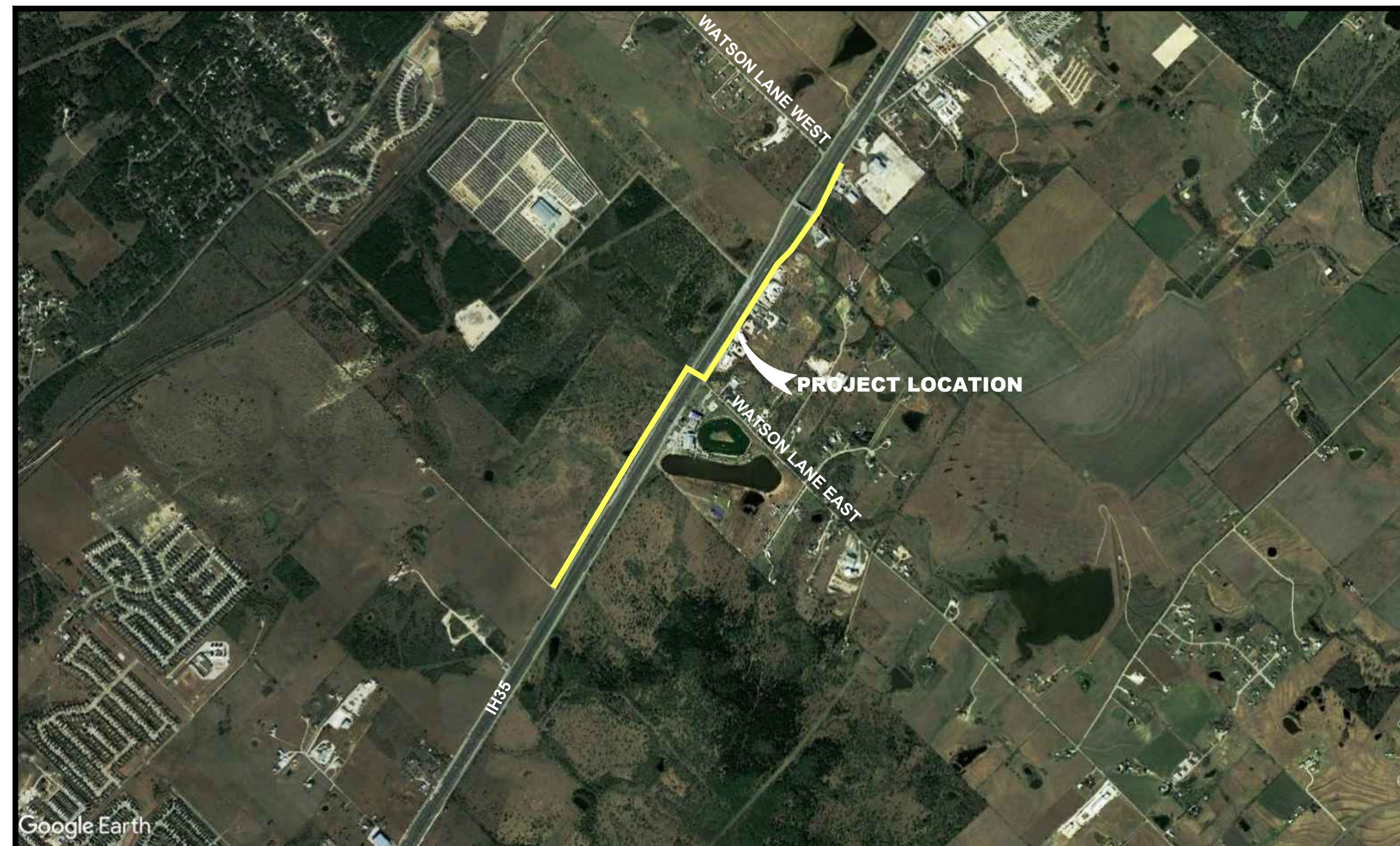


CRYSTAL CLEAR SPECIAL UTILITY DISTRICT

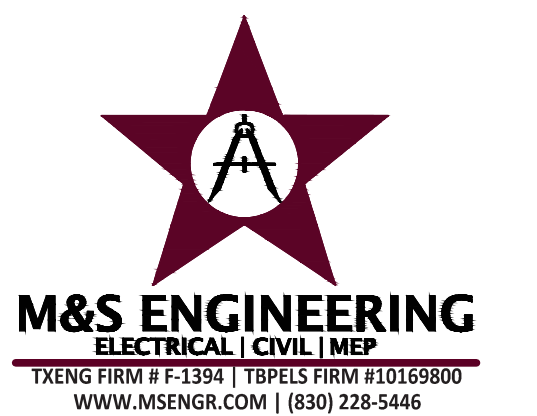
KYNDWOOD SUBDIVISION WATER MAIN EXTENSION COMAL COUNTY, TEXAS SEPTEMBER 2022



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D1.1	CONSTRUCTION DETAILS



VICINITY MAP



MAIN OFFICE

P.O. BOX 970
SPRING BRANCH,
TEXAS 78070
PHONE # (830) 228-5446
FAX # (830) 885-2170

BRANCH OFFICE

376 LANDA STREET
NEW BRAUNFELS,
TEXAS 78130

DATE DRAWN
JUNE 2022

SHEET
G0.0



GENERAL NOTES:

17. WHERE REMOVAL OF BASE AND PAVEMENT IS NECESSARY FOR THIS PROJECT, ALL BASE AND PAVEMENT SHALL BE REPLACED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS. ALL PAVEMENT UTILITY CUTS SHALL BE SAW CUT OR REMOVED TO THE NEAREST JOINT.
18. NO UTILITY TRENCHES OR PITS ARE TO BE LEFT OPEN OVERNIGHT. BACKFILLING WILL OCCUR DAILY AND AS SOON AS PRACTICAL FOLLOWING CONSTRUCTION OPERATIONS.
19. CONSTRUCTION OPERATIONS SHALL BE CONDUCTED IN SUCH A MANNER AS TO PROTECT ROADWAY FACILITIES AT ALL TIMES.
20. CONSTRUCTION STAKING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, USING DATA PROVIDED BY THE ENGINEER.

CRYSTAL CLEAR SPECIAL UTILITY DISTRICT (CCSUD) WATER MAIN NOTES

1. THE CONTRACTOR SHALL COORDINATE PRESSURE TESTING OF NEW WATER MAINS WITH OWNER AND ENGINEER AT LEAST TWO BUSINESS DAYS PRIOR. PRESSURE TESTING REQUIREMENTS ARE INCLUDED IN THE SPECIFICATIONS.
2. ALL WATER MAINS SHALL BE DISINFECTED PER AWWA AND TCEQ STANDARDS.
3. THE CONNECTION LOCATIONS LISTED IN THE PLANS ARE BASED ON BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL FIELD LOCATE EXISTING WATER MAIN LOCATIONS AT THE IN-TH-LOCATIONS TO VERIFY SIZE, ELEVATION, AND MATERIAL PRIOR TO ORDERING MATERIALS FOR CONNECTION.
4. THE CONTRACTOR SHALL MAINTAIN MINIMUM SEPARATION BETWEEN UTILITIES PER TCEQ STANDARDS.
5. WATER MAINS SHALL BE RESTRAINED WITH RESTRAINT LENGTHS OF FITTINGS SHOWN IN PLANS.
6. UNLESS OTHERWISE SPECIFIED, ALL PVC WATER MAINS SHALL BE C900/C905 DR 18, COLORED BLUE.
7. UNLESS OTHERWISE SPECIFIED, ALL DUCTILE IRON WATER MAINS SHALL BE PRESSURE CLASS 350 CONFORMING TO AWWA C150 AND AWWA C151 AND CEMENT LINED.
8. LOCATIONS OF COMBINATION AIR VALVES SHOWN ARE APPROXIMATE. INSTALL AIR RELEASE VALVES AT THE HIGH POINT IN THE WATER MAIN FOR THE LOCATIONS GIVEN.
9. THRUST BLOCKING IS REQUIRED AT ALL FITTINGS AND BENDS IN ACCORDANCE WITH THE THRUST BLOCKING DETAIL PROVIDED AND SPECIFICATION SECTION 02680 - JOINT RESTRAINTS AND THRUST BLOCKING.
10. CONSTRUCTION OF ALL CCSD WATER UTILITY INFRASTRUCTURE MUST ADHERE TO CCSD'S TECHNICAL SPECIFICATIONS, DETAILS AND APPROVED EQUIPMENT LIST.
11. THE OWNER SHALL SUPPLY ALL WATER NEEDED FOR CONSTRUCTION TESTING AND DISINFECTION. THE CONTRACTOR SHALL NOT BE REQUIRED TO PAY FOR THIS WATER.
12. UNLESS NOTED OTHERWISE, ALL WATER MAIN P.I.'S SHALL BE ACHIEVED USING THE WATER MAIN MANUFACTURER'S ALLOWABLE JOINT DEFLECTION.
13. WATER MAINS AND VALVES THAT ARE ABANDONED IN PLACE SHALL BE CUT AND PLUGGED PER SPECIFICATION SECTION 02500 - ABANDONMENT OF WATER INFRASTRUCTURE.
14. REMOVE ONLY VEGETATION, TREES, STUMPS, RUBBISH, AND OTHER MATERIAL NECESSARY FOR CONSTRUCTION AND DISPOSE OF OFF SITE.

STORMWATER POLLUTION PREVENTION PLAN NOTES:

11. DEFICIENCIES NOTED DURING THE INSPECTION WILL BE CORRECTED AND DOCUMENTED WITHIN SEVEN CALENDAR DAYS OR BEFORE THE NEXT ANTICIPATED STORM EVENT.
12. OFF-SITE MATERIAL STORAGE AREAS USED SOLELY BY THE PROJECT ARE CONSIDERED PART OF THE PROJECT.
13. MAINTAIN RECORDS OF PROJECT MILESTONE DATES AND FIELD CHANGES AS REQUIRED BY THE SWPPP.
14. PRIOR TO FINAL ACCEPTANCE BY CCSUD, HAUL ROADS AND WATERWAY CROSSINGS CONSTRUCTED FOR TEMPORARY CONTRACTOR ACCESS MUST BE REMOVED, ACCUMULATED SEDIMENT REMOVED FROM THE DITCH OR WATERWAY AND THE AREA RESTORED TO THE ORIGINAL GRADE AND REVEGETATED. ALL LAND CLEARING DEBRIS SHALL BE DISPOSED OF PROPERLY.
15. SOIL DISTURBANCES SHALL BE MINIMIZED BY EXPOSING ONLY THE SMALLEST PRACTICAL AREA OF LAND REQUIRED FOR THE CLEARING AND GRADING ACTIVITY AND FOR THE CONSTRUCTION ACTIVITY, FOR THE SHORTEST PRACTICAL PERIOD OF TIME.
16. MUD/DIRT INADVERTENTLY TRACKED OFF-SITE AND ONTO PUBLIC STREETS SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
17. ALL DISTURBED AREAS SHALL BE RESTORED PER SPECIFICATION SECTION 01700 "SITE RESTORATION".

GENERAL CONSTRUCTION NOTES:

13. THE CONTRACTOR SHALL LOCATE, PROTECT, AND MAINTAIN BENCHMARKS, MONUMENTS, AND CONTROL POINTS. RE-ESTABLISH DISTURBED OR DESTROYED ITEMS BY REGISTERED PUBLIC SURVEYOR IN THE STATE OF TEXAS AT NO ADDITIONAL COST TO OWNER.
14. EXISTING PAVING, BUILDING, AND OTHER ITEMS SHOWN ON THESE PLANS NOT SPECIFICALLY RELATED TO THE WORK OF THE CONTRACTOR IS FOR INFORMATION ONLY.
15. DEMOLITION PERMITS (IF NEEDED) ARE TO BE OBTAINED BY THE CONTRACTOR.
16. EXISTING SURFACE AND SUBSURFACE STRUCTURES (GAS MAINS, WATER MAINS, STORM SEWERS, TELEPHONE CABLES, ETC.) ARE SHOWN ON THE PLANS IF THEIR LOCATION HAS BEEN DETERMINED, BUT IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO AVOID DAMAGING THESE EXISTING STRUCTURES WHETHER OR NOT THEY ARE SHOWN ON THE PLANS. THE OWNER AND ENGINEER ASSUME NO RESPONSIBILITY FOR FAILURE TO SHOW ANY OR ALL OF THESE STRUCTURES ON THE PLANS OR TO SHOW THEM IN THEIR EXACT LOCATION. IF ANY STRUCTURE IS DAMAGED BY THE CONTRACTOR, IT SHALL BE HIS RESPONSIBILITY TO REPAIR THE DAMAGE AT HIS EXPENSE AND RESTORE THE STRUCTURE TO ITS ORIGINAL CONDITION.
17. THE ORIGINAL PLANS FOR THIS PROJECT WERE PREPARED ON FULL SIZE STANDARD SHEETS (22 INCH X 34 INCH). THE SPECIFIC SCALE FOR THE INDIVIDUAL UNITS WOULD BE TRUE ONLY ON THE ORIGINAL TRACING. REPRODUCED COPIES, REDUCTIONS OR OTHER METHODS OF PRINTING MAY CHANGE OR ALTER THE SCALE. THE ENGINEER IS NOT RESPONSIBLE FOR SCALE DIMENSIONS UTILIZED BY OTHERS ON THESE PLANS.
18. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY LOCATIONS, ELEVATIONS AND DIMENSIONS OF ADJACENT AND/OR CONFLICTING UTILITIES IN ADVANCE OF CONSTRUCTION IN ORDER THAT ADJUSTMENTS CAN BE MADE TO PROVIDE ADEQUATE CLEARANCE. IF REQUIRED THE CONTRACTOR SHALL PRESERVE AND PROTECT PUBLIC UTILITIES AT ALL TIMES DURING CONSTRUCTION. ANY DAMAGE TO UTILITIES RESULTING FROM THE CONTRACTORS OPERATIONS SHALL BE RESTORED AT HIS EXPENSE. THE ENGINEER SHALL BE NOTIFIED WHEN PROPOSED FACILITY GRADES CONFLICT WITH EXISTING UTILITY GRADES.
19. ALL CONCEPTS, IDEAS, DESIGNS, ARRANGEMENTS, AND PLANS INDICATED OR REPRESENTED BY THESE INSTRUMENTS, AS OUTLINED ON THE TITLE SHEET INDEX, AND BY ANY ADDENDUM ARE OWNED BY AND ARE THE PROPERTY OF M & S ENGINEERING, L.L.C. AND WERE CREATED AND DEVELOPED FOR THE USE, DESIGN AND IN CONNECTION WITH THE SPECIFIC PROJECT. THESE CONCEPTS, IDEAS, DESIGN, ARRANGEMENTS, OR PLANS SHALL NOT BE USED BY ANY PERSON, FIRM OR CORPORATION FOR ANY PURPOSE WHATSOEVER WITHOUT THE WRITTEN PERMISSION AND CONSENT OF M & S ENGINEERING, L.L.C. OF SPRING BRANCH, TEXAS.
20. A PRE-CONSTRUCTION CONFERENCE IS TO BE HELD PRIOR TO BEGINNING CONSTRUCTION. THE CONFERENCE SHALL TAKE PLACE AT A LOCATION SELECTED BY OWNER AND ENGINEER. CONTRACTOR TO ARRANGE A MEETING DATE WITH THE OWNER AT LEAST SEVEN DAYS PRIOR TO THE MEETING TIME.
21. CONTRACTOR SHALL NOTIFY THE TEXAS ONE CALL CENTER PRIOR TO ANY CONSTRUCTION.

TCEQ WATER DISTRIBUTION SYSTEM GENERAL CONSTRUCTION NOTES

- WHERE:
- Q = THE QUANTITY OF MAKEUP WATER IN GALLONS PER HOUR,
 - L = THE LENGTH OF THE PIPE SECTION BEING TESTED, IN FEET,
 - D = THE NOMINAL DIAMETER OF THE PIPE IN INCHES, AND
 - P = THE AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST IN POUNDS PER SQUARE INCH (PSI).
- THE HYDROSTATIC LEAKAGE RATE FOR DUCTILE IRON (DI) PIPE AND APPURTENANCES SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY FORMULAS IN AMERICA WATER WORKS ASSOCIATION (AWWA) C-600 AS REQUIRED IN 30 TAC §2900.44(A)(5). PLEASE ENSURE THAT THE FORMULA FOR THIS CALCULATION IS CORRECT AND MOST CURRENT FORMULA IS IN USE;
- WHERE:
- L = THE QUANTITY OF MAKEUP WATER IN GALLONS PER HOUR,
 - S = THE LENGTH OF THE PIPE SECTION BEING TESTED, IN FEET,
 - D = THE NOMINAL DIAMETER OF THE PIPE IN INCHES, AND
 - P = THE AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST IN POUNDS PER SQUARE INCH (PSI).
12. THE CONTRACTOR SHALL MAINTAIN A MINIMUM SEPARATION DISTANCE IN ALL DIRECTIONS OF NINE FEET BETWEEN THE PROPOSED WATERLINE AND WASTEWATER COLLECTION FACILITIES INCLUDING MANHOLES. IF THIS DISTANCE CANNOT BE MAINTAINED, THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE PROJECT ENGINEER FOR FURTHER DIRECTION. SEPARATION DISTANCES, INSTALLATION METHODS, AND MATERIALS UTILIZED MUST MEET §2900.44(E)(1)-(4).
13. THE SEPARATION DISTANCE FROM A POTABLE WATERLINE TO A WASTEWATER MAIN OR LATERAL, MANHOLE OR CLEANOUT SHALL BE A MINIMUM OF NINE FEET. WHERE THE NINE-FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE POTABLE WATERLINE SHALL BE ENCASED IN A JOINT OF AT LEAST 150 PSI PRESSURE CLASS PIPE AT LEAST 18 FEET LONG AND TWO NOMINAL SIZES LARGER THAN THE NEW CONVEYANCE. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE-FOOT INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. THE ENCASEMENT PIPE SHALL BE CENTERED ON THE CROSSING AND BOTH ENDS SEALED WITH CEMENT GROUT OR MANUFACTURED SEALANT [§2900.44(E)(5)].
14. FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OR HORIZONTALLY OF ANY WASTEWATER LINE, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE REGARDLESS OF CONSTRUCTION [§2900.44(E)(6)].
15. SUCION MAINS TO PUMPING EQUIPMENT SHALL NOT CROSS WASTEWATER MAINS, WASTEWATER LATERALS, OR WASTEWATER SERVICE LINES. RAW WATER SUPPLY LINES SHALL NOT BE INSTALLED WITHIN FIVE FEET OF ANY TILE OR CONCRETE WASTEWATER MAIN, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE [§2900.44(E)(7)].
16. WATERLINES SHALL NOT BE INSTALLED CLOSER THAN TEN FEET TO SEPTIC TANK DRAINFIELDS [§2900.44(E)(8)].
17. THE CONTRACTOR SHALL DISINFECT THE NEW WATERLINES IN ACCORDANCE WITH AWWA STANDARD C-651-14 OR MOST RECENT, THEN FLUSH AND SAMPLE THE LINES BEFORE BEING PLACED INTO SERVICE. SAMPLES SHALL BE COLLECTED FOR MICROBIOLOGICAL ANALYSIS TO CHECK THE EFFECTIVENESS OF THE DISINFECTION PROCEDURE WHICH SHALL BE REPEATED IF CONTAMINATION PERSISTS. A MINIMUM OF ONE SAMPLE FOR EACH 1,000 FEET OF COMPLETED WATERLINE WILL BE REQUIRED OR AT THE NEXT AVAILABLE SAMPLING POINT BEYOND 1,000 FEET AS DESIGNATED BY THE DESIGN ENGINEER [§2900.44(F)(3)].
18. DECHLORINATION OF DISINFECTING WATER SHALL BE IN STRICT ACCORDANCE WITH CURRENT AWWA STANDARD C-655-09 OR MOST RECENT.

