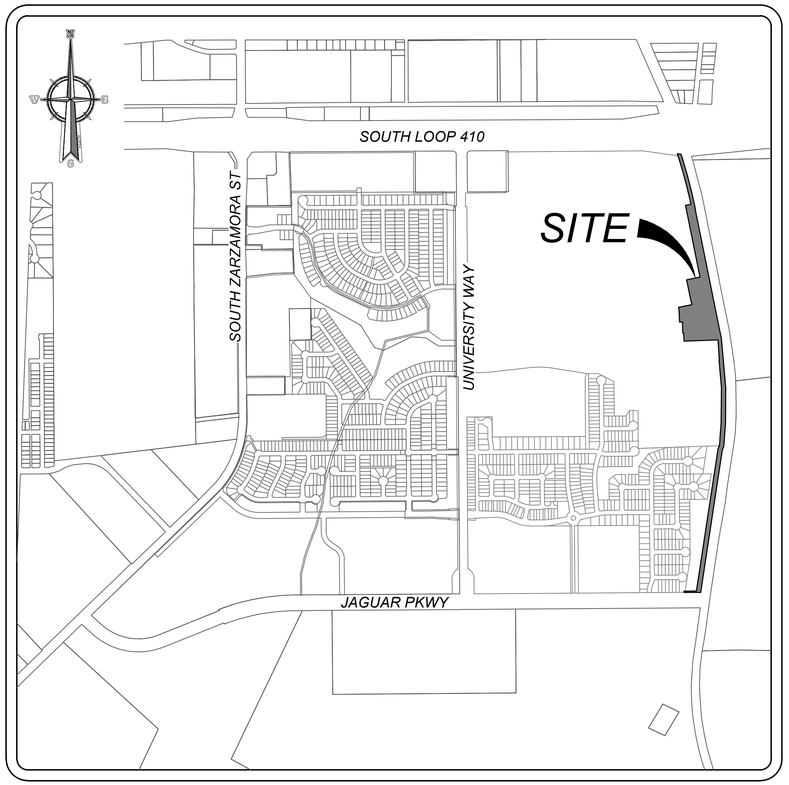
VIDA SAN ANTONIO LIFT STATION

BEXAR COUNTY, TEXAS

STREET, DRAINAGE, WATER, SANITARY SEWER & UTILITY IMPROVEMENTS



LOCATION MAP

N.T.S.

OWNER/DEVELOPER:
SOUTHSTAR AT VERANO, LLC
2055 CENTRAL PLAZA, SUITE 110
NEW BRAUNFELS, TEXAS 78130

INDEX

Colliers Engineering & Design

www.colliersengineering.com

Formerly Known as KFW

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ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
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
12/15/23

PRELIMINARY

FOR
VIDA SAN ANTONIO
LIFT STATION
PLAT# 23-11800297

SAN ANTONIO
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	OCT. 2023	EC	OE

PROJECT NUMBER: 391-10-19
DRAWING NAME: CV3911015
SHEET TITLE: COVER SHEET
SHEET NUMBER: 0.0

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

M:\CV391\1015.dwg\0.0 By: ECHAVEZ

TRENCH EXCAVATION SAFETY PROTECTION

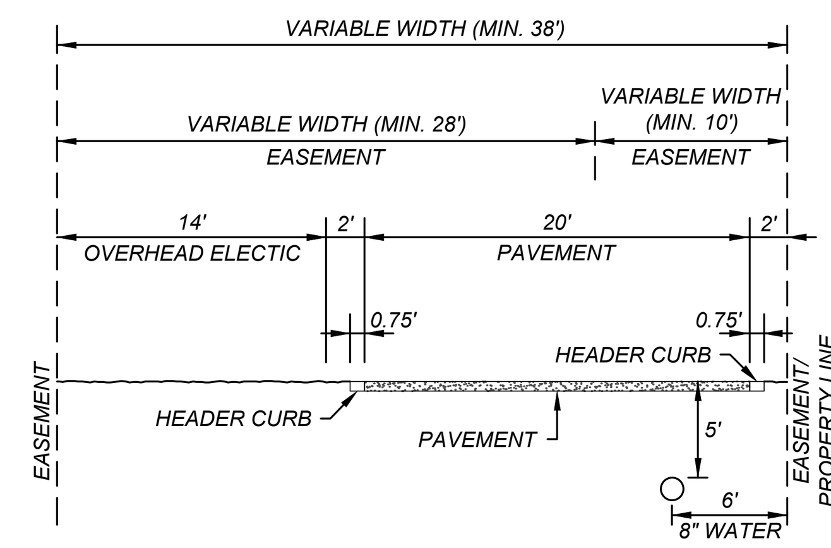
CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S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

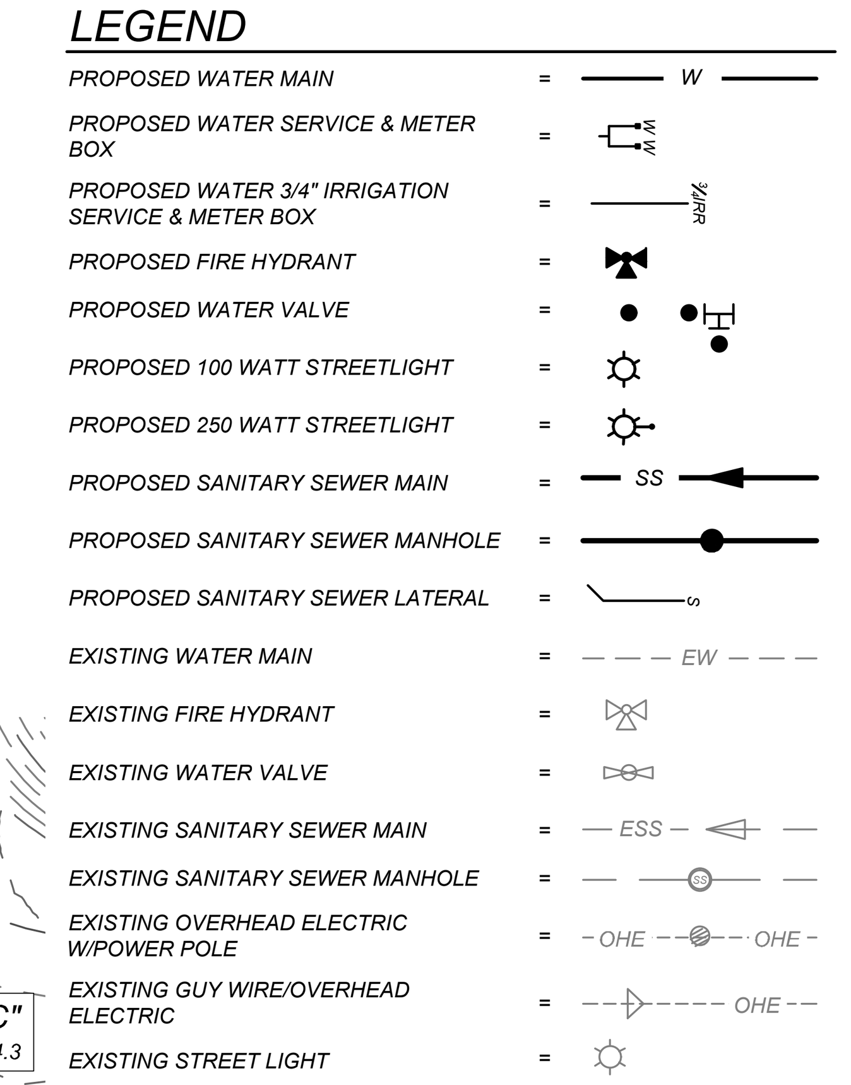
DRY UTILITY CONDUIT NOTE:

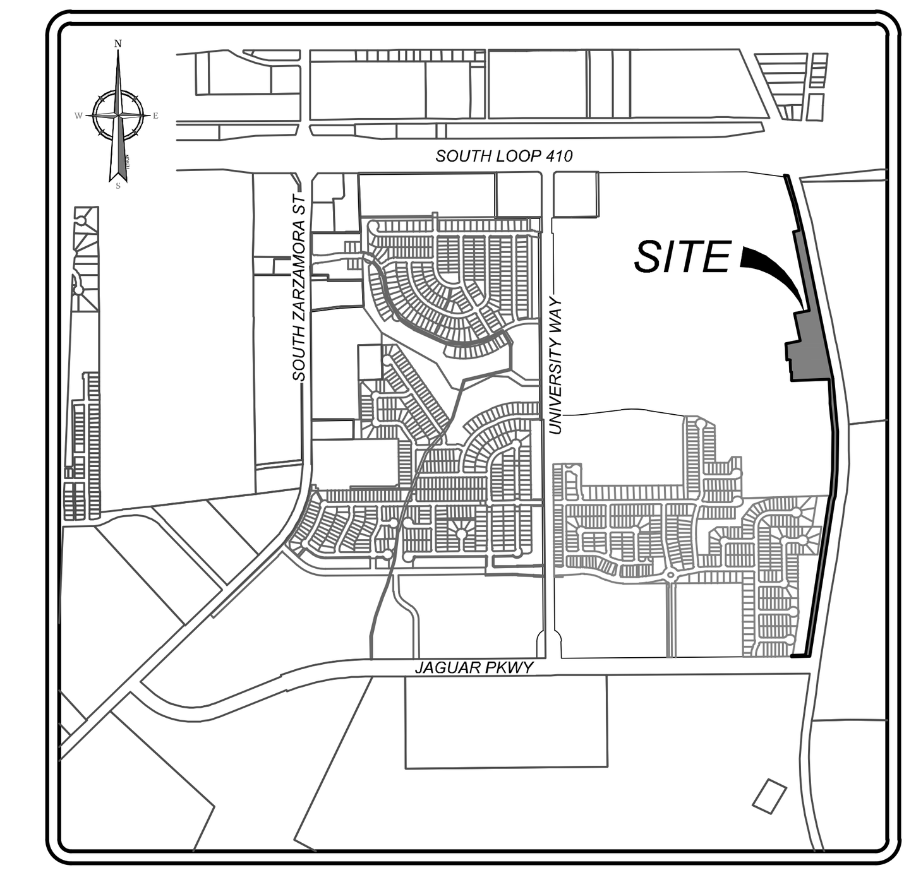
CONDUIT LOCATIONS SHOWN ON PLAN ARE FOR GEOGRAPHICAL PURPOSES ONLY AND ARE APPROXIMATE. CONTRACTOR TO INSTALL PROPOSED CONDUITS IN ACCORDANCE WITH DRY UTILITY PURVEYOR'S SPECIFICATIONS. CONTRACTOR TO VERIFY THE CONDUIT LOCATIONS AND SIZES BASED ON THE DRY UTILITY PURVEYOR'S PLAN.



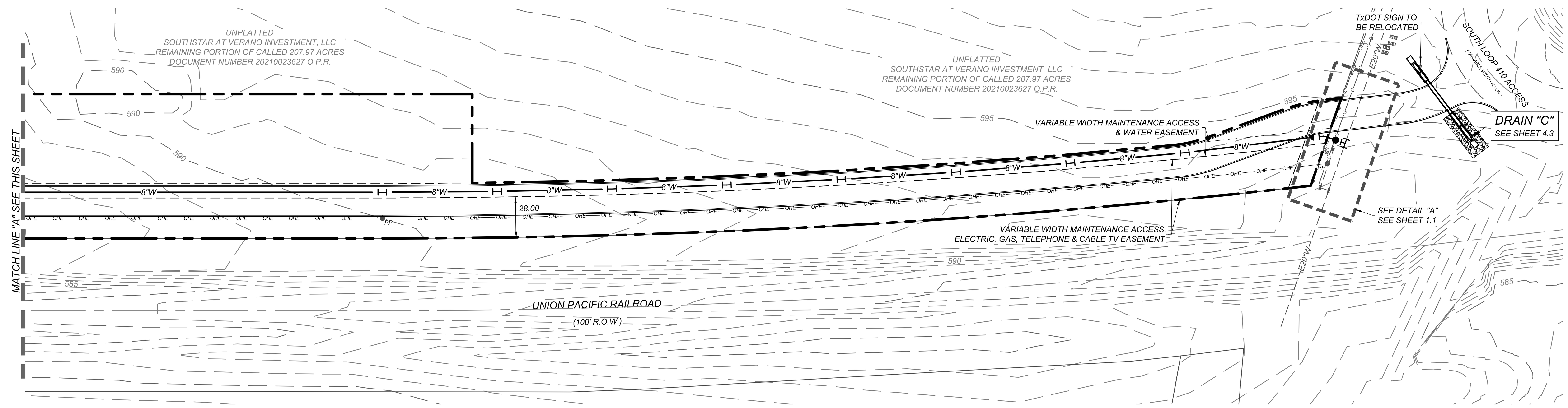
TYPICAL ACCESS ROAD SECTION
NOT TO SCALE

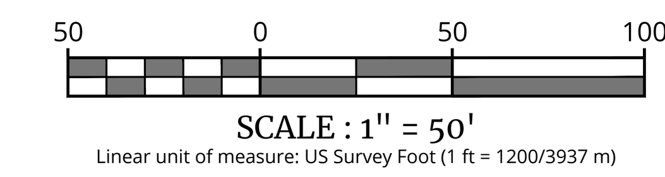
LEGEND

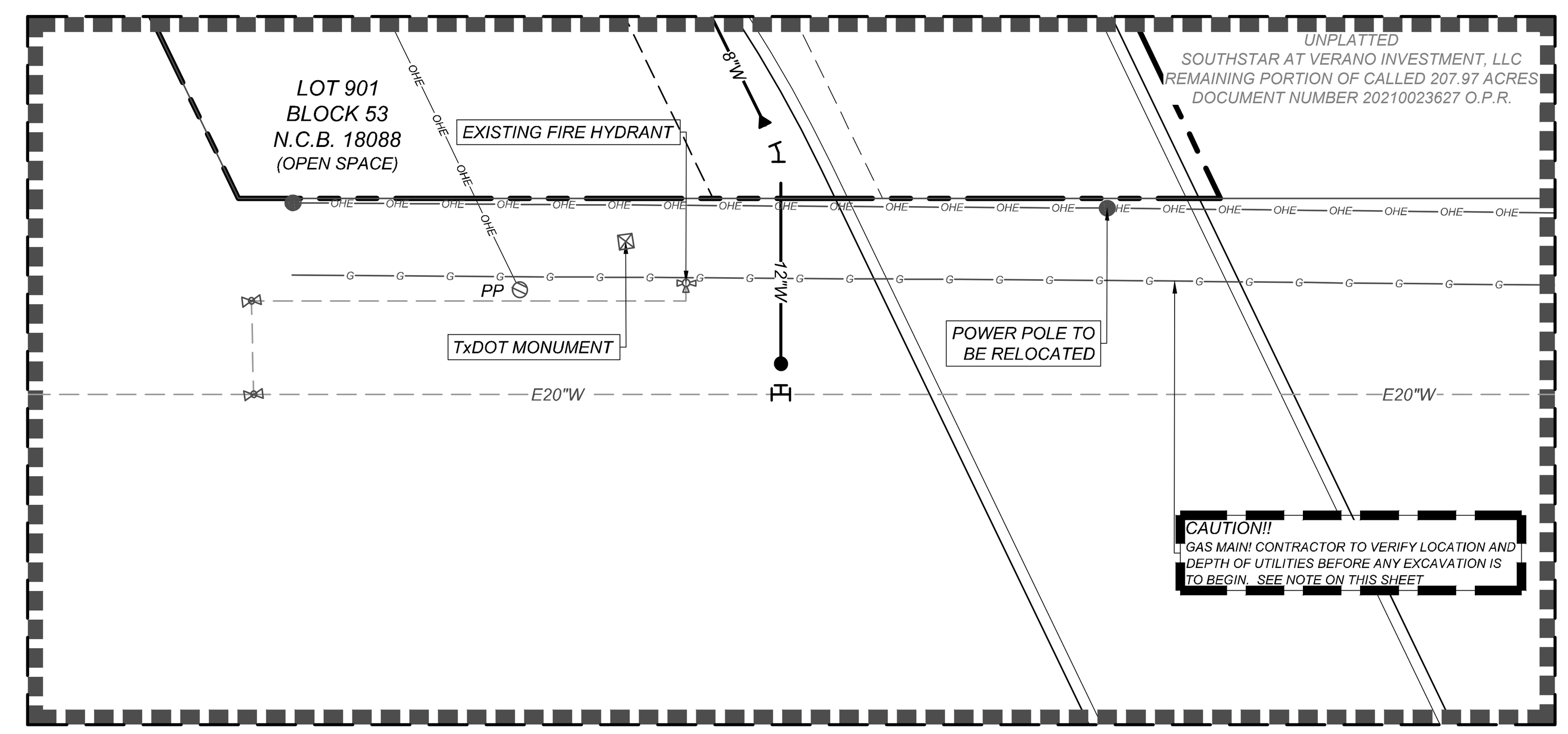




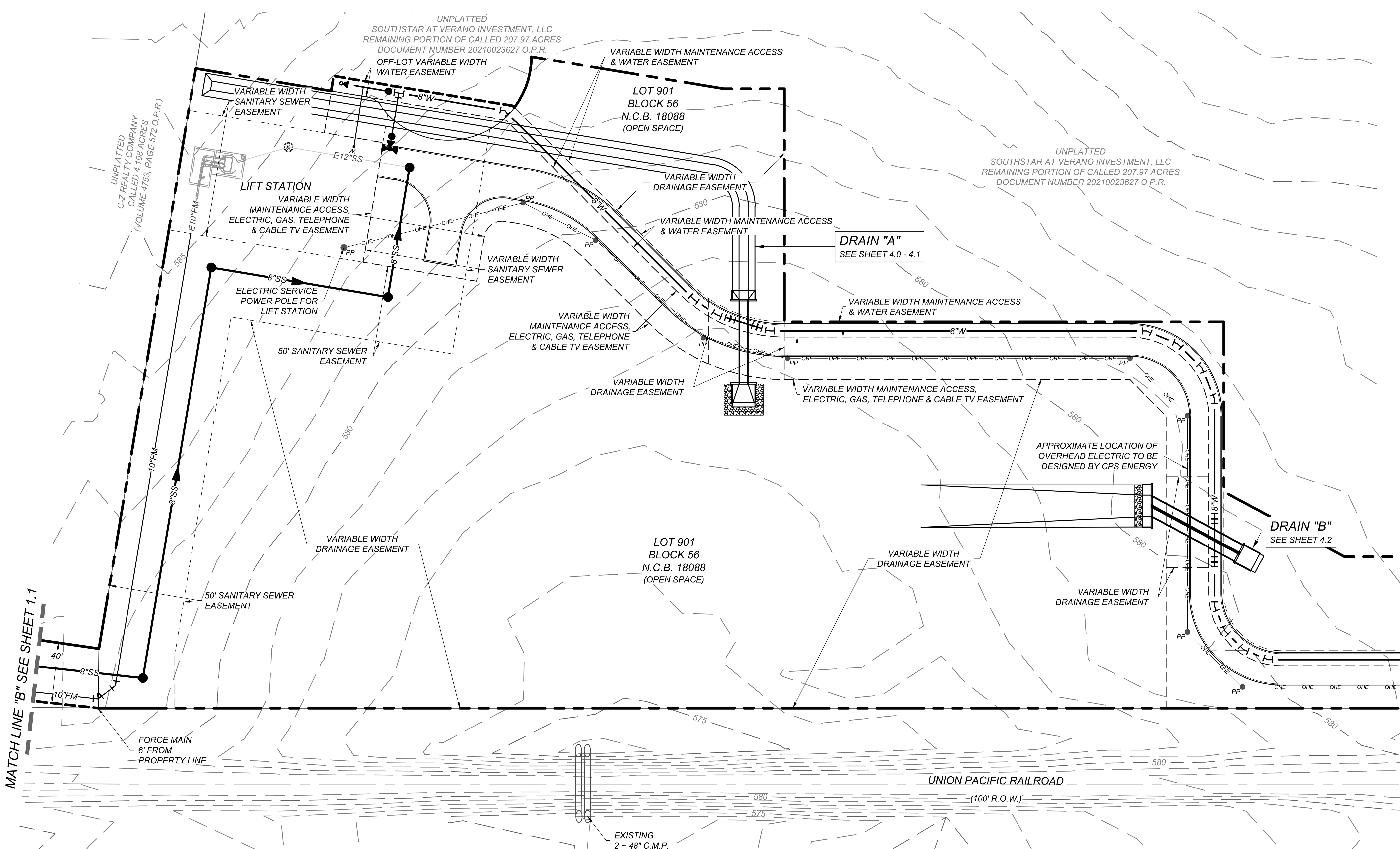
LOCATION MAP
N.T.S.

