

ROCKWALL CITY COUNCIL REGULAR MEETING

Monday, April 03, 2023 - 5:30 PM

City Hall Council Chambers - 385 Goliad St., Rockwall, TX 75087

I. Call Public Meeting to Order

II. Executive Session.

The City of Rockwall City Council will Recess into Executive Session to discuss the following matter as authorized by Chapter 551 of the Texas Government Code:

1. Discussion regarding possible sale/purchase/lease of real property in the vicinity of the downtown area, pursuant to Section §551.072 (Real Property) and Section §551.071 (Consultation with Attorney)

III. Adjourn Executive Session

IV. Reconvene Public Meeting (6:00 P.M.)

V. Invocation and Pledge of Allegiance - Councilmember Campbell

VI. Proclamations / Awards / Recognitions

1. Child Abuse Awareness & Prevention Month

VII. Open Forum

This is a time for anyone to address the Council and public on any topic not already listed on the agenda or set for a public hearing. Per Council policy, public comments should be limited to three minutes out of respect for other citizens' time. If you have a topic that warrants longer time, please contact the City Secretary at kteague@rockwall.com to be placed on the Agenda during the "Appointment Items" portion of the meeting. This will allow your topic to be provided sufficient time for discussion and will permit proper notice to be given to the public. On topics raised during Open Forum, please know Council is not permitted to respond to your comments during the meeting since the topic has not been specifically listed on the agenda (the Texas Open Meetings Act requires that topics of discussion/deliberation be posted on an agenda not less than 72 hours in advance of the Council meeting). This, in part, is so that other citizens who may have the same concern may also be involved in the discussion.

VIII. Take any Action as a Result of Executive Session

IX. Consent Agenda

These agenda items are routine/administrative in nature, have previously been discussed at a prior City Council meeting, and/or they do not warrant Council deliberation. If you would like to discuss one of these items, please let the City Secretary know before the meeting starts so that you may speak during "Open Forum."

1. Consider approval of the minutes from the March 20, 2023, regular City Council meeting, and take any action necessary.
2. Consider approval of an **ordinance** cancelling the May 6, 2023 General (city council) Election, and take any action necessary. **(2nd reading)**
3. **Z2023-008** - Consider a request by Brad Helmer on behalf of Heritage Christian Academy for the approval of an **ordinance** for a *Specific Use Permit (SUP)* allowing existing temporary educational buildings on a 6.64-acre parcel of land identified as Lot 1, Block A, Heritage Christian Academy Addition, City of Rockwall, Rockwall County, Texas, zoned Multi-Family 14 (MF-14) District, situated within the SH-205 Overlay (SH-205 OV) District, addressed as 1408 S. Goliad Street ~~SH-205~~, situated within the SH-205 Overlay (SH-205 OV) District, and take any action necessary **(2nd Reading)**.

4. **Z2023-009** - Consider a request by Jeff and Ginger Brock-Jones for the approval of an **ordinance** for a *Specific Use Permit (SUP)* to allow a *Guest Quarters/Detached Garage* on a 0.4170-acre parcel of land identified as all of Lot 1 and a portion of Lot 2, Block 2, Leonard and Adams Addition, City of Rockwall, Rockwall County, Texas, zoned Single-Family 7 (SF-7) District, addressed as 504 Nash Street, and take any action necessary **(2nd Reading)**.
5. **Z2023-011** - Consider a request by Javier Silva of JMS Custom Homes, LLC on behalf of Ruben Fragoso of RSR Capital LLC for the approval of an **ordinance** for a *Specific Use Permit (SUP)* for *Residential Infill in an Established Subdivision* on a 0.24-acre parcel of land identified as Lot 5, Block 1, L & W Addition, City of Rockwall, Rockwall County, Texas, zoned Single-Family 10 (SF-10) District, addressed as 104 Glenn Avenue, and take any action necessary **(2nd Reading)**.
6. **Z2023-012** - Consider a request by Timothy S. and Susan M. Mack for the approval of an **ordinance** for a *Specific Use Permit (SUP)* to allow a *Detached Garage* on a one (1) acre parcel of land identified as all of Lot 9, Block A, Saddlebrook Estates #2 Addition, City of Rockwall, Rockwall County, Texas, zoned Single-Family 16 (SF-16) District, addressed as 2333 Saddlebrook Lane, and take any action necessary **(2nd Reading)**.
7. **Z2023-013** - Consider a request by Kevin Osornio of MBA Custom Homes for the approval of an **ordinance** for a *Specific Use Permit (SUP)* for *Residential Infill in an Established Subdivision* on a 0.1650-acre parcel of land identified as Lot 837A of the Lake Rockwall Estates #2 Addition, City of Rockwall, Rockwall County, Texas, zoned Planned Development District 75 (PD-75) for Single-Family 7 (SF-7) District, addressed as 118 Blanche Drive, and take any action necessary **(2nd Reading)**.
8. Consider the approval of an **ordinance** for a text amendment to Chapter 38, *Subdivisions*, of the Municipal Code of Ordinances for the purpose of adopting a revised *Subdivision Ordinance*, and take any action necessary **(2nd Reading)**.
9. Consider an **ordinance** adopting the March 2023 updates to the Engineering Department's Standards of Design and Construction Manual, and take any action necessary. **(2nd reading)**
10. Consider an **ordinance** amending Section 26-505, *Prohibited in Specific Places*, of Article VII, *Stopping, Standing, or Parking*, of Chapter 26, *Motor Vehicles & Traffic*, of the Municipal Code of Ordinances to include the prohibition of parking on N. Goliad Street from FM-552 to John King Boulevard and on Shenandoah Lane from All Angels Hill Lane to the eastern terminus of Shenandoah Lane, and take any action necessary. **(1st reading)**
11. Consider authorizing the City Manager to execute a contract for the professional engineering services with KSA, to perform the engineering design services and specifications for the Davis Drive Water Line Project in an amount not to exceed \$155,680.00, to be funded out of the Water and Sewer Fund, and take any action necessary.
12. **P2023-005** - Consider a request by Josh Swiercinsky of 7.1 Ridge, LLC for the approval of a *Replat* for Lots 8-10, Block A, Sky Ridge Addition being a 2.293-acre tract of land identified as Lots 2-4, Block A, Sky Ridge Addition, City of Rockwall, Rockwall County, Texas, zoned Commercial (C) District, situated within the Scenic Overlay (SOV) District, generally located at the southwest corner of the intersection of Yellow Jacket Lane and Ridge Road [FM-740], and take any action necessary.

X. Action Items

If your comments are regarding an agenda item below, you are asked to wait until that particular agenda item is up for discussion, and the Mayor or Mayor Pro Tem will call you forth to the podium to hear your comments (please limit to 3 minutes or less). This allows for all public comments to be grouped with each specific agenda item for the Council to consider, and they are then easily referenced in meeting recordings.

1. **Z2023-010** - Discuss and consider a request by Duane Piercy of Redeemer Church for the approval of an **ordinance** for a *Zoning Change* from an Agricultural (AG) District to Light Industrial (LI) District on a 6.17-acre tract of land identified as Tract 2-01 of the D Harr. Survey, Abstract No. 102, City of Rockwall, Rockwall County, Texas, zoned Agricultural (AG) District, situated within the Airport Overlay (AP OV) District, addressed as 1760 Airport Road, and take any action necessary **(2nd Reading)**.

2. Discuss and consider approval of an **ordinance** amending Chapter 10. Building and Building Regulations, Articles III, IV, V, VI, VII, VIII, IX, X, and XI of the Municipal Code of Ordinances and adopting a new Article XVII, for the purpose of adopting the 2021 International Building, Residential, Mechanical, Plumbing, Fuel Gas, Energy Conservation, Electrical, Building, and Swimming Pool and Spa Codes, including reflecting local amendments, exceptions and related changes, and take any action necessary. **(1st reading)**
3. Discuss and consider an **ordinance** repealing Article II. Fire Code Standards, Secs. 18-32 and 18-33 of Chapter 18. Fire Prevention and Protection of the Rockwall Municipal Code of Ordinances and adopting new Secs. 18-32 and 18-33 for the purpose of adopting the 2021 International Fire Code including certain Appendices (B, D, H, L and N) and reflecting local amendments, exceptions, and related changes while retaining Subsection (41) (2006 IFC, Section 903.2, as adopted by Ord. 11-24), and take any action necessary. **(1st reading)**

XI. City Manager's Report, Departmental Reports and related discussions pertaining to current city activities, upcoming meetings, future legislative activities, and other related matters.

1. Building Inspections Department Monthly Report - February 2023
2. Fire Department Monthly Report - February 2023
3. Parks & Recreation Department Monthly Report - February 2023
4. Police Department Monthly Report - February 2023

XII. Adjournment

This facility is wheelchair accessible and accessible parking spaces are available. Request for accommodations or interpretive services must be made 48 hours prior to this meeting. Please contact the City Secretary's Office at (972) 771-7700 or FAX (972) 771-7727 for further information.

The City of Rockwall City Council reserves the right to adjourn into executive session at any time to discuss any of the matters listed on the agenda above, as authorized by Texas Government Code ¶ 551.071 (Consultation with Attorney) ¶ 551.072 (Deliberations about Real Property) ¶ 551.074 (Personnel Matters) and ¶ 551.087 (Economic Development)

I, Kristy Teague, City Secretary for the City of Rockwall, Texas, do hereby certify that this Agenda was posted at City Hall, in a place readily accessible to the general public at all times, on the 31st day of March, 2023 at 4:15PM and remained so posted for at least 72 continuous hours preceding the scheduled time of said meeting.

Kristy Teague, City Secretary
or Margaret Delaney, Asst. to the City Sect.

Date Removed

Rockwall,  Texas

Proclamation

Whereas, child abuse and neglect is a serious problem that, unfortunately, affects every segment of our community, causing psychological, emotional and physical impacts that can have lifelong consequences for victims of abuse; and

Whereas, each year the month of April is set aside to recognize dedicated professionals across our state who meet families upstream – before crisis occurs – to offer them accessible lifelines to mitigate their challenges; and

Whereas, a collaborative, multifaceted endeavor, child abuse prevention involves the diligent work of families, friends, neighbors, houses of faith, advocacy groups, non-profits, schools, healthcare providers, social workers, law enforcement and other government agencies; and

Whereas, the Child Advocacy Center of Rockwall County provides a multi-agency, coordinated approach to the investigation, prosecution, and treatment of child abuse victims while providing a safe, child-friendly environment to effectively seek justice and promote healing for our community’s most vulnerable citizens; and

Whereas, Court Appointed Special Advocates - CASA volunteers - are assigned by the court to speak on behalf of a child’s best interests, serving as a voice to ensure that children have the opportunity to grow up in a safe, loving, permanent home; and

Whereas, the Rainbow Room is an emergency item resource center for abused children in the CPS system and is accessible 24-hours a day, 7 days a week to provide clothing, shoes and toys to children who need extra support.

Now, Therefore, I, Kevin Fowler, Mayor of the City of Rockwall, Texas, do hereby proclaim **APRIL 2023** as

CHILD ABUSE AWARENESS AND PREVENTION MONTH

in the City of Rockwall and encourage all citizens to applaud and support the work these groups do together to promote awareness and take meaningful actions that benefit children and families in our community.

In Witness Whereof, I hereunto set my hand and official seal on this 3rd day of April, 2023.


Kevin Fowler, Mayor

ROCKWALL CITY COUNCIL REGULAR MEETING
Monday, March 20, 2023 - 5:00 PM
City Hall Council Chambers - 385 Goliad St., Rockwall, TX 75087

I. CALL PUBLIC MEETING TO ORDER

Mayor Fowler called the public meeting to order at 5:00 p.m. Present were Mayor Kevin Fowler, Mayor Pro Tem Trace Johannesen, and Councilmembers Dennis Lewis, Clarence Jorif, Anna Campbell, Bennie Daniels and Mark Moeller. Also present were City Manager Mary Smith, Assistant City Manager Joey Boyd, and City Attorney Frank Garza.

II. WORK SESSION

1. Hold a work session to discuss the regulation of *Short-Term Rentals*.

Planning Director, Ryan Miller came forth and provided a presentation to Council concerning the topic of 'short-term rentals' and their possible, future regulation within the city (i.e. Airbnbs, VRBOs, etc.). Indication was given that currently only about 10 short-term rentals within the City of Rockwall proactively pay their 'hotel / motel taxes' to the city; however, staff has extensively studied these booking sites online and has concluded that there may be around 90-95 short-term rentals actually located within our city limits. It is difficult to identify these establishments because the addresses are not shown on the booking sites unless/until a person actually goes in and books and pays for the rental. Staff has extensively studied what other cities are doing relative to regulating short-term rentals, with the City of Plano, for example, making attempts to 'ban' them altogether. Also, several bills may be forthcoming during this State legislative session. Several councilmembers seemed to generally indicate a desire for the city begin doing *something* related to short-term rentals (i.e. at least start requiring that they register with the city). Also, councilmembers generally seemed to express a desire for the city to keep a close eye on the State's legislative session in order to particularly watch proposed bills relative to this topic that may arise. Indication was given that the city likely can require that these short-term rental businesses register with the city and institute regulations related to life safety (i.e. require that they have proper smoke alarms and fire escapes in place).

Councilmember Daniels provided several comments of concern related to short-term rentals in the city. In his neighborhood – Lakeside Village – there are probably somewhere between four and seven 'short term rental' homes. The folks who are renting these out sometimes misconstrue that the neighborhood's HOA serves as a property management source for those units. Sometimes they come to the HOA and ask for a code and/or a key to get into the rental units. Also, sometimes there are occasions when there can be up to fifteen people visiting these rental units; however, parking is limited to two spaces per residence within the neighborhood. So, that causes a problem. Also, sometimes the HOA gets phone calls from folks who seem to be investors, asking what the neighborhood's short term rental regulations include. He believes that the city does need to do something about these short term rentals because they will only become more prominent and associated problems will only become worse.

City Attorney Frank Garza interjected that a piece of legislation has been introduced that will be heard next week in Austin. He is confident the city can institute health and safety-related regulations on short-

term rentals. It will allow a city to allow the city to require 'registration' of short term rentals; however, it does not allow for any prohibitions. It allows for the city to collect taxes due to it and for HOAs to institute some regulating rules. In addition, it allows for cities to regulate some life safety matters (i.e. fire alarms). It does also allow a city to regulate 'party houses' (i.e. you can have rentals but no 'events' may be held when renting).

Councilman Moeller believes the city should at least require these rentals to register with the city. Also, he would like to see them be required to carry commercial insurance.

Mr. Garza suggested the City of Rockwall wait to see what happens during this legislative session and then consider adopting some regulations thereafter, once the city has a better understanding of what state law will end up allowing us to do.

Councilmember Jorif generally expressed a desire for the City of Rockwall to be proactive in looking into what the city can do on short-term rentals, especially related to 'safety.'

Mayor Pro Tem Johannesen indicated that his focus is always to balance regulations with private property owner rights. He wonders what, if anything, is working well for some of the other cities who have already instituted some sorts of regulations on short term rentals. Mr. Miller shared that how 'short term rentals' versus 'long term rentals' is defined will be very important. An ability for the city to require registration and locate / identify the short term rentals within its jurisdiction will be important.

Mr. Garza indicated that he feels confident the State will continue to ensure that homeowners associations HOAs have a right and ability to regulate short-term rentals and that cities' regulatory authority will likely be limited. Cities will likely to be able to require registrations, mainly because the state wants to be able to collect taxes on short term rentals. Mrs. Smith, City Manager, interjected that HOAs within the city seem to be pretty aware of which units/houses within their subdivision are serving as short term rentals. Also, VRBO and some of the other online rental services have begun to collect the state taxes, but they do not collect the local taxes. Mrs. Smith pointed out that there are companies in existence that can be retained on behalf of a city to research short term rentals and try to identify what local taxes the city is missing out on, but – so far – our city has not gotten into that at this point.

Mayor Pro Tem Johannesen shared that he may be in favor of requiring them to register and pay a small fee, limiting the amount of staff time and city involvement. He believes that, for the most part, these 'neighbors' are likely not causing large issues / concerns within subdivisions. Mayor Fowler agreed that, likely most of these rentals are and likely won't be causing problems; however, some very limited number of them may (i.e. noise, 'party houses').

Councilmember Campbell asked staff what sorts of complaints the city has been receiving on short term rentals. Mr. Miller shared that the complaints have actually been far fewer than those who call to ask about what the city's short term rental regulations are. Mr. Miller shared that staff has received phone calls, for example, related to properties in the downtown area, the Bentonwoods subdivision and the Chandler's Landing subdivision.

Councilmember Daniels generally expressed that he has safety-related concerns, specifically related to the possibility that disagreements and associated disturbances may arise between individuals who are renting short term rentals and using neighboring homeowner's personal parking spaces while doing so. This could result in police-related disturbances (confrontations, arguments, and potentially even violence).

Councilmember Lewis shared that he lives in Chandler’s Landing, and several months ago an email went out to all residents within the subdivision letting them know that “you cannot have short term rentals within our subdivision.” Mr. Miller pointed out that, even though that may be the case, staff has still identified some of these units within Chandler’s Landing. Councilmember Daniels went on to explain some of the challenges that existing HOAs have regarding updating their rules and regulations in order to address some of the concerns associated with short term rentals (i.e. his HOA needing 2/3 of property owners to vote on changing/updating bylaws, regulations, DCNRs).

Mayor Fowler suggested that staff begin working on a rough draft of an ordinance that can be modified and considered several months from now once the legislature is done with session and the city better knows what it can and cannot regulate.

2. Hold a work session to discuss the regulation of *Credit Access Businesses*.

Mr. Miller started out by providing a definition of these types of businesses, as follows: A *Credit Access Business* is a business or credit services organization that obtains for a consumer or assists a consumer in obtaining an extension of consumer credit in the form of a deferred presentment transaction or a motor vehicle title loan.

Mr. Miller shared that “pay day loan” and “auto title loan” companies are good examples of this. The City currently has two of these types of business – one in the downtown area and one off of IH-30. He explained that in 2021, the City of Dallas essentially placed additional regulations on these types of businesses. So, as a result, our suburb – City of Rockwall – has begun seeing more inquiries from these types of businesses potentially wanting to locate in our city. These types of businesses typically like to exist in clusters, usually along major roadways. The City utilizes “specific use permits” in order to try and avoid ‘clusters’ of the same types of businesses locating in one general area. He went on to explain that a lot of bigger cities have regulations in place to dictate how these businesses operate. Our city is likely not interested in instituting those types of regulations. However, we may be interested in instituting land use related controls thru conditional land use standards and/or registration requirements. Mr. Miller shared brief details on how the State legislature views and regulates these types of businesses and one of the bills being proposed in this legislative session. Mr. Miller shared that the City of Rockwall currently categorizes these businesses as “financial institutions without drive-thrus.” If the City Council chooses to direct staff to regulate *Credit Access Businesses*, staff would propose that the text amendment include the following:

- (1) Definition of *Credit Access Business*.
- (2) The establishment of a new land use for a *Credit Access Business*.
- (3) The *Credit Access Business* land use would be permitted in all of the same districts as a *Financial Institution without Drive-Through*.
- (4) The *Conditional Land Use Standards* for a *Credit Access Business* would be required to located a minimum of 1,000-feet from any like land use as measured from property line to property line.

Mayor Pro Tem Johannesen asked if the city currently regulates other types of businesses in a similar manner. Mr. Miller shared that the city currently does so with ‘group homes’ in residential districts. Also, “SUPs” are also utilized as a tool to prevent certain types of businesses from clustering in one area (i.e. mini warehouses).

Mayor Fowler expressed that he is in favor of instituting the regulations Mr. Miller has shared this evening. Councilmember Daniels and Mr. Miller briefly discussed ‘parcel to parcel’ measurements

versus 'door to door' measurements. Mr. Miller shared that, in general, 'parcel to parcel' measurements are easier for staff to conduct.

Mayor Fowler then adjourned the work sessions portion of the meeting and called for a brief recess at 5:47 p.m.

III. RECONVENE PUBLIC MEETING (6:00 P.M.)

Mayor Fowler called the remainder of the public meeting to order at 6:00 p.m. (with all 7 councilmembers being present).

IV. INVOCATION AND PLEDGE OF ALLEGIANCE - MAYOR FOWLER

Mayor Fowler delivered the invocation and led the Pledge of Allegiance.

V. PROCLAMATIONS / AWARDS / RECOGNITIONS

1. Texas Police Chief's Association Foundation - Recognition/Accreditation of the Rockwall Police Department (Presented by Chief Steve Stanford, Bridgeport Police Department / Best Practices Accreditation Program, Team Leader)

Chief Stanford came forth and provided a brief presentation, generally explaining the accreditation process and how the Rockwall Police Department fared during its reaccreditation. He explained that less than 200 agencies in the State of Texas have been accredited, and even fewer have been reaccredited. He explained that he has personally conducted many, many of these accreditation evaluations, and our police department is the only one he has conducted that needed 'no modifications.' It meets or exceeds every category of evaluation associated with this program. He went on to congratulate and recognize Rockwall Police Chief, Ed Fowler, and the entire Rockwall Police Department for attaining this high honor / recognition.

2. 'Theater in Our Schools' Proclamation

Mayor Fowler called forth and recognized the local, youth chapter of the "Texas Thespians." He read and presented the group with this honorary proclamation.

3. 'Surveyors Week' Proclamation

Mayor Fowler called forth Craig Wallwork, a local land surveyor living in Rockwall. He then read and presented him with this proclamation.

VI. OPEN FORUM

Mayor Fowler asked if anyone would like to come forth and speak during Open Forum.

Dennis Dayman
519 Cellars Court
Rockwall, TX 75087

Mr. Dayman came forth and expressed concerns about a new business “The Northside Bar and Grill”, which is an outdoor concert/dining venue that’s located right outside of the city limits of Rockwall in the unincorporated portion of the County (in the city’s extraterritorial jurisdiction). In 2022, the business applied for an alcohol license with TABC. At that time, many residents spoke at the County Commissioner’s Court against this business. At that time, the business owners promised not to disturb the peace and to work with neighbors on concerns. However, now the owners will not even return phone calls. The company was granted their liquor license thru TABC. Mr. Dayman went on to express that he and his neighbors have many concerns. He shared that there is a lot of noise from generators and loud, bass-filled music, often times going on until 2:00 a.m. In Harlan Park, a subdivision within the City of Rockwall, residents are dealing with a lot of these concerns. Patrons to that business have been parking in the Tom Thumb parking lot and walking over. Also, some patrons have been trespassing in and around residential homes within his subdivision. He urged the city to evaluate what, if anything, the city can do to try and address some of the many concerns (noise, crime, parking, potential fire-related safety concerns, etc.). Mayor Fowler indicated that the city is definitely interested and willing to help, if possible.

John Brown

Mr. Brown came forth, indicating he owns Rudy’s Aviation Services that operates at the Rockwall Municipal Airport at 1873 Airport Road. Mr. Brown shared brief background information on himself and his career in aviation as well as his current business, Rudy’s. He went on to share that the current municipal airport manager has a business operation in Terrell (flight training and maintenance). He went on to express the belief that she (the airport manager) does anything possible to redirect business to Terrell instead of keeping the business local and encouraging it to remain at Rockwall’s airport. He said he’s been dealing with this for about 2 years now. He went on to share concerns about the airport manager recently changing up a room that’s supposed to be conducive to training, with a distraction free environment. Mr. Brown provided two, short, type-written letters to City Secretary Kristy Teague – one from Ahmed Ismail (“FAA Certified Flight Instructor, Instrument Instructor, and Ground Instructor) and one from Adrian Weaver (2570 Wagonwheel Drive Rockwall, TX 75032). Both letters generally expressed concern about recent changes to a room at the municipal airport that used to have tables and chairs in it, and it was utilized for training / flight lessons, briefings, meetings, etc. However, recent changes to the room have resulted in it having couches and a desk, similar to a pilots’ lounge type setting. Both letters generally indicated that the recent changes are undesirable and inhibit the ability for meetings, training, briefings, etc. to be held. Mr. Brown shared that he has expressed his concerns to the airport manager, but he has essentially been ‘blown off’ by her. Mayor Fowler shared that he, Mayor Pro Tem Johannesen, and Councilmember Jorif serve as the city’s Airport Subcommittee, and the three of them are happy to visit with Assistant City Manager, Joey Boyd about the concerns. Mr. Brown indicated that six months ago he came to the city asking for permission to do a maintenance shop, but he’s not heard anything from Mr. Boyd on that thus far. He did acknowledge that Mr. Widmer (Building Official for the city) has recently taken over some things, so he is now working with Mr. Widmer on this request. Also, he will appreciate if the city will update its website to point to a correct link that is currently pointing to an incorrect site online (re: airport services).

SuLaine Callaway
517 Cellars Court
Rockwall, TX 75087

She too has concerns about “Northside Bar & Grill,” the same sentiments that her neighbor, Mr. Dayman expressed a few minutes ago. She indicated that residents met with the company back in the summer to discuss their concerns; however, unfortunately, the owners have not followed thru on trying

to keep the noise levels down. Residents of Rockwall are not happy with these issues that are occurring and ongoing, and she will appreciate the City having knowledge of these issues and being in support of the issues getting resolved.

Yvonne Sullivan
521 Cellars Court
Rockwall, TX

Mrs. Sullivan shared that she 150% agrees with Mr. Dayman's sentiments pertaining to the Northside Bar & Grill. The music is extremely loud and 'booming' until late at night every weekend. She will appreciate anything the city can do in order to try and help with these concerns.

Tisa White
3718 Huntcliff Drive
Rockwall, TX

Mrs. White shared that she lives very near the location of the Northside Bar & Grill. She has seen golf carts with folks driving over to that location. She has concerns about those golf cars, children playing nearby and the noise and crowds. She will appreciate any help the city can provide.

VII. CONSENT AGENDA

1. Consider approval of the minutes from the March 6, 2023 regular City Council meeting, and take any action necessary.
2. **SP2023-005** - Consider a request by Dub Douphrate of Douphrate and Associates on behalf of Joanne Vockovic of the Pregnancy Resource Center for the approval of an *Alternative Tree Mitigation Settlement Agreement* in conjunction with an approved site plan for an *office building* on a 0.32-acre parcel of land identified as Lot 1, Block A, Pregnancy Resource Addition, City of Rockwall, Rockwall County, Texas, zoned Planned Development District 53 (PD-53) for Residential-Office (RO) District land uses, situated within the Scenic Overlay (SOV) District, addressed as 1010 Ridge Road, and take any action necessary.
3. **SP2023-008** - Consider a request by Asher Hamilton on behalf of RIV Properties, Alvin Moton Jr., James Moton, Terra Moton, Debra Heard, Beulah Robertson, Tony Moton, and Kathy Moton for the approval of an *Alternative Tree Mitigation Settlement Agreement* in conjunction with an approved site plan for a 176-unit *condominium building* on a 3.59-acre tract of land identified as Lots 1 & 2, Block1; Lots 1, 2, 3, & 4, Block 2; Lots 1, 2, 3, & 4, Block 3; Lots 1, 2, 3, & 4, Block 5; Lots 1 & 2 and a portion of Lots 3 & 4, Block 6; Lots 2, 3, & 4, Block 7; Lots 1 & 2, Block 8; and Lots 1, 2, 3, & 4, Block 9, Moton Addition, City of Rockwall, Rockwall County, Texas, situated within the Hillside Mixed Use Subdistrict and the Horizon/Summer Lee Subdistrict of Planned Development District 32 (PD-32), generally located at the southwest corner of the intersection of Horizon Road and Summer Lee Drive, and take any action necessary.
4. Consider authorizing the City Manager to execute a change order with Crescent Constructors, Inc. for the Heath Street Pump Station Improvements in an amount of \$90,402.00 to be funded by Water/Sewer Bonds, and take any action necessary.

Councilmember Lewis moved to approve the entire Consent Agenda, as presented. Councilmember Campbell seconded the motion, which passed unanimously (7 ayes to 0 nays).

VIII. APPOINTMENT ITEMS

1. Appointment with Planning & Zoning Commission representative to discuss and answer questions regarding planning-related cases on the agenda.

Sedric Thomas, Chairman of the city's P&Z Commission, came forth and briefed the Council on recommendations of the Commission pertaining to planning-related items. No discussion ensued and no action was taken following Mr. Thomas' brief comments.

IX. PUBLIC HEARING ITEMS

1. **Z2023-008** - Hold a public hearing to discuss and consider a request by Brad Helmer on behalf of Heritage Christian Academy for the approval of an **ordinance** for a *Specific Use Permit (SUP)* allowing existing temporary educational buildings on a 6.64-acre parcel of land identified as Lot 1, Block A, Heritage Christian Academy Addition, City of Rockwall, Rockwall County, Texas, zoned Multi-Family 14 (MF-14) District, situated within the SH-205 Overlay (SH-205 OV) District, addressed as 1408 S. Goliad Street [SH-205], situated within the SH-205 Overlay (SH-205 OV) District, and take any action necessary (**1st Reading**).

Mr. Miller, Planning Director, briefed the Council on this agenda item, generally indicating that the applicant is asking the city to consider allowing these temporary, portable buildings to remain for one, additional year. He went on to further explain the nature of this request and the options that are available to Council, indicating that its approval is discretionary. The P&Z Commission did recommend approval of this request by a vote of 6 to 0. In addition, 39 notices were sent out to adjacent property and land owners, and five responses from 2 property owners (i.e. four of them were from the applicant) were received in favor of the request.

**Brad Helmer
2917 Chuckwagon Drive
Rockwall, TX**

Mr. Helmer came forth and briefly addressed Council concerning this request, generally explaining the ongoing building efforts and future efforts that will ensue. He thanked the Council for its consideration of allowing these portable buildings to remain for one, additional year.

Mayor Fowler opened the public hearing, and the following came forth to speak:

**Tisa White
3718 Huntcliff Drive
Rockwall, TX**

Mrs. White is a parishioner at Our Lady of the Lake Catholic Church, which is a direct neighbor to these portable buildings. She and her fellow parishioners have no problem with these buildings remaining.

There being no one else coming forth to speak, Mayor Fowler then closed the Public Hearing.

Councilman Jorif asked for clarification on the timing of the elementary portion of the school. Mr. Helmer hopes to have it finished prior to the start of the 2024-2025 school year.

Councilmember Lewis moved to approve Z2023-008. Councilmember Campbell seconded the motion. Following brief comments from Councilmember Daniels (who commended Mr. Helmer for his work related to his school's building efforts), the ordinance caption was read as follows:

**CITY OF ROCKWALL
ORDINANCE NO. 23-15
SPECIFIC USE PERMIT NO. S-297**

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, AMENDING THE UNIFIED DEVELOPMENT CODE [ORDINANCE NO. 20-02] OF THE CITY OF ROCKWALL, TEXAS, AS PREVIOUSLY AMENDED, SO AS TO GRANT A SPECIFIC USE PERMIT (SUP) TO ALLOW THREE (3) TEMPORARY EDUCATIONAL BUILDINGS ON A 6.64-ACRE PARCEL OF LAND ZONED MULTI-FAMILY 14 (MF-14) DISTRICT IDENTIFIED AS LOT 1, BLOCK A, HERITAGE CHRISTIAN ACADEMY ADDITION, CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS; PROVIDING FOR SPECIAL CONDITIONS; PROVIDING FOR A PENALTY OR FINE NOT TO EXCEED THE SUM OF TWO THOUSAND DOLLARS (\$2,000.00) FOR EACH OFFENSE; PROVIDING FOR A SEVERABILITY CLAUSE; PROVIDING FOR A REPEALER CLAUSE; PROVIDING FOR AN EFFECTIVE DATE.

The motion passed by a vote of 7 ayes to 0 nays.

2. **Z2023-009** - Hold a public hearing to discuss and consider a request by Jeff and Ginger Brock-Jones for the approval of an **ordinance** for a *Specific Use Permit (SUP)* to allow a *Guest Quarters/Detached Garage* on a 0.4170-acre parcel of land identified as all of Lot 1 and a portion of Lot 2, Block 2, Leonard and Adams Addition, City of Rockwall, Rockwall County, Texas, zoned Single-Family 7 (SF-7) District, addressed as 504 Nash Street, and take any action necessary (**1st Reading**).

Planning Director, Ryan Miller provided background information concerning this agenda item, generally explaining the nature of this request for a detached garage/guest quarters/secondary living unit on a property containing an existing 1,705 square foot home with a 360 square foot, existing detached garage. He explained that the applicant would like to establish a 28x39' detached garage that is 1,110 square feet (roughly in the same location as the existing detached garage). Above the garage will be a 28x39' guest quarters. The total combined square footage of the structure will be 1,900 square feet. The structure will stand 29' at the peak and be clad in siding, similar to the primary structure. So, the proposed structure exceeds the size limitations of the city's current regulations. In this case, the detached garage exceeds by 485 square feet and the guest quarters exceeds by 333.5 square feet. So, the applicant is seeking approval of an SUP. Mr. Miller went on to point out that two other residences not far from this location have similar, two-story structures built on them.

Mr. Miller shared that sixty-nine notices were sent out to property owners and occupants within 500' of the property as well as nearby HOAs. Staff has received one response in favor of the applicant's request. In addition, the city's P&Z Commission has recommended approval of this request.

Jeff Jones
504 Nash Street
Rockwall, TX

Mr. Jones came forth and shared that his existing garage is old, small and dilapidated. So they'd like to construct a new garage and build guest quarters too. He will be recladding the house to match the garage, and it will blend in well with the neighborhood. He believes it will end up looking very nice.

Mayor Fowler opened the public hearing, but no one indicated a desire to come forth and speak. So he closed the public hearing.

Mr. Jones shared that he has several kids and grandkids. So, when they come over, his 1,700 square foot main house is just a bit too crowded. So, this structure will only be utilized for family and close friends. It will not be rented out.

Councilmember Jorif moved to approve Z2023-009. Mayor Pro Tem Johannesen seconded the motion. Following brief comments, the ordinance caption was read as follows:

**CITY OF ROCKWALL
ORDINANCE NO. 23-16
SPECIFIC USE PERMIT NO. S-298**

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, AMENDING THE UNIFIED DEVELOPMENT CODE (UDC) [ORDINANCE NO. 20-02] OF THE CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS, AS PREVIOUSLY AMENDED, SO AS TO GRANT A SPECIFIC USE PERMIT (SUP) FOR *GUEST QUARTERS/DETACHED GARAGE* ON A 0.4170-ACRE PARCEL OF LAND IDENTIFIED AS ALL OF LOT 1 AND A PORTION OF LOT 2, BLOCK 2, LEONARD AND ADAMS ADDITION, CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS, AND MORE SPECIFICALLY DESCRIBED AND DEPICTED IN *EXHIBIT 'A'* OF THIS ORDINANCE; PROVIDING FOR SPECIAL CONDITIONS; PROVIDING FOR A PENALTY OF FINE NOT TO EXCEED THE SUM OF TWO THOUSAND DOLLARS (\$2,000.00) FOR EACH OFFENSE; PROVIDING FOR A SEVERABILITY CLAUSE; PROVIDING FOR A REPEALER CLAUSE; PROVIDING FOR AN EFFECTIVE DATE.

The motion passed by a vote of 7 ayes to 0 nays.

3. **Z2023-010** - Hold a public hearing to discuss and consider a request by Duane Piercy of Redeemer Church for the approval of an **ordinance** for a Zoning Change from an Agricultural (AG) District to Light Industrial (LI) District on a 6.17-acre tract of land identified as Tract 2-01 of the D Harr. Survey, Abstract No. 102, City of Rockwall, Rockwall County, Texas, zoned Agricultural (AG) District, situated within the Airport Overlay (AP OV) District, addressed as 1760 Airport Road, and take any action necessary (**1st Reading**).

Mayor Fowler recused himself from this agenda item. So, Mayor Pro Tem Johannesen led this agenda item. Planning Director, Ryan Miller provided background information on this item. This is located east of the intersection of Airport Road and John King Boulevard. The applicant is wanting to rezone this property so that future development may occur on it (rezone from AG to Light Industrial). The city's future land use plan designates this property as technology and employment land uses, and "light industrial" is in conformance. Mr. Miller shared that the city's P&Z Commission did vote 6 to 0 to recommend approval of this request. In addition, 18 notices were sent out to adjacent land/property owners located within 500' of the property, but no notices were received back by staff.

Mayor Pro Tem Johannesen opened the public hearing, but no one indicated a desire to speak. So he then closed the public hearing.

Councilmember Moeller then moved to approve Z2023-010. Councilmember Daniels seconded the motion. The ordinance caption as read as follows:

**CITY OF ROCKWALL
ORDINANCE NO. 23-17**

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, AMENDING THE UNIFIED DEVELOPMENT CODE [*ORDINANCE NO. 20-02*] OF THE CITY OF ROCKWALL, AS HERETOFORE AMENDED, SO AS TO APPROVE A CHANGE IN ZONING FROM AN AGRICULTURAL (AG) DISTRICT TO LIGHT INDUSTRIAL (LI) DISTRICT FOR A 6.17-ACRE TRACT OF LAND IDENTIFIED AS TRACT 2-01 OF THE D HARR. SURVEY, ABSTRACT NO. 102, CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS, AND BEING MORE SPECIFICALLY DESCRIBED IN *EXHIBIT 'A'* AND FURTHER DEPICTED IN *EXHIBIT 'B'* OF THIS ORDINANCE; PROVIDING FOR SPECIAL CONDITIONS; PROVIDING FOR A PENALTY OF FINE NOT TO EXCEED THE SUM OF TWO THOUSAND DOLLARS (\$2,000.00) FOR EACH OFFENSE; PROVIDING FOR A SEVERABILITY CLAUSE; PROVIDING FOR A REPEALER CLAUSE; PROVIDING FOR AN EFFECTIVE DATE.

The motion passed by a vote of 6 ayes with 1 abstention (Fowler).

4. **Z2023-011** - Hold a public hearing to discuss and consider a request by Javier Silva of JMS Custom Homes, LLC on behalf of Ruben Fragoso of RSR Capital LLC for the approval of an **ordinance** for a *Specific Use Permit (SUP)* for *Residential Infill in an Established Subdivision* on a 0.24-acre parcel of land identified as Lot 5, Block 1, L & W Addition, City of Rockwall, Rockwall County, Texas, zoned Single-Family 10 (SF-10) District, addressed as 104 Glenn Avenue, and take any action necessary (**1st Reading**).

Mr. Miller provided information on this agenda item, indicating that the applicant would like an SUP so that he may construct a single-family home (at 104 Glenn Avenue) in an existing subdivision. Mr. Miller shared that Council is being asked to evaluate size, location and architecture of the proposed home when compared to nearby, existing homes. Staff conducted the analysis and has provided that information to Council for review. Sixty-nine notices were sent out to nearby land and property owners, and two notices were received back “in favor of” and one “opposed to” this request. Nearby HOAs were also notified, and the city’s P&Z Commission reviewed this and has recommended approval to Council by a vote of 6 to 0.

Mayor Fowler opened the public hearing, but no one expressed a desire to come forth and speak. So he closed the public hearing.

Mayor Pro Tem Johannesen moved to approve Z2023-011. Councilmember Jorif seconded the motion. The ordinance caption was read as follows:

**CITY OF ROCKWALL
ORDINANCE NO. 23-18
SPECIFIC USE PERMIT NO. S-299**

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, AMENDING THE UNIFIED DEVELOPMENT CODE (UDC) [ORDINANCE NO. 20-02] OF THE CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS, AS PREVIOUSLY AMENDED, SO AS TO GRANT A SPECIFIC USE PERMIT (SUP) FOR *RESIDENTIAL INFILL IN AN ESTABLISHED SUBDIVISION* TO ALLOW THE CONSTRUCTION OF A SINGLE-FAMILY HOME ON A 0.24-ACRE PARCEL OF LAND, IDENTIFIED AS LOT 5, BLOCK 1, L & W ADDITION, CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS; AND MORE SPECIFICALLY DESCRIBED AND DEPICTED IN *EXHIBIT 'A'* OF THIS ORDINANCE; PROVIDING FOR SPECIAL CONDITIONS; PROVIDING FOR A PENALTY OF FINE NOT TO EXCEED THE SUM OF TWO THOUSAND DOLLARS (\$2,000.00) FOR EACH OFFENSE; PROVIDING FOR A SEVERABILITY CLAUSE; PROVIDING FOR A REPEALER CLAUSE; PROVIDING FOR AN EFFECTIVE DATE.

The motion passed by a vote of 7 ayes to 0 nays.

5. **Z2023-012** - Hold a public hearing to discuss and consider a request by Timothy S. and Susan M. Mack for the approval of an ordinance for a Specific Use Permit (SUP) to allow a *Detached Garage* on a one (1) acre parcel of land identified as all of Lot 9, Block A, Saddlebrook Estates #2 Addition, City of Rockwall, Rockwall County, Texas, zoned Single-Family 16 (SF-16) District, addressed as 2333 Saddlebrook Lane, and take any action necessary (**1st Reading**).

Planning Director, Ryan Miller provided background information concerning this agenda item. The requested garage, in this case, exceeds the city's regulations by 415 square feet, so the applicant will need to receive an SUP in order to construct it. Mr. Miller shared that the proposed detached garage is actually very similar in size and construction compared to other garages in the subdivisions. Nineteen notices were mailed out to adjacent land and property owners, and two notices were received back in favor of the request. One nearby HOA was also notified ("Caruth Lakes"). The City's P&Z Commission did vote 6 to 0 to recommend approval of this request.

Mayor Fowler opened the public hearing, but no one expressed a desire to come forth and speak. So he closed the public hearing.

Councilmember Lewis the moved to approve Z2023-012. Councilmember Moeller seconded the motion. Following brief comments, the ordinance caption was read as follows:

**CITY OF ROCKWALL
ORDINANCE NO. 23-19
SPECIFIC USE PERMIT NO. S-300**

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, AMENDING THE UNIFIED DEVELOPMENT CODE (UDC) [ORDINANCE NO. 20-02] OF THE CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS, AS PREVIOUSLY AMENDED, SO AS TO GRANT A SPECIFIC USE PERMIT (SUP) FOR *DETACHED GARAGE ON A ONE (1) ACRE PARCEL OF LAND IDENTIFIED AS LOT 9, BLOCK A, SADDLEBROOK ESTATES #2 ADDITION, CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS, AND MORE SPECIFICALLY DESCRIBED AND DEPICTED IN EXHIBIT 'A'* OF THIS ORDINANCE; PROVIDING FOR SPECIAL CONDITIONS; PROVIDING FOR A PENALTY OF FINE NOT TO EXCEED THE SUM OF TWO THOUSAND DOLLARS (\$2,000.00) FOR EACH OFFENSE; PROVIDING FOR A SEVERABILITY

CLAUSE; PROVIDING FOR A REPEALER CLAUSE; PROVIDING FOR AN EFFECTIVE DATE.

The motion passed by a vote of 7 ayes to 0 nays.

6. **Z2023-013** - Hold a public hearing to discuss and consider a request by Kevin Osornio of MBA Custom Homes for the approval of an ordinance for a *Specific Use Permit (SUP)* for *Residential Infill in an Established Subdivision* on a 0.1650-acre parcel of land identified as Lot 837A of the Lake Rockwall Estates #2 Addition, City of Rockwall, Rockwall County, Texas, zoned Planned Development District 75 (PD-75) for Single-Family 7 (SF-7) District, addressed as 118 Blanche Drive, and take any action necessary (**1st Reading**).

Mr. Miller provided background information concerning this agenda item. The applicant would like to construct a single-family home on what is now a vacant tract of land within the existing Lake Rockwall Estates subdivision. Council is again being asked to evaluate the size, location and architecture to ensure it is compatible with existing, nearby homes. The proposed home does meet all of the city's requirements with the exception of the proposed garage, which is a j-swing garage that protrudes in front of the home by 5 to 7'. However, this garage orientation is not a-typical within this subdivision. Ninety-two notices were sent out to adjacent land/property owners, and one notice was received back in favor and one notice in opposition was received as well. The city's P&Z Commission did review this case and recommended approval by a vote of 6 to 0.

Mayor Fowler opened the public hearing, but no one expressed a desire to come forth and speak. So he closed the public hearing.

Mayor Pro Tem Johannesen moved to approve Z2023-013. Councilmember Moeller seconded the motion. Following brief, additional comments the ordinance caption was read as follows:

**CITY OF ROCKWALL
ORDINANCE NO. 23-20
SPECIFIC USE PERMIT NO. S-301**

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, AMENDING PLANNED DEVELOPMENT DISTRICT 75 (PD-75) [ORDINANCE NO. 16-01] AND THE UNIFIED DEVELOPMENT CODE (UDC) [ORDINANCE NO. 20-02] OF THE CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS, AS PREVIOUSLY AMENDED, SO AS TO GRANT A SPECIFIC USE PERMIT (SUP) FOR RESIDENTIAL INFILL IN AN ESTABLISHED SUBDIVISION TO ALLOW THE CONSTRUCTION OF A SINGLE-FAMILY HOME ON A 0.1650-ACRE PARCEL OF LAND, IDENTIFIED AS LOT 847A OF THE LAKE ROCKWALL ESTATES #2 ADDITION, CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS; AND MORE SPECIFICALLY DESCRIBED AND DEPICTED IN EXHIBIT 'A' OF THIS ORDINANCE; PROVIDING FOR SPECIAL CONDITIONS; PROVIDING FOR A PENALTY OF FINE NOT TO EXCEED THE SUM OF TWO THOUSAND DOLLARS (\$2,000.00) FOR EACH OFFENSE; PROVIDING FOR A SEVERABILITY CLAUSE; PROVIDING FOR A REPEALER CLAUSE; PROVIDING FOR AN EFFECTIVE DATE.

The motion passed by a vote of 7 ayes to 0 nays.

7. Hold a public hearing to discuss and consider the approval of an **ordinance** for a text amendment to Chapter 38, *Subdivisions*, of the Municipal Code of Ordinances for the purpose of adopting a revised *Subdivision Ordinance*, and take any action necessary **(1st Reading)**.

Planning Director, Ryan Miller provided background information pertaining to this agenda item. Mr. Miller explained that this section of the City's code regulates the division and assemblage of land within the City's corporate boundaries, and -- per the City's Interlocal Cooperation Agreement with Rockwall County -- the Extraterritorial Jurisdiction (ETJ) of the City of Rockwall. Contained within this document is the City's process for subdivision plats, the criteria for approval, and the role of City staff, the Planning and Zoning Commission, the Parks and Recreation Board, and City Council in the adoption of a subdivision plat. Also, contained within this chapter of the Municipal Code of Ordinances are sections pertaining to the adequate provisions of utilities, proportionality appeals, determination of vested rights, the Parkland Dedication Ordinance, impact fee regulations, enabling language for the City's Engineering Standards of Design and Construction, the City's engineering approval process, and regulations pertaining to disaster warning sirens. Mr. Miller then briefed the council on a summary of the major changes, as follows:

- Changed the processes to be in compliance with HB3167 [2019].
- Removed repetition and created a consolidated set of General Platting Requirements and Procedures.
- Consolidated the Engineering Standards and Procedures into a separate section. Also, provided updated enabling language for the proposed Engineering Standards of Design and Construction Manual.
- Incorporated design standards for subdivisions. This will help in regulating subdivisions in the ETJ where permitted by the Interlocal Cooperation Agreement.
- Created a section that addresses agreements, appeals, and relief. Outlined the process that is required by the City Council to grant relief from subdivision standards.
- Updated the Parkland Dedication Ordinance providing transparency with how fees are calculated and incorporating the Parks District Map.
- Conformance with all other City's codes and the Comprehensive Plan.

Mr. Miller explained that if Council adopts this document tonight, it will automatically include the "cost per acre" associated with mandatory parkland dedication requirements and fees that the city has in place, as those regulations are built into the ordinance that is being presented for consideration this evening.

Mr. Miller shared that both the City's Planning & Zoning Commission and Park Board have reviewed the document, and both have recommended approval of this document. In addition, the city's attorney has reviewed the draft to ensure all legal language and references are sound.

Mayor Fowler opened the public hearing, but no one expressed a desire to come forth and speak. So he closed the public hearing.

Councilmember Lewis moved to approve the ordinance for the text amendments, as presented. Councilmember Campbell seconded the motion. The ordinance caption was read as follows:

**CITY OF ROCKWALL
ORDINANCE NO. 23-21**

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, REPEALING IN ITS ENTIRETY CHAPTER 38, *SUBDIVISIONS*, OF THE MUNICIPAL CODE OF ORDINANCES, AS HERETOFORE AMENDED, AND ADOPTING CHAPTER 38, *SUBDIVISIONS*, WHICH PROVIDES THE FOLLOWING RULES AND REGULATIONS RELATING TO APPLICATION PROCESSING PROCEDURES, SUBDIVISION AND PLATTING PROCEEDURES, ENGINEERING STANDARDS AND PROCEDURES, SUBDIVISION REQUIREMENTS, APPEALS AND RELIEF PROCEDURES, PARKLAND DEDICATION, DISASTER WARNING SIRENS, GRADING, EXCAVATION, EARTHWORK, AND EROSION CONTROL FOR THE PURPOSE OF PROTECTING THE PUBLIC’S HEALTH, SAFETY, AND GENERAL WELFARE INSIDE THE CITY’S CORPORATE LIMITS AND THE EXTRATERRITORIAL JURISDICTION (ETJ); PROVIDING FOR A PENALTY OF FINE NOT TO EXCEED THE SUM OF TWO THOUSAND DOLLARS (\$2,000.00) FOR EACH OFFENSE; PROVIDING FOR A SEVERABILITY CLAUSE; PROVIDING FOR A REPEALER CLAUSE; PROVIDING FOR AN EFFECTIVE DATE.

The motion to approve passed by a vote of 7 ayes to 0 nays.

X. ACTION ITEMS

1. Discuss and consider adopting the March 2023 updates to the Engineering Department's Standards of Design and Construction Manual, and take any action necessary.

City Engineer, Amy Williams, briefed the Council on this document, indicating that – for the most part – the updates are minor. The last time this document was updated, reviewed and approved was in 2019. Council is now asked to review and consider the recommended updates reflected in the very large document presented to Council in their informational meeting packet in draft form.

Following brief comments, Councilmember Jorif moved to approve the ordinance adopting the March 2023 Engineering Standards of Design and Construction Manual (on 1st reading). Mayor Pro Tem Johannesen seconded the motion. The ordinance caption was read as follows:

**CITY OF ROCKWALL
ORDINANCE NO. 23-XX**

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, REPEALING IN ITS ENTIRETY THE CITY’S *OCTOBER 2019 STANDARDS OF DESIGN AND CONSTRUCTION MANUAL* AND ADOPTING THE *MARCH 2023 STANDARDS OF DESIGN AND CONSTRUCTION MANUAL* FOR THE PURPOSE OF PROTECTING THE PUBLIC’S HEALTH, SAFETY, AND GENERAL WELFARE INSIDE THE CITY’S CORPORATE LIMITS AND THE EXTRATERRITORIAL JURISDICTION (ETJ); PROVIDING FOR A PENALTY OF FINE NOT TO EXCEED THE SUM OF TWO THOUSAND DOLLARS (\$2,000.00) FOR EACH OFFENSE; PROVIDING FOR A SEVERABILITY CLAUSE; PROVIDING FOR A REPEALER CLAUSE; PROVIDING FOR AN EFFECTIVE DATE.

The motion to approve passed by a vote of 7 ayes to 0 nays.

2. Discuss and consider directing staff to make changes to the Master Thoroughfare Plan (MTP) contained in the OURHometown Vision 2040 Comprehensive Plan based on recommendations from the City's consultants, and take any action necessary.

Mr. Miller, Planning Director, indicated that in January of 2022 the City of Rockwall entered into a Professional Services Engineering Contract with Freese and Nichols, Inc. to review the City's Master Thoroughfare Plan (MTP) and provide recommendations concerning the classification of the city's roadways. Due to some issues concerning the North Central Texas Council of Government's (NCTOG's) regional model, the project was delayed; however, on February 28, 2023, the City's consultant provided staff with the final recommendations and their memorandum to the City Council, which has been provided in tonight's informational meeting packet. Several recommendations were made related to 'downgrading' and 'upgrading' various street classifications.

Should the City Council choose to direct staff to proceed with amendments to the MTP, indication was given that staff will advertise the case and hold the necessary public hearings in accordance with State law.

Following brief comments, Mayor Pro Tem Johannesen moved to approve this agenda item, as presented (directing staff to move forward with making changes to the city's Master Thoroughfare Plan). Councilmember Jorif seconded the motion, which passed unanimously (7 ayes to 0 nays).

XI. ADJOURNMENT

Mayor Fowler adjourned the meeting at 7:17 p.m.

PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS ON THIS 3rd DAY OF APRIL, 2023.

KEVIN FOWLER, MAYOR

ATTEST:

KRISTY TEAGUE, CITY SECRETARY

**CITY OF ROCKWALL, TEXAS
ORDINANCE NO. 23-22**

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS DECLARING UNOPPOSED CANDIDATES FOR THE OFFICES OF MAYOR AND CITY COUNCILMEMBER PLACE 1, CITY COUNCILMEMBER PLACE 3, AND CITY COUNCILMEMBER PLACE 5, AS ELECTED; PROVIDING THAT THE MAY 6, 2023 GENERAL MUNICIPAL ELECTION IS CANCELLED AND SHALL NOT BE HELD; REPEALING ALL ORDINANCES OR PARTS OF ORDINANCES IN CONFLICT THEREWITH; PROVIDING A SAVINGS CLAUSE; PROVIDING A SEVERABILITY CLAUSE; FINDING AND DETERMINDING THAT THE MEETING AT WHICH THIS ORDINANCE WAS PASSED WAS OPEN TO THE PUBLIC AS REQUIRED BY LAW; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City Council of the City of Rockwall, Texas adopted Resolution No. 23-01 on February 6, 2023, ordering a General Election to be held on May 6, 2023, for the purpose of electing four (4) city officials – the Mayor and City Councilmember Place 1, City Councilmember Place 3, and City Councilmember Place 5; and

WHEREAS, pursuant to Sections 143.007 and 146.054, Texas Election Code, the deadlines for filing applications for a place on the ballot and declaration of write-in candidacy for the City’s general election have expired; and

WHEREAS, the City Secretary, in accordance with Section 2.052, Texas Election code, has certified in writing, attached hereto as “**Exhibit A,**” to the City Council that Trace Johannesen is unopposed for election to the office of Mayor; that Tim McCallum is unopposed for election to the office of Councilmember Place 1; that Clarence Jorif is unopposed for election to the office of Councilmember Place 3, and that Dennis Lewis is unopposed for election to the office of Councilmember Place 5; and

WHEREAS, the City Council hereby finds and determines that the candidates whose names were to appear on the ballot in said election are unopposed, that there are no declared write-in candidates, and that no propositions are to appear on the ballot for said election; and, therefore, the City Council hereby determines it is necessary to cancel the General Election.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, THAT:

Section 1. The facts and matters set forth in the preamble of this Ordinance are hereby found to be true and correct.

Section 2. In accordance with Section 2.053(a), Texas Election Code, the following unopposed candidates are hereby declared duly elected to the respective offices for a term of two years and shall be issued a certificate of election following the date on which the general election for Councilmembers would have otherwise been held:

- Trace Johannesen – Mayor
- Tim McCallum - Councilmember, Place 1
- Clarence Jorif - Councilmember, Place 3
- Dennis Lewis - Councilmember, Place 5

Section 3. Pursuant to Section 2.053(b), Texas Election code, the General (Municipal) Election for Mayor and City Councilmember Place 1, Councilmember Place 3, and Councilmember Place 5 called and ordered by Resolution No. 23-01, for May 6, 2023, is hereby cancelled and shall not be held.

Section 4. The City Secretary is hereby directed to cause a copy of this Ordinance to be posted on Election Day, same being May 6, 2023, at all posting places that would have been used in said election.

Section 5. The term of office for the unopposed Mayor and Councilmembers shall commence on May 15, 2023 after Oaths of Office have been administered and executed.

Section 6. All ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed to the extent of such conflict.

Section 7. The Code of the City of Rockwall, Texas, as amended, shall remain in full force and effect, save and except as amended by this ordinance.

Section 8. Should any section, paragraph, sentence, clause, phrase or word of this ordinance be declared unconstitutional or invalid for any purpose by a court of competent jurisdiction, the remainder of this ordinance shall not be affected thereby, and to this end the provisions of this ordinance are declared to be severable.

Section 9. It is hereby found and determined that the meeting at which this ordinance was passed was open to the public as required by Section 551.001 et seq., Texas Government Code, and that advance public notice of the time, place and purpose of said meeting was given.

Section 10. This ordinance shall take effect immediately upon its second reading as required by the City Charter, Section 3.11.

PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS THIS 3rd DAY OF APRIL, 2023.

Kevin Fowler, Mayor

ATTEST:

Kristy Teague, City Secretary

APPROVED AS TO FORM:

Frank Garza, City Attorney

1ST Reading: 03 / 06 / 2023

2nd Reading: 04 / 03 / 2023

“EXHIBIT A”

**CERTIFICATION OF UNOPPOSED CANDIDATES
CERTIFICACIÓN DE CANDIDATOS ÚNICOS**

To: Presiding Officer of the Rockwall City Council

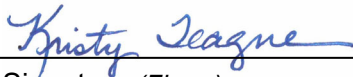
Al: Alcalde del Consejo de la ciudad de Rockwall

As the authority responsible for having the official ballot prepared, I hereby certify that the following candidates are unopposed for election to office for the election scheduled to be held May 6, 2023:

Como autoridad a cargo de la preparación de la boleta de votación oficial, por la presente certifico que los siguientes candidatos son candidatos únicos para elección para un cargo en la elección que se llevará a cabo el 6 de mayo de 2023:

Trace Johannesen - Mayor
Tim McCallum - Councilmember, Place 1
Clarence Jorif - Councilmember, Place 3
Dennis Lewis - Councilmember, Place 5

*Trace Johannesen – Alcalde
Tim McCallum – Miembro del Consejo, Puesto 1
Clarence Jorif – Miembro del Consejo, Puesto 3
Dennis Lewis – Miembro del Consejo, Puesto 5*



Signature (*Firma*)

Kristy Teague

Printed name (*Nombre en letra de molde*)

Rockwall City Secretary

Title (*Puesto*)

April 3, 2023

Date of signing (*Fecha de firma*)



(Seal) (*sello*)

CITY OF ROCKWALL

ORDINANCE NO. 23-15

SPECIFIC USE PERMIT NO. S-297

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, AMENDING THE UNIFIED DEVELOPMENT CODE [*ORDINANCE NO. 20-02*] OF THE CITY OF ROCKWALL, TEXAS, AS PREVIOUSLY AMENDED, SO AS TO GRANT A SPECIFIC USE PERMIT (SUP) TO ALLOW THREE (3) TEMPORARY EDUCATIONAL BUILDINGS ON A 6.64-ACRE PARCEL OF LAND ZONED MULTI-FAMILY 14 (MF-14) DISTRICT IDENTIFIED AS LOT 1, BLOCK A, HERITAGE CHRISTIAN ACADEMY ADDITION, CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS; PROVIDING FOR SPECIAL CONDITIONS; PROVIDING FOR A PENALTY OR FINE NOT TO EXCEED THE SUM OF TWO THOUSAND DOLLARS (\$2,000.00) FOR EACH OFFENSE; PROVIDING FOR A SEVERABILITY CLAUSE; PROVIDING FOR A REPEALER CLAUSE; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, a request has been made by Brad Helmer on behalf of Heritage Christian Academy (HCA) for the approval of a *Specific Use Permit (SUP)* allowing *Existing Temporary Education Buildings* to remain on a 6.64-acre parcel of land identified as Lot 1, Block A, Heritage Christian Academy Addition, City of Rockwall, Rockwall County, Texas, zoned Multi-Family 14 (MF-14) District, addressed as 1408 S. Goliad Street [*SH-205*], and being more specifically described in *Exhibit 'A'* of this ordinance, which herein after shall be referred to as the *Subject Property* and incorporated by reference herein; and

WHEREAS, the Planning and Zoning Commission of the City of Rockwall and the governing body of the City of Rockwall, in compliance with the laws of the State of Texas and the ordinances of the City of Rockwall, have given the requisite notices by publication and otherwise, and have held public hearings and afforded a full and fair hearing to all property owners generally, and to all persons interested in and situated in the affected area and in the vicinity thereof, the governing body in the exercise of its legislative discretion has concluded that the Unified Development Code [*Ordinance No. 20-02*] of the City of Rockwall should be amended as follows:

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS:

SECTION 1. That the approval of this ordinance shall supersede all requirements stipulated in *Ordinance No. 19-02*; and

SECTION 2. That the Unified Development Code [*Ordinance No. 20-02*] of the City of Rockwall, as heretofore amended, be and the same is hereby amended so as to grant a Specific Use Permit (SUP) allowing *Existing Temporary Educational Buildings* to remain on the *Subject Property* as stipulated by Article 04, *Permissible Uses*, of the Unified Development Code [*Ordinance No. 20-02*]; and

SECTION 3. That the *Subject Property* shall be used and developed only in the manner and for the purposes described in this Specific Use Permit (SUP) ordinance and as specifically set forth in Subsection 01.01, *Land Use Schedule*, of Article 04, *Permissible Uses*, and Subsection 03.12, *Multi-Family 14 (MF-14) District*; Subsection 04.01, *General Commercial District Standards*; and

Subsection 06.02, *General Overlay District Standards*, of Article 05, *District Development Standards*, of the Unified Development Code [Ordinance No. 20-02] of the City of Rockwall -- as heretofore amended and may be amended in the future -- and with the following conditions:

3.1 OPERATIONAL CONDITIONS

The following conditions pertain to the operation of *Existing Temporary Educational Buildings* on the *Subject Property* and conformance to these requirements is necessary for continued operations:

- 1) The *Temporary Educational Buildings* shall generally conform to the building elevations and site plan depicted in *Exhibit 'B'* of this ordinance.
- 2) The *Subject Property* shall not have more than three (3) *Temporary Educational Buildings*.
- 3) The Specific Use Permit (SUP) shall be valid for a period of one (1) year from the date of approval. At which time the City Council shall review the Specific Use Permit (SUP) to determine if a one (1) year extension is warranted.
- 4) The *Temporary Educational Buildings* are subject to administrative review in the event that the *Subject Property* is sold, conveyed, or altered in any manner.

3.2 COMPLIANCE

Approval of this ordinance in accordance with Subsection 02.02, *Specific Use Permits (SUP)*, of Article 11, *Development Applications and Review Procedures*, of the Unified Development Code (UDC) will require the *Subject Property* to comply with the following:

- 1) Should *Subject Property* fail to meet the minimum operational requirements set forth herein and outlined in the Unified Development Code (UDC), the City may (*after proper notice*) initiate proceedings to revoke the Specific Use Permit (SUP) in accordance with Subsection 02.02(F), *Revocation*, of Article 11, *Development Applications and Review Procedures*, of the Unified Development Code (UDC) [Ordinance No. 20-02].

SECTION 4. That the official zoning map of the City be corrected to reflect the changes in zoning described herein.

SECTION 5. That all ordinances of the City of Rockwall in conflict with the provisions of this ordinance be, and the same are hereby repealed to the extent of that conflict.

SECTION 6. Any person, firm, or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor and upon conviction shall be punished by a penalty of fine not to exceed the sum of *TWO THOUSAND DOLLARS (\$2,000.00)* for each offence and each and every day such offense shall continue shall be deemed to constitute a separate offense.

SECTION 7. If any section or provision of this ordinance or the application of that section or provision to any person, firm, corporation, situation or circumstance is for any reason judged invalid, the adjudication shall not affect any other section or provision of this ordinance or the application of any other section or provision to any other person, firm, corporation, situation or circumstance, and the City Council declares that it would have adopted the valid portions and applications of the ordinance without the invalid parts and to this end the provisions of this ordinance shall remain in full force and effect.

SECTION 8. That this ordinance shall take effect immediately from and after its passage.

**PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS,
THIS THE 3RD DAY OF APRIL, 2023.**

Kevin Fowler, Mayor

ATTEST:

Kristy Teague, City Secretary

APPROVED AS TO FORM:

Frank J. Garza, City Attorney

1st Reading: March 20, 2023

2nd Reading: April 3, 2023

Exhibit 'A': Legal Description

LEGAL DESCRIPTION: LOT 1, BLOCK A, HERITAGE CHRISTIAN ACADEMY ADDITION

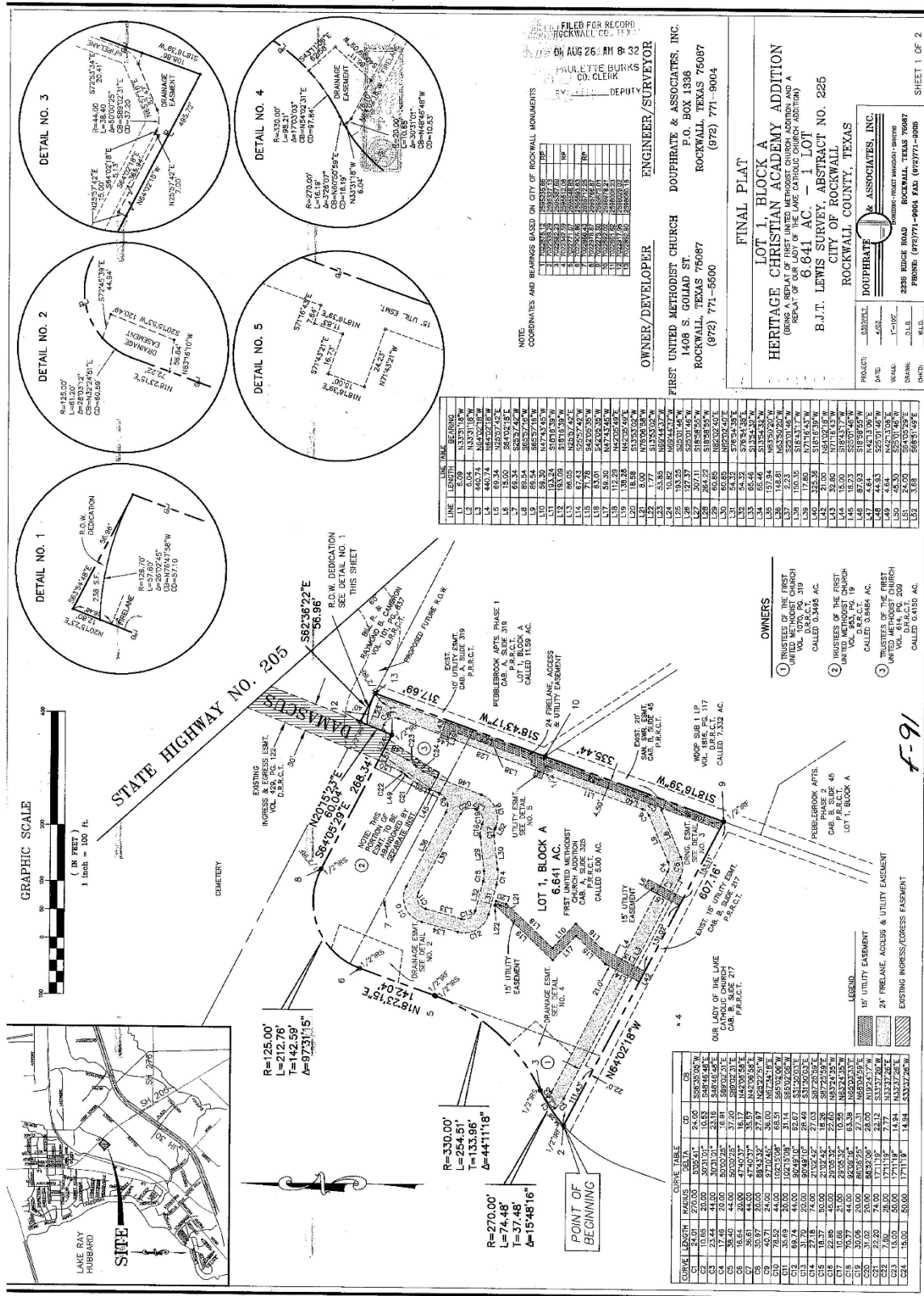


Exhibit 'B':
Site Plan

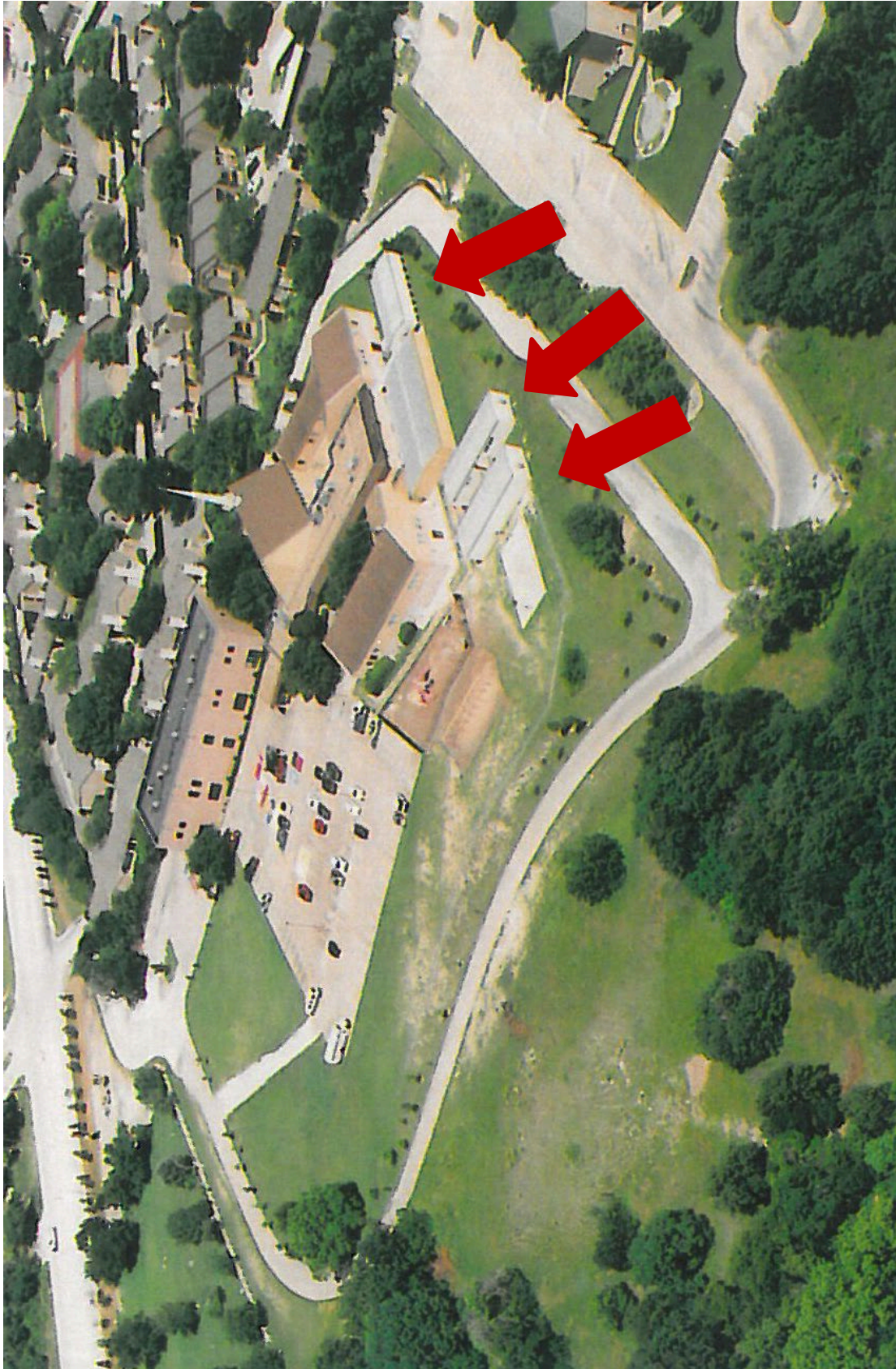


Exhibit 'C':
Applicant's Letter



February 8, 2023

To: Rockwall City Council

Ryan Lewis, AICP, Director of Planning

From: Brad Helmer, Head of School

Heritage Christian Academy

Mr. Lewis and Council Members,

First let me say on behalf of the HCA community how grateful we are that you worked with us to bring our gymnasium and classroom building to fruition. We are looking at a May completion date and could not be more excited. Your willingness to allow us to keep our portables during the building process despite the track record does not go unnoticed!

Please know that while the intent of this letter is to respectfully request one additional year with our portable classrooms, we will fulfill our commitment to you and remove the portable buildings this summer should you choose to deny this request. That said, I would like to present the following information as you consider the application for the SUP.

Current enrollment is 424 students: 264 elementary and 160 secondary students. This is the **largest** number of enrolled students in HCA's 28-year history. In January of each year, we re-enroll current families for the next school year. After accounting for the 20 seniors who will graduate, we have re-enrolled 378 students, which is a 93% retention rate.

Open enrollment for new students begins in February of each year for the next school year (23-24). We have already enrolled 17 new students. We have 20 students who are in varying stages of enrollment, and 20 students who have shown interest in moving forward with enrollment. Yesterday alone, we had 18 families attend an Open House to learn about the school. All this to say, we are only in February, and we are about to match, for 23-24, our current enrollment number. Historically, the bulk of our enrollment of new students happens between April and August, so there is no telling how many students we may have the opportunity to enroll before the 23-24 school year begins in August.

This is where I need to share with you my logistical concerns. It does not matter how many new students wish to attend HCA if we do not have space to accommodate them. When my portables, which represents 6 classrooms, are gone, I will move those students to the six new classrooms in our gym building. The net increase, however, is zero. Currently, including the portables, I have 37 classrooms available. So, in planning for next year, when my portables go away - even though I have 6 new classrooms - I have no additional room for the number of students we could potentially enroll.

CITY OF ROCKWALL

ORDINANCE NO. 23-16

SPECIFIC USE PERMIT NO. S-298

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, AMENDING THE UNIFIED DEVELOPMENT CODE (UDC) [*ORDINANCE NO. 20-02*] OF THE CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS, AS PREVIOUSLY AMENDED, SO AS TO GRANT A SPECIFIC USE PERMIT (SUP) FOR *GUEST QUARTERS/DETACHED GARAGE* ON A 0.4170-ACRE PARCEL OF LAND IDENTIFIED AS ALL OF LOT 1 AND A PORTION OF LOT 2, BLOCK 2, LEONARD AND ADAMS ADDITION, CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS, AND MORE SPECIFICALLY DESCRIBED AND DEPICTED IN *EXHIBIT 'A'* OF THIS ORDINANCE; PROVIDING FOR SPECIAL CONDITIONS; PROVIDING FOR A PENALTY OF FINE NOT TO EXCEED THE SUM OF TWO THOUSAND DOLLARS (\$2,000.00) FOR EACH OFFENSE; PROVIDING FOR A SEVERABILITY CLAUSE; PROVIDING FOR A REPEALER CLAUSE; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City has received a request by Jeff and Ginger Brock-Jones for the approval of a *Specific Use Permit (SUP)* to allow a *Guest Quarters/Detached Garage* on a 0.4170-acre parcel of land identified as all of Lot 1 and a portion of Lot 2, Block 2, Leonard and Adams Addition, City of Rockwall, Rockwall County, Texas, zoned Single-Family 7 (SF-7) District, addressed as 504 Nash Street, and being more specifically described and depicted in *Exhibit 'A'* of this ordinance, which herein after shall be referred to as the *Subject Property* and incorporated by reference herein; and

WHEREAS, the Planning and Zoning Commission of the City of Rockwall and the governing body of the City of Rockwall, in compliance with the laws of the State of Texas and the ordinances of the City of Rockwall, have given the requisite notices by publication and otherwise, and have held public hearings and afforded a full and fair hearing to all property owners generally, and to all persons interested in and situated in the affected area and in the vicinity thereof, the governing body in the exercise of its legislative discretion has concluded that the Unified Development Code (UDC) [*Ordinance No. 20-02*] of the City of Rockwall should be amended as follows:

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Rockwall, Texas;

SECTION 1. That the Unified Development Code (UDC) [*Ordinance No. 20-02*] of the City of Rockwall, as heretofore amended, be and the same is hereby amended so as to grant a Specific Use Permit (SUP) to allow for the construction of a *Guest Quarters/Detached Garage* in accordance with Article 04, *Permissible Uses*, the Unified Development Code (UDC) [*Ordinance No. 20-02*] on the *Subject Property*; and,

SECTION 2. That the Specific Use Permit (SUP) shall be subject to the requirements set forth in Subsection 03.01, *General Residential District Standards*, and Subsection 03.09, *Single-Family 7 (SF-7) District*, of Article 05, *District Development Standards*, of the Unified Development Code (UDC) [*Ordinance No. 20-02*] -- as heretofore amended and may be amended in the future -- and

with the following conditions:

2.1 OPERATIONAL CONDITIONS

The following conditions pertain to the construction of a *Guest Quarters/Detached Garage* on the *Subject Property* and conformance to these operational conditions are required:

- (1) The development of the *Subject Property* shall generally conform to the *Residential Plot Plan* as depicted in *Exhibit 'B'* of this ordinance.
- (2) The construction of a *Guest Quarters/Detached Garage* on the *Subject Property* shall generally conform to the *Building Elevations* depicted in *Exhibit 'C'* of this ordinance.
- (3) The *Guest Quarters/Detached Garage* shall not exceed a maximum building footprint of 1,020 SF and a maximum size of 1,900 SF.
- (4) The maximum height of the *Guest Quarters/Detached Garage* shall not exceed a total height of 29-feet as measured to highest point of the pitched roof.
- (5) The *Guest Quarters/Detached Garage* shall not be sold or conveyed separately from the single-family home without meeting the requirements of the zoning district and subdivision ordinance.

2.2 COMPLIANCE

Approval of this ordinance in accordance with Subsection 02.02, *Specific Use Permits (SUP)* of Article 11, *Development Applications and Review Procedures*, of the Unified Development Code (UDC) will require the *Subject Property* to comply with the following:

- 1) Upon obtaining a *Building Permit*, should the contractor operating under the guidelines of this ordinance fail to meet the minimum operational requirements set forth herein and outlined in the Unified Development Code (UDC), the City may (*after proper notice*) initiate proceedings to revoke the Specific Use Permit (SUP) in accordance with Subsection 02.02(F), *Revocation*, of Article 11, *Development Applications and Revision Procedures*, of the Unified Development Code (UDC) [*Ordinance No. 20-02*].

SECTION 3. That the official zoning map of the City be corrected to reflect the changes in zoning described herein.

SECTION 4. That all ordinances of the City of Rockwall in conflict with the provisions of this ordinance be, and the same are hereby repealed to the extent of that conflict.

SECTION 5. Any person, firm, or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor and upon conviction shall be punished by a penalty of fine not to exceed the sum of *TWO THOUSAND DOLLARS (\$2,000.00)* for each offence and each and every day such offense shall continue shall be deemed to constitute a separate offense.

SECTION 6. If any section or provision of this ordinance or the application of that section or provision to any person, firm, corporation, situation or circumstance is for any reason judged invalid, the adjudication shall not affect any other section or provision of this ordinance or the application of any other section or provision to any other person, firm, corporation, situation or circumstance, and the City Council declares that it would have adopted the valid portions and applications of the

ordinance without the invalid parts and to this end the provisions of this ordinance shall remain in full force and effect.

SECTION 7. That this ordinance shall take effect immediately from and after its passage.

PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, THIS THE 3RD DAY OF APRIL, 2023.

Kevin Fowler, Mayor

ATTEST:

Kristy Teague, City Secretary

APPROVED AS TO FORM:

Frank J. Garza, City Attorney

1st Reading: March 20, 2023

2nd Reading: April 3, 2023

Exhibit 'A'
Location Map and Legal Description

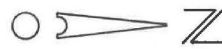
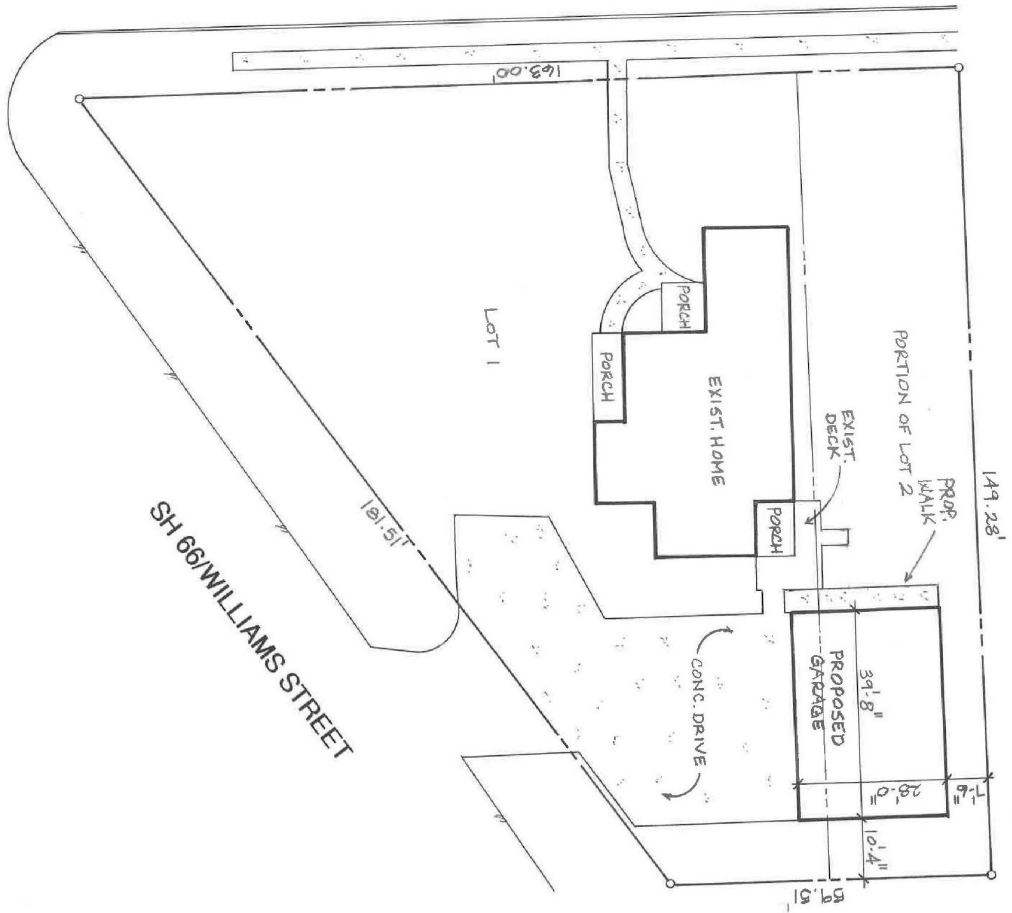
Address: 504 Nash Street

Legal Description: All of Lot 1 and a Portion of Lot 2, Block 2, Leonard and Adams Addition



**Exhibit 'B':
Residential Plot Plan**

504 NASH STREET

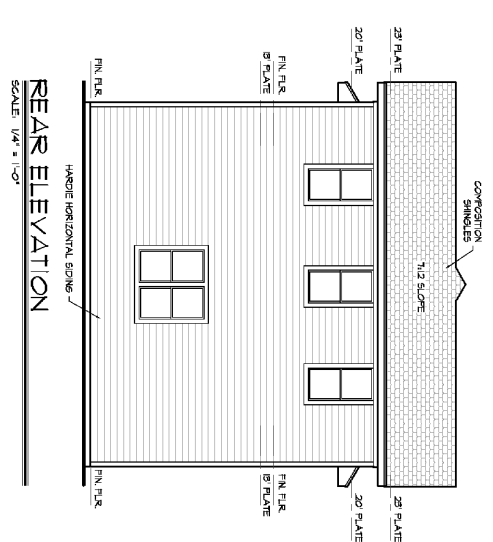
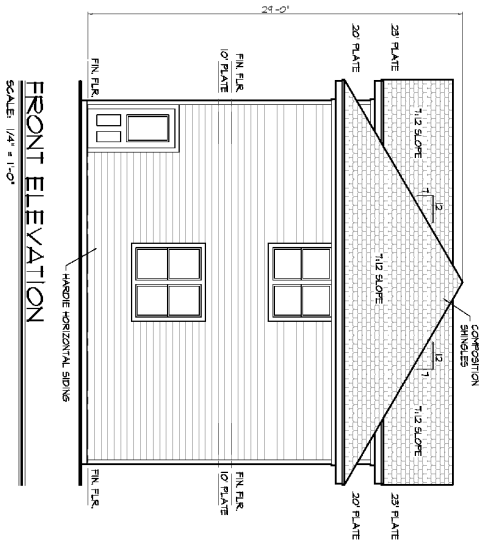
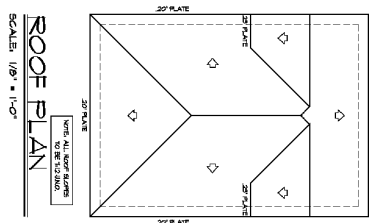
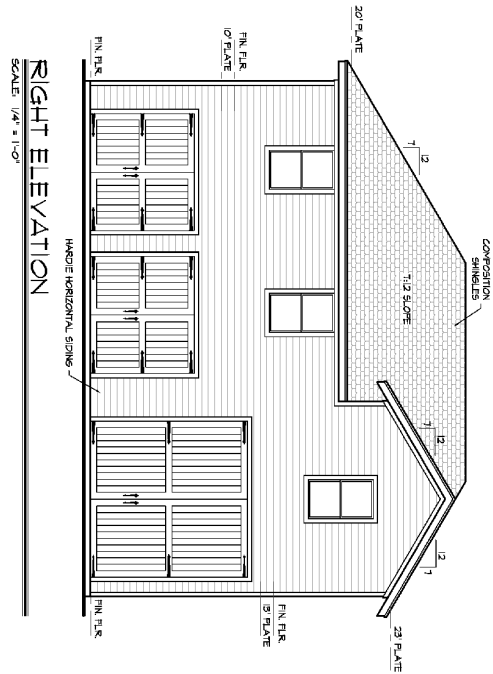
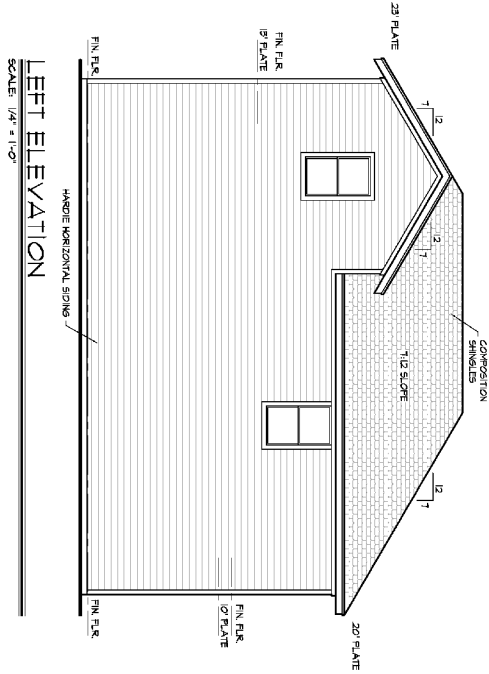


PLOT PLAN

1" = 20'-0"

LOT 182 - BLK 2
LEONARD AND ADAMS ADDITION
CITY OF ROCKWALL
ROCKWALL COUNTY, TX

**Exhibit 'C':
Building Elevations**



CITY OF ROCKWALL

ORDINANCE NO. 23-18

SPECIFIC USE PERMIT NO. S-299

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, AMENDING THE UNIFIED DEVELOPMENT CODE (UDC) [ORDINANCE NO. 20-02] OF THE CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS, AS PREVIOUSLY AMENDED, SO AS TO GRANT A SPECIFIC USE PERMIT (SUP) FOR *RESIDENTIAL INFILL IN AN ESTABLISHED SUBDIVISION* TO ALLOW THE CONSTRUCTION OF A SINGLE-FAMILY HOME ON A 0.24-ACRE PARCEL OF LAND, IDENTIFIED AS LOT 5, BLOCK 1, L & W ADDITION, CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS; AND MORE SPECIFICALLY DESCRIBED AND DEPICTED IN *EXHIBIT 'A'* OF THIS ORDINANCE; PROVIDING FOR SPECIAL CONDITIONS; PROVIDING FOR A PENALTY OF FINE NOT TO EXCEED THE SUM OF TWO THOUSAND DOLLARS (\$2,000.00) FOR EACH OFFENSE; PROVIDING FOR A SEVERABILITY CLAUSE; PROVIDING FOR A REPEALER CLAUSE; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City has received a request by Javier Silva of JMS Custom Homes, LLC on behalf of Ruben Fragoso of RSR Capital LLC for the approval of a *Specific Use Permit (SUP)* for *Residential Infill in an Established Subdivision* on a 0.24-acre parcel of land identified as Lot 5, Block 1 of the L & W Addition, City of Rockwall, Rockwall County, Texas, zoned Single-Family 10 (SF-10) District, addressed as 104 Glenn Avenue, and being more specifically described and depicted in *Exhibit 'A'* of this ordinance, which herein after shall be referred to as the *Subject Property* and incorporated by reference herein; and

WHEREAS, the Planning and Zoning Commission of the City of Rockwall and the governing body of the City of Rockwall, in compliance with the laws of the State of Texas and the ordinances of the City of Rockwall, have given the requisite notices by publication and otherwise, and have held public hearings and afforded a full and fair hearing to all property owners generally, and to all persons interested in and situated in the affected area and in the vicinity thereof, the governing body in the exercise of its legislative discretion has concluded that the Unified Development Code (UDC) [*Ordinance No. 20-02*] of the City of Rockwall should be amended as follows:

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Rockwall, Texas;

SECTION 1. That the Unified Development Code (UDC) [*Ordinance No. 20-02*] of the City of Rockwall, as heretofore amended, be and the same is hereby amended so as to grant a Specific Use Permit (SUP) for *Residential Infill in an Established Subdivision* to allow for the construction of a single-family home in an established subdivision in accordance with Article 04, *Permissible Uses*, the Unified Development Code (UDC) [*Ordinance No. 20-02*] on the *Subject Property*; and,

SECTION 2. That the Specific Use Permit (SUP) shall be subject to the requirements set forth in Subsection 03.01, *General Residential District Standards*, and Subsection 03.07, *Single-Family 10 (SF-10) District*, of Article 05, *District Development Standards*, of the Unified Development Code (UDC) [*Ordinance No. 20-02*] -- as heretofore amended and may be amended in the future

-- and with the following conditions:

2.1 OPERATIONAL CONDITIONS

The following conditions pertain to the construction of a single-family home on the *Subject Property* and conformance to these operational conditions are required:

- 1) The development of the *Subject Property* shall generally conform to the Residential Plot Plan as depicted in *Exhibit 'B'* of this ordinance.
- 2) The construction of a single-family home on the *Subject Property* shall generally conform to the Building Elevations depicted in *Exhibit 'C'* of this ordinance.
- 3) Once construction of the single-family home has been completed, inspected, and accepted by the City of Rockwall, this Specific Use Permit (SUP) shall expire, and no further action by the property owner shall be required.

2.2 COMPLIANCE

Approval of this ordinance in accordance with Subsection 02.02, *Specific Use Permits (SUP)* of Article 11, *Development Applications and Review Procedures*, of the Unified Development Code (UDC) will require the *Subject Property* to comply with the following:

- 1) Upon obtaining a *Building Permit*, should the contractor operating under the guidelines of this ordinance fail to meet the minimum operational requirements set forth herein and outlined in the Unified Development Code (UDC), the City may (*after proper notice*) initiate proceedings to revoke the Specific Use Permit (SUP) in accordance with Subsection 02.02(F), *Revocation*, of Article 11, *Development Applications and Revision Procedures*, of the Unified Development Code (UDC) [*Ordinance No. 20-02*].

SECTION 3. That the official zoning map of the City be corrected to reflect the changes in zoning described herein.

SECTION 4. That all ordinances of the City of Rockwall in conflict with the provisions of this ordinance be, and the same are hereby repealed to the extent of that conflict.

SECTION 5. Any person, firm, or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor and upon conviction shall be punished by a penalty of fine not to exceed the sum of *TWO THOUSAND DOLLARS (\$2,000.00)* for each offence and each and every day such offense shall continue shall be deemed to constitute a separate offense.

SECTION 6. If any section or provision of this ordinance or the application of that section or provision to any person, firm, corporation, situation or circumstance is for any reason judged invalid, the adjudication shall not affect any other section or provision of this ordinance or the application of any other section or provision to any other person, firm, corporation, situation or circumstance, and the City Council declares that it would have adopted the valid portions and applications of the ordinance without the invalid parts and to this end the provisions of this ordinance shall remain in full force and effect.

SECTION 7. That this ordinance shall take effect immediately from and after its passage.

**PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS,
THIS THE 3RD DAY OF APRIL, 2023.**

Kevin Fowler, Mayor

ATTEST:

Kristy Teague, City Secretary

APPROVED AS TO FORM:

Frank J. Garza, City Attorney

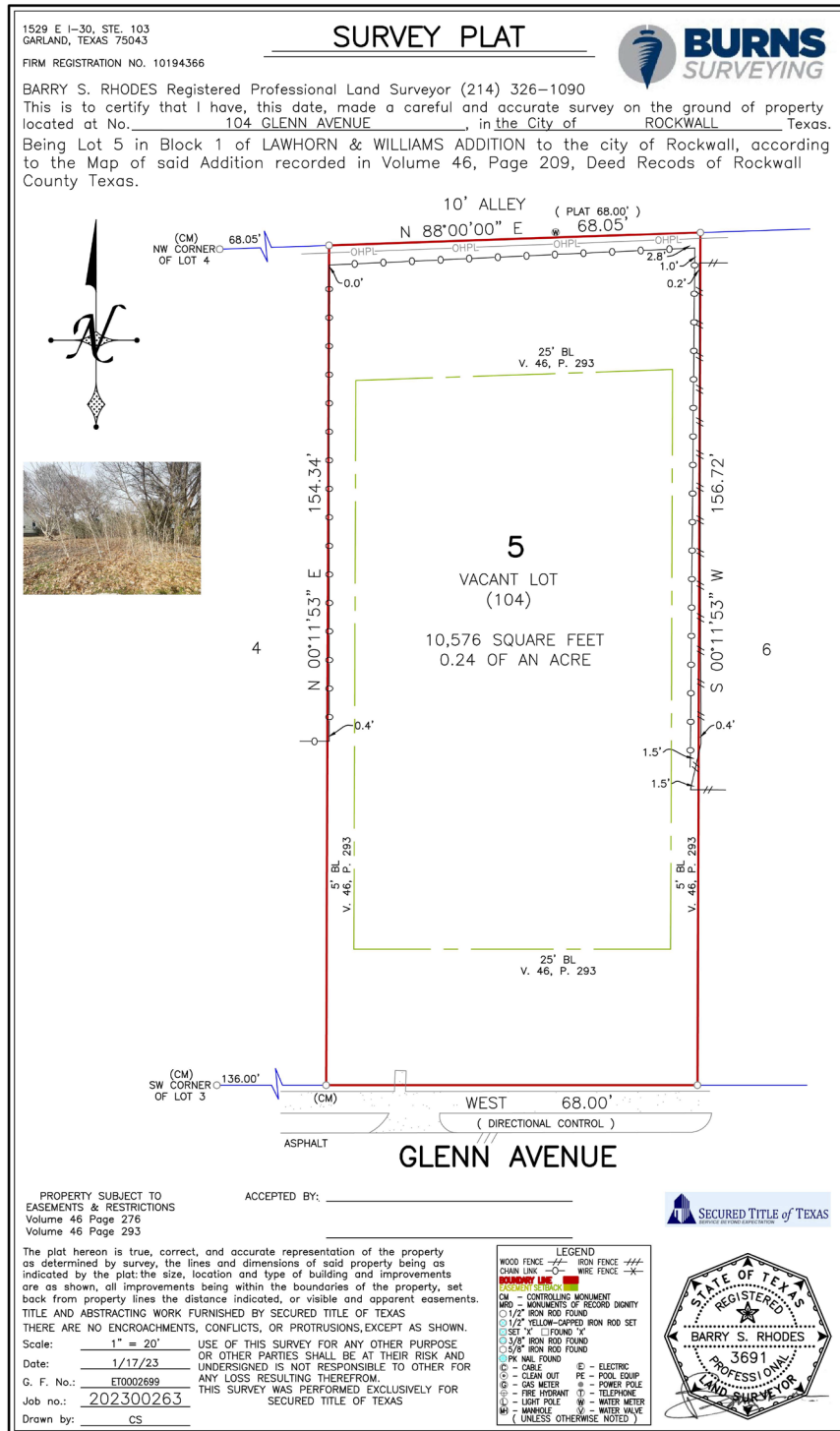
1st Reading: March 20, 2023

2nd Reading: April 3, 2023

**Exhibit 'A':
Legal Description**

Address: 104 Glenn Avenue

Legal Description: Lot 5, Block 1, L and W Addition



**Exhibit 'B':
Residential Plot Plan**

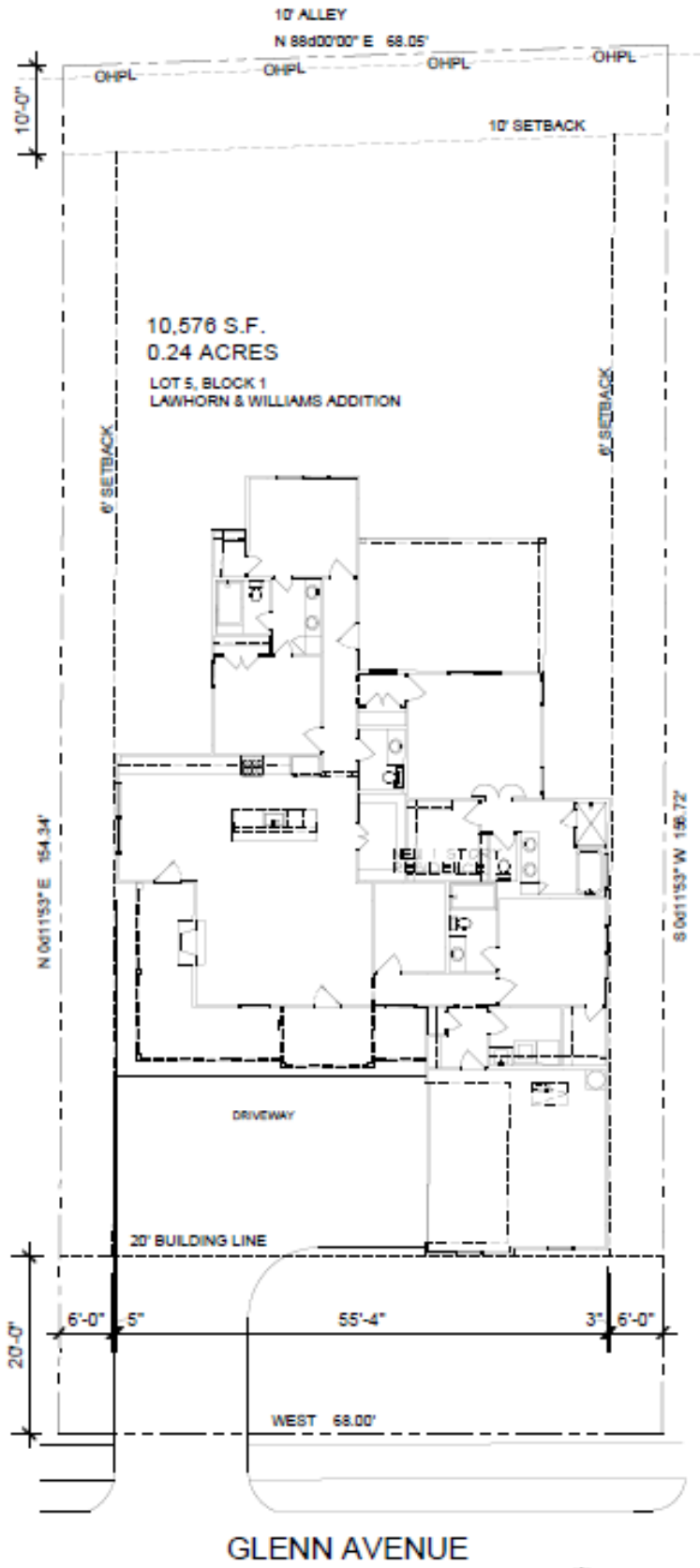
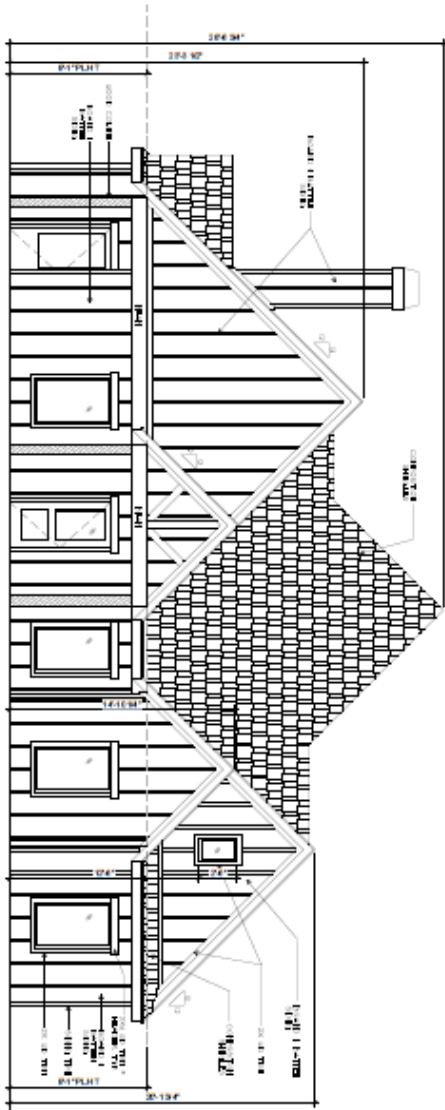


Exhibit 'C':
Building Elevations

01 SOUTH ELEVATION



02 EAST ELEVATION

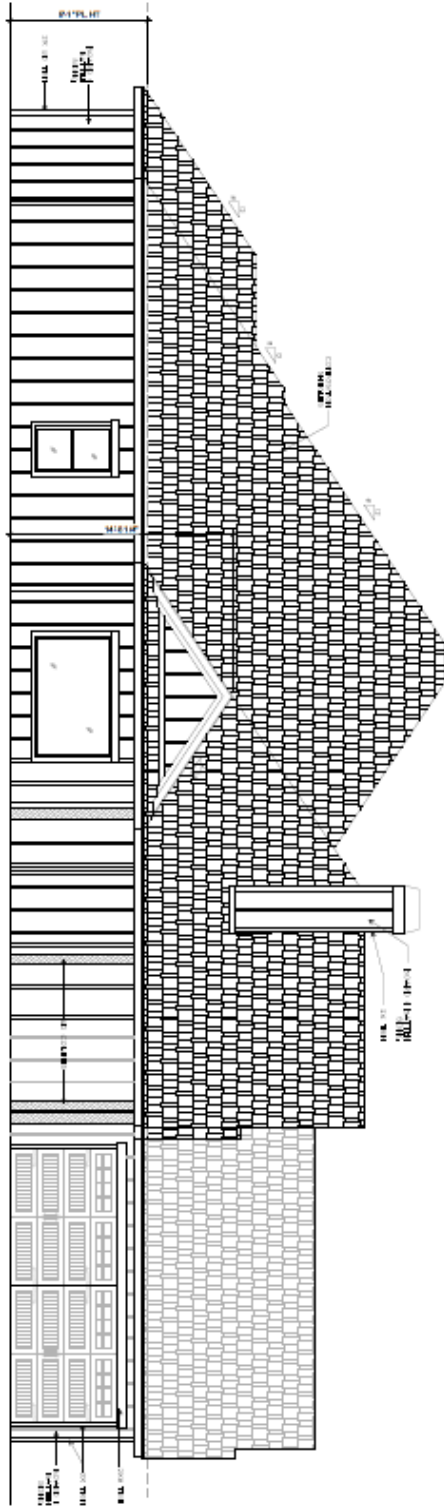
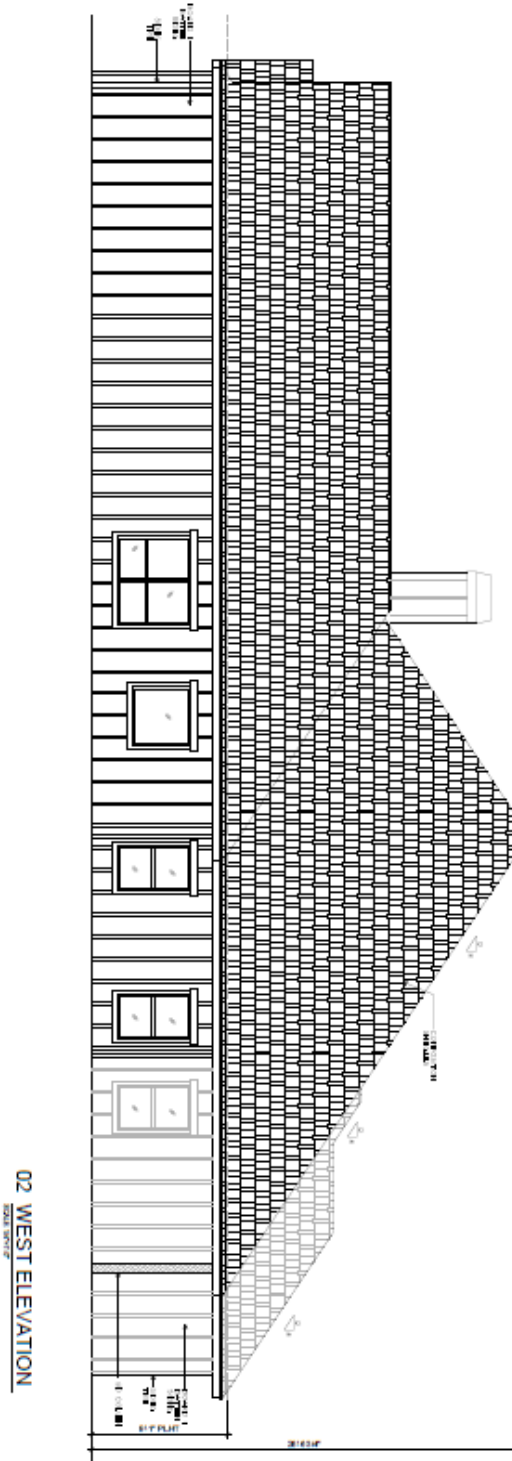
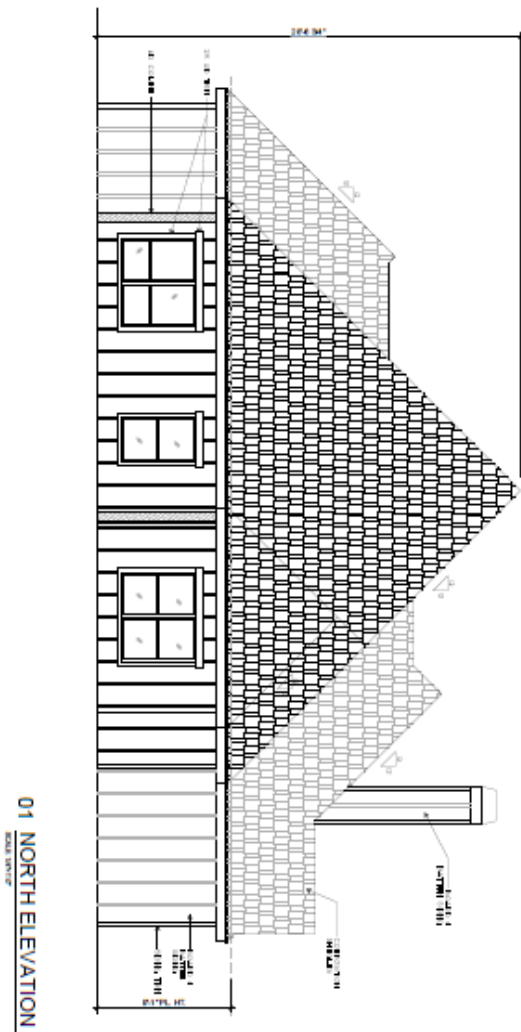


Exhibit 'C':
Building Elevations



CITY OF ROCKWALL

ORDINANCE NO. 23-19

SPECIFIC USE PERMIT NO. S-300

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, AMENDING THE UNIFIED DEVELOPMENT CODE (UDC) [*ORDINANCE NO. 20-02*] OF THE CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS, AS PREVIOUSLY AMENDED, SO AS TO GRANT A SPECIFIC USE PERMIT (SUP) FOR *DETACHED GARAGE* ON A ONE (1) ACRE PARCEL OF LAND IDENTIFIED AS LOT 9, BLOCK A, SADDLEBROOK ESTATES #2 ADDITION, CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS, AND MORE SPECIFICALLY DESCRIBED AND DEPICTED IN *EXHIBIT 'A'* OF THIS ORDINANCE; PROVIDING FOR SPECIAL CONDITIONS; PROVIDING FOR A PENALTY OF FINE NOT TO EXCEED THE SUM OF TWO THOUSAND DOLLARS (\$2,000.00) FOR EACH OFFENSE; PROVIDING FOR A SEVERABILITY CLAUSE; PROVIDING FOR A REPEALER CLAUSE; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City has received a request by Timothy S. and Susan M. Mack for the approval of a *Specific Use Permit (SUP)* to allow a *Detached Garage* on a one (1) acre parcel of land identified as Lot 9, Block A, Saddlebrook Estates #2 Addition, City of Rockwall, Rockwall County, Texas, zoned Single-Family 16 (SF-16) District, addressed as 2333 Saddlebrook Lane, and being more specifically described and depicted in *Exhibit 'A'* of this ordinance, which herein after shall be referred to as the *Subject Property* and incorporated by reference herein; and

WHEREAS, the Planning and Zoning Commission of the City of Rockwall and the governing body of the City of Rockwall, in compliance with the laws of the State of Texas and the ordinances of the City of Rockwall, have given the requisite notices by publication and otherwise, and have held public hearings and afforded a full and fair hearing to all property owners generally, and to all persons interested in and situated in the affected area and in the vicinity thereof, the governing body in the exercise of its legislative discretion has concluded that the Unified Development Code (UDC) [*Ordinance No. 20-02*] of the City of Rockwall should be amended as follows:

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Rockwall, Texas;

SECTION 1. That the Unified Development Code (UDC) [*Ordinance No. 20-02*] of the City of Rockwall, as heretofore amended, be and the same is hereby amended so as to grant a Specific Use Permit (SUP) to allow for the construction of a *Detached Garage* in accordance with Article 04, *Permissible Uses*, the Unified Development Code (UDC) [*Ordinance No. 20-02*] on the *Subject Property*; and,

SECTION 2. That the Specific Use Permit (SUP) shall be subject to the requirements set forth in Subsection 03.01, *General Residential District Standards*, and Subsection 03.06, *Single-Family 16 (SF-16) District*, of Article 05, *District Development Standards*, of the Unified Development Code (UDC) [*Ordinance No. 20-02*] -- as heretofore amended and may be amended in the future -- and with the following conditions:

2.1 OPERATIONAL CONDITIONS

The following conditions pertain to the construction of a *Detached Garage* on the *Subject Property* and conformance to these operational conditions are required:

- (1) The development of the *Subject Property* shall generally conform to the *Site Plan* as depicted in *Exhibit 'B'* of this ordinance.
- (2) The construction of a *Detached Garage* on the *Subject Property* shall generally conform to the *Building Elevations* depicted in *Exhibit 'C'* of this ordinance.
- (3) The *Detached Garage* shall not exceed a maximum building footprint or size of 1,040 SF.
- (4) The maximum height of the *Detached Garage* shall not exceed a maximum of 15-feet as measured from the mid-point of the pitched roof.
- (5) The *Detached Garage* shall not be sold or conveyed separately from the single-family home without meeting the requirements of the zoning district and subdivision ordinance.
- (6) No additional accessory structures shall be permitted on the Subject Property.

2.2 COMPLIANCE

Approval of this ordinance in accordance with Subsection 02.02, *Specific Use Permits (SUP)* of Article 11, *Development Applications and Review Procedures*, of the Unified Development Code (UDC) will require the *Subject Property* to comply with the following:

- 1) Upon obtaining a *Building Permit*, should the contractor operating under the guidelines of this ordinance fail to meet the minimum operational requirements set forth herein and outlined in the Unified Development Code (UDC), the City may (*after proper notice*) initiate proceedings to revoke the Specific Use Permit (SUP) in accordance with Subsection 02.02(F), *Revocation*, of Article 11, *Development Applications and Revision Procedures*, of the Unified Development Code (UDC) [*Ordinance No. 20-02*].

SECTION 3. That the official zoning map of the City be corrected to reflect the changes in zoning described herein.

SECTION 4. That all ordinances of the City of Rockwall in conflict with the provisions of this ordinance be, and the same are hereby repealed to the extent of that conflict.

SECTION 5. Any person, firm, or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor and upon conviction shall be punished by a penalty of fine not to exceed the sum of *TWO THOUSAND DOLLARS (\$2,000.00)* for each offence and each and every day such offense shall continue shall be deemed to constitute a separate offense.

SECTION 6. If any section or provision of this ordinance or the application of that section or provision to any person, firm, corporation, situation or circumstance is for any reason judged invalid, the adjudication shall not affect any other section or provision of this ordinance or the application of any other section or provision to any other person, firm, corporation, situation or circumstance, and the City Council declares that it would have adopted the valid portions and applications of the ordinance without the invalid parts and to this end the provisions of this ordinance shall remain in full force and effect.

SECTION 7. That this ordinance shall take effect immediately from and after its passage.

**PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS,
THIS THE 3RD DAY OF APRIL, 2023.**

Kevin Fowler, Mayor

ATTEST:

Kristy Teague, City Secretary

APPROVED AS TO FORM:

Frank J. Garza, City Attorney

1st Reading: March 20, 2023

2nd Reading: April 3, 2023

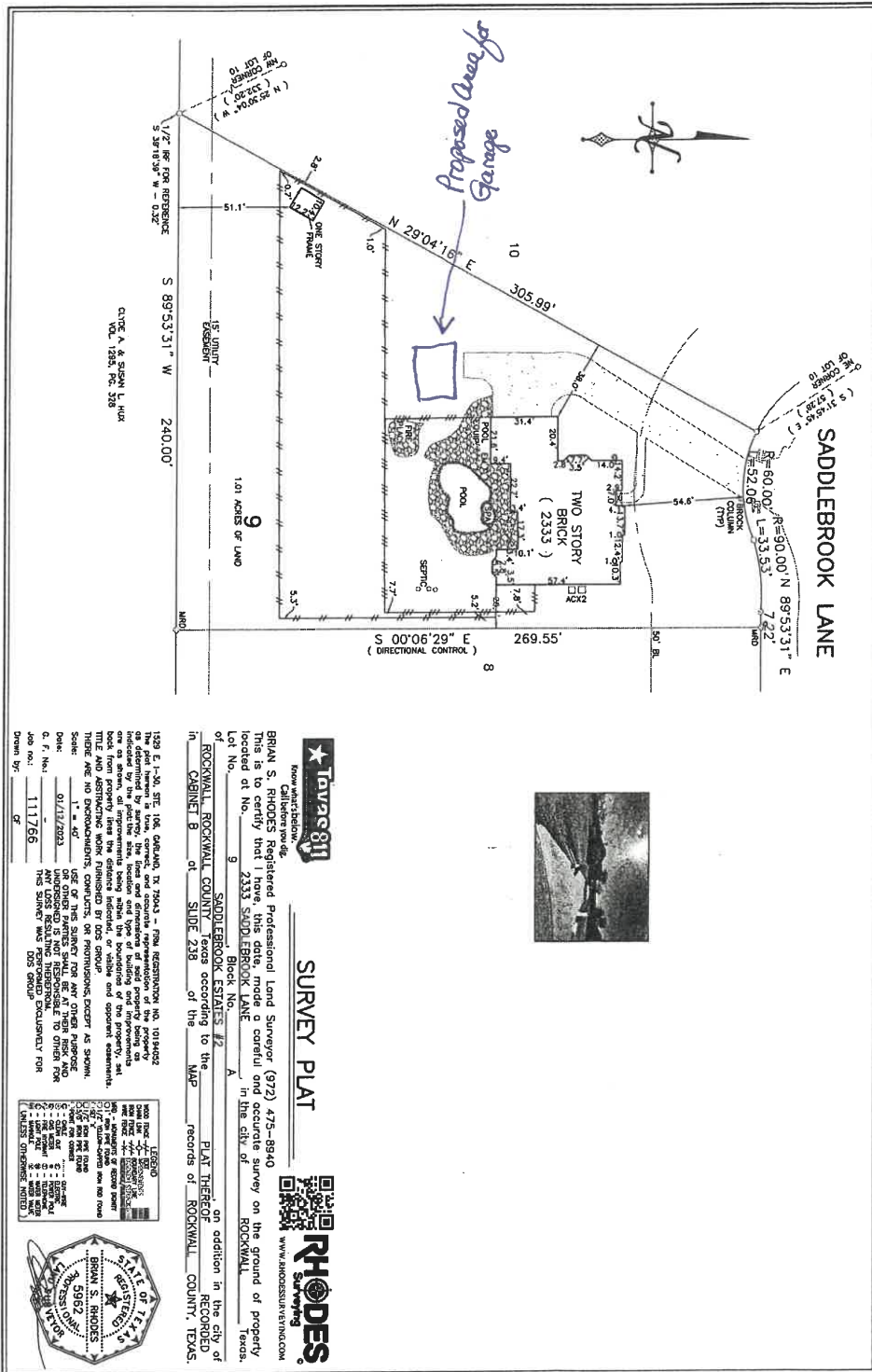
Exhibit 'A'
Location Map and Legal Description

Address: 2333 Saddlebrook Lane

Legal Description: Lot 9, Block A, Saddlebrook Estates Addition



Exhibit 'B':
Site Plan



Tovare 811
Professional Land Surveyor

SURVEY PLAT

RHODES
Professional Land Surveyor

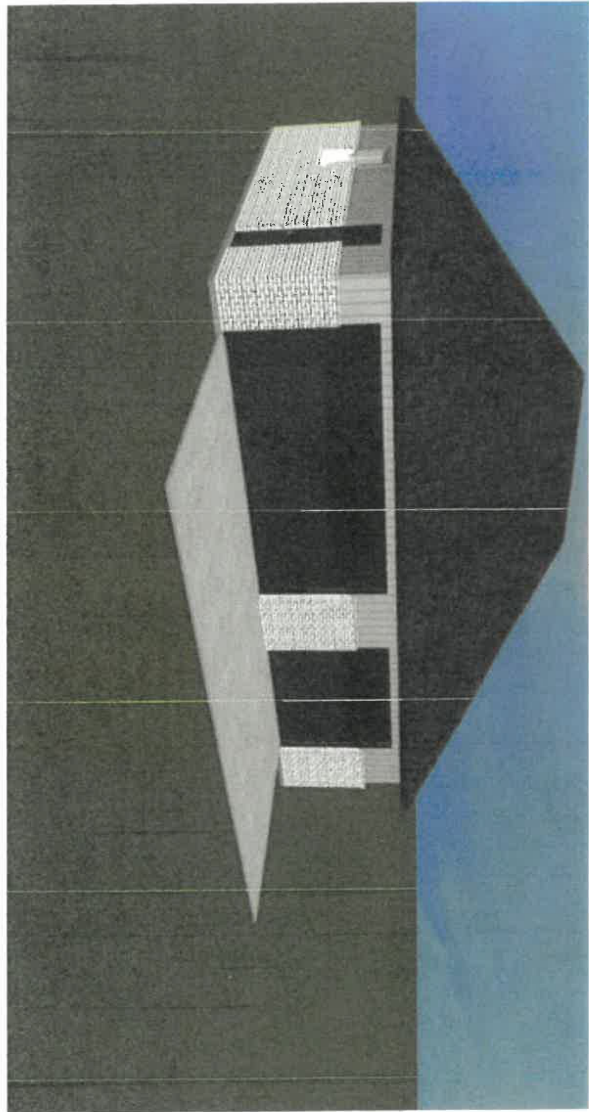
1529 E. 1-20, STE. 106, CARLAND, TX 75043 - FROM REGISTRATION NO. 1019402
as determined by survey, the lines and dimensions of said property being as
indicated by the practice show, location and type of building and improvements
thereon, and the location and dimensions of the easement shown, and the
book from property lines the distance, individual, or visible and adjacent easements.
TITLE AND ABSTRACTS WORK FINISHED BY DCS GROUP
DATE: 07/13/2023
C. F. No. 111766
THIS SURVEY WAS PERFORMED EXCLUSIVELY FOR
DRAWN BY: _____ OF _____

1529 E. 1-20, STE. 106, CARLAND, TX 75043 - FROM REGISTRATION NO. 1019402
as determined by survey, the lines and dimensions of said property being as
indicated by the practice show, location and type of building and improvements
thereon, and the location and dimensions of the easement shown, and the
book from property lines the distance, individual, or visible and adjacent easements.
TITLE AND ABSTRACTS WORK FINISHED BY DCS GROUP
DATE: 07/13/2023
C. F. No. 111766
THIS SURVEY WAS PERFORMED EXCLUSIVELY FOR
DRAWN BY: _____ OF _____

1529 E. 1-20, STE. 106, CARLAND, TX 75043 - FROM REGISTRATION NO. 1019402
as determined by survey, the lines and dimensions of said property being as
indicated by the practice show, location and type of building and improvements
thereon, and the location and dimensions of the easement shown, and the
book from property lines the distance, individual, or visible and adjacent easements.
TITLE AND ABSTRACTS WORK FINISHED BY DCS GROUP
DATE: 07/13/2023
C. F. No. 111766
THIS SURVEY WAS PERFORMED EXCLUSIVELY FOR
DRAWN BY: _____ OF _____

**Exhibit 'C':
Building Elevations**

Concrete slab, wood frame, exterior walls brick / vertical siding, composite shingles, aluminum garage doors, SH vinyl windows, secure steel entry door and all paint to match current residence,



Existing Residence Elevations:
Depicting brick, vertical siding, roof line, composite shingle, windows, garage doors and paint colors.
Like and matching materials will be used on the 'Special Use' building.



CITY OF ROCKWALL

ORDINANCE NO. 23-20

SPECIFIC USE PERMIT NO. S-301

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, AMENDING PLANNED DEVELOPMENT DISTRICT 75 (PD-75) [*ORDINANCE NO. 16-01*] AND THE UNIFIED DEVELOPMENT CODE (UDC) [*ORDINANCE NO. 20-02*] OF THE CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS, AS PREVIOUSLY AMENDED, SO AS TO GRANT A SPECIFIC USE PERMIT (SUP) FOR *RESIDENTIAL INFILL IN AN ESTABLISHED SUBDIVISION* TO ALLOW THE CONSTRUCTION OF A SINGLE-FAMILY HOME ON A 0.1650-ACRE PARCEL OF LAND, IDENTIFIED AS LOT 847A OF THE LAKE ROCKWALL ESTATES #2 ADDITION, CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS; AND MORE SPECIFICALLY DESCRIBED AND DEPICTED IN *EXHIBIT 'A'* OF THIS ORDINANCE; PROVIDING FOR SPECIAL CONDITIONS; PROVIDING FOR A PENALTY OF FINE NOT TO EXCEED THE SUM OF TWO THOUSAND DOLLARS (\$2,000.00) FOR EACH OFFENSE; PROVIDING FOR A SEVERABILITY CLAUSE; PROVIDING FOR A REPEALER CLAUSE; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City has received a request by Kevin Osornio of MBA Custom Homes for the approval of a *Specific Use Permit (SUP)* for *Residential Infill in an Established Subdivision* for the purpose of constructing a single-family home on a 0.1650-acre parcel of land identified as Lot 837A of the Lake Rockwall Estates #2 Addition, City of Rockwall, Rockwall County, Texas, zoned Planned Development District 75 (PD-75) for Single-Family 7 (SF-7) District land uses, addressed as 118 Blanche Drive, and being more specifically described and depicted in *Exhibit 'A'* of this ordinance, which herein after shall be referred to as the *Subject Property* and incorporated by reference herein; and

WHEREAS, the Planning and Zoning Commission of the City of Rockwall and the governing body of the City of Rockwall, in compliance with the laws of the State of Texas and the ordinances of the City of Rockwall, have given the requisite notices by publication and otherwise, and have held public hearings and afforded a full and fair hearing to all property owners generally, and to all persons interested in and situated in the affected area and in the vicinity thereof, the governing body in the exercise of its legislative discretion has concluded that Planned Development District 75 (PD-75) [*Ordinance No. 16-01*] and the Unified Development Code (UDC) [*Ordinance No. 20-02*] of the City of Rockwall should be amended as follows:

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Rockwall, Texas;

SECTION 1. That Planned Development District 75 (PD-75) [*Ordinance No. 16-01*] and the Unified Development Code (UDC) [*Ordinance No. 20-02*] of the City of Rockwall, as heretofore amended, be and the same is hereby amended so as to grant a Specific Use Permit (SUP) for *Residential Infill in an Established Subdivision* to allow for the construction of a single-family home in an established subdivision in accordance with Article 04, *Permissible Uses*, of the Unified Development Code (UDC) [*Ordinance No. 20-02*] on the *Subject Property*; and,

SECTION 2. That the Specific Use Permit (SUP) shall be subject to the requirements set forth in Planned Development District 75 (PD-75) [*Ordinance No. 16-01*] and Subsection 03.01, *General Residential District Standards*, and Subsection 03.09, *Single-Family 7 (SF-7) District*, of Article 05, *District Development Standards*, of the Unified Development Code (UDC) [*Ordinance No. 20-02*] -- as heretofore amended and may be amended in the future -- and with the following conditions:

2.1 OPERATIONAL CONDITIONS

The following conditions pertain to the construction of a single-family home on the *Subject Property* and conformance to these operational conditions are required:

- 1) The development of the *Subject Property* shall generally conform to the *Residential Plot Plan* as depicted in *Exhibit 'B'* of this ordinance.
- 2) The construction of a single-family home on the *Subject Property* shall generally conform to the *Building Elevations* depicted in *Exhibit 'C'* of this ordinance.
- 3) Once construction of the single-family home has been completed, inspected, and accepted by the City of Rockwall, this Specific Use Permit (SUP) shall expire, and no further action by the property owner shall be required.

2.2 COMPLIANCE

Approval of this ordinance in accordance with Subsection 02.02, *Specific Use Permits (SUP)* of Article 11, *Development Applications and Review Procedures*, of the Unified Development Code (UDC) will require the *Subject Property* to comply with the following:

- 1) Upon obtaining a *Building Permit*, should the contractor operating under the guidelines of this ordinance fail to meet the minimum operational requirements set forth herein and outlined in the Unified Development Code (UDC), the City may (*after proper notice*) initiate proceedings to revoke the Specific Use Permit (SUP) in accordance with Subsection 02.02(F), *Revocation*, of Article 11, *Development Applications and Revision Procedures*, of the Unified Development Code (UDC) [*Ordinance No. 20-02*].

SECTION 3. That the official zoning map of the City be corrected to reflect the changes in zoning described herein.

SECTION 4. That all ordinances of the City of Rockwall in conflict with the provisions of this ordinance be, and the same are hereby repealed to the extent of that conflict.

SECTION 5. Any person, firm, or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor and upon conviction shall be punished by a penalty of fine not to exceed the sum of *TWO THOUSAND DOLLARS (\$2,000.00)* for each offence and each and every day such offense shall continue shall be deemed to constitute a separate offense.

SECTION 6. If any section or provision of this ordinance or the application of that section or provision to any person, firm, corporation, situation or circumstance is for any reason judged invalid, the adjudication shall not affect any other section or provision of this ordinance or the application of any other section or provision to any other person, firm, corporation, situation or circumstance, and the City Council declares that it would have adopted the valid portions and applications of the

ordinance without the invalid parts and to this end the provisions of this ordinance shall remain in full force and effect.

SECTION 7. That this ordinance shall take effect immediately from and after its passage.

**PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS,
THIS THE 3RD DAY OF APRIL, 2023.**

Kevin Fowler, Mayor

ATTEST:

Kristy Teague, City Secretary

APPROVED AS TO FORM:

Frank J. Garza, City Attorney

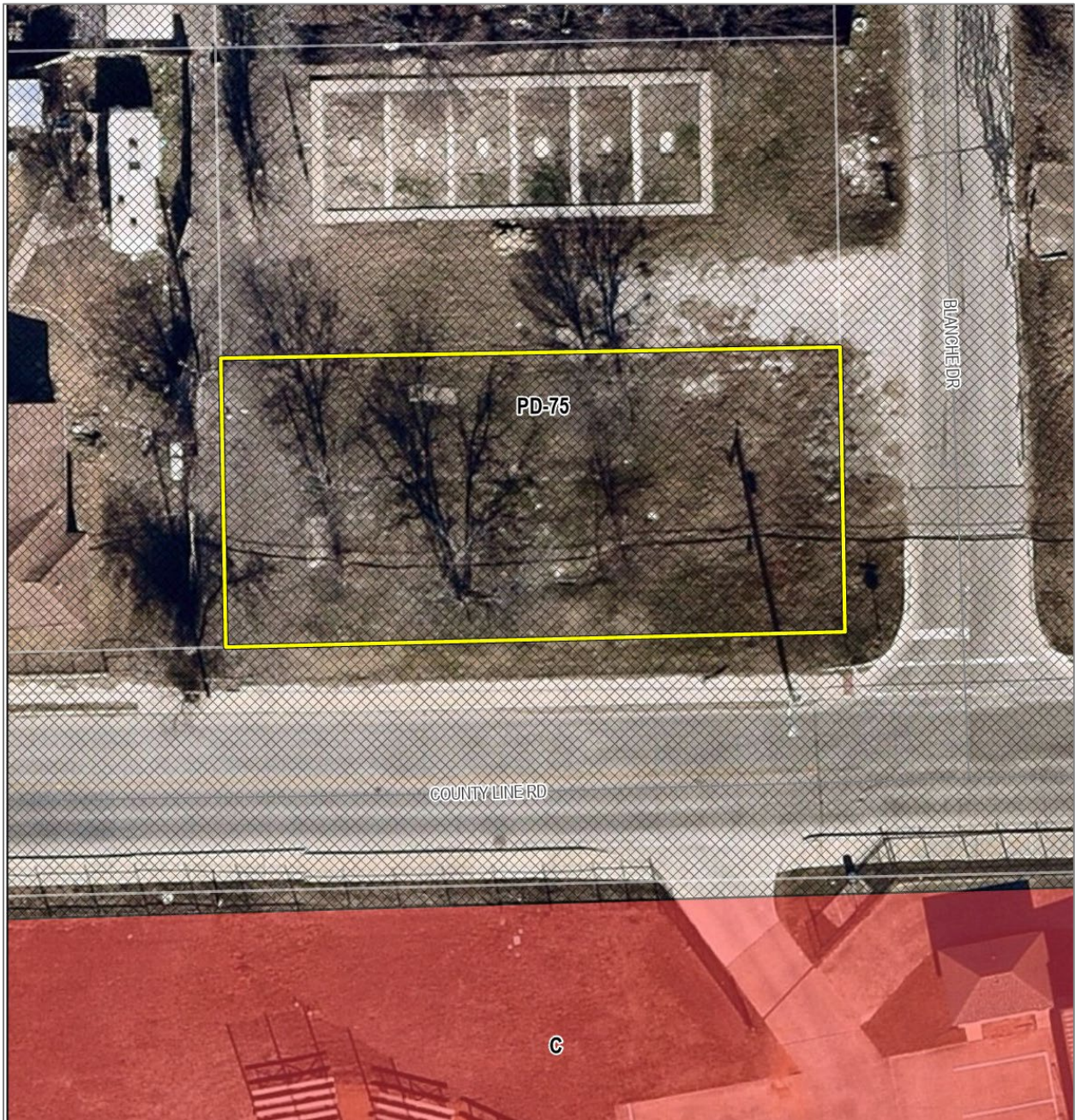
1st Reading: March 20, 2023

2nd Reading: April 3, 2023

**Exhibit 'B':
Residential Plot Plan**

Address: 118 Blanche Drive

Legal Description: Lot 837A of the Lake Rockwall Estates #2 Addition



**Exhibit 'B':
Residential Plot Plan**

limón

118 BLANCHE DR.
ROCKWALL, TX

DESIGNER:
Daisy Limon
489-A118224
118 Blanche Dr., Rockwall, TX 75080
daisy.limon@gmail.com

OWNER:
SCOTT & CALLELOS



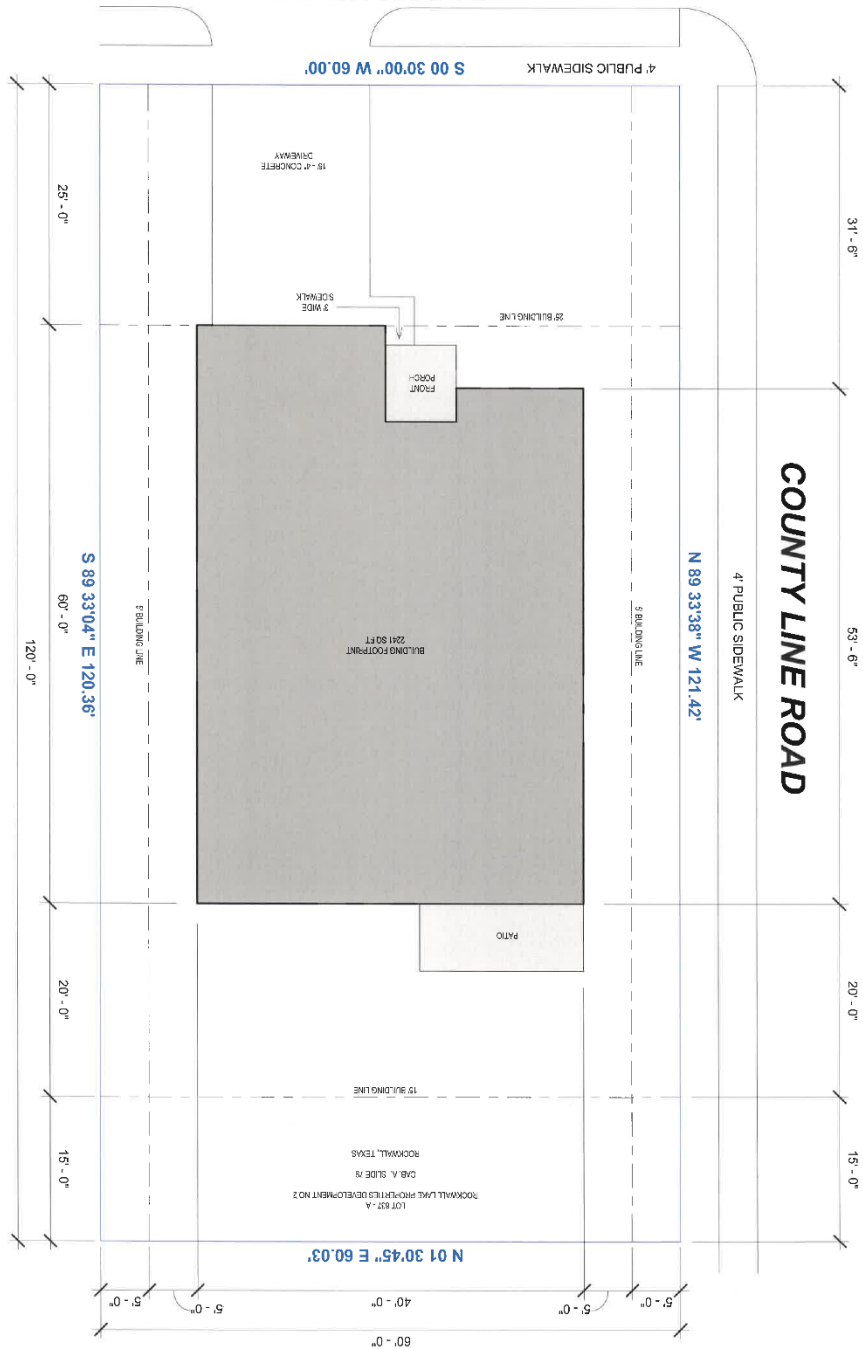
PROJECT NO
11.01
DATE
09/22/2022

Site Plan

A-003

1" = 10'-0"

118 BLANCHE DR. - SITE PLAN



**Exhibit 'C':
Building Elevations**

imón

118 BLANCHE DR.
ROCKWALL, TX

DAVE LITTON
26864113254
DAVE.LITTON@GMAIL.COM
DAVE.LITTON@GMAIL.COM

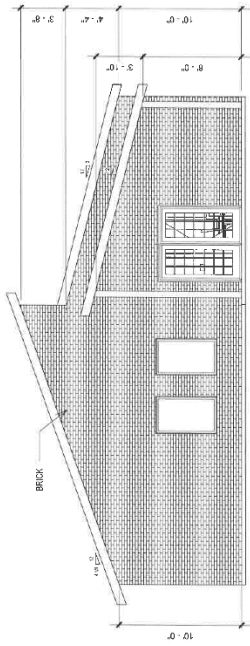
DESIGNER:
DAVE LITTON
OWNER:
OCTAVIO GARCIA FOGS



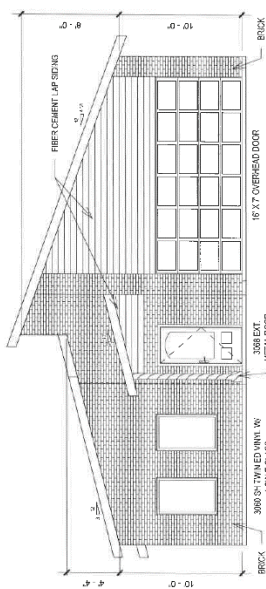
PROJECT NO. 11-01
DATE 05/22/2022

Elevations

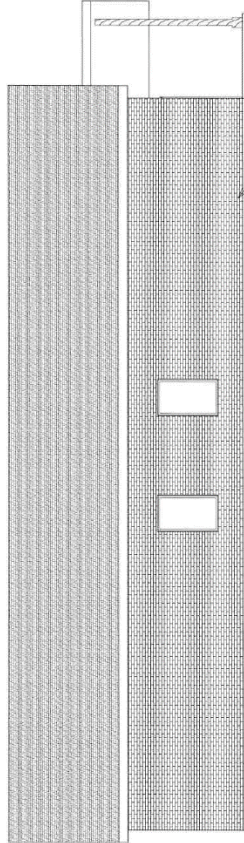
A-105



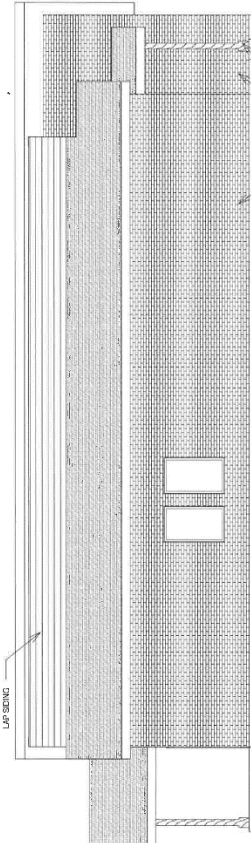
3 REAR ELEVATION
1/8" = 1'-0"



4 FRONT ELEVATION
1/8" = 1'-0"



2 EAST ELEVATION
1/8" = 1'-0"



1 WEST ELEVATION
1/8" = 1'-0"

CITY OF ROCKWALL

ORDINANCE NO. 23-21

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, REPEALING IN ITS ENTIRETY CHAPTER 38, *SUBDIVISIONS*, OF THE MUNICIPAL CODE OF ORDINANCES, AS HERETOFORE AMENDED, AND ADOPTING CHAPTER 38, *SUBDIVISIONS*, WHICH PROVIDES THE FOLLOWING RULES AND REGULATIONS RELATING TO APPLICATION PROCESSING PROCEDURES, SUBDIVISION AND PLATTING PROCEEDURES, ENGINEERING STANDARDS AND PROCEDURES, SUBDIVISION REQUIREMENTS, APPEALS AND RELIEF PROCEDURES, PARKLAND DEDICATION, DISASTER WARNING SIRENS, GRADING, EXCAVATION, EARTHWORK, AND EROSION CONTROL FOR THE PURPOSE OF PROTECTING THE PUBLIC'S HEALTH, SAFETY, AND GENERAL WELFARE INSIDE THE CITY'S CORPORATE LIMITS AND THE EXTRATERRITORIAL JURISDICTION (ETJ); PROVIDING FOR A PENALTY OF FINE NOT TO EXCEED THE SUM OF TWO THOUSAND DOLLARS (\$2,000.00) FOR EACH OFFENSE; PROVIDING FOR A SEVERABILITY CLAUSE; PROVIDING FOR A REPEALER CLAUSE; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Rockwall, Texas (*City*) is a *Home-Rule City* in accordance with Chapter 9, *Home-Rule Municipality*, of Subtitle A, *Types of Municipalities*, of Title 2, *Organization of Municipal Government*, of the Texas Local Government Code, and by State law and City Charter is permitted to establish ordinances for the purpose of protecting the health, safety, and general welfare of its residents; and

WHEREAS, the current *Subdivision Ordinance* was originally adopted on September 15, 1978 through *Ordinance No. 78-20*, which has been amended many times since its inception; and

WHEREAS, the City has prepared a revised and updated *Subdivision Ordinance* designed to allow the community to maintain its traditional character and pattern of development while accommodating new growth demands for residential and non-residential development within the City and its Extraterritorial Jurisdiction (ETJ) and comply with State law;

WHEREAS, the City Council of the City of Rockwall -- *after holding a public hearing* -- has determined that these subdivision regulations will better protect the health, safety and general welfare of its citizens and fulfill the purpose of Chapter 212, *Municipal Regulation of Subdivision and Property Development*, of the Texas Local Government Code relating to subdivision plats and other constitutional and statutory grants of power.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS:

SECTION 1. That the current Chapter 38, *Subdivisions*, of the Municipal Code of Ordinances of the City of Rockwall be repealed in its entirety and a revised Chapter 38, *Subdivisions*, of the Municipal Code of Ordinances shall be adopted as specifically described in *Exhibit 'A'* of this ordinance;

SECTION 2. That any person, firm, or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor and upon conviction shall be punished by a penalty of fine

not to exceed the sum of *Two Thousand Dollars* (\$2,000.00) for each offense and each and every day such offense shall continue shall be deemed to constitute a separate offense;

SECTION 3. FINDINGS. The City Council finds all of the above recitals to be true and correct and incorporates the same in this Ordinance as findings of fact;

SECTION 4. SEVERABILITY. That if any section, paragraph, or provision of this ordinance or the application of that section, paragraph, or provision to any person, firm, corporation or situation is for any reason judged invalid, the adjudication shall not affect any other section, paragraph, or provision of this ordinance or the application of any other section, paragraph or provision to any other person, firm, corporation or situation, nor shall adjudication affect any other section, paragraph, or provision of the Unified Development Code, and the City Council declares that it would have adopted the valid portions and applications of the ordinance without the invalid parts and to this end the provisions for this ordinance are declared to be severable;

SECTION 5. REPEALING ORDINANCE IN CONFLICT. All ordinances or parts of ordinances in conflict herewith are hereby repealed to the extent of such conflict;

SECTION 6. That this ordinance shall take effect immediately from and after its passage;

PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, THIS THE 3RD DAY OF APRIL, 2023.

Kevin Fowler, Mayor

ATTEST:

Kristy Teague, City Secretary

APPROVED AS TO FORM:

Frank J. Garza, City Attorney

1st Reading: March 20, 2023

2nd Reading: April 3, 2023

Exhibit 'A'
*Chapter 38, Subdivisions,
Municipal Code of Ordinances*

Continued on the Following Page ...



CHAPTER 38, *SUBDIVISIONS*, OF THE MUNICIPAL CODE OF ORDINANCES

CITY OF ROCKWALL, TEXAS
PLANNING AND ZONING DEPARTMENT



CHAPTER 38, *SUBDIVISIONS*, OF THE MUNICIPAL CODE OF ORDINANCES
ADOPTED AND SUMMARY OF AMENDMENTS

This table provides a summary of all of the ordinances that were adopted by the City Council amending Chapter 38, *Subdivisions*, of the Municipal Code of Ordinances. Ordinances adopted and not listed below have been omitted as repealed, superseded, or not of a general and permanent nature.

ORDINANCE NO.	DATE OF ADOPTION	SUMMARY
		Adoption of the new Chapter 38, <i>Subdivisions</i> , of the Municipal Code of Ordinance; amending the previous <i>Chapter</i> in its entirety.



TABLE OF CONTENTS

ARTICLE I. IN GENERAL 1

 SECTION 38-1: AUTHORITY AND PURPOSE 1

 SECTION 38-2: DEFINITIONS 1

 SECTION 38-3: AUTHORITY 4

 SECTION 38-4: JURISDICTION 5

 SECTION 38-5: APPLICABILITY 5

 SECTION 38-6: APPLICATION PROCESSING PROCEDURES 5

 (1) PRE-APPLICATION MEETING. 5

 (2) DEVELOPMENT APPLICATION. 5

 (3) EXPIRATION FOR PROJECT APPROVED PRIOR TO THE ADOPTION OF THIS CHAPTER. 6

 SECTION 38-7: SUBDIVISION AND PLATTING PROCEDURES 6

 (1) GENERAL PLATTING REQUIREMENTS, PROCEDURES, AND PROCESS. 6

 (A) GENERAL PLATTING REQUIREMENTS. 6

 (B) GENERAL PLATTING PROCEDURES. 10

 (C) GENERAL PLATTING PROCESS. 10

 (2) MASTER PLATS. 11

 (3) PRELIMINARY PLATS. 13

 (4) FINAL PLATS. 17

 (5) CONVEYANCE PLATS. 20

 (6) MINOR PLATS. 21

 (7) REPLATS. 23

 (8) AMENDING PLATS. 26

 (9) VACATING PLATS. 28

 (10) DORMANT PROJECTS. 29

 SECTION 38-8: ENGINEERING STANDARDS AND PROCEDURES 30

 (1) STANDARDS OF DESIGN AND CONSTRUCTION MANUAL. 31

 (2) CIVIL ENGINEERING PLANS. 31

 (3) PUBLIC WORKS CONSTRUCTION STANDARDS AND SPECIFICATIONS. 32

 (4) PRE-CONSTRUCTION MEETING. 32

 (5) ENGINEERING INSPECTION, MAINTENANCE, AND ACCEPTANCE OF PUBLIC IMPROVEMENTS. 32

 SECTION 38-9: SUBDIVISION REQUIREMENTS 33

 (1) GENERAL POLICIES. 33

 (A) SUBDIVISION PLATS. 33

 (B) CONFORMANCE TO THE CITY'S PLANS. 34

 (C) ADEQUATE PUBLIC FACILITIES. 34

 (2) WATER AND WASTEWATER. 37

 (A) WATER AND WASTEWATER BASIC POLICY. 37

 (B) WATER. 38

 (C) WASTEWATER. 39

 (3) STORM WATER, DRAINAGE, AND DETENTION. 40

 (A) STORM WATER, DRAINAGE, AND DETENTION POLICIES. 40



(B) STORM WATER MANAGEMENT PLAN.....41

(C) DRAINAGE PLAN.....41

(D) CREEKS AND FLOODPLAIN.....41

(4) STREETS.....42

 (A) GENERAL STREET POLICIES.....42

 (B) STREET DESIGN AND APPURTENANCES.....44

 (C) PRIVATE STREETS.....45

(5) ALLEYWAYS.....45

(6) DRIVEWAYS, FIRE LANES, AND ACCESS EASEMENTS.....45

(7) SIDEWALKS.....46

(8) EASEMENTS.....46

(9) SUBDIVISION NAME AND LOT & BLOCK DESIGN.....46

(10) UTILITIES.....48

(11) AMENITIES.....48

(12) PARKS AND OPEN SPACE.....49

 (A) GENERAL PARKS AND OPEN SPACE POLICIES.....49

 (B) PARKLAND DEDICATION.....50

 (C) TRAILS.....50

(13) HOMEOWNER’S ASSOCIATION.....50

SECTION 38-10: AGREEMENTS, APPEALS, AND RELIEF PROCEDURES.....52

 (1) FACILITIES AGREEMENTS.....52

 (2) PETITION FOR WAIVERS.....52

 (A) PURPOSE AND APPLICABILITY.....52

 (B) PETITION FOR A WAIVER.....52

 (C) PROCESSING OF AND DECISION ON A PETITION FOR A WAIVER.....53

 (D) APPEAL OF A DECISION ON A PETITION FOR A WAIVER.....54

 (3) PETITION FOR A PROPORTIONALITY APPEAL.....54

 (A) PURPOSE AND APPLICABILITY.....54

 (B) PROPORTIONALITY APPEAL PETITION REQUIREMENTS.....54

 (C) PROCESSING AND DECISION ON A PROPORTIONALITY APPEAL.....55

 (D) EFFECT AND EXPIRATION OF A DECISION ON A PROPORTIONALITY APPEAL.....56

 (4) PETITION FOR VESTED RIGHTS.....56

 (A) PURPOSE AND APPLICABILITY.....56

 (B) VESTED RIGHTS PETITION.....56

 (C) PROCESSING OF AND DECISION ON A VESTED RIGHTS PETITION.....57

 (D) ACTION ON AND ORDER FOR A VESTED RIGHTS PETITION.....58

 (E) EFFECT, EXPIRATION AND EXTENSION OF A VESTED RIGHTS PETITION.....58

SECTIONS 38-11 – 38-49: RESERVED.....59

ARTICLE II. PARK LAND DEDICATION.....60

 SECTION 38-50. PURPOSE.....60

 SECTION 38-51. DEFINITIONS.....60

 SECTION 38-52. AUTHORITY FOR THIS ARTICLE.....61



SECTION 38-53. APPLICABILITY OF PARKLAND DEDICATION AND/OR PARK FEES.	61
SECTION 38-54. DEDICATION OF PUBLIC PARKLAND AND THE ESTABLISHMENT OF PRIVATE PARKLAND.	61
SECTION 38-55. CASH-IN-LIEU OF LAND FEES.	62
SECTION 38-56. PRO-RATA EQUIPMENT FEES.	62
SECTION 38-57. METHODOLOGY AND CALCULATION OF CASH-IN-LIEU OF LAND FEES AND PRO-RATA EQUIPMENT FEES FOR NEIGHBORHOOD PARKS.	63
SECTION 38-58. ASSESSING AND COLLECTING CASH-IN-LIEU OF LAND FEES AND PRO-RATA EQUIPMENT FEES.	64
SECTION 38-59. SPECIAL FUND ESTABLISHED; REFUNDS.	64
SECTION 38-60. REVIEW AND UPDATING PARKS & OPEN SPACE MASTER PLAN.	65
SECTION 38-61. PARK DISTRICT BOUNDARIES.	65
SECTION 38-62. APPEALS, WAIVERS, AND VARIANCES TO THIS ARTICLE'S REQUIREMENTS BY THE CITY COUNCIL.	65
SECTIONS 38-63 - 38-82. RESERVED.	66
ARTICLE III. IMPACT FEE REGULATIONS.	67
SECTION 38-103 – 38-361.	67
SECTION 38-362 – 38-398. RESERVED.	67
ARTICLE IV. DISASTER WARNING SIREN.	68
SECTIONS 38-399. PURPOSE.	68
SECTIONS 38-400. DEFINITIONS.	68
SECTIONS 38-401. APPLICABILITY.	68
SECTIONS 38-402. METHODOLOGY AND CALCULATION OF DISASTER WARNING SIRENS.	68
SECTIONS 38-403. GENERAL REQUIREMENTS.	69
SECTIONS 38-404. PENALTIES, SANCTIONS, AND DETERMINATIONS.	69
SECTIONS 38-405 – 38-429. RESERVED.	69
ARTICLE V. GRADING, EXCAVATION, EARTHWORK, AND EROSION CONTROL.	70
SECTIONS 38-430. PURPOSE.	70
SECTIONS 38-431. DEFINITIONS.	70
SECTIONS 38-432. APPLICABILITY.	70
SECTIONS 38-433. GRADING PERMIT REQUIRED FOR FILLING, GRADING, AND EXCAVATION WORK.	70
SECTIONS 38-434. RESPONSIBILITY OF A PROPERTY OWNER.	70
SECTIONS 38-435. REQUIREMENTS FOR FILLING, GRADING, AND EXCAVATION WORK.	70
SECTIONS 38-436. GRADING PERMITS AND CRITERIA.	70
SECTIONS 38-437. PERMIT FEE AND DEPOSIT.	72
SECTIONS 38-438. PROPERTY OWNER'S RESPONSIBILITY.	72
SECTIONS 38-439. EXEMPTIONS.	72



ARTICLE I. IN GENERAL

SECTION 38-1: AUTHORITY AND PURPOSE

This ordinance is adopted under the authority of the constitution and laws of the State of Texas, including particularly Chapter 212, Texas Local Government Code.

The regulation of the subdivision and development of land is a valid function of municipal government, and this function has a direct effect on the public interest and the community's quality of life. The regulations contained within this *Chapter* are intended to protect the interests of the public and confer certain rights and privileges for private land owners. In order to achieve the orderly, efficient and environmentally sound subdivision of land, the city must be provided with appropriate guidelines and development management mechanisms. The requirements of this *Chapter* are also intended to establish a fair and rational procedure for developing and subdividing land such that land will be developed in accordance with the existing physical, social, and economic conditions of the City of Rockwall. In addition, the purpose of this *Chapter* is intended to implement the following objectives:

- (1) Provide for the orderly, efficient and economical development of residential, commercial and industrial land uses, and community facilities, including transportation, water, sewerage, drainage, schools, parks, recreation and any other related element or service.
- (2) To promote the utilization and development of land in accordance with the City's Comprehensive Plan and Unified Development Code (UDC).
- (3) To provide a clear and coherent process to guide property owners through the proper procedures for the subdivision and/or development of land within the City of Rockwall.
- (4) To protect the public interest by providing requirements relating to the provision of public infrastructure (e.g. *streets, utilities, sidewalks, trails, alleyways, and other essential public services*).
- (5) To provide for public or private facilities that are available and will have sufficient capacity to serve proposed and future developments and citizens within the City of Rockwall and its Extraterritorial Jurisdiction (ETJ).
- (6) To assist in the orderly and efficient coordination of development within the City of Rockwall's Extraterritorial Jurisdiction (ETJ).
- (7) To integrate the development of various tracts of land into the City of Rockwall, and to coordinate the future development of adjoining tracts of land.
- (8) To establish adequate and accurate records of the subdivisions of land.
- (9) To provide for efficient traffic circulation throughout the City of Rockwall.
- (10) Promote the health, safety, morals and general welfare of the people, and the safe, orderly and healthful development of the community.

SECTION 38-2: DEFINITIONS

When the following words, terms, and phrases are used in this *Chapter* (i.e. *Chapter 38, Subdivisions, of the Municipal Code of Ordinances*) they shall have the meanings ascribed to them in this section (except where the context clearly indicates a different meaning):

- (1) 100-Year Floodplain. 100-Year Floodplain is property that has a one (1) percent chance of having a flood event in a given year, based on a fully developed watershed.
- (2) Abutting. Abutting is synonymous with the words adjacent, adjoining, or contiguous. It shall mean having a common lot line between lots with a right-of-way or easement, or a physical improvement (e.g. *a street, waterline, park, or creek*).
- (3) Access. Access is a means of approaching or entering a property, or the ability to cross a property (e.g. *a cross access easement or a pedestrian access easement*).
- (4) Alley. A minor right-of-way -- typically dedicated to public use -- not intended to provide the primary means of access to an abutting lot or tract, which is used primarily for vehicular access to the back or side of the property. Alleys may be used for utility service purposes.
- (5) Amending Plat. See [Section 38-7\(8\)](#).
- (6) Amenity. An Amenity is any aesthetic or physical improvement to a development that increases the development's quality, desirability, and/or marketability to the general public. Examples of Amenities include but are not limited to an amenity center, private recreational facility (e.g. *swimming pool, club house, tennis courts, etc.*), entry features, open space, ponds, water fountains, water features, and hike and bike trails.
- (7) Applicant. An Applicant is the person or entity responsible for the submission of a *Development Application*. The Applicant must be the actual owner of the property for which a *Development Application* has been submitted, or be the duly authorized representative of the property owner [also see *Developer*].



- (8) Block. A Block is a grouping of lots that are partially or fully surrounded by one (1) or more streets and/or alleyways. A Block can consist of one (1) or two (2) tiers of lots. Lots that are separated by an alleyway can be in the same Block, but lots that are separated by a street shall be in different blocks.
- (9) Builder. See Developer.
- (10) Building Setback Line. A Building Setback Line shall mean the line on a subdivision plat delineating the nearest point to which a building or buildings may be located to a street, alleyway, or property line.
- (11) Building. A Building is any structure for the support, shelter and enclosure of persons or movable property of any kind [also see Structure].
- (12) Building Code. The Building Code shall mean the current version of the International Building Code (IBC) adopted by the City of Rockwall.
- (13) Chapter. Chapter 38, Subdivisions, of the Municipal Code of Ordinances.
- (14) City. The City shall mean the City of Rockwall.
- (15) City Council. The City Council shall mean the governing body of the City of Rockwall.
- (16) City Engineer. The City Engineer is the individual, or his/her designee, with responsibility to review and approve construction plans for development projects. He/she is also responsible for overseeing the construction of the development to ensure that it meets the requirements of the City of Rockwall Construction Design Standards.
- (17) Civil Engineering Plans. Civil Engineering Plans are the drawings and technical specifications that conform to this Chapter and the Engineering Department's Standards of Design and Construction Manual.
- (18) Commission. The Commission shall mean the Planning and Zoning Commission of the City of Rockwall.
- (19) Comprehensive Plan. The Comprehensive Plan shall mean the City's current Comprehensive Plan, which includes the goals and policies with regards -- *but not limited* -- to land use, growth management, environment/ecology, parks, open space, trails, infrastructure (e.g. *thoroughfares, water, and wastewater*), and other facets of the City's physical form. The policies and goals contained within this document govern the future development of the City and consist of various components that regulate specific geographic areas, functions, and services of the City of Rockwall.
- (20) Construction Plans. See Civil Engineering Plans.
- (21) Conveyance Plat. See [Section 38-7\(5\)](#).
- (22) Cul-de-Sac. Cul-de-Sac shall mean a local street with only one primary outlet and having a terminal of sufficient width for the reversal of traffic movement.
- (23) Dead-End Street. A Dead-End Street shall mean a public or private street, other than a Cul-De-Sac, with only one (1) outlet.
- (24) Developer. A Developer is a person or entity -- *limited to the property owner or the property owner's duly authorized representative* -- who proposes the division or improvement of land and/or other activities covered by this Chapter so as to constitute a Subdivision, including the preparation of a subdivision plat showing the layout of the land and the public improvements involved with the development and/or subdivision of the property. The word Developer is intended to include the terms subdivider, property owner, and applicant.
- (25) Development. Development consists of any activities related to the platting or physical subdivision of land including the construction, reconstruction, conversion, or enlargement of buildings or structures; the construction of impervious surfaces (e.g. *parking lots*); the installation of utilities, roadways, drainage facilities or other infrastructure; or any disturbance of the surface or subsurface of the land in preparation for construction activities, including grading, drainage, storage, paving, clearing, filling, and/or removal of vegetation or soil, and any mining dredging, excavation or drilling operations.
- (26) Development Agreement. A Development Agreement is an agreement authorized in accordance with Section 212.172, Development Agreement, of the Texas Local Government Code between the City of Rockwall and a property owner within the corporate limits of the City of Rockwall or its Extraterritorial Jurisdiction (ETJ) [see Facilities Agreement].
- (27) Development Application. A Development Application is an application for any type of subdivision plat authorized or addressed by this Chapter or the Unified Development Code (UDC). A Development Application may also be referred to as a Permit within Chapter 245, Issuance of Local Permits, of the Texas Local Government Code.



- (28) Development Services Departments. The Development Services Departments refers to the Engineering, Planning and Zoning, and Building Inspections Departments of the City of Rockwall.
- (29) Director of Planning and Zoning. The Director of Planning and Zoning (also referred to as the Director of the Planning and Zoning Department) of the City of Rockwall or his/her designee.
- (30) Dwelling Unit. A Dwelling Unit is a single unit providing complete, independent living facilities for a family, and including a residential kitchen, bathroom, and provisions for living, sleeping and sanitation.
- (31) Double Frontage Lot. A Double Frontage Lot is a lot that has a frontage on two (2) non-intersecting streets, as distinguished from a corner lot.
- (32) Easement. An Easement is a grant of one or more of the property rights by the property owner to and/or for the use or benefit by the public, a corporation, or other person or entity. An Easement shall be identified on a subdivision plat, or by a separate instrument and filed for record with the Rockwall County Clerk.
- (33) Engineer. An Engineer shall mean an individual who has been duly licensed by and in good standing with the Texas Board of Professional Engineers, and has been entitled to engage in the practice of engineering by the State of Texas.
- (34) Facilities Agreement. A Facilities Agreement is an agreement between the City of Rockwall and a property owner and/or developer that is required whenever the construction of a public improvement is funded entirely or in part by a property owner and/or private developer. The agreement sets out the terms and conditions of the provision of the public improvement [see Development Agreement].
- (35) Final Plat. See [Section 38-7\(4\)](#).
- (36) Fire Code. The Fire Code shall mean the current version of the International Fire Code (IFC) adopted by the City of Rockwall.
- (37) Homeowner's Association (HOA). The term Homeowner's Association (HOA) shall mean an association that is organized within a development in which individual owners share a common interests and responsibilities for open space, drainage and detention facilities, landscaping, amenities or facilities, and which operates under recorded land agreements. A Homeowner's Association (HOA) shall include the term Property Owner's Association (POA), Neighborhood Organization, and or Property Management Corporation (PMC).
- (38) Inspector. An Inspector is a person that is duly authorized by the City Manager who may be employed by the City of Rockwall or as a consultant, and is designated to inspect any portion or all of the construction performed in a subdivision wither on a part-time or full-time basis. The duties of the Inspector shall consist of inspecting all work during construction and/or after completion to determine compliance with the Civil Engineering Plans, specifications, and subdivision regulations, with authority to stop work during construction for non-completion, if the work is defective or non-compliant.
- (39) Lot. A Lot is an undivided tract or parcel of land having frontage on a public or private street, which is -- or may be in the future -- offered for sale, conveyance, transfer, or improvement and is intended to be occupied by a structure or group of structures.
- (40) Lot of Record. A Lot of Record is a lot or parcel of land which is part of a subdivision, the map or plat of which has been recorded in the office of the County Clerk of Rockwall County; or a lot or parcel of land not a part of an urban or town lot subdivision, the deed of which has been recorded in the office of the County Clerk of Rockwall County prior to the adoption date of the Unified Development Code (UDC) (i.e. June 7, 2004; Ordinance No. 04-38).
- (41) Master Plat. See [Section 38-7\(2\)](#).
- (42) Minor Plat. See [Section 38-7\(6\)](#).
- (43) Official Filing Date. The Official Filing Date shall mean the date an application is deemed to be complete by the responsible City official in the manner prescribed by [Section 38-6\(2\)\(C\)](#).
- (44) Owner. The Owner is the fee simple owner(s) of property being platted or their representative(s) when authorized by a power of attorney, corporate resolution or another appropriate document.
- (45) Preliminary Plat. See [Section 38-7\(3\)](#).
- (46) Pro-Rata Agreement. A Pro-Rata Agreement is an agreement between a property owner and/or developer and the City of Rockwall whereby the property owner and/or developer constructs infrastructure in accordance with the City's Master Water Distribution Plan and/or Master Wastewater



Collection Plan, which are designed and constructed to service other developments, making the property owner and/or developer eligible for reimbursement of a percentage of the cost of such improvement [see *Development Agreement*].

- (47) Replat. See [Section 38-7\(7\)](#).
- (48) Right-of-Way. A Right-of-Way is a use of land dedicated by subdivision plat or by metes and bounds to and for the use of the general public, which is separate and distinct from the lots and parcels abutting it, and which is not included within the dimensions or areas of such lots or parcels. Right-of-Way generally describes an area used for the provision of streets and utilities. Unless otherwise specified, the term Right-of-Way shall refer to public right-of-way.
- (49) Street. A Street is an access way for vehicular traffic and other public uses, whether designated as a street, highway, thoroughfare, arterial, parkway, thoroughfare, road, avenue, boulevard, lane, place or otherwise designated; however, an alleyway shall not be considered a Street.
- (50) Sidewalk. A Sidewalk is a paved travel way intended for pedestrian use.
- (51) State Roadway. State Roadways shall include IH-30, SH-205, SH-276, SH-66, FM-549, FM-740, FM-552, FM-3097, FM1141, FM-3549, and FM-1139.
- (52) Structure. A Structure is anything constructed or erected, which requires location on the ground, or attached to something having a location on the ground; including, but not limited to, buildings, communications towers, signs and swimming pools, and excluding utility poles, parking lots, fences and retaining walls [also see *Building*].
- (53) Subdivider. See *Developer*.
- (54) Subdivision. A Subdivision is the division or assemblage of any tract or parcel of land situated within the corporate limits of the City of Rockwall - or within the Extraterritorial Jurisdiction (ETJ) of the City of Rockwall – into two (2) or more parts (*whether immediate or future*) for sale or development or for the purpose of establishing or laying out a subdivision and/or delineating a residential or non-residential lot, street, alleyway, or other public or private infrastructure or use. This term includes *Re-Subdivision*, but does *not* include the division of land for agricultural purposes on parcels or tracts of land five (5) acres or more that does not involve the creation/dedication of a new street, alleyway, or easement.
- (55) Subdivision Plat. A Subdivision Plat shall mean a plan which shows the exact layout and proposed construction of a proposed development into one (1) or more lots, blocks, streets, parks, school sites, easements, alleys, and/or any other elements as required by this *Chapter*, including any engineering or construction standards for related improvements, and which conform to all requirements of this *Chapter* and any other applicable City codes or ordinances, and which is subject to approval by the Planning and Zoning Commission and City Council, unless otherwise specified herein.
- (56) Surveyor. A Surveyor shall mean a licensed state land surveyor or a registered public surveyor as authorized by the State of Texas to practice the profession of surveying.
- (57) Thoroughfare. Thoroughfare is a general term for a Street, which has a more specific meaning when used in conjunction with a distinct classification (e.g. *Minor Collector, Collector, A4D, P6D, etc.*). Each class provides a certain degree of continuity, capacity, and accessibility to adjacent land uses.
- (58) Tract. A Tract is all contiguous property in common ownership.
- (59) Unified Development Code (UDC). The Unified Development Code (UDC) shall mean the zoning code for the City of Rockwall.
- (60) Variance. A Variance is a modification of the provisions of these regulations, as applied to a specific piece of property, as further set out in [Section 38-62](#) of this *Chapter*.

SECTION 38-3: AUTHORITY

The regulations contained within this *Chapter* are adopted under the authority of [Chapter 212, Municipal Regulation of Subdivisions and Property Development](#), and [Chapter 43, Municipal Annexation, of the Texas Local Government Code](#) and the City's Charter.

- STATE LAW REFERENCE: AUTHORITY TO ADOPT SUBDIVISION REGULATION IS GRANTED BY [V. T. C. A., LOCAL GOVERNMENT CODE § 212.002](#).



SECTION 38-4: JURISDICTION

The provisions of this *Chapter* are intended to provide regulations for the subdivision and development of land -- *where applicable* -- to all areas within the City's corporate boundaries and within the City's Extraterritorial Jurisdiction (ETJ), as exist at the time of the adoption of this *Chapter* and as may be adjusted in the future through the annexation or incorporation of land or through the City's *Interlocal Agreements* with Rockwall County in accordance with Chapter 242, *Authority of Municipality and County to Regulate Subdivisions in and Outside Municipality's Extraterritorial Jurisdiction*, of the Local Government Code.

- *STATE LAW REFERENCE*: JURISDICTION IS GRANTED BY [V. T. C. A., LOCAL GOVERNMENT CODE § 212.003](#).

SECTION 38-5: APPLICABILITY

The provisions of this *Chapter*, the technical standards contained in the Engineering Department's *Standards of Design and Construction Manual*, and the standards and requirements regulating the construction of facilities that are applicable to subdivision plats contained in other portions of the Municipal Code of Ordinances shall constitute the subdivision rules and regulations of the City of Rockwall and shall apply to any division, assemblage (*i.e. the combination of separate parcels of land*), and/or development of land within the City of Rockwall's corporate boundaries or its Extraterritorial Jurisdiction (ETJ). No building permits or other permits shall be issued for any building or structure on a property until a subdivision plat has been approved and recorded.

SECTION 38-6: APPLICATION PROCESSING PROCEDURES

(1) PRE-APPLICATION MEETING.

- (A) *Purpose of the Pre-Application Meeting.* Prior to the submittal of an application, applicants are encouraged to schedule a *Pre-Application Meeting* to meet with the City's Development Services Departments to discuss the development requirements, review procedures, and approval process. While strongly encouraged, a *Pre-Application Meeting* is optional and is not a prerequisite to submitting an application.
- (B) *Pre-Application Meeting Request.* A request for a *Pre-Application Meeting* shall be accompanied by information that clearly conveys the type of development being proposed and/or the type of development application that the applicant intends to submit.
- (C) *Vested Rights.* The *Pre-Application Meeting* is for informational purposes only and does not constitute a permit as defined by [Chapter 245, Issuance of Local Permits, of the Texas Local Government Code](#). In addition, the *Pre-Application Meeting Request* form is not considered to be an application and does not confer vested rights. No applications or other materials pertaining to development will be submitted or accepted for review or filing during the *Pre-Application Meeting*.

(2) DEVELOPMENT APPLICATION.

- (A) *Development Application Content.* All *Development Applications* for subdivision plats shall conform to the requirements stipulated by the *Complete Development Packet* -- *as currently exists or as may be amended in the future* --, which shall be established and maintained by the Director of the Planning and Zoning Department.
- (B) *Development Application Fees.* Every *Development Application* shall be accompanied by the prescribed fees set forth in the City of Rockwall's Unified Development Code (UDC), and approved by the City Council; however, these fees may be waived from time-to-time by the City Council of the City of Rockwall or the City Manager or his/her designee.
- (C) *Complete Development Application.* No *Development Application* shall be accepted by the City unless such request is accompanied by the documents and plans required by and prepared in accordance with the *Complete Development Packet*. Every *Development Application* shall be subject to a determination of completeness by the Director of the Planning and Zoning Department and City Engineer; however, a determination of completeness does not constitute a determination of compliance with the substantive requirements of this *Chapter*. The filing or processing of any application by City staff prior to the *Application Deadline* is deemed to be null and void, and -- *upon discovery of such a filing or processing* -- City staff shall return the application to the applicant in accordance with [Section 38-6\(2\)\(D\)\(3\)](#). In addition, the Director of the Planning and Zoning Department may -- *on a case-by-case basis* -- require additional documents or plans to be submitted with a *Development Application* that are not typically required by the *Complete Development Packet*, but are consistent with the application contents and standards contained within this *Chapter*. If a *Development Application* is determined to be complete, the application shall be processed as prescribed by this *Chapter*.
- (D) *Relationship to Zoning.* For land in the corporate limits of the City of Rockwall, no *Development Application* shall be determined to be complete or accepted where the intended land use or the intensity of a proposed land use is not authorized in the zoning district in which the property is located, unless the application is accompanied by a copy of the Unified Development Code (UDC) or other certification verifying that the proposed use for which the *Development Application* being submitted is authorized by the zoning district in which the property is



located. If a request to change the zoning for the land to be platted to allow the development proposed in the plat is pending, the zoning application shall be decided before a determination is made whether the subdivision plat is complete. If the zoning application is denied, the subdivision plat shall be deemed incomplete. For newly annexed land, no subdivision plat will be accepted for any use or intensity of use not authorized in the Agricultural (AG) District as stipulated by the Unified Development Code (UDC), until the property has been permanently classified on the zoning district map.

- (E) Development Applications for Subdivision Plats in the City of Rockwall's Extraterritorial Jurisdiction (ETJ). Where the land to be platted lies within the Extraterritorial Jurisdiction (ETJ) of the City of Rockwall, no Development Application for a subdivision plat shall be accepted as complete for filing by the municipal authority unless such Development Application adheres to the Interlocal Cooperation Agreement entered with Rockwall County prepared in accordance with Chapter 242. Authority of Municipality and County to Regulate Subdivisions In and Outside Municipality's Extraterritorial Jurisdiction, of the Texas Local Government Code.
- (F) Grounds for the Denial or Non-Acceptance of a Development Application. The following shall be grounds for denial or non-acceptance of a Development Application:
- (1) Incomplete Application. The processing of a Development Application by City staff prior to the time the application is determined to be complete shall not constitute acceptance of the Development Application. In addition, incomplete Development Applications shall not be accepted by the City of Rockwall.
 - (2) Delinquent City Taxes. A Development Application shall not be deemed accepted or complete, nor shall it be approved, if there are delinquent City taxes owed by the subject property.
 - (3) Denial or Non-Acceptance of a Development Application. City staff shall send written notice by mail or email to the applicant of a Development Application that is denied or deemed to be not accepted within ten (10) business days of the determination of completeness. The written notice does not need to identify all the reasons the application was denied or deemed to be not accepted; however, the notice should contain at least one or more reasons for the non-acceptance.
- (G) Vested Rights. For the purposes of determining Vested Rights -- pursuant to Section 38-10(4) -- no vested rights are accrued solely from the filing of a Development Application that has expired pursuant to the requirements of this Chapter, or from the filing of a complete Development Application that is subsequently denied.

(3) EXPIRATION FOR PROJECT APPROVED PRIOR TO THE ADOPTION OF THIS CHAPTER.

- (A) Two (2) Year Expiration Established. Notwithstanding any other provisions of this Chapter, any approved Development Application for which no expiration date was in effect on the effective date of this Chapter, an expiration date of two (2) years following the effective date of this Chapter shall apply, unless the applicant files a written petition before such date for a Vested Rights Determination pursuant to Section 38-10(4) alleging that progress has been made toward completion of the project for which the application subject to expiration was filed. If a Vested Rights Petition is timely filed and subsequently approved, the City Council shall determine the expiration date of the Development Application in deciding the petition.
- (B) Five (5) Year Expiration Established. Notwithstanding any other provision of this Chapter, once a Development Application has expired under Section 38-6(3)(A), all previously approved applications for the same land shall also expire not later than five (5) years following the date of filing of the first Development Application for the project for which the expired application was filed, unless the applicant files a written petition before such date for a Vested Rights Determination pursuant to Section 38-10(4). If a Vested Rights Petition is timely filed and subsequently approved, the City Council shall determine the expiration date of the previously approved applications in deciding the petition.

SECTION 38-7: SUBDIVISION AND PLATTING PROCEDURES

(1) GENERAL PLATTING REQUIREMENTS, PROCEDURES, AND PROCESS.

(A) GENERAL PLATTING REQUIREMENTS.

- (1) Required Information for all Subdivision Plats. Unless provided for below or required in the Development Application, all subdivision plats shall conform to -- or be accompanied by -- the following information:
 - (a) General Subdivision Plat Information. All subdivision plats shall show the following information:
 - (1) Case Number. The Case Number will be provided by the City, and shall be placed in the lower right-hand corner of all subdivision plats.



- (2) Ownership Information. The Ownership Information of the area being platted shall be provided and shall include the name, address, and phone number of all property owners.
- (3) Developer Information. If applicable, the information of the Developer for the proposed subdivision plat shall be provided and shall include the name, company, address, and phone number of the Developer.
- (4) Survey/Engineer Information. The information of the Surveyor/Engineer who prepared the subdivision plat shall be provided and shall include the name, company, address, and phone number of the Surveyor/Engineer.
- (5) Date of Subdivision Plat Preparation. The date the subdivision plat was prepared shall be indicated on the subdivision plat.
- (6) Survey Monuments/State Plane Coordinates. The location of the development is required to be tied to a Rockwall Survey Monument, or two (2) corners of the development should be tied to the State Plan Coordinates (i.e. NAD 83 State Plane Texas, North Central [7202], US Survey Feet).
- (7) Vicinity Map. A Vicinity Map should show the boundaries of the proposed subdivision relative to the rest of the City at an appropriate scale to determine the general location of the area being platted.
- (8) North Point or North Arrow. The North Point or North Arrow must be facing true north on all subdivision plats, unless the scale of the drawings or scope of the project requires a different position.
- (9) Numeric and Graphic Scale. Subdivision plats should be drawn to an appropriate engineering scale (i.e. 1" = 50', 1" = 100', and etcetera.).
- (10) Subdivision Boundary, Acreage, and Square Footage. Indicate the Subdivision Boundary Lines, Acreage, and Square Footage.
- (11) Lot and Block. Each Lot and Block should be clearly indicated by number or letter. For each lot, an indication of the square footage and acreage should be provided. As an alternative a calculation sheet can be provided. A total lot count shall also be provided.
- (12) Building Setbacks. For all residential plats, the building setback lines shall be indicated for all property lines that are adjacent to a street.
- (13) Easements. Label all existing and proposed easements relative to the site and include the type, width, and purpose of the easement. All off-site easements shall be labeled with the filing information.
- (14) City Limits/Limits of the Extraterritorial Jurisdiction (ETJ). If contiguous with the area being platted or if visible on the vicinity map, the corporate limits of the City of Rockwall and its Extraterritorial Jurisdiction (ETJ) should be clearly labeled.
- (15) Property Lines. The Property Lines for all lots proposed or existing shall be indicated on all subdivision plats.
- (16) Streets. Label all the proposed and existing Streets with the proposed and approved street names.
- (17) Right-of-Way and Centerlines. Label the Right-of-Way widths and street Centerlines for each street within and adjacent to the proposed area depicted on the subdivision plat. Also, indicate the location and dimensions of any proposed right-of-way dedication.
- (18) Corner Clips. Indicate all existing and proposed Corner Clips and any subsequent dedication.
- (19) Adjacent Properties. Indicate all ownership information of the parcels adjacent to and contiguous with the area for the proposed subdivision plat. In addition, indicate the lot patterns and name of all contiguous subdivisions, and the recorded instrument numbers, record name, and/or deed record by volume and page.
- (20) Dedication of Public Land Uses. If applicable, indicate the boundary lines, dimensions, and descriptions of spaces to be dedicated for Public Land Uses.
- (21) Floodplain. If applicable, show the boundaries of the 100-Year Floodplain and floodway including cross sections with the 100-year surface elevation being labeled at each cross section.



- (22) Wetlands and Waters of the United States (WOTUS). If applicable, indicate the boundary lines of delineated Wetlands and Water of the United States (WOTUS).
- (23) Legal Description. Place the Legal Description -- metes and bounds description and field notes -- on the proposed subdivision plat.
- (b) General Notes. The following General Notes shall be provided on all subdivision plats:
- (1) Subdivider's Statement. Selling a portion of this addition by metes and bounds is unlawful and a violation of the Subdivision Ordinance of the City of Rockwall and Chapter 212, Municipal Regulation of Subdivisions and Property Development, of the Texas Local Government Code, and shall be subject to the City of Rockwall withholding utilities and building permits.
 - (2) Public Improvement Statement. It shall be the policy of the City of Rockwall to withhold issuing buildings permits until all streets, water, sewer and storm drainage systems have been accepted by the City. The approval of a subdivision plat by the City of Rockwall does not constitute any representation, assurance or guarantee that any building within such subdivision plat shall be approved, authorized, or permit issued, nor shall such approval constitute any representation, assurance or guarantee by the City of Rockwall of the adequacy and availability for water and sanitary sewer for personal use and fire protection within such subdivision plat, as required under the Subdivision Ordinance of the City of Rockwall.
 - (3) Drainage and Detention Easements. The property owner shall be responsible for maintaining, repairing, and replacing and shall bear sole liability of all systems within the drainage and detention easements.
 - (4) Fire Lanes. All Fire Lanes will be constructed, maintained, repaired and replaced by the property owner. Fire Lanes shall be constructed in accordance with the approved Civil Engineering Plans for both on-site and off-site Fire Lane improvements.
 - (5) Street Appurtenances. All decorative signage, posts, or lights installed in public right-of-way shall be installed, maintained, repaired, and replaced by the Homeowner's Association (HOA).
- (c) Owner's Certificate of Dedication. An Owner's Certificate of Dedication for all public rights-of-way, easements, parks and open space, and other public uses shall be signed by the property owner and all other parties who have a mortgage or lien interest on the property being platted. These signatures require the acknowledgement of a notary public. All deed restrictions or Covenants, Conditions, and Restrictions (CC&Rs) that are to be filed in conjunction with the subdivision plat shall be shown or filed separately. The Owner's Certificate of Dedication shall be as follows:

**STATE OF TEXAS
COUNTY OF ROCKWALL**

WHEREAS [OWNER'S NAME], BEING THE OWNER OF A TRACT OF land in the County of Rockwall, State of Texas, said tract being described as follows: **[LEGAL DESCRIPTION]**

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

**STATE OF TEXAS
COUNTY OF ROCKWALL**

I (we) the undersigned owner(s) of the land shown on this plat, and designated herein as the **[SUBDIVISION NAME]** subdivision to the City of Rockwall, Texas, and whose name is subscribed hereto, hereby dedicate to the use of the public forever all streets, alleys, parks, water courses, drains, easements and public places thereon shown on the purpose and consideration therein expressed. I (we) further certify that all other parties who have a mortgage or lien interest in the **[SUBDIVISION NAME]** subdivision have been notified and signed this plat. I (we) understand and do hereby reserve the easement strips shown on this plat for the purposes stated and for the mutual use and accommodation of all utilities desiring to use or using same. I (we) also understand the following;

- (1) No buildings shall be constructed or placed upon, over, or across the off-site and on-site utility easements as described herein.
- (2) Any public utility shall have the right to remove and keep removed all or part of any buildings, fences, trees, shrubs, or other growths or improvements which in any way endanger or interfere with construction, maintenance or efficiency of their respective system on any of these easement strips; and any public utility shall at all times have the right of ingress or egress to, from and upon the said easement strips for purpose of construction, reconstruction, inspecting, patrolling, maintaining, and



either adding to or removing all or part of their respective system without the necessity of, at any time, procuring the permission of anyone.

- (3) The City of Rockwall will not be responsible for any claims of any nature resulting from or occasioned by the establishment of grade of streets in the subdivision.
- (4) The developer/property owner and subdivision engineer shall bear total responsibility for storm drain improvements.
- (5) The developer/property owner shall be responsible for the necessary facilities to provide drainage patterns and drainage controls such that properties within the drainage area are not adversely affected by storm drainage from the development.
- (6) No house dwelling unit, or other structure shall be constructed on any lot in this addition by the owner or any other person until the developer and/or owner has complied with all requirements of the Subdivision Regulations of the City of Rockwall regarding improvements with respect to the entire block on the street or streets on which property abuts, including the actual installation of streets with the required base and paving, curb and gutter, water and sewer, drainage structures, storm structures, storm sewers, and alleys, all according to the specifications of the City of Rockwall; or

Until an escrow deposit, sufficient to pay for the cost of such improvements, as determined by the city's engineer and/or city administrator, computed on a private commercial rate basis, has been made with the city secretary, accompanied by an agreement signed by the developer and/or owner, authorizing the city to make such improvements at prevailing private commercial rates, or have the same made by a contractor and pay for the same out of the escrow deposit, should the developer and/or owner fail or refuse to install the required improvements within the time stated in such written agreement, but in no case shall the City be obligated to make such improvements itself. Such deposit may be used by the owner and/or developer as progress payments as the work progresses in making such improvements by making certified requisitions to the city secretary, supported by evidence of work done; or

Until the developer and/or owner files a corporate surety bond with the city secretary in a sum equal to the cost of such improvements for the designated area, guaranteeing the installation thereof within the time stated in the bond, which time shall be fixed by the city council of the City of Rockwall.

I (we) further acknowledge that the dedications and/or exaction's made herein are proportional to the impact of the Subdivision upon the public services required in order that the development will comport with the present and future growth needs of the City; I (we), my (our) successors and assigns hereby waive any claim, damage, or cause of action that I (we) may have as a result of the dedication of exactions made herein.

PROPERTY OWNER SIGNATURE

SIGNATURE OF PARTY WITH MORTGAGE OR LIEN INTEREST **[IF APPLICABLE]**

- (d) Notary Public Signature Block. All signatures on the Owner's Certificate of Dedication shall be required to be acknowledged by a notary public. The Notary Public Signature Block shall be provided as follows:

**STATE OF TEXAS
COUNTY OF ROCKWALL**

Before me, the undersigned authority, on this day personally appeared **[PROPERTY OWNER]**, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purpose and consideration therein stated.

Given upon my hand and seal of office this **[DAY]** day of **[MONTH]**, **[YEAR]**.

NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS

MY COMMISSION EXPIRES

- (e) Surveyor's/Registered Engineer Certificate. A registered engineer or state licensed surveyor shall be required to sign the subdivision plat certifying that the subdivision plat has been prepared by them, in accordance with the City of Rockwall's Subdivision Ordinance, and that all the necessary survey monuments are shown correctly on the subdivision plat. The Surveyor's/Registered Engineer Certificate shall be provided as follows:



NOW, THEREFORE KNOW ALL MEN BY THESE PRESENTS:

THAT I, **[SURVEYOR'S NAME]**, do hereby certify that I prepared this plat from an actual and accurate survey of the land, and that the corner monuments shown thereon were properly placed under my personal supervision.

SURVEYOR **[OR]** REGISTERED ENGINEER

REGISTERED PUBLIC SURVEYOR NO. **[OR]**
PROFESSIONAL ENGINEER NO.

- (f) Profiles and Cross Sections for Floodplains. Profiles and cross sections of all floodplains shall be shown on the subdivision plat at a minimum distance of 300-feet in order to determine that the subdivision plat will function in accordance with the City's *Standards of Design and Construction*. These profiles and cross sections shall contain the elevations and source of data for the information provided.

(B) GENERAL PLATTING PROCEDURES.

- (1) Action on a Subdivision Plat Application. All *Development Applications* for the subdivision plats identified in this *Chapter* shall be subject to the following:
- (a) Official Filing Date. The time period established by Section 212.009, Approval Procedure: Initial Approval, of the Texas Local Government Code for acting upon an application for a subdivision plat shall commence on the official filing date for the complete application pursuant to the requirements of this *Chapter*. The official filing date shall be defined as the date the application is deemed to be complete by the Director of the Planning and Zoning Department and City Engineer in accordance with the manner prescribed in Section 38-6(2)(C). The Planning & Zoning Commission shall act on the plat within 30-days after official filing date. The subdivision plat shall be considered approved if it is not disapproved by the Planning & Zoning Commission within such 30-day period. Once the Planning & Zoning Commission considers such subdivision plat, the City Council shall act on the plat within 30-days after Planning & Zoning Commission consideration. The subdivision plat shall be considered approved if it is not disapproved by the City Council within such thirty (30) day period.
- (b) Extension Request. An applicant may submit a written request to extend the time period established by Section 212.009, Approval Procedure: Initial Approval, of the Texas Local Government Code for a one (1) time extension not to exceed a period of 30-days (i.e. the Extension Request). An Extension Request must be received by the City of Rockwall two (2) business days prior to the Planning and Zoning Commission action date. Failure to submit an Extension Request by this date shall not be considered properly submitted, and action shall be taken on the subdivision plat application at the regularly scheduled meeting. Acceptance of an Extension Request shall not be deemed in anyway a waiver of any of the requirements contained within this *Chapter*.
- STATE LAW REFERENCE: AUTHORITY TO ADOPT SUBDIVISION REGULATION IS GRANTED BY V. T. C. A., LOCAL GOVERNMENT CODE § 212.009.

(C) GENERAL PLATTING PROCESS.

- (1) General Stages of Subdivision Plat Approval and Development Process Inside the Corporate Limits of the City of Rockwall. Unless otherwise stated in this *Chapter* for a specific type of subdivision plat, the following is the general stages of subdivision plat approval and development process in the City of Rockwall are as follows:
- (a) The general stages of subdivision platting approval and the development process for Commercial property in the City of Rockwall is as follows:
- (1) Zoning. See Section 02, Zoning, of Article 11, Development Applications and Review Procedures, of the Unified Development Code.
 - (2) Preliminary Plat. See Section 38-7(3).
 - (3) Site Plan. See Section 03, Site Plans, of Article 11, Development Applications and Review Procedures, of the Unified Development Code.
 - (4) Civil Engineering Plans. See Section 38-8(2).
 - (5) Final Plat. See Section 38-7(4).
- (b) The general stages of subdivision platting approval and the development process for a Residential Subdivision in the City of Rockwall is as follows:



- (1) Zoning. See [Section 02, Zoning, of Article 11, Development Applications and Review Procedures, of the Unified Development Code](#).
- (2) Master Plat. See [Section 38-7\(2\)](#).
- (3) Preliminary Plat. See [Section 38-7\(3\)](#).
- (4) Civil Engineering Plans. See [Section 38-8](#).
- (5) Site Plan. See [Section 03, Site Plans, of Article 11, Development Applications and Review Procedures, of the Unified Development Code](#).
- (6) Final Plat. See [Section 38-7\(4\)](#).

(2) MASTER PLATS.

- (A) Purpose. The purpose of a Master Plat is to delineate the timing and sequence of each phase of a subdivision or residential development that is proposed to consist of multiple phases within a larger parcel or tract of land, and to ensure the availability and capacity of the public improvements necessary to serve the proposed development.
- (B) Applicability. A Master Plat shall be required for any division of land within the corporate boundaries of the City of Rockwall where a proposed residential development is to occur in multiple phases. A Master Plat is neither required nor permitted within the City's Extraterritorial Jurisdiction (ETJ), unless required through a Development Agreement pursuant to [Section 212.172 of the Texas Local Government Code](#).
- (C) Exceptions. A Master Plat shall not be required when a proposed subdivision or residential development consists of only one (1) phase.
- (D) Required Information. A Master Plat shall conform to -- or be accompanied by -- the following information:

- (1) General Master Plat Information. In addition to the General Subdivision Plat Information contained in [Section 38-7\(1\)\(A\)\(1\)\(a\)](#), all Master Plats shall show the following information:
 - (a) Subdivision. A Master Plat shall provide a schematic layout of the entire tract to be subdivided, any remainder tracts and its relationship to adjacent property and existing developments.
 - (b) Title Block. Provide the following Title Block in the lower right-hand corner of the subdivision plat:

MASTER PLAT
[SUBDIVISION NAME]
 BEING
[TOTAL RESIDENTIAL LOTS] Residential Lots and **[TOTAL OPEN SPACE LOTS]** Open Space Lots
[TOTAL ACREAGE]-Acres or **[TOTAL SQUARE FEET]** SF
 SITUATED IN THE
[SURVEY], [ABSTRACT NO.]
 CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

- (c) Dwelling Units/Population Density. Indicate the proposed number of Dwelling Units and the proposed Population Density (i.e. the total number of Dwelling Units/Total Acreage = Population Density).
- (d) Zoning and Land Use Information. Indicate the Zoning classifications, and the existing and proposed Land Uses.
- (e) Parks and Open Space. Identify the dimensions, names, and description of all existing and proposed public and private parks and open spaces. Also, indicate the dimensions, names, and descriptions of all schools and other public use and indicate the phase of completion.
- (2) Parks and Open Space Plan. A Master Plat shall be accompanied by a Parks and Open Space Plan that shows all proposed trails, parks and open space and any proposed amenities for these private and public uses of land and indicate the phase of completion.
- (3) Phasing Plan. A Master Plat shall delineate the boundary of each phase for a proposed subdivision, the order of the development of each phase, and a schedule for the development of each phase.
- (4) Signature Block. The following signature block shall be placed on all Master Plat:

APPROVED: I hereby certify that the above and forgoing Master Plat was reviewed by the Planning and Zoning Commission and approved by the City Council of the City of Rockwall, Texas on the **[DAY]** day of **[MONTH]**, **[YEAR]**.



 MAYOR OF THE CITY OF ROCKWALL

 PLANNING AND ZONING COMMISSION CHAIRMAN

(E) Approval Process. Master Plats shall be accepted and processed in accordance with the procedures outline in [Section 38-6\(2\)](#) & [Section 38-7\(1\)](#) above, and be subject to the following approval process:

- (1) Planning and Zoning Commission. The Planning and Zoning Commission shall review the Master Plat, the findings and recommendations from all Development Services Departments, and any other applicable information required to be reviewed prior to acting on the proposed plat. From this information, the Planning and Zoning Commission shall determine if the Master Plat conforms to the criteria for approval outlined in [Section 38-7\(2\)\(F\)](#), and provide a recommendation to the City Council to either approve the plat as submitted, approve the plat with conditions (*i.e. the Master Plat shall be considered to be approved once such conditions are satisfied -- these conditions may include, but are not limited to, matters involving the City's zoning regulations, the availability and capacity of existing and proposed infrastructure, and/or the timing and phasing of the development*), or deny the plat as submitted. If the Planning and Zoning Commission chooses to make a recommendation to deny a Master Plat, the Planning and Zoning Commissioner making the motion for denial shall summarize the findings supporting the motion to deny.
- (2) City Council. Upon receiving a recommendation from the Planning and Zoning Commission, the City Council shall review the Master Plat, the findings and recommendations from all Development Services Departments, the recommendations of the Planning and Zoning Commission, and any other applicable information required to be reviewed prior to acting on the proposed plat. From this information, the City Council shall determine if the Master Plat conforms to the criteria for approval outlined in [Section 38-7\(2\)\(F\)](#), and either approve the plat as submitted, approve the plat with conditions (*i.e. the Master Plat shall be considered to be approved once such conditions are satisfied -- these conditions may include, but are not limited to, matters involving the City's zoning regulations, the availability and capacity of existing and proposed infrastructure, and/or the timing and phasing of the development*), or deny the subdivision plat as submitted. If the City Council chooses to deny a Master Plat, the City Council member making the motion for denial shall summarize the findings supporting the motion to deny.

NOTE: Conditions of approval for a Master Plat should be deemed conditions necessary to assure the compliance with the criteria for approval outlined in [Section 38-7\(2\)\(F\)](#). In addition, a Master Plat may be approved with conditions excluding certain land area should it be deemed necessary to conform with the criteria for approval outlined in [Section 38-7\(2\)\(F\)](#).

(F) Criteria for Approval. In reviewing a Master Plat, the following criteria shall be used by the Planning and Zoning Commission and City Council to determine if the Master Plat should be approved, approved with conditions (*i.e. the Master Plat shall be considered to be approved once such conditions are satisfied*), or denied:

- (1) Phasing Plan. If the location, size, and sequencing of the proposed phases as depicted on the Master Plat assures orderly and efficient land development.
- (2) Development Schedule. If the proposed development schedule (*i.e. the sequence and timing of the proposed subdivision or residential development*) for the Master Plat is feasible, and ensures that the proposed development will progress to completion within the time limits proposed.
- (3) Planned Development District Ordinance. If applicable, the conformance of the Master Plat to the Planned Development District ordinance.
- (4) Subdivision Requirements. If the Master Plat is in conformance with all applicable requirements of this *Chapter*.
- (5) Unified Development Code (UDC). If the Master Plat is in conformance with all applicable requirements of the Unified Development Code (UDC).
- (6) Standards of Design and Construction. If the Master Plat is in conformance with all of the requirements of the Engineering Department's *Standards of Design and Construction Manual* as stipulated by [Section 38-8](#).
- (7) Comprehensive Plan. If the Master Plat is in conformance with the Master Trail Plan, Master Thoroughfare Plan, Master Water Plan, Master Wastewater Plan, and the goals and policies contained within the City's Comprehensive Plan.
- (8) Adequate Public Utilities. If all phases depicted on the Master Plat will be adequately served by public utilities, facilities, and services (*i.e. water facilities, wastewater facilities, roadway and pedestrian facilities, drainage facilities and park facilities*) at the time of Final Plat in accordance with [Section 38-9\(1\)\(C\)](#).



- (9) Developer's Agreement. If the Master Plat is in conformance with any existing Developer's Agreement affecting the area depicted in the subdivision plat or if the applicant or property owner is proposing a Developer's Agreement pursuant to [Section 212.172, Development Agreement, of the Texas Local Government Code](#).
- (G) Recordation. Upon receiving approval of a Master Plat from the City Council, the applicant or property owner shall submit the required number of signed and executed copies of the subdivision plat (*on the media specified by the Director of Planning and Zoning*) and any other required information necessary to file the Master Plat with the City of Rockwall. After receiving the Master Plat and all necessary information, the Planning and Zoning Department shall procure all the required City of Rockwall signatures, and retain a copy of the Master Plat in the City's official records. After this expiration, the applicant or property owner shall be required to submit a new Master Plat, which will be subject to all zoning and subdivision standards in place at the time of the new application.
- (H) Effect of Approval. The approval of a Master Plat shall:
- (1) Establish the sequence and timing of each phase of a subdivision or proposed residential development.
 - (2) Authorize the applicant to submit a Preliminary Plat (*unless the Director of Planning and Zoning allows the Master Plat and Preliminary Plat to be submitted concurrently*).
- (I) Expiration. Approval of a Master Plat from the City Council shall establish the development schedule (*i.e. the sequence and timing of the proposed subdivision or residential development*). A Preliminary Plat shall be submitted by the applicant in accordance with the development schedule for each phase as depicted on the Master Plat. Failure to submit a Preliminary Plat in accordance with the development schedule shall result in the expiration of the Master Plat for that phase and all subsequent phases of the subdivision. Expiration of the Preliminary Plat in accordance with [Section 38-7\(3\)\(I\)](#) for any phase depicted on the Master Plat shall result in the expiration of the Master Plat for all phases which a Preliminary Plat has not been approved.
- (J) Extension Procedures. The expiration date for any phase depicted on a Master Plat may be extended by the Director of Planning and Zoning for a period not to exceed one (1) year, provided that a request for the extension is made in writing by the applicant at least 30-days prior to the date the Master Plat lapses. Any subsequent requests for extension shall require the approval of the Planning and Zoning Commission pending a recommendation from the Director of Planning and Zoning, and should not exceed a period of two (2) years. Requests for a subsequent extension shall be submitted in writing to the Director of Planning and Zoning at least 30-days prior to the date the Master Plat lapses. The Planning and Zoning Commission should consider: [1] the reason for the requested extension, [2] the ability of the applicant to comply with the conditions approved with the original Master Plat approval, [3] whether the extension is likely to result in the timely completion of the project, and [4] the extent to which newly adopted regulations should be applied to the original Master Plat approval. The Planning and Zoning Commission may adopt conditions of approval for an extension request when it is determined the conditions are needed to assure that the land will be developed in a timely manner and will serve the public interest.

(3) PRELIMINARY PLATS.

- (A) Purpose. The purpose of a Preliminary Plat is to ensure that the general layout and design of a subdivision of land and/or the development of land is consistent with the requirements of this *Chapter*, the Engineering Department's *Standards of Design and Construction Manual*, the Comprehensive Plan, the Unified Development Code (UDC), and any other applicable requirements to allow the plat to be recorded.
- (B) Applicability. A Preliminary Plat shall be required for all subdivisions or development of land within the corporate boundaries of the City of Rockwall. A Preliminary Plat shall also be required for all subdivisions or developments of land within the City's Extraterritorial Jurisdiction (ETJ).
- (C) Exceptions. A Preliminary Plat shall not be required when a Minor Plat is able to be submitted [see [Section 38-7\(6\)](#)]. The Director of the Planning and Zoning Department may unilaterally waive the requirement for a Preliminary Plat where it is deemed that a Final Plat will meet the intent of this *Chapter*.
- (D) Required Information. In addition to the applicable requirements outlined in [Section 38-7\(1\)\(A\)](#) above, a Preliminary Plat shall conform to -- or be accompanied by -- the following information:
- (1) Additional Plans. A Preliminary Plat shall be accompanied by a Preliminary Drainage Plan, Preliminary Utility Plan, and any other plans deemed necessary for review by the Director of the Planning and Zoning Department and City Engineer. These additional plans shall be considered to be documents necessary to review the Preliminary Plat and shall not be acted upon or considered filed as part of the Preliminary Plat. A final Drainage Plan and Utility Plan -- and any other plans necessary for the proposed development -- shall be submitted for approval with the Civil Engineering Plans. Failure to submit these plans with the Preliminary Plat, shall be grounds for the denial or non-acceptance of a development application in accordance with the requirements of [Section 38-6\(2\)\(D\)](#).



(2) General Preliminary Plat Information. All Preliminary Plats shall show the following information:

(a) Title Block. Provide the appropriate Title Block in the lower right-hand corner of the subdivision plat.

(1) Residential Preliminary Plats. The Title Block for Residential Preliminary Plats shall be as follows:

PRELIMINARY PLAT

[LOT/BLOCK DESIGNATION IF APPLICABLE]

[SUBDIVISION NAME]

BEING

[TOTAL RESIDENTIAL LOTS] Residential Lots and **[TOTAL OPEN SPACE LOTS]** Open Space Lots

[TOTAL ACREAGE]-Acres or **[TOTAL SQUARE FEET]** SF

SITUATED IN THE

[SURVEY], [ABSTRACT NO.]

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

(2) Non-Residential Preliminary Plats. The Title Block for Non-Residential Preliminary Plats shall be as follows:

PRELIMINARY PLAT

[LOT/BLOCK DESIGNATION IF APPLICABLE]

[SUBDIVISION NAME]

BEING

[TOTAL LOTS] Lots

[TOTAL ACREAGE]-Acres or **[TOTAL SQUARE FEET]** SF

SITUATED IN THE

[SURVEY], [ABSTRACT NO.]

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

(b) Dwelling Units/Population Density. Indicate the proposed number of Dwelling Units and the proposed Population Density (i.e. the total number of Dwelling Units/Total Acreage = Population Density).

(c) Zoning and Land Use Information. Indicate the Zoning classifications, and the existing and proposed Land Uses.

(d) Parks and Open Space. Identify the dimensions, names, and description of all existing and proposed public and private Parks and Open Spaces. Also, indicate the dimensions, names, and descriptions of all schools and other public uses.

(e) Utilities. Indicate the locations of all existing and proposed Utilities. Include the size and type of each utility.

(f) Median Openings. Locate and identify existing and/or proposed Median Openings and left and/or right turn channelization.

(g) Topographical Contours. Indicate Topographical information and physical features to include Contours at two (2) foot intervals.

(h) Wooded Areas. Indicate the boundaries of all Wooded Areas or dense tree clusters.

(i) Existing Man-Made Features. Indicate all significant Existing Man-Made Features such as railroads, roads, buildings, utilities or other physical structures as shown on the USGS topographic maps, utility company records and City records when such features affect the plans.

(j) Proposed Improvements. Indicate how the Proposed Improvements would relate to those in the surrounding area.

(k) Water Sources. Indicate Water Sources inside the City Limits or in the Extraterritorial Jurisdiction (ETJ).

(l) Sewage Disposal. Indicate Sewage Disposal method inside the City Limits or in the Extraterritorial Jurisdiction (ETJ).

(3) Signature Block. The following signature block shall be placed on all Preliminary Plats:

APPROVED: I hereby certify that the above and forgoing Preliminary Plat was reviewed by the Planning and Zoning Commission and approved by the City Council of the City of Rockwall, Texas for the preparation of a Final Plat on the **[DAY]** day of **[MONTH], [YEAR]**.



- (E) Approval Process, Preliminary Plats shall be accepted and processed in accordance with the procedures outline in [Section 38-6\(2\)](#) & [Section 38-7\(1\)](#) above, and be subject to the following approval process:
- (1) Planning and Zoning Commission. The Planning and Zoning Commission shall review the Preliminary Plat, the findings and recommendations from all Development Services Departments, the recommendations from the Parks and Recreation Board (*if applicable*), and any other applicable information required to be reviewed prior to acting on the proposed plat. From this information, the Planning and Zoning Commission shall determine if the Preliminary Plat conforms to the regulations and requirements outlined in this *Chapter* and provide a recommendation to the City Council to either approve the plat as submitted, approve the plat with conditions (*i.e. the Preliminary Plat shall be considered to be approved once such conditions are satisfied -- these conditions may include, but are not limited to, matters involving the City's zoning regulations, the availability and capacity of existing and proposed infrastructure, and if applicable the phasing of the development*), or deny the subdivision plat as submitted. If the Planning and Zoning Commission chooses to make a recommendation to deny a Preliminary Plat, the Planning and Zoning Commissioner making the motion for denial shall summarize the findings supporting the motion to deny.
 - (2) Parks and Recreation Board. If required, the Parks and Recreation Board shall review the Preliminary Plat, the findings and recommendations from the Development Services Departments, and any other applicable information required to be reviewed prior to making recommendations concerning the proposed plat. From this information, the Parks and Recreation Board shall provide a recommendation to the City Council and Planning and Zoning Commission regarding park improvements and/or park fees associated with the Preliminary Plat.
 - (3) City Council. Upon receiving a recommendation from the Planning and Zoning Commission, the City Council shall review the Preliminary Plat, the findings and recommendations from all Development Services Departments, the recommendations of the Planning and Zoning Commission and Parks and Recreation Board (*if applicable*), and any other applicable information required to be reviewed prior to acting on the proposed plat. From this information, the City Council shall determine if the Preliminary Plat conforms to the regulations and requirements outlined in this *Chapter* and either approve the plat as submitted, approve the plat with conditions (*i.e. the Preliminary Plat shall be considered to be approved once such conditions are satisfied -- these conditions may include, but are not limited to, matters involving the City's zoning regulations, the availability and capacity of existing and proposed infrastructure, and if applicable the phasing of the development*), or deny the subdivision plat as submitted. If the City Council chooses to deny a Preliminary Plat, the City Council member making the motion for denial shall summarize the findings supporting the motion to deny.
- (F) Criteria for Approval. In reviewing a Preliminary Plat, the following criteria shall be used by the Planning and Zoning Commission and City Council to determine if the Preliminary Plat should be approved, approved with conditions (*i.e. the Preliminary Plat shall be considered to be approved once such conditions are satisfied*), or denied:
- (1) Master Plat. If a Master Plat was approved prior to the Preliminary Plat, the Preliminary Plat shall conform to the approved Master Plat, the established development schedule (*i.e. the sequence and timing of the proposed subdivision or residential development*), and all conditions of approval imposed at the time of approval of the Master Plat.
 - (2) Planned Development District Ordinance. If applicable, the conformance of the Preliminary Plat to the Planned Development District ordinance.
 - (3) Subdivision Requirements. If the Preliminary Plat is in conformance with all applicable requirements of this *Chapter*.
 - (4) Unified Development Code. If the Preliminary Plat is in conformance with all applicable requirements of the Unified Development Code (UDC).
 - (5) Standards of Design and Construction. If the Preliminary Plat is in conformance with all of the requirements of the *Standards of Design and Construction Manual* as stipulated by [Section 38-8](#).
 - (6) Comprehensive Plan. If the Preliminary Plat is in conformance with the Master Trail Plan, Master Thoroughfare Plan, Master Water Plan, Master Wastewater Plan, and the goals and policies contained within the City's Comprehensive Plan.
 - (7) Adequate Public Utilities. If all phases depicted on the Preliminary Plat will be adequately served by public utilities, facilities, and services (*i.e. water facilities, wastewater facilities, roadway and pedestrian facilities, drainage facilities and park facilities*) at the time of Preliminary Plat in accordance with [Section 38-9\(C\)](#).



- (8) Developer's Agreement. If the Preliminary Plat is in conformance with any existing Developer's Agreement affecting the area depicted in the subdivision plat or if the applicant or property owner is proposing a Developer's Agreement pursuant to [Section 212.172, Development Agreement, of the Texas Local Government Code](#).
- (9) Interlocal Agreements. If the Preliminary Plat is situated within the City's Extraterritorial Jurisdiction (ETJ), the Preliminary Plat shall conform to the requirements and subdivision regulations required by the Interlocal Cooperation Agreement for Subdivision Regulations agreed upon by the City and County under [Chapter 242, Authority of Municipality and County to Regulate Subdivisions In and Outside Municipality's Extraterritorial Jurisdiction, of the Texas Local Government Code](#).
- (G) Recordation. Upon receiving approval of a Preliminary Plat from the City Council, the applicant or property owner shall submit the required number of signed and executed copies of the subdivision plat (*on the media specified by the Director of Planning and Zoning*) and any other required information necessary to file the Preliminary Plat with the City of Rockwall. After receiving the Preliminary Plat and all necessary information, the Planning and Zoning Department shall procure all the required City of Rockwall signatures, and retain a copy of the Preliminary Plat in the City's official records.
- (H) Effect of Approval. The approval of a Preliminary Plat shall:
- (1) Authorize the applicant to submit Civil Engineering Plans in accordance with [Section 38-8](#) (unless previously permitted to submit for civil engineering plans by the City Engineer) and/or a Final Plat in accordance with [Section 38-7\(4\)](#) if Civil Engineering Plans are not required.
 - (2) Approval of a Preliminary Plat is valid until a final plat is approved by the City Council or until a new Preliminary Plat is filed, whichever is earlier.
- NOTE: The approval of a Preliminary Plat shall only be deemed as general approval of the layout of a subdivision or development, and does not constitute approval or acceptance of Civil Engineering Plans or a Final Plat.*
- (I) Expiration. Upon receiving approval of a Preliminary Plat from the City Council, a Preliminary Plat shall expire if:
- (1) Recordation Time Period. The applicant or property owner fails to submit the information required for recordation as outlined in [Section 38-7\(3\)\(G\)](#) within 180-days from the date of approval. If the applicant or property owner fails to provide the required information within the recordation time period, the approval of the Preliminary Plat -- and any previously approved Master Plat -- shall lapse. After this expiration, the applicant or property owner shall be required to submit a new Master Plat and/or Preliminary Plat, which will be subject to all zoning and subdivision standards in place at the time of the new application.
 - (2) Civil Engineering Plans and Final Plat. The applicant or property owner fails to submit and an application for Civil Engineering Plans and/or Final Plat within one (1) year of the approval date of the Preliminary Plat. After this expiration, the applicant or property owner shall be required to submit a new Master Plat and/or Preliminary Plat, which will be subject to all zoning and subdivision standards in place at the time of the new application.
 - (3) Relationship to Civil Engineering Plans. The applicant or property owner allows the Civil Engineering Plans to lapse or expire more than one (1) year of the approval date of the Preliminary Plat. After this expiration, the applicant or property owner shall be required to submit a new Master Plat and/or Preliminary Plat, which will be subject to all zoning and subdivision standards in place at the time of the new application.
 - (4) Relationship to Final Plat. The applicant or property owner submits an application for Final Plat within the one (1) year time period, but the application is not acted upon by the City Council within the one (1) year time period or filed with Rockwall County in said time period. After this expiration, the applicant or property owner shall be required to submit a new Master Plat and/or Preliminary Plat, which will be subject to all zoning and subdivision standards in place at the time of the new application.
- (J) Extension Procedures. A Preliminary Plat may be extended under the following circumstances:
- (1) Extension to the Recordation Time Period. An applicant or property owner that has a Preliminary Plat in need of an extension to the 180-day timeline outlined in [Section 38-7\(3\)\(I\)\(1\)](#), may petition the Planning and Zoning Commission for an extension of the recordation time period for the Preliminary Plat. All request to extend the recordation time period for a Preliminary Plat shall be submitted in writing to the Director of Planning and Zoning 30-days prior to the expiration date. In determining to approve or deny a request for an extension of a recordation time period for the Preliminary Plat, the Planning and Zoning Commission shall consider: [1] the reason or reasons the applicant or property owner was unable to adhere to the 180-day expiration timeline, [2] the ability of the property owner to comply with any conditions attached to the original approval, [3] the extent to which the applicant or property owner agrees to abide by the adopted subdivision regulations, and [4] any changed conditions in the surrounding area which would make an extension undesirable. In



approving a request for an extension of the recordation time period for a Preliminary Plat, the Planning and Zoning Commission shall not extend the recordation time period to more than one (1) year from the date the Preliminary Plat was originally approved by the City Council. In granting an extension, the Planning and Zoning Commission may impose conditions necessary to ensure that the Preliminary Plat conforms to the City's current subdivision standards.

(2) Extension Due to Expiration Time Period. An applicant or property owner that has a Preliminary Plat in need of an extension to the timelines outlined in Section 38-7(3)(I)(2) - Section 38-7(3)(I)(4), may petition the Planning and Zoning Commission for an extension of the approval of the Preliminary Plat. All request to extend a Preliminary Plat shall be submitted in writing to the Director of Planning and Zoning 30-days prior to the expiration date. In determining to approve or deny a request for the extension of a Preliminary Plat, the Planning and Zoning Commission shall consider: [1] the reason or reasons the applicant or property owner was unable to adhere to the requirements Section 38-7(3)(I), [2] the ability of the property owner to comply with any conditions attached to the original approval, [3] the extent to which the applicant or property owner agrees to abide by the adopted subdivision regulations, and [4] any changed conditions in the surrounding area which would make an extension undesirable. In approving a request for an extension of a Preliminary Plat, the Planning and Zoning Commission shall not extend the time period that a Preliminary Plat is valid for more than two (2) years from the date of the original approval. In granting an extension, the Planning and Zoning Commission may impose conditions necessary to ensure that the Preliminary Plat conforms to the City's current subdivision standards.

(K) Reinstatement Procedures. An applicant or property owner that has had a Preliminary Plat expire in accordance with the terms of Section 38-7(3)(J), may petition the Planning and Zoning Commission to extend or reinstate the approval of the Preliminary Plat at their discretion. The Planning and Zoning Commission shall only reinstate a Preliminary Plat when it is determined that the reinstatement would be in the public interest to avoid an unnecessary review of a new Development Application, and/or when the development pattern proposed by the subdivision plat would not be to the detriment of any nearby area or the general development of the City of Rockwall. In granting a reinstatement, the Planning and Zoning Commission may impose conditions necessary to ensure that the Preliminary Plat conforms to the City's current subdivision standards.

(L) Amendments to a Preliminary Plat. Amendments to a Preliminary Plat shall be classified as Major or Minor Amendments. The Director of the Planning and Zoning Department or his/her designee shall make a determination of whether a proposed amendment is deemed Major or Minor based on the submitted amendment. Major or Minor Amendments shall be subject to the following processes:

(1) Minor Amendments. Minor Amendments to the design of the subdivision for an approved Preliminary Plat may be incorporated in a Final Plat without the necessity of filing a development application for a new Preliminary Plat. Minor Amendments may only include minor adjustments to the alignment of streets, alleyways, block lengths, paving details, or lot lines -- *that do not result in the creation of additional lots or create non-conforming lots* --, provided that such amendments are consistent with the approved zoning and Preliminary Plat.

(2) Major Amendments. All amendments that cannot be classified as Minor Amendments, shall be subject to the approval of a new Preliminary Plat and be deemed Major Amendments. Requests that fall under a Major Amendment will require a new development application -- *including application fees* -- before the approval of Civil Engineering Plans and/or a Final Plat.

(4) FINAL PLATS.

(A) Purpose. The purpose of a Final Plat is to ensure that a proposed subdivision of land and/or the development of land is consistent with the approved Preliminary Plat (if applicable), the requirements of this Chapter -- *specifically relating to the provision of adequate public facilities* --, the Engineering Standards of Design and Construction Manual, the requirements of the Unified Development Code (UDC), and any other applicable requirements to allow the subdivision plat to be recorded. A Final Plat is required for the creation of a legal lot of record.

(B) Applicability. A Final Plat shall be required for all subdivisions of land in the corporate boundaries of the City and in the City's Extraterritorial Jurisdiction (ETJ) where a Replat, Minor Plat, or Conveyance Plat would not be appropriate instrument to facilitate the division of land and/or development of a property.

(C) Exceptions. A Final Plat shall not be required when a Minor Plat is able to be submitted [see Section 38-7(6)].

(D) Required Information. In addition to the applicable requirements outlined in Section 38-7(1)(A) above, a Final Plat shall conform to -- or be accompanied by -- the following information:

(1) General Final Plat Information. All Final Plats shall show the following information:

(a) Title Block. Provide the appropriate Title Block in the lower right-hand corner of the subdivision plat.

(1) Residential Final Plats. The Title Block for Residential Final Plats shall be as follows:



FINAL PLAT
[LOT/BLOCK DESIGNATION IF APPLICABLE]
[SUBDIVISION NAME]
 BEING
[TOTAL RESIDENTIAL LOTS] RESIDENTIAL LOTS AND **[TOTAL OPEN SPACE LOTS]** OPEN SPACE LOTS
[TOTAL ACREAGE]-ACRES OR **[TOTAL SQUARE FEET]** SF
 SITUATED IN THE
[SURVEY], [ABSTRACT NO.]
 CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

- (2) *Non-Residential Final Plats.* The Title Block for *Non-Residential Final Plats* shall be as follows:

FINAL PLAT
[LOT/BLOCK DESIGNATION IF APPLICABLE]
[SUBDIVISION NAME]
 BEING
[TOTAL LOTS] LOTS
[TOTAL ACREAGE]-ACRES OR **[TOTAL SQUARE FEET]** SF
 SITUATED IN THE
[SURVEY], [ABSTRACT NO.]
 CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

- (2) *Seal/Signature.* All *Final Plats* are required to have the seal and signature of the surveyor or engineer responsible for surveying the area depicted in the *Final Plat* and the preparation of the *Final Plat*.
- (3) *Signature Block.* The following signature block shall be placed on all *Final Plats*:

APPROVED: I hereby certify that the above and forgoing subdivision plat -- *being an addition to the City of Rockwall, Texas* -- was approved by the City Council of the City of Rockwall, Texas on the **[DAY]** day of **[MONTH], [YEAR]**.

 MAYOR OF THE CITY OF ROCKWALL

 PLANNING AND ZONING COMMISSION CHAIRMAN

 CITY SECRETARY

 CITY ENGINEER

- (E) *Approval Process.* *Final Plats* shall be accepted and processed in accordance with the procedures outlined in [Section 38-6\(2\)](#) & [Section 38-7\(1\)](#) above, and be subject to the following approval process:
- (1) *Planning and Zoning Commission.* The Planning and Zoning Commission shall review the *Final Plat*, the findings and recommendations from all *Development Services Departments*, the recommendations from the Parks and Recreation Board (*if applicable*), and any other applicable information required to be reviewed prior to acting on the proposed plat. From this information, the Planning and Zoning Commission shall determine if the *Final Plat* conforms to the regulations and requirements outlined in this *Chapter* and provide a recommendation to the City Council to either approve the plat as submitted, approve the plat with conditions (*i.e. the Final Plat shall be considered to be approved once such conditions are satisfied*), or deny the subdivision plat as submitted. If the Planning and Zoning Commission chooses to make a recommendation to deny a *Final Plat*, the Commissioner making the motion for denial shall summarize the findings supporting the motion to deny.
- (2) *Parks and Recreation Board.* If required, the Parks and Recreation Board shall review the *Final Plat*, the findings and recommendations from the *Development Services Departments*, and any other applicable information required to be reviewed prior to making recommendations concerning the proposed plat. From this information, the Parks and Recreation Board shall provide a recommendation to the City Council and Planning and Zoning Commission regarding park improvements and/or park fees associated with the *Final Plat*.
- (3) *City Council.* Upon receiving a recommendation from the Planning and Zoning Commission, the City Council shall review the *Final Plat*, the findings and recommendations from all *Development Services Departments*, the recommendations of the Planning and Zoning Commission and Parks and Recreation Board (*if applicable*), and any other applicable information required to be reviewed prior to acting



on the proposed plat. From this information, the City Council shall determine if the *Final Plat* conforms to the regulations and requirements outlined in this *Chapter* and either approve the plat as submitted, approve the plat with conditions (*i.e. the Final Plat shall be considered to be approved once such conditions are satisfied*), or deny the subdivision plat as submitted. If the City Council chooses to deny a *Final Plat*, the City Council member making the motion for denial shall summarize the findings supporting the motion to deny.

- (F) *Criteria for Approval.* In reviewing a *Final Plat*, the following criteria shall be used by the Planning and Zoning Commission and City Council to determine if the *Final Plat* should be approved, approved with conditions (*i.e. the Final Plat shall be considered to be approved once such conditions are satisfied*), or denied:
- (1) *Preliminary Plat.* If a *Preliminary Plat* was approved prior to the *Final Plat*, the *Final Plat* shall conform to the approved *Preliminary Plat* and all conditions of approval imposed at the time of approval of the *Preliminary Plat*.
 - (2) *Master Plat.* If a *Master Plat* was approved prior to the *Final Plat*, the *Final Plat* shall conform to the approved *Master Plat* and all conditions of approval imposed at the time of approval of the *Master Plat*.
 - (3) *Subdivision Requirements.* If the *Final Plat* is in conformance with all applicable requirements of this *Chapter*.
 - (4) *Unified Development Code.* If the *Final Plat* is in conformance with all applicable requirements of the Unified Development Code (UDC).
 - (5) *Standards of Design and Construction.* If the *Final Plat* is in conformance with all of the requirements of the *Standards of Design and Construction Manual* as stipulated by [Section 38-8](#).
 - (6) *Adequate Public Utilities.* If all areas depicted on the *Final Plat* will be adequately served by public utilities, facilities, and services (*i.e. water facilities, wastewater facilities, roadway and pedestrian facilities, drainage facilities and park facilities*).
 - (7) *Developer's Agreement.* If the *Final Plat* is in conformance with any existing *Developer's Agreement* affecting the area depicted in the subdivision plat or if the applicant or property owner is proposing a *Developer's Agreement* pursuant to [Section 212.172, Development Agreement, of the Texas Local Government Code](#).
 - (8) *Interlocal Agreements.* If the *Final Plat* is situated within the City's Extraterritorial Jurisdiction (ETJ), the *Final Plat* shall conform to the requirements and subdivision regulations required by the *Interlocal Cooperation Agreement for Subdivision Regulations* agreed upon by the City and County under [Chapter 242, Authority of Municipality and County to Regulate Subdivisions In and Outside Municipality's Extraterritorial Jurisdiction, of the Texas Local Government Code](#).
- (G) *Recordation.* Upon receiving approval of a *Final Plat* from the City Council, the applicant or property owner shall submit the required number of signed and executed copies of the subdivision plat (*on the media specified by the Director of Planning and Zoning*) and any other required information necessary to file the *Final Plat* with the applicable County. After receiving the *Final Plat* and all necessary information, the Planning and Zoning Department shall procure all the required City of Rockwall signatures, and file the *Final Plat* with Rockwall County.
- (H) *Effect of Approval.* The approval of a *Final Plat* shall:
- (1) Supersede any prior approval of a *Preliminary Plat* for the same area as the *Final Plat*.
 - (2) Authorize the applicant to submit for a building permit (*unless previously permitted to submit for a building permit by the Director of Planning and Zoning*) or seek final approval of a construction project.
- (I) *Expiration.* Upon receiving approval of a *Final Plat* from the City Council, the applicant or property owner shall have 180-days from the date of approval to submit the information required for recordation as outlined in [Section 38-7\(4\)\(G\)](#). If the applicant or property owner fails to provide the required information within the recordation time period, the approval of the *Final Plat* -- and any previously approved *Preliminary Plat* or *Master Plat* -- shall lapse. After this expiration, the applicant or property owner shall be required to submit a new *Preliminary Plat*, *Master Plat*, and/or *Final Plat*, which will be subject to all zoning and subdivision standards in place at the time of the new application.
- (J) *Extension Procedures.* An applicant or property owner that has a *Final Plat* in need of an extension to the 180-day timeline outlined in [Section 38-7\(4\)\(I\)](#), may -- 30 days prior to the lapse of approval -- submit in writing a petition to the Director of the Planning and Zoning Department petitioning the City Council for an extension of the approval of the *Final Plat*. In determining to approve or deny a request for an extension of a *Final Plat*, the City Council shall take into account: [1] the reason or reasons for the applicant or property owner was unable to adhere to the 180-day expiration timeline, [2] the ability of the property owner to comply with any conditions attached to the original approval, [3] the extent to which the applicant or property owner agrees to abide by the adopted subdivision regulations, and [4] any changed conditions in the surrounding area which would make an extension undesirable. In approving a request for an extension, the City Council shall not extend the recordation time period to more than one (1) year from the date the *Final Plat* was originally approved by the City Council.



- (K) Reinstatement Procedures. An applicant or property owner that has had a Final Plat expire in accordance with the terms of [Section 38-7\(4\)\(I\)](#), may petition the City Council to extend or reinstate the approval of the Final Plat. The City Council shall only reinstate a Final Plat when it is determined that the reinstatement would be in the public interest to do so to avoid an unnecessary review of a new Development Application, and/or when the development pattern proposed by the subdivision plat would not be to the detriment of any nearby area or the general development of the City of Rockwall. In granting a reinstatement, the Planning and Zoning Commission may impose conditions necessary to ensure that the Final Plat conforms to the City's current subdivision standards.

(5) CONVEYANCE PLATS.

- (A) Purpose. The purpose of a Conveyance Plat is the same as a Final Plat; however, a Conveyance Plat is only intended to allow for the subdivision and/or assemblage of land for the purpose of conveying or selling property. A Conveyance Plat does not constitute approval for any type of land development, and is typically considered to be an interim step in the land development process.
- (B) Applicability. A Conveyance Plat shall only be used in lieu of a Final Plat to record the subdivision of property into parcels of land -- five (5) acres or smaller in size -- that are not intended for immediate development, provided all lots meet the minimum lot dimensions and frontage requirements.
- (C) Required Information. In addition to the applicable requirements outlined in [Section 38-7\(1\)\(A\)](#) above, a Conveyance Plat shall conform to - or be accompanied by -- the following information:

- (1) Signature Block. The following signature block shall be placed on all Conveyance Plats:

APPROVED: I hereby certify that the above and forgoing subdivision plat -- being an addition to the City of Rockwall, Texas -- was approved by the City Council of the City of Rockwall, Texas on the [DAY] day of [MONTH], [YEAR].

MAYOR OF THE CITY OF ROCKWALL

PLANNING AND ZONING COMMISSION CHAIRMAN

CITY SECRETARY

CITY ENGINEER

- (2) General Notes. In addition to the General Notes contained in [Section 38-7\(1\)\(A\)\(2\)](#), the following notes shall be provided on all Conveyance Plats:
- (a) Purpose of a Conveyance Plat. A Conveyance Plat is a property record approved by the City of Rockwall for the purpose of facilitating the sale or conveyance of the property in part or in its entirety and the interest thereon defined. No building permit shall be issued nor permanent public utility services provided until a Replat is approved, filed as a record, and public improvements accepted in accordance with the provisions of the Subdivision Ordinance of the City of Rockwall.
- (D) Approval Process. Conveyance Plats shall be accepted and processed in accordance with the procedures outlined in [Section 38-6\(2\)](#) & [Section 38-7\(1\)](#) above, and be subject to the same approval process as specified for Final Plats in [Section 38-7\(4\)\(E\)](#).
- (E) Criteria for Approval. The review criteria for a Conveyance Plat shall be the same as the review criteria for a Final Plat as specified in [Section 38-7\(4\)\(F\)](#). Additionally, any required dedication of right-of-way shall be required at the time of Conveyance Plat and shall not be deferred to a Final Plat or Replat.
- (F) Recordation. Upon receiving approval of a Conveyance Plat from the City Council, the applicant or property owner shall submit the required number of signed and executed copies of the subdivision plat (*on the media specified by the Director of Planning and Zoning*) and any other required information necessary to file the Conveyance Plat with Rockwall County. After receiving the Conveyance Plat and all necessary information, the Planning and Zoning Department shall procure all the required City of Rockwall signatures, and file the Conveyance Plat with Rockwall County.
- (G) Effect of Approval. The approval of a Conveyance Plat shall:
- (1) Supersede any prior approval of a Preliminary Plat or Final Plat for the same area as the Conveyance Plat.



- (2) Authorize the conveyance or sale of the area in the Conveyance Plat; however, this does not authorize any form of development of the subject property.
- (H) Expiration. Upon receiving approval of a Conveyance Plat from the City Council, the applicant or property owner shall have 180-days from the date of approval to submit the information required for recordation as outlined in Section 38-7(5)(F). If the applicant or property owner fails to provide the required information within the recordation time period, the approval of the Conveyance Plat shall lapse. After this expiration, the applicant or property owner shall be required to submit a new Conveyance Plat, which will be subject to all zoning and subdivision standards in place at the time of the new application.
- (I) Extension Procedures. An applicant or property owner that has a Conveyance Plat in need of an extension to the 180-day timeline outlined in Section 38-7(5)(H), may -- 30 days prior to the lapse of approval -- submit in writing a petition to the Director of the Planning and Zoning Department petitioning the City Council for an extension of the approval of the Conveyance Plat. In determining to approve or deny a request for an extension of a Conveyance Plat, the City Council shall take into account: [1] the reason or reasons for the applicant or property owner was unable to adhere to the 180-day expiration timeline, [2] the ability of the property owner to comply with any conditions attached to the original approval, [3] the extent to which the applicant or property owner agrees to abide by the adopted subdivision regulations, and [4] any changed conditions in the surrounding area which would make an extension undesirable. In approving a request for an extension, the City Council shall not extend the recordation time period to more than one (1) year from the date the Conveyance Plat was originally approved by the City Council.
- (J) Reinstatement Procedures. An applicant or property owner that has had a Conveyance Plat expire in accordance with the terms of Section 38-7(5)(H), may petition the City Council to extend or reinstate the approval of the Conveyance Plat. The City Council shall only reinstate a Conveyance Plat when it is determined that the reinstatement would be in the public interest to do so to avoid an unnecessary review of a new Development Application, and/or when the development pattern proposed by the subdivision plat would not be to the detriment of any nearby area or the general development of the City of Rockwall.

(6) MINOR PLATS.

- (A) Purpose. The purpose of a Minor Plat is the same as a Final Plat or Replat; however, a Minor Plat is also intended to simplify the subdivision of land in certain circumstances as outline in the Texas Local Government Code.
 - STATE LAW REFERENCE: APPROVAL RESPONSIBLTY IS GRANTED BY V. T. C. A., LOCAL GOVERNMENT CODE § 212.0065.
- (B) Applicability. A Minor Plat shall only be permitted to be submitted in situations where all of the following criteria exists:
 - (1) The proposed subdivision of land is wholly situated within the corporate limits of the City of Rockwall.
 - (2) The proposed subdivision of land will result in a total of four (4) or fewer lots.
 - (3) All lots in the proposed subdivision of land will have frontage on an existing public street, and the extension or creation of a new public street or alleyway is not required.
 - (4) The proposed subdivision of land does not require the extension of any municipal facilities to serve any portion of the proposed subdivision.
 - (5) The proposed subdivision of land does not require the dedication of right-of-way, or the establishment of any new easements or entitlements.
- (C) Required Information. In addition to the applicable requirements outline in Section 38-7(1)(A) above, a Minor Plat shall conform to -- or be accompanied by -- the following information:
 - (1) Signature Block. The following signature block shall be placed on all Minor Plats:

APPROVED: I hereby certify that the above and forgoing subdivision plat -- being an addition to the City of Rockwall, Texas -- was approved by the Director of Planning and Zoning and the City Engineer of the City of Rockwall, Texas on the [DAY] day of [MONTH], [YEAR].

DIRECTOR OF PLANNING AND ZONING

CITY ENGINEER

- (D) Approval Process. Minor Plats shall be accepted and processed in accordance with the procedures outline in Section 38-6(2) & Section 38-7(1) above, and be subject to the following approval process:
 - (1) Director of Planning and Zoning. The Director of the Planning and Zoning Department or his/her designee shall review the Minor Plat, the findings and recommendations from all Development Services Departments, and any other applicable information required to be



reviewed prior to acting on the Minor Plat. From this information, the Director of the Planning and Zoning Department or his/her designee shall determine if the Minor Plat conforms to the regulations and requirements outlined in this *Chapter* and render a decision to either approve the subdivision plat as submitted, approve the subdivision plat with conditions (*i.e. the Minor Plat shall be considered to be approved once such conditions are satisfied*), or deny the subdivision plat as submitted. If no decision can be rendered by the Director of the Planning and Zoning Department or his/her designee, then the Minor Plat shall be forwarded to the Planning and Zoning Commission and City Council for action in accordance with [Section 38-7\(6\)\(N\)](#). Regardless of the Director's decision, the Minor Plat shall be processed and acted upon in accordance with the timeline established in [Section 38-7\(1\)](#).

- (E) Criteria for Approval. In reviewing a Minor Plat, the following criteria shall be used by the Director of Planning and Zoning to determine if the Minor Plat should be approved, approved with conditions (*i.e. the Minor Plat shall be considered to be approved once such conditions are satisfied*), or denied:
- (1) Subdivision Requirements. If the Minor Plat is in conformance with all applicable requirements of this *Chapter*.
 - (2) Unified Development Code. If the Minor Plat is in conformance with all applicable requirements of the Unified Development Code (UDC).
 - (3) Standards of Design and Construction. If the Minor Plat is in conformance with all of the requirements of the *Standards of Design and Construction Manual* as stipulated by [Section 38-8](#).
 - (4) Adequate Public Utilities. If all areas depicted on the Minor Plat will be adequately served by public utilities, facilities, and services (*i.e. water facilities, wastewater facilities, roadway and pedestrian facilities, drainage facilities and park facilities*).
 - (5) Developer's Agreement. If the Minor Plat is in conformance with any existing Developer's Agreement affecting the area depicted in the subdivision plat or if the applicant or property owner is proposing a Developer's Agreement pursuant to [Section 212.172, Development Agreement, of the Texas Local Government Code](#).
- (F) Recordation. Upon receiving approval of a Minor Plat from the Director of Planning and Zoning, the applicant or property owner shall submit the required number of signed and executed copies of the subdivision plat (*on the media specified by the Director of Planning and Zoning*) and any other required information necessary to file the Minor Plat with Rockwall County. After receiving the Minor Plat and all necessary information, the Planning and Zoning Department shall procure all the required City of Rockwall signatures, and file the Minor Plat with Rockwall County.
- (G) Effect of Approval. The approval of a Minor Plat may:
- (1) Supersede any prior approval of a Preliminary Plat or Final Plat for the same area as the Minor Plat.
 - (2) Authorize the conveyance or sale of the area in the Minor Plat.
 - (3) Authorize the development of the area in the Minor Plat.
- (H) Expiration. Upon receiving approval of a Minor Plat from the Director of the Planning and Zoning Department or Planning and Zoning Commission, the applicant or property owner shall have 180-days from the date of approval to submit the information required for recordation as outlined in [Section 38-7\(6\)\(F\)](#). If the applicant or property owner fails to provide the required information within the recordation time period, the approval of the Minor Plat shall lapse. After this expiration, the applicant or property owner shall be required to submit a new Minor Plat, which will be subject to all zoning and subdivision standards in place at the time of the new application.
- (I) Appeal of an Administrative Decision on a Minor Plat. If the Director of the Planning and Zoning Department defers the Minor Plat to the Planning and Zoning Commission and City Council, the Planning and Zoning Commission shall review the Minor Plat, the findings and recommendations from all *Development Services Departments*, the reason for deferral by the Director of the Planning and Zoning Department, and any other applicable information required to be reviewed prior to acting on the Minor Plat. From this information, the Planning and Zoning Commission shall determine if the Minor Plat conforms to the regulations and requirements outlined in this *Chapter* and render a recommendation to the City Council to either approve the subdivision plat as submitted, approve the subdivision plat with conditions (*i.e. the Minor Plat shall be considered to be approved once such conditions are satisfied*), or deny the subdivision plat as submitted. From this recommendation, the City Council shall review all the aforementioned information and render a final decision to either approve the subdivision plat as submitted, approve the subdivision plat with conditions (*i.e. the Minor Plat shall be considered to be approved once such conditions are satisfied*), or deny the subdivision plat as submitted.
- (J) Amendments to an Approved Minor Plat. Any amendments to an approved Minor Plat shall be processed and approved as a Replat or an Amending Plat as determined by the Director of the Planning and Zoning Department.



(7) REPLATS.

(A) Purpose. The purpose of a Replat is to allow a property owner to further subdivide, assemble, and/or change all or a portion of a recorded subdivision plat -- *whether the Replat is being proposed with or without a vacation plat as outlined in [Section 38-7\(9\)](#)* -- in accordance with the requirements of this *Chapter*, the *Engineering Standards of Design and Construction Manual*, the requirements of the Unified Development Code (UDC), and any other applicable requirements to allow the subdivision plat to be recorded.

(B) Applicability. A Replat for all or a portion of a recorded subdivision plat may be approved in accordance with [Chapter 212, Municipal Regulation of Subdivisions and Property Development, of the Texas Local Government Code](#) without the vacation of the recorded subdivision plat, if the Replat meets the following criteria:

- (1) The Replat is signed and acknowledged by only the owners of the property being replatted.
- (2) The Replat is approved by the *Municipal Authority* responsible for approving subdivision plats.
- (3) The Replat does not attempt to amend or remove any covenants or restrictions.

• STATE LAW REFERENCE: [V. T. C. A., LOCAL GOVERNMENT CODE § 212.014.](#)

(C) Exceptions. A Replat shall not be required when an Amending Plat is able to be submitted [see [Section 38-7\(8\)](#)].

(D) Required Information. In addition to the applicable requirements outlined in [Section 38-7\(1\)\(A\)](#) above, a Replat shall conform to -- or be accompanied by -- the following information:

(1) General Preliminary Plat Information. All Replats shall show the following information:

(a) Title Block. Provide the appropriate Title Block in the lower right-hand corner of the subdivision plat.

(1) Residential Replats. The Title Block for Residential Replats shall be as follows:

FINAL PLAT
[PROPOSED LOT/BLOCK DESIGNATION IF APPLICABLE]
[SUBDIVISION NAME]
 BEING A REPLAT OF
[CURRENT LOT/BLOCK DESIGNATION IF APPLICABLE]
[SUBDIVISION NAME]
 BEING
[TOTAL RESIDENTIAL LOTS] RESIDENTIAL LOTS AND **[TOTAL OPEN SPACE LOTS]** OPEN SPACE LOTS
[TOTAL ACREAGE]-ACRES OR **[TOTAL SQUARE FEET]** SF
 SITUATED IN THE
[SURVEY], [ABSTRACT NO.]
 CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

(2) Non-Residential Replats. The Title Block for Non-Residential Replats shall be as follows:

FINAL PLAT
[PROPOSED LOT/BLOCK DESIGNATION IF APPLICABLE]
[SUBDIVISION NAME]
 BEING A REPLAT OF
[CURRENT LOT/BLOCK DESIGNATION IF APPLICABLE]
[SUBDIVISION NAME]
 BEING
[TOTAL LOTS] LOTS
[TOTAL ACREAGE]-ACRES OR **[TOTAL SQUARE FEET]** SF
 SITUATED IN THE
[SURVEY], [ABSTRACT NO.]
 CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

(2) Seal/Signature. All Replats are required to have the seal and signature of the surveyor or engineer responsible for surveying the area depicted in the Replat and the preparation of the Replat.