ASBESTOS CEMENT (AC) PIPE CONTAINS ASBESTOS-CONTAINING MATERIAL (ACM) AND IS LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES, HEALTH AND SAFETY REQUIREMENTS ARE APPLICABLE WHEN HANDLING, REMOVING, AND DISPOSING OF THIS PIPE. PAYMENT FOR SUCH WORK IS TO BE MADE UNDER SECTION 02800 - HANDLING ASBESTOS CEMENT PIPE OF THESE PROJECT SPECIFICATIONS.

LEGEND:

W 12"	PROP 12" C900 PVC WATER LINE
W 16"	PROP 16" C900 PVC WATER LINE
	PROP 2" C900 PVC WATER LINE
	PROP WATER METER
	PROP GATE VALVE
	PROP 90° BEND
	PROP 45° BEND
	PROP TEE
	PROP REDUCER
	PROP CUT AND PLUG
	PROP COMBINATION AIR VALVE
	PROP FLUSH VALVE
	PROP FIRE HYDRANT
	PROP ENCASED PIPE
	PROP OPEN CUT / REPAIR
	PROP SLICK BORE
	PROP BORE & RECEIVING PITS
	ENTIRE LENGTH OF PIPE TO BE RESTRAINED
	LENGTH OF PIPE TO BE RESTRAINED
	PROP AIR RELEASE VALVE
	EXIST LOT LINE
	EXIST APPARENT ROW
	EXIST EDGE OF PAVEMENT
	EXIST UTILITY EASEMENT
	EXIST OVERHEAD POWER
	EXIST 8" PVC WATER MAIN
	EXIST 6" AC WATER MAIN
	EXIST WASTEWATER LINE
	EXIST GAS LINE
	EXIST FIBER OPTIC LINE
	EXIST TELEPHONE LINE
	EXIST BARBED WIRE FENCE
	EXIST CHAIN LINK FENCE
	EXIST WOOD FENCE
	EXIST PIPE/STEEL FENCE
	EXIST ELECTRIC FENCE
	EXIST MINOR CONTOUR LINE
	EXIST MAJOR CONTOUR LINE
	EXIST GATE VALVE
	EXIST BENCH MARK
	EXIST 1/2" IRON PIN FOUND (UNLESS NOTED)
	EXIST CONCRETE MONUMENT
	EXIST CONTROL POINT
	EXIST POWER POLE
	EXIST GUY WIRE
	EXIST MAILBOX
	EXIST FIRE HYDRANT
	EXIST WATER METER
	EXIST GAS METER
	EXIST MARKER-UNDERGROUND TELEPHONE
	EXIST WATER SPIGOT
	EXIST ELECTRICAL BOX
	EXIST TELEPHONE PEDESTAL
	EXIST ELECTRIC MANHOLE
	EXIST WATER MANHOLE
	EXIST WASTEWATER MANHOLE
1110	EXIST LOT NUMBER
	EXIST TREE
	EXIST GRAVEL
	EXIST ASPHALT PARKING
	EXIST CONCRETE STRUCTURE

KYNDWOOD SUBDIVISION WATER MAIN EXTENSION

JOB: 14CCSUD001

DATE: AUGUST 2022

DRAWN: KJV | PM:

DESIGN: CB | DM:

PEER: OTHI

REVISIONS

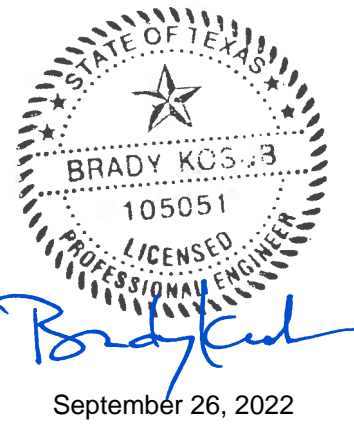
DELTA	DESCRIPTION
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CONCLUSIONS

G.I.C.

1000

Crystal Clear Special Utility District			
Kyndwood Subdivision Water Main Extension			
Item No.	Description	Unit	Estimated Quantity
1	Mobilize to the site / demobilize from the site and cleanup	LS	1
2	Furnish and install 2-inch water main (Sch. 40) by open trench method	LF	20
3	Furnish and install 12-inch C900 (DR 18) PVC water main by open trench method	LF	6195
4	Furnish and install 12-inch Certa-Lok C900/RJ (DR 18) water main in 24-inch HDPE casing by slick bore method	LF	740
5	Furnish and install 12-inch Certa-Lok C900/RJ (DR 18) water main in 24-inch steel casing by jack and bore method	LF	300
6	Furnish and install 12-inch Certa-Lok C900/RJ (DR 18) water main in 24-inch HDPE (DR 21) casing by open trench method	LF	40
7	Furnish and install 16-inch C900 (DR 18) PVC water main by open trench method	LF	767
8	Furnish and install 16-inch C900 (DR 18) PVC water main by slick bore method in 30-inch HDPE (DR 21) casing	LF	40
9	Furnish and install 12-inch gate valve with box	EA	21
10	Furnish and install 16-inch gate valve with box	EA	5
11	Furnish and install 2-inch combination air release valve assembly	EA	2
12	Furnish and install fire hydrant assembly	EA	7
13	Furnish and install 2-inch temporary flush valve	EA	1
14	Furnish and install pipe fittings	TON	2
15	Furnish and reconnect short service lines	EA	11
16	Open cut and repair existing gravel driveway	SY	23
17	Open cut and repair existing asphalt driveway	SY	111
18	Furnish and install 12" tapping sleeve and valve	EA	1
19	Furnish and install water main connection (proposed 12-inch water main to existing 12-inch water main)	EA	1
20	Furnish and install water main connection (proposed 16-inch water main to existing 12-inch water main)	EA	1



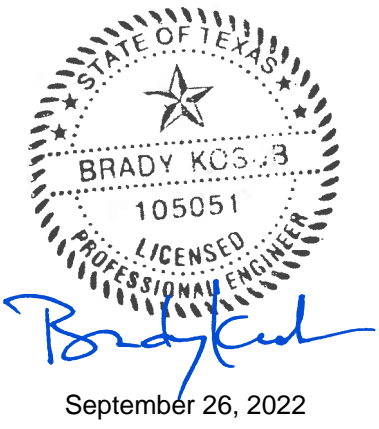
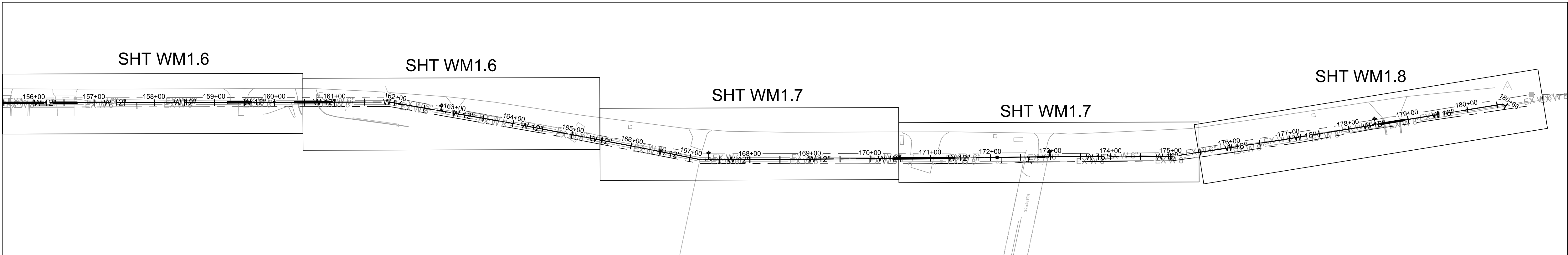
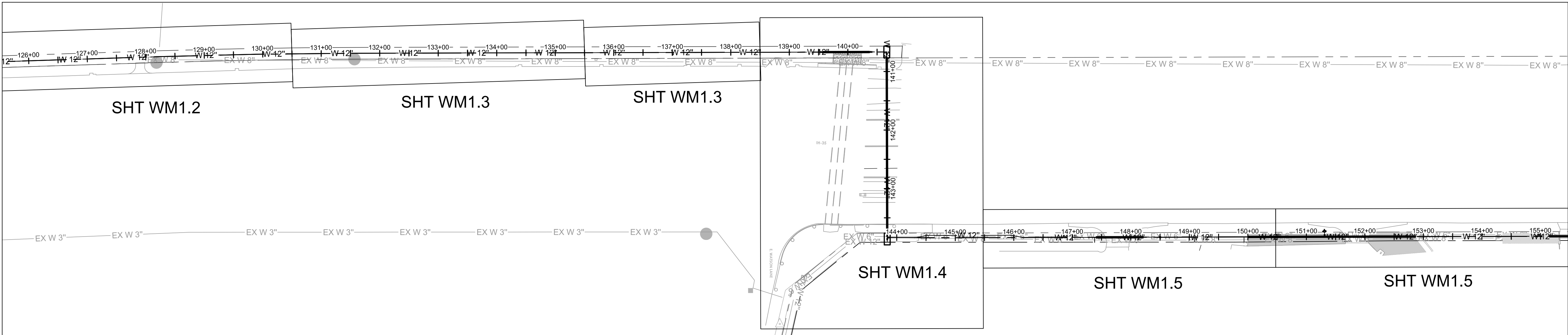
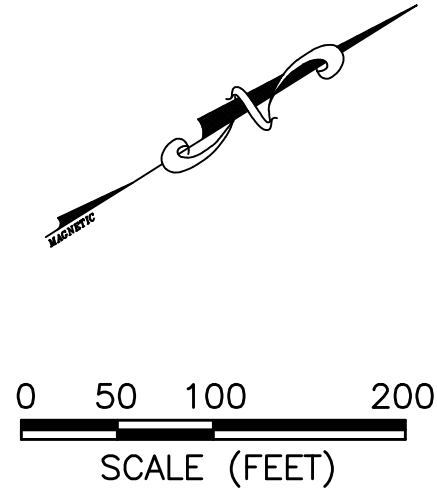
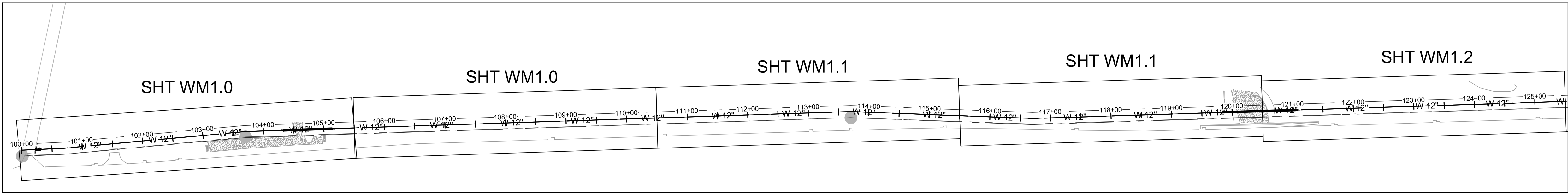
KYNDWOOD SUBDIVISION WATER
MAIN EXTENSION

CONSTRUCTION MATERIAL
QUANTITY ESTIMATES

OBJ: 14CCSUD001		
DATE: AUGUST 2022		
DRAWN: KJV	PM:	CR
DESIGN: CB	DM:	BR
PEER:	OTHER:	
REVISIONS:		
DELTA	DESCRIPTION	DATE

SHEET:

G1.1



KYNDWOOD SUBDIVISION WATER
MAIN EXTENSION

KEY MAP

JOB: 14CCSUD001		
DATE: AUGUST 2022		
DRAWN: KJV	PM:	CP
DESIGN: CB	DM:	BK
PEER:	OTHER:	
REVISIONS:		
DELTA	DESCRIPTION	DATE

SHEET:

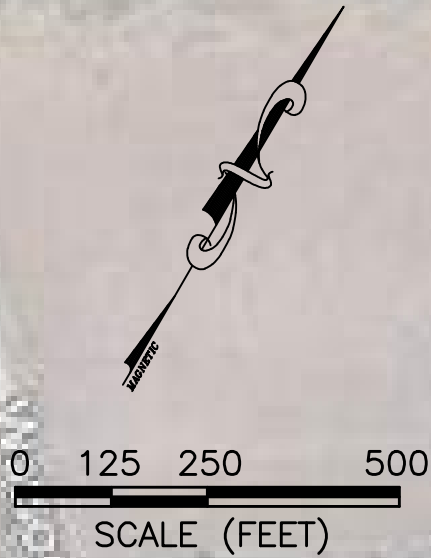
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Date: Sep 26, 2022, 9:28am User: D. Kogler
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PI Station	Northing	Easting	Distance	Direction
100+00.00	13826023.68	2270757.65		
			23.589'	N30° 03' 12.07"E
100+23.59	13826044.10	2270769.46		
			45.467'	N29° 37' 13.80"E
100+69.06	13826083.63	2270791.93		
			301.068'	N27° 01' 22.99"E
103+70.12	13826351.82	2270928.72		
			1,000.197'	N30° 23' 27.83"E
113+70.32	13827214.59	2271434.72		
			299.769'	N34° 27' 45.90"E
116+70.09	13827461.75	2271604.35		
			1,317.188'	N30° 26' 48.13"E
129+87.28	13828597.29	2272271.82		
			1,079.251'	N32° 08' 02.45"E
140+66.50	13829511.21	2272845.87		
			317.120'	S57° 51' 42.92"E
143+83.62	13829342.52	2273114.40		
			105.857'	N32° 27' 52.49"E
144+89.48	13829431.83	2273171.22		
			146.264'	N32° 05' 15.24"E
146+35.75	13829555.75	2273248.92		
			265.004'	N32° 09' 30.22"E
149+00.75	13829780.10	2273389.97		
			195.692'	N32° 05' 53.39"E
150+96.44	13829945.87	2273493.96		
			314.464'	N32° 10' 33.56"E
154+10.91	13830212.04	2273661.41		
			368.901'	N32° 07' 29.09"E
157+79.81	13830524.46	2273857.58		
			238.046'	N32° 11' 47.61"E
160+17.85	13830725.90	2273984.42		
			97.527'	N32° 10' 35.46"E
161+15.38	13830808.45	2274036.36		
			76.259'	N32° 10' 33.84"E
161+91.64	13830873.00	2274076.97		
			204.818'	N42° 06' 39.46"E
163+96.46	13831024.94	2274214.31		
			230.253'	N43° 04' 25.28"E
166+26.71	13831193.14	2274371.56		
			91.181'	N43° 36' 21.26"E
167+17.89	13831259.16	2274434.45		
			134.583'	N32° 07' 22.26"E
168+52.48	13831373.14	2274506.01		
			315.081'	N31° 46' 52.53"E
171+67.56	13831640.98	2274671.96		
			84.585'	N31° 28' 56.71"E
172+52.14	13831713.11	2274716.13		
			49.219'	N31° 23' 42.93"E
173+01.36	13831755.13	2274741.77		
			138.748'	N32° 21' 54.96"E
174+40.11	13831872.32	2274816.04		
			61.710'	N31° 44' 23.47"E
175+01.82	13831924.80	2274848.51		
			181.607'	N23° 44' 31.46"E
176+83.42	13832091.04	2274921.62		
			309.179'	N23° 02' 42.05"E
179+92.60	13832375.54	2275042.65		
			67.047'	N23° 03' 37.97"E
180+59.65	13832437.23	2275068.92		
			6.109'	N67° 27' 57.95"E
180+65.76	13832439.57	2275074.56		

POINT NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP #1	13829108.46	2273141.11	619.93	SET IRON ROD
CP #2	13832458.98	2275048.74	671.88	MAG W/ WASHER
BM #50	13829097.54	2273068.44	619.12	COTTON SPINDLE IN PP
BM #50	13832475.43	2275078.62	671.21	SPINDLE IN PP
BM #52	13829401.82	2272799.16	619.97	SQUARE ON HEADWALL



M&S ENGINEERING

ELECTRICAL | CIVIL | MEP

TXENG FIRM # F-1394 | TPBELS FIRM #10169800

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STATE OF TEXAS

BRADY K.C.S., P.E.

