ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS
STREET, DRAINAGE, WATER, SANITARY SEWER, AND UTILITY IMPROVEMENTS

GENERAL NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR CONSTRUCTION JUNE 2008, OR LATEST.
2. NO EXTRA PAYMENT SHALL BE ALLOWED FOR WORK CALLED FOR ON THE PLANS, BUT NOT INCLUDED IN THE BID PROPOSAL. THIS INCIDENTAL WORK WILL BE REQUIRED AND SHALL BE INCLUDED IN THE PAY ITEM TO WHICH IT RELATES.
3. THE CONTRACTOR SHALL PROVIDE ACCESS FOR THE DELIVERY OF MAIL BY THE U.S. POSTAL SERVICE. 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION ANY DAMAGE DONE TO EXISTING FENCES, CONCRETE ISLANDS, STREET PAVING, CURBS, SHRUBS, BUSHES OR DRIVEWAYS. (NO SEPARATE PAY ITEM).
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SEE THAT ALL SIGNS AND BARRICADES ARE PROPERLY INSTALLED AND MAINTAINED. ALL LOCATIONS AND DISTANCES WILL BE DECIDED UPON IN THE FIELD BY THE CONTRACTOR, USING THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". THE CITY'S CONSTRUCTION INSPECTOR AND TRAFFIC ENGINEERING REPRESENTATIVE WILL ONLY BE RESPONSIBLE TO INSPECT BARRICADES AND SIGNS. IF, IN THE OPINION OF THE TRAFFIC ENGINEERING REPRESENTATIVE AND THE CONSTRUCTION INSPECTOR, THE BARRICADES AND SIGNS DO NOT CONFORM TO ESTABLISHED STANDARDS OR ARE INCORRECTLY PLACED OR ARE INSUFFICIENT IN QUANTITY TO PROTECT THE GENERAL PUBLIC, THE CONSTRUCTION INSPECTOR SHALL HAVE THE OPTION TO STOP OPERATIONS UNTIL SUCH TIME AS THE CONDITIONS ARE CORRECTED.
5. IF THE NEED ARISES, ADDITIONAL BARRICADES AND DIRECTIONAL DEVICES MAY BE ORDERED BY THE TRAFFIC ENGINEERING REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
6. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.171 C.P.S. MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.
7. CONTRACTOR SHALL NOTIFY THE CITY INSPECTOR TWENTY FOUR (24) HOURS PRIOR TO BACKFILL OF ANY UTILITY TRENCHES TO SCHEDULE FOR DENSITY TEST AS REQUIRED.
8. CONTRACTOR SHALL PRESERVE ALL CONSTRUCTION STAKES, MARKS, ETC. IF ANY ARE DESTROYED OR REMOVED BY THE CONTRACTOR OR HIS EMPLOYEES, THEY SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
9. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION TO DETERMINE THE LOCATION OF EXISTING UTILITIES. CONTRACTOR SHALL NOTIFY THE FOLLOWING AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO EXCAVATION OPERATION:

SAN ANTONIO WATER SYSTEM (SAWS)	233-2010
BEXAR METROPOLITAN WATER DISTRICT (BEXAR MET)	354-6538 / 357-5741
COSA DRAINAGE	207-8048
COSA SIGNAL OPERATIONS	207-7720 / 207-7765
TEXAS STATE WIDE ONE CALL LOCATOR	1-800-344-8377
CITY PUBLIC SERVICE ENERGY - TIME WARNER - AT&T - MCI	

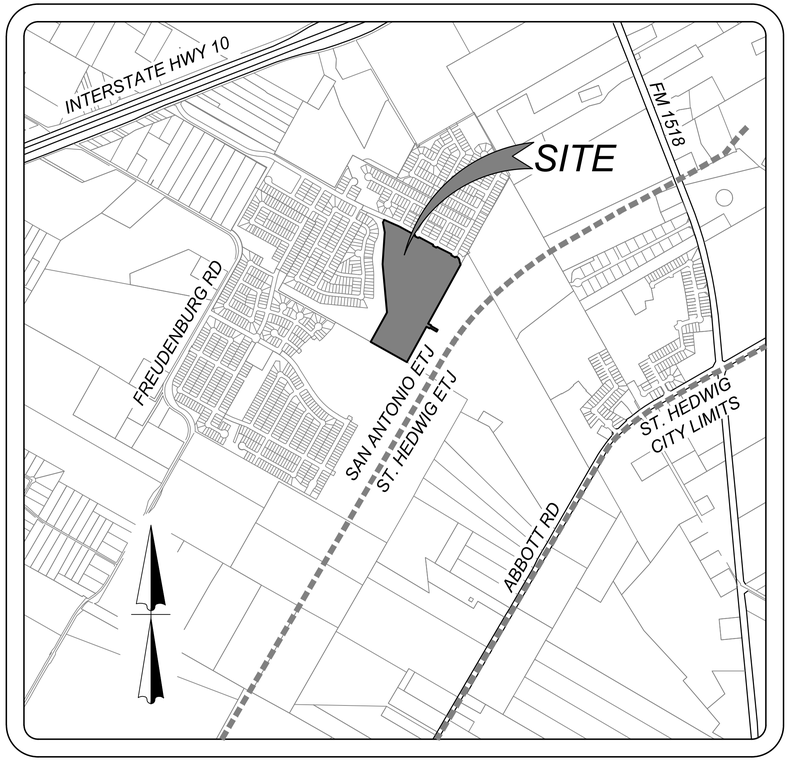
10. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM AVAILABLE RECORDS AND ARE NOT GUARANTEED, BUT SHALL BE INVESTIGATED AND VERIFIED BY THE CONTRACTOR BEFORE STARTING WORK. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE TO AND FOR THE MAINTENANCE AND PROTECTION OF THE EXISTING UTILITIES EVEN IF THEY ARE NOT SHOWN ON THE PLANS. LOCATION AND DEPTH OF EXISTING UTILITIES SHOWN HERE ARE APPROXIMATE ONLY. ACTUAL LOCATIONS AND DEPTHS MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION AND HE SHALL BE RESPONSIBLE FOR PROTECTION OF SAME DURING CONSTRUCTION.
11. ALL WASTE MATERIAL SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE HIS SOLE RESPONSIBILITY TO DISPOSE OF THIS MATERIAL OFF THE LIMITS OF THE PROJECT. NO WASTE MATE- RIAL SHALL BE PLACED IN EXISTING LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS OF EXISTING ARTIFICIAL OR NATURAL DRAINAGE.
12. THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIAL IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN DEVELOPMENT PERMIT.
13. THE CONTRACTOR SHALL MAINTAIN ALL ADJOINING STREETS AND TRAVELED ROUTES FREE FROM SPILLED AND / OR TRACKED CONSTRUCTION MATERIALS AND / OR DEBRIS.
14. IF THE CONTRACTOR ENCOUNTERS ANY ARCHAEOLOGICAL DEPOSITS DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR MUST STOP EXCAVATION IMMEDIATELY, CONTACT THE CITY INSPECTOR, AND CALL THE CITY HISTORIC PRESERVATION OFFICE AT 207-7306 OR 207-3327 FOR AN ARCHAEOLOGICAL INVESTIGATION. THE CONTRACTOR CANNOT BEGIN EXCAVATION AGAIN WITHOUT WRITTEN PERMISSION FROM THE CITY. IF MORE THAN THREE (3) DAYS ARE REQUIRED FOR INVESTIGATION (NOT INCLUDING HOLIDAY AND WEEKENDS) AND IF THE CONTRACTOR IS UNABLE TO WORK IN OTHER AREAS, THEN THE CONTRACTOR WILL BE ALLOWED TO NEGOTIATE FOR ADDITIONAL CONSTRUCTION TIME UPON WRITTEN REQUEST WITHIN TEN (10) DAYS AFTER THE FIRST NOTICE TO THE CITY OF ARCHAEOLOGICAL INVESTIGATION FOR EACH EVENT. IF THE TIME REQUIRED FOR INVESTIGATION IS LESS THAN OR EQUAL TO THREE (3) DAYS FOR EACH EVENT, CONTRACT DURATION WILL NOT BE EXTENDED.
15. IF SUSPECTED CONTAMINATION IS ENCOUNTERED DURING CONSTRUCTION OPERATIONS, C.O.S.A. SHALL BE NOTIFIED IMMEDIATELY WHEN CONTAMINATED SOILS AND / OR GROUNDWATER ARE ENCOUNTERED AT LOCATIONS NOT IDENTIFIED IN THE PLANS. THE NOTIFICATION SHOULD INCLUDE THE STATION NUMBER, TYPE OF CONTAMINATED MEDIA, EVIDENCE OF CONTAMINATION AND MEASURES TAKEN TO CONTAIN THE CONTAMINATED MEDIA AND PREVENT PUBLIC ACCESS. THE CONTAMINATED SOIL AND / OR GROUNDWATER SHALL NOT BE REMOVED FROM THE LOCATION WITHOUT PRIOR C.O.S.A. APPROVAL. THE CONTRACTOR MUST STOP THE EXCAVATION IMMEDIATELY AND CONTACT THE C.O.S.A. INSPECTOR. THE CONTRACTOR CANNOT BEGIN EXCAVATION ACTIVITIES WITHOUT WRITTEN PERMISSION FROM THE CITY.
16. CONTRACTOR IS TO INCLUDE A MAILBOX POST BLOCKOUT FOR VACANT LOTS AND ALL RESIDENCES WHICH DO NOT HAVE MAILBOXES AT THE CURB. BLOCKOUTS ARE PROVIDED FOR FUTURE USE BY THE POST OFFICE.
17. CONTRACTOR SHALL NOT REMOVE OR ADJUST ANY VIA FACILITIES. THE CONTRACTOR MUST CONTACT VIA FOURTEEN DAYS PRIOR, FOR THE REMOVAL OF BENCHES, STOP POLES OR ANY OTHER VIA FACILITIES THAT MAY BE PRESENT. PLEASE PROVIDE THIRTY DAYS PRIOR NOTICE FOR SHELTER REMOVAL (TELEPHONE NOS: (210) 362-2155 OR (210) 362-2096). THE CONTRACTOR WILL BE LIABLE FOR ANY DAMAGES TO VIA FACILITIES NOT REMOVED BY VIA. THE CONTRACTOR IS REQUIRED TO REPLACE ALL FLATWORK REMOVED OR DAMAGED IN THE COURSE OF EXECUTING THE CONTRACT UNLESS OTHERWISE NOTED BY VIA. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING VIA FACILITIES IF ADJACENT TO WORK AREA.

TREE PROTECTION AND PRESERVATION GENERAL NOTES

1. NO UTILITY OR STREET EXCAVATION WORK SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND TREATMENT MEASURES HAVE NOT BEEN COMPLETED AND APPROVED.
2. TREE PROTECTION FENCING SHALL BE REQUIRED. TREE PROTECTION FENCING SHALL BE INSTALLED, MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING SITE CONSTRUCTION. DURING CONSTRUCTION ACTIVITY, AT LEAST A SIX-INCH LAYER OF COARSE MULCH SHALL BE PLACED AND MAINTAINED OVER THE ROOT PROTECTION ZONE (NO SEPARATE PAY ITEM).
3. THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN ONE INCH IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN THE VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR FOR GUIDANCE.
4. ROOTS WILL BE CUT WITH A ROCK SAW OR BY HAND, NOT BY AN EXCAVATOR OR OTHER ROAD CONSTRUCTION EQUIPMENT.
5. ALL CURB AND SIDEWALK WORK SHALL USE ALTERNATIVE CONSTRUCTION METHODS TO MINIMIZE EXTENSIVE ROOT DAMAGE TO TREES (REFER TO DETAILS).
6. EXPOSED ROOTS SHALL BE COVERED AT THE END OF THE DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH, OR WET BURLAP.
7. NO EQUIPMENT, VEHICLES OR MATERIALS SHALL OPERATE OR BE STORED WITHIN THE ROOT PROTECTION ZONE OF ANY TREE NEAR THE PROJECT. ROOT PROTECTION ZONE IS 1 FOOT OF RADIUS PER INCH OF TREE'S DIAMETER. A 10-INCH DIAMETER TREE WOULD HAVE A 10 FOOT RADIUS ROOT PROTECTION ZONE AROUND THE TREE. ROOTS OR BRANCHES IN CONFLICT WITH THE CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. OAK WOUNDS SHALL BE PAINTED OVER WITHIN 30 MINUTES TO PREVENT OAK WILT.
8. SAPLINGS, SHRUBS OR BUSHES TO BE CLEARED FROM THE PROTECTED ROOT ZONE AREA OF A LARGE TREE SHALL BE REMOVED BY HAND AS DESIGNATED BY THE INSPECTOR.
9. NO WIRES, NAILS OR OTHER MATERIAL MAY BE ATTACHED TO PROTECTED TREES.
10. TREES, TREE LIMBS, BUSHES AND SHRUBS LOCATED IN THE CITY STREET OR ALLEY RIGHT-OF-WAY OR PERMANENT EASEMENTS WHICH INTERFERE WITH PROPOSED CONSTRUCTION ACTIVITIES SHALL BE PROPERLY PRUNED FOLLOWING THE ANSI A-300 STANDARDS FOR PRUNING. ALL TREE PRUNING SHALL BE COMPLETED BY A CITY OF SAN ANTONIO TREE MAINTENANCE LICENSED CONTRACTOR (ARTICLE 21-171, CITY CODE) ONLY AFTER APPROVAL FROM THE CAPITAL PROJECTS MANAGEMENT THROUGH THE INSPECTOR.
11. NO EXCESSIVE TREE TRIMMING WILL BE PERMITTED.
12. ALL DEBRIS GENERATED BY THE PRUNING AND TRIMMING OF THE TREES AND / OR BUSHES SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF PROPERLY (NO SEPARATE PAY ITEM).
13. TREES MUST BE MAINTAINED IN GOOD HEALTH THROUGHOUT THE CONSTRUCTION PROCESS. MAINTENANCE MAY INCLUDE, BUT NOT LIMITED TO: WATERING THE ROOT PROTECTION ZONE, WASHING FOLIAGE, FERTILIZATION, PRUNING, ADDITIONAL MULCH APPLICATIONS AND OTHER MAINTENANCE AS NEEDED ON THE PROJECT.
14. ANY TREE REMOVAL SHALL BE APPROVED BY THE CITY ARBORIST. (207-0278).
15. TREES WHICH ARE DAMAGED OR LOST DUE TO THE CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED TO THE CITY'S SATISFACTION.
16. TREE PLANTING FOR MITIGATION OR ENHANCEMENT: ALL PLANTED TREES SHALL BE MAINTAINED IN A HEALTHY CONDITION AT ALL TIMES. THIS INCLUDES IRRIGATION, FERTILIZING, PRUNING AND OTHER MAINTENANCE AS NEEDED ON THE PROJECT. TREES THAT DIE WITHIN TWELVE (12) MONTHS SHALL BE REPLACED WITH A TREE OF EQUAL SIZE AND SPECIES.

ACCESSIBILITY REQUIREMENTS

1. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN VEHICULAR AND PEDESTRIAN ACCESS AT ALL TIMES TO LOCAL RESIDENCES AND BUSINESSES.
2. WHEN THE WORK REQUIRES THE EXCAVATION OF THE STREET AND THE REMOVAL OF THE EXISTING DRIVEWAY APPROACHES AND SIDEWALKS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY ALL-WEATHER ACCESS TO THE BUSINESSES AND RESIDENCES. THE TEMPORARY DRIVEWAY APPROACHES SHALL BE CONSTRUCTED WITH FLEXIBLE BASE OR GRAVEL MATERIAL AT NO SEPARATE COST TO THE CITY.
3. PRIOR TO INITIATING THE CONSTRUCTION OF NEW DRIVEWAY APPROACHES, THE CONTRACTOR SHALL GIVE ADVANCE WARNING IN PERSON, OR IN WRITING, OF AT LEAST 48 HOURS TO EACH RESIDENCE THAT WILL BE IMMEDIATELY AFFECTED, SO THAT ALTERNATE PLANS MAY BE MADE BY THE RESIDENTS.
4. FOR BUSINESSES WITH MORE THAN ONE DRIVEWAY, AT LEAST ONE DRIVEWAY SHALL REMAIN OPEN WHILE THE OTHER NEW DRIVEWAY APPROACHES ARE CONSTRUCTED. FOR BUSINESSES WITH ONLY ONE DRIVEWAY, THE NEW DRIVEWAY APPROACH SHALL BE CONSTRUCTED IN HALF WIDTHS, UNLESS A TEMPORARY ASPHALT DRIVEWAY IS FIRST INSTALLED AT NO SEPARATE COST TO THE CITY.



LOCATION MAP
N.T.S

DECEMBER 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

CITY OF SAN ANTONIO GENERAL NOTES

% SUBMITTAL PROJECT NO.: ____ DATE: ____
DRWN. BY: ____ DSGN. BY: ____ CHKD. BY: ____ SHEET NO.: ___ OF: ___

INDEX

Sheet Title	Sheet Number
COVER SHEET	0.0
OVERALL UTILITY PLAN	1.0
OVERALL UTILITY PLAN	1.1
PROPOSED & ULTIMATE MASTER DRAINAGE PLAN	2.0
OVERALL GRADING PLAN	3.0
OVERALL GRADING PLAN	3.1
DRAIN A STA. 1+00.80 - END	4.0
DRAIN B STA. 1+33.03 - END	4.1
DRAIN C STA. 0+61.01 - END	4.2
DRAIN D STA. 1+09.17 - END	4.3
TYPE "C" INLET DETAIL	4.4
CONCRETE COLLAR AND PIPE BEDDING MISCELLANEOUS DETAILS	4.5
THYME PASS PLAN AND PROFILE	5.0
THYME PASS PLAN AND PROFILE	5.1
PUERTA DE SOL AND CARMELITA PLAN AND PROFILE	5.2
CARMELITA PLAN AND PROFILE	5.3
CARMELITA PLAN AND PROFILE	5.4
SAGASTA AND ZOCALO PLAN AND PROFILE	5.5
ZOCALO PLAN AND PROFILE	5.6
SANTA ISABEL PLAN AND PROFILE	5.7
STREET DETAIL SHEET	5.8
WHEEL CHAIR RAMP DETAIL SHEET	5.9
MISCELLANEOUS DETAIL SHEET	5.10
MISCELLANEOUS DETAIL SHEET	5.11
TRAFFIC SIGNAGE AND SIDEWALK PLAN	5.12
TRAFFIC SIGNAGE AND SIDEWALK PLAN	5.13
TRAFFIC SIGNAGE DETAIL SHEET	5.14
TRAFFIC SIGNAGE NOTES & DETAIL SHEET	5.15
SANITARY SEWER COVER SHEET	6.0
SANITARY SEWER GENERAL NOTES	6.1
OVERALL SANITARY SEWER PLAN	6.2
OVERALL SANITARY SEWER PLAN	6.3
SEWER LINE T STA. 1+00.00 - STA. 7+50.00	6.4
SEWER LINE T STA. 7+50.00 - END	6.5
SEWER LINE U STA. 1+00.00 - END	6.6
SEWER LINE X STA. 1+00.00 - END	6.7
SANITARY SEWER DETAIL SHEET	6.8
WATER COVER SHEET	7.0
OVERALL WATER PLAN	7.1
OVERALL WATER PLAN	7.2
WATER DETAIL SHEET	7.3
STORM WATER POLLUTION PREVENTION PLAN	8.0
STORM WATER POLLUTION PREVENTION PLAN	8.1
STORM WATER POLLUTION PREVENTION PLAN	8.2
STORM WATER POLLUTION DETAIL SHEET	8.3

OWNER/DEVELOPER:
FORESTAR (USA) REAL ESTATE GROUP, INC.
10700 PECAN PARK BLVD. STE. 150
AUSTIN, TX 78750
PHONE: (512) 433-5231

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
2/1/24

KFW
ENGINEERS + SURVEYING
3421 Paesanos Pkwy Suite 200, San Antonio, TX 78231
Phone #: (210) 979-8444 • Fax #: (210) 979-8441
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

JOB NO. - 873-01-07

PLAT NO. : 22-11800155

SHEET 0.0

Date: Feb 01, 2024, 9:49am User ID: joshcastrillo
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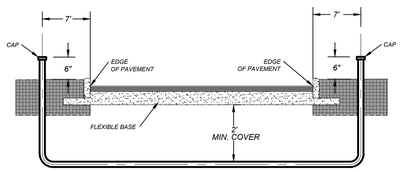
DRY UTILITY CONDUIT NOTE:
CONDUIT LOCATIONS SHOWN ON PLAN ARE FOR GEOGRAPHICAL PURPOSES ONLY AND ARE APPROXIMATE. CONTRACTOR TO INSTALL PROPOSED CONDUITS IN ACCORDANCE WITH DRY UTILITY PURVEYOR'S SPECIFICATIONS. CONTRACTOR TO VERIFY THE CONDUIT LOCATIONS AND SIZES BASED ON THE DRY UTILITY PURVEYOR'S PLAN.

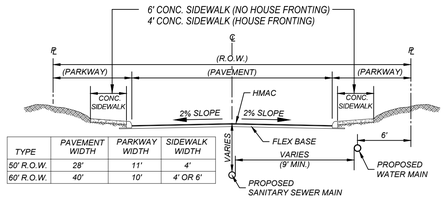
COMPACTION NOTE:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTRATOR. PER EACH 12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

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.



TYPICAL CONDUIT DETAIL
NOT-TO-SCALE

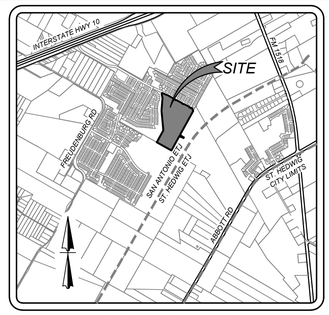
NOTE:
CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING CONDUIT SLEEVES FOR EACH CPS FACILITY AT ALL STREETS AND DRAIN CROSSING IF BUILT AHEAD OF CPS CONSTRUCTION. SLEEVES MUST ALSO BE LOCATED FOR CPS CREWS DURING CONSTRUCTION. (SEPARATE ITEM) SEE THIS SHEET FOR CONDUIT CROSSING DETAIL AND SCHEDULE.



TYPE	PAVEMENT WIDTH	PARKWAY WIDTH	SIDEWALK WIDTH
50' R.O.W.	28'	11'	4'
60' R.O.W.	40'	10'	4' OR 6'

TYPICAL STREET SECTION
N.T.S.

BEXAR COUNTY R.O.W. NOTE
A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY R.O.W.



LOCATION MAP
N.T.S

SCALE : 1" = 50'
0' 50' 150' 100'

ELIZONDO SUBDIVISION UNIT 2
(PLAT NO. 21-11800416)

BLOCK 43 C.B. 5193 · BLOCK 44 C.B. 5193 · BLOCK 45 C.B. 5193 · BLOCK 27 C.B. 5193 · BLOCK 29 C.B. 5193

OVIEDO (50' R.O.W.) · ZOCALO (50' R.O.W.) · CARMELITA (50' R.O.W.) · THYME PASS (60' R.O.W.)

GRAN VIA (70' R.O.W.)

SANTA ISABEL (50' R.O.W.)

SAGASTA (50' R.O.W.)

LOT 901 · LOT 908 BLOCK 27 C.B. 5193 · LOT 901 BLOCK 40 C.B. 5193

BLOCK 27 C.B. 5193 · BLOCK 48 C.B. 5193 · BLOCK 47 C.B. 5193 · BLOCK 46 C.B. 5193

1% AC EFFECTIVE FLOODPLAIN PER PANEL #48029C0455G

1% AC ULTIMATE FLOODPLAIN PER FLOOD STUDY PREPARED BY KFW ENGINEERS

OFF-LOT 14' E.G.T.TV.E (PLAT NO. 21-11800416)

6' SIDEWALK (PLAT NO. 21-11800416)

STREETLIGHT (UG, 250 WATT) (PLAT NO. 21-11800416)

PROPOSED STREETLIGHT (UG, 100 WATT)

4' SIDEWALK

10' E. G. T. TV. E

15' E. G. T. TV. E

6.0' TYP.

SEWER/WATER CROSSING!!! REFERENCE THIS SHEET FOR DETAIL

VARIABLE WIDTH CLEAR VISION EASEMENT

VARIABLE WIDTH E.G.T.TV., SANITARY SEWER PRIVATE DRAINAGE & MAINTENANCE ACCESS EASEMENT

VARIABLE WIDTH WATER EASEMENT (PLAT NO. 20-11800598)

EXISTING 20' WATER EASEMENT (ENTIRE EASEMENT TO EXPIRE UPON INCORPORATION INTO PLATTED RIGHT-OF-WAY) 21-11800416)

STREETLIGHT (UG, 250 WATT) (PLAT NO. 21-11800416)

EXISTING 10' GAS EASEMENT

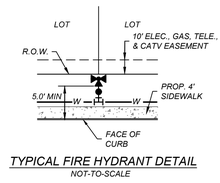
DRAIN "A" SEE SHEET 4.0

DRAIN "B" SEE SHEET 4.1

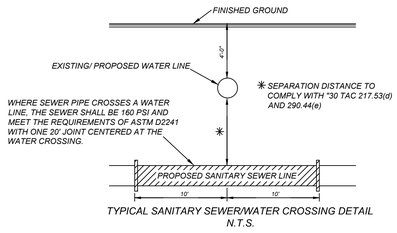
ELIZONDO SUBDIVISION UNIT 3 (PLAT NO 21-11800393)

FORESTAR REAL ESTATE GROUP INC. CALLED 84.780 ACRES (DOC. NO. 20190021141 O.P.R)

MATCHLINE "A" SEE SHEET 1.1



TYPICAL FIRE HYDRANT DETAIL
NOT-TO-SCALE



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
N.T.S.

LEGEND

PROPOSED WATER MAIN	=	W
PROPOSED WATER SERVICE & METER BOX	=	W
PROPOSED WATER SERVICE & METER BOX WITH PRESSURE REDUCING VALVE	=	W *
PROPOSED WATER 3/4" IRRIGATION SERVICE & 5/8" METER BOX	=	W/MR
PROPOSED FIRE HYDRANT	=	
PROPOSED WATER VALVE	=	
PROPOSED 100W STREETLIGHT	=	
PROPOSED 250W STREETLIGHT	=	
PROPOSED SANITARY SEWER MAIN	=	SS
PROPOSED SANITARY SEWER MANHOLE	=	
PROPOSED SANITARY SEWER LATERAL	=	SS
PROPOSED SANITARY SEWER LATERAL WITH VERTICAL STACK	=	SS
PROPOSED ELECTRIC, GAS, TELEPHONE, & CABLE TV EASEMENT	=	E. G. T. TV. E
PROPOSED VEHICULAR NON ACCESS EASEMENT	=	V.N.A.E.
EXISTING WATER MAIN	=	E.W
EXISTING FIRE HYDRANT	=	
EXISTING WATER VALVE	=	
EXISTING SANITARY SEWER MAIN	=	E.SS
EXISTING SANITARY SEWER MANHOLE	=	
EXISTING OVERHEAD ELECTRIC W/POWER POLE	=	OHE
EXISTING GUY WIRE/OVERHEAD ELECTRIC	=	OHE

KFW ENGINEERS + SURVEYING
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Phone: 210-979-8444 · Fax: 210-979-8441
TBPE Firm # 8513 · TBPLS Firm # 10122300

ISSUE DATE

REVISIONS

STATE OF TEXAS · JEFFREY W. MARTIN · 139094 · LICENSED PROFESSIONAL ENGINEER · 2/14/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

OVERALL UTILITY PLAN

PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER: 1.0

Date: Feb 08, 2024, 4:22pm User ID: Slocseph
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CONDUIT LOCATIONS SHOWN ON PLAN ARE FOR GEOGRAPHICAL PURPOSES ONLY AND ARE APPROXIMATE. CONTRACTOR TO INSTALL PROPOSED CONDUITS IN ACCORDANCE WITH DRY UTILITY PURVEYOR'S SPECIFICATIONS. CONTRACTOR TO VERIFY THE CONDUIT LOCATIONS AND SIZES BASED ON THE DRY UTILITY PURVEYOR'S PLAN.

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

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.

TYPICAL CONDUIT DETAIL
NOT-TO-SCALE

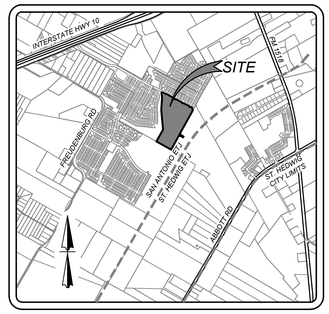
NOTE:
CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING CONDUIT SLEEVES FOR EACH CPS FACILITY AT ALL STREETS AND DRAIN CROSSINGS IF BUILT AHEAD OF CPS CONSTRUCTION. SLEEVES MUST ALSO BE LOCATED FOR CPS CREWS DURING CONSTRUCTION. (SEPARATE ITEM) SEE THIS SHEET FOR CONDUIT CROSSING DETAIL AND SCHEDULE.

TYPE	PAVEMENT WIDTH	PARKWAY WIDTH	SIDEWALK WIDTH
50' R.O.W.	28'	11'	4'
60' R.O.W.	40'	10'	4' OR 6'

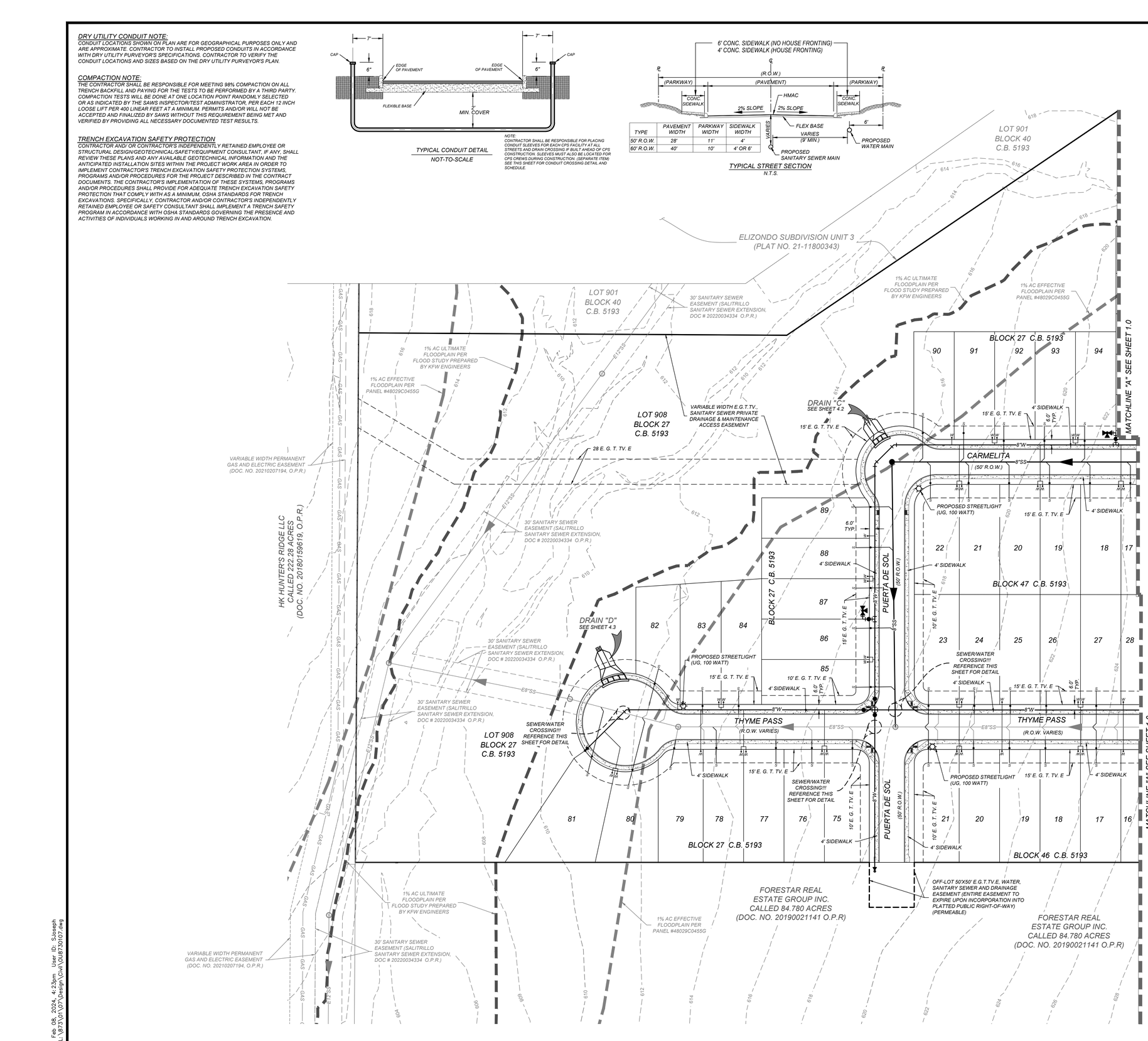
TYPICAL STREET SECTION
N.T.S.

BEXAR COUNTY R.O.W. NOTE

A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY R.O.W.



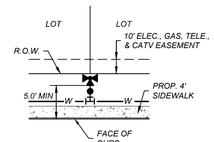
LOCATION MAP
N.T.S



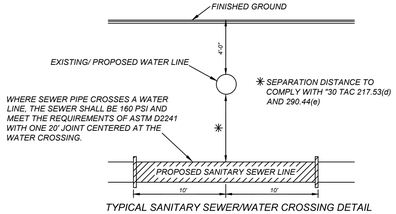
SCALE : 1" = 50'
0' 50' 150'
100'

LEGEND

PROPOSED WATER MAIN	=	W
PROPOSED WATER SERVICE & METER BOX	=	W
PROPOSED WATER SERVICE & METER BOX WITH PRESSURE REDUCING VALVE	=	W
PROPOSED WATER 3/4" IRRIGATION SERVICE & 5/8" METER BOX	=	IWSB
PROPOSED FIRE HYDRANT	=	
PROPOSED WATER VALVE	=	
PROPOSED 100W STREETLIGHT	=	
PROPOSED 250W STREETLIGHT	=	
PROPOSED SANITARY SEWER MAIN	=	SS
PROPOSED SANITARY SEWER MANHOLE	=	
PROPOSED SANITARY SEWER LATERAL	=	SS
PROPOSED SANITARY SEWER LATERAL WITH VERTICAL STACK	=	
PROPOSED ELECTRIC, GAS, TELEPHONE, & CABLE TV EASEMENT	=	E. G. T. TV. E
PROPOSED VEHICULAR NON ACCESS EASEMENT	=	V.N.A.E.
EXISTING WATER MAIN	=	E.W
EXISTING FIRE HYDRANT	=	
EXISTING WATER VALVE	=	
EXISTING SANITARY SEWER MAIN	=	E.SS
EXISTING SANITARY SEWER MANHOLE	=	
EXISTING OVERHEAD ELECTRIC W/POWER POLE	=	OHE
EXISTING GUY WIRE/OVERHEAD ELECTRIC	=	OHE



TYPICAL FIRE HYDRANT DETAIL
NOT-TO-SCALE



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
N.T.S.

KFW
ENGINEERS + SURVEYING
3421 Paesanos Pkwy, Suite 200, San Antonio, TX 78231
Phone: 210.979.8444 Fax: 210.979.8441
TBPE Firm # 9513 • TBPLS Firm # 10122300

ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
2/14/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

OVERALL UTILITY PLAN

PLAT NO.
22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER:
1.1

Date: Feb 08, 2024, 4:23pm User ID: Sdoseph
File: L:\873\01\07\Design Civil\873070107.dwg

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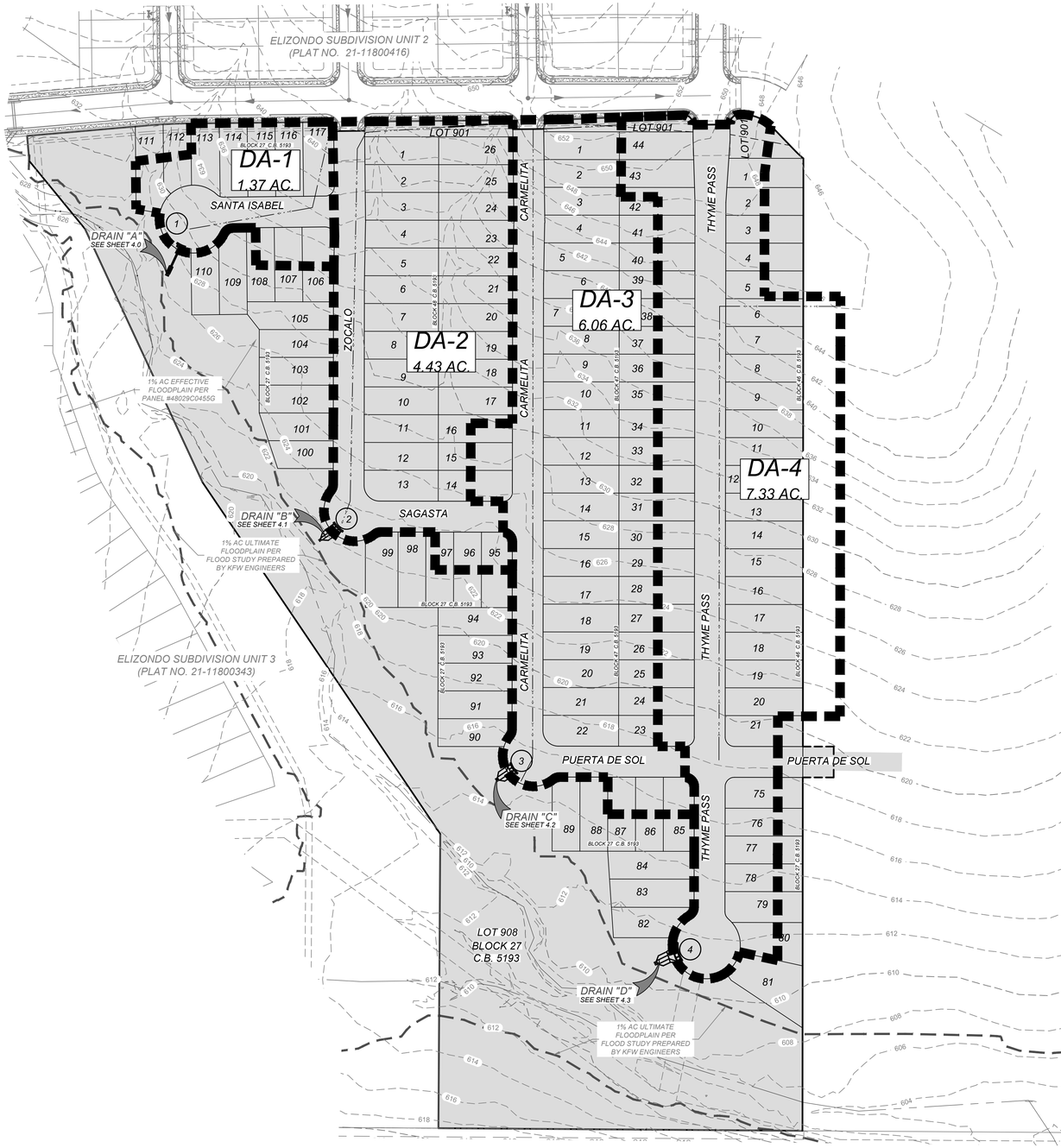

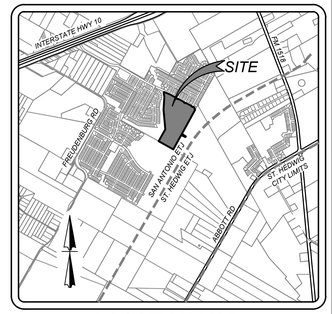

LOCATION MAP
N.T.S

SCALE : 1" = 100'
0' 100' 300'
200'

LEGEND

- = BOUNDARY
- = PROPOSED DRAINAGE AREAS
- = 1' CONTOURS
- = PROPOSED FLOW PATH
- = CURRENT UNIT OF PLATTING

PROPOSED/ULTIMATE CONDITIONS

HYDROLOGY SUMMARY - RATIONAL METHOD

Study Point	Drainage Area	(Acres)	C	Tcarryover (min)		Tovrl (min)	Tsc (min)	Tch (min)	Ttot (min)	I5 (in/hr)	I25 (in/hr)	I100 (in/hr)	Q5 (ft3/s)	Q25 (ft3/s)	Q100 (ft3/s)
1	DA-1	1.37	0.77			10.04	1.575	0	11.613	5.95	8.31	10.39	6.27	8.76	10.96
2	DA-2	4.43	0.77			11.66	3.705	0.164	15.531	5.19	7.19	8.94	17.69	24.51	30.51
3	DA-3	6.06	0.77			15.99	3.292	1.094	20.372	4.50	6.22	7.72	21.01	29.02	36.00
4	DA-4	7.33	0.77			15.39	4.179	0.892	20.459	4.49	6.20	7.70	25.35	35.02	43.45

KFW
ENGINEERS + SURVEYING
3421 Paesanos Pkwy, Suite 200, San Antonio, TX 78231
Phone #: (210) 979-8444 Fax #: (210) 979-8441
TBPE Firm #: 8813 • TBPLS Firm #: 10124300

ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
2/14/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

PROPOSED & ULTIMATE MASTER DRAINAGE PLAN

PLAT NO.
22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER:
2.0

Date: Feb 09, 2024, 8:22am User ID: jpchoucarias
File: L:\873\01\01\Design\Civil\MDB730107.dwg

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COUNTY FINISHED FLOOR ELEVATION - RELATIVE TO FLOOD PLAIN:
FINISHED FLOOR ELEVATIONS FOR STRUCTURES ON LOTS CONTAINING FLOOD PLAIN OR ADJACENT TO THE FLOOD PLAIN SHALL BE IN COMPLIANCE WITH THE FLOOD PLAIN REGULATION IN EFFECT AT THE TIME OF CONSTRUCTION. CONTACT BEXAR COUNTY PUBLIC WORKS FOR MORE INFORMATION. (F-142(a) & (b)(1))

NOTE: THE MINIMUM FINISHED FLOOR ELEVATIONS HAVE BEEN REVISED TO BE A MINIMUM OF 1' ABOVE THE ULTIMATE 100 YEAR WATER SURFACE ELEVATION BASED UPON THE HEC-RAS OUTPUT TABLES FOUND WITHIN THE CLOMR. IN INSTANCES WHERE OUR LOTS ARE CONSIDERABLY HIGHER THAN THE 100 YEAR WATER SURFACE ELEVATION, THE FINISHED FLOOR WAS SET BASED UPON THE LOW CORNER OF THE PAD PER OUR PROPOSED LOT GRADING SURFACE.

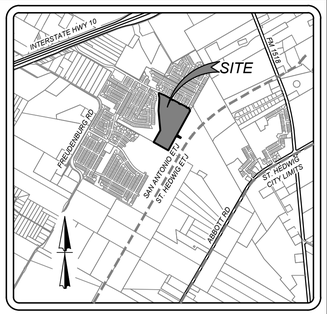
GENERAL NOTES:

1. *ELEVATION SHOWN ON FOUNDATION IS FOR FINISHED FLOOR.*
2. *CONTRACTOR SHALL PROVIDE OWNER ALL NECESSARY DENSITY TESTS FOR FILL LOTS AS REQUIRED BY HUD SPECIFICATIONS.*
3. *HOME BUILDER SHALL REFER TO THE APPROVED SUBDIVISION PLAT TO CONFIRM ALL BUILDING SETBACKS PRIOR TO ANY FOUNDATION WORK.*
4. *AS SOON AS PRACTICAL HOME BUILDER SHALL ESTABLISH VEGETATION (HYDROMULCH, SEEDING, SODDING, ETC...) TO PREVENT EROSION FROM OCCURRING.*
5. *CONTRACTOR SHALL CONTACT ENGINEER REGARDING ANY QUESTIONS ON THE INTENT OF THIS PLAN.*
6. *POSITIVE DRAINAGE SHALL BE MAINTAINED ON ALL SURFACE AREAS WITHIN THE SCOPE OF THIS PROJECT. DRAINAGE SHALL BE DIRECTED AWAY FROM ALL BUILDING FOUNDATIONS AND TOWARDS THE PROPER DRAINAGE EASEMENT OR STREET RIGHT OF WAY ACCORDING TO THE MASTER DRAINAGE PLAN FOR THE PROJECT. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW PONDING OF WATER.*
7. *ALL ELEVATIONS AND CONTOURS SHOWN ON THIS GRADING PLAN REFLECT FINISHED GRADES. THE THICKNESS OF PAVEMENT, CURBS, AND SIDEWALKS MUST BE SUBTRACTED TO OBTAIN SUBGRADE ELEVATIONS.*
8. *GRADING PLAN IS INTENDED FOR USE IN LOT GRADING ONLY. CONTRACTOR SHOULD REFER TO CONSTRUCTION DRAWINGS FOR ALL OTHER GRADES, INCLUDING, BUT NOT LIMITED TO, CHANNELS, ROADS, AND DETENTION PONDS.*
9. *CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE ALL SWALES.*

BEXAR COUNTY R.O.W. NOTE

A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY R.O.W.

SCALE : 1" = 50'
0' 50' 150'
100'



LOCATION MAP
N.T.S

ELIZONDO SUBDIVISION UNIT 2
(PLAT NO. 21-11800416)

BLOCK 29 C.B. 5193 · BLOCK 43 C.B. 5193 · BLOCK 44 C.B. 5193 · BLOCK 45 C.B. 5193 · BLOCK 27 C.B. 5193

OVIEDO (50' R.O.W.) · ZOCALO (50' R.O.W.) · CARMELITA (50' R.O.W.) · THYME PASS (60' R.O.W.)

GRAN VIA (70' R.O.W.)

10' E.G.T.TV.E (PLAT NO. 21-11800416) · 14' E.G.T.TV.E (PLAT NO. 21-11800416) · 1' V.N.A.E. (PLAT NO. 21-11800416) · OFF-LOT 14' E.G.T.TV.E (PLAT NO. 21-11800416)

VARIABLE WIDTH WATER EASEMENT (PLAT NO. 20-11800598)

EXISTING 20' WATER EASEMENT (ENTIRE EASEMENT TO EXPIRE UPON INCORPORATION INTO PLATTED RIGHT-OF-WAY) (VOL. ____, PGS. ____)

LOT 901 · SANTA ISABEL (50' R.O.W.)

15' E. G. T. TV. E · 10' E. G. T. TV. E

TW: 636.94 BW: 636.94 · TW: 636.75 BW: 630.75 · TW: 636.39 BW: 630.39 · TW: 635.35 BW: 629.87 · TW: 636.22 BW: 636.22 · TW: 636.48 BW: 632.71 · TW: 636.48 BW: 633.61 · TW: 634.28 BW: 634.28 · TW: 634.21 BW: 634.21

EXISTING 10' GAS EASEMENT

DRAIN "A" SEE SHEET 4.0 · DRAIN "B" SEE SHEET 4.1

LOT 901 BLOCK 40 C.B. 5193

1% AC ULTIMATE FLOODPLAIN PER FLOOD STUDY PREPARED BY KFW ENGINEERS

LOT 908 BLOCK 27 C.B. 5193

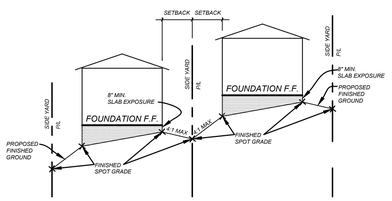
ELIZONDO SUBDIVISION UNIT 3 (PLAT NO. 21-11800343)

VARIABLE WIDTH E.G.T.TV., SANITARY SEWER PRIVATE DRAINAGE & MAINTENANCE ACCESS EASEMENT

BLOCK 27 C.B. 5193 · BLOCK 48 C.B. 5193 · BLOCK 47 C.B. 5193 · BLOCK 46 C.B. 5193

FORESTAR REAL ESTATE GROUP INC. CALLED 84.780 ACRES (DOC. NO. 20190021141 O.P.R)

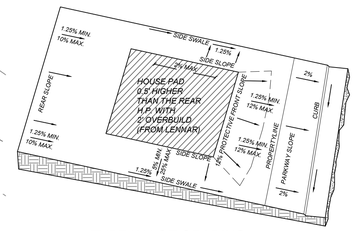
MATCHLINE "A" SEE SHEET 3.1



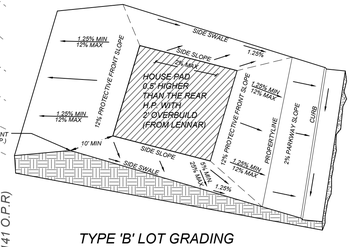
TYPICAL SIDE YARD GRADING
N.T.S.

