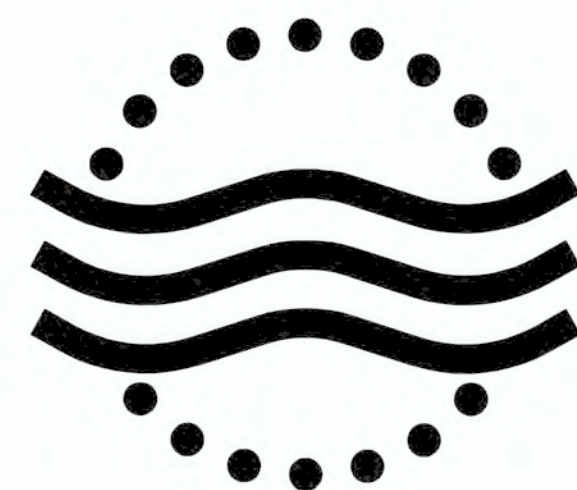


WATER VALVES REPLACEMENT PROJECT PHASE 4

Re-Bid

BROWNSVILLE, TEXAS

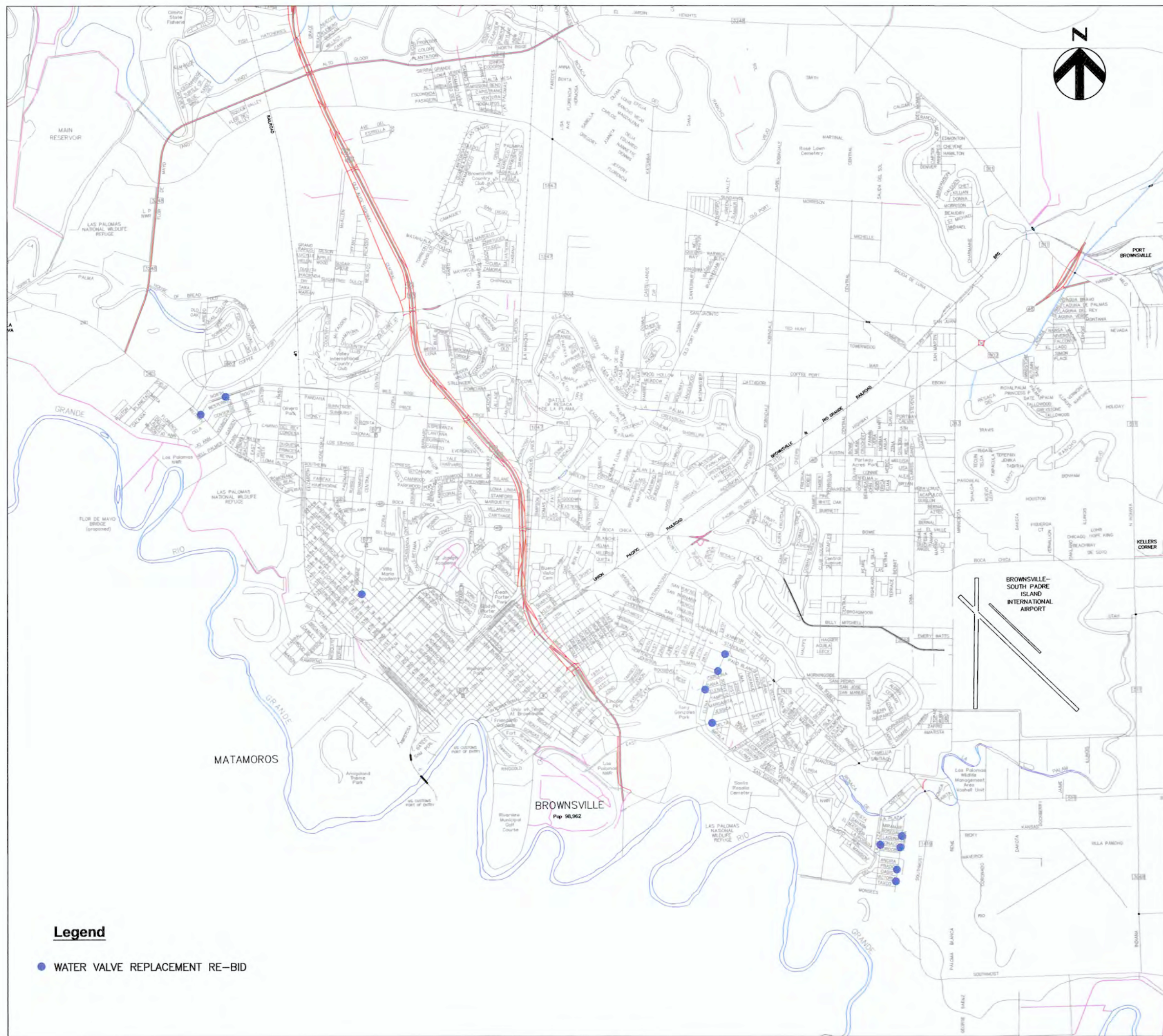
B025-25



BROWNSVILLE
PUBLIC UTILITIES BOARD

Brownsville Public Utilities Board - Board of Directors

ARTHUR "ART" RENDONCHAIR
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LOCATION MAP
NTS

SHEET INDEX

SHEET DRAWING NO. TITLE

GENERAL

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2	0000G-002	GENERAL NOTES
3	0000C-001	WATER DETAILS
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5	0000C-003	ADA DETAILS

WATER VALVES REPLACEMENT PROJECT

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4/10/2025
Marie C. Leal, P.E.

REVISIONS			
NO.	DATE		APP.

2025

PROJECT NO: B025 - 25
DRAWING NO: 0000G-001
SHEET NO: 1 OF 9

GENERAL NOTES

1. THE FOLLOWING NOTES ARE GENERAL AND APPLY TO ALL SHEETS OF ALL CONTRACT DOCUMENTS AS IF THEY WERE WRITTEN IN THEIR ENTIRETY ON EACH SHEET.
2. CONTRACTOR SHALL CONTACT THE OWNER 48 HOURS PRIOR TO START OF ANY CONSTRUCTION WITHIN PROJECT SITE.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING CONDITIONS INCLUDING LOCATION AND DIMENSIONS OF ALL EXISTING CONSTRUCTION AND UTILITIES. CONTRACTOR SHALL NOTIFY ENGINEER IF THERE IS A CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND EXISTING CONSTRUCTION BEFORE PROCEEDING WITH WORK.
4. CONTRACTOR TO NOTIFY ALL UTILITY COMPANIES WITHIN THE CONSTRUCTION AREA 48 HOURS PRIOR TO EXCAVATION NEAR THEIR UTILITIES.
5. UNLESS DETAILED, SPECIFIED OR OTHERWISE INDICATED ON THE DRAWINGS CONSTRUCTION SHALL BE AS INDICATED IN THE APPLICABLE TYPICAL DETAILS AND GENERAL NOTES. TYPICAL DETAILS SHALL APPLY EVEN THOUGH NOT REFERENCED AT SPECIFIC LOCATIONS ON DRAWINGS.
6. WHERE NO CONSTRUCTION DETAILS ARE SHOWN OR NOTED FOR ANY PART OF WORK, DETAILS SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.
7. PRIOR TO EXCAVATION FOR NEW STRUCTURES, ELECTRICAL CONDUIT, FABRICATION OF NEW PIPING AND/OR OTHER PROPOSED UTILITIES, CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL EXISTING PIPING AND UTILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL TEMPORARILY RELOCATE CONFLICTING EXISTING UTILITIES AT TIE-IN/CONNECTION LOCATIONS AND REINSTALL THEM AS REQUIRED TO ELIMINATE THE CONFLICT AT NO ADDITIONAL COST TO THE OWNER.
8. EXISTING FACILITY AND UTILITY INFORMATION SHOWN ON THE DRAWING WAS OBTAINED FROM AVAILABLE RECORDS OR ELECTRONIC FILES. THE CONTRACTOR SHALL FIELD VERIFY ALL LOCATIONS, SIZES, MATERIAL TYPES, AND ELEVATIONS SHOWN AROUND OR NEAR AREAS OF CONSTRUCTION PRIOR TO START OF CONSTRUCTION.
9. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT FROM DAMAGE, ALL EXISTING FACILITIES AND UTILITIES SHOWN OR NOT SHOWN WHICH ARE TO REMAIN IN PLACE. ALL FACILITIES DAMAGED BY THE CONTRACTOR'S OPERATION SHALL BE EXPEDITIOUSLY REPAIRED OR RECONSTRUCTED TO THE ORIGINAL OR BETTER CONDITION AT THE CONTRACTOR'S EXPENSE WITHOUT ADDITIONAL COMPENSATION.
10. CONTRACTOR SHALL VERIFY LOCATION OF ALL, MECHANICAL AND ELECTRICAL ITEMS BEFORE PLACING ANY STRUCTURAL STEEL OR CONCRETE. ALSO, STRUCTURAL DIMENSIONS AND OPENINGS CONTROLLED BY MECHANICAL OR ELECTRICAL EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
11. MECHANICAL AND ELECTRICAL EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, RECESSES AND REVEALS NOT SHOWN ON THE STRUCTURAL DRAWINGS, BUT REQUIRED BY OTHER CONTRACT DRAWINGS, SHALL BE PROVIDED PRIOR TO CASTING CONCRETE.
12. CONTRACTOR TO OBTAIN ALL CONSTRUCTION PERMITS NOT SUPPLIED BY OWNER AT HIS EXPENSE PRIOR TO COMMENCEMENT OF WORK.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE AT ALL TIMES DURING CONSTRUCTION OF PROPOSED FACILITIES. NATURAL GROUND ADJACENT TO UTILITY TRENCH EXCAVATION TO BE CLEARED AND GRUBBED PRIOR TO PLACEMENT OF EXCESS TRENCH MATERIAL (NO ADDITIONAL PAYMENT-INCLUDE IN UNIT PRICES OF UNDERGROUND UTILITIES CONSTRUCTION.)
14. CONTRACTOR IS RESPONSIBLE FOR CLEANING MUD AND/OR DIRT TRACKED ONTO EXISTING STREETS BY HIS WORKMEN'S, SUPPLIER'S, OR SUBCONTRACTOR'S VEHICLES. STREETS MUST BE CLEANED WITHIN 2 HOURS OF WHEN THE TRACKING OCCURS. NO SEPARATE PAY.
15. PROVIDE ALL SHEETING/SHORING REQUIRED TO PROTECT EXISTING STRUCTURES, PIPE, AND FACILITIES. CONTRACTOR IS HEREBY INFORMED THAT ALL TRENCHING AND SHORING WILL BE DONE IN STRICT ACCORDANCE WITH THE LATEST OSHA STANDARDS.
16. ANY ADDITIONAL SOIL BORINGS THE CONTRACTOR REQUIRES ARE TO BE DONE BY THE CONTRACTOR AT HIS EXPENSE.
17. CONSTRUCTION STAKING (ALIGNMENT AND GRADE) TO BE PROVIDED BY THE CONTRACTOR AT NO SEPARATE PAY.
18. SURPLUS EXCAVATED MATERIAL SHALL BE REMOVED AND DISPOSED OF OFF SITE AS DIRECTED BY THE ENGINEER. IF THE ENGINEER NOTIFIES THE CONTRACTOR THAT THE OWNER DOES NOT HAVE USE FOR THIS MATERIAL, THE SURPLUS MATERIAL BECOMES THE PROPERTY OF THE CONTRACTOR, AND IT IS HIS RESPONSIBILITY TO DISPOSE OF THE MATERIAL.
19. ALL WORK SHALL BE DONE IN ACCORDANCE WITH APPLICABLE LOCAL REQUIREMENTS.
20. PAVED SURFACES SHALL BE PROTECTED FROM DAMAGE FROM ANY EQUIPMENT.
21. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY IRON RODS DISTURBED DURING CONSTRUCTION AND SHALL BE REPLACED BY REGISTERED PUBLIC LAND SURVEYOR TO ORIGINAL PROPERTY CORNER AT NO SEPARATE PAY.
22. WORK PERFORMED UNDER THIS CONTRACT IS GOVERNED BY REQUIREMENTS OF SEVERAL PUBLIC, GOVERNMENTAL, AND PRIVATE ENTITIES. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF SAID ENTITIES.
23. CONTRACTOR SHALL SECURE THE CONSTRUCTION SITE AT ALL TIMES INCLUDING EVENTS OF INCLEMENT WEATHER.
24. THE BPUH SHALL DICTATE THE VALVE REPLACEMENT SEQUENCE.
25. THE CONTRACTOR SHALL COMPLETE ALL ACTIVITIES ASSOCIATED WITH THE VALVE REPLACEMENT WITHIN THE VALVE PACKET PRIOR TO COMMENCING A NEW VALVE PACKET.

