

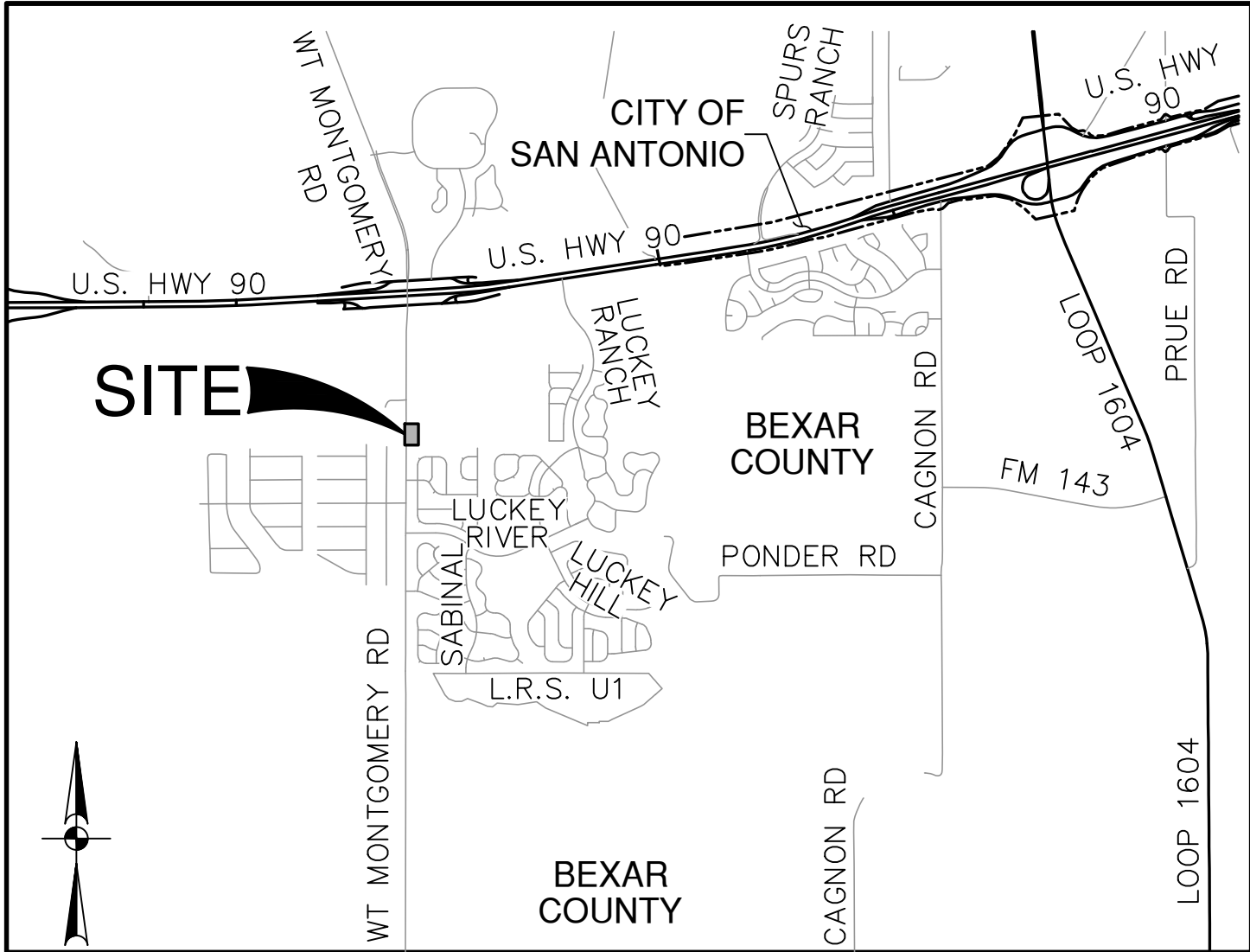
LAGO RIO VISTA

SAN ANTONIO, TEXAS

12" WATER MAIN (OFF-SITE)

SHEET INDEX

Sheet Description	Sheet No.
COVER SHEET	CWE0.00
OVERALL WATER DISTRIBUTION PLAN	CWE1.00
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WATER DISTRIBUTION NOTES	CWE3.00
TRAFFIC CONTROL DETAILS	CWE4.00
TRAFFIC CONTROL DETAILS	CWE4.10



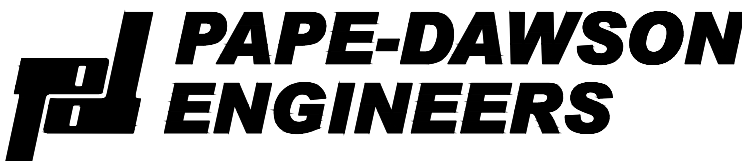
LOCATION MAP

NOT-TO-SCALE

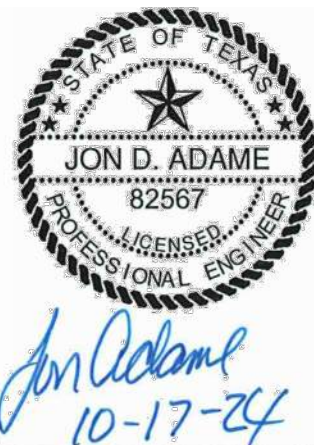
PREPARED FOR:

LAGO RIO VISTA, LLC
16205 SAN PEDRO AVENUE
SAN ANTONIO, TX 78232

OCTOBER 2024



SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

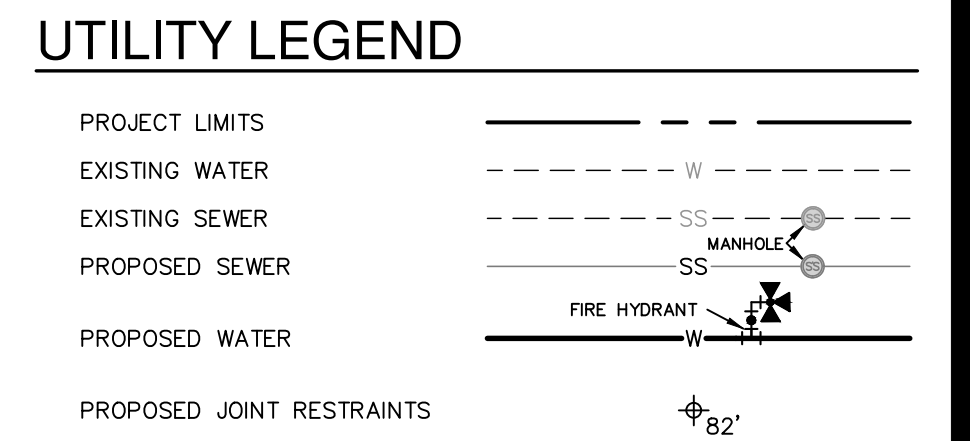
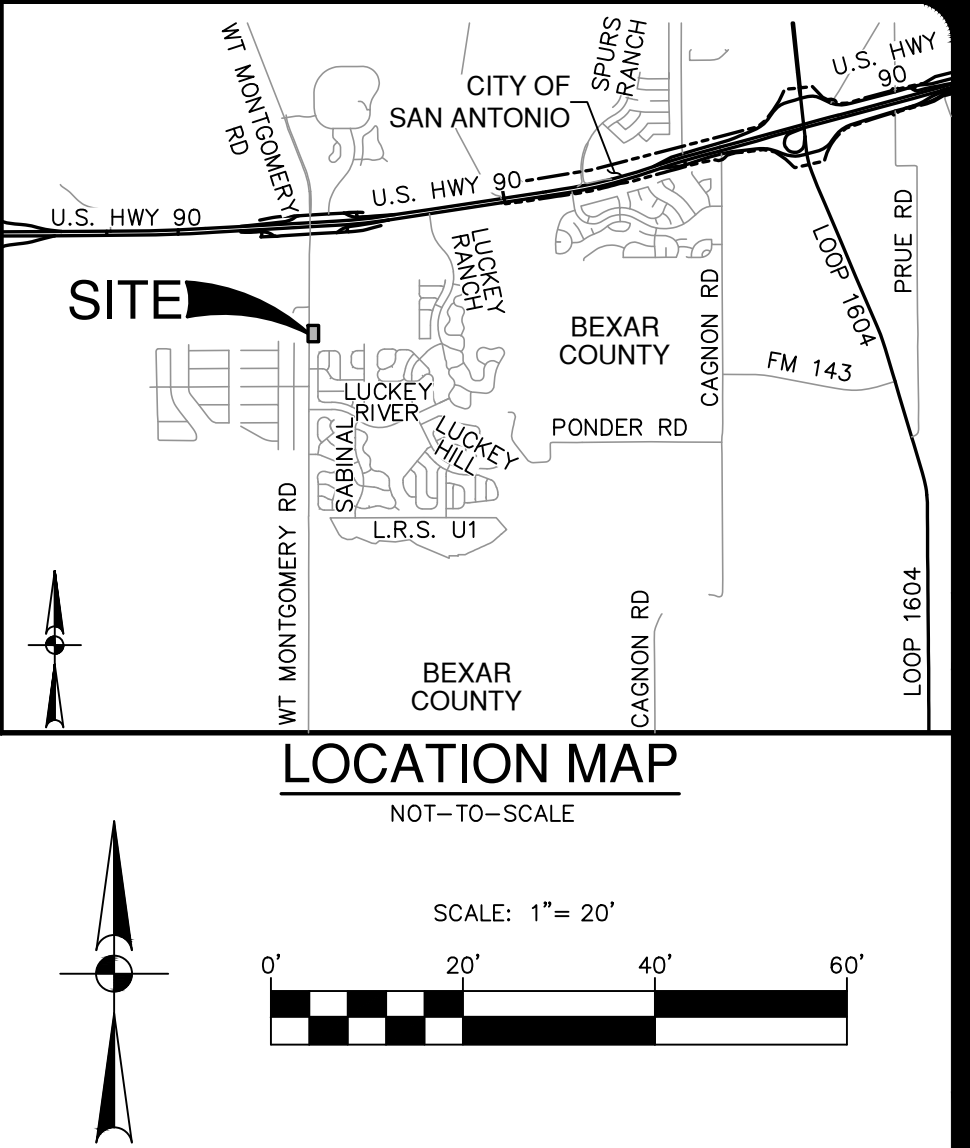
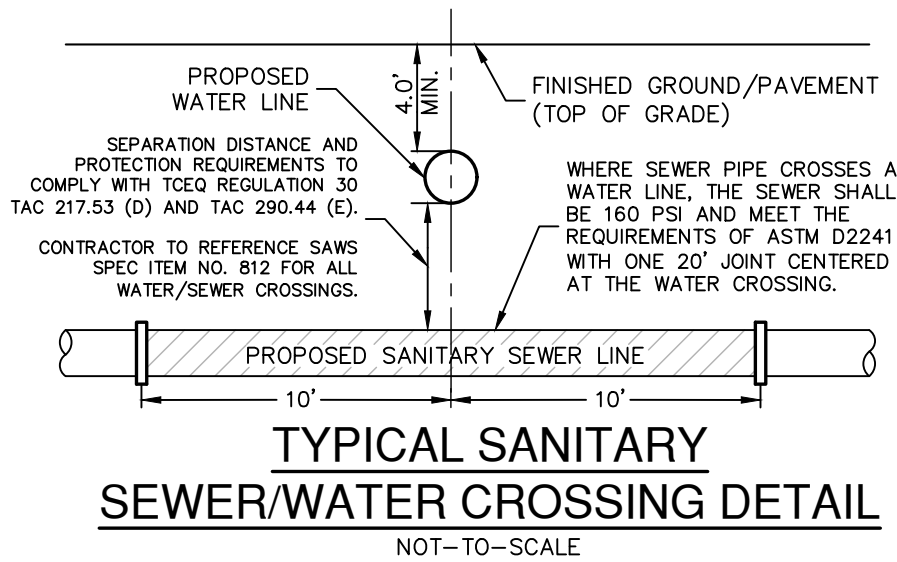
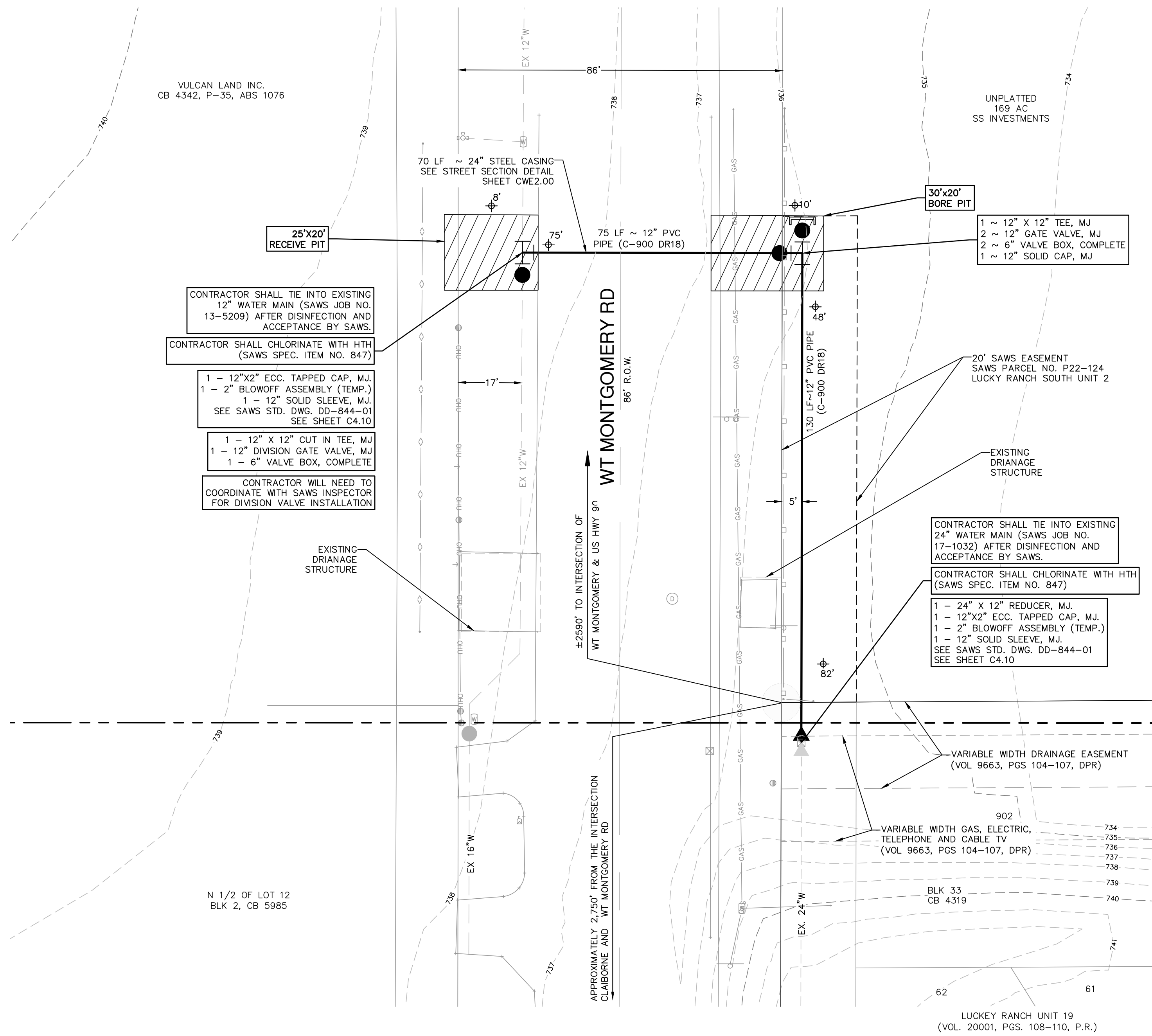