105051

LICENSED PROFESSIONAL ENGINEER

September 26, 2022

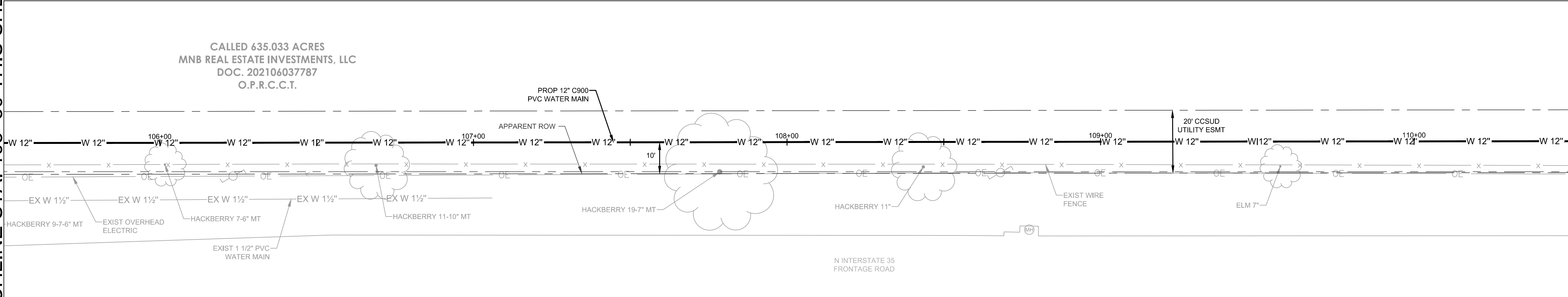
KYNDWOOD SUBDIVISION WATER
MAIN EXTENSION

CONTROL POINTS AND
ALIGNMENT DATA

JOB: 14CCSUD001
DATE: AUGUST 2022
DRAWN: KJV PM: CP
DESIGN: CB DM: BK
PEER: OTHER:
REVISIONS:
DELTA DESCRIPTION DATE

Date: Sep 26, 2022 9:29am User: D. Kogler
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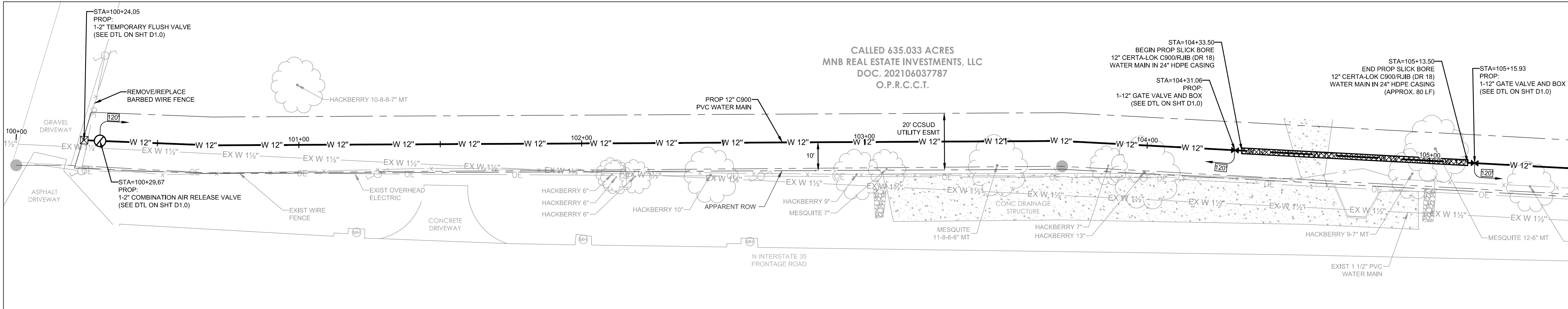
MATCHLINE STA. 105+50 THIS SHEET



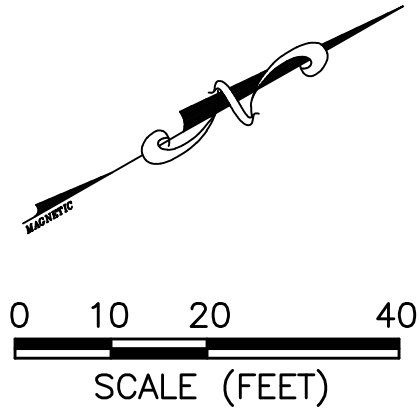
- NOTES:
- REFER TO SHEET G1.0 REGARDING EXISTING UTILITIES.

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTORS INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS, AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.



MATCHLINE STA. 105+50 THIS SHEET



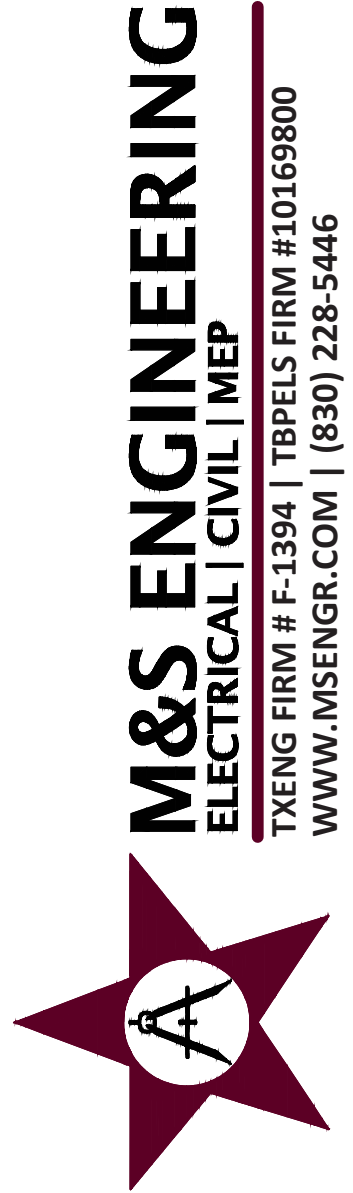
KYNDWOOD SUBDIVISION WATER
MAIN EXTENSION

WATERLINE PLAN STA. 100+00
TO STA. 110+50

JOB: 14CCSUD001
DATE: AUGUST 2022
DRAWN: KJV PM: CP
DESIGN: CB DM: BK
PEER:
OTHER:
REVISIONS:
DELTA DESCRIPTION DATE

SHEET:

WM1.0

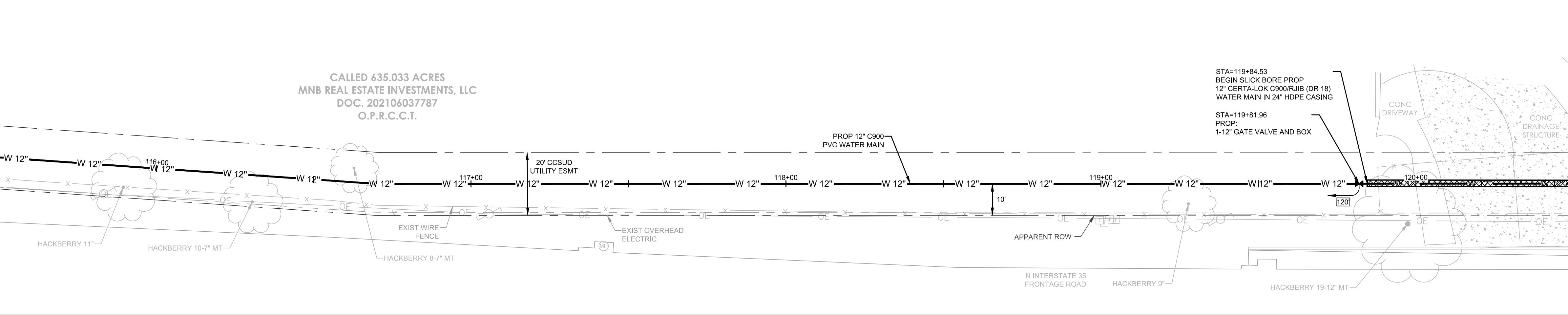


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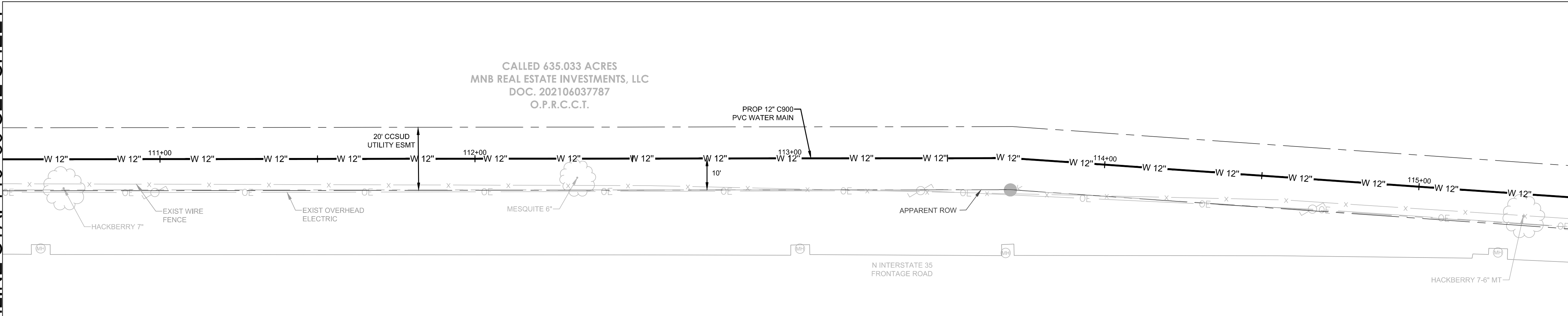
Date: Sep 26, 2022 9:29am User: D. Kogler
File: S:\Active Projects\14CCSUD001 - General Engineering Services\2021-10 Kyndwood WL.dwg\14CCSUD001-KV WATER MAIN-002.dwg

MATCHLINE STA. 115+50 THIS SHEET

MATCHLINE STA. 110+50 SEE SHEET WM1.0



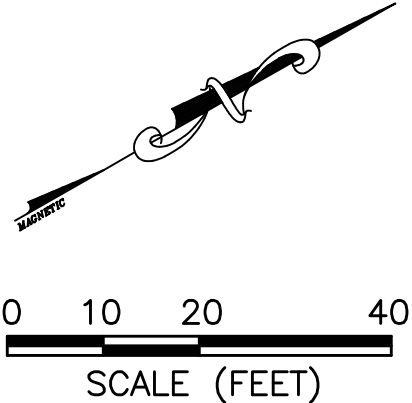
MATCHLINE STA. 120+50 SEE SHEET WM1.2



MATCHLINE STA. 115+50 THIS SHEET

NOTES:
1. REFER TO SHEET G1.0 REGARDING EXISTING UTILITIES.

TRENCH EXCAVATION SAFETY PROTECTION
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS, AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.



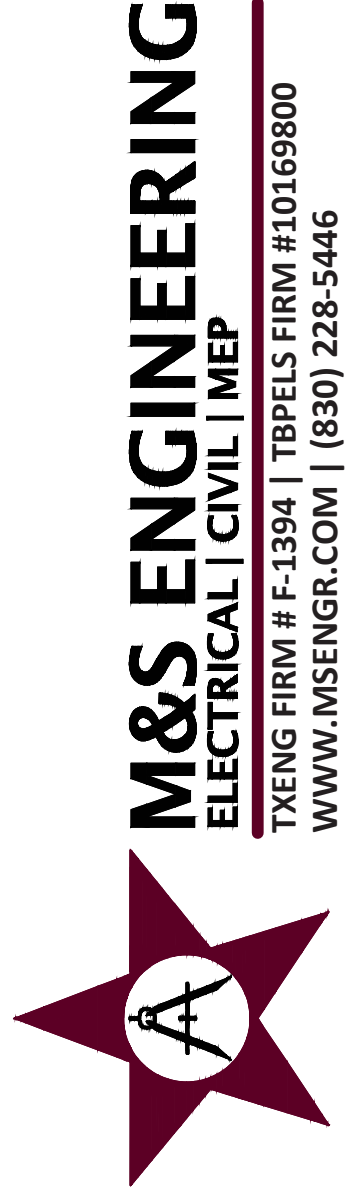
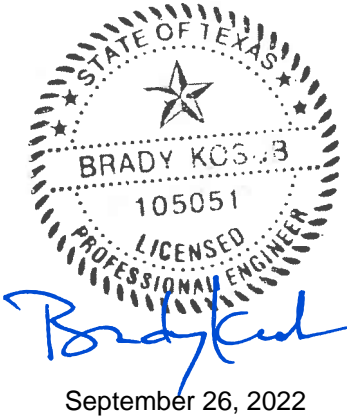
KYNDWOOD SUBDIVISION WATER MAIN EXTENSION

WATERLINE PLAN STA. 110+50 TO STA. 120+50

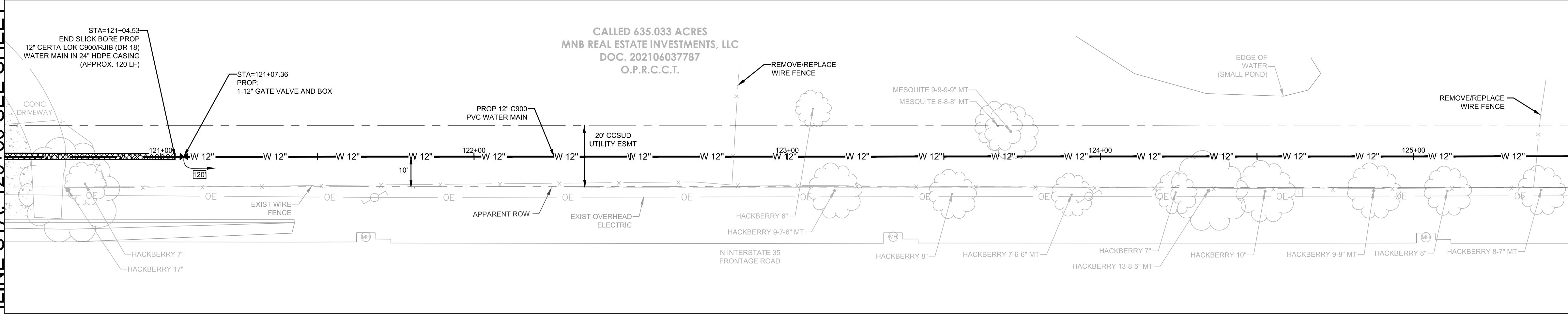
JOB: 14CCSUD001		
DATE: AUGUST 2022		
DRAWN: KJV	PM:	CP
DESIGN: CB	DM:	BK
PEER:	OTHER:	
REVISIONS:		
DELTA	DESCRIPTION	DATE

SHEET:

WM1.1



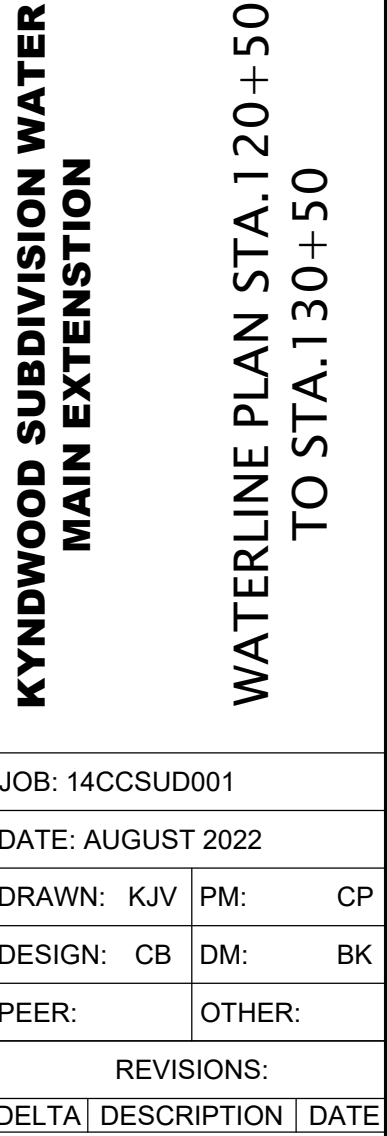
MATCHLINE STA. 120+50 SEE SHEET WM1.1



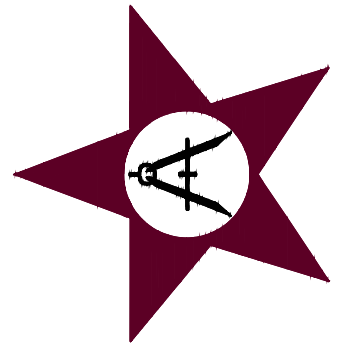
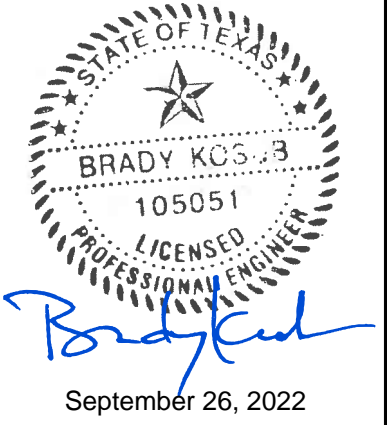
TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL ENGINEER/GEOTECHNICAL/SAFETY EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION OF THE PROJECT AND THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION PROGRAMS, METHODS, AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS AND REGULATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED ENGINEER/GEOTECHNICAL SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF OVERHEAD POWER LINES IN AND AROUND TRENCH EXCAVATION.

