UTILITY RELOCATION FOR IH 635 AT US 80 INTERCHANGE CITY OF MESQUITE, TEXAS



Real. Texas. Service.

DANIEL ALEMAN Jr. JEFF CASPER KENNY GREEN JENNIFER VIDLER TANDY BOROUGHS B.W. SMITH DEBBIE ANDERSON

MAYOR DISTRICT 1 DISTRICT 2 DISTRICT 3 DISTRICT 4 DISTRICT 5 DISTRICT 6

CLIFF KEHELEY CURT CASSIDY, PE CITY MANAGER PUBLIC WORKS DIR.



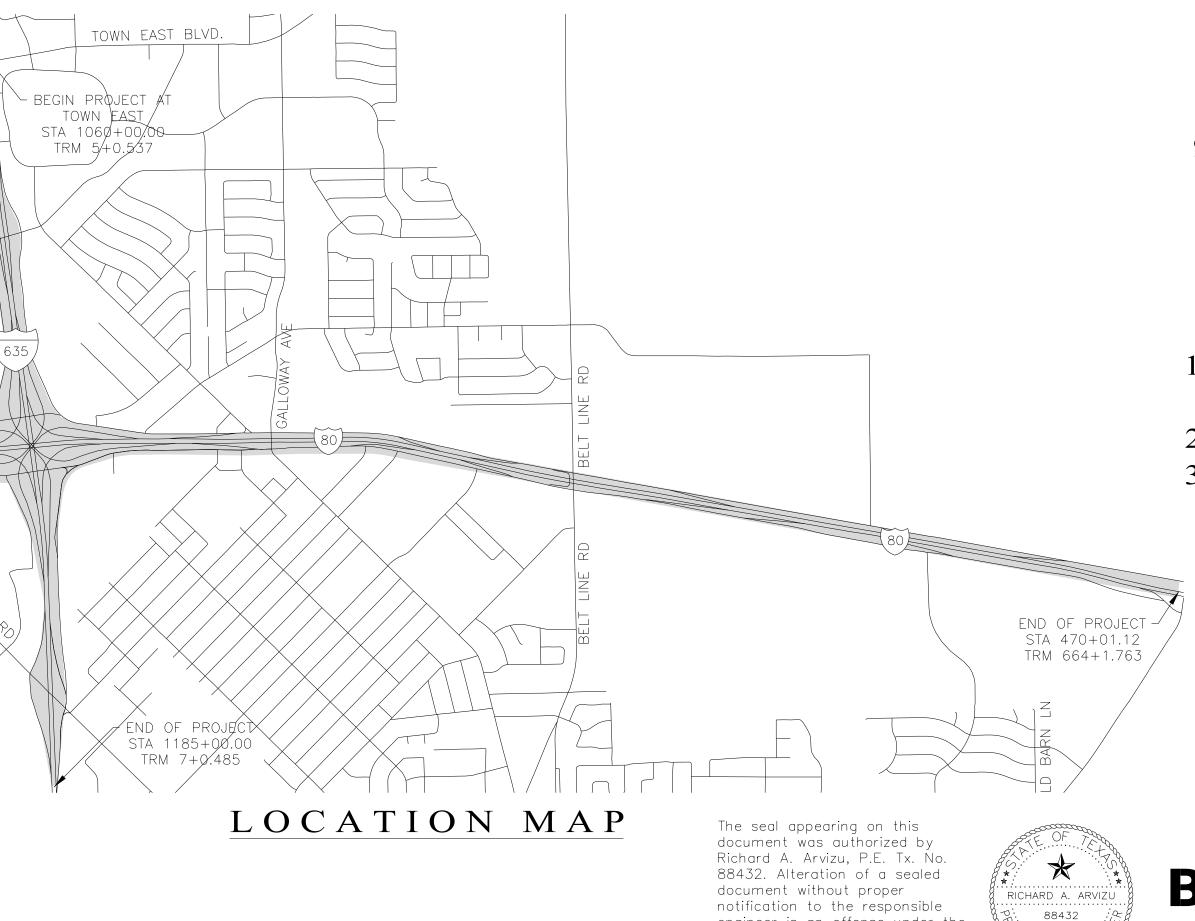


TOWN EAST

STA 182+40.11 TRM 662+0.462

CITY OF MESQUITE

1515 N. GALLOWAY MESQUITE, TX 75149 (972) 288-7711 CONSTRUCTION CSJ: 2374-02-162, ETC. ROW CSJ: 2374-02-163 UID: U00012795



engineer is an offense under the

Texas Engineering Practice Act.

March 1, 2023

City Contract No. 2023-057 March 2023

Binkley & Barfield, Inc. | TxEng F-257 1801 Gateway Blvd, Ste 101, Richardson, TX 75080 972.644.2800 | BinkleyBarfield.com

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8	ID #19 - 8" Water Line
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Binkley Barfield

DCCM

City of Mesquite General Notes for Traffic Control

1. Contractor shall provide the Project Engineer with a traffic control plan at least 10 business days before any work on a City street. Traffic control measures shall conform to the latest revision of the Texas Manual on Uniform Traffic Control Devices (TMUTCD).

2. Contract Traffic Engineering Division, 972-216-6917, at least 48 hours prior to work requiring removal or relocation of traffic signs, traffic control equipment or other traffic control appurtenances. Only City traffic personnel shall remove traffic signs.

- 3.In the event the construction work requires the closure of an existing street, alley, or fire lane, the Contractor shall request the road closure through the City Inspector a minimum of 48 hours in advance of the requested closure. Closures will not be allowed prior to 9:00 a.m. or after 3:30 p.m., Monday through Friday unless otherwise approved by the City. In the even a driveway(s) needs to be closed, the Contractor shall request the driveway closure through the City Inspector, who will in turn notify dispatch and other pertinent City departments. Closures are prohibited during school zones times in and around schools.
- 4.If the construction zone affects the movements of pedestrians, adequate pedestrian access and walkways shall be provided in accordance with the Disabilities Act Accessibility Guidelines (PROWAG, TAS and the TMUTCD). Where developments occur within 0.5 miles of a school site, temporary sidewalks must be constructed connecting the development to the school site. The route shall be approved by the City Engineer. Temporary sidewalks may be constructed with materials other than concrete. The material shall be approved by the City Engineer and be an all-weather material of a color and texture distinctly difference from the permanent sidewalk.

TxDOT General Notes for Traffic Control

- 1. Contractor shall notify TxDOT 48 hours (2 business days) before the start of construction to allow for proper inspection and coordination of workdays and traffic control plans. Use the UIR website at http://apps.dot.state.tx.us/apps/UIRPOv2/ for the 48-hour notification, updates and Traffic Control. DO NOT start construction until the construction start date and inspected has been coordinated with TxDOT.
- 2. Traffic control and protective devices shall be used and must conform to the Texas Manual on Uniform Traffic Control Devices for streets and highways. All barricades, warning devised, signs, flashers, and flag persons shall be provided by the Contractor.
- 3. Traffic shall not be stopped at any time without the use of a flag person. Prior to beginning work, the traffic control plans must be approved by the Area Engineer or his designated representative. Lane closures for any utility work will not be permitted without prior approval of Area Engineer or his designated representative. Lane closures are not permitted during peak "rush hour" traffic times.
- 4. Vehicles, equipment, construction material and personnel not necessary to the timely installation of the facility shall be kept as far as possible from the traveling public. Any above ground obstruction or bore pit located closer than the clear zone distances outlined in the "Trench Excavation and Pit Locations" specification shall be protected by barricades, metal beam guard fence and/or concrete traffic barriers as deemed necessary by the TxDOT inspector. At the end of every construction day, all equipment and materials shall be removed as far from the roadway edge as possible.
- 5. Safety Clear Zone Distances Minimum clear zone distances required for trench excavations and bore pit locations are as follows:
- For UNCURBED Highways
- A. Thirty (30) ft. from the edge of pavement (traveled lane) of high-speed (more than 40 mph), high volumes (more than 750 vehicles per day) highways.
- B.Sixteen (16) ft* from the edge of pavement of high-speed, low volume (less than 750 vehicles per day) highways.
- C.Sixteen (16) ft* from ramps.
- D.Ten (10) ft* for low-speed (40 mph or less) highways.
- E.Ten (10) ft* for any paved intersections side streets.
- Five (5) ft MINIMUM from edge of any shoulder.

<u>Traffic Control Narrative</u>

- 1. This project generally involves utility relocation in advance of the future reconstruction and widening of US80 and IH635. No open cut excavation will be permitted within the roadway travel lanes. All utility crossings shall be directional bored under the roadway as shown in the plans.
- 2. It is anticipated that the Contractor will proceed with the utility relocations in the order they appear in the plans. Contractor may proceed with an alternate sequencing plan subject to City review and approval.
- 3. Every effort should be made to limit construction impacts to traffic. Lane closures spanning the
- entire length of the project will not be permitted. Lanes closures should be limited in length and duration and only used at specific locations where needed. The Contractor shall be responsible for seeking approval for and coordinating the closure from TxDOT.

4.It is anticipated that applicable TxDOT Standard Traffic Control Plans will be used in lieu of a site-specific traffic control plan for this project. The following TxDOT Standard Traffic Control Plans match the planned construction and should be utilized based on the expected duration.

- a. TCP (1-1) 18 TCP Conventional Road Shoulder Work
- i. Duration: All work that occupies a location up to 1 hour in a single daylight period.
- b. TCP (2-1) 18 TCP Conventional Road Shoulder Work
- i. Duration: All work that occupies a location up to 1 hour in a single daylight period.
- c. TCP (1-4) 18 TCP Lane Closures on Multilane Conventional Roads i. Duration: All work that occupies a location up to 1 hour in a single daylight period.
- d. TCP (2-4) 18 TCP Lane Closures on Multilane Conventional Roads
- i. Duration: All work that occupies a location up to 1 hour in a single daylight period up to 3 days. e. TCP (2-5) - 18 - TCP Long Term Lane Closures Multilane Conventional Rds.
- i. Duration: All work that occupies a location more than 3 days.
- 5. It is the responsibility of the Contractor to determine whether the TxDOT Standard TCPs are appropriate and suitable for each utility relocation. If it is determined that the safety of pedestrians and motorists cannot be adequately maintained using the TxDOT Standard TCPs, the Contractor shall prepare and submit a site-specific traffic control plan.

6. The Contractor shall submit traffic control plans (TxDOT Standard TCPs or site-specific TCP) to the City of Mesquite and TxDOT for approval in accordance with their general notes above and other requirements.

			CAUTION EXISTING UTILITIES !!!
			Existing utilities and underground facilities indicated on these plans have been located from reference information. It shall be
			_ the responsibility of the contractor to verify both horizontally and vertically the location of all existing utilities and underground _ facilities prior to construction, to take the necessary precautions
\bigtriangleup			in order to protect all facilities encountered. The contractor shall preserve and protect all existing utilities from damage during
Rev	Description	Date	construction.

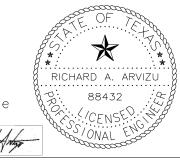
<u>General Construction Notes</u>

- <u>Utility Coordination:</u>
- 1. It is the contractor's responsibility to notify utility companies (811) & Mesquite utilities at 972–216–6940 to arrange for exact locations at least 48 hours prior to beginning construction. Utilities shown on the plans were taken from field survey and SUE provided by TxDOT, as-builts provided by the city and information provided by the utility companies. The completeness and the accuracy of this data is not guaranteed. The contractor is responsible for verifying the location of all underground utilities and protecting them from damage during construction.
- 2.Franchise utility information:
- a)Time Warner Calbe Jorge Barrera 1565 Chenault St., Dallas, TX 75228 Phone: 214-320-5443
- b)Oncor Terri Shatter (Area Manager) 1545 High Point Dr., Mesquite, TX 75149
- Phone: 972-216-8906
- c)AT&T Sandra Dixon (Area Manager of Engineering) 1255 Tavaros Ave. #306, Dallas, TX 75218
- Phone: 214-320-6440 d)ATMOS Energy - George Melendez (Project Manager) 1310 HWY. 66, Garland, TX 75040
- Phone: 972-485-6204
- e)Charter Richie Bonner richie.bonner@charter.com
- f) Verizon Jason Gongre
- jason.gongre@verizon.com
- g)Zayo Jesse Rocha
- jesse.rocha@zayo.com h)NTMWD - Jeff Hogan
- Phone: 469-626-4708
- 3. Utilities shown on the plans were taken from field surveys associated with the State of Texas Department of Transportation, Plans of Subsurface Utilities Quality Level- B, CSJ: 0095-02-107, US80 East of Town East Blvd to East of Belt Line Rd, prepared by LTRA and dated 1-29-2021, and Plans of Existing Subsurface Utilities SUE Quality Level-A, CSJ: 0095-02-107, US80 East of Town East Blvd to East of Belt Line Rd, prepared by LTRA and dated 3-12-2021. The completeness and the accuracy of this data is not guaranteed. The contractor is responsible for verifying the location of all underground utilities and structures and protecting them from damage during consruction.

<u>General:</u>

- 1. Before beginning construction, the contractor shall prepare a construction sequence schedule. The construction schedule is to be submitted to the City for approval.
- 2. The contractor is responsible for erosion control throughout construction. The City anticipates inlet protection, segments of silt fencing, protection around stock piles, and stabilized construction entrances (for soil disturbing work in parkways) be provided.
- 3. The contractor shall be required to prepare pre-construction video of the project limits clearly showing the location and condition of all improvements within and adjacent to the project area. Failure to document the condition of existing improvements may result in the contractor being required to repair or replace damaged property or facilities. The video must be turned in to the City Engineering Division before beginning construction, including any removals.
- 4. All excavation for the project is unclassified.
- 5. The contractor shall obtain a hydrant meter from the City for construction water. Contractor shall be responsible for costs of water used.
- 6. Contractor shall provide temporary support of all power and telephone poles and associated guy wires within 15 feet of excavation for proposed water and sewer lines or as work excavation demands. Contractor shall repair damaged poles and guy wires or relocate poles and guy wires as required by the utility owner at no additional cost to the City.
- 7.Refer to specifications for list of required submittals.
- 8. Work may not be backfilled or covered until it has been inspected by the City.
- 9. Contractor shall not place concrete rubble or excavated material on any street.
- 10.Contractor is responsible for dewatering existing water lines, as necessary, to complete connections. City staff shall all operate all existing valves, as necessary.
- 11. Contractor shall be required to install temporary test plugs for hydrostatic testing, as necessary, at no additional cost to the City.
- 12. Contractor shall coordinate proposed construction with other contractors in the event the other contractors are conducting work in the same area simultaneously for the overall utility relocation work and/or construction work associated with TxDOT CSJ: 2374-02-162.
- 13.Contractor's operations must stay within the right-of-way or easements designated on the plan sheets. Access routes or operations which fall outside these areas will only be aloowed with landowner approval. Evidence of such approval shall be provided to the City by the contractor.
- 14. Contractor shall submit to the City for approval a laying plan and schedule 14 days in advance of construction activities that require replacement or support of existing sanitary sewer, water, or storm sewer pipe. The plan shall describe in detail the method the contractor proposes to use for replacing or supporting existing pipe and associated schedule.

The seal appearing on this document was authorized by Richard A. Arvizu, P.E. Tx. No. 88432. Alteration of a sealed document without proper notification to the responsible engineer is an offense under the Texas Engineering Practice Act. March 1, 2023 Kichart Arty





CITY OF MESQUITE 1515 N. Galloway Mesquite, Texas 75149 Binkley

Binkley & Barfield 1801 Gateway Blvd, Ste 972.644.2800

<u>LEGEND</u>

ww1	WW1	WW1	ww1
WW1(C) WW1(C) -			
WW1(D) WW1(D) -	ww1(D) ww1	(D) WW1(D)	WW1(D) WW1(D)
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——————————————————————————————————————	T-DU	CT1	T-DUCT1

PROP PAVEMENT (BY OTHERS) PROP STORM SEWER (BY OTHERS) PROP CITY OF MESQUITE WATER LINE PROP SANITARY SEWER LINE EX SANITARY SEWER LINE (LEVEL "B") EX SANITARY SEWER LINE (LEVEL "C") EX SANITARY SEWER LINE (LEVEL "D") EX CITY OF MESQUITE WATER LINE (LEVEL "B") EX CITY OF MESQUITE WATER LINE (LEVEL "C") EX CITY OF MESQUITE WATER LINE (LEVEL "D") PROP NTMWD WATER LINE PROP TEL FIBER RELOC (BY OTHERS) PROP GAS RELOC (BY OTHERS) EX ROW PROP ROW EX STORM LINE (LEVEL "B") EX STORM LINE (LEVEL "D") EX NTMWD WATER LINE (LEVEL "B") EX NTMWD WATER LINE (LEVEL "D") EX ATT FIBER OPTIC (LEVEL "B") EX ATT FIBER OPTIC (LEVEL "D") EX ZAYO FIBER OPTIC (LEVEL "B") EX ZAYO FIBER OPTIC (LEVEL "D") EX MESQUITE FIBER OPTIC (LEVEL "B") EX MESQUITE FIBER OPTIC (LEVEL "D") EX SPECTRUM FIBER OPTIC (LEVEL "B") EX SPECTRUM FIBER OPTIC (LEVEL "D") EX ATT LEGACY FIBER OPTIC (LEVEL "B") EX ATT LEGACY FIBER OPTIC (LEVEL "D") EX SPECTRUM CTV (LEVEL "B") EX ATMOS GAS (LEVEL "B") EX ATMOS GAS (LEVEL "D") EX ONCOR ELECTRIC (LEVEL "B") EX TXDOT ELECTRIC (LEVEL "B") EX ATT TELEPHONE (LEVEL "B") EX ATT T-DUCT (LEVEL "B") PROP PAVING REM & REPL PROP SANITARY SEWER MANHOLE EX SANITARY SEWER MANHOLE PROP FIRE HYDRANT EX FIRE HYDRANT PROP WATER VALVE EX WATER VALVE PROP REDUCER EX WATER METER EX WATER MANHOLE EX WATER VAULT EX STORM SEWER MANHOLE PROP ELECTRIC POWER POLE (BY OTHERS) EX ELECTRIC POWER POLE PROP FIBER HANDHOLE (BY OTHERS) EX FIBER HANDHOLE

TEST HOLE

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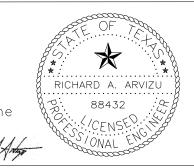
kley & Barfield	UTILITY RE	LOCATION F	FOR CSJ:237	4-02-162
DEEM field, Inc. TxEng F-257		NOTES (& LEGEND	
, Ste 101, Richardson, TX 75080 0 BinkleyBarfield.com	Scale: 1"=50' H (22"x34") 1"=4' V (22"x34") 1"=100' H (11"x17")		Job No.: 2200000333	2
	1"=8' V (11"X17")	00,01,2020	220000000	<u> </u>

tem	Description	Units	Plan	Bid	Sheet	7 Sheet 8	Sheet 9	Sheet 10	Sheet 11	Sheet 12	Sheet 13	B Sheet 14	Sheet 15	5				
GENERAL SITE PREPARA		STA	Quantity 60.5	Quantity 74.7	4.7	5.1	4.3	9.5	6.6	4.8	8.0	13.2	4.3					
8" C900 PVC CLASS 305 (3,296	3,296		0	191	0	609	506	789	828	373	_				
·	(DR14) WATER LINE W/ 16" STEEL CASING PIPE (*)		278	278	0	0	168	0	0	0	110	0	0					
	(DR14) WATER LINE (BY OTHER THAN OPEN CUT)		68	68	0	0	68	0	0	0	0	0	0					
	(DR14) WATER LINE W/ 16" STEEL CASING PIPE (BY OTHER THAN OPEN CUT) (*)	LF	334	334	0	0	64	0	55	0	158	0	57					
12" C900 PVC CLASS 305			1,456	1,456	0	521	0	924	0	0	0	11	0					
	(DR14) WATER LINE W/ 24" C900 PVC CLASS 305 (DR25) CASING PIPE		40	40	0	0	0	40	0	0	0	0	0	FIBER QUANTITY -	IADL	_		
18" C900 PVC CLASS 305		LF	532	532	0	0	0	0	0	0	0	532	0		ID	ID		
CONCRETE ENCASEMEN		LF	40	40	0	0	0	40	0	0	0	0	0			113/114		
0 REMOVE EX. WL (6" - 12"		LF	360	360	0	0	30	0	0	0	60	240	30					
1 REMOVE EX. WL (14" -16'			585	585	0	0	0	0	450	0	0	135	0					
2 CONNECT TO EXISTING W		EA	23	23	0	5	3	3	2	2	4	3	1			Sheet		lan
3 CUT & PLUG EXISTING W		EA	19	19	0	5	2	2	2	2	3	2	1	Description	Sheet 16	1 1	Units Qua	
4 GROUT ABANDONMENT V		LF	5,545	5,545	0	525	450	920	660	500	1000	1090	400	F1 Dig, Retrieve and Capture Existing Conduits and Fiber Cable to Proposed Handholes	20	0	LF :	20
5 GROUT ABANDONMENT V		LF	355	355	0	0	0	0	0	0	0	355	0	Dig and backfill for bore pits. Resod disturbed areas including smoothing, 4" topsoil,	0	170	SY 1	170
6 ABANDON EX. WATER VA		EA	6	6	0	3	1	0	0	0	0	2	0	F2 fertilizer, watering, maintenance and clean-up.				
7 REMOVE EX. WATER VAI		EA	16	16	0	5	2	2	0	1	3	3	0	F3 Open Cut 1-4" HDPE Conduits w/2-1.5" HDPE Innderducts	14	110	LF 1	124
B REMOVE EX. 16" WATER		EA	1	1	0	0	0	0	0	0	0	1	0	F4 Open Cut 2-4" HDPE Conduits w/2-1.5" HDPE Innderducts	30	0	LF :	30
REMOVE & DISPOSE EX		EA	11	11	0	2	1	1	1	1	1	4	0	F5 Directional Bore 1-4" HDPE Conduits w/2-1.5" HDPE Innerducts	275	0	LF 2	275
FIRE HYDRANT & 6" LEAD	D (*)	EA	10	10	0	2	0	1	1	1	1	4	0	F6 Directional Bore 2-4" HDPE Conduits w/2-1.5" HDPE Innerducts	597	590	LF 1,	,187
1 INSTALL 6" WATER VALV	E (*)	EA	10	10	0	2	0	1	1	1	1	4	0	F7 Directional Bore 1-10" HDPE Casing w/2-4" HDPE Conduits and 2-1.5" HDPE Innerducts	3 0	425	LF 4	425
2 INSTALL 8" WATER VALV	E (*)	EA	15	15	0	2	3	0	1	2	6	1	0	F8 Install 5/8" x 8' Ground Rod (*)	4	4	EA	8
3 INSTALL 12" WATER VAL	VE (*)	EA	7	7	0	3	0	3	0	0	0	1	0	F9 Install COM 3'x4'x3' Handhole w/ lid flush to final grade	2	2	FA	4
INSTALL 18" WATER VAL	VE (*)	EA	2	2	0	0	0	0	0	0	0	2	0			2	FA	2
5 1" TYPE 'K' COPPER SER	V. INCL. METER/CAN ADJUSTMENT (SHORT SIDE)	EA	0	5	0	0	0	0	0	0	0	0	0	F10 Install MISD 3'x4'x3' Traffic Rated Handhole w/ lid flush to final grade		2		
3 1.5" TYPE 'K' COPPER SE	ERV. INCL. METER/CAN ADJUSTMENT (SHORT SIDE)	EA	0	5	0	0	0	0	0	0	0	0	0	F11 Install Type A Traffic Rated Handhole w/lid flush to final grade	1	0	EA	1
7 2" TYPE 'K' COPPER SER	V. INCL. METER/CAN ADJUSTMENT (SHORT SIDE)	EA	3	5	0	0	2	0	0	1	0	0	0	F12 Cut and restore concrete pavement and sidewalks	55	0		55
B EXTRA D.I. FITTINGS (NOT	T SHOWN ON PLANS) (*)	TONS	0	6	0	0	0	0	0	0	0	0	0	F13 Place COM 144 Ct. Single-mode Fiber Cable (Includes slack loops plus 5%)	840	1540	LF 2,	,380
8" SDR-26 PVC SEWER P	PIPE	LF	552	552	532	0	0	0	0	20	0	0	0	F14 Place COM 48 Ct. Single-mode Fiber Cable (Includes slack loops plus 5%)	1235	1540	LF 2,	,775
TV INSPECTION OF NEW	SANITARY SEWER PIPE	LF	552	552	532	0	0	0	0	20	0	0	0	F15 Place MISD 72 Ct. Single-mode Fiber Cable (Includes slack loops plus 5%)	735	1330	LF 2,	,065
1 CUT & PLUG EXISTING SA	ANITARY SEWER	EA	2	2	2	0	0	0	0	0	0	0	0	F16 Intall 1-1C #10 AWG THHN Copper Tone Wire in all 4" HDPE Conduit	1530	2200	LF 3,	,730
2 CONNECT NEW SEWER	TO EX. MH (REPAIR & SEAL CONNECTIONS)	EA	1	1	0	0	0	0	0	0	0	0	0			1 1		
3 CEMENT STABILIZED SAN	ND EMBEDMENT	LF	22	22	0	0	0	0	0	22	0	0	0					<u> </u>
4 GROUT ABANDONMENT S	SEWER MAIN (6"-12")	LF	416	416	416	0	0	0	0	0	0	0	0	Buy America compliance documentation will be provided, as required, for the Items marked "*" in May 5, 2021	1 accordance	e with TxDO	I/FHWA gi	Jidance le
5 ABANDON EXISTING MAN	IHOLE	EA	1	1	1	0	0	0	0	0	0	0	0					
B REMOVE EXISTING MANH		EA	1	1	1	0	0	0	0	0	0	0	0					
7 CONSTRUCT 4' DIAMETEF		EA	4	4	4	0	0	0	0	0	0	0	0					
B REMOVE & REPLACE 5'x'	'2' REINF. CONC BOX CULVERT	LF	48	48	0	0	0	48	0	0	0	0	0					
P REMOVE EX. CONCRETE		SY	76	84	0	0	56	20	0	0	0	0	0					
REMOVE EX. CONCRETE		SY	600	660	140	0	193	59	0	26	169	13	0					
1 REMOVE EXISTING SIDEV		SY	14	16	4	3	7	0	0	0	0	0	0					
2 REMOVE EXISTING CONC	C. FLUME	SY	1	2	0	0	0	1	0	0	0	0	0					
3 REMOVE EXISTING CONC	C. CHANNEL LINING	SY	7	8	0	0	0	7	0	0	0	0	0					
4 CONSTRUCT 6" ASPHALT	PAVEMENT (TYPE C)	SY	632	696	144	0	193	87	0	26	169	13	0					
5 CONSTRUCT CONCRETE	SIDEWALK	SY	10	11	0	3	7	0	0	0	0	0	0					
5 SODDING OF DISTURBED	AREAS	SY	5	2,005	0	0	5	0	0	0	0	0	0					
7 TRENCH SAFETY PLAN		EA	0	1	0	0	0	0	0	0	0	0	0					
3 IMPLEMENTATION OF TRI	ENCH SAFETY PLAN	LF	6,202	6,402	532	521	359	1012	609	526	899	1371	373					
EROSION CONTROL PLAN	N (INCLUDING IMPLEMENTATION & MAINTENANCE)	EA	0	1	0	0	0	0	0	0	0	0	0					
D IRRIGATION SYSTEM REF		AL	0	1	0	0	0	0	0	0	0	0	0					
1 BARRICADING & TRAFFIC		MONTH	0	1	0	0	0	0	0	0	0	0	0					
2 MOBILIZATION (MAXIMUM		LS	0	1	0	0	0	0	0	0	0	0	0	-				
	ocumentation will be provided, as required, for the Items marked "*" in accordance with TxDO		-		<u> </u>		<u> </u>											

			CAUTION EXISTING UTILITIES !!!
			Existing utilities and underground facilities indicated on these plans have been located from reference information. It shall be
			the responsibility of the contractor to verify both horizontally
			and vertically the location of all existing utilities and underground facilities prior to construction, to take the necessary precautions
\square			in order to protect all facilities encountered. The contractor shall
Rev	Description	Date	preserve and protect all existing utilities from damage during construction.

QUANTITY SUMMARY TABLES

The seal appearing on this document was authorized by Richard A. Arvizu, P.E. Tx. No. 88432. Alteration of a sealed document without proper notification to the responsible engineer is an offense under the Texas Engineering Practice Act. March 1, 2023



MESQUITE T E X A S Mesquite, Texas 75149 Real.Texas.Service.

CITY OF MESQUITE 1515 N. Galloway

Binkley & Barfield, Inc. | TxEng F-257 1801 Gateway Blvd, Ste 101, Richardson, TX 75080 972.644.2800 | BinkleyBarfield.com

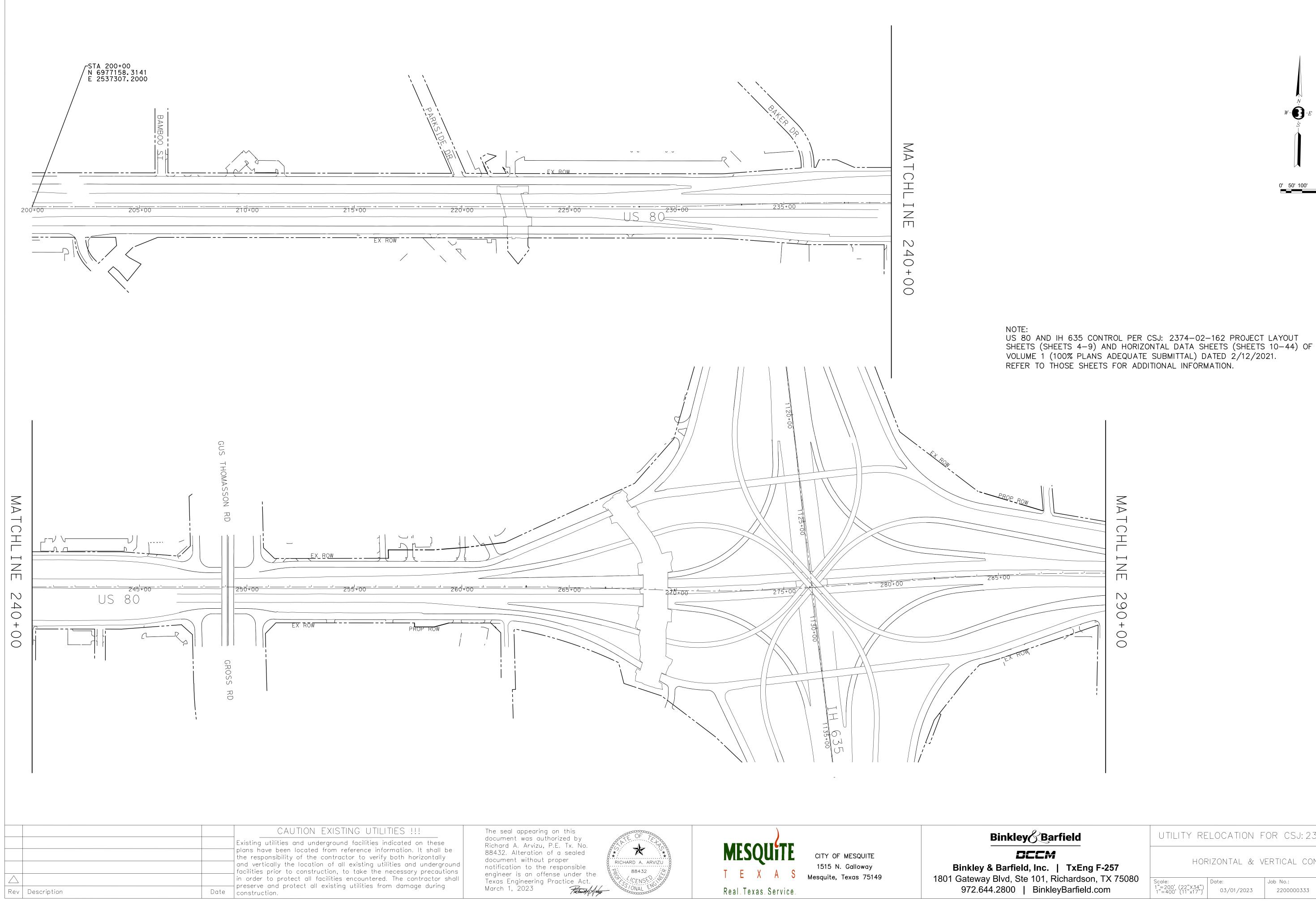


Binkley & Barfield DCCM

UTILITY RELOCATION FOR CSJ:2374-02-162

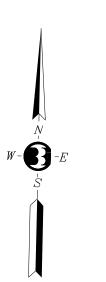
TCP NOTES & QUANTITIES

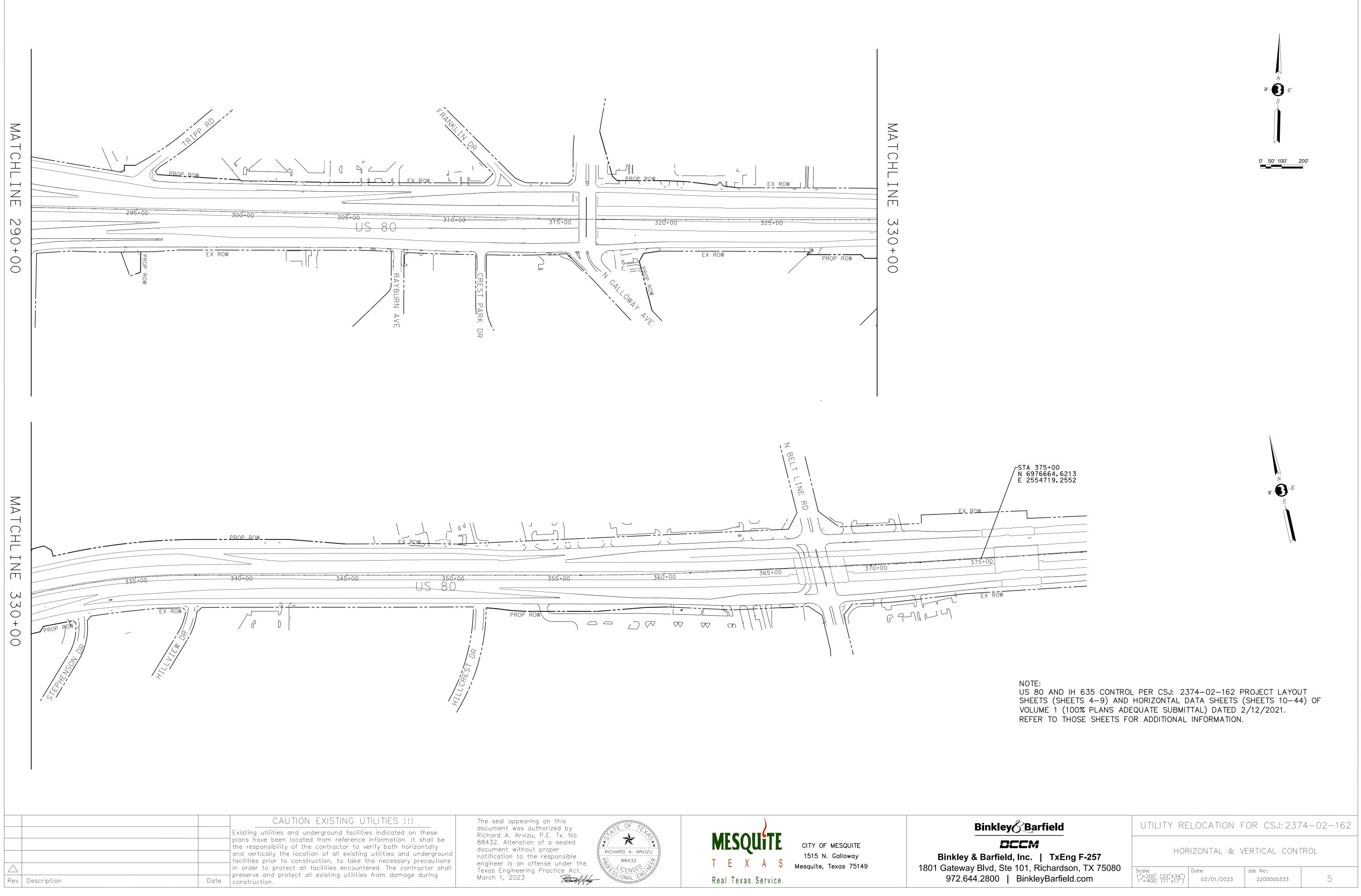
Scale: 1"=50' H (22"X34") 1"=4' V (22"X34")	Date:	Job No.:	
1"=100' H (11"X17") 1"=8' V (11"X17")	03/01/2023	2200000333	3



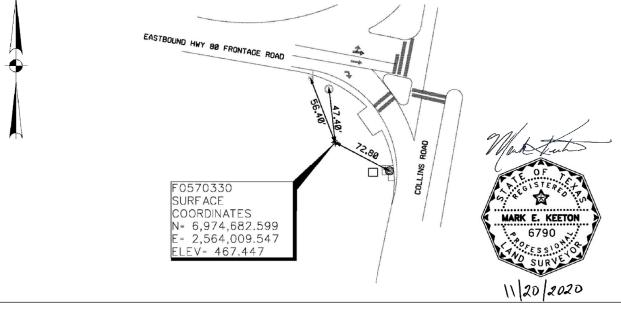
ey& Barfield	UTILITY RE	LOCATION F	FOR CSJ: 237	'4-02-162
DEEM eld, Inc. TxEng F-257	HOR	RIZONTAL & V	ERTICAL CONT	ROL
Ste 101, Richardson, TX 75080	Scale: 1"=200', (22"X34") 1"=400', (11"x17")	Date: 03/01/2023	Job No.: 2200000333	4

0' 50' 100' 200'



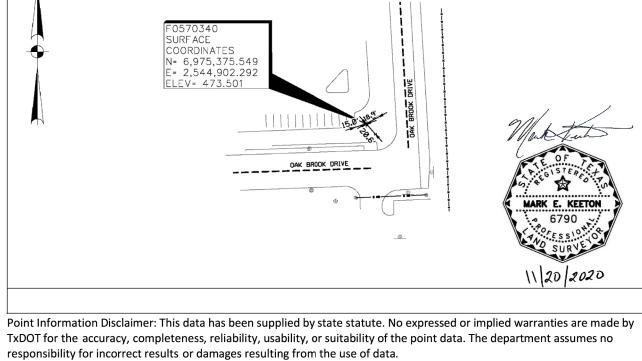


Highway / Location: US HIGHWAY TxDOT CSJ No: 0092-02-107			NO NOAD		Additio		ment Number: F		
County: DALLAS	State	Texas	Established	Bv: JA				Rev. Date:	
TxDOT Survey Level: 1	otute	Textue	201001101			ed: OC	TOBER 07, 2020	norrbuter	
Intervisible Monument Number: N/A							GPS OBS (RTN)		
Unit of Measure: US Survey Feet							GPS OBS (RTN)		
					, tum: NA		(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Projection Zone: 4202 TEXAS NORT	H CEN	FRAL		Geoid	Model:	12A			
Monument(s) Held Hz: TxDOT VRS N			TXDA (CORS	PIDs "[DF8984'	"."DF43	385"."DF8982")		
Monument(s) Held Vt: NGS MONUM			•			,	, ,		
Geodetic Position			Grid Co	ordinat	es		Grou	nd Coordinates	
Lat: 32°47'03.18633"		North: 6,	,973,730.643	;	North: 6,974,682.599				
Long: -96°33'47.63760"		East: 2,	,563,659.592	2 East: 2,564,009.547					
Elevation: 467.447							1		
TxDOT Surface Adjustment Factor: 1.	000136	506							
Mapping Angle: 1° 03' 22.68750"		Scale Fac	tor: 0.99988	3450			Combined Facto	r: 0.99986512	
Mark Logo: TEXAS DEPT OF TRANSPO	RTATIC		OL MARK	Stamp	ping: F05	570330	1		
Type of Marker: 3 ½" Aluminum Disk I	n Conc	rete	If "Othe	r":					
			Control Po	oint Sk	etch				
1					~	/	1		



Point Information Disclaimer: This data has been supplied by state statute. No expressed or implied warranties are made by TxDOT for the accuracy, completeness, reliability, usability, or suitability of the point data. The department assumes no responsibility for incorrect results or damages resulting from the use of data.