GENERAL UTILITY NOTES

1. ALL CONSTRUCTION SHALL CONFORM WITH BPUB STANDARDS
2. INFORMATION ON EXISTING BURIED PIPING, ELECTRICAL CONDUITS, HAS NOT BEEN VERIFIED AND THE ACCURACY OF SUCH INFORMATION IS NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO LOCATE UNDERGROUND FEATURES SUFFICIENTLY IN ADVANCE OF OPERATION TO AVOID DAMAGE OR CONFLICTS.
3. IN THE EVENT OF DAMAGE TO UNDERGROUND FACILITIES WHETHER OR NOT SHOWN IN THE DRAWINGS, THE CONTRACTOR SHALL MAKE THE NECESSARY REPAIRS TO PLACE THE FACILITIES BACK IN SERVICE AT NO INCREASE IN THE CONTRACT PRICE. SUCH REPAIRS SHALL CONFORM TO THE REQUIREMENTS OF THE COMPANY OR AGENCY SERVICING THE FACILITY.
4. TRENCHING FOR UTILITY INSTALLATION SHALL BE NO MORE THAN 200' AHEAD OF PIPE INSTALLATION AND BACKFILL. NO TRENCH SHALL BE LEFT OPEN AFTER NORMAL WORKING HOURS. TRENCH PLATES SHALL BE USED TO COVER OPEN TRENCHES AT ROAD CROSSINGS.
5. UNLESS SHOWN OTHERWISE ON PLANS OR SPECIFICATIONS, DEWATERING FOR UTILITY INSTALLATION, INCLUDING ALL MANHOLES & CULVERTS, WILL NOT BE PAID FOR DIRECTLY BUT CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.
6. ALL PIPELINES HAVE A MINIMUM COVER OF 60" UNLESS THE COVER AND DEPTH IS SPECIFICALLY INDICATED IN THE DRAWINGS. PIPES SHALL BE ROUTED AS SHOWN UNLESS MINOR REVISIONS ARE NECESSARY TO MISS EXISTING PIPES, STRUCTURES, ETC. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL FITTINGS AND ADAPTERS REQUIRED TO MAKE THE ROUTING CHANGES AT NO ADDITIONAL COST TO THE OWNER.
7. CONTRACTOR SHALL MAKE CONNECTIONS TO EXISTING PIPE, EQUIPMENT, ETC. AS REQUIRED AND SHALL PROVIDE ALL FITTINGS, ADAPTERS AND APPURTENANCES REQUIRED TO MAKE THE CONNECTIONS. PROVIDE ALL SUPPORTS REQUIRED FOR A RIGIDLY SUPPORTED, COMPLETE AND WORKING SYSTEM.
8. CONTRACTOR SHALL COORDINATE ANY AND ALL TIE-INS WHICH REQUIRE INTERRUPTION OF SERVICE TO EXISTING CUSTOMERS WITH FIELD TECHNICIAN AT MINIMUM OF 48HR NOTICE.
9. ALL EXISTING PIPES THAT ARE TO BE ABANDONED IN PLACE OR REMOVED MAY NOT BE SHOWN. WHERE PIPING IS TO BE ABANDONED AND MUST REMAIN IN SERVICE UNTIL COMPLETION OF OTHER PHASES OF WORK, AND IT CONFLICTS WITH NEW PIPING, TEMPORARILY RELOCATE PIPING (BY-PASS) AND PROVIDE ALL NECESSARY EQUIPMENT AND MATERIALS AS REQUIRED TO MAINTAIN SERVICE AT NO ADDITIONAL COST TO THE OWNER.
10. ABANDONED FITTINGS, VALVES, EQUIPMENT, ETC, SHALL BE RECOVERED AND STOCKPILED AT THE BPUB YARD STAGING AREA BETWEEN THE HOURS OF 8AM-3:30PM BY THE CONTRACTOR FOR SALVAGE BY THE OWNER. HOWEVER, ALL RELATED ITEMS THAT ARE UNWANTED BY THE OWNER SHALL BECOME PROPERTY OF THE CONTRACTOR AND DISPOSED OF IN AN APPROPRIATE MANNER.
11. OVERHEAD LINES MAY EXIST ON THE PROPERTY AND CONTRACTOR SHALL TAKE SPECIAL PRECAUTIONS IN THE VICINITY OF ANY OVERHEAD ELECTRIC LINES. LINES HAVE NOT BEEN MARKED SINCE THEY ARE CLEARLY VISIBLE, BUT CONTRACTOR SHOULD LOCATE THEM PRIOR TO CONSTRUCTION. CONTRACTOR SHALL ABIDE BY NATIONAL ELECTRIC CODE AND ANY REQUIREMENT BY OWNER OF ELECTRIC LINES. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE, FORBIDS ALL ACTIVITIES IN WHICH PERSONS OR THINGS MAY COME WITHIN SIX (6) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES. CONTRACTOR IS LEGALLY RESPONSIBLE FOR SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. THE CONTRACTOR SHALL TAKE SPECIAL PRECAUTIONS IN THE VICINITY OF ANY OVERHEAD ELECTRIC LINES.
12. CONTRACTOR SHALL VERIFY LOCATION OF ALL, MECHANICAL AND ELECTRICAL ITEMS BEFORE PLACING ANY STRUCTURAL STEEL OR CONCRETE. ALSO, STRUCTURAL DIMENSIONS AND OPENINGS CONTROLLED BY MECHANICAL OR ELECTRICAL EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
13. MECHANICAL AND ELECTRICAL EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, RECESSES AND REVEALS NOT SHOWN ON THE STRUCTURAL DRAWINGS, BUT REQUIRED BY OTHER CONTRACT DRAWINGS, SHALL BE PROVIDED PRIOR TO CASTING CONCRETE.
14. LOCATIONS OF UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS. NEITHER THE OWNER NOR ENGINEER ASSUMES ANY RESPONSIBILITY FOR UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN. THE CONTRACTOR SHALL VERIFY ALL LOCATIONS AND ELEVATIONS AND SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT UTILITY LINES WHETHER SHOWN OR NOT SHOWN.
15. CONTRACTOR TO MAKE ARRANGEMENTS WITH THE APPROPRIATE UTILITY COMPANY FOR SECURING POLES, IF NECESSARY, WHILE CONSTRUCTION PASSES BY POLES. COSTS OF SECURING POLES WILL BE PAID FOR BY THE CONTRACTOR, NO SEPARATE PAY.
16. CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH OSHA STANDARDS FOR CONFINED SPACE. CONTRACTOR SHALL PROVIDE ALL REQUIRED EQUIPMENT INCLUDING A MONITOR FOR AIR AND EQUIPMENT FOR BREATHING AIR AND RETRIEVING SYSTEMS.
17. CONTRACTORS SHALL NOTIFY ALL UTILITY COMPANIES AND CONTROLLING ENTITIES A MINIMUM OF 48 HRS PRIOR TO BEGINNING CONSTRUCTION.
18. CONTRACTOR SHALL COORDINATE THE FLUSHING OF THE LINE WITH THE FIELD TECHNICIAN. THE BPUB SHALL BE RESPONSIBLE TO FLUSH THE LINE.

STREET & EXCAVATION

1. ASPHALT LAYING MACHINE SHALL BE CAPABLE OF LAYING A 14' WIDTH.
 2. DURING SUBGRADE PREPARATION, THE DEVELOPMENT OF ANY SOFT AREAS SHALL BE REMOVED AND REPLACED WITH ACCEPTABLE MATERIAL AND COMPACTED AS PER PROJECT SPECIFICATIONS. A SOFT AREA SHALL BE DEFINED AS AN AREA THAT EXHIBITS A DEPRESSION GREATER THAN 1" MEASURED VERTICALLY WHEN ROLLED AT 2' INTERVALS OR LESS BY A 14 YARD DUMP TRUCK FULLY LOADED. THIS WORK SHALL NOT BE PAID FOR DIRECTLY BUT CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.
 3. WHERE EXISTING PAVEMENT IS TO REMAIN, MAKE STRAIGHT SAW CUTS IN EXISTING PAVEMENT PRIOR TO REMOVAL.
 4. WHERE EXISTING CONCRETE IS TO REMAIN, MAKE STRAIGHT SAW CUTS A MINIMUM OF 2 INCHED PRIOR TO REMOVAL.
 5. FLEXIBLE BASE SHALL BE COMPACTED TO A MINIMUM OF 98% STANDARD PROCTER DENSITY.
 6. PRIME COAT MATERIAL SHALL BE MC-30 APPLIED AT A RATE OF 0.20 GAL/SY.
 7. CARE SHALL BE TAKEN TO PROTECT CURB AND GUTTER AND OTHER CONCRETE SURFACES FROM ASPHALT SPLATTER DURING PRIMING, SEALING, AND TACKING OPERATIONS.
 8. REMOVE SIDEWALKS & CURBS TO NEAREST EXPANSION, DUMMY OR CONSTRUCTION JOINT. REMOVAL OF EXISTING CONCRETE OR OTHER PAVED AREAS SHALL INCLUDE ALL AGGREGATE BASE MATERIALS. AREAS TO BE REMOVED SHALL BE SAW CUT CLEAN AND TRUE TO LINE. REMOVE ALL NON ORGANIC MATTER THAT WOULD INTERFERE WITH THE GROWTH OF VEGETATION.
 9. PRIMING AND HOT MIX OPERATIONS SHALL NOT BE CONDUCTED ON DAYS WHEN OZONE ADVISORY HAS BEEN ISSUED; EXCLUDING DIRECTED REPAIRS.
 10. THE COMPLETED FLEXIBLE BASE SHALL RECEIVE A PRIME COAT CONSISTING OF MC-30 AND A TACK COAT CONSISTING OF SS-1 PRIOR TO THE PLACEMENT OF THE HOT MIX ASPHALTIC CONCRETE PAVEMENT.
 11. PAVEMENT REPAIR CONDUCTED IN TxDOT R.O.W. SHALL BE REPAIRED TO THE NEAREST FULL TRAVEL LANE WIDE AND FIFTY LINEAR FEET FROM THE EXCAVATION EACH WAY.
 12. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ANY AND ALL PAVEMENT MARKINGS ON THE ROADWAY DISTURBED BY CONSTRUCTION.
- MISCELLANEOUS
1. CONTRACTOR SHALL VISIT THE SITE OF THE WORK AND EXAMINE LOCAL CONDITIONS TO BE ENCOUNTERED, IMPROVEMENTS TO BE PROTECTED, PERMITS AND FEES REQUIRED, AND OTHER RESEARCH NECESSARY TO ASSURE THAT THE PROJECT IS THOROUGHLY UNDERSTOOD AND IS FULLY AWARE OF ALL CONDITIONS AND CONSTRAINTS WHICH MAY BE ENCOUNTERED DURING THE COURSE OF CONSTRUCTION.
 2. WHERE CALLED FOR IN THE PLANS, CEMENT STABILIZED SAND SHALL CONSIST OF SAND PER PROJECT SPECIFICATIONS AND 1-1/2 SACKS OF PORTLAND CEMENT PER CUBIC YARD (141LBS/CY). THIS WORK SHALL NOT BE PAID FOR DIRECTLY BUT CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.
 3. IN GENERAL, AVOID THE REMOVAL OF EXISTING TREES, SHRUBS AND PLANTS. TREE, SHRUB AND PLANT REMOVAL MAY OCCUR, BUT ONLY WHEN NECESSARY FOR CONSTRUCTION. THEY SHALL BE REPLACED TO EQUAL OR BETTER CONDITION. (NO SEPARATE PAY)
 4. CONTRACTOR TO REMOVE AND REPLACE AFFECTED TRAFFIC SIGNS AND MAILBOXES TO EQUAL OR BETTER CONDITIONS. (NO SEPARATE PAY)
 5. ALL AREAS DISTURBED DURING EXCAVATION AND GRADING ACTIVITIES SHALL BE HYDRO-SEEDED.
 6. ALL LANDSCAPE AREAS DISTURBED DURING CONSTRUCTION SHALL BE RETURNED TO EQUAL OF BETTER CONDITIONS.
 7. CONTRACTOR SHALL MAINTAIN THE FUNCTION OF THE EXISTING STORM SEWER INFRASTRUCTURE DURING THE COURSE OF CONSTRUCTION.
 8. IN THE EVENT AN ISOLATION VALVE IS INOPERABLE, THE BPUB WILL EXPEDITE THE LOCATION OF THE NEXT CLOSEST ISOLATION VALVE. THE BPUB RESERVES THE RIGHT TO RELOCATE CONTRACTOR TO NEW AREA.
 9. EXISTING PIPE LEFT IN PLACE AFTER DEMOLITION/REMOVAL ACTIVITIES SHALL BE PLUGGED OR CAPPED USING RESTRAINED FITTING. IF RESTRAINED FITTINGS CAN NOT BE USED THEN THRUST BLOCKING SHALL BE INSTALLED.
 10. VALVES AFFECTING 100+ CUSTOMERS WILL BE COORDINATED WITH BPUB OPERATIONS FOR NIGHT OPERATION.
 11. ADEQUATE DEWATERING SYSTEM SHALL BE UTILIZED IN ORDER TO MINIMIZE WATER SERVICE INTERRUPTION. NO SUMP WITH LESS THAN 150 GPM ALLOWED REFERENCE SPECIFICATION FOR DEWATERING FOR ALLOWED SIZING.

TRAFFIC CONTROL

1. CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION FOR ALL TRAFFIC AFFECTED BY THE WORK WITH WARNINGS SIGNS, FLAGS, LIGHT AND FLAG MEN WHERE NECESSARY AS REQUIRED BY TxDOT AND/OR THE CITY OF BROWNSVILLE TRAFFIC DEPARTMENT.
2. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST TEXAS MANUAL OF UNIFORM CONTROL DEVICES (MUTCD), LATEST EDITION.
3. THE CONTRACTOR SHALL PLAN AND SEQUENCE ALL CONSTRUCTION ACTIVITY IN SUCH A MANNER THAT WILL PERMIT SAFE PEDESTRIAN AND VEHICULAR MOVEMENT.
4. 48 HRS. PRIOR TO ANY EXCAVATION, CONTRACTOR SHALL COORDINATE WITH THE CITY OF BROWNSVILLE TRAFFIC DEPARTMENT AND TxDOT FOR FIELD VERIFICATION. EXTREME CAUTION SHALL BE USED WHEN EXCAVATING AROUND THE ELECTRICAL CONDUIT AREAS.

TESTING NOTES

1. BROWNSVILLE PUBLIC UTILITIES BOARD TO BE GIVEN 48 HOURS NOTICE PRIOR TO ALL TESTING OF WATER LINE AND DESTINY TESTING. REFER TO SPECIFICATION AND TCEQ NOTES FOR TESTING REQUIREMENTS. ALL TESTING TO BE CONDUCTED IN PRESENCE OF BPUB FIELD TECHNICIAN.
2. SOIL DENSITY TEST AND RELATED SOIL ANALYSIS TESTS TO BE ACCOMPLISHED BY AN INDEPENDENT LABORATORY UNDER CONTRACT WITH THE OWNER. TESTS WHICH SHOW UNSATISFACTORY RESULTS ARE TO BE REPEATED AT THE EXPENSE OF THE CONTRACTOR SUBSEQUENT TO CONTRACTOR'S REMEDIAL ACTIVITIES.
3. DENSITY TESTING OF COMPACTED SUBGRADE MATERIAL FOR FIRST COURSE AND SECOND COURSE OF COMPACT BASE SHALL BE MADE AT ALL DRIVEWAYS AND INTERSECTING STREETS, TxDOT ROADWAYS.

PROJECT CONSTRUCTION SIGN

ONE OR MORE CONSTRUCTION SIGNS AT PROJECT SITE OR NEAR THE CONSTRUCTION SITE PER THE FOLLOWING GUIDANCE AND ATTACHED SPECIFICATIONS.