★ Tova 811



WM1.2

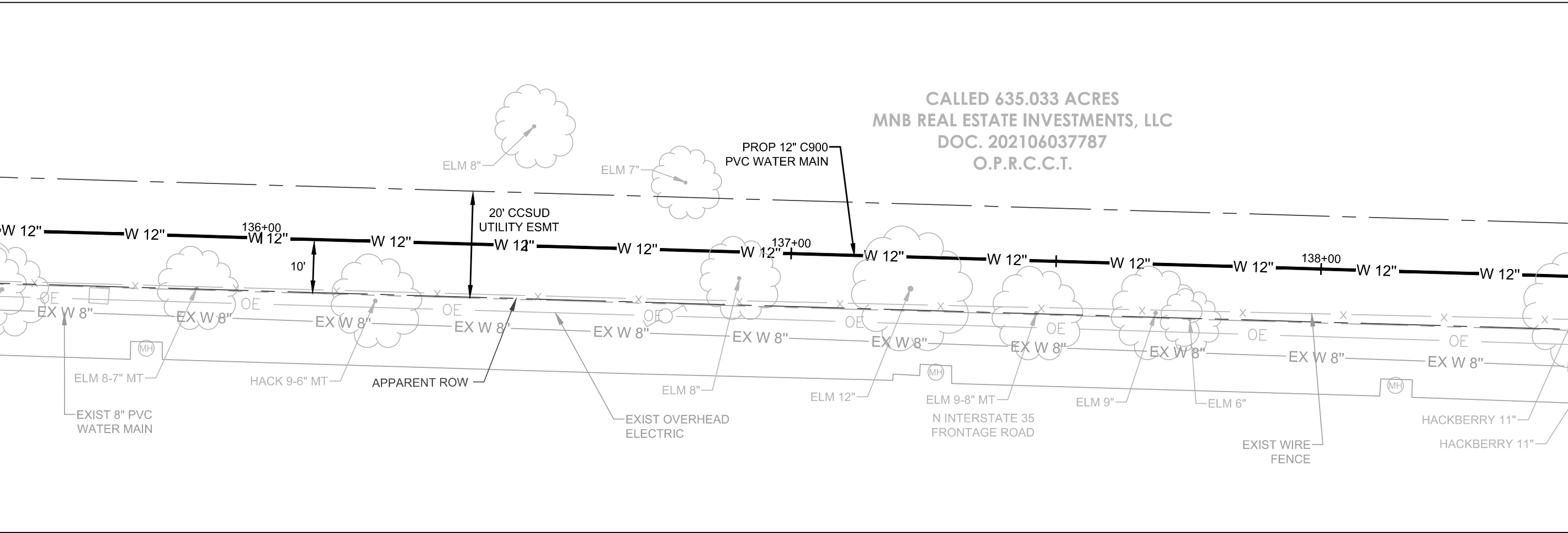


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TXENG FIRM # F-1394 | TBPELS FIRM #10169800
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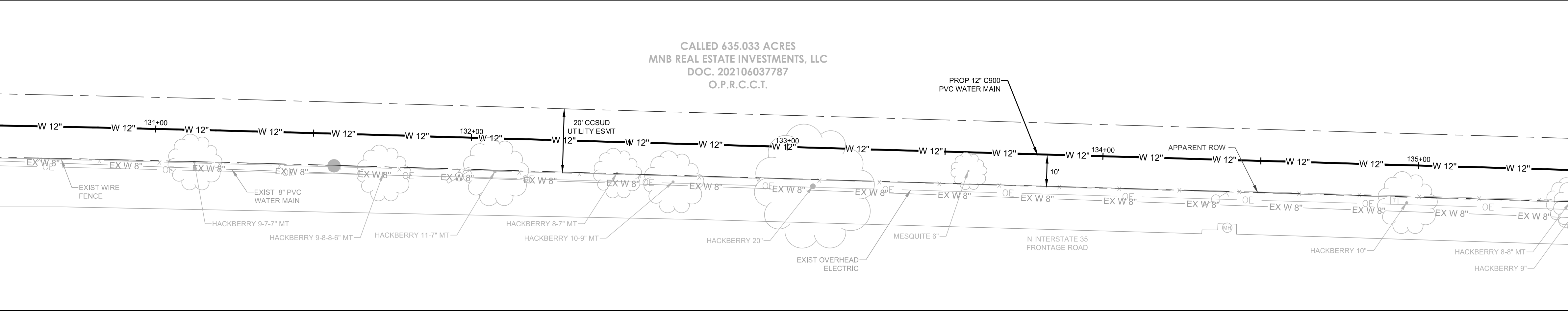
Date: Sep 26, 2022 9:30am User: D. Kogler
File: S:\Active Projects\14CCSSUD001 - General Engineering Services\2021-10 Kyndwood WL.dwg\14CCSSUD001-KW WATER MAIN-004.dwg

MATCHLINE STA. 135+50 THIS SHEET

MATCHLINE STA. 130+50 SEE SHEET WM1.2



MATCHLINE STA. 138+50 SEE SHEET WM1.4

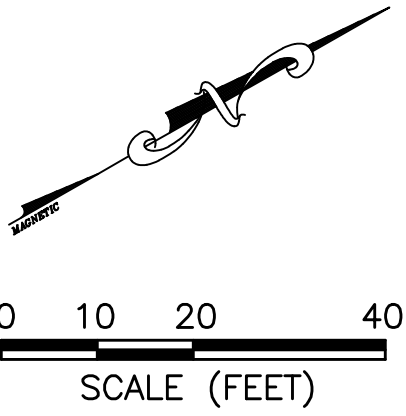


MATCHLINE STA. 135+50 THIS SHEET

- NOTES:
1. REFER TO SHEET G1.0 REGARDING EXISTING UTILITIES.

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS, AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

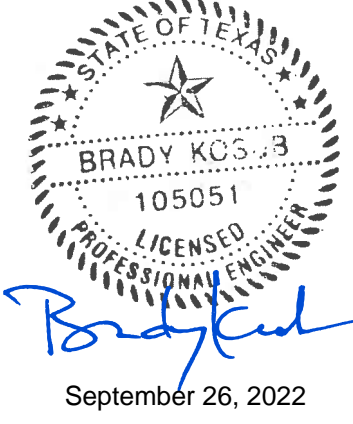


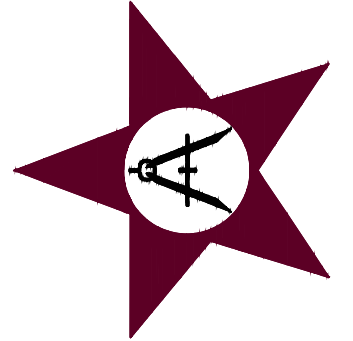
KYNDWOOD SUBDIVISION WATER
MAIN EXTENSION

JOB: 14CCSUD001		
DATE: AUGUST 2022		
DRAWN: KJV	PM:	CP
DESIGN: CB	DM:	BK
PEER:	OTHER:	
REVISIONS:		
DELTA	DESCRIPTION	DATE

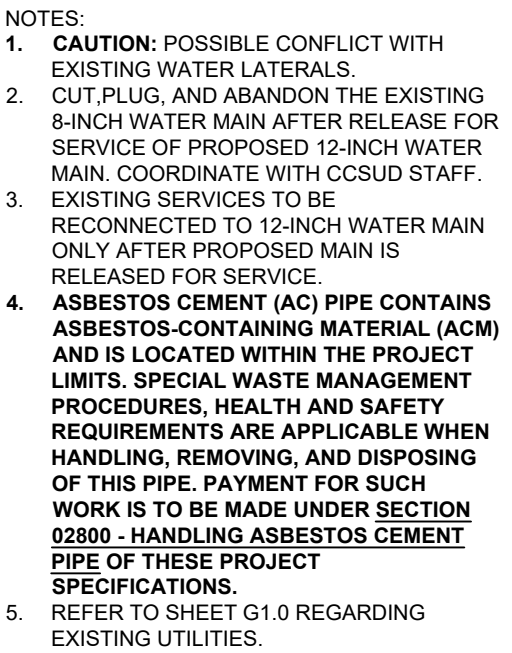
SHEET:

WM1.3





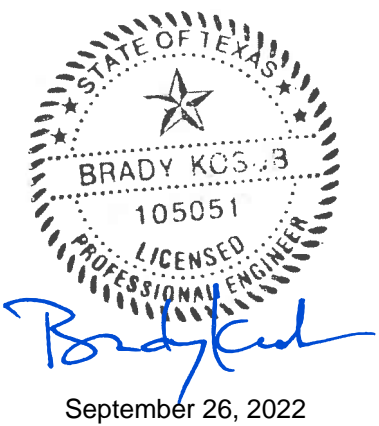
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TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY EQUIPMENT SPECIALIST, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION OF THE TRENCH AND SUBJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION PROGRAMS, AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE PROTECTIVE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA TRENCH EXCAVATION REGULATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL PROVIDE TRENCH EXCAVATION SAFETY PROTECTION IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF PERSONNEL WORKING IN AND AROUND TRENCH EXCAVATION.

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**KYNDWOOD SUBDIVISION WATER
MAIN EXTENSION**

WATERLINE PLAN STA. 138+50
TO STA. 145+50

JOB: 14CCSUD001

DATE: AUGUST 2022

DRAWN: KJV | PM: CP

DESIGN: CB | DM: BK

PEER: OTHER:

REVISIONS:

DELTA	DESCRIPTION	DATE
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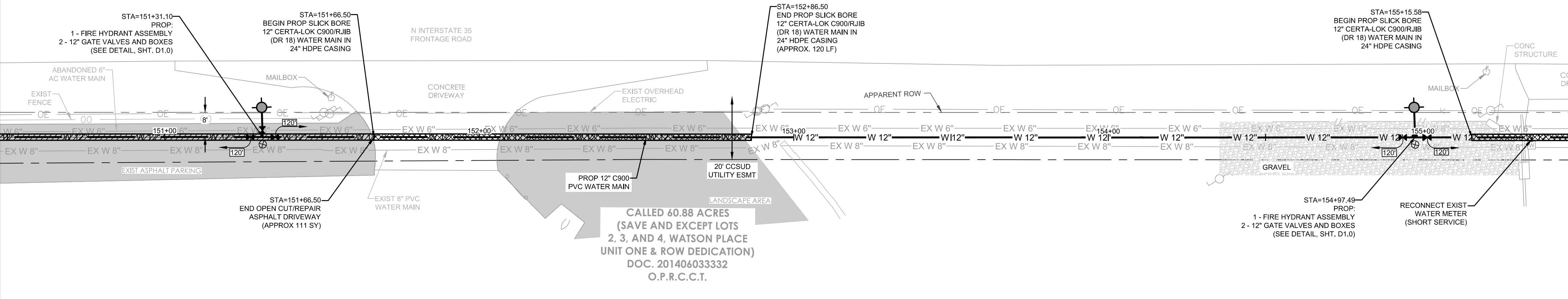
WM1.4

★ Tova 811

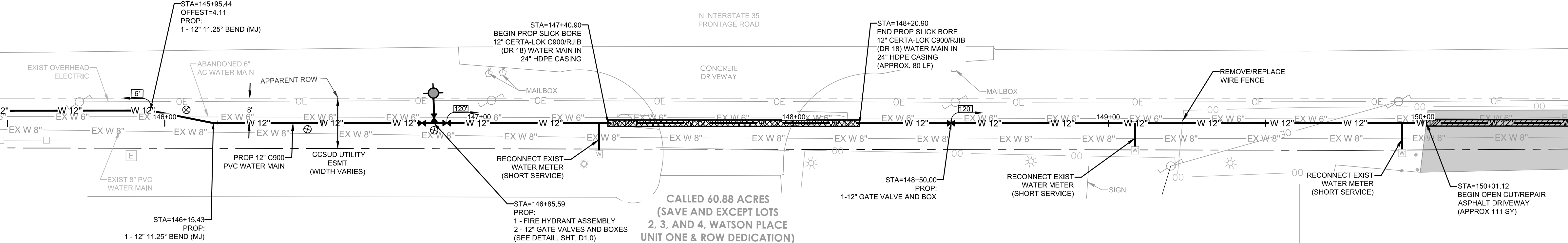
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MATCHLINE STA. 150+50 THIS SHEET

MATCHLINE STA. 145+50 SHEET WM1.4



MATCHLINE STA. 155+50 SHEET WM1.6

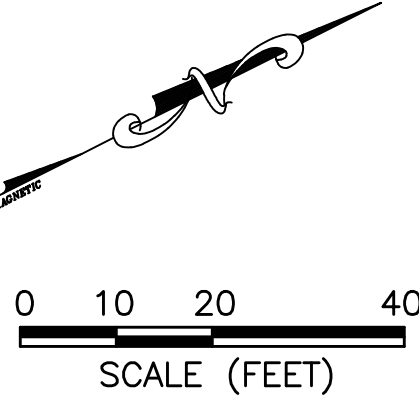


MATCHLINE STA. 150+50 THIS SHEET

- NOTES:
1. CAUTION: POSSIBLE CONFLICT WITH EXISTING WATER LATERALS.
 2. CUT, PLUG, AND ABANDON THE EXISTING 8-INCH WATER MAIN AFTER RELEASE FOR SERVICE OF PROPOSED 12-INCH WATER MAIN. COORDINATE WITH CCSUD STAFF.
 3. EXISTING SERVICES TO BE RECONNECTED TO 12-INCH WATER MAIN ONLY AFTER PROPOSED MAIN IS RELEASED FOR SERVICE.
 4. ASBESTOS CEMENT (AC) PIPE CONTAINS ASBESTOS-CONTAINING MATERIAL (ACM) AND IS LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES, HEALTH AND SAFETY REQUIREMENTS ARE APPLICABLE WHEN HANDLING, REMOVING, AND DISPOSING OF THIS PIPE. PAYMENT FOR SUCH WORK IS TO BE MADE UNDER SECTION 02800 - HANDLING ASBESTOS CEMENT PIPE OF THESE PROJECT SPECIFICATIONS.
 5. REFER TO SHEET G1.0 REGARDING EXISTING UTILITIES.

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTORS INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS, AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

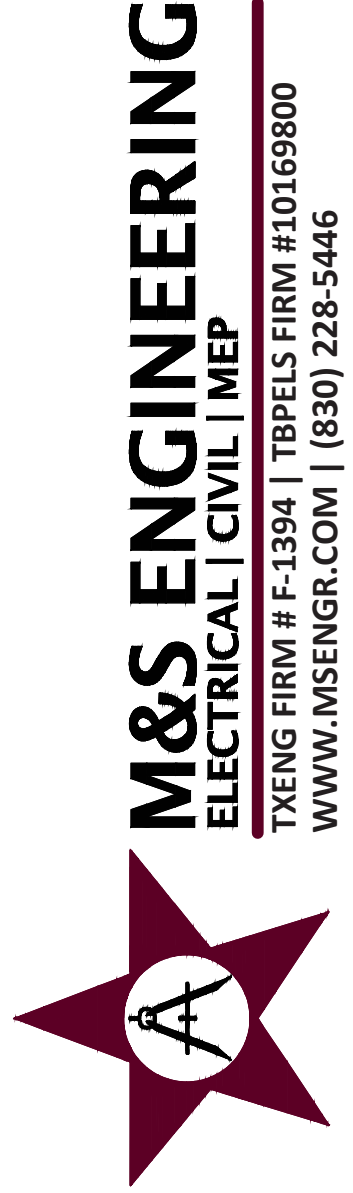


KYNDWOOD SUBDIVISION WATER MAIN EXTENSION

JOB: 14CCSUD001		
DATE: AUGUST 2022		
DRAWN: KJV	PM: CP	
DESIGN: CB	DM: BK	
PEER:	OTHER:	
REVISIONS:		
DELTA	DESCRIPTION	DATE

SHEET:

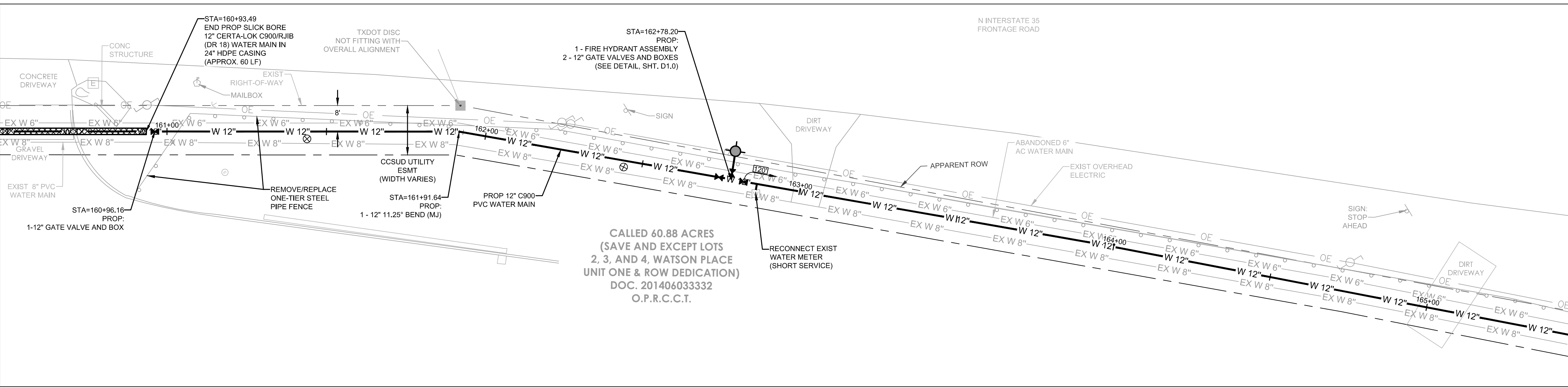
WM1.5



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MATCHLINE STA. 160+50 THIS SHEET

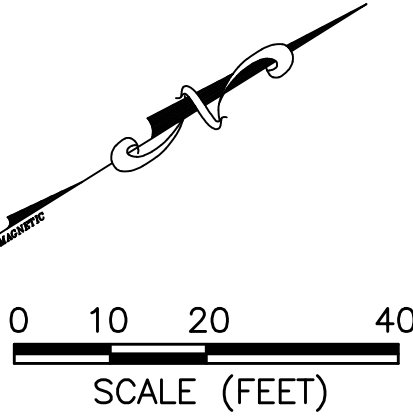
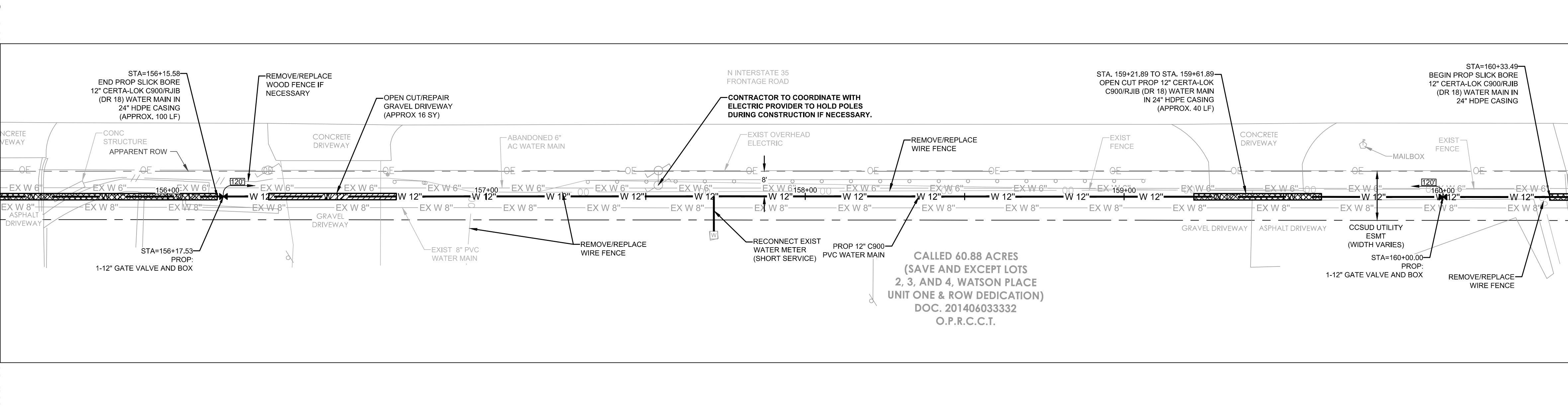


- NOTES:
1. CAUTION: POSSIBLE CONFLICT WITH EXISTING WATER LATERALS.
 2. CUT, PLUG, AND ABANDON THE EXISTING 8-INCH WATER MAIN AFTER RELEASE FOR SERVICE OF PROPOSED 12-INCH WATER MAIN. COORDINATE WITH CCSUD STAFF.
 3. EXISTING SERVICES TO BE RECONNECTED TO 12-INCH WATER MAIN ONLY AFTER PROPOSED MAIN IS RELEASED FOR SERVICE.
 4. ASBESTOS CEMENT (AC) PIPE CONTAINS ASBESTOS-CONTAINING MATERIAL (ACM) AND IS LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES, HEALTH AND SAFETY REQUIREMENTS ARE APPLICABLE WHEN HANDLING, REMOVING, AND DISPOSING OF THIS PIPE. PAYMENT FOR SUCH WORK IS TO BE MADE UNDER SECTION 02800 - HANDLING ASBESTOS CEMENT PIPE OF THESE PROJECT SPECIFICATIONS.
 5. REFER TO SHEET G1.0 REGARDING EXISTING UTILITIES.