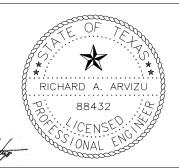
©pepartment of Transportation	Pri	mary Sur	rvey (Control	Form 2462 (Rev.9/18) Page 1 of 2
Highway / Location: IH 635 AND OAK	BROOK DRI	VE		Monu	ment Number: F0570340
TxDOT CSJ No: 0092-02-107				Additional CSJ:	0095-02-096
County: DALLAS Sta	te: Texas	Established	By: JAC	OBS	Rev. Date:
TxDOT Survey Level: 1		•	Date E	stablished: OC	TOBER 07, 2020
Intervisible Monument Number: N/A			Survey	Method Hz: G	GPS OBS (RTN)
Unit of Measure: US Survey Feet			Survey	Method Vt: G	PS OBS (VRS)
Hz. Datum: NAD 83 (2011)			Vt. Dat	um: NAVD 88	
Projection Zone: 4202 TEXAS NORTH CE	ENTRAL		Geoid I	Model: 12A	
Monument(s) Held Hz: TxDOT VRS NETW	ORK CORS ID	TXDA (CORS	PID "DF	8984","DF438	35","DF8982")
Monument(s) Held Vt: NGS MONUMENT					
Geodetic Position		Grid Co	ordinate	s	Ground Coordinates
Lat: 32°47'13.47052"	North: 6	,974,423.498	3		North: 6,975,375.549
Long: -96°37'31.25760"	East: 2,	544,554.945	5		East: 2,544,902.292
Elevation: 473.501					
TxDOT Surface Adjustment Factor: 1.0001	.36506				
Mapping Angle: 1° 03' 20.72640"	Scale Fac	tor: 0.99988	3220		Combined Factor: 0.99986463
Mark Logo: TEXAS DEPT OF TRANSPORTA	TION CONTR	OL MARK	Stamp	ing: F0570340	
Type of Marker: 3 ½" Aluminum Disk In Co	ncrete	If "Othe	er":		
		Control Po	oint Ske	tch	
	E IATES 5,375.549 4,902.292	OAK BROD	K DRIVE		Mark Junt



			CAUTION EXISTING UTILITIES !!!
			Existing utilities and underground facilities indicated on these plans have been located from reference information. It shall be the responsibility of the contractor to verify both horizontally
			and vertically the location of all existing utilities and underground facilities prior to construction, to take the necessary precautions
\square			in order to protect all facilities encountered. The contractor shall preserve and protect all existing utilities from damage during
Rev	Description	Date	construction.

Highway / Location: IH 635			Mon	ument Number: F0	570350		
TxDOT CSJ No: 0092-02-107		1	Additional CS	J: 0095-02-096	1		
County: DALLAS St.	ate: Texas	Established	By: JACOBS		Rev. Date:		
TxDOT Survey Level: 1			Date Established: O	-			
Intervisible Monument Number: N/A			Survey Method Hz:	. ,			
Unit of Measure: US Survey Feet			Survey Method Vt:				
Hz. Datum: NAD 83 (2011)		Vt. Datum: NAVD 88					
Projection Zone: 4202 TEXAS NORTH C	Geoid Model: 12A						
Monument(s) Held Hz: TxDOT VRS NETW		-	PID "DF8984","DF43	385","DF8982")			
Monument(s) Held Vt: NGS MONUMENT	Г "Н 184", PID	"CS1418"					
Geodetic Position		Grid Co	ordinates	Groun	nd Coordinates		
Lat: 32°48'52.53286"	,	984,412.934		North: 6,985,366	North: 6,985,366.348		
Long: -96°37'44.33639"	East: 2,	543,260.406	East: 2,543,607.576				
Elevation: 508.472							
TxDOT Surface Adjustment Factor: 1.000	136506			-			
Mapping Angle: 1° 03' 13.59330"	Scale Fac	tor: 0.99988	1131	Combined Factor	: 0.99986086		
Mark Logo: TEXAS DEPT OF TRANSPORTA	TION CONTRO	OL MARK	Stamping: F057035	0			
Type of Marker: 3 ½" Aluminum Disk In Co	oncrete	lf "Othe					
		Control Po	oint Sketch				
F0570350	C	1					
SURFACE							

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CITY OF MESQUITE 1515 N. Galloway T E X A S Mesquite, Texas 75149

Point Information Disclaimer: This data has been supplied by state statute. No expressed or implied warranties are made by

TxDOT for the accuracy, completeness, reliability, usability, or suitability of the point data. The department assumes no

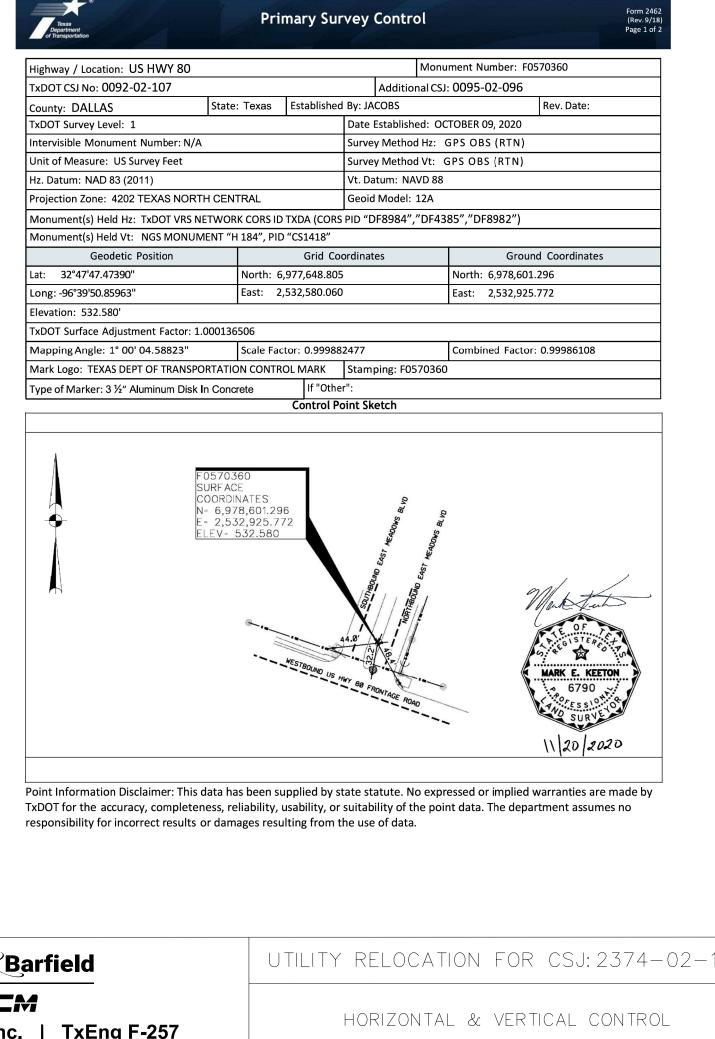
responsibility for incorrect results or damages resulting from the use of data.

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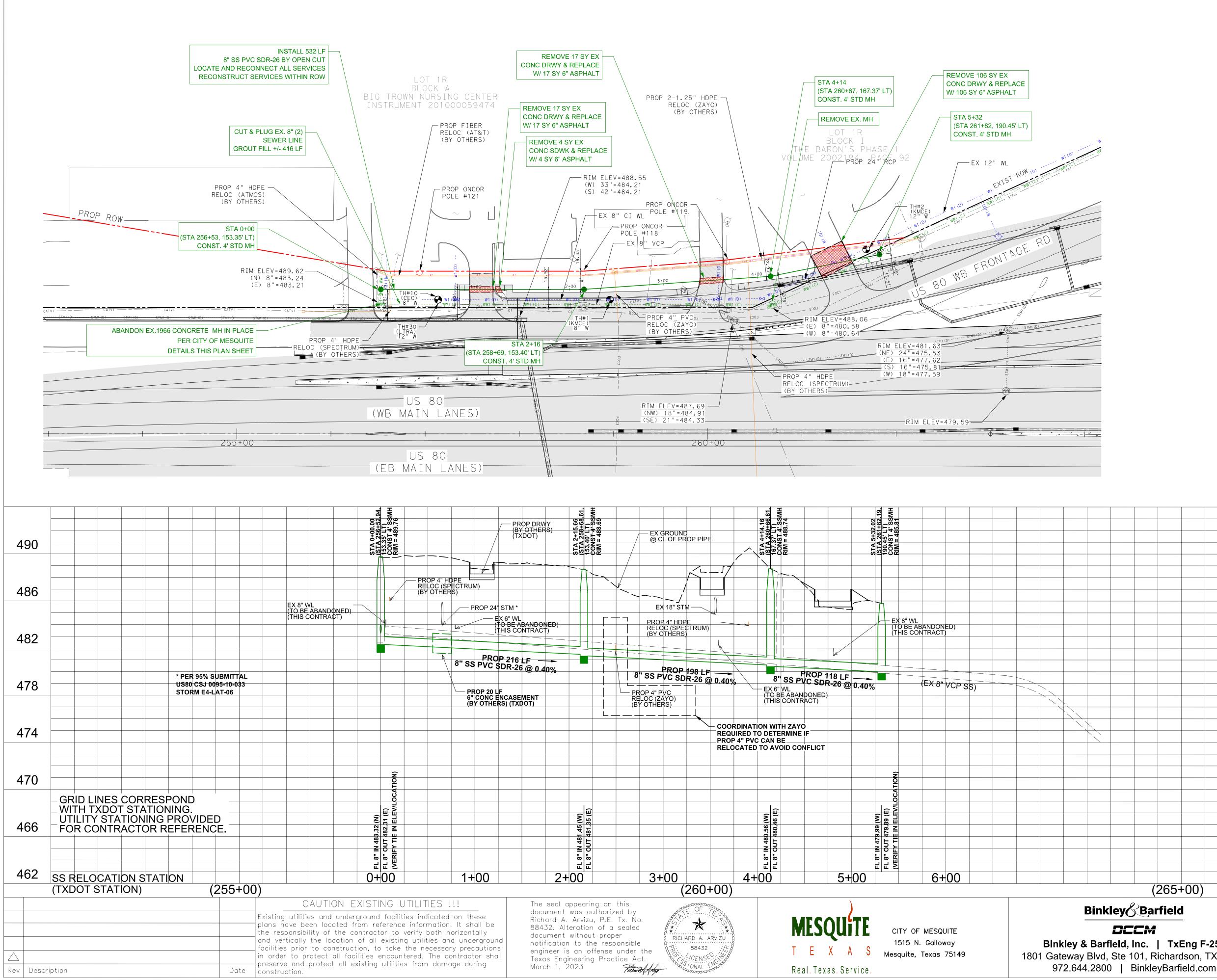
Binkley

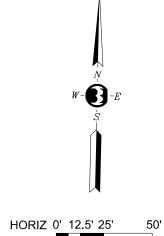
Binkley & Barfield, 1801 Gateway Blvd, Ste 1 972.644.2800 | BinkleyBarfield.com

11/20/2020



ley Barfield	UTILITY RE	LOCATION F	OR CSJ: 237	4-02-162				
DEEM field, Inc. TxEng F-257	HORIZONTAL & VERTICAL CONTROL							
Ste 101, Richardson, TX 75080 0 BinkleyBarfield.com	Scale: 1"=200', (22"X34") 1"=400', (11"x17")	Date: 03/01/2023	Job No.: 2200000333	6				





VERT 0' 2'

LINESTYLE LEGEND

	PROP PAVEMENT (BY OTHERS)
	PROP STORM SEWER (BY OTHER
	PROP CITY OF MESQUITE WATER
	PROP SANITARY SEWER LINE
	EX SANITARY SEWER LINE (LEVI
WH1 (C) WH1 (C) WH1 (C) WH1 (C) WH1 (C) WH1 (C)	EX SANITARY SEWER LINE (LEVI
WH1(D)	EX SANITARY SEWER LINE (LEVI
n n n	EX CITY OF MESQUITE WATER L
W1 (C)	EX CITY OF MESQUITE WATER L
W1(D)	EX CITY OF MESQUITE WATER L
m3 m3 m3 m3 m3 m3 m3 m3	PROP NTMWD WATER LINE
	PROP TEL FIBER RELOC (BY OT
6-1 6-1 6-1	PROP GAS RELOC (BY OTHERS)
	EX ROW
	PROP ROW
STM1 STM1 STM1 STM1 STM1 STM1 .	EX STORM LINE (LEVEL "B")
STM1 (D)	EX STORM LINE (LEVEL "D")
	EX NTMWD WATER LINE (LEVEL
-B=4	EX NTMWD WATER LINE (LEVEL
FOC1 FOC1 FOC1 FOC1 FOC1	EX ATT FIBER OPTIC (LEVEL "B
FOC1 (D)	EX ATT FIBER OPTIC (LEVEL "D
FOC3 FOC3 FOC3 FOC3 FOC3	EX ZAYO FIBER OPTIC (LEVEL "
FOC3 (D)	EX ZAYO FIBER OPTIC (LEVEL "
FOC5 FOC5 FOC5 FOC5 FOC5 FOC5 FOC5	EX MESQUITE FIBER OPTIC (LEV
FOC5 (D)	EX MESQUITE FIBER OPTIC (LEV
FOC7 FOC7 FOC7 FOC7 FOC7	EX SPECTRUM FIBER OPTIC (LE
FOC7 (D)	EX SPECTRUM FIBER OPTIC (LET
FOC8 FOC8 FOC8 FOC8 FOC8 FOC8	EX ATT LEGACY FIBER OPTIC (L
FOC8 (D)	EX ATT LEGACY FIBER OPTIC (L
CATVI CATVI CATVI CATVI CATVI	EX SPECTRUM CTV (LEVEL "B")
G1 G1 G1 G1 G1	EX ATMOS GAS (LEVEL "B")
(D) G1(D) G1(D) G1(D) G1(D) G1(D)	EX ATMOS GAS (LEVEL "D")
E1 - E1 - E1 - E1 -	EX ONCOR ELECTRIC (LEVEL "B'
£2 £2 £2 £2 £2 £2 £2 -	EX TXDOT ELECTRIC (LEVEL "B"
n n n n n _	EX ATT TELEPHONE (LEVEL "B")
	EX ATT T-DUCT (LEVEL "B")

PROP PAVEMENT (BY OTHERS) PROP STORM SEWER (BY OTHERS) PROP CITY OF MESQUITE WATER LINE PROP SANITARY SEWER LINE EX SANITARY SEWER LINE (LEVEL "B") EX SANITARY SEWER LINE (LEVEL "C") EX SANITARY SEWER LINE (LEVEL "D") EX CITY OF MESQUITE WATER LINE (LEVEL "B") EX CITY OF MESQUITE WATER LINE (LEVEL "C") EX CITY OF MESQUITE WATER LINE (LEVEL "D") PROP NTMWD WATER LINE PROP TEL FIBER RELOC (BY OTHERS PROP GAS RELOC (BY OTHERS) EX ROW PROP ROW EX STORM LINE (LEVEL "B") EX STORM LINE (LEVEL "D") EX NTMWD WATER LINE (LEVEL "B") EX NTMWD WATER LINE (LEVEL "D") EX ATT FIBER OPTIC (LEVEL "B") EX ATT FIBER OPTIC (LEVEL "D") EX ZAYO FIBER OPTIC (LEVEL "B") EX ZAYO FIBER OPTIC (LEVEL "D") EX MESQUITE FIBER OPTIC (LEVEL "B") EX MESQUITE FIBER OPTIC (LEVEL "D") EX SPECTRUM FIBER OPTIC (LEVEL "B") EX SPECTRUM FIBER OPTIC (LEVEL "D") EX ATT LEGACY FIBER OPTIC (LEVEL "B") EX ATT LEGACY FIBER OPTIC (LEVEL "D" EX SPECTRUM CTV (LEVEL "B") EX ATMOS GAS (LEVEL "B") EX ATMOS GAS (LEVEL "D") EX ONCOR ELECTRIC (LEVEL "B") EX TXDOT ELECTRIC (LEVEL "B") EX ATT TELEPHONE (LEVEL "B")

NOTES:

UTILITIES IN FIELD.

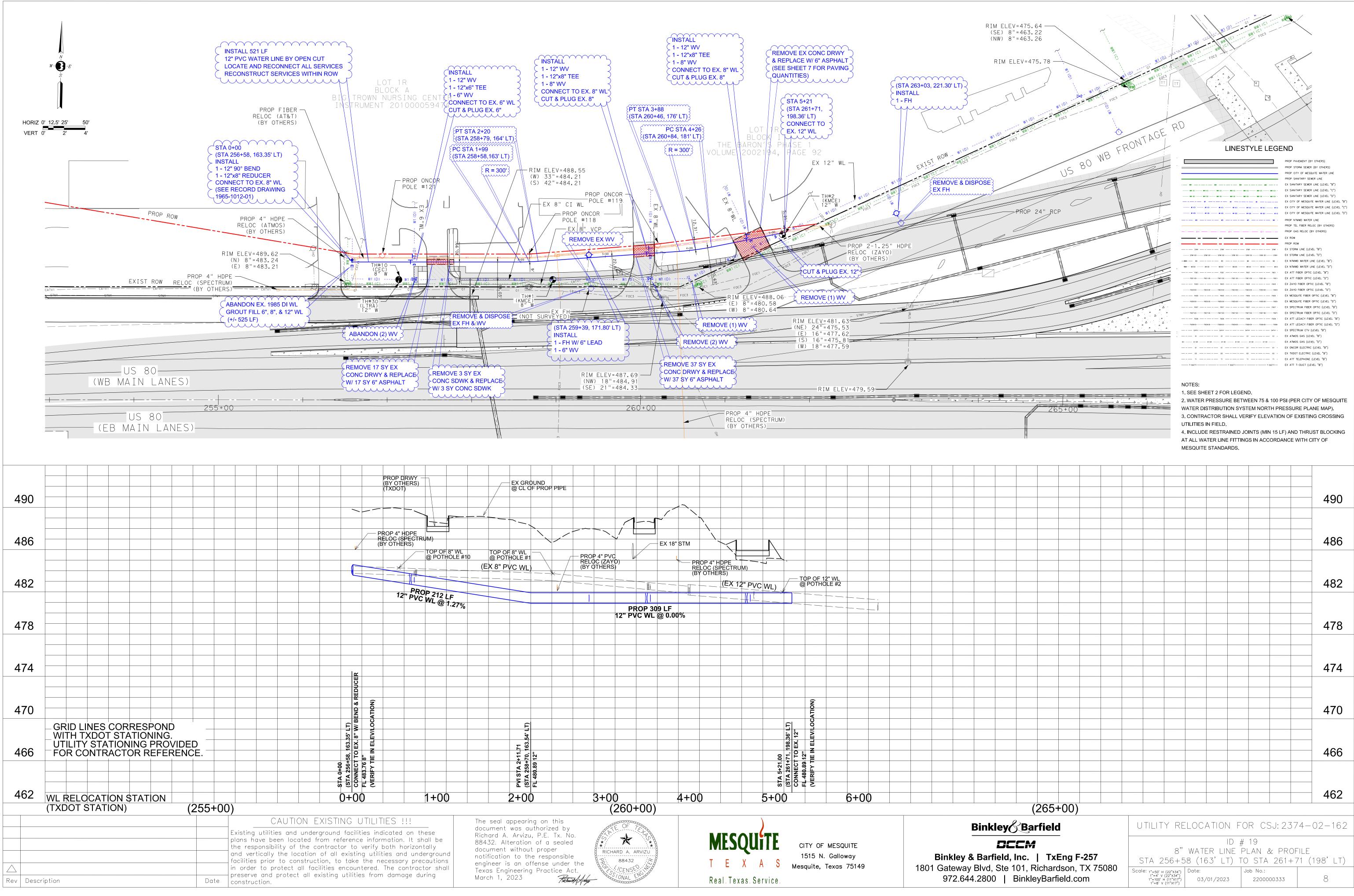
1. SEE SHEET 2 FOR SYMBOL LEGEND.

2. WATER PRESSURE BETWEEN 75 & 100 PSI (PER CITY OF MESQUITE

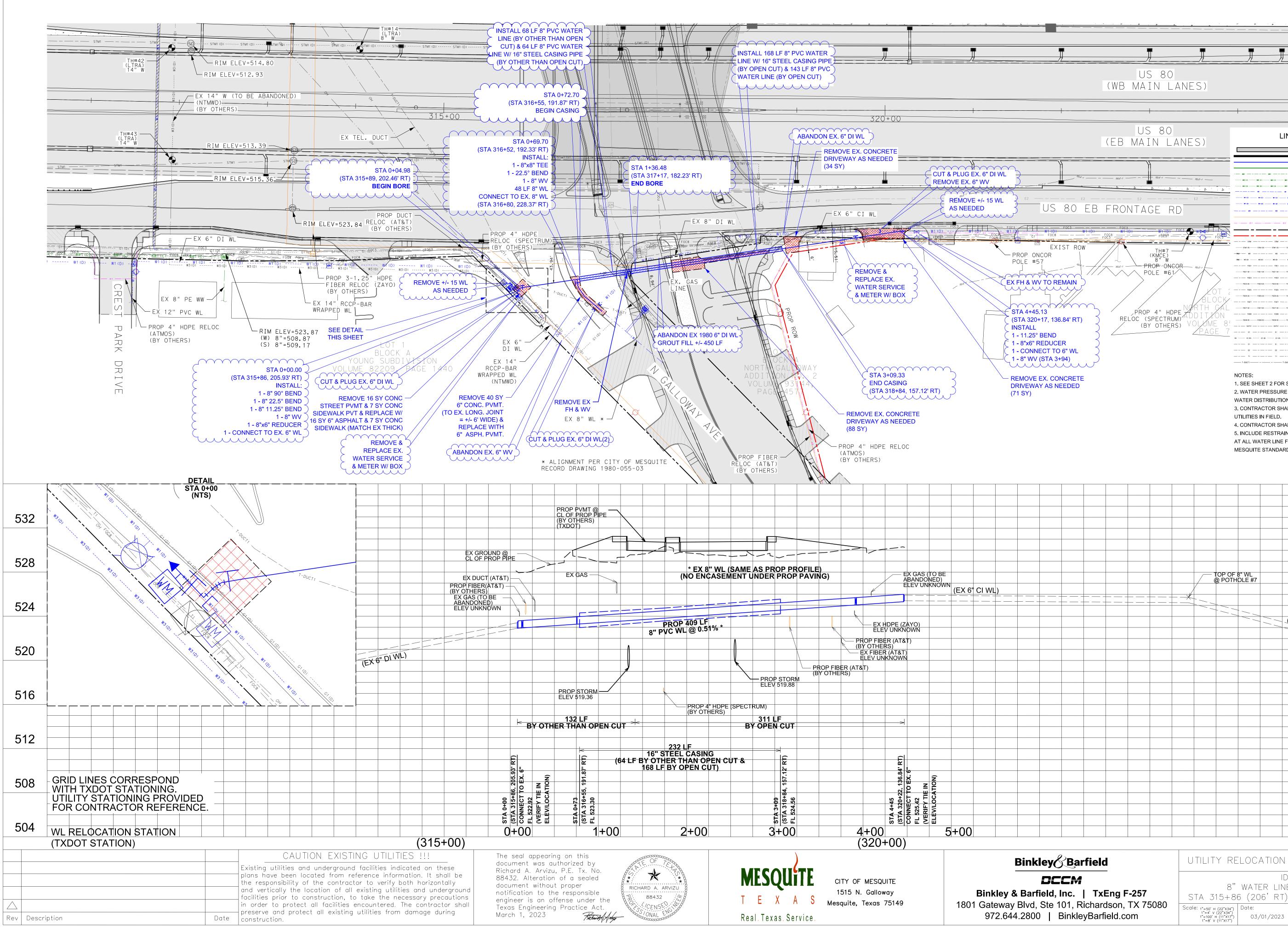
WATER DISTRIBUTION SYSTEM NORTH PRESSURE PLANE MAP). 3. CONTRACTOR SHALL VERIFY ELEVATION OF EXISTING CROSSING

490 486 482 478 474 470 466 462 (265+00)UTILITY RELOCATION FOR CSJ: 2374-02-162 **Binkley Barfield** ID # 65.1 DCCM 8" SANITARY SEWER LINE PLAN & PROFILE Binkley & Barfield, Inc. | TxEng F-257 STA 256+53 (153' LT) TO STA 261+82 (190' LT) 1801 Gateway Blvd, Ste 101, Richardson, TX 75080 cale: 1"=50' H (22"X34") 1"=4' V (22"X34") 1"=100' H (11"X17") 1"=8' V (11"X17") 03 Job No.:

03/01/2023



	G-1	c-1		G-1
	STM1	— — stm — —	STW1	
	STM1 (D) STM1 (D) -	STM1 (D) 1	STM1 (D) STM1 (D)	STM1 (D) STM1 -
	—bd #3	w3	#3	w3 -
	- 🌬 w3 (D) w3 (D) -	w3(D)	W3(D) W3(D)	••••• W3(D) •••••• W3(E
	FOC1	FOCI	FOC1	FOC1 -
	FOC1 (D) FOC1 (D) -	FOC1 (D) I	FOC1 (D) FOC1 (D)	FOC1 (D) FOC1 (
	FOC3	FOC3	FOC3	FOC3 -
	FOC3 (D) FOC3 (D) -	FOC3 (D) I	FOC3 (D) FOC3 (D)	FOC3(D) FOC3
	FOC5	FOC5	FOC5	FOC5 -
	FOC5 (D) FOC5 (D) -	FOC5 (D) F	FOC5 (D) FOC5 (D)	FOC5 (D) FOC5 -
	FOC7	FOC7	FOC7	FOC7 -
	FOC7(D) FOC7(D) -	FOC7 (D) F	FOC7 (D) FOC7 (D)	FOC7 (D) FOC7 (
	FOCB	FOC8	FOC8	FOC8 -
	FOC8 (D) FOC8 (D) -	FOC8 (D) F	FOC8(D) FOC8(D)	FOC8 (D) FOC8 (
;	CATVI	CATVI	CATV1	CATVI -
2	C1	- <u> </u>	C1	61 -
	(D) G1 (D) G1 (D)	0 G1(D)	G1 (D) G1 (D)	G1 (D)
	E1	- EI — -	EI	E1 -
	E2	E2	E2	E2 -
	n	n	n	n -
	T-DUCT1	T-DI	ICT1	T_DUCT1



LINESTYLE LEGEND

STM1	stmt	STM1	STM1 -
STM1 (D) STM1 (I	D) STMI (D)	STM1 (D) STM1 (D)	STM1 (D) STM1 (
bd #3	——— w3 ———	#3	#3 ··
-1>47 w3(D) w3(D	a ₩3(D)	#3(D) #3(D)	w3(D) w3(C
FOC1	FOC1	FOC1	FOC1 -
FOC1 (D) FOC1 (I	D) FOC1 (D)	FOC1 (D) FOC1 (D)	FOC1 (D) FOC1 (
FOC3	FOC3	FOC3	FOC3 -
FOC3 (D) FOC3 (I	D1 FOC3 (D1	FOC3(D) FOC3(D)	FOC3 (D) FOC3
FOC5	FOC5	FOC5	FOC5 -
FOC5 (D) FOC5 (I	D) FOC5 (D)	FOC5 (D) FOC5 (D)	FOC5 (D) FOC5 (
FOC7	FOC7	FOC7	FOC7 -
FOCT (D) FOCT (I	0) FOC7 (D)	FOC7 (D) FOC7 (D)	FOC7 (D) FOC7 (
FOCB	FOC8	FOC8	FOC8 -
FOC8 (D) FOC8 (I	0) FOC8 (D)	FOC8 (D) FOC8 (D)	FOC8 (D) FOC8 (
CATVI	CATV1	CATVI	CATV1 -
G1	G1	G1	c1 -
(D) G1 (D) G1	(D) G1 (D)	G1 (D) G1 (D)	GI (D)
E1	ει	ει	E1 -
E2	ES	E2	E5 -
n	n	n	- <u> </u>
	T-0	UCT1	

PROP PAVEMENT (BY OTHERS) PROP STORM SEWER (BY OTHERS) PROP CITY OF MESQUITE WATER LINE ROP SANITARY SEWER LINE EX SANITARY SEWER LINE (LEVEL "E EX SANITARY SEWER LINE (LEVEL "C") X CITY OF MESQUITE WATER LINE (LEVEL " EX CITY OF MESQUITE WATER LINE (LEVEL "C EX CITY OF MESQUITE WATER LINE (LEVEL "D PROP NTMWD WATER LINE PROP TEL FIBER RELOC (BY OTHERS

W-B

HORIZ 0' 12.5' 25' 50'

VERT 0

EX ROW PROP ROW

PROP GAS RELOC (BY OTHERS)

EX STORM LINE (LEVEL "B") EX STORM LINE (LEVEL "D") EX NTMWD WATER LINE (LEVEL "B") EX NTMWD WATER LINE (LEVEL "D") EX ATT FIBER OPTIC (LEVEL "B") EX ATT FIBER OPTIC (LEVEL "D") EX ZAYO FIBER OPTIC (LEVEL "B") EX ZAYO FIBER OPTIC (LEVEL "D") EX MESQUITE FIBER OPTIC (LEVEL "B") EX MESQUITE FIBER OPTIC (LEVEL "D") EX SPECTRUM FIBER OPTIC (LEVEL "B") EX SPECTRUM FIBER OPTIC (LEVEL "D") EX ATT LEGACY FIBER OPTIC (LEVEL "B" EX ATT LEGACY FIBER OPTIC (LEVEL "D" EX SPECTRUM CTV (LEVEL "B") EX ATMOS GAS (LEVEL "B") EX ATMOS GAS (LEVEL "D") EX ONCOR ELECTRIC (LEVEL "B") EX TXDOT ELECTRIC (LEVEL "B") EX ATT TELEPHONE (LEVEL "B") EX ATT T-DUCT (LEVEL "B")

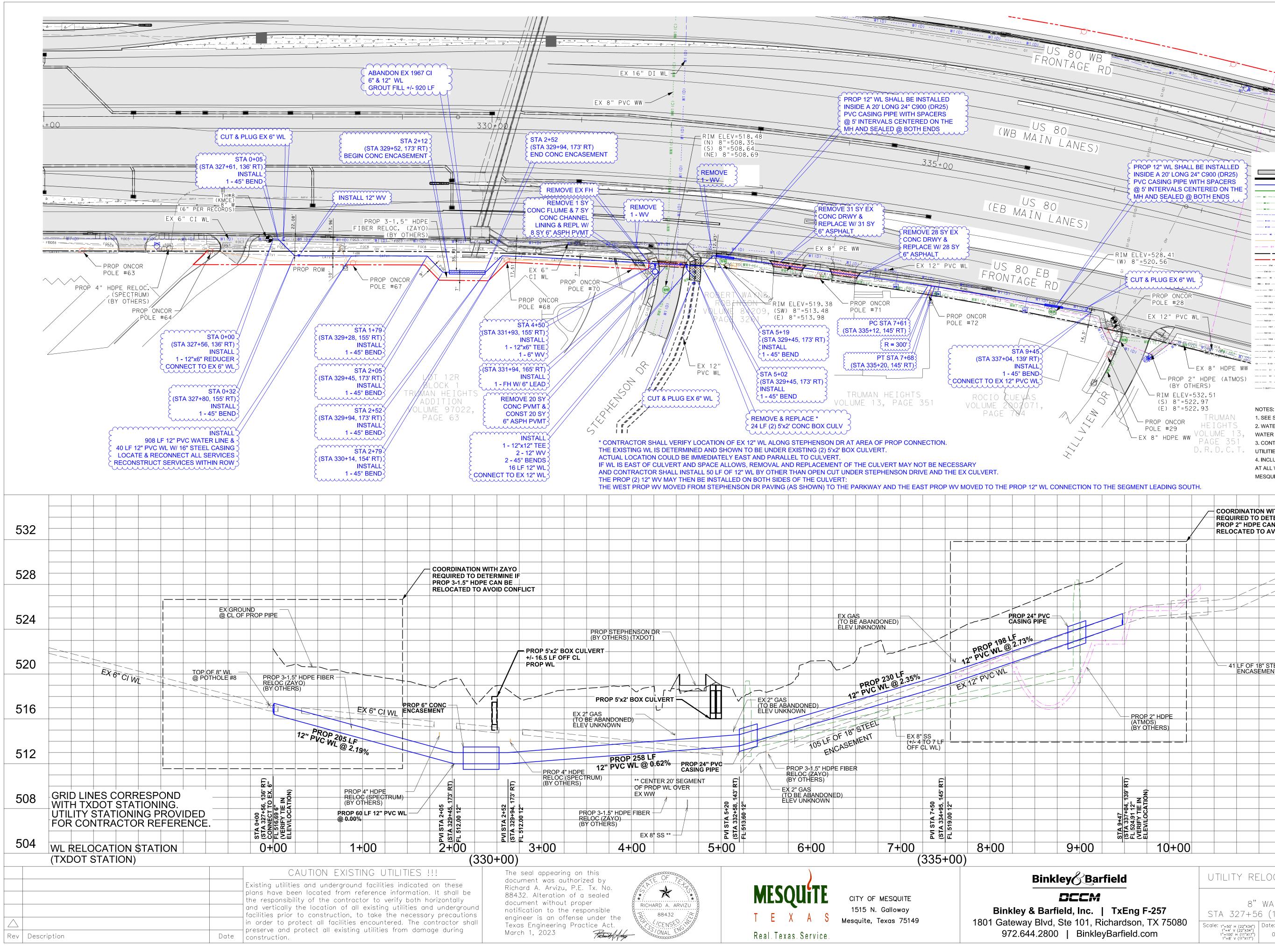
1. SEE SHEET 2 FOR SYMBOL LEGEND.