LEGEND

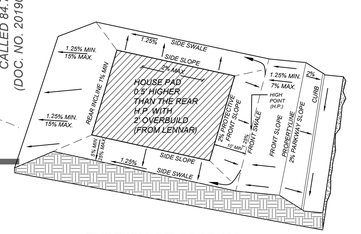
ELEC.,GAS, TELE. & CATV EASEMENT	=	ELECTRIC, GAS, TELEPHONE, CABLE T.V. EASEMENT
→	=	FLOW ARROW
(A)	=	LOT GRADE TYPE
H.P.	=	HIGH POINT
F.F. MIN= 598.0'	=	FINISHED FLOOR MINIMUM ELEVATION AS REQUIRED PER FLOODPLAIN (SEE NOTE THIS SHEET)
735	=	EXISTING CONTOUR
735	=	PROPOSED CONTOUR
735	=	EXISTING CONTOUR
+ 731.69	=	SPOT ELEVATION
	=	RETAINING WALL (RETAINING WALL TO BE DESIGNED BY OTHERS)



TYPE 'A' LOT GRADING



TYPE 'B' LOT GRADING



TYPE 'C' LOT GRADING

KFW
ENGINEERS + SURVEYING
3421 Paesanos Pkwy, Suite 200, San Antonio, TX 78231
Phone #: (210) 979-8444 Fax #: (210) 979-8441
TBPE Firm #: 8513 • TBPLS Firm #: 10124300

ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
2/14/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

OVERALL GRADING PLAN

PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER: 3.0

Date: Feb 08, 2024, 11:18am User ID: jschoolcraft
File: L:\873\01\07\Design\Civil\GRB\230107.dwg

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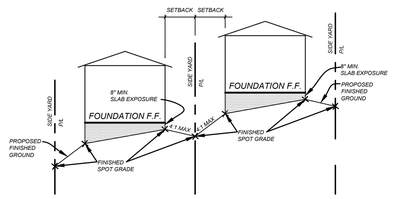

TYPICAL SIDE YARD GRADING
N.T.S.

BEXAR COUNTY R.O.W. NOTE

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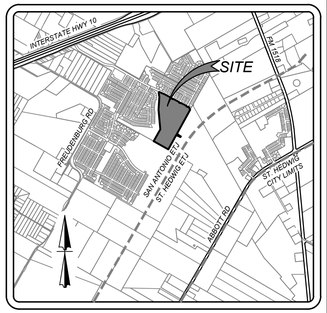
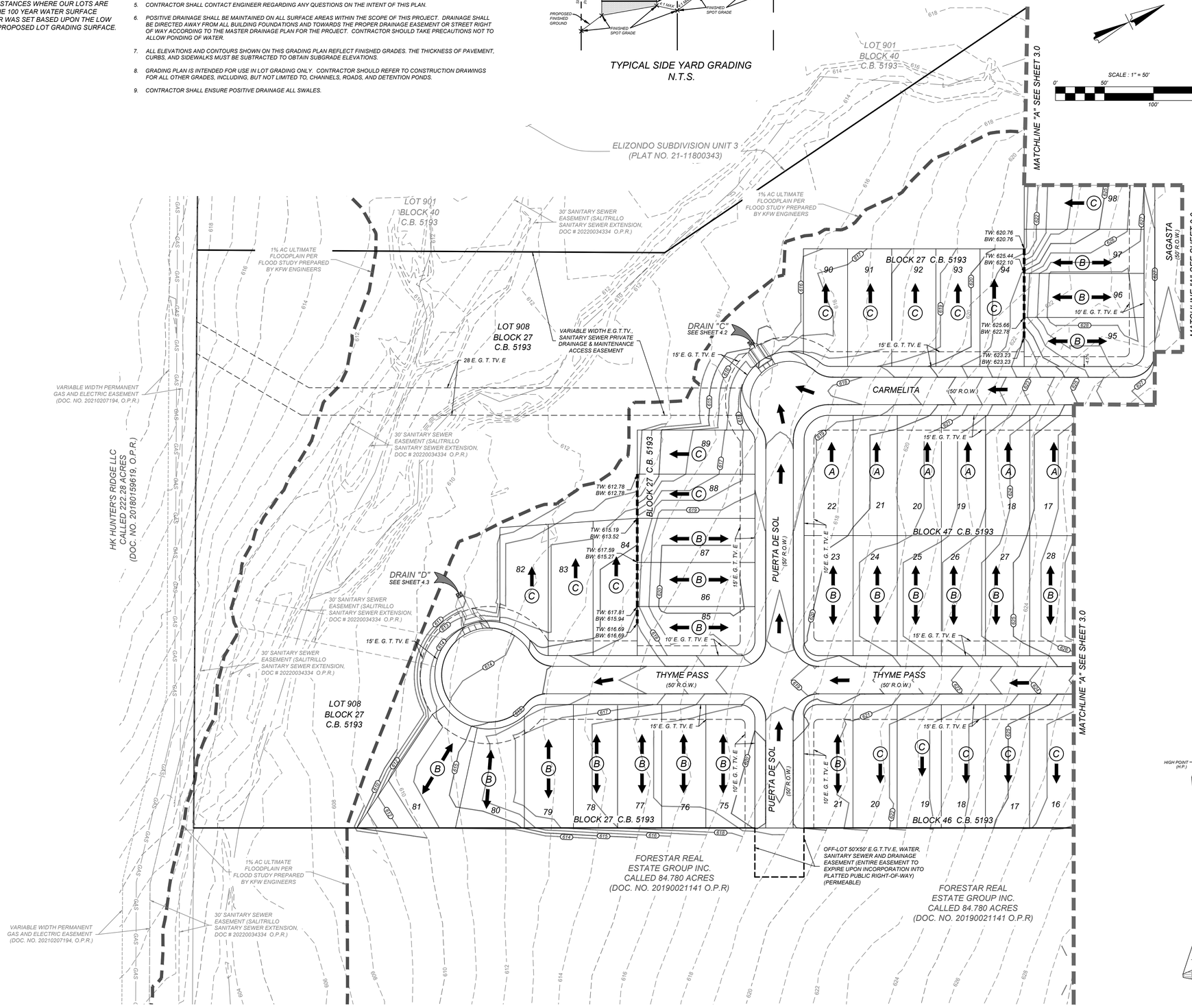


LOCATION MAP
N.T.S



LEGEND

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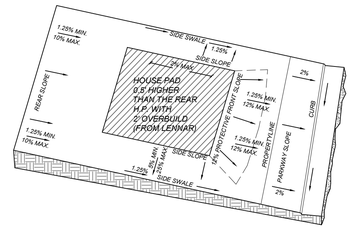
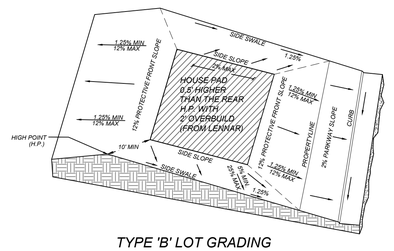
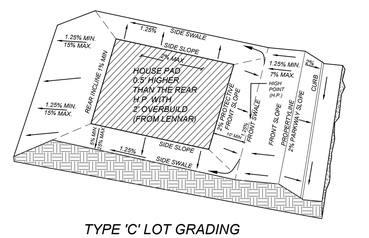


TYPE 'A' LOT GRADING



TYPE 'B' LOT GRADING



TYPE 'C' LOT GRADING

KFW ENGINEERS + SURVEYING
3421 Paesanos Pkwy, Suite 200, San Antonio, TX 78231
Phone #: (210) 979-8444 Fax #: (210) 979-8441
TBPE Firm #: 9513 • TBPLS Firm #: 10124300

ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
2/14/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

OVERALL GRADING PLAN

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Date: Feb 09, 2024, 8:36am User ID: Sloseph
File: L:\873\VD\07\Design\Civil\GR873D107.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

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TRENCH EXCAVATION SAFETY PROTECTION

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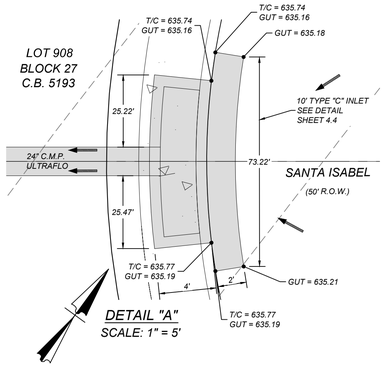
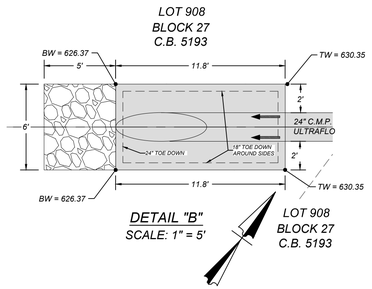
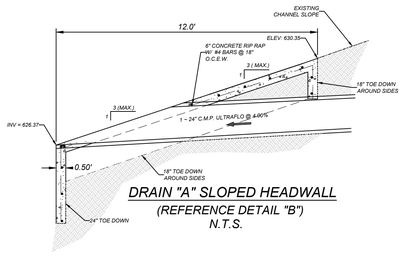


DETAIL "A"
SCALE: 1" = 5'

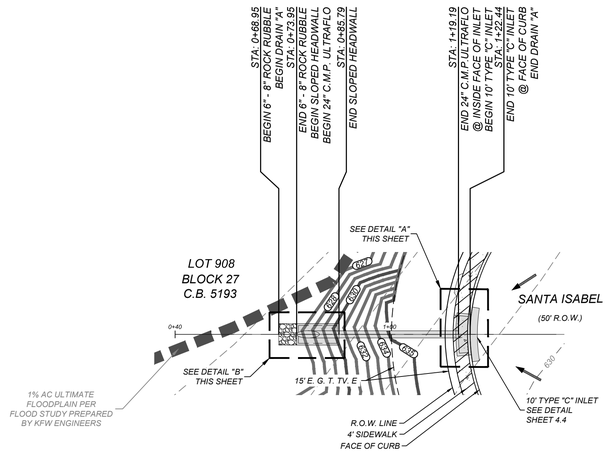


DETAIL "B"
SCALE: 1" = 5'

LOT 908
BLOCK 27
C.B. 5193

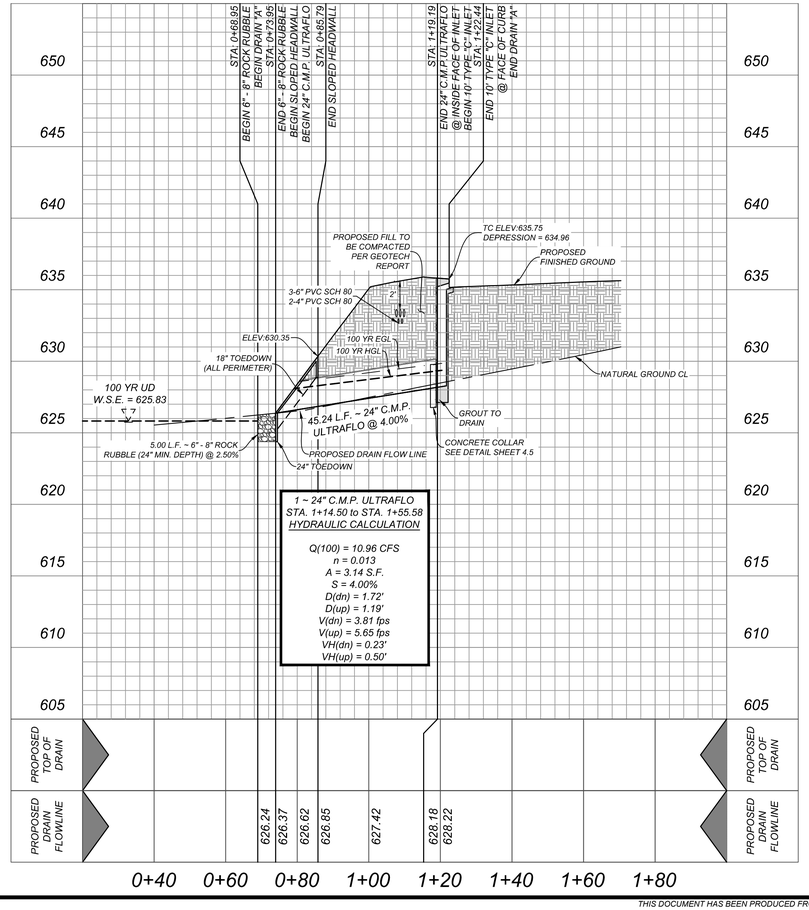


DRAIN "A" SLOPED HEADWALL
(REFERENCE DETAIL "B")
N.T.S.



DRAIN "A"
STA: 0+68.95 TO END

HORZ SCALE: 1"=20'
VERT SCALE: 1"=5'



CURB OPENING
HYDRAULIC CALCULATION

$$L = \frac{Q_{100}}{Ch^{3/2}}$$

$$L = \frac{10.96}{(3.087)\ (0.79)^{3/2}}$$

$L = 5.06$ L.F.

∴ USE 1~ 10.00 L.F. CURB OPENING

NOTE:

1. ALL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.

2. ANY DISTURBED AREAS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE DISTURBED SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.

3. CONTRACTOR TO INSTALL CONCRETE COLLARS AT ALL UPSTREAM AND DOWNSTREAM JUNCTION BOX CONNECTIONS AND ALL PIPE TRANSITIONS.

KFW
ENGINEERS + SURVEYING
3421 Paesanos Pkwy, Suite 200, San Antonio, TX 78231
Phone #: (210) 979-8444 Fax #: (210) 979-8441
TBPE Firm #: 8513 • TBPLS Firm #: 10124300

ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED
PROFESSIONAL ENGINEER
2/14/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

DRAIN A STA. 0+68.95 - END

PLAT NO.
22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER:
4.0

Date: Feb 09, 2024, 8:28am User ID: jchaparias
File: L:\873\01\07\Design\Civil\Drains\DR873D107.dwg

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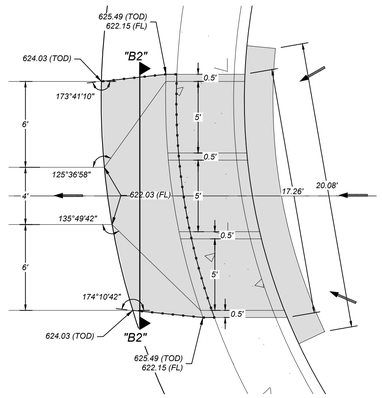
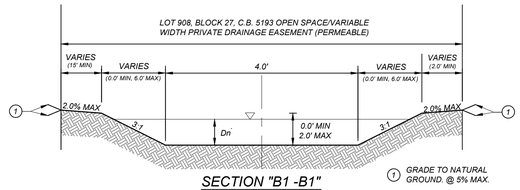
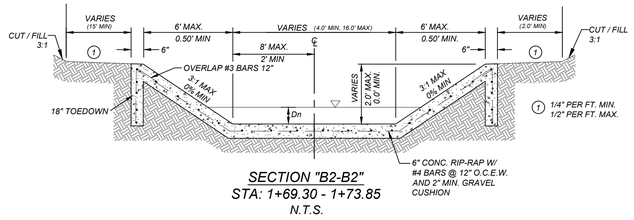


DETAIL "B1"
SCALE: 1" = 5'

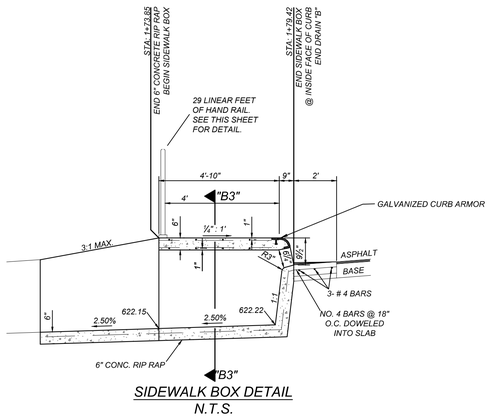


SECTION "B1 -B1"
STA: 1+48.14 - 1+69.30
N.T.S.

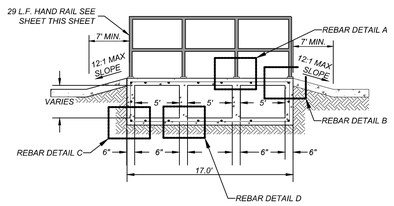
1 GRADE TO NATURAL GROUND. @ 5% MAX.



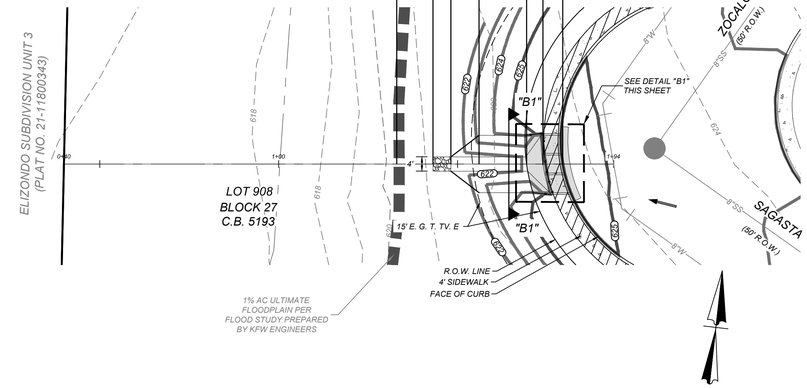
SECTION "B2-B2"
STA: 1+69.30 - 1+73.85
N.T.S.



SIDEWALK BOX DETAIL
N.T.S.



SECTION "B3-B3"
N.T.S.


STA 1+33.03
BEGIN CONTRACTOR GRADE TO DRAIN
BEGIN DRAIN "B"
STA 1+43.14
END CONTRACTOR GRADE TO DRAIN
BEGIN 6" - 8" ROCK RUBBLE
STA 1+48.14
END 6" - 8" ROCK RUBBLE
BEGIN EARTHEN TRANSITION
STA 1+56.00
END CHANNEL TRANSITON
BEGIN EARTHEN CHANNEL
STA 1+69.30
END EARTHEN CHANNEL
BEGIN 6" CONCRETE RIP RAP
STA 1+73.85
END 6" CONCRETE RIP RAP
BEGIN SIDEWALK BOX
STA 1+79.42
END SIDEWALK BOX
@ FACE OF CURB
END DRAIN "B"
ELIZONDO SUBDIVISION UNIT 3
(PLAT NO. 21-11800343)
0+40
618
1+60
618
4'
622
622
622

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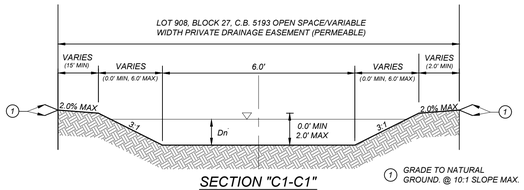
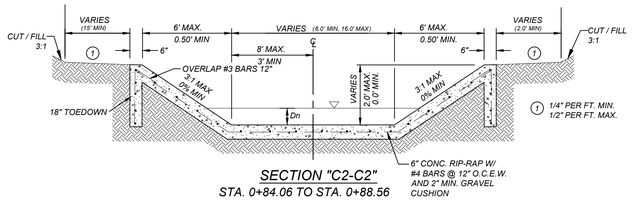
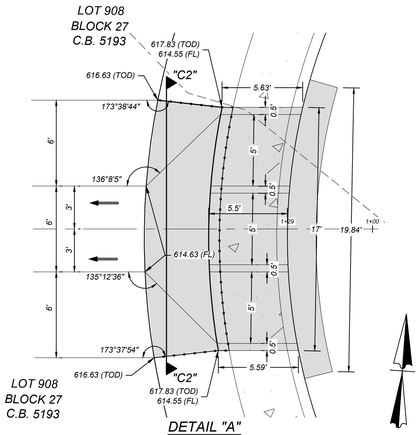


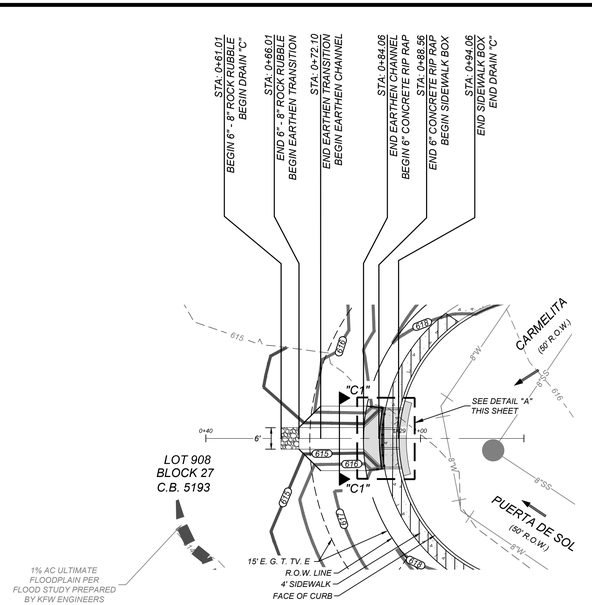
SECTION "C1-C1"
STA: 0+66.01 - 0+84.06
N.T.S.



SECTION "C2-C2"
STA. 0+84.06 TO STA. 0+88.56
N.T.S.



DETAIL "A"
SCALE: 1" = 5'



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$$L = \frac{Q_{25}}{Ch^{3/2}}$$

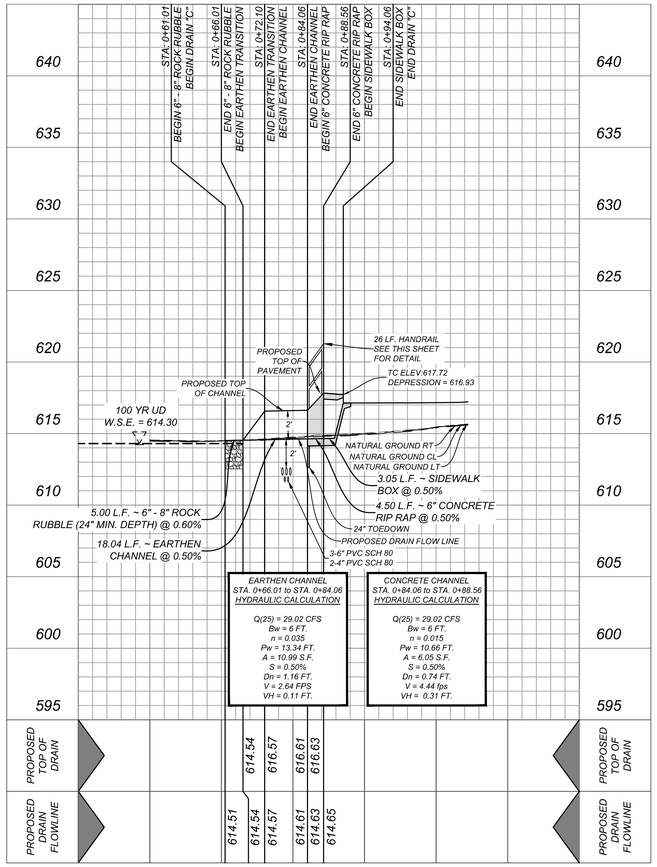
$$L = \frac{29.02}{(3.087)\ (0.79)^{3/2}}$$

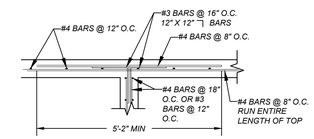
$L = 13.35$ L.F.

∴ USE 3~ 5.00 L.F. CURB OPENING

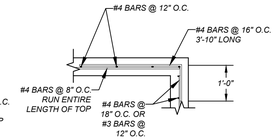
DRAIN "C"
STA: 0+61.01 TO END

HORZ SCALE: 1"=20'
VERT SCALE: 1"=5'

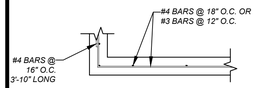




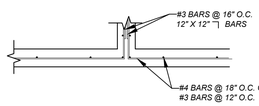
DRAIN "C" REBAR DETAIL "A"
NOTE: THE MINIMUM DISTANCE FROM FACE OF CONCRETE TO NEAREST REINFORCING BAR IS TO BE 1 INCH.



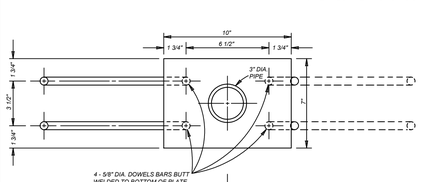
DRAIN "C" REBAR DETAIL "B"
NOTE: THE MINIMUM DISTANCE FROM FACE OF CONCRETE TO NEAREST REINFORCING BAR IS TO BE 1 INCH.



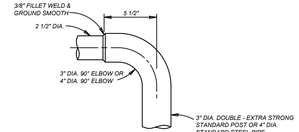
DRAIN "C" REBAR DETAIL "C"
NOTE: THE MINIMUM DISTANCE FROM FACE OF CONCRETE TO NEAREST REINFORCING BAR IS TO BE 1 INCH.



DRAIN "C" REBAR DETAIL "D"
NOTE: THE MINIMUM DISTANCE FROM FACE OF CONCRETE TO NEAREST REINFORCING BAR IS TO BE 1 INCH.

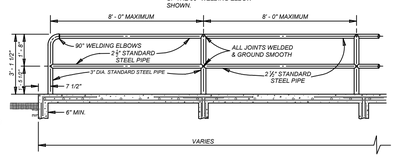


PIPE ANCHORAGE DETAILS
N.T.S.

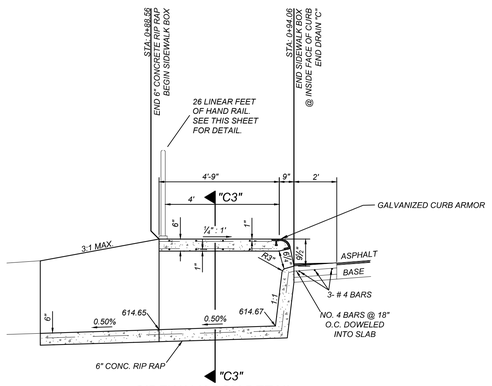


DETAIL OF 90° WELDING ELBOWS
N.T.S.

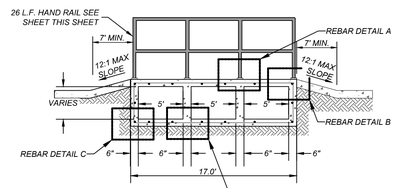
* A NEAT END SECTION, SATISFACTORY TO THE ENGINEER, FROM SUBMITTED SHOP DRAWINGS, MAY BE USED IN LIEU OF THE 90° WELDING ELBOW SHOWN.



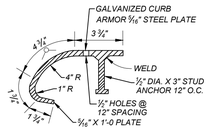
TYPICAL SIDEWALK BRIDGE & SIDEWALK PIPE RAILING SECTION
N.T.S.



SIDEWALK BOX DETAIL
N.T.S.



SECTION C3-C3
N.T.S.



CURB ARMOR DETAIL
N.T.S.

Date: Feb 01, 2024, 10:21am User ID: jpohoscoras
File: L:\873\01\01\Design\Civil\Drains\DR873S01D7.dwg

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Phone #: (210) 979-8444 Fax #: (210) 979-8441
TBPE Firm #: 8513 • TBPLS Firm #: 10102300

ISSUE DATE
REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
2/1/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

DRAIN C STA. 0+61.01 - END

PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER: 4.2

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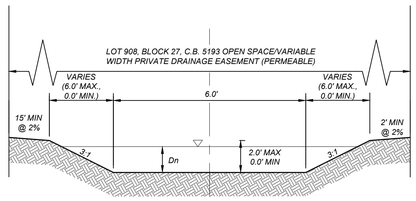
CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S 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.

COMPACTION NOTE:

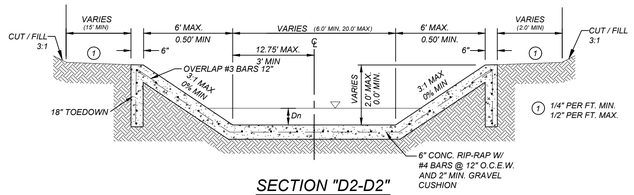
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTRATOR, PER EACH 12 INCH LOOSE LIFT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

CAUTION!!:

THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

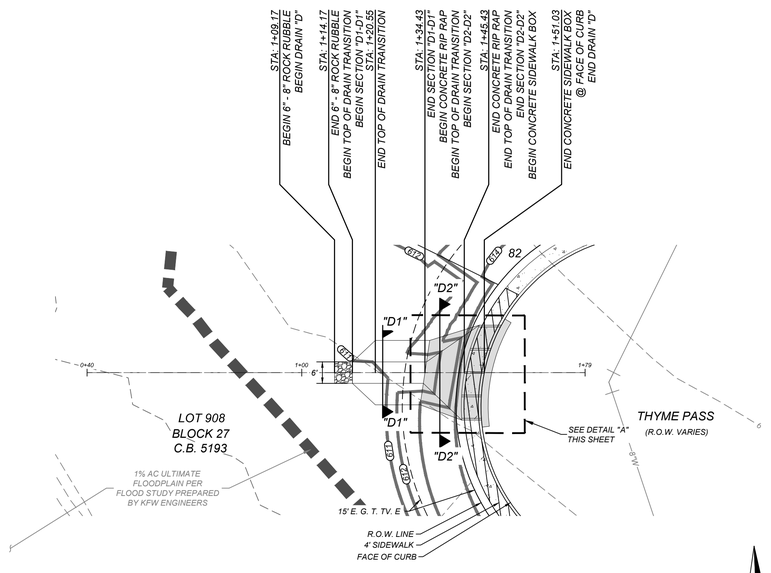


SECTION "D1-D1"
STA. 1+14.17 TO STA. 1+34.43
N.T.S.



SECTION "D2-D2"
STA. 1+34.43 TO STA. 1+45.43
N.T.S.

DETAIL "A"
SCALE: 1" = 5'



DRAIN "D"
STA: 1+09.17 TO END

HORZ SCALE: 1"=20'
VERT SCALE: 1"=5'

NOTE:

1. ALL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.

2. ANY DISTURBED AREAS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE DISTURBED SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.

3. CONTRACTOR TO INSTALL CONCRETE COLLARS AT ALL UPSTREAM AND DOWNSTREAM JUNCTION BOX CONNECTIONS AND ALL PIPE TRANSITIONS.

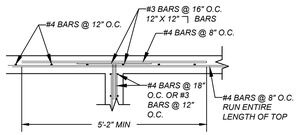
CURB OPENING HYDRAULIC CALCULATION

$$L = \frac{Q_{35}}{Ch^{3/2}}$$

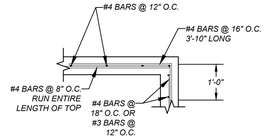
$$L = \frac{35.02}{(3.087)\ (0.79)^{3/2}}$$

$L = 16.16$ L.F.

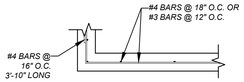
∴ USE 4 ~ 6 L.F. CURB OPENING



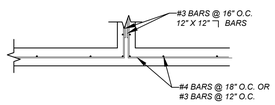
DRAIN "D" REBAR DETAIL "A"
NOTE: THE MINIMUM DISTANCE FROM FACE OF CONCRETE TO NEAREST REINFORCING BAR IS TO BE 1 INCH.



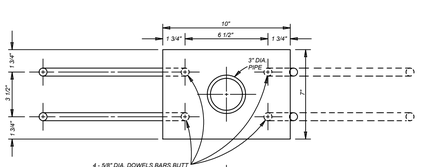
DRAIN "D" REBAR DETAIL "B"
NOTE: THE MINIMUM DISTANCE FROM FACE OF CONCRETE TO NEAREST REINFORCING BAR IS TO BE 1 INCH.

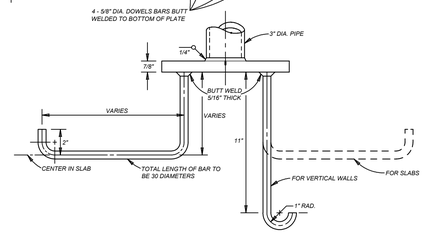


DRAIN "D" REBAR DETAIL "C"
NOTE: THE MINIMUM DISTANCE FROM FACE OF CONCRETE TO NEAREST REINFORCING BAR IS TO BE 1 INCH.

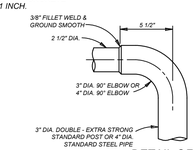


DRAIN "D" REBAR DETAIL "D"
NOTE: THE MINIMUM DISTANCE FROM FACE OF CONCRETE TO NEAREST REINFORCING BAR IS TO BE 1 INCH.

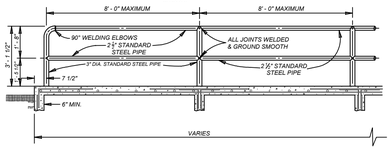




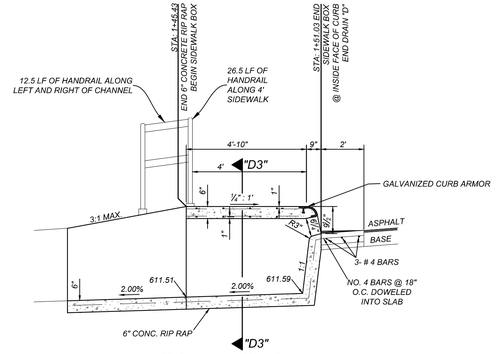
PIPE ANCHORAGE DETAILS
N.T.S.



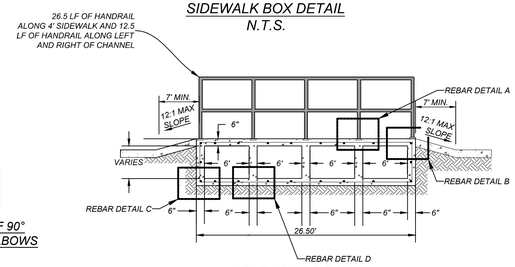
DETAIL OF 90° WELDING ELBOWS
N.T.S.
* A NEAT END SECTION, SATISFACTORY TO THE ENGINEER, FROM SUBMITTED SHOP DRAWINGS, MAY BE USED IN LIEU OF THE 90° WELDING ELBOW SHOWN.



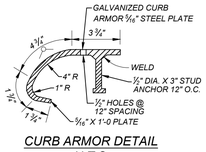
TYPICAL SIDEWALK BRIDGE & SIDEWALK PIPE RAILING SECTION
N.T.S.



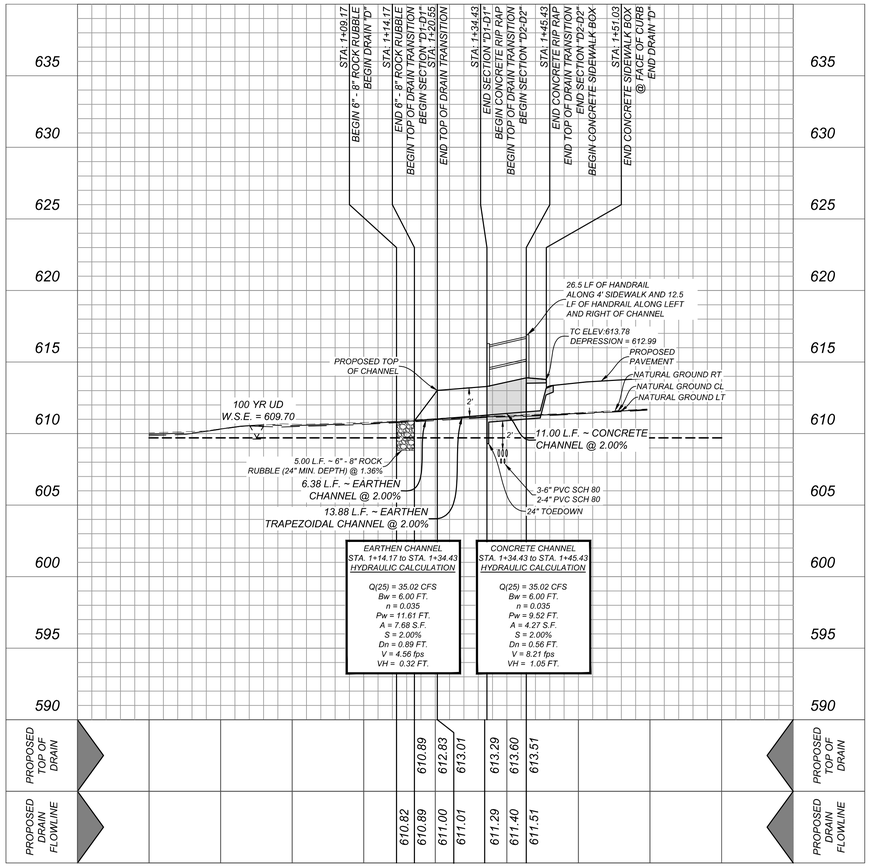
SIDEWALK BOX DETAIL
N.T.S.



SECTION "D3-D3"
N.T.S.



CURB ARMOR DETAIL
N.T.S.



EARTHEN CHANNEL
STA. 1+14.17 to STA. 1+34.43
HYDRAULIC CALCULATION

Q(25) = 35.02 CFS
Bw = 6.00 FT.
n = 0.035
Pw = 11.61 FT.
A = 7.68 S.F.
S = 2.00%
Dn = 0.89 FT.
V = 4.56 fps
VH = 0.32 FT.

CONCRETE CHANNEL
STA. 1+34.43 to STA. 1+45.43
HYDRAULIC CALCULATION

Q(25) = 35.02 CFS
Bw = 6.00 FT.
n = 0.035
Pw = 9.52 FT.
A = 4.27 S.F.
S = 2.00%
Dn = 0.56 FT.
V = 8.21 fps
VH = 1.05 FT.

KFW
ENGINEERS + SURVEYING
3421 Paesanos Pkwy, Suite 200, San Antonio, TX 78231
Phone #: (210) 979-8444 Fax #: (210) 979-8441
TBPE Firm #: 8313 • TBPLS Firm #: 10102300

ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
2/1/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

DRAIN D STA. 1+09.17 - END

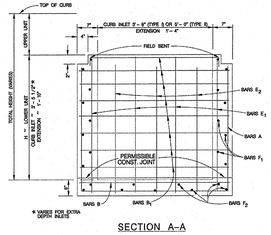
PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

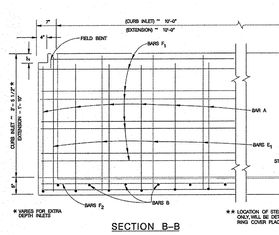
SHEET NUMBER: 4.3

Date: Feb 01, 2024, 10:26am User ID: jschoscarcs
File: L:\873\01\07\Design\Civil\Drains\DR873010704.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.



SECTION A–A



SECTION B–B

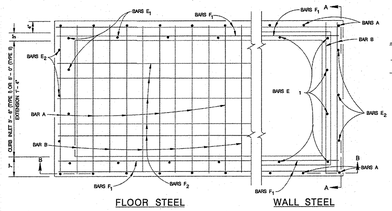
REINFORCING STEEL

LOWER UNIT 10'X 3'-6" (TYPE I)

BAR	NO.	SIZE	SPAC.	LENGTH
A	12	#4	12"	VARIES
B	11	#4	12"	4'-0"
B_1	VARIES	#4	12"	4'-6"
E_1	20	#4	10'2"	VARIES
E_2	6	#4	10'2"	VARIES
F_1	VARIES	#4	10'2"	10'-10"
F_2	9	#4	----	10'-10"

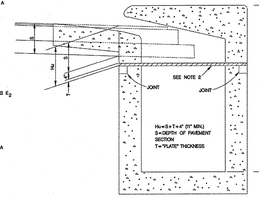
LOWER UNIT 10'X 5'-0" (TYPE II)

BAR	NO.	SIZE	SPAC.	LENGTH
A	12	#4	12"	VARIES
B	11	#4	12"	5'-0"
B_1	VARIES	#4	12"	5'-10"
F_1	22	#4	10'2"	VARIES
F_2	6	#4	10'2"	VARIES
F_1	VARIES	#4	10'2"	10'-10"
F_2	11	#4	----	10'-10"



FLOOR STEEL

WALL STEEL



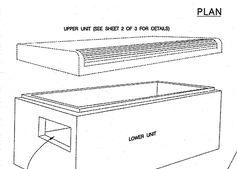
PHASE CONSTRUCTION

NOTES FOR PHASE CONSTRUCTION (WHEN DIRECTED BY THE ENGINEER):

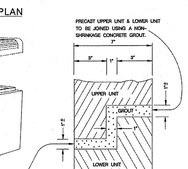
1. THE CURB INLET AND EXTENSION SHALL BE CONSTRUCTED TO A DEPTH "H=" BELOW THE INLET AND EXTENSION GUTTER LINE ELEVATION.
2. CAP THE CURB INLET AND EXTENSION WITH A STEEL PLATE APPROVED BY THE ENGINEER AND CONSTRUCT THE ROADWAY OVER THE PLATE.
3. AFTER THE ROADWAY IS COMPLETED, BUT PRIOR TO THE FINAL HMAC OVERLAY, SAW CUT THE PAVEMENT, REMOVE THE PLATE AND COMPLETE THE UPPER PORTION OF THE CURB INLET AND / OR EXTENSION.

GENERAL NOTES

1. IF INLETS AND IE EXTENSIONS MUST BE IN ACCORDANCE WITH THE LATEST TXDOT CURB INLET TYPE "C" AND EXTENSION TYPE E (L-C).
2. TYPE C-I-INLET TO BE USED ONLY WHEN STORM DRAIN PIPE IS IN-LINE WITH CURB INLET AND APPROVED BY THE ENGINEER.
3. QUANTITIES SHOWN ARE FOR CONTRACTORS INFORMATION ONLY.
4. CONCRETE FOR STRUCTURES SHALL BE CLASS "A", 3000 PSI IN 28 DAYS.
5. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
6. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 1 1/2".
7. ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M.-A-615, GRADE 60 REQUIREMENTS.
8. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3 /4".
9. DEPRESSION SLAB SHALL RECEIVE A WOOD FLOAT FINISH.
10. FACE OF INLET TO CONFORM TO FACE OF CURB LINE.
11. ALL BARS INTERCEPTING MANHOLE RING & COVER SHALL BE CUT OR BENT.
12. PAYMENT FOR ALL EXCAVATION, BACK-FILLING, CONCRETE, REINFORCING STEEL, RING AND COVER, CURB ARMOR AND STEPS SHALL BE INCLUDED IN THE UNIT COST OF ITEM 409 "STORM SEWER JUNCTION BOXES AND INLETS".
13. CARE SHOW MANHOLE RING AND COVER TO BE PLACED NEXT TO OUTLET PIPE, EXCEPT FOR VERTICAL OUTLET PIPE IN WHICH CASE MANHOLE RING AND COVER WILL BE OFFSET.
14. GALVANIZED BOLTS, NUTS, WASHERS, PLATES AND GASKETS ARE SUBSIDIARY TO INLETS.
15. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE MEANS TO LIFT AND PLACE THE INLETS, WHEN USING PRECAST UNITS.
16. ALL BARS AT PIPE BLOCKOUT LOCATIONS SHALL BE CUT OR BENT.
17. ALL LOWER UNITS SHALL RECEIVE INVERT MORTAR SHAPING.
18. PIPE BLOCKOUTS IN INLET WALLS SHOULD NOT EXCEED 3" BEYOND THE OUTER SHELL OF THE PIPE, TAKING INTO ACCOUNT THE SKEW OF THE PIPE AS NECESSARY. CONSTRUCTION JOINT MAY BE RAISED A MAXIMUM OF 6".

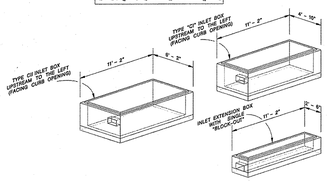


PLAN

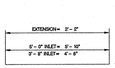


JOINT DETAIL

WHEN USING PRECAST UPPER UNIT, THE SPACE IS FOR MAKING MINOR HORIZONTAL AND VERTICAL ADJUSTMENTS TO ACCOMODATE A FIT BETWEEN THE UPPER AND LOWER UNIT THAT ALLOWS FOR A MATCH LINE AND GRADE BETWEEN THE ROADWAY CURB AND THE UPPER UNIT OF THE INLET.



CONCRETE INLET BOX CONFIGURATIONS (LOWER UNITS)



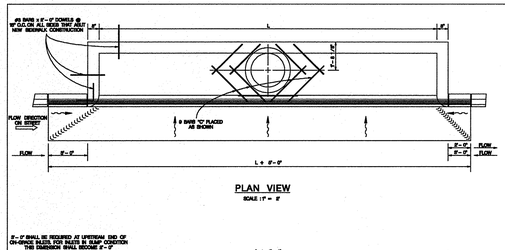
MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

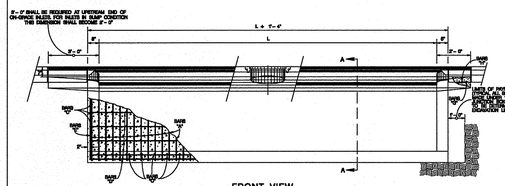
TYPE "C" INLET (TYPE I & II) & INLET EXTENSION STANDARDS
SHEET 1 OF 3

N. SUBMITTAL	PROJECT NO.:	DATE:

DRAWN BY: V. VASQUEZ | DESIGN BY: L.E. MALTOS, P.E. | CHKD. BY: S.S. HOSSEINI, P.E. | SHEET NO.: ___ OF ___



PLAN VIEW

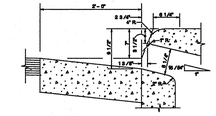


FRONT VIEW

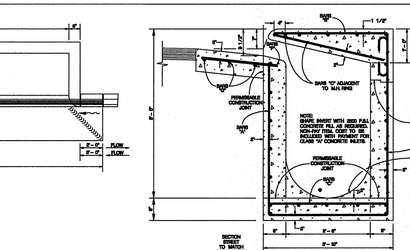
MANHOLE LID & RING DETAIL (ITEM 409)

NOTES FOR MANHOLE LID AND RING

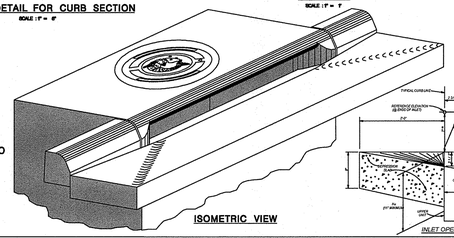
1. FOR LID DESIGN OUTSIDE OF CITY OF SAN ANTONIO, DELETE "SAN ANTONIO PUBLIC WORKS DEPT.".
2. CASTING NUMBER AND MANUFACTURER'S I.D. ON LID AND RING.
3. LOAD BEARING CAPABILITY OF HS-20 MINIMUM.
4. THE LOAD BEARING SURFACES SHALL BE MACHINE GROUND.
5. THE COMBINED WEIGHT OF THE MANHOLE RING AND COVER MUST BE AT LEAST 260 LBS.