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTORS INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS, AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

MATCHLINE STA. 155+50 SHEET WM1.5



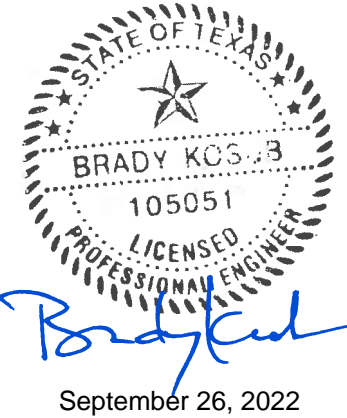
MATCHLINE STA. 160+50 THIS SHEET

KYNDWOOD SUBDIVISION WATER MAIN EXTENSION

JOB: 14CCSUD001		
DATE: AUGUST 2022		
DRAWN: KJV	PM: CP	
DESIGN: CB	DM: BK	
PEER:	OTHER:	
REVISIONS:		
DELTA	DESCRIPTION	DATE

SHEET:

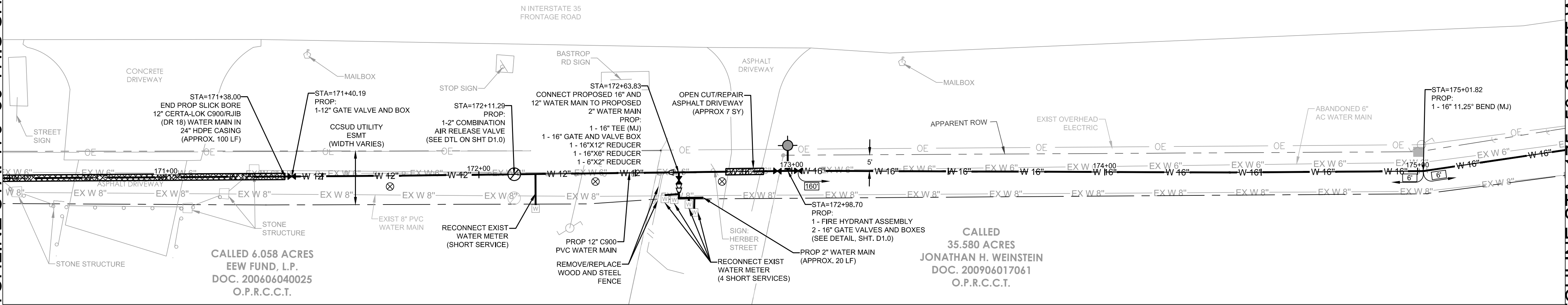
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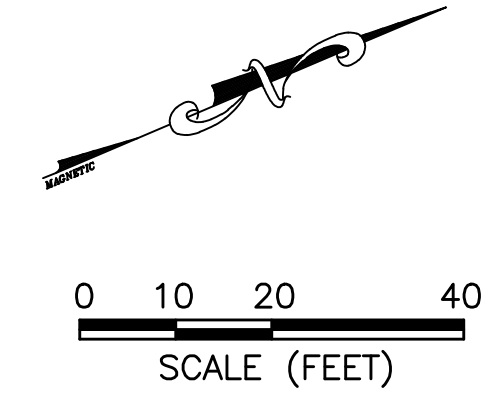
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MATCHLINE STA. 170+50 THIS SHEET



MATCHLINE STA. 175+50 SHEET WM1.8



- NOTES:
1. CAUTION: POSSIBLE CONFLICT WITH EXISTING WATER LATERALS.
 2. CUT, PLUG, AND ABANDON THE EXISTING 8-INCH WATER MAIN AFTER RELEASE FOR SERVICE OF PROPOSED 12-INCH WATER MAIN. COORDINATE WITH CCSUD STAFF.
 3. EXISTING SERVICES TO BE RECONNECTED TO 12-INCH WATER MAIN ONLY AFTER PROPOSED MAIN IS RELEASED FOR SERVICE.
 4. ASBESTOS CEMENT (AC) PIPE CONTAINS ASBESTOS-CONTAINING MATERIAL (ACM) AND IS LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES, HEALTH AND SAFETY REQUIREMENTS ARE APPLICABLE WHEN HANDLING, REMOVING, AND DISPOSING OF THIS PIPE. PAYMENT FOR SUCH WORK IS TO BE MADE UNDER SECTION 02800 - HANDLING ASBESTOS CEMENT PIPE OF THESE PROJECT SPECIFICATIONS.
 5. REFER TO SHEET G1.0 REGARDING EXISTING UTILITIES.

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTORS INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS, AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.



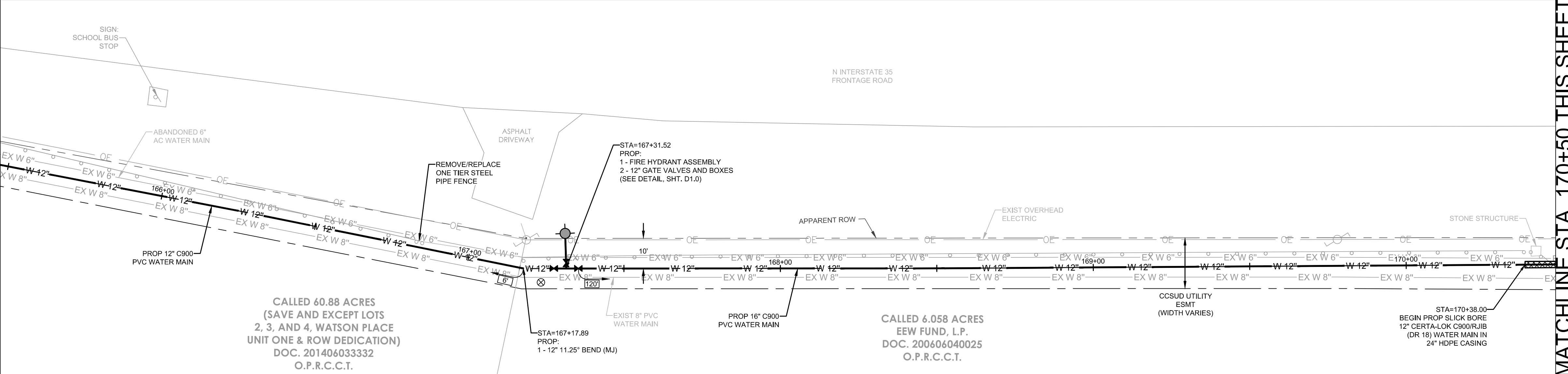
KYNDWOOD SUBDIVISION WATER
MAIN EXTENSION

JOB: 14CCSUD001
DATE: AUGUST 2022
DRAWN: KJV PM: CP
DESIGN: CB DM: BK
PEER: OTHER:
REVISIONS:
DELTA | DESCRIPTION | DATE

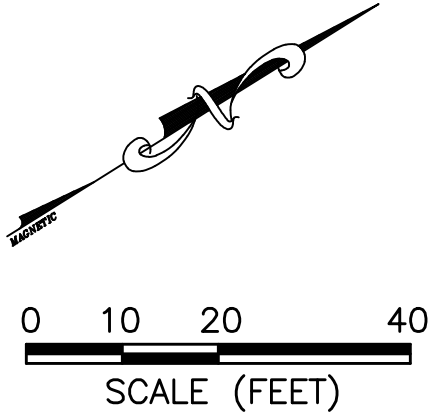
SHEET:

WM1.7

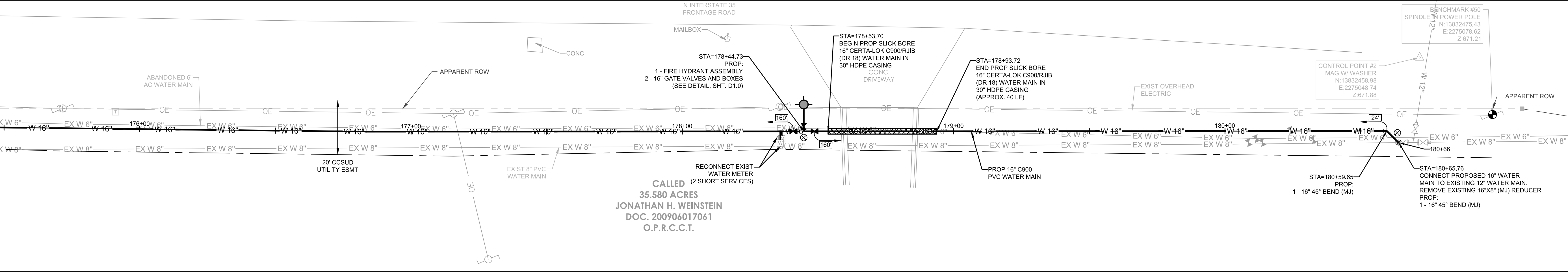
MATCHLINE STA. 165+50 SHEET WM1.6



MATCHLINE STA. 170+50 THIS SHEET



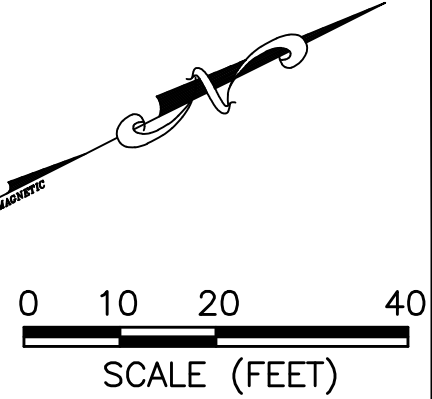
MATCHLINE STA. 175+50 SHEET WM1.7



- NOTES:
- CAUTION: POSSIBLE CONFLICT WITH EXISTING WATER LATERALS.
 - CUT, PLUG, AND ABANDON THE EXISTING 8-INCH WATER MAIN AFTER RELEASE FOR SERVICE OF PROPOSED 12-INCH WATER MAIN. COORDINATE WITH CCSUD STAFF.
 - EXISTING SERVICES TO BE RECONNECTED TO 12-INCH WATER MAIN ONLY AFTER PROPOSED MAIN IS RELEASED FOR SERVICE.
 - ASBESTOS CEMENT (AC) PIPE CONTAINS ASBESTOS-CONTAINING MATERIAL (ACM) AND IS LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES, HEALTH AND SAFETY REQUIREMENTS ARE APPLICABLE WHEN HANDLING, REMOVING, AND DISPOSING OF THIS PIPE. PAYMENT FOR SUCH WORK IS TO BE MADE UNDER SECTION 02800 - HANDLING ASBESTOS CEMENT PIPE OF THESE PROJECT SPECIFICATIONS.
 - REFER TO SHEET G1.0 REGARDING EXISTING UTILITIES.

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS, AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.



KYNDWOOD SUBDIVISION WATER MAIN EXTENSION

JOB: 14CCSUD001		
DATE: AUGUST 2022		
DRAWN: KJV	PM: CP	
DESIGN: CB	DM: BK	
PEER:	OTHER:	
REVISIONS:		
DELTA	DESCRIPTION	DATE

SHEET:

WM1.8

M&S ENGINEERING

ELECTRICAL | CIVIL | MEP

TXENG FIRM # F-1394 | TBPELS FIRM #10169800

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STATE OF TEXAS

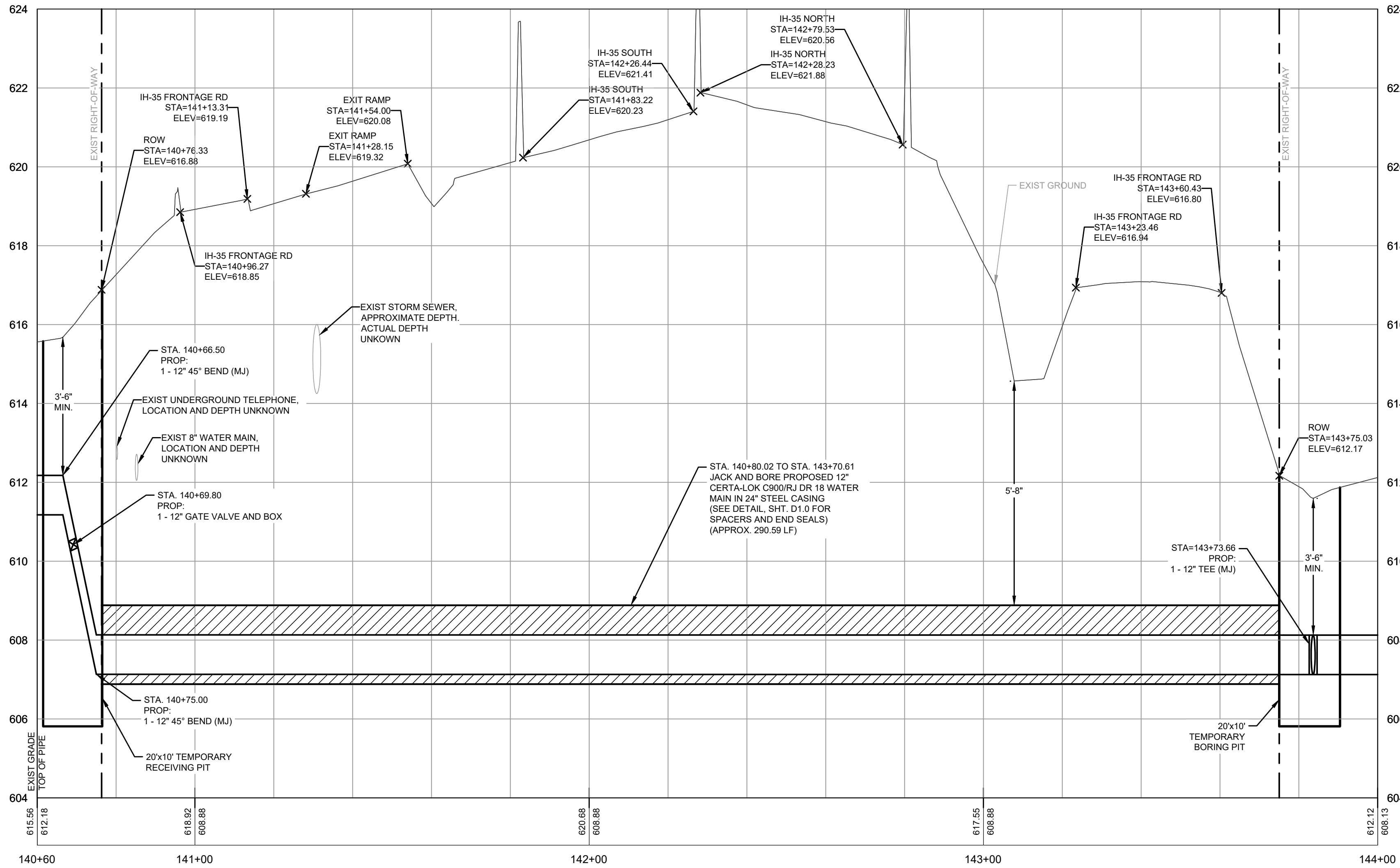
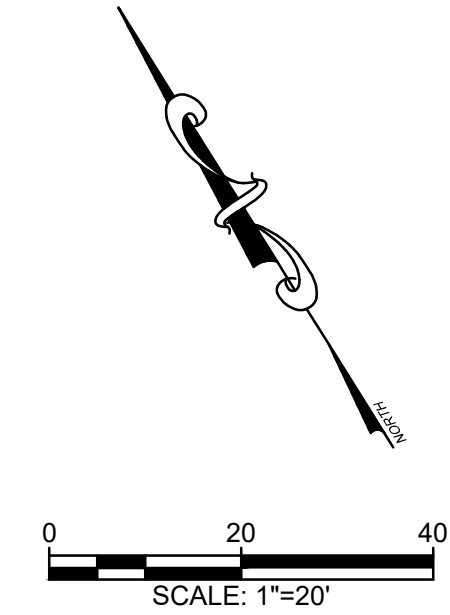
BRADY K.C.S. 105051

LICENSED PROFESSIONAL ENGINEER

September 26, 2022



Date: Sep 26, 2022 9:33am User: D. Kogler
File: S:\Active Projects\14CCSUD001 - General Engineering Services\2021-10 Kyndwood WL.dwg\14CCSUD001-KW WATER MAIN PROFILES-001.dwg



HORZ SCALE: 1"=20'
VERT SCALE: 1"=2'

NOTES:
1. L = LENGTH OF PIPE TO BE RESTRAINED
IN BOTH DIRECTIONS.

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTORS
INDEPENDENTLY RETAINED EMPLOYEE OR
STRUCTURAL
DESIGN/GEOTECHNICAL/SAFETY EQUIPMENT
CONSULTANT, IF ANY, SHALL REVIEW THESE
PLANS AND AVAILABLE GEOTECHNICAL
INFORMATION AND THE ANTICIPATED
INSTALLATION SITES WITHIN THE PROJECT
WORK AREA IN ORDER TO IMPLEMENT
CONTRACTOR'S TRENCH EXCAVATION
SAFETY PROTECTION SYSTEMS, PROGRAMS,
AND/OR PROCEDURES. THE CONTRACTOR'S
IMPLEMENTATION OF THESE SYSTEMS,
PROGRAMS AND/OR PROCEDURES SHALL
PROVIDE FOR ADEQUATE TRENCH
EXCAVATION SAFETY PROTECTION THAT
COMPLIES WITH AS A MINIMUM, OSHA
STANDARDS FOR TRENCH EXCAVATIONS.
SPECIFICALLY, CONTRACTOR AND/OR
CONTRACTOR'S INDEPENDENTLY RETAINED
EMPLOYEE OR SAFETY CONSULTANT SHALL
IMPLEMENT A TRENCH SAFETY PROGRAM IN
ACCORDANCE WITH OSHA STANDARDS
GOVERNING THE PRESENCE AND ACTIVITIES
OF INDIVIDUALS WORKING IN AND AROUND
TRENCH EXCAVATION.



