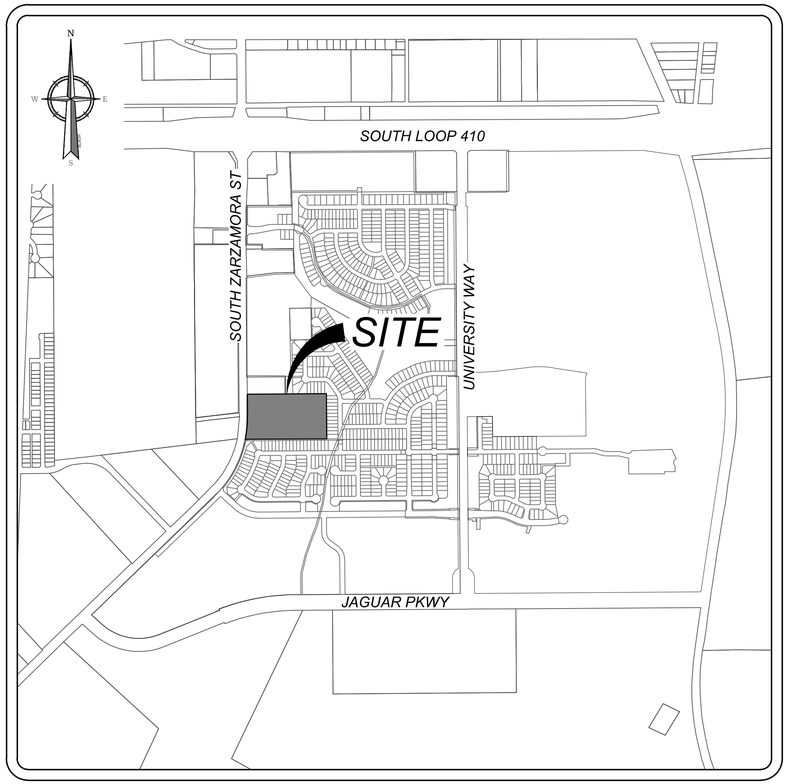
LEGACY AT LA VIDA (ENCLAVE)

BEXAR COUNTY, TEXAS

UTILITY, DRAINAGE, STREET, SANITARY SEWER AND WATER IMPROVEMENTS



LOCATION MAP

N.T.S.

OWNER/DEVELOPER:
FOUR BROTHERS CAPITAL, LLC
903 E. NACOMA DRIVE, SUITE 103
SAN ANTONIO, TX 78216

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REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED
PROFESSIONAL ENGINEER
7/11/25

LEGACY AT LA VIDA (ENCLAVE)
PLAT# 24-11800079

SANANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14809
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER:	DRAWING NAME:
1198-01-01	CV11980101

SHEET TITLE: COVER SHEET

SHEET NUMBER: 0.0

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

Civil\CV11980101.dwg|Civil3 By:ESAAC.RODRIGUEZ

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.

COMPACTION NOTE:

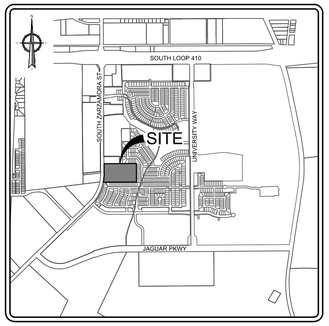
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTRATOR, PER EACH 12 INCH LOOSE LIFT 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.

DRY UTILITY CONDUIT NOTE:

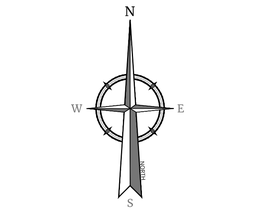
CONDUIT LOCATIONS SHOWN ON PLAN ARE FOR GEOGRAPHICAL PURPOSES ONLY AND ARE APPROXIMATE. CONTRACTOR TO INSTALL PROPOSED CONDUITS IN ACCORDANCE WITH DRY UTILITY PURVEYOR'S SPECIFICATIONS. CONTRACTOR TO VERIFY THE CONDUIT LOCATIONS AND SIZES BASED ON THE DRY UTILITY PURVEYOR'S PLAN.

LEGEND

PROPOSED WATER MAIN	=	W
PROPOSED WATER SERVICE & METER BOX	=	5/8"ø
PROPOSED WATER 3/4" IRRIGATION SERVICE & METER BOX	=	3/4"
PROPOSED FIRE HYDRANT	=	
PROPOSED WATER VALVE	=	
PROPOSED 100 WATT STREETLIGHT	=	
PROPOSED 250 WATT STREETLIGHT	=	
PROPOSED SANITARY SEWER MAIN	=	SS
PROPOSED SANITARY SEWER MANHOLE	=	SS
PROPOSED SANITARY SEWER LATERAL	=	SS
ELECTRIC, GAS, TELEPHONE & CABLE TV EASEMENT (PLAT# 24-11800079)	=	*E.G.T.TV.E*
EXISTING WATER MAIN	=	EW
EXISTING FIRE HYDRANT	=	
EXISTING WATER VALVE	=	
EXISTING SANITARY SEWER MAIN	=	ESS
EXISTING SANITARY SEWER MANHOLE	=	ESS
EXISTING OVERHEAD ELECTRIC W/POWER POLE	=	OHE
EXISTING GUY WIRE/OVERHEAD ELECTRIC	=	OHE
EXISTING STREET LIGHT	=	

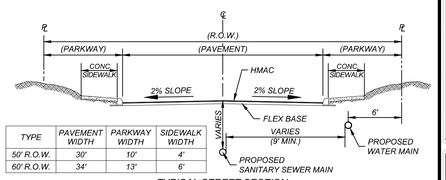


LOCATION MAP
N.T.S.



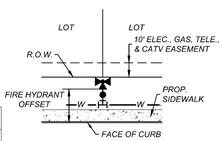
50 0 50 100

SCALE : 1" = 50'
Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)



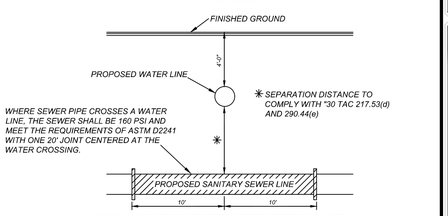
TYPE	PAVEMENT WIDTH	PARKWAY WIDTH	SIDEWALK WIDTH
50' R.O.W.	30'	10'	4'
60' R.O.W.	34'	13'	6'

TYPICAL STREET SECTION
N.T.S.



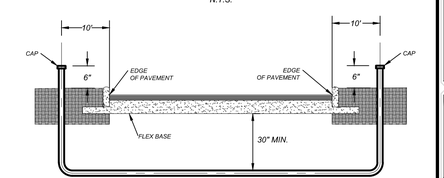
SIDEWALK WIDTH	FIRE HYDRANT OFFSET
4'	5.0' MIN

TYPICAL FIRE HYDRANT DETAIL
NOT-TO-SCALE



WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING.

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



TYPICAL CONDUIT DETAIL
N.T.S.

NOTE:
CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING CONDUIT SLEEVES FOR EACH CPS CROSSING AS SHOWN ON PLAN. CROSSING IF FACILITY HAS A CPS CONSTRUCTION, SLEEVES MUST ALSO BE LOCATED FOR CPS CREWS DURING CONSTRUCTION. (SEPERATE ITEM) SEE THIS SHEET FOR CONDUIT CROSSING DETAIL AND SCHEDULE.

RESIDENTIAL LOTS = 61

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

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STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED
PROFESSIONAL ENGINEER
9/12/25

LEGACY AT LA VIDA (ENCLAVE) PLAT# 24-11800079

SANANTONIO
BEXAR COUNTY
TEXAS

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Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER: 1198-01-01
DRAWING NAME: OU11980101

SHEET TITLE: OVERALL UTILITY PLAN

SHEET NUMBER: 1.0

By: MICHAEL.VALADEZ
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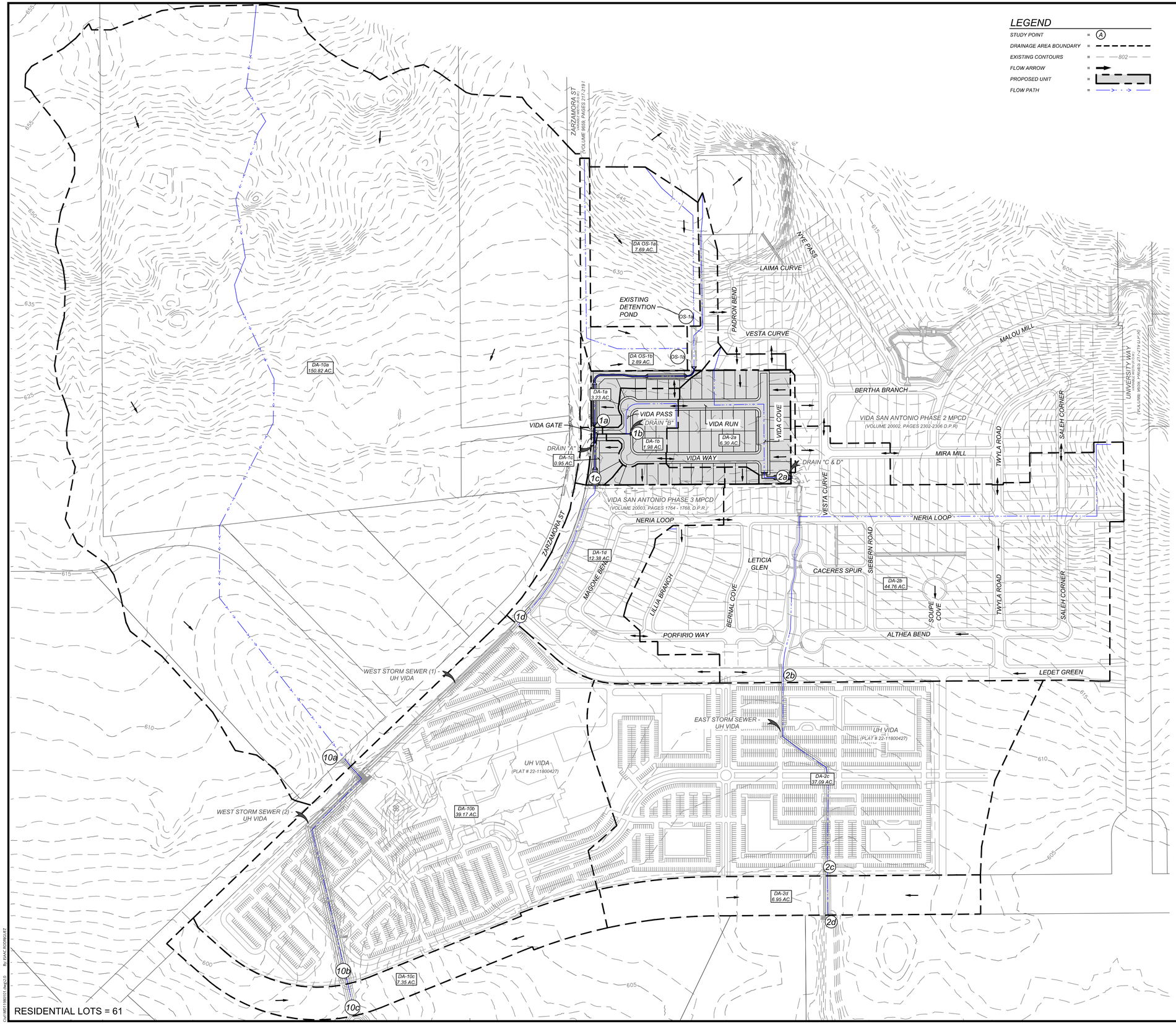
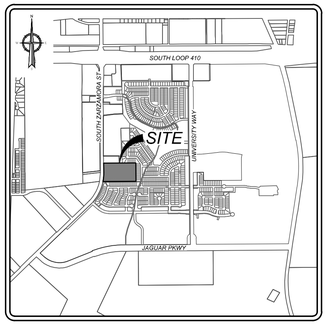
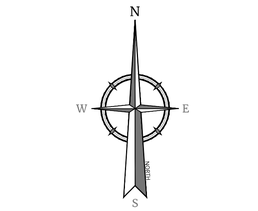




LOCATION MAP

N.T.S.



300 0 300 600

SCALE : 1" = 300'

Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)

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REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED PROFESSIONAL ENGINEER
7/1/25

LEGACY AT LA VIDA (ENCLAVE) PLAT# 24-11800079

SANANTONIO
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COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-1009
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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER:	DRAWING NAME:
1198-01-01	MD11980101

SHEET TITLE:

MASTER DRAINAGE PLAN

SHEET NUMBER:

2.0

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

By:JSAC,RODRIGUEZ
Civil\MD11980101.dwg:2.0

Ultimate Conditions														
STUDY POINT	*AREA*	*(Acres)*	*C*	*TCARRY-OVER*	*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)*
OS-1a	DA OS-1a	7.69	0.49		13.00	6.00	0.00	19	4.63	6.37	7.93	17.45	24.00	29.88
OS-1b	DA OS-1b	2.89	0.96		5.00	0.00	5.00	10	6.24	8.76	10.95	17.31	24.30	30.38
	DA-1a	3.23	0.77											
1a	PT.OS-1a + PT.OS-1b + DA-1a	13.81	0.65		13.00	1.00	8.00	22	4.30	5.91	7.34	38.60	53.05	65.89
1b	DA-1b	1.98	0.77		10.00	0.00	3.00	13	5.61	7.82	9.76	8.55	11.92	14.88
	DA-1c	0.95	0.77											
1c	PT.1a + PT.1b + DA-1c	16.74	0.67	PT.1a	22.00	0.00	1.00	23	4.21	5.77	7.17	47.22	64.72	80.42
	DA-1d	12.38	0.77											
1d	PT.1c + DA-1d	29.12	0.71	PT.1c	23.00	0.00	3.00	26	3.96	5.42	6.73	81.87	112.06	139.14
2a	DA-2a	6.30	0.77		9.00	1.00	4.00	14	5.42	7.53	9.39	26.29	36.53	45.55
	DA-2b	44.76	0.77											
2b	PT.2a + DA-2b	51.06	0.77		5.00	0.00	11.00	16	5.06	6.99	8.71	198.94	274.82	342.44
	DA-2c	37.09	0.95											
2c	PT.2b + DA-2c	88.15	0.85	PT.2b	16.00	0.00	5.00	21	4.40	6.05	7.52	329.68	453.31	563.45
	DA-2d	6.95	0.96											
2d	PT.2c + DA-2d	95.10	0.86	PT.2c	21.00	0.00	1.00	22	4.30	5.91	7.34	351.68	483.36	600.31
10a	**SCS Method - Refrence SWMP**											326.43	544.38	777.06
10b	**SCS Method - Refrence SWMP**											464.39	769.86	1096.46
10c	**SCS Method - Refrence SWMP**											481.64	797.06	1134.38

RESIDENTIAL LOTS = 61

Civil\MD119801.dwg\2.1 By: ISAAC.RODRIGUEZ

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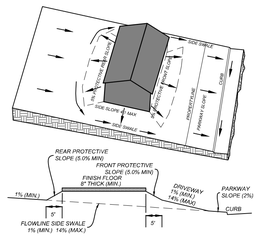
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER: 1198-01-01
DRAWING NAME: MD119801O1

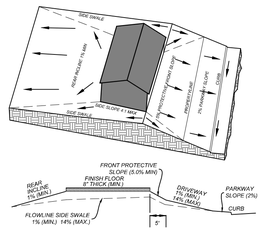
SHEET TITLE: MASTER DRAINAGE PLAN

SHEET NUMBER: 2.1

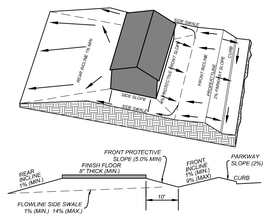
NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.



TYPE 'A' LOT GRADING



TYPE 'B' LOT GRADING



TYPE 'C' LOT GRADING

BENCHMARKS

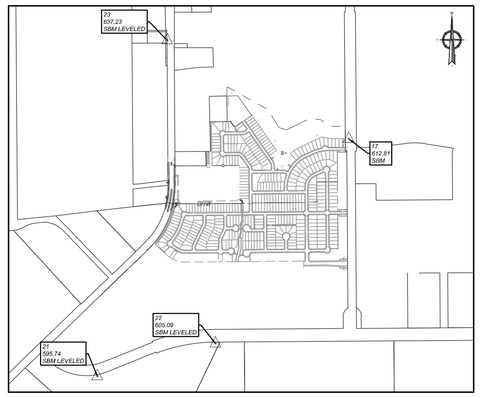
BM # 23
DESC: SBM LEVELED
N:13665498.80
E:2117746.73
ELEV: 637.23

BM # 21
DESC: SBM LEVELED
N:13660804.71
E:2116769.01
ELEV: 595.74

BM # 22
DESC: SBM LEVELED
N:13661263.43
E:2118419.82
ELEV: 605.09

BM # 17
DESC: SBM
N:13664122.55
E:2120283.46
ELEV: 612.81

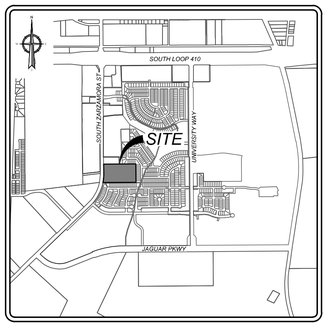
CONTRACTOR TO RUN LEVEL LOOP THROUGH BMS PROVIDED TO CONFIRM BEFORE CONSTRUCTION. CONTACT ENGINEER/SURVEYOR IMMEDIATELY IF ELEVATIONS DO NOT MATCH THOSE SHOWN.



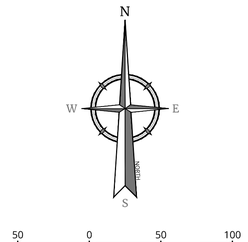
BENCHMARK MAP
SCALE: NOT-TO-SCALE

LEGEND

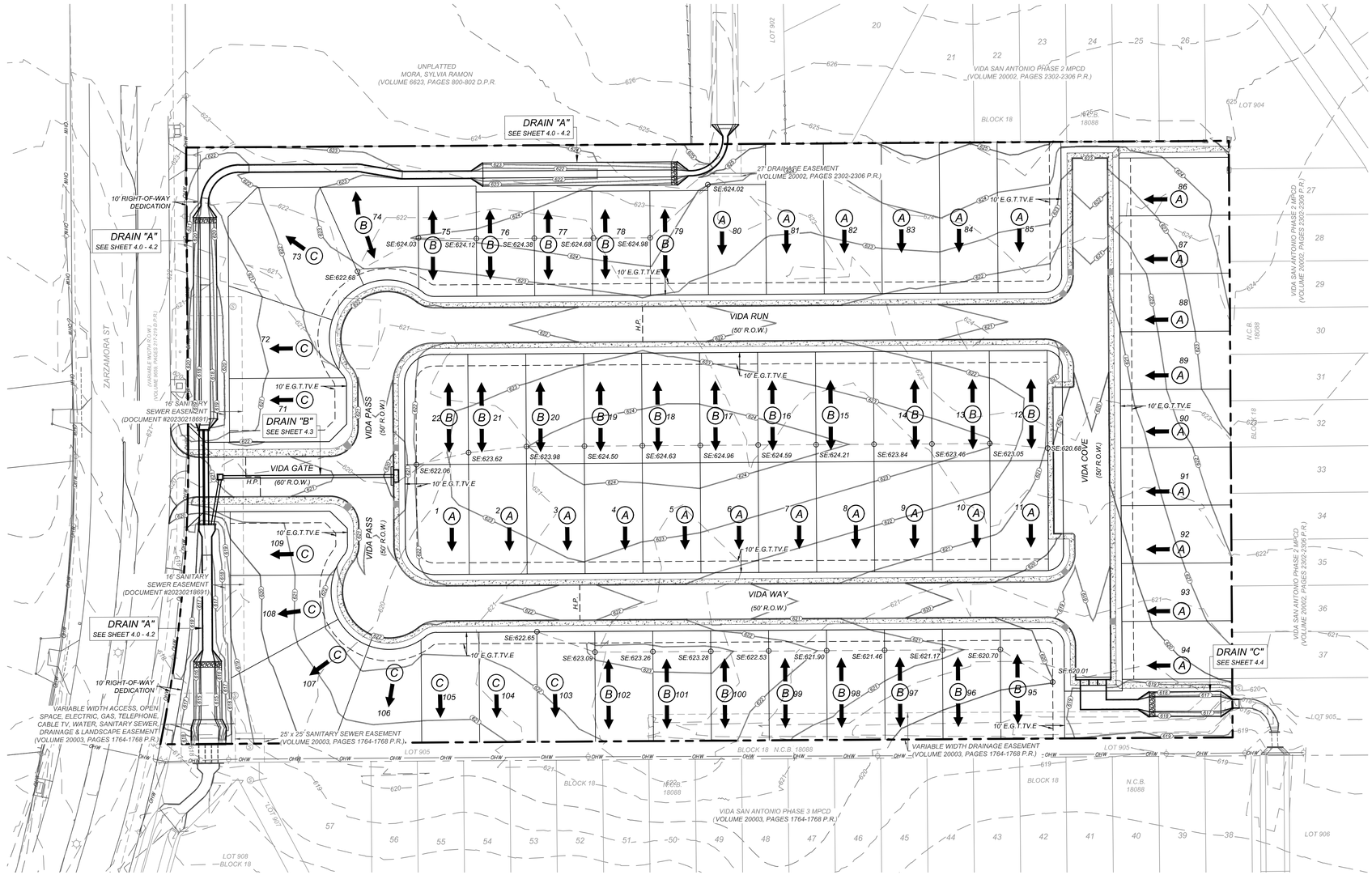
ELECTRIC, GAS, TELEPHONE & CABLE TV EASEMENT (PLAT# 24-11800079)	=	E.G.T.TV.E
WATER EASEMENT (PLAT# 24-11800079)	=	W.E
PEDESTRIANT ACCESS EASEMENT (PLAT# 24-11800079)	=	P.A.E
FLOW ARROW	=	➡
LOT GRADE TYPE	=	(A)
HIGH POINT	=	H.P.
DRIVEWAY LOCATION	=	▨



LOCATION MAP
N.T.S.



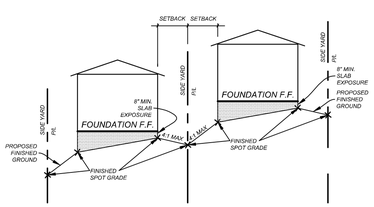
SCALE : 1" = 50'
Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)



RESIDENTIAL LOTS = 61

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.



TYPICAL SIDE YARD GRADING
N.T.S.

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FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED PROFESSIONAL ENGINEER
7/11/25

LEGACY AT LA VIDA
(ENCLAVE)
PLAT# 24-11800079

SANANTONIO
BEXAR COUNTY
TEXAS

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3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#:F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER: 1198-01-01
DRAWING NAME: GR1198101

SHEET TITLE: OVERALL GRADING PLAN

SHEET NUMBER: 3.0

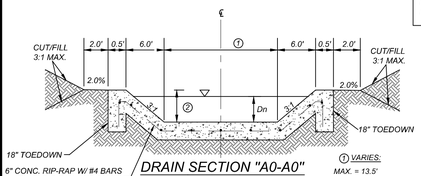
NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

By: ISAAC.BODRIGUEZ
Civil GR1198101.dwg13.0

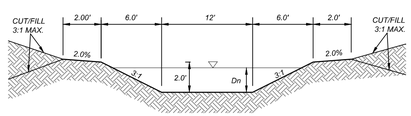
NOTE:

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 BEXAR COUNTY WILL ACCEPT.



DRAIN SECTION "A0-A0"
STA. 1+26.05 - 1+44.00
N.T.S.



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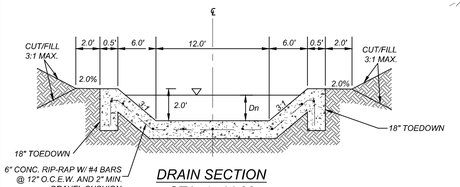
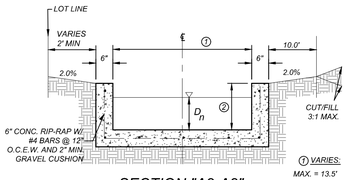


DRAIN SECTION
STA. 1+44.00
STA. 1+94.00
N.T.S.



SECTION "A2-A2"
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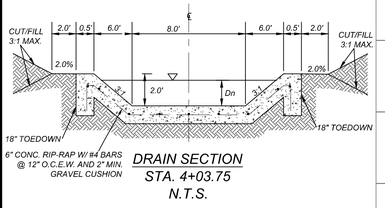
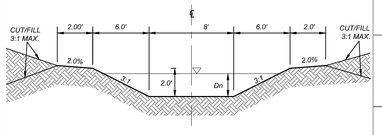


DRAIN SECTION
STA. 4+03.75
N.T.S.



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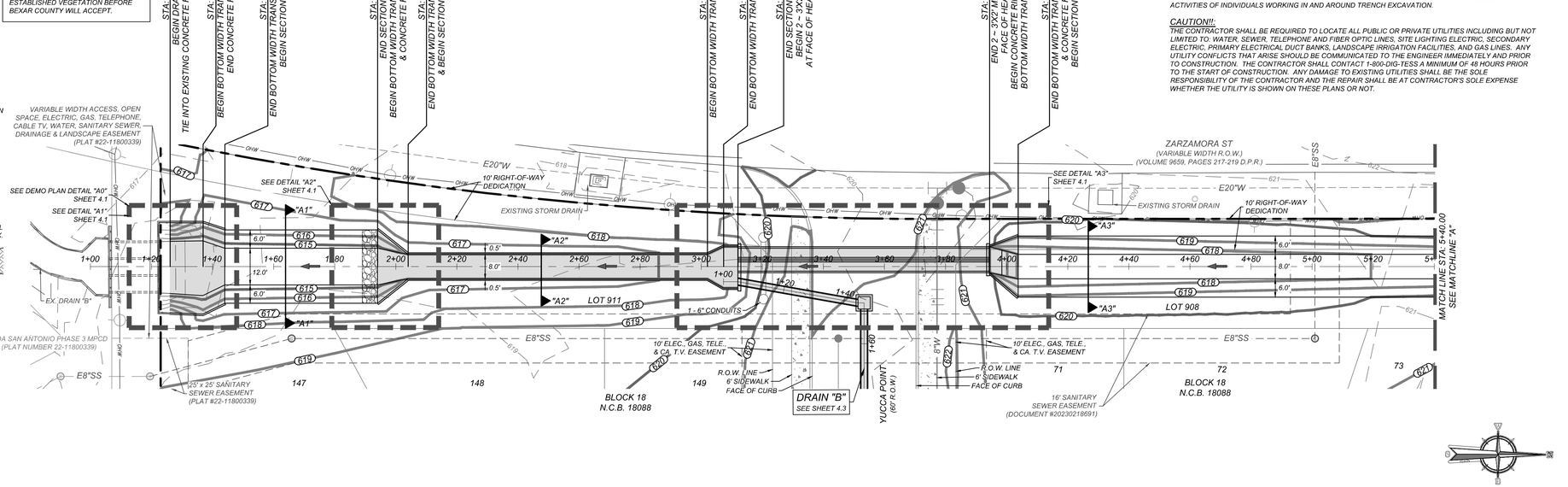
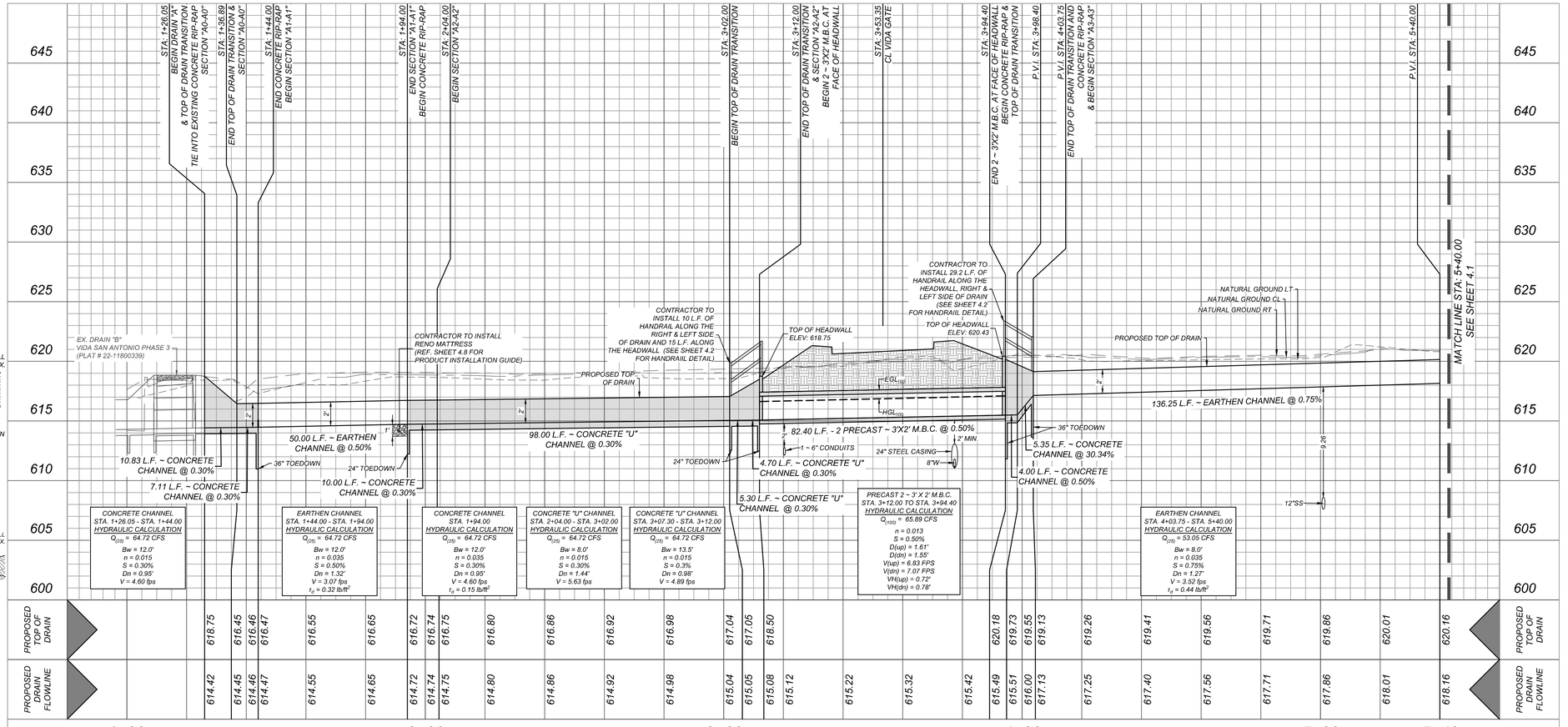
N.T.S.



