

CITY OF ROCKWALL, TEXAS

CONSTRUCTION PLANS FOR:

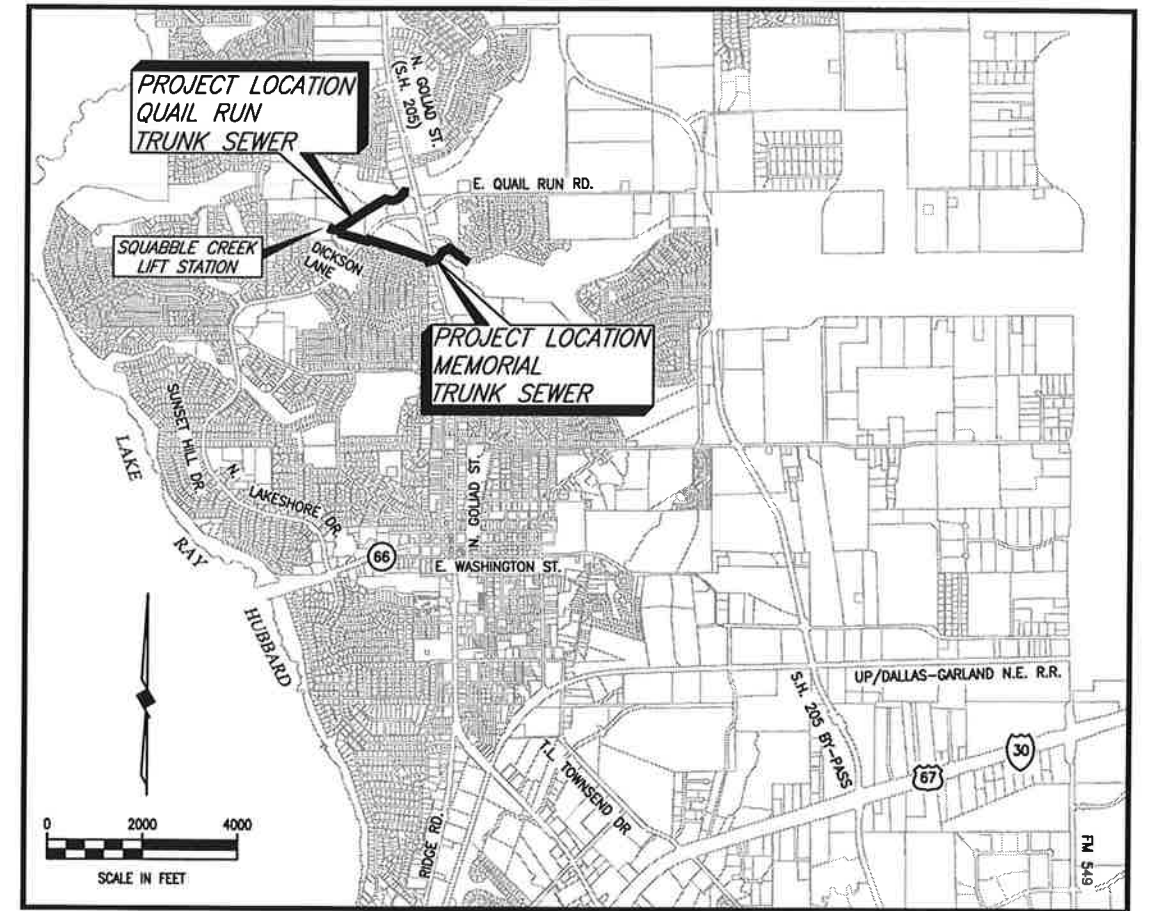
QUAIL RUN BYPASS TRUNK SEWER

CIP 2015-016

MEMORIAL BYPASS TRUNK SEWER

CIP SS2016-001

CONFORMED
FOR CONSTRUCTION



LOCATION MAP

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COUNCIL MEMBERS

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MIKE TOWNSEND, MAYOR PRO-TEM

DAVID WHITE

JOHN HOHENSHELT

KENVIN FOWLER

DENNIS LEWIS

SCOTT MILDER

CITY MANAGER

RICK CROWLEY

ASSISTANT CITY MANAGER

MARY SMITH

BRAD GRIGGS



BIRKHOFF, HENDRICKS & CARTER, L.L.P.

PROFESSIONAL ENGINEERS
TBPE Firm No. 526; TBPLS Firm No. 10031800
11910 Greenville Ave., Suite 600
Dallas, Texas 75243 (214) 361-7900

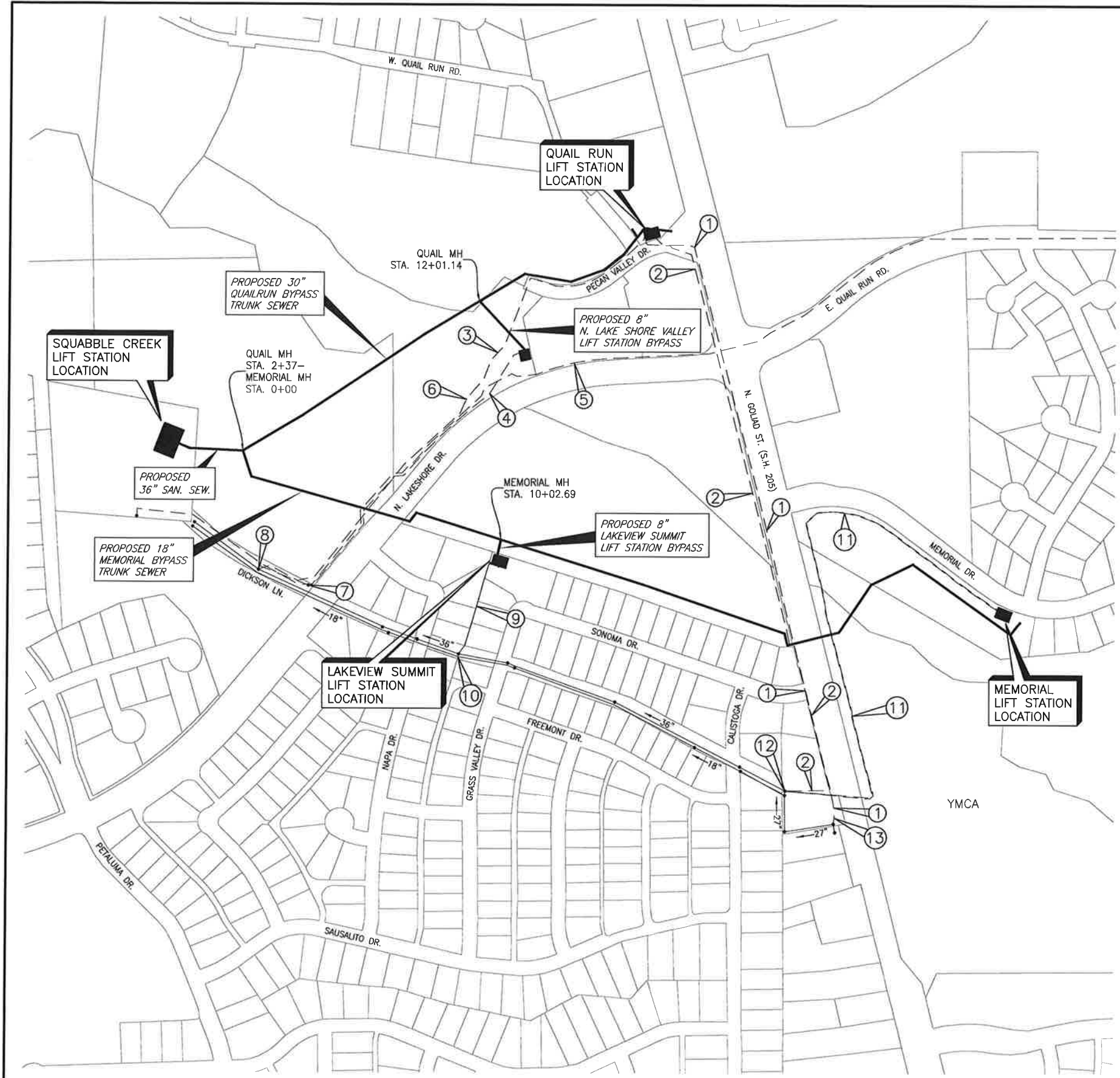
JULY 2017



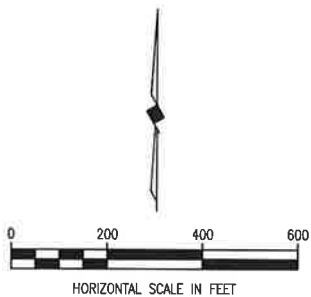
Matthew Hickey
7/28/17



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			CITY OF ROCKWALL GENERAL CONSTRUCTION NOTES			

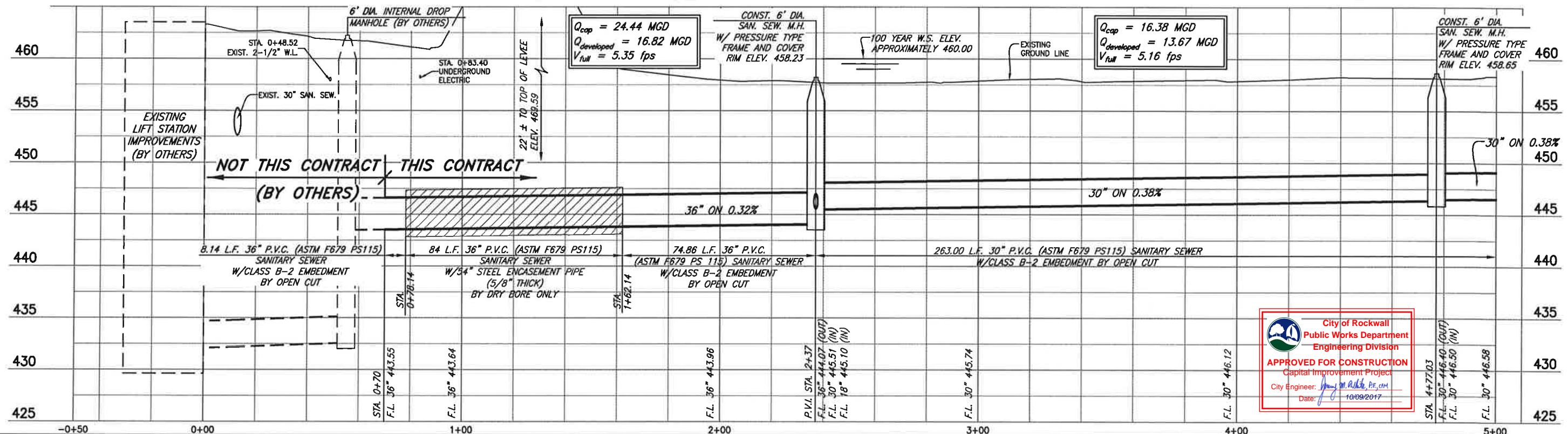
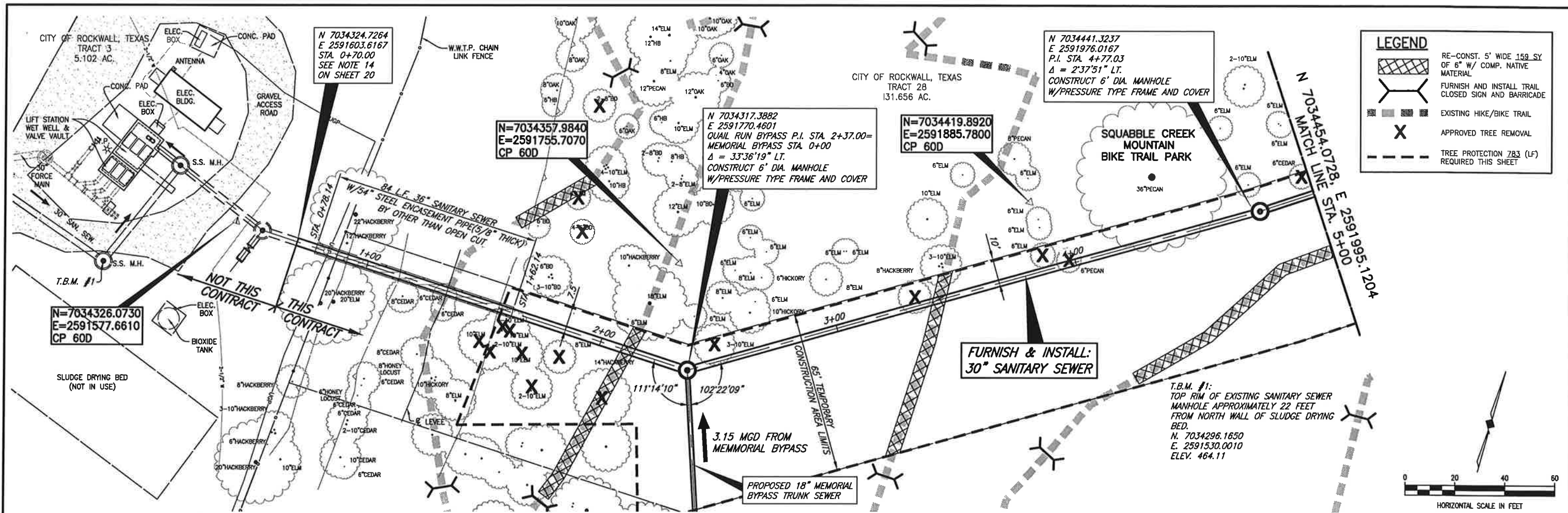


FORCE MAIN ABANDONMENT KEY					
POINT NUMBER	IDENTIFICATION	ADDITIVE ALTERNATE PAY ITEM	PIPE MATERIAL	CONSTRUCTION SCOPE	REMARKS
1	QUAIL RUN EXISTING 6" FORCE MAIN	301	PVC - CITY GIS DATA	ABANDON IN PLACE	THIS PROJECT IF ALTERNATE BID ITEM IS AWARDED
2	QUAIL RUN EXISTING 10" FORCE MAIN	301	PVC - CITY GIS DATA	ABANDON IN PLACE	THIS PROJECT IF ALTERNATE BID ITEM IS AWARDED
3	QUAIL RUN EXISTING 14" FORCE MAIN	301	PVC - RECORD DRAWINGS	ABANDON IN PLACE	THIS PROJECT IF ALTERNATE BID ITEM IS AWARDED
4	NORTH LAKESHORE VALLEY 4" FORCE MAIN	302	PVC - CITY GIS DATA	ABANDON IN PLACE	THIS PROJECT IF ALTERNATE BID ITEM IS AWARDED
5	SQUABBLE CREEK LIFT STATION 30" FORCE MAIN		PVC - CITY GIS DATA	PROTECT	TO REMAIN IN SERVICE
6	QUAIL RUN EXISTING 14" FORCE MAIN STA. 11+00	301	ISOLATION GATE VALVE	REMOVE AND SALVAGE VALVE	SEE RECORD DRAWINGS AT END OF CONSTRUCTION PLANS
7	NORTH LAKESHORE VALLEY 4" FORCE MAIN STA. 11+98	302	AIR VALVE IN MANHOLE ASSUME MH 4' DIA x 8' DEPTH	REMOVE AND SALVAGE VALVE ABANDON MANHOLE	SEE RECORD DRAWINGS AT END OF CONSTRUCTION PLANS
8	TERMINATION OF QUAIL RUN LIFT STATION 14" AND NORTH LAKESHORE VALLEY LIFT STATION 4" FORCE MAIN	301 & 302	CONCRETE MANHOLE	CUT & PLUG 14" AND 4" FORCE MAINS 5-FT OUTSIDE MANHOLE PRESSURE GROUT 14" & 4" OPENINGS IN MANHOLE	SEE RECORD DRAWINGS AT END OF CONSTRUCTION PLANS
9	LAKEVIEW SUMMIT 4" FORCE MAIN	303	PVC - CITY GIS DATA	ABANDON IN PLACE	THIS PROJECT IF ALTERNATE BID ITEM IS AWARDED
10	TERMINATION OF LAKEVIEW SUMMIT LIFT STATION 4" FORCE MAIN	303	CONCRETE MANHOLE	CUT & PLUG 4" FORCE MAIN 5-FT OUTSIDE MANHOLE PRESSURE GROUT 4" OPENING IN MANHOLE	SEE RECORD DRAWINGS AT END OF CONSTRUCTION PLANS
11	MEMORIAL LIFT STATION 8" & 10" FORCE MAINS	304	PVC - CITY GIS DATA	ABANDON IN PLACE	THIS PROJECT IF ALTERNATE BID ITEM IS AWARDED
12	TERMINATION OF QUAIL RUN LIFT STATION 10" AND MEMORIAL LIFT STATIONS 8" & 10" FORCE MAINS	301 & 304	CONCRETE MANHOLE	CUT & PLUG 10", 8" AND 4" FORCE MAINS 5-FT OUTSIDE MANHOLE PRESSURE GROUT 10", 8" & 4" OPENINGS IN MANHOLE	SEE RECORD DRAWINGS AT END OF CONSTRUCTION PLANS
13	TERMINATION OF QUAIL RUN LIFT STATION 6" FORCE MAIN	301	CONCRETE MANHOLE	CUT & PLUG 6" FORCE MAIN 5-FT OUTSIDE MANHOLE PRESSURE GROUT 4" OPENING IN MANHOLE	SEE RECORD DRAWINGS AT END OF CONSTRUCTION PLANS



NOTE:
COORDINATES ARE BASED ON THE TEXAS
STATE PLANE COORDINATE SYSTEM, NAD-83,
TEXAS NORTH CENTRAL ZONE 4202.






City of Rockwall
 Public Works Department
 Engineering Division
APPROVED FOR CONSTRUCTION
 Capital Improvement Project
 City Engineer: *[Signature]*
 Date: 10/09/2017

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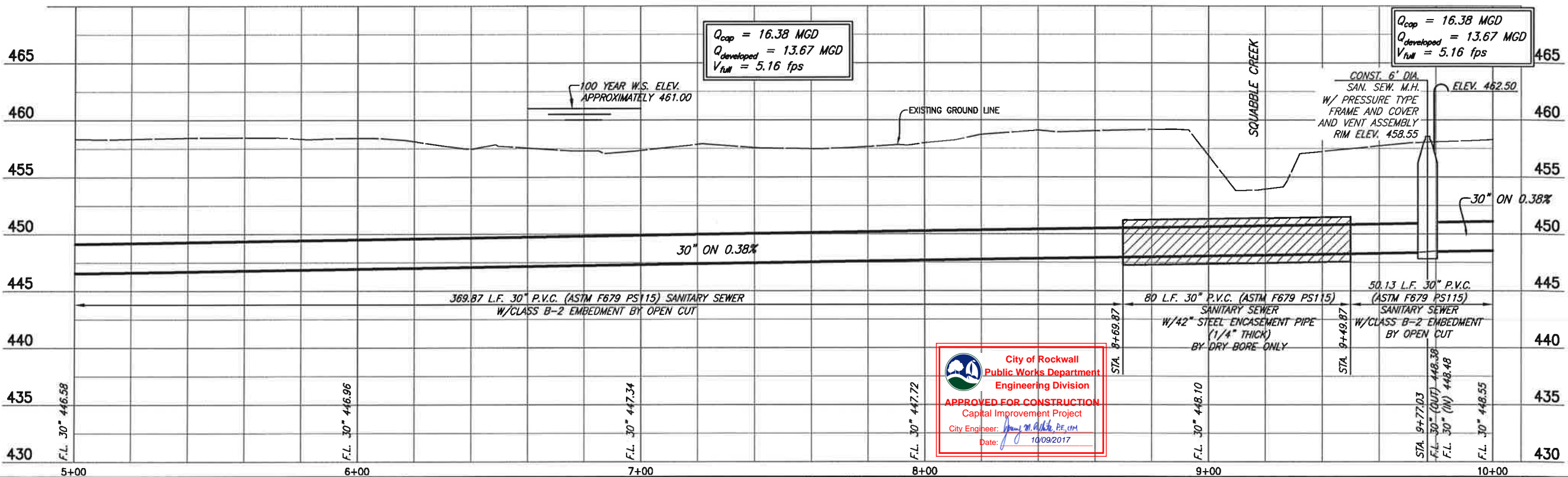
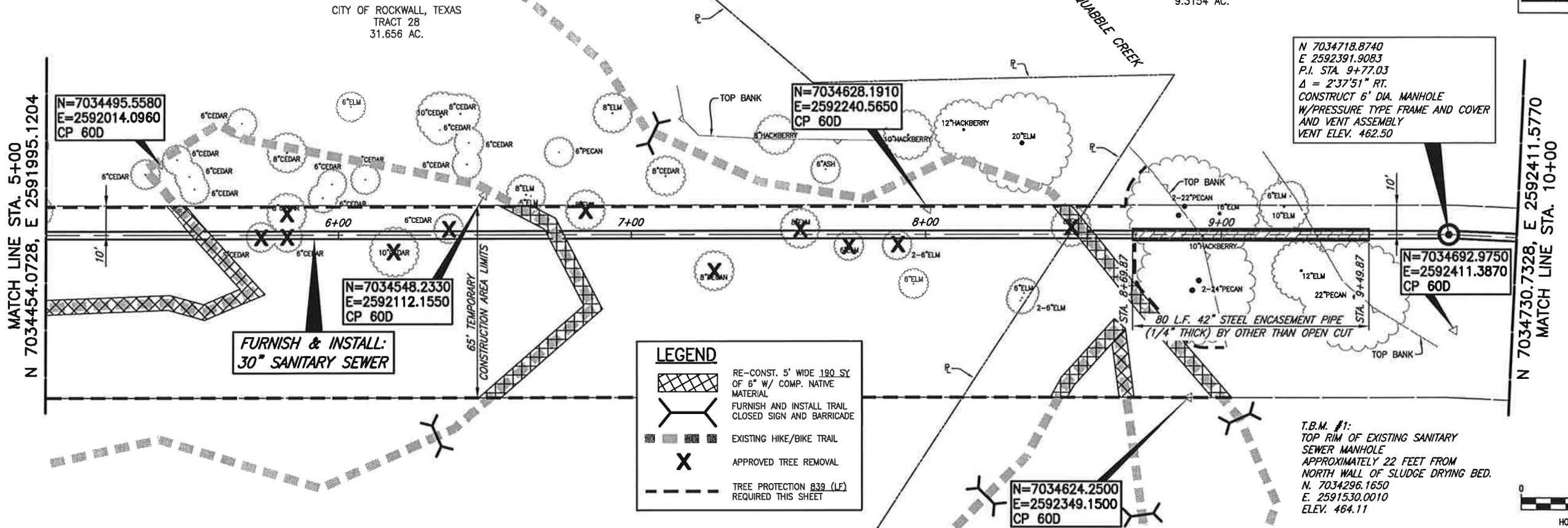


Matthew Hickey
 7/28/17

CITY OF ROCKWALL, TEXAS
QUAIL RUN & MEMORIAL BYPASS TRUNK SEWERS
QUAIL RUN BYPASS TRUNK SEWER
PLAN AND PROFILE
STA. 0+62.64 TO STA. 5+00

BHC
 PROJECT NO.
 2015-144
 July, 2017
 SHEET NO.
4

CITY OF ROCKWALL, TEXAS
TRACT 28
INST. NO 2009-00410252
9.3154 AC.



City of Rockwall
Public Works Department
Engineering Division
APPROVED FOR CONSTRUCTION
Capital Improvement Project
City Engineer: *[Signature]* PE, CM
Date: 10/09/2017

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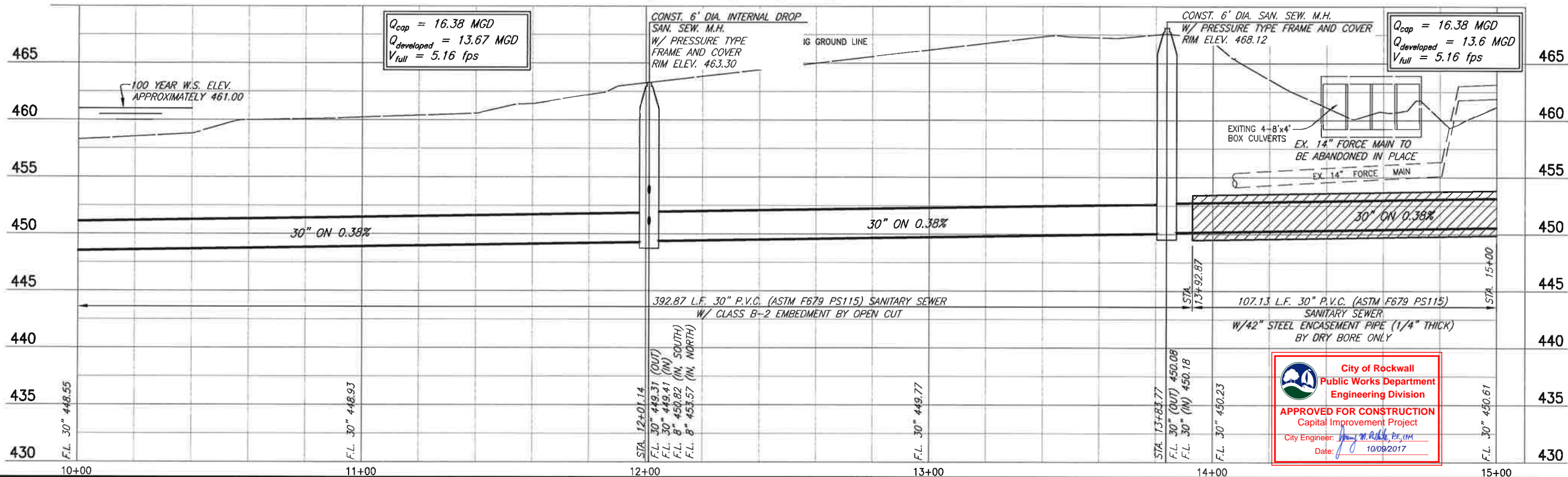
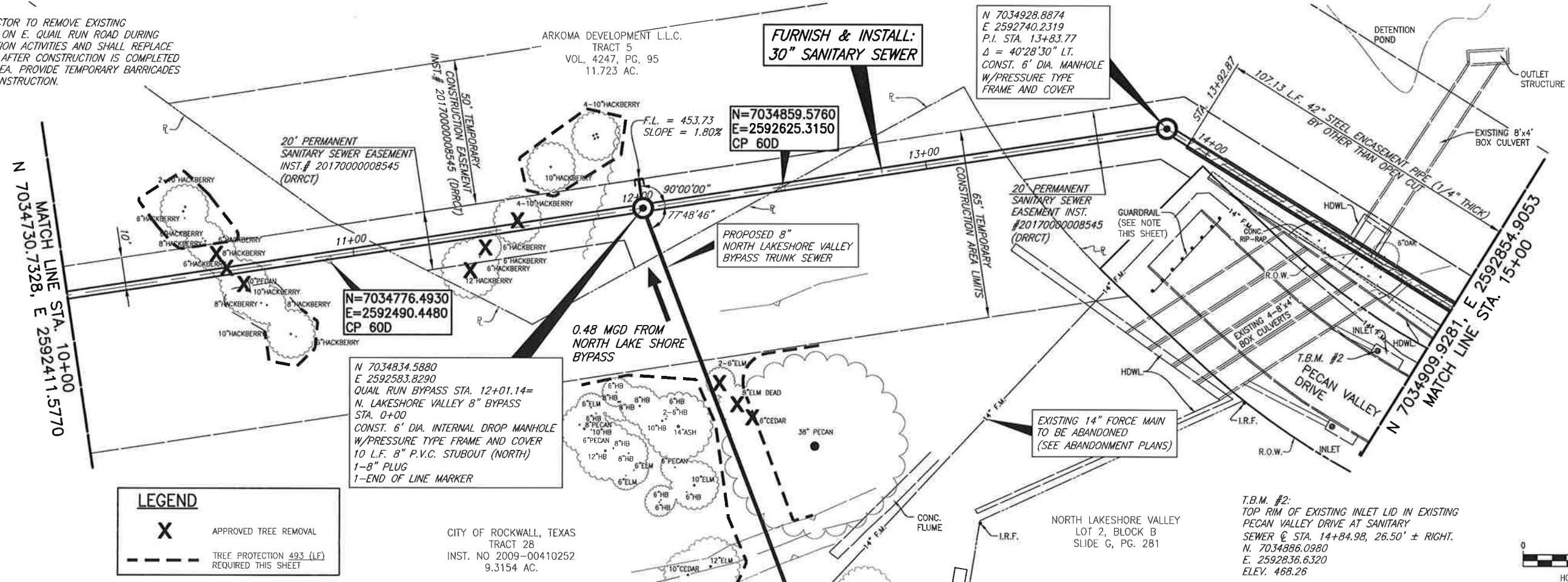
Matthew Hickey
7/28/17

CITY OF ROCKWALL, TEXAS
QUAIL RUN & MEMORIAL BYPASS TRUNK SEWERS
QUAIL RUN BYPASS TRUNK SEWER
PLAN AND PROFILE
STA. 5+00 TO STA. 10+00

BHC
PROJECT NO.
2015-144
July, 2017

SHEET NO.
5

NOTE:
1. CONTRACTOR TO REMOVE EXISTING GUARDRAIL ON E. QUAIL RUN ROAD DURING CONSTRUCTION ACTIVITIES AND SHALL REPLACE GUARDRAIL AFTER CONSTRUCTION IS COMPLETED IN THIS AREA. PROVIDE TEMPORARY BARRICADES DURING CONSTRUCTION.



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Matt Hinkley
7/28/17

CITY OF ROCKWALL, TEXAS
QUAIL RUN & MEMORIAL BYPASS TRUNK SEWERS
QUAIL RUN BYPASS TRUNK SEWER
PLAN AND PROFILE
STA. 10+00 TO STA. 15+00

BHC
PROJECT NO.
2015-144

July, 2017

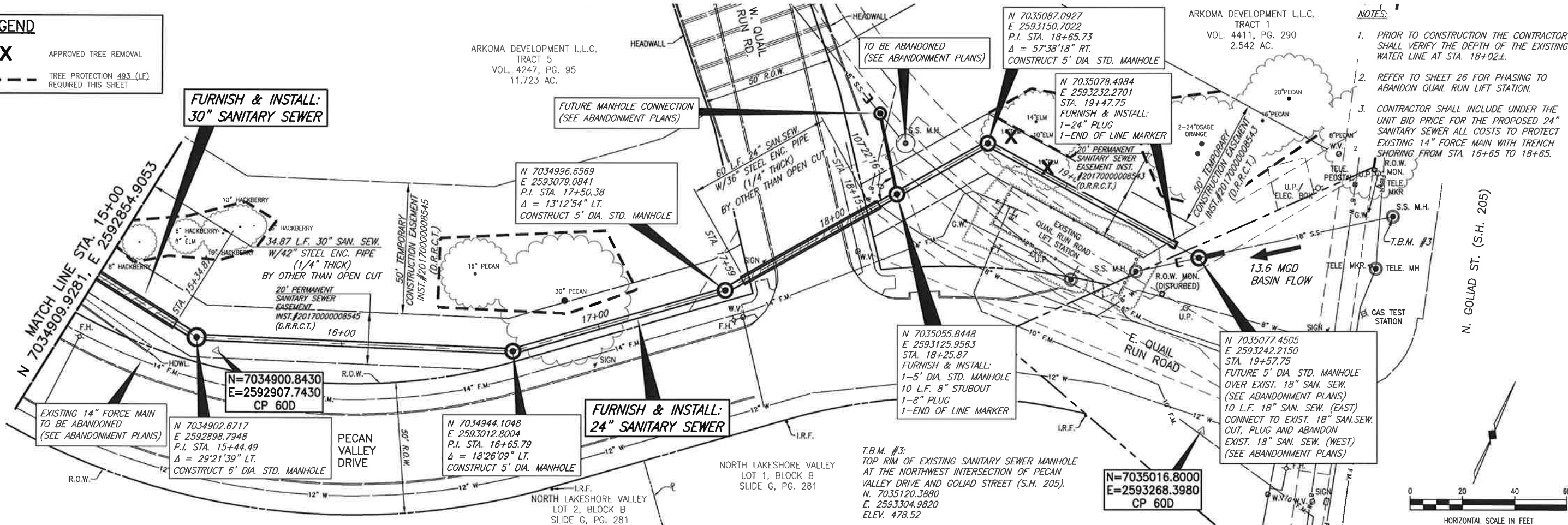
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6

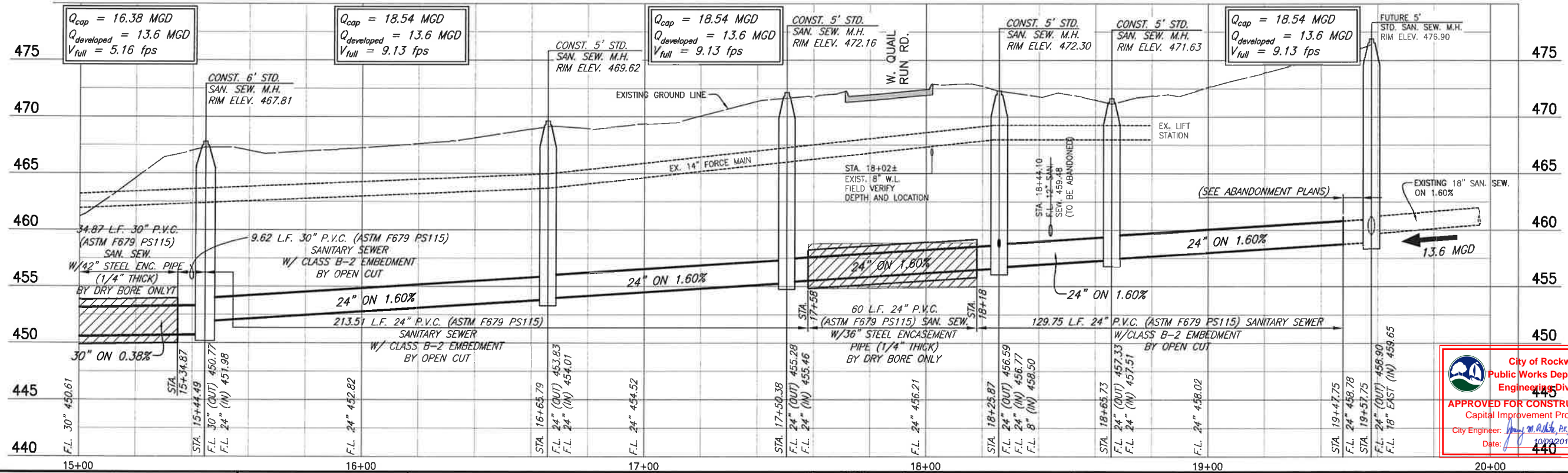
LEGEND

X APPROVED TREE REMOVAL

--- TREE PROTECTION 493 (LF) REQUIRED THIS SHEET



- NOTES:**
1. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL VERIFY THE DEPTH OF THE EXISTING WATER LINE AT STA. 18+02±.
 2. REFER TO SHEET 26 FOR PHASING TO ABANDON QUAIL RUN LIFT STATION.
 3. CONTRACTOR SHALL INCLUDE UNDER THE UNIT BID PRICE FOR THE PROPOSED 24" SANITARY SEWER ALL COSTS TO PROTECT EXISTING 14" FORCE MAIN WITH TRENCH SHORING FROM STA. 16+65 TO 18+65.



City of Rockwall
Public Works Department
Engineering Division
APPROVED FOR CONSTRUCTION
Capital Improvement Project
City Engineer: *[Signature]*
Date: 10/09/2017

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Matthew Hickey
7/28/17

CITY OF ROCKWALL, TEXAS
QUAIL RUN & MEMORIAL BYPASS TRUNK SEWERS
QUAIL RUN BYPASS TRUNK SEWER
PLAN AND PROFILE
STA. 15+00 TO STA. 19+47.75

BHC
PROJECT NO.
2015-144
SHEET NO.
7
July, 2017

ARKOMA DEVELOPMENT L.L.C.
TRACT 5
VOL. 4247, PG. 95
11.723 AC.

N=7034859.5760
E=2592625.3150
CP 60D

N 7034834.5880
E 2592583.8290
N. LAKESHORE VALLEY BYPASS STA. 0+00.00=
QUAIL RUN BYPASS STA. 12+01.14

REMOVE AND REPLACE
(JOINT TO JOINT)
6 S.Y. CONCRETE SIDEWALK

N 7034689.2250
E 2592731.9065
STA. 2+07.34
CONSTRUCT 4' DIA. STD. MANHOLE
10 L.F. 8" SAN. SEW. (EAST)

N 7034665.1688
E 2592743.3364
STA. 2+32.69
CONNECT TO EXIST.
N. LAKESHORE VALLEY
LIFT STATION WET WELL
SEE NOTE THIS SHEET

N 7034672.4510
E 2592736.4803
STA. 2+22.69
FURNISH & INSTALL:
1-8" PLUG
1-END OF LINE MARKER

FURNISH & INSTALL:
8" SANITARY SEWER

FURNISH & INSTALL
7 S.Y. GROUTED ROCK RIP-RAP
(MIN. 12" THICK)

14" FORCEMAIN TO
BE ABANDONED
(SEE ABADONMENT PLANS)

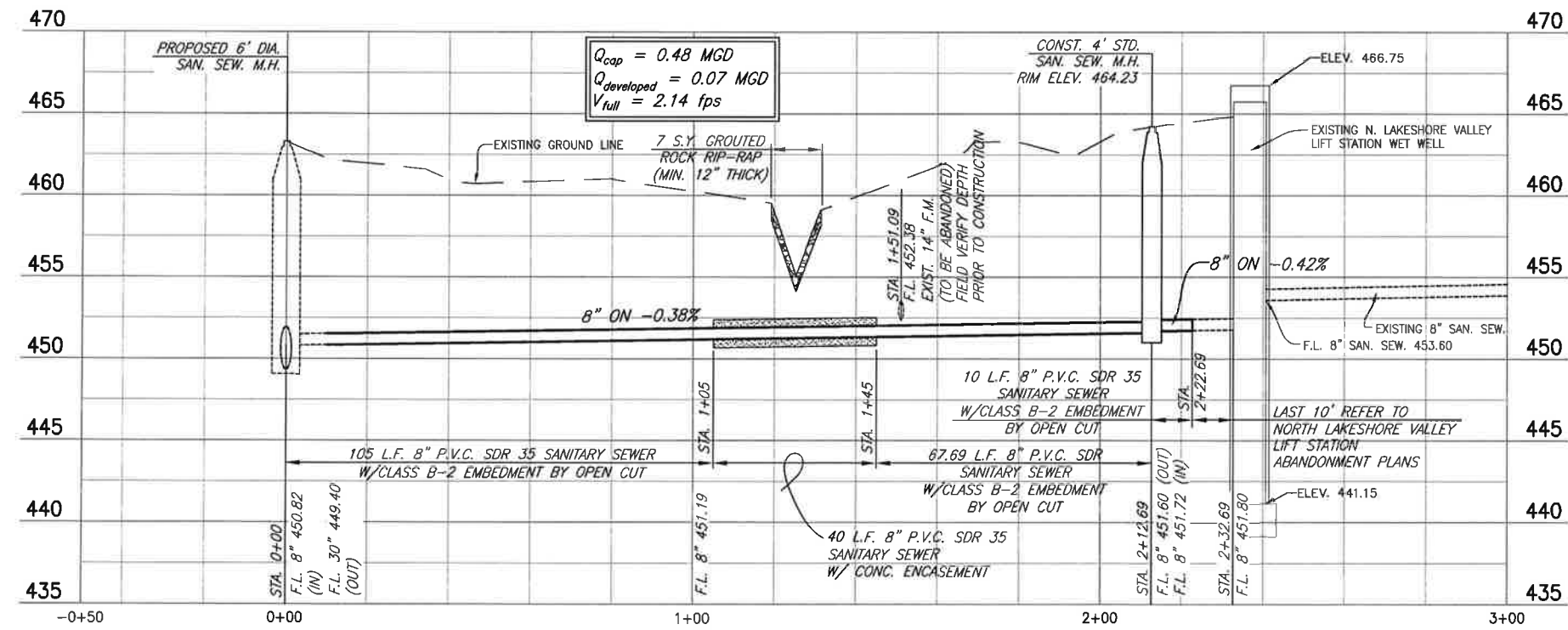
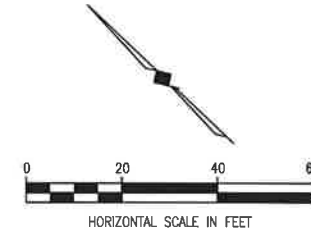
CITY OF ROCKWALL, TEXAS
TRACT 28
INST. NO 2009-00410252
9.3154 AC.

- NOTES:
1. THE EXISTING NORTH LAKESHORE VALLEY LIFT STATION WET WELL TO BE CONVERTED INTO A MANHOLE. REFER TO NORTH LAKESHORE VALLEY ABANDONMENT PLANS FOR PHASING NOTES.
 2. CONTRACTOR SHALL FIELD VERIFY ELEVATION OF EXISTING 14" FORCE MAIN AT STA. 1+51. IF THE 14" FORCE MAIN IS IN CONFLICT WITH THE PROPOSED 8" N. LAKESHORE VALLEY 8" GRAVITY LINE, THE 8" GRAVITY LINE SHALL BE TERMINATED AT STA. 1+51 WITH AN 8" PLUG AND END OF LINE MARKER. IN THIS CIRCUMSTANCE, THE SEGMENT OF 8" SANITARY SEWER FROM STA. 1+51 TO 2+22 WILL BE SHIFTED TO THE N. LAKESHORE VALLEY LIFT STATION ABANDONMENT (PAY ITEM 302). IF NOT IN CONFLICT, CONSTRUCT TO STA. 2+22 PER THE PLANS.

LEGEND

X APPROVED TREE REMOVAL

--- TREE PROTECTION 306 (LF) REQUIRED THIS SHEET



NOTE:
 $Q_{developed}$ IS BASED ON NORTH LAKESHORE VALLEY LIFT STATION RECORD DRAWINGS BY KIMLEY-HORN DATED JANUARY 2009.