**KYNDWOOD SUBDIVISION WATER
MAIN EXTENSION**

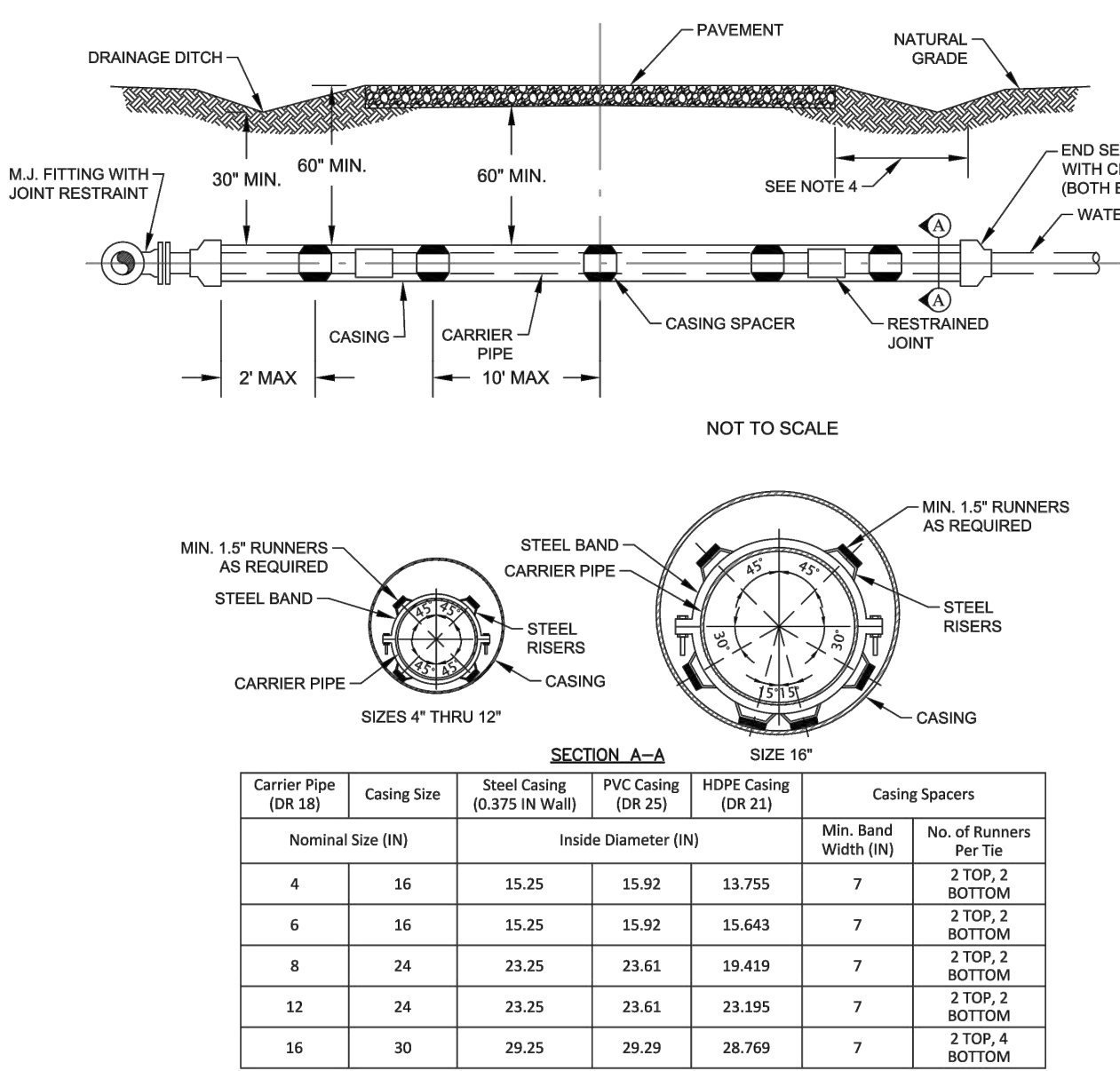
JOB: 14CCSUD001		
DATE: AUGUST 2022		
DRAWN: KJV	PM:	CP
DESIGN: CB	DM:	BK
PEER:	OTHER:	
REVISIONS:		
DELTA	DESCRIPTION	DATE

SHEET:

WM1.9

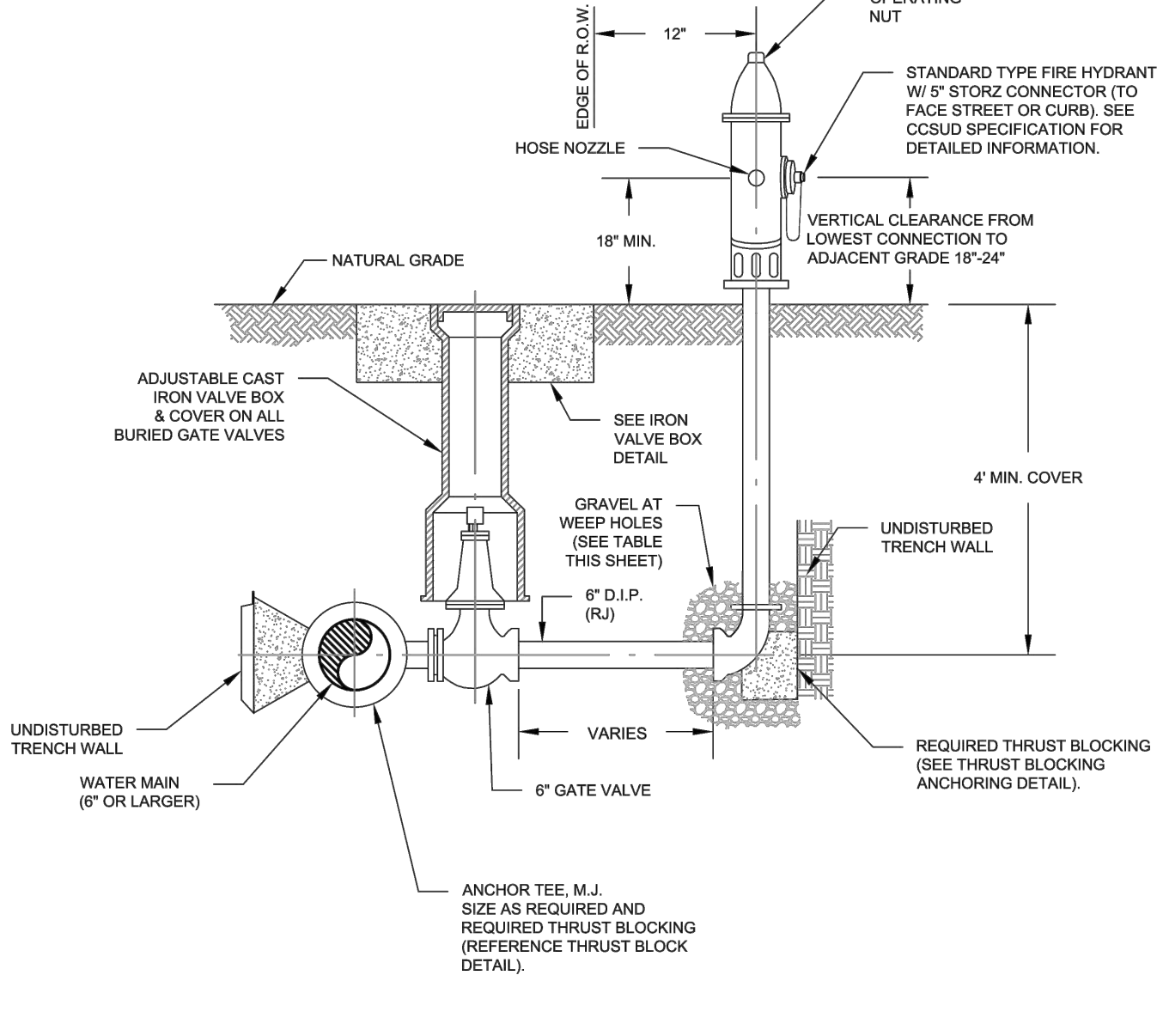
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STATE OF TEXAS
BRADY K.C.S. 3
105051
LICENSED PROFESSIONAL ENGINEER
September 26, 2022



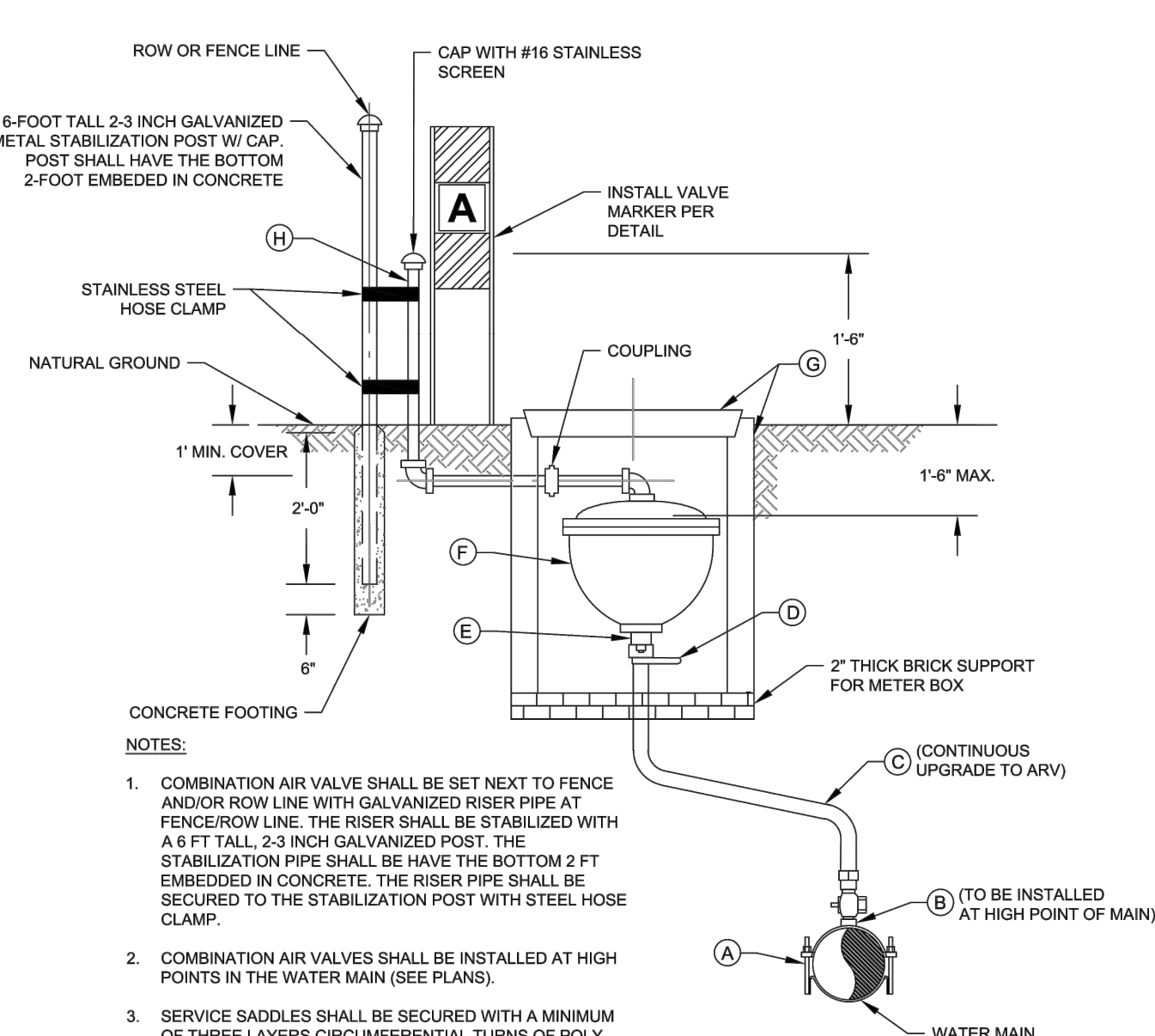
- NOTES:
- CARRIER PIPE SIZES ARE BASED ON CERTA-LOK C500RJ/B FOR 4" TO 12" PIPE DIAMETER AND CERTA-LOK C905RJ/RJ FOR 14" TO 24" PIPE DIAMETER OR APPROVED EQUAL.
 - STEEL CASING SHALL BE STANDARD WEIGHT OR HEAVIER PIPE CONFORMING TO ASTM A-36, ASTM A-588, ASTM A-135, ASTM A-199 OR OTHER ACCEPTABLE STANDARD SPECIFICATION. PIPE SHALL BE COATED AND LINED IN ACCORDANCE WITH AWWA C-210 OR APPROVED EQUAL. PIPE JOINTS SHALL BE WELDED IN ACCORDANCE WITH AWWA C-208. STEEL CASING SHALL BE NEW OR USED IN GOOD CONDITION ACCEPTABLE TO CRYSTAL CLEAR SPECIAL UTILITY DISTRICT AND TO THE ROADWAY AUTHORITY.
 - SUBSEQUENT CASING SPACERS ARE REQUIRED FOR 4" TO 14" PIPE SIZES TO BE AT 10 FEET APART AND FOR 16" TO 30" PIPE SIZES TO BE AT 8 FEET APART WITHIN THE CASING WITH AT LEAST 3 SPACERS PER JOINT ON PIPE. ONE CASING SPACER SHALL BE REPLACED WITHIN 2 FEET OF ENDS OF CASING FOR ALL PIPE SIZES.
 - CASING PIPE SHALL EXTEND A MINIMUM OF 10 FT. PAST EDGE OF PAVEMENT ALONG TXDOT ROADWAYS AND A MINIMUM OF 5 FT. PAST EDGE OF PAVEMENT ALONG ALL OTHER ROADWAYS UNLESS OTHERWISE DIRECTED BY ENGINEER OR REGULATORY AUTHORITY.
 - CASING SPACERS SHALL BE MADE FROM T-304 STEEL OF A MINIMUM 14 GAUGE THICKNESS.
 - CASING SPACERS SHALL HAVE A SYNTHETIC RUBBER OR PVC LINER TO INSULATE THE PIPELINE FROM THE SPACER.
 - CASING SPACERS SHALL HAVE A MIN. 1.5" WIDE GLASS REINFORCED PLASTIC OR UHMW POLYMER RUNNERS TO INSULATE THE SPACER FROM THE CASING.
 - CASING END SEALS SHALL BE MADE OF 1/8" THICK NEOPRENE RUBBER AND INCLUDE 1/2" WIDE T304 STAINLESS STEEL BANDINGS.

CASING DETAIL
SCALE: N.T.S.



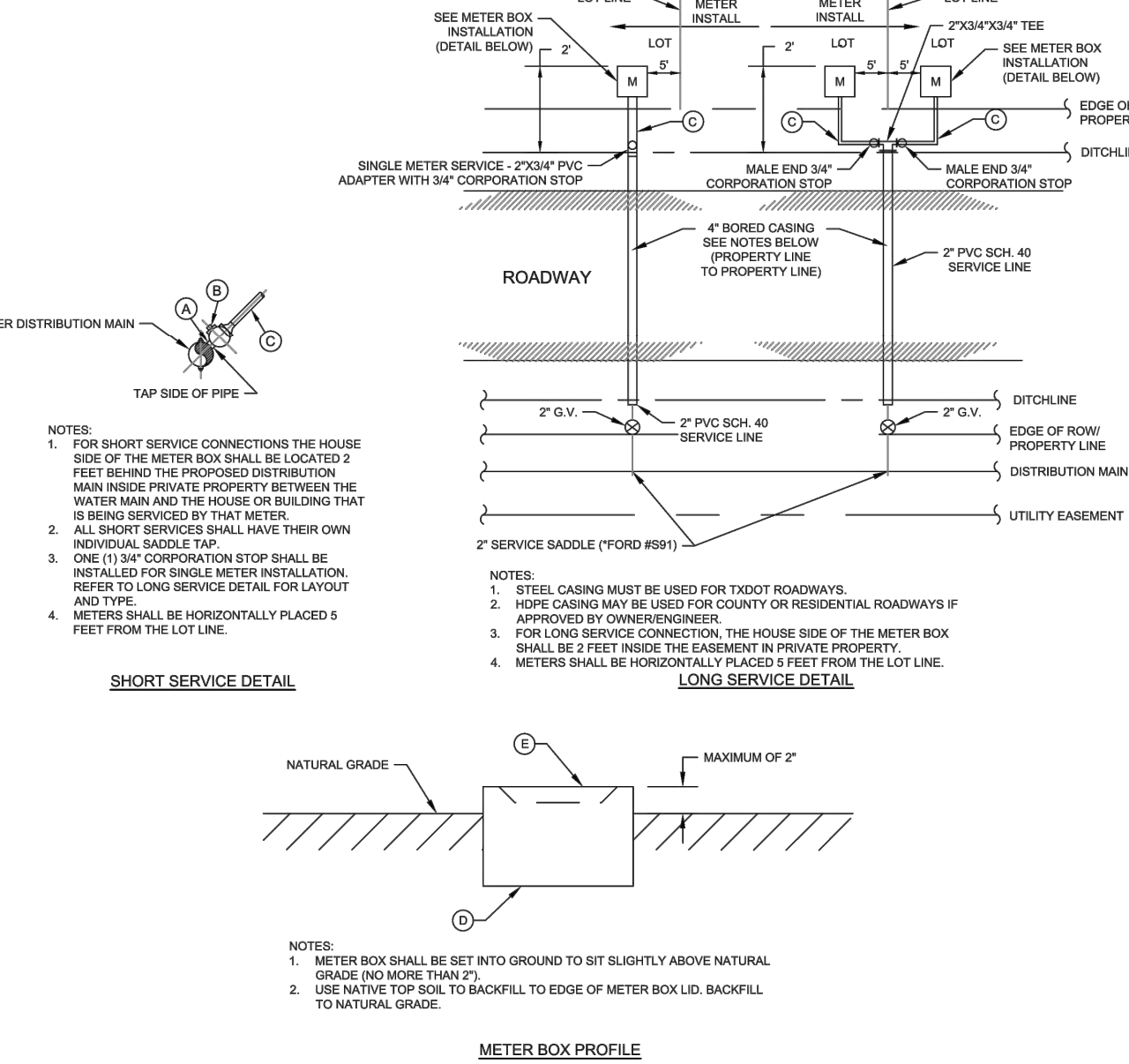
- NOTES:
- THE EARTH-BEARING SURFACE SHALL BE THE UNDISTURBED TRENCH WALL.
 - ALL PIPE JOINTS SHALL BE KEPT FREE FROM CONCRETE.
 - POLYWRAP SHALL BE SECURED WITH A MINIMUM OF THREE CIRCUMFERENTIAL TURNS OF POLY TAPE.
 - 12"x12"x4" THICK CONCRETE BLOCKS SHALL BE INSTALLED DIRECTLY UNDER ALL VALVES, FITTINGS, ETC.