OPENING DETAIL FOR CURB SECTION



SIDE VIEW



ISOMETRIC VIEW

INLET LENGTH	REINFORCING STEEL SCHEDULE					
	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
L=6'-0"	A	12	#4	12"CTS.	VARIES	48
	B	6	#4	12"CTS.	6'-0"	24
	C	3	#4	12"CTS.	6'-0"	12
	D	3	#4	12"CTS.	6'-0"	12
	E	5	#4	12"CTS.	1'-1"	5
	F	21	#6	6" CTS.	2'-0"	63
	G	22	#6	6" CTS.	3'-4"	110
	H	4	#4	----	10'-10"	29
	J	12	#4	12"	3'-6"	28
	L	4	#4	----	2'-0"	5
	M	3	#4	----	14'-8"	29
* CONCRETE TOTAL=4.85 CU.YDS. MAX.CASTING=360 LBS. STEEL TOTAL=488 LBS.						
L=8'-0"	A	12	#4	12"CTS.	VARIES	48
	B	7	#4	12"CTS.	6'-0"	28
	C	3	#4	12"CTS.	6'-0"	12
	D	3	#4	12"CTS.	6'-0"	12
	E	5	#4	12"CTS.	1'-1"	5
	F	21	#6	6" CTS.	2'-0"	63
	G	22	#6	6" CTS.	3'-4"	110
	H	4	#4	----	10'-10"	29
	J	12	#4	12"	3'-6"	28
	L	4	#4	----	2'-0"	5
	M	3	#4	----	14'-8"	29
* CONCRETE TOTAL=5.57 CU.YDS. MAX.CASTING=360 LBS. STEEL TOTAL=554 LBS.						
L=10'-0"	A	12	#4	12"CTS.	VARIES	48
	B	8	#4	12"CTS.	6'-0"	32
	C	3	#4	12"CTS.	6'-0"	12
	D	3	#4	12"CTS.	6'-0"	12
	E	5	#4	12"CTS.	1'-1"	5
	F	21	#6	6" CTS.	2'-0"	63
	G	22	#6	6" CTS.	3'-4"	110
	H	4	#4	----	10'-10"	29
	J	12	#4	12"	3'-6"	28
	L	4	#4	----	2'-0"	5
	M	3	#4	----	14'-8"	29
* CONCRETE TOTAL=6.29 CU.YDS. MAX.CASTING=360 LBS. STEEL TOTAL=699 LBS.						
L=12'-0"	A	12	#4	12"CTS.	VARIES	48
	B	9	#4	12"CTS.	6'-0"	36
	C	3	#4	12"CTS.	6'-0"	12
	D	3	#4	12"CTS.	6'-0"	12
	E	5	#4	12"CTS.	1'-1"	5
	F	21	#6	6" CTS.	2'-0"	63
	G	22	#6	6" CTS.	3'-4"	110
	H	4	#4	----	10'-10"	29
	J	12	#4	12"	3'-6"	28
	L	4	#4	----	2'-0"	5
	M	3	#4	----	14'-8"	29
* CONCRETE TOTAL=7.01 CU.YDS. MAX.CASTING=360 LBS. STEEL TOTAL=769 LBS.						
L=14'-0"	A	12	#4	12"CTS.	VARIES	48
	B	10	#4	12"CTS.	6'-0"	40
	C	3	#4	12"CTS.	6'-0"	12
	D	3	#4	12"CTS.	6'-0"	12
	E	5	#4	12"CTS.	1'-1"	5
	F	21	#6	6" CTS.	2'-0"	63
	G	22	#6	6" CTS.	3'-4"	110
	H	4	#4	----	10'-10"	29
	J	12	#4	12"	3'-6"	28
	L	4	#4	----	2'-0"	5
	M	3	#4	----	14'-8"	29
* CONCRETE TOTAL=8.59 CU.YDS. MAX.CASTING=360 LBS. STEEL TOTAL=897 LBS.						
L=16'-0"	A	12	#4	12"CTS.	VARIES	48
	B	11	#4	12"CTS.	6'-0"	44
	C	3	#4	12"CTS.	6'-0"	12
	D	3	#4	12"CTS.	6'-0"	12
	E	5	#4	12"CTS.	1'-1"	5
	F	21	#6	6" CTS.	2'-0"	63
	G	22	#6	6" CTS.	3'-4"	110
	H	4	#4	----	10'-10"	29
	J	12	#4	12"	3'-6"	28
	L	4	#4	----	2'-0"	5
	M	3	#4	----	14'-8"	29
* CONCRETE TOTAL=9.89 CU.YDS. MAX.CASTING=360 LBS. STEEL TOTAL=1,025 LBS.						
L=18'-0"	A	12	#4	12"CTS.	VARIES	48
	B	12	#4	12"CTS.	6'-0"	48
	C	3	#4	12"CTS.	6'-0"	12
	D	3	#4	12"CTS.	6'-0"	12
	E	5	#4	12"CTS.	1'-1"	5
	F	21	#6	6" CTS.	2'-0"	63
	G	22	#6	6" CTS.	3'-4"	110
	H	4	#4	----	10'-10"	29
	J	12	#4	12"	3'-6"	28
	L	4	#4	----	2'-0"	5
	M	3	#4	----	14'-8"	29
* CONCRETE TOTAL=11.19 CU.YDS. MAX.CASTING=360 LBS. STEEL TOTAL=1,153 LBS.						

* THESE VALUES DO NOT INCLUDE CONCRETE & STEEL REINFORCEMENT OF MANHOLE AND REINFORCED CONCRETE PIPE.
* INCLUDES CONCRETE GUTTER PAN ON GRADE INLET, INCLUDE BY AN ELEVATION VALUES IN SUMP.

GENERAL NOTES

1. ALL BARS INTERCEPTING MANHOLE RING & REINFORCED CONCRETE PIPE SHALL BE FIELD CUT.
2. CONCRETE FOR STRUCTURES SHALL BE CLASS "A", 3000 PSI IN 28 DAYS.
3. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER BARS.
4. ALL EXPOSED CORNERS SHALL BE CHAMFERED TO 3 /4".
5. CONSTRUCTION JOINT SHOWN AT SUMP MAY BE SHIFT A MAXIMUM OF 6" AT THE CONTRACTOR'S OPTION TO FACILITATE FORM WORK OR REBAR PLACEMENT.
6. ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M.-A-615, GRADE 60 REQUIREMENTS.
7. INLETS AND SUMP INLET TO BE SHAPED WITH CONCRETE FILL TO AFFECT DRAINAGE TO INLET OPENING.
8. CONCRETE & STEEL QUANTITIES FROM SCHEDULE QUANTITIES OF MANHOLE RING AND COVER ARE TO BE PAID FOR AT BID.
9. CARE SHOULD BE TAKEN AND THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE TO THE CURB INLET OR ADJACENT PAVEMENT DURING THE REMOVAL OF THE EXISTING CURB INLET.
10. PAYMENT FOR ALL EXCAVATION, BACK-FILLING, CONCRETE, REINFORCING STEEL, RING AND COVER, CURB ARMOR AND STEPS SHALL BE INCLUDED IN THE UNIT COST OF ITEM 409 "STORM SEWER JUNCTION BOXES AND INLETS".

JANUARY 2005

STANDARD PLANS
CITY OF SAN ANTONIO, TEXAS
DEPARTMENT OF PUBLIC WORKS

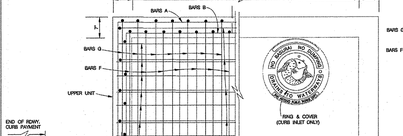
TYPE "C" INLET STANDARDS

DRAWN BY:	DATE	REVISIONS	SCALE: SEE ABOVE
V. VASQUEZ			DATE:
CHECKED BY:			SHEET: OF
MAT HAKER, P.E.			

PLAN

SECTION A–A

SECTION A1 – A1

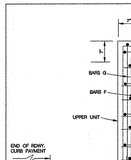


CONCRETE INLET LID CONFIGURATIONS (UPPER UNITS)

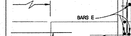
END WALL

SEE SHEET 1 OF 3 FOR GENERAL NOTES.

BACKWALL

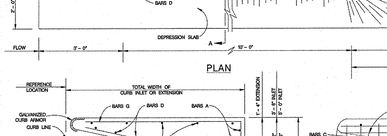


PLAN



SECTION A–A

SECTION A1 – A1



CONCRETE INLET LID CONFIGURATIONS (UPPER UNITS)

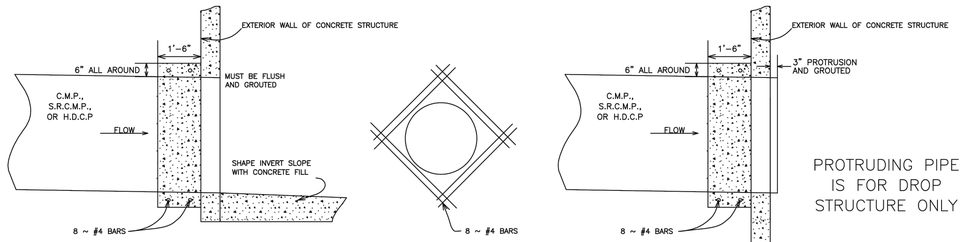
PLAN

SECTION A–A

SECTION A1 – A1

CONCRETE INLET LID CONFIGURATIONS (UPPER UNITS)

1. CONCRETE FOR STRUCTURE SHALL BE CLASS "A," 3,000 P.S.I. AT 28 DAYS.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
3. REINFORCING STEEL SHALL BE NEW BILLET STEEL, INTERMEDIATE GRADE, ASTM. A-15. THE DEFORMATION SHALL CONFORM TO ASTM. A-305.
4. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
5. ALL BARS INTERCEPTING MANHOLE OPENING AND REINFORCED CONCRETE PIPE SHALL BE FIELD-CUT.
6. WHERE LAPPING OF BARS IS REQUIRED, A MINIMUM LAP OF 33 DIAMETERS SHALL BE USED.
7. INVERT OF JUNCTION BOX TO BE SHAPED WITH CONCRETE FILL (3,000 P.S.I. MIN.) TO EFFECT DRAINAGE TO OUTLET PIPE. COST SUBSIDIARY TO CLASS "A" CONCRETE (JUNCTION BOXES).



PIPE FLUSH WITH INVERT

PROTRUDING PIPE IS FOR DROP STRUCTURE ONLY

CONCRETE COLLAR DETAIL

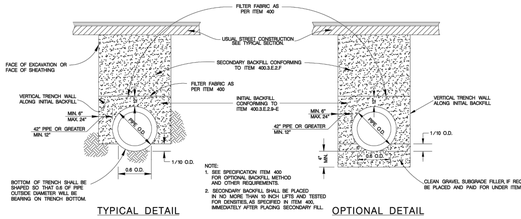
(NOT TO SCALE)

JANUARY 2006

STANDARD PLANS
CITY OF SAN ANTONIO, TEXAS
DEVELOPMENT SERVICES

CONCRETE COLLAR DETAIL

DRAWN BY: ANDREW WINTER, P.E.	DATE	REVISIONS	SCALE: SEE ABOVE
CHECKED BY: SAM DENT, P.E.			DATE: 19 JANUARY 2006
			SHEET: 1 OF 1

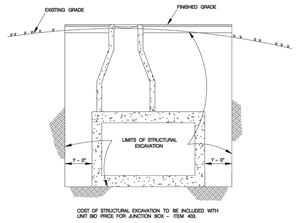


NOTE:
1. SEE SPECIFICATION ITEM 400 FOR OPTIONAL BACKFILL METHOD AND OTHER REQUIREMENTS.
2. SECONDARY BACKFILL SHALL BE PLACED IN NO MORE THAN 18 INCH LIFTS AND TESTED FOR DENSITY AS SPECIFIED IN ITEM 400, IMMEDIATELY AFTER PLACING SECONDARY FILL.

TYPICAL DETAIL

OPTIONAL DETAIL

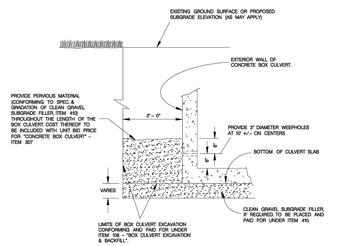
PIPE BEDDING & BACKFILL DETAILS



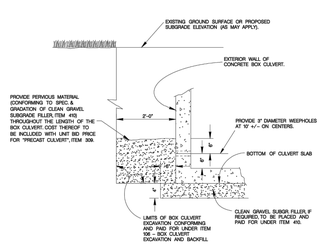
COST OF STRUCTURAL EXCAVATION TO BE INCLUDED WITH UNIT BID PRICE FOR JUNCTION BOX - ITEM 465.

STRUCTURAL EXCAVATION AT JUNCTION BOXES

NO SCALE

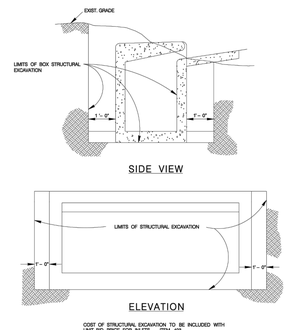


CAST-IN-PLACE BOX CULVERT



PRECAST BOX CULVERT

CONCRETE BOX CULVERT



SIDE VIEW

ELEVATION

COST OF STRUCTURAL EXCAVATION TO BE INCLUDED WITH UNIT BID PRICE FOR INLETS - ITEM 465.

STRUCTURAL EXCAVATIONS AT DRAINAGE INLETS

NO SCALE

MAY 2009

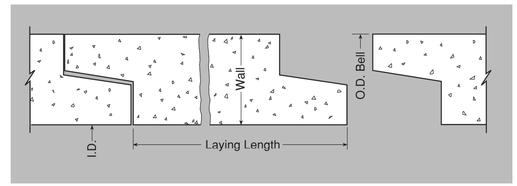
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

PIPE BEDDING & MISCELLANEOUS DRAINAGE DETAILS

% SUBMITTAL	PROJECT NO.:	DATE:
DRAWN BY:	DSGN. BY:	CHKD. BY:

SHEET NO.: ___ OF ___

Reinforced Concrete Pipe



Basic Dimensions

I.D. Pipe (Inches)	Laying Lenght (Feet)	Wall Thickness (Inches)	Bell Diameter (Inches)	Aprox. Wt./ Ft. (Pounds)
12	4 - 6	2	16	92
15	4 - 6	2	19	111
18	4 - 6 - 8	2 1/2	23	168
21	4 - 6 - 8	2 3/4	26 1/2	214
24	4 - 6 - 8	3	30	265
27	4 - 6 - 8	3 1/4	33 1/2	322
30	4 - 6 - 8	3 1/2	37	384
33	4 - 6 - 8	3 3/4	40 1/2	451
36	4 - 6 - 8	4	44	524
39	*	4 1/4	47 1/2	614
42	4 - 6 - 8	4 1/2	51	685
45	*	4 3/4	54 1/2	789
48	4 - 6 - 8	5	58	885
51	*	5 1/4	61 1/2	986
54**	4 - 6 - 8	5 1/2	65	1,092
60**	4 - 6 - 8	6	72	1,322
66**	4 - 6 - 8	6 1/2	79	1,573
72	4 - 6 - 8	7	86	1,846
78	*	*	*	*
84	*	*	*	*
90	*	*	*	*
96	*	*	*	*
108	*	*	*	*
120	*	*	*	*

Note:
- Conforms to current ASTM C-76 or C-655 specifications for reinforced concrete pipe.
* - Dimensions vary; contact manufacturer.
** - Wall C available in some market areas.

-No Scale-
All dimensions subject to allowable specification tolerances.

TITLE	PLANT	STATE	SECTION/PAGE	DATE	
Tongue and Groove Pipe	Grand Prairie / Houston	TX	2.1	01-25-10	Hanson HEIDELBERGCEMENT Group

KFW
ENGINEERS + SURVEYING
3421 Paesanos Pkwy, Suite 200, San Antonio, TX 78231
Phone #: (210) 979-8444 Fax #: (210) 979-8441
TBPE Firm #: 8513 • TBPLS Firm #: 10124300

ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
2/1/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS
CONCRETE COLLAR AND PIPE BEDDING MISCELLANEOUS DETAILS

PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER: 4.5

Date: Feb 01, 2024, 10:27am User ID: jchoacarbs
File: L:\873\01\07\Design\Civil\Plans\SD-078730107.dwg

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CAUTION!!:
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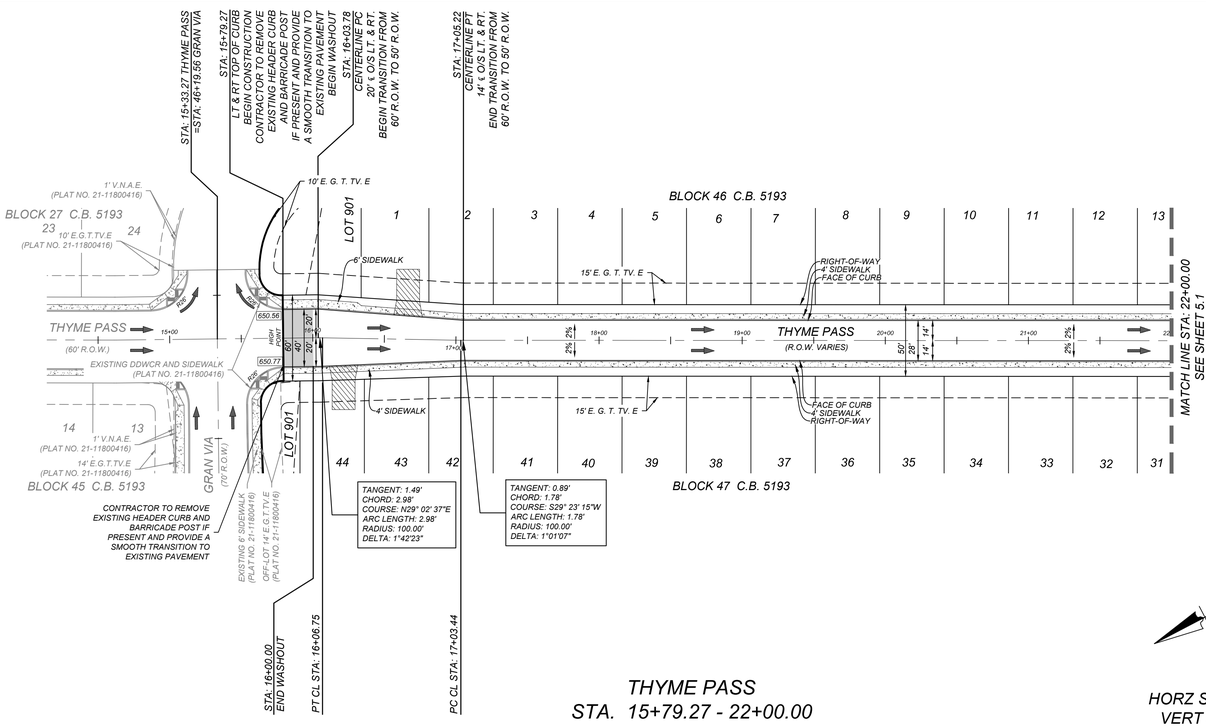
TRENCH EXCAVATION SAFETY PROTECTION

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.

BEXAR COUNTY R.O.W. NOTE

A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY R.O.W.



LEGEND

- = FLOW ARROW
- = WASHOUT CROWN
- E.G.T.TV.E. = ELECTRIC, GAS, TELEPHONE & CABLE EASEMENT
- V.N.A.E. = VEHICULAR NON-ACCESS EASEMENT
- W.C.R. = WHEELCHAIR RAMPS SEE SHEET 5.9
- (I) = WHEELCHAIR RAMP TYPE II SEE SHEET 5.9
- S.D.W.C.R. = SINGLE DIRECTIONAL WHEEL CHAIR RAMP SEE SHEET 5.9
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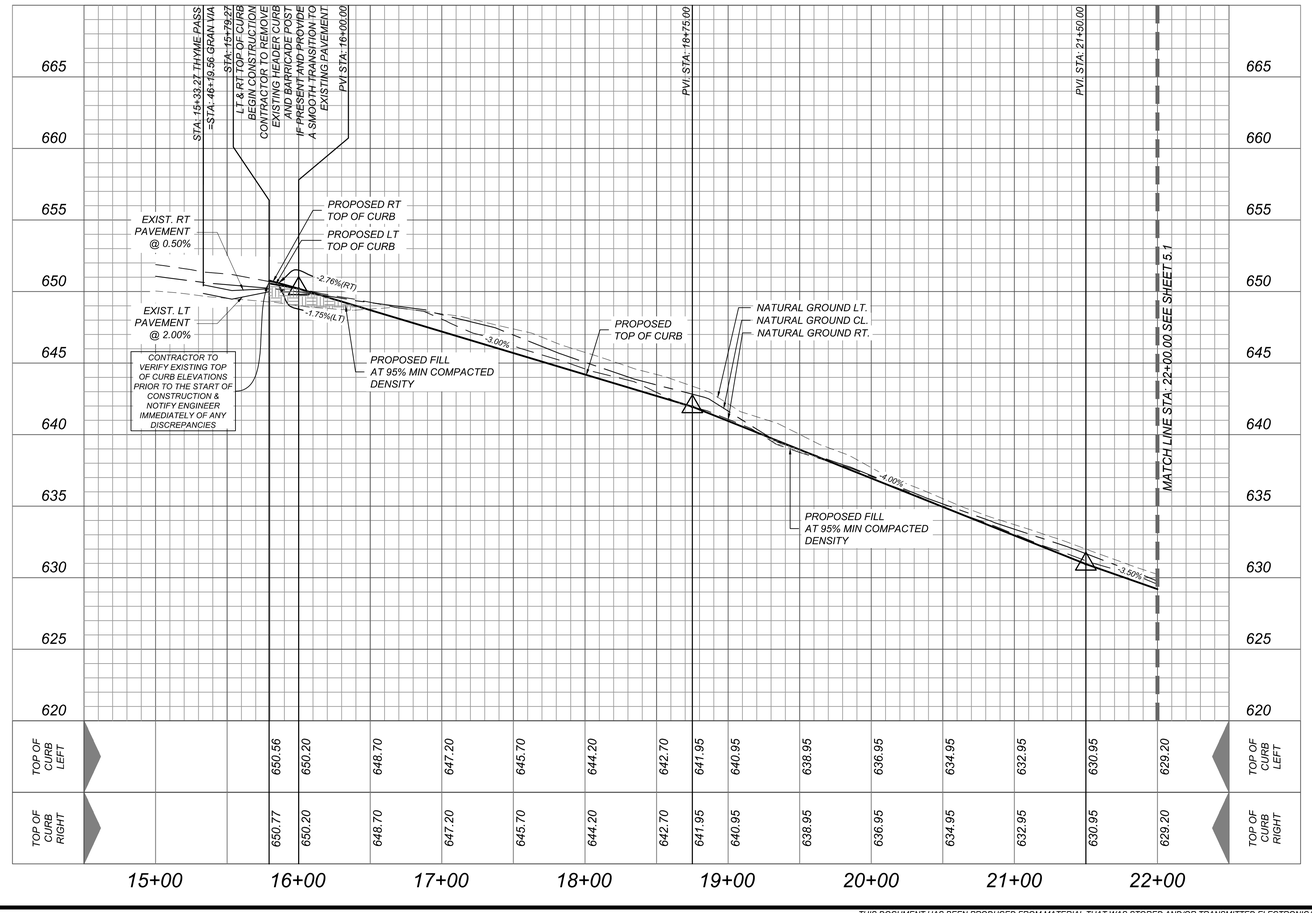
- = SIDEWALK TO BE CONSTRUCTED BY DEVELOPER
- = SIDEWALK TO BE BUILT AT THE TIME OF HOME CONSTRUCTION
- 732.87 = TOP OF CURB ELEVATIONS
- = PROPOSED DRIVEWAY LOCATIONS

THYME PASS
STA. 15+79.27 - 22+00.00

HORZ SCALE: 1"=50'
VERT SCALE: 1"=5'



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ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED
PROFESSIONAL ENGINEER
1/12/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

THYME PASS STA. 15+79.27 - 22+00.00

PLAT NO.
22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER:
5.0

Date: Jan 11, 2024, 5:04pm User ID: Sosseph
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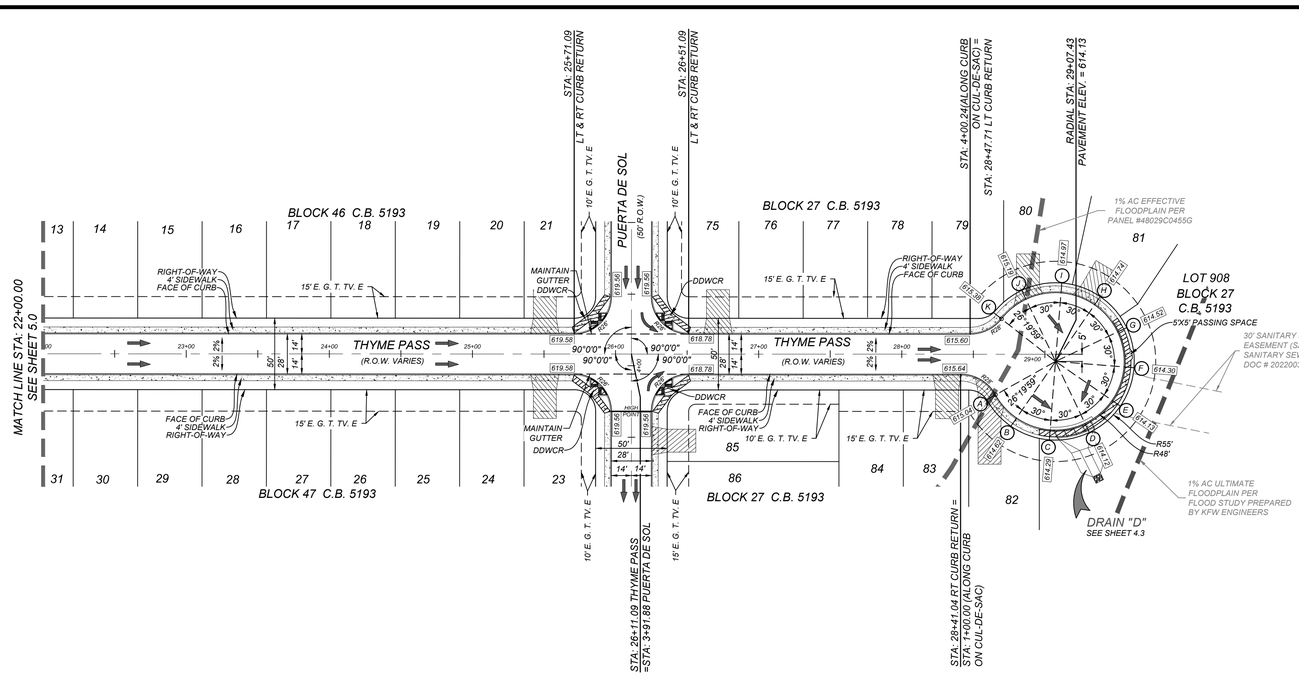

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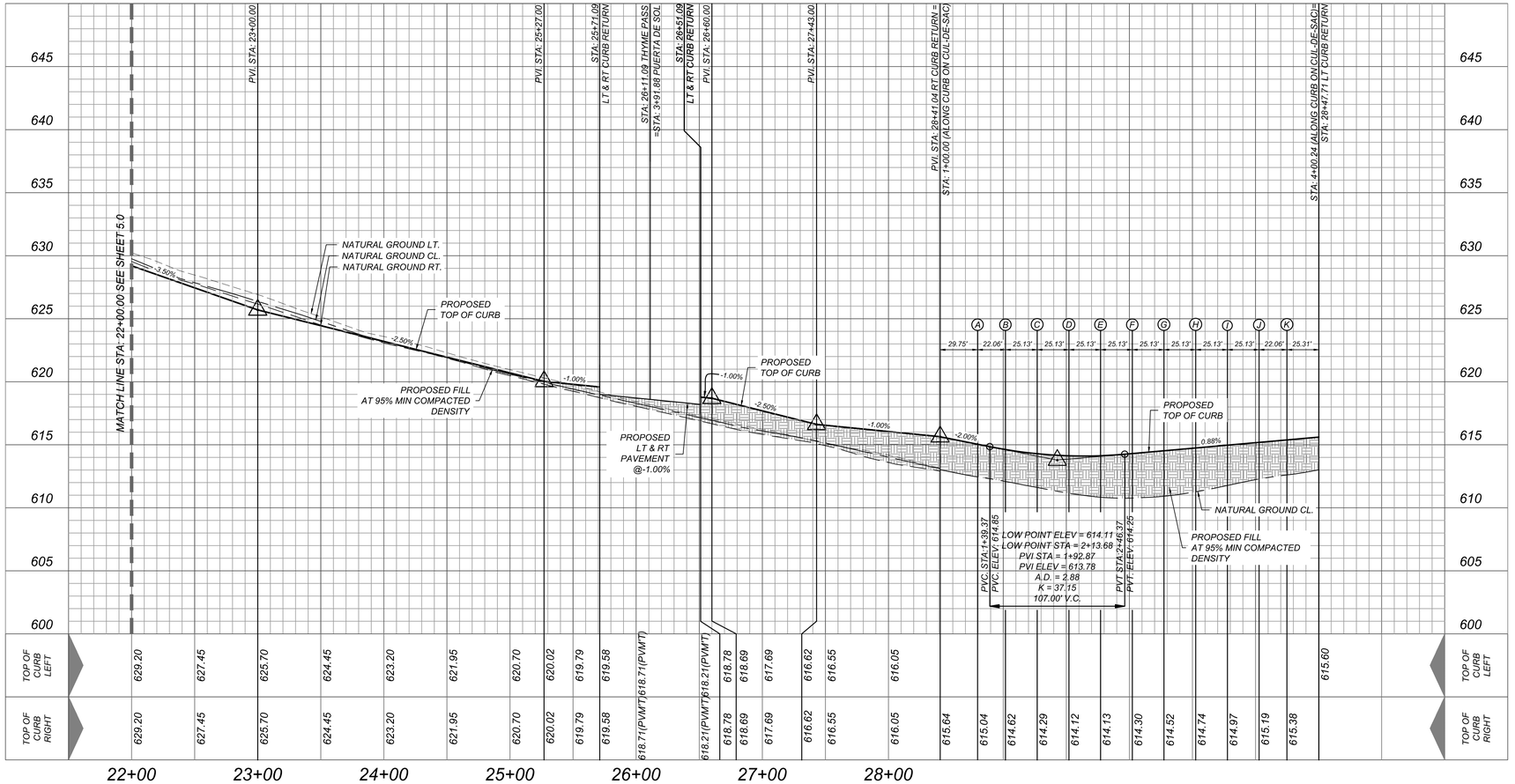

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ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED
PROFESSIONAL ENGINEER
1/12/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

THYME PASS STA. 22+00.00 - END

PLAT NO.
22-11800155

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Date: Jan 11, 2024, 5:04pm User ID: Sxsteph
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TRENCH EXCAVATION SAFETY PROTECTION

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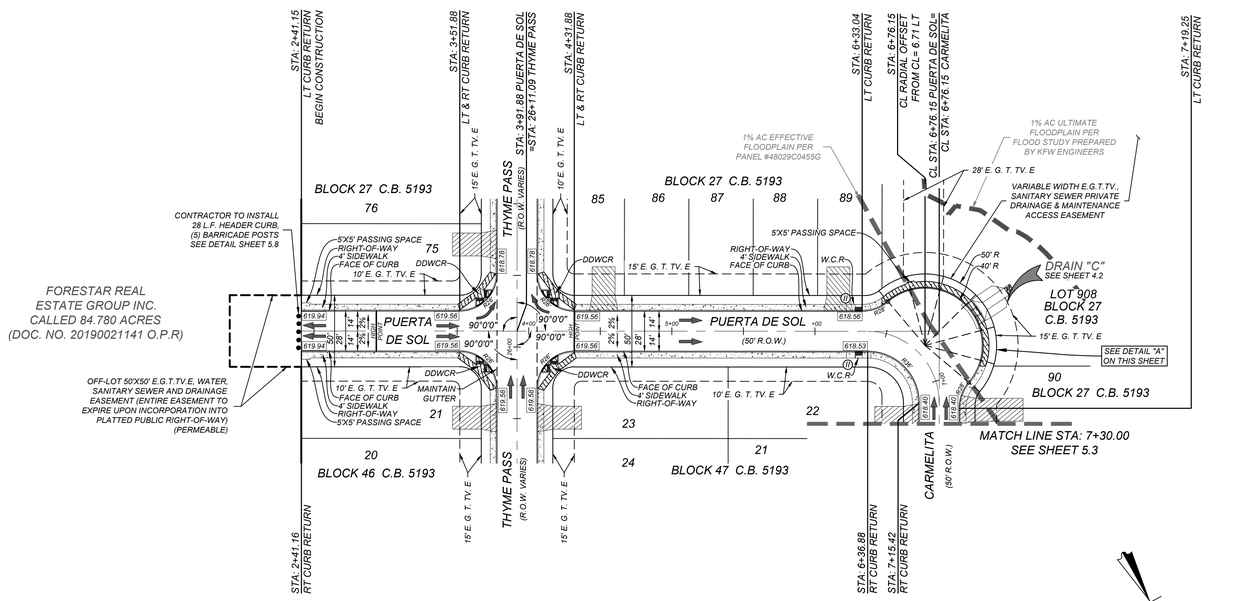
BEXAR COUNTY R.O.W. NOTE

A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY R.O.W.



LEGEND

- = FLOW ARROW
- = WASHOUT CROWN
- E.G.T.TV.E. = ELECTRIC, GAS, TELEPHONE & CABLE EASEMENT
- V.N.A.E. = VEHICULAR NON-ACCESS EASEMENT
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- Ⓓ = WHEELCHAIR RAMP TYPE II SEE SHEET 5.9
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- = SIDEWALK TO BE BUILT AT THE TIME OF HOME CONSTRUCTION
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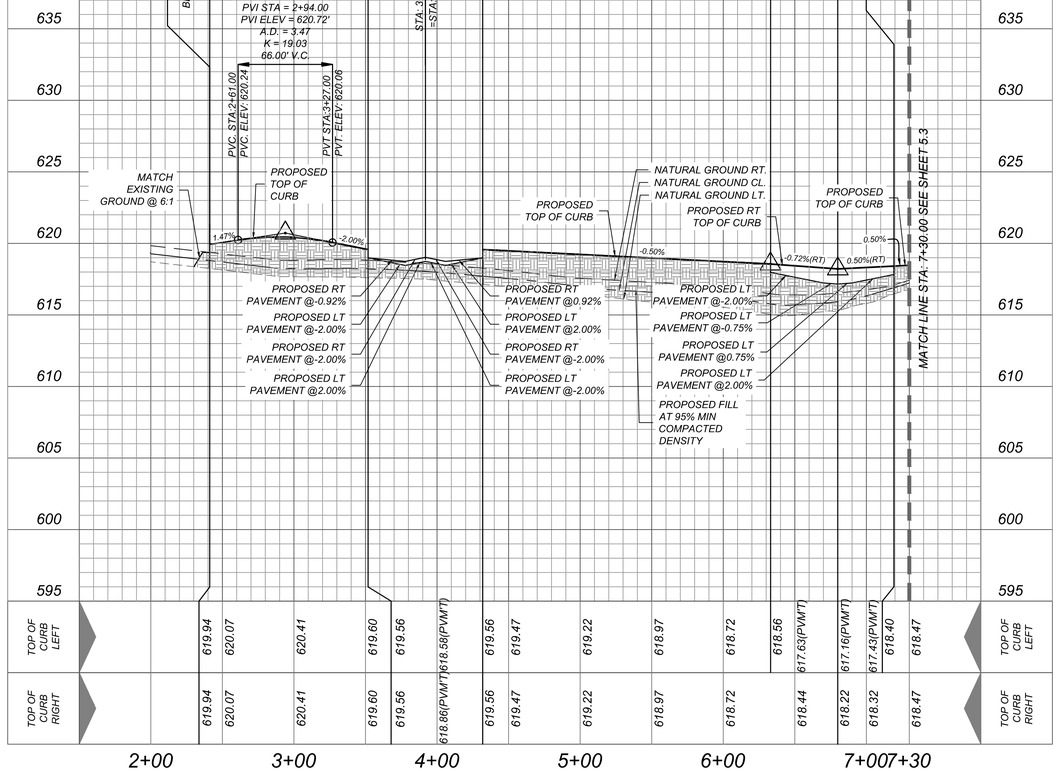
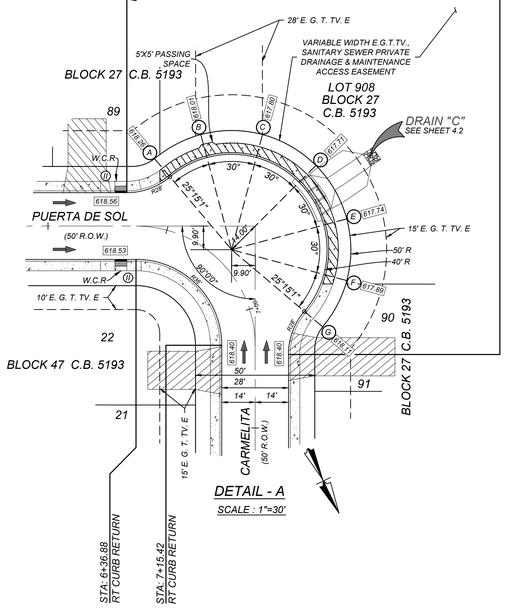
- = PROPOSED DRIVEWAY LOCATIONS

HORZ SCALE: 1"=50'
VERT SCALE: 1"=5'

PUERTA DE SOL STA. 2+41.15 - 6+76.15

CARMELITA STA. 6+76.15 - 7+30.00





DETAIL - A
SCALE : 1"=30'

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ENGINEERS + SURVEYING
3421 Paesanos Pkwy, Suite 200, San Antonio, TX 78231
Fax: 210.545.4329 Phone: 210.545.1122
TBPE Firm # 3513 • TBPLS Firm # 10122300

ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
1/12/24

ELIZONDO SUBDIVISION, UNIT 4

BEXAR COUNTY, TEXAS

PUERTA DE SOL STA. 2+41.15 - 6+76.15

CARMELITA STA. 6+76.15 - 7+30.00

PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER: 5.2

Date: Jan 11, 2024, 5:03pm User ID: Sdsseph
File: L:\873\01\07\Design\Civil\SHEETS\SHT#_873010?.dwg

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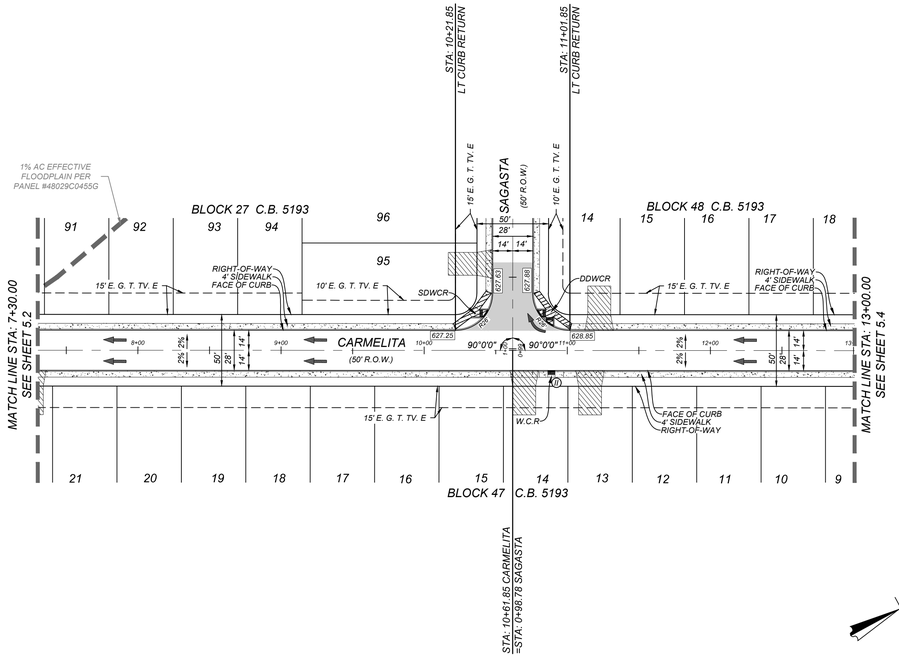

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CARMELITA
STA. 7+30.00 - 13+00.00

HORZ SCALE: 1"=50'
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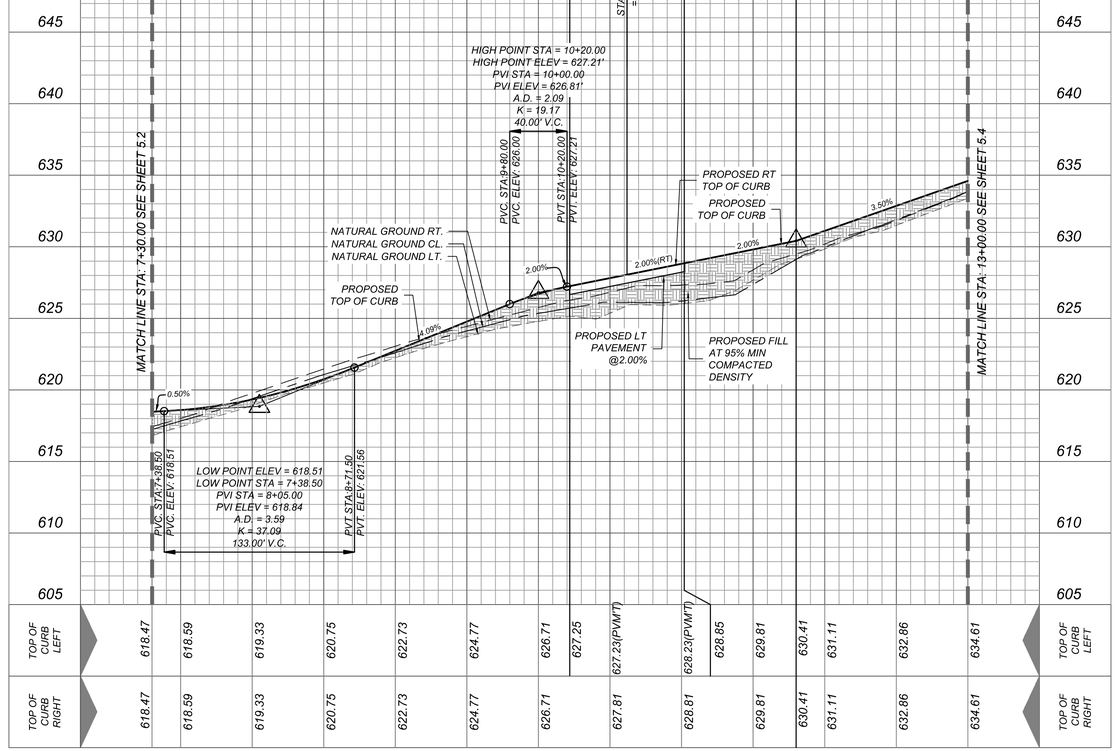

	7+30	8+00	9+00	10+00	10+61.85	11+00	11+01.85	12+00	13+00
TOP OF CURB LEFT	618.47	618.59	619.33	620.75	622.73	624.77	626.71	627.25	627.23(PVMT)	628.23(PVMT)	628.85	629.81	630.41	631.11	632.86	634.61
TOP OF CURB RIGHT	618.47	618.59	619.33	620.75	622.73	624.77	626.71	627.81	628.81	629.81	630.41	631.11	632.86	634.61

ENGINEERS + SURVEYING
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TBPE Firm # 9513 • TBPLS Firm # 10122300

ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
1/12/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

CARMELITA STA. 7+30.00 - 13+00.00

PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER: 5.3

Date: Jan 11, 2024, 5:02pm User ID: Saseph
File: L:\873\01\07\Design\Civil\STREETS\STP_873010?.dwg

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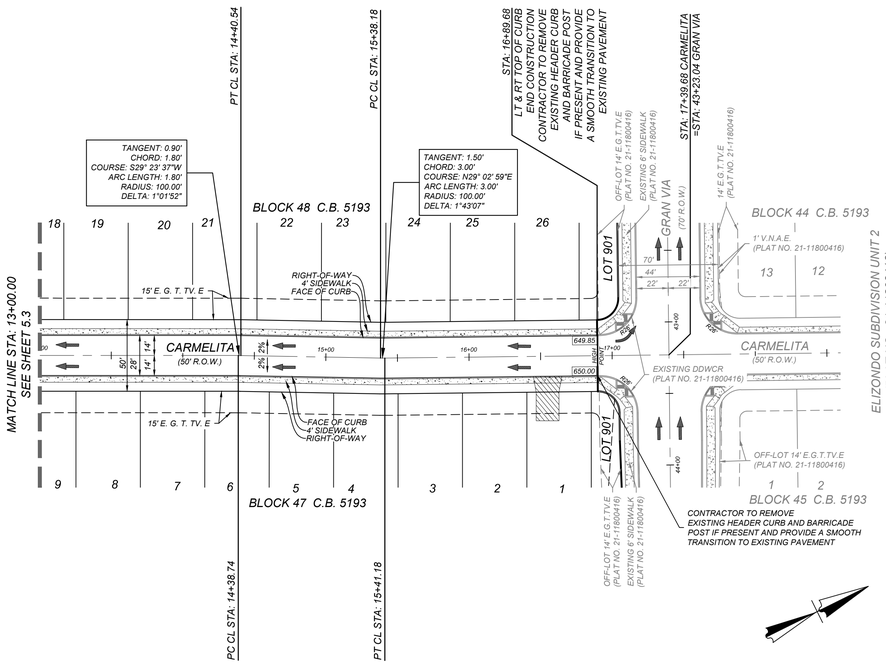

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CARMELITA
STA. 13+00.00 - 16+89.68

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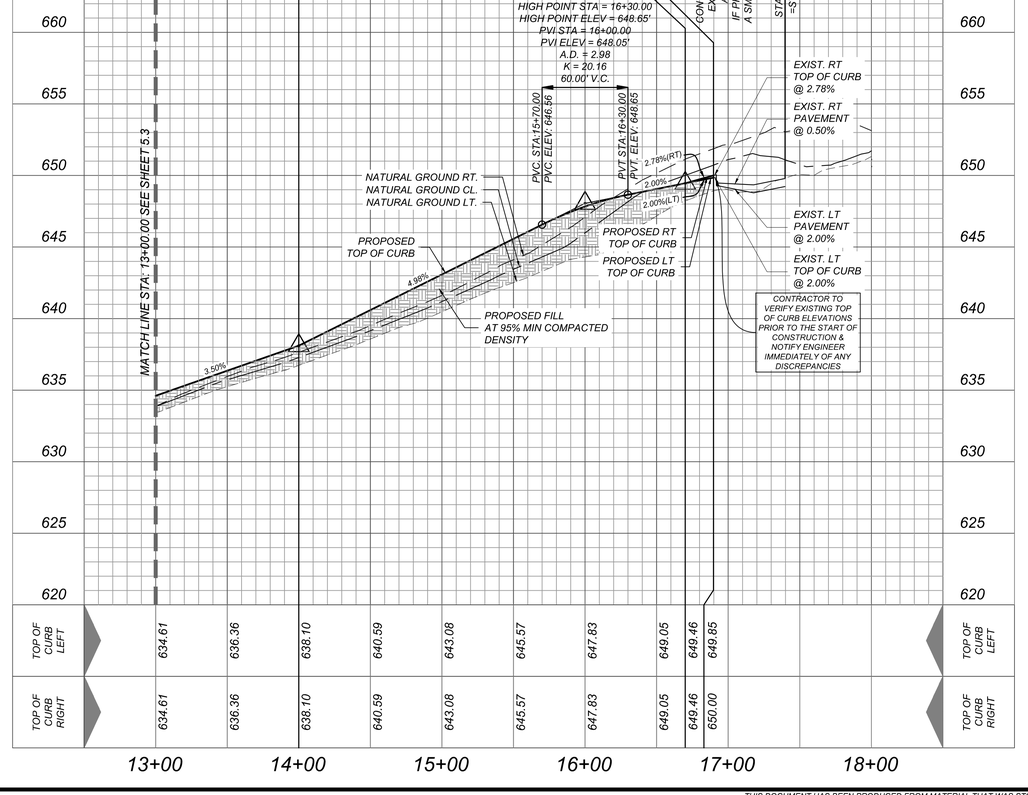

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TBPE Firm #: 9513 • TBPLS Firm #: 10122300

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ISSUE DATE

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139094
LICENSED
PROFESSIONAL ENGINEER
1/12/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS
CARMELITA STA. 13+00.00 - 16+89.68

PLAT NO.
22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER:
5.4

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Date: Jan 11, 2024, 5:02pm User ID: Sdespih
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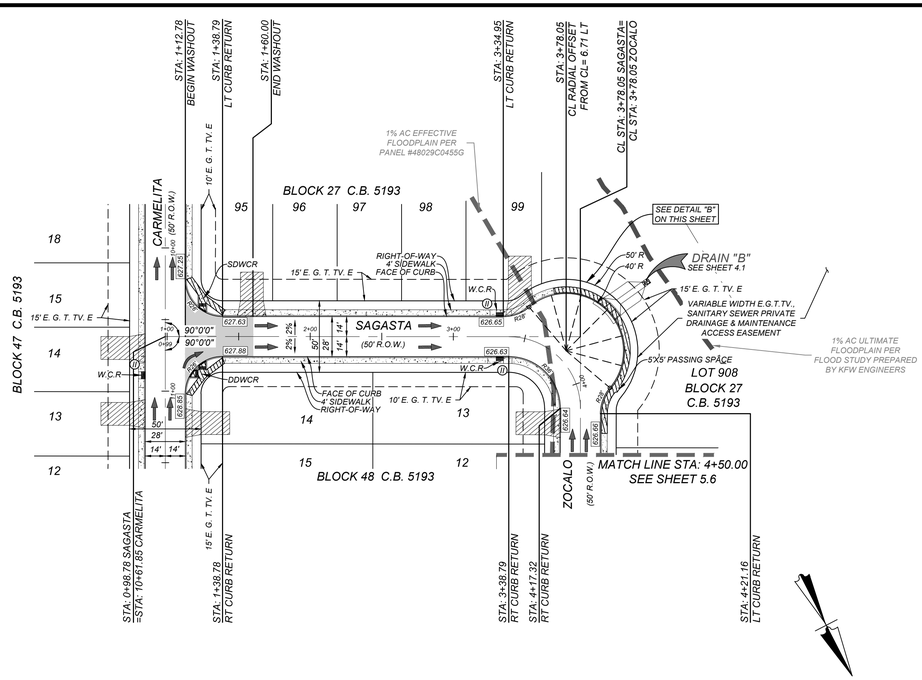