2. WATER PRESSURE BETWEEN 50 & 75 PSI (PER CITY OF MESQUITE WATER DISTRIBUTION SYSTEM NORTH PRESSURE PLANE MAP). 3. CONTRACTOR SHALL VERIFY ELEVATION OF EXISTING CROSSING UTILITIES IN FIELD.

4. CONTRACTOR SHALL VERIFY ELEVATION OF EXISTING WATER LINE. 5. INCLUDE RESTRAINED JOINTS (MIN 15 LF) AND THRUST BLOCKING AT ALL WATER LINE FITTINGS IN ACCORDANCE WITH CITY OF MESQUITE STANDARDS.

Job No.:

									532
									528
			F 8" WL HOLE #7						
<u>+ - +</u>									524
									524
						<u>"Ci Wi</u>	.)		
									520
									516
									512
									012
									500
									508
									= 6 4
									504
					(:	325+	-00)		
kley & Barfiel	d								02-162
DCCM	-		" wate		D #	35			
field, Inc. T	kEng F-257	8 TA 315+3	WATE 36 (20	K LIN 6' RT	ле Pl -) то	8 AA Ate	2 PR(.320-	JFILE ⊢17 (178'RT)
, Ste 101, Richa						b No ·			



HORIZ 0' 12.5' 25' 50 VERT 0'

PROP PAVEMENT (BY OTHERS)

OP STORM SEWER (BY OTHERS

PROP CITY OF MESQUITE WATER LINE

EX SANITARY SEWER LINE (LEVEL "B")

EX SANITARY SEWER LINE (LEVEL "C")

EX CITY OF MESQUITE WATER LINE (LEVEL "C'

EX CITY OF MESQUITE WATER LINE (LEVEL "D"

ROP SANITARY SEWER LINE

PROP NIMWD WATER LIN

EX ROW

PROP ROW

PROP TEL FIBER RELOC (BY OTHER

PROP GAS RELOC (BY OTHERS)

EX STORM LINE (LEVEL "B")

EX STORM LINE (LEVEL "D")

EX NTMWD WATER LINE (LEVEL "B"

EX ATT FIBER OPTIC (LEVEL "B")

EX ATT FIBER OPTIC (LEVEL "D")

EX ZAYO FIBER OPTIC (LEVEL "B")

EX ZAYO FIBER OPTIC (LEVEL "D")

EX MESQUITE FIBER OPTIC (LEVEL "B")

EX MESQUITE FIBER OPTIC (LEVEL "D")

EX SPECTRUM FIBER OPTIC (LEVEL "B"

EX SPECTRUM FIBER OPTIC (LEVEL "D")

EX ATT LEGACY FIBER OPTIC (LEVEL "B"

EX ATT LEGACY FIBER OPTIC (LEVEL "D

EX SPECTRUM CTV (LEVEL "B")

EX ONCOR ELECTRIC (LEVEL "B")

EX TXDOT ELECTRIC (LEVEL "B")

EX ATT TELEPHONE (LEVEL "B")

10

EX ATT T-DUCT (LEVEL "B")

EX ATMOS GAS (LEVEL "B")

EX ATMOS GAS (LEVEL "D")

EX NTMWD WATER LINE (LEVEL "D")

W-**(3)**-1

LINESTYLE LEGEND

- WAI ----- WAI ----- WAI ----- WAI -----

6·1
STM1 (D)
—bd-
-D-d w3(D)
FOC1 (D)
FOC3 FOC3 FOC3 FOC3 FOC3
FOC3 (D)
FOCS (D)
FOC7 FOC7 FOC7 FOC7 FOC7 FOC7 FOC7
FOC7 (D)
FOC8 (D)
CATVI CATVI CATVI CATVI CATVI CATVI
G1 G1 G1 G1 G1 G1
(D) G1(D) G1(D) G1(D) G1(D) G1(D)
E1 E1 E1 E1 E1 E1
E2 E
n n n n
T-DUCT1

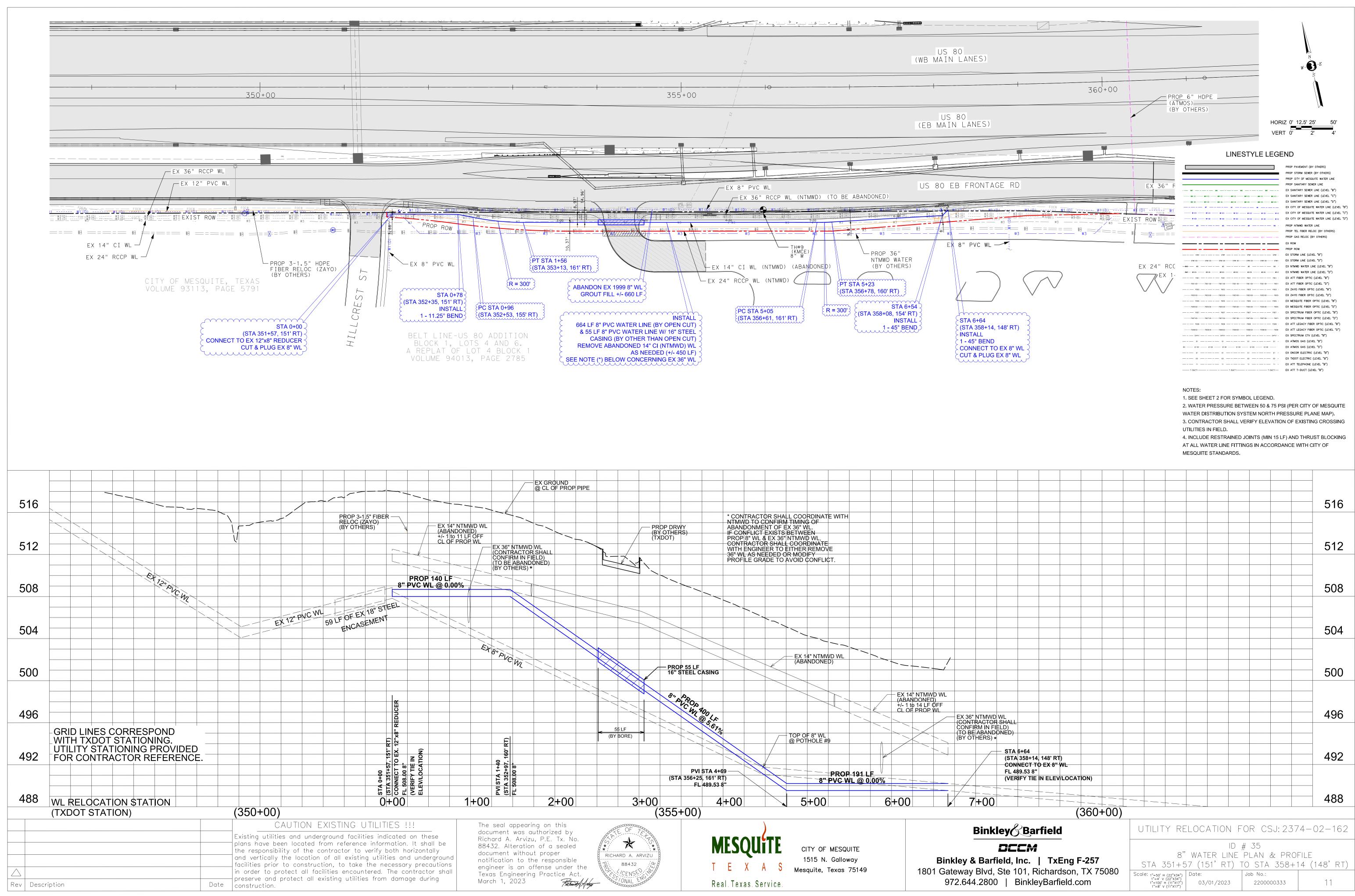
1. SEE SHEET 2 FOR SYMBOL LEGEND.

2. WATER PRESSURE BETWEEN 50 & 75 PSI (PER CITY OF MESQUITE WATER DISTRIBUTION SYSTEM NORTH PRESSURE PLANE MAP). 3. CONTRACTOR SHALL VERIFY ELEVATION OF EXISTING CROSSING UTILITIES IN FIELD.

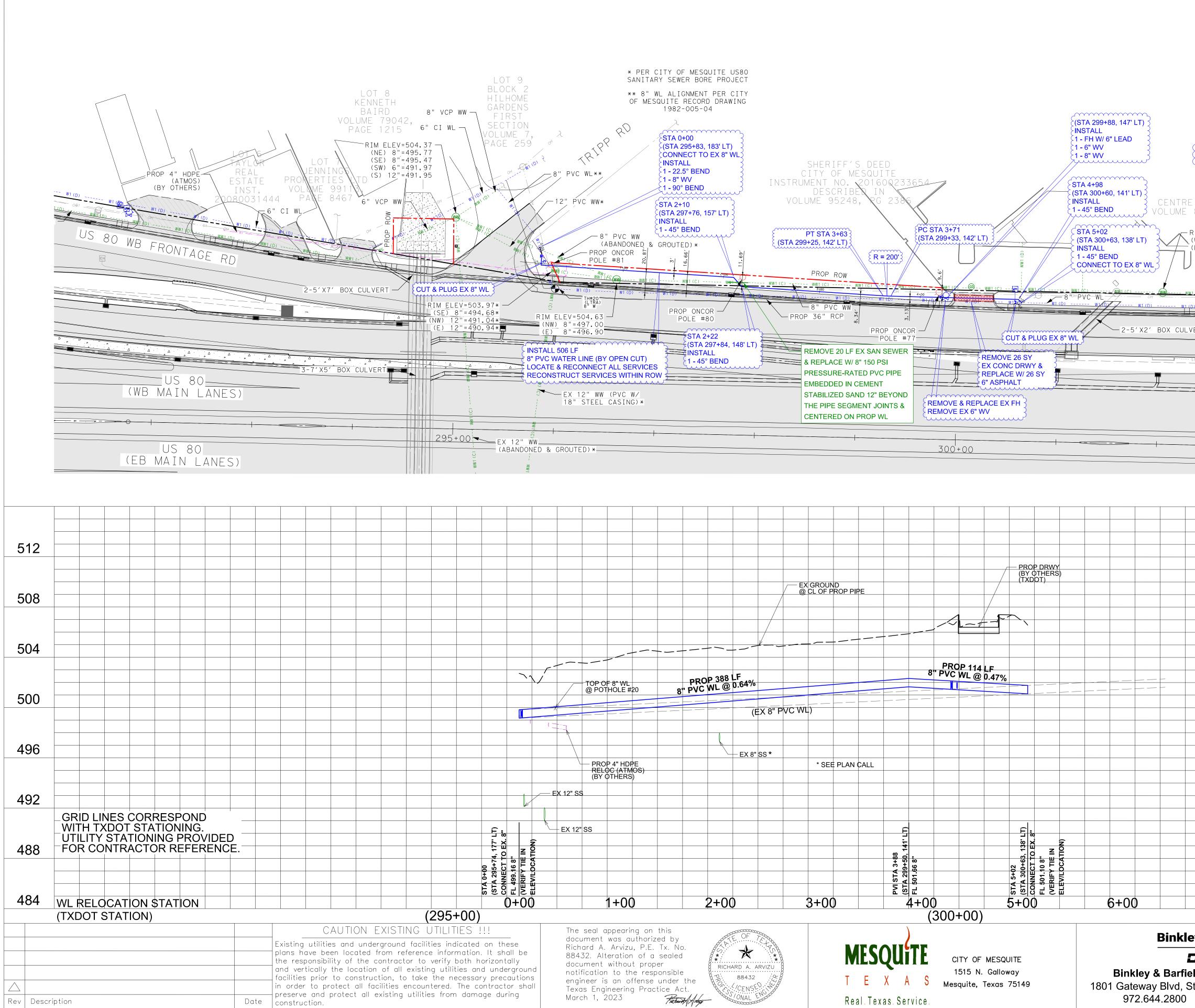
4. INCLUDE RESTRAINED JOINTS (MIN 15 LF) AND THRUST BLOCKING AT ALL WATER LINE FITTINGS IN ACCORDANCE WITH CITY OF MESQUITE STANDARDS.

		REQUIRED	ATION WITH TO DETER DPE CAN B ED TO AVOI	MINE IF	:			532
								528
				EX	12" PVC	WL		524
		41 LF (DF 18" STEE					520
								516
								512
04, 139' RT) 12" ATION)								508
00+01 00+01 00+01 00+6 00+6 00+6 00+6)							504
y Barfield		TILITY	RELOC	A TI OP	N FOR	CSJ: 2	(340+ 2374-	,
DECM Id, Inc. TxEng F-257 te 101, Richardson, TX 75080			8"WATE +56 (13 _{34")} Date:	er li	-) TO	AN & P		139'RT

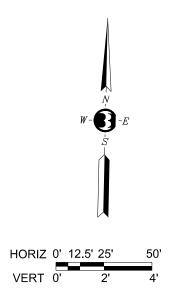
03/01/2023



		1 1							
									= 4 0
									516
									512
									508
									504
									500
									400
D WL R SHALL									496
FIELD) DONED									
*									
STA 6+64									400
(STA 358+14, 148' RT) CONNECT TO EX 8" WL									492
FL 489.53 8"									
(VERIFY TIE IN ELEV/LOCATION)									
									400
	-+								488
(360+00)									
kley & Barfield	UTILITY RELOCATION FOR CSJ: 2374-02-16)2-162	
DEEM	ID # 35								
	8" WATER LINE PLAN & PROFILE								
field, Inc. TxEng F-257			7 (15	1' RT		D STA	358+	14 (1	48' RT)
, Ste 101, Richardson, TX 75080 0 BinkleyBarfield.com	Scale: 1"=50' H 1"=4' V 1"=100' H 1"=8' V	I (22"X34") (22"X34") H (11"X17")	Date: 03/0	01/2023		Job No.: 220000)0333		11
	1 =0 V	(11 A17)							



972.644.2800

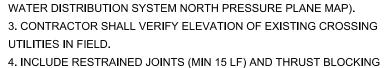


LINESTYLE LEGEND

	PROP PAVEMENT (BY OTHERS)
	PROP STORM SEWER (BY OTHERS)
	PROP CITY OF MESQUITE WATER LINE
	PROP SANITARY SEWER LINE
101 101 101 101	EX SANITARY SEWER LINE (LEVEL "B")
WH1(C) WH1(C) WH1(C) WH1(C) WH1(C)	EX SANITARY SEWER LINE (LEVEL "C")
WHI(D) WHI(D) WHI(D) WHI(D) WHI(D) WHI(D) WHI(D)	EX SANITARY SEWER LINE (LEVEL "D")
	EX CITY OF MESQUITE WATER LINE (LEVEL "B")
W1 (C)	EX CITY OF MESQUITE WATER LINE (LEVEL "C")
W1(D)	EX CITY OF MESQUITE WATER LINE (LEVEL "D")
	· · · · ·
13 13 13 13 13 13 13 13 13	PROP NTMWD WATER LINE
	PROP TEL FIBER RELOC (BY OTHERS)
6-1 6-1 6-1	PROP GAS RELOC (BY OTHERS)
	EX ROW
	PROP ROW
	EX STORM LINE (LEVEL "B")
STM1(D)	EX STORM LINE (LEVEL "D")
	EX NTMWD WATER LINE (LEVEL "B")
-B≪f W3(D)	EX NTMWD WATER LINE (LEVEL "D")
	EX ATT FIBER OPTIC (LEVEL "B")
FOC1 (D)	EX ATT FIBER OPTIC (LEVEL "D")
FOC3 FOC3 FOC3 FOC3 FOC3	EX ZAYO FIBER OPTIC (LEVEL "B")
FOC3(D) FOC3(D) FOC3(D) FOC3(D) FOC3(D) FOC3(D) FOC3(D) FOC3(D)	EX ZAYO FIBER OPTIC (LEVEL "D")
	EX MESQUITE FIBER OPTIC (LEVEL "B")
FOC5 (D)	EX MESQUITE FIBER OPTIC (LEVEL "D")
FOC7 FOC7 FOC7 FOC7	EX SPECTRUM FIBER OPTIC (LEVEL "B")
FOC7 (D)	EX SPECTRUM FIBER OPTIC (LEVEL "D")
FOC8 FOC8 FOC8 FOC8 FOC8	EX ATT LEGACY FIBER OPTIC (LEVEL "B")
FOC8 (D)	EX ATT LEGACY FIBER OPTIC (LEVEL "D")
CATVI CATVI CATVI CATVI CATVI CATVI	EX SPECTRUM CTV (LEVEL "B")
G1 G1 G1 G1 G1 G1	EX ATMOS GAS (LEVEL "B")
(D) G1 (D) G1 (D) G1 (D) G1 (D) G1 (D)	EX ATMOS GAS (LEVEL "D")
E1 E1 E1 E1 E1 E1 E1 E1 E1	EX ONCOR ELECTRIC (LEVEL "B")
E2 E2 E2 E2 E2 E2	EX TXDOT ELECTRIC (LEVEL "B")
—— n —— n —— n -	EX ATT TELEPHONE (LEVEL "B")
T-DUCT1T-DUCT1T-DUCT1T	EX ATT T-DUCT (LEVEL "B")



1. SEE SHEET 2 FOR SYMBOL LEGEND. 2. WATER PRESSURE BETWEEN 50 & 75 PSI (PER CITY OF MESQUITE WATER DISTRIBUTION SYSTEM NORTH PRESSURE PLANE MAP).

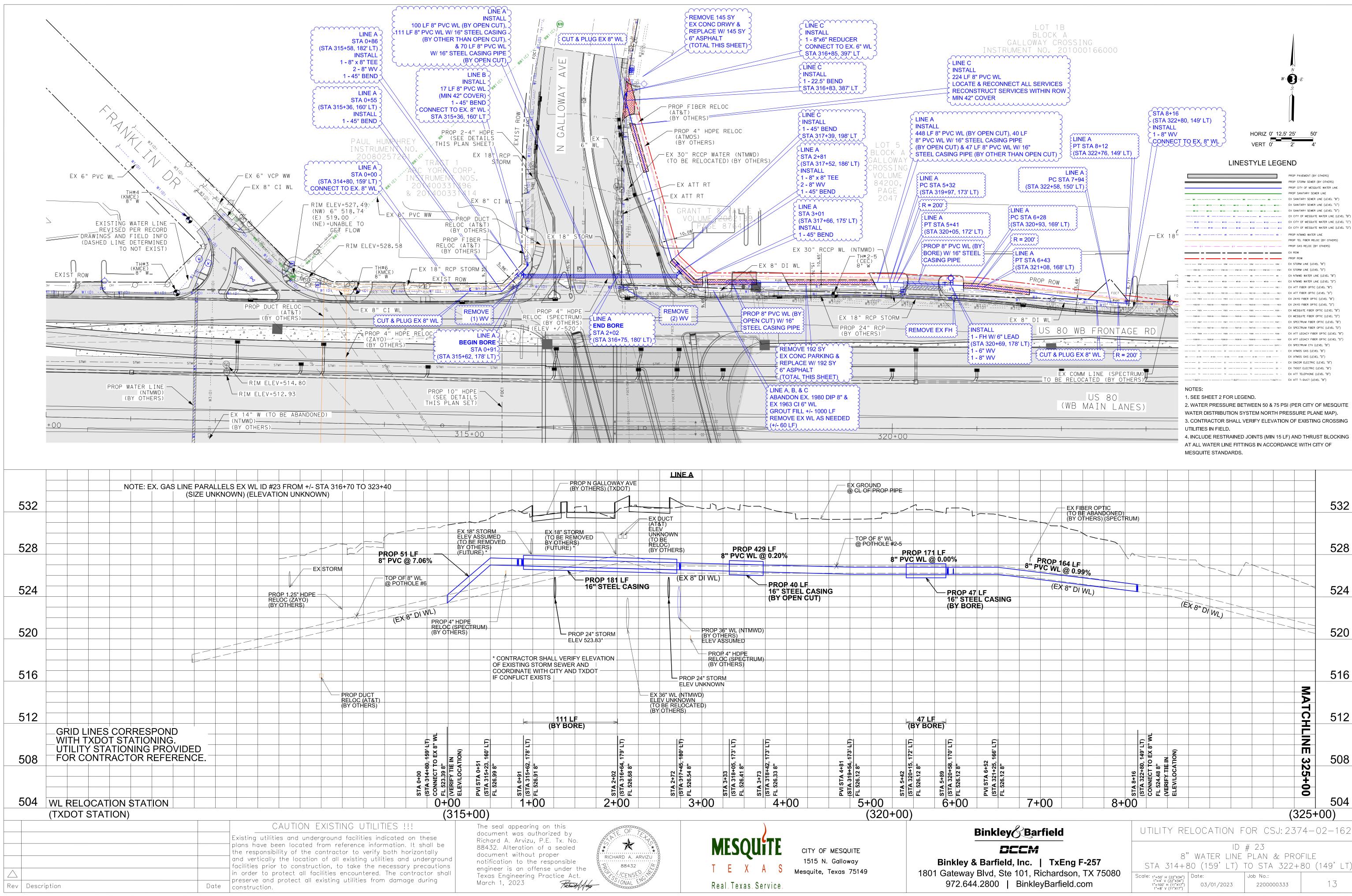


AT ALL WATER LINE FITTINGS IN ACCORDANCE WITH CITY OF MESQUITE STANDARDS.

UTILITY RELOCATION FOR CSJ: 2374-02-162							ley Barfield					
-02-162	 CSJ: 2374-				ITY				4	fial	Par	
		+00)	(305	I	I	I	<u>ı </u>	<u> </u>	1	1	1	
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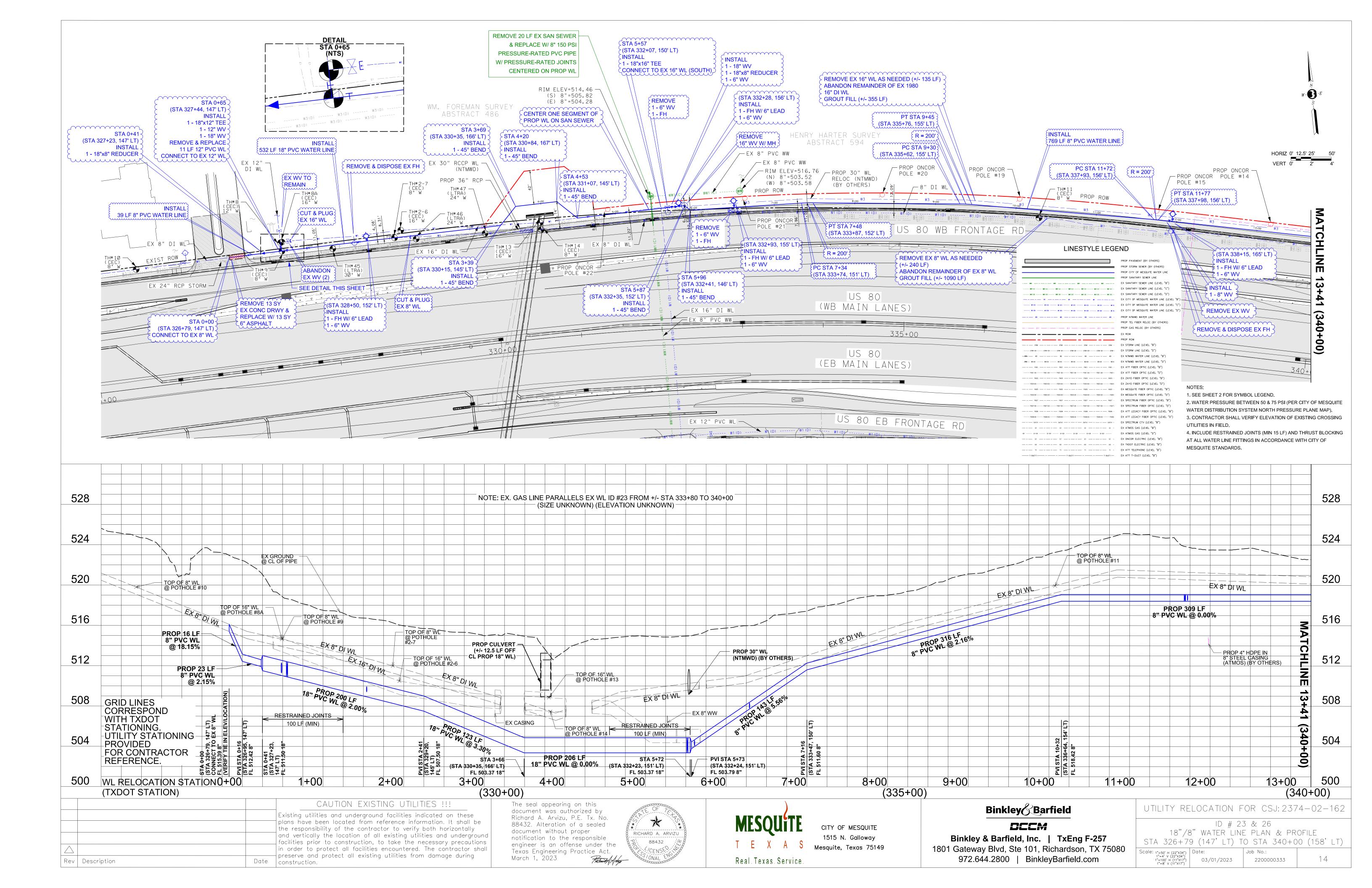
ABANDON EX 1982 8" WL GROUT FILL +/- 500 LF	CEN Volu
RE PLACE ADDITION E 86018, PAGE 2188	\int_{\cdot}
- RIM ELEV=508.09 (W) 8"=499.09 (E) 8"=499.16	HO
- 8" PVC WW	
/1 (D) W1 (D) W1 (D) W1 (D) W1 (D)	
LVERT	R (1 (1
STM1 (D) STM1 (D) STM <mark>1 (D) STM1 (D)</mark>	(D) (

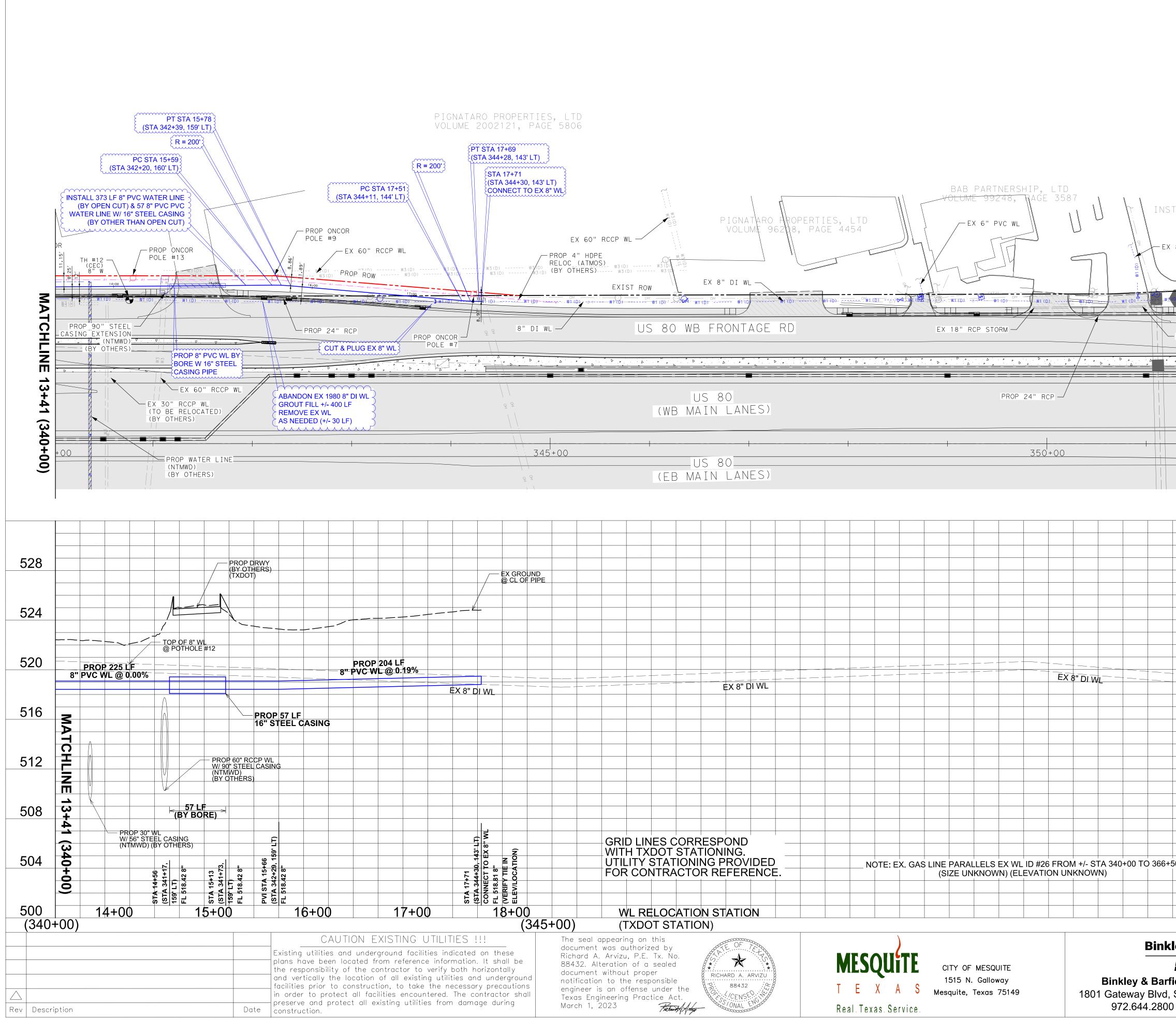
			1				
ey& Barfield	UTILITY RE	LOCATION F	OR CSJ: 237	4-02-162			
DCCM eld, Inc. TxEng F-257	ID # 21 8" WATER LINE PLAN & PROFILE STA 295+83 (183' LT) TO STA 300+63 (138'						
Ste 101, Richardson, TX 75080 BinkleyBarfield.com	Scale: 1"=50' H (22"X34") 1"=4' V (22"X34") 1"=100' H (11"X17") 1"=8' V (11"X17")	0.370172023	Job No.: 2200000333	12			



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ley	Bar	field	ł				U	TILI	TΥ	RE	LOC	ATIC	NF	FOR	CS	SJ: 2	374-	-02-162
DC	CM		-							_ ,,	\ \ / \ -		ID	# 2	3	0		
eld, l	Inc.	Τx	Eng F	-257			C	ΤΛ	Z 1								ROFIL	(1/0' + T)

kley Barfield	U U U U U U U U U U U U U U U U U U U	LUCATION F	UR CSJ: 237	4-02-162			
DECM rfield, Inc. TxEng F-257	ID # 23 8" WATER LINE PLAN & PROFILE STA 314+80 (159' LT) TO STA 322+80 (149' LT)						
l, Ste 101, Richardson, TX 75080 00 BinkleyBarfield.com	Scale: 1"=50' H (22"x34") 1"=4' V (22"x34") 1"=100' H (11"x17") 1"=8' V (11"x17")		Job No.: 2200000333	13			







HORIZ 0' 12.5' 25'

PROP PAVEMENT (BY OTHERS)

PROP SANITARY SEWER LINE

PROP NTMWD WATER LINE

EX ROW

PROP ROW

PROP STORM SEWER (BY OTHERS)

PROP CITY OF MESQUITE WATER LINE

EX SANITARY SEWER LINE (LEVEL "B")

EX SANITARY SEWER LINE (LEVEL "C")

EX SANITARY SEWER LINE (LEVEL "D")

PROP TEL FIBER RELOC (BY OTHERS)

PROP GAS RELOC (BY OTHERS)

EX CITY OF MESQUITE WATER LINE (LEVEL "B

EX CITY OF MESQUITE WATER LINE (LEVEL "C")

EX CITY OF MESQUITE WATER LINE (LEVEL "D"

VERT 0

LINESTYLE LEGEND

BFPC-MESQUITE, LLC TRUMENT NO. 201400067789 EX 8" PVC WL 8" PVC WL 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
EX 18" RCP STORM
- EX 18" RCP STORM18" RCP STORM

WHI:	WN1 WN1	m1
WW1 (C) WW1 (C)	WW1(C) WW1(C)	WW1 (C) WW1 (C) WW1 (C)
WW1(D) WW1(D)	WW1(D) WW1(D)	WW1(D) WW1(D) WW1(D)
• -	**	•
••••••••••••••••••••••••••••••••••••••	#1 (C)	···· W1 (C) ······ W1 (C) ····· W1 (C
#1(D) #1(D) -	w1(D)	w1(D) w1(D) w1(C
n3	us	- wa wa -

		G-1	· 6·1			G-1	
							_
		STM1	STM1 ————————————————————————————————————		STM1		STM1 -
	STM1 (D) STMI (D) S	TMI (D)	STM1 (D)	STM1 (D) 5	5TM1 (D)	- STM1 -
		w3	w3		W3		w3 ·
1	-1>4 w3 (0)) ₩3(D)	#3(D)	W3(D)	W3(D)	W3(D)	- w3 (C
ł		FOCI	FOC1		FOC1		FOC1 -
•	FOC1 0	D) FOC1 (D) F	OC1 (D)	FOC1 (D)	FOC1 (D) P	OC1 (D)	- FOC1
ł		FOC3	F0C3		FOC3		FOC3 -
	FOC3 0	(D) FOC3(D) F	OC3 (D)	F0C3 (D)	FOC3 (D) F	OC3 (D)	- FOC3
		FOC5	F0C5		FOC5		FOC5 -
2	FOC5 0	(D) FOC5 (D) F	OC5 (D)	FOC5 (D)	FOC5 (D) P	OC5 (D)	- FOC5
		FOC7	F0C7		FOC7		FOC7 -
	FOC7 0	(D) FOC7 (D) F	OC7 (D)	FOC7 (D)	FOC7 (D) P	OC7 (D)	- FOC7
		FOC8	FOC8		FOC8		FOC8 -
1	FOC8 ((D) FOC8 (D) F	OC8 (D)	FOC8 (D)	FOC8 (D) P	OC8 (D)	- FOCB
	c	ATV1	CATV1		CATV1		CATVI -
		G1	G1 — —		G1		GI -
	(D) G	1 (D) G1 (D)	- G1 (D)	G1 (D)	G1 (D)	- G1 (D)	
		E1	E1		E1		E1 -
		E2	E2		E2		E2 -
1		п	TI		TI		TI -
	T-DUC	TI	T-D	uct 1		T-DU	CTI —

NOTES: 1. SEE SHEET 2 FOR SYMBOL LEGEND.