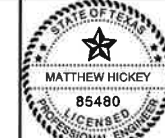
City of Rockwall
Public Works Department
Engineering Division

APPROVED FOR CONSTRUCTION
Capital Improvement Project

City Engineer: *Matthew Hickey*
Date: 10/09/2017

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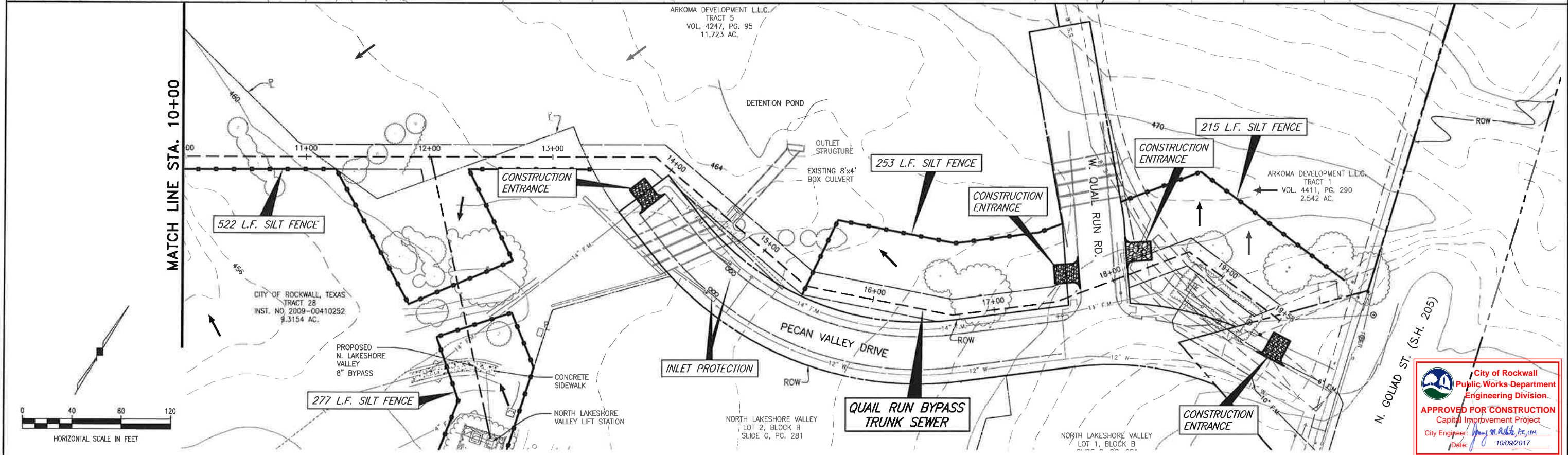
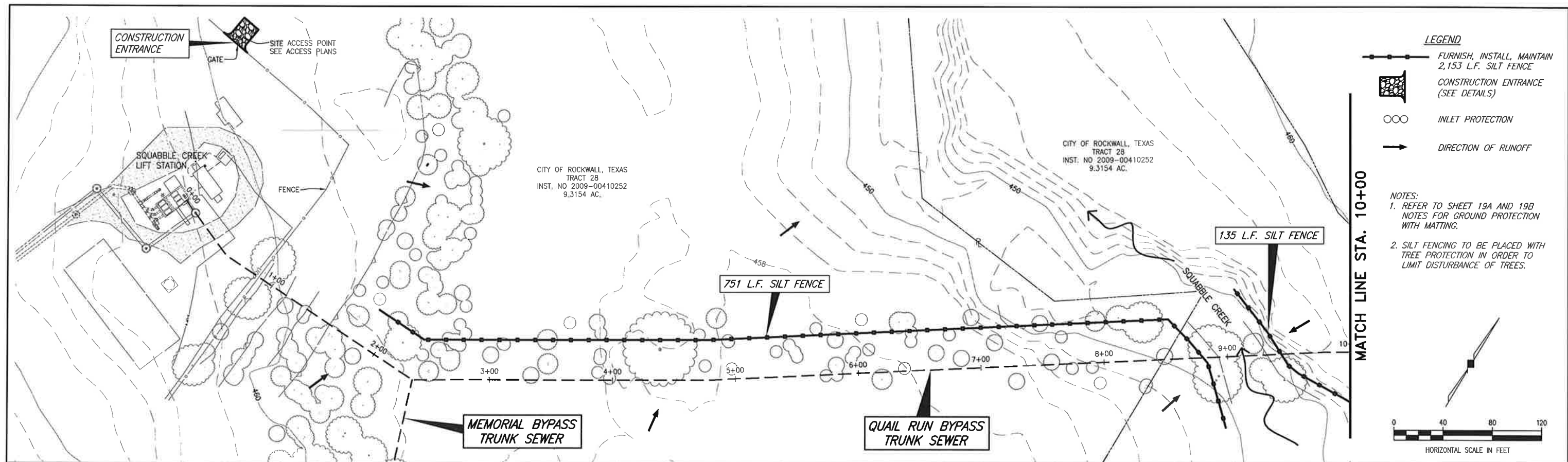
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PROFESSIONAL ENGINEERS
Texas Firm F526
11910 Greenville Ave., Suite 600
Dallas, Texas 75243 (214) 361-7900



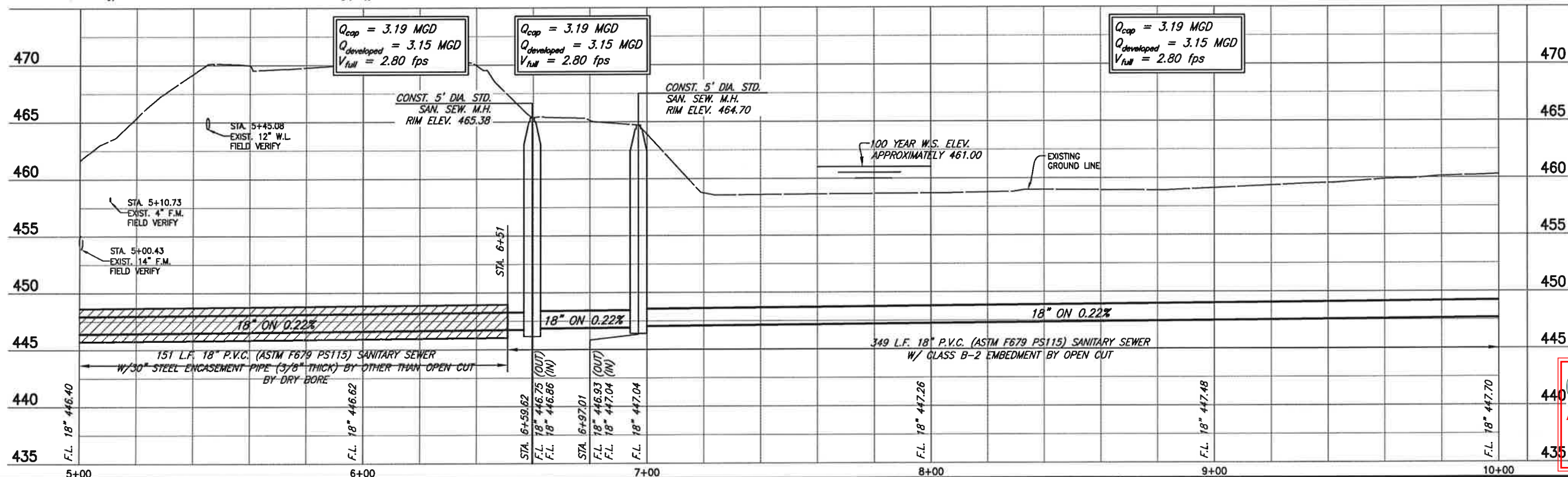
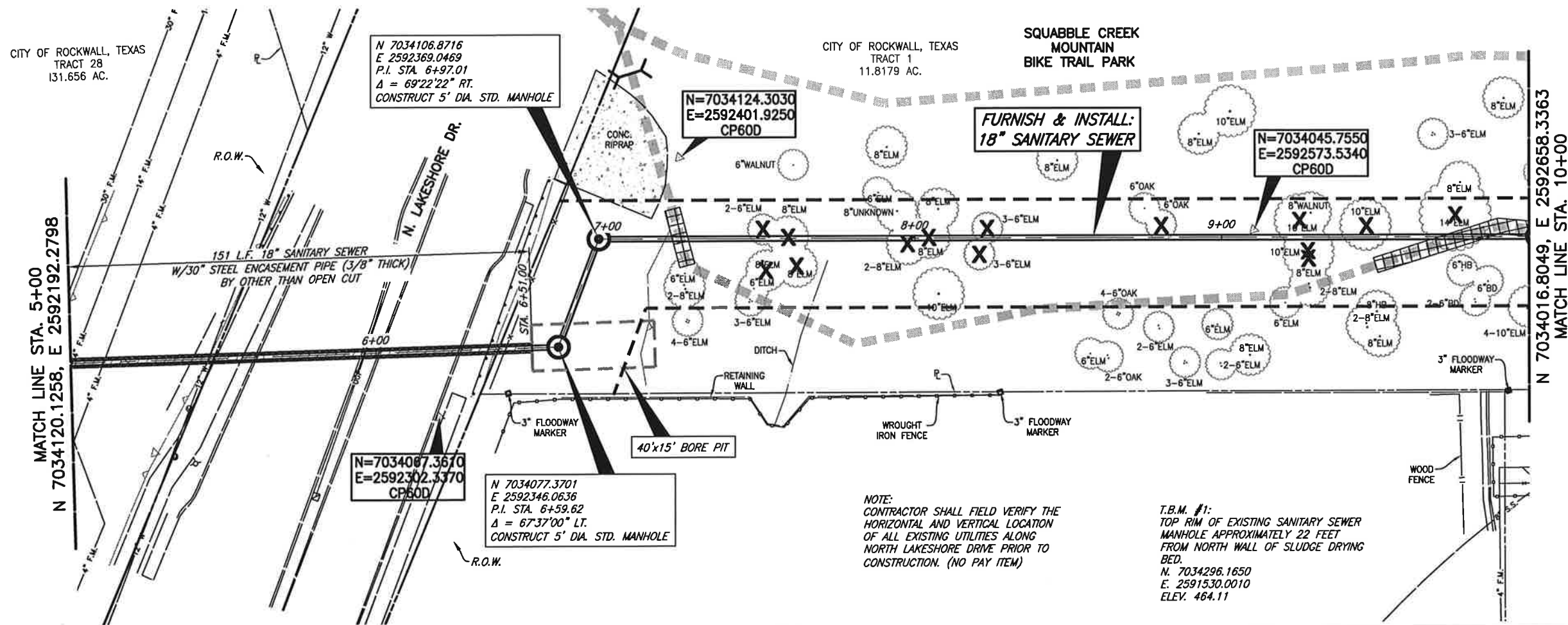
Matthew Hickey
7/28/17

CITY OF ROCKWALL, TEXAS
QUAIL RUN & MEMORIAL BYPASS TRUNK SEWERS
N. LAKESHORE VALLEY LIFT STATION BYPASS
8-INCH SANITARY SEWER

BHC
PROJECT NO.
2015-144
SHEET NO.
8
July, 2017



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				July, 2017			



City of Rockwall
Public Works Department
Engineering Division
APPROVED FOR CONSTRUCTION
Capital Improvement Project
City Engineer: *[Signature]*
Date: 10/09/2017

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
PROFESSIONAL ENGINEERS
TBPE Firm No. 526; TBPLS Firm No. 10031800
11910 Greenville Ave., Suite 600
Dallas, Texas 75243 (214) 361-7900

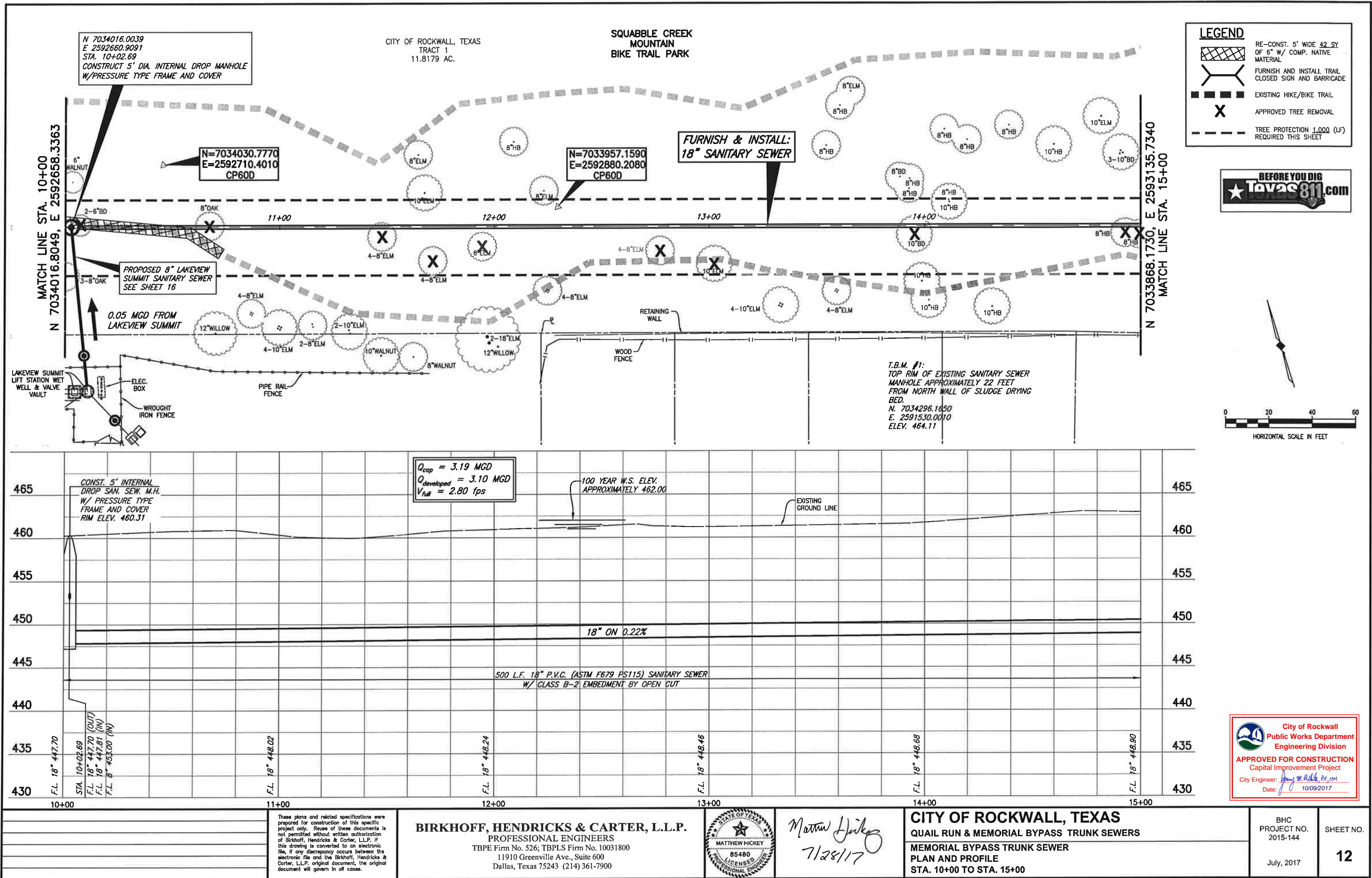


Matthew Hickey
7/28/17

CITY OF ROCKWALL, TEXAS
QUAIL RUN & MEMORIAL BYPASS TRUNK SEWERS
MEMORIAL BYPASS TRUNK SEWER
PLAN AND PROFILE
STA. 5+00 TO STA. 10+00

BHC
PROJECT NO.
2015-144
July, 2017

SHEET NO.
11

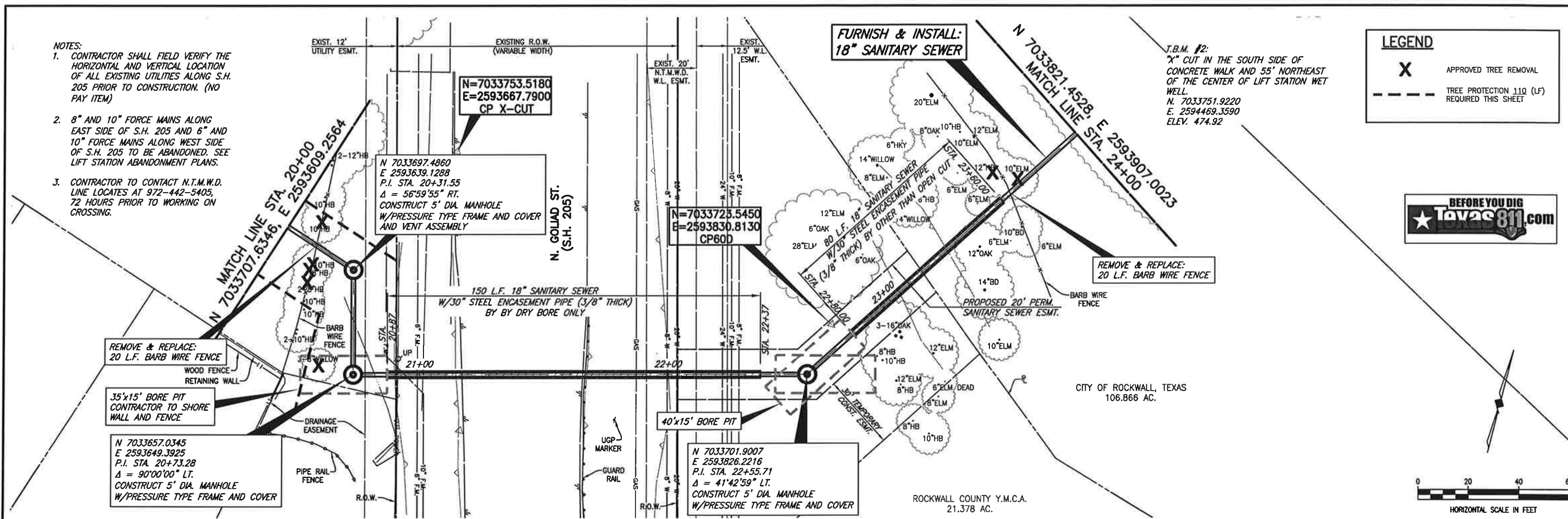
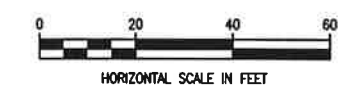


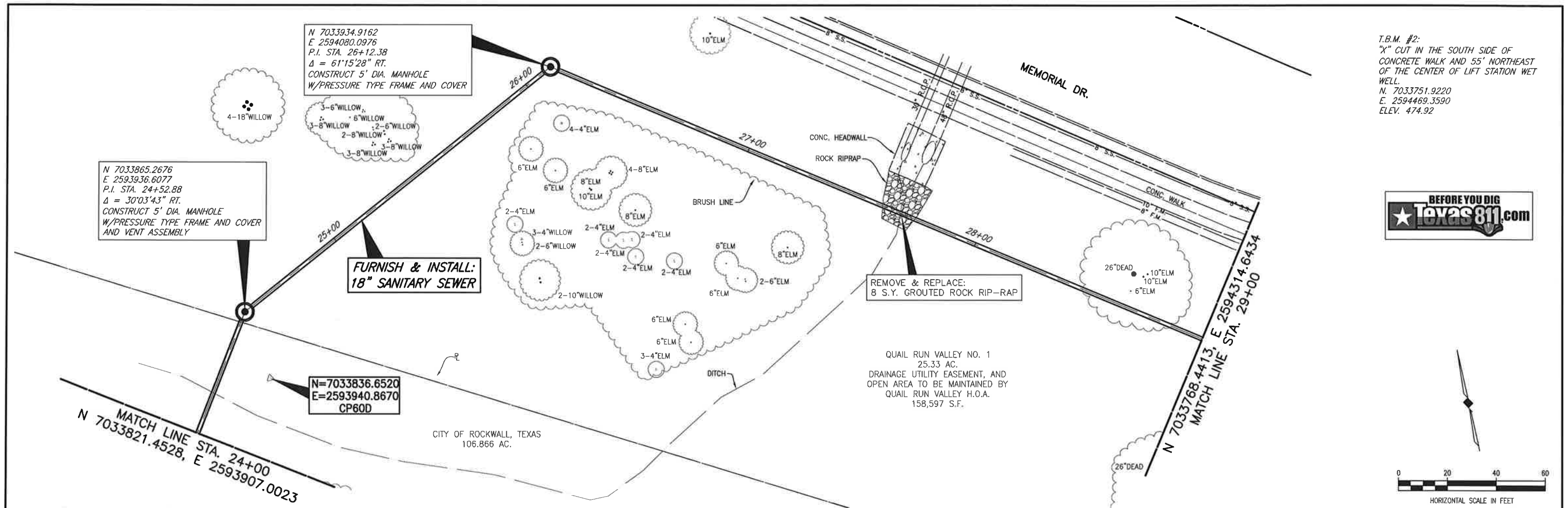
- NOTES:
1. CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES ALONG S.H. 205 PRIOR TO CONSTRUCTION. (NO PAY ITEM)
 2. 8" AND 10" FORCE MAINS ALONG EAST SIDE OF S.H. 205 AND 6" AND 10" FORCE MAINS ALONG WEST SIDE OF S.H. 205 TO BE ABANDONED. SEE LIFT STATION ABANDONMENT PLANS.
 3. CONTRACTOR TO CONTACT N.T.M.W.D. LINE LOCATES AT 972-442-5405, 72 HOURS PRIOR TO WORKING ON CROSSING.

LEGEND

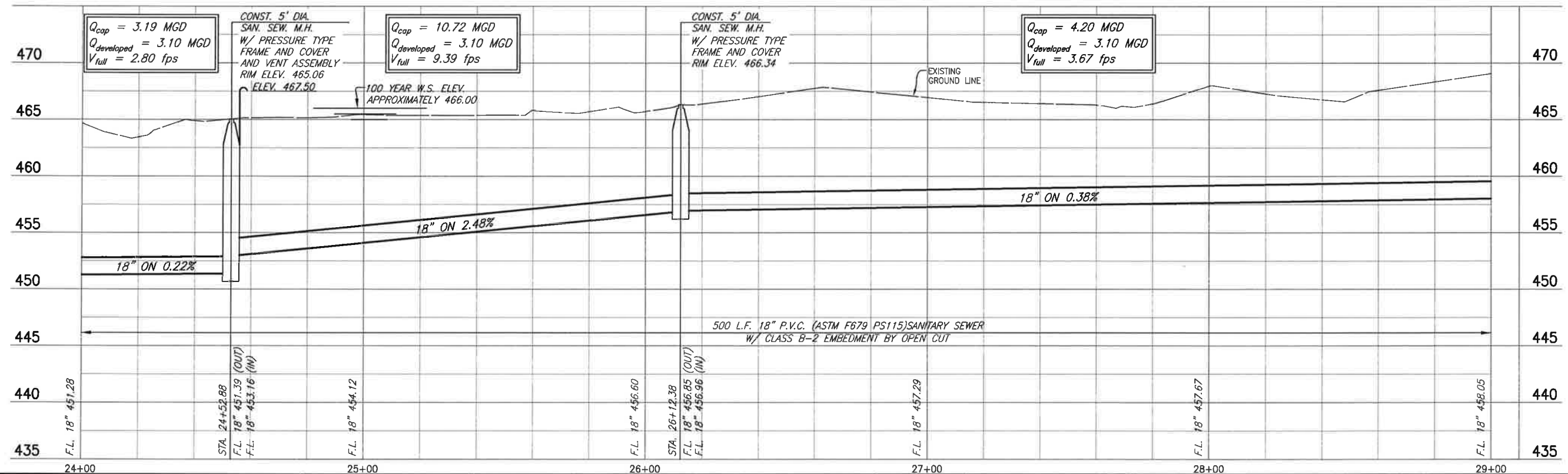
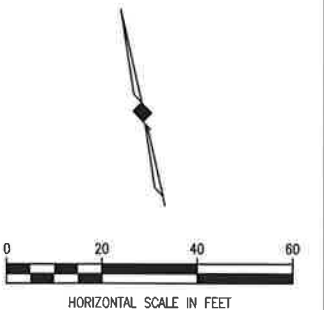
X APPROVED TREE REMOVAL

--- TREE PROTECTION 110 (LF) REQUIRED THIS SHEET





T.B.M. #2:
 "X" CUT IN THE SOUTH SIDE OF
 CONCRETE WALK AND 55' NORTHEAST
 OF THE CENTER OF LIFT STATION WET
 WELL.
 N. 7033751.9220
 E. 2594469.3590
 ELEV. 474.92



City of Rockwall
 Public Works Department
 Engineering Division
APPROVED FOR CONSTRUCTION
 Capital Improvement Project
 City Engineer: *James M. Adkins, P.E., CM*
 Date: 10/09/2017

T.B.M. #2:
"X" CUT IN THE SOUTH SIDE OF
CONCRETE WALK AND 55' NORTHEAST
OF THE CENTER OF LIFT STATION WET
WELL.
N. 7033751.9220
E. 2594469.3590
ELEV. 474.92

N 7033735.1980
E 2594449.9580
STA. 30+77.61
EXISTING CONNECTION TO
BE CONSTRUCTED WITH
MEMORIAL LIFT STATION ABANDONMENT

N 7033727.4315
E 2594443.6586
STA. 30+67.61
FURNISH & INSTALL:
1-18" PLUG
1-END OF LINE MARKER

FURNISH & INSTALL:
18" SANITARY SEWER

N 7033695.3428
E 2594417.6316
P.I. STA. 30+26.29
 $\Delta = 86'19'15''$ LT.
CONSTRUCT 5' DIA. MANHOLE
W/PRESSURE TYPE FRAME AND COVER

REMOVE & RESET:
20 L.F. CHAIN
LINK FENCE

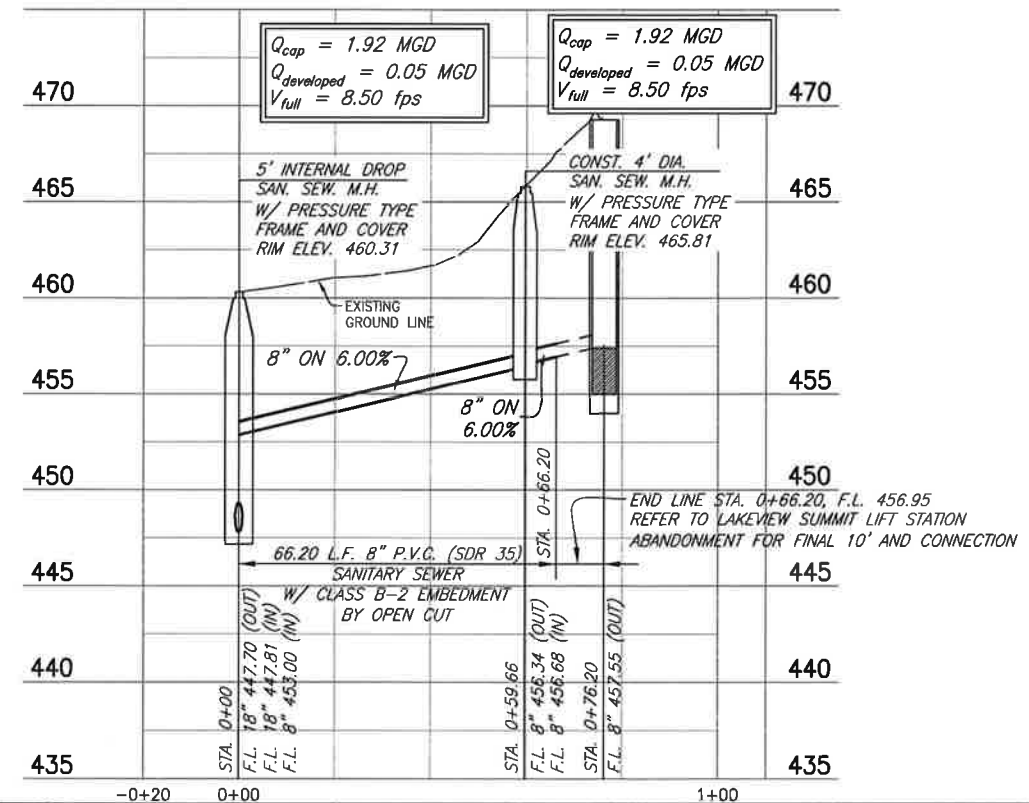
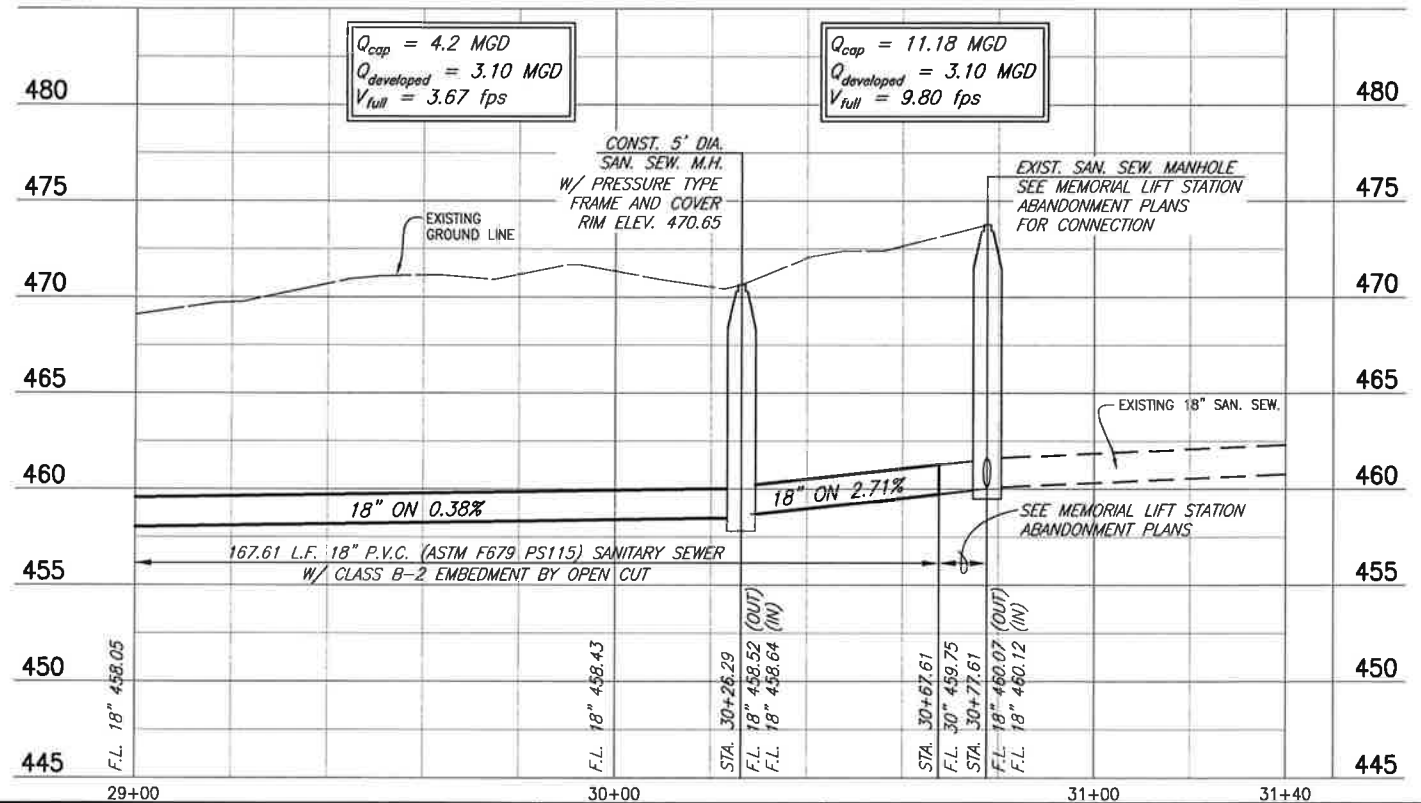
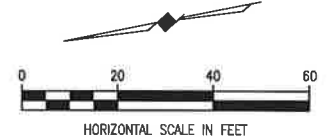
QUAIL RUN VALLEY NO. 1
25.33 AC.
DRAINAGE UTILITY EASEMENT, AND
OPEN AREA TO BE MAINTAINED BY
QUAIL RUN VALLEY H.O.A.
158,597 S.F.

N 7034016.0039
E 2592660.9091
STA. 0+00.00
5' DIA. INTERNAL DROP MANHOLE
W/PRESSURE TYPE FRAME AND COVER

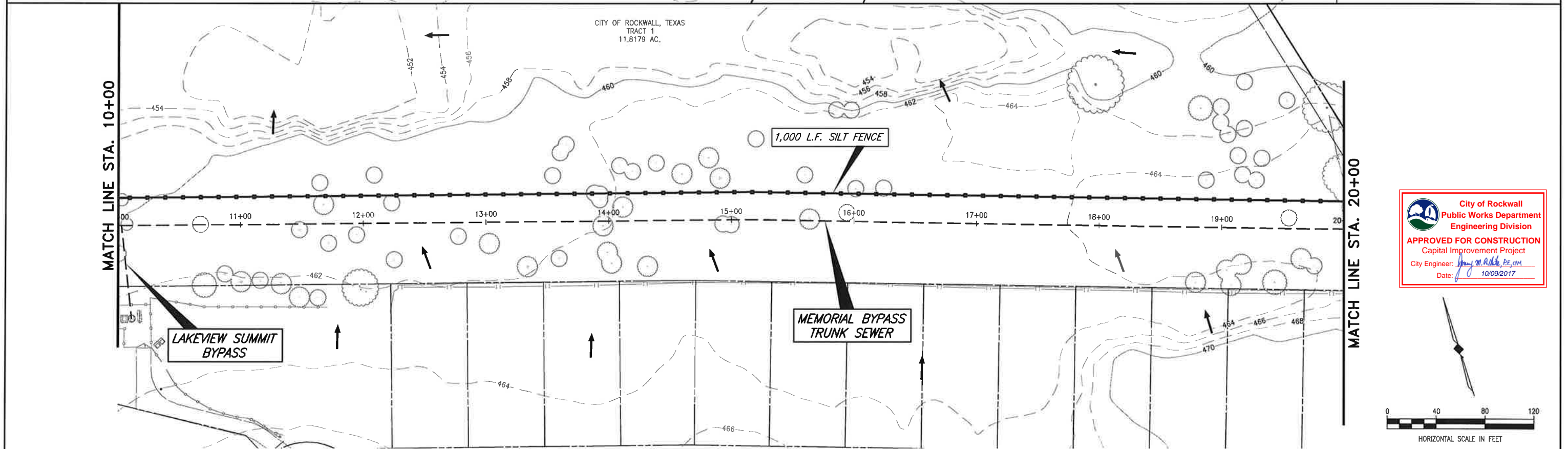
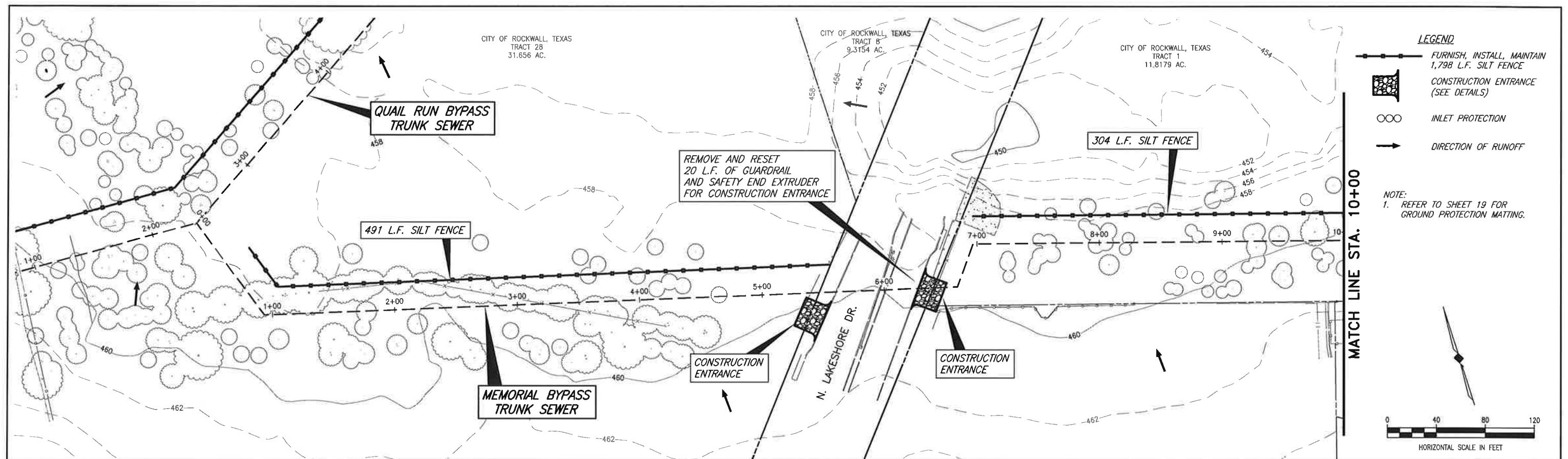
FURNISH & INSTALL:
8" SANITARY SEWER

N 7033951.1093
E 2592647.8426
STA. 0+66.20
FURNISH & INSTALL:
1-8" PLUG
1-END OF LINE MARKER

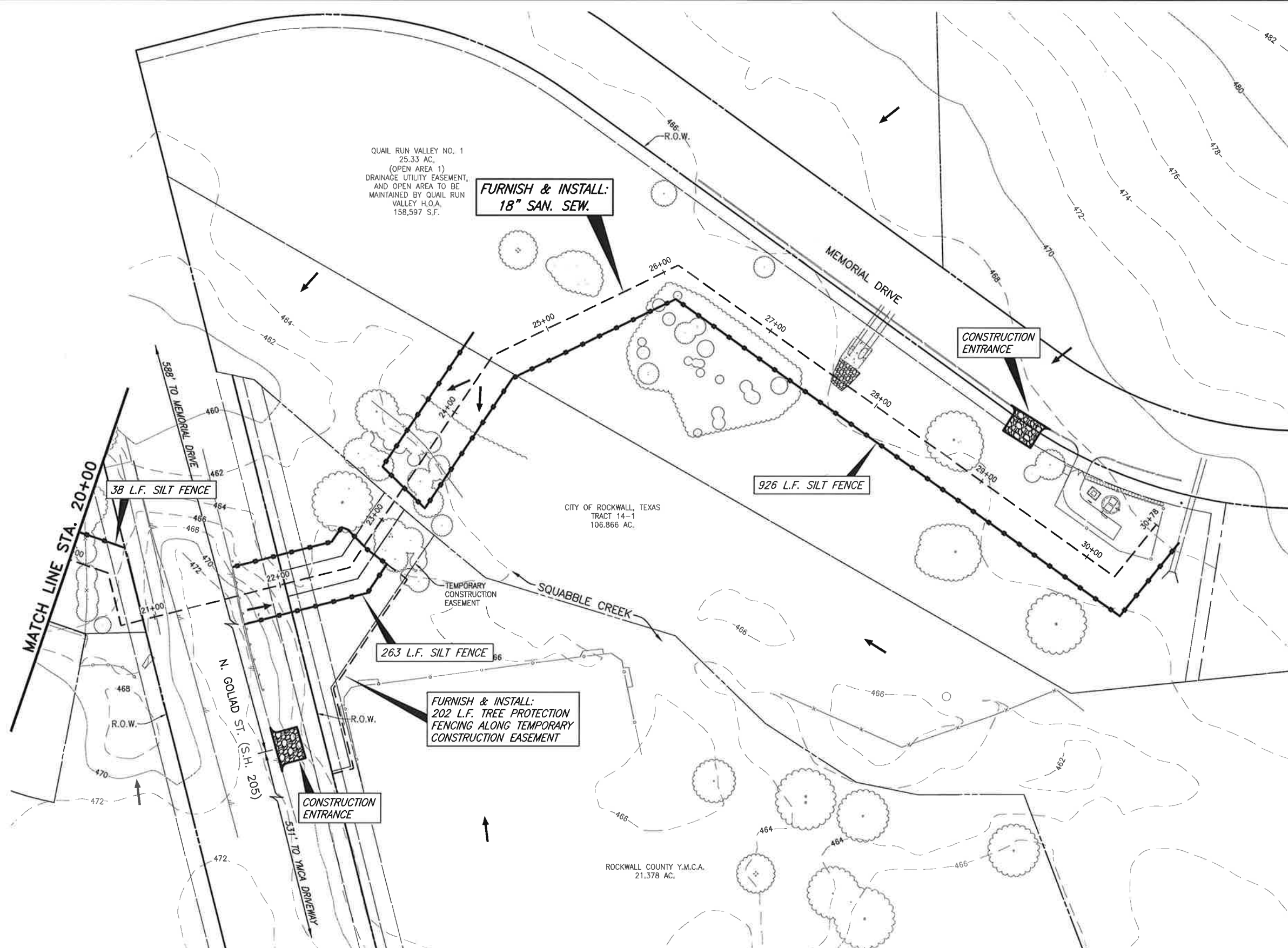
N 7033957.5211
E 2592649.1336
STA. 0+59.66
CONSTRUCT 4' DIA. MANHOLE
W/PRESSURE TYPE FRAME AND COVER



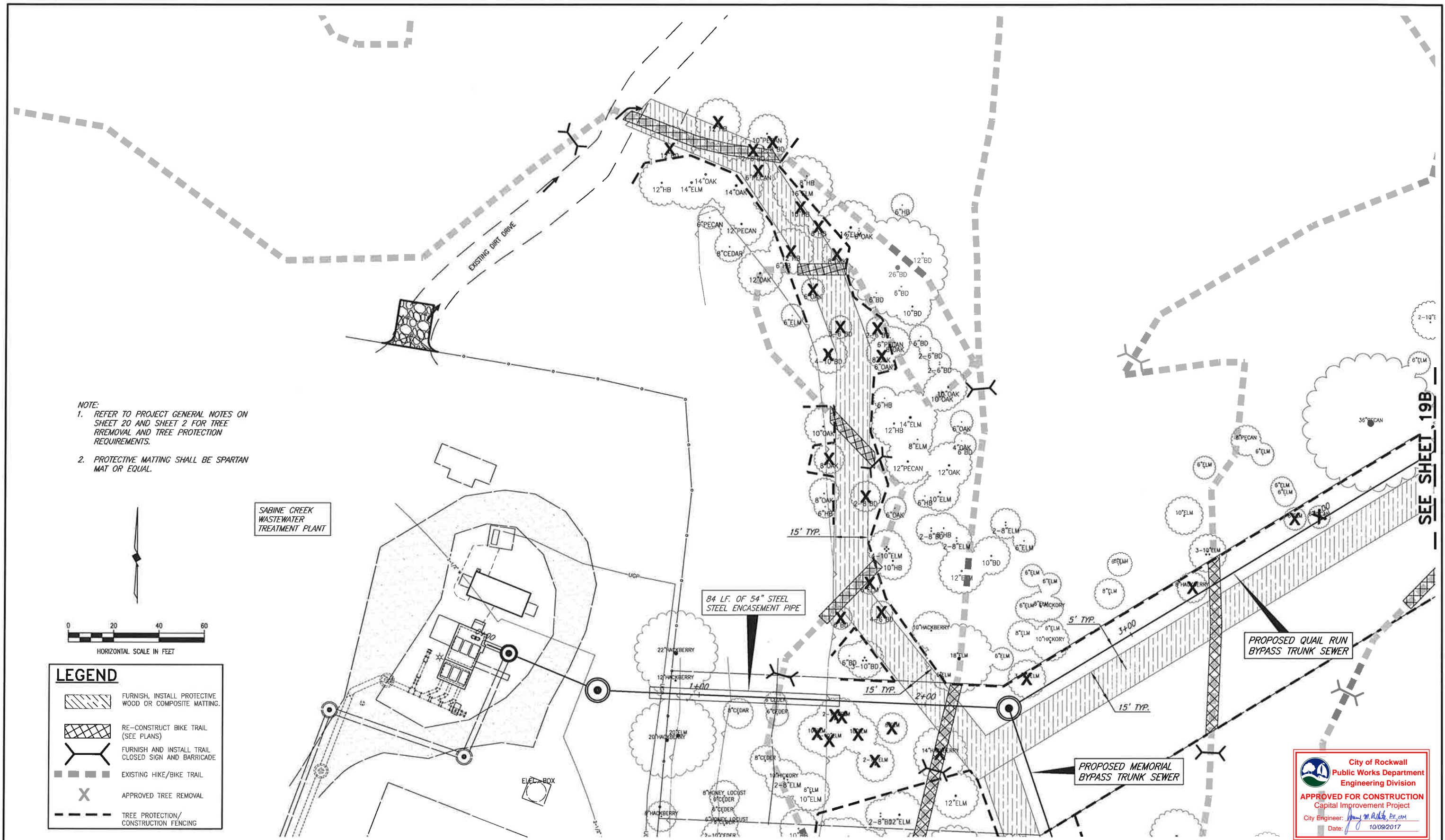
City of Rockwall
Public Works Department
Engineering Division
APPROVED FOR CONSTRUCTION
Capital Improvement Project
City Engineer: *Jeffrey M. Adair, PE, CM*
Date: 10/09/2017