FIRE HYDRANT DETAIL
SCALE: N.T.S.



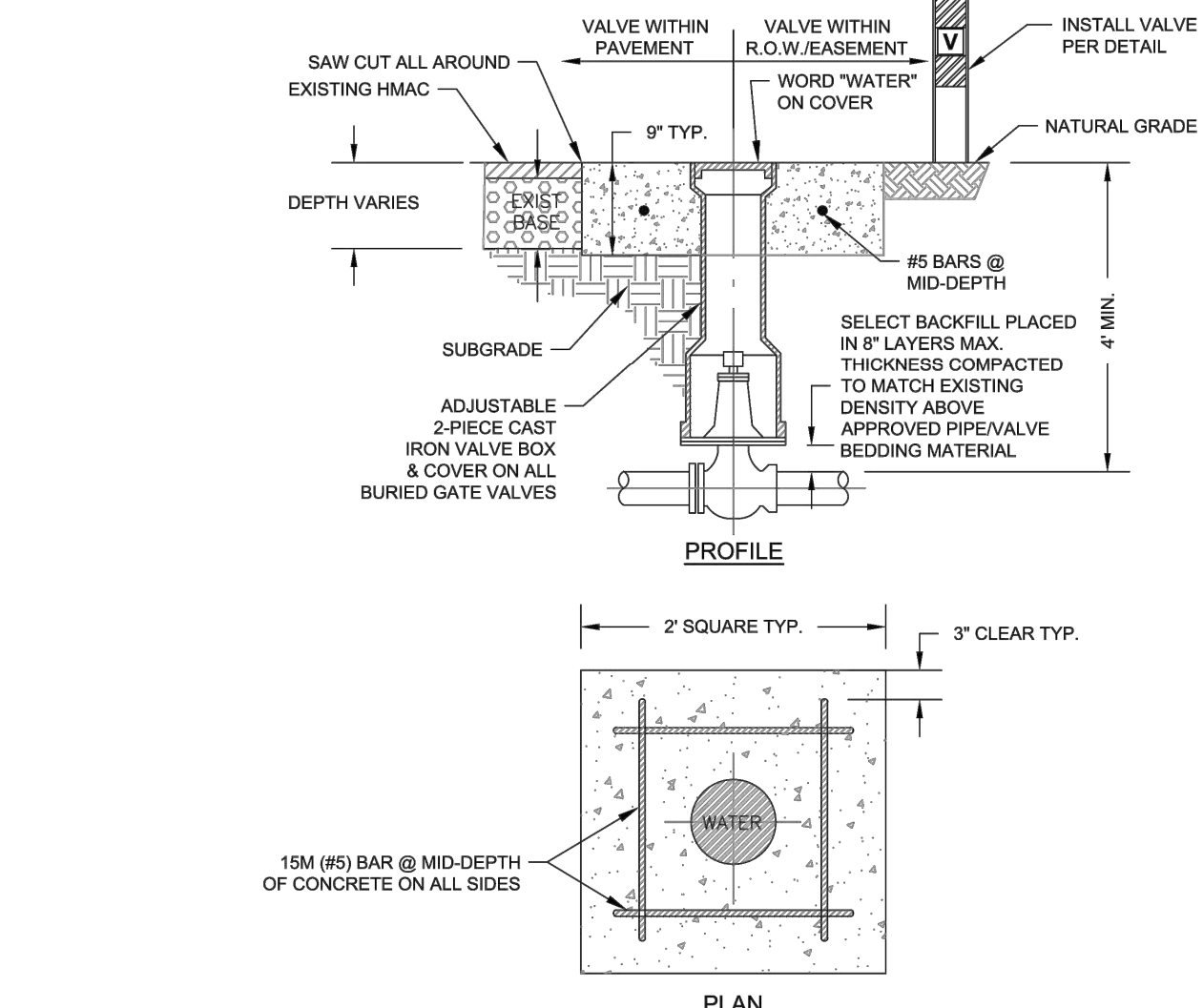
- NOTES:
- COMBINATION AIR VALVE SHALL BE SET NEXT TO FENCE AND/OR ROW LINE WITH GALVANIZED RISER PIPE AT FENCE/ROW LINE. THE RISER SHALL BE STABILIZED WITH A 6 FT TALL 2-3 INCH GALVANIZED POST. THE STABILIZATION PIPE SHALL HAVE THE BOTTOM 2 FT EMBEDDED IN CONCRETE. THE RISER PIPE SHALL BE SECURED TO THE STABILIZATION POST WITH STEEL HOSE CLAMP.
 - COMBINATION AIR VALVES SHALL BE INSTALLED AT HIGH POINTS IN THE WATER MAIN (SEE PLANS).
 - SERVICE SADDLES SHALL BE SECURED WITH A MINIMUM OF THREE LAYERS CIRCUMFERENTIAL TURNS OF POLY TAPE.

COMBINATION AIR VALVE DETAIL
SCALE: N.T.S.



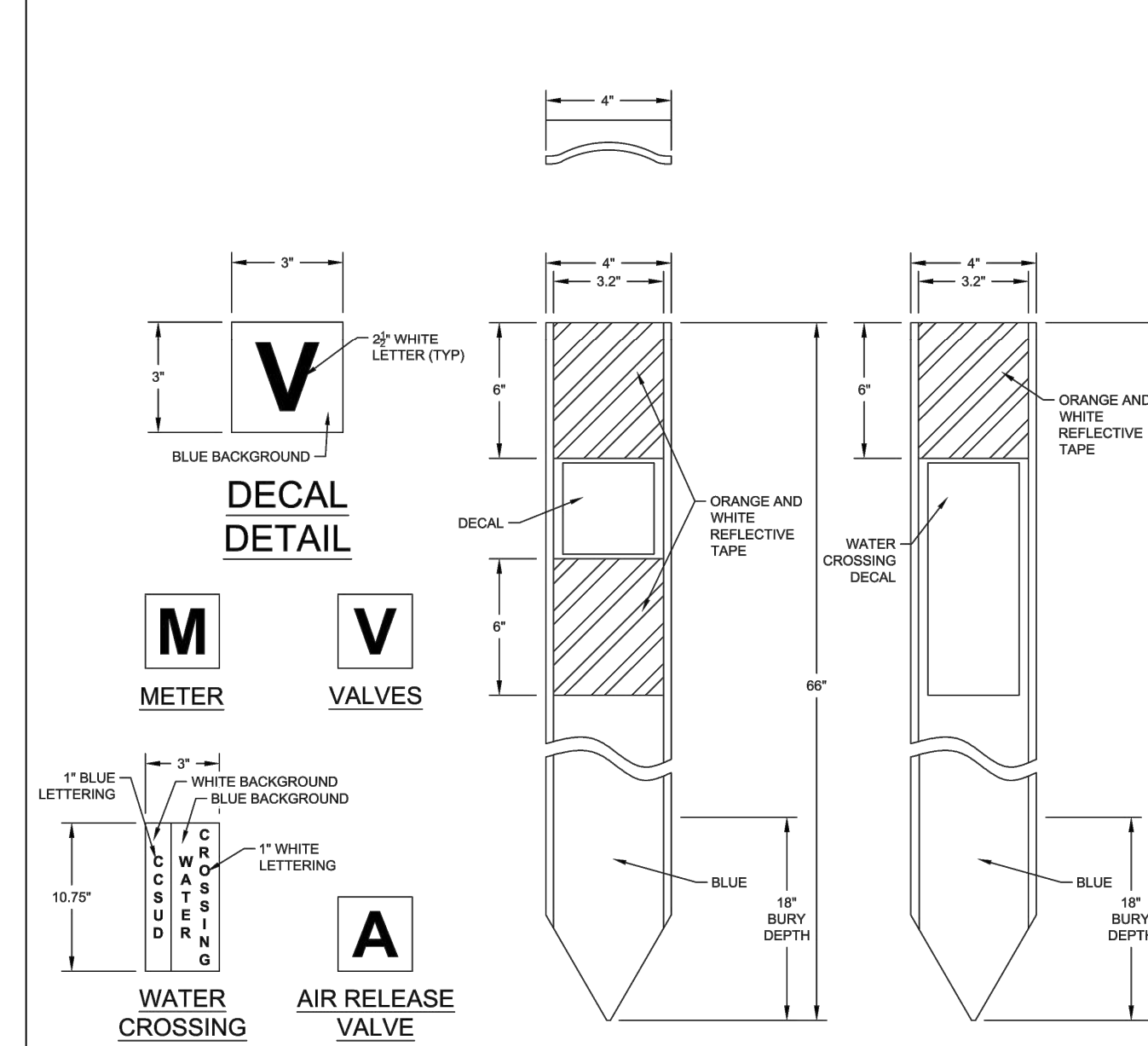
- NOTES:
- FOR SHORT SERVICE CONNECTIONS THE HOUSE SIDE OF THE METER BOX SHALL BE LOCATED 2 FEET BEHIND THE PROPOSED DISTRIBUTION MAIN INSIDE PRIVATE PROPERTY BETWEEN THE WATER MAIN AND THE HOUSE OR BUILDING THAT IS BEING SERVED BY THAT METER.
 - ALL SHORT SERVICES SHALL HAVE THEIR OWN INDIVIDUAL SADDLE TAP.
 - ONE (1) 3/4" CORPORATION STOP SHALL BE INSTALLED FOR SINGLE METER INSTALLATION. REFER TO LONG SERVICE DETAIL FOR LAYOUT AND TYPE.
 - METERS SHALL BE HORIZONTALLY PLACED 5 FEET FROM THE LOT LINE.

SERVICE CONNECTION DETAIL
SCALE: N.T.S.



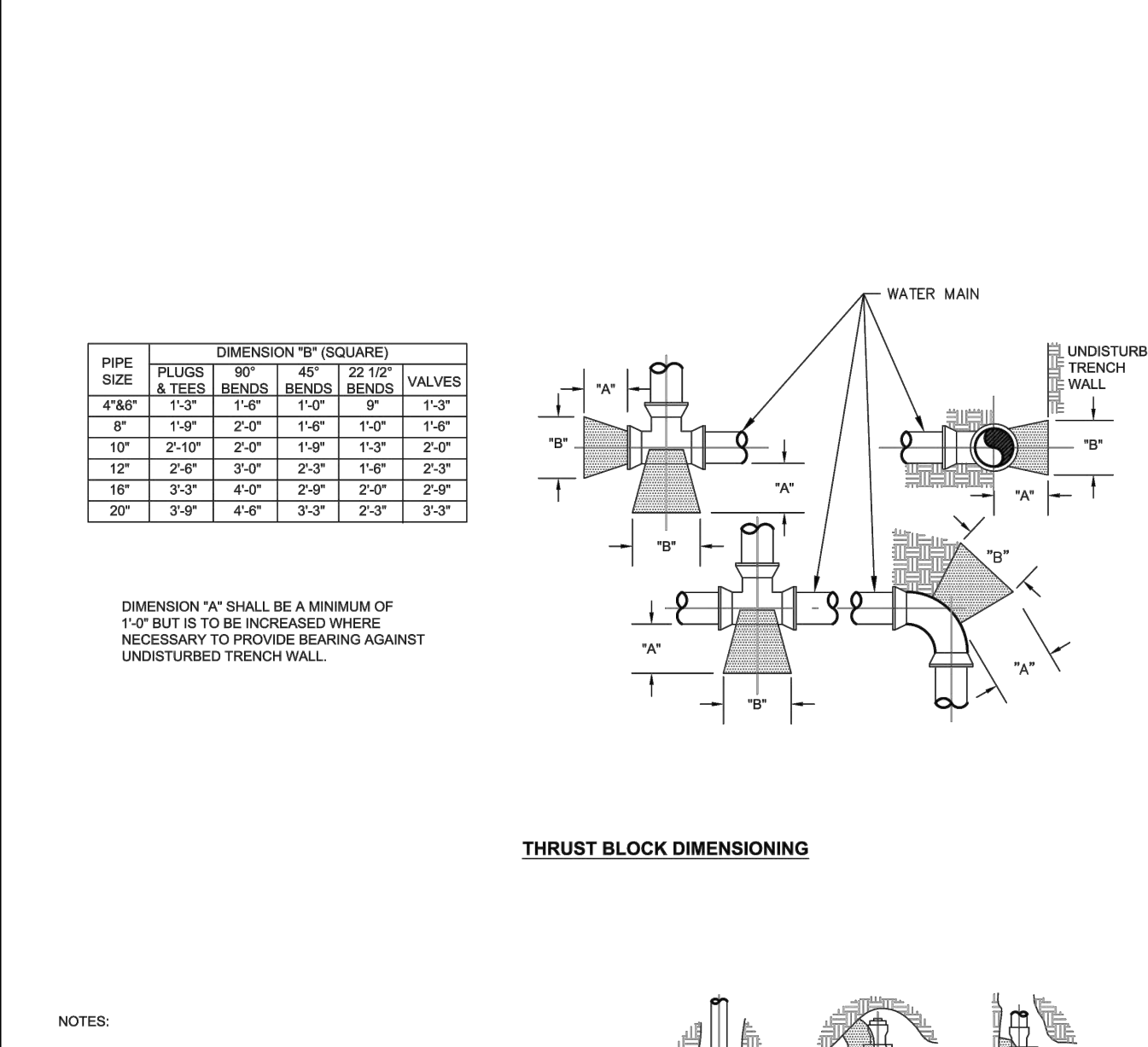
- NOTES:
- VALVE BOXES SHALL BE FITTED WITH PLASTIC VALVE ID TAGS (BLUE EMEDCO 3-1/2" X 2-3/4") INDICATING OWNER (CCSUD) VALVE SIZE, YEAR OF INSTALLATION AND # OF TURNS TO OPEN.
 - SUBGRADE SHALL BE COMPACTED AS PER SPECIFICATIONS.
 - VALVE CASTINGS SHALL BE ADJUSTED TO GRADE AFTER FINAL LIFT OF OVERLAY IS IN PLACE.
 - CLEAN VALVE BOX OF ALL DEBRIS DOWN TO THE BASE OF THE VALVE.
 - REMOVE EXISTING RISER PIPE DOWN 18" AND REPLACE TO THE NEW ELEVATION USING NEW PIPE AND A COLLAR CASTING.
 - WHEN CAST IRON CASTINGS TO BE REMOVED REQUIRE EXCAVATION GREATER THAN 20" DEEP. CONTRACTOR MAY ELECT TO FILL EXCAVATION WITH CONTROLLED LOW STRENGTH MATERIAL TO THE UNDERSIDE OF THE CONCRETE. PAVEMENT PATCH IN LIEU OF COMPACTED BACKFILL.
 - REINFORCING STEEL SHALL MEET SPECIFICATIONS.
 - VALVE BOXES MUST BE INSTALLED IN A STRAIGHT, VERTICAL POSITION.
 - VALVE MARKERS SHALL BE INSTALLED BEHIND EACH VALVE BOX WHEN VALVE IS LOCATED WITHIN EASEMENT OR R.O.W.

TYPICAL IRON VALVE BOX DETAILS
SCALE: N.T.S.



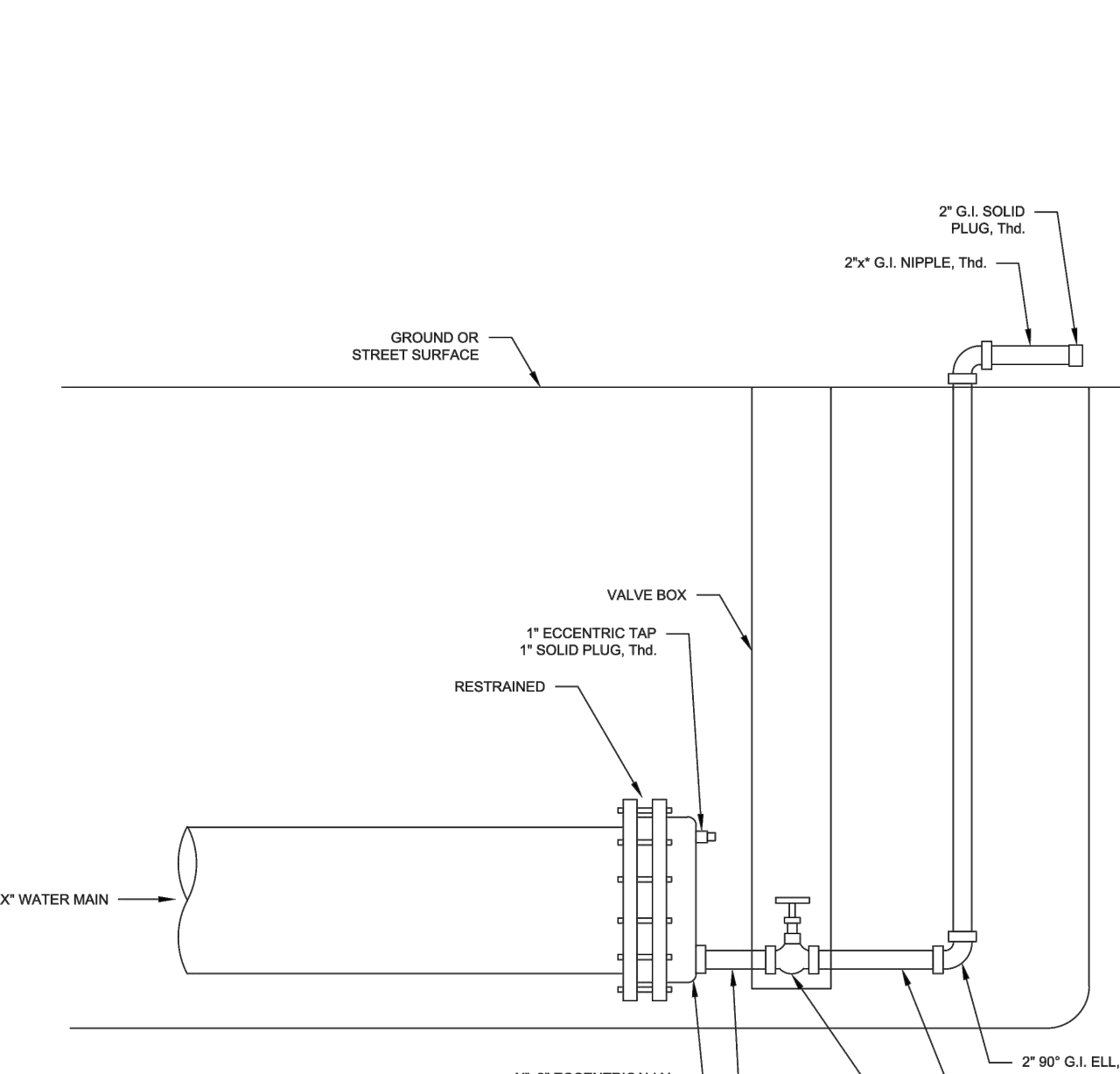
- NOTES:
- MARKERS SHALL BE 66" COMPOSITE POSTS SIMILAR TO RHINO FIBER/COMPOSITE MARKER POST.
 - MARKERS SHALL BE PLACED AT ALL GATE VALVES, FLUSHING VALVES, & AIR RELEASE VALVES PER ITEM DETAIL.
 - MARKERS SHALL BE PLACED AT WATER METERS AS SPECIFIED ON PLANS.
 - PIPELINE MARKERS SHALL BE PLACED ON R.O.W./FENCE LINE AT ALL ROAD CROSSINGS.