EX STORM LINE (LEVEL "B") EX STORM LINE (LEVEL "D") EX NTMWD WATER LINE (LEVEL "B") EX NTMWD WATER LINE (LEVEL "D") EX ATT FIBER OPTIC (LEVEL "B") EX ATT FIBER OPTIC (LEVEL "D") EX ZAYO FIBER OPTIC (LEVEL "B") EX ZAYO FIBER OPTIC (LEVEL "D") EX MESQUITE FIBER OPTIC (LEVEL "B") EX MESQUITE FIBER OPTIC (LEVEL "D") EX SPECTRUM FIBER OPTIC (LEVEL "B") EX SPECTRUM FIBER OPTIC (LEVEL "D") EX ATT LEGACY FIBER OPTIC (LEVEL "B" EX ATT LEGACY FIBER OPTIC (LEVEL "D" EX SPECTRUM CTV (LEVEL "B") EX ATMOS GAS (LEVEL "B") EX ATMOS GAS (LEVEL "D") EX ONCOR ELECTRIC (LEVEL "B")

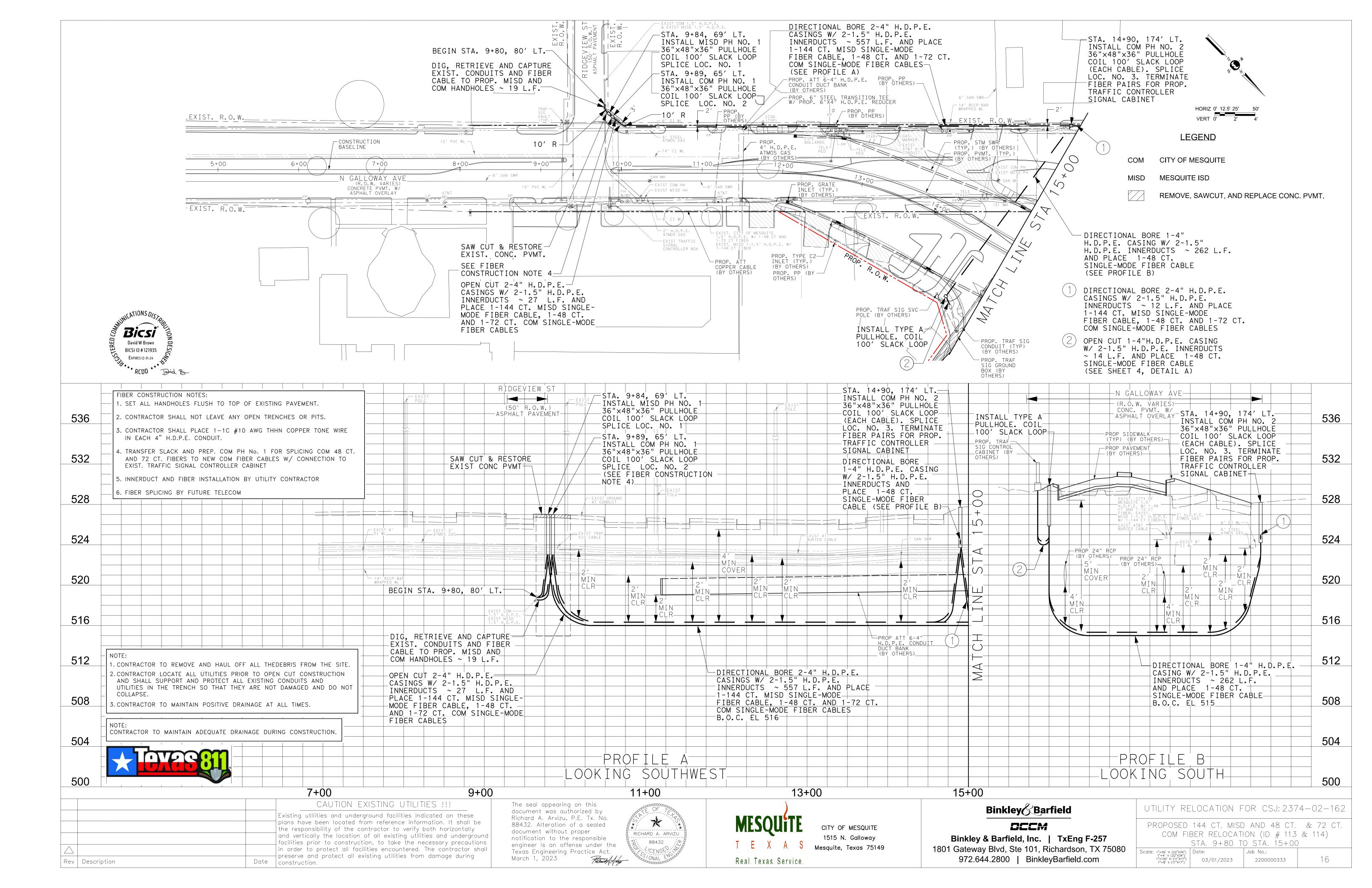
> EX TXDOT ELECTRIC (LEVEL "B") EX ATT TELEPHONE (LEVEL "B") EX ATT T-DUCT (LEVEL "B")

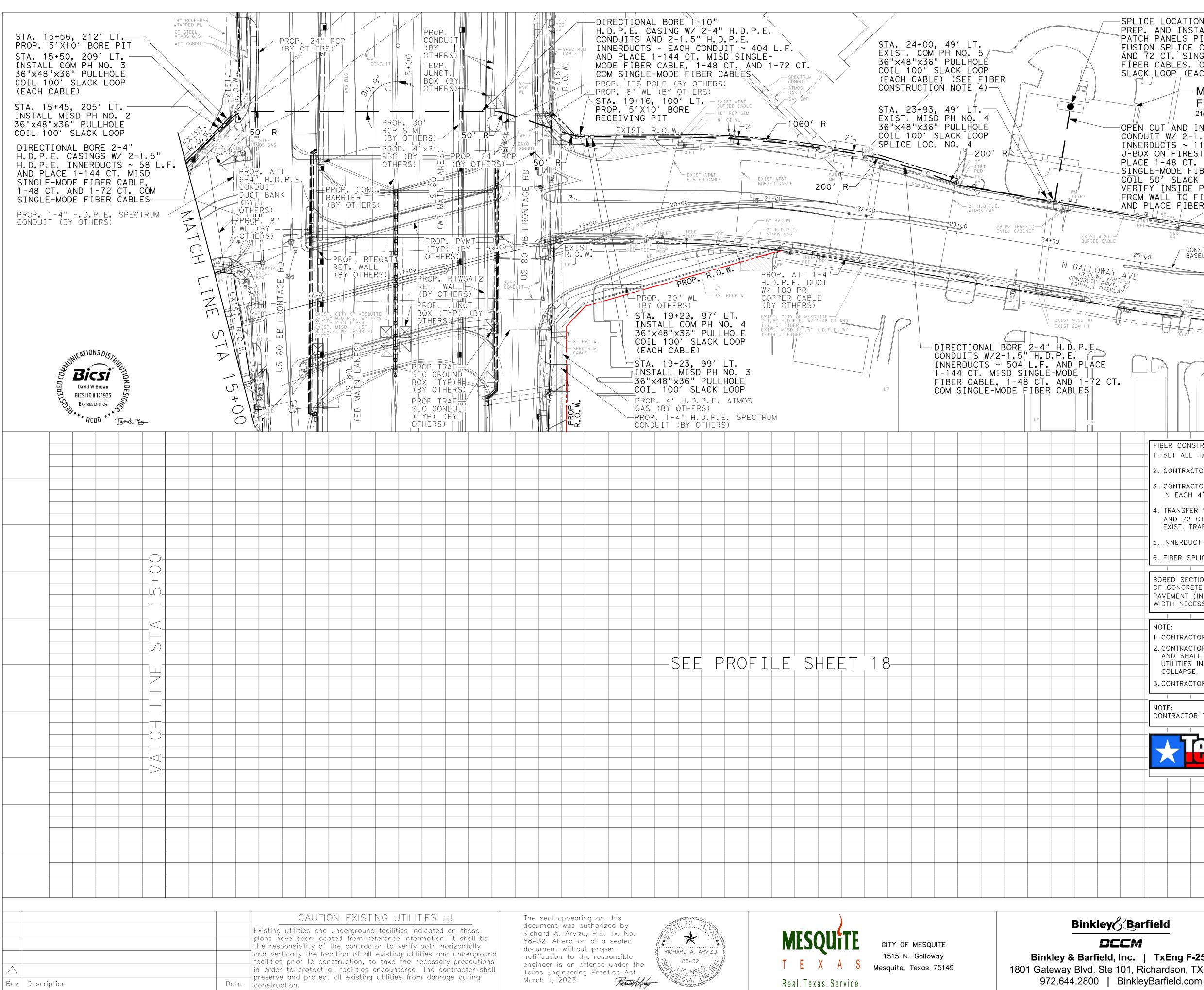
2. WATER PRESSURE BETWEEN 50 & 75 PSI (PER CITY OF MESQUITE WATER DISTRIBUTION SYSTEM NORTH PRESSURE PLANE MAP). 3. CONTRACTOR SHALL VERIFY ELEVATION OF EXISTING CROSSING UTILITIES IN FIELD.

4. CONTRACTOR SHALL VERIFY ELEVATION OF EXISTING WATER LINE 5. INCLUDE RESTRAINED JOINTS (MIN 15 LF) AND THRUST BLOCKING AT ALL WATER LINE FITTINGS IN ACCORDANCE WITH CITY OF MESQUITE STANDARDS.

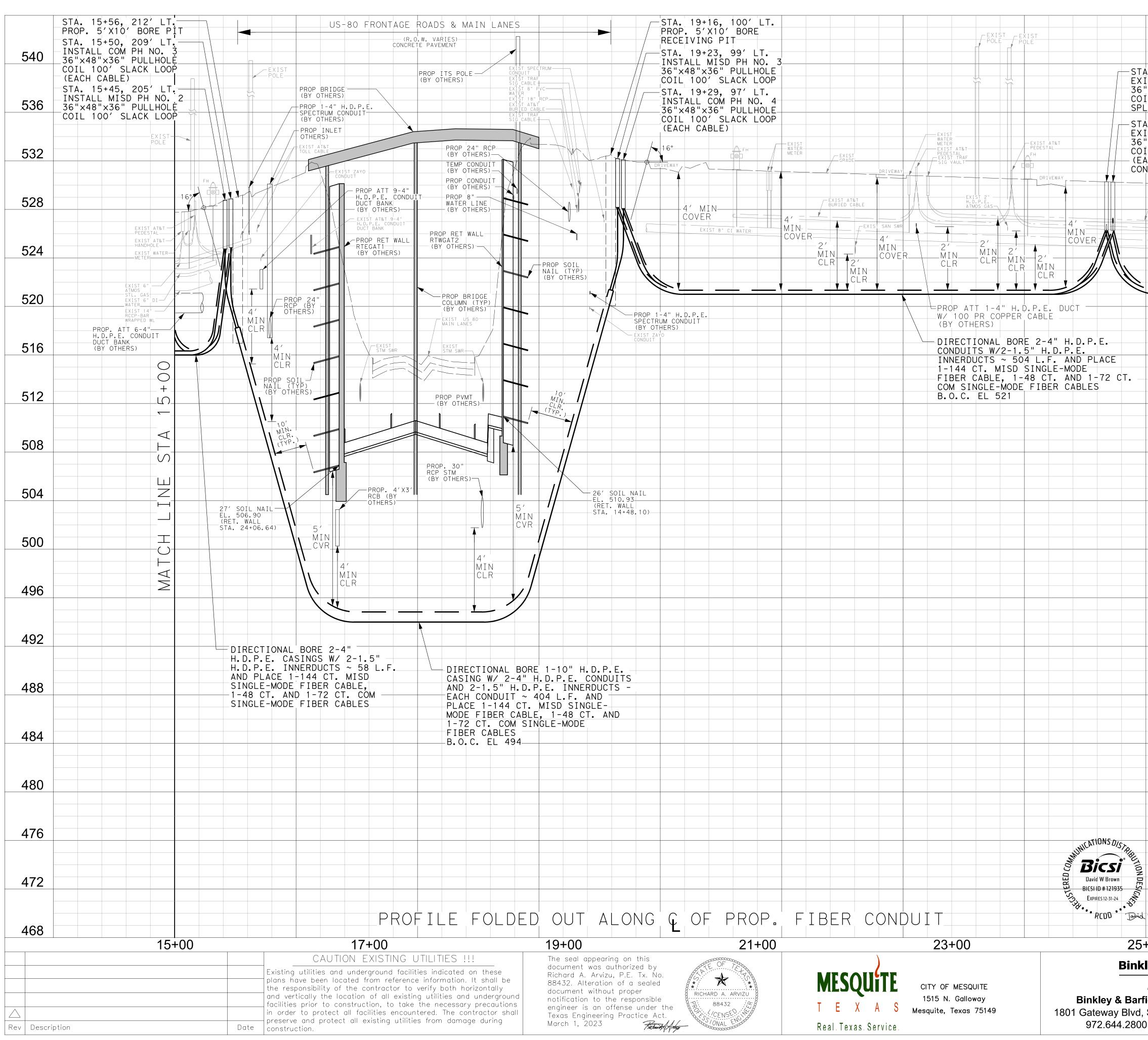
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kley	y Bal	riei					' I I <u>L</u> I I	I I\L				JU, Z.		
nr	ID # 26													

kieyo Bartield		LUCATION	UN CSU. ZS7	4-02-102			
DCCM	ID # 26 8" Water line plan & profile						
field, Inc. TxEng F-257	STA 340+00 (158' LT) TO STA 344+30 (143						
, Ste 101, Richardson, TX 75080 00 BinkleyBarfield.com	Scale: 1"=50' H (22"X34") 1"=4' V (22"X34") 1"=100' H (11"X17") 1"=8' V (11"X17")		Job No.: 2200000333	15			

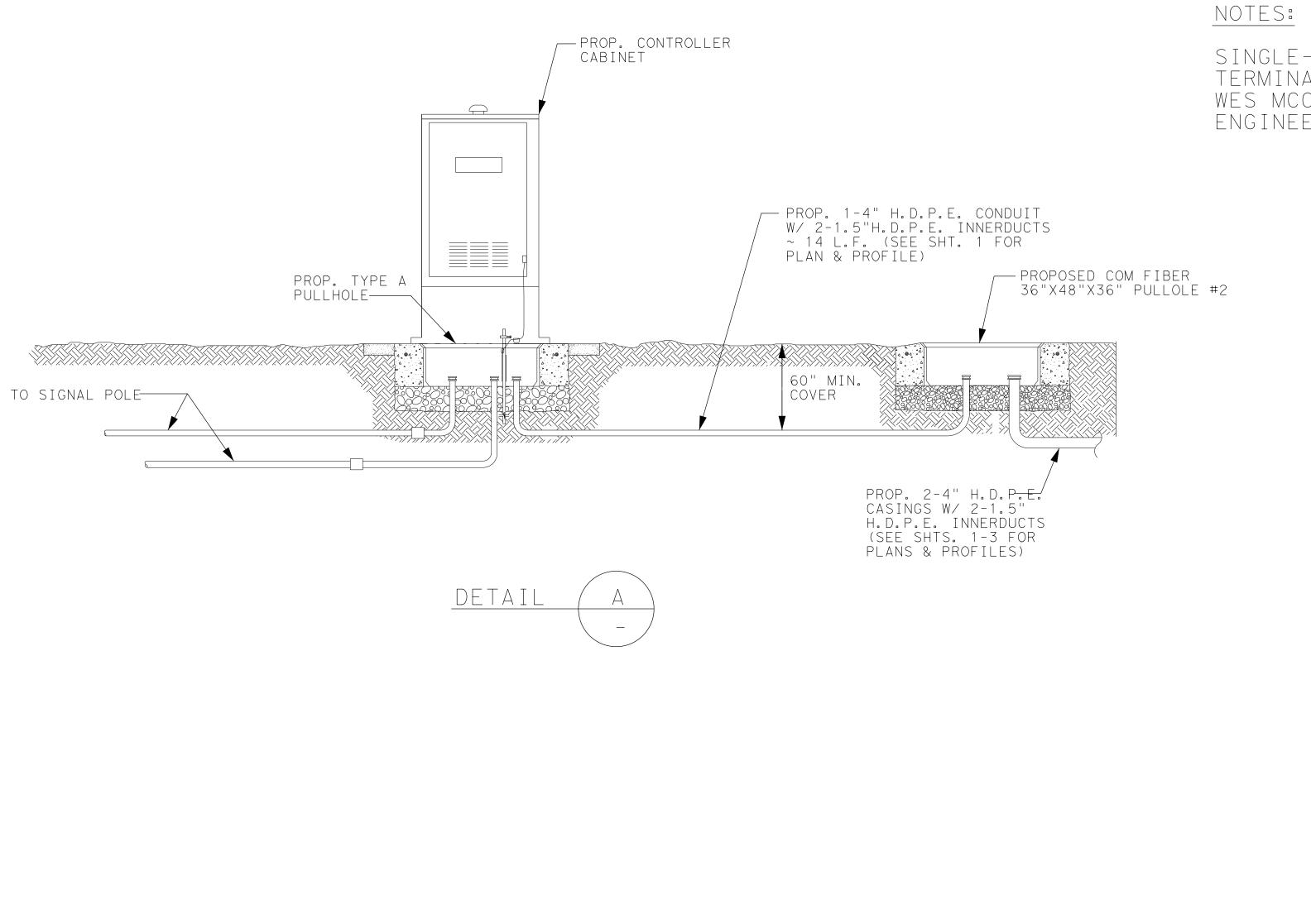




SPLICE LOCATION NO. 5 PREP. AND INSTALL FIBER PATCH PANELS PIGTAIL FUSION SPLICE COM 48 C AND 72 CT. SINGLE-MODE FIBER CABLES. COIL 30' SLACK LOOP (EACH CABLE)	Γ
OPEN CUT AND INSTALL 1- CONDUIT W/ 2-1.5" H.D.F	AY AVE HORIZ 0' 12.5' 25' 50' -4" H. D. P. E.
INNERDUCTS ~ 110 L.F. J-BOX ON FIRESTATION WA	TO EXIST.
SINGLE-MODE FIBER CABLE COIL 50' SLACK LOOP (EA	-
FROM WALL TO FIBER PATO AND PLACE FIBER CABLES	
AT&T	XIST. R.O.W. REMOVE, SAWCUT, AND REPLACE CONC. PVMT.
25+00 CONSTRUCTION BASELINE	
OWAY AVE W. VARIES) PVMT. W/ OVERLAY	
TELE PED	
= =	XIST. R.O.W.
2 CT.	
FIBER CONSTRUCTION NOT 1. SET ALL HANDHOLES F	TES:
	DT LEAVE ANY OPEN TRENCHES OR PITS.
IN EACH 4" H.D.P.E. C	
	D NEW COM FIBER CABLES W/ CONNECTION TO
5. INNERDUCT AND FIBER 6. FIBER SPLICING BY FU	INSTALLATION BY UTILITY CONTRACTOR
	TEND A MINIMUM OF 5 FEET BEYOND THE EDGE
PAVEMENT (INCLUDING AL	AND A MINIMUM OF 10 FEET BEYOND ASPHALT L PUBLIC CROSS STREETS), PLUS ANY ADDITIONAL EAR EXISTING SIDEWALKS.
NOTE:	
2. CONTRACTOR LOCATE A AND SHALL SUPPORT A UTILITIES IN THE TRENC COLLAPSE.	VE AND HAUL OFF ALL THEDEBRIS FROM THE SITE.
	AIN POSITIVE DRAINAGE AT ALL TIMES.
NOTE: CONTRACTOR TO MAINTAIN	ADEQUATE DRAINAGE DURING CONSTRUCTION.
ley Barfield	UTILITY RELOCATION FOR CSJ: 2374-02-162
DECM	PROPOSED 144 CT. MISD AND 48 CT. & 72 CT.
ield, Inc. TxEng F-257 Ste 101, Richardson, TX 75080	COM FIBER RELOCATION (ID # 113 & 114) STA. 15+00 TO END Scale: 1"=50" H (22"X34") Date: 1"=4" V (22"X34")
) BinkleyBarfield.com	$\begin{array}{c c c c c c c c c c c c c c c c c c c $



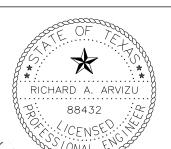
. 23+93, 49′ LT.		540
ST. MISD PH NO. 4 "x48"x36" PULLHOLE		
L 100' SLACK LOOP ICE LOC. NO. 4		536
. 24+00, 49′ LT. ST. COM PH NO. 4 '×48"×36" PULLHOLE		
L 100' SLACK LOOP		532
ISTRUCTION NOTE 4)		
EXIST TRAF SIG CABLE		528
EXIST AT&T BURIED CABLE		
EXIST 8" CI WATER		524
		520
		520
OPEN CUT AND INSTALL		- / -
CONDUIT W/ 2-1.5" H. INNERDUCTS ~ 110 L.F J-BOX ON FIRESTATION	F. TO EXIST.	516
PLACE 1-48 CT. AND 1 SINGLE-MODE FIBER CA	ABLE.	
COIL 50' SLACK LOOP VERIFY INSIDE PLANT FROM WALL TO FIBER F	DISTANCE	512
AND PLACE FIBER CABL B.O.C. EL 521		
		508
		504
		500
FIBER CONSTRUCTION NOT		
	TLUSH TO TOP OF EXISTING PAVEMENT.	496
3. CONTRACTOR SHALL PL IN EACH 4" H.D.P.E. C	LACE 1-1C #10 AWG THHN COPPER TONE WIRE	490
4. TRANSFER SLACK AND	PREP. COM PH No. 1 FOR SPLICING COM 48 CT.	100
EXIST. TRAFFIC SIGNAL		492
5. INNERDUCT AND FIBER 6. FIBER SPLICING BY FU	INSTALLATION BY UTILITY CONTRACTOR	
	(TEND A MINIMUM OF 5 FEET BEYOND THE EDGE	488
OF CONCRETE PAVEMENT PAVEMENT (INCLUDING AL	AND A MINIMUM OF 10 FEET BEYOND ASPHALT L PUBLIC CROSS STREETS), PLUS ANY ADDITIONAL	
WIDTH NECESSARY TO CL	EAR EXISTING SIDEWALKS.	484
NOTE: 1. CONTRACTOR TO REMOV	VE AND HAUL OFF ALL THE DEBRIS FROM THE SITE.	
AND SHALL SUPPORT A	ALL UTILITIES PRIOR TO OPEN CUT CONSTRUCTION	480
COLLAPSE.	CH SO THAT THEY ARE NOT DAMAGED AND DO NOT	
		476
NOTE: CONTRACTOR TO MAINTAIN	N ADEQUATE DRAINAGE DURING CONSTRUCTION.	
		472
		468
+00		400
ley Barfield	UTILITY RELOCATION FOR CSJ: 2374-02	2-162
	PROPOSED 144 CT. MISD AND 48 CT. & 7 COM FIBER RELOCATION (ID # 113 & 11	72 CT. 4)
ield, Inc. TxEng F-257 Ste 101, Richardson, TX 75080	STA. 15+00 TO END Scale: 1"=50" H (22"x34") 1"=4" V (22"x34") Date: Job No.:	
) BinkleyBarfield.com	1 [°] =100 [°] H (11 [°] X17 [°]) 1 [°] =8 [°] V (11 [°] X17 [°]) 03/01/2023 2200000333	18



			CAUTION EXISTING UTILITIES !!!
			Existing utilities and underground facilities indicated on these plans have been located from reference information. It shall be the responsibility of the contractor to verify both horizontally and vertically the location of all existing utilities and underground facilities prior to construction, to take the necessary precautions in order to protect all facilities encountered. The contractor shall
Rev	Description	Date	preserve and protect all existing utilities from damage during construction.



The seal appearing on this document was authorized by Richard A. Arvizu, P.E. Tx. No. 88432. Alteration of a sealed document without proper notification to the responsible engineer is an offense under the Texas Engineering Practice Act. March 1, 2023



MESQUITE T E X A S Mesquite, Texas 75149 Real.Texas.Service.

CITY OF MESQUITE 1515 N. Galloway

Bink -----

Binkley & Barf 1801 Gateway Blvd, 972.644.2800

SINGLE-MODE FIBER CABLE PLACEMENT AND TERMINATIONS TO THE CONTROLLER CABINETS BY WES MCCLURE OF THE CITY OF MESQUITE ENGINEERING DEPARTMENT (972-216-6924).

kley & Barfield	UTILITY RE	ELOCATION F	OR CSJ: 237	4-02-162
DECM field, Inc. TxEng F-257	CON		ABINET CONI ON DETAIL	TIUC
, Ste 101, Richardson, TX 75080 0 BinkleyBarfield.com	Scole: 1"=50' H (22"X34") 1"=4' V (22"X34") 1"=100' H (11"X17") 1"=8' V (11"X17")	Date: 03/01/2023	Job No.: 2200000333	19

	GENERAL NO	DTES	GENERAL
	 ALL INFORMATION CONCERNING TYPE AND LOCATION OF GUARANTEED TO BE ACCURATE OR ALL IS RESPONSIBLE FOR MAKING HIS OWN DETERMIN LOCATION OF UNDERGROUND UTILITIES AS MAY DAMAGE THERETO. THE CONTRACTOR SHALL VE UNDERGROUND PIPELINES, CONDUITS AND STRUCT OF UNDERGROUND UTILITIES OR BY EXCAVATING THE CONTRACTOR IS RESPONSIBLE TO POT HOLE 	INCLUSIVE. THE CONTRACTOR NATIONS AS TO TYPE AND BE NECESSARY TO AVOID ERIFY LOCATION OF CTURES BY CONTACTING OWNERS IN ADVANCE OF CONSTRUCTION.	 TYPE 'C' BACKFILL ~ SPECIFICATIONS). TYPE 'A' BACKFILL ~ LIFTS. CONDUIT FORMATIONS BETWEEN DUCT AND FORMATIONS OVER FOR S. ALL DUCTS TO BE EN G. CONCRETE ENCASE D RADII OF LESS THAN
	THE EXACT LOCATION OF ALL UTILITIES WHEN A PATH OF CONSTRUCTION.	ND WHERE THEY FALL IN THE	RADII OF LESS IMAN
	 THE LOCATION OF ALL UTILITIES ARE SHOWN IN CONTRACTOR SHALL DETERMINE THE EXACT LOC HE AGREES TO BE FULLY RESPONSIBLE FOR AN BE OCCASIONED BY THIS FAILURE TO EXACTLY IN UNDERGROUND UTILITIES. ALL PROPOSED FACILITIES SHALL MAINTAIN 24" CONSTRUCT WASTEWATER COLLECTION SYSTEMS, AND STREET PAVING IN ACCORDANCE WITH THE PUBLICATIONS STANDARD CONSTRUCTION SPECIF COLLECTION SYSTEMS, WATER LINES, STORM DRA STANDARD CONSTRUCTION DETAILS FOR WASTE LINES, STORM DRAINAGE, AND STREET PAVING F DEPARTMENT OF PUBLIC WORKS AND ENGINEERING UTILITIES PRESENTED ON THESE DRAWINGS ARE AVAILABLE INFORMATION. CONTRACTOR SHALL V 	CATION BEFORE COMMENCING WORK. Y AND ALL DAMAGES WHICH MIGHT LOCATE AND PRESERVE THESE CLEAR FROM ALL EXISTING UTILITIES. WATER LINES, STORM DRAINAGE LATEST EDITION OF THE <u>FICATIONS FOR WASTEWATER</u> <u>AINAGE AND STREET PAVING</u> , AND WATER COLLECTION SYSTEMS. WATER PUBLISHED BY FORT BEND NG. SHOWN BASED ON THE BEST (ERIFY THE EXACT LOCATIONS IN THE	 The locations of AT& determine the exact damages which migh The contractor shall lines field located. When excavating with excavations must be shall expose the AT& When AT&T TEXAS/S conduit ducts or cats The presence or abs these plans does no Please contact the e-mail him at rI725 facilities. Please contact the plans
	 FIELD PRIOR TO COMMENCING CONSTRUCTION. CONE CALL AT 811 OR 800-344-8377 AND LON 800-669-8344 AT LEAST 48 HOURS BEFORE PUTILITIES MARKED WITHIN THE PUBLIC RIGHT OF COMPLY WITH TAC TITLE 16, PART 1, CHAPTER PUBLIC WORKS ADMINISTRATION (APWA) UNIFORM 7. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMA 	E STAR NOTIFICATION CENTER AT PROCEEDING WITH ANY EXCAVATION. WAY OR IN EASEMENTS SHALL 18, RULE 18.6 AND THE AMERICAN M COLOR CODE.	e-mail him at r1725 facilities.
	WASTEWATER, STORM WATER LINES AND TRAFFIC SHALL BE <u>REPAIRED IN ACCORDANCE WITH F</u> <u>WORKS AND ENGINEERING'S STANDARD CONSTRU</u> <u>WASTEWATER COLLECTION SYSTEM, WATER LIN</u> PAVING AND STANDARD CONSTRUCTION DETAILS SYSTEMS, WATER LINES, STORM DRAINAGE, AND AT NO ADDITIONAL COST.	C CONTROL DEVICES. DAMAGES FORT BEND DEPARTMENT OF PUBLIC JCTION SPECIFICATIONS FOR IES, STORM DRAINAGE, AND STREET S FOR WASTEWATER COLLECTION	 Minimum horizontal clearstorm pipe or box to the Minimum vertical clearstored or box to the exterior The contractor shall be disturbed as a result of the contractor shall be disturbed as a result of the clearstored as a resored as a result of the clearstored as a resored as a result
	8. CONTRACTOR SHALL NOTIFY THE OFFICE OF FOR WORKS AND ENGINEERING TO SCHEDULE AN INSI TO COMMENCING CONSTRUCTION.		S
	9. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT AND ANY DRAINAGE DITCH OR STRUCTURE DISTU BE RESTORED TO EXISTING CONDITIONS OR BETT	URBED DURING CONSTRUCTION SHALL	 Contractor shall implem locations shown on the
	10. CONTRACTOR SHALL TAKE NECESSARY PRECAUT Shrubs, plants and trees along the area		2. During the excavation p excavated material can
	11. CONTRACTOR SHALL COMPLY WITH LATEST EDITI STATE OF TEXAS LAWS CONCERNING EXCAVATION		existing pavement. Any the excavated area.
	12. CONTRACTOR SHALL MAINTAIN A SET OF REDLIN CONDITIONS DURING CONSTRUCTION. THESE REDL SUBMITTED TO THE DESIGN CONSULTANT WHO ORIGINAL TRACINGS, LABEL EACH SHEET IN THE RETURN IT TO THE OFFICE OF THE CITY ENGINER WORK NEAR LARGE DIAME (24-INCH AND	LINE MARKED UP DRAWINGS WILL BE WILL MAKE THE CHANGES ON THE SET AS "RECORD DRAWINGS", AND ER. TER WATER LINES	 Contractor shall clean umud, silt or rock tracked Contractor shall follow of loose material as const Contractor to inspect a 24 hours of the end of Disturbed areas of the that are exposed to predict that are exposed to predict the sodding is disturbed or sodding. Slopes 4:1
	 PEROFRM CRITICAL LOCATE OF WATER LINE USIN JETTING METHOD OF VACUUM EXCAVATION. FOR UTILITIES PARALLEL TO LARGE DIAMETER WATE HORIZONTAL CLEARANCE EQUAL TO ONE PIPE D FEET MIN.) BETWEEN THE OUTSIDE OF THE WATE 	ATER LINES PROVIDE A MINIMUM	
	3. FOR UTILITIES CROSSING LARGE DIAMETER WATER BORE CONSTRUCTION, WITH WET BORING NOT AL OF THE WATER LINE (FOUR FEET MIN.)		1. THE CON
	 WHEN UTILIZING BORE CONSTRUCTION, PROVIDE VERTICAL CLEARANCE BETWEEN THE OUTSIDE OF PROPOSED TILITY. (6 FEET BELOW LARGE WATER WHEN UTILIZING OPEN CUT CONSTRUCTION, PROV VERTICAL CLEARANCE BETWEEN THE OUTSIDE OF PROPOSED UTILITY. CONTRACTOR IS LIMITED TO VERTICALLY AND HORIZONTALLY OF THE WATER (4 FEET IF BELOW LARGE WATER LINE). NO CONSTRUCTION RELATED ACTIVITIES INCLUDIN OF DUMP TRUCKS AND MATERIAL STAGING OR S ON TOP OF EXISTING LARGE DIAMETER WATER L 	F THE WATER LINE AND THE R LINE). VIDE A MINIMUM OF TWO FEET F THE WATER LINE AND THE (ABOVE) HAND EXCAVATION WITH FOUR FEET LINE. NG, BUT NOT LIMITED TO, LOADING STORAGE ARE TO BE PERFORMED	2. ANY DEN THE PLA CONSTRU 3. FOLLOWIN PROVIDE WITHIN 9 ALIGNME
		CAUTION EXISTING	
		Existing utilities and underground faci plans have been located from referen the responsibility of the contractor to and vertically the location of all exist facilities prior to construction, to tak in order to protect all facilities encou	ce information. It shall be o verify both horizontally ing utilities and underground e the necessary precautions untered. The contractor shall
Rev	Description	preserve and protect all existing utilit Date construction.	lies irom aamage during

BACKFILL & ENCASEMENT SPECIFICATIONS

CEMENT STABILIZED SAND (2 SACKS PER TON OR MEET LATEST FORT BEND COUNTY

ORIGINAL MATERIAL, FREE OF DETERIOUS MATERIAL, COMPACTED 90-95% PROCTOR IN 6"

, REGARDLESS OF NUMBER OF DUCTS, SHALL MAINTAIN THE SAME MINIMUM CLEARANCES TRENCH WALL, AS SHOWN IN TYPICAL FORMATIONS HEREON. OUR DUCTS HIGH REQUIRE 2" SEPARATION AFTER EVERY FOURTH TIER OF DUCTS. ICASED WITH CEMENT STABILIZED SAND UNLESS OTHERWISE SPECIFIED OR REQUIRED. JCTS WITHIN AREAS OF GRADE CHANGES MORE THAN 20% (1' IN 5') AND BENDS HAVING 80 FEET.

AT&T TEXAS/SWBT FACILITIES NOTES:

&T Texas/SWBT facilities are shown in an approximate way only. The contractor shall location before commencing work. He agrees to be fully responsible for any and all t be occasioned by this failure to exactly locate and preserve these underground utilities. call 1-800-344-8377 a minimum of 48 hours prior to construction to have underground

hin eighteen inches (18") of the indicated location of AT&T TEXAS/SWBT facilities, all accomplished using non-mechanized excavation procedures. When boring, the contractor ¢T TEXAS/SWBT facilities.

SWBT facilities are exposed, the contractor will provide support to prevent damage to the bles. When excavating near telephone poles the contractor shall brace the pole for support. sence of AT&T TEXAS/SWBT underground conduit facilities or buried cable facilities shown on mean that there are no direct cables or other cables in conduit in the area. he AT&T Texas Damage Prevention Manager Mr. Roosevelt Lee Jr. at (713) 567-4552 or 59@att.com, if there are questions about boring or excavating near our AT&T TEXAS/SWBT

AT&T Texas Damage Prevention Manager Mr. Roosevelt Lee Jr. at (713) 567-4552 or 59@att.com, if there are questions about boring or excavating near our AT&T TEXAS/SWBT

STORM CONSTRUCTION NOTES

earance between any storm pipe and box shall be at least 48-inches from exterior of the the exterior of the existing or proposed public or private utility and other appurtenances. ance between any storm pipe shall be at least 24-inches from exterior of the storm pipe of the existing or proposed or private utility and other appurtenances.

responsible for protecting, maintaining, and restoring any back slope drainage system of this work.