1. THE GENERAL CONTRACTOR AS DIRECTED BY THE OWNER SHALL FURNISH AND INSTALL A CONSTRUCTION SIGN(S) FOR IDENTIFICATION OF THE WATER VALVE REPLACEMENT PROJECT. THE SIGN SHALL BE CONSTRUCTED AS SHOWN ON DETAILS SHEET. NO SEPARATE PAY.
2. IF THE CONTRACTOR CHOOSES TO ERECT A SEPARATE SIGN, IT MAY BE ATTACHED TO OR ADJACENT TO THE PROJECT SIGN, BUT NO OTHER CONTRACTOR OR SUBCONTRACTOR OR MATERIAL SIGNS WILL BE PERMITTED ON THE CONSTRUCTION PROJECT SIGN.
3. THE CONSTRUCTION SIGN WILL BE INSTALLED PRIOR TO ANY CONSTRUCTION AT A LOCATION WHICH IS NEAR THE PROJECT SITE AND WITHIN PUBLIC VIEWING.
4. THE SIGN (PORTABLE MOUNT PERMISSIBLE) WILL BE CONSTRUCTED OF A 4.0 FEET BY 4.0 FEET EXTERIOR TYPE HIGH DENSITY OVERLaid PLYWOOD OR OTHER SIGN MATERIAL OF EQUIVALENT QUALITY WITH ROUNDED CORNERS AND PRE-PUNCHED HOLES TO INSURE A HASSLE-FREE INSTALLATION.
5. THE SIGN SHALL BE CONSTRUCTED WITH BLACK VINYL LETTERING ON A REFLECTIVE WHITE BACKGROUND AS SHOWN ON DETAIL SHEET.
6. LETTERING WILL BE OF PROFESSIONAL QUALITY AND ALL LETTERING WILL BE IN PROPORTION TO THE SIZES SHOWN AND ALIGNED ON THE SIGN.
7. INFORMATION SPECIFIED ON THE ATTACHED DETAIL WILL BE DISPLAYED ON THE SIGN.
8. THE SIGN WILL BE MAINTAINED IN GOOD CONDITION BY THE CONTRACTOR UNTIL COMPLETION OF THE CONSTRUCTION PROJECT.
9. THE SIGN WILL BE REMOVED WHEN THE CONSTRUCTION IS COMPLETE.

PROJECT TYPE:

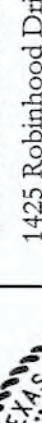
WATER VALVE REPLACEMENT

UTILITY OWNER CONTACT:

BROWNSVILLE PUBLIC UTILITIES BOARD
(956) 983-6100

CONTRACTOR CONTACT:

CONTRACTOR COMPANY NAME _____
CONTRACTOR COMPANY PHONE NUMBER _____

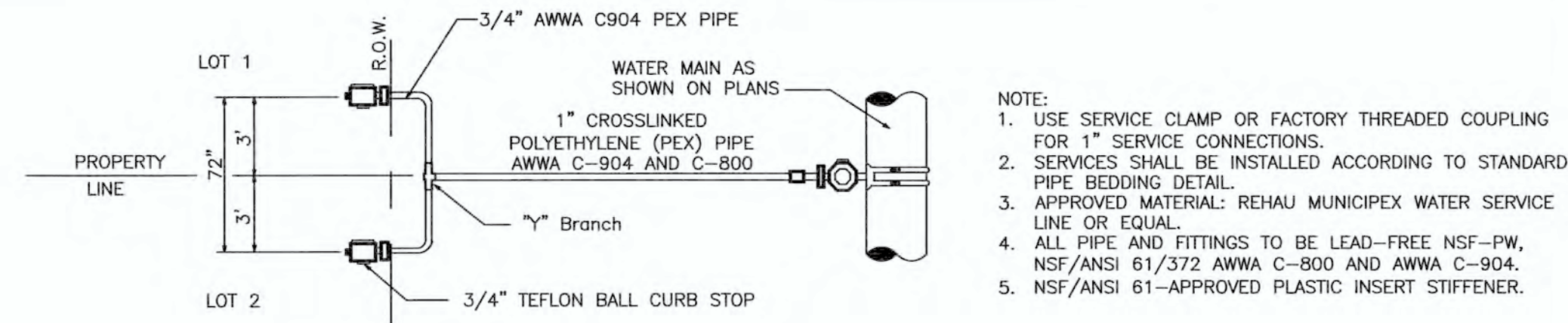
SHEET 2 OF 9	Scale: As Shown	5				Water Valves Replacement Project Re-Bid GENERAL NOTES	 STATE OF TEXAS MARIE C. LEAL 1925 PROFESSIONAL ENGINEER No. 1461823	 BROWNVILLE PUBLIC UTILITIES BOARD	Public Utilities Board 1425 Robinhood Drive Brownsville, Texas 78221 Water and Wastewater Engineering Department (956) 983-6340 (956) 983-6230 FAX
	Designed by: Michael Anzaldúa, EIT	4							
	Drawn by: Luis Martinez	3							
	Checked by: Michael Anzaldúa, EIT	2							
	Approved by: Marie C. Leal, PE	1							
BID #:		NO.	DATE	REVISION	APPROV.				

WATER MAIN – SANITARY SEWER CROSSINGS

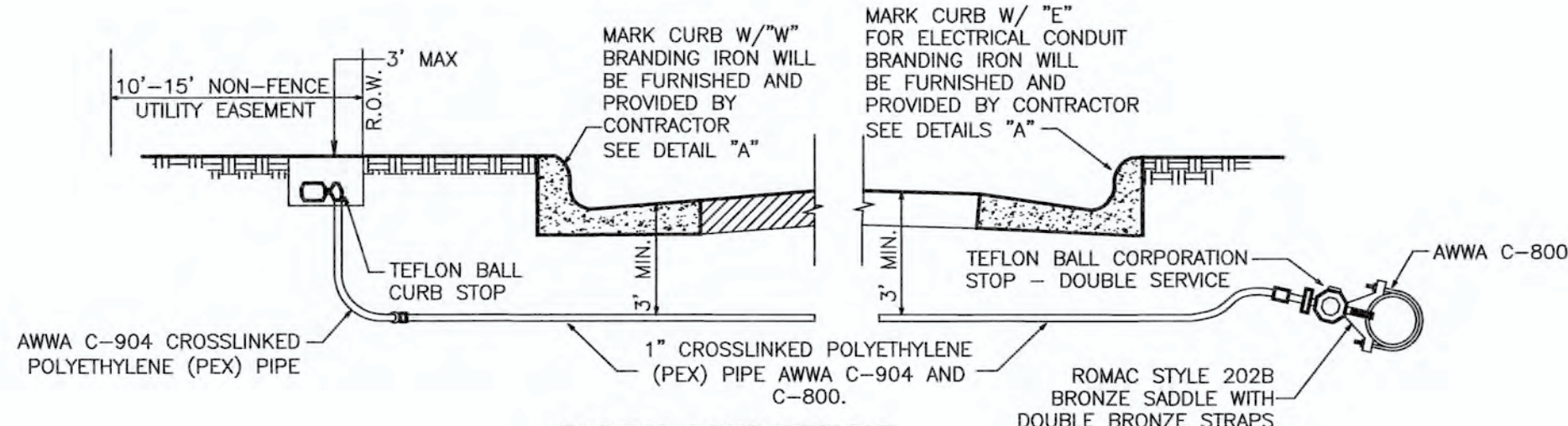
PRIMARY CONDITION	PROPOSED WATER EXISTING SANITARY SEWER		PROPOSED WATER PROPOSED SANITARY SEWER OR EXISTING WATER PROPOSED SANITARY SEWER	
	WATER OVER SANITARY SEWER	WATER UNDER SANITARY SEWER	WATER OVER SANITARY SEWER	WATER UNDER SANITARY SEWER
IF THE CLEARANCE IS	LESS THAN 2'	GREATER THAN 2' BUT LESS THAN 9'	LESS THAN 2'	GREATER THAN 2' BUT LESS THAN 9'
*PROTECTION REQUIREMENT	1	2	3	4

*PROTECTION REQUIREMENTS FOR SANITARY SEWER CROSSINGS
(UNLESS VARIANCE IS GRANTED BY THE TCEQ)

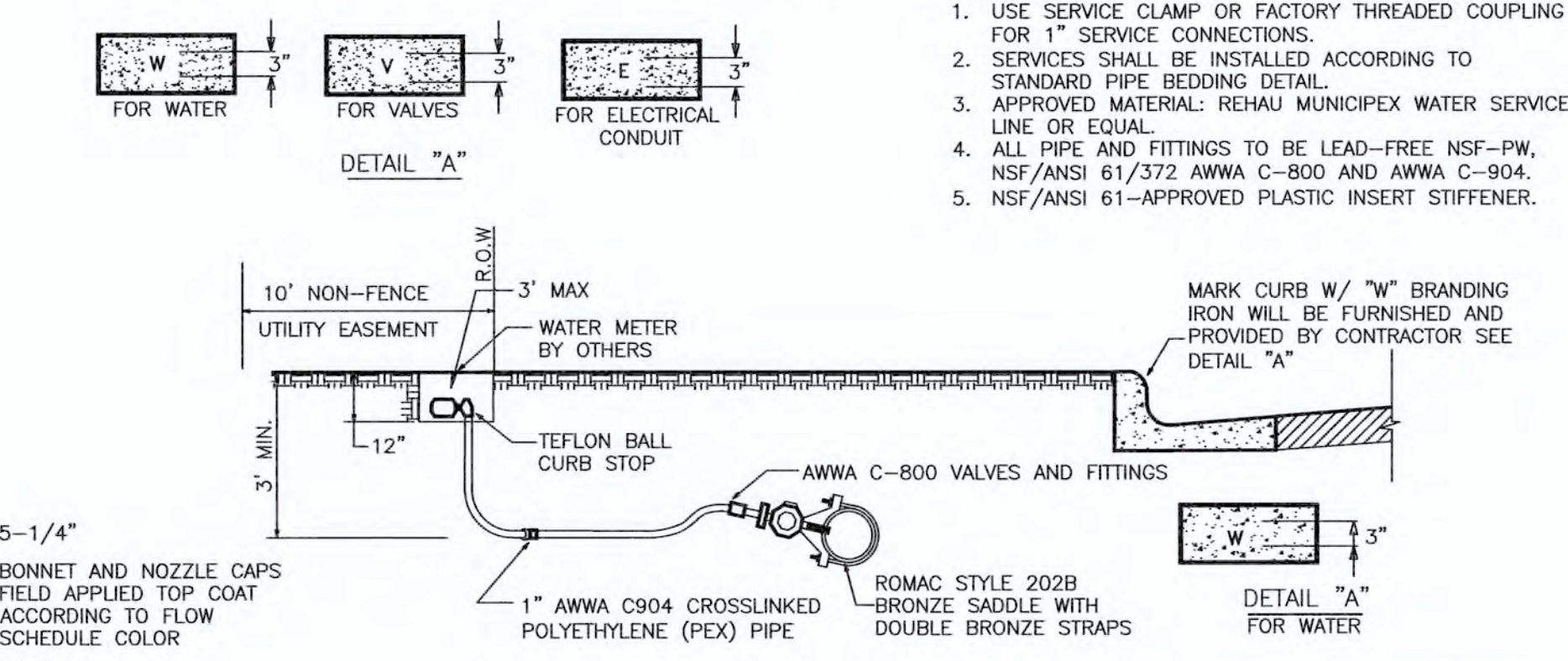
- CENTER ONE (1) 20-FOOT JOINT OF C-900 PVC DR18, CLASS 150, WATERLINE PIPE OVER SANITARY SEWER; 6-INCH ABSOLUTE MINIMUM CLEARANCE.
- IF NO EVIDENCE OF SANITARY SEWER LEAKAGE, CENTER ONE JOINT OF WATER LINE OVER SANITARY SEWER; 24-INCH ABSOLUTE MINIMUM CLEARANCE. IF THE SEWER LINE IS LEAKING, THE SEWER LINE SHALL BE REPLACED FOR AT LEAST NINE FEET IN BOTH DIRECTIONS (18 FEET TOTAL) WITH AT LEAST 150 psi PRESSURE-RATED PIPE EMBEDDED IN CEMENT STABILIZED SAN FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END.
- SEWER LINE SHALL BE ENCASED. THE CASING PIPE SHALL BE CONSTRUCTED OF AT LEAST 150 psi PRESSURE PIPE CLASS PIPE, AT LEAST 18 FEET LONG, SEALED IN BOTH ENDS WITH CEMENT GROUT OR AN MANUFACTURED SEAL, AT LEAST 2 NOMINAL SIZES LARGER THAN THE WASTEWATER COLLECTION PIPE, AN ABSOLUTE MINIMUM SEPARATION OF ONE FOOT BETWEEN WATER LINE AND ENCASEMENT PIPE, OR WATER LINE SHALL BE CONSTRUCTED OF DUCTILE IRON OR STEEL PIPE WITH MECHANICAL OR WELDED JOINTS AS APPROPRIATE. AN ABSOLUTE MINIMUM SEPARATION DISTANCE OF ONE FOOT BETWEEN THE WATER LINE AND WASTEWATER MAIN OR LATERAL SHALL BE PROVIDED.
- AUGER 8-FEET MINIMUM EACH SIDE OF SANITARY SEWER. PLACE ONE 20-FOOT JOINT OF C900 PVC, 150 PSI, CENTERED UNDER SANITARY SEWER. FILL BORED HOLE WITH BENTONITE/CLAY MIXTURE; 2-INCH ABSOLUTE MINIMUM CLEARANCE OR REPLACE THE EXISTING SANITARY SEWER WITH 150 PSI LINED DUCTILE IRON OR PVC PIPE WITH APPROPRIATE ADAPTERS ON ALL PORTIONS OF THE SANITARY WITHIN 9-FEET OF THE WATER MAIN.
- WHERE A NEW POTABLE WATER LINE CROSSES A NEW, PRESSURE RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATER LINE PIPE SHALL BE CENTERED OVER AND SHALL BE PERPENDICULAR TO THE WASTE WATER LINE SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTER LINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATER LINE SHALL BE AT LEAST SIX INCHES ABOVE THE WASTEWATER MAIN OR LATERAL, WHENEVER POSSIBLE. THE CROSSING SHALL BE CENTERED BETWEEN JOINTS OF THE WASTEWATER MAIN OR LATERAL. THE WASTEWATER PIPE SHALL HAVE A MINIMUM PRESSURE RATING OF AT LEAST 150 psi, THE WASTEWATER MAIN OR LATERAL SHALL EMBEDDED IN CEMENT STABILIZED SAND FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END.
- IF CLEARANCE IS BETWEEN 2 TO 9-FEET
A) CENTER A MINIMUM 18-FOOT JOINT OF 150 PSI LINED DUCTILE IRON OR PVC PIPE AT WATER LINE.
B) CEMENT STABILIZED SAND SHALL HAVE A MINIMUM OF 10% CEMENT PER CUBIC YARD OF CEMENT STABILIZED SAND MIXTURE, BASED ON LOOSE DRY WEIGHT VOLUME (AT LEAST 2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE). THE CEMENT STABILIZED SAND BEDDING SHALL BE A MINIMUM OF SIX INCHES ABOVE AND FOUR INCHES BELOW THE WASTEWATER MAIN OR LATERAL. THE USE OF BROWN COLORING IN CEMENT STABILIZED SAND FOR WASTEWATER MAIN OR LATERAL BEDDING IS RECOMMENDED FOR THE IDENTIFICATION OF PRESSURE RATED WASTEWATER MAINS DURING FUTURE CONSTRUCTION.