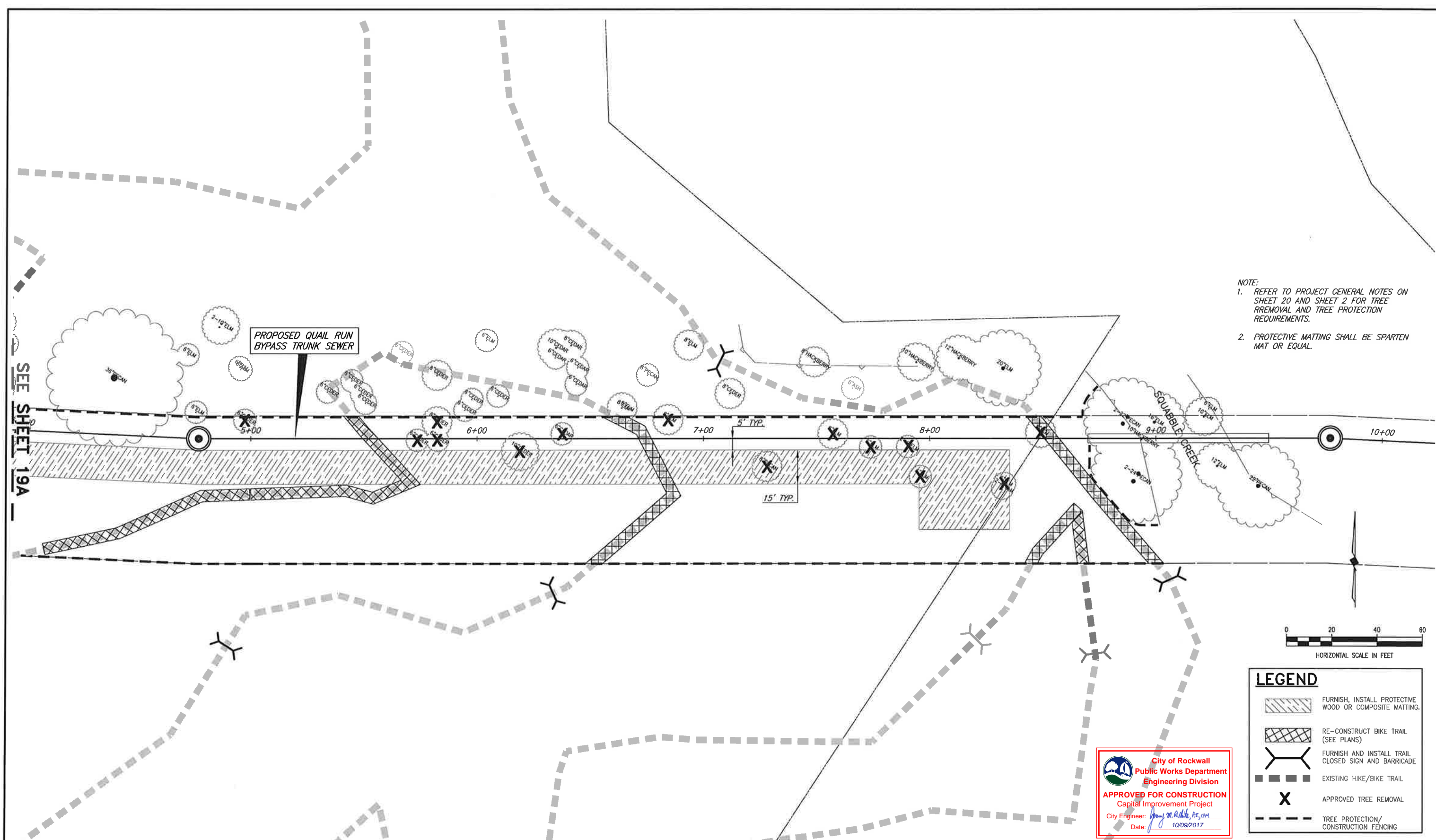
<p>These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Carter, L.L.P. If this drawing is converted to an electronic file, if any discrepancy occurs between the electronic file and the Birkhoff, Hendricks & Carter, L.L.P. original document, the original document will govern in all cases.</p>	<p>BIRKHOFF, HENDRICKS & CARTER, L.L.P. PROFESSIONAL ENGINEERS Texas Firm F526 11910 Greenville Ave., Suite 600 Dallas, Texas 75243 (214) 361-7900</p>	<p>CITY OF ROCKWALL, TEXAS QUAIL RUN & MEMORIAL BYPASS TRUNK SEWERS EROSION CONTROL PLAN (MEMORIAL)</p>	<p>BHC PROJECT NO 2015-144 July, 2017</p>	<p>SHEET NO 17</p>
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City of Rockwall
Public Works Department
Engineering Division
APPROVED FOR CONSTRUCTION
Capital Improvement Project
City Engineer: *Greg M. White, PE, CEM*
Date: 10/09/2017



<div>REVISIONS</div> <table border="1"><tr><th>NO.</th><th>DATE</th><th>DESCRIPTION</th></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></table>	NO.	DATE	DESCRIPTION										<div>These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Carter, L.L.P. If this drawing is converted to an electronic file, if any discrepancy occurs between the electronic file and the Birkhoff, Hendricks & Carter, L.L.P. original document, the original document will govern in all cases.</div>	<div>BIRKHOFF, HENDRICKS & CARTER, L.L.P. PROFESSIONAL ENGINEERS TBPE Firm No. 526; TBPLS Firm No. 10031800 11910 Greenville Ave., Suite 600 Dallas, Texas 75243 (214) 361-7900</div>	<div></div> <div>Matthew Hickey 7/28/17</div>	<div>CITY OF ROCKWALL, TEXAS QUAIL RUN & MEMORIAL BYPASS TRUNK SEWERS</div>	<div>BHC PROJECT NO. 2015-144</div>	<div>SHEET NO</div>
	NO.	DATE	DESCRIPTION															
<div>QUAIL RUN & MEMORIAL BYPASS TRUNK SEWERS ACCESS PLAN FROM SQUABBLE CREEK LIFT STATION TO QUAIL RUN TRUNK SEWER</div>	<div>July, 2017</div>	<div>19A</div>																

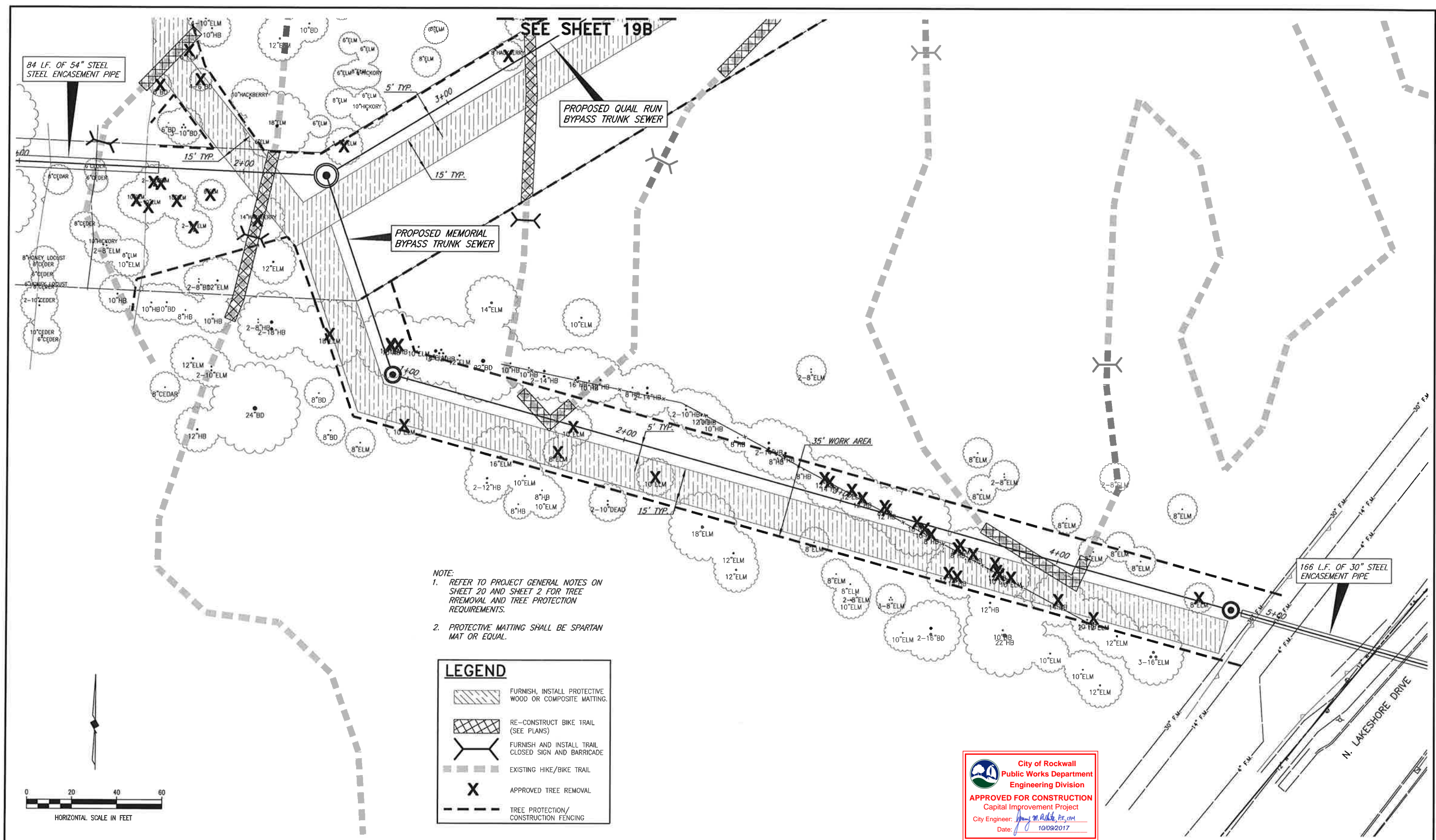


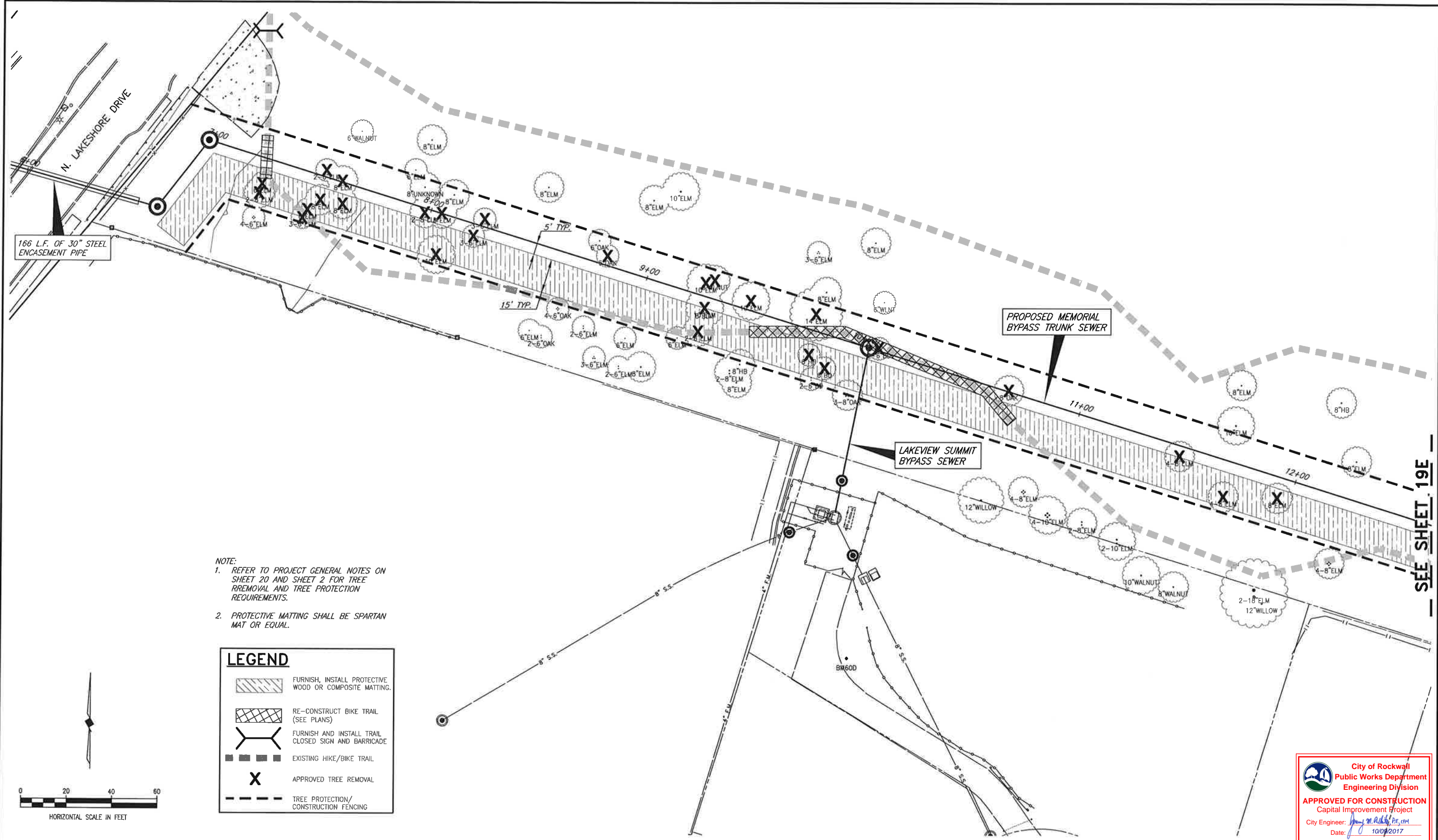
- NOTE:
1. REFER TO PROJECT GENERAL NOTES ON SHEET 20 AND SHEET 2 FOR TREE REMOVAL AND TREE PROTECTION REQUIREMENTS.
 2. PROTECTIVE MATTING SHALL BE SPARTEN MAT OR EQUAL.

LEGEND

- FURNISH, INSTALL PROTECTIVE WOOD OR COMPOSITE MATTING.
- RE-CONSTRUCT BIKE TRAIL (SEE PLANS)
- FURNISH AND INSTALL TRAIL CLOSED SIGN AND BARRICADE
- EXISTING HIKE/BIKE TRAIL
- APPROVED TREE REMOVAL
- TREE PROTECTION/CONSTRUCTION FENCING

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Public Works Department
Engineering Division
APPROVED FOR CONSTRUCTION
Capital Improvement Project
City Engineer: *John M. Ricks, PE, CM*
Date: *10/09/2017*

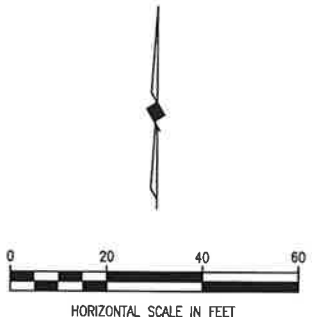




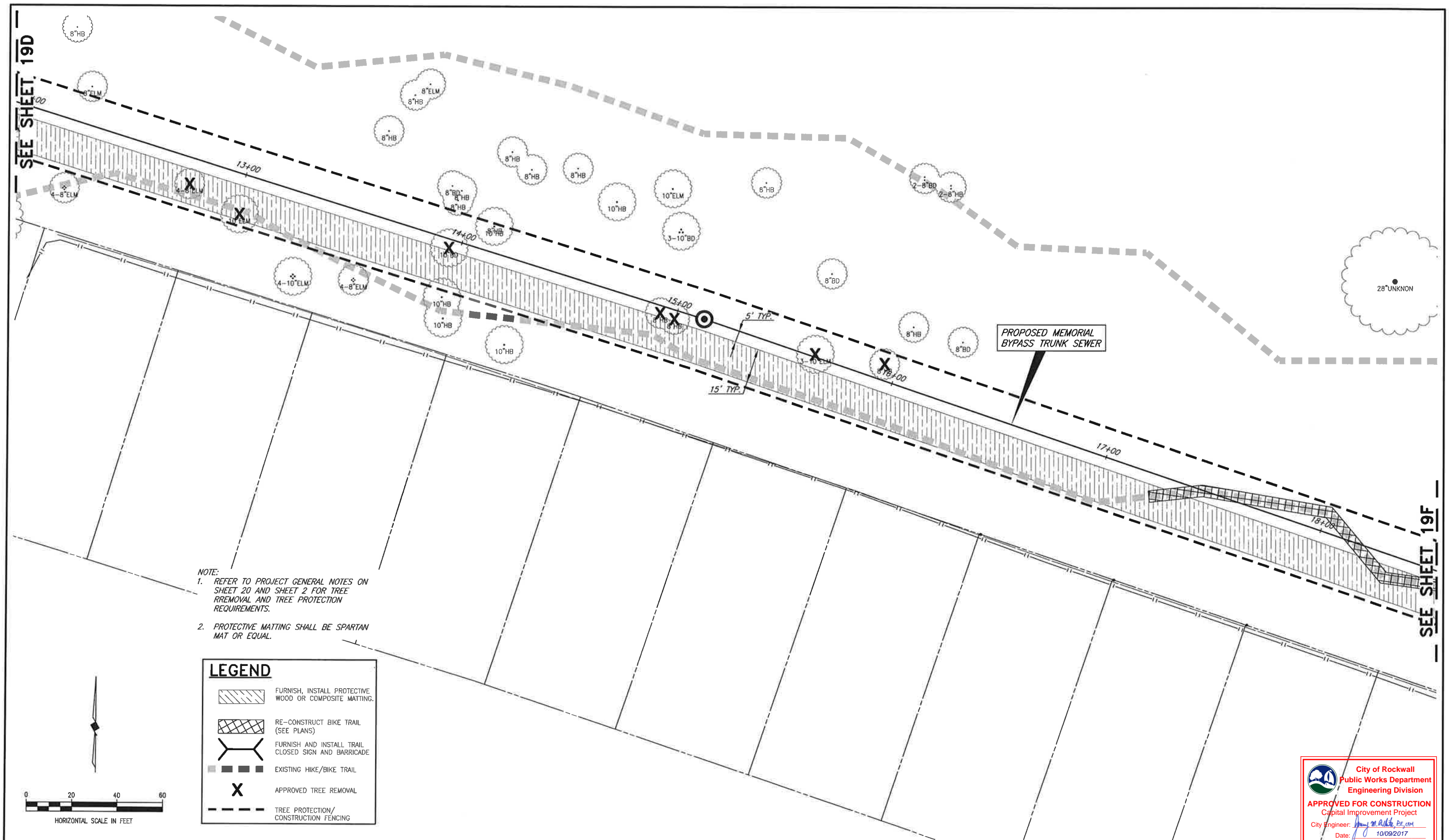
- NOTE:
1. REFER TO PROJECT GENERAL NOTES ON SHEET 20 AND SHEET 2 FOR TREE REMOVAL AND TREE PROTECTION REQUIREMENTS.
 2. PROTECTIVE MATTING SHALL BE SPARTAN MAT OR EQUAL.

LEGEND

	FURNISH, INSTALL PROTECTIVE WOOD OR COMPOSITE MATTING.
	RE-CONSTRUCT BIKE TRAIL (SEE PLANS)
	FURNISH AND INSTALL TRAIL CLOSED SIGN AND BARRICADE
	EXISTING HIKE/BIKE TRAIL
	APPROVED TREE REMOVAL
	TREE PROTECTION/ CONSTRUCTION FENCING



City of Rockwall
Public Works Department
Engineering Division
APPROVED FOR CONSTRUCTION
Capital Improvement Project
City Engineer: *John M. Adair, P.E., CM*
Date: 10/03/2017



SEE SHEET 19E

- NOTE:
1. REFER TO PROJECT GENERAL NOTES ON SHEET 20 AND SHEET 2 FOR TREE REMOVAL AND TREE PROTECTION REQUIREMENTS.
 2. PROTECTIVE MATTING SHALL BE SPARTAN MAT OR EQUAL.

LEGEND

- FURNISH, INSTALL PROTECTIVE WOOD OR COMPOSITE MATTING.
- RE-CONSTRUCT BIKE TRAIL (SEE PLANS)
- FURNISH AND INSTALL TRAIL CLOSED SIGN AND BARRICADE
- EXISTING HIKE/BIKE TRAIL
- APPROVED TREE REMOVAL
- TREE PROTECTION/ CONSTRUCTION FENCING

PROPOSED MEMORIAL BYPASS TRUNK SEWER

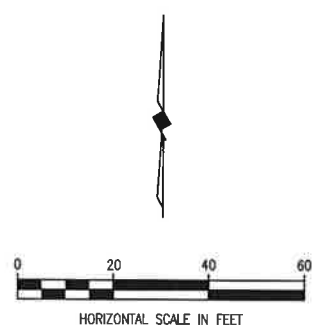
150 L.F. 30" STEEL ENCASEMENT PIPE

FURNISH & INSTALL: 214 L.F. TREE PROTECTION FENCING ALONG TEMPORARY CONSTRUCTION EASEMENT

City of Rockwall
Public Works Department
Engineering Division

APPROVED FOR CONSTRUCTION
Capital Improvement Project

City Engineer: *Matthew Hickey*, P.E., CEM
Date: 10/09/2017



BIRKHOFF, HENDRICKS & CARTER, L.L.P.
PROFESSIONAL ENGINEERS
TBPE Firm No. 526; TBPLS Firm No. 10031800
11910 Greenville Ave., Suite 600
Dallas, Texas 75243 (214) 361-7900



Matthew Hickey
7/28/17

CITY OF ROCKWALL, TEXAS
QUAIL RUN & MEMORIAL BYPASS TRUNK SEWERS
ACCESS PLAN

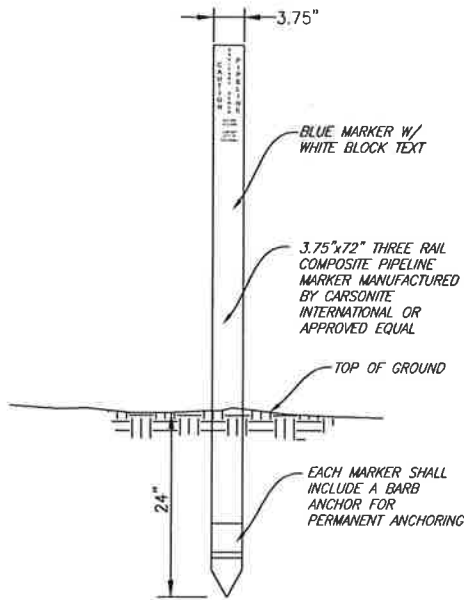
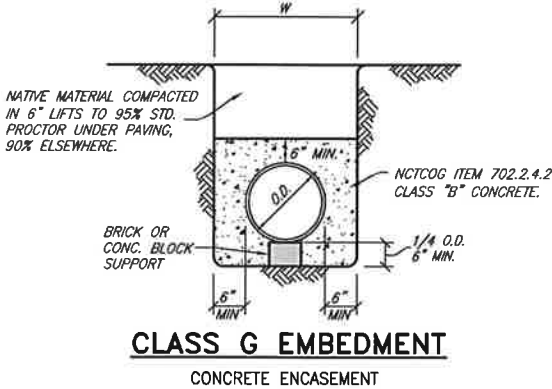
BHC
PROJECT NO.
2015-144

July, 2017

SHEET NO.
19F

GENERAL PROJECT NOTES

1. THE CONTRACTOR SHALL NOT REMOVE ANY TREES 6--INCHES AND LARGER WITHOUT APPROVAL FROM THE CITY OF ROCKWALL. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL HAVE THE CENTERLINE OF THE SANITARY SEWER LINE STAKED AT EVERY MANHOLE AND 100--FOOT STATION. ONCE STAKED, THE CONTRACTOR SHALL ARRANGE TO MEET WITH THE CITY INSPECTOR AND PARKS DEPARTMENT REPRESENTATIVE AND WALK THE ALIGNMENT AND FLAG ALL TREES TO BE REMOVED AND DISPOSED OF AND IDENTIFY THE LOCATION OF ALL TREE PROTECTION FENCING. ONCE APPROVED BY THE CITY OF ROCKWALL, THE CONTRACTOR SHALL FURNISH AND INSTALL TREE PROTECTION FOR THE DURATION OF CONSTRUCTION ALONG THE LIMITS OF THE WORK ZONE AND AROUND TREES NOT APPROVED FOR REMOVAL. REFER TO THE STANDARD DETAILS FOR TREE PROTECTION FENCING. PAYMENT FOR WALKING THE ALIGNMENT WITH THE CITY AND TREE REMOVAL IDENTIFICATION SHALL BE PAID UNDER MOBILIZATION (PAY ITEM 101).
2. CONTRACTOR SHALL REPLACE ANY TREES REMOVED OR DESTROYED WITHOUT THE OWNERS PERMISSION OR SHALL PAY FAIR MARKET VALUE (AS DETERMINED BY THE OWNER) TO THE OWNER.
3. IF AWARDED AS AN ADDITIVE ALTERNATE THE CONTRACTOR SHALL ESTABLISH A HAUL ROAD BY UTILIZING WOOD OR COMPOSITE MATTING TO PREVENT RUTTING OF PARK GROUND FROM CONSTRUCTION EQUIPMENT. MATTING SHALL BE UTILIZED FROM THE TREATMENT PLANT OUTSIDE ACCESS ROAD TO THE QUAIL RUN BYPASS TRUNK SEWER AND FROM QUAIL RUN STATION 1+62 TO 8+69. MATTING SHALL ALSO BE UTILIZED FOR THE MEMORIAL TRUNK SEWER FROM STATION 0+00 TO 5+00 AND STATION 6+59 TO 20+31. ONCE CONSTRUCTION IS COMPLETED, THE TEMPORARY MATTING SHALL BE REMOVED AND THE GROUND RESTORED PER THE CITY OF ROCKWALL GENERAL CONSTRUCTION NOTES, EROSION CONTROL AND VEGETATION NOTE 7. MATTING SHALL BE PAID AT A LUMP SUM PRICE UNDER THE APPROPRIATE ADDITIVE ALTERNATE BID SCHEDULE ITEM. PROTECTIVE MATTING SHALL BE SPARTAN MAT OR EQUAL. PRIOR TO FINAL ACCEPTANCE, THE FINAL WALK THROUGH SHALL INCLUDE THE CITY INSPECTOR AND A REPRESENTATIVE FOR THE PARKS DEPARTMENT TO ENSURE PARK LAND HAS BEEN REESTABLISHED TO PRE-CONSTRUCTION CONDITIONS.
4. THE CONTRACTOR SHALL REESTABLISH GRASS ON ALL EXISTING GRASS AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WITH SAME TYPE OF GRASS. CONTRACTOR SHALL FERTILIZE AND WATER GRASS DAILY FOR A MINIMUM OF THREE WEEKS OR UNTIL A STAND OF GRASS IS ESTABLISHED TO THE SATISFACTION OF THE CITY AND THE PROPERTY OWNER. GRASS SHALL BE REESTABLISHED BY BERMUDA HYDROMULCH. THE QUAIL RUN BYPASS HYDROMULCH AREAS ARE STA. 11+00 TO STA. 13+90, STA. 15+35 TO STA. 17+57 AND STA. 18+17 TO STA. 19+50. THE MEMORIAL BYPASS HYDROMULCH AREAS ARE STA. 5+00 TO 5+38, STA. 6+25 TO STA. 7+20, STA. 20+00 TO STA. 21+15, STA. 22+00 TO STA. 23+00 AND STA. 24+00 TO END (PAY ITEM 128).
5. IN SHADED PARK AREAS, UTILIZE BROADCAST SEEDING PER TXDOT ITEM 164, DALLAS DISTRICT, TABLE 1 CLAY SOILS FOR FEB. 1 THROUGH MAY 15 OR TABLE 3 FOR SEPTEMBER 1 THROUGH NOVEMBER 30 (PAY ITEM 129).
6. ALL EXISTING ROADWAYS, PARKING LOTS AND DRIVEWAYS SHALL BE PROTECTED DURING CONSTRUCTION. ALL PAVEMENT NOT SHOWN TO BE REPAIRED IN THE PLANS THAT ARE DAMAGED BY THE CONTRACTOR, SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO CITY AND TXDOT STANDARDS.
7. THE CONTRACTOR SHALL PROTECT ALL UNDERGROUND IRRIGATION SYSTEMS (KNOWN OR UNKNOWN). ALL DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE BY AN IRRIGATOR LICENSED IN THE STATE OF TEXAS. (NO PAY ITEM)
8. CONTRACTOR SHALL PROVIDE ADEQUATE MEASURES FOR DEWATERING THE TRENCH AND FOR PREVENTING STORM WATER FROM ENTERING THE TRENCH DURING CONSTRUCTION. ALL COSTS FOR PUMPS AND OTHER RELATED APPURTENANCES SHALL BE SUBSIDIARY TO THE CONSTRUCTION OF THE SEWER LINE. (NO PAY ITEM)
9. DURING NON-WORKING HOURS, THE CONTRACTOR SHALL NOT LEAVE OPEN SEWER LINE TRENCH. AT THE END OF EACH DAY THE CONTRACTOR SHALL BACKFILL ALL OPEN TRENCHES NOT UNDER PAVEMENT. UNDER PAVEMENT TRENCHES SHALL BE BACKFILLED AND COVERED WITH TEMPORARY H.M.A.C. PAVEMENT OR COVERED WITH TRAFFIC RATED STEEL PLATES TO COVER THE OPENING. THE COST FOR COVERING TRENCHES DURING NON-WORKING HOURS SHALL BE SUBSIDIARY TO OTHER ITEMS OF WORK.
10. UNDERGROUND MARKING TAPE, GREEN IN COLOR AND LABELED "CAUTION: BURIED SANITARY SEWER LINE BELOW", SHALL BE PLACED IN THE TRENCH ABOVE THE SANITARY SEWER LINE, THE TAPE SHALL BE A MINIMUM 12--INCH WIDE AND BE PLACED NO DEEPER THAN 36--INCHES. TAPE SHALL BE PRO--LINE SAFETY PRODUCTS CO. 1099 ATLANTIC DR. WEST CHICAGO, IL. 60185 OR EQUAL. PAYMENT FOR THE TAPE SHALL BE SUBSIDIARY TO THE APPROPRIATE BID ITEM FOR FURNISHING AND INSTALLING SANITARY SEWER LINE.
11. FURNISH AND INSTALL GREEN EMS PADS AT ALL MANHOLES. COST SHALL BE SUBSIDIARY TO MANHOLES.
12. TRIMMING OF TREES SHALL BE ACCOMPLISHED USING A SAW OR PRUNING SHEARS. ALL CUT LIMBS OVER 1--INCH IN DIAMETER SHALL BE PAINTED WITH TREE WOUND PAINT IMMEDIATELY AFTER TREE TRIMMING.
13. CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO ORDERING PIPE AND SUFFICIENTLY IN ADVANCE OF THE CONSTRUCTION SO THAT IF IT IS NECESSARY TO CHANGE OR MOVE THE UTILITY, THE PROGRESS OF THE WORK WILL NOT BE DELAYED, AND ALL COSTS INCURRED FOR THE UTILITY CONFLICTS WILL BE AT NO ADDITIONAL COST TO THE OWNER.
14. WHERE THE PROPOSED CONSTRUCTION CROSSES HIKE AND BIKE TRAILS INSIDE THE CITY OF ROCKWALL PROPERTY BETWEEN THE W.W.T.P. AND STA. 9+77 FOR THE QUAIL RUN BYPASS AND STA. 0+00 TO STA. 20+00 FOR THE MEMORIAL BYPASS, THE TRAILS SHALL BE REPLACED WITH 6--INCHES OF FLEXIBLE BASE PAVEMENT 5--FEET WIDE THROUGH THE LENGTH OF THE TRAIL DISTURBED BY CONSTRUCTION. FLEXIBLE BASE MATERIAL SHALL BE N.C.T.C.O.G. ITEM 301.5.2, GRADE 2.
15. IF THE QUAIL RUN BYPASS TRUNK SEWER, BY OTHERS FROM STATION 0+00 TO STATION 0+70, AND THE SQUABBLE CREEK LIFT STATION ARE COMPLETE AND IN SERVICE, REMOVE EXISTING PLUG AND CONNECT TO EXISTING 30--INCH SANITARY SEWER, OTHERWISE, FURNISH AND INSTALL 30--INCH PLUG. PRIOR TO CONNECTING TO 30--INCH SANITARY SEWER AT STATION 0+70, CONTACT THE CITY OF ROCKWALL TO PUMP DOWN THE SQUABBLE CREEK LIFT STATION WET WELL BELOW ELEVATION 443.00.
16. THE COSTS FOR FIELD VERIFYING EXISTING UTILITIES SHALL BE SUBSIDIARY TO INSTALLATION OF PIPE.

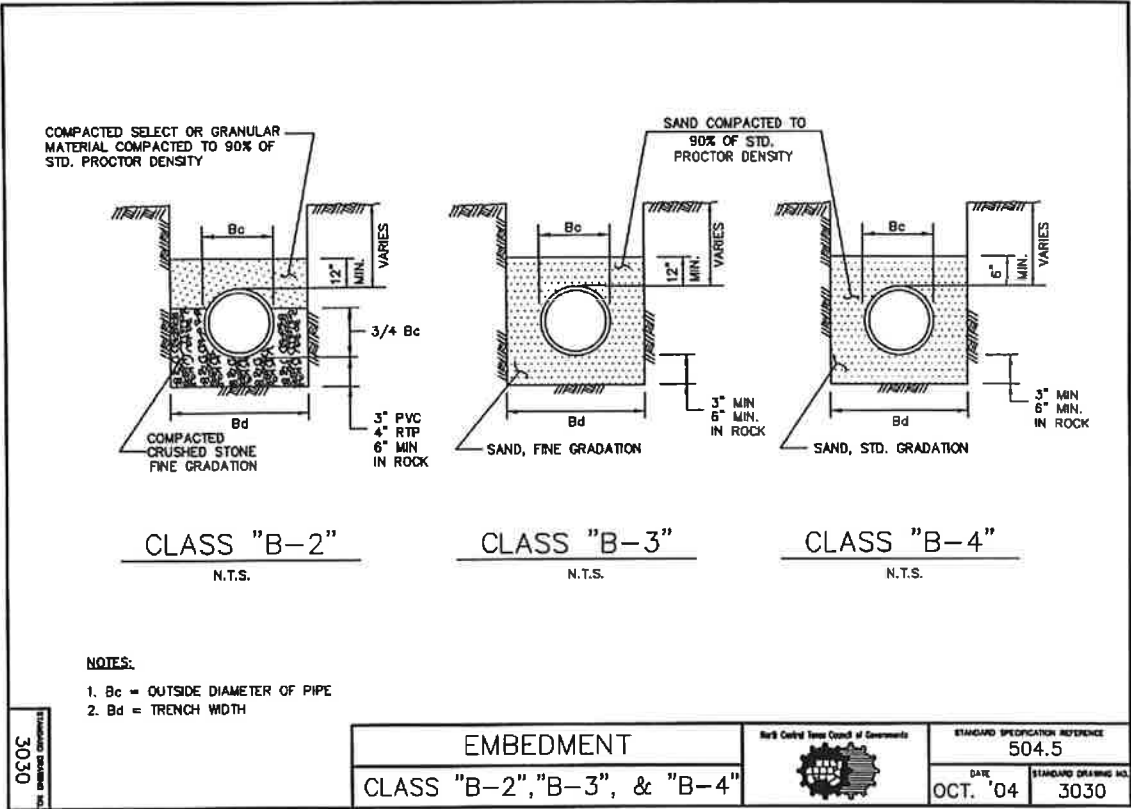


SANITARY SEWER END-OF-LINE MARKER


NO SCALE

- NOTES:
1. MARKER SHALL BE LOCATED ON BOTH SIDES OF ALL ROADS AND RAILROADS, AND AT ALL MAINLINE VALVES, AIR VALVES, AND BLOWOFF VALVES.
 2. MARKER SHALL ALSO BE PLACES AT ALL HORIZONTAL BENDS.
 3. EACH MARKER SHALL HAVE A STICKER WITH THE FOLLOWING INFORMATION "CAUTION SANITARY SEWER PIPELINE CONTACT CITY OF ROCKWALL (PHONE 972-771-7730)"

CONTRACTOR SHALL PROVIDE THE OWNER A POST DRIVER (PART #PDR1), A POST PULLER, AND 5 ADDITIONAL PIPELINE MARKERS.

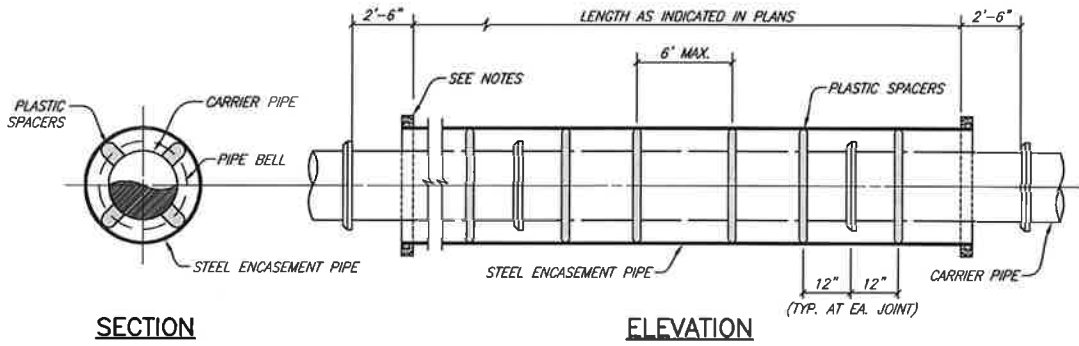


- NOTES:
1. Bc = OUTSIDE DIAMETER OF PIPE
 2. Bd = TRENCH WIDTH

EMBEDMENT			STANDARD SPECIFICATION REFERENCE	
CLASS "B-2", "B-3", & "B-4"			504.5	
			DATE	STANDARD DRAWING NO.
			OCT. '04	3030

NOTES: (ADDED TO 3030)

1. NO GRANULAR MATERIAL ABOVE ROCK OR STONE EMBEDMENT.
2. CLASS B-2--DELETE COMPACTED SELECT OR GRANULAR MATERIAL ABOVE CRUSHED STONE AND REPLACE WITH CRUSHED STONE FINE GRADATION.
3. MODIFIED CLASS B-2 EMBEDMENT FOR BE USED FOR P.V.C. SANITARY SEWER PIPE.



ENCASED DRY BORE

NO SCALE

- NOTES:
1. PREFABRICATED PLASTIC SPACERS MUST BE APPROVED BY THE OWNER.
 2. CONTRACTOR SHALL PROVIDE SUPPORT UNDER CARRIER PIPE TO HAVE MIN. 1" CLEARANCE BETWEEN PIPE BELL AND ENCASEMENT PIPE.
 3. ENDS OF ENCASEMENT PIPE SHALL BE PLUGGED WITH BRICK AND MORTAR FOR ROADWAY CROSSINGS. PLUGS SHALL BE CONSTRUCTED WITH A WEEP HOLE.



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Matthew Hickey
7/28/17

CITY OF ROCKWALL, TEXAS
QUAIL RUN & MEMORIAL BYPASS TRUNK SEWERS

PROJECT GENERAL NOTES &
MISCELLANEOUS DETAILS

BHC
PROJECT NO.
2015-144

July, 2017

SHEET NO.

20

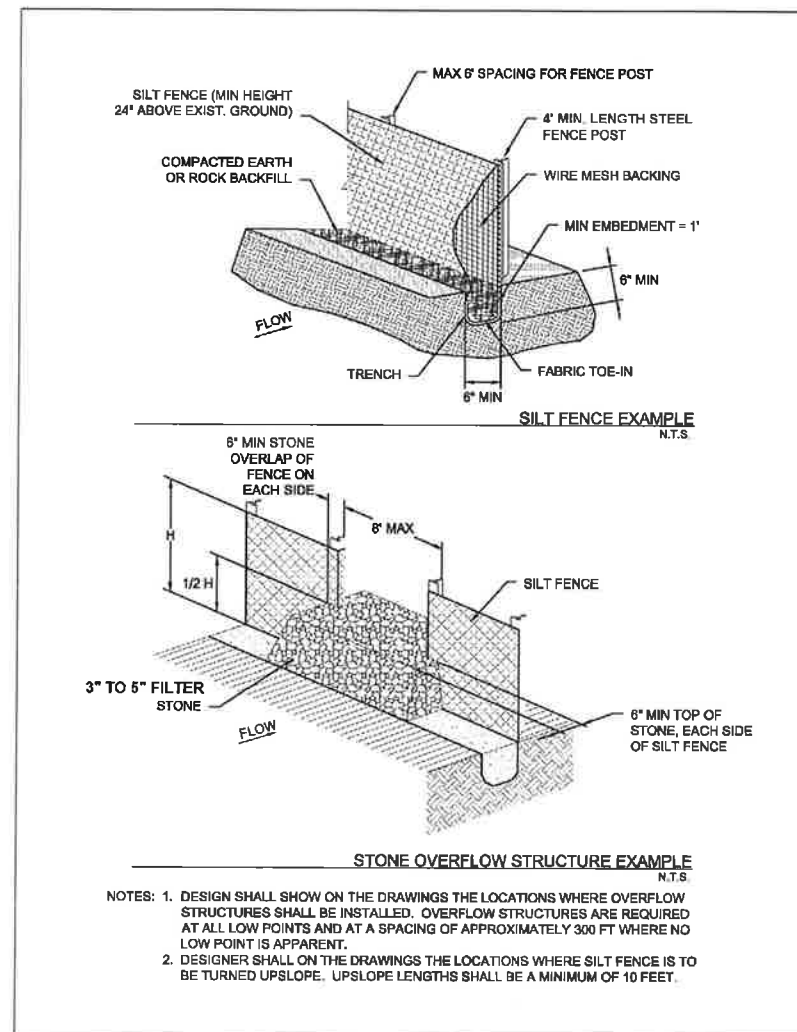


Figure 3.28 Schematics of Silt Fence

Silt Fence
Revised 04/10

CC-147

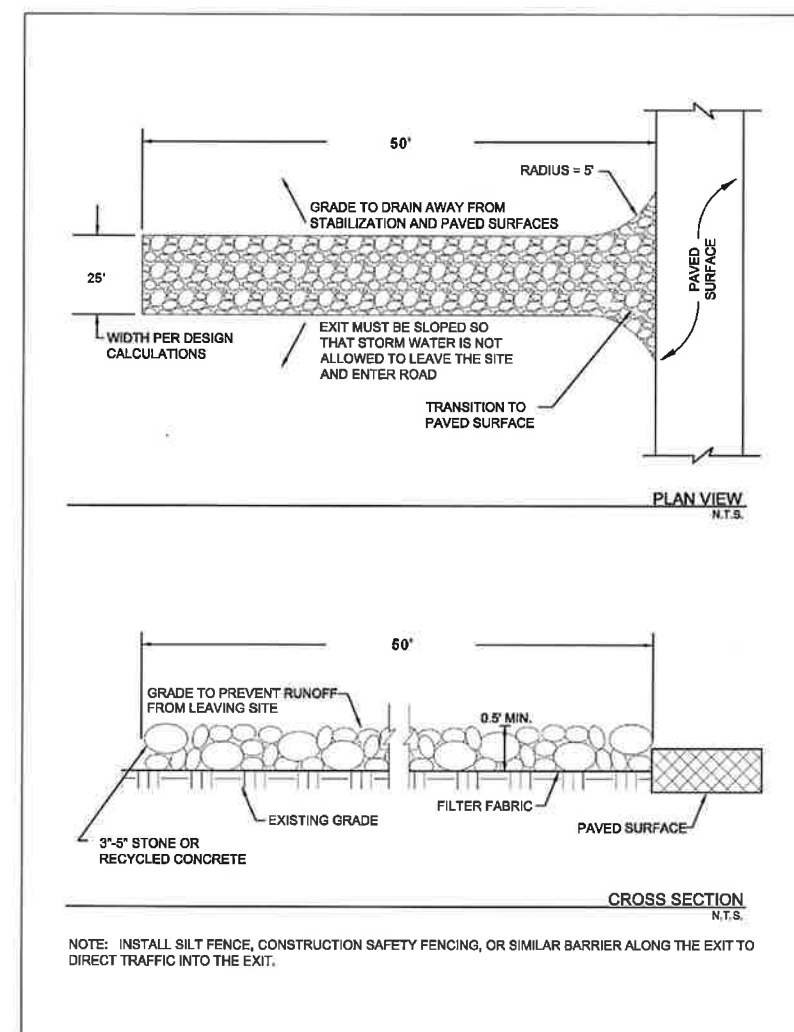


Figure 3.29 Schematics of Stabilized Construction Exit

Stabilized Construction Exit
Revised 04/10

CC-151

CONSTRUCTION ENTRANCE NOTES:

1. REMOVE "OR RECYCLE CONCRETE"
2. REVISE 0.5" MIN TO 12" MIN
3. REVISE 3"-5" STONE TO 4"-6"

STORM WATER POLLUTION PREVENTION NOTES

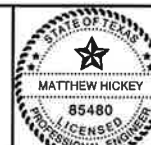
1. CONTRACTOR SHALL PROVIDE A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED BY A REGISTERED PROFESSIONAL ENGINEER, TO THE CITY PRIOR TO CONSTRUCTION.
2. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO IMPLEMENT THE SWPPP AND TO MAINTAIN THE SILT FENCE THROUGHOUT THE PERIOD OF CONSTRUCTION. UNTIL NATIVE VEGETATION IS RE-ESTABLISHED.



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Matthew Hickey
7/28/17

CITY OF ROCKWALL, TEXAS
QUAIL RUN & MEMORIAL BYPASS TRUNK SEWERS
EROSION CONTROL DETAILS

BHC
PROJECT NO.
2015-144

July, 2017

SHEET NO.