WPPP CONSTRUCTION NOTES

nent protection devices and Reinforced Filter Fabric barrier along road and side ditches at typical Storm Water Pollution Prevention (SWPP) plans to keep silt and/or excavated into the storm water inlets and ditches eventually polluting the receiving storm.

phase of the project, Contractor shall schedule the work in short segments so that be guickly hauled away from the site and to prevent it from staying uncollected on the loose excavated material which falls on pavements or driveways shall be swept back into

b the existing street intersections and driveways daily, as necessary, to remove any excess ed from the excavated area.

good housekeeping practices during construction of the project, always cleaning up dirt and ruction progresses.

and maintain areas listed below at least once every fourteen (14) calendar days and within f a storm event of 0.5 inches or greater.

construction site that have not been finally stabilized. Areas used for storage of materials ecipitation. Structural control measures. Locations where vehicles enter or exit the site. nsible to maintain existing ditches and/or culverts for unobstructed drainage at all times.

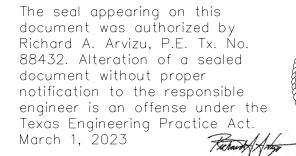
bed by excavation on backfilling operations, such areas shall be replaced by seeding or steeper shall be replaced by block sodding.

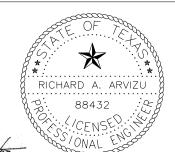
BORING NOTES

ITRACTOR SHALL REMOVE EXCESS BORE MATERIAL AFTER CUTTING PIPE AND NG TRENCH SECTION.

IATION FROM ALIGNMENT AND DEPTH OF DIRECTIONAL BORE AS SHOWN ON ANS SHALL REQUIRE APPROVAL FROM THE ENGINEER PRIOR TO UCTION.

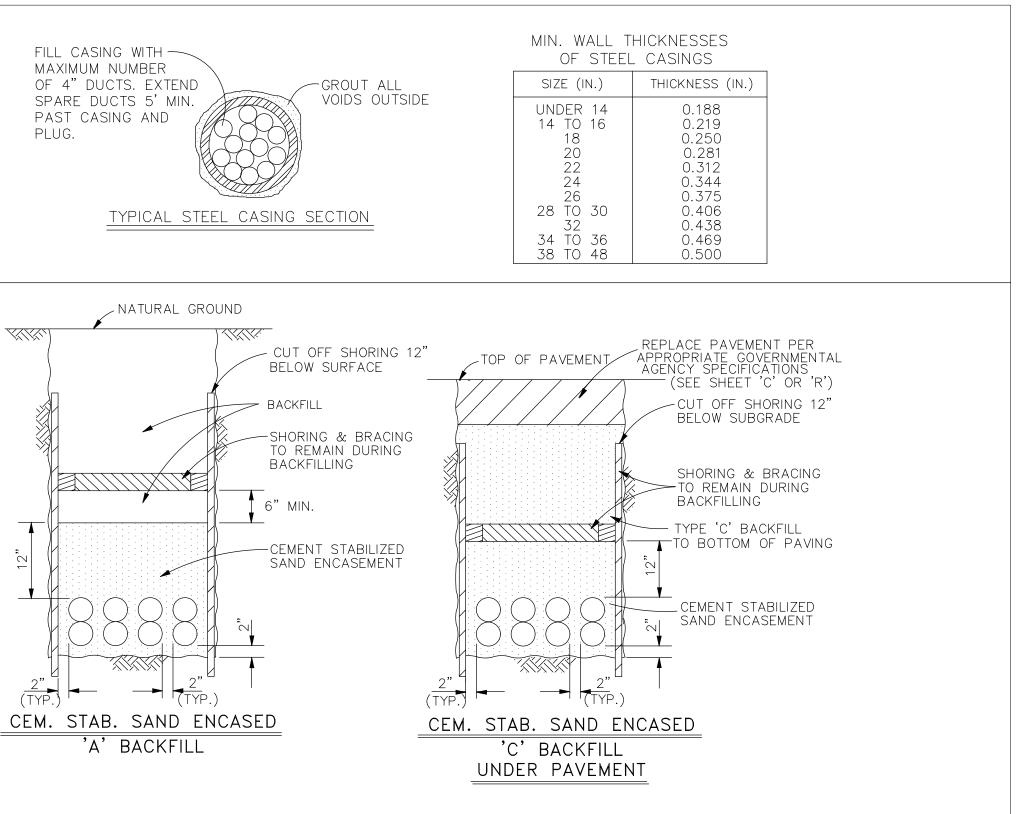
NG APPROVAL AND COMPLETION CONSTRUCTION, THE CONTRACTOR SHALL AS-BUILT INFORMATION TO CENTERPOINT ENERGY AND HARRIS COUNTY 90 DAYS OF COMPLETION OF THE WORK NOTING ALL VARIATIONS OF ENT AND DEPTH OF BORE PATH.







CITY OF MESQUITE 1515 N. Galloway Mesquite, Texas 75149



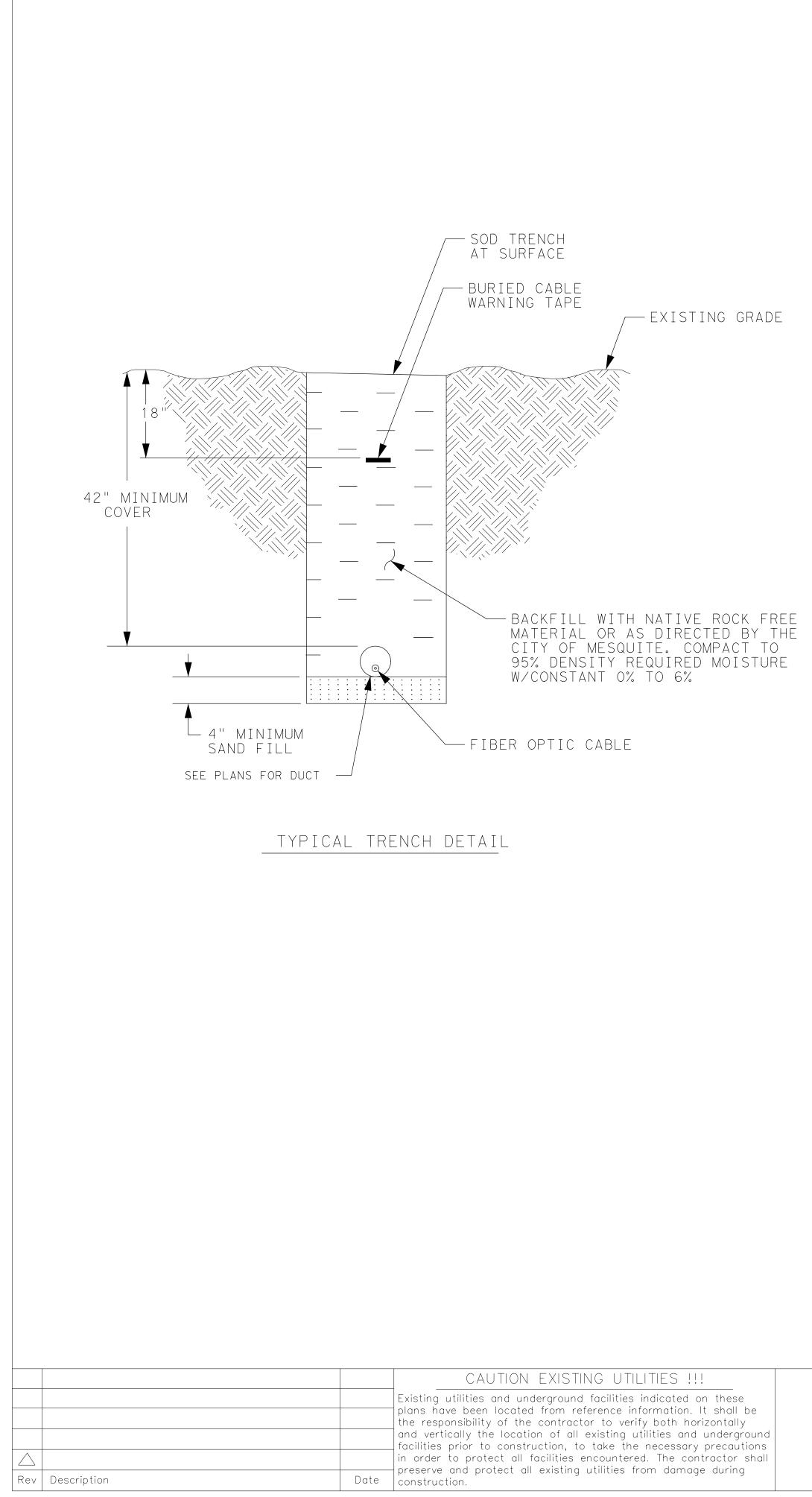
TYPE OF STRUCTURE	COMPRESSIVE STRENGTH (PSI)	MAX. SIZE OF AGGREGATE (IN.)	SLUMP (IN.)	TYPE OF CEMEN (SEE NOTE)
Manholes and other form work: Hand Compaction Machine Vibration	4000 4000	3/4 3/4	6 3	l or III
Conduit Encasement	2500	1/4 to 3/8	9	l or III
Conduit Base and Top Protection (for multiple duct or unencased single bore)	2500	3/4	3	l or III
Pavement Base, Sidewalks, Drives	2500	3/4 to 1-1/2	3	l or III

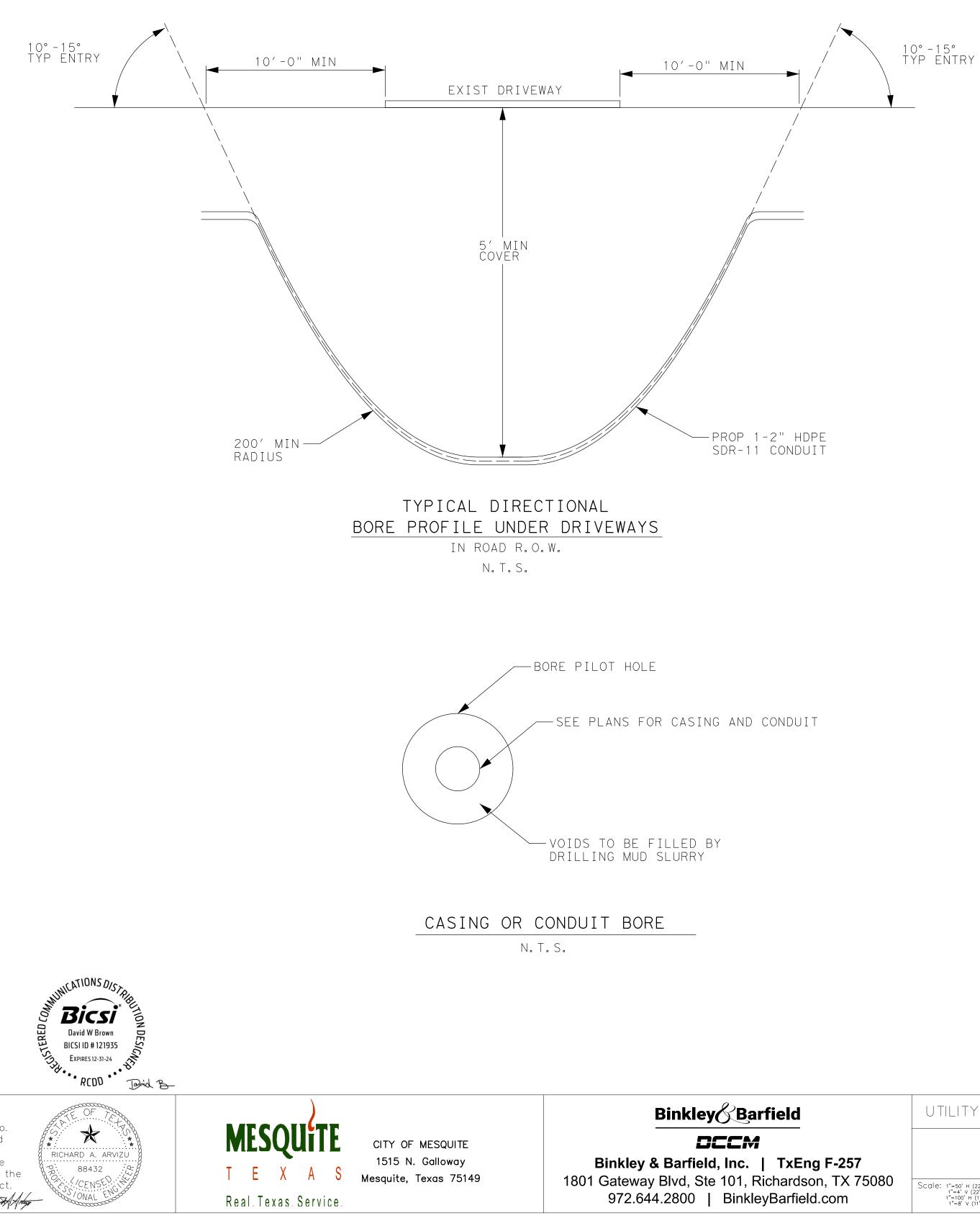


Bink

Binkley & Barf 1801 Gateway Blvd, 972.644.2800

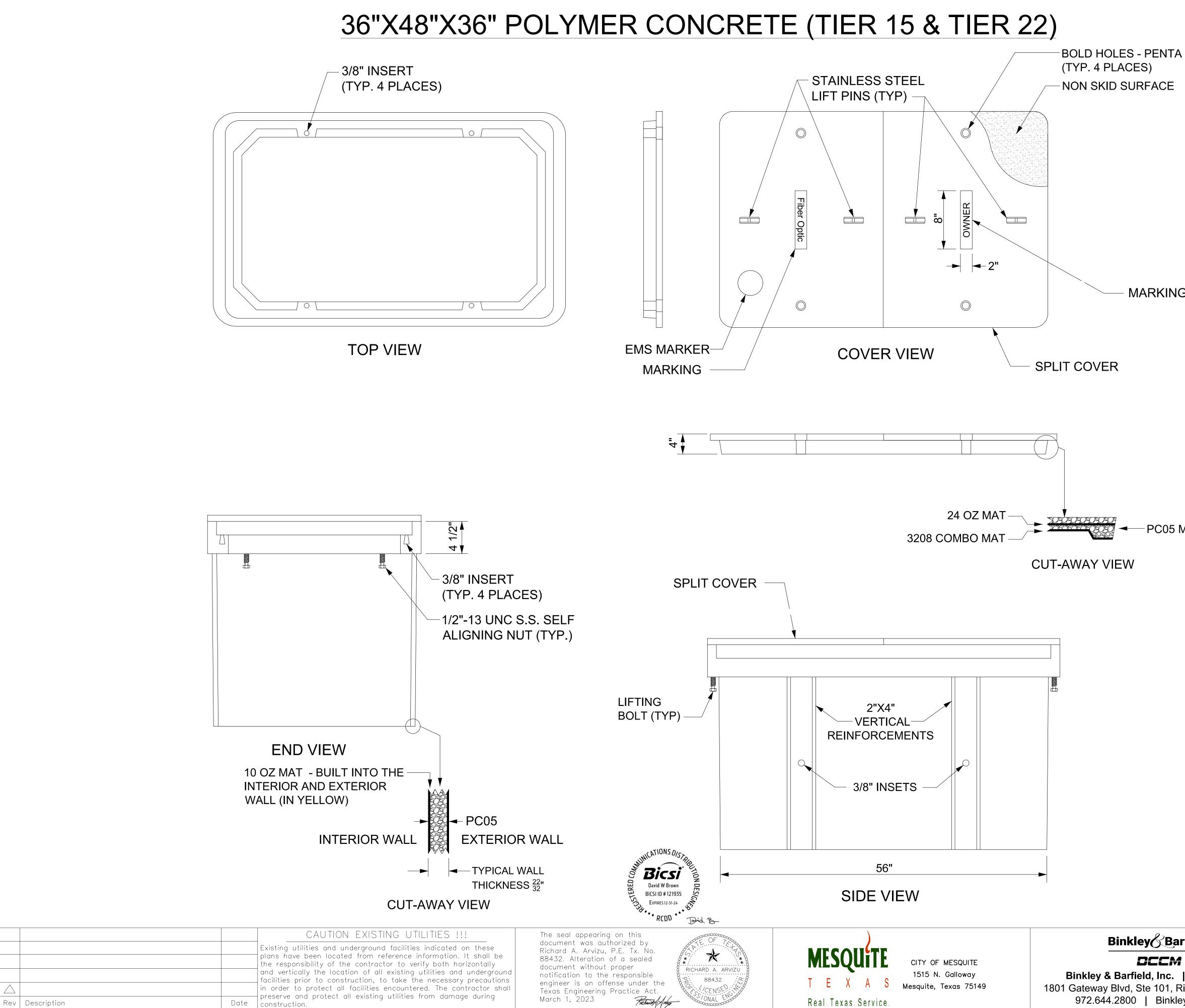
kley Barfield	UTILITY RE	LOCATION F	OR CSJ: 237	4-02-162
DEEM field, Inc. TxEng F-257		GENERA	L NOTES	
, Ste 101, Richardson, TX 75080 0 BinkleyBarfield.com	Scale: 1"=50' H (22"X34") 1"=4' V (22"X34") 1"=100' H (11"X17") 1"=8' V (11"X17")	Date: 03/01/2023	Job No.: 2200000333	20
		•		•

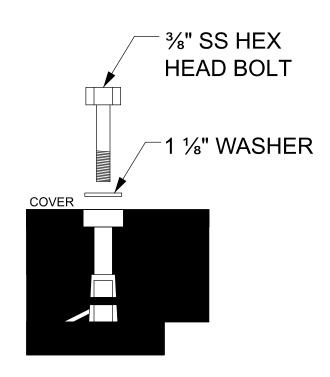




The seal appearing on this document was authorized by Richard A. Arvizu, P.E. Tx. No. 88432. Alteration of a sealed document without proper notification to the responsible engineer is an offense under the Texas Engineering Practice Act. March 1, 2023

kley Barfield	UTILITY RE	LOCATION F	OR CSJ: 237	4-02-162
DEEM field, Inc. TxEng F-257	F	IBER CONSTRU	JCTION DETAIL	_S
l, Ste 101, Richardson, TX 75080 00 BinkleyBarfield.com	Scale: 1"=50' H (22"X34") 1"=4' V (22"X34") 1"=100' H (11"X17") 1"=8' V (11"X17")	Date: 03/01/2023	Job No.: 2200000333	21





HARDWARE DETAIL

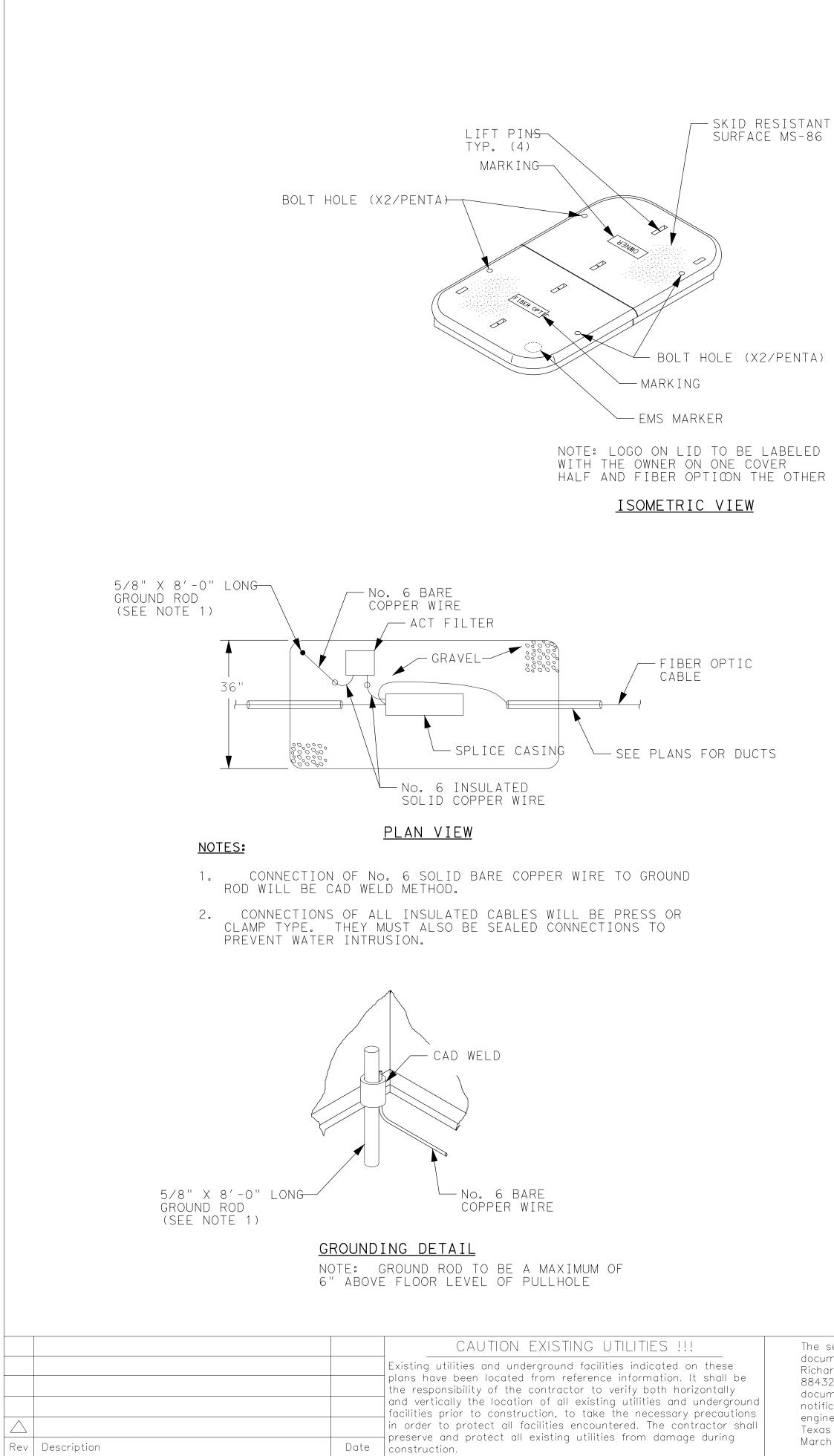
MARKING

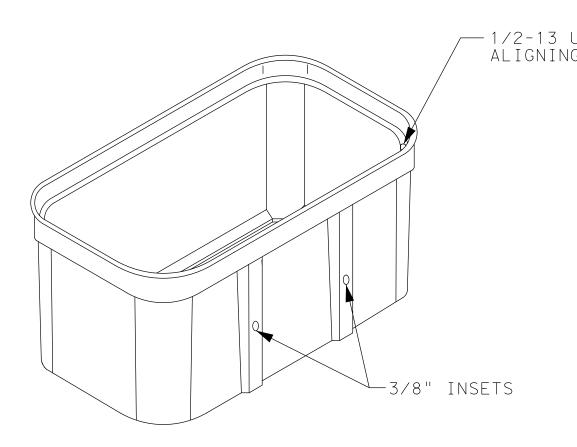
-PC05 MIX

PULLHOLE NOTES:

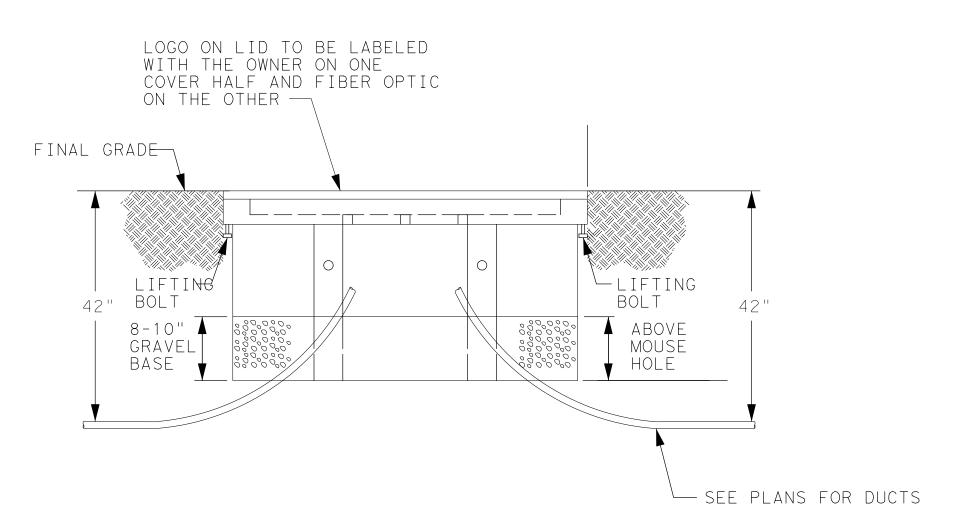
- 1. PULLHOLE LID SHALL BE 2 PIECE COVER.
- 2. THE PULLHOLE COVER SHALL BE LABELED FOR THE OWNER WHETHER THE CITY OF MESQUITE OR MISD IN THE MARKING AREA ON ONE COVER HALF AND FIBER OPTIC ON THE OTHER COVER HALF.
- 3. BOLTS SHALL BE HEX HEAD BOLTS.
- 4. COLOR SHALL BE GRAY.
- 5. PULLHOLE SHALL CONFORM TO THE LATEST ANSI/SCTE 77 STANDARD.
- 6. MANUFACTURED PULLHOLE SHALL BE UL LISTED BY VENDOR.
- 7. TOLERANCE +/- 1/8"

ley & Barfield	UTILITY RE	LOCATION	FOR CSJ:237	4-02-162
DCCM Tield, Inc. TxEng F-257 36"×48"×36" HANDHOLE DET				ILS
Ste 101, Richardson, TX 75080	Scale: 1"=50' H (22"X34") 1"=4' V (22"X34") 1"=100' H (11"X17") 1"=8' V (11"X17")	Date: 03/01/2023	Job No.: 2200000333	22

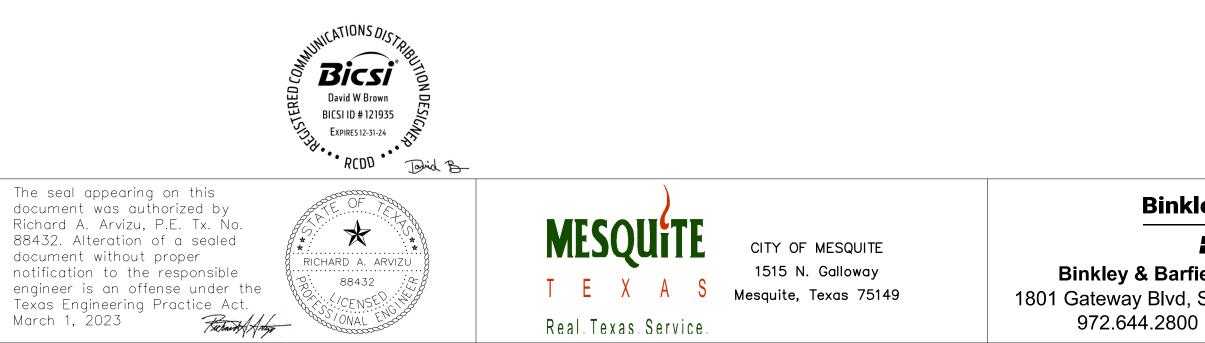




ISOMETRIC VIEW



<u>profile view</u>



kley Barfield	UTILITY RE	ELOCATION F	OR CSJ: 237	4-02-162
DEEM rfield, Inc. TxEng F-257	36"x48"x36" HANDHOLE DETAILS			
l, Ste 101, Richardson, TX 75080 00 BinkleyBarfield.com	Scale: 1"=50' H (22"X34") 1"=4' v (22"X34") 1"=100' H (11"X17") 1"=8' v (11"X17")	Date: 03/01/2023	Job No.: 2200000333	23

GENERAL NOTES FOR CONSTRUCTION ACTIVITIES:

- ALL WORK SHALL CONFORM TO THE CITY OF MESQUITE'S GENERAL DESIGN STANDARDS. IN THE EVENT AN ITEM OF WORK IS 21. NOT COVERED IN THE PLANS OR THE CITY OF MESOUITE GENERAL DESIGN STANDARDS. THE MOST CURRENT NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG) STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND THE MOST CURRENT VERSION OF TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS, AND BRIDGES SHALL APPLY WITH CONCURRING NOTIFICATION 22. TO THE CITY ENGINEER AND THE PROJECT ENGINEER. THE CITY ENGINEER SHALL HAVE FINAL DECISION ON ALL CONSTRUCTION MATERIALS, METHODS, AND PROCEDURES
- ALL CONTRACTORS AND DEVELOPERS, WITH THEIR EMPLOYEES AND AGENTS, SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL SAFETY LAWS AND REGULATIONS. INCLUDING BUT NOT LIMITED TO THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, AND ORDINANCES RULES, REGULATIONS AND ORDERS OF ANY PUBLIC AUTHORITY HAVING JURISDICTION FOR THE SAFETY OF PERSONS OR PROPERTY TO PROTECT THEM FROM DEATH, INJURY, DAMAGE OR
- ALL COMMUNICATION BETWEEN THE CITY AND THE CONTRACTOR SHALL BE THROUGH THE ENGINEERING CONSTRUCTION INSPECTOR AND CITY ENGINEER ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE APPROPRIATE DEPARTMENT FOR INSPECTIONS OF WORK NOT FALLING UNDER THE ENGINEERING CONSTRUCTION PERMIT
- PRIOR TO CONSTRUCTION, CONTRACTOR SHALL HAVE IN THEIR POSSESSION ALL NECESSARY PERMITS, PLANS, LICENSES, ETC. CONTRACTOR SHALL HAVE AT LEAST ONE SET OF APPROVED ENGINEERING PLANS AND SPECIFICATIONS ON-SITE AT ALL TIMES
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY UTILITY COMPANIES TO ARRANGE FOR EXACT LOCATIONS AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION. THE COMPLETENESS AND ACCURACY OF THE UTILITY DATA SHOWN ON THE PLANS IS NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR VERIEVING THE DEPTH AND LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATING, TRENCHING, OR DRILLING AND SHALL BE REQUIRED TO TAKE ANY PRECAUTIONARY MEASURES TO PROTECT ALL LINES SHOWN AND / OR ANY OTHER UNDERGROUND UTILITIES NOT ON RECORD OR NOT SHOWN ON THE PLANS. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAMAGES TO UTILITIES IF THE DAMAGE IS CAUSED BY NEGLIGENCE OR FAILURE TO HAVE LOCATES PERFORMED.
 - TEXAS 811 811 CITY OF MESQUITE UTILITIES 972-216-6940
 - III. CITY OF MESQUITE TRAFFIC 972-216-6278
- VERIFICATION OF THE CONDITION OF EXISTING CITY UTILITIES PRIOR TO CONNECTIONS SHALL BE THE RESPONSIBILITY OF E CONTRACTOR. THE CONTRACTOR SHALL REQUEST FOR LINE LOCATES AS DIRECTED IN ITEM #
- CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING LANDSCAPE IRRIGATION SYSTEMS. DAMAGE TO EXISTING IRRIGATION SYSTEMS SHALL BE RESTORED TO EQUAL OR BETTER CONDITION BY A LICENSED IRRIGATOR AT THE CONTRACTOR'S EXPENSE
- CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES OR ADJACENT PROPERTIES DURING CONSTRUCTION. ANY REMOVAL OR DAMAGE TO EXISTING FACILITIES OR ADJACENT PROPERTIES SHALL BE REPLACED OR REPAIRED TO EQUAL OR BETTER CONDITION BY THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE ALL REPAIRS TO PRIVATE PROPERTY WITH THE PROPERTY OWNER. CONTRACTOR SHALL PAY AND/OR SETTLE WITH PRIVATE PROPERTY OWNER FOR ALL COSTS RELATED TO ANY DAMAGE. FOR MORE DETAIL, REFER TO NCTCOG 107.24.
- TESTING AND INSPECTION OF MATERIALS SHALL BE PERFORMED BY A COMMERCIAL TESTING LABORATORY APPROVED BY THE CITY. CONTRACTOR SHALL FURNISH MATERIALS OR SPECIMENS FOR TESTING, AND SHALL FURNISH SUITABLE EVIDENCE THAT THE MATERIALS PROPOSED TO BE INCORPORATED INTO THE WORK ARE IN ACCORDANCE WITH THE SPECIFICATIONS. ALL TESTING AND RE-TESTING COSTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. FOR MORE DETAIL, REFER TO NCTCOG 106.5.
- CONTRACTOR SHALL NOTIFY THE CITY AT LEAST 48 HOURS PRIOR TO BEGINNING ANY CONSTRUCTION. 10
- ALL SHOP DRAWINGS, WORKING DRAWINGS OR OTHER DOCUMENTS WHICH REQUIRE REVIEW BY THE CITY SHALL BE 11. SUBMITTED BY THE CONTRACTOR SUFFICIENTLY IN ADVANCE OF SCHEDULED CONSTRUCTION TO ALLOW NO LESS THAN 10 BUSINESS DAYS FOR REVIEW AND RESPONSE BY THE CITY
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED CONSTRUCTION SURVEYING AND STAKING AND SHALL NOTIEY 12. THE CITY OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH ANY WORK, FOR MORE DETAIL, REFER TO NCTCOG 105.4.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL SURVEY MARKERS INCLUDING IRON RODS, PROPERTY CORNERS, OR SURVEY MONUMENTS WITHIN THE LIMITS OF CONSTRUCTION AND OUTSIDE RIGHT OF WAY DURING CONSTRUCTION. ANY SURVEY MARKERS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR AT NO COST TO THE CITY.
- CONTRACTOR SHALL NOT STORE MATERIALS, EQUIPMENT OR OTHER CONSTRUCTION ITEMS ON ADJACENT PROPERTIES OR RIGHT-OF-WAY WITHOUT THE PRIOR WRITTEN CONSENT OF THE PROPERTY OWNER AND THE CITY. THE PROJECT SHALL NOT BE ACCEPTED UNTIL THE CONTRACTOR PROVIDES A LETTER FROM THE PROPERTY OWNER STATING THEY ARE SATISFIED WITH THE CONDITION OF THE PROPERT
- UNUSABLE EXCAVATED MATERIAL OR CONSTRUCTION DEBRIS SHALL BE REMOVED AND DISPOSED OF OFFSITE AT AN APPROVED DISPOSAL FACILITY BY THE CONTRACTOR
- ALL SIGNAGE SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE TEXAS MANUAL ON UNIFORM 16. FRAFFIC CONTROL DEVICES (TMUTCD

GENERAL NOTES FOR EROSION CONTROL/STORM WATER POLLUTION PREVENTION:

- THE CONTRACTOR SHALL COMPLY WITH THE CITY OF MESQUITE'S STORM WATER ORDINANCE, THE TDPES GENERAL CONSTRUCTION PERMIT TXR150000 AND ANY OTHER STATE AND/OR LOCAL REGULATIONS
- 18 CONTRACTOR IS RESPONSIBLE FOR KEEPING STREETS AND DRIVEWAYS ADJACENT TO THE PROJECT FREE OF MUD AND DEBRIS AT ALL TIMES. CONTRACTOR SHALL CLEAN UP AND REMOVE ALL LOOSE MATERIAL RESULTING FROM CONSTRUCTION OPERATIONS. STOCKPILING OR STAGING OF MATERIALS WILL NOT BE ALLOWED IN RIGHT-OF-WAY WITHOUT PRIOR AUTHORIZATION. THE CONTRACTOR SHALL TAKE ALL AVAILABLE PRECAUTIONS TO CONTROL DUST. ANY DIRT, MUD OR DEBRIS TRACKED OFFSITE SHALL BE CLEANED UP BY THE CONTRACTOR IMMEDIATELY
- ALL EROSION CONTROL DEVICES SHOWN ON THE PLANS RELEASED FOR CONSTRUCTION SHALL BE INSTALLED IN 19. ACCORDANCE WITH THE SWPPP SEQUENCING PRIOR TO COMMENCING ANY EARTH DISTURBING ACTIVITIES. FAILURE TO INSTALL THE EROSION CONTROL DEVICES BEFORE STARTING THE FARTH DISTURBING ACTIVITIES MAY RESULT IN SANCTIONS INCLUDING, BUT NOT LIMITED TO, WITHHOLDING OF RELEASE OF CONSTRUCTION PERMITS, INSPECTIONS PAYMENT OF CITY FUNDED PORTIONS OF THE PROJECT, SUSPENSION OF CONSTRUCTION ACTIVITIES, OR CITATIONS EROSION CONTROL DEVICES SHALL BE INSTALLED AND MAINTAINED IN COMPLIANCE WITH THE PROJECT PLANS, CIT STORMWATER ORDINANCE AND/OR SWPPP AND CONSTRUCTION GENERAL PERMIT. THE CONTRACTOR SHALL INSPECT THE SITE DAILY AND KEEP THE SITE FREE OF TRASH AND CONSTRUCTION DEBRIS
- 20. CONTRACTOR MUST EXECUTE AND KEEP A COPY OF THE CONSTRUCTION SITE NOTICE (CSN) FOR THOSE ACTIVITIES DISTURBING MORE THAN 1 ACRE AND A NOTICE OF INTENT (NOI) FOR THOSE ACTIVITIES DISTURBING 5 ACRES OR MORE

- CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER WITH A TRAFFIC CONTROL PLAN AT LEAST 10 BUSINESS DAYS BEFORE ANY WORK ON A CITY STREET. TRAFFIC CONTROL MEASURES SHALL CONFORM TO THE LATEST REVISION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)
- CONTACT TRAFFIC ENGINEERING DIVISION, 972-216-6917, AT LEAST 48 HOURS PRIOR TO WORK REQUIRING THE REMOVAL OR RELOCATION OF TRAFFIC SIGNS, TRAFFIC CONTROL EQUIPMENT OR OTHER TRAFFIC CONTROL APPURTENANCES. ONLY CITY TRAFFIC PERSONNEL SHALL REMOVE TRAFFIC SIGNS.
- IN THE EVENT THE CONSTRUCTION WORK REQUIRES THE CLOSURE OF AN EXISTING STREET, ALLEY, OR FIRE LANE, THE CONTRACTOR SHALL REQUEST THE ROAD CLOSURE THROUGH THE CITY INSPECTOR A MINIMUM OF 48 HOURS IN ADVANCE 23. OF THE REQUESTED CLOSURE. CLOSURES WILL NOT BE ALLOWED PRIOR TO 9:00 A.M. OR AFTER 3:30 P.M. MONDAY THROUGH FRIDAY UNLESS OTHERWISE APPROVED BY THE CITY. IN THE EVENT A DRIVEWAY(S) NEEDS TO BE CLOSED, THE CONTRACTOR SHALL REQUEST THE DRIVEWAY CLOSURE THROUGH THE CITY INSPECTOR, WHO WILL IN TURN NOTFY DISPATCH AND OTHER PERTINENT CITY DEPARTMENTS, CLOSURES ARE PROHIBITED DURING SCHOOL ZONES TIMES IN AND AROUND SCHOOLS
- IF THE CONSTRUCTION ZONE AFFECTS THE MOVEMENTS OF PEDESTRIANS, ADEQUATE PEDESTRIAN ACCESS AND WALKWAYS SHALL BE PROVIDED IN ACCORDANCE WITH THE DISABILITIES ACT ACCESSIBILITY GUIDELINES, PROWAG, TAS 24 AND THE TMUTCD. WHERE DEVELOPMENTS OCCUR WITHIN 0.5 MILES OF A SCHOOL SITE, TEMPORARY SIDEWALKS MUST BE CONSTRUCTED CONNECTING THE DEVELOPMENT TO THE SCHOOL SITE. THE ROUTE SHALL BE APPROVED BY THE CITY ENGINEER, TEMPORARY SIDEWALKS MAY BE CONSTRUCTED WITH MATERIALS OTHER THAN CONCRETE. THE MATERIAL SHALL BE APPROVED BY THE CITY ENGINEER AND BE AN ALL-WEATHER MATERIAL OF A COLOR AND TEXTURE DISTINCTLY DIFFERENT FROM THE PERMANENT SIDEWALK.
- OVERNIGHT LANE CLOSURES SHALL BE APPROVED BY CITY PRIOR TO CLOSING THE LANE. ANY LANE OR SHOULDER 25 CLOSURE ON AN ARTERIAL ROAD THAT EXTENDS INTO THE NIGHT SHALL REQUIRE THE MANDATORY USE OF ARROW BOARDS.