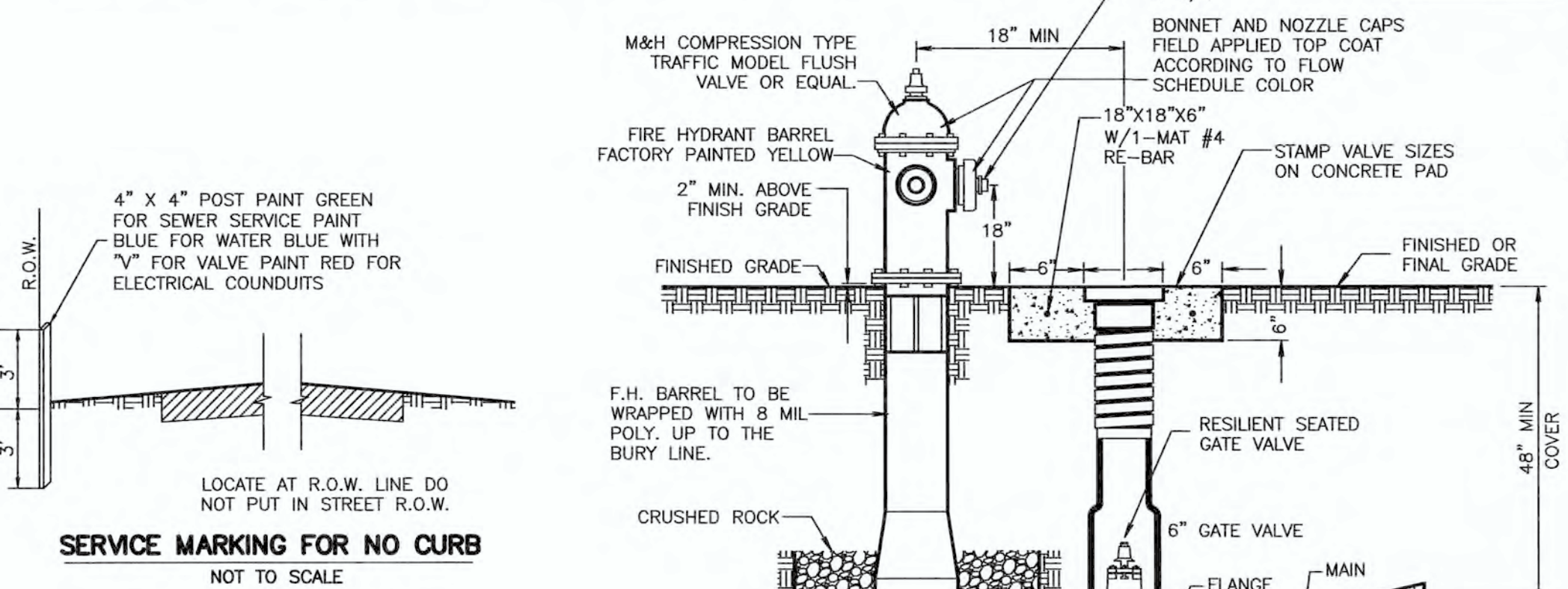
TYPICAL DOUBLE SERVICE CONNECTION
NOT TO SCALE



TYPICAL LONG SERVICE
NOT TO SCALE

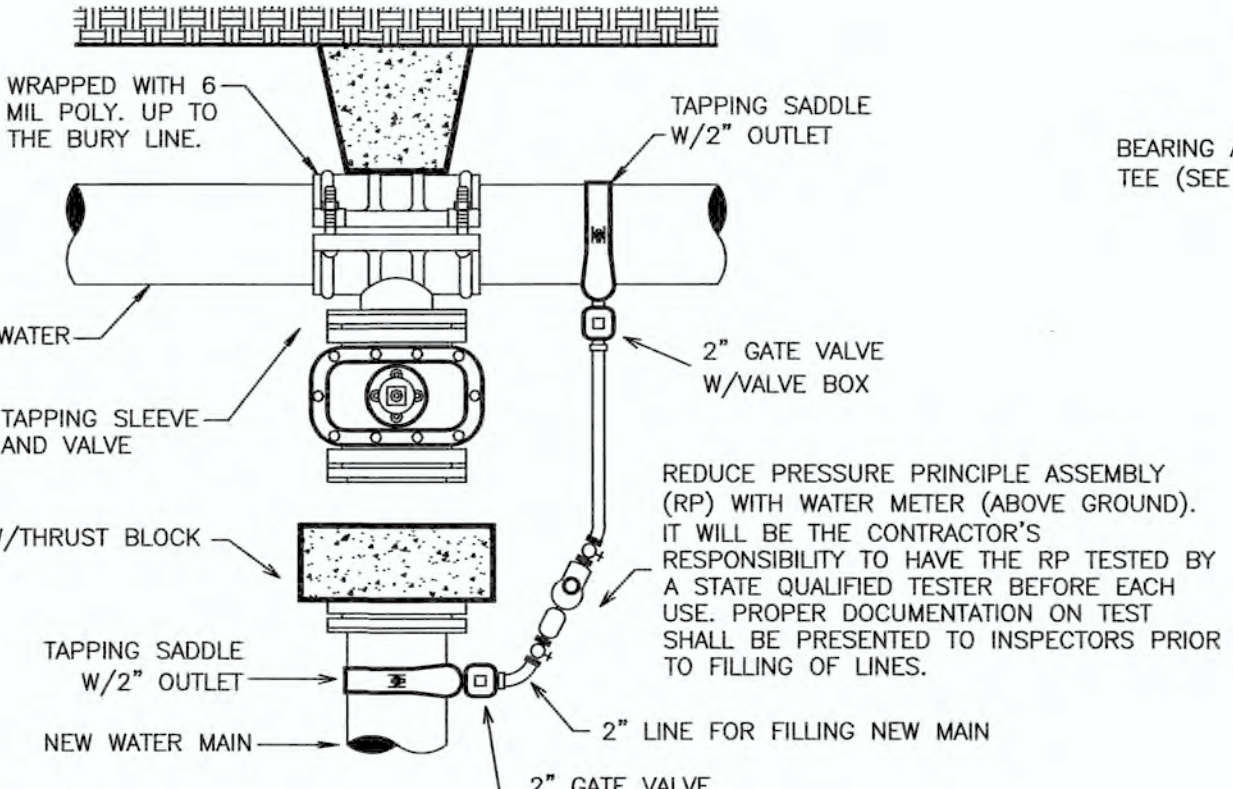


TYPICAL SHORT SERVICE
NOT TO SCALE



FIRE HYDRANT
NOT TO SCALE

VALVE & BOX
NOT TO SCALE

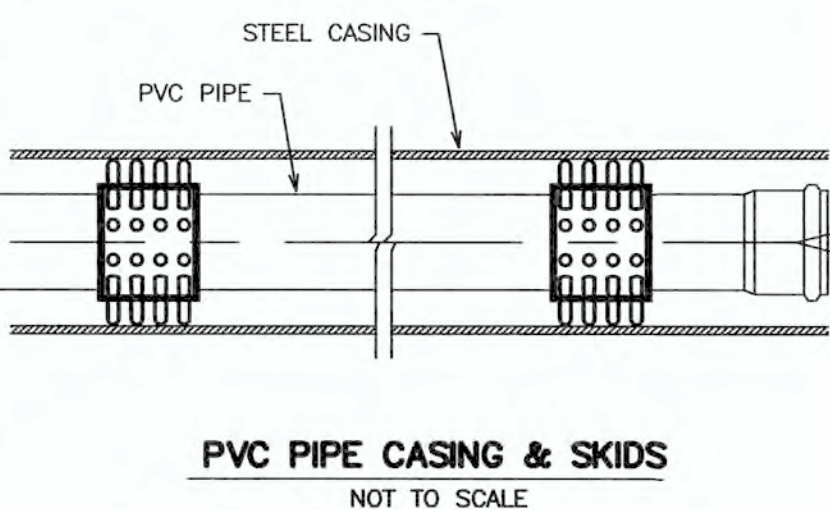
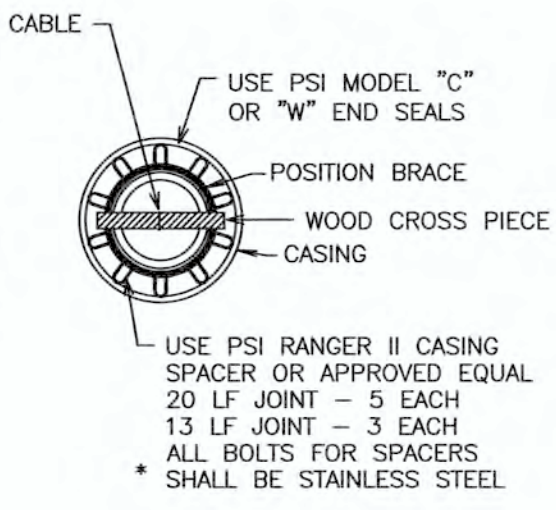


METHOD FOR FILLING AND
FLUSHING NEW WATER LINES
NOT TO SCALE

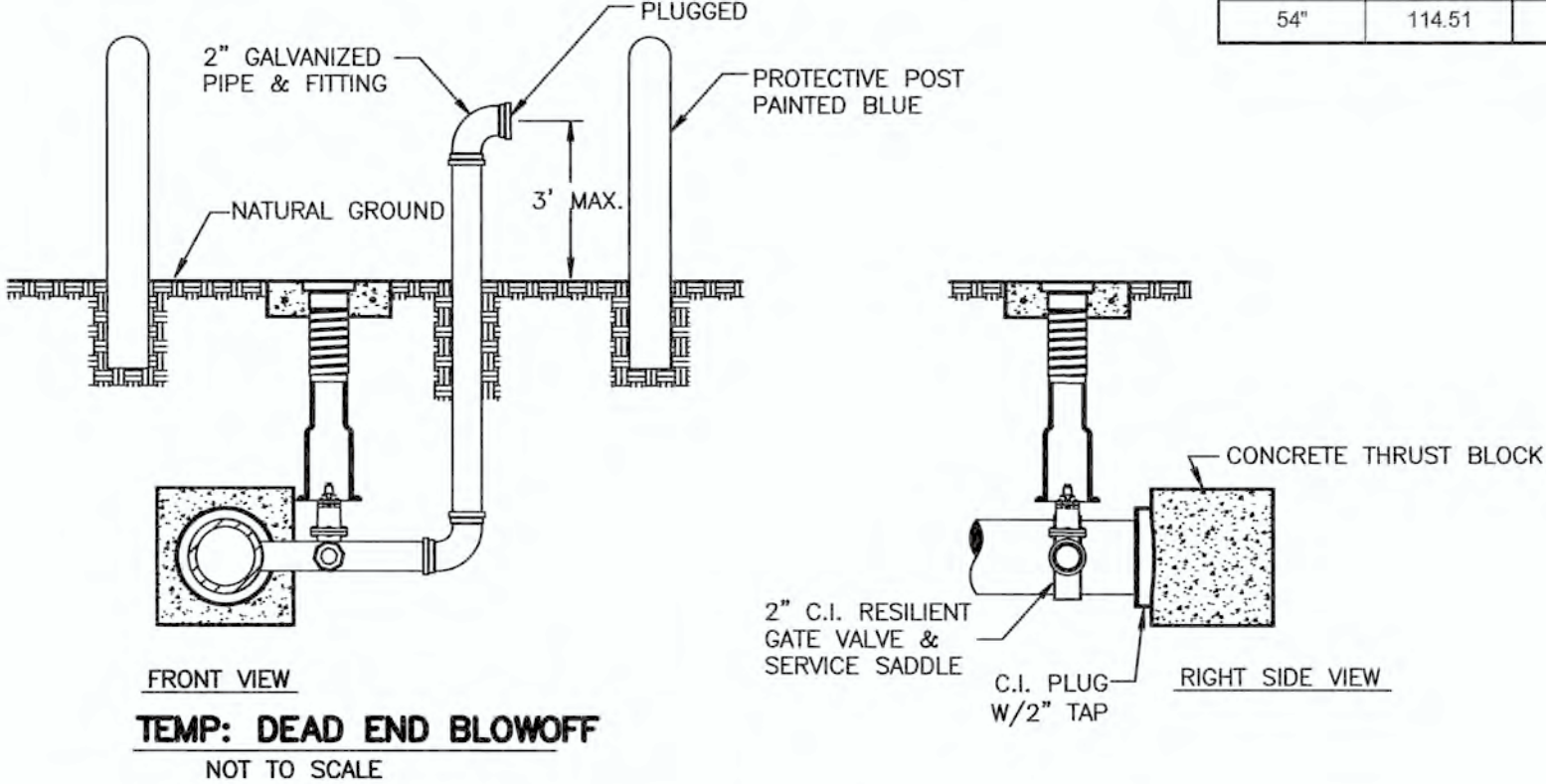
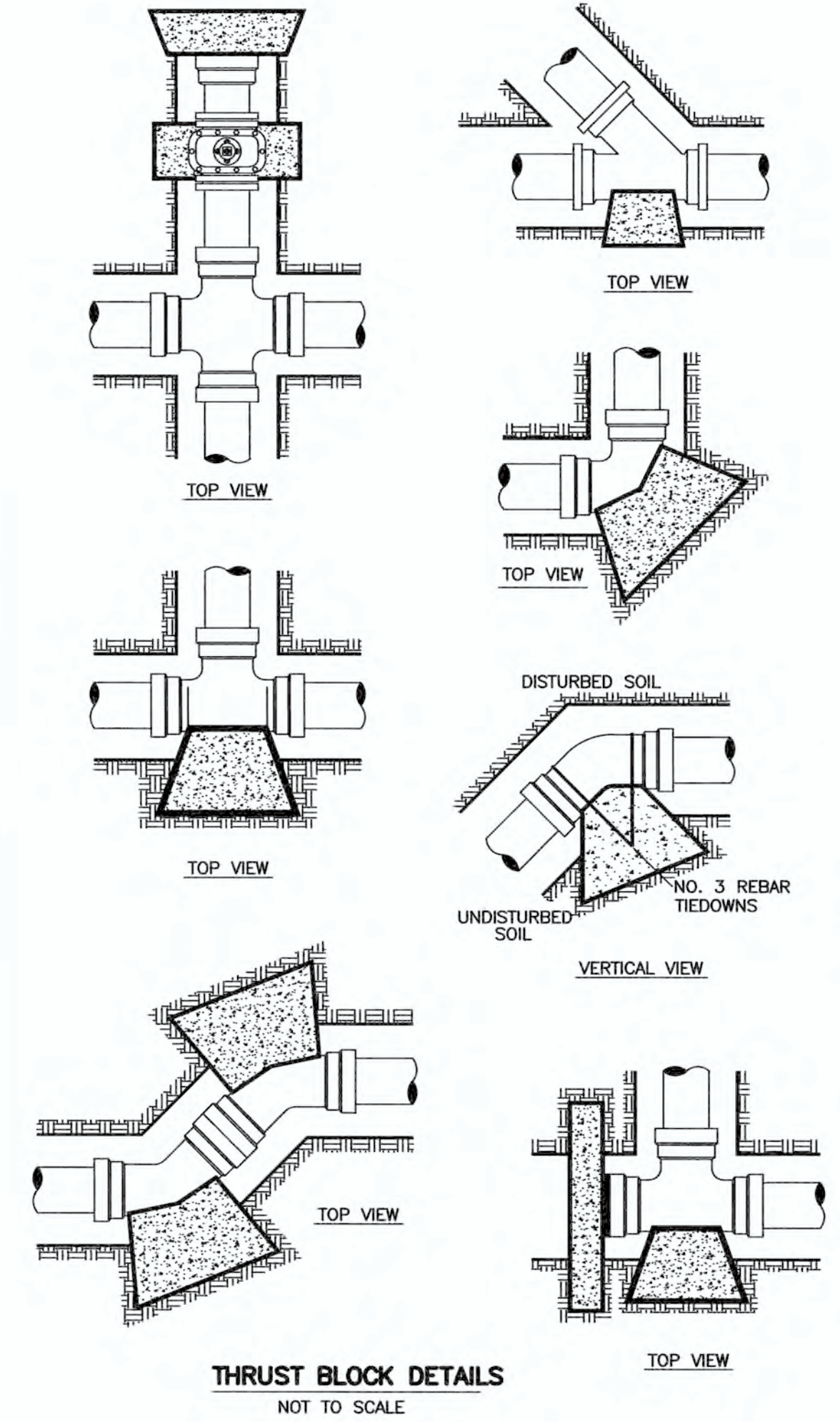
NOTE:
WATER USAGE FOR ALL INITIAL TESTING WILL NOT BE BILLED TO THE CONTRACTOR. ANY RE-TESTING NEEDED WILL BE THE RESPONSIBILITY OF THE CONTRACTOR INCLUDING PAYMENT OF ADDITIONAL WATER NEEDED. CONTRACTOR WILL BE ALLOWED TO FLUSH THE WATERLINE INITIALLY FOR A MAXIMUM OF 12-24 HRS. OR AS DETERMINED BY THE ENGINEER. IF FLUSHING IS DETERMINED TO BE LONGER, THE ENGINEER WILL BE REQUIRED TO SUPPLY THE PROPER DOCUMENTATION AND CALCULATIONS TO SUPPORT SUCH FINDINGS.
AMOUNT OF FLOW TO BE USED FOR FLUSHING WILL BE MONITORED AND REGULATED BY THE BPUB INSPECTORS. CONTRACTOR WILL NOT BE ALLOWED TO TIE-IN TO EXISTING WATER LINE UNTIL ALL TEST ON NEW LINES HAVE BEEN COMPLETED AND APPROVED.