21

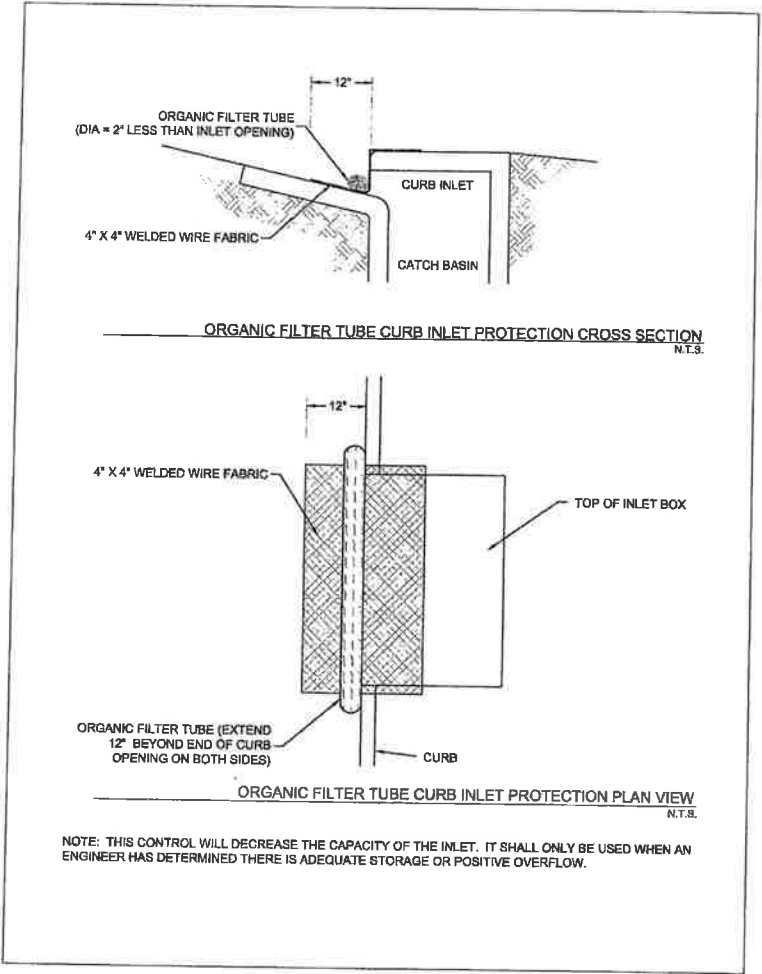


Figure 3.6 Schematics of Organic Filter Tube Curb Inlet Protection
(Source: Modified from City of Plano BMP SP-4)

Inlet Protection
April 2010, Revised 9/2014
CC-88

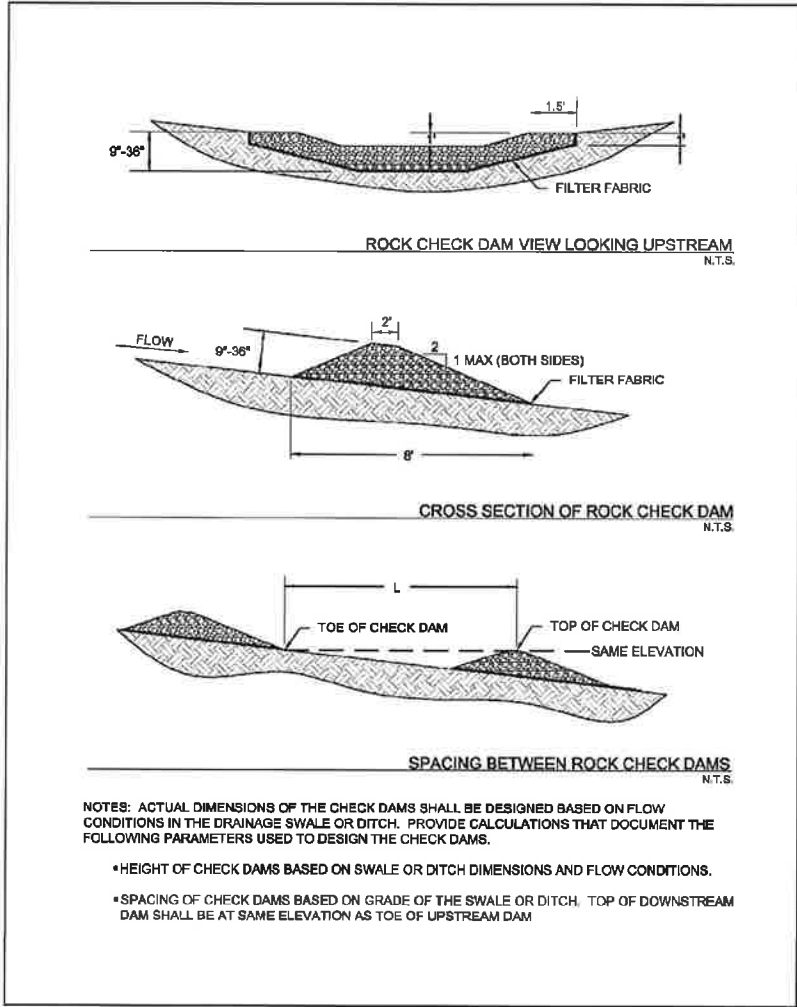


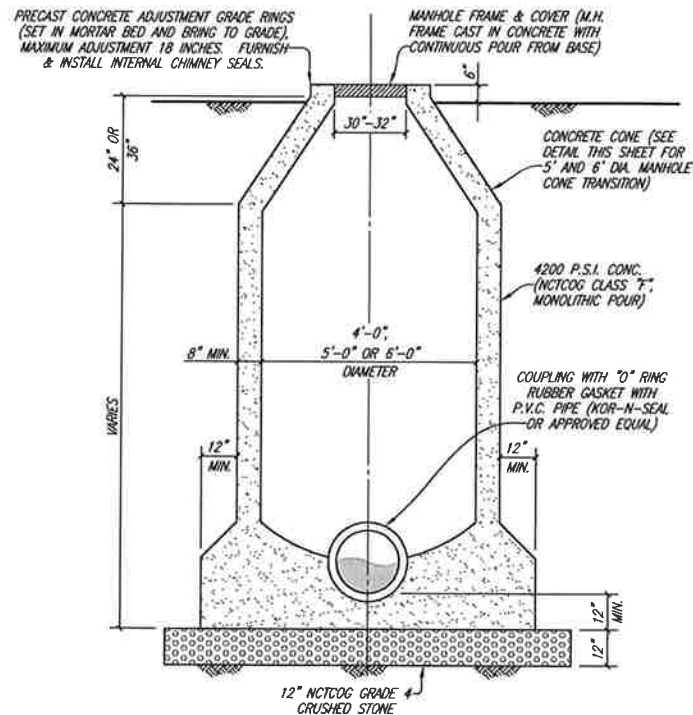
Figure 2.1 Schematics of Rock Check Dams
(Source: Modified from Stormwater Management Manual for Western Washington)

Check Dam
Revised 04/10
CC-16

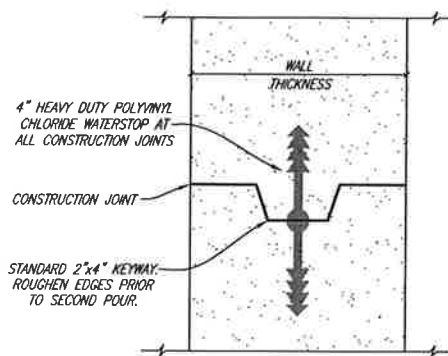
STORM WATER POLLUTION PREVENTION NOTES

1. CONTRACTOR SHALL PROVIDE A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS, TO THE CITY PRIOR TO CONSTRUCTION.
2. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO IMPLEMENT THE SWPPP AND TO MAINTAIN THE SILT FENCE THROUGHOUT THE PERIOD OF CONSTRUCTION. UNTIL NATIVE VEGETATION IS RE-ESTABLISHED.

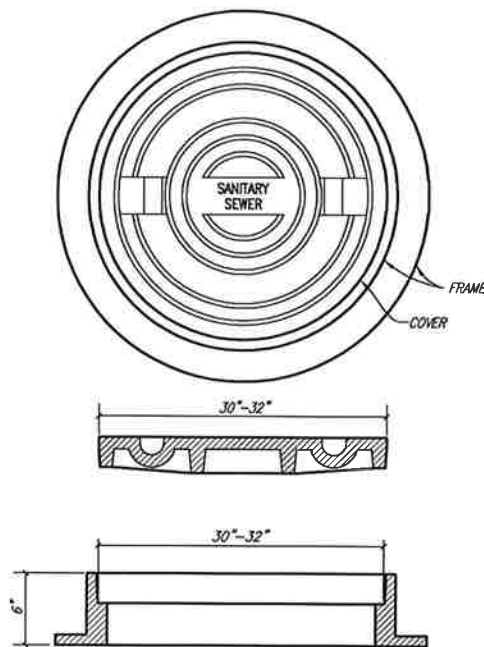




CAST IN PLACE MANHOLE ELEVATION
STANDARD SANITARY SEWER 4', 5' & 6' DIAMETER
CONCENTRIC MANHOLES
NO SCALE

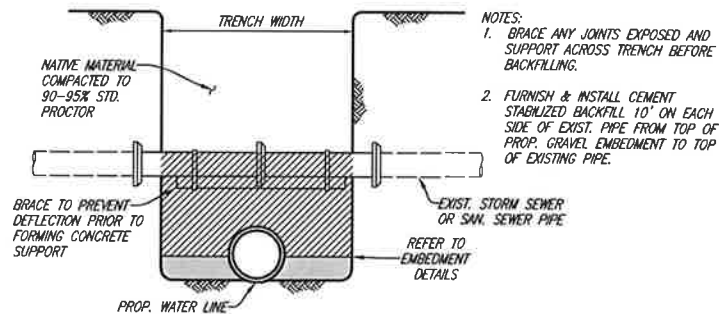


CAST IN PLACE MANHOLE CONSTRUCTION JOINT
STANDARD SANITARY SEWER 4', 5' & 6' DIAMETER CONCENTRIC MANHOLES
KEYWAY WITH WATERSTOP
NO SCALE

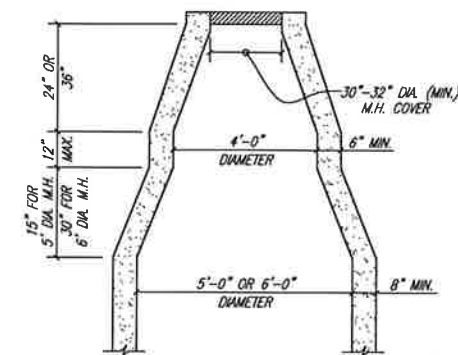


- NOTE:
- STANDARD MANHOLE FRAME AND COVER SHALL BE PAMREX WITH LOCK OR EAST JORDAN IRON WORKS 30" ERGO XL WITH CAMLOCK CLOSING DEVICE, ELASTOMER T-GASKET IN LID AND INFILTRATION PLUGS AT THE HINGES. (PRODUCT NO. 00148026L01)
 - FOR PRESSURE TYPE MANHOLES THE FRAME AND COVER SHALL BE 32" PAMTIGHT OR EQUAL.

MANHOLE RING AND COVER
NO SCALE



SANITARY OR STORM SEWER SUPPORT
NO SCALE

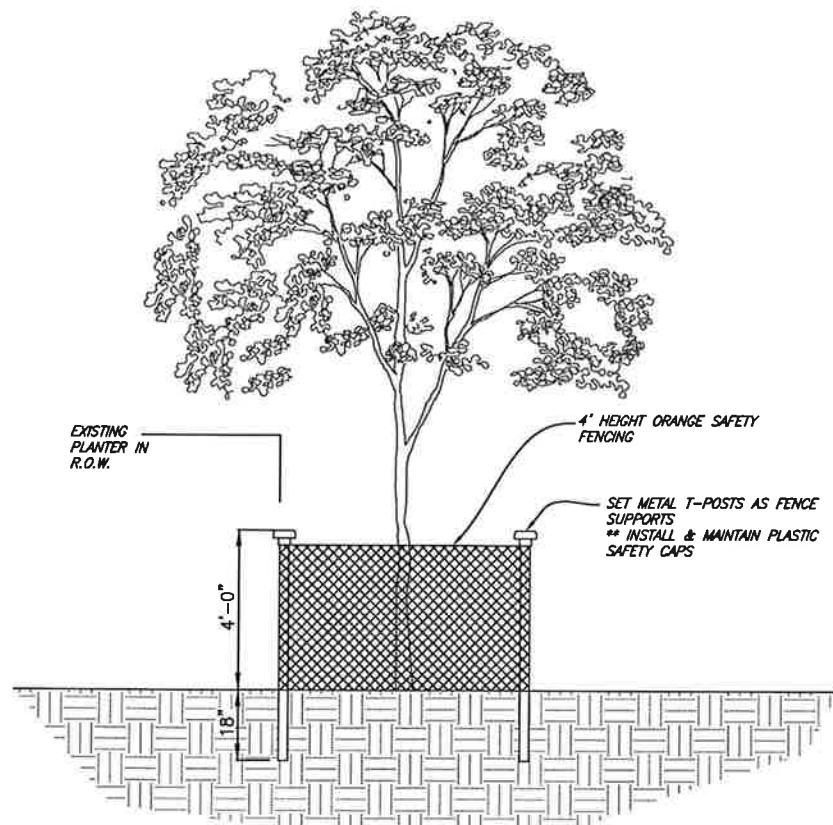


CAST IN PLACE MANHOLE CONE TRANSITION
STANDARD SANITARY SEWER 5' & 6' DIAMETER
CONCENTRIC MANHOLES ONLY
NO SCALE

MANHOLE NOTES

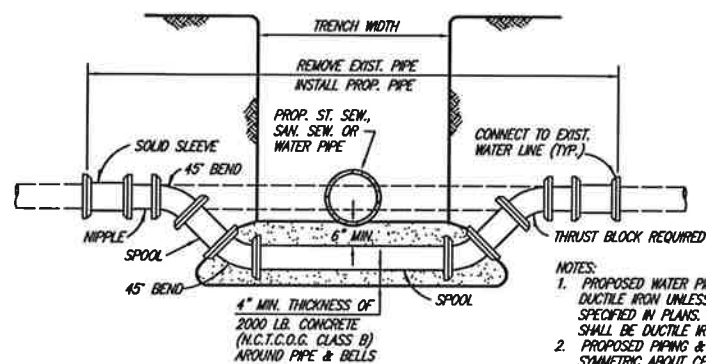
- NOTES FOR ALL MANHOLES:
- CONCRETE SHALL BE 4,200 P.S.I. AT 28 DAYS (NCTCOG CLASS "F")
 - MANHOLE SHALL BE PLUMB TO WITHIN 1" FOR EVERY 5 FT. OF VERTICAL DEPTH, PRECAST OR CAST IN PLACE.
 - MANHOLES OVER 12 FT. DEEP SHALL HAVE NO. 4 BARS @ 18" O.C.E.W. AND IF NOT POURED MONOLITHIC COLD JOINTS SHALL HAVE A FORMED GROOVE OR REINFORCING DOWELS FOR SHEAR PROTECTION; CONSTRUCTION JOINTS SHALL HAVE HEAVY DUTY P.V.C. WATERSTOP 9-INCHES IN THE DIRECTION PERPENDICULAR TO THE JOINT AS MANUFACTURED BY B.F. GOODRICH OR APPROVED EQUAL.
 - USE PRESSURE TYPE MANHOLE FRAME & COVER, WHERE NOTED.
 - ALL MANHOLES SHALL BE LINED WITH RAVEN LINING SYSTEM, (125 MILS) CONSHIELD OR APPROVED EQUAL.
- NOTES FOR PRECAST MANHOLES:
- PRECAST MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C-478.
 - FOR MANHOLES 20 FT. DEEP OR MORE USE CLASS V REINF. CONC. PIPE FOR BOTTOM 8 FT. & CLASS III R.C.P. ABOVE.
 - FURNISH & INSTALL TWO JOINT RESTRAINER STRAPS FOR EACH OF THE TOP 2 JOINTS.
 - EACH JOINT SHALL BE PROVIDED WITH AN O-RING DESIGN AND THE EXTERIOR OF EACH JOINT SHALL BE SEALED USING A PRE FORMED JOINT SEALING COMPOUND.
 - ALL WALL PENETRATIONS SHALL BE MADE UTILIZING KOR-N-SEAL RUBBER CONNECTORS, BANDS AND CLAMPS WITH HIGH STRENGTH NON SHRINK GROUT.
 - ALL JOINTS IN PRECAST MANHOLES SHALL BE SEALED ON THE OUTSIDE OF THE MANHOLE WITH AQUAGUARD SHRINK SEAL.





TREE PROTECTION PLAN

NOT TO SCALE



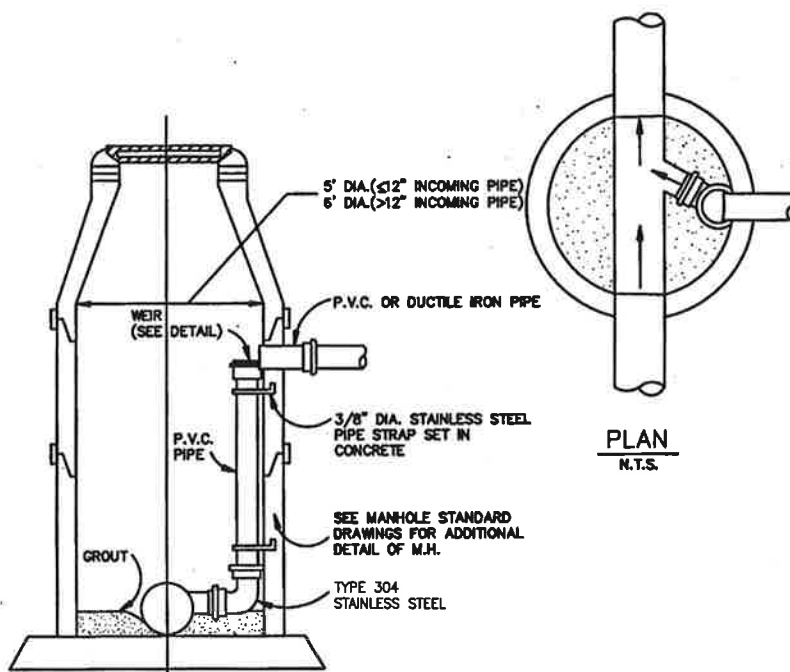
WATER MAIN LOWERING

NO SCALE

- NOTES:
1. PROPOSED WATER PIPE SHALL BE DUCTILE IRON UNLESS OTHERWISE SPECIFIED IN PLANS. ALL FITTINGS SHALL BE DUCTILE IRON (M.J.-P.E.).
 2. PROPOSED PIPING & FITTINGS ARE SYMMETRIC ABOUT CENTER OF PROP. SAN. SEW. OR ST. SEW. PIPE AND SHALL RETAIN TEST PRESSURES.
 3. ALL THRUST BLOCKING SHALL BE SUBSIDIARY TO UNIT PRICE.
 4. CROSSING OF SANITARY SEWER SHALL BE IN ACCORDANCE WITH T.N.R.C.G. REQUIREMENTS.

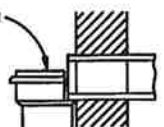
TREE PROTECTION NOTES:

1. EXISTING TREES SHOWN TO REMAIN ARE TO BE PROTECTED DURING CONSTRUCTION. ORANGE SAFETY FENCING (MIN. 4'-0" HEIGHT) SHALL BE INSTALLED AT THE DRIP LINE OF ALL TREES OF TREE GROUPS TO REMAIN. PARKING OF VEHICLES OR PERFORMING WORK WITHIN THESE AREAS, OTHER THAN SHOWN ON THE PLAN, WILL NOT BE ALLOWED. THE TREE PROTECTION SHALL REMAIN DURING CONSTRUCTION. OTHER TREE PROTECTION MEASURES SHALL BE IN ACCORDANCE WITH THE CITY OF ROCKWALL STANDARDS AND ORDINANCES.
2. DISPOSAL OF ANY WASTE MATERIAL SUCH AS, BUT NOT LIMITED TO, PAINT, ASPHALT, OIL, SOLVENTS, CONCRETE, MORTAR, ETC. WITHIN THE CANOPY AREA OF ANY EXISTING TREES SHALL NOT BE ALLOWED.
3. NO ATTACHMENTS OR WIRES OF ANY KIND, OTHER THAN THOSE OF A PROTECTIVE NATURE, SHALL BE ATTACHED TO ANY TREE.
4. NO FILL OR EXCAVATION OF ANY NATURE SHALL OCCUR WITHIN THE DRIP LINE OF A TREE TO BE PRESERVED UNLESS THERE IS A SPECIFIED WELL OR RETAINING WALL SHOWN ON THE GRADING PLAN.
5. NO MATERIALS SHALL BE STORED WITHIN THE DRIP LINE AREA OF A TREE TO BE PRESERVED.
6. T-POSTS ARE TO BE INSTALLED AND PROPERLY MAINTAINED WITH PROTECTIVE SAFETY CAPS IN PLACE.
7. FENCE TO BE MAINTAINED AND REPAIRED AS NEEDED DURING CONSTRUCTION.
8. NO CONSTRUCTION TRAFFIC, GRADING, STORAGE, OR WASTE DISPOSAL ALLOWED WITHIN THE FENCED AREA AROUND TREES.



ELEVATION N.T.S.

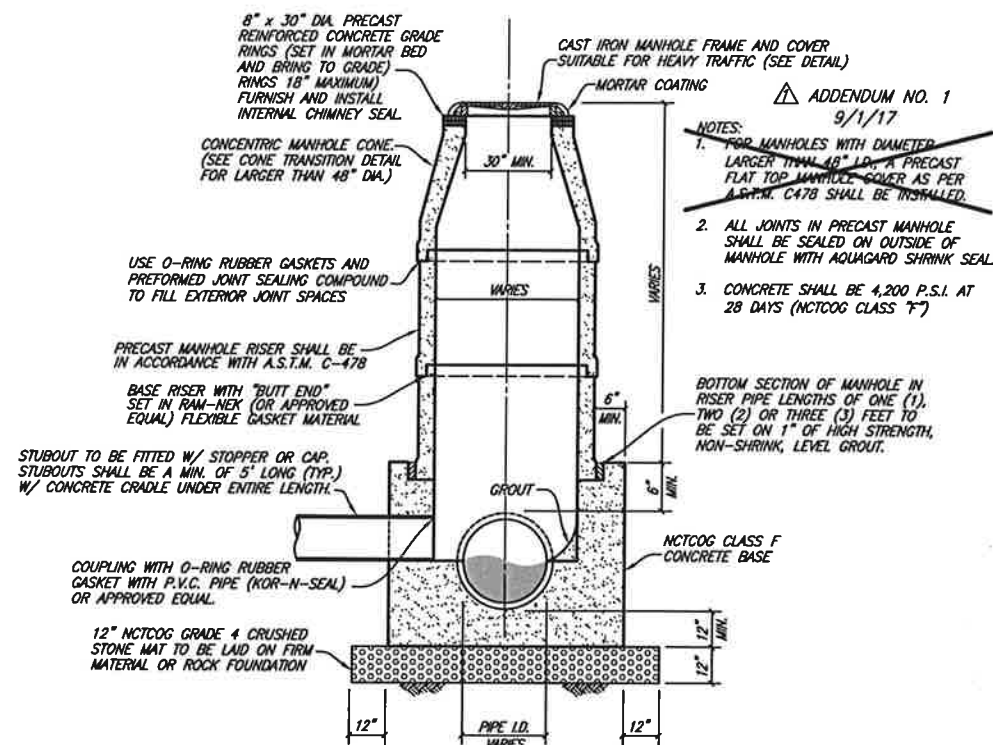
REMOVE PORTION OF DROP PIPE TO CONNECT AS SHOWN



TYPICAL INTERNAL DROP MANHOLE

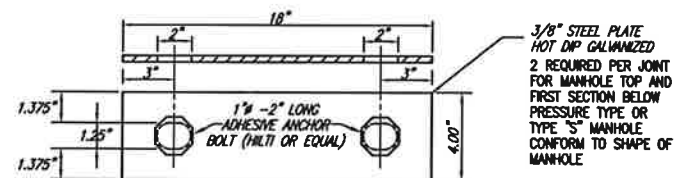
NO SCALE

NOTE:
FLOW LINE OF SURCHARGE LINE NORMALLY PLACED AT TOP OF EXISTING WASTEWATER LINE UNLESS NOTED OTHERWISE ON PLANS.



PRECAST CONCRETE MANHOLE

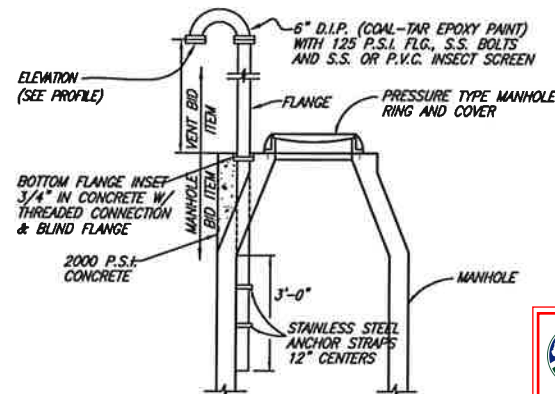
NO SCALE



JOINT RESTRAINER FOR PRECAST MANHOLE

SEE SPECIFICATIONS FOR PRECAST MANHOLE REQUIREMENTS

NO SCALE



CONE TOP MANHOLE VENT

NO SCALE

City of Rockwall
Public Works Department
Engineering Division
APPROVED FOR CONSTRUCTION
Capital Improvement Project
City Engineer: *James M. Ricks, PE, CM*
Date: 10/09/2017

BIRKHOFF, HENDRICKS & CARTER, L.L.P.

PROFESSIONAL ENGINEERS

Texas Firm F526

11910 Greenville Ave., Suite 600
Dallas, Texas 75243 (214) 361-7900



Matthew Hickey
7/28/17

CITY OF ROCKWALL, TEXAS

QUAIL RUN & MEMORIAL BYPASS TRUNK SEWERS

MISCELLANEOUS DETAILS

BHC

PROJECT NO.
2015-144

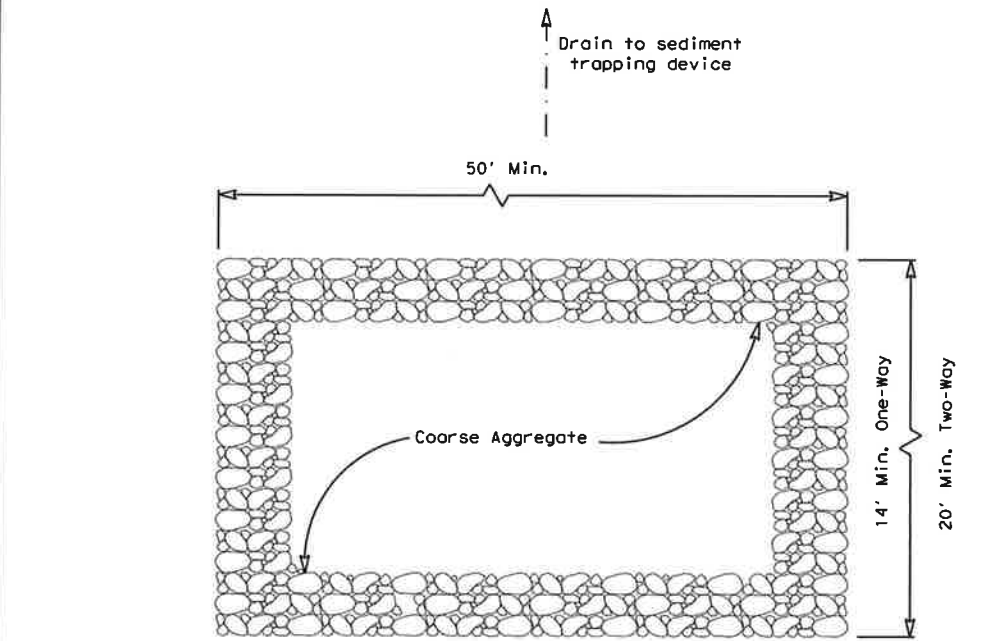
October, 2017

SHEET NO.

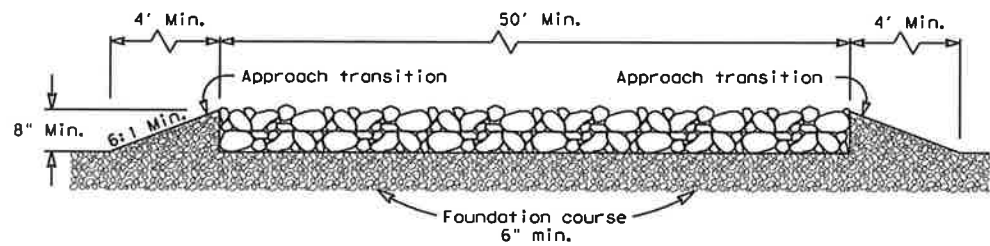
24

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DATE: \$DATE\$
FILE: \$FILES\$



PLAN VIEW

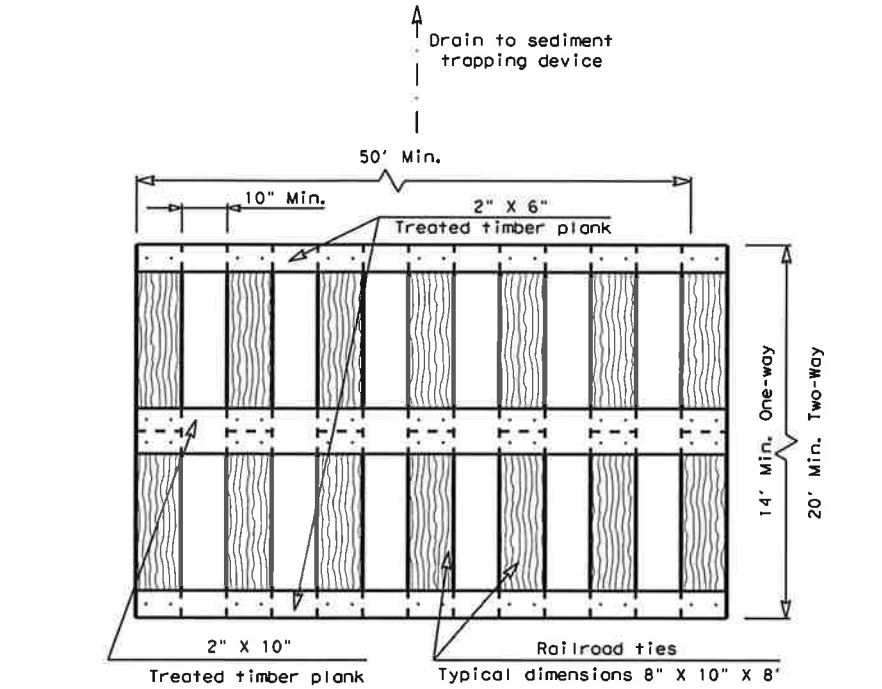


ELEVATION VIEW

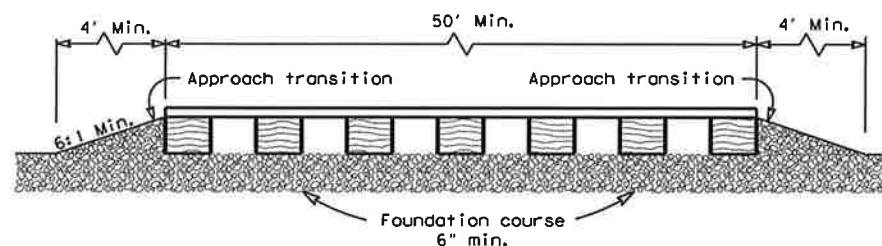
CONSTRUCTION EXIT (TYPE 1)
ROCK CONSTRUCTION (LONG TERM)

GENERAL NOTES (TYPE 1)

1. The length of the type 1 construction exit shall be as indicated on the plans, but not less than 50'.
2. The coarse aggregate should be open graded with a size of 4" to 8".
3. The approach transitions should be no steeper than 6:1 and constructed as directed by the Engineer.
4. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other materials approved by the Engineer.
5. The construction exit shall be graded to allow drainage to a sediment trapping device.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
7. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.



PLAN VIEW

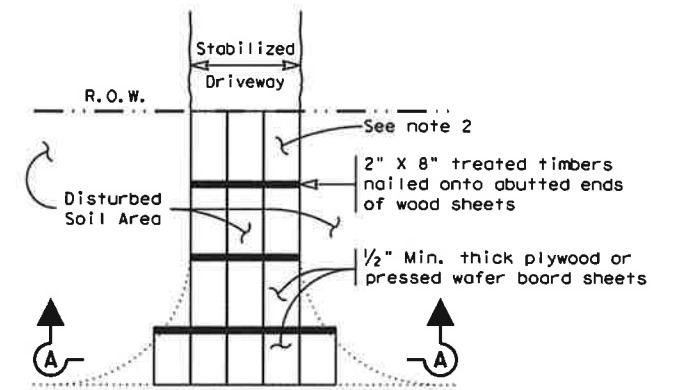


ELEVATION VIEW

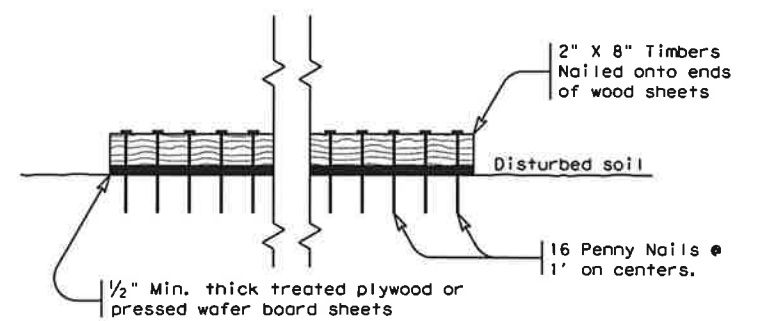
CONSTRUCTION EXIT (TYPE 2)
TIMBER CONSTRUCTION (LONG TERM)

GENERAL NOTES (TYPE 2)

1. The length of the type 2 construction exit shall be as indicated on the plans, but not less than 50'.
2. The treated timber planks shall be attached to the railroad ties with 1/2" x 6" min. lag bolts. Other fasteners may be used as approved by the Engineer.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The approach transitions shall be no steeper than 6:1 and constructed as directed by the Engineer.
5. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other material as approved by the Engineer.
6. The construction exit should be graded to allow drainage to a sediment trapping device.
7. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
8. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.



PLAN VIEW



SECTION A-A
CONSTRUCTION EXIT (TYPE 3)
SHORT TERM

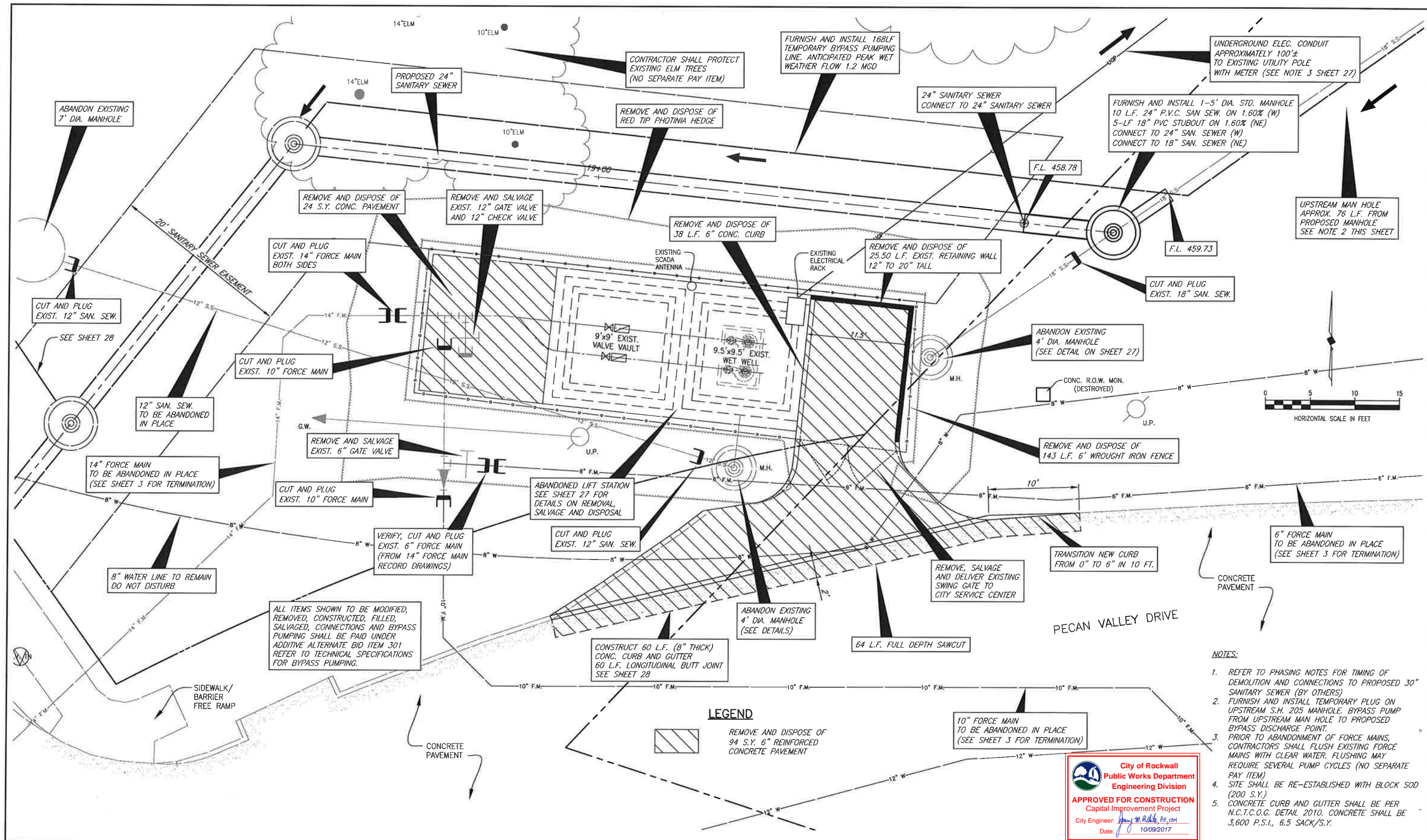
GENERAL NOTES (TYPE 3)

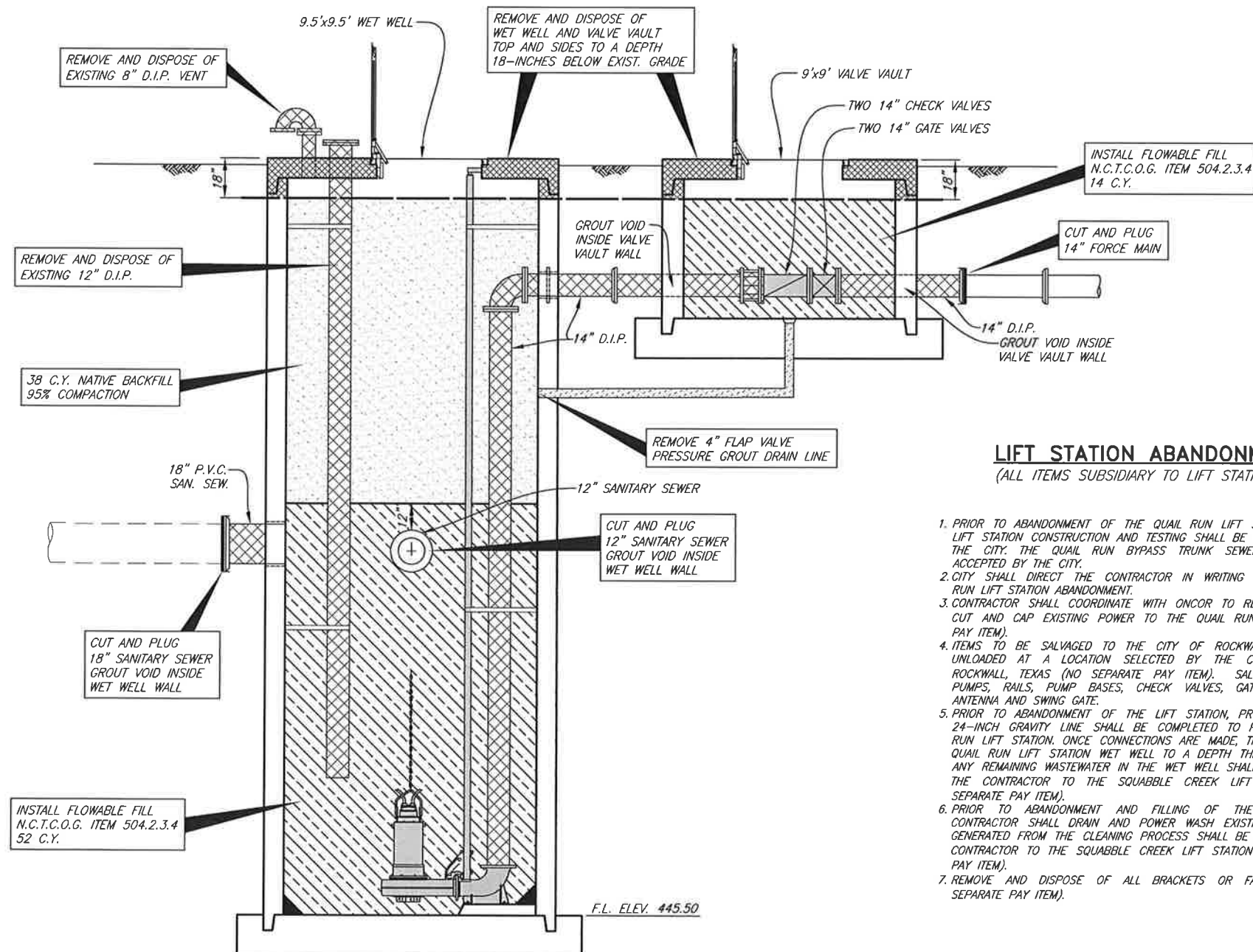
1. The length of the type 3 construction exit shall be as shown on the plans, or as directed by the Engineer.
2. The type 3 construction exit may be constructed from open graded crushed stone with a size of two to four inches spread a min. of 4" thick to the limits shown on the plans.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The guidelines shown hereon are suggestions only and may be modified by the Engineer.



SHEET NO.
25

Texas Department of Transportation		Design Division Standard	
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES CONSTRUCTION EXITS EC (3) - 16			
FILE: ec316	DW: TxDOT	CK: RM	DW: VP
©TxDOT: JULY 2016	CONT	SECT	JOB
REVISIONS	\$CS\$	\$SS\$	\$JS\$
DIST	COUNTY	SHEET NO.	\$HWYS\$
\$DST\$	\$CTYS\$	\$EC (\$A-\$	16\$





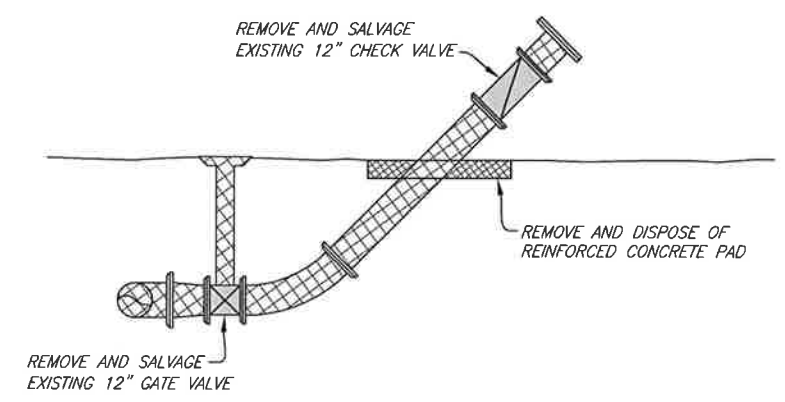
QUAIL RUN ROAD LIFT STATION ABANDONMENT
NO SCALE

LIFT STATION ABANDONMENT NOTES
(ALL ITEMS SUBSIDIARY TO LIFT STATION ABANDONMENT)

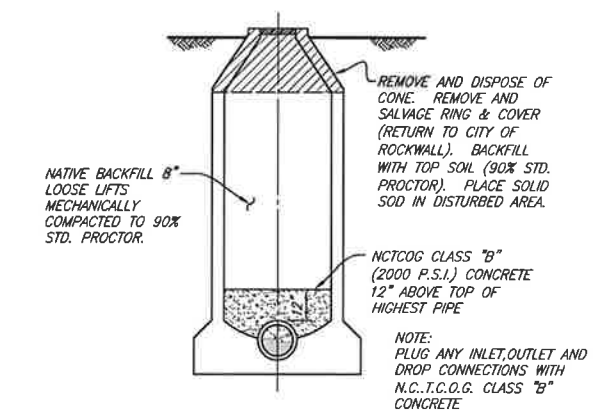
1. PRIOR TO ABANDONMENT OF THE QUAIL RUN LIFT STATION, THE SQUABBLE CREEK LIFT STATION CONSTRUCTION AND TESTING SHALL BE COMPLETED AND ACCEPTED BY THE CITY. THE QUAIL RUN BYPASS TRUNK SEWER SHALL BE IN PLACE AND ACCEPTED BY THE CITY.
2. CITY SHALL DIRECT THE CONTRACTOR IN WRITING TO PROCEED WITH THE QUAIL RUN LIFT STATION ABANDONMENT.
3. CONTRACTOR SHALL COORDINATE WITH ONCOR TO REMOVE POWER METER AND TO CUT AND CAP EXISTING POWER TO THE QUAIL RUN LIFT STATION (NO SEPARATE PAY ITEM).
4. ITEMS TO BE SALVAGED TO THE CITY OF ROCKWALL SHALL BE DELIVERED AND UNLOADED AT A LOCATION SELECTED BY THE CITY AT 1600 AIRPORT ROAD, ROCKWALL, TEXAS (NO SEPARATE PAY ITEM). SALVAGED ITEMS SHALL INCLUDE PUMPS, RAILS, PUMP BASES, CHECK VALVES, GATE VALVES, CONTROL PANEL, ANTENNA AND SWING GATE.
5. PRIOR TO ABANDONMENT OF THE LIFT STATION, PROPOSED CONNECTIONS TO THE 24-INCH GRAVITY LINE SHALL BE COMPLETED TO PREVENT FLOWS TO THE QUAIL RUN LIFT STATION. ONCE CONNECTIONS ARE MADE, THE CITY WILL PUMP DOWN THE QUAIL RUN LIFT STATION WET WELL TO A DEPTH THE EXISTING PUMPS WILL WORK. ANY REMAINING WASTEWATER IN THE WET WELL SHALL BE PUMPED AND HAULED BY THE CONTRACTOR TO THE SQUABBLE CREEK LIFT STATION FOR DISPOSAL (NO SEPARATE PAY ITEM).
6. PRIOR TO ABANDONMENT AND FILLING OF THE EXISTING WET WELL, THE CONTRACTOR SHALL DRAIN AND POWER WASH EXISTING WET WELL. WASTEWATER GENERATED FROM THE CLEANING PROCESS SHALL BE PUMPED AND HAULED BY THE CONTRACTOR TO THE SQUABBLE CREEK LIFT STATION FOR DISPOSAL (NO SEPARATE PAY ITEM).
7. REMOVE AND DISPOSE OF ALL BRACKETS OR FASTENERS IN WET WELL (NO SEPARATE PAY ITEM).