- (3) Signature Block. The following signature block shall be placed on all Replats:

APPROVED: I hereby certify that the above and forgoing subdivision plat -- *being an addition to the City of Rockwall, Texas* -- was approved by the City Council of the City of Rockwall, Texas on the **[DAY]** day of **[MONTH]**, **[YEAR]**.

MAYOR OF THE CITY OF ROCKWALL

PLANNING AND ZONING COMMISSION CHAIRMAN

CITY SECRETARY

CITY ENGINEER

- (E) Public Hearing for Certain Replats. Certain Replats meeting the below criteria require general notice and public hearing in accordance with [Section 212.015, Additional Requirements for Certain Replats, of the Texas Local Government Code](#). The requirements for these Replats are as follows:
- (1) Applicability. A Replat without the vacation of the recorded subdivision plat that conform to the following criteria shall require a Public Hearing:
 - (c) During the preceding five (5) years, any of the area to be replatted was limited by an interim or permeant zoning classification to residential use for not more than two (2) residential units per lot; or,
 - (d) Any lot in the preceding subdivision plat was limited by deed restrictions to a residential use for not more than two (2) residential units per lot.
 - (2) Exception to the Public Hearing Requirements. The requirements of [Section 38-7\(7\)\(E\)](#) shall not apply to any approval of a Replat application for a portion of a recorded subdivision plat if all of the proposed area sought to be replatted was designated or reserved for usage other than for single-family or two-family residential usage. Such designation must be noted on the recorded subdivision plat or in the legally recorded deed restrictions applicable to subdivision plat.
 - (3) Public Notice and Public Hearing. Public Notice of the required Public Hearing shall be given before the 15th calendar day before the date of the Public Hearing. This notice shall:
 - (a) Be published in an official newspaper or a newspaper of general circulation in the City of Rockwall or its unincorporated areas (as applicable by State Law) in which the proposed property being platted is located; and,
 - (b) Be by written notice -- *with a copy of the wording contained in [Section 212.015\(c\) of the Texas Local Government Code](#) (as is and as may be amended in the future) attached to the notice* -- forwarded by the City of Rockwall to all property owners and residents of lots that are in the original subdivision and that are within 200-feet of the lots to be Replatted, as indicated on the most recently approved municipal tax roll or -- *in the case of a subdivision in the City of Rockwall's Extraterritorial Jurisdiction (ETJ)* -- the most recently approved applicable Rockwall County tax roll of the property being platted. The written notice may be delivered by depositing the written notice -- *properly addressed with postage prepaid* -- in a post office or postal depository within the boundaries of the City of Rockwall.
 - (4) Protest. If the Replat application is accompanied by a Petition for Waiver in accordance with [Section 38-10\(2\)](#) and is protested in accordance with this Chapter, approval of the Replat shall require a super majority vote (*i.e. three-fourths vote of those members present*) of the City Council present at the meeting, with a minimum of four (4) votes in the affirmative required for approval. For a legal protest, written instruments signed by the property owners of at least 20% of the area of the lots or land immediately adjoining the area covered by the Replat application and extending 200-feet from that area, but within the original subdivision, must be filed with the City Council prior to the close of the Public Hearing. The area of streets and alleyways shall be included in the calculation of the within the 200-foot area.
- (K) Approval Process. Replats shall be accepted and processed in accordance with the procedures outline in [Section 38-6\(2\)](#) & [Section 38-7\(1\)](#) above, and be subject to the following approval process:
- (1) Replats Requiring a Public Hearing. Replats that require a Public Hearing in accordance with the requirements of [Section 38-7\(7\)\(E\)](#) above, shall be subject to the following approval process:



- (a) Planning and Zoning Commission. The Planning and Zoning Commission shall review the Replat, the findings and recommendations from all Development Services Departments, the recommendations from the Parks and Recreation Board (*if applicable*), any other applicable information required to be reviewed, and hold a Public Hearing prior to taking action on the proposed subdivision plat. From this information, the Planning and Zoning Commission shall determine if the Replat conforms to the regulations and requirements outlined in this Chapter and provide a recommendation to the City Council to either approve the subdivision plat as submitted, approve the subdivision plat with conditions (*i.e. the Replat shall be considered to be approved once such conditions are satisfied*), or deny the subdivision plat as submitted. If the Planning and Zoning Commission chooses to make a recommendation to deny a Replat, the Commissioner making the motion for denial shall summarize the findings supporting the motion to deny.
 - (b) Parks and Recreation Board. If required, the Parks and Recreation Board shall review the Replat, the findings and recommendations from the Development Services Departments, and any other applicable information required to be reviewed prior to making recommendations concerning the proposed plat. From this information, the Parks and Recreation Board shall provide a recommendation to the City Council and Planning and Zoning Commission regarding park improvements and/or park fees associated with the Replat.
 - (c) City Council. Upon receiving a recommendation from the Planning and Zoning Commission, the City Council shall review the Replat, the findings and recommendations from all Development Services Departments, the recommendations of the Planning and Zoning Commission and Parks and Recreation Board (*if applicable*), any other applicable information required to be reviewed, and hold a Public Hearing prior to taking action on the proposed subdivision plat. From this information, the City Council shall determine if the Replat conforms to the regulations and requirements outlined in this Chapter and either approve the subdivision plat as submitted, approve the subdivision plat with conditions (*i.e. the Replat shall be considered to be approved once such conditions are satisfied*), or deny the subdivision plat as submitted. If the City Council chooses to deny a Replat, the City Council member making the motion for denial shall summarize the findings supporting the motion to deny.
- (2) Replats Not Requiring a Public Hearing. Replats that do not require a Public Hearing shall be subject to the following approval process:
- (a) Planning and Zoning Commission. The Planning and Zoning Commission shall review the Replat, the findings and recommendations from all Development Services Departments, the recommendations from the Parks and Recreation Board (*if applicable*), and any other applicable information required to be reviewed prior to taking action on the proposed subdivision plat. From this information, the Planning and Zoning Commission shall determine if the Replat conforms to the regulations and requirements outlined in this Chapter and provide a recommendation to the City Council to either approve the subdivision plat as submitted, approve the subdivision plat with conditions (*i.e. the Replat shall be considered to be approved once such conditions are satisfied*), or deny the subdivision plat as submitted. If the Planning and Zoning Commission chooses to make a recommendation to deny a Replat, the Commissioner making the motion for denial shall summarize the findings supporting the motion to deny.
 - (b) Parks and Recreation Board. If required, the Parks and Recreation Board shall review the Replat, the findings and recommendations from the Development Services Departments, and any other applicable information required to be reviewed prior to making recommendations concerning the proposed plat. From this information, the Parks and Recreation Board shall provide a recommendation to the City Council and Planning and Zoning Commission regarding park improvements and/or park fees associated with the Replat.
 - (c) City Council. Upon receiving a recommendation from the Planning and Zoning Commission, the City Council shall review the Replat, the findings and recommendations from all Development Services Departments, the recommendations of the Planning and Zoning Commission and Parks and Recreation Board (*if applicable*), and any other applicable information required to be reviewed prior to taking action on the proposed subdivision plat. From this information, the City Council shall determine if the Replat conforms to the regulations and requirements outlined in this Chapter and either approve the subdivision plat as submitted, approve the subdivision plat with conditions (*i.e. the Replat shall be considered to be approved once such conditions are satisfied*), or deny the subdivision plat as submitted. If the City Council chooses to deny a Replat, the City Council member making the motion for denial shall summarize the findings supporting the motion to deny.
- (F) Criteria for Approval. In reviewing a Replat without the vacation of the recorded subdivision plat, the following criteria shall be used by the Planning and Zoning Commission and City Council to determine if the Replat should be approved, approved with conditions (*i.e. the Replat shall be considered to be approved once such conditions are satisfied*), or denied:
- (1) Preliminary Plat. If a Preliminary Plat was approved prior to the Replat, the Replat shall conform to the approved Preliminary Plat and all conditions of approval imposed at the time of approval of the Preliminary Plat.



- (2) Master Plat. If a Master Plat was approved prior to the Replat, the Replat shall conform to the approved Master Plat and all conditions of approval imposed at the time of approval of the Master Plat.
 - (3) Subdivision Requirements. If the Replat is in conformance with all applicable requirements of this Chapter.
 - (4) Unified Development Code. If the Replat is in conformance with all applicable requirements of the Unified Development Code (UDC).
 - (5) Standards of Design and Construction. If the Replat is in conformance with all of the requirements of the Standards of Design and Construction Manual as stipulated by Section 38-8.
 - (6) Adequate Public Utilities. If all areas depicted on the Replat will be adequately served by public utilities, facilities, and services (*i.e. water facilities, wastewater facilities, roadway and pedestrian facilities, drainage facilities and park facilities*).
 - (7) Developer's Agreement. If the Replat is in conformance with any existing Developer's Agreement affecting the area depicted in the subdivision plat or if the applicant or property owner is proposing a Developer's Agreement pursuant to Section 212.172, Development Agreement, of the Texas Local Government Code.
 - (8) Interlocal Agreements. If the Replat is situated within the City's Extraterritorial Jurisdiction (ETJ), the Replat shall conform to the requirements and subdivision regulations required by the Interlocal Cooperation Agreement for Subdivision Regulations agreed upon by the City and County under Chapter 242, Authority of Municipality and County to Regulate Subdivisions In and Outside Municipality's Extraterritorial Jurisdiction, of the Texas Local Government Code.
- (G) Recordation. Upon receiving approval of a Replat from the City Council, the applicant or property owner shall submit the required number of signed and executed copies of the subdivision plat (*on the media specified by the Director of Planning and Zoning*) and any other required information necessary to file the Replat with the applicable County. After receiving the Replat and all necessary information, the Planning and Zoning Department shall procure all the required City of Rockwall signatures, and file the Replat with Rockwall County.
- (H) Effect of Approval. The approval of a Replat shall:
- (1) Supersede any prior approval of a Final Plat for the same area as the Replat.
 - (2) Authorize the applicant to submit Civil Engineering Plans in accordance with Section 38-8 (*unless previously permitted to submit for civil engineering plans by the City Engineer*) or authorize the applicant to submit for a Building Permit (*unless previously permitted to submit for a building permit by the Director of Planning and Zoning*) if Civil Engineering Plans are not required.
- (I) Expiration. Upon receiving approval of a Replat from the City Council, the applicant or property owner shall have 180-days from the date of approval to submit the information required for recordation as outlined in Section 38-7(7)(H). If the applicant or property owner fails to provide the required information within the recordation time period, the approval of the Replat shall lapse. After this expiration, the applicant or property owner shall be required to submit a new Replat, which will be subject to all zoning and subdivision standards in place at the time of the new application.

(8) AMENDING PLATS.

- (A) Purpose. The purpose of an Amending Plat is the same as a Replat; however, an Amending Plat is also intended to provide an expedited means to making minor revisions to a recorded subdivision plat consistent with the requirements of the Texas Local Government Code.
- STATE LAW REFERENCE: APPROVAL RESPONSIBILITY IS GRANTED BY V. T. C. A., LOCAL GOVERNMENT CODE § 212.0065.
- (B) Applicability. An Amending Plat shall only be permitted to be submitted in situations where the sole purpose of the Amending Plat is to achieve one (1) or more of the following:
- (1) To correct an error in a course or distance shown on the preceding subdivision plat.
 - (2) To add a course or distance that was omitted on the preceding subdivision plat.
 - (3) To correct an error in a real property description shown on the preceding subdivision plat.
 - (4) To indicate monuments set after the death, disability, or retirement from practice of the engineer or surveyor responsible for setting monuments.
 - (5) To show the location or character of a monument that has been changed in location or character or that is shown incorrectly as to the location or character on the preceding subdivision plat.
 - (6) To correct any other type of scrivener or clerical error or omission previously approved by the Municipal Authority responsible for approving subdivision plats, including lots numbers, acreage, street names, and identification of adjacent recorded subdivision plats.



- (7) To correct an error in courses or distances of lot lines between two (2) adjacent lots if:
 - (a) Both lot owners join in the application for the Amending Plat.
 - (b) Neither lot is abolished.
 - (c) The Amending Plat does not attempt to remove recorded covenants or restrictions.
 - (d) The Amending Plat does not have a material adverse effect on the property rights of the other owner in the subdivision plat.
- (8) To relocate a lot line to eliminate an inadvertent encroachment of a building or other improvement on a lot line or easement.
- (9) To relocate one (1) or more lot lines between one (1) or more adjacent lots if:
 - (a) The owners of all those lots join in the application for the Amending Plat.
 - (b) The Amending Plat does not attempt to remove recorded covenants or restrictions.
 - (c) The Amending Plat does not increase the number of lots.
- (10) To Replat one (1) or more lots fronting on to an existing street if:
 - (a) The owners of all those lots join in the application for the Amending Plat.
 - (b) The Amending Plat does not attempt to remove recorded covenants or restrictions.
 - (c) The Amending Plat does not increase the number of lots.
 - (d) The Amending Plat does not create or require the creation of a new street or make necessary the extension of municipal facilities.

- STATE LAW REFERENCE: V. T. C. A., LOCAL GOVERNMENT CODE § 212.016.

(C) Required Information. In addition to the applicable requirements outlined in Section 38-7(1)(A) above, an Amending Plat shall conform to -- or be accompanied by -- the following information:

(1) Signature Block. The following signature block shall be placed on all Amending Plats:

APPROVED: I hereby certify that the above and forgoing subdivision plat -- *being an addition to the City of Rockwall, Texas* -- was approved by the Director of Planning and Zoning and the City Engineer of the City of Rockwall, Texas on the **[DAY]** day of **[MONTH]**, **[YEAR]**.

DIRECTOR OF PLANNING AND ZONING

CITY ENGINEER

(D) Approval Process. Amending Plats shall be accepted and processed in accordance with the procedures outlined in Section 38-7(1) above, and be subject to the following approval process:

(1) Director of Planning and Zoning. The Director of Planning and Zoning or his/her designee shall review the Amending Plat, the findings and recommendations from all Development Services Departments, and any other applicable information required to be reviewed prior to acting on the Amending Plat. From this information, the Director of the Planning and Zoning Department or his/her designee shall determine if the Amending Plat conforms to the regulations and requirements outlined in this Chapter and render a decision to either approve the subdivision plat as submitted, approve the subdivision plat with conditions (*i.e. the Amending Plat shall be considered to be approved once such conditions are satisfied*), or deny the subdivision plat as submitted. If no decision can be rendered by the Director of the Planning and Zoning Department or his/her designee, then the Amending Plat shall be forward to the Planning and Zoning Commission and City Council for action in accordance with Section 38-7(8)(f). Regardless of the Director's decision, the Amending Plat shall be processed and acted upon in accordance with the timeline established in Section 38-7(1).

(E) Criteria for Approval. In reviewing an Amending Plat, the following criteria shall be used by the Director of the Planning and Zoning Department to determine if the Amending Plat should be approved, approved with conditions (*i.e. the Amending Plat shall be considered to be approved once such conditions are satisfied*), or denied:

- (1) Subdivision Requirements. If the Amending Plat is in conformance with all applicable requirements of this Chapter.
- (2) Unified Development Code. If the Amending Plat is in conformance with all applicable requirements of the Unified Development Code (UDC).
- (3) Standards of Design and Construction. If the Amending Plat is in conformance with all of the requirements of the Standards of Design and Construction Manual as stipulated by Section 38-8.



- (4) Adequate Public Utilities. If all areas depicted on the Amending Plat will be adequately served by public utilities, facilities, and services (i.e. water facilities, wastewater facilities, roadway and pedestrian facilities, drainage facilities and park facilities).
- (5) Developer's Agreement. If the Amending Plat is in conformance with any existing Developer's Agreement affecting the area depicted in the subdivision plat or if the applicant or property owner is proposing a Developer's Agreement pursuant to [Section 212.172, Development Agreement, of the Texas Local Government Code](#).
- (F) Recordation. Upon receiving approval of an Amending Plat from the Director of Planning and Zoning, the applicant or property owner shall submit the required number of signed and executed copies of the subdivision plat (on the media specified by the Director of Planning and Zoning) and any other required information necessary to file the Amending Plat with Rockwall County. After receiving the Amending Plat and all necessary information, the Planning and Zoning Department shall procure all the required City of Rockwall signatures, and file the Amending Plat with Rockwall County.
- (G) Effect of Approval. The approval of an Amending Plat may:
- (1) Supersede any prior approval of a Replat or Final Plat for the same area as the Amending Plat.
- (H) Expiration. Upon receiving approval of an Amending Plat from the Director of the Planning and Zoning Department or Planning and Zoning Commission, the applicant or property owner shall have 180-days from the date of approval to submit the information required for recordation as outlined in [Section 38-7\(8\)\(G\)](#). If the applicant or property owner fails to provide the required information within the recordation time period, the approval of the Amending Plat shall lapse. After this expiration, the applicant or property owner shall be required to submit a new Amending Plat, which will be subject to all zoning and subdivision standards in place at the time of the new application.
- (I) Appeal of an Administrative Decision on an Amending Plat. If the Director of the Planning and Zoning Department defers the Amending Plat to the Planning and Zoning Commission and City Council, the Planning and Zoning Commission shall review the Amending Plat, the findings and recommendations from all Development Services Departments, the reason for deferral by the Director of the Planning and Zoning Department, and any other applicable information required to be reviewed prior to acting on the Amending Plat. From this information, the Planning and Zoning Commission shall determine if the Amending Plat conforms to the regulations and requirements outlined in this Chapter and render a recommendation to the City Council to either approve the subdivision plat as submitted, approve the subdivision plat with conditions (i.e. the Amending Plat shall be considered to be approved once such conditions are satisfied), or deny the subdivision plat as submitted. From this recommendation, the City Council shall review all the aforementioned information and render a final decision to either approve the subdivision plat as submitted, approve the subdivision plat with conditions (i.e. the Amending Plat shall be considered to be approved once such conditions are satisfied), or deny the subdivision plat as submitted.

(9) VACATING PLATS.

- (A) Purpose. The purpose of a Vacating Plat is to provide an expeditious process for vacating a recorded plat in its entirety, consistent with the provisions of the Texas Local Government Code.
- STATE LAW REFERENCE: V. T. C. A., LOCAL GOVERNMENT CODE § 212.0013.
- (B) Applicability. A Vacating Plat may be initiated by the following:
- (1) Property Owner(s). The Property Owner(s) of the tract of land covered by the existing subdivision plat may submit a Development Application requesting to vacate the existing subdivision plat at any time before any lot in the subdivision plat is sold or conveyed.
 - (2) By All Property Owners. If the lots in the subdivision plat have been sold, an application for a Vacating Plat shall be submitted by all Property Owners of the lots in the subdivision plat.
 - (3) City Council. If the City Council of the City of Rockwall determines that a subdivision plat should be vacated in the interest of and to protect the public's health, safety, and general welfare, the City Council -- on its own motion -- may vacate a subdivision plat after finding that:
 - (a) No lots within the approved subdivision plat have been sold or conveyed within five (5) years following the date that the subdivision plat was approved by the City of Rockwall; or
 - (b) The property owner has breached a Facilities Agreement or other Agreement relating to the provision of public improvements with the City of Rockwall; however, the Vacating Plat shall apply only to the lots owned by the property owner or their successors; or



(c) The subdivision plat has been a filed record for more than five (5) years, and the *City Council* has determined that the further sale of lots within the subdivision or addition presents a threat to the public's health, safety, and general welfare; however, the Vacating Plat shall apply only to the lots owned by the property owner or their successors.

(C) Procedures for Vacating Plats.

- (1) Director of the Planning and Zoning Department. Upon receiving and accepting a *Development Application* for a Vacating Plat in accordance with the procedures outlined in Section 38-7(1), the Director of the Planning and Zoning Department shall prepare a vacating resolution for the consideration of the City Council.
- (2) City Council. The City Council -- *at its discretion* -- shall have the right to retain all or specific portions of any road rights-of-way or easements shown on the subdivision plat being considered for vacation.

(D) Approval Process. Vacating Plats shall be accepted and processed in accordance with the procedures outlined in Section 38-6(2) & Section 38-7(1) above, and be subject to the following approval process:

- (1) Planning and Zoning Commission. The Planning and Zoning Commission shall review the Vacating Plat, the vacating resolution prepared by the Director of the Planning and Zoning Department, the findings and recommendations from all *Development Services Departments*, and any other applicable information required to be reviewed prior to acting on the Vacating Plat. From this information, the Planning and Zoning Commission shall determine if existing subdivision plat should be vacated and provide a recommendation to the City Council to either approve the request as submitted, approve the request with conditions (*i.e. the Vacating Plat shall be considered to be approved once such conditions are satisfied*), or deny the request as submitted. If the Planning and Zoning Commission chooses to make a recommendation to deny a Vacating Plat, the Commissioner making the motion for denial shall summarize the findings supporting the motion to deny.
- (2) City Council. Upon receiving a recommendation from the Planning and Zoning Commission, the City Council shall review the Vacating Plat, the vacating resolution prepared by the Director of the Planning and Zoning Department, the findings and recommendations from all *Development Services Departments*, the recommendation of the Planning and Zoning Commission, and any other applicable information required to be reviewed prior to acting on the proposed plat. From this information, the City Council shall determine if the existing subdivision plat should be vacated and either approve the request as submitted, approve the request with conditions (*i.e. the Vacating Plat shall be considered to be approved once such conditions are satisfied*), or deny the request as submitted. If the City Council chooses to deny a Vacating Plat, the City Council member making the motion for denial shall summarize the findings supporting the motion to deny.

(E) Recordation. If the City Council of the City of Rockwall approves a request to vacate a subdivision plat in whole by adopting a resolution, the vacating resolution shall be filed with the Rockwall County Clerk's Office in the same manner prescribed for the vacated subdivision plat. If the City Council of the City of Rockwall adopts a resolution vacating a portion of a subdivision plat, it shall require a revised Final Plat to be recorded along with the vacating resolution that shows the portion of the subdivision plat that has been vacated and the portion of the subdivision plat that has not been vacated.

(F) Effect of Approval. The approval of a Vacating Plat shall:

- (1) On the execution and recording of the vacating instrument, the previously filed subdivision plat shall have no effect. Regardless of the City Council's action on a *Development Application* requesting a Vacating Plat, the property owner or property owners or developer will have no right to request a refund for any fees or charges paid and/or any property or easements dedicated to the City of Rockwall except as may have been previously agreed to by the City Council of the City of Rockwall.

(10) DORMANT PROJECTS.

(A) Definitions. For the purposes of this section (*Dormant Projects*) the following definitions shall apply:

- (1) Initial Permit. An Initial Permit shall mean any of the following types of approvals granted under this *Chapter*, or any preceding subdivision or development related ordinance that was in effect prior to the adoption of this *Chapter* (e.g. Preliminary Plat, Engineering/Civil Plans, Waivers, or any other applicable application that was approved subject to a drawing or illustration showing the location, arrangement, orientation or design of a development, lot or lots, or improvements on a site that was intended for development).
- (2) Final Permit. A Final Permit shall mean a Final Plat or Replat approved under this *Chapter*, or any preceding subdivision or development related ordinance that was in effect prior to the adoption of this *Chapter*.



- (B) Expiration of Initial Permit. Any application for an Initial Permit that was approved or filed -- *but that was not subject to an expiration date* -- two (2) years or prior to the adoption date of this *Chapter*, shall expire on the effective date of this *Chapter*.
- (C) Reinstatement. The property owner of a parcel or tract of land subject to an Initial Permit that expires in accordance with [Section 38-7\(10\)\(B\)](#) may petition the City Council for the reinstatement of said Initial Permit by filing a written petition with the Director of the Planning and Zoning Department 60 calendar days following the effective date of this *Chapter*. The written petition shall clearly state the grounds for the requested reinstatement, and shall be accompanied by documentation of one (1) of the following events:
- (1) As of two (2) years prior to the effective date of this *Chapter*, one (1) of the following events has occurred:
 - (a) A Final Permit, continuing towards the completion of the project, was submitted to the City of Rockwall for all or a portion of the land subject to the approved Initial Permit, and was approved by the City of Rockwall, or was filed and was subsequently approved by the City of Rockwall.
 - (b) A Development Application for a Final Permit was submitted to the City of Rockwall for all or a portion of the land subject to the expired Initial Permit, but said application was rejected on the grounds of incompleteness [*in accordance with [Section 38-6\(2\)\(F\)](#) of this Chapter and [Section 245.005\(c\)\(2\) of the Texas Local Government Code](#)*].
 - (c) The costs for the development of the land subject to the Initial Permit, including the costs associated with roadways, utilities, and other infrastructure designed to serve the land -- *in whole or in part* --, but exclusive of the land acquisition costs, were incurred in the aggregated amount of five (5) percent of the most recent appraised market value of the land subject to the most recent appraised market value of the land.
 - (d) Fiscal security was posted with the City of Rockwall to guarantee performance of the obligations required under this *Chapter*, including the construction of the required improvements associated with the proposed development, for all or a portion of the land subject to the approval of an Initial Permit.
 - (e) Utility connection fees or impact fees for all or a portion of the land subject to the approved Initial Permit were paid to the City of Rockwall.
 - (2) After two (2) years prior to the adoption of this *Chapter*, but before the expiration date specified in [Section 38-7\(10\)\(B\)](#), one (1) of the following events had occurred:
 - (a) A Final Permit was approved for all or a portion of the land subject to an approved Development Application, and remained in effect for such land on such expiration date.
 - (b) A complete Development Application for the approval of a Final Permit for all or a portion of the land subject to an approved Initial Permit was pending for decision on such expiration date.
- (D) Reinstatement by the City Council. The City Council may take one (1) of the following actions with regard to a request to reinstate a Dormant Project:
- (1) Reinstate the expired Initial Permit without an expiration date, if it finds that the applicant has met any one (1) of the criteria listed in [Section 38-7\(10\)\(C\)\(1\)](#).
 - (2) Reinstate the Initial Permit for all or a portion of the land subject thereto, if the City Council finds that the applicant has met any one (1) of the criteria listed in [Section 38-7\(10\)\(C\)\(2\)](#), subject to such expiration dates of other conditions that ensure that the remaining land that is not subject to an approved or pending Final Permit application will be developed in a timely manner. In granting relief under this provision, the City Council may require that development of such remaining land is subject to the standards enacted after approval of the Initial Permit.
 - (3) Deny the reinstatement request, if the City Council finds that the applicant has failed to meet any of the criteria stipulated by [Section 38-7\(10\)\(C\)](#).
 - (4) Reinstate the permit for only that part of the land subject to a pending Final Permit application, if it finds that the applicant has met the criteria in [Section 38-7\(10\)\(C\)\(2\)\(b\)](#), and the pending application subsequently was approved, and deny the reinstatement request for the remaining land subject to the expired Initial Permit.

SECTION 38-8: ENGINEERING STANDARDS AND PROCEDURES



(1) STANDARDS OF DESIGN AND CONSTRUCTION MANUAL.

- (A) Standards of Design and Construction Manual. The Engineering Department's Standards of Design and Construction Manual, as approved by the City Council, is hereby adopted as the official Engineering Standards for the City of Rockwall. These Engineering Standards may be amended from time-to-time by the City Engineer with the approval of the City Council.
- (B) Authority. The City Engineer shall be the initial decision-maker regarding a development or subdivision's conformance with the Engineering Department's Standards of Design and Construction Manual.
- (C) Enforcement. The Enforcement of the Engineering Department's Standards of Design and Construction Manual shall be by the City Engineer or his/her designee. The City Engineer shall have the authority to waive any of the technical provisions as contained in said standards, when the literal interpretation and enforcement of a provision is determined to be not feasible or unreasonable, unless such authority has been expressly reserved for the City Council and/or Planning and Zoning Commission.

(2) CIVIL ENGINEERING PLANS.

- (A) Purpose. The purpose of requiring Civil Engineering Plans is to ensure that the required public improvements, being installed to serve a development or subdivision, are constructed or installed in accordance with this Chapter and the Engineering Department's Standards of Design and Construction Manual.
- (B) Applicability. All projects proposing construction and/or public improvements in the City of Rockwall shall be required to submit Civil Engineering Plans, unless otherwise provided by the City Engineer.
- (C) Submitting Civil Engineering Plans. The property owner or developer/applicant -- with the property owner's consent -- shall submit Civil Engineering Plans for any development or subdivision proposed in the City of Rockwall, unless otherwise provided for by the City Engineer. Submittal of Civil Engineering Plans shall conform to the requirements stipulated by the Engineering Department's Standards of Design and Construction Manual, the Engineering Application, and the Engineering Plan Review Checklist. No Civil Engineering Plans shall be submitted or accepted until after the approval of a Preliminary Plat, Master Plat, or Site Plan for the land covered under the Civil Engineering Plans, unless otherwise approved by the City Engineer.
- (D) Review Fees for Civil Engineering Plans. The Review Fees for Civil Engineering Plans shall be submitted to the Engineering Department with the submittal or resubmittal of Civil Engineering Plans and be in accordance with the following:

FIRST REVIEW FEE	
PARCELS OR TRACTS OF LAND LESS THAN ONE (1) ACRE	\$100.00
PARCELS OR TRACTS OF LAND ONE (1) ACRE TO FIVE (5) ACRES	\$125.00
PARCELS OR TRACTS OF LAND GREATER THAN FIVE (5) ACRES	\$175.00
RESUBMITTAL FEE	
AFTER THIRD (3 RD) REVIEW	\$500.00

- (E) Approval Required. Civil Engineer Plans shall be approved in accordance with this Chapter and the Engineering Standards of Design and Construction prior to the approval and recordation of a Final Plat or Replat [if applicable], unless otherwise permitted by the City Engineer or Director of the Planning and Zoning Department.
- (F) Criteria for Approval of Civil Engineering Plans. The City Engineer or his/her designee shall approve Civil Engineering Plans if they adhere to the following criteria:
 - (1) All required studies and external permits (e.g. Texas Department of Transportation [TXDOT], North Texas Municipal Water District [NTMWD], National Resource Soil Conservation [NRCS], and etcetera) are approved, and,
 - (2) The Civil Engineering Plans are consistent with the approved Preliminary Plat, Master Plat, and/or Site Plan; and,
 - (3) The Civil Engineering Plans conform to the Engineering Department's Standards of Design and Construction Manual; and,
 - (4) The Civil Engineering Plans conform to the zoning and requirements stipulated by the Unified Development Code (UDC) and Planned Development District ordinance [if applicable]; and,
 - (5) The Civil Engineering Plans conform to the standards for adequate public facilities as stipulated by this Chapter; and,
 - (6) The Civil Engineering Plans conform to any other applicable standards contained in the Municipal Code of Ordinances.
- (G) Effect of Approval. Approval of Civil Engineering Plans authorizes the property owner or developer/applicant to schedule a Pre-Construction Meeting in accordance with Section 38-8(4) and submit a Final Plat or Replat [if applicable].



- (H) Expiration of Civil Engineering Plans. The approval of *Civil Engineering Plans* shall remain in effect for a period of one (1) year from the date of approval, or for the duration of the project provided that continued progress towards completion is demonstrated.
- (I) Extension of Approval. The approval of *Civil Engineering Plans* may be extended by the *City Engineer* for a period of six (6) months beyond the expiration date. A request for extension shall be made to the *City Engineer* in writing a minimum of 30-days prior to the lapse of approval, and shall outline the reason for the extension. Upon receipt of the written request for extension, the *City Engineer* shall have 30 calendar days to act on the request. In determining to approve or deny a request for an extension of *Civil Engineering Plans*, the *City Engineer* shall consider: [1] if a *Final Plat* or *Replat* [if applicable] has been submitted and/or approved, [2] if the *Civil Engineering Plans* comply with any new ordinances or standards adopted over the last year, and [3] if the project has demonstrated forward progress.

(3) PUBLIC WORKS CONSTRUCTION STANDARDS AND SPECIFICATIONS.

- (A) Public Works Construction Standards and Specifications. The Public Works Construction Standards and Specifications shall be the North Central Texas Council of Governments, 5th Edition, November 2017 as amended by the City of Rockwall.

(4) PRE-CONSTRUCTION MEETING.

- (A) Purpose. The purpose of a *Pre-Construction Meeting* is to coordinate and discuss administrative, communication, construction, and operating procedures for project construction prior to *Construction Release* or the issuance of a *Building Permit*.
- (B) Applicability. A *Pre-Construction Meeting* with the Engineering Department shall be required following the approval of the *Civil Engineering Plans* and prior to the commencement of any construction activities on a property.
- (C) Construction Release. Upon approval of *Civil Engineering Plans*, receipt of all required documentation (e.g. bonds, quantities, and etcetera), and fees required by the Engineering Department, and after the *Pre-Construction Meeting* with the City, the *City Engineer* shall release the *Civil Engineering Plans* for construction if all City requirements pertaining to construction have been satisfied. The Construction Release shall remain in effect for a period of one (1) year from the date of issuance, or for the duration of the construction project provided continued progress towards completion is demonstrated. Expiration and possible extension shall be in accordance with [Section 38-8\(2\)\(H\)](#) and [Section 38-8\(2\)\(I\)](#).

(5) ENGINEERING INSPECTION, MAINTENANCE, AND ACCEPTANCE OF PUBLIC IMPROVEMENTS.

- (A) Engineering Inspections. The following pertains to Engineering Inspections in the City of Rockwall:
- (1) Engineering Inspection Fee. Any person desiring to submit for approval of *Civil Engineering Plans* shall – prior to the time of said plans being released for construction or at the time deemed appropriate by the *City Engineer* – pay to the City of Rockwall a fee that is equal to four (4) percent of the actual contract costs of the City of Rockwall’s maintained improvements (i.e. public improvements) associated with the project. The fee shall be based on a percentage of the estimated cost of public improvements including -- but not limited to -- the following: water, sanitary sewer, lift stations, storm sewer, drainage structures, bridges, culverts, paving, screening walls, and/or any other public improvement. If the actual costs are not available at the time of *Civil Engineering Plan* approval, the City of Rockwall will be furnished the estimated quantities and costs sealed and signed by a profession engineer. Prior to final acceptance by the City of Rockwall, the actual quantity and costs will be furnished to the City and the fee will be adjusted accordingly. The fee shall be due and payable to the Engineering Department prior to *Civil Engineer Plans* being released and the start of construction.
 - (2) Engineering Inspection Hours. Normal Engineering Inspection Hours are Monday through Friday 8:00 AM to 5:00 PM, with one (1) hour during that time for lunch. The Engineering Inspection Fees do not cover inspections outside of normal Engineering Inspection Hours including City holidays and/or weekend inspections.
 - (3) Engineering Inspection Outside of Normal Inspection Hours. To arrange for an Engineering Inspection Outside of Normal Inspection Hours, a written request for an overtime inspection must be submitted to the *City Engineer* or his/her designee a minimum of two (2) days prior to the inspection date. There is a two (2) hour minimum charge for inspections on weekends. The contractor will be charged a minimum two (2) hour overtime charge if the contractor schedules an inspection, but then cancels the work without notice to the Engineering Department before the inspector shows up for the inspection. The City of Rockwall will not give final acceptance of a project until the engineering inspector’s overtime charges are paid in full. Inspection overtime will be reimbursed to the City of Rockwall by the contractor at the rate of *time-and-a-half* plus workman’s compensation, Federal Insurance Contributions Act (FICA), and other normal City benefits and rates.
- (B) Maintenance During Construction. The property owner or developer/applicant shall maintain all required public improvements to the City of Rockwall’s standard during construction of the development or subdivision, and two (2) years after the date of City acceptance.



- (C) Disclaimer. The approval of a subdivision plat or *Civil Engineering Plans* does not constitute the acceptance of public improvements required to serve the development or subdivision.
- (D) As-Built Drawings. Prior to the acceptance of public improvements, City of Rockwall shall require As-Built Drawings showing a complete record of the as-built conditions on the site, unless otherwise approved by the *City Engineer*. Each record drawing sheet shall show all changes made in the *Civil Engineering Plans* during the construction process. In addition, the City shall not accept public improvements until a subdivision plat has been approved by the City Council and filed with Rockwall County.
- (E) Acceptance or Refusal of Public Improvements. The following shall relate to the City of Rockwall's acceptance of public improvements:
 - (1) Final Inspection. After the completion of all public improvements, franchise utilities, grading, and erosion control, the *City Engineer* or his/her designee will perform a final inspection before recommending acceptance of the public improvements. With the *Final Inspection* the inspector shall generate the Engineering Department's *Checklist for Final Acceptance*.
 - (2) Letter of Acceptance. If all public improvements and all items on the *Checklist for Final Acceptance* are complete, have been inspected and tested [if applicable], and determined by the City to be in compliance with the Engineering Department's *Standards of Design and Construction Manual*, the *City Engineer* shall issue a Letter of Acceptance notifying the property owner or developer/applicant of the City's acceptance.
 - (3) Refusal of Public Improvements. The *City Engineer* shall reject those public improvements that fail to comply with the Engineering Department's *Standards of Design and Construction Manual*.
- (F) Maintenance Bonds. *Maintenance Bonds* shall be required from a reputable and solvent corporate surety registered with the State of Texas -- and in good standing with the City of Rockwall -- to indemnify the City against any repairs. The Maintenance Bond shall be in accordance with the requirements of the Engineering Department's *Standards of Design and Construction Manual*.

SECTION 38-9: SUBDIVISION REQUIREMENTS

(1) GENERAL POLICIES.

(A) SUBDIVISION PLATS.

- (1) Subdivision Plat Approval is Required. It shall be unlawful for any property owner or property owner's representative to layout, subdivide, or assemble any tract of land into lots, blocks and streets within the City of Rockwall or within the City of Rockwall's Extraterritorial Jurisdiction (ETJ) without the approval of the City Council pending a recommendation from the Planning and Zoning Commission. In addition, it shall be unlawful for any property owners or property owner's representative to offer for sale or sell property in the City of Rockwall or within the City of Rockwall's Extraterritorial Jurisdiction (ETJ) that has not been laid out, subdivided, platted or replatted without the approval of the City Council.
- (2) Acceptance of Public Improvements. It is the policy of the City of Rockwall to withhold acceptance and maintenance of all public improvements (e.g. water, wastewater, streets, parks, drainage, trails, etc.) until a subdivision plat has been approved by the City Council and filed with Rockwall County.
- (3) Building Permits. The following requirements shall pertain to the issuance of Building Permits:
 - (a) Subdivision Plat Required. No Building Permits shall be issued for the construction of any building or structure on a property in the City of Rockwall -- other than a Lot of Record that has previously provided the necessary dedication and easements to facilitate development -- unless a subdivision plat has been approved by the City Council and filed with Rockwall County. In certain circumstances, upon written request of a property owner, the Director of the Planning and Zoning Department may allow for a Building Permit to be issued prior to a subdivision plat being recorded with Rockwall County; however, no improvements shall be accepted by the City of Rockwall as complete until the subdivision plat has been filed with Rockwall County and *Civil Engineer* construction has been accepted.
 - (b) Utility Connections Required. No Building Permits or Construction Permits (i.e. permits for water, sewer, plumbing, and/or electrical) or any utility connections shall be permitted or issued by the City of Rockwall to the property owner or developer/applicant with respect to any subdivision plat allowed by this *Chapter* until:
 - (1) Such time the property owner or developer/applicant has complied with the requirements of this *Chapter* and the subdivision plat pertaining to the improvements with respect to the block facing the street or road and/or streets or roads on which the



property abuts, including the installation of streets or roads and appurtenances in accordance with the specifications of the City of Rockwall; or,

- (2) Such time the property owner or developer/applicant files a corporate surety bond with the City of Rockwall in the sum equal to 115.00% of the cost of such improvements for the designated guaranteeing the installation thereof within the time slated in the bond, which shall be fixed by the City of Rockwall.

- (4) Guaranteed for Construction or Maintenance of Streets. Approval of a subdivision plat shall not impose any duty upon the City of Rockwall concerning the maintenance or improvement of any such dedicated parts until the proper authorities of the City have made acceptance by letter and maintenance bond provided to the City for two (2) year with the option of three (3) years if the City feels the need to protect the City from undue hardship.

(B) CONFORMANCE TO THE CITY'S PLANS.

- (1) Public Improvements. All proposed public improvements serving a new development shall meet the minimum service levels and conform to and be properly sized to the Master Thoroughfare Plan, Master Water Plan, Master Wastewater Plan, and Master Trail Plan as depicted in the Comprehensive Plan, the Capital Improvements Plan (CIP), the Engineering Department's *Standards of Design and Construction Manual*, or in other adopted Master Plans for public facilities and services.
- (2) Streets and Access. All subdivision plats and civil engineering plans for property within the City of Rockwall or the City of Rockwall's Extraterritorial Jurisdiction (ETJ) shall provide all thoroughfares as depicted on the Master Thoroughfare Plan contained in the Comprehensive Plan. Minor adjustments to the alignment of a thoroughfare or street is permitted without the need to amend the Comprehensive Plan if the Director of the Planning and Zoning Department determines that the proposed alignment of the thoroughfare meets the intent of the Master Thoroughfare Plan and will not compromise the free flow of traffic or the safety of the general public. The design and construction of all proposed thoroughfares shall be in conformance with the street cross sections contained in the Comprehensive Plan and the requirements of the City's *Standards of Design and Construction Manual*.
- (3) Water. The design and construction of the water distribution system necessary to adequately serve a proposed development shall be in conformance with the City's Master Water Plan contained in the City's Comprehensive Plan and the City's *Standards of Design and Construction Manual*, and shall be subject to review and approval by the *City Engineer* or his/her designee prior to the approval of *Civil Engineering Plans* or a Final Plat or Replat.
- (4) Wastewater. The design and construction of the wastewater collection system necessary to adequately serve a proposed development shall be in conformance with the City's Master Wastewater Plan contained in the City's Comprehensive Plan and the City's *Standards of Design and Construction Manual*, and shall be subject to review and approval by the *City Engineer* or his/her designee prior to the approval of *Civil Engineering Plans* or a Final Plat or Replat.
- (5) Drainage/Detention. The design and construction of drainage and detention systems necessary to mitigate stormwater runoff shall be in conformance with the City's *Standards of Design and Construction Manual*, and shall be subject to review and approval by the *City Engineer* or his/her designee prior to the approval of *Civil Engineering Plans* or a Final Plat or Replat.
- (6) Parks and Trails. The design and construction of the trail system and/or public park necessary to adequately serve pedestrian access and recreational and passive amenities to a proposed development shall be in conformance with the City's Master Trail Plan contained in the City's Comprehensive Plan, the City's *Standards of Design and Construction Manual*, and the Parks and Open Space Master Plan, and shall be subject to review and approval by the *City Engineer*, Director of the Parks and Recreation Department, and the Director of the Planning and Zoning Department or their designees prior to the approval of *Civil Engineering Plans* or a Final Plat or Replat.
- (7) Amendment to the Comprehensive Plan. If a significant deviation from the Master Thoroughfare Plan, Master Water Plan, Master Wastewater Plan, and/or Master Trail Plan is proposed, then the City's Comprehensive Plan shall be amended prior to the approval of *Civil Engineering Plans* or a Final Plat or Replat. Prior to the amendment the Director of the Planning and Zoning Department or City Engineer may -- *at their discretion* -- require additional facilities studies in order to fully assess the impact of the proposal on the City's Master Plans.

(C) ADEQUATE PUBLIC FACILITIES.

- (1) Adequate Service for Areas Proposed for Development. Land proposed for development in the City of Rockwall or the City of Rockwall's Extraterritorial Jurisdiction (ETJ) must be served adequately by essential public facilities and services (*e.g. water facilities, wastewater facilities, roadways, pedestrian facilities, drainage facilities, park and recreational facilities, etc.*). Land shall not be approved for platting or development until adequate public facilities necessary to serve the development exist or the provision of such essential public facilities



and services have been provided. This policy includes both on-site and off-site public facilities and services. In reviewing subdivision plats and proposed developments for adequate service, the City of Rockwall finds:

- (a) It is necessary and desirable to provide for the dedication of rights-of-way and easements for public facilities to support new development and subdivisions at the earliest stage of the development process.
 - (b) The requirements for the dedication and construction of public infrastructure improvements to serve a new development and subdivision should be attached as conditions of approval for any *Development Application* that contains a specific layout for the development or subdivision.
 - (c) There is an essential nexus between the demand on public facility systems created by a new development or subdivision, and the requirement to dedicate rights-of-way and easements and to construct capital improvements to offset such impacts.
 - (d) The City of Rockwall desires to assure both that development impacts are mitigated through contributions of rights-of-way, easements, and construction of capital improvements, and that a development or subdivision contribute not more than its proportionate share of such costs.
- (2) Easements and Right-of-Way for Public Facilities. In order to maintain the prescribed levels of public facilities and City services for the health, safety and general welfare of its citizens, the City of Rockwall may require the dedication of Easements and Right-of-Way for or the construction of on-site and off-site public infrastructure improvements relating to water, wastewater, roadway, drainage, or park facilities to serve a proposed development, or require the payment of fees in lieu of dedication. If adequate levels of public facilities and services cannot be provided concurrent with the schedule of a proposed development, the City of Rockwall may deny the development until the public facilities and services can be provided or: [1] require a reduction in the intensity or density of a proposed land use to sufficiently ensure that the facilities and systems serving the proposed development have adequate capacity to mitigate the impacts generated by the proposed development, or [2] require that the development be phased so that the delivery of facilities and services coincides with the demands for the facilities created by the proposed development. The City of Rockwall may also impose conditions and restrictions relating to the provision of public infrastructure specified by an ordinance establishing or amending the zoning for the property for the proposed development.
- (3) Property Owner or Developer's Responsibilities. The property owner and/or developer shall be responsible for -- *but not limited to* -- the following:
- (a) Dedication and Construction of Improvements. The property owner and/or developer/applicant shall be responsible for dedicating all rights-of-way and easements, and for the construction and extension of all necessary on-site and off-site public improvements within the rights-of-way or easements for water distribution, wastewater collection and treatment, streets/roadways, storm drainage improvements, parks and trails, and other improvements needed to adequately serve the proposed development at a level of service that is consistent with the City of Rockwall's *Water and Wastewater Master Plans* and the *Standards of Design and Construction Manual*.
 - (b) Property Adjacent to or Abutting a Substandard Street. In instances where a property is being subdivided that is adjacent to, traversed by, or abutting a substandard street, the City of Rockwall may require the property owner and/or developer to dedicate additional right-of-way and improve the street to the current standards contained within the City's *Comprehensive Plan* and *Standards of Design and Construction Manual*. In determining if a substandard street will require improvement, the City Engineer shall consider the following factors:
 - (1) The impact of new development on the substandard street;
 - (2) The timing of the proposed development in relation to the existing condition and need for the substandard street; and,
 - (3) The potential for future development of adjoining properties.
 - (c) Facilities Impact Studies. The Director of the Planning and Zoning Department and/or City Engineer or their designee may require a property owner and/or developer prepare a Facilities Impact Study (e.g. *Traffic Impact Analysis, Flood Study, Infrastructure Study, etc.*) in order to assist the City in determining if a proposed development will be supported with adequate levels of public facilities and services concurrent with the demand for the facilities created by the proposed development. The study or studies shall at a minimum identify the following:
 - (1) The adequacy and capacities of the existing facilities;
 - (2) The nature and extent of any current deficiencies of existing facilities; and,
 - (3) The public improvements necessary to meet adequate levels of service consistent with the City of Rockwall's *Water and Wastewater Master Plans* and the *Standards of Design and Construction Manual* for the proposed development.



The study or studies shall be subject to review and approval by the Director of the Planning and Zoning Department and/or City Engineer or their designee. The City may also require -- *at the time of a subsequent subdivision plat application* -- an update of a facilities impact study approved in conjunction with a prior subdivision plat application.

- (d) *Future Extensions of Public Utilities*. The property owner shall make provisions for the future extension of public facilities as needed to serve future developments.
 - (e) *Approval and Compliance with Utility Providers*. The property owner shall be responsible for obtaining all the necessary approvals from the applicable utility providers -- *other than the City of Rockwall* --, and shall submit a written verification of said approvals to the *City Engineer* with the submittal of *Civil Engineering Plans*. In addition, the property owner shall maintain compliance with all requirements of the utility providers and the City of Rockwall.
- (4) *Timing of Dedication and Construction of Public Facilities and Services*.
- (a) *Initial Provision for the Dedication or Construction of Improvements*. The City of Rockwall shall require an initial demonstration that a proposed development shall be adequately served by public facilities and services at the time for approval of the first subdivision plat or *Development Application* that portrays a specific plan or development including -- *without limitation* -- a *Development Application* for a *Preliminary Plat*, *Master Plat*, *Final Plat*, or *Replat*. As a condition of approval of the subdivision plat or *Development Application*, the City of Rockwall may require provision for the dedication of rights-of-way and/or easements for the construction of capital improvements to serve the proposed development.
 - (b) *Deferral of Obligation*. The obligation to dedicated rights-of-way for or to construct one (1) or more capital improvement to serve a new development may be deferred until approval of a subsequent phase of the subdivision, at the sole discretion of the *City Engineer*, upon a written request by the property owner or developer/applicant -- *with the property owner's consent* --, or at the City of Rockwall's own initiative. As a condition of deferring the obligation, the City of Rockwall may require that the developer enter into a *Facilities Agreement* in accordance with [Section 38-10\(1\)](#), specifying the time for the dedication of rights-of-way for or the construction of capital improvements serving the development.
- (5) *Proportionality*. The City of Rockwall recognizes that there is a direct correlation between the increased demand on public facilities and infrastructure created by a new development, the City's requirements for the dedication of rights-of-way and easements, and the construction of a fair and proportional share of the improvements necessary to offset the impacts of new development on the City's existing public facilities and infrastructure. Based on this it is the desire of the City of Rockwall that new development projects contribute a fair and proportional share of the costs necessary to offset the created impact.
- (a) *Determination of Proportionality*. Prior to the submittal of a *Development Application* for a *Preliminary Plat*, *Final Plat*, or *Replat*, a property owner or developer may request in writing a *Determination of Proportionality* from the *City Engineer* affirming that each public infrastructure improvement to be imposed as a condition of approval for a subdivision plat is roughly proportionate to the demand created by the proposed development on the City of Rockwall's public facilities and infrastructure. This determination shall take into consideration the nature and extent of the development proposed.
 - (b) *Determination of Proportionality Submission Requirements*. In addition to the written request for a *Determination of Proportionality*, the *City Engineer* may require supplementary information of the property owner or developer relating to the proposed development or public facilities and infrastructure.
 - (c) *Criteria for a Determination of Proportionality*. In making a decision on a *Determination of Proportionality* the *City Engineer* may rely upon categorical findings pertaining to:
 - (1) The location of proposed or existing on-site improvements.
 - (2) The proposed or potential use of the land.
 - (3) The timing and sequence of development in relation to the availability of adequate levels of public facilities.
 - (4) Impact fee studies or other studies that measure the demand for services created by the development and the impact on the City of Rockwall's public facilities and infrastructure.
 - (5) The function of the public infrastructure improvements in serving the proposed development.
 - (6) The degree to which public infrastructure improvements that will serve the subdivision are supplied by other developments.
 - (7) The anticipated participation by the City of Rockwall in the costs of such improvements.
 - (8) Any reimbursements for the costs of public infrastructure improvements for which the proposed development is eligible.
 - (9) Any other information relating to the mitigating effects of the public infrastructure improvements on the impacts created by the development on the City of Rockwall's public facilities and infrastructure.



- (d) *Final Determination of Proportionality*. Based upon the findings from the *Determination of Proportionality*, the *City Engineer* shall affirm that the public infrastructure improvement requirements of this *Chapter* do not impose costs on the developer for such improvements that exceed those roughly proportionate to the costs incurred by the City of Rockwall in providing public facilities and infrastructure to serve the development.
- (e) *Petition for a Proportionality Appeal*. A *Petition for a Proportionality Appeal* may be filed by a property owner or developer in accordance with the requirements of [Section 38-10\(2\)](#) to contest any requirement to dedicate land or to construct public improvements as required by this *Chapter*.

(2) WATER AND WASTEWATER

(A) WATER AND WASTEWATER BASIC POLICY

- (1) *Water and Wastewater Utility Connections*. The City of Rockwall shall *not* provide any *Water and Wastewater Utility Connections* to land proposed for subdivision under this *Chapter* until all of the following requirements have been satisfied:
 - (a) *Preliminary Utility Plan*. Concurrent with the submission of a *Preliminary Plat* -- or *Final Plat*, *Minor Plat*, or *Replat* if no *Preliminary/Plat* is required -- the property owner or developer/applicant shall submit a utility plan showing the location and size of proposed and existing water and wastewater lines, which will be required to provide adequate service and fire protection to the lots specified in the subdivision plat. Where a *Master Plat* proposes a phased development or subdivision, the property owner or developer/applicant shall demonstrate that each phase of the development or subdivision shall be served by adequate water distribution and wastewater collection systems.
 - (b) *Civil Engineering Plans*. Plans for the construction of all water and wastewater facilities required by the regulations contained in this *Chapter* shall be prepared in accordance with the requirements and specifications contained in the Engineering Department's *Standards of Design and Construction Manual*, the regulations of the Texas Commission on Environmental Quality (TCEQ), and the City's adopted *Fire Code*. Plans for the improvements shall be prepared by a *Profession Engineer* licensed by the State of Texas and accepted by the *City Engineer*.
 - (c) *Acquisition of Off-Site Easements*. The property owner or developer/applicant shall be responsible for the acquisition of all required off-site easements.
- (2) *Construction Requirements*. The following shall pertain to the construction of water and wastewater facilities in the City of Rockwall:
 - (a) A water or wastewater line easement shall not be situated between two (2) residential lots, and should be situated entirely on an individual open space lot. If it is determined by the *City Engineer* that the water or wastewater line easement can be situated on a residential lot, then the easement shall fall entirely on a single lot.
 - (b) Public water and/or wastewater lines shall not be located within a private street or drive aisle unless a public utility easement is provided.
 - (c) No portion of any structure (*including but not limited to walls, signs, foundations, porches/patios, canopies, roof extensions or overhangs, chimneys, and etcetera*) shall encroach over or into any easement unless otherwise permitted by the Unified Development Code (UDC) or by written approval of the *City Engineer*.
 - (d) Easements for water and wastewater lines shall be dedicated for exclusive use for water and wastewater facilities and shall be shown on the subdivision plat. When it is necessary for additional utilities to be placed within an easement, the *City Engineer* or his/her designee may require additional width be provided and the easement shall be labeled for its intended purpose of the subdivision plat.
 - (e) When it is necessary to relocate or replace an existing water or wastewater facility to accommodate a proposed development or subdivision, the property owner or developer/applicant is responsible for all costs associated with the relocation, except as agreed to by the City Council through a *Facilities Agreement*.
 - (f) Water and wastewater improvements shall not be deemed as accepted until *As Built* plans are submitted to the Engineering Department at the end of construction showing the actual location of all improvements, and the two (2) year maintenance bonds required for all water and wastewater improvements has expired.
- (3) *Miscellaneous Policies*. The following *Miscellaneous Policies* shall apply with regard to water distribution and wastewater collection systems in the City of Rockwall:



- (a) The City of Rockwall does not guarantee that water supply or wastewater capacity will be available at any particular time for any particular site within the City's corporate boundaries.
- (b) No buildings or structures shall be constructed or storage placed -- *temporary or permanent* -- over an existing water or wastewater line or lateral or storm drain unless approved by the City Council upon a written recommendation from the *City Engineer*.
- (c) Water and wastewater lines shall not bisect any adjacent lot. All water and wastewater lines shall be extended to have a minimal impact to adjacent properties.
- (d) Private water and wastewater lines shall be maintained, repaired, and replaced by the property owner.
- (e) Public water and wastewater lines adjacent to a State and County roads shall be constructed outside of the right-of-way in a separate easement unless otherwise agreed to by the appropriate agencies and the City of Rockwall.

(B) WATER.

- (1) Adequate Water Distribution System. No subdivision plat shall be approved unless the property owner or developer/applicant can demonstrate conformance to the following:
 - (a) City as the Provider. Where water is to be provided through the City of Rockwall's water distribution system, the property owner or developer/applicant shall install adequate water facilities, including fire protection systems or appurtenances, in accordance with the Engineering Department's *Standards of Design and Construction Manual*, the City's adopted *Fire Code*, and the Texas Commission of Environmental Quality's (TCEQ's) current *Rules and Regulations for Public Water Systems*, and any other federal, state or local laws. If any such requirements are in conflict, the most stringent requirement shall apply.
 - (b) Extraterritorial Jurisdiction (ETJ). Properties within the City of Rockwall's Extraterritorial Jurisdiction (ETJ) shall be prohibited from connecting to the City's water distribution system.
 - (c) Providers Other than the City. Where the City of Rockwall is not the provider, the property owner or developer/applicant shall provide assurances that sufficient capacity can be provided in accordance with the City of Rockwall's standards contained in this *Chapter* from the entity that holds the Certificate of Convenience and Necessity (CCN) for the land that is to be subdivided. Such entity must have a wholesale water supply contract that allows purchase of water at sufficient and consistent volume and pressure to serve the development when considering all other commitments.
- (2) Facilities for Health and Safety Emergencies. All water facilities connected to the City of Rockwall water distribution system shall be capable of providing water health and emergency purposes, including fire protection and suppression. Water supply facilities shall be in accordance with the Engineering Department's *Standards of Design and Construction Manual*. The design and construction of water system improvements shall also comply with the following standards:
 - (a) Design and construction of an on-site water source shall be in accordance with applicable regulations of the Texas Commission of Environmental Quality (TCEQ).
 - (b) Design and construction of water service from the City of Rockwall shall be in accordance with the standards in the Engineering Department's *Standards of Design and Construction Manual*.
 - (c) Design and construction of a fire protection and suppression system shall be in accordance with the standards in the City's adopted *Fire Code*.
- (3) Location of Water Supply Improvements. Improvements to the City of Rockwall's water distribution system shall adhere to the following:
 - (a) Civil Engineering Plans. The location and design of all water supply improvements, fire hydrants, private water systems, and the boundaries lines of special districts and certified water service areas shall be depicted on Civil Engineering Plans.
 - (b) Extension of Water Lines. The Extension of Water Lines shall be made along the entire frontage of a street or road adjacent to a proposed development or subdivision. If the proposed development or subdivision is not adjacent to a street, the Extension of Water Lines shall be accomplished in a manner so as to allow convenient future connections to said lines by an adjacent development or subdivision.



- (c) Waiver. If a new and additional development or subdivision will never be constructed beyond a subdivision or development that is being planned or under construction due to physical constraints, the *City Engineer* may approve a Waiver for the requirements for the *Location Water Supply Improvements* prior to any action on a subdivision plat.
- (4) Cost of the Installation of Water Supply Improvements. The cost of installing water supply improvements shall be made by the property owner or developer/applicant, including any necessary off-site improvements, necessary to adequately serve a subdivision or development.
- (5) Cost of Extending the Water Distribution System. Where the City of Rockwall's water distribution system is not planned to be extended in time to serve a proposed new subdivision or development, all necessary water facilities to serve said subdivision or development shall be provided by and at the expense of the property owner or developer/applicant. If the *City Engineer* determines that oversizing of the proposed water facility is necessary for future developments, the City of Rockwall may participate in such oversizing costs as part of a *Facilities Agreement (if funds are available)* or through a *Pro-Rata Agreement* in accordance with [Article II, Main Extension, of Chapter 44, Utilities, of the Municipal Code of Ordinances](#). Where the City of Rockwall is not the water supplier, the property owner or developer/applicant shall provide assurances that the water supply improvements shall be made to provide adequate water service prior to the approval of a subdivision plat.
- (6) Alternative Water Facilities. Developments may be approved with Alternative Water Facilities in accordance with the following criteria:
 - (a) The operation and quality of water wells shall meet the minimum requirements of the Texas Commission on Environmental Quality (TCEQ), Rockwall County, all applicable City ordinance, and any other applicable regulatory agencies.
 - (b) The water shall only be used for irrigation purposes.
 - (c) The water shall only serve a single lot or tract of land.
 - (d) Water wells may not be used for the commercial sale of water.
 - (e) The cost to tie onto the public water system must exceed the certified initial capital cost of a well by 25.00%. All costs and engineering designs shall be submitted by a *Licensed Professional Engineer*. All costs and engineering design shall be subject to approval by the *City Engineer*. If a residence is located within 1,000-feet of a domestic water supply, that residence shall tie into that domestic water service.

(C) WASTEWATER.

- (1) Adequate Wastewater Collection System. No subdivision plat shall be approved unless the property owner or developer/applicant can demonstrate conformance to the following:
 - (a) Extension of and Connection to the City's Wastewater Collection System. Extension of and connection to the City of Rockwall's sanitary sewer system shall be required for all new developments within the City's corporate boundaries.
 - (b) Extraterritorial Jurisdiction (ETJ). Properties within the City of Rockwall's Extraterritorial Jurisdiction (ETJ) shall be prohibited from connecting to the City's wastewater collection system.
 - (c) Temporary Package Treatment Plants. Adequacy of treatment facilities cannot be demonstrated by the reliance upon Temporary Package Treatment Plants.
 - (d) On-Site Sanitary Sewage Facilities (OSSF). On-Site Sanitary Sewage Facilities (OSSF) shall be permitted in accordance with the requirements of [Division 5, On-Site Sewage Facility, Article IV, Sewers and Sewage Disposal, of Chapter 44, Utilities of the Municipal Code of Ordinances](#); however, the proposed OSSF shall be situated on a lot that meets the minimum lot size standards stipulated by the zoning district as required by the Unified Development Code (UDC).
 - (e) Providers Other than the City. Where the City of Rockwall's sanitary sewer system is not to be used, the property owner or developer/applicant shall provide assurance that the entity collecting the sewage holds a Certificate of Convenience and Necessity (CCN) for the land to be developed, that the collection system is adequate to accommodate the anticipated sewage flows from the development, and that the treatment system to be used has adequate capacity.
- (2) Design and Construction. It is the policy of the City of Rockwall to require all wastewater collection lines to have gravity flow. The use of lift stations and force mains is prohibited unless the *City Engineer* determines a gravity design is impractical. The location, design,



and sizing of all wastewater improvements shall be shown on the *Civil Engineering Plans* and are subject to approval by the *City Engineer* or his/her designee.

- (3) *Cost of the Installation of Wastewater Improvements*. The cost of installing wastewater improvements shall be made by the property owner or developer/applicant, including any necessary off-site improvements, necessary to adequately serve a subdivision or development.
- (4) *Cost of Extending the Wastewater Collection System*. Where the City of Rockwall's wastewater collection system is not planned to be extended in time to serve a proposed new subdivision or development, all necessary wastewater facilities to serve said subdivision or development shall be provided by and at the expense of the property owner or developer/applicant. If the *City Engineer* determines that oversizing of the proposed wastewater facility is necessary for future developments, the City of Rockwall may participate in such oversizing costs as part of a *Facilities Agreement (if funds are available)* or through a *Pro-Rata Agreement* in accordance with [Article II, Main Extension, of Chapter 44, Utilities, of the Municipal Code of Ordinances](#).
- (5) *Future Extensions of the Wastewater Collection System*. Stub-outs for wastewater lines shall be located in manholes to facilitate the future extensions of wastewater lines. The *City Engineer* shall determine the location and size of the required stub-outs.

(3) STORM WATER, DRAINAGE, AND DETENTION.

(A) STORM WATER, DRAINAGE, AND DETENTION POLICIES.

- (1) *Easements*. Drainage and detention easements shall be dedicated for public features and shall be maintained, repaired, and replaced by the property owner in accordance with the requirements of this *Chapter* and the Engineering Department's *Standards of Design and Construction Manual*. Storm drainage easements shall be located along the side property lines, and such easements shall be contained fully on one (1) lot, parcel, or tract of land, and shall not bisect or split the property line between two (2) lots, parcels, or tracts of land.
- (2) *Storm Water Quality*. Designs for new development or subdivision shall manage storm water in a manner that protects water quality by addressing the development or subdivision's potential to cause erosion, pollution, siltation, and sedimentation in the Municipal Separate Storm Sewer System (MS4) and natural creeks. The goal is to maintain, after development -- *to the maximum extent possible* --, the predeveloped characteristics in the creek, which ultimately receives storm water runoff from the development or subdivision. It is the property owner or developer/applicant's responsibility to ensure that designs for new development or subdivisions meet the storm water management requirements in the *General Permit for Storm Water Discharges from Construction Activities* issued by the Texas Commission on Environmental Quality (TCEQ), and the City's Storm Water Management (SWM) ordinance. This permit includes the requirement for measures that will be installed during construction to control pollutants in storm water discharges after construction operations have been completed.
- (3) *Storm Water Runoff*. *Storm Water Runoff* shall be calculated anticipating a fully developed watershed. The zoning map, current land use map, and Future Land Use Plan contained in the Comprehensive Plan shall be used to determine the fully developed conditions. The *City Engineer* reserves the right to review a determination of existing land use and the fully developed conditions, and may require revisions if necessary.
- (4) *Minimum Finished Floor Elevations*. The *City Engineer* may require a *Minimum Finished Floor Elevations* to provide flood protection on certain lots contained within the subdivision. *Minimum Finished Floor Elevations* shall be shown on subdivision plats. These elevations shall incorporate the most current floodplain management criteria or other criteria as necessary to avoid damages. The *Minimum Finished Floor Elevations* shall be two (2) feet above the fully developed 100-year water surface elevation where the *Minimum Finished Floor Elevations* is associated with a natural creek, detention system, and/or open channel. When the *Minimum Finished Floor Elevations* is necessitated by situations other than a natural creek, detention system, and/or open channel, the *Minimum Finished Floor Elevations* shall be set by the property owner or developer/applicant's engineer and agreed upon by the *City Engineer*. In addition, the following note or an amended version appropriate to the specific subdivision plat shall be added to any subdivision plat upon with the *City Engineer* requires the establishment of *Minimum Finished Floor Elevations*:

The City reserves the right to require minimum finished floor elevations on any lot contained within this subdivision. The minimum elevations shown are based on the most current information available at the time the subdivision plat is filed and are subject to change.

- (5) *Off-Site Drainage*. When any proposed development or subdivision requires off-site grading where storm water runoff has been collected or concentrated, it shall not be permitted to drain onto an adjacent property except in existing creeks, channels, storm sewers or streets unless one (1) of the following is provided:



- (a) Notarized Letter of Permission. The written letter shall state that the permission shall bind the property owner of the affected property and be a covenant running with the land. It shall also refer to the plans for the improvements creating the need for the permission. The letter shall be filed with Rockwall County.
- (b) Drainage Easement. A drainage easement shall be dedicated for creeks, ditches, and/or drainage channels and shall be of a width sufficient to comply with the criteria outlined in the Engineering Department's *Standards of Design and Construction Manual*.

(B) STORM WATER MANAGEMENT PLAN.

- (1) A Storm Water Management Plan (SWMP) shall be prepared for all developments and subdivisions in accordance with the requirements set forth in the Engineering Department's *Standards of Design and Construction Manual* and City's Storm Water Management (SWM) ordinance. The purpose of the Storm Water Management Plan (SWMP) is to identify permanent water quality feature opportunities for the development.
- (2) The Storm Water Management Plan (SWMP) shall be prepared in coordination with the drainage plan on all projects where both are required. The Storm Water Management Plan (SWMP) and the drainage plan may *not* be shown on the same sheet. When a drainage plan is not required, the Storm Water Management Plan (SWMP) shall indicate the existing drainage patterns and runoff coefficients and the proposed changes to these items.
- (3) The Storm Water Management Plan (SWMP) must comply with the standards and criteria outlined in this *Chapter*, the Engineering Department's *Standards of Design and Construction Manual*, and the City's Storm Water Management (SWM) ordinance. The plan may satisfy the storm management portion of the Storm Water Pollution Prevention Plan (SWPPP) that is required for construction activities; however, the Storm Water Management Plan (SWMP) is not a substitute for the Storm Water Pollution Prevention Plan (SWPPP). The City's review of the Storm Water Management Plan (SWMP) does not constitute acceptance of the final Storm Water Management Plan (SWMP) or the final development or subdivision plan.
- (4) The property owner or developer/applicant shall provide a Storm Water Management Plan (SWMP) for the area proposed for development. For subdivision plats with a previously approved Storm Water Management Plan (SWMP), the accepted Storm Water Management Plan (SWMP) shall be enforced unless a revised Storm Water Management Plan (SWMP) is required.

(C) DRAINAGE PLAN.

- (1) A Drainage Plan shall show the watershed affecting the development of how the runoff from the fully developed watershed will be conveyed to, through, and from the development. It must comply with the standards outlined in this *Chapter* and the drainage design criteria found in the Engineering Department's *Standards of Design and Construction Manual*. The Drainage Plan is a guide for the detail drainage design. The review of the Drainage Plan does not constitute final Drainage Plan approval or authorize a waiver to this *Chapter*.
- (2) For any property involved in the development process, a Drainage Plan shall be provided -- *at the property owner or developer/applicant's expense* -- for the area proposed for development. For property with a previously accepted Drainage Plan, the accepted Drainage Plan may be submitted and enforced unless a revised Drainage Plan is required by the *City Engineer* due to lot reconfiguration or other conditions created by a new subdivision plat. The *City Engineer* may waive the requirement for a Drainage Plan if the submitted subdivision plat is not anticipated to cause any significant change in runoff characteristics from a previously accepted drainage study or for single residential properties where no drainage problems are anticipated. If the applicant requests a waiver in writing to the *City Engineer*, a copy of any previous Drainage Plan shall be provided.

(D) CREEKS AND FLOODPLAIN.

- (1) Development Adjacent to a Floodplain. All development proposed adjacent to or within the 100-year floodplain shall be in accordance with the Engineering Department's *Standards of Design and Construction Manual*, this *Chapter*, and the City's Flood Hazard Prevention ordinance.
- (2) Floodplain Restrictions for the 100-Year Floodplain. For the health, safety, and general welfare of community and for the conservation of water, storm drainage, and sanitary sewer facilities, the City prohibits development within the 100-year floodplain. Creeks shall be protected from destruction or damage resulting from clearing, grading, and dumping of fill material, waste or other foreign materials. Clearing, grading, excavation or filling of any area within the 100-year floodplain or within any creek shall be prohibited unless authorized in writing by the City of Rockwall.
- (3) Restrictions for Creeks. All Creeks shall be maintained in an open and natural condition. Each Creek is subject to the following requirements with regard to development:



- (a) The 100-year floodplain and *Erosion Hazard Setback* -- as defined in the *Engineering Department's Standards of Design and Construction Manual* -- shall be retained by the property owner or dedicated to a Homeowner's Association (HOA), pursuant to the requirements of this *Chapter*.
- (b) At no time shall any portion of the 100-year floodplain exist or be within any residential lot (*excluding multi-family*).
- (4) *Access to and Maintenance of Floodplains*. Access to a floodplain for private maintenance shall be dedicated as required by the *City Engineer*.
- (5) *Retaining Walls Adjacent to a Creek or Floodplain*. A retaining wall or walls may be allowed between a single-family lot or parcel and a creek or floodplain as approved by the *City Engineer* as long as the walls are: [1] not within the 100-year floodplain, and [2] are not within a dedicated easement.
- (6) *Streets Adjacent to a Creek or Floodplain*. *Streets Adjacent to a Creek or Floodplain* shall adhere to the following criteria:
 - (a) *Parallel Streets*. A minimum of 50.00% of the linear frontage of a creek or floodplain shall be adjacent to a *Parallel Street*, and will be constructed outside and exclusive of the required erosion hazard setback.
 - (b) *Cul-De-Sacs*. *Cul-De-Sacs* should be avoided adjacent to a creek or floodplain; however, if *Cul-De-Sacs* cannot be avoided they should comply with the following criteria:
 - (1) A minimum of 50.00% of the *Cul-De-Sac* frontage shall be open to the creek or floodplain and no lots or parcels shall encroach within the area between this line and the creek or floodplain, and will be constructed outside and exclusive of the required erosion hazard setback.
 - (2) A trail connecting to a greater trail system and/or landscaping shall be provided at the end of the *Cul-De-Sac* as approved by the Director of the Planning and Zoning Department.
- (7) *Fences Adjacent to a Creek or Floodplain*. *Fences Adjacent to a Creek or Floodplain* shall adhere to the following criteria:
 - (a) Fences shall meet the standards of the Unified Development Code (UDC) and Planned Development District ordinance [*if applicable*].
 - (b) *Fences Adjacent to a Creek of Floodplain* shall be wrought iron or a similar decorative metal where a minimum of 50.00% of the fence is transparent.
 - (c) The property owner shall be responsible for the maintenance of the fence.
 - (d) Fences shall not be located within the 100-year floodplain or the *Erosion Hazard Setback* -- as defined in the *Engineering Department's Standards of Design and Construction Manual*.
- (8) *Additional Studies*. At the request of the *City Engineer* or the Director of the Planning and Zoning Department, the property owner or developer/applicant shall submit additional studies -- including but not limited to the following: [1] *Wetland Delineation*, [2] *Habitat Study*, [3] *Vegetative Study*, [4] *Erosion Hazard Setback Study*, [5] *Storm Drainage Study*, [6] *Riparian Study*, [7] *Flood Study*, and/or [8] *Downstream Assessment Study* -- as deemed appropriate and necessary by the City of Rockwall as part of the *Civil Engineering Submittal*. These studies shall be considered during review and approval of the *Civil Engineering Plans*.

(4) STREETS.

(A) GENERAL STREET POLICIES.

- (1) *Right-of-Way Dedication*. When platting a subdivision in accordance with this *Chapter*, a property owner and/or developer shall provide additional *Right-of-Way* necessary for existing and future streets as required by the *City's Master Thoroughfare Plan*, the *Engineering Department's Standards of Design and Construction Manual*, and/or other plans adopted by the *City Council*.
- (2) *Substandard Streets*.
 - (a) *Improvement of an Existing Substandard Street*. When a proposed residential or non-residential development abuts one (1) or both sides of an existing substandard street, the property owner or developer/applicant shall be required to improve the



- substandard street and its appurtenances (e.g. curbs, gutters, sidewalks, ramps, street trees, storm systems, and etcetera) to bring the street up to the City of Rockwall's standards, or to replace it with a standard City street, at no cost to the City of Rockwall.
- (b) Escrow for an Existing Substandard Street. If the proposed development is located along only one (1) side of a substandard street, and when -- in the City Council's judgement -- it is not feasible to reconstruct the street at the time of development, the City Council may allow the property owner or developer/applicant to pay into escrow an amount equal to 115.00% of the property owner or developer/applicant's share of the cost of said improvements as a condition of approval of the *Final Plat* or *Replat*.
- (c) Partial Refund of Escrow. When funds have been provided and placed in escrow with the City of Rockwall for the development of a substandard street, and the street is reconstructed by a party other than the escrowing property owner or developer/applicant at no cost to the City, the escrowed funds and accrued interest -- if any -- shall be refunded to the developer after the completion and acceptance of the improvements. In the event that appropriation of the cost is borne by the City, the difference between the developer's proportionate cost and the escrowed funds -- including accrued interest, if any -- shall be refunded to the property owner or developer/applicant after the completion and acceptance of the improvements.
- (d) Exceptions or Appeals. The property owner or developer/applicant may request an Exception [see [Section 38-10\(2\)](#)] or file a Proportionality Appeal [see [Section 38-10\(3\)](#)] -- after a Determination of Proportionality [see [Section 38-9\(1\)\(C\)\(5\)](#)] -- if the requirements for improving an existing substandard street imposed by this *Section* would result in an unnecessary hardship or would be disproportional to the impacts generated by the development on the City of Rockwall's street system.
- (3) Perimeter Streets.
- (a) New Perimeter Streets. When a residential or non-residential development is developed abutting an existing or future thoroughfare or collector street -- as depicted on the *Master Thoroughfare Plan* contained in the *Comprehensive Plan* --, the property owner or developer/applicant shall construct a portion of the abutting street and its appurtenances (e.g. curbs, gutters, sidewalks, ramps, street trees, storm systems, and etcetera) to the City of Rockwall's design standards for that type of street (per the *Engineering Departments Standards of Design and Construction Manual*).
- (b) Escrow for a Perimeter Street. If the *City Engineer* makes a determination that it is not feasible to construct the abutting street and its appurtenances at the time of development, the City may require the property owner or developer/applicant to pay into escrow an amount equal to 115.00% of the construction costs for the future construction of the street as a condition of the *Final Plat* or *Replat* for the development.
- (4) Internal Streets.
- (a) New Internal Streets. All new streets and their appurtenances internal to a proposed residential or non-residential development shall -- at a minimum -- be built to a width and design that will adequately serve the development, and shall conform to the City of Rockwall's design standards (per the *Engineering Departments Standards of Design and Construction Manual*). If oversizing of an internal street is deemed necessary by the *City Engineer* for traffic safety or efficiency, then the City of Rockwall or an adjacent entity may participate in such oversizing costs as part of a *Development Agreement* with the property owner or developer/applicant.
- (b) Escrow for an Internal Street. If the *City Engineer* makes a determination that it is not feasible to construct an internal street and its appurtenances at the time of development, the City may require the property owner or developer/applicant to pay into escrow an amount equal to 115.00% of the construction costs for the future construction of the street as a condition of the *Final Plat* or *Replat* for the development.
- (5) Streets Adjacent to a School or a Park. In cases where a perimeter or internal street is adjacent to a public or private school or public park or open space, the *City Engineer* or Director of the Planning and Zoning Department may require a minimum of a 41-foot street (as measured from back-of-curb to back-of-curb) to facilitate proper traffic circulation.
- (6) Temporary Dead-End Street. Temporary Dead-End Streets shall conform to the following:
- (a) Connections are required to adjacent vacant properties at the locations approved by the *City Engineer* and/or the Director of the Planning and Zoning Department.
- (b) Streets which temporarily dead-end at powerlines, railroads, or similar rights-of-way shall be constructed for at least one-half (½) the distance across these rights-of-way.
- (c) On a *Final Plat* that proposes a Temporary Dead-End Street, shall incorporate a note clearly indicating that the street will be extended with future development.



- (d) Temporary Dead-End Streets that are 150-feet or more in length shall incorporate a temporary turn around in accordance with the requirements of the City of Rockwall's adopted *Fire Code* and the Engineering Department's *Standards of Design and Construction Manual*.
- (e) All Temporary Dead-End Streets shall have a sign prominently posted at the terminus of the street or road indicating that the street or road will be extended in the future. In addition, the sign shall comply with the standards established by the *City Engineer*, and be installed at the cost of the property owner or developer/applicant.
- (7) Streets Adjacent to Undeveloped Property. Where streets are adjacent to an undeveloped property and the property line is normally the centerline of the street, the property owner or developer/applicant shall provide right-of-way of a sufficient width and shall construct a minimum of 24-feet of paving if deemed necessary by the *City Engineer* or *Fire Department*.
- (8) Full Refund of Escrow. If the improvements of a road or street -- for which an escrow has been paid in accordance with the requirements of this Chapter -- do not occur within 20 years of the date the money is placed on deposit with the City of Rockwall, the money -- including any earned interest -- shall be returned to the property owner of record at that time.
- (9) Assessment Program. Should the City of Rockwall establish an Assessment Program for street improvements on any street or road within the City limits, any funds already placed in escrow for a street or road improvement for said street shall be credited toward the property owner of record at the time of the assessment [if applicable].
- (10) Traffic Impact Analysis (TIA) or Other Traffic Studies. The *City Engineer* or Director of the Planning and Zoning Department may require a Traffic Impact Analysis (TIA) or other type of engineering study from the property owner or developer/applicant prior to any approval for a subdivision plat or *Civil Engineering Plans* for technical data pertaining to the potential traffic impact of a proposed development and its impacts of the City of Rockwall's street network.

(B) STREET DESIGN AND APPURTENANCES.

- (1) Street Design. Street design requirements are subject to the provisions contained in the Engineering Department's *Standards of Design and Construction Manual*, an approved Planned Development District ordinance [if applicable], and any regulations contained within the Chapter.
- (2) Conformance to the Comprehensive Plan. The general location of roads and streets shall conform to the City of Rockwall's Comprehensive Plan. For streets that are not shown on the Master Thoroughfare Plan contained in the Comprehensive Plan (e.g. local residential or non-residential roadways), the arrangement of such streets shall:
 - (a) Alignment. Provide for the continuation or appropriate projection of an existing street from or into the surrounding areas.
 - (b) Conformance with Other Plans. Conform to any plan for the neighborhood or development approved or adopted by the City of Rockwall that addresses a particular situation where topographical or other conditions make continuance or conformity to existing streets impracticable.
 - (c) Conflict. Not be in conflict with existing or proposed streets or driveway openings, including those on the opposite side of an existing or planned thoroughfare or collector, as described and depicted in the Engineering Department's *Standards of Design and Construction Manual*. New streets shall align with opposite streets and driveway openings so that the median openings can be shared.
- (3) Relation to the Existing Street Network. The proposed street network shall extend all existing major streets and existing secondary and local streets, as necessary, for the convenience of traffic circulation and emergency ingress and egress.
- (4) Street Widths, Lengths, and Rights-of-Way. All street and road widths, lengths, and their related rights-of-way shall be designed in accordance with the City of Rockwall's Comprehensive Plan, Engineering Department's *Standards of Design and Construction Manual*, and Planned Development District ordinance (if applicable). In addition, all streets and roads shall be paved in accordance with the Engineering Department's *Standards of Design and Construction Manual*.
- (5) Street Connectivity. With regard to Street Connectivity, new developments shall:
 - (a) Connections to Adjacent Properties. Provide street connections to adjacent developments or undeveloped properties, as determined by the *City Engineer* and/or the Director of the Planning and Zoning Department, allowing access between properties for neighborhood traffic and to enhance pedestrian and bicycle connectivity.



(b) Cul-De-Sacs. Limit the use of cul-de-sacs for streets to the greatest extent possible. The *City Engineer* and the Director of the Planning and Zoning Department shall have the authority to determine whether or not the use of cul-de-sacs in a development meets the intent of this section during the review of a *Preliminary Plat* or *Final Plat*.

(6) Street Names. New Street Names shall be named so as to provide name continuity with existing streets, and to prevent conflict or word similarity confusion with similar street names. In addition, all Street Names shall conform to the City of Rockwall's *Addressing Standards*. All Street Names shall be approved by the Planning and Zoning Department prior to the approval of any subdivision plat or *Civil Engineering Plans*.

(7) Street Signage. The cost of street name signs and traffic control signs for new developments shall be paid for and installed by the property owner or developer/applicant. All street name signs and traffic control signs shall conform to the Engineering Department's *Standards of Design and Construction Manual*.

(8) Street Lighting. Street Lighting shall be provided along all streets and roads in accordance with the Engineering Department's *Standards of Design and Construction Manual*. The *City Engineer* shall be the responsible official for decisions relating to street lighting, and may authorize a *Waiver* for a street lighting requirement if such *Waiver* will not compromise the public health, safety, and general welfare. If no decision can be rendered by the *City Engineer* or his/her designee, then the decision shall be forwarded to the City Council for final action in accordance with the procedures outlined in [Section 38-10\(2\)](#).

(C) PRIVATE STREETS.

(1) Private Streets. Private Streets within the City of Rockwall and/or its Extraterritorial Jurisdiction (ETJ) may be allowed by the City Council on a *case-by-case* basis in accordance with the City's Unified Development Code (UDC). Private Streets shall be designed and constructed to the Engineering Department's *Standards of Design and Construction Manual* for a public street, and all storm systems incorporated into the Private Streets shall be private.

(2) Conversion of Private Streets to Public Streets. The City may -- *but is not obligated to* -- accept private streets for public access and maintenance. Requests to Convert Private Streets to Public Streets shall be subject to the following provisions:

(a) A representative from the neighborhood or a Homeowner's Association (HOA) -- *if one exists* -- shall submit a petition signed by at least 67.00% of the property owners (*or a greater number of signatures if required by the HOA documents and declarations*).

(b) All of the infrastructure shall be in a condition that is acceptable to the *City Engineer* or that conforms to the City's current standards as stipulated in the Engineering Department's *Standards of Design and Construction Manual*.

(c) All encumbrances or structures within the right-of-way (*e.g. signage, security gates, etcetera*) not consistent with a public street shall be removed by the Homeowner's Association (HOA) or neighborhood group, at its cost, prior to the acceptance of the private street by the City of Rockwall.

(d) All funds in the reserve fund for private street maintenance shall be delivered to the City of Rockwall. Money in the reserve fund in excess of what is needed to bring the street and its appurtenances up to the City's standards will be refunded to the Homeowner's Association (HOA) or neighborhood group.

(e) The Homeowner's Association (HOA) or neighborhood group shall prepare and submit a *Replat* to the Planning and Zoning Department for review. Upon approval, the HOA or neighborhood group shall file the *Replat* to dedicate the street and its appurtenances to the City of Rockwall.

(f) The Homeowner's Association (HOA) or neighborhood group shall modify and re-file the -- *at its costs* -- the HOA documents and declarations (*if applicable*) to remove requirements specific to the private street. The City Attorney shall review the modified HOA documents and declarations prior to their filing. The HOA or neighborhood group shall be responsible for the cost of review by the City Attorney.

(5) ALLEYWAYS.

(A) Alleyways. Alleyways shall be provided for all residential developments in accordance with the Engineering Department's *Standards of Design and Construction Manual* unless otherwise approved by the City Council through a Planned Development District ordinance or a *Waiver* or *Variance* request.

(6) DRIVEWAYS, FIRE LANES, AND ACCESS EASEMENTS.



- (A) General Requirements for Driveways. All driveway approaches and appurtenances (*i.e. curbs, gutters, pavement, and etcetera*) necessary to provide access to properties shall be provided by the developer, shall be designed, constructed and maintained by the property owner in accordance with the Engineering Department's *Standards of Design and Construction Manual*, the Unified Development Code (UDC) [*if applicable*], and any other applicable ordinances or requirements of the City of Rockwall.
- (B) Reserve Strips. Reserve Strips controlling access to public rights-of-way or adjoining properties shall be prohibited. No subdivision plat showing a reserve strip of land that could inhibit or prevent an adjoining property from accessing a public right-of-way or pedestrian way shall be approved by the City of Rockwall.
- (C) Residential Driveway Access. Unless otherwise approved for a *Waiver* in accordance with [Section 38-10\(2\)](#), all residential lots created by a subdivision plat shall have frontage and access to an existing or proposed public street or road, and shall not take access -- *by easement or other means* -- through another adjacent or adjoining property (*e.g. a shared residential driveway, access easement, and etcetera*).
- (D) Cross Access Easements. All non-residential lots shall provide Cross Access Easements to adjacent properties or other access easements as required by the *City Engineer* or the Director of the Planning and Zoning Department.
- (E) Fire Lanes. Fire Lanes will be designed in accordance with the City of Rockwall's adopted *Fire Code* and the Engineering Department's *Standards of Design and Construction Manual*. Fire Lanes shall be shown on all subdivision plats and labeled as a "*Fire Lane Easement*". Fire Lanes shall be maintained to the City of Rockwall's standards by the property owner.

(7) SIDEWALKS.

- (A) Sidewalks. Sidewalks shall be provided on all streets. All Sidewalks shall be provided in accordance with the standards and requirements stipulated in the Engineering Department's *Standards of Design and Construction Manual*. The City of Rockwall may require sidewalks in other locations depending on a proposed development. All required sidewalks shall be constructed by the builder or developer at the time a lot is developed.
- (B) Pedestrian Access Easements. Sidewalks that are intended to be public, but meander through private property or through a landscape buffer or open space shall be placed in a Pedestrian Access Easement at the time of subdivision plat.
- (C) Sidewalk Construction and Reconstruction. All Sidewalks shall be constructed and/or reconstructed in accordance with the requirements of the Engineering Department's *Standards of Design and Construction Manual*.
- (D) Sidewalk Escrow. If -- *at the time a property is being developed* -- it is determined by the *City Engineer* that it is unfeasible to construct a sidewalk required by this *Chapter*, the builder or developer shall pay into escrow 115.00% the estimated cost of the sidewalk. These funds will be used to construct the sidewalk when the *City Engineer* determines that it is feasible. The amount of the sidewalk shall be as determined by the *City Engineer* or their designated representative. This amount will be required to be paid in full prior to the construction of any buildings or other improvements are permitted on a property.

(8) EASEMENTS.

- (A) General Policy. The type, size, and location of all Easements shall be shown on all subdivision plats. All Easements shall be labeled and dedicated for their specific purpose on any *Final Plat* or *Replat*.
- (B) Off-Site Easements. Any Off-Site Easements that are necessary to fulfill the City of Rockwall's requirements or are required by the City shall be dedicated to the City by separate instrument -- *unless said easement is on an adjacent property and is being platted* -- in accordance with the processes established by the *City Engineer*. If the adjacent property is being platted, then the easement is being platted, the off-site easement shall be dedicated as part of the subdivision plat.

(9) SUBDIVISION NAME AND LOT & BLOCK DESIGN.

- (A) Compliance with the Zoning Requirements. All lots shall conform with the requirements of the Unified Development Code (UDC). Lots in the City's Extraterritorial Jurisdiction (ETJ) shall comply with this *Chapter* and any agreements between the City of Rockwall and Rockwall County.
- (B) Residential Lots Adjacent to Floodplain. Residential lots shall be platted to be mutually exclusive of any floodplain or natural drainage area (*e.g. creeks, streams, tributary, and etcetera*) and/or erosion hazard setback (*see the Engineering Department's Standards of Design and Construction Manual*).



- (C) Lot Shape. The City of Rockwall reserves the right to disapprove any lot that -- *in the City's opinion* -- will not be suitable or desirable for the purpose the lot is intended, or which is so oddly shaped that it will create a hindrance to the logical layout of the surrounding properties and/or that creates an irregular building envelope. In addition, the following requirements shall apply to Lot Shape:
- (1) Lots shall generally be rectangular in shape.
 - (2) Sharp angles between lot lines shall be avoided.
 - (3) Flag lots are *prohibited*.
 - (4) Irregular shaped lots shall have a sufficient width at the building line to meet the minimum lot width and frontage requirements for the appropriate zoning district as stipulated in the Unified Development Code (UDC).
- (D) Lot Lines. The following requirements shall apply to Lot Lines:
- (1) Side Yard Lot Lines. Side Yard Lot Lines shall generally be at a 90-degree angle or radial to the street right-of-way (*where possible*). The Director of the Planning and Zoning Department or his/her designee may allow a lot line contrary to this requirement if unusual circumstances exist on the subject property or on an adjacent property that makes it difficult to comply with the requirement.
 - (2) Jurisdictional Boundaries. All Lot Lines shall -- *where possible* -- align along County, School District, and/or other Jurisdictional Boundaries such that lots are fully within one (1) jurisdiction. The Director of the Planning and Zoning Department or his/her designee may allow a lot line contrary to this requirement provided that the entire main residential or non-residential structure is constructed entirely within one (1) jurisdiction.
- (E) Lot Orientation. No residential lots (*excluding multi-family lots*) shall front onto or have a driveway onto a Minor Collector or larger street as depicted on the Master Thoroughfare Plan contained in the Comprehensive Plan; however, the *City Engineer* or his/her designee may allow lots onto a Minor Collector if it is found that this lot orientation will not be contrary the safety of the general public.
- (F) Lot Frontage. All lots shall adhere to the following Lot Frontage requirements:
- (1) Street Frontage for Lots. Each lot shall have adequate access to an existing or proposed street or road by having a minimum frontage of no less than 50-feet at the street right-of-way line, or as otherwise specified in the Unified Development Code (UDC) or a Planned Development District ordinance [*if applicable*]. Lots fronting onto an eyebrow or cul-de-sac shall have a minimum frontage of 40-feet at the street right-of-way line.
 - (2) Double Frontage Lots. Double Frontage Lots are prohibited for residential lots (*excluding multi-family*); however, residential lots may back or side to a Minor Collector provided that the lot have no direct access to the Minor Collector and appropriate screening is provided in accordance with the requirements of the Unified Development Code (UDC). Where a non-residential lot (*including multi-family*) has frontage on more than one street or road, a front building line shall be established along all streets and/or roads.
 - (3) Lots Facing Other Lots. Whenever feasible residential lots shall face the front of a similar residential lot or onto a public/private park or open space if one (1) exists or is planned across the street from the lot. In addition, lots abutting each other in a 90-degree angle or perpendicularly should be avoided where possible. The Director of the Planning and Zoning Department may allow lot arrangements contrary to this requirement if unusual circumstances exist on the subject property or an adjacent property that makes it difficult to comply with the requirement.
- (G) Lots Adjacent to Parks and Open Space. Lots Adjacent to Parks and Open Space should generally be laid out in conformance with the City's Comprehensive Plan. Lots that are directly adjacent to or are across the street from a park or open space shall face onto the park or open space.
- (H) Remainder Lots or Tracts of Land. A Remainder Lot or Tract of Land is a portion of an existing lot within an established subdivision or the remainder of a tract of land not being subdivided or developed immediately. If a Remainder Lot or Tract of Land will result from a proposed subdivision plat, the remainder shall be placed into a lot and block designation to ensure that the remainder is a buildable area and can conform to the requirements of this *Chapter* and the Unified Development Code (UDC).
- (I) Building Setbacks. On all residential subdivision plats, the Building Setbacks shall be denoted on the subdivision plat for the front, side and rear yards as required by the Unified Development Code (UDC) [*if located within the City's corporate limits*] based on the respective zoning district or Planned Development District ordinance.
- (J) Lot & Block Designations. All Lots within each phase of a subdivision plat are to be numbered consecutively within each Block. Each Block shall have an alpha or numeric designation (*e.g. Block A, Block 1, and etcetera*). For Replats, the following sequential Lot number shall be used for replatted lots. For example, if a subdivision plat has Lots 1-5, Block A and two (2) of the lots are being replatted, the two lots would be denoted as Lots 6 & 7, Block A.



- (K) Buildable Lot. Any portion of a lot that is non-buildable for any reason shall be clearly denoted on all subdivision plats. At the request of the Director of the Planning and Zoning Department or his/her designee the property owner or developer/applicant shall provide a detail showing the buildability of a proposed lot indicating that the lot can accommodate a dwelling unit or structure that complies with the Unified Development Code (UDC) [if located within the City's corporate limits] and the City's adopted *Building Code*.
- (L) Control Monumentation. Control Monuments shall consist of a one-half (½) inch reinforced steel rod, measuring a minimum of 18-inches in length -- or an equal length as approved by the City Engineer -- and shall be placed at all: [1] lot and block corners [i.e. wherever a lot line bearing changes], [2] intersection points of an alleyway and/or block line, and [3] curve and tangent points along a block, lot, and/or right-of-way line within a subdivision. In addition, at least two (2) property corners shall be marked with Control Monuments of three (3) dimensional coordinates established from the City of Rockwall's *Geodetic Control Monuments*. The corners being marked should be at opposing ends of the property unless otherwise approved by the City Engineer. A *Closure Report* showing conformance to these standards shall be submitted with all *Final Plats, Minor Plats, Replats and Amending Plats* [if necessary].
- (M) Subdivision Name. New subdivisions shall be distinctly named so as to prevent conflict or confusion with existing subdivision names. Subdivisions with similar names shall be located in close proximity to each other (i.e. not in different areas of the City). In cases of conflict, the Director of the Planning and Zoning Department may choose to allow the names upon a finding that the proposed subdivision name will not cause confusion for emergency responders or the general public.

(10) UTILITIES.

- (A) Underground Utilities Required. All aboveground utilities shall be placed underground at the time of development. No overhead services will be allowed without a *Waiver* or *Variance* being granted by the City Council pending a recommendation from the Planning and Zoning Commission.
- (B) Franchise Utility Policies. The City Engineer and/or the Director of the Planning and Zoning Department may require easements for poles, wires, conduits, gas, telephone, cable television, or other utility lines if necessary. In addition, all Franchise Utilities shall adhere to the following requirements:
- (1) Underground Utilities. Where feasible, Franchise Utilities should be placed underground at the time of development.
 - (2) Location. Franchise Utilities shall be located in easements provided adjacent to street rights-of-way along the front of lots or tracts. Where alleyways have been constructed, Franchise Utilities shall be placed in the alleyway.
 - (3) Ground Mounted Equipment. Ground Mounted Equipment shall meet
 - (a) Location. Ground Mounted Equipment shall not be placed in existing or proposed visibility or access easements. Ground Mounted Equipment should be placed to reduce the visibility from public rights-of-way, public parks, and open space.
 - (b) Screening. All Ground Mounted Equipment within the view of a public right-of-way, public park, and/or open space shall be screened from view utilizing shrubs, planted on three (3) foot centers, consistent with the requirements of the Unified Development Code (UDC).
 - (c) Exemptions. Publicly owned Ground Mounted Equipment (e.g. State or City traffic control boxes, and etcetera) shall be exempt from the screening requirements.

(11) AMENITIES.

- (A) Provision of Amenities. Where Amenities are owned and maintained by the property owners or Homeowner's Association (HOA), or where amenities are to be dedicated to the City of Rockwall and are to be maintained publicly or privately through an agreement with the City, the City of Rockwall may require the following:
- (1) Plans and/or illustrations of the proposed Amenities.
 - (2) Cost estimates of construction, maintenance, and operating expenses.
 - (3) Any associated documents (e.g. deed restrictions, contracts and agreements, etc.).
 - (4) Provision of surety as required for maintenance and other expenses related to the Amenity.
- (B) Submittal and Review Requirements. Amenities proposed in conjunction with a residential or commercial development shall be reviewed and approved in accordance with the following:



- (1) *Commercial*. Amenities proposed for a commercial development will be reviewed and approved at the time of *Site Plan* in accordance with the requirements of the [Article 11, Development Applications and Review Procedures, of the Unified Development Code \(UDC\)](#).
- (2) *Residential*. Amenities proposed in conjunction with a residential subdivision shall require the following:
 - (a) *Parks and Open Space Plan*. A *Parks and Open Space Plan* shall depict all of the proposed open spaces in a subdivision, their design (i.e. the location and layout of all amenities), the trail system connecting the open spaces, and the landscaping proposed for these areas.
 - (b) *Master Plat*. If a *Master Plat* is required in accordance with the requirements of this *Chapter*, it shall be accompanied by a *Parks and Open Space Plan*.
 - (c) *Preliminary Plat*. If a *Master Plat* is not required for a subdivision or development, the *Parks and Open Space Plan* shall be submitted in conjunction with a *Preliminary Plat*.
 - (d) *Procedures for a Parks and Open Space Plan*. The *Parks and Open Space Plan* shall be reviewed by the Parks and Recreation Board in conjunction with the process stipulated by [Section 38-58](#). The Parks and Recreation Board shall review the subdivision plat and *Parks and Open Space Plan* and -- by simple majority vote -- make a recommendation that can be considered by the Planning and Zoning Commission and City Council in conjunction with the subdivision plat.
 - (e) *Site Plan*. When an amenities center or other physical amenities structure is proposed, the property owner or developer/applicant shall submit a *Site Plan* for the structure showing the building elevations and site layout of the proposed amenity. The *Site Plan* shall be reviewed in accordance with the processes and procedures outline in [Article 11, Development Applications and Review Procedures, of the Unified Development Code \(UDC\)](#).
- (C) *Design of Amenities*. The design of *Amenities* shall conform to the following:
 - (1) *Entry Features*. *Entry Features* shall be constructed entirely on private property (i.e. not within a public right-of-way) outside of any easements, and shall not suspend over a public rights-of-way or easements unless otherwise approved by the *City Engineer*. Smaller, minor entry elements may be placed within a street median at the entryway if approved by the *City Engineer*; however, if approved such street median shall be platted as a non-buildable lot and be dedicated to the Homeowner's Association (HOA) for ownership and maintenance. In addition, no portion of any *Entry Feature* shall be situated on a residential lot with the exception of fences. All such features shall be located wholly on a non-buildable lot that is dedicated as open space and is owned and maintained by the Homeowner's Association (HOA). No *Entry Feature* shall encroach into a visibility easement or otherwise impair pedestrian or vehicular visibility.
 - (2) *Private Recreation Facilities*. *Private Recreation Facilities* (e.g. amenities centers, playgrounds, and etcetera) -- if provided -- shall generally be centrally located within the development or subdivision.

(12) [PARKS AND OPEN SPACE](#).

(A) [GENERAL PARKS AND OPEN SPACE POLICIES](#).

- (1) *Authority*. This *Section* is enacted pursuant to the City's police powers existing under the City's *Charter* and consistent with the [Section 5, Cities of More Than 5,000 Population: Adoption or Amendment of Charters; Taxes; Debt Restrictions, of Article 11, Municipal Corporations, of the Texas Constitution](#), and applies to all property within the City's corporate boundaries.
- (2) *Public or Private Parks and Open Space*. *Public or Private Parks and Open Space* shall be easily accessible and visible to the general public. In addition, public and private parks shall be bounded by a street or streets or by other public land uses (e.g. school, library, recreation center, and etcetera) unless otherwise specific in this *Chapter*, the Unified Development Code (UDC), of a Planned Development District ordinance [if applicable]. Open spaces shall not be smaller in length or width than 50-feet; however, when open spaces are impacted by topography, floodplain, or are designated as natural areas the lots may be less than 50-feet.
- (3) *Residential Lots*. All *Residential Lots* shall be oriented such that they front onto public or private parks and open spaces and not back to them. *Residential Lots* shall only be allowed to back onto a public or private park or open space when the lot, parcel, or tract of land has physical constraints (e.g. shape, topography, drainage, and etcetera) that do not reasonable accommodate an alternative design or the layout of the development or subdivision complements the use of the park or open space (e.g. backing lots to a natural area or golf course). The Director of the Planning and Zoning Department may grant approval to allow lots to back to a private or public park or open space.
- (4) *Access to Public Parks and Open Space*. A proposed development or subdivision adjacent to a public park or open space shall not be designed to restrict public visibility or access to the park or open space. In addition, streets and sidewalk connections shall be designed to ensure continued access to the park or open space.
- (5) *Street Adjacent to a Public Park*. See [Section 38-9\(4\)\(A\)\(5\)](#) for the requirements for a *Street Adjacent to a Public Park*.



(B) PARKLAND DEDICATION.

- (1) *Park Reservation and Dedication.* See [Section 38-54](#) for requirements associated with the reservation or dedication of a public park.
- (2) *Site Selection Criteria.* See [Section 38-54](#) for requirements associated with *Site Selection Criteria* for a public park.
- (3) *Minimum Public Park Improvements.* Unless waived by the Parks and Recreation Board, all public parks shall be improved by the property owner or developer/applicant prior to the City of Rockwall accepting the public park. The minimum park improvements, as determined by the Director of the Parks and Recreation Department, shall include:
 - (a) The grading and clearance of unwanted vegetation, structures, and/or improvements.
 - (b) The installation of storm drainage systems and erosion control measures.
 - (c) The establishment of turf and the planting of required or non-required trees.
 - (d) The installation of perimeter streets and street lights.
 - (e) The provision of water and wastewater to a location on the public park as determined by the Director of Parks and Recreation and the *City Engineer*.
- (4) *Additional Voluntary Public Park Improvements.* A property owner or developer/applicant may request permission to construct -- *at their expense* -- additional park improvements. The City of Rockwall may accept or reject voluntary dedications of parkland improvements. Such voluntary dedications and/or improvements shall be considered for recommendation by the Parks and Recreation Board to the City Council. All improvements in a public park shall be consistent with the design criteria and objectives of the *Parks and Open Space Master Plan*, and shall -- *upon installation* -- become the City of Rockwall's property.

(C) TRAILS.

- (1) *Master Trail Plan.* All trails shall be constructed in accordance with the *Master Trail Plan* contained in the Comprehensive Plan and the requirements of the *Parks and Open Space Master Plan*.
- (2) *Trail Requirements.* All trails shall adhere to the following design criteria [*unless otherwise approved by the Director of the Parks and Recreation Department and/or the Parks and Recreation Board*]:
 - (a) All trails shall be a minimum of eight (8) feet in width where required; however, a ten (10) foot *hike-and-bike* trail shall be required along John King Boulevard.
 - (b) Low water crossings for trails may be allowed upon approval from the *City Engineer* and Director of the Parks and Recreation Department.
 - (c) To ensure the public's safety, all trails shall be designed so as to minimize visibility blind spots from a public street.
 - (d) All trails shall be included in the *Civil Engineering Plans* and *Construction Plans* for a proposed development or subdivision, and shall include engineered drawings of the trail cross-sections in accordance with the Engineering Department's *Standards of Design and Construction*.
- (3) *Trail Locations.* Locations for trails shall be consistent with the *Master Trail Plan*, and be subject to approval from the Director of the Parks and Recreation Department and the Parks and Recreation Board. The Director of the Parks and Recreation Board shall have the authority to determine the placement of a public trail at the time of review of a *Parks and Open Space Plan* in conjunction with a *Master Plat* or *Preliminary Plat*. Additionally, no development or subdivision shall interrupt the future routes of trails or otherwise hinder the efficient public access to or from an existing or future trail.
- (4) *Future Trails and Access for New Developments.* When a development or subdivision is adjacent to an undeveloped property, a pedestrian access stub-out shall be provided to the edge of the development or subdivision to allow for future access between developments.

(13) HOMEOWNER'S ASSOCIATION.

- (A) *Purpose.* The purpose for the establishment of a *Homeowner's Association (HOA)* for a residential development (*i.e. single-family, two-family, or multi-family*) is to create an organization that owns and is responsible for maintaining common areas, private parks, amenities, private rights-of-way, riparian areas, detention/drainage, and etcetera for the communal good of the development's property owners and residents.



- (B) Applicability. A Homeowner's Association (HOA) shall be established for any development or subdivision that contains any of the following elements: [1] amenities, [2] private streets, [3] a creek or tributary, [4] drainage/detention, [5] decorative street signage, lighting and appurtenances, and/or [6] private or public parks.
- (C) Procedure for Establishing a Homeowner's Association. The establishment of a Homeowner's Association (HOA) shall occur in conjunction with the recording of a Final Plat in accordance with Section 38-7(4), and shall generally follow the following procedure:
- (1) Documents Submitted for Review. The declaration, covenants, and other necessary documents establishing the Homeowner's Association (HOA) shall be submitted to the City of Rockwall for review by the City Attorney for conformance with this and other applicable ordinances prior to the submission of a Final Plat. Homeowner's Association (HOA) documents shall include descriptions of any amenities, private streets, creeks or tributaries, private or public parks, open space, drainage/detention, and/or other areas for which the Homeowner's Association (HOA) is responsible for maintenance.
 - (2) Approval by the City Attorney. All Homeowner's Association (HOA) documents shall be reviewed by the City Attorney prior to the recordation of a Final Plat. The applicant shall reimburse the City of Rockwall for all related legal costs association with the review of the Homeowner's Association (HOA) documents. The reimbursement shall be paid in full prior to recordation of the Final Plat.
 - (3) Recordation of the Homeowner's Association (HOA) Documents. All Homeowner's Association (HOA) documents shall be recorded with Rockwall County prior to the recordation of the Final Plat. One (1) copy of the final recorded document shall be submitted to the Planning and Zoning Department within five (5) business days of the recording date.
 - (4) Additional Phases. An additional phase to an existing subdivision is not required to establish separate Homeowner's Association (HOA) documents, provided that:
 - (a) The existing, recorded Homeowner's Association (HOA) documents are amended to incorporate the area of the new phase and outline the responsibility of the Homeowner's Association (HOA) for the maintenance of amenities, private streets, creeks or tributaries, private or public parks, open space, drainage/detention, decorative signage, street lights and appurtenance, and/or other areas located within the new phase.
 - (b) The property owner or developer/applicant shall provide a draft of the amended covenants to the City Attorney for review prior to recordation of the subdivision plat.
- (D) General Requirements. The following shall be set forth in the Homeowner's Association (HOA) documents:
- (1) A statement that the membership in the Homeowner's Association (HOA) is mandatory for all owners of property within the subdivision.
 - (2) A listing of all the required maintenance responsibilities and the lot numbers/legal descriptions and/or private streets as shown on the approved subdivision plat.
 - (3) The by-laws related to the governance of the Homeowner's Association (HOA).
 - (4) The covenants for the maintenance assessments that run with the land.
 - (5) The responsibility for liability insurance and local taxes.
 - (6) A statement that the authority for enforcement of the Homeowner's Association (HOA) rules and regulations is solely the responsibility of the Homeowner's Association (HOA) and is not, in any way, the responsibility of the City of Rockwall.
 - (7) The authority of the Homeowner's Association (HOA) to secure funds from its members to sufficiently meet its responsibilities. The authority shall include the ability to collect dues, to increase dues, charge special assessments and place liens against property for failing to pay dues and/or assessments.
 - (8) A provision that no amendment of the Homeowner's Association (HOA) documents relating to maintenance of amenities, private streets, creeks or tributaries, private or public parks, open space, detention/drainage, or any other Homeowner's Association (HOA) maintained area or facility shall occur without prior City of Rockwall approval.
 - (9) Written release of liability for maintenance to benefit the City of Rockwall. A written indemnification of the City of Rockwall outlining that under no circumstances shall the City of Rockwall be liable to the Homeowner's Association (HOA) or any property owner or their respective heirs, executors, administrators, devisees, personal representatives, successors, or assigns for any damages, injuries



(including death), and/or liability resulting from any amenity or private/public park or open space, on the private streets, and within or adjacent to any creek or tributary, detention/drainage, or any other Homeowner's Association (HOA) owned and maintained area or facility associated with the development.

(10) That no provision is included preventing or prohibiting parking of motor vehicles on a public street if parking is otherwise permitted by the City of Rockwall.

(11) Any other City requirements as may be applicable to the development or subdivision.

SECTION 38-10: AGREEMENTS, APPEALS, AND RELIEF PROCEDURES

(1) FACILITIES AGREEMENTS.

- (A) Applicability. A developer or subdivider shall be required to enter into a Facilities Agreement with the City of Rockwall, which will govern their subdivision if there are pro-rata payments, City participation and/or costs, escrow deposits or other future considerations, variances granted to this Chapter or other non-standard development regulations.
- (B) Authority. A Facilities Agreement shall be based on the requirements of this Chapter, and shall provide the City of Rockwall with specific authority to: [1] complete the improvements required by the Facilities Agreement in the event of failure to perform by the developer or subdivider, and [2] the ability to recover the full legal costs of such measures. The City of Rockwall may subordinate the Facilities Agreement to the prime lender if provided for in the agreement.
- (C) Effect of a Facilities Agreement. A Facilities Agreement shall be a legally binding agreement between the City of Rockwall and a developer or subdivider that specifies the individual and joint responsibilities of both the City of Rockwall and the developer or subdivider.
- (D) Considerations for Facilities Agreement. In drafting a Facilities Agreement, the agreement shall consider the unusual circumstances relating to the subdivision. A Facilities Agreement may stipulate pro-rata payments, City participation in unusual facilities, escrow deposits or other payments for future facilities, variances granted to this Chapter, and other particular aspects of the development. The Facilities Agreement shall include a hold harmless/indemnity clause for the developer or subdivider agreeing to hold the City of Rockwall harmless against any claim arising out of the proposed development or subdivision or any other actions taken therein.
- (E) Developer or Subdivider's Responsibility. A developer or subdivider that enters into a Facilities Agreement with the City of Rockwall shall have the continued responsibility under said agreement -- *after the filing of a Final Plat* -- until all facilities and improvements required under the agreement have been completed.
- (F) Release Prior to Completion. When construction of the required improvements has commenced to a point that certain portions of the subdivision can be adequately served, the City Manager or their designee may release certain portions of the subdivision prior to the completion of all improvements. No release shall be granted if such improvements would jeopardize or hinder the continued construction of the required improvements, and the Facilities Agreement shall remain in force for all portions of the subdivision for which a release has not been executed.

(2) PETITION FOR WAIVERS.

(A) PURPOSE AND APPLICABILITY.

- (1) Purpose. The purpose of a petition for a Waiver to a particular standard or requirement of this Chapter is to determine whether or not such particular standard or requirement should be applied to a subdivision plat or development.
- (2) Applicability. A property owner or developer/applicant may request a Waiver of a particular standard or requirement for a subdivision plat. A petition for a Waiver shall be specific in nature, and shall only involve relief consideration for one (1) particular standard or requirement; however, a property owner or developer/applicant may submit multiple petitions for Waivers if there are several standards or requirements at issue. A petition for a Waiver shall not be accepted in lieu of a Proportionality Appeal or a petition for Vested Rights. If there is a question as to whether a Proportionality Appeal or a petition for Vested Rights is required instead of a petition for a Waiver, the Director of Planning and Zoning shall make a determination as to the correct request.

(B) PETITION FOR A WAIVER.

- (1) Submission. A request for a Waiver shall be submitted in writing by the property owner or developer/applicant -- *with the property owner's consent* -- with the filing of a Development Application for a subdivision plat. No Waiver may be considered or granted unless the property owner or developer/applicant has made such request in writing. The property owner or developer/applicant's request shall



state the grounds for the *Waiver* request and all of the facts relied upon by the property owner or developer/applicant. Failure to submit in writing will result in the denial of the *Development Application* unless the applicant submits an *Extension Request* in accordance with [Section 38-7\(1\)\(B\)\(1\)\(b\)](#).

- (2) *Burden of Proof*. The property owner or developer/applicant shall bear the burden of proof to demonstrate that the requirement for which a *Waiver* is requested, if uniformly applied, imposes an undue hardship or a disproportionate burden. The property owner or developer/applicant shall submit the burden of proof within the written request for a *Waiver*.

(C) PROCESSING OF AND DECISION ON A PETITION FOR A WAIVER.

- (1) *Responsible Official*. The Director of the Planning and Zoning Department or his/her designee shall be responsible for accepting, processing, and evaluating a request for a *Waiver*; however, the Planning and Zoning Commission shall be responsible for acting upon a request for a *Waiver*.

- (2) *Burden of Proof*. The property owner or developer/applicant shall bear the burden of proof to demonstrate that the requirement for which a *Waiver* is requested, if uniformly applied, imposes an undue hardship or a disproportionate burden. The property owner or developer/applicant shall submit the burden of proof within the written request for a *Waiver*.

- (3) *Waiver Request*. A request for a *Waiver* to a requirement for this *Chapter* shall be made in writing. In addition, a *Waiver* request shall not be accepted unless it adheres to the following:

- (c) A *Waiver* may be granted only when in harmony with the general purpose and intent of this *Chapter* so that the health, safety, and general welfare of the public may be secured and substantial justice done.
- (d) A *Waiver* must be deemed to be an undue hardship. Financial hardship to the applicant shall not be deemed to constitute undue hardship.
- (e) A *Waiver* shall not constitute a violation of, or conflict with, any other valid City ordinance, code, regulation, master plan, or the Comprehensive Plan.
- (f) A *Waiver* cannot be based on false information. Any falsification of information by the applicant shall be cause for the *Waiver* request to be denied by the *Responsible Official*.

- (4) *Evaluating a Waiver Request*. The Director of the Planning and Zoning Department shall evaluate the request for a *Waiver* and prepare a recommendation to the Planning and Zoning Commission. In evaluating a request for a *Waiver*, the Director of the Planning and Zoning Department shall consider the following in preparing a recommendation:

- (a) The stated hardship or reason the *Waiver* is being requested by the property owner or developer/applicant.
- (b) If such *Waiver* will substantially or permanently injure the appropriate use of adjacent property.
- (c) If such *Waiver* will adversely affect the health, safety, and/or welfare of the general public.
- (d) If such *Waiver* is contrary to the public's interest.
- (e) If such *Waiver* will be in harmony with the spirit and intent of this *Chapter* and other City plans, codes, and policies.
- (f) If such *Waiver* will alter the essential character of the area in which the subject property is located.
- (g) If such *Waiver* will substantially weaken the general purpose of this *Chapter*.

- (5) *Planning and Zoning Commission Decision*. The Planning and Zoning Commission shall render a decision on the request for a *Waiver* with its decision/recommendation on the subdivision plat. The Planning and Zoning Commission shall take into account the written request for *Waiver*, the Planning and Zoning Department's recommendation, and the criteria for evaluating a waiver request outline in [Section 38-10\(2\)\(C\)\(3\)](#) when considering the waiver request. In order for a *Waiver* to be granted, the Planning and Zoning Commission must find:

- (a) That there are no special circumstances or conditions affecting the land involved or other constraints such that the strict application of the provisions of this *Chapter* would deprive the applicant of the reasonable use of the subject property; and
- (b) That the *Waiver* is necessary for the preservation and enjoyment of a substantial property right of the applicant, and that granting of the *Waiver* will not be detrimental to the public health, safety, or general welfare or injurious to other property in the area; and
- (c) That the granting of the *Waiver* will not have the effect of preventing the orderly subdivision of other land in the area in accordance with the provisions of this *Chapter*.

- (6) *Planning and Zoning Commission Action*. Based on the Planning and Zoning Commission's determination, the Planning and Zoning Commission shall -- *by simple majority vote* -- take one (1) of the following actions:

- (a) Deny the petition, and impose the standard or requirement as it is stated in the *Chapter*; or
- (b) Grant the petition and waive -- *in whole or in part* -- the standard or requirement as it is stated in this *Chapter*.



(D) APPEAL OF A DECISION ON A PETITION FOR A WAIVER.

- (1) Initiation of an Appeal. The property owner or developer/applicant -- *with the property owner's consent* -- may appeal the Planning and Zoning Commission's decision to the City Council on a request for a Waiver by taking one (1) of the following actions:
 - (a) Submitting a written request to the Director of the Planning and Zoning Department requesting an appeal within five (5) calendar days of the Planning and Zoning Commission's decision; or,
 - (b) Submitting an Extension Request in accordance with Section 38-7(1)(B)(1)(b) and a written request requesting an appeal to the Director of the Planning and Zoning Department within six (6) calendar days of the Planning and Zoning Commission's decision (*i.e. prior to the following City Council meeting*).
- (2) City Council Action. Based on the Planning and Zoning Commission's decision and action, the City Council shall review all of the material reviewed by the Planning and Zoning Commission and -- *by simple majority vote* -- affirm, modify, or reverse the Planning and Zoning Commission's decision and action. The City Council's decision shall be final.
- (3) Effect of Approval. Following the granting of a request for a Waiver, the property owner or developer/applicant may submit or continue the processing of the subdivision plat or Development Application, as may be applicable. The Waiver granted shall remain in effect for the period that the subdivision plat or Development Application are in effect, and shall expire upon expiration of the subdivision plat or Development Application. Extension of either the subdivision plat or Development Application shall also result in the extension of the Waiver.
- (4) Approval Based on Falsification of Information. If the Waiver request is approved based upon false information, whether intentional or not, discovery of such false information shall nullify prior approval of the Waiver, and shall be grounds for reconsideration of the Waiver request.

(3) PETITION FOR A PROPORTIONALITY APPEAL.

(A) PURPOSE AND APPLICABILITY.

- (1) Purpose. The purpose of a Proportionality Appeal is to allow for a process for a property owner or developer/applicant -- *with the property owner's consent* -- to appeal a Determination of Proportionality prepared in accordance with Section 38-9(1)(C)(5)(a), and to ensure that a requirement for the dedication, construction, or fee for public infrastructure imposed on a subdivision plat as a condition of approval does not result in a disproportionate burden to the property owner, taking into consideration the nature and extent of the demands created by the proposed development on the City of Rockwall's public facilities systems.
- (2) Applicability. A Proportionality Appeal under this Chapter may be filed by a property owner or developer/applicant -- *with the property owner's consent* -- to contest any requirement to dedicated land or to construct public improvements as required under the subdivision regulations of the City of Rockwall or attached as a condition to the approval of a subdivision plat application. A Proportionality Appeal shall not be used to waive standards on the grounds applicable to any Waiver outlined in Section 38-10(2).

(B) PROPORTIONALITY APPEAL PETITION REQUIREMENTS.

- (1) Petitioner. A petition for a Proportionality Appeal under this section may be initiated by a property owner or a developer/applicant -- *with the property owner's consent* -- as part of a Development Application for a Preliminary Plat, Final Plat, or Replat, which a requirement to dedicate land for, construct, or pay a fee (*other than an impact fee*) for a public infrastructure improvement that has been applied or included as a condition of approval, or as grounds for a denial of a subdivision plat application.
- (2) Request for Petition. The petition for a Proportionality Appeal -- *challenging the Determination of Proportionality established in Section 38-9(1)(C)(5)(a)* -- shall allege that the application of the standard relating to the dedication or construction requirement is not roughly proportional to the nature and extent of the impacts created by the proposed development on the City of Rockwall's water, wastewater, storm drainage, parks, and/or thoroughfare and street systems, or does not reasonably benefit the proposed development. A petition for a Proportionality Appeal shall consist of the following:
 - (a) Applicant's Petition. A written petition for a Proportionality Appeal outlining the appeal and allege that the application of a specific standard relating to the dedication or construction requirements is not roughly proportional to the nature and extent of the impacts created by the proposed development on the City of Rockwall's water, wastewater, storm drainage, roadway, or park system -- *as the case may be* -- or does not reasonably benefit the proposed development.



- (b) Study in Support of the Petition. The petitioner shall provide a study in support of the petition for a Proportionality Appeal that includes the following information:
- (1) The total capacity of the City of Rockwall's water, wastewater, storm drainage, roadway, or park system to be utilized by the proposed development, employing standard measures of capacity and equivalency tables relating to the type of development proposed to the quantity of the systems capacity to be consumed by the development. If the proposed development is to be developed in phases, such information shall also provide the entire development proposed, including any phases already developed.
 - (2) The total capacity to be supplied to the City of Rockwall's water, wastewater, storm drainage, roadway, or park system by the dedication of an interest in land, construction improvements or fee contributing. If the subdivision plat is proposed as a phased development, the information shall include any capacity supplied by prior dedications or construction of public improvements.
 - (3) A comparison of the capacity of the City of Rockwall's public facility systems to be consumed by the proposed development with the capacity to be supplied to such systems by the proposed dedication of an interest in land, construction of improvements, or fee payment. In making this comparison, the impacts on the City's public facility systems from the entire development shall be considered.
 - (4) The effect of any City participation in the costs of oversizing the public infrastructure improvement to be constructed in accordance with the requirements of the City of Rockwall.
 - (5) Any other pertinent information that shows the alleged disproportionality between the impacts created by the proposed development and the dedication, construction or fee requirements imposed by the City of Rockwall.
- (3) Time Period for Filing a Petition. All petitions for a Proportionality Appeal shall be filed in writing to the Director of the Planning and Zoning Department with a Development Application for a Preliminary Plat, Final Plat, or Replat; however, no Proportionality Appeal may be filed for a property that has not been properly zoned to allow the development proposed under a subdivision plat.
- (4) Land in the City's Extraterritorial Jurisdiction (ETJ). Where land or facilities to be dedicated are located within the Extraterritorial Jurisdiction (ETJ) of the City of Rockwall and are to be dedicated to Rockwall County, a petition for a Proportionality Appeal shall be accepted as complete for review by the Director of the Planning and Zoning Department only when such a petition is accompanied by verification that a copy has been delivered to and accepted by Rockwall County.

(C) PROCESSING AND DECISION ON A PROPORTIONALITY APPEAL.

- (1) Responsible Official. The Director of the Planning and Zoning Department or his/her designee shall be responsible for accepting and processing a Proportionality Appeal; however, the City Engineer shall be the official responsible for evaluating and addressing the petition and study. Where the Proportionality Appeal is for relief from the dedication of right-of-way for or the construction of a facility in the City of Rockwall's Extraterritorial Jurisdiction (ETJ) that is to be dedicated to Rockwall County under an Interlocal Agreement permitted under Chapter 242, Authority of Municipality and County to regulate Subdivisions in and Outside Municipality's Extraterritorial Jurisdiction, of the Texas Local Government Code, the City Engineer shall coordinate a recommendation with Rockwall County.
- (2) Evaluation and Recommendation of a Proportionality Appeal. The City Engineer shall evaluate the petition and supporting study and make a recommendation to the Planning and Zoning Commission and City Council. In evaluating the petition and supporting study, the City Engineer shall take into account the maximum amount of any impact fees to be charged against the development for the type of public improvement that is the subject of the petition, or similar developments on the City's Water/Wastewater Master Plan, the Master Thoroughfare Plan, the Parks and Open Space Master Plan. The City Engineer may utilize any reasonable methodology in evaluating the applicant's study.
- (3) Planning and Zoning Commission Determination. The Planning and Zoning Commission shall take into account the City Engineer's Determination of Proportionality and the Evaluation and Recommendation of the Proportionality Appeal when considering the Preliminary Plat, Final Plat, or Replat. In making a recommendation to the City Council, the Planning and Zoning Commission shall identify any variation to the requirements that are to be included as conditions of approval for the subdivision plat.
- (4) City Council Determination. The City Council shall render a decision on the Proportionality Appeal with its decision on the subdivision plat. The City Council shall determine whether the application of the standard or condition is roughly proportional to the nature and extent of the impacts created by the proposed development on the City's water, wastewater, storm drainage, parks or roadway systems, and whether the application of the standard or condition reasonably benefits the development. In making such a determination, the City Council shall consider the petition and supporting study provided by the applicant, the Determination of Proportionality, the City



Engineer's evaluation and recommendation of the *Proportionality Appeal*, and where the property is located within the City's Extraterritorial Jurisdiction (ETJ) and the recommendations made by Rockwall County [if applicable].

- (5) City Council Action. Based on the City Council's determination, the City Council shall -- by simple majority vote -- take one (1) of the following actions:
- Deny the *Proportionality Appeal* and impose the dedication and/or construction requirement as required by this Chapter; or
 - Grant the *Proportionality Appeal* and waive any dedication and/or construction requirement to the extent necessary to achieve proportionality; or
 - Grant the petition for relief, and direct that the City of Rockwall participate in the costs of acquiring land for and/or constructing the public improvement under standard participation policies.
- (6) Notification of a Decision on a Proportionality Appeal. The property owner or developer/applicant shall be notified of the decision on a *Proportionality Appeal* by the Director of the Planning and Zoning Department within 14 calendar days following the City Council's decision.

(D) EFFECT AND EXPIRATION OF A DECISION ON A PROPORTIONALITY APPEAL.

- Effect of Relief. If necessary, the Director of the Planning and Zoning Department may require the property owner and/or developer/applicant to submit a modified *Development Application* with supporting materials showing conformance with the relief granted by the City Council for a *Proportionality Appeal*. If required to resubmit the subdivision plat, the property owner and/or developer/applicant shall have 90-days -- from the date the relief under the *Proportionality Appeal* was granted by the City Council -- to submit a subdivision plat showing conformity with the City Council's decision.
- Failure to File a Subsequent Development Application. Should the property owner and/or applicant fail to provide a conforming subdivision plat within 90-days -- from the date the relief under the *Proportionality Appeal* was granted by the City Council --, the relief granted on the *Proportionality Appeal* shall expire.
- Expiration of Relief. The relief granted on a *Proportionality Appeal* shall remain in effect for the period the *Development Application* is in effect, and shall expire upon the expiration of the subdivision plat or related *Development Application*; however, the following shall also apply to a granted *Proportionality Appeal*:
 - The City Council may extend the time for filing the revised subdivision plat or *Development Application* for good cause, but in no case should the expiration date for the relief granted extend beyond one (1) year from the date the *Proportionality Appeal* was granted by the City Council.
 - If the subdivision plat or *Development Application* is modified to increase the number of residential lots or units or if the intensity of a non-residential land use is increased, the Director of the Planning and Zoning Department may require a new study to validate the *Proportionality Appeal* granted by the City Council has not changed.
 - If the subdivision plat or *Development Application* -- for which a *Proportionality Appeal* was granted by the City Council -- is denied on other grounds, a new *Proportionality Appeal* shall be required on any subsequent application.

(4) PETITION FOR VESTED RIGHTS.

(A) PURPOSE AND APPLICABILITY.

- Purpose. The purpose of a *Vested Rights Petition* is to determine whether a *Development Application* should be processed under the requirements of a previous ordinance and should not be subject to the regulations of this Chapter, to provide a process for the determination of vested rights, and to determine when certain subdivision plats are subject to expiration.
- Applicability. A *Vested Rights Petition* may be filed with a *Development Application* authorized by this Chapter. A *Vested Rights Petition* may not be submitted by an applicant along with an application for a zoning change, text amendment, Specific Use Permit (SUP), or any other *Development Application* requesting legislative action/decision by the City Council.

(B) VESTED RIGHTS PETITION.

- Submission. A *Vested Rights Petition* may be submitted by a property owner or their duly authorized representative and shall be filed with the Responsible Official [see [Subsection 38-10\(4\)\(C\)\(1\)](#)] in accordance with [Chapter 245, Issuance of Local Permits, of the Texas Local Government Code](#) or successor statute. The submission of a *Vested Rights Petition* shall be deemed to be an automatic waiver



of the applicant's right -- *and the City's obligation* -- to process and act upon an application as required by [Chapter 212, Municipal Regulation of Subdivisions and Property Development, of the Texas Local Government Code](#). The submission of a [Vested Rights Petition](#) shall stay further proceedings on the related application until a final decision is reached on the petition.

- (2) [Effect of Petition](#). If a [Vested Rights Petition](#) is approved in whole or in part, the *Responsible Official* [see [Subsection 38-10\(4\)\(C\)\(1\)](#)] shall process the related application and decide the application in accordance with the standards specified in the approval based on the prior ordinance requirements, or shall extend the validity of the related application that would otherwise be subject to expiration pursuant to the requirements of this *Chapter*.
- (3) [Form of Petition](#). The [Vested Rights Petition](#) shall allege in writing that the property owner or their duly authorized representative has a vested right for some or all of the land subject to the application established under Chapter 245, *Issuance of Local Permits*, or pursuant to [Section 43.002, Continuation of Land Use, of the Texas Local Government Code](#) or successor statute, that requires the City of Rockwall to review and decide the application under standards that were in effect prior to the effective date of the currently applicable standards. The petition shall include all of the following information and documents:
 - (a) A written narrative describing the grounds for the requested petition, including a statement as to whether the petition asserts a vested right related to a specific standard or an entire project. The written narrative shall include original notarized signatures of the property owner.
 - (b) A copy of each approved or pending *Development Application*, which is the basis for the contention that the City of Rockwall may not apply current standards to the subdivision plat application which is the subject of the petition.
 - (c) The official filing date of the *Development Application*.
 - (d) The date the subdivision for which the *Development Application* was submitted and commenced.
 - (e) Identification of all standards otherwise applicable to the *Development Application* from which relief is requested.
 - (f) Identification of the standards which the petitioner contends apply to the *Development Application*.
 - (g) Identification of the current standards which the petitioner agrees can be applied to the *Development Application* at issue.
 - (h) A copy of any prior vested rights determination involving the same land.
 - (i) Where the petitioner alleges that a subdivision plat subject to expiration should not be terminated, a description of the events constituting progress toward completion of the subjection for which the *Development Application* was approved. The applicant shall reimburse the City for all related legal costs for review of the vested rights petition. This reimbursement shall be paid in full prior to any decision on the petition.
- (4) [Time for Filing a Petition](#). A [Vested Rights Petition](#) shall be filed with an application for which a vested right is claimed, except that the petition may be filed before the date of expiration of a subdivision plat

(C) [PROCESSING OF AND DECISION ON A VESTED RIGHTS PETITION.](#)

- (1) [Responsible Official](#). The Director of the Planning and Zoning Department or his/her designee shall be responsible for processing a [Vested Rights Petition](#). In addition, a copy of the [Vested Rights Petition](#) shall be forwarded to the *City Attorney* following acceptance. The petitioner shall be responsible for reimbursing the City of Rockwall with any legal fees incurred related to the review of the [Vested Rights Petition](#). The reimbursement shall be paid in full prior to the filing of a subdivision plat.
- (2) [Determination by the Responsible Official](#). Upon receiving a [Vested Rights Petition](#), the *Responsible Official* shall review the request, and prepare a written determination concerning if the relief requested in the [Vested Rights Petition](#) is warranted in whole or in part. This determination should summarize the *Responsible Official's* reasoning and recommendation.
- (3) [Decision of the Planning and Zoning Commission](#). The *Responsible Official* shall forward the written determination to the Planning and Zoning Commission for consideration, and the Planning and Zoning Commission shall render a decision on the [Vested Rights Petition](#) within 14 calendar days following the date the petition was filed with the City of Rockwall. In approving a decision on a [Vested Rights Petition](#), the Planning and Zoning Commission shall require a simple majority vote of those members present.
- (4) [Appeal of a Decision of the Planning and Zoning Commission](#). The petitioner may appeal the decision of the Planning and Zoning Commission on a [Vested Rights Petition](#) to the City Council within ten (10) working days of the date such decision is rendered. An appeal under this section stays the acceptance of any further *Development Applications* until the City Council has rendered the final decision.
- (5) [Decision of the City Council](#). Upon appeal by a petitioner, the City Council shall review the *Responsible Official's* written determination and the Planning and Zoning Commission's decision, and render a decision on the [Vested Rights Petition](#) within 30 calendar days following the date the petition was filed with the City of Rockwall. In approving a decision on a [Vested Rights Petition](#), the City Council shall require a simple majority vote of those members present. The City Council's decision shall be the final decision on a [Vested Rights Petition](#).



- (6) Criteria for Approval. The Planning and Zoning Commission and City Council shall decide the Vested Rights Petition based upon the following factors:
- (a) The nature and extent of prior subdivision plats or *Development Applications* filed for the land subject to the petition.
 - (b) Whether any prior vested rights determinations have been made with respect to the property subject to the petition.
 - (c) Whether any prior approved *Development Applications* for the subject property have expired or have been terminated in accordance with State law or local ordinances.
 - (d) Whether any statutory exception applies to the standards in this *Chapter* from which the applicant is seeking relief.
 - (e) Whether any prior approved subdivision plats or *Development Applications* relied upon the petitioner have expired.
 - (f) For petitions filed pursuant to [Section 38-7\(10\), Dormant Projects](#), or [Section 38-6\(3\)](#) of this *Chapter*, whether any of the events preventing expiration have occurred.
 - (g) Any other applicable provisions outlined in [Chapter 245, Issuance of Local Permits](#), or [Section 43.002, Continuation of Land Use](#), of the Texas Local Government Code, or its successor statutes.
- (7) Conditions of Approval. If the claim of vested rights is based upon a pending *Development Application*, subject to the standards that have been superseded by this *Chapter*, the Planning and Zoning Commission and City Council may condition any relief granted on the Vested Rights Petition on the approval of the pending *Development Application*.

(D) ACTION ON AND ORDER FOR A VESTED RIGHTS PETITION.

- (1) Action on a Vested Rights Petition. The Planning and Zoning Commission and City Council may take any of the following actions on a Vested Rights Petition.
- (d) Deny the relief requested in the petition, and direct that the subdivision plat shall be reviewed and decided under the currently applicable standards.
 - (e) Grant the relief requested in the petition, and direct that the subdivision plat shall be reviewed and decided in accordance with the standards contained in the identified, prior regulations.
 - (f) Grant the relief requested in part, and direct that certain identified current standards be applied to the related subdivision plat, while standards contained in the identified, prior regulations shall be applied.
 - (g) For petitions filed pursuant to [Section 38-7\(10\), Dormant Projects](#), or [Section 38-6\(3\)](#) of this *Chapter*, specify the expiration date or the conditions of expiration for the related subdivision plat(s).
- (2) Order for a Vested Rights Petition. The responsible official's report and the decision on the Vested Rights Petition shall be recorded in writing in an order that identifies the follow:
- (f) The nature of the relief granted, if any.
 - (g) The approved or filed *Development Application* of the subdivision plat or other *Development Application* upon which relief is premised under the petition.
 - (h) Current standards which shall apply to the subdivision plat for which relief is sought.
 - (i) Prior standards which shall apply to the subdivision plat for which relief is sought, including any procedural standards.
 - (j) The statutory exception or other grounds upon which relief is denied in whole or in part on the petition.
 - (k) For petitions filed pursuant to [Section 38-7\(10\), Dormant Projects](#), or [Section 38-6\(3\)](#) of this *Chapter*, determine whether the approved subdivision plat should be terminated, and specify the expiration date or the conditions of expiration for the subdivision plat.

(E) EFFECT, EXPIRATION AND EXTENSION OF A VESTED RIGHTS PETITION.

- (1) Effect of Relief. Following the final decision on the Vested Rights Petition, the property owner shall conform the subdivision plat or *Development Application* for which relief is sought to such decision. If the subdivision plat or *Development Application* on file is consistent with the relief granted on the Vested Rights Petition, no revisions are necessary. Where proceedings have been stayed on the subdivision plat or *Development Application* pending referral of the Vested Rights Petition to the City Council, proceedings on the application shall resume after the City Council's final decision on the Vested Rights Petition.
- (2) Expiration of a Vested Rights Petition. Relief granted on a Vested Rights Petition shall expire on the occurrence of one (1) of the following events:
- (a) The property owner or developer/applicant fails to submit a required revised subdivision plat or *Development Application* consistent with the relief granted within 30-days of the final decision on the Vested Rights Petition; or,
 - (b) The subdivision plat for which relief was granted on the Vested Rights Petition is denied under the criteria made applicable through the relief granted on the petition; or,



- (c) The subdivision plat or *Development Application* for which the relief was granted on the *Vested Rights Petition* expires.
- (3) *Extension of a Vested Rights Petition*. Extension of the date of expiration for the *Development Application* for which relief that was granted on a *Vested Rights Petition* shall result in extension of the relief granted on the *Vested Rights Petition* for the same time period.

SECTIONS 38-11 – 38-49: RESERVED



ARTICLE II. PARK LAND DEDICATION

SECTION 38-50. PURPOSE.

The City of Rockwall acknowledges that public parks and recreational amenities are necessary to serve the public's health and welfare, and that these types of facilities improve the quality of life for the City's residents. The City has further determined that increased residential and non-residential development within the City's corporate boundaries impact the City's existing park resources and increase the demand for additional public parks, trails, and recreational amenities. In order to address these issues, the City Council of the City of Rockwall establishes this *Article* to provide a fair method for determining parkland dedication, cash-in-lieu of land fees, and pro-rata equipment fees in order to meet the current and future needs of the City's residents. The requirements for parkland are based in part on the standards, needs and objectives set forth in the Parks and Recreation Department's *Parks & Open Space Master Plan*, which is routinely amended and adopted by the City Council and which shall be incorporated by reference herein for all purposes.

SECTION 38-51. DEFINITIONS.

The following words, terms and phrases, when used in this *Article*, shall have the meanings ascribed to them in this *Section*, except where the context clearly indicates a different meaning:

- (1) Applicant. An *Applicant* is the property owner or duly authorized agent/representative of the property owner seeking approval for a development through the development process.
- (2) Community Park. A *Community Park* is a public park that is intended to serve a larger geographic area than a *Neighborhood Park*, and that: [1] is located adjacent to larger roadways to facilitate greater access to the area, [2] is located outside of the boundaries of a subdivision, [3] is a minimum of 50-acres in size with all land area being outside of the 100-year floodplain (*unless otherwise approved by the City Council pending a recommendation by Parks and Recreation Board of the City of Rockwall*), [4] provides a wider variety of outdoor recreational amenities and open space than can be provided in a *Neighborhood Park*, and [5] is in a convenient walking, bicycling, or driving distance to the majority of the residents within a stated geographic area that consists of several *Park Districts*.
- (3) Develop. To *Develop* shall mean the act of subdividing a parcel or tract of land and the installation of public facilities in accordance with and as defined in [Chapter 38, Subdivisions, of the Municipal Code of Ordinances](#).
- (4) Development. A *Development* shall mean a parcel or tract of land proposed for subdivision in accordance with and as defined by [Chapter 38, Subdivisions, of the Municipal Code of Ordinances](#).
- (5) Director. The *Director* shall mean the Director of the Parks and Recreation Department of the City of Rockwall.
- (6) Neighborhood Park. A *Neighborhood Park* is a public park that is: [1] a minimum of 11-acres in size with all land area being outside of the 100-year floodplain (*unless otherwise approved by the City Council pending a recommendation by the Parks and Recreation Board of the City of Rockwall*), [2] provides a variety of outdoor recreational amenities that are typically passive in nature (*i.e. does not typically include programmed recreational spaces for sports or uses that require a high level of maintenance*), and [3] is within a convenient walking distance for the majority of residents within a stated geographic area (*see the definition for Park Districts*).
- (7) Park Districts. *Park Districts* are geographic areas established by the City Council upon recommendation by the Parks and Recreation Board of the City of Rockwall representing the boundaries of a convenient walking distance for residents within the area to any *Neighborhood Park* that is also located within these boundaries.
- (8) Park Master Plan. The Parks and Recreation Department's *Park & Open Space Master Plan* as adopted and as may be amended in the future by the City Council.
- (9) Private Park. A *Private Park* is any park that is owned and maintained by an entity other than the City of Rockwall. *Private Parks* are typically served by private streets and are not accessible via public right-of-way.
- (10) Pro-Rata Share of Dedication. The *Pro-Rata Share of Dedication* means the amount of land that shall be dedicated -- or the acreage used to calculate the *Cash-In-Lieu of Land fees* -- for a particular *Development* as prescribed within [Section 38-57](#).
- (11) Public Parkland. *Public Parkland* is any *Neighborhood Park* or *Community Park* that is generally depicted in the Parks and Recreation Department's *Parks & Open Space Master Plan*.



(12) *Residential Development.* Residential Development shall mean any single-family or multi-family development regardless of the underlying zoning designation; however, this definition specifically excludes any development that is intended for temporary occupancy (i.e. hotels/motels, nursing homes, convalescent care facilities, homeless shelters, and halfway houses). Development intended for temporary occupancy shall be treated as Non-Residential Development.

SECTION 38-52. AUTHORITY FOR THIS ARTICLE.

This Article is enacted pursuant to and in accordance with the home rule powers of the City of Rockwall, granted under the [Section 5 of Article XI of the State of Texas Constitution](#), in statutes of the State of Texas -- including but not limited to Local Government Code §212.001 et. seq. -- and the City of Rockwall's Home Rule Charter. The imposition of park dedication or a park fee does not alter, negate, supersede, or otherwise affect any other requirements of the City, County, or State legislation or regulations that may be applicable to a development, including the City's zoning and/or subdivision regulations.

SECTION 38-53. APPLICABILITY OF PARKLAND DEDICATION AND/OR PARK FEES.

This Article shall be applicable to the establishment of Neighborhood Parks, Community Parks and the trail systems that connect homes and businesses to the public parks and the greater community. In addition, this Article shall specifically apply to Residential Development.

SECTION 38-54. DEDICATION OF PUBLIC PARKLAND AND THE ESTABLISHMENT OF PRIVATE PARKLAND.

(1) *Dedication of Public Parkland for Residential Developments.* The cost of Neighborhood Parks shall be borne initially by the Applicant and then primarily by the ultimate residential property owners, who -- by reason of the proximity of their property to such parks -- shall be the primary beneficiary of these public facilities. The following outlines the requirements and process for the dedication of public parkland for Residential Developments:

(a) *Requirements for Public Parkland Dedication.* Unless otherwise approved by the City Council upon recommendation by the Parks and Recreation Board, the following are the general requirements for parkland dedication in the City of Rockwall:

(1) *Land Suitability.* All land used to satisfy the requirements for public parkland dedication shall be suitable for the provision of recreational amenities. Land suitability shall be defined as land that: [1] is directly accessible to a public street, [2] is situated outside the 100-year floodplain (unless otherwise approved by the City Council pending a recommendation from the Parks and Recreation Board), [3] does not have excessive slope, [4] does not have encumbrances by easements, utilities, drainage structures, or appurtenances that restrict the use of the area (unless otherwise approved by the City Council pending a recommendation from the Parks and Recreation Board), and [5] generally meets the goals and policies outlined in the Park Master Plan. Any land proposed for dedication that does not adhere to this criterion may be grounds for denial of a subdivision plat.

(2) *Location.* When possible, parkland should be located adjacent to schools and/or public open spaces to facilitate shared facilities or within a subdivision to allow for a logical extension and connection to a public park, trail, or other recreation facility within an abutting subdivision.

(3) *Size.* The following size requirements shall be applicable to all land used to satisfy the requirements for public parkland dedication:

(a) *One (1) Acre or Less.* The City Council has determined that parkland dedication of one (1) acre or less is impractical for the purposes of establishing a Neighborhood Park. Therefore, if the Pro-Rata Share of Required Dedication for Residential Development is one (1) acre or less, the Applicant shall be required to pay the applicable Cash-In-Lieu of Land fees in the amount provided by [Section 38-57](#), rather than dedicate any parkland. No subdivision plat showing one (1) acre or less of parkland dedication shall be approved.

(b) *Greater than One (1) Acre but Less Than Eight (8) Acres.* In cases where the Pro-Rata Share of Required Dedication for a Residential Development is greater than one (1) acre but less than eight (8) acres, the City Council -- upon recommendation from the Parks and Recreation Board -- shall have the option of requiring parkland dedication or accepting Cash-In-Lieu of Land fees in accordance with [Section 38-57](#). In making this decision, the City Council and the Parks and Recreation Board shall determine: [1] if sufficient parkland is already provided within the Park District of the proposed Residential Development, or [2] if accepting Cash-In-Lieu of Land fees would better serve the Park District by allowing for the expansion or improvement of an existing Neighborhood Park or Community Park.

(c) *Eight (8) Acres to 11-Acres.* In cases where the Pro-Rata Share of Required Dedication for a Residential Development is greater than or equal to eight (8) acres and the proposed Public Parkland meets the requirements stipulated by [Section 38-](#)



54(1)(a), the City Council -- upon recommendation from the Parks and Recreation Board -- shall accept the dedication in accordance with Section 38-54(1)(b).

- (b) Process for the Dedication of Public Parkland. An Applicant shall provide dedication of *Public Parkland* suitable for the development of a public park or provide *Cash-In-Lieu of Land Fees* as stipulated by Section 38-57. Dedication of *Public Parkland* shall be shown on the preliminary and final plat and be labeled as "*Public Parkland Dedication to the City of Rockwall*". The Parks and Recreation Board shall review the proposed preliminary plat and final plat and provide recommendations concerning the acceptance of the proposed *Public Parkland Dedication* prior to the City Council acting on the preliminary plat or final plat. At the time the final plat is filed with the Rockwall County Clerk -- in accordance with the procedures outlined in Chapter 38, Subdivisions, of the Municipal Code of Ordinances --, such plat shall contain clear fee simple dedication of the proposed dedication for *Public Parkland*, and be free and clear of any encumbrances.
- (c) Waiver of Public Parkland Dedication for Private Residential Developments. If a *Residential Development* is proposed to be a private development with a *Private Park*, the City of Rockwall shall: [1] calculate the *Cash-In-Lieu of Land Fees* and the *Pro-Rata Equipment Fees* as if the proposed development were public, and [2] waive the requirement if the amenities of the *Private Park* of the proposed private development meet or exceed the calculated *Cash-In-Lieu of Land Fees* and the *Pro-Rata Equipment Fees* to be collected. In the event that the *Cash-In-Lieu of Land Fees* and the *Pro-Rata Equipment Fees* are greater than the amenities of the *Private Park* of the proposed private development, the Applicant of the private development shall pay the difference in accordance with the provisions of this Article.

In a private development within a *Park District* or a private development encompassing an entire *Park District*, the *Private Park* within the private development must be easily accessible to the general public either through the use of the City's trail system or via a public roadway. If the private development encompasses the entire *Park District* and the ten (10) acre *Private Park* is not a continuous land mass, each separate section of the *Private Park* must be accessible to the general public and connected by way of a minimum eight (8) foot wide trail.

- (d) Dedication of More than the Pro-Rata Share of Parkland. At the discretion of the City Council -- pending a recommendation from the Parks and Recreation Board -- an Applicant may dedicate more land than the *Pro-Rata Share of Dedication* calculated for a *Residential Development*. If an Applicant dedicates an amount of land equal to or greater than the total required area required for a *Neighborhood Park*, the City and the Applicant shall enter into a *Pro-Rata Refund Agreement* in accordance with Chapter 38, Subdivisions, of the Municipal Code of Ordinances. The *Pro-Rata Refund Agreement* shall allow the Applicant to recover the cost of the additional dedication in excess of the *Pro-Rata Share of Dedication*. This agreement shall not be executed until after the required streets, drainage, and utilities have been constructed on the dedicated land. The *Pro-Rata Refund Agreement* shall provide that future Applicants of *Residential Development* in the same *Park District* shall pay their *Pro-Rata Share of Dedication* of the actual cost of the *Neighborhood Park*, which shall be calculated based on the *Cash-In-Lieu of Land Fees* and *Pro-Rata Equipment Fees* in effect at the time of dedication. In no case shall the Applicant receive payments above the amount stated in the *Pro-Rata Refund Agreement*. The term of the *Pro-Rata Refund Agreement* shall not exceed a period of five (5) years from the date of dedication.
- (2) Prior Dedication or Absence of Prior Dedication. At the request of an Applicant, the City Council may consider crediting any former dedication or gift of land to the City of Rockwall on a per acre basis toward the eventual land dedication requirements imposed on a proposed *Residential Development*. In exercising their discretion on these types of requests, the City Council shall consider the recommendations of the Planning and Zoning Commission and Parks and Recreation Board; however, no previous dedications of required open space for any development maybe considered as prior dedication.

SECTION 38-55. CASH-IN-LIEU OF LAND FEES.

Subject to approval by the City Council -- pending a recommendation from the Parks and Recreation Board -- and the requirements of Section 38-54, an Applicant responsible for the *Parkland Dedication* under this Article may elect to meet the requirements of Section 38-54 in whole or in part through a cash payment in lieu of land dedication. The amount of this cash payment shall be as set forth in Section 38-57. Cash payments collected by the City through this method may only be used for the acquisition or improvement of a *Neighborhood Park* located within the same *Park District* as the *Development* in which the fees are being assessed.

SECTION 38-56. PRO-RATA EQUIPMENT FEES.

A *Pro-Rata Equipment Fee* is hereby imposed on *Residential Development* for the purposes of assuring that the recreational and amenity needs created by a *Residential Development* are satisfied. Such a fee is intended to be in accordance with and to further the goals and policies of the *Park Master Plan* and other City policies, ordinances and resolutions, and to ensure the provision of adequate recreational amenities in *Public Parks*. The *Pro-Rata Equipment Fee* applies to all *Residential Development* and shall only be used to provide recreational amenities in *Neighborhood Parks* and/or *Community Parks*. This fee shall be in addition to the required dedication of *Public Parkland* required by Section 38-54, and shall be as set forth in Section 38-57.



SECTION 38-57. METHODOLOGY AND CALCULATION OF CASH-IN-LIEU OF LAND FEES AND PRO-RATA EQUIPMENT FEES FOR NEIGHBORHOOD PARKS.

(1) *Ultimate Dwelling Unit Holding Capacity.* The *Ultimate Dwelling Unit Holding Capacity* or the total number of residential units expected within a fully developed *Park District* shall be calculated by using the *Impact Fee Land Use Assumptions* as depicted in *Table 2*.

(2) *Dwelling Unit Dedication Factor.* The *Dwelling Unit Dedication Factor* is the acreage required from each residential unit anticipated to be constructed within a fully developed *Park District* necessary to provide a *Neighborhood Park* within that *Park District*. This factor is calculated by dividing the *Ultimate Dwelling Unit Holding Capacity* by the required acreage for a *Neighborhood Park* (i.e. 11-acres). For example, the *Dwelling Unit Dedication Factor* for a *Park District* that has an *Ultimate Dwelling Unit Holding Capacity* of 100 dwelling units would be calculated as follows:

11-AC/100 DU = 0.11-AC/DU
WHERE: DU = DWELLING UNITS; AC = ACRES

(3) *Pro-Rata Share of Dedication.* The *Pro Rata Share of Dedication* is the acreage of required *Parkland Dedication* for a particular *Residential Development* as determined by the proposed number of units multiplied by the *Dwelling Unit Dedication Factor*. For example, the *Pro-Rate Share of Dedication* for a *Residential Development* proposing to create 100 dwelling units in a *Park District* with a *Dwelling Unit Dedication Factor* of 0.01-acres would be calculated as follows:

0.01-AC x 100 DU = 1-AC
WHERE: DU = DWELLING UNITS; AC = ACRES

(4) *Cash-In-Lieu of Land Fees.* *Cash-Lieu of Land Fees* are the fees paid by an *Applicant* for each proposed dwelling unit if *Parkland Dedication* is waived by the City Council in accordance with the requirements of *Section 38-55*. These fees shall be calculated and approved by the City Council on an annual basis by establishing the price required to purchase one (1) acre of land at current land values within the City of Rockwall, dividing it by the *Ultimate Dwelling Unit Holding Capacity* for a *Park District*, and multiplying this total by the required acreage for a *Neighborhood Park* (i.e. 11-acres). For example, if the price to purchase one (1) acre of land was established as \$50,000.00 per acre, a *Park District* with an *Ultimate Dwelling Unit Holding Capacity* of 100 dwelling units would be calculated as follows:

(\$50,000.00/100 DU) x 11-AC = \$5,500.00/DU
WHERE: DU = DWELLING UNITS; AC = ACRES

(5) *Pro-Rata Equipment Fees.* The *Pro-Rata Equipment Fees* are the fees necessary to fully amenitized a fully developed *Neighborhood Park*. These fees shall be calculated and approved by the City Council on an annual basis by establishing the average cost of providing amenity to a fully developed park and dividing it by the *Ultimate Dwelling Unit Holding Capacity* for a *Park District*. For example, if the average cost of providing amenity to a fully developed park was \$500,000.00 and the *Ultimate Holding Capacity* for a *Park District* is 100 dwelling units the *Pro-Rata Equipment Fees* would be calculated as follows:

\$500,000.00/100 DU = \$5,000.00/DU
WHERE: DU = DWELLING UNITS

TABLE 1. LAND AND EQUIPMENT COSTS

ANNUAL PRICE PER ACRE OF LAND	\$68,000.00
NEIGHBORHOOD PARK ACREAGE (ACRES)	11.00
TOTAL LAND COST FOR A NEIGHBORHOOD PARK	\$748,000.00
TOTAL EQUIPMENT COST FOR A NEIGHBORHOOD PARK	\$702,000.00
TOTAL COST FOR A NEIGHBORHOOD PARK	\$1,450,000.00

TABLE 2. FEE SCHEDULE

PARK DISTRICT	ULTIMATE DWELLING UNIT HOLDING CAPACITY	DWELLING UNIT DEDICATION FACTOR IN ACRES	CASH-IN-LIEU OF LAND FEES	PRO-RATA EQUIPMENT FEES	TOTAL ALTERNATIVE PARK FEES
1	594	0.0185	\$1,259.26	\$1,181.82	\$2,441.08
2	1,148	0.0096	\$651.57	\$611.50	\$1,263.07



3	1,350	0.0081	\$554.07	\$520.00	\$1,074.07
4	1,265	0.0087	\$591.30	\$554.94	\$1,146.25
5	1,278	0.0086	\$585.29	\$549.30	\$1,134.59
6	671	0.0164	\$1,114.75	\$1,046.20	\$2,160.95
7	1,446	0.0076	\$517.29	\$485.48	\$1,002.77
8	1,083	0.0102	\$690.67	\$648.20	\$1,338.87
9	1,451	0.0076	\$515.51	\$483.80	\$999.31
10	349	0.0315	\$2,143.27	\$2,011.46	\$4,154.73
11	1,085	0.0101	\$689.40	\$647.00	\$1,336.41
12	1,221	0.0090	\$612.61	\$574.94	\$1,187.55
13	782	0.0141	\$956.52	\$897.70	\$1,854.22
14	2,212	0.0050	\$338.16	\$317.36	\$655.52
15	1,234	0.0089	\$606.16	\$568.88	\$1,175.04
16	406	0.0271	\$1,842.36	\$1,729.06	\$3,571.43
17	2,844	0.0039	\$263.01	\$246.84	\$509.85
18	701	0.0157	\$1,067.05	\$1,001.43	\$2,068.47
19	996	0.0110	\$751.00	\$704.82	\$1,455.82
20	1,248	0.0088	\$599.36	\$562.50	\$1,161.86
21	1,006	0.0109	\$743.54	\$697.81	\$1,441.35
22	1,312	0.0084	\$570.12	\$535.06	\$1,105.18
23	1,178	0.0093	\$634.97	\$595.93	\$1,230.90
24	1,472	0.0075	\$508.15	\$476.90	\$985.05
25	1,313	0.0084	\$569.69	\$534.65	\$1,104.34
26	630	0.0175	\$1,187.30	\$1,114.29	\$2,301.59
27	1,756	0.0063	\$425.97	\$399.77	\$825.74
28	2,321	0.0047	\$322.27	\$302.46	\$624.73
29	3,965	0.0028	\$188.65	\$177.05	\$365.70
30	1,724	0.0064	\$433.87	\$407.19	\$841.07
31	333	0.0330	\$2,246.25	\$2,108.11	\$4,354.35

SECTION 38-58. ASSESSING AND COLLECTING CASH-IN-LIEU OF LAND FEES AND PRO-RATA EQUIPMENT FEES.

Applicant's submitting a subdivision plat for a *Residential Development* shall require a recommendation from the Parks and Recreation Board of the City of Rockwall prior to seeking approval from the City Council. The *Director* shall calculate the fees based on the number of residential lots or units being proposed for the *Residential Development* in accordance with [Section 38-57](#), and bring forward a recommendation for the consideration of the Parks and Recreation Board. Once the Parks and Recreation Board has approved a recommendation to the City Council, the Director of Planning and Zoning shall bring the recommendation forward to the City Council with the consideration of the replat or final plat. Upon approval from the City Council, fees shall be collected in conjunction with the collection of all civil engineering fees or -- *if applicable* -- subdivision plat recording fees.

SECTION 38-59. SPECIAL FUND ESTABLISHED; REFUNDS.

- (1) *Park Land Dedication Fund.* There is hereby established a special fund for the deposit of all *Cash-In-Lieu of Land Fees* and *Pro-Rata Equipment Fees* collected under this *Article*. This fund shall be known as the *Park Land Dedication Fund*.
- (2) *Refunds.* The City of Rockwall shall account for all sums paid for *Cash-In-Lieu of Land Fees* and *Pro-Rata Equipment Fees* collected under this *Article* and reference them by the individual subdivision plat requiring the fee dedication. Any funds paid for such purposes must be expended by the City of Rockwall within eight (8) years from the date received by the City for acquisition and development of a *Neighborhood Park* or a *Community Park* as defined in this article. Such funds shall be considered to be spent on a *first-in, first-out* basis. If not expended within eight (8) years from the date of collection, the *Applicant* -- *on the last day of such period* -- shall be entitled to a pro-rata refund of such funds. The *Applicant* must request such refund in writing within one (1) year of collection, or such rights shall be barred.



SECTION 38-60. REVIEW AND UPDATING PARKS & OPEN SPACE MASTER PLAN.

The City’s Parks and Recreation Department shall consider the need to update the *Parks & Open Space Master Plan* at least annually to ensure that the plan remains current and provides an equitable, effective framework from which to pursue the acquisition and development of *Neighborhood Parks* and *Community Parks* for each *Park District*; however, a mandatory update shall be performed at least every five (5) years.

SECTION 38-61. PARK DISTRICT BOUNDARIES.

(1) *Park Districts.* The *Park Districts* shall be as depicted in *Figure 1*.

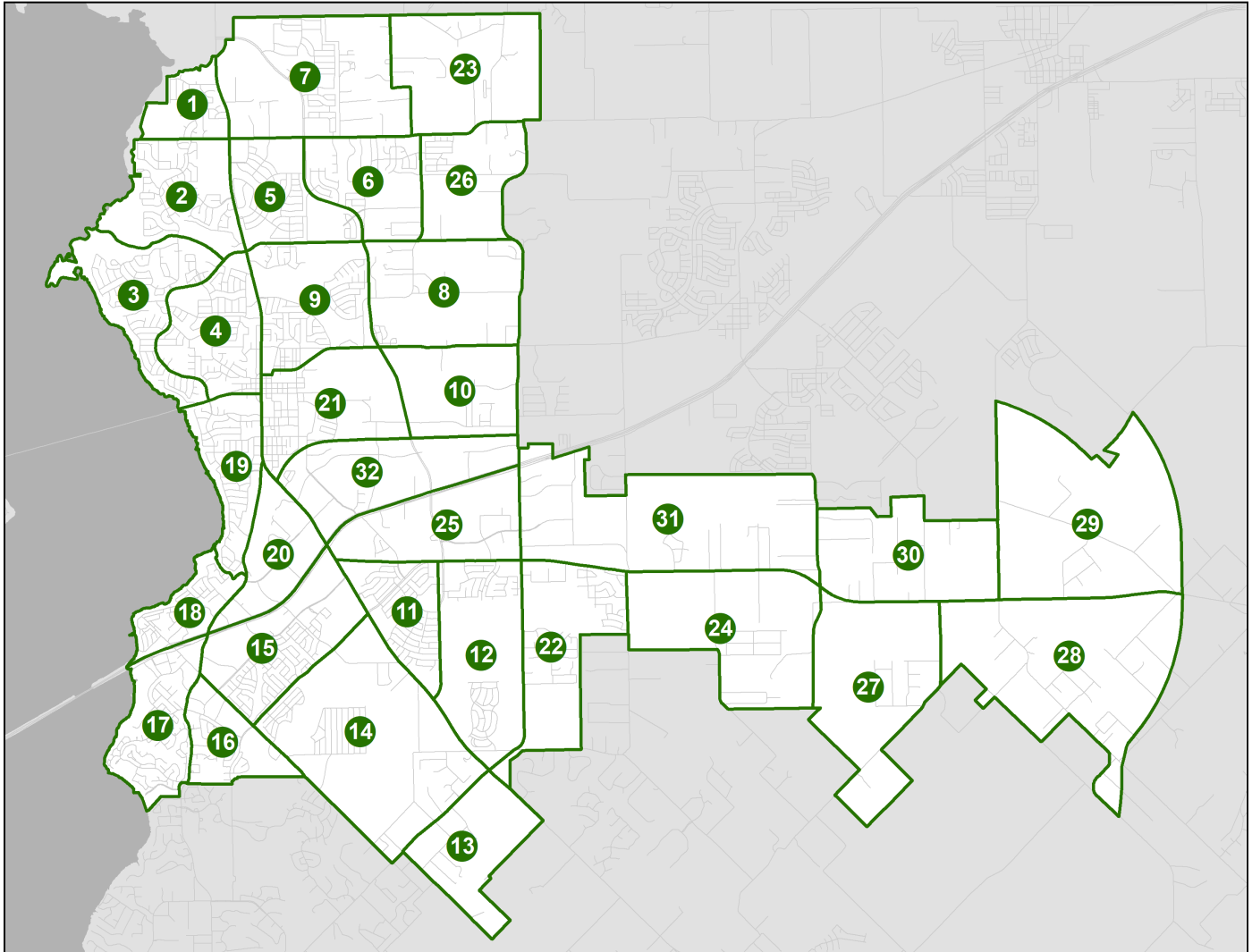


FIGURE 1: PARK DISTRICTS

SECTION 38-62. APPEALS, WAIVERS, AND VARIANCES TO THIS ARTICLE’S REQUIREMENTS BY THE CITY COUNCIL.

(1) *Appeals.* The *Applicant* may appeal the following decisions of the *Director* to the City Council:

- (a) The applicability of the *Cash-In-Lieu of Land Fees* and *Pro-Rata Equipment Fees*;
- (b) The amount of the *Park Fees* due; or,
- (c) The amount of refund due (*if any*).

The burden of proof is on the *Applicant* to demonstrate that the amount or applicability of the fee or refund, was not calculated according to the applicable schedule of fees or the guidelines established for determining such amounts. The *Applicant* must file a notice of appeal with the City Secretary within 30-days following the determination by the *Director*. The filing of an appeal shall stay the matter until final determination by the City Council.



- (2) Variations. Upon written request by the *Applicant*, the City Council may grant a variance to any requirements of this *Article* upon a finding that the strict application of such requirement would result in a substantial hardship, which is not common to similarly situated property owners.
- (3) Waivers. The City Council may waive the requirements of this *Article* upon a finding that said waiver is clearly in the best interest of the City of Rockwall.

SECTIONS 38-63 - 38-82. RESERVED.



ARTICLE III. IMPACT FEE REGULATIONS

SECTION 38-103 – 38-361.

SECTIONS 38-103 THROUGH SECTION 38-362 SHALL BE RETAINED IN ITS ENTIRITY

SECTION 38-362 – 38-398. RESERVED.



ARTICLE IV. DISASTER WARNING SIREN

SECTIONS 38-399. PURPOSE.

The City of Rockwall acknowledges that adequate disaster warning sirens are necessary to provide the general public early warning of impending situations that could pose a detriment to the health and safety of the community (e.g. *flashfloods, tornadoes, civil disturbances, and etcetera*). The City also acknowledges that growth in the community creates a need to develop new disaster warning sirens.

SECTIONS 38-400. DEFINITIONS.

The following words, terms and phrases, when used in this *Article*, shall have the meanings ascribed to them in this *Section*, except where the context clearly indicates a different meaning:

- (1) Planning and Zoning Commission. Planning and Zoning Commission shall mean the Planning and Zoning Commission of the City of Rockwall.
- (2) City Council. City Council shall mean the City Council of the City of Rockwall.
- (3) Developer. The Developer shall mean the property owner, subdivider, applicant, individual, firm, association, syndicate, co-partnership, corporation, or other organization proposing to subdivide or divide a parcel or tract of land or proposing to make improvements to an existing parcel or tract of land for the purpose of conveying or developing the parcel or tract of land.
- (4) Subdivider. See Developer.
- (5) Subdivision. Subdivision means the division of any lot, tract, or parcel of land into two (2) or more parts for the purpose of conveying or developing said lot, tract, or parcel of land now or in the future. The term Subdivision includes the re-subdivision or replatting of an existing Subdivision for the purpose of conveying or developing the whole or a portion of the existing Subdivision. When appropriate to context, the term Subdivision shall relate to the process of subdividing a lot, tract, or parcel of land or to land that has been subdivided. Subdivisions of mobile home spaces for sale or lease shall comply with all provisions of the Municipal Code of Ordinances and the Unified Development Code (UDC) for regulating mobile home parks.

SECTIONS 38-401. APPLICABILITY.

The provisions of this *Article* shall apply to all new development within the City of Rockwall and all *Subdivisions* within the City of Rockwall's Extraterritorial Jurisdiction (ETJ) after the effective date of the ordinance from which this *Article* was derived. This includes:

- (1) Development for which a *Final Plat* is required to be submitted to the City of Rockwall for approval in accordance with State law and the ordinances of the City of Rockwall; and,
- (2) Existing vacant lots for which a subdivision plat has been approved and for which a building permit has not yet been issued by the City of Rockwall.

SECTIONS 38-402. METHODOLOGY AND CALCULATION OF DISASTER WARNING SIRENS.

- (1) Disaster Warning Siren Fee. A Disaster Warning Siren Fee is hereby imposed on all new development in the City of Rockwall for the purposes of assuring that the necessary Disaster Warning Sirens are provided to meet the additional need created by new development. The Disaster Warning Siren Fee shall be calculated by multiplying the Cost Per Acre by the Number of Acres Being Platted or as follows:

DISASTER WARNING SIREN FEE = THE NUMBER OF ACRES BEING PLATTED x COST PER ACRE

- (2) Cost Per Acre. The Cost Per Acre shall be calculated based upon the cost of the last siren bid.
- (3) Acres Served. The number of Acres Served is determined by the radius -- *in feet* -- served by the siren squared, multiplied by 3.1416, and divided by the square feet in an acre (i.e. 43,560 SF). For example, if the proposed disaster warning siren serves an area of 5,000.00-feet, the radius would be determined as follows:

$(5,000^2 \times 3.1416) / 43,560 \text{ SF} = 1,803 \text{ ACRES SERVED BY ONE (1) SIREN}$

- (4) Example of Calculation of a Disaster Warning Siren Fee. Using the example in [Section 38-402\(3\)](#), if the total cost of the last bid for a siren was \$50,000.00, the fee would be calculated as follows:



\$50,000.00/1,803 ACRES = \$27.73 PER ACRE

SECTIONS 38-403. GENERAL REQUIREMENTS.

- (1) Payment Required. The City Council hereby establishes that the property owner of any property which is to be developed, and to which this *Article* is applicable, shall pay to the City of Rockwall -- at the time of subdivision platting or upon issuance of a building permit for existing platted lots at the effective date of the ordinance from which this *Article* is derived -- a *Disaster Warning Siren Fee* to provide for the *Disaster Warning Sirens* needs created by such development or subdivision, in accordance with the provisions of this *Article*.
- (2) Time of Payment. Payment of the *Disaster Warning Siren Fees* required herein shall be paid as a condition of approval of any *Final Plat, Replat, or Minor Plat*. Payment shall be made prior to the filing of the subdivision plat unless otherwise stated in a *Facilities Agreement* or *Development Agreement* approved by the City Council. In the case of existing platted lots, the fee shall be paid at the time of the issuance of a building permit.
- (3) Disaster Warning Siren Fund. All cash payments paid to the City of Rockwall -- in accordance with this *Article* -- shall be deposited in a separate *Disaster Warning Siren Fund*. The City shall account for all such payments with reference to each development for which the payment is made.
- (4) Use of Funds. Any payments made to the *Disaster Warning Siren Fund* shall be used solely for the maintenance, acquisition, development, expansion, and/or upgrading of *Disaster Warning Sirens*.
- (5) Right to Refund. If all or part of the payments made pursuant to this *Article* are not expended, or not under contract to be expended for the purposes authorized in this *Article*, within ten (10) years of the date that 95.00% of all Certificates of Occupancy (CO) have been issued for the completed development of the property for which the payments were made, the person or entity who made such payments shall be entitled to a refund of all unexpended funds. A written request for such refund shall be made within one (1) year of entitlement. If no such timely request is made, the right to a refund of the unexpended funds shall be considered waived.
- (6) Disaster Warning Siren Map. The City of Rockwall's Geographic Information Systems Division shall maintain a *Disaster Warning Siren Map* open to public inspection, indicating the sphere of influence of the *Disaster Warning Sirens* put in place.

SECTIONS 38-404. PENALTIES, SANCTIONS, AND DETERMINATIONS.

- (1) Requirements to be Satisfied Prior to Development. It shall be unlawful for any person who is required to pay the *Disaster Warning Sire Fee* -- as required by this *Article* --, to begin, or allow any other person or contractor to begin, any construction or improvements on any land within the development to which this *Article* applies, until the required payment is made to the City of Rockwall in accordance with the requirements of this *Chapter*.
- (2) Permits and Services to be Withheld. No building permits shall be issued for, and no permanent utility services shall be provided to, any land within any development to which this *Article* applies until the required payment of the *Disaster Warning Siren Fee* is made to the City of Rockwall in accordance with this *Chapter*.
- (3) Request for an Adjustment. A *Request for Adjustment* to the *Disaster Warning Siren Fee* must be submitted in writing to the City Manager. Adjustments shall only be granted in accordance with the following criteria:
 - (A) A showing of good and sufficient cause; and,
 - (B) A determination that failure to grant the adjustment would result in exceptional hardship to the applicant; and,
 - (C) A determination that the granting of an adjustment will not result in increased threats to the public's safety, extraordinary public expense, create nuisances, or conflict with existing local laws or ordinances.
- (4) Determination by the City Manager. A determination made by the City Manager shall be final.

SECTIONS 38-405 – 38-429. RESERVED.



ARTICLE V. GRADING, EXCAVATION, EARTHWORK, AND EROSION CONTROL

SECTIONS 38-430. PURPOSE.

The City Council of the City of Rockwall finds that excessive quantities of soil, mud, rock, pollutants, or other debris eroding from certain areas results in a change in the natural cover, topography, or drainage of residential, commercial, industrial, and recreational land uses, and that changes in topography can significantly interfere with existing drainage courses established in the community. Therefore, the purpose of this *Article* is to reduce soil erosion and sedimentation from occurring, and reducing damages caused by changes in drainage courses that result from non-agricultural grading activities within the City by requiring proper provisions for surface and subsurface water disposal, and the protection of soil surfaces during and after an earth-changing activity in order to promote the health, safety, and general welfare of the community.

SECTIONS 38-431. DEFINITIONS.

The following words, terms and phrases, when used in this *Article*, shall have the meanings ascribed to them in this *Section*, except where the context clearly indicates a different meaning:

- (1) *City Engineer*. The *City Engineer* of the City of Rockwall or his/her designee.
- (2) *Erosion Control*. *Erosion Control* shall mean a measure that prevents or control of wind or water erosion in land development or construction.
- (3) *Grading*. The term *Grading* means the sculpting of an area of land for the needs of a specific project. *Grading* refers to any stripping, cutting, filling, stockpiling, or any combination thereof which modifies the existing land surface contour.
- (4) *Sediment Control*. *Sediment Control* shall mean a measure or device designed to keep eroded soil on a construction site.

SECTIONS 38-432. APPLICABILITY.

The provisions of this *Article* shall apply to property owners, persons, or agents filling, grading, excavating or otherwise disturbing the surface of real property within the City of Rockwall, whether they be contractors, subcontractors, supervisors, managers, agents, developers, employees, or otherwise. Failure to comply with the requirements of this *Article* shall constitute an offense, and for each day of such failure shall constitute a separate offense.

SECTIONS 38-433. GRADING PERMIT REQUIRED FOR FILLING, GRADING, AND EXCAVATION WORK.

No person shall fill, grade, excavate, or otherwise disturb the surface of real property within the City of Rockwall without first having secured a grading permit from the *City Engineer*. No owner of real property shall knowingly permit another person to fill, grade, excavate, or otherwise disturb the surface of real property within the City of Rockwall without first having secured a permit from the *City Engineer*. In addition, if the property to be filled, graded, excavated, or otherwise disturbed is within the flood hazard or erosion hazard setback area, a development permit must be secured from the *City Engineer* as required in this *Chapter*.

SECTIONS 38-434. RESPONSIBILITY OF A PROPERTY OWNER.

It shall be unlawful and an offense and shall constitute a nuisance for any person owning or having control of real property within the City of Rockwall to allow or permit soil, mud, rock, pollutants, or debris to wash, slide, erode, or otherwise be moved from said real property onto streets, alleyways, utility facilities, drainage facilities, rights-of-way or easements. It shall be the duty of each property owner or party in control thereof to prevent soil, mud, rock, pollutants or debris from such real property being deposited or otherwise transported onto the streets, alleyways, utility facilities, rights-of-way, or easements of the City of Rockwall, and to inspect such property and acquaint themselves with the conditions existing and to remedy conditions likely or calculated to allow soil, mud, rock, pollutants or debris to wash, slide, erode, or otherwise be transported onto the streets, alleyways, utility facilities, rights-of-way, or easements and failure to do so shall be deemed criminal negligence for the purpose of the offense described herein.

SECTIONS 38-435. REQUIREMENTS FOR FILLING, GRADING, AND EXCAVATION WORK.

The *City Engineer* shall prepare a list of allowable fill materials and the minimum required compaction requirements for each material. All filling shall use only the materials listed for fill. All fill placed on a site and visible from a public right-of-way shall be leveled and have a final cover of topsoil, a minimum of six (6) inches in depth, that will support vigorous plant growth, immediately following completion of filling operations. Intermediate leveling and cover shall be required at intervals not to exceed 30-days for filling operations that will exceed 30-days in duration. In areas where fill is being placed to control erosion, the *City Engineer* may substitute an alternate cover that is resistant to erosion for the requirement to cover fill with topsoil.

SECTIONS 38-436. GRADING PERMITS AND CRITERIA.



(1) Criteria for the Issuance of a Grading Permit. The Engineering Department of the City of Rockwall shall issue permits for the grading, filling, excavating, or otherwise disturbing the surface of real property upon the satisfaction of the following criteria:

- (A) The applicant shall provide a grading plan that meets the Engineering Department’s *Standards of Design and Construction Manual*.
- (B) The applicant shall provide adequate assurances that the City of Rockwall will be reimbursed for any expenses related to cleaning or the removal of dirt, debris, or other pollutants from City streets, alleyways, utility facilities, rights-of-way and easements or the barricading thereof by the posting of a deposit of cash with the City to guarantee same.
- (C) The amount of such deposit shall be established by the City Council of the City of Rockwall from time to time and is hereby established as follows:

AREA	
PARCELS OR TRACTS OF LAND ONE (1) ACRE OR LESS	\$500.00 MINIMUM
PARCELS OR TRACTS OF LAND GREATER THAN ONE ACRES	\$500.00 + \$100.00 FOR EACH ADDITIONAL ACRE OVER ONE (1) ACRE

- (D) The applicant provides a notarized statement from the property owner giving permission for the applicant to fill, grade, excavate, or otherwise disturb the property and acknowledgement by the property owner of the responsibilities of the property owner described in [Section 38-434](#) of this *Chapter*.
- (E) The submission by the applicant of a *Storm Water Pollution Prevention Plan (SWP3)* for all work disturbing one (1) acre of land or more. This *Storm Water Pollution Prevention Plan (SWP3)* must be prepared by a licensed professional engineer in accordance with all applicable Environmental Protection Agency (EPA) and Texas Commission on Environmental Quality (TCEQ) regulations and approved by the *City Engineer* prior to the issuance of a *Grading Permit*.
- (F) The submission by the applicant of a copy of *Notice of Intent (NOI)* and/or a *Construction Site Notice (CSN)* as required by the Texas Commission on Environmental Quality (TCEQ) regulations for all work disturbing one (1) acre of land or more.
- (G) The *City Engineer* may exclude that portion of tracts in excess of ten (10) acres that is determined to be so situated as to not contribute to erosion due to location and topography.
- (H) The parcel, tract or lot is not a portion of a tract of land that is actively being developed or that has an active *Development Application*.

(2) Work Performed by the City. If the City of Rockwall is required to remove soil, rock, mud, and debris from its streets, alleyways, utility facilities, rights-of-way, or easements for any reason due to work being performed on a property for which a deposit has been made pursuant to [Section 38-436\(1\)](#), reasonable charges shall be billed to the applicant and subtracted from the balance of the applicant’s deposit. The City of Rockwall will attempt to notify the applicant to clean the affected area unless deemed to be an emergency requiring immediate attention.

(3) Criteria for a Refund of Deposit. Upon written request by the applicant to the *City Engineer*, the unused portion of the applicant’s deposit shall be refunded if the following criteria is met:

- (A) The site for which the deposit exists has been stabilized against erosion, and permeant ground cover has been established.
- (B) No further hazard of erosion is present on the site.
- (C) All temporary erosion control structures have been removed from the site.
- (D) Permanent erosion control facilities are in place and functioning properly as designed.
- (E) The *City Engineer* has given written acceptance of public improvements.

(4) Refund of Deposit. An applicant who has submitted a written request for return of their deposit who meets the requirements of [Section 38-436\(3\)](#) shall be refunded all funds not used to reimburse the City of Rockwall for the removal of soil, rock, mud, debris, and pollutants from its streets, alleyways, utility facilities, rights-of-way, or easements. Should an applicant fail to meet all requirements for a refund, the applicant’s request will be rejected until such time the requirements are met. When the requirements have been met, the funds subject to refund will be sent via first-class mail to the address on the applicant’s grading permit application or if such address has been updated pursuant to application instructions to the applicant’s updated address. If the refund mailed to the applicant is returned by the United States Postal Service (USPS) as undeliverable, the funds shall be forfeited to the City of Rockwall and placed in the *General Fund*.

(5) Forfeiture of Funds. If a written request for return of a deposit is not made within two (2) years of the date the project on the property for which the deposit has been made receives written acceptance from the *City Engineer* of the public improvements, the unused portion of the applicant’s deposit shall be forfeited to the City of Rockwall and placed in the *General Fund* after the City notifies the applicant.



- (6) *Expiration and Extension of a Grading Permit.* Grading Permits shall be valid for two (2) years after the date of issuance by the City of Rockwall. Grading Permits may be extended for one (1) additional year (i.e. for a total of three [3] years) upon written request by the applicant to the City Engineer. The City Engineer will have the site inspected to verify compliance with the permit conditions and the provisions of the submitted Storm Water Pollution Prevention Plan (SWP3) before making the permit extension. Failure of the applicant to maintain compliance with the permit conditions and the provisions of the submitted Storm Water Pollution Prevention Plan (SWP3) shall be adequate cause to deny a request for grading permit extension.

SECTIONS 38-437. PERMIT FEE AND DEPOSIT.

Construction, grading, filling, or excavation undertaken by the City of Rockwall, franchised utility companies and existing individual residential lots with existing residences under one (1) acre in size shall be exempt from the deposit and fee as required by this Article.

SECTIONS 38-438. PROPERTY OWNER'S RESPONSIBILITY.

- (1) *Property Owner's Responsibility.* The property owner shall be responsible for the implementation and operation of a Storm Water Pollution Prevention Plan (SWP3) in accordance with all applicable Environmental Protection Agency (EPA) and Texas Commission on Environmental Quality (TCEQ) regulations and all cleanup operations incidental to the grading, filling, excavation, construction or other disturbance of the surface of real property including leveling, establishment of ground cover, erosion and sediment control and removal of all trash, debris, or other materials not suitable for fill including those deposited on streets, alleyways, utilities facilities, rights-of-way or easements. In addition, the property owner shall be responsible for maintaining compliance with the approved grading plan.
- (2) *Failure to Perform.* If the property owner fails in any respect to fulfill the requirements of this Article, the City of Rockwall may go upon the owner's property and perform such work as may be necessary to fulfill such requirements and may level, establish ground cover, construct erosion control, remove all soil, rock, debris, and other materials not suitable for fill including those deposited on streets, alleyways, utility facilities, rights-of-way, or easements -- at the property owner's expense --, and charge same against the deposit of the applicant unless deemed an emergency requiring immediate attention. The City of Rockwall will first contact the applicant to address the matter.
- (3) *Failure to Pay.* In addition, if a deposit has not been made with the City of Rockwall or if the incurred cost by the City exceeds the amount of the deposit, the City shall bill the property owner the unpaid expenses. If the property owner fails to pay the City of Rockwall such expenses within 30-days of being billed, the City of Rockwall shall have the right to place a lien on the property owner's property, which shall be filed with the Rockwall County Clerk as in the case of paving assessment liens for all amounts expended by the City of Rockwall in excess of the deposit plus interest at the current lawful rate. If the property owner fails to fulfill the requirement of this Article the City may revoke the grading permit, issue citations, or take other legal remedies as may be necessary to enforce compliance with this Article.

SECTIONS 38-439. EXEMPTIONS.

A Grading Permit shall not be required for the following:

- (1) Customary and incidental routine ground maintenance, landscaping, and gardening on any property for which a subdivision plat, variance request, in a floodplain, or building permit is not required and for which such work does not affect stormwater drainage on or through the site.
- (2) Emergency repairs of a temporary nature made on public or private property that are necessary for the preservation of life, health or property, and for which are made under circumstances where it would be impossible or impracticable to obtain a grading permit.

CITY OF ROCKWALL

ORDINANCE NO. 23-23

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, REPEALING IN ITS ENTIRETY THE CITY'S *OCTOBER 2019 STANDARDS OF DESIGN AND CONSTRUCTION MANUAL* AND ADOPTING THE *MARCH 2023 STANDARDS OF DESIGN AND CONSTRUCTION MANUAL* FOR THE PURPOSE OF PROTECTING THE PUBLIC'S HEALTH, SAFETY, AND GENERAL WELFARE INSIDE THE CITY'S CORPORATE LIMITS AND THE EXTRATERRITORIAL JURISDICTION (ETJ); PROVIDING FOR A PENALTY OF FINE NOT TO EXCEED THE SUM OF TWO THOUSAND DOLLARS (\$2,000.00) FOR EACH OFFENSE; PROVIDING FOR A SEVERABILITY CLAUSE; PROVIDING FOR A REPEALER CLAUSE; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Rockwall, Texas (*City*) is a *Home-Rule City* in accordance with Chapter 9, *Home-Rule Municipality*, of Subtitle A, *Types of Municipalities*, of Title 2, *Organization of Municipal Government*, of the Texas Local Government Code, and by State law and City Charter is permitted to establish ordinances for the purpose of protecting the health, safety, and general welfare of its residents; and

WHEREAS, Section 38-8, *Engineering Standards and Procedures*, of Chapter 38, *Subdivisions*, of the Municipal Code of Ordinances (*Adopted April 3, 2023*) provides enabling language that allows the City Council of the City of Rockwall, Texas to adopt amendments to the *Standards of Design and Construction Manual* as proposed by the City Engineer from *time-to-time*;

WHEREAS, the City has prepared a revised and updated *Standards of Design and Construction Manual* designed to ensure that new development and/or existing redevelopment in the City of Rockwall and its Extraterritorial Jurisdiction (ETJ) does not have a negative impact on the community and complies with State law;

WHEREAS, the City Council of the City of Rockwall, Texas -- *in exercising of its legislative discretion* -- has concluded that the Engineering Department's *March 2023 Standards of Design and Construction Manual* should be adopted in its entirety.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS:

SECTION 1. That the current *October 2019 Standards of Design and Construction Manual* of the City of Rockwall be repealed in its entirety and a revised *March 2023 Standards of Design and Construction Manual* shall be adopted as specifically described in *Exhibit 'A'* of this ordinance;

SECTION 2. That any person, firm, or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor and upon conviction shall be punished by a penalty of fine not to exceed the sum of *Two Thousand Dollars* (\$2,000.00) for each offense and each and every day such offense shall continue shall be deemed to constitute a separate offense;

SECTION 3. FINDINGS. The City Council finds all of the above recitals to be true and correct and incorporates the same in this Ordinance as findings of fact;

SECTION 4. SEVERABILITY. That if any section, paragraph, or provision of this ordinance or the

application of that section, paragraph, or provision to any person, firm, corporation or situation is for any reason judged invalid, the adjudication shall not affect any other section, paragraph, or provision of this ordinance or the application of any other section, paragraph or provision to any other person, firm, corporation or situation, nor shall adjudication affect any other section, paragraph, or provision of the Unified Development Code, and the City Council declares that it would have adopted the valid portions and applications of the ordinance without the invalid parts and to this end the provisions for this ordinance are declared to be severable;

SECTION 5. REPEALING ORDINANCE IN CONFLICT. All ordinances or parts of ordinances in conflict herewith are hereby repealed to the extent of such conflict;

SECTION 6. That this ordinance shall take effect immediately from and after its passage;

PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, THIS THE 3RD DAY OF APRIL, 2023.

Kevin Fowler, Mayor

ATTEST:

Kristy Teague, City Secretary

APPROVED AS TO FORM:

Frank J. Garza, City Attorney

1st Reading: March 20, 2023

2nd Reading: April 3, 2023

Continued on the Following Page ...



STANDARDS OF DESIGN AND CONSTRUCTION

March 2023

CITY OF ROCKWALL, TEXAS
ENGINEERING DEPARTMENT



TABLE OF CONTENTS

CHAPTER 1 GENERAL REQUIREMENTS	1
SECTION 1.01 INTRODUCTION.....	1
SECTION 1.02 STANDARDS OF DESIGN	1
SECTION 1.03 STANDARD SPECIFICATIONS FOR CONSTRUCTION	1
SECTION 1.04 STANDARD DETAILS	1
SECTION 1.05 MATERIALS.....	2
SECTION 1.06 INSPECTION OF CONSTRUCTION BY CITY PERSONNEL	2
SECTION 1.07 FRANCHISE AND PUBLIC UTILITIES TO BE UNDERGROUND	2
SECTION 1.08 SUBMITTAL TO UTILITY COMPANIES	2
SECTION 1.09 REQUIREMENTS OF THE FINAL ENGINEERING DRAWINGS.....	2
SECTION 1.10 ENGINEERING PLAN APPROVAL AND CONSTRUCTION PERMIT RELEASE	2
SECTION 1.11 FRANCHISE AND PUBLIC UTILITIES TO BE UNDERGROUND	3
SECTION 1.12 FINAL ACCEPTANCE	3
SECTION 1.13 CHANGES IN STANDARDS OF DESIGN, CONSTRUCTION, SPECIFICATIONS, AND THIS DOCUMENT	4
CHAPTER 2 STREETS.....	5
SECTION 2.01 GENERAL.....	5
SECTION 2.02 STREET ARRANGEMENT	5
SECTION 2.03 THOROUGHFARE AND STREET GEOMETRY	5
SECTION 2.04 TURN LANES	10
SECTION 2.05 MEDIAN OPENINGS, WIDTH, LOCATION AND SPACING	10
SECTION 2.06 DRIVEWAY LOCATIONS.....	12
SUBSECTION 2.06.01 DRIVEWAYS ON TXDOT FACILITIES	12
SECTION 2.07 BLOCK LENGTHS.....	12
SECTION 2.08 STREET INTERSECTIONS.....	14
SECTION 2.09 RELATION TO ADJOINING STREETS.....	14
SECTION 2.10 DEAD-END STREETS, CUL-DE-SACS, AND COURTS	14
SECTION 2.11 ALLEYS AND ALLEY WIDTHS	14
SECTION 2.12 STREET GRADES.....	15
SECTION 2.13 PAVEMENT DESIGN.....	16
SUBSECTION 2.13.01 SUBGRADE	16
SUBSECTION 2.13.02 STEEL REINFORCED CONCRETE PAVEMENT.....	16
SECTION 2.14 PARKWAYS, GRADES, AND SIDEWALKS	18
SUBSECTION 2.14.01 ROADWAY RECONSTRUCTION	18
SECTION 2.15 DRIVEWAYS/DRIVE AISLES.....	19
SUBSECTION 2.15.01 RESIDENTIAL	19
SUBSECTION 2.15.02 MULTI-FAMILY AND NON-RESIDENTIAL	19
SUBSECTION 2.15.03 GRADES	19
SECTION 2.16 TRAFFIC INFORMATION AND CONTROL DEVICES.....	22
SUBSECTION 2.16.01 REGULATORY SIGNAGE	22
SUBSECTION 2.16.02 STREET NAME BLADES.....	22
SUBSECTION 2.16.03 STANDARD STREET SIGN POLE AND FIXTURES.....	23
SUBSECTION 2.16.04 DECORATIVE SIGN POLES AND FIXTURES	23
SUBSECTION 2.16.05 MISCELLANEOUS	24
SECTION 2.17 TEMPORARY TRAFFIC CONTROL.....	24
SECTION 2.18 SECTION 1.18 STREET LIGHTING.....	25
SECTION 2.19 BARRIER FREE RAMPS.....	25
SECTION 2.20 OFF-STREET PARKING, LOADING, AND STORAGE AREAS.....	25
SECTION 2.21 TRAFFIC IMPACT ANALYSIS (TIA) AND MITIGATION	34
SUBSECTION 2.21.01 PURPOSE	34
SUBSECTION 2.21.02 DETERMINATION OF APPLICABILITY.....	35
SUBSECTION 2.21.03 APPLICABILITY OF TIA REQUIREMENTS.....	35
SUBSECTION 2.21.04 REQUIREMENTS FOR TIA UPDATES	37
SUBSECTION 2.21.05 FUNDING RESOURCES	37
SUBSECTION 2.21.06 RESPONSIBILITY OF TIA PREPARATION AND REVIEW.....	37
SUBSECTION 2.21.07 TIA STANDARDS.....	38
SUBSECTION 2.21.08 TIA METHODOLOGY.....	38
SUBSECTION 2.21.09 TIA REPORT FORMAT.....	40



SUBSECTION 2.21.10 | TRAFFIC IMPACT MITIGATION 40

SUBSECTION 2.21.11 | ADMINISTRATION OF THE TIA 41

SUBSECTION 2.21.12 | COST OF TIA REVIEW 41

CHAPTER 3 | STORM DRAINAGE FACILITIES 42

SECTION 3.01 | INTRODUCTION 42

SECTION 3.02 | STORM DRAINAGE DESIGN CRITERIA 43

 SUBSECTION 3.02.01 | RATIONAL METHOD 43

 SUBSECTION 3.02.01.01 | RUNOFF COEFFICIENT (C) 43

 SUBSECTION 3.02.01.02 | TIME OF CONCENTRATION 44

 SUBSECTION 3.02.01.03 | RAINFALL INTENSITY 46

 SUBSECTION 3.02.02 | UNIT HYDROGRAPH METHOD 48

 SUBSECTION 3.02.03 | DESIGN STORM FREQUENCIES 51

 SUBSECTION 3.02.04 | DRAINAGE CALCULATIONS SUMMARY TABLES 51

 SUBSECTION 3.02.05 | FLOW IN STREETS 52

 SUBSECTION 3.02.06 | FLOW IN ALLEYS 52

 SUBSECTION 3.02.07 | PERMISSIBLE SPREAD OF WATER (PONDING WIDTH) 53

 SUBSECTION 3.02.07.01 | GENERAL 53

 SUBSECTION 3.02.07.02 | MAJOR AND MINOR DIVIDED ARTERIALS (P6D & A4D) 53

 SUBSECTION 3.02.07.03 | COLLECTOR STREETS (M4U, M3U, & MINOR COLLECTOR) 53

 SUBSECTION 3.02.07.04 | RESIDENTIAL 53

 SUBSECTION 3.02.07.05 | ALLEYWAYS 53

 SUBSECTION 3.02.07.06 | PARKING LOTS 54

 SUBSECTION 3.02.08 | INLET DESIGN 56

 SUBSECTION 3.02.08.01 | GENERAL 56

 SUBSECTION 3.02.08.02 | TYPES OF INLETS 56

 SUBSECTION 3.02.08.03 | LOCATION 57

 SUBSECTION 3.02.08.04 | CURB INLETS ON-GRADE 58

 SUBSECTION 3.02.08.05 | CURB INLETS AT SAG/LOW POINT 64

 SUBSECTION 3.02.09 | DROP INLETS/'Y' INLET DESIGN 66

 SUBSECTION 3.02.10 | COMBINATION AND GRATE INLET DESIGN 66

 SUBSECTION 3.02.11 | FLOW IN STORM DRAIN CONDUITS AND THEIR APPURTENANCES 78

 SUBSECTION 3.02.11.01 | HYDRAULIC GRADIENT OF CONDUITS 78

 SUBSECTION 3.02.11.02 | MINOR HEAD LOSSES 80

 SUBSECTION 3.02.11.03 | MINIMUM GRADES 84

 SUBSECTION 3.02.11.04 | MINIMUM GRADES 84

 SUBSECTION 3.02.11.05 | DISCHARGE OF STORM DRAIN PIPE 84

 SUBSECTION 3.02.11.06 | MANHOLES 84

 SUBSECTION 3.02.11.07 | LATERAL LINES 85

 SUBSECTION 3.02.11.08 | UNDERDRAINS/FRENCH DRAINS 85

 SUBSECTION 3.02.11.09 | FEDERAL 100-YEAR FLOOD ZONES 87

 SUBSECTION 3.02.11.10 | LOCAL 100-YEAR FLOOD ZONES 87

 SUBSECTION 3.02.11.11 | FLOODPLAIN MARKERS 87

 SUBSECTION 3.02.11.12 | INLET MARKERS 87

 SUBSECTION 3.02.11.13 | DUMPSTERS 87

 SUBSECTION 3.02.11.14 | FUELING STATIONS 87

 SUBSECTION 3.02.11.15 | TESTING 87

 SUBSECTION 3.02.12 | STORM SEWER DESIGN (CLOSED CONDUIT) 87

 SUBSECTION 3.02.12.01 | GENERAL 87

 SUBSECTION 3.02.13 | STORM SEWER DESIGN (OPEN CHANNELS) 90

 SUBSECTION 3.02.13.01 | GENERAL 90

 SUBSECTION 3.02.14 | CULVERT DESIGN 94

 SUBSECTION 3.02.14.01 | GENERAL 94

 SUBSECTION 3.02.15 | BRIDGE DESIGN 104

 SUBSECTION 3.02.16 | EROSION HAZARD SETBACK 104

 SUBSECTION 3.02.16.01 | DEFINITION AND PURPOSE 104

 SUBSECTION 3.02.16.02 | DEFINITION AND PURPOSE 104

 SUBSECTION 3.02.16.03 | NON-PERMITTED STRUCTURES 106

 SUBSECTION 3.02.16.04 | MODIFICATIONS 106

SECTION 3.03 | MINIMUM FREE BOARD REQUIREMENTS 107



SECTION 3.04 DETENTION	107
SUBSECTION 3.04.01 INTENT	107
SUBSECTION 3.04.02 WHERE IS DETENTION REQUIRED?	107
SUBSECTION 3.04.03 TYPE OF DETENTION FACILITIES	108
SUBSECTION 3.04.04 GEOMETRY, RESTRICTIONS, AND APPURTENANCES	109
SUBSECTION 3.04.05 DETENTION CALCULATIONS	110
SUBSECTION 3.04.05.01 METHODOLOGY	110
SUBSECTION 3.04.05.02 OUTFALL STRUCTURES	112
SECTION 3.05 FLOODPLAIN STUDIES, RECLAMATION, AND MODIFICATION	113
SECTION 3.06 STORM DRAINAGE MANAGEMENT PLAN	115
SUBSECTION 3.06.01 GENERAL	115
SUBSECTION 3.06.02 SITE DRAINAGE	115
SUBSECTION 3.06.03 SUBDIVISION DEVELOPMENT	116
SUBSECTION 3.06.04 CONSTRUCTION EROSION CONTROLS	116
SUBSECTION 3.06.05 LOT DEVELOPMENT	117
CHAPTER 4 VEGETATION	119
SECTION 4.01 GENERAL	119
SECTION 4.02 COVERAGE	119
SECTION 4.03 PLANTING SEASON	119
SECTION 4.04 ADDITIONAL INFORMATION	119
CHAPTER 5 WATER AND WASTEWATER SYSTEMS	120
SECTION 5.01 GENERAL REQUIREMENTS	120
SUBSECTION 5.01.01 SYSTEM CAPACITY STUDIES	120
SUBSECTION 5.01.02 CONNECTIONS FOR FUTURE ADJACENT DEVELOPMENTS	120
SUBSECTION 5.01.03 EASEMENTS	121
SUBSECTION 5.01.04 SEPERATION OF WATER AND WASTEWATER LINES	121
SUBSECTION 5.01.05 WATER AND WASTEWATER LINES WITHIN TXDOT RIGHT-OF-WAY	121
SUBSECTION 5.01.06 BORING, JACKING, AND TUNNELING	121
SUBSECTION 5.01.07 CROSSINGS	122
SUBSECTION 5.01.07.01 CITY ROADWAY CROSSINGS	122
SUBSECTION 5.01.07.02 CULVERT CROSSINGS	122
SUBSECTION 5.01.07.03 CREEK CROSSINGS	122
SUBSECTION 5.01.07.04 TXDOT HIGHWAY CROSSING	122
SUBSECTION 5.01.07.05 RAILROAD CROSSINGS	122
SECTION 5.02 WATER SYSTEM	122
SUBSECTION 5.02.01 GENERAL	123
SUBSECTION 5.02.02 CONNECTIONS TO EXISTING DISTRIBUTION SYSTEM	123
SUBSECTION 5.02.03 SIZING OF WATER MAINS	123
SUBSECTION 5.02.04 WATER MAINS LOCATION/ALIGNMENT	125
SUBSECTION 5.02.05 DEPTH OF COVER	125
SUBSECTION 5.02.06 PIPE MATERIAL AND EMBEDMENT	125
SUBSECTION 5.02.07 VALVES	125
SUBSECTION 5.02.07.01 GATE VALVES	126
SUBSECTION 5.02.07.02 BUTTERFLY VALVES	126
SUBSECTION 5.02.07.03 AIR RELEASE, AIR/VACUUM, AND COMBINATION AIR VALVES	126
SUBSECTION 5.02.08 FITTINGS	126
SUBSECTION 5.02.09 CONNECTION TO EXISTING WATER MAINS	126
SUBSECTION 5.02.09.01 TAPPING SLEEVES AND VALVES	126
SUBSECTION 5.02.09.02 CUT-IN CONNECTION	127
SUBSECTION 5.02.10 DEAD-END MAINS	127
SUBSECTION 5.02.11 FIRE HYDRANTS	127
SUBSECTION 5.02.12 WATER SYSTEM CONNECTIONS	128
SUBSECTION 5.02.13 ABANDONMENT OF WATER MAINS	129
SECTION 5.03 WASTEWATER SYSTEM	129
SUBSECTION 5.03.01 GENERAL	129
SUBSECTION 5.03.02 OWNERSHIP AND MAINTENANCE	130
SUBSECTION 5.03.02.01 OWNERSHIP	130
SUBSECTION 5.03.02.02 MAINTENANCE	130



- SUBSECTION 5.03.03 | CONNECTIONS TO EXISTING WASTEWATER COLLECTION SYSTEM..... 130
- SUBSECTION 5.03.04 | DESIGN FLOW 130
- SUBSECTION 5.03.05 | SIZING WASTEWATER COLLECTION MAINS..... 131
 - SUBSECTION 5.03.05.01 | GENERAL..... 131
 - SUBSECTION 5.03.05.02 | AVERAGE DAILY FLOW..... 131
 - SUBSECTION 5.03.05.03 | PEAK FLOW FACTOR 132
 - SUBSECTION 5.03.05.04 | INFLOW AND INFILTRATION..... 133
- SUBSECTION 5.03.06 | WASTEWATER MAINS 133
 - SUBSECTION 5.03.06.01 | PIPE MATERIAL..... 133
 - SUBSECTION 5.03.06.02 | MINIMUM GRADES..... 133
 - SUBSECTION 5.03.06.03 | CURVED SEWERS..... 134
- SUBSECTION 5.03.07 | WASTEWATER SERVICE LATERALS..... 134
- SUBSECTION 5.03.08 | MANHOLES 135
 - SUBSECTION 5.03.08.01 | INTERNAL DROP MANHOLES..... 135
 - SUBSECTION 5.03.08.02 | CORROSION PROTECTION 135
 - SUBSECTION 5.03.08.03 | WATERTIGHT SEALED MANHOLES..... 135
 - SUBSECTION 5.03.08.04 | INFLOW PREVENTION..... 135
- SUBSECTION 5.03.09 | CLEANOUTS..... 136
- SUBSECTION 5.03.10 | TESTING 136
- SUBSECTION 5.03.11 | ABANDONING EXISTING WASTEWATER MAINS AND MANHOLES 136
- SUBSECTION 5.03.12 | CREEK CROSSINGS..... 136
 - SUBSECTION 5.03.12.01 | AERIAL CREEK CROSSINGS 136
 - SUBSECTION 5.03.12.02 | INVERTED SIPHON..... 137
- SECTION 5.04 | WASTEWATER LIFT STATIONS AND FORCE MAINS 137
 - SUBSECTION 5.04.01 | GENERAL 137
 - SUBSECTION 5.04.02 | DESIGN REPORT AND PLANS 137
 - SUBSECTION 5.04.02.01 | REPORT 137
 - SUBSECTION 5.04.02.02 | PLANS 138
 - SUBSECTION 5.04.03 | SITE SELECTION 138
 - SUBSECTION 5.04.04 | SITE REQUIREMENTS..... 138
 - SUBSECTION 5.04.04.01 | ACCESS 139
 - SUBSECTION 5.04.04.02 | SECURITY..... 141
 - SUBSECTION 5.04.04.03 | SITE INTERIOR..... 141
 - SUBSECTION 5.04.05 | WET WELL AND VALVE VAULT DESIGN 142
 - SUBSECTION 5.04.05.01 | WET WELL DESIGN 142
 - SUBSECTION 5.04.05.02 | WET WELL VOLUME 143
 - SUBSECTION 5.04.05.03 | VALVE VAULT..... 143
 - SUBSECTION 5.04.06 | PUMPS, LIFT STATION PIPING, AND VALVES 143
 - SUBSECTION 5.04.06.01 | PUMPS 143
 - SUBSECTION 5.04.06.02 | PUMP CAPACITY..... 144
 - SUBSECTION 5.04.06.03 | LIFT STATION PIPING..... 144
 - SUBSECTION 5.04.06.04 | VALVES..... 144
 - SUBSECTION 5.04.07 | FORCE MAIN 145
 - SUBSECTION 5.04.07.01 | GENERAL..... 145
 - SUBSECTION 5.04.07.02 | EMBEDMENT..... 145
 - SUBSECTION 5.04.08 | CONTROL PANEL 145
 - SUBSECTION 5.04.08.01 | GENERAL..... 145
 - SUBSECTION 5.04.08.02 | ENCLOSURE..... 146
 - SUBSECTION 5.04.08.03 | INNER DEAD DOOR..... 146
 - SUBSECTION 5.04.08.04 | BACK PLATE..... 146
 - SUBSECTION 5.04.08.05 | POWER DISTRIBUTION 146
 - SUBSECTION 5.04.08.06 | CIRCUIT BREAKERS..... 146
 - SUBSECTION 5.04.08.07 | MOTOR STARTERS 146
 - SUBSECTION 5.04.08.08 | TRANSFORMERS..... 147
 - SUBSECTION 5.04.08.09 | LIGHTING-TRANSIENT PROTECTION..... 147
 - SUBSECTION 5.04.08.10 | PHASE MONITOR..... 147
 - SUBSECTION 5.04.08.11 | ALARM SYSTEM..... 147
 - SUBSECTION 5.04.08.12 | VAC REGULATOR SYSTEM 147
 - SUBSECTION 5.04.08.13 | ANCILLARY EQUIPMENT..... 147
 - SUBSECTION 5.04.08.14 | MISCELLANEOUS 148



CHAPTER 6 | MISCELLANEOUS REQUIREMENTS 149

SECTION 6.01 | GRADING 149

SECTION 6.02 | GRADING, FILL, EXCAVATION, AND EARTHWORK PERMIT 149

SECTION 6.03 | PRIVATE UTILITY CONSTRUCTION 150

 SUBSECTION 6.03.01 | TRENCH BACKFILL IN CITY RIGHT-OF-WAY 150

 SUBSECTION 6.03.02 | PARKWAY CLEANUP 150

SECTION 6.04 | ADDITIONAL PERMITS OR APPROVALS 150

SECTION 6.05 | RETAINING WALLS 150

SECTION 6.06 | MAINTENANCE BONDS 151

SECTION 6.07 | CONSTRUCTION 151

 SUBSECTION 6.07.01 | PRELIMINARY SITE PREPERATION 151

 SUBSECTION 6.07.02 | INSPECTION SCHEDULING 152

 SUBSECTION 6.07.03 | VERTICAL ABOVE SLAB CONSTRUCTION PERMIT 152

 SUBSECTION 6.07.04 | DISPOSAL OF EXCESS MATERIALS 153

 SUBSECTION 6.07.05 | DISPOSAL OF EXCESS MATERIALS 153

CHAPTER 7 | SPECIAL PROVISIONS TO THE NCTCOG'S STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRCTIION STANDARDS 154

SECTION 7.01 | DIVISION 100. GENERAL PROVISIONS 154

SECTION 7.02 | DIVISION 200. SITE PROTECTION AND PREPERATION 162

SECTION 7.03 | DIVISION 300. ROADWAY CONSTRUCTION 164

SECTION 7.04 | DIVISION 400. ROADWAY MAINTENANCE AND REHABILITATION 172

SECTION 7.05 | DIVISION 500. UNDERGROUND CONSTRUCTION AND APPURTENANCES 173

SECTION 7.06 | DIVISION 600. CONDUIT AND APPURTENANCE REHABILITATION 191

SECTION 7.07 | DIVISION 700. STRUCTURES 192

SECTION 7.08 | DIVISION 800. MISCELLANEOUS CONSTRUCTION AND MATERIALS 193

CHAPTER 8 | SPECIAL PROVISIONS TO THE NCTCOG'S STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION STANDARDS 198

SECTION 8.01 | DIVISION 1000. EROSION AND SEDIMENT CONTROL 198

SECTION 8.02 | DIVISION 2000. PAVEMENT SYSTEMS 205

SECTION 8.03 | DIVISION 3000. GENERAL UNDERGROUND CONDUIT 250

SECTION 8.04 | DIVISION 4000. WATER DISTRIBUTION 261

SECTION 8.05 | DIVISION 5000. WASTEWATER COLLECTION 272

SECTION 8.06 | DIVISION 6000. STORM WATER DRAINAGE 291

SECTION 8.07 | DIVISION 7000. ROCKWALL MISCELLANEOUS DETAILS 317

APPENDIX A | ENGINEERING PLAN REVIEW CHECKLIST 320

APPENDIX B | APPROVED WATER MATERIALS LIST 331

APPENDIX C | APPROVED WASTEWATER MATERIALS LIST 335

APPENDIX D | EXAMPLE CHECKLIST FOR FINAL ACCEPTANCE (RESIDENTIAL AND COMMERCIAL) 338



LIST OF FIGURES

FIGURE 2.1: TYPICAL THOROUGHFARE CROSS SECTIONS	7
FIGURE 2.2: TYPICAL THOROUGHFARE CROSS SECTIONS	8
FIGURE 2.3: TYPICAL THOROUGHFARE CROSS SECTIONS	9
FIGURE 2.4: MINIMUM DRIVEWAY SPACING AND CORNER CLEARANCE	13
FIGURE 2.5: DRIVEWAY PROFILES ON AN UPGRADE	21
FIGURE 2.6: DRIVEWAY PROFILES ON A DOWNGRADE	21
FIGURE 2.7: 90° PARKING (DOUBLE ROW)	27
FIGURE 2.8: 90° PARKING (SINGLE ROW)	28
FIGURE 2.9: 60° PARKING (DOUBLE ROW)	29
FIGURE 2.10: 60° PARKING (SINGLE ROW)	30
FIGURE 2.11: 45° PARKING (DOUBLE ROW)	31
FIGURE 2.12: 45° PARKING (SINGLE ROW)	32
FIGURE 2.13: HANDICAP SPACE PARKING	33
FIGURE 3.1: IDF CURVE	47
FIGURE 3.2: THOROUGHFARE GUTTER CAPACITY BASED ON MAXIMUM PERMISSIBLE PONDING WIDTH	55
FIGURE 3.3: GUTTER CROSS-SECTION DIAGRAM OF CURB INLETS ON GRADE	59
FIGURE 3.4: CURB INLET CAPACITY ON-GRADE PRINCIPAL AND MINOR ARTERIAL (P6D & A4D)	61
FIGURE 3.5: CURB INLET CAPACITY ON-GRADE MAJOR COLLECTOR (M4U)	62
FIGURE 3.6: CURB INLET CAPACITY ON-GRADE COLLECTION TWO (2) LANE WITH CONTINUOUS LEFT (M3U)	62
FIGURE 3.7: CURB INLET CAPACITY ON-GRADE MINOR COLLECTOR	63
FIGURE 3.8: CURB INLET CAPACITY ON-GRADE LOCAL RESIDENTIAL STREET	63
FIGURE 3.9: CURB INLET CAPACITY ON-GRADE ALLEY	64
FIGURE 3.10: STANDARD CURB INLET CAPACITY SAG/LOW	65
FIGURE 3.11: RECESSED CURB INLET CAPACITY SAG/LOW POINT	65
FIGURE 3.12: DROP/'Y' INLET CAPACITY	66
FIGURE 3.13: TWO (2) GRATE COMBINATION INLET CAPACITY CURVES ON GRADE	70
FIGURE 3.14: FOUR (4) GRATE COMBINATION INLET CAPACITY CURVES ON GRADE	71
FIGURE 3.15: THREE (3) GRATE INLET AND THREE (3) GRATE COMBINATION INLET CAPACITY CURVES ON GRADE	72
FIGURE 3.16: TWO (2) GRATE INLET CAPACITY CURVES ON GRADE	73
FIGURE 3.17: FOUR (4) GRATE INLET CAPACITY CURVES ON GRADE	74
FIGURE 3.18: SIX (6) GRATE INLET CAPACITY CURVES ON GRADE	75
FIGURE 3.19: GRATE INLET CAPACITY CURVES AT LOW POINT	76
FIGURE 3.20: COMBINATION INLET CAPACITY CURVES AT LOW POINT	77
FIGURE 3.21: CAPACITY OF CIRCULAR PIPES FLOWING FULL	79
FIGURE 3.22: LAKE RAY HUBBARD TYPICAL STORM SEWER INSTALLATION	86
FIGURE 3.23: HEADWATER DEPTH FOR CONCRETE BOX CULVERT WITH INLET CONTROL	98
FIGURE 3.24: HEADWATER DEPTH FOR CONCRETE PIPE CULVERT WITH INLET CONTROL	99
FIGURE 3.25: HEAD FOR CONCRETE BOX CULVERT FLOWING FULL	100
FIGURE 3.26: HEAD FOR CONCRETE PIPE CULVERTS FLOWING FULL	101
FIGURE 3.27: CRITICAL DEPTH OF FLOW FOR RECTANGULAR CONDUITS	102
FIGURE 3.28: CRITICAL DEPTH OF FLOW FOR CIRCULAR CONDUITS	103
FIGURE 3.29: EROSION HAZARD SETBACKS AND DRAINAGE EASEMENTS	105
FIGURE 5.1: TYPICAL LIFT STATION SITE LAYOUT	140



LIST OF TABLES

TABLE 2.1: THOROUGHFARE GEOMETRIC DESIGN STANDARDS.....	6
TABLE 2.2: MEDIAN DESIGN STANDARDS	11
TABLE 2.3: CREST VERTICAL CURVES.....	15
TABLE 2.4: MINIMUM LENGTH OF VERTICAL CURVE IN FEET (ROUNDED)	15
TABLE 2.5: SAG VERTICAL CURVES	15
TABLE 2.6: MINIMUM LENGTH OF VERTICAL CURVE IN FEET (ROUNDED)	16
TABLE 2.7: STEEL REINFORCED CONCRETE PAVEMENT DESIGN	16
TABLE 2.8: DRIVEWAY GRADES AND GRADE CHANGE	19
TABLE 2.9: VERTICAL CURVE LENGTHS FOR DRIVEWAYS.....	20
TABLE 2.10: CRITERIA FOR DETERMINING TIA STUDY REQUIREMENTS	36
TABLE 2.11: CRITERIA FOR DETERMINING TIA UPDATE REQUIREMENTS.....	37
TABLE 3.1: DRAINAGE EASEMENTS (MINIMUM WIDTHS).....	42
TABLE 3.2: RUNOFF COEFFICIENT FOR TYPES OF LAND USE	44
TABLE 3.3: MINIMUM INLET TIME OF CONCENTRATION	44
TABLE 3.4: SHEET FLOW 'N' VALUES.....	45
TABLE 3.5: PRECIPITATION FREQUENCY ESTIMATES IN INCHES FOR ROCKWALL, TEXAS	50
TABLE 3.6: NRCS RUNOFF CURVE NUMBERS (AMC _{II}) FOR VARIOUS LAND USE CLASSIFICATIONS	51
TABLE 3.7: STORM DRAIN INLETS.....	57
TABLE 3.8: ENTRANCE LOSS COEFFICIENTS.....	81
TABLE 3.9: VELOCITY HEAD LOSS COEFFICIENTS FOR CLOSED CONDUITS	83
TABLE 3.10: MINIMUM GRADES FOR STORM DRAIN PIPELINES.....	84
TABLE 3.11: MAXIMUM VELOCITIES IN CLOSED CONDUITS.....	84
TABLE 3.12: ROUGHNESS COEFFICIENTS FOR OPEN CHANNELS AND MAXIMUM VELOCITY.....	93
TABLE 3.13: CULVERT DISCHARGE VELOCITIES.....	94
TABLE 3.14: MINIMUM FREE BOARD REQUIREMENTS.....	107
TABLE 3.15: STORM RAINFALL INTENSITY (INCHES/HOUR).....	111
TABLE 5.1: MINIMUM WIDTH FOR WATER AND WASTEWATER LINE EASEMENTS.....	121
TABLE 5.2: WATER DEMAND RATES.....	124
TABLE 5.3: STANDARD WATER MAIN SIZES	125
TABLE 5.4: DEPTH OF COVER TO TOP OF PIPE.....	125
TABLE 5.5: STANDARD WASTEWATER COLLECTION SYSTEM PIPE SIZES	131
TABLE 5.6: WASTEWATER PER CAPITA AND USAGE RATES	132
TABLE 5.7: PIPE MATERIALS FOR WASTEWATER GRAVITY MAINS	133
TABLE 5.8: MINIMUM GRADES FOR WASTEWATER PIPELINES	134
TABLE 5.9: MINIMUM MANHOLE SIZES	135
TABLE 5.10: MINIMUM PUMP CYCLE TIME	143
TABLE 7.1: REVISIONS TO NCTCOG'S DIVISION 100 GENERAL PROVISIONS.....	154
TABLE 7.2: REVISIONS TO NCTCOG'S DIVISION 200 SITE PROTECTION AND PREPARATION	162
TABLE 7.3: REVISIONS TO NCTCOG'S DIVISION 300 ROADWAY CONSTRUCTION.....	164
TABLE 7.4: REVISIONS TO NCTCOG'S DIVISION 400 ROADWAY MAINTENANCE AND REHABILITATION	172
TABLE 7.5: REVISIONS TO NCTCOG'S DIVISION 500 UNDERGROUND CONSTRUCTION AND APPURTENANCES.....	173
TABLE 7.6: REVISIONS TO NCTCOG'S DIVISION 600 CONDUIT AND APPURTENANCE REHABILITATION	191
TABLE 7.7: REVISIONS TO NCTCOG'S DIVISION 700 STRUCTURES.....	192
TABLE 7.8: REVISIONS TO NCTCOG'S DIVISION 800 MISCELLANEOUS CONSTRUCTION AND MATERIALS.....	193
TABLE 8.1: DIVISION 1000 EROSION AND SEDIMENT CONTROL	198
TABLE 8.2: REVISIONS TO NCTCOG'S DIVISION 2000 PAVEMENT SYSTEMS	205
TABLE 8.3: REVISIONS TO NCTCOG'S DIVISION 3000 GENERAL UNDERGROUND CONDUIT	250
TABLE 8.4: REVISIONS TO NCTCOG'S DIVISION 4000 WATER DISTRIBUTION.....	261
TABLE 8.5: REVISIONS TO NCTCOG'S DIVISION 5000 WASTEWATER COLLECTION	272
TABLE 8.6: REVISIONS TO NCTCOG'S DIVISION 6000 STORM WATER DRAINAGE	291
TABLE 8.7: DIVISION 7000. ROCKWALL MISCELLANEOUS DETAILS.....	317
TABLE B.1: SERVICE SADDLES (FOR PVC, DI OR CI)	333
TABLE B.2: CORPORATION VALVE (STOPS).....	333
TABLE B.3: ANGLE METER VALVES (STOPS).....	333
TABLE B.4: FIRE HYDRANT PAINT.....	334
TABLE B.5: METER BOXES.....	334



LIST OF FORMS

FORM 3.1: DRAINAGE AREA CALCULATIONS TABLE..... 52
FORM 3.2: INLET DESIGN CALCULATIONS TABLE 67
FORM 3.3: STORM SEWER CALCULATIONS TABLE 88
FORM 3.4: OPEN CHANNEL CALCULATIONS TABLE 91
FORM 3.5: CULVERT DESIGN CALCULATIONS TABLE..... 95



LIST OF EQUATIONS

EQUATION 3.1: RATIONAL METHOD	43
EQUATION 3.2: TRAVEL TIME IN MINUTES FOR SHEET FLOW.....	45
EQUATION 3.3: SHALLOW CONCENTRATED FLOW TRAVEL TIME	45
EQUATION 3.4: CHANNEL FLOW TRAVEL TIME	45
EQUATION 3.5: NRCS CONVERSION EQUATION.....	48
EQUATION 3.6: MAXIMUM SHEET FLOW LENGTH.....	49
EQUATION 3.7: STORM WATER FLOW IN STREETS	52
EQUATION 3.8: MANNING'S EQUATION.....	53
EQUATION 3.9: PONDING WIDTH "T" FOR STRAIGHT CROWNED STREETS	53
EQUATION 3.10: SIZING OF CURB INLETS ON GRADE	59
EQUATION 3.11: SIZING OF CURB INLETS ON GRADE	59
EQUATION 3.12: SIZING OF CURB INLETS ON GRADE	59
EQUATION 3.13: SIZING OF CURB INLETS ON GRADE	59
EQUATION 3.14: SIZING OF CURB INLETS ON GRADE	60
EQUATION 3.15: SIZING OF CURB INLETS ON GRADE	60
EQUATION 3.16: SIZING OF CURB INLETS ON GRADE	60
EQUATION 3.17: SIZING OF CURB INLETS ON GRADE	60
EQUATION 3.18: SIZING OF CURB INLETS ON GRADE	61
EQUATION 3.19: CAPACITY OF CURB INLETS AT SAG/LOW POINT	64
EQUATION 3.20: REQUIRED CURB INLET LENGTH AT A SAG POINT	64
EQUATION 3.21: CAPACITY OF DROP INLETS.....	66
EQUATION 3.22: LENGTH OF DROP INLET	66
EQUATION 3.23: SIZE OF CONDUIT.....	78
EQUATION 3.24: ENTRANCE LOSSES TO A CLOSED STORM SEWER SYSTEM FROM AN OPEN CHANNEL OR LAKE	80
EQUATION 3.25: INLET LOSSES	81
EQUATION 3.26: EXPANSION LOSSES.....	81
EQUATION 3.27: MANHOLE AND BEND LOSSES	82
EQUATION 3.28: JUNCTION LOSSES	82
EQUATION 5.1: WET WELL VOLUME	143



CHAPTER 1 | GENERAL REQUIREMENTS

SECTION 1.01 | INTRODUCTION

The *Standards of Design and Construction* are generated to implement the provisions of [CHAPTER 38, SUBDIVISIONS, OF THE MUNICIPAL CODE OF ORDINANCES](#) [the *Subdivision Ordinance*] and to provide for the orderly, safe, healthy and uniform development of the area within the corporate city limits and within the surrounding City's Extraterritorial Jurisdiction (ETJ).

The [5TH EDITION OF THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS \(NCTCOG\) STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION](#) dated November 2017 as modified by the City of Rockwall's Special Provisions are supplemental and are made a part of these *Standards of Design and Construction*. These documents are to be considered as the minimum requirements of engineering design. The adherence to the requirements of these documents and/or the approval by the City of Rockwall and its agents in no way relieves the developer or their engineer of the responsibility for adequacy of design, which may require more stringent standards than these, the completeness of plans and specifications or the suitability of the completed facilities. In unusual circumstances, the City of Rockwall may determine that designs other than those of the *Standards of Design and Construction* are necessary and will inform the developer of such requirements before final engineering review.

The developer and/or their representative shall obtain authorization from the City of Rockwall, in writing, for any deviations from the requirements set forth in the standards of design, standard specifications for construction or standard details.

SECTION 1.02 | STANDARDS OF DESIGN

The *Standards of Design and Construction*, as adopted by the City of Rockwall, are set forth herein. These standards shall be considered as the minimum requirements, and it shall be the responsibility of the developer and design engineer to determine if more stringent requirements are necessary for a particular development. If any standard and/or detail in this document conflicts with North Central Texas Council of Governments (NCTCOG) or additional City document, the more stringent requirement will apply. It is not intended that the *Standards of Design and Construction* cover all aspects of a development. For those elements omitted, the developer and design engineer will be expected to provide designs and facilities in accordance with good engineering practice and to cause the facilities to be constructed utilizing first class workmanship and materials. The City Engineer reserves the right to request additional information not covered within these *Standards of Design and Construction* to be included in the design plans by the developer/design engineer in order to validate the intent, safety, constructability, readability and competency of the design plans. Unless otherwise specified in this document, any variances to the standards contained within the Engineering Department's *Standards of Design and Construction Manual* shall be subject to the processes and procedures stipulated for variances as defined in [SUBSECTION 09, EXCEPTIONS AND VARIANCES, OF ARTICLE 11, DEVELOPMENT APPLICATIONS AND REVIEW PROCEDURES, OF THE UNIFIED DEVELOPMENT CODE \(UDC\)](#).

The Developer/Engineer must ensure that all design and construction is in accordance with all Federal, State, and local regulations and must provide certification on final plans. A copy of all determinations, permits, and approvals received from Federal, State, and local agencies must be provided to the Engineering Department prior to approval.

The engineering design and plans submitted to the Engineering Department by the developer/design engineer shall be in conformance with the adopted *Standards of Design and Construction Manual* that is in affect when the first submittal is received by the Engineering Department. If subsequent submittals have not been received within one (1) year of the previous submittal, any subsequent submittals must conform to the current adopted *Standards of Design and Construction Manual*. Approved construction plans will expire within one (1) year of the approval date if construction has not begun or ceased to continue, and must be reviewed and revised to meet the current adopted *Standards of Design and Construction*.

SECTION 1.03 | STANDARD SPECIFICATIONS FOR CONSTRUCTION

The City of Rockwall's *Special Provisions* to the North Central Texas Council of Governments (NCTCOG) *Standard Specifications for Public Works Construction, 5th Edition (November 2017)*, as adopted by the City of Rockwall is referenced in this document. The *Standard Specifications* for construction set forth the minimum requirements for materials and workmanship for streets, parking lots, sidewalks, drainage, water and wastewater systems.

SECTION 1.04 | STANDARD DETAILS

In an effort to have uniformity and to facilitate maintenance, the City has adopted the North Central Texas Council of Governments (NCTCOG) *Standard Drawings* as modified by the City of Rockwall's *Special Provisions* for certain facilities such as manholes, street



sections, sidewalks, water, wastewater, storm water, curb inlets, barrier free ramps, etc. The City of Rockwall's *Special Provisions* can be obtained from the City of Rockwall's Engineering Department. The NCTCOG *Standard Specifications* can be obtained from NCTCOG's Regional Information Center at (817) 695-9140.

SECTION 1.05 | MATERIALS

All materials to be permanently installed for use on projects in the City of Rockwall shall be produced in the United States of America. Alternate products must be approved in writing by the City Engineer prior to installation. "Domestically produced in the United States of America" means all manufacturing processes must occur in the United States of America in one of the 50 States, the District of Columbia, Puerto Rico or in the territories and possessions of the United States. The *Approved Materials List* can be found in [APPENDIX 'B'](#) and [APPENDIX 'C'](#) of this manual.

SECTION 1.06 | INSPECTION OF CONSTRUCTION BY CITY PERSONNEL

Inspection of construction and verification of compliance to the plans and specifications shall be conducted by the City of Rockwall's staff under the direction of the City Engineer. The facilities included in this inspection requirement are streets, sidewalks, parking lots, fire lanes, alleys, storm drainage facilities, water distribution systems, wastewater collection system, erosion control, etc. The developer shall advise all of his/her construction contractors of this requirement. No development will be accepted by the City of Rockwall until all construction has been approved by the City's staff. The developer shall be responsible for any additional expenses to the City of Rockwall -- *at a rate established by the City* -- if the inspection is done after the City's normal business hours. The date of acceptance will be when all items have been accepted by the City. 20-months from the date of acceptance of a project, the City will determine any failures or defects and all repairs will be made by the contractor. The accepted method of inspection for underground utilities shall be video, and the City will require a copy of such inspection. The developer and/or contractor shall be responsible for the cost of the video inspection.

SECTION 1.07 | FRANCHISE AND PUBLIC UTILITIES TO BE UNDERGROUND

All franchise and public utilities within a development shall be placed underground. Utilities are defined for this purpose of this section as water pipelines, wastewater pipelines, storm water pipelines, natural gas pipelines, telephone wires, cable TV wires and electric wires. In case of special or unique circumstances, the City Council of the City of Rockwall may grant variances or exceptions to this requirement. Any request for variance or exception should be submitted in writing to the City of Rockwall Planning and Zoning Department, and include a written statement providing justification for the requested variance or exception. The granting of a variance or exception by the City Council of the City of Rockwall will be in writing. No work will be accepted without written approval from the City Engineer, or -- *in the case of franchise utilities* -- the Director of the Planning and Zoning Department. Commercial developments may have overhead utilities as approved by the City Council, otherwise all overhead utilities shall be placed underground. Relocation of existing utilities, including existing aerial utilities, shall be relocated underground.

SECTION 1.08 | SUBMITTAL TO UTILITY COMPANIES

The developer shall be responsible for the submittal of information needed to design private utilities for a development. This information shall be submitted to the franchise utility companies (*e.g. gas, electric, phone, and cable*). Written confirmation from the franchise companies shall be submitted to the Engineering Department, verifying that the affected utility companies have installed their respective utilities prior to acceptance by the Engineering Department of the project.

SECTION 1.09 | REQUIREMENTS OF THE FINAL ENGINEERING DRAWINGS

The final engineering drawings shall conform to the established *Engineering Drawings Requirements* and this *Standards of Design and Construction Manual*. The *Engineering Drawings Requirements* can be found the *Engineering Plan Review Checklist* in [APPENDIX 'A'](#).

The final engineering drawings will consist of drawings showing all information necessary to completely review the engineering design for improvements proposed for or affected by the site and sealed by a *Registered Professional Engineer* within the State of Texas.

SECTION 1.10 | ENGINEERING PLAN APPROVAL AND CONSTRUCTION PERMIT RELEASE

All review fees (*i.e. plan, flood study, traffic impact analysis, lift station, etc.*) shall be paid prior to engineering construction permit release and submittal of building permit.



SECTION 1.11 | FRANCHISE AND PUBLIC UTILITIES TO BE UNDERGROUND

All easements and right-of-way required for construction of a proposed project must be approved and accepted for filing prior to the approval or release of the final design/construction drawings.

(A) Requirements for On-Site Easements and Right-of-Way Dedication to the City.

- (1) All easements and rights-of-way shall be dedicated on a subdivision plat. No separate instruments will be allowed.
- (2) No structures (*i.e. buildings, walls, fences, decks, swimming pools, signage/monuments, temporary/permanent storage, structures, overhangs, etc.*) are allowed in or over any easements or rights-of-way. No trees shall be planted within ten (10) feet, horizontally, of any public water or sewer line that is ten (10) inches in diameter or larger. No trees shall be planted within five (5) feet, horizontally, of any public water and sewer line less than ten (10) inches in diameter. No trees shall be planted within five (5) feet of any public storm system.
- (3) All drainage and detention easements shall be maintained, repaired, and replaced by the property owner. This statement is to be noted on the subdivision plat.
- (4) No public utilities allowed in detention easements.
- (5) All rights-of-way shall have a minimum of a ten (10) foot utility easement dedicated adjacent to them, on both sides of right-of-way.
- (6) Easement dimensions and other special requirements can be found in the utility's respective section of this *Standards of Design and Construction Manual*.
- (7) Detention pond easements and floodplain easements shall not be located on single-family residential lots for new subdivision. Easements must be located fully within an open space or a lot owned and/or maintained by a Homeowner's Association (HOA).

(B) Requirements for Off-Site Easements Dedicated to the City.

- (1) All easement and right-of-way documents shall be written by the City of Rockwall.
- (2) The owner/developer shall furnish the City of Rockwall with a current title report for the subject property of the proposed easement, a legal description (*i.e. metes and bounds description*), and an exhibit that is signed and sealed by a *Texas Registered Professional Land Surveyor* that shows the easements or right-of-way, location, and current ownership information.
- (3) All easements shall be reviewed and approved by the City of Rockwall prior to releasing the documents for signatures by the property owners.
- (4) The individual or entity requesting the easement shall pay all filing fees required by Rockwall County.
- (5) The individual or entity shall return, to the City of Rockwall, all originally signed documents and a check for filing fees made out to Rockwall County for filing.
- (6) All filing information for all easements must be shown on all subdivision plats. Subdivision plats shall not be recorded until off-site easements have been filed and the instrument number has been included on the subdivision plat.
- (7) After recordation, a copy of the filed document will be forwarded to the property owner.

SECTION 1.12 | FINAL ACCEPTANCE

Final Acceptance shall occur when all the items on the *Engineering Checklist for Final Acceptance* have been completed and signed-off on by the City of Rockwall. An example of the checklist for final acceptance has been included in the *Engineering Plan Review Checklist* in [APPENDIX 'A'](#). Items on the checklist for final acceptance will vary per project and additional items not shown on the checklist may be required. After improvements have been constructed, the developer shall be responsible for providing to the City of Rockwall *As Built* or *Record Drawings*. The design engineer shall furnish all digital files of the project, formatted in an Autodesk Civil 3D 2020 format or newer, and a PDF format on a CD-ROM disk or flash drive. The disk or drive shall include a full set of plans along with any landscaping plans, retaining wall plans, and/or detail sheets.

Submit one (1) set of printed drawings of the *Record Drawings* containing copies of all sheets. The printed sheets will be reviewed by the construction inspector **PRIOR** to producing the *Record Drawing* digital files on a disk or flash drive. This will allow any revisions to be addressed prior to producing the digital files.



The *Record Drawing Disk* shall have the design engineers seal, signature, and must be stamped and dated as *Record Drawings* or *As Built Drawings* on all sheets.

The City of Rockwall will not accept any *Record Drawing Disk* which includes a disclaimer with verbiage that is similar to or like the example verbiage provided below. A disclaimer shall not directly or indirectly state or indicate that the design engineer or the design engineer's surveyor/surveyors did not verify grades after construction, or that the *Record Drawings* were based solely on information provided by the construction contractor/contractors. Any *Record Drawings* which include a disclaimer that contains verbiage that is similar to or like the example verbiage provided below will be accepted by the City of Rockwall.

EXAMPLE OF ACCEPTABLE DISCLAIMER

To the best of our knowledge ABC Engineering, Inc., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

SECTION 1.13 | CHANGES IN STANDARDS OF DESIGN, CONSTRUCTION, SPECIFICATIONS, AND THIS DOCUMENT

This *Standards of Design Construction Manual* and the *Construction Specifications* contained within this document can be modified by City Council through ordinance or resolution. This document can also be updated from time-to-time to reflect changes in the City of Rockwall's requirements. The City Engineer reserves the right to correct typos or add clarifications to this document. It is the responsibility of the user to obtain the latest revisions of the City of Rockwall's requirements.



CHAPTER 2 | STREETS

SECTION 2.01 | GENERAL

The street system, including the street layout, shall be in accordance with generally accepted engineering practices and in compliance with the Comprehensive Plan, the latest Master Thoroughfare Plan, the Unified Development Code (UDC), the Subdivision Regulations and any other applicable regulations. The drainage system, as incorporated into the street system, shall comply with [CHAPTER 3](#) of this document. The plans and specifications, design computations, if required, and other applicable data shall be submitted to the City of Rockwall for review. Construction shall not commence prior to the approval of plans and specifications by the City's staff. All changes during construction shall be submitted to the Engineering Department for approval prior to any changes in construction.

SECTION 2.02 | STREET ARRANGEMENT

Unless otherwise approved by the City of Rockwall, provisions shall be made for the extension of existing arterials, collector streets and local streets in accordance with the Master Thoroughfare Plan and any specific street alignments as adopted by the City Council. The alignment of future roadways in the Master Thoroughfare Plan may vary depending on design. The roadway sections in the Comprehensive Plan shall be minimums and should connect to the roadways shown in the Master Thoroughfare Plan.

Off-center intersections will be considered for approval only for *Minor Collector* and local streets and only when there is a minimum property line separation of 125-feet, unless otherwise approved by the City Engineer.

Within residential areas, the following design elements are encouraged:

- (A) Developing only a limited number of access points to arterial streets bordering the subdivision;
- (B) More than one (1) point of access;
- (C) Incorporate curvilinear streets into the plan, while having a limited impact of utility layout; and
- (D) Incorporating a discontinuous residential street network, which utilizes three (3) way intersections in lieu of four (4) way intersections.

When these factors are incorporated into a residential street plan, the result is enhanced character and traffic safety.

SECTION 2.03 | THOROUGHFARE AND STREET GEOMETRY

Geometric design standards are presented in two (2) formats within this section. [TABLE 2.1](#) identifies specific design criteria for each standard roadway type. [FIGURE 2.1](#) and [FIGURE 2.2](#) show the typical cross-section for each standard roadway type. It should be noted that the dimensions shown are to the face of curb, unless specifically identified otherwise. It should also be noted that undivided roadways shall not be parabolic crown roadway sections.

Each roadway type is keyed to the City's Master Thoroughfare Plan, with the exception of local streets. The reader is referred to this document for information as to the locations where these roadways are to be used.



TABLE 2.1: THOROUGHFARE GEOMETRIC DESIGN STANDARDS

ABBREVIATION FOR THOROUGHFARE TYPE	P6D	A4D	M4U	MINOR COLLECTOR	M3U	R2U	ALLEY
THOROUGHFARE TYPE	PRINCIPAL ARTERIAL DIVIDED SIX (6) LANE	MINOR ARTERIAL DIVIDED FOUR (4) LANE	MAJOR COLLECTOR UNDIVIDED FOUR (4) LANE	MINOR COLLECTOR/ LOCAL COMMERCIAL UNDIVIDED	MINOR COLLECTOR WITH CONTINUOUS LEFT TURN LANE	LOCAL RESIDENTIAL	ALLEY
NUMBER TRAFFIC LANES	6	4	4	2	2	2	1
MINIMUM LANE WIDTH (FEET)	12	12	11	11 + 2 PARKING	12	14	12
MINIMUM ROW WIDTH (FEET) ¹	110	85	65	60	70	50	20
DESIGN SPEED (MPH)	45	40	35	30	30	30	20
POSTED SPEED (MPH)	40	35	30	25	30	N/A	N/A
STOPPING SIGHT DISTANCE (FEET)	400	325	275	200	200	200	125
MEDIAN WIDTH (FEET) ²	16	14	N/A	N/A	LEFT TURN LANE WIDTH ¹⁴	N/A	N/A
MINIMUM LATERAL CLEARANCE (FEET)	6	6	6	6	6	N/A	N/A
PARKING PERMITTED	NO	NO	NO	C = SOME R = YES	NO	R = YES	NO
MINIMUM HORIZONTAL CENTERLINE CURVATURE (FEET)	1200	850	C = 700 R = 600	C = 500 R = 350	C = 500 R = 350	R = 250 ELBOW = 50	SEE DETAILS
CREST VERTICAL CURVE MINIMUM K VALUE	120	80	50	30	30	30	10
SAG VERTICAL CURVE MINIMUM K VALUE	90	70	50	40	40	40	20
MAXIMUM GRADE (%)	7.5 ³	7.5 ³	7.5	7.5	7.5	10.0	10.0
MINIMUM GRADE (%)	0.7	0.7	0.7	0.7	0.7	0.7	0.7

KEY:

R: RESIDENTIAL

C: COMMERCIAL

MPH: MILES PER HOUR

NOTES:

¹: RIGHT-OF-WAY REQUIREMENTS FOR STATE HIGHWAYS AND/OR THE PROVISION OF RIGHT TURN LANES OR OTHER INTERSECTION IMPROVEMENTS MAY EXCEED THIS MINIMUM R.O.W. STANDARD.

²: LARGER MEDIANS MAY BE REQUIRED TO PROVIDE FOR MULTIPLE TURN LANES.