WATER (SAWS PRESSURE ZONE 4 (930 HGL))

DEVELOPER'S NAME:	LAGO RIO VISTA
ADDRESS:	16205 SAN PEDRO AVENUE
CITY:	SAN ANTONIO
STATE:	TEXAS
ZIP:	78232
PHONE#	(210) 496-1162
SAWS BLOCK MAP#	082552 & 082556
TOT. EDU'S N/A	TOT. ACREAGE N/A
TOTAL LINEAR FOOTAGE OF PIPE:	205 LF 12"
PLAT NO.	N/A
NUMBER OF LOTS	N/A
SAWS JOB NO.	CTR-277814

Date: Oct. 17, 2024, 6:15pm, User ID: jfjrida
File: P:\116440\Design\CHN12 Final\Grass Water Main\WDA12m-116440.dwg

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ROW PERMIT NOTE:
A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY RIGHTS-OF-WAY.

PRESSURE REDUCING VALVE NOTE:
PRESSURE REDUCING VALVE TO BE INSTALLED ON CUSTOMER'S SIDE OF METER BY HOMEOWNER.

PRESSURE NOTE:
CONTRACTOR TO VERIFY THAT NO PORTION OF THE TRACT IS BELOW GROUND ELEVATION OF 745 FEET WHERE THE STATIC PRESSURE WILL NORMALLY EXCEED 80 PSI. AT ALL SUCH LOCATIONS WHERE THE GROUND LEVEL IS BELOW 745 FEET, THE DEVELOPER OR BUILDER SHALL INSTALL AT EACH LOT, ON THE CUSTOMER'S SIDE OF THE METER, AN APPROVED TYPE PRESSURE REGULATOR IN CONFORMANCE WITH THE PLUMBING CODE OF THE CITY OF SAN ANTONIO. NO DUAL SERVICES ALLOWED FOR ANY LOT(S) IF #PRV IS/ARE REQUIRED FOR SUCH LOT(S), ONLY SINGLE SERVICE CONNECTIONS SHALL BE ALLOWED.
*NOTE: A PRESSURE REGULATOR IS ALSO KNOWN AS A PRESSURE REDUCING VALVE (PRV).

FIRE FLOW NOTE:
IN AN EFFORT TO MEET THE CITY OF SAN ANTONIO'S FIRE FLOW REQUIREMENTS FOR THE PROPOSED RESIDENTIAL DEVELOPMENT, THE PUBLIC WATER MAIN SYSTEM HAS BEEN DESIGNED FOR A MINIMUM FIRE FLOW DEMAND OF 1500 GPM AT 25 PSI RESIDUAL PRESSURE. THE FIRE FLOW REQUIREMENTS FOR INDIVIDUAL STRUCTURES WILL BE REVIEWED DURING THE BUILDING PERMIT PROCESS IN ACCORDANCE WITH THE PROCEDURES SET FORTH BY THE CITY OF SAN ANTONIO DIRECTOR'S DEVELOPMENT SERVICES DEPARTMENT AND THE SAN ANTONIO FIRE DEPARTMENT FIRE MARSHAL.

JOINT RESTRAINT NOTE:
CONTRACTOR SHALL INSTALL RETAINER GLANDS AT ALL FITTINGS AND PROVIDE JOINT RESTRAINING HARNESSSES OR FIELD LOCK GASKETS AT ALL JOINTS WITHIN THE LENGTH SHOWN. CONTRACTOR SHALL INSURE THAT ALL TEES, BENDS, VALVES, ETC. HAVE A MINIMUM OF 5 FT. OF PIPE WITH NO JOINTS ON EACH SIDE OF THE FITTING. JOINT RESTRAINTS AND RETAINER GLANDS SHALL BE CALCULATED BY SAWS APPROVED PROGRAMS. THERE WILL BE NO SEPARATE PAY ITEM FOR RETAINER GLANDS AND OTHER JOINT RESTRAINING HARNESSSES AND GASKETS, BUT SHALL BE SUBSIDIARY TO THE UNIT COST PER LINEAL FOOT OF PIPE INSTALLED.

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 ANY 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 FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY 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.

WATER (SAWS PRESSURE ZONE 4 (930 HGL))

DEVELOPER'S NAME: LAGO RIO VISTA	
ADDRESS: 16205 SAN PEDRO AVENUE	
CITY: SAN ANTONIO	STATE: TEXAS
PHONE# (210) 496-1162	ZIP: 78232
SAWS BLOCK MAP#082552 & 082556 TOT. EDU'S N/ATOT. ACREAGE N/A	
TOTAL LINEAR FOOTAGE OF PIPE: 205 LF 12" PLAT NO. N/A	
NUMBER OF LOTS: N/A SAWS JOB NO. CTR-277814	

NO.	REVISION	DATE

PAPE-DAWSON ENGINEERS

JON D. ADAME
82567
PROFESSIONAL ENGINEER

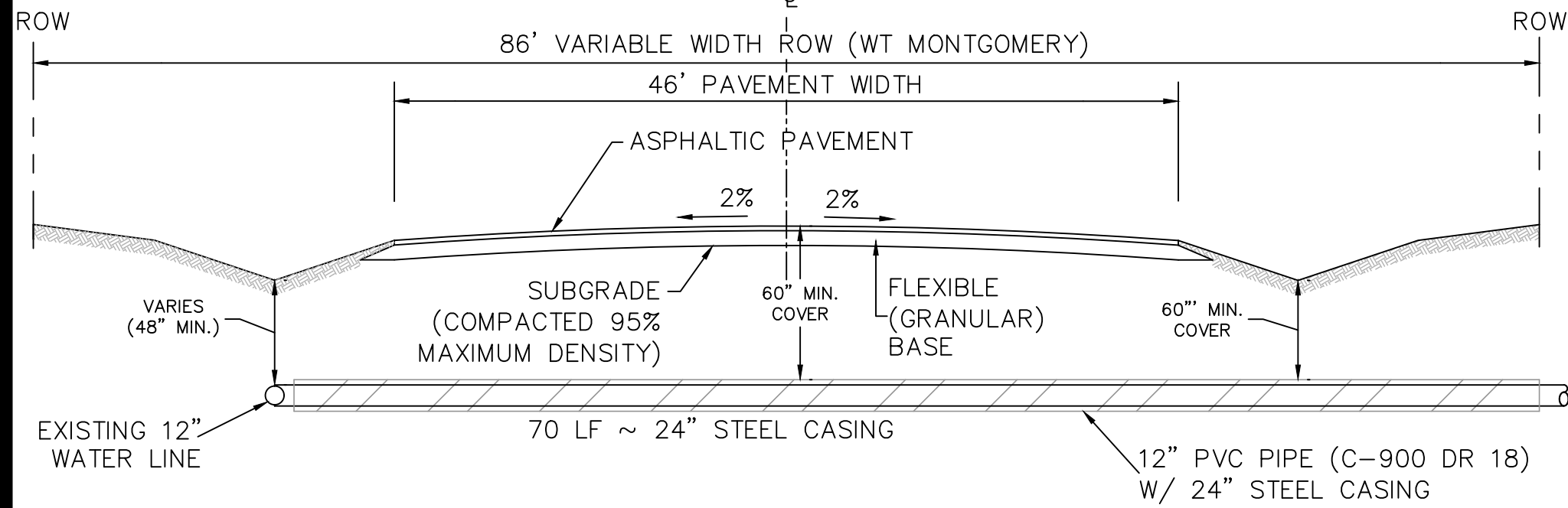
San Antonio
10-17-24

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

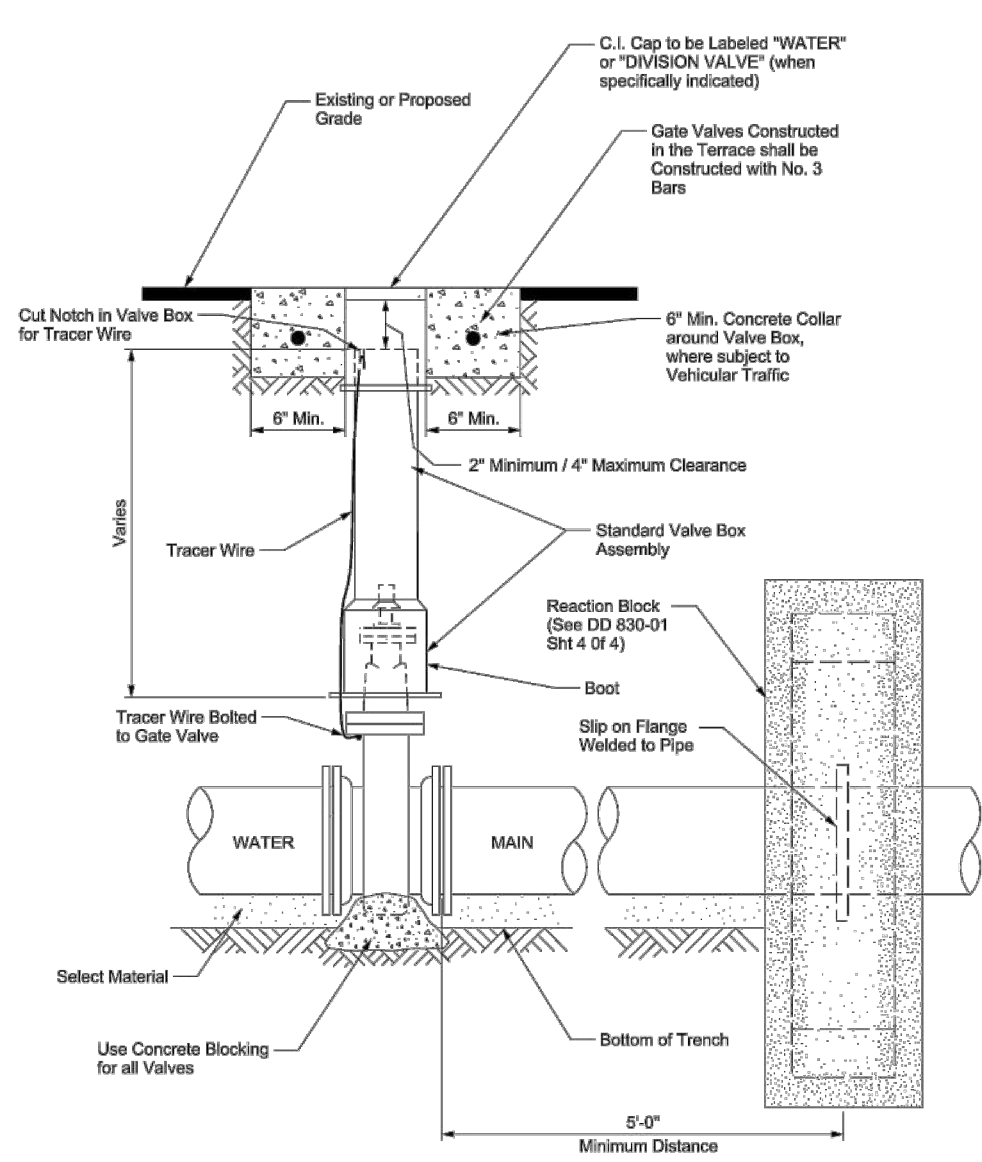
LAGO RIO VISTA
12" WATER MAIN (OFF-SITE)
SAN ANTONIO, TEXAS