DEMOLITION LEGEND

- PUMP, FITTINGS, RAILS AND VALVES TO BE REMOVED AND SALVAGED TO THE CITY
- REMOVE AND DISPOSE OF EXISTING PIPE FITTINGS
- LIFT STATION WET WELL AND VALVE VAULT TO BE REMOVED 18" (MIN.) BELOW EXISTING TOP ELEVATION. REMOVE AND DISPOSE OF WET WELL WALL AND VALVE VAULT TOPS AND HATCHES
- PLACE FLOWABLE FILL (N.C.T.C.O.G. ITEM 504.2.3.4)

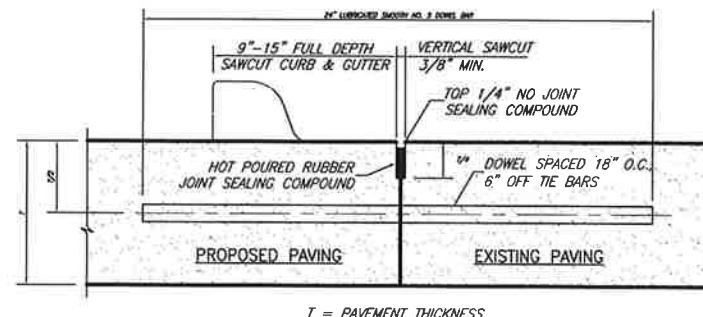
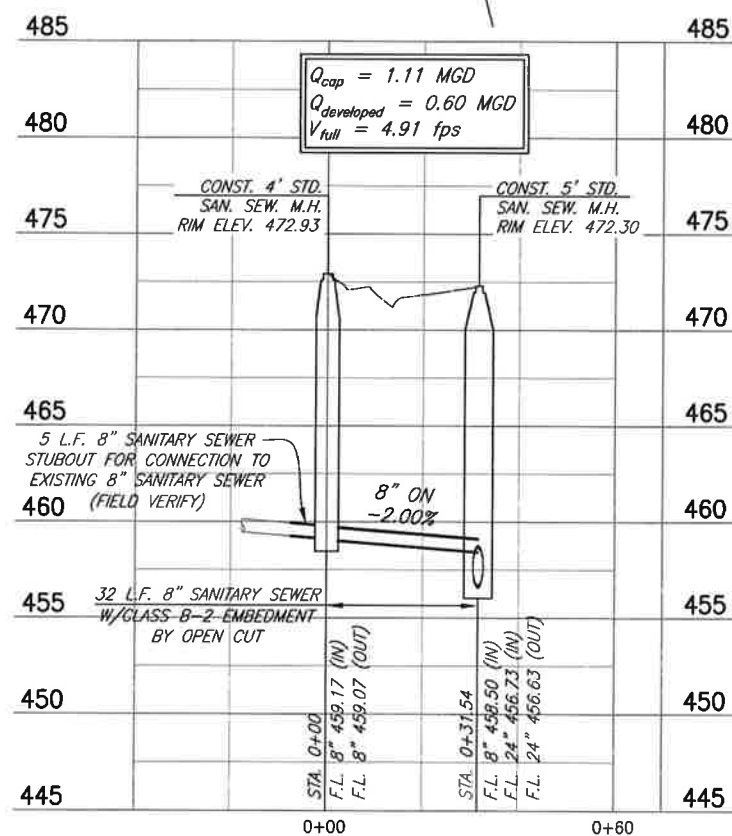
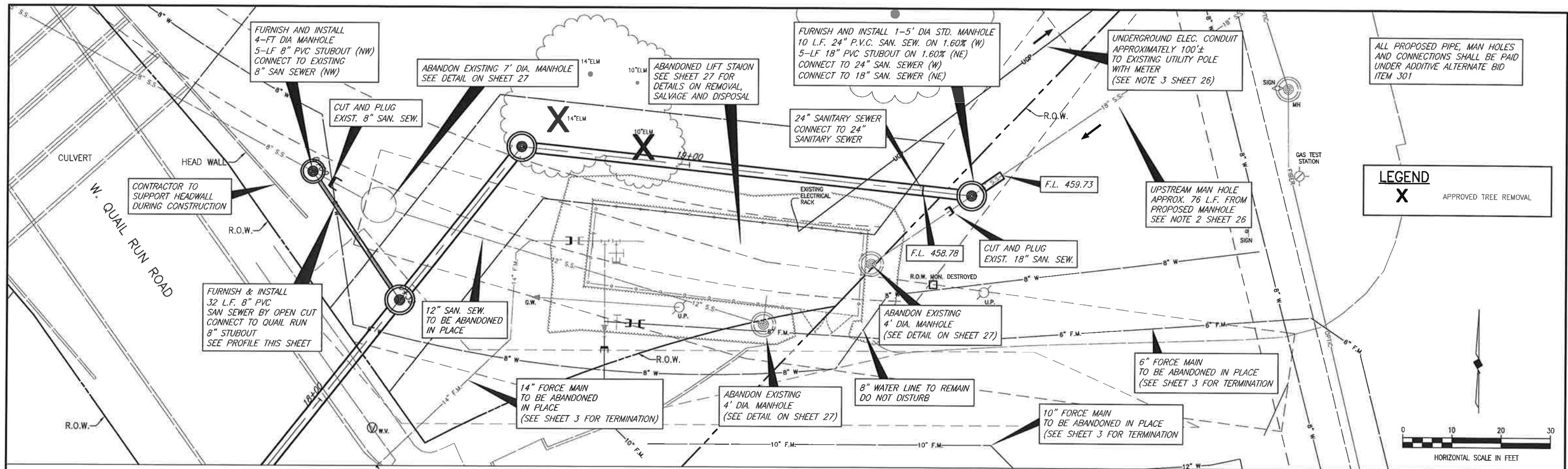


EMERGENCY BYPASS ABANDONMENT



MANHOLE ABANDONMENT
OUTSIDE PAVEMENT AREA
NO SCALE

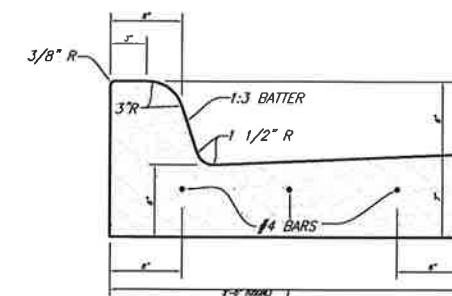
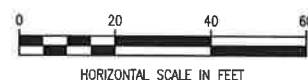
City of Rockwall
Public Works Department
Engineering Division
APPROVED FOR CONSTRUCTION
Capital Improvement Project
City Engineer: *James M. Riddle, P.E., CEM*
Date: 10/09/2017



- NOTES:
- NO. 5 SMOOTH DOWEL BAR MAY BE USED IN 6" PAVEMENT.
 - LONGITUDINAL BUTT CONSTRUCTION MAY BE USED IN PLACE OF LONGITUDINAL HINGED (KEYWAY) JOINT AT THE CONTRACTOR'S OPTION.
 - DOWEL BARS SHALL BE DRILLED INTO PAVEMENT HORIZONTALLY BY USE OF A MECHANICAL RIG.
 - DRILLING BY HAND IS NOT ACCEPTABLE. PUSHING DOWEL BARS INTO GREEN CONCRETE IS NOT ACCEPTABLE.

LONGITUDINAL BUTT JOINT

FOR 5" TO 6" PAVEMENT THICKNESS - NOT TO SCALE



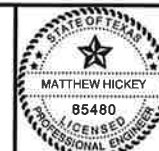
CONCRETE CURB AND GUTTER

NO SCALE

- NOTES:
- CONCRETE SHALL BE NCTOS ITEM 303.3.4.2 CLASS "C" 3,600 P.S.I.
 - HAND POURED CONCRETE SHALL NOT HAVE LESS THAN 6.5 SACKS OF CEMENT PER CUBIC YARD.

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BIRKHOFF, HENDRICKS & CARTER, L.L.P.
PROFESSIONAL ENGINEERS
TBPE Firm No. 526; TBPLS Firm No. 10031800
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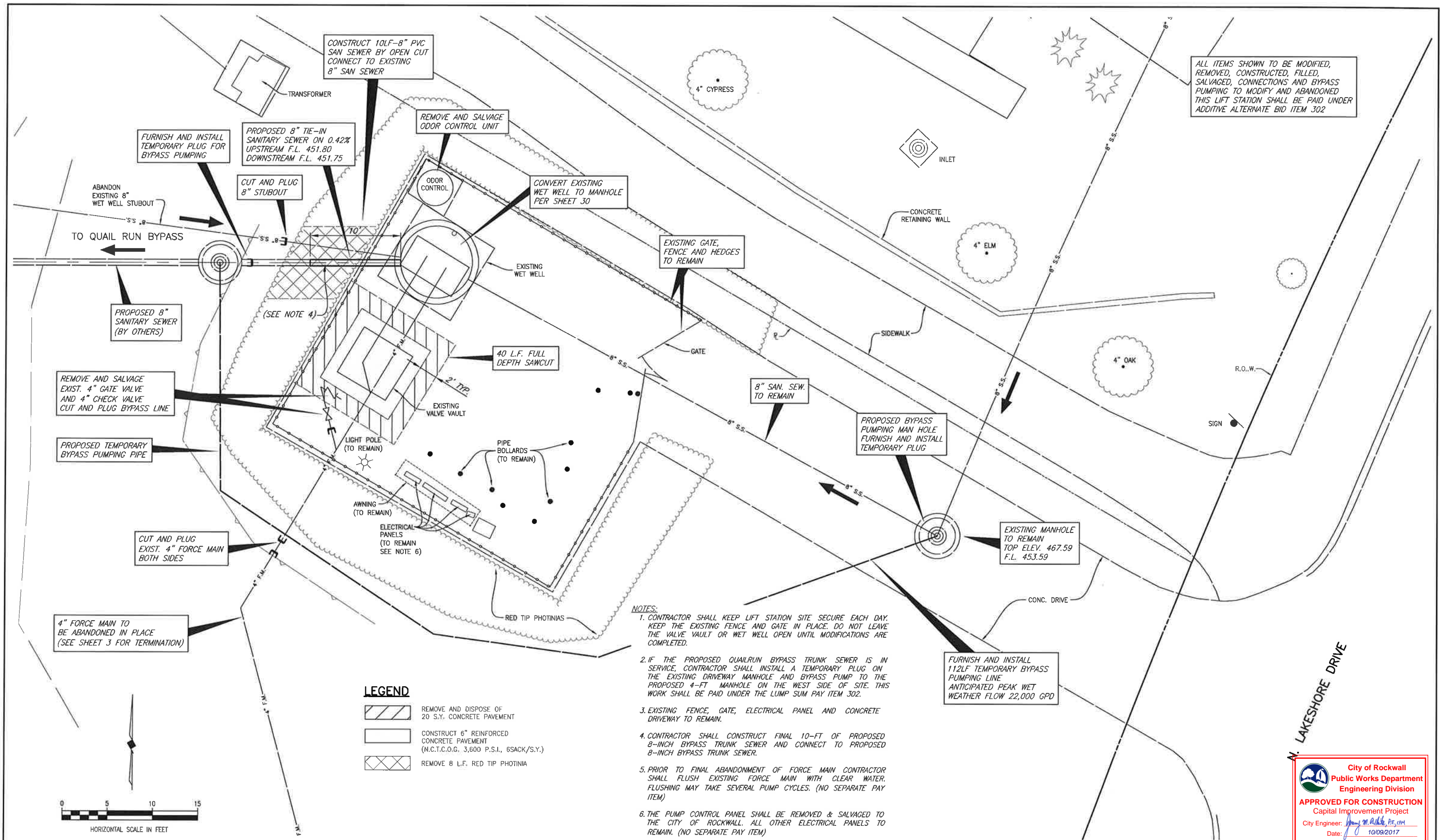
Matthew Whiskey
7/28/17

CITY OF ROCKWALL, TEXAS
QUAIL RUN & MEMORIAL BYPASS TRUNK SEWERS
QUAIL RUN CONNECTIONS
ADDITIVE ALTERNATE (ITEM 301)

City of Rockwall
Public Works Department
Engineering Division
APPROVED FOR CONSTRUCTION
Capital Improvement Project
City Engineer: *James M. White, PE, CM*
Date: 10/09/2017

BHC
PROJECT NO.
2015-144
July, 2017

SHEET NO.
28



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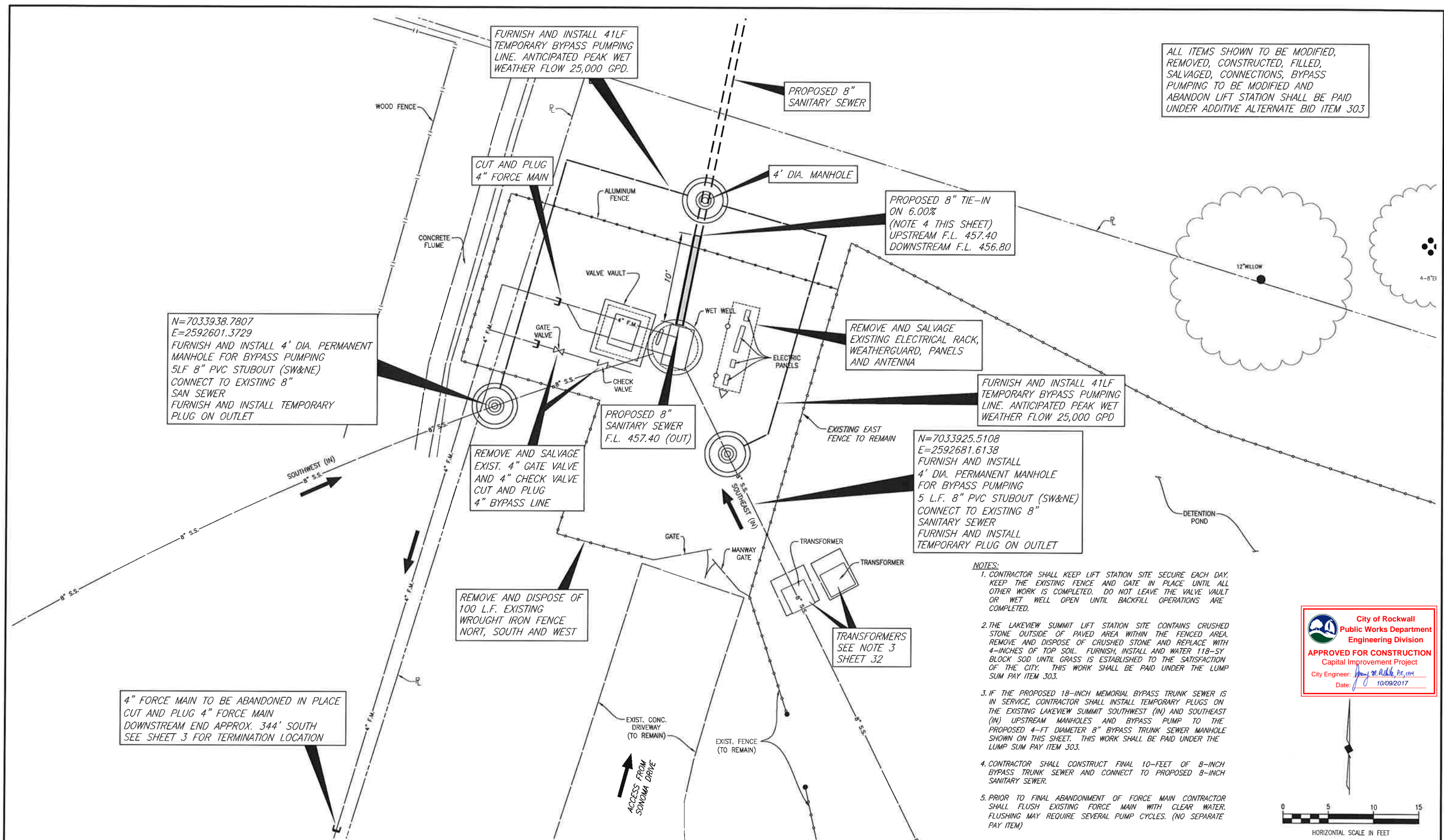
BIRKHOFF, HENDRICKS & CARTER, L.L.P.
 PROFESSIONAL ENGINEERS
 Texas Firm F526
 11910 Greenville Ave., Suite 600
 Dallas, Texas 75243 (214) 361-7900



Matthew Hickey
 7/28/17

CITY OF ROCKWALL, TEXAS
QUAIL RUN & MEMORIAL BYPASS TRUNK SEWERS
NORTH LAKESHORE VALLEY LIFT STATION MODIFICATION PLAN
ADDITIVE ALTERNATE (ITEM 302)

BHC
 PROJECT NO.
 2015-144
 SHEET NO.
29
 July, 2017



ALL ITEMS SHOWN TO BE MODIFIED, REMOVED, CONSTRUCTED, FILLED, SALVAGED, CONNECTIONS, BYPASS PUMPING TO BE MODIFIED AND ABANDON LIFT STATION SHALL BE PAID UNDER ADDITIVE ALTERNATE BID ITEM 303

N=7033938.7807
E=2592601.3729
FURNISH AND INSTALL 4' DIA. PERMANENT MANHOLE FOR BYPASS PUMPING 5LF 8" PVC STUBOUT (SW&NE) CONNECT TO EXISTING 8" SAN SEWER
FURNISH AND INSTALL TEMPORARY PLUG ON OUTLET

CUT AND PLUG 4" FORCE MAIN

PROPOSED 8" SANITARY SEWER

PROPOSED 8" TIE-IN ON 6.00% (NOTE 4 THIS SHEET) UPSTREAM F.L. 457.40 DOWNSTREAM F.L. 456.80

REMOVE AND SALVAGE EXISTING ELECTRICAL RACK, WEATHERGUARD, PANELS AND ANTENNA

FURNISH AND INSTALL 41LF TEMPORARY BYPASS PUMPING LINE. ANTICIPATED PEAK WET WEATHER FLOW 25,000 GPD

REMOVE AND SALVAGE EXIST. 4" GATE VALVE AND 4" CHECK VALVE CUT AND PLUG 4" BYPASS LINE

PROPOSED 8" SANITARY SEWER F.L. 457.40 (OUT)

N=7033925.5108
E=2592681.6138
FURNISH AND INSTALL 4' DIA. PERMANENT MANHOLE FOR BYPASS PUMPING 5 L.F. 8" PVC STUBOUT (SW&NE) CONNECT TO EXISTING 8" SANITARY SEWER
FURNISH AND INSTALL TEMPORARY PLUG ON OUTLET

REMOVE AND DISPOSE OF 100 L.F. EXISTING WROUGHT IRON FENCE NORT, SOUTH AND WEST

TRANSFORMERS SEE NOTE 3 SHEET 32

4" FORCE MAIN TO BE ABANDONED IN PLACE CUT AND PLUG 4" FORCE MAIN DOWNSTREAM END APPROX. 344' SOUTH SEE SHEET 3 FOR TERMINATION LOCATION

- NOTES:
1. CONTRACTOR SHALL KEEP LIFT STATION SITE SECURE EACH DAY. KEEP THE EXISTING FENCE AND GATE IN PLACE UNTIL ALL OTHER WORK IS COMPLETED. DO NOT LEAVE THE VALVE VAULT OR WET WELL OPEN UNTIL BACKFILL OPERATIONS ARE COMPLETED.
 2. THE LAKEVIEW SUMMIT LIFT STATION SITE CONTAINS CRUSHED STONE OUTSIDE OF PAVED AREA WITHIN THE FENCED AREA. REMOVE AND DISPOSE OF CRUSHED STONE AND REPLACE WITH 4-INCHES OF TOP SOIL. FURNISH, INSTALL AND WATER 118-SY BLOCK SOD UNTIL GRASS IS ESTABLISHED TO THE SATISFACTION OF THE CITY. THIS WORK SHALL BE PAID UNDER THE LUMP SUM PAY ITEM 303.
 3. IF THE PROPOSED 18-INCH MEMORIAL BYPASS TRUNK SEWER IS IN SERVICE, CONTRACTOR SHALL INSTALL TEMPORARY PLUGS ON THE EXISTING LAKEVIEW SUMMIT SOUTHWEST (IN) AND SOUTHEAST (IN) UPSTREAM MANHOLES AND BYPASS PUMP TO THE PROPOSED 4-FT DIAMETER 8" BYPASS TRUNK SEWER MANHOLE SHOWN ON THIS SHEET. THIS WORK SHALL BE PAID UNDER THE LUMP SUM PAY ITEM 303.
 4. CONTRACTOR SHALL CONSTRUCT FINAL 10-FOOT OF 8-INCH BYPASS TRUNK SEWER AND CONNECT TO PROPOSED 8-INCH SANITARY SEWER.
 5. PRIOR TO FINAL ABANDONMENT OF FORCE MAIN CONTRACTOR SHALL FLUSH EXISTING FORCE MAIN WITH CLEAR WATER. FLUSHING MAY REQUIRE SEVERAL PUMP CYCLES. (NO SEPARATE PAY ITEM)



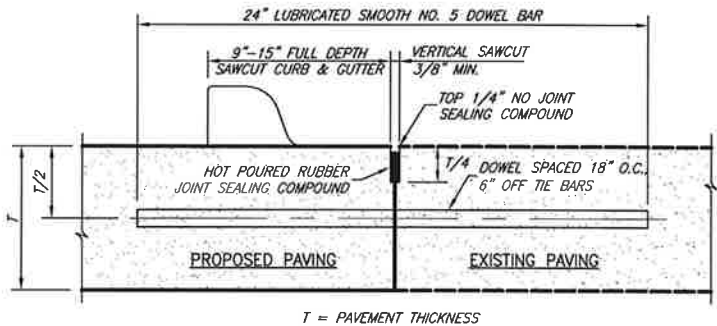
City of Rockwall
Public Works Department
Engineering Division

APPROVED FOR CONSTRUCTION
Capital Improvement Project
City Engineer: *James M. Arlt, PE, CM*
Date: 10/09/2017



LIFT STATION ABANDONMENT NOTES
(ALL ITEMS SUBSIDIARY TO LIFT STATION ABANDONMENT)

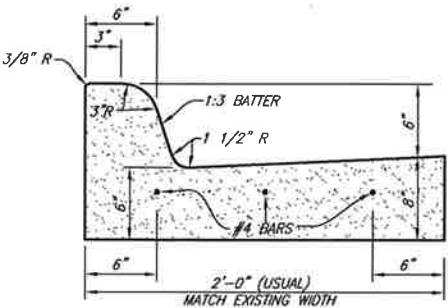
1. PRIOR TO ABANDONMENT OF THE MEMORIAL LIFT STATION, THE SQUABBLE CREEK LIFT STATION CONSTRUCTION AND TESTING SHALL BE COMPLETED AND ACCEPTED BY THE CITY.
2. CITY SHALL DIRECT THE CONTRACTOR IN WRITING TO PROCEED WITH THE MEMORIAL LIFT STATION ABANDONMENT.
3. CONTRACTOR SHALL COORDINATE WITH ONCOR TO REMOVE POWER METER AND TO CUT AND CAP EXISTING POWER TO THE MEMORIAL LIFT STATION (NO SEPARATE PAY ITEM).
4. ITEMS TO BE SALVAGED TO THE CITY OF ROCKWALL SHALL BE DELIVERED AND UNLOADED AT A LOCATION SELECTED BY THE CITY AT 1600 AIRPORT ROAD, ROCKWALL, TEXAS (NO SEPARATE PAY ITEM). SALVAGED ITEMS SHALL INCLUDE PUMPS, RAILS, PUMP BASES, CHECK VALVES, GATE VALVES, CONTROL PANEL, ANTENNA AND SWING GATE.
5. PRIOR TO ABANDONMENT OF THE MEMORIAL LIFT STATION, PROPOSED CONNECTIONS TO THE 18-INCH MEMORIAL BYPASS GRAVITY LINE SHALL BE COMPLETED TO PREVENT FLOWS TO THE MEMORIAL LIFT STATION. ONCE CONNECTIONS ARE MADE, THE CITY WILL PUMP DOWN THE MEMORIAL LIFT STATION WET WELL TO A DEPTH THE EXISTING PUMPS WILL WORK. ANY REMAINING WASTEWATER IN THE WET WELL SHALL BE PUMPED AND HAULED BY THE CONTRACTOR TO THE SQUABBLE CREEK LIFT STATION FOR DISPOSAL (NO SEPARATE PAY ITEM).
6. PRIOR TO ABANDONMENT AND FILLING OF THE EXISTING WET WELL, THE CONTRACTOR SHALL DRAIN AND POWER WASH EXISTING MEMORIAL WET WELL. WASTEWATER GENERATED FROM THE CLEANING PROCESS SHALL BE PUMPED AND HAULED BY THE CONTRACTOR TO THE SQUABBLE CREEK LIFT STATION FOR DISPOSAL (NO SEPARATE PAY ITEM).
7. REMOVE AND DISPOSE OF ALL BRACKETS OR FASTENERS IN WET WELL. (NO SEPARATE PAY ITEM).



- NOTES:
1. NO. 5 SMOOTH DOWEL BAR MAY BE USED IN 6" PAVEMENT.
 2. LONGITUDINAL BUTT CONSTRUCTION MAY BE USED IN PLACE OF LONGITUDINAL HINGED (KEYWAY) JOINT AT THE CONTRACTOR'S OPTION.
 3. DOWEL BARS SHALL BE DRILLED INTO PAVEMENT HORIZONTALLY BY USE OF A MECHANICAL RIG.
 4. DRILLING BY HAND IS NOT ACCEPTABLE. PUSHING DOWEL BARS INTO GREEN CONCRETE IS NOT ACCEPTABLE.

LONGITUDINAL BUTT JOINT

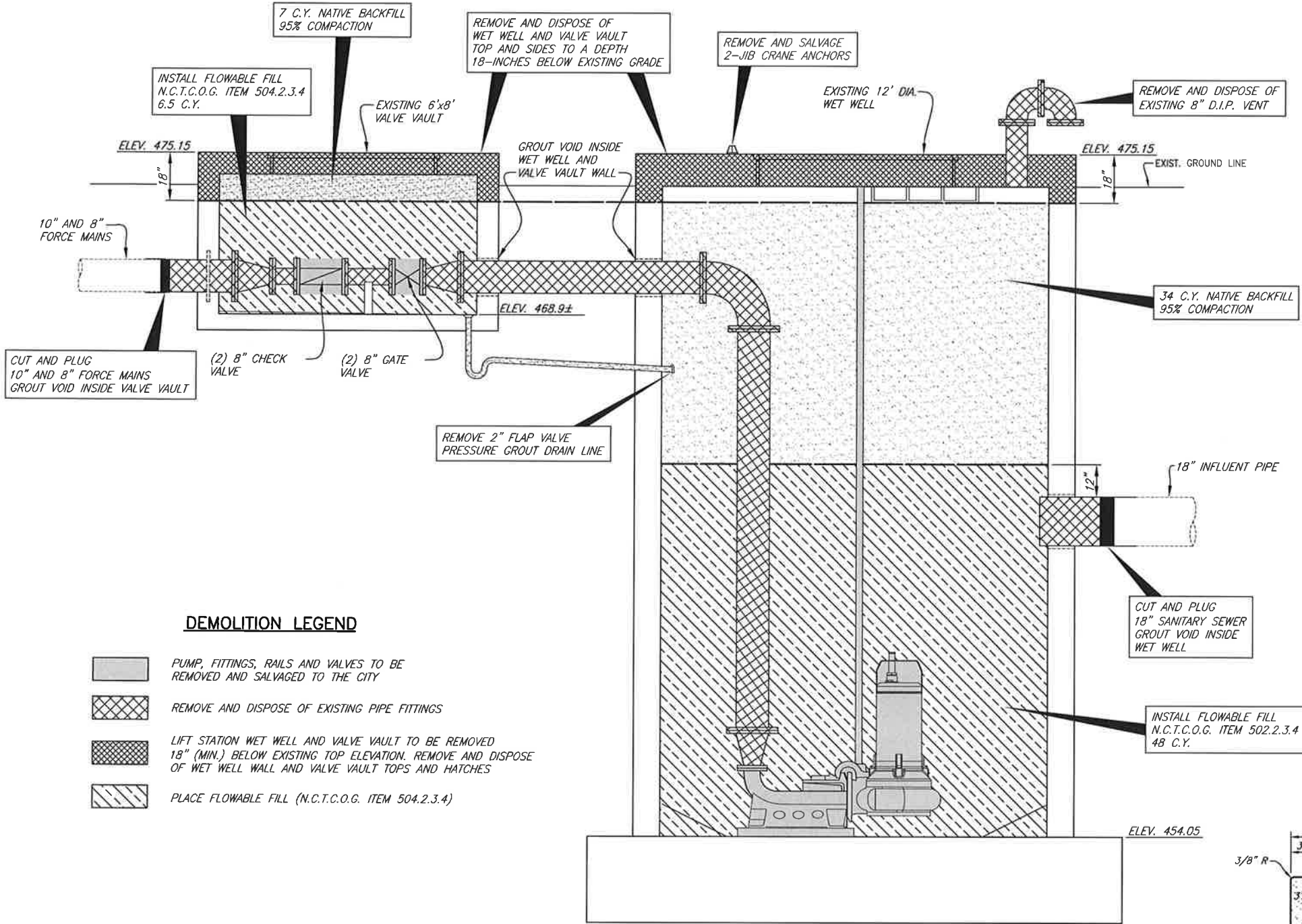
FOR 5" TO 6" PAVEMENT THICKNESS - NOT TO SCALE



- NOTES:
1. CONCRETE SHALL BE NCTOG ITEM 30.3.3.4.2 CLASS "C" 3,600 P.S.I.
 2. HAND POURED CONCRETE SHALL NOT HAVE LESS THAN 6.5 SACKS OF CEMENT PER CUBIC YARD.

CONCRETE CURB AND GUTTER

NO SCALE



DEMOLITION LEGEND

- PUMP, FITTINGS, RAILS AND VALVES TO BE REMOVED AND SALVAGED TO THE CITY
- REMOVE AND DISPOSE OF EXISTING PIPE FITTINGS
- LIFT STATION WET WELL AND VALVE VAULT TO BE REMOVED 18" (MIN.) BELOW EXISTING TOP ELEVATION. REMOVE AND DISPOSE OF WET WELL WALL AND VALVE VAULT TOPS AND HATCHES
- PLACE FLOWABLE FILL (N.C.T.C.O.G. ITEM 504.2.3.4)

MEMORIAL LIFT STATION ABANDONMENT

NO SCALE

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
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Dallas, Texas 75243 (214) 361-7900



Matthew Hickey
7/28/17

CITY OF ROCKWALL, TEXAS
QUAIL RUN & MEMORIAL BYPASS TRUNK SEWERS
MEMORIAL LIFT STATION ABANDONMENT
ADDITIVE ALTERNATE (ITEM 304)



BHC
PROJECT NO.
2015-144

July, 2017

SHEET NO.

34

QUAIL RUN 10" AND 6" FORCE MAIN RECORD DRAWINGS



STATE HIGHWAY NO. 205

N 10618.1062, E 11794.562
STA. 3+00
FURNISH & INSTALL:
1-2" COMBINATION SEWAGE
AIR & VACUUM RELEASE VALVE

PROP. 18" SAN. SEW.
BY OTHERS

REMOVE & REPLACE:
10 S.Y. ASPHALT PAVEMENT

N 10744.3234, E 11775.4085
P.I. STA. 1+72.34
Δ = 59°02'46" RT.
FURNISH & INSTALL:
1-10" 60" BEND
PULL PIPE FOR DEFLECTION

N 10770.1394, E 11712.5408
P.I. STA. 1+04.38
Δ = 31°21'10" LI.
FURNISH & INSTALL:
1-10" 22 1/2" BEND
1-10" 11 1/4" BEND

N 10779.2225, E 11705.8632
P.I. STA. 0+93.10
Δ = 45°00'00" RT.
FURNISH & INSTALL:
1-10" 45" BEND

N 10796.4332, E 11628.8587
P.I. STA. 0+12.15
Δ = 45°00'00" LI.
FURNISH & INSTALL:
1-10" 45" BEND

N 10790.2853, E 11633.3785
STA. 0+19.78
Δ = 31°21'10" LI.
FURNISH & INSTALL:
1-10" 45" BEND

FURNISH & INSTALL:
10" FORCE MAIN

REMOVE & REPLACE:
4 S.Y. ASPHALT PAVEMENT

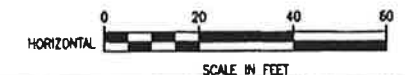
ARKOMA REALTY LTD.
VOL. 2279, PG. 273

J.H.B. JONES SURVEY
ABSTRACT NO. 124

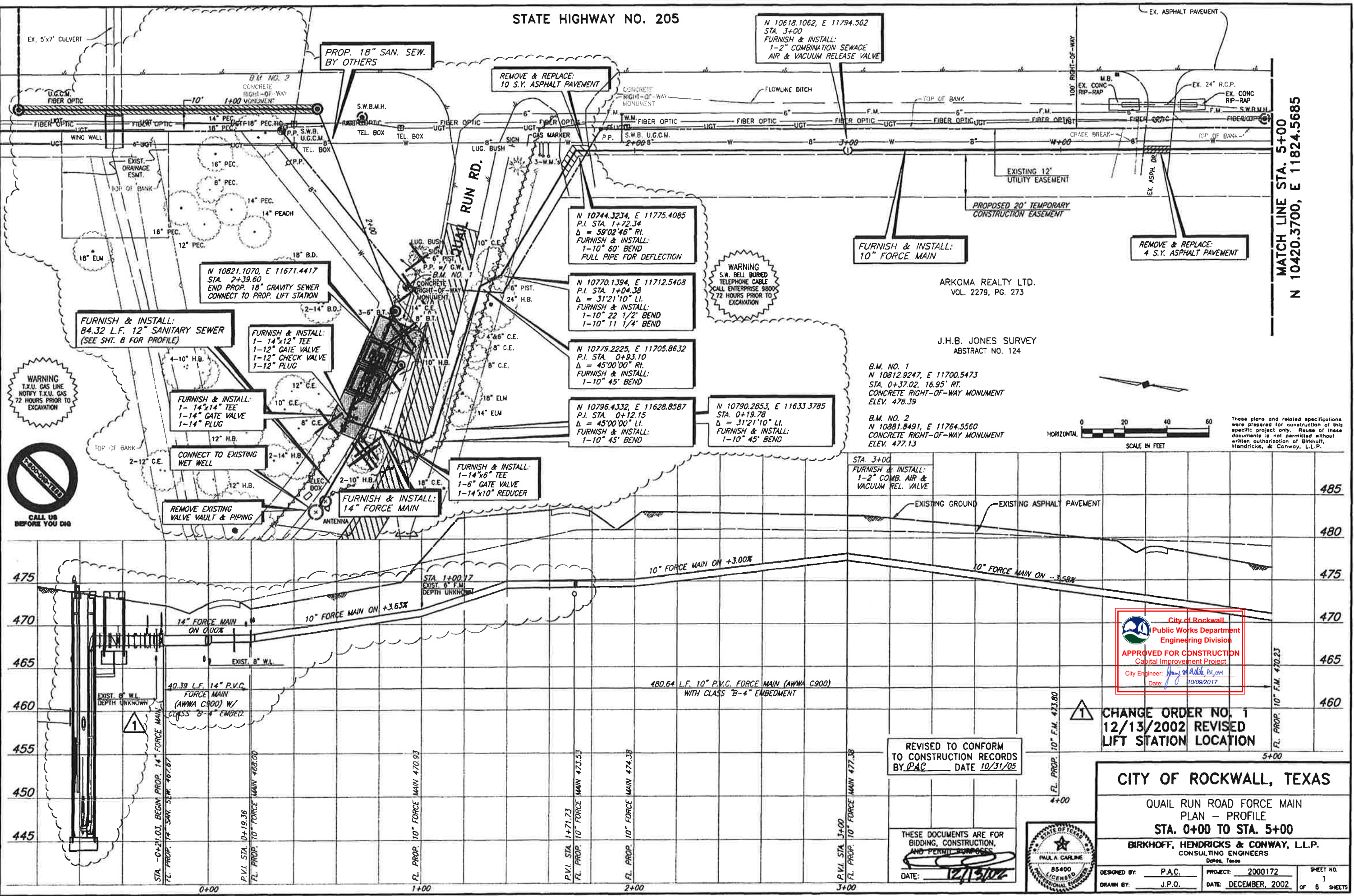
B.M. NO. 1
N 10812.9247, E 11700.5473
STA. 0+37.02, 16.95' RT.
CONCRETE RIGHT-OF-WAY MONUMENT
ELEV. 478.39

B.M. NO. 2
N 10881.8491, E 11764.5560
CONCRETE RIGHT-OF-WAY MONUMENT
ELEV. 477.13

STA. 3+00
FURNISH & INSTALL:
1-2" COMB. AIR &
VACUUM REL. VALVE



These plans and related specifications
were prepared for construction of this
specific project only. Reuse of these
documents is not permitted without
written authorization of Birkhoff,
Hendricks, & Conway, L.L.P.



City of Rockwall
Public Works Department
Engineering Division
APPROVED FOR CONSTRUCTION
Capital Improvement Project
City Engineer: *[Signature]*
Date: 10/09/2017

CHANGE ORDER NO. 1
12/13/2002 REVISED
LIFT STATION LOCATION

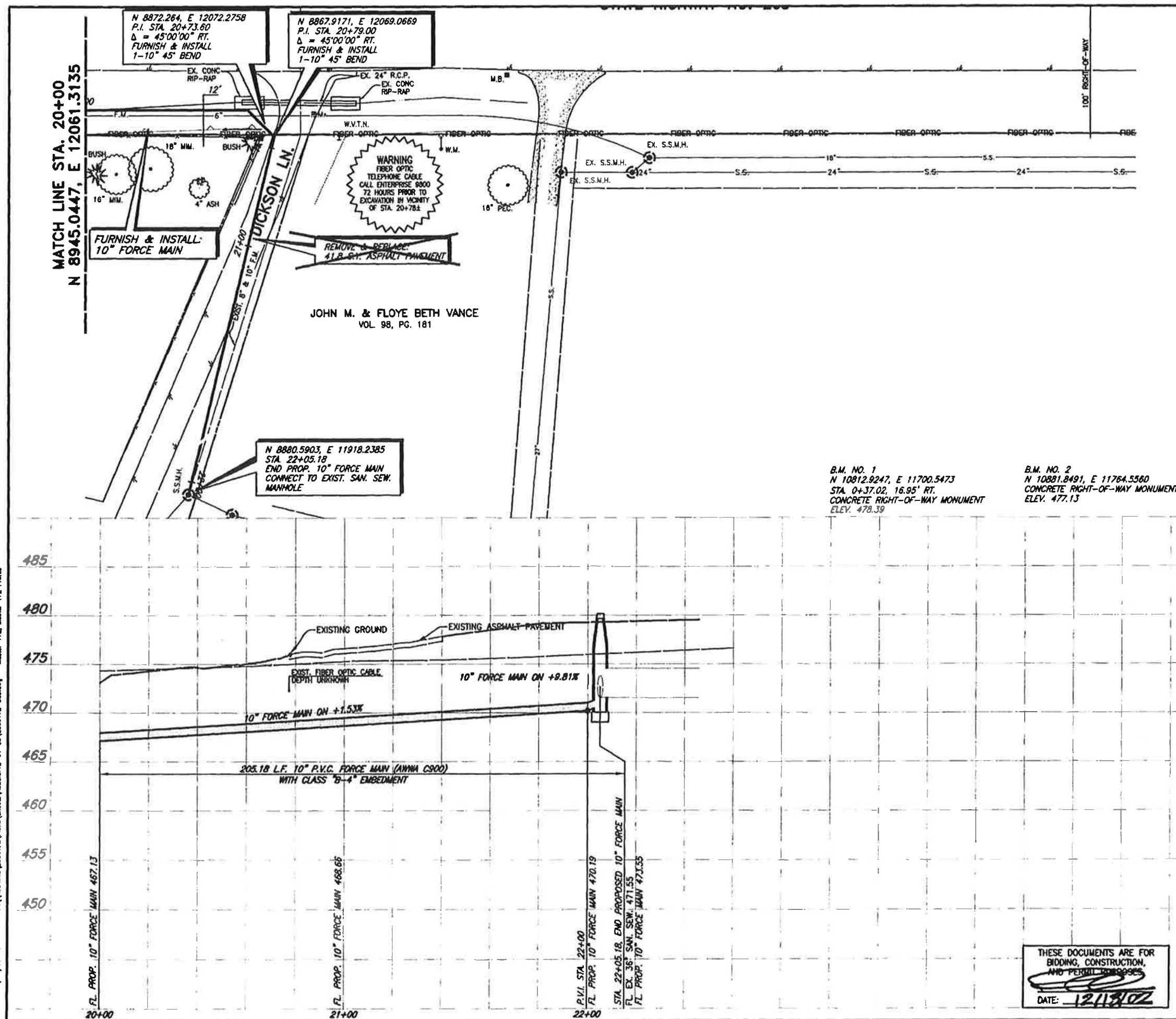
REVISED TO CONFORM
TO CONSTRUCTION RECORDS
BY: *[Signature]* DATE: 10/31/05

THESE DOCUMENTS ARE FOR
BIDDING, CONSTRUCTION,
AND PERMIT PURPOSES
DATE: 12/13/02



CITY OF ROCKWALL, TEXAS		
QUAIL RUN ROAD FORCE MAIN PLAN - PROFILE STA. 0+00 TO STA. 5+00		
BIRKHOFF, HENDRICKS & CONWAY, L.L.P. CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: P.A.C.	PROJECT: 2000172	SHEET NO. 1
DRAWN BY: J.P.O.	DATE: DECEMBER, 2002	OF 8 SHEETS

Revised: 10/31/05 MD H:\Rockwell\2000172\Fire\Sheets\ASBULT12-01-03\2000172-S05.dwg Master 172_Master 172_Profile



A horizontal scale bar with markings at 0, 20, 40, and 60 feet. The text "HORIZONTAL" is written to the left of the 0 mark, and "SCALE IN FEET" is written below the bar.

These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birchhoff, Hendricks, & Conway, LLP.