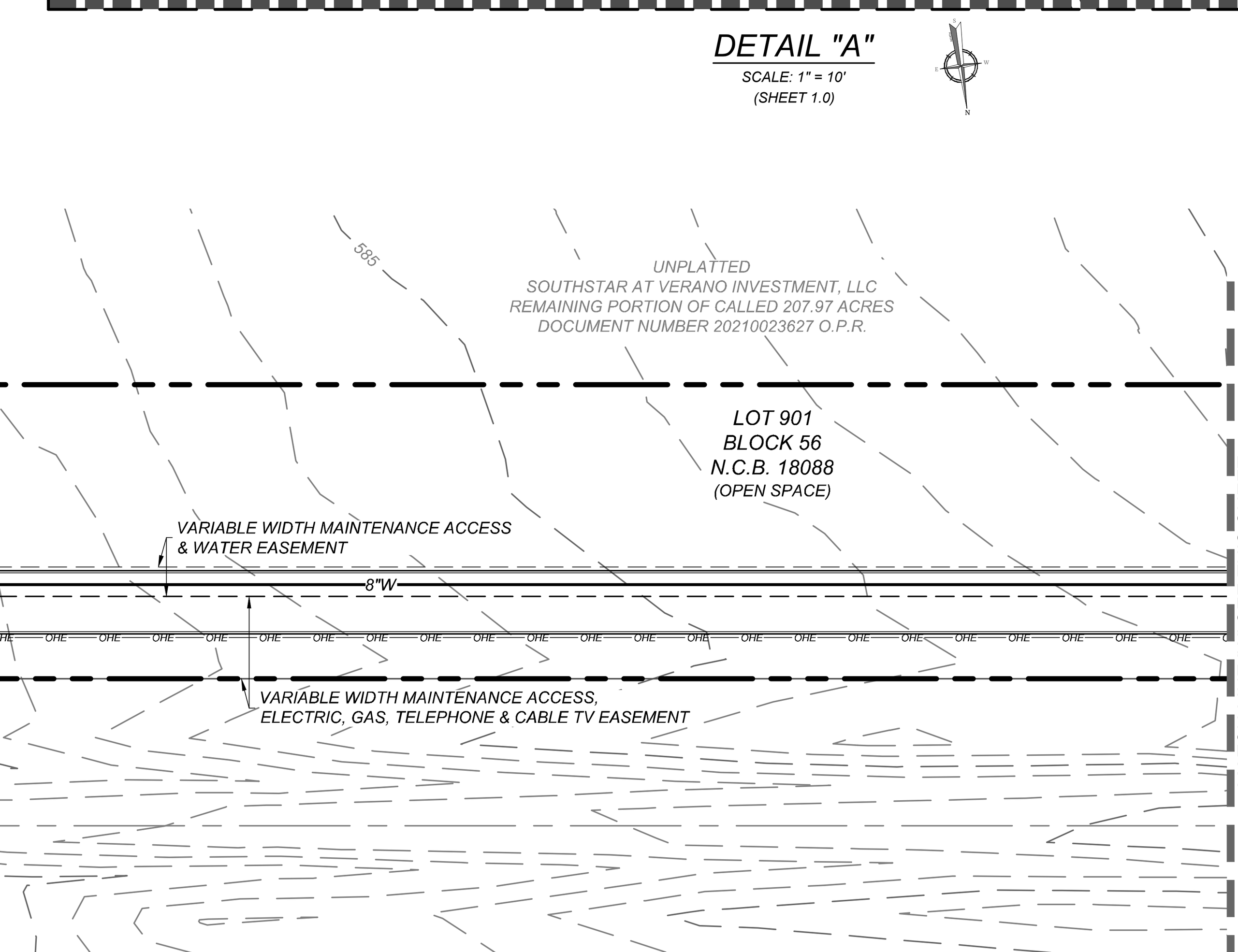


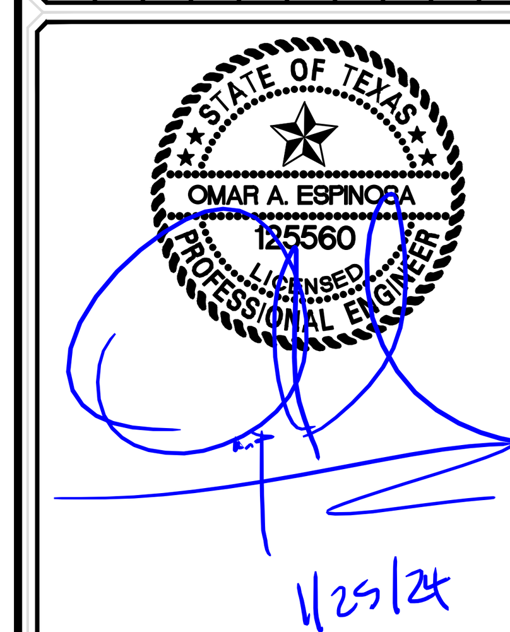




DETAIL "A"
SCALE: 1" = 10'
(SHEET 1.0)







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REV	DATE	DRAWN BY	DESCRIPTION

PRELIMINARY

FOR

VIDA SAN ANTONIO LIFT STATION PLAT# 23-11800297

SAN ANTONIO
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	OCT. 2023	EC	OE

PROJECT NUMBER:	DRAWING NAME:
391-10-19	OU3911015

SHEET TITLE:
OVERALL UTILITY PLAN (1 OF 2)

SHEET NUMBER:
1.0

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

TRENCH EXCAVATION SAFETY PROTECTION

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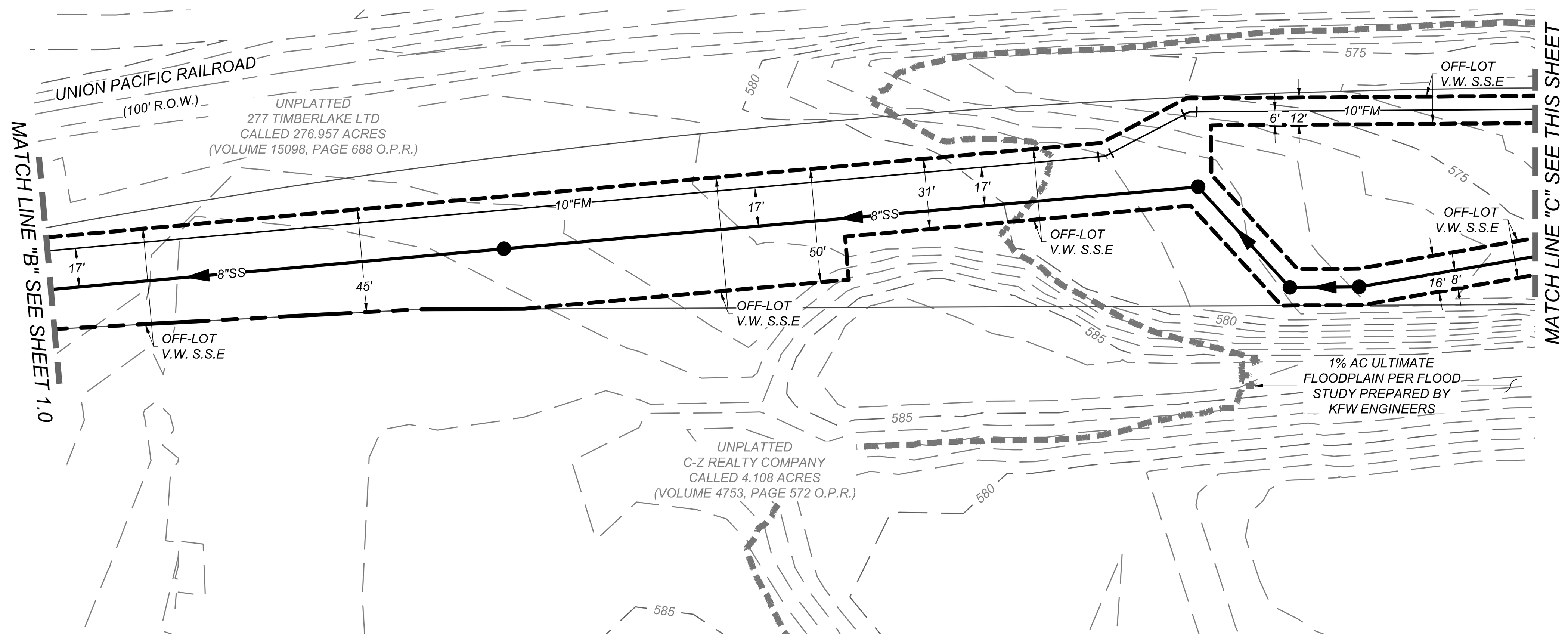
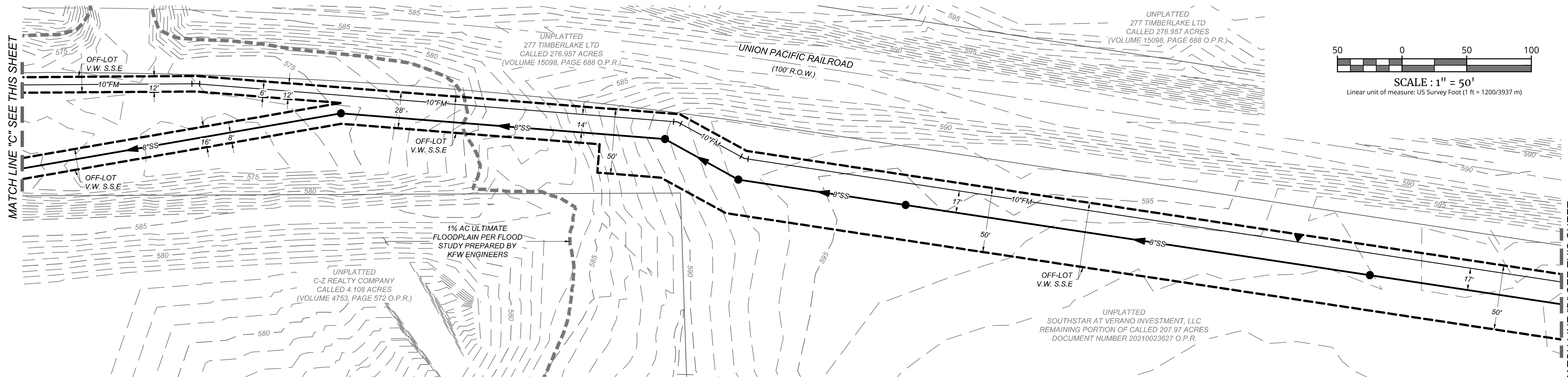
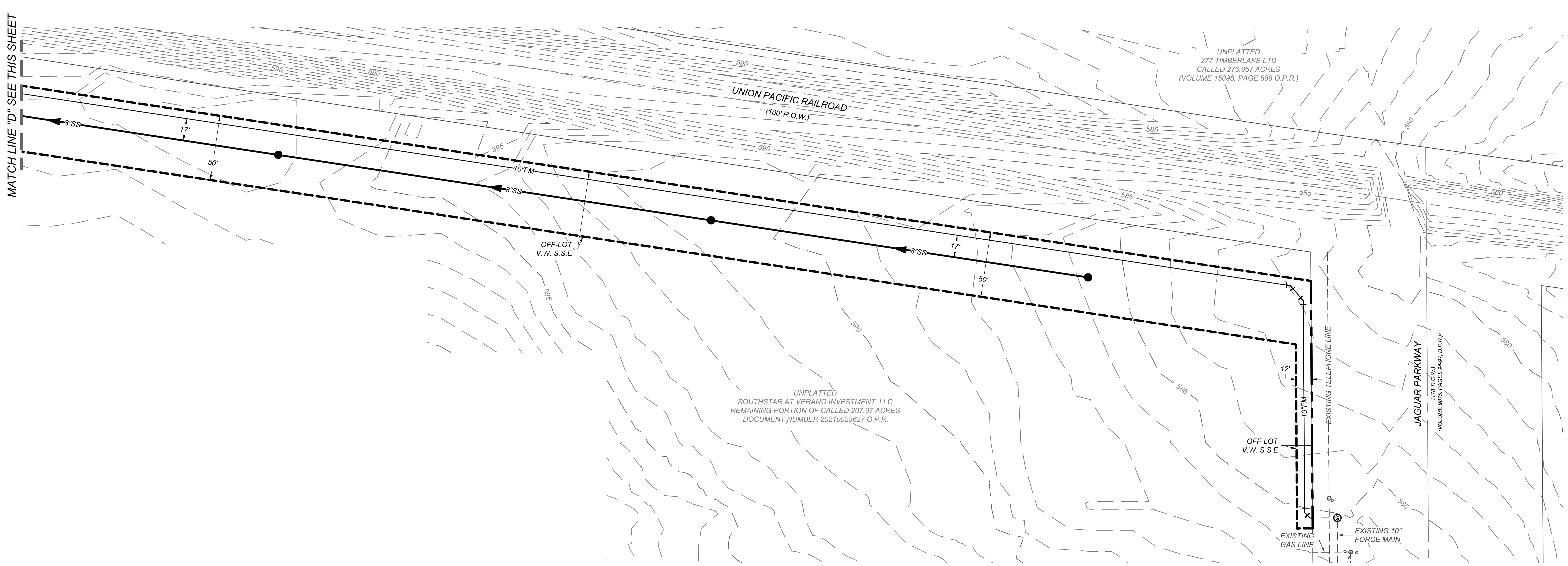
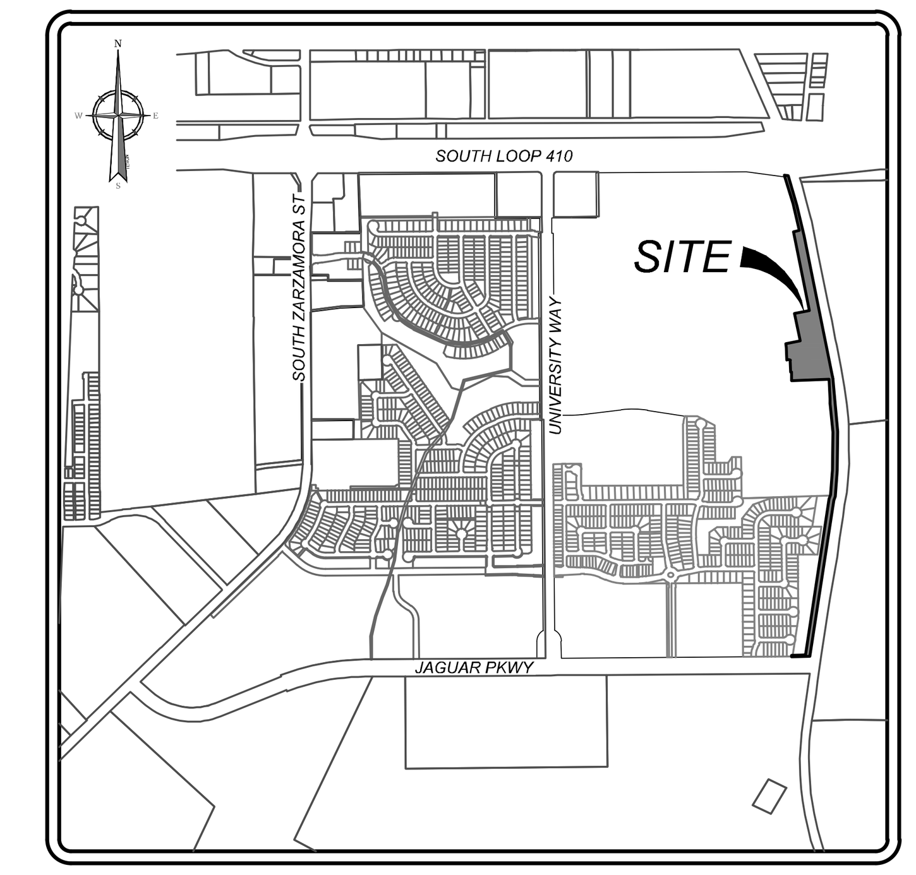






LEGEND

PROPOSED WATER MAIN	= W
PROPOSED WATER SERVICE & METER BOX	=
PROPOSED WATER 3/4" IRRIGATION SERVICE & METER BOX	= ¾IRR
PROPOSED FIRE HYDRANT	=
PROPOSED WATER VALVE	=
PROPOSED 100 WATT STREETLIGHT	=
PROPOSED 250 WATT STREETLIGHT	=
PROPOSED SANITARY SEWER MAIN	= SS
PROPOSED SANITARY SEWER MANHOLE	=
PROPOSED SANITARY SEWER LATERAL	= S
EXISTING WATER MAIN	= EW
EXISTING FIRE HYDRANT	=
EXISTING WATER VALVE	=
EXISTING SANITARY SEWER MAIN	= ESS
EXISTING SANITARY SEWER MANHOLE	= SS
EXISTING OVERHEAD ELECTRIC W/POWER POLE	= OHE OHE
EXISTING GUY WIRE/OVERHEAD ELECTRIC	= OHE
EXISTING STREET LIGHT	=



LOCATION MAP

N.T.S.