OVERALL WATER DISTRIBUTION PLAN

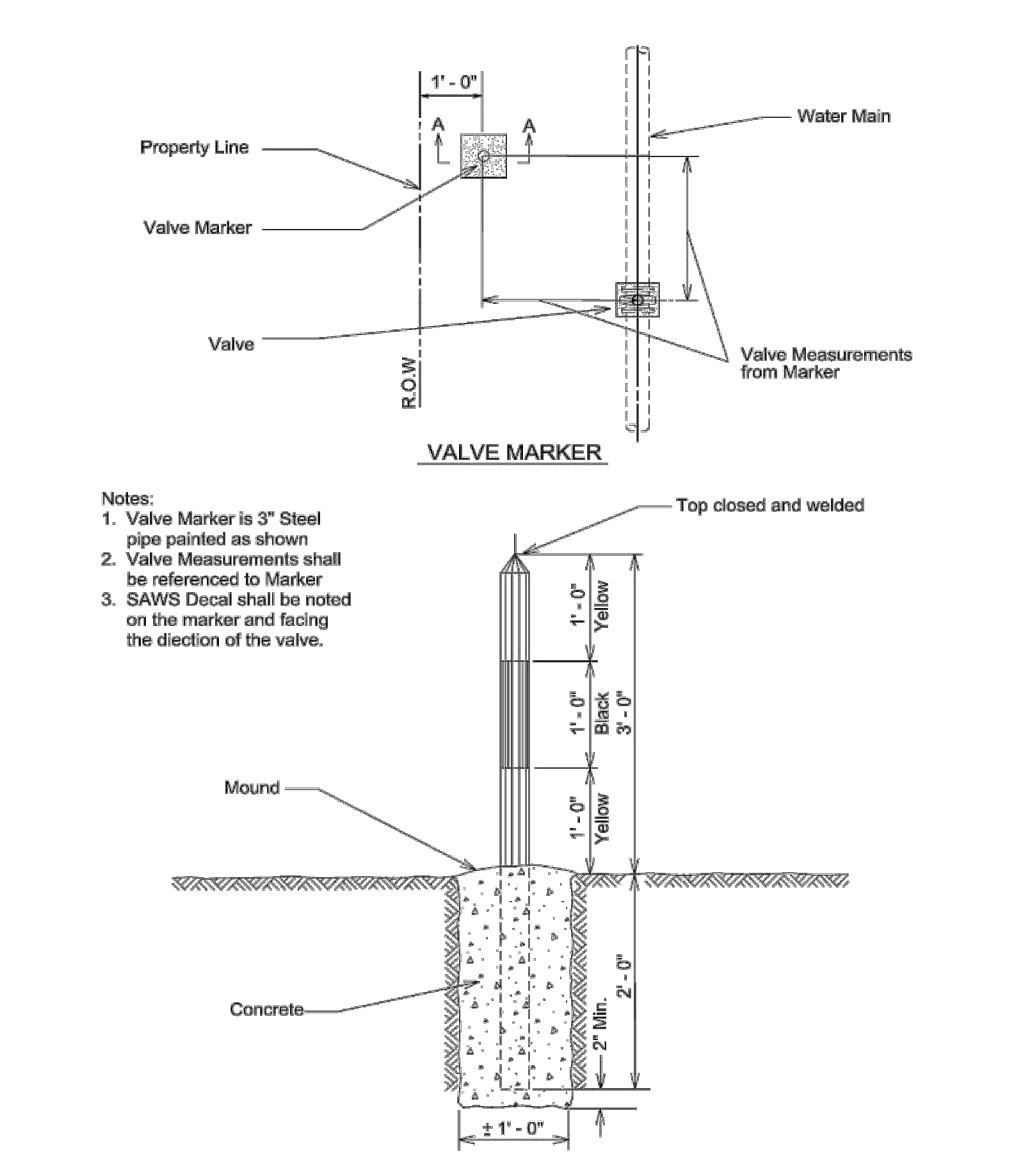
PLAT NO.	N/A
JOB NO.	11164-80
DATE	OCTOBER 2024
DESIGNER	CE
CHECKED	JA
DRAWN	JF
SHEET	CWE1.00



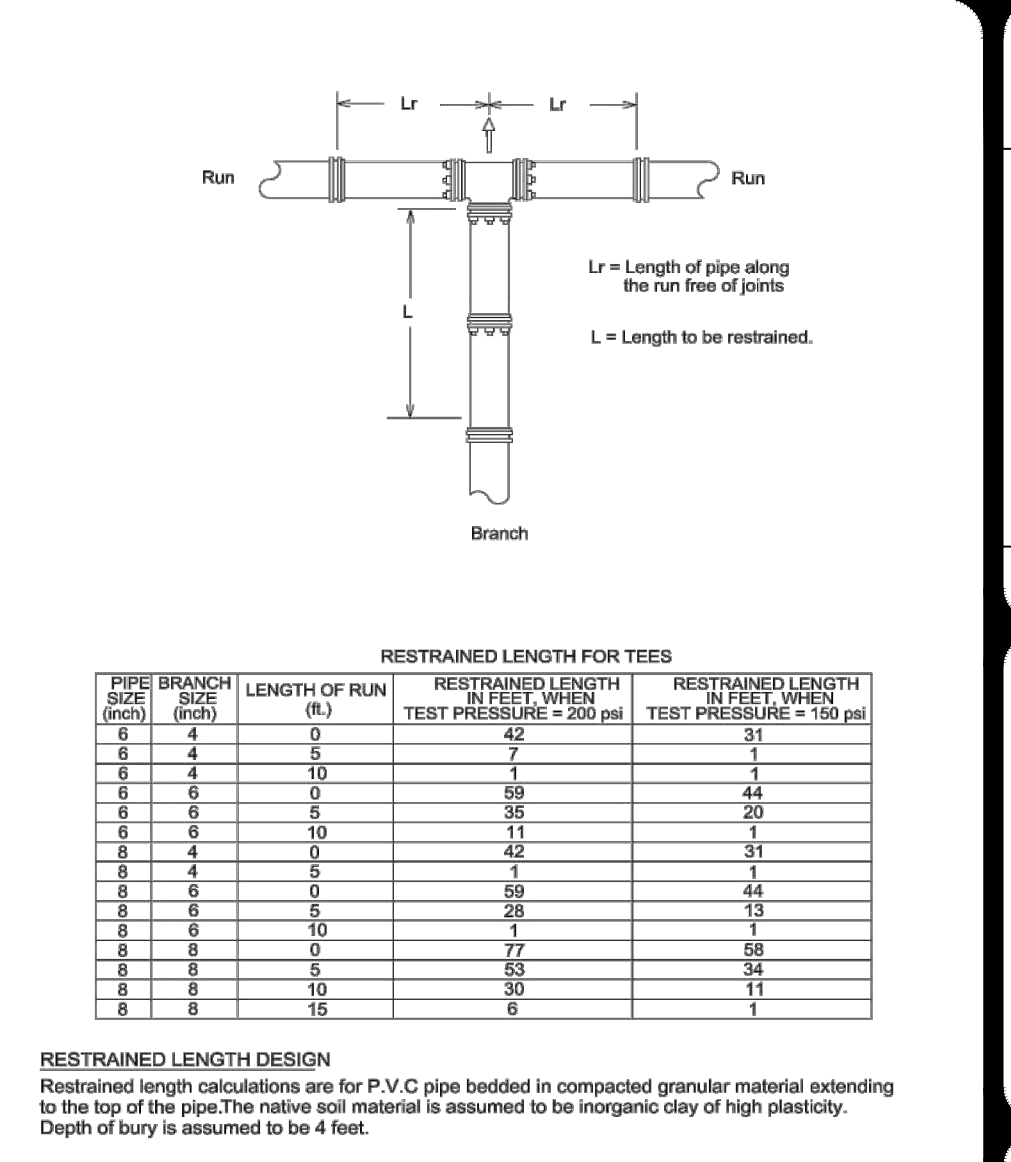
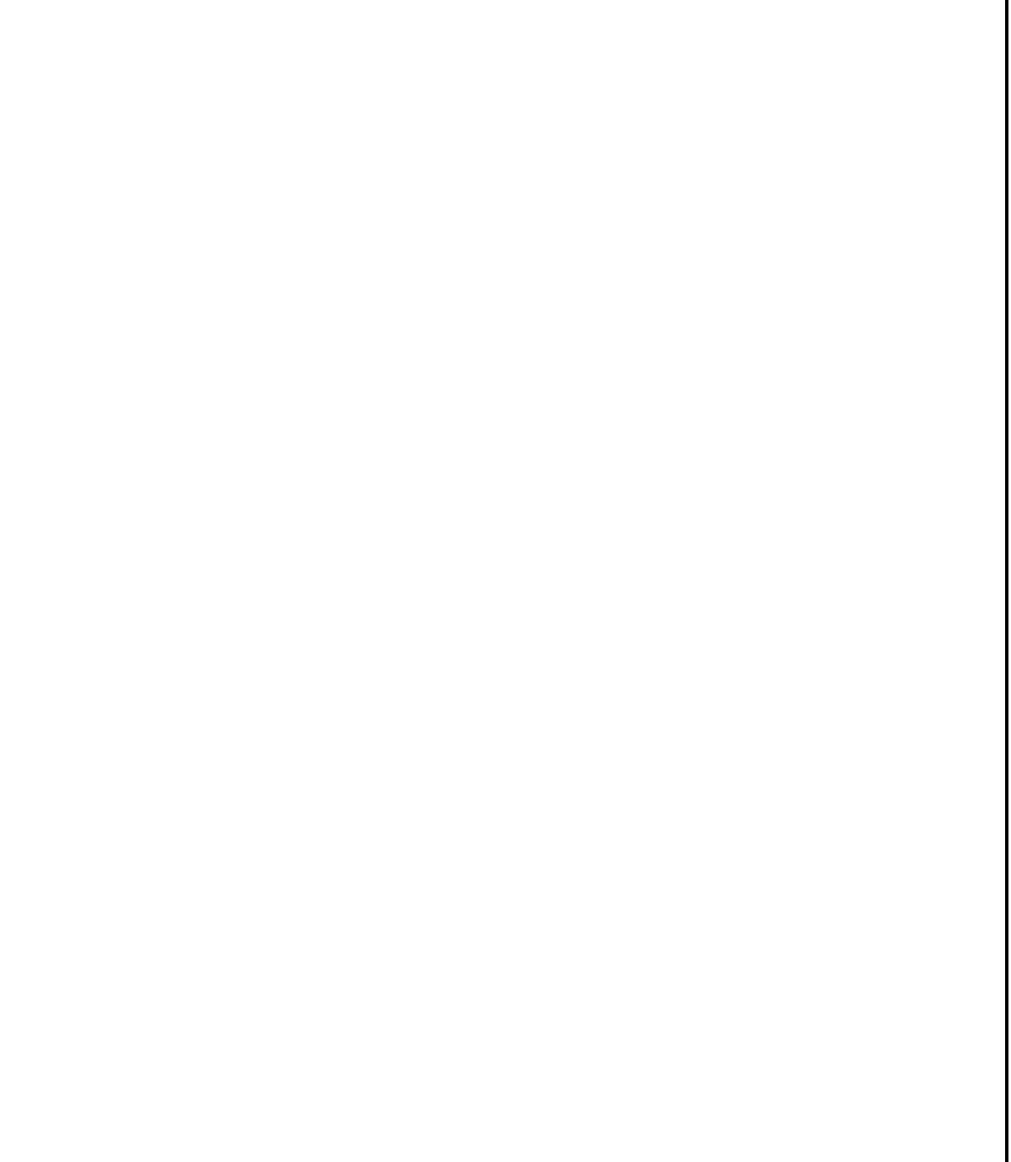
WT MONTGOMERY ROW STREET SECTION WATER MAIN
NOT-TO-SCALE