REVISED TO CONFORM
TO CONSTRUCTION RECORDS
BY PAC DATE 10/31/05

CITY OF ROCKWALL, TEXAS

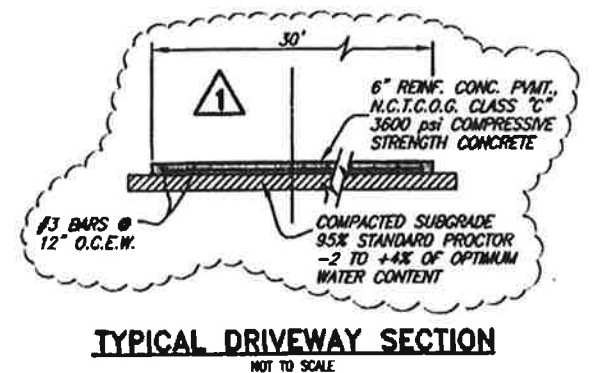
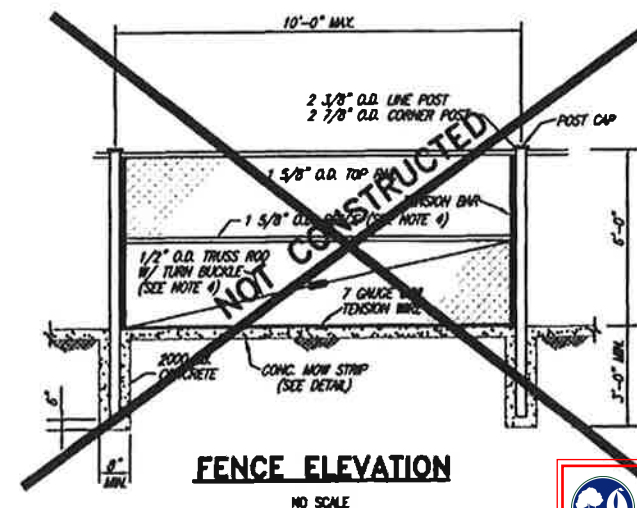
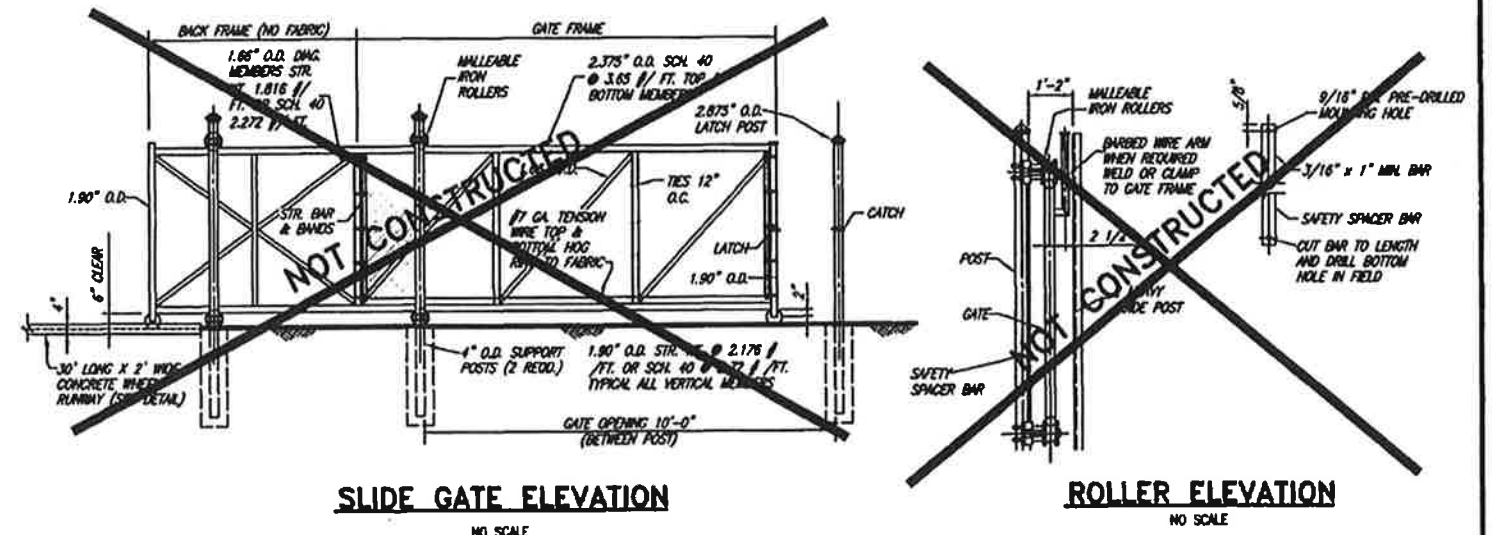
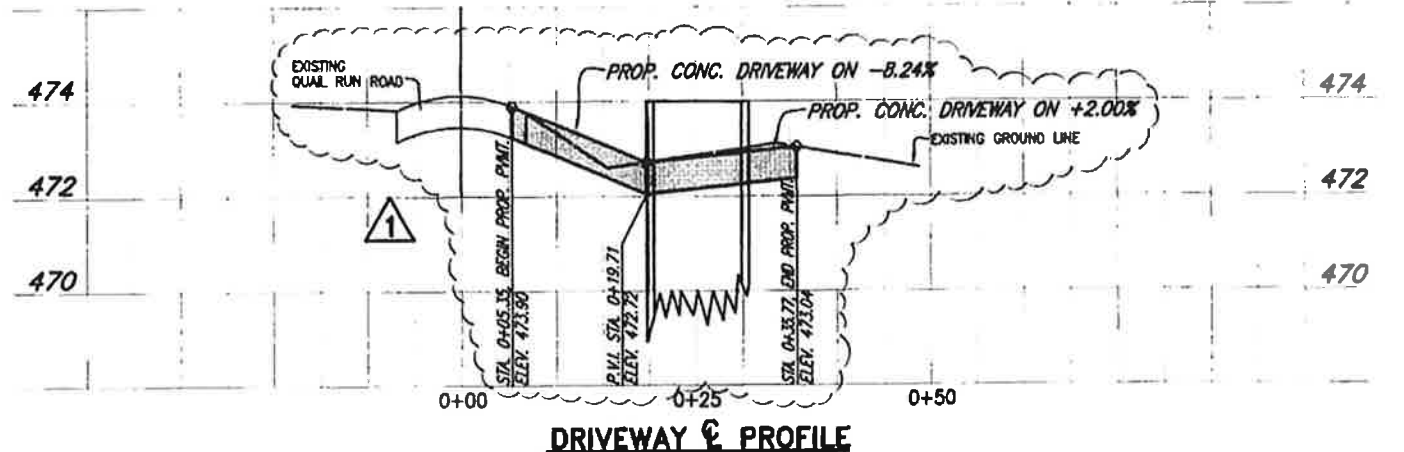
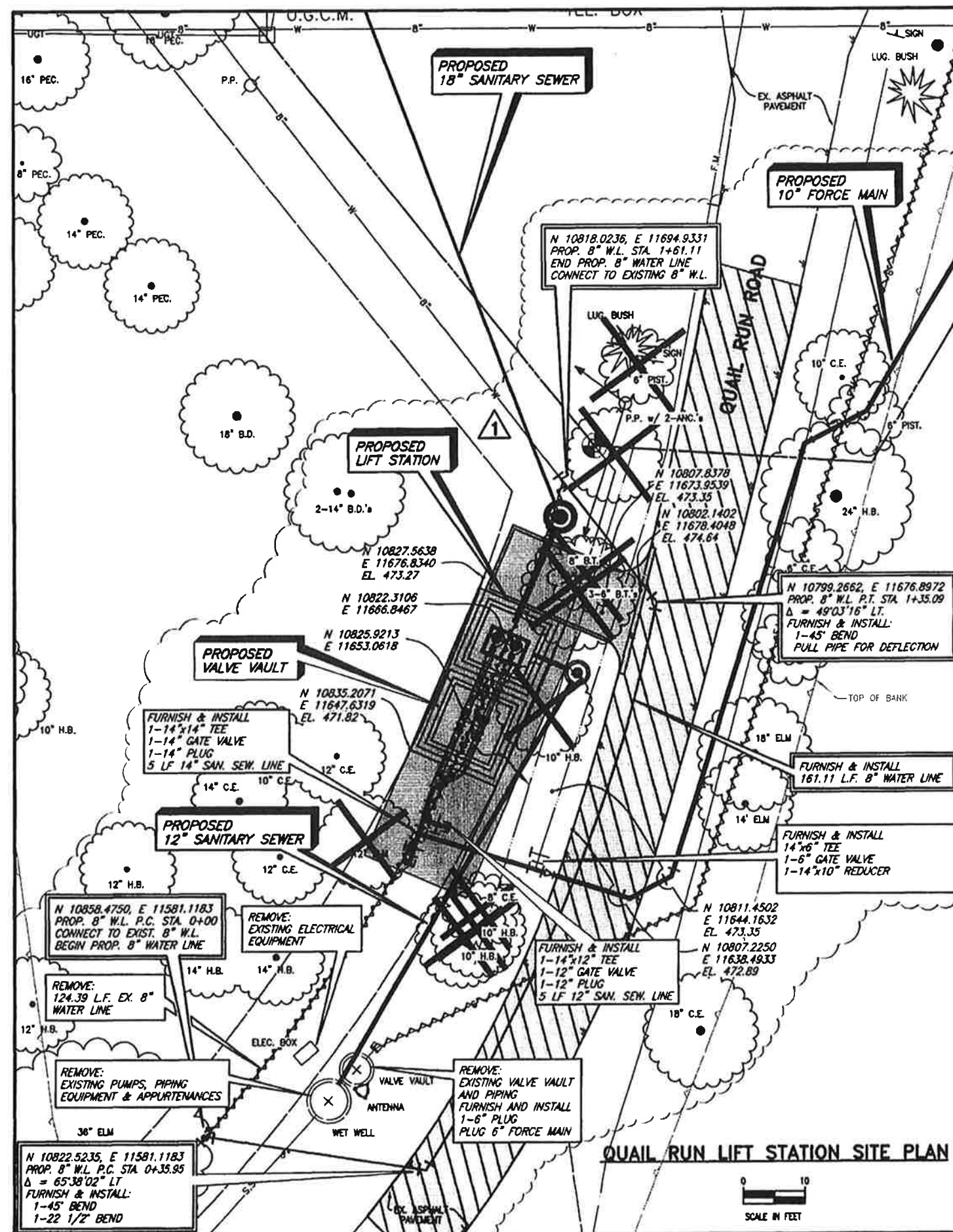
QUAIL RUN ROAD FORCE MAIN
PLAN - PROFILE
STA. 15+00 TO STA. 22+34.18

BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
CONSULTING ENGINEERS

DESIGNED BY: <u>P.A.C.</u>	PROJECT: <u>2000172</u>	SHEET NO. <u>5</u>
DRAWN BY: <u>J.P.O.</u>	DATE: <u>DECEMBER, 2002</u>	OF <u>8</u> SHEETS

THESE DOCUMENTS ARE FOR
BIDDING, CONSTRUCTION,
AND PERMIT 120995.
DATE: 12/13/02





REVISED TO CONFORM
TO CONSTRUCTION RECORDS
BY PAC DATE 10/31/05

**1 CHANGE ORDER NO. 1
12/13/2002 REVISED
LIFT STATION LOCATION**

THESE DOCUMENTS ARE FOR
BIDDING, CONSTRUCTION,
AND PERMIT PURPOSES.

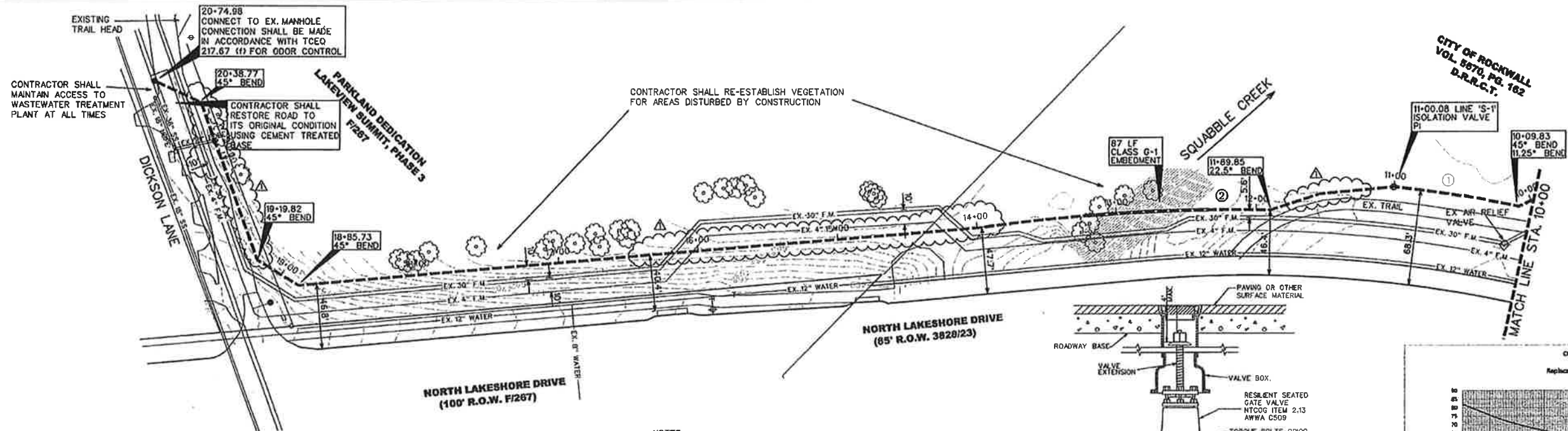
DATE: 12/13/02

STATE OF TEXAS
PAUL A. CARLINE
85400
LICENSED
PROFESSIONAL ENGINEER

CITY OF ROCKWALL, TEXAS		
QUAIL RUN LIFT STATION		
SITE PLAN AND ABANDONMENT PLAN		
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.		
CONSULTING ENGINEERS		
DESIGNED BY: <u>P.A.C.</u>	PROJECT: <u>2000172</u>	SHEET NO. <u>6</u>
DRAWN BY: <u>J.P.O.</u>	DATE: <u>DECEMBER, 2002</u>	OF <u>8</u> SHEETS

QUAIL RUN 14" FORCE MAIN RECORD DRAWINGS





NOTES:

ALL FORCE MAIN TO BE AWWA C-905 PIPE DR18, COLORED GREEN.

INSTALL GREEN SANITARY SEWER MARKER PAD-EMS APPROX. EVERY 250 FEET AND AT EVERY CHANGE IN DIRECTION ABOVE FORCE MAIN.

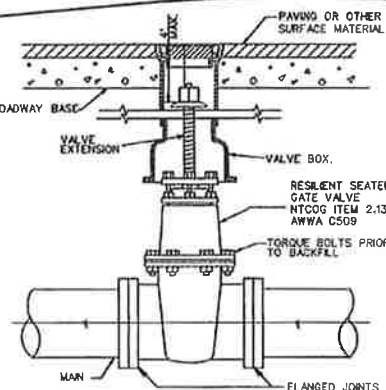
DETECTOR TAPE SHALL BE REQUIRED ALONG FORCE MAIN. SEE TCEQ 217.66

FORCE MAIN SHALL BE INSTALLED WITH CLASS "B-4" IMBEDMENT EXCEPT WHERE NOTED OTHERWISE.

ALL PIPE FITTINGS SHALL USE RESTRAINED JOINTS

ALL NEWLY INSTALLED PIPE SHALL BE TESTED AS REQUIRED BY THE CITY OF ROCKWALL STANDARDS OF DESIGN AND CONSTRUCTION.

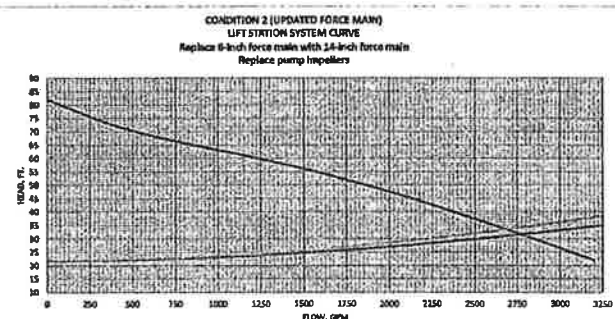
ALL BORES WILL REQUIRE STEEL ENCASEMENT PIPE AND SPACERS



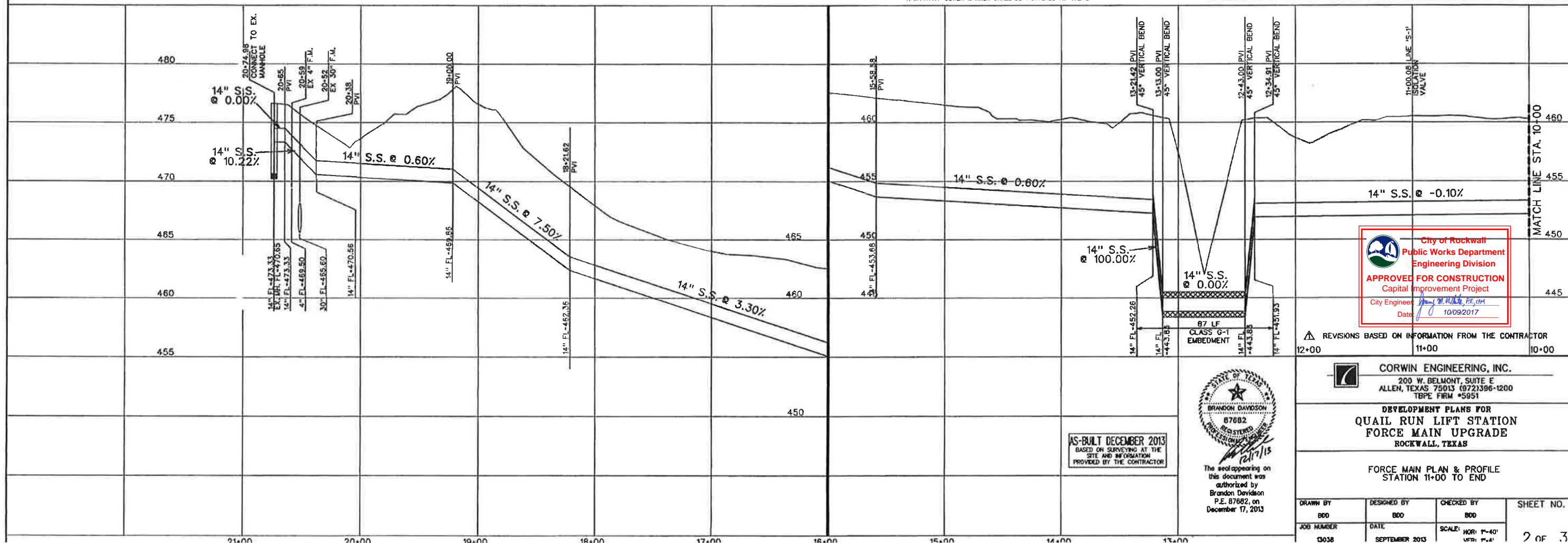
ISOLATION GATE VALVE DETAIL

NOTES:

1. IN UNPAVED AREAS, INSTALL 2' x 2' x 4" CONCRETE VALVE PAD FLUSH WITH THE TOP OF VALVE BOX.
2. IF CONNECTING TO A METALLIC PIPE, FLANGE JOINT SHALL BE INSULATED. CONTRACTOR SHALL FURNISH AND INSTALL "INSULVET" FLANGE GASKETS OR APPROVED EQUIVALENT, INSULATING SLEEVES AND TWO PLASTIC WASHERS FOR EACH BOLT AT EACH FLANGE AND VALVE CONNECTION.
3. VALVE STACK CAP SHALL BE PAINTED GREEN
4. SANITARY SEWER MARKER SHALL BE INSTALLED AT VALVE



Mark A. Perkins Texas PE 60329
Perkins Engineering Consultants, Inc. TBPE Firm F8699
August 15, 2013



City of Rockwall
Public Works Department
Engineering Division
APPROVED FOR CONSTRUCTION
Capital Improvement Project
City Engineer: *[Signature]*
Date: 10/09/2017

REVISIONS BASED ON INFORMATION FROM THE CONTRACTOR
12+00 11+00 10+00

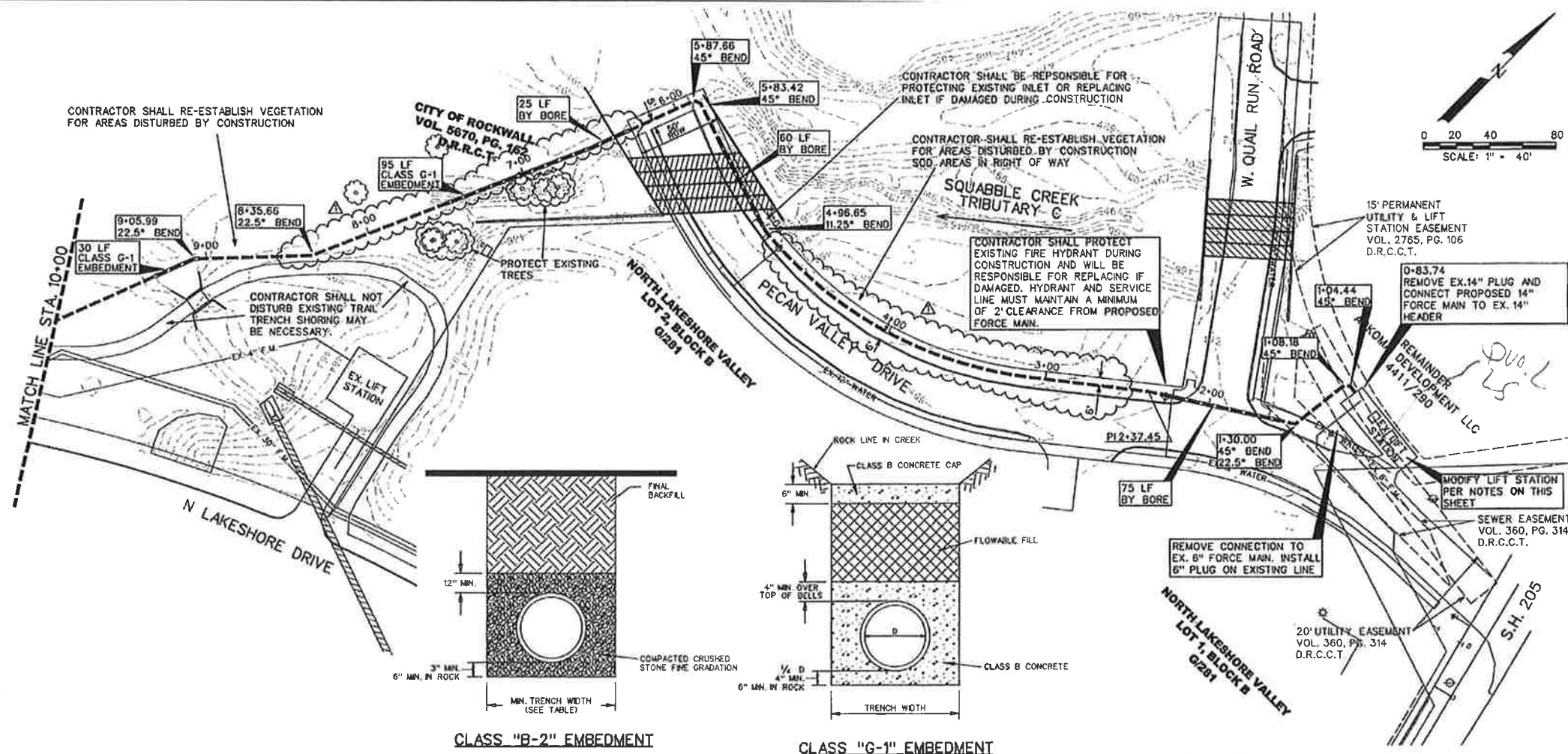


AS-BUILT DECEMBER 2013
BASED ON SURVEYING AT THE SITE AND INFORMATION PROVIDED BY THE CONTRACTOR

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951
DEVELOPMENT PLANS FOR
QUAIL RUN LIFT STATION
FORCE MAIN UPGRADE
ROCKWALL, TEXAS

FORCE MAIN PLAN & PROFILE
STATION 11+00 TO END

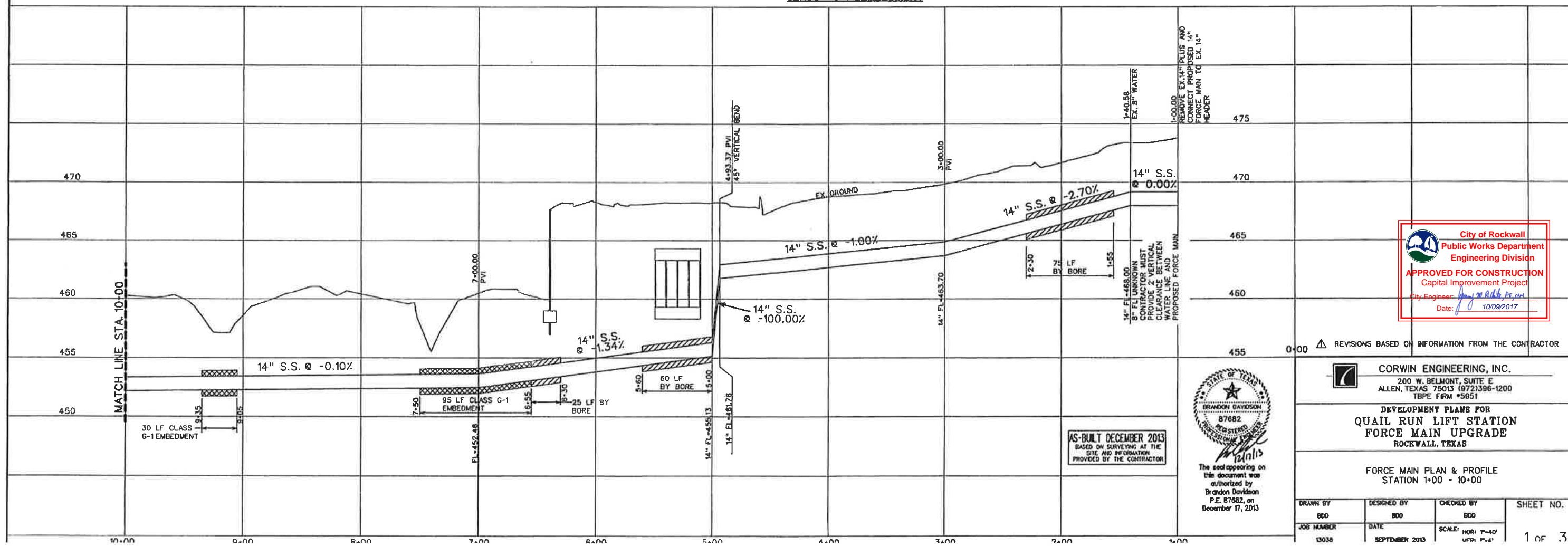
DRAWN BY 800	DESIGNED BY 800	CHECKED BY 800	SHEET NO. 2 OF 3
JOB NUMBER 13038	DATE SEPTEMBER 2013	SCALE: HOR: 1"=40' VER: 1"=4'	



- LIFT STATION MODIFICATIONS REQUIRED**
1. ALL PUMP IMPROVEMENTS AND OPERATIONS OF THE LIFT STATION SHALL BE COORDINATED WITH THE CITY OF ROCKWALL.
 2. REPLACE IMPELLERS IN EACH OF TWO EXISTING FLYGT WYLEND CP3201 PUMPS WITH IMPELLERS RATED TO PRODUCE 2760 GPM AT 32 FEET TDH (335 mm NOMINAL IMPELLER DIAMETER) TO BE VERIFIED BY PUMP MANUFACTURER.
 3. IMPELLER REPLACEMENT ON FIRST PUMP SHALL OCCUR IMMEDIATELY BEFORE PLACING NEW FORCE MAIN IN SERVICE.
 4. ONLY ONE PUMP AT A TIME MAY BE TAKEN OUT OF SERVICE FOR A MAXIMUM OF 8 HOURS EACH FOR IMPELLER REPLACEMENT.
 5. VERIFY THAT FIRST PUMP MODIFIED OPERATES SATISFACTORILY FOR 48 HOURS BEFORE TAKING SECOND PUMP OUT OF SERVICE FOR IMPELLER REPLACEMENT.
- NOTE:**
EXISTING UTILITIES SHOWN ARE A GRAPHICAL REPRESENTATION OF THE LOCATION BASED ON AS-BUILT DRAWINGS. ACTUAL LOCATION AND ELEVATION MAY BE DIFFERENT. CONTRACTOR MUST VERIFY ALL EXISTING UTILITIES FOR LOCATION AND ELEVATION PRIOR TO CONSTRUCTION.
- NOTES:**
ALL FORCE MAIN TO BE AWWA C-905 PIPE DR18, COLORED GREEN.
INSTALL GREEN SANITARY SEWER MARKER PAD-EWS APPROX. EVERY 250 FEET AND AT EVERY CHANGE IN DIRECTION ABOVE FORCE MAIN.
DETECTOR TAPE SHALL BE REQUIRED ALONG FORCE MAIN. SEE TCEQ 217.66
FORCE MAIN SHALL BE INSTALLED WITH CLASS "B-4" IMBEDMENT EXCEPT WHERE NOTED OTHERWISE.
ALL PIPE FITTINGS SHALL USE RESTRAINED JOINTS
ALL NEWLY INSTALLED PIPE SHALL BE TESTED AS REQUIRED BY THE CITY OF ROCKWALL STANDARDS OF DESIGN AND CONSTRUCTION.
ALL BORES WILL REQUIRE STEEL ENCASUREMENT PIPE AND SPACERS

CLASS "B-2" EMBEDMENT

CLASS "G-1" EMBEDMENT



City of Rockwall
Public Works Department
Engineering Division
APPROVED FOR CONSTRUCTION
Capital Improvement Project
City Engineer: *[Signature]*
Date: 10/09/2017



CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBE FIRM #5051

**DEVELOPMENT PLANS FOR
QUAIL RUN LIFT STATION
FORCE MAIN UPGRADE
ROCKWALL, TEXAS**

**FORCE MAIN PLAN & PROFILE
STATION 1+00 - 10+00**

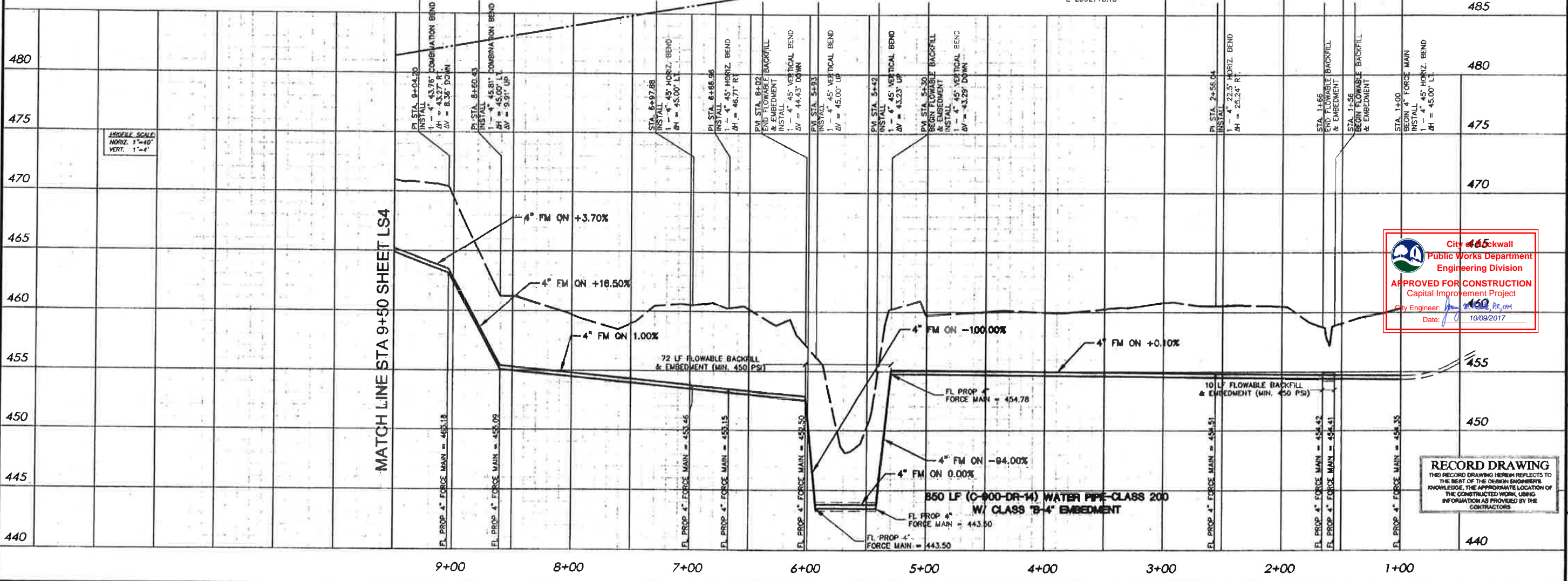
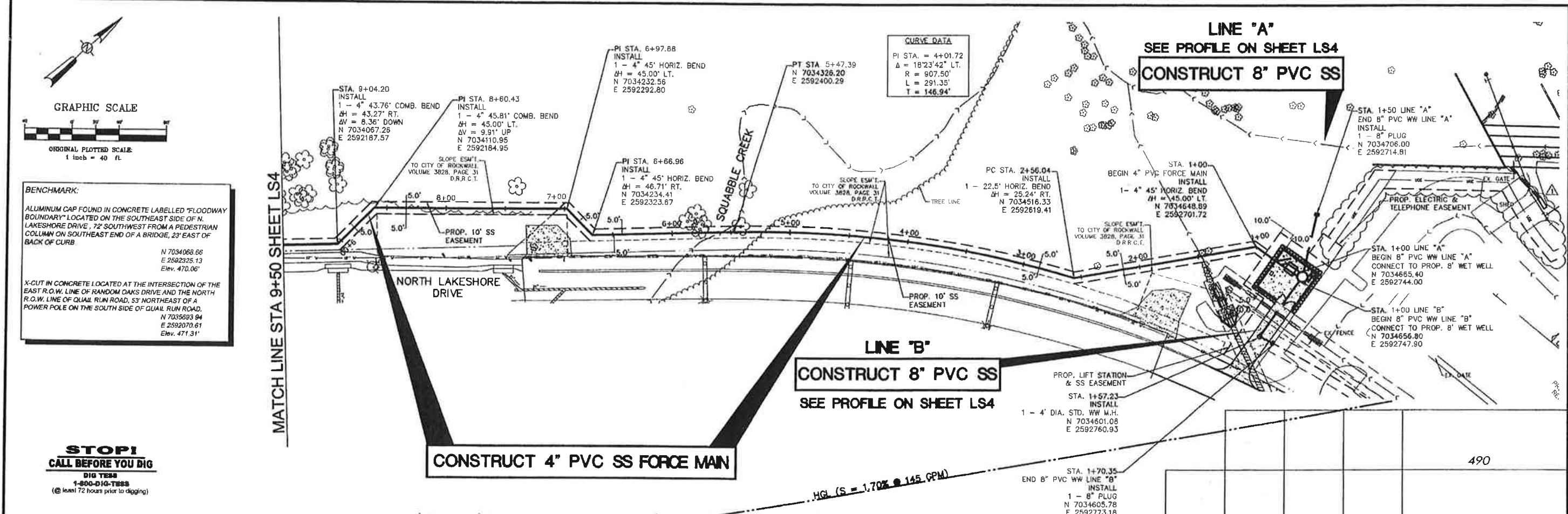
DRAWN BY BDD	DESIGNED BY BDD	CHECKED BY BDD	SHEET NO. 1 OF 3
JOB NUMBER 13036	DATE SEPTEMBER 2013	SCALE: HOR: 1"=40' VERT: 1"=4'	

AS-BUILT DECEMBER 2013
BASED ON SURVEYING AT THE
SITE AND INFORMATION
PROVIDED BY THE CONTRACTOR

The seal appearing on
this document was
authorized by
Brandon Davidson
P.E. 87682, on
December 17, 2013

NORTH LAKESHORE VALLEY FORCE MAIN RECORD DRAWINGS





Kimley-Horn
and Associates, Inc.

12700 East Central Drive, Suite 1000, Dallas, TX 75251 972-710-1300

By: [Signature]

Date: 04/21/2008

Reviewed: [Signature]

Electrical Easement Relocated

City of Rockwall
Public Works Department
Engineering Division

APPROVED FOR CONSTRUCTION
Capital Improvement Project
City Engineer: [Signature]
Date: 10/09/2017

DESIGN: TJS

DRAWN: TJS

CHECKED: MSP

KHA NO: 068237002

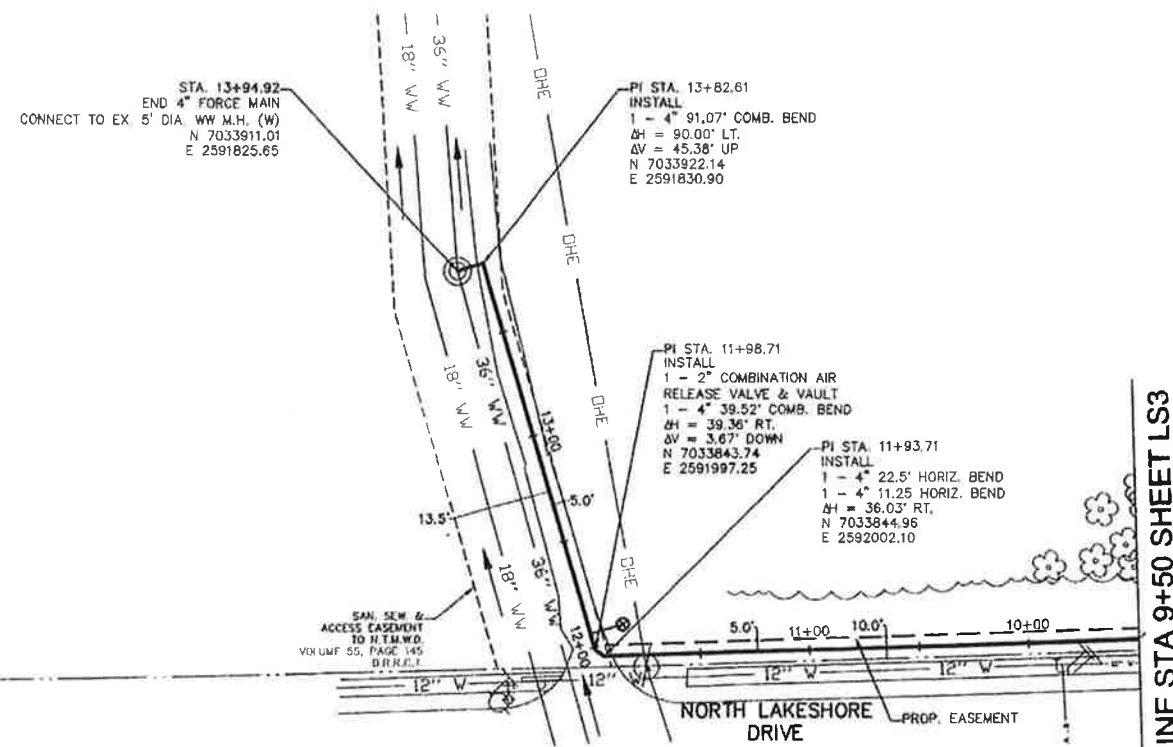
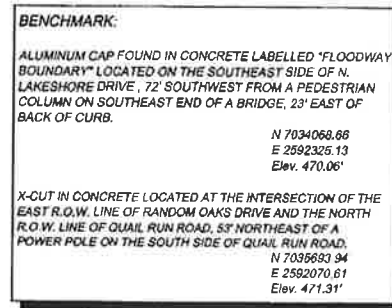
DATE: JANUARY 2009

SHEET

LS3

North Lakeshore
Valley Lift Station
Rockwall, TX

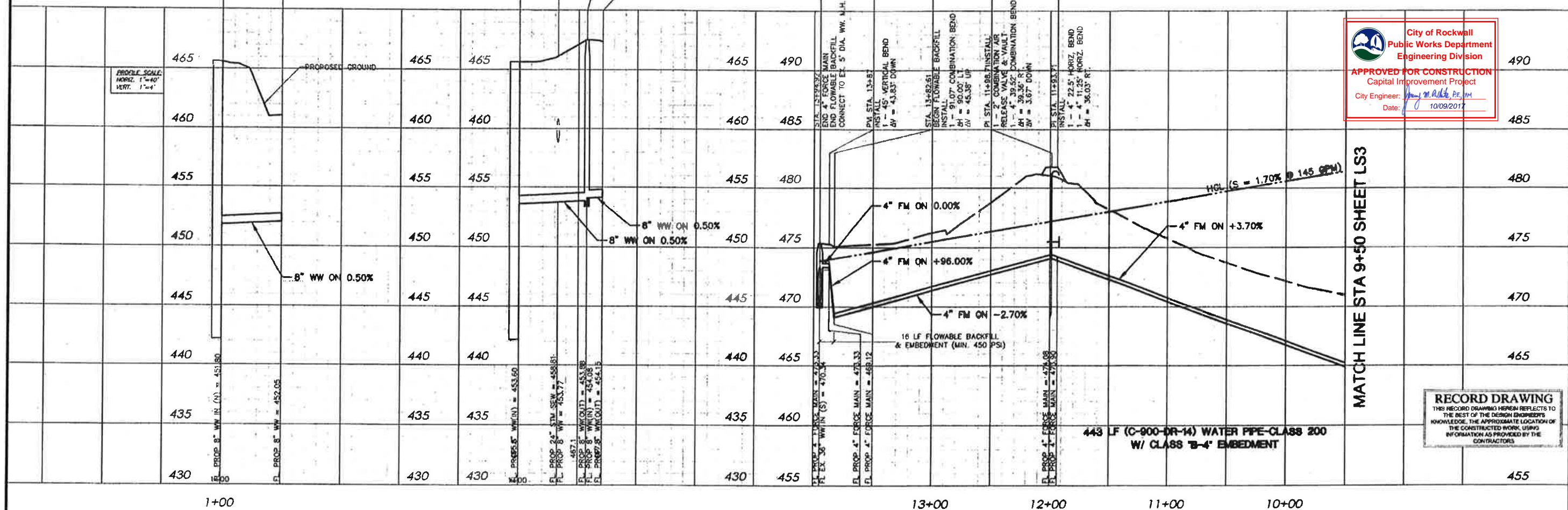
**FORCE MAIN
PLAN AND PROFILE**



MATCH LINE STA 9+50 SHEET LS3

LINE 'B'
71 LF (SDR-26) PVC WASTEWATER
W/ CLASS 'B-4" EMBEDMENT

STOP!
CALL BEFORE YOU DIG
DIG TESS
1-800-DIG-TESS
(@ least 72 hours prior to digging)



RECORD DRAWING
THIS RECORD DRAWING HEREIN REFLECTS TO
THE BEST OF THE DESIGN ENGINEER'S
KNOWLEDGE, THE APPROXIMATE LOCATION OF
THE CONSTRUCTED WORK, USING
INFORMATION AS PROVIDED BY THE
CONTRACTORS

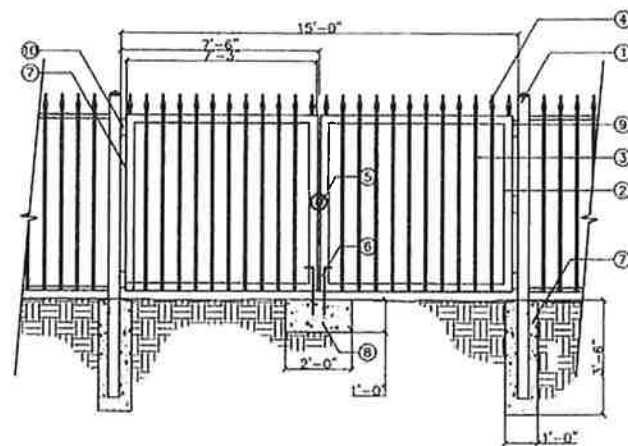
and Associates, Inc.

**North Lakeshore
Valley Lift Station
Rockwall, TX**

FORCE MAIN PLAN AND PROFILE

DESIGN:	TLS
DRAWN:	TLS
CHECKED:	MSP
KHA NO.:	06B237002

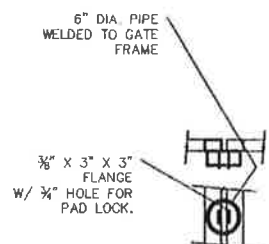
S4



**METAL ACCESS GATE
STANDARD DETAIL**

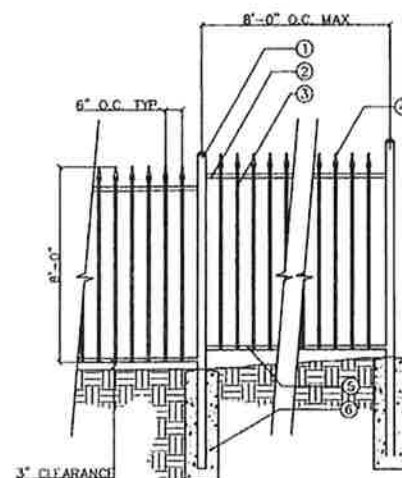
SCALE = N.T.S.