N E S W

50 0 50 100

SCALE : 1" = 50'

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

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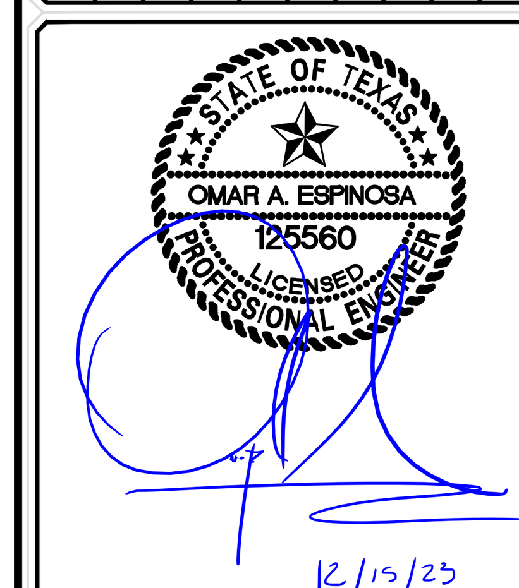


PRELIMINARY

FOR

VIDA SAN ANTONIO LIFT STATION PLAT# 23-11800297

SAN ANTONIO
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	OCT. 2023	EC	OE
PROJECT NUMBER: 391-10-19	DRAWING NAME: OU3911015		

SHEET TITLE:

OVERALL UTILITY PLAN (2 OF 2)

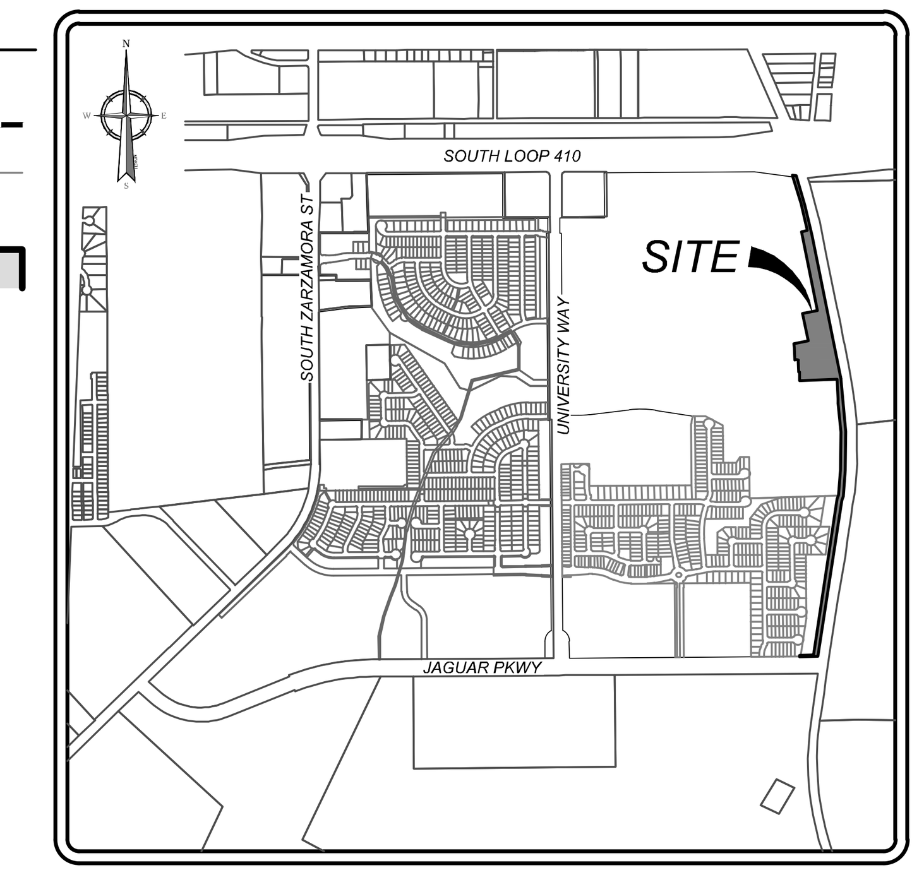
SHEET NUMBER:

1.1

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

LEGEND

STUDY POINT	=	(A)
DRAINAGE AREA BOUNDARY	=	dashed line
EXISTING CONTOURS	=	— 802 —
FLOW ARROW	=	arrow
PROPOSED UNIT	=	shaded dashed box



LOCATION MAP

N.T.S.

Proposed Conditions

STUDY POINT	AREA	(Acres)	C	T_{ovrl} (min)	T_{sc} (min)	T_{ch} (min)	T_{tot} (min)	I_5 (in/hr)	I_{25} (in/hr)	I_{100} (in/hr)	Q_5 (ft^3/s)	Q_{25} (ft^3/s)	Q_{100} (ft^3/s)
1	DA-1	0.34	0.41	15.00	0.00	0.00	15	5.24	7.24	9.03	0.73	1.01	1.26
	DA-2	13.08											
2	DA-1 + DA-2	13.42	0.41	20.00	7.00	0.00	27	3.88	5.32	6.60	21.35	29.27	36.31
3	DA-3	53.48	0.41	20.00	7.00	5.00	32	3.56	4.87	6.04	78.06	106.78	132.44
4	DA-4	11.11	0.41	20.00	7.00	0.00	27	3.88	5.32	6.60	17.67	24.23	30.06
5	DA-5	2.66	0.41	20.00	4.00	0.00	24	4.12	5.65	7.01	4.49	6.16	7.65
	DA-6	10.00											
6	DA-1 + DA-2 + DA-3 + DA-4 + DA-5 + DA-6	90.67	0.42	20.00	7.00	7.00	34	3.45	4.72	5.86	131.38	179.74	223.16

200 0 200 400

SCALE : 1" = 200'

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

1/25/24

PRELIMINARY

FOR

VIDA SAN ANTONIO LIFT STATION PLAT# 23-11800297

SAN ANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
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TBPE Firm#: F-14909
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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	OCT. 2023	EC	OE

PROJECT NUMBER: 391-10-19

DRAWING NAME: MD3911015 - INTERIM CONDITIONS

SHEET TITLE: MASTER DRAINAGE PLAN

SHEET NUMBER: 2.0

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

LEGEND

G.E.T.TV.E. = GAS, ELECTRIC, TELEPHONE & CABLE EASEMENT

→ = FLOW ARROW

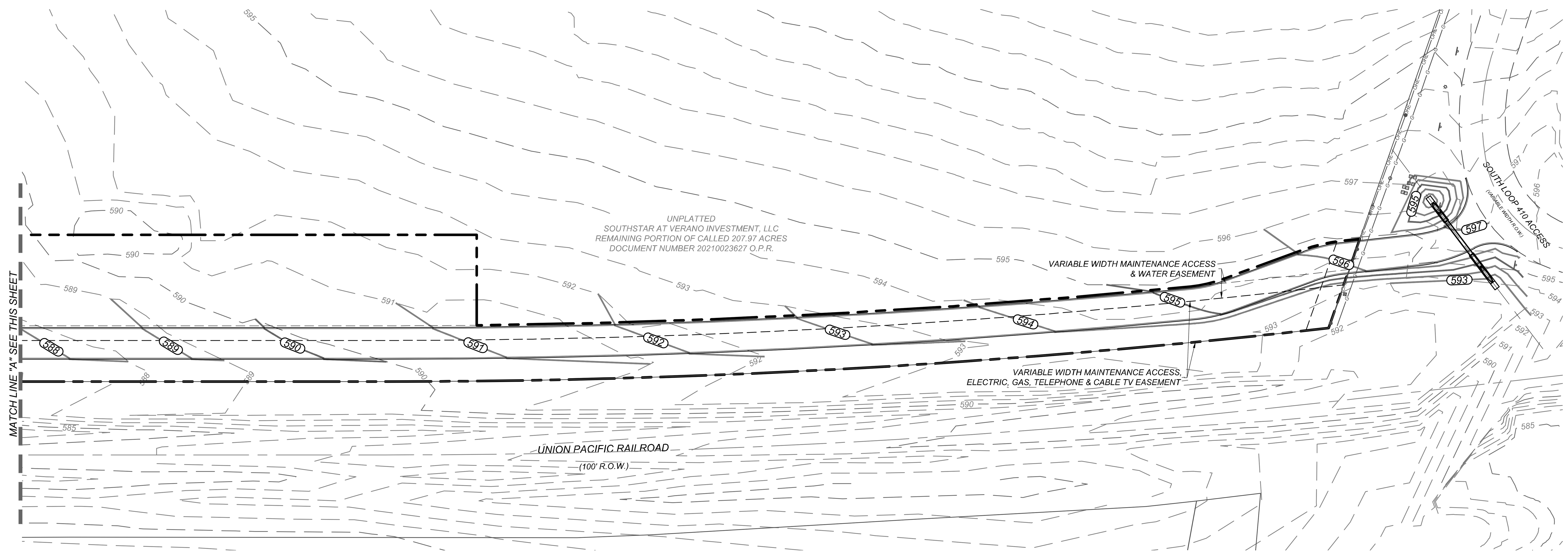
(A) = LOT GRADE TYPE

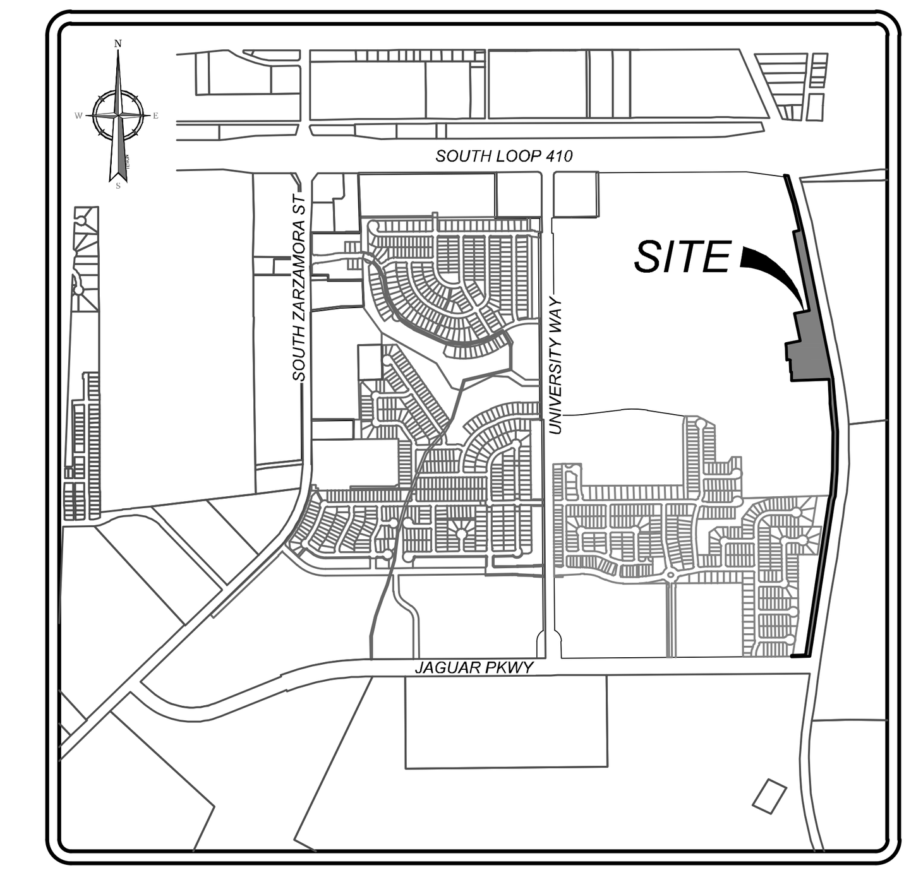
[hatched] = PROPOSED DRIVEWAY LOCATION

H.P. = HIGH POINT

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.



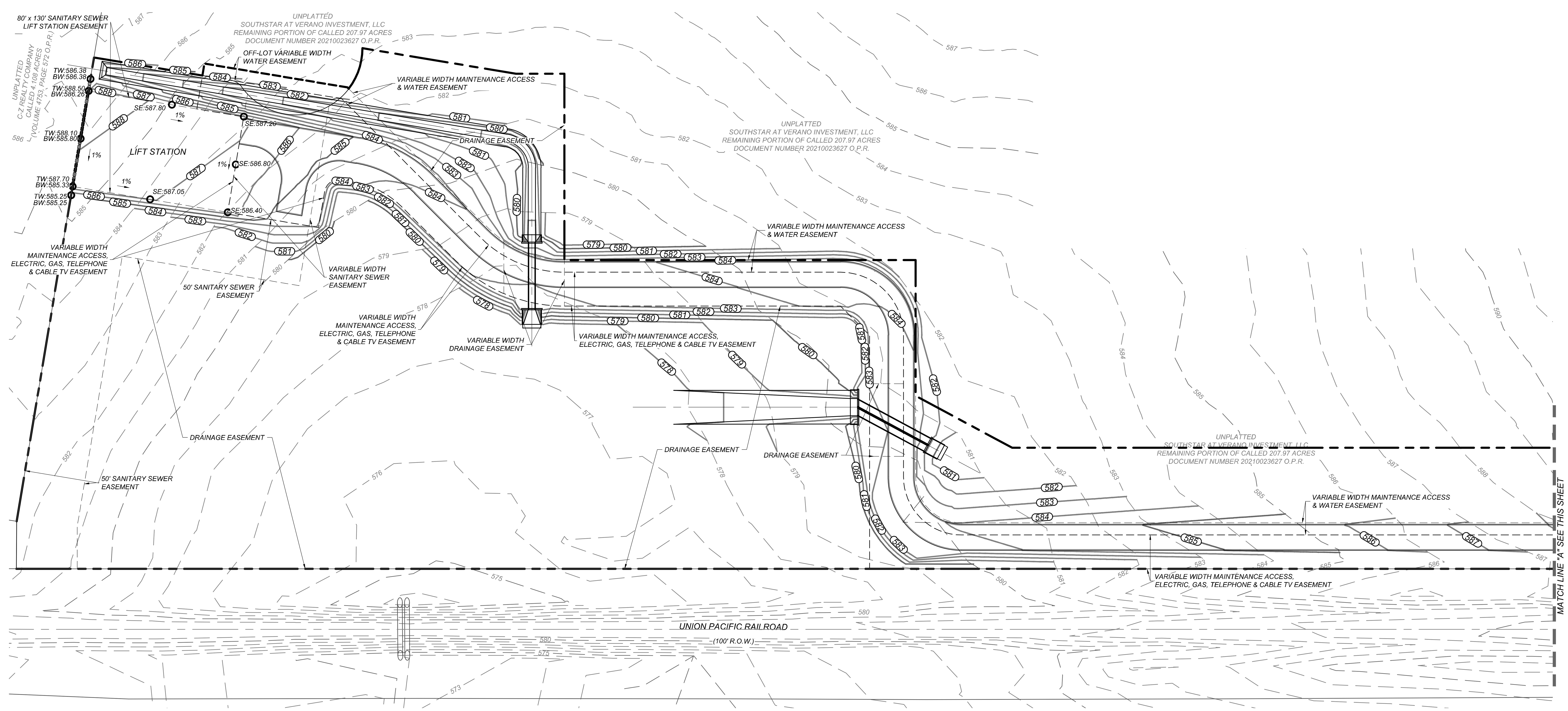


LOCATION MAP

N.T.S.

SCALE : 1" = 50'

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



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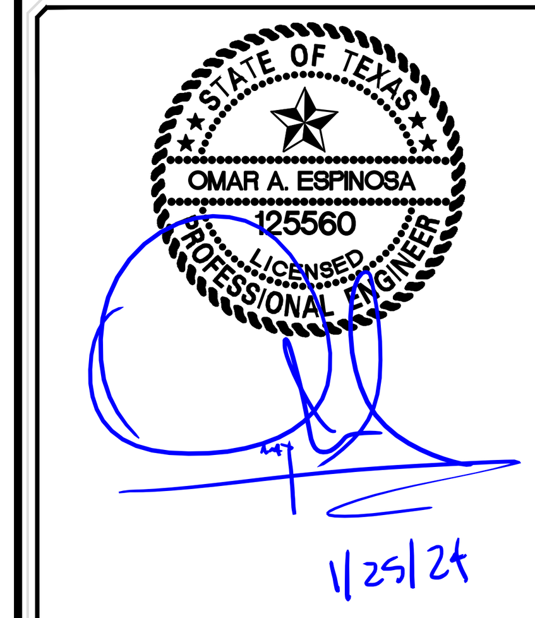

PRELIMINARY

FOR

VIDA SAN ANTONIO
LIFT STATION
PLAT# 23-11800297

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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	OCT. 2023	EC	OE

PROJECT NUMBER:	DRAWING NAME:
391-10-19	GR3911015

SHEET TITLE: OVERALL GRADING PLAN

SHEET NUMBER: 3.0

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

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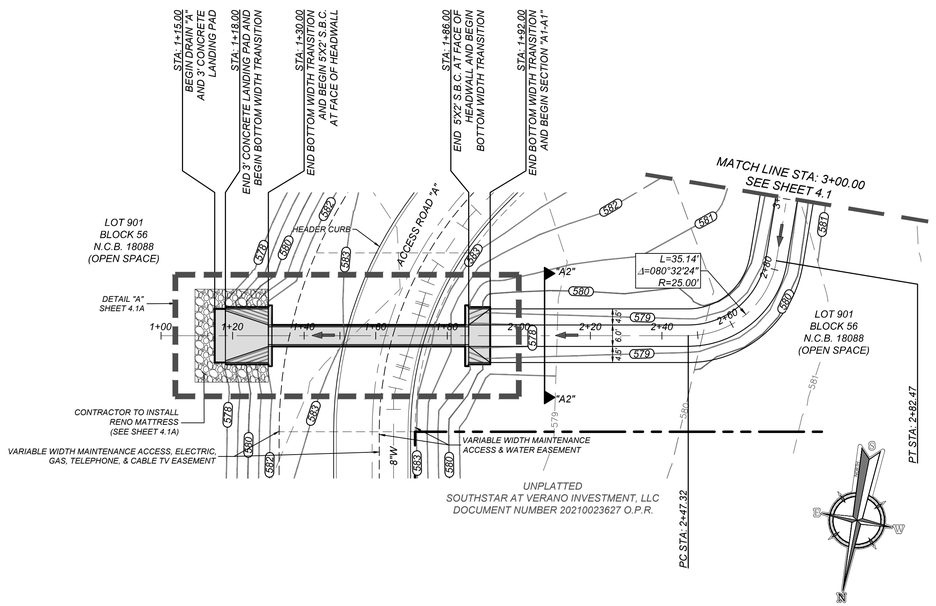
CAUTION!!:

THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL 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.