GENERAL NOTES FOR PAVING

30.

GENERAL NOTES FOR TRAFFIC CONTROL:

- ABSOLUTELY NO EARTHWORK, LIME APPLICATION, OR OTHER PREPARATION OF THE SUBGRADE FOR PAVING OF STREETS, ALLEYS, SIDEWALKS, TRAILS, FIRE LANES OR OTHER TRANSPORTATION RELATED FLATWORK SHALL BE INITIATED WITHOUT THORIZATION FROM THE CITY. THE CITY WILL AUTHORIZE THE SUBGRADE WORK IN PREPARATION FOR PAVING AFTER UTILITY TRENCH BACKFILL TESTING HAS BEEN COMPLETED AND VERIFIED TO MEET THE CITY REQUIREMENTS
- 27. ALL SIDEWALKS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT AND THE TEXAS ARCHITECTURAL BARRIERS ACT. THE CITY OF MESQUITE HAS NOT REVIEWED THESE PLANS FOR COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT, TEXAS ARCHITECTURAL BARRIERS ACT, OR ANY OTHER ACCESSIBILITY LEGISLATION, AND DOES NOT WARRANTY OR APPROVE THESE PLANS FOR ANY ACCESSIBILITY STANDARDS. PRIOR TO PROJECT ACCEPTANCE, THE CONTRACTOR SHALL SUBMIT TO THE CITY DOCUMENTATION THAT THE PROJECT WAS INSPECTED BY A REGISTERED ACCESSIBILITY SPECIALIST. REGISTERED WITH THE TEXAS DEPARTMENT OF LICENSING AND REGULATION CERTIFYING THE PROJECT IS IN COMPLIANCE WITH THE REQUIREMENTS OF THE TEXAS ARCHITECTURAL BARRIERS ACT.
- ALL CONCRETE PAVING (STREETS, ALLEYS, SIDEWALKS, DRIVEWAYS) WITHIN CITY ROW SHALL HAVE A 28 DAY MINIMUM 28. COMPRESSIVE STRENGTH OF 4,000 PSI, CONTAINING A MINIMUM OF 6 SACKS OF CEMENT PER CUBIC YARD, WITH A SLUMP RANGE OF 1" TO 3" SLUMP FOR MACHINE POURS AND 3" TO 5" SLUMP FOR HAND POURS UNLESS OTHERWISE NOTED IN THE GENERAL DESIGN STANDARDS. ALL MATERIALS AND REQUIREMENTS FOR CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT NCTCOG ITEM "PORTLAND CEMENT CONCRETE PAVEMENT" WITH THE EXCEPTION THAT FLY ASH MAY BE SUBSTITUTED FOR UP TO 20% OF THE CEMENT CONTENT REQUIREMENT AT 1 TO 1.25 CEMENT TO FLY ASH SUBSTITUTION RATE.
- 29. ALL CONCRETE MUST BE MECHANICALLY VIBRATED. THE FORMING OF NEW STREET AND ALLEY PAVEMENT IS BY USING THE SLIP FORM METHOD. CONCRETE SHALL BE HAND PLACED AT INTERSECTIONS AND MISCELLANEOUS AREAS

TEMPERATURE DURING CONCRETE PLACEMENT

- a. THE TEMPERATURE OF CONCRETE AS PLACED SHALL NOT EXCEED 95°F.
- NO CONCRETE SHALL BE PLACED ON A FROZEN SUBGRADE. IF THE AMBIENT AIR TEMPERATURE IS LESS THAN 40°F AND DROPPING CONCRETE SHALL NOT BE PLACED.
- IF CONCRETE IS PLACED AND THERE IS AN ANTICIPATED LOW TEMPERATURE OF LESS THAN 40°F WITHIN 5 DAYS AFTER PLACEMENT THE CONCRETE MUST BE COVERED AND KEPT AT A TEMPERATURE OF NOT LESS THAN 50°F.
- IN ALL CASES, CONCRETE SHOULD NOT BE KEPT AT A TEMPERATURE OF LESS THAN 50°F FOR A PERIOD OF 5 DAYS
- REINFORCING SHALL CONFORM TO ASTM A 615 AND BE A MINIMUM GRADE OF 60 PER ASTM A 370. REINFORCING STEEL BAR LAPS ARE TO BE 30 BAR DIAMETERS OR 15" PER ACI 318, WHICHEVER IS GREATER, A MINIMUM OF 50% OF REBAR NTERSECTIONS ARE TO BE SECURED WITH THE WIRE AND SUPPORTED WITH CHAIRS. ALL REINFORCEMENT SHALL BE FREE FROM RUST, SCALE, OIL, PAINT AND OTHER SUBSTANCES WHICH PREVENT BONDING TO THE CONCRETE. UNLESS OTHERWISE SPECIFIED. STEEL SHALL BE PLACED AT HALF THE PAVEMENT DEP
- WHITE CURING COMPOUND IS TO BE APPLIED, PER MANUFACTURER'S RECOMMENDATIONS, TO ALL EXPOSED CONCRETE 32. SURFACES (INCLUDING BACKS OF CURBS) IMMEDIATELY AFTER COMPLETION OF FINISHING OPERATIONS, PER ASTM C-309, TYPE 2, NCTCOG SECTION 303.2.13.1.1
- 33. NO VEHICLE TRAFFIC SHALL BE PERMITTED ON NEWLY PAVED AREAS FOR SEVEN DAYS AFTER CONCRETE POUR OR UNTIL 3.000 PSLIS ACHIEVED.
- ALL FILL AND LIME SUBGRADES SHALL BE PLACED IN MAXIMUM 8" COMPACTED LIFTS AND BE COMPACTED TO 95% 34. STANDARD PROCTOR AT A MOISTURE RANGE OF 0% TO 6% OF OPTIMUM MOISTURE. MOISTURE LEVEL MUST BE MAINTAINED, BY WETTING OR APPLICATION OF ASPHALT EMULSION PRIME COAT (0.25 TO 0.50 GAL/SY) IF NECESSARY, UNTIL PLACING OF CONCRETE PAVING

			REQUIRED	TESTING	
MATERIAL	DESIGNATION	TEST	FREQUENCY	REQUIREMENTS	NOTES
		IN-PLACE DENSITY AND WATER CONTENT		MOISTURE CONTENT: 0% - 6% OF OPTIMUM; DENSITY: 95% OF STANDARD PROCTOR	EVERY 8" LIFT
SUBGRADE	ASTM D-6938	LIME STABILIZED SUBGRADE - DEPTH CHECK	EVERY 300 LINEAR FEET (1)	DEPTH OF STABILIZATION AS SPECIFIED PER PLANS	
		LIME STABILIZED SUBGRADE - SIEVE ANALYSIS		1.75" SIEVE: 100% PASSING; NO. 4 SIEVE: 60%	
	ASTM D-698	PROCTOR	EVERY NEW MATERIAL SOURCE		
	ASTM C- 143	SLUMP OF PORTLAND CEMENT	FIRST TRUCK EACH DAY + 1 EVERY 150 CY	1" - 3" MACHINE POURS; 3" - 5" HAND POURS	
	ASTM C-231	CONCRETE AIR CONTENT BY PRESSURE METHOD (FOR FRESH CONCRETE)		MINIMUM 3%	
	ASTM C- 1064	TEMPERATURE OF FRESHLY MIXED PORTLAND CEMENT CONCRETE	EVERY TRUCK	95 F MAX (HOT WEATHER) AND 50 F MIN (COLD WEATHER)	
CONCRETE PAVING	ASTM C-39	COMPRESSIVE STRENGTH OF CYLINDRICAL CONCRETE SPECIMENS	3 CYLCINDERS TAKEN FROM FIRST TRUCK EVERY DAY + 3 EVERY 150 CY	3,000 PSI MINIMUM FOR TRAFFIC; 4,000 PSI MINIMUM AT 28 DAYS	1 BROKEN AT 7 DAYS A TRAFFIC ON PAVEMEN
	ASTM C-42	OBTAINING AND TESTING OF DRILLED CORES OF CONCRETE	EVERY 300 LINEAR FEET (1)	4,000 PSI COMPRESSIVE AT 28 DAYS	4" DIAMETER TAKEN 28
	ASTM C-174	MEASURING LENGTH OF DRILLED CONCRETE CORES		DEPTH OF PAVEMENT AS SPECIFIED PER PLANS	

GENERAL NOTES FOR TRENCHING AND CONFINED SPACE

- WITH TRENCH SAFETY DESIGN
- ENTRY PLAN WITH A COMPLETED PERMIT.

GENERAL NOTES FOR UTILITIES

ALL EXCAVATION AND TRENCH OPERATIONS SHALL BE CONDUCTED IN ACCORDANCE WITH 29 CODE OF FEDERAL REGULATIONS (CFR), PART 1926, SUBPART P AND ALL OTHER APPLICABLE STATE AND CITY REGULATIONS. PRIOR TO COMMENCING ANY EXCAVATION OR TRENCHING OPERATION, THE CONTRACTOR SHALL SUBMIT TO THE CITY ENGINEER A PLAN SEALED BY A TEXAS LICENSED PROFESSIONAL ENGINEER INDICATING THE INTENDED PROCEDURES TO BE USED BY THE CONTRACTOR TO COMPLY WITH OSHA REQUIREMENTS. SUCH PLAN SHALL FURTHER IDENTIFY THE "COMPETENT PERSON" AS REQUIRED BY PARAGRAPH 1926.651(K)(1) THAT WILL WORK WITH EACH CREW. AN AFFIDAVIT FROM THE CONTRACTOR INDICATING THE COMPETENT PERSON MUST BE SUBMITTED WITH THE TRENCH SAFETY PLAN TO THE CITY ENGINEER. A COPY OF THE TRENCH SAFETY PLAN MUST BE ON THE JOB AT ALL TIMES. THE CITY RESERVES THE RIGHT TO DENY PAYMENT FOR ANY CONSTRUCTION ACTIVITIES IN EXCAVATIONS OR TRENCHES THAT ARE NOT IN ACCORDANCE WITH THE SUBMITTED PLAN. THE CITY DOES NOT APPROVE OR DISAPPROVE TRENCH SAFETY PLANS, BUT WILL RETAIN A FILE

IMPLEMENTATION OF TRENCH SAFETY SHALL COMPLY WITH SUBMITTED TRENCH SAFETY DESIGN PLAN. SUBMIT DESIGNATED COMPETENT PERSON WHO WILL BE ON-SITE FULL TIME AND IS CAPABLE OF IDENTIFYING EXISTING AND PREDICTABLE HAZARDS IN SURROUNDING OR WORK CONDITIONS WHICH ARE UNSANITARY, HAZARDOUS, OR DANGEROUS TO EMPLOYEES AND WHO HAS THE AUTHORIZATION TO TAKE PROMPT CORRECTIVE MEASURES TO ELIMINATE THEM. INSTALL, OPERATE, MAINTAIN, ADJUST, AND REMOVE TRENCH SAFETY EQUIPMENT, AND PRECAUTIONS IN ACCORDANCE

37. ALL ENTRY INTO CONFINED SPACES SHALL BE CONDUCTED IN ACCORDANCE WITH 29 CODE OF FEDERAL REGULATIONS (CFR), PART 1910.147 P AND ALL OTHER APPLICABLE STATE AND CITY REGULATIONS. PRIOR TO COMMENCING ANY CONFINED SPACE ENTRY, THE CONTRACTOR SHALL SUBMIT TO THE CITY ENGINEER A COPY OF THE CONFINED SPACE

ALL WATER AND WASTEWATER MAINS THAT ARE PROPOSED TO BE ABANDONED WITHIN STREET ROW AND LESS THAN 10 FEET IN DEPTH, UNDER ANY MAJOR INTERSECTIONS, OR IN AREAS THAT COULD IMPACT MAJOR INFRASTRUCTURE, SHALL BE ABANDONED BY DRAINING THE EXISTING MAIN AND CUTTING AND FILLING THE EXISTING MAIN WITH GROUT.

	MESQUITE CITY OF MESQUITE, TEXAS F E X A S PUBLIC WORKS DEPARTMENT ************************************
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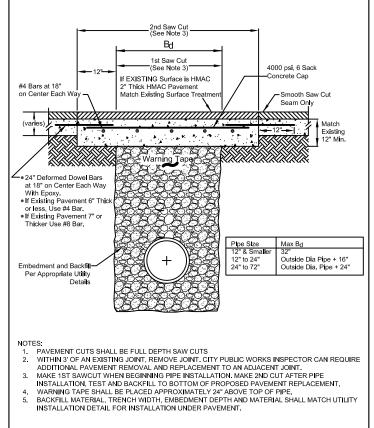
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AND THE OTHER 2 BROKEN AT 28 DAYS; IF NEEDING TO	D GET
IT FASTER THEN ADDITIONAL CYLINDER BROKEN AT 3 I	DAYS

28 DAYS AFTER POUR

TAIL NO.	DETAIL NAME	EFFECTIVE DATE	W-7	WATER SERVICE	09/08/2020	D-7A:7B	CONCRETE CHANNEL DETAILS	05/20/2
			W-8	TYPICAL UTILITY LOCATIONS	09/08/2020	D8	CONCRETE COLLAR	11/11/2
NERAL			W-9	FIRE HYDRANT	09/08/2020	D9	STORM DRAIN EMBEDMENT	11/11/2
GN	GENERAL NOTES	11/11/2019	W-10	FIRE HYDRANT (STRAIGHT)	05/20/2019			
	TABLE OF CONTENTS	05/20/2019	W-11	FIRE HYDRANT (90 BEND)	05/20/2019	FRANCHISE U		
	TYPICAL PAVEMENT CUT OVER TRENCH	11/11/2019	W-12	WATER FLANGED FITTINGS	05/20/2019	F-1	FRANCHISE UTILITY PAVEMENT CUT REPLACEMENT	05/20/2
	UTILITY BORE	05/20/2019	W-13	FIRE SPRINKLER YARD PIPING	05/20/2019	F-2	TYPICAL FRANCHISE UTILITY LOCATION IN STREET F	ROW 05/20/2
	CONCRETE ENCASEMENT	05/20/2019	W-14	REMOTE FDC AND FIRE LINE	05/20/2019	F-3	TYPICAL FRANCHISE UTILITY LOCATION IN ALLEY RO	OW 05/20/2
A:C	AERIAL CROSSING	05/20/2019	W-15	3" THRU 10" DOMESTIC TURBINE WATER METER	05/20/2019	F-4	RESERVED FOR FUTURE USE	
				ASSEMBLY		F-5A	FRANCHISE UTILITY GENERAL NOTES	04/13/2
NG			W-16	FIRE HYDRANT BOLLARD	05/20/2019	F-5B	FRANCHISE UTILITY GENERAL NOTES	05/20/2
	EXPANSION JOINTS	11/11/2019						
	CONSTRUCTION JOINTS	11/11/2019	WASTEWATER					
	SAWED CONTRACTION & ISOLATION JOINTS	05/20/2019	WW-GN	GENERAL NOTES - WASTEWATER	11/11/2019			
	STREET JOINTING	05/20/2019	WW-1	WASTEWATER EMBEDMENT (NOT UNDER PAVING)	04/13/2020			
	TYPICAL HEADERS	05/20/2019	WW-2	WASTEWATER EMBEDMENT (INDER PAVING)	04/13/2020			
	THICKENED CONCRETE EDGE	05/20/2019	WW-3	WASTEWATER LATERAL	05/20/2019			
			WW-4			1		
	TYPICAL CURB & GUTTER	07/24/2019		WASTEWATER MAINLINE CLEANOUT	05/20/2019	1		
	PEDESTRIAN FACILITIES	11/11/2019	WW-5	WASTEWATER MANHOLE RING AND COVER	05/20/2019	1		
	MONOLITHIC NOSE	05/20/2019	WW-6	WASTEWATER MANHOLE RING AND COVER	05/20/2019	1		
	MEDIAN	05/20/2019		(RETROFIT ONLY)		1		
	STAMPED CONCRETE MEDIAN PAVEMENT	05/20/2019	WW-7	DOUBLE CLEANOUT	05/20/2019	1		
A:12B	PERMANENT BARRICADE	05/20/2019	WW-8	SINGLE CLEANOUT	05/20/2019			
A:13B	LEFT TURN LANE	05/20/2019	WW-9	PRECAST MANHOLE	05/20/2019			
	CONCRETE PAVING DETAIL - TYPICAL SECTION	05/20/2019	WW-10	CAST-IN-PLACE MANHOLE	05/20/2019			
	CONCRETE SIDEWALK WITH RETAINING WALL	05/20/2019	WW-11	PRECAST DROP MANHOLE	05/20/2019			
	CURB RAMP - TYPE A	09/08/2020	WW-12	CAST-IN-PLACE DROP MANHOLE	05/20/2019			
	CURB RAMP - TYPE B	09/08/2020	WW-13	ABANDONED MANHOLE	05/20/2019			
	CURB RAMP - TYPE C	09/08/2020	WW-14	MANHOLE INVERT AND CONNECTION	05/20/2019			
	CURB RAMP - TYPE D	09/08/2020	WW-15	MANHOLE BLOCKOUT	05/20/2019			
	FIRE LANE PAVING	05/20/2019	WW-16	MANHOLE VENT	05/20/2019			
	FIRE LANE STRIPING	05/20/2019	WW-10 WW-17	PRECAST FLAT MANHOLE LID	05/20/2019			
	ALLEY PAVING	05/20/2019	WW-18	CAST-IN-PLACE FLUSH MANHOLE LID	05/20/2019			
	ALLEY/STREET INTERSECTION - OFFSET SIDEWALK	05/20/2019	WW-10	CAST-IN-PLACE FLOSH MANHOLE LID	05/20/2019			
			VV VV-19	CAST-IN-PLACE MANHOLE LID	05/20/2019			
	ALLEY/STREET INTERSECTION - ADJACENT SIDEWALK	05/20/2019	TRAFFIC					
	ALLEY UTILITY LOCATION	05/20/2019	TRAFFIC					
	DRIVEWAY - GENERAL	09/30/2020	T-1A:1D	PAVEMENT MARKING	05/20/2019			
	DRIVEWAY - FLARED	05/20/2019	T-5	JIGGLE BARS & TRAFFIC ARROWS	05/20/2019			
	DRIVEWAY - RADIAL	05/20/2019	T-6	STREET LIGHTING CONDUIT	05/20/2019			
	DRIVEWAY - RESIDENTIAL ALLEY	05/20/2019	T-7	CROSSWALK PAVEMENT MARKING	05/20/2019			
			T-8	STREET NAME SIGN LAYOUT	05/20/2019			
ER						1		
N	GENERAL NOTES - WATER	07/24/2019	SOLID WASTE			1		
	TYPICAL WATER MAIN PIPE EMBEDMENT	09/08/2020	SW-1A:1B	DUMPSTER ENCLOSURE	05/20/2019	1		
	(NOT UNDER PAVEMENT)				I	1		
	TYPICAL WATER MAIN PIPE EMBEDMENT	11/11/2019	DRAINAGE			1		
	(UNDER PAVING)		D-1A:1B	5' AND 10' SINGLE RECESSED CURB INLET	05/20/2019	1		
	WATER FLANGED FITTINGS	05/20/2019	D-2A:2B	15' AND 20' DOUBLE STANDARD CURB INLET	05/20/2019	1		
	WATER VALVE	05/20/2019	D-3A:3B	5' AND 10' SINGLE STANDARD CURB INLET	05/20/2019	1		
	ABANDONMENT OF VALVE STACK	05/20/2019	D-3A.3B	CURB INLET DETAILS AND NOTES	05/20/2019	1		
	ABANDONWENT OF VALVE STACK	05/20/2019	D-4 D-5	CURB INLET REINFORCING	05/20/2019	1		
	AIN NELEAGE VALVE	0012012010	D-6A:6B	STORM DRAIN MANHOLE 4', 5', OR 6' SQUARE	05/20/2019			
1		GENERAL DESIGN STANDARDS	1		GENERAL DESIGN STANDARDS		GEN	IERAL DESIGN STAND
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- Pavement Width -



TYPICAL PAVEMENT

REPAIR OVER TRENCH

MESQUITE Public

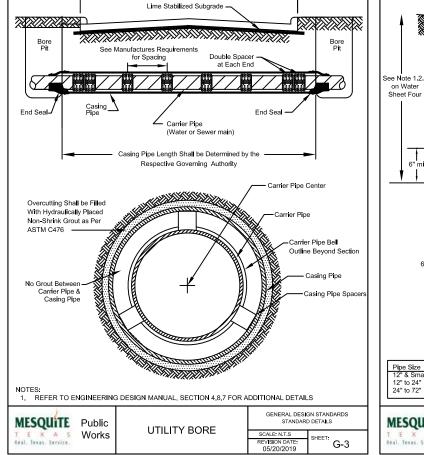
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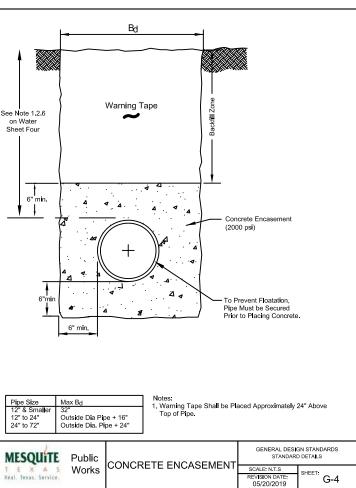
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REVISION DATE: 11/11/2019





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MESQUITE T E X A S Real. Texas. Service.	Public Works	TABLE OF CONTENTS	GENERAL DESI STANDAR SCALE: N.T.S REVISION DATE: 05/20/2019	GN STANDARDS D DETAILS SHEET: G-1D	
					MESQUATE CITY OF MESQUITE, TEXAS T E X A S PUBLIC WORKS DEPARTMENT Real. Texas. Service. STANDARD DETAILS

GENERAL NOTES FOR WATER MAINS AND RELATED APPURTENANCES:

1. GENERAL:

- 1.1. All water system improvements in the City of Mesouite, both privately and publicly maintained shall be designed and constructed in accordance with the City of Mesquite Engineering Design Standards
- 1.2. All water system design and construction shall conform to the current Texas Commission on Environmental Quality (TCEQ) regulations. These regulations can be found in the Texas Administrative Code (TAC), Title 30, Chapter 290, Subchapter D - (Rules and Regulations for Public Water
- 1.3. All water system design, construction and materials shall conform to current American Water Works Association (AWWA) standards All materials that will come into contact with potable water must be approved for use under National Sanitation Foundation (NSF) Standard 61 (Drinking 1.4. Water System Components - Health Effects)
- 1.5. Water systems shall be designed to comply with the latest City adopted version of the International Fire Code with adopted City amer 1.6. Water systems shall be designed to comply with the current Insurance Services Office (ISO) Fire Suppression Rating Schedule (edition 02-03) -Section 600 - Water Supply.

2. GENERAL INSTALLATION

- 2.1. All components of the water system (pipe, valves, fittings, restraints, blocking, services, and appurtenances) shall be designed for 200 psi working pressure and an AASHTO HS-20 live load except where loading conditions could exceed HS-20 live load limits in which case the City Engineer shall becify the appropriate design load.
- Minimum Cover: Water mains with a nominal diameter less than 14-inches shall have a minimum cover of 42" and water mains with a nominal 22 diameter 14" or greater shall have a minimum cover of 60-inches, unless otherwise approved by the City Engineer
- 2.3. Utility Clearance: Water mains and sanitary sewer mains shall have a minimum clearance of nine (9) feet. If this clearance cannot be maintained, TCEQ alternate requirements shall be met.
- Water mains are generally placed to be centered under the back of curb, unless otherwise approved by the City Engineer. 24
- Storm Sever Inlets shall be staked prior to water main placement so that the water main can be gradually deflected around and below the proposed inlets or other obstructions or conflicts in alignment. The Contractor shall stake the location of the back of curbs to ensure no valves fall within a curb.
- Warning Tape: Warning tape shall be installed 24 inches above the top of pipe or as otherwise directed by the City Engineer. The tape shall be a plastic, high stretch, 4-inch width tape approved by the City Engineer. The tape shall be blue in color and have the words "Caution Water Main Buried 2.6. Below" imprinted on the tape.
- 2.7. Grading Operations: The Contractor shall complete all fill and cut operations in accordance with released engineering plans prior to installing any utilities (i.e. water, sanitary sewer, drainage).
- 2.8. The Contractor shall not operate any valves in the existing water system nor operate any new valves that would allow connection to the City wate system. The Contractor shall coordinate and notify the City Public Works Construction Inspector 48-hours in advance to schedule a shut-down of the existing water system by City personnel. The City may require a night or weekend shut-down in order to maintain customer service. Temporary Fire Hydrant Meters: The City of Mesquite requires portable fire hydrant meters for temporary and/or construction water use at construction
- 29 steps They are routinely used to account for water used in Equities portable inertional minerate and account document of the account of the account of the account for water used prior to installation of a permanent water meters. These meters have a backflow prevention device attached. The City requires support for this device to prevent excessive torque when attached to a fire hydrant. The City requires payment for each meter. An invoice for water use is rendered each month. Arrangements for portable fire hydrant meters are administered by the City of Mesquite Water & Sewer Accounting Division at 757 N. Galloway Avenue. Please coordinate meter usage through the Utilities Division - Meter Services Section.

3. MATERIALS

- 3.1. Bolts and nuts for all fittings shall be stainless steel Grade 304 or 316 or ASTM A325 Type 3 Enhanced Corrosion Resistant steel. Stainless steel nread may be used in some applications with the approval of the City Engineer.
- 3.2. All fittings shall be mechanically restrained using restrained fittings as shown on the City of Mesquite Approved Water Materials List and meeting requirements of ASTM F1674 (PVC) or U.L. Standard 194 (Ductle Iron). Restraint gland and body and wedge components shall be ductle iron material. For pipe diameters 12° or greater, waterline plan shall show length of joints to be restrained on each side of fittings. For pipe diameters less than 12" all joints within 15 feet of fitting shall be restrained
- 3.3. Concrete Blocking: All fittings, valves, hydrants, etc. shall be blocked with 2,000 p.s.i. concrete, 4-sack minimum cement content. All blocking shall be poured to avoid nuts and bolts to allow easy access for maintenance. Excessive blocking shall not be allowed and shall be removed at the contractor's expense. Sizing and construction of blocking shall be as shown in standard drawings 4010A to 4040 of the North Central Texas Council of Governments Public Works Construction Standards, Fourth Edition (October 2004).
- Polyethylene Tube Wrap: All cast and ductile iron pipe, fittings and valves shall be wrapped with polyethylene tube wrap in accordance with AWWA C105. The polyethylene wrap must be blue in color. The wrap shall be installed in accordance with AWWA C105, Method A. 3.4.

4. VALVES

- 4.1. Location: Valves shall be anchored to adjacent fittings at Tee and Cross fittings and on fire hydrant leads. Valves shall not be used at the dead end of mains as a plug. Contractors generally do not wish to pressure test against an old valve that may leak, therefore new mains shall start with a valve and end with a plug
- 4.2. Location Marking: Valves located within a right-of-way shall be indicated on the face of the curb. or where curbs do not exist. on a conspicuous location adjacent to the valve location. Markings are to be the cutting of a four (4) inch high and 1/8" deep letter "V" with the point of the "V" pointing towards the valve location. The "V" shall be cut into the curb or paving using an approved motor driven concrete saw. The completed cut and valve riser lids shall receive a coating of blue paint if a main line valve or red if a fire hydrant valve. Contractor shall coat the interior, and exterior of the cut to a width of one (1) inch.
- Joint Restraint: All valves shall be mechanically restrained per Section 3.2. Bolts and Nuts for all fittings shall be ASTM A325 Type 3 Enhanced 4.3. Corrosion Resistant steel, or stainless steel A151 304 or 316.
- 4.4. Three-piece adjustable valve boxes: Adjustable valve boxes shall be furnished and set on each valve in accordance with the appropriate General Design Standards and the City of Mesquite Approved Water Materials List. After the final clean up and alignment has been completed, the Contractor shall cast in place a concrete block, 2-foot x 2-foot x 4-inch around all valve box tops at the finish grade.

5. TAPPING SLEEVES AND VALVES

- Wet connections to existing water mains (6-inch through 12-inch in size), shall be made with a tapping sleeve and valve. EXCEPTION: In some cases 5.1. where the size of the tap approaches the size of the main, as judged by the City Engineer, the use of a cut-in sleeve and tee will be required. Both the tapping sleeve and valve shall be rated for a minimum 200 psi service pressure.
- Prior to tapping, all tapping sleeves and valves shall be air tested at 120 psi for three (3) minutes, with no pressure loss
- Tapping is to be accomplished with no interruption of service. Facilities shall be provided for proper dewatering and for disposal of water removed from the water mains and excavations without damage to adjacent property. Special care shall be taken to prevent contamination of the existing potable 5.3. water line when dewatering, cutting, and making connections with existing pipe. No trench water, mud, or other contaminating substances shall be permitted to enter the existing lines. The interior of all tapping sleeves, tapping machine cutter assemblies, and tapping gate valves installed in such connections, and the surface of the existing pipe at these connections, shall be thoroughly cleaned and then swabbed with a solution having a chlorine content of 200 milligrams per liter.