DRAIN "A"
STA. 1+26.00 TO 5+40.00

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



CONCRETE CHANNEL
STA. 1+26.05 - STA. 1+44.00
HYDRAULIC CALCULATION
$Q_{(25)}$ = 64.72 CFS
Bw = 12.0'
n = 0.015
S = 0.30%
Dn = 0.95'
V = 4.60 fps

EARTHEN CHANNEL
STA. 1+44.00 - STA. 1+94.00
HYDRAULIC CALCULATION
$Q_{(25)}$ = 64.72 CFS
Bw = 12.0'
n = 0.035
S = 0.50%
Dn = 1.32'
V = 3.07 fps
τ_d = 0.32 lb/ft^2

CONCRETE CHANNEL
STA. 1+94.00
HYDRAULIC CALCULATION
$Q_{(25)}$ = 64.72 CFS
Bw = 12.0'
n = 0.035
S = 0.30%
Dn = 0.95'
V = 4.60 fps
τ_d = 0.15 lb/ft^2

CONCRETE "U" CHANNEL
STA. 2+04.00 - STA. 3+02.00
HYDRAULIC CALCULATION
$Q_{(25)}$ = 64.72 CFS
Bw = 8.0'
n = 0.015
S = 0.30%
Dn = 1.44'
V = 5.63 fps

CONCRETE "U" CHANNEL
STA. 3+07.30 - STA. 3+12.00
HYDRAULIC CALCULATION
$Q_{(25)}$ = 64.72 CFS
Bw = 13.5'
n = 0.015
S = 0.3%
Dn = 0.98'
V = 4.89 fps

PRECAST 2 ~ 3' X 2' M.B.C.
STA. 3+12.00 TO STA. 3+94.40
HYDRAULIC CALCULATION
$Q_{(100)}$ = 65.89 CFS
n = 0.013
S = 0.50%
D(up) = 1.61'
D(dn) = 1.55'
V(up) = 6.83 FPS
V(dn) = 7.07 FPS
VH(up) = 0.72'
VH(dn) = 0.78'

EARTHEN CHANNEL
STA. 4+03.75 - STA. 5+40.00
HYDRAULIC CALCULATION
$Q_{(25)}$ = 53.05 CFS
Bw = 8.0'
n = 0.035
S = 0.75%
Dn = 1.27'
V = 3.52 fps
τ_d = 0.44 lb/ft^2

TRENCH EXCAVATION SAFETY PROTECTION

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REV	DATE	DRAWN BY	DESCRIPTION

LEGACY AT LA VIDA (ENCLAVE)
PLAT# 24-11800079

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BEXAR COUNTY
TEXAS

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COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

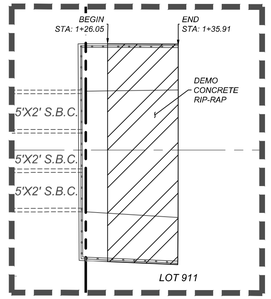
PROJECT NUMBER:	DRAWING NAME:
1198-01-01	DRPP11980101_AB

SHEET TITLE:
DRAIN "A" PLAN & PROFILE (1 OF 4)

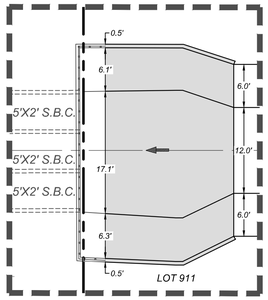
SHEET NUMBER:
4.0

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

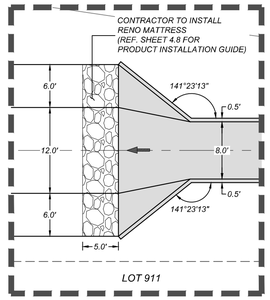
By: ISAAC.RODRIGUEZ
Civil Drains:DRPP11980101_AB.dwg/A.0



DETAIL "A0"
SCALE: 1"=10'



DETAIL "A1"
SCALE: 1"=10'



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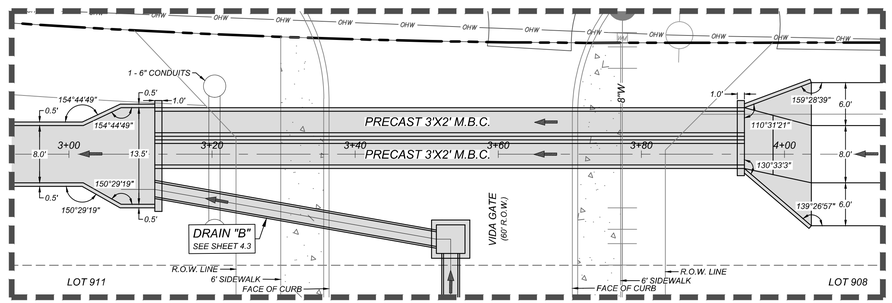

DETAIL "A3"
SCALE: 1"=10'

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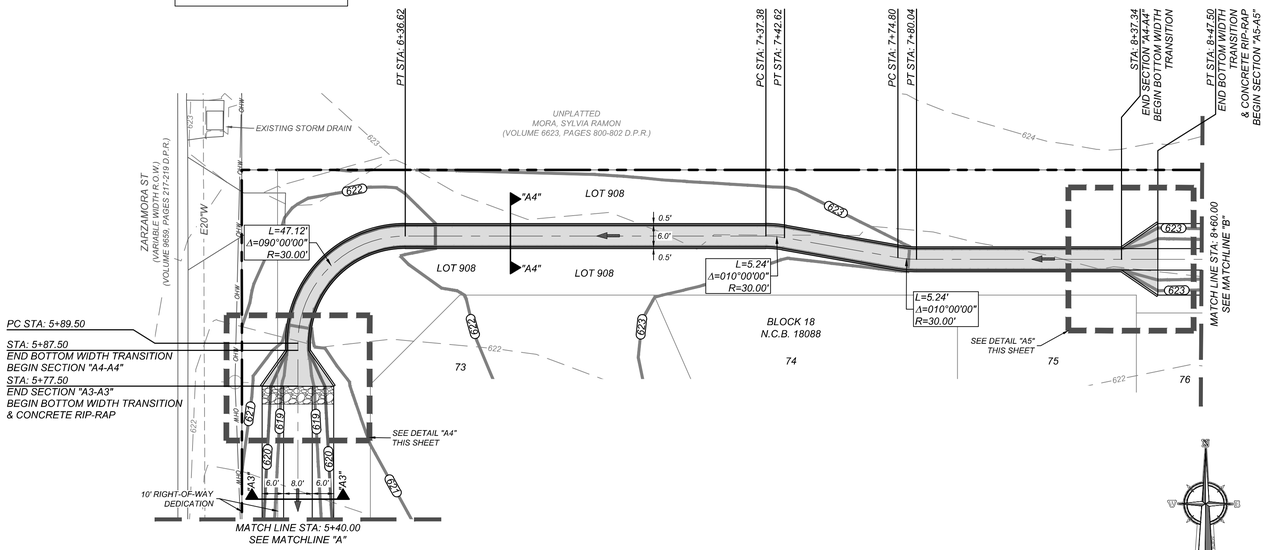
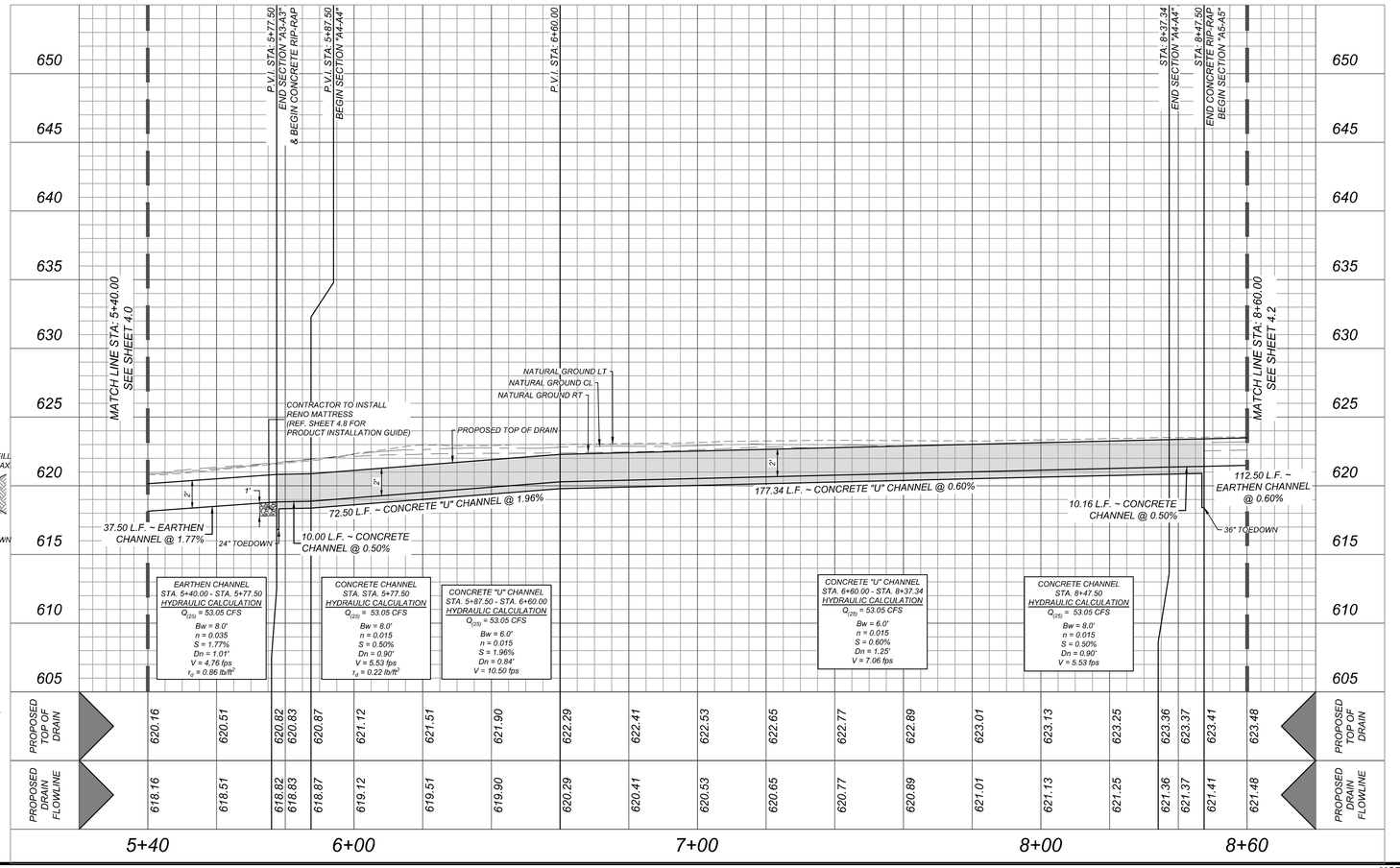
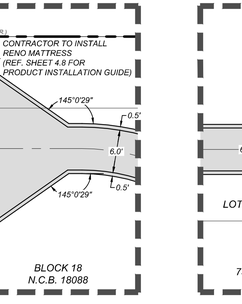


DRAIN "A"
STA. 5+40.00 TO 8+40.00

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





DETAIL "A4"
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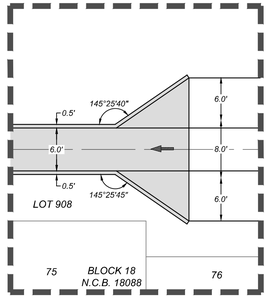

DETAIL "A5"
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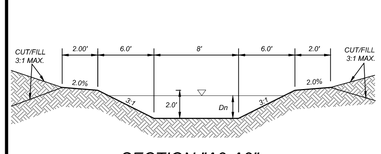

SECTION "A3-A3"
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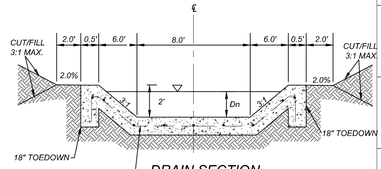
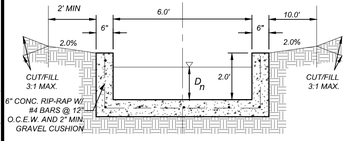
N.T.S.



DRAIN SECTION
STA. 5+77.50
STA. 8+47.50
N.T.S.



SECTION "A4-A4"
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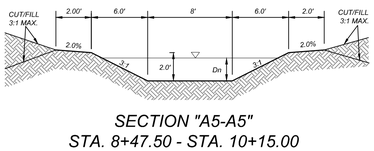
N.T.S.



SECTION "A5-A5"
STA. 8+47.50 - STA. 10+15.00
N.T.S.

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REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED
PROFESSIONAL ENGINEER
8/6/25

LEGACY AT LA VIDA
(ENCLAVE)
PLAT# 24-11800079

SANANTONIO
BEXAR COUNTY
TEXAS

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TBPE Firm#: F-14909
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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER: 1198-01-01
DRAWING NAME: DRPP1198101_AB

SHEET TITLE:
DRAIN "A" PLAN & PROFILE
(2 OF 4)

SHEET NUMBER:
4.1

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

Civil Drains DRPP1198101_AB.dwg/A1 By: ISAAC.BOSKUEZ

TRENCH EXCAVATION SAFETY PROTECTION

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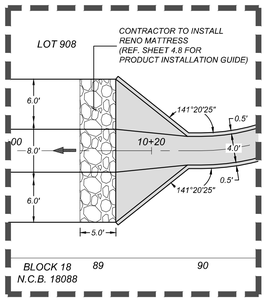
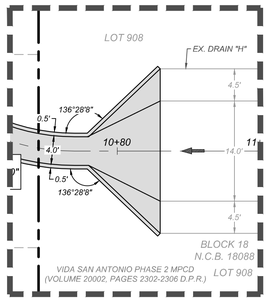
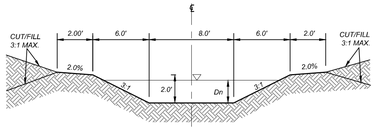


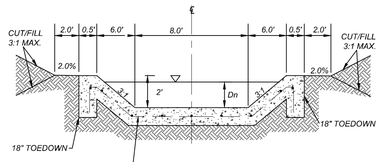
DETAIL "A6"
SCALE: 1"=10'



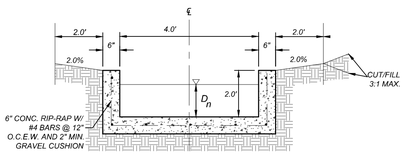
DETAIL "A7"
SCALE: 1"=10'



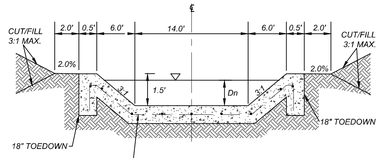
SECTION "A5-A5"
STA. 8+47.50 - STA. 10+15.00
N.T.S.



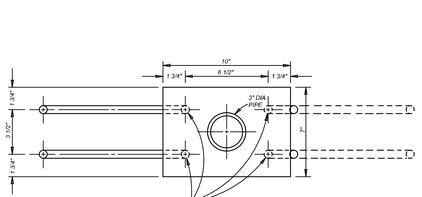
DRAIN SECTION
STA. 10+15.00
N.T.S.



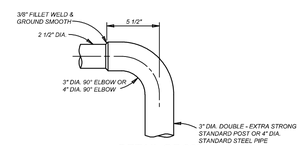
SECTION "A6-A6"
STA: 10+25.00 - STA: 10+76.00
N.T.S.



DRAIN SECTION
STA. 10+86.00
N.T.S.

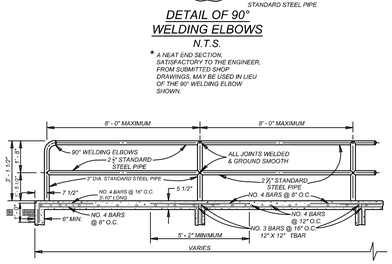


PIPE ANCHORAGE DETAILS
N.T.S.

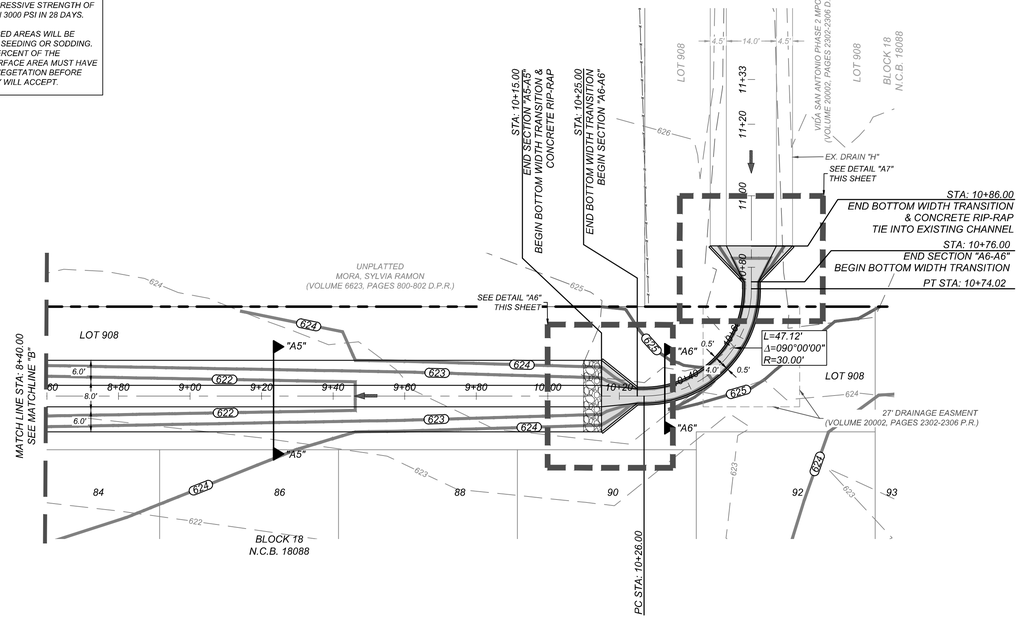


DETAIL OF 90° WELDING ELBOWS
N.T.S.

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

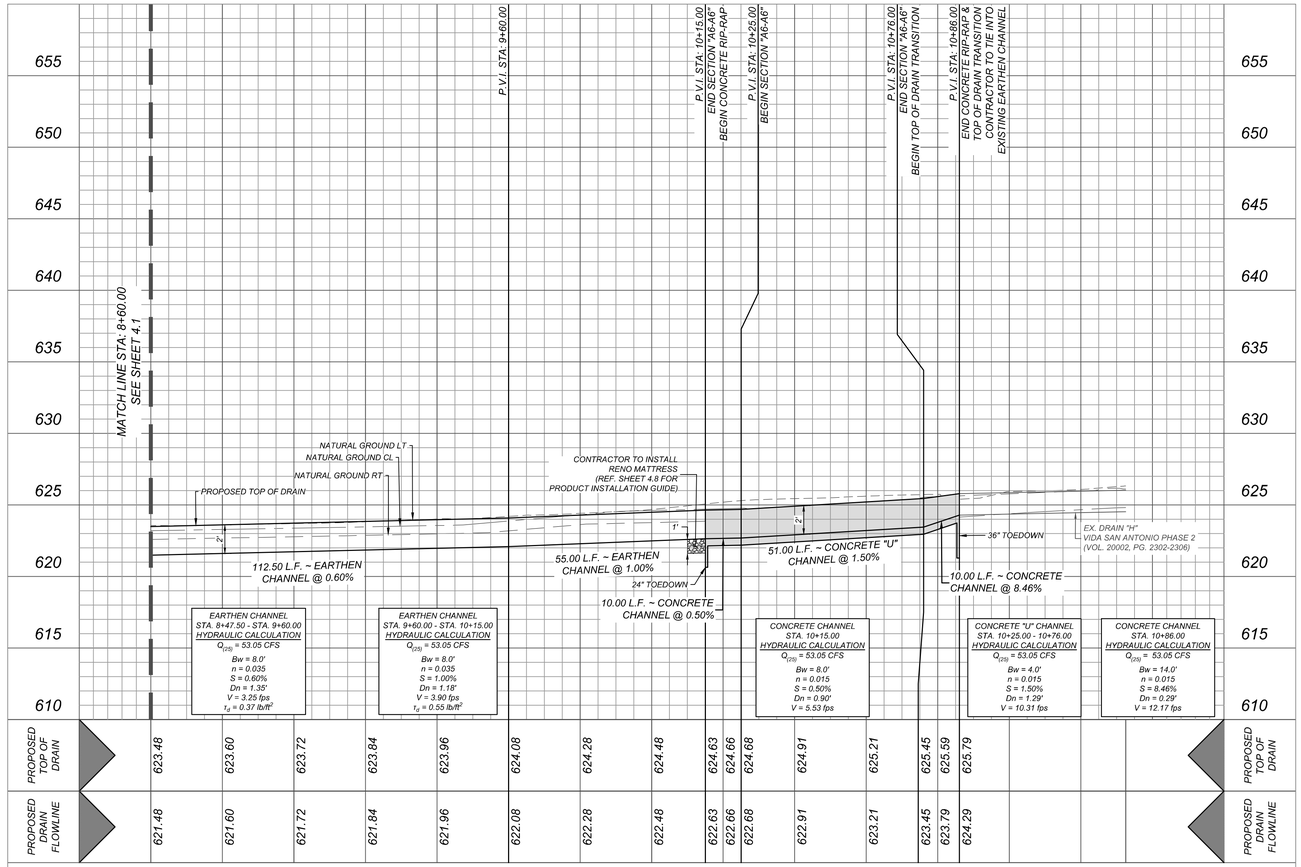


TYPICAL SIDEWALK BRIDGE & SIDEWALK PIPE RAILING SECTION
N.T.S.



DRAIN "A"
STA. 8+40.00 TO END

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



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REV	DATE	DRAWN BY	DESCRIPTION

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OMAR A. ESPINOSA
125560
LICENSED PROFESSIONAL ENGINEER
7/11/25

LEGACY AT LA VIDA (ENCLAVE)
PLAT# 24-11800079

SANANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#:F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER: 1198-01-01
DRAWING NAME: DRPP11980101_AB

SHEET TITLE:
DRAIN "A" PLAN & PROFILE (3 OF 4)

SHEET NUMBER:
4.2

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

Civil Drawing\DRPP11980101_AB.dwg\4.2 By: ISAAC.BOZIK@JLEZ

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.

CAUTION!!:

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NOTE:

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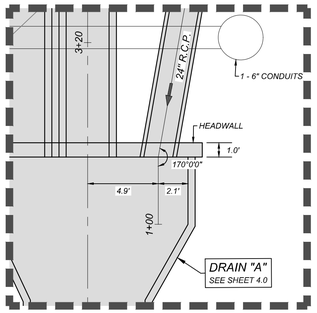
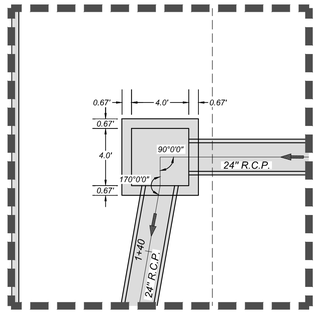
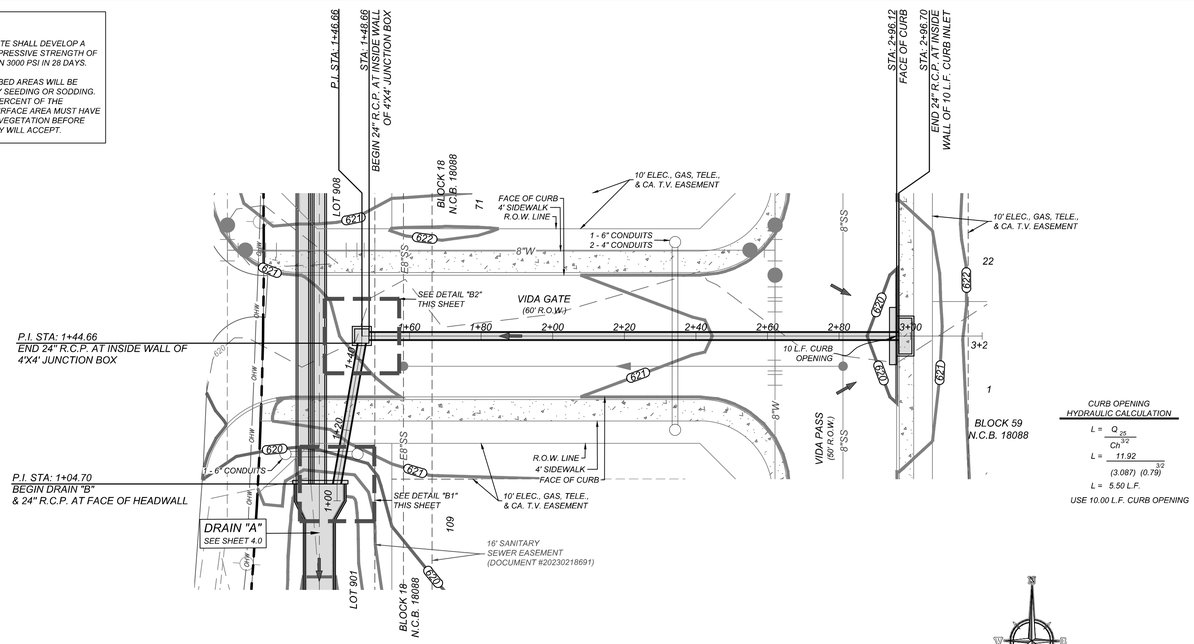
2. ANY DISTURBED AREAS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE DISTURBED SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE BEXAR COUNTY WILL ACCEPT.



DETAIL "B1"
SCALE: 1"=5'



DETAIL "B2"
SCALE: 1"=5'



CURB OPENING
HYDRAULIC CALCULATION

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

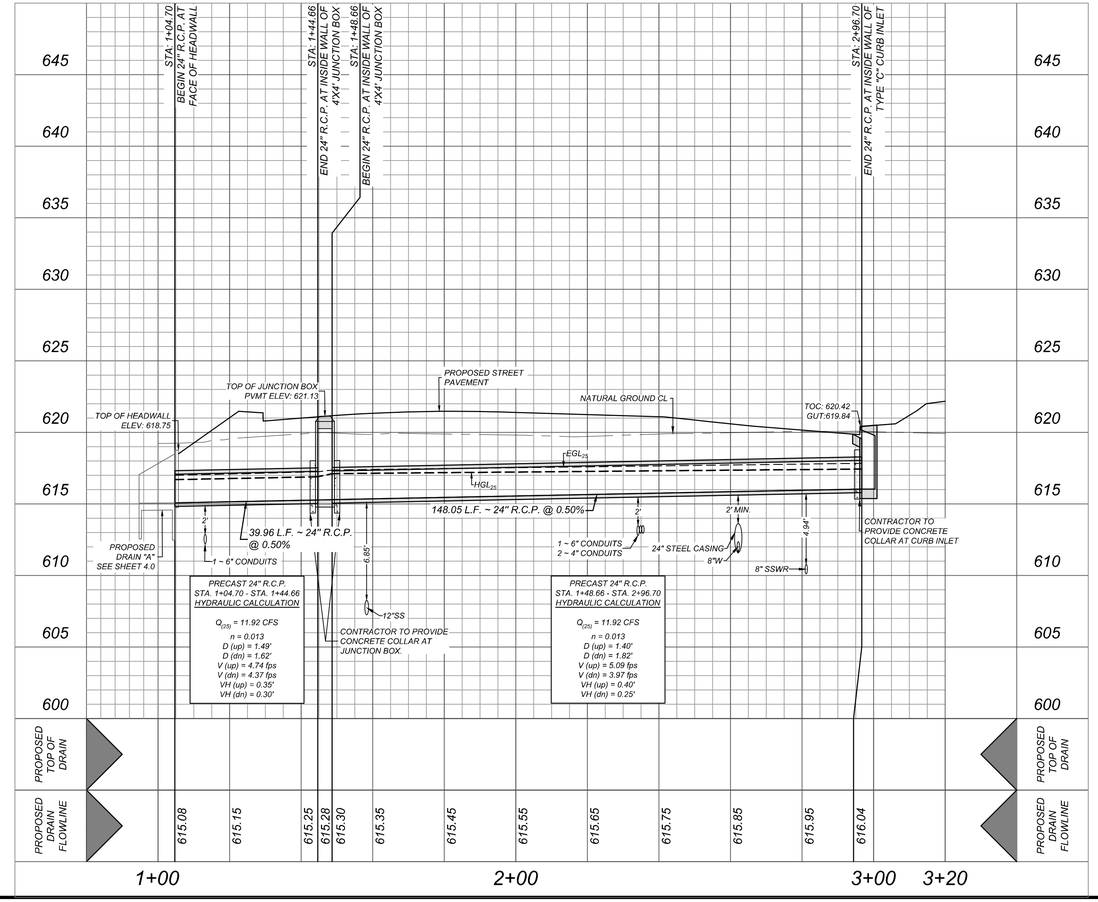
$$L = \frac{11.92}{(3.087)(0.79)^{3/2}}$$

$L = 5.50$ L.F.

USE 10.00 L.F. CURB OPENING

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

DRAIN "B"
STA. 1+00.00 TO END



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8/6/25

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Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER:	DRAWING NAME:
1198-01-01	DRPP11980101_AB

SHEET TITLE:
DRAIN "A" PLAN & PROFILE (4 OF 4)

SHEET NUMBER:
4.3

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

Civil Drawing\DRPP11980101_AB.dwg4.3 By: ISAAC.BOZIK@KFZ

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.

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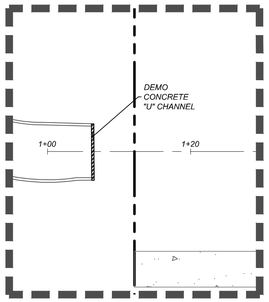
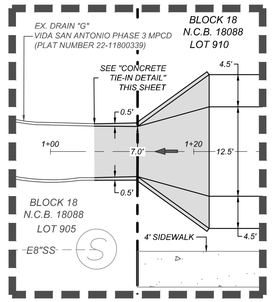


DETAIL "C0"
SCALE: 1"=10'



DETAIL "C1"
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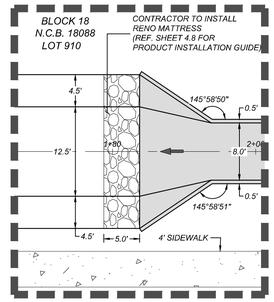
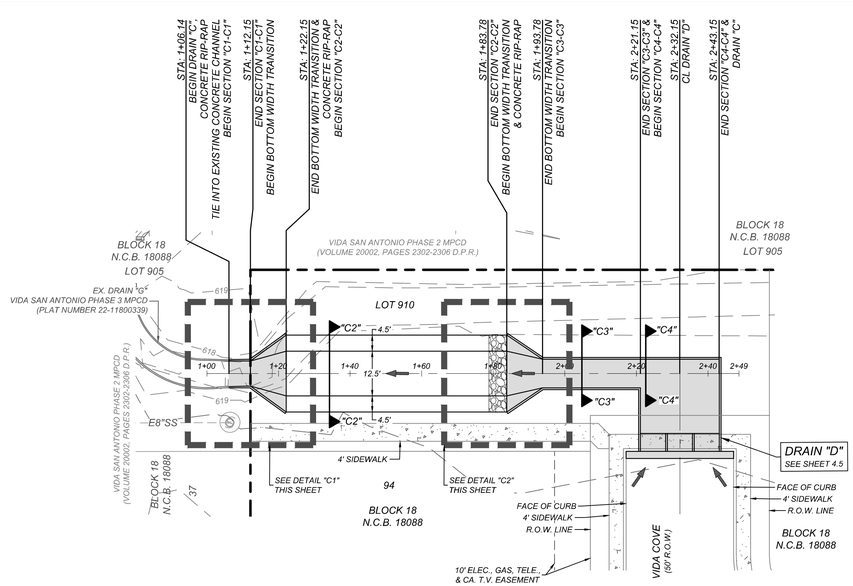
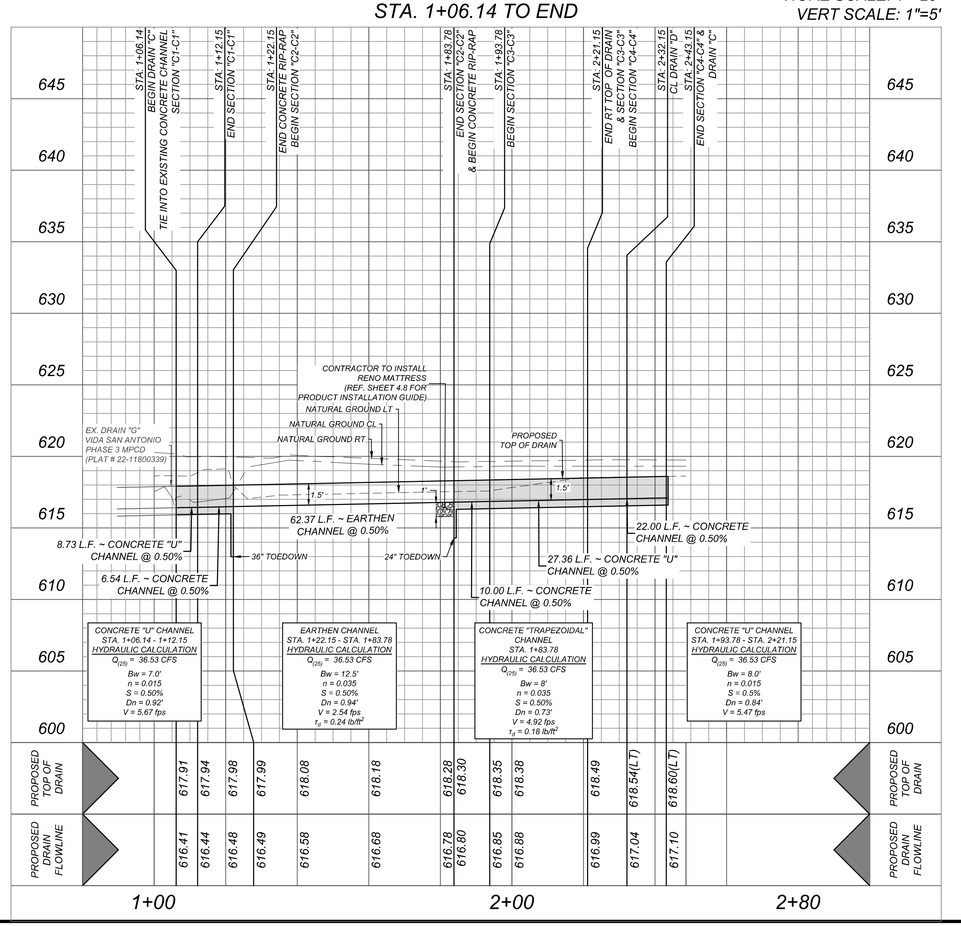


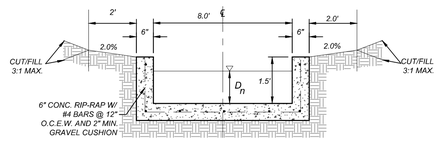
DETAIL "C2"
SCALE: 1"=10'



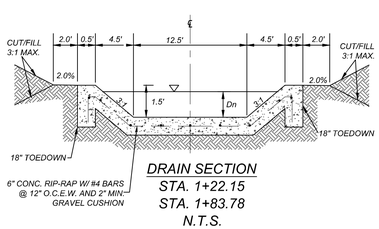
DRAIN "C"
STA. 1+06.14 TO END

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

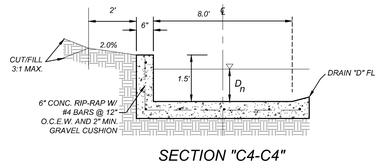




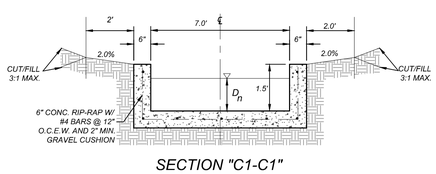
SECTION "C3-C3"
STA: 1+93.78 - STA: 2+21.15
N.T.S.



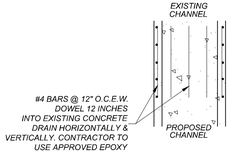
DRAIN SECTION
STA. 1+22.15
STA. 1+83.78
N.T.S.



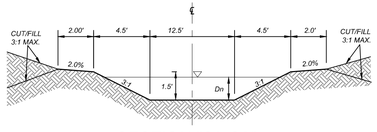
SECTION "C4-C4"
STA: 2+21.15 - STA: 2+43.15
N.T.S.



SECTION "C1-C1"
STA: 1+06.14 - STA: 1+12.15
N.T.S.



CONCRETE TIE-IN DETAIL
N.T.S.



SECTION "C2-C2"
STA. 1+22.15 - STA. 1+83.78
N.T.S.

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COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-1069
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER: 1198-01-01
DRAWING NAME: DRPP11980101_CD

SHEET TITLE: DRAIN "C" PLAN & PROFILE

SHEET NUMBER: 4.4

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

Civil\Drains\DRPP11980101_CD.dwg:4.4 By: SCHAVEZ

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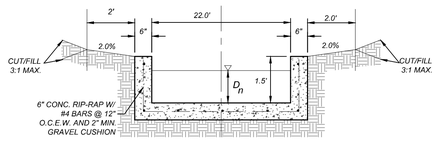
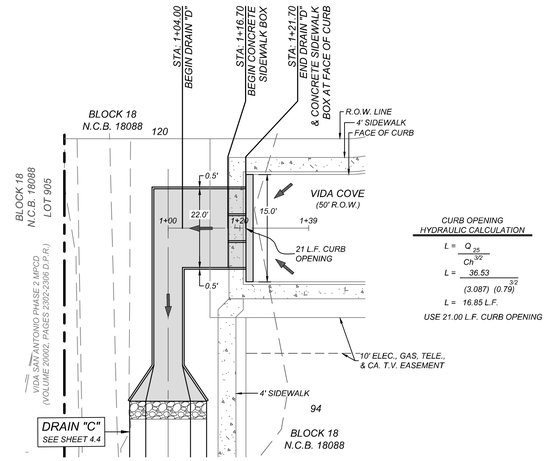


DRAIN "D" SECTION
STA: 1+04.00
N.T.S.



CURB OPENING
HYDRAULIC CALCULATION

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

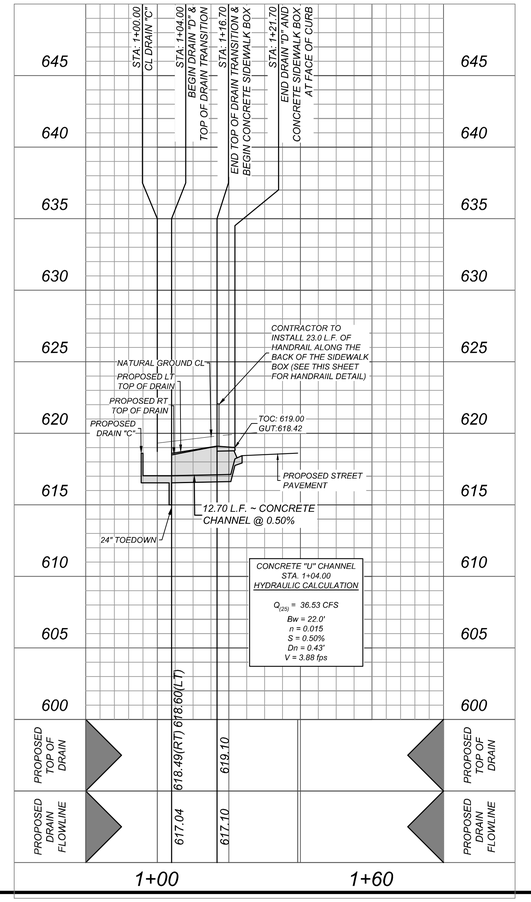
$L = \frac{36.53}{(3.087)\ (0.79)^{\frac{3}{2}}}$

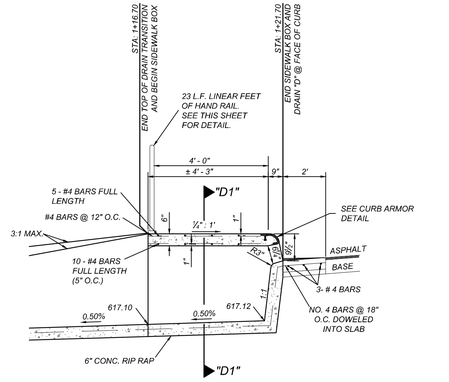
$L = 16.85$ L.F.