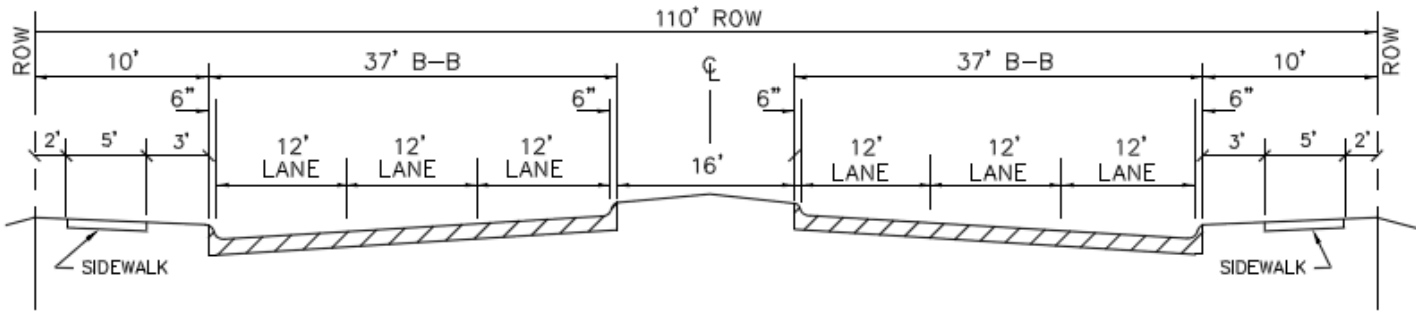
³: FOR MAXIMUM LENGTH OF 200-FEET.

GENERAL NOTES

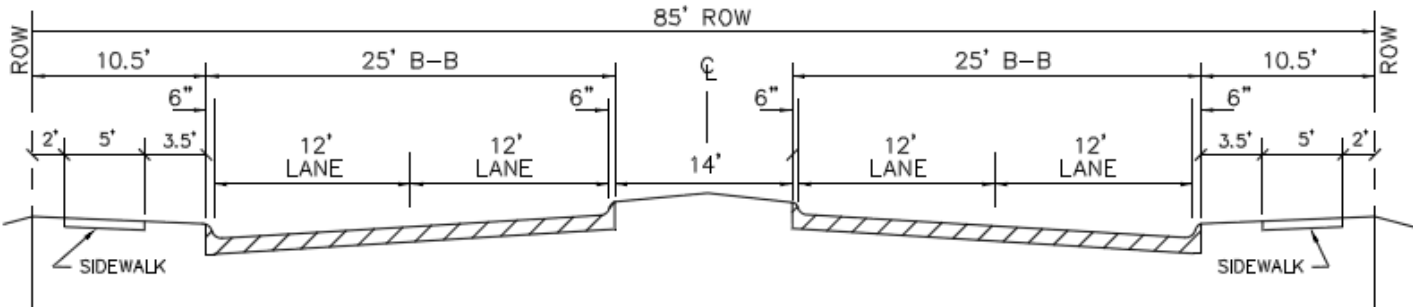
(A) LOCAL RESIDENTIAL CUL-DE-SACS SHALL HAVE A MINIMUM R.O.W. RADIUS OF 57.5-FEET.

(B) CROSS-SLOPE VARIANCE NEEDS APPROVAL FROM CITY ENGINEER.

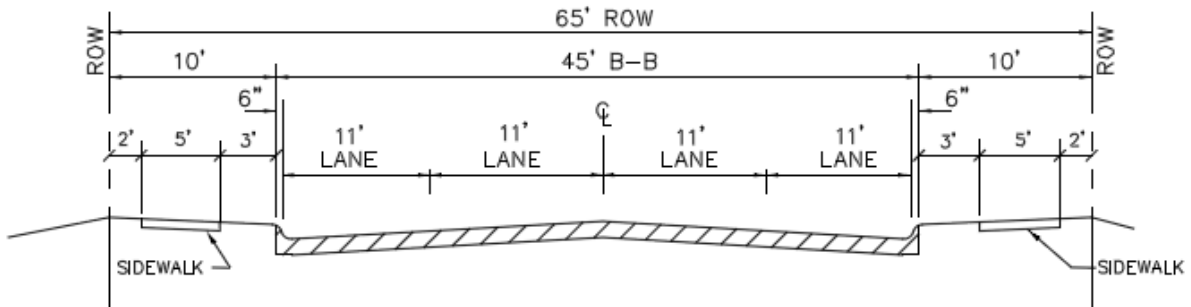
FIGURE 2.1: TYPICAL THOROUGHFARE CROSS SECTIONS



PRINCIPAL ARTERIAL DIVIDED 6-LANE
P6D

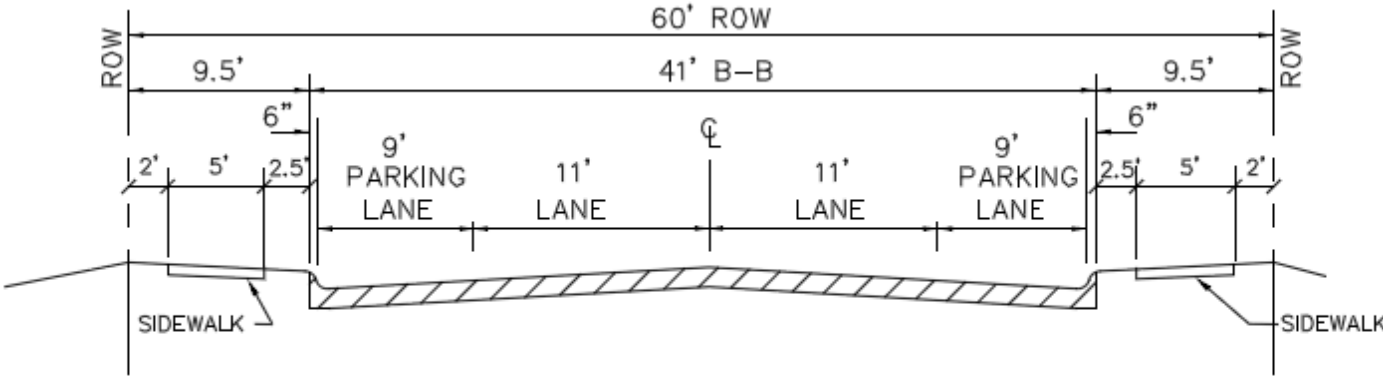


MINOR ARTERIAL DIVIDED 4-LANE
A4D

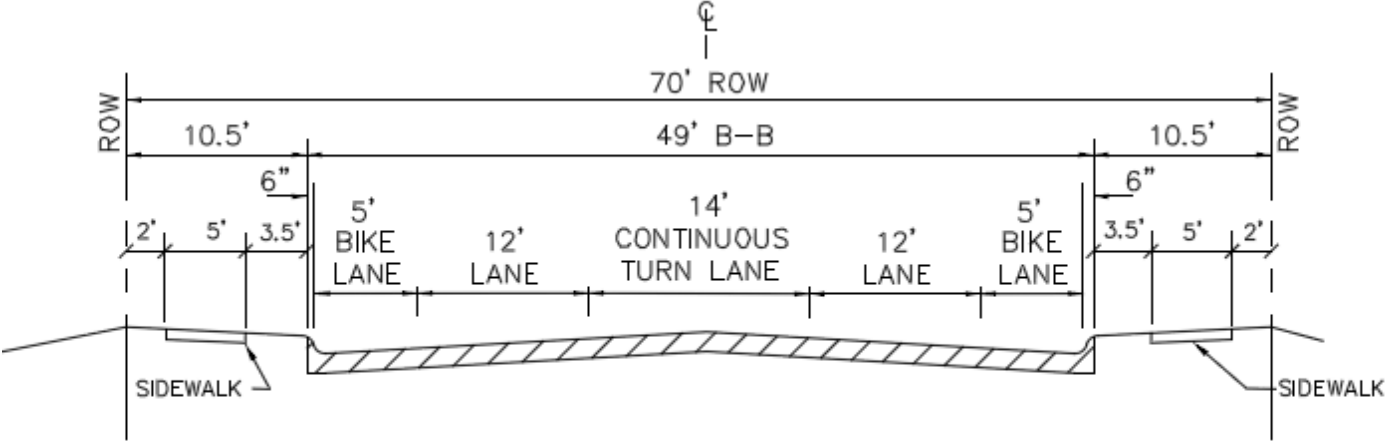


MAJOR UNDIVIDED COLLECTOR 4-LANE
M4U

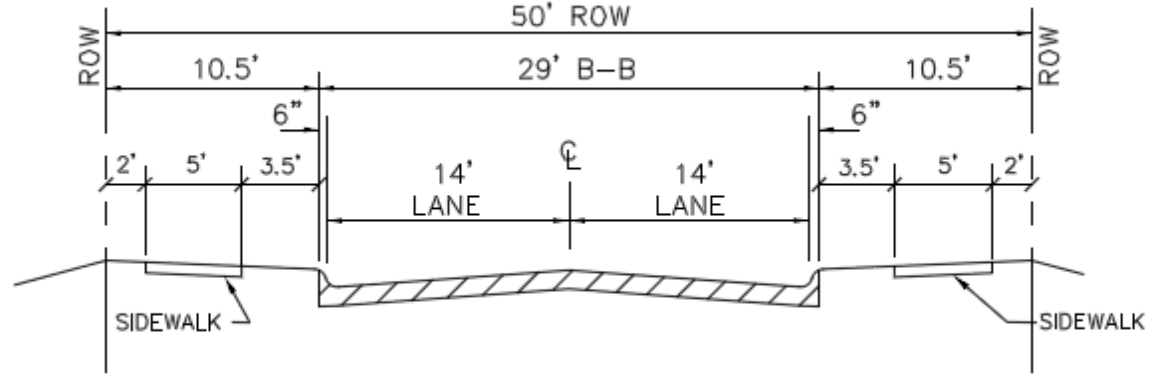
FIGURE 2.2: TYPICAL THOROUGHFARE CROSS SECTIONS



MINOR COLLECTOR AND/OR LOCAL COMMERCIAL UNDIVIDED

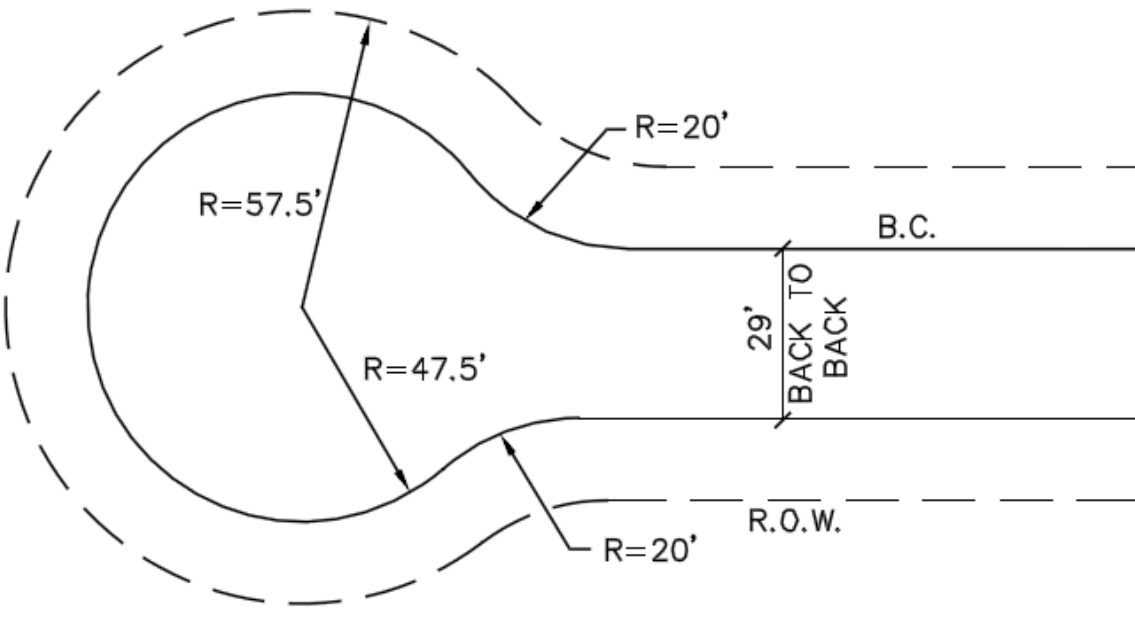


MINOR COLLECTOR – 2 LANE WITH CONTINUOUS LEFT TURN LANE
M3U

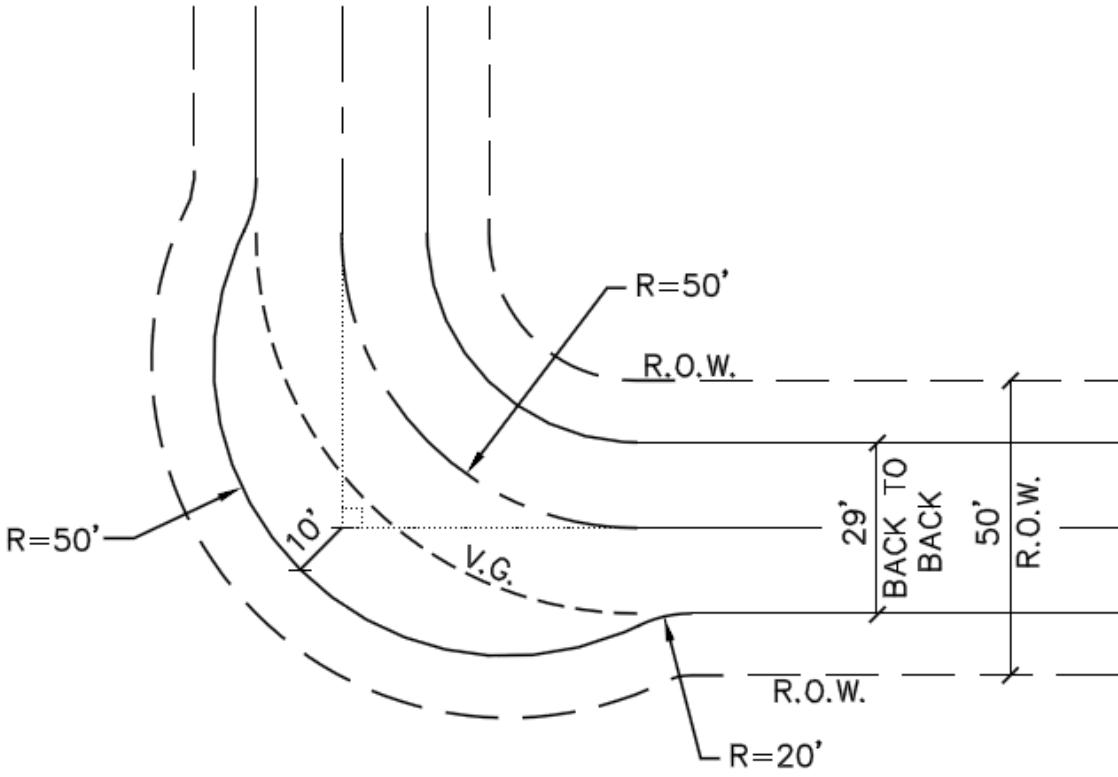


LOCAL (RESIDENTIAL STREET)

FIGURE 2.3: TYPICAL THOROUGHFARE CROSS SECTIONS



TYPICAL CUL-DE-SAC



TYPICAL EYEBROW



SECTION 2.04 | TURN LANES

All left turn storage areas shall be a minimum 11-feet wide with minimum storage requirements for left-turn lanes as in [TABLE 2.2](#). The transition curves used in left-turn lanes shall be two (2), 250-foot radius reverse curves with a total transition length of 100-feet. Medians less than seven (7) feet wide (*face-to-face*) are required to be constructed of reinforced integral stained and stamped color concrete a minimum of six (6) inches thick median pavement. All median noses are to be constructed of City approved integral stained and stamped color concrete. The color and pattern to be approved by the City. The stamped color concrete system shall be installed within a minimum distance of ten (10) feet from the end of the nose.

SECTION 2.05 | MEDIAN OPENINGS, WIDTH, LOCATION AND SPACING

Arterial thoroughfares in the City of Rockwall shall have raised medians. Arterials having continuous two (2) way left turn lanes may be utilized only in special circumstances with the approval of the City Council. Median openings at intersections shall be from right-of-way to right-of-way of the intersecting street, unless otherwise approved by the City Engineer. The width of mid-block median openings shall not be less than 60-feet, but no greater than 70-feet.

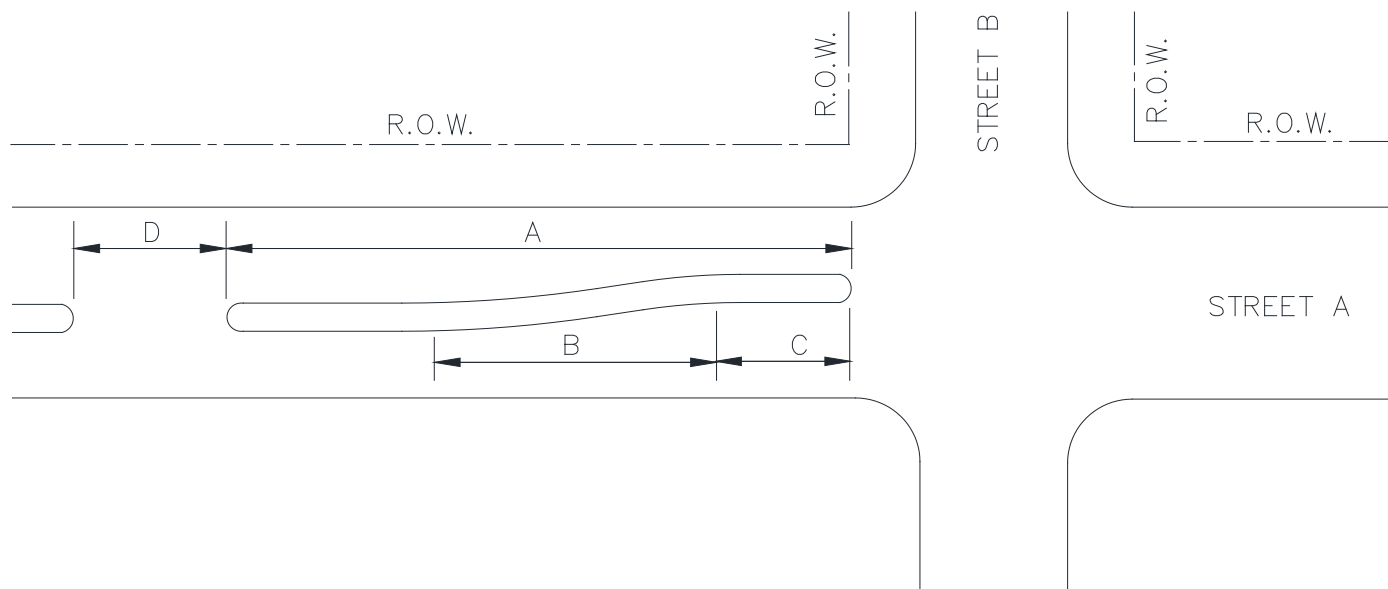
Using the above requirements, examples of the minimum distance between median openings on a divided street where left-turn storage is provided in both directions are:

- (A) 310-feet from *nose-to-nose* of the median from the intersection of two (2) major thoroughfares to a street or drive [see [TABLE 2.2: MEDIAN DESIGN STANDARDS](#)];
- (B) 260-feet from *nose-to-nose* of the median from the intersection of two (2) secondary thoroughfares or a secondary thoroughfare and a major thoroughfare to a residential street or drive, and;
- (C) 220-feet from *nose-to-nose* of the median for intersection combinations of drives and/or residential streets.

Medians less than seven (7) feet and minimum of three (3) feet wide are required to be constructed of a City approved stamped integral color concrete system with concrete curb and gutter. All median noses are to be constructed of City approved stamped integral color concrete system, a distance of ten (10) feet from the end of the nose. Any median that has landscaping is required to have a mow ramp for access, and install all standard street lighting and conduit for irrigation. Noses shall be a solid poured steel reinforced concrete bullet nose. Pavers shall only be considered for existing medians that currently have pavers.



TABLE 2.2: MEDIAN DESIGN STANDARDS



INTERSECTING STREET TYPE		MINIMUM LENGTH (FEET)			
STREET A	STREET B	A	B	C ¹	D ²
PRINCIPAL ARTERIAL, SIX (6) LANES	PRINCIPAL ARTERIAL, SIX (6) LANES	310	100	150	60
PRINCIPAL ARTERIAL, SIX (6) LANES	MINOR ARTERIAL, FOUR (4) LANES	260	100	100	60
PRINCIPAL ARTERIAL, SIX (6) LANES	MINOR ARTERIAL, FOUR (4) LANES MINOR ARTERIAL, TWO (2) LANES	260	100	100	60
PRINCIPAL ARTERIAL, SIX (6) LANES	LOCAL OR PRIVATE, TWO (2) LANES	220	100	60	60
MINOR ARTERIAL, FOUR (4) LANES	PRINCIPAL ARTERIAL, SIX (6) LANES	310	100	150	60
MINOR ARTERIAL, FOUR (4) LANES	MINOR ARTERIAL, FOUR (4) LANES	260	100	100	60
MINOR ARTERIAL, FOUR (4) LANES	MINOR ARTERIAL, FOUR (4) LANES MINOR ARTERIAL, TWO (2) LANES	260	100	100	60
MINOR ARTERIAL, FOUR (4) LANES	LOCAL OR PRIVATE	220	100	60	60

NOTES:

¹: MINIMUM LENGTH/ACTUAL LENGTH DEPENDENT UPON ANTICIPATED TURN VOLUME.

²: OR STREET WIDTHS EIGHT (8) FEET OR GREATER, WHICHEVER IS GREATER. A VARIANCE MAYBE GRANTED BY THE CITY COUNCIL ON A CASE BY CASE BASIS.

GENERAL NOTES

(A) LEFT-TURN LANE STORAGE AREA WIDTH 11-FEET MINIMUM

(B) MEDIAN WIDTH (SEE GEOMETRIC DESIGN STANDARDS FOR PRINCIPAL AND MINOR ARTERIAL)



SECTION 2.06 | DRIVEWAY LOCATIONS

- (A) Minimum standards for driveway separation accessing the same site are shown in [FIGURE 2.4](#). This standard applies to all non-residential uses.
- (B) Residential driveways shall be located so that the curb return does not extend past the property line, and meets the separation distance to curb inlets and street intersections.
- (C) There is a minimum distance upstream and downstream from the adjacent intersections within which driveways should not be located. This separation distance varies with the classification of street and is shown in [FIGURE 2.4](#). This standard applies to all non-residential users.
- (D) At mid-block access points, there is a minimum distance from a median nose, within which driveways should not be located. This is shown in [FIGURE 2.4](#) and is equally applicable along both arterials and collectors for non-residential uses.
- (E) All proposed paving connections to existing concrete paving requires a longitudinal butt joint connection. For proposed paving connections to existing asphalt, the concrete will be butted up with a smooth transition.
- (F) Developing or developed residential lots shall have a minimum of one (1) driveway. Cross access between lots shall not be the only access to a property, and is only allowed by special approval (see [CHAPTER 38, SUBDIVISIONS, OF THE MUNICIPAL CODE OF ORDINANCES](#)).

SUBSECTION 2.06.01 | DRIVEWAYS ON TXDOT FACILITIES

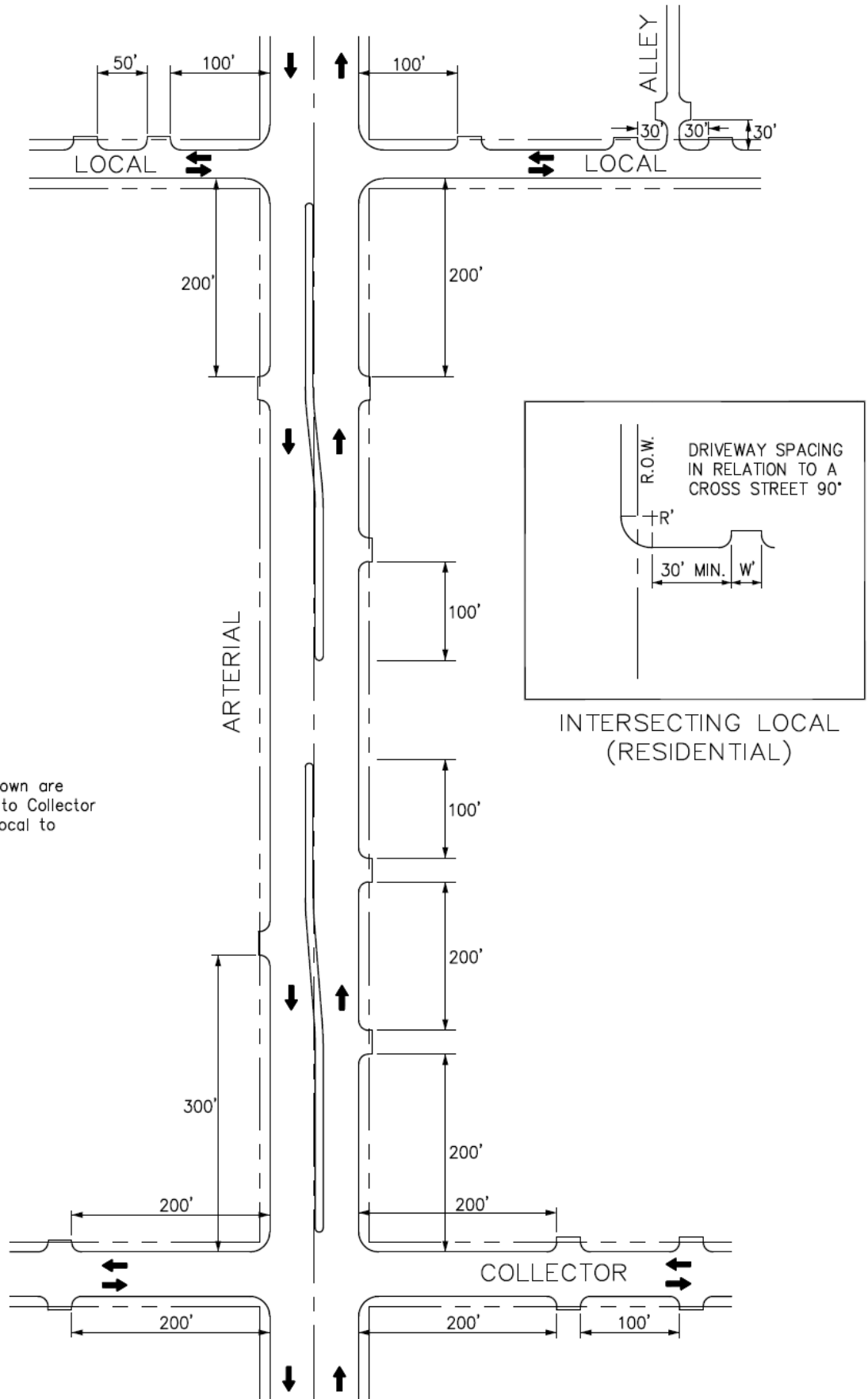
Driveways on TXDOT facilities shall be placed in accordance to the City of Rockwall's standards as set forth in this section and the requirements of the current TXDOT's *Access Management Manual* and require TXDOT *Driveway Permit* approval. TXDOT *Driveway Permits* shall be processed through the City of Rockwall's Engineering Department. TXDOT *Permit Plan* sets shall be 11" x 17" in size and signed and sealed by a licensed professional engineer with the State of Texas. Permit plan sets shall include: [1] typical sections, [2] paving plan and profile, [3] all applicable TXDOT standard details, [4] traffic control plans sheets, [5] striping plans, [6] demo plans, [7] drainage plans (*i.e. drainage area map, storm sewer plans and profiles, culvert plans and profiles*), and [8] any other items required by TXDOT or City Engineer to construct the driveway. A Traffic Impact Analysis (TIA) shall be submitted to the Engineering Department with all new driveway and roadway locations that require TXDOT *Driveway Permits*.

SECTION 2.07 | BLOCK LENGTHS

In general, streets shall be provided at such intervals as to serve cross traffic adequately and to intersect with existing streets. Where no existing subdivision plats control, the blocks shall be not more than 1,600-feet in length. Block arrangements must provide access to all lots, and in no case, shall a block interfere with traffic circulation.



FIGURE 2.4: MINIMUM DRIVEWAY SPACING AND CORNER CLEARANCE



NOTE:
All dimensions shown are minimums. Local to Collector to be same as Local to Arterial.



SECTION 2.08 | STREET INTERSECTIONS

More than two (2) streets intersecting at one (1) point is not permitted. All streets and thoroughfares should intersect other streets and thoroughfares at a 90-degree angle unless otherwise approved by the City Engineer. Arterial and collector street intersections shall have property line corner clips with a minimum tangent distance of 30-feet. Residential streets shall not normally be required to have a right-of-way corner clip at their intersection with other streets or thoroughfares, but a minimum of a ten (10) foot by ten (10) foot sidewalk corner easement will be required. Visibility easements will be required for all intersections. For all intersections that are not 90-degrees, an engineered visibility easement is required by the design engineer. The standard visibility easements for intersections that are 90-degrees, are as follows:

- (A) Arterial/Collector Street Intersections: 30' x 30' Easement
- (B) Residential Street Intersections: 20' x 20' Easement
- (C) Alley to Street Intersections: 10' x 10' Easement

Curb radii at intersections shall have a minimum radius of 30-feet along arterials, 25-feet along collectors, and 20-feet along residential streets. In any case where streets intersect at an angle of other than 90-degrees or have non-standard utility locations or have non-standard ADA ramp configurations, the City may require non-standard right-of-way corner clips, easements, and curb return radii. All proposed paving connections to existing concrete paving require a longitudinal butt joint connection.

SECTION 2.09 | RELATION TO ADJOINING STREETS

The system of streets designed for a development, except in unusual cases, must connect with streets already dedicated in adjacent developments. Where no adjacent connections are platted, the streets must be the reasonable projection of streets in the nearest subdivided tracts and must be continued to the boundaries of the tract development, so that other developments may eventually connect with the proposed development. Strips of land controlling access to or egress from other property or any street or alley or having the effect of restricting or damaging the adjoining property for development or subdivision purposes or which will not be taxable or accessible for special improvements shall not be permitted in any development unless such reserve strips are conveyed to the City on a fee simple basis. This determination is made by the Director of Planning and Zoning and/or the City Engineer. When such access is needed to maintain permanent City owned utilities, the roadway will be an improved right-of-way. If the utilities are temporary, improved temporary easement may be approved.

SECTION 2.10 | DEAD-END STREETS, CUL-DE-SACS, AND COURTS

Cul-de-sacs are permitted within residential subdivisions. Use of this design shall provide proper access to all lots and shall not exceed 600-feet in length, measured from the center of the cul-de-sac to the center of the intersecting street (*not a dead-end street*). Cul-de-sac shall have a minimum paving radius of 47½-feet and a minimum right-of-way radius of 57½-feet. Specific aspects of the standard cul-de-sac design are given in [FIGURE 2.3](#). In lieu of the typical design shown, the City may approve alternative concepts for a specific application.

For phased residential developments, temporary cul-de-sacs may be used or be required by the City. The material of the temporary cul-de-sac pavement shall be approved by the City Engineer. Paving of the temporary cul-de-sac shall be placed in a manner as to be removed in the future without impacting the main paving. Dead end streets are to be extended to a future phase and may not exceed one (1) lot depth past an intersection without a cul-de-sac.

SECTION 2.11 | ALLEYS AND ALLEY WIDTHS

Alleys shall be provided in all residential areas and shall be paved with steel reinforced concrete. No alley may be over 1,000-feet long. The City Council may waive the residential alley requirement, if it is in the best interest of the City. Alleys may be required in commercial and industrial districts. The City may waive this requirement where other definite and assured provisions are made for service access such as off-street loading, unloading, and parking consistent with and adequate for the uses proposed. The minimum right-of-way width of an alley shall be 20-feet. Dead-end alleys shall not be permitted. The City may waive this requirement where such dead-end alleys are unavoidable and where adequate turnaround facilities have been provided. Adequate provisions shall be made at all intersections in order that equipment (*e.g. garbage collection vehicles and maintenance vehicles*) can maneuver the corners. The interior edge of the pavement, at the corners, shall have a minimum radius of 30-feet. The exterior edge of the pavement, at the corners, shall have a minimum radius of 20-feet. The alley paving is to be flared at the street intersection. The right-of-way limits shall be expanded, if necessary, beyond the minimum requirement in order to include all of the paved section and utilities within the right-of-way of the alley.

Alley turnouts shall be paved to the property line and shall be 15-feet wide at that point. All alleys shall have a minimum of 12-feet of steel reinforced paved concrete roadway. Alleys shall have a minimum thickness of seven (7) inches on the exterior edges and five (5) inches in the center sections.

SECTION 2.12 | STREET GRADES

Arterial streets may have a maximum grade of seven and one-half (7½) percent, for a maximum continuous distance of 200-feet. Collector streets may have a maximum grade of seven and one-half (7½) percent. Residential streets may have a maximum grade of ten (10) percent, unless otherwise approved by the City, where the natural topography is such as to require steeper grades. All streets must have a minimum grade of at least 0.70 of one (1) percent. Centerline grade changes with an algebraic difference of more than one (1) percent shall be connected with vertical curves in compliance with the minimum length requirements set forth in [TABLE 2.3](#), [TABLE 2.4](#), [TABLE 2.5](#), and [TABLE 2.6](#).

TABLE 2.3: CREST VERTICAL CURVES

DESIGN SPEED (MPH)	COEFFICIENT OF FRICTION ¹	STOPPING SITE DISTANCE (FEET)	STOPPING SITE DISTANCE FOR DESIGN (FEET)	K	K ROUNDED FOR DESIGN
15	0.42	72.98	75	4.01	5
20	0.40	106.83	125	8.59	10
25	0.38	146.70	150	16.19	20
30	0.36	193.58	200	28.20	30
35	0.34	248.72	250	46.55	50
40	0.32	313.67	325	74.03	80
45	0.31	383.12	400	110.44	120

NOTES:

¹: AASHTO, PAGE 316

TABLE 2.4: MINIMUM LENGTH OF VERTICAL CURVE IN FEET (ROUNDED)

NOTE: FOR SPEEDS AND K VALUES SHOWN BELOW (L=KA)

ALGEBRAIC GRADE DIFFERENCE (%) [A]	MPH	15	20	25	30	35	40	45
	K	5	10	20	30	50	80	120
1	5	10	20	30	50	80	120	
2	10	20	40	60	100	160	240	
3	15	30	60	90	150	240	360	
4	20	40	80	120	200	320	480	
5	25	50	100	150	250	400	600	
6	30	60	120	180	300	480	720	
7	35	70	140	210	350	560	840	
8	40	80	160	240	400	640	960	
9	45	90	180	270	450	720	1080	
10	50	100	200	300	500	800	1200	
11	55	110	220	330	550	880	1320	
12	60	120	240	360	600	960	1440	
13	65	130	260	390	650	1040	1560	
14	70	140	280	420	700	1120	1680	
15	75	150	300	450	750	1200	1800	

TABLE 2.5: SAG VERTICAL CURVES

DESIGN SPEED (MPH)	COEFFICIENT OF FRICTION ¹	STOPPING SITE DISTANCE (FEET)	STOPPING SITE DISTANCE FOR DESIGN (FEET)	K	K ROUNDED FOR DESIGN
15	0.42	72.98	75	8.13	10
20	0.40	106.83	125	14.75	20
25	0.38	146.70	150	23.56	30
30	0.36	193.58	200	34.78	40
35	0.34	248.72	250	48.69	50
40	0.32	313.67	325	65.69	70
45	0.31	383.12	400	84.31	90

NOTES:

¹: AASHTO, PAGE 316

**TABLE 2.6: MINIMUM LENGTH OF VERTICAL CURVE IN FEET (ROUNDED)**

NOTE: FOR SPEEDS AND K VALUES SHOWN BELOW (L=KA)

ALGEBRAIC GRADE DIFFERENCE (%) [A]	MPH	15	20	25	30	35	40	45
	K	10	20	30	40	50	70	90
1	10	20	30	40	50	70	90	
2	20	40	60	80	100	140	180	
3	30	60	90	120	150	210	270	
4	40	80	120	160	200	280	360	
5	50	100	150	200	250	350	450	
6	60	120	180	240	300	420	540	
7	70	140	210	280	350	490	630	
8	80	160	240	320	400	560	720	
9	90	180	270	360	450	630	810	
10	100	200	300	400	500	700	900	
11	110	220	330	440	550	770	990	
12	120	240	360	480	600	840	1080	
13	130	260	390	520	650	910	1170	
14	140	280	420	560	700	980	1260	
15	150	300	450	600	750	1050	1350	

SECTION 2.13 | PAVEMENT DESIGN

Traffic projections for next 30-years, engineered paving designs, and sub-grade conditions are required for the pavement design section determinations of all collector and arterial streets.

SUBSECTION 2.13.01 | SUBGRADE

Subgrades shall be compacted and finished to a smooth uniform surface. All public roadways shall use a minimum six (6) inch lime stabilized subgrade or eight (8) to ten (10) inches of approved flexbase. The lime stabilization shall be used for the full width of the street, back-of-curb to back-of-curb, plus 12-inches on the outside of the curb. The minimum lime content shall be six (6) percent of the dry weight of the material (*i.e. at least 27 LBS per square yard*). Lime stabilization or cement stabilization may be required for soils showing a PI of 15 or less. Type of stabilization and paving design will be determined prior to pavement construction by a certified geotechnical testing lab. The subgrade materials will be tested and installed in accordance to the North Central Texas Council of Government's (NCTCOG's) *Standard Specifications for Construction*, unless otherwise approved by the City of Rockwall. In general, the soils testing will include the testing of Atterberg limits and testing of sulfates to determine if lime stabilization is infeasible. Laboratory tests must be submitted to the Engineering Department for approval. Subgrades should be compacted to 95% standard densities. No sand is allowed under any paving or pedestrian facility.

SUBSECTION 2.13.02 | STEEL REINFORCED CONCRETE PAVEMENT

All pavement shall be steel reinforced concrete. Size and spacing shall conform to [TABLE 2.7](#) below. All non-structural cracks in paving shall be routed and sealed as determined by the City. All reinforcing steel placed within the public right-of-way shall be grade 60 steel and comply with Texas Department of Transportation (TXDOT) specifications.

Fly ash may be used in concrete pavement locations provided that the maximum cement reduction does not exceed 20% by weight per cubic yard of concrete. The fly ash replacement shall be 1.25 pounds per one (1) pound of cement reduction (*i.e. 1.25:1*).

At a minimum all concrete pavement shall conform to [TABLE 2.7](#).

TABLE 2.7: STEEL REINFORCED CONCRETE PAVEMENT DESIGN

STREET/PAVEMENT TYPE	MINIMUM THICKNESS (INCHES)	STRENGTH 28-DAY (PSI)	MINIMUM CEMENT (SACKS / CY)		STEEL REINFORCEMENT		SLUMP (INCHES)
			MACHINE PLACED	HAND PLACED	BAR #	SPACING (OCEW)	
ARTERIAL ¹	10"	3,600	6.0	6.5	#4 BARS	18"	3"-5"
COLLECTOR ¹	8"	3,600	6.0	6.5	#4 BARS	18"	3"-5"
RESIDENTIAL	6"	3,600	6.0	6.5	#3 BARS	24"	3"-5"



ALLEY	7"-5"-7"	3,600	6.0	6.5	#3 BARS	24"	3"-5"
FIRE LANE	6"	3,600	6.0	6.5	#3 BARS	24"	3"-5"
DRIVEWAYS OUTSIDE ROW	6"	3,600	6.0	6.5	#3 BARS	24"	3"-5"
DRIVEWAY APPROACHES WITHIN ROW	TO MATCH DESIGN OF STREET PAVEMENT TYPE CONNECTING INTO						
BARRIER FREE RAMPS	6"	3,600	N/A	6.5	#3 BARS	24"	3"-5"
SIDEWALKS	4"	3,000	N/A	5.5	#3 BARS	24"	3"-5"
TRAILS	6"	3,600	N/A	6.5	#3 BARS	24"	3"-5"
PARKING LOT/DRIVE AISLES	5"	3,000	5.0	5.5	#3 BARS	24"	3"-5"
DUMPSTER PADS	7"	3,600	6.0	6.5	#3 BARS	24"	3"-5"

NOTES:

¹: PAVING SECTION DESIGNS FOR ARTERIALS AND COLLECTORS SHALL BE BASED OFF 30-YEAR PROJECTED TRAFFIC VOLUMES AND GEOTECHNICAL ANALYSIS/REPORT. PAVING SECTION DESIGN SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING: PAVEMENT THICKNESS, REINFORCING SIZE AND SPACING, PAVEMENT STRENGTH, SUBGRADE THICKNESS, SUBGRADE TREATMENT TYPE (E.G. LIME OR CEMENT).

Concrete batch designs for all paving, sidewalks, trails, and sewer/storm structures are to be reviewed and approved by the Engineering Department. All batch designs shall be submitted with history of recent (*i.e. one [1] year or newer*) cylinder breaks for each separate strength requirement (*machine placement and hand placed*). All batch designs shall have the current date, project name, and use labeled on each design. Submit batch designs to the Engineering Department a minimum of ten (10) days prior to the projected placement date for review and approval.

During construction the contractor shall furnish the following at his/her own expense:

- (A) Batch plant control from a qualified commercial laboratory. Laboratory personnel shall be competent to determine free moisture in aggregates and make needed adjustments in control of the mix and slump.
- (B) Prepare a minimum four compression cylinders for each 150 cubic yards of concrete or fraction thereof, with one (1) cylinder break at seven (7) days, one (1) at 14-days, and a minimum of two (2) cylinders broken at 28-days.

NOTE: NO AVERAGING ON CYLINDER BREAKS.

- (C) Testing labs are to submit copies of any and all concrete cylinder breaks that do not meet 28-day break specifications. Cores are to be taken within ten (10) days of any 28-day cylinder break failures.
- (D) Test data and copies of all laboratory reports for site work are to be directed to the attention of the designated engineering construction inspector that is assigned to the project.

The City of Rockwall may suspend concreting operations if the quality of the concrete being placed is not acceptable or due to adverse weather conditions. Concrete shall not be placed during rain events. Concrete placement shall cease if rain begins, and uncured concrete shall be protected from the rain. Concrete placement shall cease if the concrete temperature meets or exceeds 95-degrees Fahrenheit. If, in the opinion of the owner or the City of Rockwall, a combination of temperature, wind, and humidity create conditions that are adversely affecting the condition of the concrete, concrete placement operations shall cease. Concrete placement shall also cease if concrete temperature is below 40-degrees Fahrenheit and falling. Except by specific written authorization of the owner or the City of Rockwall, no concrete shall be placed when the air temperature is less than 40-degrees Fahrenheit and falling, but may be placed when the air temperature is above 35-degrees Fahrenheit and rising -- *Pending No Freezing Weather is Imminent* -- with the temperature being taken in the shade away from artificial heat. When and if such permission is granted, the contractor shall furnish sufficient protective material and devices to enclose and protect the fresh concrete in such a way as to maintain the temperature of 50-degrees Fahrenheit for a period of at least five (5) days. No concrete shall be placed on wet or frozen subgrades. It is to be distinctly understood that the contractor is responsible for the quality and strength of the concrete placed under any weather conditions. Any concrete that is damaged by weather conditions shall be replaced at no cost to the City.

High Early Strength Concrete is allowed. *High Early Strength Concrete* may be required by the City Engineer in certain conditions, such as to allow for a roadway to be open without traffic control in a short period of time.

Maximum time intervals between the addition of mixing water and/or cement to the batch, and the placing of concrete in the forms shall not exceed the following:



NON-AGITATED CONCRETE

AIR OR CONCRETE TEMPRATURE WHICH EVER IS HIGHER	MAXIMUM TIME FROM ADDITION OF WATER TO PLACEMENT
UP TO 80° F	30 MINUTES
ABOVE 80° F	15 MINUTES

AGITATED CONCRETE

AIR OR CONCRETE TEMPRATURE WHICH EVER IS HIGHER	MAXIMUM TIME FROM ADDITION OF WATER TO PLACEMENT
UP TO 75° F	90 MINUTES
75° TO 89° F	60 MINUTES
OVER 89° F	45 MINUTES

The use of an approved set-retarding admixture will permit the extension of the above time maximums, by 30-minutes for agitated concrete only.

SECTION 2.14 | PARKWAYS, GRADES, AND SIDEWALKS

All parkways shall be constructed to conform to top of curb grades with a standard transverse slope of ¼-inch per foot rise from top of curb to right-of-way. Prior to City acceptance, all City rights-of-way shall be sodded where disturbed. Where the natural topography is such as to require steeper grades, transverse slopes (*except for sidewalks*) up to ¾-inch per foot may be used with the approval of the City of Rockwall.

Sidewalks shall be provided for all streets. Barrier free ramps and sidewalks/trails along screening walls, landscaped areas, parks, open space, greenbelts, and/or drainage ways, shall be installed by the *Developer* with street construction. The sidewalks/trails in front of and along sides of residential lots shall be installed by the home builder. The City may require sidewalks in other locations. Sidewalks shall be minimum of five (5) feet in width and shall have two (2) feet of green space between the right-of-way line and the outside edge of sidewalk. Sidewalks shall be located wholly within the street right-of-way, sidewalk corner clip, pedestrian and/or road easement. If a fire hydrant or other appurtenance is too close to the sidewalk, the sidewalk may be swerved toward the right-of-way line to maintain five (5) foot clear path. If sidewalk has to be built outside the right-of-way, a sidewalk easement is required. This requirement may be waived by the City Council.

Sidewalks/Trails wider than six (6) feet will be required to have engineered details. Sidewalks placed adjacent to the back of the curb must be six (6) feet wide and lugged into the curb. Sidewalks placed against the back of curb shall be approved by the City Engineer.

If a trail or sidewalk system extends farther than 0.25-miles along the path from a public roadway or paved area, the trail or sidewalk must be a minimum of ten (10) feet wide, and constructed to fire lane specifications. Trails shall be installed as per the City's Master Trail Plan contained in the Comprehensive Plan. A trail easement shall be dedicated for areas where a trail extends outside of right-of-way.

Sidewalks or trails shall be constructed continuously along street frontage from property line to property line. If neighboring property is owned by a franchise utility or a public entity, sidewalk may be required to extend half the distance across neighboring property. Sidewalks shall extend past the property line into the right-of-way to connect to a ramp.

Mid-block crossings shall only be allowed by City Engineer's approval. Additional requirements may be required to allow for the crossing.

SUBSECTION 2.14.01 | ROADWAY RECONSTRUCTION

During a roadway reconstruction project, if a block of a street -- *to be reconstructed* -- does not currently have sidewalks in place, a six (6) foot sidewalk against/adjacent to the curb or a minimum five (5) foot sidewalk not adjacent to the curb shall be required on both sides of the roadway within that street block if the following criteria are met:

- (A) The roadway is above a residential/local classification or on the currently adopted Master Thoroughfare Plan (*i.e. Minor Collector, Major Collector, Minor Arterial and Principal Arterial*) and has an Average Daily Traffic (ADT) of 750 vehicles or more per day; or,



- (B) Any portion of the street block is located within 1,000 feet of a school, city park, or church. In cases where the street block is located within this 1,000-foot buffer, the street block shall have a direct connection to another street block or sidewalk system that is also located within the 1,000-foot buffer. Any street block or sidewalk system that is inhibited from connecting to an existing street block or sidewalk system by a physical barrier (e.g. bridges) may be exempted from this requirement at the discretion of the City Engineer.

NOTE: For the purpose of this section a street block shall be defined as the section of the road that extends from one (1) street intersection to another, or from a street intersection to the end of a cul-de-sac or dead-end. This section shall only apply to City initiated reconstruction projects.

SECTION 2.15 | DRIVEWAYS/DRIVE AISLES

All drive approaches (*surface between the City roadway and the property line/right-of-way*) are to be maintained, repaired, and replaced by the property owner in accordance with the City of Rockwall's requirements. Drive approaches connecting to *curb-and-gutter* streets must be by full curb and gutter removal. **HORIZONTAL CURB CUTS ARE NOT ALLOWED.**

SUBSECTION 2.15.01 | RESIDENTIAL

Steel reinforced concrete residential driveways that serve single car garages shall not be less than 12-feet in width. Two (2) car garages, carports, and/or storage areas shall not be less than 18-feet and no more than 24-feet in width at the property line. The width of the driveway for a three (3) car garage shall be 28-feet or larger (*to be reviewed on a case-by-case basis*).

Residential driveways shall be separated from one another by a distance of at least ten (10) feet at the start of the approach radius. The radii of all residential driveway returns shall be a minimum of five (5) feet and shall not extend past the adjoining property line. The driveway approaches devoted to one (1) use shall not occupy more than 60% of the frontage abutting the roadway or alleyway.

If a residential lot has frontage on both a residential street or alleyway and frontage on a collector or arterial, the driveway must be on the lower classified roadway. If a residential lot only has frontage on a collector or arterial roadway, the residential lot may connect to this classification and must meet driveway spacing requirement to said roadway. If a residential lot is allowed to connect to a collector or arterial roadway, the driveway must be designed so that the resident lot does not back out into traffic utilizing a driveway configuration such as by a circle drive or a turnaround on the property.

Circle/U-Shaped driveways shall not be less than 12-feet in width and the inside pavement edge of the driveway shall have a minimum of a ten (10) foot offset from the right-of-way line within the property. The driveway approach radii must be at least ten (10) feet apart from each approach.

SUBSECTION 2.15.02 | MULTI-FAMILY AND NON-RESIDENTIAL

Steel reinforced concrete driveways, providing access to multi-family or non-residential uses, shall have a minimum width of 24-feet and a maximum width of 45-feet when measured at their narrowest point near or at the property line. The minimum radius for these uses shall be 25-feet. Larger radii are encouraged. Limitations on permissible locations for these driveways are addressed in [SECTION 2.06, DRIVEWAY LOCATIONS](#). Driveway radii returns shall not extend across abutting property lines. The drive aisles for 90-degree parking shall have a minimum width of 24-feet. Drive-thru lanes are to be a minimum of 12-feet wide with a 12-foot by-pass lane.

SUBSECTION 2.15.03 | GRADES

The change in grade between the roadway cross slope and the slope of the driveway apron is important to ensure a smooth, low speed, turning maneuver. The maximum algebraic change in grade is shown in [TABLE 2.8](#). An abrupt change in grade will cause the front bumper to drag on the surface of the street and driveway.

TABLE 2.8: DRIVEWAY GRADES AND GRADE CHANGE

TYPE	MAXIMUM GRADE	MAXIMUM ALGEBRAIC CHANGE IN GRADE
RESIDENTIAL	14%	12%
NON-RESIDENTIAL	8%	8%

When an algebraic change in grade occurs within a driveway of more than four (4) percent vertical curve will be required. The minimum recommended lengths of vertical curve for the corresponding change in grade for driveway profiles are shown in [TABLE 2.9](#). It is recommended that a two (2) foot vertical curve is provided where ever the algebraic change in grade is less than four (4) percent.

TABLE 2.9: VERTICAL CURVE LENGTHS FOR DRIVEWAYS

ALGEBRAIC CHANGE IN GRADE	MINIMUM LENGTH IN FEET	
	CREST CURVE	SAG CURVE
LESS THAN 4%	2	2
4% - 5.99%	5	6
6% - 8.99%	5	7
9% - 12%	6	8

All driveway profiles should be designed to accommodate a sidewalk crossing at a maximum allowable cross-slope of two (2) percent in order to meet ADA requirements. A sidewalk crossing grade of two (2) percent shall be incorporated into the driveway even if a sidewalk is not to be constructed at the same time as the driveway.

Reference [FIGURE 2.5](#) for driveway profiles on an upgrade and [FIGURE 2.6](#) for driveway profiles on a downgrade. No downgrade driveways will be allowed for new development or construction. If an existing driveway with a downgrade already exists it shall be reconstructed to conform to [FIGURE 2.6](#). All down grade driveways shall have a rise that must be equal to or above the top of curb elevation.

FIGURE 2.5: DRIVEWAY PROFILES ON AN UPGRADE

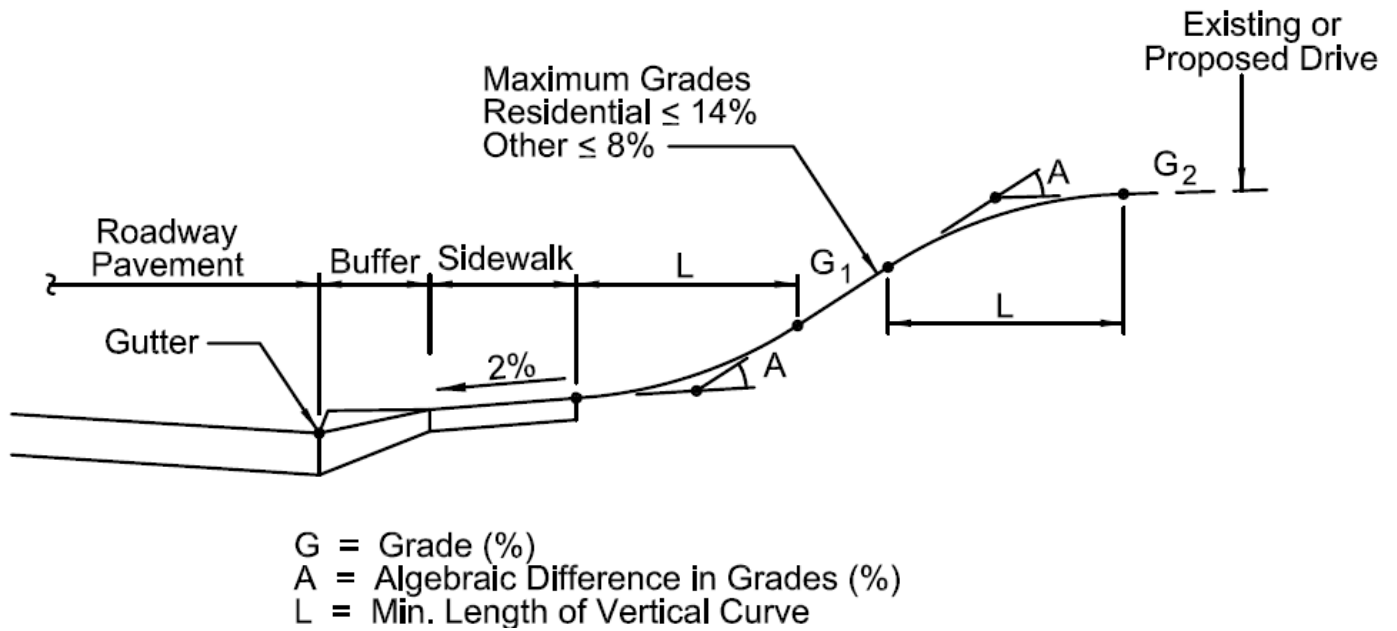
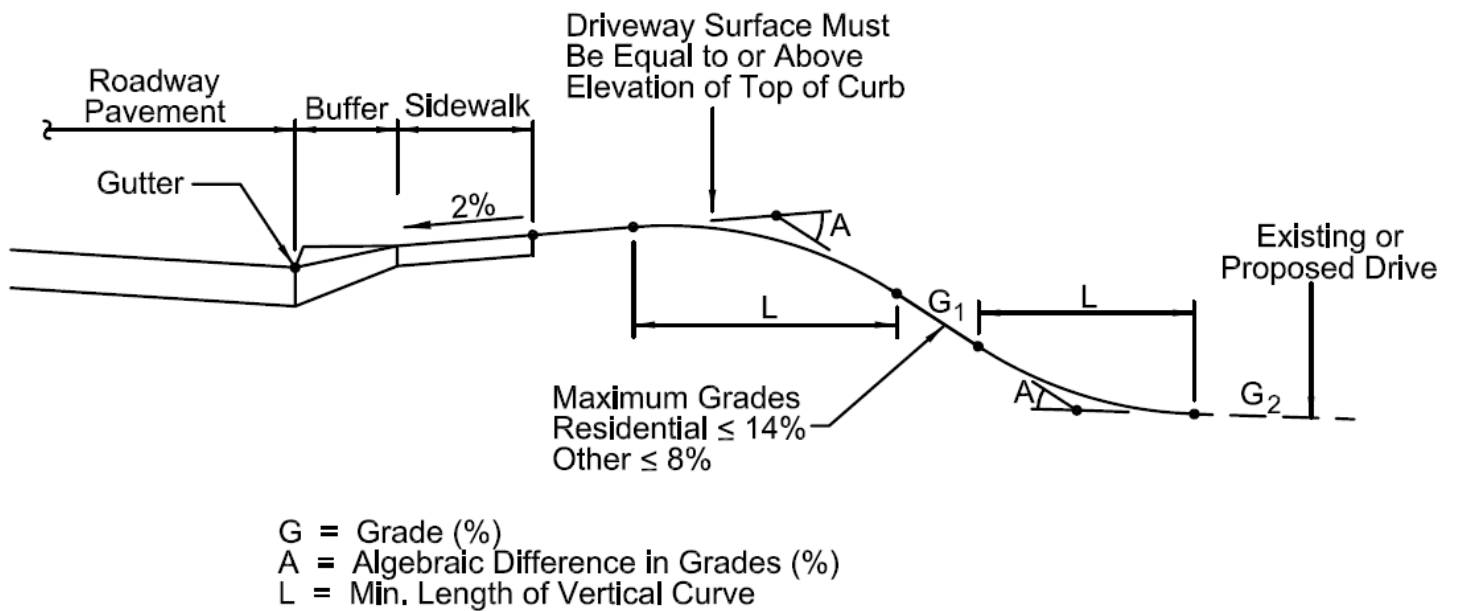


FIGURE 2.6: DRIVEWAY PROFILES ON A DOWNGRADE





SECTION 2.16 | TRAFFIC INFORMATION AND CONTROL DEVICES

Any work disturbing traffic on City streets shall require a signed and sealed traffic control plan by a *Registered Professional Engineer* in the State of Texas. All signage in City right-of-way shall conform to the Texas Manual of Uniform Traffic Control Devices.

The developer shall be responsible for and arrange for the installation of all pavement striping, regulatory, warning, guide, and school zone signs including posts, as shown on the plans or as directed by the City. Street name signs shall be installed at each intersection. Examples of regulatory, warning, information and guide signs are as follows:

- (A) Regulatory signs shall include, but are not limited to, STOP, 4-WAY, YIELD, KEEP RIGHT and speed limit signs.
- (B) Warning signs shall include, but are not limited to, DEAD END, NO OUTLET, DIVIDED ROAD, DIP, and PAVEMENT ENDS.
- (C) Guide signals shall include, but are not limited to, street name signs, DETOUR, direction arrow and advance arrow.
- (D) Traffic striping and buttons shall be provided by the developer as shown on plans or as directed by the City.

All signage within medians, paving, sidewalks, and TXDOT right-of-way shall be break away pole bases.

SUBSECTION 2.16.01 | REGULATORY SIGNAGE

Regulatory signs should be used only where justified by engineering judgment. All signage plans shall be reviewed and approved by the City of Rockwall Engineering Department and be designed in accordance with the principles described in the current Texas Manual on Uniform Traffic Control Devices (TMUTCD).

All street and regulatory signage shall be installed, inspected and approved, prior to final acceptance of the project. This inspection typically takes place as part of the Engineering Department's final walkthrough. Any sign related issue/issues will be noted on the projects final punch list.

- (A) A detailed street and regulatory signage plan are to be submitted to the City of Rockwall Engineering Department. All signs shall be shown in the engineering plans for review and approval. The signage plan shall be shown on a separate signage & pavement marking layout sheet or as a part of the plan & profile sheet. The plan shall identify the specific sign designation, size and location for each sign. Sign standards shall also be included in the engineering plans.
- (B) All signage installed shall comply with the current *Texas Manual on Uniform Traffic Control Devices* and the *Standard Highway Sign Designs for Texas*. The sign layout drawings shall show the color and dimensions of all sign face legend components including background color, legend color, borders, symbols, letter size and style.
- (C) The developer shall be responsible for furnishing and installing all regulatory signage, warning signage and street name signage along with all necessary sign mounts in accordance with the approved engineering plans. A sample production sign shall be submitted to the Street and Drainage Supervisor for review and approval. The sample shall be directed to the City of Rockwall Service Center located at 1600 Airport Road, Rockwall Texas 75087. The sample sign must be submitted at least ten (10) days prior to the scheduled installation date.
- (D) For a street with a cul-de-sac end, a standard *W 14-2a* shall be mounted over the street name blade, if the cul-de-sac is not clearly visible from the adjoining roadway, or is located in excess of 400 linear feet from the adjoining roadway.

SUBSECTION 2.16.02 | STREET NAME BLADES

- (A) Street name sign blades shall be double-sided with rounded corners.
- (B) Street Name Blades shall be nine (9) inch tall flat aluminum. The blades shall be 0.080 inches thick and be a minimum of 36-inches long.
- (C) The lettering for the street signs shall be *3M 3930* high Intensity prismatic material sheeting for street, regulatory and warning signs and shall be high intensity diamond grade type III prismatic. The street sign background shall be green and the legend shall be white.
- (D) The street sign blade must incorporate the current City of Rockwall logo. The logo shall consist of white *Scotchlite Series 3930* high intensity prismatic material (*Product Code 3930*).
- (E) Block Numbers are required on all street name blades and shall be located on the top right corner of the street blade.



- (F) The lettering for the street blades shall be composed of a combination of lower-case letters with initial upper-case letters. The *Clearview TCAD-1W* font shall be used. The lettering shall be composed of initial upper-case letters of at least six (6) inches in height and lower-case letters of at least 4½-inches in height. For supplementary lettering to indicate the type of street (*e.g. Street, Avenue or Road*) shall be composed of initial upper-case letters at least three (3) inches in height and lower-case letters at least 2¼-inches in height. Abbreviations may be used (*e.g. St., Ave., or Rd.*) except the street name itself. The supplementary lettering shall be located at the lower right corner of the street blade, under the block number.
- (G) The street blade sign shall consist of green *Scotchlite 3930* high intensity prismatic material background (*Product Code 3937*) and white *Scotchlite 3930* high intensity prismatic material for the lettering (*Product Code 3930*). The background sheeting shall be white *3M 390* high intensity prismatic material. The background material shall be applied to the full width and height of the sign blank leaving no metal exposed. The background material shall be one continuous piece of material. Patching of background material is not allowed and any sign with patching material of any type will be rejected by the City.

ALTERNATIVE OPTION

As an alternative, the foreground color may be green transparent *Scotchlite ElectroCut1177 film* (*i.e. E.C. film*). Lettering shall be cut out and removed producing a single continuous piece of green transparent film material.

- (H) All traffic signals shall have backlit name signage per City requirements.

SUBSECTION 2.16.03 | STANDARD STREET SIGN POLE AND FIXTURES

- (A) Standard Street Sign Post. Standard street sign posts shall be 12-foot long, and a minimum 2¾-inch galvanized steel round post with a minimum of 60 mil wall thickness.
- (B) Standard Post Installation Depth. A sign post shall be installed into solid ground to a minimum depth of 24-inches and anchored with a minimum of 60 pounds of concrete.
- (C) Standard Post Bracket. Standard post brackets shall be 18-inches cast aluminum round post bracket street sign mount for bottom street blade.
- (D) Standard Top Crossing Bracket. Standard top crossing brackets shall be 12-inch cast aluminum top crossing street sign bracket mount for top street blade.
- (E) Standard Mounting Bracket Assemblies. Standard mounting bracket assemblies shall be 2¼-inch diameter aluminum round post interlocking bracket with two (2) per pole.

SUBSECTION 2.16.04 | DECORATIVE SIGN POLES AND FIXTURES

The City of Rockwall will allow the installation of decorative signs and posts or street lights or other non-standard items by *Developers/Homeowners Associations (HOAs)* on a case-by-case basis provided that their installation does not result in an adverse impact to the public safety and that there is no cost to the City for installation or maintenance. Residential developer requesting such installations will be required to give the recorded documentation of an incorporated Homeowner's Association (HOA) to the City. The City of Rockwall maintains only standard street and regulatory signs/post/lights installed on public streets within its designated rights-of-way. The City of Rockwall does not maintain decorative sign poles, fixtures and light fixtures installed by developers or HOA.

If the developer elects to install non-standard decorative signs, sign poles, light poles and fixtures, the designated HOA must enter into a maintenance agreement with the City covering the hold harmless provisions. These provisions shall be noted on the approved final plat for the subdivision. The platted maintenance provisions will serve as the agreement and applies to all non-standard decorative signs, poles/post, hardware, lights, or any other attachments. The City of Rockwall has no maintenance or other responsibility to these items. The ownership and maintenance of all such signs, poles and fixtures become the maintenance responsibility of the designated HOA.

DECORATIVE SIGN POLE/FIXTURE SUBMITTALS

A detail of the decorative sign poles, pole fixtures and base mounting shall be included with the submittal of the civil engineering construction plans. The submittal shall also include a street/site plan indicating the location and identification of all proposed signage and post to scale.

HOMEOWNER'S ASSOCIATIONS (HOA) MAINTENANCE - RESPONSIBILITIES AND PROVISIONS



- (A) The HOA is responsible for maintaining all non-standard decorative signs, poles/post, hardware, attachments or other approved non-standard items under this agreement. The City of Rockwall has no maintenance or other responsibility to these items. The City of Rockwall and the HOA agree the Association will bear any and all maintenance cost related to the said improvements. The City has the statutory authority to install and maintain traffic control devices for vehicular traffic on public streets/roads within the city limits of the City of Rockwall, Texas. This agreement in no way constitutes a change in that authority and does not constitute any delegation of this authority to the Association.
- (B) The City of Rockwall reserves the right to install temporary replacement signs using standard sign post mounting or alternate temporary mounting when decorative sign posts and signs are damaged. Routine maintenance/replacement of damaged signs, posts and any sign mounting backboard/trim/hardware or other fixtures is the sole responsibility of the HOA and must be repaired within four (4) weeks of reporting to the HOA.
- (C) The City of Rockwall will not handle, store or be responsible for any decorative non-standard sign, post or associated fixtures installed under this agreement.
- (D) All signs (regulatory and warning) shall be in conformance with the *Texas Manual on Uniform Traffic Control Devices (Texas MUTCD)* and the *Standard Highway Sign Designs for Texas*.
- (E) Sign posts must be of sufficient height to mount the sign in conformance with the current (*Texas MUTCD*) requirements. Most typical installations require a vertical clearance of seven (7) feet from the bottom edge of the sign to the ground surface. Overhead signs must conform to all required standards.
- (F) Signs/posts must be installed in locations as provided in the approved engineering/construction plans or as otherwise approved by the City of Rockwall. On occasion, it may be necessary to re-locate signage/poles based on engineering judgment, study or when otherwise deemed necessary by the City.
- (G) The City of Rockwall reserves the right to approve or disapprove any sign/pole design and/or location. The City of Rockwall must approve the color of signposts and any requested sign mounting/trim.

SUBSECTION 2.16.05 | MISCELLANEOUS

Street address markers shall be installed for each lot in the subdivision. The markers shall be located at the center of the lot on the face of the curbs. The address markers shall have a deep green background with reflective white numbers. The number size shall be four (4) inches in height. The background of the address marker shall be 18-inches in length and from the top of curb to the gutter flow line. The address marker shall show the full numerical portion of the address of the lot.

All non-street signage for developments are required to have a separate permit from the building department. Signs, including any overhangs, are not allowed in any rights-of-way and/or easements. Location of any signage is not approved on engineering plans.

SECTION 2.17 | TEMPORARY TRAFFIC CONTROL

When the normal function of the roadway is suspended through closure of any portion of the right-of-way, temporary construction work zone traffic control devices shall be installed to effectively guide the motoring public through the area. Consideration for road user safety, worker safety, and the efficiency of road user flow is an integral element of every traffic control zone. No roadway may be completely closed without approval of the City Engineer and City Council.

All traffic control plans shall be prepared and submitted to the Engineering Department in accordance with the standards identified in *Part VI* of the most recent edition of the *TMUTCD*. Lane closures will not occur on roadways without an approved traffic control plan. Traffic control plans shall be required on all roadways as determined by the City Engineer or the designated representative. All traffic control plans must be prepared and signed and sealed by an individual that is licensed as a professional engineer in the State of Texas. All traffic control plans and copies of work zone certification must be submitted for review and approval a minimum of three (3) weeks prior to the anticipated temporary traffic control. The contractor executing the traffic control plan shall notify all affected property owners, emergency services, school district, mail service, trash service, etc. at least two (2) weeks prior to any the closures.

Any deviation from an approved traffic control plan must be reviewed by the City Engineer or the designated representative. If an approved traffic control plan is not adhered to, the contractor will first receive a verbal warning and be required to correct the problem immediately. If the deviation is not corrected within twenty-four (24) hours, all construction work will be suspended, the lane closure will be removed, and the roadway opened to traffic.



All temporary traffic control devices shall be removed as soon as practical when they are no longer needed. When work is suspended for short periods of time at the end of the workday, temporary traffic control devices that are no longer appropriate shall be removed or covered. The first violation of this provision will result in a verbal warning to the construction foreman. Subsequent violations will result in suspension of all work at the job site for a minimum of 48-hours. All contractors working on City funded projects will be charged one working day for each 24-hour closure.

Lane closures on any major or minor arterial will not be permitted between the hours of 6:00 AM to 9:00 AM and 4:00 PM to 7:00 PM. Where lane closures are needed in a school area, they will not be permitted during peak hours of 7:00 AM to 9:00 AM and 3:00 PM to 5:00 PM. Closures may be adjusted according to the actual start-finish times of the school with approval by the City Engineer. The first violation of this provision will result in a verbal warning to the construction foreman. Subsequent violations will result in suspension of all work at the job site for a minimum of 48-hours. All contractors working on City funded projects will be charged one working day for each 24-hour closure of a roadway whether they are working or not.

SECTION 2.18 | SECTION 1.18 | STREET LIGHTING

All developments shall provide streetlights along public roadways. In general, lights should be located at street intersections and at intervals no greater than 400-feet apart. Street lights shall be centered 1½-feet off the back of curb. Nonstandard street lights may be allowed by City Council. Nonstandard street lights must be maintained by HOA or the adjacent property owner that requested the nonstandard light. Maintenance requirement shall be included on the plat. The City shall not be responsible for the replacement of nonstandard lights.

SECTION 2.19 | BARRIER FREE RAMPS

Barrier free ramps shall be provided in all commercial areas and in residential areas which have sidewalks. Ramps shall be located to provide access in accordance with the standards set by the *Texas Department of Licensing and Regulation (TDLR)* at all pedestrian sidewalks. Laydown curbs and ramps shall be constructed at all street intersections and non-single family residential driveways whether or not sidewalks are being installed. Laydown curbs and ramps shall be constructed by the developer. Barrier free ramps shall have truncated dome plates in the color approved by the City. No truncated dome pavers or ridges allowed. Directional ramps should be used. Blended ramps should only be used when directional ramps are not feasible.

SECTION 2.20 | OFF-STREET PARKING, LOADING, AND STORAGE AREAS

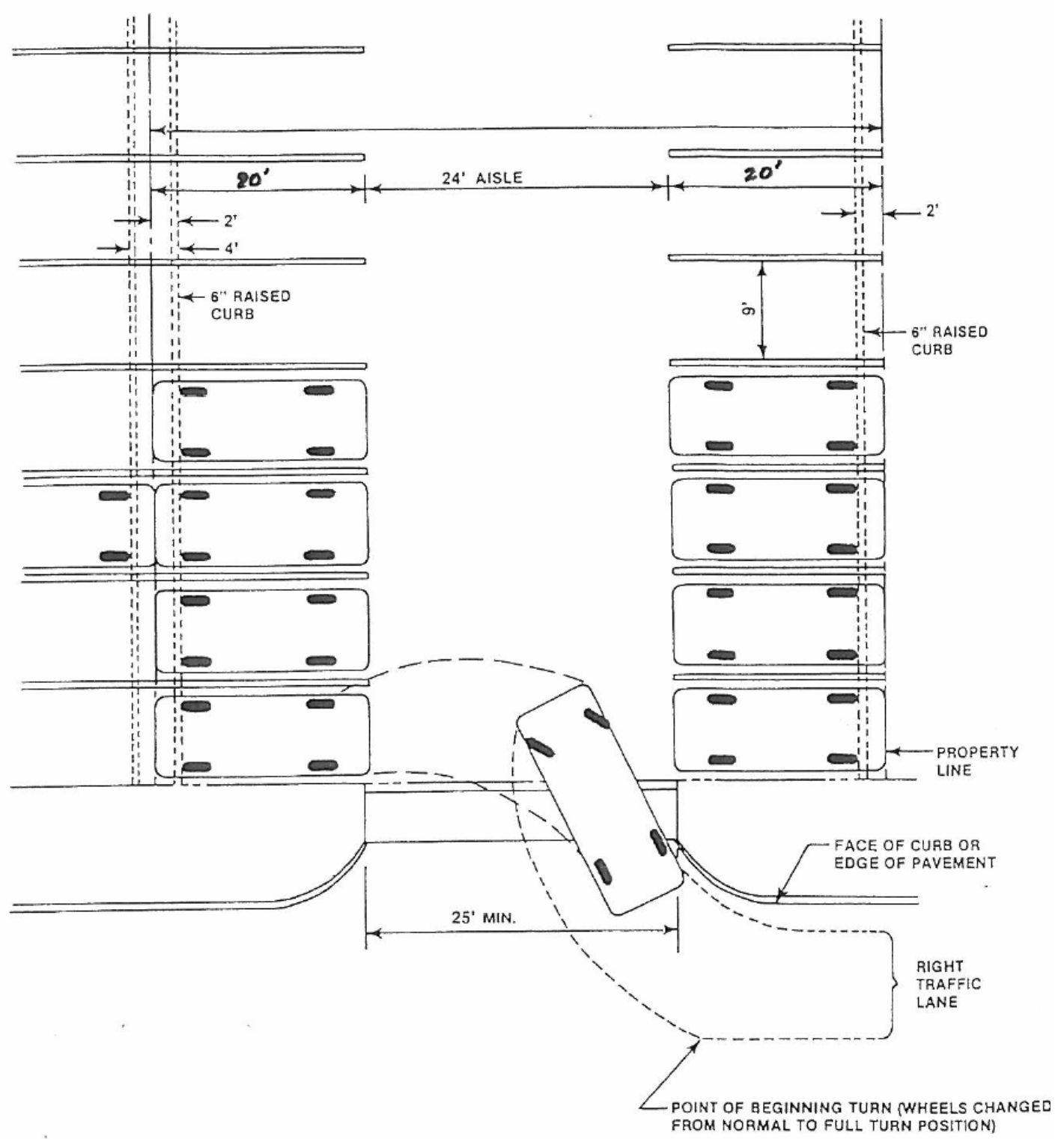
All parking areas, parking spaces, loading areas, and storage areas shall be designed and constructed of steel reinforced concrete in accordance with the following requirements:

- (A) All parking areas and spaces shall be designed and constructed of steel reinforced concrete so as to have free ingress and egress at all times.
- (B) No parking space or parking area shall be designed so as to require a vehicle to back into a public street or across a public sidewalk, except in the case of one (1) and two (2) family dwelling units.
- (C) Minimum Dimensions for Off-Street Parking:
 - (1) 90° Parking (FIGURE 2.7 and FIGURE 2.8). All parking spaces shall be a minimum of nine (9) feet in width. Each parking space adjacent to a building or future building shall not be less than 20-feet in length. Dual head in parking spaces should be a minimum of 20-feet in length. Maneuvering space shall not be less than 24-feet. Existing parking areas may remain the same dimensions when reconstructed, but new/additional parking must meet above dimensions.
 - (2) 60° Angle Parking (FIGURE 2.9 and FIGURE 2.10). Each parking space shall be not less than nine (9) feet wide perpendicular to the parking angle nor less than 20.10-feet in length when measured at right angles to the building or parking line. Maneuvering space shall be not less than 14½-feet for one (1) way traffic or 24-feet for two (2) way traffic perpendicular to the building or parking line.
 - (3) 45° Angle Parking (FIGURE 2.11 and FIGURE 2.12). Each parking space shall not be less than nine (9) feet wide perpendicular to the parking angle nor less than 19-feet in length when measured at right angles to the building or parking line. Maneuvering space shall be not less than 12-feet for one (1) way traffic or 24-feet for two (2) way traffic perpendicular to the building or parking line.
 - (4) Parallel Parking. Each parking space shall not be less than nine (9) feet in width and 22-feet in length. Maneuvering space will not be less than 24-feet.



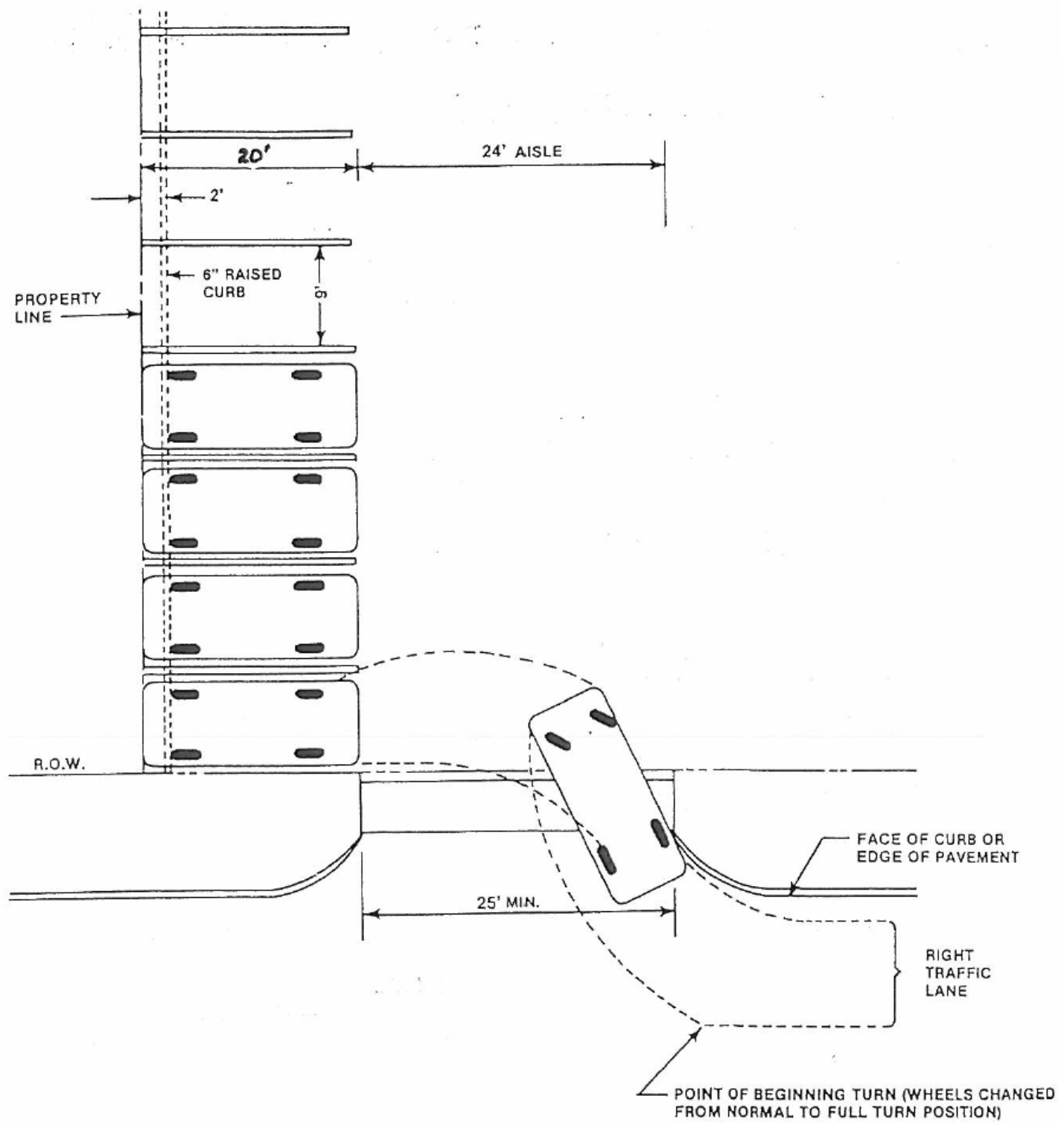
- (5) Handicap Space Parking. Where handicapped parking is required or installed, the design shall be as in [FIGURE 2.13](#).
- (6) When off-street parking facilities are provided in excess of minimum amounts herein specified, or when off-street parking facilities are provided, but not required by this *Chapter*, said off-street parking facilities shall comply with the minimum requirements for parking and maneuvering space herein specified.
- (7) Each parking space/stall shall be striped to the minimum dimension detailed out above in this section.
- (8) No dead-end parking shall be allowed for more than six (6) parking spaces without a minimum turnaround of 15-feet wide by 64-feet long or a cul-de-sac which shall be striped and signed as *No Parking*. If there are less than six (6) parking spaces, a 24-foot by 15-foot turnaround area will be allowed and shall be striped and signed as *No Parking*.

FIGURE 2.7: 90° PARKING (DOUBLE ROW)



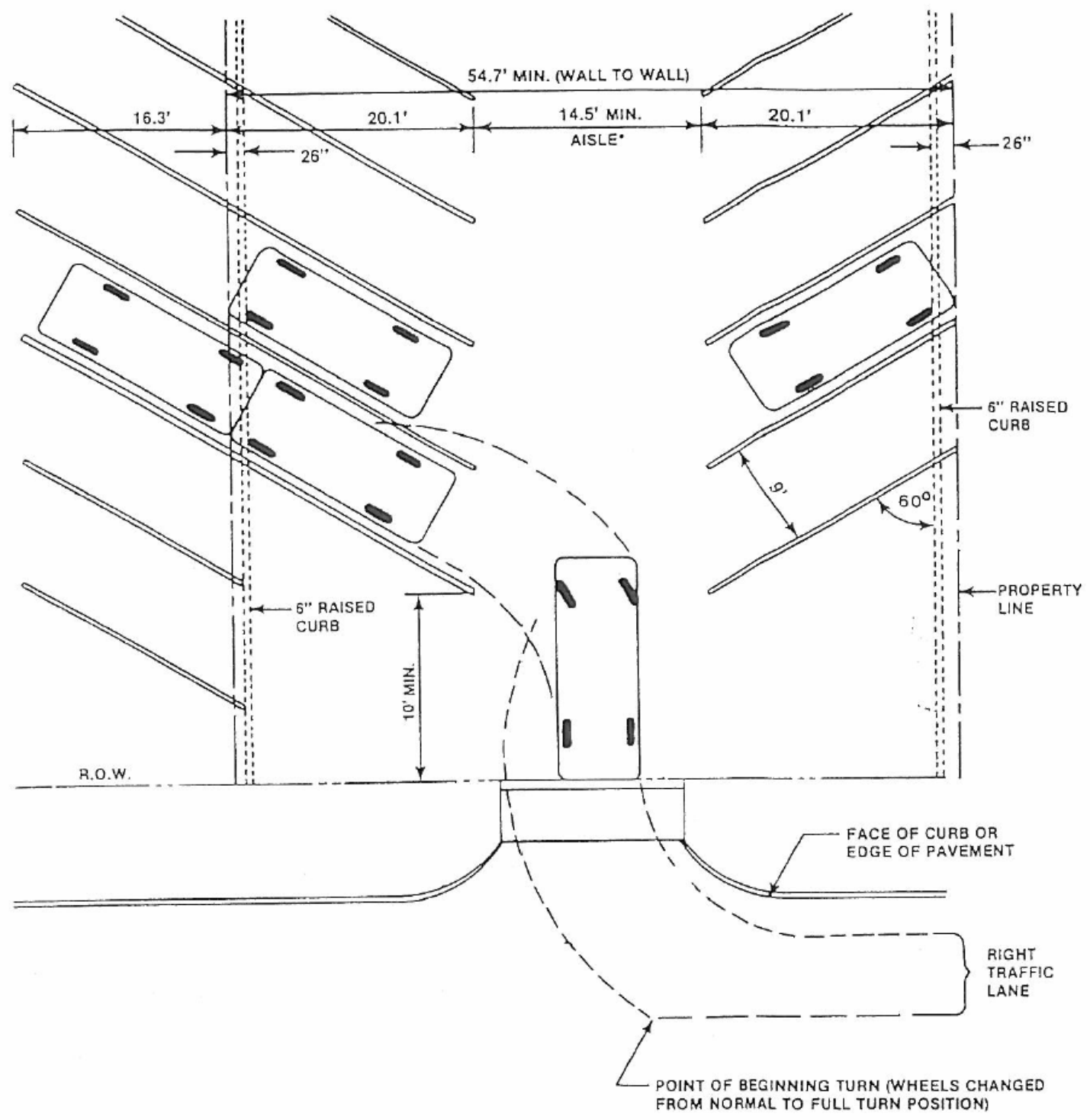
90°

FIGURE 2.8: 90° PARKING (SINGLE ROW)



90°

FIGURE 2.9: 60° PARKING (DOUBLE ROW)

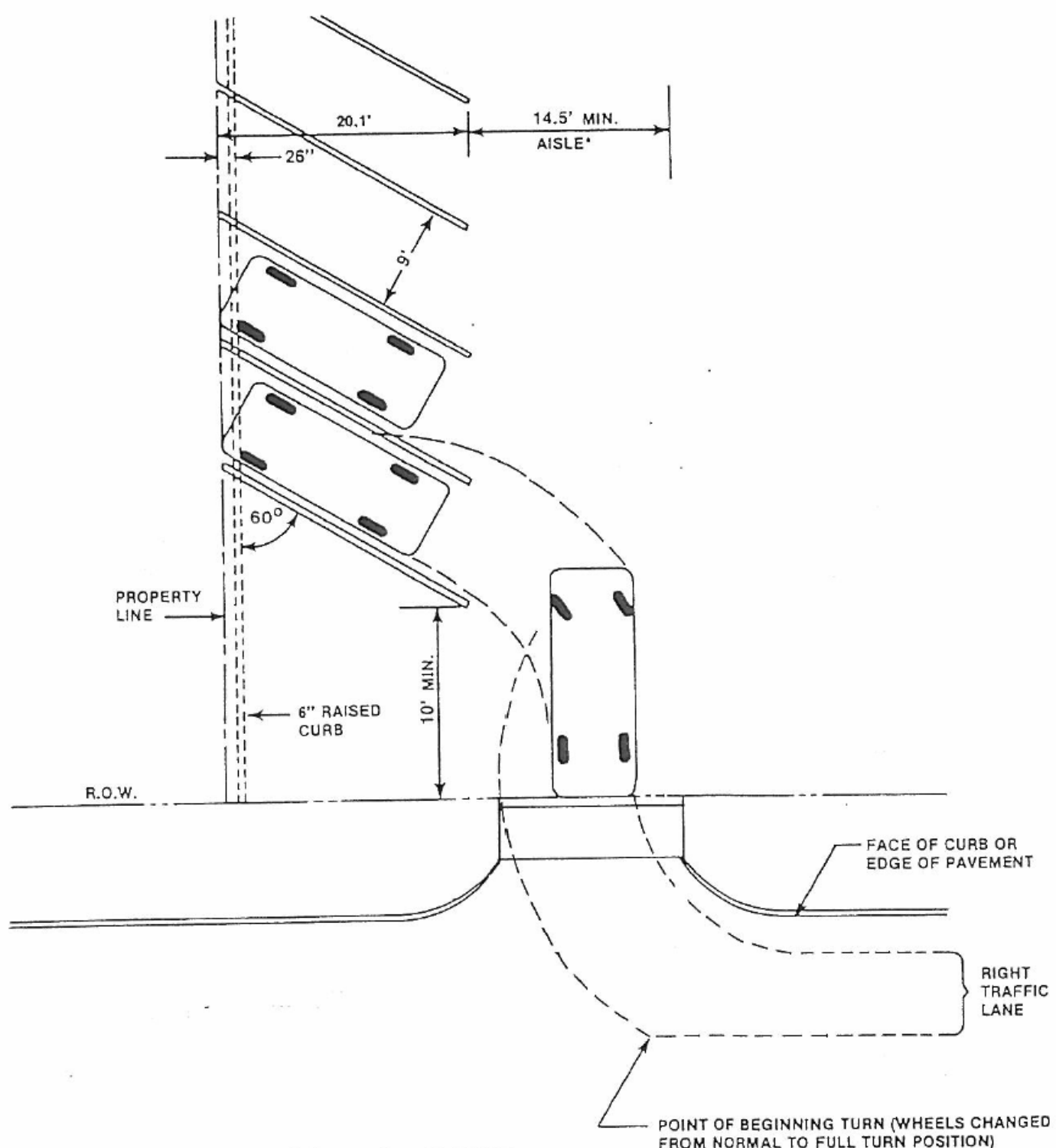


* Aisle width shown is the minimum for one-way traffic. For ease of operation and for long rows of parking, widths should be increased approximately 5'

For two-way traffic, the aisle width must be increased to 22.0' (Clear distance of 24.3')

60°

FIGURE 2.10: 60° PARKING (SINGLE ROW)

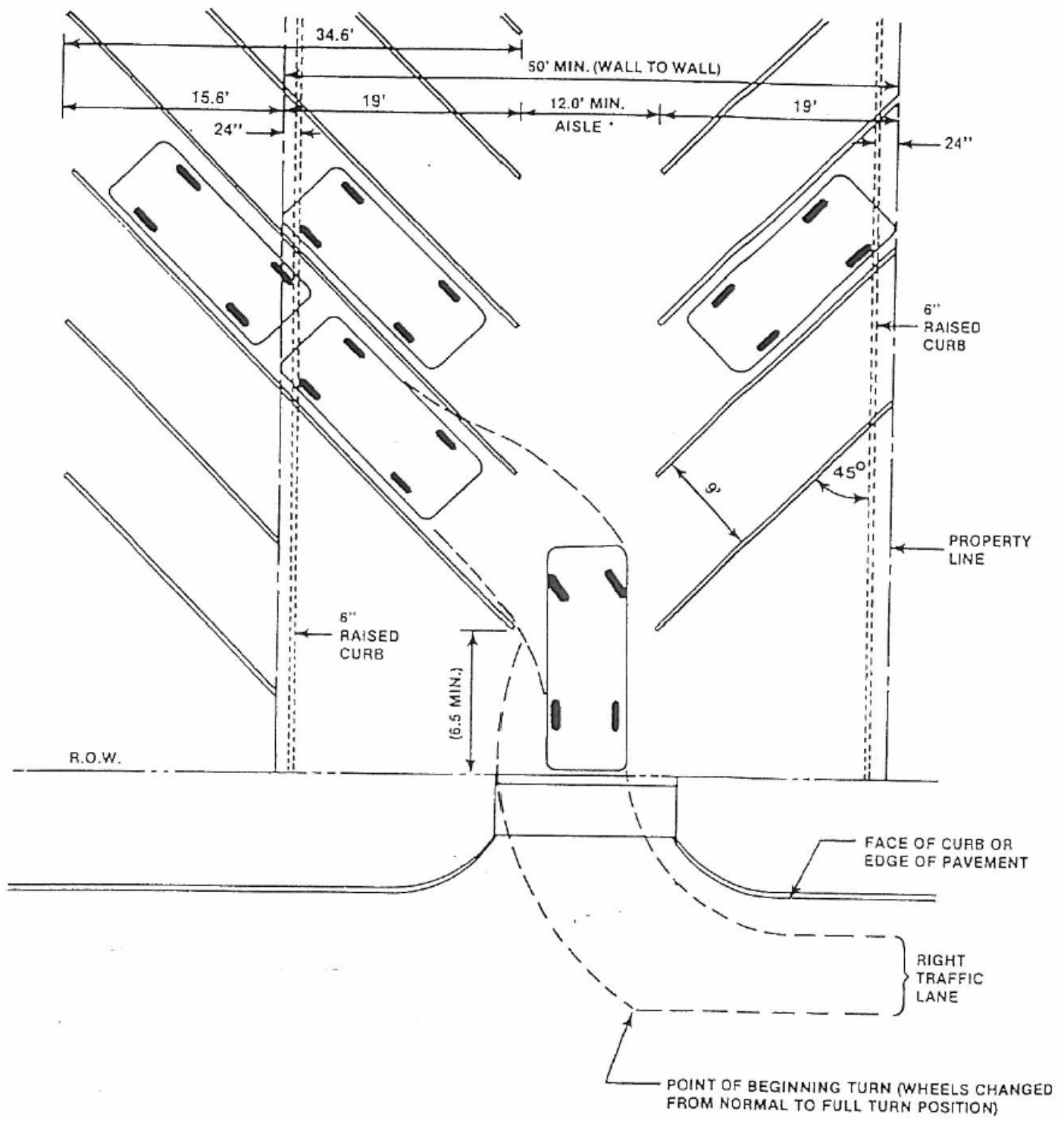


* Aisle width shown is the minimum for one-way traffic. For ease of operation and for long rows of parking, widths should be increased approximately 5'

For two-way traffic, the aisle width must be increased to 22.0' (Clear distance of 24.3')

60°

FIGURE 2.11: 45° PARKING (DOUBLE ROW)

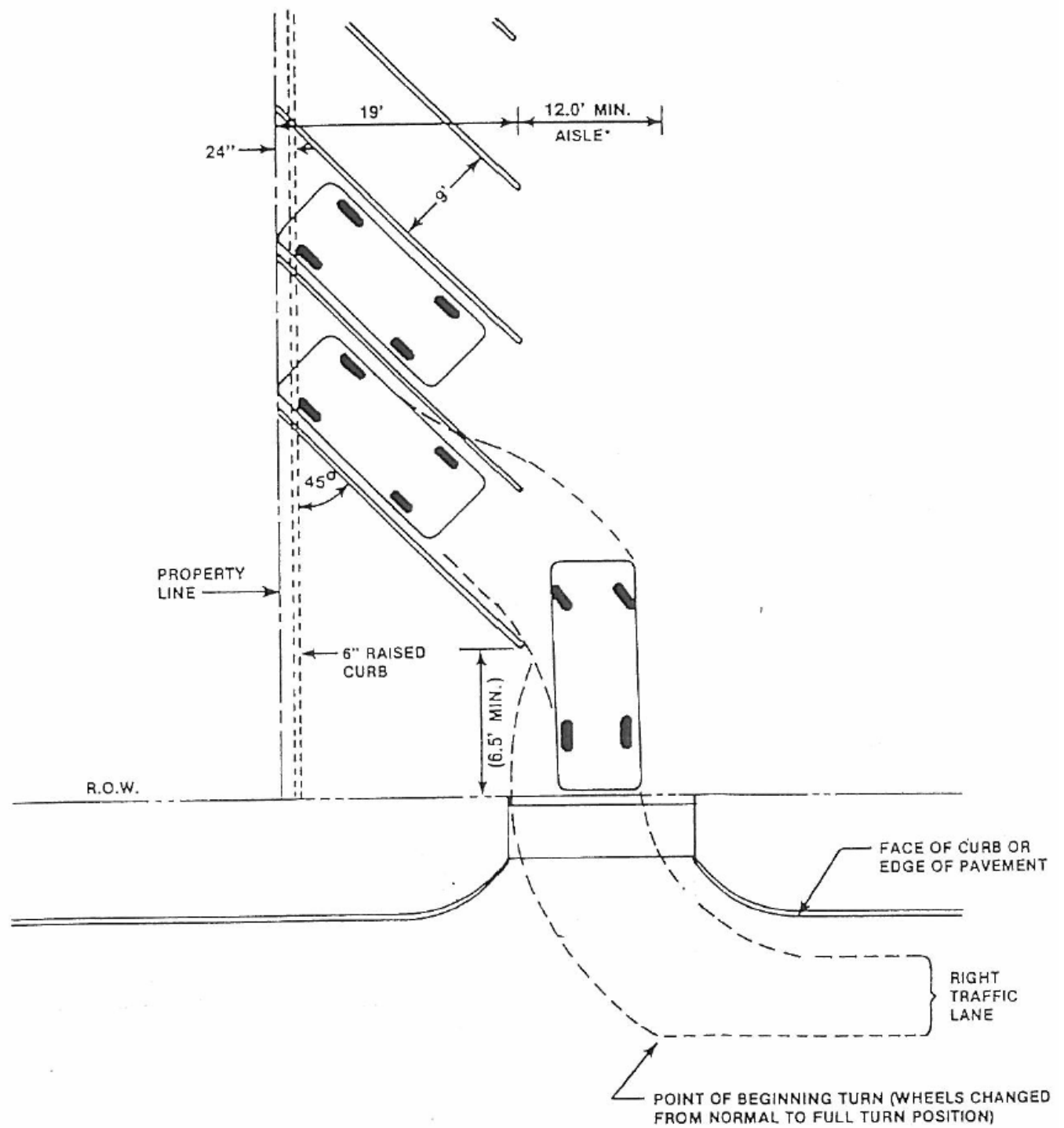


* Aisle width shown is the minimum for one-way traffic. For ease of operation and for long rows of parking, width should be increased approximately 5'

For two-way traffic the aisle width must be increased to 21' (Clear distance of 24.2')

45°

FIGURE 2.12: 45° PARKING (SINGLE ROW)

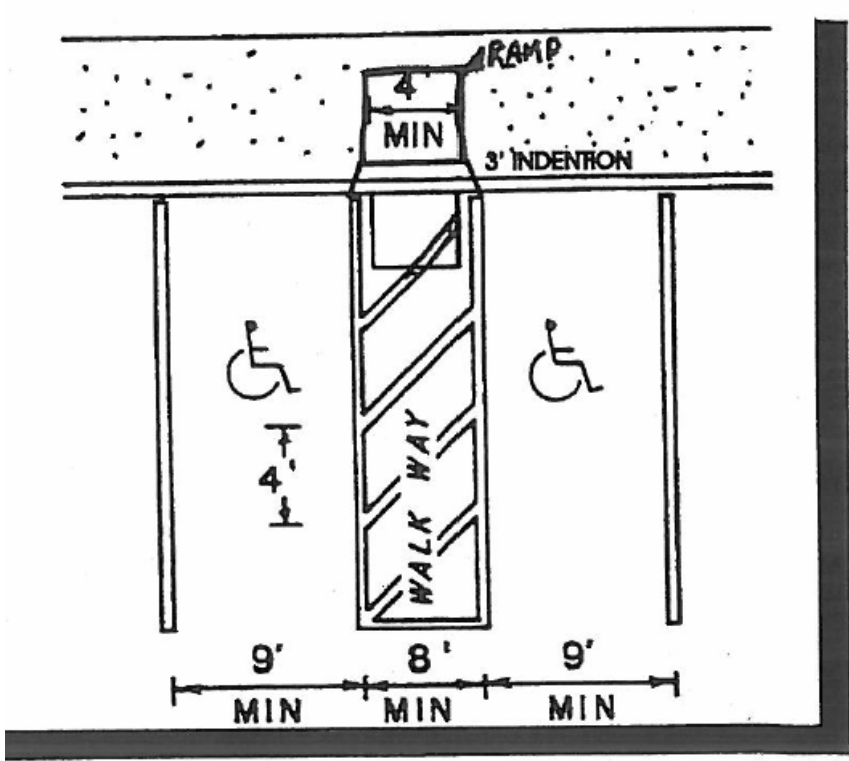


* Aisle width shown is the minimum for one-way traffic. For ease of operation and for long rows of parking, widths should be increased approximately 5'

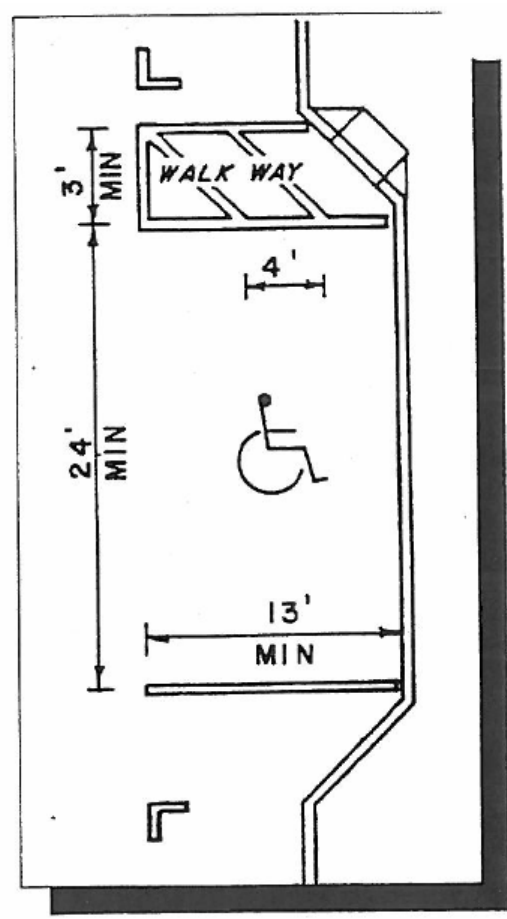
For two-way traffic, the aisle width must be increased to 21.0' (Clear distance of 24.2')

45°

FIGURE 2.13: HANDICAP SPACE PARKING



HANDICAPPED PARKING STANDARDS
Head-in or Angle parking Dimensions



HANDICAPPED PARKING STANDARDS
Parallel parking Dimensions



(D) Paving Standards.

- (1) Unless otherwise approved by the City Council or as specified in these standards, all parking lots, loading areas, and storage areas shall be paved with steel reinforced concrete and designed according to City standards and specifications. The parking spaces must be clearly marked by approved paint, buttons or other material.
 - (2) All driveway approaches shall be constructed of steel reinforced concrete in the same strength, thickness, and reinforcing as the adjacent street and shall be curbed per City standards.
 - (3) All parking lot pavement and drive aisles shall be steel reinforced concrete except for existing asphalt parking lots being rehabilitated. A steel reinforced concrete or asphalt pavement (*rehabilitated parking lots*) design shall be provided to the City Engineer for review and approval.
 - (4) Industrial and commercial parking lot pavement shall be steel reinforced concrete and designed by a Professional Engineer. Pavement design shall be submitted to the City for approval.
 - (5) The pavement within designated or non-designated loading and storage areas shall be designed and constructed to carry the additional loading of merchandise, goods, sanitation pick-up, etc., in order to prevent any unnecessary failure in the pavement itself. The pavement design shall be included in the engineering construction plans and specifications and submitted to the City Engineer for approval. The pavement design shall be designed by a Geotechnical Engineer constructed of steel reinforced concrete.
 - (6) Fire lane shall have a maximum running slope of ten (10) percent and a cross slope of five (5) percent. A vertical curve is required for grade breaks greater than one (1) percent.
 - (7) All proposed paving connections to existing concrete paving require a longitudinal butt joint connection.
- (E) If a portion of an existing street is removed for construction, except for a proposed driveway connection, at a minimum the entire concrete panel must be removed and replaced with the same strength steel reinforced concrete and one (1) inch thicker than the existing thickness. Additional roadway panels may be required to be removed and replaced due to condition and ability to connect to.
- (F) All entrances or exits in a parking lot shall have a minimum curb return radius of 30-feet from the beginning point of any corner radius.
- (G) All entrances or exits in a parking lot shall be a minimum of 24-feet and a maximum of 45-feet in width, unless one (1) way, in which case they shall both be a minimum of 12-feet, or as approved by the City Council.
- (H) No parking areas or parking spaces shall be allowed to pave over or utilize public right-of-way, with the exception of approved entrances and exits, unless the City Council grants an exception and/or a facilities agreement.
- (I) All multi-family and commercial parking areas and parking spaces shall be designed and constructed to protect adjacent residences from the direct glare of headlights of vehicles using the parking area.
- (J) No City street curb, alley, or street pavement may be cut without a permit from the City.
- (K) All fire lanes are to be maintained, repaired, and replaced by the property owner.
- (L) Rollover/mountable curbs are not allowed on any roadway.
- (M) If required, the contractor shall submit a traffic control design to the City of Rockwall Engineering Department prepared, signed, and sealed by a registered professional engineer prior to beginning of construction. The contractor shall provide signs and barricades in construction areas and comply with the Texas Department of Transportation standard of work zone traffic control. Employees exposed to public vehicular traffic, shall be provided with and wear warning vest or other suitable garments marked with or made of reflective or high visibility material. The contractor shall provide flagman when working inside an active street right-of-way where necessary.

SECTION 2.21 | TRAFFIC IMPACT ANALYSIS (TIA) AND MITIGATION

SUBSECTION 2.21.01 | PURPOSE

The purpose of a Traffic Impact Analysis (TIA) is to assess the effects of specific development activity on the existing and planned thoroughfare system. Development activity may include, but is not limited to, rezoning, preliminary site plans, site plans, preliminary plats, driveway permits, Certificates of Occupancy (CO), and Master Thoroughfare Plan amendments.



SUBSECTION 2.21.02 | DETERMINATION OF APPLICABILITY

The need for a TIA shall be determined by the City based upon the results and recommendation from a pre-development meeting, the Planning and Zoning Commission, or the City Council. It shall be the responsibility of the applicant to demonstrate that a TIA may not be required. If a TIA is required, the level of effort for a TIA submission shall be determined based on the criteria set forth in [TABLE 2.10](#).

SUBSECTION 2.21.03 | APPLICABILITY OF TIA REQUIREMENTS

- (A) Zoning, Site Plan and Platting. These TIA requirements shall apply to all requests for land use changes which will establish a land use that is deemed to be more intense than the land use depicted on the Land Use Plan contained within the Comprehensive Plan for a particular property. Applicable requests will also include zoning, site plan, and platting cases, Master Thoroughfare Plan amendments, and/or where deemed necessary by the City Engineer, Director of Planning and Zoning, the Planning and Zoning Commission, or the City Council. Special circumstances -- *including but not limited to development with no case history* -- may also require a TIA.
- (B) Development. These TIA requirements shall apply to all development requests for land uses -- *except single-family residential* --, which will generate over 100 total trips during the AM or PM peak hour. Applicable development requests include all development related applications. Special cases, in which site generated peak hour trip activity is different from that of the adjacent street (weekdays 7:00 AM - 9:00 AM and 4:00 PM - 6:00 PM), may require an additional separate analysis. Such circumstances may include, but are not limited to, the establishment of commercial/retail, entertainment or institutional developments or activity. The TIA requirement may be waived for a development if a TIA was performed previously with the zoning request and the conditions listed in the report are still current.
- (C) Single-Family Residential Exception. A TIA for single-family residential development will not be required if the development contains fewer than six (6) dwelling units unless special circumstances exist, as determined by the City Engineer and/or Director of Planning and Zoning. These special circumstances may include, but are not limited to, impacts to other residential developments from cut-through traffic, inadequate site accessibility, the construction or delay of construction of a thoroughfare prior to or after the anticipated date of construction resulting from a proposed development, or the street or access system not being anticipated to accommodate the expected traffic generation.
- (D) Depending upon the specific site characteristics of the proposed development, one (1) or more of the following elements may also be required as part of the TIA: [1] an accident analysis, [2] sight distance analysis, [3] traffic simulation, [4] traffic signal warrant analysis, [5] queuing analysis, [6] right/left-turn lane analysis, [7] access spacing analysis, [8] link capacity analysis, and/or traffic [9] circulation plan.



TABLE 2.10: CRITERIA FOR DETERMINING TIA STUDY REQUIREMENTS

ANALYSIS CATEGORY	CRITERIA	TIA ANALYSIS PERIODS ¹	STUDY AREA ⁴
I	PROJECTED SITE GENERATED ADT OF 750	(1) EXISTING YEAR (2) OPENING YEAR ²	(1) ALL DRIVEWAY ACCESS POINTS, ADJACENT ROADWAYS, AND MAJOR INTERSECTIONS (2) ALL SIGNALIZED INTERSECTIONS ON EACH STREET SERVING THE SITE WITHIN ¼ MILE OF THE SITE BOUNDARY
	OR		
	PROJECTED SITE GENERATED PEAK HOUR TRIPS OF 100 PER HOUR		
II	AND	(1) EXISTING YEAR (2) OPENING YEAR ³ (3) FIVE YEARS AFTER COMPLETION	(1) ALL DRIVEWAY ACCESS POINTS, ADJACENT ROADWAYS, AND MAJOR INTERSECTIONS (2) ALL SIGNALIZED INTERSECTIONS AND MAJOR UNSIGNALIZED INTERSECTIONS ON EACH STREET SERVING THE SITE WITHIN ½ MILE OF THE SITE BOUNDARY
	PROJECTED SITE GENERATED ADT OF 751-2,000		
	PROJECTED SITE GENERATED PEAK HOUR TRIPS OF 101-250 PER HOUR OR INSTALLATION		
III	OR	(1) EXISTING YEAR (2) OPENING YEAR ³ (3) FIVE YEARS AFTER COMPLETION	(1) ALL DRIVEWAY ACCESS POINTS, ADJACENT ROADWAYS, AND MAJOR INTERSECTIONS (2) ALL SIGNALIZED INTERSECTIONS AND MAJOR UNSIGNALIZED INTERSECTIONS ON EACH STREET SERVING THE SITE WITHIN 1 MILE OF THE SITE BOUNDARY
	PROJECTED SITE GENERATED ADT EXCEEDS 2,000		
	PROJECTED SITE GENERATED PEAK HOUR TRIPS EXCEEDS 250 PER HOUR		
	INSTALLATION OR MODIFICATION OF TWO OR MORE TRAFFIC SIGNALS, ADDITION OF TRAVEL LANES, OR MODIFICATION OF INTERCHANGE PROPOSED, REGARDLESS OF PROJECT SIZE		

NOTES:

- ¹: ANALYSIS PERIODS SHALL INCLUDE BUILD AND NO-BUILD SCENARIOS. ASSUME FULL OCCUPANCY FOR EACH PHASE AS THEY OPEN.
- ²: ASSUME FULL BUILD-OUT AND OCCUPANCY.
- ³: ADDITIONAL ANALYSIS PERIODS RELATING TO COMPLETION OF INTERIM PHASES MAY BE CONSIDERED FOR PHASED DEVELOPMENTS TO SUPPORT DELAYING CONSTRUCTION OF PLANNED MITIGATIONS UNTIL FUTURE PHASES ARE CONSTRUCTED. ASSUME FULL BUILD-OUT AND OCCUPANCY OF EACH PARTICULAR PHASE
- ⁴: THE CITY MAY ENLARGE OR REDUCE THE STUDY AREA DEPENDING ON THE PROJECT. THIS IS MEANT TO PROVIDE GENERAL GUIDANCE TO THE DEVELOPER. LAND USES WITHIN THE STUDY AREA SHOULD INCLUDE RECENTLY APPROVED OR PENDING DEVELOPMENT ADJACENT TO THE SITE.



SUBSECTION 2.21.04 | REQUIREMENTS FOR TIA UPDATES

A TIA shall be updated when the time or circumstances of the original study fall within the parameters presented in [TABLE 2.11](#). The applicant is responsible for the preparation and submittal of appropriate documentation in order for City staff to process the zoning or development application. A TIA for site development requests must be updated if two (2) years have passed since the original submittal and/or approval, or if existing or assumed conditions have changed within the defined study area.

TABLE 2.11: CRITERIA FOR DETERMINING TIA UPDATE REQUIREMENTS

ORIGINAL TIA REPORT WAS BASED ON ...	CHANGES TO THE ORIGINALLY PROPOSED DEVELOPMENT ...	
	ACCESS CHANGED ¹ OR TRIP GENERATION INCREASED BY MORE THAN 10%	ACCESS NOT CHANGED AND TRIP GENERATION INCREASED BY LESS THAN 10%
ZONING; OR PRELIMINARY SITE PLAN OR SITE PLAN THAT IS LESS THAN TWO (2) YEARS OLD	LETTER AMENDMENT REQUIRED: IDENTIFY AND REPORT ONLY ANALYSIS CONDITIONS THAT HAVE CHANGED	LETTER DOCUMENTING CHANGE (NO ANALYSIS IS REQUIRED)
PRELIMINARY SITE PLAN OR SITE PLAN THAT IS MORE THAN TWO (2) YEARS OLD	PREPARE NEW STUDY. MUST MEET ALL CURRENT TIA REQUIREMENTS	PREPARE NEW STUDY. MUST MEET ALL CURRENT TIA REQUIREMENTS.

NOTES:

¹: CHANGED ACCESS INCLUDES PROPOSED NEW ACCESS OR REFINEMENT OF GENERAL ACCESS LOCATIONS NOT SPECIFICALLY ADDRESSED IN ORIGINAL PROPOSED DEVELOPMENT.

SUBSECTION 2.21.05 | FUNDING RESOURCES

- (A) The Developer will be responsible for all costs related to the design, construction and implementation of all recommended mitigations that have been accepted and deemed required by the City Engineer, not otherwise funded by other government agencies. The City Engineer may require consideration of alternative mitigation options that may not have been included in the TIA.
- (B) The TIA may take into account the city/state/county approved traffic improvements with dedicated funding. Prior to issuance of a Certificate of Occupancy (CO) permit or Engineering Acceptance Letter, the Developer shall complete any required traffic improvements approved by the City as a result of the development which have not been funded or otherwise completed by government agencies. The City may approve delaying the construction of required improvements based on the development's phasing.

SUBSECTION 2.21.06 | RESPONSIBILITY OF TIA PREPARATION AND REVIEW

- (A) A TIA shall be prepared in accordance with all of the guidelines in this section and submitted in accordance with the Development Review Schedule set by the City. The responsibility for TIA preparation shall rest with the applicant and must be performed by a Professional Engineer (PE) licensed in the State of Texas with experience in traffic and transportation engineering. The final TIA report must be signed and sealed by the PE responsible for the analysis to be considered for review by the City. Application and review fees are due at the time of each submittal. City staff and consultants shall serve primarily in a review and advisory capacity and will only provide data to the applicant when available.
- (B) It shall be the responsibility of the applicant to submit one (1) printed and one (1) electronic PDF of the TIA reports and executive summaries prior to the zoning and/or development request submission. The proper number of reports, the timing for submission, and the review of these reports shall be based on standard City development review procedures. Incomplete TIAs or failure to submit a TIA prior to the submission shall delay consideration of zoning and development requests. Should it be determined during the review of any zoning and/or development plans that a TIA is required, consideration shall be deferred until the applicant submits a completed TIA, the TIA has been reviewed, and the City has approved the TIA.
- (C) The City and/or the City's consultant shall review the TIA and provide comments to the applicant. It shall be the responsibility of the applicant to submit one (1) printed and one (1) electronic PDF of the finalized TIA reports and executive summaries once all review



comments have been addressed. Electronic submission may substitute for the required hard copy only with written authorization of the City Engineer.

SUBSECTION 2.21.07 | TIA STANDARDS

- (A) Capacity Analysis. A capacity analysis for appropriate peak periods shall be conducted for all driveways, intersections, and streets identified during the pre-development meeting. Capacity calculations shall include both near term and long-term projections. Capacity calculations must be based on the operational analysis technique contained in the most current edition of the Highway Capacity Manual (HCM). Alternative calculations must be approved by the City Engineer.
- (B) Design Level of Service. The minimum acceptable level of service (LOS) within the City shall be defined as LOS 'C' in the peak hour for all critical movements/intersections and links. All development impacts on both thoroughfare and intersection operations must be measured against this standard.
- (C) Trip Generation Resources. The City's standard for trip generation rates for various land use categories shall be those found in the latest edition of Trip Generation Manual published by the Institute of Transportation Engineers (ITE) or other published or recognized sources applicable to the region. Alternate trip generation rates may be accepted on a *case-by-case* basis if the applicant can provide current supporting data substantiating that their development significantly differs from the ITE rates. The City and/or City's consultant must approve alternative trip generation rates in writing in advance of the TIA submission.
- (D) Trip Reductions. Trip reductions for pass-by trips and mixed-use developments will be permitted, subject to analytical support provided by the applicant and approved by the City and/or the City's consultant on a *case-by-case* basis. Assumptions relative to automobile occupancy, transit mode share, or percentage of daily traffic to occur in the peak hour must be documented and will be considered subject to analytical support provided by the applicant.
- (E) Study Horizon Years. The TIA must evaluate the impact of the proposed development on both existing traffic conditions and future traffic conditions for the horizon year(s) as specified in [TABLE 2.10](#). Horizon year(s) are defined as any analysis year beyond the existing year. These applications should take into account the Master Thoroughfare Plan or pending amendments.
- (F) Traffic Data Collection. Appropriate traffic counts shall be collected. These shall include weekday/weekend daily and peak-hour traffic counts at all locations as directed by the City, weekday counts shall be taken on a typical Tuesday, Wednesday, or Thursday unless other days are required/approved. Peak-hour intersection turning movement counts shall include 15-minute increments. Traffic counts used in a TIA shall be less than one (1) year old and should occur outside of holiday time periods and when public schools are in session unless otherwise approve by the City Engineer. The City Engineer may request additional counts based on specific conditions. The existing counts shall be presented in figures/exhibits for each intersection counted with original data sheets provided in the *Appendix*.
- (G) Design Standards. The TIA must evaluate site access characteristics including, access spacing requirements, left/right-turn lane requirements, visibility and sight distance requirements, as needed, relative to City of Rockwall and Texas Department of Transportation (TXDOT) requirements, as appropriate. Any TIA with access to a TXDOT facility must meet TXDOT minimum standards and requirements.
- (H) Traffic Signal Timing and Phasing. The analysis of all existing traffic signals shall be based on the most current signal timing plans, if available. When signal timing plans are not available the assumed signal timing shall be based on field observations, actuation/detection capabilities and corridor coordination and offsets.

SUBSECTION 2.21.08 | TIA METHODOLOGY

- (A) Site Location/Study Area. A brief description of the size, general features, and location of the site, including a map of the site in relation to the study area and surrounding vicinity. The description should include all existing and proposed traffic control devices within the study area, posted speed limits on all existing, adjoining or impacted roads, pedestrian facilities, intersection layout, and lane usages. If applicable to the project, information may also include lane widths and right of way widths for all existing roads impacted by the development. Photographs may be included to document existing transportation conditions.
- (B) Existing Zoning. A description of the existing zoning for the site and adjacent property, including land area by zoning classification and density by Floor Area Ration (FAR), square footage, number of hotel rooms, and dwelling units, etc. (*as applicable*).
- (C) Existing Development. A description of any existing development on the site and adjacent to the site. If applicable, include impacts to existing development.



- (D) Site Access. A description or illustration of the existing and proposed site access points and associated turn lanes and/or median openings, including cross-section, lane assignment, turn restrictions, throat width, curb radii, turn-lane requirements, sight distance calculations and access spacing conditions.
- (E) Proposed Zoning/Site Development. A description of the proposed zoning/development for the site, including land area by zoning classification and density by FAR, square footage, number of hotel rooms, and dwelling units, etc. (*as applicable*); identify recently approved or pending land uses within the area.
- (F) Thoroughfare System. A description and/or map of existing planned/proposed thoroughfares and traffic signals for horizon year(s) within the study area.
- (G) Model Assumptions and Design Factors. The roadway network must be modeled as accurately as possible using field data measurements, industry standards and engineering judgement. This includes, but is not limited to, intersection/roadway segment geometries, traffic flow characteristics and traffic signal phasing and operations.
- (H) Existing Traffic Volumes. Recent traffic counts for the study area including pedestrian and bike volumes where appropriate.
- (I) Projected Traffic Volumes. Background traffic projections within the study area for the horizon year(s). Background traffic projections shall include the growth in regional traffic as well as the traffic that will be generated by the undeveloped land adjacent to the site and/or within the study area that is likely to develop by the horizon year(s), as determined by the City Engineer and/or City's Consultant. These traffic projections shall be based upon recently approved development applications, the current zoning on the undeveloped land, the City's Future Land Use Plan or the requested future land use of the development.
- (J) Density of Development. A table displaying the amount of development assumed for existing zoning and/or the proposed development (*using gross floor area, dwelling units, occupied beds, etc., as required by the trip generation methodology*).
- (K) Existing Site Trip Generation. A table displaying trip generation rates and total trips generated by land use category for the appropriate peak hours and on a daily basis for each phase and full development based on existing zoning (*if applicable*), and including all appropriate trip reductions (*as approved by the City and/or City's consultant*).
- (L) Proposed Site Trip Generation. A table displaying trip generation rates and total trips generated by land use category for the appropriate peak hours and on a daily basis for each phase and full development based on existing zoning (*if applicable*) and/or proposed development, and including all appropriate trip reductions (*as approved by the City and/or City's consultant*).
- (M) Net Change in Trip Generation (For Rezoning Cases). Proposed trip generation minus existing trip generation (*if applicable*); the net increase in trips to be added to base volumes for the design year.
- (N) Trip Distribution and Traffic Assignment. Tables and/or figures/exhibits of trips generated by the proposed development (*or net change in trips, if applicable*) added to the existing and projected volumes, as appropriate, with distribution and assignment assumptions, unless computer modeling has been performed. Each step of the procedure should be clearly shown in enough detail so that all calculations can be verified.
- (O) Level of Service Evaluations. Capacity analyses for appropriate peak hours for both existing conditions and horizon year(s) projections for intersections, thoroughfare links, median openings and turn lanes associated with the site, as applicable. Results of the capacity analyses must be summarized in exhibits and/or tables for each analysis period and scenario providing the level of service designation and average control delay for each intersection overall and for each major lane group as applicable. Volume-to-capacity ratio and 95th percentile queues should be provided for all movements found to operate at a deficient level of service.
- (P) Intersection Control Evaluations. The need for new intersection controls (*i.e. traffic signals, all-way stop control*) shall be based on warrants and include their impact on the performance of the transportation system.
- (Q) Evaluation of Proposed/Necessary Mitigation. Capacity analyses for appropriate peak hours for intersections, thoroughfare links, median openings and turn lanes associated with the site under proposed/necessary traffic mitigation measures.
- (R) Conclusions. Identification of all thoroughfares, driveways, intersections, and individual movements that exceed LOS 'C' or any operational problems likely to occur.
- (S) Recommendations. Identify and summarize any necessary roadway improvements and time frames for improvements to occur. Include any intersections, turn lanes, etc. which will not be improved to LOS 'C' or better and support for why improvements are not provided. Mitigation measures should be consistent with Traffic Impact Mitigation section below.
- (T) Other Information Required for Proper Review. As requested by the City Engineer and/or the City's consultant.



SUBSECTION 2.21.09 | TIA REPORT FORMAT

- (A) The TIA report must be prepared on 8½-inch by 11-inch sheets of paper; however, it may contain figures/exhibits on larger sheets, provided they are folded to this size. All text and map products shall be computer-based and provided in both published format and computer file format (PDF). In addition, all electronic files used as part of the traffic analysis (*i.e.*, *Synchro*, *HCS*, *Passer II/III*, *CORSIM*, *VISSIM*, *ARCADY*, *etc.*) shall be provided.
- (B) Traffic volumes must be illustrated on prepared figures/exhibits depicting appropriate movements at each study intersection. This includes, existing and horizon year(s) (*i.e.* *projected background traffic volumes*, *site generated traffic volumes*, *background and site generated*).
- (C) The sections of the TIA report should be categorized according to the outline shown below:

- I. Executive Summary
- II. Introduction
 - (a) Purpose & Overview of Study
- III. Existing Conditions
 - (a) Site Location/Study Area
 - (b) Existing Zoning/Development
 - (c) Study roads/streets and intersections
 - (d) Traffic Volumes
- IV. Proposed Development
 - (a) Zoning, phasing, densities, etc.
 - (b) Site Trip Generation
 - (c) Net Change in Trip Generation (as applicable)
 - (d) Trip Distribution and Traffic Assignment
- V. Projected Volumes
 - (a) Background Volumes
 - (b) Background + Site Volumes
- VI. Analysis
 - (a) Level of Service Evaluations
 - (b) Warrant studies (as applicable)
 - (c) Link Capacity (as applicable)
 - (d) Sight Distance (as applicable)
 - (e) Access Spacing (as applicable)
 - (f) Left-turn/Right-turn Lanes (as applicable)
 - (g) Accident (as applicable)
 - (h) Queuing (as applicable)
 - (i) Mitigations
- VII. Summary/Conclusions
- VIII. Recommendations
- IX. Appendices

SUBSECTION 2.21.10 | TRAFFIC IMPACT MITIGATION

- (A) Mitigation of traffic impacts shall be required if the proposed development would cause a facility or traffic movement (*if applicable*) to exceed LOS 'C', or where it already exceeds LOS 'C' and the development would contribute five (5) percent or more of the total traffic during any projected horizon year. If mitigation is required, the applicant must only mitigate the impact of the proposed development, and would not be responsible for alleviating any deficiencies in the thoroughfare system that may occur without the proposed development.



- (B) Mitigation is not required if it can be shown that the traffic impacts of the project are fully mitigated ten (10) years after the final opening with any improvements that are already programmed to be implemented within five (5) years of the initial opening.

SUBSECTION 2.21.11 | ADMINISTRATION OF THE TIA

Based on the results of the TIA and actions recommended by the City staff, the City's consultant, the Planning & Zoning Commission and/or the City Council, as appropriate, the City shall take one or more of the following actions:

- (A) Approve the zoning or development request, if the project has been determined to have no significant impact or where the impacts can be adequately mitigated;
- (B) Approve the development request, subject to a phasing plan;
- (C) Recommend study of the City's Master Thoroughfare Plan to determine amendments required to increase capacity;
- (D) Recommend amendment of the Capital Improvement Program (CIP) to expedite construction of needed improvements; or
- (E) Deny the zoning or development request, where the impacts cannot be adequately mitigated.

SUBSECTION 2.21.12 | COST OF TIA REVIEW

The City may utilize an engineering consulting firm to assist City staff in the review of a TIA. The cost of this consultant review shall be borne by the developer, engineer, or property owner submitting the TIA. The City shall first obtain a cost estimate from the engineering consultant for the TIA review at time of the initial TIA submittal. Before the review begins, the developer, engineer, or property owner submitting the TIA shall deposit with the City funds equal to the cost estimate. The City shall disburse the funds to the consulting engineer as the review progresses. Should the consultant fees exceed the initial estimate, the developer, engineer or property owner submitting the TIA shall be informed of the shortage and a new estimate made by the consultant engineer to complete the TIA review. Additional funds will then be deposited with the City by the developer, engineer or property owner submitting the TIA to cover the estimated shortfall before the review of the study resumes. Any unused funds to be reimbursed to the developer, engineer or property owner submitting the TIA. If review process is performed by City staff, the City will submit a cost estimate for TIA review at time of the initial engineering submittal.



CHAPTER 3 | STORM DRAINAGE FACILITIES

SECTION 3.01 | INTRODUCTION

Drainage facilities shall be designed and constructed at such locations and of such size and dimensions to adequately serve the development and the contributing drainage area upstream of the development. The developer shall provide all the necessary easements and rights-of-way required for drainage structures including, but not limited to, storm drains, open channels (*lined or unlined*), flood detention facilities, and storm water diversion or containment facilities (*such as levees, dams, berms and stream diversions*). The minimum easement widths for drainage facilities shall be per [TABLE 3.1](#). Wider easements may be required by the City Engineer. For detention pond easements, public water lines and wastewater lines will not be allowed in the easement. A variance to allow retaining walls in a detention easement will require approval by the Planning and Zoning Commission with appeals being heard by the City Council. For new single-family residential subdivisions storm sewer infrastructure, detention ponds, floodplain, erosion hazard setback, and drainage easements shall not be located on a residential lot, and must be fully within a Homeowner's Association (HOA) maintained lot.

TABLE 3.1: DRAINAGE EASEMENTS (MINIMUM WIDTHS)

		MINIMUM EASEMENT WIDTH (FEET)
CONDUIT SIZE	LESS THAN 48 - INCH RCP	20
	48-INCH TO 72-INCH RCP	25
	BOX 3-FOOT TO 4-FOOT SPAN, RCB	20
	BOX 5-FOOT TO 8-FOOT SPAN, RCB	25
	BOX 9-FOOT TO 12-FOOT SPAN, RCB	30
DEPTH OF CONDUIT	< 14-FOOT	20
	14-FOOT TO 16-FOOT	25
	17-FOOT TO 20-FOOT	30
	21-FOOT TO 23-FOOT	35
	> 23-FOOT	40
OPEN CHANNEL	15-FOOT WIDER THAN TOP WIDTH OF CHANNEL ON BOTH SIDES	
EMERGENCY OVERFLOW FLUME	20	
CREEKS/STREAM/FLOODPLAINS	REFERENCE SECTION 3.2.16, EROSION HAZARD SETBACK	
DETENTION PONDS	SET AT 100-YEAR FREEBOARD ELEVATION. (REFERENCE SECTION 3.3, MINIMUM FREEBOARD REQUIREMENTS)	

The design flows for the drainage system shall be calculated by the *Rational Method* in accordance with the requirements set forth in this document unless otherwise noted within these *Standards* (*such as where the unit hydrograph methods are required*). Curbs, inlets, manholes, etc. shall be designed and constructed in accordance to the *Standard Details*. Materials and construction procedures shall conform to the requirements of the *Standard Specifications for Construction*.

The developer shall provide plans, specifications, and design calculations for all drainage structures. All open channels shall be designed to prevent erosion ([TABLE 3.12](#)). If an existing open channel is experiencing erosion or velocities are calculated to be erosive, the channel shall be modified to prevent erosion. The City shall specifically approve the type of methods used for prevention of erosion.

The design, size, type and location of all storm drainage facilities shall be subject to the approval of the Engineering Department. The requirements set forth herein are considered minimum requirements. *The developer and their engineers shall bear the total responsibility for the adequacy of design. The approval of the facilities by the City in no way relieves the developer and their engineer of this responsibility.*



The design factors, formulas, graphs and procedures described shall serve as means to prove that adequate conveyance of storm water and adequate flood prevention within the City is being provided. Responsibility for the actual design remains with the developers and design engineer of record. Deviation from the requirements of these standards shall require the approval of the City Engineer.

The City, as a participant in the National Flood Insurance Program (NFIP), must enforce all parts of its adopted Flood Hazard Damage Prevention and Erosion Control Ordinance, as approved by the Federal Emergency Management Agency (FEMA). Therefore, the requirements of that ordinance are adopted and included as a part of the City's *Standards of Design and Construction*.

The developer shall be responsible for the necessary facilities to provide drainage patterns and drainage controls such that properties within the overall watershed, whether upstream or downstream of the development, are not adversely affected by storm drainage from facilities on the development. These are outlined in the [SECTION 3.6, STORM DRAINAGE MANAGEMENT PLAN](#).

The *Storm Drainage Management Plan* provided as part of the final engineering drawings shall address how storm water on the proposed development and affected adjoining properties will be controlled during phased and completed development. Off-site improvements may be required to carry the additional flows caused by the proposed development. If the downstream system is insufficient to carry the proposed flow from the fully developed drainage area without causing potentially increased flood damages, detention will be required to release only the proportionate flow amount capable of being carried in the existing system for the drainage area. One site may not utilize all remaining capacity if undeveloped property part of the drainage area.

Storm drainage released from the site will be discharged to a natural water course or storm sewer system of an adequate size to convey the 100-year storm runoff expected after development.

All storm drainage structures shall be constructed with a minimum of 4,200 PSI concrete in 28-days with a cement content not less than 7.0 sack per cubic yard and no fly ash allowed. All batch designs shall be reviewed and approved by the Engineering Department. All batch designs shall have the current date, project name, and use labeled on each design. Submit batch designs to the Engineering Department a minimum of ten (10) days prior to the projected placement date for review and approval. If pre-cast structures are being utilized, shop drawings must be submitted to the City Engineer for approval along with the batch design which is provided by the manufacturer. All drainage structures shall be double formed. No earth forms will be allowed.

[SECTION 3.02 | STORM DRAINAGE DESIGN CRITERIA](#)

[SUBSECTION 3.02.01 | RATIONAL METHOD](#)

For all drainage areas less than 100-acres, the rational method of computing runoff may be used for design of small drainage facilities (such as storm sewer systems, inlets, street gutter, and small detention facilities). The *Rational Method* is expressed by [EQUATION 3.1](#).

[EQUATION 3.1: RATIONAL METHOD](#)

$$Q = CIA$$

WHERE:

Q = THE STORM FLOW RATE AT A GIVEN POINT (CFS)

C = RUNOFF COEFFICIENT (THE RATIO OF RAINFALL TO PEAK RUNOFF) AS INDICATED IN [TABLE 3.2](#)

I = THE AVERAGE INTENSITY OF RAINFALL, FOR A PERIOD EQUAL TO THE TIME OF FLOW FROM THE FARTHEST POINT OF THE DRAINAGE AREA TO THE POINT OF DESIGN AND IS OBTAINED FROM [FIGURE 3.1](#). (INCHES/HR)

A = THE AREA THAT IS CONTRIBUTING TO THE POINT OF DESIGN (ACRES)

[SUBSECTION 3.02.01.01 | RUNOFF COEFFICIENT \(C\)](#)

For design of proposed drainage facilities using the Rational Method, runoff coefficients shall be based on the future land use. The runoff coefficients for different land uses should be taken from [TABLE 3.2](#). A weighted runoff coefficient shall be used if different land uses are contributing to a discharge design point. Runoff coefficient used for design is based on zoning, not how the area is used (i.e. grassed area in a commercial zoned property will use C=0.9). Higher runoff coefficient may be required by City Engineer during zoning change.



TABLE 3.2: RUNOFF COEFFICIENT FOR TYPES OF LAND USE

TYPE OF AREA OR LAND USE	ADOPTED RUNOFF COEFFICIENT
FLOODPLAIN	0.35
SINGLE FAMILY RESIDENTIAL OR DUPLEX	0.50
SCHOOL	0.70
APARTMENTS	0.75
TOWNHOUSE	0.80
CHURCHES	0.80
INDUSTRIAL	0.90
COMMERCIAL BUSINESS	0.90
MERCANTILE DISTRICT	0.90
RETAIL	0.90
PARKING LOT	0.90
MAJOR AND MINOR ARTERIALS (ROW)	0.90

SUBSECTION 3.02.01.02 | TIME OF CONCENTRATION

The time of concentration is defined as the longest time, without unreasonable delay, that will be required for water to flow from the upper limit of a drainage area to the point of concentration. The time of concentration to any point in a storm drainage system is a combination of the “inlet time” and the time of flow in the storm drain. The inlet time is the period of time required for water to flow over the surface of the ground to the storm drain inlet. The time of concentration for any one design point shall not exceed ten (10) minutes for storm drain designs.

Using the *Rational Method* for small drainage acres under average conditions, the minimum time of concentration from the upstream end of a drainage system will coincide with [TABLE 3.3](#).

TABLE 3.3: MINIMUM INLET TIME OF CONCENTRATION

TYPE OF AREA OR LAND USE	MINIMUM INLET TIME (MINUTES)
FLOODPLAIN	20
SINGLE FAMILY RESIDENTIAL OR DUPLEX	10
SCHOOL	10
APARTMENTS	10
TOWNHOUSE	10
CHURCHES	10
INDUSTRIAL	10
COMMERCIAL BUSINESS	10
MERCANTILE DISTRICT	10
RETAIL	10
PARKING LOT	10
MAJOR AND MINOR ARTERIALS (ROW)	10

Under circumstances which will produce times of concentration in excess of those shown in [TABLE 3.3](#) the following NRCS TR55 methodology shall be used to determine the time of concentration (Tc). This method separates the flow through the drainage area into sheet flow, shallow concentrated flow, and open channel flow. The Tc is the sum of travel times for sheet flow, concentrated shallow flow and open channel flow. The time of concentration flow path and sheet flow path and following calculations shall be shown in the plans.

- (A) *Sheet Flow*. The maximum allowable length for sheet flow shall be no more than 100-feet, if not prior to 100-feet. Guidelines for determining the maximum allowable sheet flow length are provided in *Unit Hydrograph Method* Section. The Tt in minutes for sheet flow is determined using [EQUATION 3.2](#):



EQUATION 3.2: TRAVEL TIME IN MINUTES FOR SHEET FLOW

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5}S^{0.4}}$$

WHERE:

T_t = TRAVEL TIME, (HR)

n = MANNING'S ROUGHNESS COEFFICIENT, ([TABLE 3.4](#))

L = FLOW LENGTH, (FT)

P_2 = 2-YEAR, 24-HOUR RAINFALL, ([TABLE 3.5](#))

S = LAND SLOPE OF HYDRAULIC GRADE LINE (FT/FT)

TABLE 3.4: SHEET FLOW 'n' VALUES

SURFACE DESCRIPTION	n ¹
SMOOTH SURFACES (CONCRETE, ASPHALT, GRAVEL, OR BARE SOIL)	0.011
FALLOW (NO RESIDUE)	0.05
CULTIVATED SOILS:	
RESIDUE COVER LESS THAN 20%	0.06
RESIDUE COVER 20% OR GREATER	0.17
GRASS:	
SHORT PRAIRIE GRASS	0.15
DENSE GRASSES	0.24
BERMUDA GRASS	0.41
RANGE (NATURAL)	0.13
WOODS:	
LIGHT UNDERBRUSH	0.40
DENSE UNDERBRUSH	0.80

NOTES:

¹: THESE "n" VALUES ARE ONLY APPLICABLE FOR FLOW DEPTHS OF APPROXIMATELY 0.1 FOOT OR LESS WHERE SHEET FLOW OCCURS. FOR GREATER FLOW DEPTHS, TYPICALLY CONCENTRATED SHALLOW OVERLAND FLOW OR CHANNEL FLOW OCCURS, WITH LOWER "n" VALUES TYPICAL OF THOSE GENERALLY USED IN OPEN-CHANNEL FLOW.

- (B) Shallow concentrated flow travel time is computed by [EQUATION 3.3](#).

EQUATION 3.3: SHALLOW CONCENTRATED FLOW TRAVEL TIME

$$t_{sc} = \frac{L_{sc}}{3600KS_{sc}^{0.5}}$$

WHERE:

t_{sc} = SHALLOW CONCENTRATED FLOW TIME, (HR)

L_{sc} = SHALLOW CONCENTRATED FLOW LENGTH, (FT)

K = 16.13 FOR UNPAVED SURFACE, 20.32 FOR PAVED SURFACE

S_{sc} = SHALLOW CONCENTRATED FLOW SLOPE, (FT/FT)

- (C) Channel Flow travel time shall be computed by dividing the channel length by the flow rate obtained from Manning's Equation. This is shown by [EQUATION 3.4](#).

EQUATION 3.4: CHANNEL FLOW TRAVEL TIME

$$t_{ch} = \frac{L_{ch}}{3600 \frac{1.49}{n} R^{\frac{2}{3}} S_{ch}^{\frac{1}{2}}}$$

WHERE:

t_{ch} = CHANNEL FLOW TIME, (HR.)

L_{ch} = CHANNEL FLOW LENGTH, (FT)

S_{ch} = CHANNEL FLOW SLOPE, (FT/FT)

n = MANNING'S ROUGHNESS COEFFICIENT (TABLE 3.11)

R = CHANNEL HYDRAULIC RADIUS (FT), $R = \frac{a}{p_w}$

WHERE: A = CROSS SECTIONAL AREA (FT²)

p_w = WETTED PERIMETER (FT)

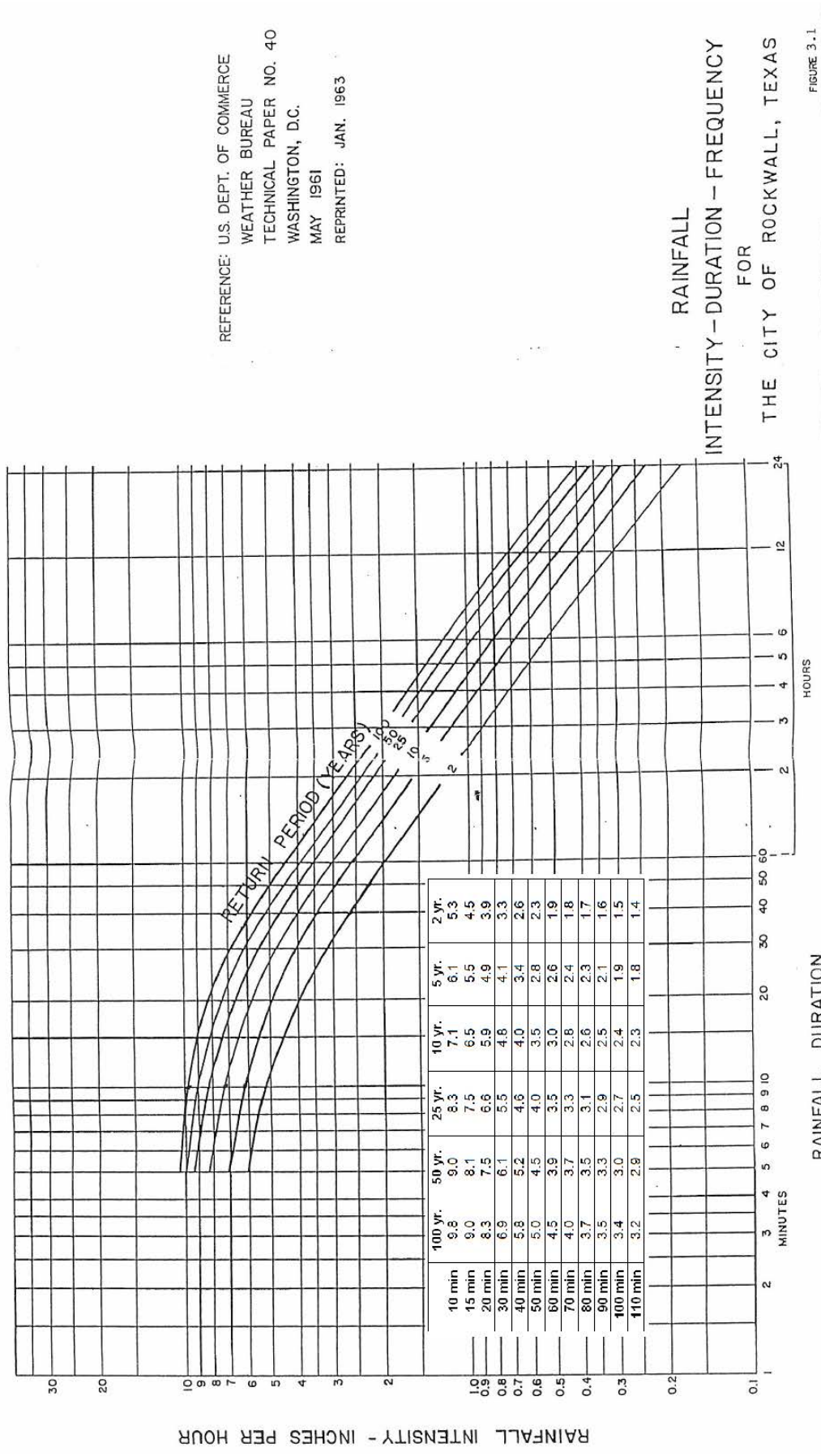
Since urbanization is anticipated in all drainage areas, all drainage improvements shall be designed for the case of fully developed watersheds. It is generally not practical to design improvements to gravity drainage systems in stages to match development, except in the case of unlined ditches, and then, it is essential that ultimate rights-of-way or easements be obtained at the outset. When the watershed in question is basically undeveloped, the developer shall attempt to anticipate future fully developed conditions and storm water drainage patterns and flow characteristics when determining the time of concentration.

SUBSECTION 3.02.01.03 | RAINFALL INTENSITY

The Rainfall intensity shall be taken from [FIGURE 3.1](#) below for the minimum inlet time above.



FIGURE 3.1: IDF CURVE





SUBSECTION 3.02.02 | UNIT HYDROGRAPH METHOD

For contributing drainage areas greater than 100-acres, the unit hydrograph method, shall be used to determine the peak storm discharge quantities. This method shall also be used for verification of adequacy of storm water detention facilities with contributing drainages areas that are equal to or greater than 20-acres.

The City will utilize an engineering consulting firm to assist City staff in the review of a flood and detention studies that utilize the *Unit Hydrograph Method*. The cost of this consultant review shall be borne by the developer, engineer, or property owner submitting the study. Before the review begins, the developer, engineer, or property owner submitting the study shall deposit with the City the consultant's review retainer fee. The City shall disburse the funds to the consulting engineer as the review progresses. Should the consultant fees exceed the initial estimate, the developer, engineer or property owner submitting the study shall be informed of the shortage to complete the study review. Additional funds will then be deposited with the City by the developer, engineer or property owner submitting the study to cover the additional reviews before the review of the study resumes. Any unused funds to be reimbursed to the developer, engineer or property owner submitting the study. If review process is performed by City staff, the City will submit a cost estimate for study review at time of the initial engineering submittal.

The use of a unit hydrograph method shall be based upon standard and accepted engineering principles used in the profession. Acceptable methods include the Natural Resources Conservation Service (NRCS) Technical Release Number 55 (TR-55) for drainage areas 100-acres to 2,000-acres and NRCS's Technical Release Number 20 (TR-20), or the United States Army Corps of Engineers HEC-HMS models for drainage areas 100-acres or more. When the flood study involves a watershed that does not already have any available hydrology model, or in the case where conversion of an existing model to a later version hydrology model is desired, use of the latest version of HEC-HMS model available is required.

When the unit hydrograph method is used, a flood study report shall be prepared and provided to the City Engineer, documenting the methodology, assumptions, derivation of all data used, and results of the study. In order to maintain consistency of all hydrologic studies within the City, the following requirements/conditions shall be used when performing the unit hydrograph method. These requirements/conditions shall be included in the plan set and the flood study report:

- (A) Use the NRCS 24-hour Type III Rainfall Distribution.
- (B) Use wet antecedent soil moisture conditions (AMC-III).
 - (1) Storm runoff/loss parameter calculations, such as NRCS runoff curve numbers (CN). CN values should first be computed based on average antecedent soil moisture conditions (AMC-II) to the nearest 0.1 value (CN₂), based on hydrologic soil group, land cover and treatment practices. Then compute the CN₃ value for AMC-III conditions, to the nearest 0.1 value, using the NRCS conversion equation, [EQUATION 3.5](#).

EQUATION 3.5: NRCS CONVERSION EQUATION

$$CN_3 = \frac{23CN_2}{10 + 0.13CN_2}$$

- (C) Compute both pre-construction conditions (*based on existing off-site watershed conditions*) and post-construction conditions and show comparison in summary table of results.
- (D) In addition to (C), compute projected future fully developed conditions to determine design elevations and erosion protection.
- (E) 24-hour rainfall storm totals, (See [TABLE 3.5](#))
- (F) Time of Concentration (T_c) and Lag Time Calculations, computed to the nearest one (1) minute: The lag time is generally considered to be 0.6 x T_c. The T_c calculations should include sheet flow travel time, shallow concentrated flow travel time, channel flow travel time, and travel time associated with any storm sewer system pipes, street gutter flow, and other travel times. Storm sewer pipe travel time may be derived based on design velocities and pipe flow lengths from available or proposed sewer pipe plans. General guidelines pertaining to NRCS TR-55 methodology for determining flow times for sheet flow, concentrated shallow flow, channel flow, and other flow types are included in the section above. The length of sheet flow used with the unit hydrograph method should be determined based on the following procedures to determine where sheet flow ends:



- (1) Field investigations, where possible, to detect overland drainage patterns and where sheet flow transitions to other types of overland or pipe flow (*such as observation of beginning of overland flow rill erosion patterns or entrance to a storm water inlet*).
- (2) Information from topographic maps, such as deflections in elevation contours indicating where sheet flow ends and shallow concentrated flow or channel flow may begin.
- (3) For areas where previous construction has occurred, review of as-built drainage plans.
- (4) High-resolution photography, which may indicate locations where overland flow begins to form shallow concentrated flow as evidenced by erosion patterns.
- (5) If the length of sheet flow cannot be determined by the above procedures, or if it is determined by the above procedures to be greater than 100-feet, the maximum length to be used shall be the lesser of 100-feet or the length computed by [EQUATION 3.6](#) [as taken from the NRCS National Engineering Handbook, Part 630; Hydrology, Chapter 15]:

EQUATION 3.6: MAXIMUM SHEET FLOW LENGTH

$$L = \frac{100S^{0.5}}{n}$$

WHERE:

L = LIMITING SHEET FLOW LENGTH, (FT)

S = LAND SLOPE OVER LENGTH L, (FT/FT)

n = MANNING'S ROUGHNESS COEFFICIENT OVER LENGTH L

- (G) When using a unit hydrograph procedure, mixing the hydrology modeling data with data based on differing procedures is not acceptable:
 - (1) The time of concentration should be calculated using actual travel time computations. [Do not assume a ten (10) minute inlet time as assumed in Rational Method].
 - (2) Use total storm precipitations (inches) listed in [TABLE 3.5](#) [Do not use rainfall intensities (inches/hour) or derive total storm precipitation based on the Rational Method rainfall intensities].
 - (3) For detention ponds with drainage areas greater than 20-acres, if a proposed pond and dam is first designed based on Modified Rational Method, but is found to be inadequate when checked with the unit hydrograph method, then it should be re-designed to safely pass the maximum required design storm using the unit hydrograph method, without flow passing over the top of the dam (and with required freeboard) and without increased discharges being passed downstream from the project site.
- (H) Drainage areas shall be rounded to the nearest 0.01-acre (0.000001 sq. mi.) in hydrology models, as well as for areas of land use and soil categories when computing composite runoff curve numbers.
- (I) Impervious areas of a drainage basin should be included within the computed composite runoff curve number calculations used in the hydrology models (*instead of using a percentage of impervious area in combination with a weighted curve number in hydrology models that contain that option*).
- (J) Stream reach hydrograph routing computations within hydrology models must be performed using a procedure that accounts for the effects of channel and floodplain storage (*such as Modified Puls Method*), so that impacts on flood discharges due to loss of flood valley storage within the reach, whether caused by currently proposed construction or due to future development, can be determined.
- (K) NRCS runoff curve numbers listed in NRCS's Technical Release 55 (TR-55) for urban and residential districts are generally inappropriate for typical developments in the City of Rockwall, due to the indicated low percentage of impervious areas indicated with the values. Therefore, curve numbers typical of conditions in the City of Rockwall are included in [TABLE 3.6](#). These values should be used in most cases; however, other curve numbers for conditions not listed in [TABLE 3.6](#) may be derived and used if reasonably justified and documented.
- (L) Options available in hydrology models to automatically compute pond spillway discharges, based on spillway or outlet type or configuration, are sometimes limited and often do not adequately represent the designed spillway. In such cases, pond water surface elevations versus discharges may need to be computed by other methods and entered into the hydrology model as user defined paired data.



TABLE 3.5: PRECIPITATION FREQUENCY ESTIMATES IN INCHES FOR ROCKWALL, TEXAS

AVERAGE RECURRENCE INTERVAL IN YEARS	DURATION														
	MINUTES					HOURS					DAYS				
	5	10	15	30	60	2	3	6	12	24	2	3	4	7	10
1	-	-	-	1.23	1.60	1.85	2.03	2.44	2.88	3.30	-	-	-	-	-
2	0.495	0.83	1.06	1.47	1.90	2.31	2.54	3.03	3.52	4.09	4.76	-	5.53	6.35	7.09
5	0.58	0.97	1.24	1.79	2.36	3.08	3.35	4.02	4.77	5.48	6.21	-	7.22	8.39	9.24
10	0.64	1.07	1.37	2.02	2.69	3.62	3.95	4.75	5.64	6.57	7.39	-	8.40	9.83	10.90
25	0.73	1.22	1.57	2.35	3.17	4.25	4.65	5.73	6.59	7.67	8.80	-	10.12	11.56	12.87
50	0.80	1.34	1.72	2.61	3.53	4.75	5.20	6.35	7.50	8.70	9.91	-	11.54	13.25	14.53
100	0.87	1.47	1.88	2.87	3.90	5.25	5.77	7.02	8.50	9.75	11.32	-	13.09	14.60	16.25
500	-	-	-	-	-	-	-	-	-	12.0	-	-	-	-	-
PROBABLE MAXIMUM PRECIPITATION	-	-	-	-	-	-	-	30.8	36.4	41.5	46.80	49.2	-	-	-

REFERENCES: U.S. DEPARTMENT OF COMMERCE/ NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION/ NATIONAL WEATHER SERVICE AND U.S. DEPARTMENT OF THE ARMY:

- (1) TECHNICAL MEMORANDUM NWS HYDRO-35, FIVE- TO 60-MINUTE PRECIPITATION FREQUENCY FOR THE EASTERN AND CENTRAL UNITED STATES, JUNE 1977.
- (2) TECHNICAL PAPER NO. 40, RAINFALL FREQUENCY ATLAS OF THE UNITED STATES FOR DURATIONS FROM 30 MINUTES TO 24 HOURS AND RETURN PERIODS FROM 1 TO 100 YEARS, MAY 1961.
- (3) TECHNICAL PAPER NO. 49, TWO- TO TEN-DAY PRECIPITATION FOR RETURN PERIODS OF 2 TO 100 YEARS IN THE CONTIGUOUS UNITED STATES, 1961.
- (4) HYDROMETEOROLOGICAL REPORT NO. 51, PROBABLE MAXIMUM PRECIPITATION ESTIMATES, UNITED STATES EAST OF THE 105TH MERIDIAN, JUNE 1978.

GENERAL NOTE: FOR RAINFALL DURATIONS OF 5 MINUTES THROUGH 60 MINUTES, RAINFALL FREQUENCY ESTIMATES FOR RETURN PERIODS OF 2 YEARS THROUGH 100 YEARS ARE BASED ON TECHNICAL MEMORANDUM NWS HYDRO-35, WHICH SUPERSEDES VALUES PRESENTED IN TECHNICAL PAPER NO. 40.



TABLE 3.6: NRCS RUNOFF CURVE NUMBERS (AMC_{II}) FOR VARIOUS LAND USE CLASSIFICATIONS

LAND USE CLASSIFICATION	HYDROLOGIC SOIL GROUP			
	A	B	C	D
WOODED (WF)	36	60	73	79
WOODED (WG)	30	55	70	77
OPEN SPACE/RANGE/PASTURE (OSF)	49	69	79	84
OPEN SPACE/RANGE/PASTURE (OSG)	39	61	74	80
CULTIVATED, STRAIGHT ROW (CSR)	72	81	88	91
CULTIVATED, CONTOURED W/O TERRACING (CC)	70	79	84	88
CULTIVATED, CONTOURED AND TERRACED (CCT)	66	74	80	82
RESIDENTIAL (R20) ²	59	74	82	86
RESIDENTIAL (R30) ²	60	75	83	87
RESIDENTIAL (R40) ²	66	78	85	88
RESIDENTIAL (R50) ²	69	80	86	89
RESIDENTIAL (R60) ²	74	83	88	91
RESIDENTIAL (R70) ²	80	87	91	93
BARE SOIL	77	86	91	94
COMMERCIAL/BUSINESS/MULTIFAMILY (CBM)	89	92	94	95
INDUSTRIAL	81	88	91	93
DIRT OR GRAVEL ROADS, R.O.W. (RD)	76	85	89	91
PAVED ROADS, R.O.W. (RP)	83	89	92	93
INUNDATED (W)	100	100	100	100
URBAN HIGH RUNOFF EQUIVALENT ¹	83	89	92	94

NOTES:

¹: URBAN HIGH RUNOFF EQUIVALENT IS USED ONLY FOR PROJECTED FULLY-DEVELOPED WATERSHED CONDITIONS.

²: RESIDENTIAL CODING REFERS TO PERCENT IMPERVIOUS [FOR EXAMPLE, R60 IS FOR 60% IMPERVIOUS] (FOR AREAS THAT FALL BETWEEN LISTED VALUES, PLEASE ROUND TO THE NEAREST CODING).

GENERAL NOTES:

CURVE NUMBERS LISTED ABOVE ARE FOR AVERAGE ANTECEDENT MOISTURE CONDITIONS (AMC II).

SUBSECTION 3.02.03 | DESIGN STORM FREQUENCIES

The design storm frequencies shall be the 5-year, 10-year, 25-year, 50-year, and 100-year storms.

For the Rational Method the relationship between rainfall intensity, duration and frequency is set forth in [FIGURE 3.1](#). These curves have been developed using Technical Paper No. 40, *Rainfall Frequency Atlas of the United States* by the U.S. Weather Bureau.

For the *Unit Hydrograph Method*, the total rainfall for the 24-hour duration storm is used. See [TABLE 3.5](#).

SUBSECTION 3.02.04 | DRAINAGE CALCULATIONS SUMMARY TABLES

The calculations of the storm water discharge shall be provided to the City by the Engineer. As a minimum, the engineering plans shall include:

- (A) Existing and Proposed Drainage Area Calculations Table using [FORM 3.1](#).
- (B) Inlet Calculations Table using [FORM 3.2](#).
- (C) Storm Sewer Calculations Table using [FORM 3.3](#).
- (D) Open Channel Calculations Table using [FORM 3.4](#).
- (E) Culvert Design Calculations Table using [FORM 3.5](#).

FORM 3.1: DRAINAGE AREA CALCULATIONS TABLE

AREA ID	TOTAL DRAINAGE AREA	FLOODPLAIN (C=0.35)	RESIDENTIAL (C=0.50)	COMMERCIAL (C=0.90)	WEIGHTED RUNOFF COEFFICIENT (C)	C x A	TIME OF CONCENTRATION (T _c)	DESIGN STORM FREQUENCY	INTENSITY (I)	STORM RUNOFF (Q)	DRAINS TO/REMARKS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	ACRES	ACRES	ACRES	ACRES	ACRES	ACRES	MINUTES	YEARS	INCHES/HOUR	CFS	

INSTRUCTIONS FOR FORM 3.1: DRAINAGE AREA CALCULATION TABLE

COLUMN (1)	DRAINAGE AREA IDENTIFICATION NUMBER OR DESIGNATION
COLUMN (2)	TOTAL DRAINAGE AREA IN ACRES
COLUMN (3 TO 5)	AREA DRAINED FOR EACH LAND USE TYPE IN ACRES (ADD ADDITIONAL COLUMNS FOR DIFFERENT LAND USE AREAS AS NEEDED) RUNOFF COEFFICIENT TAKEN FROM TABLE 3.2
COLUMN (6)	WEIGHTED RUNOFF COEFFICIENT CALCULATED FROM COLUMNS 2 TO 5
COLUMN (7)	PRODUCT OF COLUMN (2) AND COLUMN (6)
COLUMN (8)	MINIMUM INLET TIME OF CONCENTRATION TAKEN FROM TABLE 3.3
COLUMN (9)	DESIGN STORM FREQUENCY, SHALL BE 100-YR FOR ALL AREAS
COLUMN (10)	USING THE TIME OF CONCENTRATION AND DESIGN STORM FREQUENCY, THE RAINFALL INTENSITY IS TAKEN FROM FIGURE 3.1
COLUMN (11)	SOLUTION OF EQUATION 3.1
COLUMN (12)	A DETAILED DESCRIPTION OF WHERE THE DRAINAGE AREA DRAINS TO INCLUDING BUT NOT LIMITED TO INLET ID, STREET LOCATION, CREEK NAME, DETENTION POND DESIGNATION, ETC.

SUBSECTION 3.02.05 | FLOW IN STREETS

Capacity of Arterials, Collectors and Residential streets shall be calculated using a straight crown. Storm water flow in streets having a straight crown shall be calculated as follows:

EQUATION 3.7: STORM WATER FLOW IN STREETS

$$Q = \frac{0.56}{n} S_x^{\frac{5}{3}} S^{\frac{1}{2}} T^{\frac{8}{3}}$$

WHERE

- Q = GUTTER FLOW RATE (CFS)
- n = MANNING'S ROUGHNESS COEFFICIENT; VALUE = 0.0175
- S = THE LONGITUDINAL SLOPE OF THE STREET GUTTER (FEET/FEET)
- S_x = PAVEMENT CROSS SLOPE (FEET/FEET)
- T = PONDED WIDTH (FEET)

SUBSECTION 3.02.06 | FLOW IN ALLEYS

Capacity of alleys should be taken from *Manning's Equation*:



EQUATION 3.8: MANNING'S EQUATION

$$Q = \frac{1.49}{n} AR^{2/3} S^{1/2}$$

WHERE

Q = ALLEY FLOW RATE (CFS)

n = MANNING'S ROUGHNESS COEFFICIENT; VALUE = 0.0175

A = CROSS SECTIONAL AREA OF FLOW (FEET²)

R = HYDRAULIC RADIUS (FEET)

S = THE LONGITUDINAL SLOPE OF THE ALLEY (FEET/FEET)

SUBSECTION 3.02.07 | PERMISSIBLE SPREAD OF WATER (PONDING WIDTH)

SUBSECTION 3.02.07.01 | GENERAL

Spread of water refers to the amount of water that may be allowed to collect in streets during a storm of specific design frequency. The following [EQUATION 3.9](#), a re-arranging of [EQUATION 3.7](#), shall be used to determine the ponding width "T" for straight crowned streets (*Arterials, Collectors and Residential*).

EQUATION 3.9: PONDING WIDTH "T" FOR STRAIGHT CROWNED STREETS

$$T = 1.24 \left(\frac{Qn}{S_x^{5/3} S^{1/2}} \right)^{3/8}$$

WHERE

Q = GUTTER FLOW RATE (CFS)

n = MANNING'S ROUGHNESS COEFFICIENT; VALUE = 0.0175

S = THE LONGITUDINAL SLOPE OF THE STREET GUTTER (FEET/FEET)

S_x = PAVEMENT CROSS SLOPE (FEET/FEET)

T = PONDED WIDTH (FEET)

In order that excess storm water will not collect in streets during a storm of the design frequency, the following spread of water values shall be used for the various types of streets. [FIGURE 3.2](#) provided below shows the relationship between thoroughfare type, gutter flow capacity and street slope based on maximum permissible ponding width described in the next sub-sections.

SUBSECTION 3.02.07.02 | MAJOR AND MINOR DIVIDED ARTERIALS (P6D & A4D)

Based on pavement cross-slope of 2.00%, the *100-year Design Frequency* flow shall not exceed the elevation of the lowest top of curb. The design engineer shall verify that one lane of traffic in each direction shall remain free of ponding in the 100-year storm event.

SUBSECTION 3.02.07.03 | COLLECTOR STREETS (M4U, M3U, & MINOR COLLECTOR)

Based on a straight cross-slope with a roof top crown of six (6) inches, the 100-year storm event flows shall not exceed the top of curb, six (6) inches.

SUBSECTION 3.02.07.04 | RESIDENTIAL

Based on a straight cross-slope with a roof top crown of six (6) inches, the 100-year storm event flows shall not exceed the top of curb, six (6) inches.

SUBSECTION 3.02.07.05 | ALLEYWAYS

The *100-year Design Frequency* shall not exceed the capacity of the alley pavement, a depth of five (5) inches. No ponding will be allowed beyond the pavement edge. Alley paving to be warped to drain the paving toward the inlet.

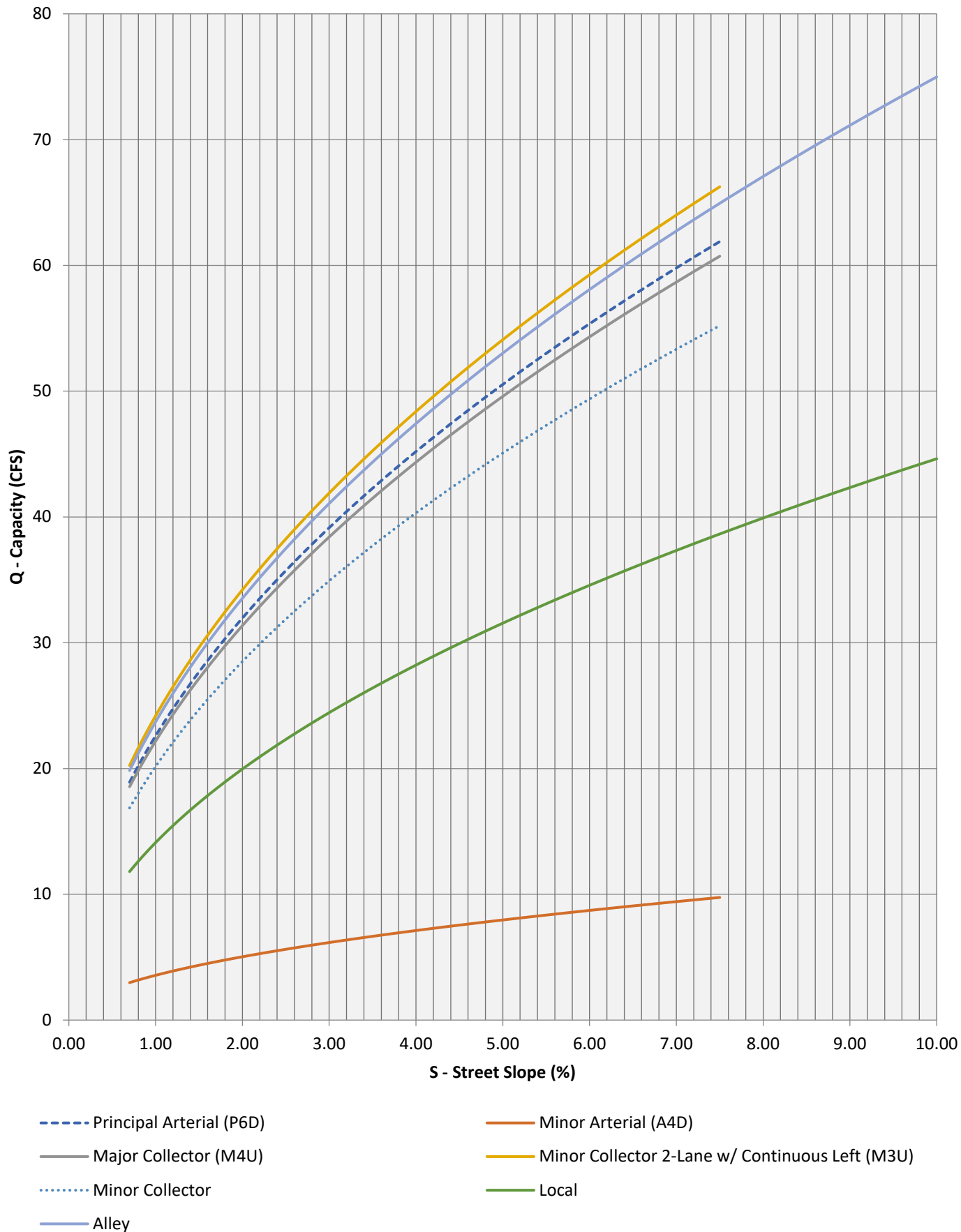


SUBSECTION 3.02.07.06 | PARKING LOTS

The 100-yr design frequency shall not exceed a depth of six (6) inches except where on pavement detention is occurring where one (1) foot in depth is permissible.



FIGURE 3.2: THOROUGHFARE GUTTER CAPACITY BASED ON MAXIMUM PERMISSIBLE PONDING WIDTH





SUBSECTION 3.02.08 | INLET DESIGN

SUBSECTION 3.02.08.01 | GENERAL

Determination of the required size of the storm drain inlets will be based on the calculations called out in this section and the instructions for [FORM 3.2: INLET DESIGN CALCULATIONS TABLE](#).

SUBSECTION 3.02.08.02 | TYPES OF INLETS

The City requires the use of depressed curb inlets. A depressed curb inlet is more efficient than a non-depressed inlet because a depressed inlet induces a greater cross-flow toward the inlet allowing less water to flow past it. Also, the transition out of the depression causes a backwater effect, which further increases the capacity of the storm drain. A gutter depression for all curb inlets shall be six (6) inches, as shown in the *Standard Details*. Inlets shall be sized in multiples of five (5) feet (*i.e.* 5, 10, 15 and 20). Construction of inlets shall be in accordance with the *Standard Details*. Use [TABLE 3.7](#) for the selection of inlets to be used within the City. No grate inlets are allowed without approval from the City Engineer.



TABLE 3.7: STORM DRAIN INLETS

INLET DESCRIPTION	AVAILABLE INLET SIZES	WHERE USED	DESIGN EQUATIONS
STANDARD CURB OPENING INLET ON GRADE	5' 10' 15' 20'	ARTERIALS (P6D & A4D) COLLECTORS (M4U, MINOR & M3U) LOCAL (RESIDENTIAL) ALLEY	EQUATION 3.10 , EQUATION 3.11 , EQUATION 3.12 , EQUATION 3.13 , EQUATION 3.14 , EQUATION 3.15 , EQUATION 3.16 , EQUATION 3.17 & EQUATION 3.18
STANDARD CURB OPENING INLET AT LOW POINT	5' 10' 15' 20'	ARTERIALS (P6D & A4D) COLLECTORS (M4U, MINOR & M3U) LOCAL (RESIDENTIAL) ALLEY	EQUATION 3.19 & EQUATION 3.20
RECESSED CURB OPENING INLET ON GRADE	5' 10' 15' 20'	STREET GRADE 6% OR GREATER ARTERIALS (P6D & A4D) COLLECTORS (M4U, MINOR & M3U)	EQUATION 3.10 , EQUATION 3.11 , EQUATION 3.12 , EQUATION 3.13 , EQUATION 3.14 , EQUATION 3.15 , EQUATION 3.16 , EQUATION 3.17 & EQUATION 3.18
COMBINATION INLET ON GRADE	4' 6' 8'	COMBINATION INLETS TO BE USED WHERE SPACE BEHIND CURB PROHIBITS OTHER INLET TYPES AND ALLEYS CITY ENGINEER APPROVAL REQUIRED	
COMBINATION INLET AT LOW GRADE	4' 6' 8'	COMBINATION INLETS TO BE USED WHERE SPACE BEHIND CURB PROHIBITS OTHER INLET TYPES AND ALLEYS CITY ENGINEER APPROVAL REQUIRED	
GRATE INLET	2 GRATE 3 GRATE 4 GRATE 6 GRATE	NO GRATE INLETS ARE ALLOWED WITHOUT APPROVAL FROM THE CITY ENGINEER	
DROP INLET	2'x2' 3'x3' 4'x4' 5'x5'	OPEN CHANNELS/AREA DRAIN	EQUATION 3.21 & EQUATION 3.22

SUBSECTION 3.02.08.03 | LOCATION

All inlets (*edge of opening*) shall be a minimum of ten (10) feet from street or driveway curb return. Recessed inlets will be required to be installed at all inlet locations where the street grade is to be six (6) percent or greater except on residential streets. At locations where depressed inlets are expected to interfere with pedestrian activity, usually at crosswalks or interior spans of the block used for parking, a depression of less than six (6) inches may be required. These locations may require additional inlet length to compensate for the reduced depression. The City will consider all variances from a standard six (6) inch gutter on an individual basis.

- (A) Major and Minor Arterials (Divided). Inlets shall be located at street intersections, at low points of grade or where the gutter flow exceeds the permissible spread of water criteria. Inlets shall be located, when possible, on lesser traveled streets or alleys when grades permit. Inlets located on arterials and where street grade is six (6) percent or greater shall be recessed in order to minimize interference of the gutter depression with travel lanes. In super-elevated sections, inlets placed against the center medians shall have no gutter depression and shall intercept gutter flow at the point of vertical curvatures to prevent flow from crossing the arterial. Unless expressly approved by the City Engineer, storm waters will not be allowed to cross arterials on the surface in valley gutters or otherwise. All sag inlets will require a reinforced concrete emergency overflow flume. The capacity of the emergency overflow flume shall equal or exceed the 100-year design storm flow coming to the sag point.
- (B) Collector Streets. Inlets shall be located at street intersections, low points of grade or where the gutter flow exceeds the permissible spread of water criteria. Inlets shall be located, when at all possible, on lesser traveled streets or alleys where grade permits. All sag inlets will require a reinforced concrete emergency overflow flume. The capacity of the emergency overflow flume shall equal or exceed the 100-year design storm flow coming to the sag point.



- (C) Residential Streets. Inlets shall be located at street intersections, low points of grade or where the gutter flow exceeds the permissible spread of water criteria. All sag inlets will require a reinforced concrete emergency overflow flume unless the design engineer calculates that the street will carry the overflow above the crest of the roadway without the water surface elevation exceeding the top of curb. The capacity of the emergency overflow flume shall equal or exceed the 100-year design storm flow coming to the sag point.
- (D) Alleys. Inlets shall be located before intersections with streets, alley to alley intersections, change in alley directions, low points of grade or where the gutter flow exceeds the permissible spread of water criteria. All sag inlets will require a reinforced concrete emergency overflow flume. The capacity of the emergency overflow flume shall equal or exceed the 100-year design storm flow coming to the sag point.
- (E) Parking Lots. Inlets shall be located at all sag points and before ponding exceeds six (6) inch depth except when on pavement detention is occurring.

SUBSECTION 3.02.08.04 | CURB INLETS ON-GRADE

The sizing of curb inlets on-grade shall be done based on the equations and figures listed below, which are provided as references for *On-Grade Curb Inlet Capacities on the City Thoroughfares*.

EQUATIONS

- [EQUATION 3.10](#)
- [EQUATION 3.11](#)
- [EQUATION 3.12](#)
- [EQUATION 3.13](#)
- [EQUATION 3.14](#)
- [EQUATION 3.15](#)
- [EQUATION 3.16](#)
- [EQUATION 3.17](#)
- [EQUATION 3.18](#)

FIGURES

- [FIGURE 3.3](#)
- [FIGURE 3.4](#)
- [FIGURE 3.5](#)
- [FIGURE 3.6](#)
- [FIGURE 3.7](#)
- [FIGURE 3.8](#)
- [FIGURE 3.9](#)



EQUATION 3.10: LENGTH OF CURB INLET ON GRADE REQUIRED

$$L_r = 0.6Q^{0.42}S^{0.3} \left(\frac{1}{nS_e} \right)^{0.6}$$

WHERE

L_r = LENGTH OF CURB INLET REQUIRED (FEET)

Q = FLOW RATE IN GUTTER (CFS)

S = LONGITUDINAL SLOPE (FEET/FEET)

n = MANNING'S ROUGHNESS COEFFICIENT, VALUE = 0.0175

S_e = EQUIVALENT CROSS SLOPE (FEET/FEET)

EQUATION 3.11: EQUIVALENT CROSS SLOPE

$$S_e = S_x + \frac{a}{W} E_0$$

WHERE

S_e = EQUIVALENT CROSS SLOPE (FEET/FEET)

S_x = CROSS SLOPE OF THE ROAD (FEET/FEET)

a = GUTTER DEPRESSION DEPTH (FEET), ALL INLET DEPRESSIONS SHALL BE 0.50 FEET (6 INCHES)

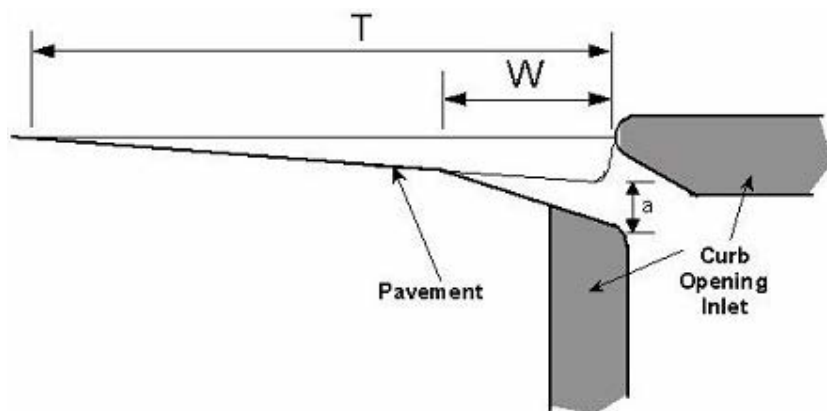
W = GUTTER DEPRESSION WIDTH (FEET)

STANDARD INLETS W = 2.0 FEET

RECESSED INLETS W = 3.0 FEET

E_0 = RATIO OF DEPRESSION FLOW TO TOTAL FLOW

FIGURE 3.3: GUTTER CROSS-SECTION DIAGRAM OF CURB INLETS ON GRADE



EQUATION 3.12: RATIO OF DEPRESSION FLOW TO TOTAL FLOW OF CURB INLETS ON GRADE

$$E_0 = \frac{K_w}{K_w + K_0}$$

WHERE

E_0 = RATIO OF DEPRESSION FLOW TO TOTAL FLOW

K_w = CONVEYANCE OF THE DEPRESSED GUTTER SECTION (CFS)

K_0 = CONVEYANCE OF THE GUTTER SECTION BEYOND THE DEPRESSION (CFS)

EQUATION 3.13: CONVEYANCE OF CROSS SECTION OF CURB INLETS ON GRADE

$$K = \frac{1.486A^{5/3}}{nP^{2/3}}$$

WHERE

K = CONVEYANCE OF CROSS SECTION (CFS)

A = AREA OF CROSS SECTION (FEET²)



n = MANNING'S ROUGHNESS COEFFICIENT, VALUE = 0.0175
 P = WETTED PERIMETER (FEET)

EQUATION 3.14: AREA OF DEPRESSED GUTTER SECTION OF CURB INLETS ON GRADE

$$A_w = WS_x \left(T - \frac{W}{2} \right) + \frac{1}{2} aW$$

WHERE

A_w = AREA OF DEPRESSED GUTTER SECTION (FEET²)

W = GUTTER DEPRESSION WIDTH (FEET)

STANDARD INLETS W = 2.0 FEET

RECESSED INLETS W = 3.0 FEET

S_x = CROSS SLOPE (FEET/FEET)

T = CALCULATED PONDED WIDTH (FT)

a = GUTTER DEPRESSION DEPTH (FT), ALL INLET DEPRESSIONS SHALL BE 0.50 FEET (6 INCHES)

EQUATION 3.15: WETTED PERIMETER OF DEPRESSED GUTTER SECTION OF CURB INLETS ON GRADE

$$P_w = \sqrt{(WS_x + a)^2 + W^2}$$

WHERE

P_w = WETTED PERIMETER OF DEPRESSED GUTTER SECTION (FEET)

W = GUTTER DEPRESSION WIDTH (FEET)

STANDARD INLETS W = 2.0 FEET

RECESSED INLETS W = 3.0 FEET

S_x = CROSS SLOPE (FEET/FEET)

a = GUTTER DEPRESSION DEPTH (FEET), ALL INLET DEPRESSIONS SHALL BE 0.50 FEET (6 INCHES)

EQUATION 3.16: AREA OF GUTTER/ROAD SECTION BEYOND THE DEPRESSION WIDTH OF CURB INLETS ON GRADE

$$A_0 = \frac{S_x}{2} (T - W)^2$$

WHERE

A_0 = AREA OF GUTTER/ROAD SECTION BEYOND THE DEPRESSION WIDTH (FEET²)

S_x = CROSS SLOPE (FEET/FEET)

W = GUTTER DEPRESSION WIDTH (FEET)

STANDARD INLETS W = 2.0 FEET

RECESSED INLETS W = 3.0 FEET

T = CALCULATED PONDED WIDTH

EQUATION 3.17: WETTED PERIMETER OF THE DEPRESSED GUTTER SECTION OF CURB INLETS ON GRADE

$$P_0 = T - W$$

WHERE

P_0 = WETTED PERIMETER OF THE DEPRESSED GUTTER SECTION (FEET)

T = CALCULATED PONDED WIDTH (FEET)

W = GUTTER DEPRESSION WIDTH (FEET)

STANDARD INLETS W = 2.0 FEET

RECESSED INLETS W = 3.0 FEET

For determining the bypass of a curb inlet on grade use the following [EQUATION 3.18](#) which factors in the ratio of the actual length of curb inlet (L_a) to the length of inlet required (L_r).

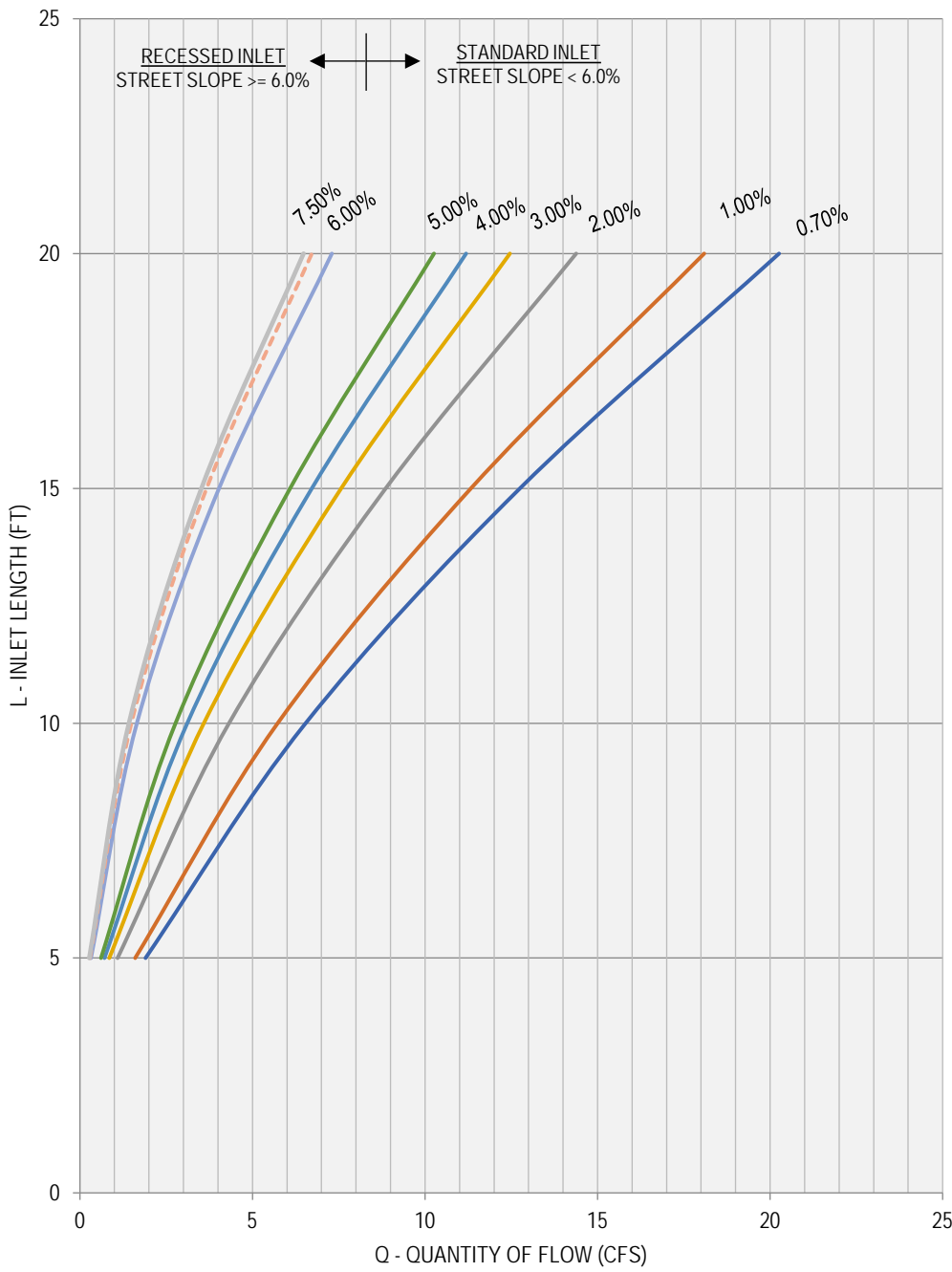
EQUATION 3.18: CARRYOVER DISCHARGE OF CURB INLETS ON GRADE

$$Q_{bypass} = Q \left(1 - \frac{L_a}{L_r} \right)^{1.8}$$

WHERE

- Q_{bypass} = CARRYOVER DISCHARGE (CFS)
- Q = TOTAL DISCHARGE (CFS)
- L_a = DESIGN LENGTH OF THE CURB OPENING INLET (FEET)
- L_r = LENGTH OF CURB OPENING INLET REQUIRED TO INTERCEPT THE TOTAL FLOW (FEET)

FIGURE 3.4: CURB INLET CAPACITY ON-GRADE PRINCIPAL AND MINOR ARTERIAL (P6D & A4D)



Inlet Capacity (cfs)				
Slope (%)	Inlet Length (ft)			
	5	10	15	20
0.70%	1.90	6.54	12.75	20.26
1.00%	1.60	5.73	11.33	18.09
2.00%	1.09	4.32	8.86	14.38
3.00%	0.85	3.59	7.57	12.46
4.00%	0.71	3.11	6.72	11.19
5.00%	0.61	2.77	6.09	10.26
6.00%	0.32	1.65	4.03	7.30
7.00%	0.29	1.49	3.67	6.72
7.50%	0.27	1.42	3.52	6.48

FIGURE 3.5: CURB INLET CAPACITY ON-GRADE MAJOR COLLECTOR (M4U)

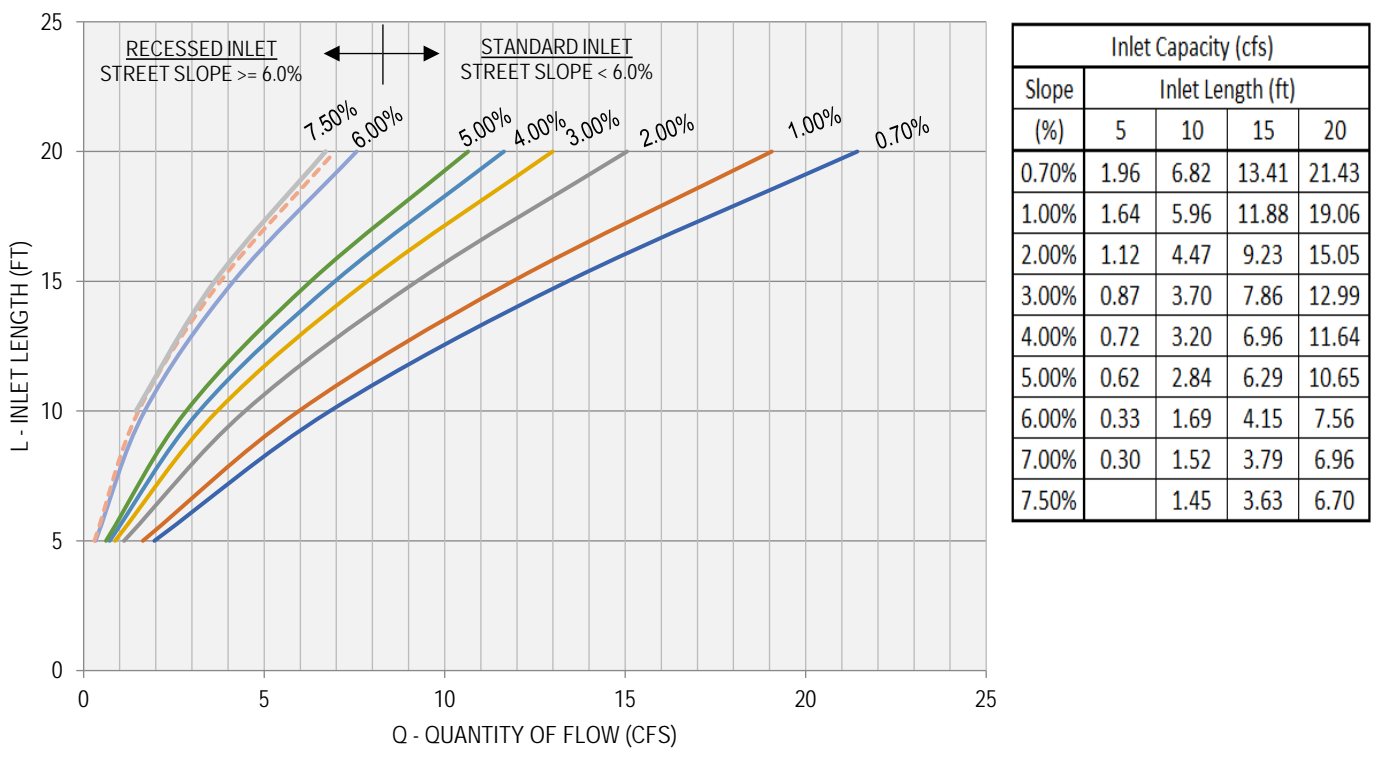


FIGURE 3.6: CURB INLET CAPACITY ON-GRADE COLLECTION TWO (2) LANE WITH CONTINUOUS LEFT (M3U)

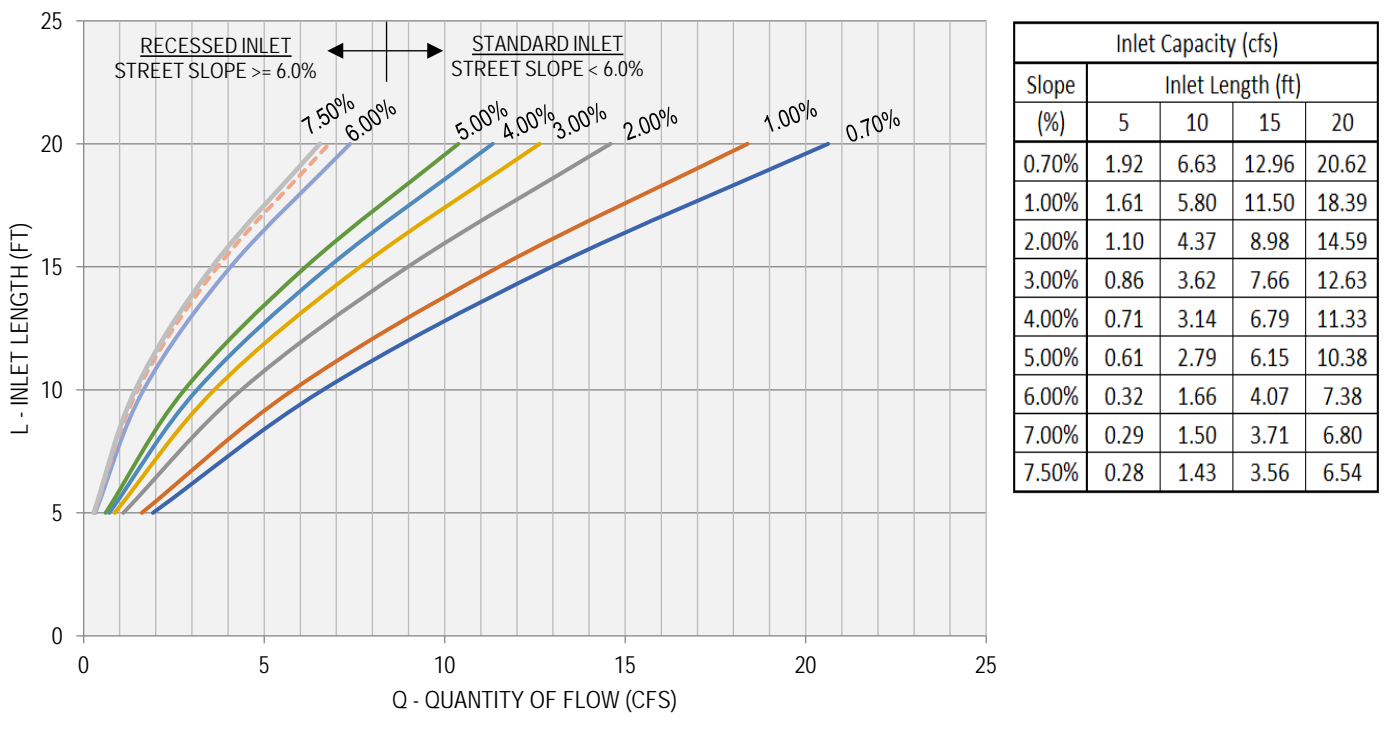
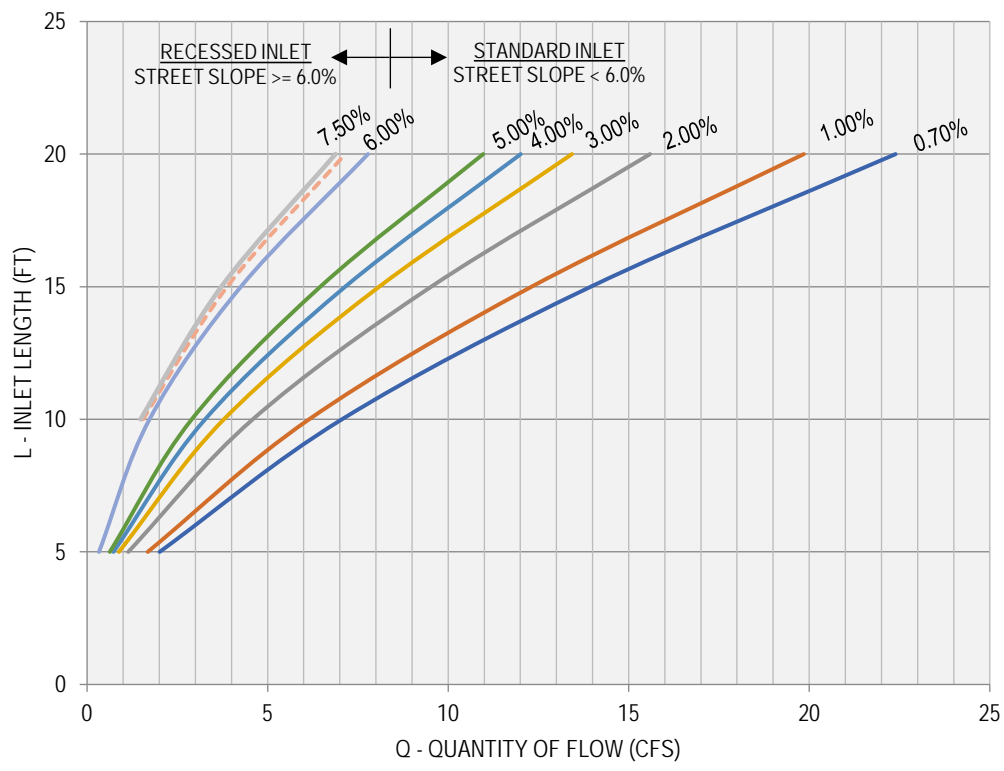
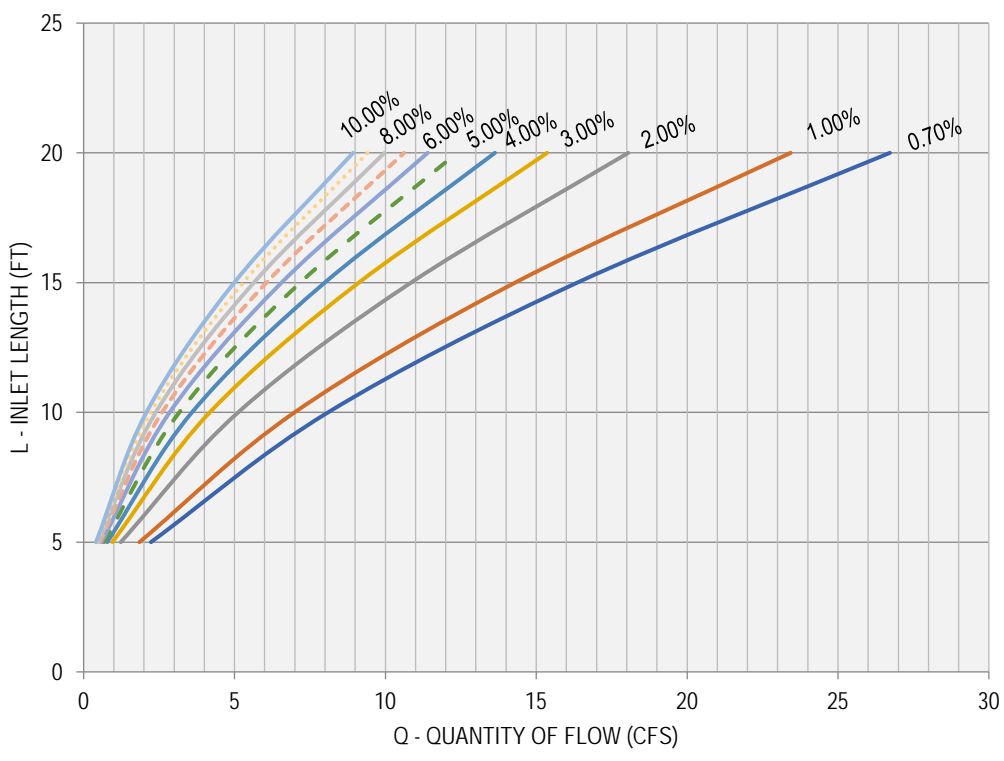


FIGURE 3.7: CURB INLET CAPACITY ON-GRADE MINOR COLLECTOR



Inlet Capacity (cfs)				
Slope (%)	Inlet Length (ft)			
	5	10	15	20
0.70%	2.01	7.06	13.95	22.39
1.00%	1.68	6.15	12.31	19.85
2.00%	1.14	4.59	9.53	15.59
3.00%	0.88	3.79	8.09	13.43
4.00%	0.73	3.27	7.15	12.01
5.00%	0.63	2.90	6.46	10.97
6.00%	0.33	1.73	4.26	7.78
7.00%		1.55	3.88	7.15
7.50%		1.48	3.72	6.88

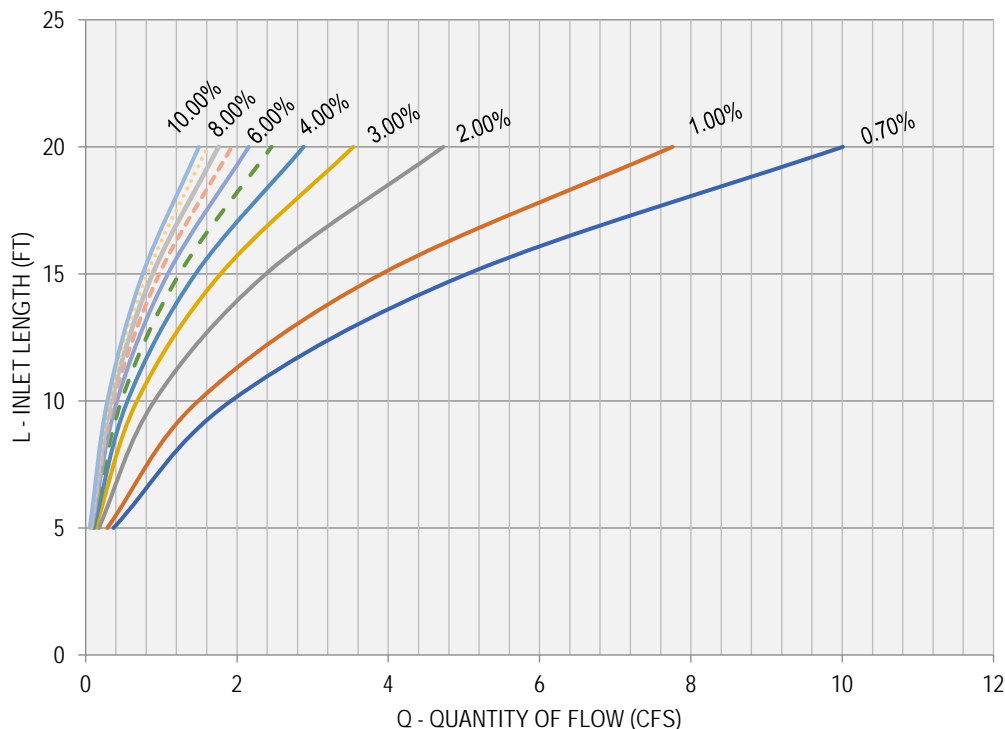
FIGURE 3.8: CURB INLET CAPACITY ON-GRADE LOCAL RESIDENTIAL STREET



Inlet Capacity (cfs)				
Slope (%)	Inlet Length (ft)			
	5	10	15	20
0.70%	2.23	8.10	16.36	26.72
1.00%	1.85	6.99	14.30	23.43
2.00%	1.23	5.12	10.85	18.05
3.00%	0.95	4.18	9.12	15.36
4.00%	0.78	3.59	7.99	13.63
5.00%	0.67	3.17	7.18	12.38
6.00%	0.59	2.85	6.56	11.40
7.00%	0.53	2.60	6.06	10.62
8.00%	0.48	2.39	5.64	9.97
9.00%	0.44	2.22	5.29	9.41
10.00%	0.41	2.08	4.99	8.93



FIGURE 3.9: CURB INLET CAPACITY ON-GRADE ALLEY



Slope (%)	Inlet Capacity (cfs)			
	Inlet Length (ft)			
	5	10	15	20
0.70%	0.37	1.92	5.05	10.01
1.00%	0.29	1.49	3.91	7.76
2.00%	0.17	0.91	2.38	4.73
3.00%	0.13	0.68	1.78	3.54
4.00%	0.11	0.55	1.45	2.88
5.00%	0.09	0.47	1.24	2.46
6.00%	0.08	0.41	1.09	2.16
7.00%	0.07	0.37	0.97	1.93
8.00%	0.06	0.34	0.89	1.76
9.00%	0.06	0.31	0.81	1.61
10.00%	0.06	0.29	0.76	1.50

SUBSECTION 3.02.08.05 | CURB INLETS AT SAG/LOW POINT

Determining the capacity of curb inlets at sag/low point shall be taken from [EQUATION 3.19](#) while the inlet operates as a weir until the water depth approaches 1.40 times the curb opening height.

EQUATION 3.19: CAPACITY OF CURB INLETS AT SAG/LOW POINT

$$Q = 2.3(L + 1.8W)y^{1.5}$$

WHERE

Q = TOTAL FLOW REACHING INLET (CFS)

y = DEPTH OF FLOW (FEET)

L = LENGTH OF CURB INLET OPENING (FEET)

W = GUTTER DEPRESSION WIDTH (FEET)

STANDARD INLETS W = 2.0 FEET

RECESSED INLETS W = 3.0 FEET

[EQUATION 3.19](#) can be rearranged to find the required curb inlet length at a sag point as shown in [EQUATION 3.20](#).

EQUATION 3.20: REQUIRED CURB INLET LENGTH AT A SAG POINT

$$L = \frac{Q}{2.3y^{1.5}} - 1.8W$$

WHERE

Q = TOTAL FLOW REACHING INLET (CFS)

y = DEPTH OF FLOW (FEET)

L = LENGTH OF CURB INLET OPENING (FEET)

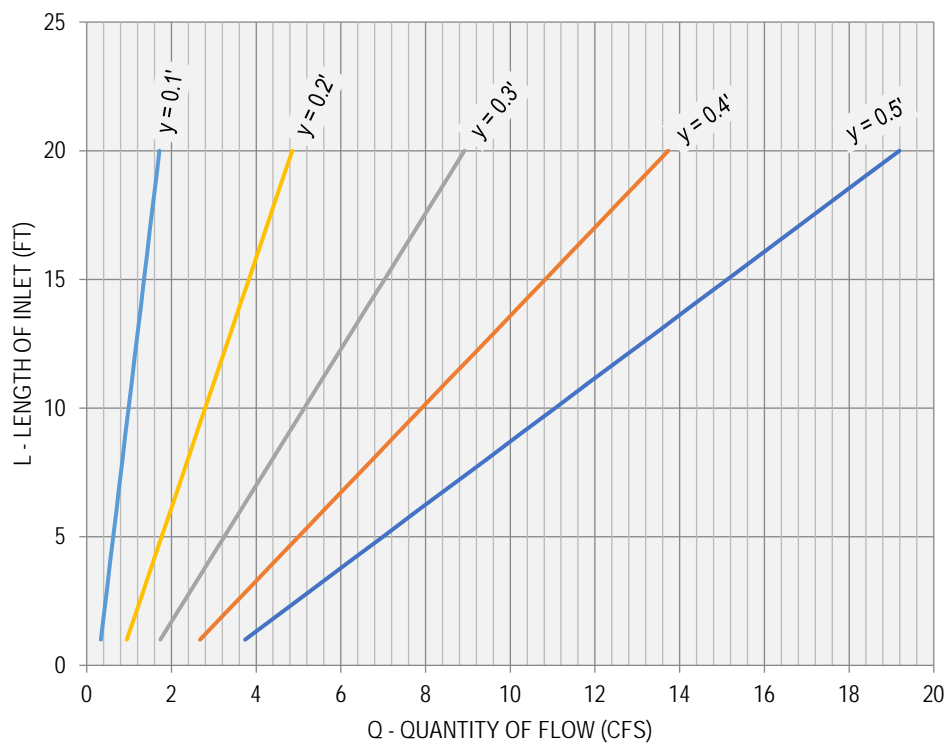
W = GUTTER DEPRESSION WIDTH (FEET)

STANDARD INLETS W = 2.0 FEET

RECESSED INLETS W = 3.0 FEET

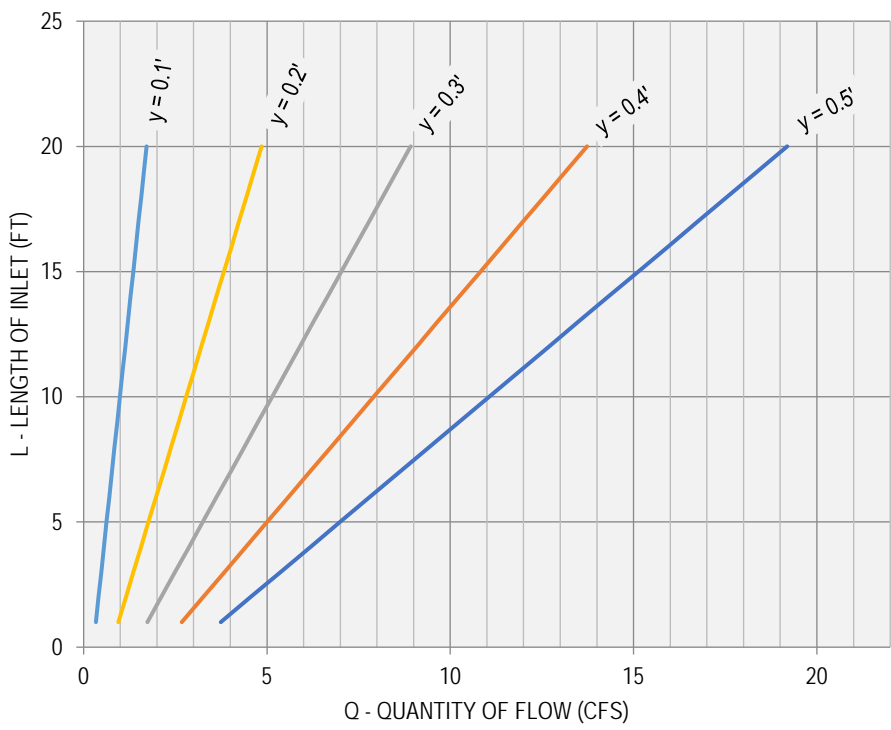
FIGURES 3.10 and FIGURES 3.11 are provided as reference for Standard and Recessed Sag Curb Inlet Capacities.

FIGURE 3.10: STANDARD CURB INLET CAPACITY SAG/LOW



Inlet Capacity (cfs)					
Length of Inlet, L (ft)	Depth of flow, y (ft)				
	0.50	0.40	0.30	0.20	0.10
5	6.99	5.00	3.25	1.77	0.63
10	11.06	7.91	5.14	2.80	0.99
15	15.13	10.82	7.03	3.83	1.35
20	19.19	13.73	8.92	4.85	1.72

FIGURE 3.11: RECESSED CURB INLET CAPACITY SAG/LOW POINT



Inlet Capacity (cfs)					
Length of Inlet, L (ft)	Depth of flow, y (ft)				
	0.50	0.40	0.30	0.20	0.10
5	8.46	6.05	3.93	2.14	0.76
10	12.52	8.96	5.82	3.17	1.12
15	16.59	11.87	7.71	4.20	1.48
20	20.65	14.78	9.60	5.23	1.85



SUBSECTION 3.02.09 | DROP INLETS/'Y' INLET DESIGN

The capacity of drop inlets shall be taken from the [EQUATION 3.21](#). All drop inlets shall be sized to have a maximum allowable head (*depth of water*) on the inlet to be six (6) inches.

EQUATION 3.21: CAPACITY OF DROP INLETS

$$Q = 3.087Ly^{3/2}$$

WHERE

Q = FLOW TO INLET (CFS)

L = LENGTH OF INLET OPENING (FT)

y = DEPTH OF WATER (HEAD) AT INLET (FT)

The equation can be rearranged to find the length of Drop Inlet opening as shown in [EQUATION 3.22](#).

EQUATION 3.22: LENGTH OF DROP INLET OPENING

$$L = \frac{Q}{3.087y^{3/2}}$$

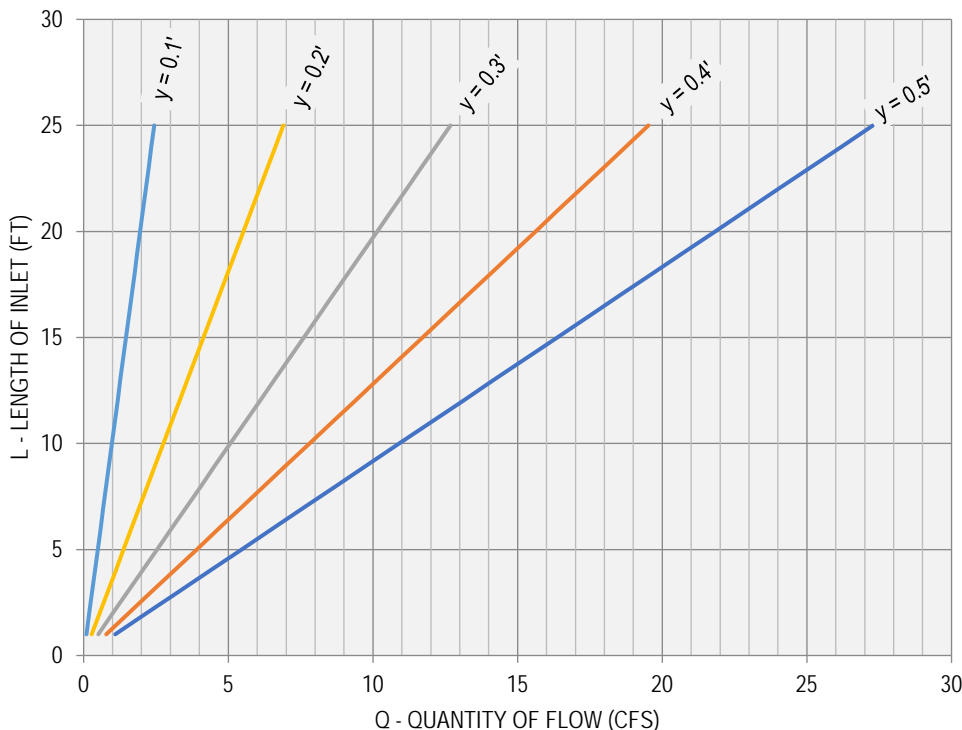
WHERE

Q = FLOW TO INLET OPENING (CFS)

L = LENGTH OF INLET OPENING (FT)

y = DEPTH OF WATER (HEAD) AT INLET (FT)

FIGURE 3.12: DROP/'Y' INLET CAPACITY



Length of Inlet, L (ft)	Inlet Capacity (cfs)				
	0.50	0.40	0.30	0.20	0.10
2'x2', L = 8'	8.73	6.25	4.06	2.21	0.78
3'x3', L = 12'	13.10	9.37	6.09	3.31	1.17
4'x4', L = 16'	17.46	12.50	8.12	4.42	1.56
5'x5', L = 20'	21.83	15.62	10.14	5.52	1.95

SUBSECTION 3.02.10 | COMBINATION AND GRATE INLET DESIGN

When allowed by the City Engineer combination and grate Inlets shall be sized using [FIGURE 3.13](#), [FIGURE 3.14](#), [FIGURE 3.15](#), [FIGURE 3.16](#), [FIGURE 3.17](#), [FIGURE 3.18](#), [FIGURE 3.19](#), and [FIGURE 3.20](#).

FORM 3.2: INLET DESIGN CALCULATIONS TABLE

INLET ID	LOCATION			DESIGN FREQUENCY	AREA RUNOFF						UPSTREAM BYPASS (C*A)
	ALIGNMENT	STATION	OFFSET		C	AREA ID	TIME OF CONCENTRATION (T _c)	INTENSITY (I)	AREA (A)	RUN OFF (Q)	
				YEAR			MINUTES	INCHES/HOUR	ACRES	CFS	CFS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)

TOTAL GUTTER FLOW (Q _a)	GUTTER FLOW									
	THOROUGHFARE TYPE	ON-GRADE/SAG	MANNING'S (n)	LONG SLOPE (S)	CROWN TYPE	CROSS SLOPE (S _x)	DEPRESSION		PONDING WIDTH/SPREAD	
							DEPTH (a)	WIDTH (W)	ALLOW (T _{ALLOW})	ACTUAL (T _{ACTUAL})
CFS				FEET/FEET		FEET/FEET	FEET	FEET	FEET	FEET
(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)

GUTTER FLOW			INLETS CAPACITY							
DEPTH OF GUTTER		MAXIMUM ALLOWABLE FLOW BASED ON MAXIMUM ALLOWABLE PONDING WIDTH (Q _{ALLOW GUTTER})	DEPRESSED GUTTER SECTION		SECTION BEYOND DEPRESSION		CONVEYANCE		RATIO OF DEPRESSION FLOW TO TOTAL FLOW (E ₀)	EQUIVALENT CROSS-SLOPE (S _e)
ALLOW (Y _{ALLOW})	ACTUAL (Y _{ACTUAL})		AREA (A _w)	WETTED PERIMETER (P _w)	AREA (A ₀)	WETTED PERIMETER (P ₀)	DEPRESSION SECTION (K _w)	SECTION BEYOND DEPRESSION (K ₀)		
FEET	FEET	CFS	FEET ²	FEET	FEET ²	FEET	CFS	CFS		FEET/FEET
(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)

INLETS CAPACITY		INLETS CAPACITY				REMARKS
INLET LENGTH		INLET CAPACITY (Q _c)	FLOW (Q _{BYPASS})	C*A	TO INLET ID	
REQUIRED (L _{REQUIRED})	ACTUAL (L _{ACTUAL})					
FEET	FEET	CFS	CFS	CFS		
(35)	(36)	(37)	(38)	(39)	(40)	(41)



INSTRUCTIONS FOR FORM 3.2: INLET DESIGN CALCULATIONS

COLUMN (1)	INLET NUMBER OR DESIGNATION, STARTING WITH THE MOST UPSTREAM INLET.
COLUMN (2)	STREET ALIGNMENT/ NAME IN WHICH THE INLET IS LOCATED.
COLUMN (3)	STATION ALONG THE ALIGNMENT IN WHICH THE INLET IS LOCATED.
COLUMN (4)	OFFSET DISTANCE AND SIDE (RT/LT) INLET IS LOCATED.
COLUMN (5)	DESIGN STORM FREQUENCY, SHALL BE 100-YR FOR ALL INLETS.
COLUMN (6)	RUNOFF COEFFICIENT TAKEN FROM TABLE 3.2 .
COLUMN (7)	CONTRIBUTING DRAINAGE AREA ID.
COLUMN (8)	MINIMUM INLET TIME OF CONCENTRATION TAKEN FROM TABLE 3.3 .
COLUMN (9)	USING THE TIME OF CONCENTRATION AND DESIGN STORM FREQUENCY, THE RAINFALL INTENSITY IS TAKEN FROM FIGURE 3.1.
COLUMN (10)	RUNOFF AREA TO INLET IN ACRES.
COLUMN (11)	SOLUTION OF EQUATION 3.1 .
COLUMN (12)	TAKEN FROM COLUMN (39) OF THE UPSTREAM INLET.
COLUMN (13)	$= \text{Column (9)} \left\{ \frac{\text{Column(12)} + \{\{\text{Column(6)} * \text{Column(10)}\}}{\text{Column(9)}} \right\}$
COLUMN (14)	THOROUGHFARE TYPE TAKEN FROM SECTION 2, STREETS , (P6D, A4D, M4U, M3U, MINOR COLLECTOR, LOCAL, ALLEY, PARKING).
COLUMN (15)	DETERMINED BY LOCATION OF INLET (ON-GRADE OR SAG).
COLUMN (16)	MANNING'S N VALUE.
COLUMN (17)	STREET LONGITUDINAL GUTTER SLOPE OF THE STREET TAKEN IN (FEET/FEET).
COLUMN (18)	STREET CROWN TYPE ON WHICH THE INLET IS LOCATED.
COLUMN (19)	STREET CROSS-SLOPE IN FEET/FEET.
COLUMN (20)	GUTTER DEPRESSION DEPTH, REFERENCE FIGURE 3.3 .
COLUMN (21)	GUTTER DEPRESSION WIDTH, REFERENCE FIGURE 3.3 .
COLUMN (22)	DETERMINED BY THE TYPE OF THOROUGHFARE IN THE PERMISSIBLE SPREAD WIDTH SECTION.
COLUMN (23)	SOLUTION OF EQUATION 3.9 .
COLUMN (24)	THE PRODUCT OF COLUMN (22) AND COLUMN (19).
COLUMN (25)	THE PRODUCT OF COLUMN (23) AND COLUMN (19).
COLUMN (26)	SOLUTION OF EQUATION 3.7 USING THE MAXIMUM ALLOWABLE POND WIDTH FROM COLUMN (22).



COLUMN (27)	SOLUTION OF EQUATION 3.14 .
COLUMN (28)	SOLUTION OF EQUATION 3.15 .
COLUMN (29)	SOLUTION OF EQUATION 3.16 .
COLUMN (30)	SOLUTION OF EQUATION 3.17 .
COLUMN (31)	SOLUTION OF EQUATION 3.13 USING COLUMNS (27) AND (28).
COLUMN (32)	SOLUTION OF EQUATION 3.13 USING COLUMNS (29) AND (30).
COLUMN (33)	SOLUTION OF EQUATION 3.12 .
COLUMN (34)	SOLUTION OF EQUATION 3.11 .
COLUMN (35)	SOLUTION OF EQUATION 3.10 FOR ON-GRADE CURB INLETS, EQUATION 3.20 FOR SAG CURB INLET, OR EQUATION 3.22 FOR DROP INLETS.
COLUMN (36)	SELECTED INLET SIZE.
COLUMN (37)	THE CAPACITY OF THE SELECTED INLET SIZE OF COLUMN (35), SOLUTION FOUND BY ITERATIVELY SOLVING FOR CAPACITY BASED ON EQUATION 3.10 FOR CURB INLETS, EQUATION 3.19 FOR SAG CURB INLETS, EQUATION 3.21 FOR DROP INLETS.
COLUMN (38)	FOR ON-GRADE INLETS THE SOLUTION OF EQUATION 3.18 .
COLUMN (39)	EQUAL COLUMN (38) DIVIDED BY COLUMN (9).
COLUMN (40)	NEXT DOWNSTREAM INLET TO WHICH BY THE BY-PASS IS GOING.
COLUMN (41)	SPECIAL DESIGN COMMENTS ARE ENTERED HERE.

FIGURE 3.13: TWO (2) GRATE COMBINATION INLET CAPACITY CURVES ON GRADE

EXAMPLE

Known:

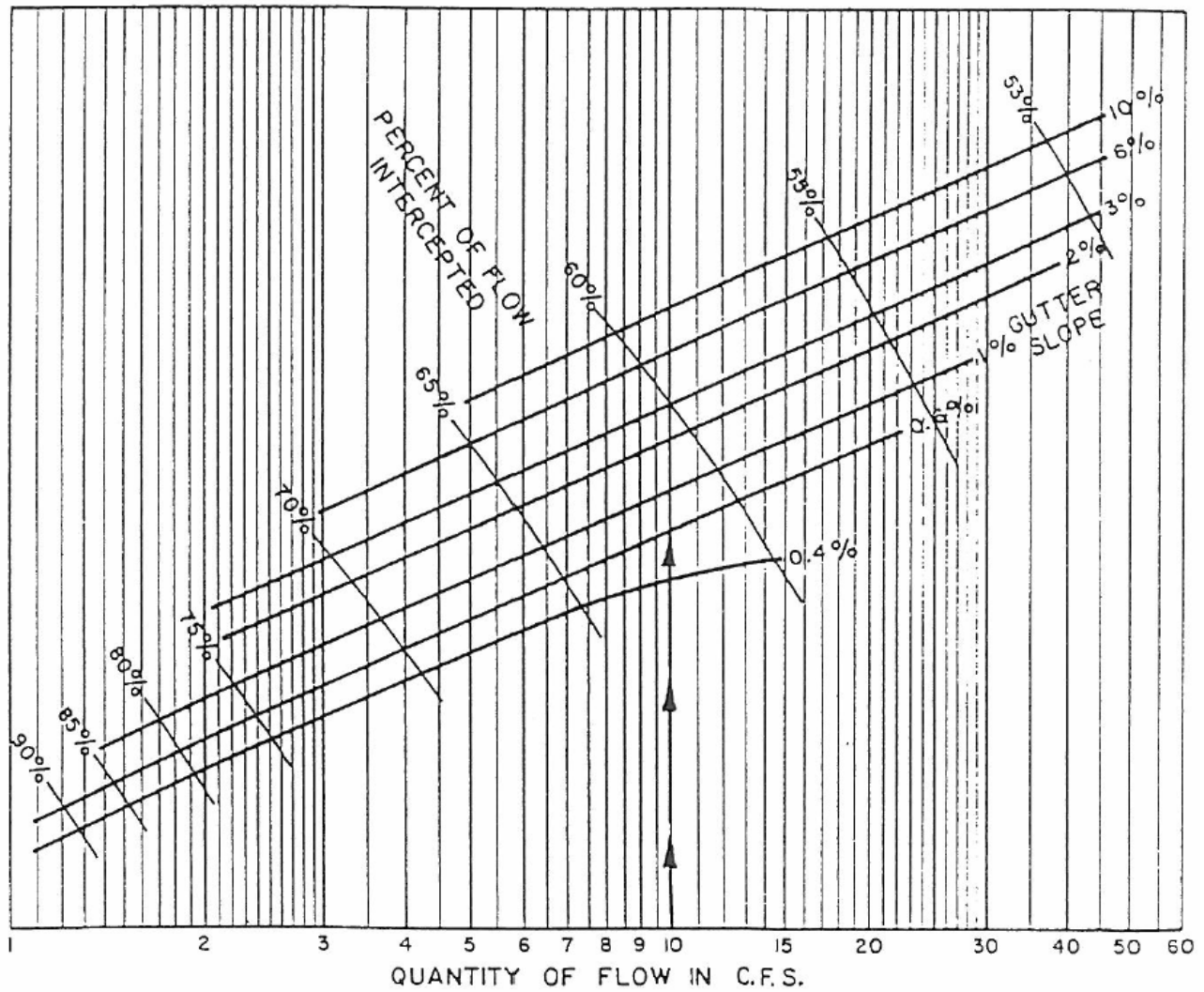
Quantity of Flow = 10.0 c.f.s.
 Gutter Slope = 0.6 %

Find:

Capacity of Two Grate Combination Inlet

Solution:

Enter Graph at 10.0 c.f.s.
 Intersect Slope = 0.6 %
 Read Percent of Flow Intercepted = 62 %
 62 % of 10.0 c.f.s. = 6.2 c.f.s.
 as Capacity of Two Grate Combination Inlet
 Remaining Gutter Flow =
 10.0 c.f.s - 6.2 c.f.s. = 3.8 c.f.s.



TWO GRATE COMBINATION INLET CAPACITY CURVES ON GRADE



FIGURE 3.14: FOUR (4) GRATE COMBINATION INLET CAPACITY CURVES ON GRADE

EXAMPLE

Known:

Quantity of Flow = 6.0 c.f.s.

Gutter Slope = 1.0 %

Find:

Capacity of Four Grate Combination
Inlet

Solution:

Enter Graph at 6.0 c.f.s.

Intersect Slope = 1.0 %

Read Percent of Flow

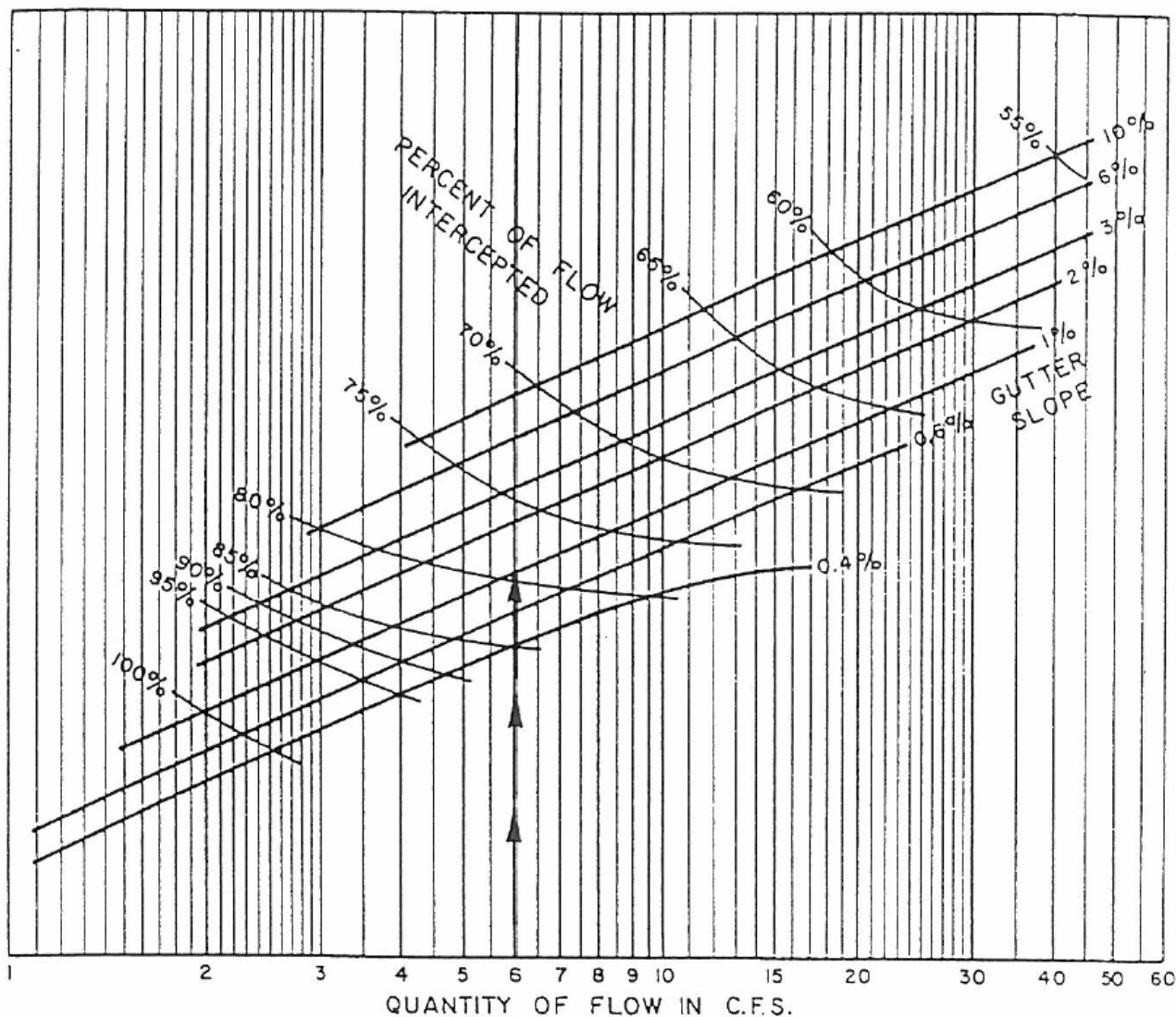
Intercepted = 79 %

79 % of 6.0 c.f.s. = 4.7 c.f.s.

as Capacity of Four Grate
Combination Inlet

Remaining Gutter Flow =

6.0 c.f.s. - 4.7 c.f.s. = 1.3 c.f.s.



FOUR GRATE COMBINATION INLET
CAPACITY CURVES
ON GRADE



FIGURE 3.15: THREE (3) GRATE INLET AND THREE (3) GRATE COMBINATION INLET CAPACITY CURVES ON GRADE

EXAMPLE

Known:

Quantity of Flow = 8.0 c.f.s.

Gutter Slope = 0.4%

Find:

Capacity of Three Grate Inlet

Solution:

Enter Graph at 8.0 c.f.s.

Intersect Slope = 0.4%

Read Percent of Flow

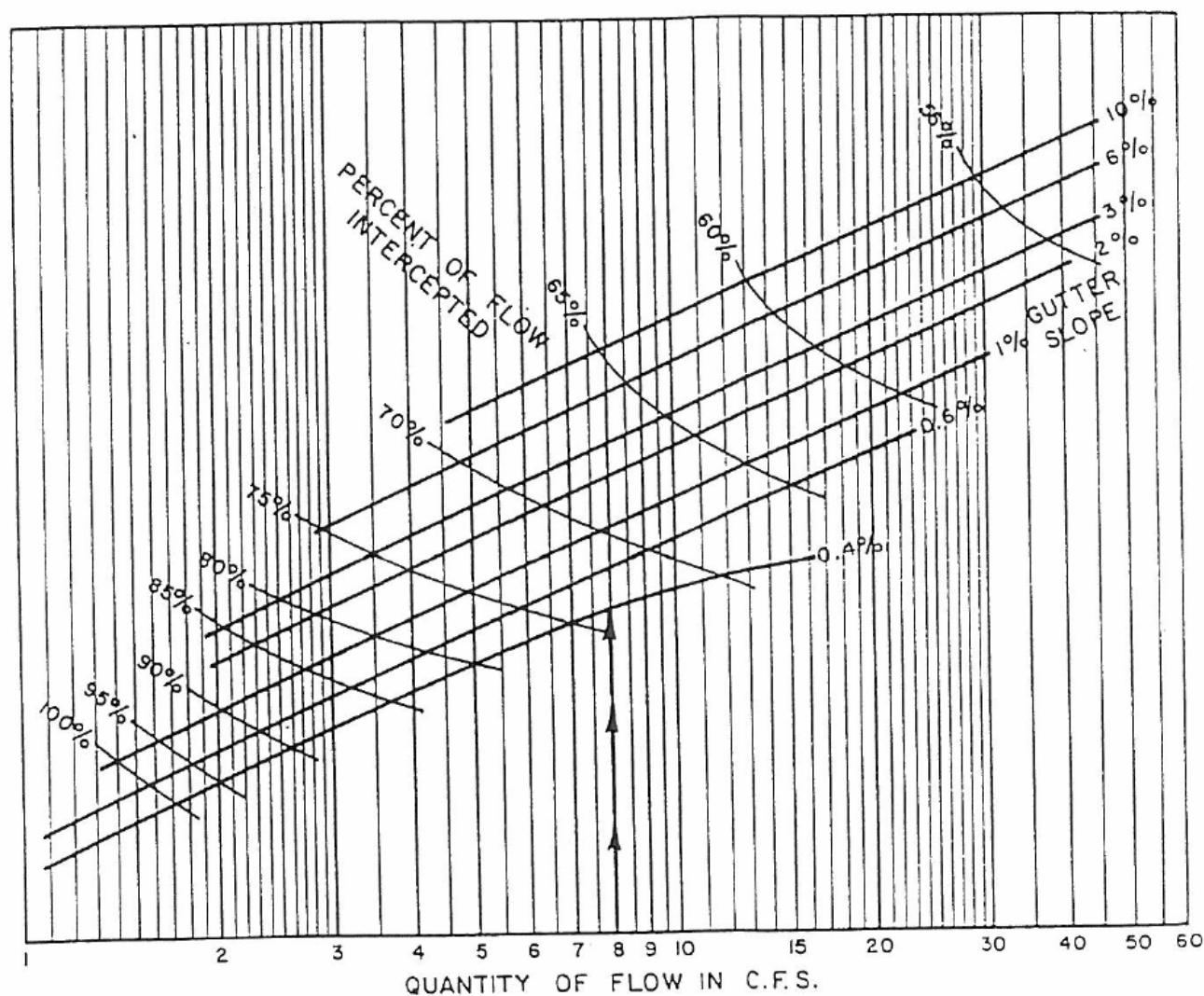
Intercepted = 74%

74% of 8.0 c.f.s. = 5.9 c.f.s.

as Capacity of Three Grate Inlet

Remaining Gutter Flow =

8.0 c.f.s. - 5.9 c.f.s. = 2.1 c.f.s.



THREE GRATE INLET AND
THREE GRATE COMBINATION INLET
CAPACITY CURVES
ON GRADE

FIGURE 3.16: TWO (2) GRATE INLET CAPACITY CURVES ON GRADE

EXAMPLE

Known:

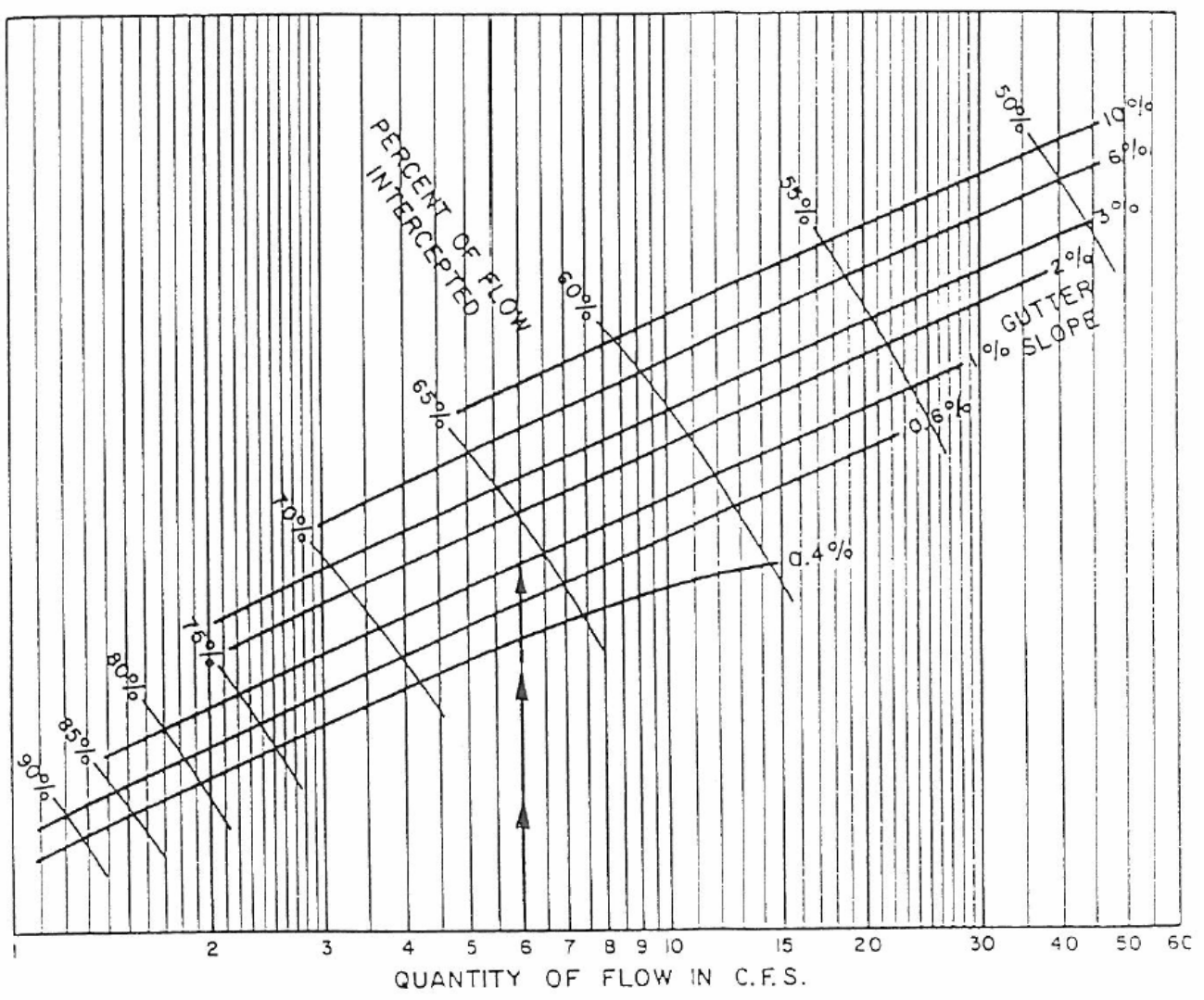
- Quantity of Flow = 6.0 c.f.s.
- Gutter Slope = 1.0%

Find:

Capacity of Two Grate Inlet

Solution:

- Enter Graph at 6.0 c.f.s.
- Intersect Slope = 1.0%
- Read Percent of Flow Intercepted = 66%
- 66% of 6.0 c.f.s. = 4.0 c.f.s.
- as Capacity of Two Grate Inlet
- Remaining Gutter Flow = 6.0 c.f.s. - 4.0 c.f.s. = 2.0 c.f.s.



TWO GRATE INLET
CAPACITY CURVES
ON GRADE

FIGURE 3.17: FOUR (4) GRATE INLET CAPACITY CURVES ON GRADE

EXAMPLE

Known:

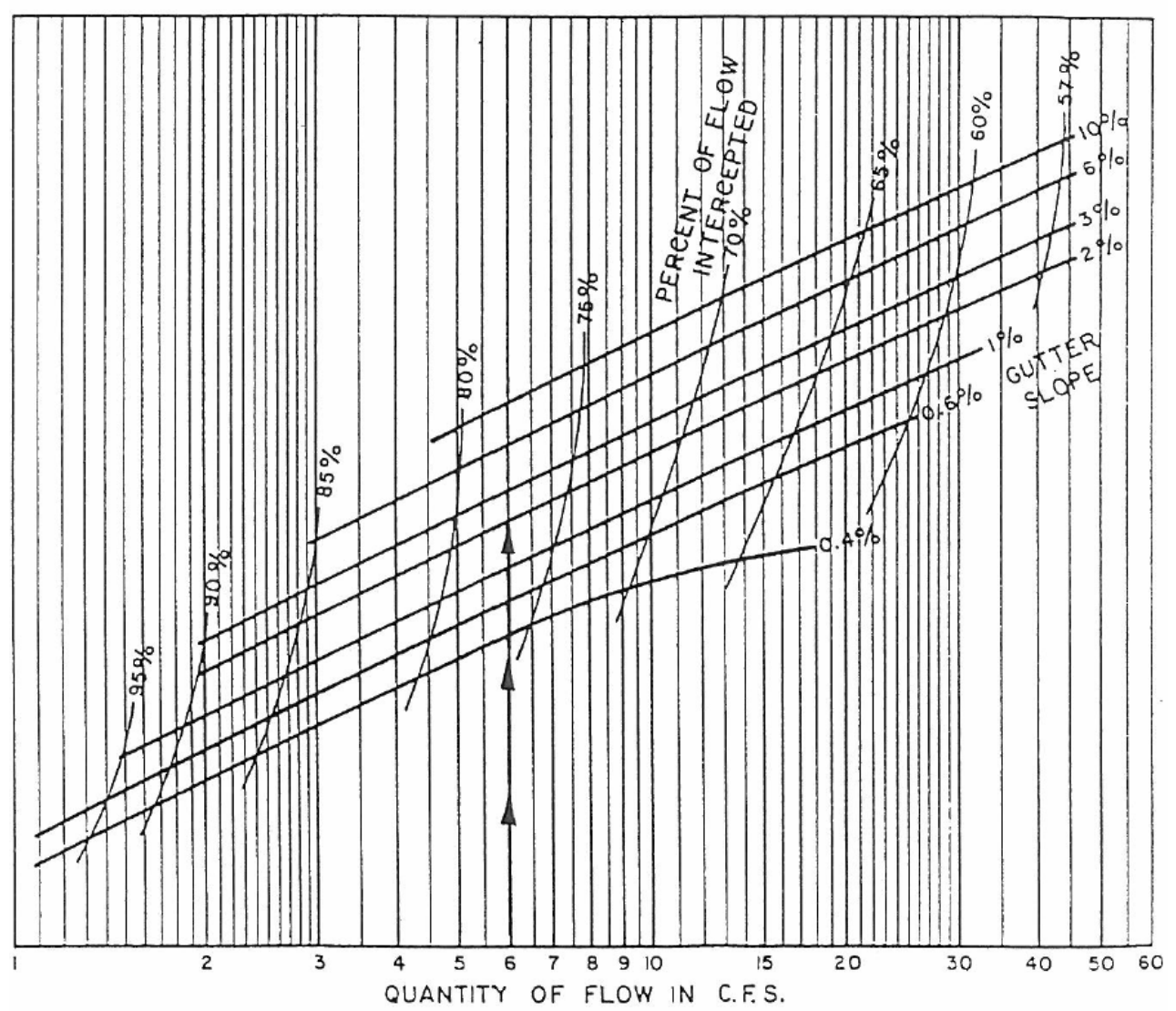
Quantity of Flow = 6.0 c.f.s.
 Gutter Slope = 1.0%

Find:

Capacity of Four Grate Inlet

Solution:

Enter Graph at 6.0 c.f.s.
 Intersect Slope = 1.0%
 Read Percent of Flow Intercepted = 77%
 77% of 6.0 c.f.s. = 4.6 c.f.s.
 as Capacity of Four Grate Inlet
 Remaining Gutter Flow =
 6.0 c.f.s. - 4.6 c.f.s. = 1.4 c.f.s.