LEGEND

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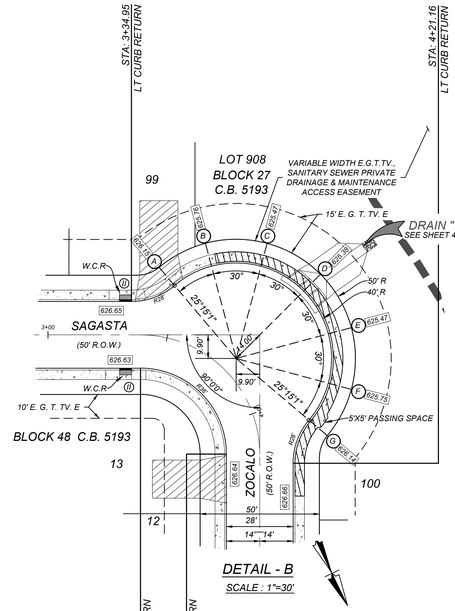

DETAIL - B
SCALE : 1"=30'

SAGASTA STA. 1+00.00 - 3+78.05

ZOCALO STA. 3+78.05 - 4+50.00

HORZ SCALE: 1"=50'
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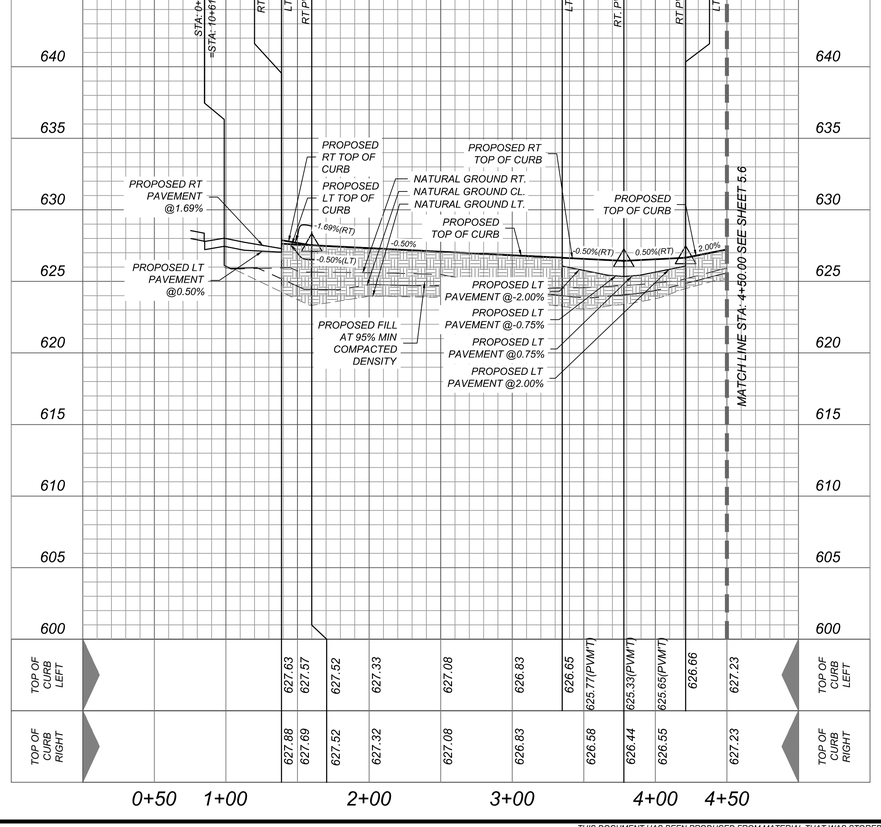

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PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER: 5.5

Date: Jan 11, 2024, 5:01pm User ID: Sasaph
File: L:\873\01\07\Design\Civil\STREETS\STP_873010?.dwg

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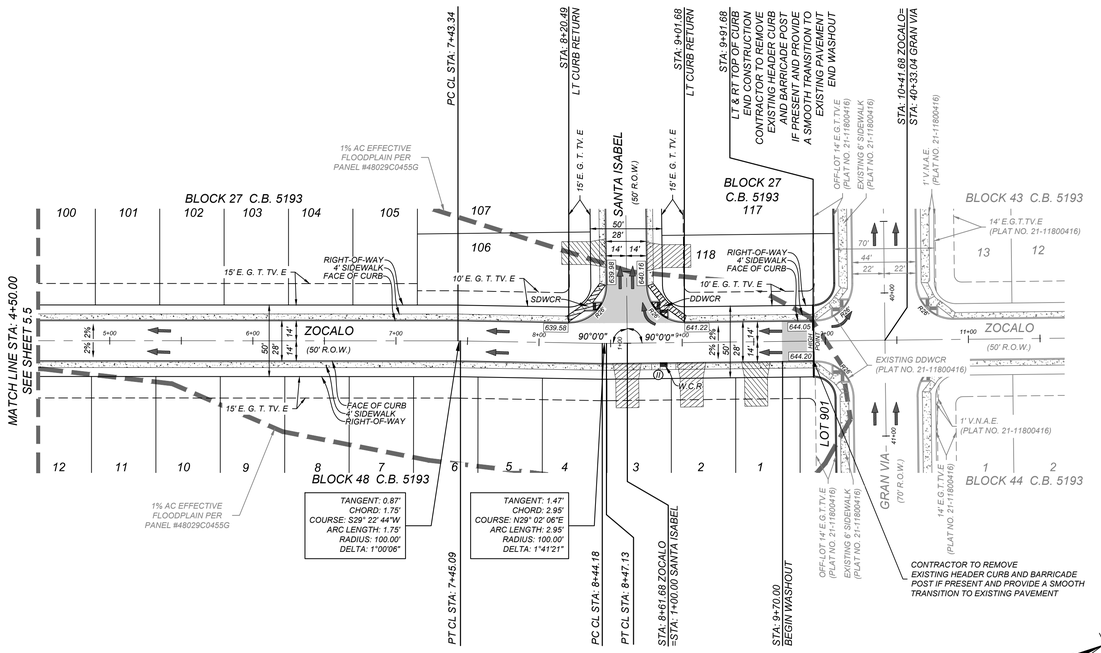

ZOCALO
STA. 4+50.00 - 9+91.68

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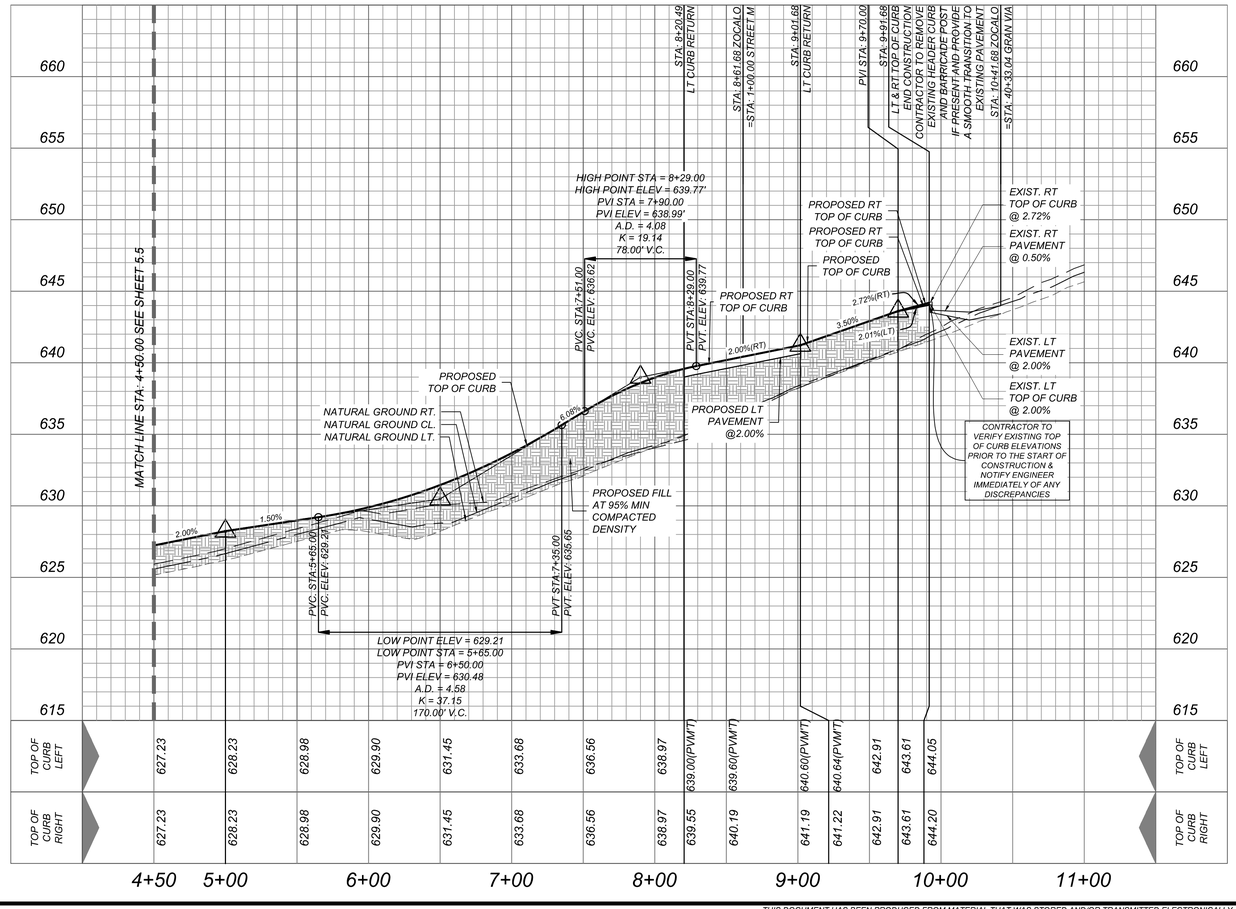

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PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER: 5.6

Date: Jan 31, 2024, 12:41pm User ID: jschnoorcas
File: L:\873\01\07\Design\Civil\SHEETS\SHPP_8720107.dwg

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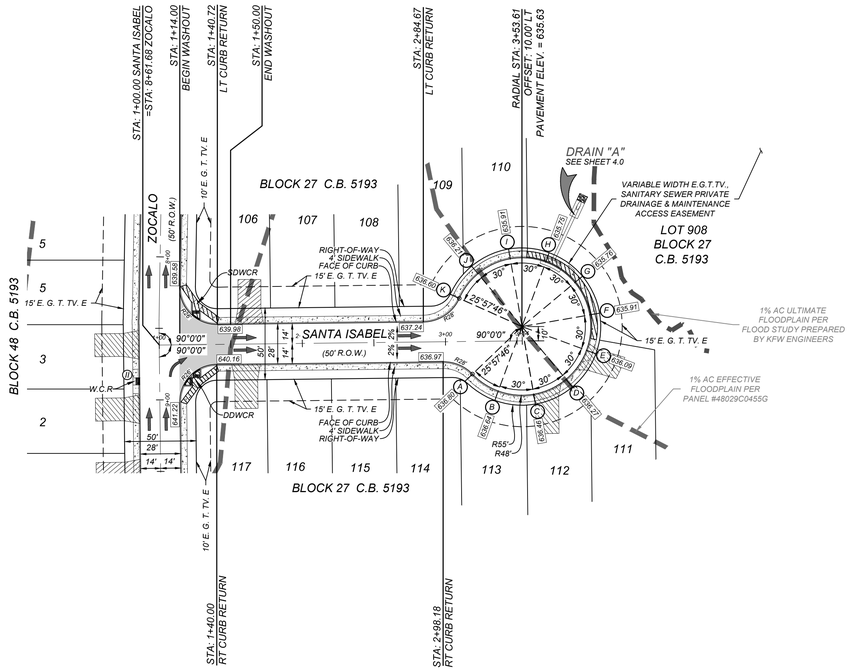
CAUTION!!:
THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

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.

BEXAR COUNTY R.O.W. NOTE

A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY R.O.W.

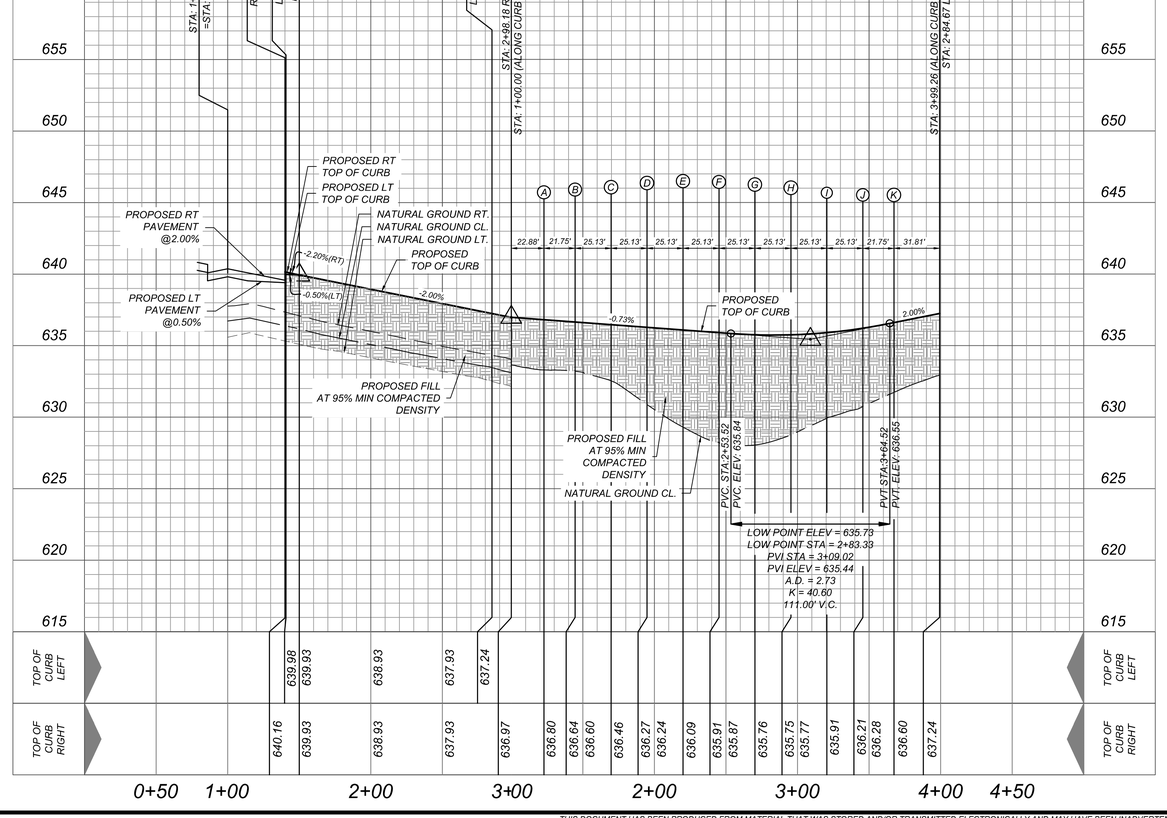


LEGEND

- = FLOW ARROW
- = WASHOUT CROWN
- E.G.T.TV.E. = ELECTRIC, GAS, TELEPHONE & CABLE EASEMENT
- V.N.A.E. = VEHICULAR NON-ACCESS EASEMENT
- W.C.R. = WHEELCHAIR RAMPS SEE SHEET 5.9
- (I) = WHEELCHAIR RAMP TYPE II SEE SHEET 5.9
- S.D.W.C.R. = SINGLE DIRECTIONAL WHEEL CHAIR RAMP SEE SHEET 5.9
- D.D.W.C.R. = DOUBLE DIRECTIONAL WHEEL CHAIR RAMP SEE SHEET 5.9
- = SIDEWALK TO BE CONSTRUCTED BY DEVELOPER
- = SIDEWALK TO BE BUILT AT THE TIME OF HOME CONSTRUCTION
- 732.87 = TOP OF CURB ELEVATIONS
- = PROPOSED DRIVEWAY LOCATIONS

SANTA ISABEL
STA. 1+00.00 - END

HORZ SCALE: 1"=50'
VERT SCALE: 1"=5'



KFW ENGINEERS + SURVEYING
3421 Paesanos Pkwy, Suite 200, San Antonio, TX 78231
Phone: (210) 979-8444 • Fax: (210) 979-8441
TBPE Firm # 9513 • TBPLS Firm # 10122300

ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED
PROFESSIONAL ENGINEER
2/14/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

SANTA ISABEL STA. 1+00.00 - END

PLAT NO.
22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER:
5.7

Date: Feb 09, 2024, 8:19am User ID: Slosseph
File: L:\873\01\07\Design\Civil\STREETS\STP#_873\01\07.dwg

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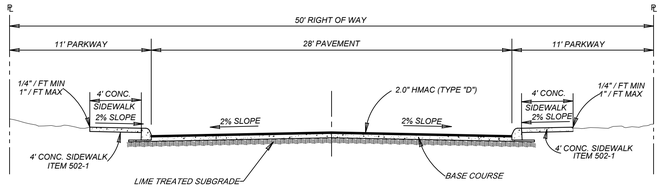
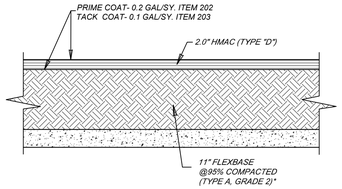


TYPICAL LOCAL "A" STREET SECTION

NOT TO SCALE

THYME PASS: STA. 17+05.22 - END
PUERTA DE SOL: STA. 2+41.15 -6+76.15
CARMELITA: STA. 6+76.15 - END
SAGASTA: STA. 1+00.00 -3+78.05
ZOCALO: STA. 3+78.05 -END
SANTA ISABEL: STA. 1+00.00 -END



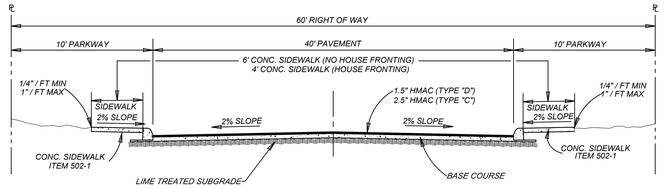
ASPHALT PAVEMENT DETAIL

NOT-TO-SCALE

DETAIL FOR ALL LOCAL TYPE A

FLEXIBLE PAVEMENT SYSTEM (DARK BROWN CLAY SUBGRADE)

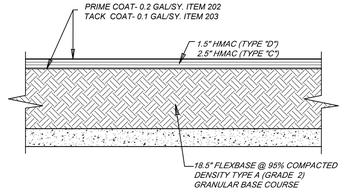
Pavement Section
2.0" HMAC (TYPE "D")
11" FLEXBASE COURSE (TYPE "A" GRADE 2)
6.0" LIME STABILIZED SUBGRADE (33.0 LBS/SY)
Total: 19"
Structural No: 2.90
C.B.R = 2.0



TYPICAL LOCAL "B" STREET SECTIONS

NOT TO SCALE

THYME PASS: STA. 15+79.27 - 17+05.22



ASPHALT PAVEMENT DETAIL

NOT-TO-SCALE

DETAIL FOR ALL LOCAL TYPE B

FLEXIBLE PAVEMENT SYSTEM (DARK BROWN CLAY SUBGRADE)

Pavement Section
1.5" HMAC (TYPE "D")
2.5" HMAC (TYPE "C")
18.5" FLEXBASE TYPE A (GRADE 2)
8" LIME TREATED SUBGRADE (44.0 LBS/SY)
Total: 30.5"
Structural No: 4.99
C.B.R = 2.0

NOTES:
1. PAVEMENT DESIGN THICKNESS BASED ON GEOTECHNICAL REPORT "SUBSURFACE EXPLORATION AND PAVEMENT ANALYSIS, PROPOSED NEW STREETS, ELIZONDO SUBDIVISION UNIT 4, SAN ANTONIO, TEXAS" BY INTEGRATED TESTING AND ENGINEERING COMPANY OF SAN ANTONIO (INTEC), PROJECT NO. S221271 DATED JUNE 21, 2022.

2. REFERENCE PROJECT GEOTECHNICAL REPORT AND PROJECT SPECIFICATION FOR ADDITIONAL REQUIREMENTS AND ALTERNATE PAVEMENT SECTIONS.

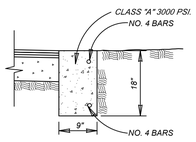
3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING MATERIAL TESTING. TESTING TO BE PAID BY OWNER.

4. CONTRACTOR MAY LEAVE VERTICAL CUT BANKS AT R.O.W. LINE AND MEDIANS PROVIDED PROJECT GEOTECHNICAL ENGINEER DETERMINES ROCK IS COMPETENT TO STAND ON ITS OWN.

*NOTE: LIME OR CEMENT CONTENT OF 7.5 PERCENT OF THE DRY WEIGHT OF THE SOIL TO BE STABILIZED SHOULD BE USED. SUBGRADE STABILIZATION SHALL BE APPLIED AT A RATE OF 33.0 LBS/S.Y. FOR 6" DEPTH OF STABILIZATION AND 44.0 LBS/S.Y. FOR 8" DEPTH OF STABILIZATION AS PER GEOTECHNICAL REPORT BY INTEC.

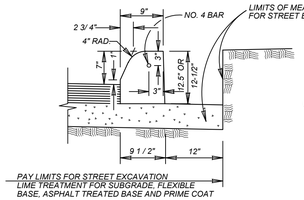
**NOTE: ASPHALT PAVEMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR CONSTRUCTION, ITEMS NO. 200, 202, 203, 204, AND 205 (PRIME COAT APPLIED AT A RATE NOT TO EXCEED 0.20 GAL/S.Y. AND TACK COAT APPLIED AT A RATE NOT TO EXCEED 0.10 GAL/S.Y.).

***NOTE: GEOTECHNICAL ENGINEER TO BE ON SITE TO MAKE FINAL SUBGRADE DETERMINATION. CHANGES TO THIS PAVEMENT DESIGN SHALL BE SUBMITTED TO COSA-DSD & BEXAR COUNTY PRIOR TO PLACEMENT OF BASE MATERIAL.



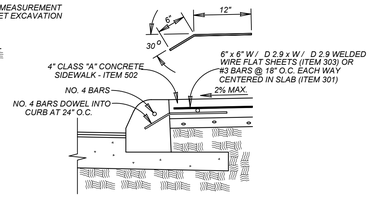
HEADER CURB

ITEM 500 ON SAND OR GRAVEL
NOT TO SCALE



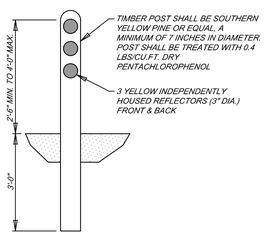
CONCRETE CURB

ITEM 500 ON FLEXIBLE BASE MATERIAL
NOT TO SCALE



CONCRETE SIDEWALK ABUTTING CURB SECTION

ITEM 502
NOT TO SCALE



TIMBER GUARD POST DETAIL

NOT-TO-SCALE

*NOTE: CONTRACTOR TO REFERENCE GEOTECH REPORT PREPARED BY INTEGRATED TESTING AND ENGINEERING COMPANY (INTEC) PROJECT NO. S221271 DATED JUNE 21, 2022

GENERAL NOTES:

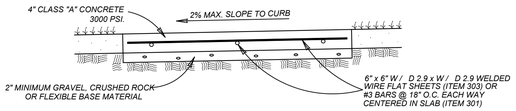
1. THE SUBGRADE SOILS SHOULD BE TESTED FOR SOLUBLE SULPHATE CONTENT PRIOR TO INSTALLATION OF THE LIME OR CEMENT.

FOR CONSTRUCTION VERIFICATION THE FOLLOWING SHALL BE CONDUCTED IN THE FIELD:

- AFTER INITIAL MIXING THE SOIL-LIME MIXTURE SHALL MELLOW FOR A PERIOD OF TWO TO THREE (2-3) DAYS. MAINTAIN MOISTURE DURING MELLOWING;
  - MINIMUM PASSING 1 ¾" SIEVE 100
  - MINIMUM PASSING ¾" SIEVE 95
  - MINIMUM PASSING NO. 4 SIEVE 60
- SAMPLE SOIL-LIME MIXTURE FOR DETERMINATION OF MAXIMUM DRY DENSITY (MDD). IN THE LABORATORY, MOLD SPECIMENS TO 95% OF MDD AT OPTIMUM MOISTURE CONTENT AND VERIFY UCS TO BE AT LEAST 160 PSI IN ACCORDANCE WITH PROCEDURE OUTLINED ABOVE FOR MIXTURE DESIGN.
- COMPACT AND CHECK FIELD DENSITY (MINIMUM OF 95% OF MDD REQUIRED);
- CURE FOR AN ADDITIONAL 2 TO 5 DAYS (TOTAL MELLOWING AND CURING TIME SHOULD TOTAL AT LEAST 5 DAYS).
- VERIFY DEPTH OF LIME STABILIZED LAYER TO DEPTH AS NOTED ON PLAN TO WITHIN +/- 1.0 INCH.

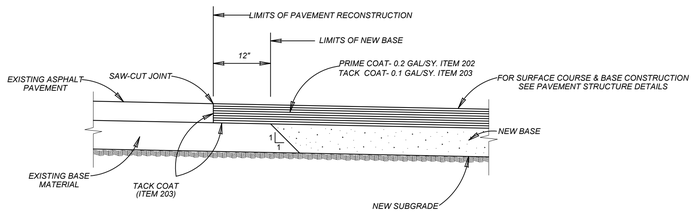
NOTES:

ANY FILL USED TO RAISE THE SUBGRADE:
- SHOULD NOT CONTAIN ANY DELETERIOUS MATERIAL.
- SHOULD HAVE A CBR VALUE OF 2.0 OR GREATER
- SHOULD NOT HAVE GRAVELS LARGER THAN 3 INCH IN SIZE
- SHOULD HAVE THE "LIME PERCENTAGE/APPLICATION RATE" RE-RUN PRIOR TO INSTALLATION
- PI SHOULD BE LESS THAN 60



CONCRETE SIDEWALK SECTION

ITEM 502
NOT TO SCALE



PAVEMENT JUNCTION DETAILS

NOT TO SCALE

KFW ENGINEERS + SURVEYING
3421 Paesanos Pkwy, Suite 200, San Antonio, TX 78231
Phone: 210.979.8444 • Fax: 210.979.8441
TBPE Firm # 8513 • TBPLS Firm # 10122300

REVISIONS | ISSUE DATE

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
2/1/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

STREET DETAIL SHEET

PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER: 5.8

Date: Jan 29, 2024, 3:37pm User ID: LMartinez
File: L:\873\01\07\Design\Civil\STREETS\STD\873x0107.dwg

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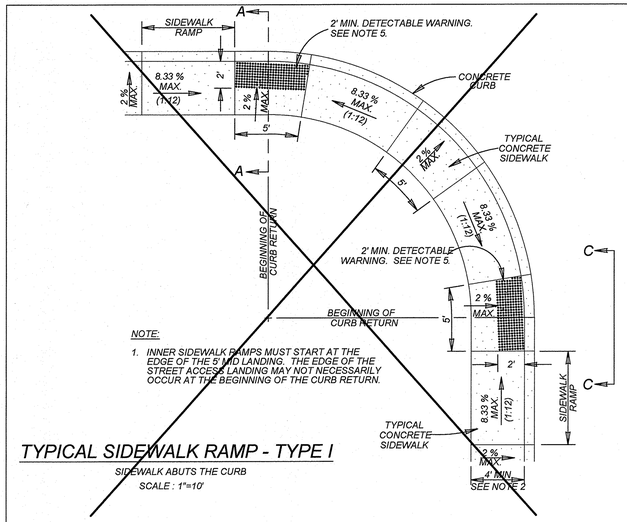


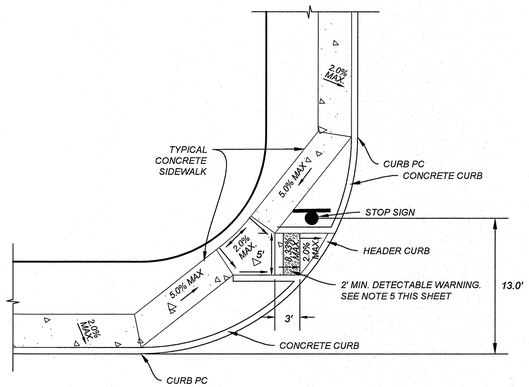
NOTE:

1. INNER SIDEWALK RAMPS MUST START AT THE EDGE OF THE 5' MID LANDING. THE EDGE OF THE STREET ACCESS LANDING MAY NOT NECESSARILY OCCUR AT THE BEGINNING OF THE CURB RETURN.

TYPICAL SIDEWALK RAMP - TYPE I

SIDEWALK ABUTS THE CURB

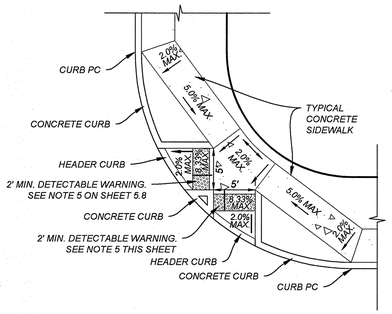
SCALE : 1"=10'



SINGLE DIRECTIONAL WHEEL CHAIR RAMP (SDWCR)

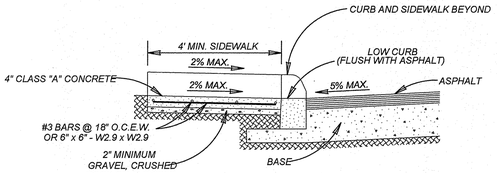
NOT TO SCALE

* REFERENCE TxDOT PEDESTRIAN DETAILS. SEE SHEET 5.10



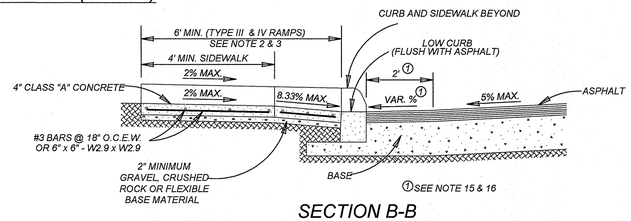
DOUBLE DIRECTIONAL WHEEL CHAIR RAMP (DDWCR)

NOT TO SCALE



SECTION A-A

SCALE : 1"=4'

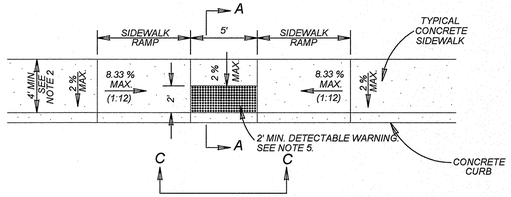


SECTION B-B

SCALE : 1"=4'

GENERAL NOTES

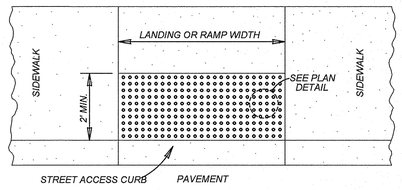
1. WHEN POSSIBLE SIDEWALKS SHOULD BE PLACED NEXT TO THE PROPERTY LINE, ALLOWING A MINIMUM OF 1 FOOT BUFFER. DEVIATION OF THE PATHWAY FROM A STRAIGHT LINE IS ENCOURAGED TO AVOID TREES OR OTHER OBSTRUCTIONS.
2. FOR LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 3' FROM THE BACK OF CURB.
3. FOR OTHER THAN LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4' AND SEPARATED A MINIMUM OF 3' FROM THE BACK OF CURB OR AS AN OPTION, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 6' WHEN LOCATED AT THE BACK OF CURB.
4. SIDEWALK RAMP LENGTHS PRESENTED IN TABLE 1 ARE GUIDELINES ONLY. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE.
5. ALL CURB-RAMPS OR LANDINGS ABUTTING THE CROSSWALK SHALL HAVE A DETECTABLE WARNING 24 INCHES DEEP (IN THE DIRECTION OF PEDESTRIAN TRAVEL) AND EXTENDING THE FULL WIDTH OF THE CURB RAMP OR LANDING. THE DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES, ALIGNED IN A GRID PATTERN WITH A DIAMETER OF A NOMINAL 0.9 INCHES (23 MM), A HEIGHT OF NOMINAL 0.2 INCHES (5 MM) AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES (60 MM). THE DETECTABLE WARNING SURFACE SHALL BE PAVERS CONFORMING TO TXDOT STANDARD PED-05, PEDESTRIAN FACILITIES.
6. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.
7. SIDEWALK RAMP TYPE V SHALL BE USED ONLY WHERE THERE IS SIGNIFICANT RESTRICTION WITHIN THE PARKWAY TO CONSTRUCT TYPE I OR TYPE III RAMPS.
8. CONSTRUCTION OF ALL WHEELCHAIR RAMPS TO BE INCLUDED UNDER ITEMS "500 - CONCRETE CURB, GUTTER, AND CONCRETE CURB AND GUTTER" AND / OR "502 - CONCRETE SIDEWALKS". RAMP SURFACE SHALL BE BRUSH FINISHED.
9. THESE DETAILS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS OF WHEELCHAIR RAMPS TO BE SHOWN ON CONSTRUCTION PLANS. CITY CONSTRUCTION INSPECTOR CAN ADJUST LOCATIONS FOR SAFETY OR UTILITY CLEARANCE.
10. SIDEWALKS LESS THAN 5 FEET IN WIDTH SHALL BE PROVIDED WITH A PASSING SPACE AT A MAXIMUM SPACING OF 200 FEET.
11. WHEELCHAIR RAMP SHALL BE CONSTRUCTED WITH 4" CLASS "A" CONCRETE AND 2" MINIMUM GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL.
12. REINFORCING STEEL SHALL BE #3 BARS AT 18" O.C.E.W. OR 6" x 6" - W2.9 x W2.9 WIRE MESH.
13. SIDEWALK GRADES SHALL NOT EXCEED THE GRADE ESTABLISHED FOR THE ADJACENT ROADWAY, ANY SIDEWALK CONSTRUCTION THAT DEVIATES FROM THE NATURAL GRADE OF THE ROADWAY TO CREATE A GRADE STEEPER THAN THE EXISTING ROADWAY WILL REQUIRE RAMPS, HANDRAILS AND RESTING PLATFORMS TO BE CONSTRUCTED IN ACCORDANCE WITH ADA AND TAS STANDARDS.
14. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2%. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
15. THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES SHALL BE LESS THAN 11%. THE CHANGE OF GRADE SHALL BE DEFINED AS THE ALGEBRAIC DIFFERENCE OF THE ADJACENT SURFACE SLOPES. IN THE CASE OF A STREET ACCESS RAMP DESIGNED AT THE 8.33% MAXIMUM SLOPE, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN 2.67% (I.E. 8.33-(-2.67)=11). IN ADDITION, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN OR EQUAL TO 5%.
16. IF THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 11%, A LEVELING STRIP, 2 FEET IN LENGTH, SHALL BE PROVIDED TO TRANSITION THE ADJACENT SURFACES.
17. ADA COMPLIANCE IN ALTERATIONS INCLUDE ONLY THAT WORK WITHIN THE LIMITS, BOUNDARIES OR SCOPE OF A PLANNED PROJECT.



TYPICAL SIDEWALK RAMP - TYPE II

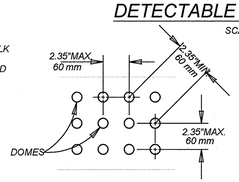
USED AT TEE INTERSECTIONS WHERE SIDEWALK ABUTS CURB

SCALE : 1"=10'



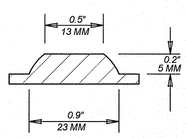
DETECTABLE WARNING SURFACE

SCALE : 1"=4'



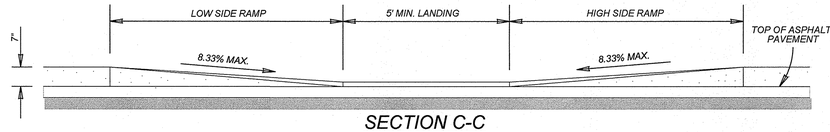
PLAN DETAIL

NO SCALE



DOME SECTION

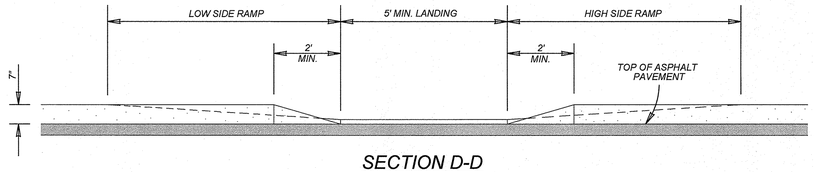
NO SCALE



SECTION C-C

CURB PROFILE WHERE SIDEWALK ABUTS CURB

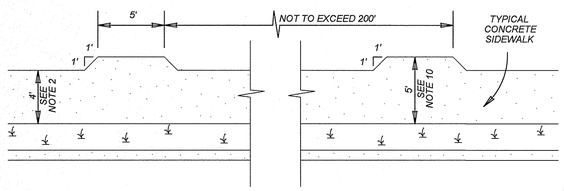
SCALE : 1"=4'



SECTION D-D

CURB PROFILE WHERE SIDEWALK IS SEPARATED FROM CURB

SCALE : 1"=4'



SIDEWALK PASSING SPACE

SCALE : 1"=10'

NOTE:

STAMPED CONCRETE TRUNCATED DOMES WILL NOT BE ALLOWED TO BE USED FOR DETECTABLE WARNING ON WHEELCHAIR RAMPS. CONTRACTOR MUST SUBMIT TRUNCATED DOME INFORMATION THAT IS TO BE USED ON WHEELCHAIR RAMPS TO THE PROJECT MANAGER FOR APPROVAL AT LEAST 30 DAYS PRIOR TO INSTALLATION.

TABLE 1 (SEE NOTE 4)

GUTTER SLOPE	SIDEWALK RAMP LENGTH (1:12)	
	LOW SIDE	HIGH SIDE
1%	5'-6"	7'-2"
2%	5'-0"	8'-4"
3%	4'-6"	10'-0"
4%	4'-2"	12'-6"
5%	3'-10"	16'-8"

WHEELCHAIR RAMP STANDARDS

KFW ENGINEERS + SURVEYING
3421 Paesanos Pkwy, Suite 200, San Antonio, TX 78231
Phone #: (210) 979-8444 Fax #: (210) 979-8441
TBPE Firm #: 8313 TBPLS Firm #: 10028300

ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
11/30/22

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

WHEEL CHAIR RAMP DETAIL SHEET

PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER: 5.9

Date: Nov 30, 2022, 1:11pm User ID: rhouse
File: L:\873\01\07\Design\Civil\STREETS\STD\873010707.dwg

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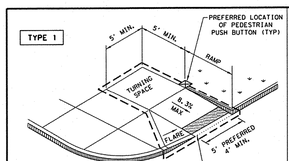
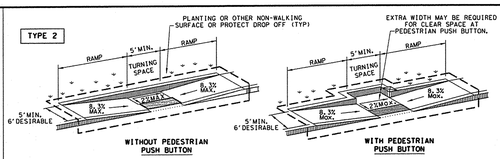
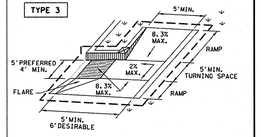
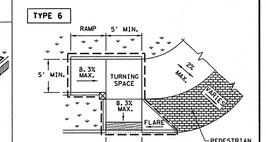


PERPENDICULAR CURB RAMP

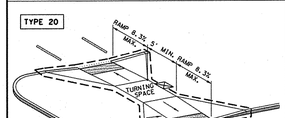


PARALLEL CURB RAMP

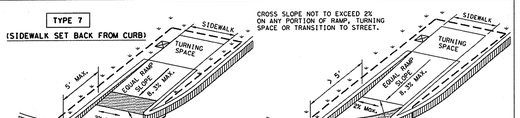


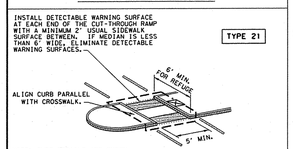


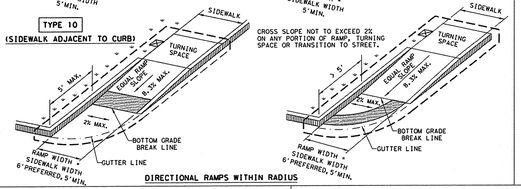
COMBINATION CURB RAMPS



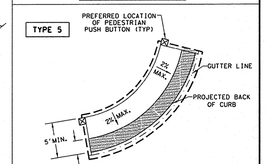
CURB RAMPS AT MEDIAN ISLANDS



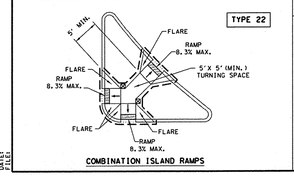




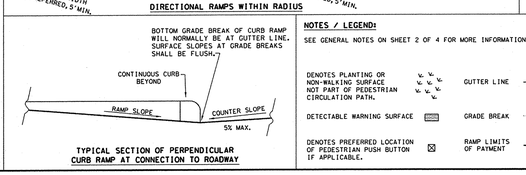
DIRECTIONAL RAMPS WITHIN RADIUS



BLENDED TRANSITION (FLUSH LANDING)



COMBINATION ISLAND RAMPS



TYPICAL SECTION OF PERPENDICULAR CURB RAMP AT CONNECTION TO ROADWAY

NOTES / LEGEND:

SEE GENERAL NOTES ON SHEET 2 OF 4 FOR MORE INFORMATION.

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.

DETECTABLE WARNING SURFACE

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.

GUTTER LINE

GRADE BREAK

RAMP LIMITS OF PAYMENT

SHEET 1 OF 4

Texas Department of Transportation | Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DW: TxDOT	CK: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT: 5617	SECT: JOB:		HIGHWAY
REVISIONS	DIST:	COUNTY:		SHEET NO.:

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DATE:
FILE:

GENERAL NOTES

CURB RAMPS

1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Cross slopes of 1.5% and lesser running should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
4. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5'x 5' passing areas at intervals not to exceed 200' are required.
5. Turning Spaces shall be 5'x 5' minimum. Cross slope shall be maximum 2%.
6. Clear space at the bottom of curb ramps shall be a minimum of 4'x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
8. Additional information on curb ramp location, design, light reflective value and texture may be found in the latest draft of the Proposed Guidelines for Pedestrian Facilities in the Public Right of Way (PROWAG) as published by the U.S. Architectural and Transportation Barriers Compliance Board (Access Board).
9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
10. Small channelization islands, which do not provide a minimum 5'x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.
12. Provide curb ramps to connect the pedestrian access route at each pedestrian street crossing. Handrails are not required on curb ramps.
13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".
14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
15. Furnish and install No. 3 reinforcing steel bars at 18" o.c. both ways, unless otherwise directed.
16. Provide a smooth transition where the curb ramps connect to the street.
17. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
18. Existing features that comply with applicable standards may remain in place unless otherwise shown on the plans.

DETECTABLE WARNING MATERIAL

19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to unpainted concrete, unless specified elsewhere in the plans.
20. Detectable Warning Materials must meet TxDOT Departmental Materials Specification DMS 4350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
21. Detectable warning surfaces must be firm, stable and slip resistant.
22. Detectable warning surfaces shall be a minimum of 24 inches in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
23. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb and neither end of that edge is greater than 5 feet from the back of curb. Detectable warning surfaces may be curved along the corner radius.
24. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.

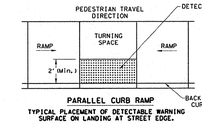
DETECTABLE WARNING PAVERS (IF USED)

25. Furnish detectable warning paver units meeting all requirements of ASTM C-936, C-33. Lay in a two by two unit basket weave pattern or as directed.
26. Lay full-size units first followed by closure units consisting of at least 25 percent (25%) of a full unit. Cut detectable warning paver units using a power saw.

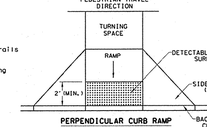
SIDEWALKS

27. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within unobstructed reach range specified in PROWAG section R406.
28. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
29. Street grades and cross slopes shall be as shown elsewhere in the plans.
30. Changes in level greater than 1/4 inch are not permitted.
31. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than five percent (5%) must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with PROWAG R409.
32. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
33. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".
34. Sidewalk details are shown elsewhere in the plans.

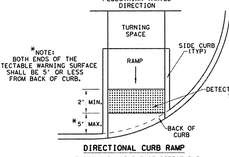
DETECTABLE WARNING SURFACE DETAILS



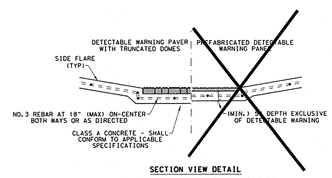
PARALLEL CURB RAMP
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING AT STREET EDGE.



PERPENDICULAR CURB RAMP
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.



DIRECTIONAL CURB RAMP
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.



SECTION VIEW DETAIL
CURB RAMP AT DETECTIBLE WARNINGS

SHEET 2 OF 4

Texas Department of Transportation | Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DW: TxDOT	CK: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT: 5617	SECT: JOB:		HIGHWAY
REVISIONS	DIST:	COUNTY:		SHEET NO.:

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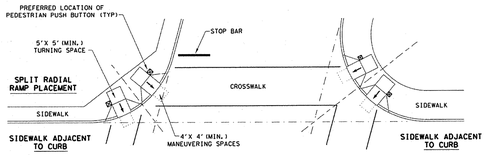
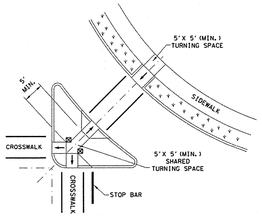
DATE:
FILE:

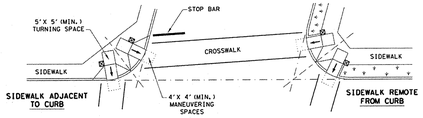
TYPICAL CROSSING LAYOUTS
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



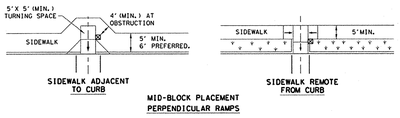
SKEWED INTERSECTION WITH "LARGE" RADIUS



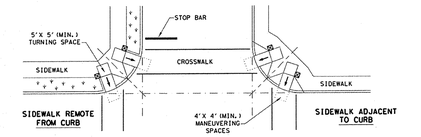
AT INTERSECTION
W/FREE RIGHT TURN & ISLAND



SKEWED INTERSECTION WITH "SMALL" RADIUS



MID-BLOCK PLACEMENT
PERPENDICULAR RAMPS



NORMAL INTERSECTION WITH "SMALL" RADIUS

LEGEND:

SHOWS DOWNWARD SLOPE.

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON (IF APPLICABLE).

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.

SHEET 4 OF 4

Texas Department of Transportation | Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DW: TxDOT	CK: VP	CK: KM	CK: PK & JG
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REVISIONS	DIST:	COUNTY:		SHEET NO.:

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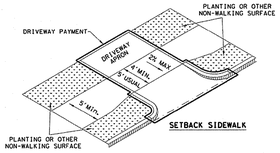
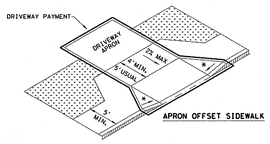
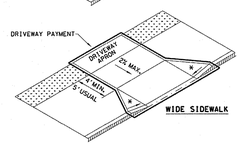
SIDEWALK TREATMENT AT DRIVEWAYS



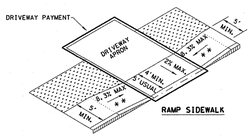
SETBACK SIDEWALK



APRON OFFSET SIDEWALK



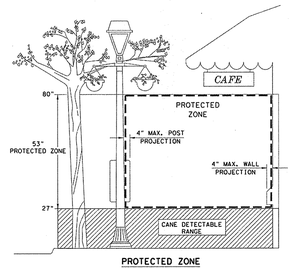
WIDE SIDEWALK



RAMP SIDEWALK

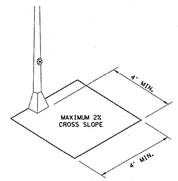
NOTES:
* WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.