USE 21.00 L.F. CURB OPENING

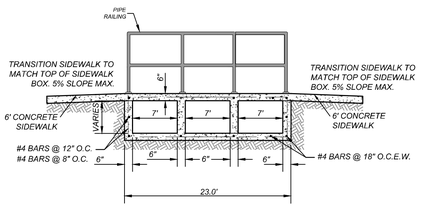
DRAIN "D"
STA. 1+04.00 TO END

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

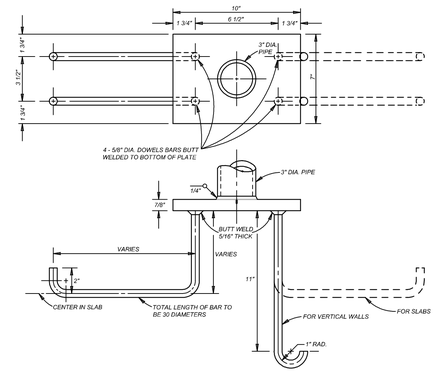




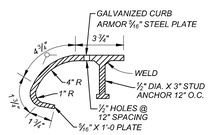
SIDEWALK BOX DETAIL
N.T.S.



SECTION "D1-D1"
N.T.S.



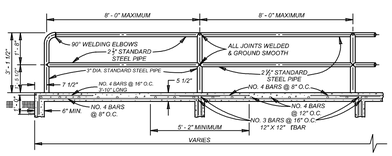
PIPE ANCHORAGE DETAILS
N.T.S.



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.*

CURB ARMOR DETAIL
N.T.S.



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

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AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER:	DRAWING NAME:
1198-01-01	DRPP11980101_CD

SHEET TITLE:
DRAIN "D" PLAN & PROFILE

SHEET NUMBER:
4.5

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

Civil Drawn:\DRPP11980101_CD.dwg/4.5 By:ESAIC.RODRIGUEZ

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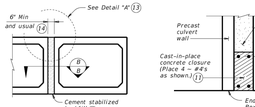
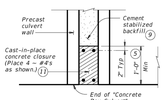
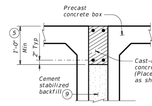


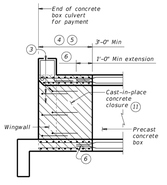
MULTIPLE UNIT PLACEMENT



SECTION B-B

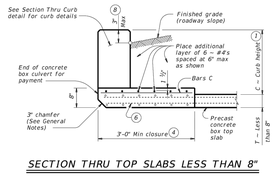


DETAIL "A" (13)

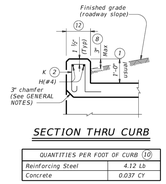


WINGWALL CONNECTION

(Also applies to safety end treatment.)

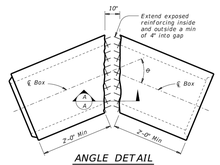


SECTION THRU TOP SLABS LESS THAN 8"

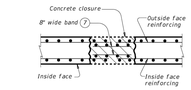


SECTION THRU CURB

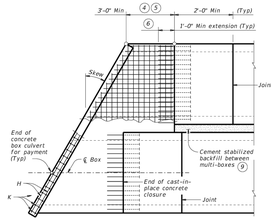
QUANTITIES PER FOOT OF CURB (16)	
Reinforcing Steel	4.12 Lb
Concrete	0.037 CY



ANGLE DETAIL



SECTION A-A



PLAN OF SKEWED ENDS

(Showing multi-box placement.)

1. 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail, bicycle rail, or curbs taller than 1'-0, refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CH) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.
2. For curbs less than 1'-0" high, tilt Bars K or reduce bar height as necessary to maintain cover. For curbs less than 2" high, Bars K may be omitted.
3. Extend curb, wingwall, or safety end treatment reinforcing into concrete closure. Bend or trim, as necessary, any reinforcing that does not fit into closure area.
4. Provide a 3'-0" Min cast-in-place concrete closure. Break back boxes in the field or cast boxes short. Provide bands of reinforcing in the closure that are the same size and spacing as in the precast box section. Provide #4 longitudinal reinforcement spaced at 12 inches Max within the closure. Except where shown otherwise, construct the cast-in-place closure flush with the inside and outside faces of the precast box section.
5. For multiple unit placements, adjust the length of the closure for the interior walls as necessary. Provide a 3'-0" Min cast-in-place closure in the top slab, bottom slab, and exterior wall. See Section B-B detail when interior walls are cast full length.
6. Extend precast box reinforcing a minimum of 1'-0" into concrete closure (Typ).
7. Place bands of reinforcing matching the inside and outside face reinforcing in the gaps of the top and bottom slabs. Place a band matching the outside face reinforcing of the wall in the gaps of the walls (placed in the outside face only). Tack weld the bands to the exposed reinforcing at each point of contact.
8. For vehicle safety, the following requirements must be met:
   - For structures without bridge rail, construct curbs no more than 3" above finished grade.
   - For structures with bridge rail, construct curbs flush with finished grade.

   Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
9. Cement stabilized backfill between boxes is considered part of the box culvert for payment.
10. All curb concrete and reinforcing is considered part of the box culvert for payment.
11. Any additional concrete and reinforcing required for the closures will be considered subsidiary to the box culvert for payment.
12. 1'-0" typical. 2'-3" when the Box Culvert Rail Mounting Details (RAC) standard sheet is referred to elsewhere in the plans.
13. For multiple unit placement with overlay, with 1 to 2 course surface treatment, or with the top slab as the final riding surface, provide wall closure as shown in Detail "A".
14. This dimension may be increased with approval of the Engineer to allow the precast boxes to be lowered or jacked in accordance with Item 476, "Jacking, Boring, or Tunneling Pipe or Box." No payment will be made for any additional material in the gap between adjacent boxes.

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide ASTM A1064 welded wire reinforcement.
Provide Class C concrete (f'c = 3,600 psi) for the closures.
Provide cement stabilized backfill meeting the requirements of Item 400, "Excavation and Backfill for Structures."
Any additional concrete required for the closures will be considered subsidiary to the box culvert.

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
Refer to the Single Box Culverts Precast (SCP) standard sheets for details and notes not shown.
Chamfer the bottom edge of the top slab closure 3 inches at culvert closure ends.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing bars dimensions are out-to-out of bars.

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BOX CULVERTS PRECAST MISCELLANEOUS DETAILS

SCP-MD

FILE: CD-SCP-MD-20.dgn	DN: GAF	CK: LMW	DW: BWH/TxDOT	CK: GAF
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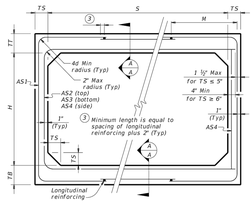
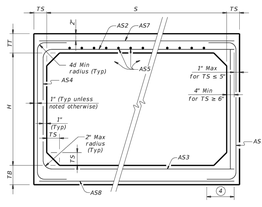
BOX DATA

SECTION DIMENSIONS						REINFORCING (sq. in. / ft.) (2)							(1)
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	Fill Height (ft.)	H (Min) (in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	Lift Weight (tons)
4	2	7.5	6	5	< 2	–	0.18	0.27	0.15	0.12	0.18	0.18	0.14	4.5
4	2	5	5	5	2 < 3	38	0.18	0.19	0.17	0.12	–	–	–	3.6
4	2	5	5	5	3 – 5	38	0.13	0.13	0.13	0.12	–	–	–	3.6
4	2	5	5	5	10	38	0.12	0.12	0.12	0.12	–	–	–	3.6
4	2	5	5	5	15	38	0.14	0.16	0.16	0.12	–	–	–	3.6
4	2	5	5	5	20	38	0.18	0.20	0.21	0.12	–	–	–	3.6
4	2	5	5	5	25	38	0.23	0.25	0.25	0.12	–	–	–	3.6
4	2	5	5	5	30	38	0.28	0.30	0.30	0.12	–	–	–	3.6
4	3	7.5	6	5	< 2	–	0.18	0.31	0.18	0.12	0.18	0.18	0.14	5.0
4	3	5	5	5	2 < 3	38	0.15	0.23	0.20	0.12	–	–	–	4.1
4	3	5	5	5	3 – 5	38	0.12	0.16	0.16	0.12	–	–	–	4.1
4	3	5	5	5	10	38	0.12	0.14	0.14	0.12	–	–	–	4.1
4	3	5	5	5	15	38	0.12	0.18	0.18	0.12	–	–	–	4.1
4	3	5	5	5	20	38	0.14	0.23	0.24	0.12	–	–	–	4.1
4	3	5	5	5	25	38	0.17	0.29	0.29	0.12	–	–	–	4.1
4	3	5	5	5	30	38	0.21	0.35	0.35	0.12	–	–	–	4.1
4	4	7.5	6	5	< 2	–	0.18	0.33	0.20	0.12	0.18	0.18	0.14	5.5
4	4	5	5	5	2 < 3	38	0.12	0.26	0.23	0.12	–	–	–	4.6
4	4	5	5	5	3 – 5	38	0.12	0.18	0.18	0.12	–	–	–	4.6
4	4	5	5	5	10	38	0.12	0.15	0.15	0.12	–	–	–	4.6
4	4	5	5	5	15	38	0.12	0.19	0.20	0.12	–	–	–	4.6
4	4	5	5	5	20	38	0.12	0.25	0.25	0.12	–	–	–	4.6
4	4	5	5	5	25	38	0.14	0.31	0.31	0.12	–	–	–	4.6
4	4	5	5	5	30	38	0.17	0.37	0.37	0.12	–	–	–	4.6



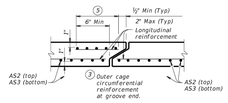
CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT 2 FT AND GREATER



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT



SECTION A-A

(Showing top and bottom slab joint reinforcement.)

MATERIAL NOTES:
Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.
Provide Class H concrete (f'c = 5,000 psi).

GENERAL NOTES:
Designs shown conform to ASTM C1577. Refer to ASTH C1577 for information or details not shown.
See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.
"In lieu of furnishing the designs shown on this sheet, the contractor may submit shop plans for alternate designs that meet or exceed the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)."

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Texas Department of Transportation — Bridge Division Standard

SINGLE BOX CULVERTS PRECAST

4'-0" SPAN

SCP-4

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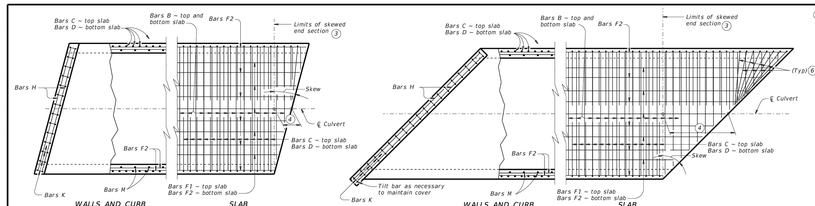
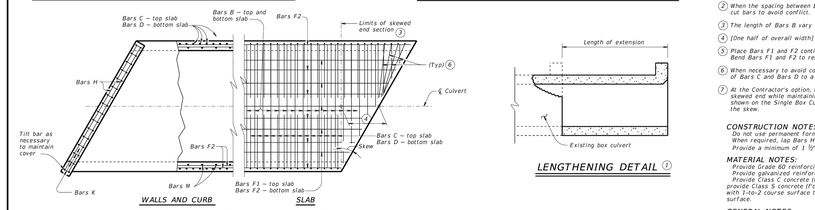
1. For box length = 8'-0"
2. AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



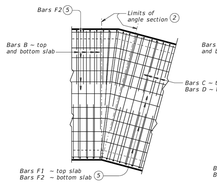
PLAN OF SKEWED ENDS ~ FROM 0° TO 15° (7)

PLAN OF SKEWED ENDS ~ OVER 30° TO 45°

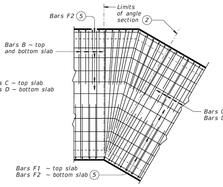


PLAN OF SKEWED ENDS ~ OVER 15° TO 30°

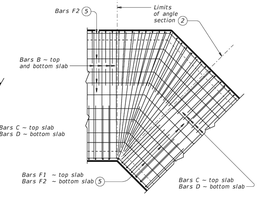
LENGTHENING DETAIL (7)



PLAN OF ANGLE SECTION ~ FROM 0° TO 15°



PLAN OF ANGLE SECTION ~ OVER 15° TO 30°



PLAN OF ANGLE SECTION ~ OVER 30° TO 45°

1. For skewed box culverts with less than 2'-0" of fill, break back the top slab to provide a 1'-10" minimum lap of the existing longitudinal bars with the longitudinal bars in the extension.
   For non-skewed box culverts with less than 2'-0" of fill and for skewed or non-skewed culverts with a fill depth of 2'-0" or greater, break back the top slab to provide a 1'-10" minimum lap of the existing longitudinal bars with the longitudinal bars in the extension. Alternatively, if the box is non-skewed, embed #6 anchor bars with a Type III, C, D , E, or K anchor adhesive into the existing walls, top and bottom slab at 1'-0" centers-to-center spacing. Minimum embedment depth is 8". Anchor adhesive chosen must be able to achieve a basic bond strength in tension, N_{pn}, of 26.4 kips. Submit signed and sealed calculations, manufacturer's literature, and certification from an ACI/CRSI adhesive anchor technician that the proposed anchor adhesive's ability to develop this load to the Engineer for approval prior to use. Anchor installation, including hole size, drilling, and clean out, must be in accordance with Item 450, "Railing." Test adhesive anchors in accordance with Item 450.3.3, "Tests." Test 3 anchors per 100 anchors installed.
   Break back wings and apron as necessary to install the extension. Clean and extend the exposed wingwall and apron reinforcing into the extension. When lengthening existing box culverts with dimensions different than current standard dimensions, form horizontal and vertical transitions as directed by the Engineer. Match bottom slabs to maintain an unobstructed flow line. Match wingwalls and aprons and reinforcing into transitions and maintain specified cover requirements. For top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface, adjust the "H" dimension to provide a smooth riding surface.
2. When the spacing between Bars B becomes less than half of the normal spacing, cut bars to avoid conflict.
3. The length of Bars B vary in the skewed end sections.
4. [One half of overall width] x [tangent of the skew angle]
5. Place Bars F1 and F2 continuously through the angle section. Bend Bars F1 and F2 to remain parallel to the walls of the box culvert.
6. When necessary to avoid conflict in acute corners, shorten the slab extension leg of Bars C and Bars D to a minimum of 1'-6" for skews of 30° thru 45°.
7. At the Contractor's option, for skews of 15° or less, place Bars B, C, and D parallel to the skewed end while maintaining spacing along centerline of box. Increase lengths of Bars B shown on the Single Box Culverts Cast-In-Place (SCC) standards sheets to accommodate the skew.

CONSTRUCTION NOTES:
Do not use permanent forms.
When required, lap Bars H 1'-8" for uncoated or galvanized bars.
Provide a minimum of 1 ½" clear cover.

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel, if required elsewhere in the plans.
Provide Class C concrete (f'c = 3,600 psi) with these exceptions: provide Class S concrete (f'c = 4,000 psi) for top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface.

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
Refer to Single Box Culverts Cast-in-Place (SCC) standard sheets for details of straight sections of culvert.
For skewed sections and angle sections, refer to Single Box Culverts Cast-in-Place (SCC) standard sheets for slab and wall dimensions, bar sizes, maximum bar spacing, and any other details not shown.
For skewed ends with curbs, adjust length of Bars H, number of Bars K, curb concrete volume, and reinforcing steel weight by dividing the values shown on the culvert Single Box Culverts Cast-In-Place (SCC) standard sheets by the cosine of the skew angle.

Cover dimensions are clear dimensions, unless noted otherwise.

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SINGLE BOX CULVERTS CAST-IN-PLACE MISCELLANEOUS DETAILS

SCC-MD

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STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED
PROFESSIONAL ENGINEER
7/1/25

LEGACY AT LA VIDA (ENCLAVE)
PLAT# 24-11800079

SANANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

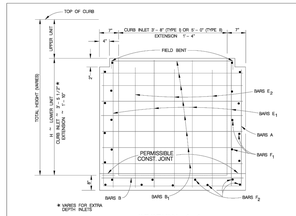
PROJECT NUMBER: 1198-01-01
DRAWING NAME: DRDT11980101

SHEET TITLE: DRAIN DETAILS (1 OF 3)

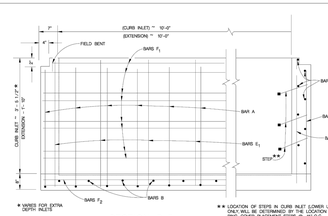
SHEET NUMBER: 4.6

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

Civil Drains DRDT11980101.dwg 4.7 By: ESAAC RODRIGUEZ



SECTION A–A



SECTION B–B

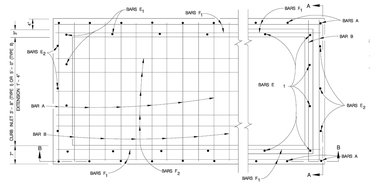
REINFORCING STEEL

LOWER UNIT 10' X 3' – 8" (TYPE I)				
BAR	NO.	SIZE	SPAC.	LENGTH
A	12	#4	12"	VARIES
B	11	#4	12"	4'-6"
B_1	VARIES	#4	12"	4'-6"
E_1	20	#4	18" T	VARIES
E_2	6	#4	18" T	VARIES
F_1	VARIES	#4	12" T	10'-10"
F_2	9	#4	----	10'-10"

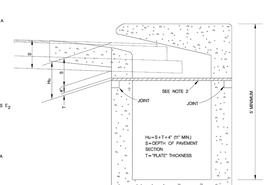
LOWER UNIT 10' X 5' – 0" (TYPE II)				
BAR	NO.	SIZE	SPAC.	LENGTH
A	12	#4	12"	VARIES
B	11	#4	12"	5'-10"
B_1	VARIES	#4	12"	5'-10"
E_1	20	#4	18" T	VARIES
E_2	8	#4	18" T	VARIES
F_1	VARIES	#4	12" T	10'-10"
F_2	11	#4	----	10'-10"

GENERAL NOTES

1. 5' INLETS AND 5' EXTENSIONS MUST BE IN ACCORDANCE WITH THE LATEST TXDOT CURB INLET TYPE "C" AND EXTENSION TYPE II (L=Q).
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 FILL, CONCRETE, REINFORCING STEEL, RING AND COVER, CURB ARMOR AND STORM SEWER PIPE INCLUDED IN THE UNIT COST OF ITEM 409 "STORM SEWER JUNCTION BOXES AND INLETS".
13. CAST IRON 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 RING ACCOUNT THE SKEW OF THE PIPE AS NECESSARY. CONSTRUCTION JOINT MAY BE RAISED A MAXIMUM OF 6".



FLOOR STEEL



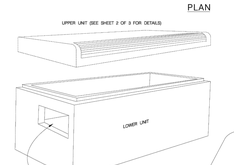
WALL STEEL

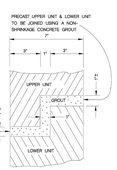
PLAN

PHASE CONSTRUCTION

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

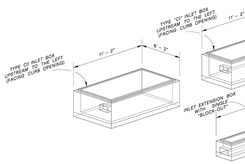
1. THE CURB INLET AND EXTENSION SHALL BE CONSTRUCTED TO A DEPTH "H" BELOW THE INLET AND EXTENSION GUTTER LINE ELEVATION.
2. CAP THE CURB INLET AND EXTENSION WITH A STEEL PLATE APPROVED BY THE ENGINEER AND CONSTRUCT THE ROADWAY OVER THE PLATE.
3. AFTER THE ROADWAY IS COMPLETED, BUT PRIOR TO THE FINAL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



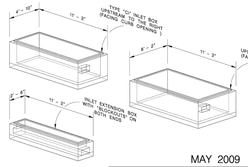


JOINT DETAIL

WHEN USING PRECAST UPPER UNIT, THIS 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.



TYPE "C" INLET BOX UPSTREAM TO THE LEFT (FACING CURB OPENING)



CONCRETE INLET BOX CONFIGURATIONS (LOWER UNITS)

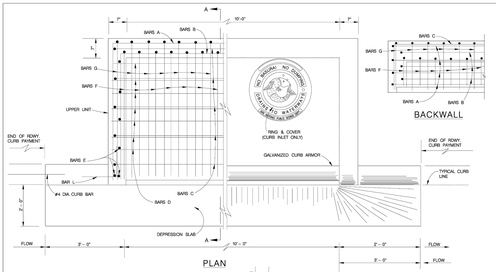
BARS A
(LOWER UNIT)

MAY 2009

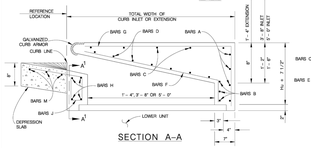
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

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

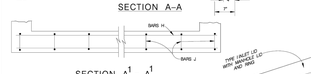
___% SUBMITTAL PROJECT NO.:_____ DATE:_____
DRAWN BY:V. VASQUEZ DESIGN BY:L.E. MALTOS, P.E. CHKD. BY:B.S. HOSSENI, P.E. SHEET NO.:___OF___



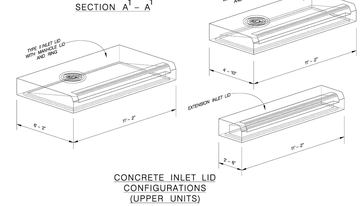
PLAN



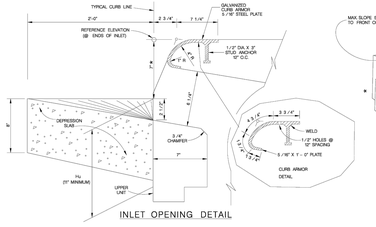
SECTION A–A



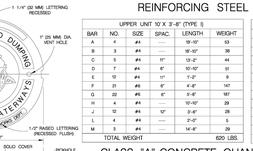
SECTION A^1 – A^1



CONCRETE INLET LID CONFIGURATIONS (UPPER UNITS)



INLET OPENING DETAIL



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 280 LBS.

SEE SHEET 1 OF 3 FOR GENERAL NOTES.

END WALL

REINFORCING STEEL (FOR Hu = 11')

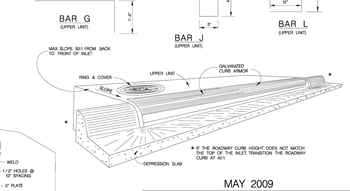
UPPER UNIT 10' X 3'-8" (TYPE I)					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	----	10'-10"	53
B	3	#4	----	10'-10"	39
C	5	#4	11"	13'-2"	44
D	7	#4	6"	10'-10"	51
E	10	#4	11"	1'-3"	5
F	21	#6	6"	4'-8"	147
G	22	#6	6"	5'-8"	187
H	4	#4	----	10'-10"	29
J	12	#4	12"	3'-6"	28
L	4	#4	----	2'-0"	5
M	3	#4	----	14'-8"	29
TOTAL WEIGHT					620 LBS.

UPPER UNIT 10' X 5' (TYPE II)					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	----	22'-6"	66
B	3	#4	----	14'-2"	28
C	3	#4	11"	13'-2"	62
D	11	#4	6"	10'-10"	80
E	16	#4	11"	1'-3"	13
F	21	#6	6"	6'-8"	179
G	22	#6	6"	7'-0"	231
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
TOTAL WEIGHT					759 LBS.

CLASS "A" CONCRETE QUANTITIES (FOR Hu = 11")

DEPRESSION SLAB	C.Y.
10' INLET	0.7
10' EXTENSION	0.7

UPPER UNIT (ONLY)	C.Y.
10' X 3'-8" CURB INLET	1.9
10' X 5'-0" CURB INLET	2.7
EXTENSION	1.0



MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TYPE "C" INLET (TYPE I & II)
& INLET EXTENSION STANDARDS
SHEET 2 OF 3

___% SUBMITTAL PROJECT NO.:_____ DATE:_____
DRAWN BY:V. VASQUEZ DESIGN BY:L.E. MALTOS, P.E. CHKD. BY:B.S. HOSSENI, P.E. SHEET NO.:___OF___

MACCAFERRI PRODUCT INSTALLATION GUIDE

Rev: 01, Issue Date 04.01.2005

RENO MATTRESS

Material Delivery

Reno mattresses are manufactured with all components mechanically connected at the production facility with the exception of the lid, which is produced separately from the base. All Reno mattresses are supplied in a collapsed form, either folded and bundled or rolled, for shipping. The bundles are banded together at the factory for shipping and handling. Reno mattress bases and lids may be packed in separate bundles. Lacing wire is shipped in coils. Ring fasteners are shipped in boxes. All Reno mattresses are labelled to show their dimensions and the number of pieces per bundle.

Assembly

The folded units shall be taken out from the bundle and placed on a hard flat surface. Reno mattresses shall be opened, unfolded, and pressed out to their original shape. Front, back and end panels shall be lifted to a vertical position to form an open box shape. End flaps shall be folded and/or overlapped, as appropriate. All edges of the diaphragms and end panels shall be tied or fastened to the front and back of the mattress.
The mattresses should be assembled individually, by erecting the sides, ends and diaphragms, ensuring that all creases are in the correct position and the tops of all sides are level.

Fastening Procedure

Connect the edges of the mattress by using either lacing wire or ring fasteners. When steel ring fasteners are used, the use of either a mechanical or a pneumatic fastening tool is required. Spacing of the rings shall be in accordance with ASTM A975-97 Table 2, Panel to Panel connection, Pull-Apart Resistance. In any case, ring fasteners spacing shall not exceed 6 in (150 mm). Rings shall be installed at the top and the bottom connections of the end and center diaphragms and along all edges. Care should be taken to ensure the steel ring fastener is completely closed after installation (Fig. 3). When this is not possible, fixing rings must be complemented or replaced with lacing wire.
The procedure for using lacing wire consists of cutting a sufficient length of wire, and first looping and/or twisting the lacing wire to the wire mesh. Proceed to lace with alternating double and single loops through every mesh opening approximately every 6 in (150 mm) pulling each loop tight and finally securing the end of the lacing wire to the wire mesh by looping and/or twisting. The use of pliers to aid assembly and wiring of the units using the binding wire supplied with the mattresses is normally recommended.

Foundation Preparation

The foundation on which the Reno mattresses are to be placed shall be level, and graded to the elevations as shown on the project construction drawings. The foundation for Reno mattresses shall be free of surface irregularities, loose material, and vegetation in accordance with the project specifications. Appropriate measures shall be taken for filtering and drainage of the foundation, as per the project specifications (filter cloth, drain works, etc.). Geotextiles required to be installed behind or underneath Reno mattress structures shall comply with the requirements for subsurface drainage applications.

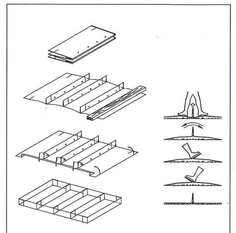


Figure 1

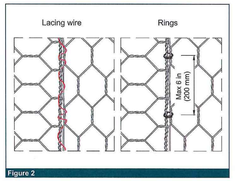


Figure 2

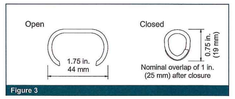


Figure 3

MACCAFERRI **Maccaferri** reserves the right to amend product specifications without notice and specifiers are requested to check as to the validity of the specifications they are using.

Installation and Filling

After assembly, the mattresses are placed in their proper location and securely attached to adjacent units. For structural integrity, all adjoining empty units should be connected by means of lacing wire or ring fasteners along all the edges of their contact surfaces, in order to form a monolithic structure. On slopes, the mattress should be laid with the width perpendicular to the slope, except for very small ditches. Mattresses should be placed and securely attached while empty. Where mattresses are to be placed on steep slopes, the unit should be secured by hardwood or steel pegs driven into the ground just below the upper end panel, at 6 ft (2 m) centers or as specified in the project requirements.
Mattresses can conform to bends up to a radius of 60-70 ft. (18 - 21 m) without alteration, and placed to the required curvature for filling. Mattresses may be cut to form curves or bevels.
Rocks for mattresses may be produced by any suitable quarrying method, and by the use of any device that yields the required sizes within the gradation limits chosen.
Rocks shall be hard, angular to round, durable and of such quality that they shall not disintegrate on exposure to water or weathering during the life of the structure.
Reno mattress rocks shall range between 3-6 in (75-150 mm). The range in sizes may allow for a variation of 5% oversize and/ or 5% undersize rock, provided it is not placed on the mattress exposed surface. In all cases, any oversize rock for mattresses shall allow for a placement of a minimum two layers of mixed rock sizes, dependent upon the height/thickness of the mattress. When using PVC coated Reno mattresses, care should be taken when placing the stone to ensure that the PVC coating on the mattress will not be damaged. Some hand placing is necessary to ensure the void ratio is kept to a minimum. If installing on a slope, start at the bottom of the slope. Filling should be done unit by unit, but several units should be ready for filling at any one time. Ensure that the diaphragm tops are accessible for lacing to the mattress lids when required.

Closing

To allow for settlement, level off the fill 1 in (25 mm) above the top of the mesh. In aprons downstream of weirs and similar places where water will fall directly onto the Reno mattresses, install bracing wires vertically between the top and bottom mesh. Make sure the top edges of the diaphragms are exposed. Lay the lid down, pull the edges of the panels to be connected together where necessary using an appropriate tool as a lid closer. The lids shall be tightly laced along all edges, ends and diaphragms in the same manner as described for assembling. Adjacent lids may be securely attached simultaneously. Securely attach the lids to the ends of the mattresses and then securely attach them to the sides, and diaphragms, using alternate double and single loops, or steel wire ring fasteners. Adjacent lids can securely be attached in one operation. In cases where a number of adjacent bases are to be covered at one time, rolls of mesh can be used in place of individual unit size lids.

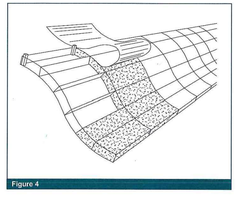


Figure 4

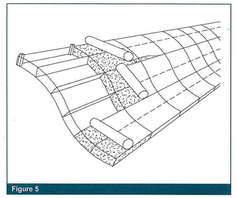


Figure 5

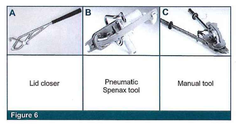


Figure 6

10303 Governor Lane Boulevard
Williamsport, MD 21795-3116
Tel: 301-223-6910
Fax: 301-223-6134

MACCAFERRI INC.
email: hdqtrs@maccaferri-usa.com
website: www.maccaferri.com

3650 Seaport Boulevard
West Sacramento, CA 95691-3400
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Fax: 916-371-0764

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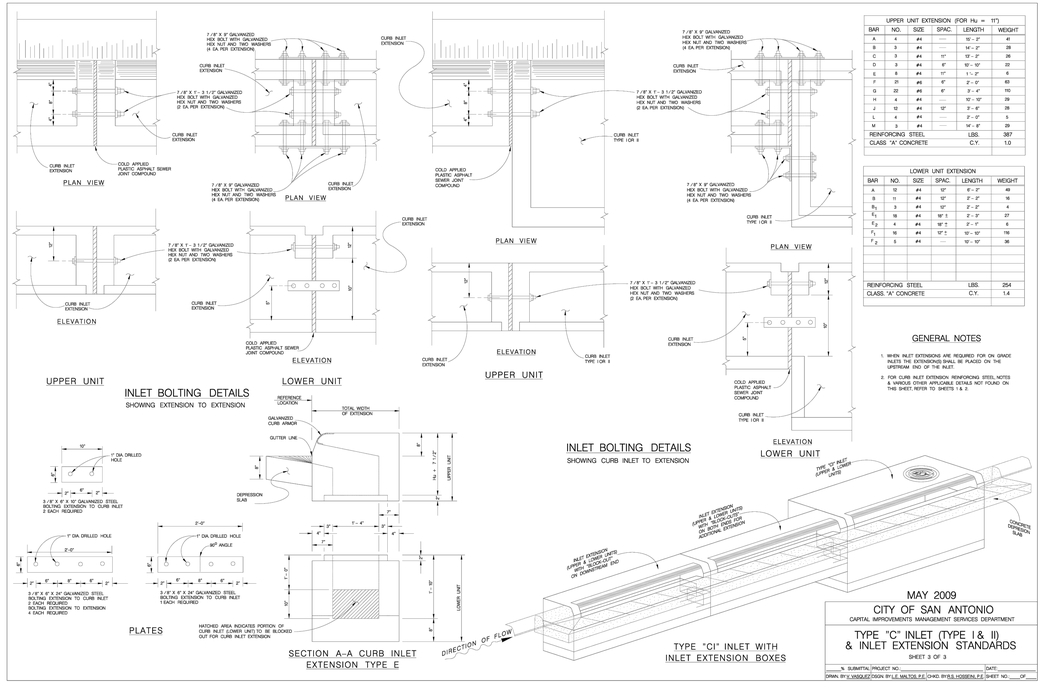

UPPER UNIT EXTENSION (FOR Hu = 11')					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	----	10' - 2"	41
B	3	#4	----	14' - 2"	28
C	3	#4	11"	13' - 2"	26
D	3	#4	6"	10' - 10"	22
E	8	#4	11"	1' - 3"	6
F	21	#6	6"	2' - 0"	63
G	22	#6	6"	3' - 4"	110
H	4	#4	----	10' - 10"	39
J	12	#4	12"	3' - 6"	28
L	4	#4	----	2' - 0"	5
M	3	#4	----	14' - 8"	29
REINFORCING STEEL				LBS.	387
CLASS "A" CONCRETE				C.Y.	1.0

LOWER UNIT EXTENSION					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	12	#4	12"	6' - 2"	48
B	11	#4	12"	5' - 2"	16
B_1	3	#4	12"	5' - 2"	4
E_1	16	#4	18" T	3' - 1"	27
E_2	4	#4	18" T	3' - 1"	6
F_1	16	#4	12" T	10' - 10"	116
F_2	5	#4	----	10' - 10"	36
REINFORCING STEEL				LBS.	254
CLASS "A" CONCRETE				C.Y.	1.4

GENERAL NOTES

1. WHEN INLET EXTENSIONS ARE REQUIRED FOR ON GRADE INLETS THE EXTENSIONS SHALL BE PLACED ON THE UPSTREAM END OF THE INLET.
2. FOR CURB INLET EXTENSION REINFORCING STEEL NOTES & VARIOUS OTHER APPLICABLE DETAILS NOT FOUND ON THIS SHEET, REFER TO SHEETS 1 & 2.