NOTE:

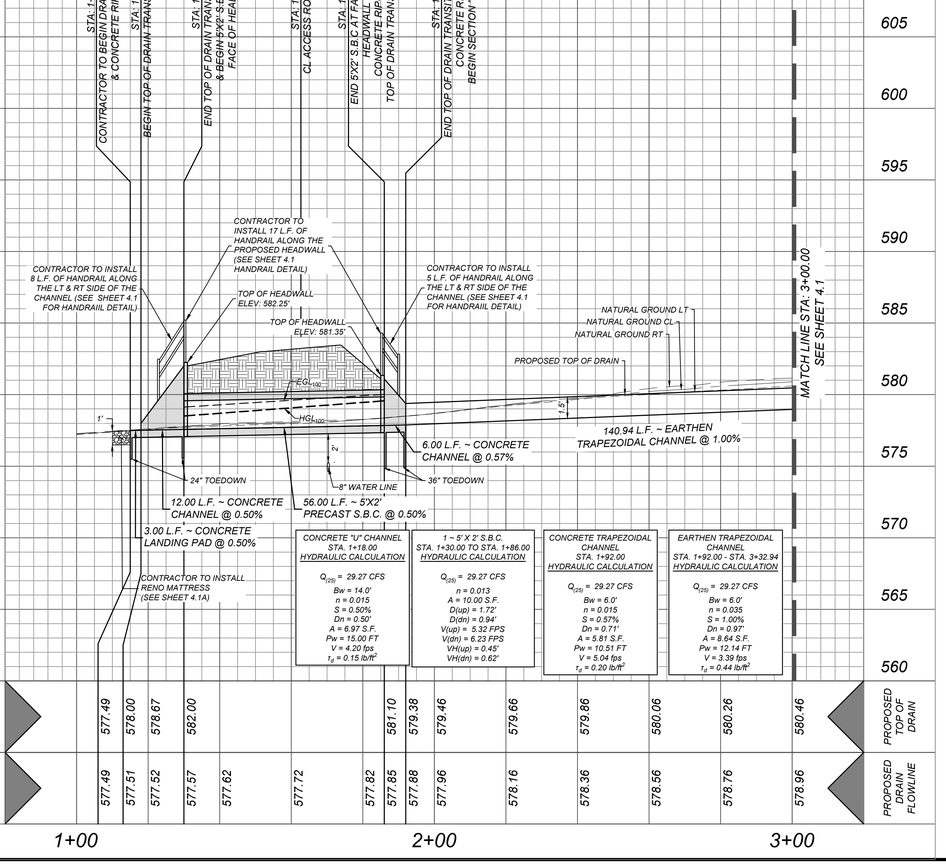
1. ALL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.

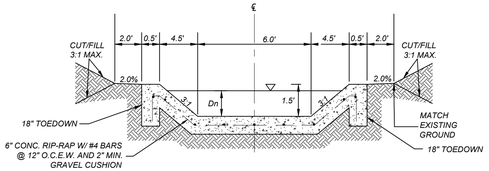
2. ANY DISTURBED AREAS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE DISTURBED SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE CITY OF SAN ANTONIO WILL ACCEPT.



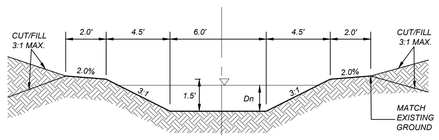
INTERCEPTOR DRAIN "A"
STA: 1+00.00 - 3+00.00

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

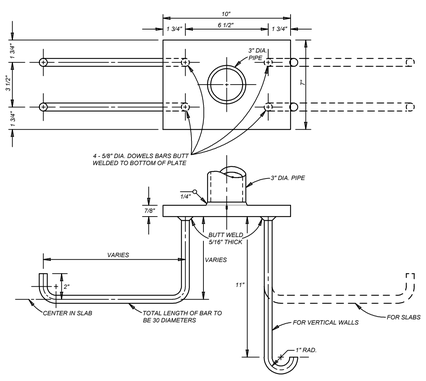




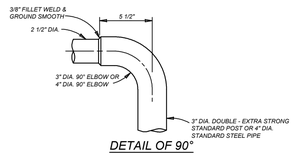
DRAIN SECTION "A1-A1"
STA.1+92.00
N.T.S.



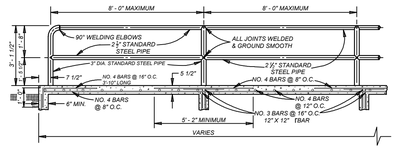
SECTION "A2-A2"
STA. 1+92.00 - STA. 6+17.31
N.T.S.



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.

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PROTECT YOURSELF
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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
12/15/23

PRELIMINARY

FOR

VIDA SAN ANTONIO LIFT STATION
PLAT# 23-11800297

SAN ANTONIO
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	OCT, 2023	EC	OE

PROJECT NUMBER: 391-10-19
DRAWING NAME: DRP391015_A

SHEET TITLE: DRAIN "A" PLAN & PROFILE (1 OF 2)

SHEET NUMBER: 4.0

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

M:\Drawings\DRP391015_A.dwg\4.0 By: SCHAVEZ

TRENCH EXCAVATION SAFETY PROTECTION

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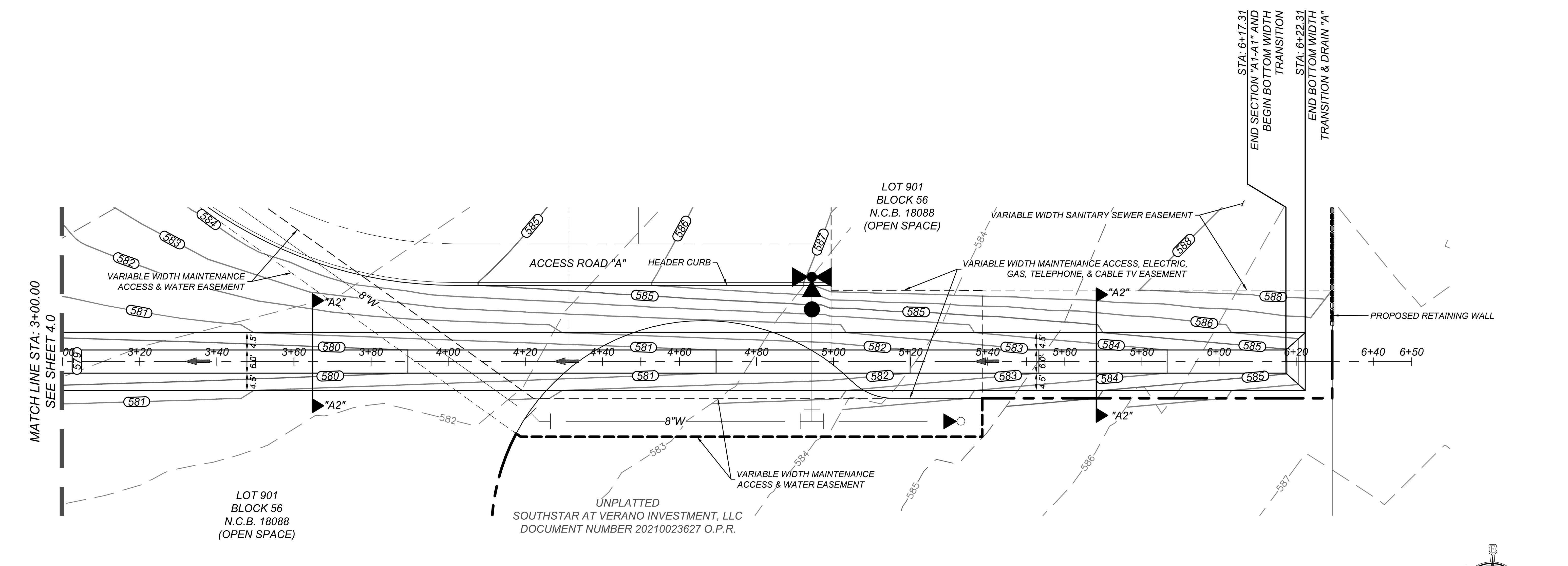
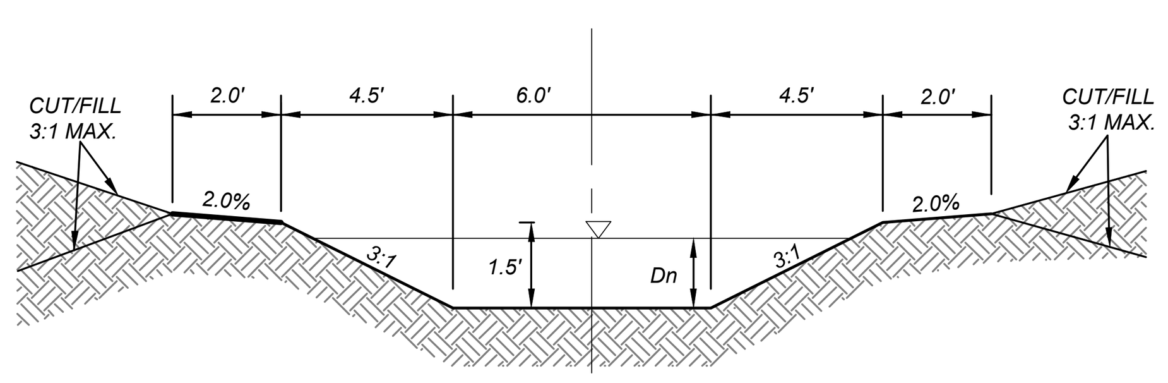


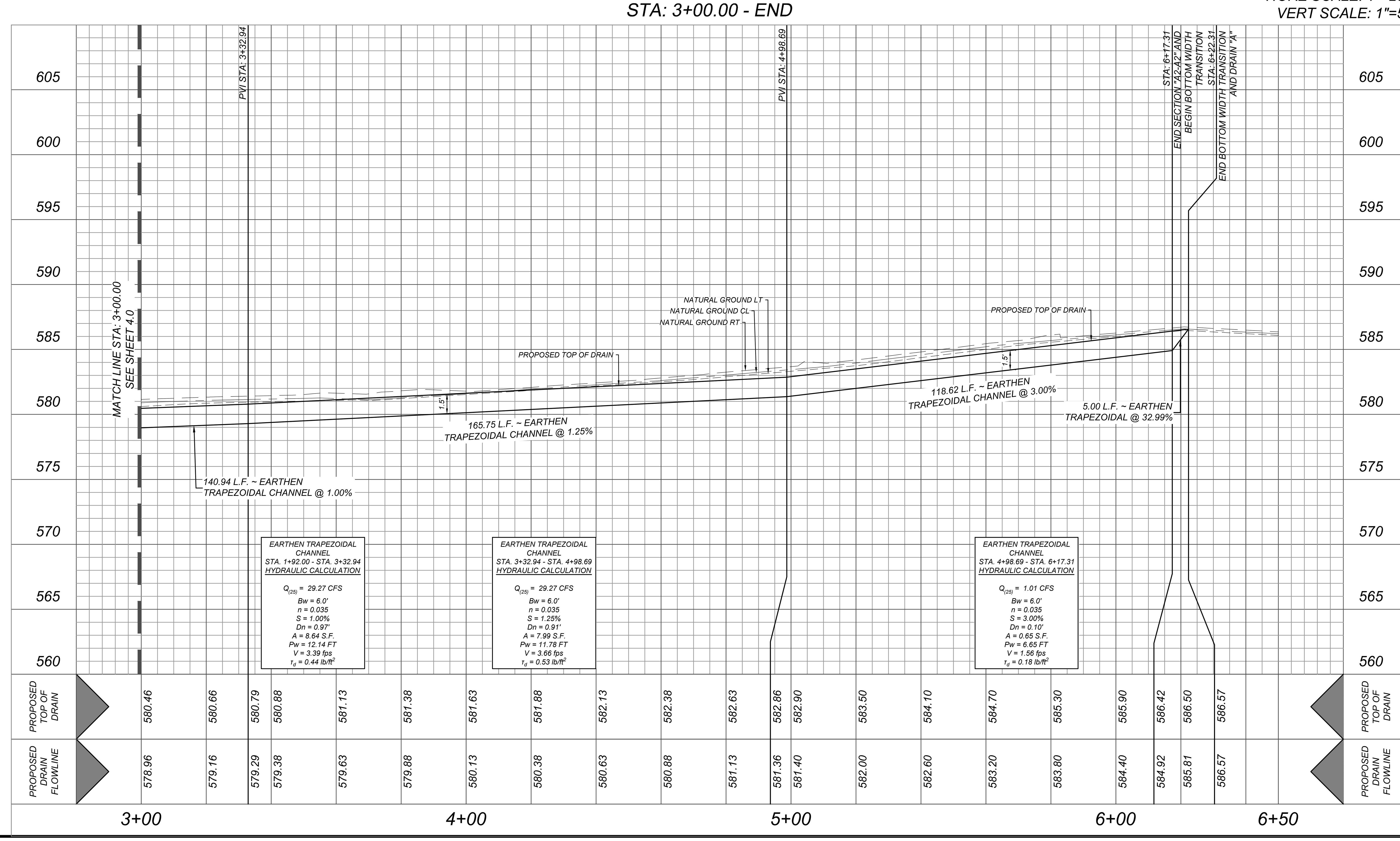


SECTION "A2-A2"
STA. 1+92.00 - STA. 6+17.31
N.T.S.

INTERCEPTOR DRAIN "A"

STA: 3+00.00 - END

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



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PRELIMINARY

FOR

VIDA SAN ANTONIO LIFT STATION PLAT# 23-11800297

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TEXAS

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TBPE Firm#: F-14909
TBPLS Firm#: 10194550

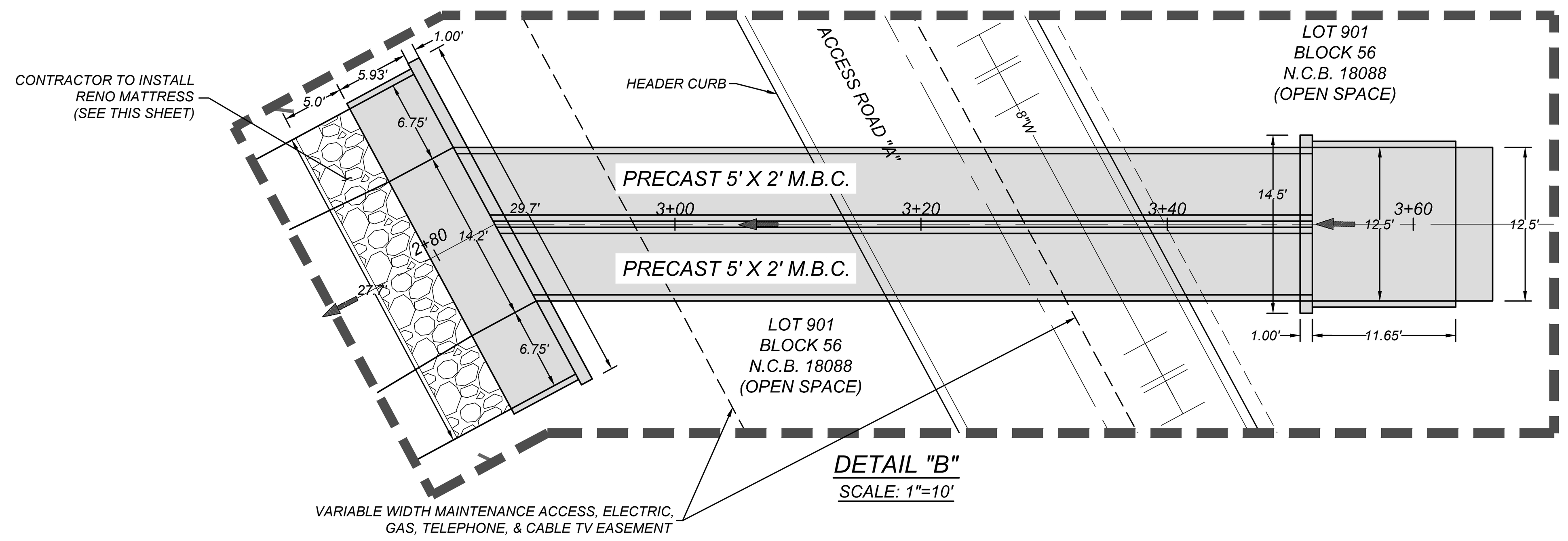
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	OCT. 2023	EC	OE

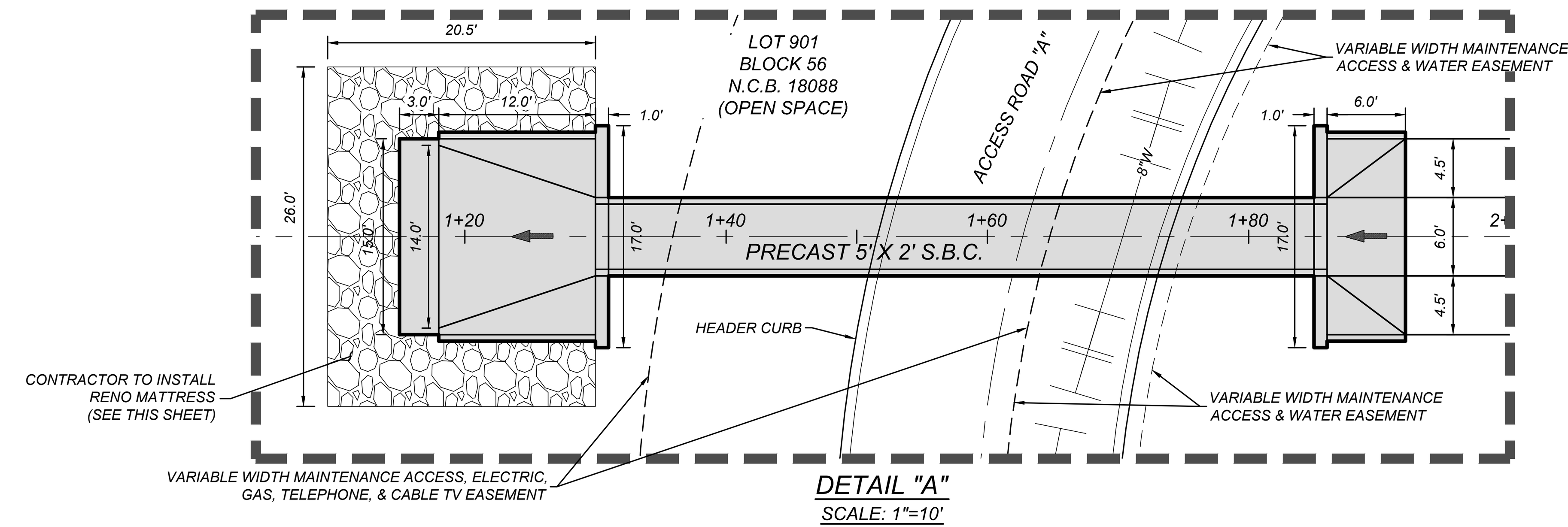
PROJECT NUMBER:	DRAWING NAME:
391-10-19	DRPP391015_A

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

SHEET NUMBER:
4.1

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.





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.