* * IF CURB HEIGHT IS GREATER THAN 6 INCHES, USE GRADE LESS THAN OR EQUAL TO 5%. HANDRAIL AND DETECTABLE WARNING ARE NOT REQUIRED.

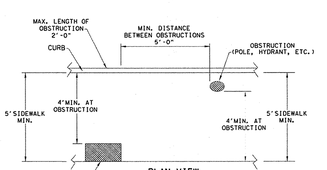


PROTECTED ZONE

NOTE: IN PEDESTRIAN CIRCULATION AREA, MAXIMUM 4" PROJECTION FOR POST OR WALL MOUNTED OBJECTS BETWEEN 27" AND 80" ABOVE THE SURFACE.

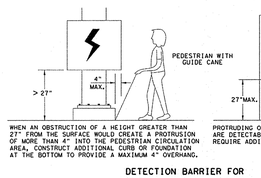


CLEAR SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



PLAN VIEW
PLACEMENT OF STREET FIXTURES

NOTE: ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' X 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.



WHEN AN OBSTRUCTION OF A HEIGHT GREATER THAN 27" FROM THE SURFACE WOULD CREATE A PROTRUSION OF MORE THAN 4" INTO THE PEDESTRIAN CIRCULATION AREA, CONSTRUCT ADDITIONAL CURB OR FOUNDATION AT THE BOTTOM TO PROVIDE A MAXIMUM 4" OVERHANG.

PROTRUDING OBJECTS OF A HEIGHT ≤ 27" ARE DETECTABLE BY CANE AND DO NOT REQUIRE ADDITIONAL TREATMENT.

DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"

SHEET 3 OF 4

Texas Department of Transportation | Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DW: TxDOT	CK: VP	CK: KM	CK: PK & JG
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REVISIONS	DIST:	COUNTY:		SHEET NO.:

KFW ENGINEERS + SURVEYING
3421 Pleasanton Pkwy, Suite 200, San Antonio, TX 78231
Phone #: (210) 979-8444 • Fax #: (210) 979-8441
TBPE Firm #: 9513 • TBPLS Firm #: 10123300

ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
10/17/22

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

MISCELLANEOUS DETAIL SHEET

PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER:

5.10

Date: Oct. 17, 2022, 10:47am User ID: rsoldano
File: L:\873\01\07\Design Civil\STREETS\STD873O107.dwg

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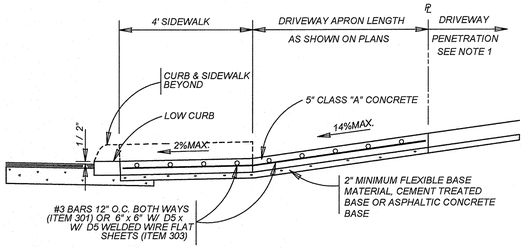
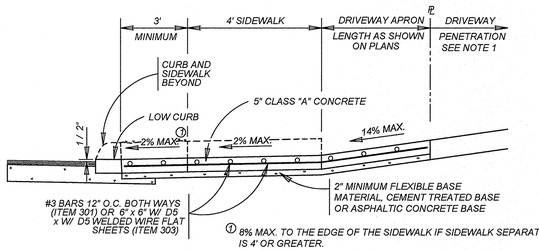


TYPICAL RESIDENTIAL DRIVEWAY SECTION

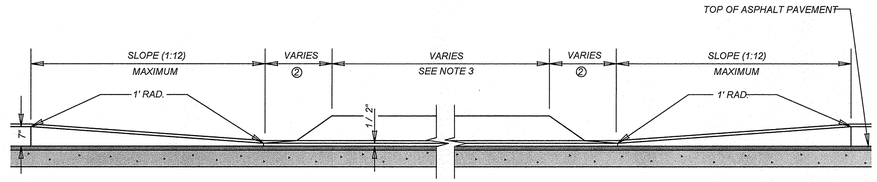
WITH SIDEWALK ABUTTING CURB
ITEM 503.1



① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

TYPICAL RESIDENTIAL DRIVEWAY SECTION

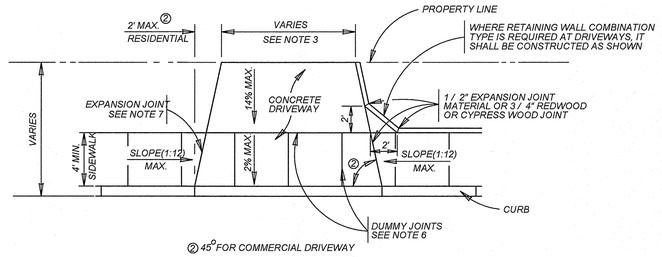
WITH SIDEWALK SEPARATED FROM CURB
ITEM 503.1



② RESIDENTIAL : 2' MAXIMUM; COMMERCIAL: SEE PLAN VIEW

CURB PROFILE AT DRIVEWAY

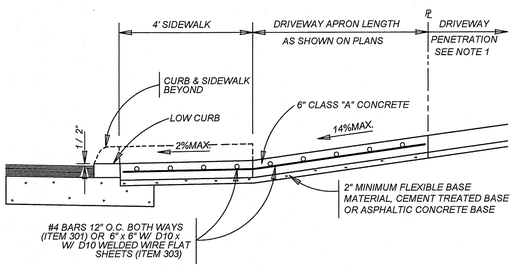
WITH SIDEWALK ABUTTING CURB



② 45° FOR COMMERCIAL DRIVEWAY

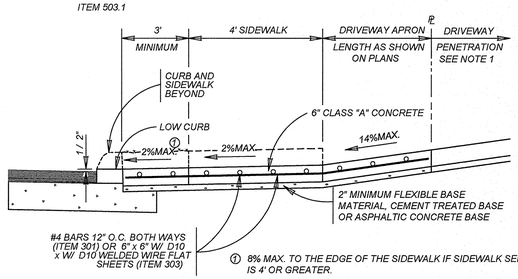
TYPICAL DRIVEWAY PLAN VIEW

WITH SIDEWALK ABUTTING CURB



TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB
ITEM 503.2



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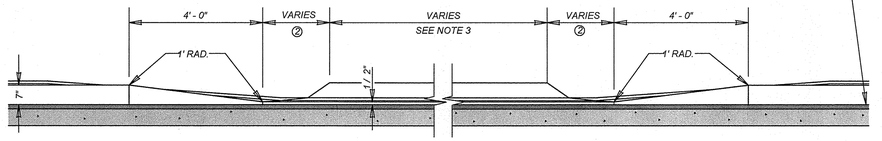
TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK SEPARATED FROM CURB
ITEM 503.2



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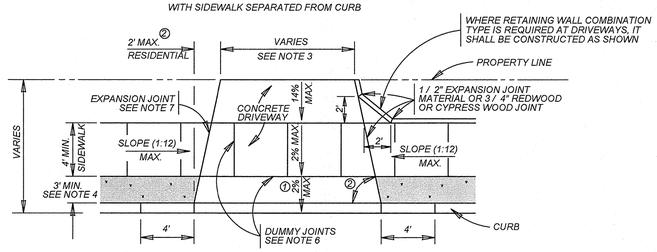
CURB PROFILE AT DRIVEWAY

WITH SIDEWALK SEPARATED FROM CURB



① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

② 45° FOR COMMERCIAL DRIVEWAY

TYPICAL DRIVEWAY PLAN VIEW

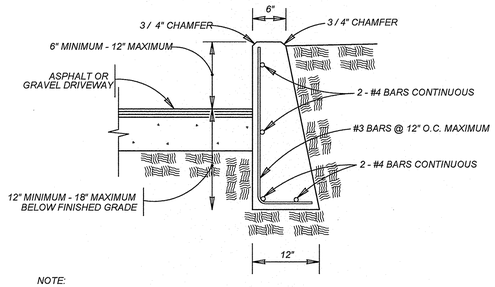
WITH SIDEWALK SEPARATED FROM CURB

CONCRETE DRIVEWAY NOTES

1. DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE. THIS PORTION OF THE DRIVEWAY SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS AS MAY APPLY:
   A.) CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503.1 OR 503.2.
   B.) ASPHALTIC CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503.4 AND SHALL INCLUDE A MINIMUM OF 1" ASPHALT TYPE 'D' & 6" FLEXIBLE BASE
   C.) GRAVEL DRIVEWAY PAID FOR UNDER ITEM NO. 503.5 AND SHALL INCLUDE A MINIMUM OF 6" FLEXIBLE BASE
2. 7" MINIMUM HEIGHT WILL NOT NECESSARILY OCCUR AT THE PROPERTY LINE. IT MAY OCCUR WITHIN THE RIGHT OF WAY OR WITHIN THE DRIVEWAY PENETRATION ON PRIVATE PROPERTY.
3. THE PROPOSED DRIVEWAY SHOULD MATCH THE EXISTING WIDTH AT THE PROPERTY LINE BUT UNLESS AUTHORIZED BY THE CITY TRAFFIC ENGINEER, THE WIDTH SHALL BE WITHIN THE FOLLOWING VALUES:

TYPE	MINIMUM	MAXIMUM
RESIDENTIAL	10'	20'
COMMERCIAL - ONE WAY	12'	20'
COMMERCIAL - TWO WAY	24'	30'

4. FOR LOCAL TYPE "A" STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 3' FROM THE BACK OF CURB.
5. FOR OTHER THAN LOCAL TYPE "A" STREETS, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND SEPARATED A MINIMUM OF 3' FROM THE BACK OF CURB OR, AS AN OPTION, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 6' WHEN LOCATED AT THE BACK OF CURB.
6. DUMMY JOINTS PARALLEL TO THE CURB SHALL BE PLACED WHERE THE SIDEWALK MEETS THE DRIVEWAY. DUMMY JOINTS PERPENDICULAR TO THE CURB, AND WITHIN THE BOUNDARIES OF THE PARALLEL DUMMY JOINTS, SHALL BE PLACED AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK.
7. A MINIMUM OF TWO ROUND AND SMOOTH DOWEL BARS 3/8" IN DIAMETER AND 18" IN LENGTH SHALL BE SPACED 18" APART AT EACH EXPANSION JOINT.
8. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE. WHERE SIDEWALKS CROSS DRIVEWAYS, SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.
9. SIDEWALK RAMP SURFACE SHALL BE BRUSH FINISHED.



NOTE:
1. COST OF REINFORCEMENT TO BE INCLUDED IN UNIT COST OF ITEM 307.1.
2. CONCRETE RETAINING WALL COMBINATION TYPE SHALL BE USED FOR CONCRETE DRIVEWAYS.

DRIVEWAY - CONCRETE RETAINING WALL

ON COMPACTED SUBGRADE
ITEM 307.1

MAY 2009

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

CONCRETE DRIVEWAY STANDARDS

_____% SUBMITTAL	PROJECT NO.:_____	DATE:_____
DRWN. BY: V. VASQUEZ	DSGN. BY:_____	CHKD. BY: R.S. HOSSEINI, P.E.	SHEET NO.:____OF____

KFW ENGINEERS + SURVEYING
3421 Paesanos Pkwy, Suite 200, San Antonio, TX 78231
Phone #: (210) 979-8444 • Fax #: (210) 979-8441
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
10/17/22

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

MISCELLANEOUS DETAIL SHEET

PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER: 5.11

Date: Oct 17, 2022, 10:47am User ID: raddona
File: L:\873\01\07\Design\Civil\STREETS\STD787530107.dwg

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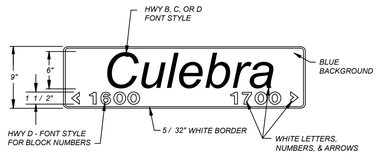
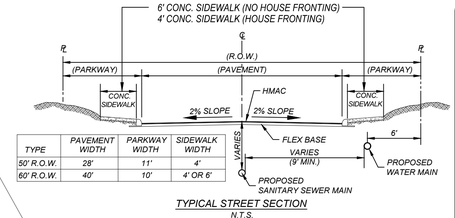
TRENCH EXCAVATION SAFETY PROTECTION

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.

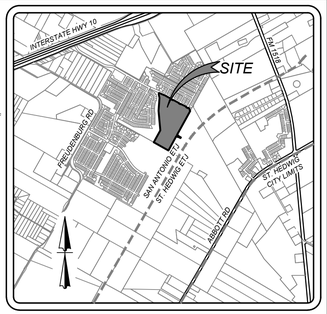


9" STREET NAME SIGN



TYPE	PAVEMENT WIDTH	PARKWAY WIDTH	SIDEWALK WIDTH
50' R.O.W.	28'	11'	4'
60' R.O.W.	40'	10'	4' OR 6'

TYPICAL STREET SECTION
N.T.S.

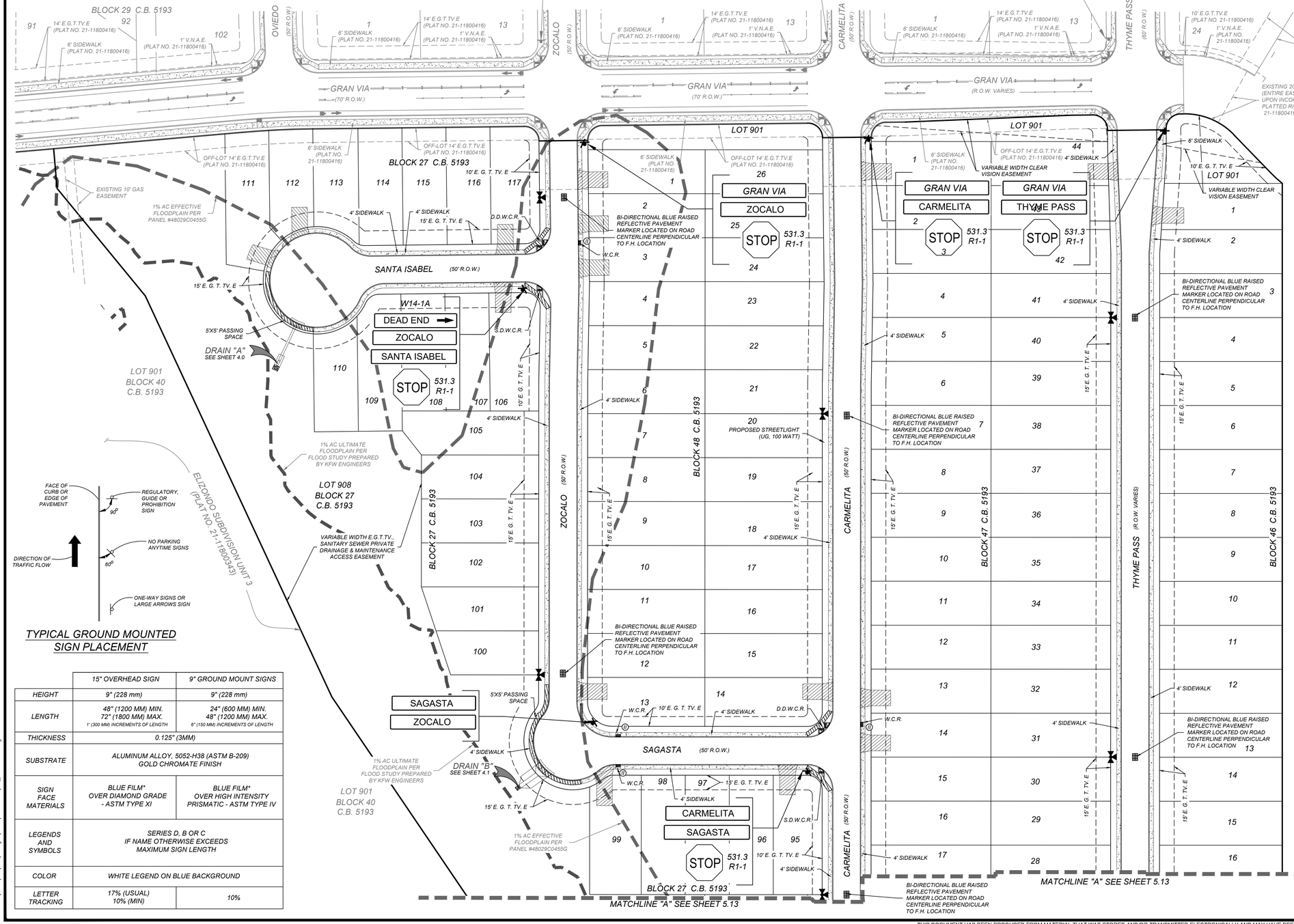


LOCATION MAP
N.T.S

BEXAR COUNTY R.O.W. NOTE

A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY R.O.W.

SCALE : 1" = 50'
0' 50' 150'
100'



LEGEND

- = FLOW ARROW
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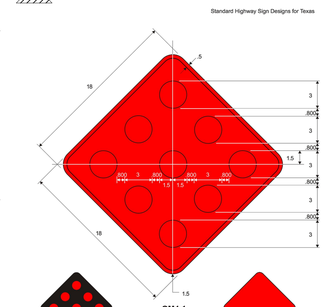

TYPICAL GROUND MOUNTED SIGN PLACEMENT

	15" OVERHEAD SIGN	9" GROUND MOUNT SIGNS
HEIGHT	9" (228 mm)	9" (228 mm)
LENGTH	48" (1200 MM) MIN. 72" (1800 MM) MAX. 1' (300 MM) INCREMENTS OF LENGTH	24" (600 MM) MIN. 48" (1200 MM) MAX. 6" (150 MM) INCREMENTS OF LENGTH
THICKNESS	0.125" (3MM)	
SUBSTRATE	ALUMINUM ALLOY, 5052-H38 (ASTM B-209) GOLD CHROMATE FINISH	
SIGN FACE MATERIALS	BLUE FILM* OVER DIAMOND GRADE - ASTM TYPE XI	BLUE FILM* OVER HIGH INTENSITY PRISMATIC - ASTM TYPE IV
LEGENDS AND SYMBOLS	SERIES D, B OR C IF NAME OTHERWISE EXCEEDS MAXIMUM SIGN LENGTH	
COLOR	WHITE LEGEND ON BLUE BACKGROUND	
LETTER TRACKING	17% (USUAL) 10% (MIN)	10%

NOTES:
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Phone: (210) 979-8444 • Fax: (210) 979-8441
TBPE Firm # 8513 • TBPLS Firm # 10122300

ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
2/14/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

TRAFFIC SIGNAGE AND SIDEWALK PLAN

PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER: 5.12

Date: Feb 08, 2024, 4:33pm User ID: Sdesph
File: L:\873\01\07\Design\Civil\SHEETS\CS_873010707.dwg

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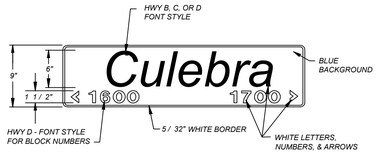
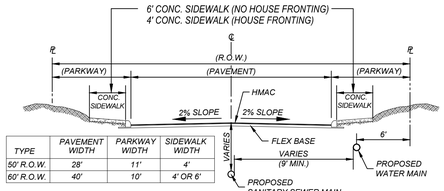


9" STREET NAME SIGN



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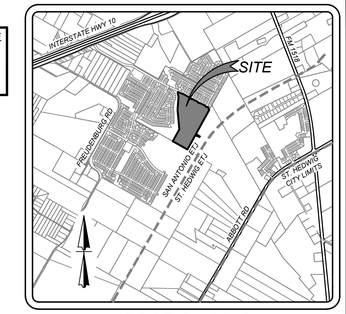

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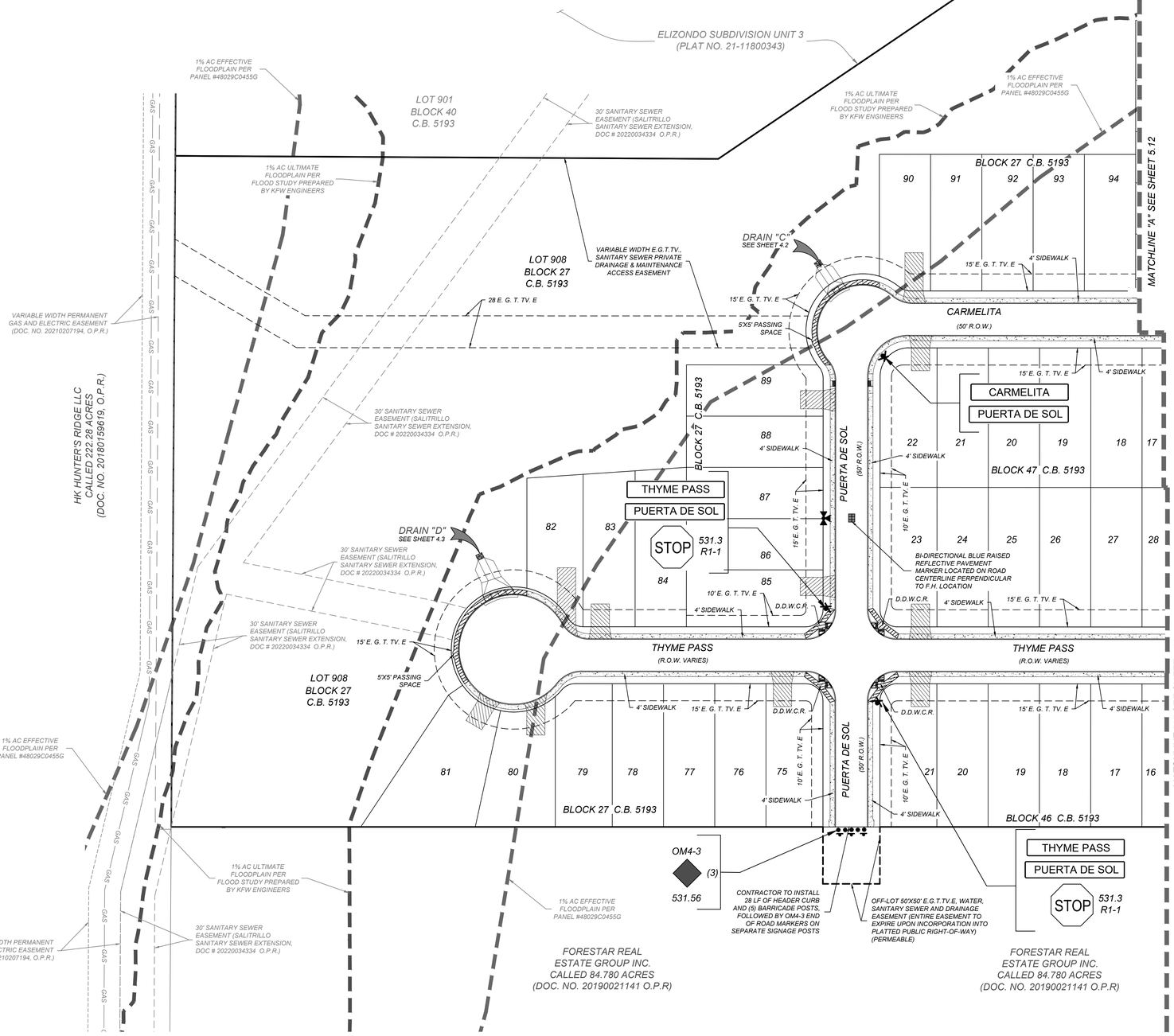
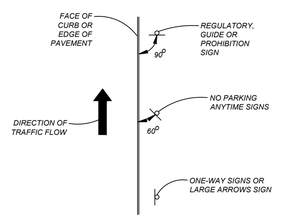
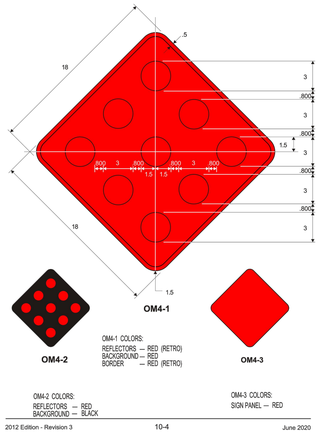




TYPICAL GROUND MOUNTED SIGN PLACEMENT

Standard Highway Sign Designs for Texas



2012 Edition - Revision 3 10-4 June 2020

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TRAFFIC SIGNAGE AND SIDEWALK PLAN

PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER: 5.13

Date: Feb 14, 2024, 3:34pm User ID: jrichiecarlos
File: L:\873\01\07\Design Civil\SHEETS\5.13_873010707.dwg

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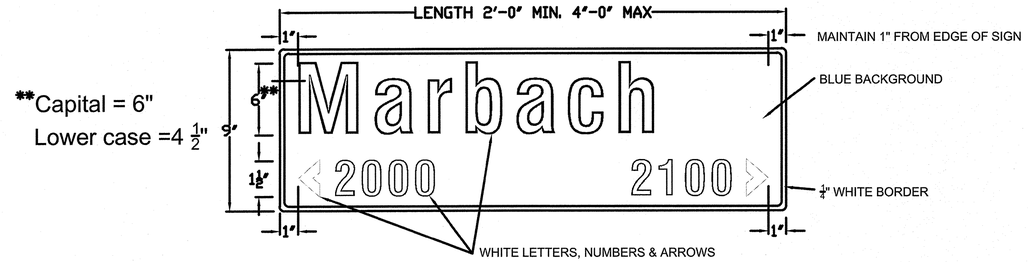
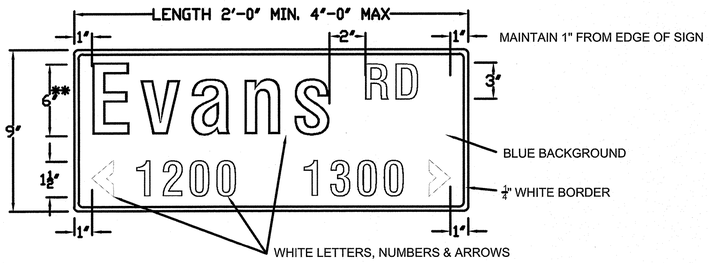
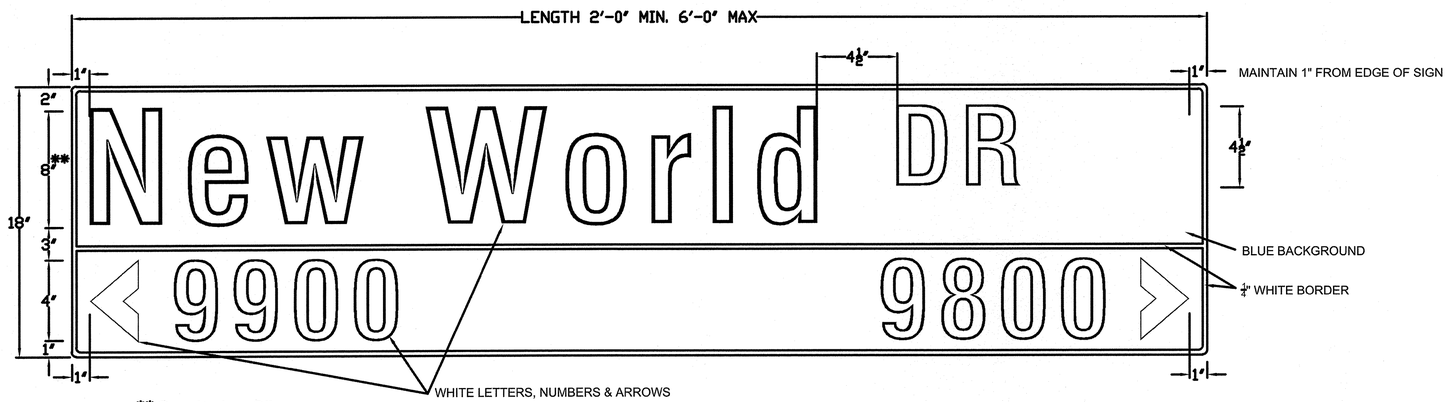


9" GROUND MOUNT STREET NAME SIGNS



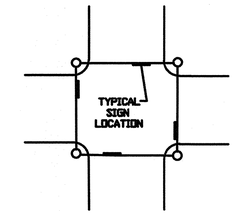
9" GROUND MOUNT STREET NAME SIGNS
WITH STREET DESIGNATION



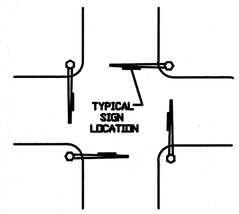
18" OVERHEAD STREET NAME SIGNS

	18" OVERHEAD SIGN	9" GROUND MOUNT SIGNS
HEIGHT	18" (381 mm)	9" (228 mm)
LENGTH	48" (1200 mm) MIN. 72" (1800 mm) MAX. 1' (300mm) INCREMENTS OF LENGTH	24" (600 mm) MIN. 48" (1200 mm) MAX. 6" (150mm) INCREMENTS OF LENGTH
THICKNESS	0.125" (3 mm)	
SUBSTRATE	ALUMINUM ALLOY, 5052-H38 (ASTM B-209 GOLD CHROMATE FINISH	
SIGN FACE MATERIALS	BLUE FILM ✳ OVER DIAMOND GRADE - ASTM Type XI Non-Fluorescent	BLUE FILM ✳ OVER HIGH INTENSITY PRISMATIC- ASTM Type IV
LEGENDS AND SYMBOLS	SERIES D, B OR C IF NAME OTHERWISE EXCEEDS MAXIMUM SIGN LENGTH	
COLOR	WHITE LEGEND ON BLUE BACKGROUND	
LETTER TRACKING	17% (USUAL) 10% (MIN.)	10%

✳ ACRYLIC ELECTRONIC CUTTABLE FILM



SPAN WIRE INSTALLATION



MAST ARM INSTALLATION

SIGN FACE MATERIALS
SHALL CONFORM TO:

1. STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS & BRIDGES ON FEDERAL HIGHWAY PROJECTS - FP-03 U.S. CUSTOMARY UNITS SECTION 718
2. GENERAL SERVICES ADMINISTRATION FEDERAL SPECIFICATIONS L-S-300C
3. ASTM D 4956 - 09ε1

Bexar County Public Works

Street Name Sign Details

DESIGN BY: | DRAWN BY:
CHECKED BY: | DATE:
FILE NO.:
SHEET 1

KFW
ENGINEERS + SURVEYING
3421 Paesanos Pkwy, Suite 200, San Antonio, TX 78231
Phone #: (210) 979-8444 • Fax #: (210) 979-8441
TBPE Firm #: 3613 • TBPLS Firm #: 10122300

ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
10/11/22

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

TRAFFIC SIGNAGE DETAIL SHEET

PLAT NO.
22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER:
5.14

Date: Oct 17, 2022, 10:48am User ID: rsaldana
File: L:\873\01\07\design\Civil\STREETS\TSD18730107.dwg

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SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

SM RD SGN ASSM TY XXXXX(X)XX(X-XXXX)

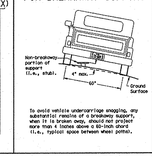
Post Type
- FRP = Fiberglass Reinforced Fiberlite Pipe (see SMD(FRP))
- TWT = Thin-Walled Tubing (see SMD(TWT))
- 10GWG = 10 GWG Tubing (see SMD(SLIP-1) to (SLIP-3))
- SDB = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

Anchor Type
- UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))
- UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))
- BS = Wedge Anchor Steel - (see SMD(TWT))
- BA = Wedge Anchor Galvanized - (see SMD(TWT))
- SA = Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))
- SB = Slipbase - Bolted Down (see SMD(SLIP-1) to (SLIP-3))

Sign Mounting Designation
- P = Prefab. "Field" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))
- F = Prefab. "F" (see SMD(SLIP-1) to (SLIP-3), (TWT))
- U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))
- T = Prefab. "T"
- (12) or (22) = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
- BW = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
- BC = 1:12 W/F Wing Channel (see SMD(SLIP-1) to (SLIP-3))
- EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

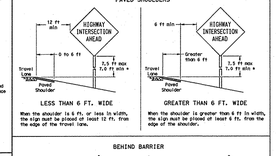
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, such as a length of shaft projecting more than 4 inches above a 30-inch shorty (i.e., typical space between wheel potter.

SIGN LOCATION

PAVED SHOULDERS



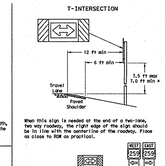
LESS THAN 6 FT. WIDE

When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.

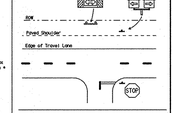
GREATER THAN 6 FT. WIDE

When the shoulder is greater than 6 ft to width, the sign must be placed at least 6 ft. from the edge of the shoulder.

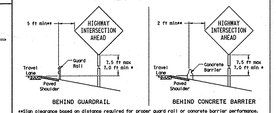
T-INTERSECTION



When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.



BEHIND BARRIER



BEHIND GUARDRAIL

BEHIND CONCRETE BARRIER

•sign clearance based on distance required for proper guard rail or concrete barrier performance.

- Signs shall be mounted using the following condition that results in the greatest sign elevation:
  (1) a minimum of 7 ft + inches of 7.5 feet above the edge of the travel lane or
  (2) a minimum of 7 ft + inches of 7.5 feet above the grade on the base of the support when sign is installed on the backslope.

  The maximum values may be increased when directed by the Engineer.

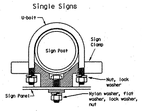
  See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Sign Components and Wedge Anchor System components.

  The website address is: http://www.txdot.gov/publications/trafficlis.htm

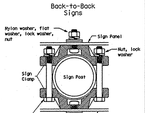
*** Post may be shorter if protected by guardrail or if Engineer determines the ground will not be hit due to extreme slope.

TYPICAL SIGN ATTACHMENT DETAIL

Single Signs



Back-to-Back Signs



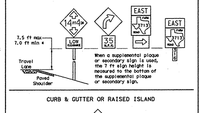
Bolts used to mount sign panels to the clamps are 5/16-18 UNC galvanized square head with nut. Bolt length is 1 inch for aluminum.

When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and hellical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. These lengths may have to be adjusted depending upon field conditions.

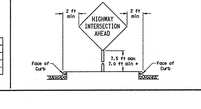
Sign clamps may be either the specific size clamp or the universal clamp.

Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES

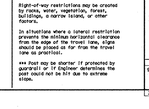


CURB & GUTTER OR RAISED ISLAND



RESTRICTED RIGHT-OF-WAY

(When 6 ft min. is not possible.)



Right-of-way restrictions may be created by rocks, water, vegetation, fences, buildings, a narrow island, or other factors.

In situations where a general restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs may be placed as far back as four from the travel lane as practical.

Texas Department of Transportation
Traffic Operations Division

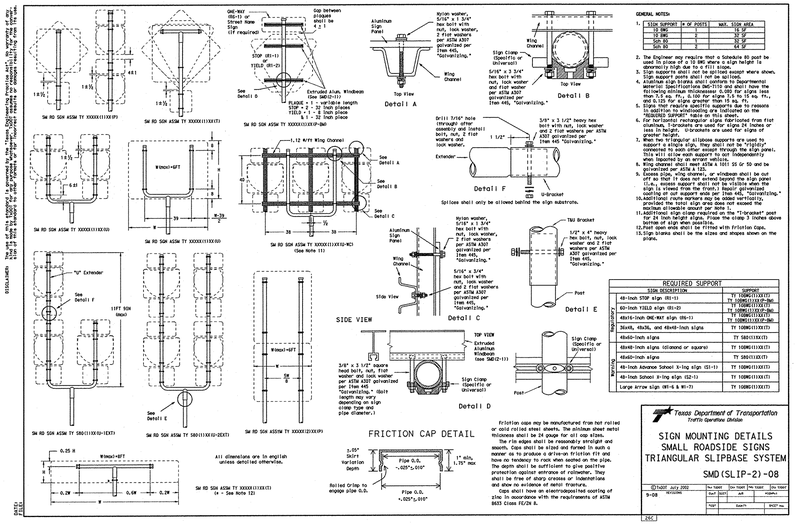
SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

SMD(GEN)-08

©TxDOT June 2002	No. Sheets	Dist. Sheets	Dist. Count	Proj. Sheets	Proj. Count
9-08 REVISIONS	Dist.	DIST	AR	HIGHWAY	
	FED.RD. DIV. NO.	STATE	DISTRICT	CONTROL	SECT. NO.

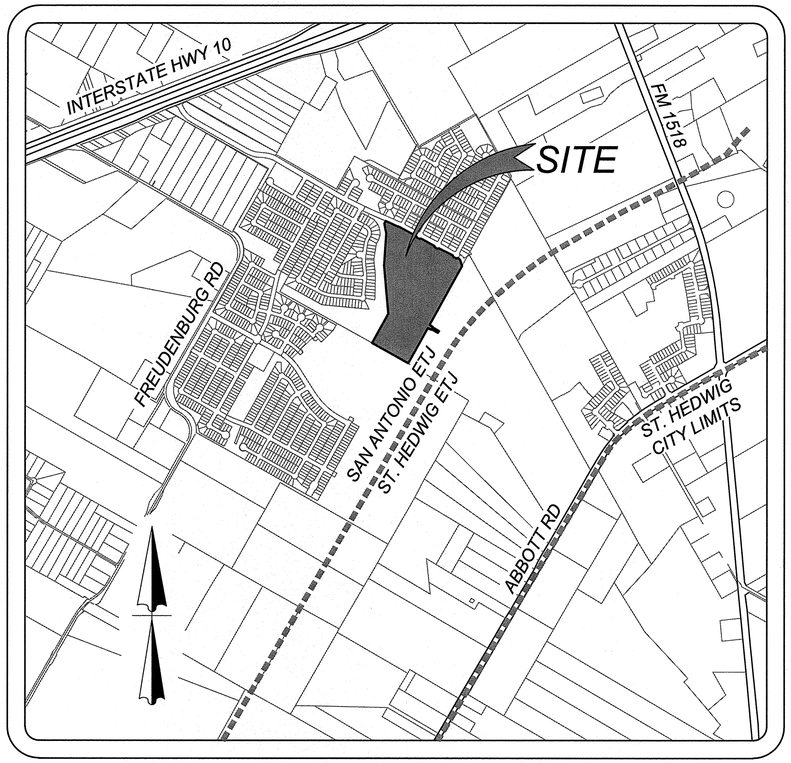
254

The use of this STANDARD is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by the Texas Department of Transportation for any purpose whatsoever. The Texas Department of Transportation assumes no responsibility for the use of this STANDARD UNLESS used in accordance with the provisions of the TRAFFIC OPERATIONS DIVISION STANDARD OFFICE MANUAL.



ELIZONDO SUBDIVISION, UNIT 4

BEXAR COUNTY, TEXAS
SANITARY SEWER IMPROVEMENTS



LOCATION MAP
N.T.S

INDEX

DESCRIPTION	
SANITARY SEWER COVER SHEET	6.0
SANITARY SEWER GENERAL NOTES	6.1
OVERALL SANITARY SEWER PLAN	6.2
OVERALL SANITARY SEWER PLAN	6.3
SEWER LINE T STA. 1+00.00 - STA. 7+50.00	6.4
SEWER LINE T STA. 7+50.00 - END	6.5
SEWER LINE U STA. 1+00.00 - END	6.6
SEWER LINE X STA. 1+00.00 - END	6.7
SANITARY SEWER DETAIL SHEET	6.8

OWNER/DEVELOPER:
FORESTAR (USA) REAL ESTATE GROUP INC.
10700 PECAN PARK BLVD, SUITE 150
AUSTIN, TEXAS 78750
PHONE: (713) 457-1690

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED
PROFESSIONAL ENGINEER
10/7/22

SAN ANTONIO RIVER AUTHORITY
Water Brings Us Together

SAN ANTONIO RIVER AUTHORITY
100 E. GUENTHER STREET
P.O. BOX 839980
SAN ANTONIO, TEXAS 78283-9980

KFW
ENGINEERS + SURVEYING
3421 Paesanos Pkwy, Suite 200, San Antonio, TX 78231
Phone #: (210) 979-8444 • Fax #: (210) 979-8441
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

JOB NO. - 873-01-07

PLAT NO. : 22-11800155

SHEET 6.0

Date: Oct 17, 2022, 10:48am User ID: eaddena
File: L:\873\01\07\Design\Civil\SEW\ENCV\873010?.dwg

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GENERAL NOTES:

1. SAN ANTONIO RIVER AUTHORITY (RIVER AUTHORITY) STANDARD SPECIFICATIONS AND STANDARD DETAILS ARE PROVIDED FOR DESIGN AND CONSTRUCTION OF SEWER COLLECTION SYSTEMS MANAGED AND CONTRACTED BY THE RIVER AUTHORITY.

2. AT ANY TIME, THESE STANDARD SPECIFICATIONS AND DETAILS MAY BE ALTERED OR SUPERSEDED BY THE GENERAL CONDITIONS, SUPPLEMENTAL CONDITIONS, PLANS OR PROJECT SPECIFICATIONS WITHIN THE CONTRACT DOCUMENT PER DIRECTION FROM THE RIVER AUTHORITY.

3. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY RIVER AUTHORITY AND COMPLY WITH THE CONTRACT DOCUMENTS AND THE FOLLOWING AS APPLICABLE:

   3.1. CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM"; TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30, PART 1, CHAPTER 217.

   3.2. CURRENT TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT), "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE".

   3.3. CURRENT RIVER AUTHORITY "STANDARD SPECIFICATIONS FOR SANITARY SEWER CONSTRUCTION".

   3.4. CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION". CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL".

4. THE CONTRACTOR IS TO NOTIFY AND MAKE ARRANGEMENTS WITH THE RIVER AUTHORITY INSPECTIONS DIVISION AT (210) 302-4200 FORTY EIGHT (48) HOURS PRIOR TO ANY EXCAVATION. CONTRACTOR SHALL ALSO PROVIDE PROCEDURES THAT WILL BE USED TO NOTIFY AFFECTED RESIDENTS AND/OR PROPERTY OWNERS 48 HOURS PRIOR TO ANY EXCAVATION OR CONSTRUCTION. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD BEFORE ANY EXCAVATION OR START OF PROJECT.

5. WORK SHALL NOT BE PERFORMED ON SATURDAYS, SUNDAYS, FEDERAL HOLIDAYS, RIVER AUTHORITY HOLIDAYS, BEFORE 7:30 AM, OR AFTER 4:30 PM, UNLESS PRIOR APPROVAL IS GRANTED BY THE RIVER AUTHORITY ENGINEER. REQUEST TO PERFORM WORK DURING THESE TIMES MUST BE EMAILED 48 HOURS IN ADVANCE TO UTILITIESDEVELOPMENT@SARIVERAUTHORITY.ORG.

6. NO EXTRA PAYMENT SHALL BE ALLOWED FOR WORK CALLED FOR IN THE PLANS BUT NOT INCLUDED IN THE BID SCHEDULE. THIS INCIDENTAL WORK WILL BE REQUIRED AND SHALL BE INCLUDED UNDER THE PAY ITEM WHICH IT RELATES TO.

7. WORK COMPLETED BY CONTRACTOR WHICH HAS NOT RECEIVED A WORK ORDER OR THE CONSENT OF RIVER AUTHORITY WILL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE EXPENSE OF THE CONTRACTOR.

8. LOCATIONS AND DEPTHS 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 48 HOURS PRIOR TO CONSTRUCTION REGARDLESS OF ILLUSTRATION ON THE PLANS. 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 RIVER AUTHORITY. CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGES TO EXISTING UTILITIES AND REPAIRS WILL BE AT CONTRACTOR'S EXPENSE.

   THE FOLLOWING CONTACT INFORMATION IS SUPPLIED FOR VERIFICATION PURPOSES:

EAST CENTRAL SPECIAL UTILITY DISTRICT	210-649-2383
CITY OF SAN ANTONIO DRAINAGE	210-207-5048
CITY PUBLIC SERVICE (CPS)	210-973-3500
CITY OF CONVERSE (PUBLIC WORKS)	210-659-9513
TIME WARNER	210-352-4872
VALERO ENERGY CO.	210-349-7555
RIVER AUTHORITY INSPECTIONS	210-302-4200
TEXAS 811	800-344-8377
SAN ANTONIO WATER SYSTEM (SAWS)	210-233-3500

9. CERTAIN PORTIONS OF THE PROJECT MAY PARALLEL AND/OR CROSS EXISTING UTILITIES, AND CONTRACTOR IS REQUIRED TO PROTECT THESE UTILITIES. ADDITIONAL SUPPORTIVE SHORING MAY BE REQUIRED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT HIS WORKERS, EXISTING UTILITIES, AND FINISHED WORK THROUGHOUT THE PROJECT. CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGES AND REPAIRS WILL BE AT CONTRACTORS EXPENSE.

10. WHERE WATER LINES AND NEW SEWER LINES ARE INSTALLED WITH A SEPARATION DISTANCE LESS THAN 9 FEET (I.E. WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES OR WATER LINES NEXT TO MANHOLES), THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC 217 AND 30 TAC 290.

11. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.161, CPS MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND VALVES THAT ARE IN THE PROJECT AREAS.

12. AN APPROPRIATELY SAFE OVERHEAD CLEARANCE MUST BE MAINTAINED BETWEEN ALL OVERHEAD EQUIPMENT AND PERSONNEL. THE CONTRACTOR SHALL NOTIFY CPS AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION IN THE VICINITY OF CPS OVERHEAD LINES. CONTRACTOR SHALL MAINTAIN CPS RECOMMENDED CLEARANCE REQUIREMENTS.

13. ALL WORK IN THE TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) RIGHT-OF-WAY SHALL PROCEED DURING WORKING HOURS AGREED UPON BY RIVER AUTHORITY AND TXDOT INSPECTORS.

14. BEFORE THE START OF ANY CONSTRUCTION, THE PROJECT SITE MUST BE VIDEO RECORDED BY THE CONTRACTOR WITH ONE COPY SUBMITTED TO RIVER AUTHORITY. THE PRE-CON SITE VIDEO WILL PROVIDE ACCURATE DOCUMENTATION OF EXISTING CONDITIONS.

15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES TO ORIGINAL OR BETTER CONDITION AS A RESULT OF DAMAGE DONE DURING THE PROJECT CONSTRUCTION.

16. ANY AND ALL FENCING, INCLUDING ELECTRIC FENCE, WHETHER OR NOT IDENTIFIED ON THE PLANS, MUST BE MAINTAINED AT ALL TIMES. ANY AND ALL DAMAGES DIRECTLY ATTRIBUTED TO THE CONTRACTOR MUST BE REPLACED TO EQUAL OR BETTER CONDITIONS AT THE CONTRACTOR'S EXPENSE AND AS APPROVED BY THE RIVER AUTHORITY INSPECTOR. GAPS IN THE FENCING MUST BE PROVIDED AT ALL LOCATIONS WHERE THE SEWER LINE EASEMENT CROSSES FENCING. FENCING REQUIRED TO MAINTAIN LIVESTOCK MUST BE MAINTAINED AT ALL TIMES.

17. CONTRACTOR MUST AVOID DAMAGE TO ADJACENT LAND OUTSIDE THE IDENTIFIED CONSTRUCTION LIMITS. ANY CLAIMS DIRECTLY ATTRIBUTED TO THE CONTRACTOR RESULTING FROM HIS STRAYING BEYOND THE CONSTRUCTION LIMITS MUST BE SETTLED BY THE CONTRACTOR TO THE SATISFACTION OF RIVER AUTHORITY AND THE APPROPRIATE LANDOWNER.

18. CONTRACTOR MUST MAINTAIN ACCESS FOR PRIVATE INDIVIDUALS AND BUSINESSES AT ALL TIMES. IF NORMAL ACCESS IS DAMAGED DURING CONSTRUCTION, THE CONTRACTOR MUST REPLACE THE ACCESS TO EQUAL OR BETTER CONDITION AT THE CONTRACTOR'S EXPENSE AND AS APPROVED BY RIVER AUTHORITY.

19. CONTRACTOR MUST COMPLY WITH TEXAS GOVERNMENT CODE SECTION 2166.303 UNIFORM TRENCH SAFETY CONDITIONS.

20. CONTRACTOR SHALL BACKFILL ALL OPEN TRENCHES AT THE END OF THE DAY. CONTRACTOR SHALL NOT INSTALL MORE PIPE THAN CAN BE COVERED. NO OPEN TRENCHES WILL BE PERMITTED OVERNIGHT. ALL ENDS OF OPEN PIPE SHALL BE PLUGGED OVERNIGHT.