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

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

___% SUBMITTAL PROJECT NO.:_____ DATE:_____
DRAWN BY:V. VASQUEZ DESIGN BY:L.E. MALTOS, P.E. CHKD. BY:B.S. HOSSENI, P.E. SHEET NO.:___OF___

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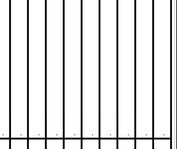
REV	DESCRIPTION	DRAWN BY	DATE



LEGACY AT LA VIDA (ENCLAVE)
PLAT# 24-11800079

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TEXAS

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TBPE Firm#: F-14909
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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

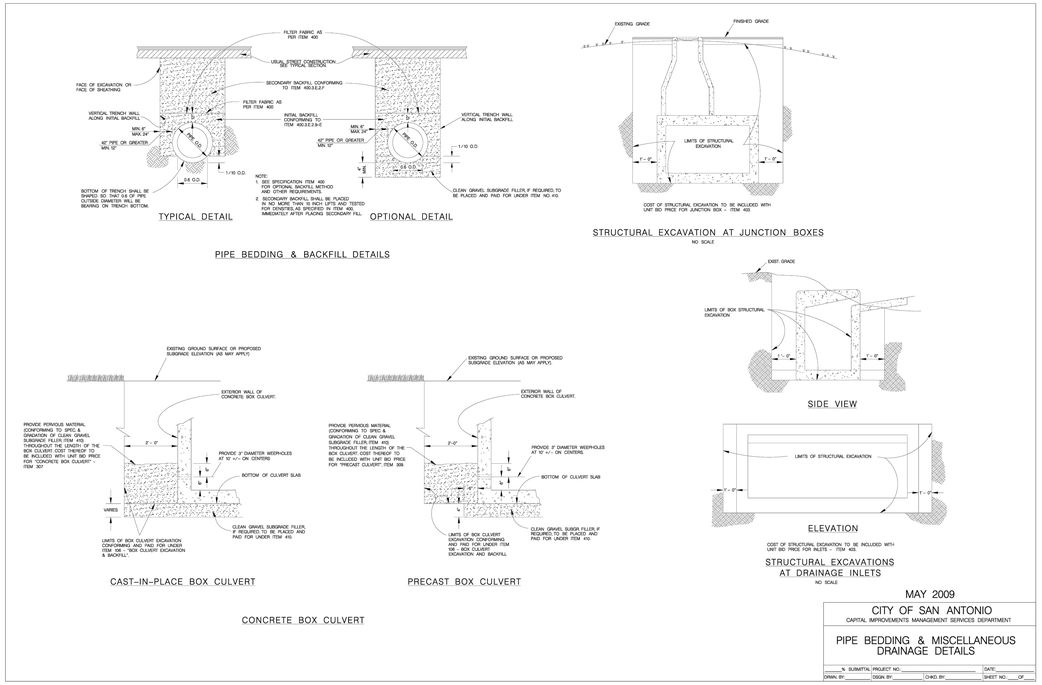
PROJECT NUMBER: 1198-01-01
DRAWING NAME: DRDT11980101

SHEET TITLE: DRAIN DETAILS (2 OF 3)

SHEET NUMBER: 4.7

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

Civil Drawing DRDT11980101.dwg 4.8 By: ESAC: RODRIGUEZ

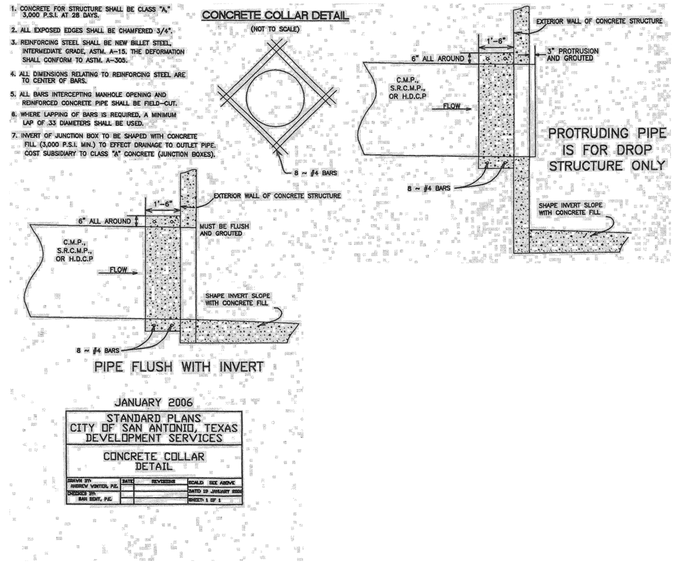


MAY 2009

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____

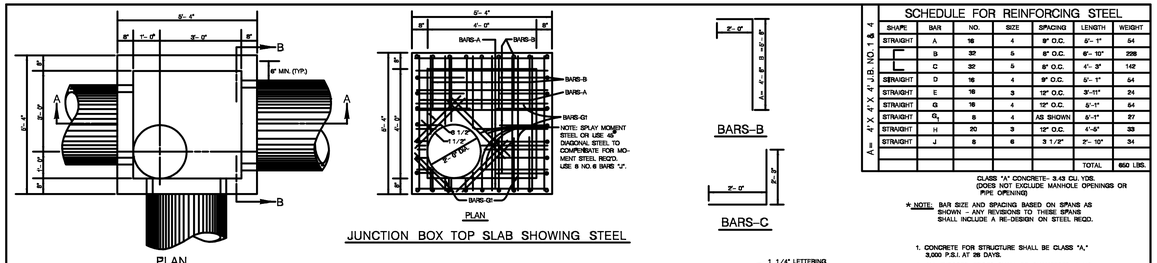


JANUARY 2006

STANDARD PLANS
CITY OF SAN ANTONIO, TEXAS
DEVELOPMENT SERVICES

CONCRETE COLLAR DETAIL

DRAWN BY:	DATE:	REVISIONS:	SCALE: SEE ABOVE
ANDREW VORTEL, P.E.			DATED 29 JANUARY 2006
CHECKED BY:			SHEET 1 OF 1
BAR SIGHT, INC.			



SCHEDULE FOR REINFORCING STEEL

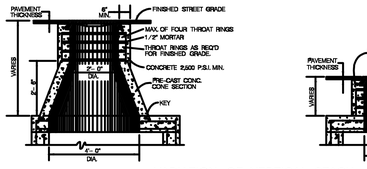
A = 4'X 4'X 4' J.B. NO. 1 & 4

SHAPE	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
STRAIGHT	A	16	4	9" O.C.	5'- 1"	54
L	B	32	5	6" O.C.	6'- 10"	228
L	C	32	5	6" O.C.	4'- 3"	142
STRAIGHT	D	16	4	9" O.C.	5'- 1"	54
STRAIGHT	E	16	3	12" O.C.	3'-11"	24
STRAIGHT	G	16	4	12" O.C.	5'-1"	54
STRAIGHT	G_1	8	4	AS SHOWN	5'-1"	27
STRAIGHT	H	20	3	12" O.C.	4'-5"	33
STRAIGHT	J	8	6	3 1/2"	3'- 10"	34
					TOTAL	650 LBS.

CLASS "A" CONCRETE= 3.43 CU. YDS.
(DOES NOT EXCLUDE MANHOLE OPENINGS OR PIPE OPENING)

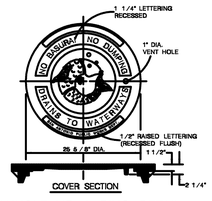
★ NOTE: BAR SIZE AND SPACING BASED ON SPANS AS SHOWN - ANY REVISIONS TO THESE SPANS SHALL INCLUDE A RE-DESIGN ON STEEL REQ'D.

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).
8. PAYMENT FOR ALL EXCAVATION, BACKFILLING, CONCRETE, REINFORCING STEEL, VERTICAL STACK, RING AND COVER SHALL BE INCLUDED IN THE UNIT COST OF ITEM 403 - "STORM SEWER JUNCTION BOXES AND INLETS".



VARIATION OF VERTICAL STACK

VERTICAL STACK DESIGN SHALL BE GOVERNED BY THE DEPTH OF THE TOP OF THE JUNCTION BOX BELOW THE FINISHED STREET GRADE.

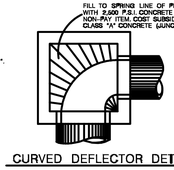


MANHOLE LID & RING DETAIL

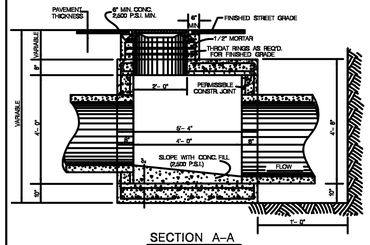
SCALE: 1 : 16

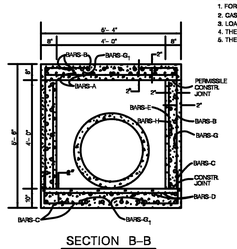
NOTES FOR MANHOLE LID AND RING

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.



CURVED DEFLECTOR DETAIL





JANUARY 2005

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

4'x4'x4' JUNCTION BOX STANDARDS

_% SUBMITTAL PROJECT NO.:_____ DATE:_____
DRAWN BY:_____ DSGN BY:_____ CHKD BY:_____ SHEET NO.:____OF____

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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER: 1198-01-01
DRAWING NAME: DRDT11980101

SHEET TITLE: DRAIN DETAILS (3 OF 3)

SHEET NUMBER: 4.8

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

Civil Drawing:DRDT11980101.dwg(4.8 By:ESAC-ISOS\SCUEZ

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.

CAUTION!!:

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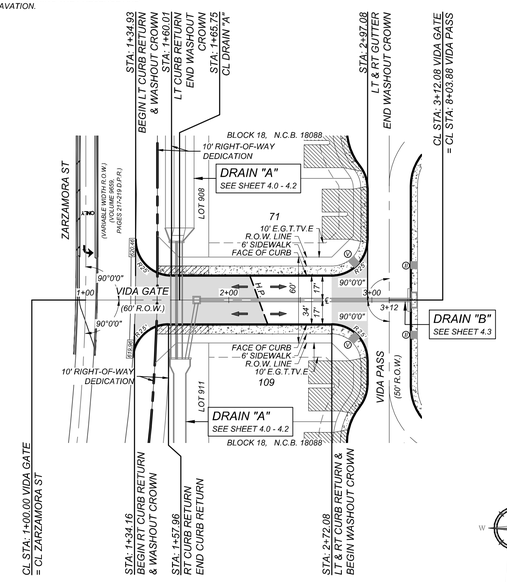
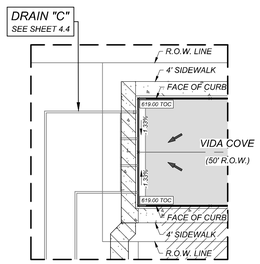
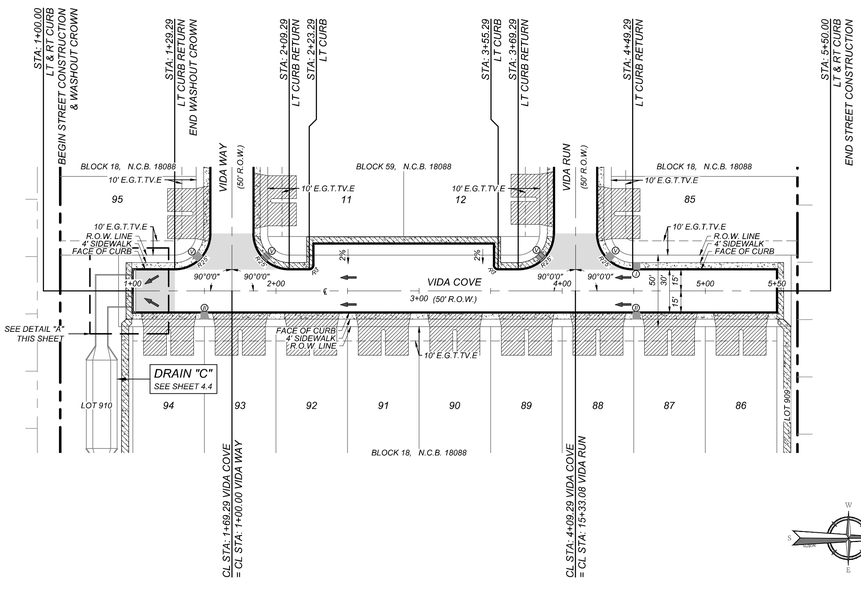




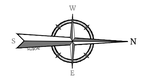
DETAIL "A"

SCALE: 1" = 20'



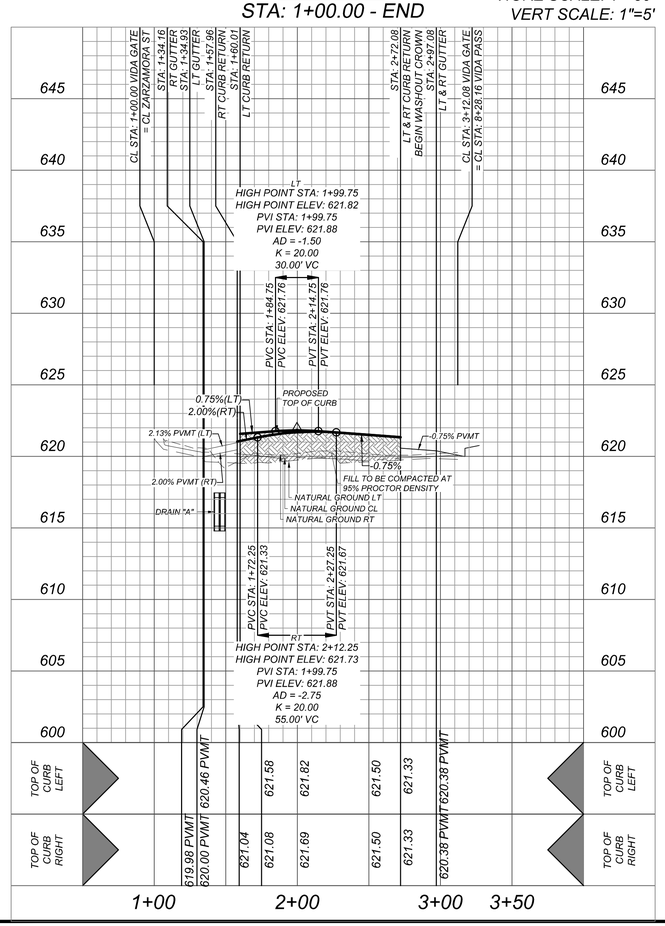
VIDA GATE
STA: 1+00.00 - END

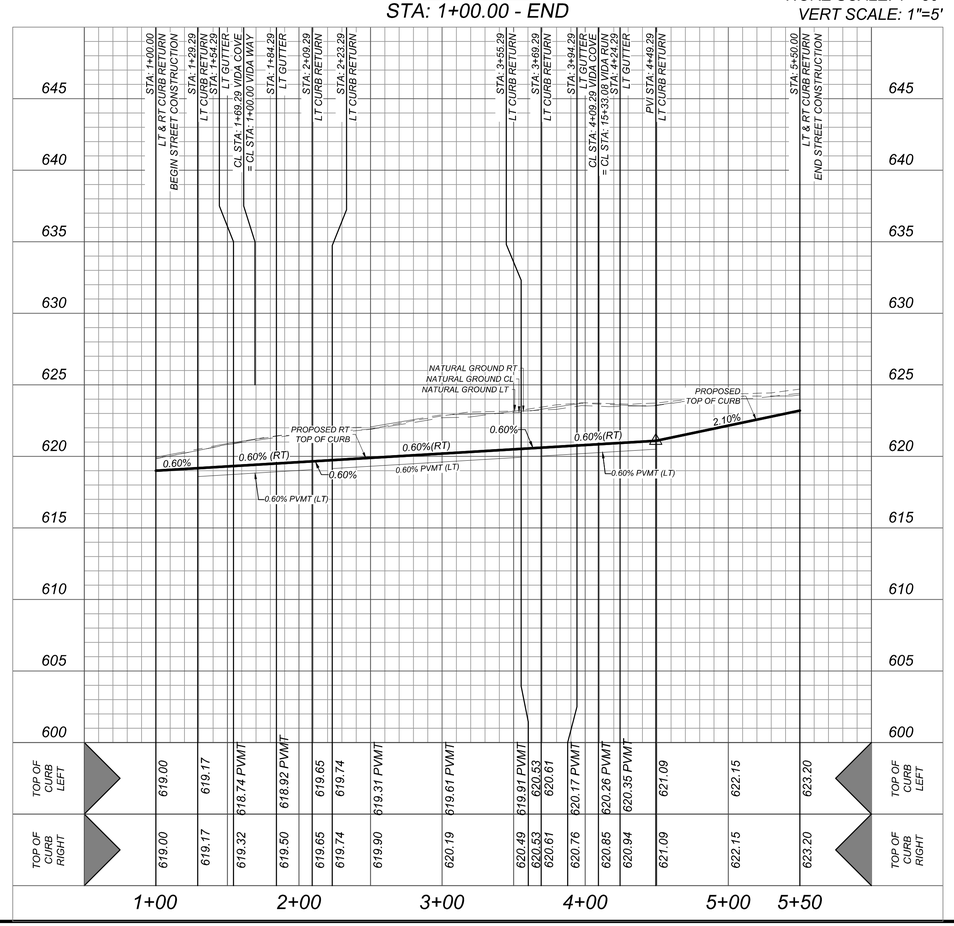
HORZ SCALE: 1"=50'
VERT SCALE: 1"=5'



VIDA COVE
STA: 1+00.00 - END

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





LEGEND

R.O.W.	=	RIGHT OF WAY
E.G.T.TV.E	=	ELECTRIC, GAS, TELEPHONE & CABLE EASEMENT (PLAT# 24-11800079)
P.A.E	=	PEDESTRIANT ACCESS EASEMENT (PLAT# 24-11800079)
	=	FLOW ARROW
	=	WASHOUT CROWN
SDW	=	SINGLE DIRECTION WHEELCHAIR RAMP SEE SHEET 5.5
DDW	=	DUAL DIRECTION WHEELCHAIR RAMP SEE SHEET 5.5
I	=	WHEELCHAIR RAMP TYPE I SEE SHEET 5.5
II	=	WHEELCHAIR RAMP TYPE II SEE SHEET 5.5
	=	SIDEWALK TO BE CONSTRUCTED BY DEVELOPER
	=	SIDEWALK TO BE BUILT AT THE TIME OF HOME CONSTRUCTION
	=	PROPOSED DRIVEWAY LOCATION
H.P.	=	HIGH POINT
L.P.	=	LOW POINT

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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER: 1198-01-01
DRAWING NAME: STPP11980101_AB

SHEET TITLE:
YUCCA POINT & PITAYA STREET PLAN & PROFILE

SHEET NUMBER:
5.0

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C:\civil\STREETS\STPP11980101_AB.dwg|LS By: SCHAVEZ

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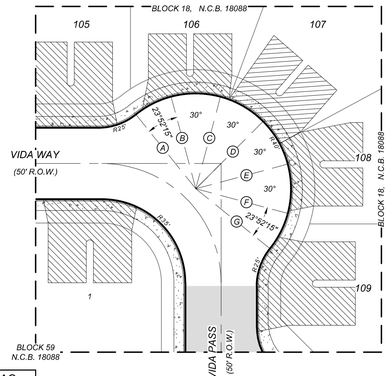
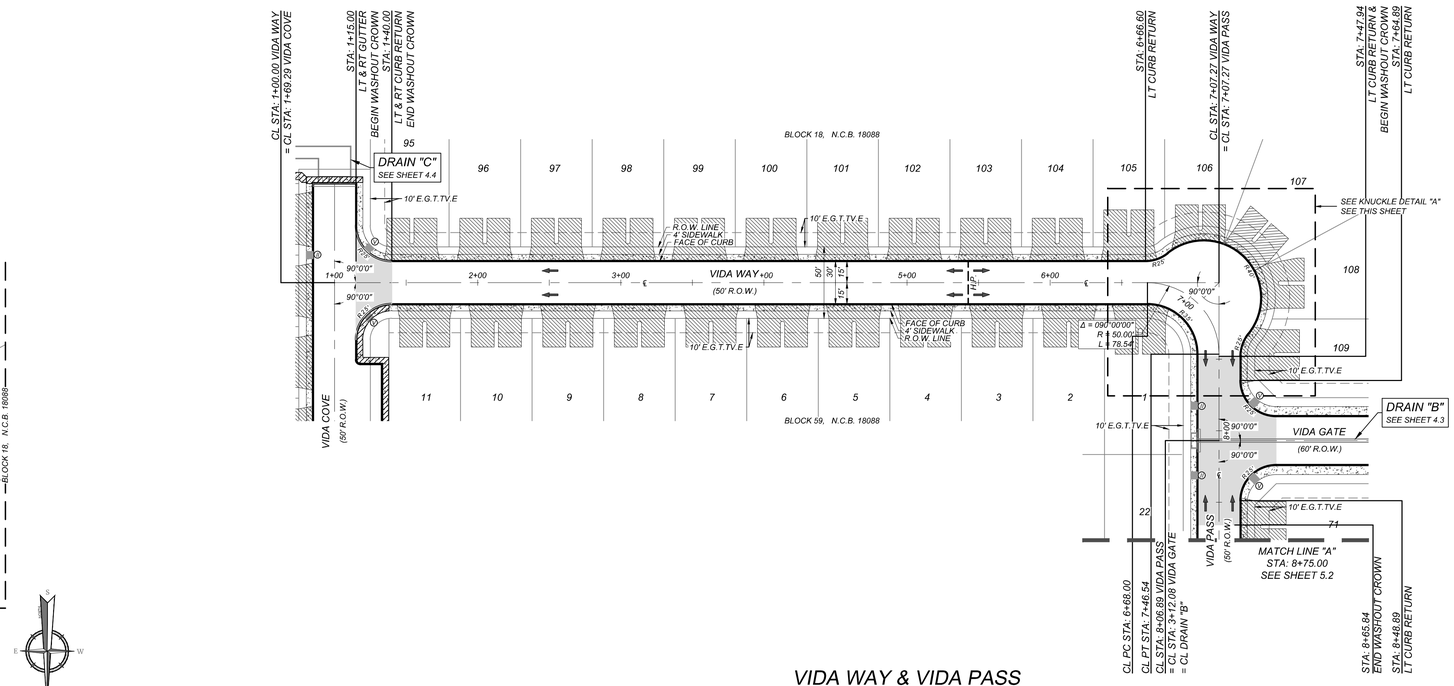


KNUCKLESAC ELEVATIONS	
STATION	TOP OF CURB ELEVATIONS
A	622.02
B	622.20
C	622.32
D	622.31
E	622.19
F	621.94
G	621.67

KNUCKLE DETAIL "A"

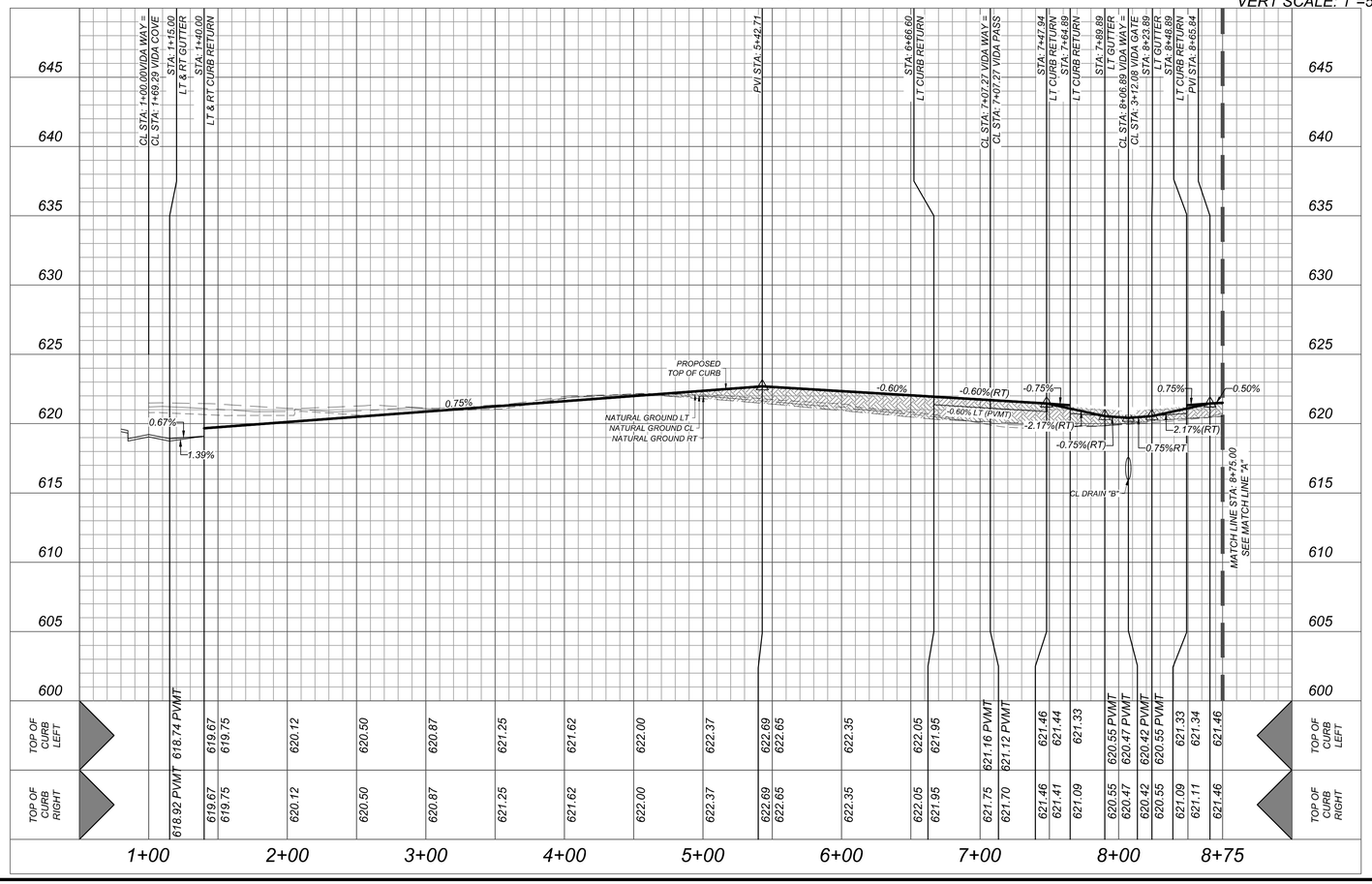
SCALE: 1" = 30'



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

VIDA WAY & VIDA PASS

STA: 1+00.00 - 8+75.00



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LEGEND

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REV	DATE	DRAWN BY	DESCRIPTION

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PLAT# 24-11800079

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TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
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PROJECT NUMBER: 1198-01-01
DRAWING NAME: STPP11980101_C

SHEET TITLE:
SABILA TRAIL & DALIA PARK
PLAN & PROFILE (1 OF 2)

SHEET NUMBER:
5.1

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Civil/STREETS/STPP11980101_C.dwg|5.1 By: SCHultZ

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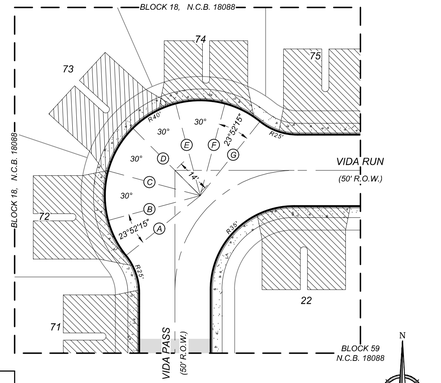
CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S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

CAUTION!!:

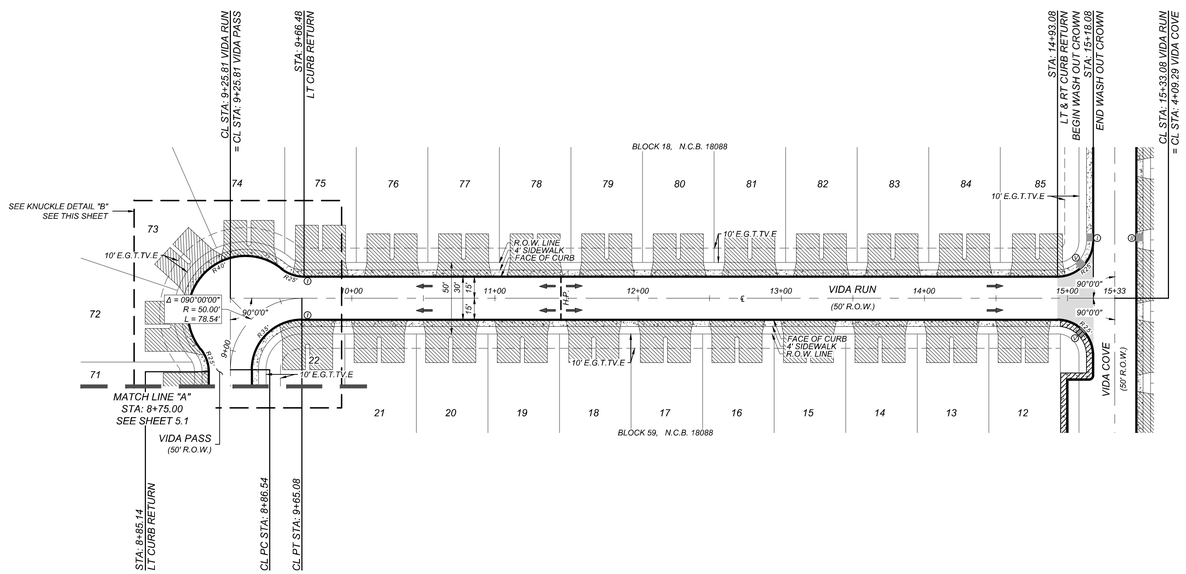
THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT 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.



KNUCKLE DETAIL "B"

SCALE: 1" = 30'

KNUCKLESAC ELEVATIONS	
STATION	TOP OF CURB ELEVATIONS
A	621.75
B	622.02
C	622.25
D	622.37
E	622.36
F	622.23
G	622.04

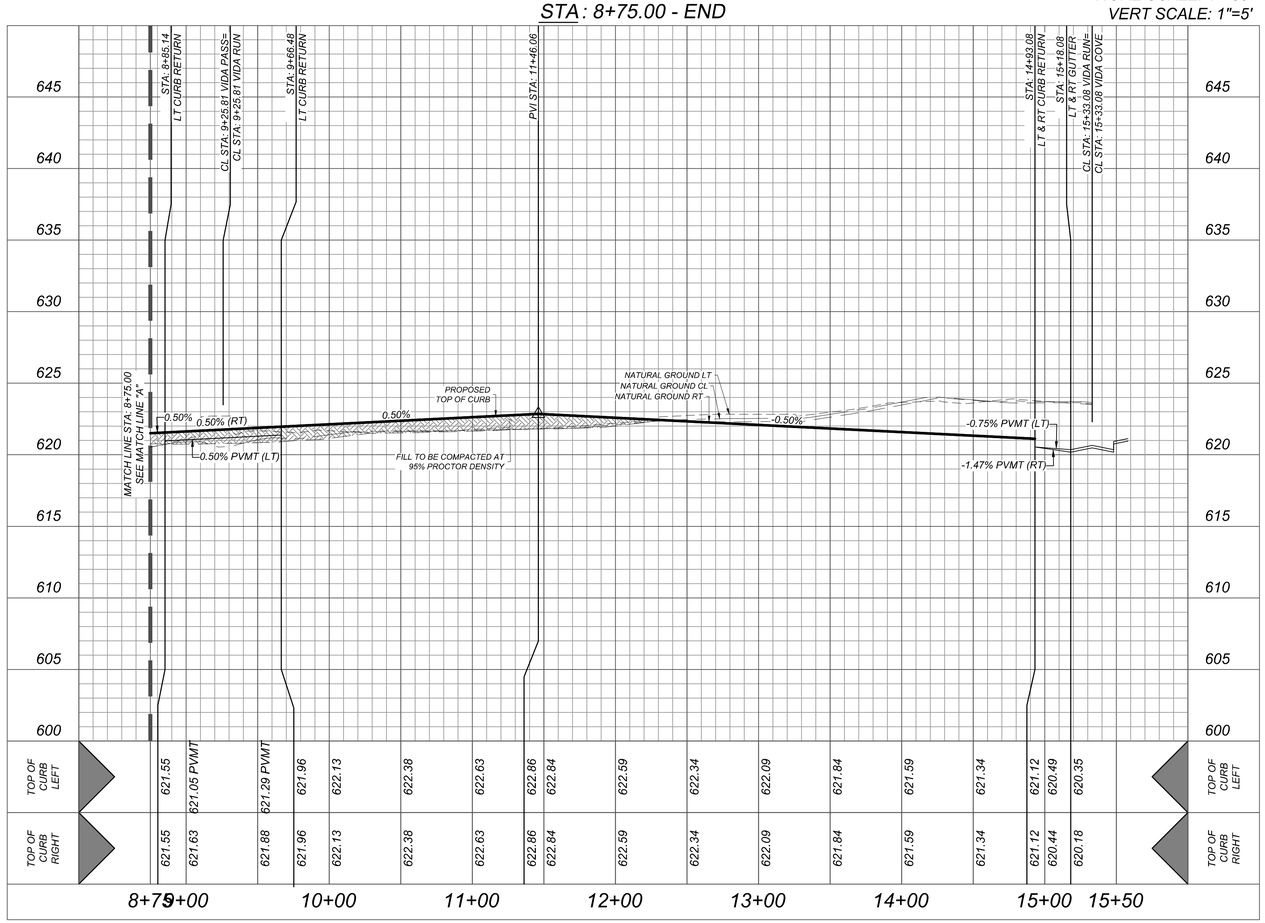


LEGEND

R.O.W.	=	RIGHT OF WAY
E.G.T.TV.E	=	ELECTRIC, GAS, TELEPHONE & CABLE EASEMENT
	=	FLOW ARROW
	=	WASHOUT CROWN
SDW	=	SINGLE DIRECTION WHEELCHAIR RAMP SEE SHEET 5.5
DDW	=	DUAL DIRECTION WHEELCHAIR RAMP SEE SHEET 5.5
I	=	WHEELCHAIR RAMP TYPE I SEE SHEET 5.5
II	=	WHEELCHAIR RAMP TYPE II SEE SHEET 5.5
	=	SIDEWALK TO BE CONSTRUCTED BY DEVELOPER
	=	SIDEWALK TO BE BUILT AT THE TIME OF HOME CONSTRUCTION
	=	PROPOSED DRIVEWAY LOCATION
H.P.	=	HIGH POINT
L.P.	=	LOW POINT

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

VIDA PASS & VIDA RUN
STA : 8+75.00 - END



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REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED
PROFESSIONAL ENGINEER
7/1/25

LEGACY AT LA VIDA
(ENCLAVE)
PLAT# 24-11800079

SANANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
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Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

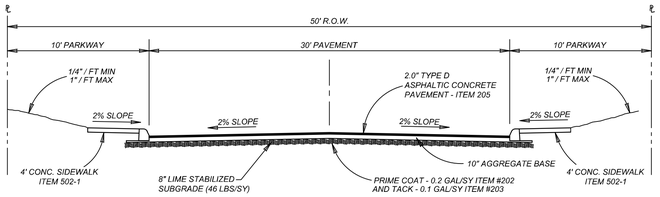
PROJECT NUMBER: 1198-01-01
DRAWING NAME: STPP11980101_C

SHEET TITLE:
DALIA PARK & JICAMA GROVE PLAN & PROFILE (2 OF 2)

SHEET NUMBER:
5.2

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

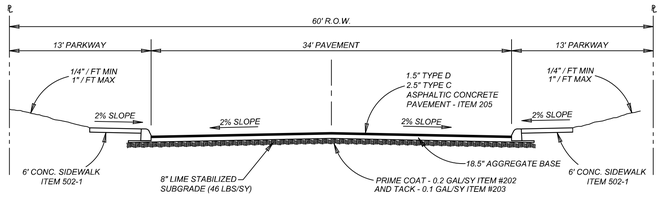
Civil\STREETS\STPP11980101_C.dwg\5.2 By: SCHAVEZ



TYPICAL LOCAL "A" STREET SECTION

NOT TO SCALE

USE LOCAL "A" STREET SECTION FOR STREETS BELOW:
VIDA COVE - STA: 1+00.00 - END
VIDA WAY, VIDA PASS & VIDA RUN - STA: 1+00.00 - END

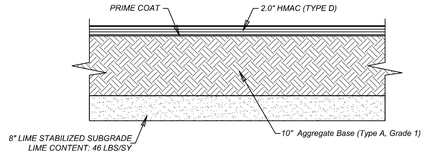


TYPICAL LOCAL "B" STREET SECTION

NOT TO SCALE

USE LOCAL "B" STREET SECTION FOR STREETS BELOW:
VIDA GATE - STA: 1+00.00 - END

Pavement Section
- 2.0" HMAC Type "D"
- 10" Aggregate Base (Type A, Grade 1)
- 8" Lime Stablized Subgrade(46 LBS/SY)
- Total: 20"
- Structural No: 2.92
- CBR: 2.0
- REQUIRED IF SUBGRADE PI > 20

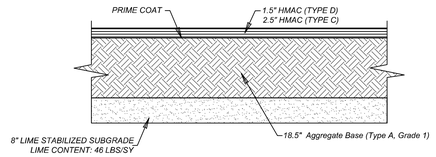


ASPHALT PAVEMENT DETAIL

NOT-TO-SCALE

DETAIL FOR ALL LOCAL TYPE A

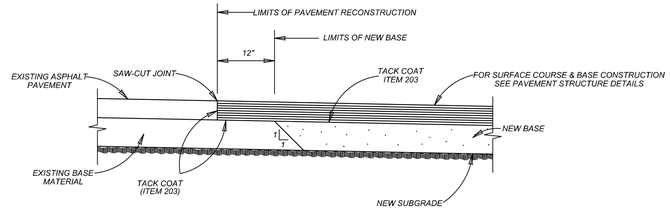
Pavement Section
- 1.5" HMAC Type "D"
- 2.5" HMAC Type C
- 18.5" Aggregate Base (Type A, Grade 1)
- 8" Lime Stablized Subgrade(46 LBS/SY)
- Total: 30.5"
- Structural No: 4.99
- CBR: 2.0
- REQUIRED IF SUBGRADE PI > 20