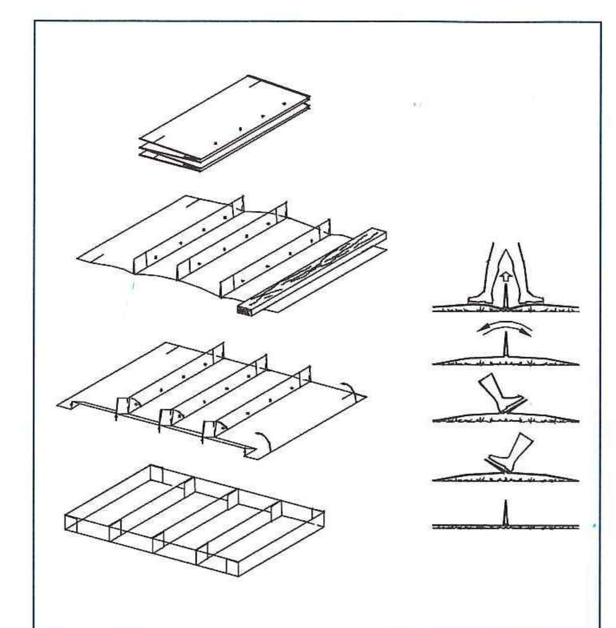


Figure 1

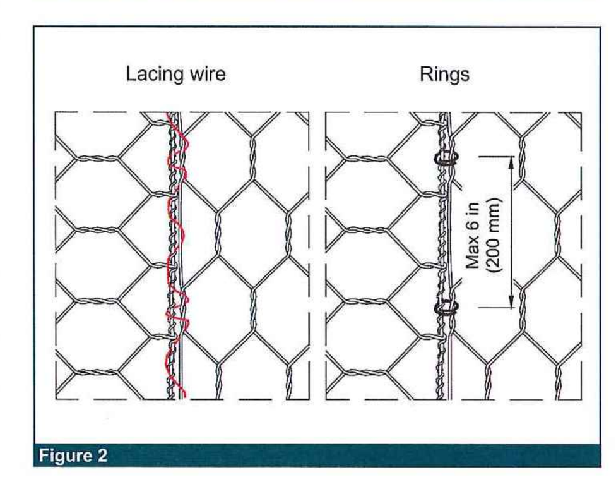


Figure 2

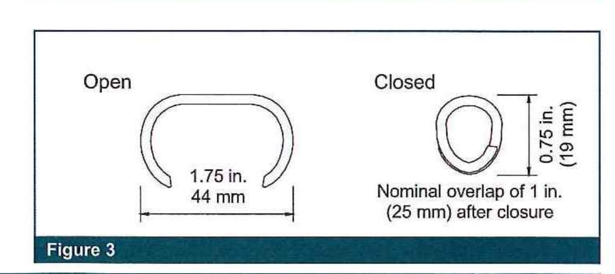


Figure 3

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.

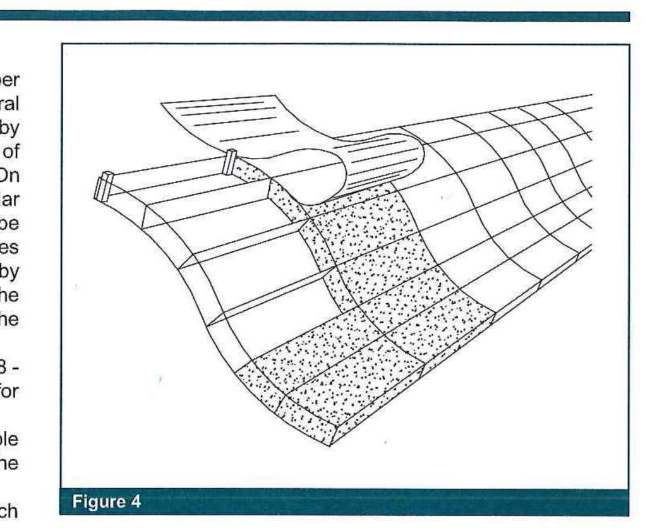


Figure 4

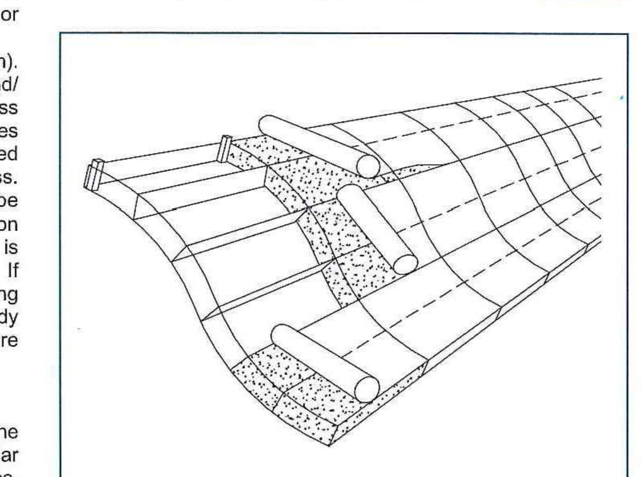


Figure 5

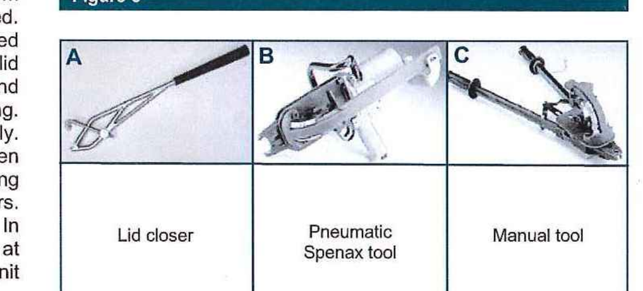


Figure 6

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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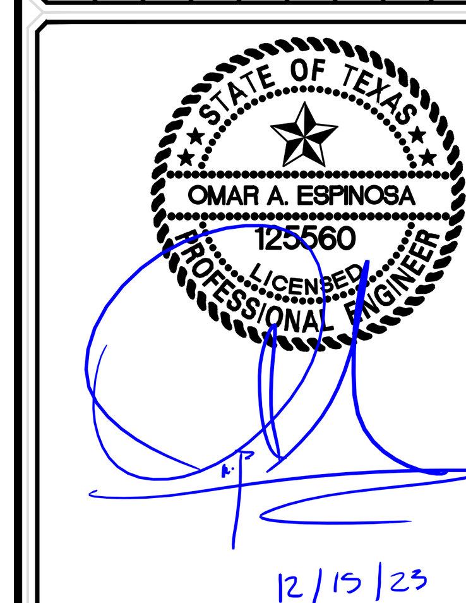

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AS SHOWN	OCT. 2023	EC	OE
PROJECT NUMBER: 391-10-19	DRAWING NAME: DRPP391015_A		

SHEET TITLE:
DRAIN "A" & "B" DETAILS

SHEET NUMBER:
4.1A

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

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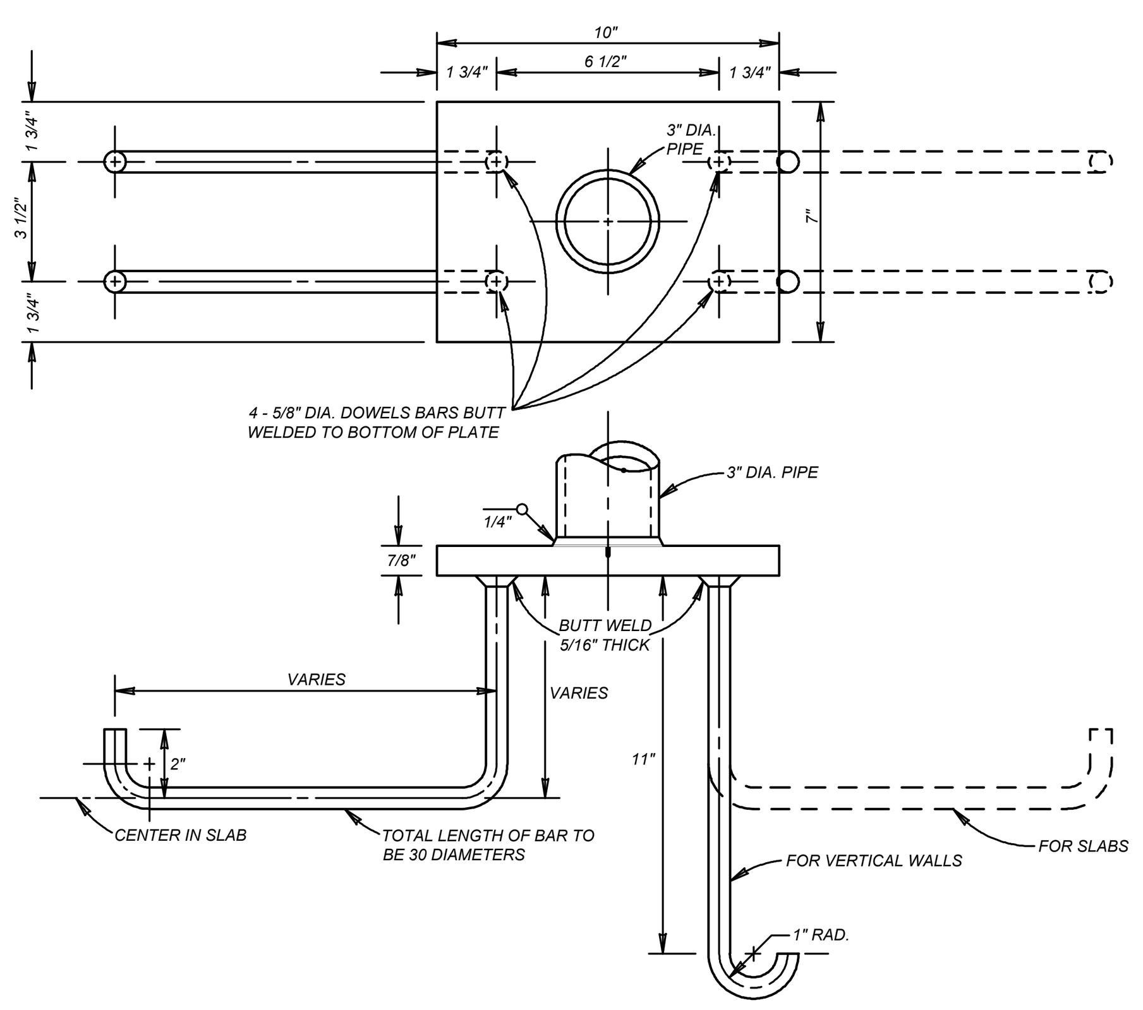
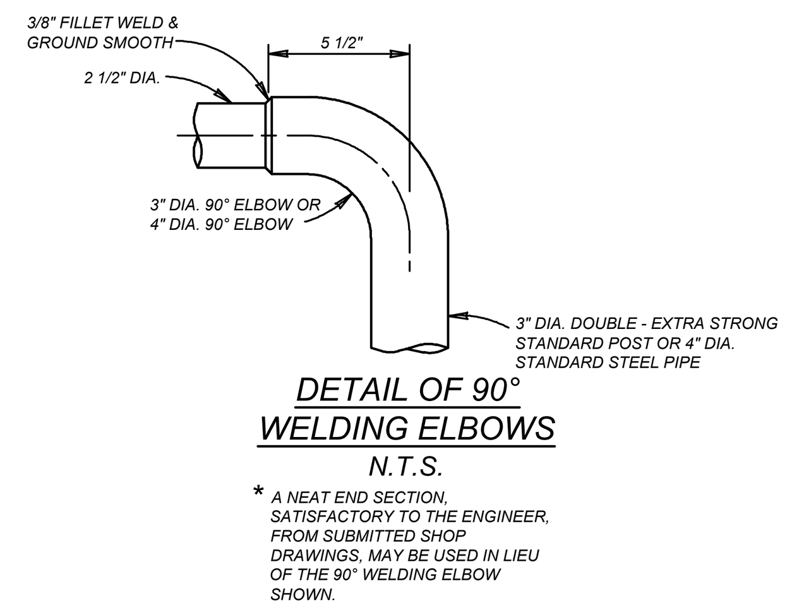


PIPE ANCHORAGE DETAILS

N.T.S.



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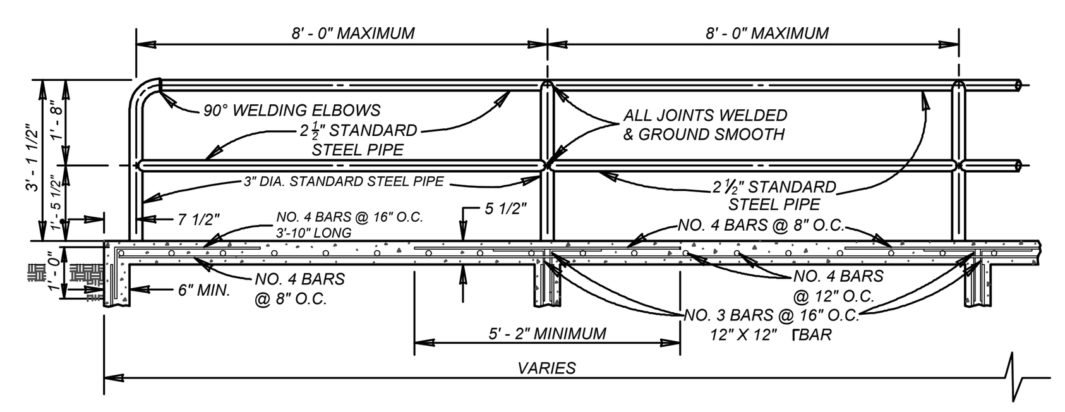

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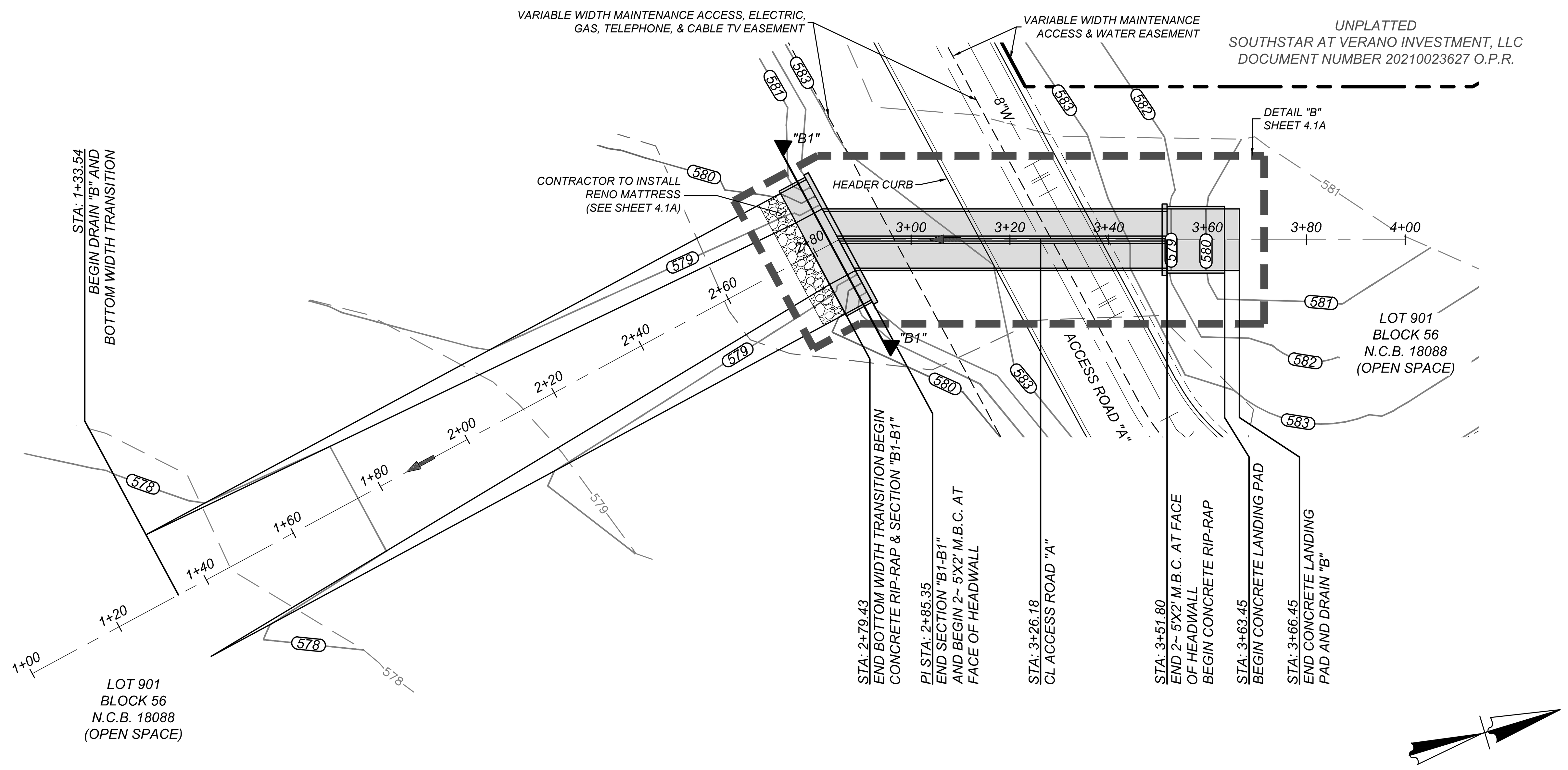
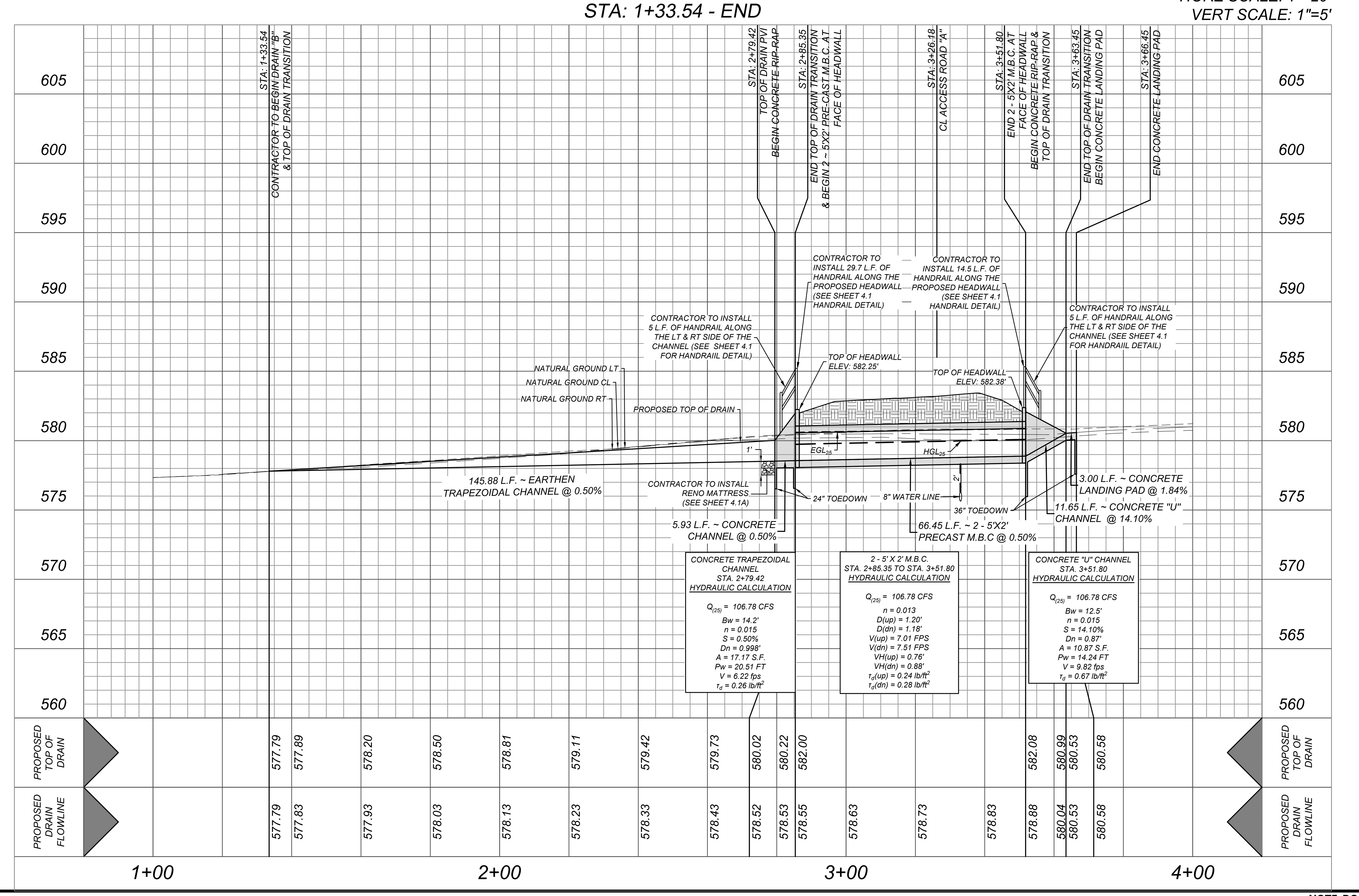