- ALL MJ FITTINGS WILL REQUIRE RESTRAINERS (MEGA LUGS) WITH THRUST BLOCKS
- NOTES ON THRUST BLOCKING:
- ALL BLOCKING SHALL BE AGAINST UNDISTURBED HAND DUG SOIL AND SHALL BE CONCRETE HAVING A MINIMUM 28 DAY STRENGTH OF 2000 LBS. PER SQUARE INCH.
 - THRUST CALCULATIONS TO BE BASED ON THRUST DUE TO WATER PRESSURE AT 100% OF TEST PRESSURE. $THRUST = 2 AP \sin \frac{1}{2} \phi$ WHERE A = AREA OF PIPE, P = WATER PRESSURE, ϕ = DEFLECTION ANGLE.
 - VERTICAL UPLIFT BLOCKS SHALL BE DESIGNED ON THE BASIS OF 150 LBS. PER CU. FT. FOR CONCRETE AND SOIL AT 120 LBS. PER FT. OVER THE AREA OF BLOCK.
 - VERTICAL DOWN THRUST BLOCKS SHALL BE DESIGNED ON THE BASIS OF 2000 LBS. PER SQ. FT. ALLOWABLE SOIL BEARING PRESSURE. DIMENSION MAY BE DECREASED WITH APPROVAL OF THE ENGINEER IF MEASURED SOIL CONDITIONS PERMIT. IN POOR SOIL CONDITIONS, BLOCK DIMENSIONS SHALL BE INCREASED IN PROPORTION TO THE ALLOWABLE BEARING VALUE.
 - THRUST BLOCKS ON HORIZONTAL BENDS, TEES, CROSSES, AND REDUCERS SHALL BE SIZED BASED ON 24000 LBS. PER SQ. FT. OF BLOCKING SURFACE AREA IN CONTACT WITH UNDISTURBED SOIL. BLOCK DIMENSIONS MAY BE DECREASED WITH APPROVAL OF THE ENGINEER IF MEASURED SOIL CONDITIONS PERMIT. IN POOR SOIL CONDITIONS, BLOCK DIMENSIONS SHALL BE INCREASED IN PROPORTION TO THE ALLOWABLE BEARING VALUE.
 - ALL BLOCKING SHALL HAVE A MINIMUM SOIL COVER OF 1 FT.
 - ADDITIONAL REINFORCING MAY BE REQUIRED FOR HORIZONTAL BLOCKING TO HANDLE UNUSUAL SHEAR LOADING CONDITIONS.

PIPE SIZE	GENERAL DATA FOR BLOCKING STANDARD FITTING					
	THRUST IN TONS EXERTED AT PLUGS, TEES AND BENDS FOR EACH 100 LBS. PER SQ. IN. OF TEST PRESSURE.	PLUG	TEE	90° BEND	45° BEND	22-1/2° BEND
4"	0.63	0.63	0.89	0.48	0.25	0.12
6"	1.40	1.40	2.00	1.08	0.55	0.28
8"	2.50	2.50	3.55	1.92	0.98	0.49
10"	3.93	3.93	5.55	3.00	1.53	0.77
12"	5.65	5.65	8.00	4.33	2.21	1.11
14"	7.70	7.70	10.88	5.89	3.00	1.51
16"	10.05	10.05	14.21	7.69	3.85	1.97
18"	12.70	12.70	17.99	9.74	4.96	2.49
20"	15.71	15.71	22.22	12.02	6.13	3.08
24"	22.67	22.67	32.00	17.31	8.93	4.43
27"	28.63	28.63	40.48	21.91	11.17	5.61
30"	35.35	35.35	50.00	27.08	13.79	6.93
36"	50.90	50.90	72.98	38.95	19.89	9.98
42"	69.27	69.27	97.97	53.02	27.03	13.58
48"	90.48	90.48	127.96	69.25	35.30	17.74
54"	114.51	114.51	161.94	87.64	44.68	22.45



NOMINAL PIPE SIZE	CASING SIZE	NO. OF SKIDS
6"	12"	4
8"	16"	4
12"	20"	4
16"	24"	5

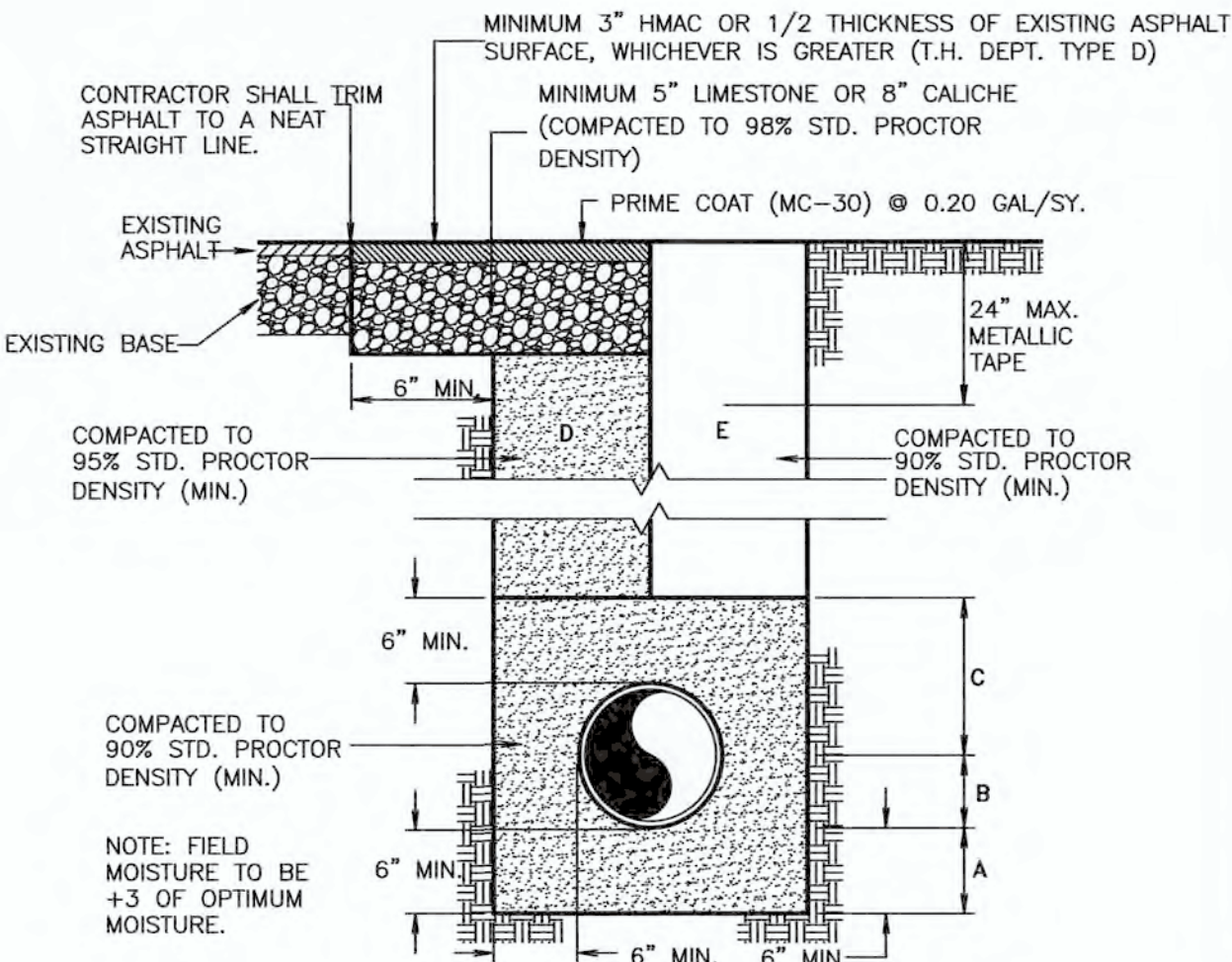


- NOTE
- A BLOWOFF TAP, AS SHOWN ON THE DETAIL HEREON SHALL BE PROVIDED AT ALL DEAD ENDS FOR RELEASING TRAPPED AIR TO AID IN FLUSHING, AND FOR SAMPLING FOR TESTING.
 - CONCRETE THRUST BLOCKS SHALL BE REQUIRED AT PLUGS, AS WELL AS AT ALL OTHER LOCATIONS AS NOTED HEREON.

STEEL CASING WALL THICKNESS CHART	
MINIMUM THICKNESS	DIAMETER OF CASING PIPE
1/4"	12" OR LESS
5/16"	OVER 12"-18"
3/8"	OVER 18"-22"
7/16"	OVER 22"-28"
1/2"	OVER 28"-34"
9/16"	OVER 34"-42"
5/8"	OVER 42"-48"

OVER 48" MUST BE APPROVED BY B.P.U.B.

NOTE: THIS CHART IS ONLY FOR SMOOTH STEEL CASING PIPES WITH MINIMUM YIELD STRENGTH OF 35,000 PSI



TYPICAL PIPE BEDDING AND
TRENCH BACKFILL DETAIL
NOT TO SCALE

- A SAND BEDDING PLACED BEFORE PIPE IS LAID UP TO FLOW LINE OF PIPE (MIN. THICKNESS = 6").
- B SAND BACKFILL PLACED AFTER PIPE IS LAID FROM BOTTOM OF PIPE TO SPRING LINE OF PIPE (4" LIFTS, HAND TAMPED).
- C SAND BACKFILL PLACED FROM SPRING LINE OF PIPE TO 6" ABOVE TOP OF PIPE (6" LIFTS, HAND TAMPED).
- D SAND BACKFILL, CLASS "A" (6" LIFTS, MECHANICAL COMPACTION).
- E EARTH BACKFILL, CLASS "B" (12" LIFTS, MECHANICAL COMPACTION).

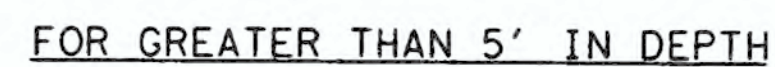
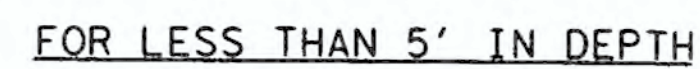
FOUNDATION PREPARATION (WELLPOINTS, GRAVEL OR CEMENT STABILIZATION, OR APPROVED SUBSTITUTE) SHALL BE REQUIRED WHEN TRENCH BOTTOM IS UNSTABLE.)