ASPHALT PAVEMENT DETAIL

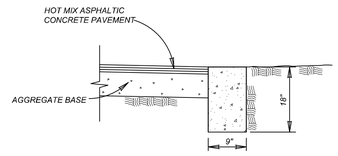
NOT-TO-SCALE

DETAIL FOR ALL LOCAL TYPE B



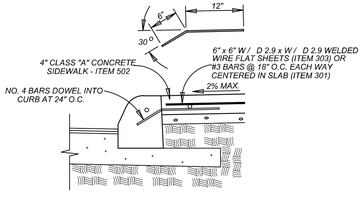
PAVEMENT JUNCTION DETAILS

NOT TO SCALE



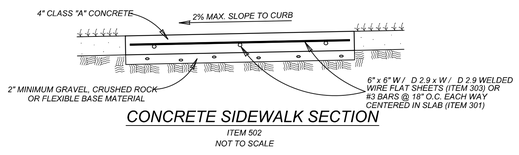
HEADER CURB

ITEM 500 ON SAND OR GRAVEL
NOT TO SCALE



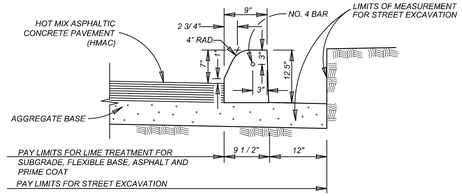
CONCRETE SIDEWALK
ABUTTING CURB SECTION

ITEM 502
NOT TO SCALE



CONCRETE SIDEWALK SECTION

ITEM 502
NOT TO SCALE



CONCRETE CURB

ITEM 500 ON ASPHALT TREATED BASE OR ASPHALTIC CONCRETE BASE
NOT TO SCALE

NOTES:
1. *PAVEMENT DESIGN THICKNESS BASED ON GEOTECHNICAL REPORT BY INTEC, L.P., PROJECT NO. S241050 DATED 03/21/24.*
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. *GEOTECHNICAL ENGINEER TO BE ON SITE TO MAKE FINAL SUBGRADE DETERMINATION. CHANGES TO THIS PAVEMENT DESIGN SHALL BE SUBMITTED TO COSA-DSD PRIOR TO PLACEMENT OF BASE MATERIAL.*

GENERAL NOTES:

1. *THE SUBGRADE SOILS SHOULD BE TESTED FOR SOLUBLE SULPHATE CONTENT PRIOR TO INSTALLATION OF THE LIME OR CEMENT.*
2. *THE APPLICATION RATE OF LIME SHALL BE DETERMINED BASED ON LABORATORY TESTING AND SHALL BE THE LOWEST PERCENTAGE OF LIME THAT PROVIDES AN UNCONFINED COMPRESSIVE STRENGTH (UCS) AT 7-DAYS OF AT LEAST 160 PSI IN ACCORDANCE WITH ASTM D5102 STANDARD TEST METHODS FOR UNCONFINED COMPRESSIVE STRENGTH OF COMPACTED SOIL-LIME MIXTURES (PROCEDURE B) (IN ADDITION, CURING SHOULD OCCUR FOR 7 DAYS AT 40° AND SPECIMENS SHOULD BE SUBJECT TO 24-HR CAPILLARY SOAK PRIOR TO TESTING.*

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

1. *AFTER INITIAL MIXING THE SOIL-LIME MIXTURE SHALL MELLOW FOR A PERIOD OF TWO TO THREE (2 - 3) DAYS. MAINTAIN MOISTURE DURING MELLOWING;*
2. *AFTER MELLOWING AND FINAL MIXING, THE PULVERIZATION SHALL BE CHECKED USING THE FOLLOWING CRITERIA (REMOVE NON-SLAKING AGGREGATES RETAINED ON THE ¾ INCH SIEVE FROM THE SAMPLE):*
   - *MINIMUM PASSING 1 ½" SIEVE 100*
   - *MINIMUM PASSING ¾" SIEVE 85*
   - *MINIMUM PASSING NO. 4 SIEVE 60*
3. *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.*
4. *COMPACT AND CHECK FIELD DENSITY (MINIMUM OF 95% OF MDD REQUIRED)*
5. *CURE FOR AN ADDITIONAL 2 TO 5 DAYS (TOTAL MELLOWING AND CURING TIME SHOULD TOTAL AT LEAST 5 DAYS).*
6. *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:
- *SHOUD 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*
- *PSI SHOULD BE LESS THAN 20*

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REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED
PROFESSIONAL ENGINEER
7/1/25

LEGACY AT LA VIDA (ENCLAVE)
PLAT# 24-11800079

SANANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
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3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

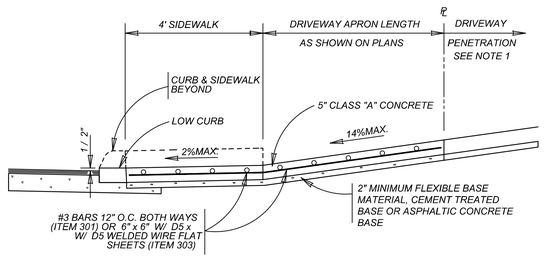
PROJECT NUMBER:	DRAWING NAME:
1198-01-01	STDT11980101

SHEET TITLE:
TYPICAL STREET DETAILS

SHEET NUMBER:
5.3

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

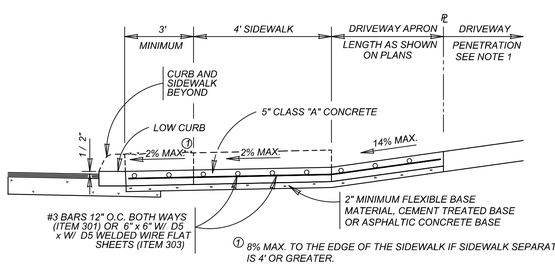
C:\sh\STREETS\STDT11980101.dwg[5.3 By:ESAVC,RDORSO,GIET



TYPICAL RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB

ITEM 503.1

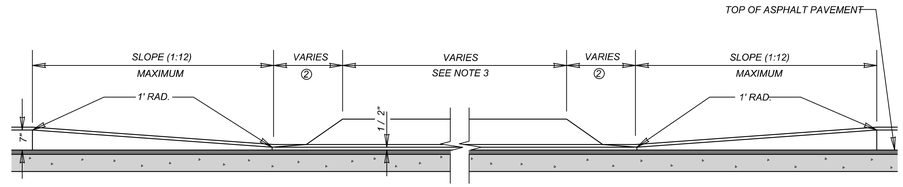


① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

TYPICAL RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK SEPARATED FROM CURB

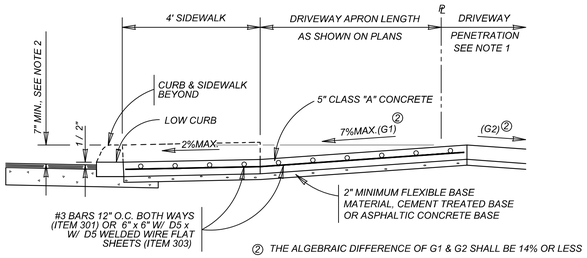
ITEM 503.1



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

CURB PROFILE AT DRIVEWAY

WITH SIDEWALK ABUTTING CURB

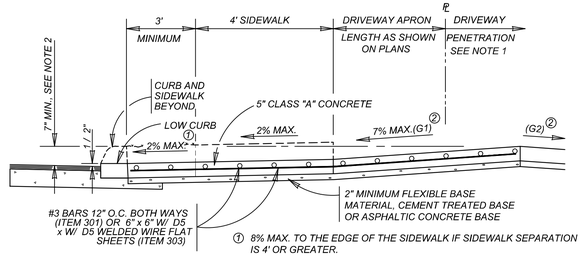


② THE ALGEBRAIC DIFFERENCE OF G1 & G2 SHALL BE 14% OR LESS

TYPICAL RESIDENTIAL DRIVEWAY SECTION

WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS ABUTTING CURB

ITEM 503.1



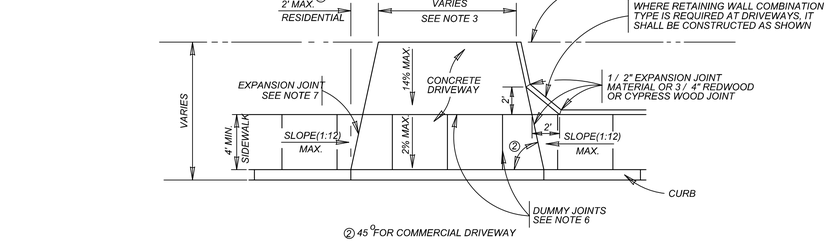
① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

② THE ALGEBRAIC DIFFERENCE OF G1 & G2 SHALL BE 14% OR LESS

TYPICAL RESIDENTIAL DRIVEWAY SECTION

WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS SEPARATED FROM CURB

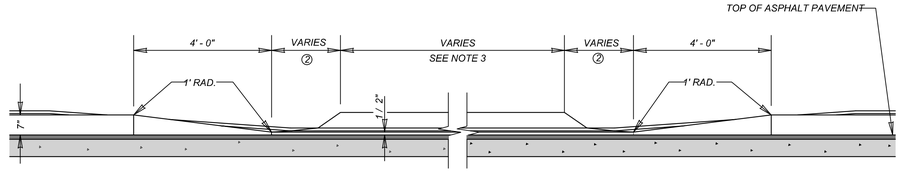
ITEM 503.1



② 45° FOR COMMERCIAL DRIVEWAY

TYPICAL DRIVEWAY PLAN VIEW

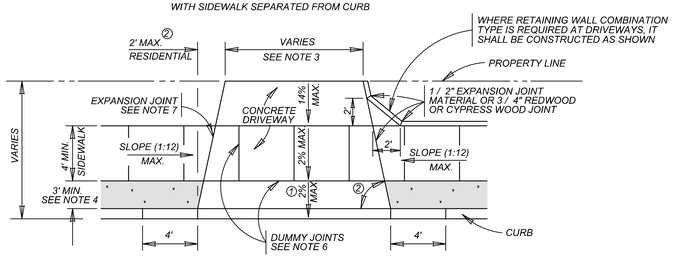
WITH SIDEWALK ABUTTING CURB



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

CURB PROFILE AT DRIVEWAY

WITH SIDEWALK SEPARATED FROM CURB

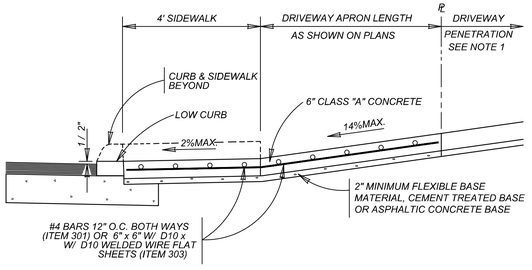


① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

② 45° FOR COMMERCIAL DRIVEWAY

TYPICAL DRIVEWAY PLAN VIEW

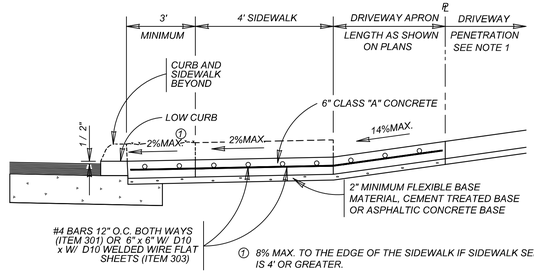
WITH SIDEWALK SEPARATED FROM CURB



TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB

ITEM 503.2



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

TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK SEPARATED FROM CURB

ITEM 503.2

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.

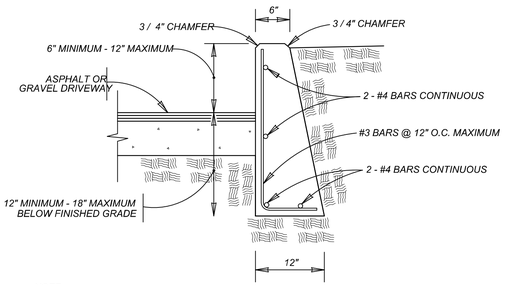
5. FOR OTHER THAN LOCAL TYPE "A" STREETS, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND SEPARATED A MINIMUM OF 3' FROM THE BACK OF CURB OR, AS AN OPTION, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 6' WHEN LOCATED AT THE BACK OF CURB.

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

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FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED
PROFESSIONAL ENGINEER
7/11/25

LEGACY AT LA VIDA (ENCLAVE)
PLAT# 24-11800079

SANANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-1909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

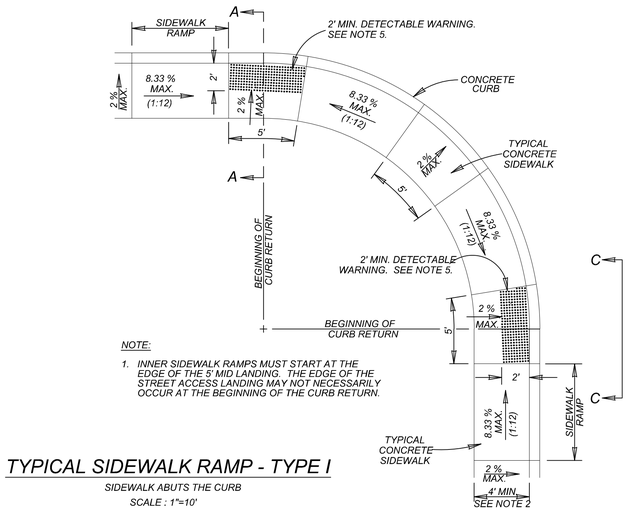
PROJECT NUMBER: 1198-01-01
DRAWING NAME: STDT11980101

SHEET TITLE: CONCRETE DRIVEWAY DETAILS

SHEET NUMBER: 5.4

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

By: ISAAC.RODRIGUEZ
Civil\STERTS\STDT11980101.dwg\5.4



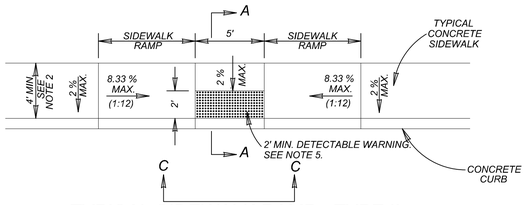
NOTE:

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

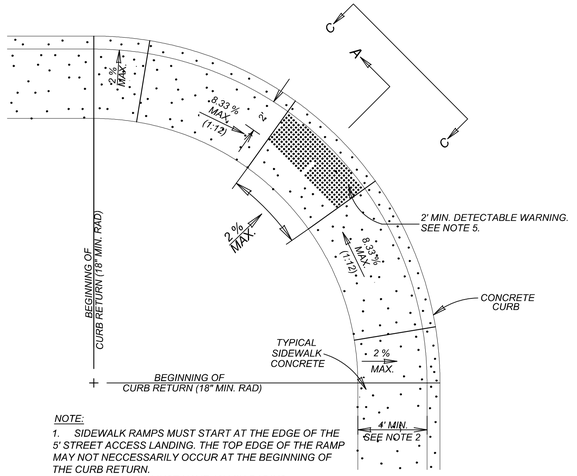
SCALE : 1"=10'



TYPICAL SIDEWALK RAMP - TYPE II

USED AT TEE INTERSECTIONS WHERE SIDEWALK ABUTS CURB

SCALE : 1"=10'



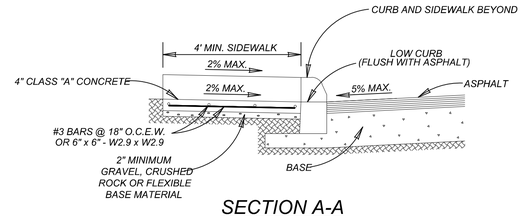
NOTE:

1. SIDEWALK RAMPS MUST START AT THE EDGE OF THE 5' STREET ACCESS LANDING. THE TOP EDGE OF THE RAMP MAY NOT NECCESSARILY OCCUR AT THE BEGINNING OF THE CURB RETURN.
2. TYPE V RAMPS MUST HAVE 18' MIN RADIUS

TYPICAL SIDEWALK RAMP - TYPE V

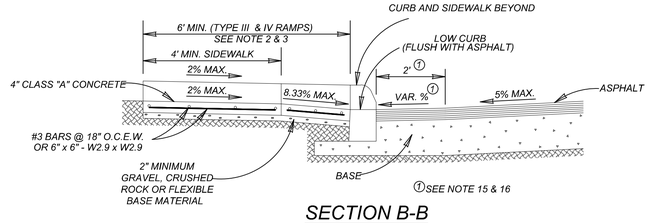
SIDEWALK ABUTS THE CURB

SCALE : 1"=10'



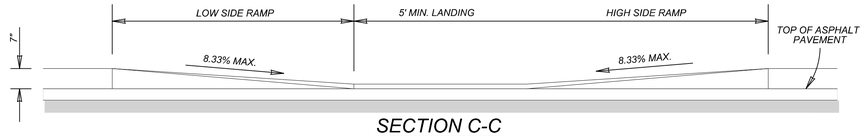
SECTION A-A

SCALE : 1"=4'



SECTION B-B

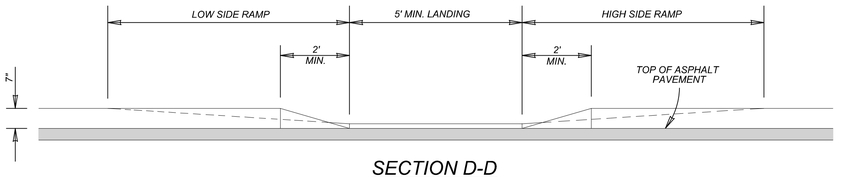
SCALE : 1"=4'



SECTION C-C

CURB PROFILE WHERE SIDEWALK ABUTS CURB

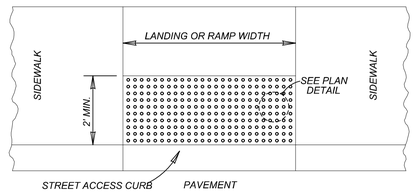
SCALE : 1"=4'



SECTION D-D

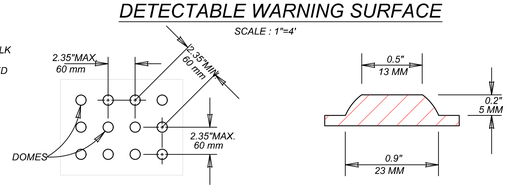
CURB PROFILE WHERE SIDEWALK IS SEPARATED FROM CURB

SCALE : 1"=4'



DETECTABLE WARNING SURFACE

SCALE : 1"=4'

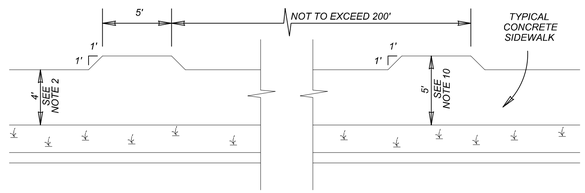


PLAN DETAIL

NO SCALE

DOME SECTION

NO SCALE



SIDEWALK PASSING SPACE

SCALE : 1"=10'

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"

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
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
10. SIDEWALKS LESS THAN 5 FEET IN WIDTH SHALL BE PROVIDED WITH A PASSING SPACE AT A MAXIMUM
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.

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.

MAY 2009

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

WHEELCHAIR RAMP STANDARDS

_____% SUBMITTAL | PROJECT NO.:_____ | DATE:_____

DRWN. BY: V. VASQUEZ | DSGN. BY:_____ | CHKD. BY: R.S. HOSSEINI, P.E. | SHEET NO.:____OF____

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REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS — OMAR A. ESPINOSA — 125560 — LICENSED PROFESSIONAL ENGINEER — 7/11/25

LEGACY AT LA VIDA (ENCLAVE)
PLAT# 24-11800079

SANANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design

SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#:F-1909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER: 1198-01-01

DRAWING NAME: STDT11980101

SHEET TITLE: WHEELCHAIR RAMP DETAILS

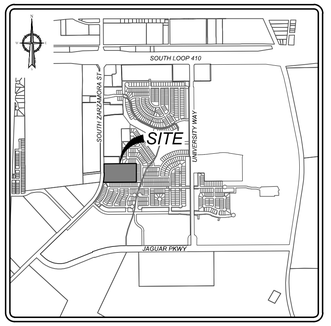
SHEET NUMBER: 5.5

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

CivilSTREETS-STDT11980101.dwg/5.5, By: ISAAC.RODRIGUEZ

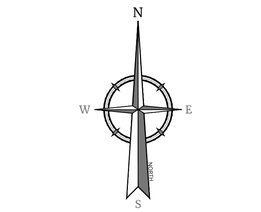
LEGEND

NEW CITY BLOCK	=	N.C.B
ELECTRIC, GAS, TELEPHONE & CABLE TV EASEMENT (PLAT# 24-11800079)	=	E.G.T.TV.E
WATER EASEMENT (PLAT# 24-11800079)	=	W.E
PEDESTRIANT ACCESS EASEMENT (PLAT# 24-11800079)	=	P.A.E
WHEELCHAIR RAMP TYPE I SEE SHEET 5.5	=	(I)
WHEELCHAIR RAMP TYPE II SEE SHEET 5.5	=	(II)
SINGLE DIRECTION WHEELCHAIR RAMP SEE SHEET 5.5	=	SDW
DUAL DIRECTION WHEELCHAIR RAMP SEE SHEET 5.5	=	DDW
SIDEWALK TO BE CONSTRUCTED BY DEVELOPER	=	
SIDEWALK TO BE BUILT AT THE TIME OF HOME CONSTRUCTION	=	
DRIVEWAY LOCATION	=	



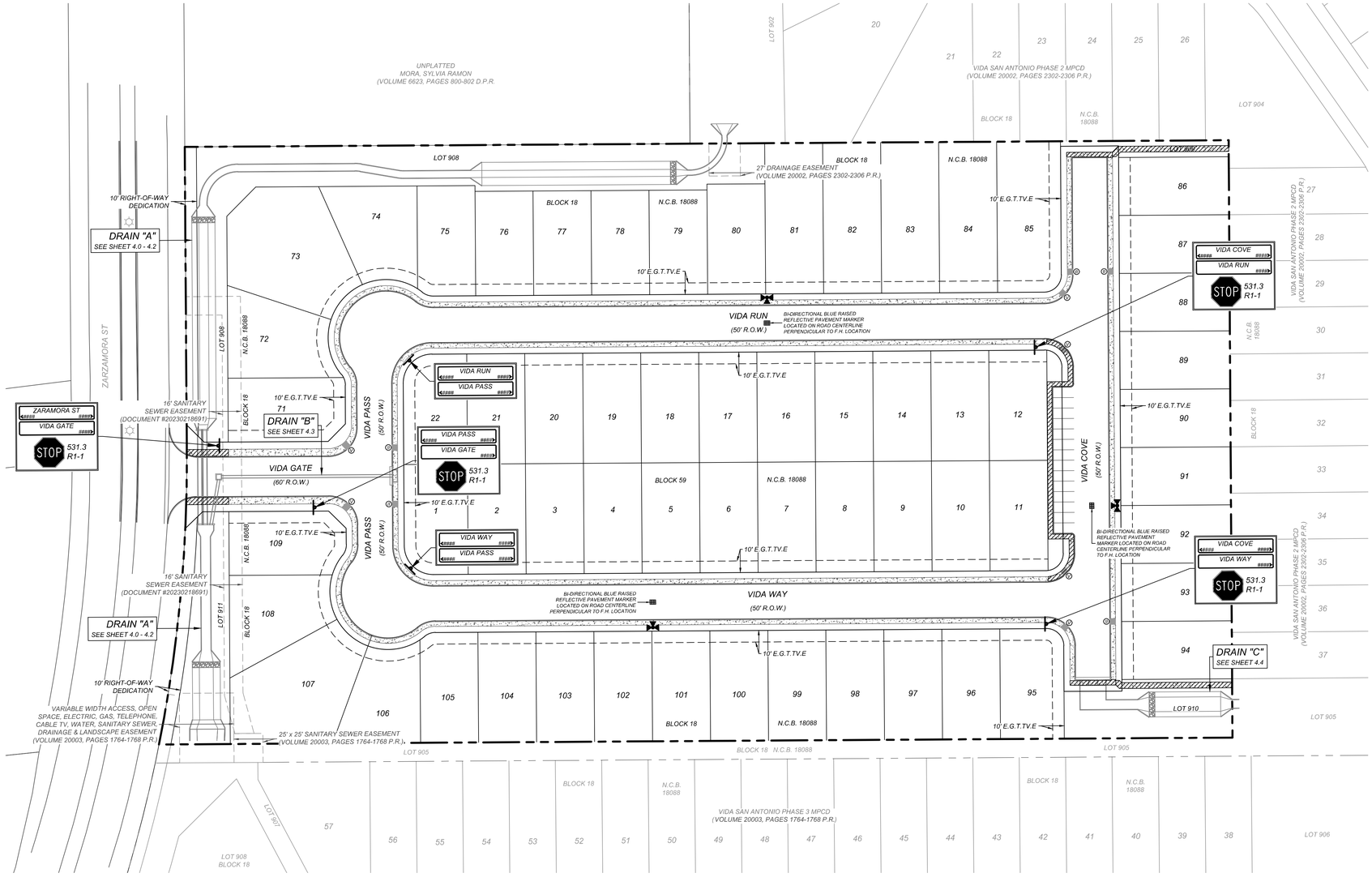
LOCATION MAP

N.T.S.



SCALE : 1'' = 50'

Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)



RESIDENTIAL LOTS = 61

SYMBOL		ITEM NUMBER
STOP	R1-1 30 X 30	531.03
STREET NAME	STANDARD COSA STREET NAME SIGN STD X 9	531.59
	TYPE II BLUE PAVEMENT MARKER	537.8

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OMAR A. ESPINOSA
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LICENSED PROFESSIONAL ENGINEER
7/1/25

LEGACY AT LA VIDA (ENCLAVE) PLAT# 24-11800079

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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER:	DRAWING NAME:
1198-01-01	TS11980101

SHEET TITLE:
TRAFIC SIGNAGE & PEDESTRIAN ACCESSIBILITY PLAN

SHEET NUMBER:
5.6

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

By IDAC-AUTOMOUNT
Civil\STREETS\TS11980101.dwg/5.6

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 Plastic Pipe (see SMD(FRP))
TW1 = Thin-Walled Tubing (see SMD(TW1))
TUBE = 10 SMO Tubing (see SMD(SLIP-1) to (SLIP-3))
S80 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

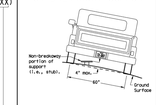
Anchor Type

UA = Universal Anchor - Concreted (see SMD(FRP) and (TW1))
UB = Universal Anchor - Bolted down (see SMD(FRP) and (TW1))
RP = Wedge Anchor Steel - (see SMD(TW1))
WA = Wedge Anchor Steel - (see SMD(TW1))
SA = Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))
SB = Slipbase - Bolted Down (see SMD(SLIP-1) to (SLIP-3))

Sign Mounting Designation

F = Prefab. "Frolic" (see SMD(SLIP-1) to (SLIP-3), (TW1), (FRP))
T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TW1))
U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))
X = Special
(12) or (22) = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TW1))
BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
WC = 1.12 W/Y Wing Channel (see SMD(SLIP-1) to (SLIP-3))
EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

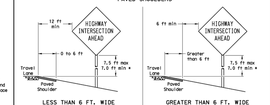
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



To avoid vehicle undercarriage snagging, any substantial meeting of a breakaway support, such as a slipbase, with a paved surface of more than 4 inches above a 60-inch chord (i.e., typical space between wheel pads).

SIGN LOCATION

PAVED SHOULDERS



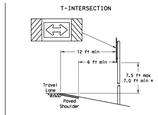
LESS THAN 6 FT. WIDE

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

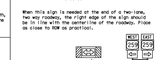
GREATER THAN 6 FT. WIDE

When the shoulder is greater than 6 ft in width, the sign shall 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 center line 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 a maximum of 7.5 feet above the top of the nearest travel lane, or

(2) a minimum of 1 ft a maximum of 1.5 feet above the grade of the base of the support when sign is installed on the backslope.

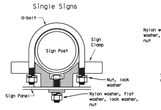
The maximum values may be increased when directed by the Engineer.

See the Traffic Operations Division website for detailed drawings of sign slipbase, Triangular Slipbase System components and Wedge Anchor System components.

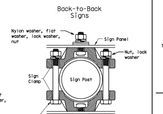
The website address is:
http://www.txdot.gov/publications/traffic.htm

TYPICAL SIGN ATTACHMENT DETAIL

Single Signs



Back-to-Back Signs

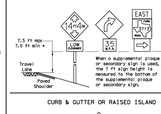


Bolts used to mount sign panels to the clamps are 5/16-18 UNC galvanized square head with nut, galvanized flat washer and galvanized lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. These lengths may have to be adjusted depending upon field conditions.

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

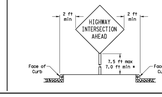
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
3" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
2" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES



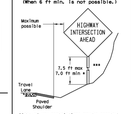
When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND



RESTRICTED RIGHT-OF-WAY

(When 6 ft min. is not possible.)



Right-of-way restrictions may be created by ponds, water, vegetation, forest, buildings, a narrow island, or other feature.

In situations where a lateral restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs should be placed as far from the travel lane as practical.

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

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
GENERAL NOTES & DETAILS

SMD(GEN)-08

©TxDOT July 2002	Tex Years	Tex Years	Tex Years	Tex Years
REVISIONS	DIST	DIST	DIST	DIST
9-08	AUS			HOUMAS
	TRAF			
	CONT	SECT	JOB	HIGHWAY No.

254

DATE: 7/1/25
FILE: sm_rd_sgn_assm_ty_xxxxx(x)xx(x-xxxx)

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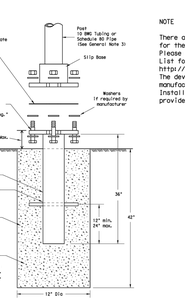
DISCLAIMER:

TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



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

NOTE

There are various devices approved for the Trilangular Slipbase System. Please reference the Material Producer List for approved slip base systems. http://www.txdot.gov/business/producer_list.htm The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.

GENERAL NOTES:

1. Slip base shall be permanently marked to indicate manufacturer, method, design, and location of marking are subject to the approval of the TxDOT Traffic Standards Engineer.
2. Material used as post with this system shall conform to the following specifications:
   10 SMO Tubing (2.875" outside diameter)
   Steel: ASTM A500 Grade B
   Seamless or electric-resistance welded steel tubing or pipe
   Sheet shall be HSLAS or 55 per ASTM A1011 or ASTM A1008
   Other sheets may be used if they meet the following:
   55,000 PSI minimum yield strength
   70,000 PSI minimum tensile strength
   20% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of 0.122" to 0.136"
   Schedule 80 Pipe (2.875" outside diameter): ASTM A53, Grade B, Type E or S
   Galvanization per ASTM A123 or ASTM A653 G210, for galvanized steel tubing ASTM A653, recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
   Schedule 80 Pipe (2.875" outside diameter)
   0.276" nominal wall thickness
   Yield strength: 46,000 PSI minimum
   Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following:
   46,000 PSI minimum yield strength
   63,000 PSI minimum tensile strength
   25% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
   Outside diameter (uncoated) shall be within the range of 2.835" to 2.895"
   Galvanization per ASTM A123
3. See the Traffic Operations Division website for detailed drawings of slip slipbase and Texas Universal Triangular Slipbase System components. The website address is: http://www.txdot.gov/publications/traffic.htm
4. Slip supports shall not be spliced except where shown. Slip support posts shall not be spliced.

ASSEMBLY PROCEDURE

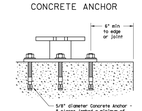
Foundation

1. Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock.
2. Place non-reinforced concrete footing in bottom of hole. Place slip base and stub pipe in non-reinforced concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Push the pipe and of the slip base stub into the center of the concrete. Rotate the stub back and forth while pushing it down into the concrete to assure good contact between the concrete and stub. Concrete shall be Class A. Finish concrete even with the top of the stub. Remove any excess concrete. Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
4. Slip base for triangular slipbase system is multidirectional and is designed to release when struck from any direction.

Support

1. Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the travelway (i.e., edge of the closest lane) when slip plate is below the edge of pavement or 7 to 7.5 feet above the top of slip plate when the slip plate is above the edge of the travelway. The cut shall be plumb and perpendicular.
2. Attach slip to support using connections shown. When multiple signs are installed on the same support, ensure the minimum clearance between each sign is maintained. See SMD(SLIP-3) for clearances based on sign types.

CONCRETE ANCHOR



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

Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end, a heavy hex nut per ASTM A563 and hardened washer per ASTM F436. The stud bolt shall have minimum yield and ultimate tensile strengths of 50 and 75 ksi, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Top of bolt shall extend at least flush with top of nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 3 3/4" minimum embedment, shall have a minimum allowable tension and shear of 2400 and 1525 pst, respectively. Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt shall extend at least flush with top of nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 3 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3100 and 3100 pst, respectively.

Texas Department of Transportation
Traffic Operations Division

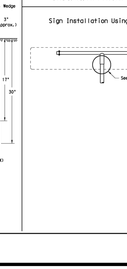
SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-1)-08

©TxDOT July 2002	Tex Years	Tex Years	Tex Years	Tex Years
REVISIONS	DIST	DIST	DIST	DIST
9-08				
	TRAF			
	CONT	SECT	JOB	HIGHWAY No.

255

ONE-WAY
Street Name Sign (if required)
Gap between shields shall be ± 2 ".
STOP (R1-1)
YIELD (R1-2)
Extruded Alum. Windbeam (see SMD(I-11)
See Detail D
PLAQUE = L - variable length
STOP = 2 - 32 inch plaques
YIELD = 2 - 36 inch plaques
1 - 30 inch plaque
Aluminum Sign Panel
Top View
Wing Channel
Detail A
Nylon washer, 5/16" x 1 3/4" hex bolt with nut, lock washer, 2 flat washers per ASTM A307 galvanized per Item 445, "Galvanizing."
Slip Clamp (Specific or Universal)
5/16" x 3/4" hex bolt with nut, lock washer and 2 flat washers per ASTM A307 galvanized per Item 445, "Galvanizing."
Top View
Detail B
Drill 7/16" hole through: other assembly and install bolt, nut, 2 flat washers and lock washer.
1 1/2"
Extender
3/8" x 3 1/2" hex bolt with nut, lock washer and 2 flat washers per ASTM A307 galvanized per Item 445, "Galvanizing."
U-Bracket
Detail F
Splices shall only be allowed behind the sign substrate.
GENERAL NOTES:
1. SIGN SUPPORT | # OF POSTS | MAX. SIGN AREA
   12 SMO | 1 | 12 SF
   12 SMO | 2 | 24 SF
   Sch 80 | 1 | 12 SF
   Sch 80 | 2 | 24 SF
2. The Engineer may require that a Schedule 80 post be used in place of a 10 SMO where a sign height is abnormally high due to a fill slope.
3. All nuts, bolts and washers shall be galvanized except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specification DMS-4410 and will be furnished in the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
5. Signs that require specific supports due to reasons other than wind loading are designated as "REQUIRED SUPPORT" table on this sheet.
6. For horizontal rectangular signs fabricated from flat sheet aluminum, the Engineer may permit butt joints for signs less than 5 ft. in length. Stringers are used for signs of greater height.
7. Triangular or circular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. They shall be designed to work independently when impacted by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A123.
9. Excess plate, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel as it is viewed from the front. Repair galvanized coating on cut support ends per Item 445, "Galvanizing."
10. Slipbase shall be the size shown unless shown otherwise on the sheet. Engineer may approve the use of smaller slipbase when designed by an errant vehicle analysis.
11. Additional sign clamp required on the "T-Bracket" post for 24 inch signs. Place the clamp 3 inches above bottom of sign when specified.
12. Post open ends shall be fitted with friction Caps.
13. Sign blanks shall be the sizes and shapes shown on the plans.