MARKER DETAILS
SCALE: N.T.S.



- NOTES:
- THE EARTH-BEARING SURFACE SHALL BE THE UNDISTURBED TRENCH WALL.
 - ALL PIPE JOINTS SHALL BE KEPT FREE FROM CONCRETE.
 - ALL THRUST BLOCKS SHALL CONTAIN A MINIMUM OF 1 1/2 CUBIC YARDS OF CONCRETE.
 - CONCRETE SHALL BE 2000 P.S.I. AT 28 DAYS MINIMUM.
 - ALL FITTINGS AND FITTING JOINTS MUST BE WRAPPED W/ POLYWRAP. POLYWRAP SHALL BE SECURED WITH A MINIMUM OF THREE CIRCUMFERENTIAL TURNS OF POLY TAPE.
 - 12"x12"x4" THICK CONCRETE BLOCKS SHALL BE INSTALLED DIRECTLY UNDER ALL VALVES, FITTINGS, ETC.

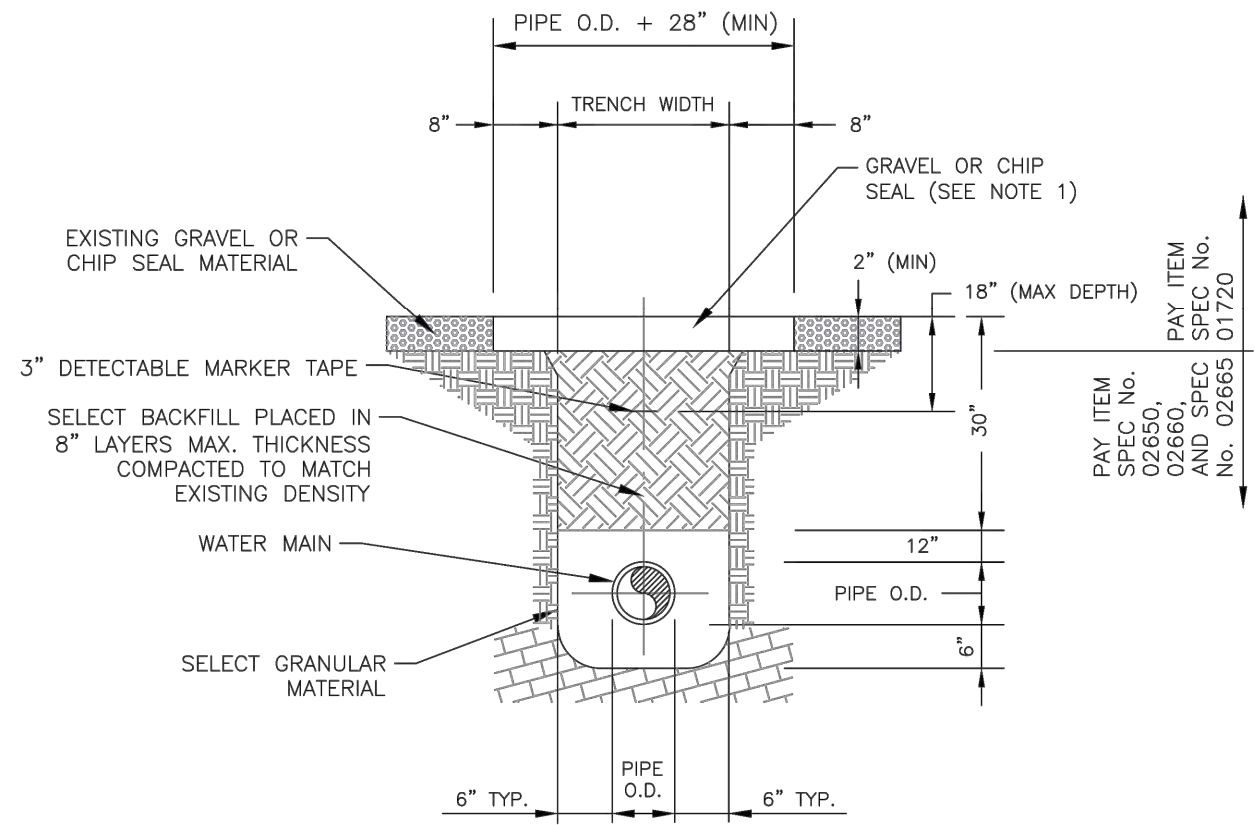
THRUST BLOCKING ANCHORING DETAILS
SCALE: N.T.S.



- NOTE:
- BURIED PIPING, FITTINGS, AND FITTINGS JOINTS SHALL BE WRAPPED IN POLYWRAP.
 - THE EARTH-BEARING SURFACE SHALL BE THE UNDISTURBED TRENCH WALL.
 - ALL PIPE JOINTS SHALL BE KEPT FREE FROM CONCRETE.
 - POLYWRAP SHALL BE SECURED WITH A MINIMUM OF THREE CIRCUMFERENTIAL TURNS OF POLY TAPE.

TEMPORARY FLUSH VALVE 12 INCH OR LARGER
SCALE: N.T.S.

Aug 11, 2022, 8:03am User ID: kvogler
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NOTES

- GRAVEL OR CHIP SEAL (MATCH EXISTING PAVEMENT TYPE) SHALL BE A MINIMUM OF 2" THICK.
- ROAD BASE AND SURFACE MATERIALS IN THE TRENCH CUT SHALL BE REPLACED IN KIND, OF EQUAL THICKNESS

TRENCHING NOTES

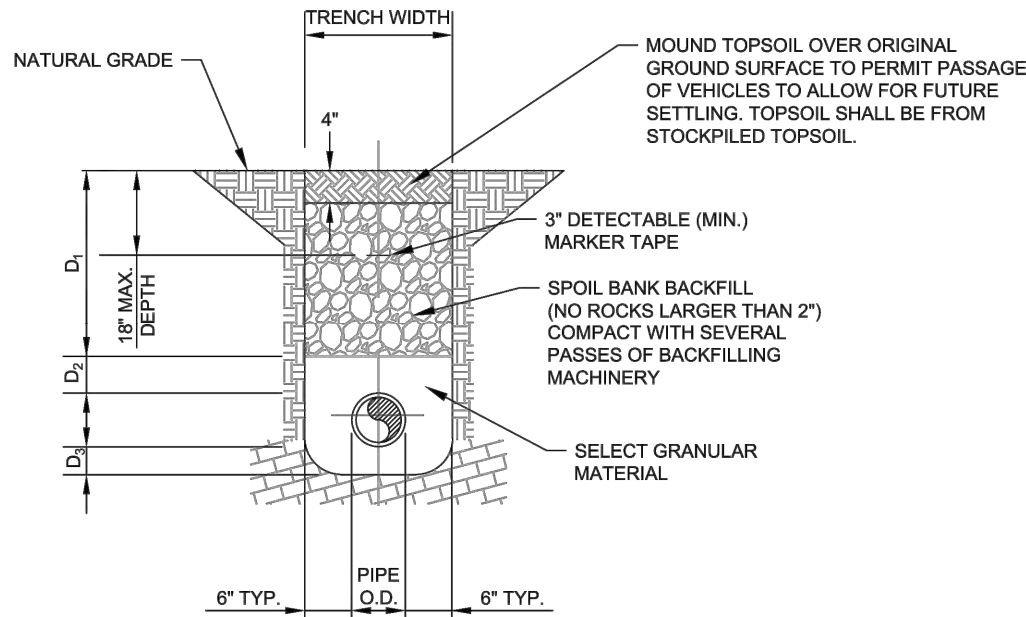
- ADEQUATE BARRICADES & WARNING SIGNS SHALL BE ERECTED BEFORE ANY WORK IS STARTED IN PUBLIC RIGHT-OF-WAY.
- THE DRIVEWAY SHALL BE CUT ONLY WHERE REQUIRED BY THE ENGINEER.
- DRIVEWAY SHALL REMAIN ACCESSIBLE AT ALL TIMES.
- REFER TO SPECIFICATIONS FOR ANY SPECIAL REQUIREMENTS OR CONDITIONS.
- BACKFILL SHALL BE COMPLETED IMMEDIATELY AFTER PIPELINE LAYING WITHIN PRIVATE DRIVEWAYS.

TRENCH SAFETY NOTES

- TRENCH SAFETY SYSTEM, SHORING OR SIDE SLOPE TO BE IN ACCORDANCE WITH OSHA STANDARDS.
- TRENCH SAFETY SYSTEM PLAN TO BE PROVIDED BY CONTRACTOR PRIOR TO CONSTRUCTION.
- ALL EXCAVATION GREATER THAN 5' DEEP SHALL MEET TRENCH SAFETY NOTE.

TYPICAL GRAVEL/CHIP SEAL DRIVEWAY REPAIR DETAIL

SCALE: N.T.S.



	D ₁	D ₂	D ₃
4" OR SMALLER	36"	6"	4"
6"-8"	30"	12"	6"
12" OR LARGER	42"	12"	6"

TRENCHING NOTES

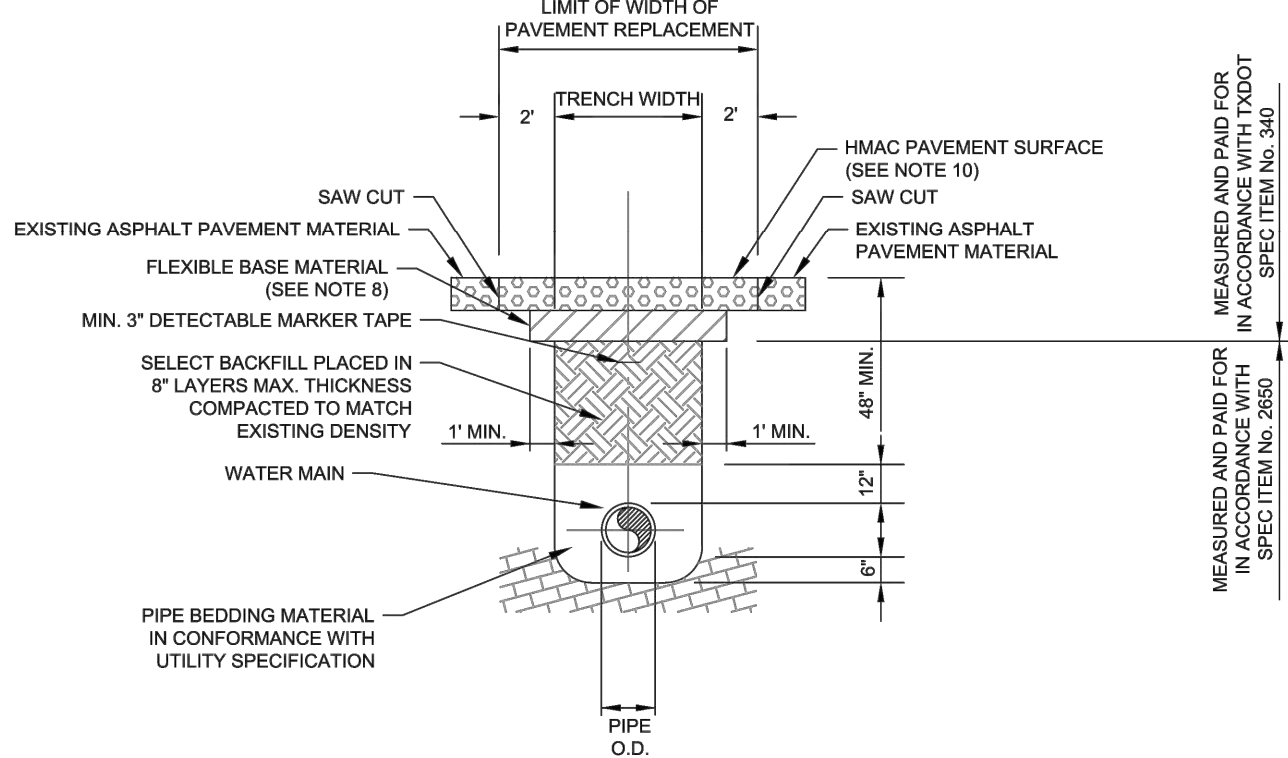
- ADEQUATE BARRICADES & WARNING SIGNS SHALL BE ERECTED BEFORE ANY WORK IS STARTED IN PUBLIC RIGHT-OF-WAY.
- REFER TO SPECIFICATIONS FOR ANY SPECIAL REQUIREMENTS OR CONDITIONS.
- BACKFILL SHALL BE COMPLETED IMMEDIATELY AFTER PIPELINE LAYING WITHIN PUBLIC RIGHT-OF-WAYS OR CROSSING PUBLIC RIGHT-OF-WAYS & PRIVATE DRIVEWAYS.

TRENCH SAFETY NOTES

- TRENCH SAFETY SYSTEM, SHORING OR SIDE SLOPE TO BE IN ACCORDANCE WITH OSHA STANDARDS.
- TRENCH SAFETY SYSTEM PLAN TO BE PROVIDED BY CONTRACTOR PRIOR TO CONSTRUCTION.

TYPICAL TRENCH BACKFILL DETAIL

SCALE: N.T.S.



TRENCH AND BACKFILL NOTES:

- ADEQUATE BARRICADES & WARNING SIGNS SHALL BE ERECTED BEFORE ANY WORK IS STARTED IN PUBLIC RIGHT-OF-WAY.
- THE ROADWAY SHALL BE CUT ONLY WHERE REQUIRED.
- NO MORE THAN HALF OF THE WIDTH OF THE ROAD SHALL BE CUT & OPENED AT ONE TIME.
- REFER TO SPECIFICATIONS FOR ANY SPECIAL REQUIREMENTS OR CONDITIONS
- BACKFILL SHALL BE COMPLETED IMMEDIATELY AFTER PIPELINE LAYING WITHIN PUBLIC RIGHT-OF-WAYS OR CROSSING PUBLIC RIGHT-OF-WAYS & PRIVATE DRIVEWAYS.
- THE EXISTING PAVING SURFACE SHALL BE SAW CUT IN A STRAIGHT LINE A MINIMUM OF 12" WIDER THAN UNDISTURBED SIDE OF THE TRENCH ASYMMETRICAL ABOVE THE CENTER LINE OF THE EXCAVATION.
- ANY CONCRETE PAVING SHALL BE SAW CUT 6" WIDER THAN UNDISTURBED SIDES OF THE EXCAVATION.
- LOCAL STREETS SHALL BE 10" AND MAJOR/MINOR STREETS SHALL BE 12" THICK. BASE MATERIAL SHALL BE PLACED 2' WIDER THAN TRENCH WIDTH ON BOTH SIDES. FLEXIBLE BASE SHALL BE TXDOT ITEM 247 TYPE A, GRADE 1.
- DAMAGED PAVEMENT OUTSIDE THE TRENCH CUT SHALL BE REMOVED AND REPLACED WITH A BASE, THICKNESS OF 10" OR A THICKNESS MATCHING EXISTING, WHICHEVER IS GREATER, AT NO ADDITIONAL COST TO THE OWNER.
- REPLACEMENT AC SURFACE LAYER SHALL BE OF THE TYPE AND THICKNESS BASED ON FUNCTIONAL CLASSIFICATION.
A. MIN. 2" HMAC SHALL BE TXDOT ITEM 340, TYPE D FOR TRENCH REPAIR IN LOCAL/RESIDENTIAL STREETS AND DRIVEWAYS.
B. MIN. 3" HMAC SHALL BE TXDOT ITEM 340, TYPE D FOR TRENCH REPAIR IN COLLECTION/ARTERIAL STREETS.

TRENCH SAFETY NOTES

- TRENCH SAFETY SYSTEM, SHORING OR SIDE SLOPE TO BE IN ACCORDANCE WITH OSHA STANDARDS.
- TRENCH SAFETY SYSTEM PLAN TO BE PROVIDED BY CONTRACTOR PRIOR TO CONSTRUCTION.

ASPHALT PAVEMENT AND DRIVEWAY (TRENCH REPAIR)

SCALE: N.T.S.

KYNDWOOD SUBDIVISION WATER MAIN EXTENSION

CONSTRUCTION DETAILS

JOB: 14CCSUD001
DATE: AUGUST 2022
DRAWN: KJV PM: CP
DESIGN: CB DM: BK
PEER: OTHER:
REVISIONS:
DELTA DESCRIPTION DATE

SHEET:

D1.1



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