- ① 4" SQUARE STEEL POST
- ② 2"x3" TUBULAR STEEL GATE FRAME
- ③ 3/4" SQUARE STEEL PICKETS ATTACH TO FRONT OF RAILS
- ④ DECORATIVE FINIAL
- ⑤ PAD-LOCK 'HASP'
- ⑥ FOOTBOLT
- ⑦ PROVIDE CONCRETE FOOTING FOR POSTS. POSTS @ 8'-0" O.C. OR AS REQUIRED FOR GRADE OR DIRECTIONAL CHANGES. SLOPE CONCRETE AT TOP OF FOOTING AWAY FROM BASE OF POLE
- ⑧ 2'X1'X1' CONCRETE FOOTING FOR FOOTBOLT
- ⑨ 3 STANDARD GATE HINGES
- ⑩ 2 STANDARD GATE HINGES



**PAD LOCK HASP
STANDARD DETAIL**

SCALE = N.T.S.

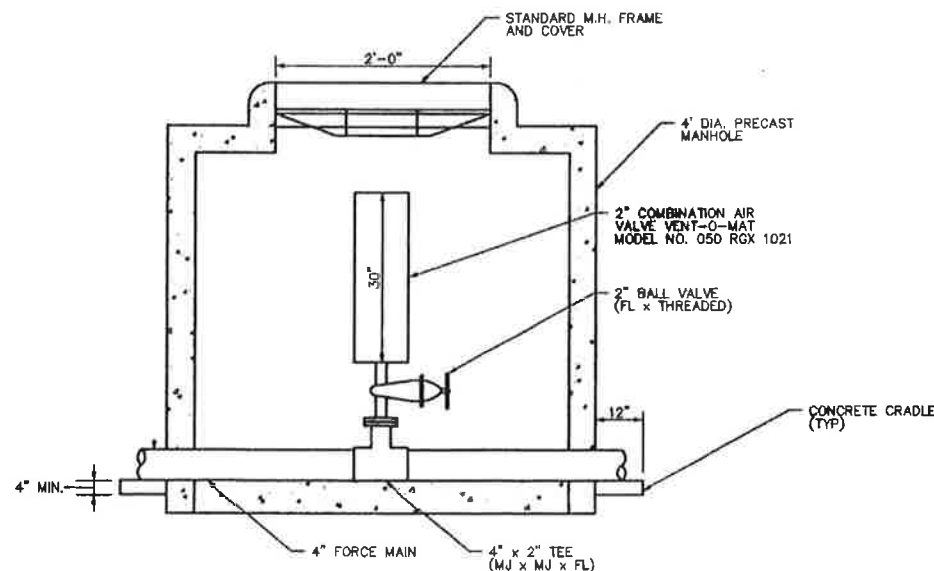


- ① 3" SQUARE STEEL POST, WITH POST CAP
- ② 1-1/2" SQUARE STEEL TOP RAIL
- ③ 3/4" SQUARE STEEL PICKETS ATTACH TO FRONT OF RAILS
- ④ DECORATIVE FINIAL
- ⑤ 1-1/2" SQUARE STEEL BOTTOM RAIL
- ⑥ PROVIDE CONCRETE FOOTING FOR POSTS. POSTS @ 8'-0" O.C. OR AS REQUIRED FOR GRADE OR DIRECTIONAL CHANGES. SLOPE CONCRETE AT TOP OF FOOTING AWAY FROM BASE OF POLE

**PERIMETER FENCE
STANDARD DETAIL**

SCALE = N.T.S.

NOTE:
THE CONTRACTOR SHALL PROVIDE AND INSTALL ONE MANHOLE ODOR FILTER INSERT IN EACH OF THE COMBINATION AIR VALVE MANHOLES. THE MANHOLE ODOR FILTER SHALL BE THE WOLVERINE BRAND AS SUPPLIED BY SHIPLE SOLUTIONS DISTRIBUTING, LLC 1-866-677-8465, OR APPROVED EQUAL.



**AIR RELEASE VALVE & VAULT
STANDARD DETAIL**

SCALE = N.T.S.



**Kimley-Horn
and Associates, Inc.**

12700 Park Center Drive, Suite 1800, Dallas, TX 75251 972-770-1300

City of Rockwall

Public Works Department

Engineering Division

**North Lakeshore
Valley Lift Station
Rockwall, TX**

**CONSTRUCTION
DETAILS**

DATE: JANUARY 2009

DESIGN: TJS

DRAWN: TJS

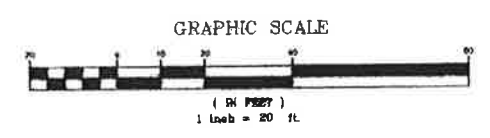
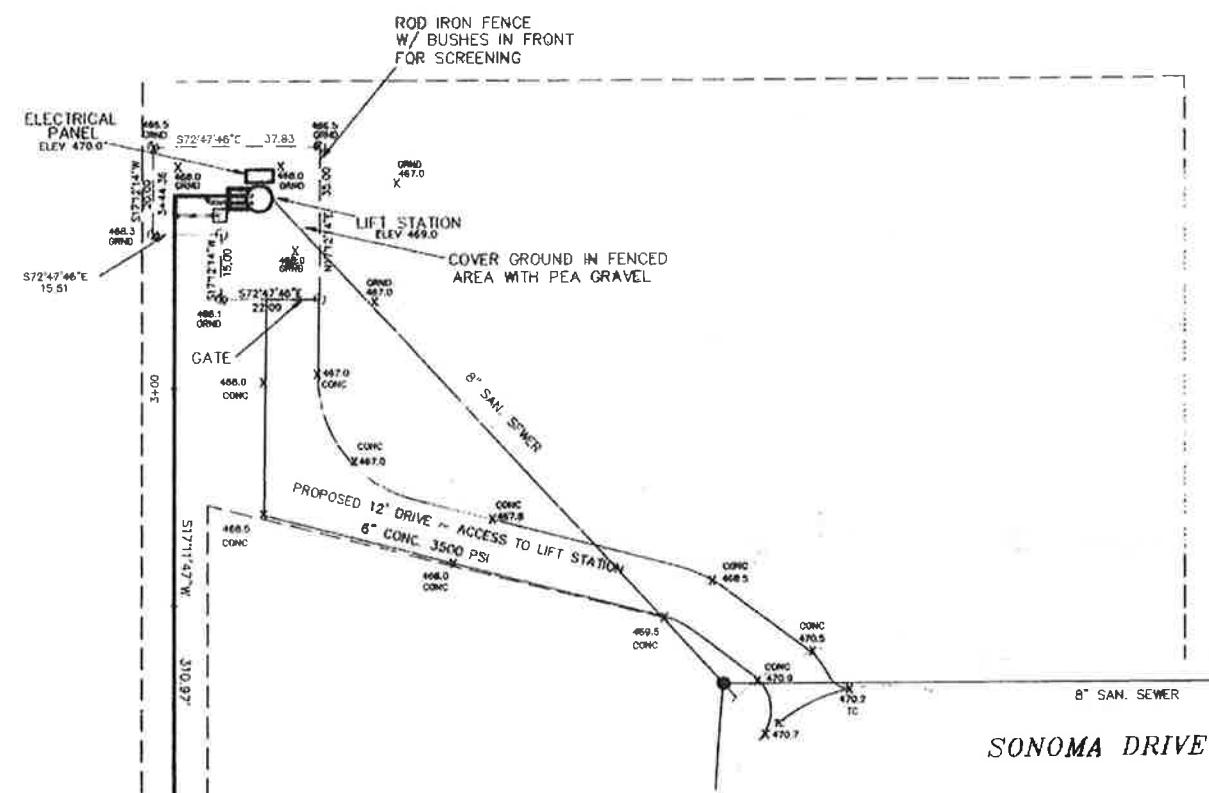
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KHA NO.: 068237002

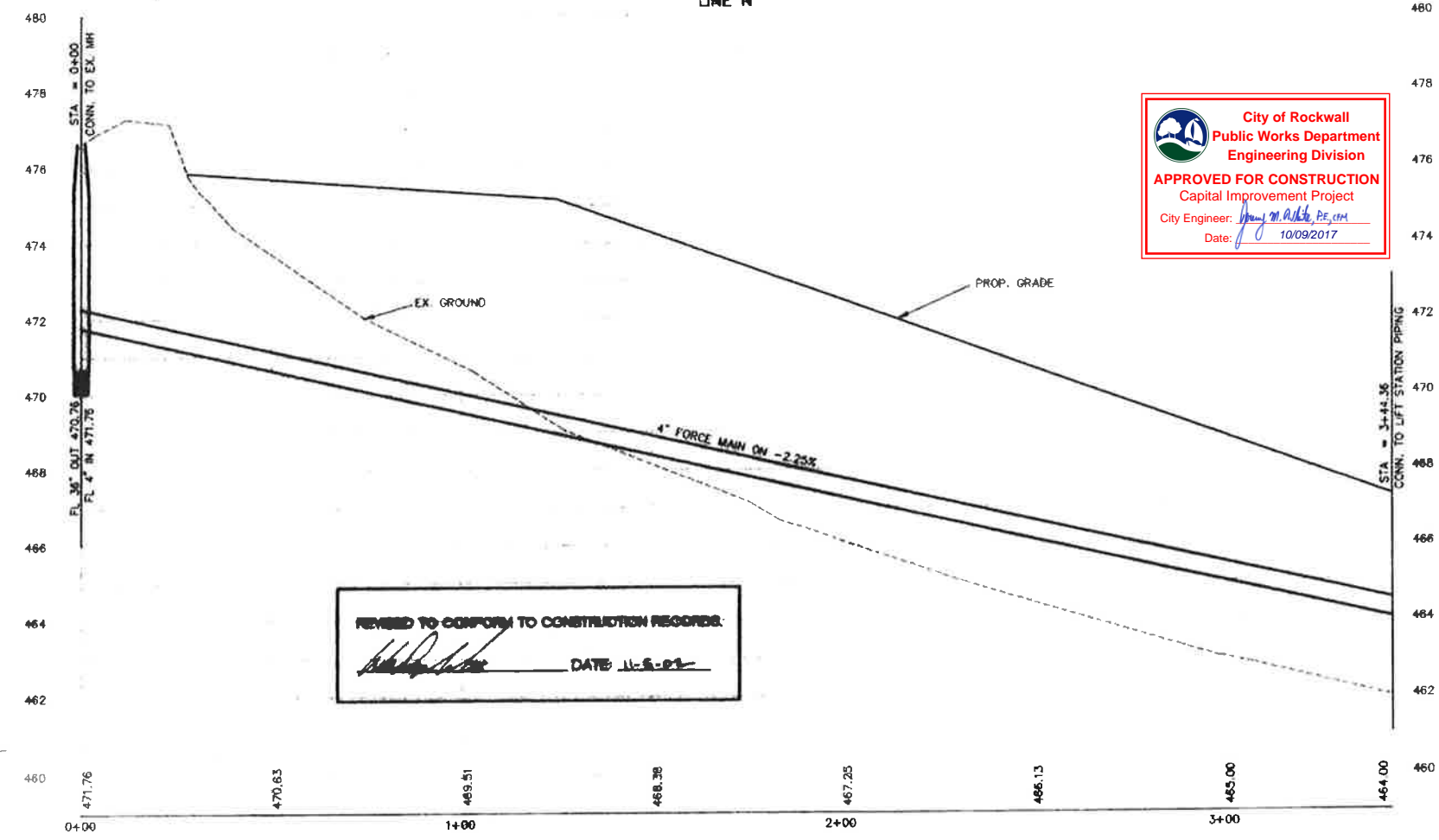
D2

LAKEVIEW SUMMIT 4" FORCE MAIN RECORD DRAWINGS





STA. 0+33.40
INSTALL: 45° BEND



REVISED TO CONFORM TO CONSTRUCTION RECORDS:
DATE 11-5-21

City of Rockwall
Public Works Department
Engineering Division
APPROVED FOR CONSTRUCTION
Capital Improvement Project
City Engineer: *[Signature]*
Date: 10/09/2017



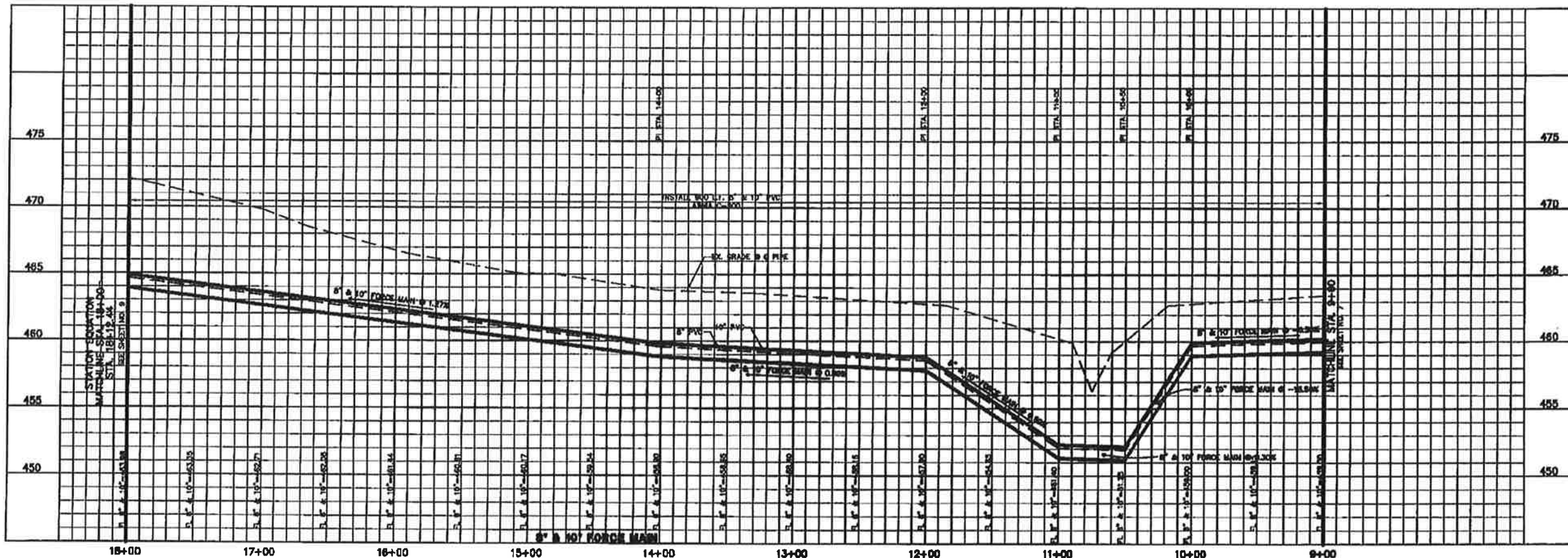
DOUPHRAITE & ASSOCIATES, INC.
2231 RIDGE RD., # 200 ROCKWALL, TEXAS 75087
PHONE: (972)771-8064 FAX: (972)771-8065

**FORCE MAIN & LIFT STATION
LAKEVIEW SUMMIT PHASE 1-A
CITY OF ROCKWALL
ROCKWALL COUNTY, TX**

W.L.D.
A.J.W.
DATE 2/21/01
PROJECT 99101-AL83

MEMORIAL 10" AND 8" FORCE MAIN RECORD DRAWINGS

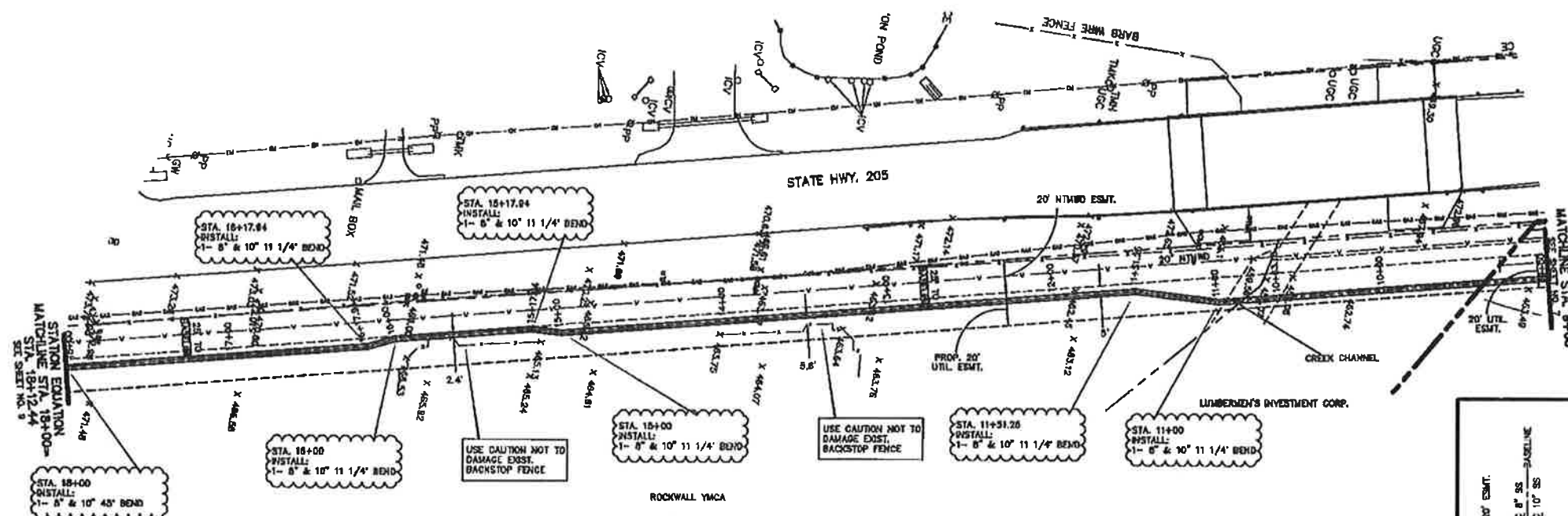




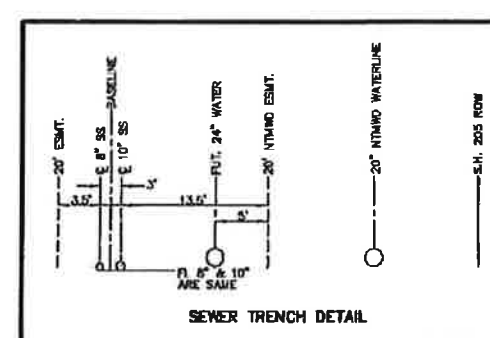
THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY F.E. MIDDLETON, JR., P.E. #67449

**OSHAL VALLEY RUN FORCE MAIN
PLAN & PROFILE
STA. 9+00 TO 18+00**

Scale: 1/8" = 1'-0"
Designed By: MK
Drawn By: MK
Checked By: FEM
Title: SEWERS
Project No.: 5000001



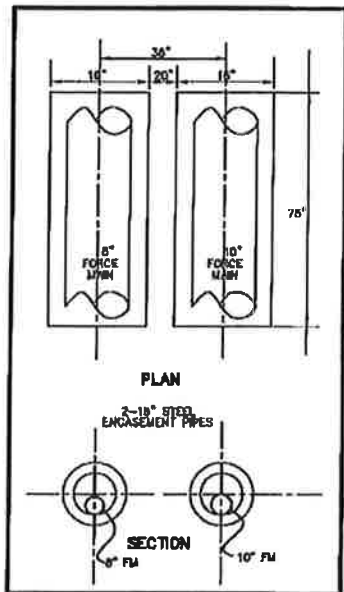
City of Rockwall
Public Works Department
Engineering Division
APPROVED FOR CONSTRUCTION
Capital Improvement Project
City Engineer: *James M. White, P.E., CEM*
Date: 10/09/2017



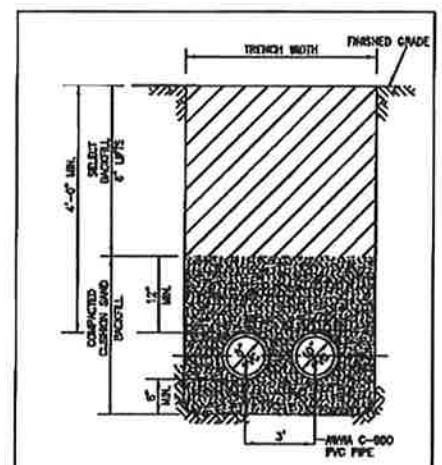
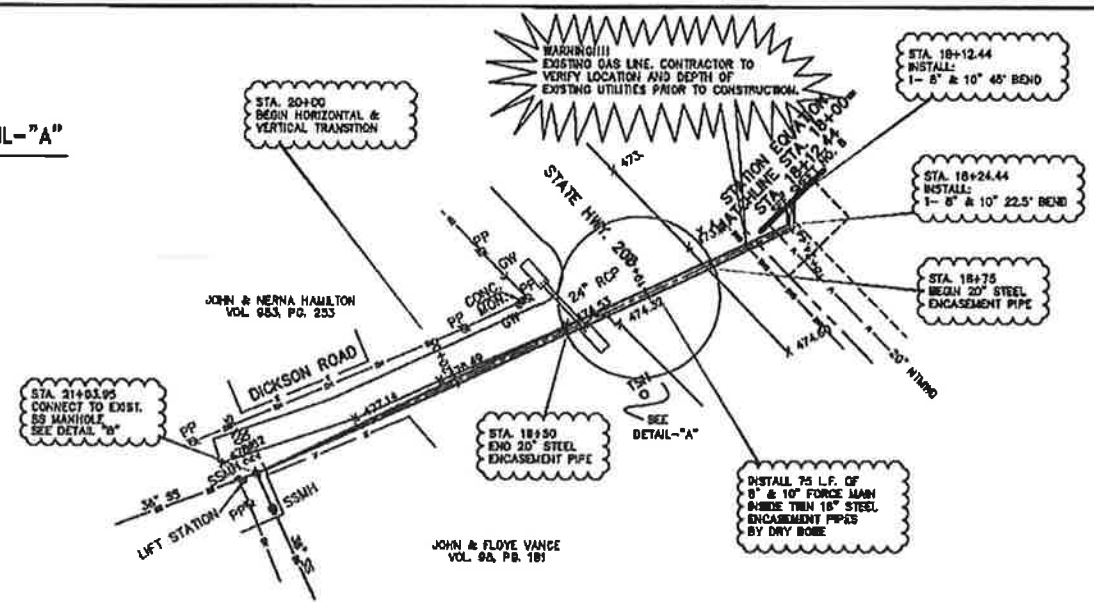
THESE CONSTRUCTION PLANS WERE PREPARED UNDER CONTRACT BY THE CITY OF ROCKWALL, TEXAS. F.E. MIDDLETON, JR., REGISTERED PROFESSIONAL ENGINEER NO. 57449.

MCCURRY SURVEY ABSTRACT NO. 148
CITY OF ROCKWALL,
ROCKWALL COUNTY, TEXAS
CONTINENTAL HOMES
521 W. COLLEGE STREET
GRAPEVINE, TEXAS 76031

Winkelmann & Associates, Inc.
CONSULTING CIVIL ENGINEERS & SURVEYORS
1000 MILLER ROAD, SUITE 100
ROCKWALL, TEXAS 76087
(972) 961-1000
FAX: (972) 961-1001

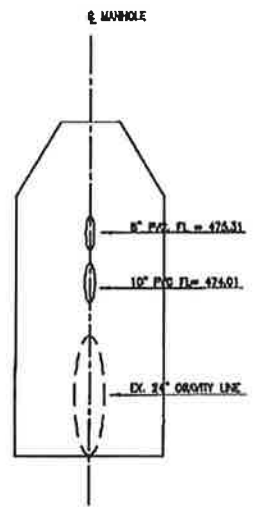


DETAIL-A

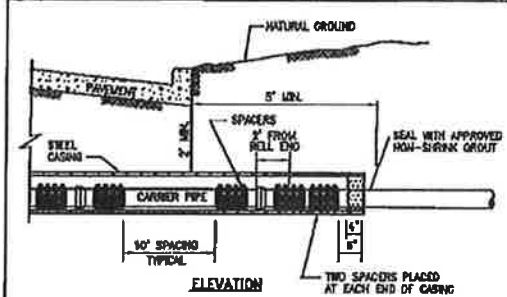


PVC PIPE BEDDING & BACKFILL

- NOTES
- NO A.C. PIPE ALLOWED.
 - LINE SIZES GREATER THAN 6" SHALL BE C-900 CLASS 100 (DR-10) PVC.
 - COMPACT BACKFILL IN 6" LIFTS TO 95% PROCTOR DENSITY WITHIN THE RIGHT-OF-WAY AND BOX IN ALL OTHER AREAS.
 - CURBION ROAD MUST PASS NO. 8 SIEVE.
 - SELECT BACKFILL IS NATIVE TRENCH MATERIAL WITH NO ROCKS OVER 3" IN DIAMETER.

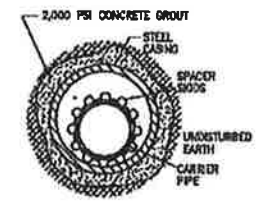


DETAIL-B



ELEVATION

CARRIER PIPE	NOMINAL CASING	MIN. VALL THICKNESS (IN)
8"	12"	0.11
8"	14"	0.15
10"	16"	0.18
12"	18"	0.20



- NOTES
- SPACERS SHALL BE RACI HIGH DENSITY POLYETHYLENE AS MANUFACTURED BY RECON PIPE CORP., OR APPROVED EQUAL.
 - SPACER HEIGHT SHALL BE 2.38"
 - MAINTAIN 10" SPACING (TYPICAL) BETWEEN SPACERS.
 - SEE THE PLAN/PROFILE FOR DECONING AND EXING STATIONS.
 - PRESSURE 2,000 PSI CONCRETE GROUT BETWEEN CASING AND SURROUNDING EARTH.
 - CASING IS REQUIRED WHEN CROSSING STREETS LARGER THAN A COLLECTOR STREET.

STEEL PIPE MAIN ENCASEMENT

City of Rockwall
Public Works Department
Engineering Division
APPROVED FOR CONSTRUCTION
Capital Improvement Project
City Engineer: *James M. White, P.E., CEM*
Date: 10/09/2017

THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON, JR., REGISTERED PROFESSIONAL ENGINEER NO. 87446.

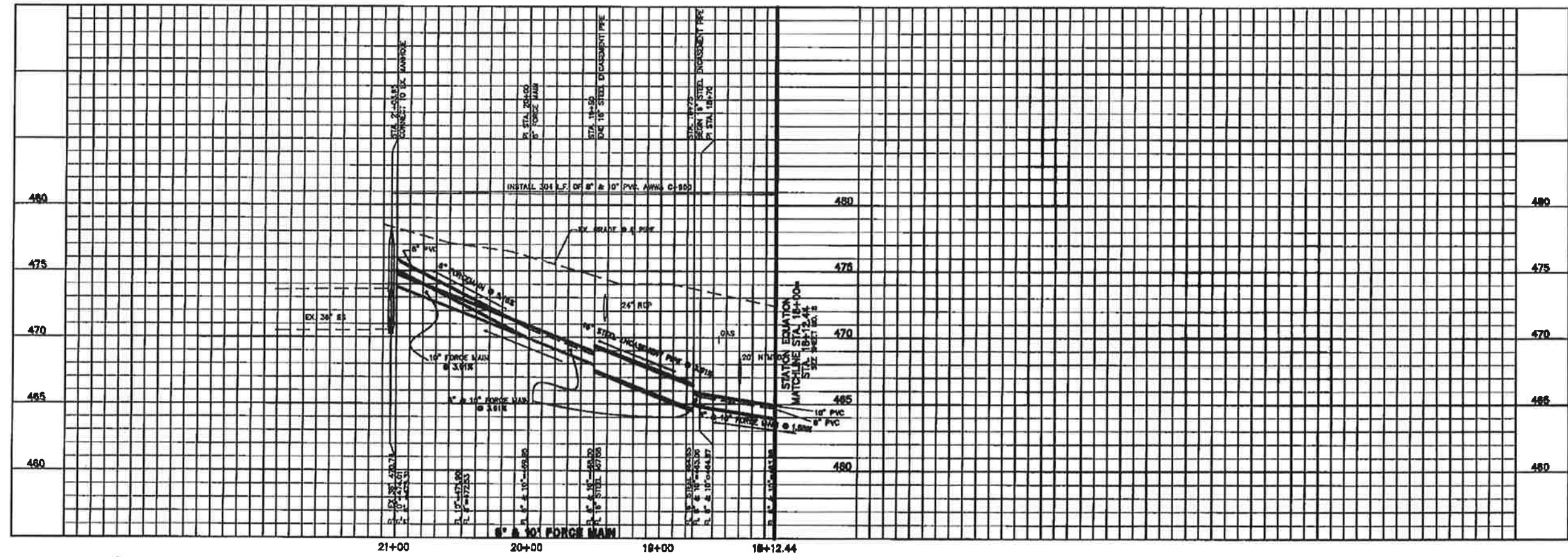
THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY F.E. MIDDLETON, JR., P.E. #87446

Winkelmann & Associates, Inc.
CONSULTING CIVIL ENGINEERS & SURVEYORS
1000 W. COLLEGE STREET
SUITE 200
ROCKWALL, TEXAS 75087
(972) 961-1100

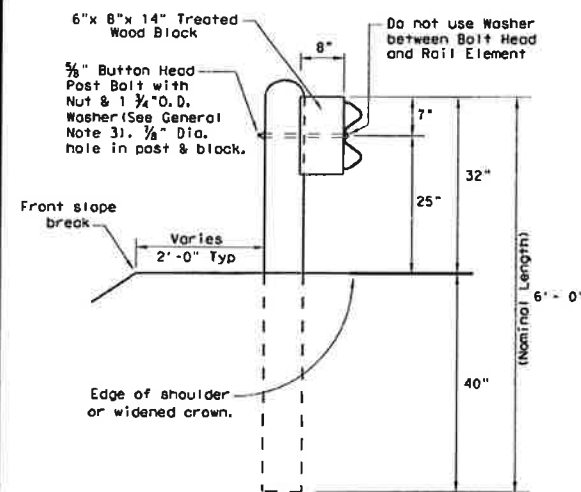
McCURRY SURVEY, ABSTRACT NO. 148
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
CONTINENTAL HOMES
5201 W. COLLEGE STREET
GRAPEVINE, TEXAS 76037

**QUAL VALLEY RUN FORCE MAIN
PLAN & PROFILE**
STA. 18+00 TO 21+12.37

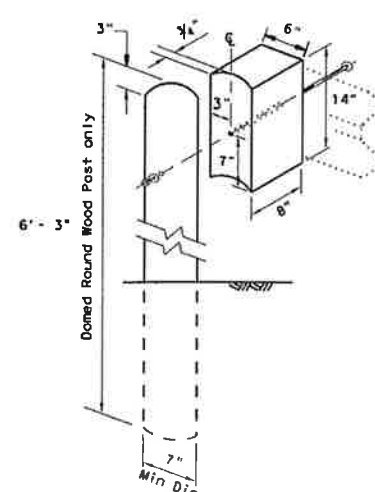
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Designed By: MK
Drawn By: MK
Checked By: PMA
Title: 20000533.DWG (Plan)
Project No.: 20000533



DISCLAIMER:
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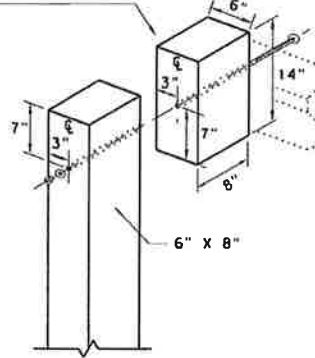


TYPICAL POST

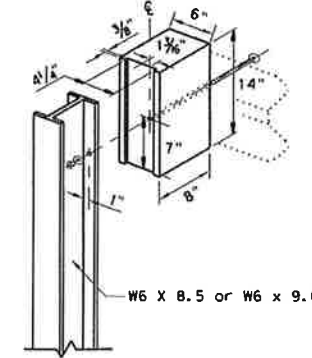


WOOD BLOCK TO ROUND WOOD POST

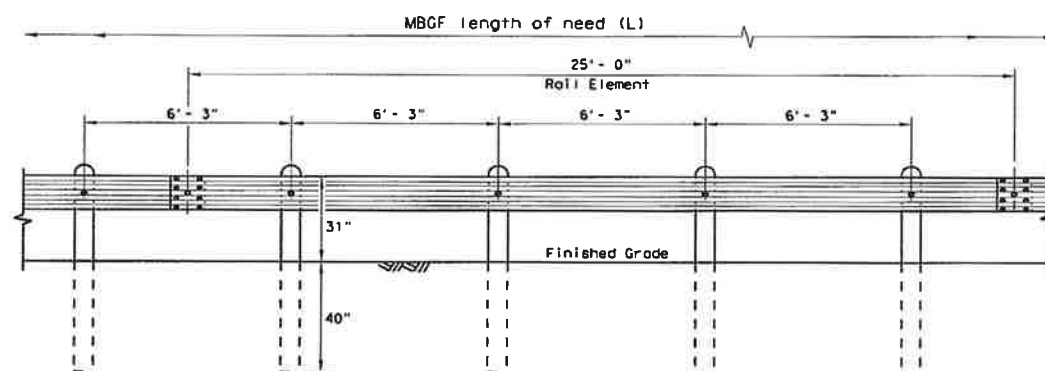
Toenail with one 16d Galv. nail to prevent block rotation



WOOD BLOCK TO RECTANGULAR WOOD POST

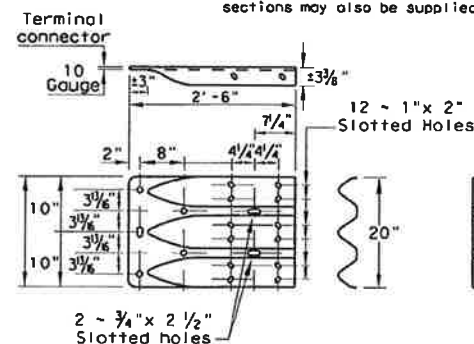


WOOD BLOCK TO STEEL POST

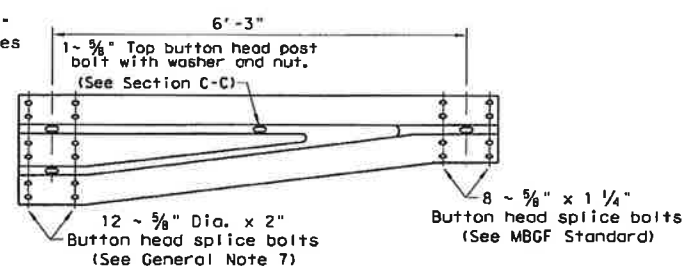


ELEVATION MID-SPAN RAIL SPLICE

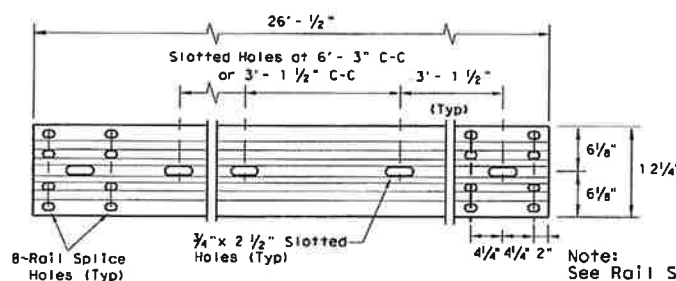
Showing a 25'-0" section of W-Beam rail, 12'-6" rail sections may also be supplied (See General Note 2)



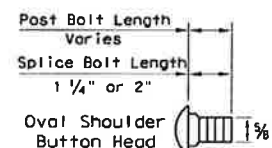
THREE-BEAM TERMINAL CONNECTION
(SEE GENERAL NOTES 6 & 7 FOR REQUIRED HARDWARE)



NON-SYMMETRICAL TRANSITION TO W-BEAM (10 Gauge)

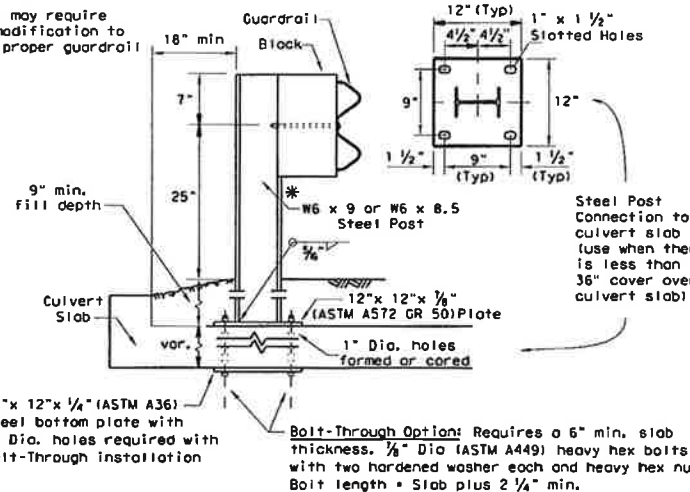


ELEVATION 25'-0" (NOM.) W-BEAM SECTION
12'-6" RAIL SECTIONS MAY ALSO BE SUPPLIED (SEE GENERAL NOTE 2)



BUTTON HEAD BOLT
Post and Splice Bolts (See General Note 3)

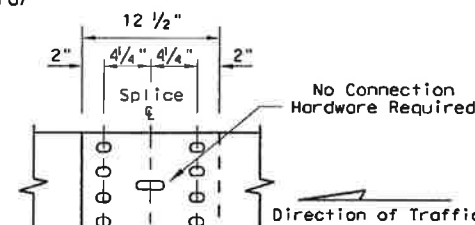
* Post(s) may require field modification to ensure proper guardrail height.



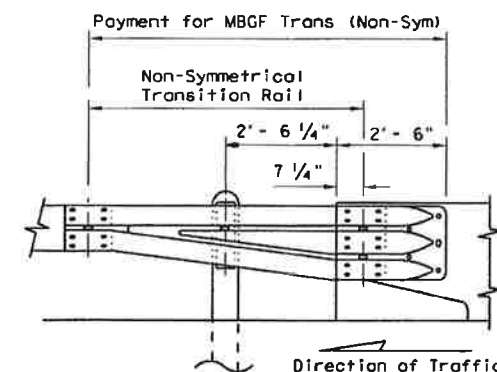
LOW FILL CULVERT POST

Culverts of 25 ft. or less, see GF(31)LS standard for "Long Span" option.

Epoxy Note:
Epoxy Anchor Option: This option may only be used if the culvert slab is 8" min. thick. Threaded anchor rods must be 1/2" Dia. ASTM A449 or A193 Grade B7 with heavy hex nut, and one hardened washer each. Embed anchor rods 6" with HiTi HIT RE 500 epoxy adhesive. Other Type III Class C epoxy adhesives meeting the requirements of DMS-6100, "Epoxyes and Adhesives", may be used if it can be demonstrated that they meet or exceed the strength of HiTi HIT RE 500 with the same embedment depth and threaded rod dia. Follow the manufacturer's requirements for installing epoxied threaded rods. Extend rods 1/4" min. beyond nut.



MID-SPAN RAIL SPLICE DETAIL



DOWNSTREAM RAIL ATTACHMENT

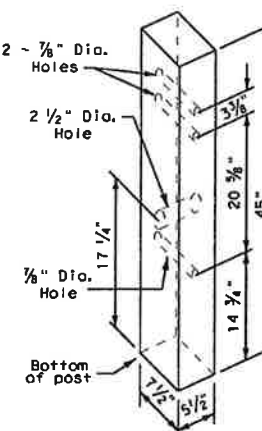
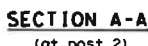
GENERAL NOTES

1. The type of post (round wood post, rectangular wood post, or steel post) will be as shown in the plans. The exact position of MBGF shall be shown in the plans or as directed by the Engineer. Steel posts to be galvanized in accordance with Item 445, "Galvanizing."
2. Rail element shall meet the requirements of Item 540, "Metal Beam Guard Fence" except as modified in the plans. The Contractor may furnish rail elements of 25'-0", or 12'-6" (nom.) lengths. Rail elements may have slotted holes at 3'-1 1/2" C-C or 6'-3" C-C. A special length of rail may be manufactured to accommodate the downstream anchor terminal (DAT) and the transition sections of guardrail.
3. Button head "post" bolts (ASTM A307) shall be of sufficient length to extend through the full thickness of the nut (ASTM A563) and Type A (1 1/4" O.D.) washer and not more than 1" beyond it. Button head "splice" bolts (ASTM A307) are 5/8" x 1 1/4" (or 2" long at triple rail splices) with a 3/8" double recessed nut (ASTM A563). Thrie beam "connection" 3/8" dia. (ASTM A325) hex bolts shall be of sufficient length to extend through the full thickness of the rail, washers, and nuts.
4. Fittings (bolts, nuts, and washers) shall be galvanized in accordance with Item 445, "Galvanizing." Fittings shall be subsidiary to the bid item.
5. Crown shall be widened to accommodate the Metal Beam Guard Fence.
6. The lateral approach to the guard fence, shall have a maximum slope of 1V:10H.
7. If shown elsewhere in the plans or as directed by the Engineer, the guard fence may be flared at a rate of 25:1 or flatter.
8. Unless otherwise shown in the plans, guard fence placed in the vicinity of curbs shall be positioned so that the face of curb is located directly below or behind the face of the rail. Rail placed over curbs shall be installed so that the post bolt is located approximately 25 inches above the gutter pan or edge of shoulder.
9. If solid rock is encountered within 0 to 18" of the finished grade, drill a 22" dia. hole, or drill two 12" dia. front to back overlapping holes, 24" into the rock. If solid rock is encountered below 18", drill a 12" dia. hole, 12" into the rock or to the standard embedment depth, whichever may be less. Any excess post length, after meeting these depths, may be field cut to ensure proper guardrail mounting height. Backfill with a cohesionless material.
10. Posts shall not be set in concrete, of any depth.
11. Special fabrication will be required at installations having a curvature of less than 150 ft. radius.
12. Unless otherwise shown in the plans, a composite material post and/or block that meets the requirements of DMS-7210, "Composite Material Posts and Blocks for Metal Beam Guard Fence" may be substituted for posts and/or blocks of similar dimensions. The Construction Division, TxDOT maintains a Material Producer List (MPL) for producers of materials conforming to DMS-7210. Only producers on the MPL may furnish composite material posts and/or blocks.
13. For posts located partially or wholly between precast box culvert units, the use of a cast-in-place concrete closure between boxes is required. See Detail "A" on Bridge Standard SCP-MD.



Texas Department of Transportation		Design Division Standard	
METAL BEAM GUARD FENCE			
GF(31)-14			
FILES: gf3114.dgn	DW: TxDOT	CX: AM	DW: VP
CX: CGL	CON: December 2011	SECT: JOB	HIGHWAY
REVISIONS		DIST: COUNTY	SHEET NO.

DATE: _____
FILE: _____



All measurements should be taken from bottom of posts.

POST & TUBE OPTIONS				BILL OF MATERIAL
Item #	Type I	Type II	Type III	DESCRIPTION
S1303	1	1	1	Guardrail (12 Ga.) 12'- 6" SKT
G12025	1	1	1	Guardrail (12 Ga.) 9'- 4 1/2"
G1209	1	1	1	Guardrail (12 Ga.) 25'- 0"
S730	2	2	2	Steel Tube - 6" x 8" x 72" x 1/8" min. or 3/8"
S735	0	2	6	Steel Tube - 6" x 8" x 54" x 1/8" min. or 3/8"
P650	2	4	8	Wood Posts - 5 1/2" x 7 1/2" x 45"
P671	6	4	0	Wood CRT Posts - 6" x 8" x 72"
P675	6	6	6	Wood Block - 6" x 8" x 14"
E740	1	1	1	Pipe Sleeve - 2" Std. Pipe x 5 1/2"
E750	1	1	1	Bearing Plate - 3/4" x 8" x 8"
S760	1	1	1	Cable Anchor Box
E770	1	1	1	Cable Assembly
E780	1	1	1	Ground Strut
S3000	1	1	1	Impact Head
HARDWARE				
B580754	2	4	8	5/8" x 7 1/2" Hex Hd. Bolt
B581004	2	4	8	5/8" x 10" Hex Hd. Bolt (Top of Tubes)
W050	11	15	23	3/8" Washers
B581002	1	1	1	5/8" x 10" HGR Post Bolt (Post 2)
B580122	16	16	16	3/4" x 1 1/4" HGR Splice Bolt
B581802	6	6	6	5/8" x 18" HGR Post Bolt (Posts ① thru ⑥)
N050	35	39	47	5/8" HGR Nut (24-Spl, Varies-Posts, 2-Strut)
E350	2	2	2	3/8" x 3" Lag Screw
N100	2	2	2	1" Hex Nut (Anchor Cable)
W100	2	2	2	1" Washer (Anchor Cable)
SB12A	8	8	8	Cable Anchor Box Shoulder Bolts
N012A	8	8	8	1/2" Structural Nut
W012A	8	8	8	1/2" Structural Washer
E3151	1	1	1	Object Marker - (18" x 18")

All measurements should be taken from bottom of posts.