INSTALLATION OF NON-GEARED GATE VALVE WITH VALVE BOX AND EXTENSION
DD 828-01



VALVE MARKER
DD-828-04



RESTRAINED LENGTHS FOR TEES
DD-839-04

RESTRAINED LENGTH FOR TEES (Cont'd)				
PIPE SIZE (in)	BRANCH SIZE (in)	LENGTH OF RUN (ft)	RESTRAINED LENGTH IN FEET WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET WHEN TEST PRESSURE = 150 psi
12	4	0	42	31
12	4	5	7	1
12	6	0	59	44
12	6	5	13	1
12	6	10	1	1
12	8	0	77	59
12	8	5	42	23
12	8	10	7	1
12	8	15	1	1
12	12	0	109	82
12	12	5	69	59
12	12	10	53	35
12	12	15	39	12

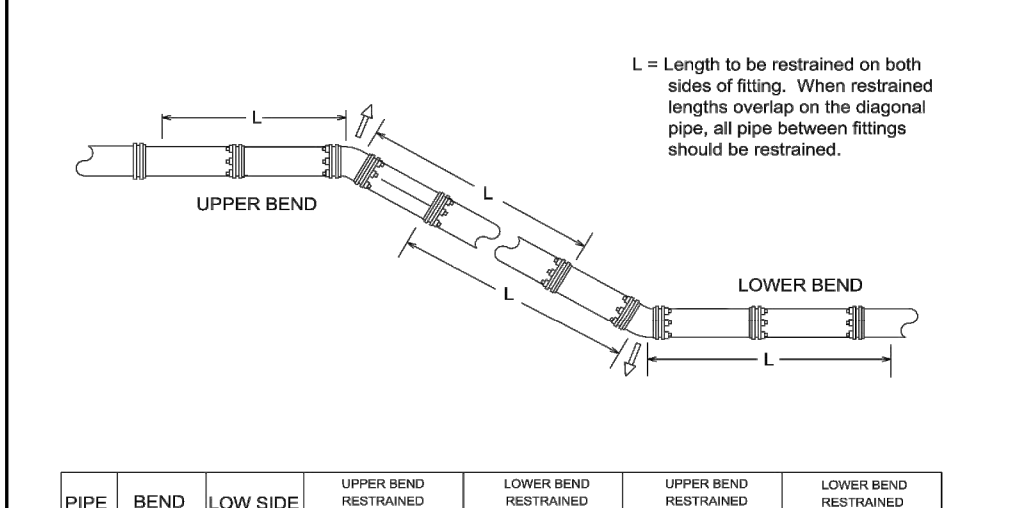
RESTRAINED LENGTH DESIGN
Restrained length calculations are for P.V.C pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

RESTRAINED LENGTH DESIGN		
PIPE SIZE (in)	RESTRAINED LENGTH IN FEET WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET WHEN TEST PRESSURE = 150 psi
6	59	44
8	77	59
10	93	69
12	109	82

RESTRAINED LENGTH DESIGN
Restrained length calculations are for P.V.C pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

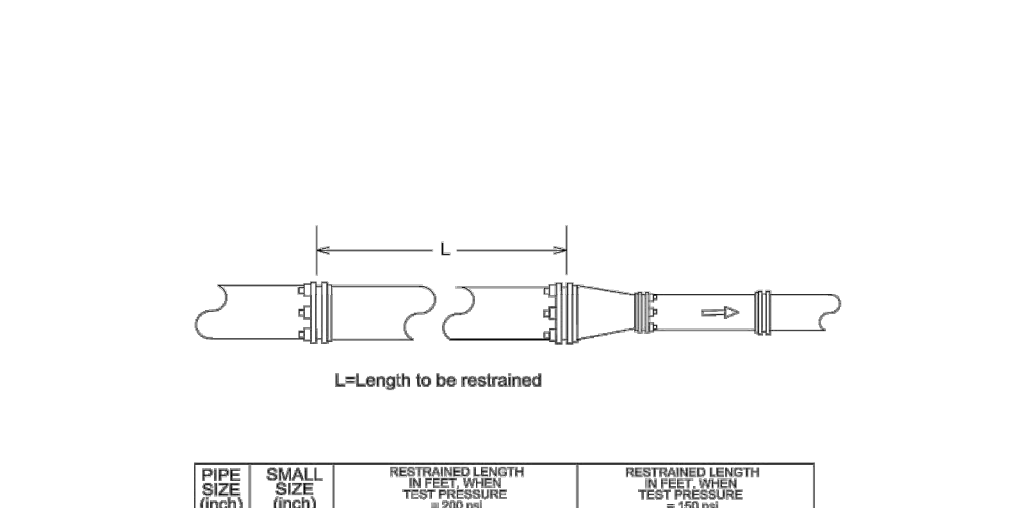
Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.



PIPE SIZE (in)	BEND ANGLE (deg.)	LOW SIDE DEPTH	UPPER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 200 psi	LOWER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 200 psi	UPPER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 150 psi	LOWER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 150 psi
6	45	5	24	8	18	6
6	22.5	5	12	4	9	3
6	11.25	5	6	2	4	1
6	45	10	24	5	18	4
6	22.5	10	12	2	9	2
6	11.25	10	6	1	4	1
8	45	5	32	11	24	8
8	22.5	5	15	5	11	4
8	11.25	5	8	3	6	2
8	45	10	32	7	24	6
8	22.5	10	15	3	11	2
8	11.25	10	8	2	6	1
12	45	5	45	16	34	12
12	22.5	5	22	7	16	6
12	11.25	5	11	4	8	3
12	45	10	45	10	34	7
12	22.5	10	22	5	16	3
12	11.25	10	11	2	8	2

RESTRAINED LENGTH DESIGN
Restrained length calculations are for P.V.C pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

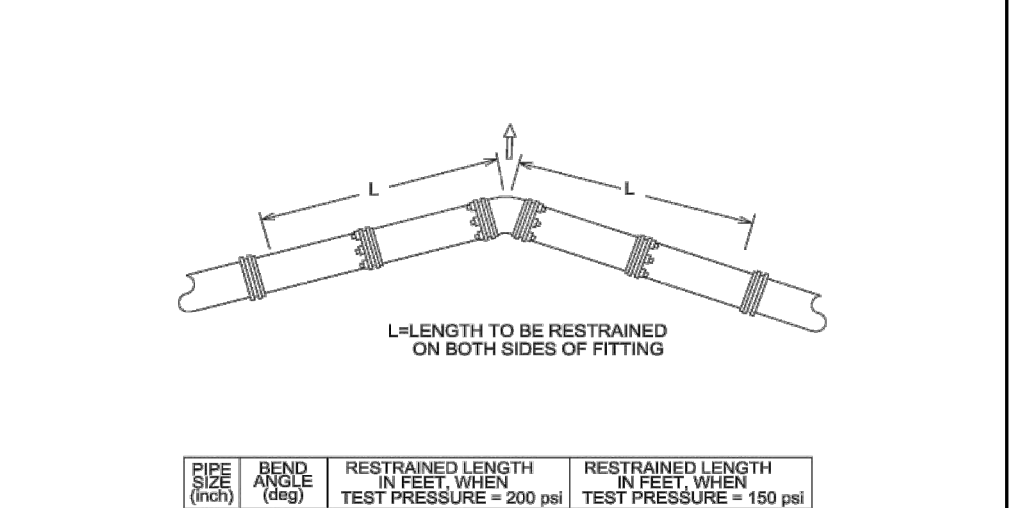
Note:
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PIPE SIZE (in)	SMALL SIZE (in)	RESTRAINED LENGTH IN FEET WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET WHEN TEST PRESSURE = 150 psi
6	4	23	17
6	4	5	7
6	22.5	5	3
6	11.25	5	2
8	4	23	17
8	4	5	3
8	22.5	5	4
8	11.25	5	2
12	6	60	43
12	6	58	43

RESTRAINED LENGTH DESIGN
Restrained length calculations are for P.V.C pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

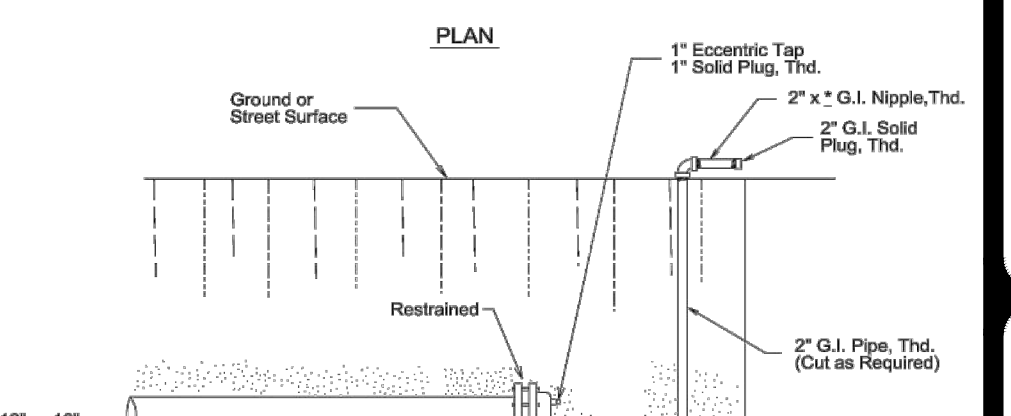
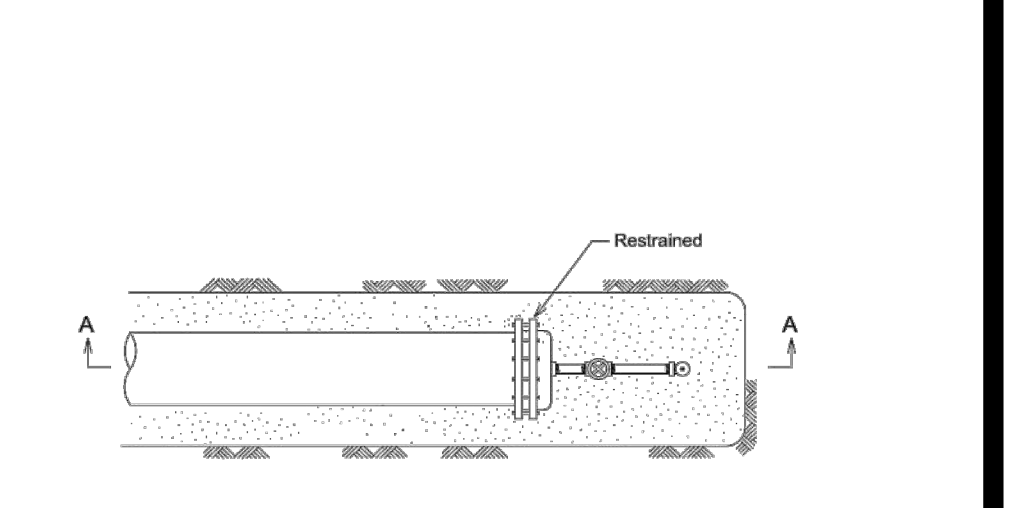
Note:
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PIPE SIZE (in)	BEND ANGLE (deg.)	RESTRAINED LENGTH IN FEET WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET WHEN TEST PRESSURE = 150 psi
6	45	23	17
6	4	5	7
6	22.5	5	3
6	11.25	5	2
8	45	30	22
8	45	12	9
8	22.5	6	4
8	11.25	3	2
12	90	43	32
12	45	18	13
12	22.5	8	6
12	11.25	4	3

RESTRAINED LENGTH DESIGN
Restrained length calculations are for P.V.C pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.