21. NO TREES SHALL BE REMOVED AS PART OF THIS PROJECT UNLESS OTHERWISE SPECIFIED IN THE PLANS.

22. FOR PORTIONS OF THE CONSTRUCTION THAT ARE WITHIN THE LIMITS OF THE 100-YEAR FLOODPLAIN, THE CONTRACTOR IS REQUIRED TO KEEP THE CHANNEL CLEAR OF POTENTIAL OBSTRUCTIONS TO FLOOD FLOWS. POTENTIAL OBSTRUCTIONS INCLUDE HEAVY CONSTRUCTION EQUIPMENT, TEMPORARY ROADS ACROSS CHANNEL, EXCAVATION MATERIAL, STOCKPILED DEBRIS, AND ALL OTHER ITEMS DEEMED UNACCEPTABLE BY RIVER AUTHORITY. UNDER THREATENING WEATHER CONDITIONS AND WHERE FLOODING IS LIKELY, OBSTRUCTIONS SHALL BE IMMEDIATELY REMOVED BY THE CONTRACTOR AT NO ADDITIONAL COST TO RIVER AUTHORITY. THE CONTRACTOR ASSUMES ALL RISK FOR UNFINISHED WORK. NO EQUIPMENT OR MATERIALS SHALL BE STOCKPILED IN THE 100-YEAR FLOODPLAIN.

23. NO WASTE MATERIAL SHALL BE PLACED IN EXISTING DRAINAGE LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS, NATURAL DRAINAGE, OR PLACED WITHIN THE LIMITS OF EXISTING FLOODPLAIN.

24. IF A THREATENED OR ENDANGERED PLANT OR ANIMAL SPECIES AND/OR CULTURAL/ARCHAEOLOGICAL RESOURCES ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL STOP WORK IMMEDIATELY AND NOTIFY THE APPROPRIATE PERSONNEL.

SANANTONIO RIVER AUTHORITY — 100 E. GUENTHER STREET, SAN ANTONIO, TEXAS 78204

ISSUED BY: ; DRAWN BY: ; CHECKED BY: ; APPROVED BY: ; DATE: ; FILE: ; REVISIONS ; ISSUE DATE ; SHEET

SANITARY SEWER PIPING:

52. THE TYPE AND DESCRIPTION OF THE PIPE CONDUIT IS SHOWN ON THE PLANS. REFER TO RIVER AUTHORITY SPECIFICATIONS FOR MATERIALS, STIFFNESS, AND TYPE.

53. THE USE OF ASBESTOS CEMENT PIPE WILL BE PROHIBITED UNDER THIS CONTRACT.

54. ALL DUCTILE IRON PIPE USED IN THIS SYSTEM SHALL BE CORROSION PROTECTED ON BOTH THE INTERIOR AND EXTERIOR SURFACES. ALL CORROSION PROTECTION SHALL BE APPLIED AND INSTALLED IN SUCH A MANNER AS TO MAINTAIN A CONTINUOUSLY PROTECTED SURFACE AFTER FINAL PIPE INSTALLATION.

55. SEE SPECIFICATIONS FOR PVC SEWER PIPE WITH OVER 14 FEET OF COVER.

56. ALL SEWER PIPES SHALL HAVE COMPRESSION OR MECHANICAL JOINTS.

57. SEWER PIPE CONNECTIONS TO PRECAST MANHOLES SHALL BE APPROVED BY THE RIVER AUTHORITY. THIS CONNECTION SHALL USE A FLEXIBLE "BOOT" TYPE CONNECTOR SUCH AS THE PSX POSITIVE SEAL SYSTEM OR ENGINEER APPROVED EQUAL AND COMPLY WITH ASTM C-923. SEWER PIPE CONNECTIONS TO MONOLITHIC MANHOLES WILL BE AS SHOWN ON THE STANDARD DETAIL SHEET. ANY CHANGES IN THESE METHODS MUST BE APPROVED BY RIVER AUTHORITY ENGINEER.

58. ALL PIPE TRENCHING, BEDDING AND BACKFILL SHALL BE CONDUCTED IN ACCORDANCE WITH RIVER AUTHORITY SPECIFICATIONS. COMPACTION SHALL BE 98% DENSITY; TESTING WILL BE REQUIRED PER LIFT EVERY 400 FEET.

59. SAND MIGRATION PREVENTION COLLAR WHEN CHANGING THE INITIAL BACKFILL FROM SELECT INITIAL BACKFILL TO OPTIONAL SELECT INITIAL BACKFILL. A TWO (2) FOOT LONG CLASS B CONCRETE ENCASEMENT OR FIRMLY COMPACTED, CONSOLIDATED CLAY ENCASEMENT SHALL BE PLACED BETWEEN THE TWO BACKFILLS. FOR THE ENTIRE HEIGHT OF THE INITIAL BACKFILL, EVERY 180 FEET ALONG PIPE AND 20 FEET FROM WALL OF MANHOLE IN EACH DIRECTION.

SEWER LINE LOCATION:

60. SEWER LINES SHALL BE SIZED AND EXTENDED THROUGH THE LIMITS OF A DEVELOPMENT TO SERVE ADJACENT PROPERTY, WITH MANHOLE AND STUB-OUT AT END OF SEWER LINE.

61. IN PHASED CONSTRUCTION OF THOROUGHFARES, THE SEWER LINE SHALL BE EXTENDED THE ENTIRE LENGTH OF PROPOSED THOROUGHFARE.

62. NO PUBLIC SEWER LINE SHALL BE LOCATED NEARER THAN FIVE (5) FEET FROM ANY TREE.

63. SIZES AND GRADES FOR SANITARY SEWER SHALL BE AS REQUIRED BY RIVER AUTHORITY ENGINEER AND CONSIDERATION SHALL BE GIVEN AS TO POSSIBLE EXTENSIONS FOR FUTURE DEVELOPMENT. NO SANITARY SEWERS, OTHER THAN LATERALS AND FORCE MAINS, SHALL BE LESS THAN EIGHT (8) INCH IN DIAMETER.

SEWER SERVICE LATERALS

64. WHEN SEWER LATERALS ARE TO BE CONNECTED TO EXISTING SEWER MAINS AND NO STUB-OUT HAS BEEN EARLIER PROVIDED, THE CONNECTION MUST BE MADE WITH AN APPROVED SERVICE SADDLE AS PER 30 TAC 313.5(C) (7). NEW INVERT TO BE BUILT, SMOOTH CHANNEL FOR NEW PIPE/SLOPE AT 2 % FLOW.

65. INSERTA-TEE TYPE FITTINGS WILL BE ALLOWABLE. THE MANUFACTURER SHALL COMPLY WITH THOSE IN THE RIVER AUTHORITY APPROVED PRODUCTS LIST.

66. ALL RESIDENTIAL SERVICE LATERALS SHALL BE SDR 26 PVC WITH RATING OF 115 PSI, BE EXTENDED TO THE PROPERTY LINE AT (6 x 6) CAPPED AND SEALED. ATTACH SEWER BURIAL TAPE TO THE END OF ALL SEWER LATERALS AND BRING UP TO THE GROUND LEVEL FOR MARKER (GREEN). (SEE HOUSE LATERALS DETAILS).

THE SIZES AND LOCATIONS OF LATERALS SHALL BE DESIGNATED AS FOLLOWS UNLESS OTHERWISE DIRECTED BY THE RIVER AUTHORITY ENGINEER:

67. IN GENERAL, FOR SINGLE FAMILY DWELLING, THE LATERAL SIZE SHALL BE A FOUR (4) INCH MINIMUM. HOUSE LATERALS SHALL BE INSTALLED CENTER OF THE LOT AND SHALL HAVE A TEN (10) FOOT SEPARATION FROM THE WATER SERVICE. THE SERVICE SHALL THEN BE EXTENDED AT A FORTY-FIVE (45) DEGREE ANGLE TO FOUR (4) FEET ABOVE THE FINISHED GRADE AND CAPPED. USE SEWER BURIAL TAPE TO MARK ALL SEWER SERVICE LATERALS.

68. MULTIPLE UNITS, APARTMENTS, LOCAL RETAIL AND COMMERCIAL SIX (6) INCH MINIMUM, MANUFACTURING AND INDUSTRIAL – EIGHT (8) INCH MINIMUM,OR LARGER AS REQUIRED.

TRAPS AND INTERCEPTORS (FOG – TECQ)

69. UNIFORM PLUMBING CODE, CITY OF SAN ANTONIO BUILDING INSPECTIONS DEPARTMENT. ALL COMMERCIAL BUILINGS WILL HAVE TRAPS (FOG –TECQ).

OIL SEPARATORS

70. WHICH INCLUDE OIL SEPARATOR– GASOLINE SERVICE STATIONS, CAR WASHES, GARAGES, DRY CLEANERS, CHEMICAL PLANTS, GAS PLANTS, HIDE PROCESSORS, TESTING LABORATORIES, OR ANY PLACE WHERE OIL OR SOLVENTS MAY BE INTRODUCED INTO THE SANITARY SEWER SYSTEM.THE SIZING CRITERIA FOR OIL SEPARATORS SHALL BE BASED ON THE G.P.M. RATE OF ALL FIXTURES, APPLIANCE OR APPURTENANCE, DRAINING INTO SEWER SYSTEM.

SAND INTERCEPTORS

71. SAND INTERCEPTORS SHALL BE INSTALLED IN THE SEWER SYSTEM OF THE FOLLOWING ESTABLISHMENTS, GARAGES, CAR WASHES, SERVICE STATIONS, OR ANY PLACE OF BUSINESS WHERE HEAVY SOLIDS MAY BE INTRODUCED INTO THE SANITARY SEWER SYSTEM. THE SIZING CRITERIA FOR A SAND INTERCEPTOR SHALL BE BASED ON THE REQUIRED G.P.M. x 12 MINUTE RETENTION TIMES TO OBTAIN THE TANK SIZE IN GALLONS CAPACITY.

AUTOMATIC CAR WASHES

72. WITH HIGH PRESSURE SPRAYS AND /OR BRUSHES INSTALL A 50 G.P.M. INTERCEPTOR.MINIMUM, FOR A 4-BAY VEHICLE WASH, THE SIZE OF THE INTERCEPTOR SHALL INCREASE 10 G.P.M. FOR EACH ADDITIONAL WASH BAY OVER 4, SINGLE BAY OR PORTABLE WASHER TYPE VEHICLE WASHES SHALL INSTALL A 20 GPM INTERCEPTOR MINIMUM.

NEUTRALIZING DEVICES

73. IN NO CASE SHALL CORROSIVE LIQUIDS, SPENT ACIDS, OR OTHER HARMFUL CHEMICALS WHICH MIGHT DESTROY OR INJURE A DRAIN, SEWER, SOIL, OR WASTE PIPE, OR WHICH MIGHT CREATE NOXIOUS OR TOXIC FUMES, DISCHARGE INTO THE SANITARY SEWER SYSTEM WITHOUT BEING THOROUGHLY NEUTRALIZED BY PASSING THROUGH A PROPERLY CONSTRUCTED AND ACCEPTABLE NEUTRALIZING DEVICE. SUCH DEVICE SHALL BE PROVIDED WITH A SUFFICIENT INTAKE OF NEUTRALIZING MEDIUM, CONSISTING OF LIMESTONE OR MARBLE CHIPS, SO AS TO MAKE ITS CONTENTS NON-INJURIOUS BEFORE BEING DISCHARGED INTO THE SANITARY SEWER SYSTEM.

LINT TRAPS

74. PUBLIC AND PRIVATE WASHATERIAS AND COMMERCIAL LAUNDRIES SHALL INSTALL A LINT TRAP EQUIPPED WITH A CONVENIENTLY LOCATED AND EASILY REMOVABLE WIRE BASKET OR OTHER SIMILAR DEVICE THAT WILL PREVENT THE STRINGS, RAGS, BUTTONS, OR OTHER PROHIBITED MATERIAL FROM ENTERING THE SANITARY SEWER SYSTEM. THE BASKET OR OTHER SIMILAR DEVICE SHALL PREVENT PASSAGE TO THE SANITARY SEWER SYSTEM OF SOLIDS GREATER THAN ½"INCH IN DIAMETER. THE LINT TRAP SIZE SHALL BE BASED ON THE TOTAL G.P.M. OF ALL FIXTURES, APPLIANCES AND APPURTENANCES DRAINING TO IT.IN LIEU OF A LINT TRAP,A LINT INTERCEPTOR MAY BE INSTALLED.THE INTERCEPTOR SHALL BE SIZED AND DESIGNED BY A TEXAS REGISTERED ENGINEER WITH HIS SEAL AND SIGNATURE ON THE DRAWINGS.

SILVER RECOVERY UNITS

75. SILVER RECOVERY UNITS SHALL BE INSTALLED IN WASTE LINE(S) LEADING FROM X-- RAY PROCESSING, PHOTOGRAPHIC PROCESSING, AND /OR ANY PROCEDURES IN ESTABLISHMENT SUCH AS MEDICAL LABS, DENTAL LABS; PHOTO FINISHERS, PRINTERS, GRAPHIC ARTS PRODUCTION FACILITIES, HOSPITAL, FACILITIES, VETERINARY HOSPITALS, OR OTHER ESTABLISHMENTS WHERE SILVER MAY BE INTRODUCED INTO THE SANITARY SEWER SYSTEM.

SOLIDS INTERCEPTORS

76. SOLIDS INTERCEPTORS SHALL BE INSTALLED WHEN PRE-TREATMENT OF WASTE STREAMS IS NECESSARY TO PREVENT SOLIDS GREATER THAN ¼" IN DIAMETER, WHICH MAY CAUSE LINE STOPPAGE FROM ENTERING THE SANITARY SEWER SYSTEM.

INTERCEPTORS

77. INTERCEPTORS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DESIGN APPROVED BY THE SAN ANTONIO RIVER AUTHORITY CONSISTING OF A MINIMUM OF TWO COMPARTMENTS WITH FITTINGS DESIGNED FOR GREASE RETENTION AND PROVIDE FOR A MINIMUM OF TWELVE (12) MINUTES RETENTION.

78. THERE SHALL BE AN ADEQUATE NUMBER OF MANHOLES TO PROVIDE ACCESS FOR CLEANING ALL AREAS OF AN INTERCEPTOR, ONE MANHOLE PER TRAP COMPARTMENT. MANHOLE COVERS SHALL BE GAS TIGHT IN CONSTRUCTION HAVING A MINIMUM OPENING DIMENSION OF 20 INCH INCHES (0.5 M).

79. IN AREAS WHERE TRAFFIC MAY EXIST THE INTERCEPTOR SHALL BE DESIGNED TO HAVE ADEQUATE REINFORCEMENT AND COVER.

80. ALL INTERCEPTORS SHALL HAVE THE SIZE OF THE INTERCEPTOR (IN GALLON PER MINUTE OR GALLON CAPACITY) PERMANENTLY AFFIXED TO THE DEVICE.

81. ALL CONCRETE UTILIZED IN THE CONSTRUCTION OF INTERCEPTOR SHALL HAVE A MINIMUM STRENGTH OF 3000 PSI.

82. AN EFFLUENT SAMPLING WELL ON ALL INTERCEPTORS SHALL BE REQUIRED. THE SAMPLE WELL SHALL HAVE A RISER A MINIMUM OF 6" INCHES IN DIAMETER AND SHALL BE INSTALLED AFTER THE CONFLUENCE OF ALL WASTE STREAMS FROM THE FACILITY AND PRIOR TO DISCHARGING INTO SANITARY SEWER COLLECTION SYSTEM. THE WELL SHALL BE PERPENDICULAR TO THE EFFLUENT LATERAL TO ALLOW VISUAL OBSERVATION OF THE FLOW STREAM AND PROVIDE FOR SAMPLING OF WASTEWATER.

SANANTONIO RIVER AUTHORITY — 100 E. GUENTHER STREET, SAN ANTONIO, TEXAS 78204

ISSUED BY: ; DRAWN BY: ; CHECKED BY: ; APPROVED BY: ; DATE: ; FILE: ; REVISIONS ; ISSUE DATE ; SHEET

SEWER NOTES:

25. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT NO SANITARY SEWER OVERFLOW (SSO) OCCURS AS A RESULT OF THE WORK. ALL PERSONNEL RESPONSIBLE FOR SSO PREVENTION AND CONTROL SHALL BE TRAINED ON THE PROPER RESPONSE. SHOULD AN SSO OCCUR, THE CONTRACTOR SHALL:

   25.1. IDENTIFY THE SOURCE OF THE SSO AND ATTEMPT TO ELIMINATE ANY ADDITIONAL SPILLAGE.
   25.2. NOTIFY RIVER AUTHORITY CONSTRUCTION INSPECTIONS DIVISION AT 210-302-4216 OR 210-219-0130.
   25.3. ATTEMPT TO ELIMINATE THE SOURCE OF THE SSO.
   25.4. CONTAIN SEWAGE FROM THE SSO TO PREVENT CONTAMINATION OF WATERWAYS.
   25.5. CLEAN UP THE SPILL SITE AND REMOVE CONTAMINATED MATERIALS.
   25.6. DISINFECT THE AREA OF THE SPILL WITH A MIXTURE OF 4TH CHLORINE AND WATER.
   25.7. CLEAN THE AFFECTED SEWER LINE AND REMOVE ANY DEBRIS.
   25.8. IDENTIFY AND TRAIN PERSONNEL RESPONSIBLE FOR SPILLAGE PREVENTION AND CONTROL.
   25.9. NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THIS WORK. ALL WORK SHALL BE DONE ACCORDING TO GUIDELINES SET BY THE TCEQ AND RIVER AUTHORITY.

26. TIE-INS OR SHUTDOWNS OF EXISTING FORCE MAINS OF ANY SIZE MUST BE COORDINATED WITH THE RIVER AUTHORITY INSPECTOR AT LEAST ONE WEEK IN ADVANCE OF THE SHUTDOWN. CONTRACTOR SHALL PROVIDE A SEQUENCE OF WORK AS RELATED TO TIE-INS AT NO ADDITIONAL COST TO RIVER AUTHORITY OR THE PROJECT.

27. ELEVATIONS OF THE TOP OF MANHOLES AND INVERTS ARE FOR REFERENCE ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ALLOWANCES AND ADJUSTMENTS FOR THE TOPS OF MANHOLES AND INVERTS TO MATCH THE FINISHED GRADE OF THE PROJECT IMPROVEMENTS (NSPI).

28. THE CONTRACTOR SHALL PROVIDE BYPASS PUMPING OF SEWAGE AROUND EACH SEGMENT OF PIPE TO BE REPLACED. CONTRACTOR SHALL HAVE STANDBY PUMPS AVAILABLE TO BYPASS FLOW IN CASE PRIMARY PUMP FAILS. THE CONTRACTOR SHALL PROVIDE A SEQUENCE OF BYPASS PUMPING FOR REVIEW AND APPROVAL BY RIVER AUTHORITY. THE CONTRACTOR SHALL ALSO PROVIDE A DETAILED SKETCH SHOWING THE LOCATION OF BYPASS PUMPING; SPECIFICATIONS FOR THE PUMPING EQUIPMENT; AND TYPE, SIZE, CAPACITY AND NUMBER OF PUMPS REQUIRED TO HANDLE THE PEAK WET WEATHER FLOW.

29. CONTRACTOR WILL MAINTAIN SERVICE TO ALL EXISTING SANITARY SEWERS AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR WILL CLEAN ALL DEBRIS, GRAVEL, DIRT, ETC. OUT OF MANHOLES AND FIX ANY STOPPAGES CAUSED BY DEBRIS DURING CONSTRUCTION AT CONTRACTOR'S EXPENSE. ANY DAMAGE TO EXISTING MANHOLES OR SEWER MAIN WILL BE CORRECTED AT CONTRACTOR'S EXPENSE. CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PREVENT DAMAGE TO EXISTING OR NEW RINGS, COVERS, OR CONES FROM EQUIPMENT AND MATERIALS USED OR TAKEN THROUGH THE WORK AREA. IF AN EXISTING OR NEW MANHOLE COVER, RING, OR CONE IS DAMAGED BY THE CONTRACTOR, IT SHALL BE REPLACED AS DIRECTED BY THE RIVER AUTHORITY INSPECTOR. MANHOLES WILL NEED TO BE RESEALED WITH RIVER AUTHORITY APPROVED SEALANT. IF SEAL COATING IS COMPROMISED, CONTRACTOR WILL HAVE MANHOLE RECOATED. CONTRACTOR SHALL RESEAL ALL LEAKS AT CONTRACTOR EXPENSE.

30. CONTRACTOR TO ENSURE ALL PLUGS USED TO PLUG SEWER LINES WHILE TESTING THE PROJECT (SUCH AS AIR PLUGS, SCREW TYPE PLUGS, ETC.) ARE LABELED, MARKED OR TAGGED. THE CONTRACTOR SHALL RECORD HOW MANY PLUGS ARE BEING USED, AS WELL AS THE LOCATION AND IDENTIFICATION OF EACH PLUG. CONTRACTOR WILL REPORT TO PROJECT INSPECTOR OF ANY LOST OR UNRESTRAINED PLUGS.

31. CONTRACTOR WILL BE HELD LIABLE FOR ANY DAMAGE TO SEWER COLLECTION SYSTEM, STOPPAGES, OVER-FLOWS, OR BACKUPS INTO HOMES CAUSED BY LOST OR RUNAWAY SEWER PLUGS.

32. CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY DAMAGE TO WASTEWATER TREATMENT EQUIPMENT CAUSED BY LOST OR RUNAWAY SEWER PLUGS. CONTRACTOR WILL BE HELD LIABLE FOR REPAIRS.

33. RIVER AUTHORITY IS NOT RESPONSIBLE FOR ANY ABNORMALITIES ON STUB OUT, INVERT, GRADE OR SLOPE FOR ANY EXISTING MANHOLE TIE-IN OR SERVICE LATERAL

MANHOLE NOTES:

34. THERE SHALL BE 400 FEET MAXIMUM SPACE BETWEEN MANHOLES TO PROVIDE ACCESS FOR CLEANING. A 16-FOOT WIDE GATE WITH A LOCK SHALL ALSO BE SUPPLIED AND INSTALLED BY THE CONTRACTOR FOR ACCESSING THE SANITARY SEWER LINE.

35. ALL MANHOLES SHALL BE CONSTRUCTED SO THAT THE TOP OF THE RING IS AT LEAST FOUR (4) INCHES ABOVE THE FINISHED GRADE OF THE SURROUNDING GROUND IN UNPAVED AREAS. IN PAVED AREAS, THE MANHOLE RING SHALL BE FLUSH WITH THE PAVEMENT.

36. EVERY THIRD MANHOLE COVER WILL HAVE A 1"HOLE FOR A VENT.

37. EACH MANHOLE SHALL HAVE TWO LOCKS INSTALLED TO PREVENT REMOVAL.

38. ALL MANHOLES SHALL HAVE A 30"OPENING, WATERTIGHT RINGS AND COVERS, WITH THE RIVER AUTHORITY LOGO AND I/I BARRIER.

39. NEW MANHOLE PROTECTIVE COATING LINER MUST BE APPLIED TO ALL MANHOLES. APPLICATION PROCEDURES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION AND PER THE FOLLOWING SPECIFICATIONS:

   39.1. CONTRACTOR WILL BE RESPONSIBLE FOR MANHOLE SAFETY AND CONFINED SPACE ENTRY SET BY OCCUPATIONAL SAFETY AND HEALTH STANDARDS, 29 CFR 1910.146 APP. E.
   39.2. THE CONTRACTOR SHALL NOTIFY THE RIVER AUTHORITY UTILITIES INSPECTIONS DEPARTMENT A MINIMUM OF 48 HOURS IN ADVANCE OF THE START OF ANY FIELD SURFACE PREPARATION WORK.
   39.3. ALL NEW MANHOLES AND THE EXISTING MANHOLE THAT THE PROPOSED SEWER LINE WILL TIE-IN TO SHALL HAVE THE INTERIOR WALL PREPPED AS PER MANUFACTURER'S RECOMMENDATIONS AND COATED WITH A RIVER AUTHORITY APPROVED PRODUCT.
   39.4. FOR ALL MANHOLES, APPLY THE CEMENTITIOUS COATING FIRST, FOLLOWED BY THE EPOXY COATING. LAFARGE SEWPERCOAT 200 HR PRODUCT IS THE ONLY APPROVED PRODUCT WHICH COMBINES THE CEMENTITIOUS AND EPOXY COATINGS, UNLESS OTHERWISE LISTED IN THE APPROVED PRODUCT LIST.
   39.5. CEMENTITIOUS COATING WITH REQUIRED ONE-INCH-THICK APPLICATION:SEE RIVER AUTHORITY APPROVED PRODUCT SHEET.
   39.6. EPOXY COATING: WITH SPECIFIED THICKNESS APPLICATION: SEE RIVER AUTHORITY APPROVED PRODUCT SHEET.
   39.7. SPRAY WALL POLYURETHANE SYSTEM REQUIRED THICKNESS 150 MILS
   39.8. CONTRACTOR SHALL SUBMIT WARRANTY LETTER ON MANHOLE PROTECTIVE COATING FOR 10 YEARS AFTER FINAL ACCEPTANCE OF PROTECTIVE COATINGS.

40. ANY CONNECTIONS TO EXISTING MANHOLES WILL REQUIRE A CRADLE TO SUPPORT THE INCOMING PIPE. A RUBBER GASKET WILL ALSO BE REQUIRED (CENTERED AT MANHOLE WALL) WITH GROUTING AT INTERIOR AND EXTERIOR PENETRATIONS.

41. PENETRATION INTO THE MANHOLE WILL BE CORE DRILLED. ANY DAMAGE TO EXISTING MANHOLE WILL BE REPAIRED AT CONTRACTOR'S EXPENSE. IF EXISTING SEWER MANHOLE SEAL COATING IS COMPROMISED, ALL OF THE MANHOLE WILL BE RESEALED.

42. IF ANY EXISTING MANHOLES CONNECTED WITH THIS PROJECT LEAK, THEY SHALL BE SEALED BY THE CONTRACTOR.

43. MANHOLES WITH STUB-OUTS 8-INCH OR LARGER MUST BE LOCATED AT THE END OF ALL SEWER LINES TO BE EXTENDED IN THE FUTURE. STUB-OUTS SHALL BE PLUGGED.

44. MANHOLE COVER INSERTS ARE SHOWN IN RIVER AUTHORITY APPROVED PRODUCT SHEET. INSERTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING THE NECESSARY FIELD MEASUREMENTS FOR THE MANUFACTURER PRIOR TO PRODUCTION.

45. BEFORE BACK FILLING/COMPACTION/CONCRETE ENCASEMENT, ALL MANHOLE JOINT SECTION RISERS, CONE SECTIONS AND GRADE RING SHALL BE WRAPPED WITH INFI-SHIELD GATOR WRAP SEALING SYSTEMS, BUTYL ADHESIVE SEALANT WITH A MINIMUM THICKNESS OF 30 MILS. JOINT SEALANT MUST MEET ASTM C923. MASTIC MUST MEETS ASTM C 990 OR BE APPROVED BY THE RIVER AUTHORITY ENGINEER.

46. IF CONCRETE THROA

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.

CAUTION!!!
THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

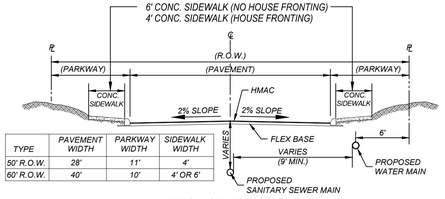
TRENCH EXCAVATION SAFETY PROTECTION

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.

MANHOLE NOTE
ALL MANHOLES MUST BE WATERTIGHT, WITH WATERTIGHT RINGS AND COVERS. EVERY 4TH MANHOLE IN SEQUENCE MUST BE VENTED PER S.A.R.A DETAIL SHEET

NOTE:

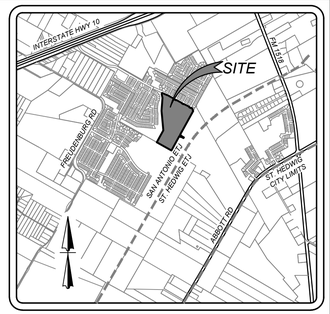
1. *SEWER PIPE WHERE WATER LINE CROSSES SHALL BE MEET THE REQUIREMENTS OF ASTM D2241. CONTRACTOR SHALL CENTER A 20 FOOT JOINT OF 160 P.S.I. PRESSURE RATED P.V.C. AT THE PROPOSED WATER CROSSING (NO SEPARATE PAY ITEM). REFERENCE SHEETS 6.1-6.2, SANITARY SEWER GENERAL NOTES, SARA CRITERIA FOR SEWER MAIN CONSTRUCTION IN THE VICINITY OF WATER MAINS.*
2. *PIPE TYPE DESIGNATIONS ARE SDR 26.*
3. *SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.*
4. *ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING AND COVER. SEE SHEET 6.8 FOR DETAILS.*
5. *NO 6" CLEANOUTS SHALL BE LOCATED UNDER DRIVEWAYS OR SIDEWALKS.*
6. *LATERAL CONNECTIONS MADE TO EXISTING INFRASTRUCTURE WILL NEED TO BE COMPLETED USING AN INSERTA TEE OR APPROVED EQUAL.*
7. *MANHOLES WILL NEED TO BE RESEALED WITH THE SARA APPROVED SEALING. IF SEAL COATING IS BROKEN, CONTRACTOR WILL HAVE MANHOLE RECOATED. RESEAL ALL LEAKS AT CONTRACTOR EXPENSE.*
8. *IF 5 OR MORE LATERALS MUST BE TIED IN TO EXISTING MAIN, CONTRACTOR IS RESPONSIBLE FOR RETESTING*



TYPE	PAVEMENT WIDTH	PARKWAY WIDTH	SIDEWALK WIDTH
50' R.O.W.	28'	11'	4'
60' R.O.W.	40'	10'	4' OR 6'

TYPICAL STREET SECTION
N.T.S.

BEXAR COUNTY R.O.W. NOTE
A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY R.O.W.



LOCATION MAP
N.T.S

SCALE : 1" = 50'
0' 50' 150'
100'

ELIZONDO SUBDIVISION UNIT 2
(PLAT NO. 21-11800416)

BLOCK 43 C.B. 5193 · BLOCK 44 C.B. 5193 · BLOCK 45 C.B. 5193 · BLOCK 27 C.B. 5193

BLOCK 29 C.B. 5193 · BLOCK 27 C.B. 5193 · BLOCK 48 C.B. 5193 · BLOCK 47 C.B. 5193 · BLOCK 46 C.B. 5193

OVIEDO LINE Q · ZOCALO LINE N · CARMELITA · THYME PASS · GRAN VIA (70' R.O.W.) · SANTA ISABEL (50' R.O.W.) · SAGASTA (50' R.O.W.)

LINE N · LINE U · LINE X · LINE T · EXISTING LINE C1

STA: 9+95.00 LINE U
M.H. "U4"
END LINE U

STA: 14+04.95 LINE T
M.H. "T4"
END LINE T

STA: 1+00.00 LINE X=
STA: 8+84.32 LINE U
M.H. "U3"
BEGIN LINE X

STA: 3+82.57 LINE X
M.H. "X1"

STA: 6+37.78 LINE U
M.H. "U2"

STA: 3+90.00 LINE U
M.H. "U1"

STA: 10+91.46 LINE T
M.H. "T3"

STA: 7+91.46 LINE T=
STA: 1+00.00 LINE U
M.H. "T2"
BEGIN LINE U

SEWER/WATER CROSSING!!! REFERENCE THIS SHEET FOR DETAIL

CONTRACTOR TO ADJUST TOP OF MANHOLE ELEVATION TO FINSHED GRADE ELEV. 643.71

CONTRACTOR TO ADJUST TOP OF MANHOLE ELEVATION TO FINSHED GRADE ELEV. 628.65

EXISTING 10' GAS EASEMENT

1% AC EFFECTIVE FLOODPLAIN PER PANEL #48029C0455G

1% AC ULTIMATE FLOODPLAIN PER FLOOD STUDY PREPARED BY KFW ENGINEERS

VARIABLE WIDTH E.G.T.TV., SANITARY SEWER PRIVATE DRAINAGE & MAINTENANCE ACCESS EASEMENT

VARIABLE WIDTH WATER EASEMENT (PLAT NO. 20-11800598)

EXISTING 20' WATER EASEMENT (ENTIRE EASEMENT TO EXPIRE UPON INCORPORATION INTO PLATTED RIGHT-OF-WAY) 21-11800416)

EXIST. 8" SARA SEWER MAIN

LOT 901 · LOT 901 BLOCK 40 C.B. 5193 · LOT 908 BLOCK 27 C.B. 5193

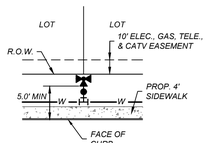
ELIZONDO SUBDIVISION UNIT 3 (PLAT NO. 21-11800343)

DRAIN "A" SEE SHEET 4.0 · DRAIN "B" SEE SHEET 4.1

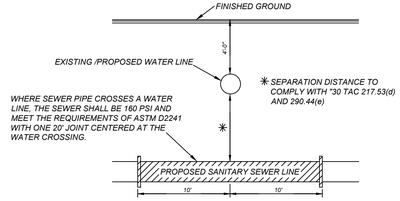
LATERAL TO BE ABANDONED · LATERALS TO BE ABANDONED

FORESTAR REAL ESTATE GROUP INC. CALLED 84.780 ACRES (DOC. NO. 20190021141 O.P.R)

MATCHLINE "A" SEE SHEET 6.4



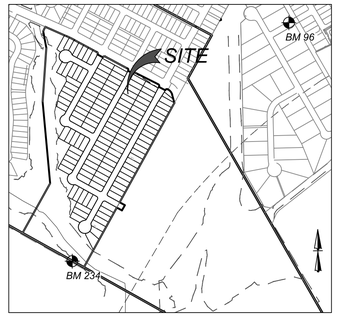
TYPICAL FIRE HYDRANT DETAIL
NOT-TO-SCALE



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
N.T.S.

LEGEND

PROPOSED WATER MAIN	=	W
PROPOSED WATER SERVICE & METER BOX	=	W
PROPOSED WATER SERVICE & METER BOX WITH PRESSURE REDUCING VALVE	=	W
PROPOSED WATER 3/4" IRRIGATION SERVICE & 5/8" METER BOX	=	W
PROPOSED FIRE HYDRANT	=	
PROPOSED WATER VALVE	=	
PROPOSED 100W STREETLIGHT	=	
PROPOSED 250W STREETLIGHT	=	
PROPOSED SANITARY SEWER MAIN	=	SS
PROPOSED SANITARY SEWER MANHOLE	=	
PROPOSED SANITARY SEWER LATERAL	=	
PROPOSED SANITARY SEWER LATERAL WITH VERTICAL STACK	=	
PROPOSED ELECTRIC, GAS, TELEPHONE, & CABLE TV EASEMENT	=	E. G. T. TV. E
PROPOSED VEHICULAR NON ACCESS EASEMENT	=	V.N.A.E.
EXISTING WATER MAIN	=	E.W
EXISTING FIRE HYDRANT	=	
EXISTING WATER VALVE	=	
EXISTING SANITARY SEWER MAIN	=	E.SS
EXISTING SANITARY SEWER MANHOLE	=	
EXISTING OVERHEAD ELECTRIC W/POWER POLE	=	OHE
EXISTING GUY WIRE/OVERHEAD ELECTRIC	=	OHE



BENCHMARKS LOCATION MAP

BENCHMARKS

BM 96
SET BENCH MARK
LEVELED
NORTHING: 13724067.63
EASTING: 2215107.23

BM 234
SET BENCH MARK
LEVELED
ELEVATION 612.07
NORTHING: 13722067.4
EASTING: 2213289.91

NOTE:
CONTRACTOR TO RUN LEVEL LOOP THROUGH BM'S PROVIDED TO CONFIRM BEFORE CONSTRUCTION. CONTACT ENGINEER/SURVEYOR IMMEDIATELY IF ELEVATIONS DO NOT MATCH THOSE SHOWN.

KFW ENGINEERS + SURVEYING
3421 Paesanos Pkwy, Suite 200, San Antonio, TX 78231
Phone: (210) 979-8444 Fax: (210) 979-8441
TBPE Firm # 8513 - TBPLS Firm # 10122300

ISSUE DATE
REVISIONS

STATE OF TEXAS · JEFFREY W. MARTIN · 139094 · LICENSED PROFESSIONAL ENGINEER · 2/14/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS
OVERALL SANITARY SEWER PLAN

PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER: 6.2

Date: Feb 08, 2024, 4:31pm User ID: Sciaseph
File: L:\873\VD\07 Design\Civil\SEWER\093007.dwg

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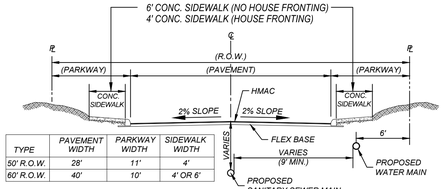
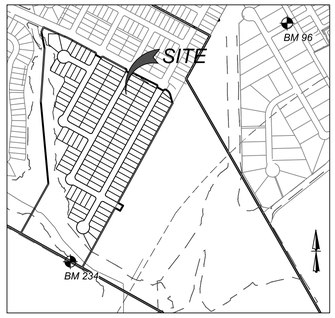
TRENCH EXCAVATION SAFETY PROTECTION:
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA 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.

CAUTION!!!
THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.



TYPE	PAVEMENT WIDTH	PARKWAY WIDTH	SIDEWALK WIDTH
50' R.O.W.	28'	11'	4'
60' R.O.W.	40'	10'	4' OR 6'

TYPICAL STREET SECTION
N.T.S.



BENCHMARKS LOCATION MAP

BENCHMARKS

BM 96 SET BENCH MARK LEVELED NORTHING: 13724067.63 EASTING: 2215107.23	BM 234 SET BENCH MARK LEVELED ELEVATION 612.07 NORTHING: 13722067.4 EASTING: 2213289.91

NOTE:
CONTRACTOR TO RUN LEVEL LOOP THROUGH BM'S PROVIDED TO CONFIRM BEFORE CONSTRUCTION. CONTACT ENGINEER/SURVEYOR IMMEDIATELY IF ELEVATIONS DO NOT MATCH THOSE SHOWN.

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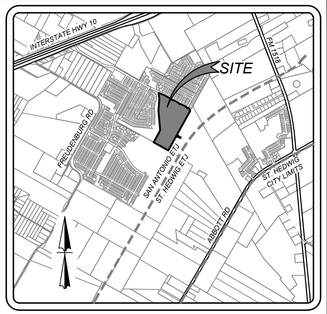
MANHOLE NOTE
ALL MANHOLES MUST BE WATERTIGHT, WITH WATERTIGHT RINGS AND COVERS. EVERY 4TH MANHOLE IN SEQUENCE MUST BE VENTED PER S.A.R.A DETAIL SHEET

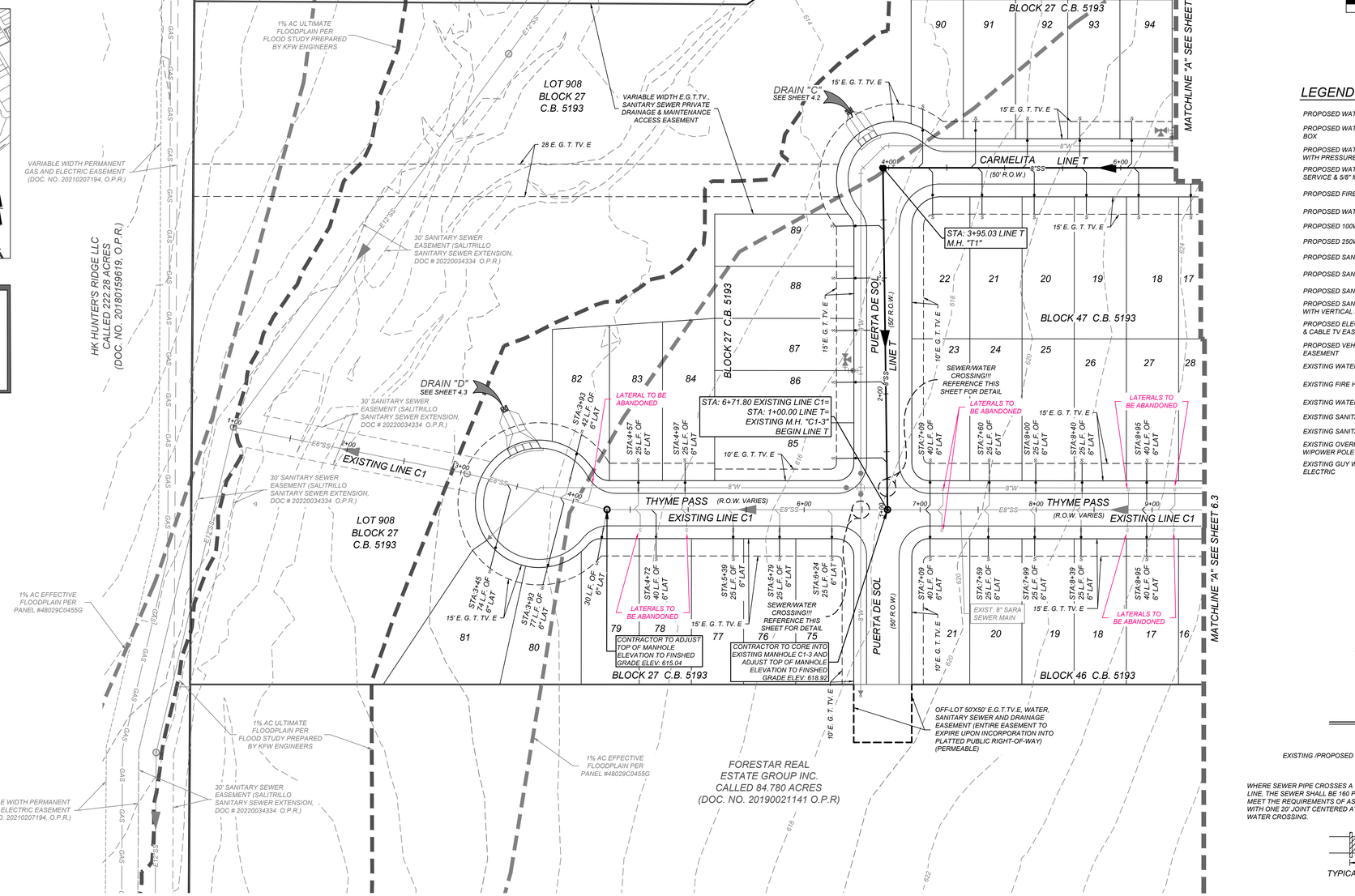
NOTE:
1. SEWER PIPE WHERE WATER LINE CROSSES SHALL BE MEET THE REQUIREMENTS OF ASTM D2241. CONTRACTOR SHALL CENTER A 20 FOOT JOINT OF 160 P.S.I. PRESSURE RATED P.V.C. AT THE PROPOSED WATER CROSSING (NO SEPARATE PAY ITEM). REFERENCE SHEETS 6.1-6.2, SANITARY SEWER GENERAL NOTES, SARA CRITERIA FOR SEWER MAIN CONSTRUCTION IN THE VICINITY OF WATER MAINS.
2. PIPE TYPE DESIGNATIONS ARE SDR 26.
3. SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.
4. ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING AND COVER. SEE SHEET 6.8 FOR DETAILS.
5. NO 6" CLEANOUTS SHALL BE LOCATED UNDER DRIVEWAYS OR SIDEWALKS.
6. LATERAL CONNECTIONS MADE TO EXISTING INFRASTRUCTURE WILL NEED TO BE COMPLETED USING AN INSERTA TEE OR APPROVED EQUAL.
7. MANHOLES WILL NEED TO BE RESEALED WITH THE SARA APPROVED SEALING. IF SEAL COATING IS BROKEN, CONTRACTOR WILL HAVE MANHOLE RECOATED. RESEAL ALL LEAKS AT CONTRACTOR EXPENSE.
8. IF 5 OR MORE LATERALS MUST BE TIED IN TO EXISTING MAIN, CONTRACTOR IS RESPONSIBLE FOR RETESTING

BEXAR COUNTY R.O.W. NOTE
A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY R.O.W.



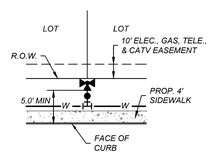
LOCATION MAP
N.T.S

SCALE : 1" = 50'
0' 50' 150'
100'

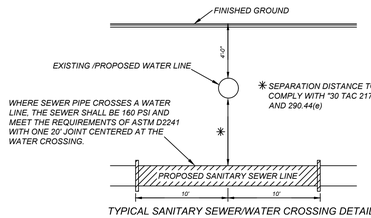


LEGEND

PROPOSED WATER MAIN	=	W
PROPOSED WATER SERVICE & METER BOX	=	W
PROPOSED WATER SERVICE & METER BOX WITH PRESSURE REDUCING VALVE	=	W
PROPOSED WATER 3/4" IRRIGATION SERVICE & 5/8" METER BOX	=	W
PROPOSED FIRE HYDRANT	=	
PROPOSED WATER VALVE	=	
PROPOSED 100W STREETLIGHT	=	
PROPOSED 250W STREETLIGHT	=	
PROPOSED SANITARY SEWER MAIN	=	SS
PROPOSED SANITARY SEWER MANHOLE	=	
PROPOSED SANITARY SEWER LATERAL	=	SS
PROPOSED SANITARY SEWER LATERAL WITH VERTICAL STACK	=	SS
PROPOSED ELECTRIC, GAS, TELEPHONE, & CABLE TV EASEMENT	=	E. G. T. TV. E
PROPOSED VEHICULAR NON ACCESS EASEMENT	=	V.N.A.E.
EXISTING WATER MAIN	=	E.W
EXISTING FIRE HYDRANT	=	
EXISTING WATER VALVE	=	
EXISTING SANITARY SEWER MAIN	=	E.SS
EXISTING SANITARY SEWER MANHOLE	=	
EXISTING OVERHEAD ELECTRIC W/POWER POLE	=	OHE
EXISTING GUY WIRE/OVERHEAD ELECTRIC	=	OHE



TYPICAL FIRE HYDRANT DETAIL
NOT-TO-SCALE



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
N.T.S.

KFW ENGINEERS + SURVEYING
3421 Paesanos Pkwy, Suite 200, San Antonio, TX 78231
Phone: 210-979-8444 Fax: 210-979-8441
TBPE Firm # 9513 - TBPLS Firm # 10122300

ISSUE DATE
REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
2/1/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

OVERALL SANITARY SEWER PLAN

PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER:
6.3

Date: Jan 31, 2024, 9:04am User ID: LMartinez
File: L:\873\01\07\Design\Civil\SEWER\0873010707.dwg

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NOTE:
ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM (SAWS) STANDARD SPECIFICATIONS.