REQUIRED SUPPORT	
SIGN DESCRIPTION	SUPPORT
48-Inch STOP sign (R1-1)	TY 10SMO(11)(ET) TY 10SMO(11)(ET)(BM)
60-Inch YIELD sign (R1-2)	TY 10SMO(11)(ET) TY 10SMO(11)(ET)(BM)
48x16-Inch ONE-WAY sign (R6-1)	TY 10SMO(11)(ET) TY 10SMO(11)(ET)(BM)
36x48, 48x36, and 48x48-Inch signs	TY 10SMO(11)(ET)
48x60-Inch signs	TY 10SMO(11)(ET)
48x48-Inch signs (diamond or square)	TY 10SMO(11)(ET)
48x60-Inch signs	TY 10SMO(11)(ET)
48-Inch Advance School X-ing sign (S1-1)	TY 10SMO(11)(ET)
48-Inch School X-ing sign (S2-1)	TY 10SMO(11)(ET)
Large arrow sign (W1-6 & W1-7)	TY 10SMO(11)(ET)

REQUIRED SUPPORT	
SIGN DESCRIPTION	SUPPORT
48-Inch STOP sign (R1-1)	TY 10SMO(11)(ET) TY 10SMO(11)(ET)(BM)
60-Inch YIELD sign (R1-2)	TY 10SMO(11)(ET) TY 10SMO(11)(ET)(BM)
48x16-Inch ONE-WAY sign (R6-1)	TY 10SMO(11)(ET) TY 10SMO(11)(ET)(BM)
36x48, 48x36, and 48x48-Inch signs	TY 10SMO(11)(ET)
48x60-Inch signs	TY 10SMO(11)(ET)
48x48-Inch signs (diamond or square)	TY 10SMO(11)(ET)
48x60-Inch signs	TY 10SMO(11)(ET)
48-Inch Advance School X-ing sign (S1-1)	TY 10SMO(11)(ET)
48-Inch School X-ing sign (S2-1)	TY 10SMO(11)(ET)
Large arrow sign (W1-6 & W1-7)	TY 10SMO(11)(ET)

Texas Department of Transportation
Traffic Operations Division

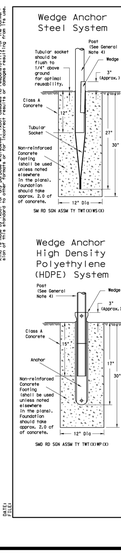
SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-2)-08

©TxDOT July 2002	Tex Years	Tex Years	Tex Years	Tex Years
REVISIONS	DIST	DIST	DIST	DIST
9-08				
	TRAF			
	CONT	SECT	JOB	HIGHWAY No.

256

DATE: 7/1/25
FILE: sm_rd_sgn_assm_ty_xxxxx(x)xx(x-xxxx)



NOTE

The devices shall be installed per manufacturer's recommendations. Installation procedures shall be provided to the Engineer by Contractor.

GENERAL NOTES:

1. The Wedge Anchor System and the Universal Anchor System with thin wall tubing post shall be the only systems allowed for use with TW1 slip posts.
2. The tubular socket, wedge and prefabricated T-bracket shall be permanently marked to indicate manufacturer, method, design, and location of marking are subject to the approval of the TxDOT Traffic Standards Engineer.
3. Except for posts 110 SMO tubing, clamps, nuts and bolts, all components shall be hot dipped galv. per ASTM A123. Materials may be obtained from the material Producer List web page. The website address is:
   http://www.txdot.gov/business/producer_list.htm
4. Material used as post with this system shall conform to the following specifications:
   4.5 SMO tubing (4.5" outside diameter (OD))
   0.095" nominal wall thickness
   Seamless or electric-resistance welded steel tubing
   Sheet shall be HSLAS or 55 per ASTM A1011 or ASTM A1008
   Other sheets may be used if they meet the following:
   70,000 PSI minimum yield strength
   75,000 PSI minimum tensile strength
   18% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of .087" to .099"
   Outside diameter (uncoated) shall be within the range of 2.369" to 2.381"
   Galvanization per ASTM A123 or ASTM A653 G210, for galvanized steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
5. Sign blanks shall be the sizes and shapes shown on the plans.
6. Additional sign clamp required on the "T-bracket" post for 24" high signs. Place clamp at least 3" above bottom of sign when specified.
7. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
8. See the Traffic Operations Division website for detailed drawings of sign clamps and Wedge Anchor System components. The website address is:
   http://www.txdot.gov/publications/traffic.htm

WEDGE ANCHOR SYSTEM INSTALLATION PROCEDURES

1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18", any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Insert tubular socket into concrete until top of socket is approximately 1/4 " above the concrete footing.
4. Finish top of concrete a minimum 4 days for concrete to set, unless otherwise directed by Engineer.
5. Attach slip to the sign post.
6. Insert the sign post into socket and align sign flush with roadway.
7. Tap wedge into socket with a hammer. Typically, the top of wedge will be 1 inches approximately 3 inches of the wedge exposed.

UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURES

1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18", When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18", any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. Insert base post in hole to depths shown and backfill hole with concrete.
3. Level and plumb the base post using a torpedo level and allow concrete adequate time to set. Finish top of concrete a minimum 4 days for concrete to set, unless otherwise directed by the Engineer.
4. Attach the slip to the sign post.
5. Insert the sign post into base post. Lower until the post comes to rest on steel rod.
6. Insert sign post into base post. Lower until the post comes to rest on steel rod.
7. Seat compression ring using a hammer. Typically, the top of compression ring will be approximately level with top of stub post when optimally installed.
8. Check sign post by hand to ensure it is unable to turn, if loose, increase the tightening of the compression ring.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
WEDGE & UNIVERSAL ANCHOR WITH THIN WALL TUBING POST

SMD(TW1)-08

©TxDOT July 2002	Tex Years	Tex Years	Tex Years	Tex Years
REVISIONS	DIST	DIST	DIST	DIST
9-08				
	TRAF			
	CONT	SECT	JOB	HIGHWAY No.

256A

RESIDENTIAL LOTS = 61

REQUIRED SUPPORT	
SIGN DESCRIPTION	SUPPORT
48-Inch STOP sign (R1-1)	TY 10SMO(11)(ET) TY 10SMO(11)(ET)(BM)
60-Inch YIELD sign (R1-2)	TY 10SMO(11)(ET) TY 10SMO(11)(ET)(BM)
48x16-Inch ONE-WAY sign (R6-1)	TY 10SMO(11)(ET) TY 10SMO(11)(ET)(BM)
36x48, 48x36, and 48x48-Inch signs	TY 10SMO(11)(ET)
48x60-Inch signs	TY 10SMO(11)(ET)
48x48-Inch signs (diamond or square)	TY 10SMO(11)(ET)
48x60-Inch signs	TY 10SMO(11)(ET)
48-Inch Advance School X-ing sign (S1-1)	TY 10SMO(11)(ET)
48-Inch School X-ing sign (S2-1)	TY 10SMO(11)(ET)
Large arrow sign (W1-6 & W1-7)	TY 10SMO(11)(ET)

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Traffic Operations Division

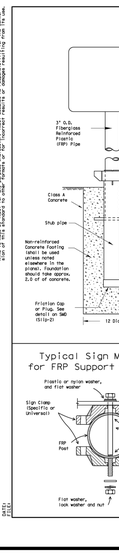
SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-3)-08

©TxDOT July 2002	Tex Years	Tex Years	Tex Years	Tex Years
REVISIONS	DIST	DIST	DIST	DIST
9-08				
	TRAF			
	CONT	SECT	JOB	HIGHWAY No.

257

DATE: 7/1/25
FILE: sm_rd_sgn_assm_ty_xxxxx(x)xx(x-xxxx)


Universal Anchor System with Fiberglass Reinforced Plastic (FRP) Post
3" O.D. Fiberglass Reinforced Plastic (FRP) Pipe
6" min to edge or joint
5/8" diameter Concrete Anchor - 4 places (embed a min. of 3 3/4" and torque to min. of 50 ft-lbs). Anchor may be expansion or adhesive type.
1/4 x 2 7/8" equally spaced
3 1/2" Schedule 40 Stub Pipe (4" Nominal)
1/2 x 7 1/2" Steel Rod Acts as a "shear" for the slip post and prevents rotation from turning in the foundation.
Cross A Concrete
Non-reinforced Concrete footing (shall be used unless noted elsewhere in the plans). Foundation should have approx. 0.5 cf of concrete.
Friction Cap or Plug, See detail on SMD (SLIP-2)
Compression Ring
Fiberglass Reinforced Plastic (FRP) Pipe
3 1/2" Schedule 40 Stub Pipe (4" Nominal)
View A-A
10"
14"
30"
12 Dia
SM RD SGN ASSM TY FRP(XX)UA(P)
BOLT-DOWN DETAILS
3/4" dia.
Coupler
Pipe Stub
Base Plate
3 1/2"
1/2"
10"
SM RD SGN ASSM TY FRP(XX)UB(P)
Wing Channel
Nylon washer, 5/16" x 3 1/2" hex bolt with nut, lock washer, and 2 flat washers per ASTM A307 galvanized per Item 445, "Galvanizing."
Slip Panel
Side View
Detail B
Drill 7/16" hole through other assembly and install bolt, nut, 2 flat washers and lock washer.
1 1/2"
Extender
3/8" x 4" heavy hex bolt with nut, lock washer and 2 flat washers per ASTM A307 galvanized per Item 445, "Galvanizing."
T-Bracket
Detail C
Splices shall only be allowed behind the sign substrate.
Typical Sign Mounting Detail for FRP Support with Single Sign
Pipefit or nylon washer, and flat washer
Sign Face
Sign Clamp (Specific or Universal)
Drill 3/8" (max.) hole here in FRP support and sign face
FRP Post
.080"

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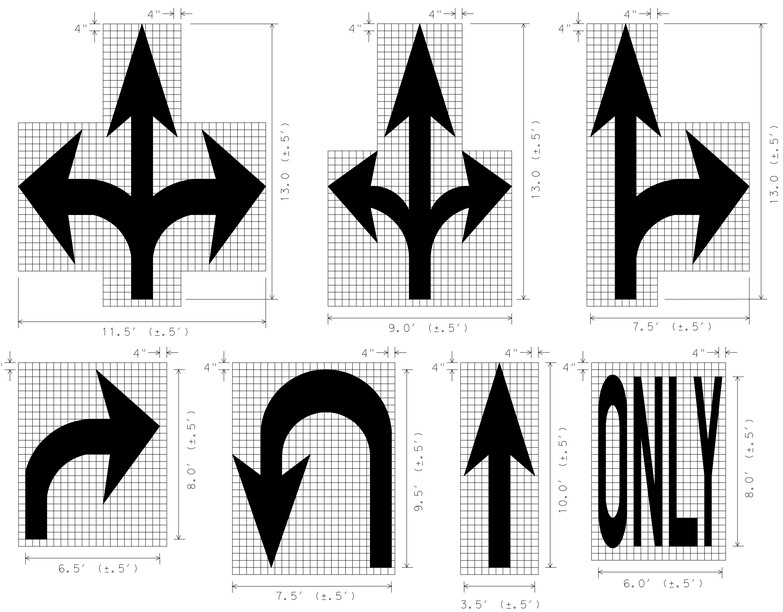

GENERAL NOTES:

1. Minimum 8 foot white markings should be used, unless otherwise noted. If message consists of more than one word, it should be placed with first word nearest the driver.
2. These details are standard size for normal installations; sizes may be reduced approximately one-third for low speed urban conditions; larger sizes may be needed for freeways, above average speed conditions or other critical locations.
3. The longitudinal space between markings should be at least four times the height of the markings, on low speed roads, but should not exceed ten times the height under any condition.
4. Markings considered appropriate for use when warranted include the following:
   A. Regulatory
      STOP
      RIGHT (LEFT) TURN ONLY
      25 MPH
      SYMBOL ARROWS
   B. Warning
      STOP AHEAD
      SIGNAL AHEAD
      SCHOOL
      SCHOOL X-ING
      PED X-ING
      R X R (see RCPM standard)
   C. Guide
      US XXX
      ROUTE XXX
      STATE XXX
      Other words or symbols may be necessary under certain conditions
5. Uncontrolled use of pavement markings can result in driver confusion. Word and symbol markings should be no more than three lines.
6. The word "STOP" shall not be used on the pavement unless accompanied by a Stop line and Stop sign. The word "STOP" shall not be placed on the pavement in advance to a stop line, unless every vehicle is required to stop at all times.
7. Pavement markings should generally be no more than one lane in width, with School messages being the exception. For details of School and School crossing pavement markings, refer to Part VII of the "Texas Manual on Uniform Traffic Control Devices".
8. Spacing between letters should be approximately 4 inches. The width of letters may vary depending on the width of the traffic lanes.
9. Lane-Use arrow markings may be used to convey either guidance or mandatory messages. Arrows used to convey a mandatory movement must be accompanied by standard signs and the pavement marking word "ONLY".
10. Pavement markings are to be located as specified elsewhere in the plans.

SPACING BETWEEN LINES OF PAVEMENT MARKINGS	
MPH	SPACING
≤ 45	MINIMUM 4 TIMES THE LETTER HEIGHT
> 45	MINIMUM - 4 TIMES THE LETTER HEIGHT, MAXIMUM - 10 TIMES THE LETTER HEIGHT

Texas Department of Transportation
Traffic Operations Division

STANDARD PAVEMENT MARKINGS (ARROWS)

PM(6)-01

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REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

22H

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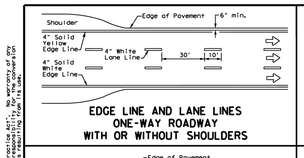
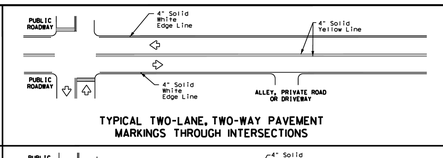
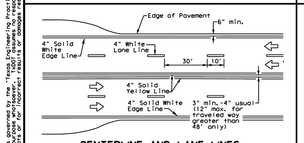


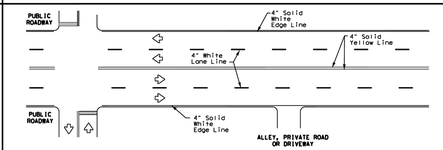
EDGE LINE AND LANE LINES
ONE-WAY ROADWAY
WITH OR WITHOUT SHOULDERS



TYPICAL TWO-LANE, TWO-WAY PAVEMENT
MARKINGS THROUGH INTERSECTIONS



CENTERLINE AND LANE LINES
FOUR LANE TWO-WAY ROADWAY
WITH OR WITHOUT SHOULDERS



TYPICAL MULTI-LANE, TWO-WAY PAVEMENT
MARKINGS THROUGH INTERSECTIONS

GENERAL NOTES

1. Edgeline striping shall be as shown in the plans or as directed by the Engineer. The edgeline should not be placed less less than 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edgelines are not required in curb and gutter sections of roadways.
2. The traveled way includes only that portion of the roadway used for vehicular travel. It does not include the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the inside of edgeline to the inside of edgeline of a two lane roadway.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.

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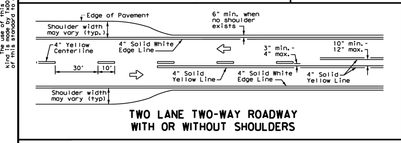
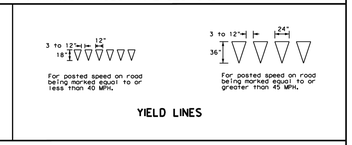
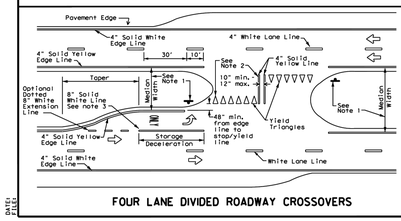
DATE:
FILE:



TWO LANE TWO-WAY ROADWAY
WITH OR WITHOUT SHOULDERS



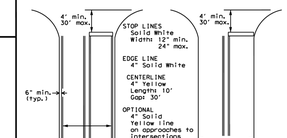
YIELD LINES



FOUR LANE DIVIDED ROADWAY CROSSOVERS

NOTES

1. Where divided highways are separated by median widths at the median opening itself of 30 feet or more, median openings shall be signed as two separate intersections. Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling width to determine if signs are required. Yield signs are the typical intersection control. Stop signs are optional as determined by the Engineer.
2. Install median striping (double yellow centerlines and stop bars/yield triangles) when a 50' or greater median centerline can be placed. Stop bars shall only be used with stop signs. Yield traingles shall only be used with yield signs.
3. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.



GUIDE FOR PLACEMENT OF STOP LINES,
EDGE LINE & CENTERLINE
Based on Traveled Way and Pavement Widths
for Undivided Highways

Texas Department of Transportation
Traffic Safety Division Standard

TYPICAL STANDARD PAVEMENT MARKINGS

PM(1)-20

FILE:	pm1-20.dgn	DN:	CK:	DW:	CK:
©TxDOT	November 1978	CONT	SECT	JOB	HIGHWAY
REVISIONS	9-95 3-03				
	5-00 2-10	DIST	COUNTY		SHEET NO.
	8-00 6-20				

5-00

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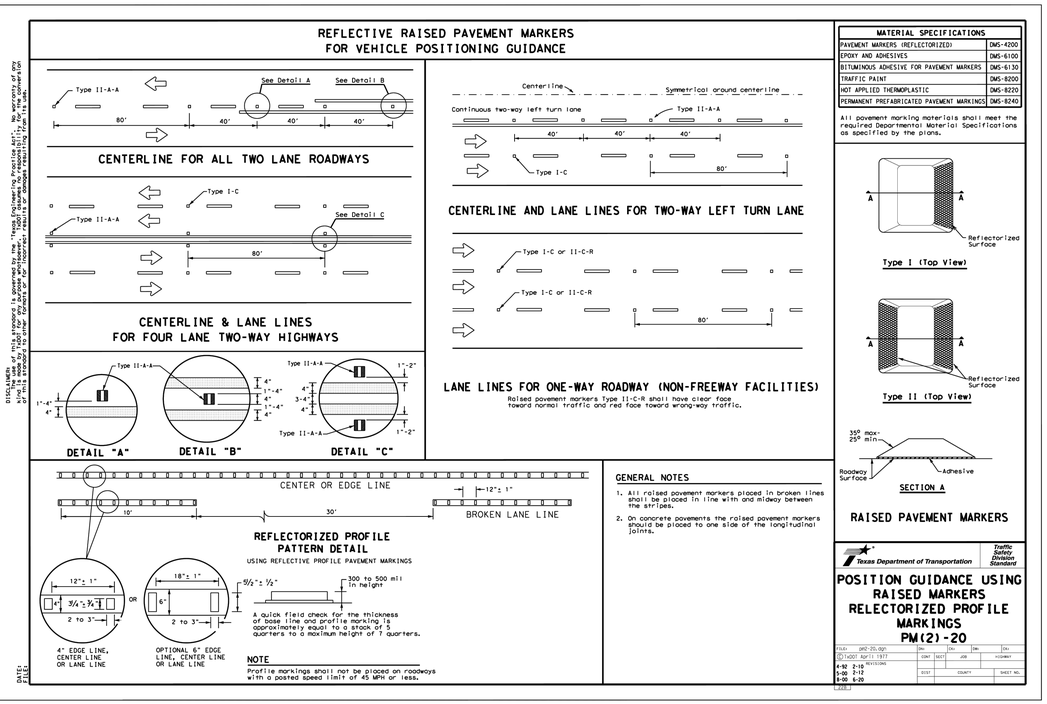

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.

GENERAL NOTES

1. All raised pavement markers placed in broken lines shall be placed in line with and midway between the stripes.
2. On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.

Texas Department of Transportation
Traffic Safety Division Standard

POSITION GUIDANCE USING RAISED MARKERS RELECTORIZED PROFILE MARKINGS

PM(2)-20

FILE:	pm2-20.dgn	DN:	CK:	DW:	CK:
©TxDOT	April 1977	CONT	SECT	JOB	HIGHWAY
REVISIONS	4-92 2-10				
	5-00 2-12	DIST	COUNTY		SHEET NO.
	8-00 6-20				

Cont

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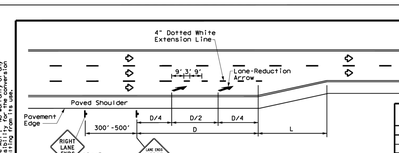
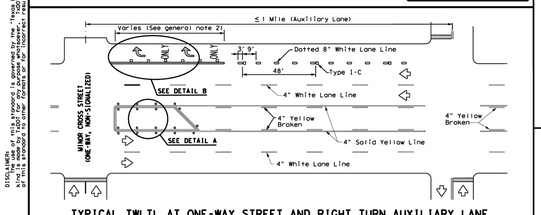


LANE REDUCTION

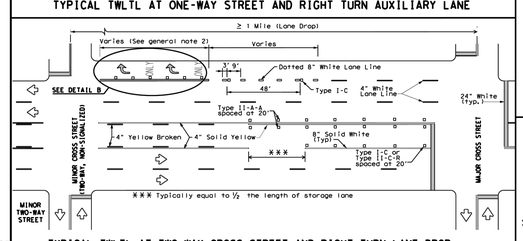
Posted Speed	D (ft)	L (ft)
30 MPH	460	L=WS²/60
35 MPH	565	
40 MPH	670	
45 MPH	775	
50 MPH	885	L=WS
55 MPH	990	
60 MPH	1,100	
65 MPH	1,200	
70 MPH	1,250	
75 MPH	1,350	

NOTES

1. Lane reduction pavement markings are used where the number of through lanes is reduced because of narrowing of the roadway or because of a section of on-street parking in what would otherwise be a through lane. For Texas Super 2 Passing Lanes, see TS2(PL) standard sheets.
2. On divided highways, an additional W9-1R "RIGHT LANE ENDS" sign may be installed in the median aligned with the W9-1R sign on the right side of the highway.
3. Lane reduction arrows are required for speeds of 45 mph or greater. An optional third lane reduction arrow may be added based on engineering judgement. If used, the optional third lane reduction arrow should be centered between the first and last lane reduction arrows.
4. For lane reductions on Freeways and Expressways, signing shall conform to the TxDOT Freeway Signing Handbook.



TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE



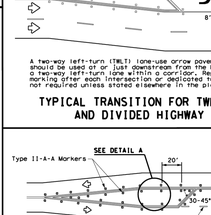
TYPICAL TWLTL AT TWO-WAY CROSS STREET AND RIGHT TURN LANE DROP

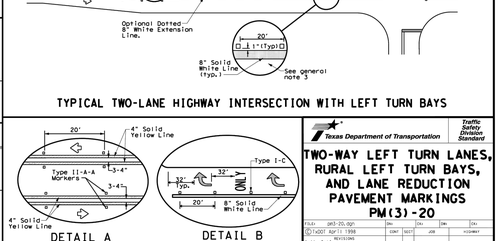
GENERAL NOTES

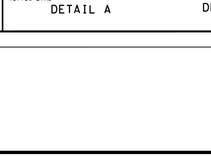
1. Lane use word and arrow markings shall be used where through lanes approaching an intersection become separated by turning lanes. Word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn bays for emphasis. Details for words and arrows are as shown in the Standard Highway Sign Designs for Texas.
2. When lane-use words and arrow markings are used, two sets of arrows should be used if the length of the bay is greater than 180 feet. When a single set of arrows is used, word and arrow marking is used on the front lane, and arrows located at or near the upstream end of the full-width turn lane.
3. Use raised pavement marker Type I-C with undivided highways, flush medians and two way left turn lanes. Use raised pavement marker Type I(I-C-R with divided highways and raised medians.
4. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.

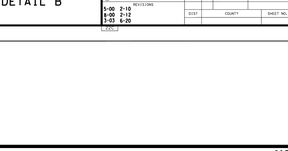
MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.









Texas Department of Transportation
Traffic Safety Division Standard

TWO-WAY LEFT TURN LANES, RURAL LEFT TURN BAYS, AND LANE REDUCTION PAVEMENT MARKINGS

PM(3)-20

FILE:	pm3-20.dgn	DN:	CK:	DW:	CK:
©TxDOT	April 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	5-00 2-10				
	8-00 2-12	DIST	COUNTY		SHEET NO.
	3-03 6-20				

Cont

RESIDENTIAL LOTS = 61

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

Civil\STREETS\ST1198010 - left turn striping plan.dwg\5.10 By: ISAAC.BOORDUFF2

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REV	DESCRIPTION	DRAWN BY	DATE

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED
PROFESSIONAL ENGINEER
7/1/25

LEGACY AT LA VIDA
(ENCLAVE)
PLAT# 24-11800079

SANANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194500

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER: 1198-01-01
DRAWING NAME: ST1198D101 - LEFT TURN STRIPING PLAN

SHEET TITLE: STRIPING DETAILS

SHEET NUMBER: 5.10

LEGACY AT LA VIDA (ENCLAVE)

BEXAR COUNTY, TEXAS

SANITARY SEWER IMPROVEMENTS

SAWS CONSTRUCTION NOTES
COUNTER PERMIT AND GENERAL CONSTRUCTION PERMIT
January 2022

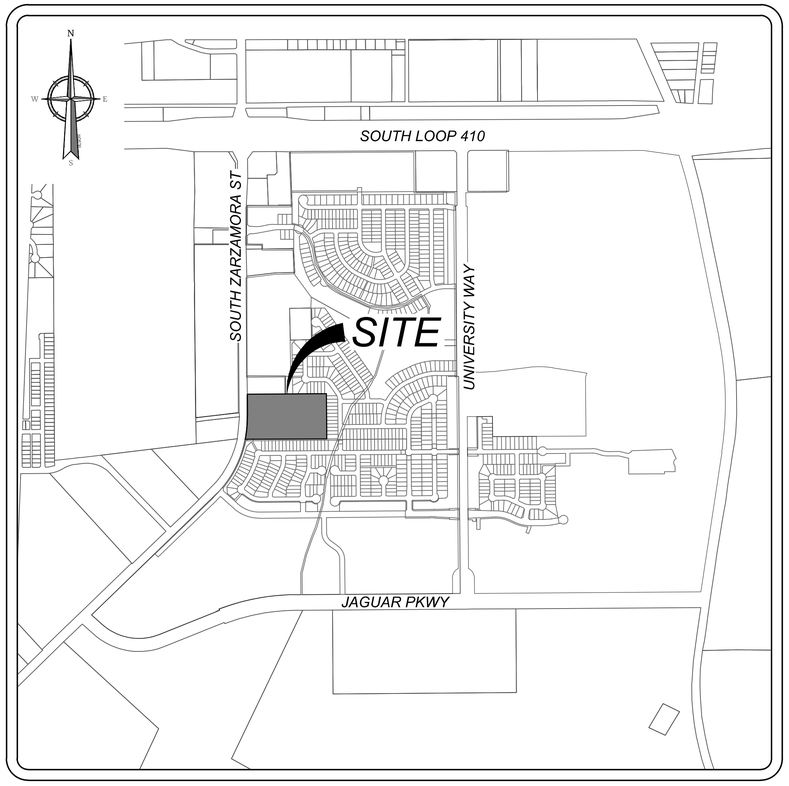
General Section

1. ***All materials and construction procedures within the scope of this contract shall be approved by the San Antonio Water System (SAWS) and comply with the Plans, Specifications, General Conditions and with the following as applicable:***
   - ***A. Current Texas Commission on Environmental Quality (TCEQ) "Design Criteria for Domestic Wastewater System", Texas Administrative Code (TAC) Title 30 Part 1 Chapter 217 and "Public Drinking Water", TAC Title 30 Part 1 Chapter 290.***
   - ***B. Current TXDOT "Standard Specifications for Construction of Highways, Streets and Drainage".***
   - ***C. Current "San Antonio Water System Standard Specifications for Water and Sanitary Sewer Construction".***
   - ***D. Current City of San Antonio "Standard Specifications for Public Works Construction".***
   - ***E. Current City of San Antonio "Utility Excavation Criteria Manual" (UECM).***
2. ***The contractor shall not proceed with any pipe installation work until they obtain a copy of the approved Counter Permit or General Construction Permit (GCP) from the consultant and has been notified by SAWS Construction Inspection Division to proceed with the work and has arranged a meeting with the inspector and consultant for the work requirements. Work completed by the contractor without an approved Counter Permit and/or a GCP will be subject to removal and replacement at the expense of the contractors and/or the developer.***
3. ***The Contractor shall obtain the SAWS Standard Details from the SAWS website. http://www.saws.org/business_center/specs. Unless otherwise noted within the design plans.***
4. ***The Contractor is to make arrangements with the SAWS Construction Inspection Division at (210) 233-2973, on notification procedures that will be used to notify affected home residents and/or property owners 48 hours prior to beginning any work.***
5. ***Location and depth of existing utilities and service laterals shown on the plans are understood to be approximate. Actual locations and depths must be field verified by the Contractor at least 1 week prior to construction. It shall be the Contractor's responsibility to locate utility service lines as required for construction and to protect them during construction at no cost to SAWS.***
6. ***The Contractor shall verify the exact location of underground utilities and drainage structures at least 1-2 weeks prior to construction whether shown on plans or not. Please allow up to 7 business days for locates requesting pipe location markers on SAWS facilities. The following contact information are supplied for verification purposes:***
   - ***SAWS Utility Locates: http://www.saws.org/Service/Locates***
   - ***COSA Drainage (210) 207-0724 or (210) 207-6026***
   - ***COSA Traffic Signal Operations (210) 206-8480***
   - ***COSA Traffic Signal Damages (210) 207-3951***
   - ***Texas State Wide One Call Locator 1-800-545-6005 or 811***
7. ***The Contractor shall be responsible for restoring existing fences, curbs, streets, driveways, sidewalks, landscaping and structures to its original or better condition if damages are made as a result of the project's construction.***
8. ***All work in Texas Department of Transportation (TxDOT) and/or Bexar County right-of-way shall be done in accordance with respective construction specifications and permit requirements.***
9. ***The Contractor shall comply with City of San Antonio or other governing municipality's tree ordinances when excavating near trees.***
10. ***The Contractor shall not place any waste materials in the 100-year Flood Plain without first obtaining an approved Flood Plain Permit.***
11. ***Holiday Work: Contractors will not be allowed to perform SAWS work on SAWS recognized holidays. Request should be sent to constworkreq@saws.org. Weekend Work: Contractors are required to notify the SAWS Inspection Construction Department 48 hours in advance to request weekend work. Request should be sent to constworkreq@saws.org. Any and all SAWS utility work installed without holiday/weekend approval will be subject to be uncovered for proper inspection.***
12. ***Compaction note (Item 804): The contractor shall be responsible for meeting the compaction requirements on all trench backfill and for paying for the tests performed by a third party. Compaction tests will be done at one location point randomly selected, or as indicated by the SAWS Inspector and/or the test administrator, per each 12-inch loose lift per 400 linear feet at a minimum. This project will not be accepted and finalized by SAWS without this requirement being met and verified by providing all necessary documented test results.***
13. ***A copy of all testing reports shall be forwarded to SAWS Construction Inspection Division.***

Sewer Notes

1. *The Contractor is responsible for ensuring that no Sanitary Sewer Overflow (SSO) occurs as a result of their work. All contractor personnel responsible for SSO prevention and control shall be trained on proper response. Should an SSO occur, the contractor shall:*
   - *A. Identify the source of the SSO and notify SAWS Emergency Operations Center (EOC) immediately at (210) 233-2014. Provide the address of the spill and an estimated volume or flow.*
   - *B. Attempt to eliminate the source of the SSO.*
   - *C. Contain sewage from the SSO to the extent of preventing a possible contamination of waterways.*
   - *D. Clean up spill site (return contained sewage to the collection system if possible) and properly dispose of contaminated soil/materials.*
   - *E. Clean the affected sewer mains and remove any debris.*
   - *F. Meet all post-SSO requirements as per the EPA Consent Decree, including line cleaning and televising the affected sewer mains (at SAWS direction) within 24 hours.*

   Should the Contractor fail to address an SSO immediately and to SAWS satisfaction, they will be responsible for all costs incurred by SAWS, including any fines from EPA, TCEQ and/or any other Federal, State or Local Agencies. No separate measurement or payment shall be made for this work. All work shall be done according to guidelines set by the TCEQ and SAWS.
2. *If bypass pumping is required, the Contractor shall perform such work in accordance with SAWS Standard Specification for Water and Sanitary Sewer Construction, Item No. 864, "Bypass Pumping".*
3. *Prior to tie-ins, any shutdowns of existing force mains of any size must be coordinated with the SAWS Construction Inspection Division at (210) 233-2973 at least one week in advance of the shutdown. The Contractor must also provide a sequence of work as related to the tie-ins; this is at no additional cost to SAWS or the project and it is the responsibility of the Contractor to sequence the work accordingly.*
4. *Sewer pipe where water line crosses shall be 160 psi and meet the requirements of ASTM D2241, TAC 217.53 and TCEQ 290.44(e)(4)(B). Contractor shall center a 20' joint of 160 psi pressure rated PVC at the proposed water crossing.*
5. *ELEVATIONS POSTED FOR TOP OF MANHOLES ARE FOR REFERENCE ONLY: It shall be the responsibility of the Contractor to make allowances and adjustments for top of manholes to match the finished grade of the project's improvements. (NSPI)*
6. *Spills, Overflows, or Discharges of Wastewater: All spills, overflows, or discharges of wastewater, recycled water, petroleum products, or chemicals must be reported immediately to the SAWS Inspector assigned to the Counter Permit or General Construction Permit (GCP). This requirement applies to every spill, overflow, or discharge regardless of size.*
7. *Manhole and all pipe testing (including the TV inspection) must be performed and passed prior to Final Field Acceptance by SAWS Construction Inspection Division, as per the SAWS Specifications For Water and Sanitary Sewer Construction.*
8. *All PVC pipe over 14 feet of cover shall be extra strength with minimum pipe stiffness of 115 psi.*



LOCATION MAP

N.T.S.

OWNER/DEVELOPER:
FOUR BROTHERS CAPITAL, LLC
903 E. NACOMA DRIVE, SUITE 103
SAN ANTONIO, TX 78216

INDEX

DESCRIPTION	SHEET NO.
SANITARY SEWER COVER SHEET	6.0
OVERALL SANITARY SEWER PLAN	6.1
EX LINE "A" PLAN & PROFILE	6.2
LINE "A" PLAN & PROFILE	6.3
LINE "B" PLAN & PROFILE	6.4

SEWER - WEST SEWERSHED - LEON CREEK W.R.C.

DEVELOPER'S NAME: FOUR BROTHERS CAPITAL, LLC		
DEVELOPER'S ADDRESS: 903 E. NACOMA DRIVE, SUITE 103		
CITY: SAN ANTONIO	*STATE: TEXAS*	*ZIP: 78216*
PHONE#:	*FAX#:*	*TOTAL ACREAGE: 10.69 ACRES*
SAWS BLOCK MAP#: 148536		*TOTAL EDU'S: 61*
TOTAL LINEAR FOOTAGE OF PIPE: 1,800.00 LF ~ 8" SDR 26		*PLAT NO.: 24-11800079*
NUMBER OF LOTS: 61	*SAWS JOB#: xx-xxxx*	

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STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED
PROFESSIONAL ENGINEER
7/1/25

LEGACY AT LA VIDA
(ENCLAVE)
PLAT# 24-11800079

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BEXAR COUNTY
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3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#:F-14809
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER:	DRAWING NAME:
1198-01-01	CVOS11980101

SHEET TITLE:
SANITARY SEWER COVER SHEET

SHEET NUMBER:
6.0

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

Civil\SEWER\CVOS11980101.dwg\6.0 By: SAAC.RODRIGUEZ

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.