RESTRAINED LENGTHS FOR REDUCERS
DD-839-07

RESTRAINED LENGTHS FOR HORIZONTAL BENDS
DD-839-08

RESTRAINED LENGTHS FOR DEAD ENDS / INLINE VALVES
DD-839-05

RESTRAINED LENGTHS FOR VERTICAL OFFSETS
DD-839-06

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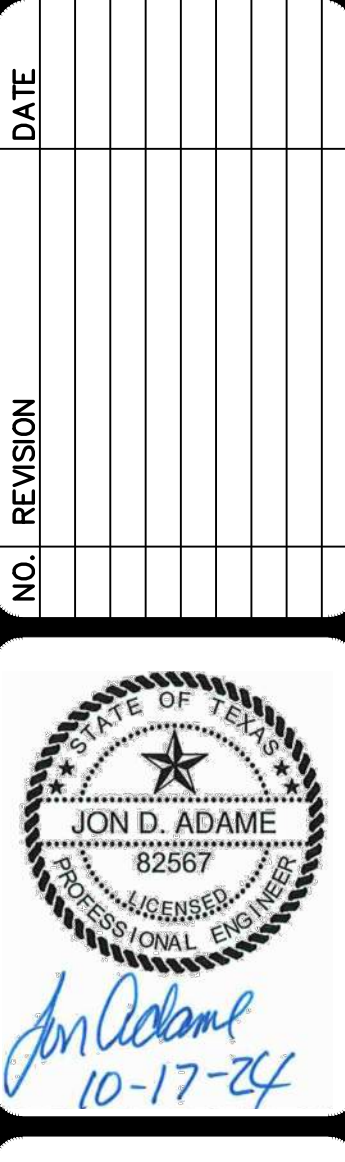
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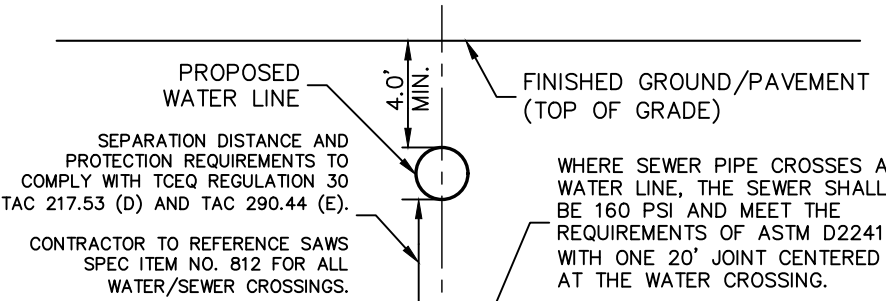
PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

LAGO RIO VISTA
12" WATER MAIN (OFF-SITE)
SAN ANTONIO, TEXAS
WATER DISTRIBUTION DETAILS

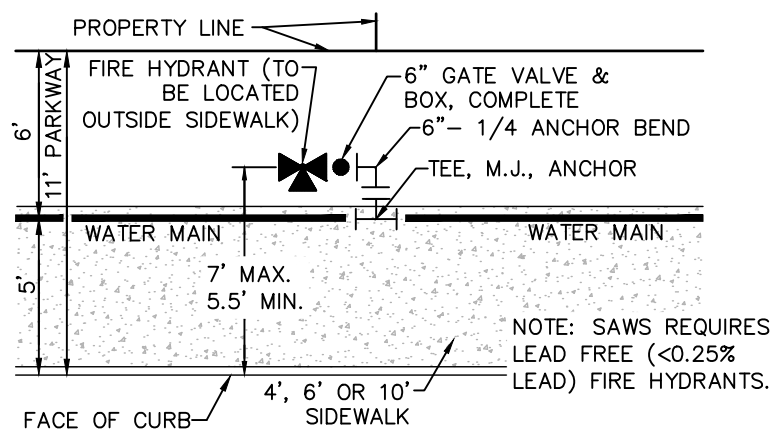
DEVELOPER'S NAME: LAGO RIO VISTA
ADDRESS: 16205 SAN PEDRO AVENUE
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78232
PHONE: (210) 496-1162
SAWS BLOCK MAP: 082552 & 082556 TOT. EDU'S N/A TOT. ACREAGE N/A
TOTAL LINEAR FOOTAGE OF PIPE: 205 LF 12" PLAT NO. N/A
NUMBER OF LOTS N/A SAWS JOB NO. CTR-277814

PLAT NO. N/A
JOB NO. 11164-80
DATE: OCTOBER 2024
DESIGNER: CE
CHECKED: JA DRAWN: JF
SHEET: CWE2.00

Date: Oct 17, 2024, 6:20am, User ID: 554512
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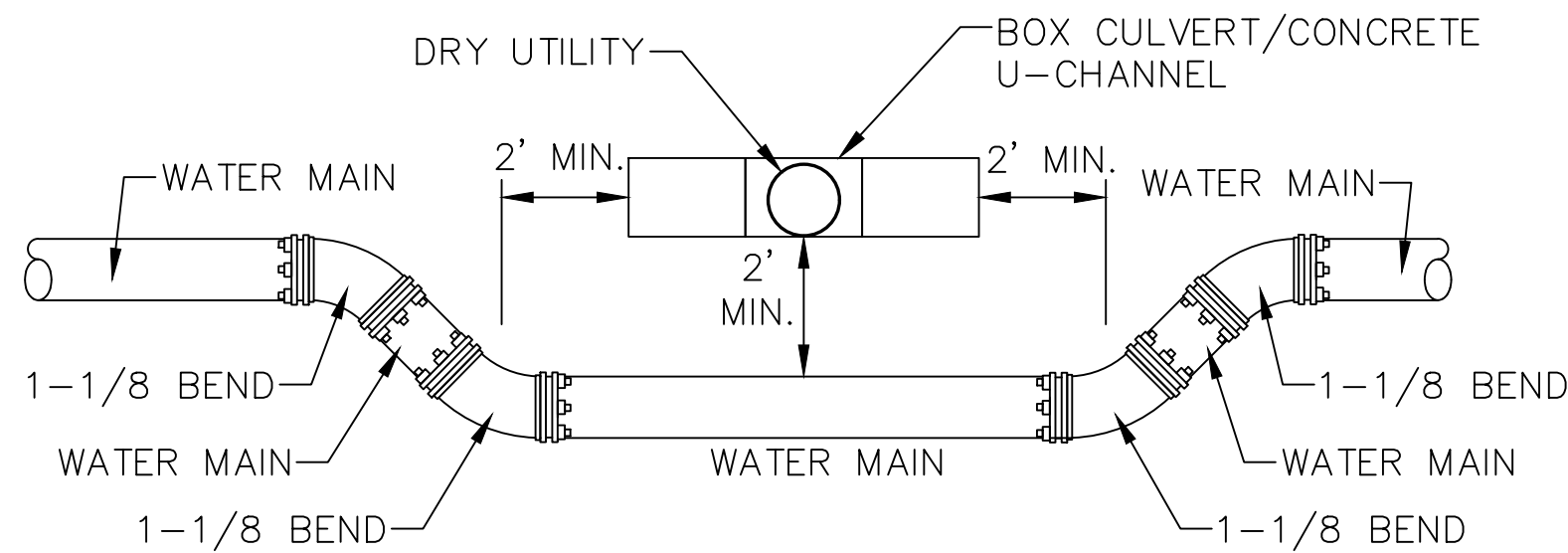


**TYPICAL SANITARY
SEWER/WATER CROSSING DETAIL**
NOT-TO-SCALE



FIRE HYDRANT INSTALLATION
NOT-TO-SCALE

FINISHED GRADE



ALL JOINTS ARE FULLY RESTRAINED IN
ACCORDANCE WITH SAWS SPECIFICATION
TABLE DD-839-06.

DETAIL "B"
TYPICAL UTILITY/WATER CROSSING DETAIL
NOT-TO-SCALE

SAWS CONSTRUCTION NOTES (LAST REVISED JULY 2017)

SAWS GENERAL SECTION

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE SAN ANTONIO WATER SYSTEM (SAWS) AND COMPLY WITH THE PLANS, SPECIFICATIONS, GENERAL CONDITIONS AND WITH THE FOLLOWING AS APPLICABLE:

- A. CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM"; TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30 PART 1 CHAPTER 290.
- B. CURRENT TxDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE".
- C. CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION".
- D. CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION".
- E. CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL" (UECM).

2. THE CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL THEY OBTAIN A COPY OF THE APPROVED COUNTER PERMIT OR GENERAL CONSTRUCTION PERMIT (GCP) FROM THE CONSULTANT AND HAS BEEN NOTIFIED BY SAWS CONSTRUCTION INSPECTION DIVISION OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS, THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.

3. THE CONTRACTOR SHALL OBTAIN THE SAWS STANDARD DETAILS FROM THE SAWS WEBSITE, [HTTP://WWW.SAWS.ORG/BUSINESS_CENTR/SPECS](http://WWW.SAWS.ORG/BUSINESS_CENTR/SPECS). UNLESS OTHERWISE NOTED WITHIN THE DESIGN PLANS.

4. THE CONTRACTOR IS TO MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION INSPECTION DIVISION ON NOTIFICATION PROCEDURES THAT WILL BE USED TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS 48 HOURS PRIOR TO BEGINNING ANY WORK.

5. LOCATION AND DEPTH OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR AT LEAST 1 WEEK PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION AND TO PROTECT THEM DURING CONSTRUCTION AT NO COST TO SAWS.

6. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 1-2 WEEKS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT. PLEASE ALLOW UP TO 7 BUSINESS DAYS FOR LOCATES. REQUESTING PIPE LOCATION MARKERS ON SAWS FACILITIES. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIED FOR VERIFICATION PURPOSES:

- SAWS UTILITY LOCATES: [HTTP://WWW.SAWS.ORG/SERVICE/LOCATES](http://WWW.SAWS.ORG/SERVICE/LOCATES)
- COSA DRAINAGE (210) 207-0724 OR (210) 207-6026
- COSA TRAFFIC SIGNAL OPERATIONS (210) 206-8480
- COSA TRAFFIC SIGNAL DAMAGES (210) 207-3951
- TEXAS STATE WIDE ONE CALL LOCATOR 1-800-545-6005 OR 811

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES TO ITS ORIGINAL OR BETTER CONDITION IF DAMAGES ARE MADE AS A RESULT OF THE PROJECT'S CONSTRUCTION.

8. ALL WORK IN TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) AND/OR BEXAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT REQUIREMENTS.

9. THE CONTRACTOR SHALL COMPLY WITH CITY OF SAN ANTONIO OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.

10. THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN PERMIT.

HOLIDAY WORK: CONTRACTORS WILL NOT BE ALLOWED TO PERFORM SAWS WORK ON SAWS RECOGNIZED HOLIDAYS. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG.

WEEKEND WORK: CONTRACTORS ARE REQUIRED TO NOTIFY THE SAWS INSPECTION CONSTRUCTION DEPARTMENT 48 HOURS IN ADVANCE TO REQUEST WEEKEND WORK. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG.

11. ANY AND ALL SAWS UTILITY WORK INSTALLED WITHOUT HOLIDAY/WEEKEND APPROVAL WILL BE SUBJECT TO BE UNCOVERED FOR PROPER INSPECTION.

12. COMPACTION NOTE (ITEM 804): THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING THE 98% COMPACTION REQUIREMENTS ON ALL TRENCH BACKFILL AND FOR PAYING FOR THE TESTS PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED, OR AS INDICATED BY THE SAWS INSPECTOR AND/OR THE TEST ADMINISTRATOR, PER EACH 12-INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. THIS PERMIT WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

13. A COPY OF ALL TESTING REPORTS SHALL BE FORWARDED TO SAWS CONSTRUCTION INSPECTION DIVISION.

SAWS WATER NOTES

1. PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT LEAST ONE WEEK IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS, THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.

• FOR WATER MAINS 12" OR HIGHER: SAWS EMERGENCY OPERATIONS CENTER (210) 233-2014

2. ASBESTOS CEMENT (AC) PIPE, ALSO KNOWN AS TRANSITE PIPE WHICH IS KNOWN TO CONTAIN ASBESTOS- CONTAINING MATERIAL (ACM), MAY BE LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF THIS PIPE OCCURS. SUCH WORK IS TO BE MADE UNDER SPECIAL SPECIFICATION ITEM NO. 3000, "SPECIAL SPECIFICATION FOR HANDLING ASBESTOS CEMENT PIPE".

3. VALVE REMOVAL: WHERE THE CONTRACTOR IS TO ABANDON A WATER MAIN, THE CONTROL VALVE LOCATED ON THE ABANDONING BRANCH WILL BE REMOVED AND REPLACED WITH A CAP/PLUG. (NSPI)

4. SUITABLE ANCHORAGE/THRUST BLOCKING OR JOINT RESTRAINT SHALL BE PROVIDED AT ALL OF THE FOLLOWING MAIN LOCATIONS: DEAD ENDS, PLUGS, CAPS, TEES, CROSSES, VALVES, AND BENDS, IN ACCORDANCE WITH THE STANDARD DRAWINGS DD-839 SERIES AND ITEM NO. 839, IN THE SAWS STANDARD SPECIFICATIONS FOR CONSTRUCTION.