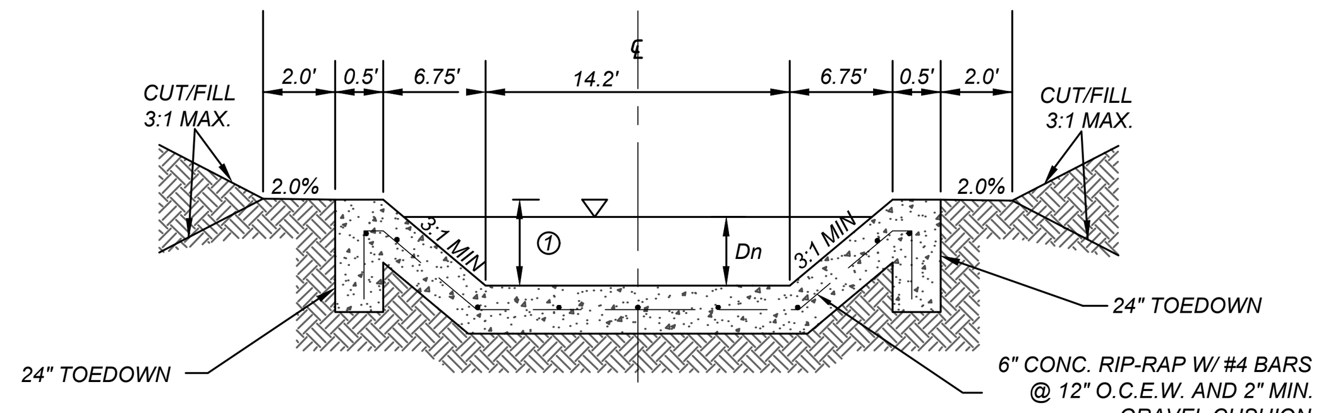
DRAIN "B"

STA: 1+33.54 - END

HORZ SCALE: 1"=20'

VERT SCALE: 1"=5'



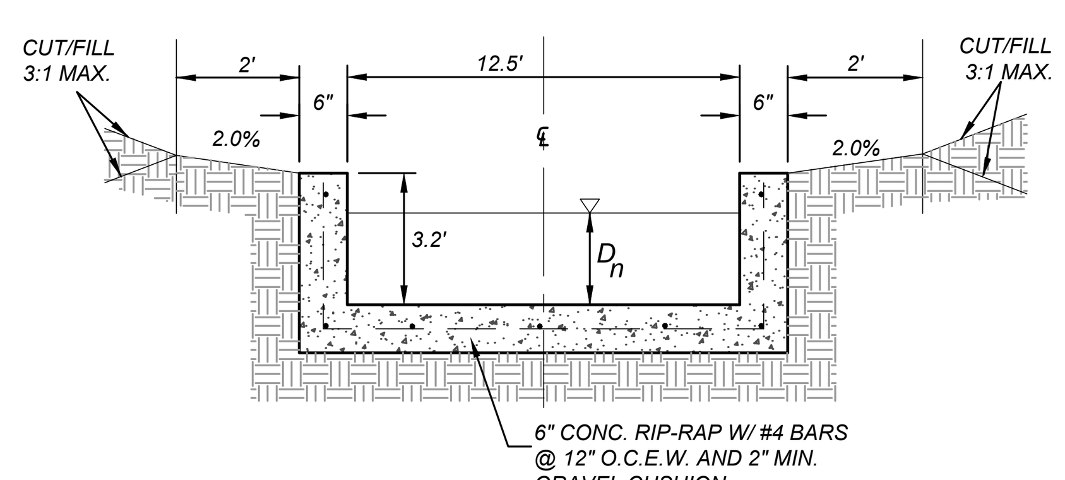


SECTION "B1-B1"

STA. 2+79.42 - 2+85.35

N.T.S.

① MAX: 3.45'
MIN: 1.5'



SECTION "B2-B2"

STA: 3+51.80

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PROJECT NUMBER: 391-10-19	DRAWING NAME: DRPP391015_BC		

SHEET TITLE:
DRAIN "B" PLAN & PROFILE

SHEET NUMBER:
4.2

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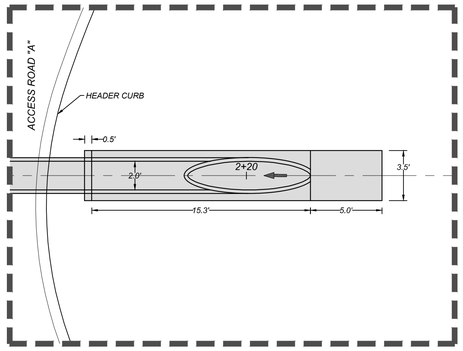
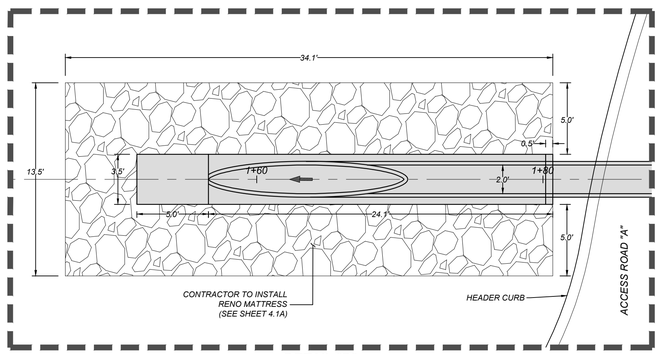
1. ALL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.

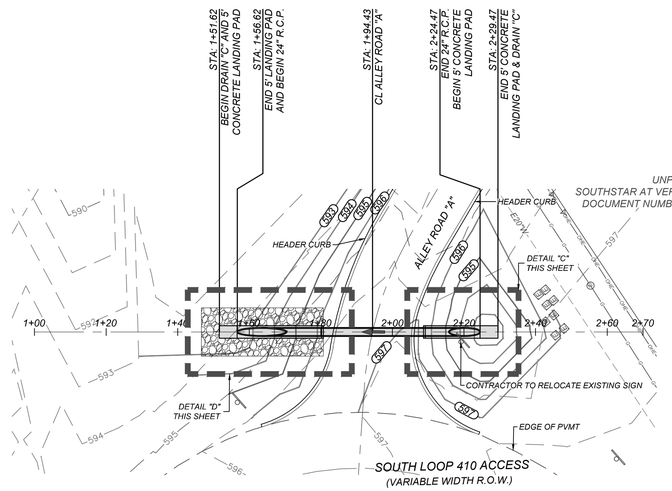
2. ANY DISTURBED AREAS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE DISTURBED SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE BEXAR COUNTY WILL ACCEPT.



DETAIL "C"
SCALE: 1"=5'

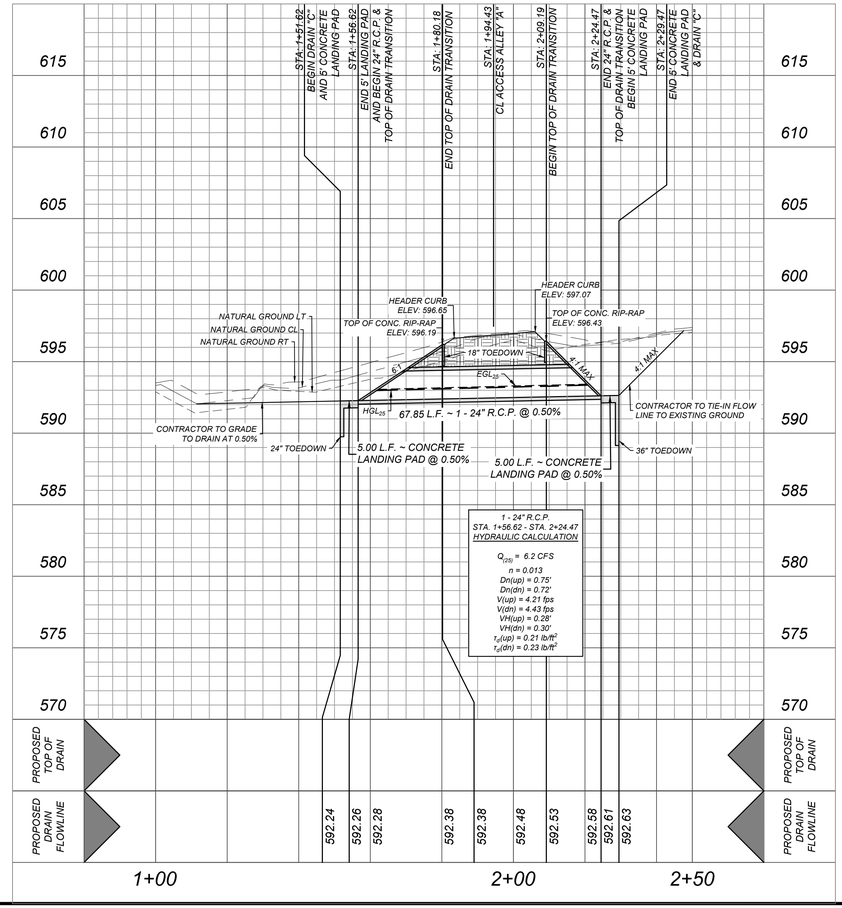


DETAIL "D"
SCALE: 1"=5'



DRAIN "C"
STA: 1+51.62 - 2+29.47

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



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STATE OF TEXAS
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11/25/24

PRELIMINARY

FOR

VIDA SAN ANTONIO LIFT STATION
PLAT# 23-11800297

SAN ANTONIO
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	OCT. 2023	EC	OE

PROJECT NUMBER: 391-10-19
DRAWING NAME: DRPP391015_BC

SHEET TITLE: DRAIN "C" PLAN & PROFILE

SHEET NUMBER: 4.3

M:\Drawn\DRPP391015 BC.dwg4.3 By: SCHAVEZ

TABLE OF DIMENSIONS AND REINFORCING STEEL
(Wings for one structure end)

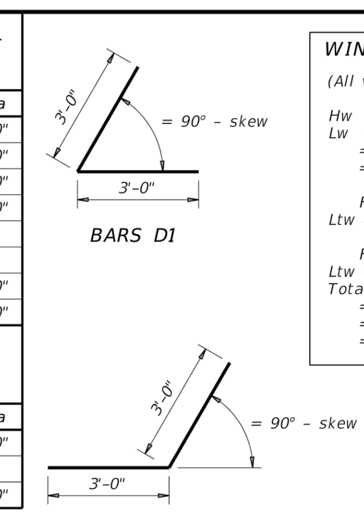
Maximum Wingwall Height Hw	W	X	Y	Z	Bars J1 Size	Bars J1 Spa	Bars J2 Size	Bars J2 Spa	Estimated Quantities per ft of wing (2~wings) (4) Reinf Lb/Ft)	Conc (CY/Ft)	Estimated Quantities per ft of Toewall (1~toewall) Reinf (Lb/Ft)	Conc (CY/Ft)
2'-6"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	48.64	0.406	6.85	0.071
2'-9"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	49.31	0.424	6.85	0.071
3'-0"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	49.98	0.444	6.85	0.071
3'-3"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	53.32	0.462	6.85	0.071
3'-6"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	53.98	0.480	6.85	0.071
4'-0"	3'-2"	1'-2"	1'-0"	7"	#4	1'-0"	#4	1'-0"	55.77	0.532	6.85	0.071
4'-6"	3'-2"	1'-2"	1'-0"	7"	#4	1'-0"	#4	1'-0"	59.77	0.568	6.85	0.071
5'-0"	3'-9"	1'-7"	1'-2"	7"	#4	1'-0"	#4	1'-0"	63.45	0.632	6.96	0.075
5'-6"	3'-9"	1'-7"	1'-2"	7"	#4	1'-0"	#4	1'-0"	67.46	0.668	6.96	0.075
6'-0"	4'-4"	2'-0"	1'-4"	7"	#5	1'-0"	#5	1'-0"	80.67	0.730	7.07	0.078
6'-6"	4'-4"	2'-0"	1'-4"	7"	#5	1'-0"	#5	1'-0"	85.05	0.768	7.07	0.078
7'-0"	5'-0"	2'-3"	1'-9"	8"	#5	1'-0"	#5	1'-0"	92.15	0.864	8.07	0.093
7'-6"	5'-0"	2'-3"	1'-9"	8"	#5	1'-0"	#5	1'-0"	96.54	0.902	8.07	0.093
8'-0"	5'-6"	2'-8"	1'-10"	8"	#5	6"	#5	6"	139.04	0.962	8.13	0.095
8'-6"	5'-6"	2'-8"	1'-10"	8"	#5	6"	#5	6"	144.47	1.000	8.13	0.095
9'-6"	6'-0"	2'-10"	2'-2"	9"	#5	6"	#5	6"	156.93	1.136	8.41	0.110
10'-6"	6'-5"	3'-0"	2'-5"	9"	#6	6"	#5	6"	196.27	1.234	8.57	0.117
11'-6"	7'-2"	3'-6"	2'-8"	11"	#6	6"	#6	6"	230.13	1.438	9.52	0.140
12'-6"	7'-8"	3'-9"	2'-11"	1'-0"	#7	6"	#6	6"	283.41	1.592	9.74	0.157
13'-6"	8'-2"	4'-0"	3'-2"	1'-2"	#8	6"	#6	6"	348.72	1.804	10.02	0.186
14'-6"	8'-10"	4'-5"	3'-5"	1'-4"	#9	6"	#6	6"	432.94	2.046	10.30	0.218
15'-6"	9'-6"	4'-10"	3'-8"	1'-6"	#9	6"	#7	6"	489.52	2.302	11.24	0.253
16'-0"	9'-11"	5'-0"	3'-11"	1'-7"	#9	6"	#7	6"	505.72	2.448	11.47	0.279

TABLE OF WINGWALL REINFORCING
(2~wings)

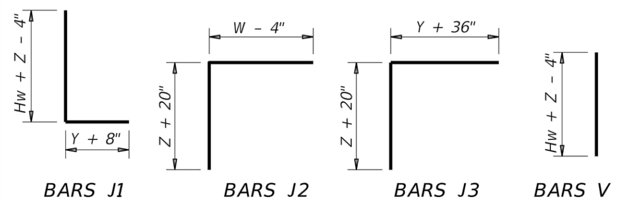
Bar	Size	No.	Spa
D1	#6	~	1'-0"
D2	#6	~	1'-0"
E1	#4	~	1'-0"
F	#4	~	1'-0"
G	#6	~	8"
M1	#4	4	~
P	#4	~	1'-0"
V	#4	~	1'-0"

TABLE OF TOEWALL REINFORCING

Bar	Size	No.	Spa
J3	#4	~	1'-0"
M2	#4	2	~
E2	#4	~	1'-0"



BARS D1 — BARS D2



BARS J1 — BARS J2 — BARS J3 — BARS V

WING DIMENSION FORMULAS:

(All values are in feet.)

Hw = H + T + C
Lw = (Hw) (SL) ÷ cosine (θ) for Type PW-1
= (Hw - 1') (SL) ÷ cosine (θ) for Type PW-2 and Hw ≥ 4'
= (Hw - 0.5') (SL) ÷ cosine (θ) for Type PW-2 and Hw < 4'

For cast-in-place culverts:
Ltw = [(N) (S) + (N + 1) (U)] ÷ cosine (θ)

For precast culverts:
Ltw = [(N) (2 U + S) + (N - 1) (0.5')] ÷ cosine (θ)
Total Wingwall Area (two wings ~ SF)
= (2)(Hw)(Lw) for Type PW-1
= (2)(Hw)(Lw) - 6 SF for Type PW-2 and Hw ≥ 4'
= (2)(Hw)(Lw) - 1.5 SF for Type PW-2 and Hw < 4'

Hw = Height of wingwall
Lw = Length of wingwall
Ltw = Culvert toewall length
N = Number of culvert spans
SL:1 = Channel slope ratio. (horizontal: 1 vertical, usual value is 2:1)
θ = Culvert skew

See applicable box culvert standard sheet for S, H, T, and U values.

(1) Skew = 0°

(2) At discharge end, chamfer may be ¾" minimum.

(3) For 15° skew ~ 1"
For 30° skew ~ 2"
For 45° skew ~ 3"

(4) Quantities shown are for two Type PW-1 wings. Adjust concrete volume for Type PW-2 wings. To determine estimated quantities for two wings, multiply the tabulated values by Lw. Quantities shown do not include weight of Bars D.

(5) Provide weepholes for Hw = 5'-0" and greater. Fill around weepholes with coarse gravel.

(6) Extend Bars E2 1'-6" minimum into the wingwall footing.

(7) Lap Bars M1 1'-6" minimum with Bars M2.

(8) Place Bars G as shown, equally spaced at 8" maximum. Provide at least two pairs of Bars G per wing.

(9) 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian 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-CM) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.