COMPACTION NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAVING 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.

NOTES:

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 SHEET 6.0, SANITARY SEWER GENERAL NOTES, S.A.W.S. CRITERIA FOR SEWER MAIN CONSTRUCTION IN THE VICINITY OF WATER MAINS.*
2. *REFERENCE SHEET 6.1 FOR BENCHMARK INFORMATION.*
3. *PIPE TYPE DESIGNATIONS ARE SDR 26.*
4. *REF. THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.*
5. *ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM (SAWS) STANDARD SPECIFICATIONS.*

BENCHMARKS

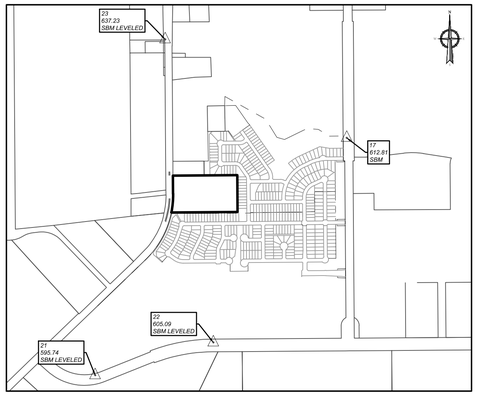
BM # 23
DESC: SBM LEVELED
N:13665498.80
E:2117746.73
ELEV: 637.23

BM # 21
DESC: SBM LEVELED
N:13660804.71
E:2116769.01
ELEV: 595.74

BM # 22
DESC: SBM LEVELED
N:13661263.43
E:2118419.82
ELEV: 605.09

BM # 17
DESC: SBM
N:13664122.55
E:2120283.46
ELEV: 612.81

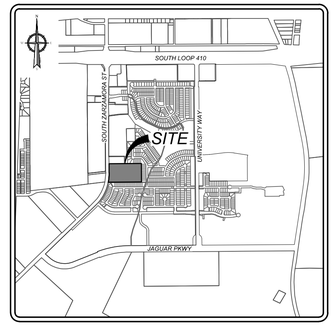
★ *CONTRACTOR TO RUN LEVEL LOOP THROUGH BMS PROVIDED TO CONFIRM BEFORE CONSTRUCTION. CONTACT ENGINEER/SURVEYOR IMMEDIATELY IF ELEVATIONS DO NOT MATCH THOSE SHOWN.*



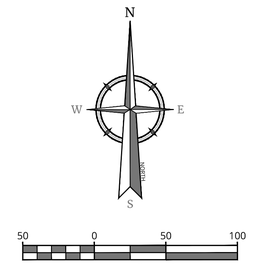
BENCHMARK MAP
SCALE: NOT-TO-SCALE

LEGEND

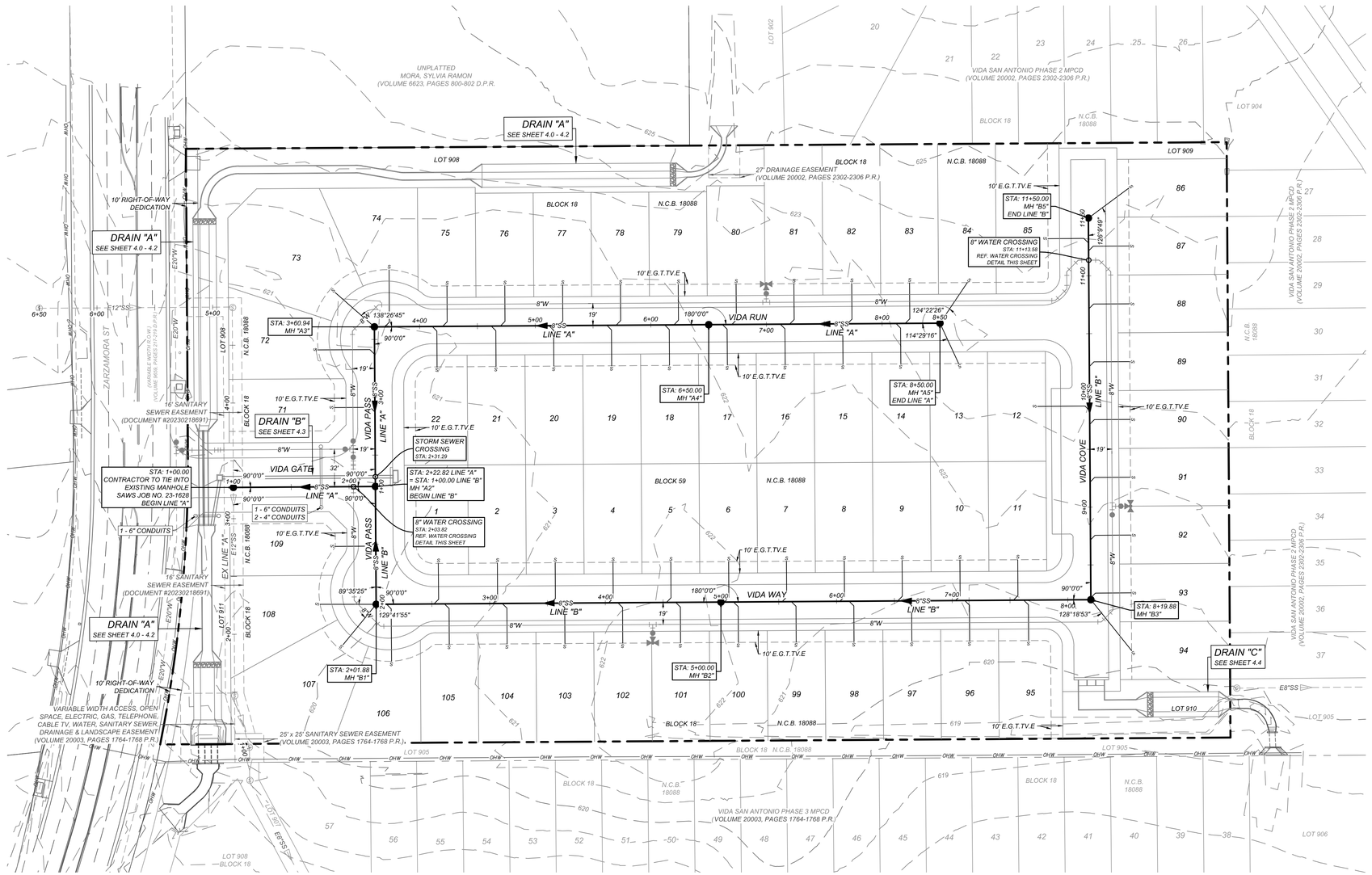
PROPOSED WATER MAIN	=	W
PROPOSED FIRE HYDRANT	=	
PROPOSED WATER VALVE	=	
PROPOSED SANITARY SEWER MAIN	=	SS
PROPOSED SANITARY SEWER MANHOLE	=	SS
PROPOSED SANITARY SEWER LATERAL	=	
ELECTRIC, GAS, TELEPHONE & CABLE TV EASEMENT (PLAT# 24-11800079)	=	*E.G.T.TV.E*
WATER EASEMENT (PLAT# 24-11800079)	=	*W.E*
PEDESTRIANT ACCESS EASEMENT (PLAT# 24-11800079)	=	*P.A.E*
EXISTING WATER MAIN	=	EW
EXISTING FIRE HYDRANT	=	
EXISTING WATER VALVE	=	
EXISTING SANITARY SEWER MAIN	=	ESS
EXISTING SANITARY SEWER MANHOLE	=	ESS

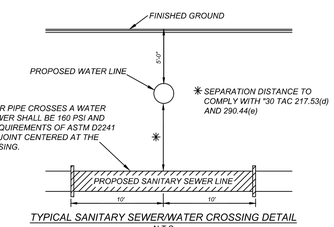


LOCATION MAP
N.T.S.



SCALE : 1" = 50'
Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)





WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING.

✱ *SEPARATION DISTANCE TO COMPLY WITH "30 TAC 217.53(d) AND 290.44(e)*

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

RESIDENTIAL LOTS = 61

SEWER - WEST SEWERSHED - LEON CREEK W.R.C.

DEVELOPER'S NAME: FOUR BROTHERS CAPITAL, LLC
DEVELOPER'S ADDRESS: 903 E. NACOMA DRIVE, SUITE 103
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216
PHONE#: FAX#: TOTAL ACREAGE: 10.69 ACRES
SAWS BLOCK MAP#: 148536 TOTAL EDU'S: 61
TOTAL LINEAR FOOTAGE OF PIPE: 1,800.00 LF ~ 8" SDR 26 PLAT NO.: 24-11800079
NUMBER OF LOTS: 61 SAWS JOB#: xx-xxxx

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

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Texas811.org Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED
PROFESSIONAL ENGINEER
8/6/25

LEGACY AT LA VIDA (ENCLAVE) PLAT# 24-11800079

SANANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025		OE

PROJECT NUMBER: 1198-01-01
DRAWING NAME: 0511980101

SHEET TITLE:
OVERALL SANITARY SEWER PLAN

SHEET NUMBER:
6.1

CivilSEWERNOS11980101.dwg(6.1 By: SCHAVEZ

DEVELOPER'S NAME: FOUR BROTHERS CAPITAL, LLC
DEVELOPER'S ADDRESS: 903 E. NACOMA DRIVE, SUITE 103
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216
PHONE#: FAX#: TOTAL ACREAGE: 10.69 ACRES
SAWS BLOCK MAP#: 148536 TOTAL EDU'S: 61
TOTAL LINEAR FOOTAGE OF PIPE: 1,800.00 LF ~ 8" SDR 26 PLAT NO.: 24-11800079
NUMBER OF LOTS: 61 SAWS JOB#: xx-xxxx

TRENCH EXCAVATION SAFETY PROTECTION

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NOTES:

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2. REF. THIS SHEET FOR BENCHMARK INFORMATION.
3. PIPE TYPE DESIGNATIONS ARE SDR 26.
4. REF. THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.
5. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM (SAWS) STANDARD SPECIFICATIONS.

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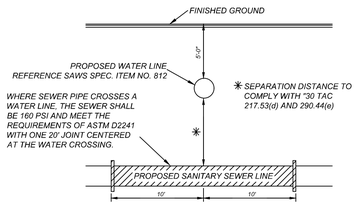
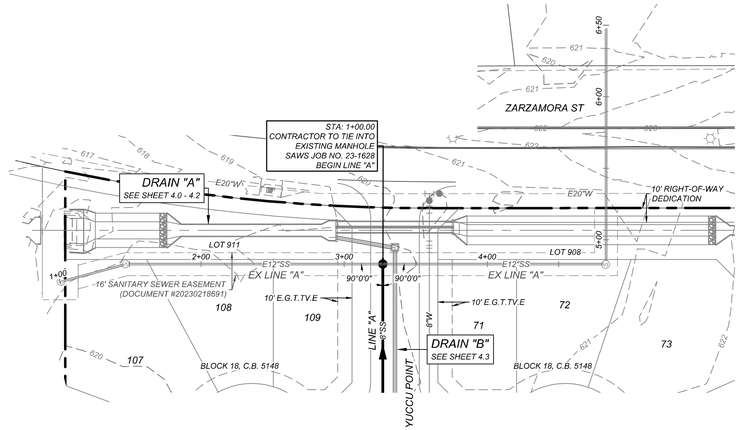
MANHOLE NOTE:

ALL MANHOLES MUST BE WATERTIGHT, WITH WATERTIGHT RINGS AND COVERS. THESE MANHOLES MUST BE VENTED PER SAWS DETAIL DD852-02.

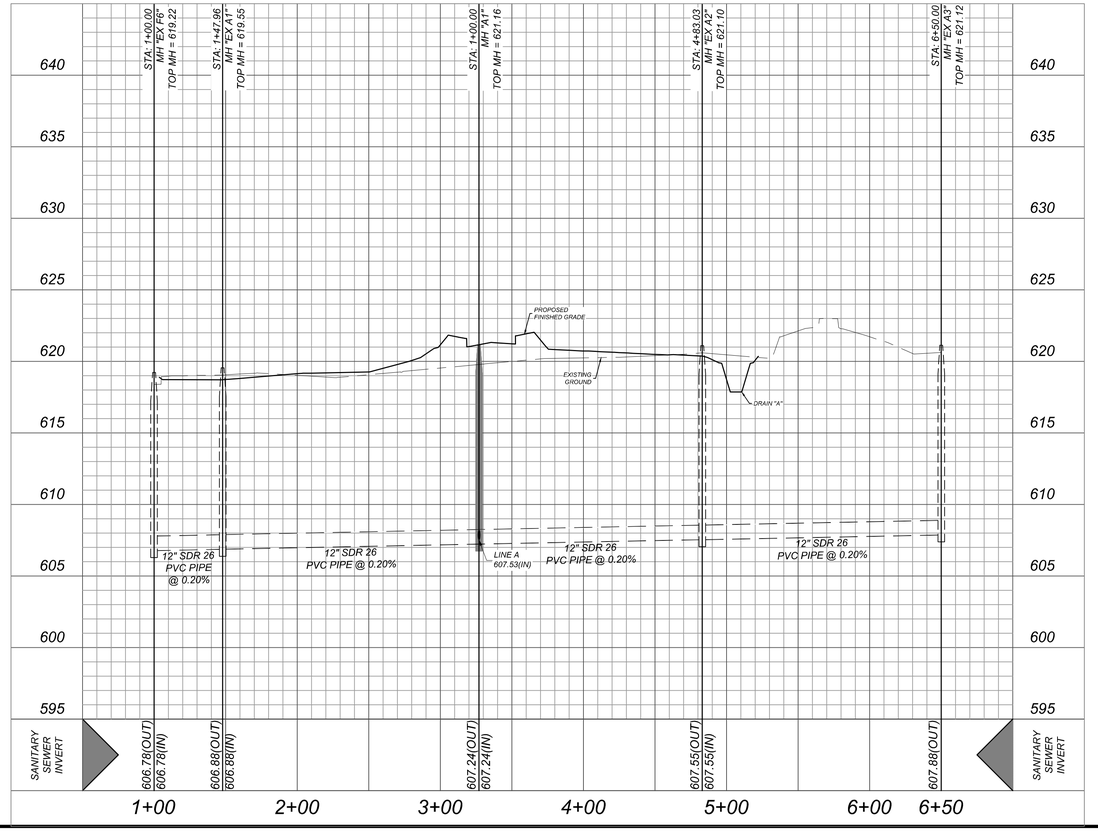


TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
N.T.S.



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

EX LINE "A"
STA: 1+00.00 - END



LEGEND

RIGHT OF WAY	=	R.O.W.
COUNTY BLOCK	=	C.B.
EXISTING	=	EX
EXISTING SANITARY SEWER	=	ESS
PROPOSED SANITARY SEWER	=	SS
EXISTING WATER	=	EW
PROPOSED WATER	=	W
ELECTRIC, GAS, TELEPHONE & CABLE TV EASEMENT	=	E.G.T.TV.E
VARIABLE WIDTH CLEAR VISION EASEMENT	=	V.W.C.V.E
LINEAR FEET	=	LF
LATERAL	=	LAT
VERTICAL STACK	=	VS

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FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED
PROFESSIONAL ENGINEER
7/1/25

LEGACY AT LA VIDA (ENCLAVE)
PLAT# 24-11800079

SANANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194500

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER: 1198-01-01
DRAWING NAME: SSPP11980101_EXA

SHEET TITLE: EX LINE "A" PLAN & PROFILE

SHEET NUMBER: 6.2

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

Civil:\SEWER\SSPP11980101_EXA.dwg 6.2 By: ESAC, RODRIGUEZ

TRENCH EXCAVATION SAFETY PROTECTION

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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 SHEET 6.0, SANITARY SEWER GENERAL NOTES, S.A.W.S. CRITERIA FOR SEWER MAIN CONSTRUCTION IN THE VICINITY OF WATER MAINS.
2. REF. THIS SHEET FOR BENCHMARK INFORMATION.
3. PIPE TYPE DESIGNATIONS ARE SDR 26.
4. REF. THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.
5. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM (SAWS) STANDARD SPECIFICATIONS.

CAUTION!!:

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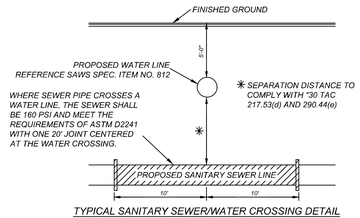

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
N.T.S.

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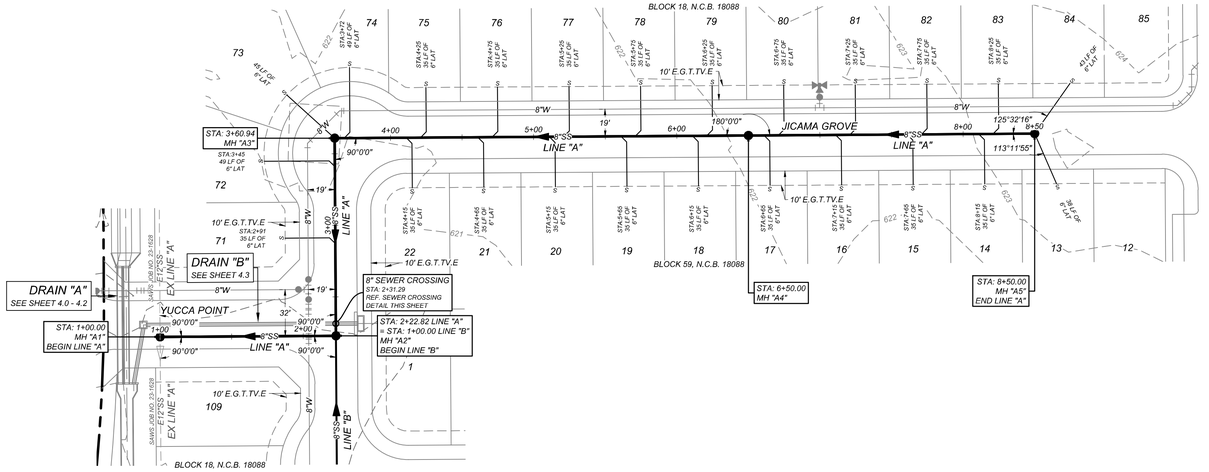
SEWER - WEST SEWERSHED - LEON CREEK W.R.C.

DEVELOPER'S NAME: FOUR BROTHERS CAPITAL, LLC			
DEVELOPER'S ADDRESS: 903 E. NACOMA DRIVE, SUITE 103			
CITY: SAN ANTONIO	STATE: TEXAS	ZIP: 78216	
PHONE#:	FAX#:	TOTAL ACREAGE: 10.69 ACRES	
SAWS BLOCK MAP#: 148536		TOTAL EDU'S: 61	
TOTAL LINEAR FOOTAGE OF PIPE: 1,800.00 LF ~ 8" SDR 26		PLAT NO.: 24-11800079	
NUMBER OF LOTS: 61	SAWS JOB#: xx-xxxx		

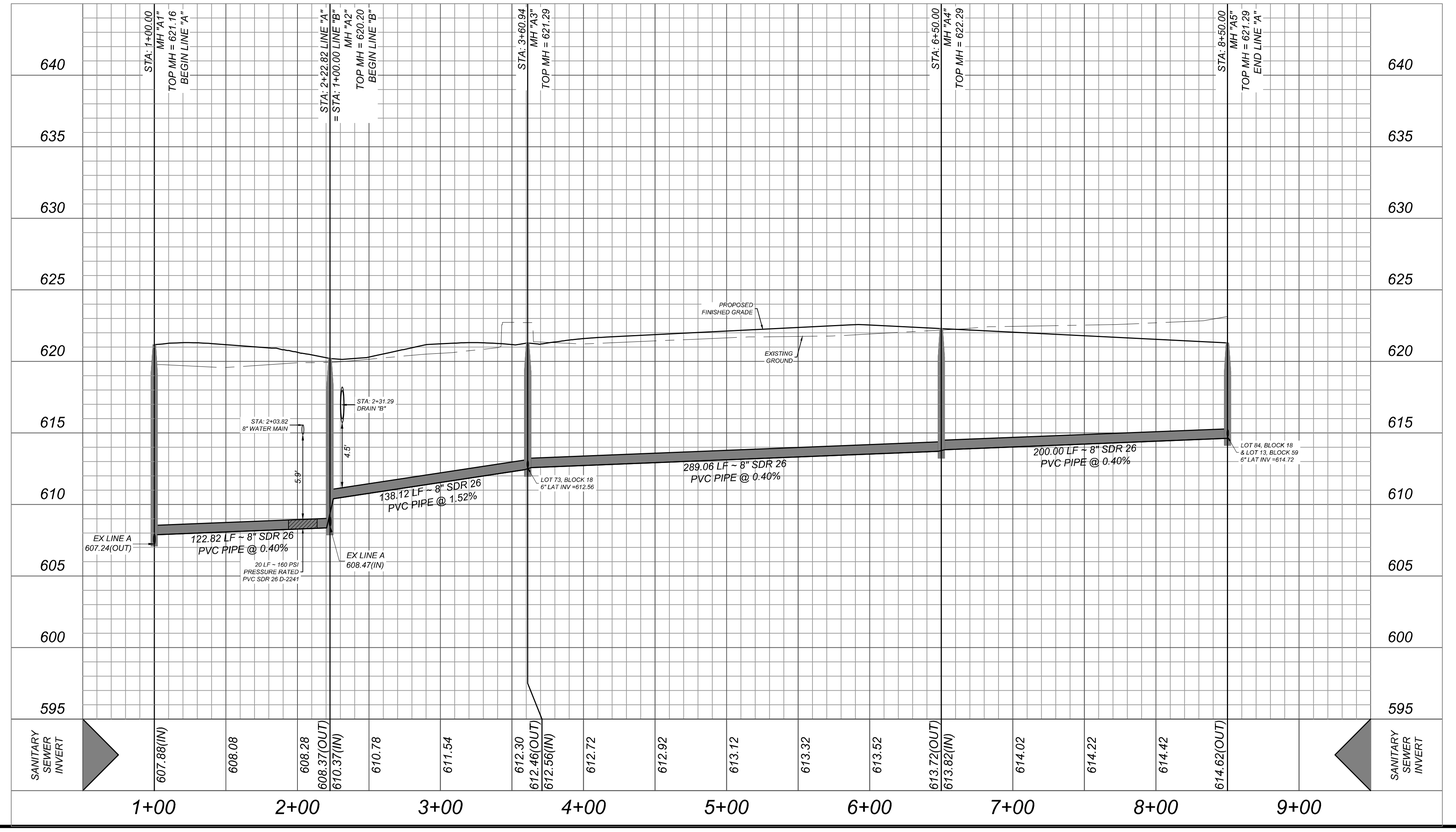


LEGEND

RIGHT OF WAY	= R.O.W.
COUNTY BLOCK	= C.B.
EXISTING	= EX
EXISTING SANITARY SEWER	= ESS
PROPOSED SANITARY SEWER	= SS
EXISTING WATER	= EW
PROPOSED WATER	= W
ELECTRIC, GAS, TELEPHONE & CABLE TV EASEMENT	= E.G.T.TV.E
VARIABLE WIDTH CLEAR VISION EASEMENT	= V.W.C.V.E
LINEAR FEET	= LF
LATERAL	= LAT
VERTICAL STACK	= VS

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

LINE "A"
STA: 1+00.00 - END



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REV	DATE	DRAWN BY	DESCRIPTION
	-	-	-

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED
PROFESSIONAL ENGINEER
7/1/25

LEGACY AT LA VIDA (ENCLAVE)
PLAT# 24-11800079

SANANTONIO
BEXAR COUNTY
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San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194500

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER: 1198-01-01
DRAWING NAME: SSPP11980101_A

SHEET TITLE: LINE "A" PLAN & PROFILE

SHEET NUMBER: 6.3

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

Civil\SEWER\SSPP11980101_A.dwg\6.3 By: SCHAVEZ

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NOTES:

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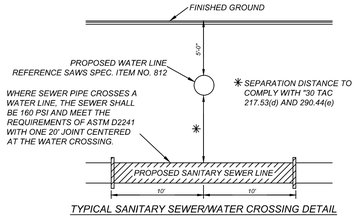
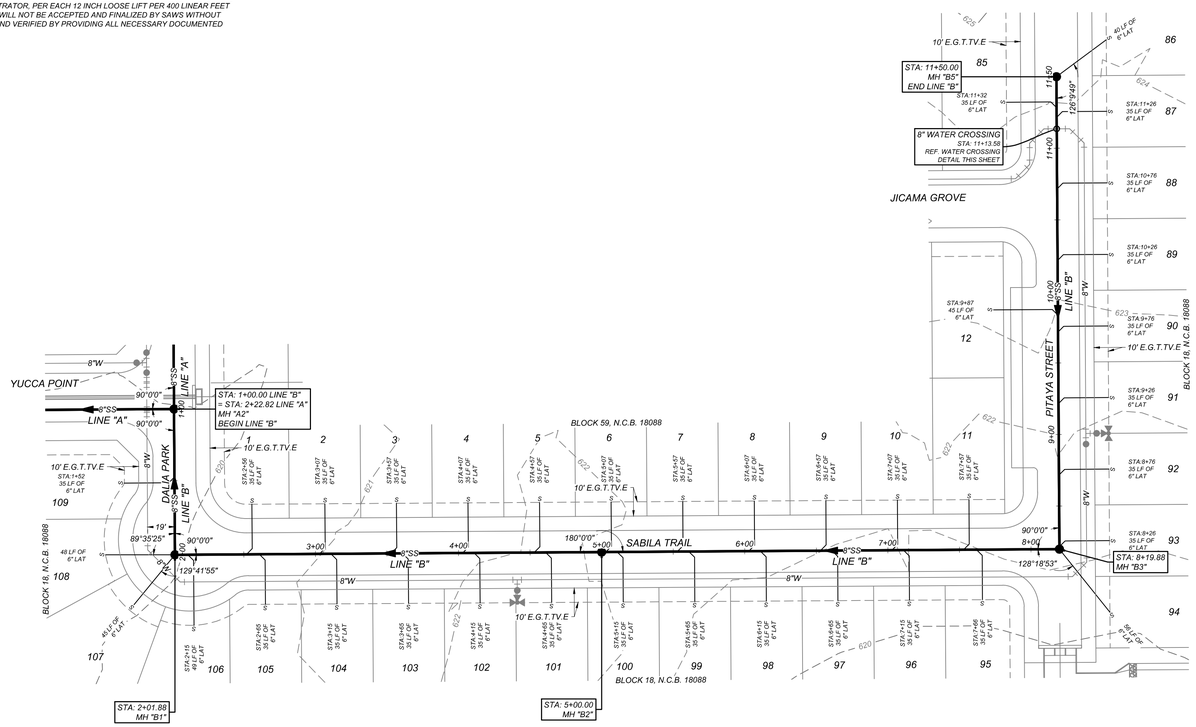
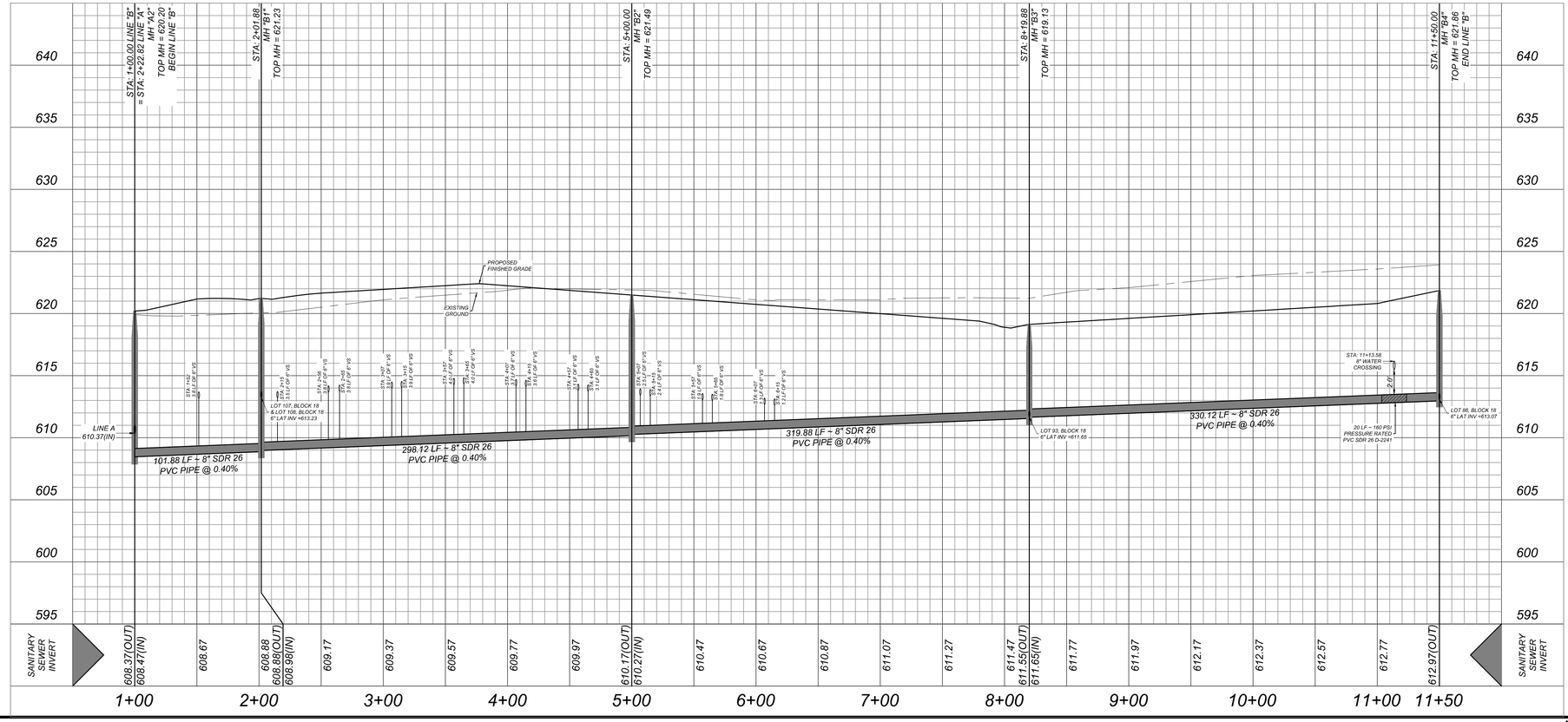


TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
N.T.S.



LINE "B"
STA: 1+00.00 - END

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



SEWER - WEST SEWERSHED - LEON CREEK W.R.C.

DEVELOPER'S NAME: FOUR BROTHERS CAPITAL, LLC			
DEVELOPER'S ADDRESS: 903 E. NACOMA DRIVE, SUITE 103			
CITY: SAN ANTONIO	STATE: TEXAS	ZIP: 78216	
PHONE#:	FAX#:	TOTAL ACREAGE: 10.69 ACRES	
SAWS BLOCK MAP#: 148536		TOTAL EDU'S: 61	
TOTAL LINEAR FOOTAGE OF PIPE: 1,800.00 LF ~ 8" SDR 26		PLAT NO.: 24-11800079	
NUMBER OF LOTS: 61	SAWS JOB#: xx-xxxx		

LEGEND

RIGHT OF WAY	=	*R.O.W.*
COUNTY BLOCK	=	*C.B.*
EXISTING	=	*EX*
EXISTING SANITARY SEWER	=	*ESS*
PROPOSED SANITARY SEWER	=	*SS*
EXISTING WATER	=	*EW*
PROPOSED WATER	=	*W*
ELECTRIC, GAS, TELEPHONE & CABLE TV EASEMENT	=	*E.G.T.TV.E*
VARIABLE WIDTH CLEAR VISION EASEMENT	=	*V.W.C.V.E*
LINEAR FEET	=	*LF*
LATERAL	=	*LAT*
VERTICAL STACK	=	*VS*

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FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED PROFESSIONAL ENGINEER
8/6/25

LEGACY AT LA VIDA (ENCLAVE)
PLAT# 24-11800079

SANANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194500

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER: 1198-01-01
DRAWING NAME: SSPP11980101_B

SHEET TITLE: LINE "B" PLAN & PROFILE

SHEET NUMBER: 6.4

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

CadD:SWRSSPP11980101_B.dwg6.4 By: SCHAVEZ

LEGACY AT LA VIDA (ENCLAVE)

BEXAR COUNTY, TEXAS

WATER IMPROVEMENTS

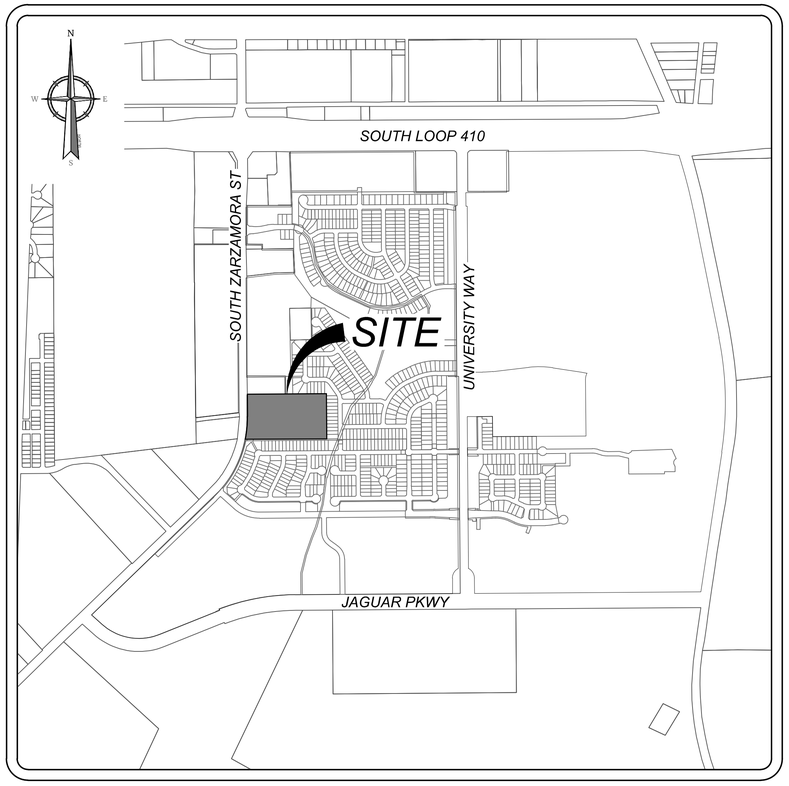
SAWS CONSTRUCTION NOTES
COUNTER PERMIT AND GENERAL CONSTRUCTION PERMIT
January 2022