5. ALL VALVES SHALL READ "OPEN RIGHT".

6. PRVS REQUIRED: CONTRACTOR TO VERIFY THAT NO PORTION OF THE TRACT BELOW GROUND ELEVATION OF 745 FEET WHERE THE STATIC PRESSURE WILL NORMALLY EXCEED 80 PSI. AT ALL SUCH LOCATIONS WHERE THE GROUND LEVEL IS BELOW 745 FEET, THE DEVELOPER OR BUILDER SHALL INSTALL AT EACH LOT, ON THE CUSTOMER'S SIDE OF THE METER, AN APPROVED "PRESSURE REGULATOR" IN CONFORMANCE WITH THE PLUMBING CODE OF THE CITY OF SAN ANTONIO. NO DUAL SERVICES ALLOWED FOR ANY LOT(S) IF "PRV IS/ARE REQUIRED FOR SUCH LOT(S), ONLY SINGLE SERVICE CONNECTIONS SHALL BE ALLOWED. NOTE: A PRESSURE REGULATOR IS ALSO KNOWN AS A PRESSURE REDUCING VALVE (PRV).

7. PIPE DISINFECTION WITH DRY HTH FOR PROJECTS LESS THAN 800 LINEAR FEET. (ITEM NO. 847.3); MAINS SHALL BE DISINFECTED WITH DRY HTH WHERE SHOWN IN THE CONTRACT DOCUMENTS OR AS DIRECTED BY THE INSPECTOR, AND SHALL NOT EXCEED A TOTAL LENGTH OF 800 FEET. THIS METHOD OF DISINFECTION WILL ALSO BE FOLLOWED FOR MAIN REPAIRS. THE CONTRACTOR SHALL UTILIZE AN APPROPRIATE SAFETY MEASURE TO PROTECT HIS PERSONNEL DURING DISINFECTION OPERATIONS.

8. BACKFLOW PREVENTION DEVICES:

- ALL IRRIGATION SERVICES WITHIN RESIDENTIAL AREAS ARE REQUIRED TO HAVE BACKFLOW PREVENTION DEVICES.
- ALL COMMERCIAL BACKFLOW PREVENTION DEVICES MUST BE APPROVED BY SAWS PRIOR TO INSTALLATION.

9. FINAL CONNECTION TO THE EXISTING WATER MAIN SHALL NOT BE MADE UNTIL THE WATER MAIN HAS BEEN PRESSURE TESTED, CHLORINATED, AND SAWS HAS RELEASED THE MAIN FOR TIE-IN AND USE.

10. DIVISION VALVES: DIVISION VALVES SHOWN ON PLANS OR NOT SHOWN ON PLANS BUT FOUND IN THE FIELD SHALL ONLY BE OPERATED BY SAWS DISTRIBUTION AND COLLECTION STAFF AND ONLY WITH PRIOR WRITTEN APPROVAL OF THE SAWS DIRECTOR OF PRODUCTION AND OPERATIONS AND PROPER COORDINATION WITH ALL SAWS DEPARTMENTS. CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO THE INSPECTOR A MINIMUM OF TWO WEEKS IN ADVANCE TO START THE COORDINATION PROCESS AND WILL BE INFORMED BY THE INSPECTOR WHEN THE DIVISION VALVE WILL BE OPERATED BY THE SAWS DISTRIBUTION AND COLLECTION STAFF. THE DIVISION VALVE CAN ONLY BE OPERATED BY SAWS DISTRIBUTION AND COLLECTION STAFF MEMBER NOT THE INSPECTOR OR THE CONTRACTOR. OPERATION OF A DIVISION VALVE WITHOUT THE EXPRESS PRIOR WRITTEN APPROVAL OF THE SAWS DISTRIBUTION AND COLLECTION STAFF WILL CONSTITUTE A MATERIAL BREACH OF ANY WRITTEN SAWS CONTRACT OR PERMIT IN ADDITION TO SUBJECTING THE CONTRACTOR TO LIABILITY FOR ANY AND ALL FINES, FEES, OR OTHER DAMAGES, DIRECT OR CONSEQUENTIAL, THAT MAY ARISE FROM OR BE CAUSED BY THE OPERATION OF THE VALVE WITHOUT PRIOR WRITTEN PERMISSION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE OPERATION OR OPENING OR CLOSING OF A DIVISION VALVE CAN TAKE SEVERAL WEEKS FOR APPROVAL. DIVISION VALVES WILL ALSO HAVE A VALVE LID LABELED DIVISION VALVE AND A LOCKING MECHANISM INSTALLED WITH A KEY. THE LOCK AND KEY MECHANISM WILL BE PAID FOR BY THE CONTRACTOR BUT WILL BE INSTALLED BY SAWS DISTRIBUTION AND COLLECTION STAFF.

PROJECT WATER NOTES

1. MACHINE CHLORINATION BY THE S.A.W.S.

2. ALL 8", 12" AND 16" PIPE SHALL BE P.V.C. C-900 CLASS 235 DR 18.

3. ALL MAINS SHALL BE HYDROSTATICALLY TESTED BY THE CONTRACTOR, AS PROVIDED FOR IN THE SPECIAL CONDITIONS.

4. THE WATER LINES WILL BE SET FROM THE STREET HUBS BEFORE THIS CONTRACT BEGINS. STREET CUT SHEETS WILL BE SUPPLIED TO THE CONTRACTOR. THERE SHOULD BE NO ADDITIONAL STAKES REQUIRED, AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSPECT THE SITE AND VERIFY THAT ALL STAKES REQUIRED FOR HIS WORK ARE IN PLACE AT THE TIME THE CONSTRUCTION BEGINS. IF ANY STAKES ARE MISSING, THE ENGINEER SHOULD BE NOTIFIED IMMEDIATELY AFTER CONSTRUCTION BEGINS. ALL CONSTRUCTION STAKES, MARKS, ETC., SHALL BE CAREFULLY PRESERVED BY THE CONTRACTOR, AND IN CASE OF DESTRUCTION OR REMOVAL BY THE CONTRACTOR, HIS EMPLOYEES OR ANY OTHER MEANS, SUCH STAKES, MARKS, ETC., SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

5. THE CONTRACTOR SHALL FURNISH THE ENGINEER WITH ALL THE FINAL MEASUREMENTS, TAPS AND LENGTH OF SERVICE CONNECTIONS.

6. THE LOT CORNERS WILL BE SET BY THE ENGINEER FOR INSTALLATION OF ALL WATER SERVICES. THESE LOT CORNERS SHALL BE CAREFULLY PRESERVED BY THE CONTRACTOR SO THE METER BOXES CAN BE SET IN PHASE II. ANY LOT CORNER DESTROYED OR REMOVED BY THE CONTRACTOR, HIS EMPLOYEES, OR BY ANY OTHER MEANS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

7. STREETS WILL HAVE BEEN EXCAVATED DOWN TO SUBGRADE AND THE PARKWAY WILL BE CUT DOWN TO TOP OF CURB BY THE STREET CONTRACTOR, PRIOR TO CONSTRUCTION OF THE WATER MAINS. IT WILL BE THE UTILITY CONTRACTOR'S RESPONSIBILITY TO PROVIDE A PAD FOR HIS EQUIPMENT.

8. WATER METER BOXES IF APPLICABLE SHALL BE INSTALLED NINE FEET FROM FACE OF CURB TO CENTER OF THE METER BOX.

9. ALL GARBAGE OR SPOIL MATERIAL FROM THIS WORK SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR, AT HIS EXPENSE.

10. FINAL CONNECTION TO THE EXISTING WATER MAIN SHALL NOT BE MADE UNTIL WATER MAIN HAS BEEN PRESSURE TESTED, CHLORINATED AND THE S.A.W.S. RELEASES THE MAIN FOR TIE-IN AND USE.

11. UNIT PRICE BID FOR "STANDARD FIRE HYDRANT ASSEMBLY" SHALL INCLUDE FIRE HYDRANT, 6-INCH GATE VALVE AND 6-INCH VALVE BOX COMPLETE, ANCHOR BEND, AND ALL 6-INCH DI PIPE REQUIRED (DI PIPE REQUIRED SHALL INCLUDE ALL PIPE FROM THE TEE ON THE MAIN LINE TO THE FIRE HYDRANT).

12. WHEN SEWER LINES ARE INSTALLED IN THE VICINITY OF WATER MAINS, SUCH INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE TEXAS NATURAL RESOURCE CONSERVATION COMMISSION "RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS" (1988 OR ANY REVISIONS THERETO).

13. A CLEAR SPACE SHALL BE PROVIDED AROUND ALL FIRE HYDRANTS. THIS AREA SHOULD HAVE A MINIMUM DIAMETER OF 3.0' AND BE CLEAN OF VERTICAL OBSTRUCTIONS, VALVES, AND METER BOXES.