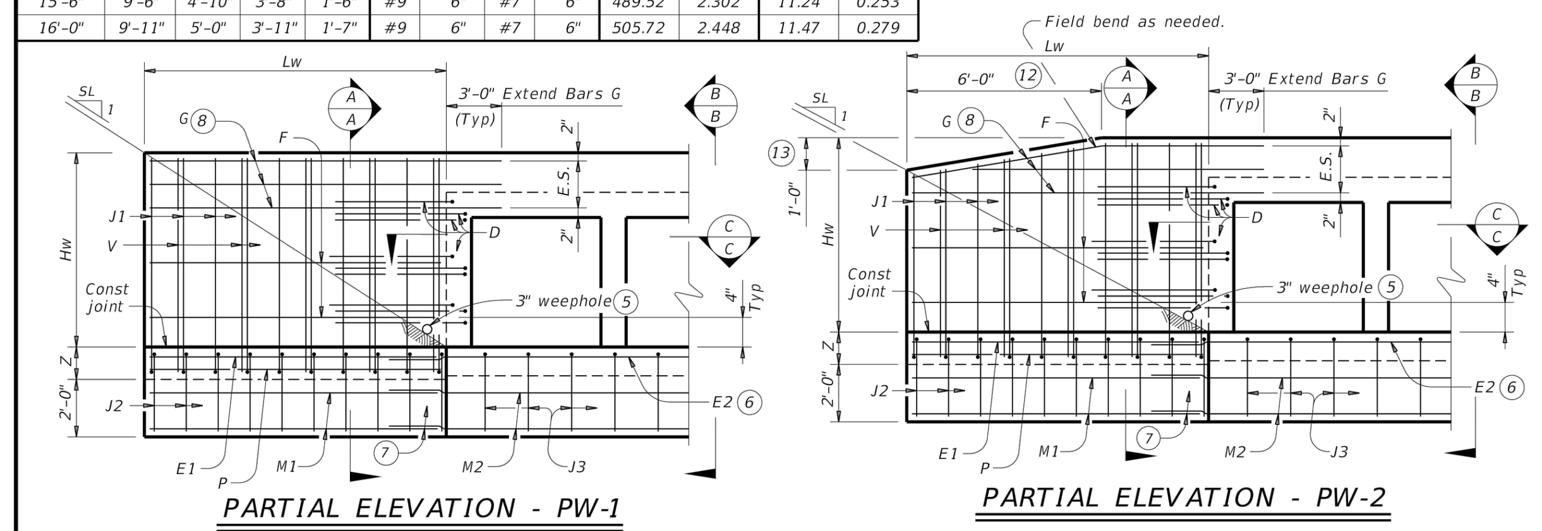
(10) For vehicle safety, the following requirements must be met:
- For structures without bridge rail, construct curbs no more than 3" above finished grade.
- For structures with bridge rail, construct curbs flush with finished grade.

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.

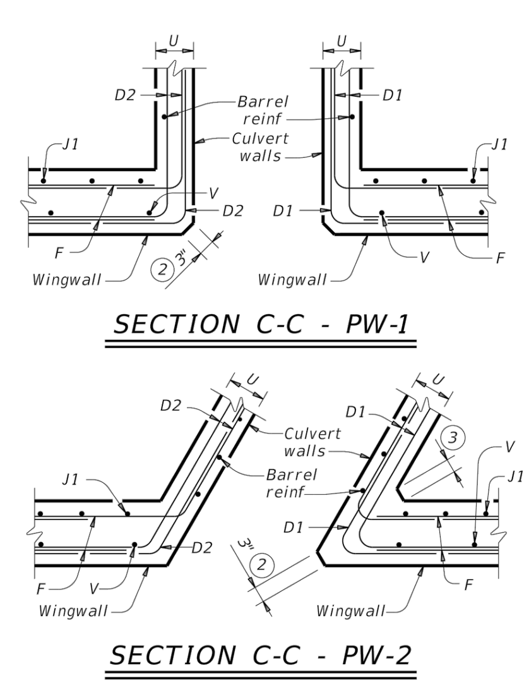
(11) 1'-0" typical. 2'-3" when the Box Culvert Rail Mounting Details (RAC) standard sheet is referred to elsewhere in the plans.

(12) 3'-0" for Hw < 4'.

(13) 6" for Hw < 4'.



PARTIAL ELEVATION - PW-1 — PARTIAL ELEVATION - PW-2



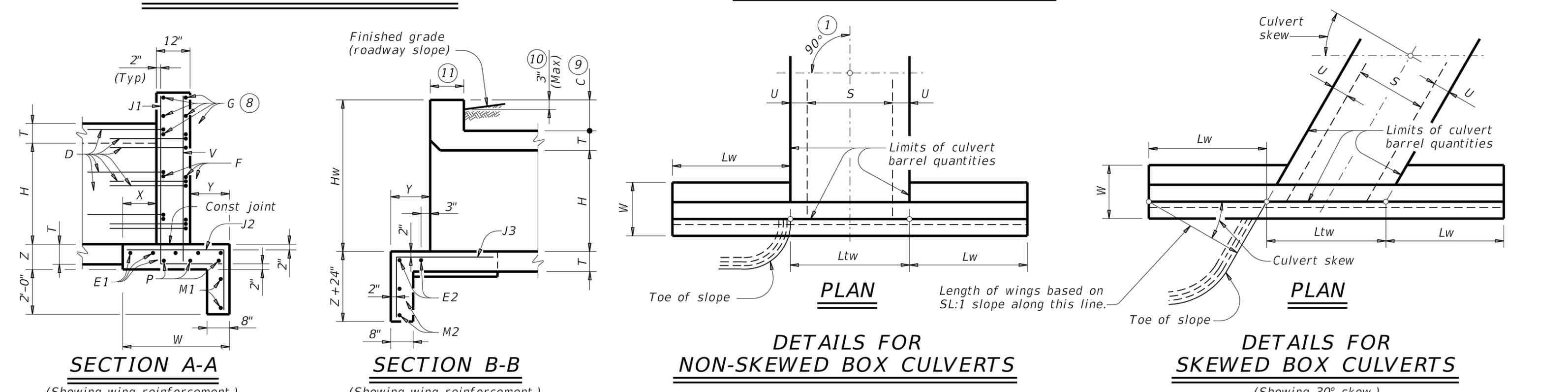
SECTION C-C - PW-1 — SECTION C-C - PW-2

DESIGNER NOTES:
Type PW-1 can be used for all applications and must be used if railing is to be mounted to the wingwall.
Type PW-2 can only be used for applications without a railing mounted to the wingwall.

MATERIAL NOTES:
Provide Class C concrete (f'c=3,600 psi).
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.

GENERAL NOTES:
Designed in accordance with AASHTO LRFD Bridge Design Specifications.
Depth of toewalls for wingwalls and culverts may be reduced or eliminated when founded on solid rock, when directed by the Engineer.
See Box Culvert Supplement (BCS) standard sheet for wingwall type and additional dimensions and information.
Quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for the Contractor's information only.

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



SECTION A-A (Showing wing reinforcement.) — SECTION B-B (Showing wing reinforcement.) — PLAN: DETAILS FOR NON-SKEWED BOX CULVERTS — PLAN: DETAILS FOR SKEWED BOX CULVERTS (Showing 30° skew.)

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CONCRETE WINGWALLS WITH PARALLEL WINGS FOR BOX CULVERTS TYPES PW-1 AND PW-2

PW

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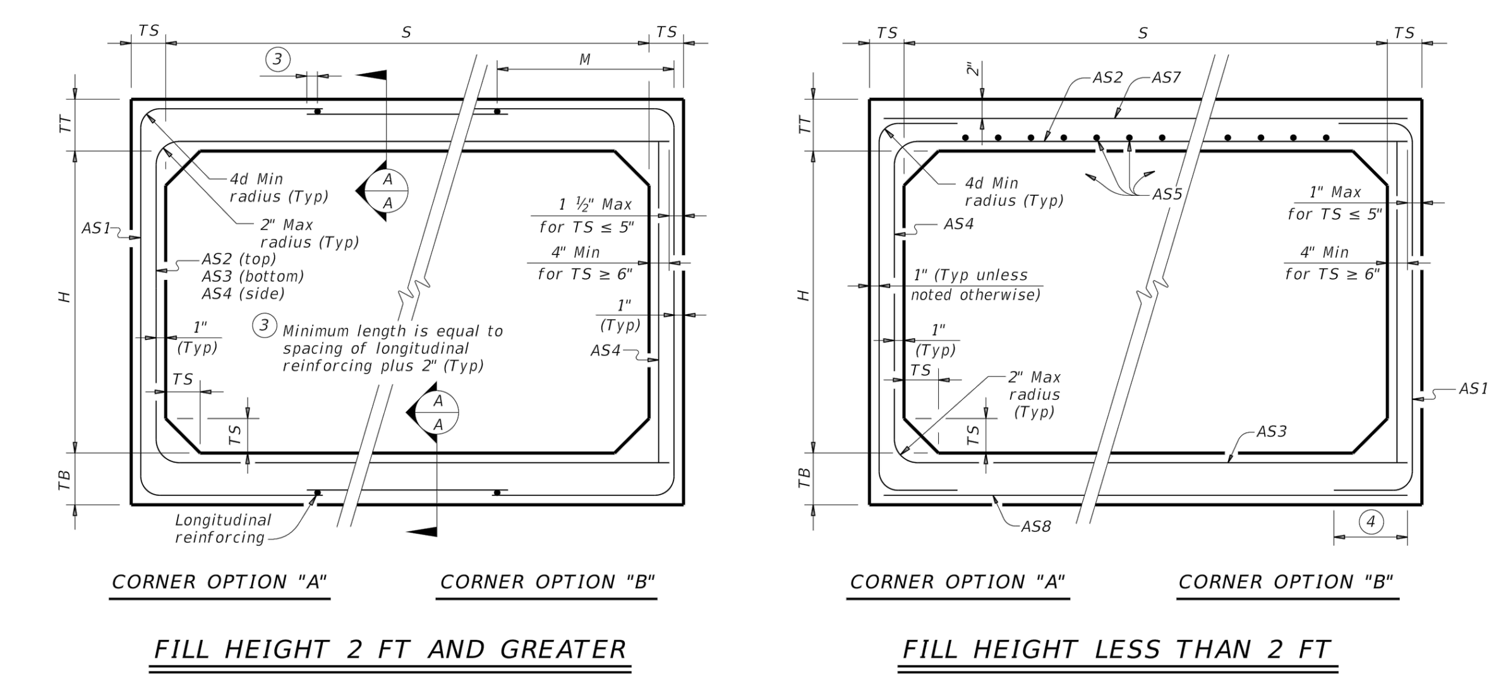
BOX DATA

S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	Fill Height (ft.)	M (Min) (in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	(1) Lift Weight (tons)
							REINFORCING (sq. in. / ft.) (2)							
5	2	8	7	6	< 2	–	0.19	0.27	0.18	0.14	0.19	0.19	0.17	6.0
5	2	6	6	6	2 < 3	44	0.22	0.20	0.16	0.14	–	–	–	5.1
5	2	6	6	6	3 - 5	44	0.16	0.14	0.14	0.14	–	–	–	5.1
5	2	6	6	6	10	36	0.15	0.14	0.14	0.14	–	–	–	5.1
5	2	6	6	6	15	36	0.20	0.18	0.18	0.14	–	–	–	5.1
5	2	6	6	6	20	36	0.26	0.23	0.24	0.14	–	–	–	5.1
5	2	6	6	6	25	36	0.33	0.29	0.29	0.14	–	–	–	5.1
5	2	6	6	6	30	36	0.39	0.34	0.35	0.14	–	–	–	5.1
5	3	8	7	6	< 2	–	0.19	0.31	0.21	0.14	0.19	0.19	0.17	6.6
5	3	6	6	6	2 < 3	45	0.18	0.24	0.19	0.14	–	–	–	5.7
5	3	6	6	6	3 - 5	36	0.14	0.17	0.16	0.14	–	–	–	5.7
5	3	6	6	6	10	36	0.14	0.16	0.17	0.14	–	–	–	5.7
5	3	6	6	6	15	35	0.16	0.21	0.22	0.14	–	–	–	5.7
5	3	6	6	6	20	35	0.21	0.27	0.28	0.14	–	–	–	5.7
5	3	6	6	6	25	35	0.26	0.34	0.34	0.14	–	–	–	5.7
5	3	6	6	6	30	35	0.31	0.41	0.41	0.14	–	–	–	5.7
5	4	8	7	6	< 2	–	0.19	0.33	0.24	0.14	0.19	0.19	0.17	7.2
5	4	6	6	6	2 < 3	45	0.16	0.27	0.22	0.14	–	–	–	6.3
5	4	6	6	6	3 - 5	45	0.14	0.19	0.18	0.14	–	–	–	6.3
5	4	6	6	6	10	36	0.14	0.18	0.18	0.14	–	–	–	6.3
5	4	6	6	6	15	35	0.14	0.23	0.24	0.14	–	–	–	6.3
5	4	6	6	6	20	35	0.17	0.30	0.31	0.14	–	–	–	6.3
5	4	6	6	6	25	35	0.21	0.37	0.38	0.14	–	–	–	6.3
5	4	6	6	6	30	35	0.25	0.44	0.45	0.14	–	–	–	6.3
5	5	8	7	6	< 2	–	0.19	0.35	0.26	0.14	0.19	0.19	0.17	7.8
5	5	6	6	6	2 < 3	45	0.14	0.29	0.24	0.14	–	–	–	6.9
5	5	6	6	6	3 - 5	45	0.14	0.21	0.20	0.14	–	–	–	6.9
5	5	6	6	6	10	45	0.14	0.19	0.20	0.14	–	–	–	6.9
5	5	6	6	6	15	36	0.14	0.24	0.25	0.14	–	–	–	6.9
5	5	6	6	6	20	35	0.15	0.31	0.32	0.14	–	–	–	6.9
5	5	6	6	6	25	35	0.18	0.38	0.39	0.14	–	–	–	6.9
5	5	6	6	6	30	35	0.21	0.46	0.47	0.14	–	–	–	6.9

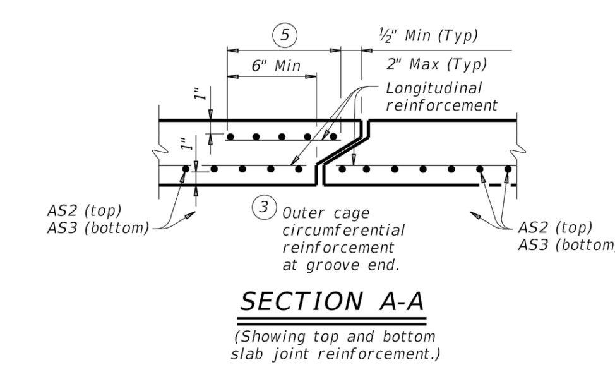
(1) For box length = 8'-0"

(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.



CORNER OPTION "A" — CORNER OPTION "B" — FILL HEIGHT 2 FT AND GREATER — FILL HEIGHT LESS THAN 2 FT

(4) Length is equal to spacing of longitudinal reinforcing plus 2" (10" Min) (Typ)



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 ASTM 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 furnish an alternate design that is equal to or exceeds 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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SINGLE BOX CULVERTS PRECAST
5'-0" SPAN

SCP-5

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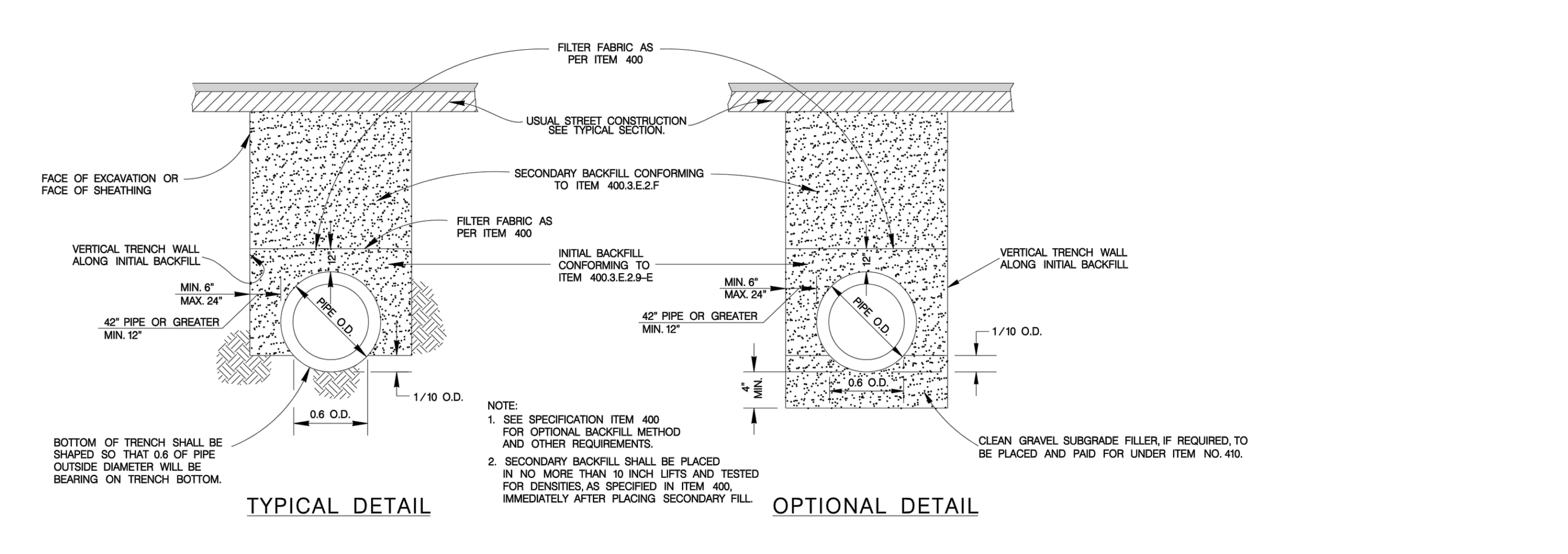
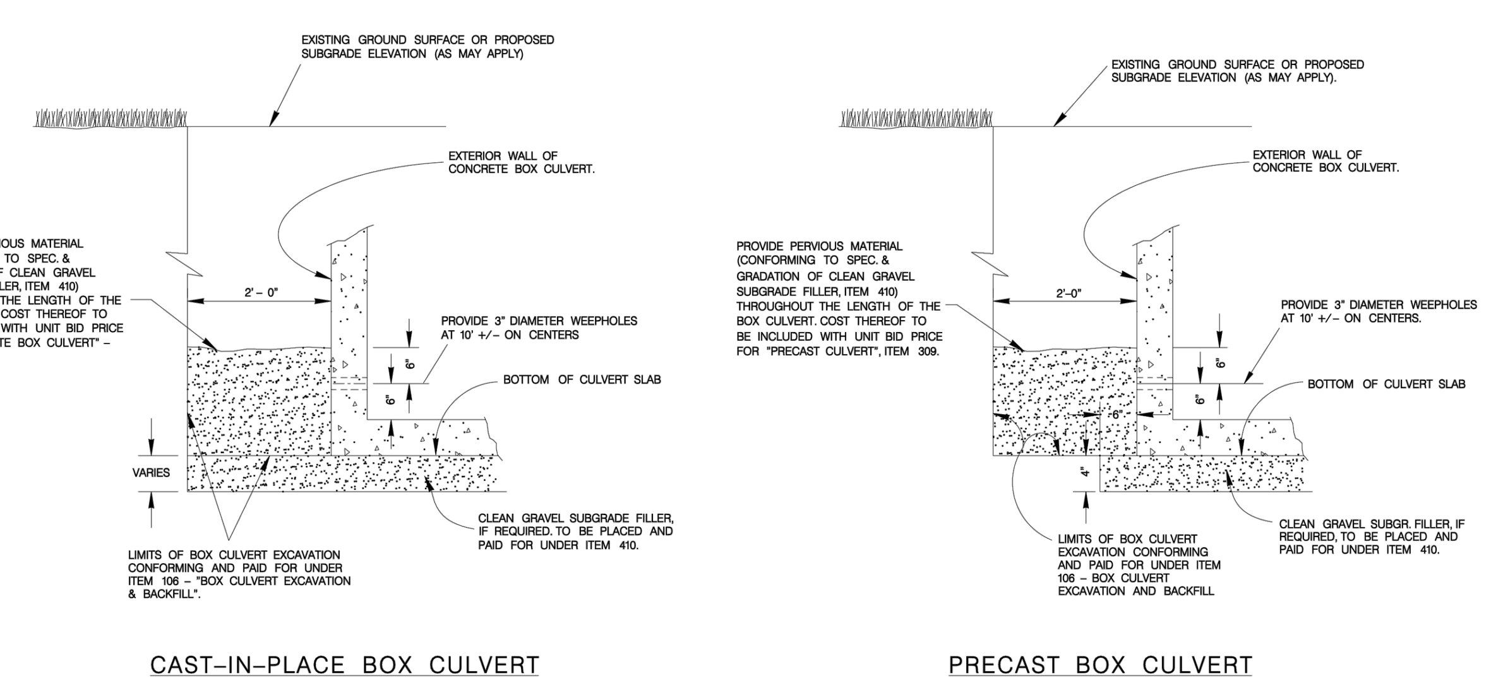