FOUR GRATE INLET
 CAPACITY CURVES
 ON GRADE

FIGURE 3.18: SIX (6) GRATE INLET CAPACITY CURVES ON GRADE

EXAMPLE

Known:

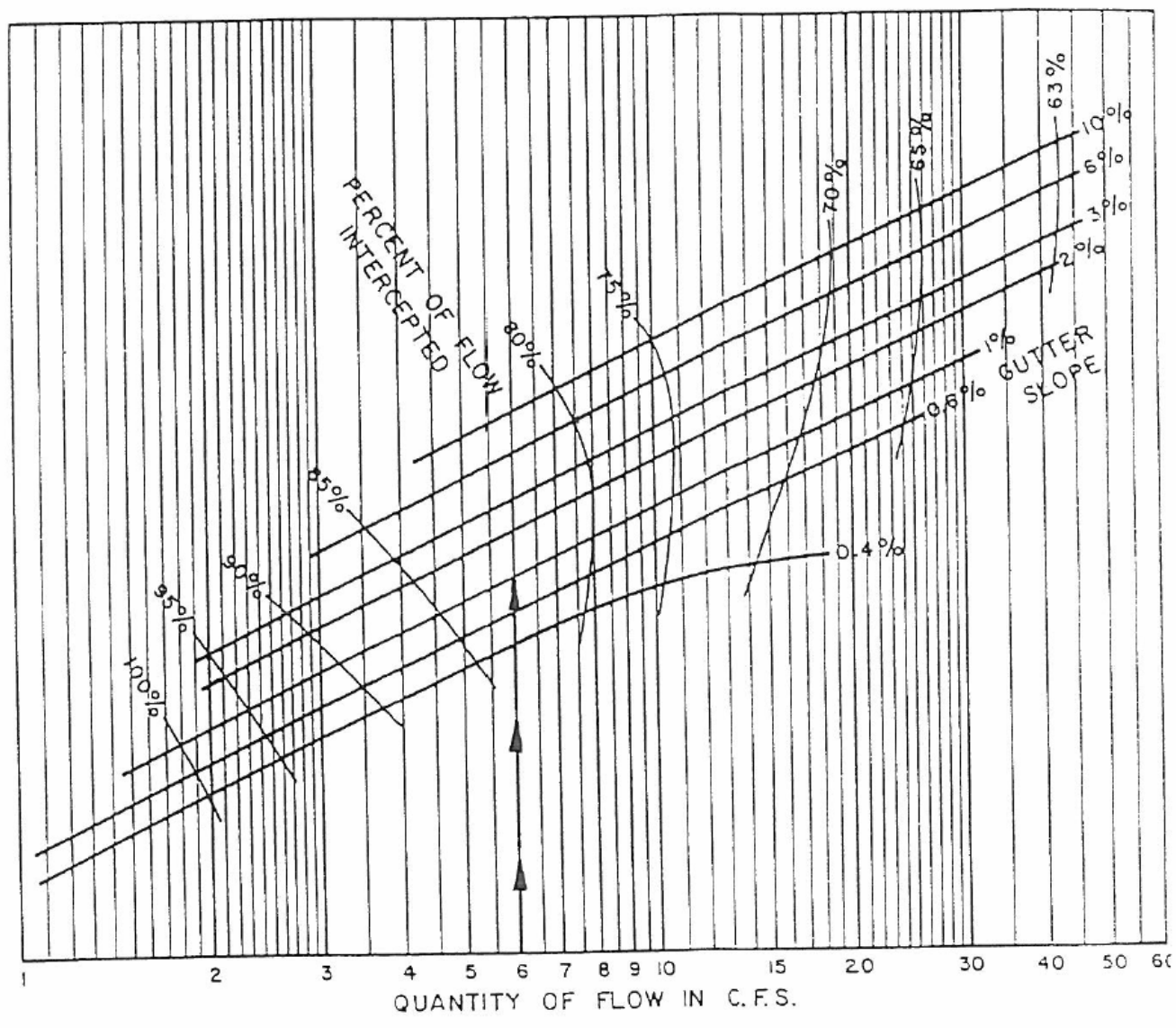
Quantity of Flow = 6.0 c.f.s.
 Gutter Slope = 1.0%

Find:

Capacity of Six Grate Inlet

Solution:

Enter Graph at 6.0 c.f.s.
 Intersect Slope = 1.0%
 Read Percent of Flow Intercepted = 82 %
 82 % of 6.0 c.f.s. = 4.9 c.f.s.
 as Capacity of Six Grate Inlet
 Remaining Gutter Flow =
 6.0c.f.s. - 4.9 c.f.s. = 1.1 c.f.s.



SIX GRATE INLET
 CAPACITY CURVES
 ON GRADE

FIGURE 3.19: GRATE INLET CAPACITY CURVES AT LOW POINT

EXAMPLE

Known:

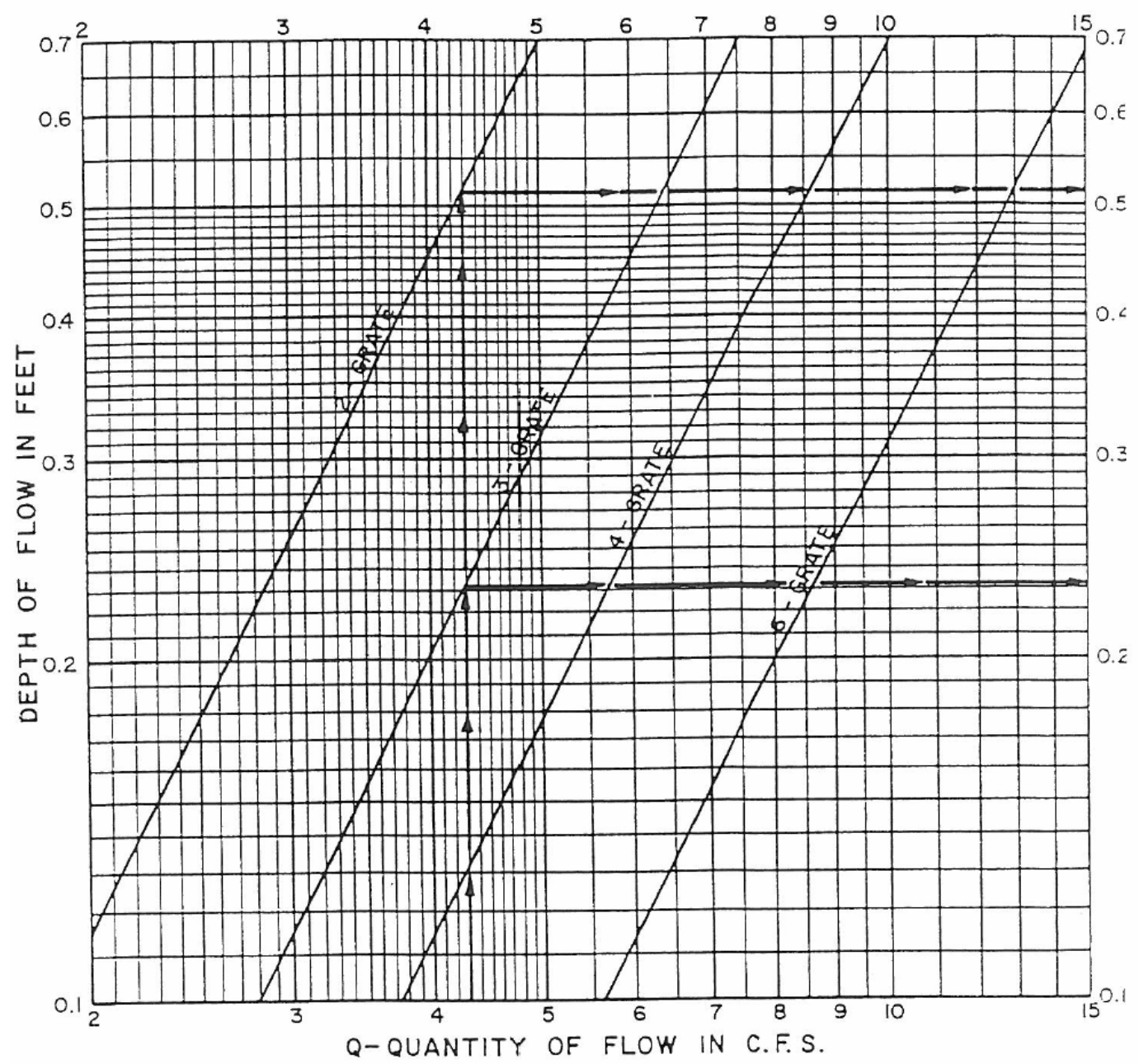
Quantity of Flow = 4.3 c.f.s.
 Maximum Depth of Flow Desired
 at Low Point = 0.3'

Find:

Inlet Required

Solution:

Enter Graph at 4.3 c.f.s.
 Intersect 3 - Grate at 0.23'
 Intersect 2 - Grate at 0.51'
 Use 3 - Grate



GRATE INLET
 CAPACITY CURVES
 AT LOW POINT

OFigure 3.20: COMBINATION INLET CAPACITY CURVES AT LOW POINT

EXAMPLE

Known:

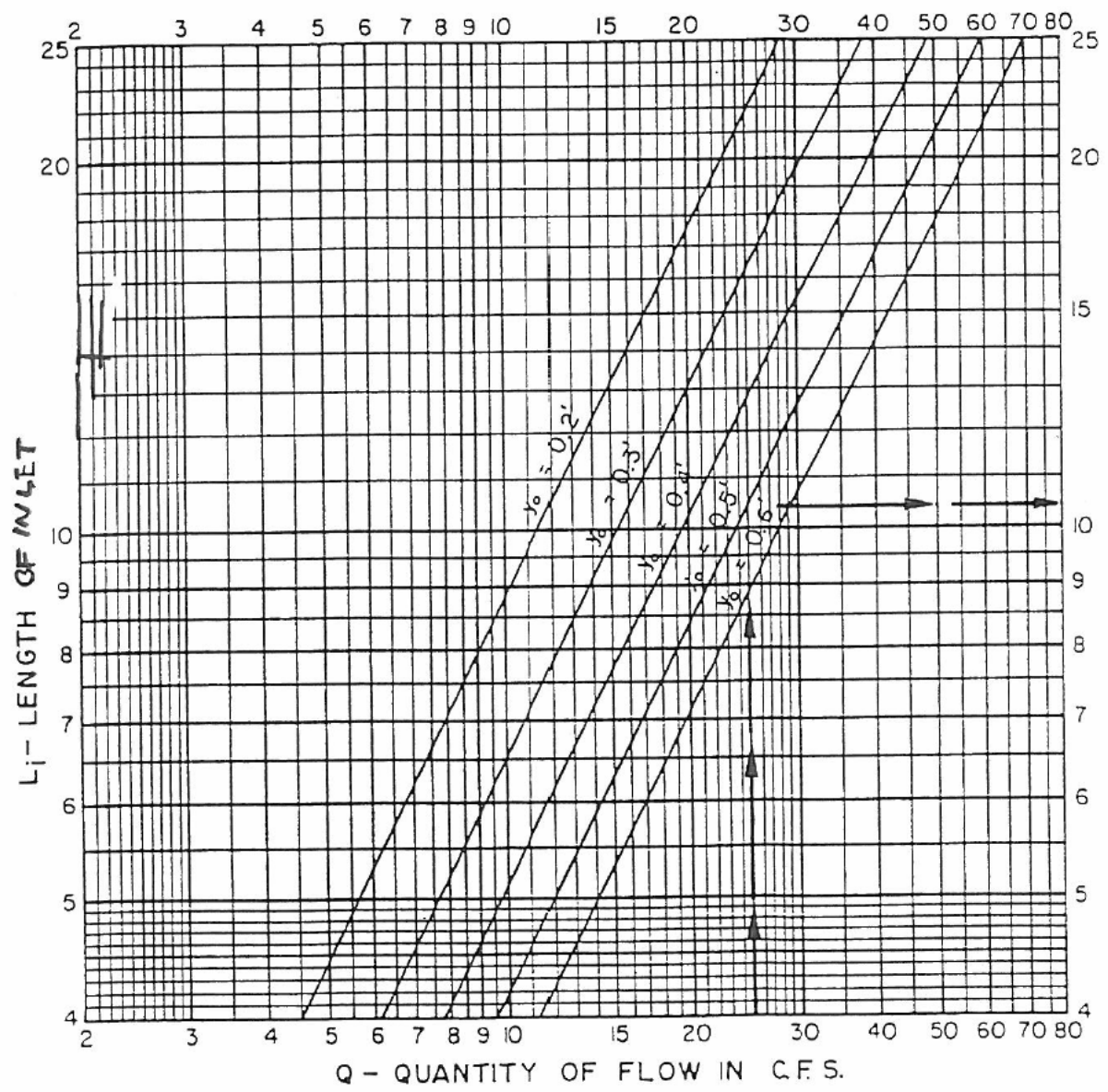
Quantity of Flow = 25.0 c.f.s.
 Maximum Depth of Flow Desired
 At Low Point (y_0) = 0.5'

Solution:

Enter Graph at 25.0 c.f.s.
 Intersect $y_0 = 0.5'$
 Read $L_i = 10.4'$
 Use 12' Inlet

Find:

Length of Inlet Required (L_i)



ROUGHNESS COEFFICIENT $n = .0175$	
STREET WIDTH	CROWN TYPE
ALL	Straight and Parabolic

COMBINATION INLET
 CAPACITY CURVES
 AT LOW POINT



SUBSECTION 3.02.11 | FLOW IN STORM DRAIN CONDUITS AND THEIR APPURTENANCES

SUBSECTION 3.02.11.01 | HYDRAULIC GRADIENT OF CONDUITS

A storm drainage conduit must have sufficient capacity to discharge a design storm with a minimum of interruption and inconvenience to the public using streets and thoroughfares. The size of the conduit is determined by accumulating runoff from contributing inlets and calculating the slope of a hydraulic gradient from *Manning's Equation*: [EQUATION 3.23](#)

EQUATION 3.23: MANNING'S EQUATION

$$S_f = \frac{Qn^2}{1.49AR^{2/3}}$$

WHERE

Q = FLOW IN CONDUIT, (CFS)

n = MANNING'S ROUGHNESS COEFFICIENT; VALUE = 0.013

A = CROSS SECTIONAL AREA OF FLOW, (FEET²)

R = HYDRAULIC RADIUS, (FEET)

S_f = HYDRAULIC FRICTION SLOPE, (FEET/FEET)

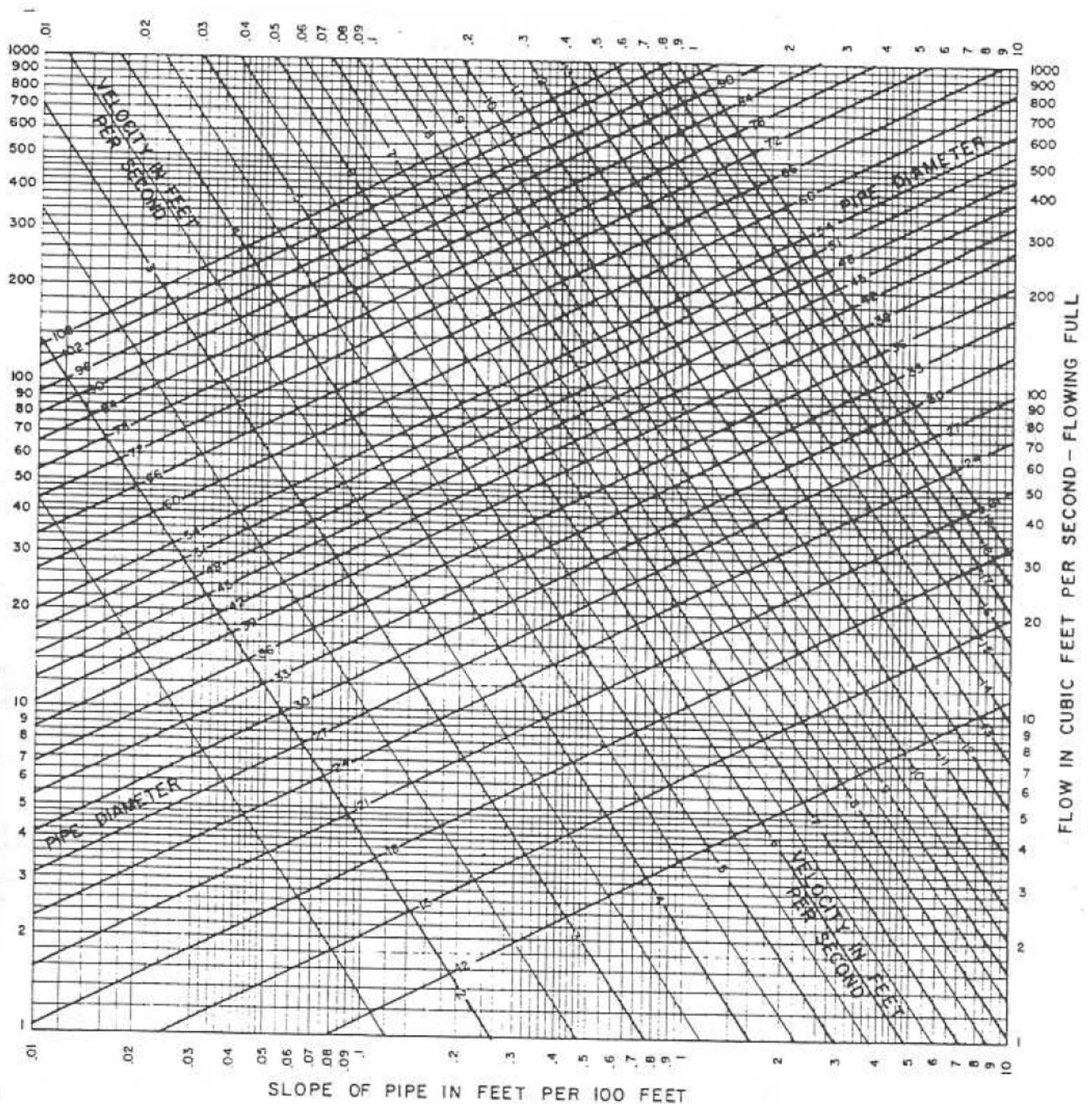
Hydraulic gradient for the selected conduit size shall be a minimum of 1.50-feet below gutter (*2.00-feet below top of curb*) for each contributing inlet to ensure that the selected conduit will carry the design flow at an elevation below the gutter profile. As the conduit size is selected and the hydraulic gradient is plotted between each inlet pickup point, a head loss due to a change in velocity and pipe size must be incorporated in the gradient profile.

At an outfall/headwall the starting hydraulic grade line (HGL) for a conduit system shall be set to the greater of the following: the conduit soffit or the 100-year water surface elevation for the receiving channel or detention pond.

Concrete pipe conduit shall be used to carry the storm water, and flow chart, [FIGURE 3.21](#), based on *Manning's Equation* may be used to determine the various hydraulic elements including the pipe size, the hydraulic gradient and the velocity. Special hydraulic calculators are also available for solution of *Manning's Equation*. All public storm lines shall be sized to carry the 100-year flow or greater. The hydraulic grade line is not allowed to be above of the public storm water pipe.



FIGURE 3.21: CAPACITY OF CIRCULAR PIPES FLOWING FULL



CAPACITY OF CIRCULAR
PIPES FLOWING FULL

A GRAPHICAL SOLUTION
OF
MANNING'S EQUATION

$$V = \frac{1.486}{n} R^{2/3} S^{1/2}$$

n = 0.013



The roughness coefficient 'n' for storm sewer conduit shall be 0.013.

With the hydraulic gradient established, considerable latitude is available for establishment of the conduit flow line. The inside top of the conduit must be at or below the hydraulic gradient thus allowing the conduit to be lowered where necessary. The hydraulic gradient at every inlet should be plotted directly on the construction plan profile worksheet and adjusted as necessary.

There will be hydraulic conditions, which cause the conduits to flow partially full, and where this occurs, the hydraulic gradient should be shown at the inside crown (soffit) of the conduit. This procedure will provide a means for conservatively selecting a conduit size, which will carry the flood discharge.

All public storm sewer systems shall be reinforced concrete pipe. Storm sewer pipe, with two (2) feet or less of cover, are required to be Class IV reinforced concrete pipe. All storm pipes and laterals are required to have a plan and profile on engineering plans. All flow data (Q_{100} , Q_{cap} , *velocity*, *hydraulic slope*) is required at every change in pipe size, slope and/or change in flow rate.

SUBSECTION 3.02.11.02 | MINOR HEAD LOSSES

When establishing the hydraulic grade line of a storm sewer, minor head losses at points of turbulence shall be calculated and included in the computation of the hydraulic grade line.

ENTRANCE LOSSES

Entrance losses to a closed storm sewer system from an open channel or lake shall be calculated using [EQUATION 3.24](#).

EQUATION 3.24: ENTRANCE LOSSES TO A CLOSED STORM SEWER SYSTEM FROM AN OPEN CHANNEL OR LAKE

$$H_L = K_E \frac{V_1^2}{2g}$$

WHERE:

H_L = HEAD LOSS (FT)

K_E = HEAD LOSS COEFFICIENT (SEE [TABLE 3.8](#)).

V_1 = VELOCITY IN THE DOWNSTREAM CONDUIT (FEET/SECOND)

g = THE ACCELERATION OF GRAVITY (32.3 FT/S²)



TABLE 3.8: ENTRANCE LOSS COEFFICIENTS

TYPE OF STRUCTURE AND DESIGN OF ENTRANCE	COEFFICIENT (K _e)
PIPE (CONCRETE)	
PROJECTING FROM FILL, SOCKET END (GROOVE-END)	0.2
PROJECTING FROM FILL, SQUARE CUT END	0.5
HEADWALL OR HEADWALL AND WINGWALLS	
SOCKET END OF PIPE (GROOVE-END)	0.2
SQUARE-EDGE	0.5
ROUNDED (RADIUS = 1/12D)	0.2
MITERED TO CONFORM TO FILL SLOPE	0.7
END-SECTION CONFORMING TO FILL SLOPE	0.5
BEVELED EDGES, 33.7- OR 45-DEGREE BEVELS	0.2
SIDE- OR SLOPE-TAPERED INLET	0.2
PIPE, OR PIPE-ARCH, (CORRUGATED METAL)	
PROJECTING FROM FILL (NO HEADWALL)	0.9
HEADWALL OR HEADWALL AND WINGWALLS SQUARE-EDGE	0.5
MITERED TO CONFORM TO FILL SLOPE, PAVED OR UNPAVED SLOPE	0.7
END-SECTION CONFORMING TO FILL SLOPE	0.5
BEVELED EDGES, 33.7-DEGREE OR 45-DEGREE BEVELS	0.2
SIDE- OR SLOPE-TAPERED INLET	0.2
BOX (REINFORCED CONCRETE)	
HEADWALL PARALLEL TO EMBANKMENT (NO WINGWALLS)	
SQUARE-EDGED ON 3 EDGES	0.5
ROUNDED ON 3 EDGES TO RADIUS OF 1/12 BARREL DIMENSION OR BEVELED EDGES ON 3 SIDES	0.2
WINGWALLS AT 30- TO 75-DEGREES TO BARREL	
SQUARE-EDGED AT CROWN	0.4
CROWN EDGE ROUNDED TO RADIUS OF 1/12 BARREL DIMENSION, OR BEVELED TOP EDGE	0.2
WINGWALL AT 10- TO 25-DEGREES TO BARREL	
SQUARE-EDGED AT CROWN	0.5
WINGWALL PARALLEL (EXTENSION OF SIDES)	
SQUARE-EDGED AT CROWN	0.7
SIDE- OR SLOPE-TAPERED INLET	0.2

INLET LOSSES

Inlet losses shall be calculated using [EQUATION 3.25](#).

EQUATION 3.25: INLET LOSSES

$$H_L = 1.25 \frac{V_{Lat}^2}{2g}$$

WHERE

H_L = HEAD LOSS (FT)

V_{Lat} = VELOCITY IN THE LATERAL (FT/S)

g = THE ACCELERATION OF GRAVITY (32.2 FT/S²)

EXPANSION LOSSES

For pipe size expansions, head loss shall be calculated using the following [EQUATION 3.26](#).

EQUATION 3.26: EXPANSION LOSSES

$$H_L = \left(1 - \left(\frac{D_1}{D_2}\right)^2\right) \frac{V_1^2}{2g}$$

WHERE

H_L = HEAD LOSS (FT)

V₁ = UPSTREAM VELOCITY (FT/S)

D₁ = UPSTREAM CONDUIT DIAMETER (FT)

D₂ = DOWNSTREAM CONDUIT DIAMETER (FT)

g = THE ACCELERATION OF GRAVITY (32.2 FT/S²)



MANHOLE AND BEND LOSSES

Head losses associated with manholes for pipe direction changes and bends in pipes of equal diameter shall be calculated using [EQUATION 3.27](#).

EQUATION 3.27: MANHOLE AND BEND LOSSES

$$H_L = K_j \frac{V_2^2}{2g}$$

WHERE

H_L = HEAD LOSS (FT)

K_e = HEAD LOSS COEFFICIENT FROM [TABLE 3.9](#).

V₂ = DOWNSTREAM VELOCITY (FT/S)

g = THE ACCELERATION OF GRAVITY (32.2 FT/S²)

JUNCTION LOSSES

Head losses associated with wye connections or manholes with branch laterals entering the main line shall be calculated by using [EQUATION 3.28](#).

EQUATION 3.28: JUNCTION LOSSES

$$H_L = \frac{V_2^2}{2g} - K_j \frac{V_1^2}{2g}$$

WHERE

H_L = HEAD LOSS (FT)

V₁ = VELOCITY IN THE UPSTREAM CONDUIT (FT/S)

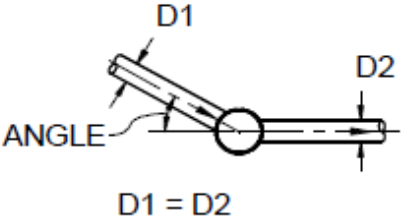
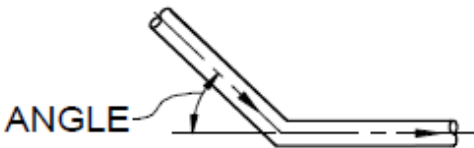
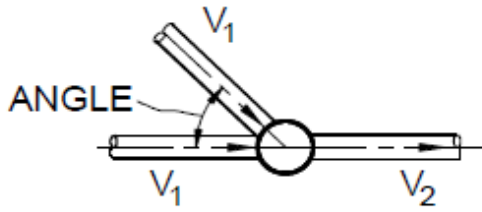
V₂ = VELOCITY IN THE DOWNSTREAM CONDUIT (FT/S)

K_e = HEAD LOSS COEFFICIENT FROM [TABLE 3.8](#).

g = THE ACCELERATION OF GRAVITY (32.2 FT/S²)



TABLE 3.9: VELOCITY HEAD LOSS COEFFICIENTS FOR CLOSED CONDUITS

MANHOLE AT CHANGE IN PIPE DIRECTION		
DESCRIPTION	ANGLE	HEAD LOSS COEFFICIENT K_j
 <p>$D1 = D2$</p>	90°	0.55
	60°	0.48
	45°	0.42
	30°	0.3
	0°	0.05
BENDS IN PIPES		
DESCRIPTION	ANGLE	HEAD LOSS COEFFICIENT K_j
	90°	0.5
	60°	0.43
	45°	0.37
	30°	0.25
JUNCTION		
DESCRIPTION	ANGLE	HEAD LOSS COEFFICIENT K_j
	0°	1
	22 1/2°	0.75
	45°	0.5
	60°	0.35
	90°	0.25



SUBSECTION 3.02.11.03 | MINIMUM GRADES

Storm drains should operate with flow velocities sufficient to prevent excessive deposits of solid materials; otherwise objectionable clogging may result. The controlling velocity with regard to sediment deposition is near the bottom of the conduit and considerably less than the mean velocity of the storm. Storm drains shall be designed to have a minimum mean velocity flowing full of 2.50-feet per second (FPS). [TABLE 3.10](#) indicates the minimum grades for concrete pipe with "Manning's "n" = 0.013 and flowing at 2.5 FPS.

TABLE 3.10: MINIMUM GRADES FOR STORM DRAIN PIPELINES

PIPE DIAMETER (INCHES)	SLOPE (FOOT/FOOT)	PIPE DIAMETER (INCHES)	SLOPE (FOOT/FOOT)
18	0.0018	48	0.0005
21	0.0015	54	0.0005
24	0.0013	60	0.0004
27	0.0011	66	0.0004
30	0.0009	72	0.0003
33	0.0008	78	0.0003
36	0.0007	84	0.0003
39	0.0006	90	0.0002
42	0.0006	96	0.0002
45	0.0005	102	0.0002

SUBSECTION 3.02.11.04 | MINIMUM GRADES

The slope of a storm sewer should also be such that excessive velocities will not damage the pipeline or drainage structures. [TABLE 3.11](#) delineates the maximum desirable velocities for storm sewer.

TABLE 3.11: MAXIMUM VELOCITIES IN CLOSED CONDUITS

TYPE OF CONDUIT	MAXIMUM VELOCITY
CULVERTS	15 FPS
INLET LATERALS	15 FPS
STORM SEWER PIPE	12.5 FPS

NOTE: THE MAXIMUM VELOCITIES SHALL BE THE ACTUAL VELOCITY, FULL OR PARTIAL FLOW.

SUBSECTION 3.02.11.05 | DISCHARGE OF STORM DRAIN PIPE

Storm drain pipes discharging into Lake Ray Hubbard shall be set such that the top of the pipe shall be set at elevation 435.5 or otherwise approved by the City Engineer. Discharge into Lake Ray Hubbard will require approval from the City of Dallas. Pipes discharging into the lake shall run to the lake to prevent erosion of the shoreline ([FIGURE 3.22 BELOW; CITY OF DALLAS](#)).

For discharging into retention ponds or lakes other than Lake Ray Hubbard, the outfall must be at minimum the same level of the normal water surface elevation. Pipes may not be designed or discharged to retain water within the pipe longer than 48-hours.

Where storm drain pipes discharge into water courses, the invert of the pipe shall be at the same grade as the low point of the water course and angled a maximum of 60-degrees to flow downstream. Adequate grouted rock riprap or other erosion protection shall be provided, no matter the velocity. Storm sewers shall discharge into open channels at a maximum velocity allowed within the channel material type per [TABLE 3.13](#).

SUBSECTION 3.02.11.06 | MANHOLES

Storm drain manholes shall be located at intervals not to exceed 500-feet for all public underground storm conduit systems. Manholes shall also be placed at locations where CCTV and Vac-con equipment can inspect/clean entire system without getting stuck or unable to make bends/wye connection turns. Therefore, manholes shall also be placed where there is no more than one (1) bend or wye connection between manholes or inlets. Inlet and manhole lids shall be 24-inches with locking lids.



SUBSECTION 3.02.11.07 | LATERAL LINES

The minimum size of public reinforced concrete storm sewer line from the inlet box to the collector lines shall be 18-inches in diameter for a discharge of less than ten (10) CFS. Where discharge exceeds ten (10) CFS and/or connects to a ten (10) foot inlet, lateral lines shall be a minimum of 21-inches in diameter.

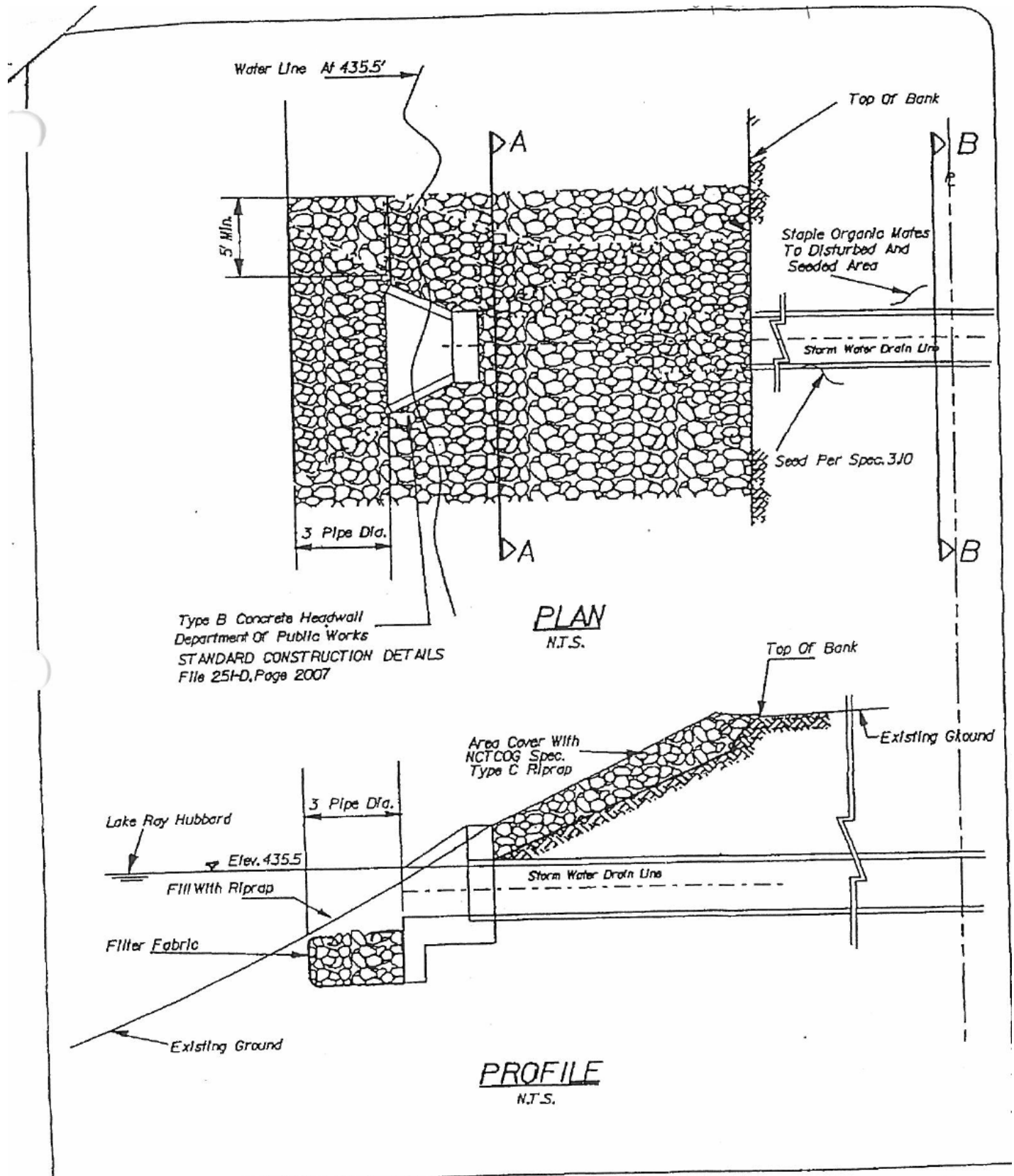
SUBSECTION 3.02.11.08 | UNDERDRAINS/FRENCH DRAINS

The minimum size of underdrains/French drain shall be six (6) inches in diameter. Piping shall be installed per standard detail R-6080 and connect to the nearest downstream inlet. Cleanout shall be placed at the most upstream point and at a maximum spacing of 400 feet. Horizontal location shall be adjusted as needed in order to prevent conflict with other proposed or existing utilities within corridor. 90-degree bends in small lines are prohibited. 45-degree bends or clean outs are recommended.

Any private underdrains/French drains that are discharging into City right-of-way or easements shall connect to the closest City underdrain, storm drain pipe or inlet. A clean out shall be placed at the right-of-way line to the private underdrain lateral. If a private underdrain is not in close proximity to a larger storm drain pipe or inlet system, a pop-up drain shall be installed in private property. No cutting or "punching" into City curb with pipes will be allowed.



FIGURE 3.22: LAKE RAY HUBBARD TYPICAL STORM SEWER INSTALLATION



LAKE RAY HUBBARD - TYPICAL STORM SEWER INSTALLATION



SUBSECTION 3.02.11.09 | FEDERAL 100-YEAR FLOOD ZONES

Where the Federal Emergency Management Administration (FEMA) has defined a flood hazard area with regard to a drainage course as shown on the effective Flood Insurance Rate Maps (FIRMs), the flood hazard zone and the floodplain, floodway, cross-section lines and water surface elevations at each cross-section, if available, shall be shown on the plat and engineering plans a minimum of every 300-feet.

SUBSECTION 3.02.11.10 | LOCAL 100-YEAR FLOOD ZONES

Where flood information has not been determined for streams, creeks, channels, or impoundments located within or adjacent to a proposed development, the 100-year fully developed flood elevations and flood boundaries shall be determined by the developers' engineers. The local floodplain, cross-section lines and water surface elevations at each cross-section shall be shown on the plat and engineering plans a minimum of every 300-feet. Source of the floodplain information shall be referenced.

SUBSECTION 3.02.11.11 | FLOODPLAIN MARKERS

The City will provide floodplain markers to be installed by the developer which shall be placed at the property corners and points of intersection of each lot adjacent to the flood plain and a maximum distance apart of 300-feet along the floodplain line.

SUBSECTION 3.02.11.12 | INLET MARKERS

The City will provide *No Dumping, Drains to Waterway* inlet markers to be installed on each inlet by the developer. Installation to be done at the developer's expense.

SUBSECTION 3.02.11.13 | DUMPSTERS

The dumpster site area shall drain through a private oil/water separator prior to connecting to the storm water system. All dumpster surface area must drain into a private slot or area drain to prevent any drainage from leaving the dumpster area. This private system shall discharge into a storm system and cannot discharge into a wastewater system or surface drain.

SUBSECTION 3.02.11.14 | FUELING STATIONS

If there is a fueling station on the site, the storm line serving the fueling station drainage area shall include an oil/water separator. This private system shall discharge into a storm system and cannot discharge into a wastewater system or surface drain.

SUBSECTION 3.02.11.15 | TESTING

All storm sewers, laterals and underdrains shall be visually inspected by video/camera at the contractor's expense prior to final acceptance by the City of Rockwall. Any sags, open joints, cracked pipes, etc. shall be repaired or removed by the contractor at the contractor's expense. Pipes shall be cleaned prior to videoing the pipe. The contractor shall furnish a DVD or flash drive of the video to the Engineering Department inspector for review. Where applicable, the storm line shall be videoed after the franchise utilities have been installed for the site.

SUBSECTION 3.02.12 | STORM SEWER DESIGN (CLOSED CONDUIT)

SUBSECTION 3.02.12.01 | GENERAL

To facilitate the design of closed conduit storm sewers, design will be based on the calculations called out in this section and the instructions for [FORM 3.3, STORM SEWER CALCULATIONS](#). [FORM 3.3](#) in its entirety shall be included in the plans and calculations shall be provided for each system including laterals.

FORM 3.3: STORM SEWER CALCULATIONS TABLE

SYSTEM ID	CONDUIT PROPERTIES										
	COLLECTION POINT STATION		LENGTH	# OF BARRELS	PIPE SIZE	BOX		TYPE	AREA	WETTED PERIMETER (P _w)	HYDRAULIC RADIUS
	U/S	D/S				SPAN	RISE				
			FEET		INCHES	FEET	FEET		FEET ²	FEET	FEET
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)

CONDUIT PROPERTIES				INCREMENTAL DRAINAGE AREA				ACCUMULATED (C*A)	UP-STREAM (T _c)	DESIGN STORM FREQUENCY
MANNING'S (n)	FLOWLINE ELEVATION		SLOPE	INLET ID	AREA	RUNOFF COEFFICIENT (C)	INCREMENTAL (C*A)			
	UP-STREAM	DOWN-STREAM						FEET/FEET	ACRES	MINUTES
(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)

INTENSITY (I)	RUNOFF (Q)	CONDUIT CAPACITY (Q _c)	PARTIAL FLOW	VELOCITY (V)	TIME IN CONDUIT	FRICTION SLOPE (S _i)	FRICTION HEAD-LOSS	HGL		HEADLOSS CALCULATIONS	
								U/S	D/S	$\frac{V_1^2}{2g}$	$\frac{V_2^2}{2g}$
INCH/HOUR	CFS	CFS	YES/NO	FEET/SECOND	MINUTES	FEET/FEET	FEET			FEET	FEET
(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)

HEADLOSS CALCULATIONS			DESIGN HGL	TOP OF CURB ELEVATION	HGL DEPTH BELOW (T/C)	REMARKS
JUNCTION TYPE	COEFFICIENT (K _j)	HEAD-LOSS (H _L)				
		FEET			FEET	
(36)	(37)	(38)	(39)	(40)	(41)	(42)



INSTRUCTIONS FOR FORM 3.3: INLET DESIGN CALCULATIONS

COLUMN (1)	SYSTEM ID, IF PRIVATE LABEL (EX. LINE-A, LINE-B,; LAT-A1, LAT-A2,)
COLUMN (2)	STORM SEWER LINE STATION AT THE UPSTREAM END OF CONDUIT SECTION
COLUMN (3)	STORM SEWER LINE STATION AT THE DOWNSTREAM END OF CONDUIT SECTION
COLUMN (4)	LENGTH OF CONDUIT SEGMENT, EQUAL TO COLUMN (2) MINUS COLUMN (3)
COLUMN (5)	NUMBER OF BARRELS OF CONDUIT
COLUMN (6)	SIZE OF PIPE IN INCHES
COLUMN (7)	SPAN OF BOX CONDUIT
COLUMN (8)	RISE OF BOX CONDUIT
COLUMN (9)	CONDUIT TYPE (EX. RCP, RCB, PVC, HDPE,)
COLUMN (10)	CONDUIT AREA
COLUMN (11)	WETTED PERIMETER
COLUMN (12)	EQUAL TO COLUMN (10) DIVIDED BY COLUMN (11)
COLUMN (13)	MANNING'S ROUGHNESS COEFFICIENT
COLUMN (14)	CONDUIT FLOWLINE ELEVATION AT THE UPSTREAM END OF CONDUIT SECTION
COLUMN (15)	CONDUIT FLOWLINE ELEVATION AT THE DOWNSTREAM END OF CONDUIT SECTION
COLUMN (16)	CONDUIT SLOPE IN FEET/FEET
COLUMN (17)	THE INCREMENTAL DRAINAGE AREA ID CONTRIBUTING TO THE CONDUIT SECTION
COLUMN (18)	THE INCREMENTAL DRAINAGE AREA IN ACRES CONTRIBUTING TO THE CONDUIT SECTION
COLUMN (19)	THE INCREMENTAL DRAINAGE AREA RUNOFF COEFFICIENT CONTRIBUTING TO THE CONDUIT SECTION
COLUMN (20)	EQUAL TO COLUMN (18) MULTIPLIED BY COLUMN (19)
COLUMN (21)	EQUAL TO COLUMN (20) PLUS COLUMN (21) OF THE UPSTREAM CONDUIT SECTION
COLUMN (22)	EQUAL TO INLET TC OF MOST UPSTREAM CONDUIT SECTION, OR THE SUM OF UPSTREAM CONDUIT SECTION COLUMN (22) AND COLUMN (29)
COLUMN (23)	DESIGN STORM FREQUENCY SHALL BE 100-YR
COLUMN (24)	SHALL BE TAKEN FROM FIGURE 3.1 USING COLUMNS (22) AND (23)
COLUMN (25)	SOLUTION OF EQUATION 3.1 USING COLUMNS (21) AND (24)
COLUMN (26)	SOLUTION OF MANNING'S EQUATION 3.8 WHERE THE CONDUIT IS FLOWING FULL (<i>DEPTH OF FLOW IS EQUAL TO HEIGHT OF CONDUIT</i>)



COLUMN (27)	YES, IF COLUMN (25) < COLUMN (26). NO, IF COLUMN (25) ≥ COLUMN (26)
COLUMN (28)	THE ACTUAL VELOCITY WITHIN THE CONDUIT
COLUMN (29)	EQUAL TO COLUMN (4) DIVIDED BY COLUMN (28) DIVIDED BY 60 SEC/MIN
COLUMN (30)	SOLUTION OF EQUATION 3.23
COLUMN (31)	EQUAL TO COLUMN (4) MULTIPLIED BY COLUMN (30)
COLUMN (32)	UPSTREAM HYDRAULIC GRADE LINE. EQUAL TO COLUMN (33) PLUS COLUMN (31)
COLUMN (33)	THIS IS THE BEGINNING HYDRAULIC GRADIENT OF THE LINE. IT IS EQUAL TO THE DESIGN HGL COLUMN (38) FOR THE NEXT DOWNSTREAM SEGMENT, OR THE BEGINNING HGL OF THE SYSTEM.
COLUMN (34)	VELOCITY HEAD OF THE INCOMING PIPE AT THE WYE, JUNCTION, INLET OR MANHOLE.
COLUMN (35)	VELOCITY HEAD OF THE OUTGOING PIPE (<i>THE PIPE SEGMENT BEING ANALYZED</i>) AT THE WYE, JUNCTION, INLET OR MANHOLE.
COLUMN (36)	UPSTREAM JUNCTION TYPE (<i>EX. INLET, 60° WYE, 30° BEND, JCT. BOX, ...</i>)
COLUMN (37)	TAKEN FROM TABLE 3.9
COLUMN (38)	TAKEN FOR EQUATION 3.25 , EQUATION 3.26 , EQUATION 3.27 , AND EQUATION 3.28 DEPENDING ON JUNCTION TYPE
COLUMN (39)	UPSTREAM HYDRAULIC GRADE LINE DESIGN POINT OF THE CONDUIT SEGMENT. COLUMN (24) PLUS COLUMN (32)
COLUMN (40)	THE TOP OF CURB ELEVATION AT WHICH THE INLET IS LOCATED
COLUMN (41)	EQUAL TO THE COLUMN (40) MINUS COLUMN (39)
COLUMN (42)	SPECIAL DESIGN COMMENTS ARE ENTERED HERE.

SUBSECTION 3.02.13 | STORM SEWER DESIGN (OPEN CHANNELS)

SUBSECTION 3.02.13.01 | GENERAL

All channels, proposed or existing, shall be designed to have a minimum bottom width of six (6) feet and based on a maximum flow and a minimum flow line slope of one (1) percent. Side slopes of channels shall not be steeper than one (1) foot rise to four (4) feet horizontal distance. Where slopes are steeper than four (4) to one (1) [*i.e.* 4:1], the slopes shall be concrete lined for slope protection. In unlined open channels, the side slopes and channel slopes shall be such that erosion is controlled and the channel is stable. Channels discharging into Lake Ray Hubbard must have City of Dallas approval and shall have inverts a minimum of two (2) feet below normal conservation pool level (*i.e.* 435.5). Channels discharging into water courses shall have the same invert level as the water course.

The instructions for [FORM 3.4, OPEN DRAINAGE CHANNEL CALCULATIONS TABLE](#), have been included in this section to facilitate the hydraulic design of an open channel.



INSTRUCTIONS FOR FORM 3.4: OPEN DRAINAGE CHANNEL CALCULATIONS

COLUMN (1)	DOWNSTEAM LIMIT OF THE SECTION OF CHANNEL UNDER CONSIDERATION.
COLUMN (2)	UPSTREAM LIMIT OF THE SECTION OF CHANNEL UNDER CONSIDERATION.
COLUMN (3)	TYPE OF CHANNEL AS SHOWN SHALL BE EITHER TYPE I NATURAL UNIMPROVED CHANNEL, TYPE II UNLINED WITH MAINTENANCE SECTION, (CONCRETE PILOT CHANNEL) OR TYPE III, CONCRETE LINED CHANNEL.
COLUMN (4)	FLOW IN THE SECTION OF CHANNEL UNDER CONSIDERATION.
COLUMN (5)	ROUGHNESS COEFFICIENT OF THE CHANNEL CROSS-SECTION TAKEN FROM TABLE 3.12 .
COLUMN (6)	SLOPE OF THE CHANNEL WHICH IS MOST OFTEN PARALLEL TO SLOPE OF THE HYDRAULIC GRADIENT.
COLUMN (7)	SQUARE ROOT OF COLUMN (6).
COLUMN (8)	CALCULATION IS MADE USING THE VALUES IN COLUMNS (4), (5) AND (7).
COLUMN (9)	ASSUMED WIDTH OF THE BOTTOM WIDTH OF THE CHANNEL.
COLUMN (10)	ASSUMED DEPTH OF FLOW.
COLUMN (11)	ASSUMED SLOPE OF THE SIDES OF THE CHANNEL.
COLUMN (12)	AREA OF FLOW WHICH IS CALCULATED BASED ON COLUMNS (9), (10) AND (11).
COLUMN (13)	WETTER PERIMETER CALCULATED FROM COLUMNS (9), (10) AND (11).
COLUMN (14)	VALUE IS CALCULATED FROM COLUMNS (12) AND (13).
COLUMN (15)	COLUMN (14) RAISED TO 2/3 POWER.
COLUMN (16)	PRODUCT OF COLUMN (13) TIMES COLUMN (15).
<p><i>NOTE:</i> WHEN THE VALUE OF COLUMN (16) EQUALS THE VALUE OF COLUMN (8) THE CHANNEL HAS BEEN ADEQUATELY SIZED. WHEN THE VALUE OF COLUMN (16) EXCEEDS THE VALUE OF COLUMN (8) BY MORE THAN FIVE PERCENT, THE CHANNEL WIDTH OR DEPTH SHOULD BE DECREASED AND ANOTHER TRIAL SECTION ANALYZED.</p>	
COLUMN (17)	CALCULATION IS BASED ON THE VALUES OF COLUMNS (4) AND (12)
COLUMN (18)	CALCULATION IS BASED ON COLUMN (17)
COLUMN (19)	REMARKS CONCERNING THE CHANNEL SECTION ANALYZED MAY BE ENTERED.



TABLE 3.12: ROUGHNESS COEFFICIENTS FOR OPEN CHANNELS AND MAXIMUM VELOCITY

Channel Description	Roughness Coefficient			Maximum Velocity
	Minimum	Normal	Maximum	
<u>Minor Natural Streams - Type I Channel</u>				
Moderately Well Defined Channel				
Grass and Weeds, Little Brush	0.025	0.030	0.033	8
Dense Weeds, Little Brush	0.030	0.035	0.040	8
Weeds, Light Brush on Banks	0.030	0.035	0.040	8
Weeds, Heavy Brush on Banks	0.035	0.050	0.060	8
Weeds, Dense Willows on Banks	0.040	0.060	0.080	8
Irregular Channel with Pools and Meanders				
Grass and Weeds, Little Brush	0.030	0.036	0.042	8
Dense Weeds, Little Brush	0.036	0.042	0.048	8
Weeds, Light Brush on Banks	0.036	0.042	0.048	8
Weeds, Heavy Brush on Banks	0.042	0.060	0.072	8
Weeds, Dense Willows on Banks	0.048	0.072	0.096	8
Flood Plain, Pasture				
Short Grass, No Brush	0.025	0.030	0.035	8
Tall Grass, No Brush	0.030	0.035	0.050	8
Flood Plain, Cultivated				
No Crops	0.025	0.030	0.035	8
Mature Crops	0.030	0.040	0.050	8
Flood Plain, Uncleared				
Heavy Weeds, Light Brush	0.035	0.050	0.070	8
Medium to Dense Brush	0.070	0.100	0.160	8
Trees with Flood State below Branches	0.080	0.100	0.120	8
<u>Major Natural Streams - Type I Channel</u>				
The roughness coefficient is less than that for minor streams of similar description because banks offer less effective resistance.				
Moderately Well Defined Channel	0.025	---	0.060	8
Irregular Channel	0.035	---	0.100	8
<u>Unlined Vegetated Channels - Type II Channel</u>				
Mowed Grass, Clay Soil	0.025	0.030	0.035	8
Mowed Grass, Sandy Soil	0.025	0.030	0.035	6
<u>Unlined Non-Vegetated Channels - Type II Channel</u>				
Clean Gravel Section	0.022	0.025	0.030	8
Shale	0.025	0.030	0.035	10
Smooth Rock	0.025	0.030	0.035	15
<u>Lined Channels - Type II</u>				
Smooth Finished Concrete	0.013	0.015	0.020	15
Riprap (Rubble)	0.030	0.040	0.050	12



SUBSECTION 3.02.14 | CULVERT DESIGN

SUBSECTION 3.02.14.01 | GENERAL

The design of culverts shall be sized to convey the discharge of the design flood frequency of 100-year fully-developed watershed. The hydraulic calculations shall be entered into [FORM 3.5](#), which is further described herein. If computer modeling software is used in culvert design such as *HY-8*, *HEC-RAS*, etc. all input and output parameters shall be included in the plans, or in a certified report referenced in the plans.

Where a parallel culvert is to be placed in a roadside ditch the culvert headwalls shall start at the end of the curb return or driveway radius and extend beyond the return. All driveway culverts are to be maintained, repaired, and replaced by the property owner or HOA.

Minimum Culvert Diameter shall be 18-inch and be reinforced concrete pipe.

(A) Information in the upper right of form:

- Culvert Location. This is a word description of the physical location.
- Length. The actual length of the culvert.
- Total Discharge (Q). This is the flow computed on [FORM 3.1](#).
- Design Storm Frequency. 100-year storm
- Roughness Coefficient (n). Value = 0.013.
- Maximum Discharge Velocity. Obtained from [TABLE 3.13](#).
- Tailwater. This is the design depth of water in the downstream channel and is obtained in connection with the channel design performed on [FORM 3.4](#).
- D.S. Channel Width. This is the bottom width of the downstream channel. The culvert should be sized to approximate this width whenever possible.
- Entrance Description. This is a listing of the actual condition as shown in the *Culvert Entrance Data* shown on the calculation sheet.
- Roadway Elevation. The elevation of the top of curb at the upstream end of culvert.
- U.S. Culvert F.L. The flow line of the culvert at the upstream end.
- Difference. The difference in elevations of the roadway and the upstream flow line.
- Required Freeboard. The vertical distance required for safety between the upstream design water surface and the roadway elevation or such other requirements, which may occur because of particular physical conditions.
- Allowable Headwater. This is obtained by subtracting the freeboard from the difference shown immediately above.
- D.S. Culvert F.L. The flow line elevation of the downstream end of the culvert.
- Culvert Slope (S). This is the physical slope of the structure calculated as indicated.

The instructions for [FORM 3.5](#): Culvert Design Calculations Table have been included in this section to facilitate the hydraulic design of a culvert.

TABLE 3.13: CULVERT DISCHARGE VELOCITIES

CULVERT DISCHARGES ON	MAXIMUM ALLOWABLE VELOCITY (FPS)
EARTH (SANDY)	6
EARTH (CLAY)	8
SODDED EARTH	8
CONCRETE	15
SHALE	10
ROCK	15

*Note: Velocities are based on actual velocity - partial or full flow



FORM 3.5: CULVERT DESIGN CALCULATIONS TABLE

CULVERT ENTRANCE DATA

CONCRETE BOX CULVERT

TYPE	FLARE ANGLE	ENTRANCE EDGE	K_e
1A	30° to 75°	Square	0.4
1B	30° to 75°	Round	0.3
2A	15° to 30° & 75° to 90°	Square	0.5
2B	15° to 30° & 75° to 90°	Round	0.3
3A	0° (Extension of Sides)	Square	0.7
3B	0° (Extension of Sides)	Round	0.5

CONCRETE PIPE

TYPE	ENTRANCE DESCRIPTION	K_e
4	Spigot End With Headwall	0.5
5	Bell End With Headwall	0.2
6A	Bell End Projecting With No Headwall	0.3
6B	Spigot End Projecting With No Headwall	0.6

OUTLET CONTROL

CASE III
OUTLET SUBMERGED

CASE IV
OUTLET NOT SUBMERGED

INLET CONTROL

CASE I
INLET NOT SUBMERGED

CASE II
INLET SUBMERGED

CULVERT DESIGN CALCULATIONS

CULVERT LOCATION: _____ LENGTH, L: _____

TOTAL DISCHARGE, Q: _____ DESIGN STORM FREQ: _____

ROUGHNESS COEFF., n: _____ MAX. VEL: _____

TAILWATER: _____ D.S. CHANNEL WIDTH: _____

ENTRANCE DESCRIPTION: _____

RDWY. ELEV. _____ U.S. CULV. F.L. _____

U.S. CULV. F.L. _____ D.S. CULV. F.L. _____

DIFFERENCE _____ DIFFERENCE _____

REDD. FREEBOARD, _____ FT. CULV. SLOPE, S_o : _____ DIFF. FT. _____

ALLOW. HEADWATER, _____ FT. S_o : _____

HEADWATER CALCULATION

OUTLET CONTROL (See Figures 27, 28, 29, & 30)

Trial Area of Opening $T_A = \frac{A_c \sqrt{V_{max}}}{4.48}$ (sq. ft.)	DEPTH RANGE D.R.		POSSIBLE CULVERT SIZES				INLET CONTROL (See Figures 25 & 26)		OUTLET CONTROL (See Figures 27, 28, 29, & 30)				The Greater of Head Water (Inlet or Outlet) (feet)	SELECTED CONDUIT SIZE																																			
	Channel Width "W" (feet)	$\frac{T_A c}{W}$ (feet)	No. of Openings	Width of Box "B" (feet)	Depth of Box or Pipe Dia. "D" (feet)	Total Culvert Area "A _c " (sq. ft.)	"O" Each Opening (c.f.t.)	Entrance Type	Case No.	$\frac{D}{B}$ (c.f.t.)	$\frac{HW}{D}$ (figure 25 & 26)	Entrance Coeff. K_e			"H" (figure 27 & 28)	"TW" (feet)	"LxS _o " (feet)	"H" (figure 27 & 28)	"HW" (feet)	$\frac{d_c}{29.830}$ (figure 29 & 30)	$\frac{d_c}{2}$ or $\frac{d_c}{2}$ (figure 29 & 30)	$\frac{d_c}{2}$ or $\frac{d_c}{2}$ (figure 29 & 30)	$HW + H + hg - LxS_o$ (feet)	$hw + \frac{d_c + D}{2}$ or $hw + TW$ (use larger) (feet)	LxS_o (feet)	LxS_o (feet)	h_o (feet)	h_o (feet)	h_o (feet)	$HW + H + hg - LxS_o$ (feet)																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50



INSTRUCTIONS FOR FORM 3.5: CULVERT DESIGN CALCULATIONS

NOTE: COLUMNS 1 THROUGH 10 DEAL WITH SELECTION OF TRIAL CULVERT SIZE AND ARE EXPLAINED AS FOLLOWS:

COLUMN (1)	TOTAL DESIGN DISCHARGE, Q, PASSING THROUGH THE CULVERT DIVIDED BY THE ALLOWABLE MAXIMUM VELOCITY GIVES TRIAL TOTAL AREA OF CULVERT OPENING.
COLUMN (2)	CULVERT WIDTH SHOULD BE REASONABLY CLOSE TO THE CHANNEL BOTTOM WIDTH, W, DOWNSTREAM OF THE CULVERT.
COLUMN (3)	LOWER RANGE FOR CHOOSING CULVERT DEPTH IS TRIAL AREA OF CULVERT OPENING, COLUMN (1) DIVIDED BY CHANNEL WIDTH, COLUMN (2).
COLUMN (4)	ALLOWABLE HEADWATER OBTAINED FROM UPPER RIGHT OF SHEET.
COLUMN (5)	TRIAL DEPTH, D, OF CULVERT CORRESPONDING TO AVAILABLE STANDARD SIZED AND BETWEEN THE NUMERICAL VALUES OF COLUMNS (3) AND (4).

NOTE: COLUMNS (6), (7) AND (8) ARE SOLVED SIMULTANEOUSLY BASED ON PROVIDING A TOTAL AREA EQUIVALENT TO THE TRIAL AREA OF OPENING IN COLUMN (1).

COLUMN (6)	NUMBER OF CULVERT OPENINGS.
COLUMN (7)	INSIDE WIDTH OF ONE OPENING.
COLUMN (8)	INSIDE DEPTH OF ONE OPENING IF CULVERT IS BOX STRUCTURE OR DIAMETER IF CULVERT IS PIPE.
COLUMN (9)	COLUMN 6 MULTIPLIED BY COLUMN (7) AND COLUMN (8).
COLUMN (10)	TOTAL DISCHARGE DIVIDED BY NUMBER OF OPENINGS SHOWN IN COLUMN (6).

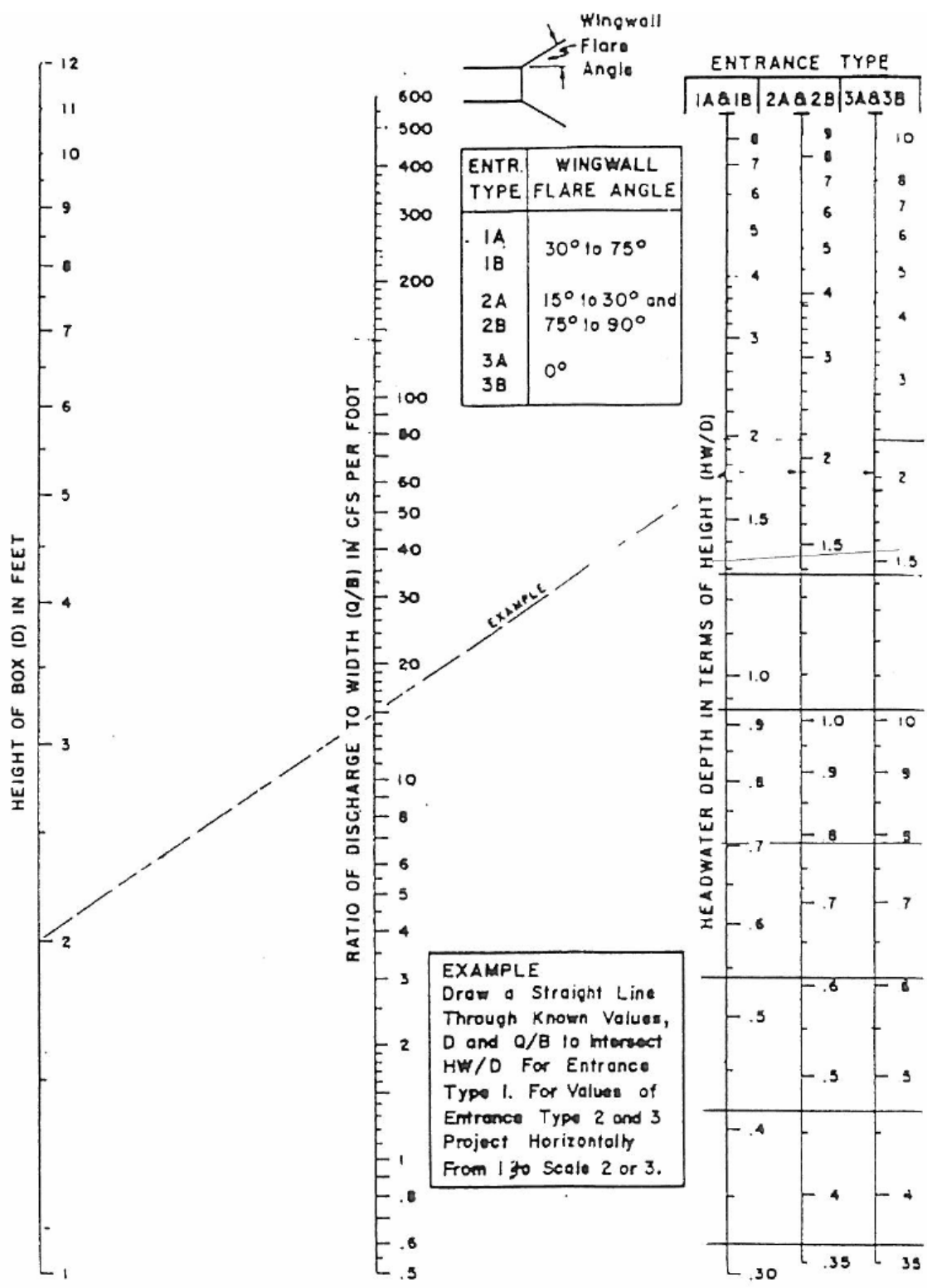
NOTE: COLUMNS (11) THROUGH (15) (INLET CONTROL) AND (16) THROUGH (27) (OUTLET CONTROL) DEAL WITH HEADWATER CALCULATIONS WHICH VERIFY HYDRAULICS OF TRIAL CULVERT SELECTED AND ARE EXPLAINED AS FOLLOWS.

COLUMN (11)	OBTAINED FROM UPPER RIGHT OF SHEET.
COLUMN (12)	WHEN THE ALLOWABLE HEADWATER IS EQUAL TO OR LESS THAN THE VALUE IN COLUMN (8), ENTER CASE I. WHEN THE ALLOWABLE HEADWATER IS MORE THAN THE VALUE IN COLUMN (8), ENTER CASE II.
COLUMN (13)	COLUMN 10 DIVIDED BY COLUMN (7).
COLUMN (14)	OBTAINED FROM FIGURE 3.23 FOR BOX CULVERTS OR FIGURE 3.24 FOR PIPE CULVERTS.
COLUMN (15)	COLUMN (14) MULTIPLIED BY COLUMN (8).
COLUMN (16)	OBTAINED FROM UPPER PART OF SHEET.
COLUMN (17)	OBTAINED FROM FIGURE 3.25 FOR BOX CULVERTS AND FIGURE 3.26 FOR PIPE CULVERTS.
COLUMN (18)	TAILWATER DEPTH FROM UPPER RIGHT OF SHEET.
COLUMN (19)	CULVERT SLOPE, S, MULTIPLIED BY CULVERT LENGTH, BOTH OBTAINED FROM UPPER RIGHT OF SHEET.
COLUMN (20)	SUM OF COLUMNS (17) AND (18), MINUS COLUMN (19).
COLUMN (21)	OBTAINED FROM FIGURE 3.25 FOR BOX CULVERTS AND FIGURE 3.26 FOR PIPE CULVERTS.
COLUMN (22)	CRITICAL DEPTH OBTAINED FROM FIGURE 3.27 FOR BOX CULVERTS AND FIGURE 3.28 FOR PIPE CULVERTS.
COLUMN (23)	SUM OF COLUMNS (22) AND (8) DIVIDED BY (2).



COLUMN (24)	TAILWATER DEPTH FROM UPPER RIGHT OF SHEET.
COLUMN (25)	ENTER THE LARGER OF THE TWO VALUES SHOWN IN COLUMN (23) OR COLUMN (24).
COLUMN (26)	PREVIOUSLY CALCULATED IN COLUMN (19) AND MAY BE TRANSPOSED.
COLUMN (27)	THE SUM OF COLUMNS (21) AND (25) MINUS COLUMN (26).
COLUMN (28)	ENTER THE LARGER OF THE VALUES FROM EITHER COLUMN (15), COLUMN (20) OR COLUMN (27). THIS DETERMINES THE CONTROLLING HYDRAULIC CONDITIONS OF THE PARTICULAR SIZE CULVERT INVESTIGATED.
COLUMN (29)	WHEN THE ENGINEER IS SATISFIED WITH THE HYDRAULIC INVESTIGATIONS OF VARIOUS CULVERTS AND HAS DETERMINED WHICH WOULD BE THE MOST ECONOMICAL SELECTION; THE DESCRIPTION SHOULD BE ENTERED.

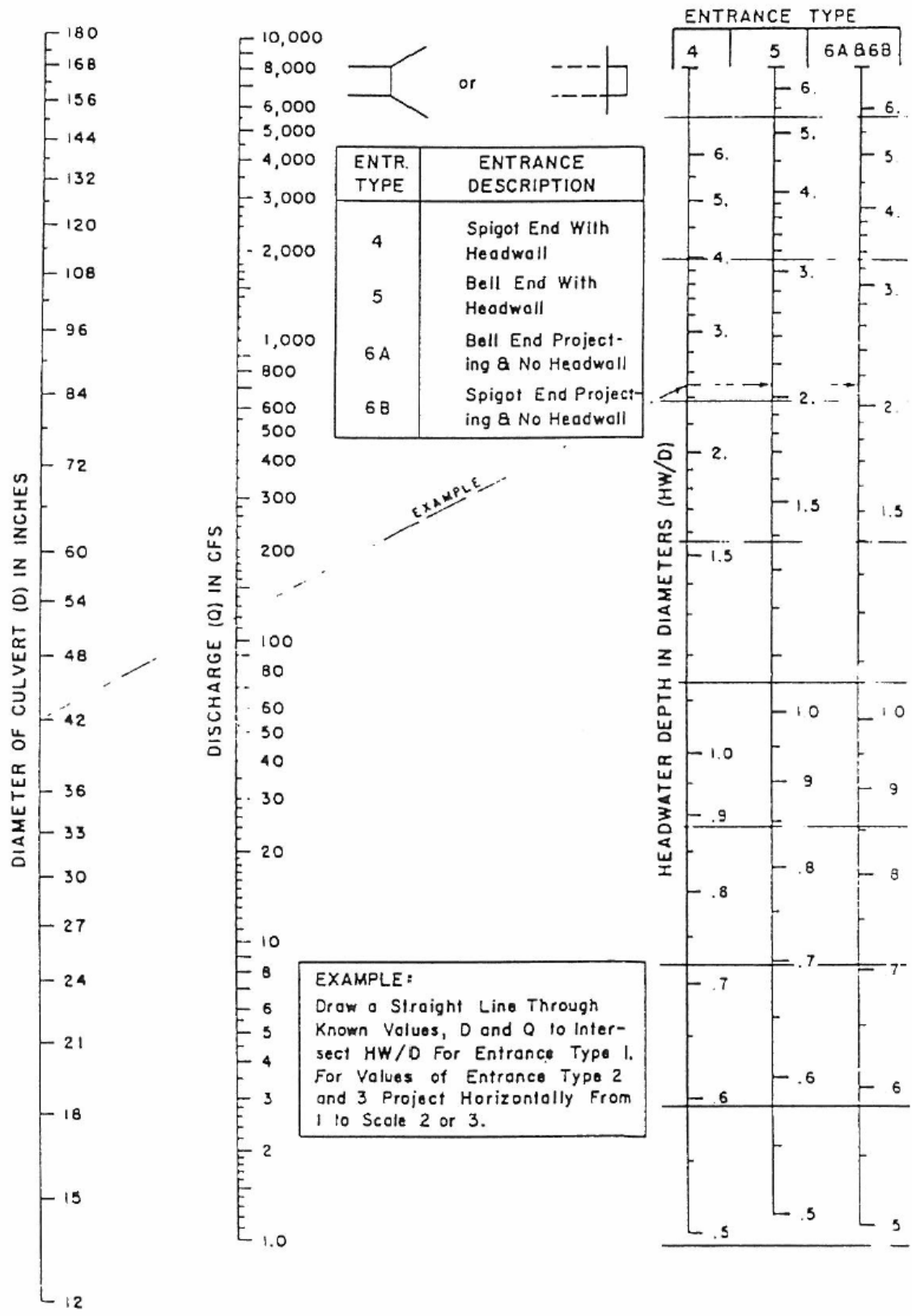
FIGURE 3.23: HEADWATER DEPTH FOR CONCRETE BOX CULVERT WITH INLET CONTROL



BUREAU OF PUBLIC ROADS JAN 1963

HEADWATER DEPTH FOR CONCRETE BOX CULVERT WITH INLET CONTROL

FIGURE 3.24: HEADWATER DEPTH FOR CONCRETE PIPE CULVERT WITH INLET CONTROL



HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

BUREAU OF PUBLIC ROADS JAN 1963

FIGURE 3.25: HEAD FOR CONCRETE BOX CULVERT FLOWING FULL

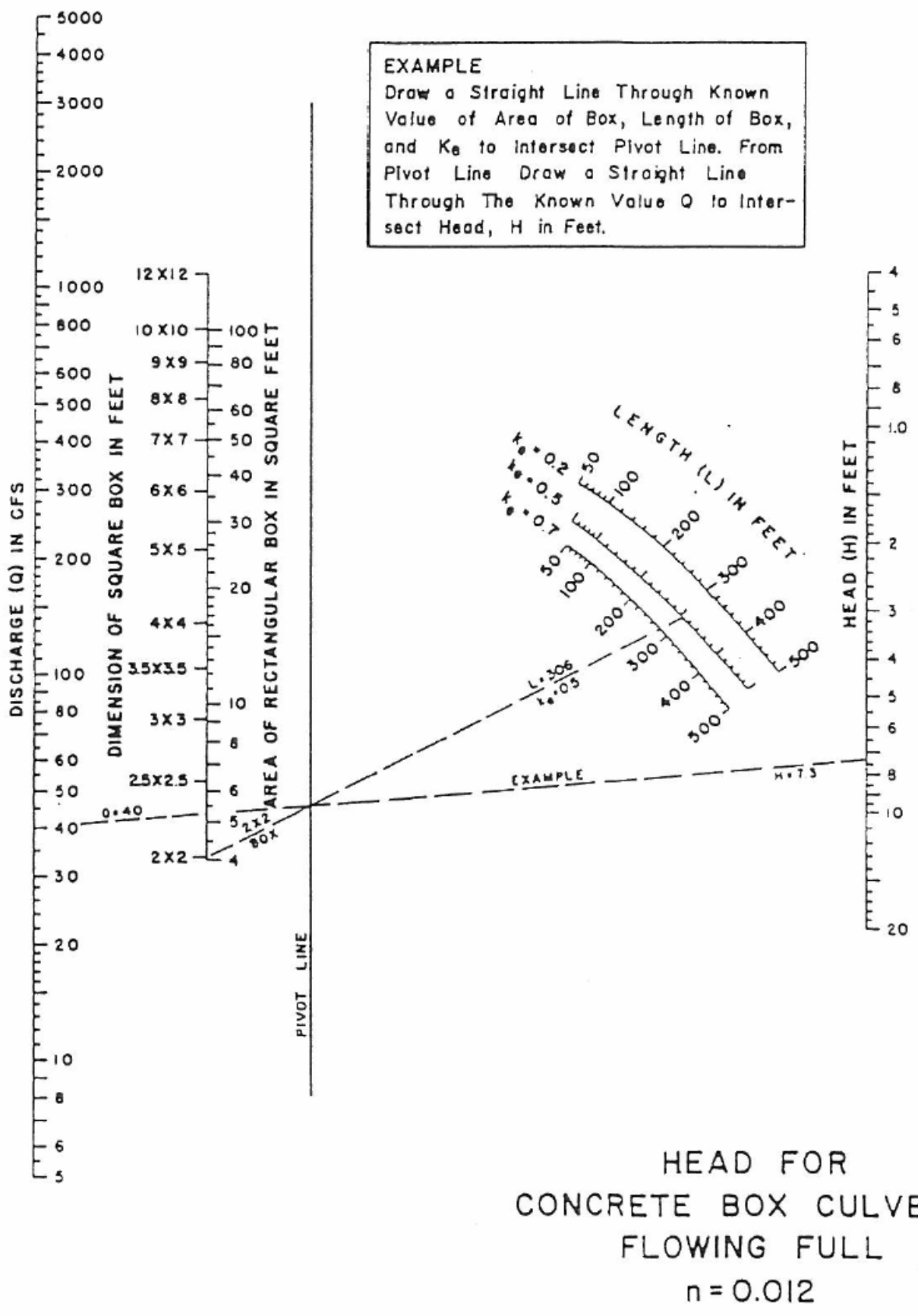
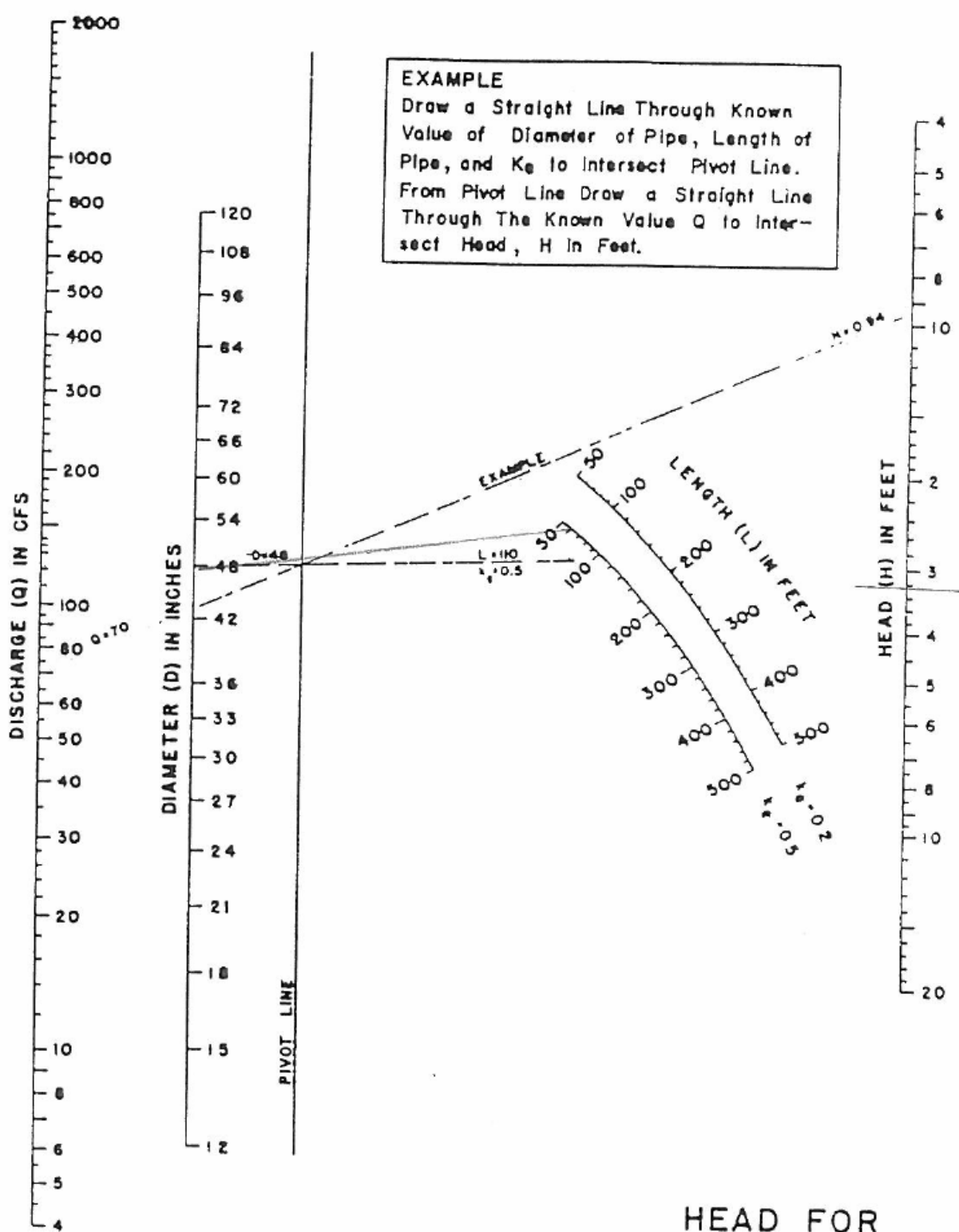


FIGURE 3.26: HEAD FOR CONCRETE PIPE CULVERTS FLOWING FULL



EXAMPLE
 Draw a Straight Line Through Known Value of Diameter of Pipe, Length of Pipe, and K_e to Intersect Pivot Line. From Pivot Line Draw a Straight Line Through The Known Value Q to Intersect Head, H in Feet.

HEAD FOR
 CONCRETE PIPE CULVERTS
 FLOWING FULL
 $n = 0.012$

BUREAU OF PUBLIC ROADS JAN 1963

FIGURE 3.27: CRITICAL DEPTH OF FLOW FOR RECTANGULAR CONDUITS

EXAMPLE

Known:

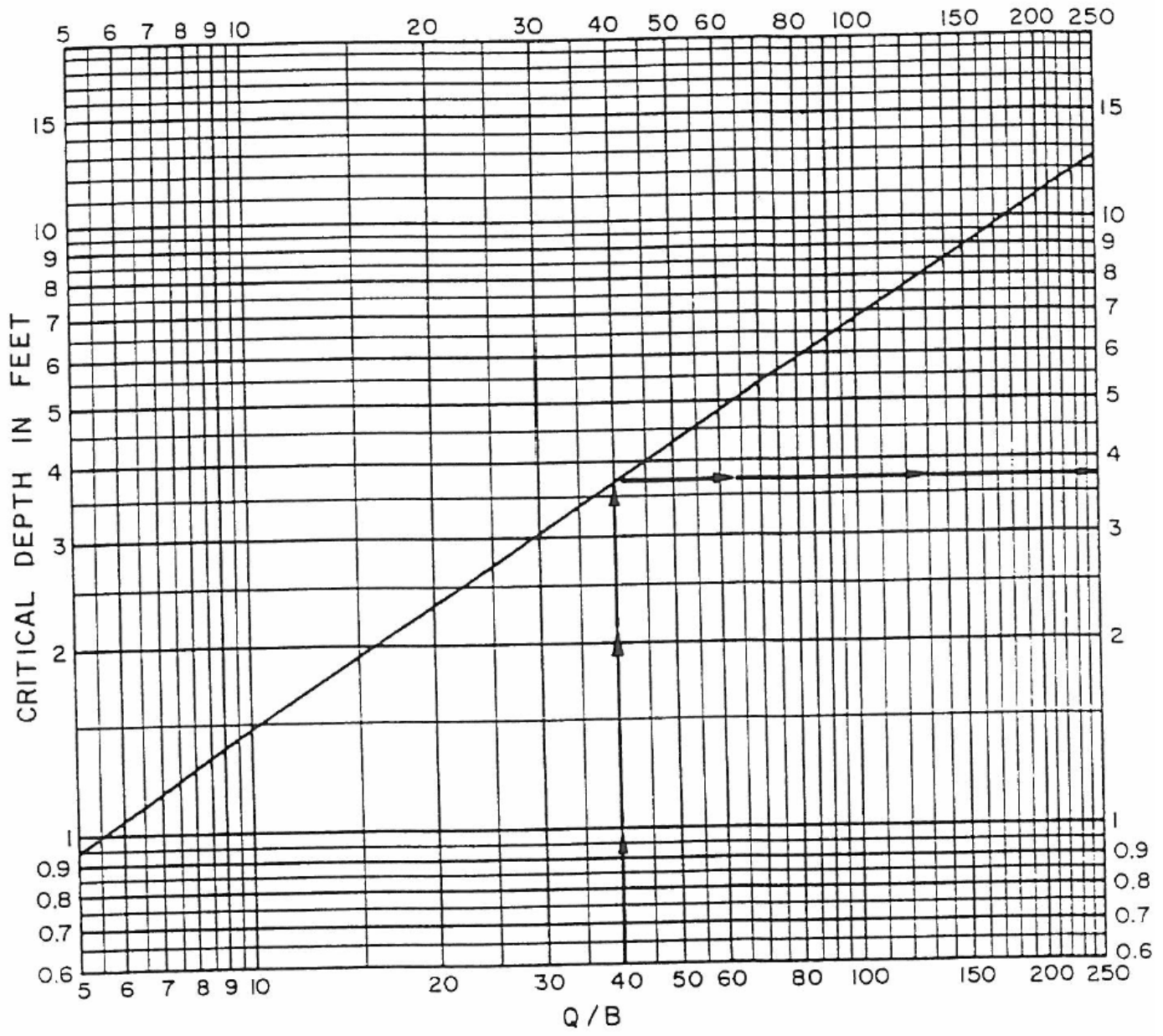
- Discharge = 200 c.f.s.
- Width of Conduit = 5'
- $Q/B = 40$

Solution:

- Enter Graph at $Q/B = 40$
- Intersect Critical Depth at 3.7

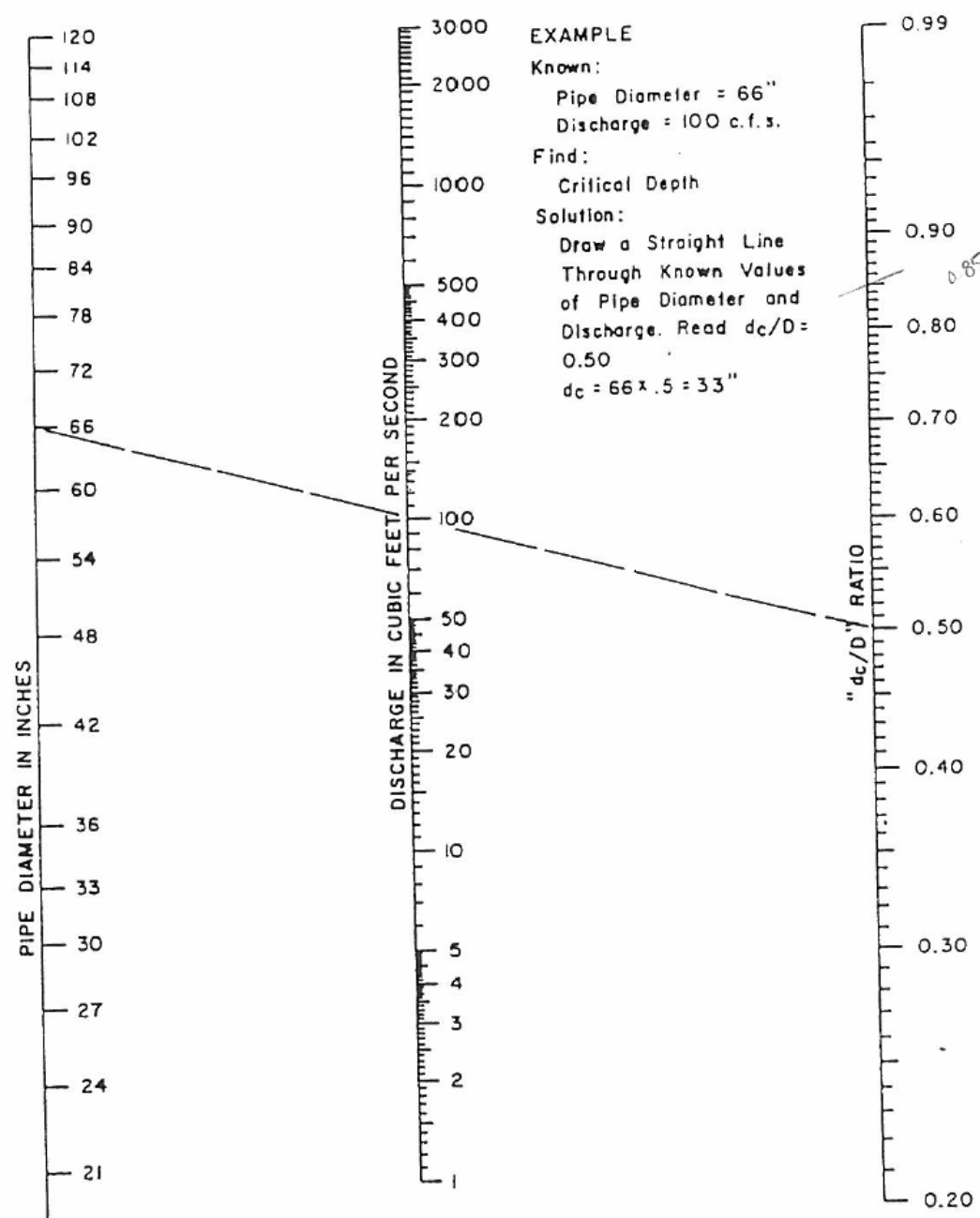
Find:

Critical Depth



CRITICAL DEPTH OF FLOW FOR RECTANGULAR CONDUITS

FIGURE 3.28: CRITICAL DEPTH OF FLOW FOR CIRCULAR CONDUITS



EXAMPLE
 Known:
 Pipe Diameter = 66"
 Discharge = 100 c.f.s.
 Find:
 Critical Depth
 Solution:
 Draw a Straight Line
 Through Known Values
 of Pipe Diameter and
 Discharge. Read $d_c/D =$
 0.50
 $d_c = 66 \times .5 = 33"$

d_c = Critical Depth of Flow in Inches
 D = Pipe Diameter in Inches

CRITICAL DEPTH OF FLOW
 FOR
 CIRCULAR CONDUITS



SUBSECTION 3.02.15 | BRIDGE DESIGN

- (A) A scour analysis shall be performed and submitted in or with the design plans.
- (B) For all bridges a flood study report shall be prepared and provided to the City Engineer, documenting the methodology, assumptions, derivation of all data used, and results of the study.
- (C) The 100-year projected fully developed water surface elevation shall not be increased upstream or downstream of the bridge.
- (D) If utilities are connected to a bridge, utility shall be connected to the downstream side of bridge support members.

SUBSECTION 3.02.16 | EROSION HAZARD SETBACK

SUBSECTION 3.02.16.01 | DEFINITION AND PURPOSE

Erosion hazard setbacks shall be determined for every stream and creek (*flowing or not*) in which natural channels are to be preserved. The purpose of this erosion hazard setback is to reduce the potential for any damage to a private lot, building, utilities or street right-of-way caused by the natural erosion of the creek bank and to minimize the expenditure of public funds for stream bank stabilization projects. The erosion hazard setback shall be included within the drainage easement and in its own lot and block. The erosion hazard setback shall be maintained by the property owner. Erosion hazard setback and easement may not be located on a single-family residential lot in a new subdivision.

SUBSECTION 3.02.16.02 | DEFINITION AND PURPOSE

The erosion hazard setback shall be determined by the following steps:

- Locate the toe of the natural stream bank. The toe may be located outside of the low flow channel.
- Project at a 4(H):1(V) line sloping away from the center of the creek/stream until it intersects natural ground or the new proposed elevation, whichever results in the greater setback.
- From this intersecting point continue an additional 15-foot horizontally away from bank. This shall set the limit of the erosion hazard setback.
- In certain scenarios, the calculated erosion hazard setback is within the 100-year fully developed floodplain. In these scenarios, the 100-year fully developed floodplain access area shall govern for setting the drainage/floodplain easement.
- The typical erosion hazard setback established by steps above is shown in [FIGURE 3.29](#).

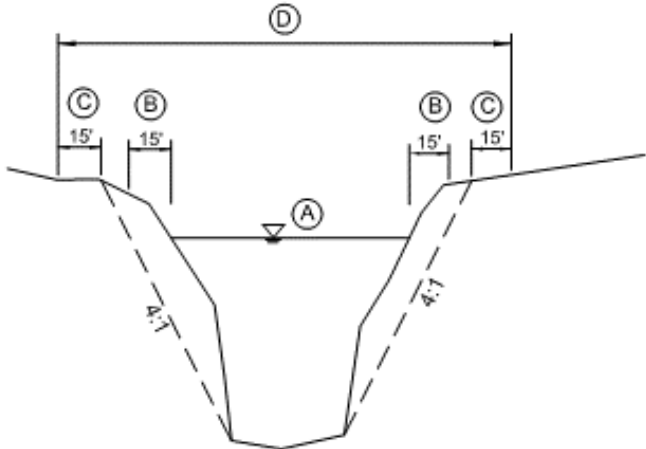
Proof of determination of the above shall be included in the Engineering Plan set. It shall include the following:

- Locating and labeling of the toe of the natural stream bank. If trapezoidal in nature both toes shall be identified.
- Existing one-foot topographic contours of the entire site.
- Projected hypothetical one-foot contours representing the 4(H):1(V) line sloping away from the center of the creek/stream until it intersects natural ground or the new proposed elevation
- Show and label hypothetical projected intersecting point/top of 4:1 slope line.
- Show and label Erosion Hazard Setback (*15-foot offset away from bank of intersecting point/top of 4:1 slope line*)
- Show and label 100-year fully developed floodplain.
- Show and label 15-foot offset from 100-year fully developed floodplain to establish the floodplain access area.
- Show and label the required *Drainage/Floodplain Easement*. The easement will be the greater of the 15-foot erosion hazard setback and 15-foot floodplain access area. Easement is a minimum 15-feet on both sides of the floodplain or erosion hazard setback. Wider easement may be required by City Engineer.

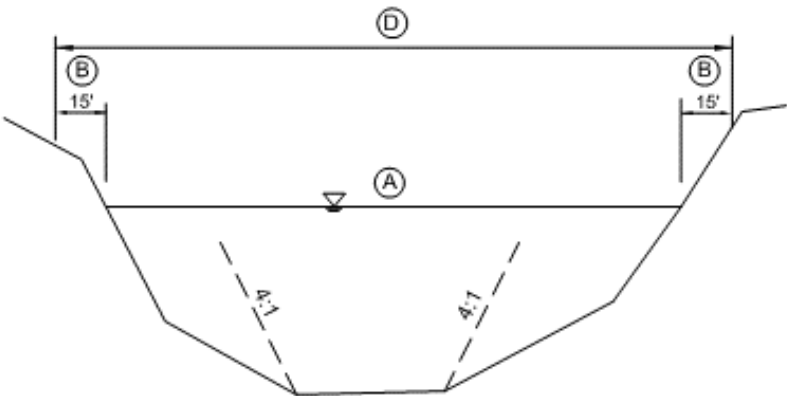
FIGURE 3.29: EROSION HAZARD SETBACKS AND DRAINAGE EASEMENTS

NATURAL CREEKS/CHANNELS: SETBACKS AND EASEMENTS

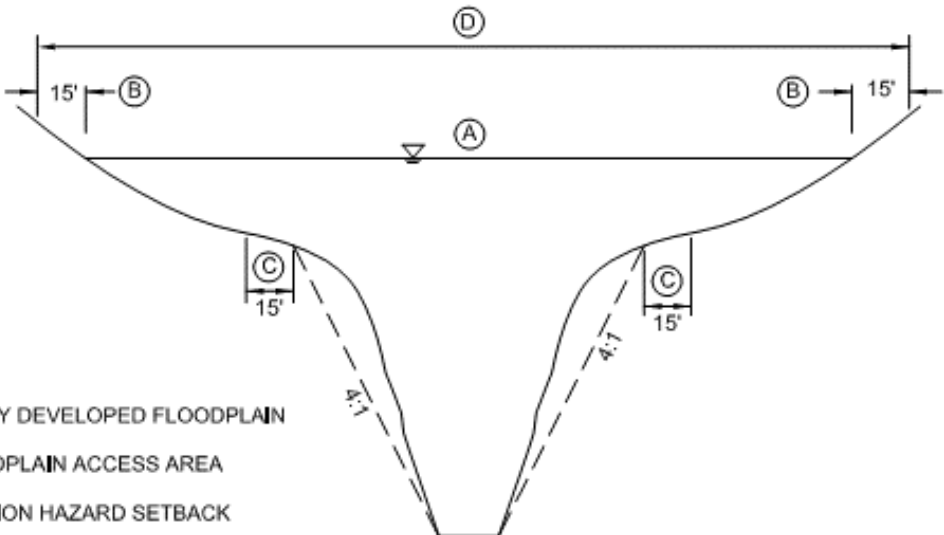
SCENARIO 1 (Floodplain within Erosion Hazard Setback)



SCENARIO 2 (Erosion Hazard Setback within Floodplain)



SCENARIO 3 (Erosion Hazard Setback within Floodplain)



NOTES:

- (A) 100 YEAR FULLY DEVELOPED FLOODPLAIN
- (B) 15 FOOT FLOODPLAIN ACCESS AREA
- (C) 15 FOOT EROSION HAZARD SETBACK
- (D) EXTENTS OF DRAINAGE/FLOODPLAIN EASEMENT



SUBSECTION 3.02.16.03 | NON-PERMITTED STRUCTURES

The following are non-permitted structures within the drainage/floodplain/erosion hazard setback easement: building, wall, parking lot, driveway, fences, decks, swimming pools, signage, monumentation, detention structures/ponds or other structures. Water and wastewater lines shall be placed beneath the projected 4:1 slope line. The pipe shall be concrete encased when there is less than four (4) foot of cover from the 4:1 slope line.

SUBSECTION 3.02.16.04 | MODIFICATIONS

Any modifications to the erosion hazard setback will require the following items and approval by the City Engineer:

- A geotechnical and stream geomorphological stability analysis signed and sealed by a licensed *Professional Geotechnical Engineer* within the State of Texas.
- Structural plans, calculations and report of the permanent stream bank stabilization measures signed and sealed by a licensed *Professional Structural Engineer* within the State of Texas.
- Grading permit.
- Adequate access to maintain the stream bank stabilization measures indefinitely.



SECTION 3.03 | MINIMUM FREE BOARD REQUIREMENTS

To help prevent flood damages and protect public safety, all design elevation requirements related to water surface elevations and flood elevations shall be based, at a minimum, on the 100-year flood, fully-developed watershed conditions. The difference between a minimum design elevation and the 100-year flood elevation is commonly referred to as minimum freeboard. [TABLE 3.14](#) provides a summary of absolute minimum freeboard requirements for design and construction in the City of Rockwall. However, prudent engineering in setting design elevations should be incorporated into any design. In some situations, a greater freeboard than those listed in [TABLE 3.14](#) may be required by the City, at the discretion of the City Engineer, or as required by State and Federal regulations and guideline, depending of flood hazard potential in relation to property damages and public safety. The City's minimum freeboard requirements are not intended to take precedence over State and Federal regulations (*except when the City's requirements exceed those set by State and Federal regulations*). The minimum elevations of all flood protection levees and all dams must meet requirements of all State and Federal regulations and guidelines. If the minimum floor elevation based on floodplain is less than that based on roadway gutter elevation, the higher elevation of the frontage portion of the roadway shall be the minimum elevation.

TABLE 3.14: MINIMUM FREE BOARD REQUIREMENTS

DESCRIPTION	MINIMUM FREEBOARD ABOVE 100-YEAR FLOOD ELEVATION (FT) ¹
MINIMUM FLOOR ELEVATIONS (INCLUDING BASEMENTS AND SUNKEN FLOOR AREAS):	
RESIDENTIAL	2.0
NON-RESIDENTIAL (UNLESS FLOOD PROOFED; SEE FLOOD DAMAGE PREVENTION ORDINANCE)	2.0
BUILDING PAD ELEVATIONS FOR STRUCTURES (AT LOWEST ADJACENT STRUCTURE GRADE)	1.0
DAMS (FREEBOARD ABOVE EFFECTIVE CREST ELEVATION OF DAM, AFTER ALLOWING FOR SETTLEMENT AND CONSOLIDATION OF EMBANKMENT):	
LESS THAN OR EQUAL TO 5-FT MAXIMUM HEIGHT	1.0
MORE THAN 5-FT MAXIMUM HEIGHT (MUST MEET STATE AND FEDERAL REQUIREMENTS)	2.0
DAMS WITH ENTIRE EMBANKMENT HAVING OVERFLOW PROTECTION (SUCH AS CONCRETE)	1.0
DETENTION AND RETENTION PONDS (FREEBOARD ALONG ALL SHORELINE AREAS AROUND THE POND):	
PER DAM HEIGHT:	
WITH DAMS LESS THAN OR EQUAL TO 5-FT MAXIMUM HEIGHT	1.0
WITH DAMS MORE THAN 5-FEET MAXIMUM HEIGHT	2.0
INCISED PONDS (NO DAM)	1.0
PER AREA DRAINING TO POND:	
1 ACRE OR LESS DRAINAGE AREA	0.0
5 ACRES TO 1 ACRE DRAINAGE AREA	1.0
GREATER THAN 5 ACRES	2.0
FLOOD PROTECTION LEVEES, DIKES, OR WALLS (CITY ENGINEER APPROVAL REQUIRED):	
SIGNIFICANT OR HIGH HAZARD FLOOD DAMAGE OR PUBLIC SAFETY POTENTIAL	3.0
LOW HAZARD FLOOD DAMAGE POTENTIAL OR PUBLIC SAFETY POTENTIAL	2.0
PUBLIC ROADWAYS, ALLEYS, PARKING LOTS, COMMERCIAL DRIVEWAYS AND RESIDENTIAL DRIVEWAYS (AS MEASURED FROM EDGE OF PAVEMENT/TOP OF CURB)	1.0
CHANNELS	1.0
BRIDGES (AS MEASURED FROM LOWEST POINT OF LOW CHORD)	1.0
CULVERTS (AS MEASURED FROM EDGE OF PAVEMENT/TOP OF CURB)	1.0
SANITARY SEWER AND WATER MANHOLE COVERS	2.0

NOTES:

¹: THE 100-YEAR FLOOD ELEVATIONS AS DETERMINED BASED ON DISCHARGES RESULTING FROM A FULLY-DEVELOPED WATERSHED. GREATER FREEBOARD MAY BE REQUIRED, AT DISCRETION OF CITY ENGINEER (DEPENDING ON FLOOD HAZARD POTENTIAL) OR BY STATE AND FEDERAL REGULATIONS.

SECTION 3.04 | DETENTION

SUBSECTION 3.04.01 | INTENT

It is the City's intent to utilize detention (*or detention/retention*) of storm water runoff as a solution towards control of potential hazards created by storm water runoff including: [1] a reduction in the impact on downstream storm water drainage facilities, [2] prevention of erosive conditions in water drainage ways, [3] protection against downstream and adjacent property damage, and [4] preservation of existing floodplains along major creeks. Detention basins may also improve water quality by allowing some sediment to settle out.

SUBSECTION 3.04.02 | WHERE IS DETENTION REQUIRED?

(A) All non-residential and multi-family developments (*or other redevelopment areas that will impact the storm water flow*) shall construct detention facilities.



- (B) Residential developments shall construct detention facilities if it is determined that the downstream system does not have adequate hydraulic capacity for the proposed developed flow and the capacity of the downstream system cannot be increased to allow the conveyance of the proposed developed flows.
- (C) All development within the Squabble Creek, Buffalo Creek and Little Buffalo Creek watersheds will construct detention facilities and provide a flood study using hydrology and hydraulic models, to prove that the proposed development will not cause any increase in peak flood discharge rates and flood elevations at all computed points downstream of the proposed development. For Squabble Creek this study shall extend downstream to Lake Ray Hubbard, for Buffalo Creek it shall extend downstream through Rockwall Lake Dam, for Little Buffalo Creek it shall extend downstream to the crossing of Horizon Road (FM-3097).

SUBSECTION 3.04.03 | TYPE OF DETENTION FACILITIES

The following detention facilities are to be utilized for detention.

- (A) Site of ½-Acre or Less
- (1) Underground
 - (2) On concrete Parking Surface (*maximum one [1] foot water depth*)
- (B) Site of Greater Than ½-Acre, On-site
- (1) Underground
 - (2) On concrete Parking Surface (*maximum one [1] foot water depth*)
 - (3) Detention Basin
 - Side slopes to be four (4) to one (1) [4:1] or flatter(*no fencing allowed*).
 - Area to be Landscaped
 - Retaining walls not allowed within detention pond
 - Maintained by Developer
 - Additional Amenities Preferred
 - Ownership Stays with Property Owner
 - Dams over five (5) foot to be approved by State. Dam must meet state dam safety guidelines.
- (C) Greater Than ½-Acre, Off-site Shared
- (1) Detention Basin Shared with Other Developments
 - May Expand Existing Pond
 - No Increase in 100-Year Flood Plain Elevation
 - Capacity Expanded Above Existing Water Surface
 - Need Engineering Study
 - (2) Flow to Regional Detention Basin
 - Regional facility manager (*owner of facility*) must approve improvements unless drainage is already accounted for in original design
 - Developer/s fund improvements to regional basin
 - Developer/s improves storm water conveyance system to basin (*based on fully-developed 100-year flow*)
 - Dams over five (5) foot to be approved by State. Dam must meet state dam safety guidelines.
 - Dam cannot be over 15-feet tall
 - Basins with water retention to have stored water depth of at least four (4) feet
 - Requires landscaping and amenity features (*Approved by Planning Department*)
 - Facility manager to assure good retained water quality
 - Trash collectors required at outfall structures
 - Side slopes to be four (4) to one (1) [4:1] or flatter.



- Developer/Owner owns and maintains basin
- Facility Manager to develop and perform maintenance program
- Underground (*preferred*), natural open channel (*existing creek with 100-year developed capacity*), Developer's to obtain additional drainage easement for 100-year developed flow area (*no concrete or gabion sidewalls*).
- Possible Pro-rata from other developments that utilize the basin

(3) Existing Lake

- Lake manager must approve
- Developer/s to fund improvements to lake
- Developer/s improves to the storm water conveyance system to lake (*developed 100-year flow*); Underground (*preferred*); Natural Open Channel (*existing creek with developed 100-year capacity*); Developers to obtain additional drainage easement for 100-year developed flow area; no concrete or gabion channel sidewalls
- Additional storage out of 100-year storage

(D) Existing Ponds

(1) Developer/s improve existing undesirable detention facilities

- Remove fencing where possible
- Provide concrete flume in bottom of pond
- Provide landscaping
- Improve maintenance access
- Reconstruct with underground system
- Remove pond by conveying storm water flow to shared detention facility without adverse impacts to other properties.

SUBSECTION 3.04.04 | GEOMETRY, RESTRICTIONS, AND APPURTENANCES

- (A) Detention ponds shall have a side slope of four (4) to one (1) [4:1] or flatter. No retaining walls are allowed in detention ponds unless a variance is approved by the Planning and Zoning Commission in accordance with the procedures contained in [SECTION 09, EXCEPTIONS AND VARIANCES, OF ARTICLE 11, DEVELOPMENT APPLICATIONS AND REVIEW PROCEDURES, OF THE UNIFIED DEVELOPMENT CODE \(UDC\)](#) prior to the installation of the retaining walls. Retaining walls installed without an approved variance shall be removed.
- (B) The detention pond bottom grade shall be at a minimum of one (1) percent slope unless a detention/retention pond. A four (4) inch thick concrete low flow flume shall be installed from the pond's inlet structure/structures to the outfall structure.
- (C) All detention ponds and reserved shoreline shall have the appropriate amount of freeboard as called out in [TABLE 3.14, MINIMUM FREEBOARD REQUIREMENTS](#), from the 100-year water surface, based on flood inflows determined assuming fully-developed watershed conditions (*without consideration of any future upstream detention*), including incised ponds (*without embankment/dams*), or a higher design criterion if required by the State.
- (D) The State of Texas has jurisdiction of all dams, regardless of dam height or impoundment storage size, if they are classified by State regulations and guidelines with hazard classifications as "high – or significant-hazard". [*Reference: Texas Administrative Code, Title 30, Part 1, Chapter 299, Subchapter A, (a)(3)*]. Dams with maximum height of over five (5) feet must be approved by the State, unless the dam maximum height is less than 15-feet and a registered professional engineer licensed in Texas adequately shows, with an engineering study using the State of Texas Dam Safety guidelines and regulations, that a sudden breach of the dam during a major flood event, as specified and determined by the State's procedures, would not cause any significant increase in flooding or significant increase in flood damages as compared to a non-breach of the dam during a non-breach flood event. For dams permanently impounding water, the study should also determine the extent of additional flooding that would be caused by a sudden breach of the dam during non-flooding events. If the breach of the dam can be proven to not cause any significant flood damages (*other than to the dam embankment*), then it can be proven to be classified as a "low-hazard" dam by State definition, and the dam may be exempt, at the City Engineer's discretion, from requiring State review and approval. However, regardless of whether the dam design is reviewed by the State, all dams, regardless of size, must have an emergency spillway and be designed, constructed, maintained, and operated per State Dam Safety Guidelines, including emergency action management. The maximum height of the dam, hazard classifications, and "significant" increased flooding (*as related to embankment breach analyses*) are determined based on the State's definitions and regulations.



- (E) No detention is allowed in the FEMA 100-year nor local 100-year fully developed floodplain.
- (F) No detention pond is allowed with outlet elevation below a receiving stream's or channel's 100-year fully developed flood elevation.
- (G) No franchise utilities (*Gas, Electric, Cable, Telephone, Communications, etc.*), public water lines and wastewater lines are allowed in detention ponds, and detention easements.
- (H) Underground detention systems must be a fully enclosed pipe system.
- (I) The detention pond shall have an emergency overflow in case the main outfall structure gets clogged. The emergency overflow shall be sized to pass the fully-developed 100-year flood at a minimum, or greater based on State Dam Safety requirements. City-approved erosion protection shall be placed along the length of the emergency overflow to the flowline of the receiving structure, creek or channel, and extended as necessary to prevent erosion of the dam structure.
- (J) The detention systems are to be installed and verified for design compliance along with the associated storm sewer and outfall structures and drainage channels, prior to any paving operations. All constructed detention ponds, drainage ways, and open channels shall have the sides and bottom stabilized with sod or anchored seeded matting prior to any paving construction (including building slab). The matting or sod shall be anchored at high velocity locations if deemed necessary. Erosion protection is to be placed at the pond's outflow structure along with any associated erosion BMP's noted on the erosion control plan.
- (K) Sometimes a detention facility will be utilized by several developments, and then a pro-rata agreement/detention masterplan may be entered into with the development constructing the facility and the other developments utilizing the facility Without a pro-rata agreement/detention master plan of all parties in advance of construction of all combined developments, no new proposed development will be allowed to take credit for any "over detention" of a previous development or the reduction of discharges from a previous development within the watershed in the determination of detention requirements.
- (L) Detention pond outfall structures shall be fitted with a trash rack.
- (M) Detention ponds shall be designed to be fully emptied within 24-hours.
- (N) Detention ponds shall be designed, graded and maintained so that standing water does not remain after the designed discharge timeframe.
- (O) Detention ponds shall be irrigated.
- (P) Detention ponds for new single-family residential subdivisions shall be located within a HOA maintained lot. Detention ponds and associated easements may not be located on a non-HOA lot. Non-single family residential development's detention system shall be maintained, repaired, and replaced by property owner.

SUBSECTION 3.04.05 | DETENTION CALCULATIONS

The detention design calculations and outfall rating curves shall be included in the plans and flood study. Increased peak discharges from the detention basin are not allowed for the 5-year, 10-year, 25-year, 50-year and 100-year frequency floods based on existing off-site conditions.

SUBSECTION 3.04.05.01 | METHODOLOGY

Detention facilities that have a drainage area of less than 20-acres shall be sized using the *Modified Rational Method*. If the drainage area is equal to or greater than 20-acres then the *Unit Hydrograph Method* shall be used. The *Modified Rational* method may be used for drainage areas more than 20-acres but the *Unit Hydrograph Method* must be performed as a comparison. The more conservative of the two methods shall be used to design the pond (*and technical documentation of both methods should be provided to the City for review and verification of the most conservative method selected*).

The following conditions shall be used when implementing the *Modified Rational Method*.

- (A) The proposed development will construct detention facilities to detain the increase in runoff between the existing 100-year flows (*C-undeveloped, TC = 20 minute*) and the fully developed flows (*C – depends on zoning, TC = 10 minute*). The "C" value is based on zoning, not pervious/impervious areas. Large area of park land dedicated to City can be considered by City in this value.
- (B) Storm rainfall intensity (inch/hour) for different storm years shall be as shown in [TABLE 3.15](#).



TABLE 3.15: STORM RAINFALL INTENSITY (INCHES/HOUR)

	100 YEAR	50 YEAR	25 YEAR	10 YEAR	5 YEAR	2 YEAR
10 MINUTES	9.8	9.0	8.3	7.1	6.1	5.3
15 MINUTES	9.0	8.1	7.5	6.5	5.5	4.5
20 MINUTES	8.3	7.5	6.6	5.9	4.9	3.9
30 MINUTES	6.9	6.1	5.5	4.8	4.1	3.3
40 MINUTES	5.8	5.2	4.6	4.0	3.4	2.6
50 MINUTES	5.0	4.5	4.0	3.5	2.8	2.3
60 MINUTES	4.5	3.9	3.5	3.0	2.6	1.9
70 MINUTES	4.0	3.7	3.3	2.8	2.4	1.8
80 MINUTES	3.7	3.5	3.1	2.6	2.3	1.7
90 MINUTES	3.5	3.3	2.9	2.5	2.1	1.6
100 MINUTES	3.4	3.0	2.7	2.4	1.9	1.5
110 MINUTES	3.2	2.9	2.5	2.3	1.8	1.4

(C) The following is an example calculation on how the *Modified Rational Method* is performed to determine detention volume:

MODIFIED RATIONAL METHOD DETENTION BASIN DESIGN

Given: A ten (10) acre site, currently agricultural use, is to be developed for townhouses. The entire area is the drainage area of the proposed detention basin.

Determine: Maximum release rate and required detention storage.

Solution:

(A) Determine 100-year peak runoff rate prior to site development. This is the maximum release rate from site after development.

NOTE: WHERE A BASIN IS BEING DESIGNED TO PROVIDE DETENTION FOR BOTH ITS DRAINAGE AREA AND A BY-PASS AREA; THE MAXIMUM RELEASE RATE IS EQUAL TO THE PEAK RUNOFF RATE PRIOR TO SITE DEVELOPMENT FOR THE TOTAL OF THE AREAS MINUS THE PEAK RUNOFF RATE AFTER DEVELOPMENT FOR THE BY-PASS AREA. THIS RATE FOR THE BY-PASS AREA WILL VARY WITH THE DURATION BEING CONSIDERED.

(B) Determine inflow hydrograph for storms of various durations in order to determine maximum volume required with release rate determined in Step 1.

NOTE: INCREMENTALLY INCREASE DURATIONS BY 10 MINUTES TO DETERMINE MAXIMUM REQUIRED VOLUME. THE DURATION WITH A PEAK INFLOW LESS THAN MAXIMUM RELEASE RATE OR WHERE REQUIRED STORAGE IS LESS THAN STORAGE FOR THE PRIOR DURATION IS THE LAST INCREMENT.

PROCEDURE

STEP 1. PRESENT CONDITIONS (AGRICULTURAL)

$$Q = C \cdot I \cdot A$$

$$C = 0.35$$

$$T_c = 20 \text{ MINUTES}$$

$$I_{100} = 8.3 \text{ INCHES/HOUR}$$

$$Q_{100} = (0.35)(8.3)(10 \text{ ACRES}) = 29.05 \text{ CFS (MAXIMUM RELEASE RATE)}$$

STEP 2. FUTURE CONDITIONS (TOWNHOUSES)

$$C = 0.80$$

$$T_c = 10 \text{ MINUTES}$$

$$I_{100} = 9.8 \text{ INCHES/HOUR}$$

$$Q_{100} = (0.80)(9.8)(10 \text{ ACRES}) = 78.40 \text{ CFS}$$

Check various duration storms:

MINUTES	I	Q
15	9.0	(0.80)(9.0)(10 acres) = 72.0 CFS



20	8.3	(0.80)(8.3)(10 acres) = 66.4 CFS
30	6.9	(0.80)(6.9)(10 acres) = 55.2 CFS
40	5.8	(0.80)(5.8)(10 acres) = 46.4 CFS
50	5.0	(0.80)(5.0)(10 acres) = 40.0 CFS
60	4.5	(0.80)(4.5)(10 acres) = 36.0 CFS
70	4.0	(0.80)(4.0)(10 acres) = 32.0 CFS
80	3.7	(0.80)(3.7)(10 acres) = 29.6 CFS
90	3.5	(0.80)(3.5)(10 acres) = 28.0 CFS
100	3.4	(0.80)(3.4)(10 acres) = 27.2 CFS
110	3.2	(0.80)(3.2)(10 acres) = 25.6 CFS

Maximum Storage Volume is determined by deducting the volume of runoff released during the time of inflow from the total inflow for each storm duration.

MINUTES	INFLOW (IN)	OUTFLOW (OUT)	STORAGE VOLUME (IN-OUT = SV)
10	(10)(78.4 CFS)(60 SEC/MIN) = 47,040 CF	(0.5)(20 MIN)(29.05 CFS)(60 SEC/MIN) = 17,430 CF	29,610 CF
15	(15)(72.0 CFS)(60 SEC/MIN) = 64,800 CF	(0.5)(25 MIN)(29.05 CFS)(60 SEC/MIN) = 21,788 CF	43,012 CF
20	(20)(66.4 CFS)(60 SEC/MIN) = 79,680 CF	(0.5)(30 MIN)(29.05 CFS)(60 SEC/MIN) = 26,145 CF	53,535 CF
30	(30)(55.2 CFS)(60 SEC/MIN) = 99,360 CF	(0.5)(40 MIN)(29.05 CFS)(60 SEC/MIN) = 34,860 CF	64,500 CF
40	(40)(46.4 CFS)(60 SEC/MIN) = 111,360 CF	(0.5)(50 MIN)(29.05 CFS)(60 SEC/MIN) = 43,575 CF	67,785 CF
50	(50)(40.0 CFS)(60 SEC/MIN) = 120,000 CF	(0.5)(60 MIN)(29.05 CFS)(60 SEC/MIN) = 52,290 CF	67,710 CF
60	(60)(36.0 CFS)(60 SEC/MIN) = 129,600 CF	(0.5)(70 MIN)(29.05 CFS)(60 SEC/MIN) = 61,005 CF	68,595 CF
70	(70)(32.0 CFS)(60 SEC/MIN) = 134,400 CF	(0.5)(80 MIN)(29.05 CFS)(60 SEC/MIN) = 69,720 CF	64,680 CF
80	(80)(29.6 CFS)(60 SEC/MIN) = 142,080 CF	(0.5)(90 MIN)(29.05 CFS)(60 SEC/MIN) = 78,435 CF	63,645 CF
90	(90)(28.0 CFS)(60 SEC/MIN) = 151,200 CF	(0.5)(100 MIN)(29.05 CFS)(60 SEC/MIN) = 87,150 CF	64,050 CF
100	(100)(27.2 CFS)(60 SEC/MIN) = 163,200 CF	(0.5)(110 MIN)(29.05 CFS)(60 SEC/MIN) = 95,865 CF	67,335 CF
110	(110)(25.6 CFS)(60 SEC/MIN) = 168,960 CF	(0.5)(120 MIN)(29.05 CFS)(60 SEC/MIN) = 104,580 CF	64,380 CF

The maximum volume required is 68,595 CF at the 60-minute storm duration.

SUBSECTION 3.04.05.02 | OUTFALL STRUCTURES

Detention out fall structures shall be multi-staged and designed to detain the 5-year, 10-year, 25-year, 50-year, and 100-year storm events without increasing the peak discharge. A chart shall be furnished by the design engineer showing the allowable flows verses the actual flows through the detention pond outflow structure for 5-year, 10-year, 25-year, 50-year, and 100-year storm events.

When the design is based on the Modified Rational Method, outfall structures shall be designed in accordance to the equations established in *Hydraulic Engineering Circular No. 22, Urban Drainage Design Manual (HEC-22)*. The Engineer shall include all calculations/ equations for the outfall structure in the plans, including each stage of the structure (5-year, 10-year, 25-year, 50-year, and 100-year storm events).

When the detention pond and outfall structure is designed using a *Unit Hydrograph Method (hydrology model)* and a hydraulic model is being prepared (such as for a detention pond with dam located across a stream for which flood elevations will be determined), the outfall structure discharges may be determined with the hydraulic model. All flow characteristics and conditions of the outfall structure should be adequately represented in the hydraulic model or other calculations to account for orifice flow conditions, weir flow conditions, and full-pipe and partially-full pipe flow conditions for all discharge openings, pipes, and overflow areas of both the discharge structure and the dam. The resulting discharge versus pond flood elevation data should be adequately represented in the hydrology model to ensure that the flood elevations computed with the hydrology model reasonably agree with those computed by the hydraulic model for all ranges of discharges.

City approved erosion protection shall be placed around the outfall structure and shall extend downstream the entire flow path length to the flowline of the receiving structure, creek or channel. The erosion protection shall extend to two (2) feet above the 100-yr water surface elevation.



SECTION 3.05 | FLOODPLAIN STUDIES, RECLAMATION, AND MODIFICATION

All floodplain studies, reclamation, modification, flood boundary delineations and design of structures within or adjacent to creeks or streams shall meet the following guidelines set forth in this section and the most current *Flood Hazard Damage Prevention and Control Ordinance*.

- (A) A qualified professional engineer licensed in the State of Texas shall prepare a flood study report documenting all data, methodology, and assumptions used in the study. The study report shall be properly signed and sealed, and include a concluding statement certifying that the hydrologic and hydraulic study is based on standard engineering practice, that the project is constructed, or proposed to be constructed, as shown in certified engineering plans used in the study such that there will be no adverse increases in flooding or flood damages on other properties and that the project meets the requirements of all parts of the City's current *Flood Hazard Damage Prevention and Control Ordinance*.
- (B) Flood studies shall follow the general procedures set by FEMA for applying for a LOMR or CLOMR, including hydrologic and hydraulic modeling; drainage area workmap; floodplain workmap; annotated FIRM; FEMA forms; and complete technical documentation of all data used in the study, including, but not limited to, calculations of times of concentrations or lag times and calculations of other runoff parameters such as NRCS curve numbers. Other requirements are contained in *Unit Hydrograph Method* Section of these standards. These procedures shall be performed even for flood studies not being submitted to FEMA.
- (C) Floodplains and watersheds shall be modeled using standard practice engineering models that are public domain. The use of computer modeling software that is not public domain will require approval by the City Engineer. [*The most recent versions of HEC-HMS and HEC-RAS are currently the City's required hydrology and hydraulic models for flood studies. The use of these models is required in cases where a conversion from older models is desired or in previously-unstudied areas where new models are to be created*].
- (D) All design elevations shall be based on computed flood elevations using flood discharges for 100-year projected fully-developed watershed conditions, including the effects of changes in storm water runoff and effects of encroachment and changes in flood valley storage caused by the proposed project.
- (E) All flood study models shall utilize the most current available models from the City or FEMA as base models (*if available*) and shall incorporate all additional modifications that have occurred since the last update of these models. Conversion of base models to newer approved digital models is allowed, as noted below.
- (F) Results of hydrology and floodplain hydraulic computer models shall be summarized in tabular form, to show differences in computed 100-year flood discharges and flood elevations. The computer model results to be included in the comparison tables include:
 - (1) The original effective base hydrology and hydraulic models, if available, as provided by the City or FEMA.
 - (2) Improved modeling procedures may be allowed and included, such as conversion of original models to newer versions of computer modeling software, such as conversion of HEC-2 models to HEC-RAS and conversion of TR-20 or HEC-1 models to HEC-HMS. Conversion to computer software that is not free public domain software and that is not on FEMA's approved list of computer modeling software must receive approval by the City Engineer. Results of conversion to improved modeling should be performed prior to any updates or corrections to the model data and compared in tabular form with the original base model results.
 - (3) Corrected hydrologic and hydraulic models (*commonly referred to as "corrected effective" models by FEMA procedures*) to include any improved data or needed corrections, such as new surveyed floodplain cross sections, inclusion of additional cross sections, or improved topographic mapping, but should not include and man-made changes to the watershed or floodplain.
 - (4) Pre-project hydrologic and hydraulic models, to update the computer models by adding man-made changes that have occurred in the watershed and floodplain since the date of the original effective base models. [*If there are no updates based on man-made changes, then the "corrected effective" and "pre-project" models are the same*].
 - (5) Post-project hydrologic and hydraulic models, to include all changes that are included in the pre-project models, plus hydrologic and hydraulic characteristics that are representative of changes based on the project's proposed final completed construction. The post-project hydrology should include changes in runoff conditions related to modifications of land cover and grading, changes in times of concentration or lag times, alteration of stream channels and floodplain areas (*including changes in floodplain valley storage and changes in flow velocities*), changes in drainage areas and drainage patterns, and any proposed mitigation to prevent increases in flood discharges. The post-project hydraulic models should include effects to floodplain hydraulic characteristics, including changes in floodplain and channel configuration, such as encroachments, excavations, channelization, proposed hydraulic structures, clearing of areas that will be continually maintained, and changes in hydrology (*flood discharges*). The effects of temporary clearing of vegetation in areas that will not be maintained should not be included.



- (6) Hydrologic and hydraulic computer modeling must be provided for both existing watershed conditions (*both pre-project and post-project conditions*), with summary comparisons of various steps (*"a" through "e", above*) shown in tabular form, to include computed 100-year discharges and flood elevations. The results of hydrology and hydraulic post-project models will be compared with results of pre-project models to verify compliance of City Standards requiring no increased flooding on other properties. Additionally, hydrology and hydraulic models must be provided based on fully-developed watershed conditions with the proposed project. The results of the fully-developed condition models, will be used to determine compliance with the City's design elevation standards. When construction of a project will be in phases, the City Engineer may require flood studies to be submitted for each phase.
- (G) When transferring discharges computed by the hydrology models as input data entered into the hydraulic models, round-off of discharges is allowed only to the nearest one (1) CFS. All hydrology models should be set to compute discharges to the nearest one (1) CFS and flood elevations (*such as in ponds*) to the nearest 0.01-feet. All hydraulic models should be set to compute flood elevations to the nearest 0.01 ft. Locations of flow changes in the hydraulic model should be carefully determined to avoid undue under-calculation of flood elevations. For example, in order to prevent unreasonable under-calculations of flood elevations along portions streams, discharges computed at sub-basin outlets along a stream should normally be used in the hydraulic model for a reasonable extended portion of the upstream floodplain reach, in order to avoid neglecting all of the lateral inflow within the upper stream reach in the hydraulic model computations.
- (H) The completed flood study, including detailed technical documentation; printed hydraulic and hydrological model input data and output results, digital model files (*as listed in "F", above, for both existing and projected future fully-developed watershed conditions*), supporting calculations, drainage area maps, floodplain boundary maps, certification statement (*as noted in "A.", above*) and all CAD/GIS data shall be submitted to the City for review.
- (I) The watershed work map(s) should include the following:
- (1) Multiple watershed work maps may be submitted for pre-project and proposed project conditions, as long as all of the following items are provided.
 - (2) Total watershed drainage area and sub-basin drainage delineation boundaries, including those representative of the original base hydrology model, the corrected drainage delineations (*if any*), and proposed project changes in drainage delineations and any added sub-basins. All sub-areas should be labeled in agreement with sub-area labels used in the hydrology models.
 - (3) Topography overlaid on high-resolution aerial photography, with elevation contour labeling.
 - (4) Delineation of hydrologic soil groups and land cover conditions (*these may be included on a separate map, with drainage delineations*).
 - (5) Property boundaries of the tract of land where the proposed project is located, including any proposed division lines for the current and future project phases.
 - (6) Proposed project, with proposed grading and changes in land cover.
 - (7) Stream channel centerline flow path, with flow direction indicated.
 - (8) Flow path used in determining times-of-concentration or lag times (both pre-project and modifications based on proposed construction).
 - (9) Title block, legend, north arrow, and bar scale.
- (J) The floodplain work map(s) should include the following:
- (1) Multiple floodplain work maps may be submitted, as long as all of the following items are provided.
 - (2) Floodplain cross sections, with location and orientation relative to the floodplain, with labels in agreement with the stations referenced in the hydraulic models. If the study involves a stream that has been previously studied, stream stationing should be in general agreement with stationing used in the previous study. For streams with no previous flood studies, the stream stationing should be based on channel distance upstream from the stream's point of termination (downstream location of where the stream enters a larger receiving stream or major lake (such as Lake Ray Hubbard).
 - (3) Topography overlaid on high-resolution aerial photography, with elevation contour labeling.
 - (4) Floodplain boundaries and flood elevations for the 100-year flood using discharges for both pre-project existing watershed conditions and modifications based on proposed project discharges.
 - (5) Floodplain boundaries identified on the Flood Insurance Rate Maps as Special Flood Hazard Areas, and floodplain boundaries from previous studies (*if available from the City*) with 100-year flood elevations.



- (6) Floodplain boundaries and flood elevations for the 100-year flood based on projected fully-developed watershed conditions, with the proposed project.
 - (7) Stream channel centerline (*invert*) with direction of flow indicated (*for both pre-project and any changes in stream channel centerline based on the proposed construction*).
 - (8) Property boundaries of the tract of land where the proposed project is located, including any proposed division lines for the current and future project phases. Include drainage easements and erosion hazard setbacks.
 - (9) Title block, legend, north arrow, and bar scale.
- (K) In order for the City to maintain and update their hydrology and hydraulic computer models, after construction is completed, the developer's engineer must update and submit to the City their final certified flood study report, with hydrology and hydraulic models, along with all supporting calculations, maps, report, AutoCAD (.*dwg files*), and GIS files and other exhibits to adequately represent as-built conditions. If the project has been submitted to FEMA, the updated models and revisions to flood study reports should include all modifications that were approved by FEMA.
- (L) The City Engineer will determine whether the proposed development will require a LOMR or CLOMR. All documentation prepared for submitting to FEMA (*LOMRs/CLOMRs*) will be reviewed by the City. The City will not approve the flood study prepared for a LOMR, nor sign a LOMR application form, until construction grading associated with the LOMR has been completed, certified "as-built" plans are submitted to the City, construction has been verified by onsite inspection(s), and all required Local, Federal, and State permits and approvals have been received. Lots that overlap the existing floodplain will not be permitted until final LOMR is approved by City and FEMA and effective removing the lots from the floodplain.
- (M) The City will utilize an engineering consulting firm to assist City staff in the review of a flood study. The cost of this consultant review shall be borne by the developer, engineer, or property owner submitting the flood study. Before the review begins, the developer, engineer, or property owner submitting the flood study shall deposit with the City funds required for the review of the flood study. The City shall disburse the funds to the consulting engineer as the review progresses. Should the consultant fees exceed the initial estimate, the developer, engineer or property owner submitting the flood study shall be informed of the shortage to complete the flood study review. Additional funds will then be deposited with the City by the developer, engineer or property owner submitting the flood study to cover the remaining reviews before the review of the study resumes. Any unused funds to be reimbursed to the developer, engineer or property owner submitting the flood study.

SECTION 3.06 | STORM DRAINAGE MANAGEMENT PLAN

SUBSECTION 3.06.01 | GENERAL

Storm drainage facilities shall include all elements of a drainage system consisting of streets, alleys, storm drains, channels, culverts, bridges, swales and any other facility through which or over which storm water flows, all of which the City must have a legal access, either in the form of a dedicated right-of-way, floodway or drainage easements.

SUBSECTION 3.06.02 | SITE DRAINAGE

All new subdivisions shall provide as part of the subdivision review process a complete storm drainage management plan. This plan will include, but not be limited to, the following: a complete review of all on-site, upstream and downstream drainage within the impacted watershed; determine all on-site and downstream drainage facility improvements due to the increased runoff from the proposed development and future upstream and downstream developments; and contain calculations necessary to determine compliance with the Standards of Design herein. Detention will be required if the downstream storm system is not capable of handling the proposed drainage flows and areas designated in [SUBSECTION 3.04.02](#) of this document. The plan shall be done, using current zoning conditions or land use prescribed by the City's Land Use Plan (whichever creates the greatest storm water runoff), with maximum development considered throughout the watershed. The storm drainage plan shall show all necessary improvements with flow data provided at each point of interception of water. As part of the storm drainage plan, the developer shall show a lot grading plan to direct all water to proper intersection points prohibiting cross flow of water from lot to lot. Drainage may not be impeded or blocked from following natural paths, causing standing water or damage on adjacent property. All upstream discharge shall be intercepted and carried through the proper intersection points prohibiting cross flow of water from lot to lot. All upstream discharge shall be intercepted and carried through the proposed development in compliance with the Standards of Design herein. Upstream drainage shall not cross into or through any single-family lot. It shall be collected in an engineered designed ditch/swale or pipe system and conveyed downstream. All discharge from the proposed development shall be designed in accordance with the Standards of Design herein with all necessary improvements being installed by the developer to protect downstream property and adjacent properties from damage. The determination of necessary



improvements to existing drainage facilities downstream of a proposed development shall be reviewed by the City Engineer for compliance and adequacy. If a storm drainage plan has been completed prior to new proposed development in question, the developer may use this plan if the City Engineer deems the existing plan is adequate.

SUBSECTION 3.06.03 | SUBDIVISION DEVELOPMENT

All subdivision developments shall be built in complete compliance with a storm drainage plan as outlined herein. All lots shall be graded at the time of development in accordance with the plan. All grading shall not exceed a slope of four (4) to one (1) [*i.e.* 4:1] unless approved by the City Engineer. Approved erosion control shall be provided as part of the development construction on any or all lots within the development to protect the drainage, lot development and adjacent property.

The finish building pad for all subdivision developments shall be elevated to a minimum of one (1) foot above the crown of the road. In no circumstance shall a building pad and finish floor of any structure be placed below any adjacent street or alley invert grade. An open space/HOA lot may not be used as a buffer from an adjacent street or alley to alleviate this requirement unless approved by the City Engineer.

SUBSECTION 3.06.04 | CONSTRUCTION EROSION CONTROLS

Construction Erosion Controls shall follow the guidelines set out in NCTCOG's *iSWMTM Technical Manual: Construction Controls April 2010, Revised September 2014* or more recent revision.

In order to address the requirements of pollution reduction at construction sites, a variety of controls should be employed to reduce soil erosion, reduce sediment loss from the site, and manage construction-generated waste and construction related toxic materials. Controls consist of both temporary and permanent methods to reduce pollution from a construction site. The majority of controls address loss of soil from the site. Soil loss in the form of erosion and sediment due to storm events and wind constitute the majority of pollution generated from construction sites. Controls that address erosion and sediment are typically more site specific than waste and toxics management. Erosion and sediment controls are dependent on-site slopes, drainage patterns and drainage quantities along with other site-specific conditions. Materials and waste management consists primarily of "good housekeeping" practices which are dependent on the type of construction and the quantity and type of building materials.

Control measures shall follow the control selection guide set forth in the iSWM manual and TCEQ. Control measures from each of the three categories; *Erosion Controls, Sediment Controls and the Material and Waste Controls* shall be used in the design of an *Erosion Control Plan* for a site. Standard details called out in *Division 1000 of NCTCOG's Standard Specifications and Standard drawings* and the City details shall be utilized as well in the development of an erosion control plan.

Control measures (*such are silt fences, inlet protection, rock berms, etc.*) shall be removed from the site once grass cover has been established to an efficient level. Types of erosion control may be removed depending on amount of disturbed area remaining. Erosion control shall remain and be maintained when the overall project has reached the minimum amount of disturbed area, one (1) acre. Grass cover shall be determined by the [VEGETATION](#) section of these *Standards*.

Erosion control for a development shall remain until the phase has the minimum disturbed area, one (1) acre, for the overall phase, not individual lots. By approval of City Engineer, erosion control may remain in place after phase is complete in anticipation of future phases.

Erosion control shall be inspected by the contractor weekly, and before and after rain events. Deficiencies shall be corrected within a timely manner. If a deficiency is identified before a rain event, it shall be corrected before the end of the day or before the rain begins. Types of deficiencies include, but not limited to, holes or tears in silt fencing, fallen silt fencing, debris or sediment clogging erosion control device, rock check dams or construction entrance rock sedimented over or covered, and required inlet protectors missing. Silt fence, construction entrance, and all other approved construction site erosion control devices shall be maintained to SWP3 and City Engineering Inspector requirements.

- (1) Construction Entrance. No crushed or recycled concrete is allowed and rock must be a minimum of 12-inches thick using well graded rock with minimum diameters of four (4) to six (6) inches.
- (2) Silt Fence. No wooden stakes to be allowed on any erosion control device. Silt fence should not be installed within a 100-year floodplain.
- (3) Hay Bales. No hay bales to be allowed as an erosion control device.



- (4) Performance. Erosion from construction sites can be a significant water quality problem. Developing areas are cleared of vegetation during construction leaving the soil exposed and susceptible to erosion. Runoff then transports eroded sediment from these areas and deposits it downstream. The accumulation of silt in streams and ponds is a form of water pollution that is unattractive and impedes drainage.

Prevention is a key aspect of erosion control. Many of the control methods presented herein can be placed in a manner that will protect highly erodible areas such as steep slopes. The prevention of erosion requires prior planning to ascertain the placement of selected control methods. The rewards of this planning will be a significant reduction in soil loss. Not only can soil loss be prevented, but eroded soil can be recovered on the construction site and used for fill.

The particulate material in construction site runoff is generally heavier and larger than particulates in urban runoff. These attributes facilitate the removal of the material whether the removal is by settling in a sediment trap or by filtration through a filter fence. Temporary sediment traps, filters and routing devices can effectively control erosion for construction sites if properly applied. These methods are even more effective when permanent management techniques are used in an effort to control temporary increases in sediment loads.

Keep dirt/mud/debris off of all public streets and fire lanes. It is required to have sufficient equipment and materials on-site to safely remove dirt/mud/debris from the public streets and fire lanes. Such equipment includes but not limited to: traffic control items, brooms, shovels, and personal protection equipment.

Required documents and permits prior to construction:

- Storm Water Pollution Prevention Plan (SWP3). A copy of the executed SWP3 is to be submitted electronically to the City, if the project disturbs one (1) acre or more of land.
- Storm Water Notice of Intent (NOI). An electronic copy of the executed NOI will be required to be submitted to the City, if the disturbed area of land of the project is five (5) acres or more, or if the project will disturb land one (1) or more acres, but less than five (5) acres and is a part of a larger common plan of development or sale that will disturb 5-acres of land.
- TPDES General Permit No. TXR 150000. Provide an electronic executed copy of the general permit to the City if the project is one (1) acre and less than five (5) acres of disturbed land.
- Administrative Policy (97-03). An executed copy of the Administrative Policy shall be submitted to the City.

SUBSECTION 3.06.05 | LOT DEVELOPMENT

All lot developments shall include a drainage plan preventing all diversion of water from the approved path of discharge. The builder at the time of permit application shall furnish a grading plan in compliance with the appropriate chapter of the building code adopted by the City, the as-built grading plan for the development, and the as-built storm drainage plan approved for that particular development. All structures or mechanical equipment installed after site/civil construction shall not block or divert drainage. If the re-grading of a lot is necessary, the builder shall be required to furnish a new drainage plan indicating the diversion and rerouting of the affected storm water. When the re-grading of a lot prevents the drainage from flowing to the proper structures as designated in the drainage plan, then the builder will furnish a registered engineer's review for adequacy of existing structures to which the water is diverted. If improvements are necessary to provide for adequate drainage due to re-grading of a lot, then the improvement must be made at the builder's expense before a grading permit or other permits for construction will be issued by the City. The City Engineer will review the information submitted for compliance with the approved grading and drainage management plan. Accepted City streets are not to be used as an erosion control. No inlet protection is allowed in an accepted City street.

- (A) Off-Site Cost Sharing. The developer shall be fully responsible for the construction of off-site drainage improvements necessary for his/her subdivision and the surrounding area, unless other provisions are approved by the City Council. Provisions for reimbursement of cost in excess of those necessary to serve the development, and any other provisions, shall be made a part of a facilities agreement. For any subsequent development utilizing such facilities, any cost due to prior developers shall be pro-rated based on the increased contribution of storm water runoff. Such pro-rated amounts shall be made a part of any subsequent agreement, collected by the City and repaid to the original developer making such improvements.

The original developer shall provide the City with acceptable documentation of actual construction cost from which calculation of reimbursable amounts will be made for inclusion in the facilities agreement.

- (B) Exemptions. When a development is of two lots or less and in the City Engineer's opinion does not affect existing drainage facilities or affect the adjacent property, the City Engineer may allow the developer to waive any off-site pro-rata costs.



- (C) All City rights-of-way shall be sodded where disturbed. No artificial grass is allowed in any City right-of-way and/or easements.
- (D) Before acceptance of streets and alleys silt fencing shall be placed at the back of curb/edge of all pavement.



CHAPTER 4 | VEGETATION

SECTION 4.01 | GENERAL

All seeding, sodding and fertilizer requirements are to be done in accordance with the North Central Texas Council of Governments (NCTCOG) *Standards and Specifications (Under Item 202)* as modified by the City of Rockwall.

SECTION 4.02 | COVERAGE

The developer shall establish grass and maintain the seeded area, including watering, until a *Permanent Stand of Grass* is obtained at which time the project will be accepted by the City. A *Stand of Grass* shall consist of 75% to 80% coverage of the whole project area and a minimum of one (1) inch in height as determined by the City. There shall not be more than one (1) acre of land without proper grass coverage at the time of City acceptance. Re-seeding will be required in all washed areas and areas that have not established.

All City rights-of-way shall be sodded if disturbed. No artificial grass is allowed in any City right-of-way and/or easements.

SECTION 4.03 | PLANTING SEASON

TYPE NO.	VARIETY	HULLED OR UNHULLED	WEIGHT/ACRE	PLANTING SEASON
TYPE I	BERMUDA GRASS	HULLED	50 LBS/ACRE	APRIL THROUGH JUNE
TYPE II	ANNUAL RYE GRASS	N/A	40 LBS/ACRE	SEPTEMBER THROUGH MARCH
TYPE III	BERMUDA GRASS	UNHULLED	50 LBS/ACRE	JANUARY THROUGH MARCH & JULY THROUGH AUGUST

SECTION 4.04 | ADDITIONAL INFORMATION

For a public utility less than ten (10) inches in size no tree shall be planted within five (5) feet (*horizontally*) of the utility and for a utility greater than or equal to ten (10) inches in size no tree shall be planted within ten (10) feet (*horizontally*) of the utility. If trees are approved by the Planning and Zoning Department and/or Planning and Zoning Commission to be within the right-of-way then a City approved root barrier will be required to be installed in order to keep roots from degrading the pavement structure. Vegetation over two (2) feet in height shall not be planted in any visibility easement or potential sight visibility (*including medians*).



CHAPTER 5 | WATER AND WASTEWATER SYSTEMS

SECTION 5.01 | GENERAL REQUIREMENTS

The design and construction of the water and wastewater system to serve the development shall be in accordance with good engineering principles, with these *Standards of Design and Construction*, and the *Standard Details* and with the requirements of the Texas Commission on Environmental Quality (TCEQ).

All on-site and off-site water and wastewater mains shall be sized and located to conform to projected demands in accordance with the current *Water Master Plan* and *Wastewater Master Plan* and the computer model with regard to the impact of each development on the existing and proposed water system. The alignment of future water and wastewater lines in the *Master Water and Wastewater Plans* may vary depending on design or layout. The water and wastewater lines in the Master Plans shall be minimums and should connect to the systems shown in the Plans.

No construction shall commence prior to the approval of the plans and specifications by the City.

The term “water main” shall refer to a water system that water meters, hydrants, and fire lines are connected to. Water mains may be located on private property but shall be within an easement and maintained by the City.

The term “wastewater main” shall be refer to a wastewater system that serves more than one (1) property. Wastewater mains may be located on private property but shall be within an easement and maintained by the City. If a system serves only one (1) property and is located on private property it shall be a private sewer service and not a wastewater main and therefore considered private unless to serve off-site properties. Manholes or cleanouts on a sanitary sewer line does not indicate or require the system to be a wastewater main.

Water and wastewater mains should not cross a single-family lot unless along a street right-of-way within an easement. Mains crossing between rights-of-way within a residential subdivision shall be within right-of-way or within an easement, within a HOA owned and maintained lot.

SUBSECTION 5.01.01 | SYSTEM CAPACITY STUDIES

A *Water and Wastewater System Capacity Study* shall be performed for all developments or re-developments that propose a change in existing land use (*change in density or higher water and sewer usage*) that does not conform to the City's current *Water and Wastewater System Master Plan*.

The City will utilize an engineering consulting firm to assist City staff in performing *Water and Wastewater System Capacity Studies*. The cost of this study, by the consultant, shall be borne by the developer, engineer, or property owner requesting the proposed change in land use. Before the study begins, the developer, engineer, or property owner submitting for a change in land use shall deposit with the City for the reviews. The City shall disburse the funds to the consulting engineer as the study progresses. Should the consultant fees exceed the initial estimate, the developer, engineer or property owner submitting for the change in land use shall be informed of the shortage for the consultant engineer to complete the study. Additional funds will then be deposited with the City by the developer, engineer or property owner to cover the remaining reviews. Any unused funds to be reimbursed to the developer, engineer or property owner submitting for a change in land use. If review process is performed by City staff, the City will submit a cost estimate for the study at time of the initial submittal.

SUBSECTION 5.01.02 | CONNECTIONS FOR FUTURE ADJACENT DEVELOPMENTS

All development shall accommodate future adjacent and upstream/downstream developments by extending water and wastewater lines across the proposed development in order to create water and wastewater systems connectivity. This connectivity will be provided for an ease of future development and limited disturbance to existing developments. These extensions of the water and wastewater facilities shall match the City's *Water Master Plan* and *Wastewater Master Plan*.

If the property adjacent to the proposed development is a Utility owned or City owned property, extension may be required across the subject property.



SUBSECTION 5.01.03 | EASEMENTS

If a water or wastewater main is located on private property the mains shall be within an easement that conforms to the minimum width in [TABLE 5.1](#). The utility shall be centered within the easement, or have a minimum of half the required easement width on both sides of utility.

TABLE 5.1: MINIMUM WIDTH FOR WATER AND WASTEWATER LINE EASEMENTS

		MINIMUM EASEMENT WIDTH (FT)	
CONDUIT SIZE	<= 48" DIAMETER	20'	
	> 48" DIAMETER	APPROVAL CITY ENGINEER	
DEPTH OF CONDUIT	< 14'	20'	
	14' - 16'	25'	
	17' - 20'	30'	
	21' - 23'	35'	
	> 23'	40'	

SUBSECTION 5.01.04 | SEPERATION OF WATER AND WASTEWATER LINES

All water lines and wastewater lines shall be separated ten (10) foot horizontally and per TCEQ Rules and Regulations. Refer to the following for additional requirements:

- [CHAPTER 290, PUBLIC DRINKING WATER SUBCHAPTER D: RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS, §290.38 - 290.47](#)
- [CHAPTER 217, DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEMS SUBCHAPTER C: CONVENTIONAL COLLECTION SYSTEMS, §217.51 - 217.70](#)

For separation between storm lines, a spacing of five (5) foot horizontal shall be maintained from outside dimension of storm pipe to the water or wastewater line.

SUBSECTION 5.01.05 | WATER AND WASTEWATER LINES WITHIN TXDOT RIGHT-OF-WAY

Water and wastewater lines within or crossing a Texas Department of Transportation (TXDOT) right-of-way (ROW) shall meet the requirements of the TXDOT District Office and the TXDOT Utility Manual. Utility permits for lines within or crossing TXDOT rights-of-way shall be processed through the City's Engineering Department. TXDOT permit plan sets shall be 11-inch by 17-inch in size and signed and sealed by a licensed professional engineer with the State of Texas. Plan sets shall include all applicable TXDOT standard details and traffic control plans sheets to construct the lines.

New proposed utility lines shall be outside of TXDOT ROW, on private property, within an easement.

SUBSECTION 5.01.06 | BORING, JACKING, AND TUNNELING

All water and wastewater mains to be installed in steel casing under existing Texas Department of Transportation (TXDOT) and City maintained arterial roadways, railroads, and creeks and shall be installed by a method other than open cut, unless otherwise approved by the City Engineer. Casing pipe may also be required where deemed necessary by the City Engineer. All crossings, regardless of casing, of existing City maintained pavement shall be installed by a method other than open cut, unless otherwise approved by the City Engineer, all boring of water and wastewater lines shall be by dry bore methods. No wet bores will be allowed.

Steel casing thickness and diameter size shall be designed by the engineer of record for construction and maintenance of the carrier pipe per the requirements below. Raci patented casing spacers, or approved equal, shall be used. No bends and/or curves are permitted with casing pipes. The construction bore and receiving pit shall be located at a minimum distance of four (4) feet behind the back of curb. The engineer of record shall provide a distance greater than four (4) feet where there is no curb or barrier protection at the edge of pavement. Additional bore setback distances or shoring shall be required to maintain roadway integrity and the safety of construction



personnel. When bore and receiving pits are located on private property, permanent water and wastewater easements for the pits will be required for the installation and future maintenance of the line.

The engineer of record shall design the pipe casing for the following loading conditions and/or applicable combinations thereof:

- Cooper's E-80 Railway loading or AASHTO HS20 loading, as applicable.
- Earth loading with the height of fill above the casing as shown on the plans as existing or finish grade whichever is greater.
- All other applicable loading conditions, including loads applied during transportation and handling.
- Max casing deflection of ½-inch from the above loading conditions.

Engineer of records shall consider the location, size, and depth of bore and receiving pits relative to existing utilities when establishing the beginning and ending stations.

Manufacturers: Paint Manufacturers for pipe casing shall be 46-465 H.B. Tnemecol; Tnemec Inc. or approved equal.

SUBSECTION 5.01.07 | CROSSINGS

SUBSECTION 5.01.07.01 | CITY ROADWAY CROSSINGS

All City roadway crossings shall be by dry bore. Open cut is by City Engineer written approval only, and shall require full panel concrete replacement at a minimum.

SUBSECTION 5.01.07.02 | CULVERT CROSSINGS

A steel encasement pipe shall be used to encase the carrier pipe with a minimum vertical clearance of two (2) feet from the bottom of the culvert and casing pipe. The encasement pipe shall be extended a minimum of five (5) feet from the outside edge of a box culvert or the outside diameter edge of the storm sewer for future maintenance of the carrier pipe. All culvert crossing shall be profiled.

SUBSECTION 5.01.07.03 | CREEK CROSSINGS

Water and wastewater lines at creek crossing shall be design to go under the flowline of the crossing. The lines shall be in steel encasement pipe with a minimum vertical clearance of four (4) feet from the encasement pipe and the flowline of the creek to protect from future creek undercutting. The encasement pipe shall be extended to the creek's erosion hazard set back line for future maintenance of the carrier pipe. Where an erosion hazard set back does not exist due to a shallow creek the encasement pipe shall extend 15-feet on either side of the main channel of the creek. All creek crossings shall be profiled and shall show the erosion hazard set back line along with the projected 4(H):1(V) sloping line and 15-foot buffer from the intersecting point of the ground. Aerial crossing of water lines is not allowed.

Aerial crossings for wastewater lines may be used only when all other alternatives have been evaluated and determined not to be feasible. Aerial crossings of wastewater lines require approval of the City Engineer. If an aerial crossing is to be installed, reference additional requirements in the Wastewater System Section. No syphons are allowed.

SUBSECTION 5.01.07.04 | TXDOT HIGHWAY CROSSING

A steel encasement pipe shall be used to encase the carrier pipe at all TXDOT highway crossings. The crossing shall be at 90-degree (*perpendicular*) to the highway. All boring of water and wastewater lines shall be by dry bore methods. No wet bores will be allowed unless approved in writing by the TXDOT District Office.

SUBSECTION 5.01.07.05 | RAILROAD CROSSINGS

Prior to the design of any railroad crossing, the engineer of record shall contact the railroad and the appropriate regulatory agency to determine if there are any special design and/or construction requirements and shall copy the City Engineer on all correspondence with each regulatory agency and approved permits.

SECTION 5.02 | WATER SYSTEM



SUBSECTION 5.02.01 | GENERAL

All facilities shall be sufficient size to provide adequate capacity for ultimate development as called out in the latest copy of the *Water Master Plan*. The water mains shall be sized to meet the maximum instant domestic requirements plus an appropriate allowance for fire protection water. The design criteria for water demand shall be submitted to the City with the plans and specifications. The City reserves the right to require larger water mains than required for the proposed development in order to provide capacities for areas outside the development. The developer will be responsible to construct water mains adjacent to his property in accordance with the latest *Water Master Plan* or as required by the City Engineer.

SUBSECTION 5.02.02 | CONNECTIONS TO EXISTING DISTRIBUTION SYSTEM

Preliminary discussions concerning take-off points in the water system should be conducted with the City of Rockwall Engineering Department or its designated representative prior to finalizing the preliminary designs of the water system, which will serve the development. Connections to the City's existing water system will be allowed only at locations where sufficient quantity and pressures are available to meet the projected requirements of the development. In general, the connections to the existing water system shall be made in such a manner to keep "shut-downs" to a minimum. Preference should be given to a tapping valve connection.

In a proposed development where City water is not adjacent to the property but is accessible, the developer shall provide, at their expense, a minimum of eight (8) inch water main, an off-site water main of sufficient size to serve his development, or as shown on the City's *Water Master Plan*, whichever is larger. The City can participate (*if funds are available*) or collect pro-rata for the oversize of the required line. The City participation must be approved by the City Council. The proposed development may require a loop into the existing water system in order to provide adequate water pressure. The loop will be at the developer's expense. All water main shall be extended to the property lines for future connections.

In general, the City will not approve a development, which cannot be served by extensions to the City water system. Some areas in the City are served by water supply corporations. The *Developer* shall contact these water supply corporations for notification of future development. The *Developer* shall still be responsible to construct water facilities that meet City requirements and as shown on the City's *Water Master Plan*. The City will inspect the water facilities. All water facilities must pass North Texas Municipal Water District testing prior to acceptance of said facility.

Under unusual circumstances, the City may consider approval of a private water system, which will supply an adequate quantity of potable water to every lot in a residential development. Such systems must meet the approval of the City, the TCEQ, the State Board of Insurance and other appropriate regulatory agencies. In addition, an agreement between the City and the developer must be executed whereby the City may acquire the system at such time as it can be connected into the City's owned and operated distribution network. In all cases, the engineering drawings shall show the source of water for the development.

SUBSECTION 5.02.03 | SIZING OF WATER MAINS

- (A) Water mains shall be sized to have maximum velocities of seven (7) feet per second for maximum daily demands and maximum velocities of ten (10) feet per second for combined maximum daily demand and fire flow demands.
- (B) [TABLE 5.2](#) provides the water demand for residential land uses and non-residential land uses and shall apply for any development where the lot layout has not been finalized. Land uses not listed shall be classified by the land use they most nearly resemble in [TABLE 5.2](#) or calculated by the engineer in accordance with the anticipated use. The engineer shall submit the maximum daily demand and the maximum hourly demand to the City Engineer for review and approval. The City reserves the right to assign a higher water usage rate, population per unit, and/or units per acre to be used for developments anticipated to generate higher than typical usage rates.
- (C) The engineer shall sufficiently size all water mains to provide adequate capacity for ultimate development as called out in the latest copy of the City's *Water Master Plan*. For all developments, re-developments, and any type of facility tying into the City's water distribution system, the following guidelines shall be used:
 - (1) The engineer shall obtain the available record drawings. When record drawings are not available, field investigations and verifications shall be required prior to construction.
 - (2) The standard water main sizes that shall be used are noted in the [TABLE 5.3](#).
 - (3) The minimum water main size to serve residential areas shall be eight (8) inches in diameter



- (4) The minimum water main size serving commercial, business, industrial, etc. shall be eight (8) inches.
- (5) Fire Flow Demands for all districts shall be calculated with a minimum residual pressure of 20 PSI under combined fire and domestic (*Maximum Daily Demand*) water flow conditions and/or the latest requirement by the TCEQ. The developer shall provide facilities sufficient for fire flows in accordance with the minimum criteria set for by the City's Fire Marshal Office.
- (6) Mains are to be sized to ensure less than one (1) foot of head loss per 1,000-feet of water main using a Hazen Williams coefficient of $C = 110$ for the *Maximum Hourly Demand* flow rates within the subdivision internal distribution system.
- (7) Mains shall be sized to provide service to adjacent properties.

TABLE 5.2: WATER DEMAND RATES

LAND USE	UNITS PER ACRE	POPULATION PER UNIT	MAX DAY PER CAPITA (GPCD)	MAX HOUR PER CAPITA (GPCD)	MAX DAY PER ACRE (GPAD)	MAX HOUR PER ACRE (GPAD)
RESIDENTIAL						
SINGLE FAMILY - LOW DENSITY	3.5	2.87	350	700		
SINGLE FAMILY - MEDIUM DENSITY	8.0	2.87	350	700		
SINGLE FAMILY - HIGH DENSITY	18.0	2.87	350	700		
TOWNHOME	4.0	2.50	350	700		
MULTI FAMILY	12.0-16.0	2.00	350	700		
MOBILE HOME PARK	8.7	2.87	200	360		
NON-RESIDENTIAL						
MIXED USE / LIVE WORK / DOWNTOWN			350	700		
COMMERCIAL RETAIL / BUSINESS CENTER					1,500	3,000
PUBLIC / QUASI-PUBLIC					1,500	2,000
COMMERCIAL INDUSTRIAL					2,000	3,000
SPECIAL COMMERCIAL CORRIDOR / TECHNOLOGY EMPLOYMENT CENTER					3,000	3,900
LIGHT MANUFACTURING ¹					2,000	3,000
HEAVY MANUFACTURING ¹					2,500	3,000
SCHOOLS (ELEMENTARY)			39 PER STUDENT	52 PER STUDENT		
SCHOOLS (MIDDLE / HIGH SCHOOLS / COLLEGES)					1,500	2,000
HOSPITALS			720 GPD PER BED	864 GPD PER BED		
NURSING HOMES / ASSISTED LIVING			240 GPD PER BED	288 GPD PER BED		
RESTAURANTS					1,500	3,000
PARKS AND OPEN SPACE					1,500	1,500
GOLF COURSE ²					1,000	1,000

NOTES:

¹: ENGINEER SHALL PROVIDE THE MAXIMUM DAILY DEMAND AND MAXIMUM HOURLY DEMAND FLOWS AND/OR THE NUMBER AND SIZE OF WATER METERS PROPOSED FOR THE PARTICULAR LAND USE FOR REVIEW BY THE CITY.

²: ENGINEER SHALL PROVIDE THE NUMBER AND SIZE OF WATER AND IRRIGATION METERS PROPOSED FOR THE GOLF COURSE FOR REVIEW BY THE CITY.



TABLE 5.3: STANDARD WATER MAIN SIZES

8-Inch	10-Inch	12-Inch	14-Inch	18-Inch
20-Inch	24-Inch	30-Inch	36-Inch	48-Inch
48-Inch	54-Inch	60-Inch	66-Inch	72-Inch

SUBSECTION 5.02.04 | WATER MAINS LOCATION/ALIGNMENT

Water pipelines shall be located in the parkways between the back of the curb and the street right-of-way. The location shall be six (6) feet from the back of curb on the north side of east-west streets and on the west side of north-south streets. When horizontal curvature is used the minimum radius of curvature shall be equal to that recommended by the pipe manufacturer. No water main less than ten (10) inches shall be located nearer than five (5) feet from any tree. No water main ten (10) inches or greater shall be located nearer than ten (10) feet from any tree.

Water mains should not be designed to pass through single-family lots or between single-family lots unless fully within a HOA owned and maintained lot.

A blue EMS Locator Pad will be located as shown in the *Standard Drawings*. Water mains shall have blue EMS locator pads at every 250-feet, change in direction, valve, curb stop, and service connection to the main water main.

SUBSECTION 5.02.05 | DEPTH OF COVER

The minimum depth of cover for water mains are indicated in [TABLE 5.4](#).

TABLE 5.4: DEPTH OF COVER TO TOP OF PIPE

PIPE SIZE	MINIMUM DEPTH OF COVER
6-INCH THROUGH 10-INCH	4.0- FEET
12-INCH THROUGH 18-INCH	5.0- FEET
20-INCH OR LARGER	6.0- FEET

The engineer shall consider the ultimate roadway elevations in determining the depth of cover. Additional depth of cover shall be required for future development and as directed by the City Engineer. Depths of cover greater than eight (8) feet shall be approved by the City Engineer. Water mains should be installed as close to the minimum as possible. If a proposed development's proposed grading changes the depth of an existing water main, the water main may be required to be relocated.

SUBSECTION 5.02.06 | PIPE MATERIAL AND EMBEDMENT

Water mains shall be PVC pipe conforming to the *Standard Specifications for Construction*. In general, the water pipelines shall be AWWA C900-16 PVC Pipe (*blue in color*) for all sizes, DR 14 (*PC 305*) for pipeline sizes 12-inch and smaller, and DR 18 (*PC 235*) for 14-inch and larger water pipelines. All pipes shall be installed in embedment material as shown on the *Standard Drawings* and in conformance with the *Standard Specifications for Construction*.

SUBSECTION 5.02.07 | VALVES

Valves shall be installed on the main to isolate pipe at a minimum of every fire hydrant and on both sides of all public roadways. All gate valves shall comply with the approved list or an approved equal with resilient seat only and shall conform to and shall be installed according to the *Standard Specifications for Construction*.

- (A) Valves shall be placed in straight run sections at spacing no greater than 500-feet.
- (B) All valve boxes shall be encased in a concrete pad that shall be minimum 12-inches by 12-inches by six (6) inches and reinforced with No. 3 steel bars. Valves larger than eight (8) inches may require larger concrete pads.
- (C) Valve extensions shall be 316 stainless-steel.
- (D) Unless otherwise requested by the developer and approved by the City, valves shall be located in the northwest quadrant of the street intersection.



- (E) Valves shall be placed at or near the ends of mains in such a manner that a shutdown can be made for a future main extension without causing loss of service on the existing main. A minimum of 20-feet of main shall be installed past the valve and mechanical pipe thrust restraints shall be used to anchor it.
- (F) Valves should not be placed in vehicle parking spaces.
- (G) Where fire lines are connected to the water main, valves shall be installed on one side of the connection of the main to provide the ability to isolate the main line and continue to provide water to the fire line. The fire line shall be provided with a valve at the connection with the main line.
- (H) Valve boxes shall be provided for buried valves. They shall be three (3) piece screw-type cast iron boxes of the extension type. The three pieces shall consist of the top section, bottom section, and cover.
- (I) Two-inch square nuts that would be over four (4) feet deep shall have stainless-steel valve stem extensions. In these cases, the two (2) inch square valve operating nut shall be no greater than two (2) feet from the finish grade. Valve box extensions may be cast iron or C-900 PVC.
- (J) Additional valves may be required by the City Engineer. Additional valves may be required for fire support or isolation purposes.

SUBSECTION 5.02.07.01 | GATE VALVES

Valves 12-inches and under shall be Resilient Wedge Gate Valves (RWGV). Valves are required to have 316 stainless-steel hardware. Gate valves shall be located outside the paved streets and shall be six (6) feet from back of curb of the intersecting street. In general, gate valves shall be located at street intersections (*except for fire hydrant leads*).

SUBSECTION 5.02.07.02 | BUTTERFLY VALVES

Valves greater than 12-inches shall be flanged butterfly type spaced at a maximum of 1,000-foot intervals. All valves shall have horizontal mounted actuators with a manhole for access to the actuators.

SUBSECTION 5.02.07.03 | AIR RELEASE, AIR/VACUUM, AND COMBINATION AIR VALVES

- (A) Air release valves, air/vacuum, and combination air valves shall be required on 16-inch and larger water mains and as necessary for proper system operation. There are three (3) primary functions of the valves that the engineer shall consider as follows:
 - (1) To vent large volumes of air during filling of the line;
 - (2) To allow air into the pipe during emptying for maintenance and/or repairs; and,
 - (3) To vent small volumes of air that come out of solution during service.
- (B) Typically, these are installed at high points where the pipeline has a vertical change in gradient. Additional installation locations may be required by the City Engineer.
- (C) A fire hydrant shall be required at high points on 12-inch water mains for air relief and flushing maintenance operations. When a fire hydrant cannot be used, an air release valve may be approved by the City Engineer.

SUBSECTION 5.02.08 | FITTINGS

Mega-lugs or approved equal shall be installed. No compaction fittings allowed. Fittings shall be ductile iron in accordance with AWWA C110 or AWWA C153. All buried metal shall be wrapped in polyethylene tube wrap.

SUBSECTION 5.02.09 | CONNECTION TO EXISTING WATER MAINS

SUBSECTION 5.02.09.01 | TAPPING SLEEVES AND VALVES

- (A) Size on size tapping sleeves are not allowed. The largest allowable tapping sleeve shall be the main line size less one (1) standard pipe size (*Example: 16-inch by 12-inch, eight [8] inch by six [6] inch, etc.*). If a size on size connection is required, then a cut-in connection shall be used.
- (B) Connections to an existing line shall be made with full body stainless-steel tapping sleeve and valve. A resilient wedge gate valve shall be flanged to the tapping sleeve.



- (C) Age, material, or condition of existing main may prohibit the use of a tapping sleeve for connections. Older mains can have major failures when tapping is attempted.

SUBSECTION 5.02.09.02 | CUT-IN CONNECTION

When connecting to an existing main, it may be required to provide a cut-in connection with a tee and valve being installed into the existing main in lieu of a tapping sleeve and valve where there is not an existing main line valve between proposed water connection locations as directed by the City Engineer. A test shut down of the existing water main(s) shall be conducted by the Water Department. The requirement for a test shutdown may be waived with approvals of the City Engineer. Only the City's Water Department may perform a water shut down.

SUBSECTION 5.02.10 | DEAD-END MAINS

- (A) Dead-end mains shall be avoided and may only be considered when a looped or interconnected water main system is not available. The design of all water distribution systems should include the opportunity for future looping or interconnect of any approved or proposed dead-end line.
- (B) All dead-end lines shall only be installed upon approval from the City Engineer and at a maximum length of 150-feet regardless of main diameter or valve placement.
- (C) Dead-end non-residential water mains shall only have one fire hydrant or service without looping the water main.
- (D) Where dead-end mains are approved, a flush point at the end of the dead end main shall be provided.

SUBSECTION 5.02.11 | FIRE HYDRANTS

In general, fire hydrants shall be located at each street intersection and at intervals on the interior of each block.

(A) Residential and Duplex.

Residential and duplex areas shall have a fire hydrant at each street intersection and at a maximum of 400-foot intervals on the interior of each block. The City Fire Marshal may alter spacing requirements along roadways depending on subdivision layout.

- (B) Multi Family. Multi-Family areas shall have a fire hydrant at each street intersection and at a maximum of 400-foot intervals on the interior of each block and along fire lanes. The City Fire Marshal may alter spacing requirements along fire lanes depending on fire suppression systems being installed.

- (C) Commercial, Retail and Industrial. Commercial, retail and industrial areas shall have a fire hydrant at each street intersection and at a maximum of 400-foot intervals on the interior of each block and along fire lanes. The City Fire Marshal may alter spacing requirements along fire lanes depending on fire suppression systems being installed.

- (D) Rural Undeveloped Roadway. Water lines along roadways in rural areas that have not been developed, or development is sparse shall have fire hydrants installed a maximum of every 1,000-feet. Additional hydrants may be required by the City.

Fire hydrants shall be installed a minimum of three (3) feet and no greater than six (6) feet behind curb of a fire lane, driveway, access, and/or street as measured from the centerline of the fire hydrant to back of curb, edge of pavement, or fire lane. All fire hydrants shall have five (5) feet of clearance around, including but not limited to trees, shrubs, bollards, walls, signs, structures, and parking stall curbs.

The spacing of fire hydrants shall be measured along the street frontage or fire lanes. The City Fire Marshal and Engineering Department shall review all fire hydrant spacing. When a special condition exists due to land use, the Fire Marshal or City Engineer may require additional hydrants for fire protection. All existing fire flows and pressure tests shall be obtained from a private company (THE CITY DOES NOT PERFORM THIS TEST).

Fire hydrants shall comply with the approved list or an approved equal conforming to the requirements set forth in the *Standard Specifications for Construction*. All fire hydrants shall be installed with a six (6) inch gate valve on the hydrant lead. The installation shall be as set forth in the *Standard Specifications for Construction*. Fire hydrants shall be painted to meet the City's requirements for color code as set forth in the *Standard Specifications*. In general, the fire hydrant will be reflective silver with differing cap color, which corresponds to the size of hydrant feeder line, as detailed in *Approved Water Materials List* in the Appendix.



Fire hydrants shall be installed at the end of each dead-end line. Minimum lead size for a fire hydrant shall be eight (8) inches if the fire hydrant lead is 50-feet or longer. Fire Hydrant leads may not be longer than 150-feet. Fire hydrants are not to be powder coated. Fire hydrants nozzles are to be a minimum of 19-inches to a maximum of 28-inches above final grade.

Nozzle diameter shall be two hose nozzles measuring 2½-inches nominal inner diameter and one pumper nozzle measuring 4½-inches nominal inner diameter. All nozzles are to have *National Standard Hose Threads*. The operating nut and nozzle nuts shall be 1½-inch pentagon-point to flat size/shape.

- (A) Standard fire hydrant barrel shoe depth where ever practical shall be five (5) feet. The fire hydrant lead line shall be adjusted to meet the standard fire hydrant depth.
- (B) The connection to the main line shall include a flanged tee connected to a flange by mechanical joint gate valve. The mechanical joint shall be restrained so that the fire hydrant is anchored to the valve.
- (C) Specifications. Fire hydrants shall be three-way breakaway type no less than 5¼-inch size. Mechanical joint connection is required.

SUBSECTION 5.02.12 | WATER SYSTEM CONNECTIONS

Service connections shall be in accordance with the designs shown on the *Standard Drawings*. The materials shall comply with approved list or approved equal and shall be installed in accordance with the *Standard Specifications for Construction*.

- (A) All service pipelines shall be constructed of SDR-9 (*Polytube*) having a minimum size of one (1) inch. All connections shall be compression type or approved equal.
- (B) Detector pads embedded in sand shall be installed above all service connections.
- (C) All meter boxes for residential properties shall be set between the sidewalk and the back of curb. If sidewalk is located on the back of curb, the water meter shall be set between sidewalk and edge of ROW. Meter box tops shall be set one-half (½) inch to 1½-inch above the curb, and an angle meter stop shall be set six (6) inches below the meter box top. Meter boxes shall have a one (1) inch wide slot from five (5) inches below the top of the box to the bottom of the box on the side facing the lot for service connection.
- (D) Any meter box installed in paving shall be traffic rated.
- (E) Water meters shall not be located within a driveway or drive approach unless is a traffic rated box and lid.
- (F) A domestic and/or irrigation service connection shall not be allowed on fire hydrant leads.
- (G) Installation of multiple meters per water service will not be allowed. Only one (1) meter per service will be allowed. *Bull Heading* of services and meters shall not be allowed except for special conditions and approved by City Engineer approval only.
- (H) Service saddle shall be double bronze flattened straps or stainless-steel double bolt wide straps (*no banded straps shall be allowed*) with brass body. Service saddle shall be per the approved material list. Minimum size tap shall be one (1) inch diameter.
- (I) Water meter sizes shall not be bigger than the service line size from the water main to the meter.
- (J) All meters two (2) inch and under shall be purchased from the City and will be at developer's/contractor's expense. All meters greater than two (2) inches must be approved by the City and shall be furnished and paid for by the developer/contractor.
- (K) Concrete meter vaults are required for meter sizes three (3) inches and larger, meters and vaults shall be provided by the contractor. Meter vaults shall be sealed on the outside of the vault to prevent water from draining into the vault. Meter vault and meter requirements are shown in the *Standard Drawing* section.
- (L) Bending of water service from main to meter should be avoided.
- (M) Residential Water Meters.
 - (1) In single family residential developments, the nearest edge of the water meter box shall be a minimum of six (6) inches behind the back of curb, and the water service shall be no more than 12-inches deep, covered with a meter box in place at grade. If sidewalk is on the back of curb, the nearest edge of the water meter box shall be a minimum of six (6) inches behind the back of sidewalk, and the water service shall be no more than 12-inches deep, covered with a meter box in place at grade. If no curb is present, the water meter shall be located at the right-of-way line, no more than 12-inches deep, covered with a meter box in place at grade. Along roadways without a curb, the water service line shall be constructed at a minimum of 24-inches below the ditch flowline. Meter boxes shall not be placed in the invert of a ditch.



- (2) For multi-family, condominium and townhouse developments installation of multiple meter boxes: may only be installed at approved locations. Each service box shall service one (1) lot/building. Installation of multiple meters per water service will not be allowed. Only one (1) meter per service will be allowed. All meters are to have a testable double check backflow device installed below grade at the meter.

(N) Non-Residential Water Meters.

- (1) Installation of non-residential three (3) inches and larger meters will include two (2) mainline valves, one (1) bypass valve with chain and lock, and bypass line, all located inside the vault. Clearances between fasteners on valves, strainers, and meters to interior surfaces shall provide adequate room for maintenance. All meters are to have a testable double check backflow device installed below grade at the meter.
- (2) Non-residential and multifamily water meters will be located within the right-of-way or within a water easement and clear of high traffic areas. Location within ROW shall match that of *Section 5.2.12.L*. All meters are to have a testable double check backflow device installed below grade at the meter.
- (3) Water meter vaults shall be sized according to the size of the water meter and to allow for a minimum of a 12-inch clear working area for maintenance and operation. Minimum water meter vault sizes are shown in the City of Rockwall *Standard Details*.
- (4) Non-residential domestic and irrigation meters shall have a testable double check backflow preventer installed below grade at the meter.

SUBSECTION 5.02.13 | ABANDONMENT OF WATER MAINS

- (A) The engineer is to note the limits and appropriate conditions for abandoning existing water mains that are being replaced. For lines being abandoned, the engineer should note and locate points of cut and plug at the junction with the line that remains in service.
- (B) The engineer shall make allowances to permit the existing and proposed mains to remain in service simultaneously thereby providing a means for transferring customer's services from the old main to the new main with minimum interruption. If the construction of a proposed main necessitates the abandoning of the existing main prior to the new main's placement into service, then provisions for a temporary water main with services and fire flow must be addressed with the design.
- (C) Abandoned water lines to remain in place shall be cut and plugged and all void spaces within the abandoned line shall be filled with grout, flowable fill, or an expandable permanent foam product. Valves to be abandoned in place shall have any extensions and the valve box removed and shall be capped in concrete.
- (D) Existing fire hydrants and valves located on mains/hydrant leads being abandoned are to be removed and delivered to the Water Department.

SECTION 5.03 | WASTEWATER SYSTEM

SUBSECTION 5.03.01 | GENERAL

All facilities shall be sufficient size to provide adequate capacity for the ultimate development. The wastewater lines shall be sized to meet the peak-day wet weather flow plus an appropriate allowance for infiltration of storm water. The minimum wastewater main size (*other than service lines*) for all developments shall be eight (8) inches in diameter. The design criteria and calculation shall be submitted to the City with the plans and specifications. The City reserves the right to require a wastewater main of a larger size than that required by the development in order to provide capacities for areas outside of the development. Wastewater systems shall be designed so that all wastewater mains will be gravity flow. The use of a wastewater lift station can only be allowed with written approval by the City Engineer.

Connections to substandard mains and manholes shall not be allowed. Substandard mains and manholes shall be determined by the City Engineer based on criteria including, but not limited to: size, material, condition, flow rate, capacity, etc. Offsite improvements will be provided by the development for adequate wastewater service to the site.

All wastewater mains shall be installed at a depth sufficient to permit all water mains to be above the wastewater when the water main has a minimum cover of four (4) feet. In such cases where water mains either cross under, over within two (2) feet, or otherwise come



within ten (10) feet of a wastewater main, the wastewater main shall be PVC pressure pipe with a minimum working pressure class of 150 PSI or encased in concrete. Other conditions may have additional conditions per TCEQ.

SUBSECTION 5.03.02 | OWNERSHIP AND MAINTENANCE

SUBSECTION 5.03.02.01 | OWNERSHIP

Ownership of wastewater systems shall conform to the following:

- (A) Wastewater mains within right-of-way or easements shall be owned by the City. This shall include the manholes and cleanouts on those lines.
- (B) Wastewater service laterals shall be owned by the property being serviced, from the wastewater main connection to the structure being serviced. This includes any and all manholes and cleanouts on the service lateral.

SUBSECTION 5.03.02.02 | MAINTENANCE

Maintenance of wastewater system shall conform to the following:

- (A) Wastewater mains within right-of-way or easements shall be maintained by the City. This shall include the manholes, pipe, cleanouts, etc. on those lines.
- (B) Wastewater service lateral shall be maintained by the property owner being served from the structure to the main

SUBSECTION 5.03.03 | CONNECTIONS TO EXISTING WASTEWATER COLLECTION SYSTEM

Preliminary discussion concerning entrance points in the wastewater system should be conducted with the City of Rockwall Engineering Department or its designated representative prior to finalizing the preliminary designs of the collection system to serve the development. In a proposed development where City wastewater facilities are not adjacent to the property but are accessible, the developer shall provide, at his expense, an off-site wastewater interceptor of sufficient size to serve his development and the contributing service area (*using fully developed flows*), or as shown on the City's *Wastewater Master Plan*, whichever is larger. Developers can request a pro-rata agreement for wastewater over-size above ten (10) inch to be executed with the City, where the City collects a pro-rated amount as other developments connect to the system. This money would be distributed back to the developer that constructed the over-sized system. The pro-rata agreement requires approval by City Council.

Connections to Existing Wastewater Mains. When connecting a six (6) inch or larger new line to an existing wastewater main the engineer shall provide a new manhole at the point of connection. A six (6) inch service serving a single-family residential lot may use standard residential tap with City Engineer approval. Prior to connecting to the existing line, the new manhole and upstream pipe segment shall pass inspection by the City's Engineering Department or designated representative. Connections in residential locations shall be completed after the preliminary inspection of the main has been performed by the Engineering Department and approval is granted.

In general, the City will not approve a development which cannot be served by extensions to the City's wastewater collection system unless the development has received an approved variance granted by City Council. Pump and haul will not be allowed as a wastewater collection system under any circumstances unless it is for temporary use while the extensions to the City's wastewater collection system are complete.

SUBSECTION 5.03.04 | DESIGN FLOW

All wastewater collection systems shall be designed in accordance with the current City's *Wastewater Master Plan*.

Where possible, all collection systems will be laid out so that all lines will be gravity flow unless approved by the City Engineer.

All wastewater collection systems must be designed to convey the peak wet weather flow from the entire service area including offsite areas through the system. The basin delineation shall be provided by using the latest LIDAR and surveyed contours. Contours shall be provided on two (2) foot or less intervals.

Flow calculations must include the specifics of the average daily flows, peak factor (*ratio of peak to average flows*) and the allowance for inflow and infiltration.

SUBSECTION 5.03.05 | SIZING WASTEWATER COLLECTION MAINS

SUBSECTION 5.03.05.01 | GENERAL

- (A) The engineer shall reference the *Wastewater Master Plan* to determine the size of wastewater mains required in order to serve the development. For all developments or re-developments that propose a change in existing land use (*change in density*) that does not conform to the City's current *Wastewater System Master Plan* a Wastewater System Capacity Study shall be performed. This shall be done as per SUBSECTION 5.01.01, SYSTEM CAPACITY STUDIES.
- (B) The standard wastewater pipe sizes that shall be used are noted in the TABLE 5.5.

TABLE 5.5: STANDARD WASTEWATER COLLECTION SYSTEM PIPE SIZES

8-Inch	10-Inch	12-Inch	15-Inch	18-Inch
21-Inch	24-Inch	27-Inch	30-Inch	33-Inch
36-Inch	39-Inch	42-Inch	48-Inch	54-Inch
60-Inch				

SUBSECTION 5.03.05.02 | AVERAGE DAILY FLOW

- (A) TABLE 5.6 shall be used to calculate the average daily wastewater flow. The collection system shall be designed based on the peak flow calculations, plus an allowance for inflow and infiltration.
- (B) For replacement of existing sewer for additional capacity, wastewater flow data will be provided by the City Engineer and the City's wastewater modeling consultant from data generated by the City's *Wastewater Master Plan* computer model.
- (C) Wastewater mains with direct connections to service lines shall be designed to be no more than 70.00% full and interceptors shall be designed for 100.00% full.
- (D) TABLE 5.6 summarizes the residential and non-residential land use wastewater usage rates. Land uses not listed shall be classified by the land use they most nearly resemble in TABLE 5.6 or calculated by the engineer in accordance with the anticipated use. The engineer shall submit the average daily flow and peak flow calculations including off-site flows within the drainage basin to the City Engineer for review and approval. The City reserves the right to assign a higher wastewater usage rate and/or population per unit to be used for developments anticipated to generate higher than typical usage rates.



TABLE 5.6: WASTEWATER PER CAPITA AND USAGE RATES

LAND USE	UNITS PER ACRE	POPULATION PER UNIT	AVERAGE DAILY FLOW (GALLONS PER PERSON OR UNIT/DAY)	AVERAGE DAILY FLOW PER ACRE (GPAD)
RESIDENTIAL				
SINGLE FAMILY - LOW DENSITY	3.5	2.87	90	
SINGLE FAMILY - MEDIUM DENSITY	8.0	2.87	90	
SINGLE FAMILY - HIGH DENSITY	18.0	2.87	90	
TOWNHOME	4.0	2.50	90	
MULTI FAMILY	12.0-16.0	2.00	80	
MOBILE HOME PARK	8.7	2.87	150	
NON-RESIDENTIAL				
MIXED USE / LIVE WORK / DOWNTOWN				800
COMMERCIAL RETAIL / BUSINESS CENTER				800
PUBLIC / QUASI-PUBLIC				1,000
COMMERCIAL INDUSTRIAL				1,500
SPECIAL COMMERCIAL CORRIDOR / TECHNOLOGY EMPLOYMENT CENTER				1,200
LIGHT MANUFACTURING ¹				1,500
HEAVY MANUFACTURING ¹				3,000
SCHOOLS (ELEMENTARY)			30 PER STUDENT	
SCHOOLS (MIDDLE / HIGH SCHOOLS / COLLEGES)			30 PER STUDENT	
HOSPITALS			400 PER BED	
NURSING HOMES / ASSISTED LIVING			300 PER BED	
RESTAURANTS			50 PER SEAT	
HOTELS			200 PER ROOM	
PARKS AND OPEN SPACE				0
GOLF COURSE				100

NOTES:

¹: USAGE RATES SUBJECT TO CHANGE. ENGINEER FOR THE PROPOSED DEVELOPMENT SHALL PROVIDE ESTIMATES OF THE AVERAGE DAY AND PEAK HOUR WASTEWATER FLOWS BASED ON THE EXPECTED RATES OF USE FOR THE PROPOSED DEVELOPMENT. CITY WILL REVIEW AND PROVIDE DETERMINATION OF ANY REQUIRED CHANGES.

SUBSECTION 5.03.05.03 | PEAK FLOW FACTOR

Peak flow factors are as follows:

- (A) For average daily flow less than 0.05 MGD – Peak Flow Factor = 5.
- (B) For average daily flow between 0.05 MGD and 1.0 MGD – Peak Flow Factor = 4.



(C) For average daily flow between 1.01 MGD and 2.0 MGD – Peak Flow Factor = 3.5.

(D) For average daily flow greater than 2.0 MGD – Peak Flow Factor = 3.

SUBSECTION 5.03.05.04 | INFLOW AND INFILTRATION

After determining the peak flow amount, the engineer shall add an average daily inflow and infiltration rate of 400 GPAD. The inflow and infiltration amount calculated shall be added to the peak flow calculated, with the resultant being the peak wet weather flow, the basis for design.

SUBSECTION 5.03.06 | WASTEWATER MAINS

Wastewater pipelines shall be located in the parkways between the back of the curb and the street right-of-way. The location shall be six (6) feet from the back of the curb on the south side of east-west streets and on the east side of north-south streets. A green EMS Locator Pad is to be installed at every manhole, cleanout, and service connection to the wastewater main. If a wastewater line is to be constructed greater than ten (10) feet in depth and services are required, then a parallel line is to be constructed at a depth shallower than ten (10) feet. The deeper line shall be six (6) feet from the back of curb in the pavement side and the shallower line with services shall be six (6) feet from the back of curb toward the right of way. Depending on depth and exact location of the main, additional easement width may be required. An alternative to a parallel line is a special service connection, by City Engineer approval only. Two (2) sanitary sewer mains shall be installed running parallel over one (1) another. No wastewater main less than ten (10) inches shall be located nearer than five (5) feet from any tree. No wastewater main ten (10) inches or greater shall be located nearer than ten (10) feet from any tree. Wastewater mains should not be designed to pass through single-family lots or between single-family lots.

SUBSECTION 5.03.06.01 | PIPE MATERIAL

Allowable for gravity wastewater mains shall be per [TABLE 5.7](#).

TABLE 5.7: PIPE MATERIALS FOR WASTEWATER GRAVITY MAINS

PIPE SIZE	MINIMUM DEPTH OF COVER
4-INCH THROUGH 15-INCH	Green PVC – SDR 35 (ASTM D3034) [Less 10-Foot Cover]
	Green PVC – SDR 26 (ASTM D3034) [10-Foot or More Cover]
18-INCH OR LARGER	Green PVC – PS 46 (ASTM F679) [Less 10-Foot Cover]
	Green PVC – PS 115 (ASTM F679) [10-Foot or More Cover]

Pipe shall have a minimum earth cover of four (4) feet. All pipes shall be installed in embedment material as shown on the *Standard Details* and in conformance for the *Standard Specification for Construction*. Any main with less than minimum cover shall be encased in concrete and is subject to approval by the City Engineer. Depth of cover greater than 20-feet must be approved by the City Engineer. All pipelines shall be tested for infiltration.

SUBSECTION 5.03.06.02 | MINIMUM GRADES

Wastewater lines should operate with velocities of flow sufficient to prevent excessive deposits of solid materials, otherwise objectionable clogging may result. The controlling velocity with regard to sediment deposition is near the bottom of the conduit and considerably less than the mean velocity flowing full of two and a half feet per second (2.5 FPS). [TABLE 5.8](#) indicates the minimum grades for wastewater pipe with a Manning's "n" = 0.013 and flowing at 2.4 FPS.



TABLE 5.8: MINIMUM GRADES FOR WASTEWATER PIPELINES

PIPE SIZE (INCHES)	SLOPE (n = 0.013) (FOOT/FOOT)
6	0.0050
8	0.0033
10	0.0025
12	0.0023
15	0.0023
18	0.0018
21	0.0015
24	0.0013
27	0.0011
30	0.0009
33	0.0008
36	0.0007
39	0.0006
42	0.0006
45	0.0005
48	0.0005
54	0.0004
60	0.0004
66	0.0004
72	0.0003
78	0.0003
84	0.0003
96	0.0002

SUBSECTION 5.03.06.03 | CURVED SEWERS

No vertical curves will be allowed. Horizontal curvature may be allowed by joint deflection or pipe flexure but not both. The Engineer must specify on the plans the method of deflection allowed and the allowable radius or joint deflection for each pipe size.

When pipe flexure is used, the minimum radius of curvature shall be equal to that recommended by the pipe manufacturer or $300 \times D_0$, where D_0 is the average outside diameter of the pipe in inches, whichever is greater. The Engineer shall note on the plans that when using pipe flexure, all joints are to remain fully seated.

If a joint deflection will be used to provide horizontal curvature, the allowable deflection shall be five (5) degrees or 80.00% of the manufacturer's recommended maximum joint deflection, or 80.00% of the National Reference Standard maximum recommended joint reflection, whichever is less. When joint reflection is used, the Engineer must specify the size of mandrel used for reflection testing. The mandrel shall be sized to verify that the maximum joint deflection has not been exceeded.

Horizontal curves shall match change in street direction as near as possible.

SUBSECTION 5.03.07 | WASTEWATER SERVICE LATERALS

Wastewater service pipelines shall be laid to each lot. The service pipelines shall be plastic pipe having a minimum diameter of four (4) inches and shall extend to the property line. Wastewater service pipelines shall be located on the lower side of each lot and as approved on the final construction plans by the City. In general, a service pipeline shall serve only one (1) lot. Special wastewater service sizing may be required in some instances. Where water and wastewater pipelines pass within ten (10) feet of each other horizontally, the method of construction shall be specified in order to meet TCEQ criteria. No wastewater main less than ten (10) inches shall be located nearer than five feet (5') from any tree. No wastewater main 10-inches or greater shall be located nearer than ten (10) feet from any tree. Service lines cannot connect to wastewater mains that are over ten (10) feet deep unless a special service connection is approved by the City Engineer.

Service laterals shall have a minimum horizontal separation of ten (10) feet downstream from any water service.

Bends in services under roadway pavement should be avoided.



Retail and Commercial. Service lateral size shall be six (6) inch minimum at a two (2) percent minimum grade.

SUBSECTION 5.03.08 | MANHOLES

In general, manholes shall be located at all intersections of wastewater pipelines, changes in grade, changes in alignment, non-single family residential service connections, and at distances not to exceed 500-feet. A manhole maybe required for a residential sewer service six (6) inch or larger. Manholes should not be installed in parking stalls, inverts within pavement, gutter lines, or sidewalk ramp flares.

All manholes will be hydrostatically or vacuum tested. For manholes that have an epoxy coating after constructed, a spark test will be required prior to acceptance. Manhole sizing shall be per [TABLE 5.9](#) with a 30-inch lid. If a manhole exceeds ten (10) feet in depth, increase the diameter by one (1) foot from the sizes given in [TABLE 5.9](#).

TABLE 5.9: MINIMUM MANHOLE SIZES

WASTEWATER MAIN SIZE	MINIMUM MANHOLE DIAMETER
6", 8" AND 10"	4.0 FOOT ¹
12", 15", 18", 21", 24" AND 27"	5.0 FOOT ¹
30" AND 36"	6.0 FOOT ¹

NOTES:

¹: INTERNAL DROP MANHOLES SHALL BE 6.0-FEET MINIMUM.

SUBSECTION 5.03.08.01 | INTERNAL DROP MANHOLES

Internal drop manholes shall be required when the inflow elevation is more than 18-inches above the outflow elevation. New internal drop manholes shall be constructed with inside drops with a six (6) foot minimum diameter. Depending on the depth of the drop manhole and inside clearances between drop bowl apparatus and the manhole, the City Engineer may increase the minimum diameter above six (6) feet. Drop manholes shall increase in diameter as necessary to accommodate the pipe for an internal drop connection as necessary to provide 48-inches of clear space for construction and maintenance operations. Within the manhole the inverts shall be sloped to maintain a smooth transition through the manhole connecting all inlets and outlets. Outside drop connections will not be allowed. Only one (1) internal drop is allowed per manhole.

SUBSECTION 5.03.08.02 | CORROSION PROTECTION

All manholes shall have Raven Liner 405 epoxy coating, ConShield, or approved equal. ConShield must have terracotta color dye mixed in the precast and cast-in-place concrete. Where connections to existing manholes are made the contractor shall rehab manhole as necessary and install a 250-mil thick coating of Raven Liner 405 or approved equal. Manhole shall be replaced at the developer's/contractor's expense if it cannot be rehabilitated.

SUBSECTION 5.03.08.03 | WATERTIGHT SEALED MANHOLES

All manholes shall be sealed if located in an area of storm water flow (*paving, creek, drain way, etc.*). When manholes are placed within the limits of the fully developed 100-year floodplain, watertight sealed manholes (*Type S*) shall be used to prevent the entrance of stormwater and properly vent manhole. Manholes installed in the floodplain shall be a minimum of 60-inch diameter with a concentric flat top that has a rim elevation two (2) feet above the limits of the fully developed 100-year floodplain. When allowed by the City Engineer, manholes may be below the 100-year floodplain but must be bolted and gasketed. Every third (3rd) manhole shall be vented two (2) feet above the fully developed 100-year floodplain elevation or four (4) feet above the adjacent ground line, whichever is higher. Manhole rim shall be a minimum of two (2) feet above ground line but not to exceed four (4) feet above ground line. The engineer shall obtain and provide the elevation of the fully developed 100-year floodplain. When manholes are installed within a floodplain or open space, a location indicator pole shall be installed on the manhole to help prevent damage and for City to easily locate.

SUBSECTION 5.03.08.04 | INFLOW PREVENTION

In order to reduce the size of wastewater system main trunk lines and reduce the cost of wastewater treatment, efforts to reducing inflow and infiltration into the wastewater collection system shall be taken. All manholes (*public or private*) shall be fitted with inflow prevention. The inflow prevention shall conform to the measures called out in standard detail R-5031.



SUBSECTION 5.03.09 | CLEANOUTS

Cleanouts shall be constructed on the end of all lines. The maximum distance between a manhole and an upstream cleanout is 250-feet. Cleanouts may be located at the end of the line only. Double clean outs shall be installed for non-residential services at the right-of-way line, property line, or easement line where a public line changes to a private service. Cleanouts shall conform to the *Standard Details* and the *Standard Specifications for Construction*.

SUBSECTION 5.03.10 | TESTING

All wastewater lines shall be tested for infiltration in accordance with the procedures set forth in the *Standard Specifications for Construction*. In general, all wastewater pipes shall be installed so that the completed wastewater will have a maximum exfiltration of 150-gallons per inch of internal diameter, per mile of pipe, per 24-hours, where the maximum hydrostatic head at the centerline of the pipe does not exceed 25-feet. All wastewater pipes shall be inspected by photographic means (*video/camera*) after franchise utility installation but prior to final acceptance. The contractor shall furnish a DVD or flash drive to the Engineering Department Construction Inspector for review. Any sags, open joints, cracked pipes, etc. shall be repaired or removed by the contractor at the contractor's expense. A television survey will be performed as part of the final testing in the twentieth (20th) month of the maintenance period. The City's representative shall be present at all testing. All expenses for this work shall be the developer's responsibility.

SUBSECTION 5.03.11 | ABANDONING EXISTING WASTEWATER MAINS AND MANHOLES

When an existing wastewater line is to be abandoned all services and laterals on the main to be abandoned shall connect back into the system. All existing wastewater mains that are to be abandoned shall be videotaped to determine the location of the services and laterals. A copy of the videos shall be given to the City Engineering Construction Inspector for review before the line is fully abandoned.

All abandoned wastewater and force main lines shall be cut and plugged and all void spaces within the abandoned line shall be filled with grout, flowable fill or an expandable permanent foam product.

Wastewater manholes shall be abandoned per *Standard Drawing No. 5170*.

SUBSECTION 5.03.12 | CREEK CROSSINGS

Wastewater lines constructed under or over any flowing stream or semi-permanent body of water, such as a marsh or pond, shall be installed inside a separate watertight encasement pipe. Wastewater lines shall have manholes on each side of the crossing.

The engineer of record shall determine the type and limits of any special embedment, and specify the limits for specialized backfills to prevent soil erosion at the areas of trench backfill as approved by the City Engineer.

SUBSECTION 5.03.12.01 | AERIAL CREEK CROSSINGS

Aerial crossings for wastewater lines may be used only when all other alternatives have been evaluated and determine not to be feasible. Aerial crossings of wastewater lines require approval of the City Engineer.

Aerial crossing shall meet the following requirements:

- (A) The design of all piers, bents, restraints, abutments, steel casing, etc. for the aerial crossing shall be performed and signed and sealed by a Professional Structural Engineer licensed in the State of Texas.
- (B) The engineer of record shall use steel encasement pipe around all aerial carrier pipes. The carrier pipe shall be restrained or welded all around joints or be a monolithic pipe between a span section.
- (C) The pier spacing for the aerial crossing supports must maintain adequate grade, and span the 100-year floodway.
- (D) A span section must withstand the hydraulic forces applied by the occurrence of a 100-year flood including buoyancy. Both the aerial crossing encasement pipe and the supporting structure shall be capable of withstanding impacts from debris and water.
- (E) A scour analysis report prepared by a geotechnical professional engineer shall be submitted to the City Engineer for review.
- (F) A Hydrologic and Hydraulics Study of the aerial crossing shall be performed. The aerial crossing shall not increase the 100-year floodplain water surface elevations or velocities.
- (G) Geotechnical borings at the creek crossing and report shall be prepared by a Professional Geotechnical Engineer licensed in the State of Texas.



- (H) Wastewater lines shall have manholes on each side of the crossing.
- (I) The upstream bent/abutment section of the aerial crossing shall be designed with a minimum two (2) inch underdrain at the flowline of the embedment to collect infiltration that is travel within the upstream embedment of the aerial crossing. This shall day light at the aerial crossing current day slope to prevent erosion of the aerial crossing at the upstream end.
- (J) The aerial crossing shall be designed to extend to the erosion hazard setback line with piers and bents.

SUBSECTION 5.03.12.02 | INVERTED SIPHON

Inverted siphons at creek crossings for wastewater lines are not allowed.

SECTION 5.04 | WASTEWATER LIFT STATIONS AND FORCE MAINS

SUBSECTION 5.04.01 | GENERAL

All lift station design plans and specifications shall be submitted to the City Engineer and TCEQ for review and approval prior to construction. Developments which increase the flow to existing lift stations will be subject to a pro-rata charge if sufficient capacity is available in the existing lift station or will be required to increase the capacity of the existing facility. Lift stations and force mains shall be designed and built for the upstream drainage area using a fully developed condition. This will include off-site areas if applicable. Developers are responsible for the construction of regional lift stations and force mains, per the *Wastewater Master Plan*. Developers can request a pro-rata agreement be executed with the City, where the City collects a pro-rated amount as other developments connect to the system. This money would be distributed back to the developer that constructed the oversized system. The pro-rata agreement requires approval by City Council.

The City will utilize an engineering consulting firm to assist City staff in the review of a report and plans for wastewater lift stations and force mains. The cost of this consultant review shall be borne by the developer, engineer, or property owner submitting the report and plans for wastewater lift stations and force mains. The City shall first obtain a cost estimate from the engineering consultant for the review at time of the initial engineering submittal. Before the review begins, the developer, engineer, or property owner submitting the report and plans for wastewater lift stations and force mains shall deposit with the City funds equal to the cost estimate. The City shall disburse the funds to the consulting engineer as the review progresses. Should the consultant fees exceed the initial estimate, the developer, engineer, or property owner submitting the report and plans for wastewater lift stations and force mains shall be informed of the shortage and a new estimate made by the consultant engineer to complete the review. Additional funds will then be deposited with the City by the developer, engineer or property owner submitting the report and plans for wastewater lift stations and force mains to cover the estimated shortfall before the review resumes. Any unused funds to be reimbursed to the developer, engineer or property owner submitting the report and plans for wastewater lift stations and force mains. If review process is performed by City staff, the City will submit a cost estimate for the review at time of the initial engineering submittal.

SUBSECTION 5.04.02 | DESIGN REPORT AND PLANS

A typed lift station and force main design report shall be prepared and signed and sealed by a register professional engineer licensed in the State of Texas.

SUBSECTION 5.04.02.01 | REPORT

The typed report shall include the following information at a minimum:

- (A) A brief summary of project scope that includes:
 - (1) General description of proposed development
 - (2) General explanation on circumstances that warrant a lift station including other options considered.
 - (3) Description of any potential phasing of lift station until sewer basin is built-out, if City Engineer approves lift station size less than fully developed conditions.
- (B) Influent hydraulic calculations showing:
 - (1) Area in acres of the sewer basin and the development.
 - (2) The area of each proposed use for the development and the ultimate projected use for the basin per City Future Land Use.
 - (3) The average design flow and the maximum peak flow for the basin and the development.



- (4) Elevation of the proposed lift station site.
- (5) The elevation of the proposed discharge point of the force main.
- (C) Wet well volume calculations
- (D) Force main size with proposed velocities in pipe.
- (E) Power outage records on electric provider letterhead for power outages in area for the past 24 months.
- (F) Opinion of probable costs for lift station, force main, and annual operating and maintenance costs.
- (G) Ground water levels in proposed site area.
- (H) Proposed system's effect on existing system's capacity.
- (I) Odor control methods shall be submitted to the City Engineer for review and approval. The potential odor determination must include the estimated flows immediately following construction and throughout a system's 50-year expected life cycle.

SUBSECTION 5.04.02.02 | PLANS

The plan or plans submitted shall contain the following minimum information:

- (A) Scale
- (B) North Arrow
- (C) Vicinity map
- (D) Delineation of the boundary of the proposed development and off-site areas of the sewer basin (service area) in which the development lies. Basin delineation shall be provided using NCTCOG, LIDAR or surveyed contours. Contours shall be provided on two (2') foot or less intervals. USGS topo is not permissible.
- (E) Area in acres of the development and of the sewer basin contributing to the lift station.
- (F) Proposed use or uses for the development and service area.
- (G) The proposed lift station location.
- (H) The proposed force main routing.
- (I) Delineation of the 100-year fully developed flood plain, FEMA 100-year flood plain and erosion hazard setbacks.
- (J) The location and size of the existing collection system at the tie-in point.
- (K) Property lines, easement lines, and right-of-way lines.

SUBSECTION 5.04.03 | SITE SELECTION

The following are the minimum criteria that shall be met for a lift station site:

- (A) The station should be located as remotely as possible from populated areas. The lift station site shall not be located within 150-feet of an existing or proposed residential dwelling and 100-feet from a residential lot.
- (B) The station shall be protected from the 100-year flood and shall be accessible during a 100-year flood. The elevation of the site shall be a minimum of one (1) foot above the fully developed 100-year flood plain.
- (C) The station site and its access shall be dedicated to the City as a wastewater easement. The fencing set back shall be five (5) feet from the easement line to allow for a landscape and drainage buffer.
- (D) The station site shall be located so it may serve as much of the entire sewer drainage basin as possible. This may require that the station be located off-site of the development. When a station serves a larger area than the proposed development, the developer can request a pro-rata agreement with the City to be reimbursed the cost of excess capacity as other developments connect to the system.

SUBSECTION 5.04.04 | SITE REQUIREMENTS

The lift station site shall conform to the requirements in these subsections and [FIGURE 5.1, TYPICAL LIFT STATION SITE LAYOUT](#).



SUBSECTION 5.04.04.01 | ACCESS

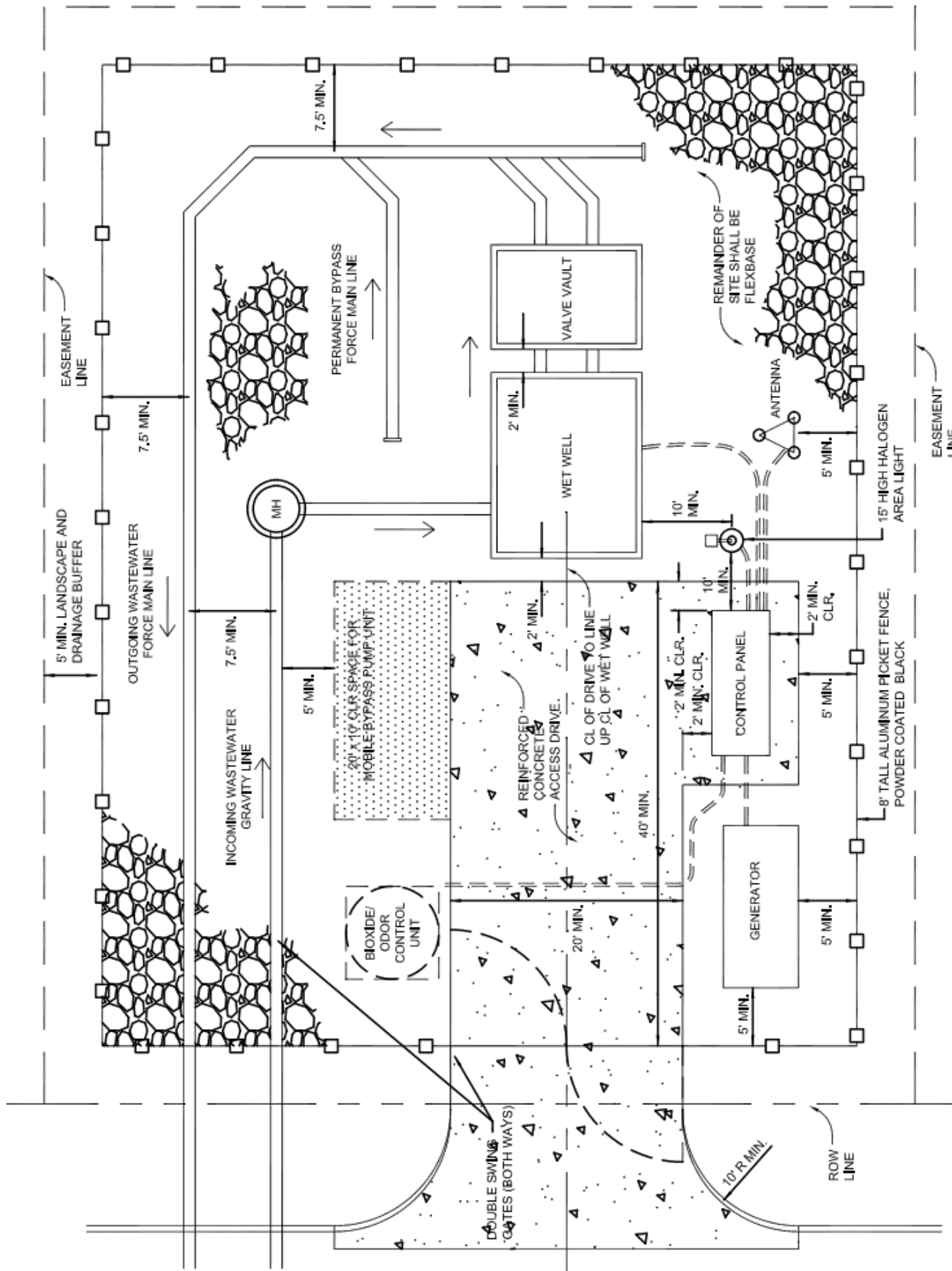
Access drive will be provided by a reinforced concrete pavement from a public street and/or dedicated access easement. Concrete shall be a minimum eight (8) inches thick, 3,600 PSI (6.5 sack/CY) with #4 bars at 18-inch OCEW reinforced concrete pavement with a minimum of 20-feet in width and 40-feet in length (*within fenced area of lift station*) to allow maintenance vehicles to park fully outside of the right-of-way.

When an access drive for the lift station connects to a City Thoroughfare or Texas Department of Transportation (TXDOT) designated highway a "T" shaped turnaround shall be provided with applicable turning radii. The alignment of the drive shall allow maintenance vehicles the ability to back up straight to the wet well.

Access shall be functional during a 100-year flood. All area within the lift station fencing and access drive shall be a minimum of one (1) foot above the water level caused by a 100-year fully developed floodplain.



FIGURE 5.1: TYPICAL LIFT STATION SITE LAYOUT





SUBSECTION 5.04.04.02 | SECURITY

At a minimum, security of the lift station site shall be provided by an intruder-resistant fence (IRF) to restrict access by an unauthorized person(s). The IRF shall be placed around the perimeter of the site encompassing all interior structures and appurtenances shall maintain a minimum five (5) foot clearance from all lift station components and 7.50-foot minimum off of lift station piping.

The IRF shall be a minimum of eight (8) feet aluminum picket fence with a 20-foot-wide minimum double swing gate for access. All components shall be manufactured from aluminum extrusions having a minimum ultimate strength of 35,000 PSI, using 6005 T5 alloy. The fence, post and gates shall be powder coated black with a minimum cure film thickness of two (2) mils.

TECHNICAL DATA

Pickets. The hollow pickets shall pass through the rails and are to be attached using stainless-steel screws allowing the pickets to be always parallel to the terrain. Screws shall be on one (1) side of rail only. Pickets shall be one (1) inch square x 0.062-inch thick.

Horizontal Rails. Rails shall be C-Channels with ribbed reinforced side walls. Square holes shall be punched in the top of the rails to allow the pickets to pass through.

(A) Four (4) rails are required.

(B) *Heavy Industrial Rails* shall be 1 $\frac{1}{8}$ -inch by 1 $\frac{1}{8}$ -inch with a side thickness of 0.100-inch, top wall thickness 0.070-inch and bottom wall thickness of 0.062-inch, which snaps into the top allowing all screws to be enclosed inside the rail.

Posts. Posts shall be hollow square extrusion with holes pre-punched to allow the rails from the fence sections to slide into them. All posts shall include aluminum post caps. Posts can be placed no more than 6 feet apart.

(A) Line Posts and End Posts are three (3) inch square by 0.125-inch thick

(B) Gate Posts are four (4) inch square x 0.125-inch thick weighing nine (9) pounds per foot

Gates. Gates shall be fabricated with two (2) inch or 2 $\frac{1}{2}$ -inch square ends, 1 $\frac{1}{8}$ -inch by 1 $\frac{1}{8}$ -inch rails and one (1) inch square pickets. The gate shall be a double swing gate. Gate shall match appearance of fence panel. The gate shall have a double rail that allows for hidden fasteners and no exposed cavities under the rail. Gate shall be designed and manufactured by the fence manufacturer.

(A) Each gate shall have a hasp for chain locking welded to the frame as detailed in the construction plans.

(B) Gates shall be designed and manufactured by the fence manufacturer.

(C) Assembled section shall be able to support 500-pounds of vertical load at the mid-point of any horizontal frame rail.

(D) Swing gates shall include cane-bolts for each gate panel. The cane-boll shall have a stop to hold it in the up position for operating the gate.

(E) Hinges shall have minimum $\frac{3}{8}$ -inch stainless-steel pins.

Post Installation. The post shall be set 36-inch in the concrete footing. The gate post shall set a minimum of 48-inch into the concrete footing.

There should be a minimum of a five (5) foot landscape and drainage buffer from the easement line to the lift station fencing. The five (5) foot buffer shall have Chinese Variegated Privet (*or similar vegetation as approved by the Director of Parks and Recreation*) place within the buffer to screen the lift station site.

SUBSECTION 5.04.04.03 | SITE INTERIOR

Interior of the site that is not part of the access drive shall be a minimum six (6) inches thick flex base. Site shall be graded to drain away from the station to prevent storm water inflow or infiltration into the wet well, valve vault and manholes. The wet well and valve vault top elevation shall be a minimum of 12-inches higher than interior concrete and flex base.



Control panel shall have a two (2) foot minimum clear reinforced concrete working area away from face, sides and back of cabinet. Electrical and instrumentation panels shall be located where they do not obstruct vehicle access to the wet well or the dry well. They shall be placed at an elevation so that they are easily accessible.

A 15-foot high halogen or LED area light with photometric cell on an aluminum pole shall be placed within ten (10) feet of wet well and control panel without obstructing daily operations.

SUBSECTION 5.04.05 | WET WELL AND VALVE VAULT DESIGN

SUBSECTION 5.04.05.01 | WET WELL DESIGN

Wet well shall be cast in place or pre-cast watertight and gas tight walls with watertight joint meeting ASTM C478-90. Steel, HDPE and RCP are not acceptable materials. The tops may be pre-cast with the hatches built in. All wall penetrations through the wet well wall shall be gas tight. The wet well shall be hydrostatically tested to the top of the wet well for 48-hours prior to putting the lift station into service. Only losses due to evaporation will be tolerated.

Additional design requirements are as follows:

(A) Orientation.

- (1) Orientation shall consider the routing of incoming sewer and force main for ease of maintenance and to minimize effluent turbulence.
- (2) Orientation shall allow a five (5) ton vehicle to pull in forwards or backwards directly to the wet well or the dry well.
- (3) All influent gravity mains discharging into the wet well shall be located so that the invert/flowline is above the "on" setting liquid level of the pumps.

(B) Level Sensors.

- (1) Level control system shall use a pressure transducer with built in surge protection for pump operation with Off and High-Level Floats as back-up in case transducer fails.
- (2) Sensors shall be provided for "All Pumps Off," "Lead Pump On," "Lag Pump On," and "High Level Alarm" levels as well as additional "Lag-Lag Pump On" for lift stations with more than two pumps.
- (3) Level Sensors shall be placed in the wet well.

(C) Wet Well and Valve Vault Separation.

- (1) Wet wells and valve vaults shall be separated by a minimum of two (2) feet.

(D) Liner and Coatings.

- (1) Wet wells shall have a minimum of ten (10) percent sloped bottoms to the pump intakes and shall have a smooth finish to avoid excess sludge deposits.
- (2) Wet wells shall be ConShield, Raven Lining or approved equal to protect against hydrogen sulfide gases.
- (3) Wet wells and valve vaults shall have inflow protection as called out in Standard detail R-5031.

(E) Hatches.

- (1) The wet well shall have a lockable odor suppressing aluminum door with an aluminum frame and safety grate. The minimum opening size shall be four (4) feet by six (6) feet with two (2) doors large enough to adequately maintain the wet well.
- (2) All hatches shall have accommodations for locking above grade with 3/8-inch shaft padlocks provided by the City.

(F) Ventilation.

- (1) The design of a wet well must reduce odor potential in a populated area or as directed by the City Engineer.
- (2) Passive ventilation structures shall be provided and must include screening to prevent the entry of birds and insects to the wet well. An air vent pipe shall have a minimum diameter of four (4) inches with outlet located one (1) foot above wet well top.
- (3) Continuous mechanical ventilation structures shall be provided with ventilation equipment providing a minimum capacity of 12 air exchanges per hour and be constructed of corrosion resistant material.

(G) Cable Strain Relief. A stainless-steel cable holder shall be provided for all cables in the wet well for cable strain relief purposes.



SUBSECTION 5.04.05.02 | WET WELL VOLUME

- (A) Wet well volume for a submersible pump station is the volume contained above the top of the motor, or as specified by the pump manufacturer.
- (B) High level alarm elevation shall be a minimum of 60-inches below the top of the wet well or 48-inches below the flowline elevation of the lowest service tap, whichever elevation is lower.
- (1) Alarm shall be sent when both pumps are running on a duplex station or when the level is six (6) inches to 12-inches over all pumps running. The City Engineer shall approve all situations and levels that need to trigger an alarm.
 - (2) Wet well volume shall be calculated by [EQUATION 5.1](#):

EQUATION 5.1: WET WELL VOLUME

$$V = \frac{TQ}{4(7.48)}$$

WHERE

V = ACTIVE VOLUME, (CUBIC FEET)

Q = PUMP CAPACITY, (GALLONS PER MINUTE)

T = CYCLE TIME, (MINUTES)

7.48 = CONVERSION FACTOR, (GALLONS PER CUBIC FOOT)

- (C) Pump cycle time, based on Peak Flow, must equal or exceed the criteria shown in [TABLE 5.10](#).

TABLE 5.10: MINIMUM PUMP CYCLE TIME

PUMP HORSEPOWER	MINIMUM CYCLE TIMES
< 50	6 MINUTES
50-100	10 MINUTES
> 100	15 MINUTES

- (D) The operation cycle "T" shall not be less than ten (10) minutes for average flow and not more than 60-minutes for minimum flow conditions. The operation cycle time must exceed the manufacturer's requirements.

SUBSECTION 5.04.05.03 | VALVE VAULT

- (A) Valve vaults shall have sloped bottoms towards a floor drain to remove liquid build up. The floor drain line from the valve vault connecting to the wet well must prevent gas and liquids from entering valve vault.
- (B) The valve vault shall have a lockable aluminum door with an aluminum frame. The minimum opening size shall be two (2) feet by three (3) feet or large enough to adequately maintain the valve vault.

SUBSECTION 5.04.06 | PUMPS, LIFT STATION PIPING, AND VALVES

SUBSECTION 5.04.06.01 | PUMPS

- (A) Stations shall contain a minimum of two (2) pumps and shall be capable of handling peak flows with one (1) pump out of service.
- (B) All pumps shall be explosion proof, non-clog, submersible type capable of passing a 2½-inch diameter sphere or greater. Vortex impellers shall be used to prevent clogging.
- (C) Pumps shall be sized to operate at optimum efficiency. Minimum acceptable efficiency at the operating point will be 60 percent. The minimum required horsepower for the motor must be capable of handling the entire range as shown in the pump curve. Where necessary, a higher horsepower pump will be required to prevent any damage to the motor as a result of loss of hydraulic head situation.
- (D) All submersible pumps shall be equipped with an automatic flush valve attached to the pump volute using the hydraulic energy created by the pump operation to temporarily suspend settled materials.
- (E) The pump rail system shall be MTM Sch 40 stainless-steel with supports on eight (8) feet maximum spacing.



SUBSECTION 5.04.06.02 | PUMP CAPACITY

- (A) The firm pumping capacity shall be greater than the peak flow for the entire fully developed drainage basin. If the fully developed drainage basin is significantly larger than the proposed development and it is not feasible to design for this flow, the firm capacity may be designed to handle a portion of the basin with the ability to expand for the ultimate basin capacity with approval from the City Engineer.
- (B) The pump curves shall be selected so that during normal operating conditions the pumps will run near the best efficiency point. The curves shall not approach shut off head when the pumps are running together.
- (C) System head curves, pump curves, and head calculations shall be submitted. Calculations and pump curves at both minimum (*all pumps off*) and maximum (*last normal operating pump on*) static heads, and for a C value of both 100 and 140 must be provided for each pump and for the combination of pumps with modified pump curves. Head calculations shall be the sum of static head, friction head in force main and lift station piping, and a fittings head.
- (D) Flow calculations, system curves, and head calculations shall be shown in the construction drawings as well as in a final design report. Final design report shall include all of the preliminary design submittal requirements with the exception of the replacement of final design information.

SUBSECTION 5.04.06.03 | LIFT STATION PIPING

- (A) Piping inside the lift station shall be ductile iron Class 200 PSI, AWWA C151-75, C171-76, or latest edition thereof. Pipe shall be centrifugally cast with rubber gasket type joint. All fittings shall be ductile iron Class 250 meeting AWWA C110-77 or latest revision for sizes 12-inches and smaller or Class 150 on sizes 14-inches and larger. All pipe and fittings shall have a prime coat on the outside surface and shall have an interior lining of 40-mils nominal dry film thickness of Protecto 401 Ceramic Epoxy Lining or approved equal, applied in accordance to the manufacturer's recommendations.
- (B) All nut and bolt assemblies inside the wet well shall be ASTM 316 stainless-steel.
- (C) Lift station piping shall be designed with an additional emergency by-pass pump connection, allowing the station to be operated with the primary pump(s) out of service for an extended period of time. The by-pass pump connection shall be fitted with a CamLock fitting and cap. Bypass piping shall be supported by a strut type pipe support set in a reinforced concrete pad. By-pass piping and valves shall maintain a minimum of a 24-inch clear from the ground.

SUBSECTION 5.04.06.04 | VALVES

(Isolation valves, check valves, and air release/vacuum valves shall be located in the valve vault)

(A) Isolation Valves.

- (1) Each pump shall have one isolation valve downstream of the pump and check valve, including a discharge pressure gauge between the pump and isolation valve. Isolation valves shall be resilient seated gate valves meeting the City Standard Specifications. The discharge pressure gauge shall be a minimum of four (4) inch diameter within the appropriate pressure ranges for the design.
- (2) All external nuts and bolts shall be ASTM 316 stainless-steel.

(B) Check Valves.

- (1) Check valves shall be a controlled closing swing check valve with a lever and spring.
- (2) Check valves shall be located upstream of the isolation valve.
- (3) All external nuts and bolts shall be ASTM 316 stainless-steel.

(C) Air Release/Vacuum Valves.

- (1) Air release valves of a type suitable for wastewater service shall be installed along the force main where the force main would be prone to trapped air.
- (2) The type of valve shall be air release or a combination of air release and vacuum breaker. Valves shall be fitted with blow off valves, quick disconnect coupling and hose to permit back flushing after installation without dismantling the valve.
- (3) All external nuts and bolts shall be ASTM 316 stainless-steel.



- (4) The engineer shall determine the valve type and location. The calculations for valve type and valve sizing shall be provided to the City Engineer.
- (5) Isolation valves for three (3) inch and smaller air release valves shall be all bronze or brass. Isolation valves four (4) inch and larger shall meet standard specifications for resilient wedge gate valve.
- (6) Locations of the air release/vacuum valves shall be shown on the plan and profile sheets for the force main.

SUBSECTION 5.04.07 | FORCE MAIN

SUBSECTION 5.04.07.01 | GENERAL

- (A) Force main capacity shall be sized to meet the pump capacity. The force main shall be sized to handle the ultimate basin capacity. The force main may be designed to handle a portion of the basin with the ability to expand for the ultimate basin capacity if approved by the City Engineer. The minimum force main size shall be four (4) inch diameter except for grinder pump lift stations. The minimum recommended velocity is three (3) feet per second, and the velocity shall not be less than 2.50-feet per second when only the smallest pump is in operation.
- (B) Force main sewer pipe shall be designed to meet the working pressure requirements of the particular application. Design calculations and pipe selection shall be submitted to the City Engineer in report format.
- (C) A force main must be designed to abate any anticipated odor.
- (D) Force main pipe materials shall AWWA C900-16 PVC Pipe (*green in color*) for all sizes, DR 14 (*PC 305*) for pipeline sizes 12-inch and smaller, and DR 18 (*PC 235*) for 14-inch and larger wastewater pipelines.
- (E) For trench depths greater than 12-feet or other dead and/or live loading considerations, the engineer shall provide a pipe with the appropriate DR rating which shall exceed the minimum requirements.
- (F) All fittings shall be wrapped ductile iron in accordance with AWWA C110 or AWWA C153. Fittings shall have a prime coat on the outside surface and shall have an interior lining of 40-mils nominal dry film thickness of Protecto 401 Ceramic Epoxy Lining or approved equal, applied in accordance to the manufacturer's recommendations.
- (G) Isolation valves shall be a maximum spacing of 1,000-feet and at critical locations along the force main.
- (H) All valves and fittings shall be restrained with Mega-lug or approved equal. Joint material for PVC shall conform to ASTM F471.
- (I) Plans shall include plan and profile for the force main.
- (J) Force main shall have a minimum of four (4) feet of cover and be laid to standard specifications for potable waterline.
- (K) Force main separation and design criteria from water mains and all other utility lines shall meet the minimum requirements from TCEQ.
- (L) All force mains shall have green EMS locator pads at every 250-feet, change in direction, valve, manhole, etc.

SUBSECTION 5.04.07.02 | EMBEDMENT

All force main pipes shall be installed in embedment material as shown on the *Standard Details* and in conformance for the *Standard Specification for Construction*.

SUBSECTION 5.04.08 | CONTROL PANEL

SUBSECTION 5.04.08.01 | GENERAL

The control system shall be designed to operate the required number of pumps specified on the drawing at the power characteristics shown on the plans.

The control function shall provide for the operation of the pumps in Hand (manual) and Auto (controlled by PLC). See *24VAC Regulator System* for further information. The control shall function as described below. The equipment listed below is a guide and does not relieve the supplier from providing a system that will function as required.



SUBSECTION 5.04.08.02 | ENCLOSURE

The enclosure shall be a NEMA 4x rated stainless-steel. The enclosure shall be a wall mount type with a minimum depth of eight (8) inch sized to adequately house all the components. The door gasket shall be rubber composition with a retainer to assure a positive weatherproof seal. The door shall operate with a single action handle that accepts a 3/8-inch shaft padlock and opens a minimum of 180 degrees.

SUBSECTION 5.04.08.03 | INNER DEAD DOOR

A polished aluminum dead front shall be mounted on a continuous aircraft type hinge, contain cutouts for mounted equipment, and provide protection of personnel from live internal wiring. Cutouts for breaker handles shall be provided to allow operation of breakers without entering the compartment. No door mounted operating mechanisms allowed for breaker operation. All control switches, indicator pilot lights, ONE general purpose GFI duplex receptacle and other operational devices shall be mounted on the external surface of the dead front. The dead front shall open a minimum of 150 degrees to allow access to equipment for maintenance. A 3/4-inch break shall be formed around the perimeter of the dead front to provide rigidity.

SUBSECTION 5.04.08.04 | BACK PLATE

The back plate shall be manufactured of 12-gauge sheet steel and be finished with a primer coat and two (2) coats of baked on white enamel. All devices shall be permanently identified.

SUBSECTION 5.04.08.05 | POWER DISTRIBUTION

The panel power distribution shall include all necessary components and be wired with stranded copper conductors rated at a minimum of 90 degrees C.

System shall be equipped with an Emergency Generator with an automatic transfer switch capable of programmable test dates and times. Inputs shall be provided to PLC to indicate Generator Running, Generator Alarm, and Generator Low Fuel Level OR a Stand Alone Manual Double Throw Safety Switch to allow hard wiring to a portable generator. Emergency Generator shall meet the requirements of the most recently adopted noise ordinance and be a minimum Level I noise control compliant.

No door mounted operating mechanisms allowed for breaker operation in control panel. All conductor terminations shall be as recommended by the device manufacturer.

SUBSECTION 5.04.08.06 | CIRCUIT BREAKERS

All circuit breakers shall be heavy-duty thermal magnetic or motor circuit protectors similar and equal to Square D type FAL. Each motor breaker shall be adequately sized to meet the pump motor operating characteristics and shall have a minimum of 10,000 amps interrupting capacity for 230 VAC and 14,000 amps at 480 VAC. The control circuit and the duplex receptacles shall be individually controlled by heavy-duty breakers.

Circuit breakers shall be indicating type, providing "ON-OFF-TRIP" positions of the operating handle. When the breaker is tripped automatically, the handle shall assume a middle position indicating "TRIP".

Thermal magnetic breakers shall be quick-make and quick-break on both manual and automatic operation and have inverse time characteristics secured through the use of bimetallic tripping elements supplemented by a magnetic trip.

Breakers shall be designed so that an overload on one pole automatically trips and opens all legs. Field installed handled ties shall not be acceptable.

SUBSECTION 5.04.08.07 | MOTOR STARTERS

Motor starters shall be open frame, across the line, NEMA rated with individual overload protection in each leg. Motor starter contact and coil shall be replaceable from the front of the starter without being removed from its mounted position. Overload heaters shall be solid state motor logic type with the following features: [1] three (3) to one (1) adjustment for trip current, [2] phase loss and unbalance protection, [3] LED power indication, [4] ambient insensitive and self-powered, and [5] shall have availability of electrical remote reset. Overloads shall be sized for the full load amperage draw of the pumps. Definite purpose contactors, fractional size starters and horsepower rated contactors or relays shall not be acceptable.



SUBSECTION 5.04.08.08 | TRANSFORMERS

Control transformers shall provide the 120 VAC and/or 24 VAC for control circuits. Transformers shall be fused on the primary and secondary circuits. The secondary shall be grounded.

SUBSECTION 5.04.08.09 | LIGHTING-TRANSIENT PROTECTION

A lightning-transient protector with tell-tale warning lights on each phase to indicate loss of protection on the individual phases shall be provided. The device shall be solid state with a response time of less than five (5) nanoseconds withstanding surge capacity of 6,500 amperes. Unit shall be instant recovery, long life and have no holdover currents.

SUBSECTION 5.04.08.10 | PHASE MONITOR

A line voltage rated, adjustable phase monitor shall be installed to sense low voltage, loss of power, reversed phasing and loss of a phase. Control circuit shall de-energize upon sensing any of the faults and shall automatically restore service upon return to normal power.

SUBSECTION 5.04.08.11 | ALARM SYSTEM

The alarm light shall be a weatherproof, shatterproof, red light fixture with 500 lumens minimum to indicate alarm conditions. The alarm light shall be turned on by the alarm level.

The alarm light shall be mounted on the exterior of the cabinet. The alarm horn shall provide an audio signal of not less than 90 DB at ten (10) feet. An alarm silence switch shall be mounted on the exterior of the cabinet and deactivate the alarm horn; however, the alarm light shall flash until the alarm condition ceases to exist. An Input shall be provided to PLC to indicate High Wet Well Condition.

SUBSECTION 5.04.08.12 | VAC REGULATOR SYSTEM

SCADA. Equipment for SCADA shall consist of a PLC, Radio, Antenna, etc. to operate the system. Control cabinet components shall be installed when the panel is built. Engineer shall contact the Pump Department at 972-771-7730 for current requirements for SCADA system and contact for City's current SCADA supplier. The control system shall provide for both automatic and manual control and alternation of the pumps to maintain a pumped down condition of the wet well.

Wet well levels shall be sensed by a pressure transducer. Float regulators shall be installed as back up for HIGH and LOW levels only. The transducer shall sense the "OFF", "LEAD", "LAG", and "HIGH" levels as given on the plans. As the level in the wet well raises the lead pump, as determined by the alternator, shall start and pump the station to the "OFF" position. In the event the incoming flow exceeds the capacity of the lead pump, the lag pump shall start and both pumps shall run to the off level. If the wet well level continues to rise, high well alarm functions shall be activated. The alternator shall switch when the off level is reached.

All inputs and outputs shall be wired to a terminal strip at bottom of cabinet.

SUBSECTION 5.04.08.13 | ANCILLARY EQUIPMENT

- (A) HOA Switches. A three (3) position HOA switch shall be provided on the inner dead front for each pump. Inputs shall be provided to PLC to indicate position of HOA.
- (B) Run Indicators. A run pilot indicator shall be provided on the inner dead front. All indicator lights shall be push to test. Inputs shall be provided to PLC to indicate pump running.
- (C) Elapsed Time. Elapse time meter shall be mounted on the dead front door.
- (D) Cabinet Temperature Control. The cabinet shall be equipped with a panel heater controlled by a thermostat and a vent fan controlled by a thermostat.
- (E) Receptacles. One (1) duplex receptacle located on inner dead front door for general purpose use. This receptacle shall be of the ground fault type, 120 volts, and protected by a 20-amp breaker. A second single receptacle shall be located on the back panel to provide power for UPS back up system. This receptacle shall be 120 volts and protected by a separate 20-amp breaker.



- (F) UPS Back Up System. Will provided 120 volts power to SCADA communication equipment and all low voltage power transformers. This must be installed in the control panel. UPS shall be APC 650VA 120 volts or equivalent. The System must be able to transmit all alarms and wet well levels when on backup power.
- (G) Motor Protection. A control and status module shall sense either motor over temperature or seal leakage, and shall turn off the pump, lock out the pump, and send an alarm. Inputs shall be provided to PLC to indicate Pump Fail, Seal Fail and Temp Fail individually for each pump.

SUBSECTION 5.04.08.14 | MISCELLANEOUS

- (A) Panel Racks. Posts supporting racks shall be three (3) inch minimum rigid conduit capped and bolted directly to channel framework supporting the panels. Panels shall have a "rain shield" structure using ¼-inch minimum aluminum plating providing a solid back plate behind panels continuous to overhead plate to protect panel from rain. Provide lighting mounted on structure with switch mounted on exterior of panel to light up panel area. Contact City of Rockwall at 972-771-7730 for location of existing type structure. Each pump must have its own conduit for power cord and a separate conduit for all float wires.
- (B) Drawings. Control panel schematic drawings shall be submitted for approval with the submittal plans. Final control panel wire schematic drawings including a list of all legends (*two [2] sets total*) shall be provided. One (1) set shall be encapsulated in Mylar and attached to the inside of the front door of the control cabinet. A second set shall be delivered to the City of Rockwall Wastewater Department.
- (C) Panel Markings. All component parts in the control panel shall be permanently marked and identified as they are indicated on the drawing. Marking shall be on the back plate adjacent to the component. All control conductors shall be identified with wire markers as close as practical to each end of conductors.
- (D) Panel Wiring. All wiring in panel shall maintain a minimum of 1½-inch spacing between components and wire ways.
- (E) Testing. All panels shall be tested to the power requirements as shown on the plans to assure proper operation of all the components. Each control function shall be activated to check for proper operation and indication.
- (F) Guarantee. All equipment shall be guaranteed for a period of three (3) years from date of acceptance. The guarantee is effective against all defects in workmanship and/or defective components. The warranty is limited to replacement or repair of the defective equipment.



CHAPTER 6 | MISCELLANEOUS REQUIREMENTS

SECTION 6.01 | GRADING

All backfill or grading material shall be placed in layers not to exceed eight (8) inches loose thickness. The moisture content shall be uniform and near the optimum moisture content for the material. In cases where the materials being placed do not have the proper moisture, the material shall be dried out or additional moisture shall be added by satisfactory methods such that the additional water is distributed uniformly throughout the material being placed. The layers of the backfill shall be reduced in thickness when satisfactory compaction cannot be obtained with the equipment being used. In all cases, a density of not less than 95 percent of the standard proctor density must be obtained. The contractor shall arrange for the necessary laboratory testing, at their expense, to determine the density of the material. All density reports shall be provided to the City of Rockwall. All franchise utility companies (*phone, gas, electrical, cable, internet, and any utility that isn't supplied by the City*) working within the rights-of-way of streets or alleys shall also comply with the above noted specifications with laboratory testing results provided to the City of Rockwall. Easement locations under pavement shall also have a minimum density control backfill to 95 percent of the standard proctor density. All densities are to be within the acceptable moisture range of (-2 to +4) percent of optimum moisture unless otherwise approved by the City Engineer.

A sheep's-foot roller shall be utilized for compaction of all fill material. Mechanical tamping is allowed for trench backfill. The sheep's-foot roller is to be on-site and active whenever fill material is being placed.

It shall be the responsibility of the Developer to adjust all City and franchise utilities to the final grades of the development. Depending on changes in grade over existing utilities, utility relocation may be required.

All slopes should be a maximum of four (4) to one (1) (*or 4:1*) and a minimum of one (1) percent. In locations where a four (4) to one (1) (*or 4:1*) slope is not possible, retaining walls, gabion baskets, concrete slope protection or other approved retaining methods may be required. Retaining methods must be approved by the City Engineer.

At the beginning of the project the Developer will provide offset stakes at intervals of 50-feet. The stakes will be offset from the back of the outside curb, a convenient distance to permit all operations, to be completed without disturbing these stakes. Information that shall be included on the stakes includes the station number, offset distance from back of curb, and elevations of hub. It will be the contractor's responsibility to maintain these stakes, and use the information for all other horizontal and vertical control required. The contractor will set all forms using the data shown on the approved plans.

SECTION 6.02 | GRADING, FILL, EXCAVATION, AND EARTHWORK PERMIT

A grading, fill, excavation and earthwork permit shall be obtained prior to stockpiling or filling property within the City limits. No filling in drainage swales, creeks, wetlands, flood plains, etc. is allowed without a flood study approval. Erosion protection shall be installed around stockpiled or stored material until grass is established. If fill is placed for use other than stockpiling or storage, a grading plan shall be prepared by a Professional Engineer and submitted with the grading, fill, excavation and earthwork permit. Temporary stockpiles have a maximum time limit of six (6) months. Densities shall be taken and proper compaction techniques used when placing the fill. In all cases, a Professional Engineer shall certify that the proposed fill location is not within a stream, creek (*flowing or not*), or floodplain. If the City Engineer determines the fill is to be placed near a creek or stream or possible drainage way, the 100-year floodplain shall be staked by a registered surveyor.

Grading for the parcels/development will only be released with final construction plan release by the Engineering Department.

Residential (including infill) lots shall submit a grading plan with the building permit. This is to ensure drainage and structure elevations will meet City requirements.

The City of Rockwall requires that the design engineer provide a letter of concurrence. The letter is to verify that the drainage patterns, grade to drains locations, detention systems including outfall structures, detention pond volume, pad elevations, and drainage structures located within the project scope were installed to the general elevations as shown on the approved plans. The letter shall also verify that the project was constructed to meet the approved design requirements or is within acceptable design tolerances (*max 0.2-feet for residential pad elevations*). The design engineer or their designated representative shall direct all survey work necessary to verify elevations and design compliance. The letter of concurrence is to have the seal and signature of the design engineer.



SECTION 6.03 | PRIVATE UTILITY CONSTRUCTION

SUBSECTION 6.03.01 | TRENCH BACKFILL IN CITY RIGHT-OF-WAY

- (A) No concrete streets shall be open cut by utility companies without City approval. Utilities crossing concrete streets shall be tunneled or bored (*dry only*). If open cut is approved by City, full panel replacement will be required to nearest joints. Additional pavement removal and replacement may be required for connection.
- (B) Asphalt streets may be open cut. Backfill above utilities shall be concrete stabilized sand or cement. The asphalt pavement shall be repaired per City detail.
- (C) All trench backfill is to be compacted to 95 percent *Standard Proctor Density* within City rights-of-way. The compaction may be obtained by mechanical tamping, rolling, etc. No water jetting is allowed. In the parkway, the backfill material may be from the excavated trench, except no rocks larger than two (2) inches shall be used. Material from rock or shale excavation cannot be used. The contractor for the utility company or the utility company shall furnish density reports from a material testing company verifying the densities. Densities shall be taken at each 12-inches lift at a maximum spacing of 150-feet. The moisture content shall be uniform and near the optimum moisture content for the material. In cases, where the materials being placed do not have the proper moisture, the material shall be dried out or additional moisture shall be added by satisfactory methods such that the additional water is distributed uniformly throughout the material being placed.

SUBSECTION 6.03.02 | PARKWAY CLEANUP

The contractor for the utility company or utility company shall remove any rocks or excess trench material from the parkway and replace any disturbed areas with grass sod.

SECTION 6.04 | ADDITIONAL PERMITS OR APPROVALS

Developer or developer's representative is responsible for obtaining any other approvals or permits needed for their development, for example: TCEQ, TXDOT, City of Dallas, FEMA, USACOE etc. prior to start of construction. Copies of the permits/approvals shall be furnished to the City.

SECTION 6.05 | RETAINING WALLS

- (A) Retaining walls or concrete slope protection shall be installed where lot slope is greater than four (4) to one (1) (*or 4:1*).
- (B) No railroad tie, wood, or steel retaining walls shall be constructed in public or private property.
- (C) No retaining walls, including the footings, shall be placed in the right-of-way, easements, detention ponds or overlapping property lines. Retaining walls shall be entirely on the lot with the higher elevation.
- (D) All retaining walls (*18-inches and taller*) shall be stone, masonry or reinforced concrete with a stone face or form liner. No smooth concrete retaining walls to be installed.
- (E) Retaining walls three (3) feet and taller shall be designed (*signed and sealed*) and inspected by a professional licensed engineer in the State of Texas. Property lines and rights-of-way shall be noted on the wall plans. The City requires a verification letter (signed/sealed) from the design engineer stating that the retaining walls installed with the site/subdivision were inspected by the engineer or their designated representative and that the walls were installed to the engineered design and general construction standards. The verification letter shall be delivered to the Engineering Department prior to the project acceptance by the City.
- (F) Retaining walls over 30-inches in height that have sidewalk, trail or other walking surface on the top side of the wall will require railing.
- (G) Traffic rated guard rail or barrier will be required when roadway, parking lot, drive isle or alley is within ten (10) feet of a retaining wall that is over 30-inches in height. Details of the railing or barrier shall be provided in the engineering plans.
- (H) The design of retaining walls (*not screening walls*) in close proximity to trash enclosures shall take into account the weight of a fully loaded dumpster, fully loaded trash truck, and the force exerted when the dumpster is placed back on the ground in the enclosure.
- (I) Gabion retaining walls may be used only with City Engineer's approval for walls less than three (3) feet along drainage ways.
- (J) All retaining walls shall be placed according to offset hubs set by certified professional surveyors noting grade cuts, wall elevations and stop points for each wall end. Wall locations and elevations shall match those shown on the approved site grading plans.



- (K) All retaining wall plans shall indicate property lines, swales, and rights-of-way. If the retaining wall is designed to be the high point of the lot/area, the wall shall have a stone cap that is installed a minimum of six (6) inch above the final adjacent grade.