14. SAWS REQUIRES LEAD FREE (< 0.25%) FIRE HYDRANTS.

15. UNLESS OTHERWISE NOTED ALL SERVICES SHALL BE 3/4" WITH 5/8" METER.

BEXAR COUNTY RIGHT OF WAY PERMIT NOTE

GENERAL REQUIREMENTS

- A SITE DEVELOPMENT PLAN SHALL BE DRAWN TO SCALE, AND SHALL INDICATE:
 - DIMENSIONS AND LOCATIONS OF SIDEWALKS, PEDESTRIAN PASSING SPACES, DRIVEWAYS, CURB RAMPS OR MEDIAN CROSSEOVERS BEING REQUESTED.
 - LOCATIONS OF EXISTING AND PROPOSED ROADS OR ROADWAY INTERSECTIONS IF WITHIN 100 FEET OF THE SITE, AND
 - LOCATIONS OF EXISTING OR PROPOSED STRUCTURES, STORM SEWER INLETS, FIRE HYDRANTS, CURB RAMPS, UTILITY POLES, FENCES AND SERVICE FIXTURES WITHIN 20' OF THE PROPOSED IMPROVEMENT WITHIN THE RIGHT-OF-WAY.
- ANY WORK IN A FLOODPLAIN WILL REQUIRE A FLOODPLAIN DEVELOPMENT PERMIT.
- SEPARATE PERMITS ARE REQUIRED FOR TEMPORARY CONSTRUCTION AND PERMANENT ENTRANCES.
- DRIP IRRIGATION (OR EQUIVALENT) SYSTEMS WILL BE PERMITTED PROVIDED AN APPROVED CITY OF SAN ANTONIO IRRIGATION PERMIT (IN THE ETJ) AND AN APPROVED LICENSE LANDSCAPE AGREEMENT IS SUBMITTED WITH THE APPLICATION. NO OTHER IRRIGATION SYSTEM WILL BE ALLOWED.
- MONUMENTS OR "SPECIAL" LANDSCAPING WILL NOT BE PERMITTED WITHOUT AN APPROVED LICENSE LANDSCAPE AGREEMENT.
- ALL UTILITY ROAD CROSSINGS WILL BE BORED A MINIMUM OF 30 INCHES BELOW THE PAVEMENT STRUCTURAL SECTION. WATER JETTING UNDER A STREET WILL NOT BE PERMITTED. CASING WILL BE REQUIRED ON ANY PRESSURIZED UTILITY LINE CROSSING. NO OPEN CUTS WILL BE PERMITTED ON ANY PAVED ROADWAY, CURB, SIDEWALK, OR DRIVEWAY UNLESS UTILITY CONNECTION IS LOCATED WITHIN THE STREET.
- IF A PARTIAL OR TOTAL ROAD CLOSURE WILL BE NEEDED, A TRAFFIC CONTROL PLAN SHALL BE SUBMITTED WITH THE PERMIT APPLICATION.
- FOR ALL WORK THAT REQUIRES A PARTIAL ROAD CLOSURE, CONTRACTOR WILL MAINTAIN AT LEAST ONE (1) 12-FOOT TRAFFIC LANE, CONTROLLED WITH FLAGMEN, DURING WORKING HOURS AND OPEN THE ROADWAY UP TO TWO (2) TRAFFIC LANES (24 FT.) DURING ALL NON-WORKING HOURS. CONTRACTOR WILL FURNISH AND MAINTAIN ALL REQUIRED TRAFFIC CONTROL DEVICES, PER TxDOT ARRAYS DIRECTED BY THE DESIGN ENGINEER, TO PROPERLY WARN, GUIDE, AND CONTROL TRAFFIC AT ALL TIMES DURING CONSTRUCTION.
- FOR WORK THAT REQUIRES A TOTAL ROAD CLOSURE, CONTRACTOR MUST NOTIFY BEXAR COUNTY PUBLIC WORKS TRAFFIC SECTION (210-335-6700) AT LEAST 72 HOURS BEFORE CLOSING THE ROAD.
- NOTIFY THE INSPECTION SECTION AT 210-335-6700 WITH PERMIT NUMBER AT LEAST 24 HOURS BEFORE STARTING THE ACTIVITY. NO INSPECTION SHALL BE MADE WITHOUT A PERMIT.
- STORAGE OF MATERIALS WITHIN 10 LINEAR FEET OF EDGE OF PAVEMENT WITHOUT APPROPRIATE TRAFFIC SAFETY BARRIER IS PROHIBITED.
- DRIVEWAY, SIDEWALK AND CURB REPAIRS WILL FOLLOW CURRENT CITY OF SAN ANTONIO SPECIFICATIONS.
- ALL DISTURBED ADA ROUTES MUST BE BROUGHT UP TO CURRENT ADA STANDARDS (BRICK PAVERS, SLOPES, ETC.).
- ALTERNATIVE ADA ACCESSIBLE ROUTES SHALL BE DESIGNATED DURING CONSTRUCTION WHERE AN EXISTING ACCESSIBLE ROUTE IS DISTURBED.
- WHEN A DRIVEWAY CULVERT IS REQUIRED OR REPLACED, THE MINIMUM PIPE SIZE FOR THE CULVERT SHALL BE 15 INCHES, UNLESS A LARGER DIAMETER PIPE IS REQUIRED AS DETERMINED IN THE FIELD OR DURING THE PERMIT REVIEW (E.G., LARGER PIPE CROSS-SECTIONAL AREA WILL BE REQUIRED IF THE EXISTING CULVERT UPSTREAM OF THE PROPOSED DRIVEWAY IS LARGER THAN THE PROPOSED CULVERT). (SEE CULVERT DETAIL).
- CONCRETE END TREATMENTS, SAFETY END TREATMENTS AND/OR HEADWALLS, SHALL BE INSTALLED WHERE CULVERTS UNDER ROADWAYS, DRIVEWAYS, OR OTHER STRUCTURES IN THE RIGHT-OF-WAY ARE REQUIRED, MODIFIED OR REPLACED (SEE CULVERT DETAIL).
- WHERE EXISTING GUARDRAIL IS REMOVED, IT SHALL BE REPLACED ACCORDING TO LATEST VERSION OF TxDOT STANDARDS.
- TRENCHES EXCAVATED IN PARKWAYS WHERE EXISTING SURFACE GRADE EXCEEDS 5% SHALL REQUIRE CEMENT STABILIZATION OR APPROVED EQUIVALENT. THE CEMENT STABILIZED BASE WILL CONSIST OF A 1 1/2-2 SACK MIX PER CY WITH THE TRENCH BEING OVER EXCAVATED BY AT LEAST ONE FOOT ON EACH SIDE TO A DEPTH OF 6"-8" FOR THE STABILIZED BASE BACKFILL. (SEE CEMENT STABILIZED TRENCH BACKFILL DETAIL).
- TRENCHES EXCAVATED OUTSIDE OF THE ROADWAY AND WITHIN 2 LINEAR FEET OF THE EDGE OF PAVEMENT SHALL BE BACKFILLED WITH CEMENT STABILIZED AS NOTED ABOVE OR APPROVED EQUIVALENT. (SEE CEMENT STABILIZED TRENCH BACKFILL DETAIL).
- ALL DAMAGED PAVEMENT SHALL BE RECONSTRUCTED TO EXISTING OR BETTER CONDITION. LIMITS OF RECONSTRUCTION SHALL BE DETERMINED BY THE DEVELOPMENT SERVICES ENGINEER OR INSPECTOR.
- WHERE ROADWAY MARKINGS ARE ADDED OR REPLACED, THERMOPLASTIC PAVEMENT MARKING MATERIAL SHALL BE USED IN ACCORDANCE WITH THE LATEST TxDOT STANDARDS.
- PAVEMENT DESIGN FOR AUXILIARY LANES ABUTTING AN EXISTING ROAD SHALL BE MINIMUM 2" HMAC TYPE D (OR TYPE C) AND 12" HMAC TYPE B OR MATCH EXISTING PAVEMENT SECTION (IF KNOWN).
- IF CRACK SEALING IS REQUIRED, THE SEALANT SHALL BE HOT POUR.
- IF A CHIP SEAL IS REQUIRED, FOLLOW TxDOT SPEC ITEM 316. USE CRS-2P EMULSION AT A RATE OF 0.30 GAL/SY WITH A GRADE 5T, TRAP ROCK AGGREGATE AT A RATE OF 16.5 #/SY.
- IF A FOG SEAL IS REQUIRED, [SPECIFIED APPROPRIATE TYPES] AT A RATE SPECIFIED BY THE MANUFACTURER.
- IF A MAIL BOX IS REPLACED, THE MAIL BOX SHALL COMPLY WITH THE LATEST VERSION OF TxDOT STANDARDS.

TRENCHES

ROADWAY

- IF A TRENCH CUT IS ALLOWED, TRENCH REPAIRS ON ROADWAYS WITH PAVEMENT OVER 5 YEARS OLD OR HAVE AN OCI LESS THAN 85 WILL REQUIRE MINIMUM PATCH WIDTH OF 10' WITH NO LESS THAN 2" OF PAVEMENT EXTENDING OUTSIDE OPEN CUT EDGE IN ALL DIRECTIONS AT A MINIMUM INTERSECTIONS, KNUCKLES, CUL-DE-SACS, AND ROADWAY PAVEMENT THAT IS LESS THAN 5 YEARS OLD OR HAS AN OCI GREATER THAN OR EQUAL TO 85 MAY REQUIRE ADDITIONAL PAVEMENT REPLACEMENT. EXISTING ASPHALT TO BE REMOVED SHALL BE SAW CUT, MILLED AND OVERLAYED AS DETERMINED DURING THE PERMIT REVIEW.
- UNLESS OTHERWISE NOTED IN THE ISSUED PERMIT, TRENCHES ARE TO BE BACK FILLED NO LESS THAN 10" FROM BOTTOM OF FINAL SURFACE. TREATMENT WITH FLOWABLE FILL ABOVE THE FLOWABLE FILL, A MINIMUM 10" TYPE B HMAC AND NO LESS THAN 2" OF HMAC TYPE C ASPHALT BENCHMARK 1 OUTSIDE TRENCH WILL BE REQUIRED. NEW ROADS MAY REQUIRE 2" HMAC TYPE D ASPHALT.
- CURB REPAIRS THAT DISTURB THE EDGE OF ROADWAY WILL REQUIRE MINIMUM 18" WIDE ASPHALT REPLACEMENT (MINIMUM 2" DEPTH) FROM THE FACE OF CURB. THE REPLACEMENT WILL EXTEND A MINIMUM OF 18" FROM EACH END OF THE CURB REPLACEMENT AREA.
- FOR ADDITIONAL REPAIR INFORMATION, PLEASE REFER TO GENERAL REQUIREMENTS 20 THROUGH 25.

DRIVEWAY

- IF A BORE UNDERNEATH AN EXISTING DRIVEWAY IS NOT POSSIBLE, THE ENTIRE DRIVEWAY WILL NEED TO BE REPLACED FROM ROW TO EDGE OF PAVEMENT OR CURB.
- FOR ADDITIONAL REPAIRS, PLEASE REFER TO TRENCHES -ROADWAY AND GENERAL REQUIREMENTS 12 THROUGH 19.
- SIDEWALK AND CURB
 - IF A BORE UNDERNEATH AN EXISTING SIDEWALKS OR CURB IS NOT POSSIBLE, THE SIDEWALK AND/OR CURB WILL
 - NEED TO BE REPLACED FROM EXPANSION JOINT TO EXPANSION JOINT.
 - FOR ADDITIONAL REPAIRS, PLEASE REFER TO ROADWAY TRENCHES AND GENERAL REQUIREMENTS 12 THROUGH 19.

EMERGENCY REPAIRS

- A REPAIR IS CONSIDERED TO BE AN EMERGENCY IF:
- REPAIR WILL PROTECT PUBLIC HEALTH OR SAFETY; AND
 - REPAIR MUST BE STARTED BEFORE OBTAINING A ROW PERMIT.
- SUBMIT A BEXAR COUNTY ROW PERMIT APPLICATION WITHIN 24 HOURS OF THE START OF THE REPAIR. (FAX 335-6713; EMAIL: ROW.PERMIT@BEXAR.ORG)
 - PROVIDE PHOTOGRAPHS, PLAN AND/OR DETAIL OF AREA OF REPAIR IDENTIFYING DESCRIPTION OF WORK (E.G. DRIVEWAY, SIDEWALK, ROADWAY, DRAIN STRUCTURES ETC.)
 - PERMANENT REPAIRS ARE TO BE COMPLETED WITHIN A MONTH OF PERMIT APPLICATION SUBMITTAL AND REQUIRE A BEXAR COUNTY INSPECTOR TO BE PRESENT DURING CONSTRUCTION.

WATER (SAWS PRESSURE ZONE 4 (930 HGL))

DEVELOPER'S NAME: LAGO RIO VISTA
ADDRESS: 16205 SAN PEDRO AVENUE
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78232
PHONE# (210) 496-1162
SAWS BLOCK MAP# 082552 & 082556 TOT. EDU'S/N/A TOT. ACREAGE/N/A
TOTAL LINEAR FOOTAGE OF PIPE: 205 LF 12" PLAT NO. N/A
NUMBER OF LOTS N/A SAWS JOB NO. CTR-277814

DATE	
NO.	
REVISION	



Jon Adame
10-17-24

**PAPE-DAWSON
ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008860

LAGO RIO VISTA
12" WATER MAIN (OFF-SITE)
SAN ANTONIO, TEXAS
WATER DISTRIBUTION NOTES

PLAT NO.	N/A
JOB NO.	11164-80
DATE	OCTOBER 2024
DESIGNER	CE
CHECKED	JA
DRAWN	JF
SHEET	CWE3.00

Date: Oct 17, 2024, 6:20pm User ID: 551915
File: P:\116440\Design\City\12 Road Closure Water Main Plans\STA2-111640.dwg

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TRAFFIC NOTES

TRENCHING / EXCAVATING

The following notes shall apply to excavations of trenches or pits that are located in the pavement or are within six (6) feet of the edge of roadway:

1. Trench walls shall not be closer than three (3) feet from the edge of the traveled way at any stage of construction.
2. Traffic control devices shall be in place before starting any excavation.
3. Trenches or pits will not be permitted to be bridged by steel plates and open to traffic unless they are temporarily backfilled to finished street grade.
4. For pits or trenches along or in a roadway that are going to be left open over night that are zero to fifty (0 - 50) feet in length, the following applies. **GUARD RAIL OR CONCRETE BARRIER SHALL BE USED.**
5. For pits or trenches along or in roadway that are going to be left open over night and are longer than 50 feet in length, **CONCRETE BARRIERS MUST BE USED.**
6. Plastic construction fencing shall be required for any trench or pit left open over night.
7. When using any guardrail or concrete barrier, protected end must be used as per the TEXAS-M.U.T.C.D.
8. For vertical drop-offs greater than two (2) feet along roadway, low profile concrete with appropriate end protection must be installed.
9. All concrete barriers placed on City R.O.W. shall be low profile. No high profile barriers will be allowed.

REFLECTIVE SHEETING

The reflectorized white and reflectorized orange stripes for channelizing devices such as barricade drums and vertical panels shall be constructed of reflective sheeting meeting the color and retro-reflectivity requirements of high intensity, unless otherwise specified in the plans.

MAINTENANCE

1. All traffic signs shall be kept in proper position, clean and legible at all times. Damaged barricades, signs, and other traffic control devices shall be replaced without undue delay.
2. To ensure adequate maintenance, a suitable schedule for inspection, cleaning, and replacement of barricades, lights, and signs shall be established.
3. Special attention and necessary action shall be taken to see that weeds, trees, shrubbery and construction materials do not obscure the face of any sign or barricades.

TRAINING

Each person whose actions affect maintenance and construction zone safety, from the upper-level management personnel through construction and maintenance field personnel, should receive training appropriate to the job decision each individual is required to make. Only those individuals who are qualified by means of adequate training in safe traffic control practices and have a basic understanding of the principles established by applicable standards and regulations, including those of the TEXAS M.U.T.C.D. should supervise the selection, placement, and maintenance of traffic control devices in maintenance and construction areas.

SPECIAL EVENTS BARRICADING

All Type I, (8") barricades used for special events (Dome, Runs, Walks, Parades etc.) shall be a minimum of 42" high and 96" wide. Any necessary signs will require proper sign stands.

USE OF CITY R.O.W.

The City of San Antonio reserves the right to allow contracting and barricading sub-contractors to use the City's R.O.W. The City also reserves the right to advise contractors and barricading sub-contractors to remove stored or unused traffic control devices from the City of San Antonio R.O.W. It is the barricading sub-contractor's responsibility to remove any traffic control device from City's R.O.W. when instructed to do so by a City representative.

CLOSURE DIAGRAMS

TYPICAL INTERSECTING STREET CLOSURE FOR TWO LANE STREETS

NOTE:
ALL SIGNS WILL BE MOUNTED ON SIGN SUPPORTS ONLY

JUNE 2005
CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS
TRAFFIC STANDARDS
BARRICADE AND CONSTRUCTION STANDARDS
SHEET 1 OF 4

THE ORIGINAL OF THIS DRAWING WAS SIGNED AND SEALED BY JOHN D. ADAME, LICENSED PROFESSIONAL ENGINEER, AND IS ON FILE WITH THE TRAFFIC ENGINEERING DIVISION OF THE PUBLIC WORKS DEPARTMENT, CITY OF SAN ANTONIO.