BACKFILLING AT STRUCTURES SHALL BE PLACED IN UNIFORM LAYERS, MOISTENED AS REQUIRED TO APPROXIMATE OPTIMUM MOISTURE CONTENT, AND COMPACTED TO 95% STD. PROCTOR DENSITY. THE THICKNESS OF EACH LOOSE LAYER SHALL NOT EXCEED 6". STRUCTURE BACKFILL MATERIAL SHALL BE SAND, APPROVED SITE SOIL, OR OTHER APPROVED SUBSTITUTE.



NOTES 2:
SAND BACKFILL CLASS "A" IS ONLY REQUIRED
IF DEPTH BETWEEN FLEXIBLE BASE AND TOP
OF PIPE IS GREATER THAN 6 FEET.

NOTES 3:
MINIMUM 50' OF OVERLAY IS REQUIRED ON
EACH SIDE OF TRENCH.



D (IN)	A (FT)	WALL THICKNESS
18"	1'	2 1/2"
24"	1'	3"
30"	1'	3 1/2"
36"	2'	4"
42"	2'	4 1/2"
48"	2'	5"
54"	2'	5 1/2"
60"	2'	6"
72"	2'	7"

NOTE:
1. MINIMUM 50' OF OVERLAY
REQUIRED ON EACH SIDE
OF TRENCH.



- 1 CONCRETE SHALL BE CLASS "A" WITH A 3000 PSI MINIMUM COMPRESSIVE
STRENGTH AT 28 DAYS W/1.5 LBS/CY "FIBERMESH".
- 2 CURBS SHALL BE BACKFILLED IMMEDIATELY AFTER REMOVAL OF FORMS
TO PREVENT TILTING.
- 3 2" DEEP DUMMY JOINTS 10' O.C. MAX.
- 4 EXPANSION JOINTS WILL BE PLACED AT CURB RETURNS, INLETS AND END
OF EACH POUR WITH INTERVALS NOT TO EXCEED 40 LF.
- 5 JOINTS WILL CONSIST 1/2" PRE-MOULDED BITUMINOUS EXPANSION JOINT
MATERIAL WITH 3 - 36" x 1/2" DOWELS, ONE END GREASED AND WRAPPED.
- 6 CARE MUST BE TAKEN THAT THE DOWELS ARE STRAIGHT AND LAID PARALLEL
WITH CURB AND NO CONCRETE "PLUGS" OR OTHER MATERIAL BE ALLOWED
THROUGH THE DOWEL HOLES OR EXPANSION MATERIAL THAT WOULD PREVENT
JOINT FROM OPERATING AS AN EXPANSION JOINT.

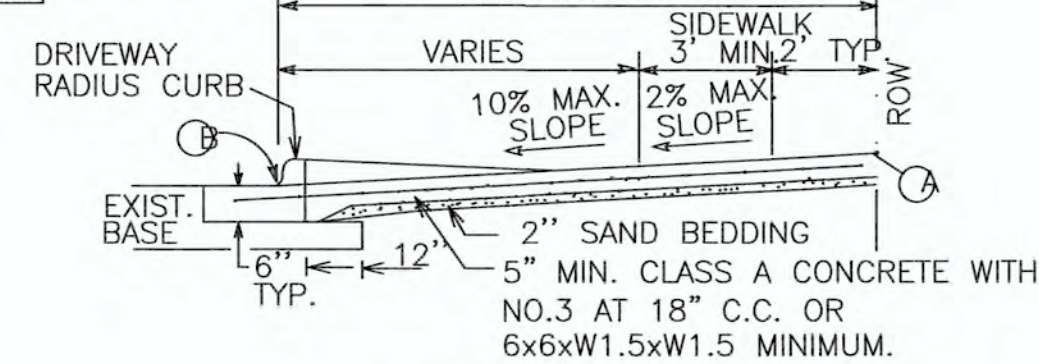
NOT TO SCALE



RADIUS DIMENSION			
USE	MIN.	*OPT.	MAX.
SINGLE FAMILY	5	5	10
DUPLEX	5	8	10
TOWN HOME	5	8	10

*OPTIMUM

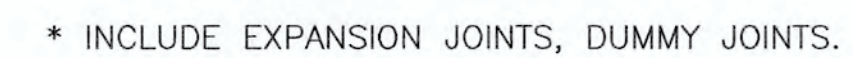
NOTE: ALL DRIVEWAYS SHALL BE SLOPPED TOWARDS THE STREET FROM THE R.O.W. LINE. ELEVATION OF POINT A ABOVE POINT B IS, TYPICALLY, A MINIMUM OF 6" PLUS 1/4" RISE/FEET OVER A DISTANCE "X".



CROSS SECTION



NOT TO SCALE

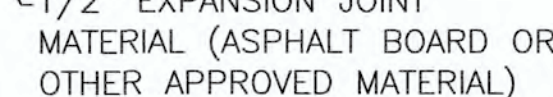


CONCRETE SHALL BE CLASS "A"
WITH A 4,000 P.S.I. MINIMUM
COMPRESSIVE STRENGTH AT 28
DAYS WITH 1.5 LB. "FIBERMESH"
PER CU. YD.

NOT TO SCALE

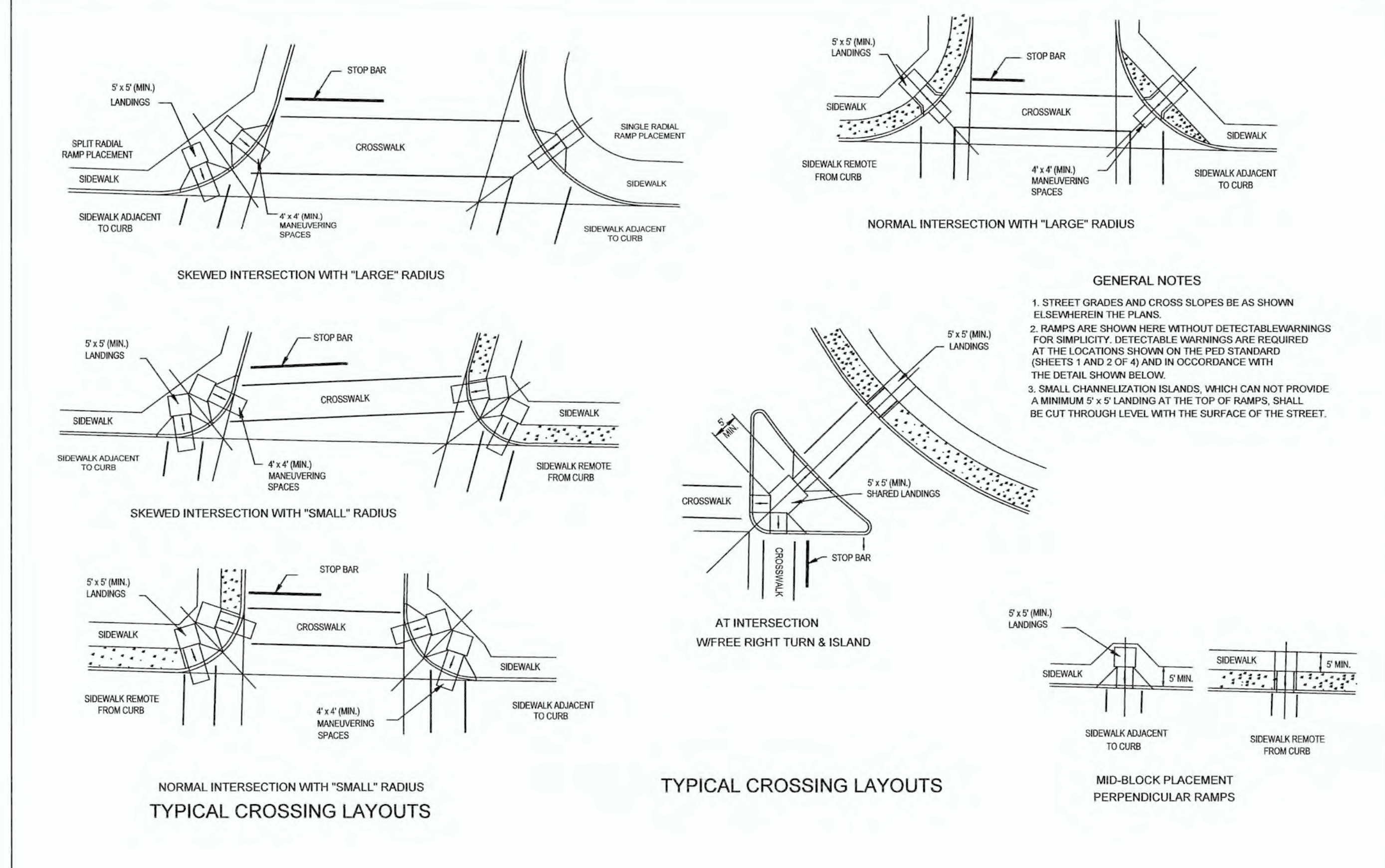
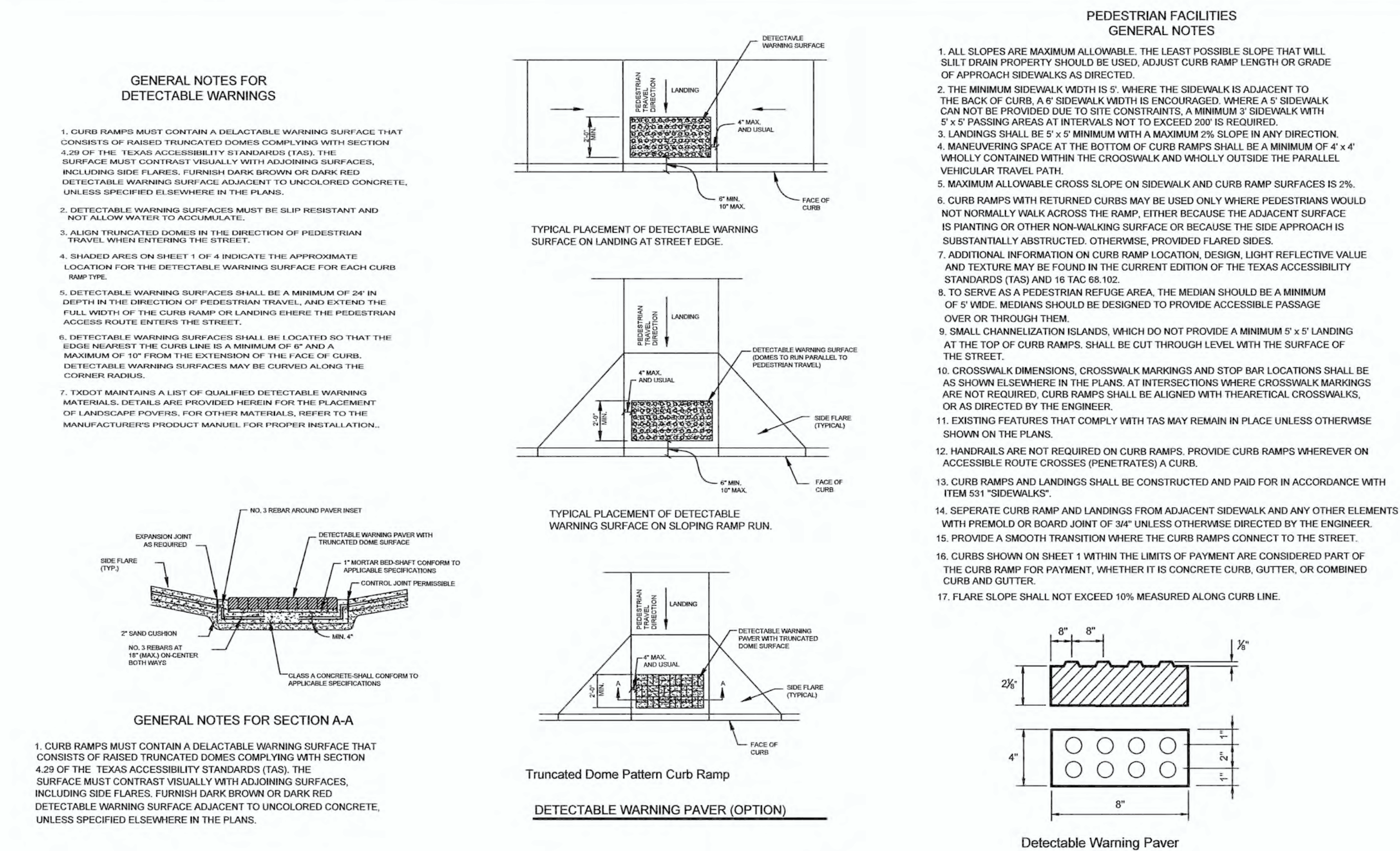
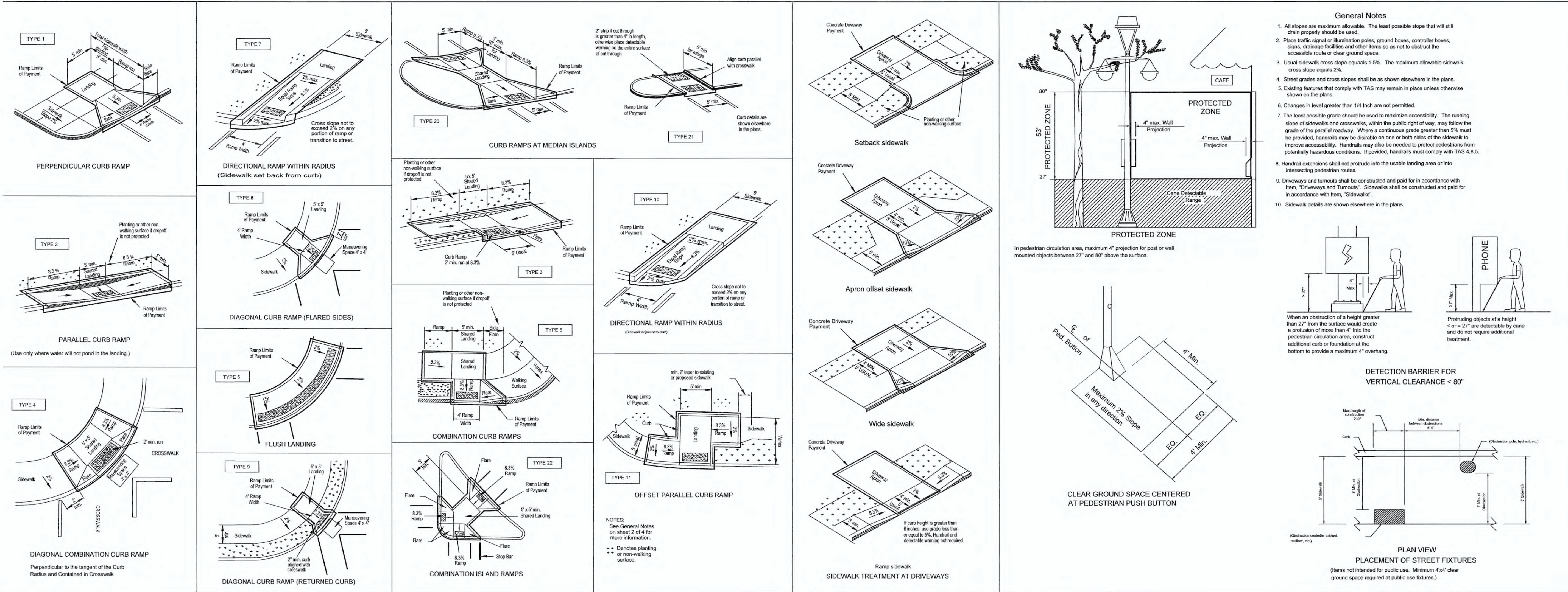