SECTION 6.06 | MAINTENANCE BONDS

The City requires ten (10) percent two (2) year maintenance bond for paving, paving improvements, water systems, wastewater systems, storm sewer systems including detention systems, and associated fixtures and structures which are located within the rights-of-way or defined easements. The two (2) year maintenance bond is to state "from date of City acceptance" as the starting time.

A review of the site shall be conducted at 20-months into the two (2) year maintenance period. The design engineer or their designated representative shall be present to walk the site with the City of Rockwall Engineering Inspection personnel.

SECTION 6.07 | CONSTRUCTION

SUBSECTION 6.07.01 | PRELIMINARY SITE PREPERATION

Site Preparation. The below noted site preparation items are to be in place, inspected and approved by the City, prior to the start of any clearing, grubbing or grading operations.

- (A) Protected trees which are designated to remain on site are to be identified, tagged and banded with bright orange or red bands.
- (B) Protected trees which are designated to be removed from the site are to be identified tagged and banded with blue bands or blue paint markings.
- (C) Tree identification tags are to consist of metal tags which have the tree identification number stenciled or stamped or engraved on the tag. The numbers used to identify the protected trees shall correspond to the tree identification number noted on the approved treescape plans.
- (D) Protected Tree Barrier Fencing.
 - (1) Chain link barrier fencing shall be placed around the drip lines of the individual protected trees or groups of protected trees, which are designated to remain at the site if they are located within ten (10) feet of any cut/fill grading location.
 - (2) Plastic mesh barrier fencing shall be placed around the drip lines of individual protected trees or groups of protected trees, which are located over ten (10) feet or more outside a cut/fill grading location.
- (E) Silt fence along with construction entrance and any other designated erosion BMP's must be installed and inspected. No silt fencing may be installed at the site until the trees have been identified, banded, tagged, fenced and inspected by the City. Silt fence should not be installed within a floodplain.
- (F) Portable toilet facilities will be required on all construction sites or as otherwise deemed necessary by the City of Rockwall. It is essential that adequate on-site restroom facilities be available for all construction workers. It will be the responsibility of the contractor to install and maintain the facilities through the completion of the project. These facilities must be on site and verified prior to moving personnel on site and before construction can begin.
- (G) Portable trash receptacle is to remain on the job site through the course of construction. The site is to remain free of construction litter and debris. Construction workers shall place all lunch trash in the "trash containers" immediately after lunch. Trash receptacle must be on site and verified prior to moving personnel on site and before construction can begin.
- (H) If a detention pond system is required per the plans, the detention pond must be installed with outfall structure and soil stabilization before pavement or slab may be placed.
- (I) Construction Site Working Hours and Noise Control Signage. Construction and construction related activities are limited to the hours of 7:00 AM to 7:00 PM Monday through Friday and 8:00 AM to 7:00 PM on Saturday. No Sunday construction allowed. The City of Rockwall requires that a sign be posted at each Commercial/Residential development construction site. The sign must be installed at the site and verified prior to moving personnel on site and before construction can begin. The construction related activities are to include but not be limited to the following:
 - (1) Maintenance, servicing and fueling of construction equipment.
 - (2) The delivery of construction related materials and/or construction equipment.



At locations where compliance to *Ordinance 05-45* is not being observed, the City of Rockwall may issue written orders to stop work or further regulate the site construction work hours. The City may also issue citations if it is determined that a violation of the construction ordinance exist.

CONSTRUCTION SITE SIGN EXAMPLE

**Ordinance # 05-45
Construction Site Working Hours and Noise Control**

City *Ordinance No. 05-45* limits construction and construction related activities to the hours of 7:00 AM - 7:00 PM Monday through Friday, and 8:00 AM - 7:00 PM on Saturday. (NO SUNDAY CONSTRUCTION ALLOWED).

**ORDENANZA #05-45
HORAS DE TRABAJO EN EL SITIO DE CONSTRUCCION Y EL CONTROL DE RUIDO**

La Ordenanza de la Ciudad No. 05-45 limita la construcción y las actividades relacionadas con la construcción a las horas de 7:00 AM – 7:00 PM de Lunes a Viernes, y de 8:00 AM – 7:00 PM los Sábados. (NO SE PERMITIRÁ CONSTRUCCIÓN LOS DOMINGO).

GENERAL NOTES:

NOISE ORDINANCE SIGN | SIGN SIZE THREE (3) FEET WIDE BY TWO (2) FEET TALL.

SUBSECTION 6.07.02 | INSPECTION SCHEDULING

It is the responsibility of the contractor to schedule inspections prior to construction. Inspections may be scheduled and coordinated in the field or by cell phone directly with the Engineering Department Construction Inspector. Inspection of construction and verification of compliance to plans and specifications shall be conducted by the City of Rockwall Engineering Construction Inspector. The general contractor shall notify all of his construction contractors of this requirement. Items to be inspected must be sufficiently ready for inspection at the time of your requested inspection appointment as inspector's time is limited. Failure to be ready for inspections may result in inspection rescheduling to the following day. No development will be accepted by the City of Rockwall until all construction has been approved by the City of Rockwall inspectors.

- (A) Saturday Inspections. The contractor will be charged a minimum two (2) hours inspection charge for all Saturday inspections. All Saturday inspections must be scheduled in writing to the Engineering Department by noon on the Thursday before the inspection date. A signed Saturday Engineering Inspection Request form must be emailed to the City Engineer and Construction Inspector Supervisor. Approval/disapproval will be emailed back to the requesting contractor with the Saturday inspector's information. All cancellations must be given verbally and in writing to the Saturday inspector no later than 8:00 AM on day of inspection. Two (2) hours of overtime inspection will be charged to the contractor if no cancellation is given prior to the inspector arriving at the project site. Contractor must sign form to finalize the inspection. No acceptance and/or certification of occupancy will be given until all overtime engineering inspection fees are paid in full. If any City holiday occurs on a Friday, there will be no inspections or inspectable construction on the Saturday after this holiday. If any City holiday occurs on a Monday, there will be no inspections or inspectable construction on the Saturday prior to this holiday.
- (B) Before/After Weekday Hours Inspections. Contractor will be charged on 15-minute intervals for any before/after hour's inspections. Contractor must sign form to finalize the inspection. No acceptance and/or certification of occupancy will be given until all overtime engineering inspection fees are paid in full.

SUBSECTION 6.07.03 | VERTICAL ABOVE SLAB CONSTRUCTION PERMIT

No vertical (above slab) construction will be allowed until such time as the following minimum site requirements have been addressed at the site, verified by a City Representative, and a vertical above slab construction permit has been issued. Minimum requirements for vertical construction are subject to but not necessarily limited to the below noted items:

- (A) Fire lane pavement is installed, tested, and approved for use
 (B) Fire lane pavement is painted and marked to Fire Department specifications
 (C) Water lines for the site are installed, tested, and approved for use



- (D) All fire hydrants are installed and approved for use
- (E) Fire hydrant nozzles and bonnets are painted as per line size color code
- (F) Reflective fire hydrant locator buttons are in place at hydrant pavement locations
- (G) Fire hydrants are flow tested to verify flow at designated hydrant locations
- (H) Fire hydrant nozzle diameters, proper height above final grade, and clearance are verified and approved
- (I) Silt fence is placed above the fire lane if it is deemed necessary at positive flow areas
- (J) Exterior building materials are approved by the Planning and Zoning Department.

SUBSECTION 6.07.04 | DISPOSAL OF EXCESS MATERIALS

The contractor shall properly dispose of all excess material by removing from the job site all the brush, trash, debris, etc. upon completion of construction. All material shall be properly disposed outside of the City limits. No dumping of dirt inside the City of Rockwall without a permit.

SUBSECTION 6.07.05 | DISPOSAL OF EXCESS MATERIALS

Construction site safety measures are to be in place at all construction projects located within the City of Rockwall. All necessary measures required to ensure that safe work zones exist for the protection of construction workers and general public living in or near such construction zones. Construction zones shall comply with work zone traffic control specifications and requirements. Occupational Health and Safety Administration requirements and regulations must be in compliance. Temporary construction fencing is to be placed around open trenches, pits, or other locations deemed necessary by the City of Rockwall. Any miscellaneous items that may pose direct or potential hazard to workers or the general public that is known by the contractor or brought to the attention of the contractor shall be addressed immediately.

It is the responsibility of the contractor(s) to establish and maintain construction site safety measures; however, the City of Rockwall will temporarily suspend work at a construction site if it is deemed necessary due to unsafe or hazardous conditions until such conditions have been corrected.

In each circumstance where it is deemed that proper safety measures are not being followed, a warning will be issued by the Engineering Construction Inspector. Construction may be temporarily suspended if deemed necessary until items responsible for issuance of the safety warning have been properly addressed. Issuance of three (3) or more safety warnings will require that the designated construction be suspended until such time that a safety meeting is scheduled with contractor personnel along with City of Rockwall representatives to discuss the appropriate measures to correct the identified problems and determine any further possible actions which may be necessary.



CHAPTER 7 | SPECIAL PROVISIONS TO THE NCTCOG'S STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION STANDARDS

All work included as a part of this contract shall be performed in accordance with the Standard Specifications for Public Works Construction, North Central Texas, November 2017, Fifth Edition, except where noted otherwise in the City of Rockwall's Supplemental Special Provisions, the Special Conditions included in the Specifications and Contract Documents.

The North Central Texas Standard Specifications shall be modified and clarified by the addition to the following requirements to the various items. Except when specifically stated, none of the requirements of the North Central Texas Standard Specifications shall be deleted.

SECTION 7.01 | DIVISION 100. GENERAL PROVISIONS

NOTE: THE (1) SYMBOL SPECIFIES THAT THIS ITEM IS ALSO COVERED IN THE CITY OF ROCKWALL'S "SPECIAL PROVISIONS" TO THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, NORTH CENTRAL TEXAS". THESE SPECIAL PROVISIONS ARE ADDITIONAL AND MODIFY THE "STANDARD SPECIFICATION"

TABLE 7.1: REVISIONS TO NCTCOG'S DIVISION 100 GENERAL PROVISIONS

REVISED	STANDARD SPECIFICATION ITEM NO.	DESCRIPTION
	101	DEFINITIONS AND ABBREVIATIONS
	101.1	DEFINITIONS
	101.2	ABBREVIATIONS AND ACRONYMS
	102	PROPOSAL PROCEDURES
	102.1	PROPOSAL FORM
	102.2	QUANTITIES IN PROPOSAL FORM
	102.3	EXAMINATION OF PLANS, SPECIFICATIONS AND SITE OF THE WORK
	102.4	PREPARATION OF PROPOSAL
	102.5	PROPOSAL GUARANTY
	102.6	FILING OF PROPOSALS
	102.7	WITHDRAWING PROPOSALS
	102.8	OPENING PROPOSALS
	102.9	CONSIDERATION OF PROPOSAL
	102.10	IRREGULAR PROPOSALS
	102.11	REJECTION OF PROPOSALS
	102.12	DISQUALIFICATION OF BIDDERS
	102.13	RETURN OF PROPOSAL
	103	AWARD AND EXECUTION CONTRACT
	103.1	CONTRACTOR'S WARRANTIES AND UNDERSTANDING
(1)	103.2	AWARD OF CONTRACT
	103.3	SURETY BONDS
(1)	103.4	INSURANCE
	103.5	EXECUTION OF CONTRACT
	103.6	NOTICE TO PROCEED AND COMMENCEMENT OF WORK
	103.7	DELAY OF CONTRACT
	103.8	ORDER OF WORK TO BE PERFORMED
	104	SCOPE OF WORK
	104.1	INTENT OF CONTRACT DOCUMENTS
	104.2	CHANGE OF MODIFICATION OF CONTRACT
	104.3	DISRUPTED WORK AND CLAIMS FOR ADDITIONAL COMPENSATION
	104.4	PERFORMANCE OF EXTRA DISPUTED WORK



	105	CONTROL OF WORK
(1)	105.1	CONTRACT OF DOCUMENTS
(1)	105.2	WORKMANSHIP, WARRANTIES AND GUARANTEES
(1)	105.3	SHOP DRAWINGS, PRODUCT DATA AND SAMPLES
(1)	105.4	CONSTRUCTION STAKES
(1)	105.5	MEANS AND METHODS OF CONSTRUCTION
	105.6	SUPERVISION BY CONTRACTOR
(1)	105.7	OWNER'S REPRESENTATIVES
	105.8	SERVICE OF NOTICES
	105.9	INSPECTION
(1)	105.10	ACCEPTANCE
	106	CONTROL OF MATERIAL
	106.1	SUBSTITUTION OF MATERIALS
	106.2	MATERIALS AND EQUIPMENT
	106.3	SALVAGEABLE MATERIAL
	106.4	OFF-SITE STORAGE
	106.5	SAMPLES AND TESTS OF MATERIALS
	106.6	SURPLUS MATERIAL
	107	LEGAL RELATIONS AND CONTRACT RESPONSIBILITIES
	107.1	CONTRACTOR INDEPENDENCE
	107.2	NO THIRD-PARTY CONTRACTUAL RIGHTS
(1)	107.3	INDEMNIFICATION
	107.4	OWNER'S OFFICERS, EMPLOYEES OR AGENTS
	107.5	VENUE AND GOVERNING LAW
	107.6	NO WAIVER OF LEGAL RIGHTS
	107.7	SEVERABILITY
	107.8	HEADINGS
	107.9	OBLIGATION TO PERFORM FUNCTIONS
(1)	107.10	PERFORMANCE OF THE WORK
	107.11	SUCCESSORS AND ASSIGNS
	107.12	SUPERVISION AND CONSTRUCTION OF PROCEDURES
	107.13	LABOR AND MATERIALS
(1)	107.14	EQUAL EMPLOYMENT OPPORTUNITY
(1)	107.15	STATE AND LOCAL SALES AND USE TAXES
	107.16	PATENTS
(1)	107.17	COMPLIANCE WITH LAWS
	107.18	SANITARY PROVISIONS
	107.19	PUBLIC CONVENIENCE AND SAFETY
(1)	107.20	PROTECTION OF WORK AND PERSONS AND PROPERTY
	107.21	PROJECT SIGNS
	107.22	WORKING AREA
	107.23	RAILWAY CROSSINGS
	107.24	EXISTING STRUCTURES, FACILITIES AND APPURTENANCES
	107.25	PROJECT CLEAN-UP
	107.26	DISPOSAL OF MATERIALS
	107.27	RESTORATION OF PROPERTY
	107.28	ENVIRONMENTAL COMPLIANCE
	108	PROSECTUTION AND PROGRESS



108.1	PROGRESS SCHEDULE
108.2	PROSECUTION OF THE WORK
108.3	OTHER CONTRACTORS; OBLIGATION TO COOPERATE
108.4	EMPLOYEES
108.5	SUBCONTRACTS
108.6	ASSIGNMENTS
108.7	OWNER'S RIGHT TO TEMPORARILY SUSPEND WORK
108.8	DELAYS; EXTENSION OF TIME; LIQUIDATED DAMAGES
108.9	CONTRACTOR DEFAULT: OWNER'S RIGHT TO SUSPEND WORK AND ANNUL CONTRACT
108.10	SUSPENSION BY COURT ORDER AGAINST THE OWNER
108.11	TERMINATION FOR CONVENIENCE OF THE OWNER
108.12	CLAIMS AGAINST OWNER AND ACTION THERON
108.13	USE OF COMPLETED PORTIONS OF WORK
109	MEASUREMENT AND PAYMENT
109.1	PAYMENT FOR LABOR AND MATERIAL; NO LIENS
109.2	PAYMENT FOR MATERIALS
109.3	PAYMENT FOR EXTRA WORK
109.4	PAYMENT WITHHELD
(1) 109.5	MONTHLY ESTIMATE, PARTIAL PAYMENTS, RETAINAGE, FINAL INSPECTION, ACCEPTANCE AND FINAL PAYMENT
109.6	WIRE TRANSFERS
110	AIR QUALITY REQUIREMENTS FOR EQUIPMENT
110.1	EQUIPMENT REQUIREMENTS
110.2	OPERATIONAL REQUIREMENTS
110.3	REPORTING TO OWNER
110.4	ENFORCEMENT

ITEM 103 AWARD AND EXECUTION CONTRACT

103.2 AWARD OF CONTRACT

DELETE ITEM 103.2 IN ITS ENTIRETY AND SUBSTITUTE THEREFORE THE FOLLOWING:

It is the intention of the Owner to award a contract for the work included in this project on the basis of the lowest acceptable bid submitted by a qualified bidder, as determined by the Owner.

Within five (5) working days after the bid opening, the low bidder shall submit such evidence as the Owner may require establishing the bidder's qualifications to satisfactorily perform the work included in this project. Information that may be required shall include the following:

- (1) Current Financial Statement.
- (2) Letter of Auditor's opinion.
- (3) Previous years Balance Sheet, Income Statement and Change of Financial Position.
- (4) List of projects that have been satisfactorily completed by the Bidder that are of the same general type as included in this contract, together with names, addresses and phone numbers or persons familiar with this work.
- (5) Other information that may be pertinent to the Bidder's Qualifications.

Should the bidder fail to produce evidence satisfactory to the Owner on any of the foregoing points he may be disqualified and the work awarded to the next bidder so qualifying.



The Owner will notify the successful bidder, in writing, within sixty (60) days after the date of receiving bids, of the acceptance of the proposal. The Contractor or Contractors shall complete execution of the required bonds and Contract within ten (10) days of such notice.

103.4 INSURANCE

ADD THE FOLLOWING SUB-ITEM:

103.4.6 BONDS AND INSURANCE

103.4.6.1 PERFORMANCE, PAYMENT AND OTHER BONDS

Contractor shall furnish Performance and Payment Bonds as security for the faithful performance and payment of all his obligations under the Contract Documents. These Bonds shall be, at all times, in amounts equal to the total Contract Price, and in such form as set forth in the Contract Documents and with such corporate sureties as are licensed to conduct business in the state where the Project is located and are named in the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Federal Register by the Audit Staff Bureau of Accounts, U.S. Treasury Department. The Performance and Payment Bonds shall be expanded to include any extension of the Contract Period of total Price.

If the surety on any Bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located in revoked, Contractor shall within five (5) days thereafter substitute another Bond and surety, both of which may be acceptable to the City.

103.4.6.2 Additional Bonds and Insurance

Prior to delivery of the executed Contract by City to the Contractor, City may require CONTRACTOR to furnish such other Bonds and such additional insurance in such form and with such sureties or insurers as the City may require.

ITEM 105 CONTROL OF WORK

105.1 CONTRACT OF DOCUMENTS

105.1.1 PRIORITY OF CONTRACT DOCUMENTS

CHANGE THE FIRST SENTENCE OF ITEM 105.1.1 TO READ:

In case of conflict between contract documents, priority of interpretation shall be in the following order: signed agreement, performance and payment bonds, addenda, special conditions, project (*or contract*) drawings and specifications, City of Rockwall Special Provisions to the Standard Specifications for Public Works Construction – North Central Texas, standard drawings, advertisement for bids, contractor's bid proposal and bid form.

105.1.3 CONTRACT DRAWINGS AND SPECIFICATIONS

ADD THE FOLLOWING:

In general, the number of copies of the plans and specifications furnished to the Contractor shall be limited to five (5). Additional copies may be obtained at cost of reproduction.

105.2 WORKMANSHIP, WARRANTIES AND GUARANTEES

105.2.2 SPECIAL WARRANTY



ADD THE FOLLOWING:

The Contractor shall provide a Maintenance Bond in the amount of ten (10) percent of the total amount of the contract guaranteeing the work in accordance with the plans and specifications for a period of two (2) years after acceptance by the City of Rockwall. This bond shall provide for repair and/or replacement of all defects due to faulty material and workmanship that appear within a period of two (2) years from the date of completion and acceptance of the improvements by the City of Rockwall.

105.3 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

ADD THE FOLLOWING:

Review of Shop Drawings by the Engineer shall be of the sole purpose of determining the sufficiency of the said drawings or schedules to result in finished improvements in conformance with the plans and specifications, and shall not relieve the Contractor of his duty as an independent contractor. It being understood and agreed that the Engineer does not assume any duty to pass upon the propriety or adequacy of such drawings or schedules or any means or methods reflected thereby in relation to the safety of either person or property during the contractor's performance hereunder.

105.4 CONSTRUCTION STAKES

ADD THE FOLLOWING TO THE FIRST PARAGRAPH:

The Contractor shall be required to utilize the control monuments provided in the plans to set horizontal and vertical control and construction staking with the contractor's own surveyor.

105.5 MEANS AND METHODS OF CONSTRUCTION

ADD THE FOLLOWING:

105.5.1 WATER FOR CONSTRUCTION

The Contractor shall make the necessary arrangements for securing and transporting all water required in the construction, including water required for mixing of concrete, sprinkling, testing, flushing, flooding or jetting. The Contractor shall provide water as required at his own expenses.

All construction meters are to be approved and tagged by the City of Rockwall. The tag is to remain on the meter at all times. If the tag is damaged or lost, immediately notify the Public Works Department. Any construction meter in use without a tag will be removed by City personnel. The use of any non-approved meters will result in the City of Rockwall charging for an estimated water usage and possible fines. All construction meters are to be equipped with a backflow prevention device with double check valves and dual test ports. All backflow devices shall have a Backflow Prevention Assembly Test and Maintenance Report from a certified backflow tester, when registering a meter at the City of Rockwall Service Center.

Any party requesting the use of a temporary meter on a fire hydrant in the City of Rockwall shall execute an agreement with the City of Rockwall and shall deposit with the City of Rockwall the amount required by ordinance. Such deposit shall be returned upon payment of all charges for water use, and upon return of the meter, fittings, and wrench in their original condition.

Stationary meters shall be locked to fire hydrants at all times. Installation, set up and service fees shall be in the amounts established by ordinance.

It shall be unlawful for any person to open or close any fire hydrant used to obtain water for any purpose with any tool or device other than a standard accepted fire hydrant wrench, which can be supplied by the City of Rockwall.



All stationary fire hydrant meters shall be read monthly at their location in the field. All mobile fire hydrant meters are to be brought to the Utility Maintenance Department, Rockwall, Texas, between the 1st and 10th of each month to be read. The location of all meters shall be disclosed in writing to the City of Rockwall's Water Department. If meter is relocated, written notification of new location must be made immediately to the City of Rockwall's Water Department.

Temporary fire hydrant meters shall be read monthly by representatives of the City of Rockwall, and bills rendered at the current rates for all consumption. Customers using such meters shall comply with the written procedures implemented by the City with regard to making the meters available to be read by representatives of the Rockwall Water Department. It shall be unlawful for any person to fail to make such meter available to be read by representatives of the Rockwall Utilities Department, as required by written procedures issued by the City.

Upon conviction of violation of the above requirements punishment shall be by fine not to exceed *TWO HUNDRED DOLLARS* (\$200.00). Each day on which a violation exists shall constitute a separate offense.

105.7 OWNER'S REPRESENTATIVES

ADD THE FOLLOWING:

105.7.3 OBSERVATION OF WORK BY ENGINEER

The Engineer shall make periodic visits to the site to familiarize himself/herself generally with the progress of the executed work and to determine if such work generally meets the essential performance and design features and the technical and functional engineering requirements of the Contract Documents; provided and except, however, that the Engineer shall not be responsible for making any detailed, exhaustive, comprehensive or continuous on-site inspection of the quality or quantity of the work or be in any way responsible, directly or indirectly, for the construction means, methods, techniques, sequences, quality, procedures, programs, safety precautions or lack of same incident thereto or in connection therewith. Notwithstanding any other provision of this agreement or any other Contract Document, the Engineer shall not be in any way responsible or liable for any acts, errors, omissions or negligence of the Contractor, any subcontractor or any of the Contractor's or subcontractor's agents, servants or employees or any other person, firm or corporation performing or attempting to perform any of the work.

105.10 ACCEPTANCE

ADD THE FOLLOWING:

Once the work is satisfactory to the City of Rockwall and in accordance with the plans, specifications, contract documents, and the City has received; the Contractor's Affidavit of Final Payment and Release, Maintenance Bond, and Contractor's redlines/markups plans of actual work performed by the Contractor will the City issue a certificate of acceptance.

ITEM 107 LEGAL RELATIONS AND CONTRACT RESPONSIBILITIES

107.3 INDEMNIFICATION

DELETE ITEM 107.3 IN ITS ENTIRETY AND SUBSTITUTE THEREFORE THE FOLLOWING:

The Contractor and his sureties shall indemnify, defend and save harmless the OWNER and all of its officers, agents and employees, ENGINEER and all of its officers and employees from all suits, actions or claims of any character, name and description brought for or on account of any injuries, including death or damages received or sustained by any person, persons or property on account of the operations of the Contractor, his agents, employees or subcontractors; or on account of any negligent act or fault of the Contractor, his agents, employees or subcontractors in the execution of said contract; or on account of the failure of the Contractor to provide the necessary barricades, warning lights or signs; and shall be required to pay any judgment, with cost, which may be obtained against the Owner or Engineer growing out of such injury, including death or damage.



107.14 EQUAL EMPLOYMENT OPPORTUNITY

DELETE ITEM 107.14.5 REPORTS IN THIS ITEM IN ITS ENTIRETY.

107.15 STATE AND LOCAL SALES AND USE TAXES

DELETE IN ITS ENTIRETY AND SUBSTITUTE THEREFORE THE FOLLOWING;

Recent legislation has removed the sales tax exemption previously provided by Section 151.311 of the Tax Code covering tangible personal property purchased by a contractor for use in the performance of a contract for the improvement of City-owned realty.

It is still possible, however, for a contractor to make tax-free purchases of tangible personal property that will be incorporated into and become part of a City construction project through the use of a "separated contract" with the City. A "separated contract" is one, which separates charges for materials from charges for labor. Under such a contract, the contractor becomes a "seller" of those materials, which are incorporated into the project, such as bricks, lumber, concrete, paint, etc. The contractor issues a resale certificate in lieu of paying the sales tax at the time such items are purchased. The contractor then receives an exemption certificate from the City for those materials (*This procedure may not be used, however, for materials, which do not become a part of the finished product. For example, equipment rentals, form materials, etc. are not considered as becoming "incorporated" into the project.*)

Utilization of this "separated contract" approach eliminates the need for bidders to figure in sales tax for materials, which are to be incorporated into the project. Bid items, which contain non-taxable materials, are identified in the Bid Schedule of this project. The successful bidder will be required to complete a Contract Form provided by the Owner identifying and separating non-taxable materials from the labor and taxable materials which are not incorporated into the finished project. The completed contractor form will be used to develop the "separated contract" and will determine the extent of the tax exemption.

107.17 COMPLIANCE WITH LAWS

ADD THE FOLLOWING SUB ITEM:

107.17.2 ANTITRUST

The Contractor hereby assigns to the Owner any and all claims for over-charges associated with this contract which arise under the Antitrust Laws of the United States, 15 U.S.C.A. Section 1, et seq., (1973).

ADD THE FOLLOWING SUB ITEM:

107.17.3 WAGE RATE

All employees of the Contractor on the work to be performed under this contract shall be paid the prevailing wage scale in this locality for work of a similar character, and in no event less than the rates shown in the Special conditions to the Specifications.

107.20 PROTECTION OF WORK AND PERSONS AND PROPERTY

107.20.2 PROTECTION OF PERSONS AND PROPERTY

ADD THE FOLLOWING:

The Contractor shall at all times exercise reasonable precautions for the safety of employees and others on or near the work and shall comply with all applicable provisions of Federal, State, and Municipal Safety laws and building and construction codes. All machinery equipment and other physical hazards shall be guarded in accordance with the "Manual of Accident Prevention in Construction" of the Associated General Contractors of America except where incompatible with Federal, State and Municipal laws or regulations. The Contractor shall provide such machinery,



guards, safe walkways, ladders, bridges, gangplanks and other safety devices. The safety precautions actually taken and their adequacy shall be the sole responsibility of the Contractor, acting at his discretion as an independent contractor.

ADD THE FOLLOWING SUB ITEM:

107.20.4 SMALL CLAIMS FOR DAMAGES OR INJURY

If any person files a claim against the OWNER or CONTRACTOR for personal injury or property damage resulting from, arising out of, or caused by the operations of the Contractor, or any work within the limits of the project, the Contractor must either submit to the Owner a duly executed full release within thirty (30) days from the date of written claim, or immediately report the claim to his liability insurance carrier for their action in adjusting the claim. If the Contractor fails to comply with this provision within the stipulated time limit, it will be automatically deemed that the Contractor has appointed the Owner as its irrevocable Attorney in Fact authorizing the Owner to report the claim directly with the liability insurance carrier. This provision is in and of itself a Power of Attorney from the Contractor to the Owner which authorizes the Owner to take said action on behalf of the Contractor without the necessity of the execution of any other document. If the Contractor fails to comply with the provisions of this item the Owner, at its own discretion, may terminate this contract or take any other actions it deems appropriate. Any payment or portion thereof due the Contractor, whether it is a final payment, progress payment, payment out of retainage or refund payment may be withheld by the Owner as is authorized by item 109.4. Bankruptcy, insolvency or denial of liability by the insurance carrier shall not exonerate the Contractor from liability.

ITEM 109 MEASUREMENT AND PAYMENT

109.5 MONTHLY ESTIMATE, PARTIAL PAYMENTS, RETAINAGE, FINAL INSPECTION, ACCEPTANCE AND FINAL PAYMENT

109.5.2 RETAINAGE

ADD THE FOLLOWING:

(4) On projects where the contract price, at the time of execution, is greater than \$400,000.00 the Owner may retain ten (10) percent of the amount due the Contractor, with the retainage above five (5) percent deposited in an interest-bearing account and interest earned on such five (5) percent retained funds shall be paid to the Contractor upon completion of the contract.

109.5.3 FINAL INSPECTION AND ACCEPTANCE

ADD THE FOLLOWING:

Within ten (10) days after the Contractor has given the Engineer written notice that the work has been completed, or substantially completed, the Engineer and the Owner shall inspect the work and within said time, if the work be found to be completed or substantially completed in accordance with the Contract Documents, the Engineer shall issue to the Owner and the Contractor his Certificate of Completion, and there upon it shall be the duty of the Owner within ten (10) days to insure a Certificate of acceptance of the work to the Contractor or to advise the Contractor in writing of the reason for non-acceptance.

Definition of Substantially Complete. The date of substantial completion of a project or specified area of a project is the date when the construction is sufficiently completed, in accordance with the contract documents, as modified by any change order agreed to by the parties, so that the Owner can occupy or utilize the project or specified area of the project for the use for which it was intended.



SECTION 7.02 | DIVISION 200. SITE PROTECTION AND PREPERATION

NOTE: THE (1) SYMBOL SPECIFIES THAT THIS ITEM IS ALSO COVERED IN THE CITY OF ROCKWALL'S "SPECIAL PROVISIONS" TO THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, NORTH CENTRAL TEXAS". THESE SPECIAL PROVISIONS ARE ADDITIONAL AND MODIFY THE "STANDARD SPECIFICATION"

TABLE 7.2: REVISIONS TO NCTCOG'S DIVISION 200 SITE PROTECTION AND PREPARATION

REVISED	STANDARD SPECIFICATION ITEM NO.	DESCRIPTION
	201	SITE PROTECTION
	201.1	REMOVAL, PROTECTION, AND REPLACEMENT OF TREES, SHRUBBERY, PLANTS, SOD AND OTHER VEGETATION
	201.2	DETERMINING LOCATION AND PROTECTION OF EXISTING STRUCTURES AND UTILITIES
	201.3	MAINTENANCE OF STREETS AND RIGHTS OF WAY DURING CONSTRUCTION
	202	TEMPORARY EROSION, SEDIMENTATION, AND WATER POLLUTION PREVENTION AND CONTROL
	202.1	DESCRIPTION
	202.2	ITEMS OF WORK AND MATERIALS
	202.3	PRE-CONSTRUCTION SUBMITTALS
	202.4	CONSTRUCTION REQUIREMENTS
(1)	202.5	SILT FENCE
	202.6	INTERCEPTOR SWALE
	202.7	DIVERSION DIKE
	202.8	TRIANGULAR SEDIMENT FILTER DIKE
	202.9	CHECK DAM (ROCK)
	202.10	CHECK DAM (FILTER TUBE)
(1)	202.11	STABILIZED CONSTRUCTION EXIT
	202.12	STOP OUTLET SEDIMENT TRAP
	202.13	PIPE SLOPE DRAIN
	202.14	INLET PROTECTION
	202.15	EROSION CONTROL BLANKETS
	202.16	SECTION HELD FOR FUTURE USE
	202.17	SECTION HELD FOR FUTURE USE
	202.18	FILTER TUBES
	202.19	MEASUREMENT AND PAYMENT
	203	SITE PREPARATION
	203.1	GENERAL SITE PREPARATION
(1)	203.2	UNCLASSIFIED STREET EXCAVATION
	203.3	SECTION HELD FOR FUTURE USE
	203.4	BORROW & SPOIL
(1)	203.5	EMBANKMENT
	203.6	DUST CONTROL
	204	LANDSCAPING
	204.1	REMOVAL, PROTECTION, AND REPLACEMENT OF TREES, SHRUBBERY, PLANTS, SOD AND OTHER VEGETATION
(1)	204.2	TOPSOIL
	204.3	SOIL AMENDMENTS
	204.4	FERTILIZER
	204.5	SODDING
(1)	204.6	SEEDING TURF-GRASS
	204.7	REJECTION

ITEM 201 TEMPORARY EROSION, SEDIMENTATION, AND WATER POLLUTION PREVENTION AND CONTROL

202.5. SILT FENCE



202.5.2. MATERIALS

202.5.2.2. POSTS

DELETE THE LAST SENTENCE IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

No wood stakes shall be allowed.

202.11. STABILIZED CONSTRUCTION EXIT

202.11.2. MATERIALS

202.11.2.1 STONE

DELETE THE FOLLOWING SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

Stone material shall consist of four (4) to six (6) inch minimum course aggregate riprap and shall be place in a layer 12-inch thick. No crushed or recycled concrete shall be allowed.

ITEM 203 SITE PREPERATION

203.2. UNCLASSIFIED STREET EXCAVATION

203.2.3. GENERAL

ADD TO THE FOLLOWING AS THE THIRD PARAGRAPH:

Unless otherwise approved in writing by the City of Rockwall, where excavation to grade established in the field by the Owner terminates in loose or solid rock, the Contractor shall excavate six (6) inches below the required subgrade elevations for the entire roadbed width and shall backfill with suitable selected materials as indicated on the plans. Suitable selected material shall include lime treated subgrade or a base material having a plasticity index not greater than 12. Payment for such work will be made under the items of unclassified street excavation, lime treated subgrade and hydrated lime. The six (6) inch lime treated subgrade or base shall be compacted to 95 percent standard proctor density.

ITEM 204 LANDSCAPING

204.2. TOPSOIL

204.2.3. CONSTRUCTION METHODS

ADD THE FOLLOWING:

A minimum of four (4) inches of topsoil shall be provided on all major thoroughfare medians and rights-of-way and on all earthen channel slopes to the lines and grades established by the construction plans. This will be material imported from off site. The City will approve material prior to placement.

204.6 SEEDING TURFGRASS

204.6.1. GENERAL

ADD THE FOLLOWING:



The Contractor shall maintain the seeded areas including watering until a “Stand of Grass” is obtained. A “Permanent Stand of Grass” shall consist of 75 percent to 80 percent coverage, a minimum of one (1) inch in height. Re-seeding will be required in washed areas.

204.6.3. PLANTING SEASON AND APPLICATION RATE

DELETE THE MIXTURE, RATE, AND PLANTING DATES IN TABLE 204.6.3.(A) SEEDING TURFGRASS AND SUBSTITUTE:

TYPE NO.	VARIETY	HULLED OR UNHULLED	WEIGHT/ACRE	PLANTING SEASON
TYPE I	BERMUDA GRASS	HULLED	50 LBS/ACRE	APRIL THROUGH JUNE
TYPE II	ANNUAL RYE GRASS	N/A	40 LBS/ACRE	SEPTEMBER THROUGH MARCH
TYPE III	BERMUDA GRASS	UNHULLED	50 LBS/ACRE	JANUARY THROUGH MARCH & JULY THROUGH AUGUST

NOTE: A mix of seed shall be used in overlapping seasons.

SECTION 7.03 | DIVISION 300. ROADWAY CONSTRUCTION

NOTE: THE (1) SYMBOL SPECIFIES THAT THIS ITEM IS ALSO COVERED IN THE CITY OF ROCKWALL’S “SPECIAL PROVISIONS” TO THE “STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, NORTH CENTRAL TEXAS”. THESE SPECIAL PROVISIONS ARE ADDITIONAL AND MODIFY THE “STANDARD SPECIFICATION”

TABLE 7.3: REVISIONS TO NCTCOG’S DIVISION 300 ROADWAY CONSTRUCTION

REVISED	STANDARD SPECIFICATION ITEM NO.	DESCRIPTION
	301	SUBGRADE, SUBBASE AND BASE PREPARATION
	301.1	GENERAL
(1)	301.2	LIME TREATMENT
(1)	301.3	PORTLAND CEMENT TREATMENT
	301.4	ASPHALT EMULSION TREATMENT
(1)	301.5	FLEXIBLE SUB-BASE OR BASE (CRUSHED STONE/CONCRETE)
	301.6	GEO-TEXTILES USED IN PAVING APPLICATIONS
	302	ASPHALT PAVEMENT
	302.1	DESCRIPTION
	302.2	AGGREGATES FOR HOT-MIX ASPHALT PAVEMENT
	302.3	BITUMINOUS MATERIALS
	302.4	SECTION HELD FOR FUTURE USE
	302.5	STORAGE, HEATING AND APPLICATION TEMPERATURE OF BITUMINOUS MATERIALS
	302.6	EMULSIFIED ASPHALT TREATMENT
	302.7	PRIME COAT
	302.8	ASPHALT BASE COURSE
	302.9	HOT-MIX ASPHALT PAVEMENT
	302.10	MEASUREMENT AND PAYMENT
	303	PORTLAND CEMENT CONCRETE PAVEMENT
	303.1	DESCRIPTION
(1)	303.2	PORTLAND CEMENT CONCRETE PAVEMENT MATERIALS
(1)	303.3	MIX DESIGN AND MIXING CONCRETE
	303.4	EQUIPMENT
(1)	303.5	CONSTRUCTION METHODS
	303.6	ALLEY PAVING



	303.7	PAVEMENT LEAVE-OUTS
(1)	303.8	PAVEMENT TESTING AND EVALUATION
	303.9	MEASUREMENT AND PAYMENT
	304	PAVING UNITS
(1)	304.1	SOLID CONCRETE INTERLOCKING PAVING UNITS
	305	MISCELLANEOUS ROADWAY CONSTRUCTION
(1)	305.1	CONCRETE CURB AND GUTTER
(1)	305.2	CONCRETE SIDEWALKS, DRIVEWAY APPROACHES, AND BARRIER FREE RAMPS
(1)	305.3	CONCRETE MEDIANS
	305.4	REINFORCED CONCRETE HEADERS

ITEM 301. SUBGRADE, SUBBASE AND BASE PREPERATION

301.2 LIME TREATMENT

ADD THE FOLLOWING SENTENCES:

Quick Lime shall not be used in the construction of roadway work in the City. Dry hydrated lime shall not be used for treating subgrade or base material unless specified on the plans

301.2.1. MATERIALS

301.2.1.2. QUICKLIME

301.2.1.2.1. GENERAL

ADD TO THE BEGINNING OF THE FIRST PARAGRAPH:

Quicklime (dry) shall not be used in the City without written approval from the City.

301.2.3. LIME TREATMENT CONSTRUCTION METHODS

301.2.3.3. GENERAL CONSTRUCTION

301.2.3.3.1. TREATMENT FOR MATERIALS IN PLACE

ADD THE FOLLOWING:

Prior to final compaction of subgrade, samples of the subgrade material shall be collected by a testing laboratory approved by the City, and laboratory tests made to determine the amount of lime required.

The application rate for hydrated lime shall be selected to obtain at least the optimum lime percentage indicated by test method *ASTM C977-83a, Appendix XI*; however, not less than 27 LBS per SY shall be applied. A Geotechnical Engineer's report reflecting the recommended application rate and including supporting test data shall be submitted in writing to the City, for approval prior to beginning any lime treatment. Laboratory test may be waived provided a minimum of 36 LBS per SY is applied. Testing shall look for sulfates to see if *Lime Treatment* will cause and adverse effect on the subgrade.

301.2.3.7. MAINTENANCE



ADD THE FOLLOWING TO THE FIRST PARAGRAPH:

The lime treated subgrade shall be moist cured until covered by other base or pavement up to 14-days after final compaction. After 14-days without covering an application of 0.10 to 0.20 gallons per square yard emulsified asphalt shall be applied at the Contractor's expense. Reapplication of emulsified asphalt may be required if lime treated subgrade is not covered shortly after first application. Lime treated subgrade may be covered by other base or pavement when density of 95 percent of maximum at optimum moisture content is obtained.

301.3 PORTLAND CEMENT TREATMENT

ADD THE FOLLOWING:

Portland cement modification of subgrade soils is not approved in Rockwall. Subgrade soils means natural ground or embankment encountered in the construction.

301.5 FLEXIBLE SUBBASE OR BASE (CRUSHED STONE/CONCRETE)

301.5.1. MATERIAL

301.5.1.1. GENERAL

ADD THE SENTENCE:

No local limestone material shall be used as flexible base (crushed limestone) on Rockwall paving projects, unless otherwise shown on the plans.

301.5.1.2 TESTS AND PHYSICAL REQUIREMENTS

AFTER THE FIRST SENTENCE ADD THE SENTENCE:

Samples of crushed limestone shall be submitted to the engineer testing laboratory employed by the City for testing and conformance with the specifications.

ITEM 303 PORTLAND CEMENT PAVEMENT

303.2. PORTLAND CEMENT CONCRETE PAVEMENT MATERIALS

303.2.1. AGGREGATES FOR PORTLAND CEMENT CONCRETE

303.2.1.3. COARSE AGGREGATES

Gradation:

ADD THE SENTENCE:

For Rockwall paving projects, the coarse aggregate's gradation shall meet the requirements of Size No. 4 shown in the table.

303.3 MIX DESIGN AND MIXING CONCRETE FOR PAVEMENT

303.3.5. MIXING AND DELIVERY

303.3.5.3. CENTRAL MIXING PLANT



ADD THE FOLLOWING:

When a fly ash admixture is used with Type I cement in the production of Portland cement concrete, separate silos shall be provided for fly ash and cement and provisions shall be made for individual measurements.

303.5 CONSTRUCTION METHODS

303.5.6. FINISHING

DELETE 303.5.6. AND ADD THE FOLLOWING:

The finished concrete pavement construction under these specifications is expected to meet certain quality standards for surface of the concrete including the durability, texture, riding surface and appearance. The surface must be durable, firm, dense and well bonded to the aggregate to maintain an appearance and texture which is satisfactory to the Owner. Concrete pavement having a poor surface which has spalled (*exposed aggregate*) due to poor quality paste, high water-cement ratio, over-vibration, improper curing, extreme weather or any other reason, or does not have a satisfactory riding surface shall be removed and replaced at the Contractor's expense. It is extremely important that the pavement have a good rideable surface, free from undulations and rough joints. The City Engineer shall determine the acceptability of the pavement.

303.5.6.1. MACHINE FINISHING

Machine finishing of pavement shall include the use of power-driven spreaders, reciprocating type power-driven vibrators, power-driven transverse strike-off, and screed.

The concrete pavement shall be consolidated by a reciprocating type mechanical vibrator. As soon as the concrete has been spread between the forms, the mechanical vibrator shall be operated to consolidate the concrete and remove all voids. Hand manipulated vibrators shall be used for areas not covered by the mechanical vibratory unit.

The transverse finishing machine shall first be operated to compact and finish the pavement to the required section and grade, without surface voids. The machine shall be operated over each area as many times and at such intervals as directed. At least two trips will be required and the last trip over a given area shall be a continuous run of not less than 40-feet. After completion of finishing with the transverse finishing machine a transverse drag float may be used.

After the floating has been completed and the excess water removed, but while the concrete is still plastic, the surface of the concrete shall be tested for trueness with an approved ten (10) foot steel straightedge furnished by the Contractor. The straightedge shall be operated from the side of the pavement, placed parallel to the pavement centerline and passed across the slab to reveal any high spots or depressions. The straightedge shall be advanced along the pavement in successive stages of not more than one-half its length. Practically perfect contact of the straightedge with surface will be required, and the pavement shall be leveled to this condition, in order to insure conformity with the surface test required below after the pavement has fully hardened and to insure a smooth rideable surface. Any correction of the surface required shall be accomplished by adding concrete if required and by operating the longitudinal float over the area. The surface test with the straightedge shall then be repeated.

After completion of the straightedge testing and surface correction the surface of the pavement shall be finished by an approved method. Methods available for pavement surface finish including a burlap drag finish, a broom finish or a belt finish. Unless otherwise shown on the plans, the pavement surface shall be finished with the burlap drag.

303.5.6.1.1. BURLAP DRAG FINISH



If the surface texture is to be a drag finish, a drag shall be used; it shall consist of a seamless strip of damp burlap or cotton fabric, and it shall produce a uniform surface of gritty texture after dragging it longitudinally along the full width of pavement. For pavement 16-feet or more in width, the drag shall be mounted on a bridge which travels on the forms. The diameter of the drag shall be such that a strip of burlap or fabric at least three (3) feet wide is in contact with the full width of pavement surface while the drag is used. The drag shall consist of not less than two layers of burlap with the bottom layer approximately six (6) inches wider than the upper layer. The drag shall be maintained in such a condition that the resultant surface is of uniform appearance and reasonably free from gravels over 1/16-inch in depth. Drags shall be maintained clean and free from encrusted mortar. Drags that cannot be cleaned shall be discarded and new drags substituted.

303.5.6.1.2. BROOM FINISH

If the surface texture is to be broom finished, it shall be applied when the water sheen has practically disappeared. The broom shall be drawn from the center to the edge of the pavement with adjacent strokes slightly overlapping. The broom operation shall be so executed that the corrugation produced in the surface shall be uniform in appearance and not more than 1/16-inch in depth. Brooming shall be completed before the concrete is in such condition that the surface will be torn or unduly roughened by the operation. The surface thus finished shall be free from rough and porous areas, irregularities, and depressions resulting from improper handling of the broom. Brooms shall be of the quality, size, and construction and shall be operated to produce a surface finish meeting the approval of the Owner. Subject to the approval of the Owner, the Contractor may be permitted to substitute mechanical brooming in lieu of the manual brooming as herein described.

303.5.6.1.3. BELT FINISH

If the surface texture is to be belt finish, when straightedging is completed and after sheen has practically disappeared and just before the concrete becomes non-plastic, the surface shall be belted with a two (2) ply canvas belt not less than eight (8) inches wide and at least three (3) feet longer than the pavement width. Hand belts shall have suitable handles to permit controlled, uniform manipulation. The belt shall be operated with short strokes transverse to the centerline and with a rapid advance parallel to the centerline.

303.5.6.2. HAND FINISHING

Hand finishing of concrete pavement will be permitted in areas where it is not practical or possible to construct with finishing machines. These areas include, but are not limited to, intersections, left turn lanes, crossovers, transition areas and where the pavement width is not uniform. In all hand finished areas, one-half (1/2) extra sack of cement per cubic yard of concrete shall be used in the mix. In hand finished areas, the concrete shall be struck off with an approved strike-off screed to such elevation that when consolidated and finished the surface of the pavement shall conform to the required section and grade. The strike template shall be moved forward with a combined transverse and longitudinal motion in the direction the work is progressing, maintaining a slight excess of material in front of the cutting edge. The concrete shall then be tamped with an approved tamping template to compact the concrete thoroughly and eliminate surface voids and the surface screeded to required section. After completion of a strike-off, consolidation and transverse screeding, a hand-operated longitudinal float shall be operated to test and level the surface to the required grade.



Workmen shall operate the float from approved bridges riding on the forms and spanning the pavement. The longitudinal float shall be held in contact with the surface and parallel to the centerline and operated with short longitudinal strokes while being passed from one side of the pavement to the other. If contact with the pavement is not made at all points, additional concrete shall be placed, if required, and screeded, and the float shall be used to produce a satisfactory surface. Care shall be exercised to keep the ends of the float from digging into the surface of the pavement. After a section has been smoothed so that the float maintains contact with the surface at all points in being passed from one side to the other, the bridges may be moved forward half the length of the float and the operation repeated. Other operations and surfaces tests shall be as required for machine finishing.

303.5.6.3. EDGING AT FORMS AND JOINTS

After the final finish, but before the concrete has taken its initial set, the edges of the pavement along each side of each slab, and on each side of transverse expansion joints, formed joints, transverse construction joints, and emergency construction joints shall be worked with an approved tool and rounded to the radius required by the plans. A well-defined and continuous radius shall be produced and a smooth, dense mortar finish obtained. The surface of the slab shall not be unduly disturbed by tilting of the tool during use.

At all joints, any tool marks appearing on the slab adjacent to the joints shall be eliminated by brooming the surface. In doing this, the rounding of the edge shall not be disturbed. All concrete on top of the joint filler shall be completely removed.

All joints shall be tested with a straightedge before the concrete has set, and correction shall be made if one side of the joint is higher than the other or if they are higher or lower than the adjacent slabs.

303.8 PAVEMENT TESTING AND ELEVATION

303.8.2. PAVEMENT THICKNESS TEST

DELETE IN ITS ENTIRETY AND SUBSTITUTE THEREFORE THE FOLLOWING:

Upon completion of the work and before final acceptance and final payment shall be made, pavement thickness tests shall be made by the Contractor. Tests shall be made at 400-foot spacings along the length of the pavement. In the event a deficiency in the thickness of pavement is revealed, two (2) subsequent sets necessary to isolate the deficiency shall be made - one at a jointed section prior to the deficient station and one at a jointed section following the deficient station. Additional tests shall be obtained as necessary, at jointed section intervals to isolate the deficient area. Removal and replacement of concrete shall extend to joint boundaries, the full width of pavement section. If the average thickness of pavement in a particular section is less than called for on the plans, the pavement section shall be removed and replaced with the correct thickness, extending to joint boundaries, the full width of the pavement section, at the Contractor's entire expense. No additional payment over the contract unit price shall be made for any pavement of a thickness exceeding that required on the plans.

303.8.3. PAVEMENT STRENGTH TEST

303.8.3.1 FOR STANDARD CLASSES OF CONCRETE

REVISE THE FIRST PARAGRAPH TO READ:

During the progress of the work, the Inspector or a commercial laboratory shall cast test cylinders or beams to maintain a check on the strengths of the concrete being placed. Add the following sentence and table: A table titled "PAVEMENT STRENGTH REQUIREMENTS", is provided showing the required pavement thickness, seven (7) day strength, fourteen (14) day strength, 2-28-day strength (no averaging), minimum cement factor and maximum slump for each street type to be constructed in Rockwall.



ADD TO THE 5TH PARAGRAPH:

Test cores shall be obtained within ten (10) working days after the 28-day test results have been provided by the commercial laboratory. All test cores shall be obtained by a commercial laboratory, at the Contractors expense. One (1) core shall be obtained in the immediate area of the deficiency and two (2) additional cores shall be obtained - one at a jointed section prior to the deficient station and one at a jointed section following the deficient station. Additional cores shall be obtained as necessary, at jointed section intervals to isolate the deficient area. Removal and replacement of concrete shall extend to joint boundaries, the full width of pavement section.

AMEND THE SECOND SENTENCE OF THE 7TH PARAGRAPH TO READ:

"Pavement not meeting the minimum specified 28-day strength after cores have been tested shall be removed and replaced at the Contractor's expense."

DELETE THE TABLE 303.8.3.1(A) AND THE PARAGRAPH BELOW IT.

ADD THE FOLLOWING TABLE:

TABLE: PAVEMENT STRENGTH REQUIREMENTS

STREET/PAVEMENT TYPE	MINIMUM THICKNESS (INCHES)	STRENGTH 28-DAY (PSI)	MINIMUM CEMENT (SACKS / CY)		STEEL REINFORCEMENT		SLUMP (INCHES)
			MACHINE PLACED	HAND PLACED	BAR #	SPACING (O.C.E.W.)	
ARTERIAL ¹	10"	3,600	6.0	6.5	#4 BARS"	18"	3"-5"
COLLECTOR ¹	8"	3,600	6.0	6.5	#4 BARS	18"	3"-5"
RESIDENTIAL	6"	3,600	6.0	6.5	#3 BARS	24"	3"-5"
ALLEY	7"-5"-7"	3,600	6.0	6.5	#3 BARS	24"	3"-5"
FIRE LANE	6"	3,600	6.0	6.5	#3 BARS	24"	3"-5"
DRIVEWAYS	6"	3,600	6.0	6.5	#3 BARS	24"	3"-5"
DRIVEWAY APPROACHES WITHIN ROW			TO MATCH DESIGN OF STREET PAVEMENT TYPE CONNECTING INTO				
BARRIER FREE RAMPS	6"	3,600	N/A	6.5	#3 BARS	24"	3"-5"
SIDEWALKS	4"	3,000	N/A	5.5	#3 BARS	24"	3"-5"
TRAILS	6"	3,600	N/A	6.5	#3 BARS	24"	3"-5"
PARKING LOT/DRIVE AISLES	5"	3,000	5.0	5.5	#3 BARS	24"	3"-5"
DUMPSTER PADS	7"	3,600	6.0	6.5	#3 BARS	24"	3"-5"

NOTES:

¹: PAVING SECTION DESIGNS FOR ARTERIALS AND COLLECTORS SHALL BE BASED OFF 30-YEAR PROJECTED TRAFFIC VOLUMES AND GEOTECHNICAL ANALYSIS/REPORT (PAVING SECTION DESIGN SHALL INCLUDE BUT NOT LIMITED TO THE FOLLOWING: PAVEMENT THICKNESS, REINFORCING SIZE AND SPACING, PAVEMENT STRENGTH, SUBGRADE THICKNESS, SUBGRADE TREATMENT TYPE [LIME OR CEMENT]).

ITEM 304 PAVING UNITS

304.1. SOLID CONCRETE INTERLOCKING PAVING UNITS

304.1.2. MATERIALS

304.1.2.2. BASE

DELETE IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:



The base shall be constructed of 3,600 PSI reinforced concrete meeting the requirements of Item 303 of the Standard Specifications. #4 reinforcing bars shall be placed 18-inches on center, both ways, in all concrete.

304.1.3. CONSTRUCTION METHODS

304.1.3.3. CONSTRUCTION PROCEDURES

304.1.3.3.3 PAVING UNITS AND JOINTS

DELETE PARAGRAPH TWO IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

Joints between paving units shall have a spacing of $\frac{1}{8}$ -inch.

304.1.4. MEASUREMENT AND PAYMENT

DELETE IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

Interlocking Concrete Paving Stone shall be measured and paid for by the square foot of stone, sand and concrete base furnished and installed, which price shall include all labor, including excavation, materials, equipment, tools and incidentals necessary to complete the work. No separate payment shall be made for six (6) inch concrete base or washed sand. Payment for removal and disposal of existing concrete median pavement, if required, shall be made by the square foot. Payment shall include all labor, equipment, materials, tools, and incidentals necessary to complete the work.

ITEM 305. MISCELLANEOUS ROADWAY CONSTRUCTION

305.1. CONCRETE CURB AND GUTTER

305.1.3. CONSTRUCTION METHODS

305.1.3.2. REINFORCING STEEL

THE THIRD SENTENCE, FIRST PARAGRAPH SHALL BE REVISED TO READ:

All bars at splices shall be lapped a minimum of 30 diameters of the bar or 12-inches, whichever is greater.

305.2 CONCRETE SIDEWALKS, DRIVEWAY APPROACHES, AND BARRIER FREE RAMPS

305.2.2. MATERIALS

305.2.2.2. REINFORCEMENT

REVISE THE FIRST SENTENCE TO READ:

Driveway approaches and walk reinforcing shall be No. 3 bars on 24-inch centers.

305.2.3. CONSTRUCTION METHODS

305.2.3.1. GENERAL

ADD TO END OF FIRST PARAGRAPH:

The drive approach shall have a minimum thickness equal to the thickness of the adjacent street or six (6) inches, whichever is greater.

305.2.3.7. JOINTS

REVISE SECOND SENTENCE TO READ:

Expansion joints shall be placed in the sidewalk at 20-foot intervals or as otherwise specified by the Owner.

305.3. CONCRETE MEDIANS

DELETE IN ENTIRETY.

SECTION 7.04 | DIVISION 400. ROADWAY MAINTENANCE AND REHABILITATION

NOTE: THE (1) SYMBOL SPECIFIES THAT THIS ITEM IS ALSO COVERED IN THE CITY OF ROCKWALL'S "SPECIAL PROVISIONS" TO THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, NORTH CENTRAL TEXAS". THESE SPECIAL PROVISIONS ARE ADDITIONAL AND MODIFY THE "STANDARD SPECIFICATION"

TABLE 7.4: REVISIONS TO NCTCOG'S DIVISION 400 ROADWAY MAINTENANCE AND REHABILITATION

REVISED	STANDARD SPECIFICATION ITEM NO.	DESCRIPTION
	401	CRACK SEALING
	401.1	GENERAL
	401.2	MATERIALS
	401.3	METHODS
	401.	MEASUREMENT AND PAYMENT
	402	PAVEMENT CUT, EXCAVATION AND REPAIR
	402.1	GENERAL REQUIREMENTS
	402.2	MINIMUM SIZE OF REPAIR
(1)	402.3	SAWING
	402.4	REPLACING PAVED SURFACES
	403	ASPHALTIC PAVEMENT REPAIR
	403.1	DESCRIPTION
	403.2	MATERIALS AND MIXING
	403.3	METHODS
	403.4	MEASUREMENT AND PAYMENT
	404	SURFACE TREATMENT
	404.1	DESCRIPTION
	404.2	GENERAL
	404.3	SLURRY SEALS AND MICRO-(RE)SURFACING
	404.4	BITUMINOUS SURFACE TREATMENT (CHIP SEAL)
	405	ULTRA THIN CONCRETE PAVING (WHITETOPPING)
	405.1	DESCRIPTION
	405.2	MATERIALS
	405.3	CONSTRUCTION METHODS
	405.4	MEASUREMENTS
	405.5	PAYMENT

ITEM 402 PAVEMENT CUT, EXCAVATION AND REPAIR

402.3 SAWING



402.3.2. EQUIPMENT

REVISE SECOND PARAGRAPH TO READ:

Saw blades shall make a clean, smooth cut, producing a groove a minimum of $\frac{3}{8}$ -inch wide and to the full depth required by these specifications or as shown on the plans.

SECTION 7.05 | DIVISION 500. UNDERGROUND CONSTRUCTION AND APPURTENANCES

NOTE: THE (1) SYMBOL SPECIFIES THAT THIS ITEM IS ALSO COVERED IN THE CITY OF ROCKWALL'S "SPECIAL PROVISIONS" TO THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, NORTH CENTRAL TEXAS". THESE SPECIAL PROVISIONS ARE ADDITIONAL AND MODIFY THE "STANDARD SPECIFICATION"

TABLE 7.5: REVISIONS TO NCTCOG'S DIVISION 500 UNDERGROUND CONSTRUCTION AND APPURTENANCES

REVISED	STANDARD SPECIFICATION ITEM NO.	DESCRIPTION
	501	UNDERGROUND CONDUIT MATERIALS
	501.1	GENERAL
	501.2	CLAY WASTEWATER PIPE
	501.3	VITRIFIED CLAY PIPE FOR MICRO-TUNNELING, SLIP-LINING, PIPE BURSTING AND TUNNELS
(1)	501.4	CONCRETE PRESSURE PIPE AND FITTINGS
(1)	501.5	REINFORCED CONCRETE WASTEWATER PIPE WITH RUBBER GASKET JOINTS
	501.6	REINFORCED CONCRETE CULVERT, STORM DRAIN, PIPE AND BOX SECTION
(1)	501.7	DUCTILE-IRON PRESSURE PIPE AND FITTINGS
	501.8	DUCTILE-IRON PIPE FOR PIPE REHABILITATION
(1)	501.9	STEEL PIPE AND FITTINGS
	501.10	SEAMLESS COPPER TUBING
	501.11	CORRUGATED METAL PIPE OR ARCH SHAPES
	501.12	STRUCTURAL PLATE STRUCTURES
	501.13	TUNNEL LINER PLATES
(1)	501.14	POLYVINYL CHLORIDE (PVC) WATER PIPE
	501.15	POLYVINYL CHLORIDE (PVC) PRESSURE-RATED (SDR SERIES)
	501.16	MOLECULARLY ORIENTED POLYVINYL CHLORIDE (PVCO) WATER PIPE
	501.17	POLYVINYL CHLORIDE (PVC) WASTEWATER PIPE & FITTINGS WITH DIMENSION CONTROL
	501.18	POLYVINYL CHLORIDE (PVC) PROFILE GRAVITY WASTEWATER PIPE AND FITTINGS-FOR DIRECT BURY AND SLIP-LINING APPLICATIONS
	501.19	PVC COMPOSITE PIPE FOR WASTEWATER CONDUITS
	501.20	POLYVINYL CHLORIDE (PVC) CORRUGATED STORM WATER PIPE WITH SMOOTH INTERIOR AND FITTINGS
	501.21	SOLID WALL POLYETHYLENE PLASTIC PIPE FOR WATER, WASTEWATER AND PIPE REHABILITATION
	501.22	POLYETHYLENE (PE) LARGE DIAMETER WASTEWATER PIPE WITH MODIFIED WALL PROFILES AND PERFORMANCE STANDARDS
	501.23	POLYETHYLENE (PE) CORRUGATED DRAINAGE TUBING AND CORRUGATED SMOOTH LINED STORM WATER PIPE AND FITTINGS
	501.24	FIBERGLASS (GLASS-FIBER-REINFORCED THERMOSETTING-RESIN) WASTEWATER PIPE
	501.25	FIBERGLASS (GLASS-FIBER-REINFORCED THERMOSETTING-RESIN) WATER PIPE
	502	APPURTENANCES
(1)	502.1	MANHOLES
	502.2	WASTEWATER MAIN CLEANOUTS
(1)	502.3	FIRE HYDRANTS
	502.4	THRUST RESTRAINT
(1)	502.5	FITTINGS
(1)	502.6	VALVES
	502.7	PERFORMED FLEXIBLE CONDUIT JOINT SEALANT



	502.8	POLYETHYLENE WRAP FOR METAL PIPE FITTINGS
	502.9	CORROSION-RESISTANT COATINGS AND LINERS FOR WASTEWATER CONDUIT AND APPURTENANCES
	502.10	CONNECTIONS TO CONDUIT FOR SERVICE
	502.11	MISCELLANEOUS CONDUIT CONNECTIONS
	502.12	STRUCTURES
	503	TRENCHLESS INSTALLATION
	503.1	CONDUIT MATERIALS
	503.2	TUNNEL/CHASING PIPE SPACERS
	503.3	METHODS OF JACKING, BORING OR TUNNELING
	503.4	MEASUREMENT AND PAYMENT
	504	OPEN CUT - BACKFILL
	504.1	GENERAL
(1)	504.2	MATERIALS
(1)	504.3	EXCAVATION AND FOUNDATION
(1)	504.4	BACKFILL-GENERAL REQUIREMENTS
(1)	504.5	EMBEDMENT
(1)	504.6	FINAL BACKFILL
	504.7	MEASUREMENT AND PAYMENT OF BACKFILL
	505	OPEN CUT – GENERAL CONDUIT INSTALLATION
	505.1	GENERAL
	505.2	GENERAL INSTALLATION REQUIREMENTS FOR PIPE TYPES
	506	OPEN CUT – WATER CONDUIT INSTALLATION
	506.1	DESCRIPTION
	506.2	MATERIALS
(1)	506.3	LAYING WATER CONDUIT
	506.4	PIPE JOINTS
(1)	506.5	HYDROSTATIC TEST
	506.6	CONNECTIONS TO EXISTING WATER CONDUITS
	506.7	PURGING AND DISINFECTION OF WATER CONDUITS
	506.8	PLUGS
	506.9	MEASUREMENTS AND PAYMENTS
	507	OPEN CUT- WASTEWATER CONDUIT INSTALLATION
	507.1	DESCRIPTION
	507.2	MATERIALS
	507.3	LAYING WASTEWATER CONDUIT
	507.4	WASTEWATER CONDUIT JOINTS
(1)	507.5	TEST AND INSPECTIONS
	507.6	MEASUREMENT AND PAYMENT FOR WASTEWATER CONDUIT INSTALLATION
	508	OPEN CUT – STORM WATER CONDUIT INSTALLATION
	508.1	DESCRIPTION
	508.2	GENERAL
	508.3	REINFORCED CONCRETE PIPE FOR STORM WATER
	508.4	CORRUGATED METAL PIPE
	508.5	STRUCTURAL PLATE CONDUIT
	508.6	MEASUREMENT AND PAYMENT FOR STROM WATER CONDUIT INSTALLATION
(1)	508.7	STORM SEWER CONDUIT INSPECTION
	509	CROSSINGS
	509.1	GENERAL



	509.2	STATE HIGHWAY CROSSINGS
	509.3	STREET AND ALLEY CROSSINGS
	509.4	RAILROAD CROSSING
(1)	509.5	CREEK AND RIVER CROSSINGS
	509.6	MEASUREMENT AND PAYMENT OF CROSSINGS

ITEM 501. UNDERGROUND CONDUIT MATERIALS

501.4 CONCRETE PRESSURE PIPE AND FITTINGS

ADD THE FOLLOWING:

C302 Reinforced Concrete Pressure Pipe, Non-Cylinder Type, for Water and Other Liquids, and C300 Reinforced Concrete Pressure Pipe, Steel Cylinder Type, for Water and Other Liquids are not approved for use in the City, unless otherwise shown in the plans or approved in writing. Reinforced concrete cylinder pipe in sizes 16-inches through 21-inches shall be Bar-Wrapped Concrete Cylinder Pipe AWWA Type C303. For pipe 42-inches in diameter and above the pipe shall be Prestressed Concrete Pressure Pipe, Steel Cylinder Type, AWWA Type C301. Between 24-inches and 36-inches the pipe furnished may be either type. All pipe shall be designed to withstand the working pressure and external load as shown in the plans.

501.5 REINFORCED CONCRETE WASTEWATER PIPE WITH RUBBER GASKET JOINTS

501.5.1. GENERAL

ADD THE FOLLOWING:

All reinforced concrete pipe used in the sanitary sewer system shall conform to ASTM Designation C76 and shall be of the Thick Wall Pipe design with aggregates consisting of limestone aggregate in the proportion of at least 75 percent by weight of the total aggregates, unless otherwise provided in the *Special Conditions to the Specifications*.

501.7 DUCTILE-IRON PRESSURE PIPE AND FITTINGS

501.7.1. GENERAL

ADD THE FOLLOWING:

Minimum design thickness for all Ductile-Iron Pipe installed shall be Class 51 on sizes 12-inches and smaller, and Class 52 on sizes 14-inches and larger.

501.9 STEEL PIPE AND FITTINGS

501.9.3. PIPE AND FITTING REQUIREMENTS

SUBSTITUTE THE SECOND TO LAST SENTENCE WITH THE FOLLOWING:

All steel pipe to be furnished for this project shall be designed in accordance with AWWA M11 for the most critical application of internal pressures and external loads. The following design conditions shall apply:

Internal Pressure (Design to account for working and surge together)

- (1) Working Pressure of 200 PSI
- (2) Surge allowance of 250 PSI

External Loading for Buried Pipe



- (1) External loads shall be comprised of the weight of the backfill together with live and impact loads. Earth loads shall be calculated based on ditch and positive projecting conduit. The earth load for the pipe design shall be the greater of the above two conditions.
- (2) External live loads shall be at least equivalent to AASHTO HS-20 loading.
- (3) Modulus of soil reaction (E') < 1000 PSI
- (4) Unit weight of fill (w) > 120 PCF
- (5) Deflection lag factor (D1) (1.0)
- (6) Bedding constant (K) = 0.100
- (7) $hw = h$ = depth of cover above top of pipe
- (8) Maximum deflection in percent of pipe diameter shall be as determined by AWWA M11, latest edition, as calculated using moment of inertia of steel cross section of pipe wall. Moment of inertia of cement mortar shall not be included in calculation of maximum deflection.

Available Deflections

Mortar-lined and coated = two (2) percent of pipe diameter

Maximum Working Stress

The maximum combined stress based on working pressure shall be no greater than 50 percent of the minimum yield strength or 18,000 PSI, whichever is less.

The maximum combined stress based on test pressure shall be no greater than 75 percent of the minimum yield strength or 24,000 PSI, whichever is less.

501.9.4. JOINTS

ADD THE FOLLOWING:

In general, pipe joints shall be as follows, as indicated on the Drawings or as specified.

- (1) Flanged joints shall be provided as a minimum at all flanged valves, meters and other equipment.
 - (a) Flanges. Unless otherwise noted, flanges shall conform to the requirements of AWWA C207, Table D, E or F as required.
 - (b) Flange Bolts and Nuts. Shall be furnished in size and numbers stipulated in AWWA C207. Unless otherwise indicated, bolts shall be carbon steel to meet the requirements of ASTM Designation A307, Grade B for regular joints.
- (2) Restrained Lap-Welded slip joints (expanded bell) with a single fillet weld.
- (3) Carnegie-Shape Rubber Gasket Joint. Bell and spigot rubber gasket joint will be furnished with the bell end of the pipe mechanically expanded to the required internal diameter and the spigot end furnished as a sized Carnegie shape welded to the opposite end of the pipe. The expanded bell and Carnegie spigot shall be designed such that when the pipe is laid and jointed, it will be self-centered, and the O-ring rubber gasket will be enclosed tightly on all four sides and confined under compression adequate to ensure water tightness. Gaskets to be full-face for use with flat face flanges and ring type for use with raised face flanges. Gasket material for water service pipe shall be cloth inserted rubber sheet, 1/8-inch thick or red rubber, ASTM D1330, Grade 1. Gasket material for air piping shall be as above, but of EPDM.
- (4) Mechanical Couplings. Mechanical couplings designed to provide a stress relieving flexible joint shall consist of a cylindrical sleeve, two gaskets, two follower rings and a set of bolts and nuts.
 - (a) Sleeves. Manufactured of ASTM A53 steel for sizes ten (10) inches and smaller. ASTM A36 steel for sizes 12-inches and larger. Minimum sleeve length shall be five inches for pipe 12-inches and smaller, seven (7) inches for pipe 14-inches through 24-inches, and ten (10) inches for pipe larger than 24-inches.



- (b) Follower Rings. Ductile Iron ASTM A536 or AISI C1020 Steel.
- (c) Bolts and Nuts. High strength low alloy steel with heavy semi-finished hexagon nuts.
- (d) Gaskets. Shall be of synthetic rubber suitable for operating conditions.
- (e) Shop Finish. Manufacturer's standard unless otherwise noted.
- (f) Manufacturer. Baker 200, Dresser Style 39, Rockwell Series 411 or approved equal.

501.14 POLYVINYL CHLORINE (PVC) WATER PIPE

ADD THE FOLLOWING:

All PVC water pipelines shall be AWWA C900-16 PVC Pipe (blue in color), DR 14 (PC 305) for pipeline sizes 12-inch and smaller, and DR 18 (PC 235) for 14-inch and larger water pipelines. All PVC water pipe shall be extruded PVC pipe of the rubber gasket type joint and shall be furnished in 20-foot nominal laying lengths.

All fittings shall be ductile-iron of bell and spigot or mechanical joint, Class 250, in accordance with AWWA Specification C 110, C 111 or C 153 (Compact), and shall be tar coated on the outside surface and shall have an interior cement lining with seal coat per AWWA Specification C104, unless otherwise shown in the plans.

ITEM 502. APPURTENANCES

502.1 MANHOLES

502.1.1. MANHOLE MATERIALS

502.1.1.1. PRECAST REINFORCED MANHOLE SECTIONS

502.1.1.1.1. JOINTS

ADD THE FOLLOWING:

All sanitary sewer manholes installed in the City of Rockwall, shall have "O" ring joints conforming with ASTM Designation C443

502.1.4. MANHOLE CONSTRUCTION

502.1.4.1. MANHOLE TYPES AND REQUIREMENTS

502.1.4.1.1. CAST-IN-PLACE CONCRETE MANHOLES

ADD THE FOLLOWING:

502.1.4.1.1.1. FORMS

Manholes shall be constructed in place in accordance with the details shown in the plans and using forms as market by Improved Construction Methods, Inc., Jacksonville, Arkansas or Symons Corp., DePlaines, Illinois, or an approved equal.

502.1.4.1.1.2. BASE

The base shall be cast monolithically with the rest of the manhole. The invert and flow channel shall be formed during or immediately after the placing of the concrete and trowel-finished as soon as the

concrete has set sufficiently. The concrete must set for 24 hours before any pipe inside the manhole is trimmed. Concrete shall be minimum 4200 PSI.

The base concrete shall be 4200 PSI, maximum slump four (4) inches vibrated or tamped on undisturbed bearing. The base shall have a minimum diameter or width of at least one (1) foot greater than the outside diameter of the manhole, and a minimum thickness including the area under the pipe as follows:

0- FEET TO 12- FEET MANHOLE	12- INCH
12- FEET TO 20- FEET MANHOLE	15- INCH
20- FEET AND ABOVE	18- INCH

502.1.4.1.1.3. INVERT

All invert channels shall be smooth and accurately shaped to a semi-circular bottom conforming to the inside of the adjacent sewer section. Inverts shall be formed directly in the concrete of the manhole base or may be constructed by laying full section sewer pipe through the manhole and breaking out the top half after the base is constructed. Inverts shall extend up at least half of the diameter of the pipe. Changes in the direction of the sewer and entering branches shall have a true curve of as large a radius as the size of the manhole will permit. Where the pipe is laid through the manhole, the invert shall be finished to ¼--inch below the center of the pipe. The pipe shall be trimmed down to ¼-inch below the surface of the invert, and the edges of the pipe along the invert and at the walls of the manhole shall be plastered and brush-finished. Plaster shall be two (2) parts of masonry sand to one (1) part of Portland cement, or an approved non-shrink grout.

502.1.4.1.1.4. MANHOLE BARREL SECTION

The vertical forms, wall spaces, and placing cone must be carefully positioned and firmly clamped in place before any placement is made. The wall spacers must be located 90 degrees from each other. The manhole shall be cast of 4200 PSI concrete with a maximum slump of four (4) inches. The first placement shall consist of approximately ½ yard of concrete evenly around the walls and vibrated until there is a minimum slump of 60 degrees from the bottom of the forms to the bearing surface both inside and outside of the manhole. When this is complete and before additional concrete is added, the concrete must be carefully vibrated on each side of each pipe. Additional concrete must be deposited in evenly distributed layers of about 18-inches with each layer vibrated to bond it to the preceding layer. The wall spacers must be raised as the placements are made with the area from which the spacer is withdrawn being carefully vibrated. Excessive vibration is to be avoided. A maximum of two (2) percent calcium chloride may be added to the concrete, at the Contractor's option, to speed the set. The forms may be removed as soon as the concrete has sufficiently set (*approximately two [2] hours after placement depending on field conditions*).



Form marks and offsets up to one (1) inch will be permitted on the outside surface of the manhole. Form marks and offsets up to ½-inch will be permitted inside the manhole. All offsets on the inside surface of the manhole will be smoothed and plastered so there is no projection or irregularity capable of scratching a worker or catching and holding water or solid materials. Honeycomb will be plastered with a mortar consisting of three (3) parts of masonry sand and one (1) part Portland cement upon removal of the forms. Manholes deemed to be structurally unsound shall be replaced.

502.1.4.1.1.5. BACKFILLING

Will be performed evenly and carefully around the manhole 24-hours or more after the placement of concrete is completed and shall conform to these specifications.

502.1.4.1.1.6. COLD JOINTS

Should circumstances make a cold joint necessary, a formed groove or reinforcing dowels will be required in the top of the first placement for shear protection. Immediately before the second placement is made, the surface of the cold joint shall be thoroughly cleaned and wetted with a 1½-inch layer of mortar (*two [2] parts sand and one [1] part cement*) being deposited on the surface. Cold joints below the natural water table or in the bottom four (4) feet of the manhole shall include an approved waterstop material. Waterstops shall be heavy duty polyvinyl conforming to Corps of Engineers Specification CRD-572, latest edition, as manufactured by Serviced Products Division of W.R. Grace and Co.; B.F. Goodrich Company; Electrovert, Inc.; W.R. Meadows, Inc.; or approved equal.

502.3 FIRE HYDRANTS

502.3.1. MATERIALS

DELETE ALL PARTS OF ITEM 502.3.1 IN ITS ENTIRETY EXCEPT SUB ITEMS 502.3.1.3, 502.3.1.4., 502.3.1.10, AND 502.3.1.14.

ADD THE FOLLOWING:

All fire hydrants furnished shall conform strictly with the latest specification C-502 of the American Water Works Association Standards for dry barrel fire hydrants and must comply with the following supplementary details and changes or addition.

- (a) Inlet Connection. Unless otherwise specified, the inlet connection shall be a six (6) inch standard mechanical joint complete with all joint accessories. The inlet shoe shall be cast of the same or stronger metal than the lower barrel to prevent impact damage of the shoe. The interior of the shoe, including the lower valve plate and/or cap nut shall have a protective epoxy coating of at least four (4) mils applied in the shop. If a cap nut is utilized it must be locked in place with a stainless-steel lock washer or similar non-corrosive device and all machined surfaces must be protected from water intrusion to prevent corrosion and assure ease of field teardown or maintenance.
- (b) Main Valve. The main valve shall be reversible compression type, closing with the pressure and shall be not less than 5¼-inch in diameter. Composition of the main valve shall be molded rubber or neoprene having a



durometer hardness of 90 + 5 and shall be not less than one (1) inch thick to protect against hydrant chatter and give long term durability.

- (c) Outlet Nozzles. All hydrants shall be "three way", equipped with two hose nozzles and one pumper nozzle.
- (d) Diameter Outlet Nozzles. The hydrant shall have two hose nozzles, 2½-inches nominal I.D., and one pumper nozzle 4½-inches nominal I.D. with Natural Standard Hose Threads.
- (e) Nozzle Attachment. All nozzles shall be mechanically connected into the barrel and have "O" Ring pressure seals to provide a positive seal between nozzles and hydrant barrel. A suitable nozzle lock shall be provided and shall be stainless-steel or bronze. Nozzles shall not be caulked in. Nozzle caps shall be furnished with pentagon nut the same size as the operating nut. They shall be furnished with interior rubber gaskets that will seat against bronze nozzles. All caps shall be secured to hydrant barrel by heavy duty non-kinking chains with a chain loop on each cap that permits free turning of the cap, for speed and ease of removal by fire fighters.
- (f) Operating Nut. The operating nut shall be non-rising, pentagonal shape, measuring 1¼-inch at the top and 1½-inch at the base from point to flat. Pentagon shall have a depth of at least 1¼-inch. The hydrant shall be constructed in such a manner that the operating nut, "O" Rings and washers can be removed and replaced without removing the bonnet. All bearing surfaces of the operating nut shall be bronze.
- (g) Holddown Nut. Holddown nut must have integral weather seal. Resilient seal between holddown nut and operating nut shall prevent debris entry to protect operating nut from damage.
- (h) Lubrication Reservoir. The hydrant shall have a completely "O" Ring sealed oil reservoir with a minimum of two (2) "O" Ring pressure seals to prevent contamination of the oil around the operating parts of the hydrant. The oil reservoir shall be cast in such a manner that all operating parts shall be repairable without removal of the bonnet to facilitate repairs and shall be of a design that all bearing surfaces and threaded parts will be automatically lubricated upon each operation of the hydrant. If bearing surfaces are not lubricated, the design shall keep operating friction to a minimum. A high wear resistant thermoset plastic anti-friction washer shall be in place above the thrust collar to minimize operation torque and facilitate long term ease of operation. The operating threads must be sealed against contact with water to all times regardless of open or closed position of main valve. The hydrant shall have the capability of field personnel to visually check oil level and add additional oil if needed. Filler and inspection plug shall be recessed or flush type.
- (i) Traffic Feature. Hydrants shall be "traffic model" having upper and lower barrel joined approximately two (2) inches above the ground line by a breakable "swivel" flange providing 360-degree rotation of the upper barrel for nozzle positioning and must be capable of rotating barrel with line pressure on. The ground line shall not be less than 18-inches below the centerline of the lowest nozzle and shall be clearly marked in a permanent manner on the lower barrel. A breakable stainless-steel stem coupling shall join the two-piece stem adjacent to the ground line flange. Screws, clevis pins, fasteners or bolts used in the coupling shall be Series 300 stainless-steel. The weakened portion of the stem coupling shall be located to divert pressure from the stem coupling directly to the upper and lower stems when torque is applied in seat ring removal. Design of the coupling shall be such that when the coupling is broken, no part of the coupling will shatter or come loose and fall into hydrant and the break will not occur through the pins or bolts holding the coupling to the stem.
- (j) Drain Valve Assembly. Hydrants shall be equipped with two drain valves which drain the barrel when the hydrant is closed and seal shut when the hydrant is in the open position. The upper valve plate, seat ring and drain ring (*shoe bushing*) must be bronze and work in conjunction to form an all bronze drain way. Upper valve plate if not bronze, must be epoxy coated. The bronze seat ring shall be a minimum 5¼-inch inside diameter and shall thread into a bronze drain ring forming an all bronze drain way with two (2) drain outlets for double protection against drain clogging and corrosive damage. All bronze components shall have less than 16 percent zinc alloy, Grade A to give high corrosion resistance as recommended in *Section 2.1, Table I of American Water Works Association Standard C-502*. Seat ring seals shall be "O" Rings. Hydrant shall be designed so that during opening and closing operation(s), water pressure force flushes the drain valve and drain openings to prevent clogging, thus allowing barrel drainage.
- (k) Repair. All internal operating parts shall be removable from above ground level with a lightweight stem wrench.
- (l) Provisions for Extension. All hydrants shall be capable of being extended to accommodate future grade changes without excavation. Extension of the hydrant shall be made by adding at the groundline flange a new coupling and stem section equal to the length of the extension. This must facilitate easy field grade adjustment.

Stem extensions made by adding new section of stem to the threaded section of the stem at the top of the hydrant will not be accepted. Extension kits must be available from manufacturer in six (6) inch increments.

- (m) Pressure Loss and Working Pressure. Pressure loss through one (1), 4½-inch nozzle at 1,000 GPM shall not be more than five (5) PSI.
- (n) Nuts and Bolts. Body Bolts, studs and nuts shall be 316 stainless-steel.

ADD THE FOLLOWING:

502.3.4. PAINT AND PROTECTIVE COATINGS

All fire hydrants furnished under these specifications shall have paint and protective coatings applied at the factory or in the field as specified herein.

(a) Factory Coating.

All hydrants shall be cleaned at the factory by shot blasting and shall be painted above the groundline (*at the factory*) with two (2) coats of neutral orange rust-prohibitive primer which shall be compatible with the finished coating.

All continuously wetted ferrous metal surfaces in the hydrant shoe shall be protected with a two-part thermoset epoxy coating to a nominal thickness of four (4) mils of corrosion protection and shall be of a color that is easily identified as an epoxy coating. All other exposed exterior surfaces below ground level shall be coated with asphalt varnish as specified in *American Water Works Association Standard C-502, Section 4.2* or as otherwise outlined in these specifications. All remaining interior surfaces above the main valve, except machined surfaces such as the threaded portion of the operating stem or nut, shall be coated with asphalt varnish.

The thermoset epoxy coating shall be a two (2) part epoxy and shall function as a physical, chemical and electrical barrier between the base metal to which it is applied and the surroundings. The coating shall be non-toxic and shall not impart taste to water. The coating must be formulated from materials deemed acceptable per the *Food & Drug Administration Document Title 21 of the Federal Regulations of Food Additives, Section 121.2514 entitled Resins & Polymeric Coatings*. The coating shall have a satin finish and shall be suitable for field overcoating and touch-up with the same coating material without sanding or special surface preparation, or application of heat in excess of room temperatures.

(b) Field Coatings.

All hydrants shall be field painted at the time the Contractor is instructed by the Public Works Inspector and shall be painted above ground with two (2) coats of aluminum paint, Mobil 11-A-19 or Tnemec 2-color, Tnemec-Gloss or approved equal according to the following color schedule:

WATER MAIN SIZE	BONNET AND CAPS COLOR
6"	SILVER
8"	BLUE
10" & LARGER	YELLOW

ADD THE FOLLOWING:

502.3.5. EXPERIENCE AND CERTIFICATION

Fire hydrants, furnished under these specifications, shall be manufactured by a firm that has been producing hydrants of this general type continuously for the past five (5) years. Each company or manufacturer supplying hydrants under these specifications shall have on file, at the City of Rockwall, approved records of experience and detailed drawings of the proposed hydrants. Drawings shall cover the specific hydrant to be furnished for installation in the City and shall show all dimensions including metal thickness, construction details and materials used in all parts of the hydrant together with ASTM Designation and structural properties of these materials.

For ease of identification, all hydrants shall have "City of Rockwall, Texas" stenciled on the lower barrel. This stencil shall be applied at the factory. The manufacturer shall furnish to the City of Rockwall, a Certification that the fire hydrant complies with the specifications without any exceptions. This certification shall apply to specific hydrants being installed within the City water distribution system. The certification shall state [1] the number of hydrants covered by the certification, [2] the Addition where hydrants are being installed or the Project Name and [3] name of Contractor installing hydrants.

The City may require the Manufacturer, Supplier or Contractor to dismantle hydrants at any time to determine compliance with these specifications. Location of any hydrant within the City system, installed after adoption of these specifications, that does not meet the specifications completely shall be cause for prohibiting the future use of any hydrants from the same manufacturer.

502.5 FITTINGS

502.5.1. BRASS STOPS, COCKS AND FITTINGS FOR WATER WORKS SERVICE

ADD THE FOLLOWING:

502.5.1.2. PHYSICALS

All pressure holding components of brass stops or fittings shall be certifiably pressure tested before assembly as specified herein, including meter coupling tailpieces, flared nuts, compression nuts, etc.

502.5.1.3. DESIGN FEATURES OF STOP AND COCKS

The stem end of the key, prestaked key nut and the "D" washer shall be so designed that they turn in unison and if tightened to the failure point, the stem will not break causing the key to blow out.

Corporation, curb and angle stop bodies shall be of one (1) piece construction to provide optimum resistance to installation, operating and earth-load stresses. The operating head and checks of these stops shall be integrally cast with the plug or cap of the stop for maximum resistance to torque feature.

Angle valves shall have a lockwing and shall be "O" ring sealed at the top of the key to prevent leakage during operation and to act as a secondary protection against external top leakage. Meter swivel nuts shall be of the saddle nut construction to support the meter during installation. Inlet flare and compression parts for angle valves shall be field interchangeable on ¾-inch and one (1) inch sizes to make repairs easier and more economical.

502.5.1.4. DESIGN FEATURES OF FITTINGS

ADD THE FOLLOWING TO THE THIRD PARAGRAPH OF THIS ITEM:

Flare joints shall have curved metal to metal seating surfaces and flare nuts shall meet the following overall minimum length to insure that the flare nut will give adequate pipe support to this type of joint.

MINIMUM FLARE NUT	OVERALL LENGTH
¾-INCH	1½-INCH
1-INCH	2-INCH
1½-INCH	3-INCH
2-INCH	3½-INCH

Add the following to the sixth paragraph of this item:



All stops and fitting joints shall be of the compression type for copper pipe unless otherwise noted. Compression coupling nuts shall be designed to "bottom out" on a machined shoulder on the fitting to provide a visual check for proper assembly and eliminate field judgment errors of the installation. The coupling nut shall house the compression gasket in a smooth machined area and shall be internally coated with a fluorocarbon (Teflon) lubricant to prevent gasket damage and reduce installation torques. The compression gasket shall be a heavy armored gasket to provide electrical continuity through the fitting and prevent gasket cold flow and shall house a concave hardened stainless-steel overlapping gripper band that is automatically activated and set by shouldering out the fitting properly.

Minimum pullout (*or tensile strength*) required of these fittings after installation to protect against earthloads are as follows:

¾-INCH	2,000 LBS
1-INCH	3,000 LBS
1½-INCH	3,500 LBS
2-INCH	4,000 LBS

All outlet threads on compression connections shall be compatible with the City's present drilling and tapping machine equipment.

502.6 VALVES

502.6.1. METAL-SEATED GATE VALVES FOR ORDINARY WATER WORKS SERVICE

502.6.1.2. BONNET BOLTING

DELETE IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

Body Bolts, studs and nuts shall be 316 stainless-steel.

502.6.2. RESILIENT-SEATED GATE VALVES FOR ORDINARY WATER WORKS SERVICE

502.6.2.1. GENERAL DESCRIPTION

ADD THE FOLLOWING:

Unless otherwise approved in writing, all Gate Valves for direct buried service in the City's distribution system, six (6) inches through 12-inches in diameter, shall be Resilient Seated Gate Valves that conform strictly with the latest specification C-509 of the American Water Works Association Standards and must comply with the following supplementary details, changes or additions. Gate valves shall be iron body designed for a working pressure of 250 PSI. All valves shall be hydrostatically tested at 200 PSI and shell tested at 500 PSI. Any leakage during testing shall be cause for rejection. For ease of repair the body, bonnet and stuffing box shall be flanged together with ASTM Grade B bolts and nuts. Each valve shall have the maker's initials, pressure rating, and year in which manufactured cast in the body.

502.6.2.2. BONNET BOLTING

DELETE IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

Body Bolts, studs and nuts shall be 316 stainless-steel.

502.6.2.5. VALVE STEM AND NUTS

ADD THE FOLLOWING:



Stems shall be machined from manganese bronze rod with an integral forged thrust collar machined to size. The stems shall be non-rising and equipped for nut operation, which shall be opened by turning to the left. The seals shall consist of two "O" rings above and one "O" ring below the thrust collar. An anti-friction washer shall be located above and below the thrust collar for operating torque. The stem nut shall be ASTM B-62 bronze.

502.6.2.17. RESILIENT WEDGE

ADD THE FOLLOWING:

The wedge shall be cast iron, fully encapsulated in molded rubber complying with ASTM D2000. Wedge must have molded wedge guides preventing the disc from tilting downstream during operation. Protective guide cap bearings made of polymer bearing material to provide a bearing interface between the wedge guide and valve interior.

502.6.2.18. PAINT AND PROTECTIVE COATINGS:

ADD THE FOLLOWING:

All valves furnished under these specifications shall be painted on the exterior as specified in AWWA C-509 with asphalt varnish.

All ferrous metal surfaces in the internal part of the valve shall be protected with a fusion epoxy coating to a nominal thickness of ten (10) mils for corrosion protection and shall be of a color that is easily identified as an epoxy coating.

The proguard fusion epoxy coating shall fully comply with AWWA C550 and certified NSF 61. The coating shall be non-toxic and shall not impart taste to water. The coating must be formulated from materials deemed acceptable per the *Food & Drug Administration Document Title 21 of the Federal Regulations of Food Additives, Section 121.2514* entitled *Resins and Polymeric Coatings*. The coating shall have a satin finish and shall be suitable for field overcoating and touchup with the same coating material without sanding or special surface preparation, or application of heat in excess of room temperature.

502.6.2.19. EXPERIENCE AND CERTIFICATION

ADD THE FOLLOWING:

Valves, furnished under these specifications, shall be manufactured by a firm that has been producing valves of this general type continuously for the past five (5) years. Each company or manufacturer supplying valves under these specifications shall have on file, with the City of Rockwall, approved records of experience and detailed drawings of the proposed valves. Drawings shall cover the specific valve to be furnished for installation and shall show all dimensions including metal thickness, construction details and materials used in all parts of the valve together with ASTM Designation and Structural properties of these materials.

The manufacturer shall furnish to the City of Rockwall, a Certification that the valve complies with the specifications without any exceptions. This certification shall apply to specific valves being installed within the City water distribution system. The certification shall state [1] the number of valves covered by the certifications, [2] the Addition where valves are being installed or the Project Name, and [3] name of Contractor installing valves.

The City may require the Manufacturer, Supplier or Contractor to dismantle valves at any time to determine compliance with these specifications. Location of any valve within the City system, installed



after adoption of these specifications, that does not meet the specifications completely shall be cause for prohibiting the future use of any valves from the same manufacturer.

502.6.2.20. TAPPING SLEEVES

ADD THE FOLLOWING:

The materials for tapping sleeve bodies shall be, by City approval only, cast-iron or ductile-iron in accordance with AWWA Standard C110 (ANSI 21.10), in two sections, or halves to be bolted together with high-strength, corrosion resistant, low alloy steel bolts conforming to AWWA Standard C111 (ANSI 21.11).

Cast iron and ductile-iron sleeve shall be mechanical joint, or as specified, or dimensions to secure proper fit on the type and class of pipe on which they are to be used. Each sleeve shall be furnished with a $\frac{3}{8}$ -inch test opening so that tests can be made prior to tapping. Opening shall be provided with a $\frac{3}{8}$ -inch bronze plug.

502.6.5. BUTTERFLY VALVES

ADD THE FOLLOWING:

All Butterfly Valves for installation underground in the City's distribution system 16 inches through 48 inches shall be in accordance with this specification.

All butterfly valves furnished shall conform strictly with the latest specification C-504 of the American Water Works Association Standard for rubber-seated butterfly valves and must comply with the following supplementary details and changes or addition.

- (a) Body. The body shall be cast-iron ASTM A126, Class B and shall have face to face dimensions in accordance with AWWA Standards for short body, Class 150-B. All butterfly valves shall have a floating body seat ring to compensate for change in direction of flow to assure bottle-tight seal in either direction.
- (b) Shaft. Valve shafts shall be an 18-8, Type 316 stainless-steel. Valve disc and shaft shall be standard self-adjusting Chevron "V" type packing. Shaft seals shall be of a design allowing replacement without removing the valve shaft.
- (c) Disc and Seat. The valve disc shall be cast iron ASTM A126, Class B. The valve seat shall be Buna-N located on the valve body. Valves 20-inch and smaller shall have a bonded seat that meets test procedures in ASTM D429, Method B. Valves 24-inch and larger shall be retained in the valve body by mechanical means without the use of metal retainers or other devices located in the flow stream.
- (d) Operator. Butterfly valve operators shall be of the traveling nut design. All operators shall have adjustable mechanical stop limiting devices to prevent over travel of the disc. The operator shall have a mechanical stop which will withstand an input torque of 450-foot/LBS. against the stop. The traveling nut shall engage alignment grooves in the housing.
- (e) Operation. Unless otherwise shown in the plans, all valves shall open counter clockwise.
- (f) Valve Ends. Valve ends shall be Mechanical Joint End, or Flanged Ends. Mechanical joint valves shall come complete with bolts, nuts, gaskets and glands. It shall be the responsibility of the Contractor to coordinate the ends of the adjoining pipe with the type valve end he/she proposes to use.
- (g) Testing. All valves seats shall be tested at 150 PSI as described in AWWA C-504 and in addition shall have a shell test of 300 PSI. Any leakage shall be cause for rejection.
- (h) Paint and Protective Coatings. All butterfly valves furnished under these specifications shall be painted on exterior as specified in AWWA C-504, with asphalt varnish.

All ferrous metal surfaces in the internal part of the valve shall be protected with a two-part thermoset epoxy coating to a nominal thickness of 4 mils for corrosion protection and shall be of a color that is easily identified as an epoxy coating. This shall be applied in shop.



The thermoset epoxy coating shall be a two-part epoxy and shall function as a physical, chemical and electrical barrier between the base metal to which it is applied and the surroundings. The coating shall be non-toxic and shall not impart taste to water. The coating must be formulated from materials deemed acceptable per the *Food & Drug Administration Document Title 21 of the Federal Regulations of Food Additives, Section 121.2514* entitled *Resins & Polymeric Coatings*. The coating shall have a satin finish and shall be suitable for field overcoating and touchup with the same coating material without sanding or special surface preparation, or application of heat in excess of room temperatures.

- (i) *Experience and Certification*. Butterfly valves, furnished under these specifications, shall be manufactured by a firm that has been producing valves of this general type continuously for the past five (5) years. Each company or manufacturer supplying valves under these specifications shall have on file, at the City of Rockwall, approved records of experience and detailed drawings of the proposed valves. Drawings shall cover the specific valve to be furnished for installation in the City of Rockwall and shall show all dimensions including metal thickness, construction details and materials used in all parts of the valve together with ASTM Designation and structural properties of these materials.

The manufacturer shall furnish to the City, a Certification that the valve complies with the specifications without any exceptions. This certification shall apply to specific valve being installed with the City water distribution system. The certification shall state [1] the number of valves covered by the certification, [2] the Addition where valves are being installed or the Project Name and [3] name of Contractor installing valves.

The City may require the Manufacturer, Supplier or Contractor to dismantle valves at any time to determine compliance with these specifications. Location of any valve with the City system, installed after adoption of these specifications, that does not meet the specifications completely shall be cause for prohibiting the future use of any valves from the same manufacturer.

ITEM 504. OPEN CUT – BACKFILL

504.2 MATERIALS

504.2.2. PIPE BEDDING MATERIAL FOR STORM, WATER AND SANITARY SEWER MAINS

ADD THE FOLLOWING:

Unless otherwise indicated, storm sewer pipe shall be bedded with Class "C" bedding in accordance with the details shown on the plans.

504.2.2.1. CRUSHED STONE EMBEDMENT

ADD THE FOLLOWING:

Where stone is called out for pipe embedment, Standard Crushed Rock-Aggregate, Grade 4, shall be used unless otherwise approved in writing.

504.3. EXCAVATION AND FOUNDATION

ADD THE FOLLOWING:

504.3.1 EXCAVATION

ADD THE FOLLOWING:

Prior to start of excavation the Contractor shall remove and stockpile the Topsoil and protect the Topsoil from contamination during construction.

504.5 EMBEDMENT



ADD THE FOLLOWING:

Rock Cuttings will not be permitted in the pipe bedding for sanitary sewer or water lines in the City of Rockwall.

504.5.2. EMBEDMENT CLASSES

504.5.2.9. CLASS "C" EMBEDMENT

REPLACE THE LAST SENTENCE IN ITS ENTIRETY WITH THE FOLLOWING SENTENCE:

Density shall be at least 95 percent of maximum density, as determined by ASTM D698.

504.5.2.15. CLASS "H" EMBEDMENT

Class "H" Embedment shall be used on the PVC Sanitary Sewer Pipe installed within the City of Rockwall.

On PVC Pipe 18-inches through 27-inches in diameter the crushed stone shall be brought up in uniform layers to a point nine inches over the top of the pipe when compacted.

504.6. FINAL BACKFILL

ADD THE FOLLOWING:

After the trench has been refilled, topsoil shall be replaced to the extent that rock, excavated from the trench, will be completely covered and the area is returned to its original condition, except that in cultivated areas a minimum of 12-inches of top soil shall be replaced.

504.6.1. EXCAVATED MATERIAL

ADD THE FOLLOWING:

The material used in the backfill shall be pulverized to the extent necessary to produce a free-flowing material free of clay balls larger than 6-inch diameter.

ITEM 506. OPEN CUT - WATER CONDUIT INSTALLATION

506.3. LAYING WATER CONDUIT

ADD THE FOLLOWING:

Valves for installation in the City's distribution system shall be installed by direct burial as shown on the standard detail sheets and shall be provided with valve boxes for operation of the valve.

506.5 HYDROSTATIC TEST

DELETE FIRST PARAGRAPH AND TABLE AND REPLACE WITH:

All hydrostatic tests shall be maintained over a period of not less than four hours.

"Before being accepted, all ductile iron, C-900 PVC or concrete cylinder water mains shall be tested with a hydraulic test pressure of not less than four hours. Concrete pressure pipe shall be tested with a hydraulic test pressure of 120 percent of the design pressure. Steel pressure pipe shall be tested with a hydraulic test pressure not to exceed 150 percent and not less than 120 percent of the designed working pressure. The rate of leakage of all pipe tested shall not exceed the amounts shown in the

tables titled "Hydrostatic Test-C-900 PVC, Steel or Ductile Iron Water Mains" or "Hydrostatic Test-Concrete Cylinder Water Mains". Water lines of material in combination shall be tested for the type of pipe (material) with the least stringent hydraulic test pressure and maintained over a period of not less than four hours."

TABLE: HYDROSTATIC TEST (C900-16 PVC, STEEL OR DUCTILE-IRON WATER MAINS)

LF PIPE	GALLONS ALLOWED								
	PIPE DIAMETER								
	4"	6"	8"	10"	12"	14"	16"	18"	20"
5	0.016	0.024	0.032	0.039	0.047	0.055	0.063	0.071	0.079
10	0.032	0.047	0.063	0.079	0.095	0.110	0.126	0.142	0.158
20	0.063	0.095	0.126	0.158	0.189	0.221	0.253	0.284	0.316
30	0.095	0.142	0.189	0.237	0.284	0.331	0.379	0.426	0.473
40	0.126	0.189	0.253	0.316	0.379	0.442	0.505	0.568	0.631
50	0.158	0.239	0.316	0.395	0.473	0.552	0.631	0.710	0.789
60	0.189	0.284	0.379	0.473	0.568	0.663	0.758	0.852	0.947
70	0.221	0.331	0.442	0.552	0.663	0.773	0.884	0.994	1.105
80	0.253	0.379	0.505	0.631	0.756	0.884	1.010	1.136	1.263
90	0.284	0.426	0.568	0.710	0.852	0.994	1.136	1.278	1.420
100	0.316	0.473	0.631	0.789	0.947	1.105	1.263	1.420	1.578
200	0.631	0.947	1.263	1.578	1.894	2.210	2.525	2.841	3.157
300	0.947	1.420	1.894	2.367	2.841	3.314	3.788	4.261	4.735
400	1.263	1.894	2.525	3.157	3.788	4.419	5.051	5.682	6.313
500	1.578	2.367	3.157	3.946	4.735	5.524	6.313	7.102	7.891
600	1.894	2.841	3.788	4.735	5.682	6.629	7.576	8.523	9.470
700	2.210	3.314	4.419	5.524	6.629	7.734	8.838	9.943	11.048
800	2.525	3.788	5.051	6.313	7.576	8.838	10.101	11.364	12.626
900	2.841	4.261	5.682	7.102	8.523	9.943	11.364	12.784	14.205
1000	3.157	4.735	6.313	7.891	9.470	11.048	12.626	14.205	15.783

Maximum allowable water loss in 4 hours at 180 pounds per square inch of pressure for a rate of 25 gallons per inch diameter of pipe per mile over a 24-hour period

EQUATION THE ABOVE CHART IS BASED ON:

$$\text{Maximum Loss (Gal.)} = 25 \times \text{Diameter of Pipe (inches)} \times \frac{\text{L. F. of Pipe}}{5280 \text{ Pipe}} \times \frac{4}{24}$$

TABLE: HYDROSTATIC TEST (CONCRETE CYLINDER WATER MAINS)

LF PIPE	GALLONS ALLOWED								
	PIPE DIAMETER								
	4"	6"	8"	10"	12"	14"	16"	18"	20"
5	0.031	0.047	0.063	0.078	0.095	0.110	0.126	0.142	0.158
10	0.063	0.095	0.126	0.158	0.189	0.221	0.253	0.284	0.315
20	0.126	0.189	0.253	0.316	0.379	0.442	0.505	0.568	0.631
30	0.188	0.284	0.379	0.473	0.568	0.663	0.758	0.852	0.947
40	0.253	0.379	0.505	0.631	0.758	0.884	1.010	1.136	1.263
50	0.316	0.473	0.631	0.789	0.947	1.105	1.263	1.420	1.578
60	0.379	0.568	0.758	0.947	1.136	1.326	1.515	1.704	1.894
70	0.442	0.663	0.884	1.105	1.326	1.547	1.768	1.989	2.210



80	0.505	0.758	1.010	1.263	1.515	1.768	2.020	2.273	2.525
90	0.568	0.852	1.136	1.420	1.704	1.989	2.273	2.557	2.841
100	0.631	0.947	1.263	1.578	1.894	2.209	2.525	2.841	3.156
200	1.263	1.894	2.525	3.156	3.788	4.419	5.050	5.682	6.313
300	1.894	2.841	3.788	4.735	5.682	6.628	7.575	8.522	9.470
400	2.525	3.788	5.050	6.313	7.575	8.838	10.100	11.363	12.626
500	3.158	4.735	6.313	7.891	9.470	11.047	12.626	14.204	15.782
600	3.788	5.682	7.575	9.469	11.363	13.257	15.151	17.045	18.938
700	4.419	6.628	8.838	11.047	13.257	15.468	17.676	19.885	22.095
800	5.050	7.575	10.100	12.626	15.152	17.676	20.201	22.726	25.251
900	5.682	8.522	11.363	14.204	17.044	19.886	22.726	25.567	28.405
1000	6.313	9.469	12.626	15.782	18.939	22.096	25.253	28.408	31.564

Maximum allowable water loss in 4 hours at 180 pounds per square inch of pressure for a rate of 50 gallons per inch diameter of pipe per mile over a 24-hour period

EQUATION THE ABOVE CHART IS BASED ON:

$$\text{Maximum Loss (Gal.)} = 50 \times \text{Diameter of Pipe (inches)} \times \frac{\text{L.F. of Pipe}}{5280 \text{ Pipe}} \times \frac{4}{24}$$

ITEM 507. OPEN CUT – WASTEWATER CONDUIT INSTALLATION

507.5. TESTS AND INSPECTIONS

507.5.2. TELEVISION INSPECTION

ADD THE FOLLOWING TO THIS SECTION:

All sanitary sewer pipe construction in this contract shall be visually inspected by photographic means (television and video taped) prior to final acceptance by the Owner. No separate measurement or payment shall be provided for the video inspection. All labor, materials and equipment required are subsidiary to the appropriate bid items as established in the *Proposal and Bid Schedule*.

ITEM 508. OPEN CUT – STORM WATER CONDUIT INSTALLATION

ADD THE FOLLOWING:

508.8 INSPECTION

All storm sewers shall be visually inspected by photographic means (television and video taped), at Contractor's expense, prior to final acceptance by the City. Any sags, open joints, cracked pipes, etc. shall be repaired or removed by the Contractor at Contractor's expense. Pipes will be cleaned prior to televising the pipe. The contractor shall furnish a DVD formatted video to the City.

ITEM 509. CROSSINGS

509.5. CREEK AND RIVER CROSSINGS

ADD THE FOLLOWING:

509.5.1. AERIAL CROSSINGS



509.5.1.1. GENERAL

Piers for aerial crossings will be drilled piers and columns of the diameter shown on the plans. Piers shall be founded at least six (6) feet into firm gray limestone and eight (8) feet into undisturbed material, unless otherwise directed by the Owner.

Materials and workmanship required to construct piers and cap shall conform to Reinforced Concrete Structures, of the specifications. Concrete of piers shall be 4,200 PSI.

Anchor straps and bolts shall be installed as shown on the plans, and shall be hot dipped galvanized after fabrication.

After installing the aerial crossing, including the junction collars with the main sewer pipe, an approved coal tar mastic jointing compound shall be installed the full inside circumference of the pipe at each joint to produce a smooth surface with no sharp flow transitions.

509.5.1.2. STEEL PIPE

Steel pipe used of Aerial Crossings shall be of the diameter and wall thickness shown on the plans and shall be line pipe manufactured in accordance with the following specifications:

- (1) AWWA C200-75 Mill Type Steel Water Pipe, Grade B
- (2) ASTM A139, Grade B

Pipe shall be designed for a clear span as shown on the plans. Couplings shall be Dresser Type 38, or approved equal and shall be located as shown on the plans. Bolts shall be stainless-steel or galvanized.

The steel pipe sizes shown on the plans are the nominal diameters of the minimum size steel pipe which may be furnished and installed. Pipe of a larger size may be furnished at the Contractor's option, but no extra payment will be allowed. If larger pipe is utilized, it shall be set so as to retain the flow lines designated on the plans.

All steel pipe shall receive an interior shop-applied Liquid Epoxy Coating System in conformance with AWWA C-210, latest revision.

509.5.1.3. EXTERIOR PAINTING

Exterior painting for aerial crossings shall conform to Item 804.2.

All surface prepared in the field shall be inspected by the City of Rockwall for adequate surface preparation as defined above prior to application of paint coating. All surfaces to be painted in the field shall have their readiness for painting approved by the City of Rockwall before work is started.

Paint shall be applied to all ferrous material part of the aerial crossing including but not limited to pipe, couplings, straps, nuts, bolts, etc.

509.5.1.3.1. PAINTS

Paints for aerial crossings shall be:

- (1) TNEMEC Series 66, or Mobile 78 Series, or Koppers 200 HB, 5.0 mil dry film thickness each coat.
- (2) TNEMEC Series 66, or Mobile 78 Series, or Koppers 200 HB, 6.0 mil dry film thickness each coat.



Approved material of other manufacturers which are equivalent in all respects to the brands named above, may be substituted upon approval. All paint applied must be by the same manufacturer. The color on the final coat shall be selected by the City of Rockwall.

509.5.1.4. MEASUREMENT OF PAYMENT

Aerial crossings will be measured for payment per each between the limits shown on the plans and will be paid for at the lump sum bid price for each crossing in the Bid Schedule.

Concrete piers and collars to the elevations shown in the plans will be measured and paid for in the lump sum price for aerial crossings. Payment in vertical feet for additional depth of reinforced concrete piers as approved by the City of Rockwall, shall be as provided in the Proposal and Bid Schedule.

Payment of the unit or lump sum prices shall be full compensation for furnishing all labor, supervisions, materials, tools, equipment, and incidentals, and for performing all work necessary in construction the aerial crossings and piers, including excavation, dewatering, backfilling, disposal of surplus material, painting, testing, concrete encasement, hauling, transportation costs, disposal costs, salvaging, and any other work required in accordance with the Plans and Specifications.

SECTION 7.06 | DIVISION 600. CONDUIT AND APPURTENANCE REHABILITATION

NOTE: THE (1) SYMBOL SPECIFIES THAT THIS ITEM IS ALSO COVERED IN THE CITY OF ROCKWALL'S "SPECIAL PROVISIONS" TO THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, NORTH CENTRAL TEXAS". THESE SPECIAL PROVISIONS ARE ADDITIONAL AND MODIFY THE "STANDARD SPECIFICATION"

TABLE 7.6: REVISIONS TO NCTCOG'S DIVISION 600 CONDUIT AND APPURTENANCE REHABILITATION

REVISED	STANDARD SPECIFICATION ITEM NO.	DESCRIPTION
	601	PIPELINE REHABILITATION
	601.1	DESCRIPTION
	601.2	GENERAL
	601.3	GENERAL MATERIALS
	601.4	GENERAL METHODS
	601.5	SECTION HELD FOR FUTURE USE
	601.6	SECTION HELD FOR FUTURE USE
	601.7	CURED-IN-PLACE PIPE LINER (CIPP LINER)
	601.8	PIPE BURSTING WITH POLYETHYLENE
	601.9	PIPE BURSTING WITH RIGID PLACE
	601.10	POLYVINYL CHLORIDE (PVC) PROFILE GRAVITY LINER PIPE (SEGMENTAL SLIPLINING)
	601.11	MEASUREMENT AND PAYMENT
	602	REHABILITATION OF MANHOLES OR UNDERGROUND VAULTS
	602.1	GENERAL
	602.2	SUBMITTALS
	602.3	QUALITY ASSURANCE
	602.4	DELIVERY, STORAGE AND HANDLING
	602.5	REHABILITATION
	602.7	INSPECTION AND TESTING
	602.8	MEASUREMENT AND PAYMENT
	603	ABATEMENT OF COATINGS CONTAINING HEAVY METALS
	603.1	GENERAL
	603.2	JOB PLAN



603.3	TESTING
603.4	MONITORING
603.5	PROTECTION
603.6	LEAD-BASED COATING REMOVAL
603.7	LEAD-BASED COATING ENCAPSULATION
603.8	CLEAN-UP AND DISPOSAL
603.9	PAYMENT
604	REMOVAL OF ASBESTOS-CEMENT PIPE (ACP)
604.1	GENERAL
604.2	JOB PLAN
604.3	PROCEDURES
604.4	DISPOSAL
604.5	PAYMENT

SECTION 7.07 | DIVISION 700. STRUCTURES

NOTE: THE (1) SYMBOL SPECIFIES THAT THIS ITEM IS ALSO COVERED IN THE CITY OF ROCKWALL'S "SPECIAL PROVISIONS" TO THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, NORTH CENTRAL TEXAS". THESE SPECIAL PROVISIONS ARE ADDITIONAL AND MODIFY THE "STANDARD SPECIFICATION"

TABLE 7.7: REVISIONS TO NCTCOG'S DIVISION 700 STRUCTURES

REVISED	STANDARD SPECIFICATION ITEM NO.	DESCRIPTION
	701	GENERAL STRUCTURES
	701.1	STRUCTURAL WOOD PRODUCTS
	701.2	STRUCTURAL EXCAVATION
	701.3	STRUCTURAL BOLTING
	702	CONCRETE STRUCTURES
	702.1	DESCRIPTION
	702.2	CONCRETE STRUCTURE MATERIALS
(1)	702.3	MIX DESIGN AND MIXING CONCRETE FOR STRUCTURES
	702.4	MIX DESIGN AND MIXING LIGHTWEIGHT CONCRETE FOR STRUCTURES
	702.5	CONSTRUCTING CONCRETE STRUCTURES
	702.6	PRE-STRESSED CONCRETE FOR STRUCTURES
	702.7	PNEUMATICALLY PLACED CONCRETE (GUNITE)
	702.8	DRILLED SHAFT FOUNDATIONS
	702.9	PRE-CAST AND CAST-IN-PLACE CONCRETE UNITS
	703	STEEL STRUCTURES
	703.1	DESCRIPTION
	703.2	MATERIALS FOR STEAL STRUCTURES
	703.3	STEEL STRUCTURE CONSTRUCTION
	703.4	PAINTING METAL STRUCTURES
	703.5	MEASUREMENT AND PAYMENT
	704	PILING
	704.1	PILING MATERIALS
	704.2	DRIVING PILING
	704.3	PENETRATION
	704.4	BEARING RESISTANCE
	704.5	CONSTRUCTING CAST-IN-PLACE, PRE-STRESSED CONCRETE PILING
	704.6	MEASUREMENT AND PAYMENT

ITEM 702 CONCRETE STRUCTURES



702.3. MIX DESIGN AND MIXING CONCRETE FOR STRUCTURES

702.3.4. QUALITY OF CONCRETE

702.3.4.2. STANDARD CLASSES

ADD THE FOLLOWING:

Type "G" Concrete: Min.- Sacks Cement per C.Y. – 7.0; min. 28-day Comp. Strength - 5,000 PSI; Min. seven (7) day Strength 3600 PSI; Max. Water Cement Ratio - 5.0; Course Aggregate 1½-inch. No fly ash allowed.

SECTION 7.08 | DIVISION 800. MISCELLANEOUS CONSTRUCTION AND MATERIALS

NOTE: THE (1) SYMBOL SPECIFIES THAT THIS ITEM IS ALSO COVERED IN THE CITY OF ROCKWALL'S "SPECIAL PROVISIONS" TO THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, NORTH CENTRAL TEXAS". THESE SPECIAL PROVISIONS ARE ADDITIONAL AND MODIFY THE "STANDARD SPECIFICATION"

TABLE 7.8: REVISIONS TO NCTCOG'S DIVISION 800 MISCELLANEOUS CONSTRUCTION AND MATERIALS

REVISED	STANDARD SPECIFICATION ITEM NO.	DESCRIPTION
	801.	BARRIERS, WARNING & DEOUR SIGNS AND FENCES
	801.1.	BARRIERS AND WARNING AND DETOUR SIGNS
(1)	801.2.	METAL BEAM GUARD FENCE
	801.3.	RAILING
	801.4.	CHAIN LINK FENCE
(1)	801.5.	WIRE FENCE
	802.	STEPS AND RETAINING WALLS
	802.1.	CONCRETE STEPS
	802.2.	CONCRETE RETAINING WALLS
	802.3.	SEGMENTAL RETAINING WALL SYSTEMS
	802.4.	COFFERDAMS
	803.	SLOPE AND CHANNEL PROTECTION
	803.1.	ARTICULATING CONCRETE BLOCK
(1)	803.2.	GABION STRUCTURES
(1)	803.3.	RIPRAP
	803.4.	GEOTEXTILES USED IN DRAINAGE AND STABILIZATION APPLICATIONS
	804.	PAINTING AND OTHER PROTECTIVE TREATMENTS; PAVEMENT MARKING
	804.1.	DESCRIPTION
(2)	804.2.	PAINTING AND MARKING
	804.3.	GALVANIZING
	804.4.	MEASUREMENT AND PAYMENT
	804.5.	SPECIALTY COATINGS
	805.	ELECTRICAL COMPONENTS AND CONDUIT
	805.1.	DESCRIPTION
	805.2.	GENERAL REQUIREMENTS FOR ELECTRICAL COMPONENTS
(1)	805.3.	CONDUIT CONSTRUCTION METHODS
(1)	805.4.	MEASUREMENT AND PAYMENT
	806.	METALS MATERIALS
	806.1.	GENERAL
	806.2.	STRUCTURAL STEEL



806.3.	FORGINGS
806.4.	CASTINGS
806.5.	COPPER
806.6.	BOLTS, NUTS AND WASHERS
806.7.	MEASUREMENT AND PAYMENT

ITEM 801 BARRIERS, WARNING & DETOUR SIGNS, AND FENCES

801.1. BARRIERS AND WARNING AND DETOUR SIGNS

ADD THE FOLLOWING:

Reflectorized marking for guard rail and other traffic control used shall meet the requirements of 3M Scotchlite Brand Reflective Sheeting Grade, Series 2800, 3800 or 5800, or equal. The marking shall conform to U.S. Department of Transportation, Federal Highway Administration, STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS, 1979 FP-79, Type III A, Sections 633.36 and 718.01 and Federal Supply Service, General Services Administration, LS-300 C, SHEETING AND TAPE REFLECTIVE NON-EXPOSED LENS, Reflectivity 2, Class 4.

801.2. METAL BEAM GUARD FENCE

ADD THE FOLLOWING:

Reflectorized Marking shall be applied to metal beam guardrail at locations shown on the plans. To apply properly, the following equipment and accessories are recommended:

- (a) Heat Activated Adhesive
 - (1) Heat lamp vacuum applicator with temperature control.
 - (2) Remove protective liner from adhesive and place glossy side of liner over the sign face. Sheeting and liner may require perforation to aid in air evaluation.
- (b) Pressure Sensitive Adhesive
 - (1) 48-inch Interstate Squeeze Roll Applicator.
 - (2) Hand application. To obtain maximum initial adhesion use firm pressure with two (2) inch (*i.e. five [5] cm*) rubber roller or plastic squeeze. Multiple, heavy overlapping strokes should be used. Re-squeeze all edges.

801.5. WIRE FENCING

801.5.2. MATERIAL

ADD THE FOLLOWING:

801.5.2.1. WIRE FENCING FABRIC:

All chain link fencing shall be No. 9 gage copper bearing open-hearth steel wire.

801.5.2.2. POSTS

801.5.2.2.1 METAL POSTS

All posts shall be heavily galvanized by the hot-dip process after fabrication and shall be fitted with watertight malleable iron caps. All posts shall be of the following size and shape:

801.5.2.2.2. LINE POSTS



"H" Section hot rolled weighing not less than 4.10 pounds per linear foot or 3½-inch O.D. pipe weighing not less than 3.65 pounds per linear foot.

801.5.2.2.3. TERMINAL POSTS

Three (3) inch steel pipe weighing not less than 5.79 pounds per linear foot.

801.5.2.2.4. GATE POSTS

Four (4) inch O.D. steel pipe weighing not less than 9.11 pounds per linear foot.

801.5.2.3. RAILS, GATES, BRACES AND FITTINGS

Shall be 1½-inch steel pipe weighing not less than 2.27 pounds per linear foot.

ITEM 803 SLOPE AND CHANNEL PROTECTION

803.2. GABION STRUCTURES

803.2.2. MATERIALS

803.2.2.1. BASKETS

ADD THE SENTENCE:

All wire used, including tie and connecting wire, shall be certified by Mill Test Reports showing compliance with specification requirements.

803.2.2.2. STONE

ADD THE FOLLOWING:

Facing stone shall be hand selected, large stone and shall be selected for best appearance. Facing stone shall be an off-white color and prior to laying the stone, samples shall be delivered to the site and shall be approved by the Engineer for gradation and appearance.

803.2.3. GABION CONSTRUCTION

803.2.3.1. GEOTEXTILE FILTER LAYER

ADD THE FOLLOWING:

High strength permeable barrier fabric for use as a filter media, shall be placed along the earth side of the Gabion Structures. The permeable barrier fabric to be used shall be TREVIRA S1115 as manufactured by Hoechst Fibers Industries, Spartanburg, South Carolina; MIRAFLI 140 Fabric, produced by Fiber Industries, Inc.; Bidim U-14 as distributed by Quline Corporation, Houston, Texas, or approved equal.

803.3. RIPRAP

803.3.2. RIPRAP MATERIALS

803.3.2.2. STONE

803.3.2.2.1. TYPES



Broken Concrete.

DELETE THIS SUB-SECTION AND REPLACE WITH THE FOLLOWING WORDING:

Broken concrete shall not be used for riprap.

ITEM 804 PAINTING AND OTHER PROTECTIVE TREATMENTS, PAVEMENT MARKINGS

804.2 PAINTING AND MARKING

804.2.3. PREPARING STRUCTURES FOR PAINT

804.2.3.1. DESCALING, CLEANING AND PREPARATION OF SURFACES

ADD THE FOLLOWING:

Prior to painting concrete or masonry screening walls the concrete must be thoroughly cured and dry for proper adhesion of paint. Preparation of work shall include either of the following:

- (1) The concert surface shall be thoroughly washed with a solution of one (1) gallon Muriatic Acid to ten (10) gallons H₂O (*Caution: Always add acid to H₂O rather than H₂O to acid*). Rinse thoroughly with clear water and paint while damp.
- (2) Treatment of surface with masonry conditioner such as a clear alkali-resistant soya alkyd binder type sealer or as recommended by paint manufacturer.

804.2.5. PAINTING NEW STRUCTURES

804.2.5.5. FINISH COATS

ADD THE FOLLOWING:

On masonry walls which are painted, the total dry film thickness shall be 6 mils (*two [2] coats applied at eight [8] mils wet and spreading rate = 200 square feet per gallon based on 36% + 2% Volume Solids*). The thickness shall be tested using a Wet Film Thickness Gage.

804.2.6. CLEANING AND PAINTING EXISTING STRUCTURES

ADD THE FOLLOWING:

Masonry walls which require repainting shall be sand blasted or cleaned with a power brush, removing all mastic, powdery, thick layered, peeling or heavily chalked old paint. Spot prime all bare areas with Masonry Conditioner. If old paint is a cement-based paint, apply Masonry Conditioner to entire surface and apply two (2) coats of paint in accordance with 8.9.3(k) above.

ITEM 805 ELECTRICAL COMPONENTS AND CONDUIT

805.3. MATERIAL

ADD THE FOLLOWING:

In the City of Rockwall, conduit for street lighting shall be 2-inch PVC pipe and for traffic control shall be three (3) inch PVC pipe, meeting the requirements of Item 2.10, Electrical Components.

ADD THE FOLLOWING:



805.3.7. PULL BOX.

All pull boxes shall be #36 supplied by Traffic Signal Equipment Company, Fort Worth, Texas or approved equal. Boxes shall be approximately 10½-inch by 17-inch by 12-inch and shall be furnished with a concrete cover.

805.4 CONDUIT CONSTRUCTION METHODS

REVISE FIRST SENTENCE, THIRD PARAGRAPH TO READ AS FOLLOWS:

All conduit shall be placed a minimum of 36-inches below finish grade. Conduit in median shall be placed a minimum of 36-inches below inside of curb as shown on plans.



CHAPTER 8 | SPECIAL PROVISIONS TO THE NCTCOG'S STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION STANDARDS

All work within the City of Rockwall shall conform to the standard drawings called out within this section. The City of Rockwall's Standard Drawing for Construction shall conform to Section II – Standard Drawings for North Central Texas Council of Governments Standard Specifications and Standard Drawings, November 2004, Fifth Edition.

The North Central Texas Standard Drawings shall be modified and clarified by the deletion, revision, and/or addition of the following drawings. Except when specifically stated, none of the standard drawings of the North Central Texas Standard Specifications shall be deleted.

SECTION 8.01 | DIVISION 1000. EROSION AND SEDIMENT CONTROL

TABLE 8.1: DIVISION 1000 EROSION AND SEDIMENT CONTROL

NOTES: (1) DELETED NCTCOG DRAWING; (2) REVISED NCTCOG DRAWING (SEE REVISIONS BELOW); (3) ADDED ROCKWALL STANDARD DRAWING (SEE DRAWING BELOW); AND (4) ADDED CURRENT TXDOT STANDARDS

REVISED	DRAWING NO.	DESCRIPTION
	1010	RESERVED
(1)	1020A	SILT FENCE
(3)	R-1020A	SILT FENCE
(1)	1020B	SILT FENCE – GENERAL NOTES
(3)	R-1020B	SILT FENCE – GENERAL NOTES
	1030A	INTERCEPTOR SWALE
	1030B	INTERCEPTOR SWALE
	1040A	DIVERSION DIKE
	1040B	DIVERSION DIKE
	1050A	TRIANGULAR SEDIMENT FILTER DIKE
	1050B	TRIANGULAR SEDIMENT FILTER DIKE
	1060A	ROCK CHECK DAM
(1)	1060B	ROCK CHECK DAM
(3)	R-1060B	ROCK CHECK DAM
(1)	1070A	STABILIZED CONSTRUCTION ENTRANCE
(3)	R-1070A	STABILIZED CONSTRUCTION ENTRANCE
(1)	1070B	STABILIZED CONSTRUCTION ENTRANCE
(3)	R-1070B	STABILIZED CONSTRUCTION ENTRANCE
	1080A	SANDBAG CHECK DAM
	1080B	SANDBAG CHECK DAM
(1)	1090	STONE OUTLET – SEDIMENT TRAP
(3)	R-1090	STONE OUTLET – SEDIMENT TRAP
	1100	PIPE OUTLET – SEDIMENT BASIN
	1110	PIPE SLOPE DRAIN
	1120	INLET PROTECTION – FILTER BARRIER
(1)	1130	INLET PROTECTION-DROP – BLOCK AND GRAVEL
(1)	1140	INLET PROTECTION-CURB – BLOCK AND GRAVEL
	1150	INLET PROTECTION – EXCAVATED IMPOUNDMENT
	1160A	EROSION CONTROL BLANKETS
	1160B	EROSION CONTROL BLANKETS

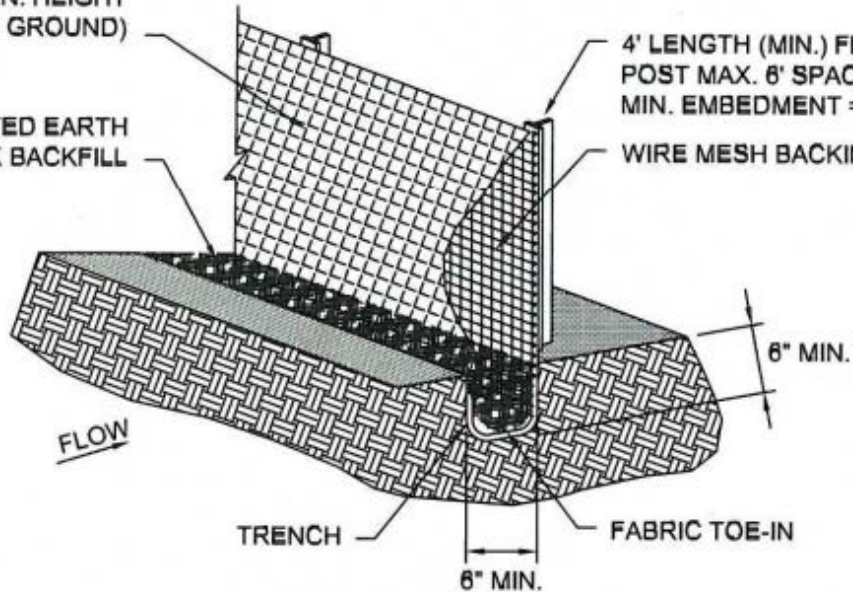


SILT FENCE (MIN. HEIGHT 24" ABOVE EXIST. GROUND)

COMPACTED EARTH OR ROCK BACKFILL

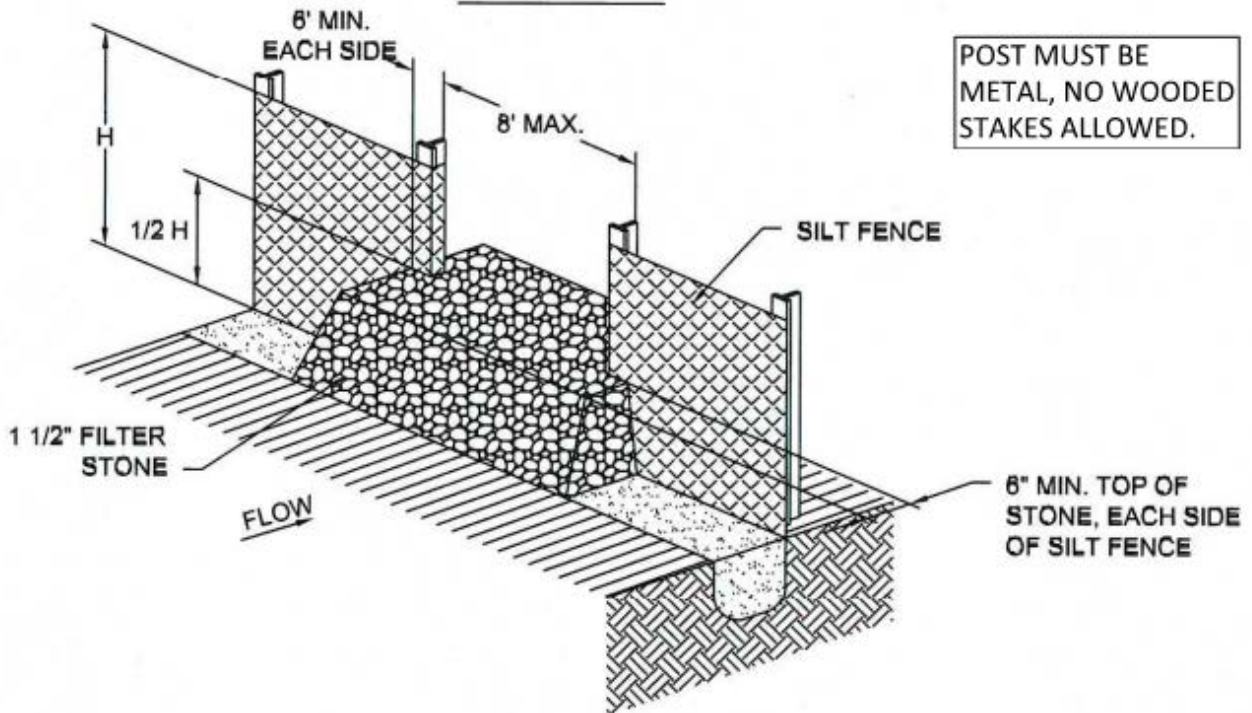
4' LENGTH (MIN.) FENCE POST MAX. 6' SPACING, MIN. EMBEDMENT = 1'

WIRE MESH BACKING



SILT FENCE

POST MUST BE METAL, NO WOODED STAKES ALLOWED.



STONE OVERFLOW STRUCTURE

SILT FENCE

CITY OF ROCKWALL

STANDARD SPECIFICATION REFERENCE

202.5 *



DATE

Mar. 2018


STANDARD DRAWING NO.

R-1020A



SILT FENCE GENERAL NOTES:


1. POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH SUPPORT POST OR TO WIRE BACKING, WHICH IN TURN IS ATTACHED TO THE FENCE POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
5. INSPECTION SHALL BE AS SPECIFIED IN THE SWPPP. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN FINAL STABILIZATION IS ACHIEVED OR ANOTHER EROSION OR SEDIMENT CONTROL DEVICE IS EMPLOYED.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.
8. FILTER STONE SHALL BE WRAPPED IN FILTER FABRIC AND BURIED SIX (6") INCHES MINIMUM.

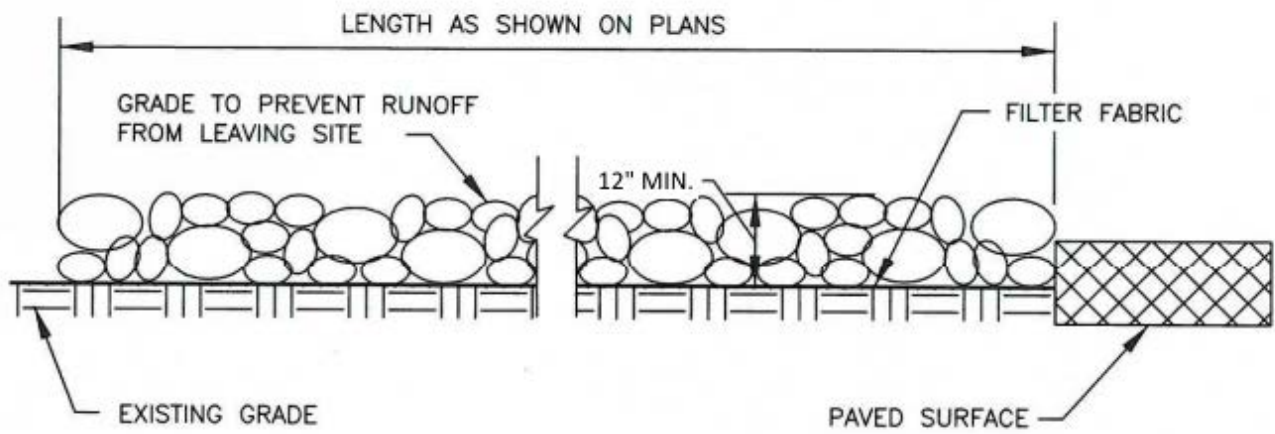
SILT FENCE	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 202.5 *	
		DATE Mar. 2018	STANDARD DRAWING NO. R-1020B



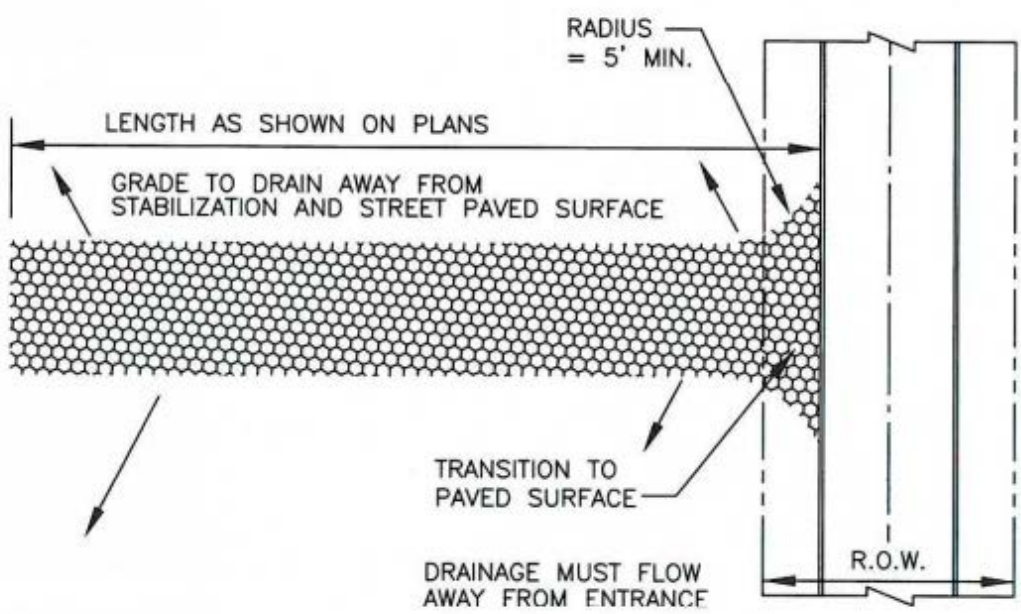
ROCK CHECK DAM GENERAL NOTES:

1. STONE SHALL BE WELL GRADED WITH SIZE RANGE FROM 1½ TO 3½ INCHES IN DIAMETER DEPENDING ON EXPECTED FLOWS.
2. THE CHECK DAM SHALL BE INSPECTED AS SPECIFIED IN THE SWPPP AND SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
3. WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD OF THE HEIGHT OF THE CHECK DAM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF PROPERLY.
4. WHEN THE SITE HAS ACHIEVED FINAL STABILIZATION OR ANOTHER EROSION OR SEDIMENT CONTROL DEVICE IS EMPLOYED, THE CHECK DAM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.
5. FILTER STONE SHALL BE WRAPPED IN APPROPRIATE SIZED WIRE MESH TO CONTAIN STONE AND BURIED SIX (6") INCHES MINIMUM.

ROCK CHECK DAM	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 202.9 *	
		DATE Mar. 2018	STANDARD DRAWING NO. R-1060B




PROFILE VIEW
N.T.S.



PLAN VIEW
N.T.S.


Note: No crushed concrete or recycled concrete allowed.

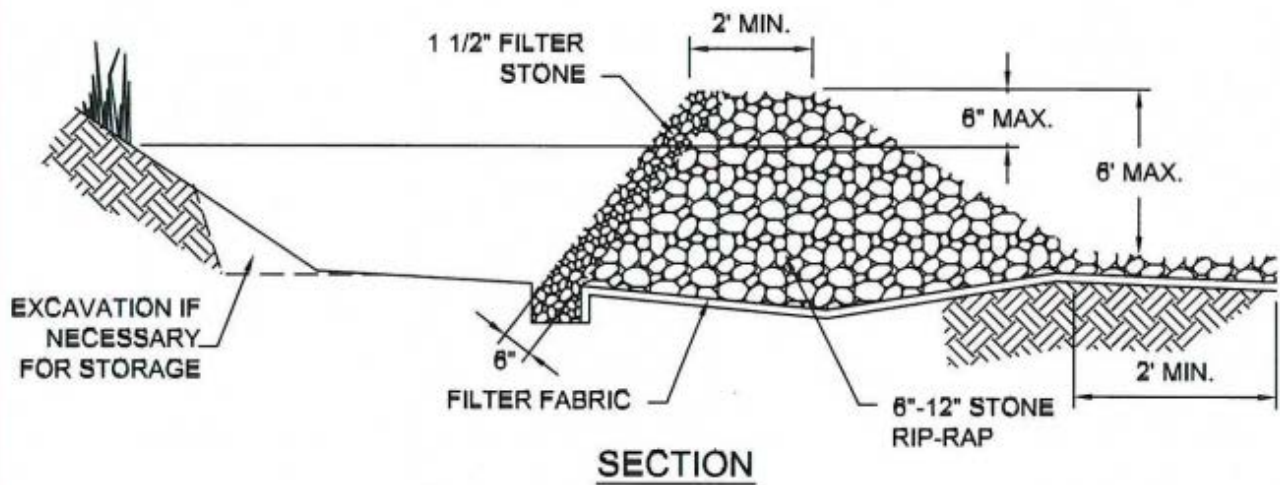
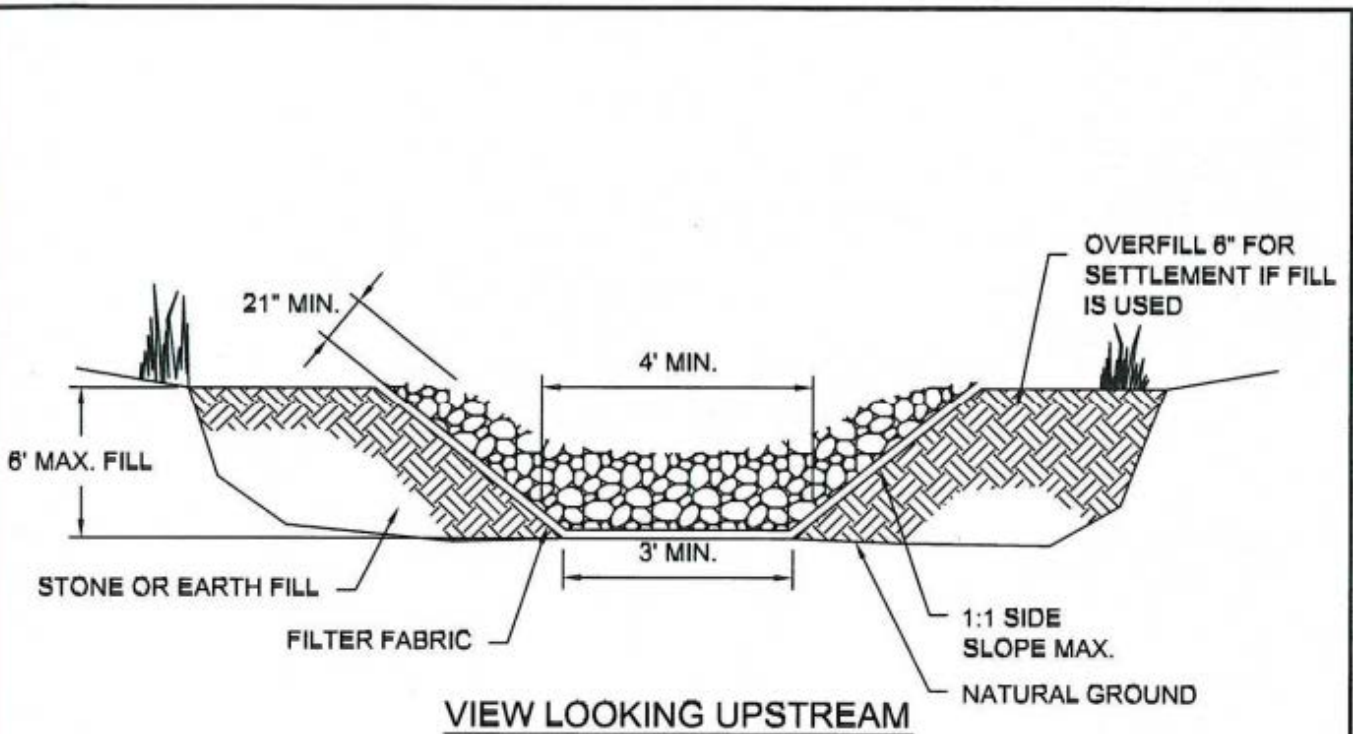
STABILIZED CONSTRUCTION ENTRANCE	CITY OF ROCKWALL 	STANDARD SPECIFICATION REFERENCE 202.11 *
		DATE: Mar. 2018 STANDARD DRAWING NO.: R-1070A




STABILIZED CONSTRUCTION ENTRANCE GENERAL NOTES:

1. STONE SHALL BE 4 TO 6 INCH DIAMETER COARSE AGGREGATE.
2. MINIMUM LENGTH SHALL BE 50 FEET AND WIDTH SHALL BE 20 FEET.
3. THE THICKNESS SHALL NOT BE LESS THAN 12 INCHES.
4. THE WIDTH SHALL BE NO LESS THAN THE FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
5. WHEN NECESSARY, VEHICLES SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO A PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WITH DRAINAGE FLOWING AWAY FROM BOTH THE STREET AND THE STABILIZED ENTRANCE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PAVED SURFACES. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PAVED SURFACES MUST BE REMOVED IMMEDIATELY.
7. THE ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
8. PREVENT SHORTCUTTING OF THE FULL LENGTH OF THE CONSTRUCTION ENTRANCE BY INSTALLING BARRIERS AS NECESSARY.
9. INSPECTION SHALL BE AS SPECIFIED IN THE SWPPP.
10. NO CRUSHED OR RECYCLED CONCRETE ALLOWED.

STABILIZED CONSTRUCTION	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE	
ENTRANCE		202.11 *	
		DATE Mar. 2018	STANDARD DRAWING NO. R-1070B



NOTE: FILTER STONE SHALL BE WRAPPED IN APPROPRIATE SIZED WIRE MESH TO CONTAIN STONE.

STONE OUTLET SEDIMENT TRAP	CITY OF ROCKWALL 	STANDARD SPECIFICATION REFERENCE 202.12 *
	DATE Mar. 2018	STANDARD DRAWING NO. R-1090



SECTION 8.02 | DIVISION 2000. PAVEMENT SYSTEMS

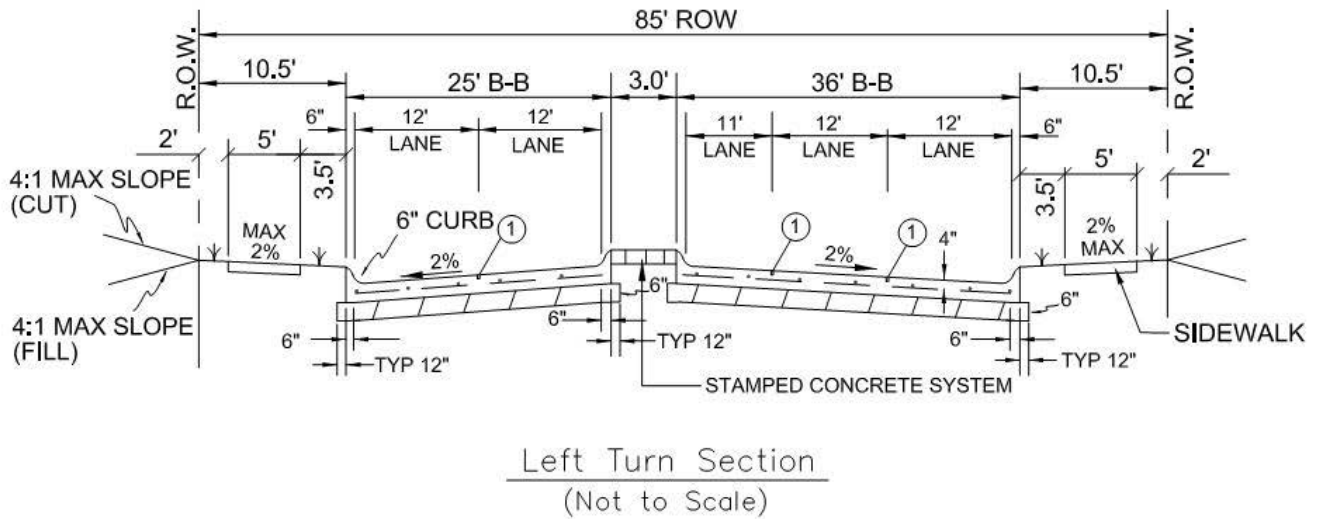
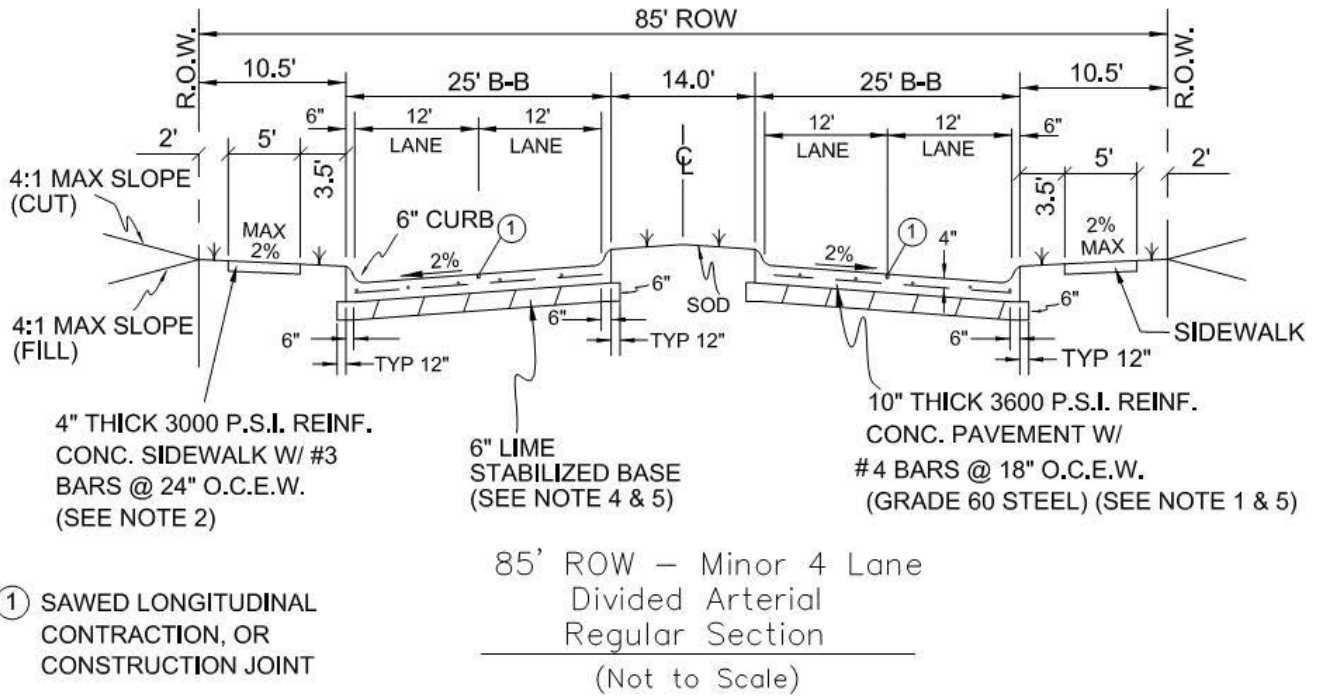
TABLE 8.2: REVISIONS TO NCTCOG'S DIVISION 2000 PAVEMENT SYSTEMS

NOTES: (1) DELETED NCTCOG DRAWING; (2) REVISED NCTCOG DRAWING (SEE REVISIONS BELOW); (3) ADDED ROCKWALL STANDARD DRAWING (SEE DRAWING BELOW); AND (4) ADDED CURRENT TXDOT STANDARDS

REVISED	DRAWING NO.	DESCRIPTION
(1)	2010	REINFORCED CONCRETE PAVEMENT – SIX LANE DIVIDED THOROUGHFARE
(3)	R-2010	REINFORCED CONCRETE PAVEMENT – (P6D) PRINCIPAL ARTERIAL DIVIDED 6-LANE
(1)	2020	REINFORCED CONCRETE PAVEMENT – FOUR LANE DIVIDED THOROUGHFARE
(3)	R-2020	REINFORCED CONCRETE PAVEMENT – (A4D) MINOR ARTERIAL DIVIDED 4-LANE
(1)	2030	REINFORCED CONCRETE PAVEMENT – 2- & 4- UNDIVIDED THOROUGHFARE
(3)	R-2030	REINFORCED CONCRETE PAVEMENT – (M4U) MAJOR COLLECTOR UNDIVIDED 4-LANE
(3)	R-2031	REINFORCED CONCRETE PAVEMENT – MINOR COLLECTOR/LOCAL COMMERCIAL
(3)	R-2032	REINFORCED CONCRETE PAVEMENT – (M3U) MINOR COLLECTOR – 2 LANE WITH CONTINUOUS LEFT TURN LANE
(3)	R-2033	REINFORCED CONCRETE PAVEMENT – LOCAL RESIDENTIAL STREET
(1)	2040	REINFORCED CONCRETE PAVEMENT - ALLEYS
(3)	R-2040	REINFORCED CONCRETE PAVEMENT – ALLEYS
(3)	R-2041	REINFORCED CONCRETE PAVEMENT – FIRE LANE
(1)	2050	REINFORCED CONCRETE PAVEMENT - JOINTS
(3)	R-2050	REINFORCED CONCRETE PAVEMENT - JOINTS
(3)	R-2051	REINFORCED CONCRETE PAVEMENT – LONGITUDINAL BUTT JOINT
	2060	REINFORCED CONCRETE PAVEMENT – TRANSVERSE JOINT SPACING
(1)	2070	REINFORCED CONCRETE PAVEMENT – STREET HEADERS
(3)	R-2070	REINFORCED CONCRETE PAVEMENT – STREET HEADERS
	2080	REINFORCED CONCRETE PAVEMENT – BRIDGE APPROACH SLAB
(1)	2090	HOT MIX ASPHALT PAVEMENT – SIX LANE DIVIDED THOROUGHFARE
(1)	2100	HOT MIX ASPHALT PAVEMENT – FOUR LANE DIVIDED THOROUGHFARE
(1)	2110	HOT MIX ASPHALT PAVEMENT – 2- & 4- UNDIVIDED THOROUGHFARE
	2120	CONCRETE CURB AND GUTTER – INTEGRAL, SEPARATE, AND DOWELED
(1)	2125A - 2125B	CURB RAMPS
(3)	R-2125A - R-2125D	DIRECTIONAL CURB RAMP
(4)		TXDOT: PED-18: PEDESTRIAN FACILITIES – CURB RAMPS
(1)	2130	MEDIAN ISLAND PAVEMENT – NOSE & LEFT TURN LANE
(3)	R-2130	MEDIAN ISLAND PAVEMENT – NOSE & LEFT TURN LANE
(1)	2140	MEDIAN ISLAND PAVEMENT – MONOLITHIC CONCRETE NOSE
(3)	R-2140	MEDIAN ISLAND PAVEMENT – MONOLITHIC CONCRETE NOSE
(1)	2150A - 2150B	DRIVEWAY APPROACH – FLARED RETURN TYPE
(1)	2155	DRIVEWAY APPROACH – RADIUS RETURN TYPE
(3)	R-2150	DRIVEWAY DETAIL – RESIDENTIAL DRIVEWAY
(3)	R-2151A	RESIDENTIAL DRIVEWAY – SIDEWALK ADJACENT TO CURB – HIGH SIDE OF THE STREET
(3)	R-2151B	RESIDENTIAL DRIVEWAY – SIDEWALK ADJACENT TO CURB – HIGH SIDE OF THE STREET
(3)	R-2152	RESIDENTIAL DRIVEWAY – SIDEWALK ADJACENT TO CURB – DRIVEWAYS CLOSER THAN 27-FT
(1)	2160	ALLEY APPROACH – RADIUS RETURN TYPE
(3)	R-2160	ALLEY APPROACH – RADIUS RETURN TYPE
(1)	2170	REINFORCED CONCRETE SIDEWALKS – JOINTS AND SPACING
(3)	R-2170	REINFORCED CONCRETE SIDEWALKS – JOINTS AND SPACING
(1)	2180	REINFORCED CONCRETE RETAINING WALL - INTEGRAL WITH SIDEWALK
(3)	R-2180	REINFORCED CONCRETE RETAINING WALL - INTEGRAL WITH SIDEWALK
(1)	2190	PAVEMENT SYSTEMS – GENERAL NOTES
(3)	R-2190	PAVEMENT SYSTEMS – GENERAL NOTES
	2200	SUBDRAINS – PAVEMENT SUBGRADE
(1)	2210	ALLEY GEOMETRICS – TYPE "A": & TYPE "B"
(3)	R-2210	ALLEY GEOMETRICS – TYPE "A": & TYPE "B"
(1)	2220	ALLEY GEOMETRICS - TYPE "C": & TYPE "D"



(3)	R-2220	ALLEY GEOMETRICS - TYPE "C": & TYPE "D"
(1)	2230	ALLEY GEOMETRICS - TYPE "E": & TYPE "F"
(3)	R-2230	ALLEY GEOMETRICS - TYPE "E": & TYPE "F"
(1)	2240	ALLEY GEOMETRICS - TYPE "G": & TYPE "H"
(3)	R-2240	ALLEY GEOMETRICS - TYPE "G": & TYPE "H"
(1)	2250	ALLEY GEOMETRICS - TYPE "J"
(3)	R-2250	ALLEY GEOMETRICS - TYPE "J"
(3)	R-2251	ALLEY GEOMETRICS – ALLEY WARPING AT INLET
	2260	ALLEY INTERSECTION – PROPOSED TO EXISTING
(3)	R-2270	LEFT TURN LANE – CONCRETE REMOVAL & REPLACEMENT
(1)	2270A	METAL BEAM GUARD FENCE – ROADSIDE PLACEMENT & BEAM ELEMENTS
(1)	2270B	METAL BEAM GUARD FENCE – LINE POST & CONNECTIONS
(1)	2270C	METAL BEAM GUARD FENCE – END SECTION & ANGLE ANCHOR POST
(1)	2270D	METAL BEAM GUARD FENCE – SPECIAL END SHOE & ANCHOR POST
(1)	2270E	METAL BEAM GUARD FENCE – GENERAL NOTES
(1)	2280A	METAL BEAM GUARD FENCE – TWO-WAY TRAFFIC BRIDGE END
(1)	2280B	METAL BEAM GUARD FENCE – TWO-WAY TRAFFIC BRIDGE END
(4)		TXDOT: METAL BEAM GUARD FENCE
	2290	METAL BEAM GUARD FENCE – END OF ROAD
(3)	R-2300	STREET REGULATORY SIGN - STREET NAME BLADES
(3)	R-2310	ILLUMINATED STREET NAME SIGN – ILSN SIGN DETAIL
(3)	R-2320	RAISED PAVEMENT MARKINGS – LANE LINES
(3)	R-2330	RAISED PAVEMENT MARKINGS – CHEVRON AND CROSSHATCH
(3)	R-2340	RAISED PAVEMENT MARKINGS – INTERSECTION APPROACH
(3)	R-2350	TYPE C INTERSECTION – RIGHT LANE DROP MARKINGS
(3)	R-2360	TYPICAL THOROUGHFARE LAYOUTS
(3)	R-2370	TYPICAL CROSSWALK LAYOUTS
(3)	R-2380	TYPICAL CROSSWALK AND DASHED MARKINGS
(3)	R-2390	CHEVRON STRIPING
(3)	R-2400	DIAGONAL CROSSHATCH STRIPING



NOTES:

1. Street pavement cement content to be no less than 6 sacks per cubic yard for machine placed and not less than 6.5 sacks per cubic yard for hand placed.
2. Sidewalk Cement content of not less than 5.5 sack per cubic yard.
3. No sand allowed under pavement or sidewalks.
4. Minimum lime content shall be 6% of dry weight of material (at least 27 lbs/SY) compacted to 95% standard density.
5. Paving Section design shall be based off the 30 year projected traffic volumes and geotechnical analysis/report.

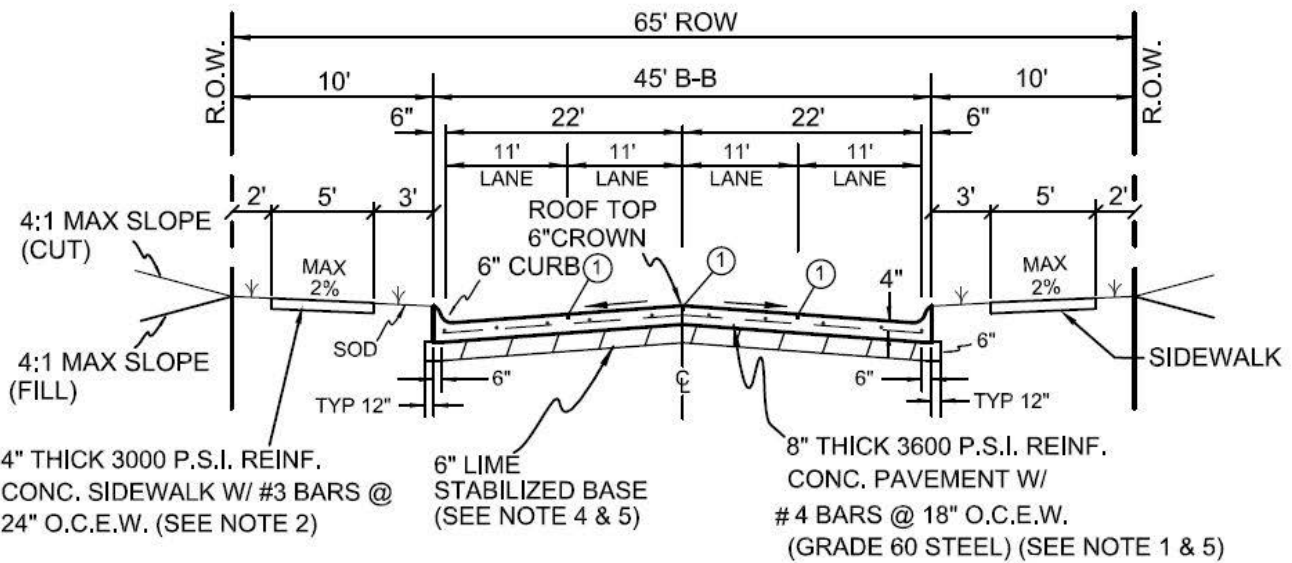
REINFORCED CONCRETE PAVEMENT

(A4D) MINOR ARTERIAL DIVIDED 4-LANE

CITY OF ROCKWALL



DATE AUG. '22	DRAWING NO. R-2020
------------------	-----------------------



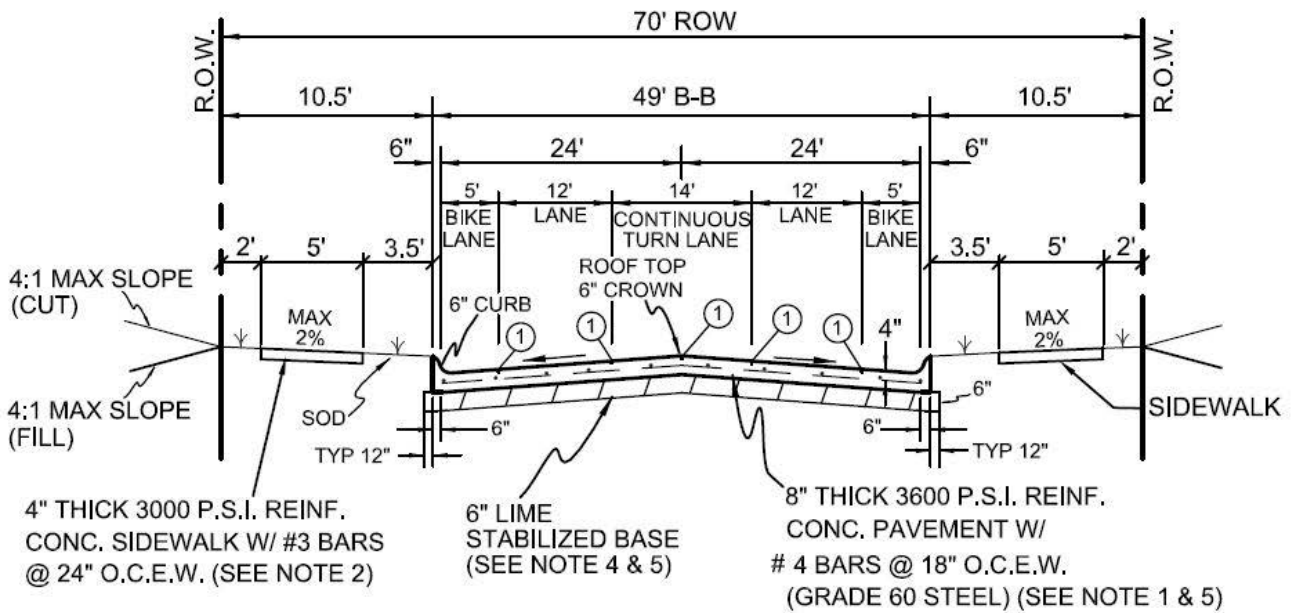
① SAWED LONGITUDINAL
CONTRACTION, OR
CONSTRUCTION JOINT

**65' ROW – Major 4 Lane
Undivided Collector**
(Not to Scale)

NOTES:

1. Street pavement cement content to be no less than 6 sacks per cubic yard for machine placed and not less than 6.5 sacks per cubic yard for hand placed.
2. Sidewalk Cement content of not less than 5.5 sack per cubic yard.
3. No sand allowed under pavement or sidewalks.
4. Minimum lime content shall be 6% of dry weight of material (at least 27 lbs/SY) compacted to 95% standard density.
5. Paving Section design shall be based off 30 year projected traffic volumes and geotechnical analysis/report.

REINFORCED CONCRETE PAVEMENT	CITY OF ROCKWALL		
(M4U) MAJOR COLLECTOR UNDIVIDED 4-LANE		DATE AUG. '15	DRAWING NO. R-2030



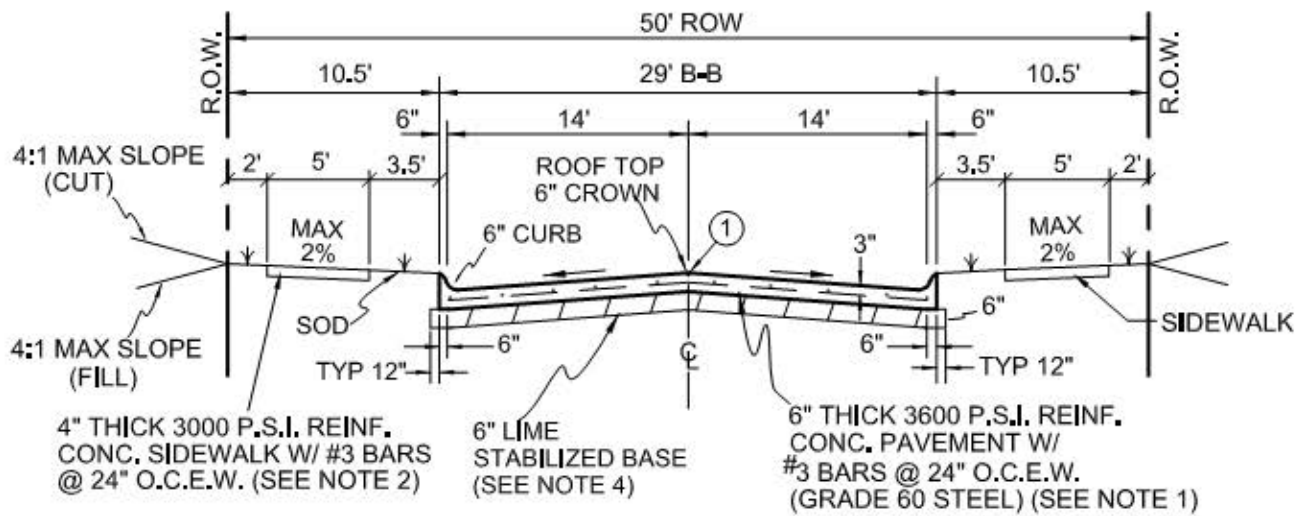
① SAWED LONGITUDINAL CONTRACTION, OR CONSTRUCTION JOINT

**70' ROW – Minor Collector
2 Lane with Continuous Left Turn Lane
(Not to Scale)**

NOTES:

1. Street pavement cement content to be no less than 6 sacks per cubic yard for machine placed and not less than 6.5 sacks per cubic yard for hand placed.
2. Sidewalk Cement content of not less than 5.5 sack per cubic yard.
3. No sand allowed under pavement or sidewalks.
4. Minimum lime content shall be 6% of dry weight of material (at least 27 lbs/SY) compacted to 95% standard density.
5. Paving Section design shall be based off the 30 year projected traffic volumes and geotechnical analysis/report.

REINFORCED CONCRETE PAVEMENT		CITY OF ROCKWALL	
(M3U) MINOR COLLECTOR – 2 LANE WITH CONTINUOUS LEFT TURN LANE			
		DATE AUG. '15	DRAWING NO. R-2032



- ① SAWED LONGITUDINAL CONTRACTION, OR CONSTRUCTION JOINT

50' R.O.W. Residential Street
(Not to Scale)

NOTES:

1. Street pavement cement content to be no less than 6 sacks per cubic yard for machine placed and not less than 6.5 sacks per cubic yard for hand placed.
2. Sidewalk Cement content of not less than 5.5 sack per cubic yard.
3. No sand allowed under pavement or sidewalks.
4. Minimum lime content shall be 6% of dry weight of material (at least 27 lbs/SY) compacted to 95% standard density.

REINFORCED CONCRETE PAVEMENT

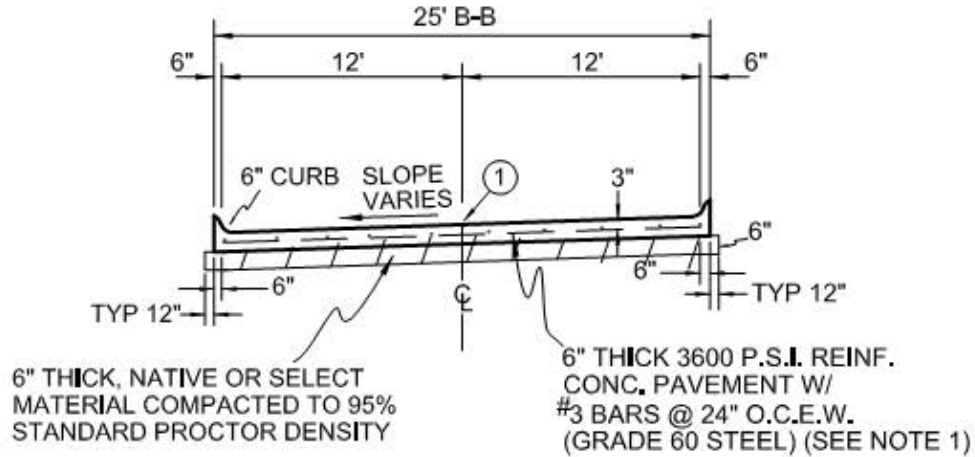
CITY OF ROCKWALL

LOCAL RESIDENTIAL STREET



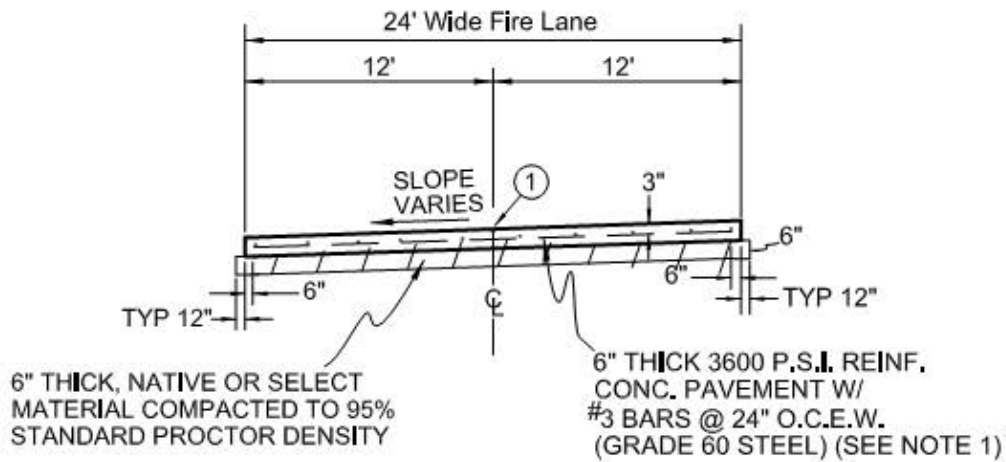
DATE
AUG. '19

DRAWING NO.
R-2033



24' Wide Fire Lane with Curbs
(Not to Scale)

① SAWED LONGITUDINAL CONTRACTION OR CONSTRUCTION JOINT

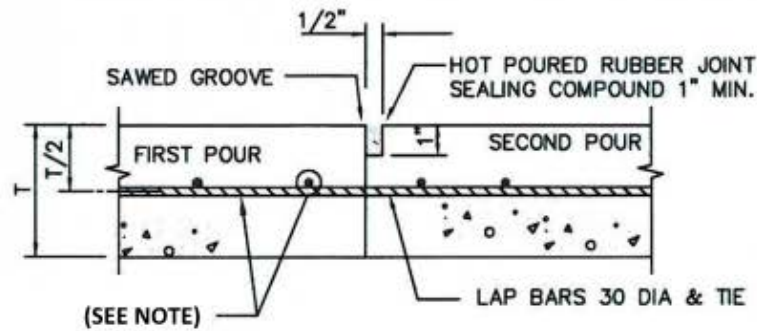


24' Wide Fire Lane
(Not to Scale)

NOTES:

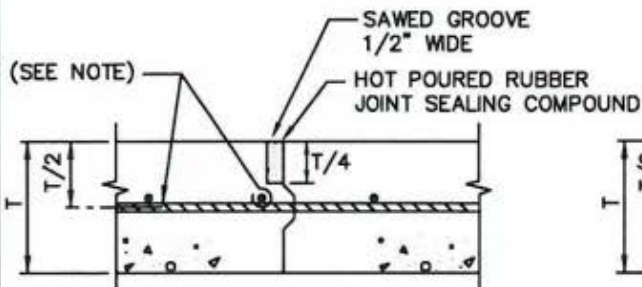
1. Street pavement cement content to be no less than 6 sacks per cubic yard for machine placed and not less than 6.5 sacks per cubic yard for hand placed.
2. Sidewalk Cement content of not less than 5.5 sack per cubic yard.
3. No sand allowed under pavement or sidewalks.

REINFORCED CONCRETE PAVEMENT	CITY OF ROCKWALL		
FIRE LANE		DATE AUG. '19	DRAWING NO. R-2041



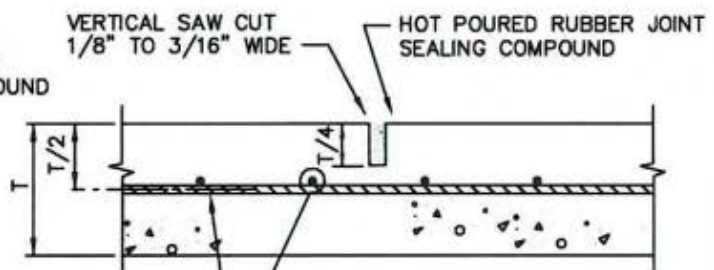
CONSTRUCTION JOINT

N.T.S.



KEYWAY JOINT

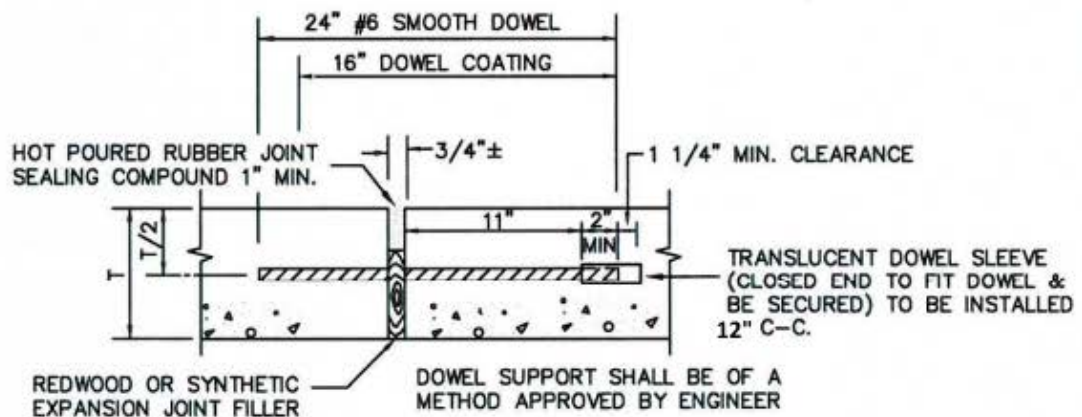
(FOR PAVEMENT THICKNESS > 6")
N.T.S.



SAWED CONTRACTION JOINT

N.T.S.

NOTE:
REINFORCING SHALL BE - #3 BARS AT 24" FOR 6"
THICK PAVEMENT AND LESS. #4 BARS AT 18"
FOR 8" THICK PAVEMENT AND GREATER.



EXPANSION JOINT

(SPACED 600 FT. MAXIMUM; LOCATE AT
STRUCTURES AND AT INTERSECTION P.C.'S & P.T.'S)
N.T.S.

REINFORCED CONCRETE PAVEMENT

CITY OF ROCKWALL

STANDARD SPECIFICATION REFERENCE

303.5.4.

JOINTS

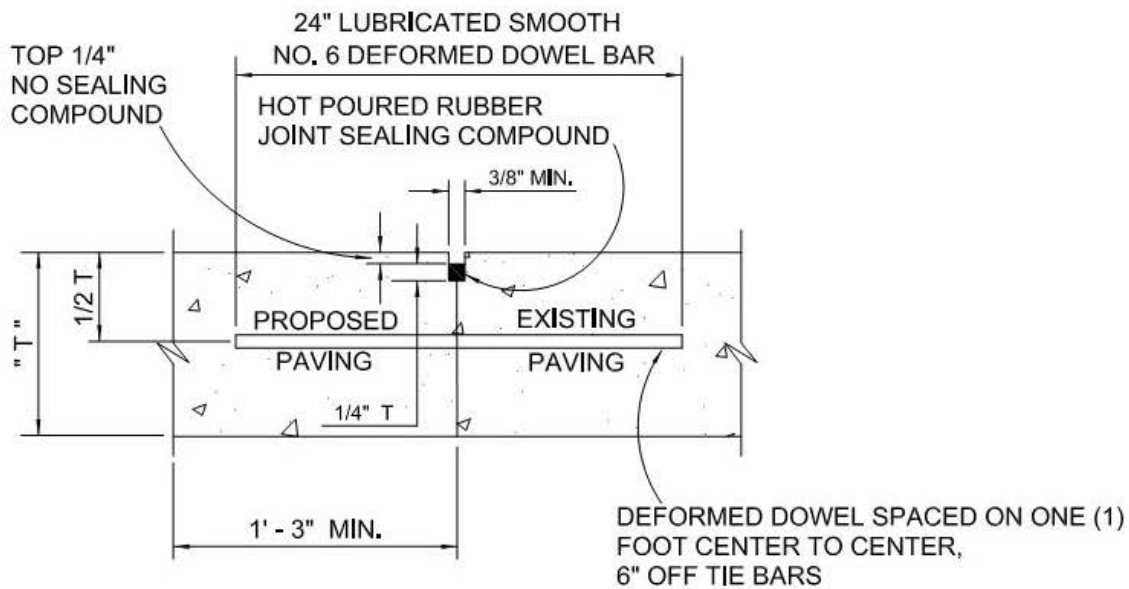


DATE

Mar. 2018

STANDARD DRAWING NO.


R-2050

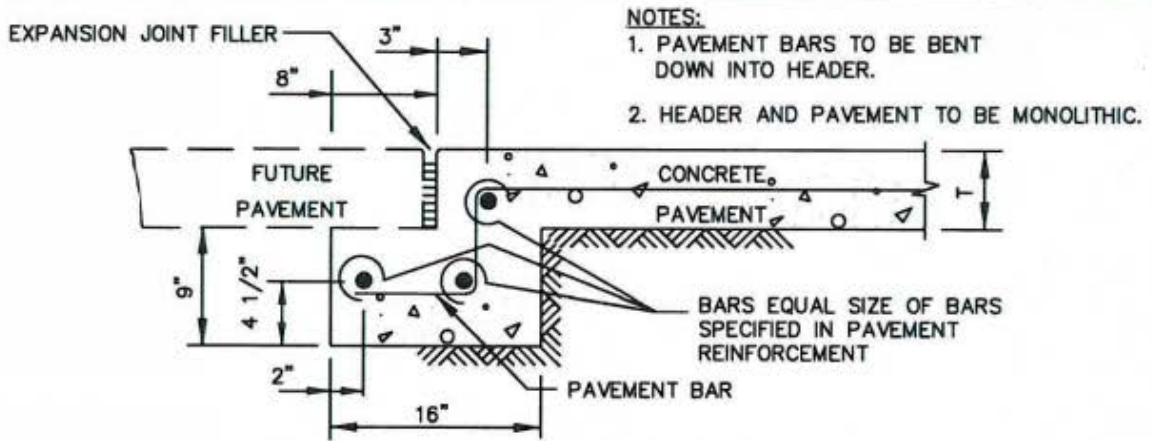


NOTES: T = PAVEMENT

1. LONGITUDINAL BUTT CONSTRUCTION MAY BE UTILIZED IN PLACE OF LONGITUDINAL HINGED (KEYWAY) JOINT AT CONTRACTORS OPTION.
2. DEFORMED DOWEL BARS SHALL BE DRILLED INTO PAVEMENT HORIZONTALLY BY USE OF A MECHANICAL RIG.
3. DRILLING BY HAND IS NOT ACCEPTABLE, PUSHING DOWEL BARS INTO GREEN CONCRETE NOT ACCEPTABLE.

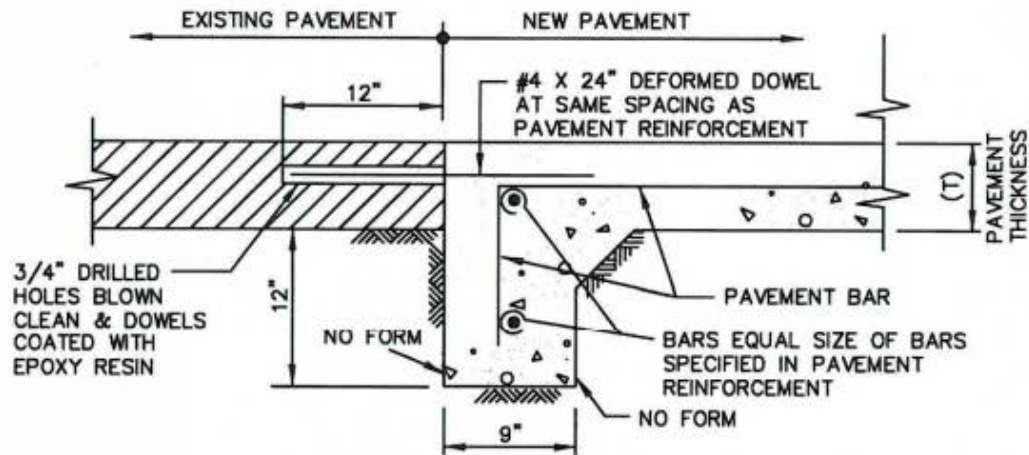
LONGITUDINAL BUTT JOINT
NOT TO SCALE

REINFORCED CONCRETE PAVEMENT	CITY OF ROCKWALL		
LONGITUDINAL BUTT JOINT		DATE DEC '22	DRAWING NO. R-2051



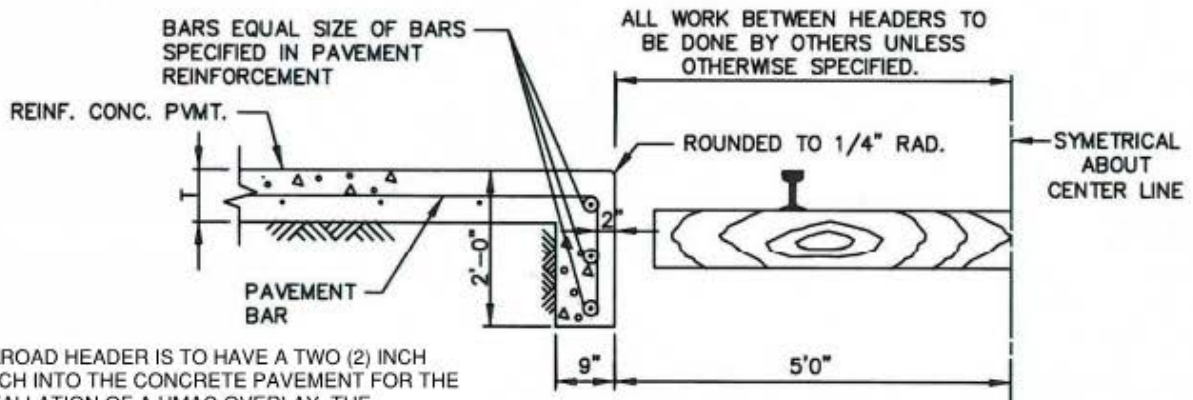
STREET HEADER FOR FUTURE PAVEMENT

N.T.S.



STREET HEADER AT EXISTING PAVEMENT

N.T.S.



RAILROAD HEADER IS TO HAVE A TWO (2) INCH NOTCH INTO THE CONCRETE PAVEMENT FOR THE INSTALLATION OF A HMA OVERLAY. THE CONCRETE UNDER THE HMA IS TO BE THE FULL STREET THICKNESS. THE NOTCH SHOULD START AT THE END OF THE PAVEMENT AND GO TWENTY (20) FEET UP THE ROAD AWAY FROM THE CROSSING.

STREET HEADER AT RAILROAD

N.T.S.

REINFORCED CONCRETE PAVEMENT
STREET HEADERS

CITY OF ROCKWALL



STANDARD SPECIFICATION REFERENCE

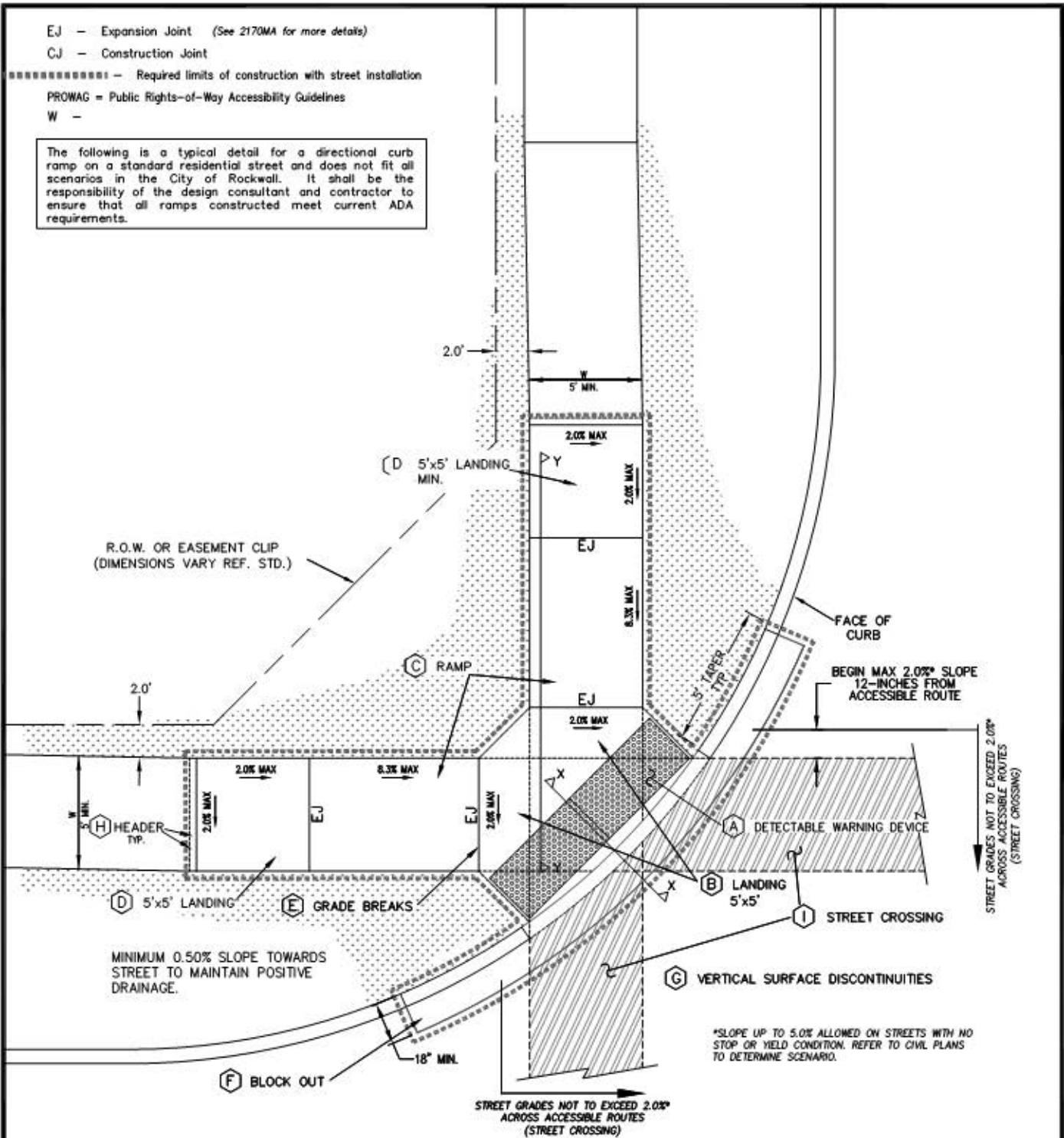
305.4

DATE

Mar. 2018

STANDARD DRAWING NO.

R-2070



NOTES: All newly constructed sidewalks, curb ramps and crosswalks installed within City of Rockwall public rights-of-way shall be considered a pedestrian access route and shall conform to the most current "Draft" Guidelines for Public Rights-of-Way created by the United States Access Board.

1. SEE DETAIL R-2125B FOR RAMP FEATURE DESCRIPTIONS
2. SEE DETAIL R-2125C FOR SECTIONS X-X AND Y-Y
3. SEE DETAIL R-2125D FOR ADDITIONAL NOTES

DIRECTIONAL CURB RAMP	CITY OF ROCKWALL		
		DATE	DRAWING NO.
		MAR. '17	R-2125A



A

Detectable Warning Devices (DWD) shall be pre-manufactured cast-in-place truncated dome plates installed to the manufacturer's specifications, and shall meet all ADA requirements. No Brick Pavers allowed. Color to be approved by the City. DWD shall be 24 inches in length for the full width of the street connection starting at the back of curb. A maximum 2-inch border shall be allowed on the sides of the DWD for proper installation.

B

Also known as "Clear Space" per ADA PROWAG, the City requires a minimum landing space of 5-foot by 5-foot at the bottom of every ramp. This landing space shall have a cross slope in both directions that does not exceed 2.0% and shall be wholly outside the parallel vehicular travel path.

C

The ramp component of the directional curb ramp shall have a continuous longitudinal slope more than 5% and less than 8.3%. The ramp shall also have a cross slope of no more than 2.0%. Length of ramp can vary, but shall not exceed 15 feet to achieve desired elevation change.

D

Also known as "Turning Space" per ADA PROWAG, a minimum landing space of 5-foot by 5-foot shall be at the top of every ramp. This landing (turning) space shall have a cross slope in both directions that does not exceed 2.0%. Landing must match width of sidewalk and length shall be the same distance ("Squared" Landing).

E

All curb ramps shall have grade breaks at the top and bottom that are perpendicular to the direction of the ramp run. Where the ends of the bottom grade break are less than or equal to 5 feet, the DWD shall be placed within the ramp at the bottom grade break. Where either end of the bottom grade break is greater than 5 feet, the DWD shall be placed behind the back of the curb.

F

Paving contractor shall leave block out with a keyway joint installed, minimum of 18 inches measured from back of curb. Block out shall be poured monolithically with Curb Ramp. Concrete shall tie to street paving with a keyway joint per NCTCOG detail 2050. No curb shall be constructed where a DWD is provided. The curb on either side shall have a typical 5 foot taper to transition from the standard 6-inch curb height to be flush with ramp.

G

All work associated with accessible routes shall be installed flush with all features to minimize vertical surface discontinuities. Each segment along accessible route shall be flush with no more (zero tolerance) than a $\frac{1}{4}$ -inch grade separation (elevation difference), or $\frac{1}{2}$ -inch grade separation if beveled (bevel slope shall not be steeper than 50%).

H

A sidewalk header shall be constructed at ends of all work performed.

I

Street crossings shall adhere to same guidelines as other accessible routes within public right-of-way, and shall be for the full width of the in-line accessible route. Cross slope shall not exceed 2%*. New street construction shall incorporate all ADA design requirements. It shall be the responsibility of the Design Professional and Contractor to ensure all street crossings meet the requirements of PROWAG. Street alterations on existing streets to bring to compliance shall be at the City Engineer's discretion.

J

All curbs constructed as part of an ADA Ramp shall match City curb standards.

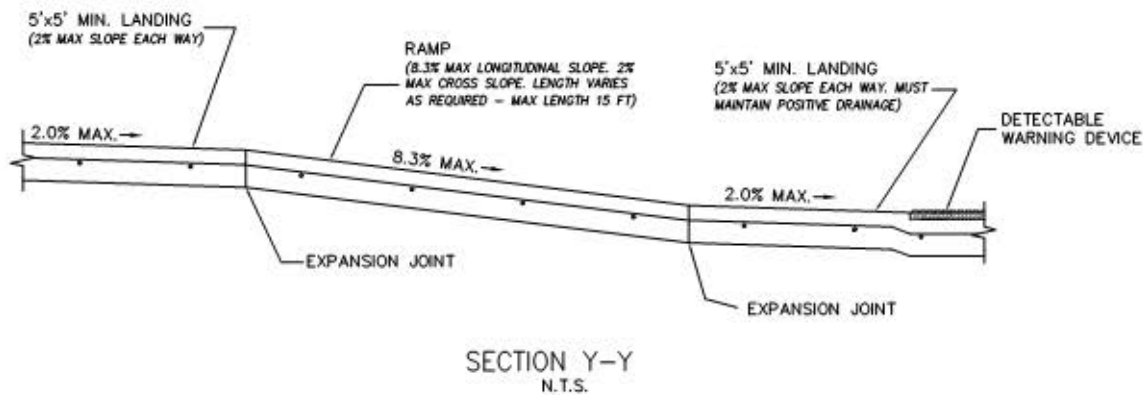
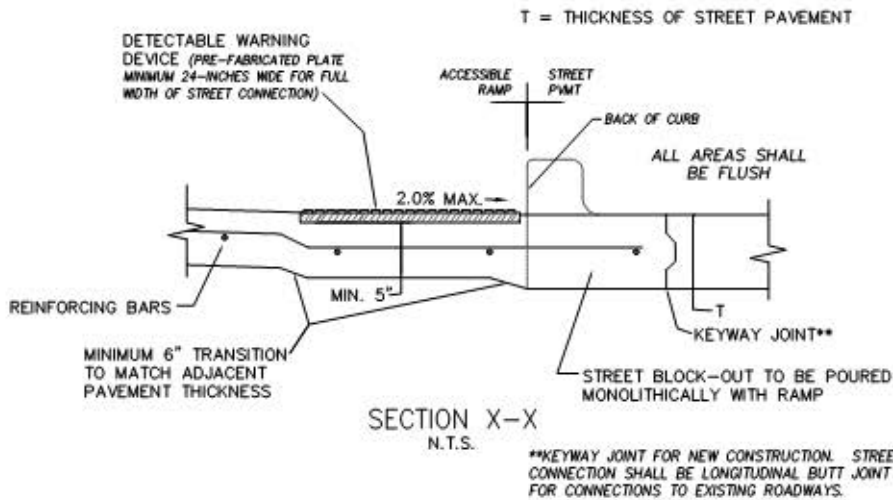
* See PROWAG special design considerations when street crossing has no stop or yield condition.

DIRECTIONAL CURB RAMP


CITY OF ROCKWALL



DATE	DRAWING NO.
MAR. '17	R-2125B



NOTE: ALL SIDEWALK CURB RAMPS WILL BE 3,600 PSI (6.5 SACK/CY) CONCRETE.

DIRECTIONAL CURB RAMP	CITY OF ROCKWALL		
		DATE MAR. '17	DRAWING NO. R-2125C



PEDESTRIAN ACCESSIBILITY (WITHIN PUBLIC R.O.W.)

All newly constructed sidewalks, curb ramps and crosswalks installed within City of Rockwall public rights-of-way shall be considered a pedestrian access route and shall conform to the most current Guidelines for Public Rights-of-Way created by the United States Access Board.

CURB RAMPS


1. All slopes shown are **MAXIMUM ALLOWABLE**. Lesser slopes that will still drain properly should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
2. Landings shall be 5'x 5' minimum with a maximum 2% slope in the transverse and longitudinal directions..
3. Clear space at the bottom of curb ramps shall be a minimum of 5'x 5' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
4. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
5. Additional information on curb ramp location, design, light reflective value and texture may be found in the most current edition of the Texas Accessibility Standards (TAS) and 16 TAC 68.102. Federal guidelines shall supersede any conflicts.
6. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps and accessible routes shall align with theoretical crosswalks unless otherwise directed.
7. Handrails are not required on curb ramps.
8. Provide a flush transition where the curb ramps connect to the street.
9. Accessible routes are considered "ramps" when longitudinal slopes are between 5% and 8.3% (maximum allowable). Sidewalks under 5% longitudinal slope are deemed accessible routes and must follow all applicable guidelines.

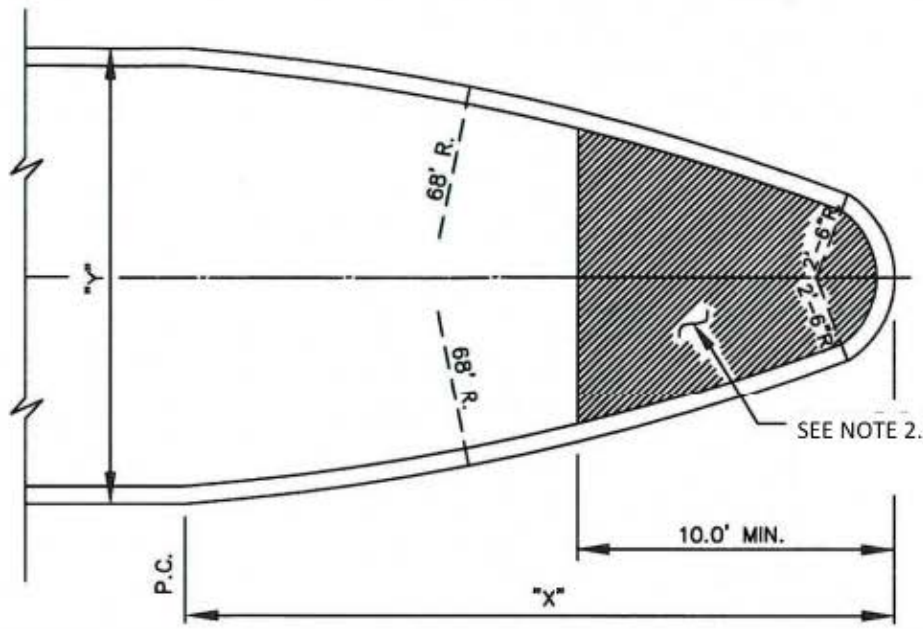
DETECTABLE WARNING DEVICE

10. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with Section 705 of the TAS. The surface must contrast visually with adjoining surfaces. Furnish and install an approved cast-in-place dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
11. Detectable Warning Materials shall be truncated dome plates in the color approved by the City. Install products in accordance with manufacturer's specifications.
12. Detectable warning surfaces must be slip resistant and not allow water to accumulate.
13. Detectable warning surfaces shall be a minimum of 24" in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
14. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb. When placed on the ramp, align the rows of domes to be perpendicular to the grade break between the ramp run and the street. Where detectable warning surfaces are provided on a surface with a slope that is less than 5 percent, dome orientation is less critical. Detectable warning surfaces may be curved along the corner radius.

SIDEWALKS

15. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within one or more reach ranges specified in TAS 308.
16. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
17. Street grades and cross slopes shall be as shown elsewhere in the plans.
18. Changes in level greater than 1/4 inch are not permitted (1/2 inch with bevel).
19. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than 5% must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with TAS 505.
20. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.

DIRECTIONAL CURB RAMP	CITY OF ROCKWALL		
		DATE	DRAWING NO.
		MAR. '17	R-2125D



DIMENSIONS OF MEDIAN NOSE

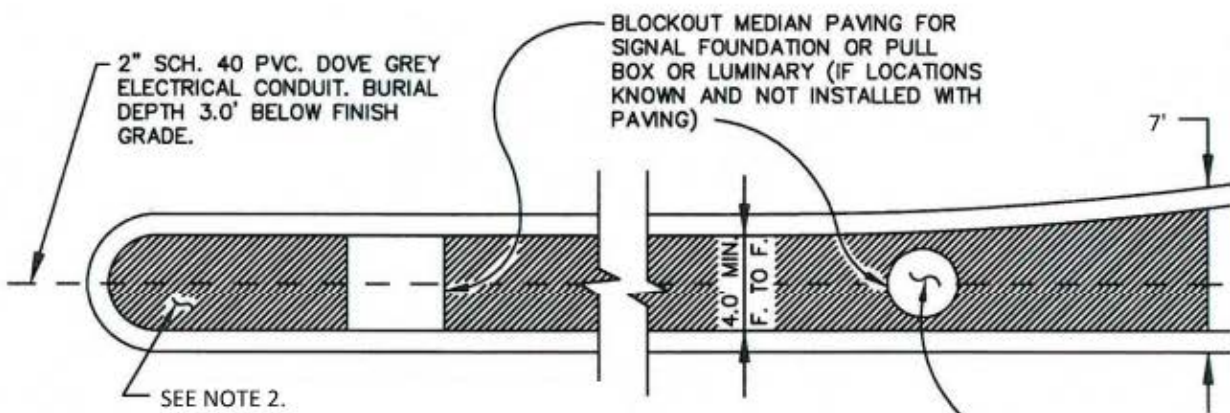
Y = 15'	X = 27.6'
Y = 16'	X = 28.8'
Y = 17'	X = 29.9'
Y = 18'	X = 30.9'

CONCRETE NOSE FOR MEDIAN ISLAND

N.T.S.

NOTES

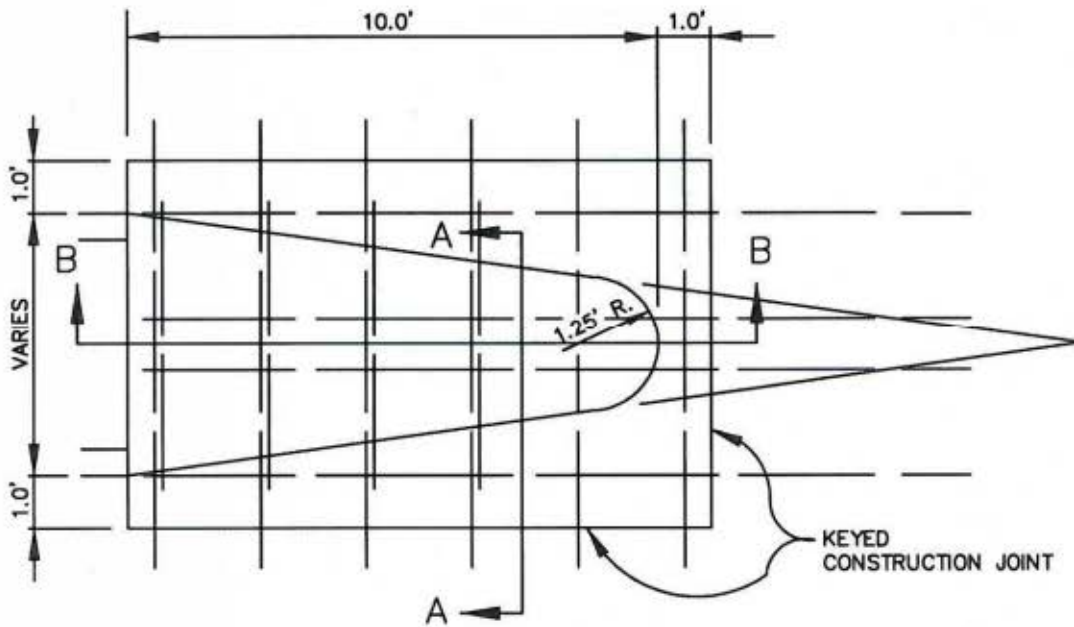
1. LEFT TURN LANE SHALL HAVE A MOWER ACCESS RAMP.
2. MEDIAN PAVING TO BE CONSTRUCTED OF INTEGRAL STAMPED & STAINED REINFORCED CONCRETE, COLOR AND PATTERN TO BE APPROVED BY THE CITY. CONCRETE TO BE MINIMUM SIX (6") INCH 3600PSI (6.5 SACK/CY) WITH #4 BARS ON 18" CENTERS.
3. STREET LIGHT POLE BASES IN MEDIAN ARE TO HAVE THIRTY-SIX (36") INCH BY THIRTY-SIX (36") INCH, FOUR (4") INCH THICK, 3000PSI REINFORCED CONCRETE MOW STRIP.



LEFT TURN LANE MEDIAN PAVEMENT

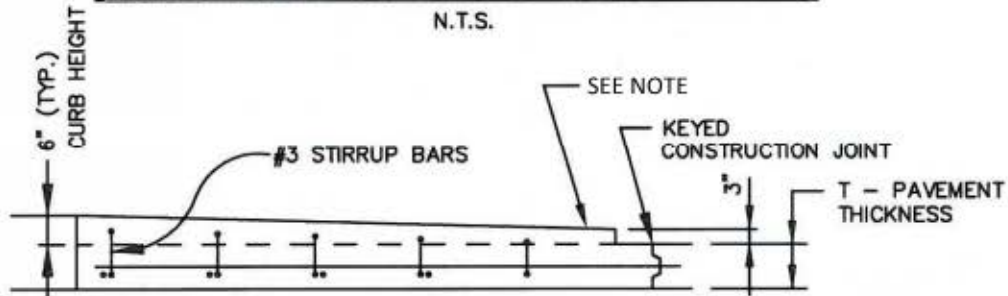
N.T.S.

MEDIAN ISLAND PAVEMENT NOSE & LEFT TURN LANE	CITY OF ROCKWALL 	STANDARD SPECIFICATION REFERENCE 305.3	
		DATE AUG. '19	STANDARD DRAWING NO. R-2130



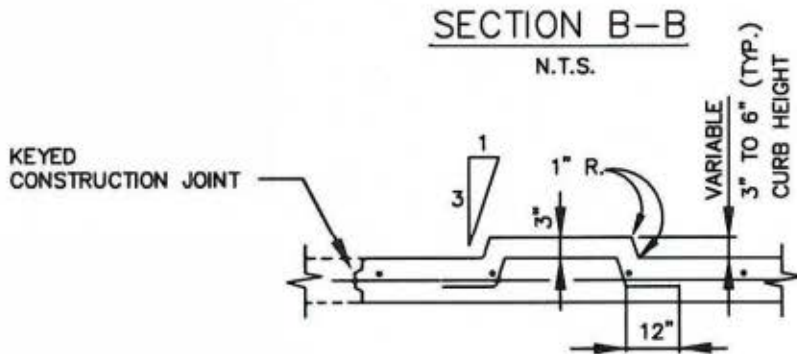
MONOLITHIC CONCRETE MEDIAN NOSE

N.T.S.



SECTION B-B


N.T.S.

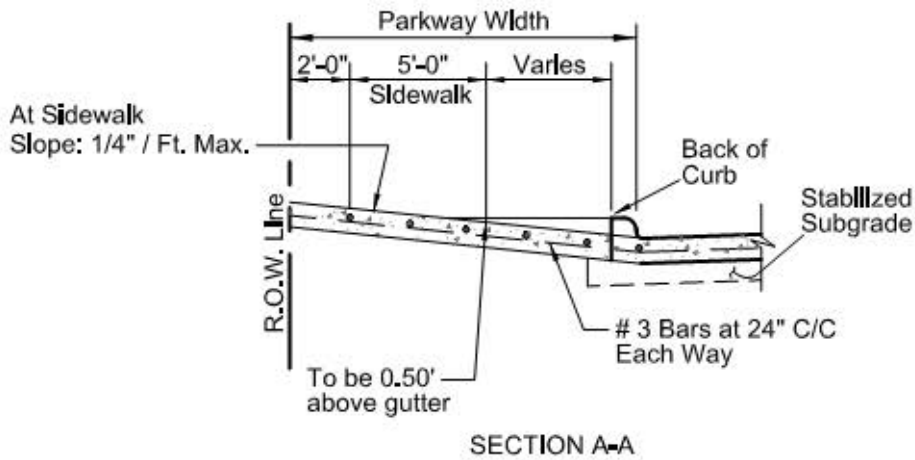


SECTION A-A

N.T.S.

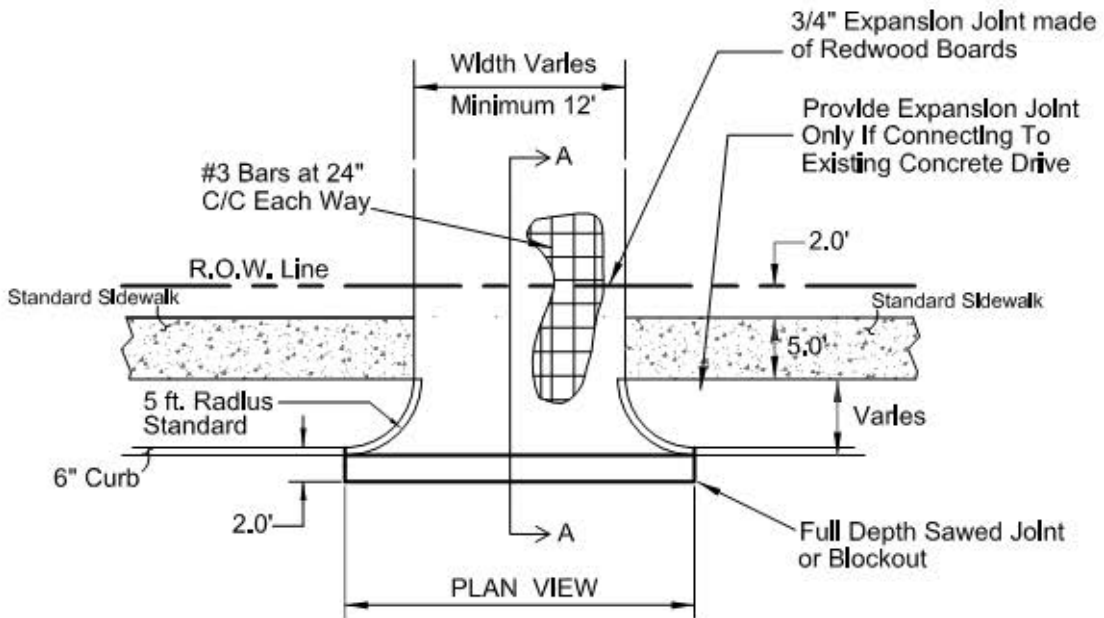
- NOTE:
1. MEDIAN NOSE PAVEMENT STRENGTH SHALL MATCH THAT OF STREET PAVING.
 2. MONOLITHIC NOSE REQUIRED WHEN LESS THAN 6.0' FACE TO FACE.
 3. REINFORCEMENT BARS SHALL MATCH THOSE IN PAVEMENT.

<p>MEDIAN ISLAND PAVEMENT</p>	<p>CITY OF ROCKWALL</p>	<p>STANDARD SPECIFICATION REFERENCE 305.3</p>	
<p>MONOLITHIC CONCRETE NOSE</p>		<p>DATE AUG. '19</p>	<p>STANDARD DRAWING NO. R-2140</p>




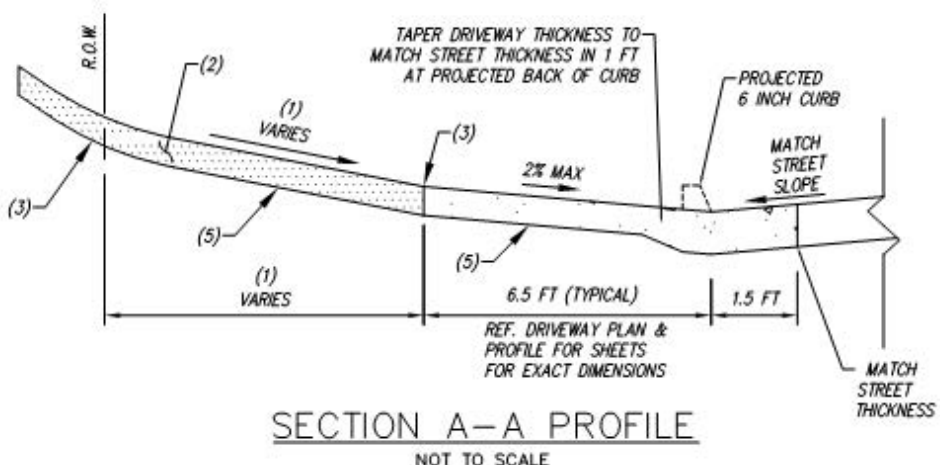
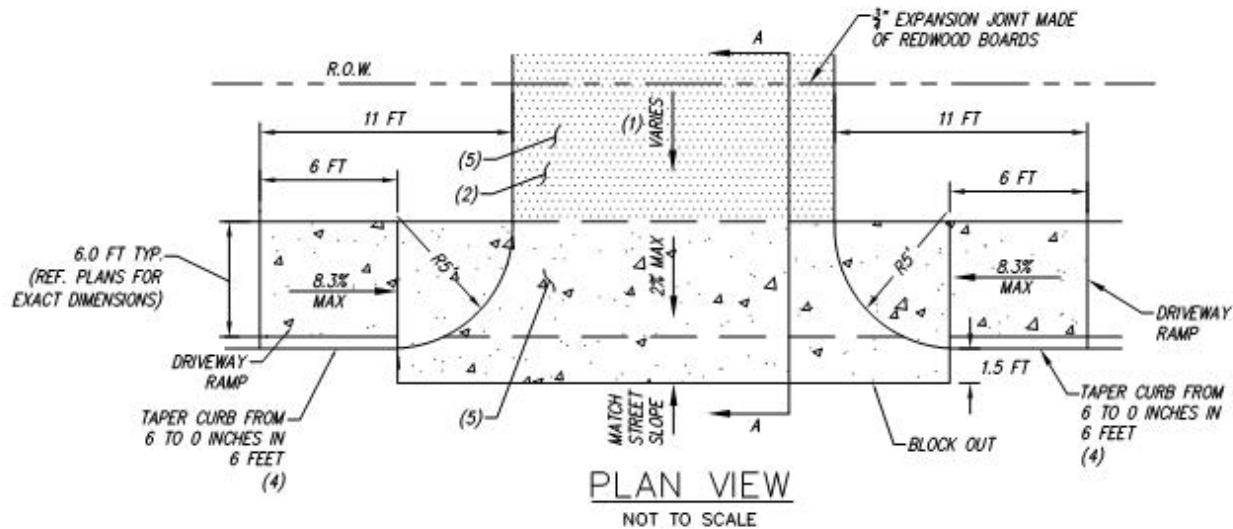
NOTE:

Sidewalk section thru driveway to be poured same thickness as driveway - 6" Thick 3,600 P.S.I. Relnf. Conc. Pvmt. w/ #3 Bars @ 24" O.C.E.W. (Grade 60 Steel)



DRIVEWAY DETAILS
(Not to Scale)

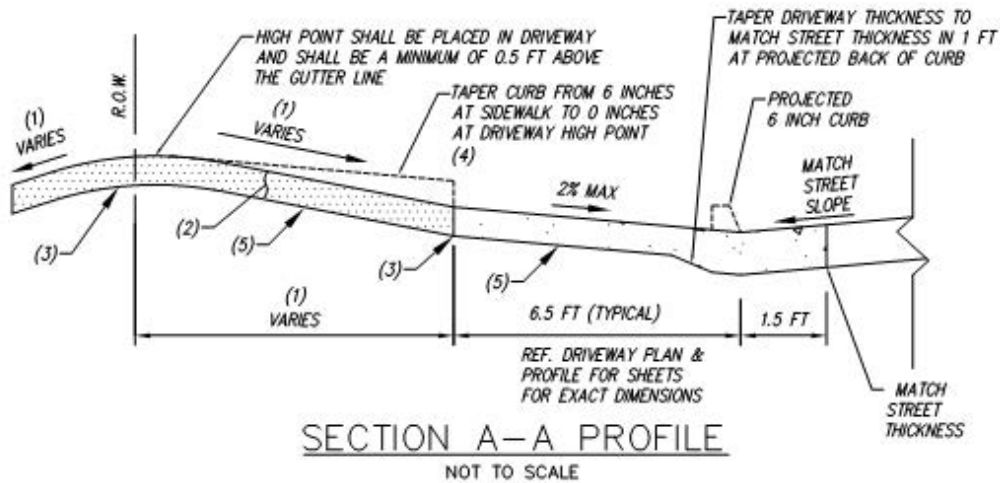
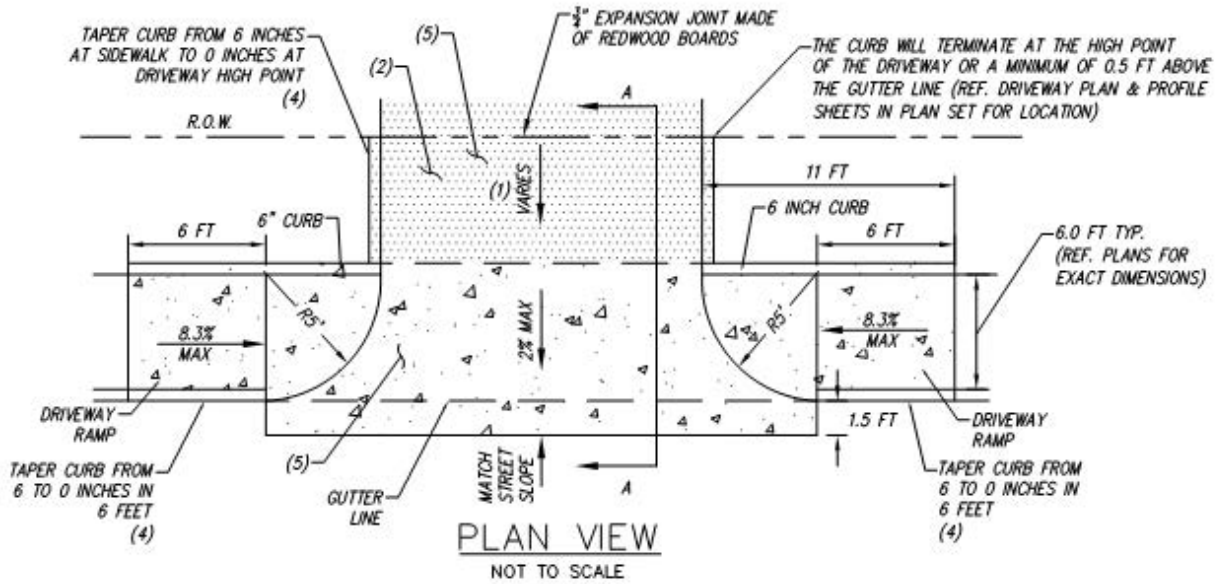
DRIVEWAY DETAIL	CITY OF ROCKWALL		
RESIDENTIAL DRIVEWAY		DATE AUG '19	DRAWING NO. R-2150



- (1) REFERENCE DRIVEWAY PLAN AND PROFILE SHEETS FOR EXACT GRADES AND VERTICAL CURVE INFORMATION
- (2) FOR ROAD RECONSTRUCTION PROJECTS THE DRIVEWAY MATERIAL/FINISH TYPE BEHIND THE SIDEWALK SHALL MATCH THE EXISTING DRIVEWAY MATERIAL TYPE/FINISH (EXPOSED AGGREGATE, STAMPED STAINED, PAVERS, ETC.) THE SIDEWALK CROSSING SHALL BE STANDARD BROOM FINISH.
- (3) VERTICAL CURVES SHALL BE INSTALLED PER THE DRIVEWAY PROFILE FOUND IN THE PLAN SET. WHEN DRIVEWAY PROFILES ARE NOT PROVIDED VERTICAL CURVES SHALL BE INSTALLED WHEN AN ALGEBRAIC CHANGE IN GRADE OCCURS WITHIN A DRIVEWAY OF MORE THAN 4%. THE MINIMUM RECOMMENDED LENGTHS OF VERTICAL CURVE FOR THE CORRESPONDING CHANGE IN GRADE FOR DRIVEWAY PROFILES ARE SHOWN IN THE TABLE. IT IS RECOMMENDED TO PUT A 2 FOOT VERTICAL CURVE WHERE EVER THE ALGEBRAIC CHANGE IN GRADE IS LESS THAN 4%.
- (4) SAWCUTTING OF CURB FOR CURB HEIGHT TAPER WILL NOT BE ALLOWED. FULL DRIVEWAY AND SIDEWALK PANEL REPLACEMENT WILL BE REQUIRED IF SAWCUTTING OCCURS.
- (5) REINFORCED CONCRETE SHALL BE MIN. 6" THICK, 3,600 PSI (6.5 SACK/CY) W/ #3 BARS @ 24" O.C.E.W.

VERTICAL CURVE LENGTHS FOR DRIVEWAYS		
ALGEBRAIC CHANGE IN GRADE	MINIMUM LENGTH (FT)	
	CREST CURVE	SAG CURVE
< 4%	2	2
4% - 5%	5	6
6% - 8%	5	7
9% - 12%	6	8

RESIDENTIAL DRIVEWAY - SIDEWALK ADJACENT TO CURB	CITY OF ROCKWALL 	
HIGH SIDE OF STREET		
		DATE MAY '21
		DRAWING NO. R-2151A

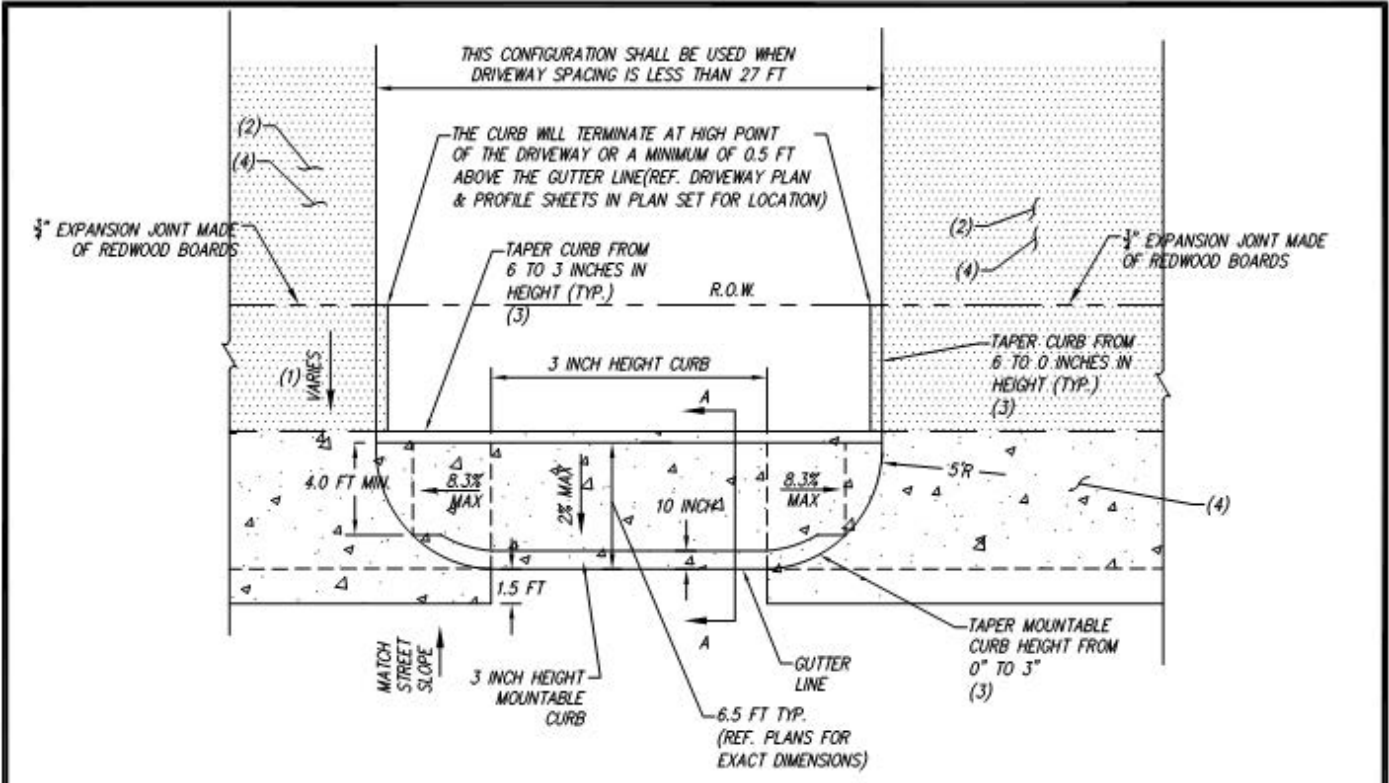


- (1) REFERENCE DRIVEWAY PLAN AND PROFILE SHEETS FOR EXACT GRADES AND VERTICAL CURVE INFORMATION
- (2) FOR ROAD RECONSTRUCTION PROJECTS THE DRIVEWAY MATERIAL/FINISH TYPE BEHIND THE SIDEWALK SHALL MATCH THE EXISTING DRIVEWAY MATERIAL TYPE/FINISH (EXPOSED AGGREGATE, STAMPED STAINED, PAVERS, ETC.) THE SIDEWALK CROSSING SHALL BE STANDARD BROOM FINISH.
- (3) VERTICAL CURVES SHALL BE INSTALLED PER THE DRIVEWAY PROFILE FOUND IN THE PLAN SET. WHEN DRIVEWAY PROFILES ARE NOT PROVIDED VERTICAL CURVES SHALL BE INSTALLED WHEN AN ALGEBRAIC CHANGE IN GRADE OCCURS WITHIN A DRIVEWAY OF MORE THAN 4%. THE MINIMUM RECOMMENDED LENGTHS OF VERTICAL CURVE FOR THE CORRESPONDING CHANGE IN GRADE FOR DRIVEWAY PROFILES ARE SHOWN IN THE TABLE. IT IS RECOMMENDED TO PUT A 2 FOOT VERTICAL CURVE WHERE EVER THE ALGEBRAIC CHANGE IN GRADE IS LESS THAN 4%.
- (4) SAWCUTTING OF CURB FOR CURB HEIGHT TAPER WILL NOT BE ALLOWED. FULL DRIVEWAY AND SIDEWALK PANEL REPLACEMENT WILL BE REQUIRED IF SAWCUTTING OCCURS.
- (5) REINFORCED CONCRETE SHALL BE MIN. 6" THICK, 3,600 PSI (6.5 SACK/CY) W/ #3 BARS @ 24" O.C.E.W

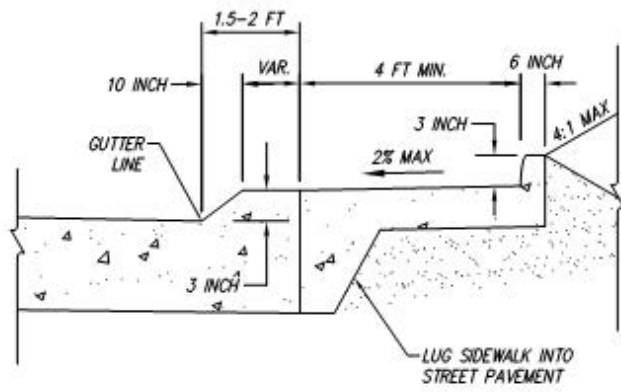
VERTICAL CURVE LENGTHS FOR DRIVEWAYS		
ALGEBRAIC CHANGE IN GRADE	MINIMUM LENGTH (FT)	
	CREST CURVE	SAG CURVE
< 4%	2	2
4% - 5%	5	6
6% - 8%	5	7
9% - 12%	6	8

NOTE: NO DOWNGRADE DRIVEWAYS WILL BE ALLOWED FOR NEW DEVELOPMENT OR NEW CONSTRUCTION.

RESIDENTIAL DRIVEWAY - SIDEWALK ADJACENT TO CURB	CITY OF ROCKWALL 	
LOW SIDE OF STREET		DATE MAY '21
		DRAWING NO. R-2151B




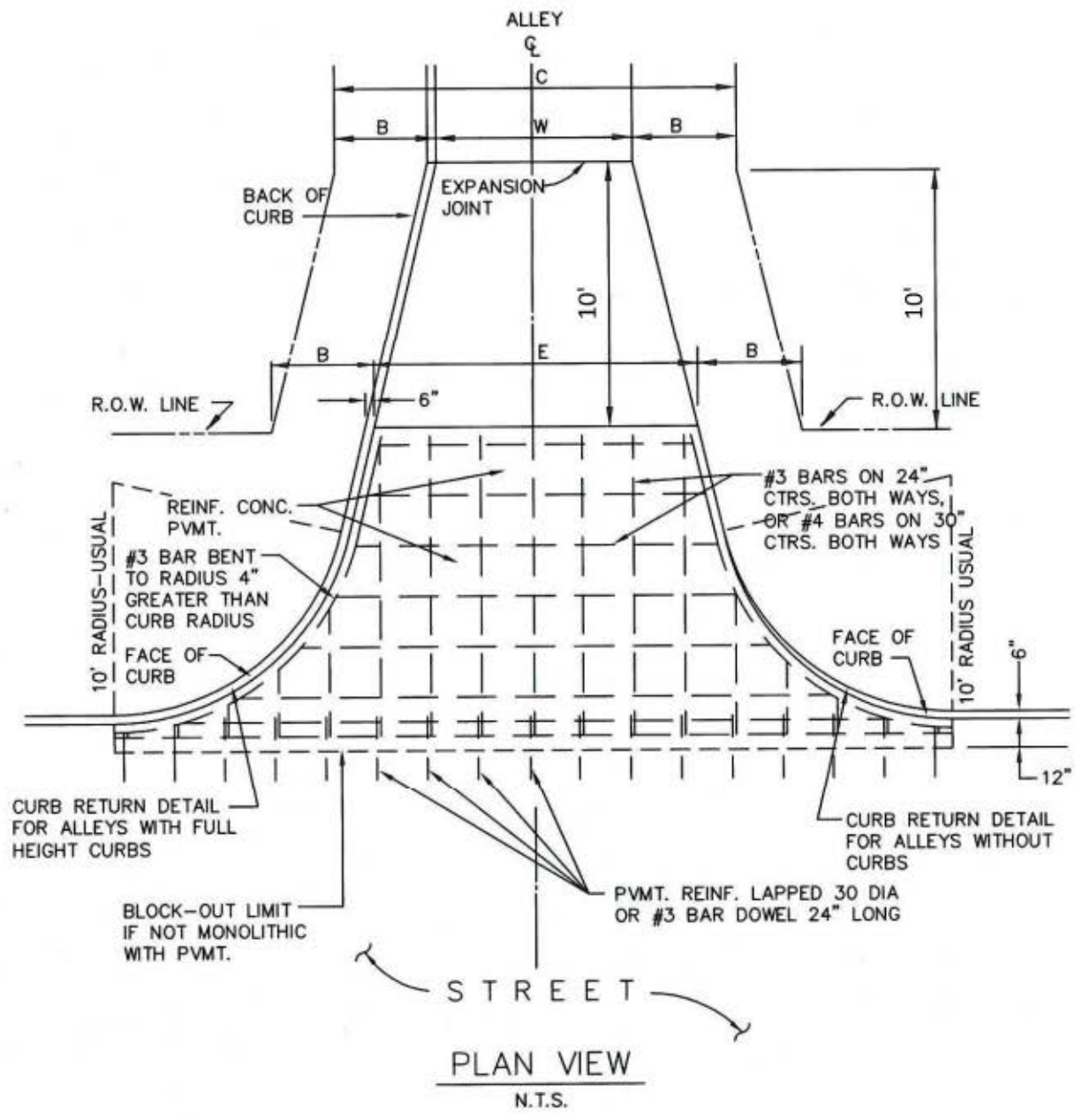
PLAN VIEW
NOT TO SCALE



SECTION A-A
NOT TO SCALE

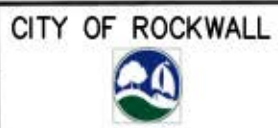
- (1) REFERENCE DRIVEWAY PLAN AND PROFILE SHEETS FOR EXACT GRADES AND VERTICAL CURVE INFORMATION
- (2) FOR ROAD RECONSTRUCTION PROJECTS THE DRIVEWAY MATERIAL/FINISH TYPE BEHIND THE SIDEWALK SHALL MATCH THE EXISTING DRIVEWAY MATERIAL TYPE/FINISH (EXPOSED AGGREGATE, STAMPED STAINED, PAVERS, ETC.) THE SIDEWALK CROSSING SHALL BE STANDARD BROOM FINISH.
- (3) SAWCUTTING OF CURB FOR CURB HEIGHT TAPER WILL NOT BE ALLOWED. FULL DRIVEWAY AND SIDEWALK PANEL REPLACEMENT WILL BE REQUIRED IF SAWCUTTING OCCURS.
- (4) DRIVEWAY REINFORCED CONCRETE SHALL BE MIN. 6" THICK, 3,600 PSI (6.5 SACK/CY) W/ #3 BARS @ 24" O.C.E.W

RESIDENTIAL DRIVEWAY - SIDEWALK ADJACENT TO CURB	CITY OF ROCKWALL			
DRIVEWAYS CLOSER THAN 27-FT		<table border="1"> <tr> <td>DATE MAY '21</td> <td>DRAWING NO. R-2152</td> </tr> </table>	DATE MAY '21	DRAWING NO. R-2152
DATE MAY '21	DRAWING NO. R-2152			

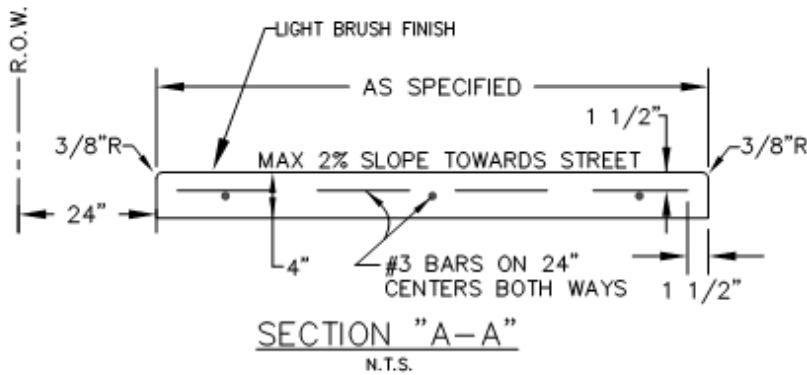
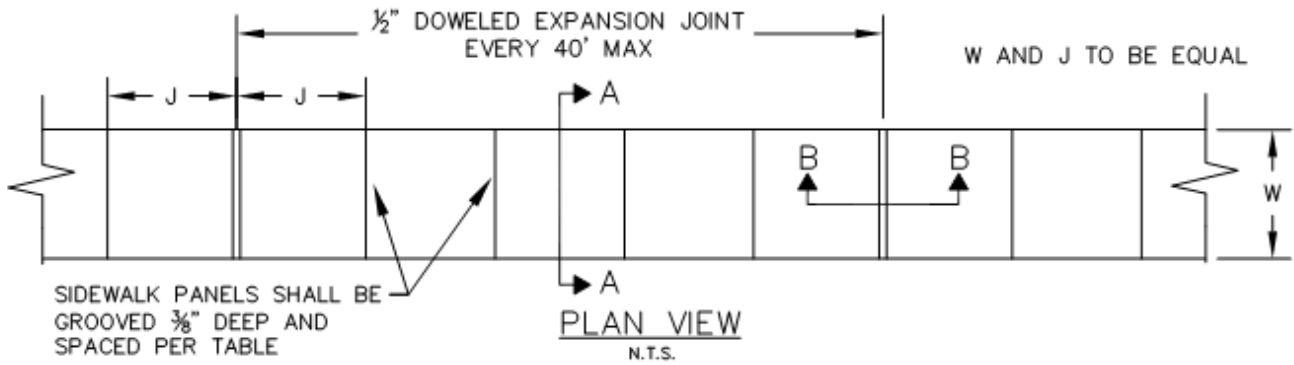


ALLEY WIDTH (W)	R.O.W. WIDTH (C)	B	E
12'	20'	4'	14'

ALLEY APPROACH
RADIUS RETURN TYPE

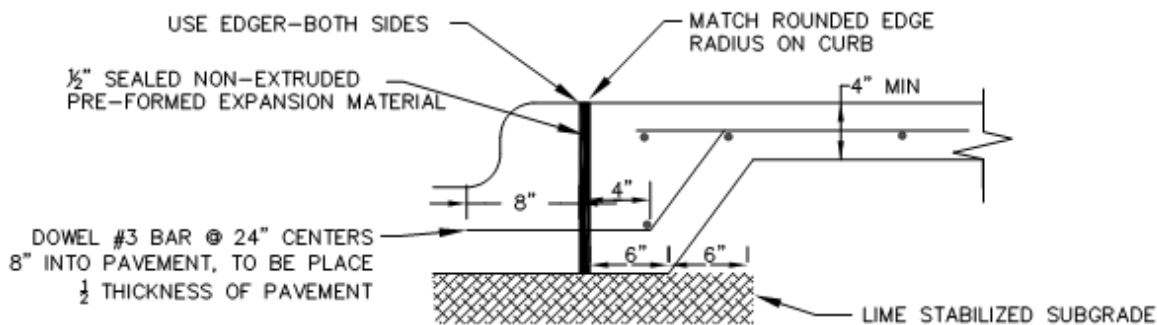
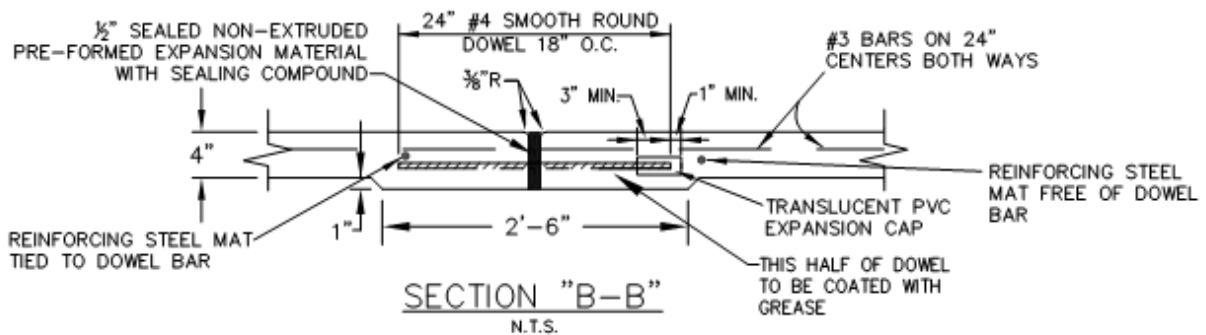


STANDARD SPECIFICATION REFERENCE 305.2	
DATE Mar. 2018	STANDARD DRAWING NO. R-2160



NOTES:

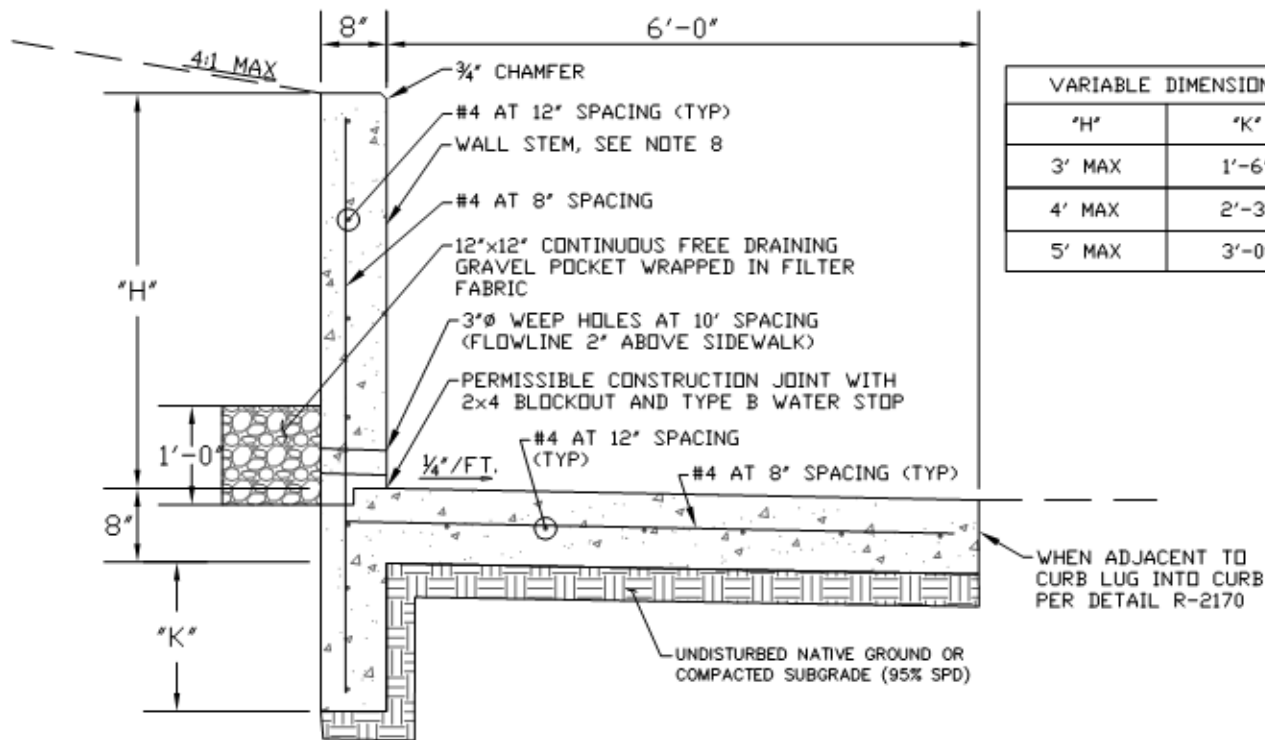
1. CROSS SLOPE OF SIDEWALK SHALL BE NO GREATER THAN 2%
2. SIDEWALK CONCRETE WITHIN CITY R.O.W. SHALL BE MINIMUM 3,000 PSI (5.5 SACK/C.Y.) CONCRETE.
3. ALL SIDEWALKS SHALL MAINTAIN POSITIVE DRAINAGE.
4. ALL HONEYCOMB IN BACK OF CURB TO BE TROWEL-PLASTERED BEFORE POURING SIDEWALK.
5. MINIMUM WIDTH OF 6' IF SIDEWALK ADJACENT TO CURB A LUGGED INTO THE CURB.
6. STEEL WIRE MESH IS NOT ACCEPTABLE.