TRENCH EXCAVATION SAFETY PROTECTION
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MANHOLE NOTE:
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NOTE:

1. *SEWER PIPE WHERE WATER LINE CROSSES SHALL BE MEET THE REQUIREMENTS OF ASTM D2241. CONTRACTOR SHALL CENTER A 20 FOOT JOINT OF 160 P.S.I. PRESSURE RATED P.V.C. AT THE PROPOSED WATER CROSSING (NO SEPARATE PAY ITEM). REFERENCE SHEETS 6.1-6.2, SANITARY SEWER GENERAL NOTES, SARA CRITERIA FOR SEWER MAIN CONSTRUCTION IN THE VICINITY OF WATER MAINS.*
2. *PIPE TYPE DESIGNATIONS ARE SDR 26.*
3. *SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.*
4. *ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING AND COVER. SEE SHEET 6.8 FOR DETAILS.*
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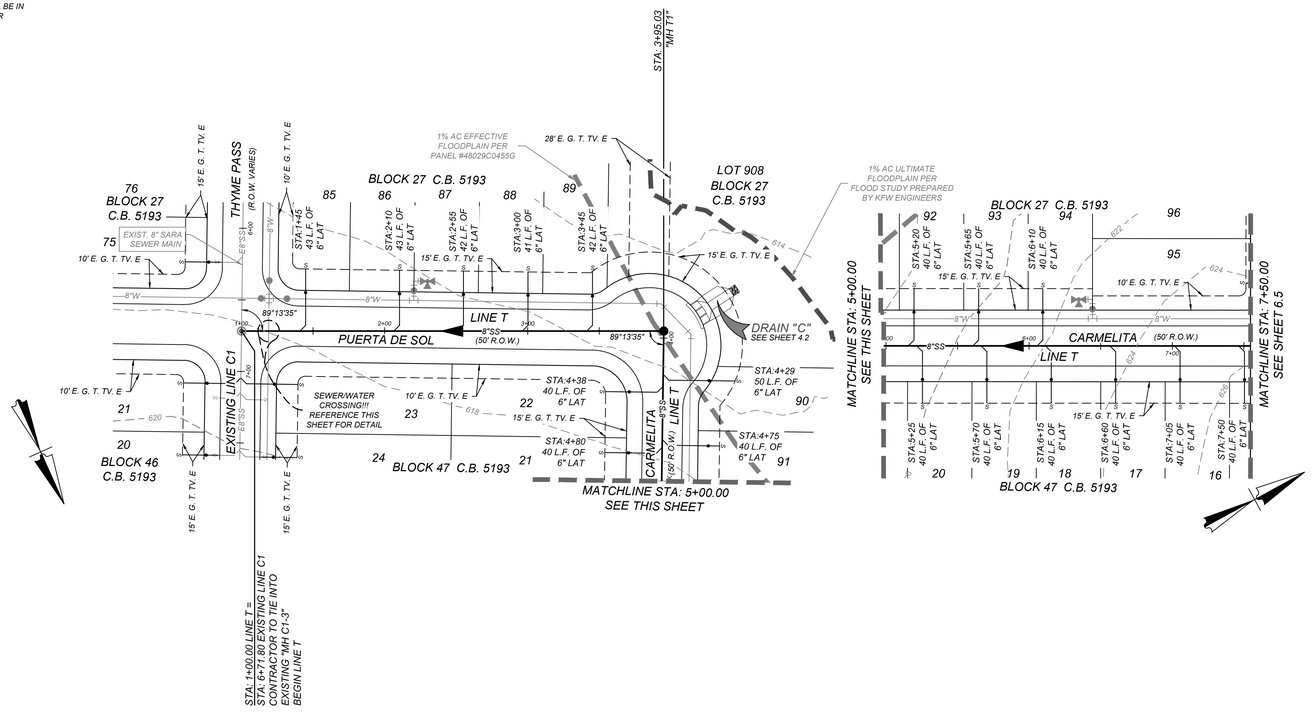
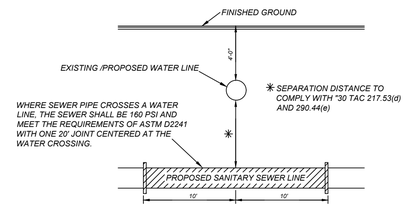
8. *IF 5 OR MORE LATERALS MUST BE TIED IN TO EXISTING MAIN, CONTRACTOR IS RESPONSIBLE FOR RETESTING*

WATER/SEWER CROSSING NOTE:
ALL WATER/SEWER CROSSINGS SHALL COMPLY WITH SAWS SPECIFICATION ITEM 812 SANITARY SEWER/WATER DETAIL.

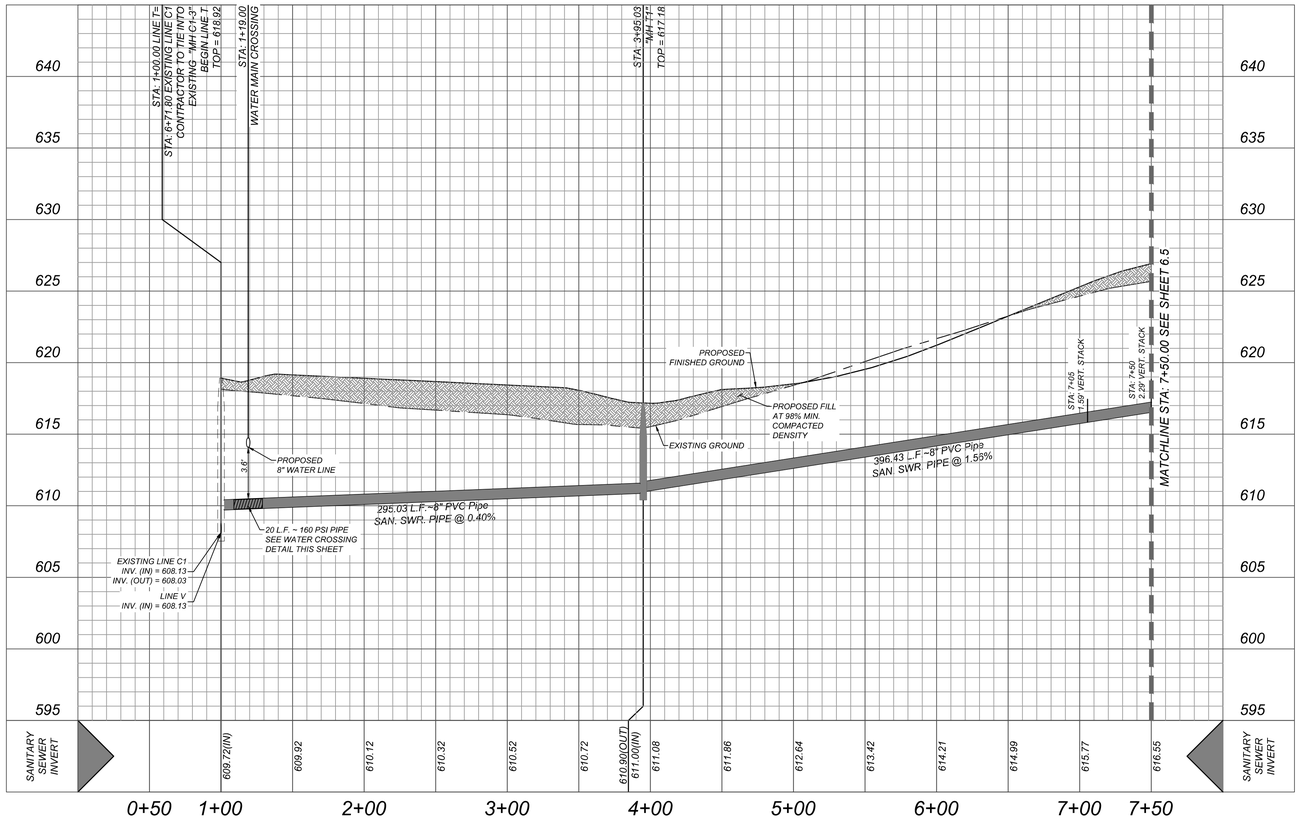




TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
N.T.S.

LINE "T"
STA: 1+00.00 - STA: 7+50.00

HORZ SCALE: 1"=50'
VERT SCALE: 1"=5'



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ISSUE DATE
REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
1/12/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

SEWER LINE T STA. 1+00.00 - STA. 7+50.00

PLAT NO.
22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER:
6.4

Date: Jan 11, 2024, 5:05pm User ID: Sdeseph
File: L:\873\01\01\Design\Civil\SEWER\SSP2_873O107.dwg

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NOTE:
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MANHOLE NOTE:
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NOTE:

1. *SEWER PIPE WHERE WATER LINE CROSSES SHALL BE MEET THE REQUIREMENTS OF ASTM D2241. CONTRACTOR SHALL CENTER A 20 FOOT JOINT OF 160 P.S.I. PRESSURE RATED P.V.C. AT THE PROPOSED WATER CROSSING (NO SEPARATE PAY ITEM). REFERENCE SHEETS 6.1-6.2, SANITARY SEWER GENERAL NOTES, SARA CRITERIA FOR SEWER MAIN CONSTRUCTION IN THE VICINITY OF WATER MAINS.*
2. *PIPE TYPE DESIGNATIONS ARE SDR 26.*
3. *SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.*
4. *ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING AND COVER. SEE SHEET 6.6 FOR DETAILS.*
5. *NO 6" CLEANOUTS SHALL BE LOCATED UNDER DRIVEWAYS OR SIDEWALKS.*
6. *LATERAL CONNECTIONS MADE TO EXISTING INFRASTRUCTURE WILL NEED TO BE COMPLETED USING AN INSERTA TEE OR APPROVED EQUAL.*
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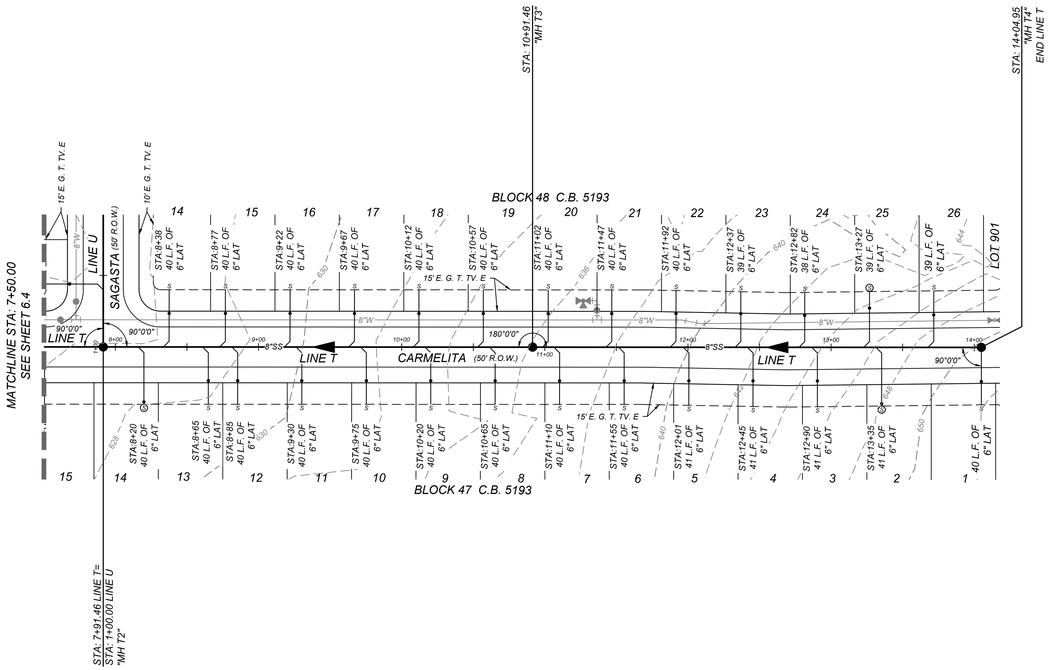
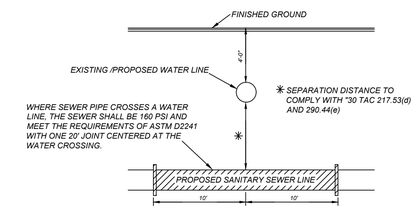
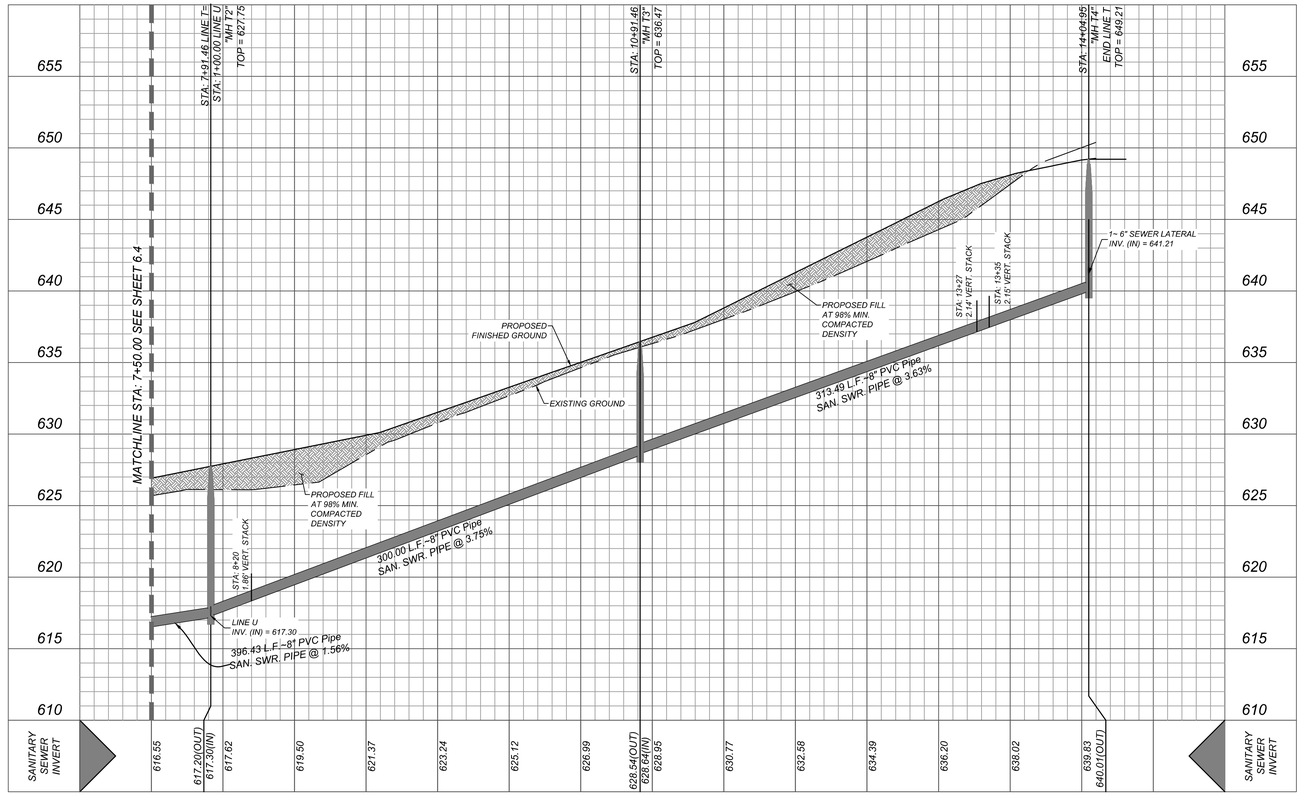




TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
N.T.S.

LINE "T"
STA: 7+50.00 - END

HORZ SCALE: 1"=50'
VERT SCALE: 1"=5'



KFW
ENGINEERS + SURVEYING
3421 Paesanos Pkwy, Suite 200, San Antonio, TX 78231
Phone: 210.979.8444 Fax: 210.979.8441
TBPE Firm # 8513 - TBPLS Firm # 10122300

ISSUE DATE
REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED
PROFESSIONAL ENGINEER
1/12/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

SEWER LINE T STA. 7+50.00 - END

PLAT NO. 22-11800155

JOB NO.	873-01-07
DATE:	MARCH 2022
DRAWN:	LM CHECKED: JM

SHEET NUMBER:
6.5

Date: Jan 11, 2024, 5:18pm User ID: Sdsteph
File: L:\873-01\07\Design Civil\SEWER\SSPP_873-01-07.dwg

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CAUTION!!
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NOTE:
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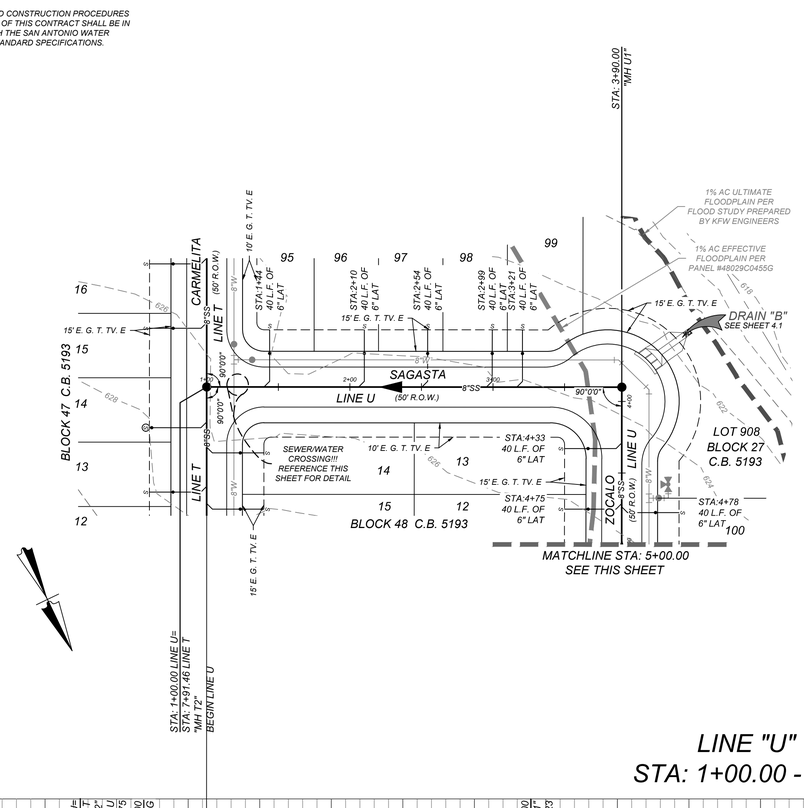
TRENCH EXCAVATION SAFETY PROTECTION
CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK 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.

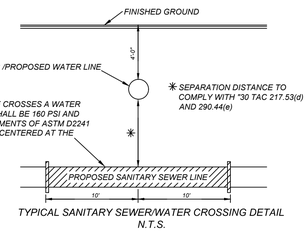
MANHOLE NOTE:
ALL MANHOLES MUST BE WATERTIGHT, WITH WATERTIGHT RINGS AND COVERS. THESE MANHOLES MUST BE VENTED PER SAWS DETAIL DD852-02 UNLESS OTHERWISE NOTED

NOTE:

1. *SEWER PIPE WHERE WATER LINE CROSSES SHALL BE MEET THE REQUIREMENTS OF ASTM D2241. CONTRACTOR SHALL CENTER A 20 FOOT JOINT OF 160 P.S.I. PRESSURE RATED P.V.C. AT THE PROPOSED WATER CROSSING (NO SEPARATE PAY ITEM). REFERENCE SHEETS 6.1-6.2, SANITARY SEWER GENERAL NOTES, SARA CRITERIA FOR SEWER MAIN CONSTRUCTION IN THE VICINITY OF WATER MAINS.*
2. *PIPE TYPE DESIGNATIONS ARE SDR 26.*
3. *SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.*
4. *ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING AND COVER. SEE SHEET 6.8 FOR DETAILS.*
5. *NO 6" CLEANOUTS SHALL BE LOCATED UNDER DRIVEWAYS OR SIDEWALKS.*
6. *LATERAL CONNECTIONS MADE TO EXISTING INFRASTRUCTURE WILL NEED TO BE COMPLETED USING AN INSERTA TEE OR APPROVED EQUAL.*
7. *MANHOLES WILL NEED TO BE RESEALED WITH THE SARA APPROVED SEALING. IF SEAL COATING IS BROKEN, CONTRACTOR WILL HAVE MANHOLE RECOATED. RESEAL ALL LEAKS AT CONTRACTOR EXPENSE.*
8. *IF 5 OR MORE LATERALS MUST BE TIED IN TO EXISTING MAIN, CONTRACTOR IS RESPONSIBLE FOR RETESTING*

WATER/SEWER CROSSING NOTE:
ALL WATER/SEWER CROSSINGS SHALL COMPLY WITH SAWS SPECIFICATION ITEM 812 SANITARY SEWER/WATER DETAIL.

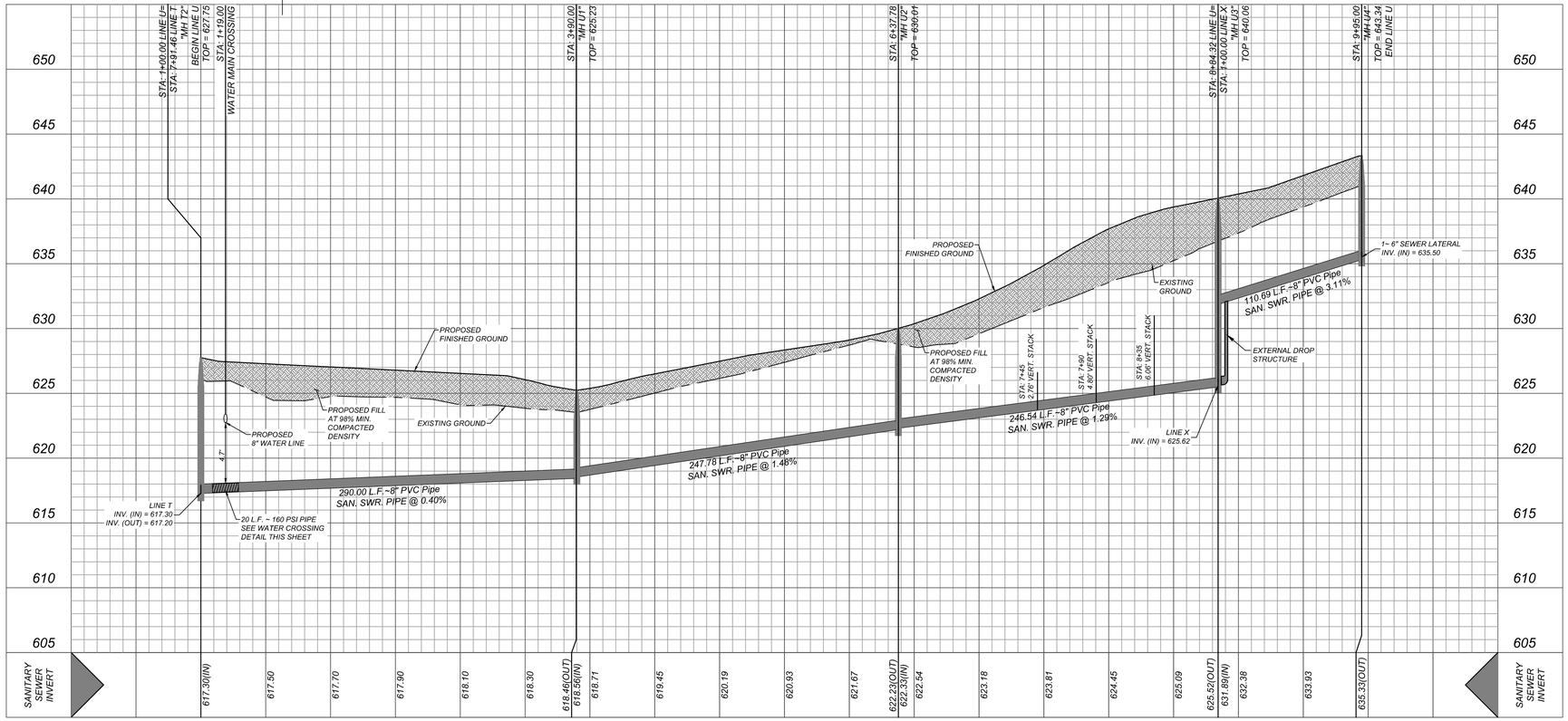




TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
N.T.S.

LINE "U"
STA: 1+00.00 - END

HORZ SCALE: 1"=50'
VERT SCALE: 1"=5'



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Phone: 210-979-8444 • Fax: 210-979-8441
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED
PROFESSIONAL ENGINEER
1/12/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

SEWER LINE U STA. 1+00.00 - END

PLAT NO.
22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER:
6.6

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Date: Jan 11, 2024, 5:19pm User ID: SJoseph
File: L:\873\01\07\Design\Civil\SEWER\SSPP_873010707.dwg

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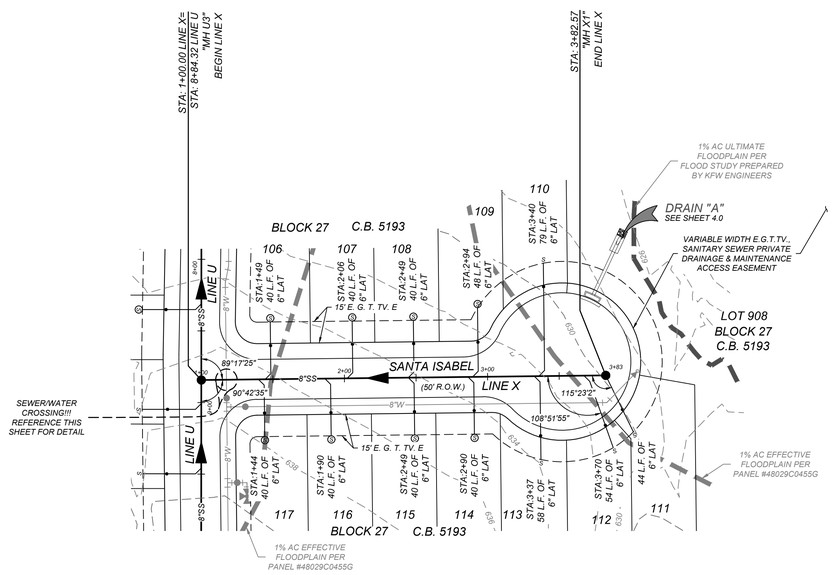
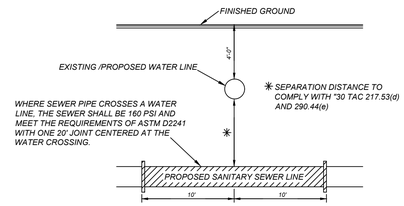
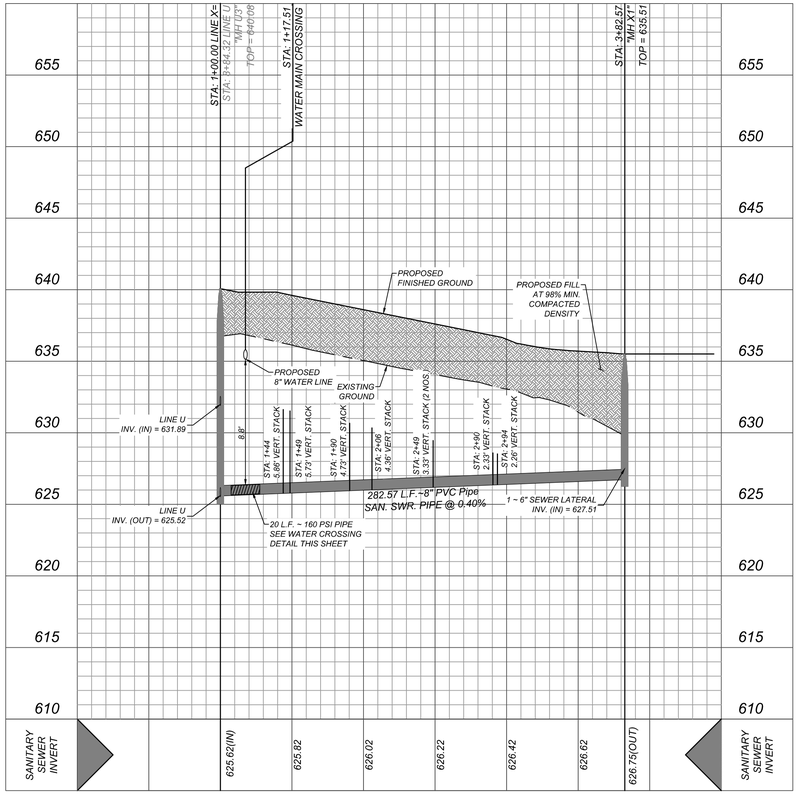




TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
N.T.S.

LINE "X"
STA: 1+00.00 - END

HORZ SCALE: 1"=50'
VERT SCALE: 1"=5'



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REVISIONS
ISSUE DATE

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
2/14/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

SEWER LINE X STA. 1+00.00 - END

PLAT NO. 22-11800155
JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM
SHEET NUMBER: 6.7

Date: Feb 09, 2024, 8:28am User ID: SJoseph
File: L:\873\07\07\Design Civil\SEWER\SSPP_873O107.dwg

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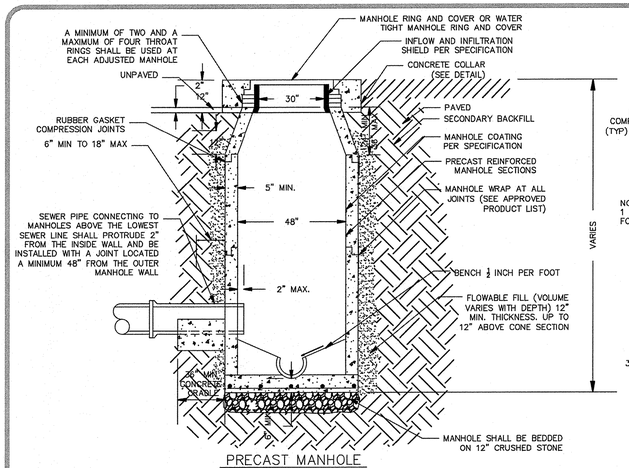
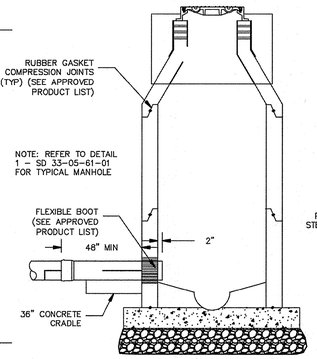
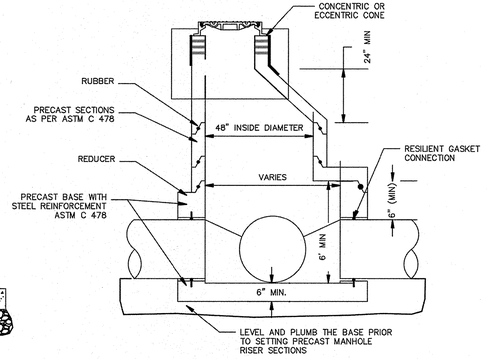


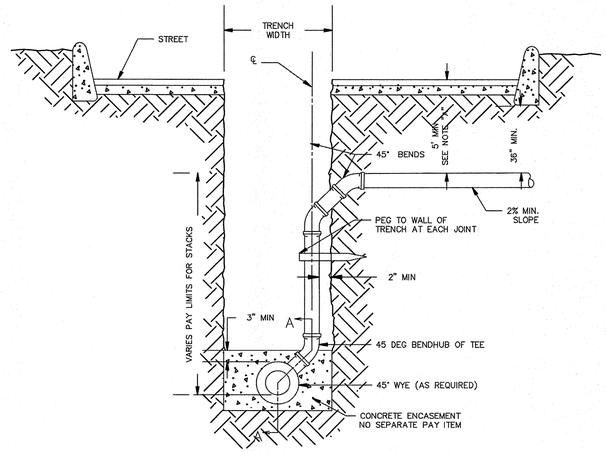
PRECAST MANHOLE



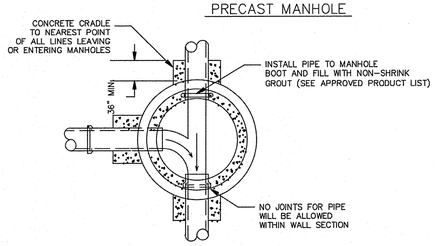
PRECAST MANHOLE
PRECAST BASE



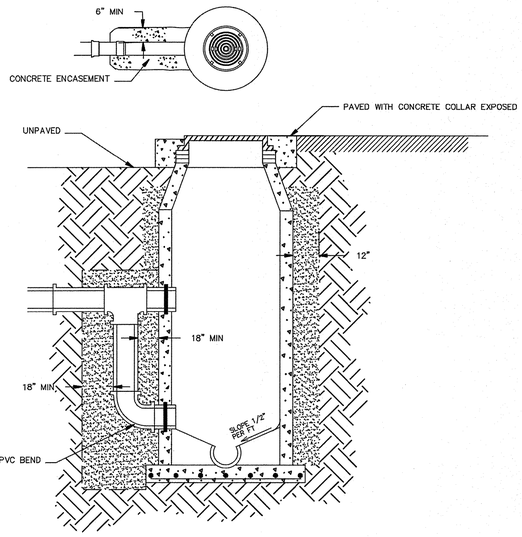
PRECAST MANHOLE ON PRECAST BASE
FOR PIPE SIZES 24" AND LARGER

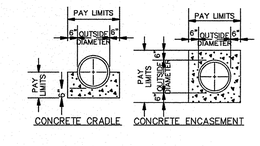


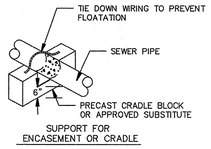
VERTICAL STACK DETAIL



MANHOLE FLOOR PLAN

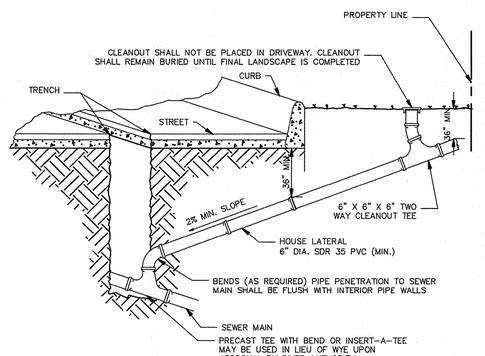


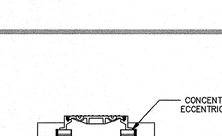




SUPPORT FOR ENCASEMENT OR CRADLE

NOTES:
1) ALL CONCRETE ENCASEMENT SHALL BE POURED AT A PLANE 6" ABOVE THE PIPE BETWEEN EXCAVATED TRENCH WALLS.
2) ALL SEWER PIPE WITH LESS THAN 3' OF COVER TO SUBGRADE SHALL BE CONCRETE ENCASED.
3) ALL FORCE MAINS SHALL BE PROVIDED WITH THRUST BLOCKS, WHERE CHANGES IN DIRECTION OCCUR, AT TEES, BENDS, CROSSES, CHANGES IN SIZE, STOPS, OR AS DIRECTED BY SAWA.





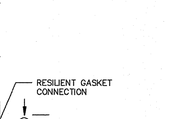
CONCRETE JOINTING COLLAR

AFTER CENTERING PIPE ENDS, WRAP JOINTS WITH 3" WIDE POLYVINYL TAPE OR RUBBER ADAPTER, CAN-TEX.1-70A OR EQUAL

½" PIPE SECTIONS TO BE BLOCKED AND SUPPORTED SIMILAR TO THE ENCASEMENT DETAIL SHOWN BELOW, (SUBJECT TO APPROVAL)

CONCRETE COVER FOR FLEXIBLE PIPE

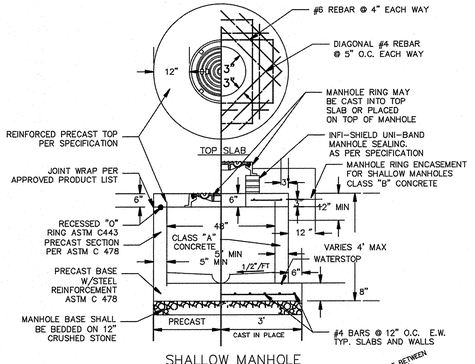
TO BE USED WHEREVER TRENCH WIDTH IS GREATER THAN TWO FEET (2') PLUS O.D.



TYPICAL CONCRETE SADDLE

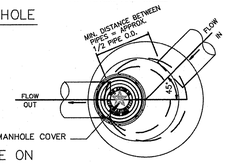
NOTES:

1. A MINIMUM OF 36" OF COVER FROM GRADE IS REQUIRED. IF 36" OF COVER CANNOT BE OBTAINED, THEN CONCRETE ENCASEMENT WILL BE REQUIRED.
2. DEPTH AND GRADE OF SERVICE LATERALS AS SHOWN, ARE TYPICAL AND NOT TO SCALE. ACTUAL DEPTH, ALIGNMENT AND GRADE OF SERVICE LATERALS SHALL BE DETERMINED BY THE ENGINEER BASED ON THE ELEVATIONS OF THE SEWER MAIN, STREET, NATURAL GROUND AND BUILDING TO BE SERVICED.



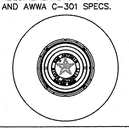
SHALLOW MANHOLE

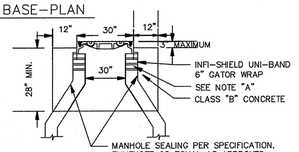
MAX PIPE SIZE OD		
MANHOLE DIA	0° To 45° > DEFL.	45° DEFL.
5 FT	42"	32"
6 FT	51"	38"
8 FT	73 1/2"	50"

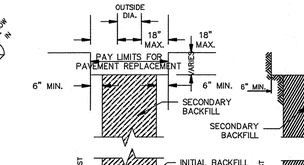


PRECAST MANHOLE ON PRECAST BASE–PLAN

NOTE: PIPE TRENCH AND BEDDING MATERIAL MUST ALSO MEET ANY REQUIREMENTS OF PIPE MANUFACTURER AND AWWA C-301 SPECS.





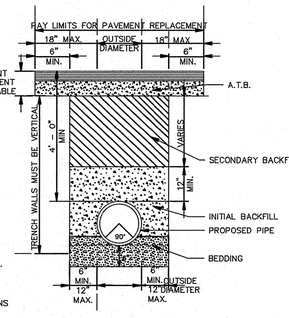


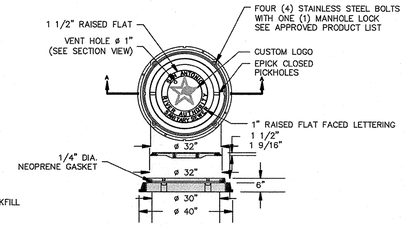
* SEWER GRAVEL 12" MIN. OR 1/8 O.D. OF THE PIPE, WHICHEVER IS GREATER AS DIRECTED BY THE RIVER AUTHORITY

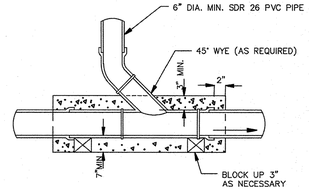
1) RIGID PIPE – UNSTABLE OR UNACCEPTABLE CONDITIONS FLEXIBLE PIPE – ALL CONDITIONS

* IN AREAS OF OVER EXCAVATION, ENCASEMENT SHALL EXTEND FROM TRENCH WALL TO TRENCH WALL. PAY LIMITS SHALL NOT EXCEED 12" MAX. AS SHOWN ON DETAIL. ADDITIONAL ENCASEMENT SHALL BE INCIDENTAL.

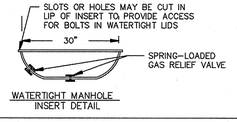
2) RIGID PIPE – EXISTING STABLE BEDDING CONDITIONS







SECTION A–A



WATERTIGHT MANHOLE INSERT DETAIL

VENT HOLE SECTION

NOTE:
1. MANHOLE RING ENCASEMENT (COLLAR) REQUIRED ON ALL MANHOLES. SEE DETAIL.

SHEET

KFW ENGINEERS + SURVEYING
3421 Paesanos Parkway, Suite 200 • San Antonio, Texas 78231
Phone #: (210) 979-8444 • Fax #: (210) 979-8441
TBPE Firm #: 9513 • TBPLS Firm #: 10122200

SAN ANTONIO RIVER AUTHORITY
100 E. GUENTHER STREET
SAN ANTONIO, TEXAS 78283

DESIGNED BY: MSUT
DRAWN BY:
CHECKED BY:
APPROVED BY:
DATE:
FILE:

NO.	REVISION	DATE	BY

REVISED 5/25/2022

ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
10/19/22

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

SANITARY SEWER DETAIL SHEET

PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER: 6.8

Date: Oct 17, 2022, 10:50am User ID: rsaldana
File: L:\873\01\07\Design\Civil\SEWER\SS_DT_8730107.dwg

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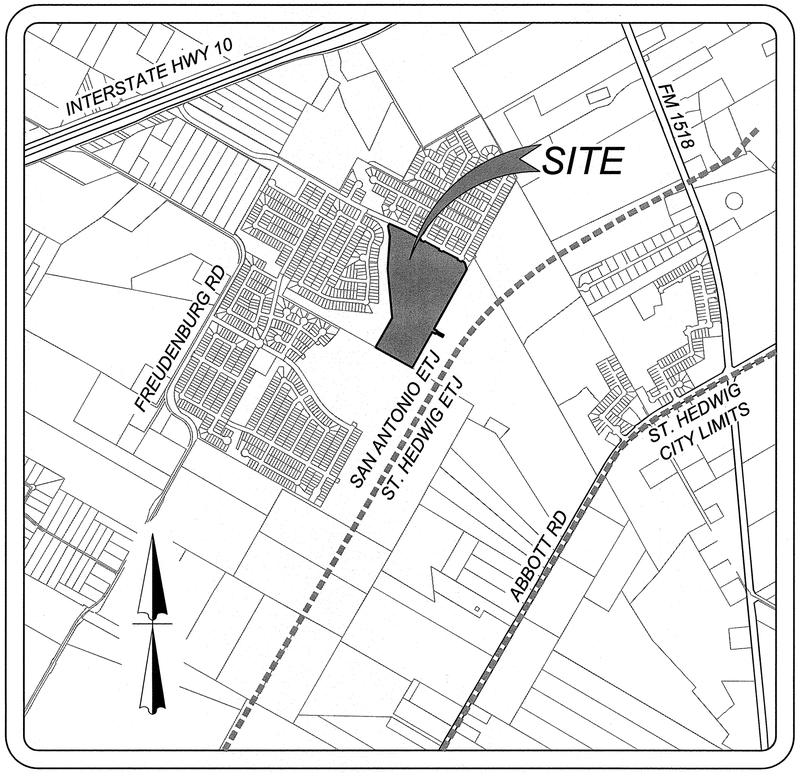
ELIZONDO SUBDIVISION, UNIT 4

BEXAR COUNTY, TEXAS

WATER IMPROVEMENTS



LOCATION MAP

N.T.S

INDEX

DESCRIPTION	
WATER COVER SHEET	7.0
OVERALL WATER PLAN	7.1
OVERALL WATER PLAN	7.2
WATER DETAIL SHEET	7.3

GENERAL NOTES

1. ALL VALVES SHALL REMAIN CLOSED UNTIL MAINS HAVE BEEN DISINFECTED, FLUSHED, AND RELEASED FOR PUBLIC USE BY THE ENGINEER.
2. EXISTING UTILITIES SHOWN ARE TAKEN FROM VARIOUS UTILITY COMPANY RECORDS. CONTRACTORS SHALL VERIFY THE EXACT LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES, WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO BEGINNING CONSTRUCTION. CONTRACTORS SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING UTILITIES AND DRAINAGE STRUCTURES DURING CONSTRUCTION.
3. ALL EXCAVATION SHALL BE UNCLASSIFIED REGARDLESS OF MATERIAL ENCOUNTERED.
4. BIDDERS ARE NOTIFIED TO MAKE SUBSURFACE INVESTIGATIONS AS THEY DEEM NECESSARY. NO ADDITIONAL PAYMENT WILL BE MADE FOR WATER, SAND, GRAVEL OR OTHER UNSTABLE CONDITIONS ENCOUNTERED IN EXCAVATIONS.
5. DETOUR OF TRAFFIC AROUND WORK ACTIVITIES, MAINTENANCE OF TRAFFIC CONTROL SIGNS, AND FLAGMEN ARE THE CONTRACTOR'S RESPONSIBILITY. NO SEPARATE PAYMENT WILL BE MADE.
6. THE CONTRACTOR SHALL PROTECT ALL OPEN EXCAVATIONS AND EQUIPMENT FROM CHILDREN, PEDESTRIANS, AND VEHICLES IN THE AREA.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION OF ALL FENCES IN THE WORK AREA TO THEIR ORIGINAL CONDITION PRIOR TO COMPLETION OF THE CONTRACT. THIS SHALL APPLY TO ALL FENCES IN THE WORK AREA WHETHER THEY ARE SHOWN ON THE PLANS OR NOT.
8. CONTRACTOR SHALL PRESERVE ALL CONSTRUCTION STAKES, MARKS, ETC. ANY CONSTRUCTION STAKES, MARKS, ETC., DESTROYED OR REMOVED BY THE CONTRACTOR OR HIS EMPLOYEES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
9. THE CONTRACTOR SHALL CONFER WITH EACH INDIVIDUAL PROPERTY OWNER AS TO THE LOCATION OF EACH INDIVIDUAL METER BOX.
10. CONTRACTOR SHALL DISINFECT ALL NEW WATER MAINS BEFORE TYING INTO EXISTING WATER MAINS.
11. ALL VALVES SHALL BE PERMANENTLY MARKED BY THE USE OF A VALVE MARKER. NO SEPARATE PAY ITEM.
12. 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(S) 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.
13. CONTRACTOR SHALL MAINTAIN FENCING FOR THE CONTAINMENT OF LIVESTOCK DURING CONSTRUCTION. ALL FENCES REMOVED FOR CONSTRUCTION SHALL BE REPLACED. ALL REQUIRED FENCING SHALL BE INCIDENTAL TO CONSTRUCTION AND NOT A SEPARATE PAY ITEM.
14. ALL DRIVEWAYS, INCLUDING DRAIN PIPES, CULVERTS AND HEADWALLS, DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR TO EQUAL OR BETTER THAN PRECONSTRUCTION CONDITION. ASPHALT DRIVES ARE NOT ALLOWED TO BE CUT WITHOUT OWNERS PERMISSION. INSTALLATION OF WATER MAINS CROSSING CONCRETE DRIVES WILL BE BORED. ALL DRAIN PIPE, CULVERT AND HEADWALL REPAIR SHALL BE INCIDENTAL TO CONSTRUCTION AND NOT A SEPARATE PAY ITEM. DRIVEWAY PAVEMENT REPAIR SHALL BE PAID FOR AS PER ITEM NO. 02950, "CUTTING AND PATCHING ASPHALT PAVEMENT, ASPHALT DRIVES, CONCRETE DRIVES, OR GRAVEL ROADS AND DRIVES". PAYMENT FOR BORES UNDER CONCRETE DRIVES DRIVES SHALL BE PAID FOR AS PER ITEM 02445 "BORING AND CASING PIPE UNDER HIGHWAYS, RAILROADS, OR OTHER AREAS".
15. LOCATIONS OF COMBINATION AIR VALVES WHERE SHOWN ON PLANS ARE APPROXIMATE. FINAL LOCATIONS TO BE ADJUSTED IN FIELD AT TIME OF CONSTRUCTION AT THE DIRECTION OF THE ENGINEER.
16. ALL WORK SHALL BE SCHEDULED TO TAKE PLACE ON MONDAY THROUGH FRIDAY, DURING NORMAL WORK HOURS. CONTRACTOR SHALL NOTIFY ECSUD 48 HOURS PRIOR TO SERVICE SHUT OFF AFFECTING CUSTOMERS. SERVICE SHALL NOT BE SHUT OFF FOR MORE THAN EIGHT (8) HOURS AT A TIME.
17. THE CONTRACTOR SHALL IMMEDIATELY REPAIR OR REPLACE ANY PHYSICAL DAMAGE TO PROPERTY, INCLUDING, BUT NOT LIMITED TO, FENCES, PAVEMENT, DRIVEWAYS, LAWNS, CULVERTS, AND TREES, AT NO COST TO THE OWNER.
18. THE CONTRACTOR SHALL PROVIDE EROSION CONTROL AT ALL CULVERT, STREAM AND DRAINAGE SWALE CROSSINGS. EROSION CONTROL MEASURES SHALL INCLUDE AS A MINIMUM SILT FENCES. SILT FENCES SHALL BE INSTALLED PRIOR TO DISTURBANCE OF THE WORK AREAS AND SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION OF THE DISTURBED AREAS UPSTREAM. EROSION CONTROL SHALL BE COORDINATED WITH THE ENGINEER.
19. THE CONTRACTOR SHALL REMOVE AND REPLACE ANY MAILBOXES, TRAFFIC OR ROAD SIGNS ENCOUNTERED. NO SEPARATE PAY ITEM.
20. CONTRACTOR SHALL SUBMIT TO ENGINEER PROPOSED CONSTRUCTION SEQUENCE PRIOR TO BEGINNING CONSTRUCTION.
21. ALL FITTINGS ARE TO BE DUCTILE IRON, MECHANICAL JOINT TYPE, UNLESS OTHERWISE NOTED ON PLANS.
22. ALL THRUST BLOCKS SHALL BE INSPECTED BY OWNER AND/OR ENGINEER PRIOR TO BACKFILLING.
23. ALL EXISTING VALVES SHOWN ON PLANS TO BE ABANDONED, SHALL HAVE BOXES REMOVED AND SHALL BE BACKFILLED ACCORDING TO SPECIFICATIONS. NO SEPARATE PAY ITEM.
24. CONTRACTOR SHALL CONTAIN ALL CONSTRUCTION AND STAGING WITHIN EXISTING UTILITY EASEMENTS, UNLESS OTHER ARRANGEMENTS ARE MADE WITH OWNER AND/OR TxDOT.
25. WHERE THE NEW WATER MAIN SHOWN ON THE PLANS REQUIRES CROSSING AN EXISTING WATER MAIN OR OTHER UTILITY, THE CONTRACTOR SHALL VERTICALLY DEFLECT THE PROPOSED WATER MAIN. DEFLECTION SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURER'S RECOMMENDATIONS. FITTINGS ARE NOT PERMISSIBLE, UNLESS OTHERWISE SHOWN ON THE PLANS. NO SEPARATE PAY ITEM.
26. WATER MAINS SHALL BE INSTALLED WITH 48" MINIMUM COVER OVER THE TOP OF THE PIPE, UNLESS OTHERWISE NOTED ON THE PLANS OR DIRECTED BY THE ENGINEER.
27. CONTRACTOR TO PROVIDE POSITIVE DRAINAGE AWAY FROM ALL CONCRETE FOUNDATIONS, VAULT BOXES AND OVERFLOW BOXES THROUGHOUT THE PROJECT SITE.
28. CONTRACTOR TO INSTALL DIRECT BURIAL ELECTRICALLY CONTINUOUS TRACER WIRE WITH ACCESS POINTS, ADJACENT TO ALL WATER MAINS. N.S.P.I.