General Section

1. ***All materials and construction procedures within the scope of this contract shall be approved by the San Antonio Water System (SAWS) and comply with the Plans, Specifications, General Conditions and with the following as applicable:***
   A. Current Texas Commission on Environmental Quality (TCEQ) "Design Criteria for Domestic Wastewater System", Texas Administrative Code (TAC) Title 30 Part 1 Chapter 217 and "Public Drinking Water", TAC Title 30 Part 1 Chapter 290.
   B. Current TXDOT "Standard Specifications for Construction of Highways, Streets and Drainage".
   C. Current "San Antonio Water System Standard Specifications for Water and Sanitary Sewer Construction".
   D. Current City of San Antonio "Standard Specifications for Public Works Construction".
   E. Current City of San Antonio "Utility Excavation Criteria Manual" (UECM).
2. ***The contractor shall not proceed with any pipe installation work until they obtain a copy of the approved Counter Permit or General Construction Permit (GCP) from the consultant and has been notified by SAWS Construction Inspection Division to proceed with the work and has arranged a meeting with the inspector and consultant for the work requirements. Work completed by the contractor without an approved Counter Permit and/or a GCP will be subject to removal and replacement at the expense of the contractors and/or the developer.***
3. ***The Contractor shall obtain the SAWS Standard Details from the SAWS website. http://www.saws.org/business_center/specs. Unless otherwise noted within the design plans.***
4. ***The Contractor is to make arrangements with the SAWS Construction Inspection Division at (210) 233-2973, on notification procedures that will be used to notify affected home residents and/or property owners 48 hours prior to beginning any work.***
5. ***Location and depth of existing utilities and service laterals shown on the plans are understood to be approximate. Actual locations and depths must be field verified by the Contractor at least 1 week prior to construction. It shall be the Contractor's responsibility to locate utility service lines as required for construction and to protect them during construction at no cost to SAWS.***
6. ***The Contractor shall verify the exact location of underground utilities and drainage structures at least 1-2 weeks prior to construction whether shown on plans or not. Please allow up to 7 business days for locates requesting pipe location markers on SAWS facilities. The following contact information are supplied for verification purposes:***
   - ***SAWS Utility Locates: http://www.saws.org/Service/Locates***
   - ***COSA Drainage (210) 207-0724 or (210) 207-6026***
   - ***COSA Traffic Signal Operations (210) 206-8480***
   - ***COSA Traffic Signal Damages (210) 207-3951***
   - ***Texas State Wide One Call Locator 1-800-545-6005 or 811***
7. ***The Contractor shall be responsible for restoring existing fences, curbs, streets, driveways, sidewalks, landscaping and structures to its original or better condition if damages are made as a result of the project's construction.***
8. ***All work in Texas Department of Transportation (TxDOT) and/or Bexar County right-of-way shall be done in accordance with respective construction specifications and permit requirements.***
9. ***The Contractor shall comply with City of San Antonio or other governing municipality's tree ordinances when excavating near trees.***
10. ***The Contractor shall not place any waste materials in the 100-year Flood Plain without first obtaining an approved Flood Plain Permit.***
11. ***Holiday Work: Contractors will not be allowed to perform SAWS work on SAWS recognized holidays. Request should be sent to constworkreq@saws.org. Weekend Work: Contractors are required to notify the SAWS Inspection Construction Department 48 hours in advance to request weekend work. Request should be sent to constworkreq@saws.org. Any and all SAWS utility work installed without holiday/weekend approval will be subject to be uncovered for proper inspection.***
12. ***Compaction note (Item 804): The contractor shall be responsible for meeting the compaction requirements on all trench backfill and for paying for the tests performed by a third party. Compaction tests will be done at one location point randomly selected, or as indicated by the SAWS Inspector and/or the test administrator, per each 12-inch loose lift per 400 linear feet at a minimum. This project will not be accepted and finalized by SAWS without this requirement being met and verified by providing all necessary documented test results.***
13. ***A copy of all testing reports shall be forwarded to SAWS Construction Inspection Division.***

Water Section

1. ***Prior to tie-ins, any shutdowns of existing mains of any size must be coordinated with the SAWS Construction Inspection Division at least one week in advance of the shutdown. The Contractor must also provide a sequence of work as related to the tie-ins; this is at no additional cost to SAWS or the project and it is the responsibility of the Contractor to sequence the work accordingly.***
   - ***For water mains 12" or higher: SAWS Emergency Operations Center (210) 233-2014***
2. ***Asbestos Cement (AC) pipe, also known as transite pipe which is known to contain asbestos containing material (ACM), may be located within the project limits. Special waste management procedures and health and safety requirements will be applicable when removal and/or disturbance of this pipe occurs. Such work is to be made under Special Specification Item No. 3000, "Special Specification for Handling Asbestos Cement Pipe".***
3. ***Valve removal: Where the contractor is to abandon a water main, the control valve located on the abandoning branch will be removed and replaced with a cap/plug. (NSPI)***
4. ***Suitable anchorage/thrust blocking or joint restraint shall be provided at all of the following main locations: dead ends, plugs, caps, tees, crosses, valves, and bends, in accordance with the Standard Drawings DD-839 Series and Item No. 839, in the SAWS Standard Specifications for Construction.***
5. ***All valves shall read "open right".***
6. ***PRVs Required: Contractor to verify that no portion of the tract is below ground elevation of 605 feet where the static pressure will normally exceed 80 PSI. At all such locations where the ground level is below 605 feet, the Developer or Builder shall install at each lot, on the customer's side of the meter, an approved type pressure regulator in conformance with the Plumbing Code of the City of San Antonio. No dual services allowed for any lot(s) if "PRV is/are required for such lot(s), only single service connections shall be allowed. "Note: A pressure regulator is also known as a pressure reducing valve (PRV).***
7. ***Pipe Disinfection with Dry HTH for Projects less than 800 linear feet. (Item No. 847.3): Mains shall be disinfected with dry HTH where shown in the contract documents or as directed by the Inspector, and shall not exceed a total length of 800 feet. This method of disinfection will also be followed for main repairs. The Contractor shall utilize all appropriate safety measure to protect his personnel during disinfection operations.***
8. ***Backflow Prevention Devices:***
   - ***All irrigation services within residential areas are required to have backflow prevention devices.***
   - ***All commercial backflow prevention devices must be approved by SAWS prior to installation.***
9. ***Final connection to the existing water main shall not be made until the water main has been pressure tested, chlorinated, and SAWS has released the main for tie-in and use.***
10. ***Division Valves: Division Valves shown on plans or not shown on plans but found in the field shall only be operated by SAWS Distribution and Collection staff and only with prior written approval of the SAWS Director of Production and Operations and proper coordination with all SAWS departments. Contractor shall provide written notification to the inspector a minimum of two weeks in advance to start the coordination process and will be informed by the Inspector when the division valve will be operated by the SAWS Distribution and Collection staff. The Division Valve can only be operated by SAWS Distribution and Collection staff member not the inspector or the contractor. Operation of a Division Valve without the express prior written approval of the SAWS Distribution and Collection staff will constitute a material breach of any written SAWS contract or permit in addition to subjecting the Contractor to liability for any and all fines, fees, or other damages, direct or consequential, that may arise from or be caused by the operation of the valve without prior written permission. Please be informed that the approval of the operation or opening or closing of a division valve can take several weeks for approval. Division Valves will also have a valve lid labeled Division Valve and a locking mechanism installed with a key. The lock and key mechanism will be paid for by the contractor but will be installed by SAWS Distribution and Collection staff.***



LOCATION MAP

N.T.S.

OWNER/DEVELOPER:
FOUR BROTHERS CAPITAL, LLC
903 E. NACOMA DRIVE, SUITE 103
SAN ANTONIO, TX 78216

INDEX

DESCRIPTION	SHEET NO.
WATER DISTRIBUTION COVER SHEET	7.0
WATER DISTRIBUTION PLAN	7.1

SAWS PRESSURE ZONE 790

DEVELOPER'S NAME: FOUR BROTHERS CAPITAL, LLC		
DEVELOPER'S ADDRESS: 903 E. NACOMA DRIVE, SUITE 103		
CITY: SAN ANTONIO	*STATE: TEXAS*	*ZIP: 78216*
PHONE#:	*FAX#:*	*TOTAL ACREAGE: 10.69 ACRES*
SAWS BLOCK MAP#: 148536		*TOTAL EDU'S: 61*
TOTAL LINEAR FOOTAGE OF PIPE: 1,986 LF ~ 8" C-900		*PLAT NO.: 24-11800079*
NUMBER OF LOTS: 61	*SAWS JOB#: xx-xxxx-i*	

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REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED
PROFESSIONAL ENGINEER
7/1/25

LEGACY AT LA VIDA (ENCLAVE)
PLAT# 24-11800079

SANANTONIO
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TBPE Firm#:F-14809
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER:	DRAWING NAME:
1198-01-01	CVOW11980101

SHEET TITLE:
WATER DISTRIBUTION COVER SHEET

SHEET NUMBER:
7.0

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

By:JDIAZ,RODRIGUEZ
Civil\WATER\CVOW11980101.dwg(7.0

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.

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.

PRESSURE REDUCING VALVE (PRV) NOTE:

*CONTRACTOR TO VERIFY THAT NO PORTION OF THE TRACT IS BELOW GROUND ELEVATION OF 605 FEET WHERE THE STATIC PRESSURE WILL NORMALLY EXCEED 80 PSI. AT ALL SUCH LOCATIONS WHERE THE GROUND LEVEL IS BELOW 605 FEET, THE DEVELOPER OR BUILDER SHALL INSTALL AT EACH LOT, ON THE CUSTOMER'S SIDE OF THE METER, AN APPROVED TYPE PRESSURE REGULATOR IN CONFORMANCE WITH THE PLUMBING CODE OF THE CITY OF SAN ANTONIO. NO DUAL SERVICES ALLOWED FOR ANY LOT(S) IF "PRV IS / ARE REQUIRED FOR SUCH LOT(S), ONLY SINGLE SERVICE CONNECTIONS SHALL BE ALLOWED. WATER SERVICES WHERE PRV'S REQUIRED ARE DESIGNATED BY AN ASTERISK (*).*

"NOTE: A PRESSURE REGULATOR IS ALSO KNOWN AS A PRESSURE REDUCING VALVE(PRV)

JOINT RESTRAINT NOTE:

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

WATER PLAN NOTES:

1. ALL VALVES SHALL READ "OPEN RIGHT"
2. ALL PVC PIPE TO BE C-900 CLASS 235 (DR 18)
3. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM (SAWS) STANDARD SPECIFICATIONS.

SAWS STANDARD NOTE:

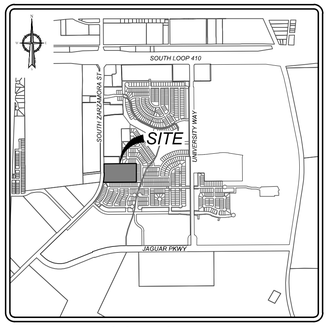
ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM (SAWS) STANDARD SPECIFICATIONS

SAWS NOTE:

"SAWS REQUIRES GCPs AND COUNTER PERMIT TO USE LEAD FREE (<0.25% LEAD) FIRE HYDRANTS."

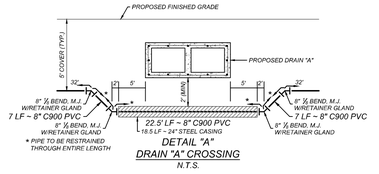
LEGEND

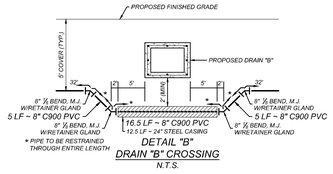
PROPOSED WATER MAIN	=	W
PROPOSED WATER SERVICE & METER BOX	=	W
PROPOSED WATER 3/4" IRRIGATION SERVICE & METER BOX	=	W
PROPOSED FIRE HYDRANT	=	
PROPOSED WATER VALVE	=	
PROPOSED SANITARY SEWER MAIN	=	SS
PROPOSED SANITARY SEWER MANHOLE	=	SS
ELECTRIC, GAS, TELEPHONE & CABLE TV EASEMENT (PLAT# 24-11800079)	=	E.G.T.TV.E
WATER EASEMENT (PLAT# 24-11800079)	=	W.E
PEDESTRIANT ACCESS EASEMENT (PLAT# 24-11800079)	=	P.A.E
EXISTING WATER MAIN	=	EW
EXISTING FIRE HYDRANT	=	
EXISTING WATER VALVE	=	
EXISTING SANITARY SEWER MAIN	=	ESS
EXISTING SANITARY SEWER MANHOLE	=	ESS
EXISTING OVERHEAD ELECTRIC W/POWER POLE	=	OHE
EXISTING GUY WIRE/OVERHEAD ELECTRIC	=	OHE

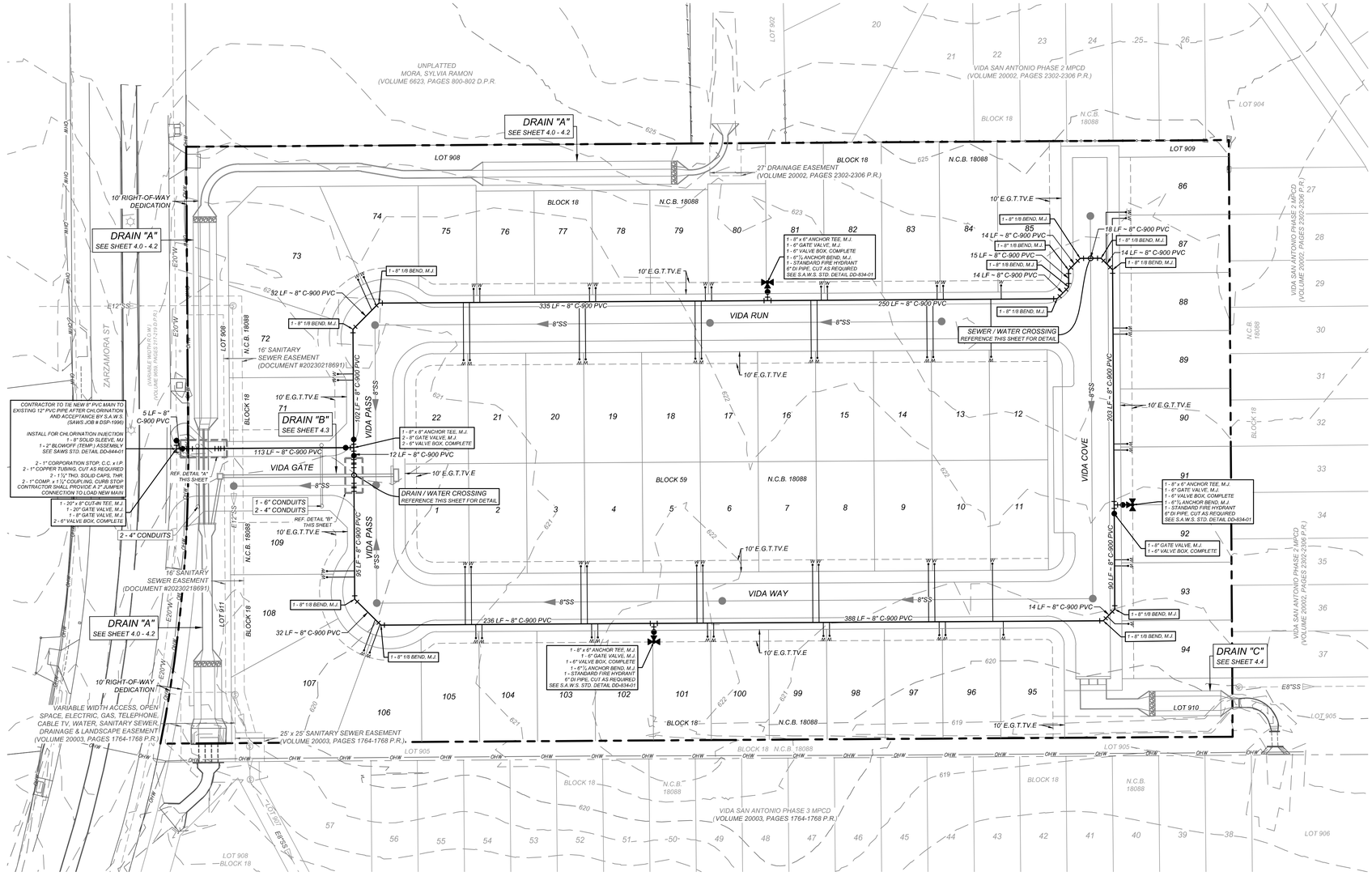


LOCATION MAP

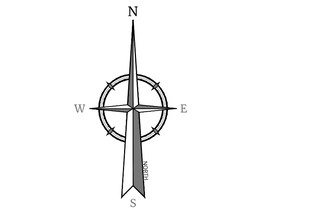
N.T.S.







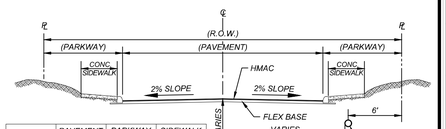
RESIDENTIAL LOTS = 61



50 0 50 100

SCALE : 1" = 50'

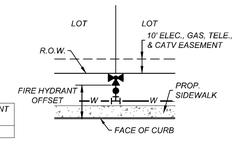
Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)



TYPE	PAVEMENT WIDTH	PARKWAY WIDTH	SIDEWALK WIDTH
50' R.O.W.	30'	10'	4'
60' R.O.W.	34'	13'	6'

TYPICAL STREET SECTION

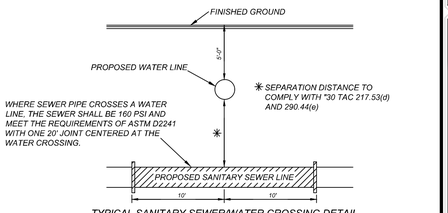
N.T.S.



SIDEWALK WIDTH	FIRE HYDRANT OFFSET
4'	5.0' MIN

TYPICAL FIRE HYDRANT DETAIL

NOT-TO-SCALE



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

N.T.S.

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.

SAWS PRESSURE ZONE 790

DEVELOPER'S NAME: FOUR BROTHERS CAPITAL, LLC
DEVELOPER'S ADDRESS: 903 E. NACOMA DRIVE, SUITE 103
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216
PHONE#: FAX#: TOTAL ACREAGE: 10.69 ACRES
SAWS BLOCK MAP#: 148536 TOTAL EDU'S: 61
TOTAL LINEAR FOOTAGE OF PIPE: 1,986 LF ~ 8" C-900 PLAT NO.: 24-11800079
NUMBER OF LOTS: 61 SAWS JOB#: xx-xxxx-i

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

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FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED PROFESSIONAL ENGINEER
7/1/25

LEGACY AT LA VIDA (ENCLAVE) PLAT# 24-11800079

SANANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER: 1198-01-01
DRAWING NAME: OW11980101

SHEET TITLE: WATER DISTRIBUTION PLAN

SHEET NUMBER: 7.1

By: EAAC.BOSBQUEZ
Civil\WATER\OW11980101.dwg7.1

INSTALLATION:

1. *ALL OPERATORS SHALL SUBMIT A NOTICE OF INTENT (NOI) AT LEAST 48 HOURS IN ADVANCE AND ALL BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE IN PLACE PRIOR TO STARTING CONSTRUCTION ACTIVITIES.*
2. *CONTRACTOR TO ENSURE THAT STRUCTURAL BMP'S ARE INSTALLED WITHIN THE LIMITS OF THE SITE BOUNDARY.*
3. *CONTRACTOR MAY INSTALL THE BEST MANAGEMENT PRACTICES IN PHASES THAT COINCIDE WITH THE DISTURBANCE OF UP GRADIENT AREAS. THIS PHASING SHOULD BE NOTED WITHIN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.*
4. *CONTRACTOR TO VERIFY SUFFICIENT VEGETATION IN AREAS DENOTED AS VEGETATED FILTER STRIP. IF INSUFFICIENT VEGETATION EXISTS, CONTRACTOR SHALL IMPLEMENT A DIFFERENT BEST MANAGEMENT PRACTICE AND WILL SHOW IT ON THIS PLAN WITH NOTATION IN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.*

MAINTENANCE AND INSPECTION:

1. *CONTRACTOR SHOULD LIMIT CONSTRUCTION ACTIVITIES TO ONLY THOSE AREAS SHOWN TO BE DISTURBED ON THIS PLAN. IF ADDITIONAL VEGETATED AREAS ARE DISTURBED, THEY SHOULD BE PROTECTED WITH APPROPRIATE BEST MANAGEMENT PRACTICES UNTIL THE AREAS HAVE BEEN STABILIZED AS PER THE SPECIFICATIONS OF THE SWPPP. THE AREAS OF THIS ADDITIONAL SOIL DISTURBANCE AND THE MEASURES USED SHOULD BE SHOWN ON THE SITE PLAN AND NOTED WITHIN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.*
2. *CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND INSPECTION OF BMP'S AS PER THE SPECIFICATIONS OF THE SWPPP. THE CONTRACTOR MAY MODIFY THE CONTROLS AS NECESSARY TO PREVENT SEDIMENT RUNOFF. THESE MODIFICATIONS SHOULD BE SHOWN AND THE SITE PLAN AND NOTED WITHIN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.*
3. *LOCATION OF CONSTRUCTION ENTRANCE/EXIT, CONCRETE WASHOUT PIT, AND EQUIPMENT AND STORAGE ARE TO BE FIELD DETERMINED. LOCATIONS SHALL BE UPDATED ON THIS PLAN.*

PROJECT COMPLETION:

1. *ALL DISTURBED AREAS ARES NOT COVERED BY IMPERVIOUS COVER ARE TO BE STABILIZED PER THE SWPPP AND PROJECT SPECIFICATIONS PRIOR TO REMOVAL OF ANY BMP'S AND/OR PRIOR TO FILING A NOTICE OF TERMINATION (NOT).*
2. *BEST MANAGEMENT PRACTICES MAY BE REMOVED IN PHASES IF ALL UPGRADIENT AREAS HAVE BEEN STABILIZED PER SWPPP AND PROJECT SPECIFICATIONS. THIS PHASING SHOULD BE NOTED WITHIN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.*
3. *CONTRACTOR TO ENSURE THEY HAVE MET ALL REQUIREMENTS OF THE SWPPP BEFORE FILING A NOTICE OF TERMINATION (NOT).*

GENERAL:

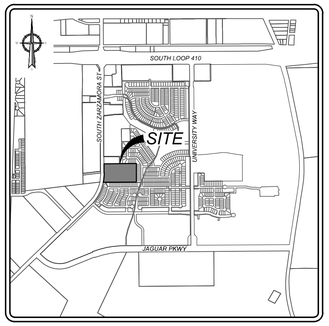
1. *THIS EXHIBIT IS TO BE USED FOR THE PURPOSES OF STORMWATER POLLUTION PREVENTION ONLY. ALL OTHER CIVIL ENGINEERING INFORMATION SHOULD BE OBTAINED FROM THE APPROPRIATE CONSTRUCTION DOCUMENTS.*
2. *THE PURPOSE OF THE SIGNATURE AND SEAL OF THE ENGINEER ON THIS DOCUMENT IS TO DEMONSTRATE COMPLIANCE WITH THE TPDES STORMWATER POLLUTION PREVENTION PLAN REGULATIONS ONLY.*
3. *ALL OWNERS/OPERATORS ARE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH THE STORMWATER POLLUTION PREVENTION PLAN AND COMPLYING WITH THE REGULATIONS CONTAINED WITHIN IT.*

COORDINATION NOTE:

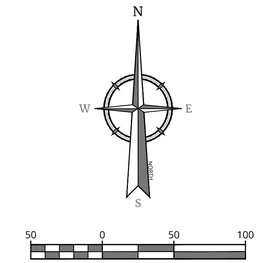
1. *CONTACT TIME WARNER TO COORDINATE CABLE TV SERVICE. (210) 244-0500*
2. *CONDUIT FOR ELECTRICAL SERVICE. CONFIRM REQUIREMENTS AND COORDINATE WITH CPS FOR INSPECTION. (210) 353-2246.*
3. *CONTACT AT&T TO COORDINATE TELEPHONE SERVICE. 1-800-449-7928.*
4. *CONTRACTOR TO COORDINATE WITH CPS PRIOR TO CONSTRUCTION TO PLAN ELECTRIC SERVICE.*
5. *CONTRACTOR TO COORDINATE WITH SAWS TO PLAN WATER AND SANITARY SEWER SERVICES (210) 704-7297*
6. *CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION.*

LEGEND

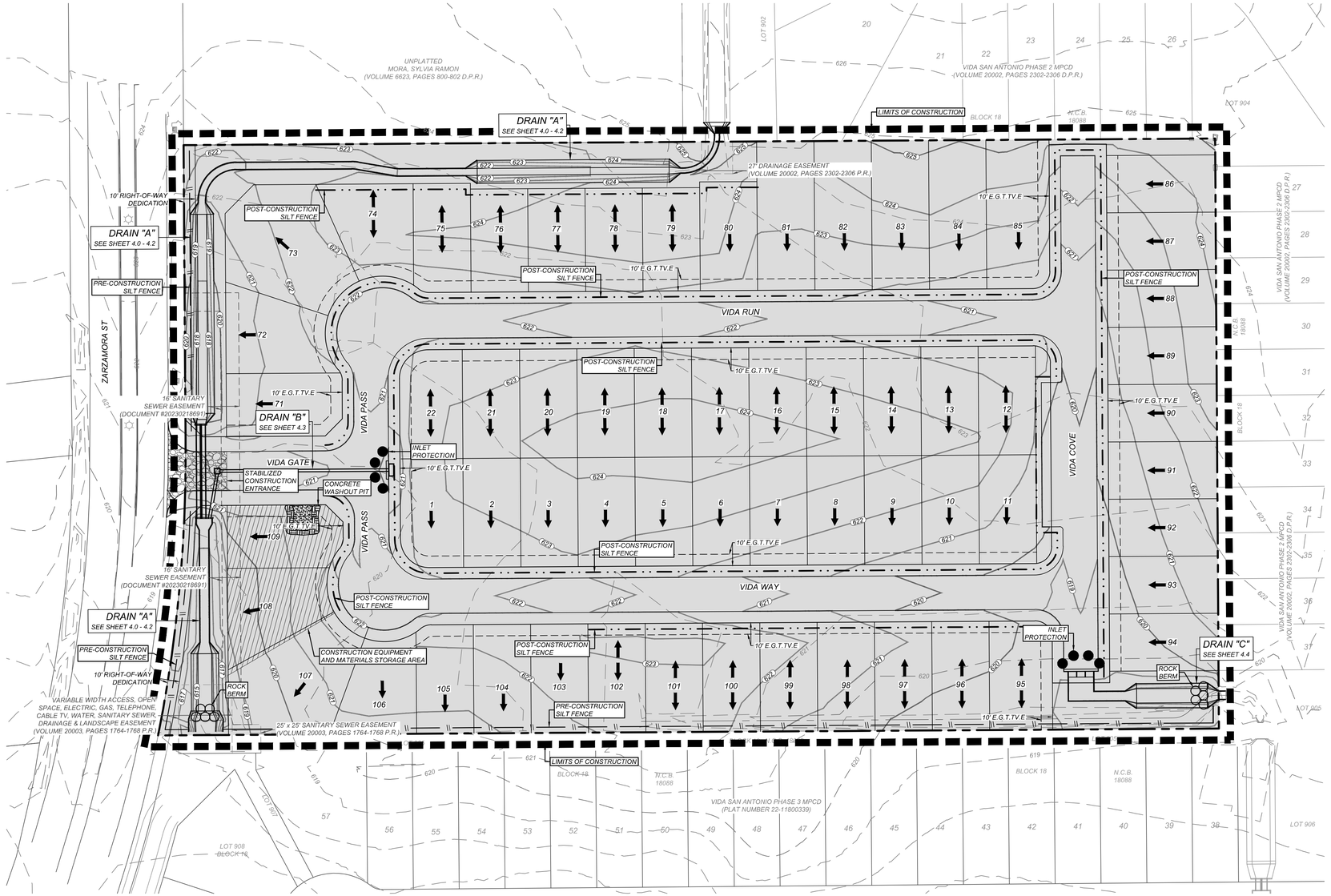
LIMITS OF CONSTRUCTION	=	
EXISTING CONTOURS	=	570
PROPOSED CONTOURS	=	1008
FLOW ARROW	=	
PRE CONSTRUCTION SILT FENCE	=	
POST CONSTRUCTION SILT FENCE	=	
TYPE 4 SACK GABIONS	=	
DISTURBED AREA	=	
STABILIZED CONSTRUCTION ENTRANCE/EXIT	=	
CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA.	=	
NATURAL VEGETATIVE BUFFER	=	
CONCRETE TRUCK WASHOUT PIT	=	
ROCK BERM	=	
INLET WITH PROTECTION (GRAVEL FILTERS BAGS)	=	
ELECTRIC, GAS, TELEPHONE, & CABLE TV EASEMENT (24-11800079)	=	*E.G.T.TV.E*
WATER EASEMENT (PLAT# 24-11800079)	=	*W.E*
PEDESTRIAN ACCESS EASEMENT (PLAT# 24-11800079)	=	*P.A.E*



LOCATION MAP
N.T.S.



SCALE : 1" = 50'
Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)



RESIDENTIAL LOTS = 61

SW3P MODIFICATIONS

DATE	SIGNATURE	DESCRIPTION

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

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FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED
PROFESSIONAL ENGINEER
7/1/25

LEGACY AT LA VIDA (ENCLAVE)
PLAT# 24-11800079

SANANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14309
TBPLS Firm#: 10194500

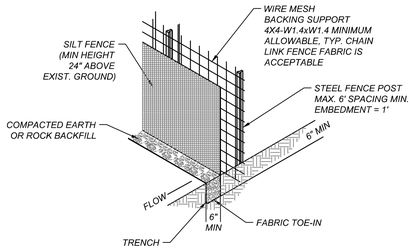
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER:	DRAWING NAME:
1198-01-01	SW3P11980101

SHEET TITLE:
STORMWATER POLLUTION PREVENTION PLAN

SHEET NUMBER:
8.0

Civil\SW3P\11980101.dwg(8.0 By:EMC,BDORE,OET



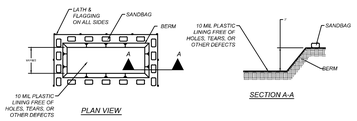
ISOMETRIC PLAN VIEW

Materials:
(1) Silt fence material should be polypropylene, polyethylene or polyamide woven or nonwoven fabric. The fabric width should be 36 inches, with a minimum unit weight of 4.5 oz/yd, mullen burst strength exceeding 190 lb/in2, ultraviolet stability exceeding 70%, and minimum apparent opening size of U.S. Sieve No. 30.
(2) Fence posts should be made of hot rolled steel, at least 4 feet long with Tee or Ybar cross section, surface painted or galvanized, minimum nominal weight 1.25 lb/ft2, and Brindell hardness exceeding 140.
(3) Woven wire backing to support the fabric should be galvanized 2" x 4" welded wire, 12 gauge minimum.

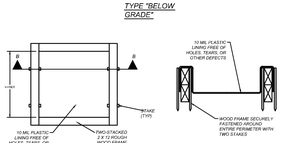
Installation:
(1) Steel posts, which support the silt fence, should be installed on a slight angle toward the anticipated runoff source. Post must be embedded a minimum of 1- foot deep and spaced not more than 8 feet on center. Where water concentrates, the maximum spacing should be 6 feet.
(2) Lay out fencing down-slope of disturbed area, following the contour as closely as possible. The fence should be sited so that the maximum drainage area is ¼ acre1 00 feet of fence.
(3) The toe of the silt fence should be trenched in with a spade or mechanical trencher, so that the down- slope face of the trench is flat and perpendicular to the line of flow. Where fence cannot be trenched in (e.g., pavement or rock outcrop), weight fabric flap with 3 inches of pea gravel on uphill side to prevent flow from seeping under fence.
(4) The trench must be a minimum of 6 inches deep and 6 inches wide to allow for the silt fence fabric to be laid in the ground and backfilled with compacted material.
(5) Silt fence should be securely fastened to each steel support post or to woven wire, which is in turn attached to the steel fence post. There should be a 3-foot overlap, securely fastened where ends of fabric meet.
(6) Silt fence should be removed when the site is completely stabilized so as not to block or impede stone flow or drainage.

Inspection and Maintenance Guidelines:
(1) Inspect all fencing weekly, and after any rainfall.
(2) Remove sediment when buildup reaches 6 inches.
(3) Replace any torn fabric or install a second line of fencing parallel to the torn section.
(4) Replace or repair any sections crushed or collapsed in the course of construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a silt fence at common vehicle access points.
(5) When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.

SILT FENCE



TYPE "BELOW GRADE"

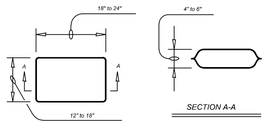


TYPE "ABOVE GRADE"

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.*

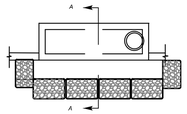
CONCRETE TRUCK WASHOUT PIT



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).*

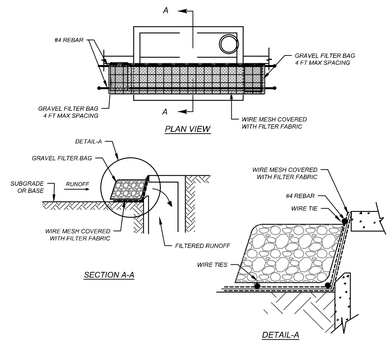
GRAVEL FILTER BAG DETAIL



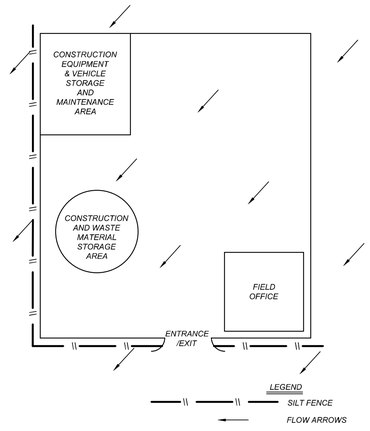
GENERAL NOTES:

- *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.*

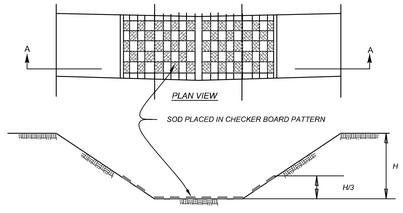
CURB INLET PROTECTION GRAVEL FILTER BAGS



CURB INLET PROTECTION (ALTERNATE)

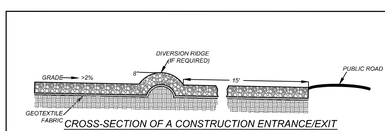


TYPICAL CONSTRUCTION STAGING AREA



- *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.*

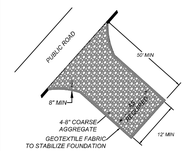
CHANNEL LINING



CROSS-SECTION OF A 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 oz/y02, 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.

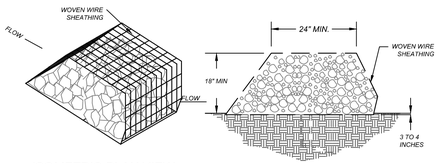


TEMPORARY CONSTRUCTION ENTRANCE/EXIT

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



ISOMETRIC PLAN VIEW

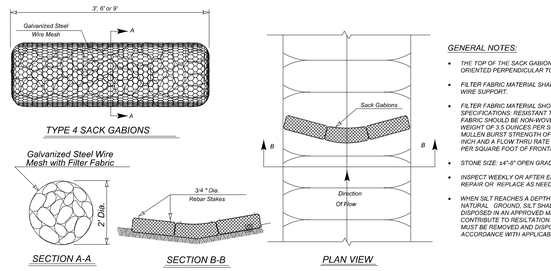
CROSS SECTION

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, airt the berm retains its shape when walked upon.
(5) Berm should be built along the contour at zero percent 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



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: 64"-8" OPEN GRADED CRUSHED LIMESTONE.*
- *INSPECT WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACE AS NEEDED.*
- *WHEN SILT REACHES A DEPTH OF 50% OR MORE ABOVE NATURAL GROUND, SILT SHALL BE REMOVED AND DISPOSED IN AN APPROVED MANNER THAT WILL NOT CONTRIBUTE TO RESLTATION. CONTAMINATED SEDIMENT MUST BE REMOVED AND DISPOSED OF OFF-SITE IN ACCORDANCE WITH APPLICABLE REGULATIONS.*

TYPE 4 SACK GABIONS

RESIDENTIAL LOTS = 61

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REV	DATE	DRAWN BY	DESCRIPTION

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OMAR A. ESPINOSA
125560
LICENSED
PROFESSIONAL ENGINEER
7/1/25

LEGACY AT LA VIDA (ENCLAVE) PLAT# 24-11800079

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BEXAR COUNTY
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AS SHOWN	APRIL 2025	-	OE

PROJECT NUMBER:	DRAWING NAME:
1198-01-01	SW3P11980101

SHEET TITLE:
STORMWATER POLLUTION PREVENTION PLAN DETAILS

SHEET NUMBER:
8.1

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

Civil\SW3P11980101.dwg\8.1 By: ESAAC.BODRIGUEZ