JOINT LUG DETAIL FOR MEDIAN PAVEMENT
LEAD WALK CONNECTIONS OR SIDEWALK ADJACENT TO CURB
N.T.S.

REINFORCED CONCRETE SIDEWALKS	CITY OF ROCKWALL		
		DATE AUG '19	DRAWING NO. R-2170
JOINTS AND SPACING			





VARIABLE DIMENSIONS	
"H"	"K"
3' MAX	1'-6"
4' MAX	2'-3"
5' MAX	3'-0"

RETAINING WALL WITH INTEGRAL SIDEWALK

N.T.S.

- NOTES:
- FOR USE OF THIS STANDARD DETAIL, THE FOLLOWING GEOTECHNICAL SITE CONDITIONS MUST BE MET:
 - MINIMUM ALLOWABLE BEARING PRESSURE: 1,500 PSF
 - MINIMUM COEFFICIENT OF FRICTION: 0.3
 - MAXIMUM ACTIVE PRESSURE COEFFICIENT (K_a): 0.65
 - ALL MATERIALS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO CONSTRUCTION.
 - ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI.
 - ALL REINFORCING STEEL SHALL BE GRADE 60.
 - ALL CLEAR COVER SHALL BE 2" WHERE FORMED AND 3" WHERE CAST AGAINST EARTH.
 - IF ANY SURCHARGE LOAD IS ANTICIPATED AN ENGINEERING DESIGN IS REQUIRED, SEALED BY A REGISTERED ENGINEER IN THE STATE OF TEXAS. THIS INCLUDES DEAD LOAD SURCHARGES AND LIVE LOAD SURCHARGES SUCH AS TRAFFIC LOADS.
 - JOINT LOCATIONS SHALL MATCH ON SIDEWALK AND WALL. JOINT SPACING SHALL BE EVERY 30 FEET FOR CONTROL JOINTS AND EVERY 90 FEET FOR EXPANSION JOINTS. TYPE B WATERSTOP SHALL BE APPLIED ON THE FILL SIDE OF ALL EXPANSION AND CONSTRUCTION JOINTS.
 - WALL FACE SHALL BE FORM LINER OR STONE VENEER WITH RANDOM ROCK ASHLAR PATTERN, NO SMOOTH CONCRETE SURFACE ALLOWED


REINFORCED CONCRETE RETAINING WALL	CITY OF ROCKWALL 	DATE	DRAWING NO.
		AUG '19	R-2180
INTEGRAL WITH SIDEWALK			

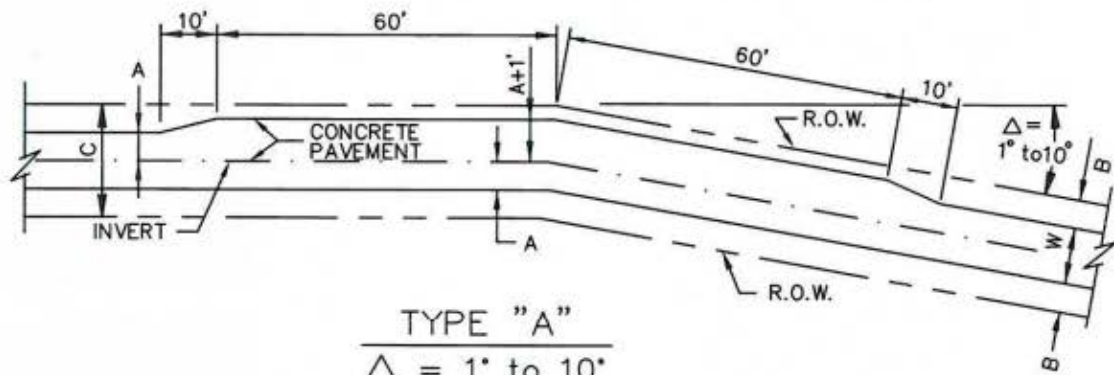


GENERAL NOTES:

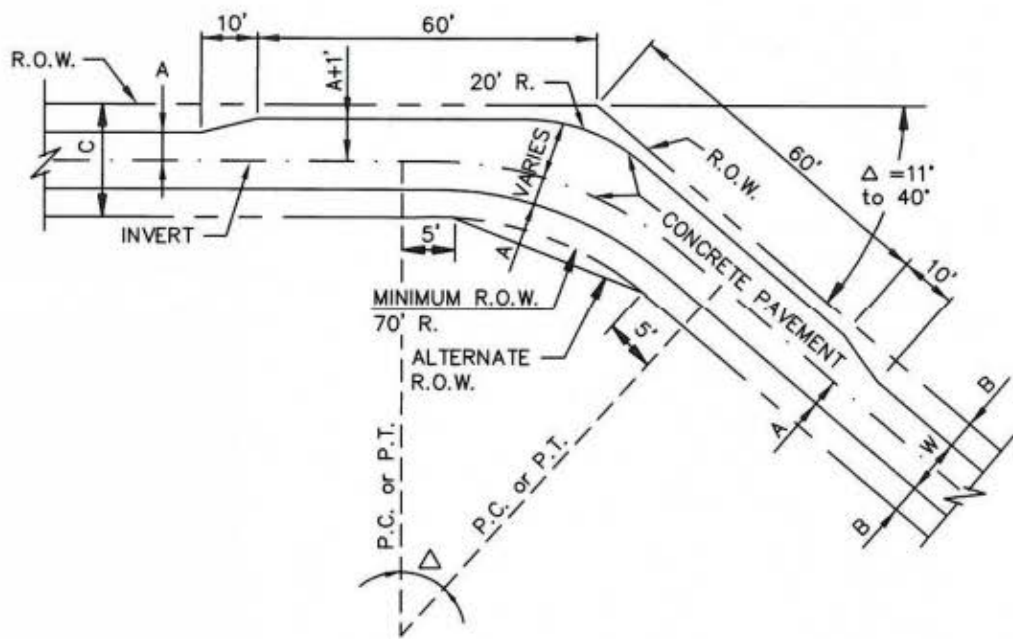
1. REINFORCED CONCRETE PAVEMENT:
 - A. ALL CURBS SHALL BE PLACED INTEGRAL WITH PAVEMENT UNLESS OTHERWISE APPROVED BY THE OWNER.
 - B. CURBS SHALL MEET THE SAME COMPRESSIVE STRENGTH AS SPECIFIED FOR THE PAVEMENT.
 - C. BAR LAPS SHALL BE 30 DIAMETERS.
 - D. REINFORCING BARS SHALL BE SUPPORTED BY CHAIRS OR OTHER DEVICES APPROVED BY THE OWNER.

2. SUBGRADE: (UNLESS OTHERWISE SPECIFIED BY OWNER)
 - A. SUBGRADE UNDER ALL PAVEMENTS SHALL BE STABILIZED TO A MINIMUM DEPTH OF SIX (6") INCHES WITH HYDRATED LIME CEMENT. LABORATORY TESTS WILL BE PERFORMED TO DETERMINE THE AMOUNT OF LIME OR CEMENT TO USE.

PAVEMENT SYSTEMS	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE	
GENERAL NOTES		302,303	
		DATE	STANDARD DRAWING NO.
		Mar. 2018	R-2190




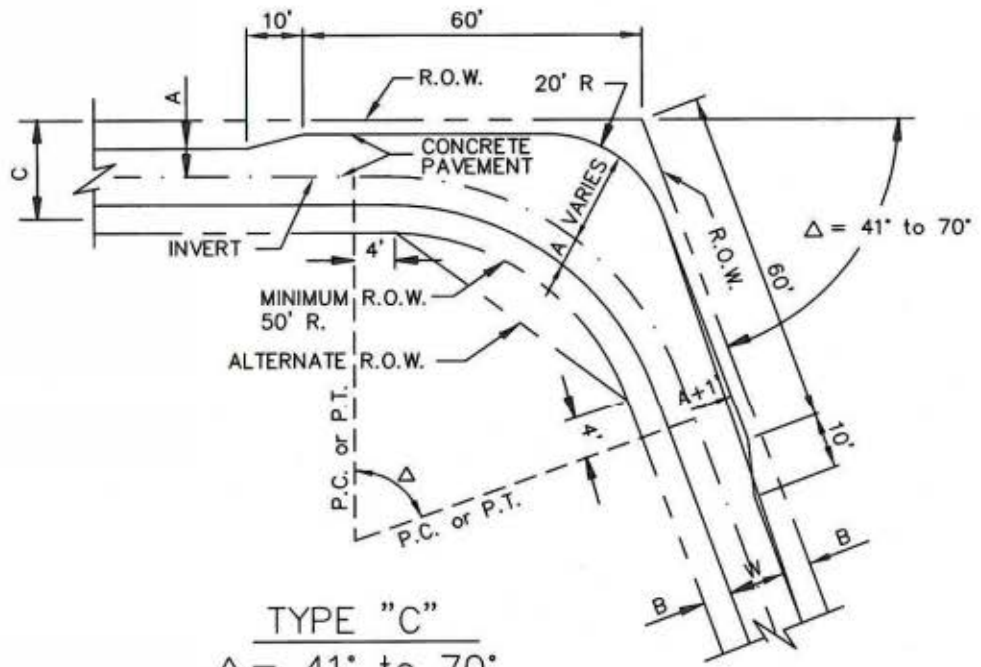
TYPE "A"
 $\Delta = 1' \text{ to } 10'$
 N.T.S.



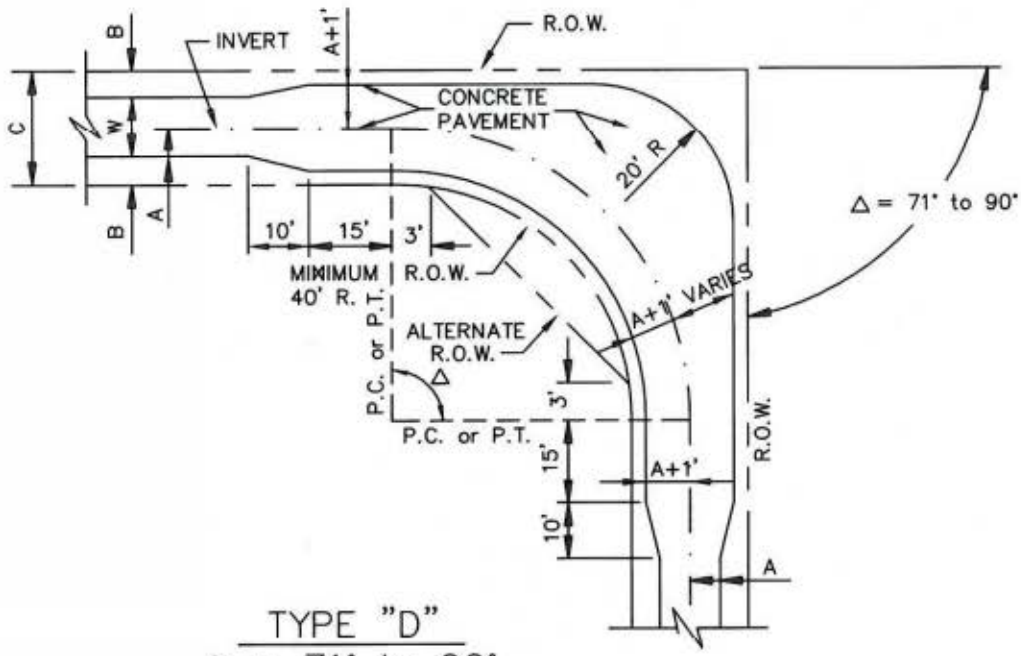
TYPE "B"
 $\Delta = 11' \text{ to } 40'$
 N.T.S.

- NOTES:
1. ALLEY WIDTH SHALL BE TWELVE (12') FEET MINIMUM.
 2. ALLEY R.O.W. SHALL BE TWENTY (20') FEET MINIMUM.
 3. DIMENSION A= SIX (6') FEET.
 4. DIMENSION B= FOUR (4') FEET.

ALLEY GEOMETRICS TYPE "A" & TYPE "B"	CITY OF ROCKWALL 	STANDARD SPECIFICATION REFERENCE 303.5
		DATE Mar. 2018



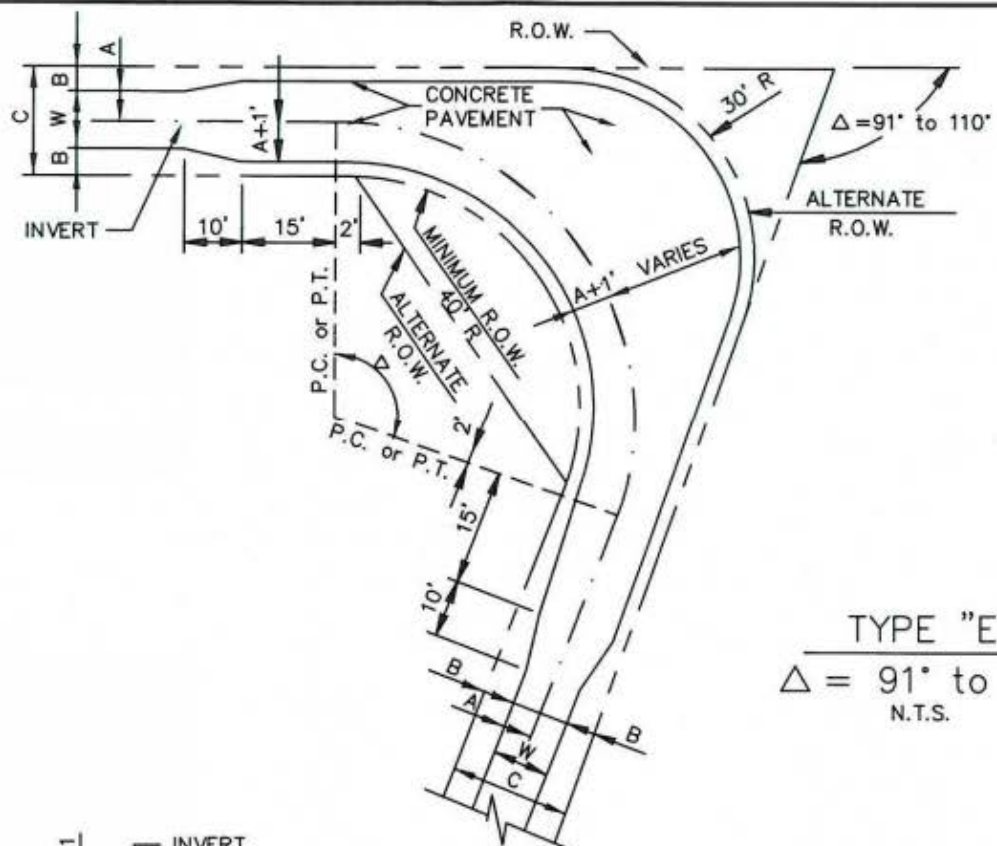
TYPE "C"
 $\Delta = 41^\circ \text{ to } 70^\circ$
 N.T.S.



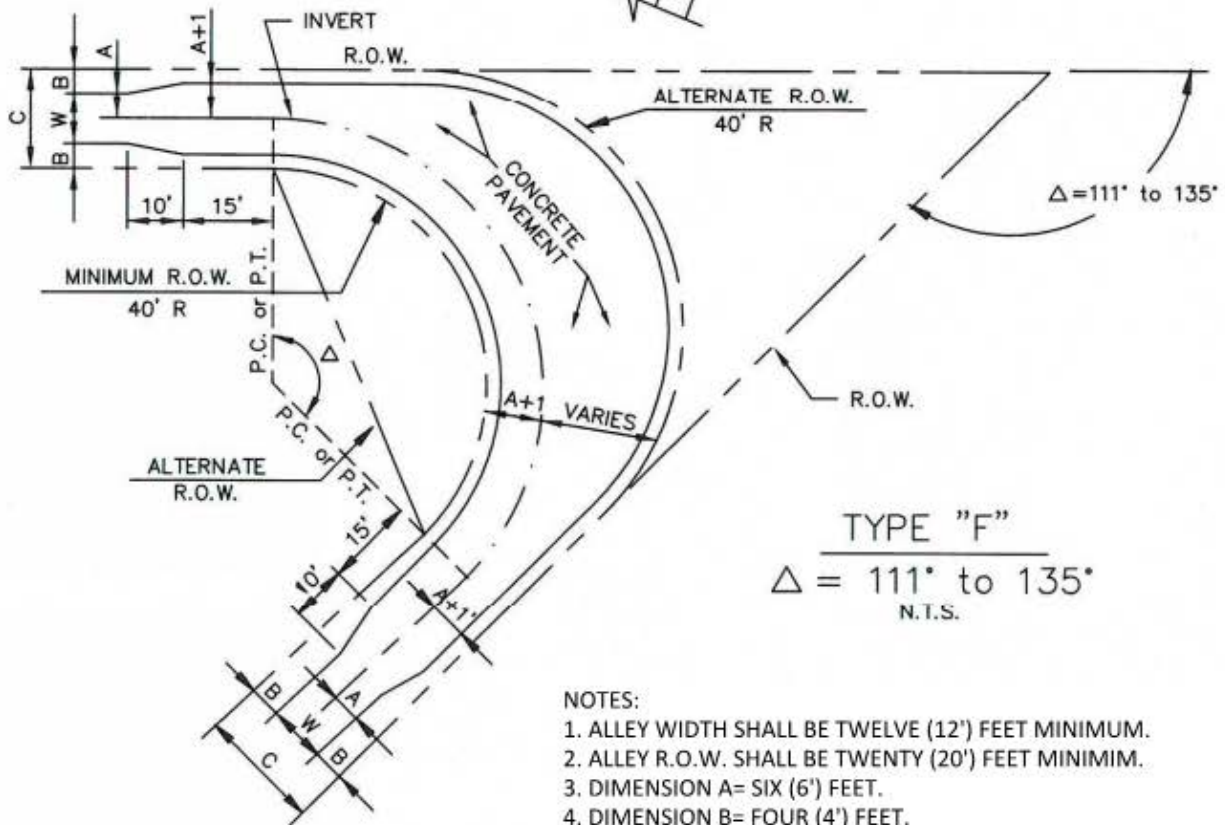
TYPE "D"
 $\Delta = 71^\circ \text{ to } 90^\circ$
 N.T.S.

- NOTES:
1. ALLEY WIDTH SHALL BE TWELVE (12') FEET MINIMUM.
 2. ALLEY R.O.W. SHALL BE TWENTY (20') FEET MINIMUM.
 3. DIMENSION A= SIX (6') FEET.
 4. DIMENSION B= FOUR (4') FEET.

ALLEY GEOMETRICS TYPE "C" & TYPE "D"	CITY OF ROCKWALL 	STANDARD SPECIFICATION REFERENCE 303.5	
		DATE Mar. 2018	STANDARD DRAWING NO. R-2220




TYPE "E"
 $\Delta = 91^\circ \text{ to } 110^\circ$
 N.T.S.

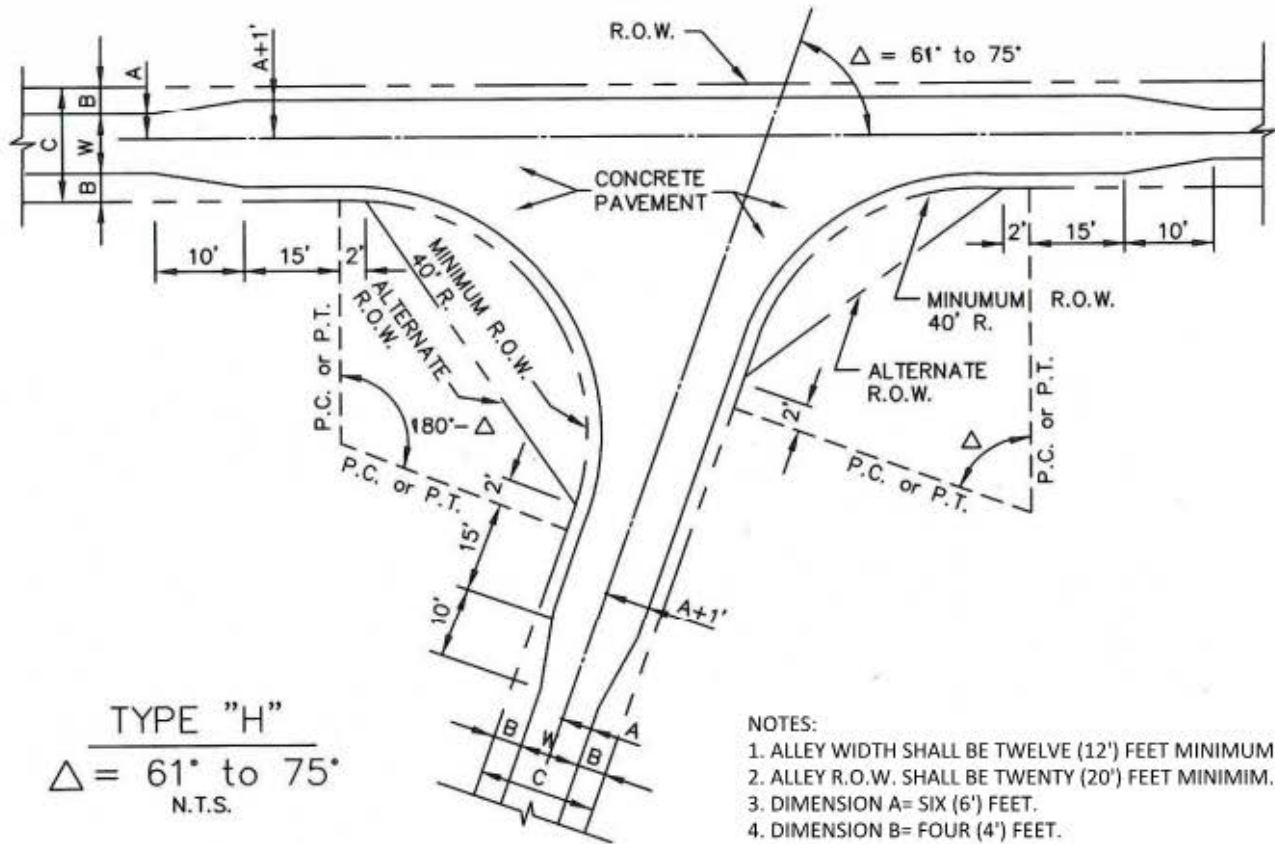
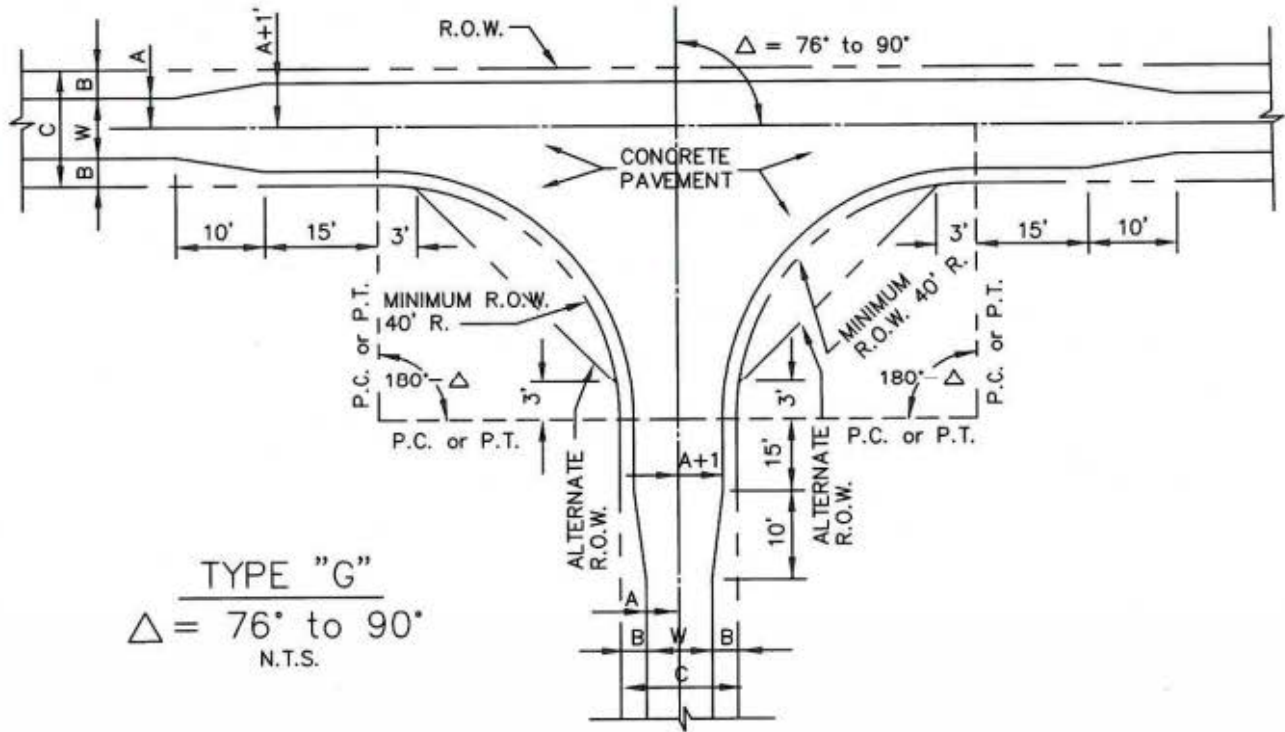


TYPE "F"
 $\Delta = 111^\circ \text{ to } 135^\circ$
 N.T.S.

NOTES:

1. ALLEY WIDTH SHALL BE TWELVE (12') FEET MINIMUM.
2. ALLEY R.O.W. SHALL BE TWENTY (20') FEET MINIMUM.
3. DIMENSION A= SIX (6') FEET.
4. DIMENSION B= FOUR (4') FEET.

ALLEY GEOMETRICS TYPE "E" & TYPE "F"	CITY OF ROCKWALL 	STANDARD SPECIFICATION REFERENCE 303.5	
		DATE Mar. 2018	STANDARD DRAWING NO. R-2230



- NOTES:
1. ALLEY WIDTH SHALL BE TWELVE (12') FEET MINIMUM.
 2. ALLEY R.O.W. SHALL BE TWENTY (20') FEET MINIMUM.
 3. DIMENSION A= SIX (6') FEET.
 4. DIMENSION B= FOUR (4') FEET.

ALLEY GEOMETRICS

TYPE "G" & TYPE "H"

CITY OF ROCKWALL



STANDARD SPECIFICATION REFERENCE

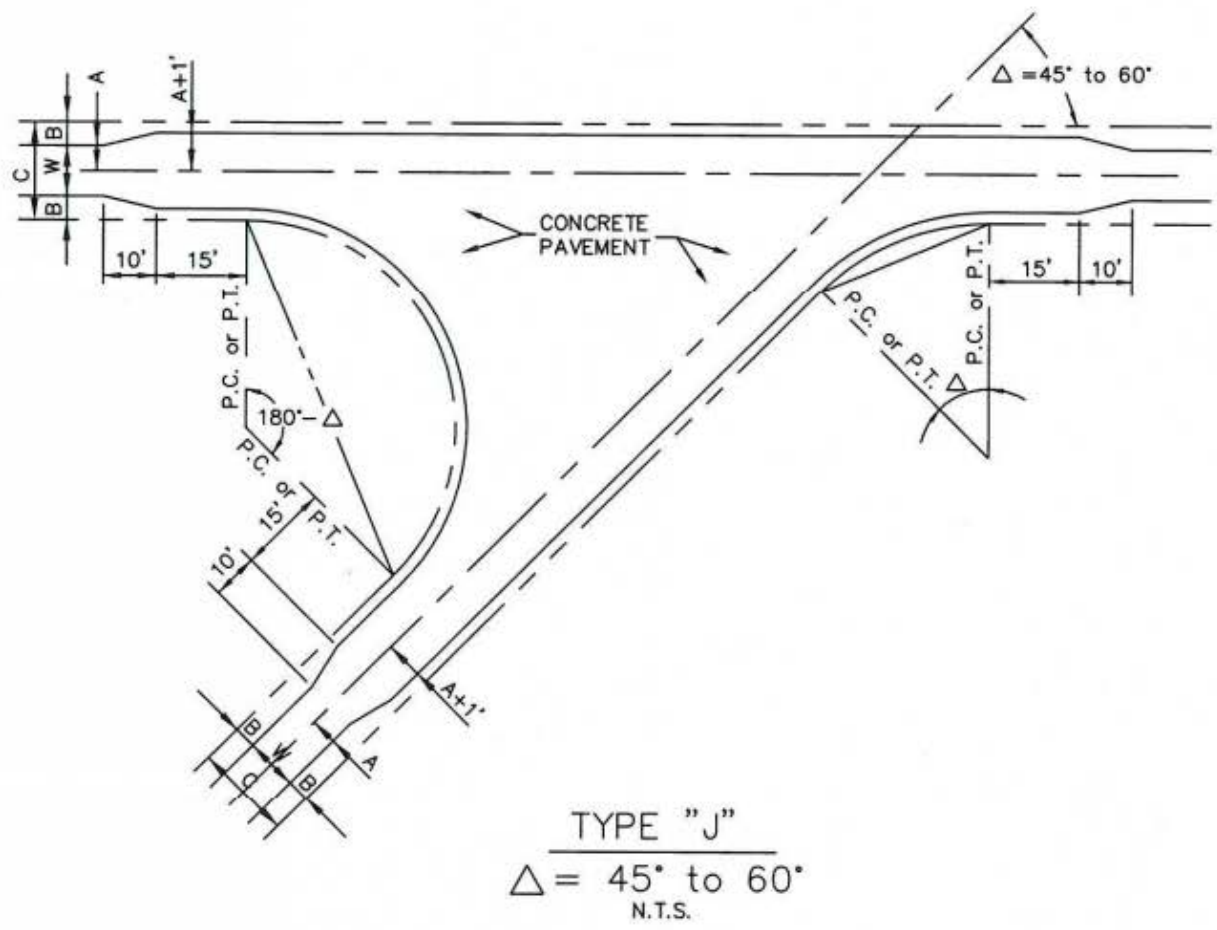
303.5

DATE

Mar. 2018

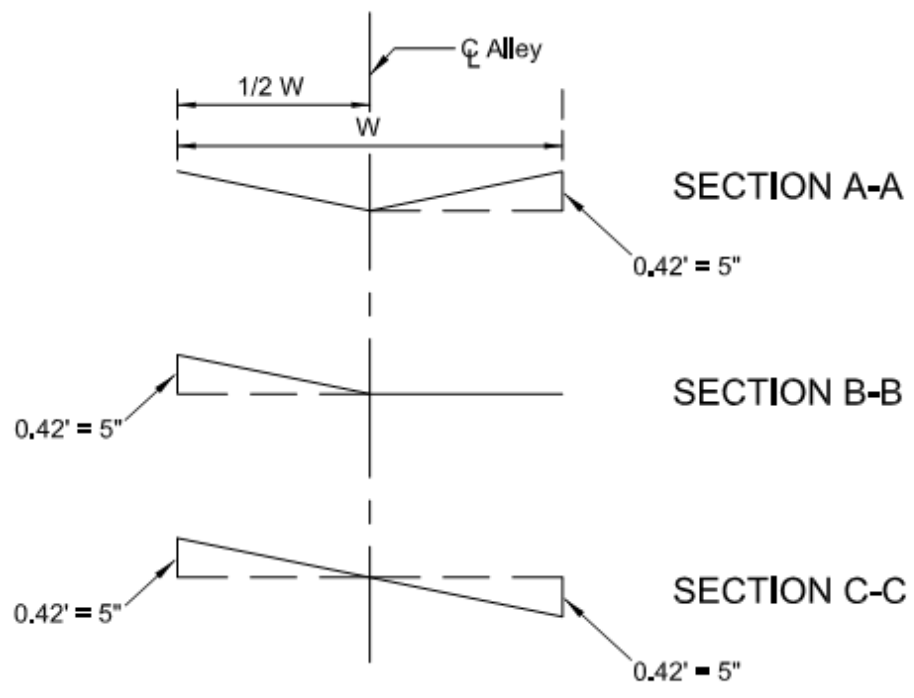
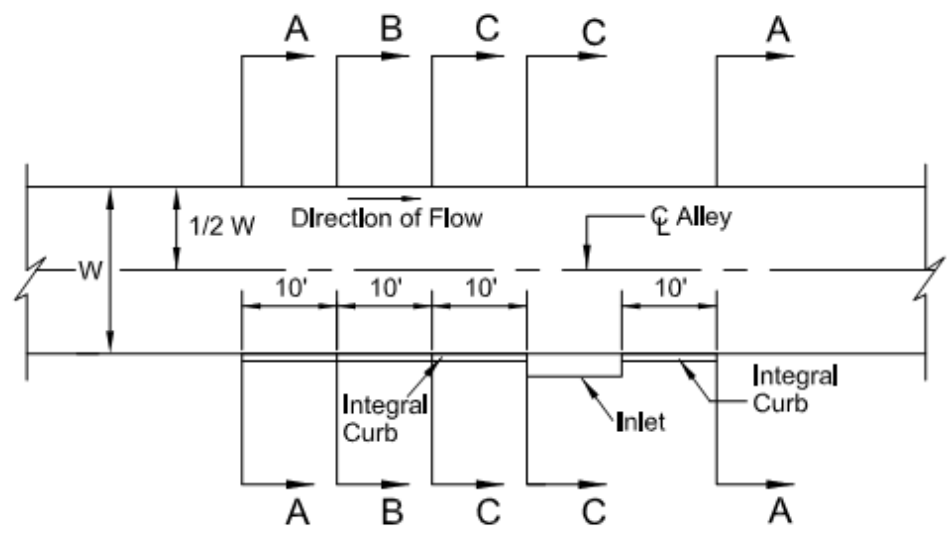
STANDARD DRAWING NO.

R-2240




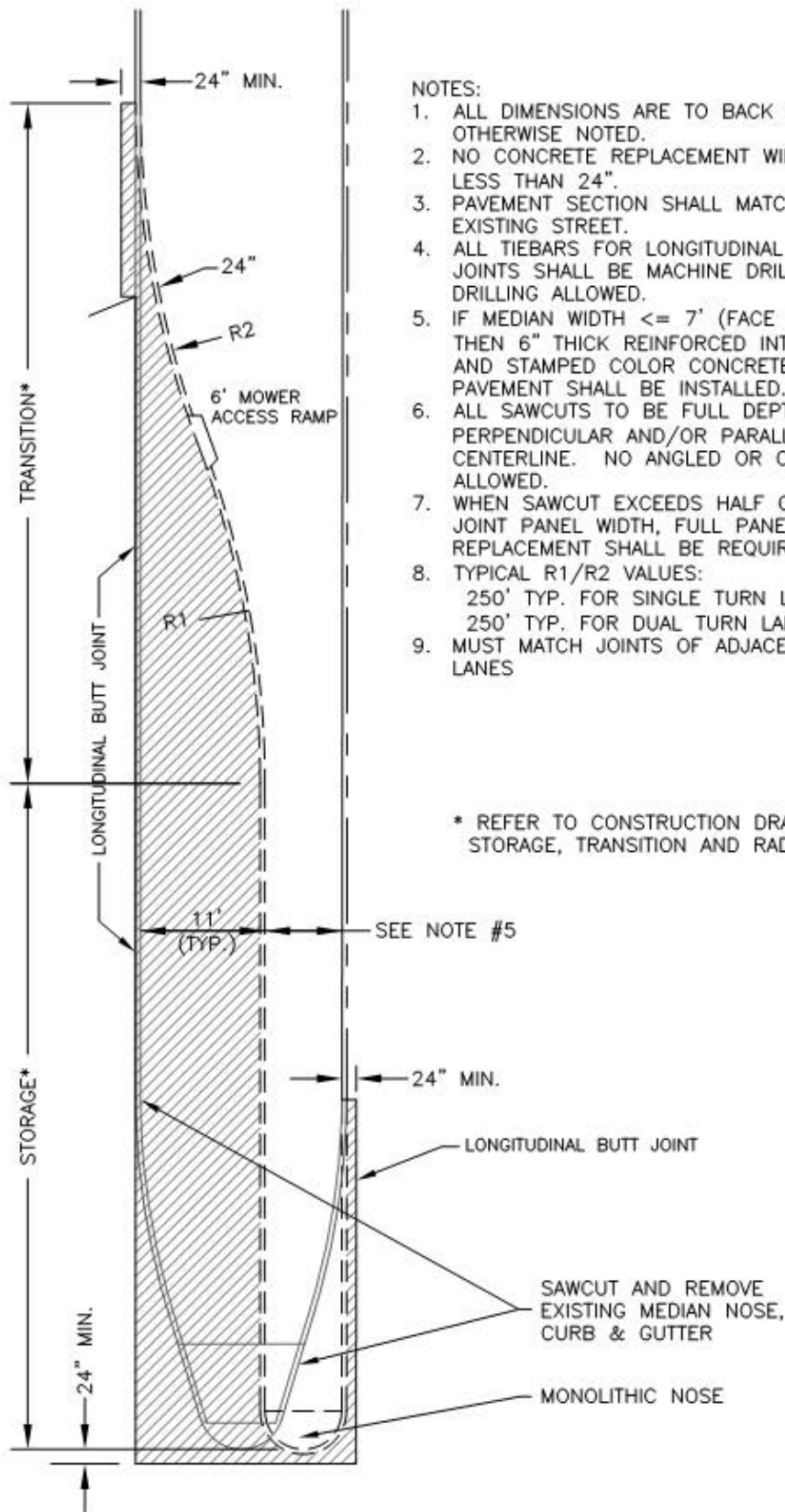
- NOTES:
1. ALLEY WIDTH SHALL BE TWELVE (12') FEET MINIMUM.
 2. ALLEY R.O.W. SHALL BE TWENTY (20') FEET MINIMUM.
 3. DIMENSION A= SIX (6') FEET.
 4. DIMENSION B= FOUR (4') FEET.

ALLEY GEOMETRICS TYPE "J"	CITY OF ROCKWALL 	STANDARD SPECIFICATION REFERENCE 303.5 DATE Mar. 2018	STANDARD DRAWING NO. R-2250
------------------------------	----------------------	--	--------------------------------



TYPICAL ALLEY WARPING AT INLET
(Not to Scale)

ALLEY GEOMETRICS	CITY OF ROCKWALL		
ALLEY WARPING AT INLET		DATE OCT. '17	DRAWING NO. R-2251

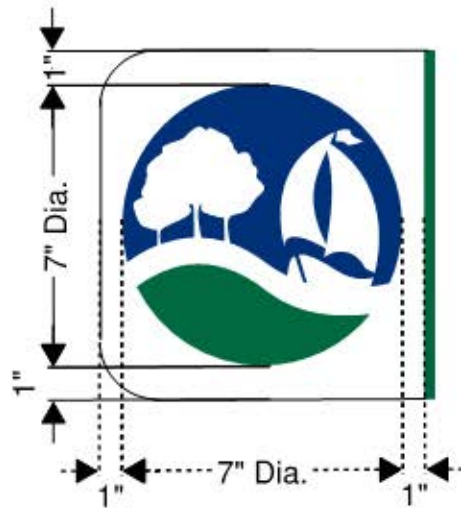


NOTES:

1. ALL DIMENSIONS ARE TO BACK OF CURB UNLESS OTHERWISE NOTED.
2. NO CONCRETE REPLACEMENT WIDTH SHALL BE LESS THAN 24".
3. PAVEMENT SECTION SHALL MATCH THAT OF EXISTING STREET.
4. ALL TIEBARS FOR LONGITUDINAL CONSTRUCTION JOINTS SHALL BE MACHINE DRILLED. NO HAND DRILLING ALLOWED.
5. IF MEDIAN WIDTH $\leq 7'$ (FACE TO FACE) THEN 6" THICK REINFORCED INTEGRAL STAINED AND STAMPED COLOR CONCRETE MEDIAN PAVEMENT SHALL BE INSTALLED.
6. ALL SAWCUTS TO BE FULL DEPTH AND EITHER PERPENDICULAR AND/OR PARALLEL WITH STREET CENTERLINE. NO ANGLED OR CURVED SAWCUTS ALLOWED.
7. WHEN SAWCUT EXCEEDS HALF OF CONSTRUCTION JOINT PANEL WIDTH, FULL PANEL REMOVAL AND REPLACEMENT SHALL BE REQUIRED.
8. TYPICAL R1/R2 VALUES:
250' TYP. FOR SINGLE TURN LANE
250' TYP. FOR DUAL TURN LANE
9. MUST MATCH JOINTS OF ADJACENT TRAFFIC LANES

* REFER TO CONSTRUCTION DRAWINGS FOR STORAGE, TRANSITION AND RADII DIMENSIONS.

LEFT TURN LANE	CITY OF ROCKWALL		
CONCRETE REMOVAL & REPLACEMENT		DATE AUG. '19	DRAWING NO. R-2270



Rockwall Logo Detail

NOT TO SCALE

Notes:

1. Street name blades shall consist of white SCOTCHLITE 3930 High Intensity Prismatic Material, digitally printed using HP Latex 360 or higher.
 Green: Pantone 335C with overlay CMYK 100-0-20-0 set to darken.
 Blue: Pantone 287C.


2. Lettering to be composed of a combination of upper and lowercase letters, with initial uppercase letters. Font to be Clearview TCAD-1w with uppercase to be 6" Min. height and lowercase to be 4.5" Min. height. No more than 65% compression on font width.

3. Lettering for street designations and block numbers to be composed of initial uppercase letters at least 3" Min. height and lower-case letters at least 2.25" Min. height.

4. Sign post to be 2 3/8" O.D. galvanized steel tube sign pole.

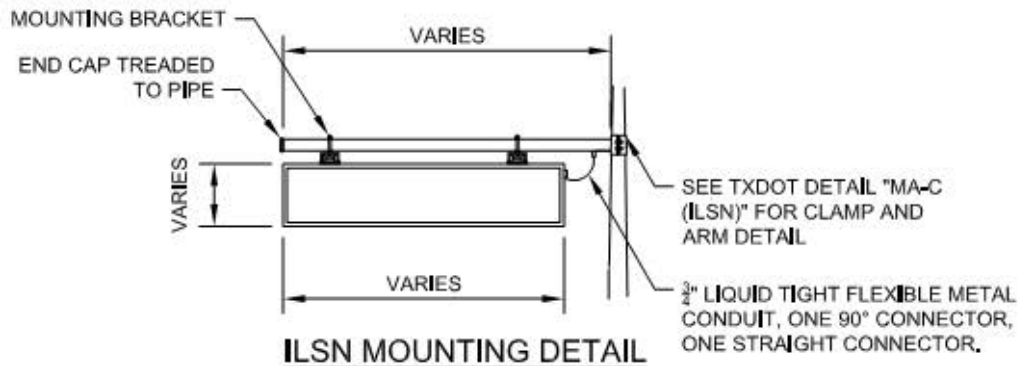
STREET SIGN DETAIL

NOT TO SCALE

STREET REGULATORY SIGNAGE	CITY OF ROCKWALL		
TYPICAL STREET SIGN DETAIL		DATE May 2018	DRAWING NO. R-2300




EXAMPLE SINGLE STREET NAME DETAIL

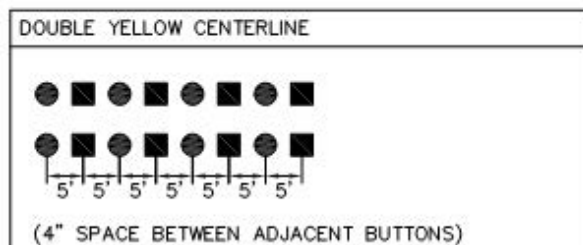
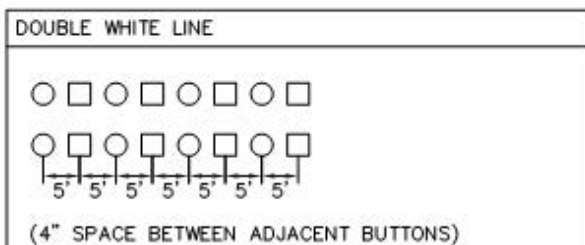
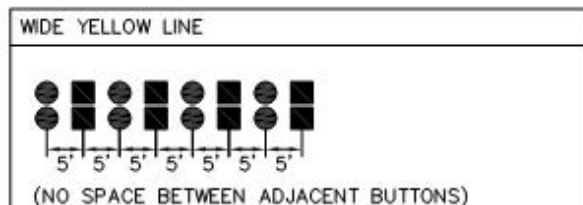
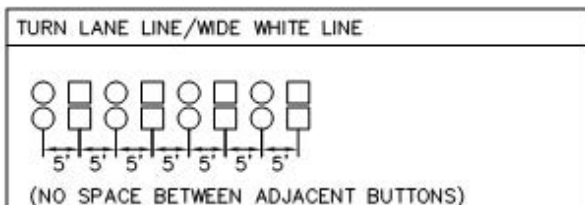
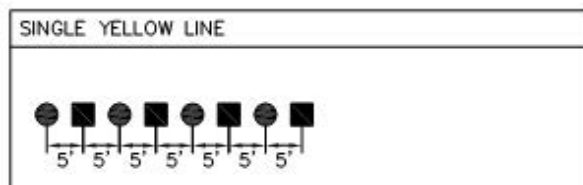
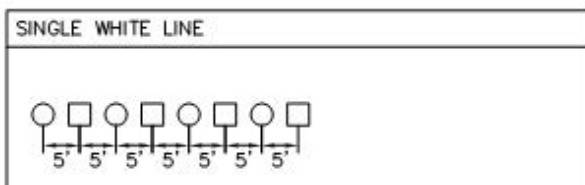
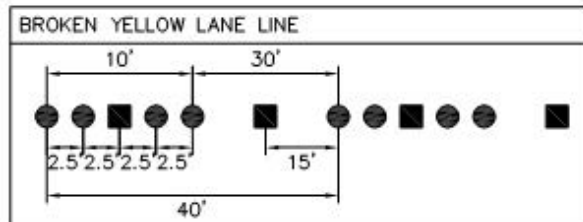
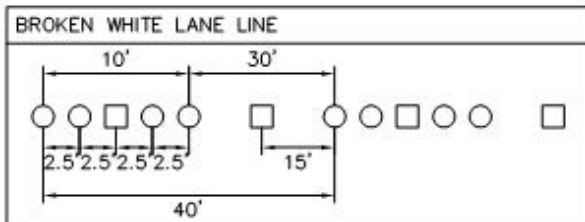


ILSN MOUNTING DETAIL

NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL LETTER SPACING AND WIDTH SHALL BE 100% OF THE US DOT MINIMUM RECOMMENDATION.
 - A. LEGENDS REQUIRING LENGTHS GREATER THAN THE 96" WIDTH OF THE SIGN USING STANDARD SPACING, MAY BE ADJUSTED TO FIT.
2. ILSNS UP TO 6' IN LENGTH MAY BE PLACED ON A 7' ILSN CLAMP-ON ARM, ILSNS UP TO 8' IN LENGTH MAY BE PLACED ON A 9' ILSN CAMP-ON ARM.
3. LETTERING SIZE AND SPACING BETWEEN THE VARIOUS SIGN ELEMENTS SHALL FOLLOW THE CURRENT VERSION OF THE *STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS* MANUAL FOR D3-1.
 - A. DESIRED LETTER HEIGHT FOR STREET NAME SIGNS SHALL BE 12" FOR UPPER CASE LETTERS. STREET NAME LETTER HEIGHT MAY BE REDUCED TO 10" TO REDUCE THE SIZE OF THE SIGN AS NEEDED.
4. THE CITY LOGO HEIGHT SHALL MATCH MAXIMUM TEXT SIZE HEIGHT ON SIGN LEGEND. THE LOGO SHALL BE PLACED ON THE LEFT SIDE OF EACH SIDE OF THE SIGN ON A WHITE BACKGROUND.
5. THE ILSN LEGEND MAY BE COMPOSED OF ONE LINE OR TWO LINES OF TEXT. CONTRACTOR TO VERIFY WITH CITY BEFORE SUBMITTING SHOP DRAWINGS FOR SIGNS WITH TWO LINES OF TEXT.
6. SIGNS SHALL BE EDGELIT LED ILLUMINATED
7. FACE COLOR/MATERIAL: GREEN EC FILM OVER HIGH-INTENSITY TRANSLUCENT REFLECTIVE WHITE SHEETING ON UV LEXAN.
8. FRAME WIDTH TO BE PROVIDED BY MANUFACTURER.
9. SIGN BODIES AND DOORS ARE TO BE POWDER COATED GLOSSY BLACK.
10. SIGNS SHALL BE SINGLE SIDED EXCEPT UNDER THE FOLLOWING CONDITION:
SIGN SHALL BE DOUBLE SIDED IF BOTH APPROACHES FACING THE SIGN ARE UNDIVIDED (NO MEDIAN).
11. SIGNS SHALL BE TOP MOUNTED USING STANDARD TXDOT DETAILS.
12. ILSN SHALL BE MOUNTED ON A STANDARD TXDOT ILSN CLAMP-ON ARM UNLESS OTHERWISE DIRECTED IN THE PLANS
13. ILSN SHALL BE FULLY GASKETED AND WATERTIGHT.
14. TRAFFIC SIGNAL POLE SHALL BE AT LEAST 24' HEIGHT. (SEE TXDOT TRAFFIC SIGNAL POLE STANDARDS)
15. A SEPARATE PHOTOCCELL FOR ILSN/120 VOLT CIRCUIT WILL BE REQUIRED.
16. TWO #8 XHHW CONDUCTORS SHALL BE INSTALLED FROM SERVICE TO TERMINAL BLOCK OF EACH POLE WITH ILSN UNLESS OTHERWISE SHOWN IN THE PLANS. (CONDUCTORS FROM SERVICE TO TERMINAL BLOCK OF EACH POLE SHALL BE PAID FOR SEPARATELY FROM THE ILSN PAY ITEM.)
 - A. DAISY CHAIN ALL ILSNS UNLESS OTHERWISE DIRECTED IN THE PLANS.
17. TWO #12 XHHW CONDUCTORS SHALL BE INSTALLED FROM TERMINAL BLOCK OF POLE TO ILSN UNLESS OTHERWISE SHOWN IN THE PLANS. (CONDUCTORS FROM THE TERMINAL BLOCK OF EACH POLE TO ILSN SHALL BE PAID FOR SEPARATELY FROM THE ILSN PAY ITEM.)
18. CONTRACTOR TO SUBMIT SHOP DRAWINGS OF THE LED ILSNS TO CITY OF ROCKWALL FOR APPROVAL PRIOR TO FABRICATION.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EQUIPMENT NECESSARY TO INSTALL THE ILSN SIGN.
20. ALL ILSNS SHALL FOLLOW ALL RULES AND GUIDELINES AS SPECIFIED IN THE MOST RECENT EDITIONS OF THE *STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS* AND THE *TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES*. SHOULD ANY CONFLICTS BETWEEN THE ABOVE NOTES AND THESE DOCUMENTS, THESE DOCUMENTS SHALL GOVERN.

ILLUMINATED STREET NAME SIGN	CITY OF ROCKWALL		
ILSN SIGN DETAIL		DATE JUN '17	DRAWING NO. R-2310



NOTES:

UNLESS OTHERWISE NOTED, THE FOLLOWING BUTTON TYPES SHALL BE USED:

- = 4" ROUND YELLOW CERAMIC NON-REFLECTIVE BUTTON
- = 4" SQUARE YELLOW/YELLOW ACRYLIC REFLECTIVE BUTTON
- = 4" ROUND WHITE CERAMIC NON-REFLECTIVE BUTTON
- = 4" SQUARE CLEAR/RED ACRYLIC REFLECTIVE BUTTON

RAISED PAVEMENT MARKINGS

LANE LINES

CITY OF ROCKWALL



STANDARD SPECIFICATION REFERENCE

DATE
Mar. 2018

STANDARD DRAWING NO.
R-2320



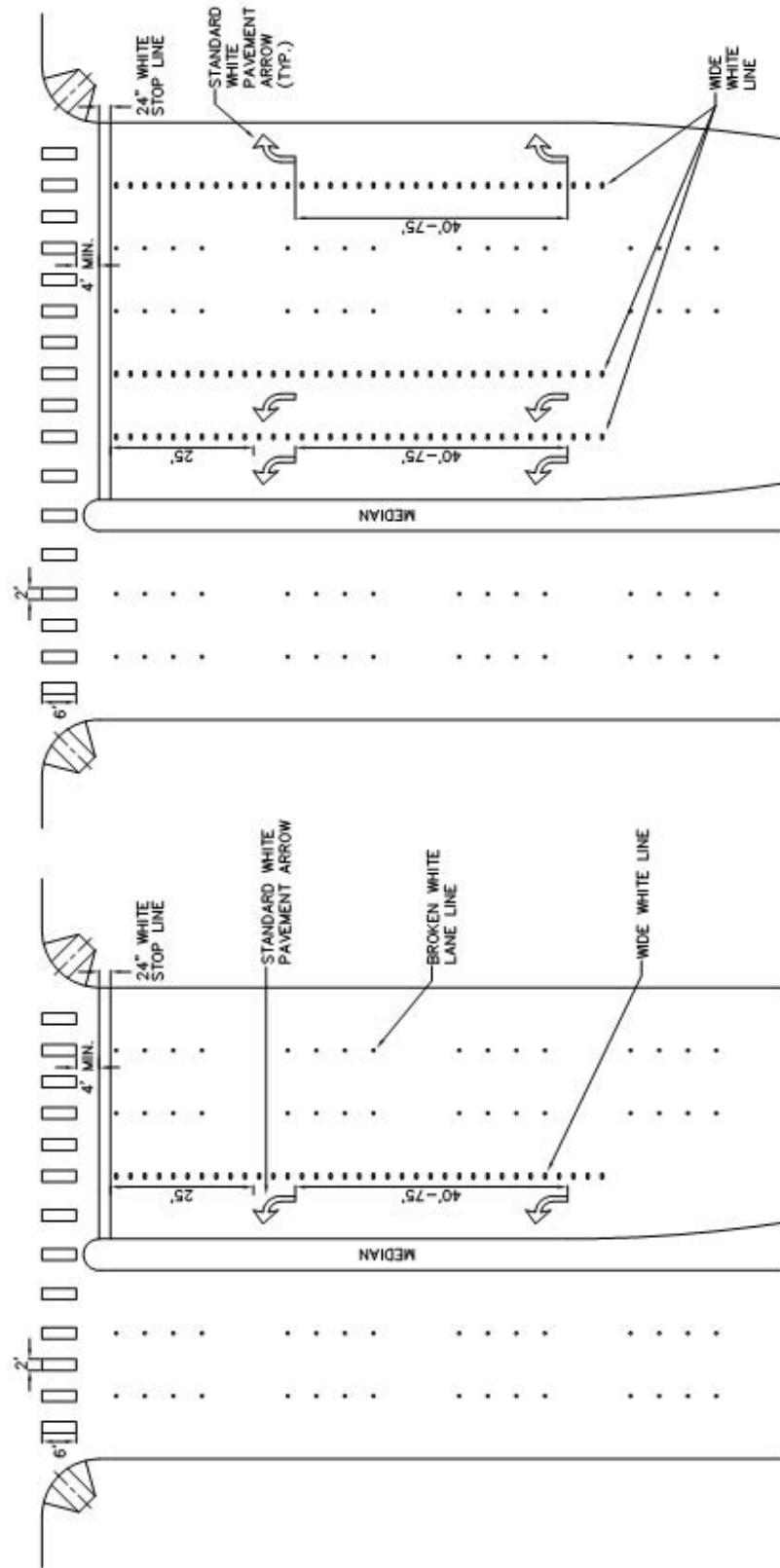
<p>WHITE CHEVRON LANE</p> <p>ALTERNATING BUTTONS (AB)</p> <p>ALTERNATING LINES (AL)</p>	<p>YELLOW CHEVRON LANE</p> <p>ALTERNATING BUTTONS (AB)</p> <p>ALTERNATING LINES (AL)</p>	<p>WHITE CROSS HATCH LINE</p> <p>ALTERNATING BUTTONS (AB)</p> <p>ALTERNATING LINES (AL)</p>	<p>YELLOW CROSS HATCH LINE</p> <p>ALTERNATING BUTTONS (AB)</p> <p>ALTERNATING LINES (AL)</p>				
<p>RAISED PAVEMENT MARKINGS</p> <p>CHEVRON AND CROSSHATCH</p>		<p>CITY OF ROCKWALL</p>	<p>STANDARD SPECIFICATION REFERENCE</p> <table border="1"> <tr> <td>DATE</td> <td>STANDARD DRAWING NO.</td> </tr> <tr> <td>Mar. 2018</td> <td>R-2330</td> </tr> </table>	DATE	STANDARD DRAWING NO.	Mar. 2018	R-2330
DATE	STANDARD DRAWING NO.						
Mar. 2018	R-2330						

NOTES:
 UNLESS OTHERWISE NOTED, THE FOLLOWING BUTTON TYPES SHALL BE USED:

- = 4" ROUND YELLOW CERAMIC NON-REFLECTIVE BUTTON
- = 4" SQUARE YELLOW/YELLOW ACRYLIC REFLECTIVE BUTTON
- = 4" ROUND WHITE CERAMIC NON-REFLECTIVE BUTTON
- = 4" SQUARE CLEAR/RED ACRYLIC REFLECTIVE BUTTON

FOR CHEVRON AND CROSS-HATCH LINES, THE FOLLOWING DIMENSIONS WILL BE NOTED ON THE PLANS.

B = THE DISTANCE BETWEEN ADJACENT BUTTONS ON A LINE (MEASURED ALONG A LINE PERPENDICULAR TO THE BUTTONED AREA, NOT ALONG THE 45 DEGREE LINE)



DUAL LEFT TURN LANE & RIGHT TURN LANE

TYPICAL APPROACH

RAISED PAVEMENT MARKINGS
INTERSECTION APPROACH

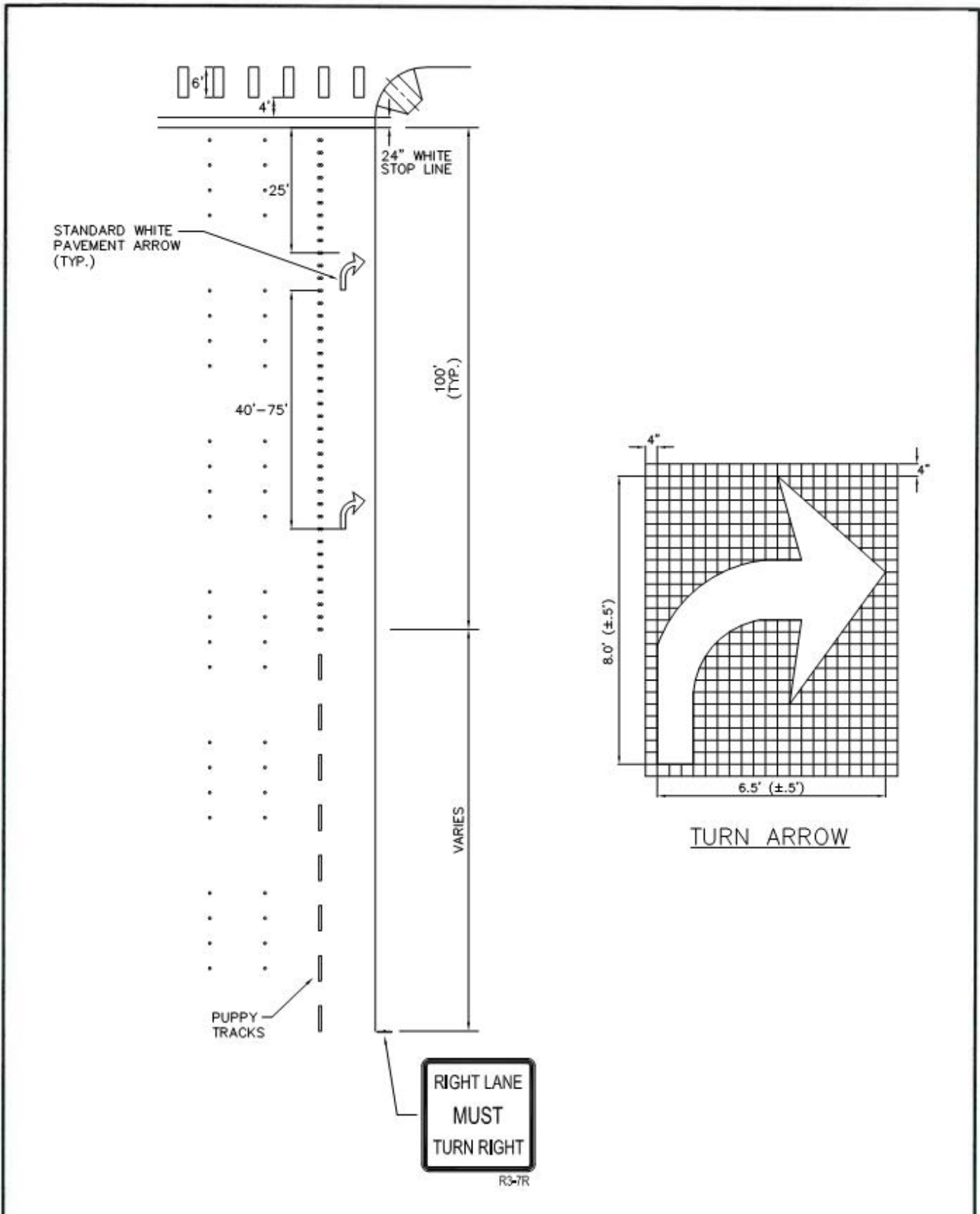
CITY OF ROCKWALL





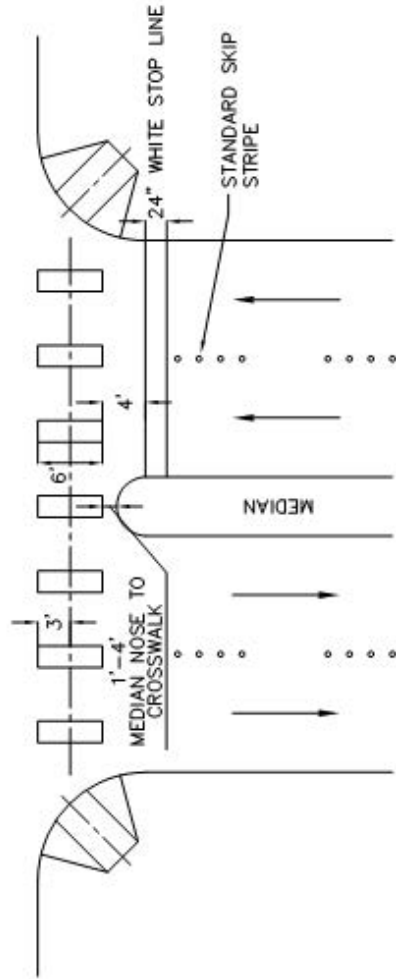
STANDARD SPECIFICATION REFERENCE

DATE
Mar. 2018

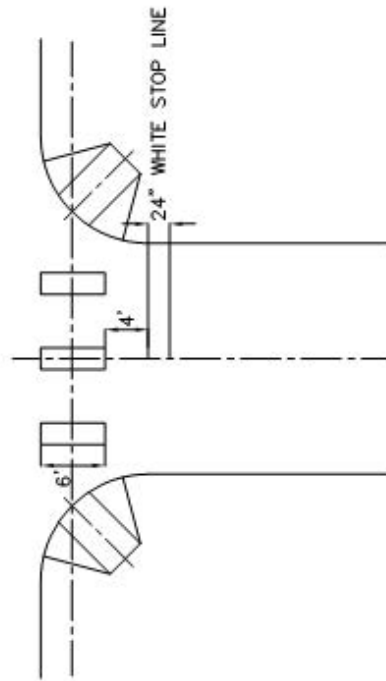
STANDARD DRAWING NO.
R-2340



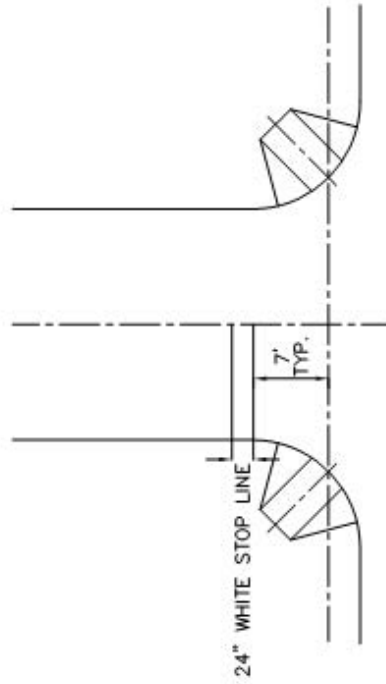
<p>TYPE C INTERSECTION</p> <p>RIGHT LANE DROP MARKINGS</p>	<p>CITY OF ROCKWALL</p> 	<p>STANDARD SPECIFICATION REFERENCE</p>	
		<p>DATE</p> <p>Mar. 2018</p>	<p>STANDARD DRAWING NO.</p> <p>R-2350</p>



TYPICAL LAYOUT
TYPE D THOROUGHFARE
STOP LINE WITH CROSSWALK



TYPICAL LAYOUT
TYPE F&G THOROUGHFARE
CROSSWALK WITH STOP LINE



TYPICAL LAYOUT
TYPE F&G THOROUGHFARE
STOP LINE WITHOUT CROSSWALK

TYPICAL THOROUGHFARE
LAYOUTS

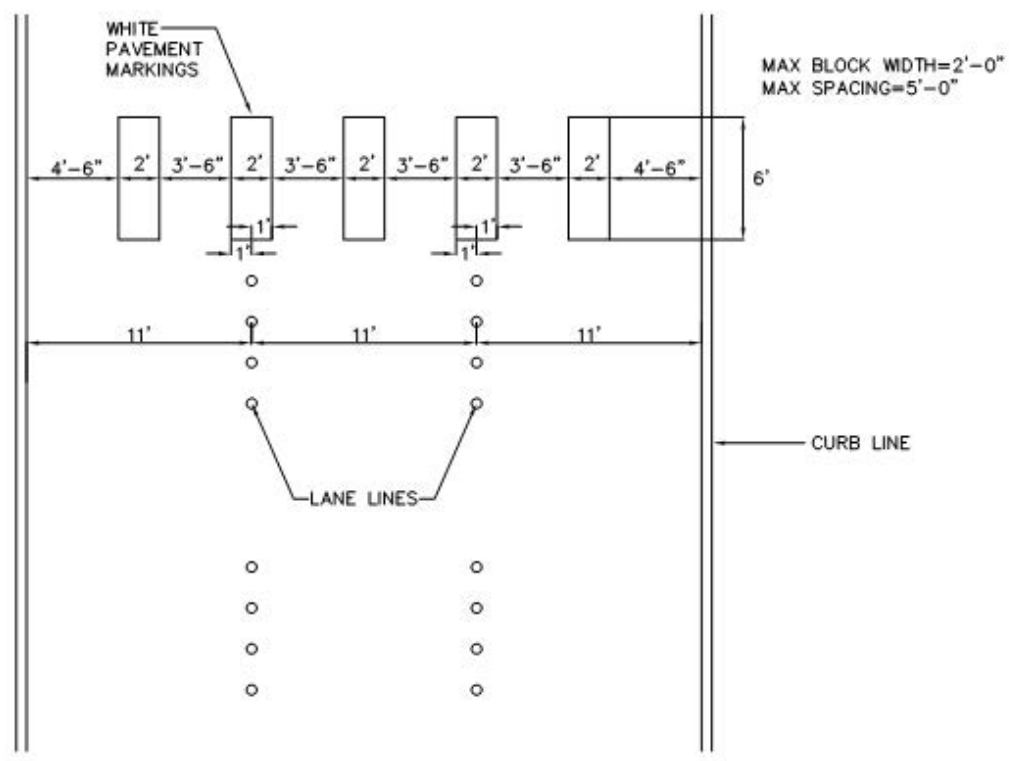
CITY OF ROCKWALL



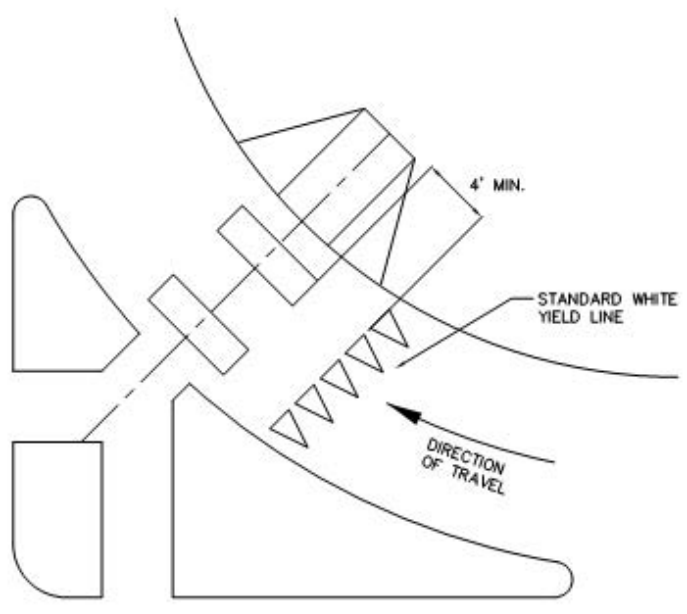
STANDARD SPECIFICATION REFERENCE

DATE
Mar. 2018


STANDARD DRAWING NO.
R-2360

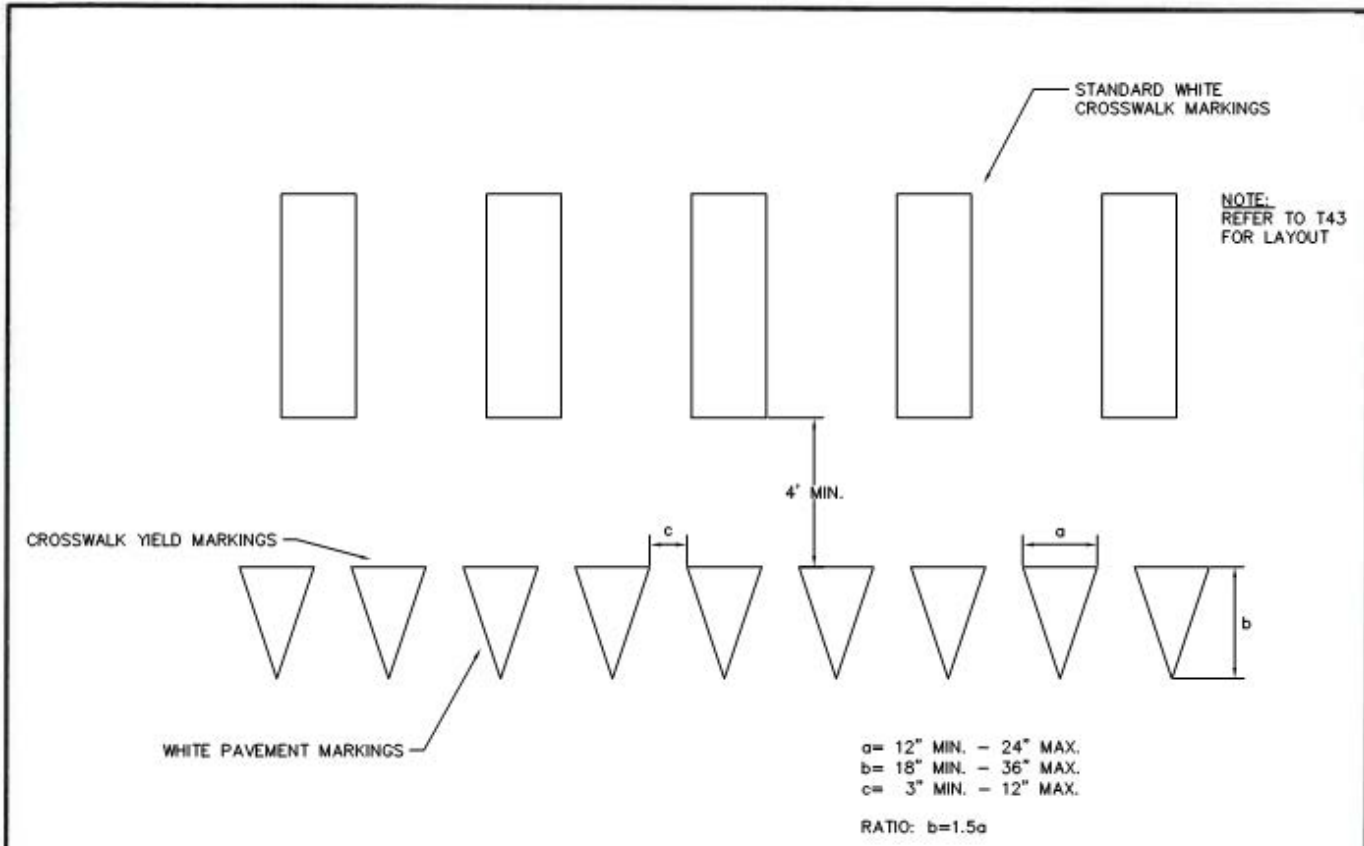


TYPICAL LAYOUT
CROSSWALK
MARKINGS

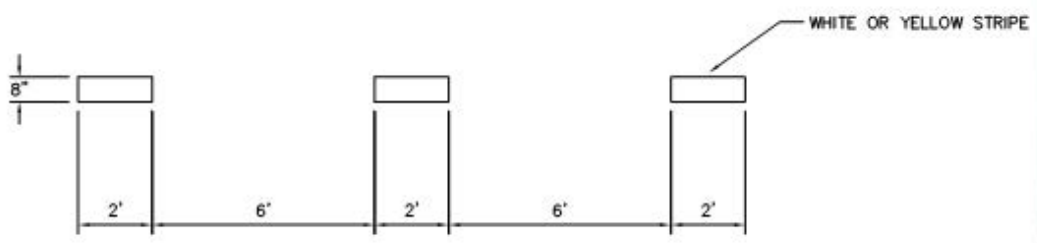


TYPICAL LAYOUT
CHANNELIZING ISLAND
YIELD LINE WITH CROSSWALK

<p>TYPICAL CROSSWALK LAYOUTS</p>	<p>CITY OF ROCKWALL</p> 	<p>STANDARD SPECIFICATION REFERENCE</p>	
		<p>DATE Mar. 2018</p>	<p>STANDARD DRAWING NO. R-2370</p>

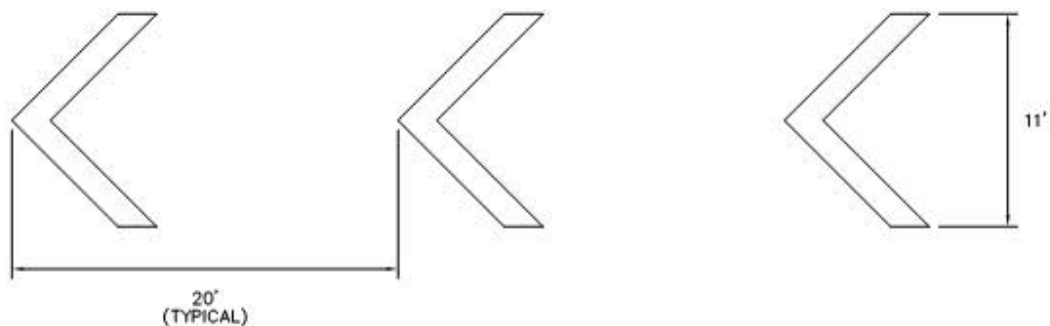


CROSSWALK MARKINGS

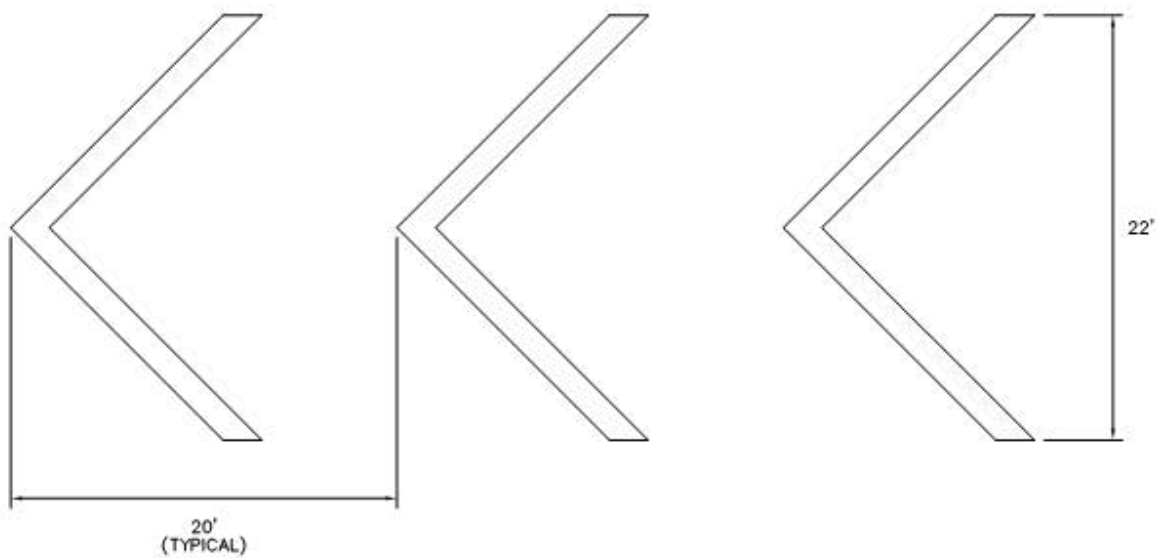


DASH LINE ("PUPPY TRACK") MARKINGS

TYPICAL CROSSWALK AND DASHED MARKINGS	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE	
		DATE Mar. 2018	STANDARD DRAWING NO. R-2380



11' WIDE CHEVRON STRIPE



22' WIDE CHEVRON STRIPE

CHEVRON STRIPING

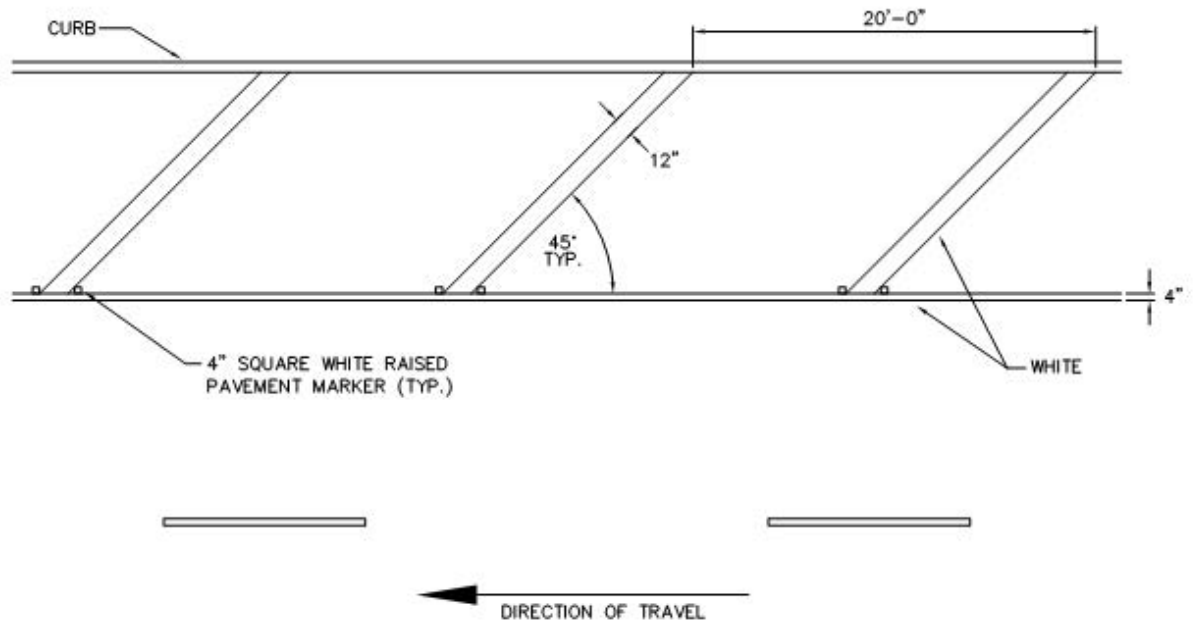
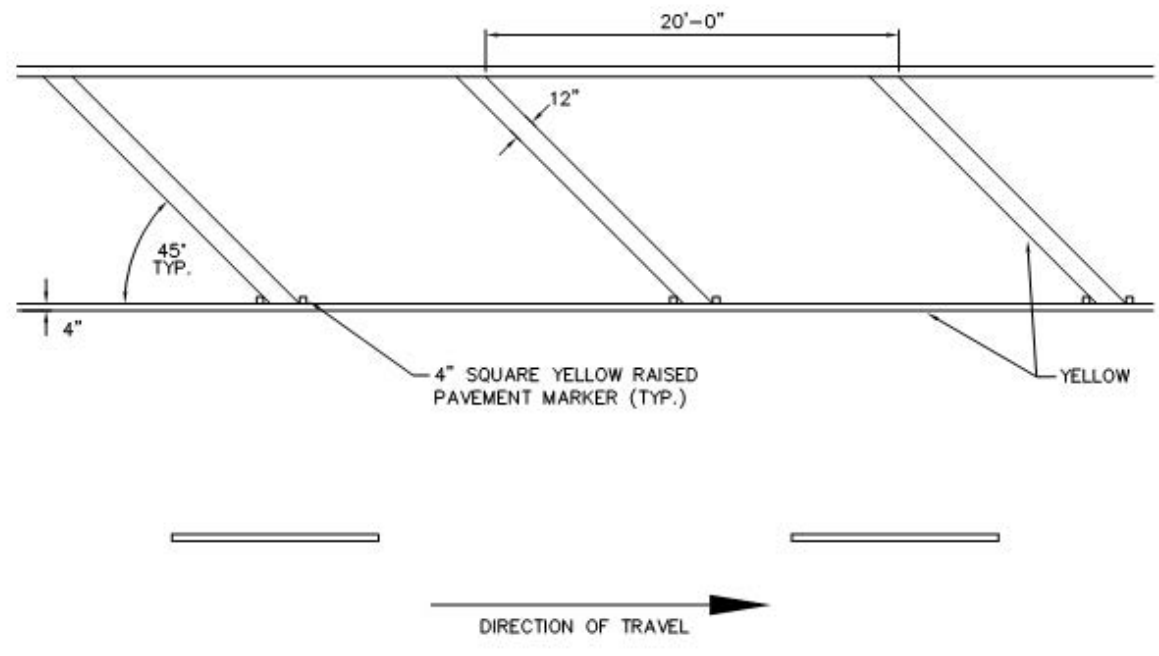
CITY OF ROCKWALL


STANDARD SPECIFICATION REFERENCE



DATE
Mar. 2018

STANDARD DRAWING NO.
R-2390



<p>DIAGONAL CROSSHATCH STRIPING</p>	<p>CITY OF ROCKWALL</p> 	<p>STANDARD SPECIFICATION REFERENCE</p>	
		<p>DATE Mar. 2018</p>	<p>STANDARD DRAWING NO. R-2400</p>

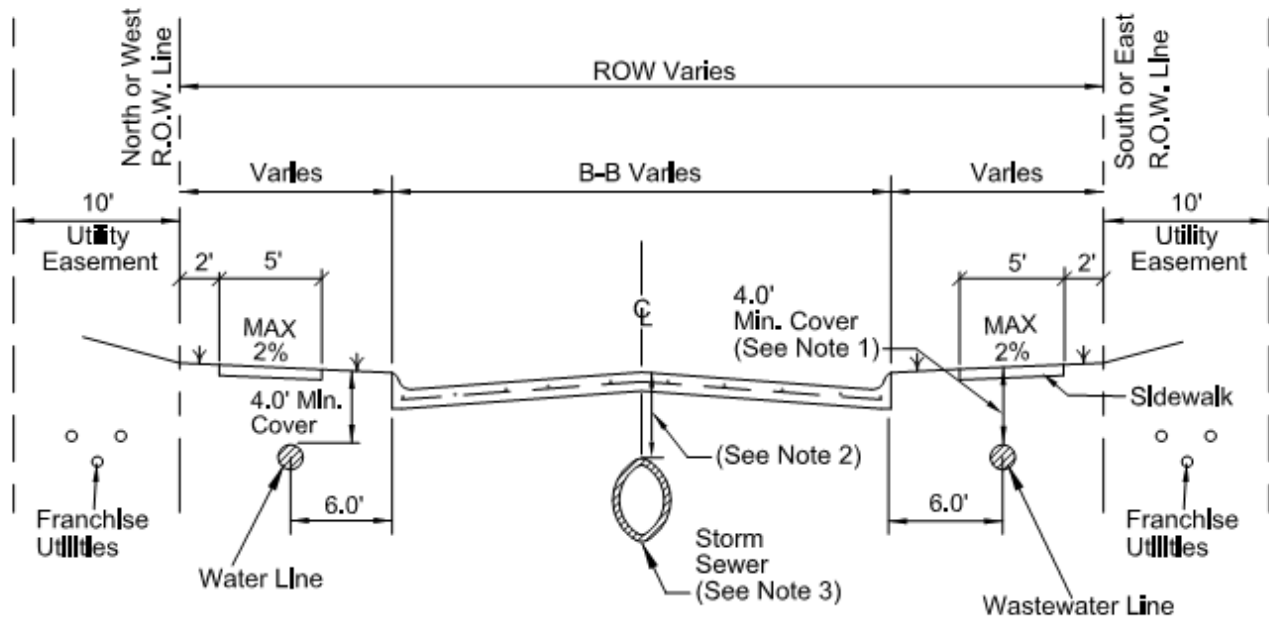


SECTION 8.03 | DIVISION 3000. GENERAL UNDERGROUND CONDUIT

TABLE 8.3: REVISIONS TO NCTCOG'S DIVISION 3000 GENERAL UNDERGROUND CONDUIT

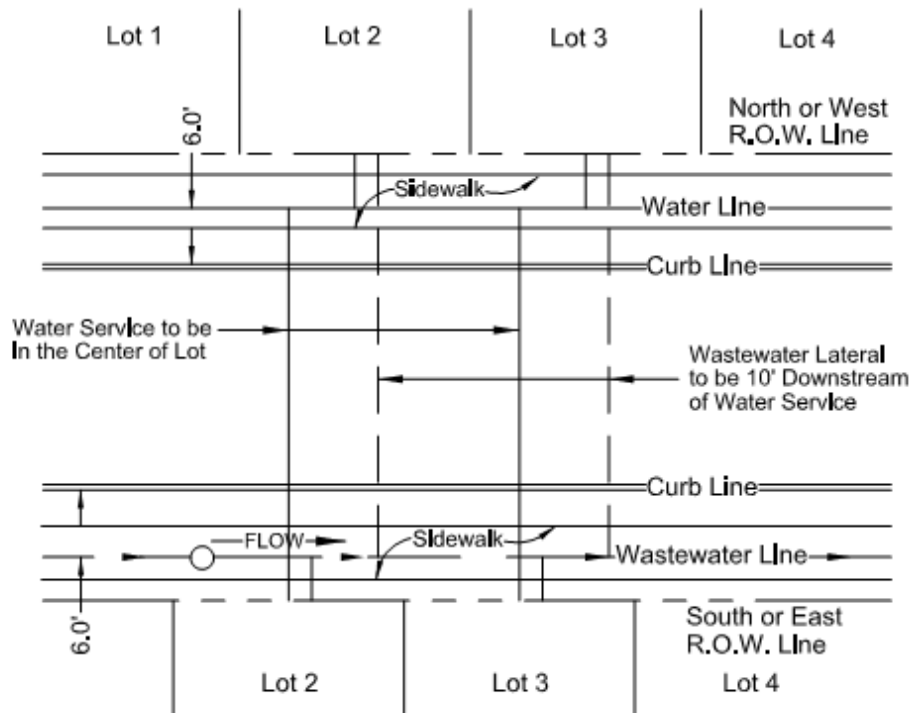
NOTES: (1) DELETED NCTCOG DRAWING; (2) REVISED NCTCOG DRAWING (SEE REVISIONS BELOW); (3) ADDED ROCKWALL STANDARD DRAWING (SEE DRAWING BELOW); AND (4) ADDED CURRENT TXDOT STANDARDS

REVISED	DRAWING NO.	DESCRIPTION
(3)	R-3000	UTILITIES LOCATION DETAIL
(1)	3010	EMBEDMENT – CLASS "A" & "A-1"
(3)	R-3010	EMBEDMENT – CLASS "A" & "A-1"
(1)	3020	EMBEDMENT – CLASS "B", "B+" & "B-1"
(3)	R-3020	EMBEDMENT – CLASS "B", "B+" & "B-1"
(1)	3030	EMBEDMENT – CLASS "B-2", "B-3" & "B-4"
(3)	R-3030	EMBEDMENT – CLASS "B-2", "B-3" & "B-4"
(1)	3040	EMBEDMENT – CLASS "C", "C+" & "C-1"
(3)	R-3040	EMBEDMENT – CLASS "C", "C+" & "C-1"
(1)	3050	EMBEDMENT – CLASS "D+" & "G"
(3)	R-3050	EMBEDMENT – CLASS "D+" & "G"
(1)	3060	EMBEDMENT – CLASS "G-1" & "H"
(3)	R-3060	EMBEDMENT – CLASS "G-1" & "H"
(1)	3070A	PAVEMENT CUT AND REPAIR – CONCRETE AND PARKWAY
(3)	R-3070A	PAVEMENT CUT AND REPAIR – CONCRETE AND PARKWAY
(1)	3070B	PAVEMENT CUT AND REPAIR – ASPHALT
(3)	R-3070B	PAVEMENT CUT AND REPAIR – ASPHALT
(1)	3070C	PAVEMENT CUT AND REPAIR – EXTENT –RESIDENTIAL
(1)	3070D	PAVEMENT CUT AND REPAIR – EXTENT - MULTIPLE LANES
(1)	3080	INFILTRATION PROTECTION – CONDUIT UNDER CHANNEL
(3)	R-3090	UNDERGROUND CONDUIT – STEEL ENCASED BORE



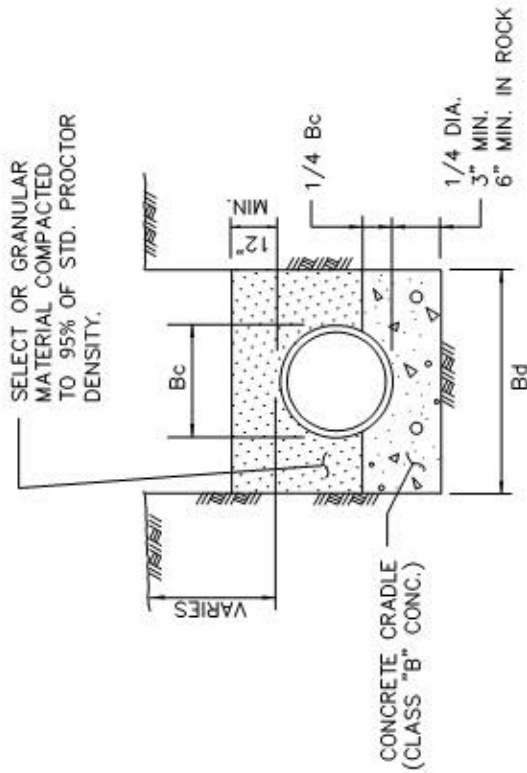
NOTE:

1. If wastewater line has a cover greater than ten feet (10') than pipe shall be minimum SDR 26 and no services allowed.
2. If cover is two (2) feet or less than Class IV RCP is required.
3. Horizontal location of storm sewer for divided roads to be determined by design engineer. Not to be placed in the parkway.



UTILITY SERVICE DETAIL

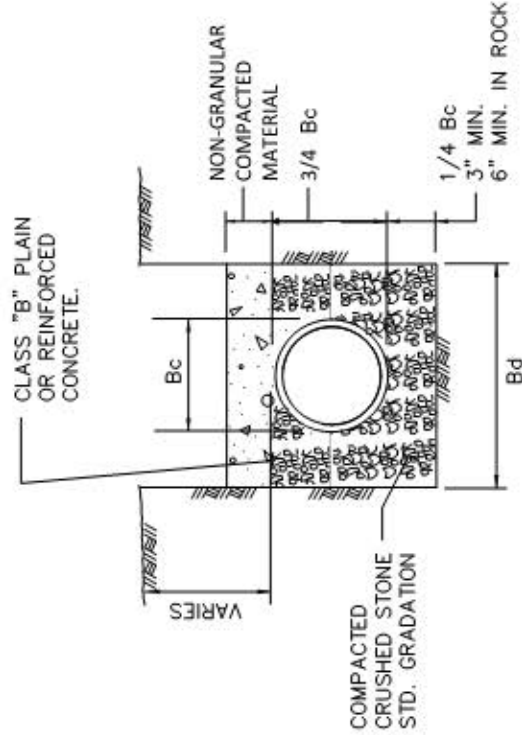
GENERAL UNDERGROUND CONDUIT	CITY OF ROCKWALL		
UTILITIES LOCATION DETAIL		DATE OCT. '17	DRAWING NO. R-3000



CLASS "A"

CLASS "B" CONCRETE CRADLE
PLAIN CONC. LF 2.8
REINF. CONC. LF 3.4 P=0.4%

N.T.S.



CLASS "A-1"

CLASS "B" CONCRETE CAP
PLAIN CONC. LF 2.8
REINF. CONC. LF 3.4 P=0.4%
REINF. CONC. LF 4.8 P=1.0%

N.T.S.

NOTES:

1. LF. = LOAD FACTOR TO BE USED TO DETERMINE 3 EDGE BEARING BASED ON TYPE OF EMBEDMENT.
2. FREE-FALL OF CONCRETE NOT TO EXCEED 5 FT. MAXIMUM.
3. P = Rho FOR STEEL %
4. Bc = OUTSIDE DIAMETER OF PIPE
5. Bd = TRENCH WIDTH

STANDARD DRAWING NO.
3010

EMBEDMENT

CLASS "A" & "A-1"

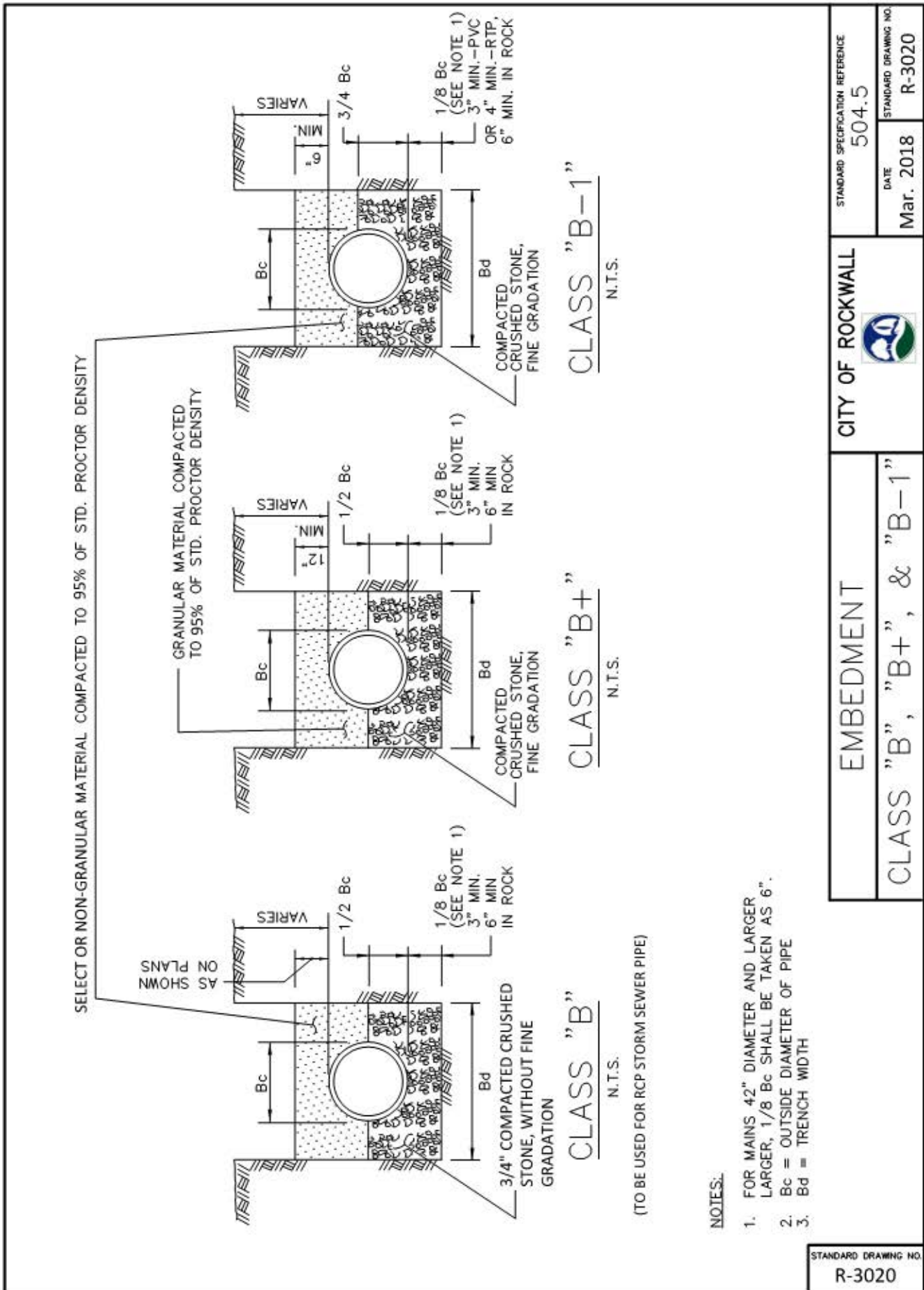


CITY OF ROCKWALL

STANDARD SPECIFICATION REFERENCE
504.5

DATE
Mar. 2018

STANDARD DRAWING NO.
R-3010



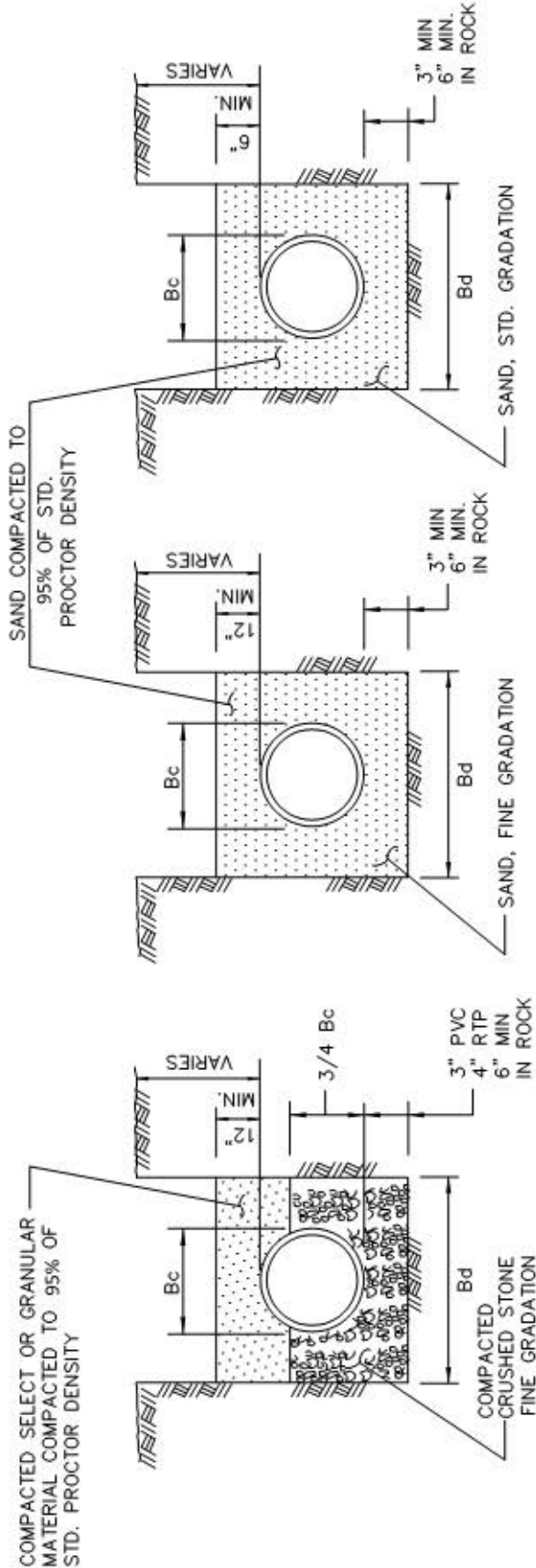
STANDARD SPECIFICATION REFERENCE	504.5
DATE	Mar. 2018
STANDARD DRAWING NO.	R-3020

CITY OF ROCKWALL

EMBEDMENT

CLASS "B", "B+", & "B-1"

STANDARD DRAWING NO.	R-3020
----------------------	--------



CLASS "B-2"

N.T.S.

CLASS "B-3"

N.T.S.

CLASS "B-4"

N.T.S.

(TO BE USED FOR PVC WATER PIPE AND
PVC WASTE WATER FORCE MAIN PIPE)

NOTES:

1. Bc = OUTSIDE DIAMETER OF PIPE
2. Bd = TRENCH WIDTH
3. NO GRANULAR MATERIAL ABOVE
ROCK OR STONE EMBEDMENT

STANDARD DRAWING NO.
3030



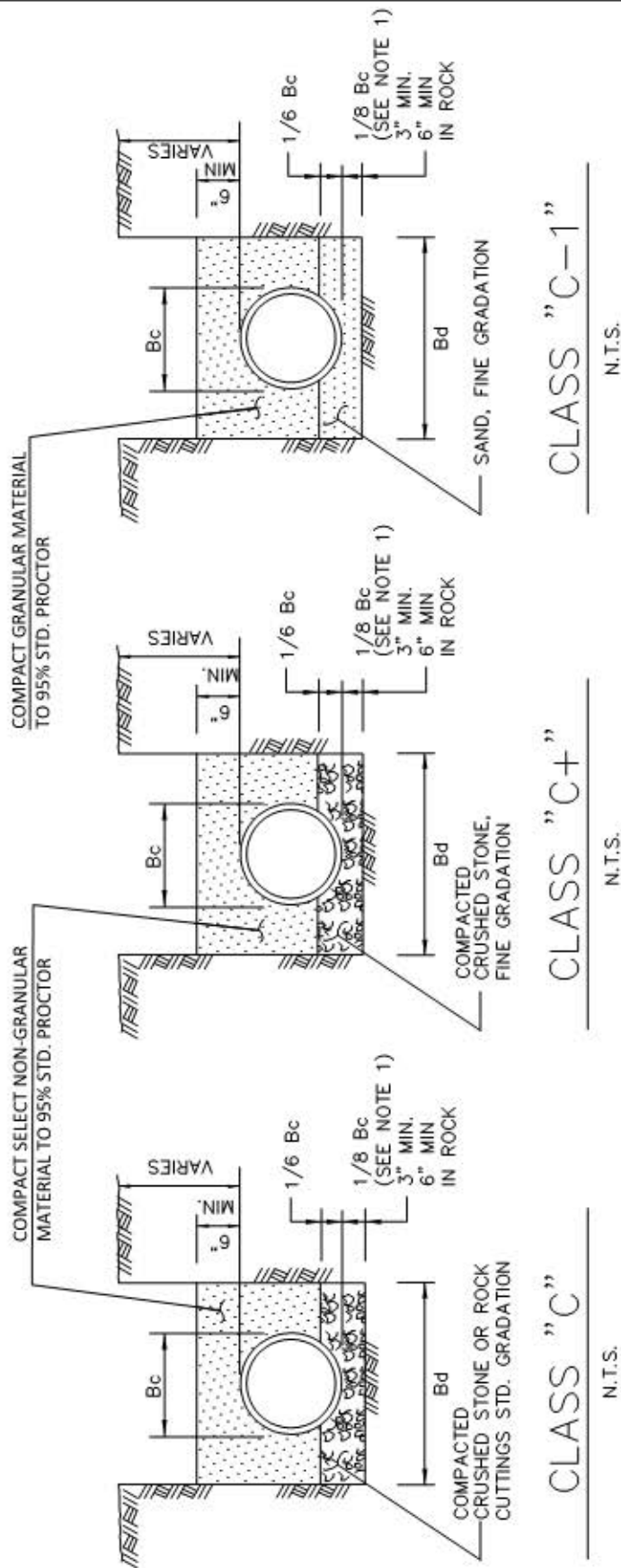
CITY OF ROCKWALL

STANDARD SPECIFICATION REFERENCE
504.5

DATE
AUG. '19

STANDARD DRAWING NO.
R-3030

EMBEDMENT
CLASS "B-2", "B-3", & "B-4"



NOTES:

1. FOR MAINS 42" DIAMETER AND LARGER, 1/8 Bc SHALL BE TAKEN AS 6".
2. Bc = OUTSIDE DIAMETER OF PIPE
3. Bd = TRENCH WIDTH

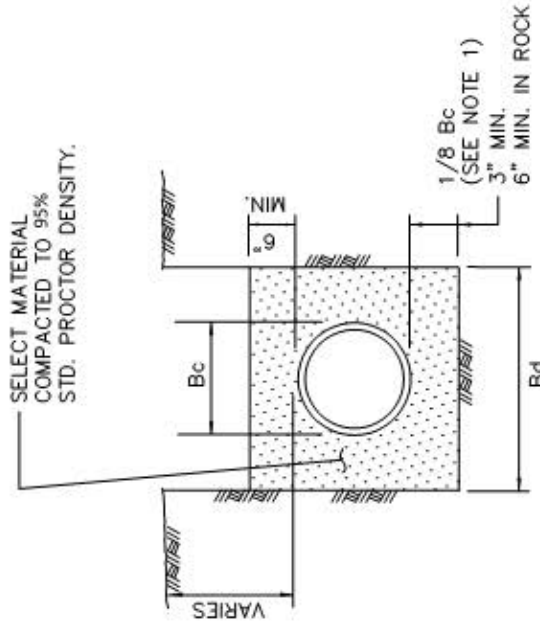
STANDARD SPECIFICATION REFERENCE	504.5
DATE	Mar. 2018
STANDARD DRAWING NO.	R-3040

CITY OF ROCKWALL

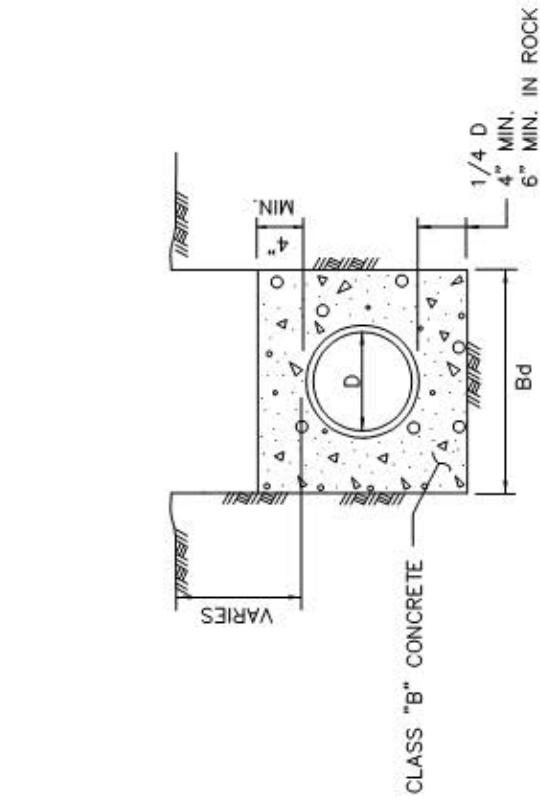
EMBEDMENT

CLASS "C", "C+", & "C-1"

STANDARD DRAWING NO.	R-3040
----------------------	--------



CLASS "D+"
N.T.S.



CLASS "G"
N.T.S.

NOTES:

1. FOR MAINS 42" DIAMETER AND LARGER, 1/8 Bc SHALL BE TAKEN AS 6".
2. Bc = OUTSIDE DIAMETER OF PIPE
3. Bd = TRENCH WIDTH
4. D = INSIDE DIAMETER OF PIPE

STANDARD DRAWING NO.
R-3050

CITY OF ROCKWALL



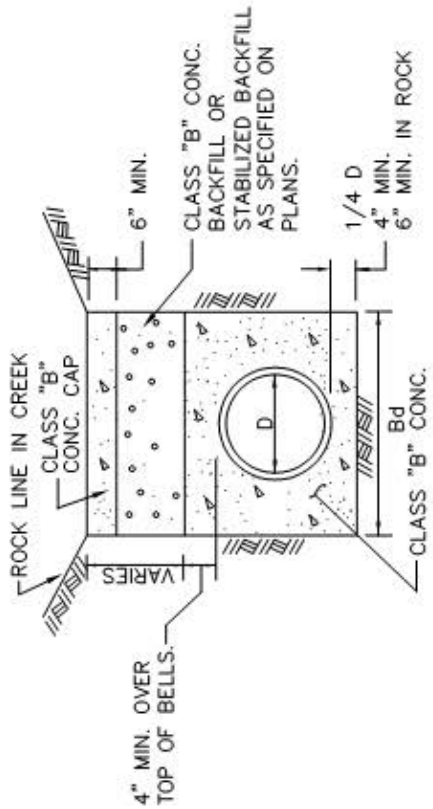
EMBEDMENT

CLASS "D+" & "G"

STANDARD SPECIFICATION REFERENCE
504.5

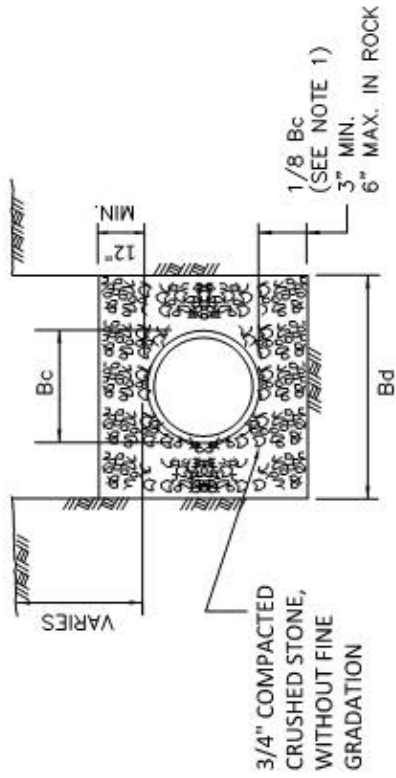
DATE
Mar. 2018

STANDARD DRAWING NO.
R-3050



CLASS "G-1"

(FOR ROCK DITCHES IN CREEKS)
N.T.S.



CLASS "H"

N.T.S.

(TO BE USED FOR PVC WASTEWATER PIPE)

NOTES:

1. FOR MAINS 42" DIAMETER AND LARGER, 1/8 Bc SHALL BE TAKEN AS 6".
2. Bd = TRENCH WIDTH
3. Bc = OUTSIDE DIAMETER OF PIPE
4. D = INSIDE DIAMETER OF PIPE

STANDARD DRAWING NO.
R-3060

CITY OF ROCKWALL



EMBEDMENT

CLASS "G-1" & "H"

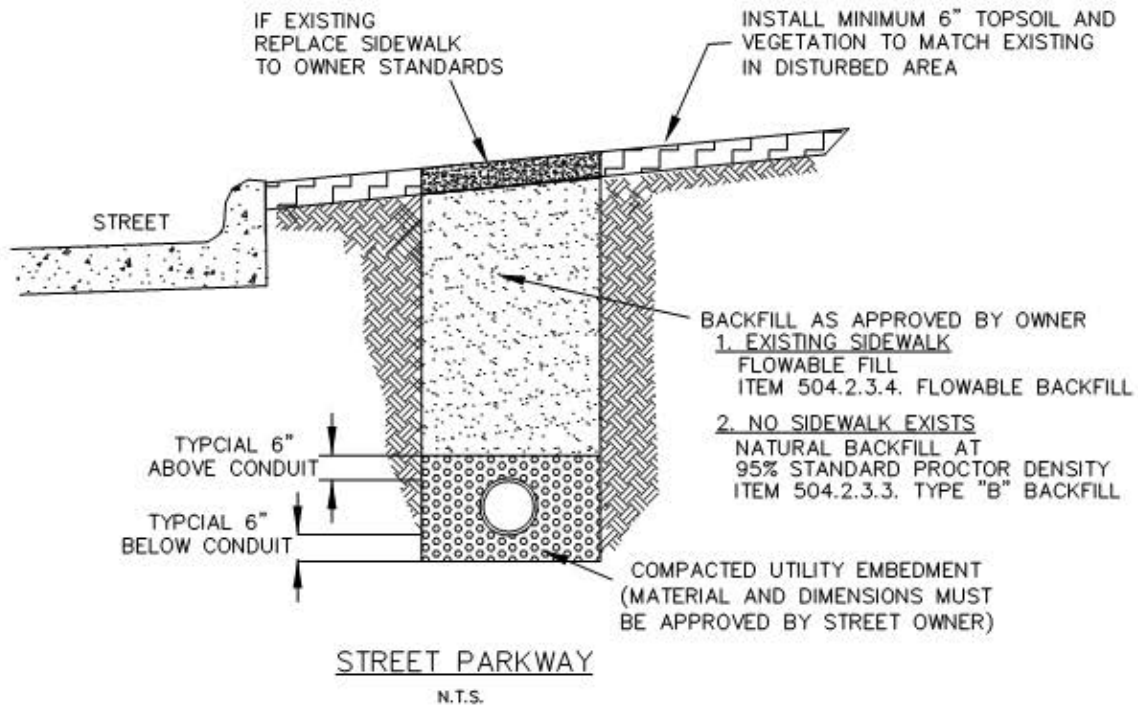
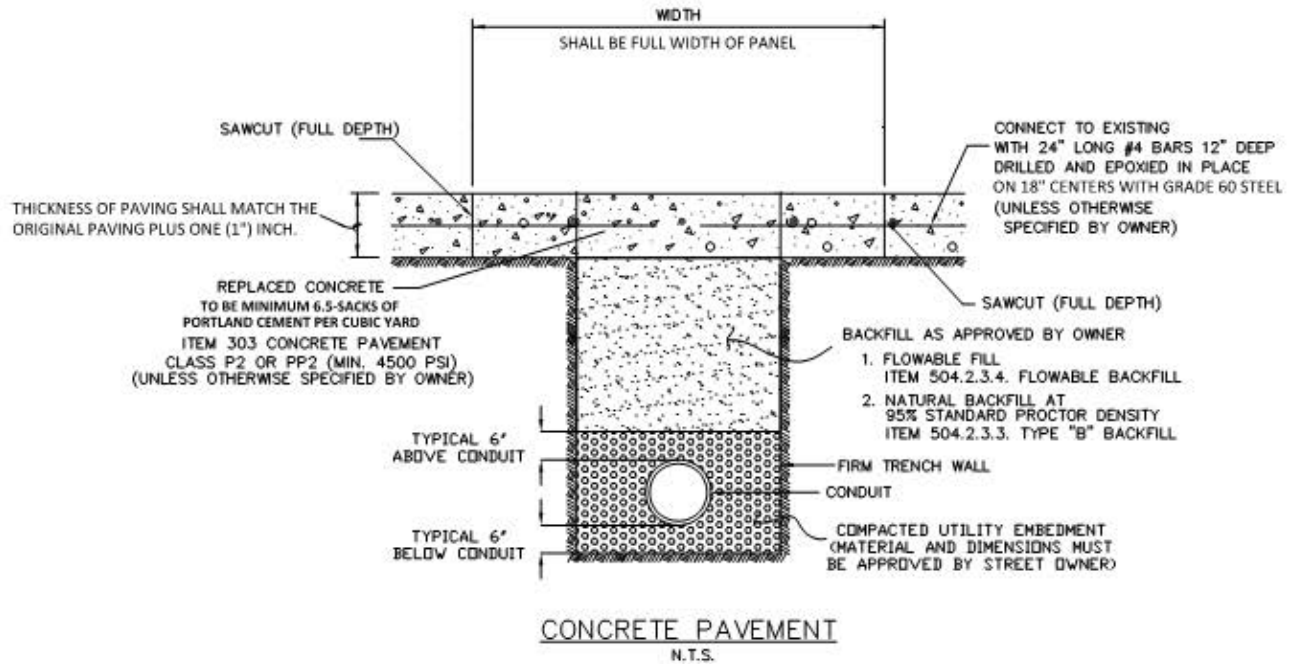
STANDARD SPECIFICATION REFERENCE
504.5

DATE
AUG. '19

STANDARD DRAWING NO.
R-3060



GENERAL NOTE: CHECK WITH STREET OWNER FOR SPECIFIC REQUIREMENTS NOT CONTAINED HEREIN



PAVEMENT CUT AND REPAIR
CONCRETE AND PARKWAY

CITY OF ROCKWALL



STANDARD SPECIFICATION REFERENCE

402

DATE

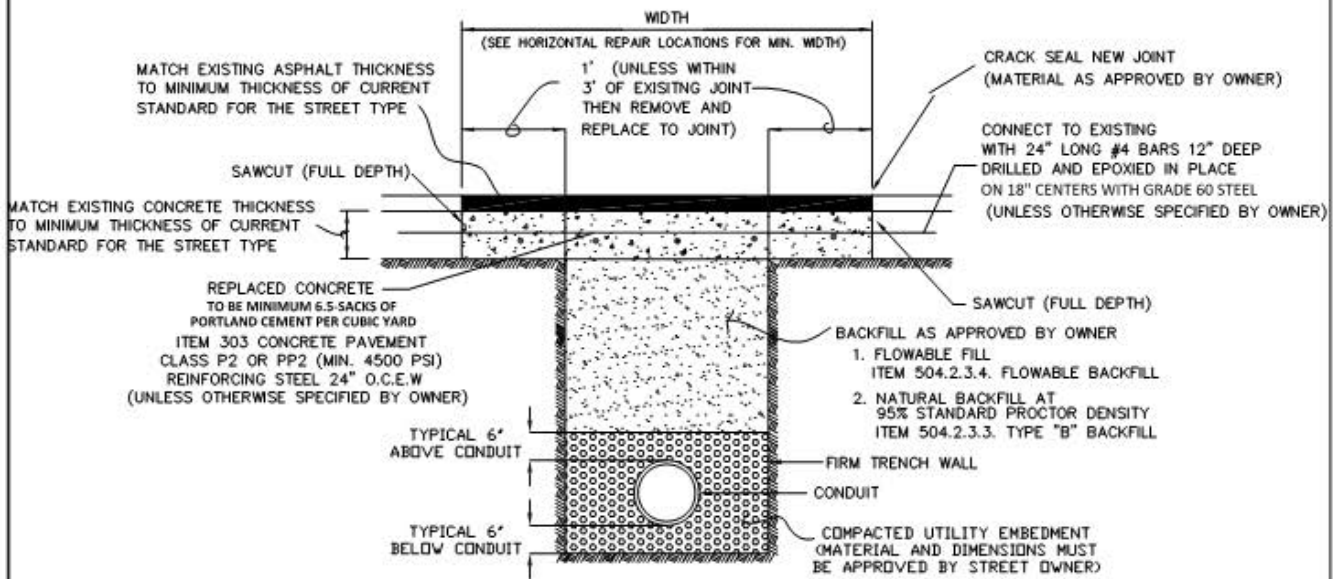
Mar. 2018

STANDARD DRAWING NO.

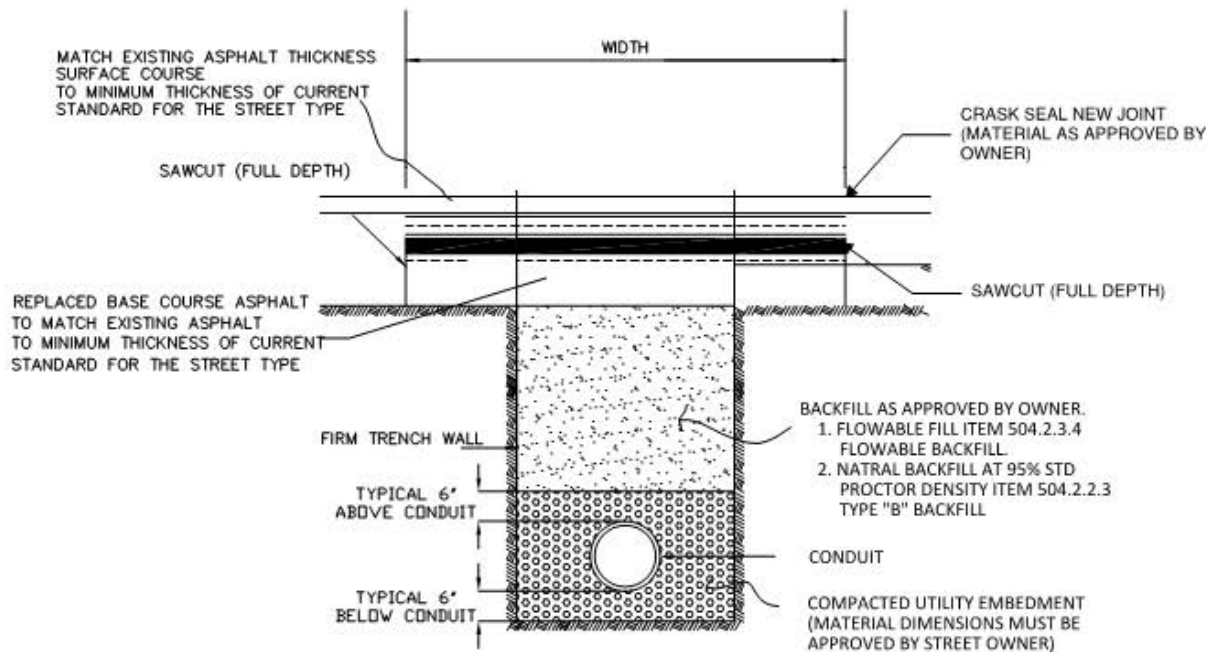
R-3070A



GENERAL NOTE: CHECK WITH STREET OWNER FOR SPECIFIC REQUIREMENTS NOT CONTAINED HEREIN



CONCRETE PAVEMENT WITH ASPHALT OVERLAY
N.T.S.



FULL DEPTH ASPHALT PAVEMENT
N.T.S.

PAVEMENT CUT AND REPAIR
ASPHALT



STANDARD SPECIFICATION REFERENCE

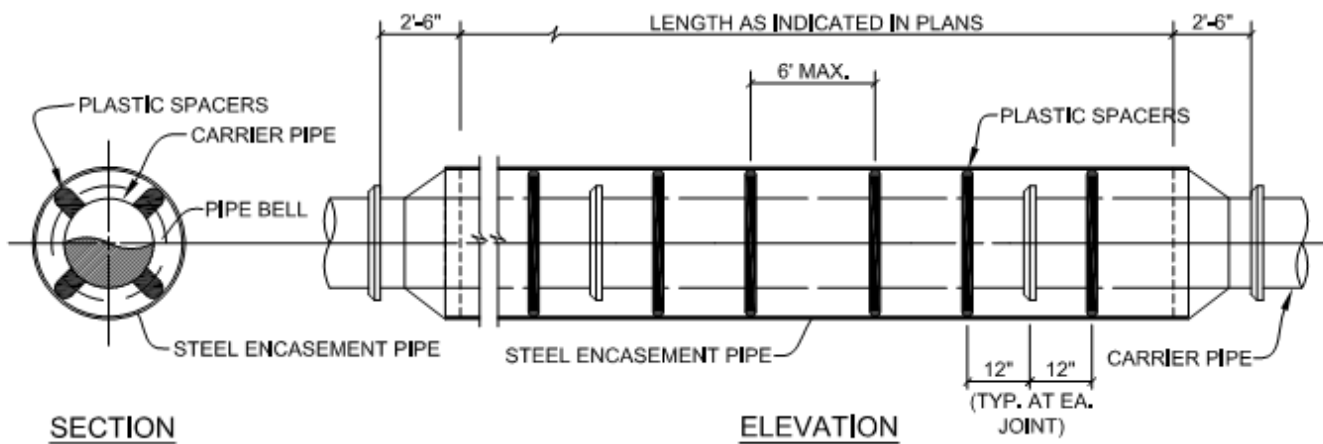
402

DATE

Mar. 2018

STANDARD DRAWING NO.

R-3070B



SECTION

ELEVATION

ENCASED ROAD BORE

NO SCALE

NOTES:

- 1) ALL BORES BY CONTRACTOR SHALL BE DRY BORES.
- 2) PREFABRICATED PLASTIC SPACERS SHALL BE RACI NORTH AMERICA OR APPROVED EQUAL, FOR THE SPECIFIC APPLICATION AS RECOMMENDED BY THE MANUFACTURER.
- 3) CONTRACTOR SHALL PROVIDE SUPPORT UNDER CARRIER PIPE TO HAVE A MIN. 1" CLEARANCE BETWEEN PIPE BELL AND ENCASEMENT PIPE.
- 4) ENDS OF ENCASEMENT PIPE SHALL HAVE END SEALS INSTALLED PER MANUFACTURER'S REQUIREMENTS. END SEALS SHALL BE CCI MODEL ESW WRAP-AROUND BY CCI PIPELINE SYSTEMS OR APPROVED EQUAL.
- 5) THE DESIGN ENGINEER SHALL DESIGN THE MINIMUM THICKNESS OF THE ENCASEMENT PIPE. DESIGN WILL NEED TO INCLUDE DEAD LOADING BASED ON THE HEIGHT OF COVER AND HS-20 LOADINGS FOR ROADWAY CROSSINGS AND E-80 LOADINGS FOR RAILROAD CROSSINGS.
- 6) STEEL ENCASEMENT PIPE SHALL CONFORM TO AWWA C-200. PIPE SHALL BE FABRICATED IN ACCORDANCE WITH ASTM A-570 FROM STEEL PLATES HAVING MINIMUM YIELD STRENGTH 36,000 PSI.
- 7) STEEL ENCASEMENT PIPE SHALL BE PAINTED INSIDE AND OUTSIDE WITH TWO COATS OF TNEMEC, HB TNEMECOL, SERIES 46+465 COAL TAR, OR CITY APPROVED EQUIVALENT PRIOR TO DELIVERY TO THE JOB SITE. MINIMUM COATING INSIDE AND OUTSIDE SHALL BE 12+MILS DRY FILM THICKNESS (DFT) PER EACH COAT.
- 8) ENCASEMENT PIPE SHALL BE FIELD WELDED IN ACCORDANCE WITH AWWA C-206. WELDED JOINTS SHALL BE WIRE BRUSHED AND PAINTED WITH ONE COAT OF TNEMEC, OMNITHANE SERIES 530, 2.5-MILS DRY FILM THICKNESS (DFT) OR CITY APPROVED EQUIVALENT.

UNDERGROUND CONDUIT	CITY OF ROCKWALL		
STEEL ENCASED BORE		DATE OCT. '17	DRAWING NO. R-3090



SECTION 8.04 | DIVISION 4000. WATER DISTRIBUTION

TABLE 8.4: REVISIONS TO NCTCOG'S DIVISION 4000 WATER DISTRIBUTION

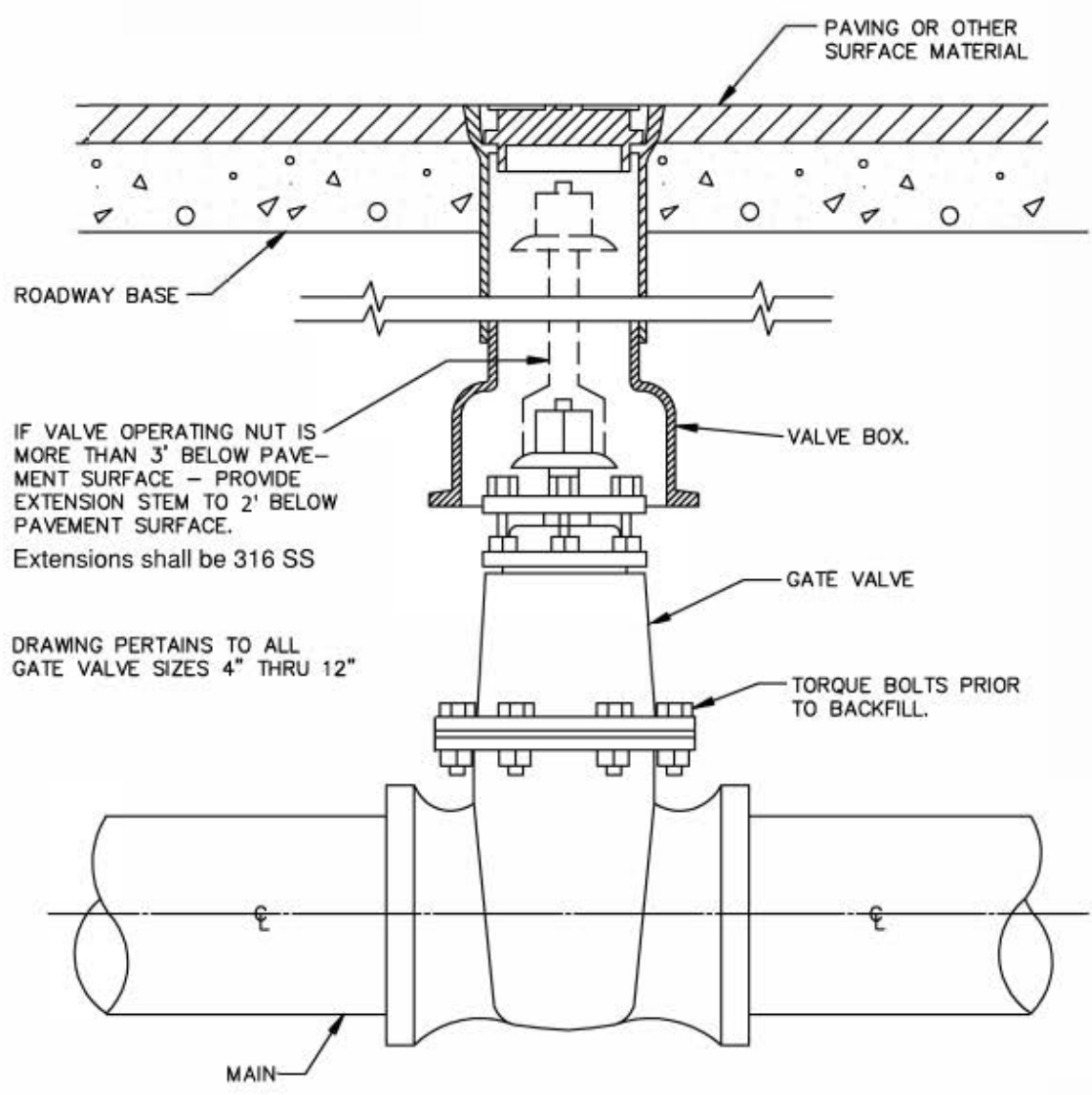
NOTES: (1) DELETED NCTCOG DRAWING; (2) REVISED NCTCOG DRAWING (SEE REVISIONS BELOW); (3) ADDED ROCKWALL STANDARD DRAWING (SEE DRAWING BELOW); AND (4) ADDED CURRENT TXDOT STANDARDS

REVISED	DRAWING NO.	DESCRIPTION
	4010A	HORIZONTAL THRUST BLOCKING – AT PIPE BEND
	4010B	HORIZONTAL THRUST BLOCKING – AT PIPE BEND
	4010C	HORIZONTAL THRUST BLOCKING – AT PIPE BEND
	4020	HORIZONTAL THRUST BLOCKING – AT TEES AND PLUGS
	4030	VERTICAL THRUST BLOCKING – AT PIPE BEND
	4040	THRUST BLOCK – GENERAL NOTES
(1)	4050	GATE VALVE 4" TO 12" – BOX & EXTENSION STEM
(3)	R-4050	GATE VALVE 4" TO 12" – BOX & EXTENSION STEM
(1)	4060A	VAULT CONSTRUCTION – HORIZONTAL GATE VALVE ≥ 16"
(1)	4060B	VAULT CONSTRUCTION – HORIZONTAL GATE VALVE ≥ 16"
(3)	R-4060	16" THRU 42" – HORIZONTAL BUTTERFLY VALVES
(1)	4070A	VAULT CONSTRUCTION – VERTICAL GATE VALVE ≥ 16"
(1)	4070B	VAULT CONSTRUCTION – VERTICAL GATE VALVE ≥ 16"
	4080A	VAULT CONSTRUCTION – BUTTERFLY VALVE ≥ 48"
	4080B	VAULT CONSTRUCTION – BUTTERFLY VALVE ≥ 48"
(1)	4090	COMBINATION AIR VACUUM VALVE – TYPE "1"
(3)	R-4090	COMBINATION AIR VACUUM VALVE – TYPE "1"
	4100A	COMBINATION AIR VACUUM VALVE – TYPE "2"
	4100B	AIR RELEASE VALVE – TYPE "2"
(1)	4110	FLUSH POINT INSTALLATION – TYPE "1"
(3)	R-4110	FLUSH POINT INSTALLATION – TYPE "1"
(1)	4120	FIRE HYDRANT - INSTALLATION
(3)	R-4120	FIRE HYDRANT - INSTALLATION
(1)	4130	WATER SERVICE INSTALLATION – ¾" OR 1" LINE
(3)	R-4130	WATER SERVICE INSTALLATION – 1" OR 1 ½" OR 2" LINE
(1)	4140	WATER SERVICE INSTALLATION – 1 ½" OR 2" LINE
(1)	R-4140	WATER SERVICE INSTALLATION – 1 ½" OR 2" LINE
(3)	R-4145	SINGLE SERVICE METER TAIL CONNECTION
(1)	4150	4" COMBINATION SERVICE – WITH 4" METER
(1)	R-4150	4" COMBINATION SERVICE – WITH 4" METER
(1)	4160	8" DETECTOR CHECK – SERVICE WITH 8" METER
(3)	R-4160	DOMESTIC METER VAULT – 3", 4" OR 6" LINE
(1)	4170	8" FIRE LINE STANDPIPE – SERVICE WITH 8" METER
(3)	R-4170	IRRIGATION METER VAULT – 3", 4" OR 6" LINE
(1)	4180	4" DOMESTIC SERVICE – WITH 3" METER
(1)	4190A	LARGE SERVICE METER – VAULT INSTALLATION
(1)	4190B	LARGE SERVICE METER – PRECAST VAULT
(1)	4200	WATER MAIN LOWERING – BELOW WASTEWATER MAIN
(3)	R-4200	WATER MAIN LOWERING – BELOW WASTEWATER MAIN



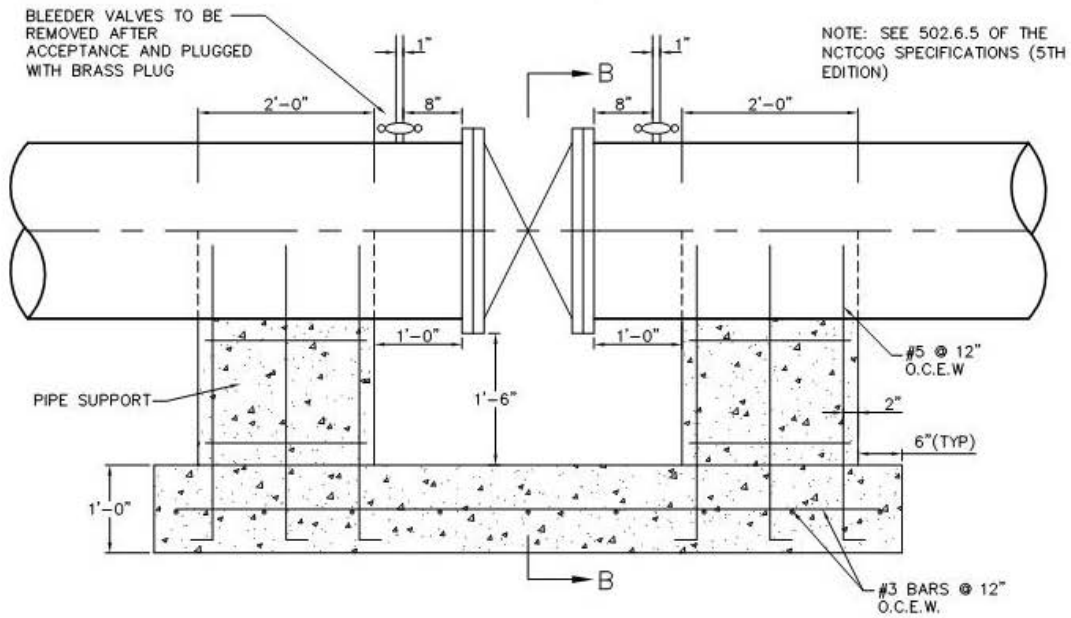
NOTE:

IN UNPAVED AREAS, INSTALL 2' x 2' x 6" CONCRETE VALVE PAD FLUSH WITH THE TOP OF VALVE BOX. REINFORCE WITH #3 BARS ON 6" CENTERS BOTH WAYS.

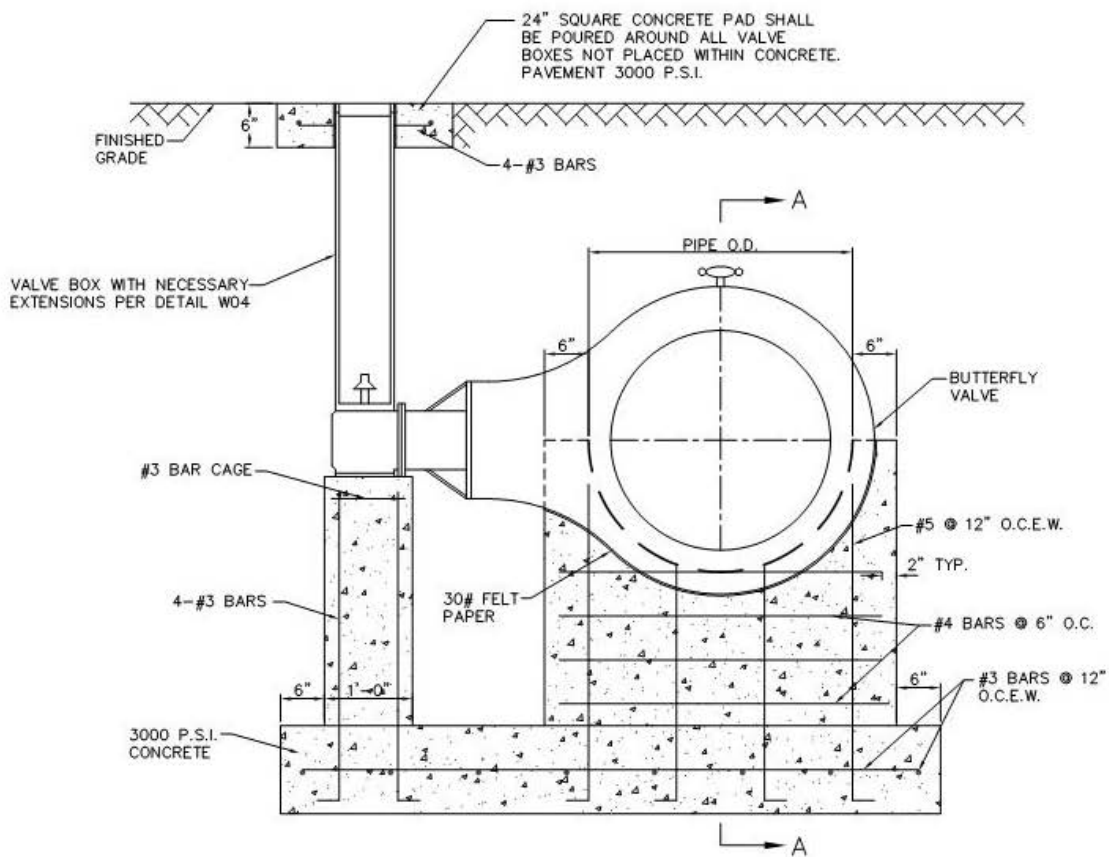


GATE VALVE BOX AND
EXTENSION STEM
N.T.S.

GATE VALVE 4" TO 12" BOX & EXTENSION STEM	CITY OF ROCKWALL 	STANDARD SPECIFICATION REFERENCE 502.6.6*	
		DATE AUG. '19	STANDARD DRAWING NO. R-4050



SECTION A-A



SECTION B-B

16" thru 42"

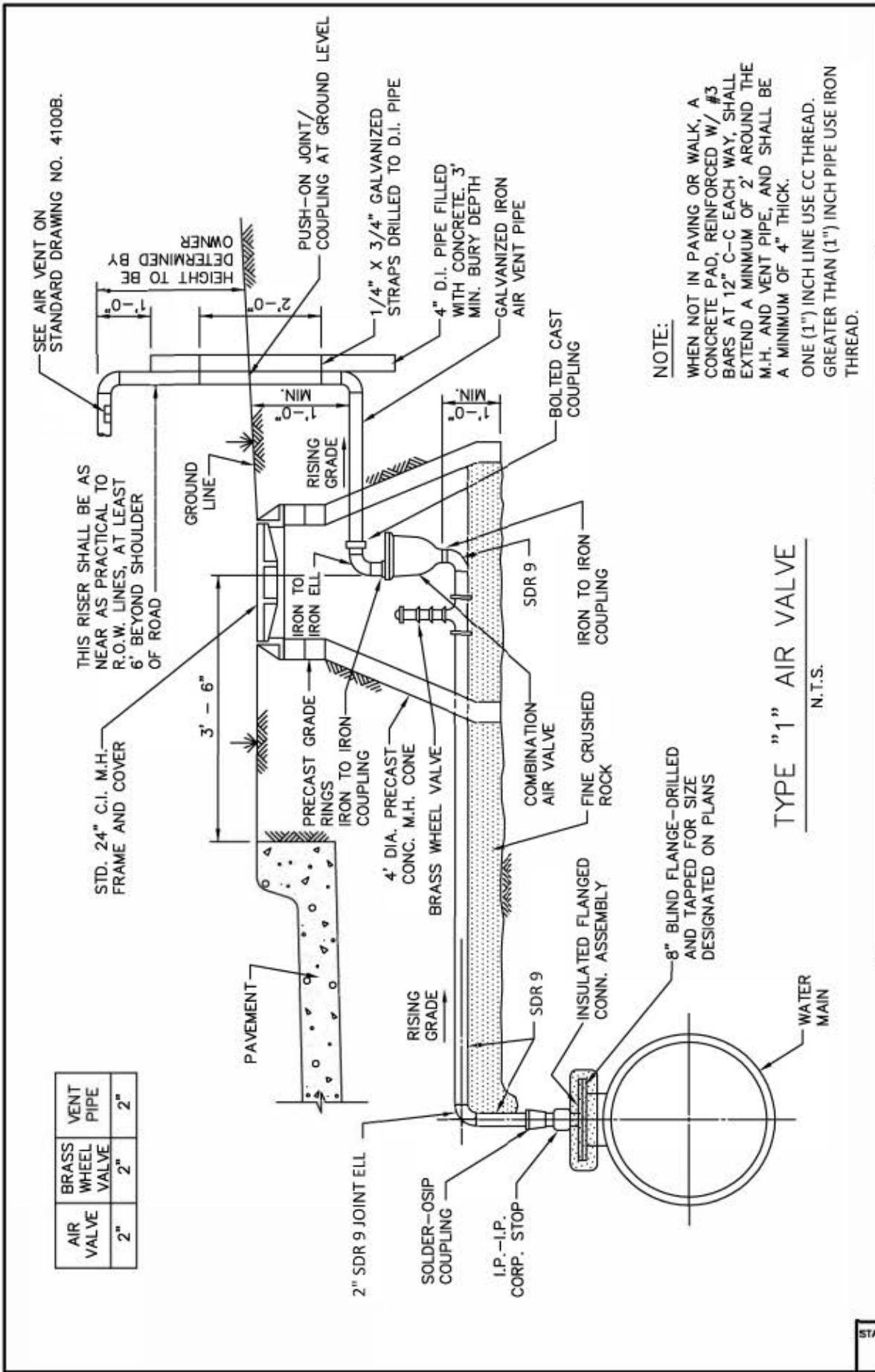
CITY OF ROCKWALL



HORIZONTAL BUTTERFLY VALVES

DATE
MAY 2022

DRAWING NO.
R-4060

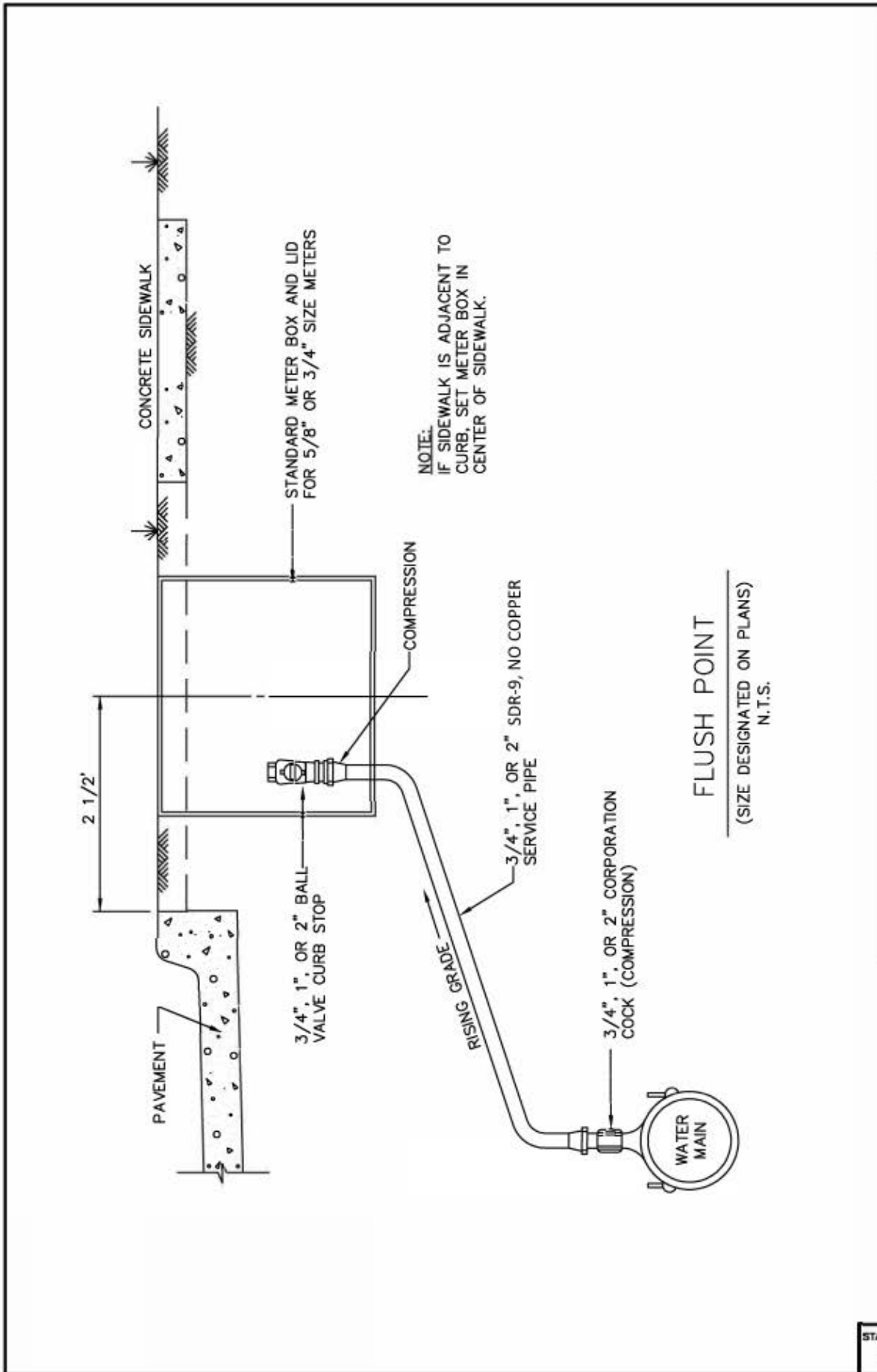


AIR VALVE	2"
BRASS WHEEL VALVE	2"
VENT PIPE	2"

NOTE:
 WHEN NOT IN PAVING OR WALK, A CONCRETE PAD, REINFORCED W/ #3 BARS AT 12" C-C EACH WAY, SHALL EXTEND A MINIMUM OF 2' AROUND THE M.H. AND VENT PIPE, AND SHALL BE A MINIMUM OF 4" THICK.
 ONE (1") INCH LINE USE CC THREAD. GREATER THAN (1") INCH PIPE USE IRON THREAD.

TYPE "1" AIR VALVE
 N.T.S.

COMBINATION AIR VACUUM VALVE TYPE "1"	CITY OF ROCKWALL
STANDARD DRAWING NO. R-4090	STANDARD SPECIFICATION REFERENCE 502.6.6*
DATE Mar. 2018	STANDARD DRAWING NO. R-4090



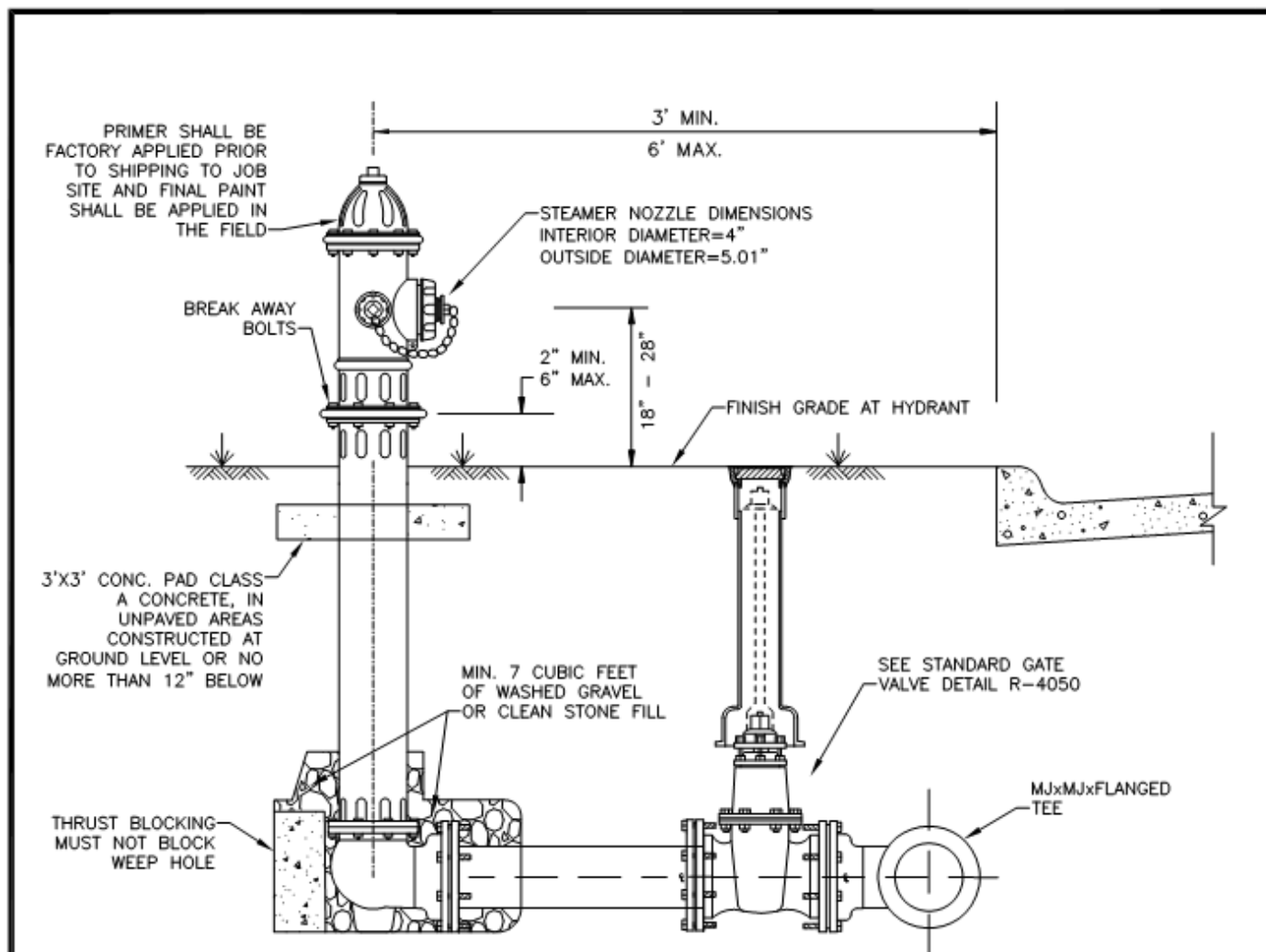
FLUSH POINT
(SIZE DESIGNATED ON PLANS)
N.T.S.

STANDARD SPECIFICATION REFERENCE	502.10.3*
DATE	Mar. 2018
STANDARD DRAWING NO.	R-4110



FLUSH POINT INSTALLATION
CITY OF ROCKWALL
TYPE "1"

STANDARD DRAWING NO.	R-4110
----------------------	--------



NOTES:

1. IN GENERAL, ALL FIRE HYDRANTS SHALL CONFORM TO AWWA STANDARD SPECIFICATIONS FOR FIRE HYDRANTS FOR ORDINARY WATER WORKS SERVICE, C-502. FIRE HYDRANTS SHALL HAVE A 5 $\frac{1}{4}$ " MIN. VALVE OPENING AND A BARREL APPROXIMATELY 7" INSIDE DIAMETER. ALL HYDRANTS SHALL BE EQUIPPED WITH BREAK AWAY FLANGE.
2. ALL JOINTS TO BE RESTRAINED JOINTS. MEGA-LUGS OR APPROVED EQUAL.
3. TYPICAL VALVE: ACTUAL VALVE LOCATION WILL DEPEND ON LOCATION OF WATER MAIN.
4. NO FIRE HYDRANT CLOSER THAN 18" TO EXISTING OR PROPOSED SIDEWALKS. (USUAL)
5. STANDARD BURY DEPTH 4 FEET.
6. SET FIRE HYDRANT ON THE LOT LINE EXTENDED WHEN POSSIBLE.

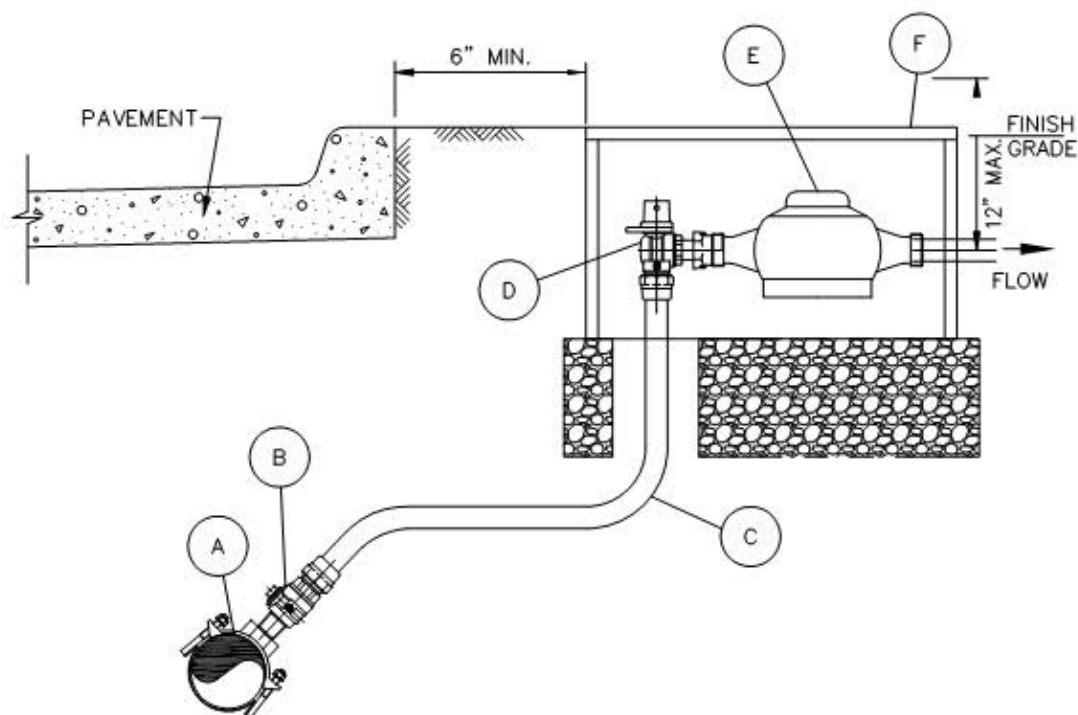
FIRE HYDRANT INSTALLATION

CITY OF ROCKWALL



DATE
MAY '22

DRAWING NO.
R-4120



NOTES:

1. SERVICE PIPE SHALL BE 1" OR 2" SEAMLESS 250 PSI BLUE COLORED POLYETHYLENE ASTM D2737, SDR 9, CTS WATER SERVICE PIPE, NSF61 APPROVED.
2. TOP OF METER BOXES SHALL BE 1" ABOVE FINISHED GRADE.
3. METER BOX SHALL HAVE A MINIMUM OF 6" OF GRAVEL BENEATH METER BOX AS ILLUSTRATED.
4. LOCATION OF THE METER BOX SHALL BE LOCATED TO ALLOW 6" CLEARANCE FROM CURB.

MATERIAL LIST:

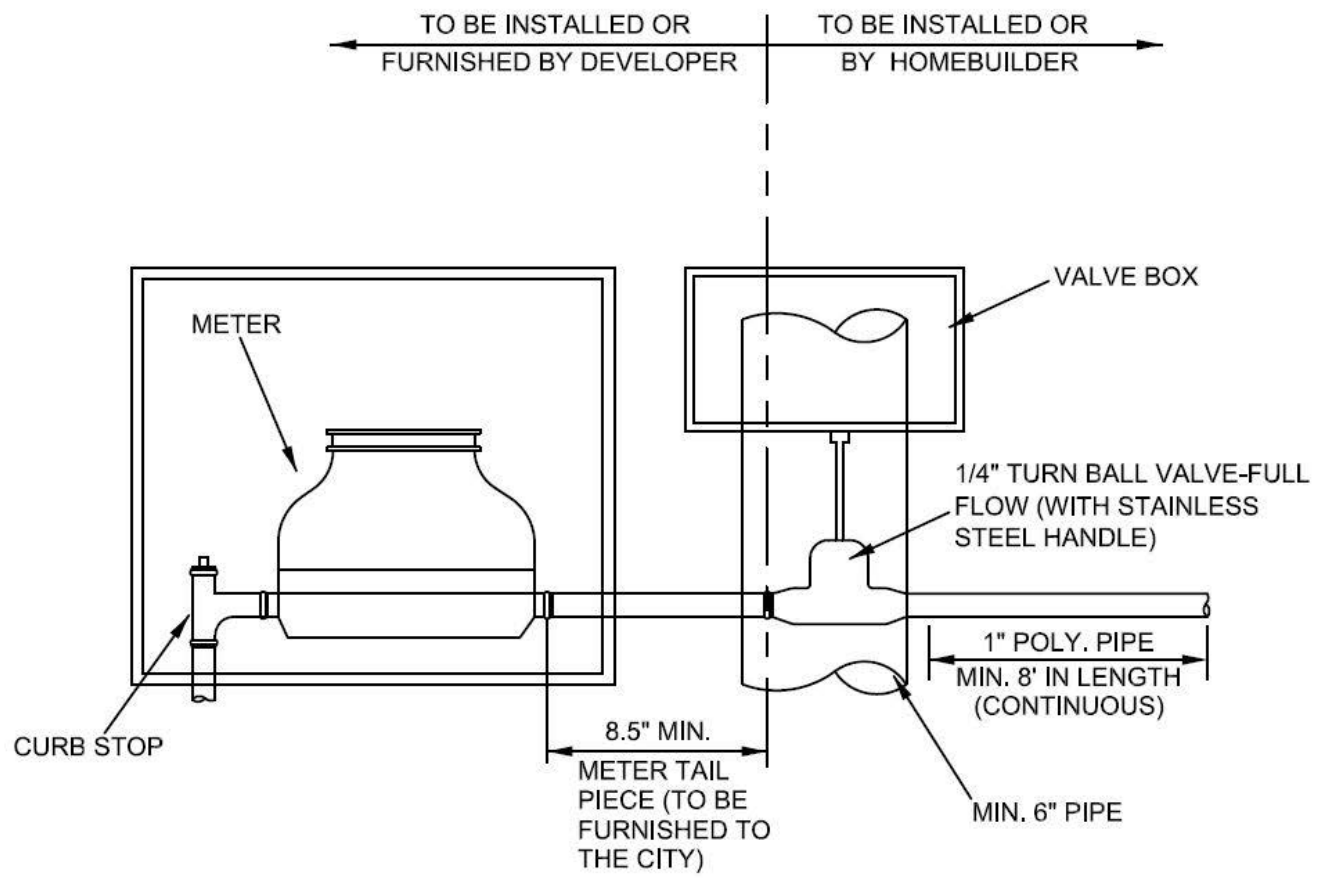
- A. SERVICE SADDLE SHALL BE BRASS WITH DOUBLE BRONZE FLATTENED STRAPS OR STAINLESS STEEL DOUBLE BOLT WIDE STRAPS. NO BANDED OR HINGED STRAPS SHALL BE ALLOWED. SERVICE SADDLES SHALL MEET AWWA/CC TAPPING OUTLET (TAPERED THREADS) REQUIREMENTS. ALL SERVICE SADDLES SHALL BE PER APPROVED WATER MATERIALS LIST.
- B. 1" OR 2" CORPORATION STOP PER APPROVED WATER MATERIALS LIST.
- C. 1" OR 2" SERVICE PIPE SHALL BE SEAMLESS 250 PSI BLUE COLORED POLYETHYLENE ASTM D2737, SDR9, CTS WATER SERVICE PIPE, NSF61 APPROVED.
- D. 1" OR 2" LOCKING ANGLE METER VALVE (STOP) PER APPROVED WATER MATERIALS LIST.
- E. WATER METERS CENTERED IN BOX AS ILLUSTRATED.
- F. ROUND METER BOX PER APPROVED WATER MATERIALS LIST.

WATER SERVICE INSTALLATION

CITY OF ROCKWALL


1" OR 2" LINE

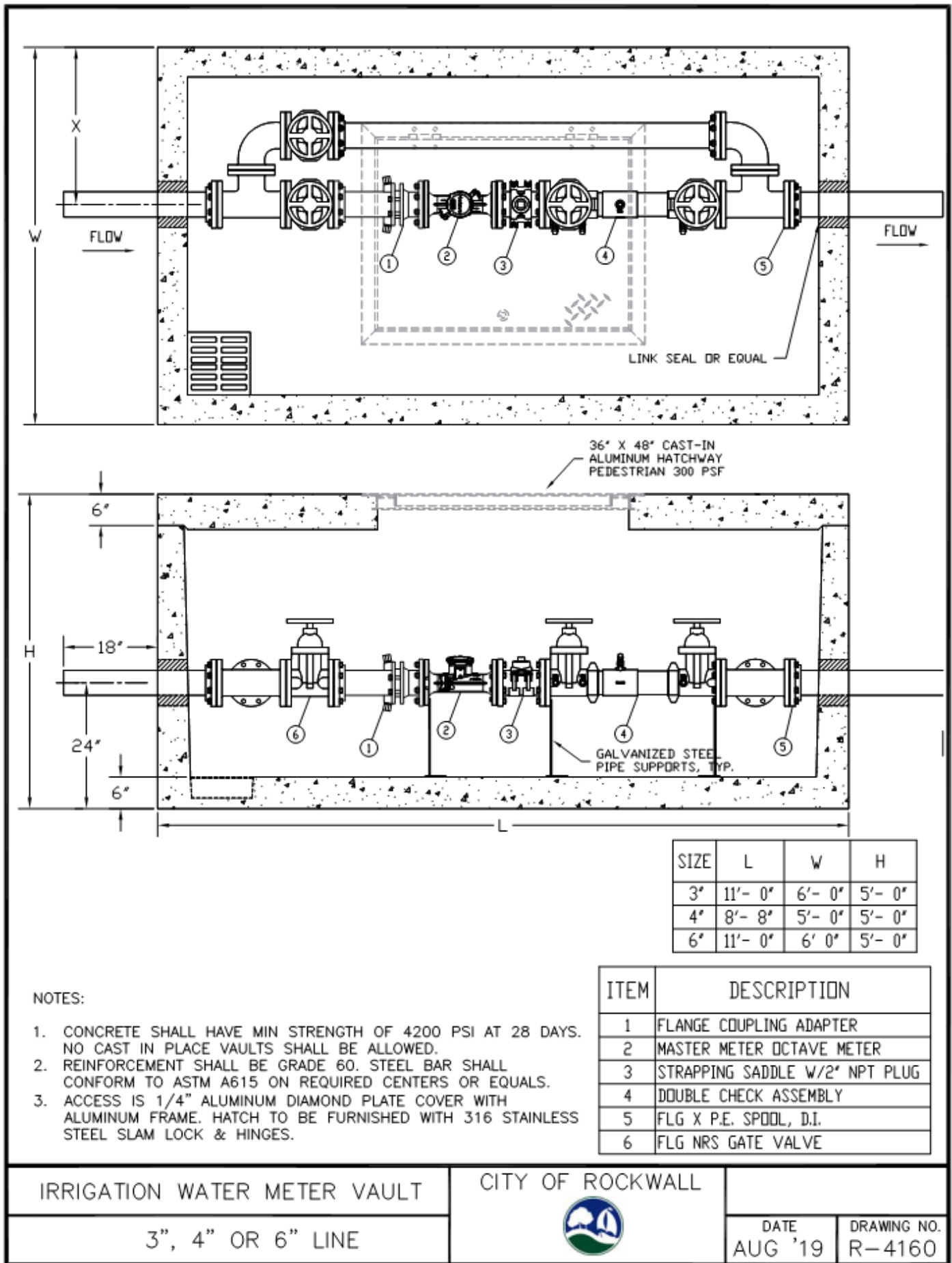
DATE
AUG '19DRAWING NO.
R-4130



NOTE:
 VALVE BOX TO BE TRAFFIC RATED IF UNDER PAVING.

SINGLE SERVICE METER TAIL CONNECTION
 NOT TO SCALE

WATER METER DETAIL	CITY OF ROCKWALL		
SINGLE SERVICE		DATE AUG. '15	DRAWING NO. R-4145



SIZE	L	W	H
3"	11'- 0"	6'- 0"	5'- 0"
4"	8'- 8"	5'- 0"	5'- 0"
6"	11'- 0"	6'- 0"	5'- 0"

NOTES:

1. CONCRETE SHALL HAVE MIN STRENGTH OF 4200 PSI AT 28 DAYS. NO CAST IN PLACE VAULTS SHALL BE ALLOWED.
2. REINFORCEMENT SHALL BE GRADE 60. STEEL BAR SHALL CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUALS.
3. ACCESS IS 1/4" ALUMINUM DIAMOND PLATE COVER WITH ALUMINUM FRAME. HATCH TO BE FURNISHED WITH 316 STAINLESS STEEL SLAM LOCK & HINGES.

ITEM	DESCRIPTION
1	FLANGE COUPLING ADAPTER
2	MASTER METER OCTAVE METER
3	STRAPPING SADDLE W/2" NPT PLUG
4	DOUBLE CHECK ASSEMBLY
5	FLG X P.E. SPOOL, D.I.
6	FLG NRS GATE VALVE

IRRIGATION WATER METER VAULT

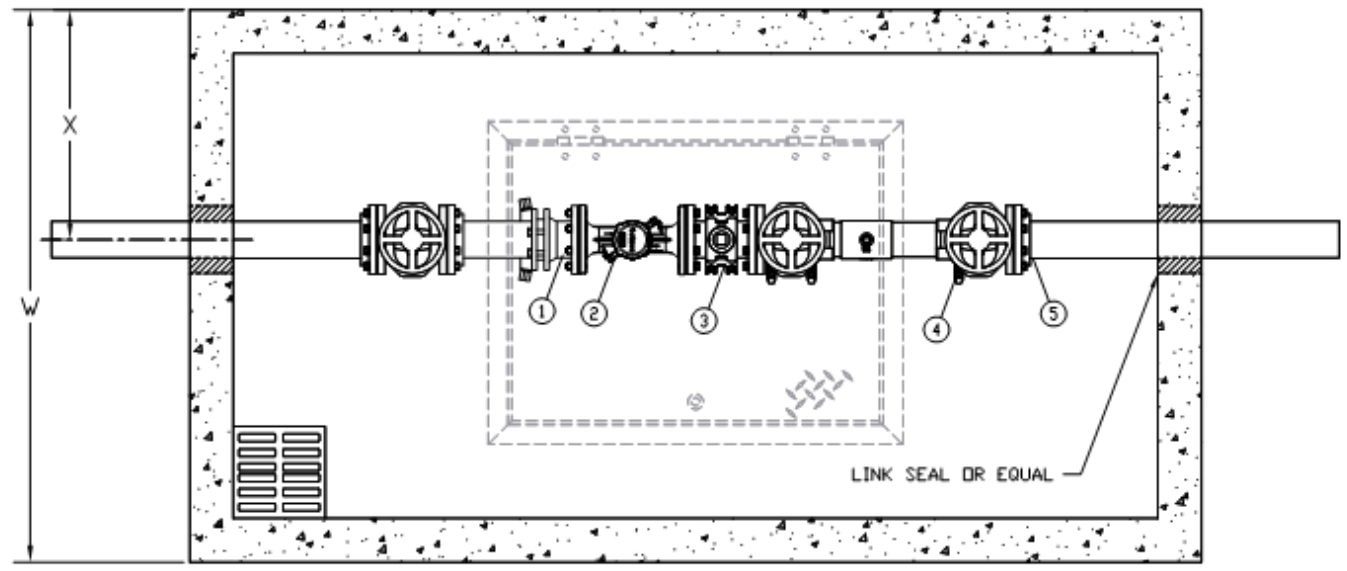
CITY OF ROCKWALL

3", 4" OR 6" LINE

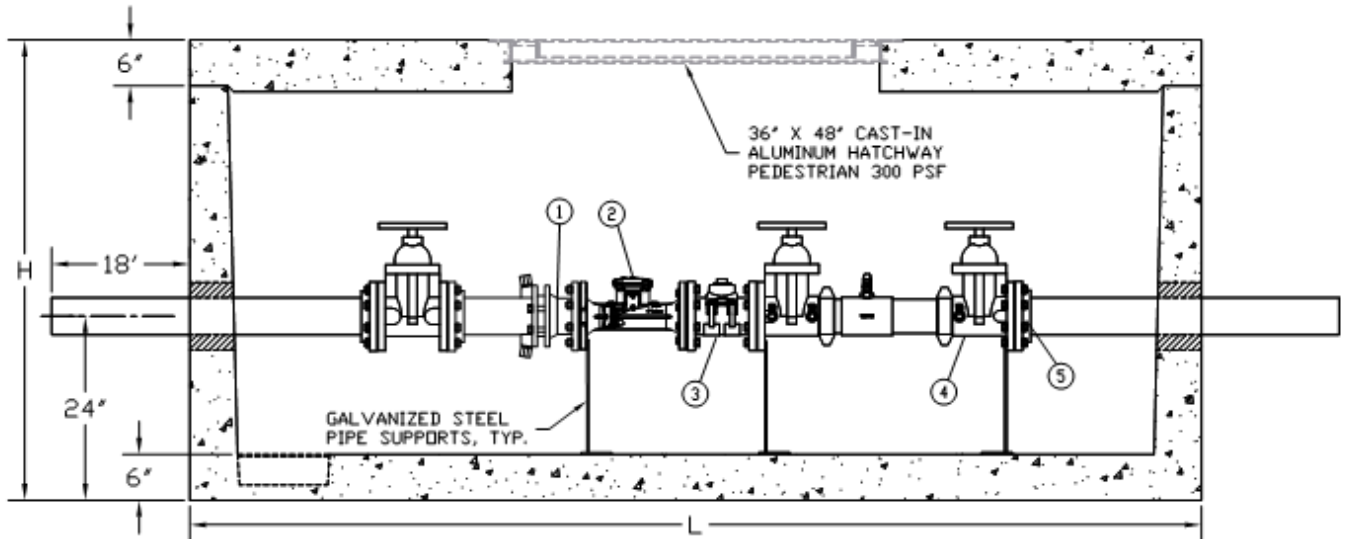


DATE
AUG '19

DRAWING NO.
R-4160



PLAN VIEW



ELEVATION VIEW

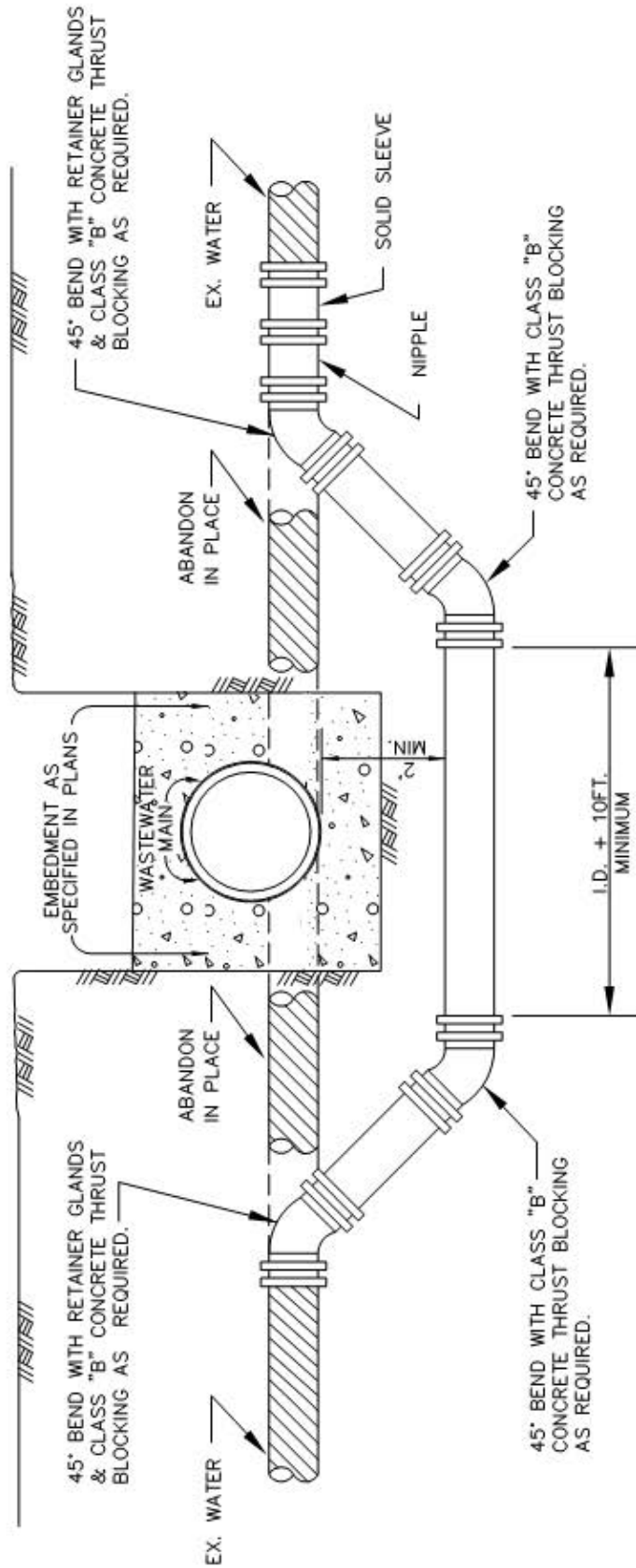
SIZE	L	W	H
3"	11'- 0"	6'- 0"	5'- 0"
4"	11'- 0"	6'- 0"	5'- 0"
6"	11'- 0"	6'- 0"	5'- 0"

NOTES:

1. CONCRETE SHALL HAVE MIN STRENGTH OF 4200 PSI AT 28 DAYS. NO CAST IN PLACE VAULTS SHALL BE ALLOWED.
2. REINFORCEMENT SHALL BE GRADE 60. STEEL BAR SHALL CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUALS.
3. ACCESS IS 1/4" ALUMINUM DIAMOND PLATE COVER WITH ALUMINUM FRAME. HATCH TO BE FURNISHED WITH 316 STAINLESS STEEL SLAM LOCK & HINGES.

ITEM	DESCRIPTION
1	FLANGE COUPLING ADAPTER
2	MASTER METER OCTAVE METER
3	STRAPPING SADDLE W/2" NPT PLUG
4	DOUBLE CHECK ASSEMBLY
5	FLG X P.E. SPOOL, D.I.

IRRIGATION WATER METER VAULT	CITY OF ROCKWALL		
3", 4" OR 6" LINE		DATE AUG '19	DRAWING NO. R-4170



STANDARD SPECIFICATION REFERENCE	506.6
DATE	Mar. 2018
STANDARD DRAWING NO	R-4200

CITY OF ROCKWALL

WATER MAIN LOWERING
BELOW WASTEWATER MAIN

STANDARD DRAWING NO	R-4200
---------------------	--------

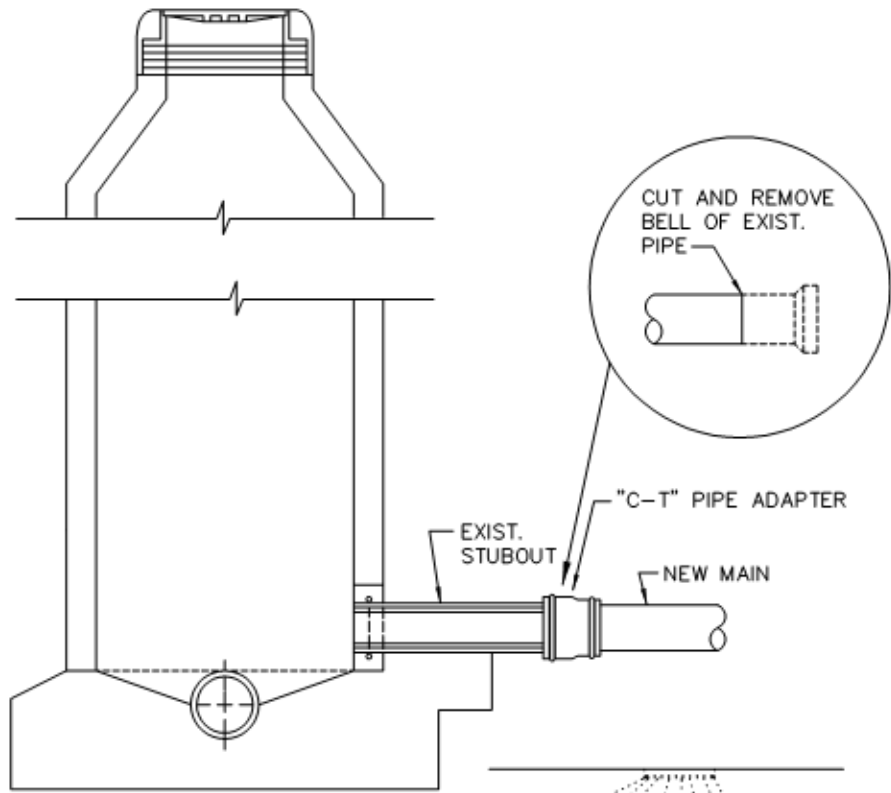


SECTION 8.05 | DIVISION 5000. WASTEWATER COLLECTION

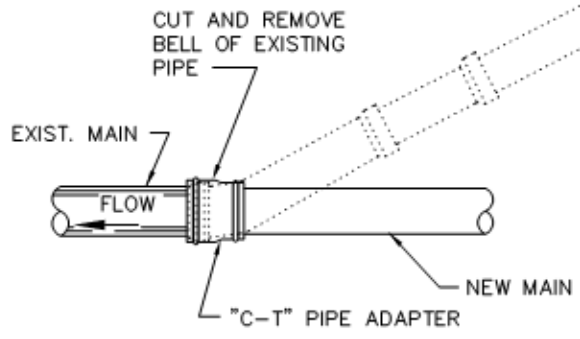
TABLE 8.5: REVISIONS TO NCTCOG'S DIVISION 5000 WASTEWATER COLLECTION

NOTES: (1) DELETED NCTCOG DRAWING; (2) REVISED NCTCOG DRAWING (SEE REVISIONS BELOW); (3) ADDED ROCKWALL STANDARD DRAWING (SEE DRAWING BELOW); AND (4) ADDED CURRENT TXDOT STANDARDS

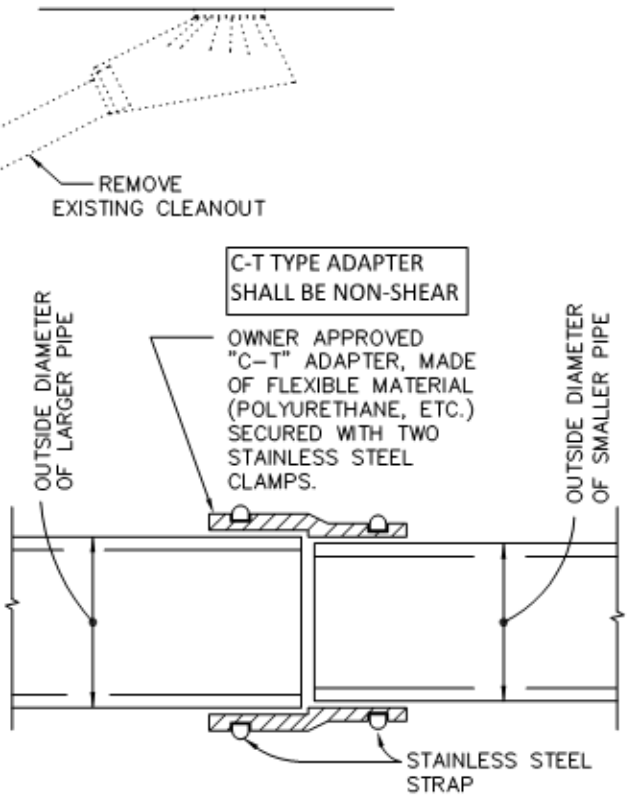
REVISED	DRAWING NO.	DESCRIPTION
(1)	5010	WASTEWATER MAIN TIE-IN – AT CLEANOUT OR M.H. STUBOUT
(3)	R-5010	WASTEWATER MAIN TIE-IN – AT CLEANOUT OR M.H. STUBOUT
(1)	5020	WASTEWATER MANHOLE – PRECAST
(3)	R-5020	WASTEWATER MANHOLE – PRECAST
(1)	5030	WASTEWATER MANHOLE – CAST-IN-PLACE
(3)	R-5030	WASTEWATER MANHOLE – CAST-IN-PLACE
(3)	R-5031	WASTEWATER MANHOLE – INFLOW PREVENTION & CORROSION PROTECTION
(1)	5040	WASTEWATER MANHOLE – FIBERGLASS
(1)	5050	WASTEWATER MANHOLE – PRESSURE TYPE
(3)	R-5050	WASTEWATER MANHOLE – PRESSURE TYPE
(1)	5060	WASTEWATER MANHOLE – VENTED
(3)	R-5060	WASTEWATER MANHOLE – VENTED
(1)	5070	WASTEWATER MANHOLE – OUTSIDE DROP CONNECTIONS
(1)	5080	WASTEWATER MANHOLE – INSIDE DROP CONNECTION
(3)	R-5080	WASTEWATER MANHOLE – INSIDE DROP CONNECTION
	5090	WASTEWATER MANHOLE – LINE INTERSECTION
	5100	WASTEWATER MANHOLE – FALSE BOTTOM
(3)	R-5101	WASTEWATER MANHOLE – HINGED RIM & COVER
(3)	R-5102	WASTEWATER MANHOLE – BOLT AND GASKET RIM & COVER
(3)	R-5103	WASTEWATER MANHOLE – PRIVATE RIM & COVER
(1)	5110	WASTEWATER MAIN – CLEANOUT
(3)	R-5110	WASTEWATER MAIN – CLEANOUT
(1)	5120	WASTEWATER LATERALS – WITH & WITHOUT CLEANOUT
(3)	R-5120	WASTEWATER LATERAL CONNECTIONS – RESIDENTIAL
(1)	5130	WASTEWATER LATERAL CONNECTIONS – IN EARTH & IN ROCK
	5140	WASTEWATER LATERAL CONNECTIONS – CLEANOUT FRAME & COVER
(1)	5150	WASTEWATER LATERAL STUBOUT – IN ADVANCE OF PAVING
(3)	R-5150	WASTEWATER LATERAL STUBOUT – IN ADVANCE OF PAVING
(1)	5160	WASTEWATER LATERAL REPLACEMENT – IN ADVANCE OF PAVING
(3)	R-5160	WASTEWATER LATERAL REPLACEMENT – IN ADVANCE OF PAVING
(1)	5170	ABANDONMENT OF MANHOLE – IN OR OUT OF PAVEMENT
(3)	R-5170	ABANDONMENT OF MANHOLE – IN OR OUT OF PAVEMENT
(3)	R-5180	MANHOLE AND VALVE VAULT – MOW STRIP



AT STUBOUT
N.T.S.



AT CLEANOUT
N.T.S.



"C-T" PIPE ADAPTER
N.T.S.

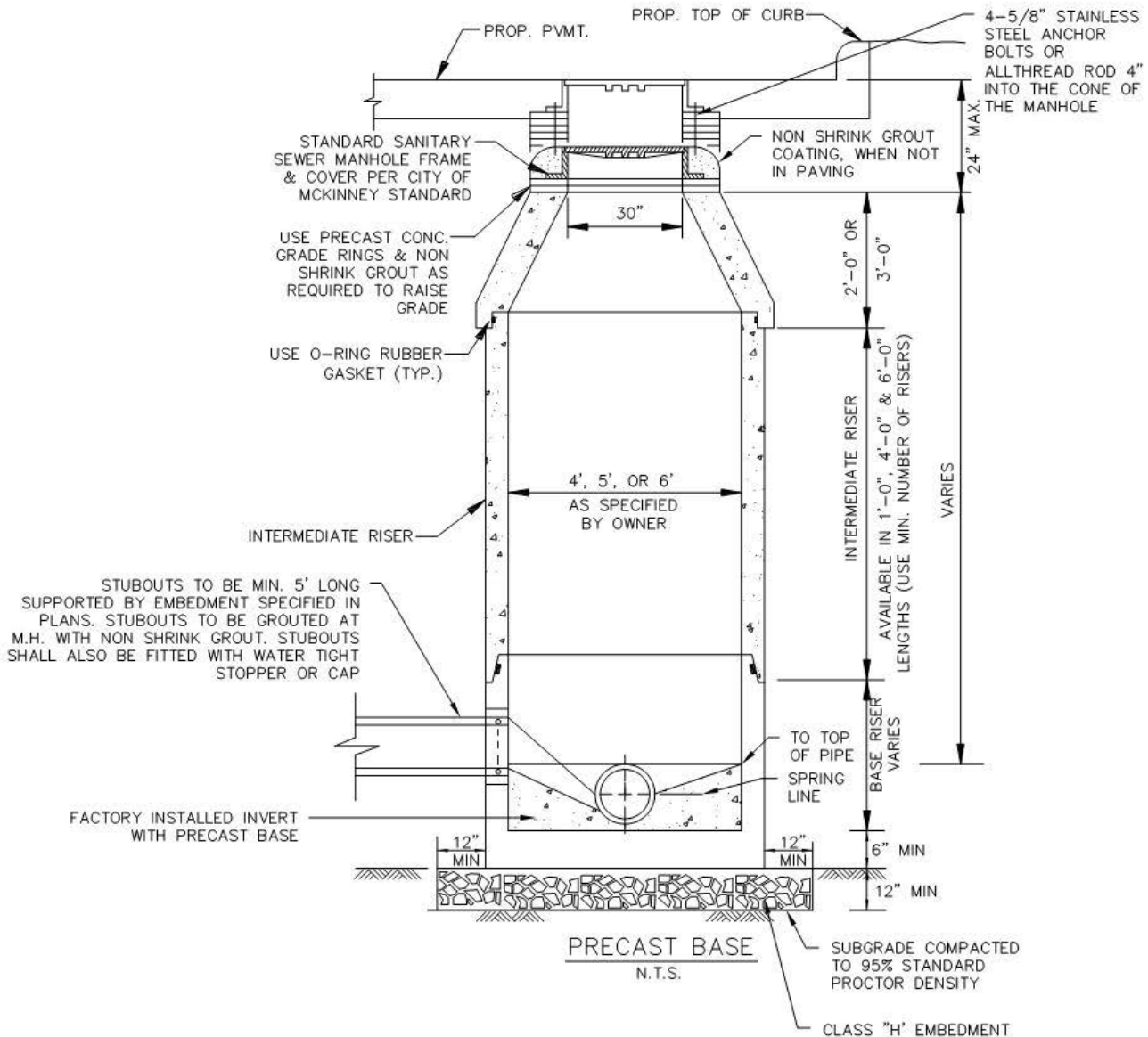
NOTE:
THIS DETAIL FOR USE ONLY WHEN NEW MAIN WILL NOT MATE WITH EXISTING MAIN JOINT DUE TO DIFFERENT DIMENSIONS OR MATERIALS AND A MANHOLE IS NOT REQUIRED.

WASTEWATER MAIN TIE-IN AT CLEANOUT OR M.H. STUBOUT	CITY OF ROCKWALL 	STANDARD SPECIFICATION REFERENCE 502.10
	DATE Mar. 2018	STANDARD DRAWING NO. R-5010

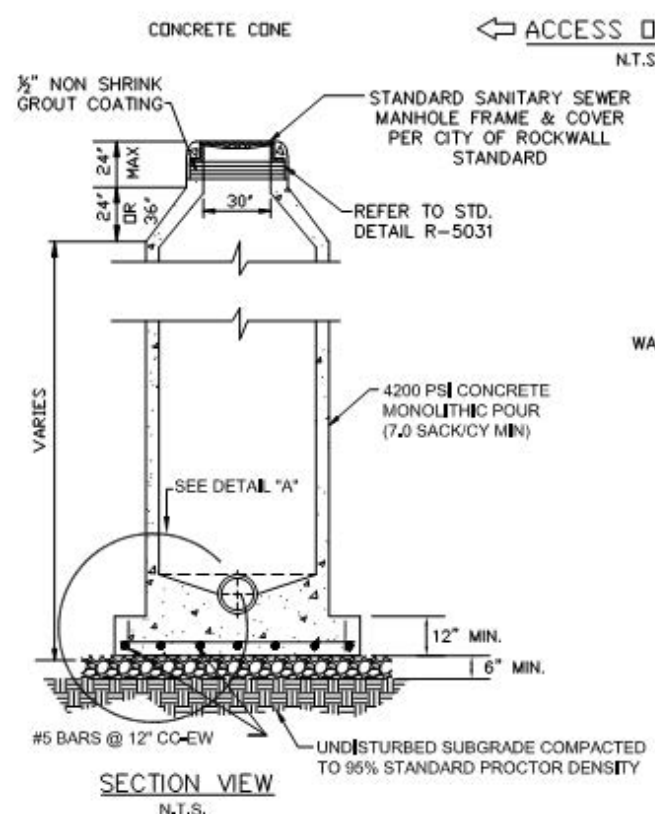


NOTES:

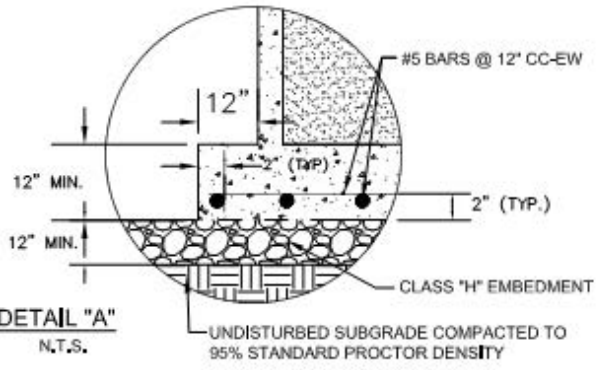
1. FIRST MAIN LINE JOINT TO BE A MIN. OF 5' LONG.
2. IF FALSE M.H. ARE REQUIRED, THEY SHALL BE CONSTRUCTED, INSTALLED AND REMOVED PER STD. DWG. NO. 5100.
3. M.H.'S LOCATED OUTSIDE OF PAVING SHALL BE CONSTRUCTED WITH A CONCRETE MOW STRIP PER STD. DWG. NO. R-7005.
4. REFER TO STD. DWG. NO. R-5031 FOR INFLOW PROTECTION AT MANHOLE GRADE RINGS, MANHOLE JOINTS AND ON OUTSIDE OF STRUCTURE.
5. REFER TO STD. DWG. NO. R-5032 FOR CORROSION PROTECTION.
6. CONCRETE SHALL BE 4,200 PSI (7.0 SACK/CY) 28 DAY STRENGTH.
7. REINFORCING SHALL MEET OR EXCEED ASTM C478 REQUIREMENTS.
8. INSTALL GREEN EMS DISK AT ALL MANHOLES.
9. LIP TO BE PRECAST.
10. INSTALL A MINIMUM OF FOUR (4) 5/8" STAINLESS STEEL ANCHOR BOLTS OR ALLTHREAD ROD 4" INTO THE CONE OF THE MANHOLE TO HOLD THE RING AND COVER. ALLTHREAD MUST BE EPOXIED IN PLACE.



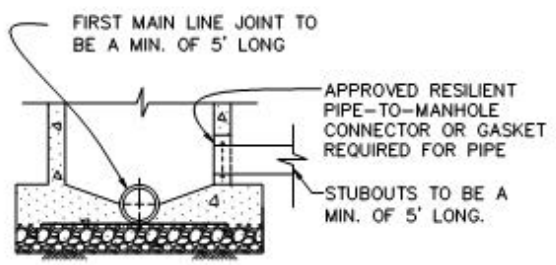
WASTEWATER MANHOLE	CITY OF ROCKWALL 			
PRECAST		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">DATE DEC '22</td> <td style="width: 50%; text-align: center;">DRAWING NO. R-5020</td> </tr> </table>	DATE DEC '22	DRAWING NO. R-5020
DATE DEC '22	DRAWING NO. R-5020			



SECTION VIEW
N.T.S.

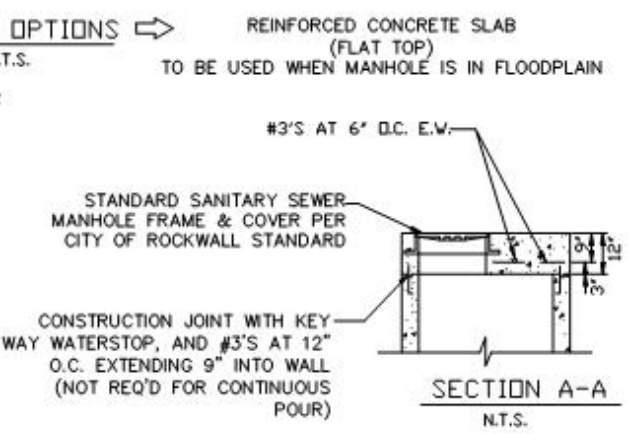


DETAIL "A"
N.T.S.



STUBOUT CONNECTION
N.T.S.

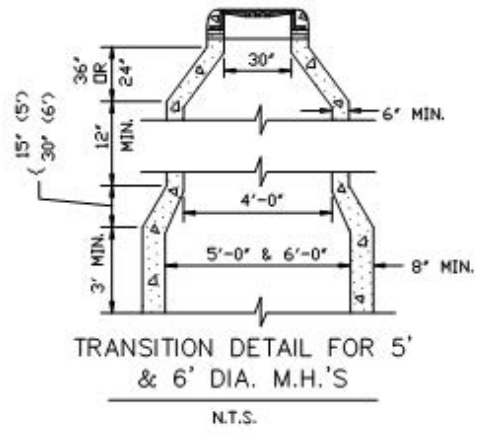
← ACCESS OPTIONS →
N.T.S.



SECTION A-A
N.T.S.



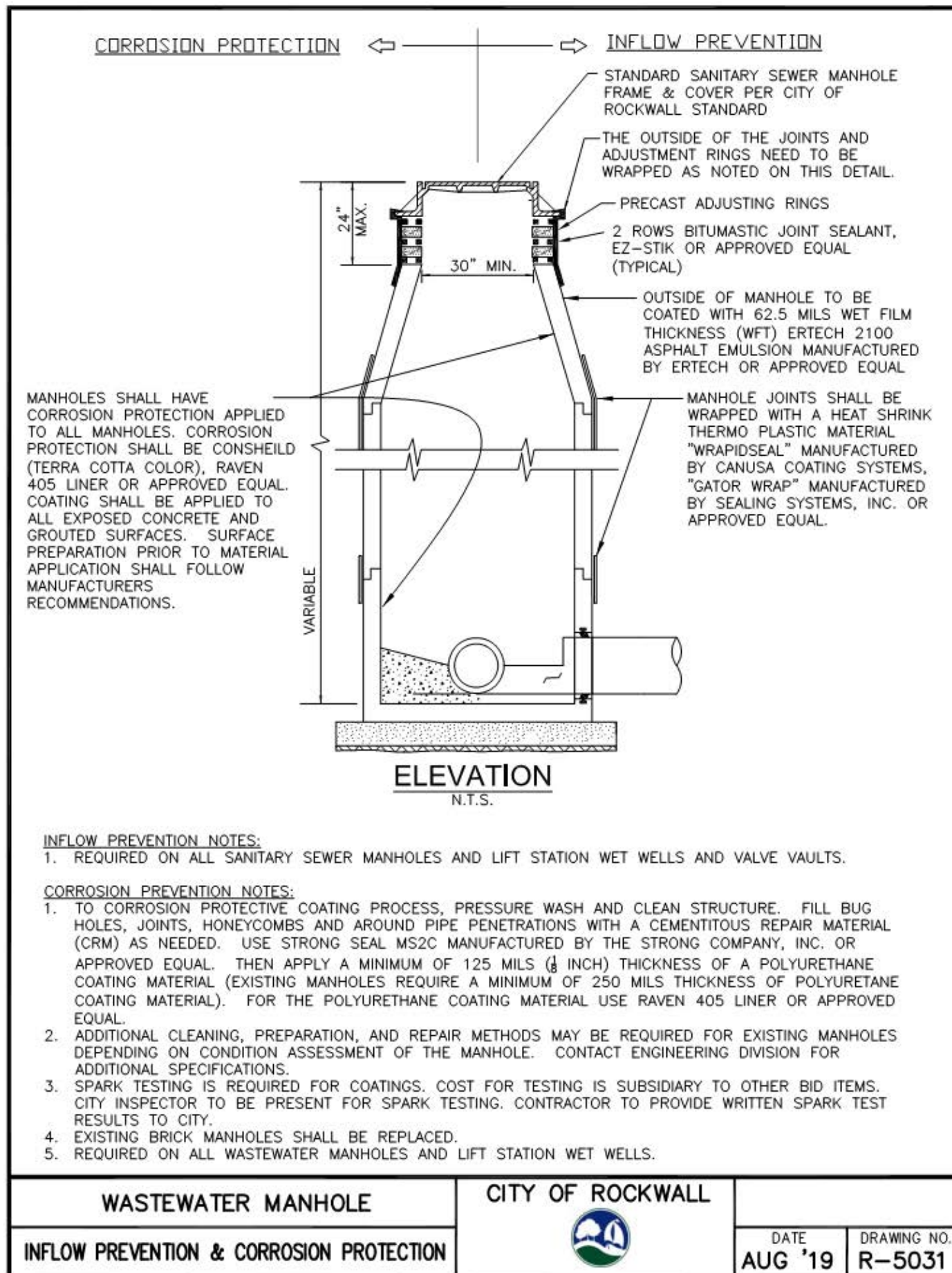
ACCESS STEEL LAYOUT
N.T.S.



TRANSITION DETAIL FOR 5'
& 6' DIA. M.H.'S
N.T.S.

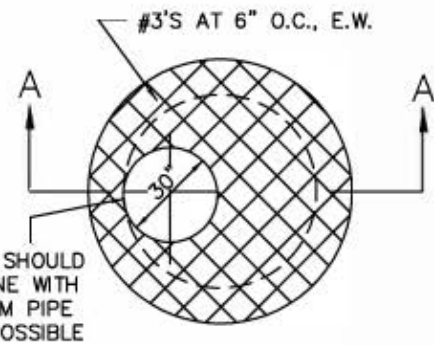
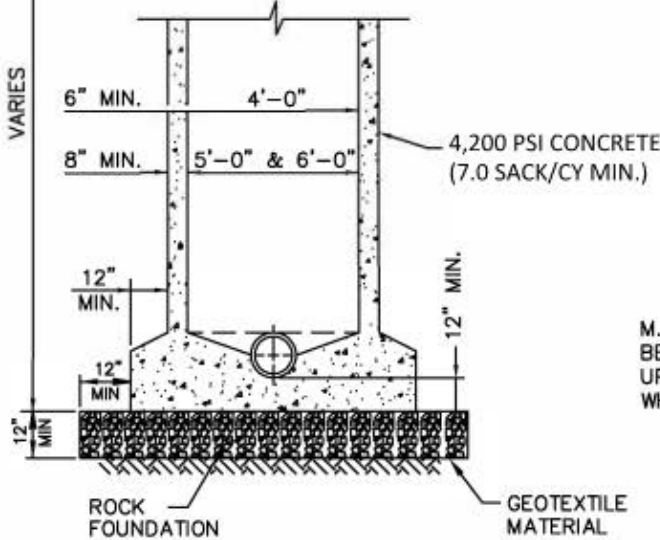
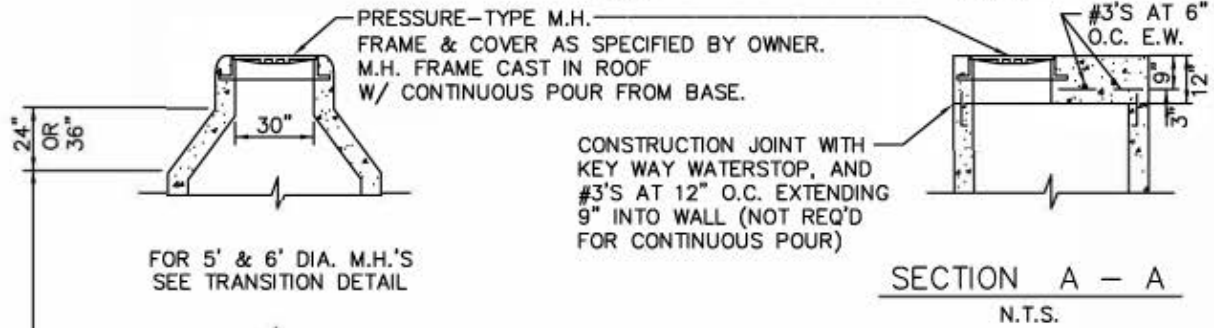
- NOTES:**
1. IF FALSE M.H. BOTTOMS ARE REQUIRED THEY SHALL BE CONSTRUCTED, INSTALLED AND REMOVED, PER STD. DWG. NO. 5100
 2. M.H.'S LOCATED OUTSIDE OF PAVING SHALL BE CONSTRUCTED WITH A CONCRETE MOW STRIP PER STANDARD DETAIL R-7005.
 3. REFER TO STD. DWG. NO. R-5031 FOR INFLOW PROTECTION AT MANHOLE GRADE RINGS AND ON THE OUTSIDE OF MANHOLE STRUCTURE.
 4. CAST IN PLACE BASE MUST BE A MINIMUM 12" THICK WITH #5 BARS @ 12" OC-EW (EACH WAY) AND SHALL EXTEND 1' BEYOND MANHOLE.
 5. CONCRETE SHALL BE 4,200 PSI (7.0 SACK/CY) 28 DAY STRENGTH.
 6. REINFORCING SHALL MEET OR EXCEED ASTM C478 REQUIREMENTS.
 7. INSTALL GREEN EMS DISK AT ALL MANHOLES.

WASTEWATER MANHOLE	CITY OF ROCKWALL		
CAST-IN-PLACE		DATE AUG '19	DRAWING NO. R-5030

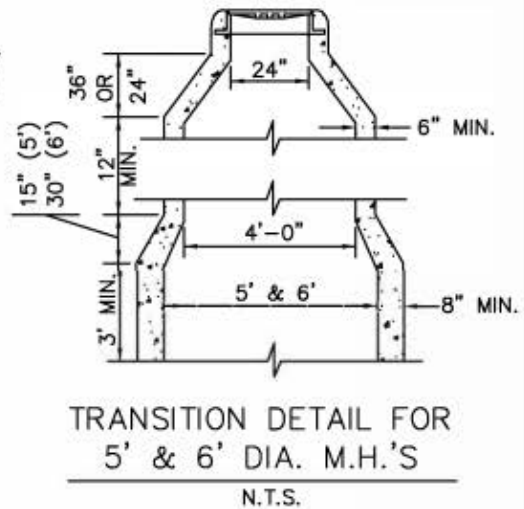
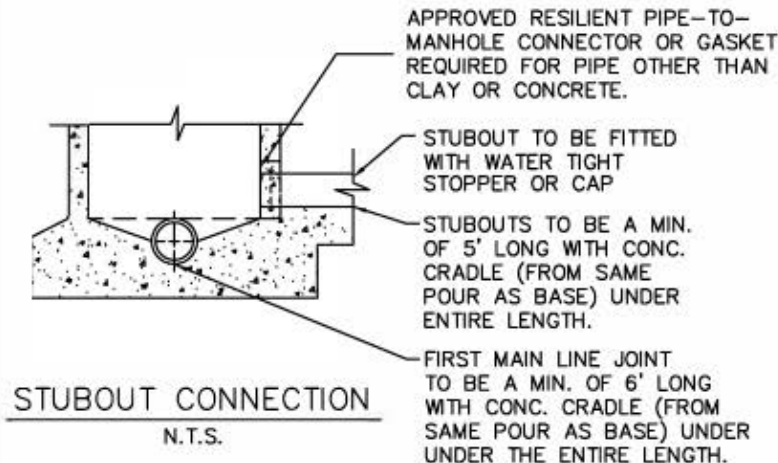




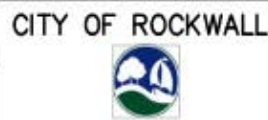
CONCRETE CONE ← ROOF OPTIONS → REINFORCED CONCRETE SLAB
N.T.S.



INSTALL GREEN EMS DISKS AT ALL MANHOLES.

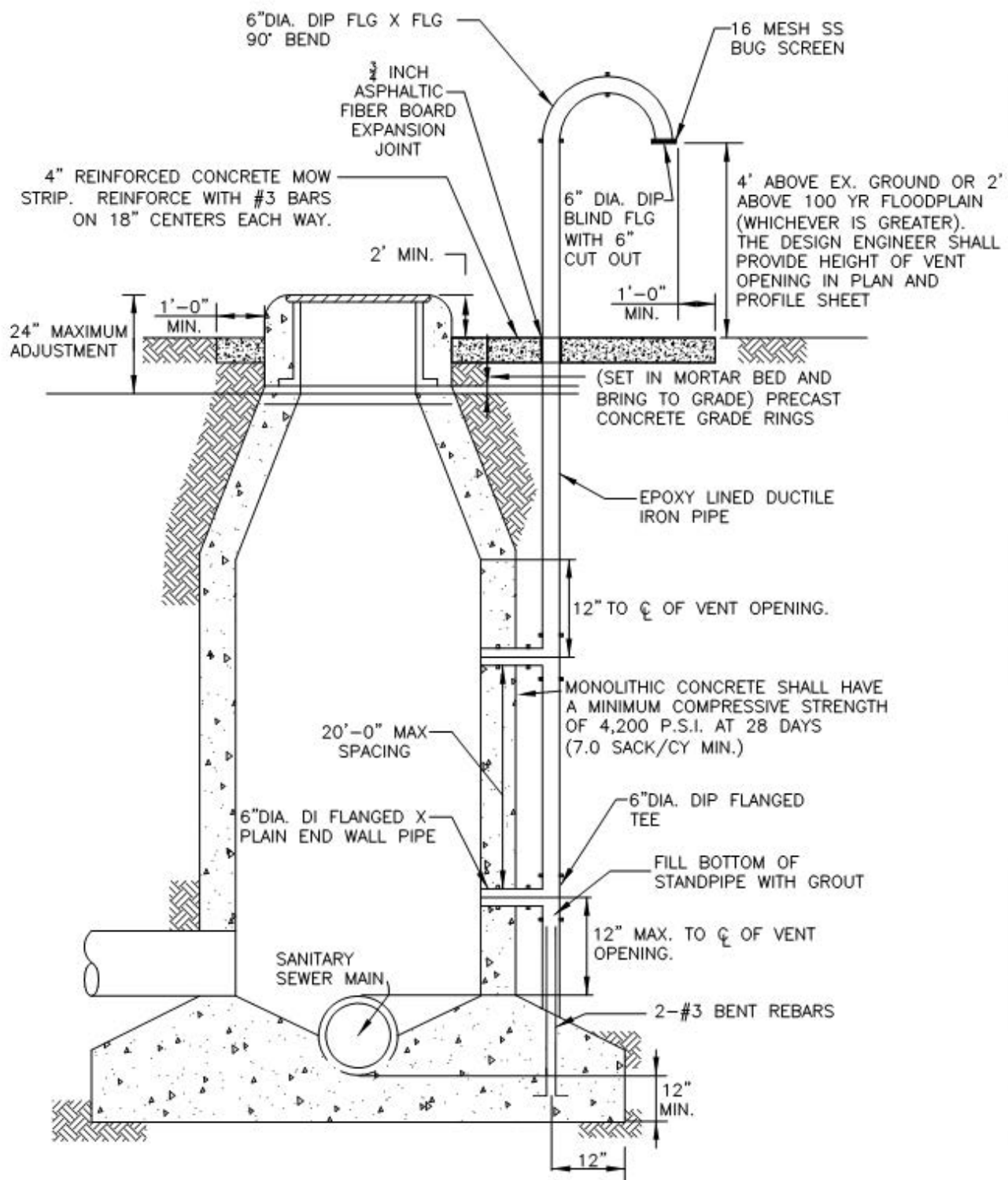


WASTEWATER MANHOLE
PRESSURE-TYPE




STANDARD SPECIFICATION REFERENCE
502.1.4.15*

DATE: Mar. 2018
STANDARD DRAWING NO.: R-5050



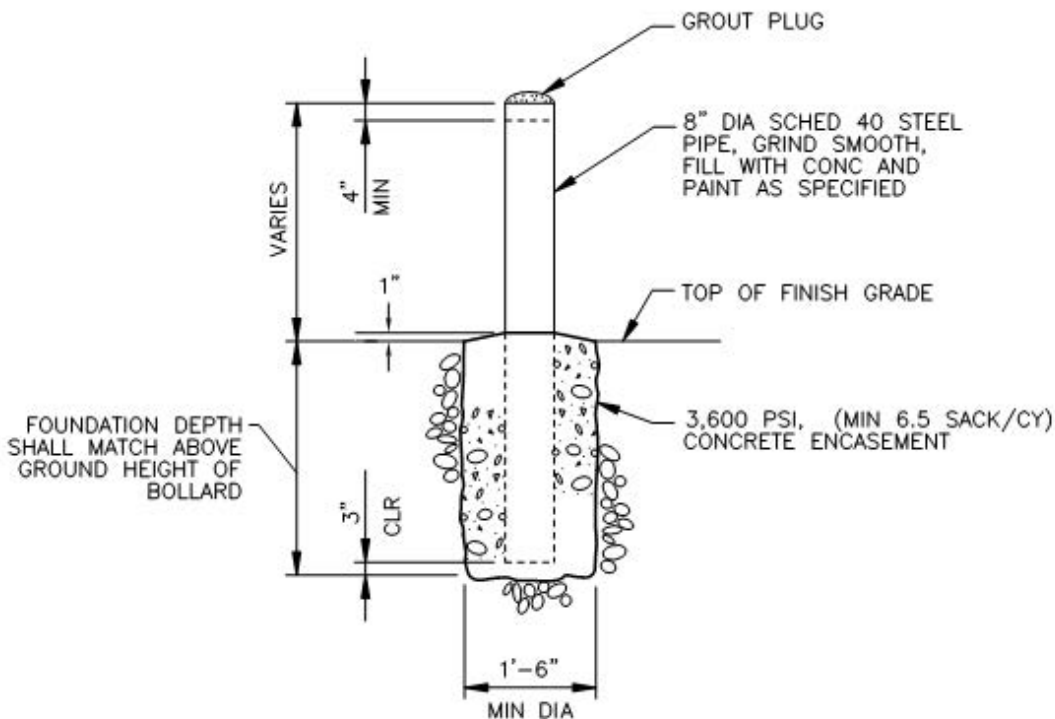
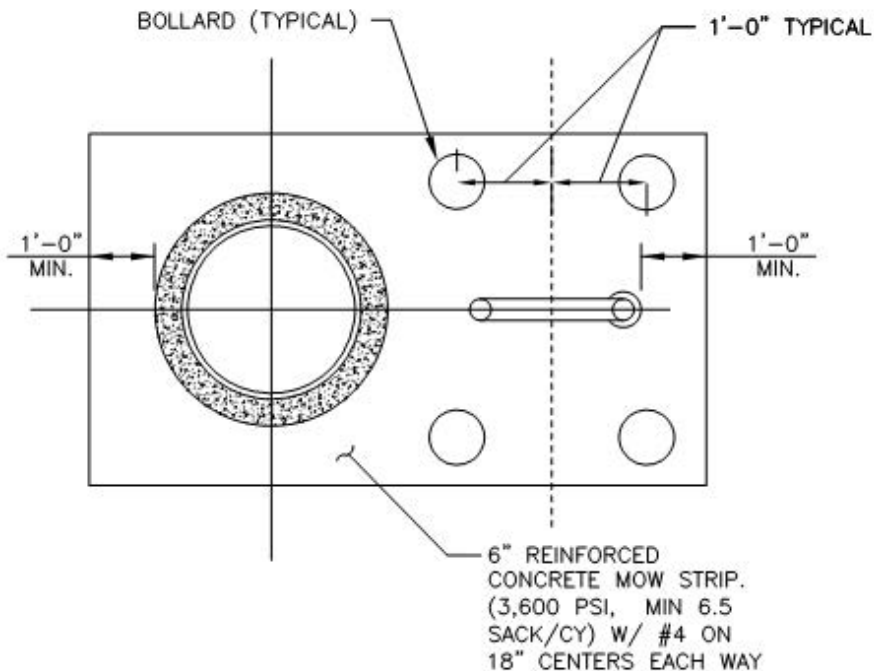
- NOTES:**
1. REFER TO STANDARD DETAIL R-5030 FOR MANHOLE. CONCRETE SHALL BE MONOLITHIC POUR.
 2. REFER TO STD. DWG. NO. R-5031 FOR INFLOW PROTECTION AT MANHOLE GRADE RINGS, MANHOLE JOINTS, AND ON OUTSIDE OF STRUCTURE.

SHEET 1 OF 2


WASTEWATER MANHOLE	CITY OF ROCKWALL		
VENTED		DATE AUG '19	DRAWING NO. R-5060

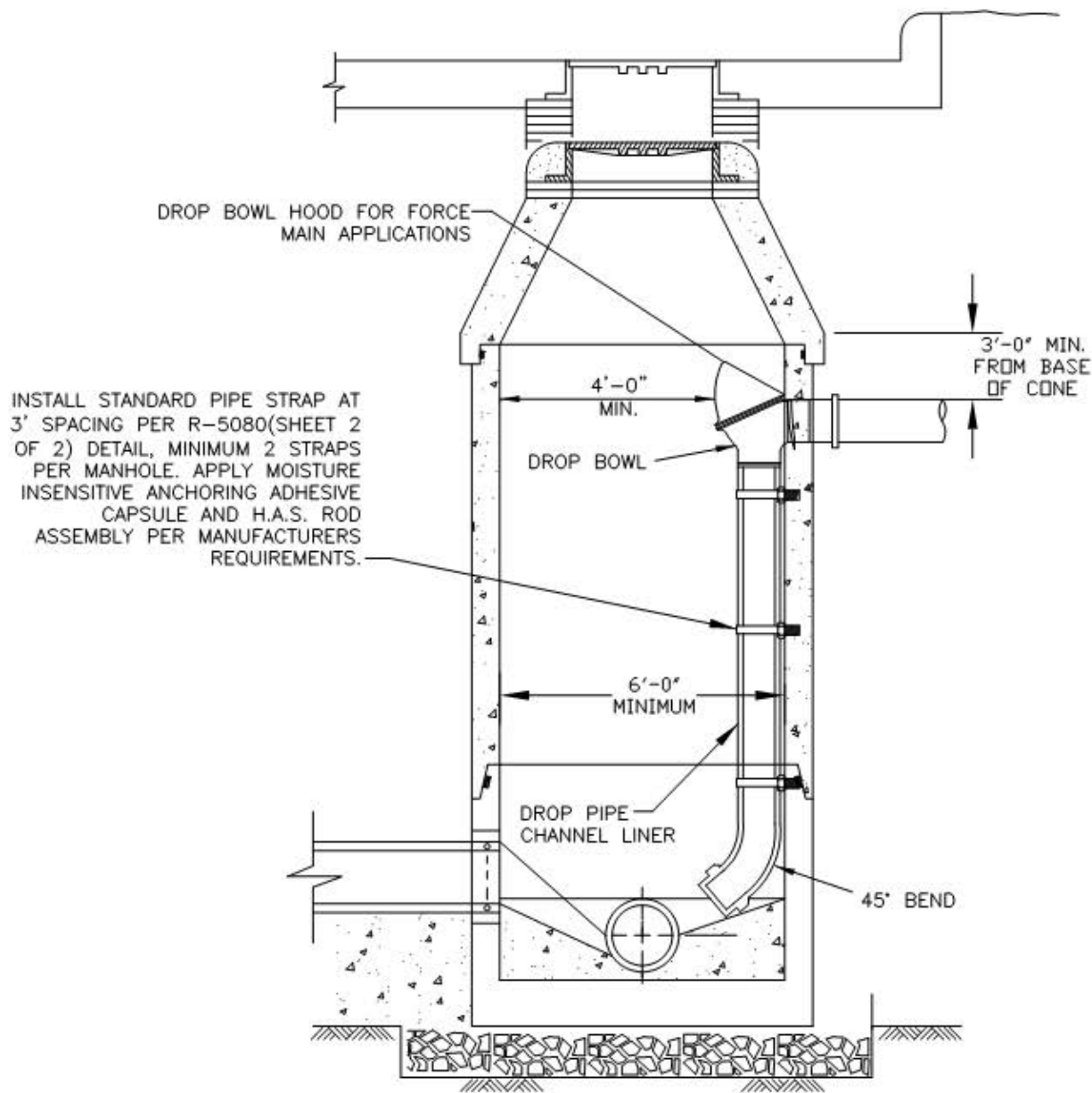


NOTES:
 1. BOLLARD HEIGHT SHALL EXTEND TO 1 FOOT ABOVE THE OVERALL HEIGHT OF THE VENT PIPE.



SHEET 2 OF 2


WASTEWATER MANHOLE	CITY OF ROCKWALL		
VENTED		DATE AUG '19	DRAWING NO. R-5060



ELEVATION
N.T.S.

NOTE:
1. DROP BOWL, DROP PIPE CHANNEL LINER AND STAINLESS STEEL PIPE CLAMPS AS MANUFACTURED BY RELINER/DURAN INC. OR APPROVED EQUAL.

SHEET 1 OF 2

WASTEWATER MANHOLE	CITY OF ROCKWALL		
DROP CONNECTIONS		DATE AUG '19	DRAWING NO. R-5080



HVA ADHESIVE CAPSULE ANCHOR

- A. DRILL HOLES WITH ANSI B212.15 MATCHED TOLERANCE CARBIDE TIPPED DRILL BITS WITH DRILL IN ROTO-HAMMER MODE OR USE A MATCHED TOLERANCE DIAMOND CORE DRILL BIT OF DIAMETER SPECIFIED BY HILTI.
- B. DRILLED HOLE SPECIFICATIONS (DIAMETER & DEPTH) SHALL COMPLY WITH HILTI SPECIFICATION OR ICC ESR 1562.
- C. ALLOWABLE LOADS MAY BE INCREASED BY 33-1/3% FOR SHORT-TERM WIND OR SEISMIC LOAD RESISTANCE (AW ICC ESR 1682 UNLESS NOT PERMITTED BY THE APPLICABLE BUILDING CODE).
- D. WHEN CONDUCTED, PROOF TEST ANCHORS IN THE FIELD TO 150-200% OF HILTI PUBLISHED ALLOWABLE TENSION LOAD UNLESS NOTED OTHERWISE IN A PROOF TEST LOAD TABLE. TORQUE TESTING IS NOT PERMITTED.
- E. ANCHORS SHALL BE TIGHTENED WITH A CALIBRATED TORQUE WRENCH. USE OF AN IMPACT WRENCH IS NOT PERMITTED.
- F. CONTACT HILTI TECHNICAL SUPPORT AT 1-800-879-8000 FOR INSTALLATION INSTRUCTIONS IN SUBMERGED WATER CONDITIONS.
- G. CONTACT HILTI TECHNICAL SUPPORT AT 1-800-879-8000 FOR ADDITIONAL ASSISTANCE WITH HVA ADHESIVE ANCHOR INSTALLATIONS.

H. INSTALLATION INSTRUCTIONS:

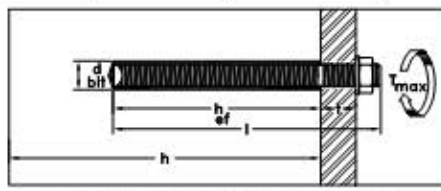
- H.1. FOR HVA ADHESIVE CAPSULES WITH H.A.S. THREADED RODS:
 - 1. DRILL ANCHOR HOLE WITH A CARBIDE BIT (SEE NOTE 1 ABOVE), TO SPECIFIED EMBEDMENT DEPTH.
 - 2. CLEAN HOLE WITH COMPRESSED AIR OR BLOW OUT PUMP. INSERT NOZZLE TO BOTTOM OF HOLE.
 - 3. IF USING MATCHED TOLERANCE CORE BIT, REMOVE STANDING WATER FROM HOLE.
 - 4. INSERT APPROPRIATE HVU CAPSULE INTO HOLE WITH POINTED END FIRST. CAPSULE LENGTH IS LONGER THAN STANDARD EMBEDMENT AND WILL PROTRUDE FROM HOLE. DO NOT CUT OFF ANY PART OF THE HVU CAPSULE.
 - 5. THREAD NUT ONTO ROD.
 - 6. PLACE A WASHER ON FIRST NUT AND THREAD BLACK SETTING NUT DOWN ON WASHER.
 - 7. TIGHTEN NUTS TOGETHER SO THAT BLACK SETTING WASHER IS AT TOP OF ROD.
 - 8. INSERT SQUARE DRIVE SHAFT INTO HAMMER DRILL AND ATTACH PROPER IMPACT SOCKET.
 - 9. WITH HAMMER DRILL ON ROTARY HAMMER, ENGAGE TOP NUT OF HAS ROD ASSEMBLY AND ROTOHAMMER ROD THROUGH CAPSULE(S) INTO THE HOLE. STOP DRILL ROTATION IMMEDIATELY UPON REACHING BOTTOM OF HOLE.
 - 10. DO NOT DISTURB OR LOAD ANCHOR BEFORE CURING TIME ELAPSES.

HVA INSTALLATION SPECIFICATION TABLE FOR H.A.S. RODS

DETAILS	HAS Rod Size	1/2	3/8	1/2	5/8	3/4	7/8	1	1-1/4
d _{tip} : nominal bit diameter	in.	15/32	9/16	11/16	7/8	1	1-1/8	1-3/8	1-3/8
h _{nom} : std. depth of embed. capsule length	in.	3-1/2	4-1/4	5	6-5/8	6-5/8	8-1/4	12	12
t : max. thickness fastened	in.	1	1-1/2	1-3/4	2	2-1/4	2-1/2	2-3/4	2-3/4
t _{max} : max. tightening torque	All Hilti Rods	ft-lb	18	30	75	150	175	235	400
h : minimum base material thickness	h _{ef} = h _{nom}	in.	5-1/4	6-3/8	7-1/2	10	10	12-3/8	18
	h _{ef} = h _{nom}	in.	1.0h + ef 2	1.0h + ef 2	1.0h + ef 2	1.0h + ef 2	1.0h + ef 2	1.0h + ef 2 1/4	1.0h + ef 3
Recommended Hilti Rotary Hammer Drill			TE-5,15, 18M,25	TE-18M,25,55,76		TE-55, 76		TE-76	

For S₁ 1/2 inch - 25.4mm, 1/2-h 1.4 Nm
Curing Time Table (Approximate)

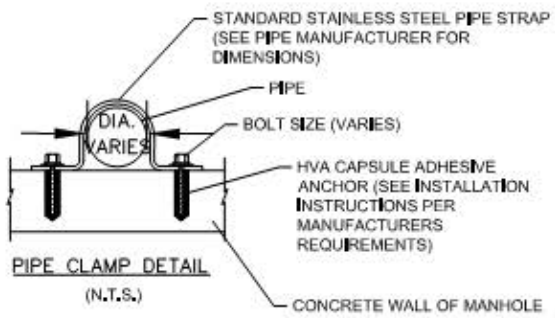
Approx. Curing Time	Base Material Temperature
20 Minutes	ABOVE 68° F/20° C
30 Minutes	50° F/10° C
1 Hour	32° F/0° C
5 Hour	23° F/-5° C



HILTI HVA ADHESIVE CAPSULE ANCHOR OR APPROVED EQUAL

INSTALLATION INSTRUCTIONS:

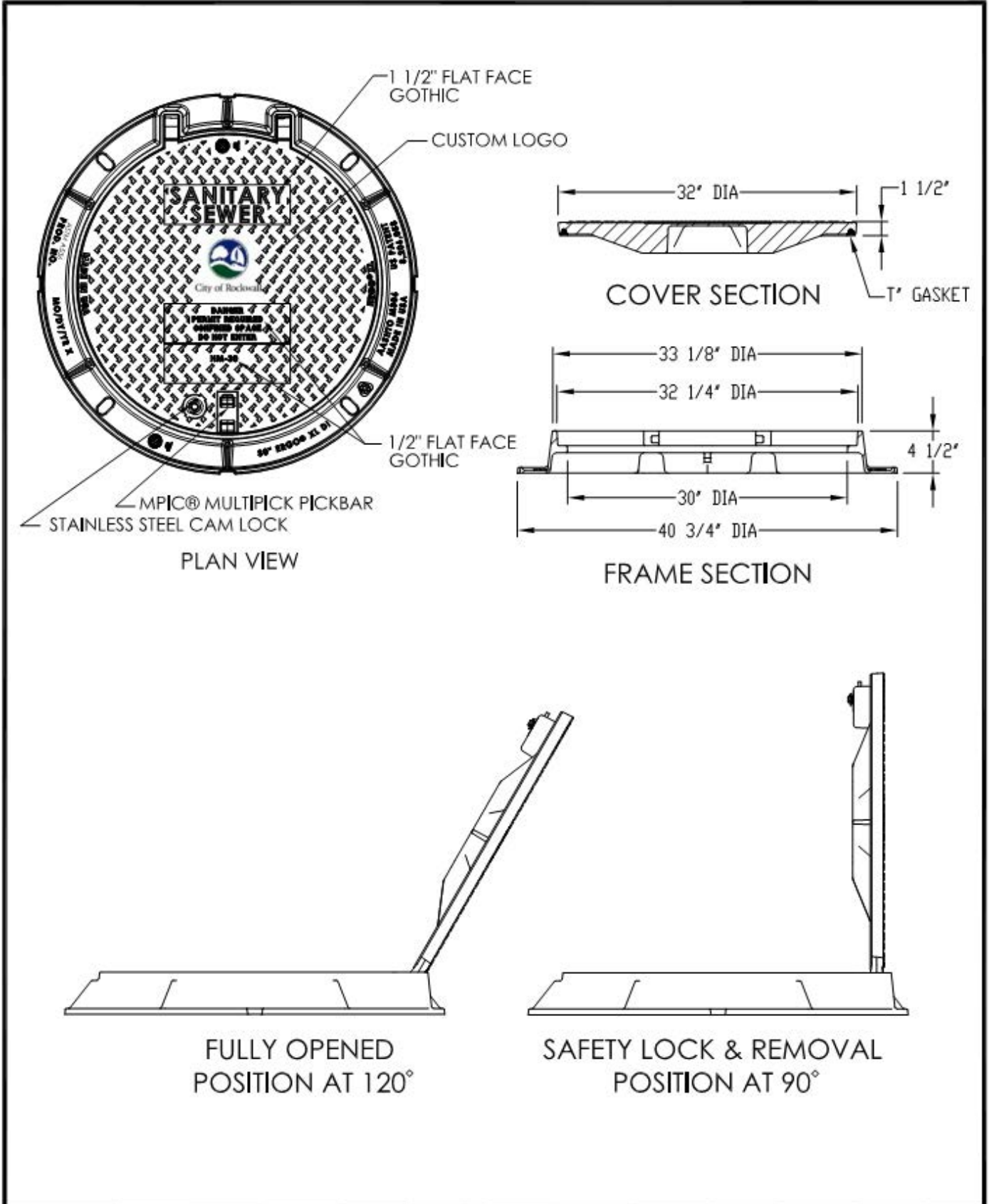
- 1. SET THE DRILL DEPTH GAUGE AND DRILL A HOLE TO THE REQUIRED HOLE DEPTH. IMPORTANT: CLEAN OUT DUST AND DEBRIS. USE COMPRESSED AIR OR VACUUM AT BOTTOM OF THE HOLE. WHEN USING THE HILTI MATCHED TOLERANCE DIAMOND CORE BIT, IMMEDIATELY REMOVE STANDING WATER.
- 2. INSERT APPROPRIATE DIAMETER HVU ADHESIVE CAPSULE INTO PRE-DRILLED HOLE IN BASE MATERIAL. NOTE: THE BEST METHOD FOR SETTING MULTIPLE CAPSULES IS TO CRUSH THE FIRST CAPSULE(S) INTO THE HOLE AND THEN INSERT THE NEXT CAPSULE. DO NOT CUT OFF CAPSULES PARTIALLY PROTRUDING FROM THE HOLE.
- 3. CAPSULE LENGTH IS LONGER THAN STANDARD EMBED. DEPTH AND WILL PROTRUDE FROM THE HOLE.
- 4. THREAD A H.A.S. NUT ON THE H.A.S. ROD, PLACE A WASHER ON TOP OF THE FIRST NUT AND THEN THREAD A BLACK SETTING NUT DOWN ON TOP OF THE WASHER. TIGHTEN THE TWO NUTS TOGETHER "LOCKING" THE WASHER BETWEEN THEM. THE TOP NUT SHOULD BE FLUSH WITH THE TOP OF THE ROD.
- 5. INSERT A SQUARE DRIVE SHAFT INTO THE HAMMER DRILL AND ATTACH THE PROPER IMPACT SOCKET. AT THE ROTARY HAMMER DRILL SETTING, ENGAGE THE TOP NUT OF THE HAS ROD ASSEMBLY WITH THE SOCKET AND DRIVE THE ROD DOWN THROUGH THE CAPSULE(S). STOP DRILL ROTATION IMMEDIATELY UPON REACHING BOTTOM OF HOLE.
- 6. DO NOT DISTURB OR LOAD THE SET ANCHOR BEFORE THE SPECIFIED CURING TIME ELAPSES.




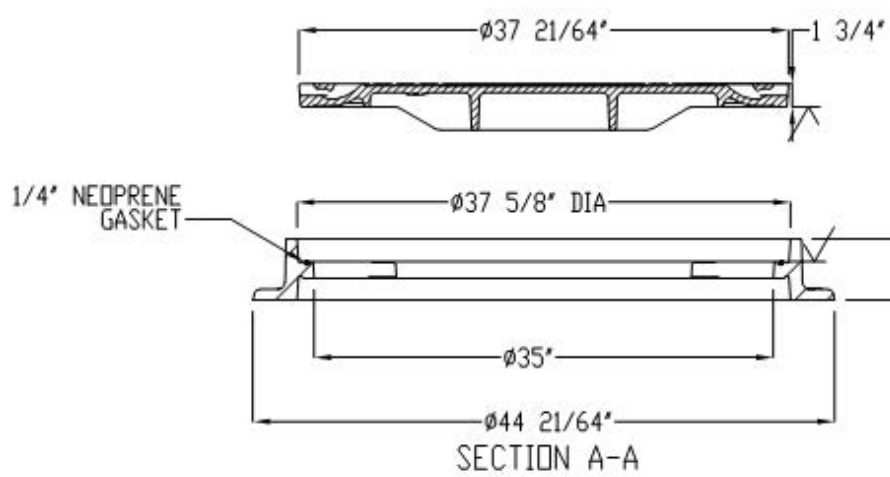
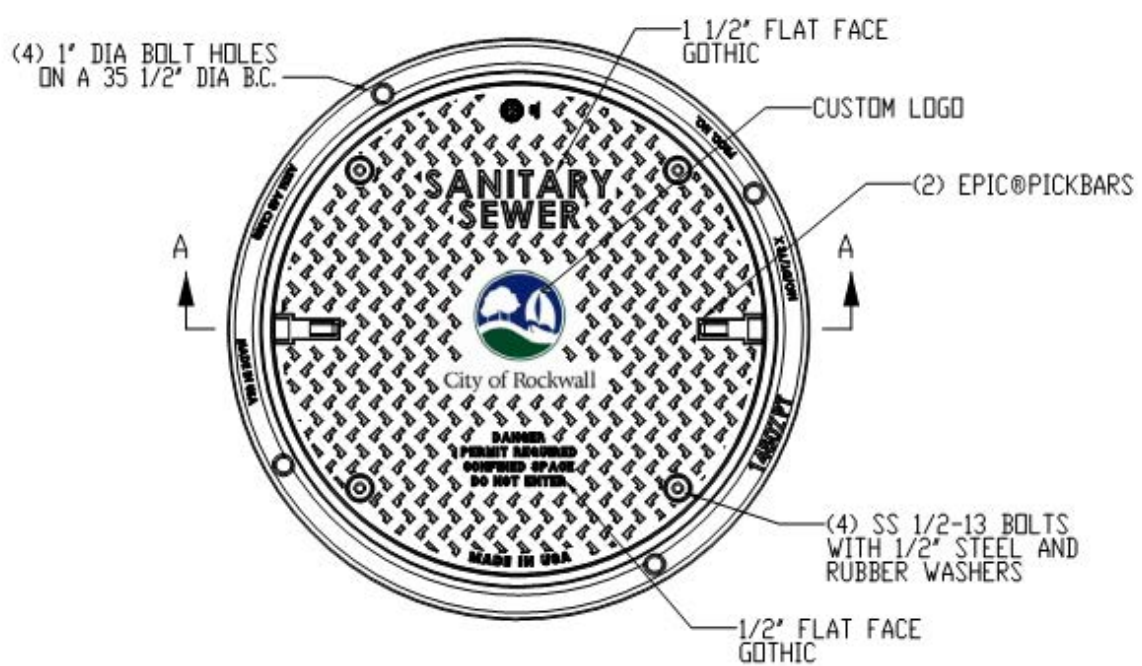
DROP FIXTURE ANCHOR (N.T.S.)