6. FIRE HYDRANTS

- 6.1. Fire hydrants shall be located to minimize interference with driveways and shall be located with sufficient clearance from drive and street radii to prevent the fire hydrant from being struck if a vehicle jumps the curb and/or takes a wide turn. Hydrants shall not be placed in intersection radii or other locations with a high probability of being damaged by traffic. A 3-foot clear space shall be maintained around the circumference of fire hydrants except as otherwise required or approved.
- Mid-block fire hydrants shall be located on property lines (extended) to minimize interference with drives and on-street parking.
- Hydrants shall be placed 2-feet to 10-feet from the back of curb and shall not interfere with sidewalks, driveways, etc. Hydrants shall be placed so the bury mark is at ground or paving level. Mounding of the ground or paving shall not be allowed to achieve this requirement. No more than one extension of 18 inches maximum will be allowed for grade adjustment. Hydrants shall have a barrel length of 4-feet to 6-feet unless approved by the City 6.3. Engineer. All hydrants shall be surrounded by a 2 to 9 feet long x 3-feet wide x 4-inch thick concrete pad with 3,600 psi, 6 sack concrete and #4 reinforcing bars on 18" centers both ways placed to anchor the hydrant and to provide a splash pad between the hydrant and the curb for flushing operations.
- Installation: Installation shall be of a type as detailed in these standards. All fire hydrant leads shall be from an MJ to Flanged tee and all valves and 6.4. ings from the tee to hydrant shall be flanged.
- 6.5. Out of Service: If a fire hydrant is out of service, for any reason, the contractor shall bag the fire hydrant with a black trash bag secured with duct tape and report hydrant to the Utility Dispatch office with the reason why it is out of service. This includes, but is not limited to, hydrants that are out of service for the following reasons:
- Water main valved-off and being abandoned but connected hydrant is not yet removed. 651
- 6.5.2. New hydrant recently installed but not yet ready for service
- Hydrant temporarily out of service due to main shut down 6.5.3.
- Fire Hydrant Markers: The contractor shall place a Stemsonite Model 88-SSA blue fire hydrant marker in the street adjacent to the hydrant. The marker shall be located perpendicular to the curb, at the center of the driving lane closest to the fire hydrant. The marker shall be installed with a two 6.6. part epoxy adhesive per manufacturer's instructions.
- Fire Hydrant Painting (color coding). All fire hydrants are to be painted with a base coat consisting of two (2) coats of aluminum paint as specified below. Refer to City of Mesquite Approved Water Materials List for approved paint. When a color code other than aluminum is required, the top bonnet (from operating nut to underneath the uppermost flange) shall be painted two coats of the appropriate color in accordance with the following color code. Nozzle caps are not to be color-coded.
- 671 Base undercoat: Two (2) coats of aluminum paint are required as a base coat on all hydrants.

required over the base coat. The colors shall conform as follows: 6.7.2. Overcoats: Two (2) additional coats of paint are

rcoats	s: Two (2) additional coats of paint are required over the base coat. The colors shall				
	MAIN SIZE	COLOR			
	6 INCHES	ALUMINUM - TOP & BOTTOM			
	8 INCHES	BLUE TOP - ALUMINUM BOTTOM			
	10 INCHES OR LARGER	YELLOW TOP - ALUMINUM BOTTOM			

SERVICES AND METERS

- 7.1. <u>Meter and Service Location</u>: Meters and services must be located within R.O.W. or easements in accordance with City approved plans and details. In residential developments, residential water meters and services are generally placed at the center of the lot in the grassed parkway. Water meters shall not be located in proposed driveways, sidewalks, parking lots or other paved areas. For narrow lots or front entry lots, the designer must design shall not be reaching the meters of the meters to make sure they are placed in an unpaved areas. If the interview of the meters is the meters of the meters meter face is 6-inches to 10-inches below finished grade.
- All PEX-A water service lines shall be in accordance with ASTM F876 and AWWA C904 and the following procedures For installation under a non-residential street, service line shall be installed with detectable tracing wire. Detectable tracing wire shall be a 7.2.1. minimum 12 gauge with HDPE coating.
- 722 A Plastic insert stiffener shall be used at all fittings
- 7.3. All water services shall be continuous from the corporation valve at the water main to the angle meter valve in the meter box (No Couplings). Service Ine shall be "goose necked". Crimping or excessive bending of the service line shall not be allowed. Service lines shall be continuous and shall have no fittings under any paving, unless approved by the City Engineer. Long copper service lines that exceed the length of standard rolls of copper may be spliced in unpaved areas with a silver solder coupling. When installing a water main the Contractor shall furnish and install new meter boxes. Service lines shall be poly-wrapped for the first 5-feet of copper service from the main. Water services shall have a minimum depth under paving of 36-inches easured from surface of paving).
- All service connections to the main for services 2" or smaller shall be made with service saddles.
- A water meter box with locking lid shall be furnished and installed by the Contractor after paving and fine grading is complete. When installing a water 7.5. main, new meter boxes shall be furnished, installed and connected to the main. Meters larger than 2-inches in size shall be furnished and installed by the Contractor in concrete vaults in accordance with City details.
- Each individual service location shall be marked on the face of the curb with a 4-inch high and 1/8-inch deep scribe mark "I" cut in the curb using an 7.6. approved motor driven concrete saw. The scribe mark "I" shall receive a coating of blue paint, which shall coat the interior and exterior of the cut to a width of 1 inch

8. WATER SYSTEM INSTALLATION

- 8.1. Excavation: Excavation in general, shall be made in open cut from the surface of the ground and shall be no greater in width and depth than is ssary to permit the proper construction of the work. When the trench depth exceeds five (5) feet, see Standard Procedures Section 12.2 regarding "Trench Safety" requirements. The amount of trench excavation to grade shall not exceed 100 (one hundred) feet from the end of the pipe laying operations and no excavation shall be 300 (three hundred) feet in advance of the completed pipe operations (includes backfilling). At the end of the workday, all trench excavation shall be backfilled. Any landscaping and irrigation system within the City medians and right-of-ways that are disturbed, removed, or damaged during construction shall be replaced to original condition or better by a licensed irrigator.
- Minimum bury depth: Minimum bury depth shall be forty-two (42) inches from finished grade to the top of the pipe, unless otherwise directed by the City Engineer. 8.2.
- Sanitation: The inside of all pipe and fittings shall be kept clean during installation. The City Engineer may require swabbing or pigging of all new pipe if the pipe is installed in an unsanitary manor. See Section 11 TESTING PROCEDURES for more information. 8.3.
- Lifting Straps: All water pipe, valves, fire hydrants, and fittings shall be installed by the use of lifting straps. The use of chains is prohibite Entring oraps: An water pipe, varies, ine hydrarits, and numps shall be instanded by the design on hung stars, the use of chains is provided. Backfill and Compaction: For trenches not under paving, final backfill material shall be from the trench excavation placed in a maximum of 12 inch loose lifts and compacted to 95% of Standard Proctor Density (ASTM D698) at a moisture range of 0% to plus 6% of optimum moisture. Under existing or proposed paving (public/private sidewalks, streets, alleys, driveways, etc.), backfill shall be crushed concrete flexible base (TxDOT, Item 247, Grade 1, Type D) compacted to 95% of Standard Proctor Density (ASTM D698) at a moisture range of 0% to plus 6% of optimum moisture unless alternate material is approved by the City Engineer. The contractor shall take new proctors at each change in soil type. Water jetting will not be allowed for any 85

9. TESTING PROCEDURES

- 9.1. Notification of Testing: The Contractor shall hire an independent testing lab, subject to the approval of the City Engineer, for all material and acceptance testing at Contractors Expense. The Contractor shall notify the assigned City Public Works Construction Inspector of all density testing 24 hours prior to the scheduled test. Copies of all test reports shall be sent to the Public Works Inspector for review and acceptance and inclusion in the City project file. Projects will not receive City acceptance until all test results are complete and satisfactory.
- Compaction of Trenches and Excavations: Density tests shall be performed at a frequency of one test per lift, per 300 linear feet of trench (including services) at locations specified by the City Public Works Construction Inspector. All nuclear gauge density tests shall be performed per ASTM D2922.
- Pressure Testing and Disinfecting Water Mains: The purpose of this specification is to define the minimum requirements for the pressure testing and 9.3. tion of water mains, including the preparation of water mains, hydrostatic tests, flushing, application of chlorine, and sampling for the presof coliform bacteria. Water mains, services and fire sprinkler systems shall be flushed and disinfected per the following requirement th AWWA C651 "Disinfecting Water Mains".
- Connection to Existing Water System: Water required to fill the new main for hydrostatic pressure testing, disinfection, and flushing shall be supplied 94 through a temporary connection between the distribution system and the new main. The temporary connection shall include an appropriate cross-connection control device and shall be disconnected during the hydrostatic pressure test. As an alternate, a connection to the existing distribution system is permitted provided a new valve is placed at the connection point. Do not test against an existing valve in the existing

9.5. General Procedures and Precautions Taken During Construction:

- Inspect materials prior to installation to ensure their cleanliness and integrity.
- Keep interior of pipe dry and clean during storage and installation. Prevent contaminates from entering the water main during storage and 9.5.2.
- 9.5.3. If dirt enters the pipe during storage or installation, it shall be removed and the interior surface swabbed with a 1 to 5 percent hypochlorite disinfecting solution. 9.5.4 During construction openings in the pipe shall be closed with a watertight plug when pipe laving is stopped at the close of each day's work or for
- ther reasons such as rest breaks and meals to prevent contaminants and animals from entering pipe
- 955 Remove, by flushing or other means, those materials that may have entered the water main.
- Chlorinating any residual contamination that may remain, and flushing the chlorinated water from the main
- 9.5.7. Protecting the existing distribution system from backflow caused by hydrostatic test and disinfection procedure. Documenting that an adequate level of chlorine contacted each pipe to provide disinfection.
- 958 9.5.9. Once the contractor has been notified by the City Public Works Construction Inspector of a successful y (negative result) laboratory bacteriological testing result, the contractor can make connection of the approved new water main to the active distribution system
- Hydrostatic (Pressure) Test: All water mains, fittings and services shall be tested with a hydraulic test pressure of not less than 200 psi over a period of not less than 2 hours. The allowable leakage, in gallons, of all pipe tested shall be calculated per the following equation:

ALLOWABLE	28.28L*D	WHERE L = LENGTH OF PIPE (FT)
LEAKAGE=	148,000	D = DIAMETER OF PIPE (IN)

- For a two hour pressure test at a pressure of 200 psi. If the tests indicate a leakage in excess of the acceptable rate, the Contractor shall be required to find and repair the leak. Even if the test requirements are met, all apparent leaks shall be repaired and stopped.
- The hydrostatic pump shall be connected to a system where the amount of leakage can be determined by measurement or gauge. The 200-psi pressure shall be maintained at the highest point of the main being tested over the entire 2-hour test period. The leakage shall be determined by 9.6.2. comparing the quantity of water in the measuring system at the beginning of the test and quantity of water at the end of the test. The difference in these quantities shall be the leakage. An alternate method is to add water to the measuring system during the test. At the end of the 2-hour test, the quantity of water added shall be the leakage.

9.7. Flushing and Pigging the Main Prior to Disinfection / Chlorination

9.7.1. Flushing Method: Before the main is chlorinated, it shall be filled to eliminate air pockets and flushed to remove particulates. The flushing velocity in the main shall not be less than 3.0 ft/sec. Below is the required flow and openings needed to flush pipelines with a pressure of 40 psi

м	FLOW (GPM)	1" TAP	1.5″ TAP	2" TAP	2.5" HYDRANT DUTLET
4"	120	1			1
6"	260		1		1
8"	470		2		1
10"	730		3	2	1
12"	1060			3	2
16"	1880			5	2

9.7.2.3. 9.7.2.4. 9.8 Disinfection (Chlorination): 981 9.8.2. 983 9.8.4. Chlorine concentration.

chlorine

9.7.2. Plaging Method

9.7.2.1.

9.7.2.2.

- 9.8.5. Chlorine for Disinfection: 9.8.6.
- 9.8.6.1. 9862
- 9.8.6.3.

Contractor. 9.9.1

- 992
- 9.9.3.
- 995
 - 9.10.1. 9.10.2 Inspector shall notify the Contractor of the results. 9.10.3.
 - 9 10 4
 - 9.10.5.
 - and samples taken again until a satisfactory sample is obtained. 9.11.
- at least 16-hours.

required to provide adequate provisions for sampling. 9.10. Bacterial Sampling:

openings and then proceed with disinfection. The Contractor shall install and remove all pump-in, blow-off and sampling points.

Pigging is accomplished by passing an appropriate sized pig through the pipe. A pig is a bullet-shaped, flexible sponge available in differen sizes, densities, and degrees of roughness. All mains 12-inch and larger must be pigged prior to flushing and disinfection with

The pig shall be inserted in the new conduit at the location where the new conduit is connected to the active distribution system. Where expulsion of the pig is required through a dead-ended conduit, the Contractor shall make every effort to prevent back flow of the purged water into the conduit after passage of the pig. Backwater re-entry into the pipe can be prevented by the temporary installation of mechanical joint bends and pipe joints to provide a riser out of the trench.

After passage of the pig, flushing of all backwater from the pipe, and satisfactory test results, the Contractor shall secure the test location

The Continuous-feed method must be used unless it is stated otherwise in the Contract Specifications.

Water from the existing system or other approved source shall be made to flow at a constant rate in the new main. At a point no more than 10-ft downstream of the beginning of the new conduit, water entering the new conduit shall receive a dose of chlorine. such that the water shall have not less than 100-mg/L (ppm) free chlorine. Chlorine application shall not cease until the entire conduit is filled with heavily chlorinated water. 125 lbs of Calcium Hypochlorite (65% available chlorine) is required in 100,000 gal of water to produce 100 mg/L (ppm

The chlorinated water shall be retained in the conduit for at least 24 hours, during which time all valves and hydrants in the section treated shall be operated in order to disinfect the appurtenances. Every effort shall be made to prevent the flow of chlorinated water into conduits in active servic At the end of the 24-hour period, the treated water in all portions of the conduit shall have a residual of at least 10-mg/L (ppm) free chlorine

Calcium Hypochlorite in granular form conforming to ANSI/AWWA B300 must be used and must contain approximately 65 percent available chlorine by weight. The material should be stored in a cool, dry, and dark environment to minimize deterioration. The heavily chlorinated water shall then be flushed from the conduit and disposed in a manner meeting the requirements set out below The chlorine residual shall be tested prior to flushing operations.

Disposal of Hyper-Chlorinated Water: If the chlorine residual exceeds 4-mg/L (ppm) the water shall remain in the new water conduit until the chlorine residual is less than 4-mg/L (ppm). As an alternate, the Contractor may choose to evacuate the water into water trucks, or an approved storage facility (such as a detention pond until the chlorine residual is 4-mg/L (ppm) or less), or treat the water with Sodium Bisulfite or another decklorination chemica (Sulfur Dioxide, Sodium Sulfite, Sodium Thiosulfate, or Ascorbic Acid) or method appropriate for potable water and approved by the Owner until the chlorine residual is reduced to 4-mg/L (ppm) or less. The heavily chlorinated water shall not be disposed of into the storm sewer system. After the specified chlorine residual is obtained, less than 4 mg/L (ppm), the water may then be discharged into the storm sewer system or utilized by the

The requirement for discharge of heavily chlorinated water is found in the TPDES General Permit to Authorize the Discharge of Storm Water and Certain Non-Storm Water Discharges from Regulated Construction Activities Within the State of Texas The Contractor shall prepare the conduit for disinfection activities and secure same after chlorination is complete.

This shall consist of furnishing all equipment, material and labor to satisfactorily prepare the conduit for disinfection. The Contractor shall also be

The Contractor shall make all necessary taps into the pipe to accomplish chlorination of a new line.

After satisfactory completion of the disinfection operation, the Contractor shall remove surplus pipe at the chlorination and sampling points, plug the remaining pipe, backfill, and complete all appurtenant work necessary to secure the conduit.

Unless otherwise specified, the Contractor shall inject chlorine disinfectant into the conduit and monitor the solution.

The City Public Works Construction Inspector shall supervise the taking of water samples from a suitable tap (not through a fire hydrant) for analysis by the North Texas Municipal Water District laboratory. The sample(s) shall be transported by City staff to the laboratory at 9:00 AM on Tuesdays and Thursdays. Samples may not be taken earlier than 3:00 PM on the day prior to delivery. The City Public Works Construction

Microbiological sampling shall be done prior to connecting the new conduit into the existing distribution system in accordance with AWWA C651 Disinfecting Water Mains. Samples shall be tested in accordance with Standard Methods for the Examination of Water and Wastewater Samples for bacteriological analysis shall be collected in sterile bottles treated with sodium thiosulfate. At least one sample shall be collected for every 1,000-linear-feet of new water conduit, plus one set from the end of the line and at least one set from each branch. If trench water has entered the new conduit during construction or, if in the opinion of the City inspector, excessive quantities of dirt or debris have entered the new conduit, samples shall be taken at intervals of approximately 200-linear-feet. Samples shall be taken of water that has been in the new conduit fo

Unsatisfactory test results shall require a repeat of the disinfection process and resampling as required above until a satisfactory sample is

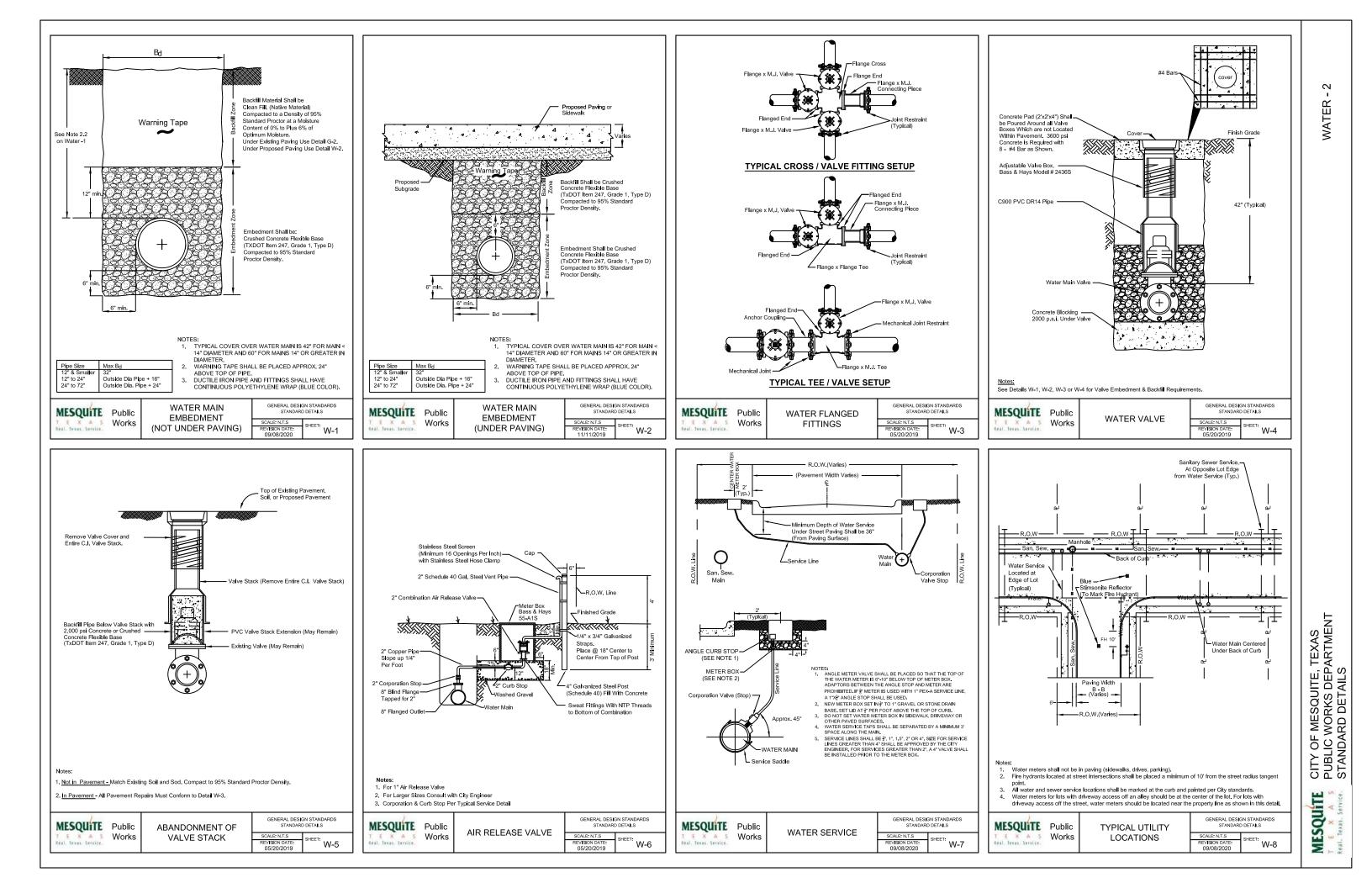
In the event there are two unsatisfactory test results from the same sampling point, the Contractor must "poly-pig" the new water main

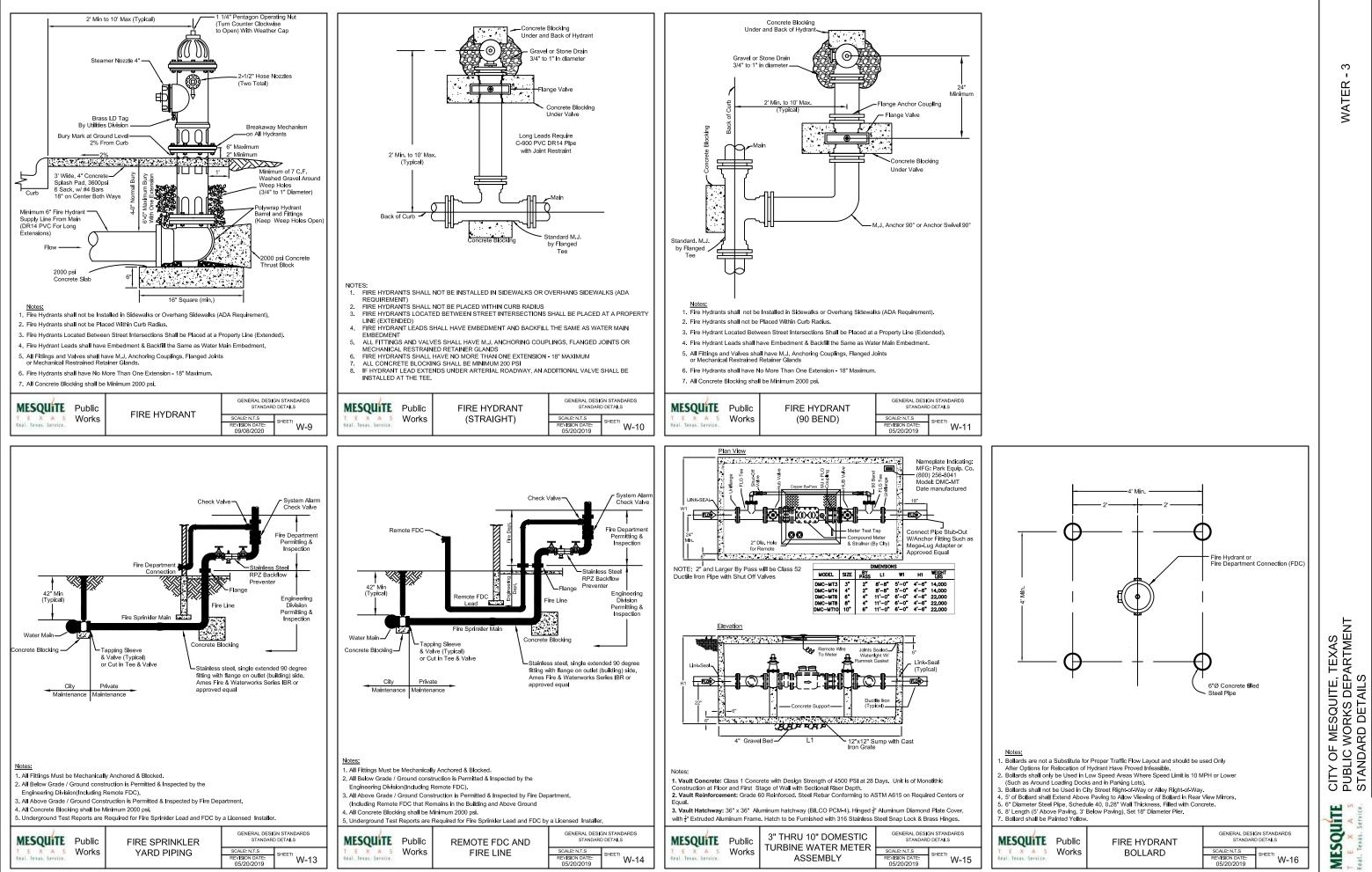
Tapping Sleeve and Valve Air Test: Prior to tapping, all tapping sleeves and valves shall be air tested at 120 psi for three (3) minutes, with no

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WATER - 1 GENERAL NOTES

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REVISION DATE: 07/24/2019	W-GN







GENERAL NOTES FOR WASTEWATER MAINS AND RELATED APPURTENANCES:

1. GENERAL

- 1.1. All sanitary sewer system improvements in the City of Mesouite, both privately and publicly maintained shall be designed and constructed in accordance with the City of Mesquite Engineering Design Standards.
- All sanitary sewer system design and construction shall conform to the most current Texas Commission on Environmental Quality (TCEQ) regulations. 1.2. These regulations can be found in the Texas Administrative Code (TAC), Title 30, Chapter 217, Subchapter C (Design Criteria for Domestic

2. SANITARY SEWER MAINS:

- Sanitary Sewer mains are generally placed in the parkway, 6 feet back of curb, unless otherwise approved by the City Engineer.
- Trench boxes shall be required for construction of mains where adequate clearance from streets or primary structures cannot be achieved. Adequate clearance is defined as a distance from the pavement / structure equal to the depth of the trench. 2.2.
- 2.3. The spacing and separation of water mains from sanitary sewer mains shall follow the nine (9) foot rule as set forth in the TCEQ regulation (30 TAC 17.53). Water and sanitary sever mains (including manholes) shall be separated by nine feet in all directions and installed in separate trenches. 2.4. Warning table shall be installed 18 inches above the top of the embedment or as otherwise directed by the Public Works Construction Inspector. The table in the shall be green in color and have the words are opported by the City Engineer. The tape shall be green in color and have the words "Caution Sanitary Sewer Main Buried Below" imprinted on the tape.
- Private sanitary sewer mains and laterals shall be designed, permitted and inspected per the International Plumbing Code; generally private systems are permitted and inspected by the City Building Inspection Division. 2.5.

3. SERVICE LATERALS

- 3.1. Service laterals shall be located ten (10) feet downstream of the water service for the lot (water service generally to be located at the centerline of the lot), and plugged suitable for testing.
- All sanitary sewer services are to have a minimum cover of three (3) feet and a maximum cover of five (5) feet as measured at the property line or 3.2. easement line from the proposed grade to top of pipe. In general, the minimum depth for sever to serve given property with a 4 inch lateral shall be 3-feet plus 2% times the length of the lateral to the middle of the structure. Services that are longer than 100 feet from the main and larger buildings may require a deeper service line and may request an exemption by the City Engineer from the maximum cover requirements. No services shall be connected to mains over 15 feet deep as measured from the proposed ground elevation to the main flowline
- Contractor shall install a property line cleanout per the City of Mesquite General Design Details if required by the City Engineer. Contractor shall not 3.3. install double service cleanouts in concrete paving.
- Service fittings shall be a tee or wye fitting to be installed on the main. Saddle services are not allowed for new construction.
- Each individual service location shall be marked on the face of the curb with a four (4) inch high and 1/8" deep double scribe mark "II" cut in the curb using an approved motor driven concrete saw. The double scribe mark "II" shall receive a coating of green paint, which shall coat the interior and exterior of the cut to a width of one (1) inch. 3.5.

4. MANHOLES

4.1 Manhole wall thickness shall conform to the following table:

	-	
HANHOLE DIAMETER	HINIMUM VALL THICKNESS (PRE-CAST)	MINIMUM WALL THICKNESS (CAST-IN PLACE)
4 FEET	5*	6*
5 FEET	6"	8*
6 FEET	8"	8*
> 6 FEET AND/OR SPECIAL CONDITIONS AND SITUATIONS	AS REQUIRED	BY CITY ENGINEER

- 4.2. Drop Manholes shall be installed if there is an incoming line with a vertical drop of more than two (2) feet measured from flowline to flowline. All drops manholes shall be internal and conform to City of Mesquite standard details. Drop manholes shall have a minimum diameter of five (5) feet. Existing manholes that have drops installed may terminate the drop pipe at the invert ledge. The top of a manhole located in a floodplain area shall have a minimum elevation of the ultimate 100 year water surface elevation and shall be a
- 4.3. minimum of 2-feet and a maximum of 3-feet above the adjacent grade. The tops of all other manholes shall be set to the grade of adjacent land or paving.
- 4.4. The excavation within 6-feet of a manhole shall be backfilled with crushed concrete flexible base (TxDOT, Item 247, Grade 1, Type D) compacted to construction unless an alternate is approved by the City Engineer.
- 4.5 MANHOLE MATERIALS
- Pre-cast concrete shall conform to current ASTM designation C 478 (C 478M). Lifting eyes are not allowed in pre-cast manholes. "T" base 4.5.1. manholes may be substituted with the City Engineer for all pre-cast manholes for RCP mains larger than 36 inches in diameter. Shop drawing shall be submitted to the City Engineer for all pre-cast manholes.
- 4.5.2. Cast-in-place concrete manholes shall only be allowed with special permission of the City Engineer. Generally the City Engineer will only grant City Engineer, construction must conform to City of Mesquite Engineering Design Standards. Manholes must have a concentric top cone section. Eccentric cone manholes may be used in situations where conflicts with other facilities warrant it.
- 4.5.3. Brick or fiberglass manholes or any other type of manhole material other than concrete will not be allowed.
- 4.6. All rigs shall be bolted to the manhade cone section with a layer of matice applied between the ring and cone section.
 4.7. All manhale ring and covers on manhade cone section with a layer of matice applied between the ring and cone section.
 4.8. All manhale ring and covers on manhade cone section with a context proved section with a context proved structural / high suffice resistant coating (see City of Mesquite Approved Sewer Materials List).
 4.8. Manhade rings and covers shall be adjusted by the use of approved grade rings with buty sealant between grade rings, cover ring and manhade.
- Maximum adjustment is eight (8) inches. Grade rings may be HDPE or Rubber as shown on the City of Mesquite Approved Sewer Materials List and in accordance with NCTCOG Public Works Construction Standard 502.1.2. Precast concrete grade rings, bricks, steel, iron or and broken concrete are not acceptable for adjustment.
- All manholes shall have full depth inverts to the depth of the largest entering main
- 4.10. Manhole Ring Sealing to Manhole Cone/Flat Top: All manholes rings shall be sealed and contain an internal manhole chimney seal or approved external seal or wrap as shown on the City of Mesquite Approved Sever Materials List. 4.11. False Bottoms: All manholes shall have a % inch thick plywood false bottom installed prior to initiation of grading and/or liming operations.
- Manhole Coatings: All mainless shall have a X inclusion provide lase bottom instance prior to inflated or to inflated or provide larger shall be coated. Manholes shall be coated with a City approved structural/high sulfide resistant coating (see City of Mesquite Approved Sewer Materials List). Coating application procedures shall conform to the recommendations of the coating manufacturer, including material handling, mixing, and environmental controls during application, 4.12. safety, and equipment.
- 4.13. Manhole Testing: Manhole testing shall be in accordance with section 5.3.
- 4.14. Location Marking: Each manhole shall be marked on the face of the curb with a four (4) inch high and 1/8" deep mark "MH" cut in the curb using an approved motor driven concrete saw. The double mark "MH" shall receive a coating of green paint, which shall coat the interior and exterior of the cut to a width of one (1) inch.
- 4.15. Main Line Cleanouts: Main line cleanouts are to be located and installed as per approved drawings and City of Mesquite Engineering Design Standards. Each cleanout shall be marked on the face of the curb with a four (4) inch high and 1/8" deep mark "CO" cut in the curb using an approved motor driven concrete saw. The double mark "CO" shall receive a coating of green paint, which shall coat the interior and exterior of the cut to a width of one (1) inch.
- 4.16. Manhole Stub Outs: Stub outs from manholes shall be a minimum five (5) foot long and capped.
- 4.17. Manholes located in floodplain or in middle of field shall have a minimum 5' tall marker attached to manhole lid

5. INSTALLATION AND CONSTRUCTION

- 5.1. Installation of all sanitary sewer shall conform to North Central Texas Council of Governments (NCTCOG) Standard Specifications for Public Works Construction Items 505.1 and 507 except as amended in these standards.
- 5.2 Excavation in general, shall be made in open cut from the surface of the ground and shall be no greater in width and depth than is necessary to permit the proper construction of the work. When the trench depth exceeds five (5) feet, see Section 6.2 regarding "trench safety" requirements. The amount of trench excavation to grade shall not exceed one hundred (100) feet from the end of the pipe laving operations and no excavation shall be three on denote the denotes of the concentration of the indiced (100) feet from the end of the provide sign of the workday, all french excavation shall be backfilled. Any landscaping and irrigation system within the City medians and right-of-ways that is disturbed, removed, or damaged during construction shall be replaced to original condition or better by a licensed irrigator.
- Backfill and Compaction: For trenches not under paving, final backfill material shall be from the trench excavation placed in a maximum of 12 inch loose lifts and compacted to 95% of Standard Proctor Density (ASTM D698) at a moisture range of 0% to plus 6% of optimum moisture. Under existing 5.3. or proposed paving (public/private sidewalks, streets, alleys, driveways, etc.), backfill shall be crushed concrete flexible base (TxDOT, Item 247, Grade Type D) comp ype D) compacted to 95% of Standard Proctor Density (ASTM D698) at a moisture range of 0% to plus 6% of optimum moisture unless alternate erial is approved by the City Engineer. The contractor shall take new proctors at each change in soil type. Water jetting will not be allowed for any

6. TESTING

- 6.1. Motification of Testing: The Contractor shall notify the assigned City Public Works Construction Inspector of all testing 24 hours prior to the scheduled test. Copies of all test reports shall be sent to the City Public Works Construction Inspector for review and acceptance and inclusion in the City project file. Projects will not receive City acceptance until all test results are complete and satisfactory.
- Compaction of Trenches and Excavations: The Contractor shall take nuclear gauge density tests per ASTM D2922 at a frequency of one test per lift, per 300 linear feet of trench (including services) at locations specified by the City Public Works Inspector. In addition to the above trench density tests, two nuclear gauge density tests per ASTM D2922 shall be taken of the manhole backfill within 4 foot of the manhole. Density tests must meet a 6.2.

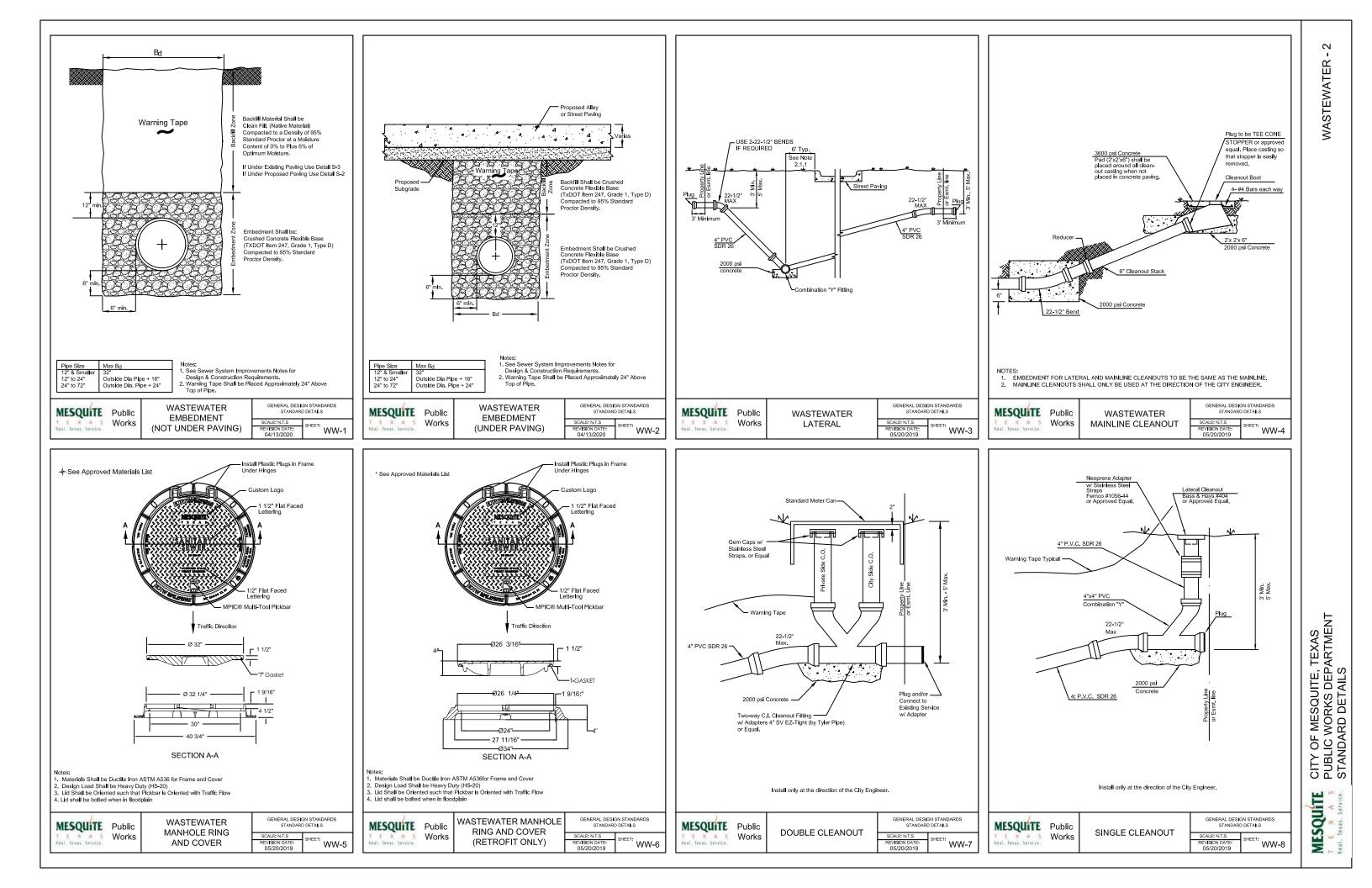
minimum compaction of 95% of Standard Proctor Density (ASTM D698) at a moisture range of 0% to plus 6% of optimum moisture.