POST & TUBE OPTIONS	
Type I	post ① thru ④
Type II	post ① thru ④
Type III	post ① thru ④

City of Rockwall
Public Works Department
Engineering Division

APPROVED FOR CONSTRUCTION
Capital Improvement Project

City Engineer: *[Signature]* M. A. [unclear], P.E., CEM

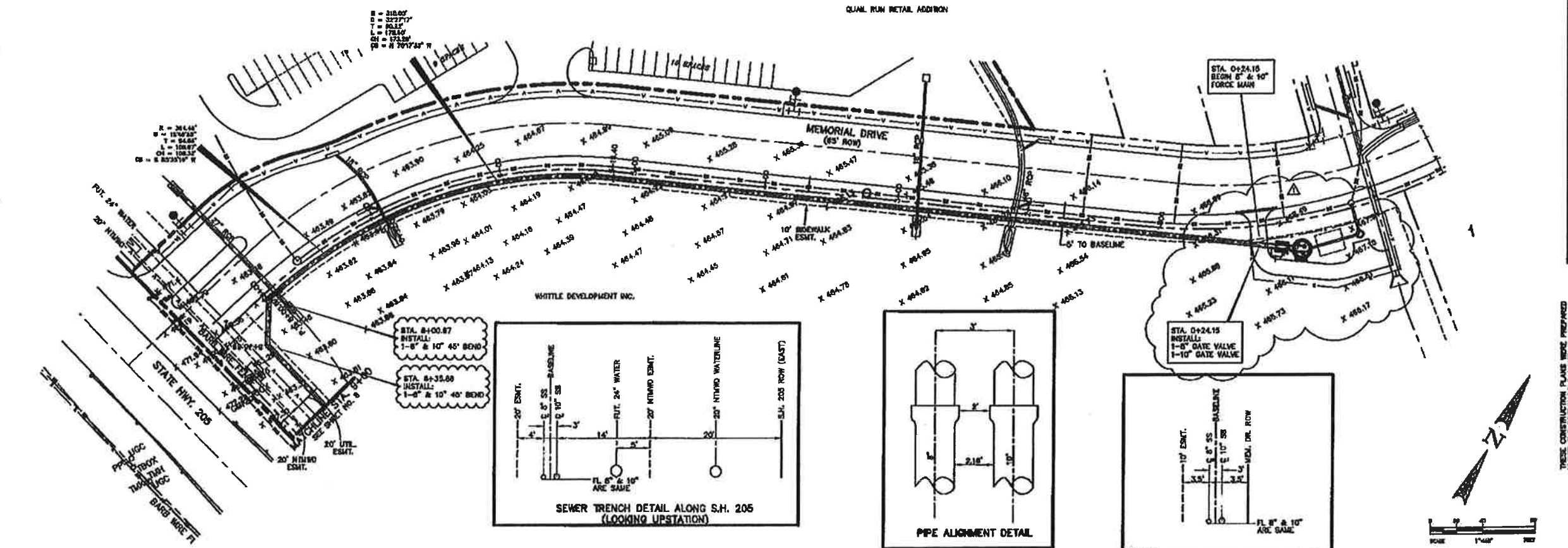
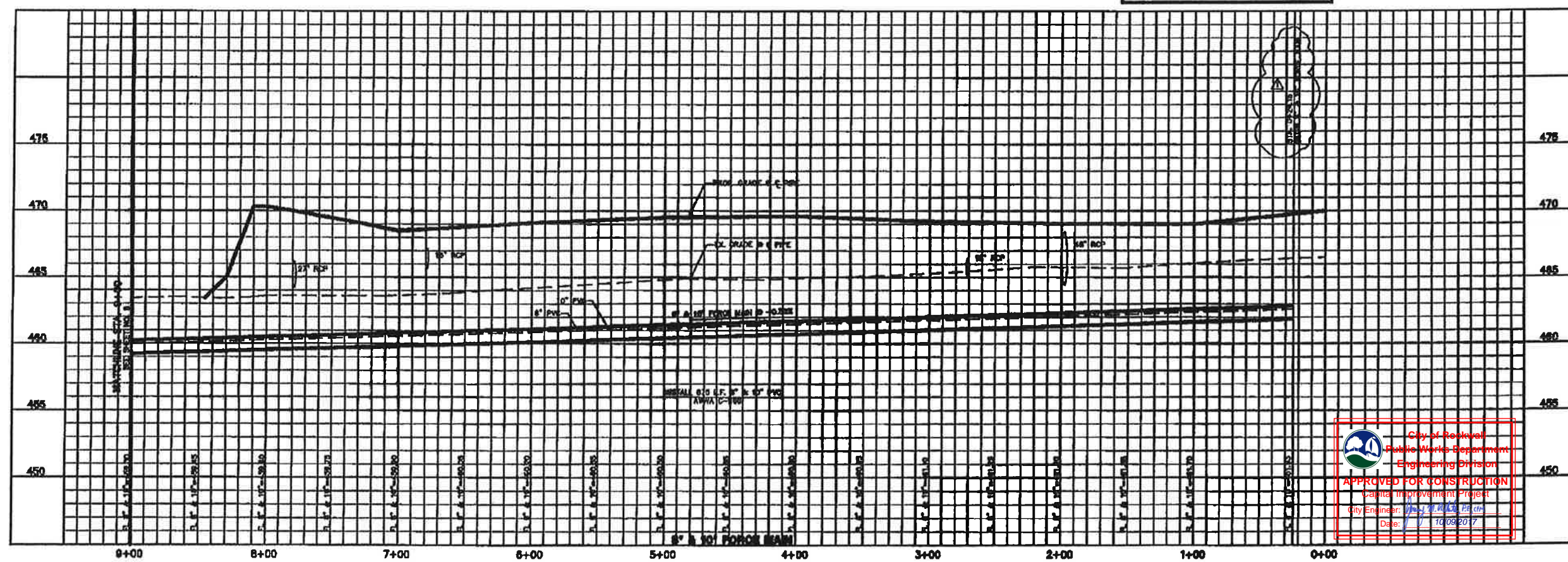
Date: 10/09/2017

 <p>Texas Department of Transportation</p>	<p>Design Division Standard</p>
<p>SINGLE GUARDRAIL TERMINAL (SKT-31) (WOOD POST)</p>	
<p>SGT (8) 31-14</p>	

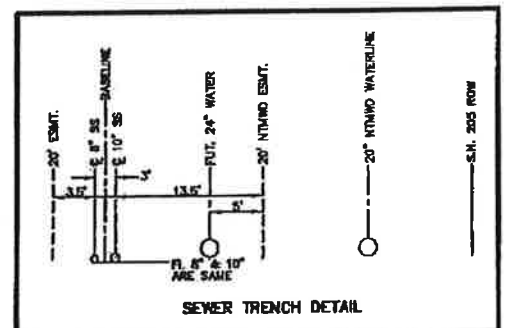
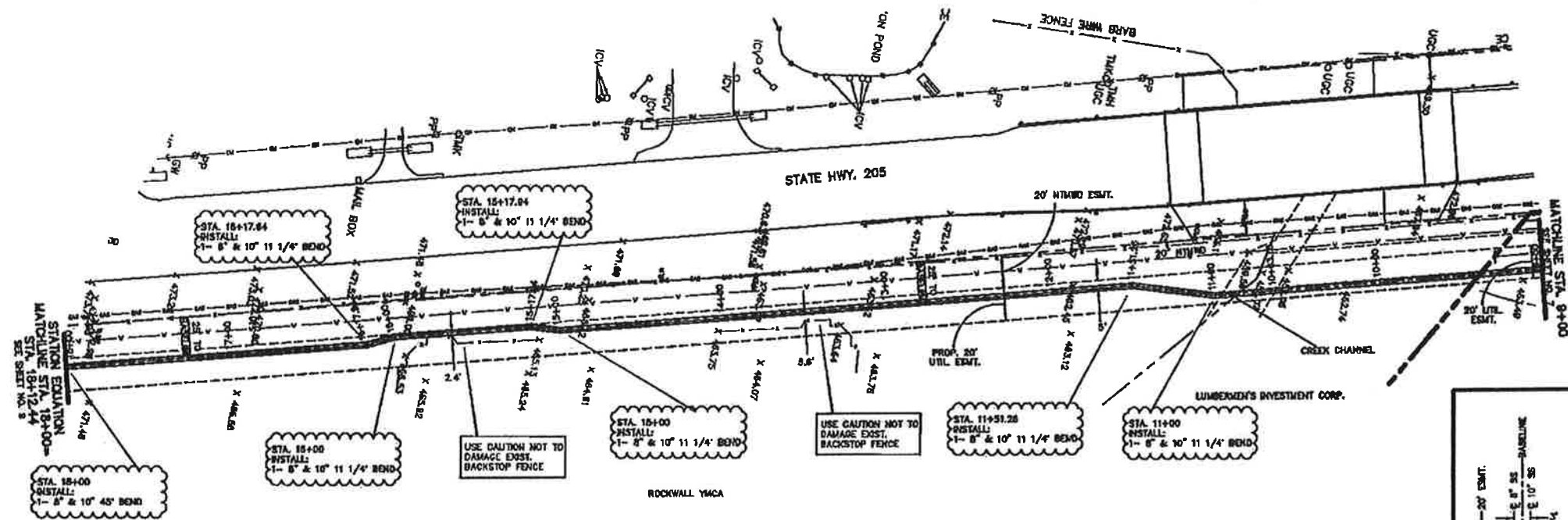
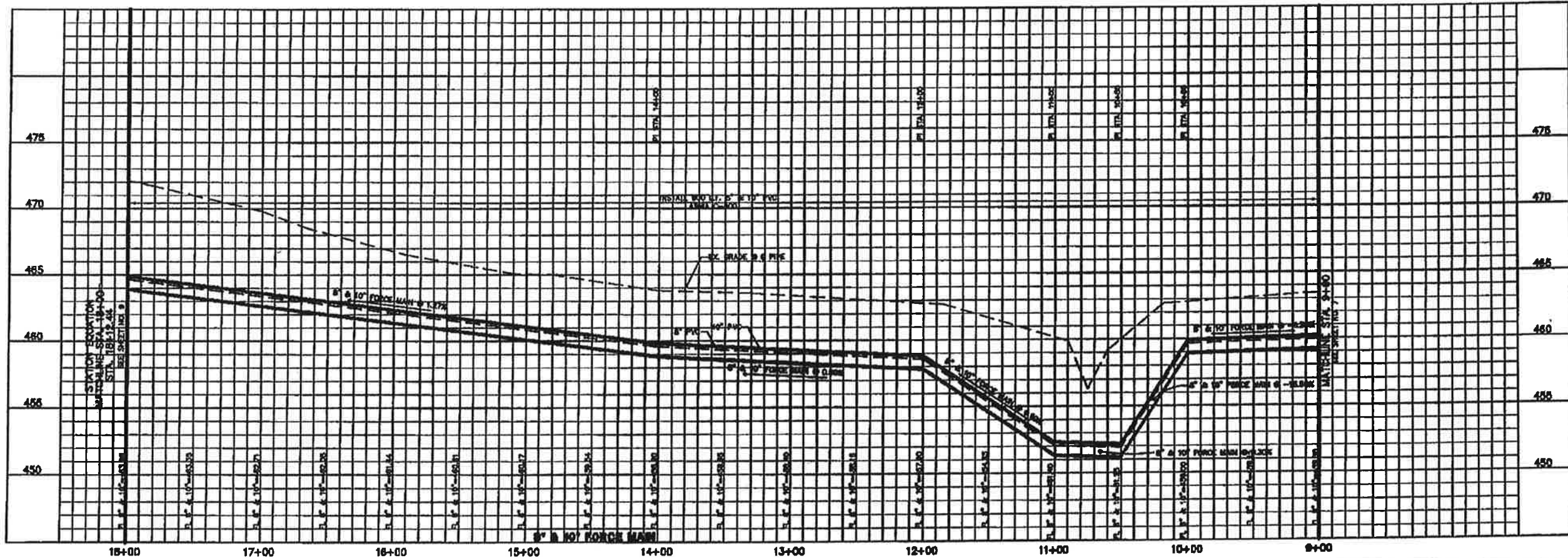
3/14, dgn	DIST	TXDOT	CR: AM	DW: BD/VP	CR: VP
December 2011	CONT	SECT	JOB		HIGHWAY
REVISIONS					
	DIST	COUNTY			SHEET NO.

MEMORIAL 10" AND 8" FORCE MAIN RECORD DRAWINGS





QUAL VALLEY RUN FORCE MAIN PLAN & PROFILE STA. 0+00 TO 9+00	
Scale: 1" = 40'	Sheet: 2-5-02
Designed by: MK	Drawn by: MK
Checked by: FEM	Project No.: 20003.01
City of Rockwall Public Works Department Engineering Division APPROVED FOR CONSTRUCTION Capital Improvement Project City Engineer: [Signature] P.E. #10000 Date: 10/09/2017	
THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY F.E. MIDDLETON, JR., P.E. #87449	
McCURRY BUNRY ABSTRACT NO. 148 CITY OF ROCKWALL, TEXAS ROCKWALL COUNTY, TEXAS CONTINGENTIAL HOMES 621 W. COLLIER STREET GRAPEVINE, TEXAS 75051	
Winkelmann & Associates, Inc. CONSULTING ENGINEERS & ARCHITECTS 2000 BLANCHARD AVE., SUITE 200 DALLAS, TEXAS 75201 (972) 241-7000	
REVISED VALLEY & METHELL LOCATIONS	APPROVED
DATE	DATE
NO.	NO.



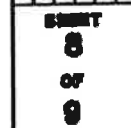
City of Rockwall
Public Works Department
Engineering Division
APPROVED FOR CONSTRUCTION
Capital Improvement Project
City Engineer: *[Signature]* P.E., CEM
Date: 10/09/2017

THESE CONSTRUCTION PLANS WERE PREPARED
UNDER THE RESPONSIBLE SUPERVISION OF
P.E. MODULON, JR., REGISTERED PROFESSIONAL
ENGINEER NO. 87449.

THE SEAL APPEARING ON THIS
DOCUMENT WAS AUTHORIZED BY
P.E. MODULON, JR., P.E. #87449

**QUAL VALLEY RUN FORCE MAIN
PLAN & PROFILE
STA. 9+00 TO 18+00**

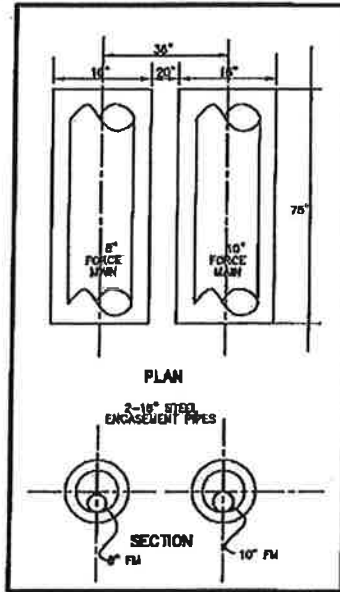
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Designed By: MK
Drawn By: MK
Checked By: FKM
File: 3000332.DWG Date: 10/09/2017
Project No. 1 3000301



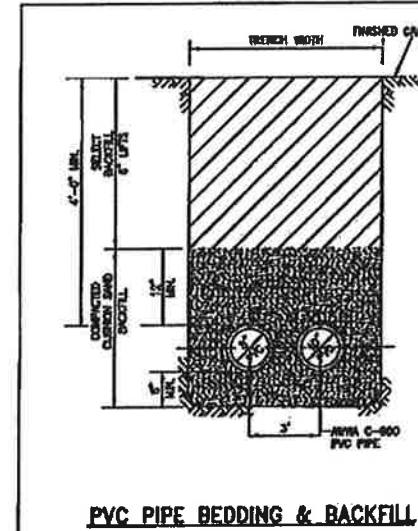
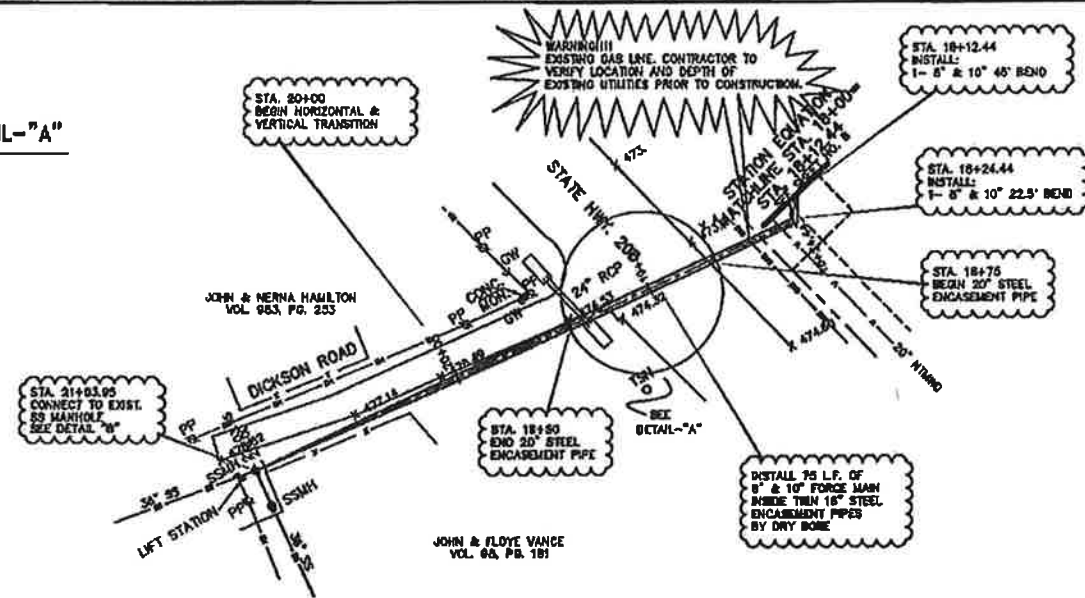
McCURRY SURVEY, ABSTRACT NO. 148
CITY OF ROCKWALL,
ROCKWALL COUNTY, TEXAS
CONTINENTAL HOMES
821 W. COLLEGE STREET
GRAPETOWN, TEXAS 76031

**Winkelman
& Associates, Inc.**
CONSULTING CIVIL ENGINEERS & ARCHITECTS
2000 W. HICKORY STREET, SUITE 100
DALLAS, TEXAS 75201
TEL: 214-343-1100
FAX: 214-343-1101

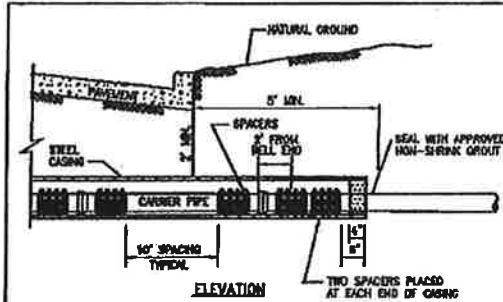
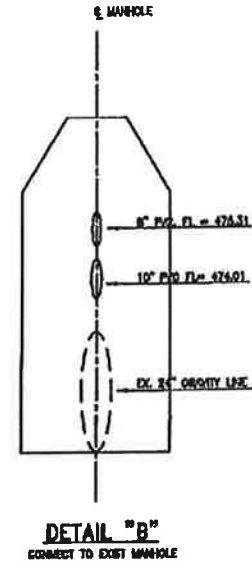
NO.	DATE	REVISION	APPROV.



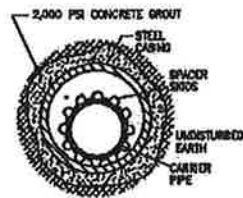
DETAIL-A



- NOTES
1. NO A.C. PIPE ALLOWED.
 2. LINE SIZES GREATER THAN 6\"/>



CARRIER PIPE	MANHOLE CASING	MIN. WALL THICKNESS (IN.)
8"	12"	0.11
10"	14"	0.15
12"	16"	0.20



- NOTES
1. SPACERS SHALL BE MADE FROM HIGH DENSITY POLYETHYLENE AS MANUFACTURED BY RECON PIPE CORP., OR APPROVED EQUAL.
 2. SPACER HEIGHT SHALL BE 2.38\"/>

STEEL PIPE MAIN ENCASEMENT



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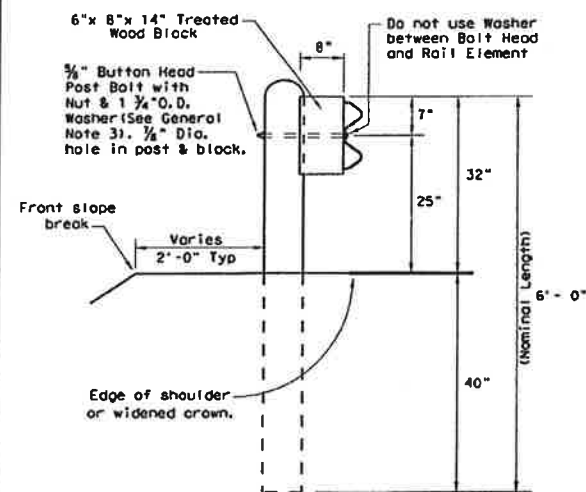
QUAL VALLEY RUN FORCE MAIN
PLAN & PROFILE
STA. 19+00 TO 21+12.37

Scale: 1/8\"/>

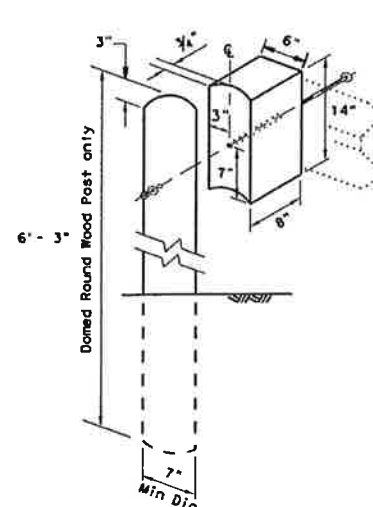
Winkelman & Associates, Inc.
CONSULTING CIVIL ENGINEERS & ARCHITECTS
1000 W. COLLEGE STREET
SUITE 200
ROCKWALL, TEXAS 75087

Project No.: 20003.01

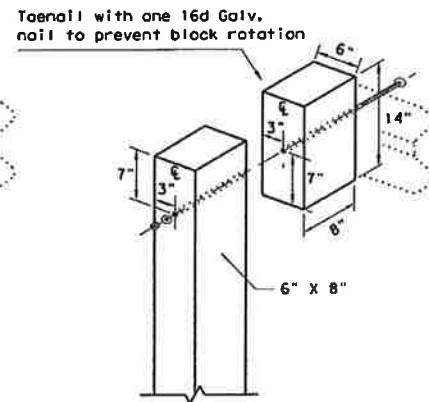
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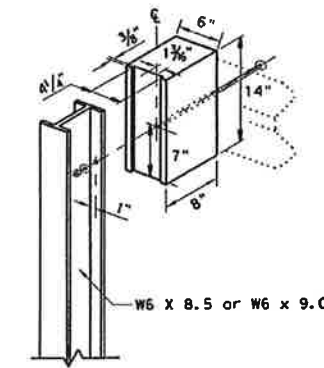
TYPICAL POST



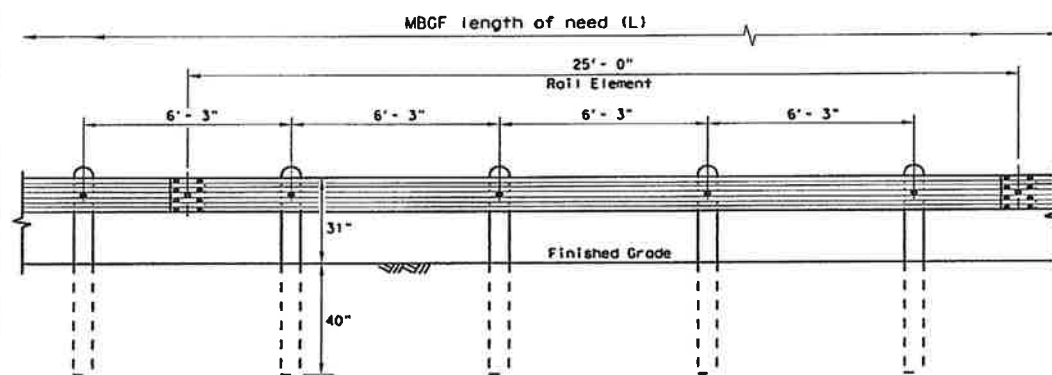
WOOD BLOCK TO ROUND WOOD POST



WOOD BLOCK TO RECTANGULAR WOOD POST

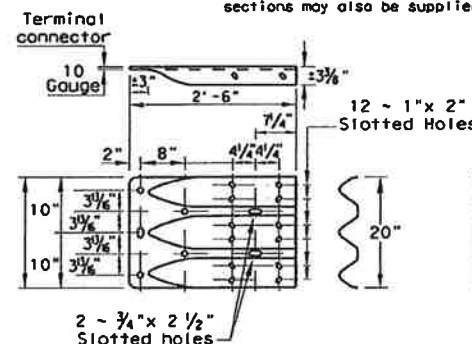


WOOD BLOCK TO STEEL POST

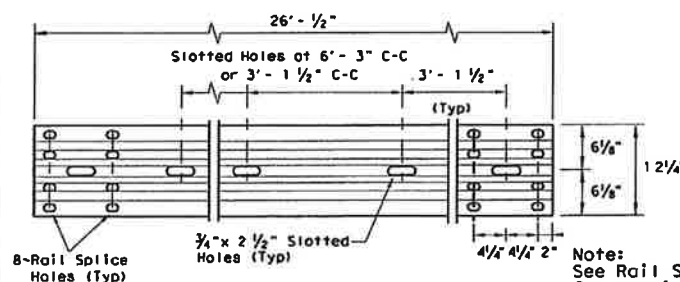


ELEVATION MID-SPAN RAIL SPLICE

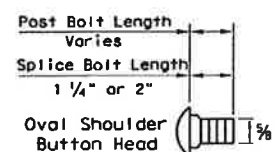
Showing a 25'-0" section of W-Beam rail, 12'-6" rail sections may also be supplied (See General Note 2)



THREE-BEAM TERMINAL CONNECTION
(SEE GENERAL NOTES 6 & 7 FOR REQUIRED HARDWARE)



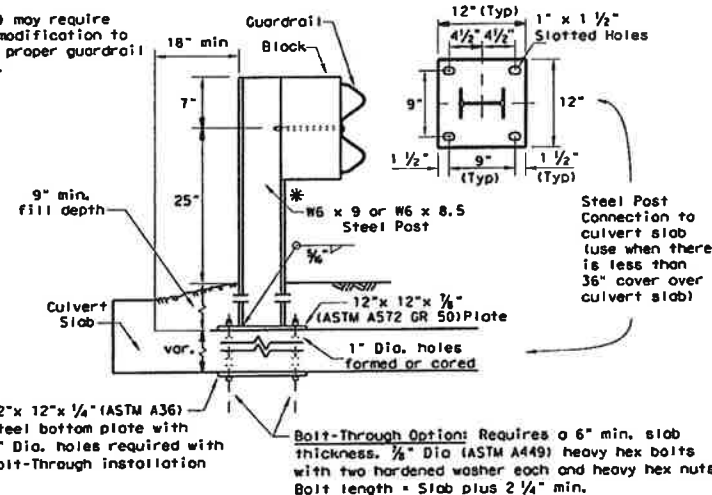
NON-SYMMETRICAL TRANSITION TO W-BEAM (10 GAUGE)



BUTTON HEAD BOLT
Post and Splice Bolts
(See General Note 3)

ELEVATION 25'-0" (NOM.) W-BEAM SECTION
12'-6" RAIL SECTIONS MAY ALSO BE SUPPLIED (SEE GENERAL NOTE 2)

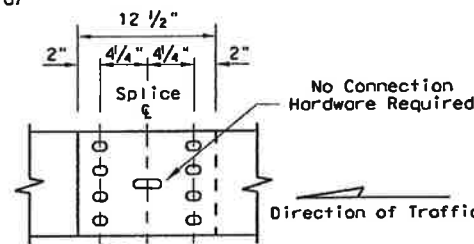
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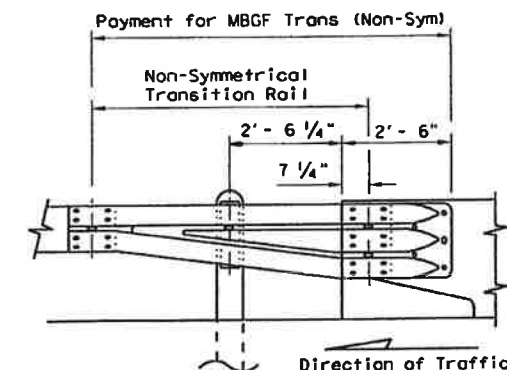
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Note: GF(31), Mid-Span rail splices are required with 6'-3" post spacings.

MID-SPAN RAIL SPLICE DETAIL


- GENERAL NOTES**
- The type of post (round wood post, rectangular wood post, or steel post) will be as shown in the plans. The exact position of MBGF shall be shown in the plans or as directed by the Engineer. Steel posts to be galvanized in accordance with Item 445, "Galvanizing."
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 - Unless otherwise shown in the plans, a composite material post and/or block that meets the requirements of DMS-7210, "Composite Material Posts and Blocks for Metal Beam Guard Fence" may be substituted for posts and/or blocks of similar dimensions. The Construction Division, TxDOT maintains a Material Producer List (MPL) for producers of materials conforming to DMS-7210. Only producers on the MPL may furnish composite material posts and/or blocks.
 - For posts located partially or wholly between precast box culvert units, the use of a cast-in-place concrete closure between boxes is required. See Detail "A" on Bridge Standard SCP-MD.



Note: All rail elements shall be lapped in the direction of adjacent traffic.

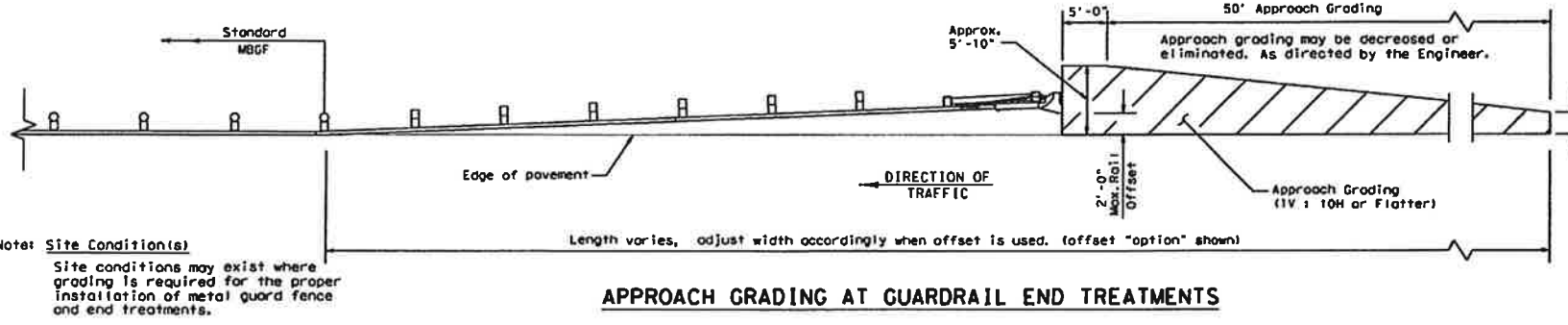
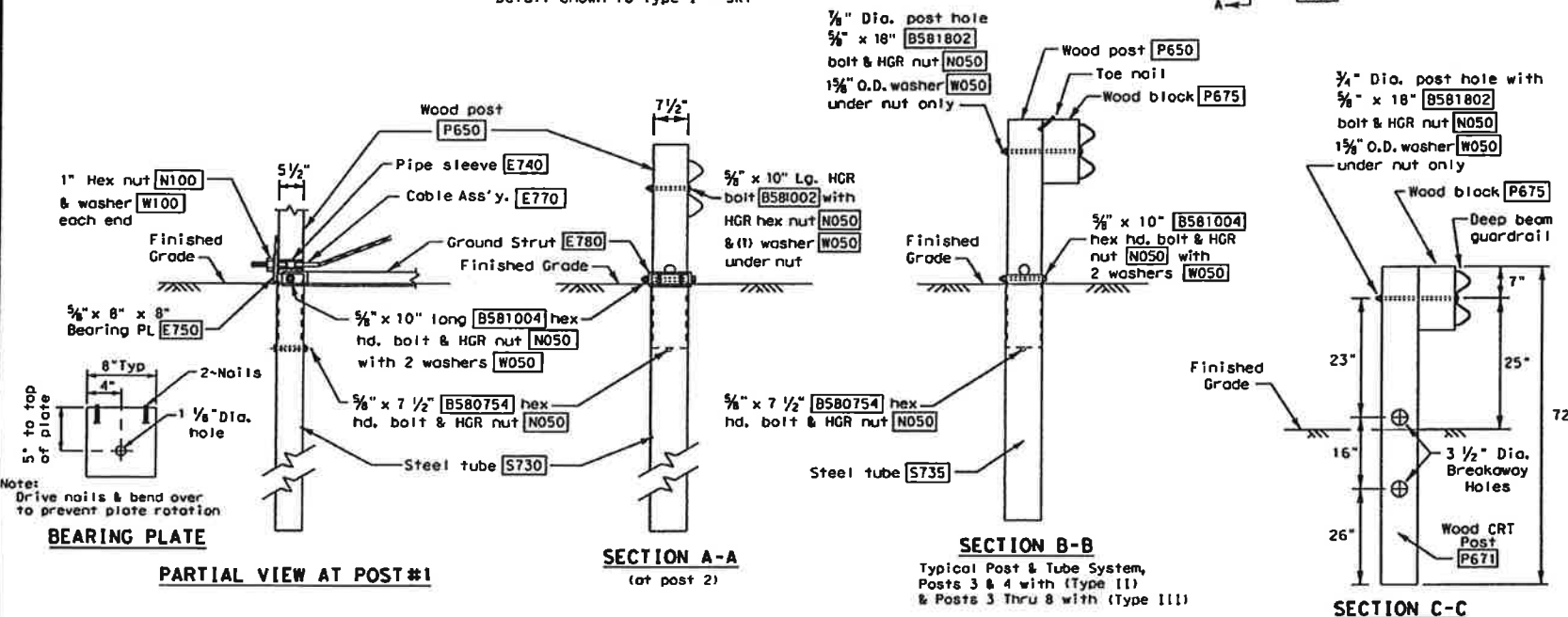
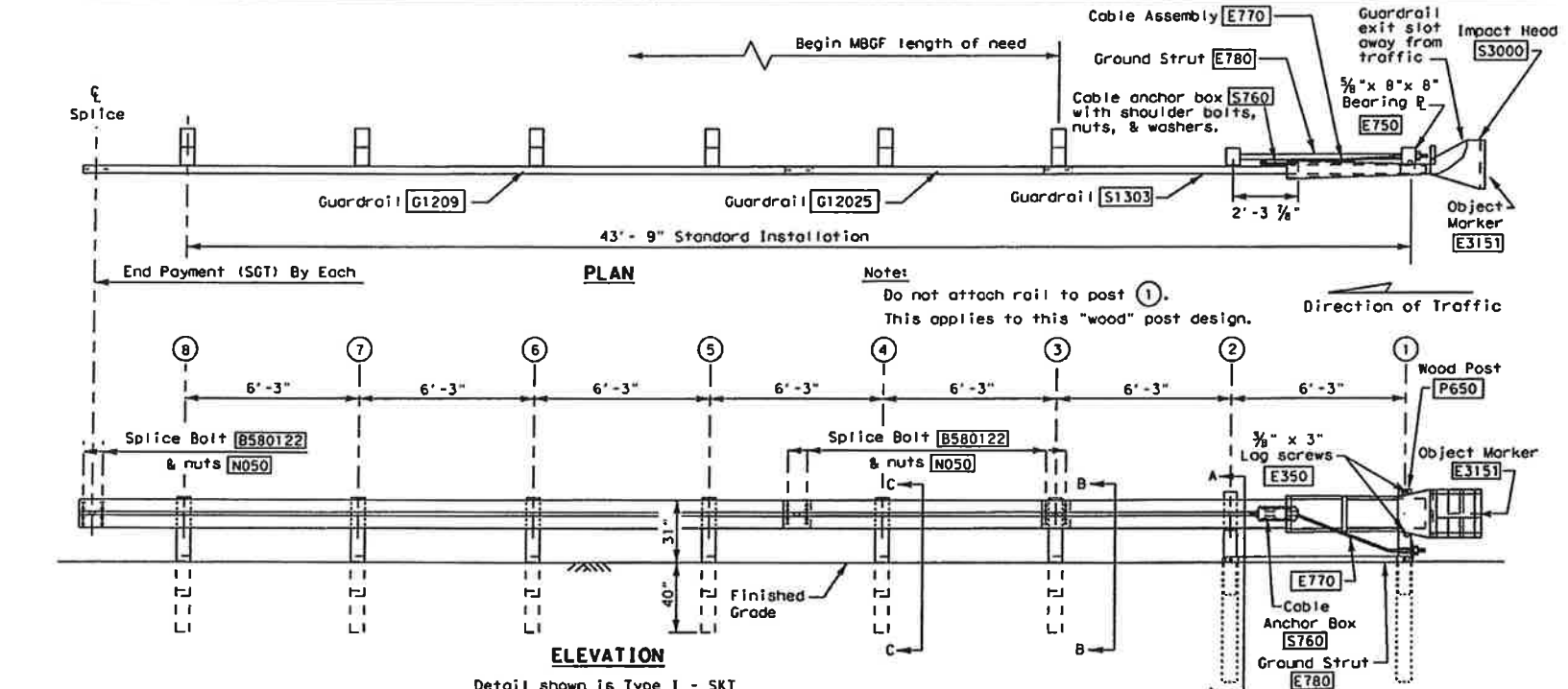
DOWNSTREAM RAIL ATTACHMENT



 Texas Department of Transportation		Design Division Standard	
<div>METAL BEAM GUARD FENCE</div> <div>GF (31) - 14</div>			
FILE# gf3114.dgn	DN: TxDOT	CR: AM	DN: VP
© TxDOT: December 2011	CONT	SECT	JOB
REVISIONS			HIGHWAY
	DIST	COUNTY	SHEET NO.

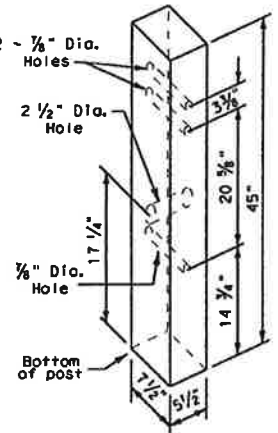
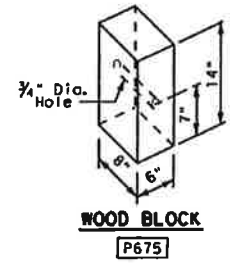
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DATE: FILE:



GENERAL NOTES

- For additional information contact: Interstate Steel Inc. (432) 263-3725
- The Type of SGT unit will be specified elsewhere in the plans. The numbers in the circles indicate post position. The Type of SGT unit chosen is a maintenance consideration and does not affect the systems performance.
Post & Tube Options
Type I Posts ① thru ②
Type II Posts ① thru ④
Type III Posts ① thru ⑧
Post Only
Posts ③ thru ⑧
Posts ⑤ thru ⑧
None
- SGT's placed within the "minimum" 150 ft. radius, shall be installed straight. Standard rail elements may be installed within the radius, without special fabrication.
- All bolts, nuts cable assemblies, cable anchors, steel tubes & bearing plates shall be galvanized.
- A flare rate of 25:1 may be used over the first 50 ft. of the system to prevent the terminal head from encroaching the shoulder. The flare may be decreased or eliminated for specific installations, if directed by the Engineer.
- The steel tubes shall not protrude more than 4 inches above ground. Site grading may be necessary to meet this requirement.
- The steel tubes may be driven with an approved driving head. They shall not be driven with the wood post in the tube. If the steel tubes are placed in drilled holes, the backfill material must be satisfactorily compacted to prevent tube settlement.
- If solid rock is encountered. See the Manufacturer's installation manual for the proper installation guidance.
- The breakaway cable assembly must be taut. A locking device, (vice grips or channel lock pliers) should be used to prevent the cable from twisting when tightening the nuts.
- The wood blocks shall be "toe nailed" to the rectangular wood posts to prevent them from turning when the wood shrinks. The bearing plate on the front post shall also be "toe nailed" to prevent rotation.
- For curb installations, the soil tubes and posts shall be installed at the proper ground elevation behind the curb. The posts will then require field drilling new holes to accommodate the rail to post connection bolt to maintain the proper height of the rail above the gutter pan. The excess post length above the rail will be removed if directed by the Engineer.
- An object marker shall be installed on the front of the impact head as detailed on D80M(VIA).



Item #		POST & TUBE OPTIONS			BILL OF MATERIAL	
		Type I	Type II	Type III	DESCRIPTION	
S1303	1	1	1	1	Guardrail (12 Ga.)	12'- 6" SKT
G12025	1	1	1	1	Guardrail (12 Ga.)	9'- 4 1/2"
G1209	1	1	1	1	Guardrail (12 Ga.)	25'- 0"
S730	2	2	2	2	Steel Tube - 6" x 8" x 72"	x 1/8" min. or 3/8"
S735	0	2	6	6	Steel Tube - 6" x 8" x 54"	x 1/8" min. or 3/8"
P650	2	4	8	8	Wood Posts - 5 1/2" x 7 1/2" x 45"	
P671	6	4	0	0	Wood CRT Posts - 6" x 8" x 72"	
P675	6	6	6	6	Wood Block - 6" x 8" x 14"	
E740	1	1	1	1	Pipe Sleeve - 2" Std. Pipe x 5 1/2"	
E750	1	1	1	1	Bearing Plate - 3/4" x 8" x 8"	
S760	1	1	1	1	Cable Anchor Box	
E770	1	1	1	1	Cable Assembly	
E780	1	1	1	1	Ground Strut	
S3000	1	1	1	1	Impact Head	
HARDWARE						
B580754	2	4	8	8	3/4" x 7 1/2" Hex Hd. Bolt	
B581004	2	4	8	8	3/4" x 10" Hex Hd. Bolt (Top of Tubes)	
W050	11	15	23	23	3/4" Washers	
B581002	1	1	1	1	3/4" x 10" HGR Post Bolt (Post 2)	
B580122	16	16	16	16	3/4" x 1 1/4" HGR Splice Bolt	
B581802	6	6	6	6	3/4" x 18" HGR Post Bolt (Posts ③ thru ⑧)	
N050	35	39	47	47	3/4" HGR Nut (24-Spl, Varies-Posts, 2-Strut)	
E350	2	2	2	2	3/4" x 3" Log Screw	
N100	2	2	2	2	1" Hex Nut (Anchor Cable)	
W100	2	2	2	2	1" Washer (Anchor Cable)	
S812A	8	8	8	8	Cable Anchor Box Shoulder Bolts	
N012A	8	8	8	8	1/2" Structural Nut	
W012A	8	8	8	8	1/2" Structural Washer	
E3151	1	1	1	1	Object Marker - (18" x 18")	

All measurements should be taken from bottom of posts.

UNIVERSAL WOOD POST

POST & TUBE OPTIONS	
Type I post	① thru ②
Type II post	① thru ④
Type III post	① thru ⑧

City of Rockwall
Public Works Department
Engineering Division
APPROVED FOR CONSTRUCTION
Capital Improvement
City Engineer: [Signature]
Date: 10/02/2017

Texas Department of Transportation		Design Division Standard
SINGLE GUARDRAIL TERMINAL		
(SKT-31)		
(WOOD POST)		
SGT (8) 31-14		
114.dgn	DN: TxDOT	CK: AM
December 2011	CON: SECT	JOB: HIGHWAY
REVIEWS	DIST	COUNTY
		SHEET NO.