NOT TO SCALE



NOT TO SCALE





		BROWNVILLE PUBLIC UTILITIES BOARD	
Public Utilities Board 1425 Robinhood Drive Brownsville, Texas 78521		Water and Wastewater Engineering Department (956) 983-6250 FAX: (956) 983-6220	
		Water Valves Replacement Project Phase 4 Re-Bid	
ADA DETAILS			
Scale: As Shown	Date:	5	APPROV.
Designed by: Michael Anzola, EIT		4	REVISION
Drawn by: Luis Martinez		3	
Checked by: Michael Anzola, EIT		2	
Approved by: Marie C. Leal, PE		1	
BID #:		ND	DATE
SHEET		5	
		OF 9	

No.	Location	Valve Size (in.)	Material	TxDOT	Customers Affected
1	W. Elizabeth St. and Central Blvd.	12"	PVC	YES	21
2	Southmost Blvd. and E. 30th St.	16"	AC	YES	25
3	Hortencia Blvd. and E. 30th St.	12"	PVC		25
4	South Dr. and Military Hwy.	8"	PVC	YES	40
5	Kennedy Ave. and South Dr.	6"	AC		40
6	East Ave. and Margarita St.	1-8", 1-4"	AC		50
7	Dana St. and Carolina St.	2-6"	AC		60
8	3180 Del Prado	1-8", 1-6"	AC		100+
9	Alameda Dr. and Victoria Dr.	1-8", 1-6"	AC		100+
10	Monaco Dr. and La Plaza Dr.	1-8", 1-6"	PVC		100+
11	Alameda Dr. and Monaco Dr.	1-8", 1-6"	PVC		100+
12	Rosedal Dr. and Alameda Dr.	1-8", 1-6"	PVC		100+
Valve Summary: 1-4" Valves, 8-6" Valves, 7-8" Valves, 2-12" Valves, 1-16" Valve = 19 Valves Total					
NOTE: Valves affecting 100+ customers will be coordinated with BPUB for night operation due to the amount affected by shut down of water service.					



BROWNVILLE

PUBLIC UTILITIES BOARD

Public Utilities Board
1425 Robinhood Drive
Brownsville, Texas 78321
Water and Wastewater
Engineering Department
(956) 983-6230
FAX: (956) 983-6220



12/05
4/16

Water Valves Replacement Project Phase 4
Re-Bid

PROJECT INFORMATION
SUMMARY OF QUANTITIES

Scale: As Shown

Designed by: Michael Anzaldúa, EIT

Drawn by: Luis Martinez

Checked by: Michael Anzaldúa, EIT

Approved by: Marie C. Leal, PE

BID #:

5

4

3

2

1

ND

Date:

REVISION

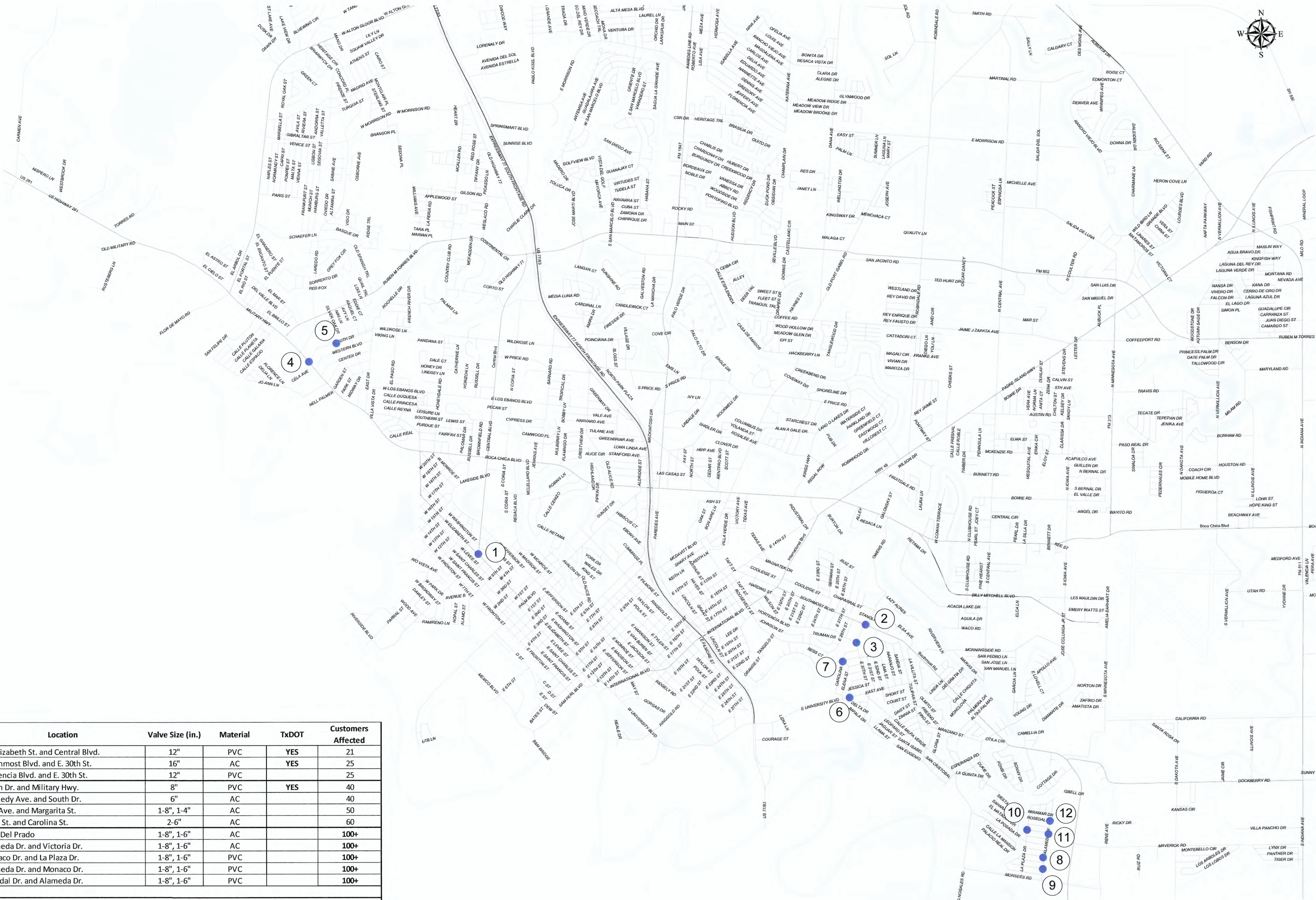
APPROV.

SHEET

6

OF 9

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5	Kennedy Ave. and South Dr.	6"	AC		40
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7	Dana St. and Carolina St.	2-6"	AC		60
8	3180 Del Prado	1-8", 1-6"	AC		100+
9	Alameda Dr. and Victoria Dr.	1-8", 1-6"	AC		100+
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1425 Robinhood Drive
Brownsville, Texas 78521

Water and Wastewater
Engineering Department
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FAX: (956) 983-6220



Marie C. Leal, P.E.

Water Valves Replacement Project Phase 4
Re-Bid

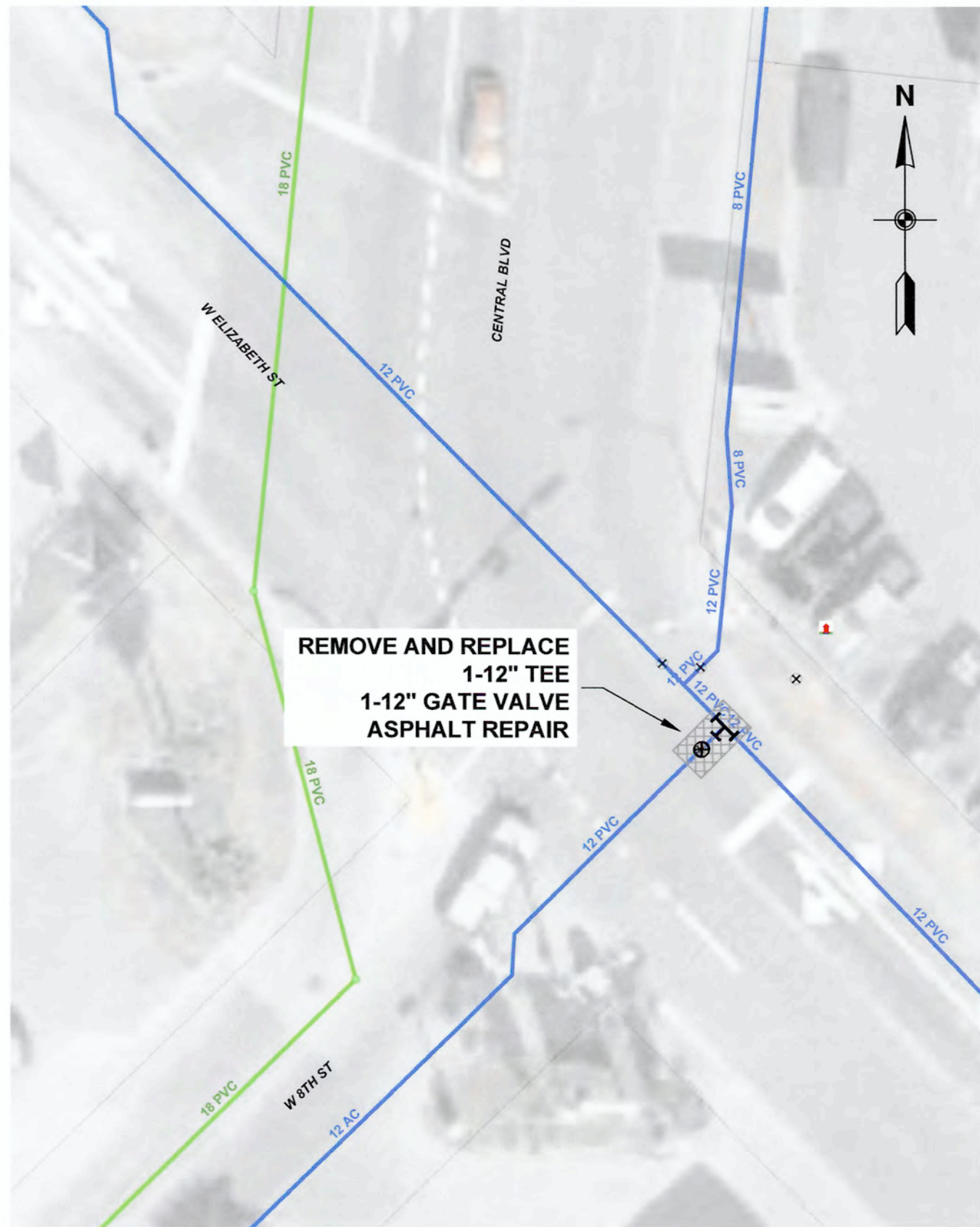
OVERALL PROJECT
LOCATION LAYOUT

Scale:	As Shown	Date:	5
Designed by:	Michael Anzaidua, EIT		4
Drawn by:	Luis Martinez		3
Checked by:	Michael Anzaidua, EIT		2
Approved by:	Marie C. Leal, PE		1
BID #:	NEL	DATE	REVISION

SHEET

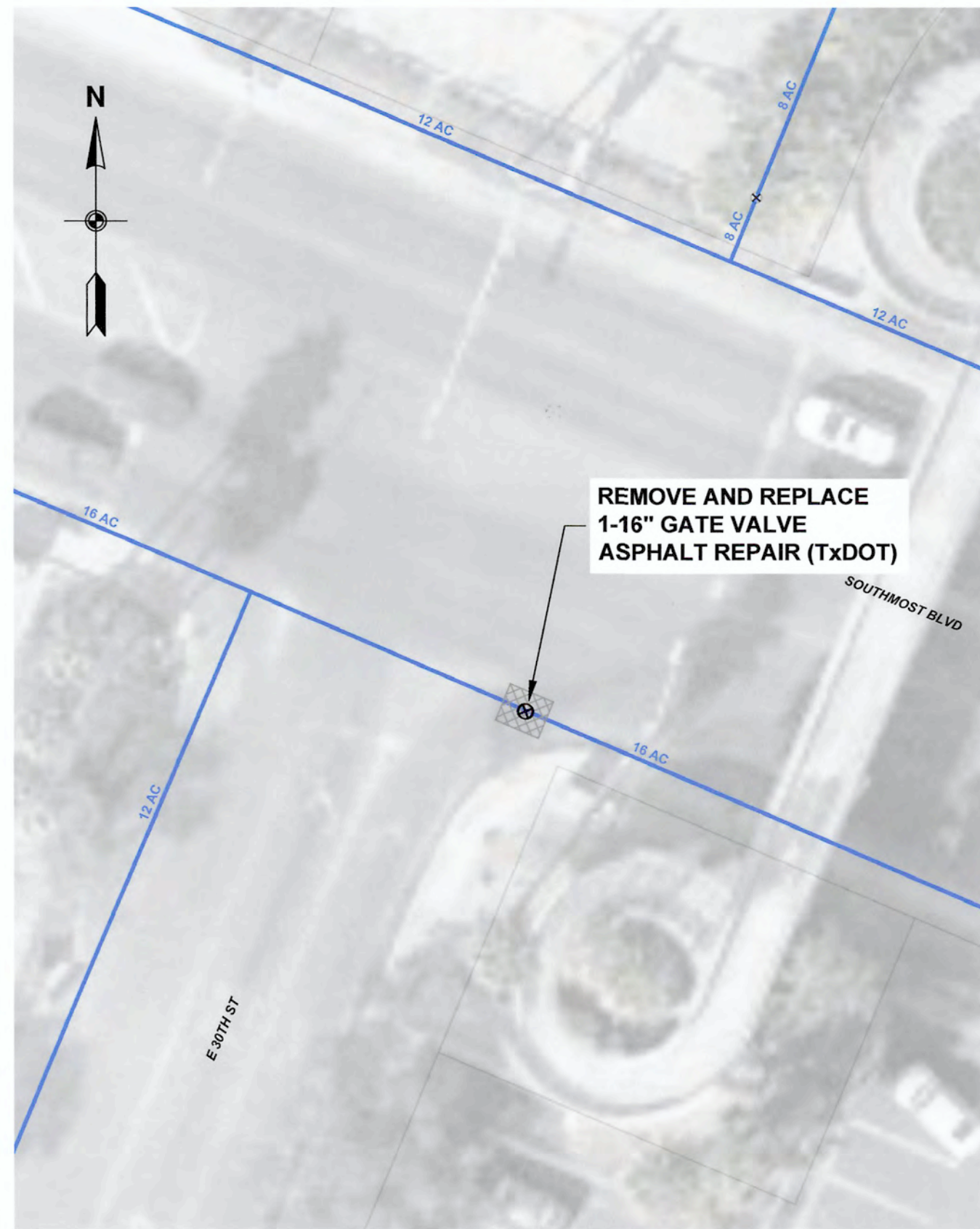
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OF 9