TYPE I BARRICADE

1.) Only the following Type I barricade shall be used in the City of San Antonio Right-Of-Way:

- A. 1" x 8" plastic rail with 2" x 6" wooden legs.
- B. 1" x 8" wooden rail with plastic legs.
- C. 1" x 8" wooden rail with 2" x 6" wood legs.
- D. No screws allowed for assembly of A-legs or rail.
- E. Warning lights will be used as directed by the Traffic Engineer.
- F. All Type I (4") barricades will be a minimum of 36" high and 60" wide. (For Construction Use Only)
- G. All Type I (8") barricades with wooden legs shall be 2" X 6" wood only.
- H. All Type I (4") barricades with wooden legs shall be 1" X 8" wood only.

2.) Type I Barricades shall not be used for partial and total street closures in construction work zones. Only Type III barricades shall be used for this purpose.

3.) Warning lights shall not be mounted on Type I barricades.

(See TxDOT BC-03 Sheets for specific construction information)

Type III BARRICADE

1.) Only the following Type III barricade shall be used in the City of San Antonio Right-Of-Way:

- A. Hollow polyvinyl or fiberglass tubing post with 1" X 8" wooden rails.
- B. Hollow polyvinyl or fiberglass tubing post with plastic rails.
- C. Skids must be wood or solid plastic only.
- D. Warning lights shall not be mounted on Type III barricades.

(See TxDOT BC-03 Sheets for specific construction information)

TEMPORARY MARKINGS

1.) Solid double yellow painted lines shall be installed for temporary division of traffic or construction duration longer than five (5) days, with repainting to occur once monthly or at the discretion of the Traffic Engineer. (All cost of upkeep will be at the contractor's expense.)

2.) Solid double yellow tabs, or V/P panels shall be installed for temporary division of traffic for construction duration less than five (5) days, with re-tabling to occur at the discretion of the Traffic Engineer. **NAILS SHALL NOT BE USED TO FIX TABS TO CEMENT OR BASE** (All cost of upkeep will be at the contractor's expense.)

(See TxDOT BC-03 Sheets for specific construction information.)

TEMPORARY CONCRETE BARRIER

1.) All concrete barriers placed on City R.O.W. shall be low profile.

2.) No high profile barriers will be allowed.

3.) Reflectors will be required on each concrete barrier.

(See TxDOT BC-03 Sheets for specific construction information)

CONES

1.) Base for 28" high cones must weigh at least 9.5 lbs.

2.) Night time cones must have reflective collars.

(See TxDOT BC-03 Sheets for specific construction information)

PLASTIC DRUMS

1.) Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).

2.) Drums, bases, and related materials shall exhibit good workmanship and shall be free from objectionable marks or defects that would adversely affect their appearance or serviceability.

3.) The Engineer/Inspector shall provide written notice to the Contractor regarding the replacement of drums or other traffic control devices. The Contractor shall have a maximum of 24 hours to replace any plastic drums or other traffic control devices identified for replacement by the Engineer/Inspector. The replacement device must be an approved device.

4.) Each drum must have a 40 lb. rubber or plastic snap on.

5.) No signs larger than 18" X 24" will be allowed to be mounted on plastic drums.

6.) No warning lights will be allowed to be mounted on plastic barrels.

7.) In lieu of a warning light, a yellow reflector will be acceptable.

(See TxDOT BC-03 Sheets for specific construction information)

PROJECT LIMITS FOR CLOSED ROADWAY

BARRICADES SHALL BE ERECTED COMPLETELY ACROSS ROADWAY. CHANNELIZING DEVICES MAY BE DRUMS, VERTICAL PANELS OR CONES AS SPECIFIED IN THE PLANS

CROSS STREET SIGNING AND BARRICADING TOTALLY CLOSED

NOTE:
ADVANCE WARNING SIGNS WILL ALSO BE NECESSARY

LETTERS- BLACK BORDER- BLACK BACKGROUND- ORANGE SPACING-3 SIGNS PER BLOCK

VEHICLES

PEDESTRIANS

LETTERS- WHITE BORDER- WHITE BACKGROUND- BLUE REFLECTIVE

OPEN TO LOCAL BUSINESS

LETTERS- BLACK BORDER- BLACK BACKGROUND- ORANGE SPACING-3 SIGNS PER BLOCK

DIRECTION OF ARROWS ARE REVERSIBLE

JUNE 2005
CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS
TRAFFIC STANDARDS
BARRICADE AND CONSTRUCTION STANDARDS
SHEET 2 OF 4

THE ORIGINAL OF THIS DRAWING WAS SIGNED AND SEALED BY JOHN D. ADAME, LICENSED PROFESSIONAL ENGINEER, AND IS ON FILE WITH THE TRAFFIC ENGINEERING DIVISION OF THE PUBLIC WORKS DEPARTMENT, CITY OF SAN ANTONIO.

SIGNS

1.) A maximum of two signs can be mounted on any one Long / Intermediate Term Stationary Portable Sign Support.

2.) 48" X 48" signs shall be mounted separately on the Long / Intermediate Term Stationary Portable Sign Support.

3.) For Short Term Stationary Portable Sign Support the distance from the bottom of the vinyl sign to the existing ground must be one (1) foot.

4.) Long / Intermediate Term Stationary Portable Signs must be made of wood or plastic only.

5.) No signs shall be mounted to any Type I, Type III, or folding barricades.

6.) Signs shall be mounted only on TxDOT approved sign supports.

7.) Detour signs will be mounted on single "D" legs w / 7' clearance from the bottom of the sign

8.) WORK DURATION TERMINOLOGY
Long Term Stationary = occupies a location 3 or more days.
Intermediate-Term Stationary = occupies a location for overnight to 3 days.
Short Term Stationary = daylight work that occupies a location from 1 to 12 hours.
Short Duration = occupies a location up to 1 hour.

9.) Signs shall adhere to the following requirements:

- Signs placed on plastic barrels or drums shall be made of ABS plastic or plywood.
- Signs placed on skids shall be made of plywood or aluminum.
- Aluminum signs shall have a minimum thickness of 0.08".
- Plywood signs shall have a minimum thickness of 1 / 2".
- ABS Plastic signs shall have a minimum thickness of 0.13".

Plastic signs cannot exceed 18" by 24" in size and shall be reinforced with 2" wide, 0.08" thick aluminum slats, as depicted below:

ALIGN WITH MOUNT BRACKETS ON PLASTIC BARRELS OR DRUMS

LONG TERM / INTERMEDIATE TERM SIGN SUPPORT

1.) 48" X48" signs must be mounted independently.

2.) A maximum of two signs can be mounted on any one long term / intermediate sign support.

3.) Sand bag all sign supports.

4.) Distance from the bottom of the sign to the existing ground shall be 7'.

5.) Distance from the header barricade rail to the face of the sign panel shall be 2' min. and 10' max.

6.) Steel tripods shall not be allowed.

(See TxDOT BC-03 Sheets for specific construction information)

JUNE 2005
CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS
TRAFFIC STANDARDS
BARRICADE AND CONSTRUCTION STANDARDS
SHEET 4 OF 4

THE ORIGINAL OF THIS DRAWING WAS SIGNED AND SEALED BY JOHN D. ADAME, LICENSED PROFESSIONAL ENGINEER, AND IS ON FILE WITH THE TRAFFIC ENGINEERING DIVISION OF THE PUBLIC WORKS DEPARTMENT, CITY OF SAN ANTONIO.

PLAT NO. N/A

JOB NO. 11164-80

DATE OCTOBER 2024

DESIGNER CE

CHECKED JA DRAWN CE

SHEET CWE4.00

LAGO RIO VISTA
12" WATER MAIN (OFF-SITE)
SAN ANTONIO, TEXAS
TRAFFIC CONTROL DETAILS

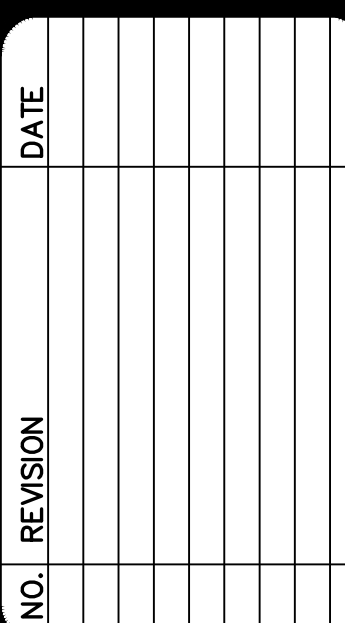
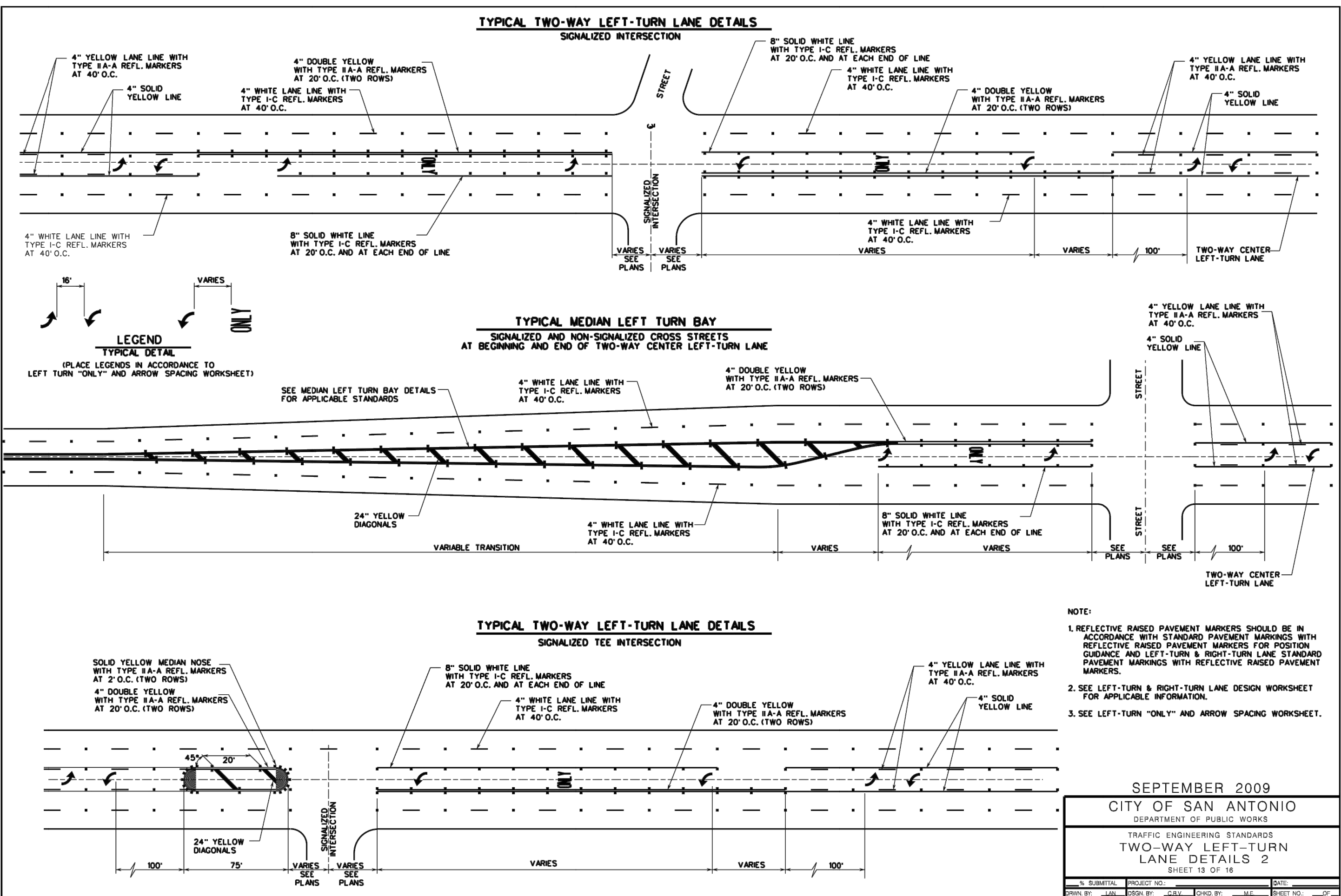
DATE

NO. REVISION

STATE OF TEXAS
JON D. ADAME
82567
LICENSED PROFESSIONAL ENGINEER
10-17-24

PAPE-DAWSON
ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800



PLAT NO. N/A
JOB NO. 11164-80
DATE OCTOBER 2024
DESIGNER CE
CHECKED JA DRAWN CE
SHEET CWE4.10