OWNER/DEVELOPER:
FORESTAR (USA) REAL ESTATE GROUP, INC.
10700 PECAN PARK BLVD. STE. 150
AUSTIN, TX 78750
PHONE: (512) 433-5231

STATE OF TEXAS
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TBPE Firm #: 9513 • TBPLS Firm #: 10122300

JOB NO. - 873-01-07

PLAT NO. : 22-11800155

SHEET 7.0

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COMPACTION NOTE:
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TRENCH EXCAVATION SAFETY PROTECTION
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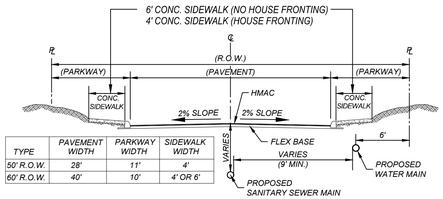
DRY UTILITY CONDUIT NOTE:
CONDUIT LOCATIONS SHOWN ON PLAN ARE FOR GEOGRAPHICAL PURPOSES ONLY AND ARE APPROXIMATE. CONTRACTOR TO INSTALL PROPOSED CONDUITS IN ACCORDANCE WITH DRY UTILITY PURVEYOR'S SPECIFICATIONS. CONTRACTOR TO VERIFY THE CONDUIT LOCATIONS AND SIZES BASED ON THE DRY UTILITY PURVEYOR'S PLAN.

NOTE:
PRESSURE REDUCING VALVES TO BE THE RESPONSIBILITY OF THE HOME BUILDER WHERE REQUIRED

NOTE:
CONTRACTOR SHALL COORDINATE WITH EAST CENTRAL WATER DISTRICT TO VERIFY THE LOCATION OF ISOLATION VALVES. OPERATION OF ISOLATION VALVES SHALL ONLY BE MADE WITH THE APPROVAL AND PRESENCE OF EAST CENTRAL WATER DISTRICT PERSONNEL

WATER PLAN NOTES:
1. *ALL VALVES SHALL READ "OPEN RIGHT"*
2. *ALL PVC PIPE SHALL BE C-900 CLASS 150.*
3. *LONG WATER SERVICES REQUIRE 2" PVC CASING*

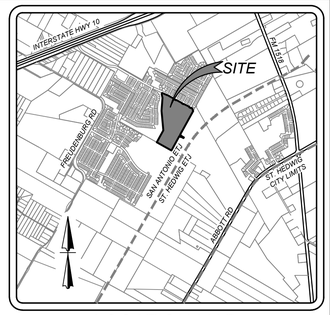
FIRE FLOW NOTE:
IN AN EFFORT TO MEET THE CITY OF SAN ANTONIO'S FIRE FLOW REQUIREMENTS FOR THE PROPOSED RESIDENTIAL DEVELOPMENT, THE PUBLIC WATER MAIN SYSTEM HAS BEEN DESIGNED FOR A MINIMUM FIRE FLOW DEMAND OF 1,000 GPM AT 25 PSI RESIDUAL PRESSURE. THE FIRE FLOW REQUIREMENTS FOR INDIVIDUAL STRUCTURES WILL BE REVIEWED DURING THE BUILDING PERMIT PROCESS IN ACCORDANCE WITH THE PROCEDURES SET FORTH BY THE CITY OF SAN ANTONIO DIRECTOR OF DEVELOPMENT SERVICES DEPARTMENT AND THE SAN ANTONIO FIRE DEPARTMENT FIRE MARSHAL.



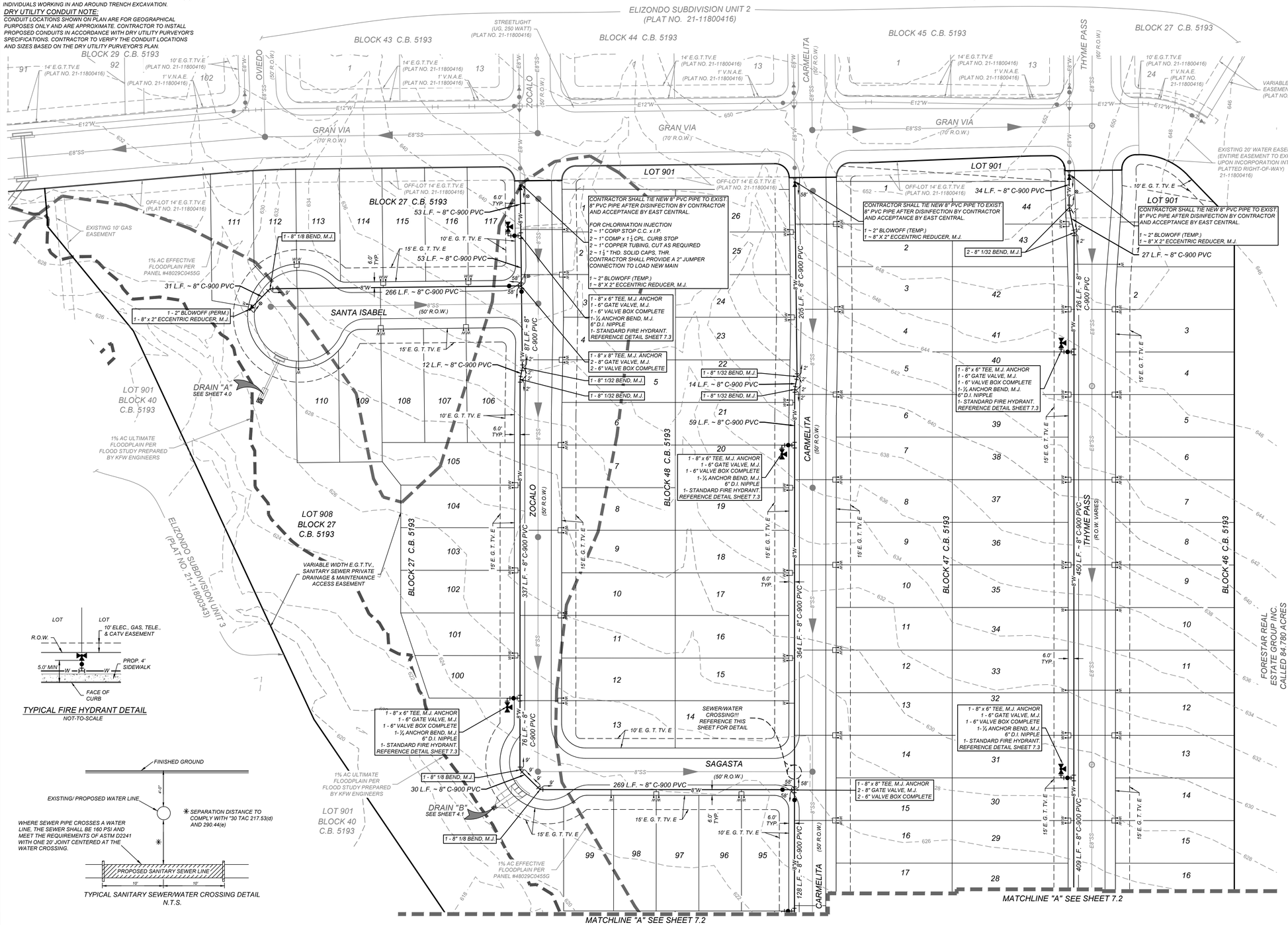
TYPE	PAVEMENT WIDTH	PARKWAY WIDTH	SIDEWALK WIDTH
50' R.O.W.	28'	11'	4'
60' R.O.W.	40'	10'	4' OR 6'

TYPICAL STREET SECTION
N.T.S.

BEXAR COUNTY R.O.W. NOTE
A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY R.O.W.



LOCATION MAP
N.T.S



TYPICAL FIRE HYDRANT DETAIL
NOT-TO-SCALE

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
N.T.S.

SCALE : 1" = 50'
0' 50' 150'
100'

LEGEND

PROPOSED WATER MAIN	=	W
PROPOSED WATER SERVICE & METER BOX	=	
PROPOSED WATER 3/4" IRRIGATION SERVICE & METER BOX	=	
PROPOSED FIRE HYDRANT	=	
PROPOSED WATER VALVE	=	
PROPOSED 100 WATT STREETLIGHT	=	
PROPOSED SANITARY SEWER MAIN	=	SS
PROPOSED SANITARY SEWER MANHOLE	=	
PROPOSED SANITARY SEWER LATERAL	=	S
PROPOSED ELECTRIC, GAS, TELEPHONE, & CABLE TV EASEMENT	=	E.G.T.TV.E
EXISTING WATER MAIN	=	E.W
EXISTING FIRE HYDRANT	=	
EXISTING WATER VALVE	=	
EXISTING SANITARY SEWER MAIN	=	E.SS
EXISTING SANITARY SEWER MANHOLE	=	
EXISTING OVERHEAD ELECTRIC W/POWER POLE	=	OHE
EXISTING GUY WIRE/OVERHEAD ELECTRIC	=	OHE
EXISTING STREET LIGHT	=	
RESTRAINED LENGTH (TOTAL)	=	⊗

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TBPE Firm # 8513 • TBPLS Firm # 10122300

ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
2/15/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

OVERALL WATER PLAN

PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER: 7.1

Date: Feb 15, 2024, 7:40pm User ID: johnsocr.cs
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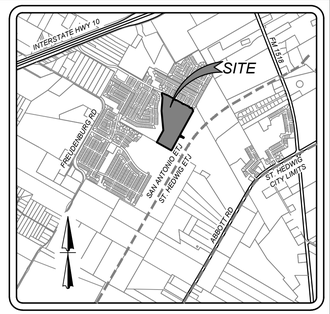

LOCATION MAP
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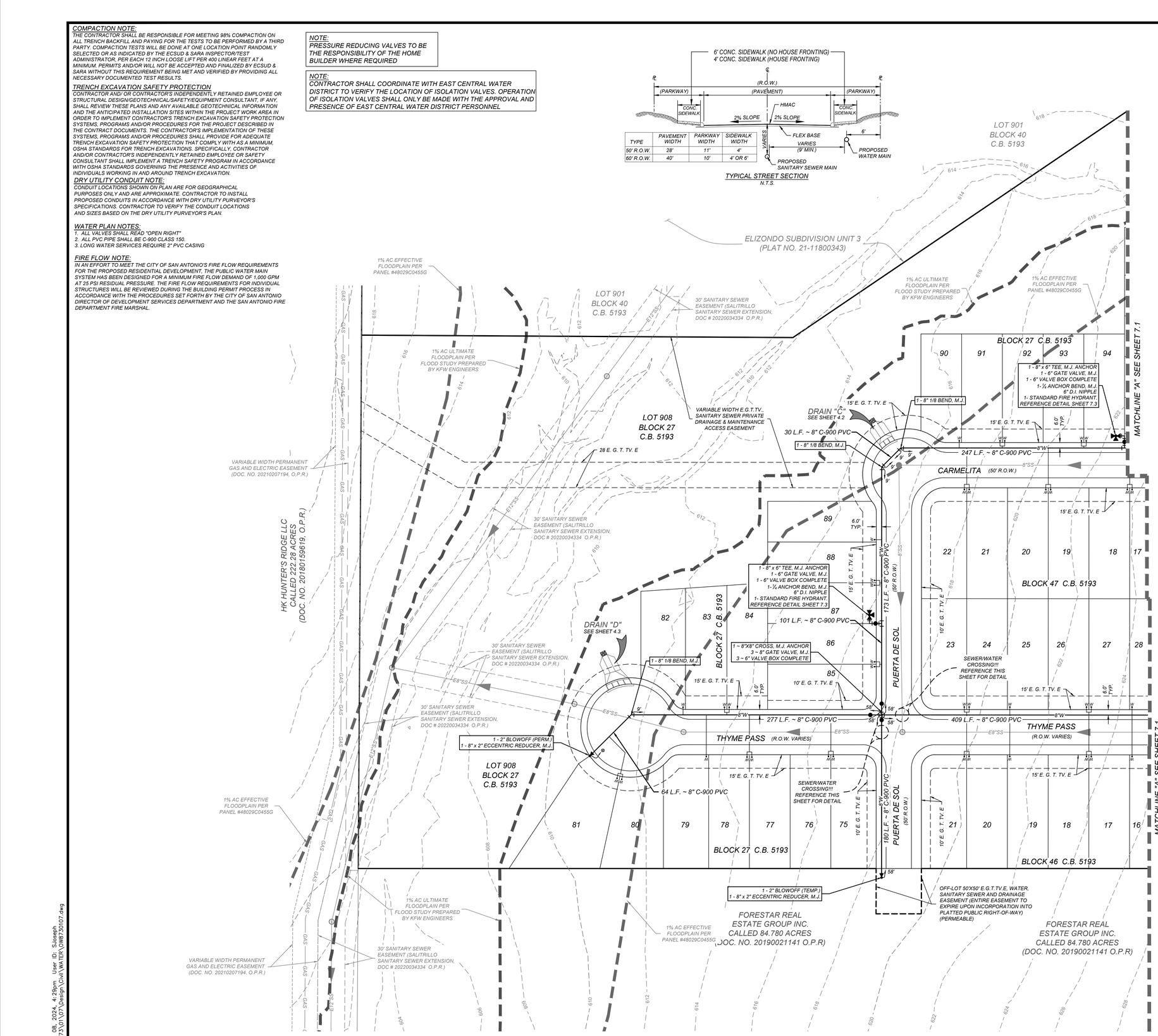

LEGEND

PROPOSED WATER MAIN	=	W
PROPOSED WATER SERVICE & METER BOX	=	W
PROPOSED WATER 3/4" IRRIGATION SERVICE & METER BOX	=	IRR
PROPOSED FIRE HYDRANT	=	
PROPOSED WATER VALVE	=	
PROPOSED 100 WATT STREETLIGHT	=	
PROPOSED SANITARY SEWER MAIN	=	SS
PROPOSED SANITARY SEWER MANHOLE	=	
PROPOSED SANITARY SEWER LATERAL	=	
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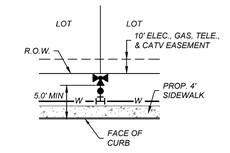
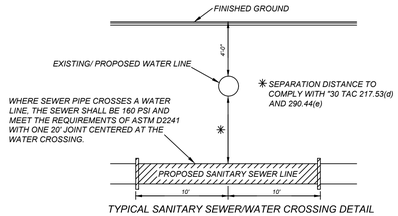
EXISTING WATER MAIN	=	E W
EXISTING FIRE HYDRANT	=	
EXISTING WATER VALVE	=	
EXISTING SANITARY SEWER MAIN	=	E SS
EXISTING SANITARY SEWER MANHOLE	=	
EXISTING OVERHEAD ELECTRIC W/POWER POLE	=	OHE
EXISTING GUY WIRE/OVERHEAD ELECTRIC	=	OHE
EXISTING STREET LIGHT	=	
RESTRAINED LENGTH (TOTAL)	=	



TYPICAL FIRE HYDRANT DETAIL
NOT-TO-SCALE



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
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SCALE : 1" = 50'
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PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER: 7.2

Date: Feb 08, 2024, 4:29pm User ID: Sukseph
File: L:\873\07\Design Civil\MEP\ (0873-07-WATER).dwg

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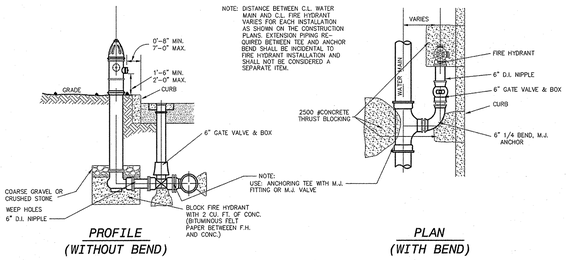
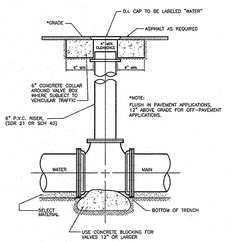
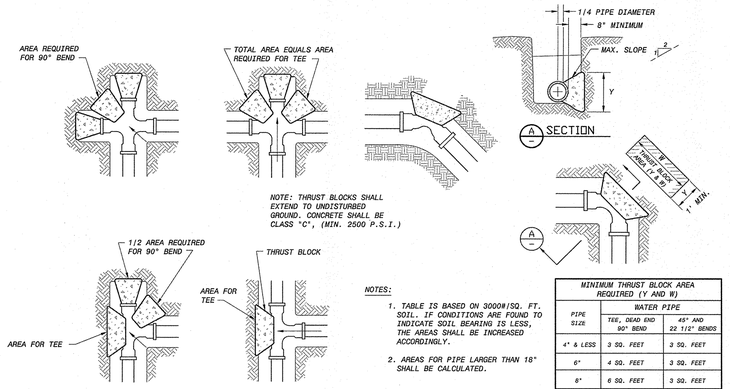


FIRE HYDRANT INSTALLATION N.T.S.



GATE VALVE W/ VALVE BOX N.T.S.



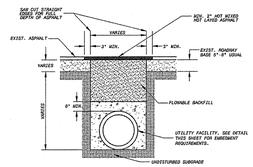
NOTES:

1. TABLE IS BASED ON 3000#/SQ. FT. SOIL. IF CONDITIONS ARE FOUND TO INDICATE SOIL BEARING IS LESS, THE AREAS SHALL BE INCREASED ACCORDINGLY.
2. AREAS FOR PIPE LARGER THAN 18" SHALL BE CALCULATED.

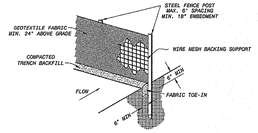
MINIMUM THRUST BLOCK AREA REQUIRED (Y AND W)

PIPE SIZE	WATER PIPE	
	TEE, DEAD END 90° BEND	45° AND 22 1/2° BENDS
4" & LESS	3 SQ. FEET	2 SQ. FEET
6"	4 SQ. FEET	2 SQ. FEET
8"	6 SQ. FEET	3 SQ. FEET
10"	9 SQ. FEET	5 SQ. FEET
12"	13 SQ. FEET	7 SQ. FEET
16"	23 SQ. FEET	12 SQ. FEET
18"	29 SQ. FEET	15 SQ. FEET

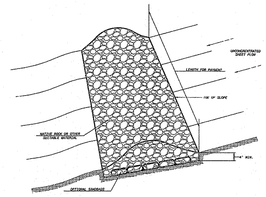
THRUST BLOCK DETAILS N.T.S.



BACKFILL AND PATCH PAVEMENT N.T.S.



TEMPORARY SILT FENCE N.T.S.



TEMPORARY ROCK BERM N.T.S.

EMBEDMENT FOR WATER CONDUITS

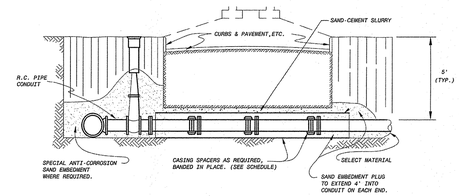
TYPE OF PIPE	IN EARTH			IN ROCK		
	0'-8'	8'-16'	>16'	0'-8'	8'-16'	>16'
ALL PVC WATER PIPE	C+	B+	B+	C+	B+	B+
16" AND SMALLER DUCTILE IRON WATER PIPE	D+	C	B	C	C	B
18" AND LARGER DUCTILE IRON WATER PIPE	B	B	B	B	B	B

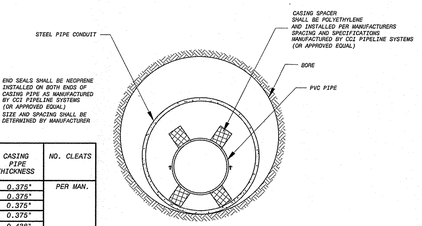
EMBEDMENT DETAILS N.T.S.

EMBEDMENT DIMENSIONS

PIPE DIAMETER (INCHES)	KIND OF PIPE	EXTERNAL DIAMETER Bc (INCHES)	TRENCH WIDTH Bd (INCHES)
6"	PVC	6.90	24
6"	DI	6.90	24
8"	PVC	9.05	25
8"	DI	9.05	25
10"	PVC	11.10	27
10"	DI	11.10	27
12"	PVC	13.20	29
12"	DI	13.20	29
16"	DI	17.40	33
18"	DI	19.50	36
20"	DI	21.60	39

NOTE: ALIGNMENT AND GRADE OF CONDUIT WILL BE SPECIFIED ON THE CONSTRUCTION PLANS.





CARRIER PIPE SIZE	CASING PIPE SIZE	CASING PIPE THICKNESS	NO. CLEATS
6"	18"	0.375"	PER MAN.
8"	20"	0.375"	
12"	24"	0.375"	
16"	30"	0.375"	
20"	36"	0.438"	
24"	42"	0.438"	
30"	48"	1/2"	
36"	54"	9/16"	

SECTION THROUGH PIPE IN CONDUIT

INSTALLATION OF PIPE IN CONDUIT N.T.S.

KFW ENGINEERS + SURVEYING
3421 Paesanos Pkwy, Suite 200 San Antonio, TX 78231
Phone #: (210) 979-8444 • Fax #: (210) 979-8441
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

NO.	DATE	REVISIONS DESCRIPTION	BY
PROJ. #	17-FESUD	DES. BY:	SS
DATE:	2018	DRN. BY:	SS
		CHKD. BY:	RWC

GALLEGOS ENGINEERING, INC.
SAN ANTONIO, TEXAS www.gallegosenginc.com PH: 210.641.0812

ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
10/17/22

EAST CENTRAL SPECIAL UTILITY DISTRICT

STANDARD DETAILS

SHEET 1 OF 1

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

WATER DETAIL SHEET

PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER: 7.3

Date: Oct 17, 2022, 10:51am User ID: rsaldana
File: L:\873\01\07\Design\Civil\WATER\DTOWB73O107.dwg

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COORDINATION NOTE:

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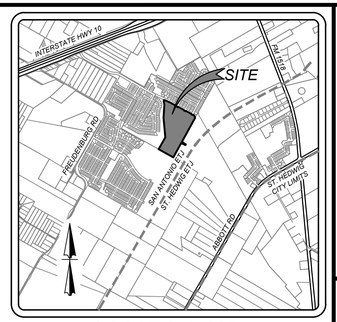
SW3P MODIFICATIONS

DATE	SIGNATURE	DESCRIPTION



LOCATION MAP
N.T.S

SCALE : 1" = 50'
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BEXAR COUNTY R.O.W. NOTE

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KFW ENGINEERS + SURVEYING
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Phone #: (210) 979-8444 Fax #: (210) 979-8441
TBPE Firm #: 8513 • TBPLS Firm #: 10124300

ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
2/15/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

STORM WATER POLLUTION PREVENTION PLAN

PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER:
8.0

Date: Feb 15, 2024, 7:58am User ID: Jchocoorias
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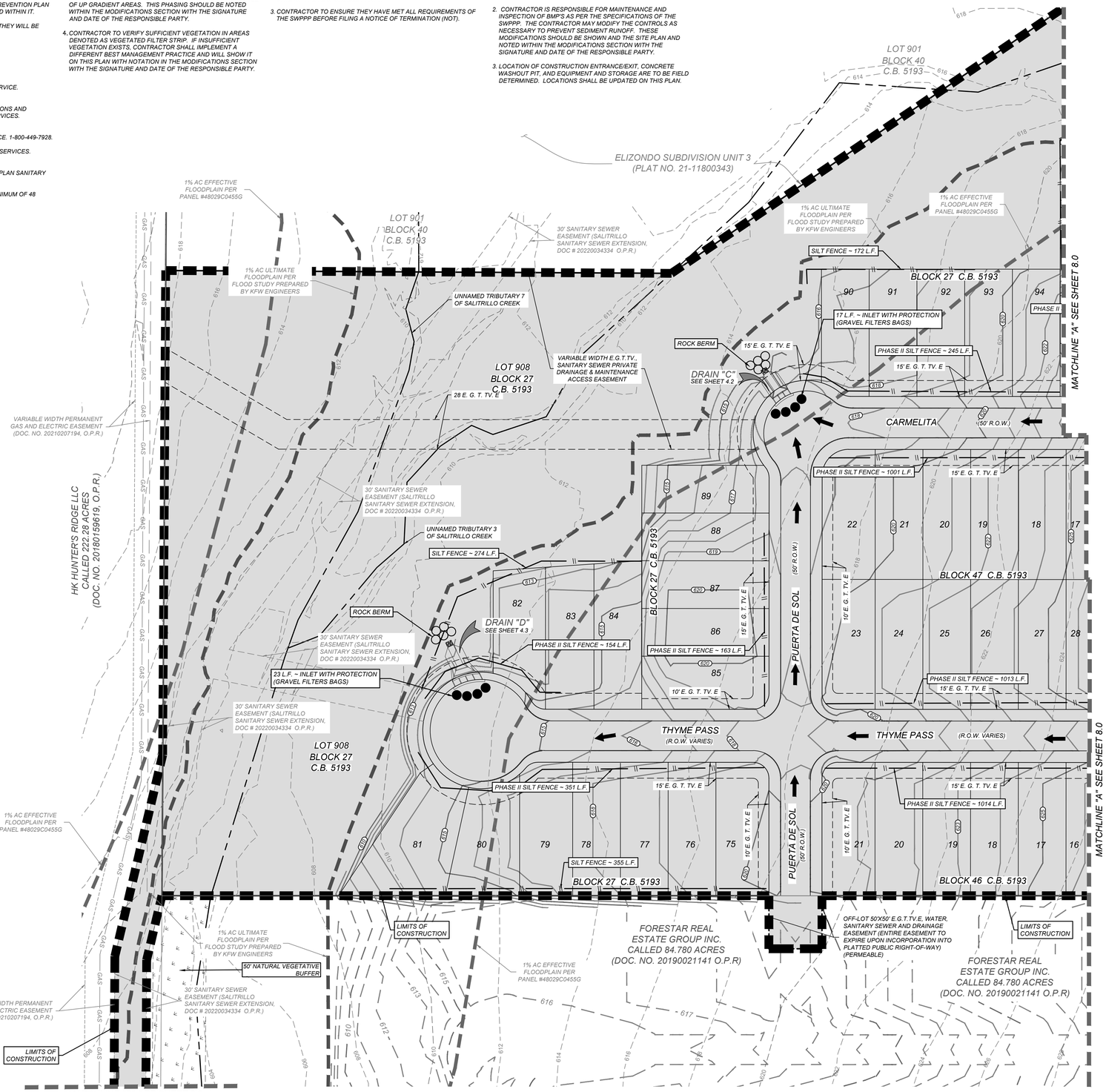

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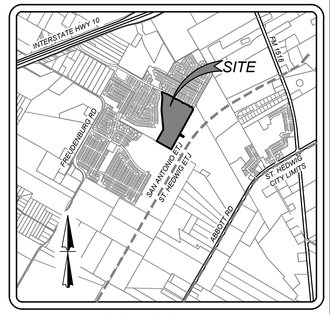

LOCATION MAP
N.T.S

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SW3P MODIFICATIONS

DATE	SIGNATURE	DESCRIPTION

KFW ENGINEERS + SURVEYING
3421 Paesanos Pkwy, Suite 200, San Antonio, TX 78231
Phone #: (210) 979-8444 Fax #: (210) 979-8441
TBPE Firm #: 8513 • TBPLS Firm #: 10124300

ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
2/14/24

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

STORM WATER POLLUTION PREVENTION PLAN

PLAT NO. 22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER:
8.1

Date: Feb. 09, 2024, 8:35am User ID: Sosseph
File: L:\873\01\07\Design\Civil\SW3P\873010707.dwg

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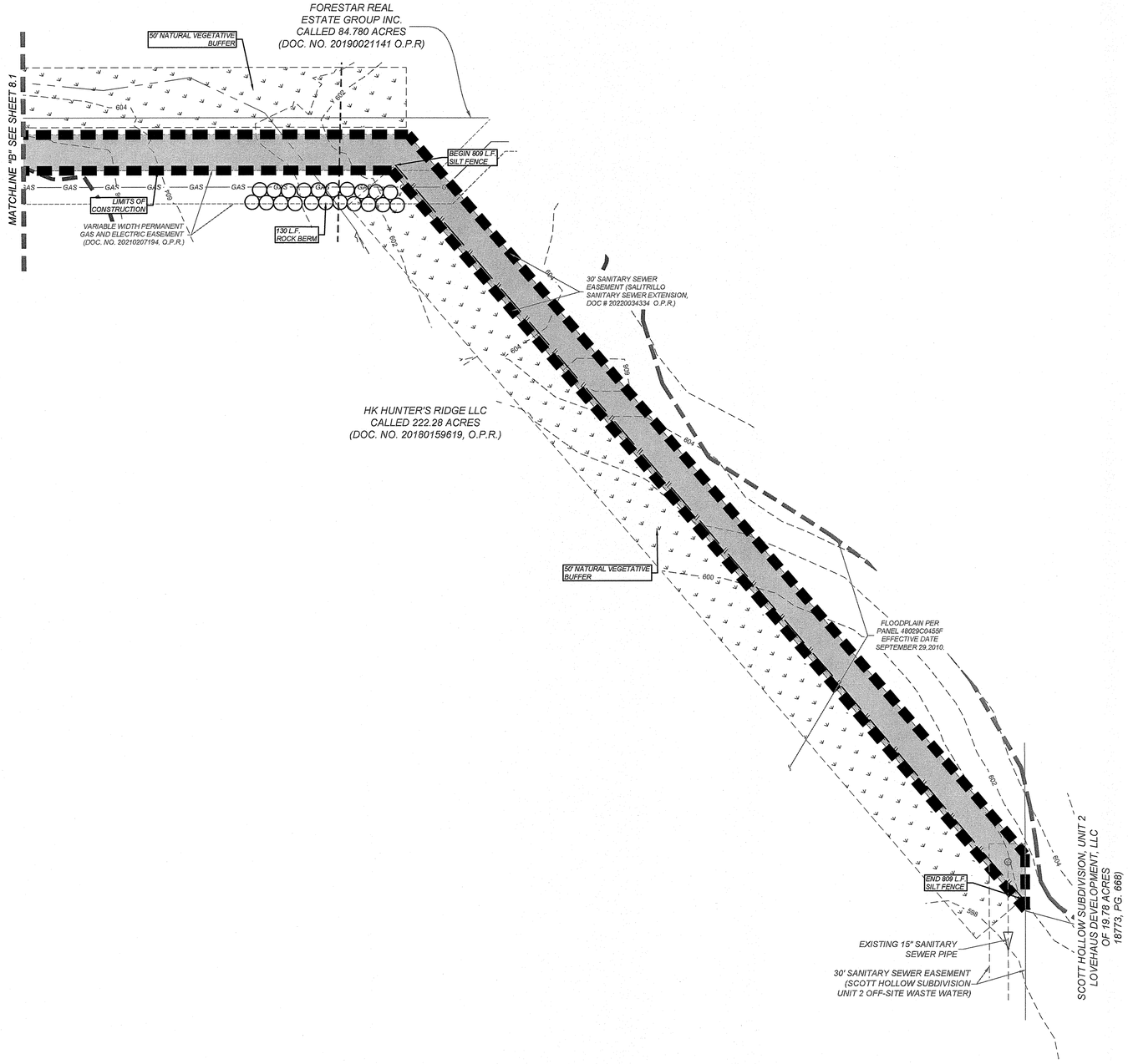

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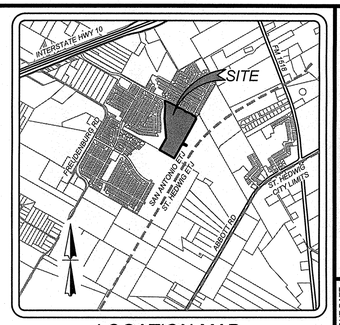

LOCATION MAP
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STATE OF TEXAS
JEFFREY W. MARTIN
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LICENSED
PROFESSIONAL ENGINEER

ELIZONDO SUBDIVISION, UNIT 4
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STORM WATER POLLUTION PREVENTION PLAN

PLAT NO.
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JOB NO. 873-01-07
DATE: MARCH 2022
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8.2

Date: Oct 17, 2022, 10:53am User ID: raaldana
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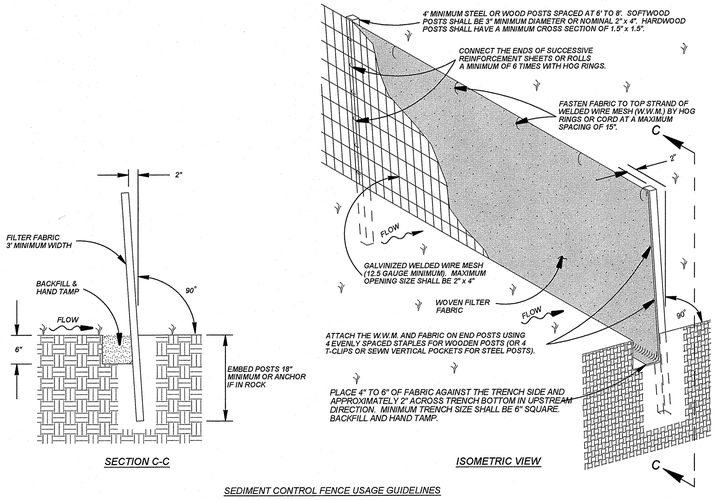


SECTION C-C

ISOMETRIC VIEW

SEDIMENT CONTROL FENCE USAGE GUIDELINES

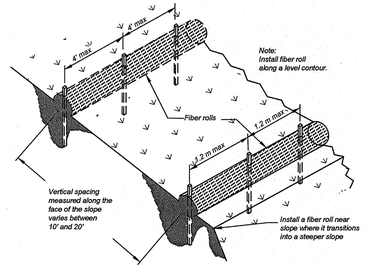
A SEDIMENT CONTROL FENCE MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUN-OFF. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED.

SEDIMENT CONTROL FENCE SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 100 GPM / FT SQUARED. SEDIMENT CONTROL FENCE IS NOT RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE AREA LARGER THAN 2 ACRES.

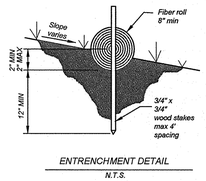
GENERAL NOTES

1. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

TEMPORARY SEDIMENT CONTROL FENCE



TYPICAL FIBER ROLL INSTALLATION
N.T.S.



ENTRENCHMENT DETAIL
N.T.S.

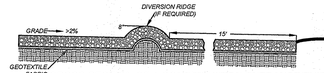
THE MATERIAL, INSTALLATION, INSPECTION, AND MAINTENANCE OF FIBER ROLLS WILL BE PER THE MANUFACTURE'S SPECIFICATIONS AND SHALL ALSO COMPLY WITH THE TEXAS COMMISSION OF ENVIRONMENTAL QUALITY CURRENT "TECHNICAL GUIDANCE ON BEST MANAGEMENT PRACTICES" AS NOTED BELOW.

Material:
(1) Core material: Core material should be biodegradable or recyclable. Material may be compost, mulch, aspen wood fibers, chipped site vegetation, agricultural rice or wheat straw, coconut fiber, 100% recyclable fibers, or similar materials.
(2) Containment Mesh: Containment mesh should be 100% biodegradable, photodegradable or recyclable such as burlap, twine, UV photodegradable plastic, polyester, or similar material. When the fiber role will remain in place as part of a vegetative system use biodegradable or photodegradable mesh. For temporary installation recyclable mesh is recommended.

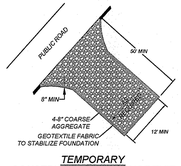
Implementation:
(1) Locate fiber rolls on level contours spaced as follows:
Slope inclination of 4:1 (H:V) or flatter: Fiber rolls should be placed at a maximum interval of 20 ft.
Slope inclination between 4:1 and 2:1 (H:V): Fiber Rolls should be placed at a maximum interval of 15 ft. (a closer spacing is more effective).
Slope inclination 2:1 (H:V) or greater: Fiber Rolls should be placed at a maximum interval of 10 ft. (a closer spacing is more effective).
(2) Turn the ends of the fiber roll up slope to prevent runoff from going around the roll.
(3) Stake fiber rolls into a 2 to 4 in. deep trench with a width equal to the diameter of the fiber roll.
(4) Drive stakes at the end of each fiber roll and spaced 4 ft maximum on center.
(5) Use wood stakes with a nominal classification of 0.75 by 0.75 in. and minimum length of 24 in.
(6) If more than one fiber roll is placed in a row, the rolls should be overlapped, not abutted.

Inspection and Maintenance Guidelines:
(1) Inspect prior to forecast rain, daily during extended rain events, after rain events, and weekly.
(2) Repair or replace split, torn, unraveling, or slumping fiber rolls.
(3) If the fiber roll is used as a sediment capture device, or as an erosion control device to maintain sheet flows, sediment that accumulates behind the role must be periodically removed in order to maintain its effectiveness. Sediment should be removed when the accumulation reaches one-half the designated sediment storage depth, usually one-half the distance between the top of the fiber roll and the adjacent ground surface. Sediment removed during maintenance may be incorporated into earthwork on the site or disposed of at an appropriate location.

FIBER ROLL



CROSS-SECTION OF A CONSTRUCTION ENTRANCE/EXIT



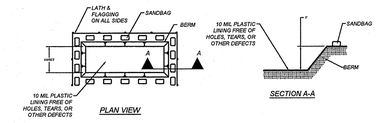
TEMPORARY
CONSTRUCTION ENTRANCE/EXIT

Materials:
(1) The aggregate should consist of 4 to 8 inch washed stone over a stable foundation as specified in the plan.
(2) The aggregate should be placed with a minimum thickness of 8 inches.
(3) The geotextile fabric should be designed specifically for use as a soil filtration media with an approximate weight of 6 ozjyd2, a mullen burst rating of 140 lb/in2, and an equivalent opening size greater than a number 50 sieve.
(4) If a washing facility is required, a level area with a minimum of 4 inch diameter washed stone or commercial rack should be included in the plans. Divert wastewater to a sediment trap or basin.

Installation: (North Carolina, 1993)
(1) Avoid curves on public roads and steep slopes. Remove vegetation and other objectionable material from the foundation area. Grade crown foundation for positive drainage.
(2) The minimum width of the entrance/exit should be 12 feet or the full width of exit roadway, whichever is greater.
(3) The construction entrance should be at least 50 feet long.
(4) If the slope toward the road exceeds 2%, construct a ridge, 6 to 8 inches high with 3:1 (H:V) side slopes, across the foundation approximately 15 feet from the entrance to divert runoff away from the public road.
(5) Place geotextile fabric and grade foundation to improve stability, especially where wet conditions are anticipated.
(6) Place stone to dimensions and grade shown on plans. Leave surface smooth and slope for drainage.
(7) Divert all surface runoff and drainage from the stone pad to a sediment trap or basin.
(8) Install pipe under pad as needed to maintain proper public road drainage.

Inspection and Maintenance Guidelines:
(1) The entrance should be maintained in a condition, which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment.
(2) All sediment spilled, dropped, washed or tracked onto public rights-of-way should be removed immediately by contractor.
(3) When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way.
(4) When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.
(5) All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.

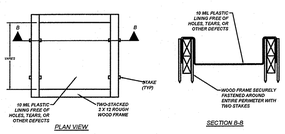
STABILIZED CONSTRUCTION ENTRANCE / EXIT



PLAN VIEW

SECTION A-A

TYPE "BELOW GRADE"



PLAN VIEW

SECTION B-B

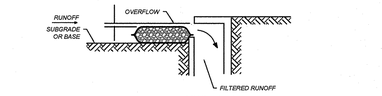
TYPE "ABOVE GRADE"

GENERAL NOTES:

- DETAIL ABOVE ILLUSTRATES MINIMUM DIMENSIONS. PIT CAN BE INCREASED IN SIZE DEPENDING ON EXPECTED FREQUENCY OF USE.
- WASHOUT PIT SHALL BE LOCATED IN AN AREA EASILY ACCESSIBLE TO CONSTRUCTION TRAFFIC.
- WASHOUT PIT SHALL NOT BE LOCATED IN AREAS SUBJECT TO INUNDATION FROM STORM WATER RUNOFF AND AT LEAST 50 FEET FROM SENSITIVE FEATURES, STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS.

CONCRETE TRUCK WASHOUT PIT

PLAN VIEW

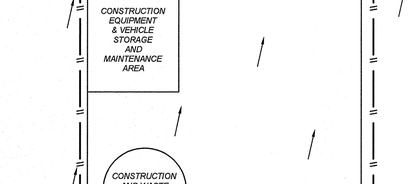


SECTION A-A

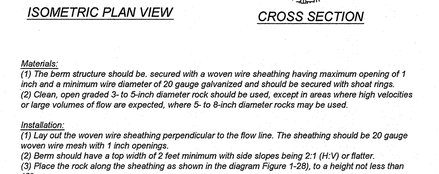
GENERAL NOTES:

- ALL STORM DRAINAGE SYSTEMS INLETS SHOULD FILTER RUNOFF BEFORE THE WATER IS DISCHARGED INTO STREAMS OR ONTO ADJACENT PROPERTIES, UNLESS TREATMENT IS PROVIDED ELSEWHERE.
- IF NO ADDITIONAL DOWNSTREAM TREATMENT EXISTS, THE MAXIMUM DRAINAGE AREA TRIBUTARY TO AN AREA DRAIN INSTALLED WITH A GRAVEL FILTER SHOULD BE ONE ACRE.
- ALL CURB INLET GRAVEL FILTERS SHOULD BE INSPECTED AND REPAIRED AFTER EACH RUNOFF EVENT. SEDIMENT SHOULD BE REMOVED WHEN MATERIAL IS WITHIN THREE INCHES OF THE TOP OF THE CONCRETE BLOCKS. PERIODICALLY, THE GRAVEL SHOULD BE RAKED TO INCREASE INFILTRATION AND FILTERING OF RUNOFF WATERS.

CURB INLET PROTECTION GRAVEL FILTER BAGS



TYPICAL CONSTRUCTION STAGING AREA



ISOMETRIC PLAN VIEW

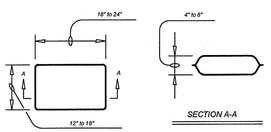
CROSS SECTION

Materials:
(1) The berm structure should be. secured with a woven wire sheathing having maximum opening of 1 inch and a minimum wire diameter of 20 gauge galvanized and should be secured with shoat rings.
(2) Clean, open graded 3- to 5-inch diameter rock should be used, except in areas where high velocities or large volumes of flow are expected, where 5- to 8-inch diameter rocks may be used.

Installation:
(1) Lay out the woven wire sheathing perpendicular to the flow line. The sheathing should be 20 gauge woven wire mesh with 1 inch openings.
(2) Berm should have a top width of 2 feet minimum with side slopes being 2:1 (H:V) or flatter.
(3) Place the rock along the sheathing as shown in the diagram Figure 1-28), to a height not less than 18".
(4) Wrap the wire sheathing around the rock and secure with tie wire so that the ends of the sheathing overlap at least 2 inches, ain't the berm retains its shape when walked upon.
(5) Berm should be built along the contour at zero pecent grade or as near as possible.
(6) The ends of the berm should be tied into existing upslope grade and the berm should be buried in a trench approximately 3 to 4 inches deep to prevent failure of the control.

Inspection and Maintenance Guidelines:
(1) Inspection should be made weekly and after each rainfall by the responsible party. For installations in streambeds, additional daily inspections should be made.
(2) Remove sediment and other debris when buildup reaches 6 inches and dispose of the accumulated silt in an approved manner that will not cause any additional siltation.
(3) Repair any loose wire sheathing.
(4) The berm should be reshaped as needed during inspection.
(5) The berm should be replaced when the structure ceases to function as intended due to silt accumulation among the rocks, washout, construction traffic damage, etc.
(6) The rock berm should be left in place until all upstream areas are stabilized and accumulated silt removed.

ROCK BERM

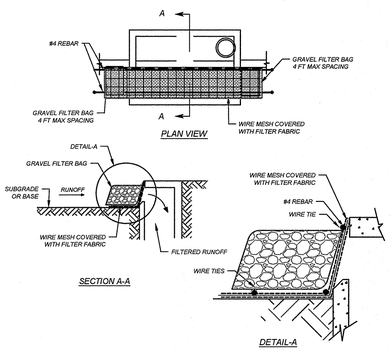


SECTION A-A

GENERAL NOTES:

- THE FILTER BAG MATERIAL SHALL BE MADE OF POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN FABRIC, MIN UNIT WEIGHT OF 4 OUNCES/SY, MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70%.
- THE FILTER BAG SHALL BE FILLED WITH CLEAN, MEDIUM TO COARSE GRAVEL (0.31 TO 0.75 INCH DIAMETER).

GRAVEL FILTER BAG DETAIL

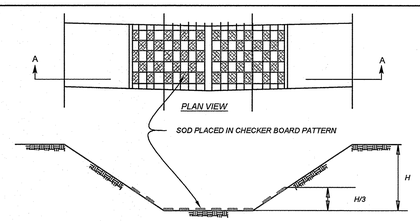


PLAN VIEW

SECTION A-A

DETAIL-A

CURB INLET PROTECTION (ALTERNATE)



PLAN VIEW

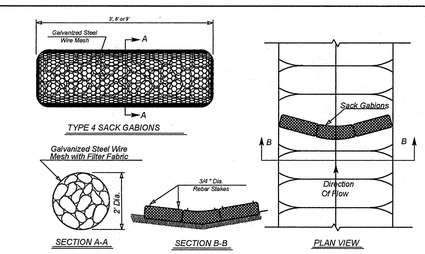
SOD PLACED IN CHECKER BOARD PATTERN

SECTION A-A

SECTION B-B

- CHANNEL TO BE STABILIZED WITH SOD PLACED IN A CHECKER BOARD PATTERN TON THE CHANNEL BOTTOM AND ON THE SIDES UP TO 1/3 THE DEPTH OF CHANNEL.

CHANNEL LINING



TYPE 4 SACK GABIONS

SECTION A-A

SECTION B-B

PLAN VIEW

GENERAL NOTES:

- THE TOP OF THE SACK GABIONS SHOULD BE LEVEL AND ORIENTED PERPENDICULAR TO THE DIRECTION OF FLOW.
- FILTER FABRIC MATERIAL SHALL BE FASTENED TO WOVEN WIRE SUPPORT.
- FILTER FABRIC MATERIAL SHOULD MEET THE FOLLOWING SPECIFICATIONS: RESISTANT TO ULTRAVIOLET LIGHT, FABRIC SHOULD BE NON-WOVEN GEOTEXTILE WITH MINIMUM WEIGHT OF 3.5 OUNCES PER SQUARE YARD, MINIMUM MULLEN BURST STRENGTH OF 200 POUNDS PER SQUARE INCH AND A FLOW THRU RATE OF 120 GALLONS PER MINUTE PER SQUARE FOOT OF FRONTAL AREA.
- STONE SIZE: s4"-8" OPEN GRADED CRUSHED LIMESTONE.
- INSPECT WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACE AS NEEDED.
- WHEN SILT REACHES A DEPTH OF 6 INCHES OR MORE ABOVE NATURAL GROUND, SILT SHALL BE REMOVED AND DISPOSED IN AN APPROVED MANNER THAT WILL NOT CONTRIBUTE TO RESILTATION. CONTAMINATED SEDIMENT MUST BE REMOVED AND DISPOSED OF OFF-SITE IN ACCORDANCE WITH APPLICABLE REGULATIONS.

TYPE 4 SACK GABIONS

KFW
ENGINEERS + SURVEYING
3421 Paesanos Parkway, Suite 200, San Antonio, TX 78231
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TBPE Firm # 9513 • TBPLS Firm #: 10122500

ISSUE DATE

REVISIONS

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED
PROFESSIONAL ENGINEER
10/18/22

ELIZONDO SUBDIVISION, UNIT 4
BEXAR COUNTY, TEXAS

STORM WATER POLLUTION DETAIL SHEET

PLAT NO.
22-11800155

JOB NO. 873-01-07
DATE: MARCH 2022
DRAWN: LM CHECKED: JM

SHEET NUMBER:
8.3

Date: Oct 17, 2022, 10:53am User ID: reddone
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