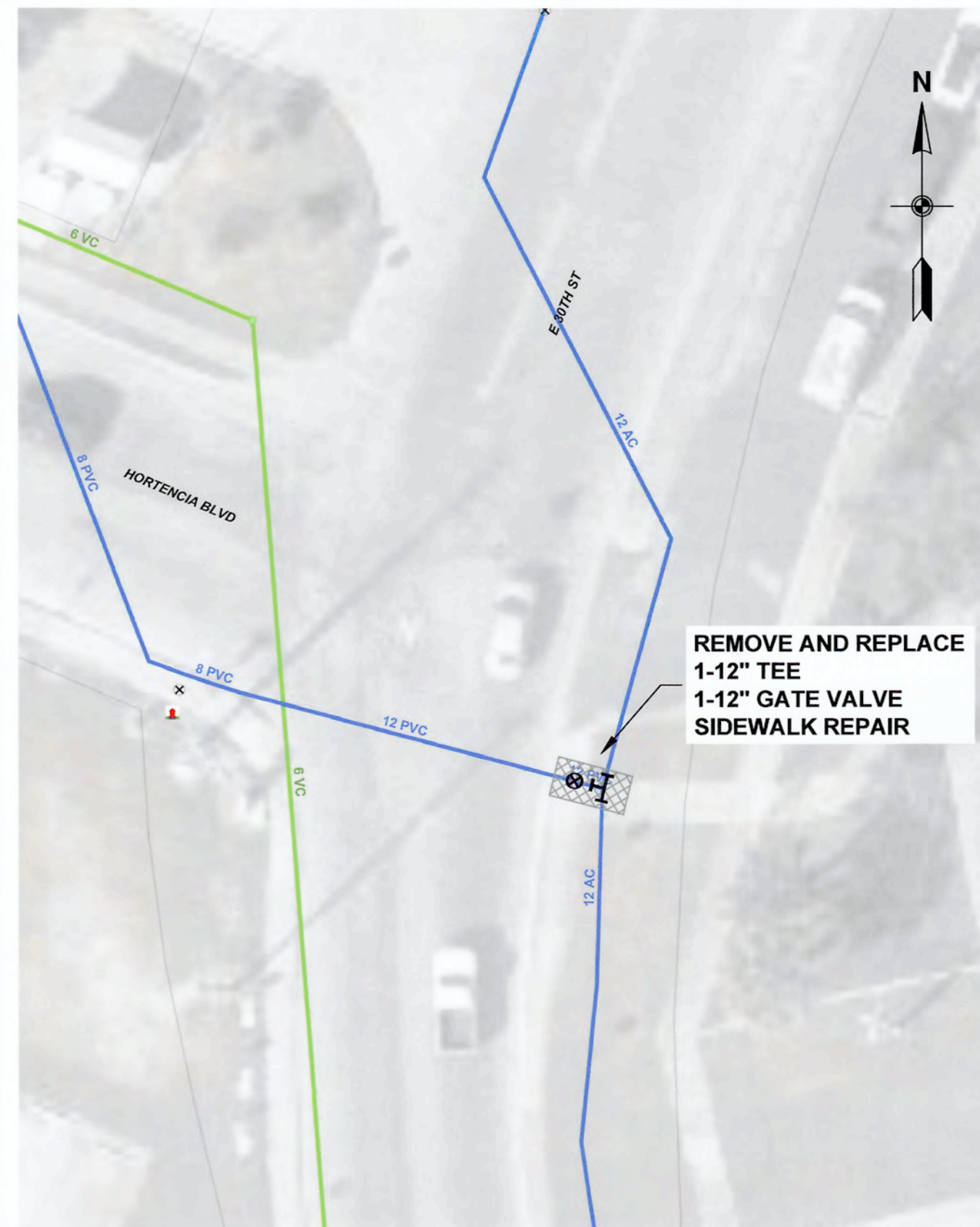
W. Elizabeth St.
and Central Blvd.
1" = 20'

1



Southmost Blvd.
and E. 30th St.
1" = 20'

2



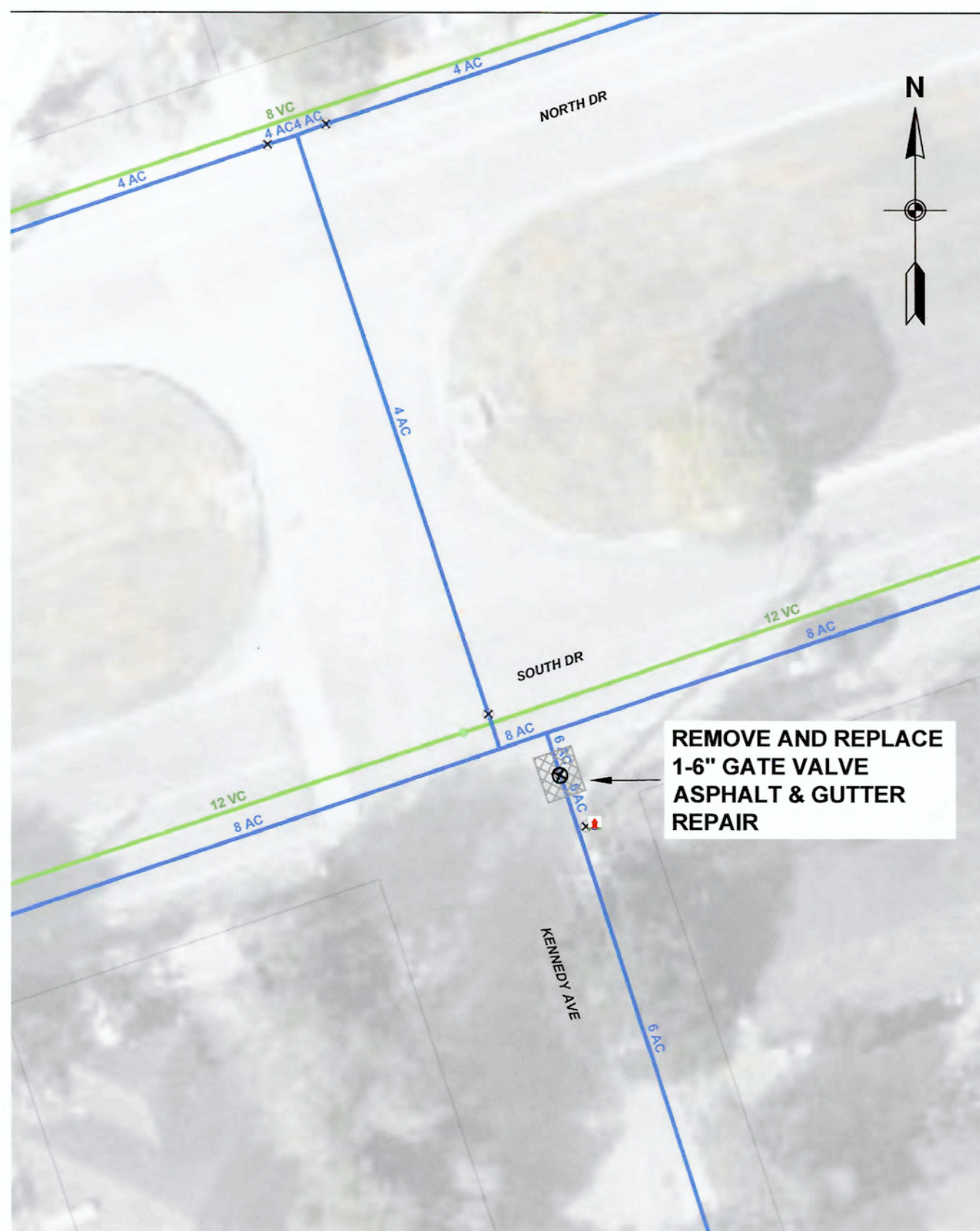
Hortencia Blvd.
and E. 30th St.
1" = 20'

3



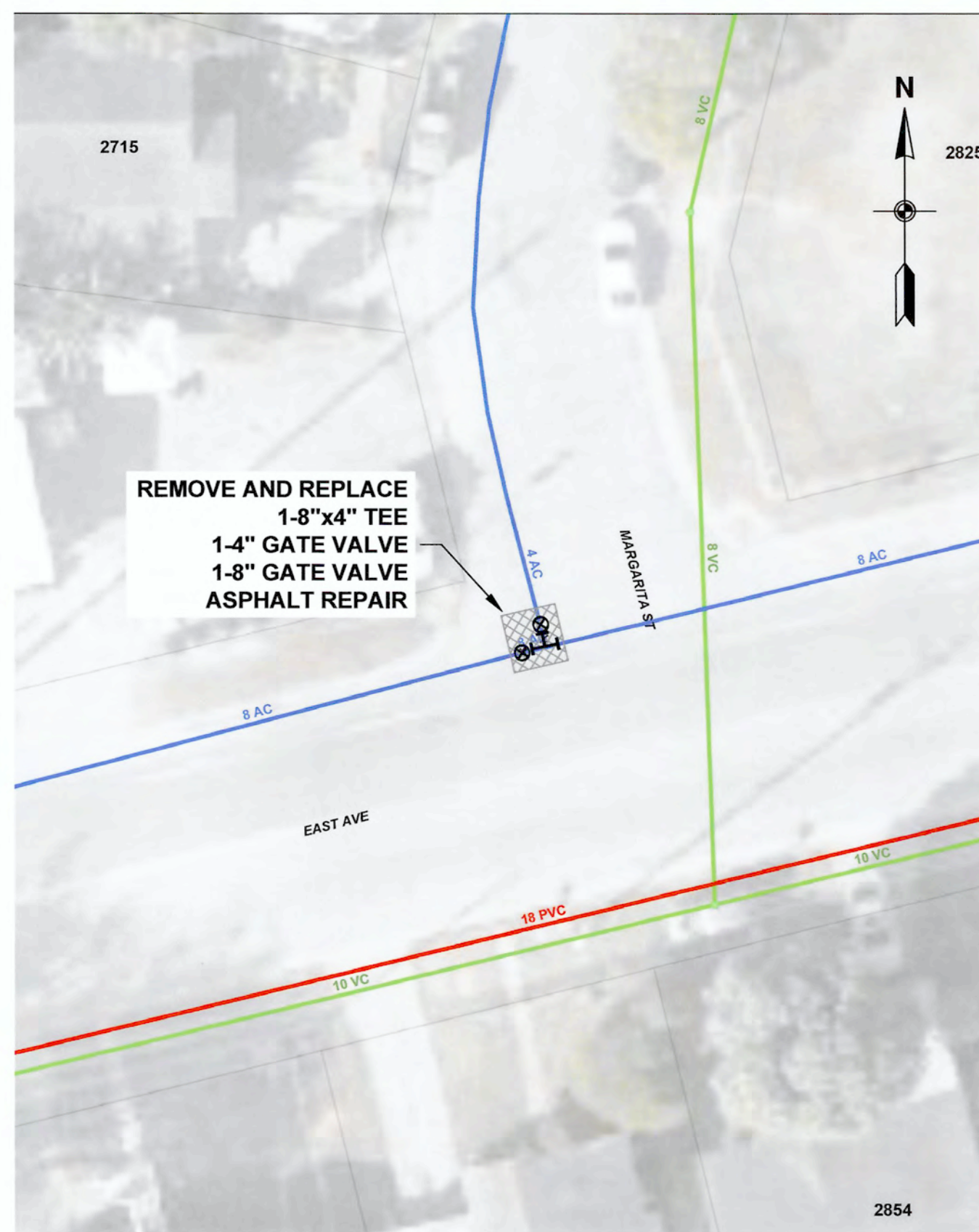
South Dr.
and Military Hwy.
1" = 20'

4



Kennedy Ave.
and South Dr.
1" = 20'

5



East Ave.
and Margarita St.
1" = 20'

6



Dana St.
and Carolina St.
1" = 20'

7



3180 Del Prado Dr.
1" = 20'

8

Scale:	As Shown	Date:	5	4	3	2	1	NO.	DATE	REVISION	APPROV.
Designed by:	Michael Anzoldua, EIT										
Drawn by:	Luis Martinez										
Checked by:	Michael Anzoldua, EIT										
Approved by:	Marie C. Leal, PE										
BID #:											



Alameda Dr.
and Victoria Dr.
1" = 20'

9



Monaco Dr.
and La Plaza Dr.
1" = 20'

10



Alameda Dr.
and Monaco Dr.
1" = 20'

11



Rosedal Dr.
and Alameda Dr.
1" = 20'

12

Scale: As Shown	5				
Designed by: Michael Anzoldua, EIT	4				
Drawn by: Luis Martinez	3				
Checked by: Michael Anzoldua, EIT	2				
Approved by: Marie C. Leal, PE	1				
BID #:	N/A	DATE	REVISION	APPROV.	



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Brownsville, Texas 78521
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Engineering Department
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BROWN SVILLE
PUBLIC UTILITIES BOARD