SHEET 2 OF 2

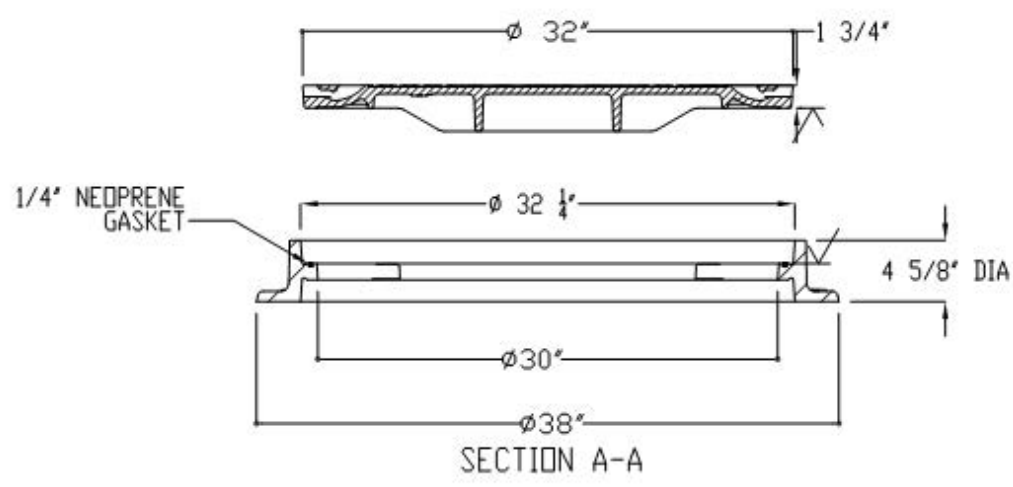
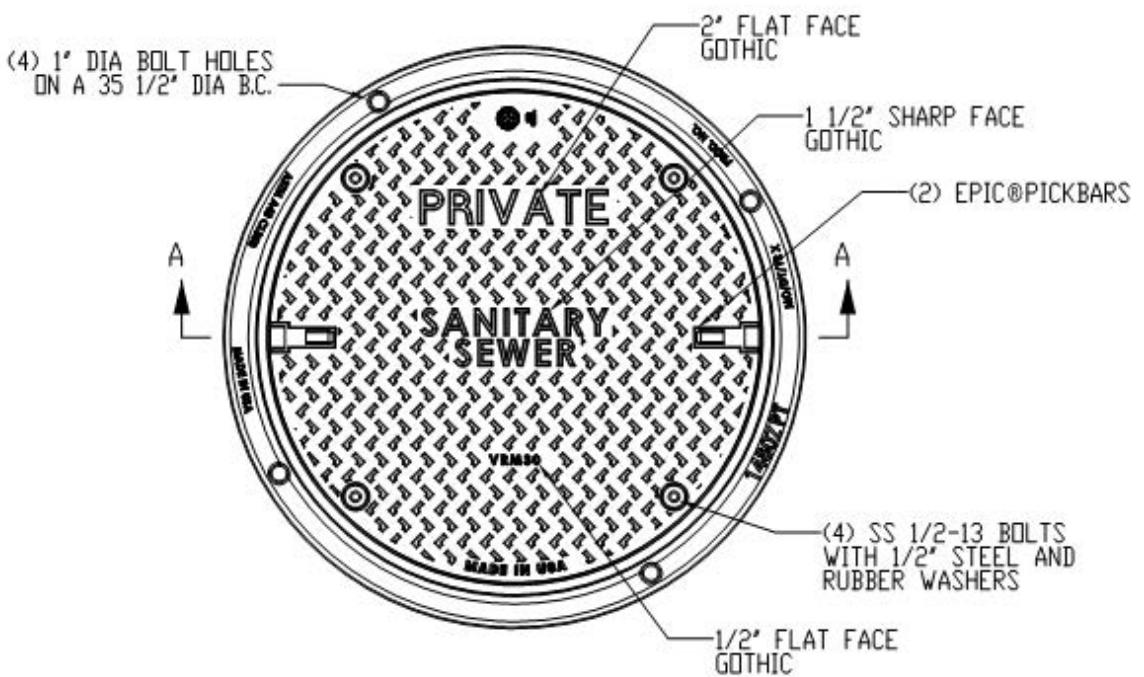
WASTEWATER MANHOLE	CITY OF ROCKWALL		
DROP CONNECTIONS		DATE AUG '19	DRAWING NO. R-5080



WASTEWATER MANHOLE	CITY OF ROCKWALL		
HINGED RIM AND COVER		DATE AUG '19	DRAWING NO. R-5101



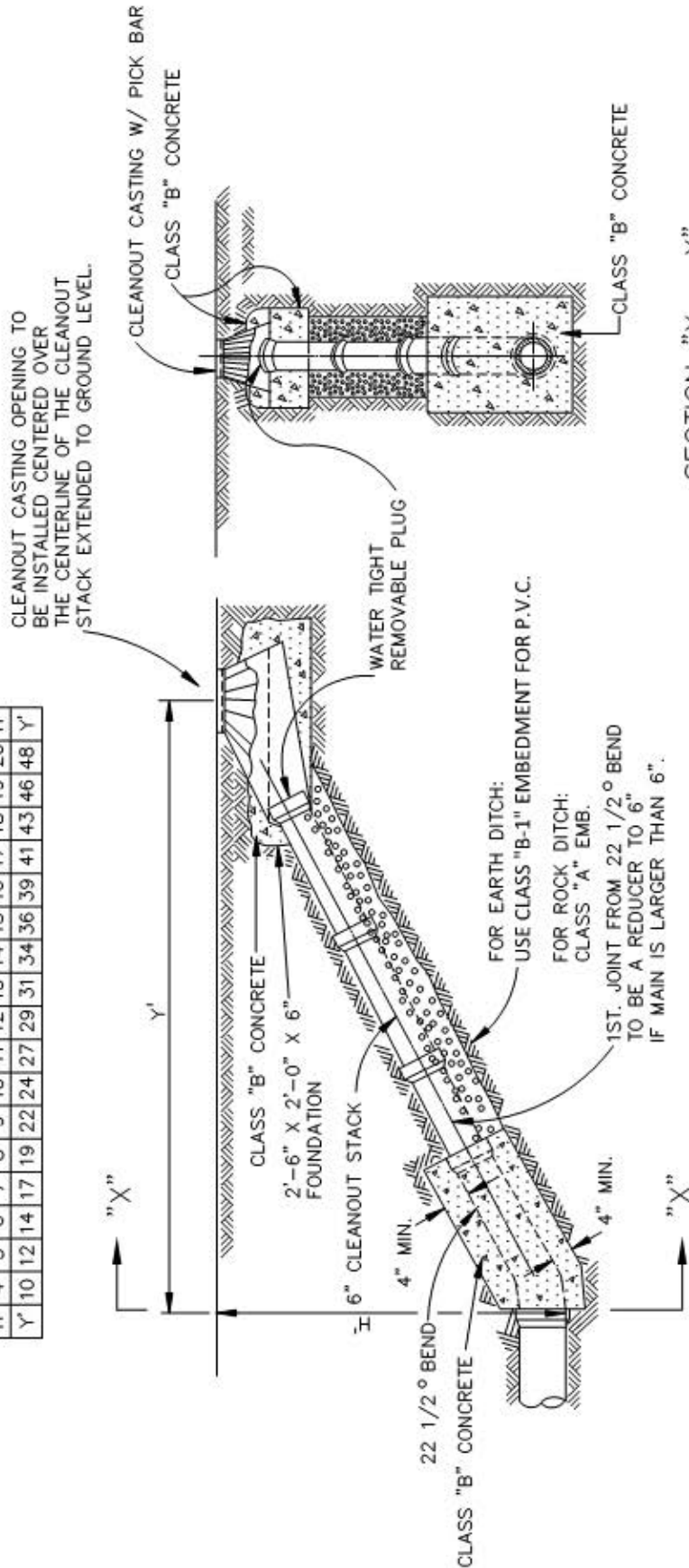
WASTEWATER MANHOLE	CITY OF ROCKWALL		
BOLT AND GASKET RIM AND COVER		DATE AUG '19	DRAWING NO. R-5102



WASTEWATER MANHOLE	CITY OF ROCKWALL		
PRIVATE RIM AND COVER		DATE AUG '19	DRAWING NO. R-5103



H'	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	H'
Y'	10	12	14	17	19	22	24	27	29	31	34	36	39	41	43	46	48	Y'



SECTION "X - X"
N.T.S.

PROFILE VIEW
N.T.S.

- NOTES:
1. IF CLEANOUT IS PLACED IN ADVANCE OF PAVEMENT PLACE SAND AROUND CLEANOUT CASTING IN LIEU OF CLASS "B" CONCRETE.
 2. IF CLEANOUT IS OUTSIDE OF PAVEMENT, CENTER CASTING IN 15"x15" CLASS "A" CONCRETE PAD "4" THICK.

STANDARD SPECIFICATION REFERENCE	502.2
DATE	Mar. 2018
STANDARD DRAWING NO.	R-5110

CITY OF ROCKWALL

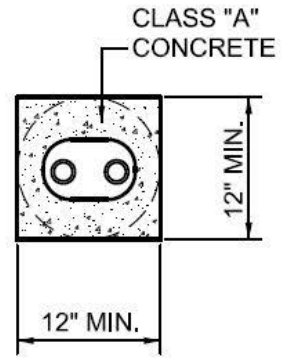
WASTEWATER MAIN
CLEANOUT

STANDARD DRAWING NO.	R-5110
----------------------	--------

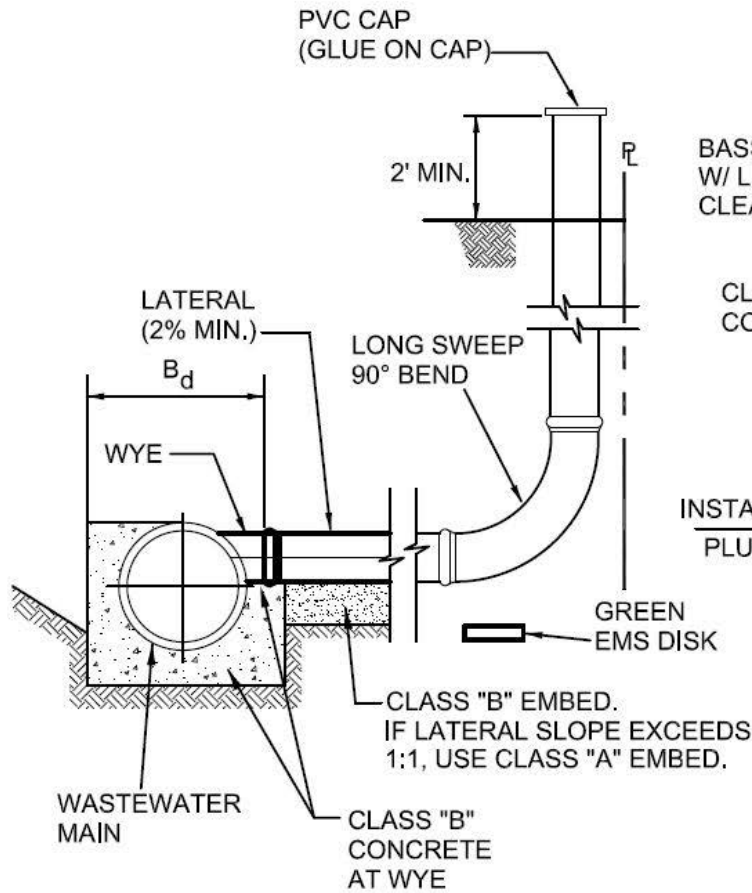


CLASS CONCRETE	BAGS CEMENT PER C.Y.	MIN. STRENGTH 28 - DAY PSI
A	5.5	3000
B	4	2000

THE CLEANOUT MAY BE PLACED IN THE PARKWAY OR SIDEWALK, IF NECESSARY



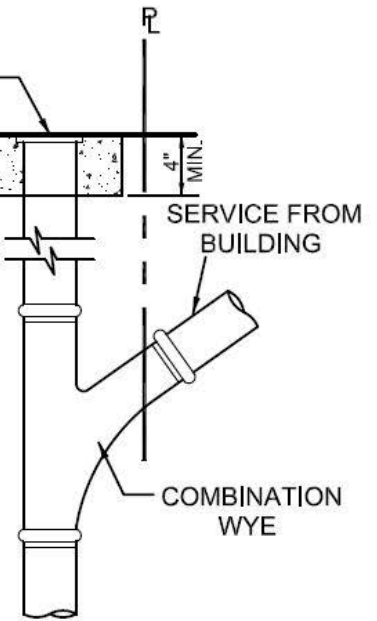
TOP VIEW OF CLEANOUT



BASS & HAYS 404 W/ LID & GASKET CLEANOUT

CLASS "A" CONCRETE

INSTALLED BY PLUMBER



PLUMBER TO CUT CLEANOUT RISER TO INSTALL COMBINATION WYE TO CORRESPOND W/ GRADE OF THE PIPE LEADING FROM BUILDING. AFTER INSTALLATION OF THE WYE, INSERT CLEANOUT INTO THE TOP OF THE RISOR.

WASTEWATER LATERAL

CITY OF ROCKWALL

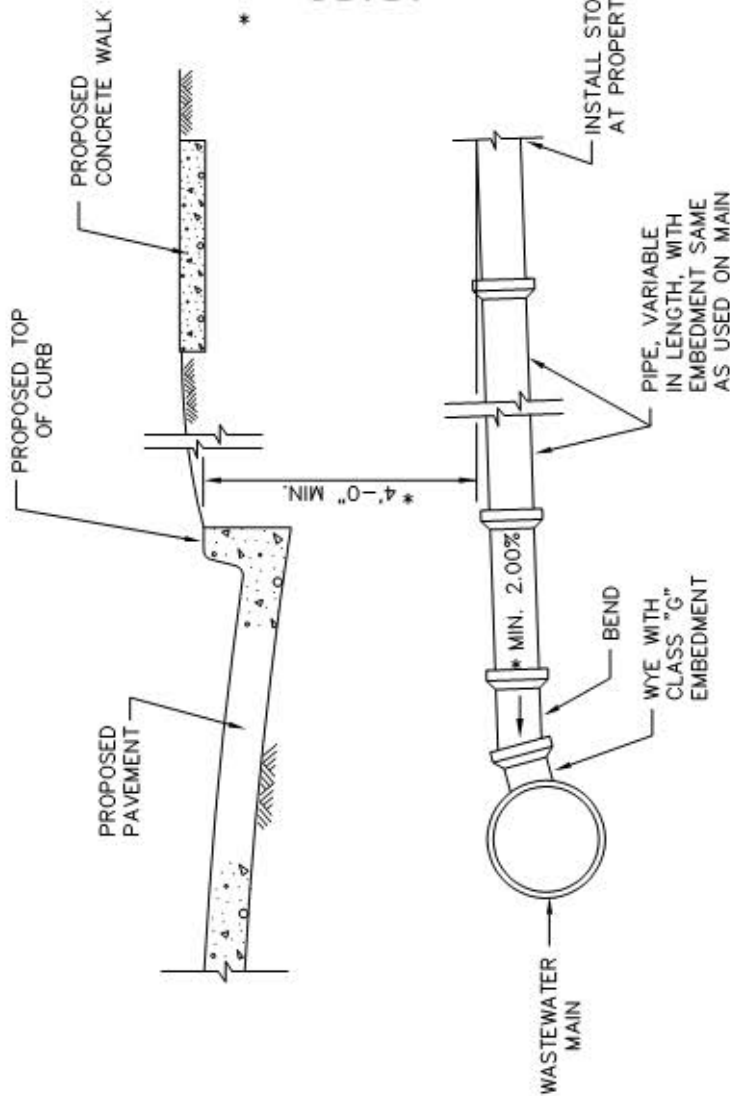
CONNECTIONS – RESIDENTIAL



DATE AUG. '15 DRAWING NO. R-5120



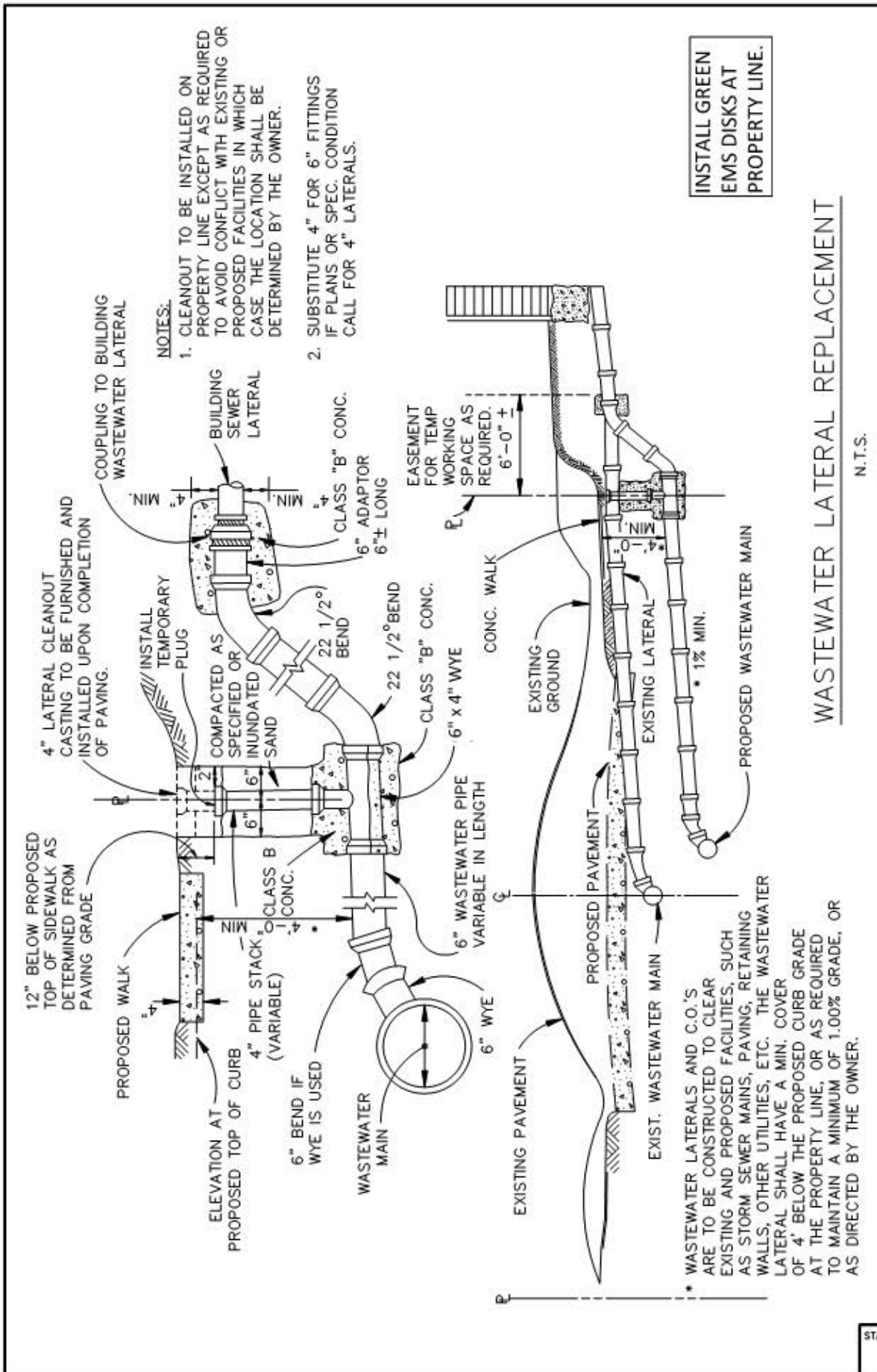
INSTALL GREEN
EMS DISKS AT
END OF LATERAL.

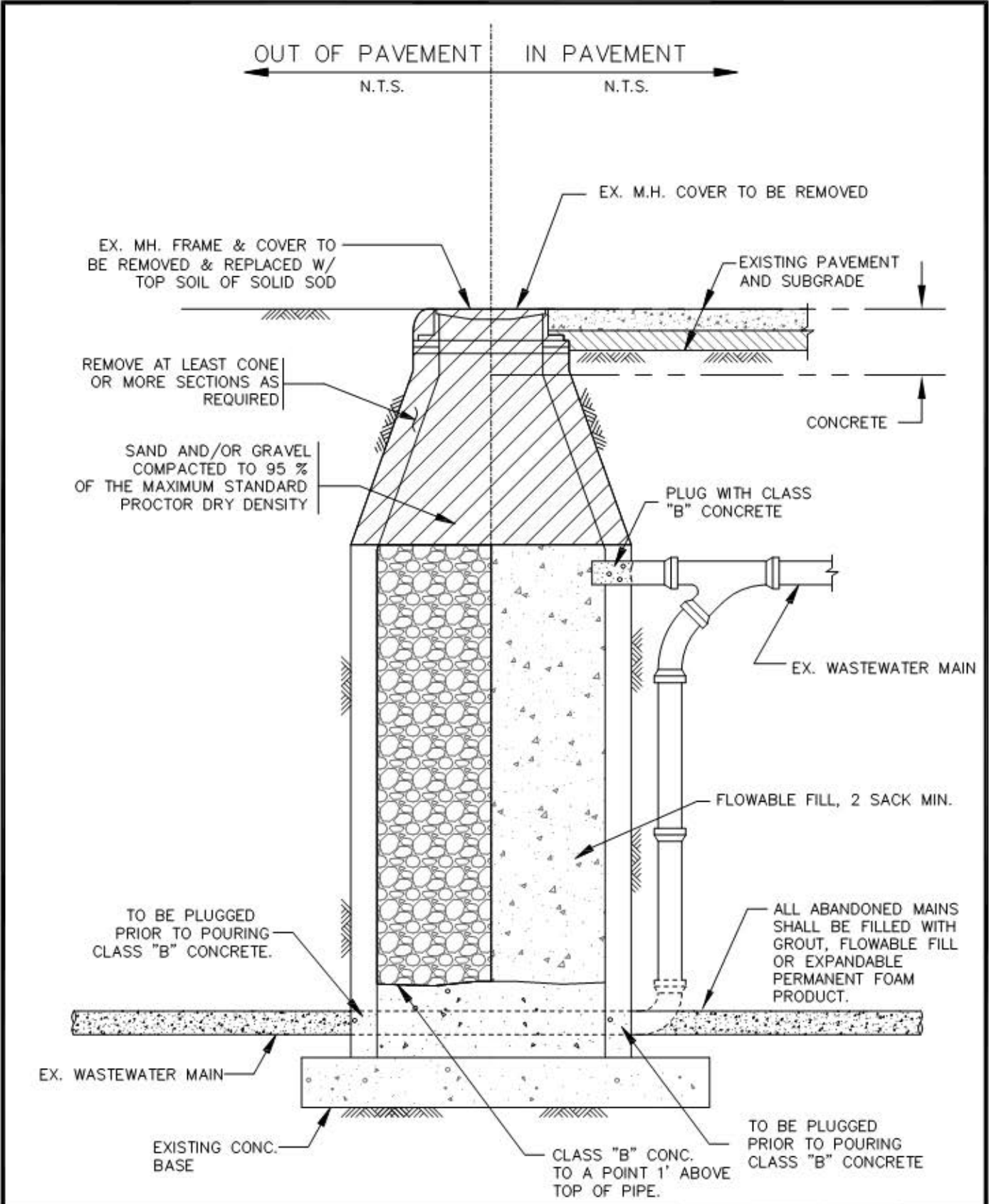



* WASTEWATER LATERALS ARE TO BE CONSTRUCTED TO CLEAR EXISTING AND PROPOSED FACILITIES, SUCH AS STORM SEWER MAINS, RETAINING WALLS, OTHER UTILITIES, ETC. THE WASTEWATER LATERAL SHALL HAVE A MINIMUM COVER OF 4'-0" BELOW THE PROPOSED CURB GRADE AT THE PROPERTY LINE, DETERMINED FROM PAVING GRADE, OR AS REQUIRED TO MAINTAIN A MINIMUM OF 2.00% GRADE, OR AS DIRECTED BY THE OWNER.

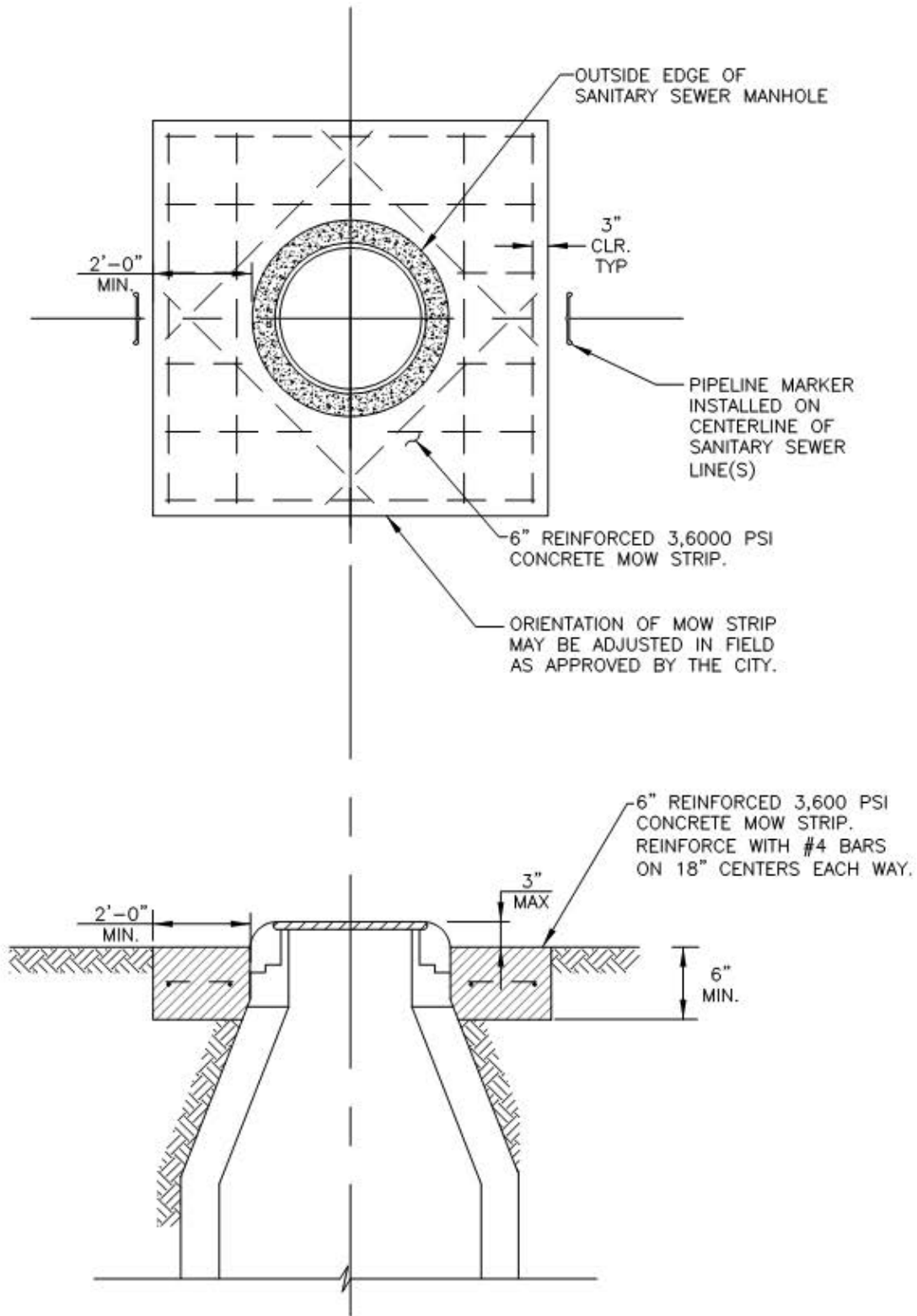
WASTEWATER LATERAL STUBOUT
(FOR FUTURE CONNECTION, 4" OR 6" AS SPECIFIED)
N.T.S.


CITY OF ROCKWALL 	STANDARD SPECIFICATION REFERENCE 502.10
	DATE Mar. 2018
WASTEWATER LATERAL STUBOUT IN ADVANCE OF PAVING	STANDARD DRAWING NO. R-5150





<p>ABANDONMENT OF MANHOLE</p>	<p>CITY OF ROCKWALL</p>		
<p>INSIDE AND OUTSIDE OF PAVEMENT</p>		<p>DATE AUG '19</p>	<p>DRAWING NO. R-5170</p>



MANHOLE AND VALVE VAULT	CITY OF ROCKWALL		
MOW STRIP		DATE AUG '19	DRAWING NO. R-5180



SECTION 8.06 | DIVISION 6000. STORM WATER DRAINAGE

TABLE 8.6: REVISIONS TO NCTCOG'S DIVISION 6000 STORM WATER DRAINAGE

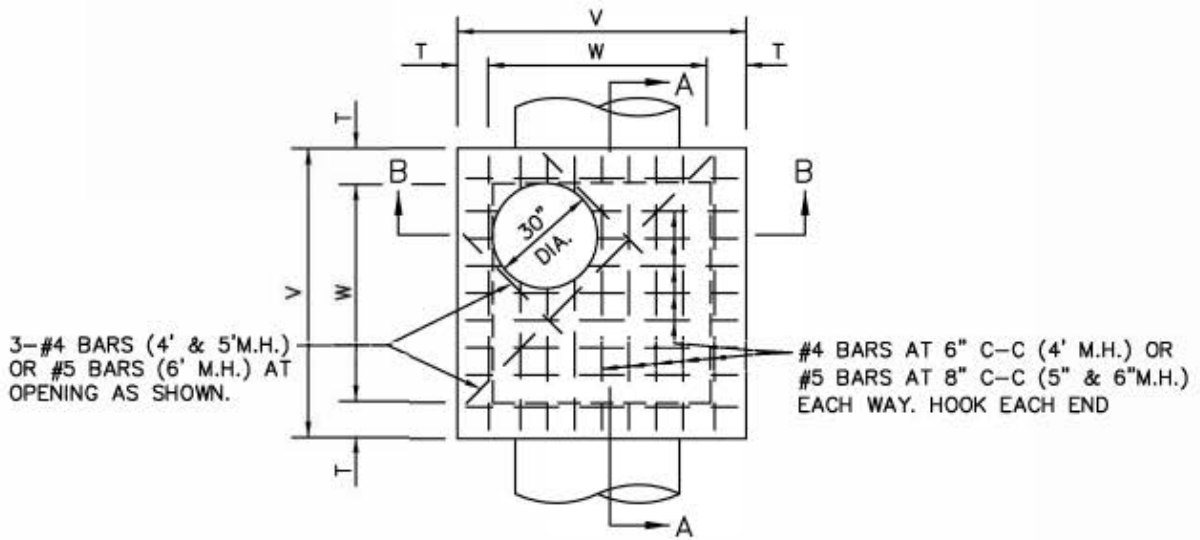
NOTES: (1) DELETED NCTCOG DRAWING; (2) REVISED NCTCOG DRAWING (SEE REVISIONS BELOW); (3) ADDED ROCKWALL STANDARD DRAWING (SEE DRAWING BELOW); AND (4) ADDED CURRENT TXDOT STANDARDS

REVISED	DRAWING NO.	DESCRIPTION
(1)	6010A	STORM WATER MANHOLE – 4', 5', 6' SQUARE
(3)	R-6010A	STORM WATER MANHOLE – 4', 5', 6' SQUARE
(1)	6010B	STORM WATER MANHOLE – 4', 5', 6' SQUARE
(3)	R-6010B	STORM WATER MANHOLE – 4', 5', 6' SQUARE
(1)	6020A	CURB INLET – 5', 10' 15' OR 20' OPENING
(3)	R-6020A	CURB INLET – 5', 10' 15' OR 20' OPENING
(1)	6020B	CURB INLET – CROSS SECTION & INLET THROAT
(3)	R-6020B	CURB INLET – CROSS SECTION & INLET THROAT
(1)	6020C	CURB INLET – REBAR & M.H. FRAME & COVER
(3)	R-6020C	CURB INLET – REBAR & M.H. FRAME & COVER
(1)	6020D	CURB INLET – BILL OF REINFORCING STEEL
(3)	R-6020D	CURB INLET – BILL OF REINFORCING STEEL
(1)	6020E	CURB INLET – SUMMARY OF QUANTITIES
(3)	R-6020E	CURB INLET – SUMMARY OF QUANTITIES
(3)	R-6022	ALLEY CURB INLET – UNDER PAVING – 5', 10' 15' OR 20' OPENING
(3)	R-6025A	CURB INLET UNDER PAVEMENT – 5', 10' 15' OR 20' OPENING
(3)	R-6025B	CURB INLET UNDER PAVEMENT – CROSS SECTION & CENTER BEAM
(3)	R-6025C	CURB INLET UNDER PAVEMENT – INLET THROAT & M.H. FRAME & COVER
(3)	R-6025D	CURB INLET UNDER PAVEMENT – GENERAL NOTES
(1)	6030A	CURB INLET RECESSED – 5', 10' 15' OR 20' OPENING
(3)	R-6030A	CURB INLET RECESSED – 5', 10' 15' OR 20' OPENING
(1)	6030B	CURB INLET RECESSED – CROSS SECTION & CENTER BEAM
(3)	R-6030B	CURB INLET RECESSED – CROSS SECTION & CENTER BEAM
(1)	6030C	CURB INLET RECESSED – INLET THROAT & M.H. FRAME & COVER
(3)	R-6030C	CURB INLET RECESSED – INLET THROAT & M.H. FRAME & COVER
(1)	6030D	CURB INLET RECESSED – GENERAL NOTES
(3)	R-6030D	CURB INLET RECESSED – GENERAL NOTES
(1)	6040	DROP INLET – 2', 4', 5', OR 6' SQUARE
(3)	R-6040	DROP INLET – 2', 4', 5', OR 6' SQUARE
(1)	6050	FULL CHANNEL LINING – CONCRETE REINFORCED
(3)	R-6050	FULL CHANNEL LINING – CONCRETE REINFORCED
(1)	6060	CONCRETE APRON – VERTICAL HEADWALL
(3)	R-6060	CONCRETE APRON – VERTICAL HEADWALL
(1)	6070	CONCRETE APRON - SLOPING HEADWALL
(3)	R-6070	CONCRETE APRON - SLOPING HEADWALL
(3)	R-6080	UNDERDRAIN/FRENCH DRAIN – UNDER SIDEWALK – RESIDENTIAL STREET
(4)		TXDOT: SINGLE BOX CULVERT – CAST-IN-PLACE AND PRECAST
(4)		TXDOT: MULTIPLE BOX CULVERT – CAST-IN-PLACE
(4)		TXDOT: WINGWALLS FOR SINGLE & MULTI-BOX CULVERTS
(4)		TXDOT: CONCRETE HEADWALLS FOR PIPE CULVERTS
(4)		TXDOT: SAFETY END TREATMENT FOR BOX CULVERTS
(4)		TXDOT: SAFETY END TREATMENT FOR PIPE CULVERTS

NOTE:
STORM SEWER HEADWALLS, WINGWALLS, BOX CULVERTS AND SAFETY PIPE RUNNERS SHALL BE PER TEXAS DEPARTMENT OF TRANSPORTATION STANDARD DETAILS AND MADE PART OF THE CITY OF ROCKWALL STANDARD DETAILS.

TXDOT STANDARD DRAWINGS SHALL BE MODIFIED AS FOLLOWS:

- (1) ALL CONCRETE FOR STRUCTURES SHALL BE CLASS F (4200 PSI, MINIMUM 7.0 SACK CEMENT).
- (2) NO FLY ASH IS ALLOWED IN CONCRETE FOR STRUCTURES.



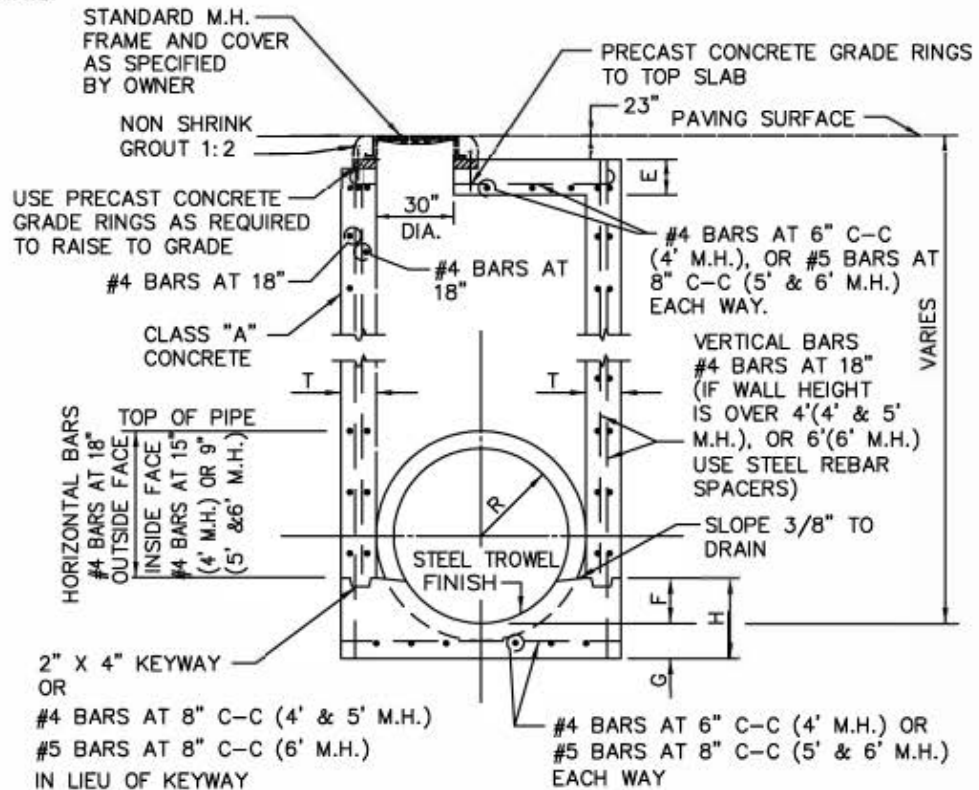
M.H. SIZE(W)	V	T	E	F	G	H
4'	5'-4"	8"	6"	9"	6"	1'-3"
5'	6'-4"	8"	6"	12"	8"	1'-8"
6'	7'-6"	9"	9"	16"	10"	2'-2"

TABLE OF DIMENSIONS

N.T.S.

PLAN
N.T.S.

ALL CONCRETE STRUCTURES SHALL BE CLASS F (4200psi, MIN. 7.0 SACK CEMENT). NO FLY ASH IS ALLOWED IN CONCRETE STRUCTURES.



SECTION B-B

N.T.S.

STORM WATER MANHOLE
4', 5', OR 6' SQUARE

CITY OF ROCKWALL



STANDARD SPECIFICATION REFERENCE
502.1.4.1*

DATE
Mar. 2018

STANDARD DRAWING NO.
R-6010A



#4 BARS AT 6" C-C (4' M.H.), OR
#5 BARS AT 8" C-C (5' & 6' M.H.)
EACH WAY HOOKED
EACH END

#4 BARS
AT 18"
OUTSIDE FACE

#4 BARS
AT 18" INSIDE FACE

#4 BARS
AT 18"
OUTSIDE FACE

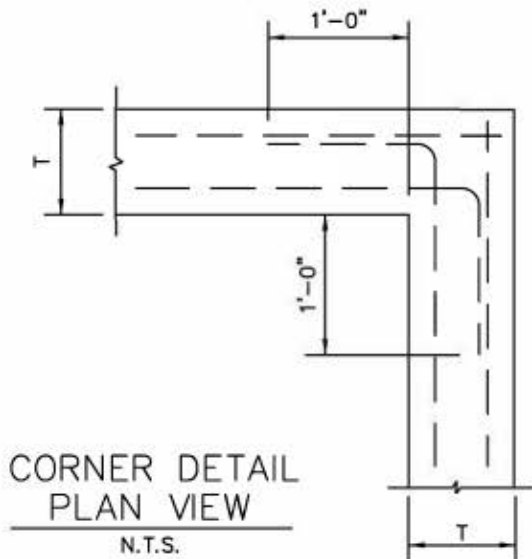
#4 BARS AT 15"
(4' M.H.) OR 9" (5'
& 6' M.H.) INSIDE FACE.

#4 DOWELS AT 18"
ALL AROUND EXCEPT
IN WAY OF PIPE

#4 BARS AT 6" C-C
(4' M.H.), OR #5 BARS AT
8" C-C (5' & 6' M.H.)
EACH WAY

G 5" MIN.

SECTION A-A
N.T.S.



NOTES:

1. SLOPE INVERT OF MANHOLE AS INDICATED ON PLAN-PROFILE SHEET.
2. LAYERS OF REINFORCING STEEL NEAREST THE INTERIOR AND EXTERIOR SURFACE SHALL HAVE A COVER OF 2" TO THE CENTER OF BARS, UNLESS OTHERWISE NOTED.
3. ALL CONCRETE STRUCTURES SHALL BE CLASS F (4200psi, MIN. 7.0 SACK CEMENT).
4. NO FLY ASH IS ALLOWED IN CONCRETE STRUCTURES.

STORM WATER MANHOLE
4', 5', OR 6' SQUARE

CITY OF ROCKWALL



STANDARD SPECIFICATION REFERENCE

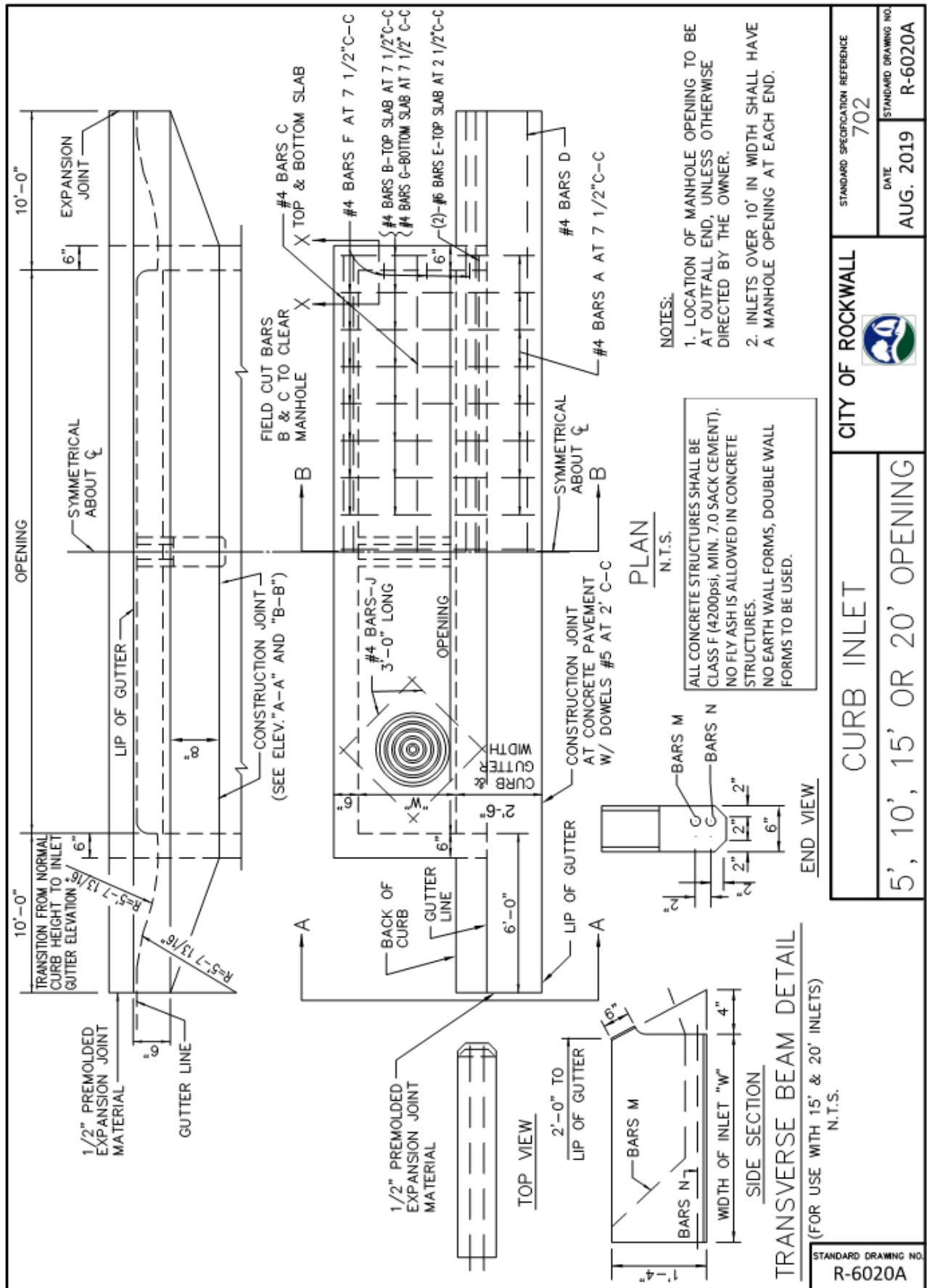
502.1.4.1*

DATE

Mar. 2018

STANDARD DRAWING NO.

R-6010B

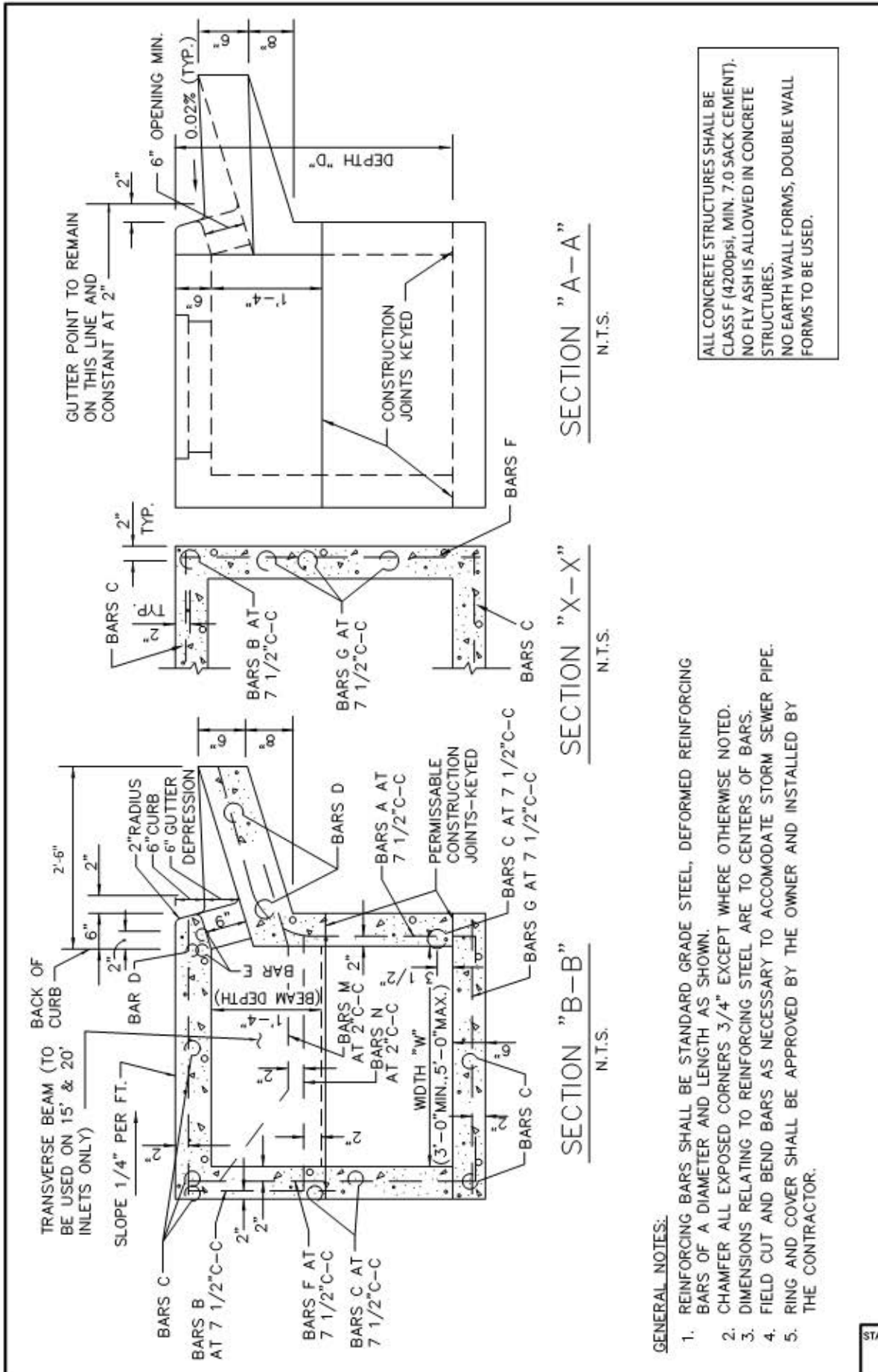


STANDARD SPECIFICATION REFERENCE 702	DATE AUG. 2019	STANDARD DRAWING NO. R-6020A
--	--------------------------	--

CITY OF ROCKWALL

CURB INLET
5', 10', 15' OR 20' OPENING

STANDARD DRAWING NO. R-6020A
--

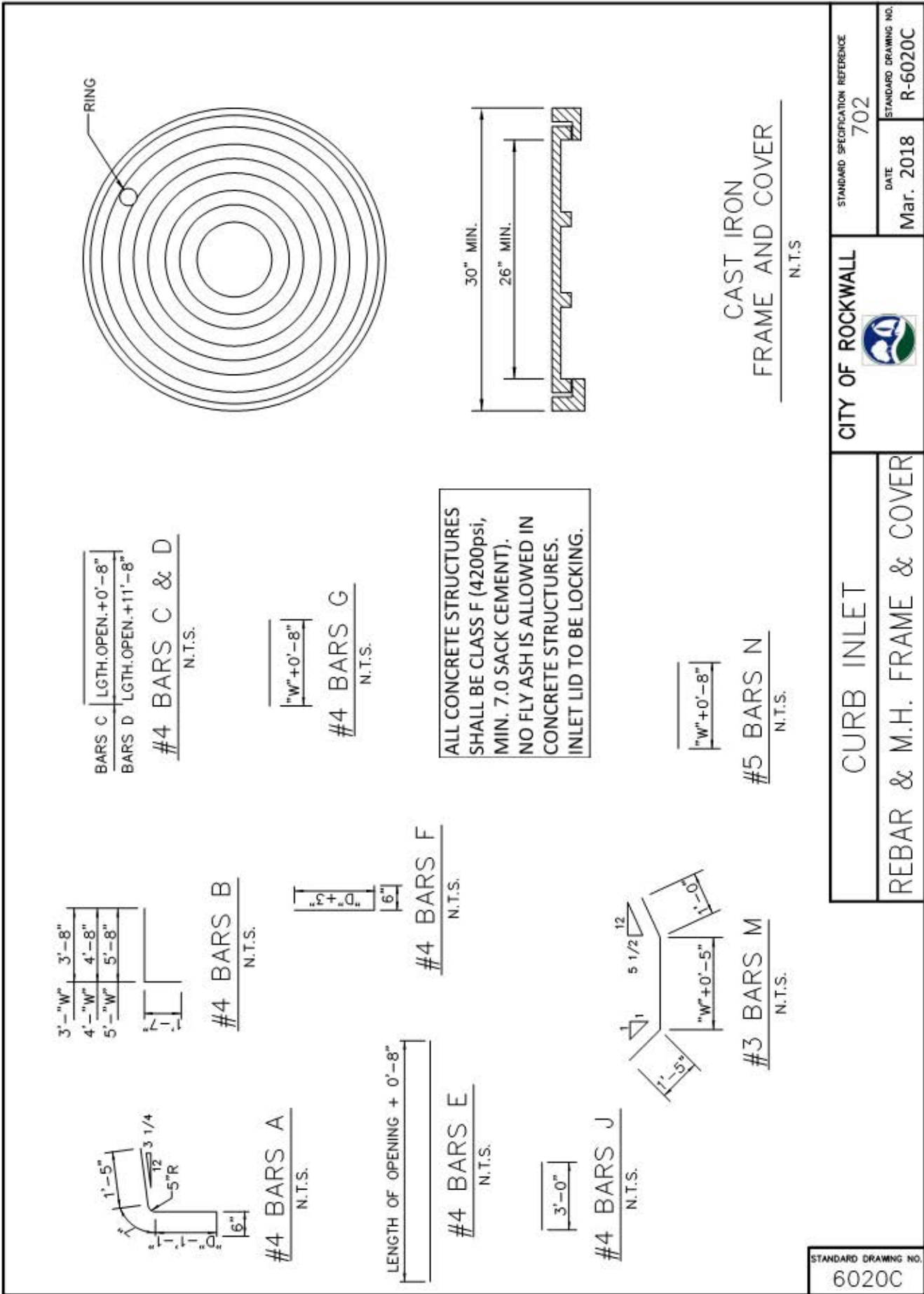


GENERAL NOTES:

1. REINFORCING BARS SHALL BE STANDARD GRADE STEEL, DEFORMED REINFORCING BARS OF A DIAMETER AND LENGTH AS SHOWN.
2. CHAMFER ALL EXPOSED CORNERS 3/4" EXCEPT WHERE OTHERWISE NOTED.
3. DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTERS OF BARS.
4. FIELD CUT AND BEND BARS AS NECESSARY TO ACCOMMODATE STORM SEWER PIPE.
5. RING AND COVER SHALL BE APPROVED BY THE OWNER AND INSTALLED BY THE CONTRACTOR.

ALL CONCRETE STRUCTURES SHALL BE CLASS F (4200psi, MIN. 7.0 SACK CEMENT). NO FLY ASH IS ALLOWED IN CONCRETE STRUCTURES. NO EARTH WALL FORMS, DOUBLE WALL FORMS TO BE USED.

CURB INLET CROSS SECTION & INLET THROAT	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 702
		DATE AUG. 2019
		STANDARD DRAWING NO. R-6020B





BILL OF REINFORCING STEEL

DEPTH "D"	"L" = 5ft												"L" = 10ft												"L" = 15 ft												"L" = 20 ft											
	OPENING LENGTH						"W"						OPENING LENGTH						"W"						OPENING LENGTH						"W"																	
	ALL WIDTHS AND LENGTHS		3ft		4ft		5ft		3ft		4ft		5ft		3ft		4ft		5ft		3ft		4ft		5ft		3ft		4ft		5ft																	
C	D	E	J	F	F	A	B	G	F	F	F	A	B	G	F	F	F	A	B	G	M	N	F	F	F	A	B	G	M	N																		
3'-6"	17	3	2	4	20	24	28	10	10	20	28	32	36	18	18	28	36	40	44	26	26	36	2	2	44	48	52	34	34	44	2	2																
3'-9"	18	"	"	"	"	"	"	20	"	"	"	"	"	"	"	28	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
4'-0"	19	"	"	"	"	"	"	24	"	"	"	"	"	"	"	32	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
4'-3"	19	"	"	"	"	"	"	24	"	"	"	"	"	"	"	32	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
4'-6"	21	"	"	"	"	"	"	26	"	"	"	"	"	"	"	34	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
4'-9"	21	"	"	"	"	"	"	26	"	"	"	"	"	"	"	34	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
5'-0"	21	"	"	"	"	"	"	26	"	"	"	"	"	"	"	34	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
5'-3"	23	"	"	"	"	"	"	28	"	"	"	"	"	"	"	36	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
5'-6"	23	"	"	"	"	"	"	28	"	"	"	"	"	"	"	36	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
5'-9"	25	"	"	"	"	"	"	30	"	"	"	"	"	"	"	38	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
6'-0"	25	"	"	"	"	"	"	30	"	"	"	"	"	"	"	38	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
6'-3"	26	"	"	"	"	"	"	30	"	"	"	"	"	"	"	38	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
6'-6"	27	"	"	"	"	"	"	32	"	"	"	"	"	"	"	40	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
6'-9"	27	"	"	"	"	"	"	32	"	"	"	"	"	"	"	40	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
7'-0"	29	"	"	"	"	"	"	34	"	"	"	"	"	"	"	42	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
7'-3"	29	"	"	"	"	"	"	34	"	"	"	"	"	"	"	42	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
7'-6"	30	"	"	"	"	"	"	34	"	"	"	"	"	"	"	42	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
7'-9"	31	"	"	"	"	"	"	36	"	"	"	"	"	"	"	44	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
8'-0"	31	"	"	"	"	"	"	36	"	"	"	"	"	"	"	44	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
8'-3"	32	"	"	"	"	"	"	36	"	"	"	"	"	"	"	44	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
8'-6"	33	"	"	"	"	"	"	38	"	"	"	"	"	"	"	46	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
8'-9"	34	"	"	"	"	"	"	38	"	"	"	"	"	"	"	46	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
9'-0"	35	"	"	"	"	"	"	40	"	"	"	"	"	"	"	48	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
9'-3"	36	"	"	"	"	"	"	40	"	"	"	"	"	"	"	48	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
9'-6"	37	"	"	"	"	"	"	42	"	"	"	"	"	"	"	50	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															
10'-0"	38	"	"	"	"	"	"	42	"	"	"	"	"	"	"	50	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"															

ALL CONCRETE STRUCTURES SHALL BE CLASS F (4200psi, MIN. 7.0 SACK CEMENT). NO FLY ASH IS ALLOWED IN CONCRETE STRUCTURES.

NOTE: FOR CONVENIENCE, DEPTHS OF INLETS SHOWN IN ABOVE TABLES ARE IN INCREMENTS OF 3 INCHES BUT ANY DEPTHS OTHER THAN THOSE SHOWN ABOVE MAY BE USED WHEREVER DEEMED NECESSARY. QUANTITIES FOR OTHER DEPTHS FALLING WITHIN THE LIMITS OF THE TABLE MAY BE FOUND BY INTERPOLATION.

STANDARD SPECIFICATION REFERENCE	702
DATE	Mar. 2018
STANDARD DRAWING NO.	R-6020D

CITY OF ROCKWALL

CURB INLET

BILL OF REINFORCING STEEL

STANDARD DRAWING NO.
R-6020D



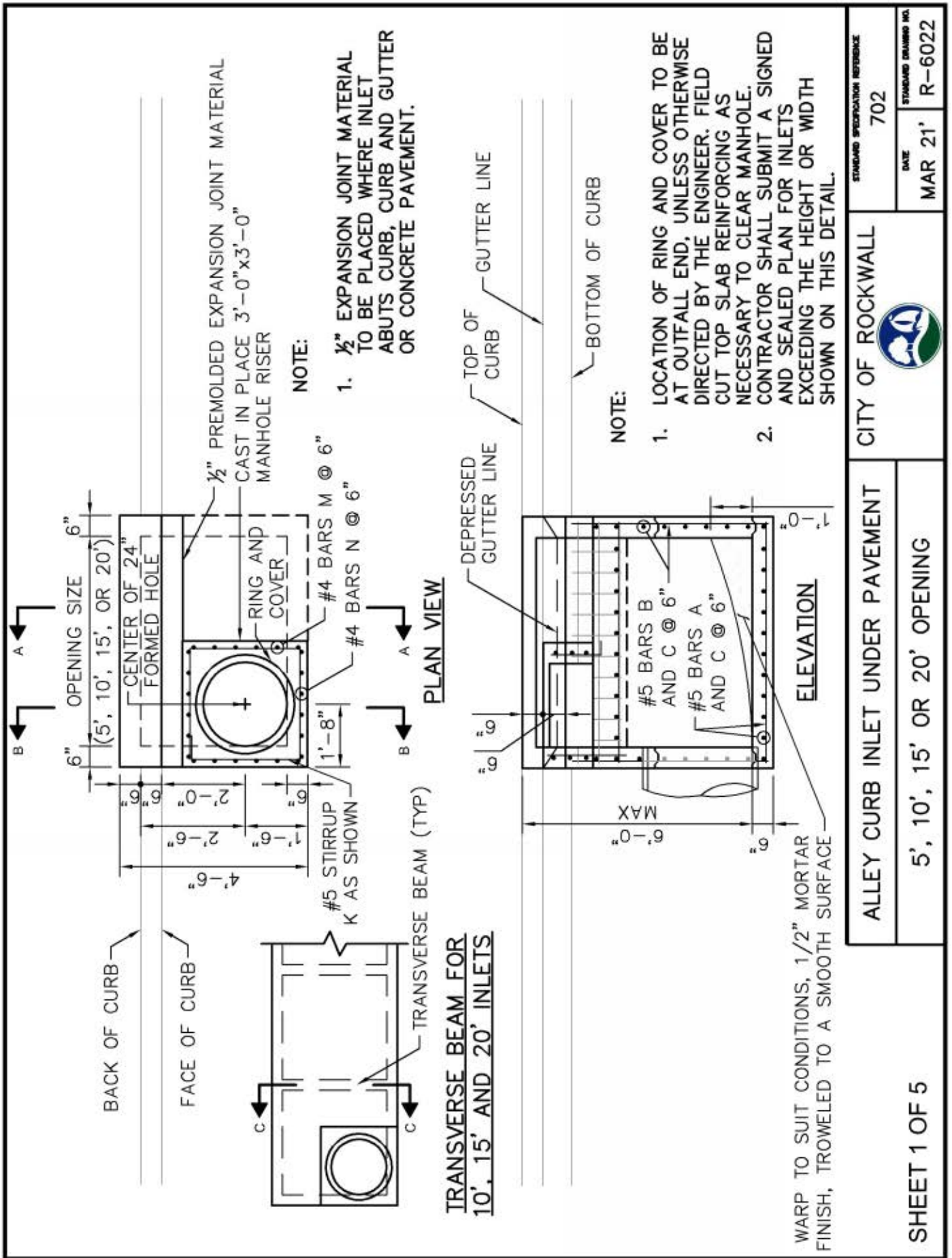
SUMMARY OF QUANTITIES FOR CURB INLETS

DEPTH "D"	5'-0" OPENING						10'-0" OPENING						15'-0" OPENING						20'-0" OPENING					
	WIDTH 3'-0"		WIDTH 4'-0"		WIDTH 5'-0"		WIDTH 3'-0"		WIDTH 4'-0"		WIDTH 5'-0"		WIDTH 3'-0"		WIDTH 4'-0"		WIDTH 5'-0"		WIDTH 3'-0"		WIDTH 4'-0"		WIDTH 5'-0"	
	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.
3'-6"	2.62	306	2.95	332	3.28	373	4.12	479	4.64	521	5.20	564	5.69	667	6.40	721	7.10	775	7.20	846	8.11	909	9.03	976
3'-9"	2.70	309	3.04	341	3.39	373	4.25	494	4.78	536	5.34	579	5.87	687	6.58	741	7.30	796	7.42	874	8.34	937	9.27	1010
4'-0"	2.78	328	3.14	364	3.49	399	4.38	518	4.92	565	5.49	610	6.05	718	6.77	776	7.49	835	7.64	909	8.58	976	9.51	1046
4'-3"	2.87	334	3.23	370	3.59	406	4.51	526	5.06	573	5.64	619	6.22	729	6.95	787	7.69	847	7.87	922	8.81	990	9.75	1061
4'-6"	2.95	356	3.32	394	3.69	431	4.64	558	5.20	607	5.79	656	6.40	770	7.14	830	7.88	891	8.09	973	9.04	1043	9.99	1115
4'-9"	3.03	361	3.41	410	3.79	438	4.77	566	5.34	616	5.94	665	6.57	780	7.32	841	8.07	903	8.31	986	9.27	1056	10.23	1129
5'-0"	3.12	367	3.51	416	3.90	445	4.90	574	5.47	624	6.09	674	6.75	791	7.51	853	8.27	915	8.53	999	9.50	1070	10.47	1144
5'-3"	3.20	383	3.60	424	4.00	465	5.03	600	5.61	652	6.23	704	6.93	827	7.69	890	8.46	955	8.76	1044	9.73	1118	10.71	1194
5'-6"	3.28	389	3.69	430	4.10	472	5.16	608	5.75	661	6.38	713	7.11	837	7.88	901	8.66	967	8.98	1057	9.97	1131	10.95	1208
5'-9"	3.37	405	3.78	451	4.20	495	5.29	635	5.89	690	6.53	744	7.28	874	8.07	940	8.85	1007	9.20	1102	11.02	1178	11.19	1258
6'-0"	3.45	415	3.88	460	4.30	504	5.42	646	6.03	702	6.68	757	7.45	888	8.25	954	9.05	1022	9.42	1119	10.43	1196	11.43	1276
6'-3"	3.53	425	3.97	470	4.41	515	5.55	661	6.17	718	6.83	773	7.63	908	8.44	975	9.24	1044	9.64	1147	10.66	1223	11.67	1305
6'-6"	3.62	437	4.06	486	4.51	532	5.68	681	6.31	739	6.97	797	7.81	935	8.62	1005	9.43	1057	9.87	1178	10.89	1258	11.92	1340
6'-9"	3.70	441	4.15	490	4.61	537	5.81	688	6.45	747	7.12	806	7.98	945	8.81	1015	9.63	1066	10.09	1191	11.12	1272	12.15	1355
7'-0"	3.78	460	4.25	510	4.71	560	5.94	716	6.59	777	7.27	837	8.16	981	8.99	1053	9.82	1126	10.31	1237	11.35	1319	12.40	1404
7'-3"	3.86	465	4.34	516	4.81	567	6.07	724	6.72	785	7.42	846	8.33	992	9.18	1065	10.02	1138	10.53	1249	11.59	1333	12.64	1418
7'-6"	3.95	477	4.43	529	4.91	570	6.20	742	6.86	804	7.57	866	8.51	1016	9.36	1089	10.21	1163	10.75	1290	11.82	1365	12.88	1451
7'-9"	4.03	491	4.53	544	5.02	597	6.33	762	7.00	826	7.71	890	8.67	1040	9.55	1116	10.41	1193	10.98	1313	12.05	1399	13.12	1498
8'-0"	4.12	496	4.62	550	5.12	604	6.46	770	7.14	834	7.86	899	8.86	1051	9.73	1129	10.60	1205	11.20	1325	12.28	1412	13.36	1510
8'-3"	4.20	504	4.71	559	5.22	613	6.59	784	7.28	849	8.01	915	9.04	1069	9.92	1149	10.80	1228	11.42	1353	12.51	1440	13.60	1529
8'-6"	4.28	519	4.80	576	5.32	632	6.71	804	7.42	871	8.16	938	9.21	1107	10.10	1176	10.99	1257	11.64	1385	12.74	1474	13.84	1565
8'-9"	4.37	528	4.90	586	5.42	643	6.84	819	7.56	886	8.31	954	9.39	1119	10.29	1199	11.18	1280	11.87	1410	12.97	1500	14.08	1592
9'-0"	4.45	545	4.99	605	5.53	664	6.97	842	7.70	912	8.46	982	9.56	1148	10.47	1231	11.38	1313	12.09	1447	13.21	1539	14.32	1631
9'-3"	4.53	554	5.08	614	5.63	674	7.10	858	7.84	929	8.60	999	9.74	1169	10.66	1252	11.57	1335	12.31	1474	13.44	1563	14.56	1660
9'-6"	4.62	568	5.17	630	5.73	692	7.23	878	7.97	950	8.75	1022	9.92	1195	10.84	1280	11.77	1365	12.53	1505	13.67	1600	14.80	1696
10'-0"	4.78	582	5.36	645	5.93	708	7.49	900	8.11	974	9.05	1048	10.27	1227	11.21	1312	12.16	1399	12.98	1546	14.13	1642	15.29	1739

NOTE:
 FOR CONVENIENCE, DEPTHS OF INLETS SHOWN IN ABOVE TABLES ARE IN INCREMENTS OF 3 INCHES BUT ANY DEPTHS OTHER THAN THOSE SHOWN ABOVE MAY BE USED WHEREVER DEEMED NECESSARY. QUANTITIES FOR OTHER DEPTHS FALLING WITHIN THE LIMITS OF THE TABLE MAY BE FOUND BY INTERPOLATION.

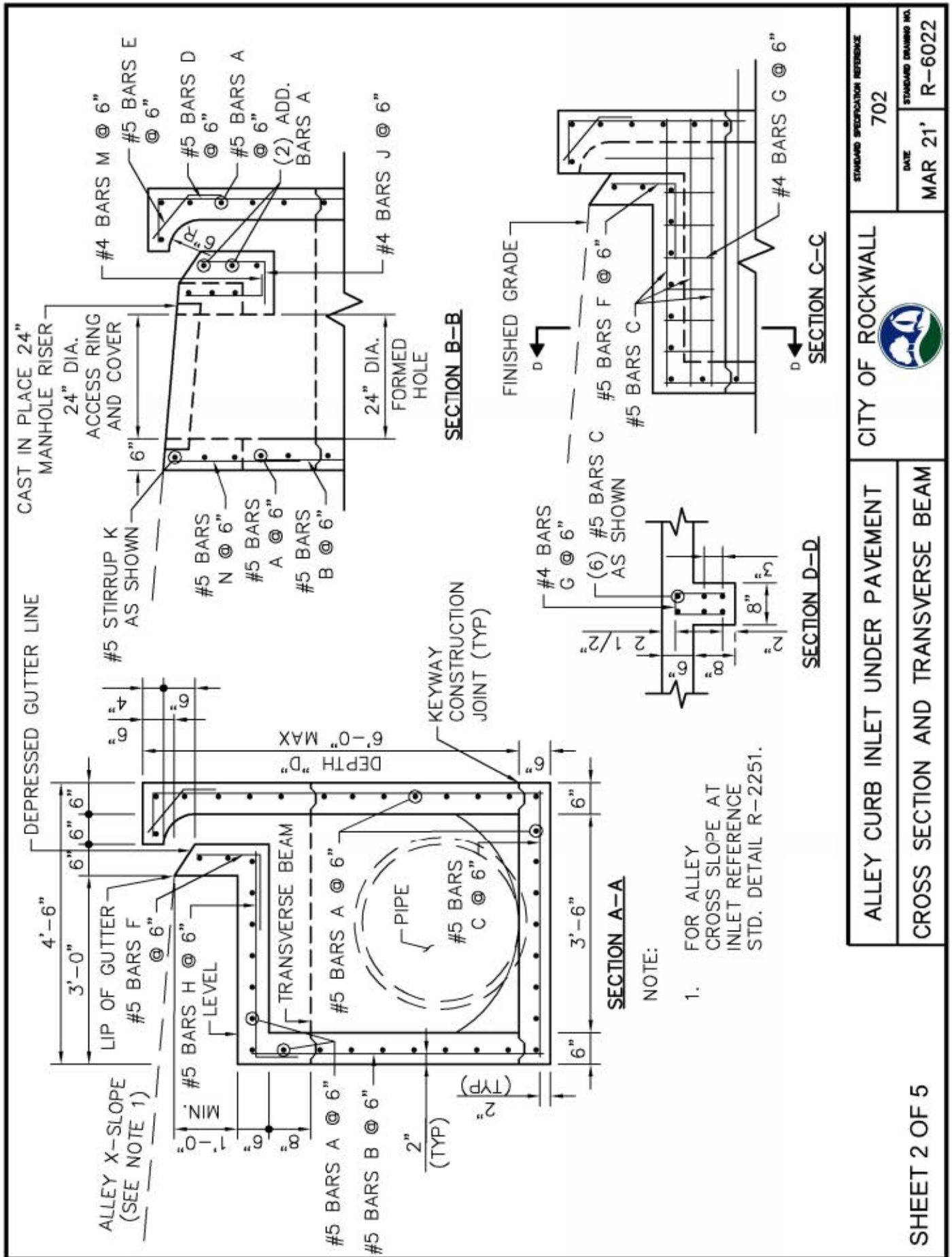
ALL CONCRETE STRUCTURES SHALL BE CLASS F (4200psi, MIN. 7.0 SACK CEMENT).
 NO FLY ASH IS ALLOWED IN CONCRETE STRUCTURES.

STANDARD DRAWING NO. R-6020E	CITY OF ROCKWALL 	STANDARD SPECIFICATION REFERENCE 702
		DATE Mar. 2018
STANDARD DRAWING NO. R-6020E		



CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE	702
	DATE	MAR 21'
ALLEY CURB INLET UNDER PAVEMENT	STANDARD DRAWING NO.	R-6022
5', 10', 15' OR 20' OPENING		

SHEET 1 OF 5



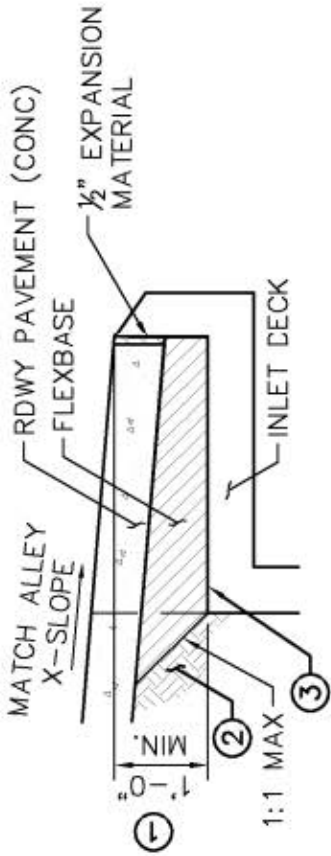
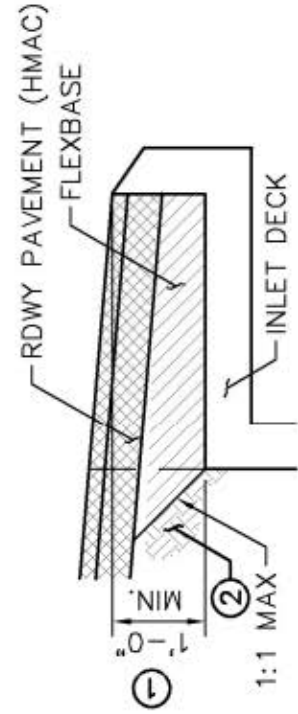
STANDARD SPECIFICATION REFERENCE	
702	
DATE	STANDARD DRAWING NO.
MAR 21'	R-6022

CITY OF ROCKWALL

ALLEY CURB INLET UNDER PAVEMENT

CROSS SECTION AND TRANSVERSE BEAM

SHEET 2 OF 5



- ① THICKNESS OF RDWY PAVEMENT PLUS FLEXBASE: IF LESS THAN 1'-0", INCREASE DEPTH OF FLEXBASE.
- ② SUBGRADE MATERIAL PER ROADWAY PAVEMENT DESIGN.
- ③ IF CONCRETE PAVEMENT IS PLACED DIRECTLY ON INLET DECK, APPLY APPROVED BOND BREAKER TO SURFACE OF INLET.

INLET ADJACENT TO HOT MIX ASPHALT PAVEMENT

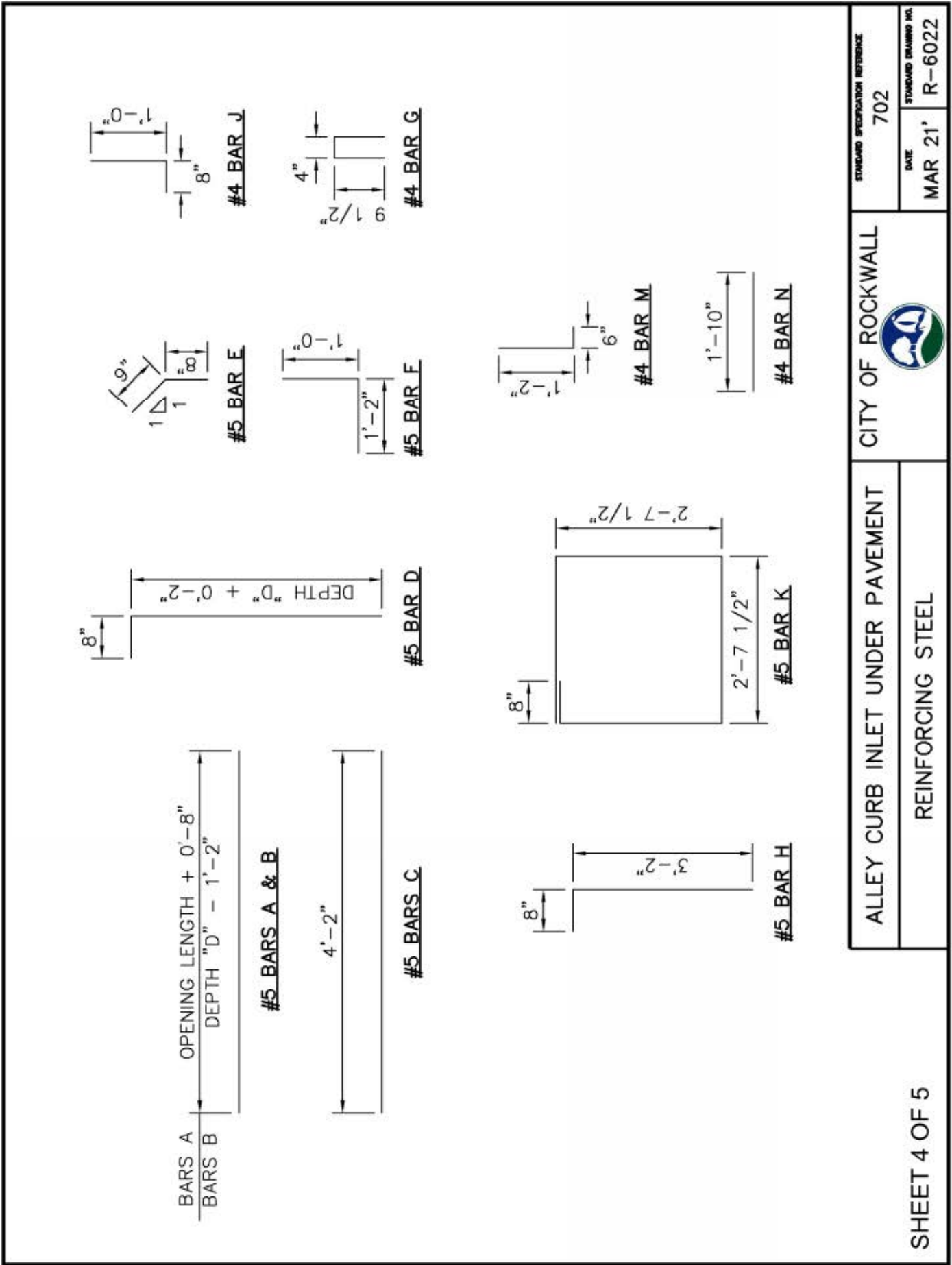
INLET ADJACENT TO PORTLAND CEMENT CONCRETE PAVEMENT

GENERAL NOTES:

- 1. DESIGNED IN ACCORDANCE WITH AASHTO LRFD, 8TH EDITION, FOR THE FOLLOWING LOADS:
 DEAD LOAD: SELF-WEIGHT
 LIVE LOAD: HL-93
 EARTH PRESSURE: 100 PSF/FT
- 2. ALL REINFORCING STEEL SHALL BE GRADE 60.
- 3. ALL CONCRETE SHALL BE CLASS F (4,200 PSI, MIN. 7.0 SACK CEMENT). ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
- 4. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 2.0" TO THE CENTER OF THE BAR.
- 5. ALL BACK FILLING SHALL BE PERFORMED BY MECHANICAL TAMPING TO 95% STANDARD PROCTOR DENSITY.
- 6. NO FLY ASH IS ALLOWED IN CONCRETE STRUCTURES.
- 7. NO EARTH WALL FORMS, DOUBLE WALL FORMS TO BE USED.
- 8. FORMED CONCRETE ABOVE PIPE SHALL BE 0'-6" MIN. MAXIMUM PIPE SIZE - 30".

SHEET 3 OF 5

ALLEY CURB INLET UNDER PAVEMENT PVMT CONNECTION & GENERAL NOTES	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 702
		DATE MAR 21'
		STANDARD DRAWING NO. R-6022



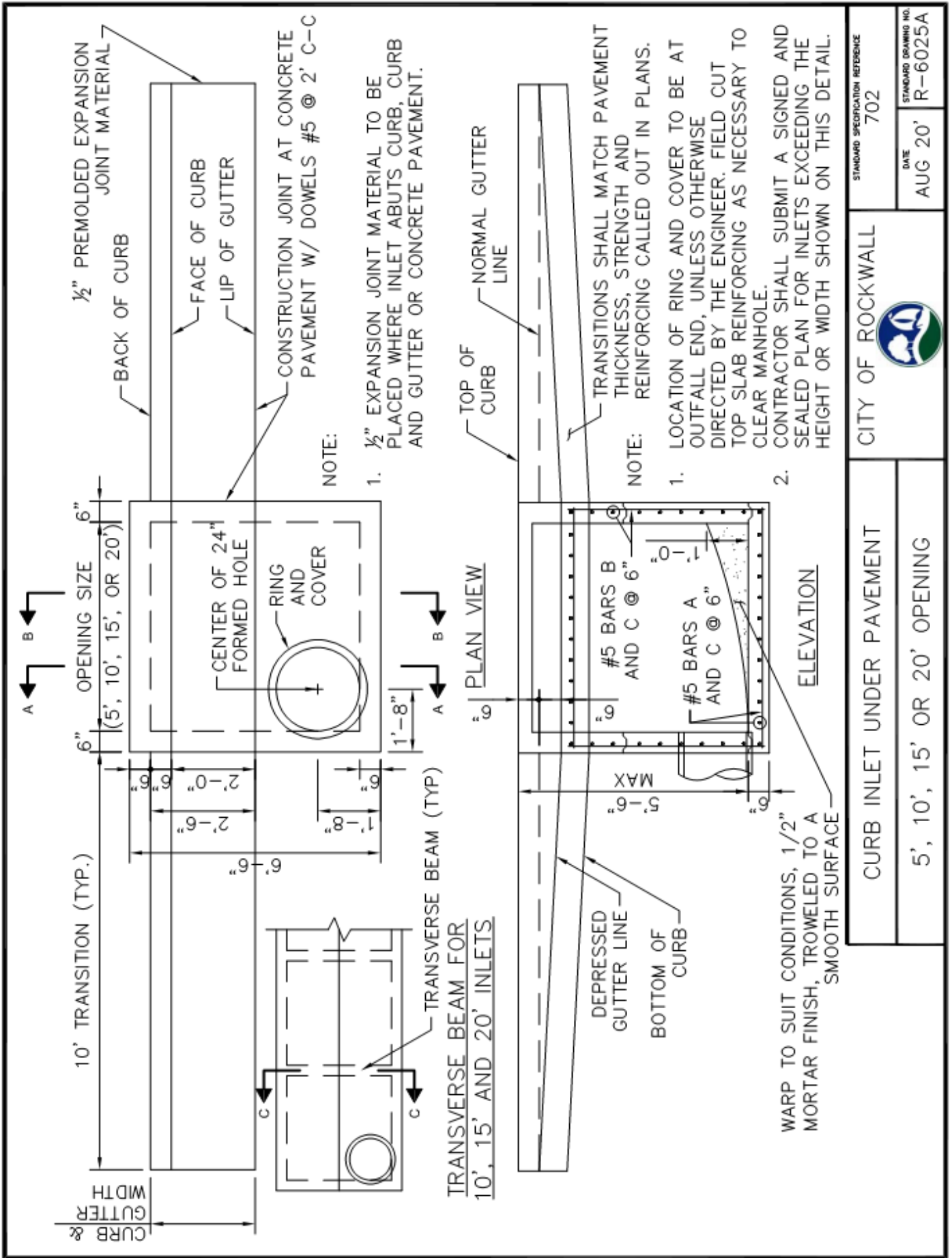


BILL OF REINFORCING STEEL

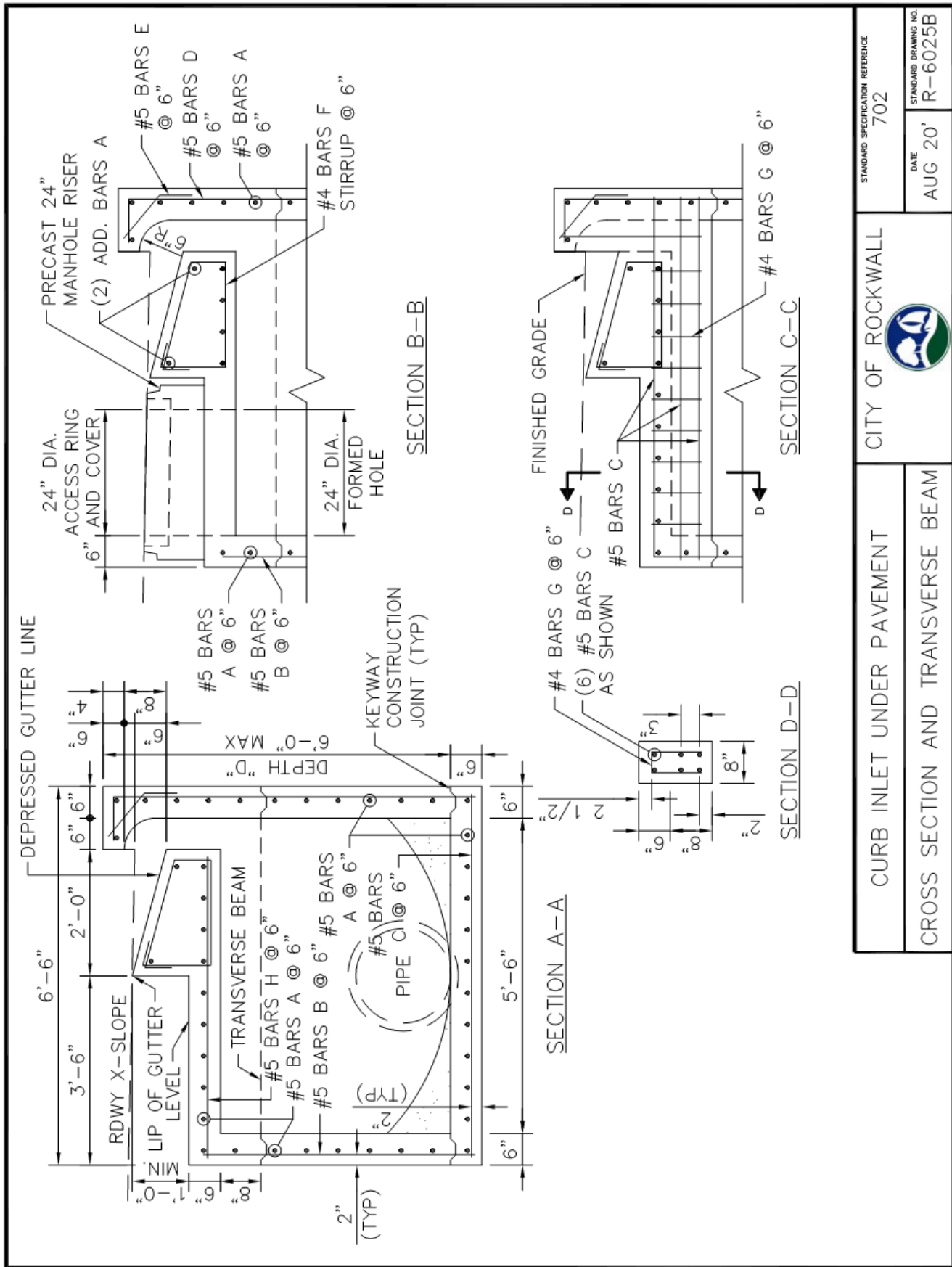
DEPTH "D"	OPENING LENGTH = 5 FT															OPENING LENGTH = 10 FT														
	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	
BAR SIZE	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	
4'-0"	30	30	30	12	12	6	-	10	4	4	3	12	12	12	12	30	41	47	23	23	17	7	20	4	4	3	12	12	12	
4'-6"	32	"	32	"	"	"	"	"	"	"	"	"	"	"	"	32	"	49	"	"	"	"	"	"	"	"	"	"	"	
5'-0"	34	"	34	"	"	"	"	"	"	"	"	"	"	"	"	34	"	51	"	"	"	"	"	"	"	"	"	"	"	
5'-6"	36	"	36	"	"	"	"	"	"	"	"	"	"	"	"	36	"	53	"	"	"	"	"	"	"	"	"	"	"	
6'-0"	38	"	38	"	"	"	"	"	"	"	"	"	"	"	"	38	"	55	"	"	"	"	"	"	"	"	"	"	"	
DEPTH "D"	OPENING LENGTH = 15 FT															OPENING LENGTH = 20 FT														
BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	
BAR SIZE	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	
4'-0"	30	52	58	34	34	28	14	30	4	4	3	12	12	12	12	30	63	69	45	45	39	21	40	4	4	3	12	12	12	
4'-6"	32	"	60	"	"	"	"	"	"	"	"	"	"	"	"	32	"	71	"	"	"	"	"	"	"	"	"	"	"	
5'-0"	34	"	62	"	"	"	"	"	"	"	"	"	"	"	"	34	"	73	"	"	"	"	"	"	"	"	"	"	"	
5'-6"	36	"	64	"	"	"	"	"	"	"	"	"	"	"	"	36	"	75	"	"	"	"	"	"	"	"	"	"	"	
6'-0"	38	"	66	"	"	"	"	"	"	"	"	"	"	"	"	38	"	77	"	"	"	"	"	"	"	"	"	"	"	

ALLEY CURB INLET UNDER PAVEMENT BILL OF REINFORCING STEEL	CITY OF ROCKWALL 	STANDARD SPECIFICATION REFERENCE 702 DATE MAR 21' STANDARD DRAWING NO. R-6022
--	----------------------	--

SHEET 5 OF 5



CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE	702
	DATE	AUG 20'
CURB INLET UNDER PAVEMENT	STANDARD DRAWING NO.	R-6025A
5', 10', 15' OR 20' OPENING		



STANDARD SPECIFICATION REFERENCE	702
DATE	AUG 20'
STANDARD DRAWING NO.	R-6025B

CITY OF ROCKWALL



CURB INLET UNDER PAVEMENT
CROSS SECTION AND TRANSVERSE BEAM



- ① THICKNESS OF RDWY PAVEMENT PLUS FLEXBASE: IF LESS THAN 1'-0", INCREASE DEPTH OF FLEXBASE.
- ② SUBGRADE MATERIAL PER ROADWAY PAVEMENT DESIGN.

INLET ADJACENT TO PORTLAND CEMENT CONCRETE PAVEMENT

INLET ADJACENT TO HOT MIX ASPHALT PAVEMENT

GENERAL NOTES:

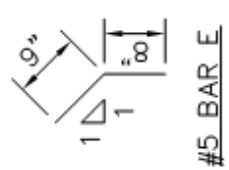
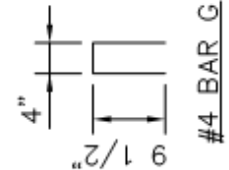
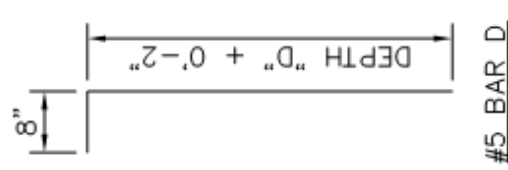
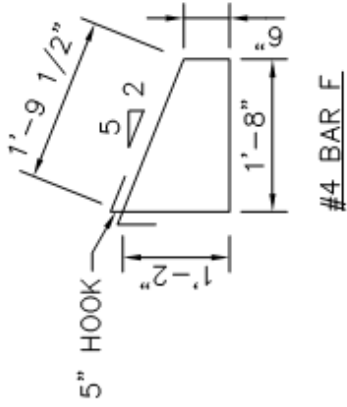
1. DESIGNED IN ACCORDANCE WITH AASHTO LRFD, 8TH EDITION, FOR THE FOLLOWING LOADS:
DEAD LOAD: SELF-WEIGHT
LIVE LOAD: HL-93
EARTH PRESSURE: 100 PSF/FT
2. ALL REINFORCING STEEL SHALL BE GRADE 60.
3. ALL CONCRETE SHALL BE CLASS F (4,200 PSI, MIN. 7.0 SACK CEMENT). ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
4. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 2.0" TO THE CENTER OF THE BAR.
5. 10'-0" OF EXISTING CURB AND GUTTER UPSTREAM AND 10'-0" OF EXISTING CURB AND GUTTER DOWNSTREAM SHALL BE REMOVED AND REPOURED INTEGRALLY WITH EACH INLET.
6. ALL BACK FILLING SHALL BE PERFORMED BY MECHANICAL TAMPING TO 95% STANDARD PROCTOR DENSITY.
7. NO FLY ASH IS ALLOWED IN CONCRETE STRUCTURES.
8. NO EARTH WALL FORMS, DOUBLE WALL FORMS TO BE USED.
9. FORMED CONCRETE ABOVE PIPE SHALL BE 0'-6" MIN. MAXIMUM PIPE SIZE - 30".

CURB INLET UNDER PAVEMENT PVMT CONNECTION & GENERAL NOTES	CITY OF ROCKWALL 	STANDARD SPECIFICATION REFERENCE 702
	DATE AUG 20'	STANDARD DRAWING NO. R-6025C



BILL OF REINFORCING STEEL

DEPTH "D"	OPENING LENGTH = 5 FT								OPENING LENGTH = 10 FT							
	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS
4'-0"	37	34	22	12	12	10	-	12	37	45	38	23	23	21	10	20
4'-6"	39	"	24	"	"	"	"	"	39	"	40	"	"	"	"	"
5'-0"	41	"	26	"	"	"	"	"	41	"	42	"	"	"	"	"
5'-6"	43	"	28	"	"	"	"	"	43	"	44	"	"	"	"	"
6'-0"	45	"	30	"	"	"	"	"	45	"	46	"	"	"	"	"
DEPTH "D"	OPENING LENGTH = 15 FT								OPENING LENGTH = 20 FT							
	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS	BARS
4'-0"	37	56	34	34	32	20	30	30	37	67	73	45	45	43	30	40
4'-6"	39	"	58	"	"	"	"	"	39	"	75	"	"	"	"	"
5'-0"	41	"	60	"	"	"	"	"	41	"	77	"	"	"	"	"
5'-6"	43	"	62	"	"	"	"	"	43	"	79	"	"	"	"	"
6'-0"	45	"	64	"	"	"	"	"	45	"	81	"	"	"	"	"



#5 BARS A & B



#5 BARS C & H

CITY OF ROCKWALL

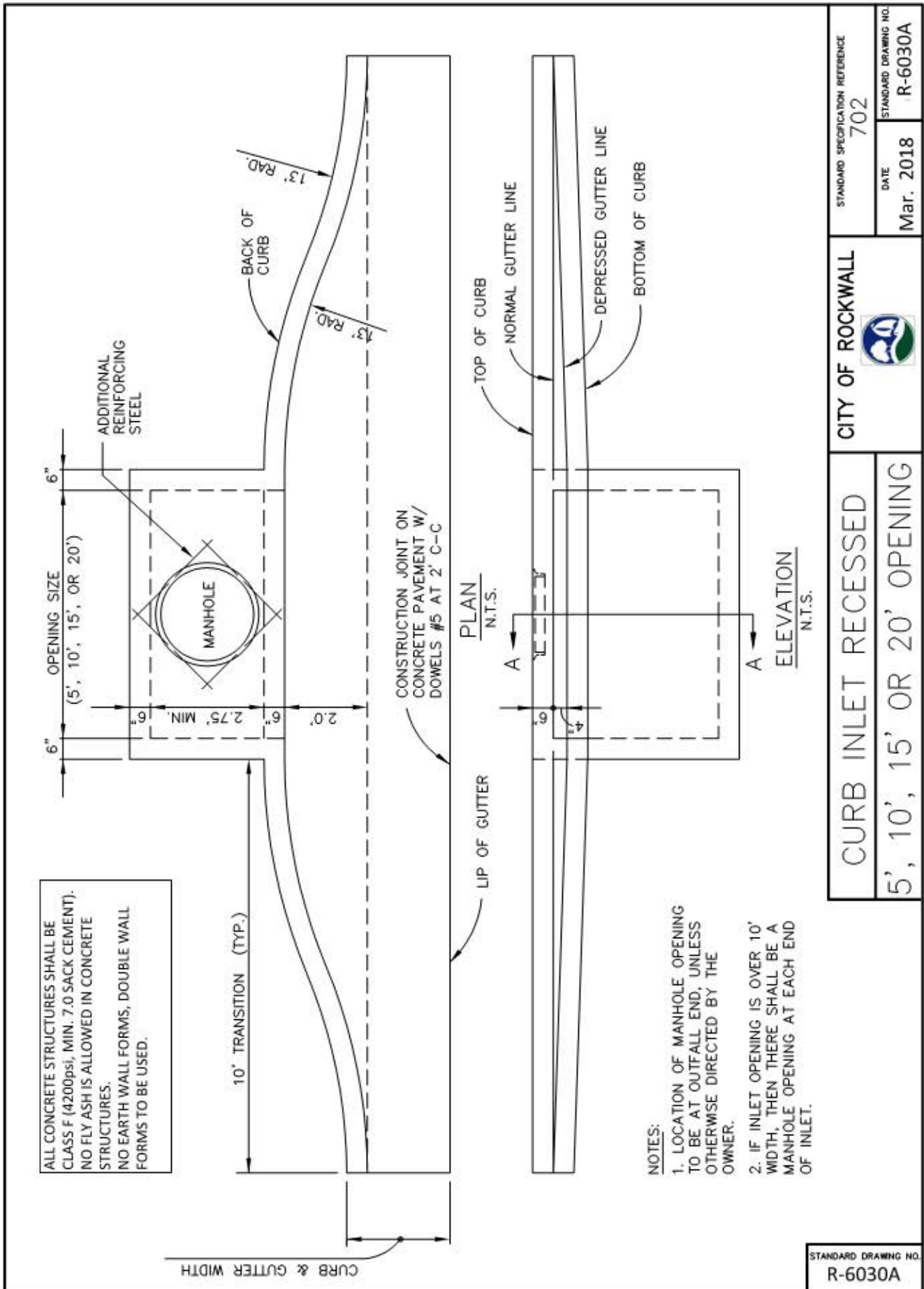
CURB INLET UNDER PAVEMENT

BILL OF REINFORCING STEEL

STANDARD SPECIFICATION REFERENCE
702

DATE
AUG 20'

STANDARD DRAWING NO.
R-6025D



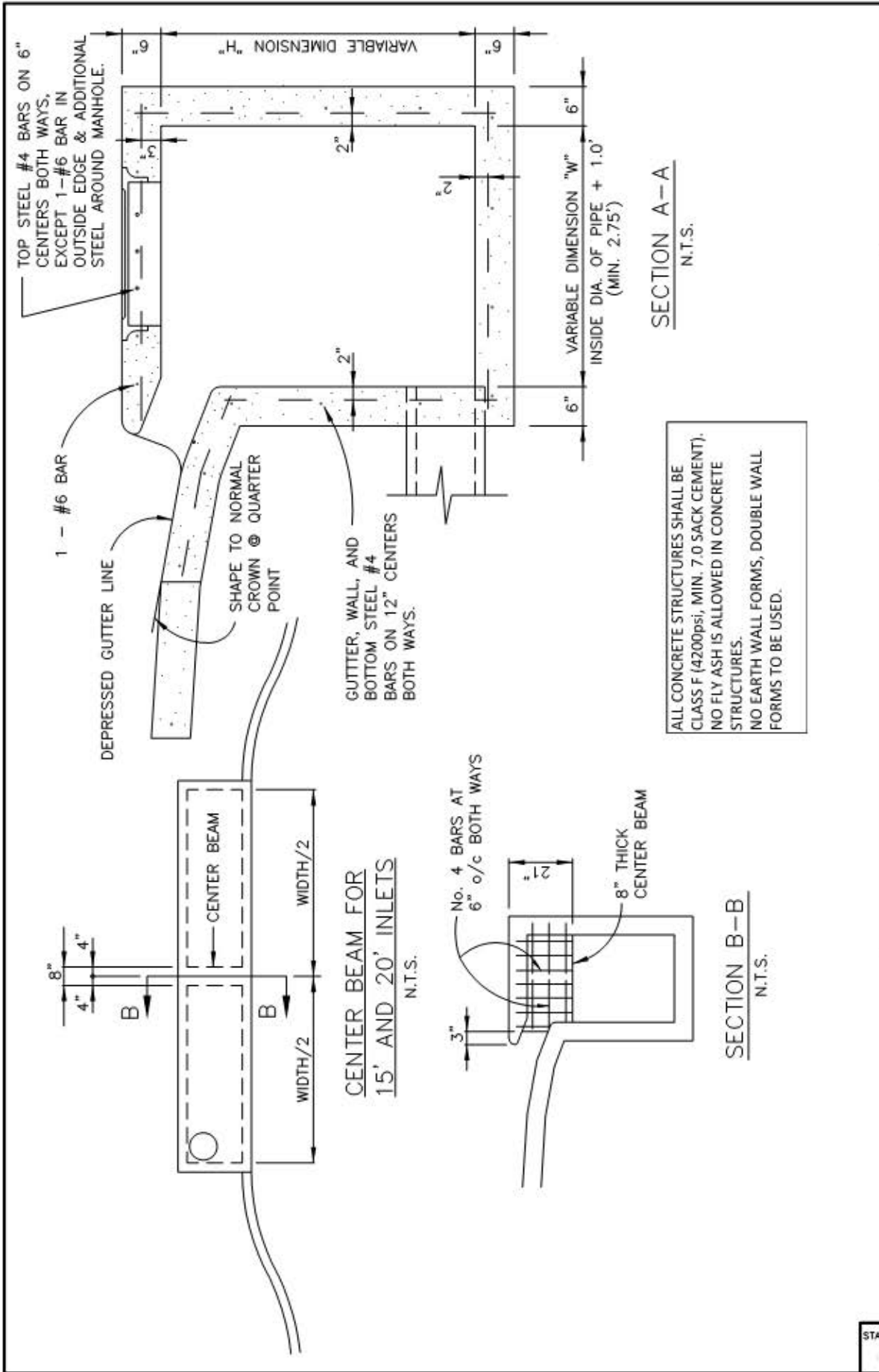
STANDARD SPECIFICATION REFERENCE	702
DATE	Mar. 2018
STANDARD DRAWING NO.	R-6030A



CITY OF ROCKWALL

CURB INLET RECESSED

5', 10', 15' OR 20' OPENING

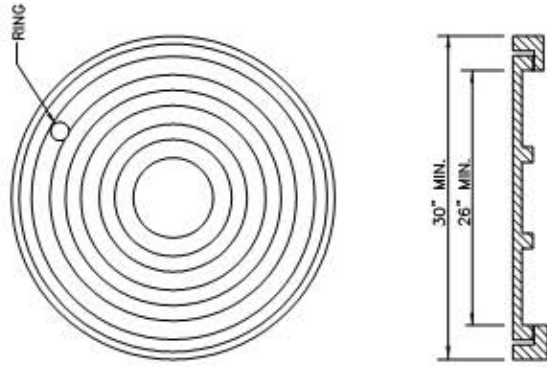


STANDARD SPECIFICATION REFERENCE	702
DATE	Mar. 2018
STANDARD DRAWING NO.	R-6030B

CITY OF ROCKWALL

CURB INLET RECESSED
CROSS SECTION & CENTER BEAM

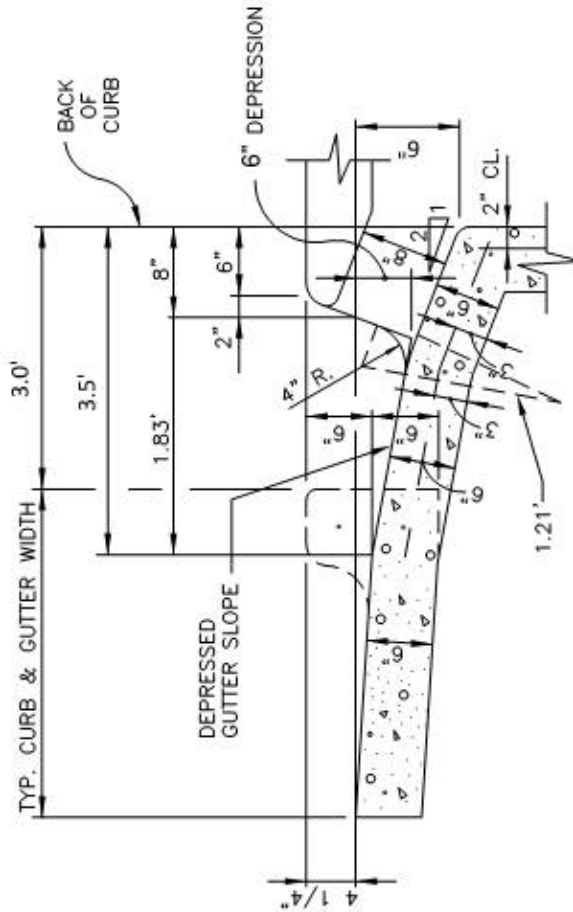
STANDARD DRAWING NO.	R-6030B
----------------------	---------



MANHOLE FRAME & COVER

N.T.S.

INLET LID OF BE LOCKING



INLET THROAT

N.T.S.

ALL CONCRETE STRUCTURES SHALL BE CLASS F (4200psi, MIN. 7.0 SACK CEMENT). NO FLY ASH IS ALLOWED IN CONCRETE STRUCTURES.

STANDARD SPECIFICATION REFERENCE	702
DATE	Mar. 2018
STANDARD DRAWING NO.	R-6030C

CITY OF ROCKWALL



CURB INLET RECESSED
INLET THROAT & M.H. FRAME & COVER

STANDARD DRAWING NO.	R-6030C
----------------------	---------



GENERAL NOTES:

1. IN GENERAL, REINFORCING STEEL SHALL BE #4 BARS ON 12" CENTERS BOTH WAYS FOR GUTTER, BOTTOM SLAB ENDS, FRONT AND BACK WALLS, AND #4 BARS ON 6" CENTERS BOTH WAYS FOR TOP SLAB. AN ADDITIONAL #6 BAR SHALL BE PLACED IN THE FRONT EDGE OF THE TOP SLAB IN THE INLETS AND ADDITIONAL REINFORCING STEEL SHALL BE PLACED AROUND MANHOLES AS SHOWN.
2. ALL REINFORCING STEEL SHALL BE GRADE 60.
3. ALL CONCRETE STRUCTURES SHALL BE CLASS F (4200psi, MIN. 7.0 SACK CEMENT). ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
4. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 2" TO THE CENTERS OF THE BARS.
5. 10'-0" OF EXISTING CURB AND GUTTER UPSTREAM AND 10'-0" OF EXISTING CURB AND GUTTER DOWNSTREAM SHALL BE REMOVED AND REPOURED INTEGRALLY WITH EACH INLET.
6. ALL BACK FILLING SHALL BE PERFORMED BY MECHANICAL TAMPING TO 95% STANDARD PROCTOR DENSITY.
7. NO FLY ASH IS ALLOWED IN CONCRETE STRUCTURES.

CURB INLET RECESSED

GENERAL NOTES

CITY OF ROCKWALL

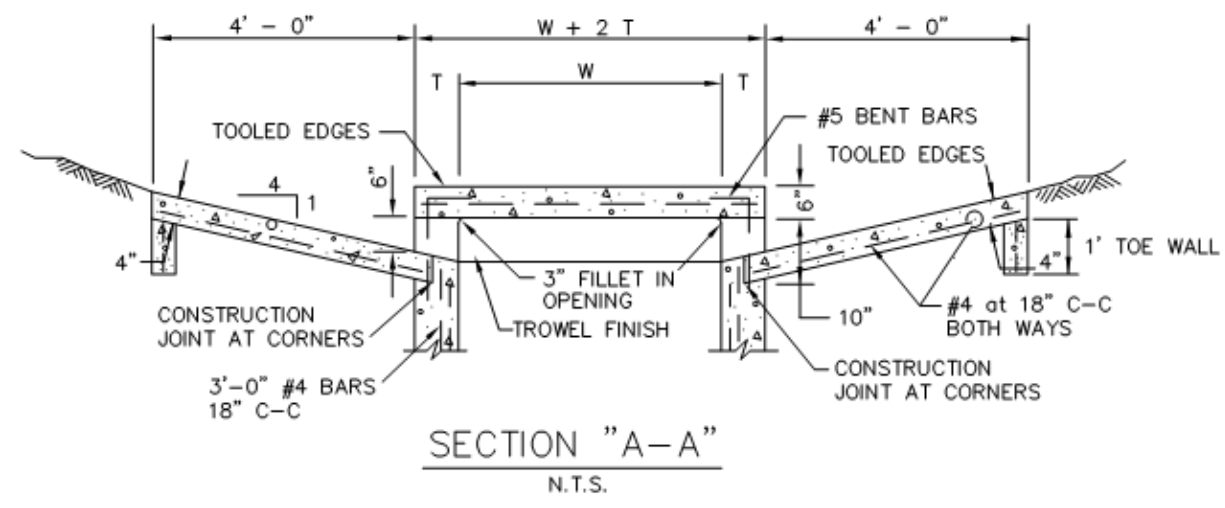


STANDARD SPECIFICATION REFERENCE
702

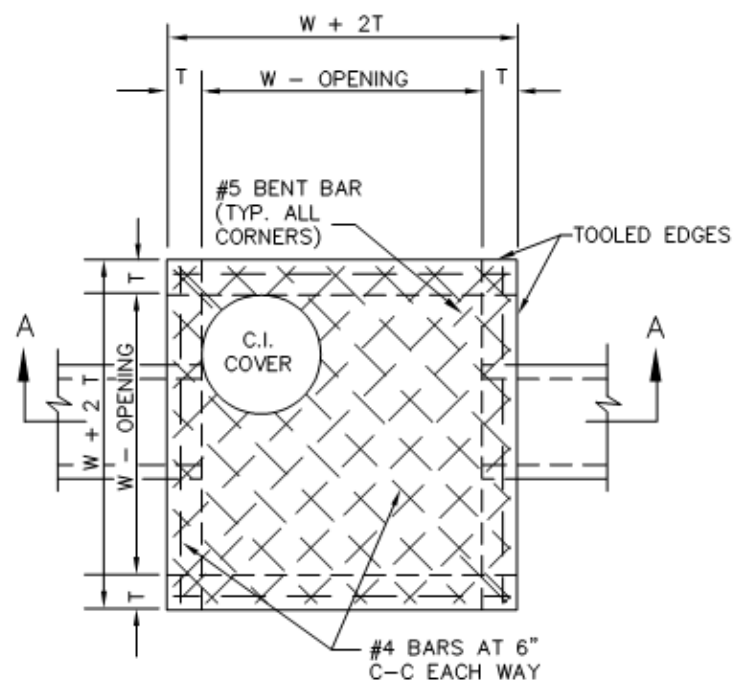
DATE
Mar. 2018

STANDARD DRAWING NO.
R-6030D

STANDARD DRAWING NO.
R-6030D



SECTION "A-A"
N.T.S.



PLAN OF TOP SLAB
N.T.S.

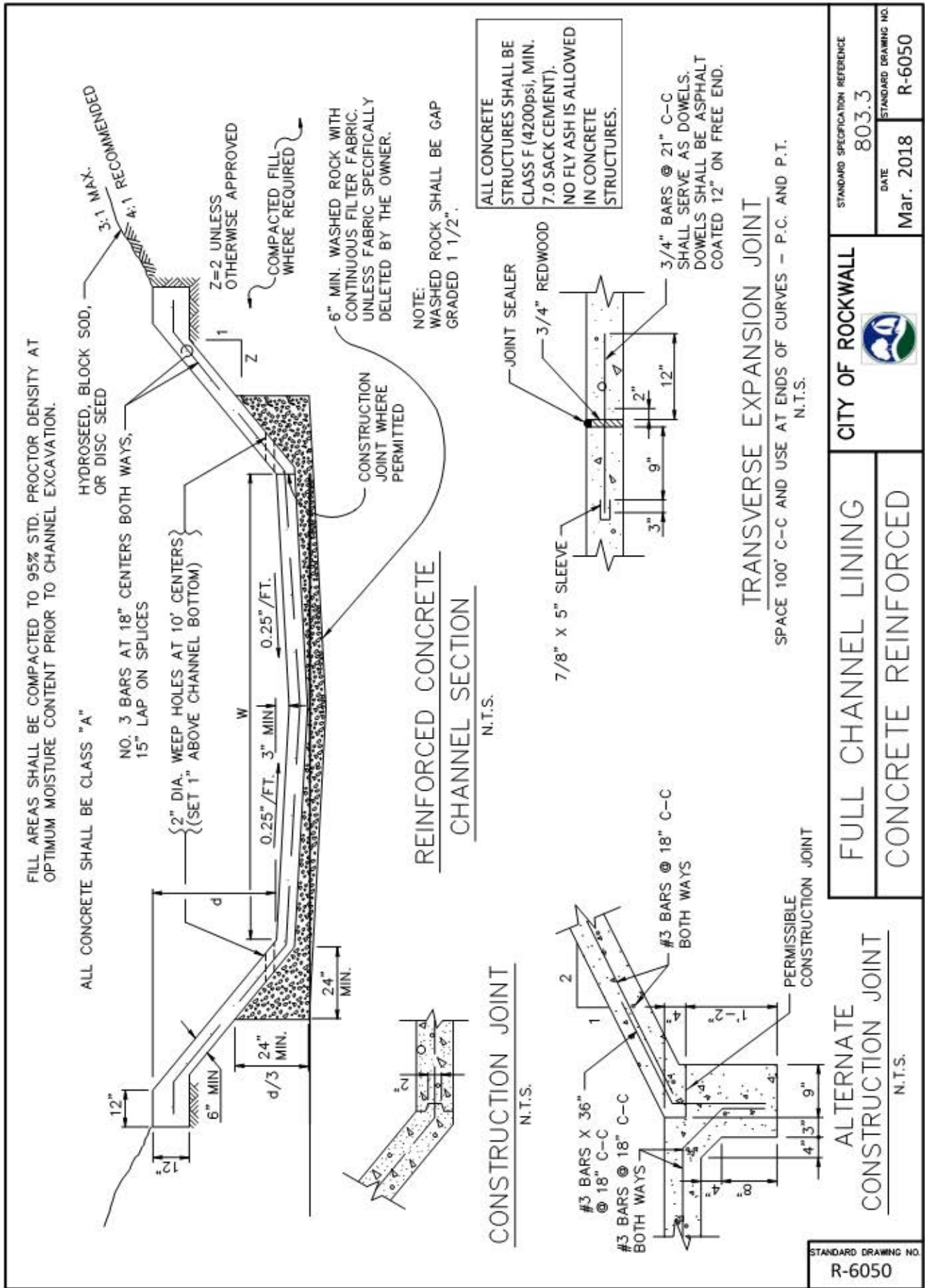
ALL CONCRETE STRUCTURES SHALL BE CLASS F (4200psi, MIN. 7.0 SACK CEMENT). NO FLY ASH IS ALLOWED IN CONCRETE STRUCTURES. NO EARTH WALL FORMS, DOUBLE WALL FORMS TO BE USED.

INLET SIZE	T	W
2' SQUARE	7"	2'-0"
4' SQUARE	7"	4'-0"
5' SQUARE	8"	5'-0"
6' SQUARE	9"	6'-0"

NOTES:

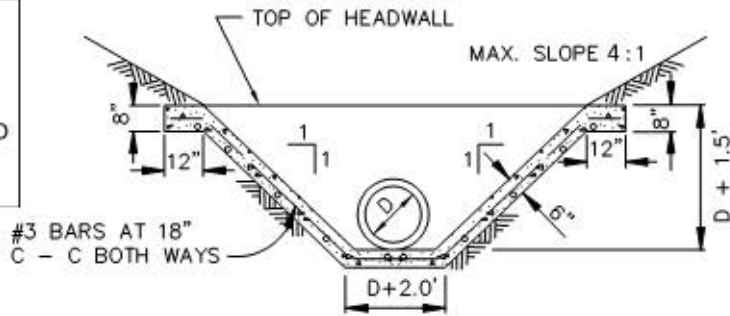
1. MATERIAL AND WORKMANSHIP SHALL CONFORM WITH THE REQUIREMENTS OF NCTCOG STANDARD SPECIFICATIONS FOR STANDARD CONCRETE MANHOLES. MINIMUM CLASS "A" CONCRETE.
2. LAYERS OF REINFORCING STEEL NEAREST THE INTERIOR AND EXTERIOR SURFACES SHALL HAVE A COVER OF 2" TO THE CENTER OF BARS, UNLESS OTHERWISE NOTED.
3. FOR DETAILS OF REINFORCING OF LOWER PORTIONS OF INLET SEE APPROPRIATE SQUARE MANHOLE DETAILS.
4. DEPTH OF DROP INLET FROM FINISHED GRADE TO FLOW LINE OF INLET IS VARIABLE. APPROXIMATE DEPTH WILL BE SHOWN ON PLANS AT LOCATION OF INLET.
5. ALL STANDARD DROP INLETS SHALL HAVE ONE OPENING ON EACH SIDE UNLESS OTHERWISE SHOWN ON PLANS.
6. DECK MAY BE REINFORCED SAME AS 4' SQUARE MANHOLE.

DROP INLET	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 702
2', 4', 5' OR 6' SQUARE		DATE Mar. 2018 STANDARD DRAWING NO. R-6040

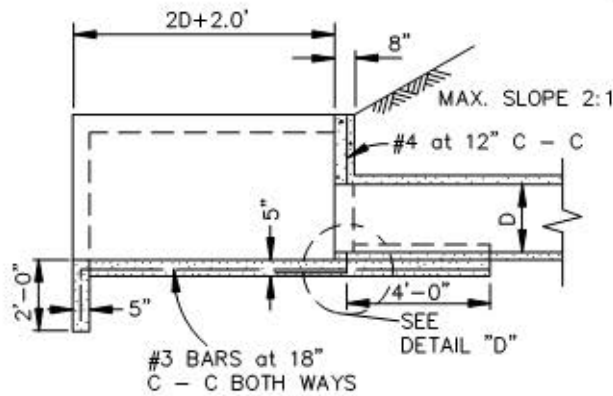




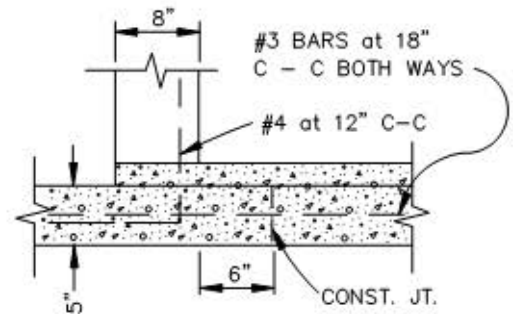
ALL CONCRETE STRUCTURES SHALL BE CLASS F (4200psi, MIN. 7.0 SACK CEMENT). NO FLY ASH IS ALLOWED IN CONCRETE STRUCTURES.



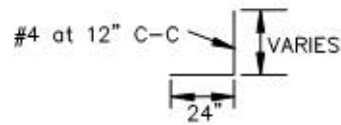
SECTION "B-B"
N.T.S.



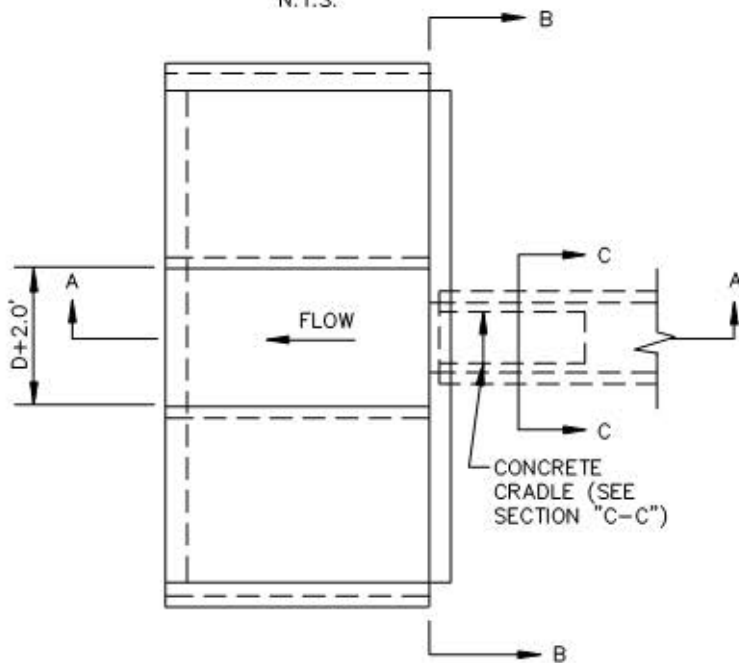
SECTION "A-A"
N.T.S.



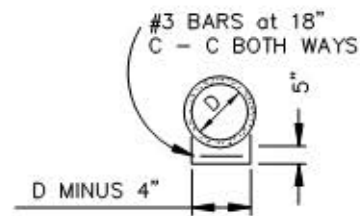
DETAIL "D"
N.T.S.



BAR DETAIL
N.T.S.



PLAN
N.T.S.



SECTION "C-C"
N.T.S.

NOTE:
CONCRETE SHALL BE CLASS "A"

CONCRETE APRON
VERTICAL HEADWALL

CITY OF ROCKWALL



STANDARD SPECIFICATION REFERENCE

803.3

DATE

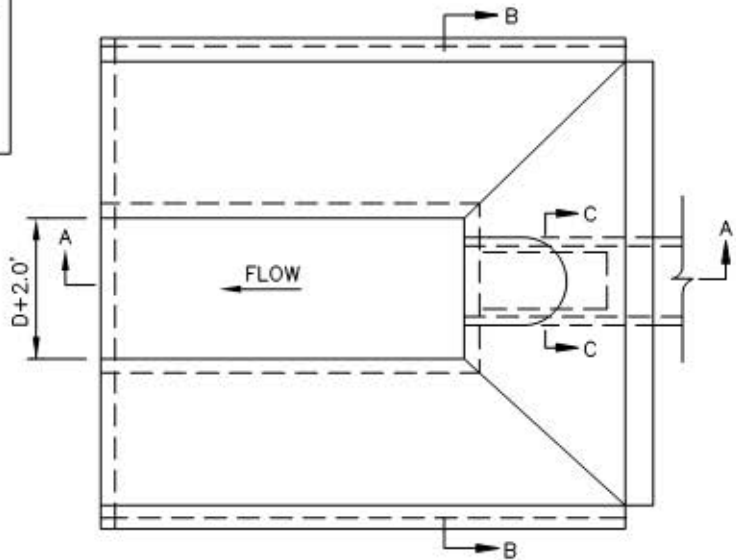
Mar. 2018

STANDARD DRAWING NO.

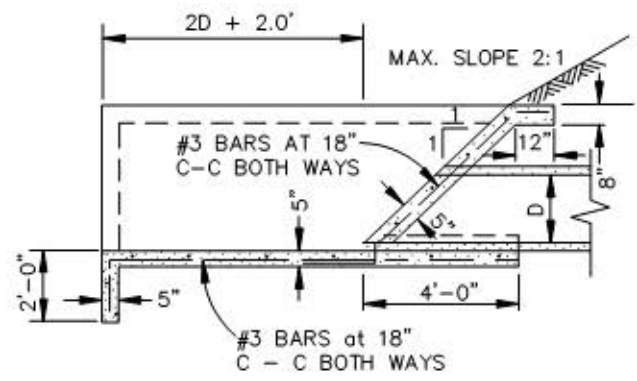
R-6060



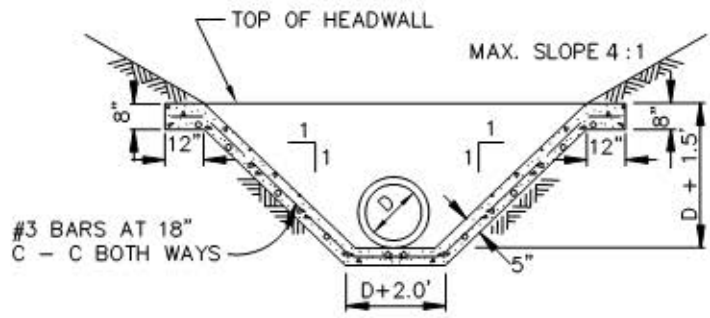
ALL CONCRETE STRUCTURES SHALL BE CLASS F (4200psi, MIN. 7.0 SACK CEMENT). NO FLY ASH IS ALLOWED IN CONCRETE STRUCTURES.



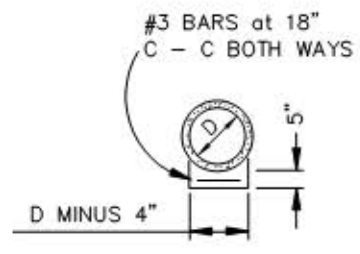
PLAN
N.T.S.



SECTION A-A
N.T.S.



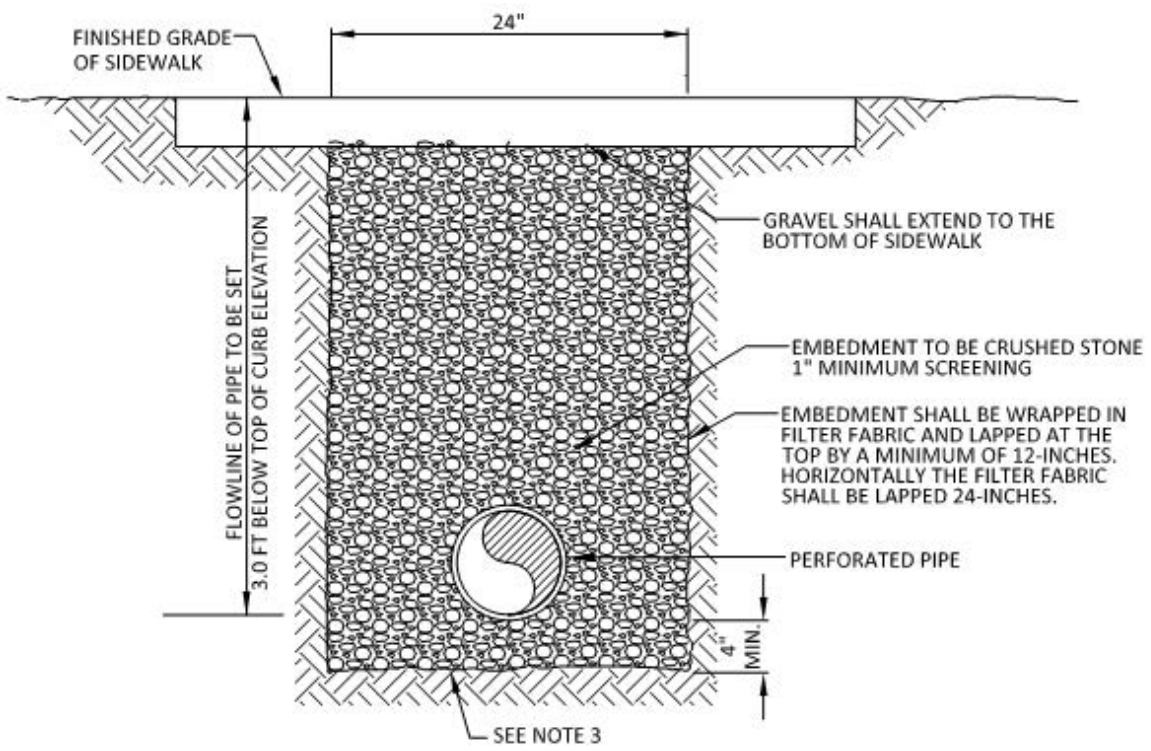
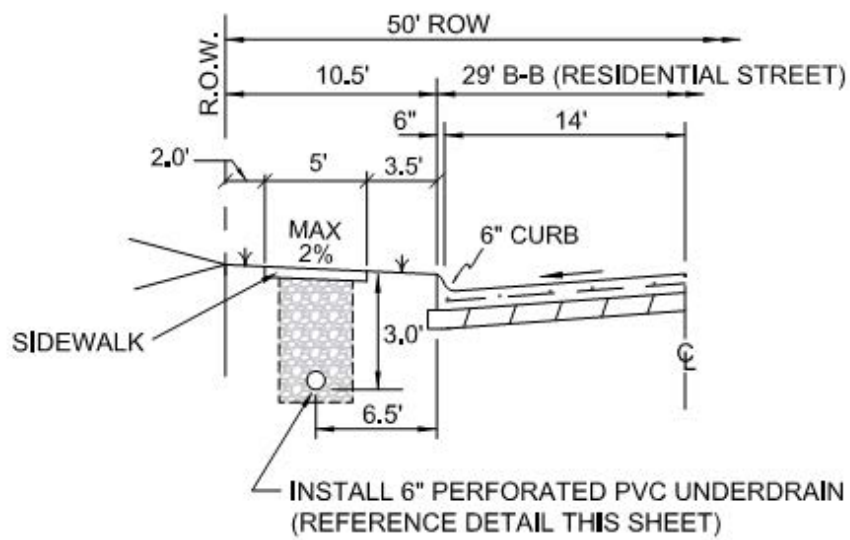
SECTION B-B
N.T.S.



SECTION C-C
N.T.S.


NOTE:
CONCRETE SHALL BE CLASS "A".

CONCRETE APRON SLOPING HEADWALL	CITY OF ROCKWALL 	STANDARD SPECIFICATION REFERENCE 803.3
		DATE Mar. 2018



NOTES:

1. THE UNDER DRAIN/FRENCH DRAIN SYSTEM SHALL BE PVC 6" DIAMETER TYPE PS-46 PVC PIPE OR APPROVED EQUAL. THE PIPE SHALL MEET ALL CURRENT ASTM F758 REQUIREMENTS AND SHALL HAVE GASKET TYPE JOINTS. THE PERFORATED AND CONDUCTING PIPES SHALL BE WHITE IN COLOR.
2. CLEANOUTS SHALL BE INSTALLED AT LOCATIONS AS CALLED OUT IN THE TABLE PROVIDED. CLEANOUTS SHALL BE A 6"X6" WYE WITH BASS & HAYS 339 CLEANOUT BOOT AND 399 UNDERDRAIN LID.
3. PLACE A SINGLE LAYER OF FILTER FABRIC WITH A LAP OVER THE PVC PIPE, BETWEEN THE EMBEDMENT AND INITIAL BACKFILL MATERIAL. THE FILTER FABRIC SHALL BE A NON-WOVEN INERT MATERIAL GREATER THAN OR EQUAL TO "MIRAFI 140N" AS MANUFACTURED BY THE MIRAFI GEOTEXTILE FABRICS COMPANY.

UNDERDRAIN/FRENCH DRAIN DETAIL	CITY OF ROCKWALL		
UNDER SIDEWALK – RESIDENTIAL STREET		DATE MAR. 2021	DRAWING NO. R-6080

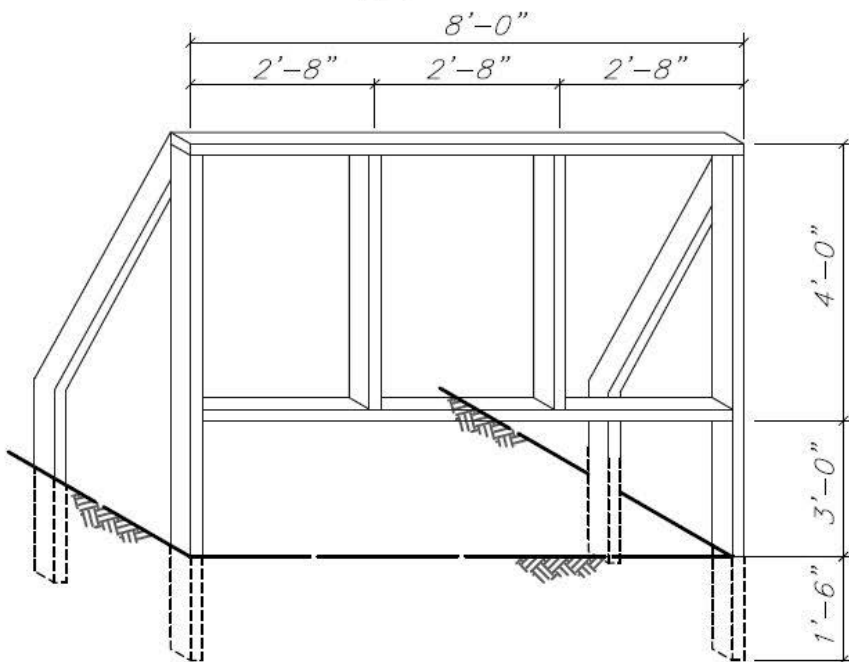
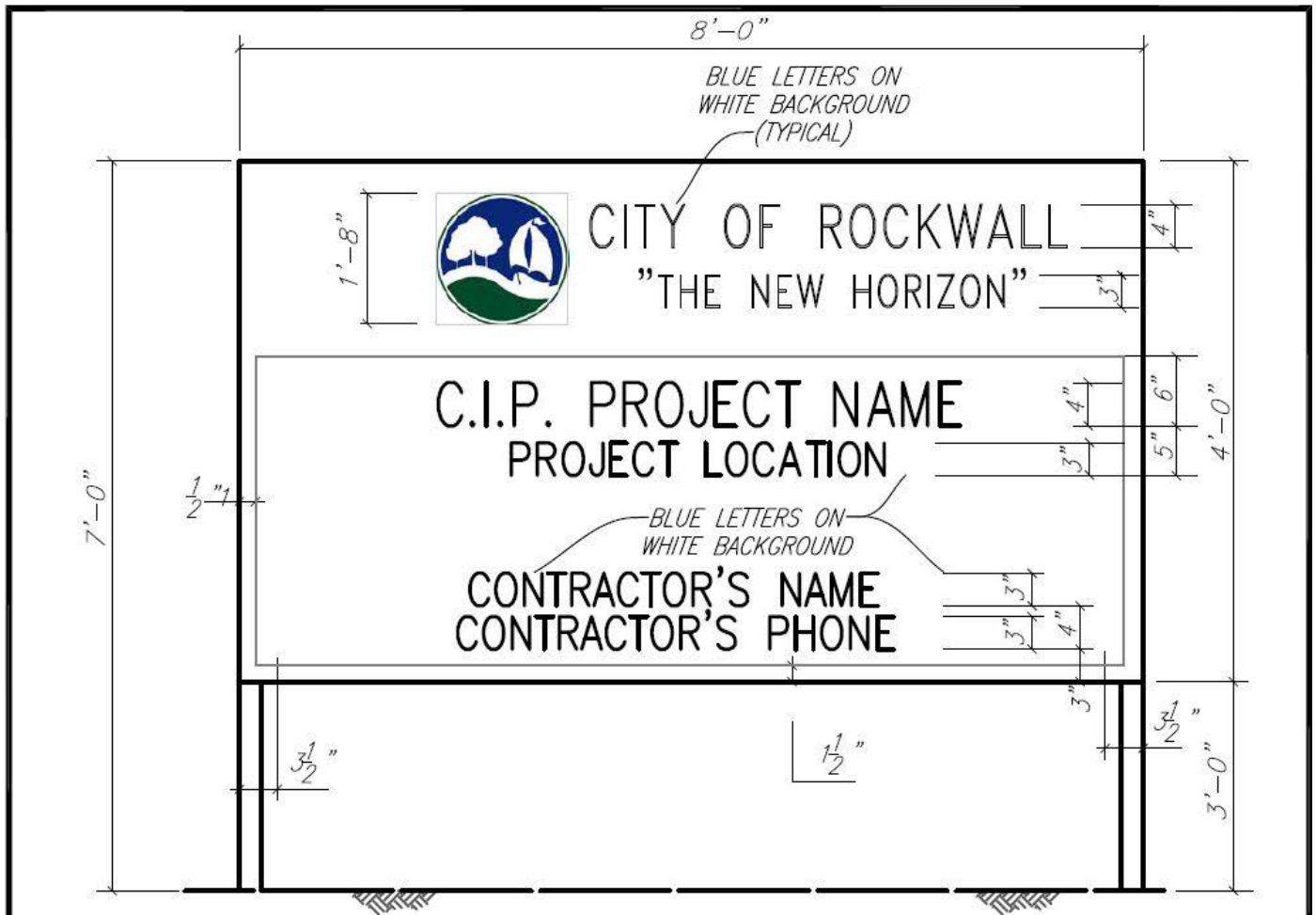


SECTION 8.07 | DIVISION 7000. ROCKWALL MISCELLANEOUS DETAILS

This Division 7000 is to be added to the NCTCOG's Standard Drawings for Public Works Construction Standards. Division 7000 contains miscellaneous standard details added by the City. The following Table 8.7 contains a list of the miscellaneous standards being added.

TABLE 8.7: DIVISION 7000. ROCKWALL MISCELLANEOUS DETAILS

DRAWING NO.	DESCRIPTION
R-7010	MISCELLANEOUS DETAILS – CONSTRUCTION SIGN DETAIL
R-7020	MISCELLANEOUS DETAILS – RESIDENTIAL LOT TYPICAL WALL & SWALE DETAIL




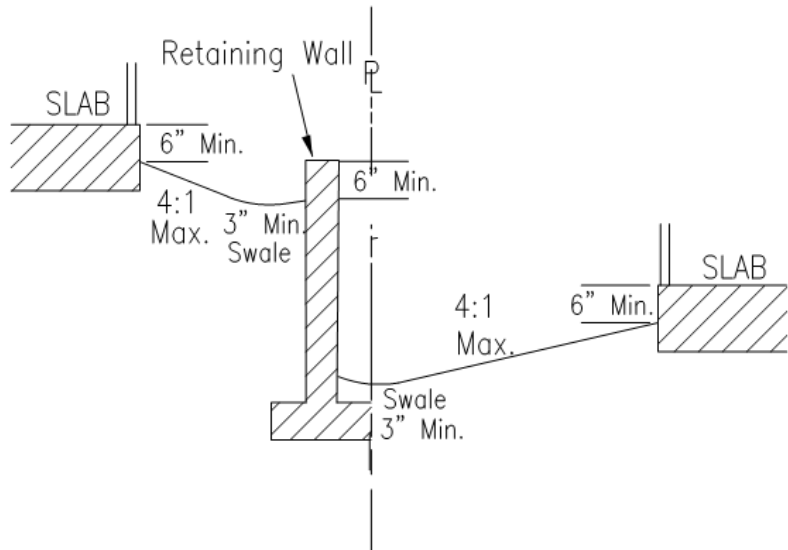
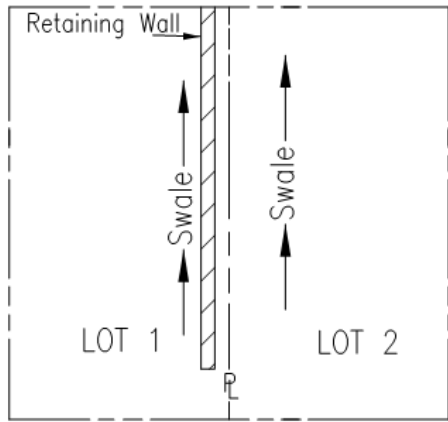
SIGN PANEL 3/4" EXTERIOR PLYWOOD
PAINT AS SHOWN ON DETAIL ABOVE

FRAME 2"x4" STOCK FRAME TO BE
PAINTED WHITE

ALL PAINT TO BE "EXTERIOR GRADE"

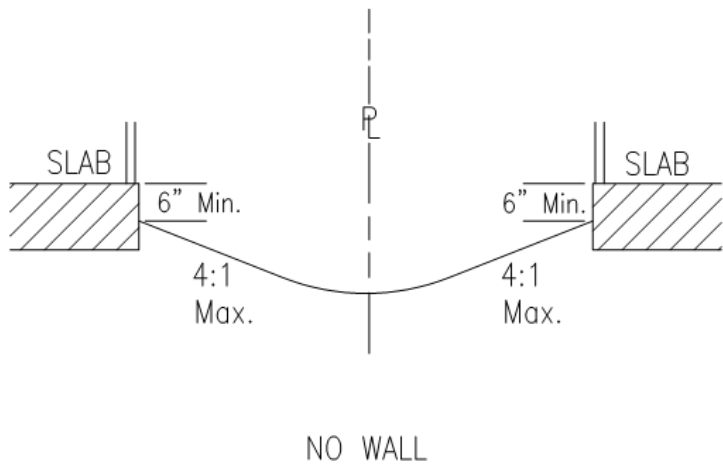
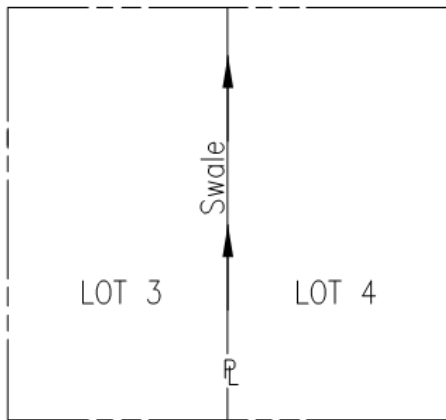
SIGN FRAME ELEVATION

MISCELLANEOUS DETAILS	CITY OF ROCKWALL		
CONSTRUCTION SIGN DETAIL		DATE AUG. '15	DRAWING NO. R-7010



NOTE:

No Retaining Walls including the footing shall be placed in the right-of-way, easements, or overlapping property lines.



MISCELLANEOUS DETAILS

CITY OF ROCKWALL

RESIDENTIAL LOT
TYPICAL WALL & SWALE DETAIL



DATE AUG. '22	DRAWING NO. R-7020
------------------	-----------------------



APPENDIX A | ENGINEERING PLAN REVIEW CHECKLIST



ENGINEERING STANDARDS OF DESIGN AND CONSTRUCTION MANUAL | ENGINEERING PLAN REVIEW CHECKLIST

ADMINISTRATIVE ITEMS

NOTES: = COMPLETE | = DEFICIENT | = N/A

- ENGINEERING PLAN SUBMISSION APPLICATION WITH SUBMITTAL CHECKLIST
- ENGINEERING-PLAN REVIEW CHECKLIST
- FOUR COMPLETE COPIES OF ENGINEERING PLANS INITIAL SUBMITTAL; THREE COMPLETE COPIES OF ENGINEERING PLANS RE-SUBMITTAL; TWO ADDITIONAL SETS EACH SUBMITTAL IS PROPOSED LIFT STATION.
- MARKUPS FROM PREVIOUS SUBMITTALS, IF SUBSEQUENT SUBMITTAL
- ANNOTATED REVIEW COMMENTS, IF APPLICABLE
- TWO COPIES OF ANY STUDY OR REPORT COMPLETED IN SUPPORT OF THE PROJECT
- SUBMISSION OF REQUIRED FIRE FLOWS FORM TO FIRE MARSHAL
- SUBMISSION OF FIRE HYDRANT FLOW FORM TO FIRE MARSHAL
- FLOODPLAIN ADMINISTRATOR DEVELOPMENT PERMIT APPLICATION
- STORM DRAINAGE MANAGEMENT PLAN
- TXDOT PRELIMINARY LETTER OF APPROVAL FOR DRIVE APPROACH CONNECTIONS
- TXDOT PERMITS OBTAINED
- FRANCHISED UTILITY APPROVAL OBTAINED (SPECIFY)
- OTHER AGENCY OR LAND OWNER APPROVAL OBTAINED (SPECIFY)
- CORPS OF ENGINEERS (COE) WETLAND PERMIT OBTAINED (IF APPLICABLE) OR LETTER OF DETERMINATION
- FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) LETTER OF MAP REVISION (LOMR)
- OTHER AGREEMENTS (EXPLAIN)

STUDIES (IF REQUIRED)

NOTES: = COMPLETE | = DEFICIENT | = N/A

- GEOTECHNICAL REPORT
- FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) LETTER OF MAP REVISION (LOMR) FLOOD STUDY
- WETLAND AND WATER OF U.S. DETERMINATION
- LIFT STATION REPORT
- HYDRAULIC STUDY SUBMITTED
- WATER STUDY SUBMITTED
- SANITARY SEWER CAPACITY STUDY SUBMITTED
- TRAFFIC IMPACT ANALYSIS
- FLOOD STUDY (100 YEAR-FULLY DEVELOPED) (LOCAL OR FEMA)
- SIGHT VISIBILITY DETERMINATION FOR EASEMENTS

ALL SHEETS

NOTES: = COMPLETE | = DEFICIENT | = N/A

- SHEET SIZE 24" X 36"
- TITLE BLOCK WITH SUBDIVISION NAME, PROJECT NAME AND SHEET DESCRIPTION
- REVISION BLOCK - FILLED OUT
- NORTH ARROW
- VERTICAL AND HORIZONTAL SCALE LISTED AND ACCURATE



- BENCHMARKS LISTED AND DESCRIBED
- LEGEND OF ALL DRAWING SYMBOLS AND LINE TYPES USED
- ENGINEER'S SEAL, SIGNATURE AND DATE PER TEXAS ENGINEERING PRACTICES ACT
- RESPONSIBILITY NOTE REQUIRED ON ALL SHEETS EXCEPT SITE PLAN AND STANDARD DETAILS:
"ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN."
- PROVIDE KEY MAP FOR LARGE PROJECTS SHOWING SHEET LOCATIONS
- CLEAR DRAFTING WITH PROPER LINE WEIGHTS FOR EASE OF READING
- NO OVERLAPPING TEXT
- DRAFTING AT ADEQUATE SCALE TO OBTAIN EASE OF READING AND SCANNING

COVER SHEET

NOTES: = COMPLETE | = DEFICIENT | = N/A

- PROJECT NAME
- OFFICIAL PLAT NAME AS ASSIGNED BY THE PLANNING AND ZONING DEPARTMENT (INCLUDING BLOCK & LOT)
- OFFICIAL PROJECT ADDRESS ASSIGNED BY THE CITY PLANNING AND ZONING DEPARTMENT
- MAPSCO GRID REFERENCE
- MONTH AND YEAR OF PROBABLE START OF PROJECT CONSTRUCTION (UPDATED WITH EACH SUBMITTAL)
- REVISION TABLE
- ENGINEER CONTACT INFORMATION (NAME, ADDRESS, PHONE NUMBER, EMAIL ADDRESS)
- OWNER CONTACT INFORMATION (NAME, ADDRESS, PHONE NUMBER, EMAIL ADDRESS)
- SHEET INDEX - LIST ALL SHEETS INCLUDED IN PLAN SET INCLUDING DETAILS
- LOCATION MAP WITH NORTH ARROW
- SIDE BAR - PLAT SUBDIVISION NAME & PROJECT NAME
- TITLE OF TYPE OF SHEET (I.E. GRADING, UTILITY, WATER...)

APPROVED SITE PLAN

NOTES: = COMPLETE | = DEFICIENT | = N/A

- APPROVED SITE PLAN

APPROVED LANDSCAPE/TREESCAPE PLAN

NOTES: = COMPLETE | = DEFICIENT | = N/A

- APPROVED LANDSCAPE AND TREESCAPE PLAN

PROPOSED FINAL PLAT

NOTES: = COMPLETE | = DEFICIENT | = N/A

- PLAT INCLUDED
- CORRECT PLAT NAME
- PLAT CLOSURE CALCULATIONS (SEALED BY REGISTERED SURVEYOR OR ENGINEER)
- GPS GRID COORDINATES SHOWN FOR THE PROPERTY CORNERS PROPERLY INTO CITY MONUMENTATION SYSTEM (X, Y COORDINATES ON 2 PROPERTY CORNERS)
- LOCATION MAP
- STREET NAMES WITH RIGHTS-OF-WAY WIDTHS IDENTIFIED
- BENCHMARK (IF NEAR DRAINAGE FEATURE OR FLOOD ZONE)
- BASIS OF BEARING



- METES AND BOUNDS OF TRACT
- ADJACENT LAND OWNERSHIP INFORMATION
- LIST CORNERS FOUND OR SET
- PROPERTY PINS SHOWN FOR TRACTS ACROSS ROW WITH VERIFICATION OF EXISTING ROW WIDTHS
- BUILDING SETBACK LINES SHOWN
- RECORDING VOLUME AND PAGE INFORMATION FOR ALL SEPARATE EASEMENTS AND ROW DEDICATIONS WITHIN PLATTED AREA OR ADJACENT TRACTS
- 100-YEAR FLOODPLAIN FOR FULLY DEVELOPED CONDITIONS SHOWING CROSS SECTIONS AND ELEVATIONS AND WETLAND AND WATER OF U.S. DELINIATION
- MINIMUM FINISHED FLOOR ELEVATIONS SHOWN (IF NEAR DRAINAGE FEATURE OR FLOOD ZONE)
- DRAINAGE & DRAINAGE MAINTENANCE EASEMENTS SHOWN AND ANNOTATED
- REQUIRED UTILITY EASEMENTS SHOWN (20' MINIMUM WIDTH) AND ANNOTATED
- ACCESS EASEMENTS SHOWN AND ANNOTATED
- ROW. DEDICATION SHOWN AND ANNOTATED
- ROW CORNER CLIPS AND ANNOTATED
- ALL EXISTING EASEMENTS (ON-SITE) SHOWN AND ANNOTATED
- VISIBILITY EASEMENTS SHOWN AND ANNOTATED
- SURVEYOR SEAL, SIGNATURE AND DATE

DEMOLITION PLAN

NOTES: = COMPLETE | = DEFICIENT | = N/A

- ALL EXISTING TOPOGRAPHIC FEATURES INCLUDING BUT NOT LIMITED TO: PAVEMENT, CURBS SIDEWALKS, BARRIER-FREE-RAMPS, LIGHT POLES, DRIVEWAYS, STORM SEWER INLETS, MANHOLES, JUNCTION BOXES HEADWALLS RETAINING WALLS, FENCES, MAILBOXES LANDSCAPE PLANTERS, TREES, ETC.
- ALL WET UTILITIES (WATER LINES, WASTEWATER LINES AND STORM SEWER) INCLUDING SIZES
- ALL FRANCHISE UTILITIES (ELECTRIC, CABLE, COMMUNICATIONS, GAS, ETC.)
- PAVEMENT REMOVALS WITH FULL DEPTH PAVEMENT SAWCUT LOCATIONS
- WATER LINE, WASTEWATER LINE AND STORM SEWER REMOVALS

DIMENSIONAL CONTROL & PAVING PLAN

NOTES: = COMPLETE | = DEFICIENT | = N/A

- LOT BOUNDARY WITH DIMENSIONS AND BEARINGS
- STREET NAMES SHOWN
- EXISTING ROW
- ROW. DEDICATION AND ROW CORNER CLIPS SHOWN WITH DIMENSIONS
- VERIFICATION OF PUBLIC RIGHTS-OF-WAY WIDTH ("VARIABLE WIDTH" IS NOT ACCEPTABLE) (WHEN REQUIRED)
- VISIBILITY EASEMENTS SHOWN AS REQUIRED BY CITY CODE
- BUILDING SETBACK LINES SHOWN
- DIMENSIONS (THICKNESS, WIDTH, LENGTH, RADIUS) FOR ALL PAVED AREAS (PARKING AREAS, DRIVEWAYS, FIRE LANES, TURN LANES, DRIVE AISLES, SIDEWALKS, ETC)
- DRIVEWAYS LOCATION, SPACING AND WIDTH MEET CITY CODE AND TXDOT REQUIREMENTS
- DRIVEWAYS- WIDTH, RADIUS, DISTANCE TO ADJACENT DRIVES, ALIGNMENT WITH OTHER DRIVES ACROSS STREET SHOWN
- FIRE LANE - WIDTH, RADIUS & DISTANCE FROM BUILDING SHOWN AND DETAILED INCLUDING TURN-AROUNDS AND DEAD-ENDS
- ALL PAVEMENT THICKNESS, CONCRETE STRENGTH, REINFORCING, SUBGRADE DETAILED PER CITY REQUIREMENTS
- LOCATION OF FIRE SPRINKLER FIRE DEPARTMENT CONNECTION (FDC) SHOWN
- LOCATION OF ELECTRICAL TRANSFORMERS SHOWN



- DUMPSTER LOCATION, ACCESS AND CONSTRUCTION REQUIREMENTS MET AND APPROVED BY PLANNING AND ZONING DEPARTMENT (BACKING DISTANCE AND MANEUVER - ACCESSIBLE BY SU-30 TURNING TEMPLATE)
- ALL EXISTING AND PROPOSED UTILITY AND DRAINAGE EASEMENTS SHOWN
- EXISTING AND REQUIRED ACCESS EASEMENTS SHOWN
- SCREENING WALL LOCATION, FOUNDATION, HEIGHT, START/END OF WALL
- RETAINING WALL LOCATION, FOUNDATION, HEIGHT, START/END OF WALL
- EXISTING AND REQUIRED SIDEWALKS AND TRAILS SHOWN WITH DIMENSIONS
- SHOW LOCATION OF REQUIRED ADA RAMPS
- LIMITS OF 100-YEAR ULTIMATE FLOOD PLAIN SHOWN (FEMA AND LOCAL) AND WETLAND AND WATER OF U.S. DELINIATION
- NOTE IDENTIFYING REFERENCE FOR 100-YEAR FLOODPLAIN AND WSE INFORMATION WITH CROSS SECTION WITH ELEVATIONS
- NEW/RELOCATING LEFT TURN LANE AND/OR DECELERATION LANES COMPLIES WITH CITY AND TXDOT REQUIREMENTS (SPACING, LENGTH, CONSTRUCTION)
- EXISTING AND PROPOSED INFRASTRUCTURE WITHIN MEDIAN MODIFICATIONS SHOWN (TREES, STREET LIGHTS, CONDUIT, IRRIGATION, PAVERS, ETC)
- STREET LIGHTING AND STREET SIGN PLAN

ROADWAY PAVING PLAN AND PROFILE

NOTES: = COMPLETE | = DEFICIENT | = N/A

- STREET NAME AND CROSS STREET NAMES
- BLOCK, LOT, AND ADDRESS LABELS
- ALL EXISTING AND PROPOSED EASEMENTS
- DIMENSIONS LABELS OF ROADWAY WIDTH, ROW WIDTH, SIDEWALK WIDTHS, CURB RETURN RADIUS, ETC.
- SHOW AND LABEL ALL STORM SEWER INLETS WITH ROADWAY STATIONING
- LEGEND SHOWING TYPE OF PAVEMENTS, THICKNESS, STRENGTH, REINFORCING, ETC.
- ROADWAY CENTERLINE STATIONING EVERY 100 FT, AL LABELS FOR ALL START, PC, PT, PI, PRC, ETC.
- DRIVEWAY CENTERLINE STATIONING LOCATION OFF ROADWAY
- LABEL CROSS-SLOPE (AT CROSS-SLOPE TRANSITIONS THE CROSS-SLOPE SHALL BE LABELED EVERY 25 FT AND AT CRITICAL DESIGN POINTS)
- SHOW AND LABEL PROPOSED PROFILE STATION AND ELEVATION (ALL SLOPES, VPI, PI, VERTICAL CURVES, LP, HP, K, E, PC, PT, VPRC, ETC.)
- SHOW AND LABEL EXISTING GROUND CENTERLINE, LEFT ROW, RIGHT ROW, AND ANY OTHER CRITICAL PROFILES
- SHOW IN PROFILE A MAJOR UTILITY CROSSING (CULVERTS, WATER/WASTEWATER TRANSMISSION LINES, GAS TRANSMISSION LINES, ELECTRIC AND COMMUNICATION DUCT BANKS)
- EXISTING AND PROPOSED GROUND LINES ELEVATION IN PROFILE EVERY 50 FT
- 100-YEAR FLOODPLAIN LINE AND WSEL

CROSS-SECTIONS

NOTES: = COMPLETE | = DEFICIENT | = N/A

- CROSS SECTIONS SHALL BE PROVIDED FOR ALL ARTERIAL AND COLLECTOR ROADWAYS
- CROSS-SECTIONS SHALL BE TAKEN EVERY 50 FEET, DRIVEWAY CENTERLINE, INTERSECTING STREETS, AND OTHER CRITICAL POINTS OR FEATURES.
- INCLUDE EXISTING AND PROPOSED ROW LINES
- EXISTING GROUND LINE
- PROPOSED PAVEMENT THICKNESS, AND SUBGRADE DEPTHS, AND SIDEWALKS
- PROPOSED SLOPES
- CROSS-SECTIONS AT DRIVEWAYS SHALL HAVE ALL SLOPE AND VC LABELED



GRADING PLAN

NOTES: = COMPLETE | = DEFICIENT | = N/A

- BENCHMARKS
- EXIST LOT LINES & CORNERS (LOT LINES SCREENED IF BEING CHANGED)
- PROPOSED LOT LINES
- EXISTING (SCREENED) & PROPOSED ROW
- STREET NAMES SHOWN
- DRAINAGE EASEMENTS FOR DRAINAGE FEATURES AND STRUCTURES SHOWN
- EXISTING & PROPOSED IMPROVEMENTS (PAVING AND BUILDING FOOTPRINTS)
- MINIMUM FINISHED FLOOR (FF) ELEVATIONS FOR STRUCTURES MEET REQUIREMENTS OF DRAINAGE ORDINANCE
- MINIMUM FINISHED FLOOR (FF) ELEVATION SHOWN FOR EACH STRUCTURE
- EXISTING & PROPOSED CONTOURS FOR SITE AND MINIMUM OF 50' BEYOND PROPERTY LINES (WITH APPROPRIATE CONTOUR INTERVAL) WITH ALL PONDS AND WATERWAYS LABELED
- EXISTING & PROPOSED SPOT ELEV. SHOWING GRADE; HIGH & LOW POINTS; SWALES, INVERTS & RIDGES WITH FLOW ARROWS
- LABEL LOT AREA AND DISTURBED LAND AREA
- ADJACENT PROPERTY IMPROVEMENTS WITHIN MINIMUM 25' OF SITE
- EXISTING & PROPOSED ON-SITE AND OFF-SITE DRAINAGE FEATURES (DESIGN INFO SHOWN)
- MAXIMUM CROSS SLOPE 4H:1V (H=HORIZONTAL, V=VERTICAL) MIN RUNNING SLOPE 1% FOR UNPAVED AREAS
- DITCHES ADJACENT TO SITE CLEARED, CLEANED & REGRADED (ONLY WITH PERMISSION FROM PROPERTY OWNER)
- POSITIVE OVERFLOW ROUTES WITH ELEVATIONS (ALL PUBLIC ROADS THAT HAVE A SAG REQUIRE AN OVERFLOW ROUTE)
- LOT GRADING TO BE ABOVE STREET ELEVATION (RESIDENTIAL ONLY)
- LIMITS OF EXISING AND PROPOSED 100-YEAR ULTIMATE FLOODPLAIN SHOWN AND WETLAND AND WATER OF U.S. DELINIATION
- ULTIMATE (FULLY DEVELOPED) 100-YEAR FLOODPLAIN WATER SURFACE ELEVATIONS (WSE'S) SHOWN ON CROSS SECTIONS
- NOTE IDENTIFYING REFERENCE FOR 100-YEAR FLOODPLAIN AND WSE AND WETLAND AND WATER OF U.S. DELINIATION INFORMATION
- CROSS SECTIONS TO SCALE WITH HYDRAULIC CALCULATIONS
- LOCATION OF CROSS-SECTIONS WITH STATIONING SHOWN
- CUT OR FILL AREAS SHOWN ON CROSS-SECTIONS
- EXISTING AND PROPOSED RETAINING WALLS WITH TOP & BOTTOM SPOT ELEVATIONS AND CALCULATIONS AS REQUIRED
- NO RESIDENTIAL CROSS LOT DRAINAGE
- GRADING PLAN MATCHES DRAINAGE AREA MAP
- DOES GRADING PLAN ADDRESS IMPACTS TO ADJACENT PROPERTIES REQUIRING EASEMENTS OR LETTERS OF PERMISSION
- ALL DETENTION AREAS WITH FLUMES WITH ELEVATIONS AND SIDE SLOPES LABELED

RETAINING WALL PLAN AND PROFILES

NOTES: = COMPLETE | = DEFICIENT | = N/A

- LABEL BEGINNING AND ENDING OF WALL
- LABEL TOP OF WALL, BOTTOM OF WALL, BOTTOM OF FOOTING
- RAILING TYPE AND LIMITS
- DETAILED STRUCTURAL SECTIONS FOR EACH DIFFERING SECTION TYPE
- FLUME LOCATIONS SHOWN IN PLAN AND SECTIONS (NO WATER ALLOWED TO OVERTOP RETAINING WALLS)
- SHOW LOCATIONS OF ALL WATER, SANITARY SEWER, STORM SEWER, FRANCHISE UTILITY CROSSINGS IN PLAN
- SHOW LOCATIONS OF ALL WATER, SANITARY SEWER, STORM SEWER, FRANCHISE UTILITY CROSSINGS IN PROFILE ALONG WITH ELEVATIONS



- PROFILE EXISTING NATURAL GROUND LINE, PROPOSED GROUND LINE AT BOTTOM AND TOP OF WALL

DRAINAGE AREA MAP

NOTES: = COMPLETE | = DEFICIENT | = N/A

- EXISTING DRAINAGE AREA MAP (PRE-PROJECT CONDITIONS), PROPOSED DRAINAGE AREA MAP (CURRENT PROPOSED PHASE OF DEVELOPMENT CONDITIONS) AND ULTIMATE DRAINAGE AREA MAP (BUILT-OUT CONDITIONS OF DEVELOPMENT)
- STORM DRAINAGE ANALYSIS AND DESIGN SHALL COMPLY WITH THE DRAINAGE ORDINANCE AND THE FLOOD HAZARD DAMAGE PREVENTION AND CONTROL ORDINANCE.
- EXISTING AND PROPOSED DRAINAGE SYSTEM AND STRUCTURES SHOWN (PIPE, INLETS, ETC)
- CURRENT ZONING OR ANTICIPATED ULTIMATE DEVELOPMENT SHOWN AND CORRECT FOR OFF-SITE AREAS
- ENSURE SITE DRAINAGE IS COLLECTED ON SITE
- DESIGN FOR AN ULTIMATE (FULLY DEVELOPED) 100 YEAR STORM EVENT
- DESIGN SHOWING ELEVATION CONTOURS FOR THE ENTIRE OFF-SITE DRAINAGE BASIN AND 50' BEYOND PROPERTY
- DESIGN WITH MOST RECENT SURVEYED CONTOUR INFORMATION
- DRAINAGE AREA MAP SHOWS SUBBASINS FOR EACH COLLECTION POINT AND INLET
- EACH DRAINAGE AREA HAS ID, Q100, ACRES AND DIRECTION OF FLOW TO THE OUTFALL SHOWN
- EACH OUTFALL LABELED WITH AN IDENTIFICATION, DIRECTION OF FLOW AND TOTAL FLOW
- DRAINAGE DIRECTION ARROWS FOR BOTH ON-SITE AND OFF-SITE DRAINAGE BASINS
- INDICATE ALL SAGS AND CRESTS WITH FLOW ARROWS
- CITY STANDARD DRAINAGE AREA MAP CALCULATION TABLE FOR CURRENT AND FUTURE CONDITIONS WITH OUTFALL SUMMARY INCLUDED
- I - VALUES MEET CITY REQUIREMENTS
- C - VALUES MEET CITY REQUIREMENTS (BASED ON ZONING)
- TIME OF CONCENTRATION VALUES USED MEET CITY REQUIREMENTS
- Q - CALCULATED FLOW IN CFS
- PROVIDE A SUBTOTAL FOR EACH MAJOR DRAINAGE LINE
- DRAINAGE AREA MAP & CALCULATIONS FOR ALL OFFSITE DRAINAGE
- LIMITS OF EXISTING AND PROPOSED 100-YEAR ULTIMATE FLOODPLAIN SHOWN AND WETLAND AND WATER OF U.S. DELINIATION
- ULTIMATE (FULLY DEVELOPED) 100-YEAR FLOODPLAIN WATER SURFACE ELEVATIONS (WSE'S) SHOWN (FEMA AND LOCAL)
- NOTE IDENTIFYING REFERENCE FOR 100 YEAR FLOODPLAIN AND WSE INFORMATION (FEMA AND LOCAL) AND WETLAND AND WATER OF U.S. DELINIATION
- SHOW LIMITS OF EACH PLAN SHEET (TILE)
- SHOW DETENTION
- SHOW EXISTING DRAINAGE AREAS (LIGHTER LINE TYPE)
- LABEL WHERE EACH DRAINAGE AREA DRAINS (INLET NUMBER, SWALE, ETC.)

STORM DRAINAGE PLANS AND PROFILES (STORM DRAINAGE STRUCTURES INCLUDING PIPE, INLETS, ETC.)

NOTES: = COMPLETE | = DEFICIENT | = N/A

- BENCHMARK LOCATION AND ELEVATION
- FLOOD STUDY / FEMA FIRM MAP REFERENCE INFORMATION LISTED BY NOTE
- STORM SEWER ALIGNMENT LOGICAL, SHARP BENDS ELIMINATED
- COLLECTING ON-SITE DRAINAGE WITH STORM SEWER/INLETS
- PROFILE GIVEN FOR ALL STORM SEWER MAINS AND LATERALS (SHALL BE ALONG THE CENTERLINE OF PIPE)
- PIPE SIZE, MATERIAL AND CLASS IDENTIFIED ON PLAN AND PROFILE
- HYDRAULIC GRADE LINE SHOWN ON ALL STORM SEWER PROFILES FOR MAINS/LATERALS, IN BOTH FULL AND PARTIAL FLOW CONDUIT CONDITIONS



- HYDRAULIC GRADE LINE ELEVATIONS LABELED ON STORM SEWER PROFILES AT EVERY CHANGE IN FLOW, CHANGE IN PIPE SIZE, HORIZONTAL BEND, VERTICAL BEND, WYE, MANHOLE, INLET, HEADWALL, ETC.
- OTHER HYDRAULIC INFO SHOWN ON STORM SEWER PROFILES FOR ALL MAINS/LATERALS (Q100, QCAP, VELOCITY, V2/2G) ON EVERY CONDUIT SECTION BETWEEN EVERY JUNCTION AND/OR INCREASE IN FLOW
- VERTICAL AND HORIZONTAL ALIGNMENT AND SLOPE SHOWN FOR ALL MAINS/LATERALS ON PLAN AND PROFILE
- HYDRAULIC GRADE LINE MEETS CITY DESIGN REQUIREMENTS
- STARTING HYDRAULIC GRADE LINE CALCULATIONS/ASSUMPTIONS LISTED
- STARTING HYDRAULIC GRADE LINE MEETS CITY DESIGN REQUIREMENTS
- PIPE VELOCITY WITHIN ORDINANCE REQUIREMENTS AND LIMITATIONS
- ELEVATION INFORMATION ON PLAN VIEW (FLOWLINES, TOP-OF-CURB, HGL OR 100 YR WATER SURFACE (PARTIAL FLOW) AT EVERY INLET, ETC) MATCHES PROFILE VIEW
- SHOW CROSSINGS OF EXISTING AND PROPOSED WATER AND SANITARY SEWER ON STORM SEWER PROFILE
- NOTE MINIMUM COVER FOR PIPES AND CULVERTS
- DRAINAGE SYSTEM REVIEWED FOR CONSTRUCTABILITY - DEPTH AND CLEARANCE FROM STREETS, STRUCTURES, OTHER UTILITIES (DIMENSIONS)
- INLET CAPACITY CALCULATIONS PROVIDED IN CITY STANDARD TABULAR FORM
- INLETS PLACED TO CAPTURE RUNOFF BEFORE IT ENTERS STREET OR MAJOR THOROUGHFARE
- STORM SEWER CALCULATIONS PROVIDED IN CITY STANDARD TABULAR FORM
- IF STREET DRAINAGE, CALCULATIONS SHOWING CURB & STREET CAPACITY
- IF STREET DRAINAGE, SHOW NEAREST INLET & ALL UPSTREAM DRAINAGE
- INLET CONSTRUCTION LAYOUT INFORMATION SHOWN (TOP OF CURB, FLOWLINE, THROAT ELEVATION, TYPE, SIZE, HGL, Q100, ETC)
- STORM SEWER INLET LOCATION, SIZE, TYPE, AND CONSTRUCTION DETAIL PER CITY REQUIREMENTS
- STORM SEWER MANHOLE LOCATION, SIZE, TYPE, AND CONSTRUCTION DETAIL PER CITY REQUIREMENTS
- OUTFALL, HEADWALL, AND OTHER STRUCTURE LOCATION, TYPE, VELOCITY AND EROSION/SCOURING PROTECTION PER CITY STANDARDS
- POSITIVE OVERFLOW ROUTE THROUGH SITE WITH GRADES
- SAG POINTS IDENTIFIED AND PAVED POSITIVE OVERFLOW DESIGNED
- OUTFALL/HEADWALL LOCATIONS NO GREATER THAN 1' ABOVE CREEK FLOWLINE AND POINTED DOWN STREAM
- OUTFALLS DISCHARGE INTO EXISTING DRAINAGE FEATURES OR PROVIDE EASEMENTS AS REQUIRED
- OUTFALL VELOCITY MEETS CITY REQUIREMENTS
- OUTFALL PROTECTION / ENERGY DISSIPATION WHEN REQUIRED
- APPROPRIATE DETAILS ARE INCLUDED FOR STRUCTURES, JUNCTION BOXES, HEADWALLS AND INLETS (IF DIFFERENT THAN NCTCOG 4TH ED. OR CITY DETAILS)
- CONNECTION DETAILS PROVIDED FOR NON-STANDARD CONNECTIONS
- LIMITS OF EXISTING AND PROPOSED 100-YEAR ULTIMATE FLOODPLAIN SHOWN (FEMA AND LOCAL) AND WETLAND AND WATER OF U.S. DELINIATION
- ULTIMATE (FULLY DEVELOPED) 100-YEAR FLOODPLAIN WATER SURFACE ELEVATIONS (WSE'S) SHOWN (FEMA AND LOCAL)
- NOTE IDENTIFYING REFERENCE FOR 100 YEAR FLOODPLAIN AND WSE INFORMATION AND WETLAND AND WATER OF U.S. DELINIATION
- DRAINAGE EASEMENTS FOR DRAINAGE FEATURES AND STRUCTURES SHOWN (15' MINIMUM WIDTH)

STORM DRAINAGE PLANS AND PROFILES (DITCHES, SWALES, AND OPEN CHANNELS)

NOTES: = COMPLETE | = DEFICIENT | = N/A

- DIRECTION OF FLOW INDICATED FOR DITCHES, SWALES AND OPEN CHANNELS
- DITCHES, SWALES AND OPEN CHANNELS HAVE 100 YEAR ULTIMATE WATER SURFACE SHOWN ON PROFILE (MIN 1% RUNNING SLOPE)
- DITCHES, SWALES AND OPEN CHANNELS HAVE 100 YEAR ULTIMATE WATER SURFACE SHOWN ON CROSS SECTIONS
- DITCHES, SWALES AND OPEN CHANNELS ARMORED WITH APPROVED MATERIAL IN AREAS WHERE AVERAGE & LOCALIZED VELOCITIES ARE ABOVE 6 FPS
- DITCHES, SWALES AND OPEN CHANNELS CAN CARRY 100-YEAR ULTIMATE STORM WITH REQUIRED FREEBOARD



- DITCHES, SWALES AND OPEN CHANNELS HYDRAULIC INFORMATION SHOWN ON PLANS
- DITCHES, SWALES AND OPEN CHANNELS HYDRAULIC INFORMATION SHOWN ON PLANS MATCHES HYDRAULIC REPORT OR FLOOD STUDY SUBMITTED
- DITCHES, SWALES AND OPEN CHANNELS SIDE SLOPES LESS THAN 4H:1V FOR GRASSED/UN-ARMORED SECTIONS
- DITCH, SWALE AND OPEN CHANNEL WIDTH, DEPTH, RUNNING AND SIDE SLOPES AND CAPACITY PER CITY REQUIREMENTS
- DRAINAGE EASEMENTS FOR DRAINAGE FEATURES AND STRUCTURES SHOWN

STORM DRAINAGE PLANS (DETENTION AND PONDS)

NOTES: = COMPLETE | = DEFICIENT | = N/A

- REQUIRED DETENTION SHOWN
- DETENTION CALCULATION SHOWN AND CORRECT
- OUTFALL DISCHARGE CURVES FOR REQUIRED STORM EVENTS
- DETENTION/RETENTION POND LOCATION, SIZE, DEPTH, CAPACITY, AND MATERIAL PER CITY REQUIREMENTS, 100 YEAR WATER SURFACE ELEVATIONS
- PROVIDE ACCESS AND STRUCTURES THAT CONTRIBUTE TO LONG TERM MAINTENANCE OF DETENTION POND
- DRAINAGE EASEMENTS FOR DRAINAGE FEATURES AND STRUCTURES SHOWN (15' MINIMUM WIDTH)
- PROVIDE CHART SHOWING FLOW ALLOWABLE VS. FLOW ACTUAL FOR Q5, Q10, Q25, AND Q100

WATER

NOTES: = COMPLETE | = DEFICIENT | = N/A

- WATER MAIN SIZED IN COMPLIANCE WITH WATER SYSTEM MASTER PLAN
- WATER MAINS PROVIDED TO FRONT PROPERTY ALONG ALL STREET FRONTAGES OR OTHERWISE EXTENDED TO SERVE ADJACENT PROPERTIES
- WATER MAIN EXTENSION REQUIRED BY CODE SHOWN
- WATER MAINS LOOPED TO PROVIDE CIRCULATING AND REDUNDANT FEED
- WATER MAIN SIZE, MATERIAL AND CLASS CALLED OUT
- EXISTING WATER MAINS AND VALVES SHOWN; SHOW VALVES ON BOTH SIDES OF TAP IN CASE AREA NEEDS TO BE ISOLATED
- EXISTING & PROPOSED FIRE HYDRANTS SHOWN
- UTILITY EASEMENTS FOR WATER MAINS SHOWN
- PROPOSED AND EXISTING FIRE LANES SHOWN
- FIRE HYDRANT SPACING MEETS REQUIREMENTS OF ADOPTED INTERNATIONAL FIRE CODE (IFC)
- FIRE SPRINKLER FIRE DEPARTMENT CONNECTION (FDC) LOCATION SHOWN
- WATER MAIN FITTINGS, VALVES, ETC IDENTIFIED
- WATER MAINS 16" AND LARGER PROFILED
- ALL WATER MAIN BORES PROFILED
- ALL CROSSINGS IDENTIFIED ON APPROPRIATE PROFILE
- BORE COMPLIES WITH BORE AND UTILITY CROSSING GENERAL DESIGN STANDARDS AND TXDOT STANDARDS IF IN TXDOT ROW
- EXISTING WATER METERS SHOWN
- PROPOSED WATER METERS SHOWN (BOTH DOMESTIC AND IRRIGATION)
- DOMESTIC AND IRRIGATION WATER METERS ON LOOPED/CIRCULATING MAIN
- ALL WATER METERS ON SEPARATE SERVICE - NO WATER METER "BULLHEADS" OR MANIFOLDS ALLOWED
- WATER METERS LOCATION, PREFERRED TO BE IN UNPAVED AREA
- WATER METER SIZES IDENTIFIED
- APPROPRIATE DOUBLE CHECK/BACKFLOW PREVENTION SHOWN ON PRIVATE SIDE OF ALL METERS



- WATER SYSTEM REVIEWED FOR CONSTRUCTABILITY AND MAINTENANCE - DEPTH AND CLEARANCE FROM STREETS, STRUCTURES, OTHER UTILITIES (DIMENSIONS)
- WATER MAINS IDENTIFIED AS EITHER PUBLIC OR PRIVATE WITH LINES OF DEMARCATION
- UTILITY CROSSINGS SHOWN IN ALL PROFILES AND BORE PROFILES INCLUDING FRANCHISE UTILITIES AND STREET LIGHT UTILITIES
- IF FIRE SPRINKLER LINE IS SHOWN, ADD NOTE TO PLANS TO INDICATED THE REQUIREMENT FOR SEPARATE PERMIT FROM THE FIRE DEPARTMENT AND LABEL MIN 10-FOOT SEPARATION DISTANCE FROM ALL OTHER UTILITIES

WASTEWATER

NOTES: = COMPLETE | = DEFICIENT | = N/A

- WASTEWATER MAINS PROVIDED TO FRONT PROPERTY OR OTHERWISE EXTENDED TO SERVE UPSTREAM PROPERTY
- EXISTING WASTEWATER MAINS, MANHOLES, CLEANOUTS AND SERVICES SHOWN
- PROPOSED WASTEWATER MAINS, MANHOLES, CLEANOUTS AND SERVICES SHOWN
- SANITARY SEWER MAINS PROFILED ALONG CENTERLINE OF PIPE
- BORE COMPLIES WITH BORE AND UTILITY CROSSING GENERAL DESIGN STANDARDS AND TXDOT STANDARDS IF IN TXDOT ROW
- WASTEWATER MAIN SIZE, MATERIAL AND CLASS IDENTIFIED ON PLAN AND PROFILE
- WASTEWATER MAIN DEPTH, SLOPE, SERVICE LOCATIONS, CLEANOUTS AND MANHOLES SHOWN IN ALL PROFILES
- WASTEWATER RIM, FLOW LINE IN & FLOW LINE OUT ELEVATIONS FOR ALL MANHOLES (MIN 2% DROP BETWEEN MANHOLE FLOW-IN AND FLOW-OUT)
- UTILITY CROSSINGS SHOWN IN ALL PROFILES AND BORE PROFILES INCLUDING FRANCHISE UTILITIES AND STREET LIGHT UTILITIES
- WASTEWATER SYSTEM REVIEWED FOR CONSTRUCTABILITY AND MAINTAINABILITY - DEPTH AND CLEARANCE FROM STREETS, STRUCTURES, OTHER UTILITIES (DIMENSIONS)
- ALL EXISTING AND PROPOSED PUBLIC AND PRIVATE EASEMENTS AND RIGHTS OF WAY SHOWN
- WASTEWATER MAINS IDENTIFIED AS EITHER PUBLIC OR PRIVATE WITH LINES OF DEMARCATION AND PRIVATE UTILITY NOTE
- PRIVATE UTILITY NOTE: "ALL WASTEWATER WORK DESIGNATED AS "PRIVATE" IN THIS SET OF PLANS SHALL BE INSTALLED IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE, PERMITTED AND INSPECTED BY THE CITY BUILDING INSPECTION DEPARTMENT AND INSTALLED BY A LICENSED PLUMBER."
- LIMITS OF EXISTING AND PROPOSED 100-YEAR ULTIMATE FLOODPLAIN SHOWN (FEMA AND LOCAL) AND WETLAND AND WATER OF U.S. DELINIATION
- ULTIMATE (FULLY DEVELOPED) 100-YEAR FLOODPLAIN WATER SURFACE ELEVATIONS (WSE'S) SHOWN (FEMA AND LOCAL)
- NOTE IDENTIFYING REFERENCE FOR 100 YEAR FLOODPLAIN AND WSE INFORMATION AND WETLAND AND WATER OF U.S. DELINIATION

LIFT STATION

NOTES: = COMPLETE | = DEFICIENT | = N/A

- LIFT STATION REPORT
- DIMENSION AND SITE PLANS
- GRADING PLAN
- FORCE MAIN PLAN AND PROFILE
- LANDSCAPE PLAN
- ELECTRICAL AND CONTROL PLANS
- DETAIL SHEETS

EROSION CONTROL (FOR SITES GREATER 1- ACRE OR LARGER) / SWP3 (IF REQUIRED BY TCEQ REGULATIONS)

NOTES: = COMPLETE | = DEFICIENT | = N/A

- OWNERS NAME, ADDRESS & PHONE NO.
- DEVELOPERS NAME ADDRESS & PHONE NO.
- ENGINEERS NAME ADDRESS & PHONE NO.
- SITE ACREAGE LISTED



- DISTURBED ACREAGE LISTED (ACRES)
- LIMITS OF CONSTRUCTION AND DISTURBED AREAS SHOWN
- EXISTING GROUND CONTOURS, DRAINAGE FEATURES AND STRUCTURES
- 100-YR FLOOD PLAIN WITH ELEVATIONS (FEMA AND LOCAL) AND WETLAND AND WATER OF U.S. DELINIATION
- LIMITS OF TREES/SHRUBS TO REMAIN
- GRADES TO MATCH GRADING PLAN
- PROPOSED STORM DRAINAGE, STRUCTURES & PAVEMENT
- BORROW & SPOIL AREA IDENTIFIED
- BMP LOCATIONS, DETAILS, CALCULATIONS, AND MAINTENANCE SCHEDULE
- SEDIMENT BASIN, REQUIRED IF DISTURBED AREA GREATER THAN 10 ACRES

STANDARD DETAILS AND CITY GENERAL NOTES

NOTES: = COMPLETE | = DEFICIENT | = N/A

- ALL STANDARD DETAILS THAT ARE REQUIRED FOR CONSTRUCTION FROM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, NORTH CENTRAL TEXAS, FIFTH EDITION, OR THE CITY OF ROCKWALL STANDARDS OF DESIGN AND CONSTRUCTION SHALL BE INCLUDED IN ALL PLAN SETS.
- CITY GENERAL NOTES SHEETS

TXDOT DETAILS

NOTES: = COMPLETE | = DEFICIENT | = N/A

- INCLUDE ALL PERTINENT DETAILS CALLED OUT IN PLANS



APPENDIX B | APPROVED WATER MATERIALS LIST



APPROVED WATER MATERIALS LIST

All materials on this list do not require separate submittals. All materials must be new and in good condition. All materials to be installed for use on projects in the City of Rockwall shall be produced in the United States of America

FIRE HYDRANTS

NOTE: ALL BOLTS, NUTS AND WASHERS BELOW *BURY LINE* TO BE TYPE 316 STAINLESS-STEEL.

- Mueller "Super Centurion 250-A423"
- American Darling "B-84B-5"
- Waterous "Pacer WB67"
- Clow "Medallion"
- M&H "Model 129 & 929"
- WaterMaster 5CD250

VALVES

NOTE: ALL BOLTS, NUTS AND WASHERS FOR VALVES TO BE TYPE 316 STAINLESS-STEEL.

- Mueller Resilient Seat
- Mueller Resilient Wedge
- Mueller Butterfly
- American Darling Resilient Wedge
- American Darling Butterfly
- U.S. Pipe & Foundry "Metro-Seal" Resilient Wedge
- American Flow Control – Series 2500 Resilient Wedge Valve
- Clow Resilient Wedge
- Pratt Butterfly
- American AVK Resilient Seated Gate Valve Series 25, 4"-12"

VALVES (AIR RELEASE / COMBINATION AIR & VACUUM)

- Vent-O-Mat 025 RBX 2521 – 1"
- Vent-O-Mat 050 RBX 2521 – 2"

TAPPING SLEEVES AND VALVES

NOTE: ALL BOLTS, NUTS AND WASHERS TO BE TYPE 316 STAINLESS-STEEL.

- All require ¾" NPT brass test plug.

SLEEVES

NOTE: ALL BOLTS, NUTS AND WASHERS TO BE TYPE 316 STAINLESS-STEEL.

- Mueller H-304 Stainless-steel Tapping Sleeve w/Stainless-steel Flange
- Tyler Traverse Tapping Sleeve
- Clow Traverse Tapping Sleeve
- Dresser Style 630 Heavy Stainless-Steel Tapping Sleeve
- PowerSeal Model 3490 Stainless-steel Tapping Sleeve
- Ford All Stainless Tapping Sleeve Style FTSS
- Ford All Stainless Tapping Sleeve Style FTSS-MJ
- Smith-Blair 665 Stainless-steel Tapping Sleeve with Stainless-steel Flange, Smith-Blair 665MJ Stainless-steel Tapping Sleeve with Stainless-steel Flange Romac Industries, SST III

**TABLE B.1: SERVICE SADDLES (FOR PVC, DI OR CI)**

SIZE/MANUFACTURER	MUELLER	JONES	FORD	A.Y. MCDONALD
¾-INCH, 2 STRAP	BR-2B, BR-2S	J-979, J-969	202B, 202BS	3825, 3845
1-INCH, 2 STRAP	BR-2B, BR-2S	J-979, J-969	202B, 202BS	3825, 3845
1 ½ -INCH, 2 STRAP	BR-2B, BR-2S	J-979, J-969	202B, 202BS	3825, 3845
2-INCH, 2 STRAP	BR-2B, BR-2S	J-979, J-969	202B, 202BS	3825, 3845

NOTE: ALL OF THE ABOVE SERVICE SADDLES ARE TO BE CC THREAD. SADDLES MUST BE SUPPLIED WITH STAINLESS-STEEL BOLT/NUT/WASHER, WITH THE EXCEPTION OF A DOUBLE STRAP BRONZE SADDLE.

RESTRAINT (RETAINER) GLANDS

NOTE: ALL BOLTS, NUTS AND WASHERS TO BE TYPE 316 STAINLESS-STEEL.

- Uni-Flange Series 1400 for 4" thru 12" (Ductile Iron)
- Uni-Flange Series 1500 for 4" thru 12" (C900 PVC)
- EBAA Iron 1100 Series Megalug (Ductile Iron)
- EBAA Iron 2000PV Series Megalug (C900 PVC)
- Stargrip Series 4000 (C900 PVC)
- Stargrip Series 3000 (Ductile Iron)
- Sigma – One Lok (C900/905 PVC)
- Tyler Union Field Lock (Ductile Iron)
- Tyler Union Tufgrip 1000 (Ductile Iron)
- Tyler Union Tufgrip 2000 (PVC)

RESTRAINT (INTERNAL JOINT RESTRAINED)

NOTE: ALL BOLTS, NUTS AND WASHERS TO BE TYPE 316 STAINLESS-STEEL.

- Eagle LOC 900 for 4" thru 12" C900 DR14 PVC Pipe
- Diamond Lok-21 for 4" thru 12" C900 DR14 PVC Pipe

TABLE B.2: CORPORATION VALVE (STOPS)

SIZE/MANUFACTURER	MUELLER	JONES	FORD	A.Y. MCDONALD
¾-INCH	B-25008	J-1937-SG	FB-1000-3-Q	4701BQ
1-INCH	B-25008	J-1937-SG	FB-1000-4-Q	4701BQ
1 ½ -INCH	B-25008	J-1937-SG	FB-1000-6-Q	4701BQ
2-INCH	B-25008	J-1937-SG	FB-1000-7-Q	4701BQ

TABLE B.3: ANGLE METER VALVES (STOPS)

SIZE/MANUFACTURER	MUELLER	JONES	FORD	A.Y. MCDONALD
¾-INCH	B-24258	J-1963W-SG	BA43-332-WQ	4602BQ 3/4
1-INCH	B-24258	J-1963W-SG	BA43-444-WQ	4602BQ 1
1 ½ -INCH	B-24276	J-1975W-SG	BFA43-666-WQ	4602BQ 1 ½
2-INCH	B-24276	J-1975W-SG	BFA43-777-WQ	4602BQ 2

DUCTILE IRON FITTINGS (COMPACT ONLY C153)

- American Pipe
- Tyler Pipe Products
- Clow Products
- Star Pipe Products (tees, bends & anchor nipples)
- Sigma/Nappco Products (tees, bends & anchor nipples)
- Griffin Pipe Products



VALVE STACKS AND BOXES

- Bass & Hays adjustable valve box Model No. 2436S

TABLE B.4: FIRE HYDRANT PAINT

MAIN SIZE	COLOR	PAINT
6"	SILVER/TOP & BOTTOM	SHERWIN WILLIAMS SILVER-BRITE HEAVY DUTY RUST RESISTANT ALUMINUM PAINT B59S11
8"	SAFETY BLUE TOP/ALUMINUM BOTTOM	SHERWIN WILLIAMS HEAVY DUTY RUST RESISTANT ALUMINUM PAINT-SAFETY BLUE B54T104
10" OR LARGER	YELLOW TOP/ALUMINUM BOTTOM	SHERWIN WILLIAMS HEAVY DUTY RUST RESISTANT ALUMINUM PAINT-SAFETY YELLOW B54Y37

TABLE B.5: METER BOXES

< 1 INCH SERVICE	DFW1814F-1BA DFW PLASTICS, INC NOT TRAFFIC RATED
1-1/2-INCH, 2-INCH SERVICE	DFW2818F-1BA DFW PLASTICS, INC NOT TRAFFIC RATED
TRAFFIC RATED METER BOX LIDS	DFW65C-14-10BA DFW65C-1BA – CAN DFW65C-OVERLAY-LID DFW PLASTICS
	DFW 18-AMRL-LID E SERIES



APPENDIX C | APPROVED WASTEWATER MATERIALS LIST



Approved Wastewater Materials List

NOTE: ALL SPECIFIED MATERIALS ON THIS LIST DO NOT REQUIRE SEPARATE SUBMITTALS. ALL MATERIALS MUST BE NEW AND IN GOOD CONDITION.

WASTEWATER MAIN AND SERVICE PIPE (GRAVITY FLOW ONLY)

- ASTM D3034 SDR-35 PVC 4" to 15" Diameter (Green in color)
- ASTM D3034 SDR-26 PVC 18" to 30" Diameter and for any wastewater installed 10' and deeper (Green in color)
- ASTM D3262 Fiberglass Sewer Pipe 18" to 54" and ASTM 4161 Fiberglass Fittings (must submit thickness design for wall thickness calculations) Approved Manufactures for Fiberglass Pipe and fitting are Hobas Pipe, US Composite Pipe South and Ameron International.

MANHOLE PIPE CONNECTORS

- Link-Seal
- A-LOC
- KOR-N-SEAL – 306 Series by National Pollution Control Systems Inc.
- PS (Press-Seal) – PSX: Direct Drive

WASTEWATER MANHOLE LIDS AND RINGS

- Pamrex with Lock
- East Jordan Iron Works 30" ERGO XL with Camlock Security closing device, MPIC Pick slot, elastomer T-Gasket in lid and infiltration plugs at the hinges. – Product No. 00148026L01
- East Jordan Iron Works 24" ERGO with Camlock Security closing device, MPIC Pick slot, elastomer T-Gasket in lid and infiltration plugs at the hinges – Product No. NPR10-1213A (for retrofit work only).

MANHOLE COATINGS (NO DARK COLORS ALLOWED)

- Raven 405 (125 mils thick)-light blue colored only
- ConShield-terra cotta colored only (must be spark tested per NACE International Standard)

GEOTEXTILE MATERIAL (INSTALLED UNDER PRECAST MANHOLES)

- Mirafi 140N
- Geotex 401

MANHOLE GRADE RINGS

- HDPE Adjustment Rings by Ladtech Inc.
- ARPRO Expanded Polypropylene, ASTM D3575, by Cretex Seals
- East Jordan Iron Works Infra-Riser.

PRE-CAST MANHOLE GASKETS

- Hanson – CR 097
- Hydroconduit – Profile

MANHOLE CHIMNEY SEALS AND RING & COVER SEALING SYSTEMS

- Cretex with stainless-steel self-locking bands. (interior & exterior)
- Riser Wrap by PSI

MANHOLE DROP BOWL



- Reliner / Duran Inc., Inside Drop Bowl with Stainless-steel anchor assemblies
- Approved Equal

CLEANOUT

- Bass & Hays 404 Lateral Cleanout with lid and gasket within pavement only
- Bass & Hays 339 Wastewater Cleanout Boot
- Stan Roberts G-1504

DOUBLE CLEANOUT METER BOX

- Bass & Hays 3-LID2 (Sewer)
- Approved Equal

THREADED ANCHOR

- Hilti – KB3-SS304 5/8" anchor bolts or equal
- Stainless-steel all thread 5/8" (embedded min 4-1/2" into cone with a epoxy or Wedge-it)
- Simpson Strong Tie – Strong-Bolt 5/8"

FORCE MAIN PIPE

- AWWA C-905 pipe, green colored

AIR RELEASE VALVE

- Vent-O-Mat Anti-Shock Air Release and Vacuum Break Valves
- Approved Equal

ISOLATION GATE VALVE

- American-Series 2500 2"-12" Resilient Wedge Gate Valves with Flanged Ends
- Approved Equal

GENERAL NOTES:

- (1) ALL EXPOSED STAINLESS-STEEL BOLTS AND NUTS MUST BE COATED WITH APPROVED ANTI-SEIZE COMPOUND: PERMATHEX NICKEL ANTI-SEIZE OR APPROVED EQUAL.
- (2) MATERIALS NOT ON THIS LIST WILL NEED TO BE SUBMITTED FOR REVIEW.



APPENDIX D | EXAMPLE CHECKLIST FOR FINAL ACCEPTANCE
(RESIDENTIAL AND COMMERCIAL)



EXAMPLE: CHECKLIST FOR FINAL ACCEPTANCE OF A RESIDENTIAL PROJECT

(DATE)

(ENGINEER'S NAME)
(ENGINEERING COMPANY)
(ADDRESS)
(CITY, TX ZIP)

RE: (PROJECT NAME) – CHECKLIST FOR FINAL ACCEPTANCE

Dear (ENGINEER'S NAME),

The following items are to be completed at the above-mentioned site to bring the project into compliance with City specifications and to meet specific project requirements. The listed items are items identified during the walkover of the site and are to be addressed prior to final acceptance of the project. The City will conduct daily site visits (during daily rounds) at the project until completion of the noted items. A copy of this list will also be directed to the developer/owner and general contractor. The below listed items are to be directed to the appropriate responsible parties for completion.

REQUIRED DOCUMENTATION

- (1) The City of Rockwall requires that the design engineer provide a letter of concurrence. The letter is to verify that the drainage flow patterns, grade to drain locations, pad elevations, and drainage structures, including the volume of the surface and/or subsurface detention system and detention outlet structure located at the project were installed to the general elevations as shown on the approved plans. The letter shall also verify that the project was constructed to meet the approved design requirements or is within acceptable design tolerances. The Design Engineer or his designated representative shall direct all "survey-work" necessary to verify elevations and design compliance. The letter of concurrence is to have the seal and signature of the design engineer.

EXAMPLE OF LETTER OF CONCURRENCE VERBIAGE WHICH WILL NOT BE ACCEPTED BY THE CITY:

A representative of this company visited the site and has visually verified to the best of the engineer's professional opinion, knowledge and belief, the final grading and site drainage comply with the City approved plans and details.

EXAMPLE OF LETTER OF CONCURRENCE VERBIAGE WHICH WILL BE ACCEPTED BY THE CITY:

A representative of this company visited the site and has visually verified to the best of the engineer's professional opinion, knowledge and belief, that based on my observations along with survey work conducted at the site, the final grading, site drainage, and detention outfall with required volume comply with the City approved plans and details.

- (2) The Design Engineer shall furnish a digital file of the project formatted in Auto Cad 14, or 2000 format or newer and Adobe Acrobat (pdf.) format with a CD-ROM. The disk shall include a full set of plans along with any landscaping, wall plans, and details sheets.

Submit one (1) set of blue line drawings of the "Record Drawings" containing copies of all sheets. The blue line copy will be reviewed by the construction inspector **PRIOR** to producing the "Record Drawing" disk. This will allow any revisions to be addressed prior to producing the disk.

RECORD DRAWING DISK DRAWINGS SHALL HAVE THE DESIGN ENGINEERS SEAL, SIGNATURE AND MUST BE STAMPED AND DATED AS "RECORD DRAWINGS" OR "AS BUILT DRAWINGS" ON ALL SHEETS.

The City of Rockwall will not accept any Record Drawing disk drawings which include a disclaimer with the like or similar verbiage. A disclaimer shall not directly or indirectly state or indicate that the design engineer or the design engineers, surveyor/surveyors did not verify or grades after construction, or that the Record Drawings were based solely on information provided by the construction



contractor/contractors. Any Record Drawings which include like or similar disclaimer verbiage will not be accepted by the City of Rockwall.

EXAMPLE OF ACCEPTABLE DISCLAIMER:

To the best of our knowledge Smith Engineering, Inc., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

- (3) 4% Engineering Inspection Fee (Final As-Built Adjustments). Prior to the start of construction at the project, engineering inspection fees for the project were established. The preliminary inspection fee amounts were based upon the projected contract quantity and unit price amounts which were submitted to the City. A fee based on 4% of the projected quantity cost was paid to the City. The final fee amounts are to be adjusted if necessary to match the unit quantity and unit price amounts based on the as-built contract unit quantity amounts. Please provide a copy of the as-built quantity amounts with total amounts for each item. The as built amounts should be noted or stamped as "as-built contract quantity and unit price amounts". The engineering inspection fee charged by the City will be adjusted to match these amounts if necessary. The City is to receive payment on the adjusted cost amounts prior to project acceptance. As-built contract unit quantity and unit price amounts for the pavement, drive approaches, sidewalks, barrier free ramps, wastewater, storm sewer, drainage structures (including underground detention), water lines, along with all associated fixtures which are located within the defined rights-of-way and easements of the project.
- (4) All weekday and weekend overtime engineering inspections fees are to be paid.
- (5) Flood study review fees to be paid if there is an excess due over the initial review fee. If all of the initial fees were not utilized for the flood study review, those monies will be refunded.
- (6) Gas and Electric facilities are to be installed at the site and be ready to provide service to each lot. A letter of installation verification and operation will be required from electric and gas project managers and will need to be directed to the City of Rockwall prior to project acceptance or any early lot releases. The letter may be from the above noted parties or their designated representatives.
- (7) Storm Sewer Outfall Coordinates. It is now necessary to tie down all the storm sewer outfall pipes to our state plane Coordinate System. The design engineer will be required to provide the following coordinate information which is to be submitted in letterform showing the x, y, and z coordinates at the end of all storm sewer outfalls of the project.
- (8) The City of Rockwall – Elevation Survey Monuments which are to be installed at the project shall be tied to the City of Rockwall monument coordinates both horizontally and vertically. The information shall be transferred to the City of Rockwall. Elevations and monument locations are to be shown on the as built mylars on both the paving plans and the storm sewer plans and shall also be submitted to the City in letter-form. The monuments are to be supplied by the City of Rockwall and installed by the utility contractor. The monument locations are as follows:
 - (A) (LOCATION)
 - (B) (LOCATION)
- (9) Right-of-way Compaction and Density Reports. Final grade densities are to be conducted at approximately each 500 – foot intervals on both sides of each street in the general fill areas of the rights-of-way. Full Depth trench densities are to be taken at all utility trenching locations where trenching operations consisted of cutting trench 10-inches wide or wider. All final grade right-of-way and easement compaction density tests are to be a minimum of 95% of the standard proctor density. Copies of the compaction tests performed for the developer's contractors as well as by the franchise utility company's contractors shall be provided to the City prior to project acceptance.
- (10) Maintenance bonds are to be submitted to the City of Rockwall for the paving and utilities installed at the project. The bonds shall be two-year 10% maintenance bonds to cover maintenance, for a two-year timeline starting from the "Date of City of Rockwall's Acceptance" for the project. There is to be no date in the starting timeline only the above wording.
 - (A) The utility bond shall cover the following utility systems and their associated fixtures.
 - Water
 - Wastewater
 - Storm sewer (including detention systems)
 - (B) The paving bond shall cover the following:
 - Street Pavement.



- Driveway Approaches
- Sidewalks.
- Barrier free ramps.

- (11) Engineered Retaining Wall Inspection & Letter of Concurrence. The City requires the design engineer for any retaining wall which is three-feet in height or taller, to periodically inspect, or make arrangements for his designated representative to periodically inspect the retaining wall/walls during the construction process. The design engineer is to submit letter of concurrence for the retaining wall/walls to the City prior to project acceptance. The letter shall contain the seal and signature of the retaining wall design engineer.
- (12) City Council approved and owner signed final/replat plat mylars and tax certificates to be submitted to Planning Department for filing.

SITE ITEMS

- (1) Site Working Hours and Noise Control Signage (Ordinance No. 05-45). Signs are to be placed at all entrances, which provides an access entry way into the subdivision. The signs are to note allowed hours of construction as mandated by the City Ordinance. The signs must be installed prior to project acceptance or prior to the start of any early lot release construction. The signs may be placed in the City right-of-way provided that it is not placed within the 30-foot visibility easement clips, which are located at all street intersections. Each posted sign shall contain the following ordinance work-hours information and contain both the English and the Spanish version of the ordinance. The face of the sign shall be a minimum of 4-feet wide by 3-feet tall with the sign post being approximately 4-feet tall when measured from the top of the ground to the bottom of the sign face. The maximum height of the sign shall not exceed a height of 7-feet, 6 inches when measured from the top of the ground to the top of the sign. The sign face shall consist of a white background with blue or black lettering. The letters shall be of sufficient size so as to be readily visible to all vehicular traffic entering the subdivision.

CITY OF ROCKWALL - ORDINANCE

ORDINANCE # 05-45 CONSTRUCTION SITE WORKING HOURS AND NOISE CONTROL

City Ordinance – No. 05-45 limits construction and construction related activities to the hours of 7:00 a.m. - 7:00 p.m. Monday through Friday, and 8:00 a.m. - 7:00 p.m. on Saturday. (No Sunday construction allowed).

ORDENANZA # 05-45 HORAS DE TRABAJO EN EL SITIO DE CONSTRUCCION Y EL CONTROL DE RUIDO

La Ordenanza de la Ciudad – No. 05-45 limita la construcción y las actividades relacionadas con la construcción a las horas de 7:00 a.m. – 7:00 p.m. de Lunes a Viernes, y de 8:00 a.m. – 7:00 p.m. los Sábados. (No se permitirá construcción los Domingo).

- (2) The maximum slope allowed by the City will be a 4:1 slope, however this slope will only be allowed when it is not possible or feasible to achieve a slope of 4:1 or less. Retaining walls or other City approved retaining methods will be required where it is not possible or feasible to comply with the 4:1 maximum slope requirement. All slopes are to be compacted to 95% of the standard proctor density.
- (3) Install floodway monument markers. The City will furnish the marker cap, which is to be set in concrete as directed by the City of Rockwall. The developers designated representative shall install the marker prior to project acceptance. Monument installation shall meet City of Rockwall specifications.
- (A) The monument marker location is to be shown on the Record Drawing Mylar's on the grading plan.
- (B) The City of Rockwall will furnish the marker cap.
- (C) Install "No Dumping, Drains to Waterway" inlet markers to be installed on each inlet by the developer



- (4) Street Address Marker Blocks. Street address marker blocks shall be painted on the curbs in the center of each lot and comply with the City of Rockwall specifications. The street address markers are to be installed at each lot in the subdivision. The markers shall be located at the center of the lot on the face of the street curb. The address markers shall have a Forest green background with reflective white numbers. The number size shall be four-inches in height. The background of the address marker shall be eighteen-inches in length and be located from the top of the curb to the gutter flow line. The address marks shall show the full numerical portion of the address of the lot.
- (5) Interior Erosion Protection. Install reinforced silt fencing which complies with (NCTCOG) standard drawing (1020A) Third Addition. Silt fencing is to be installed at the back of the street pavement curbs and at 1-foot off the outside pavement edge of the alleys. The silt fence should contain the entire perimeter of the disturbed lot areas.
- (6) When installing the silt fence at the street (back of curb) and alley (edge of paving) locations take care to address the following issues:
 - (A) Allow for a clearance radius of 5-feet around each hydrant.
 - (B) Block the silt fence around and to the backside of each water meter.
 - (C) When placing the silt fence at an alley intersection be sure to transition the silt fence to allow a turning radius for vehicles.
 - (D) Do place the silt fence within the sight visibility easements which are located at the street and alley intersections.
- (7) Maintain existing or install additional construction site erosion BMP's as necessary, to stabilize the disturbed soil or contain silt migration.
- (8) All street and alley parkways and right-of-way locations are to be graded so as to obtain a 2% grade (1/4-inch per foot) slope. All parkways and right-of-way locations are to have positive drainage flow towards the street or alley to the right-of-way. The transitional grading from the right-of-way to the existing natural grade is to match the approved grading plans.
- (9) Final Site Grading. All grading is to be completed and verified to meet the approved grading plans. All graded areas including slopes are to be brought to a final grade surface that is smooth and uniform being relatively free of erosion washouts, tire ruts, dirt clods, silt deposits, etc., care should be taken to re-grade any rough surface areas prior to the application of grass seed, sod or erosion matting.
- (10) Remove and dispose any miscellaneous construction related debris, trash rocks etc. from the job-site and properly dispose.
- (11) Rout and seal all miscellaneous random cracks which are located in the street and alley locations.
- (12) Provide the construction inspector with electronic copies of all testing reports for the project. These shall include but not be limited to soils reports, utility densities, utility videos along with supporting documents, subgrade test reports and all concrete related reports for utilities and paving.
- (13) Conduct a video survey of the public sanitary and storm lines to the construction inspector assigned to the project. Videos shall be taken after the franchise utilities on the project have been completed.
- (14) Complete the installation of all barrier free ramps.
- (15) Construct all sidewalks that are located in the common open areas.
- (16) Clean and sweep all roadways to remove all of the dirt and debris that has accumulated during construction.
- (17) Random Pavement Depth Checks. Random depth core test is to be conducted at various street and alley locations, as directed by the engineering inspector. The location of the test and the number of test necessary will be left to the discretion of the engineering inspector.
- (18) Complete the landscaping per the approved landscaping plans.
- (19) Fire hydrants are required to have a nozzle height of 19-inches to 28-inches above the final grade elevation. Hydrant nozzles that do not meet this specification are to be raised or lowered as necessary to obtain compliance.
- (20) All fire hydrants are to have a clearance radius of 5-feet in all directions. No structures, traffic bollards, silt fencing, landscaping etc., are to be placed within the clearance area.
- (21) Paint all fire hydrants located at the site to City specifications. A minimum of two coats of aluminum paint, Mobile 11-A-19 or Tnemec 2-color Tnemec-Gloss or approved equal are to be applied to each hydrant. The fire hydrant body shall be painted silver. The hydrant



nozzle and bonnet are to be painted to comply with the following line size color code. The color indicating the line size shall be as follows:

- (A) Solid silver for 6-inch water mains.
- (B) Blue for 8-inch lines water mains.
- (C) Yellow for 10-inch water mains and above.

(22) Water Valve and Waste Water Manhole Curb Cut Marks. The pavement curbs are to be marked at all water valve and waste water manhole locations. The curb cut marks are to be sawn into the pavement curb. The curb cut marks are to consist of the following:

- (A) Valves. Place a (V) mark on the curb to note the valve locations, (blue paint for general, white paint for stub outs or dead ends, and red paint for fire hydrants and or fire lines).
- (B) Manholes. Place a (M-H) mark on the pavement curb to indicate manhole locations (green paint).
- (C) Curb Stops. Place a (I) mark on the pavement curb to indicate curb stop locations (blue paint).
- (D) Cleanouts. Place a (II) mark on the pavement curb to indicate sewer clean out locations (green paint).

(23) Seal and vacuum test all manholes. All manholes which require grade adjustments are to be re-tested.

(24) Perform a television camera inspection of all sanitary sewer and storm sewers, along with the associated storm sewer laterals. Copies of the inspection tapes which are to be on a thumb drive or DVD format are to be submitted to Engineering Inspector with the City of Rockwall Engineering Department. Videos shall be taken after the franchise utilities on the project have been completed. Also forward the results of all air and mandrel test to Engineering Inspector.

(25) The lift station is to be operational and approved for use, by the design engineer and the City of Rockwall.

(26) Install guard rail at all locations as noted on the approved plans.

(27) Ryan Miller, Director of Planning and Zoning or his designated representative shall conduct an inspection of the landscaping and project screening upon completion.

(28) Information (Future Item) – Twenty-Month Maintenance Review – The City of Rockwall requires a twenty-month maintenance review of every project. This review is to be conducted at twenty-months into the two-year maintenance warranty. The Design Engineer or his designated representative along with the contractors designated representatives shall be present to perform a walkover of the project with the City of Rockwall. A second T.V. camera of sanitary sewer main shall be done at this time with a thumb drive or DVD formatted copy provided to the City of Rockwall

(29) Grass is to be established in all disturbed areas. Grass shall be at least 1" in height with 75%-80% coverage of all disturbed areas.

For additional information, regarding this check list or site work status please contact – Engineering Inspector who is the designated Construction Inspector for the site-work on this project for the City of Rockwall, regarding this list. Project acceptance is subject to but not necessarily limited to the above listed punch list items. Engineering Inspector may be reached at telephone no. 972-771-7746.

Sincerely,

Engineering Inspector
Construction Inspector
City of Rockwall Engineering Department



EXAMPLE: CHECKLIST FOR FINAL ACCEPTANCE OF A COMMERCIAL PROJECT

(DATE)

(ENGINEER'S NAME)
 (ENGINEERING COMPANY)
 (ADDRESS)
 (CITY, TX ZIP)

RE: (PROJECT NAME) – CHECKLIST FOR FINAL ACCEPTANCE

Dear (ENGINEER'S NAME),

The following items are to be completed at the above-mentioned site to bring the project into compliance with City specifications and to meet specific project requirements. The listed items are items identified during the walkover of the site and are to be addressed prior to final acceptance of the project. The City will conduct daily site visits (during daily rounds) at the project until completion of the noted items. A copy of this list will also be directed to the developer/owner and general contractor. The below listed items are to be directed to the appropriate responsible parties for completion.

REQUIRED DOCUMENTATION

- (1) The City of Rockwall requires that the design engineer provide a letter of concurrence. The letter is to verify that the drainage flow patterns, grade to drain locations and drainage structures, including the volume of the surface and/or subsurface detention system and detention outlet structure located at the project were installed to the general elevations as shown on the approved plans. The letter shall also verify that the project was constructed to meet the approved design requirements or is within acceptable design tolerances. The Design Engineer or his designated representative shall direct all "survey-work" necessary to verify elevations and design compliance. The letter of concurrence is to have the seal and signature of the design engineer.

EXAMPLE OF LETTER OF CONCURRENCE VERBIAGE WHICH WILL NOT BE ACCEPTED BY THE CITY:

A representative of this company visited the site and has visually verified to the best of the engineer's professional opinion, knowledge and belief, the final grading and site drainage comply with the City approved plans and details.

EXAMPLE OF LETTER OF CONCURRENCE VERBIAGE WHICH WILL BE ACCEPTED BY THE CITY:

A representative of this company visited the site and has visually verified to the best of the engineer's professional opinion, knowledge and belief, that based on my observations along with survey work conducted at the site, the final grading, site drainage, and detention outfall with required volume comply with the City approved plans and details.

- (2) The Design Engineer shall furnish a digital file of the project formatted in Auto Cad 14, or 2000 format or newer and Adobe Acrobat (pdf.) format with a CD-ROM. The disk shall include a full set of plans along with any landscaping, wall plans, and details sheets.

Submit one (1) set of blue line drawings of the "Record Drawings" containing copies of all sheets. The blue line copy will be reviewed by the construction inspector **PRIOR** to producing the "Record Drawing" disk. This will allow any revisions to be addressed prior to producing the disk.

RECORD DRAWING DISK DRAWINGS SHALL HAVE THE DESIGN ENGINEERS SEAL, SIGNATURE AND MUST BE STAMPED AND DATED AS "RECORD DRAWINGS" OR "AS BUILT DRAWINGS" ON ALL SHEETS.

The City of Rockwall will not accept any Record Drawing disk drawings which include a disclaimer with the like or similar verbiage. A disclaimer shall not directly or indirectly state or indicate that the design engineer or the design engineers, surveyor/surveyors did not verify or grades after construction, or that the Record Drawings were based solely on information provided by the construction



contractor/contractors. Any Record Drawings which include like or similar disclaimer verbiage will not be accepted by the City of Rockwall.

EXAMPLE OF ACCEPTABLE DISCLAIMER:

To the best of our knowledge Smith Engineering, Inc., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

- (3) 4% Engineering Inspection Fee (Final As-Built Adjustments). Prior to the start of construction at the project, engineering inspection fees for the project were established. The preliminary inspection fee amounts were based upon the projected contract quantity and unit price amounts which were submitted to the City. A fee based on 4% of the projected quantity cost was paid to the City. The final fee amounts are to be adjusted if necessary to match the unit quantity and unit price amounts based on the as-built contract unit quantity amounts. Please provide a copy of the as-built quantity amounts with total amounts for each item. The as built amounts should be noted or stamped as "as-built contract quantity and unit price amounts". The engineering inspection fee charged by the City will be adjusted to match these amounts if necessary. The City is to receive payment on the adjusted cost amounts prior to project acceptance. As-built contract unit quantity and unit price amounts for the pavement (including fire lane if applicable), drive approaches, sidewalks, barrier free ramps, wastewater, storm sewer, drainage structures (including underground detention), water lines, along with all associated fixtures which are located within the defined rights-of-way and easements of the project.
- (4) All weekday and weekend overtime engineering inspections fees are to be paid.
- (5) Flood study review fees to be paid if there is an excess due over the initial review fee. If all of the initial fees were not utilized for the flood study review, those monies will be refunded.
- (6) Storm Sewer Outfall Coordinates. It is now necessary to tie down all the storm sewer outfall pipes to our state plane Coordinate System. The design engineer will be required to provide the following coordinate information which is to be submitted in letterform showing the x, y, and z coordinates at the end of all storm sewer outfalls of the project.
- (7) Maintenance bonds are to be submitted to the City of Rockwall for the paving and utilities installed at the project. The bonds shall be two-year 10% maintenance bonds to cover maintenance, for a two-year timeline starting from the "Date of City of Rockwall's Acceptance" for the project. There is to be no date in the starting timeline only the above wording.
 - (A) The utility bond shall cover the following utility systems and their associated fixtures.
 - Water
 - Wastewater
 - Storm sewer (including detention systems)
 - (B) The paving bond shall cover the following:
 - Street Pavement.
 - Driveway Approaches
 - Fire Lane.
 - Sidewalks.
 - Barrier free ramps.
- (8) Engineered Retaining Wall Inspection & Letter of Concurrence. The City requires the design engineer for any retaining wall which is three-feet in height or taller, to periodically inspect, or make arrangements for his designated representative to periodically inspect the retaining wall/walls during the construction process. The design engineer is to submit letter of concurrence for the retaining wall/walls to the City prior to project acceptance. The letter shall contain the seal and signature of the retaining wall design engineer.
- (9) City Council approved and owner signed final/replat plat mylars and tax certificates to be submitted to Planning Department for filing.

SITE ITEMS

- (1) Grass is to be established at all of the disturbed areas. The grass is to be maintained until such time that a general coverage density of 75-80% of the disturbed area has been established with a minimum grass stand height of one-inch.



- (2) Maintain existing or install additional construction site erosion BMP's as necessary, to stabilize the disturbed soil or contain silt migration.
- (3) All fire lanes are to be sawn and crack sealed. All miscellaneous random cracks are to be routed and sealed. All expansion joints are to be sealed in the fire lane.
- (4) The fire lane is to be re-painted where necessary if there are locations where the fire lane is scuffed or is flaking. The locations which require re-painting shall be sandblasted, prior to re-painting.
- (5) Wipe the inside ring and cover of the sanitary sewer manhole, using "Non-Shrink" grout and seal if necessary.
- (6) Repair all gouges, cracks, and other deformities on the curbs.
- (7) Adjust meter cans and valve stacks to final grade elevation.
- (8) Adjust fire hydrants to grade. All fire hydrants must have the operating nut between 19 and 28 inches above the final grade elevation around them.
- (9) All fire hydrants are to have a clearance radius of 5-feet in all directions. No structures, traffic bollards, barricades, guardrail, landscaping etc., are to be placed within the clearance area.
- (10) All valve stacks located outside of paving are to have a 2'x2' four-inch thick reinforced concrete pad around them.
- (11) Water Valve and Waste Water manhole curb cut marks. The pavement curbs are to be marked at all water valve and waste water manhole locations. The curb cut marks are to be sawn into the pavement curb. The curb cut marks are to consist of the following:
 - (A) Valves. Place a (V) mark on the curb to note the valve locations, (blue paint for general, white paint for sub outs or dead ends, and red paint for fire hydrants and or fire lines).
 - (B) Curb stops. Place a (I) mark on the pavement curb to indicate curb stop locations, (blue paint).
 - (C) Clean outs. Place a (II) mark on the pavement curb to indicate sewer clean-out locations, (green paint).
- (12) Cut an invert in the sanitary sewer connection into the existing manhole at station 0+00, and re-seal the bottom of the manhole.
- (13) Clean mud from concrete flume in detention pond.
- (14) Install floodway monument markers. The City will furnish the marker cap, which is to be set in concrete as directed by the City of Rockwall. The developers designated representative shall install the marker prior to project acceptance. Monument installation shall meet City of Rockwall specifications.
 - (A) The monument marker location is to be shown on the Record Drawing Mylar's on the grading plan.
 - (B) The City of Rockwall will furnish the marker cap.
 - (C) Install "No Dumping, Drains to Waterway" inlet markers to be installed on each inlet by the developer
- (15) All parking lot and handicap striping along with all associated signs must be installed.
- (16) All construction related trash material and miscellaneous debris is to be removed from the site and properly disposed.
- (17) Maximum slopes allowed by the City of Rockwall shall be a 4:1 slope. All slope areas which exceed the above noted slope requirements are to be re-graded or retained unless otherwise approved by the City Engineer. All slopes are to be graded so as to achieve the most gradual slope possible, unless otherwise noted on the approved construction plans.
- (18) Final Grading. Re-establish all drainage swales, as necessary to achieve conformance to the drainage patterns shown on the approved grading plans. Grade to drain any locations which may hold water or obstruct approved drainage flow patterns. All graded areas, including slopes are to be brought to a final grade surface that is smooth and uniform being relatively free of erosion washouts, tire ruts, dirt clods, silt deposits etc., care should be taken to re-grade any rough surface areas prior to the application of erosion matting or grass seeding.
- (19) All required landscaping is to be installed at the site and comply with the approved landscape plan. The site landscaping is to be inspected by Ryan Miller, Director of Planning and Zoning, or his designated representative prior to project acceptance.

For additional information, regarding this check list or site work status please contact – (Inspector's Name), who is the designated Construction Inspector for the site-work on this project for the City of Rockwall, regarding this list. Project acceptance is subject to but not necessarily limited to the above listed punch list items. (Inspector's Name) may be reached at telephone no. 972-771-7746.



Sincerely,

Construction Inspector
City of Rockwall Engineering Department



MEMORANDUM

TO: Mary Smith, City Manager

CC: Honorable Mayor and City Council

FROM: Amy Williams, City Engineer and Director of Public Works

DATE: April 3, 2023

SUBJECT: PARKING RESTRICTIONS FOR N. GOLIAD STREET [SH-205] AND SHENANDOAH LANE

Attachments
Draft Ordinance

Summary/Background Information

Recently, the City of Rockwall has had issues with vehicles parking along N. Goliad Street [SH-205] and Shenandoah Lane. Specifically, vehicles parking along N. Goliad Street have created visibility issues for vehicles turning onto N. Goliad Street [SH-205] at the intersection of SH-205 and Shenandoah Lane. This creates an unsafe condition considering the speed limit of N. Goliad Street [SH-205]. In addition, Shenandoah Lane consists of approximately 12-feet of pavement width, and vehicles parking along this roadway prohibit access for residents and emergency vehicles. To address this issue, staff has prepared the attached amendment to Section 26-505, *Prohibited in Specific Places*, of Article VII, *Stopping, Standing, or Parking*, of Chapter 26, *Motor Vehicles & Traffic*, of the Municipal Code of Ordinances, which will prohibit parking: [1] along N. Goliad Street from FM-552 to John King Boulevard, and [2] along Shenandoah Lane from All Angels Hill Lane to the eastern terminus of Shenandoah Lane.

Action Needed

Consider an ordinance amending Section 26-505, *Prohibited in Specific Places*, of Article VII, *Stopping, Standing, or Parking*, of Chapter 26, *Motor Vehicles & Traffic*, of the Municipal Code of Ordinances to include the prohibition of parking on N. Goliad Street from FM-552 to John King Boulevard and on Shenandoah Lane from All Angels Hill Lane to the eastern terminus of Shenandoah Lane, and take any action necessary.

CITY OF ROCKWALL

ORDINANCE NO. 23-XX

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, AMENDING THE MUNICIPAL CODE ORDINANCES OF THE CITY OF ROCKWALL, BY AMENDING SECTION 26-505, *PROHIBITED IN SPECIFIC PLACES*, OF ARTICLE VII, *STOPPING, STANDING OR PARKING*, OF CHAPTER 26, *MOTOR VEHICLES AND TRAFFIC*, TO INCORPORATE ADDITIONAL STREETS SUBJECT TO THE PROHIBITED PARKING REQUIREMENTS; PROVIDING FOR A PENALTY OF FINE NOT TO EXCEED THE SUM OF TWO HUNDRED DOLLARS (\$200.00) FOR EACH OFFENSE; PROVIDING FOR A SEVERABILITY CLAUSE; PROVIDING FOR A REPEALER CLAUSE; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Rockwall, Texas is a *Home Rule City* by State Law and the City's Charter is permitted to establish ordinances to protect the health, safety and general welfare of its residents; and,

WHEREAS, the City has exclusive control and power over the streets, alleys, and public grounds and highways of the City pursuant to Transportation Code §311.001, as it may be amended.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS:

SECTION 1. Findings. The recitals are hereby found to be true and correct and are hereby incorporated as part of this Ordinance.

SECTION 2. That the Section 26-505, *Prohibited in Specified Places*, of Article VII, *Stopping, Standing or Parking*, of Chapter 26, *Motor Vehicles and Traffic*, of the Code of Ordinances be hereby amended to henceforth to read in its entirety as follows:

SECTION 26-505: Prohibited in specified places

(a) An operator may not stop, stand, or park a vehicle:

- (1) On the roadway side of a vehicle stopped or parked at the edge or curb of a street;
- (2) On a sidewalk;
- (3) In an intersection;
- (4) On a crosswalk;
- (5) Between a safety zone and the adjacent curb or within 30 feet of a place on the curb immediately opposite the ends of a safety zone, unless the governing body of a municipality designates a different length by signs or markings;
- (6) Alongside or opposite a street excavation or obstruction if stopping, standing or parking the vehicle would obstruct traffic;
- (7) On a bridge or other elevated structure on a highway or in a highway tunnel;
- (8) On a railroad track;
- (9) Where an official sign prohibits stopping;
- (10) On Clark Street, between Williams and E. Boydston, or Fannin Street, between Washington and E. Boydston, except within the parking niches outside the main roadway lanes;
- (11) On either side of Summer Lee Drive from FM 740 (Ridge Road) west to the western right-of-way line of Bourbon Street Circle; or
- (12) On either side of Springer Road, Corporate Crossing, Discovery Boulevard, Data Drive, Capital Boulevard, Research Circle, Observation Trail, Science Place, Technology Way, and Innovation Drive.
- (13) On either side of South Lakeshore Drive from State Highway 66/West Rusk to the intersection of South Lakeshore Drive and Summit Ridge Drive, except within the parking niches outside the main roadway lanes.
- (14) On either side of Summit Ridge Drive from the Farm to Market 740/Ridge Road to the intersection of South Lakeshore Drive and Summit Ridge Drive, except within the parking niches outside the main roadway lanes.
- (15) N. Goliad Street [*SH-205*] from FM-552 to the John King Boulevard, and Shenandoah Lane from

All Angels Hill Lane to its eastern terminus of Shenandoah Lane.

- (b) All emergency vehicles shall be exempt from the restrictions set forth in subsection (a) of this section. Emergency vehicles shall include ambulances, fire trucks and equipment, paramedic vehicles, police vehicles and all governmental vehicles used for necessary governmental purposes.
- (c) Any vehicle actively used for construction or repair work in the Rockwall Technology Park shall be exempt from the restrictions set forth in subsection (a) of this section.
- (d) The City Manager or his designee shall provide for appropriate notice and signage for the parking restrictions as contained in this section. The City Manager or his designee shall also be authorized to issue citations and perform other enforcement provisions in accordance with this chapter.
- (e) No person shall move a vehicle not lawfully under his control into any such prohibited area or away from a curb such a distance as is unlawful.

SECTION 3. That all ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed to the extent of such conflict;

SECTION 4. That the Code of the City of Rockwall, Texas, as amended, shall remain in full force and effect, save and except as amended by this ordinance;

SECTION 5. That should any section, paragraph, sentence, clause, phrase or word of this ordinance be declared unconstitutional or invalid for any purpose by a court of competent jurisdiction, the remainder of this ordinance shall not be affected thereby, and to this end the provisions of this ordinance are declared to be severable;

SECTION 6. That this ordinance shall take effect immediately from and after its passage;

PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, THIS THE 17TH DAY OF APRIL, 2023.

Kevin Fowler, *Mayor*

ATTEST:

Kristy Teague, *City Secretary*

APPROVED AS TO FORM:

Frank J. Garza, *City Attorney*

1st Reading: April 3, 2023

2nd Reading: April 17, 2023



MEMORANDUM

TO: Mary Smith, City Manager

CC: Honorable Mayor and City Council

FROM: Amy Williams, P.E., Director of Public Works/City Engineer

DATE: April 3, 2023

SUBJECT: DAVIS DRIVE WATER LINE PROJECT

Attachments
Proposal and Map

Summary/Background Information

In 1998, the residents along Davis Drive were annexed into the City of Rockwall. When annexed, the water was being provided from an existing 12-inch North Texas Municipal Water District water line that was located along State Highway 66 (SH-66). In 2009, the City constructed a 12-inch water line along SH- 66, which allowed the services for the residents on Davis Drive to be served by the City of Rockwall. The meters for all of these residents are located on the north side of SH-66. The private water services for these lots range in length from 400 to 1,100-feet, which can be a burden on the property owner if maintenance or repair is needed. In some cases when these homes were built, the water services were installed from the meter located on the north side of SH-66 and across the rear property lines of multiple property owners before reaching the resident's property.

A resident has requested that the City provide a water line along Davis Drive to provide water service to the residents. This eight (8) inch water line would provide fire protection, and a shorter, less obstructed water service line.

Staff has requested a proposal from KSA to provide the engineering design, construction plans, and specifications to install approximately 1,000-feet of eight (8) inch water along Davis Drive. The contract proposal for this project is \$155,680.00.

Action Needed

Staff is requesting that the City Council consider authorizing the City Manager to execute a contract for the professional engineering services with KSA, to perform the engineering design services and specifications in an amount not to exceed \$155,680.00. If approved, this will be paid out of the *Water/Sewer Fund*.

March 8, 2023

Jonathan Browning, P.E. C.F.M.
Assistant City Engineer
City of Rockwall
385 S. Goliad
Rockwall, TX 75087

RE: Professional Engineering Services Proposal
Davis Dr Waterline Extension

Dear Mr. Browning:

We appreciate the opportunity to provide the City of Rockwall (The City) professional engineering services for the above-referenced project. Below we describe our understanding of the project, proposed scope of work, fee schedule, and timeline milestones.

PROJECT SUMMARY

The project involves the installation of a new residential waterline in a new easement(s) along a private road within the City of Rockwall. Below are the major design elements that would be included in the scope of work, based on previous coordination and our general understanding of the project:

- **Residential Waterline Extension Design (1,055 LF +/-)**
 - o Connect to existing 8" WL valve/stub just South of the HWY 66 right of way.
 - o The line will be installed in a new easement to be acquired as a part of this project.
 - o The waterline will be planned along the east side of Davis Dr to provide water service to the end of the road at 700 Davis Dr.
 - o Each property owner will then be required to hire professional services for making the connection to the new system, as well as disconnecting existing services, independently from this project.
 - o Hydrants will be located per city standards and at the southern terminus for line flushing.
 - o The waterline is anticipated to be a 6"-8" diameter, standard PVC C900, installed at a city-standard depth.

- **Easement Acquisitions (Estimated between 1 to 7)**
 - o We understand that Davis Dr. is owned by a single owner and has an ingress/egress easement for the benefit of the property owners. Depending on the feasible alignment of the waterline, our proposal anticipates one of two situations:
 - o Option 1 – Acquire one easement within the road property from one property owner.
 - o Option 2 – Acquire easements from seven property owners along the east side of the road.

A conceptual illustration of the project area is attached for reference.

SCOPE OF WORK

The tasks below are the professional services to be provided under this proposal.

1. Topographic & Boundary Survey

KSA will perform a topographic design survey of the roadway corridor in compliance with the minimum requirements of the City's SDC, based on NAD-83 datum or the City's preference. The surveyed existing conditions will include features found on the surface and utility markings from TX811. The survey will provide a terrain described by one-foot contours.

A boundary survey will be performed to locate property corners relevant to the acquisition of easements for the purpose of the waterline as described above. The resulting property lines will be incorporated into the topographic survey for use in determining the easement impacts.

2. Schematic Design

KSA will prepare a schematic-level layout and profile of the proposed waterline and prepare a review submittal to the City. The schematic plan will be used to confirm the desired alignment and its impacts on existing features (driveways, landscaping, utilities), as well as to evaluate the needed easements.

Our team will meet with the City (typically within 1 week of the submittal) to discuss the schematic and incorporate feedback for use in the Preliminary Design.

3. Preliminary Design

KSA will prepare a Preliminary Design to include the following typical plan parts:

- a. Cover Sheet
- b. Project Control and Layout
- c. Demolition Plan
- d. Easement Requirements
- e. Waterline Plan and Profile
- f. Standard Detail Sheets

We will prepare an Opinion of Probable Construction Cost (OPCC) to accompany the Preliminary Design. Our team will prepare an electronic and half size (11"x17") hard copy submittal (typically up to 5 copies) for city review.

As noted in our attached Timeline, up to 2 weeks review periods are planned for the City to evaluate each submittal.

4. Easement Acquisition Services (This phase can also be initiated after Final Design if preferred)

Our services will include the following tasks:

- a. Easement Exhibits. We will activate our mapping subconsultant to prepare easement exhibits for the applicable properties (depending on which alignment is pursued).
- b. Appraisals. Independent appraisals will be secured if they are required.
- c. Title Policies. Our Scope excludes securing title policies, but they can be added if required.
- d. Professional Acquisition Services. The KSA Team will make initial contacts, perform title research services, process right of entry letters, conduct negotiations, and provide documentation services, for the processing of acquisitions.

5. Final Design

KSA will incorporate comments from the Preliminary Plan and prepare the Final Design to include the updated plan parts with the additional detail needed for construction. The Final Design plans will incorporate additional sections such as:

- a. Erosion Protection Plan
- b. Custom Details that may be needed
- c. Other Sheets as applicable

KSA will prepare a draft set of Bidding Documents based on the City's boilerplate documents, or EJCDC bidding documents, as directed by the City.

KSA will update the OPCC and prepare a Final Design submittal for final review. After the review period (anticipated up to two weeks) we will incorporate comments and produce a sealed Plan set and Bidding Documents.

6. Bidding and Award Support

KSA will support the City with the following Bid Phase services:

- a. Advertisement of Bids
- b. Management of electronic bid distribution (civcastusa.com or the City's platform)
- c. Respond to questions and issue addenda
- d. Open Bids and produce Bid Tabulation
- e. Prepare Bid Summary for Council consideration
- f. Prepare Contract Documents after Award

Our resource plan assumes the project involves one bidding cycle.

7. Basic Construction Administration

During the construction phase, our team will perform the basic construction phase support tasks below:

- a. Conduct or attend the Pre-Construction Conference
- b. Review construction Submittals
- c. Respond to Requests for Information (RFIs)

- d. Attend periodic site visits and construction meetings
- e. Review requests for Change Orders, Pay Estimates
- f. Perform the Substantial Completion Walkthrough and produce a Closeout Punch List
- g. Prepare Record Drawings based on Contractor’s “Redlines”

8. RPR Services

If requested, KSA can provide full or part time Resident Project Representative services. This service is performed by experienced KSA staff that could be on site near full or part time and provide observation of the contractor’s activities, and assist the City with field orders, resolving questions, and generally reporting issues with compliance with city or project standards.

FEE SCHEDULE

Our proposed fee is broken down in the table below as lump sum (LS) and time and materials (T&M) tasks as follows:

Basic Services	Budget	
Topographic Survey	\$ 9,500	LS
Schematic Design	\$ 5,400	LS
Preliminary Design	\$ 19,200	LS
Final Design	\$ 17,990	LS
Subtotal Design Services =	\$ 52,090	

Additional Services		
Boundary Survey	\$ 11,550	LS
Bidding and Award Support	\$ 7,700	LS
Basic Construction Phase Svcs	\$ 17,700	LS
Subtotal Design Services =	\$ 36,950	

Easement Acquisition Services (per Easement)		
Easement Exhibit	\$ 2,260	T&M
Easement Appraisal	\$ 2,420	T&M
Acquisition Support Services	\$ 4,840	T&M
Estimated Subtotal per Easement =	\$ 9,520	

Estimated Total for Option 1 (1 Easement)	\$ 98,560
Estimated Total for Option 2 (7 Easements)	\$ 155,680

Full-Time RPR Services (per month)	\$ 14,380	T&M
---	------------------	-----

The level of effort for each easement acquisition may vary, and the average effort per easement is estimated in the breakdown above. KSA will not exceed the time and material budgets proposed without the City’s written approval.

The following tasks/design elements are excluded from our scope of work, but we can revise our proposal to add

them if requested:

- Roadway and drainage improvements
- Title Policies
- Water system modeling
- Public meetings
- TXDOT Utility Installation Requests (UIR)

TIMELINE

We propose to complete the tasks outlined above as described in the attached timeline. A detailed schedule with milestone dates will be updated once a notice to proceed date becomes apparent.

Please do not hesitate to contact me for any comments or should you need additional information. If this proposal is acceptable, we will follow the City's contracting process or follow up with an EJCDC Standard format professional engineering services agreement.

We look forward to work with you on this important project.

Sincerely,

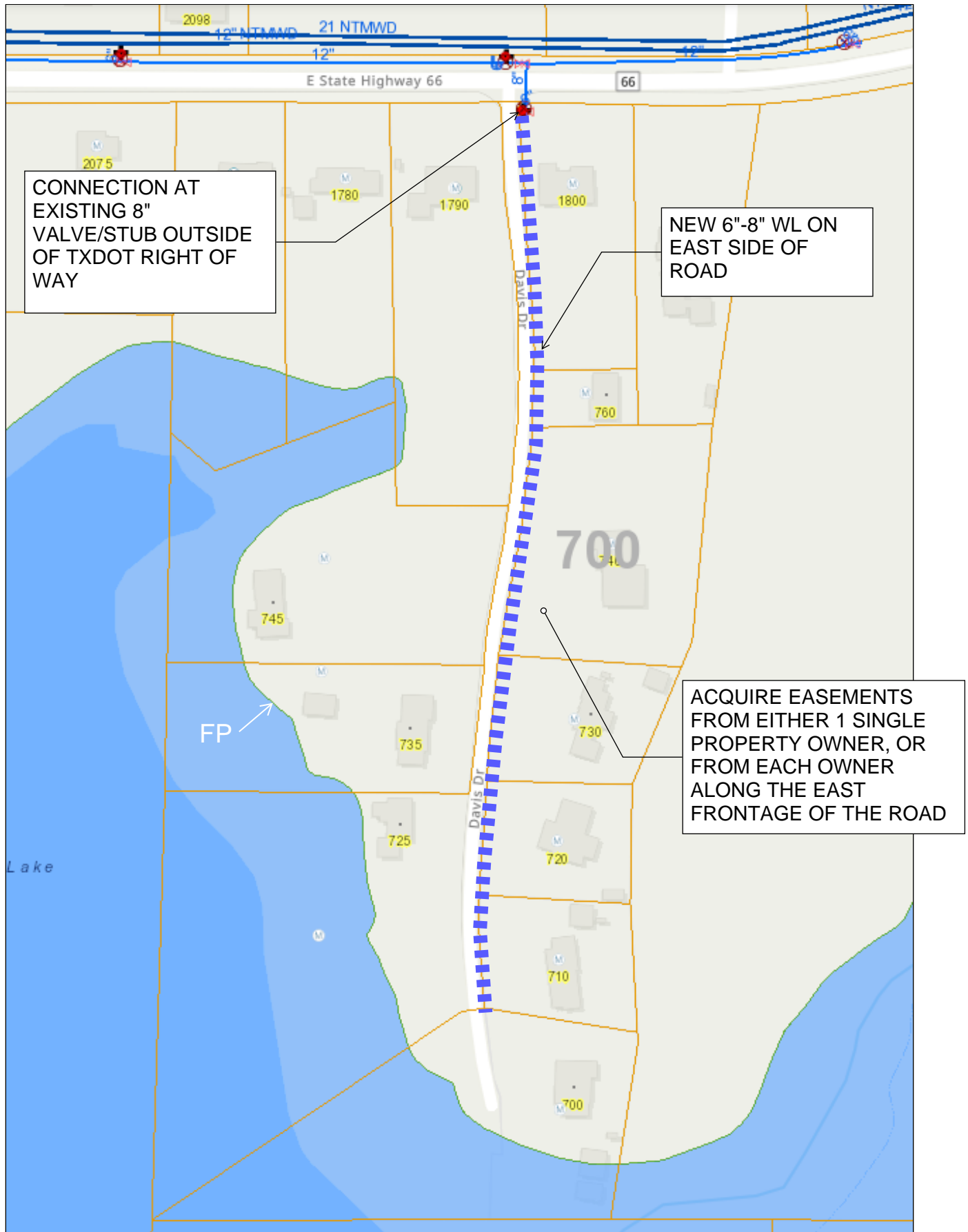
KSA



Abiel Carrillo, P.E.
Municipal Practice Leader

Cc: Project File 102016

DAVIS DR WL EXTENSION - SCOPE EXHIBIT





MEMORANDUM

TO: Mary Smith, City Manager

CC: Honorable Mayor and City Council

FROM: Ryan Miller, Director of Planning and Zoning

DATE: April 3, 2023

SUBJECT: P2023-005; REPLAT FOR LOTS 8-10, BLOCK A, SKY RIDGE ADDITION

Attachments

Case Memo
Development Application
Location Map
Replat

Summary/Background Information

Consider a request by Josh Swiercinsky of 7.1 Ridge, LLC for the approval of a *Replat* for Lots 8-10, Block A, Sky Ridge Addition being a 2.293-acre tract of land identified as Lots 2-4, Block A, Sky Ridge Addition, City of Rockwall, Rockwall County, Texas, zoned Commercial (C) District, situated within the Scenic Overlay (SOV) District, generally located at the southwest corner of the intersection of Yellow Jacket Lane and Ridge Road [FM-740], and take any action necessary.

Action Needed

The City council is being asked to approve, approve with conditions, or deny the proposed *Replat*.



CITY OF ROCKWALL

CITY COUNCIL CASE MEMO

PLANNING AND ZONING DEPARTMENT

385 S. GOLIAD STREET • ROCKWALL, TX 75087

PHONE: (972) 771-7745 • EMAIL: PLANNING@ROCKWALL.COM

TO: Mayor and City Council
DATE: April 11, 2023
APPLICANT: Josh Swiercinsky, 7.1 Ridge, LLC
CASE NUMBER: P2023-005; *Replat for Lots 8-10, Block A, Sky Ridge Addition*

SUMMARY

Consider a request by Josh Swiercinsky of 7.1 Ridge, LLC for the approval of a Replat for Lots 8-10, Block A, Sky Ridge Addition being a 2.293-acre tract of land identified as Lots 2-4, Block A, Sky Ridge Addition, City of Rockwall, Rockwall County, Texas, zoned Commercial (C) District, situated within the Scenic Overlay (SOV) District, generally located at the southwest corner of the intersection of Yellow Jacket Lane and Ridge Road [FM-740], and take any action necessary.

PLAT INFORMATION

- The purpose of the applicant's request is to Replat a 2.293-acre tract of land (*i.e. Lots 2-4, Block A, Sky Ridge Addition*) into three (3) lots (*i.e. Lots 8-10, Block A, Sky Ridge Addition*) for the purpose of establishing access, fire lane, and utility easements for future infrastructure improvements. The subject property is located directly west of the intersection of Ridge Road and W. Yellowjacket Lane, and is zoned Commercial (C) District.
- The subject property was annexed into the City of Rockwall by *Ordinance No. 60-02* and *Ordinance No. 60-04*. The subject property was zoned Commercial (C) District according to the January 3, 1972 zoning map. On January 20, 2015, the City Council approved a tree mitigation plan (*Case No. 2014-018*) to allow for future development of the subject property. On August 7, 2017, the City Council approved a final plat (*Case No. P2017-037*) to establish the subject property as Lot 1, Block A, Sky Ridge Addition. On January 26, 2021, the Planning and Zoning Commission approved a variance to the minimum 20-foot landscape buffer requirement (*Case No. MIS2021-001*) stipulated by Subsection 06.02, *General Overlay District Standards*, of Article 05, *District Development Standards*, of the Unified Development Code (UDC) to allow a variable width landscape buffer ranging between five (5) feet and 22-feet along the front of the subject property adjacent to Ridge Road. On August 2, 2021, the City Council approved a replat (*i.e. Case No. P2021-038*) to establish the subject property as Lots 2-4, Block A, Sky Ridge Addition. On June 14, 2022, the Planning and Zoning Commission approved two (2) site plans (*i.e. Case No. SP2022-025 & SP2022-026*) to allow the construction of two (2) *Restaurants with 2,000 SF or more with Drive-Through or Drive-In* on the subject property.
- The surveyor has completed the majority of the technical revisions requested by staff, and this Replat -- *conforming to the requirements for plats as stipulated by the Subdivision Ordinance in the Municipal Code of Ordinances* -- is recommended for conditional approval pending the completion of final technical modifications and submittal requirements.
- Conditional approval of this Replat by the City Council shall constitute approval subject to the conditions stipulated in the *Conditions of Approval* section below.
- With the exception of the items listed in the *Conditions of Approval* section of this case memo, this plat is in substantial compliance with the requirements of the *Subdivision Ordinance* in the Municipal Code of Ordinances.