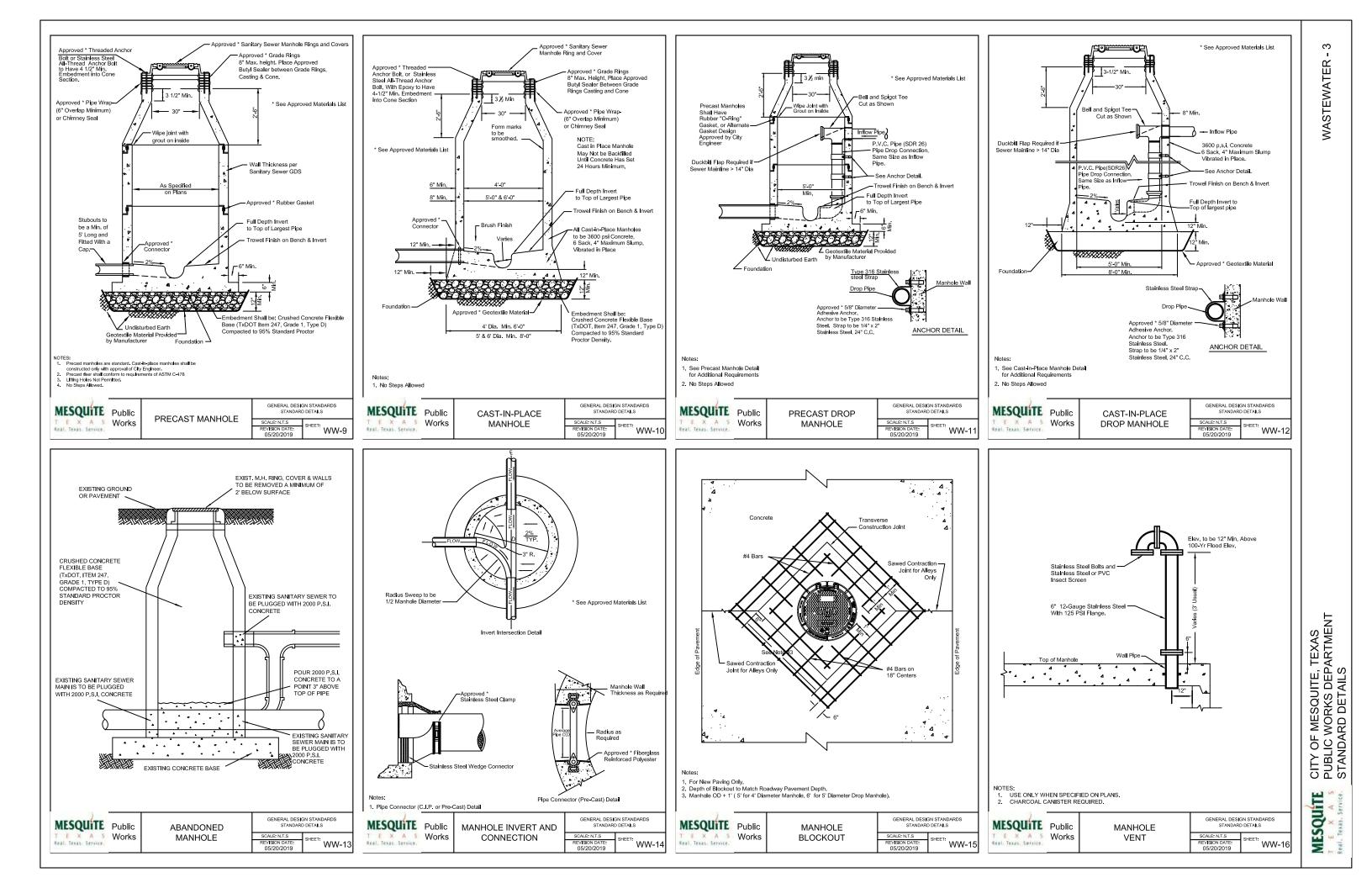
- Manhole Testing: All manholes shall be vacuum tested including grade rings and casting per NCTCOG Public Works Construction Standard 502.1.5.2 and meet TCEQ regulations 30 TAC 217 and ASTM C1244, "Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test Prior to Backfill". The time for the vacuum to drop from 10 inches of mercury to 9 inches shall not be less than two (2) 6.3. minutes
- Deflection Testing: Mains less than thirty six (36) inches in diameter shall pass deflection mandrel test per NCTCOG Standard Specifications for Public Works Construction, Item 507.5.1.4 Flexible Pipe (Deflection) Testing and TCEQ regulations Chapter 217.57(b) Deflection Testing. Alternate 6.4. methods for measuring deflection for pipes larger than thirty six (36) inches in diameter subject to City approval. Testing of mains thirty six (36) inches and larger shall occur at least 30 days after installation and backfill. Pipe with deflection exceeding the percentage allowed deflection per NCTCOG table 507.5.1.4.2(a) at the time of testing shall be uncovered and reinstalled. If deflection exceeds 7% at the time of testing, pipe shall be removed and replaced with new materials. All failed joints, pipes, sections or structures shall be retested upon completion of remedial actions. Failed sections shall be retested after the remedial construction has been in place for 30 days.
- 6.5. Air Testing: Mains less than thirty six (36) inches in diameter and laterals shall pass a Low Pressure Air Test per NCTCOG Standard Specifications for Public Works Construction. Item 507.5.1.3 Low Pressure Air Testing and TCEQ regulations 30 TAC Chapter 217.57(a)(1) Low Pressure Air Test Pipes 36-holes and larger may be tested per NCTCOG item 507.5.1.3. (individual joint air test metod). Testing of mains thirty six (36) inches and larger shall occur at least 30 days after installation and backfill. All failed joints, pipes, sections or structures shall be retested upon completion of remedial actions. Failed sections shall be retested after the remedial construction has been in place for 30 days.
- TV Camera Inspection: After the deflection mandrel and air pressure test, the contractor shall conduct a color television camera inspection of the interior of the installed sanitary sewer system. The main must be laced with enough water to fill any low points. A copy of the recording in digital format and storage device (DVD disk, flash drive, etc.) as specified by the City, with written log of the inspection, shall be provided to the Public Works Construction Inspector prior to final acceptance of the project.

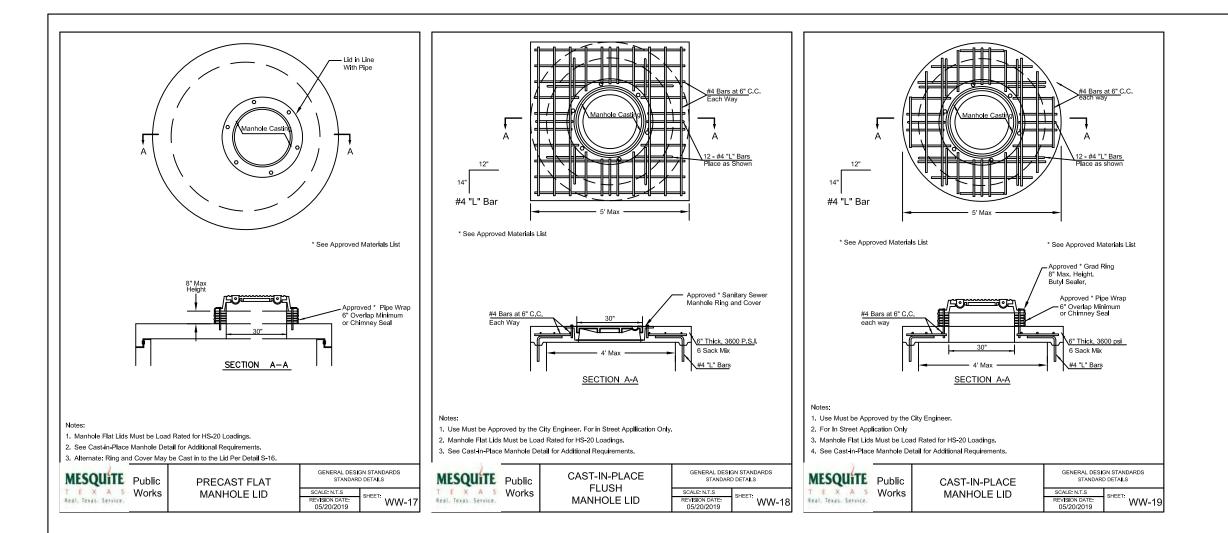
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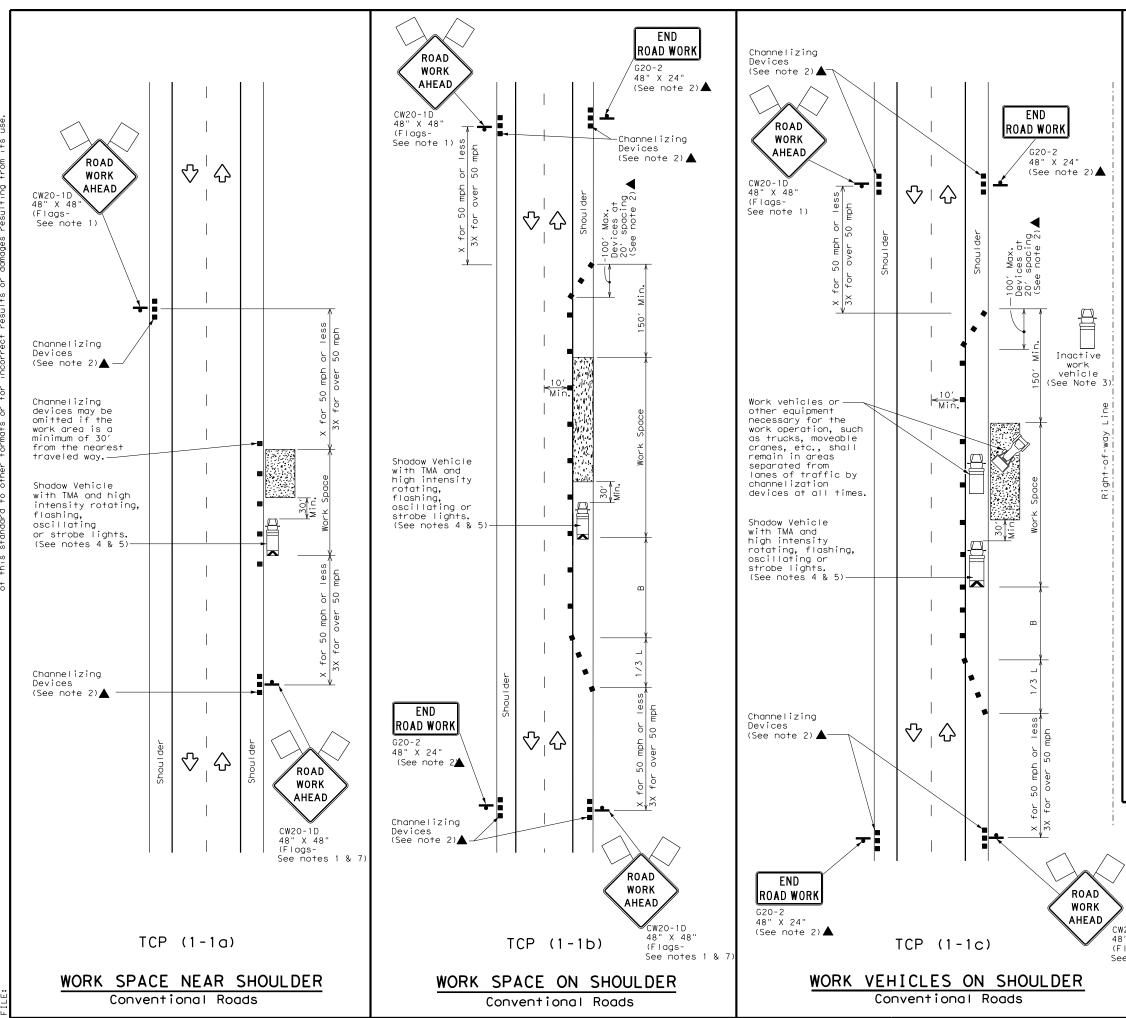




WASTEWATER - 4







DATE: FILE:

LEGEND							
<u>~~~~</u>	Type 3 Barricade		Channelizing Devices				
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)				
F	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)				
-	Sign	2	Traffic Flow				
\bigtriangleup	Flag	LO	Flagger				

Posted Speed	ed Formula Desirable Taper Lengths X X		Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X"	Suggested Longitudinal Buffer Space		
*		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	Distance	"B"
30		150′	165′	180′	30′	60′	120′	90′
35	$L = \frac{WS^2}{60}$	205′	225′	245′	35′	70′	160′	120′
40	60	265′	295′	320′	40′	80′	240′	155′
45		450′	495′	540′	45′	90′	320′	195′
50		500′	550'	600′	50′	100′	400′	240′
55	L=WS	550′	605 <i>′</i>	660′	55′	110′	500′	295′
60	L #3	600′	660'	720′	60′	120′	600′	350′
65		650′	715′	780′	65 <i>'</i>	130′	700′	410′
70		700′	770′	840′	70′	140′	800′	475′
75		750′	825′	900′	75′	150′	900′	540′

* Conventional Roads Only

XX Taper lengths have been rounded off.

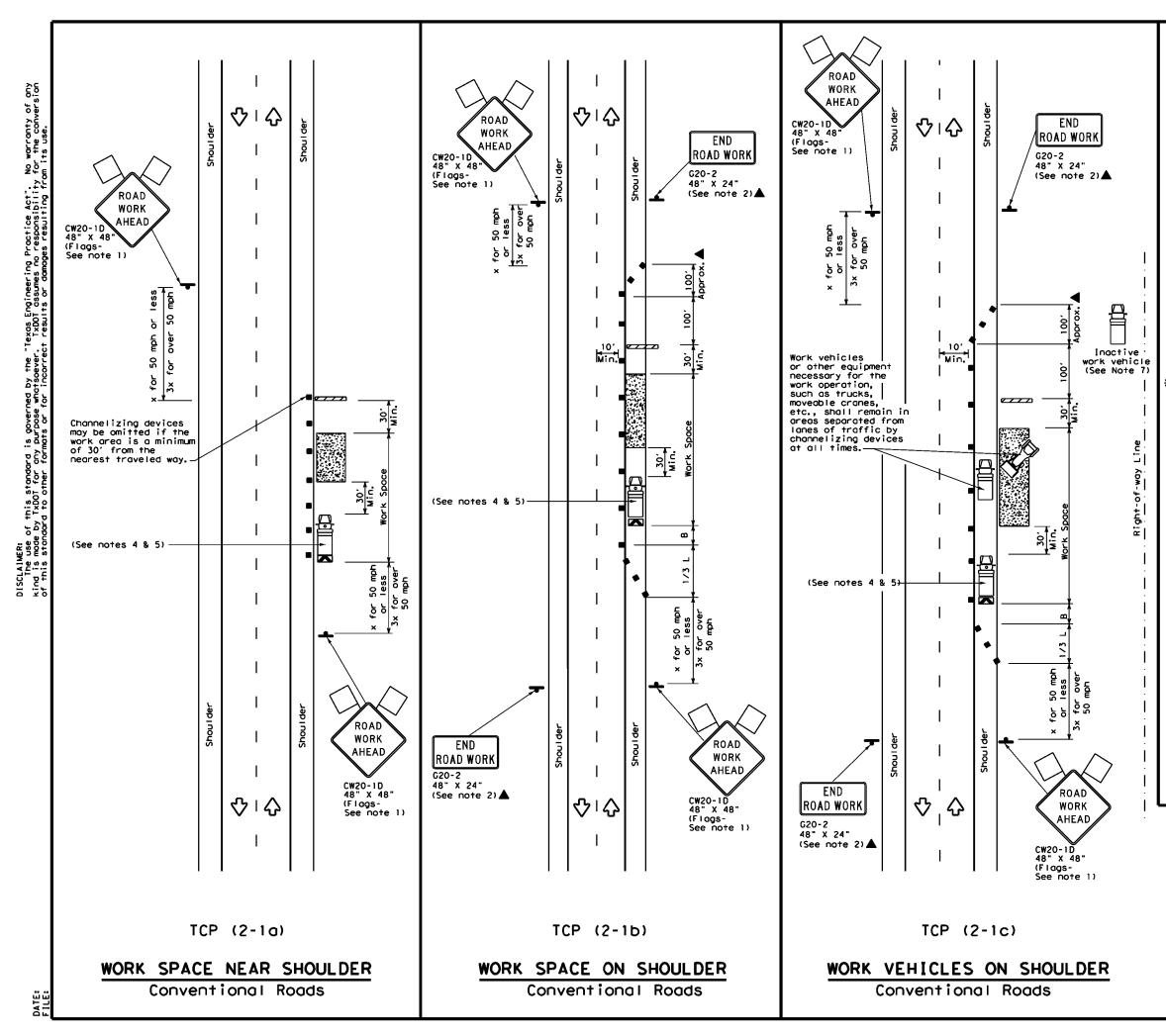
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

		TYPICAL U	JSAGE	
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	1	1		

GENERAL NOTES

- 1. Flags attached to signs where shown are REQUIRED.
- 2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
- 3. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
- 4. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
 See TCP(5-1) for shoulder work on divided highways, expressways and
- freeways. 7. CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D
- "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

	Texas Department	Traffic Operations Texas Department of Transportation Standard							
CW20-1D 48" X 48" (Flags-		TION		OAD K					
See notes 1 & 7)	FILE: tcp1-1-18.dgn	DN:	CK:	DW:	CK:				
	© TxDOT December 1985	CONT	SECT JOB		HIGHWAY				
	REVISIONS 2-94 4-98 8-95 2-12 1-97 2-18	DIST	COUNT	TY	SHEET NO.				
	151								



LEGEND						
<u></u>	Type 3 Barricade	••	Chonnelizing Devices			
₽	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)			
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)			
ł	Sign	\Diamond	Traffic Flow			
$\langle \lambda \rangle$	Flog	<u>ل</u>	Flagger			

Speed	osted Formula speed		Desirable Taper Lengths X X			d Maximum ng of lizing ices	Minimum Sign Spacing "x"	Suggested Longitudina Buffer Space
*		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	Distance	"В"
30		150'	165'	180'	30'	60'	120'	90'
35	$L = \frac{WS^2}{60}$	2051	225'	245'	35'	70'	160'	120'
40	60	265'	295'	320′	40′	80'	240'	155'
45		450'	495′	540'	45′	90′	320'	195'
50		500'	550'	600 <i>'</i>	50 <i>'</i>	100'	4001	240′
55	L=WS	550'	605 <i>'</i>	660ʻ	55'	110′	500 <i>°</i>	295'
60	L #3	600 <i>'</i>	660'	720'	60 <i>'</i>	120'	600'	350'
65		650 <i>'</i>	715'	780 <i>'</i>	651	130'	700′	410′
70		700'	770'	840′	70 <i>'</i>	140'	800'	475′
75		750'	825′	900'	75′	150'	900'	540'

* Conventional Roads Only

XX Taper lengths have been rounded off.

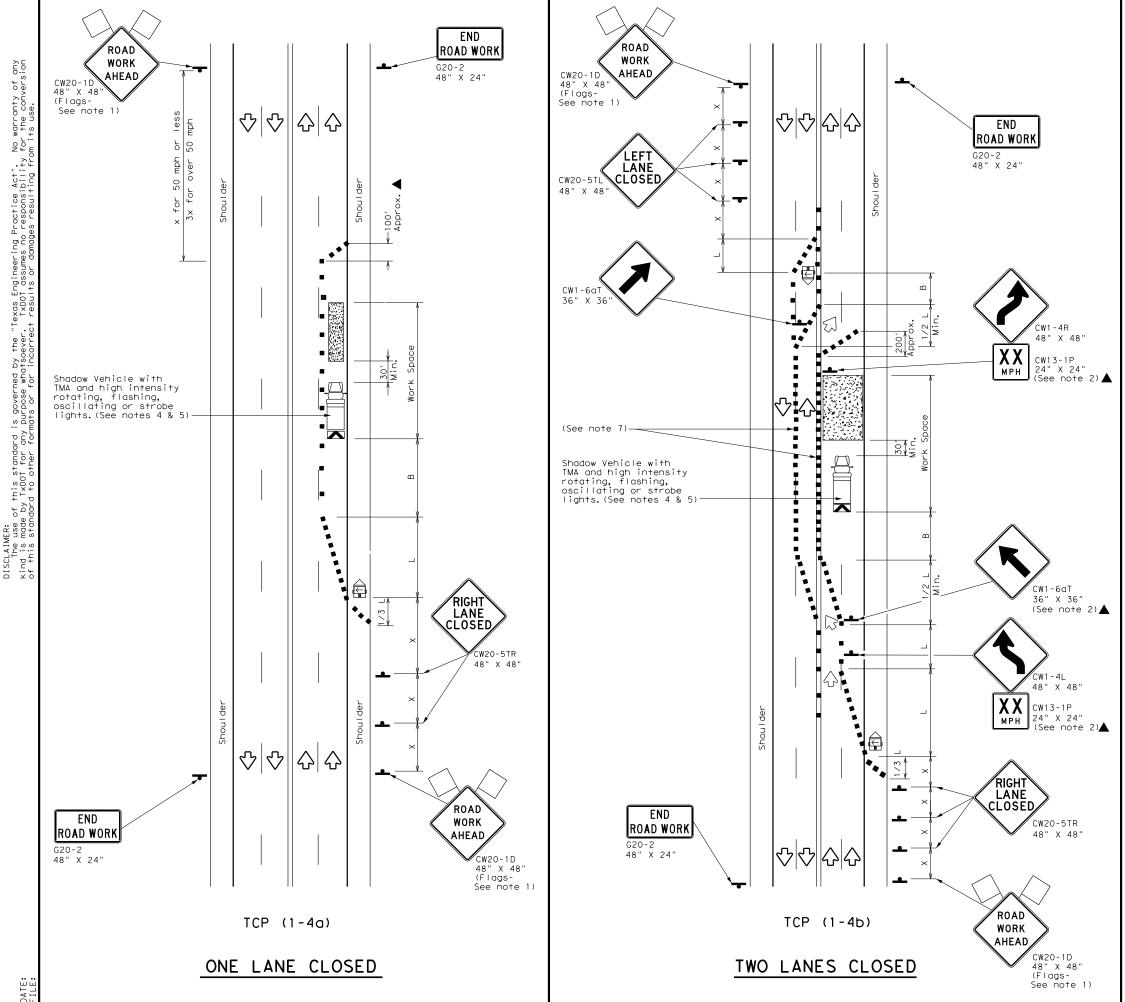
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE							
MOBILE	SHORT DURATION	SHORT TERM	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY			
	1	1	4	4			

GENERAL NOTES

- 1. Flags attached to signs where shown, are REQUIRED.
- All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated in the plans, or for routine maintenance work, when approved by the Engineer.
- 3. Stockpiled material should be placed a minimum of 30 feet from
- nearest traveled way.
 Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
 See TCP(5-1) for shoulder work on divided highways, expressways and
- freeways. 7. Inactive work vehicles or other equipment should be parked near the
- right-of-way line and not parked on the paved shoulder. 8. CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D
- "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.





LEGEND									
<u>~~~~</u>	Type 3 Barricade		Channelizing Devices						
p	Heavy Work Vehicle	Χ	Truck Mounted Attenuator (TMA)						
Ę	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)						
•	Sign	\Diamond	Traffic Flow						
\bigtriangleup	Flag		Flagger						

Posted Formula Speed		Desirable Taper Lengths X X			Špacir Channe		Minimum Sign Spacing "X"	Suggested Longitudinal Buffer Space
*		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	Distance	"B"
30	<u>ws²</u>	150′	165′	180′	30′	60′	120′	90′
35	$L = \frac{WS}{60}$	205′	225′	245′	35′	70′	160′	120′
40	60	265′	295′	320′	40′	80′	240′	155′
45		450′	495′	540′	45′	90′	320′	195′
50		500′	550′	600′	50′	100′	400′	240′
55	L=WS	550′	605′	660′	55′	110′	500 <i>1</i>	295′
60		600′	660′	720′	60′	120′	600′	350′
65		650′	715′	780′	65′	130′	700′	410′
70		700′	770′	840′	70′	140′	800′	475′
75		750′	825′	900′	75′	150′	900′	540′

X Conventional Roads Only

 \times Taper lengths have been rounded off.

L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE								
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY				
	1	1						

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.

- 2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer. 3. The CW20-1D "ROAD WORK AHEAD" sign may be repeated if the
- visibility of the work zone is less than 1500 feet.
- 4. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- 5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

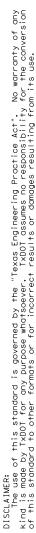
TCP (1-4a)

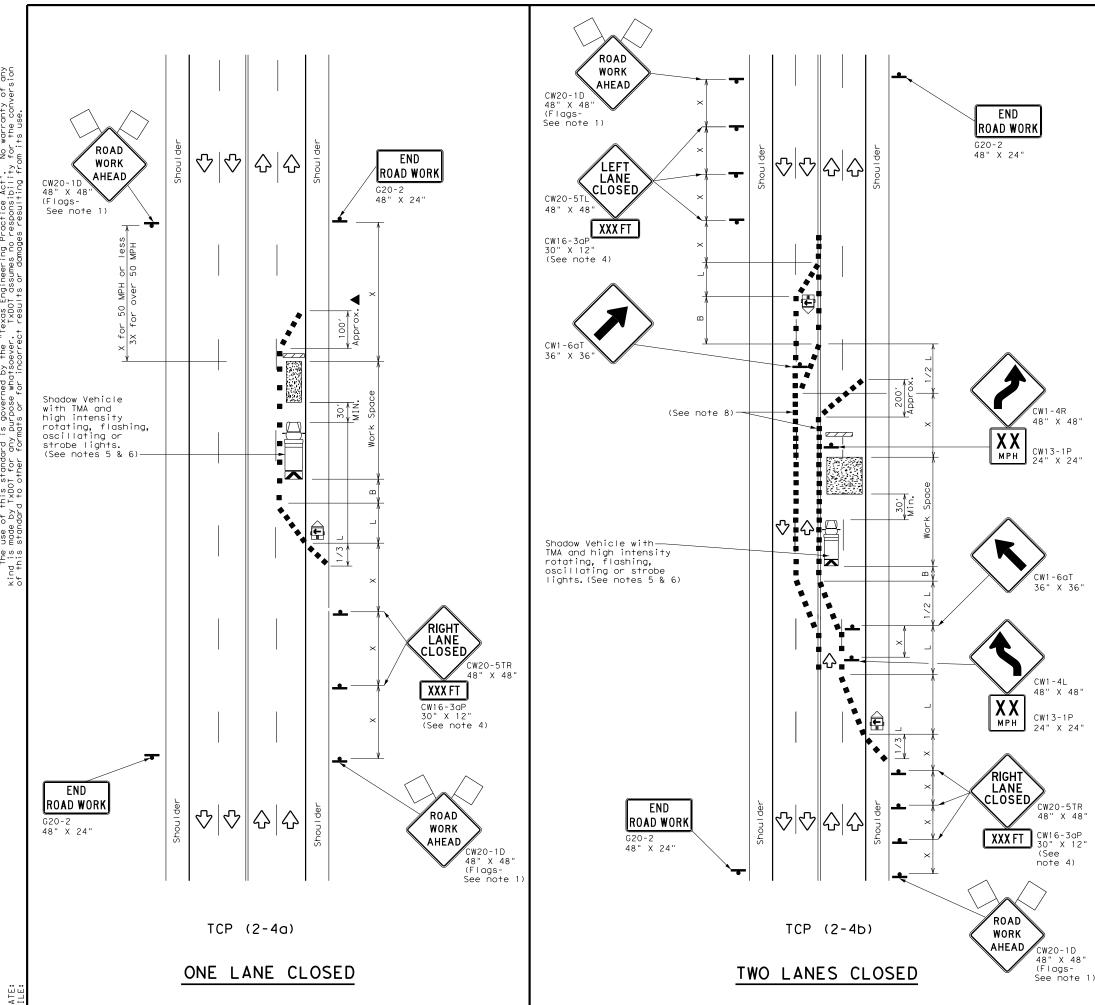
6. If this TCP is used for a left lane closure , CW20-5TL "LEFT LANE CLOSED" signs shall be used and channelizing devices shall be placed on the centerline where needed to protect the work space from opposing traffic with the arrow panel placed in the closed lane near the end of the merging taper.

TCP (1-4b)

7. Where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2S where S is the speed in mph. This tighter device spacing is intended for the areas of conflicting markings, not the entire work zone.

Traffic Operations Division Standard								
TRAFFIC CONTROL PLAN LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS								
TCP ((1 - 4	4) - 18						
FILE: tcp1-4-18. dgn	1 - 4	· •	w: ск:					
	DN:	· •						





1	LEGEND												
			T١	/pe 3	Barric	ade				Channe	lizing D	evices	
		þ	He	eavy W	ork Ve	hicle		Κ		Truck Mounted Attenuator (TMA)			
	(-1>		ailer Iashin	-d				ple Chang ge Sign (
		•	si	gn		$\langle \cdot \rangle$		Traff	ic Flow				
	<	\mathcal{A}	F	lag						er			
Post Spee		Formu	۱a	D	Minimum esirab er Leng X X	le		Suggested Maximum Spacing of Channelizing Devices		of zing	Minimum Sign Spacing "x"	Suggested Longitudinal Buffer Space	
×				10' Offset	11' Offset	12' Offset)n a aper	т	On a angent	Distance	"B"	
30)		.2	150′	165′	180′		30′		60 <i>′</i>	120′	90′	
35	;	L= <u>W</u>	5	2051	225′	245′		35′		70′	160′	120	'
40	1	00	,	265′	295′	320′		40′		80 <i>'</i>	240′	155	'
45				450 <i>'</i>	495′	540′		45′		90′	320′	195	′
50)			500′	550′	600′		50′		100′	400′	240	′
55		= W 3	~	550′	605′	660′		55′		110′	500′	295	'
60	,	L-W3		600′	660′	720′		60′		120′	600′	350	'
65				650′	715′	780′		65′		130′	700′	410	'
70				700′	770′	840′		70′		140′	800′	475	'
75				750′	825′	900′		75′		150′	900′	540	<i>,</i>

X Conventional Roads Only

XX Taper lengths have been rounded off.

L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE							
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY			
		1	1				

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.

2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.

3. The downstream taper is optional. When used, it should be 100 feet minimum length per lane.

4. For short term applications, when post mounted signs are not used, the distance legend may be shown on the sign face rather than on a CW16-3aP supplemental plaque.

5. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.

6. Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.

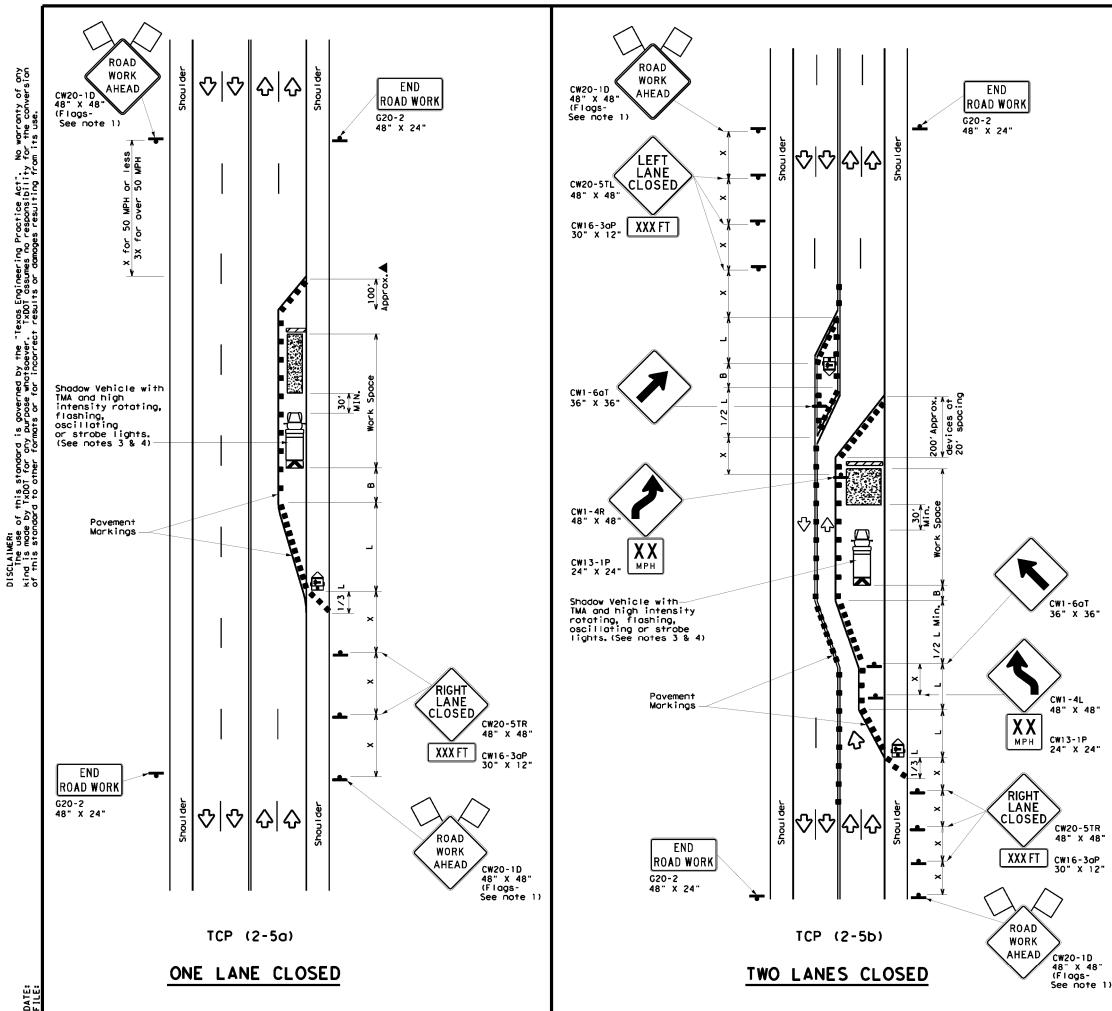
TCP (2-4a)

7. If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED" signs shall be used and channelizing devices shall be placed on the centerline to protect the work space from opposing traffic with the arrow board placed in the closed lane near the end of the merging taper.

TCP (2-4b)

8. For shorter durations where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2(S) where S is the speed in mph. This tighter devices spacing is intended for the area of conflicting markings, not the entire work zone.

Taffic Operations Division Standard							
TRAFFIC CONTROL PLAN							
LANE CLOSUF	RFS	O	N MU	II T	ΤΙ ΔΝΕ		
CONVENT	101	NA I	L RC)AC)S		
TCF)(2	- 4) - 1	8			
				-			
FILE: tcp2-4-18.dgn	DN:		CK:	DW:	CK:		
(C)TxDOT December 1985	CONT	SECT	JOB		HIGHWAY		
0							
REVISIONS							
<u> </u>	DIST		COUNTY		SHEET NO.		
8-95 3-03	DIST		COUNTY		SHEET NO.		



LEGEND									
<u>e</u>	Type 3 Barricade	••	Channelizing Devices						
₿	Heavy Work Vehicle	K	Truck Mounted Attenuator (TMA)						
Ê	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)						
4	Sign	\diamond	Traffic Flow						
5	Flag	ЦO	Flagger						

Speed	sted Formula beed X		**			d Maximum ng of lizing ices	Minimum Sign Spacing "x"	Suggested Longitudinal Buffer_Space
*		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	Distance	-6-
30		150'	1651	180'	30'	60 <i>'</i>	1201	90'
35	$L = \frac{WS^2}{60}$	205'	225'	245'	35′	70'	160'	120'
40	-00	265′	295'	320'	40′	80'	240′	155'
45		450′	495′	540'	45′	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55	L=WS	550'	605′	660'	55'	110'	500 <i>'</i>	295'
60	L-#J	600'	660'	720'	60 <i>'</i>	120'	600 <i>'</i>	350 <i>'</i>
65		650'	715′	780'	65 <i>'</i>	130'	700'	410′
70		700'	770'	840'	70'	140'	800'	475′
75		750'	825′	900′	75′	150'	900′	540 <i>′</i>

* Conventional Roads Only

XX Toper lengths have been rounded off.

L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

TYPICAL USAGE										
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY						

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.

- 2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer. 3. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew eposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other
- channelizing devices may be substitutued for the Shadow Vehicle and TMA. Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those
- shown in order to protect a wider work space. The downstream taper is optional. When used, it should be 100 feet 5. approximately per lane, with channelizing devices spaced at 20 feet.

TCP (2-5a)

If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED" 6. signs shall be used and channelizing devices shall be placed on the centerline to protect the work space from opposing traffic, with the arrow board placed in the closed lane near the end of the merging toper.

TCP (2-5b)

7. Conflicting pavement markings shall be removed for long-term projects.