CONDITIONS OF APPROVAL

If the City Council chooses to approve the Replat for *Lots 8-10, Block A, Sky Ridge Addition*, staff would propose the following conditions of approval:

- (1) All technical comments from City Staff (*i.e. Engineering, Planning and Fire Department*) shall be addressed prior to submittal of civil engineering plans; and
- (2) Any construction resulting from the approval of this Replat shall conform to the requirements set forth by the Unified Development Code (UDC), the International Building Code (IBC), the Rockwall Municipal Code of Ordinances, city adopted engineering and fire codes and with all other applicable regulatory requirements administered and/or enforced by the state and federal government.

PLANNING AND ZONING COMMISSION

On March 28, 2023, the Planning and Zoning Commission approved a motion to recommend approval of the Replat by a vote of 7-0.



DEVELOPMENT APPLICATION

City of Rockwall
Planning and Zoning Department
385 S. Goliad Street
Rockwall, Texas 75087

STAFF USE ONLY

PLANNING & ZONING CASE NO.

P2023-005

NOTE: THE APPLICATION IS NOT CONSIDERED ACCEPTED BY THE CITY UNTIL THE PLANNING DIRECTOR AND CITY ENGINEER HAVE SIGNED BELOW.

DIRECTOR OF PLANNING:

CITY ENGINEER:

PLEASE CHECK THE APPROPRIATE BOX BELOW TO INDICATE THE TYPE OF DEVELOPMENT REQUEST [SELECT ONLY ONE BOX]:

PLATTING APPLICATION FEES:

- MASTER PLAT (\$100.00 + \$15.00 ACRE) ¹
- PRELIMINARY PLAT (\$200.00 + \$15.00 ACRE) ¹
- FINAL PLAT (\$300.00 + \$20.00 ACRE) ¹
- REPLAT (\$300.00 + \$20.00 ACRE) ¹
- AMENDING OR MINOR PLAT (\$150.00)
- PLAT REINSTATEMENT REQUEST (\$100.00)

SITE PLAN APPLICATION FEES:

- SITE PLAN (\$250.00 + \$20.00 ACRE) ¹
- AMENDED SITE PLAN/ELEVATIONS/LANDSCAPING PLAN (\$100.00)

ZONING APPLICATION FEES:

- ZONING CHANGE (\$200.00 + \$15.00 ACRE) ¹
- SPECIFIC USE PERMIT (\$200.00 + \$15.00 ACRE) ^{1 & 2}
- PD DEVELOPMENT PLANS (\$200.00 + \$15.00 ACRE) ¹

OTHER APPLICATION FEES:

- TREE REMOVAL (\$75.00)
- VARIANCE REQUEST/SPECIAL EXCEPTIONS (\$100.00) ²

NOTES:

¹: IN DETERMINING THE FEE, PLEASE USE THE EXACT ACREAGE WHEN MULTIPLYING BY THE PER ACRE AMOUNT. FOR REQUESTS ON LESS THAN ONE ACRE, ROUND UP TO ONE (1) ACRE.
²: A ~~\$1,000.00~~ FEE WILL BE ADDED TO THE APPLICATION FEE FOR ANY REQUEST THAT INVOLVES CONSTRUCTION WITHOUT OR NOT IN COMPLIANCE TO AN APPROVED BUILDING PERMIT.

PROPERTY INFORMATION [PLEASE PRINT]

ADDRESS	FM 740			
SUBDIVISION	SKY RIDGE ADDITION LOTS 2-7	LOT	3&4	BLOCK A
GENERAL LOCATION	NORTH SIDE OF FM 740			

ZONING, SITE PLAN AND PLATTING INFORMATION [PLEASE PRINT]

CURRENT ZONING	COMMERCIAL	CURRENT USE	COMMERCIAL/FAST FOOD	
PROPOSED ZONING	SAME	PROPOSED USE	SAME	
ACREAGE	PART OF 2.293 AC.	LOTS [CURRENT]	3	LOTS [PROPOSED] 3

SITE PLANS AND PLATS: BY CHECKING THIS BOX YOU ACKNOWLEDGE THAT DUE TO THE PASSAGE OF HB3167 THE CITY NO LONGER HAS FLEXIBILITY WITH REGARD TO ITS APPROVAL PROCESS, AND FAILURE TO ADDRESS ANY OF STAFF'S COMMENTS BY THE DATE PROVIDED ON THE DEVELOPMENT CALENDAR WILL RESULT IN THE DENIAL OF YOUR CASE.

OWNER/APPLICANT/AGENT INFORMATION [PLEASE PRINT/CHECK THE PRIMARY CONTACT/ORIGINAL SIGNATURES ARE REQUIRED]

<input checked="" type="checkbox"/> OWNER	7.1 RIDGE, LLC	<input checked="" type="checkbox"/> APPLICANT	SAME AS OWNER
CONTACT PERSON	Josh Swiercinsky	CONTACT PERSON	
ADDRESS	106 E. RUSK STREET, STE 200	ADDRESS	
CITY, STATE & ZIP	ROCKWALL, TX 75032	CITY, STATE & ZIP	
PHONE	972-771-7577	PHONE	
E-MAIL	joshua@skyrei.com	E-MAIL	

NOTARY VERIFICATION [REQUIRED]

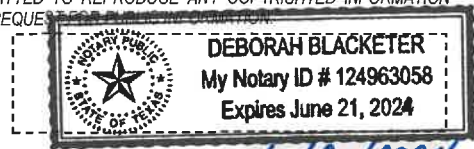
BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED Michael Swiercinsky [OWNER] THE UNDERSIGNED, WHO STATED THE INFORMATION ON THIS APPLICATION TO BE TRUE AND CERTIFIED THE FOLLOWING:

"I HEREBY CERTIFY THAT I AM THE OWNER FOR THE PURPOSE OF THIS APPLICATION; ALL INFORMATION SUBMITTED HEREIN IS TRUE AND CORRECT; AND THE APPLICATION FEE OF \$345.86 TO COVER THE COST OF THIS APPLICATION, HAS BEEN PAID TO THE CITY OF ROCKWALL ON THIS THE 10 DAY OF March, 2023. BY SIGNING THIS APPLICATION, I AGREE THAT THE CITY OF ROCKWALL (I.E. "CITY") IS AUTHORIZED AND PERMITTED TO PROVIDE INFORMATION CONTAINED WITHIN THIS APPLICATION TO THE PUBLIC. THE CITY IS ALSO AUTHORIZED AND PERMITTED TO REPRODUCE ANY COPYRIGHTED INFORMATION SUBMITTED IN CONJUNCTION WITH THIS APPLICATION, IF SUCH REPRODUCTION IS ASSOCIATED OR IN RESPONSE TO A REQUEST FOR PUBLIC RECORDS INFORMATION."

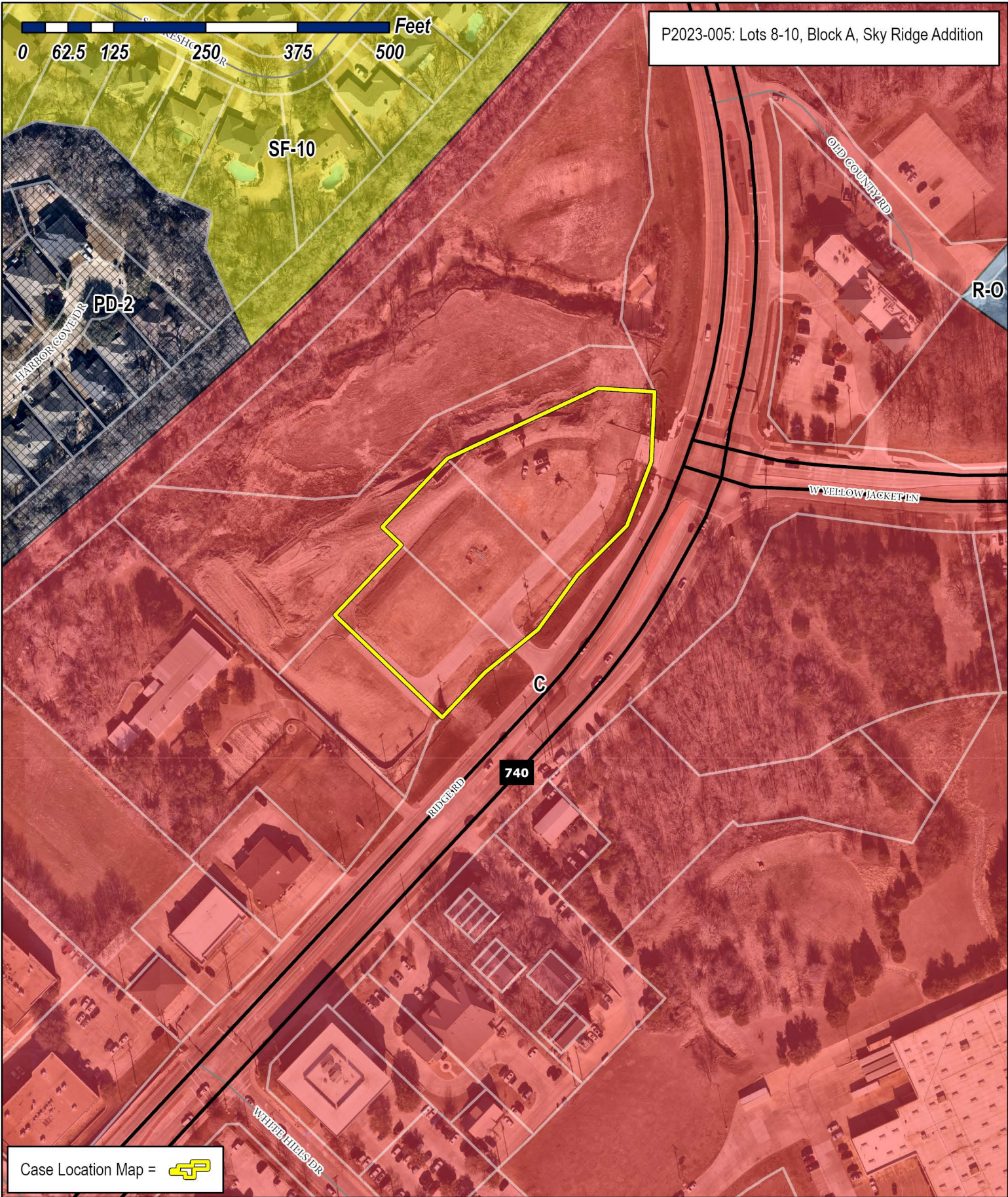
GIVEN UNDER MY HAND AND SEAL OF OFFICE ON THIS THE 16 DAY OF March, 2023.

OWNER'S SIGNATURE [Signature]

NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS [Signature]



MY COMMISSION EXPIRES 6/21/2024



P2023-005: Lots 8-10, Block A, Sky Ridge Addition

Case Location Map = 

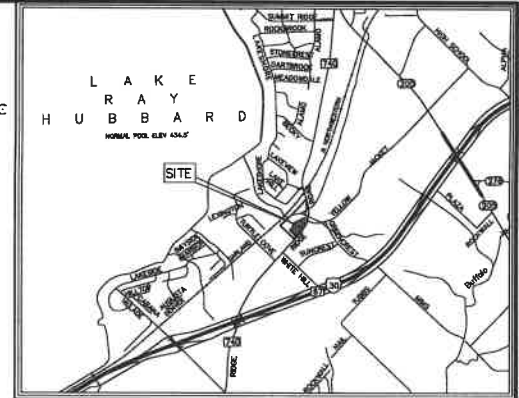


City of Rockwall

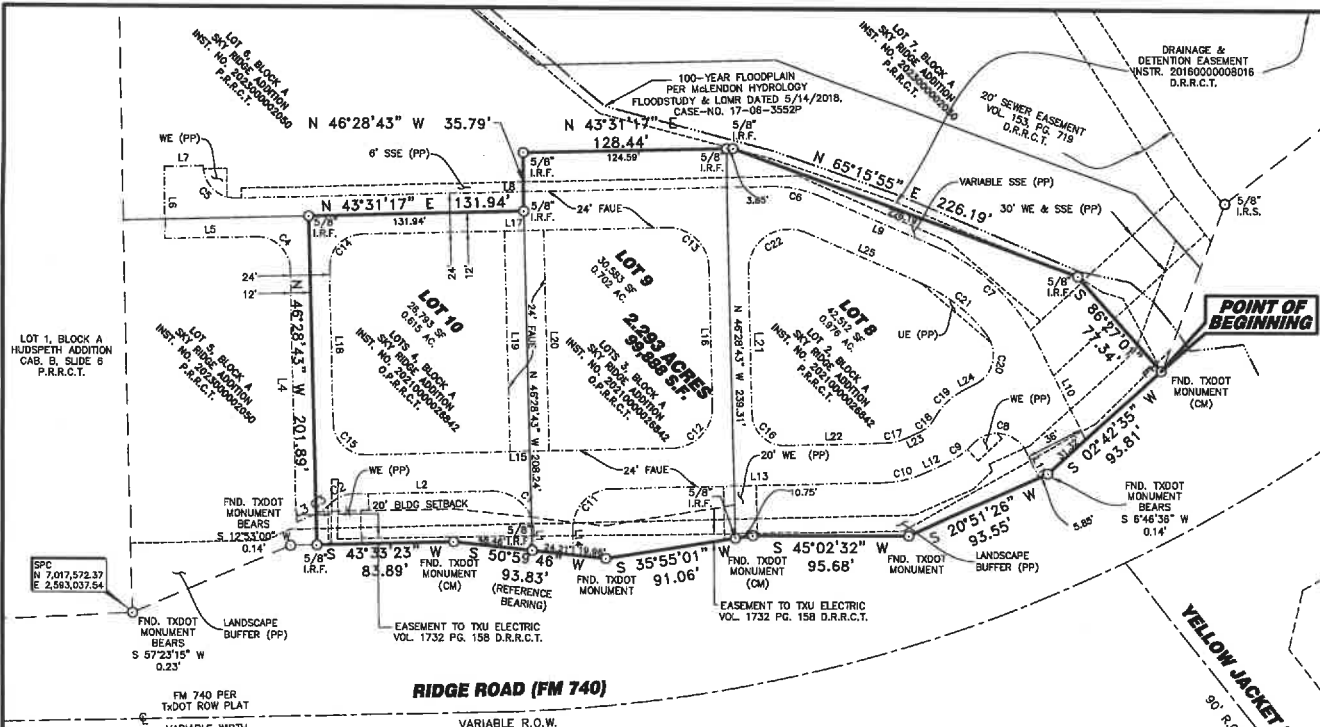
Planning & Zoning Department
 385 S. Goliad Street
 Rockwall, Texas 75087
 (P): (972) 771-7745
 (W): www.rockwall.com

The City of Rockwall GIS maps are continually under development and therefore subject to change without notice. While we endeavor to provide timely and accurate information, we make no guarantees. The City of Rockwall makes no warranty, express or implied, including warranties of merchantability and fitness for a particular purpose. Use of the information is the sole responsibility of the user.





VICINITY MAP
N.T.S.



LEGEND

5/8" I.R.S. 5/8" IRON ROD SET WITH YELLOW CAP STAMPED "RPLS 3983"

I.R.F. IRON ROD FOUND

FAUE FIRE LANE, ACCESS & UTILITY EASEMENT

SSE SANITARY SEWER EASEMENT

WE WATER LINE EASEMENT

CM CONTROL MONUMENT

SPC STATE PLANE COORDINATES

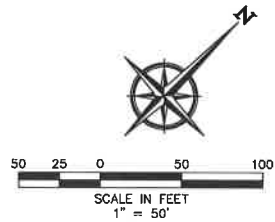
WS WATER SURFACE ELEVATION

UE UTILITY EASEMENT

P.R.R.C.T. PLAT RECORDS ROCKWALL COUNTY, TEXAS

D.R.R.C.T. DEED RECORDS ROCKWALL COUNTY, TEXAS

O.P.R.R.C.T. OFFICIAL PUBLIC RECORDS ROCKWALL COUNTY, TEXAS



CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	25.00	39.27	35.36	N 88°31'17" E	90°00'00"
C2	20.00	15.13	14.77	N 21°51'18" E	43°19'57"
C3	34.00	12.83	12.59	N 10°49'50" E	21°17'02"
C4	20.00	31.42	28.39	N 88°31'10" E	90°00'14"
C5	20.00	31.45	28.31	S 88°34'23" W	90°08'40"
C6	74.00	32.31	32.06	N 58°01'38" E	25°01'10"
C7	124.00	86.03	84.92	N 88°24'49" E	38°45'12"
C8	20.00	38.30	32.71	N 53°29'04" E	108°42'40"
C9	58.00	21.83	21.70	N 08°24'43" E	21°33'57"
C10	64.00	26.06	25.95	N 31°51'29" E	23°19'36"
C11	25.00	39.27	35.36	N 01°28'43" W	90°00'00"
C12	25.00	39.27	35.36	S 01°28'43" E	90°00'00"
C13	25.00	39.27	35.36	N 88°31'10" E	90°00'14"
C14	20.00	31.42	28.28	N 01°26'32" W	89°55'11"
C15	20.00	31.44	28.30	S 88°34'25" W	90°04'35"
C16	20.00	31.42	28.28	N 88°31'22" E	90°00'10"
C17	40.00	18.28	18.17	S 31°51'29" W	23°19'36"
C18	20.00	12.81	12.69	N 01°41'58" E	36°58'33"
C19	41.75	25.57	25.17	S 00°44'42" W	35°05'17"
C20	20.00	34.81	33.66	S 31°44'48" E	100°04'22"
C21	100.00	51.80	51.23	N 83°22'38" E	29°40'50"
C22	25.00	50.19	42.17	N 11°01'45" E	115°00'56"

LINE	BEARING	DISTANCE
L1	S 48°28'43" E	12.00
L2	N 43°31'17" E	68.12
L3	N 21°28'21" E	11.56
L4	S 46°28'43" E	156.97
L5	N 43°31'03" E	55.81
L6	N 46°22'12" W	44.02
L7	S 13°27'59" W	23.86
L8	S 43°31'17" W	78.20
L9	S 88°32'13" W	325.98
L10	S 71°42'35" E	67.01
L11	S 71°39'36" E	18.26
L12	N 20°11'42" E	13.59
L13	N 43°31'17" E	185.93
L14	N 48°28'43" W	15.15
L15	S 43°31'17" W	187.54
L16	S 48°28'43" E	85.41
L17	N 43°31'03" E	187.41
L18	N 48°24'08" W	95.40
L19	S 48°28'43" E	135.41
L20	S 48°28'43" E	135.41
L21	S 48°28'43" E	88.07
L22	S 43°31'17" W	59.54
L23	S 20°11'42" W	7.73
L24	S 18°17'25" W	7.73
L25	N 88°32'13" E	77.59

- GENERAL NOTES:**
- Basis of bearing being S 50°59'48" W for a south line of deed recorded in Instr. 20160000018015, D.R.R.C.T.
 - Surveyor has made no investigation or independent search for assessments of record, restrictive covenants, ownership, title evidence or any other facts that an abstract of title would disclose.
 - It shall be the policy of the City of Rockwall to withhold issuing building permits until all streets, water, sewer and storm drainage systems have been accepted by the City. The approval of a plat by the City does not constitute any representation, assurance or guarantee that any building within such plat shall be approved, authorized or permit therefore issued, nor shall such approval constitute any representation, assurance or guarantee by the City of the adequacy and availability for water for personal use and fire protection within such plat, as required under Ordinance 83-54.
 - Property owners shall be responsible for all maintenance, repair, and reconstruction of all systems within drainages and detention easements on site.
 - (PP) Indicates building lines, easements, right-of-ways, dimensions, etc. are per a previous plat recorded as Instrument Number 2021000028842.

OWNER/DEVELOPER
BEAUTY LEGACY, LLC
3508 RIM FIRE DRIVE
GARLAND, TX 75044

OWNER/DEVELOPER
7.1 RIDGE, LLC
106 E. RUSK STREET, STE 200
ROCKWALL, TX 75087
(972) 771-7577

LAND SURVEYOR
R.C. MYERS SURVEYING, LLC
488 ARROYO COURT
SUNNYVALE, TX 75182
(214) 532-0636
FAX (972) 412-4875
EMAIL: rcmysurveying@gmail.com
FIRM NO. 10192300 JOB NO. 377

FINAL PLAT
SKY RIDGE ADDITION
LOTS 8-10, BLOCK A

BEING A REPLAT OF
LOT 2-4, BLOCK A, SKY RIDGE ADDITION
INSTRUMENT NUMBER
2021000028842 O.P.R.R.C.T.
BEING
3 LOTS AND CONTAINING
2.293 ACRES (99,888 S.F.)
AND SITUATED IN THE
E.P. GAINES CHISUM SURVEY, A-64
CITY OF ROCKWALL,
ROCKWALL COUNTY, TEXAS

OWNER'S CERTIFICATE & DEDICATION

STATE OF TEXAS
COUNTY OF ROCKWALL

WHEREAS 7.1 RIDGE, LLC and BEAUTY LEGACY, LLC BEING THE OWNERS of a 2.293 acre tract of land situated in the E.P. Gaines Chisum Survey, Abstract No. 64, City of Rockwall, Rockwall County, Texas and being all of Lots 2, 3, and 4, Block A, of Sky Ridge Addition, an addition to the city of Rockwall, Rockwall County Texas, recorded in instrument 20210000026842, Official Public Records, Rockwall County, Texas, and this tract being more particularly described by metes and bounds as follows:

BEGINNING at a TXDOT Monument with an Aluminum Disk found for corner at the southeast corner of Lot 7 of said Sky Ridge Addition, common to the most eastern corner of said Lot 2, said point being in the northwest right-of-way line of Farm to Market Road 740 (Ridge Road), a variable width right-of-way;

THENCE Southwesterly, along the northwest right-of-way line of said FM 740 and the southeast lines of said Lots 2, 3, and 4, the following courses:

- S 02 degrees 42 minutes 35 seconds W, a distance of 93.81 feet to a point for corner from which a TXDOT Monument with an Aluminum Disk found for reference bears S 06 degrees 46 minutes 36 seconds W, a distance of 0.14 feet;
- S 20 degrees 51 minutes 26 seconds W, a distance of 93.55 feet to a TXDOT Monument with an Aluminum Disk found for corner;
- S 45 degrees 02 minutes 32 seconds W, a distance of 95.68 feet to a TXDOT Monument with an Aluminum Disk found for corner;
- S 35 degrees 55 minutes 01 seconds W, at 10.75 feet, passing the common corner of said Lots 2 and 3, and continuing for a total distance of 91.06 feet to a TXDOT Monument with an Aluminum Disk found for corner;
- S 50 degrees 59 minutes 46 seconds W, at 45.37 feet passing the common corner of said Lots 3 and 4, and continuing for a total distance of 93.83 feet to a TXDOT Monument with an Aluminum Disk found for corner;
- S 43 degrees 33 minutes 23 seconds W, a distance of 83.89 feet to a 5/8" Iron rod with a yellow cap stamped "RPLS 3963" found for corner at the most southern corner of said Lot 4, common the most eastern corner of said Lot 5;

THENCE N 46 degrees 28 minutes 43 seconds W, along the common line of Lots 4 and 5 of said Sky Ridge Addition, a distance of 201.89 feet, to a 5/8" Iron rod with a yellow cap stamped "RPLS 3963" found for corner at the common northerly corner thereof and also being in a southeast line of Lot 6;

Thence along the southeasterly lines of said Lot 6 and Lot 7 of said Addition, and the northwesterly lines of said Lots 4, 3, and 2, respectively, the following courses:

- N 43 degrees 31 minutes 17 seconds E, a distance of 131.94 feet, to a 5/8" Iron rod with a yellow cap stamped "RPLS 3963" found for corner at the most northern corner of said Lot 4;
- N 46 degrees 28 minutes 43 seconds W, a distance of 35.79 feet, to a 5/8" Iron rod with a yellow cap stamped "RPLS 3963" found for corner at the most western corner of said Lot 3;
- N 43 degrees 31 minutes 17 seconds E, at 124.59, feet passing the common northerly corner of said Lots 3 and 2, respectively, and continuing for a total distance of 128.44 feet, to a 5/8" Iron rod with a yellow cap stamped "RPLS 3963" found for corner;
- N 65 degrees 15 minutes 55 seconds E, a distance of 226.19 feet, to a 5/8" Iron rod with a yellow cap stamped "RPLS 3963" found for corner;
- S 86 degrees 27 minutes 01 seconds E, a distance of 77.34 feet, to the POINT OF BEGINNING and containing 99,888 square feet or 2.293 acres of land.

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

STATE OF TEXAS
COUNTY OF ROCKWALL

We the undersigned owners of the land shown on this replat, and designated herein as the SKY RIDGE ADDITION, LOTS 2-4, an Addition to the City of Rockwall, Texas, and whose names are subscribed hereto, hereby dedicate to the use of the public forever, all streets, alleys, parks, water courses, drains, easements and public places thereon shown on the purpose and consideration therein expressed. We further certify that all other parties who have a mortgage or lien interest in SKY RIDGE ADDITION, LOTS 2-4, subdivision have been notified and signed this plat. We understand and do hereby reserve the easement strips shown on this plat for the purposes stated and for the mutual use and accommodation of all utilities desiring to use or using same. We also understand the following:

1. No buildings shall be constructed or placed upon, over, or across the utility easements as described herein.
2. Any public utility shall have the right to remove and keep removed all or part of any buildings, fences, trees, shrubs, or other growths or improvements which in any way endanger or interfere with construction, maintenance or efficiency of their respective system on any of these easement strips; and any public utility shall at all times have the right of ingress or egress to, from and upon the said easement strips for purpose of construction, reconstruction, inspecting, patrolling, maintaining, and either adding to or removing all or part of their respective system without the necessity of, at any time, procuring the permission of anyone.
3. The City of Rockwall will not be responsible for any claims of any nature resulting from or occasioned by the establishment of grade of streets in the subdivision.
4. The developer and subdivision engineer shall bear total responsibility for storm drain improvements.
5. The developer shall be responsible for the necessary facilities to provide drainage patterns and drainage controls such that properties within the drainage area are not adversely affected by storm drainage from the development.
6. No house dwelling unit, or other structure shall be constructed on any lot in this addition by the owner or any other person until the developer and/or owner has complied with all requirements of the Subdivision Regulations of the City of Rockwall regarding improvements with respect to the entire block on the street or streets on which property abuts, including the actual installation of streets with the required base and paving, curb and gutter, water and sewer, drainage structures, storm structures, storm sewers, and alleys, all according to the specifications of the City of Rockwall; or

Until an escrow deposit, sufficient to pay for the cost of such improvements, as determined by the city's engineer and/or city administrator, computed on a private commercial rate basis, has been made with the city secretary, accompanied by an agreement signed by the developer and/or owners, authorizing the city to make such improvements at prevailing private commercial rates, or have the same made by a contractor and pay for the same out of the escrow deposit, should the developer and/or owner fail or refuse to install the required improvements within the time stated in such written agreement, but in no case shall the City be obligated to make such improvements itself. Such deposits may be used by the owners and/or developer as progress payments as the work progresses in making such improvements by making certified requisitions to the city secretary, supported by evidence of work done; or

Until the developer and/or owners files a corporate surety bond with the city secretary in a sum equal to the cost of such improvements for the designated area, guaranteeing the installation thereof within the time stated in the bond, which time shall be fixed by the city council of the City of Rockwall.

We further acknowledge that the dedications and/or exactions made herein are proportional to the impact of the Subdivision upon the public services required in order that the development will comport with the present and future growth needs of the City; We, my successors and assigns hereby waive any claim, damage, or cause of action that we may have as a result of the dedication of exactions made herein.

FOR: 7.1 RIDGE, LLC

FOR: BEAUTY LEGACY, LLC

BY:

BY:

Name: Michael Swiercinsky

Name: _____

Title: President

Title: _____

STATE OF TEXAS
COUNTY OF _____

Before me, the undersigned authority, on this day personally appeared _____ known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purpose and consideration therein stated.

Given under my hand and seal of office this 21 day of March, 2023.

Deborah Blacketer
Notary Public in and for the State of Texas
My Commission Expires: 6/21/2024

STATE OF TEXAS
COUNTY OF _____

Before me, the undersigned authority, on this day personally appeared _____ known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purpose and consideration therein stated.

Given under my hand and seal of office this _____ day of _____, 2023.

Notary Public in and for the State of Texas
My Commission Expires: _____

SURVEYOR'S CERTIFICATE

NOW, THEREFORE KNOW ALL MEN BY THESE PRESENTS:

That I, Robert C. Myers, do hereby certify that this plat from an actual and accurate survey of the land, and that the corner monuments shown thereon were properly placed under my personal supervision.

GIVEN UNDER MY SEAL OF OFFICE THIS THE _____ DAY OF _____, 2023.

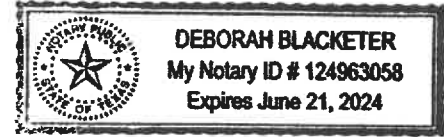
PRELIMINARY - FOR REVIEW ONLY
NOT TO BE RECORDED FOR ANY PURPOSE
RELEASED 03/13/2023
ROBERT C. MYERS
REGISTERED PROFESSIONAL LAND SURVEYOR
STATE OF TEXAS NO. 3963

STATE OF TEXAS
COUNTY OF _____

BEFORE ME, the undersigned authority, on this date personally appeared Robert C. Myers, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein stated.

GIVEN UNDER MY SEAL OF OFFICE THIS THE _____ DAY OF _____, 2023.

NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS
MY COMMISSION EXPIRES: _____



RECOMMENDED FOR FINAL APPROVAL

Planning and Zoning Commission, Chairman Date _____

APPROVED

I hereby certify that the above and foregoing replat of RAINBO ACRES, LOT 24, an addition to the City of Rockwall, Texas, was approved by the City Council of the City of Rockwall on the _____ day of _____, 20____.

This approval shall be invalid unless the approved plat for such addition is recorded in the office of the County Clerk of Rockwall, County, Texas, within one hundred eighty (180) days from said date of final approval.

WITNESS OUR HANDS, this _____ day of _____, 20____.

Mayor, City of Rockwall City Secretary City Engineer

OWNER/DEVELOPER
BEAUTY LEGACY, LLC
3509 RIM FIRE DRIVE
GARLAND, TX 75044

OWNER/DEVELOPER
7.1 RIDGE, LLC
106 E. RUSK STREET, STE 200
ROCKWALL, TX 75087
(972) 771-7577

LAND SURVEYOR
R.C. MYERS SURVEYING, LLC
488 ARROYO COURT
SUNNYVALE, TX 75182
(214) 532-0636
FAX (972) 412-4875
EMAIL: rcmsurveying@gmail.com
FIRM NO. 10192300 JOB NO. 377

FINAL PLAT
SKY RIDGE ADDITION
LOTS 8-10, BLOCK A

BEING A REPLAT OF
LOT 2-4, BLOCK A, SKY RIDGE ADDITION
INSTRUMENT NUMBER
20210000026842 O.P.R.R.C.T.
BEING
3 LOTS AND CONTAINING

2.293 ACRES (99,888 S.F.)
AND SITUATED IN THE

E.P. GAINES CHISUM SURVEY, A-64
CITY OF ROCKWALL,
ROCKWALL COUNTY, TEXAS

DATE: MARCH 8, 2023 CASE: SHEET 2 OF 2



MEMORANDUM

TO: Mary Smith, City Manager

CC: Honorable Mayor and City Council

FROM: Kristy Teague, City Secretary / Asst. to the City Manager

DATE: April 3, 2023

SUBJECT: 2ND READING OF ORDINANCE

Attachments
Ord 2nd Reading

Summary/Background Information

This item passed unanimously at the last city council meeting; however, it is being placed as an 'Action Item' on this agenda since Mayor Fowler has asked to recuse himself from voting on this item.

Action Needed

Motion to approve the ordinance, as presented.

CITY OF ROCKWALL

ORDINANCE NO. 23-17

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, AMENDING THE UNIFIED DEVELOPMENT CODE [ORDINANCE NO. 20-02] OF THE CITY OF ROCKWALL, AS HERETOFORE AMENDED, SO AS TO APPROVE A CHANGE IN ZONING FROM AN AGRICULTURAL (AG) DISTRICT TO LIGHT INDUSTRIAL (LI) DISTRICT FOR A 6.17-ACRE TRACT OF LAND IDENTIFIED AS TRACT 2-01 OF THE D HARR. SURVEY, ABSTRACT NO. 102, CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS, AND BEING MORE SPECIFICALLY DESCRIBED IN *EXHIBIT 'A'* AND FURTHER DEPICTED IN *EXHIBIT 'B'* OF THIS ORDINANCE; PROVIDING FOR SPECIAL CONDITIONS; PROVIDING FOR A PENALTY OF FINE NOT TO EXCEED THE SUM OF TWO THOUSAND DOLLARS (\$2,000.00) FOR EACH OFFENSE; PROVIDING FOR A SEVERABILITY CLAUSE; PROVIDING FOR A REPEALER CLAUSE; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City has received a request from Duane Piercy of Redeemer Church for the approval of a Zoning Change from an Agricultural (AG) District to Light Industrial (LI) District on a 6.17-acre tract of land identified as Tract 2-01 of the D Harr. Survey, Abstract No. 102, City of Rockwall, Rockwall County, Texas, zoned Agricultural (AG) District, and more fully described in *Exhibit 'A'* and depicted in *Exhibit 'B'* of this ordinance, which hereinafter shall be referred to as the *Subject Property* and incorporated by reference herein; and

WHEREAS, the Planning and Zoning Commission of the City of Rockwall and the governing body of the City of Rockwall in compliance with the laws of the State of Texas and the ordinances of the City of Rockwall have given the requisite notices by publication and otherwise, and have held public hearings and afforded a full and fair hearing to all property owners generally and to all persons interested in and situated in the affected area, and in the vicinity thereof, and the governing body in the exercise of its legislative discretion, has concluded that the Unified Development Code (UDC) [*Ordinance No. 20-02*] should be amended as follows:

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS:

SECTION 1. That the Unified Development Code (UDC) [*Ordinance No. 20-02*] of the City of Rockwall, Texas, as heretofore amended, be and the same are hereby amended by amending the zoning map of the City of Rockwall so as to change the zoning of the *Subject Property* from Agricultural (AG) District to a Light Industrial (LI) District;

SECTION 2. That the *Subject Property* shall be used only in the manner and for the purposes provided for a Light Industrial (LI) District as stipulated in Section 01.01, *Use of Land and Buildings*, of Article 04, *Permissible Uses* and Section 05.01, *General Industrial District Standards*; Section 05.02, *Light Industrial (LI) District*, of the Unified Development Code (UDC) [*Ordinance No. 20-02*] of the City of Rockwall as heretofore amended, as amended herein by granting of this zoning change, and as maybe amended in the future;

SECTION 3. That the official zoning map of the City be corrected to reflect the changes in the

zoning described herein;

SECTION 4. Any person, firm, or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor and upon conviction shall be punished by a penalty of fine not to exceed the sum of *Two Thousand Dollars (\$2,000.00)* for each offense and each and every day such offense shall continue shall be deemed to constitute a separate offense;

SECTION 5. If any section, paragraph, or provision of this ordinance or the application of that section, paragraph, or provision to any person, firm, corporation or situation is for any reason judged invalid, the adjudication shall not affect any other section, paragraph, or provision of this ordinance or the application of any other section, paragraph or provision to any other person, firm, corporation or situation, nor shall adjudication affect any other section, paragraph, or provision of the Unified Development Code (UDC) of the City of Rockwall, Texas, and the City Council declares that it would have adopted the valid portions and applications of the ordinance without the invalid parts and to this end the provisions for this ordinance are declared to be severable; and

SECTION 6. That all ordinances of the City of Rockwall in conflict with the provisions of this ordinance be and the same are hereby repealed, and all other ordinances of the City of Rockwall not in conflict with the provisions of this ordinance shall remain in full force and effect;

SECTION 7. That this ordinance shall take effect immediately from and after its passage.

**PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS,
THIS THE 3RD DAY OF APRIL, 2023.**

Kevin Fowler, Mayor

ATTEST:

Kristy Teague, City Secretary

APPROVED AS TO FORM:

Frank J. Garza, City Attorney

1st Reading: March 20, 2023

2nd Reading: April 3, 2023

Exhibit 'A'
Legal Description

All that certain lot, tract or parcel of land situated in the DAVID HARR SURVEY, ABSTRACT NO. 102, City of Rockwall, Rockwall County, Texas, and being all of Tract C-1 as described in a Special Warranty deed from the Estate of Ruby Lee Athey to Jo Ann Athey, dated December 22, 2006 and being recorded in Volume 4875, Page 133 of the Official Public Records of Rockwall County, Texas, and being more particularly described as follows:

BEGINNING at a ½" iron rod found for corner in the north right-of-way line of the Union Pacific Railroad, a 100-foot right-of-way, at the southwest corner of Tract C-1 and at the southeast corner of Tract B-1 as described in a Special Warranty deed to Bobby Frank Athey, as recorded in Volume 4875, Page 117 of the Official Public Records of Rockwall, County, Texas;

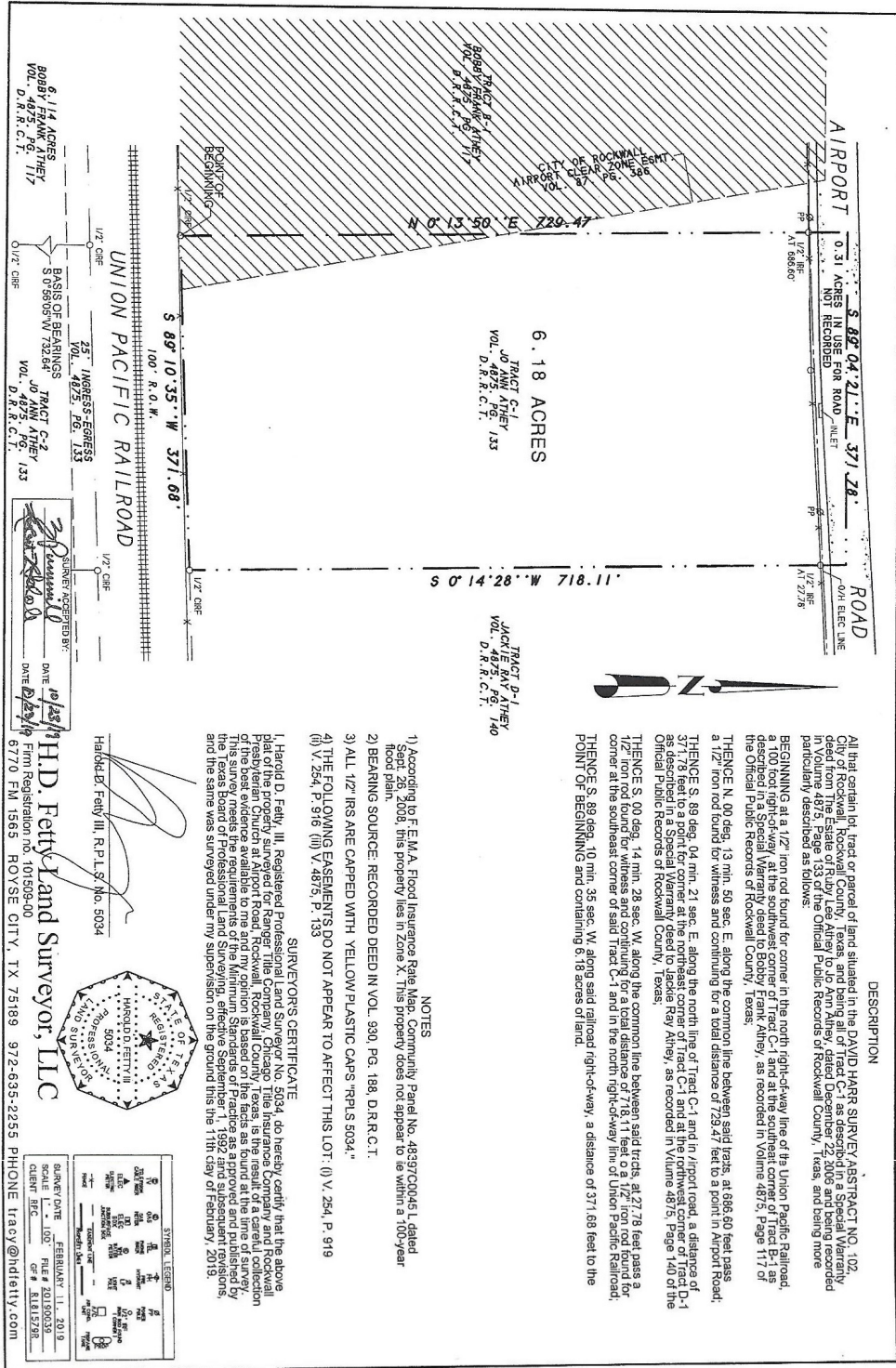
THENCE N. 00 Deg. 13 Min. 50 Sec. E. along the common line between said tracts at 686.60-feet past a ½" iron rod found for witness and continuing for a total distance of 729.47-feet to a point in Airport Road;

THENCE S. 89 Deg. 04 Min. 21 Sec. E. along the north line of Tract C-1 and in Airport Road, a distance of 371.78-feet to a point for corner at the northeast corner of Tract C-1 and at the northwest corner of Tract D-1 as described in a Special Warranty deed to Jackie Ray Athey, as recorded in Volume 4847, Page 140 of the Official Public Records of Rockwall County, Texas;

THENCE S. 00 Deg. 14 Min. 28 Sec. W. along the common line between said tracts, at 27.28-feet pass a ½" iron rod found for witness and continuing for a total distance of 718.11-feet to a ½" iron rod found for corner at the southeast corner of said Tract C-1 and in the north right-of-way line of the Union Pacific Railroad;

THENCE S. 89 Deg. 10 Min. 35 Sec. W. along said railroad right-of-way a distance of 371.68-feet to the **POINT OF BEGINNING** and containing 6.18-acres of land.

Exhibit 'B'
Survey



DESCRIPTION

All that certain lot, tract or parcel of land situated in the DAVID HARR SURVEY, ABSTRACT NO. 102, City of Rockwall, Rockwall County, Texas and being all of Tract C-1 as described in a Special Warranty Deed to Jackie Ray Atney, as recorded in Volume 4875, Page 133 of the Official Public Records of Rockwall County, Texas, and being more particularly described as follows:

BEGINNING at a 1/2" iron rod found for corner in the north right-of-way line of the Union Pacific Railroad, a 100 foot right-of-way, at the southwest corner of Tract C-1 and at the southeast corner of Tract B-1 as described in a Special Warranty deed to Bobby Frank Atney, as recorded in Volume 4875, Page 117 of the Official Public Records of Rockwall County, Texas;

THENCE N. 00 deg. 13 min. 50 sec. E. along the common line between said tracts, at 686.60 feet pass a 1/2" iron rod found for witness and continuing for a total distance of 729.47 feet to a point in Airport Road;

THENCE S. 89 deg. 04 min. 21 sec. E. along the north line of Tract C-1 and in Airport road, a distance of 37.78 feet to a point in the north right-of-way line of Tract D-1 as described in a Special Warranty deed to Jackie Ray Atney, as recorded in Volume 4875, Page 140 of the Official Public Records of Rockwall County, Texas;

THENCE S. 00 deg. 14 min. 28 sec. W. along the common line between said tracts, at 27.78 feet pass a 1/2" iron rod found for witness and continuing for a total distance of 718.11 feet, a 1/2" iron rod found for corner at the southeast corner of said Tract C-1 and in the north right-of-way line of Union Pacific Railroad;

THENCE S. 89 deg. 10 min. 35 sec. W. along said railroad right-of-way, a distance of 371.68 feet to the **POINT OF BEGINNING** and containing 6.18 acres of land.

NOTES

1) According to FEMA Flood Insurance Rate Map, Community Panel No. 48397C004L, dated Sept. 28, 2004, this property lies in Zone 'X'. This property does not appear to be within a 100-year flood plain.

2) BEARING SOURCE: RECORDED DEED IN VOL. 930, PG. 188, D.R.R.C.T.

3) ALL 1/2" IRNS ARE CAPPED WITH YELLOW PLASTIC CAPS-RPL'S 5034."

4) THE FOLLOWING EASEMENTS DO NOT APPEAR TO AFFECT THIS LOT: (i) V. 254, P. 919 (ii) V. 254, P. 916 (iii) V. 4875, P. 133

SURVEYOR'S CERTIFICATE

I, Harold D. Felty, III, Registered Professional Land Surveyor, No. 5034, do hereby certify that the above plat of the property surveyed for Ranger Title Company, Chicago Title Insurance Company and Rockwall Presbyterian Church at Airport Road, Rockwall, Rockwall County, Texas, is the result of a careful collection of the best evidence available to me and my opinion is based on the facts as found at the time of survey, and that I have complied with the provisions of the Statutes of this State and the rules and regulations of the Texas Board of Professional Land Surveying, effective September 1, 1992 and subsequent revisions, and the same was surveyed under my supervision on the ground this the 11th day of February, 2019.

DATE 02/11/2019
DATE 02/11/2019

Harold D. Felty, III, R.P.L.S., No. 5034

H.D. Felty and Surveyor, LLC
Firm Registration no. 101509-00
6770 FM 1565 ROYSE CITY, TX 75189 972-635-2255 PHONE traey@hditelly.com

SYMBOL LEGEND			
Symbol	Description	Symbol	Description
—	Survey Boundary	—	Property Line
---	Unsurveyed Boundary	---	Unsurveyed Property Line
+	Iron Rod	+	Witness Stake
o	Corner	o	Center of Iron Rod
o	Center of Iron Rod	o	Center of Witness Stake
o	Center of Witness Stake	o	Center of Survey



City of Rockwall
The New Horizon

MEMORANDUM

TO: Mayor and City Council

FROM: Jeffrey Widmer, Building Official

DATE: 4/3/23

SUBJECT: Adoption of new building codes

Currently, construction within the City of Rockwall is governed by the 2015 edition of the International Building, Fire, Plumbing, Mechanical, Fuel Gas, Energy Conservation Codes and the 2014 National Electric Code. It is my intention with this memo, to give you an overview of what we need to do to keep in step with the building trades, construction industry and the States regulations regarding minimum requirements for construction.

The International Codes have been widely accepted across the nation, with many States including Texas adopting some as state law. These include the Building, Residential, Plumbing and Energy Conservations codes and the National Electrical Code. The most current edition of these codes, which have been reviewed and supported by the North Central Texas Council of Governments (COG), is the 2021. I serve on the COG Regional Codes Coordinating Committee and also the Building Code Advisory Board. Our Building Inspections Department has been working diligently to review the new codes and the COG regional amendments, in order to prepare our local amendments and ordinance for adoption. The amendments associated with the codes are predominantly carry over's from previous editions of the codes adopted by the City. With this current edition of the International Codes and the COG recommended amendments, we have been able minimize our local amendments.

While the International Codes are updated and available every three years, many Cities choose to update their local requirements every other code cycle. Reasons for this are related to the amount of work in reviewing, understanding and preparing local amendments as well as trying to keep a consistent set of codes in place for more than a thirty-six month time frame. In addition, it is somewhat confusing and difficult for the building community to adjust to the new code additions. Design professionals appreciate this as well.

Most Developers, Architects and Builders would prefer to design and build under the 2021 edition and therefore, we believe these codes will be well accepted by our local Builders, Developers and Design Professionals. The latest edition allows more flexibility in design and construction methods, providing way's to save money during construction, by allowing larger buildings to be built with less stringent requirements regarding typically costly items such as fire rated walls, fire and smoke dampers, rated door and window assemblies, area separation walls and occupancy separation walls as well as additional exists and exit enclosures.

We are extremely pleased with the 2021 International Codes and are asking to adopt the 2021 International Building, Residential, Plumbing, Mechanical, Fuel Gas and Energy Conservation, Existing Building Codes and the 2020 National Electrical Code.

CITY OF ROCKWALL
ORDINANCE NO. 23-

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, AMENDING CHAPTER 10 BUILDINGS AND BUILDING REGULATIONS, ARTICLES III, IV, V, VI, VII, VIII, IX AND X OF THE CODE OF ORDINANCES; REPEALING ARTICLES III, IV, V, VI, VII, VIII, IX, AND X IN THEIR ENTIRETY; AMENDING ARTICLE XI, DIVISION 2, SECTION 10-425; ADOPTING A NEW ARTICLE XVII. "SWIMMING POOL AND SPA CODE;" PROVIDING FOR A PENALTY OF FINE NOT TO EXCEED THE SUM OF TWO THOUSAND DOLLARS (\$2,000.00) FOR EACH OFFENSE AND A SEPARATE OFFENSE SHALL BE DEEMED COMMITTED ON EACH DAY DURING OR ON WHICH A VIOLATION OCCURS; PROVIDING FOR A SEVERABILITY CLAUSE; PROVIDING FOR A REPEALER CLAUSE; PROVIDING FOR AN EFFECTIVE DATE.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS:

Section 1. That Chapter 10, Article III Building Code of the Code of Ordinances of the City of Rockwall is hereby repealed in its entirety and a new Article III Building Code is created and shall hereinafter read in its entirety as specified and attached hereto as "**Exhibit A,**" which is made part hereof for all purposes;

Section 2. That Chapter 10, Article IV Residential Code of the Code of Ordinances of the City of Rockwall are hereby repealed in its entirety and a new Article IV Residential Code, which is hereby adopted and shall hereinafter read as specified and attached hereto as "**Exhibit B,**" which is made part hereof for all purposes. Chapter 10, Article IV. Residential Code, Sec. 10-138, including retaining Appendix P, Section AP101 (2006 IRC, as amended and codified by city Ord. 11-24), which shall remain unchanged and in full force and effect as reflected and incorporated in "Exhibit B."

Section 3. That Chapter 10, Article V Mechanical Code of the Code of Ordinances of the City of Rockwall is hereby repealed in its entirety and a new Article V Mechanical Code is created and shall hereinafter read in its entirety as specified and attached hereto as "**Exhibit C,**" which is made part hereof for all purposes;

Section 4 That Chapter 10, Article VI Plumbing Code of the Code of Ordinances of the City of Rockwall is hereby repealed in its entirety and a new Article VI Plumbing Code is created and shall hereinafter read in its entirety as specified and attached hereto as "**Exhibit D,**" which is made part hereof for all purposes;

Section 5. That Chapter 10, Article VII Fuel Gas Code of the Code of Ordinances of the City of Rockwall is hereby repealed in its entirety and a new Article VII Fuel Gas Code is created and shall hereinafter read in its entirety as specified and attached hereto as "**Exhibit E,**" which is made part hereof for all purposes;

Section 6. That Chapter 10, Article VIII Energy Conservation Code of the Code of Ordinances of the City of Rockwall is hereby repealed in its entirety and a new Article VIII Energy Conservation Code is created and shall hereinafter read in its entirety as specified and attached hereto as "**Exhibit F,**" which is made part hereof for all purposes;

Section 7. That Chapter 10, Article IX Electrical Code of the Code of Ordinances

of the City of Rockwall is hereby repealed in its entirety and a new Article IX Electrical Code is created and shall hereinafter read in its entirety as specified and attached hereto as “**Exhibit G,**” which is made part hereof for all purposes;

Section 8. That Chapter 10, Article X Existing Building Code of the Code of Ordinances of the City of Rockwall is hereby repealed in its entirety and a new Article X Existing Building Code is created and shall hereinafter read in its entirety as specified and attached hereto as “**Exhibit H,**” which is made part hereof for all purposes;

Section 9. That Chapter 10, Article XI. Fences of the Code of Ordinances of the City of Rockwall is hereby amended in Division 2. Construction Standards; Sec. 10-425 Swimming Pool, Spa and Hot Tub/Barrier Requirements and shall hereinafter read in its entirety as specified and attached hereto as “**Exhibit I,**” which is made part hereof for all purposes;

Section 10. That Chapter 10, Article XVII. Swimming Pool and Spa Code of the City of Rockwall is hereby newly adopted and shall hereinafter read in its entirety as specified and attached hereto as “**Exhibit J,**” which is made part hereof for all purposes;

Section 11. any person, firm or corporation violating any of the provisions of this ordinance shall be punished by a penalty of fine not to exceed the sum of Two Thousand Dollars (\$2,000.00) for each offense and each and every day such offense shall continue shall be deemed to constitute a separate offense.

Section 12. That if any section or provision of this ordinance or the application of that section or provision to any person, firm, corporation, situation or circumstance is for any reason judged invalid, the adjudication shall not affect any other section or provision of this ordinance or the application of any other section or provision to any other person, firm, corporation, situation or circumstance, and the City Council declares that it would have adopted the valid portions and applications of the ordinance without the invalid parts and to this end the provisions of this ordinance shall remain in full force and effect.

Section 13. That this ordinance shall be cumulative of all other ordinances of the City and shall not repeal any of the provisions of those ordinances except in those instances where the provisions of those ordinances are in direct conflict with the provisions of this ordinance.

Section 14. That this ordinance shall take effect immediately from and after its passage and approval, and it is so ordained.

PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, THIS THE 17TH DAY OF APRIL, 2023.

Kevin Fowler, Mayor

ATTEST:

Kristy Teague, City Secretary

1st Reading: 04-03-2023

2nd Reading: 04-17-2023

APPROVED AS TO FORM:

Frank Garza, City Attorney

“EXHIBIT A”

ARTICLE III. BUILDING CODE

Sec. 10-116. Adopted

The International Building Code, 2021 edition, as amended by this chapter, is hereby adopted as the Building Code of the City of Rockwall, TX. A copy of such code will be kept in the Building Official's Office and shall be made available for public inspection during regular business hours via a scheduled appointment through the City Secretary's Office.

Sec. 10-117 Amendments

The following sections, paragraphs, and sentences of the International Building Code, 2021 edition, are hereby amended to read as follows:

Section 101.4; change to read as follows:

101.4 Referenced codes. The other codes listed in Sections 101.4.1 through 101.4.8 and referenced elsewhere in this code, when specifically adopted, shall be considered part of the requirements of this code to the prescribed extent of each such reference. Whenever amendments have been adopted to the referenced codes and standards, each reference to said code and standard shall be considered to reference the amendments as well. Any reference to NFPA 70 or the Electrical Code shall mean the Electrical Code as adopted.

Section 101.4.4; change to read as follows:

101.4.4 Property maintenance. The provisions of the Rockwall Property Maintenance Code shall apply to existing structures and premises; equipment and facilities; light, ventilation, space heating, sanitation, life and fire safety hazards; responsibilities of owners, operators and occupants; and occupancy of existing premises and structures.

Section 101.4.8; add the following:

101.4.8 Electrical. The provisions of the Electrical Code shall apply to the installation of electrical systems, including alterations, repairs, replacement, equipment, appliances, fixtures, fittings and appurtenances thereto.

Section 102.6; change to read as follows:

102.6 Existing structures. The legal occupancy of any structure existing on the date of adoption of this code shall be permitted to continue without change, except as otherwise specifically provided in this code, the International Existing Building Code, the Rockwall Property Maintenance Code or the International Fire Code.

Section 102.6.2; change to read as follows:

[A] 102.6.2 Buildings previously occupied. The legal occupancy of any building existing on the date of adoption of this code shall be permitted to continue without change, except as otherwise

specifically provided in this code, the International Fire Code or Rockwall Property Maintenance Code, or as is deemed necessary by the building official for the general safety and welfare of the occupants and the public.

Section 103.3; change to read as follows:

103.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the building official shall have the authority to appoint a deputy building official, the related technical officers, inspectors, plan examiners and other employees. Such employees shall have powers as delegated by the building official. For the maintenance of existing properties, see the Rockwall Property Maintenance Code.

Section [A] 104.2.1; delete the section

Section 104.10.1; delete the section

Section 105.2; change “Building” to read as follows:

Building: [remainder unchanged]

7. Painting, papering, tiling, carpeting, cabinets, counter tops and similar finish work.
9. Prefabricated swimming pools accessory to a Group R-3 occupancy that are less than 24 inches (610 mm) deep, do not exceed 5,000 gallons (18 925 L) and are installed entirely above ground.
11. Swings and other playground equipment accessory to detached one- and two-family dwellings.
13. Movable fixtures, cases, racks, counters and partitions not over 5 feet 9 inches (1753 mm) in height.

Section 113; change title to read as follows: Section 113 - Construction Advisory and Appeals Board

Section 113.1; change to read as follows:

113.1 General. The Construction Advisory and Appeals Board shall be in accordance with Chapter 10, Article II, Division 3, Subdivision I, Sections 10-61 to 10-115 of the City of Rockwall code of Ordinances.

Sections 113.2, 113.3 and 113.4; Delete

Section 202; amend definition of Ambulatory Care Facility as follows:

AMBULATORY CARE FACILITY. Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on a less than 24-hour basis to persons who are rendered incapable of self-preservation by the services provided. This group may include but not be limited to the following:

- Dialysis centers
- Sedation dentistry
- Surgery centers
- Colonic centers
- Psychiatric centers

Section 202; add definition of Assisting Living Facilities to read as follows.

ASSISTED LIVING FACILITIES. A building or part thereof housing persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment which provides personal care services. The occupants are capable of responding to an emergency situation without physical assistance from staff.

Section 202; add definition of Repair Garage as follows:

REPAIR GARAGE. A building, structure or portion thereof used for servicing or repairing motor vehicles. This occupancy shall also include garages involved in minor repair, modification and servicing of motor vehicles for items such as lube changes, inspections, windshield repair or replacement, shocks, minor part replacement and other such minor repairs.

Section 202; amend definition to read as follows:

SPECIAL INSPECTOR. A qualified person employed or retained by an approved agency who shall prove to the satisfaction of the registered design professional in responsible charge and the Building Official as having the competence necessary to inspect a particular type of construction requiring special inspection.

Section 202; amend definition to read as follows:

HIGH-RISE BUILDING. A building with an occupied floor located more than 55 feet (16 764 mm) above the lowest level of fire department vehicle access.

Section 403.1, Exception 3; change to read as follows:

3. The open air portion of a building [remainder unchanged]

Section 403.3, delete exception

Section 403.3.2; change to read as follows:

403.3.2 Water supply to required fire pumps. In buildings that are more than 120 feet in building height, required fire pumps shall be supplied by connections to no fewer than two water mains located in different streets. Separate supply piping shall be provided between each connection to the water main and the pumps. Each connection and the supply piping between the connection and the pumps shall be sized to supply the flow and pressure required for the pumps to operate.

Section 404.10; change to read as follows:

Section 404.10 Exit Stairways in an atrium. Where an atrium contains an exit access stairway all the following shall be met:

[Remainder Unchanged]

Section 406.3.3.1 Carport separation; change to read as follows:

A fire separation is not required between a Group R-2 and U carport provided that the carport is entirely open on all sides and that the distance between the two is at least 10 feet (3048 mm).

Section 423.5.1; add exception 3 to read as follows.:

Exception 3. Where approved by the building official, the actual number of occupants for whom each occupied space, floor or building is designed, although less than those determined by occupant load calculation, shall be permitted to be used in the determination of the required design occupant capacity for the storm shelter.

Section 502.1; change section to read as follows:

502.1 Address identification. New and existing buildings shall have approved address numbers, building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property and from all rear alleyways / access. Where required by the fire code official, address numbers shall be provided in additional approved locations to facilitate emergency response. These numbers shall contrast with their background; color selection shall accommodate all lighting conditions. Address numbers shall be Arabic numbers or alphabetical letters. Street address numbers shall be a minimum of 12 inches high with a minimum stroke width of 0.5 inch (12.7 mm). Unit/suite/apartment/rear/alley numbers shall be a minimum of 4 inches high. Where access is by means of a private road and the building cannot be viewed from the public way, a monument, pole or other sign or means shall be used to identify the structure.

Exception: Structures located within the historic district may utilize numbers a minimum of 6 inches high, as approved by the fire code official.

Table 506.2; delete footnote i from table

Section 708.4.2; change sentence to read as follows:

708.4.2 Fireblocks and draftstops in combustible construction. [Body of text unchanged]

1. **Exceptions:** Buildings equipped with an automatic sprinkler system installed throughout in accordance with Section 903.3.1.1, or in accordance with Section 903.3.1.2 provided that sprinkler protection is provided in the space between the top of the fire partition and the underside of the floor or roof sheathing, deck or slab above as required for systems complying with Section 903.3.1.1. Portions of buildings containing concealed spaces filled with noncombustible insulation as permitted for sprinkler omission shall not apply to this exception for draftstopping. [Remainder unchanged]

Section 718.3; change sentence to read as follows:

718.3 Draftstopping in floors. [Body of text unchanged]

Exceptions: Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. and provided that in combustible construction, sprinkler protection is provided in the floor space.

Section 718.4; change sentence to read as follows:

718.4 Draftstopping in attics. [Body of text unchanged]

Exceptions: Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 and provided that in combustible construction, sprinkler protection is provided in the attic space.

Section 903.2 remains unamended from previous code adoptions, per Ordinance 11-24

Previous code adoption wording:

Section 903.2; add exception to read as follows:

903.2 Where Required. Approved automatic fire sprinkler systems shall be installed in all new buildings, structures and additions with a fire flow calculation area of 5,000 square feet (464.5 m²) or greater and in all existing buildings, not including R-3, that are enlarged to have a fire flow calculation of 5,000 square feet (464.5 m²) or greater and in buildings that have a fire flow calculation greater than 5,000 square feet (464.5 m²) which are enlarged and all locations described in this section.

Approved automatic fire sprinkler systems shall be installed in all new R-3 buildings, structures and additions with a finished floor area of 5,000 square feet (464.5 m²) or greater and in all existing R-3 occupancies that have additions totaling more than 30% of the original finished floor area and exceeding a finished floor area of 5,000 square feet.

For the purpose of this provision, fire walls shall not define separate buildings.

Exceptions:

1. Spaces or areas in telecommunications buildings used exclusively for telecommunications equipment, associated electrical power distribution equipment, batteries and standby engines, provided those spaces or areas are equipped throughout with an automatic fire alarm system and are separated from the remainder of the building by fire barriers consisting of not less than 1-hour fire-resistance-rated walls and 2-hour fire-resistance-rated floor/ ceiling assemblies.
2. Group U
3. Temporary structures other than amusement buildings.
4. Group A-5, except as required by 903.2.1.5.
5. Open parking garages in compliance with Section 406.5 of the International Building Code, when all of the following conditions apply:
 - i. The structure is non-combustible construction.
 - ii. The structure has no other types of occupancies located above or below it.
 - iii. The structure does not contain any mixed uses, accessory uses, storage rooms, electrical rooms or spaces used or occupied for anything other than motor vehicle parking.
 - iv. The structure does not exceed 3 stories.
 - v. The structure has two complete sides unobstructed for fire department access by roadway or fire lane

Section 903.2.9; add Section 903.2.9.3 to read as follows:

903.2.9.3 Self-service storage facility. An automatic sprinkler system shall be installed throughout all self-service storage facilities.

Exception: One-story self-storage facilities that have no interior corridors and are less than 5,000 square feet.

903.2.10 Group S-2 enclosed parking garages change to read as follows:

903.2.10 Group S-2 parking garages.

An automatic sprinkler system shall be provided throughout buildings classified as parking garages where any of the following conditions exists:

1. Where the fire area of the enclosed parking garage in accordance with Section 406.6 is 5,000 square feet or greater.
2. Where the enclosed parking garage in accordance with Section 406.6 is located beneath other groups.

Exception: Enclosed parking garages located beneath one- and two-family dwellings.

3. Where the fire area of the open parking garage in accordance with Section 406.5 exceeds 48,000 square feet (4460 m²).

Section 903.3.1.2.2; change to read as follows:

903.3.1.2.2 Corridors and balconies. Sprinkler protection shall be provided in all corridors and for all balconies.

Section 903.3.1.2.3; add section to read as follows:

Section 903.3.1.3; change to read as follows:

903.3.1.3 NFPA 13D Sprinkler Systems. *Automatic sprinkler systems* installed in one- and two-family *dwellings*; Group R-3; Group R-4, Condition 1; and *townhouses* shall be permitted to be installed throughout in accordance with NFPA 13D or in accordance with state law.

Section 903.3.1.4; add to read as follows:

903.3.1.4 Freeze protection. Freeze protection systems for automatic fire sprinkler systems shall be in accordance with the requirements of the applicable referenced NFPA standard and this section.

903.3.1.4.1 Attics. Only dry pipe, preaction, or listed antifreeze automatic fire sprinkler systems shall be allowed to protect attic spaces.

Exception: Wet-pipe fire sprinkler systems shall be allowed to protect non-ventilated attic spaces where:

1. The attic sprinklers are supplied by a separate floor control valve assembly to allow ease of draining the attic system without impairing sprinklers throughout the rest of the building, and
2. Adequate heat shall be provided for freeze protection as per the applicable referenced NFPA standard, and
3. The attic space is a part of the building's thermal, or heat, envelope, such that insulation is provided at the roof deck, rather than at the ceiling level.

903.3.1.4.2 Heat trace/insulation. Heat trace/insulation shall only be allowed where approved by the fire code official for small sections of large diameter water-filled pipe.

Section 903.3.5; add a second paragraph to read as follows:

[F] Water supply as required for such systems shall be provided in conformance with the supply requirements of the respective standards; however, every water-based fire protection

system shall be designed with a 5 psi safety factor.

Section 903.4.2; add second paragraph to read as follows:

[F] The alarm device required on the exterior of the building shall be a weatherproof horn/strobe notification appliance with a minimum 75 candela strobe rating, installed as close as practicable to the fire department connection.

Section 903.4.3; change to read as follows:

Approved supervised indicating control valves shall be provided at the point of connection to the riser on each floor in high-rise-buildings.

Section 904.3.5; change to read as follows:

904.3.5 Monitoring. Where a building fire alarm system or a dedicated function fire alarm system is installed, automatic fire-extinguishing systems shall be monitored by the building fire alarm system or the dedicated function fire alarm system in accordance with NFPA 72.

Section 905.3.9 change to read as follows:

[F] **905.3.9 Buildings exceeding 10,000 sq. ft.** In buildings exceeding 10,000 square feet in area per story and where any portion of the building's interior area is more than 200 feet (60960 mm) of travel, vertically and horizontally, from the nearest point of fire department vehicle access, Class I standpipes shall be provided.

Section 905.4; change Item #2 to read as follows:

905.4 Location of Class 1 standpipes hose connections.

Class I standpipe hose connections shall be provided in all of the following locations:

1. {No Change}
2. On each side of the wall adjacent to the exit opening of a horizontal exit.

~~Exception: Where floor areas adjacent to a horizontal exit are reachable from an interior exit stairway hose connection by a 30-foot (9144 mm) hose stream from a nozzle attached to 100 feet (30 480 mm) of hose, a hose connection shall not be required at the horizontal exit.~~

Where all floor areas are reachable from an exit stairway hose connection on the same side of a horizontal exit within 200 ft (61 m) for sprinklered buildings or 130 ft (39.7 m) for nonsprinklered buildings, the hose connection on the other side of the horizontal exit shall be permitted to be omitted.

3. {No Change}
4. {No Change}
5. {No Change}
6. {No Change}

Section 905.8; change to read as follows:

905.8 Dry standpipes. Dry standpipes shall not be installed.

Exception: Where subject to freezing and in accordance with NFPA 14. Additionally, manual dry standpipe systems shall be supervised with a minimum of 10 psig and a maximum of 40 psig air pressure with a high/low Supervisory alarm.

Section 907.6.1; add Section 907.6.1.1 to read as follows:

[F] 907.6.1.1 Wiring Installation. All fire alarm systems shall be installed in such a manner that a failure of any single initiating device or single open in an initiating circuit conductor will not interfere with the normal operation of other such devices. All signaling line circuits (SLC) shall be installed in such a way that a single open will not interfere with the operation of any addressable devices (Class A). Outgoing and return SLC conductors shall be installed in accordance with NFPA 72 requirements for Class A circuits and shall have a minimum of four feet separation horizontal and one foot vertical between supply and return circuit conductors. The initiating device circuit (IDC) from a signaling line circuit interface device may be wired Class B, provided the distance from the interface device to the initiating device is ten feet or less.

Section 907.6.3; delete all four Exceptions.

Section 912; add Section 912.2.1.1 and 912.2.1.2 to read as follows:

912.2.1.1 Hydrant distance. An approved fire hydrant shall be located within 100 feet of the fire department connection as the fire hose lays along an unobstructed path.

912.2.1.2 Fire apparatus access roadway Distance. An approved Fire apparatus access roadway shall be located within 50 feet of a fire department connection as the fire hose lays along an unobstructed path.

Section 1006.2.1 change exception 3 to read as follows;

Section 1006.2.1 Egress based on occupant load and common path of egress travel distance.

Exceptions:

3. Unoccupied rooftop mechanical rooms and penthouses are not required to comply with the common path of egress travel distance measurement.

Section 1101.1 Scope. add exception to Section 1101.1 as follows:

Exception: Components of projects regulated by and registered with Architectural Barriers Division of Texas Department of Licensing and Regulation shall be deemed to be in compliance with the requirements of this chapter.

Table 1505.1; delete footnote c and replace footnote b with the following:

- b. Non-classified roof coverings shall be permitted on buildings of U occupancies having not more than 120 sq. ft. of protected roof area. When exceeding 120 sq. ft. of protected roof area, buildings of U occupancies may use non-rated non-combustible roof coverings.
- c. [delete]

Section 1505.7; delete the section

Section 1809 .5.1 Frost Protection at required exits: delete this section.

Section 2702.5; add section to read as follows:

Section 2702.5 Designated Critical Operations Areas (DCOA): In areas within a facility or site requiring continuous operation for the purpose of public safety, emergency management, national security or business continuity, the power systems shall comply with NFPA 70 Article 708.

Section 2902.1; add a second paragraph to read as follows:

In other than E Occupancies, the minimum number of fixtures in Table 2902.1 may be lowered, if requested in writing, by the applicant stating reasons for a reduced number and approved by the Building Official.

Table 2902.1; add footnote g to read as follows:

- g. Drinking fountains are not required in M Occupancies with an occupant load of 100 or less, B Occupancies with an occupant load of 25 or less, and for dining and/or drinking establishments.

Drinking fountains may be substituted by a water dispenser for an occupant load of 50 or less.

Section 2902.1.1 Delete Exception 2

Section 2902.2 Delete Exception 6

Section 2902.6; change to read as follows:

2902.6 Small occupancies. Drinking fountains shall not be required for an occupant load of 25 or fewer. Drinking fountains may be substituted by a water dispenser for an occupant load of 50 or less.

Section 3109.1; change to read as follows:

3109.1 General. The design and construction of swimming pools, spas and hot tubs shall comply with the 2021 International Swimming Pool and Spa Code and applicable state laws.

“EXHIBIT B”

ARTICLE IV. RESIDENTIAL CODE

Sec 10-137. - Adopted

The International Residential Code, 2021 edition is hereby adopted as the Residential Code of the City of Rockwall, TX. A copy of such code will be kept in the Building Official's Office and shall be made available for public inspection during regular business hours via a scheduled appointment through the City Secretary's Office.

Sec. 10-138. - Amendments.

The International Residential Code, 2021 edition is hereby amended as follows:

Section R101.1; insert jurisdiction name as follows:

R101.1 Title. These provisions shall be known as the Residential Code for One-and Two-family Dwellings of the City of Rockwall, and shall be cited as such and will be referred hereinafter referred to as "this code."

Section R102.4; change to read as follows:

R102.4 Referenced codes and standards. The codes, when specifically adopted, and standards referenced in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference and as further regulated in Sections R102.4.1 and R102.4.2. Whenever amendments have been adopted to the referenced codes and standards, each reference to said code and standard shall be considered to reference the amendments as well. Any reference made to NFPA 70 or the Electrical Code shall mean the Electrical Code as adopted.

Section R102.7; change to read as follows:

R102.7 Existing structures. The legal occupancy of any structure existing on the date of adoption of this code shall be permitted to continue without change, except as is specifically covered in this code, the Rockwall Property Maintenance Code or the International Fire Code, or as is deemed necessary by the building official for the general safety and welfare of the occupants and the public.

Section R104.10.1 Flood Hazard areas; delete this section.

Section R105.2; change "Building" to read as follows: Building:

6. Painting, papering, tiling, carpeting, cabinets, counter tops and similar finish work.
7. Prefabricated swimming pools that are less than 24 inches (610 mm) deep.
8. Swings and other playground equipment.

Section R105.2; add text as follows:

11. Shingle replacement up to 25% of a roof area.

Section R105.3.1.1 and R106.1.4; delete these sections.

Section R112; change title to read as follows: R112 - Construction Advisory and Appeals Board.

Section R112.1; change to read as follows:

112.1 *General.* The Construction Advisory and Appeals Board shall be in accordance with Chapter 10, Article II, Division 3, Subdivision I, Sections 10-89 to 10-96 of the Code of Ordinances.

Section [A] 112.2, [A] 112.3 and [A] 112.4; Delete

Section R202; change definition of "Townhouse" to read as follows:

TOWNHOUSE. A single-family dwelling unit separated by property lines in townhomes that extends from foundation to roof and that has a yard or public way on not less than two sides.

Table R301.2 (1); fill in as follows:

GROUND SNOW LOAD	WIND DESIGN				SEISMIC DESIGN CATEGORY ^f	SUBJECT TO DAMAGE FROM			WINTER DESIGN TEMPE ^e	ICE BARRIER UNDER-LAYMENT ^h	FLOOD HAZARD ^g	AIR FREEZING INDEX ⁱ	MEAN ANNUAL TEMPE ^j
	SPEED ^d (MPH)	Topographic Effects ^k	Wind Special Region ^l	Windborne Debris Zone ^m		Weathering ^a	Frost Line Depth ^b	Termite ^c					
5 lb/ft	115 (3 sec-gust)/ 76 fastest mile	No	No	No	A	Moderate	6"	Very Heavy	22 ^o F	No	Local Code	150	64.9 ^o F

Delete remainder of table Manual J Design Criteria and footnote N

Section R302.2.2.6: delete exception #6:

Exceptions: {previous exceptions unchanged}

Section R303.3, Exception; amend to read as follows:

Exception: {existing text unchanged} Spaces containing only a water closet or water closet and a lavatory may be ventilated with an approved mechanical recirculating fan or similar devices designed to remove odors from the air.

Section R302.3; add Exception #3 to read as follows: Exceptions:

1. {existing text unchanged}
2. {existing text unchanged}
3. Two-family dwelling units that are also divided by a property line through the structure shall be separated as required for townhouses.

R302.5.1; change to read as follows:

R302.5.1 Opening protection. Opening from a private garage directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and residence shall be equipped with solid wood doors not less than 1 3/8 inches (35 mm) in thickness, solid or honeycomb steel doors not less than 1 3/8inch (35 mm) thick, or 20-minute fire-rated doors.

Section R302.15; add the following:

Appendix P, Section AP101 (2006 IRC, as amended and codified by city Ord. 11-24), is retained and reads as follows:

AP101 Fire Sprinklers

Approved automatic fire sprinkler systems shall be installed in all new R-3 buildings, structures and additions with a finished floor area of 5,000 square feet (464.5 m²) or greater and in all existing R-3 occupancies that have additions totaling more than 30% of the original finished floor area and exceeding a finished floor area of 5,000 square feet.

For the purpose of this provision, fire walls shall not define separate buildings.

For the purposes of this provision, finished floor area is defined as an enclosed area in a house (R-3) that is suitable for year-round use, embodying walls, floors, and ceilings that are similar to the rest of the house as defined by ANSI Z765-2003. Garages, porches, balconies, decks and other similar unfinished areas are not included in the finished floor area.

Section R303.3, Exception; amend to read as follows:

Exception: {existing text unchanged} Exhaust air from the space shall be exhaust out to the outdoors unless the space contains only a water closet, a lavatory, or water closet and a lavatory may be ventilated with an approved mechanical recirculating fan or similar device designed to remove odors from the air.

Section R309.3 Flood hazard areas; delete the section.

Section R309.5 Fire Sprinklers; delete the section.

Section R313.2; change exception to read as follows.

R313.2 One- and two-family dwellings automatic fire systems.

Exception: Approved automatic fire sprinkler systems shall not be required in new one and two- family dwellings, structures and additions with a finished floor area of less than 5,000 square feet (464.5 m²) or in existing one- and two-family dwelling occupancies that have additions totaling less than 30% of the original finished floor area and not equaling a finished floor area of 5,000 square feet. For the purpose of this provision, fire walls shall not define separate buildings.

Section R315.2.2 Alteration, repairs and additions; amend to read as follows:

Exception:

1. {existing text remains}
2. Installation, alteration or repairs of all electrically powered mechanical systems or plumbing appliances.

Section R322 Flood Resistant Construction; delete section.

Add Section 327.1.1; add to read as follows:

Section 327.1.1 Adjacency to Structural Foundation. Depth of the swimming pool and spa shall maintain a ratio of 1:1 from the nearest building foundation or footing of a retaining wall.

Exception: A sealed engineered design drawing of the proposed new structure shall be submitted for approval.

Section R401.2; amend by adding a new paragraph following the existing paragraph to read as follows:

Section R401.2. Requirements. {existing text unchanged}...

Every foundation and/or footing, or any size addition to an existing foundation, regulated by this code shall be designed and sealed by a Texas-registered engineer.

Section R404.4 Retaining walls; delete the section, add new text as follows:

Section R404.4 Retaining walls. All retaining walls require a permit. Retaining walls must be masonry, stone, or reinforced concrete with stone face/form liner. Smooth concrete retaining walls shall not be installed. Retaining walls exceeding 3 feet in height must be designed and sealed by a Texas-licensed engineer.

Add section 703.8.4.1.2 Veneer Ties for Wall Studs; to read as follows:

R703.8.4.1.2 Veneer Ties for Wall Studs. In stud framed exterior walls, all ties may be anchored to studs as follows:

1. When studs are 16 in (407 mm) o.c., stud ties shall be spaced no further apart than 24 in (737 mm) vertically starting approximately 12 in (381 mm) from the foundation; or
2. When studs are 24 in (610 mm) o.c., stud ties shall be spaced no further apart than 16 in (483 mm) vertically starting approximately 8 in (254 mm) from the foundation.

Add Section R1001.14.

R1001.14 Fire pits. Permanently installed fire pits shall not be installed within 10 feet of a structure or combustible material. Fire pits shall conform to all building setback requirements for single family dwellings as found in the City of Rockwall Unified Development Code. The maximum diameter of a fire pit shall be 3 feet.

Chapter 11 [RE] - Energy Efficiency; deleted in its entirety and replaced with the following:

N1101.1 Scope. This chapter regulates the energy efficiency for the design and construction of buildings regulated by this code.

N1101.2 Compliance. Compliance shall be demonstrated by meeting the requirements of the residential provisions of 2021 International Energy Conservation Code.

Section M1305.1.3; change to read as follows:

Section 1305.1.2; change to read as follows:

M1305.1.2 Appliances in attics. Attics containing appliances shall be provided . . . {bulk of paragraph unchanged} . . . side of the appliance. The clear access opening dimensions shall be a minimum of 20 inches by 30 inches (508 mm by 762 mm), and large enough to allow removal of the largest appliance. As a minimum, for access to the attic space, provide one of the following:

1. A permanent stair.
2. A pull down stair with a minimum 300 lb (136 kg) capacity.
3. An access door from an upper floor level.

Section 1503.6; change to read as follows:

M1503.6 Makeup air required. Where one or more gas, liquid or solid fuel-burning appliance that is neither direct-vent nor uses a mechanical draft venting system is located within a dwelling unit's air barrier, each exhaust system capable of exhausting in excess of 400 cubic feet per minute (0.19 m³/s) shall be mechanically or passively provided with makeup air at a rate approximately equal to the difference between exhaust air rate and 400 cubic feet per minute. Such makeup air systems shall be equipped with no fewer than one damper complying with Section M1503.6.2.

Exception: Makeup air is not required for exhaust systems installed for the exclusive purpose of space cooling and intended to be operated only when windows or other air inlets are open. Where all appliances in the house are of sealed combustion, power-vent, unvented, or electric, the exhaust hood system shall be permitted to exhaust up to 600 cubic feet per minute (0.28 m³/s) without providing makeup air. Exhaust hood systems capable of exhausting in excess of 600 cubic feet per minute (0.28 m³/s) shall be provided with a makeup air at a rate approximately to the difference between the exhaust air rate and 600 cubic feet per minute.

Section M2005.2; change to read as follows:

M2005.2 Prohibited locations. Fuel-fired water heaters shall not be installed in a room used as a storage closet. Water heaters located in a bedroom or bathroom shall be installed in a sealed enclosure so that combustion air will not be taken from the living space. Access to such enclosure may be from the bedroom or bathroom when through a solid door, weather-stripped in accordance with the exterior door air leakage requirements of the International Energy Conservation Code and equipped with an approved self-closing device. Installation of direct-vent water heaters within an enclosure is not required. Water heaters installed in an attic or above 1st story shall be equipped with an approved leak stop detection device.

Section G2408.3 (305.5); delete.

Section G2415.2. (404.2.); add a second paragraph to read as follows:

Both ends of each section of medium pressure gas piping shall identify its operating gas pressure with an approved tag. The tags are to be composed of aluminum or stainless steel and the following wording shall be stamped into the tag:

"WARNING: ½ to 5 psi gas pressure - Do Not Remove"

Section G2415.12 (404.12); change to read as follows:

G2415.12 (404.12) Minimum burial depth. Underground piping systems shall be installed a minimum depth of 18 inches (457 mm) below grade.

Section 2415.12.1 (404.12.1) Individual outside appliances; delete.

Section G2417.4; change to read as follows:

G2417.4 (406.4) Test pressure measurement. Test pressure shall be measured with a manometer or with a pressure-measuring device designed and calibrated to read, record, or indicate a pressure loss caused by leakage during the pressure test period. The source of pressure shall be isolated before the pressure tests are made.

Section G2417.4.1; change to read as follows:

G2417.4.1 (406.4.1) Test pressure. The test pressure to be used shall be no less than 3 psig (20 kPa gauge), or at the discretion of the Code Official, the piping and valves may be tested at a pressure of at least six (6) inches (152 mm) of mercury, measured with a manometer or slope gauge. For tests requiring a pressure of 3 psig, diaphragm gauges shall utilize a dial with a minimum diameter of three and one half inches (3½"), a set hand, 1/10 pound incrementation and pressure range not to exceed 6 psi for tests requiring a pressure of 3 psig. For tests requiring a pressure of 10 psig, diaphragm gauges shall utilize a dial with a minimum diameter of three and one-half inches (3½"), a set hand, a minimum of 2/10 pound incrementation and a pressure range not to exceed 20 psi. For welded piping, and for piping carrying gas at pressures in excess of fourteen (14) inches water column pressure (3.48 kPa) (1/2 psi) and less than 200 inches of water column pressure (52.2 kPa) (7.5 psi), the test pressure shall not be less than ten (10) pounds per square inch (69.6 kPa). For piping carrying gas at a pressure that exceeds 200 inches of water column (52.2 kPa) (7.5 psi), the test pressure shall be not less than one and one-half times the proposed maximum working pressure. Diaphragm gauges used for testing must display a current calibration and be in good working condition. The appropriate test must be applied to the diaphragm gauge used for testing.

Section G2417.4.2; change to read as follows:

G2417.4.2 (406.4.2) Test duration. The test duration shall be held for a length of time satisfactory to the Building Official, but in no case for less than fifteen (15) minutes. For welded piping, and for piping carrying gas at pressures in excess of fourteen (14) inches water column pressure (3.48 kPa), the test duration shall be held for a length of time satisfactory to the Building Official, but in no case for less than thirty (30) minutes.

Section G2420.2 (409.2); change to read as follows:

G2420.2 Meter valve. Every meter shall be equipped with a shutoff valve located on the supply side of the meter and an additional shutoff valve shall be provided where the piping system enters the building. A union shall be installed downstream from the shutoff valve at the building.

Section G2421.1 (410.1); add text and exception to read as follows:

G2421.1 (410.1) Pressure regulators. A line pressure regulator shall be ... {bulk of paragraph unchanged} ... approved for outdoor installation. Access to regulators shall comply with the requirements for access to appliances as specified in Section M1305.

Exception: A passageway or level service space is not required when the regulator is capable of being serviced and removed through the required attic opening.

Section G2445.2 (621.2); add exception to read as follows:

G2445.2 (621.2) Prohibited use. One or more unvented room heaters shall not be used as the sole source of comfort heating in a dwelling unit.

Exception: Existing approved unvented room heaters may continue to be used in dwelling units, in accordance with the code provisions in effect when installed, when approved by the Building Official unless an unsafe condition is determined to exist as described in International Fuel Gas Code Section 108.7 of the Fuel Gas Code.

Section G2453.1 (635.1); change text to read as follows:

Section G2453.1 (635.1) Outdoor Decorative Appliances General. Permanently fixed-in-place outdoor decorative appliances shall be tested in accordance with ANSI Z21.97 and shall be installed in accordance with the manufacturer's instructions. Outdoor decorative appliances shall be minimum 3 feet from combustibles and property lines or in accordance with manufacturer's clearance requirements, whichever is greatest.

Section P2801.6.1; change to read as follows:

Section P2801.6.1 Pan size and drain. The pan shall be not less than 1½ inches (38 mm) in depth and shall be of sufficient size and shape to receive all dripping or condensate from the tank or water heater. The pan shall be drained by an indirect waste pipe having a diameter of not less than ¾ inch (19 mm). Piping for safety pan drains shall be of those materials indicated in Table 2906.5.

Section P2801.6.2; change to read as follows:

P2801.6.2 Pan drain termination. The pan drain shall extend full-size and terminate over a suitably located indirect waste receptor or floor drain or extend to the exterior of the building and terminate not less than 6 inches (152 mm) and not more than 24 inches (610 mm) above the adjacent ground surface. With approval of the Code official; when technically infeasible to install a pan drain to an approved location, a device must be installed that will automatically shut off the water supply to the water heater when a water leak is detected.

Section P2804.6.1; change to read as follows:

P2804.6.1 Requirements for discharge piping. The discharge piping serving a pressure relief valve, temperature relief valve or combination thereof shall:

1. Not be directly connected to the drainage system.
2. Discharge through an air gap.
3. Not be smaller than the diameter of the outlet of the valve served and shall discharge full size to the air gap.
4. Serve a single relief device and shall not connect to piping serving any other relief device or equipment.

Exception: Multiple relief devices may be installed to a single T & P discharge piping system when approved by the administrative authority and permitted by the manufacturer's installation instructions and installed with those instructions. Where previously installed water heaters have been approved with the T&P discharge piping and pan drains combined, the T&P discharge piping and pan drains may remain combined, with the approval of the code official. All check valves must be removed from the piping.

5. Discharge to the pan serving the water heater or storage tank, to an indirect waste receptor or to the outdoors.
6. Discharge in a manner that does not cause personal injury or structural damage.
7. Discharge to a termination point that is readily observable by the building occupants.
8. Not be trapped.
9. Be installed so as to flow by gravity.
10. Not terminate less than 6 inches or more than 24 inches (152 mm) above grade nor more than 6 inches above the waste receptor flood level rim.
11. Not have a threaded connection at the end of such piping.
12. Not have valves or tee fittings.

13. Be constructed of those materials listed in Section P2906.5 or materials tested, rated and approved for such use in accordance with ASME A112.4.1.
14. Be one nominal size larger than the size of the relief-valve outlet, where the relief-valve discharge piping is constructed of PEX or PE-RT tubing. The outlet end of such tubing shall be fastened in place.

Section P2902.5.3; Lawn irrigation systems, delete.

Section 3003.9.2; change to read as follows:

P3003.9.2 Solvent cementing. Joint surfaces shall be clean and free from moisture. A purple primer that conforms to ASTM F 656 shall be applied. Solvent cement not purple in color and conforming to ASTM D 2564, CSA B137.3, CSA B181.2 or CSA B182.1 shall be applied to all joint surfaces. The joint shall be made while the cement is wet and shall be in accordance with ASTM D 2855. Solvent cement joints shall be permitted above or below ground.

Section P3005.2.3; change to read as follows:

P3005.2.3 Building drain and building sewer junction. There shall be a two-way cleanout near the junction of the building drain and building sewer. The two-way cleanout shall be outside the building wall, and brought up to finish grade or to the lowest floor level. All two-way sewer cleanouts shall be equipped with relief valves on both cleanout openings.

Section P3112.2; delete and replace with the following:

P3112.2 Installation. Traps for island sinks and similar equipment shall be roughed in above the floor and may be vented by extending the vent as high as possible, but not less than the drainboard height and then returning it downward and connecting it to the horizontal sink drain immediately downstream from the vertical fixture drain. The return vent shall be connected to the horizontal drain through a wye-branch fitting and shall, in addition, be provided with a foot vent taken off the vertical fixture vent by means of a wye-branch immediately below the floor and extending to the nearest partition and then through the roof to the open air or may be connected to other vents at a point not less than six (6) inches (152 mm) above the flood level rim of the fixtures served. Drainage fittings shall be used on all parts of the vent below the floor level and a minimum slope of one-quarter ($\frac{1}{4}$) inch per foot (20.9 mm/m) back to the drain shall be maintained. The return bend used under the drainboard shall be a one (1) piece fitting or an assembly of a forty-five (45) degree (0.79 radius), a ninety (90) degree (1.6 radius) and a forty-five (45) degree (0.79 radius) elbow in the order named. Pipe sizing shall be as elsewhere required in this Code. The island sink drain, upstream of the return vent, shall serve no other fixtures. An accessible cleanout shall be installed in the vertical portion of the foot vent.

“EXHIBIT C”

ARTICLE V. MECHANICAL CODE

Sec. 10-158. - Adopted

The International Mechanical Code, 2021 edition, as amended by this chapter, is hereby adopted as the Mechanical Code of the City of Rockwall, TX. A copy of such code will be kept in the Building Official's Office and shall be made available for public inspection during regular business hours via a scheduled appointment through the City Secretary's Office.

Sec. 10-159. - Amendments.

The International Mechanical Code, 2021 edition, is hereby amended as follows:

Section 102.8; change to read as follows:

102.8 Referenced Codes and Standards. The codes and standards referenced herein shall be those that are listed in Chapter 15 and such codes, when specifically adopted, and standards shall be considered part of the requirements of this code to the prescribed extent of each such reference. Where differences occur between provisions of this code and the referenced standards, the provisions of this code shall apply. Whenever amendments have been adopted to the referenced codes and standards, each reference to said code and standard shall be considered to reference the adopted amendments. Any reference to NFPA 70 or the National Electrical Code (NEC) shall mean the Electrical Code as adopted.

Section 114; Change title to read as follows: Construction Advisory and Appeals Board

Section 114.1 Change to read as follows:

114.1 General The Construction Advisory and Appeals Board shall be in accordance with Chapter 10, Article II, Division 3, Subdivision I, Sections 10-89 to 10-96 of the Code of Ordinances.

Sections 114.2 to 114.4; Delete:

Section 306.3; change to read as follows:

306.3 Appliances in Attics. Attics containing appliances shall be provided . . . {bulk of paragraph unchanged} . . . side of the appliance. As a minimum, for access to the attic space, provide one of the following:

1. A permanent stair.
2. A pull down stair with a minimum 300 lb. (136 kg) capacity.
3. An access door from an upper floor level.
4. Access Panel may be used in lieu of items 1, 2, and 3 with prior approval of the code official due to building conditions.

Exceptions: unchanged

Section 306.5; change to read as follows:

306.5 Equipment and Appliances on Roofs or Elevated Structures. Where equipment requiring access or appliances are located on an elevated structure or the roof of a building such that personnel will have to climb higher than 16 feet (4877 mm) above grade to access, a permanent interior or exterior means of access shall be provided. Permanent exterior ladders providing roof access need not extend closer than 12 feet (2438 mm) to the finish grade or floor level below and shall extend to the equipment and appliances' level service space. Such access shall . . . {bulk of section to read the same} . . . on roofs having a slope greater than 4 units vertical in 12 units horizontal (33-percent slope). ... {bulk of section to read the same}.

Section 306.5.1; change to read as follows:

306.5.1 Sloped Roofs. Where appliances, equipment, fans or other components that require service are installed on a roof having a slope of 3 units vertical in 12 units horizontal (25-percent slope) or greater and having an edge more than 30 inches (762 mm) above grade at such edge, a catwalk at least 16 inches in width with substantial cleats spaced not more than 16 inches apart shall be provided from the roof access to a level platform at the appliance. The level platform shall be provided on each side of the appliance to which access is required for service, repair or maintenance. The platform shall be not less than 30 inches (762 mm) in any dimension and shall be provided with guards. The guards shall extend not less than 42 inches (1067 mm) above the platform, shall be constructed so as to prevent the passage of a 21-inch- diameter (533 mm) sphere and shall comply with the loading requirements for guards specified in the International Building Code.

Add Section 306.6 to read as follows:

306.6 Water Heaters Above Ground or Floor. When the mezzanine or platform in which a water heater is installed is more than eight (8) feet (2438 mm) above the ground or floor level, it shall be made accessible by a stairway or permanent ladder fastened to the building. Water heaters installed in an attic or above 1st story shall be equipped with an approved leak stop detection device.

Exception: A maximum 10-gallon water heater (or larger with approval) is capable of being accessed through a lay-in ceiling and the water heater installed is not more than ten (10) feet (3048 mm) above the ground or floor level and may be reached with a portable ladder.

Section 403.2.1; add an item 5 to read as follows:

5. Toilet rooms within private dwellings that contain only a water closet, lavatory, or combination thereof may be ventilated with an approved mechanical recirculating fan or similar device designed to remove odors from the air.

Section 501.3; add an exception 4 to read as follows:

Exceptions:

4. Toilet room exhaust ducts may terminate in a warehouse or shop area when infiltration of outside air is present.

Section 607.5.1; change to read as follows:

607.5.1 Fire Walls. Ducts and air transfer openings permitted in fire walls in accordance with Section 705.11 of the International Building Code shall be protected with listed fire dampers installed in accordance with their listing. For hazardous exhaust systems see Section 510.1-510.9 IMC.

“EXHIBIT D”

ARTICLE VI. PLUMBING CODE

Sec. 10-179. - Adopted

The International Plumbing Code, 2021 edition, as amended by this chapter, is hereby adopted as the Plumbing Code of the City of Rockwall, TX. A copy of such code will be kept in the Building Official’s Office and shall be made available for public inspection during regular business hours via a scheduled appointment through the City Secretary’s Office.

Sec. 10-180. - Amendments.

The International Plumbing Code, 2021 edition, is hereby amended as follows:

Table of Contents, Chapter 7, Section 713; change to read as follows:

713 Engineered Drainage Design7-12

Section 102.8; change to read as follows:

102.8 Referenced codes and standards. The codes and standards referenced in this code shall be those that are listed in Chapter 15 and such codes, when specifically adopted, and standards shall be considered as part of the requirements of this code to the prescribed extent of each such reference. Where the differences occur between provisions of this code and the referenced standards, the provisions of this code shall be the minimum requirements. Whenever amendments have been adopted to the referenced codes and standards, each reference to said code and standard shall be considered to reference the adopted amendments. Any reference to NFPA 70 or the National Electrical Code (NEC) shall mean the Electrical Code as adopted.

Section 109 FEES

Section 109.2; change to read as follows

109.2 Schedule of permit fees. Where work requires a permit, a fee for each permit shall be paid as required, in accordance with the schedule as established by resolution of the Rockwall City Council.

Section 114; Delete entire section and insert the following:

Section 114; Change title to read as follows:

Construction Advisory and Appeals Board

Section 114.1 Delete existing text, change to read as follows:

Section 114.1 General. The Construction Advisory and Appeals Board shall be in accordance with Chapter 10, Article II, Division 3, Subdivision I, Sections 10-89 to 10-96 of the Code of Ordinances.

Sections 114.2-114.4; Delete:

Section 305.4.1; change to read as follows:

305.4.1 Sewer depth.

Building sewers shall be a minimum of 12 inches (304 mm) below grade.

Section 305.7; change to read as follows:

305.7 Protection of components of plumbing system. Components of a plumbing system installed within 2 feet along alleyways, driveways, parking garages or other locations in a manner in which they would be exposed to damage shall be recessed into the wall or otherwise protected in an approved manner.

Sections 312.10.1 and 312.10.2; change to read as follows:

312.10.1 Inspections. Annual inspections shall be made of all backflow prevention assemblies and air gaps to determine whether they are operable. In the absence of local provisions, the owner is responsible to ensure that testing is performed. All tests shall be performed by a State of Texas certified backflow tester. All testers shall be registered with the City of Rockwall. All test results shall be recorded on a City of Rockwall Backflow Prevention Assembly Test and Maintenance Report form and submitted to the Rockwall Engineering Department.

312.10.2 Testing. Reduced pressure principle backflow preventer assemblies, double check-valve assemblies, pressure vacuum breaker assemblies, reduced pressure detector fire protection backflow prevention assemblies, double check detector fire protection backflow prevention assemblies, hose connection backflow preventers, and spill-proof vacuum breakers shall be tested at the time of installation, immediately after repairs or relocation and at least annually. The testing procedure shall be performed in accordance with applicable local provisions and one of the following standards: {list of standards unchanged}

Table 403.1; add footnote g to read as follows:

Table 403.1

MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES^g

g. Drinking fountains are not required in M Occupancies with an occupant load of 100 or less, B Occupancies with an occupant load of 25 or less, and for dining and/or drinking establishments. Drinking fountains may be substituted by a water dispenser for an occupant load of 50 or less.

Section 403.1.1 Delete Exception 2

Section 403.2 Delete Exception 6

Section 410.2; change to read as follows:

410.2 Small occupancies. Drinking fountains shall not be required for an occupant load of 25 or fewer. Drinking fountains may be substituted by a water dispenser for an occupant load of 50 or less.

Section 502.3; change to read as follows:

502.3 Appliances in attics. Attics containing ...paragraph unchanged.... Removal of the water heater. As a minimum, for access to the attic space, provide one of the following:

1. A permanent stair.
2. A pull down stair with a minimum 300 lb. (136 kg) capacity.
3. An access door from an upper floor level.
4. Access panel may be used in lieu of items 1, 2, and 3 with prior approval of the code official due to building conditions.

Add Section 502.6 to read as follows:

502.6 Water heaters above ground or floor. When the attic, roof, mezzanine or platform in which a water heater is installed is more than eight (8) feet (2438 mm) above the ground or floor level, it shall be made accessible by a stairway or permanent ladder fastened to the building. Water heaters installed in an attic or above 1st story shall be equipped with an approved leak stop detection device.

Exception: A max 10 gallon water heater (or larger with approval) is capable of being accessed through a lay-in ceiling and a water heater is installed is not more than ten (10) feet (3048 mm) above the ground or floor level and may be reached with a portable ladder.

Section 504.7.2 change to read as follows:

504.7.2 Pan drain termination. The pan drain shall extend full-size and terminate over a suitably located indirect waste receptor or floor drain or extend to the exterior of the building and terminate not less than 6 inches (152 mm) and not more than 24 inches (610 mm) above the adjacent ground surface. With approval of the Code official; when technically infeasible to install a pan drain to an approved location, a device must be installed that will automatically shut off the water supply to the water heater when a water leak is detected.

Section 603.1; change to read as follows:

603.1 Size of water service pipe. The water service pipe shall be sized to supply water to the structure in the quantities and at the pressures required in this code. The minimum diameter of water service pipe shall be 1 inch and extend to the first fixture of not less than 20 fixture units.

Add Section 606.1.2; as follows:

606.1.2 Service valve. Every water service shall be provided with an accessible main shutoff valve installed on the water meter tailpiece. The valve shall be of a ball type and be equipped with a stainless steel handle. All service valves are to be installed within a plastic valve or meter box large enough so as to not hamper maintenance or operation.

Section 608.1; change to read as follows:

608.1 General All commercial potable water supply systems shall be protected against backflow by a double-check valve or a reduced pressure principle backflow preventer. Backflow preventer applications shall conform to, Table 608.1, except as specifically stated in Sections 608.2 through 608.17.10

Section 608.17.5; Connections to lawn irrigation systems, delete

Section 608.18; change to read as follows:

608.18 Protection of individual water supplies. An individual water supply shall be located and constructed so as to be safeguarded against contamination in accordance with applicable local regulations. Installation shall be in accordance with Sections 608.18.1 through 608.18.8

Section 703.6; Delete

Section 705.10.2; change to read as follows:

705.10.2 Solvent cementing. Joint surfaces shall be clean and free from moisture. A purple primer that conforms to ASTM F 656 shall be applied. Solvent cement not purple in color and conforming to ASTM D 2564, CSA B137.3, CSA B181.2 or CSA B182.1 shall be applied to all joint surfaces. The joint shall be made while the cement is wet and shall be in accordance with ASTM D 2855. Solvent cement joints shall be permitted above or below ground.

Section 713, 713.1; change to read as follows:

SECTION 713 ENGINEERED DRAINAGE DESIGN

713.1 Design of drainage system. The sizing, design and layout of the drainage system shall be designed by a State of Texas registered engineer using approved design methods.

Section 903.1; change to read as follows:

903.1.1 Roof extension unprotected. Open vent pipes that extend through a roof shall terminate not less than six (6) inches (152 mm) above the roof.

Section 1003.2; change to read as follows:

1003.2 Approval. The size, type, and location of each interceptor and of each separator shall be designed and installed in accordance with the manufacturer's instructions, requirements of this section based on the anticipated conditions of use and in accordance with applicable local regulations. All interceptors shall be sized by an engineer. Wastes that do not require treatment or separation shall not be discharged into any interceptor or separator.

Section 1109; delete this section.

Section 1202.1; delete Exceptions 1 and 2.

(Reason: State law already specifies that Med Gas systems must comply with NFPA 99.)

“EXHIBIT E”

ARTICLE VII. FUEL GAS CODE

Sec. 10-199. - Adopted.

The International Fuel Gas Code, 2021 edition, as amended by this chapter, is hereby adopted as the Fuel Gas Code of the City of Rockwall, TX. A copy of such code will be kept in the Building Official's Office and shall be made available for public inspection during regular business hours via a scheduled appointment through the City Secretary's Office.

Sec. 10-200. Amendments

The International Fuel Gas Code, 2021 edition, is hereby amended as follows:

Section 101.1; fill in the blank.

Section 101.1 Title. These regulations shall be known as the Fuel Gas Code of Rockwall, hereinafter referred to as “this code”.

Section 109.2; change to read as follows;

109.2 Fee schedule.

Permit fees shall be established by resolution of the Rockwall City Council.

Section 113; Change title to read as follows:

Construction Advisory and Appeals Board

Section 113.1 Change to read as follows:

113.1 The Construction Advisory and Appeals Board shall be in accordance with Chapter 10, Article II, Division 3, Subdivision I, Sections 10-89 to 10-96 of the Code of Ordinances.

Sections 113.2 to 113.4; Delete:

Section 114; Delete:

Add Section 305.13; to read as follows:

305.13 Protection of components of plumbing system. Components of a plumbing system installed within 2 feet along alleyways, driveways, parking garages or other locations in a manner in which they would be exposed to damage shall be recessed into the wall or otherwise protected in an approved manner.

Section 306.3; change to read as follows:

[M] 306.3 Appliances in attics. Attics containing appliances requiring access shall be provided . . . {bulk of paragraph unchanged} . . . side of the appliance. The clear access opening dimensions shall be a minimum of 20 inches by 30 inches (508 mm by 762 mm), and large enough to allow removal of the largest appliance. As a minimum, for access to the attic space, provide one of the following:

1. A permanent stair.
2. A pull-down stair with a minimum 300 lb. (136 kg) capacity.
3. An access door from an upper floor level.

4. Access panel may be used in lieu of items 1, 2, and 3 with prior approval of the code official due to building conditions.

Exceptions:

1. The passageway and level service space are not required where the appliance is capable of being serviced and removed through the required opening.
2. Where the passageway is not less than ... {bulk of section to read the same}.

Section 306.5; change to read as follows:

306.5 Equipment and Appliances on Roofs or Elevated Structures. Where equipment requiring access or appliances are located on an elevated structure or the roof of a building such that personnel will have to climb higher than 16 feet (4877 mm) above grade to access, an permanent interior or exterior means of access shall be provided. Permanent exterior ladders providing roof access need not extend closer than 12 feet (2438 mm) to the finish grade or floor level below and shall extend to the equipment and appliances' level service space. Such access shall . . . {bulk of section to read the same} . . . on roofs having a slope greater than 4 units vertical in 12 units horizontal (33-percent slope). ... {bulk of section to read the same}.

Section 306.5.1; change to read as follows:

306.5.1 Sloped Roofs. Where appliances, equipment, fans or other components that require service are installed on a roof having a slope of 3 units vertical in 12 units horizontal (25-percent slope) or greater and having an edge more than 30 inches (762 mm) above grade at such edge, a catwalk at least 16 inches in width with substantial cleats spaced not more than 16 inches apart shall be provided from the roof access to a level platform at the appliance. The level platform shall be provided on each side of the appliance to which access is required for service, repair or maintenance. The platform shall be not less than 30 inches (762 mm) in any dimension and shall be provided with guards. The guards shall extend not less than 42 inches (1067 mm) above the platform, shall be constructed so as to prevent the passage of a 21-inch- diameter (533 mm) sphere and shall comply with the loading requirements for guards specified in the International Building Code.

Section 401.5; add a second paragraph to read as follows:

Both ends of each section of medium pressure gas piping shall identify its operating gas pressure with an approved tag. The tags are to be composed of aluminum or stainless steel and the following wording shall be stamped into the tag:

"WARNING 1/2 to 5 psi gas pressure Do Not Remove

Section 404.12; change to read as follows:

404.12 Minimum burial depth. Underground piping systems shall be installed a minimum depth of 18 inches (458 mm) top of pipe below grade.

Section 404.12.1; Individual outside appliances, delete.

Section 406.4; change to read as follows:

406.4 Test pressure measurement. Test pressure shall be measured with a monometer or with a pressure-measuring device designed and calibrated to read, record, or indicate a pressure loss caused by leakage during the pressure test period. The source of pressure shall be isolated before the pressure tests are made. Mechanical gauges used to measure test pressures shall have a range such that the highest end of the scale is not greater than five times the test pressure. Spring type gauges do not meet the requirement of a calibrated gauge.

Section 406.4.1; change to read as follows:

406.4.1 Test pressure. The test pressure to be used shall be no less than 3 psig (20 kPa gauge), or at the discretion of the Code Official, the piping and valves may be tested at a pressure of at

least six (6) inches (152 mm) of mercury, measured with a manometer or slope gauge. For tests requiring a pressure of 3 psig, diaphragm gauges shall utilize a dial with a minimum diameter of three- and one-half inches (3 ½"), a set hand, 1/10 pound incrementation and pressure range not to exceed 15 psi for tests requiring a pressure of 3 psig. For tests requiring a pressure of 10 psig, diaphragm gauges shall utilize a dial with a minimum diameter of three and one-half inches (3 ½"), a set hand, a minimum of 2/10 pound incrementation and a pressure range not to exceed 50 psi. For welded piping, and for piping carrying gas at pressures in excess of fourteen (14) inches water column pressure (3.48 kPa) (½ psi) and less than 200 inches of water column pressure (52.2 kPa) (7.5 psi), the test pressure shall not be less than ten (10) pounds per square inch (69.6 kPa). For piping carrying gas at a pressure that exceeds 200 inches of water column (52.2 kPa) (7.5 psi), the test pressure shall be not less than one and one-half times the proposed maximum working pressure. Diaphragm gauges used for testing must display a current calibration and be in good working condition. The appropriate test must be applied to the diaphragm gauge used for testing.

Section 406.4.2; change to read as follows:

406.4.2 Test duration. Test duration shall be held for a length of time satisfactory to the Code Official, but in no case for less than fifteen (15) minutes. For welded piping, and for piping carrying gas at pressures in excess of fourteen (14) inches water column pressure (3.48 kPa), the test duration shall be held for a length of time satisfactory to the Code Official, but in no case for less than thirty (30) minutes. (Delete remainder of section.)

Section 409.2; change to read as follows:

409.2 Meter valve. Every meter shall be equipped with a shutoff valve located on the supply side of the meter and an additional shutoff valve shall be provided where the piping system enters the building.

A union shall be installed downstream from the shutoff valve at the building.

Section 410.1; add a second paragraph and exception to read as follows:

Access to regulators shall comply with the requirements for access to appliances as specified in Section 306.

Exception: A passageway or level service space is not required when the regulator is capable of being serviced and removed through the required attic opening.

Section 621.2; add exception as follows:

Exception: Existing approved unvented heaters may continue to be used in dwelling units, in accordance with the code provisions in effect when installed, when approved by the Code Official unless an unsafe condition is determined to exist as described in Section 115.6

“EXHIBIT F”

ARTICLE VIII. ENERGY CONSERVATION CODE

Sec. 10-223. Adopted.

The International Energy Conservation Code, 2021 edition, as amended by this chapter, is hereby adopted as the Energy Conservation Code of the City of Rockwall, TX. A copy of such code will be kept in the Building Official’s Office and shall be made available for public inspection during regular business hours via a scheduled appointment through the City Secretary’s Office.

Sec. 10-224. Amendments.

The International Energy Conservation Code, 2021 edition, is hereby amended as follows:

Section C102/R102; add Section C102.1.2 and R102.1.2 to read as follows:

C102.1.2 Alternative compliance. A building certified by a national, state, or local accredited energy efficiency program and determined by the Energy Systems Laboratory to be in compliance with the energy efficiency requirements of this section may, at the option of the Code Official, be considered in compliance. The United States Environmental Protection Agency’s Energy Star Program certification of energy code equivalency shall be considered in compliance.

R102.1.2 Alternative compliance. A building certified by a national, state, or local accredited energy efficiency program and determined by the Energy Systems Laboratory to be in compliance with the energy efficiency requirements of this section may, at the option of the Code Official, be considered in compliance. The United States Environmental Protection Agency’s Energy Star Program certification of energy code equivalency shall be considered in compliance. Regardless of the program or the path to compliance, each 1- and 2-family dwelling shall be tested for air and duct leakage as prescribed in Section R402.4.1.2 and R403.3.3 respectively.

Section C110; change title to read as follows:

C110.1- Construction Advisory and Appeals Board

Section R110; change title to read as follows:

R110.1- Construction Advisory and Appeals Board

Section C110.1; to read as follows:

C110.1 General. The Construction Advisory and Appeals Board shall be in accordance with Chapter 10, Article II, Division 3, Subdivision I, Sections 10-89 to 10-96 of the Code of Ordinances.

Section R110.1; to read as follows:

R110.1 General. The Construction Advisory and Appeals Board shall be in accordance with Article II, Division 3, Chapter 10 of the Code of Ordinances, City of Rockwall.

Section C110.2 and C110.3; delete

Section R110.2 and R110.3; delete

Section C202 and R202; add the following definition:

PROJECTION FACTOR. The ratio of the horizontal depth of the overhang, eave or permanently attached shading device, divided by the distance measured vertically from the bottom of the fenestration glazing to the underside of the overhang, eave or permanently attached shading device.

Section R202; add the following definition:

DYNAMIC GLAZING. Any fenestration product that has the fully reversible ability to change its performance properties, including U-factor, solar heat gain coefficient (SHGC), or visible transmittance (VT).

Section R401.2.5 Additional Energy efficiency; deleted in its entirety.

Table R402.1.2 Maximum Assembly/Climate Zone items: amend table as follows:

Climate Zone	Fenestration U-Factor ^f	Ceiling U-Factor
2	.40	0.29
3	0.32	0.29

Table R402.1.3 Insulation/Climate Zone items: amend table as follows.

Climate Zone	Fenestration U-Factor ^{b,i}	Ceiling R-Value	Wood Frame Wall R-Value	Slab R-Value & Depth
2	.40	42	13 or 0 + 10	0
3	0.32	42	19 or 13 + 3ci, 0 + 15	0

R402.4.1.2 Testing; Add a last paragraph to read as follows:

Mandatory testing shall only be performed by individuals that are certified to perform air infiltration testing certified by national or state organizations as approved by the building official. The certified individuals must be an independent third-party entity, and may not be employed; or have any financial interest in the company that constructs the structure.

Section R402.4.6 Electrical and Communication outlet boxes. Delete after the first sentence to read as follows.

R402.4.6 Electrical and communication outlet boxes (air-sealed boxes). Electrical and communication outlet boxes installed in the building thermal envelope shall be sealed to limit air leakage between conditioned and unconditioned spaces.

R403.3.5 Duct Testing; Add a last paragraph to read as follows:

Mandatory testing shall only be performed by individuals that are certified to perform duct testing leakage testing certified by national or state organizations as approved by the building official. The certified individuals must be an independent third-party entity, and may not be employed; or have any financial interest in the company that constructs the structure.

Section R404.2 Interior Lighting Controls; deleted in its entirety.

Section R405.6.2; add the following sentence to the end of paragraph:

Acceptable performance software simulation tools may include, but are not limited to, REM Rate™, Energy Gauge and IC3. Other performance software programs accredited by RESNET BESTEST and having the ability to provide a report as outlined in R405.4.2 may also be deemed acceptable performance simulation programs and may be considered by the building official.

TABLE R406.4 MAXIMUM ENERGY RATING INDEX; amend to read as follows:

**TABLE R406.4 (N1106.4) ²
MAXIMUM ENERGY RATING INDEX**

CLIMATE ZONE	ENERGY RATING INDEX
2	59
3	59

² The table is effective from September 1, 2022 to August 31, 2025.

**TABLE R406.4 (N1106.4) ³
MAXIMUM ENERGY RATING INDEX**

CLIMATE ZONE	ENERGY RATING INDEX
2	57
3	57

³ The table is effective from September 1, 2025 to August 31, 2028.

**TABLE R406.4 (N1106.4) ³
MAXIMUM ENERGY RATING INDEX**

CLIMATE ZONE	ENERGY RATING INDEX
2	55
3	55

⁴ This table is effective on or after September 1, 2028.

(Reason: The tables reflect the values and timetable set forth in HB 3215, 87th Regular Session Codified in Chapter 388 Texas Building Energy Performance Standards: §388.003.)

“EXHIBIT G”

ARTICLE IX. ELECTRICAL CODE

Sec. 10-244. - Adopted.

The National Electric Code, 2020 edition, as amended by this chapter, is hereby adopted as the Electrical Code of the City of Rockwall, TX. A copy of such code will be kept in the Building Official's Office and shall be made available for public inspection during regular business hours via a scheduled appointment through the City Secretary's Office.

Sec. 10-245. - Amendments.

The National Electric Code, 2020 edition, is hereby amended as follows:

Section 90.10 Construction Advisory and Appeals Board; add to read as follows:

Section 90.10 Construction Advisory and Appeals Board

Section 90.11; add to read as follows:

90.11 General. The Construction Advisory and Appeals Board shall be in accordance with Article II, Division 3, Chapter 10 of the Code of Ordinances, City of Rockwall.

Article 100; add the following to definitions:

Engineering Supervision. Supervision by a Qualified State of Texas Licensed Professional Engineer engaged primarily in the design or maintenance of electrical installations.

“EXHIBIT H”

ARTICLE X. EXISTING BUILDING CODE

Sec. 10-381. - Adopted

The Existing Building Code, 2021 edition, as amended by this chapter, is hereby adopted as the Existing Building Code of the city. A copy of such code will be kept in the Building Official's Office and shall be made available for public inspection during regular business hours via a scheduled appointment through the City Secretary's Office.

Sec. 10-382. - Amendments

The Existing Building Code, 2021 edition, is hereby amended as follows:

Section 101.1; Insert jurisdiction name as follows:

[A] 101.1 Title. These regulations shall be known as the Existing Building Code of Rockwall, TX hereinafter referred to as “this code.”

Section 101.4.2; change to read as follows:

[A] 101.4.2 Buildings previously occupied. The legal occupancy of any building existing on the date of adoption of this code shall be permitted to continue without change, except as is specifically covered in this code, the International Fire Code, or the Rockwall Property Maintenance Code, or as is deemed necessary by the code official for the general safety and welfare of the occupants and the public.

Section 102.4; change to read as follows:

[A] 102.4 Referenced codes and standards. The codes, when specifically adopted, and standards referenced in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference and as further regulated in Sections 102.4.1 and 102.4.2. {No change to rest of section.}

Section [A] 104.2.1; Determination of substantially improved or substantially damaged existing buildings and structures in flood hazard areas. Delete

Section [A] 104.10.1 Flood hazard areas. Delete

Section 105.2; change to read as follows:

[A] 105.2 Work exempt from permit. Exemptions from permit requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this jurisdiction. Permits shall not be required for the following:

Building:

2. Painting, papering, tiling, carpeting, cabinets, counter tops, and similar finish work.
5. Window awnings supported by an exterior wall of Group R-3 or Group U occupancies.
6. Movable cases, counters, and partitions not over 69 inches (1753 mm) in height.

Section 110.2; delete number 11 as follows:

~~11. Where an automatic sprinkler system is provided, and whether an automatic sprinkler system is required.~~

Section R112; change title to read as follows:

R112- Construction Advisory and Appeals Board

Section [A] R112.1; change to read as follows:

[A] 112.1 General. The Construction Advisory and Appeals Board shall be in accordance with Chapter 10, Article II, Division 3, Subdivision I, Sections 10-89 to 10-96 of the Code of Ordinances.

Section [A] 112.2, 112.3 and 112.4; Delete

Section 202; amend definition of Existing Building as follows:

Existing Building - A building, structure, or space, with an approved final inspection issued under a code edition which is at least 2 published code editions preceding the currently adopted building code; or a change of occupancy.

Section 306.1; add exceptions to read as follows:

Exceptions:

1. Components of projects regulated by and registered with Architectural Barriers Division of Texas Department of Licensing and Regulation shall be deemed to be in compliance with the requirements of this chapter.
2. If the cost of the project is less than \$50K, it must comply with ICC A117.1, or it shall be reviewed and inspected to the Texas Accessibility Standards by a Registered Accessibility Specialist.

Section 306.2; add exception to read as follows:

Exception: Projects subject to the Texas Accessibility Standards as adopted by the Texas Department of Licensing and Regulation are exempt from this section. Projects with a valuation of less than \$50,000.00 (which are subject to the Texas Accessibility Standards) may be accepted as equivalent to this section where reviewed and inspected to the Texas Accessibility Standards by a Texas Department of Licensing and Regulation Registered Accessibility Specialist when a plan review report and a compliant inspection report are provided to the building code official.

Section 306.5.1; add to read as follows:

306.5.1 Complete change of occupancy. Where an entire building undergoes a change of occupancy, it shall have all of the following accessible features:

1. *Not fewer than one accessible building entrance.*
2. *Not fewer than one accessible route from an accessible building entrance to primary function areas.*
3. *Signage complying with Section 1111 of the International Building Code.*

4. Accessible parking, where parking is being provided.
5. Not fewer than one accessible passenger loading zone, where loading zones are provided.
6. Not fewer than one accessible route connecting accessible parking and accessible passenger loading zones to an accessible entrance.
7. At least one accessible family or assisted use toilet room shall be provided in accordance with Chapter 11 of the International Building Code.

Where it is technically infeasible to comply with the new construction standards for any of these requirements for a change of group or occupancy, Items 1 through 6 shall conform to the requirements to the maximum extent technically feasible.

Exception: The accessible features listed in Items 1 through 6 are not required for an accessible route to Type B units.

Section 401.3; Flood Hazard Areas; delete this section.

Section 405.2.6 Flood Hazard Areas; delete this section.

Section 502.3 Flood Hazard Areas; delete this section.

Section 503.2 Flood hazard areas; delete this section.

Section 507.3 Flood Hazard Areas; delete this section.

Section 701.3 Flood Hazard Areas; delete this section.

Section 803.1; add sentence to read as follows:

For the purpose of fire sprinkler protection and fire alarm requirements included in this section, the work area shall be extended to include at least the entire tenant space or spaces bounded by walls capable of resisting the passage of smoke containing the subject work area, and if the work area includes a corridor, hallway, or other exit access, then such corridor, hallway, or other exit access shall be protected in its entirety on that particular floor level.

Section 803.2.6; change Exception to read as follows:

Exception: Supervision is not required where the Fire Code does not require such for new construction.

Section 803.3; change section to read as follows:

803.3 Standpipes. Refer to Section 1103.6 of the Fire Code for retroactive standpipe requirements.

{Delete rest of Section 803.3.}

Section 804.2; Remove exception #1

Section 904.1; add sentence to read as follows:

For the purpose of fire sprinkler protection and fire alarm requirements included in this section, the work area shall be extended to include at least the entire tenant space or spaces bounded by walls containing the subject work area, and if the work area includes a corridor, hallway, or other exit access, then such corridor, hallway, or other exit access shall be protected in its entirety on that particular floor level.

Section 904.1; add sentence to read as follows:

904.1.1 High-rise buildings. An automatic sprinkler system shall be provided in work areas of high-rise buildings.

Section 1103.3 Flood Hazard areas. Delete:

Section 1201.4 Flood hazard areas. Delete

Section 1301.3.2; change to read as follows:

1301.3.2 Compliance with other codes. Buildings that are evaluated in accordance with this section shall comply with the International Fire Code.

“EXHIBIT I”

ARTICLE XI. FENCES

DIVISION 2. – CONSTRUCTION STANDARDS

Sec. 10-425. – Swimming pool, spa, and hot tub/barrier requirements

DELETE EXISTING LANGUAGE IN ITS ENTIRETY AND REPLACE WITH:

For swimming pool, spa, and hot tub barrier requirements, see Article XVII. Swimming Pool and Spa Code

“EXHIBIT J”

ARTICLE XVII. SWIMMING POOL AND SPA CODE

Sec. 10-711. Adopted

The International Swimming Pool and Spa Code, 2021 edition, as amended by this chapter, is hereby adopted as the Swimming Pool and Spa Code of the City of Rockwall, TX. A copy of such code will be kept in the Building Official's office and shall be made available for public inspection during regular business hours via a scheduled appointment through the City Secretary's Office.

Sec. 10-712. Amendments.

The International Swimming Pool and Spa Code, 2021 edition, is hereby amended as follows:

Section 102.9; Change to read as follows:

Section 102.9 Other laws. The provisions of this code shall not be deemed to nullify any provisions of local, state or federal law, to include but not limited to:

1. Texas Department of State Health Services (TDSHS); *Standards for Public Pools and Spas*; §285.181 through §285.208, (TDSHS rules do not apply to pools serving one- and two-family dwellings or townhouses).
2. *Texas Department of Licensing and Regulation (TDLR); 2012 Texas Accessibility Standards (TAS)*, TAS provide the scoping and technical requirements for accessibility for Swimming Pool, wading pools and spas and shall comply with *2012 TAS, Section 242*. (TAS rules do not apply to pools serving one- and two-family dwellings or townhouses).

Exception: Elements regulated under Texas Department of Licensing and Regulation (TDLR) and built in accordance with TDLR approved plans, including any variances or waivers granted by the TDLR, shall be deemed to be in compliance with the requirements of this Chapter.

Section 111; Change title to read as follows:

Section 111 Construction Advisory and Appeals Board

Change 111.1, to read as follows:

Section 111.1 General. The Construction Advisory and Appeals Board shall be in accordance with Chapter 10, Article II, Division 3, Subdivision I, Sections 10-89 to 10-96 of the Code of Ordinances.

Section 112 Board of Appeals, Delete

Section 305; Change to read as follows:

305.1 General.

The provisions of this section shall apply to the design of barriers for restricting entry into areas

having pools and spas. In only one- and two-family dwellings and townhouses, where spas or hot tubs are equipped with a lockable safety cover complying with ASTM F1346 the areas where those spas or hot tubs are located shall not be required to comply with Sections 305.2 through 305.7.

Section 305.2.5. Add an exception to read as follows:

Exception: Boards with a minimum 60-degree angle, cut and placed at the top of the horizontal fence members, may be used on existing fences that will become pool barriers. This exception does not apply to fences adjacent to public right of way.

Add subsection 305.2.7.1; to read as follows:

305.2.7.1 Chain link fencing prohibited. Chain link fencing is not permitted as a barrier in public pools built after January 1, 1994. (Ref: *Texas Health and Safety Code Chapter 757.003 (f).*)

Section 305.3.5 Vehicular access gates; add to read as follows:

Vehicular access gates may be considered part of the required pool barrier, provided the gate is self-closing and latching within 30 seconds from being fully opened.

Section 305.4 structure wall as a barrier; Changes as follows:

305.4 Structure wall as a barrier. Where a wall of a dwelling or structure of a one- and two-family dwelling or townhouse or its accessory structure serves as part of a barrier and where doors or windows provide direct access to the pool or spa through that wall, one of the following shall be required:

1. Remainder Unchanged
2. Remainder Unchanged
3. Remainder Unchanged
4. Remainder unchanged
5. Remainder unchanged
6. Remainder unchanged

(Ref: *Texas Health and Safety Code Chapter 757.007.*)

Section 305.6; Change to read as follows:

305.6 Natural barriers used in a one- and two-family dwelling or townhouse. In the case where the pool or spa area abuts the edge of a lake or other natural body of water, public access is not permitted or allowed along the shoreline, and required barriers extend to and beyond the water's edge a minimum of eighteen (18) inches, a barrier is not required between the natural body of water shoreline and the pool or spa.

(Reason: *Specific Texas statutes do not allow the use of natural barriers in lieu of fencing for public pools per Chapter 757.003.*)

Section 307.1.4 Accessibility; Add exception to Section to 307.1.4 as follows:

Exception: Components of projects regulated by and registered with Architectural Barriers Division of Texas Department of Licensing and Regulation shall be deemed to be in compliance with the requirements of this chapter.

(Reason: *To accommodate buildings regulated under state law. Further clarified to mean Components that are specifically addressed by TDLR shall be exempt.*)

Section 307.2.2.2; add to read as follows:

Section 307.2.2.2. Adjacency to Structural Foundation. Depth of the swimming pool and spa shall maintain a ratio of 1:1 from the nearest building foundation or footing of a retaining wall.

Exception: A sealed engineered design drawing of the proposed new structure shall be submitted for approval.

(Reason: To clarify specific distances for pools and spas, correlates with IRC 327.1.)

Section 310; Change to read as follows:

310.1 General. Suction entrapment avoidance for pools and spas shall be provided in accordance with APSP 7 (ANSI/PHTA/ICC 7) or for public swimming pools in accordance with State of Texas Rules for Public Swimming Pools and Spas, Title 25 TAC Chapter 265 Subchapter L, Rule §265.190.

[Remainder unchanged]

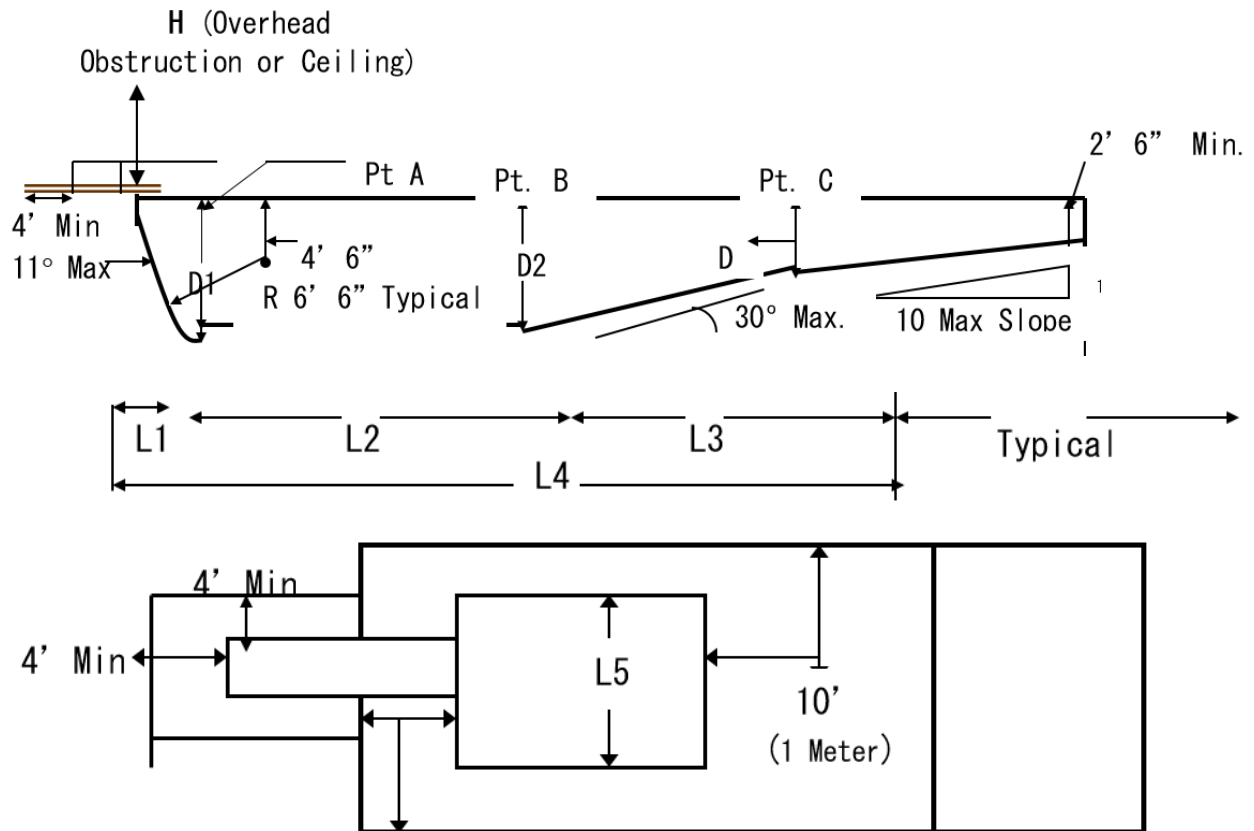
(Reason: To clarify specific Texas statutes which regulate public pools and spas.)

Section 402.12; Change to read as follows:

402.12 Water envelopes. The minimum diving water envelopes shall be in accordance with Table 402.12 Texas department of State Health services, Administrative Code Title 25, Chapter 265, Section 186 (e) and Figure: 25 TAC 256.186 (e) (6). (Delete Table 402.12 and Figure 402.12)

ADD: Figure: 25 TAC §265.186 (e) (6)

Maximum Diving Board Height Over Water	¾ Meter	1 Meter	3 Meters
Max. Diving Board Length	12 ft.	16 ft.	16 ft.
Minimum Diving Board Overhang	2 ft. 6 in.	5 ft.	5 ft.
D1 Minimum	8 ft. 6 in.	11 ft. 2 in.	12 ft. 2 in.
D2 Minimum	9 ft.	10 ft. 10 in.	11 ft. 10 in.
D3 Minimum	4 ft.	6 ft.	6 ft.
L1 Minimum	4 ft.	5 ft.	5 ft.
L2 Minimum	12 ft.	16 ft. 5 in.	19 ft. 9 in.
L3 Minimum	14 ft. 10 in.	13 ft. 2 in.	13 ft. 11 in.
L4 Minimum	30 ft. 10 in.	34 ft. 7 in.	38 ft. 8 in.
L5 Minimum	8 ft.	10 ft.	13 ft.
H Minimum	16 ft.	16 ft.	16 ft.
From Plummet to Pool Wall at Side	9 ft.	10 ft.	11 ft. 6 in.
From Plummet to Adjacent Plummet	10 ft.	10 ft.	10 ft.



(Reason: To avoid conflict with 25 TAC Chapter 265.)

Section 411.2.1 & 411.2.2; Change to read as follows:

411.2.1 Tread dimensions and area. Treads shall have a minimum unobstructed horizontal depth (i.e., horizontal run) of 12 inches and a minimum width of 20 inches.

411.2.2 Risers. Risers for steps shall have a maximum uniform height of 10 inches, with the bottom riser height allowed to taper to zero.

(Reason: To avoid conflict with 25 TAC Chapter 265.186 (c)(7)(A)& (B).)

Section 411.5.1 & 411.5.2; Change to read as follows:

411.5.1 Swimouts. Swimouts located in either the deep or shallow area of a pool, shall comply with all of the following:

1. Unchanged
2. Unchanged
3. Unchanged
4. The leading edge shall be visibly set apart and provided with a horizontal solid or broken stripe at least 1 inch wide on the top surface along the front leading edge of each step. This stripe shall be plainly visible to persons on the pool deck. The stripe shall be a contrasting color to the background on which it is applied, and the color shall be permanent in nature and shall be a slip-resistant surface.

411.5.2 Underwater seats and benches. Underwater seats and benches, whether used alone or in conjunction with pool stairs, shall comply with all of the following:

1. Unchanged
2. Unchanged
3. Unchanged
4. Unchanged
5. The leading edge shall be visually set apart and provided with a horizontal solid or broken stripe at least 1 inch wide on the top surface along the front leading edge of each step. This stripe shall be plainly visible to persons on the pool deck. The stripe shall be a contrasting color to the background on which it is applied, and the color shall be permanent in nature and shall be a slip-resistant surface.
6. Unchanged
7. Unchanged

(Reason: To avoid conflict with 25 TAC Chapter 265.184 (u) & 265.186 (c) (10).)

Section 610.5.1; Change to read:

610.5.1 Uniform height of 10 inches. Except for the bottom riser, risers at the centerline shall have a maximum uniform height of 10 inches (254 mm). The bottom riser height shall be permitted to vary from the other risers.

(Reason: To avoid conflict with 25 TAC Chapter 265.186 (c)(7)(B).)

Section 804 Diving Water Envelopes; Change to read as follows:

Section 804.1 General. The minimum diving water envelopes shall be in accordance with Table 804.1 and Figure 804.1, or the manufacturer's specifications, whichever is greater. Negative construction tolerances shall not be applied to the dimensions of the minimum diving water envelopes given in Table 804.1.



City of Rockwall
The New Horizon

MEMORANDUM



TO: Mayor and City Council
FROM: Kenneth Cullins, Fire Chief
DATE: March 20, 2023
SUBJECT: Adoption of 2021 International Fire Code

The attached ordinance amends the Code of Ordinances and adopts the 2021 International Fire Code (IFC) with local amendments and recommended regional amendments from the Council of Governments. The 2021 edition will replace the 2015 edition currently in use.

Development

This code is based on principles to establish provisions consistent with a fire code that adequately protect public health, safety, and welfare; do not unnecessarily increase construction costs; do not restrict the use of new materials, products, or methods of construction; and do not give preferential treatment to particular types or classes of materials, products, or methods. Code enforcement officials, industry representatives, design professionals, and others review proposed changes to the IFC to keep it current. An open code development process allows interested and affected parties to carefully consider proposed changes.

The North Central Texas Council of Governments promotes model construction code standardization through advisory boards to simplify construction, improve building system safety, promote common code interpretation, facilitate contractor mobility, and reduce training and construction costs. Regional advisory boards review and amend the latest codes. North Texas cities and businesses with a stake in code enforcement make up the advisory boards. Each amendment is assessed for safety, construction cost, and code text intent. Our Fire Marshal, Ariana Kistner, co-chairs the fire advisory board, which has helped us understand the new code edition and all regional amendments.

Major Fire Code Changes

Sections of note within the proposed 2021 International Fire Code and amendments include:

- Sprinkler requirements for storage, manufacturing, and selling upholstered furniture and mattresses have been updated.
- Storage requirements for spirits and wines in barrels and casks have been added.
- A fire command center is required in Groups F-1 and S-1 where the building footprint is greater than 500,000 square feet.
- CO detection is required in existing Group I-1, I-2, I-4, Group R, and classrooms in Group E.
- Firefighter Air Replenishment Systems (FARS) are required in specific larger buildings. This system provides the ability for firefighters to replenish their air bottles inside a structure within minutes, increasing their safety factor significantly.

Additional information or questions on the 2021 International Fire Code and the Rockwall amendments may be obtained from Assistant Chief/Fire Marshal, Ariana Kistner, at akistner@rockwall.com or by calling the Fire Prevention, Education, and Investigation Division at 972-771-7774.

CITY OF ROCKWALL, TEXAS
ORDINANCE NO. 23-_____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, REPEALING ARTICLE II. FIRE CODE STANDARDS, SEC. 18-32 AND SEC. 18-33 OF CHAPTER 18 FIRE PREVENTION AND PROTECTION OF THE ROCKWALL MUNICIPAL CODE OF ORDINANCES AND ADOPTING A NEW SEC. 18-32 AND A NEW SEC. 18-33 OF SAID CHAPTER AND ARTICLE, INCLUDING SPECIFIED LOCAL AMENDMENTS TO THE 2021 INTERNATIONAL FIRE CODE, INCLUDING APPENDICES B, D, H, L, AND N WITH THE EXCEPTION OF SUBSECTION (41) (2006 IFC, SECTION 903.2, AS ADOPTED BY ORD. 11-24); PROVIDING FOR A PENALTY OF FINE NOT TO EXCEED THE SUM OF TWO THOUSAND DOLLARS (\$2,000.00) FOR EACH OFFENSE AND A SEPARATE OFFENSE SHALL BE DEEMED COMMITTED ON EACH DAY DURING OR ON WHICH A VIOLATION OCCURS; PROVIDING FOR A SEVERABILITY CLAUSE; PROVIDING FOR A REPEALER CLAUSE; PROVIDING FOR AN EFFECTIVE DATE.

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Rockwall, Texas:

Section 1. That Chapter 18 Fire Prevention and Protection, Article II. Fire Code Standards, Sec. 18-32 of the Code of Ordinances of the City of Rockwall is hereby repealed and that it shall hereinafter read in its entirety as follows:

Sec. 18-32. Code adopted.

The International Fire Code, including Appendices B, D, H, L, and N, 2021 edition are hereby adopted and incorporated by reference as if fully set forth in this article as the fire code of the City of Rockwall, Texas. A copy of such code will be kept in the Fire Marshal's Office and shall be made available for public inspection during regular business hours via a scheduled appointment through the City Secretary's Office.

Section 2. That Chapter 18 Fire Prevention and Protection, Article II. Fire Code Standards, Sec. 18-33 Amendments to adopted code is here by repealed in its entirety with the exception that current code of ordinances (city Ord. 11-24) subsection 41 (Sec. 18-33 (41), which is the 2006 IFC Section 903.2) shall remain unchanged and in full force and effect as reflected in the attached "**Exhibit A**" and that Sec. 18-33 shall hereinafter read in its entirety as reflected in "**Exhibit A,**" which is attached hereto and made part hereof for all purposes.

Section 3. That any person, firm or corporation violating any of the provisions of this ordinance shall be punished by a penalty of fine not to exceed the sum of Two Thousand Dollars (\$2,000.00) for each offense and each and every day such offense shall continue shall be deemed to constitute a separate offense.

Section 4. That if any section or provision of this ordinance or the application of that section or provision to any person, firm, corporation, situation or circumstance is for any reason judged invalid, the adjudication shall not affect any other section or provision of this ordinance or the application of any other section or provision to any other person, firm, corporation, situation or circumstance, and the City Council declares that it would have adopted the valid portions and applications of the ordinance without the invalid parts and to this end the provisions of this ordinance shall remain in full force and effect.

Section 5. That this ordinance shall be cumulative of all other ordinances of the City and shall not repeal any of the provisions of those ordinances except in those instances where the provisions of those ordinances are in direct conflict with the provisions of this ordinance.

Section 6. That this ordinance shall take effect immediately from and after its passage and approval, and it is so ordained.

PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF ROCKWALL, TEXAS, THIS 17TH DAY OF APRIL, 2023.

Kevin Fowler, Mayor

ATTEST:

Kristy Teague, City Secretary

APPROVED AS TO FORM:

Frank Garza, City Attorney

1st Reading: 04-03-2023

2nd Reading: 04-17-2023

EXHIBIT “A”
Amendments to the
2021 International Fire Code

The following sections, paragraphs, and sentences of the *2021 International Fire Code* (IFC) are hereby amended as follows: Standard (unmodified) type is text from the IFC. Underlined type is text (locally) inserted. ~~Lined through type is (locally) deleted text from the IFC.~~

Section 101.1; change to read as follows:

101.1 Title. These regulations shall be known as the Fire Code of the City of Rockwall, hereinafter referred to as “this code.”

Section 103.1; change to read as follows:

103.1 Creation of Agency. The Rockwall Fire Department Fire Prevention, Education and Investigation Division is hereby created and the official in charge thereof shall be known as the fire code official. The function of the agency shall be the implementation, administration and enforcement of the provisions of this code.

Section 105.6; change to read as follows:

105.6 Required Construction Permits. The fire code official is authorized to issue construction permits for work as set forth in Sections 105.6.1 through 105.6.245.

Section 105.6.25; add to read as follows:

105.6.25 Electronic access control systems. Construction permits are required to install or modify an electronic access control system, as specified in Chapter 10. A separate construction permit is required for to install or modify a fire alarm system that may be connected to the access control system. Maintenance performed in accordance with this code is not considered to be a modification and does not require a permit.

Section 112.4; change to read as follows:

112.4 Violation penalties. Persons who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, install, alter, repair or do work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate used under provisions of this code, shall be guilty of a Class C Offense, punishable by a fine of not more than ~~[AMOUNT]~~ \$2,000-dollars. ~~or by imprisonment not exceeding [NUMBER OF DAYS], or both such fine and imprisonment.~~ Each day that a violation continues after due notice has been served shall be deemed a separate offense.

Section 202; amend and add definitions to read as follows:

[B] AMBULATORY CARE FACILITY. Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing, or similar care on a less than 24-hour basis to persons who are rendered incapable of self-preservation by the services provided or staff has accepted responsibility for care recipients already incapable. This group may include but not be limited to the following:

- Dialysis centers
- Procedures involving sedation
- Sedation dentistry
- Surgery centers
- Colonic centers
- Psychiatric centers

[B] DEFEND IN PLACE. A method of emergency response that engages building components and trained staff to provide occupant safety during an emergency. Emergency response involves remaining in place, relocating within the building, or both, without evacuating the building.

HIGH-RISE BUILDING. A building with an occupied floor located more than 75 ~~55~~ feet (~~22-860~~ 16 764)

mm) above the lowest level of fire department vehicle access.

Section 307.2; change to read as follows:

307.2 Permit Required. A permit shall be obtained from the *fire code official* in accordance with Section 105.6 prior to kindling a fire for recognized silvicultural or range or wildlife management practices, prevention or control of disease or pests, or open burning-a bonfire. Application for such approval shall only be presented by and permits issued to the owner of the land upon which the fire is to be kindled.

Section 308.1.6, change to read as follows:

308.1.6 Open-flame devices. Torches and other devices, machines or processes liable to start or cause fire shall not be operated or used ~~in or on wildfire risk areas~~, except by a permit in accordance with Section 105.5 secured from the *fire code official*.

Exception: *unchanged*

Section 308.1.6.2, Exception #3; change to read as follows:

3. Torches or flame-producing devices in accordance with Section ~~308.4~~ 308.1.3.

Section 308.2, change to read as follows:

308.2 Permits Required. Permits shall be obtained from the fire code official in accordance with Section 105.5 prior to engaging in the following activities involving open flame, fire and burning:

1. Use of a torch or flame-producing device to remove paint from a structure.
2. Use of open flame, fire or burning in connection with Group A or E occupancies.
3. Use or operation of torches and other devices, machines or processes liable to start or cause fire ~~in or on wildfire risk areas~~.

Section 503.2.1; change to read as follows:

503.2.1 Dimensions. Fire apparatus access roads shall have an unobstructed width of not less than ~~20~~ 24 feet (6096 mm 7315 mm), exclusive of shoulders, except for approved security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than ~~13 feet 6 inches (4115 mm)~~ 14 feet (4267 mm).

Section 503.2.3; change to read as follows:

503.2.3 Surface. Fire apparatus access roads shall be designed and maintained to support imposed loads of 85,000 Lbs. for fire apparatus and shall be surfaced so as to provide all-weather driving capabilities in accordance with the City of Rockwall Engineering Standards.

Section 503.2.4; change to read as follows:

503.2.4 Turning radius. The required turning radius of a fire apparatus access road shall be ~~determined by the fire code official~~ determined by the fire code official in accordance with the following:

1. For buildings less than 30-feet and less than 3 stories in height:
 - a. 20-feet (inside) for turns less than or equal to 90 degrees
 - b. 25-feet (inside) for turns greater than 90 degrees
2. For buildings 30-feet or more and/or 3 or more stories in height minimum interior turning radius of 30 feet

For purposes of this section, the building height is measured from the lowest finished grade of the fire access roads to the point of accessible roof level, including parapet walls. For buildings with pitched roofs, the height is measured to the roof plate.

Section 503.2.7; change to read as follows:

503.2.7 Grade. The grade of the fire apparatus access road shall ~~be within the limits established by the fire code official based on the fire department's apparatus.~~ not exceed 10% in grade change, with cross slope not exceeding 5% or as approved by the Fire Chief.

Section 503.2.8; change to read as follows:

503.2.8 Angles of approach and departure. The angles of approach and departure for fire apparatus access roads shall ~~be within the limits established by the fire code official based on the fire department's apparatus shall not exceed 7 Degrees, (or 12 %) or as approved by the Fire Chief.~~

Section 505.1; change to read as follows:

505.1 Address Identification. New and existing buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be not less than ~~4 inches (102 mm)~~ 12 inches (304.8 mm) high with a minimum stroke width of 1/2 inch (12.7 mm). Where required by the fire code official, address numbers shall be provided in additional approved locations to facilitate emergency response. Where access is by means of a private road, buildings do not immediately front a street, and/or the building cannot be viewed from the public way, a monument, pole or other sign with approved 12 inch (304.8 mm) height building numerals or addresses and 4 inch (101.6 mm) height suite/apartment numerals of a color contrasting with the background of the building or other approved means shall be used to identify the structure. Numerals or addresses shall be posted on a minimum 20 inch (508 mm) by 30 inch (762 mm) background on border. Address identification shall be maintained.

Exception: Structures locate within the historic district may utilize a minimum of 6 inches (152.4 mm) high numbers as approved by the Fire Code Official.

Section 506.1; change to read as follows:

506.1 Where required. Where access to or within a structure or an area is restricted because of secured openings or where immediate access is necessary for life-saving or fire-fighting purposes, The fire code official is authorized to require a key box to be installed in an approved location. The key box shall be of an approved type listed in accordance with UL 1037, and shall contain keys to gain necessary access as required by the fire code official. An approved key box shall be provided on the following structures:

1. On new and existing structures at fire sprinkler riser/fire pump rooms, if one is provided, and at additional locations as required by the Fire Code Official.
2. On all existing commercial structures comprised of multiple tenant spaces. A single approved Key Box may serve multiple occupancies in a single building provided the box is located in an approved location and is adequately sized for the number of keys.

Section 507.1; add a new paragraph to read as follows:

507.1 Required water supply. An approved water supply capable of supplying the required fire flow for fire protection shall be provided to premises on which facilities, buildings or portions of buildings are hereafter constructed or moved into or within the jurisdiction.

Existing fire hydrants on adjacent properties shall not be considered available unless fire apparatus access roads extend between properties and easements are established to prevent obstruction of such roads. Existing fire hydrants on public streets are allowed to be considered as available where streets are not provided with median dividers which cannot be crossed by fire fighters pulling hose lines.)

Section 507.4; change to read as follows:

507.4 Water Supply Test Date and Information. The water supply test used for hydraulic calculation of fire protection systems shall be conducted in accordance with NFPA 291 "Recommended Practice for Fire Flow Testing and Marking of Hydrants" and within one year of sprinkler plan submittal. The fire code official shall be notified prior to the water supply test. Water supply tests shall be witnessed by the fire code official or approved documentation of the test shall be provided to the fire code official prior to final approval of the water supply system. The exact location of the static/residual hydrant and the flow hydrant shall be indicated on the design drawings. All fire protection plan submittals shall be accompanied by a hard copy of the waterflow test report, or as approved by the fire code official. The report must indicate

the dominant water tank level at the time of the test and the maximum and minimum operating levels of the tank, as well, or identify applicable water supply fluctuation. The licensed contractor must then design the fire protection system based on this fluctuation information, as per the applicable referenced NFPA standard. Reference Section 903.3.5 for additional design requirements.

Section 507.5.1.2; add new section to read as follows:

507.5.1.2 Location. Fire hydrants shall be located within 6 ft. of the edge of the pavement unless the fire department determines another location is acceptable for fire department use.

Section 507.5.1.3; add new section to read as follows:

507.5.1.3 Intersections. Fire hydrants shall be at every street intersection, or as otherwise required by the fire code official.

Section 509.1.2; add to read as follows:

509.1.2 Sign Requirements. Unless more stringent requirements apply, lettering for signs required by this section shall have a minimum height of 2 inches (50.8 mm) when located inside a building and 4 inches (101.6 mm) when located outside, or as approved by the fire code official. The letters shall be of a color that contrasts with the background.

Section 605.4 through 605.4.2.2 ; change to read as follows:

605.4 Fuel oil storage systems. ~~Fuel oil storage systems for building heating systems~~ shall be installed and maintained in accordance with this code. Tanks and fuel-oil piping systems shall be installed in accordance with Chapter 13 of the *International Mechanical Code* and Chapter 57.

605.4.1 Fuel oil storage in outside, above-ground tanks. Where connected to a fuel-oil piping system, the maximum amount of fuel oil storage allowed outside above ground without additional protection shall be 660 gallons (2498 L). The storage of fuel oil above ground in quantities exceeding 660 gallons (2498 L) shall comply with NFPA 31 and Chapter 57.

605.4.1.1 Approval. Outdoor fuel oil storage tanks shall be in accordance with UL 142 or UL 2085, and also listed as double-wall/secondary containment tanks.

605.4.2 Fuel oil storage inside buildings. Fuel oil storage inside buildings shall comply with Sections 605.4.2.2 through 605.4.2.8 ~~or~~ and Chapter 57.

605.4.2.1 Approval. Indoor fuel oil storage tanks shall be in accordance with UL 80, UL 142 or UL 2085.

605.4.2.2 Quantity limits. One or more fuel oil storage tanks containing Class II or III *combustible liquid* shall be permitted in a building. The aggregate capacity of all tanks shall not exceed the following:

1. 660 gallons (2498 L) in unsprinklered buildings, where stored in a tank complying with UL 80, UL 142 or UL 2085, and also listed as a double-wall/secondary containment tank for Class II liquids.
2. 1,320 gallons (4996 L) in buildings equipped with an *automatic sprinkler* system in accordance with Section 903.3.1.1, where stored in a tank complying with UL 142 or UL 2085. The tank shall be listed as a secondary containment tank, and the secondary containment shall be monitored visually or automatically.
3. 3,000 gallons (11 356 L) in buildings equipped with an *automatic sprinkler* system in accordance with Section 903.3.1.1, where stored in protected above-ground tanks complying with UL 2085 and Section 5704.2.9.7. The tank shall be listed as a secondary containment tank, as required by UL 2085, and the secondary containment shall be monitored visually or automatically.

Section 903.2 remains unamended from previous code adoptions, per Ordinance 11-24

903.2 Where Required. Approved automatic fire sprinkler systems shall be installed in all new buildings, structures and additions with a fire flow calculation area of 5,000 square feet (464.5 m²) or greater and in all existing buildings, not including R-3, that are enlarged to have a fire flow calculation of 5,000 square feet (464.5 m²) or greater and in buildings that have a fire flow calculation greater than 5,000 square feet (464.5 m²) which are enlarged and all locations described in this section.

Approved automatic fire sprinkler systems shall be installed in all new R-3 buildings, structures and additions with a finished floor area of 5,000 square feet (464.5 m²) or greater and in all existing R-3 occupancies that have additions totaling more than 30% of the original finished floor area and exceeding a finished floor area of 5,000 square feet.

For the purpose of this provision, fire walls shall not define separate buildings.

Exceptions:

1. Spaces or areas in telecommunications buildings used exclusively for telecommunications equipment, associated electrical power distribution equipment, batteries and standby engines, provided those spaces or areas are equipped throughout with an automatic fire alarm system and are separated from the remainder of the building by fire barriers consisting of not less than 1-hour fire-resistance-rated walls and 2-hour fire-resistance-rated floor/ ceiling assemblies.
2. Group U
3. Temporary structures other than amusement buildings.
4. Group A-5, except as required by 903.2.1.5.
5. Open parking garages in compliance with Section 406.3 of the International Building Code, when all of the following conditions apply:
 - i. The structure is non-combustible construction.
 - ii. The structure has no other types of occupancies located above or below it.
 - iii. The structure does not contain any mixed uses, accessory uses, storage rooms, electrical rooms or spaces used or occupied for anything other than motor vehicle parking.
 - iv. The structure does not exceed 3 stories.
 - v. The structure has two complete sides unobstructed for fire department access by roadway or fire lane.

Section 903.2.9.5; add to read as follows:

903.2.9.5 Self-Service Storage Facility. An automatic sprinkler system shall be installed throughout all self-service storage facilities.

Exception: Self-service storage facilities not greater than one story above grade plane that have no interior corridors and are less than 5,000 square feet.

Section 903.2.10; change to read as follows:

903.2.10 Group S-2 parking garages. An automatic sprinkler system shall be provided throughout buildings classified as parking garages where any of the following conditions exist:

1. Where the fire area of the enclosed parking garage, in accordance with Section 406.6 of the International Building Code, ~~exceeds 12,000 square feet (1115 m²)~~ is 5,000 square feet or greater.
2. Where the enclosed parking garage, in accordance with Section 406.6 of the International Building Code, is located beneath other groups.
Exception: Enclosed parking garages located beneath buildings that do not contain more than two dwelling units ~~Group R-3 occupancies.~~
3. Where the fire area of the open parking garage, in accordance with Section 406.5 of the International Building Code, exceeds 48,000 square feet (4460 m²).

Section 903.3.1.2.2; change to read as follows:

903.3.1.2.2 Corridors and balconies in the means of egress. Sprinkler protection shall be provided in all corridors and for all balconies. ~~in the means of egress where any of the following conditions apply: {Delete the rest of this section.}~~

Section 903.3.1.3; change to read as follows:

903.3.1.3 NFPA 13D Sprinkler Systems. Automatic sprinkler systems installed in one- and two-family dwellings; Group R-3; Group R-4, Condition 1; and townhouses shall be permitted to be installed throughout in accordance with NFPA 13D or in accordance with state law.

Section 903.3.1.4; add to read as follows:

903.3.1.4 Freeze protection. Freeze protection systems for automatic fire sprinkler systems shall be in accordance with the requirements of the applicable referenced NFPA standard and this section.

903.3.1.4.1 Attics. Only dry-pipe, preaction, or listed antifreeze automatic fire sprinkler systems shall be allowed to protect attic spaces.

Exception: Wet-pipe fire sprinkler systems shall be allowed to protect non-ventilated attic spaces where:

1. The attic sprinklers are supplied by a separate floor control valve assembly to allow ease of draining the attic system without impairing sprinklers throughout the rest of the building unless otherwise approved by the Fire Code Official, and
2. Adequate heat shall be provided for freeze protection as per the applicable referenced NFPA standard, and
3. The attic space is a part of the building's thermal, or heat, envelope, such that insulation is provided at the roof deck, rather than at the ceiling level.

903.3.1.4.2 Heat trace/insulation. Heat trace/insulation shall only be allowed where approved by the fire code official for small sections of large diameter water-filled pipe.

Section 903.3.5; add a second paragraph to read as follows:

Water supply as required for such systems shall be provided in conformance with the supply requirements of the respective standards; however, every water-based fire protection system shall be designed with a 5psi safety factor. Reference Section 507.4 for additional design requirements.

Section 903.4.2; add second paragraph to read as follows:

The alarm device required on the exterior of the building shall be a weatherproof horn/strobe notification appliance with a minimum 75 candela strobe rating, installed as close as practicable to the fire department connection.

***Section 903.4.3; change to read as follows:**

Approved supervised indicating control valves shall be provided at the point of connection to the riser on each floor ~~in high-rise buildings.~~

Section 904.3.5; change to read as follows:

904.3.5 Monitoring. Where a building fire alarm system or a dedicated function fire alarm system is installed, automatic fire-extinguishing systems shall be monitored by the building fire alarm system or the dedicated function fire alarm system in accordance with NFPA 72.

Section 905.3; change to read as follows:

905.3 Required Installations. Standpipe systems shall be installed where required by Sections 905.3.1 through 905.3.89. Standpipe systems are allowed to be combined with automatic sprinkler systems.

Exception: Standpipe systems are not required in Group R-3 occupancies.

Section 905.3.9; add Section 905.3.9 to read as follows:

905.3.9 Buildings Exceeding 10,000 sq. ft. In buildings exceeding 10,000 square feet in area per story and having any portion of the building's interior area more than 200 feet (60960 mm) of travel, vertically or horizontally, from the nearest point of fire department vehicle access, Class I standpipes shall be provided.

Section 905.4; change Item #2 to read as follows:

905.4 Location of Class 1 standpipes hose connections.

Class I standpipe hose connections shall be provided in all of the following locations:

1. {No Change}
2. On each side of the wall adjacent to the exit opening of a horizontal exit.

~~Exception: Where floor areas adjacent to a horizontal exit are reachable from an interior exit stairway hose connection by a 30-foot (9144 mm) hose stream from a nozzle attached to 100 feet (30 480 mm) of hose, a hose connection shall not be required at the horizontal exit.~~

Where all floor areas are reachable from an exit stairway hose connection on the same side of a horizontal exit within 200 ft (61 m) for sprinklered buildings or 130 ft (39.7 m) for nonsprinklered buildings, the hose connection on the other side of the horizontal exit shall be permitted to be omitted.

3. {No Change}
4. {No Change}
5. {No Change}
6. {No Change}

Section 907.6.1.1; add to read as follows:

907.6.1.1 Wiring Installation. All fire alarm systems shall be installed in such a manner that a failure of any single initiating device or single open in an initiating circuit conductor will not interfere with the normal operation of other such devices. All signaling line circuits (SLC) shall be installed in such a way that a single open will not interfere with the operation of any addressable devices (Class A). Outgoing and return SLC conductors shall be installed in accordance with NFPA 72 requirements for Class A circuits and shall have a minimum of four feet separation horizontal and one foot vertical between supply and return circuit conductors. The initiating device circuit (IDC) from a signaling line circuit interface device may be wired Class B, provided the distance from the interface device to the initiating device is ten feet or less.

Section 907.6.3; change to read as follows:

Section 907.6.3 Initiating device identification. The fire alarm system shall identify the specific initiating device address, location, device type, floor level where applicable and status including indication of normal, alarm, trouble and supervisory status, as appropriate.

~~Exceptions:~~

- ~~1. Fire alarm systems in single-story buildings less than 22,500 square feet (2090 m²) in area.~~
- ~~2. Fire alarm systems that only include manual fire alarm boxes, waterflow initiating devices and not more than 10 additional alarm-initiating devices.~~
- ~~3. Special initiating devices that do not support individual device identification.~~
- ~~4. Fire alarm systems or devices that are replacing existing equipment.~~

Section 912.2.1.1; add to read as follows:

912.2.1.1 Hydrant Distance. An approved fire hydrant shall be located within 100 feet of the fire department connection as the fire hose lays along an unobstructed path.

912.2.1.2; add to read as follows:

912.2.1.2 Fire apparatus access roadway distance. An approved Fire apparatus access roadway shall be located within 50 feet of the fire department connection as the fire hose lays along an unobstructed path

Section 5601.1.3; change to read as follows:

5601.1.3 Fireworks. The possession, manufacture, storage, sale, handling and use of fireworks are prohibited.

Exceptions:

- ~~1. Storage and handling of fireworks as allowed in Section 5604.~~
- ~~2. Manufacture, assembly and testing of fireworks as allowed in Section 5605.~~
- ~~3. The use of fireworks for fireworks displays as allowed in Section 5608.~~
- ~~4. The possession, storage, sale, handling and use of specific types of Division 1.4G fireworks where allowed by applicable laws, ordinances and regulations, provided that such fireworks and facilities comply with the 2006 edition of NFPA 1124, CPSC 16 CFR Parts 1500 and 1507, and DOTn 49 CFR Parts 100-185, as applicable for consumer fireworks.~~

Section 5704.2.9.6.1 (geographic limits in which the storage of Class I and Class II liquids in above-ground tanks outside of buildings is prohibited): [JURISDICTION TO SPECIFY]

5704.2.9.6.1 Locations where above-ground tanks are prohibited. Storage of Class I and II liquids in above-ground tanks outside of buildings is prohibited within the limits established by law as the limits of districts in which such storage is prohibited otherwise by City of Rockwall Ordinance.

Section 5706.2.4.4 (geographic limits in which the storage of Class I and Class II liquids in above-ground tanks is prohibited): [JURISDICTION TO SPECIFY]

5706.2.4.4 Locations where above-ground tanks are prohibited. The storage of Class I and II liquids in above-ground tanks is prohibited within the limits established by law as the limits of districts in which such storage is prohibited otherwise by City of Rockwall Ordinance.

Section 5806.2 (geographic limits in which the storage of flammable cryogenic fluids in stationary containers is prohibited): [JURISDICTION TO SPECIFY]

5806.2 Limitations. Storage of flammable cryogenic fluids in stationary containers outside of buildings is prohibited within the limits established by law as the limits of districts in which such storage is prohibited otherwise by City of Rockwall Ordinance.

Appendix D, Section D102.1; change to read as follows:

D102.1 Access and loading. Facilities, buildings or portions of buildings hereafter constructed shall be accessible to fire department apparatus by way of an approved fire apparatus access road with an asphalt, concrete or other approved driving surface capable of supporting the imposed load of fire apparatus weighing up to ~~75,000 pounds (34,050 kg)~~ 85,000 pounds (38,555 kg) in accordance with the City of Rockwall Engineering Standards.

Appendix D, Section D103.1; change to read as follows:

D103.1 Access road width with a hydrant. Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be ~~26 feet (7925 mm)~~ 24 feet, exclusive of shoulders (see Figure D103.1).

Appendix D, Section D103.2; change to read as follows:

D103.2 Grade. Fire apparatus access roads shall not exceed 10 percent in grade and 5 percent in cross slope.

Exception: Grades steeper than 10 % as approved by the Fire Code Official.

Appendix D, Section D103.3; change to read as follows:

D103.3 Turning radius. The minimum turning radius shall be determined by the Fire Code Official and in accordance with the following:

1. For buildings less than 30-feet and less than 3 stories in height:

- a. 20-feet (inside) for turns less than or equal to 90 degrees
 - b. 25-feet (inside) for turns greater than 90 degrees
2. For buildings 30-feet or more and/or 3 or more stories in height minimum interior turning radius of 30 feet

For purposes of this section, the building height is measured from the lowest finished grade of the fire access roads to the point of accessible roof level, including parapet walls. For buildings with pitched roofs, the height is measured to the roof plate.

Appendix D, Section D103.4; change to read as follows:

D103.4 Dead ends. Dead-end fire apparatus access roads in excess of 150 feet (45 720 mm) shall be provided with width and turnaround provisions in accordance with Table D103.4.

**TABLE D103.4
REQUIREMENTS FOR DEAD-END FIRE APPARATUS ACCESS ROADS**

LENGTH (feet)	WIDTH (feet)	TURNAROUNDS REQUIRED
0–150	20 <u>24</u>	None required
151–500	20 <u>24</u>	120-foot Hammerhead, 60-foot “Y” or 96-foot diameter cul-de-sac in accordance with Figure D103.1
501–750	26	120-foot Hammerhead, 60-foot “Y” or 96-foot diameter cul-de-sac in accordance with Figure D103.1
Over 750		Special approval required

For SI: 1 foot = 304.8 mm.

Appendix D, Section D103.5; change Item 1 to read as follows:

D103.5 Fire apparatus access road gates. Gates securing the fire apparatus access roads shall comply with all of the following criteria:

1. ~~Where a single gate is provided, the gate width shall be not less than 20 feet (6096 mm). Where a fire apparatus road consists of a divided roadway, the gate width shall be not less than 12 feet (3658 mm). Gates shall not obstruct the required minimum required widths of the fire apparatus access roadway.~~
2. ~~– 8. remain unchanged~~

Appendix D, Section D103.6; change to read as follows:

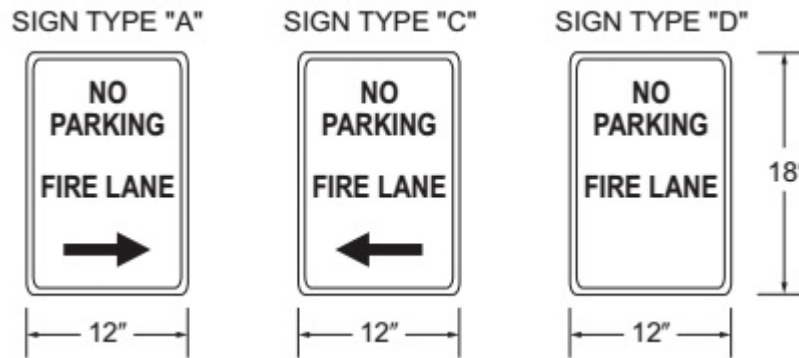
D103.6 Signs–Marking. Striping, signs, or other markings, when approved by the fire code official, shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof. Striping, signs and other markings shall be maintained in a clean and legible condition at all times and be replaced or repaired when necessary to provide adequate visibility.

(1) Striping – Fire apparatus access roads shall be continuously marked by painted lines of red traffic paint six inches (6”) in width to show the boundaries of the lane. The words “NO PARKING FIRE LANE” or “FIRE LANE NO PARKING” shall appear in four inch (4”) white letters at 25 feet intervals on the red border markings along both sides of the fire lanes. Where a curb is available, the striping shall be on the vertical face of the curb.

(2) Signs – Signs shall read “NO PARKING FIRE LANE” or “FIRE LANE NO PARKING” and shall be

12" wide and 18" high (See Figure D103.6). Signs shall have red letters on a white reflective background, using not less than 2" lettering. Signs shall be permanently affixed to a stationary post and the bottom of the sign shall be six feet, six inches (6'6") above finished grade. Signs shall be spaced not more than fifty feet (50') apart along both sides of the fire lane. Signs may be installed on permanent buildings or walls or as approved by the Fire Chief.

Where required by the fire code official, fire apparatus access roads shall be marked with permanent "NO PARKING—FIRE LANE" signs complying with Figure D103.6, or other approved method. Signs shall have a minimum dimension of 12 inches (305 mm) wide by 18 inches (457 mm) high and have red letters on a white reflective background. Signs shall be posted on one or both sides of the fire apparatus road as required by Section D103.6.1 or D103.6.2.



**FIGURE D103.6
FIRE LANE SIGNS**

Appendix D, Section D103.6.1 and D103.6.2; delete sections as follows:

D103.6.1 Roads 20 to 26 feet in width. *Fire lane signs as specified in Section D103.6 shall be posted on both sides of fire apparatus access roads that are 20 to 26 feet wide (6096 to 7925 mm).*

D103.6.2 Roads more than 26 feet in width. *Fire lane signs as specified in Section D103.6 shall be posted on one side of fire apparatus access roads more than 26 feet wide (7925 mm) and less than 32 feet wide (9754 mm).*

Appendix D, Section D104.3; change to read as follows:

D104.3 Remoteness. Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the lot or area to be served, measured in a straight line between accesses, or as approved by the fire code official.

Appendix D, Section D105.2; change to read as follows:

D105.2 Width. Aerial fire apparatus access roads shall have a minimum unobstructed width of 26 ~~24~~ feet (7925 mm), exclusive of shoulders, in the immediate vicinity of the building or portion thereof.

Appendix D, Section D105.3; change to read as follows:

D105.3 Proximity to building. Unless otherwise approved by the fire code official, one or more of the required access routes meeting this condition shall be located not less than 15 feet (4572 mm) and not greater than 30 feet (9144 mm) from the building, and shall be positioned parallel to one entire side of the building. The side of the building on which the aerial fire apparatus access road is positioned shall be approved by the fire code official.

Appendix D, Section D106.3; change to read as follows:

D106.3 Remoteness. Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses, or as approved by the

fire code official.

Appendix D, Section D107.2; change to read as follows:

D107.2 Remoteness. Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses, or as approved by the fire code official.

Appendix L, Section L101.1; change to read as follows:

Section L101.1 Scope. Fire fighter air replenishment systems (FARS) shall be provided in accordance with this appendix in new buildings when any of the following conditions occur:

1. Any new building 5 or more stories in height above the lowest level of fire department vehicle access.
2. Any new building with 2 or more floors below grade.
3. Any new building 500,000 square feet or more in size.

Each stairwell shall have a supply riser. SCBA fill panels shall be located on odd numbered floors commencing at the first level in the primary stairwell and on even numbered floors commencing at level 2 in the remaining stairwells. Fill panels in buildings over 500,000 square feet shall have the SCBA fill panels in locations as approved by the Fire Code Official.

~~The adopting ordinance shall specify building characteristics or special hazards that establish thresholds triggering a requirement for the installation of a FARS. The requirement shall be based on the fire department's capability of replenishing fire fighter breathing air during sustained emergency operations. Considerations shall include:~~

- ~~1. Building characteristics, such as number of stories above or below grade plane, floor area, type of construction and fire resistance of the primary structural frame to allow sustained fire fighting operations based on a rating of not less than 2 hours.~~
- ~~2. Special hazards, other than buildings, that require unique accommodations to allow the fire department to replenish fire fighter breathing air.~~
- ~~3. Fire department staffing level.~~
- ~~4. Availability of a fire department breathing air replenishment vehicle.~~

Appendix L, Section L104.13.1; delete this section in its entirety.

~~L104.13.1 Location. Fill stations for refilling breathing air cylinders shall be located as follows:~~

- ~~1. Fill stations shall be provided at the fifth floor above and below the ground level floor and every third floor level thereafter.~~
- ~~2. On floor levels requiring fill stations, one fill station shall be provided adjacent to a required exit stair at a location designated by the fire code official. In buildings required to have three or more exit stairs, additional fill stations shall be provided at a ratio of one fill station for every three stairways.~~

Appendix L, Section L104.14; add paragraph to read as follows:

The external mobile air connection shall be located with approved separation from the Fire Department Connection (FDC) to allow functionality of both devices by first responders; shall be visible from and within 50 ft. of a fire apparatus access road along an unobstructed path; and shall be located in an approved signed, secured cabinet.



City of Rockwall
The New Horizon

Building Inspections Department Monthly Report

February 2023

Permits

Total Permits Issued:	252
Building Permits:	16
Contractor Permits:	236
Total Commercial Permit Values:	\$418,088.34
Building Permits:	\$7,000.00
Contractor Permits:	\$411,088.34
Total Fees Collected:	\$131,295.33
Building Permits:	\$105,817.78
Contractor Permits:	\$25,477.55

Board of Adjustment

Board of Adjustment Cases: 0

3/6/2023
8:47:33AM

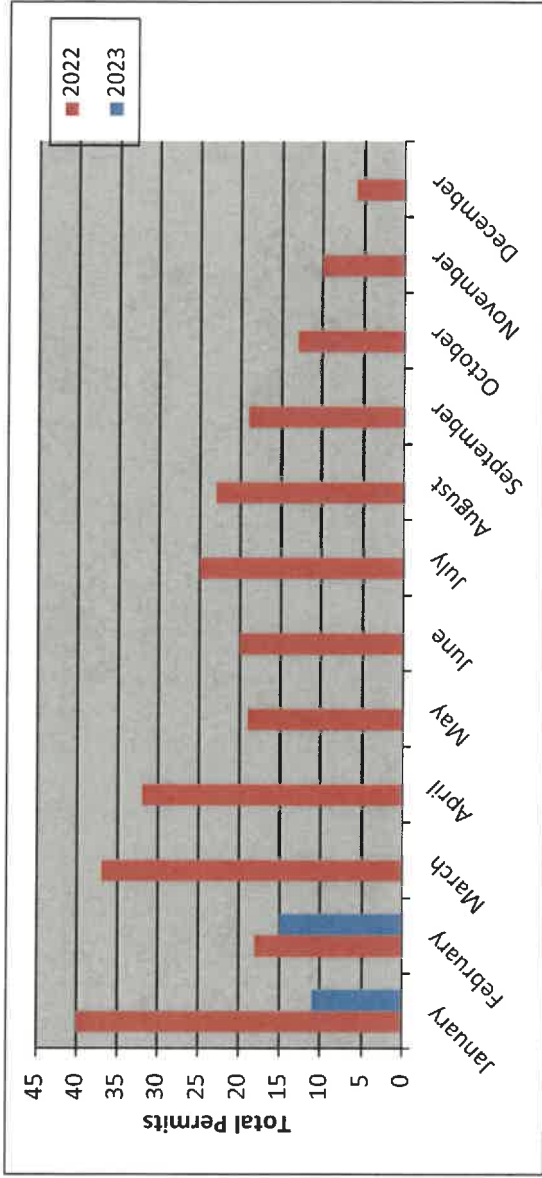
City of Rockwall
PERMITS ISSUED - Summary by Type and Subtype
For the Period 2/1/2023 to 2/28/2023

Type/Subtype	# of Permits Issued	Valuation of Work	Fees Charged
Commercial Building Permit	50	\$418,088.34	\$5,767.18
Addition	1	7,000.00	\$153.77
Certificate of Occupancy	5		\$381.00
Demolition	3		\$153.00
Electrical Permit	10	68,459.17	\$1,048.82
Plumbing Permit	10	30,900.00	\$1,003.19
Remodel	2	26,000.00	\$478.90
Retaining Wall Permit	1		\$51.00
Roofing Permit	1	193,706.00	\$76.50
Sign Permit	15	92,023.17	\$2,217.00
Temporary Construction Trailer	2		\$204.00
Residential Building Permit	202		\$125,528.15
Backflow Permit	1		\$76.50
Carport Permit	1		\$50.00
Concrete Permit	5		\$1,029.99
Electrical Permit	6		\$714.00
Fence Permit	36		\$1,828.00
Generator	6		\$918.00
Irrigation Permit	29		\$2,217.00
Mechanical Permit	11		\$1,349.00
New Single Family Residential	15		\$105,664.01
Outdoor Kitchen Permit	2		\$175.00
Patio Cover/Pergola	10		\$1,106.22
Plumbing Permit	36		\$2,827.50
Pool	10		\$1,548.00
Remodel	1		\$587.72
Retaining Wall Permit	3		\$202.00
Roofing Permit	15		\$1,146.00
Solar Panel Permit	8		\$3,733.21
Window & Door Permit	7		\$356.00
Totals:	252		\$131,295.33

New Residential Permits

Calendar Year

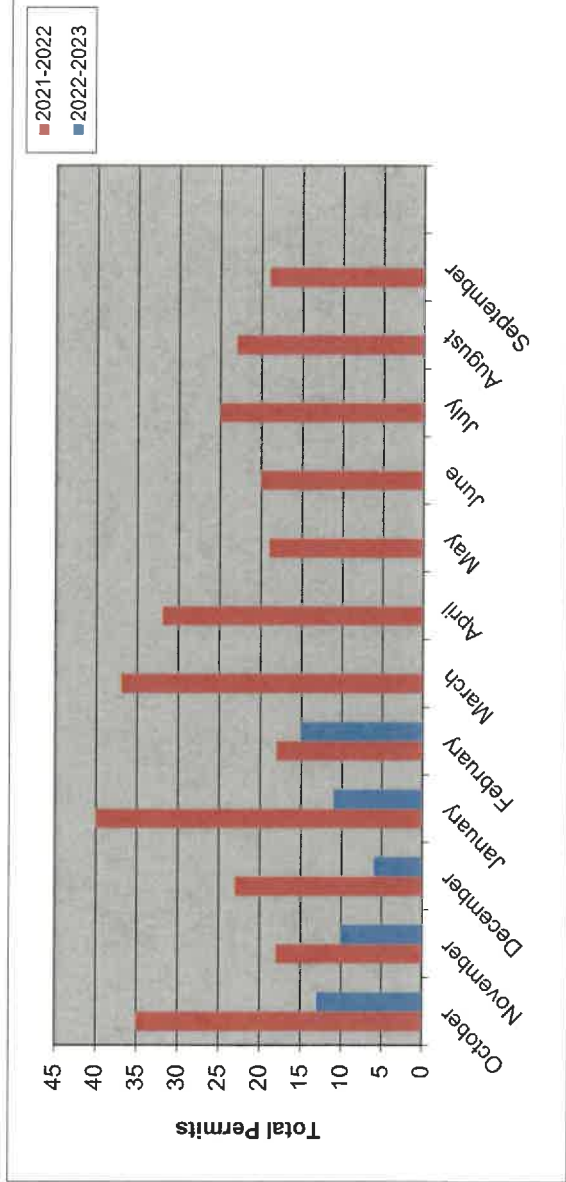
	Year	
	2022	2023
January	40	11
February	18	15
March	37	
April	32	
May	19	
June	20	
July	25	
August	23	
September	19	
October	13	
November	10	
December	6	
Totals	262	26



New Residential Permits

Fiscal Year

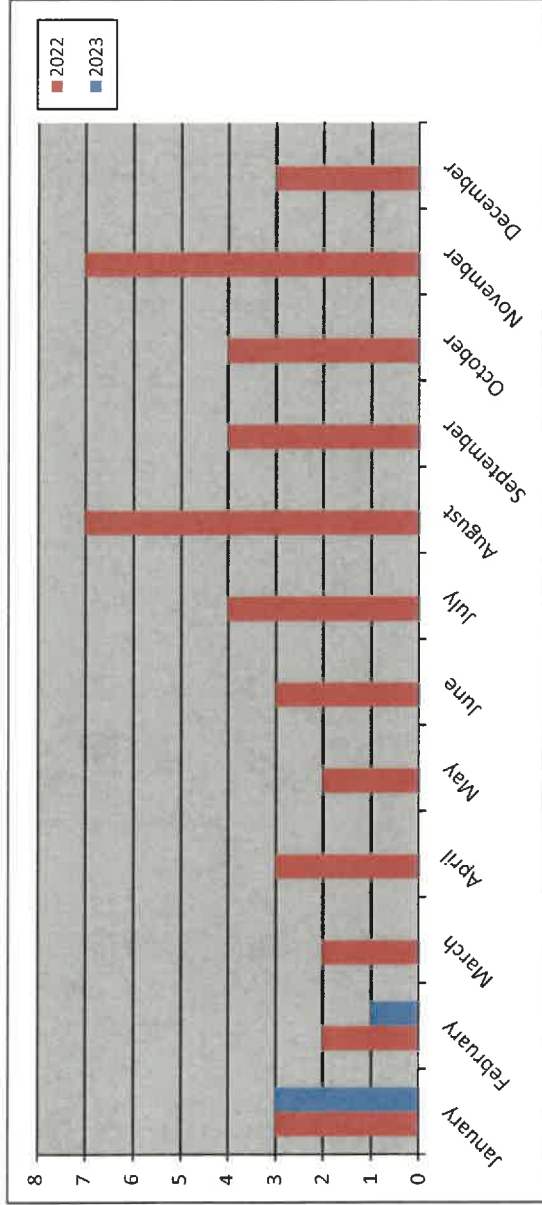
	Year	
	2021-2022	2022-2023
October	35	13
November	18	10
December	23	6
January	40	11
February	18	15
March	37	
April	32	
May	19	
June	20	
July	25	
August	23	
September	19	
Totals	309	55



Residential Remodel Permits

Calendar Year

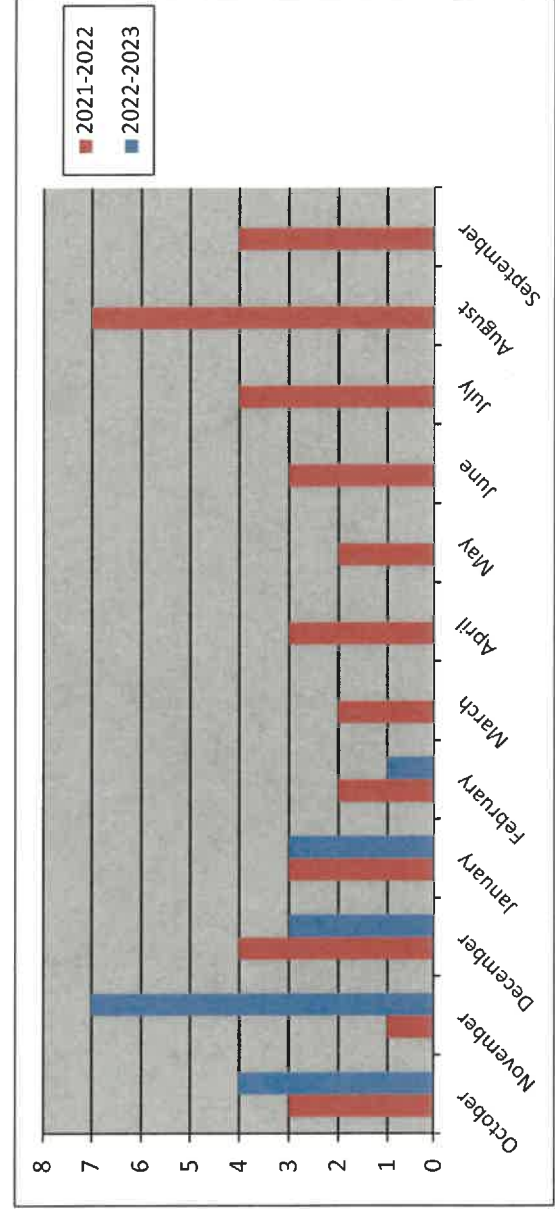
	Year	
	2022	2023
January	3	3
February	2	1
March	2	
April	3	
May	2	
June	3	
July	4	
August	7	
September	4	
October	4	
November	7	
December	3	
Totals	44	4



Residential Remodel Permits

Fiscal Year

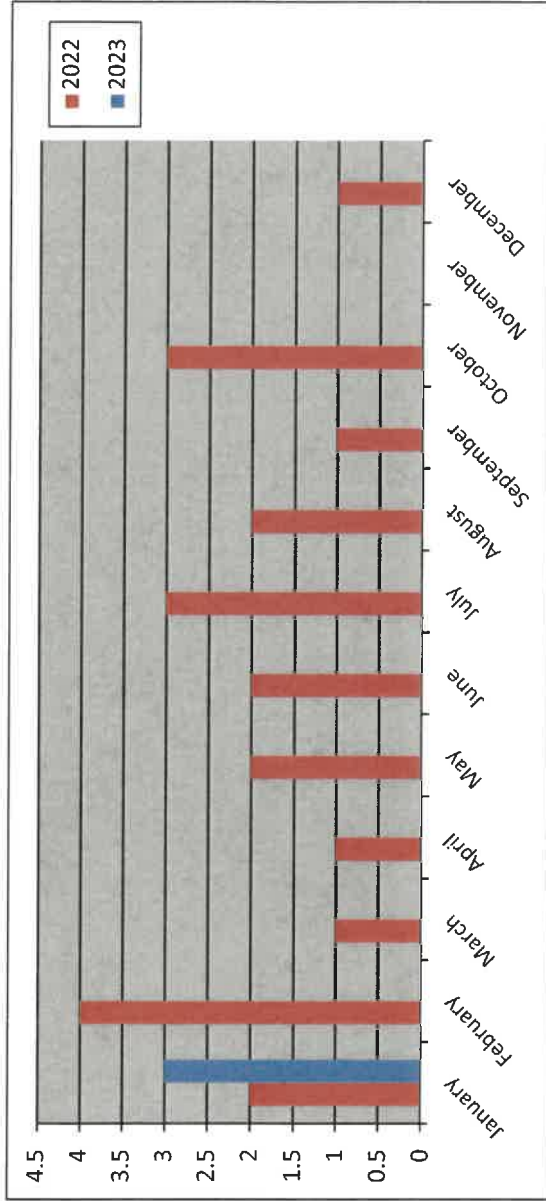
	Year	
	2021-2022	2022-2023
October	3	4
November	1	7
December	4	3
January	3	3
February	2	1
March	2	
April	3	
May	2	
June	3	
July	4	
August	7	
September	4	
Totals	38	18



New Commercial Permits

Calendar Year

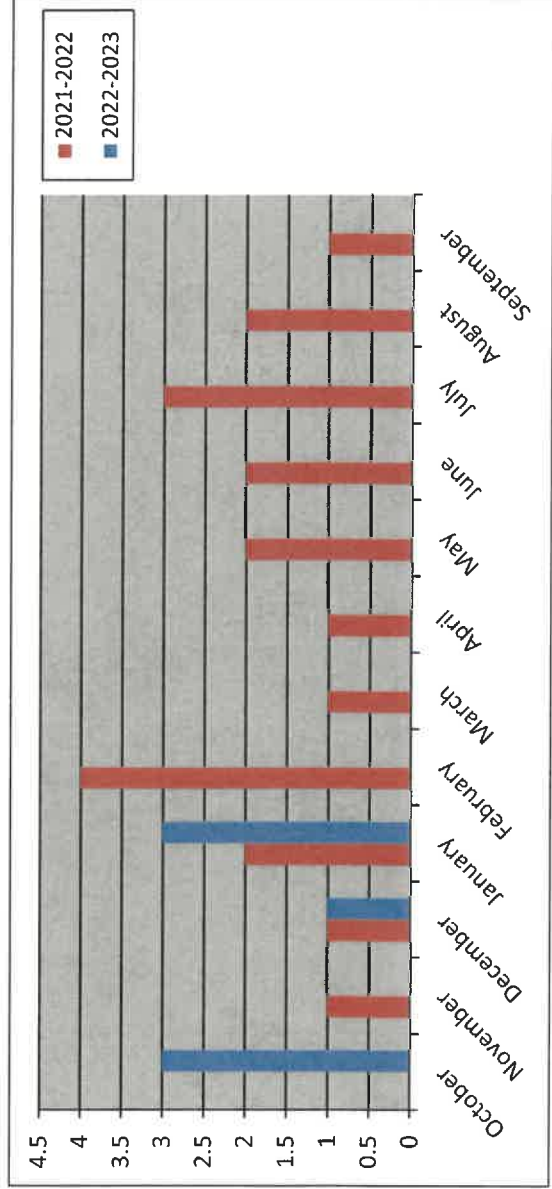
	Year	
	2022	2023
January	2	3
February	4	0
March	1	
April	1	
May	2	
June	2	
July	3	
August	2	
September	1	
October	3	
November	0	
December	1	
Totals	22	3



New Commercial Permits

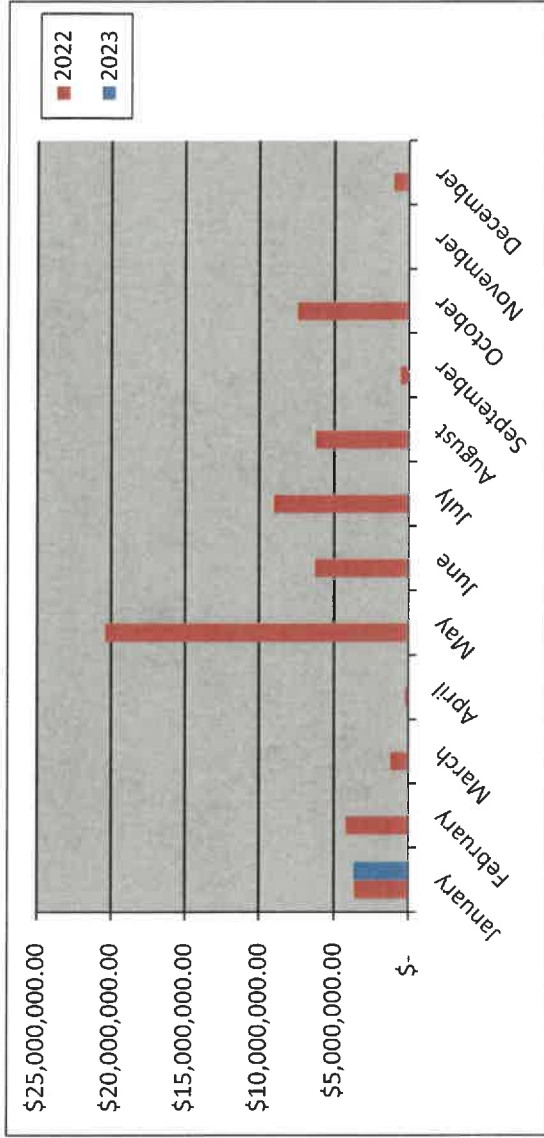
Fiscal Year

	Year	
	2021-2022	2022-2023
October	0	3
November	1	0
December	1	1
January	2	3
February	4	0
March	1	
April	1	
May	2	
June	2	
July	3	
August	2	
September	1	
Totals	20	7



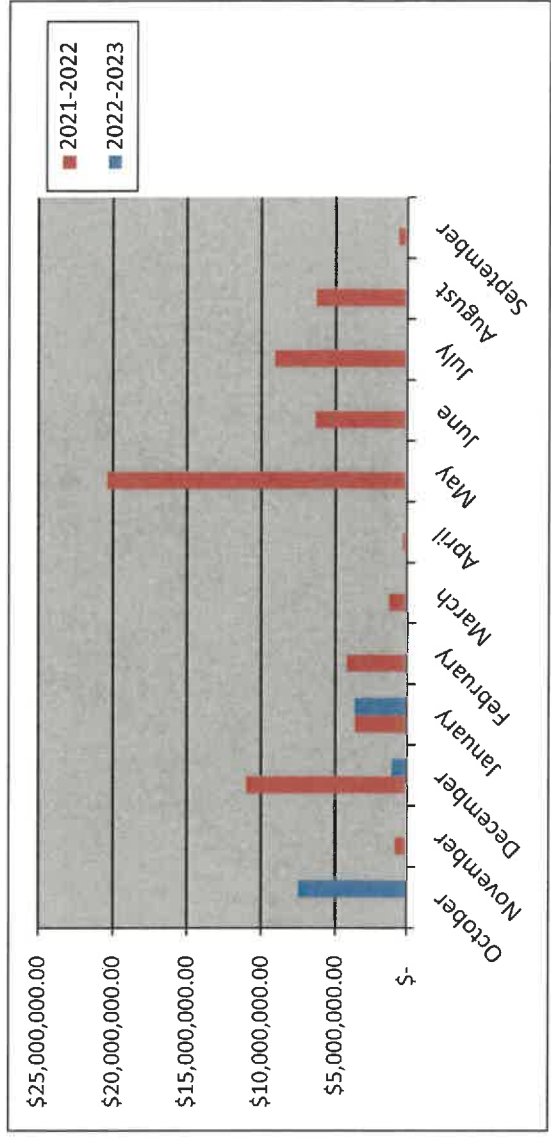
New Commercial Value Calendar Year

	Year	
	2022	2023
January	\$ 3,625,000.00	\$ 3,684,500.00
February	\$ 4,186,300.00	\$ -
March	\$ 1,200,000.00	\$ -
April	\$ 250,000.00	\$ -
May	\$ 20,400,000.00	\$ -
June	\$ 6,300,000.00	\$ -
July	\$ 9,075,000.00	\$ -
August	\$ 6,244,700.00	\$ -
September	\$ 550,000.00	\$ -
October	\$ 7,472,450.00	\$ -
November	\$ -	\$ -
December	\$ 1,000,000.00	\$ -
Totals	\$ 60,303,450.00	\$ 3,684,500.00



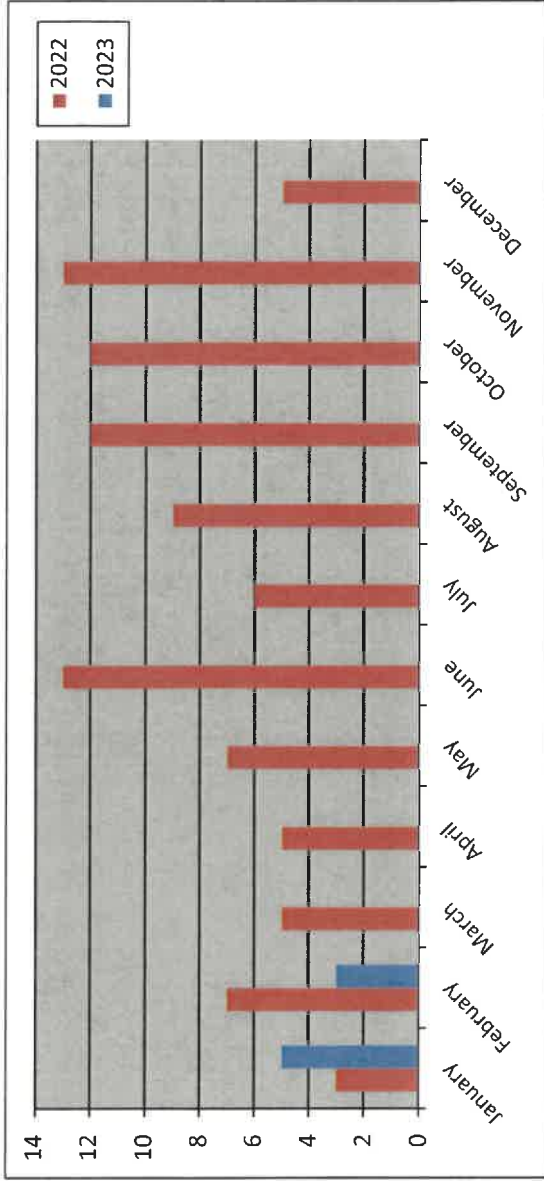
New Commercial Value Fiscal Year

	Year	
	2021-2022	2022-2023
October	\$ -	\$ 7,472,450.00
November	\$ 750,000.00	\$ -
December	\$ 11,000,000.00	\$ 1,000,000.00
January	\$ 3,625,000.00	\$ 3,684,500.00
February	\$ 4,186,300.00	\$ -
March	\$ 1,200,000.00	\$ -
April	\$ 250,000.00	\$ -
May	\$ 20,400,000.00	\$ -
June	\$ 6,300,000.00	\$ -
July	\$ 9,075,000.00	\$ -
August	\$ 6,244,700.00	\$ -
September	\$ 550,000.00	\$ -
Totals	\$ 63,581,000.00	\$ 12,156,950.00



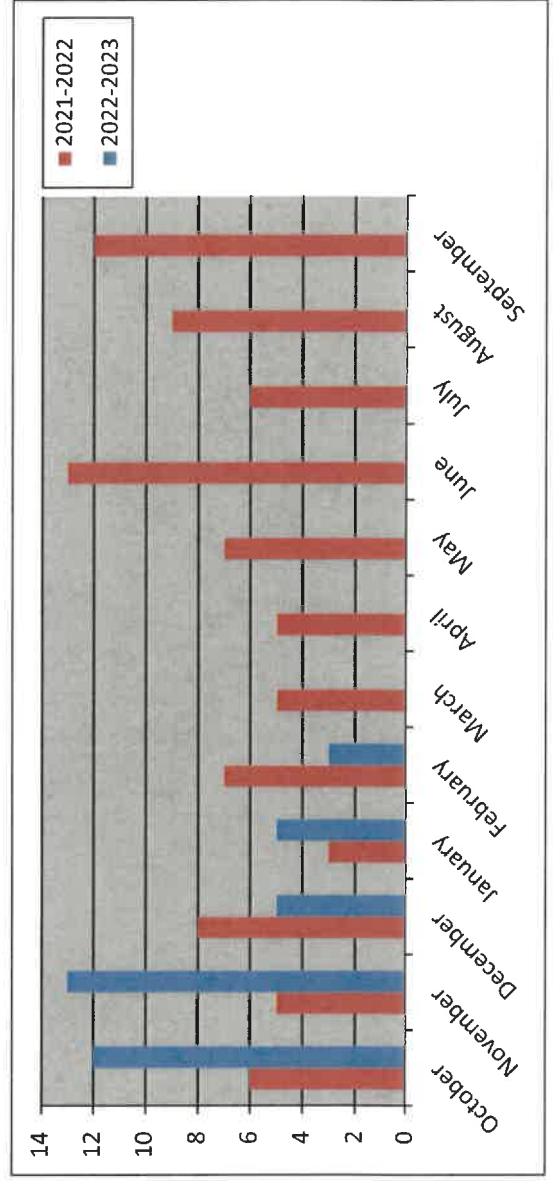
Commercial Remodel Permits Calendar Year

	Year	
	2022	2023
January	3	5
February	7	3
March	5	
April	5	
May	7	
June	13	
July	6	
August	9	
September	12	
October	12	
November	13	
December	5	
Totals	97	8



Commercial Remodel Permits Fiscal Year

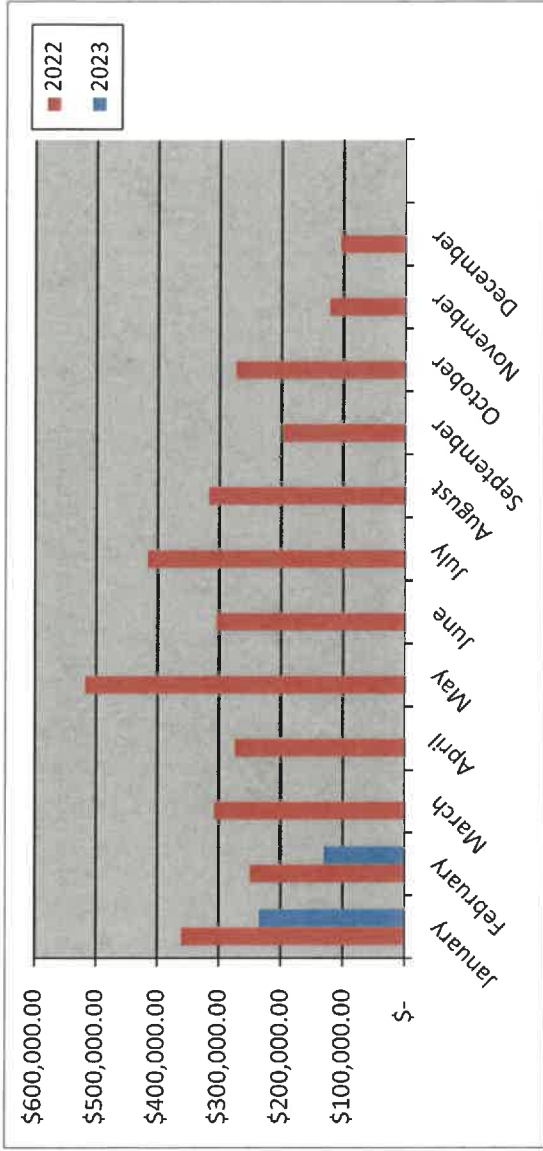
	Year	
	2021-2022	2022-2023
October	6	12
November	5	13
December	8	5
January	3	5
February	7	3
March	5	
April	5	
May	7	
June	13	
July	6	
August	9	
September	12	
Totals	86	38



Total Fees Collected

Calendar Year

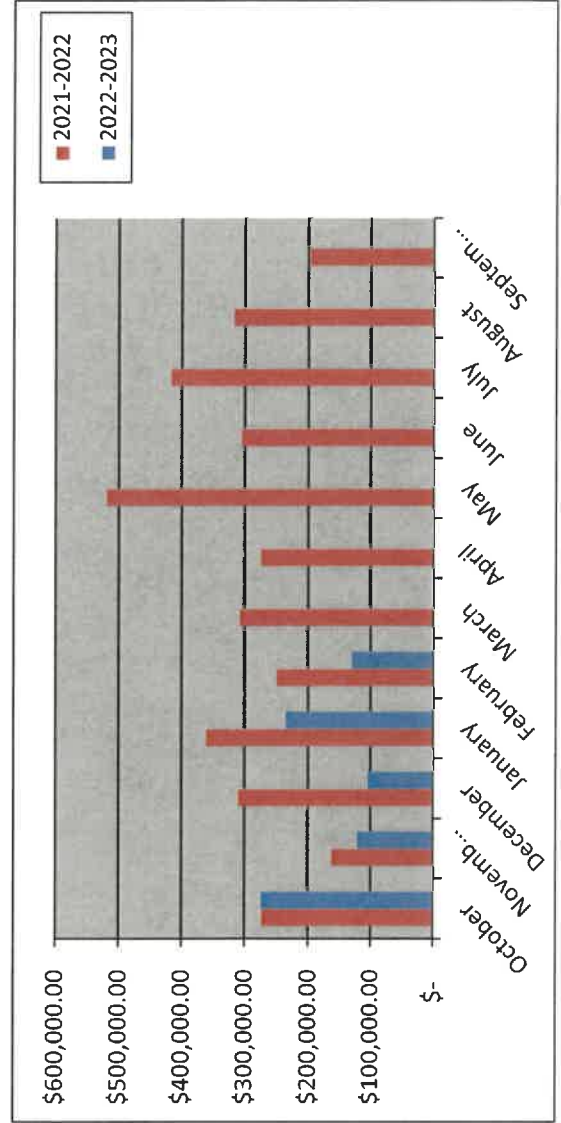
	Year	
	2022	2023
January	\$ 361,270.18	\$ 235,769.45
February	\$ 250,094.89	\$ 131,295.33
March	\$ 307,866.69	
April	\$ 274,768.54	
May	\$ 518,725.96	
June	\$ 304,895.03	
July	\$ 416,616.46	
August	\$ 317,170.14	
September	\$ 197,419.77	
October	\$ 274,314.07	
November	\$ 122,821.42	
December	\$ 105,480.50	
Totals	\$ 3,451,443.65	\$ 367,064.78



Total Fees Collected

Fiscal Year

	Year	
	2021-2022	2022-2023
October	\$ 273,670.22	\$ 274,314.07
November	\$ 163,206.06	\$ 122,821.42
December	\$ 310,002.73	\$ 105,480.50
January	\$ 361,270.18	\$ 235,769.45
February	\$ 250,094.89	\$ 131,295.33
March	\$ 307,866.69	
April	\$ 274,768.54	
May	\$ 518,725.96	
June	\$ 304,895.03	
July	\$ 416,616.46	
August	\$ 317,170.14	
September	\$ 197,419.77	
Totals	\$ 3,695,706.67	\$ 869,680.77



8:52:14AM

CERTIFICATES OF OCCUPANCY ISSUED

For the Period 2/1/2023 to 2/28/2023

Permit Number	Permit Type	Site Address	Total Fees	
Application Date	Subtype	Parcel Number		
Issue Date	Status of Permit	Subdivision Name	Total SQFT	Fees Paid
	Business Name	Plan Number	Valuation	
COM2023-181	Commercial Building Permit			
01/12/2023	Certificate of Occupancy	2245 RIDGE RD SUITE	\$76.50	\$76.50
02/07/2023	ISSUED	101	1,400.00	
	Blo Dry Rockwall			

Contact Type	Contact Name	Contact Address			
	Business Phone				
Business Owner	Mrs. Velma McMillan 469-769-1015	2245 Ridge Rd Suite 101	Rockwall	TX	75087
Property Owner	Lakewood Properties	102 S Goliad	Rockwall	TX	75087

Contractors

COM2023-393	Commercial Building Permit			
01/26/2023	Certificate of Occupancy	2861 RIDGE RD Suite	\$76.50	\$76.50
02/17/2023	ISSUED	101	5,000.00	
	Bearded Monkey			

Contact Type	Contact Name	Contact Address			
	Business Phone				
Business Owner	Michael Weatherall 214-205-5344	1454 War Admiral Dr	Terrell	TX	75160
Property Owner	Steger Towne Crossing	580 Decker Dr	Irving	TX	75062

Contractors

COM2023-425	Commercial Building Permit			
01/27/2023	Certificate of Occupancy	2455 RIDGE RD, S. 120,	\$76.50	\$76.50
02/06/2023	ISSUED	ROCKWALL, TX 75087	2,058.00	
	MC3 Health LLC dba HOTWORX Studio Rockwall			

Contact Type	Contact Name	Contact Address			
	Business Phone				
Business Owner	Brandie Munks 469-314-1443	2455 Ridge Rd, Suite 120	Lewisville	TX	75077
Property Owner	2455 Ridge LLC	2701 Custer Parkway, S. 706	Richardson	TX	75080
Applicant	Brandie Munks	2455 Ridge Rd, Suite 120	Lewisville	TX	75077
Inspection Report C	Brandie Munks	2455 Ridge Rd, Suite 120	Lewisville	TX	75077

Contractors

8:52:14AM

CERTIFICATES OF OCCUPANCY ISSUED

For the Period 2/1/2023 to 2/28/2023

Permit Number	Permit Type	Site Address	Total Fees	
Application Date	Subtype	Parcel Number		
Issue Date	Status of Permit	Subdivision Name	Total SQFT	Fees Paid
	Business Name	Plan Number	Valuation	
COM2023-446	Commercial Building Permit			
01/30/2023	Certificate of Occupancy	109 N Goliad St,	\$75.00	\$75.00
02/22/2023	ISSUED	Rockwall, TX 75087	2,150.00	
	Mills Mercantile LLC			

Contact Type	Contact Name	Contact Address			
	Business Phone				
Business Owner	Jamie Holton 972-832-7376	109 N Goliad St	Rockwall	TX	75087
Property Owner	K's Advertising Dallas	P.O. Box 1238	Rockwall	TX	75087

Contractors

COM2023-513	Commercial Building Permit			
02/07/2023	Certificate of Occupancy	447 E INTERSTATE 30	\$76.50	\$76.50
02/16/2023	ISSUED		2,400.00	
	Rockwall Artisan Home			

Contact Type	Contact Name	Contact Address			
	Business Phone				
Business Owner	Abby Urban-Bader 503-473-2594	447 E Interstate 30	Rockwall	TX	75087
Property Owner	Sabre Realty Management, Inc.	16475 Dallas Parkway, Suite 800	Addison	TX	

Contractors

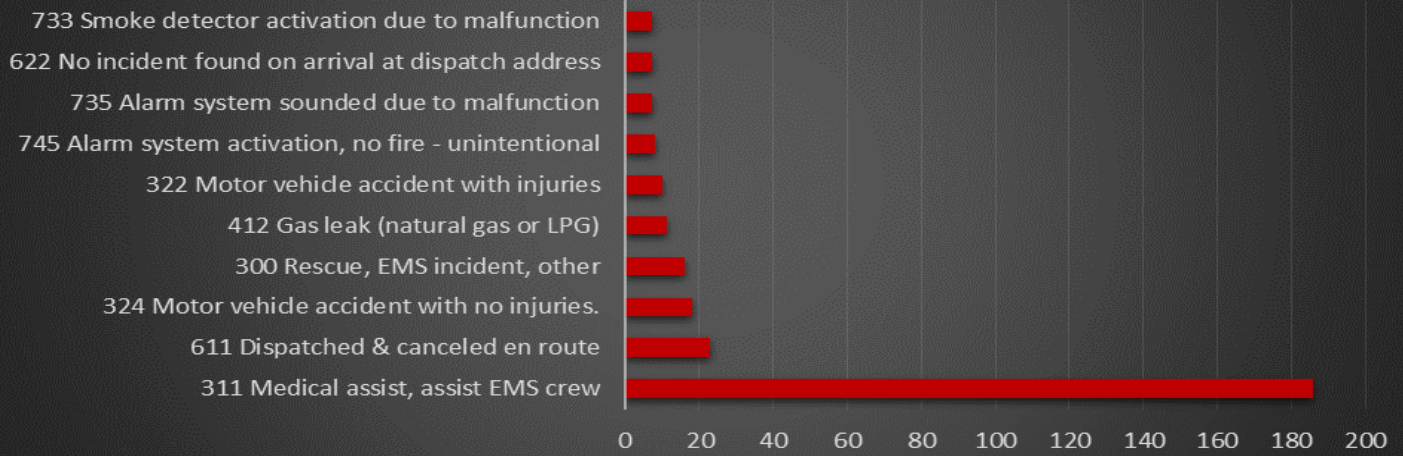
5

Total Valuation:
Total Fees: \$381.00
Total Fees Paid: \$381.00



February 2023 Monthly Report

Top 10 NFIRS Call Types



All Calls By NFIRS Call Type

 Incident Count

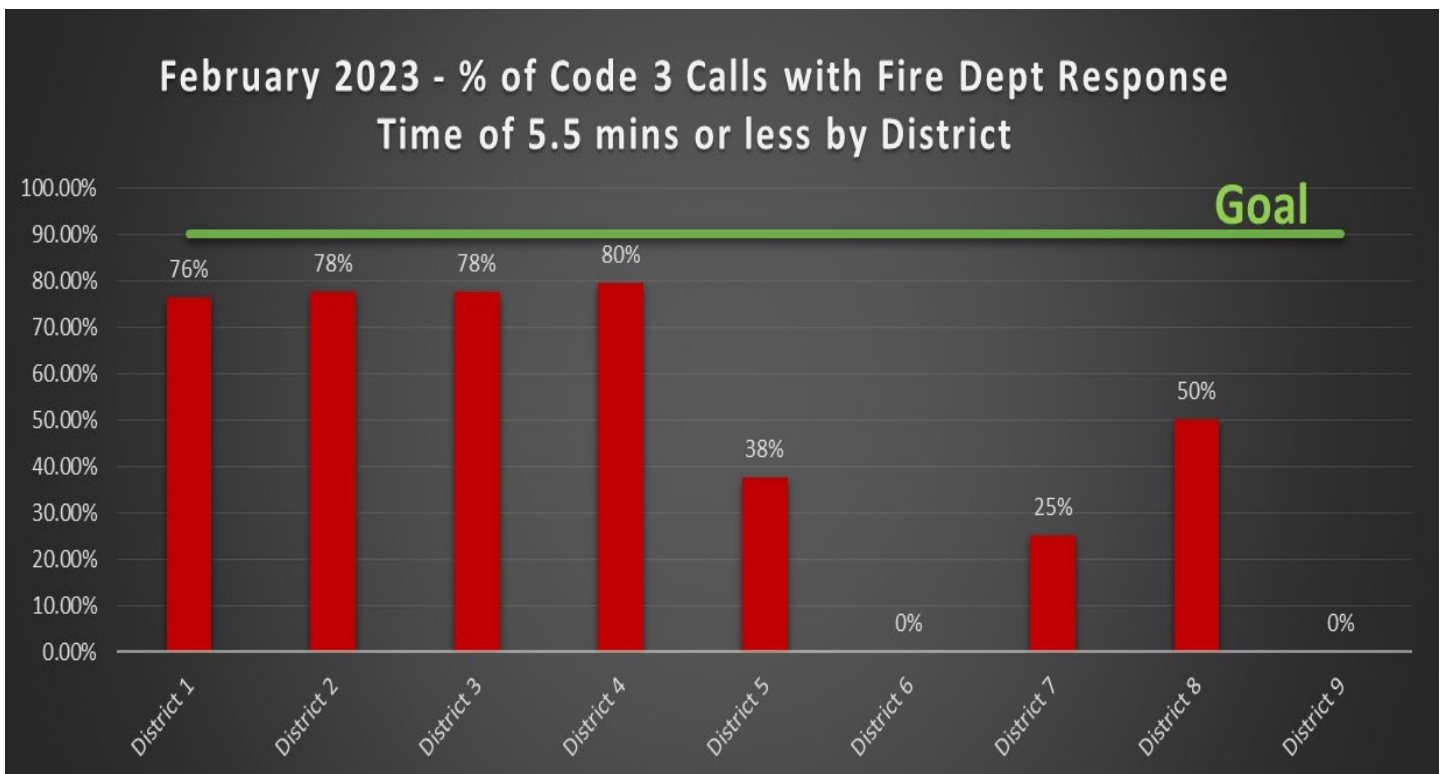
111 Building fire	6
113 Cooking fire, confined to container	1
131 Passenger vehicle fire (cars, pickups, SUV's)	4
132 Road freight or transport vehicle fire (Commercial Vehicles)	2
142 Brush or brush-and-grass mixture fire	1
154 Dumpster or other outside trash receptacle fire	2
300 Rescue, EMS incident, other	16
311 Medical assist, assist EMS crew	186
322 Motor vehicle accident with injuries	10
324 Motor vehicle accident with no injuries.	18
342 Search for person in water	1
355 Confined space rescue	1
411 Gasoline or other flammable liquid spill	2
412 Gas leak (natural gas or LPG)	11
413 Oil or other combustible liquid spill	1
424 Carbon monoxide incident	1
444 Power line down	4
445 Arcing, shorted electrical equipment	1
510 Person in distress, other	1
511 Lock-out	1
522 Water or steam leak	1
531 Smoke or odor removal	1
550 Public service assistance, other	3
550 Smoke Detector Battery Change/Install	6
551 Assist police or other governmental agency	1
553 Public service	1
600 Good intent call, other	1
611 Dispatched & canceled en route	23
622 No incident found on arrival at dispatch address	7
651 Smoke scare, odor of smoke	1
652 Steam, vapor, fog or dust thought to be smoke	1
671 HazMat release investigation w/no HazMat	1
700 False alarm or false call, other	2
715 Local alarm system, malicious false alarm	1
730 System malfunction, other	1
732 Extinguishing system malfunction (activation)	3
733 Smoke detector activation due to malfunction	7
735 Alarm system sounded due to malfunction	7
736 CO detector activation due to malfunction	1
741 Sprinkler activation, no fire - unintentional	3
743 Smoke detector activation, no fire - unintentional	3
744 Detector activation, no fire - unintentional	1
745 Alarm system activation, no fire - unintentional	8

Grand Total

586 354

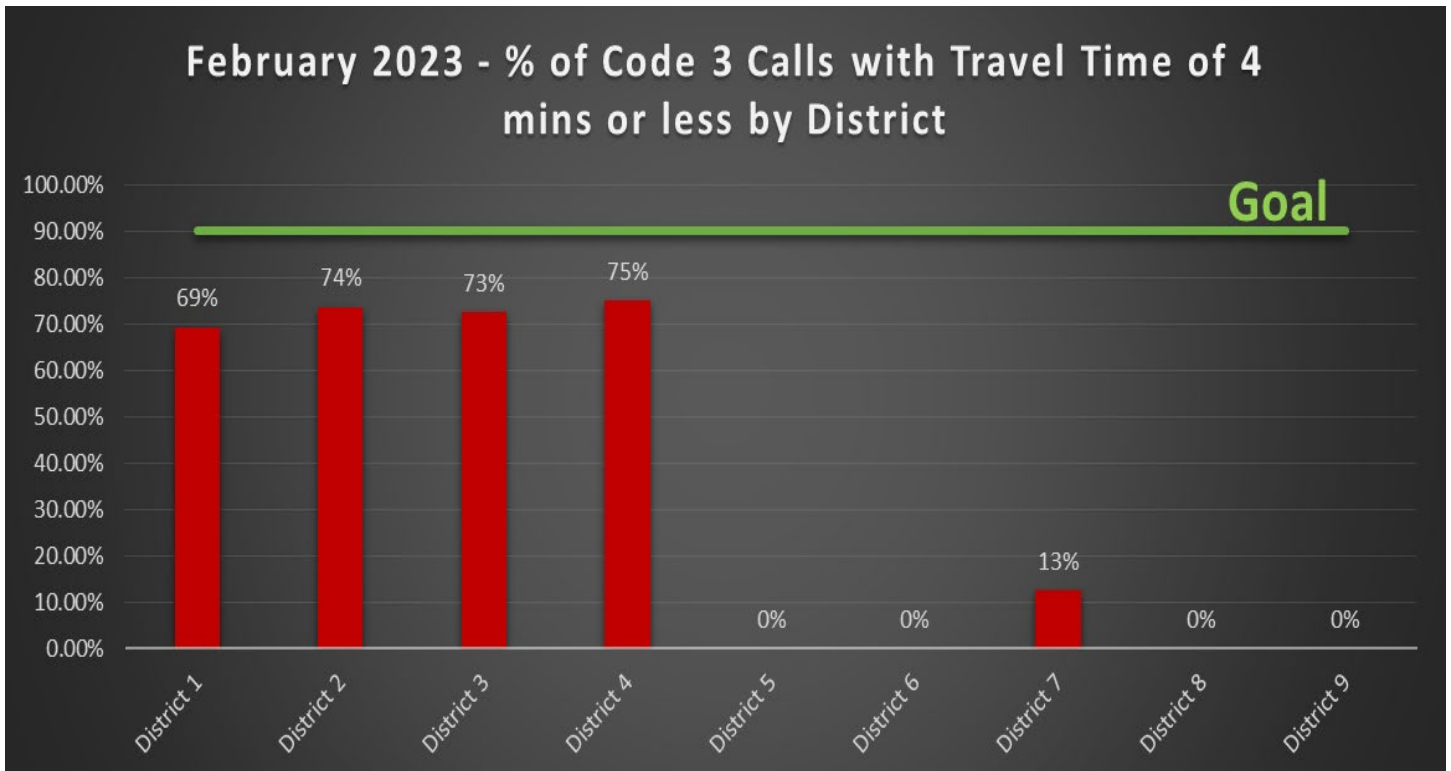
February 2023 Dispatch to Arrival Analysis

District	Total Number of Calls	Percent of Runs per District	Number of Calls in 5.5 mins or Less	Average FD Response Time Minutes	% in 5.5 min or less	Goal of 90%
District 1	101	36%	77	0:05:10	76%	90%
District 2	76	27%	59	0:05:00	78%	90%
District 3	40	14%	31	0:04:33	78%	90%
District 4	44	16%	35	0:04:34	80%	90%
District 5	8	3%	3	0:08:04	38%	90%
District 6	3	1%	0	0:06:50	0%	90%
District 7	8	3%	2	0:06:34	25%	90%
District 8	2	1%	1	0:06:07	50%	90%
District 9	1	0%	0	0:06:36	0%	90%
Department	283	100%	208	0:05:06	73%	90%



February 2023 Travel Times by District

District	Total Number of Calls	Percent of Runs per District	Number of Calls in 4 or Less	Average Travel Time Minutes	% in 4 min or less	Goal of 90%
District 1	101	36%	70	0:04:17	69%	90%
District 2	76	27%	56	0:04:04	74%	90%
District 3	40	14%	29	0:03:32	73%	90%
District 4	44	16%	33	0:03:28	75%	90%
District 5	8	3%	0	0:07:05	0%	90%
District 6	3	1%	0	0:06:02	0%	90%
District 7	8	3%	1	0:05:44	13%	90%
District 8	2	1%	0	0:05:18	0%	90%
District 9	1	0%	0	0:06:11	0%	90%
Department	283	100%	189	0:04:08	67%	90%





Total Dollar Losses

February 2023



City of Rockwall
The New Horizon

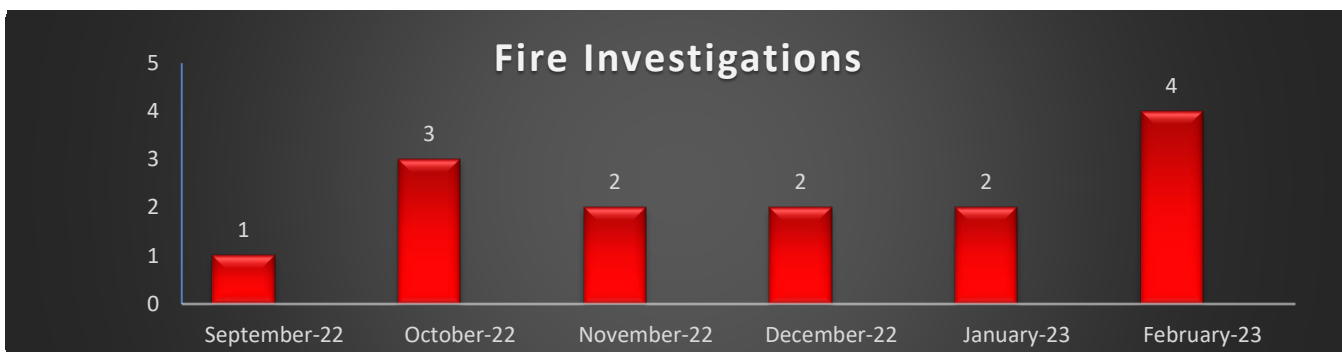
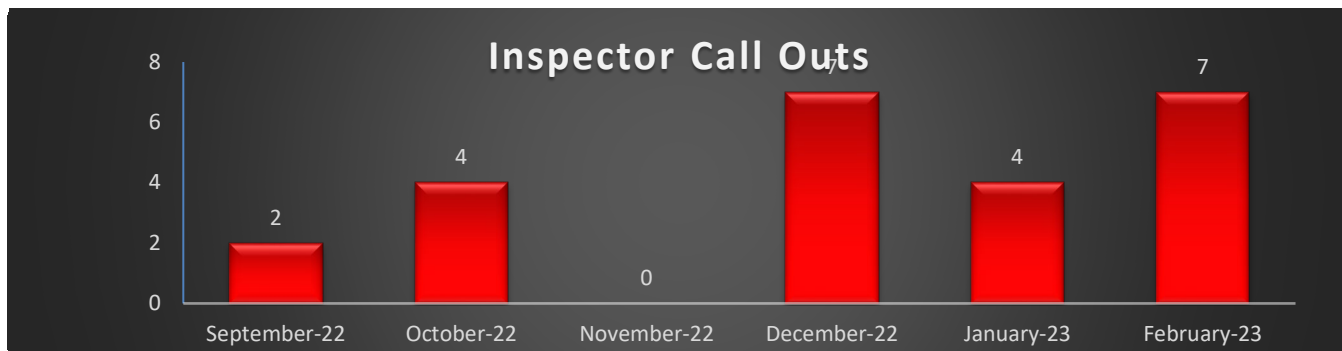
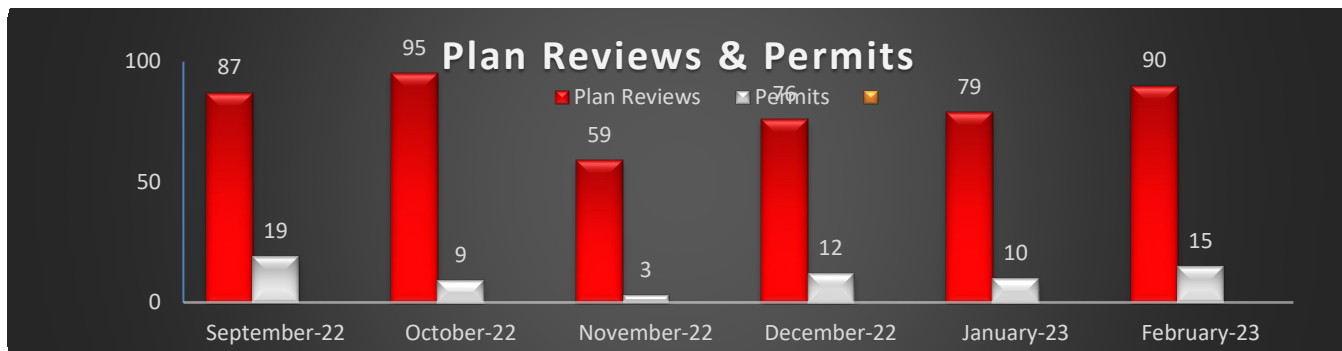
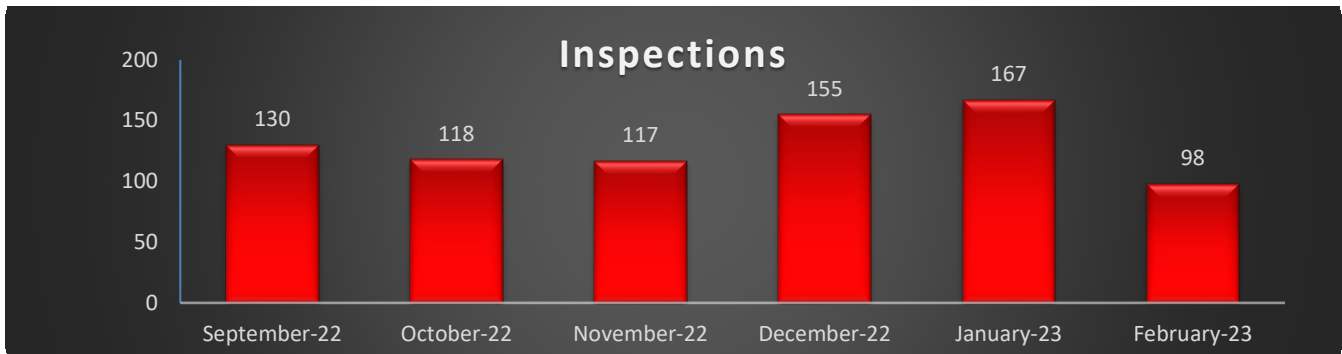
Rockwall Fire Department

Print Date/Time: 03/06/2023 10:04
Login ID: rck\ldgang
Layer: All
Areas: All

ORI Number: TX504
Incident Type: All
Station: All

	Current Month	Last Month	Same Month Last Year	Year To Date	Last Year To Date
Total Property Loss:	\$468,430.00	\$6,000.00	\$356,800.00	\$994,430.00	\$597,100.00
Total Content Loss:	\$1,204,000.00	\$100.00	\$735,000.00	\$1,714,100.00	\$835,000.00
Total Property Pre-Incident Value:	\$6,146,850.00	\$0.00	\$1,562,320.00	\$57,340,990.00	\$1,943,870.00
Total Contents Pre-Incident Value	\$12,213,828.00	\$0.00	\$630,000.00	\$24,213,828.00	\$730,000.00
Total Losses:	\$1,672,430.00	\$6,100.00	\$1,091,800.00	\$2,708,530.00	\$1,672,430.00
Total Value:	\$18,360,678.00	\$0.00	\$2,192,320.00	\$81,554,818.00	\$2,673,870.00

Fire Prevention, Education, & Investigations Division Monthly Report February 2023





Monthly Report February 2023



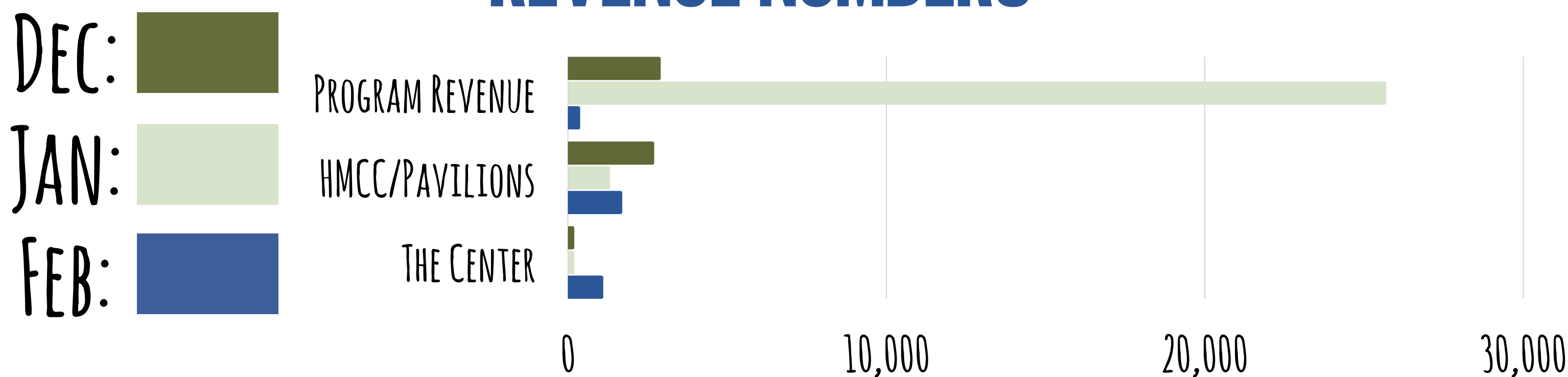
TROUT STOCKING AT
HARRY MYERS PARK



SENIOR TRIP - GEORGE W.
BUSH LIBRARY
11 ATTENDEES



REVENUE NUMBERS



Upcoming:

Fishing Derby	May 6 - Harry Myers Park
Family Fun Friday	April 28 - Yellow Jacket Park
May the Fourth Star Wars Concert	May 4 - The Harbor

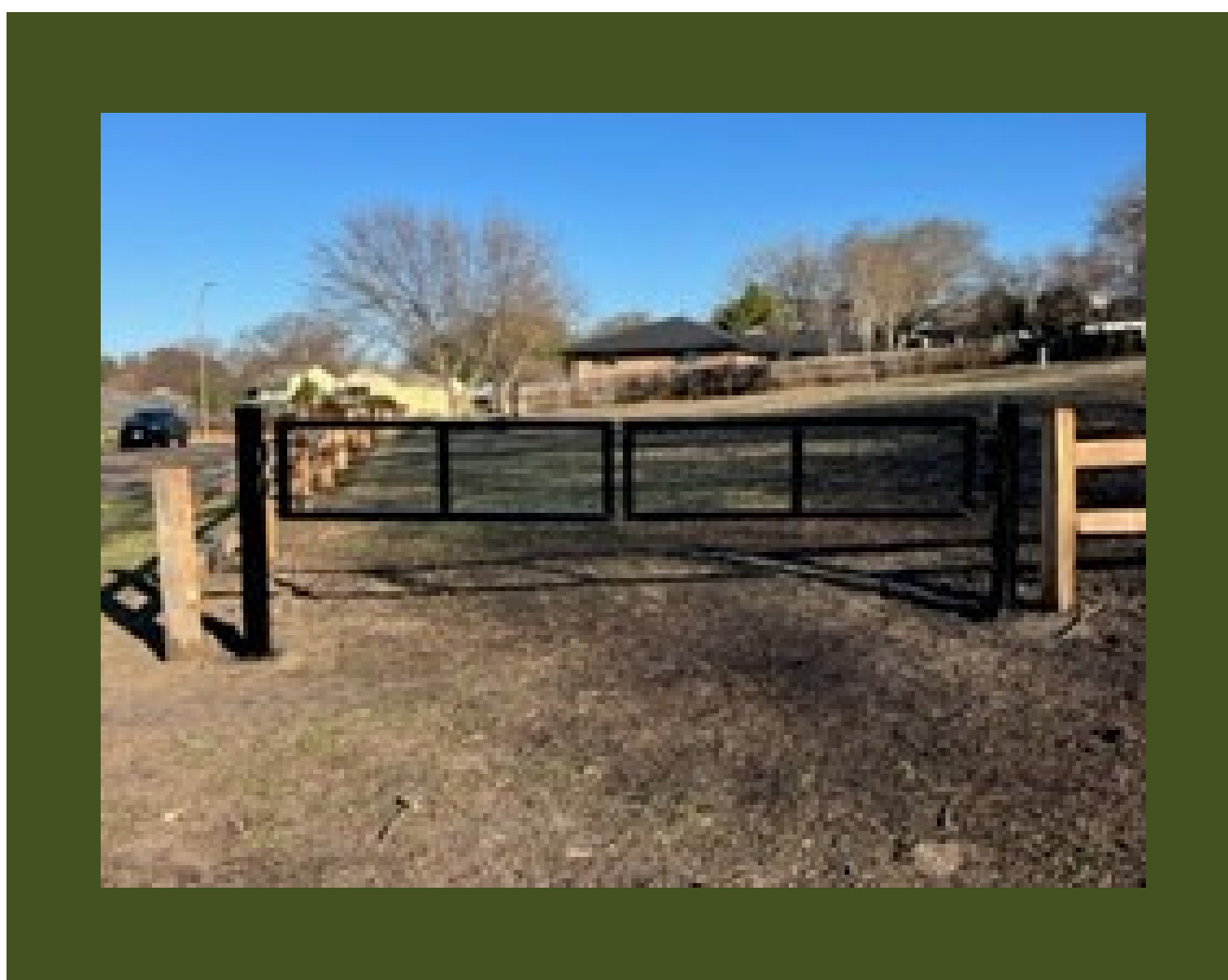
PARKS PROJECT UPDATE – FEBRUARY 2023



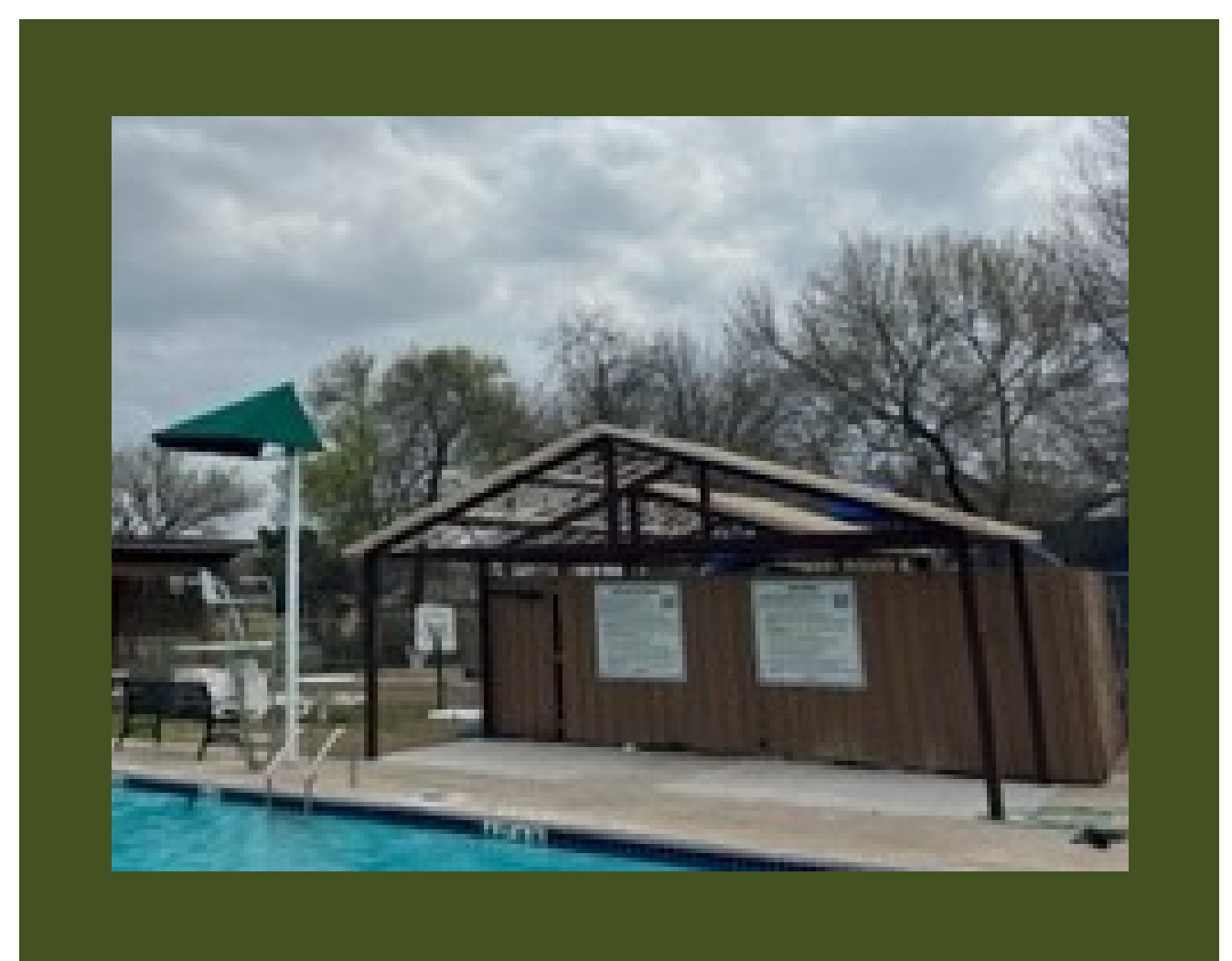
HARRY MYERS PICKLEBALL COURT
RESURFACE



ROCKWALL MUSEUM GRANITE TRAIL
INSTALLATION



GARDENHIRE CEMETERY NEW SPLIT
RAIL AND GATE INSTALLATION



GLORIA WILLIAMS SHADE STRUCTURE
INSTALLATION

Other Projects

SHORES PARK, HICKORY RIDGE AND FOX CHASE BASKETBALL COURT RESURFACING

Rockwall Police Department

Monthly Activity Report

February-2023

ACTIVITY	CURRENT MONTH FEBRUARY	PREVIOUS MONTH JANUARY	YTD 2023	YTD 2022	YTD % CHANGE
----------	----------------------------------	----------------------------------	---------------------	---------------------	-------------------------

PART 1 OFFENSES

Homicide / Manslaughter	0	0	0	0	0.00%
Sexual Assault	1	0	1	2	-50.00%
Robbery	0	1	1	4	-75.00%
Aggravated Assault	2	4	6	3	100.00%
Burglary	3	1	4	6	-33.33%
Larceny	55	51	106	83	27.71%
Motor Vehicle Theft	9	7	16	8	100.00%
TOTAL PART I	70	64	134	106	26.42%
TOTAL PART II	109	115	224	228	-1.75%
TOTAL OFFENSES	179	179	358	334	7.19%

ADDITIONAL STATISTICS

FAMILY VIOLENCE	4	15	19	15	26.67%
D.W.I.	12	8	20	27	-25.93%

ARRESTS

FELONY	15	26	41	35	17.14%
MISDEMEANOR	47	46	93	106	-12.26%
WARRANT ARREST	5	6	11	12	-8.33%
JUVENILE	5	5	10	7	42.86%
TOTAL ARRESTS	72	83	155	160	-3.13%

DISPATCH

CALLS FOR SERVICE	2126	2224	4350	3588	21.24%
-------------------	------	------	------	------	--------

ACCIDENTS

INJURY	1	2	3	10	-70.00%
NON-INJURY	81	71	152	127	19.69%
FATALITY	0	0	0	0	0.00%
TOTAL	82	73	155	137	13.14%

FALSE ALARMS

RESIDENT ALARMS	27	42	69	85	-18.82%
BUSINESS ALARMS	151	131	282	290	-2.76%
TOTAL FALSE ALARMS	178	173	351	375	-6.40%
Estimated Lost Hours	117.48	114.18	231.66	247.5	-6.40%
Estimated Cost	\$2,794.60	\$2,716.10	\$5,510.70	\$5,887.50	-6.40%

ROCKWALL NARCOTICS UNIT

	Number of Cases	2
	Arrests	2
	Arrest Warrants	2
	Search Warrants	6
	Seized	
	Marijuana	120 ounces
	Cocaine	933 grams
	Methamphetamine	12072 grams
	Heroin	6000 grams
	Fentanyl	400 pills
	Weapons	19
	Money	\$10,000

Rockwall Police Department

Dispatch and Response Times

February 2023

Police Department

	Average Response Time	
Priority 1		Number of Calls 135
Call to Dispatch	0:00:59	
Call to Arrival	0:06:38	
% over 7 minutes	30%	
	Average Response Time	
Priority 2		Number of Calls 933
Call to Dispatch	0:04:01	
Call to Arrival	0:15:28	
% over 7 minutes	16%	
	Average Response Time	
Priority 3		Number of Calls 65
Call to Dispatch	0:01:49	
Call to Arrival	0:10:06	
% over 7 minutes	57%	

Average dispatch response time goals are as follows:

Priority 1: 1 Minute

Priority 2: 1 Minute, 30 Seconds

Priority 3: 3 Minutes