TYPICAL DETAIL — OPTIONAL DETAIL

PIPE BEDDING & BACKFILL DETAILS



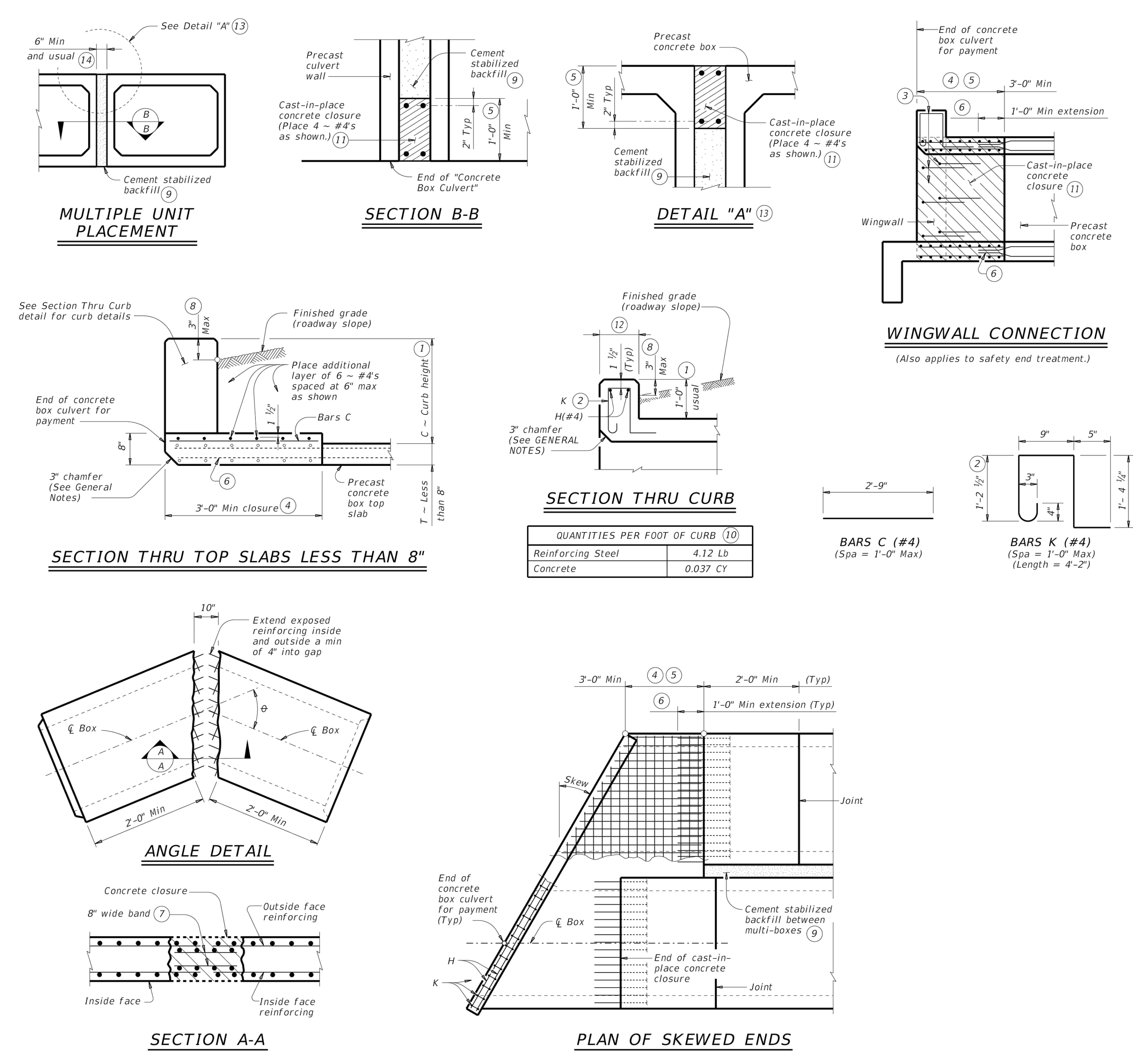
CAST-IN-PLACE BOX CULVERT — PRECAST BOX CULVERT

CONCRETE BOX CULVERT

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

PIPE BEDDING & MISCELLANEOUS DRAINAGE DETAILS



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 — BARS C (#4) (Spa = 1'-0" Max) — BARS K (#4) (Spa = 1'-0" Max) (Length = 4'-2") — ANGLE DETAIL — SECTION A-A — PLAN OF SKEWED ENDS (Showing multi-box placement.)

QUANTITIES PER FOOT OF CURB (10)	
Reinforcing Steel	4.12 Lb
Concrete	0.037 CY

(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-CM) 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 3" 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 tunneled 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

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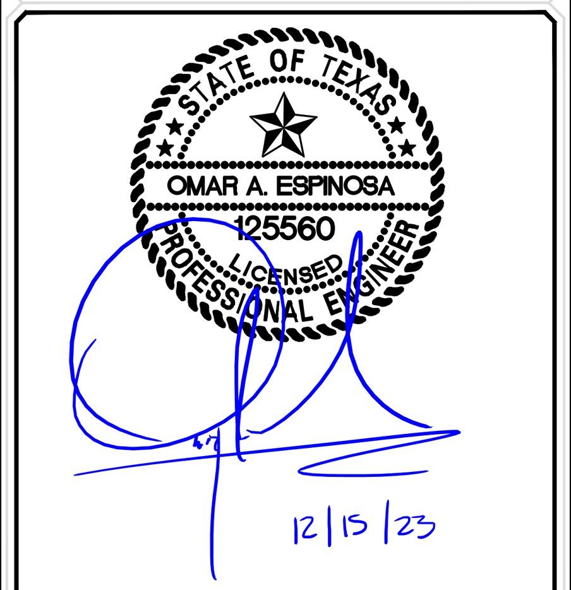
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION



PRELIMINARY

FOR

VIDA SAN ANTONIO LIFT STATION PLAT# 23-11800297

SAN ANTONIO
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	OCT. 2023	EC	OE
PROJECT NUMBER: 391-10-19		DRAWING NAME: DRPP391015_DTLS	

SHEET TITLE: DRAIN DETAILS

SHEET NUMBER: 4.4

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

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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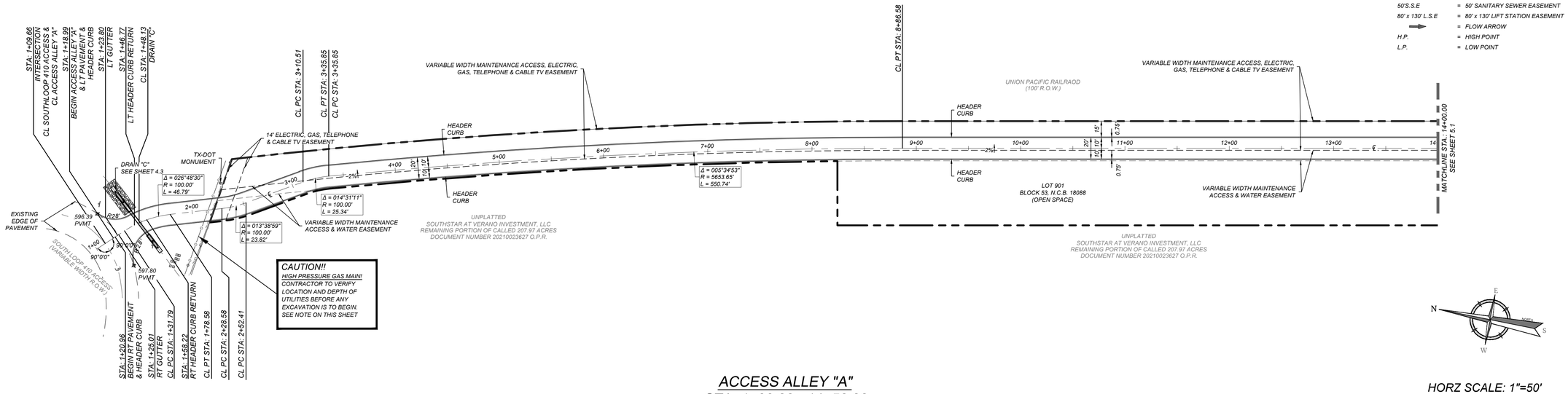
LEGEND

R.O.W.	=	RIGHT OF WAY
V.W.M.A.E.G.T.TV.E	=	VARIABLE WIDTH MAINTENANCE ACCESS, ELECTRIC, GAS, TELEPHONE & CABLE TV EASEMENT
V.W.M.A.W.E	=	VARIABLE WIDTH MAINTENANCE ACCESS & WATER EASEMENT
O.V.W.W.E	=	OFF-LOT VARIABLE WIDTH WATER EASEMENT
V.W.S.S.E	=	VARIABLE WIDTH SANITARY SEWER EASEMENT
50'S.S.E	=	50' SANITARY SEWER EASEMENT
80' x 130' L.S.E	=	80' x 130' LIFT STATION EASEMENT
	=	FLOW ARROW
H.P.	=	HIGH POINT
L.P.	=	LOW POINT

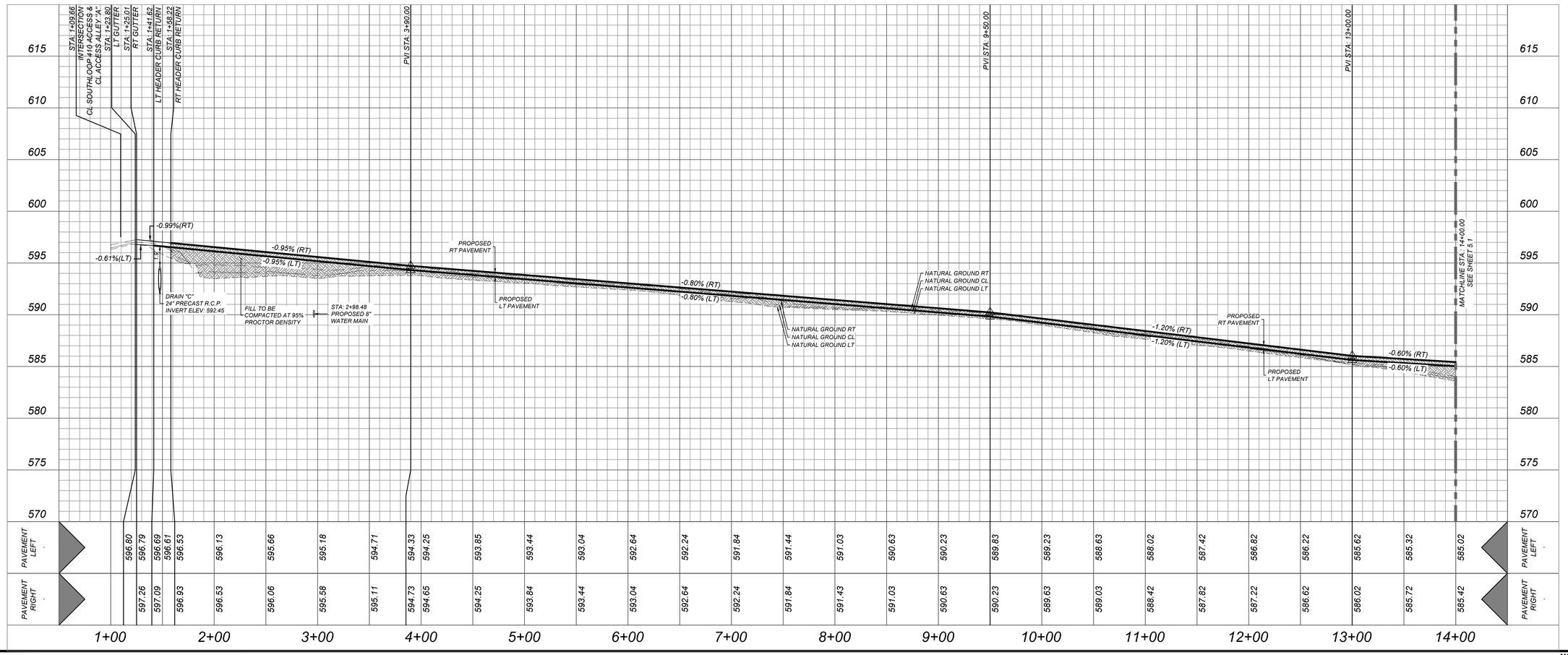


CAUTION!!

HIGH PRESSURE GAS MAIN!
CONTRACTOR TO VERIFY LOCATION AND DEPTH OF UTILITIES BEFORE ANY EXCAVATION IS TO BEGIN. SEE NOTE ON THIS SHEET

ACCESS ALLEY "A"
STA: 1+00.00 - 14+50.00

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



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REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED PROFESSIONAL ENGINEER
11/25/24

PRELIMINARY

FOR

VIDA SAN ANTONIO LIFT STATION
PLAT# 23-11800297

SAN ANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design

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San Antonio, TX 78231
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COLLIERS ENGINEERING & DESIGN, INC.
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TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	OCT. 2023	EC	OE

PROJECT NUMBER: 391-10-19
DRAWING NAME: STP3911015_AB

SHEET TITLE:
ACCESS ROAD "A" PLAN & PROFILE (1 OF 2)

SHEET NUMBER: 5.0

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

By: SCHAVEZ
M:\STREETS\STP3911015_AB.dwg\5.0

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.

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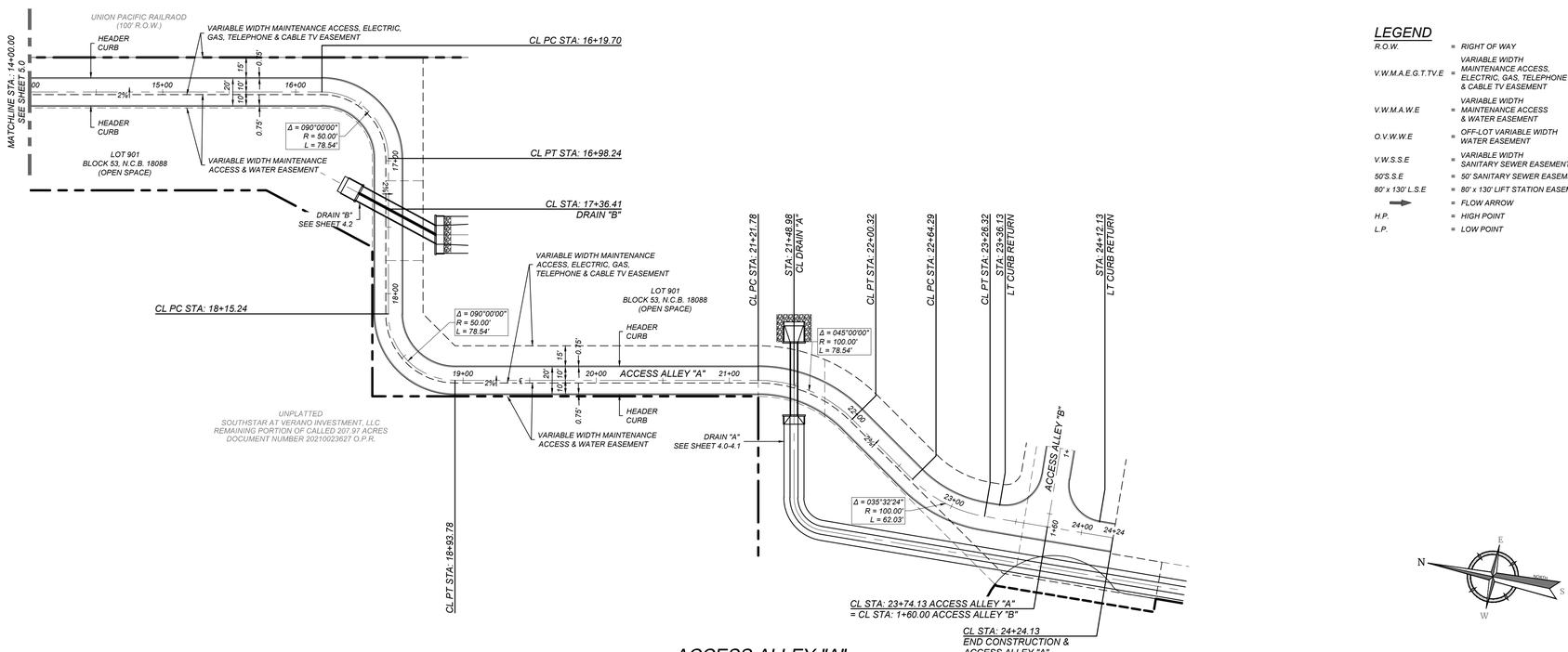

LEGEND

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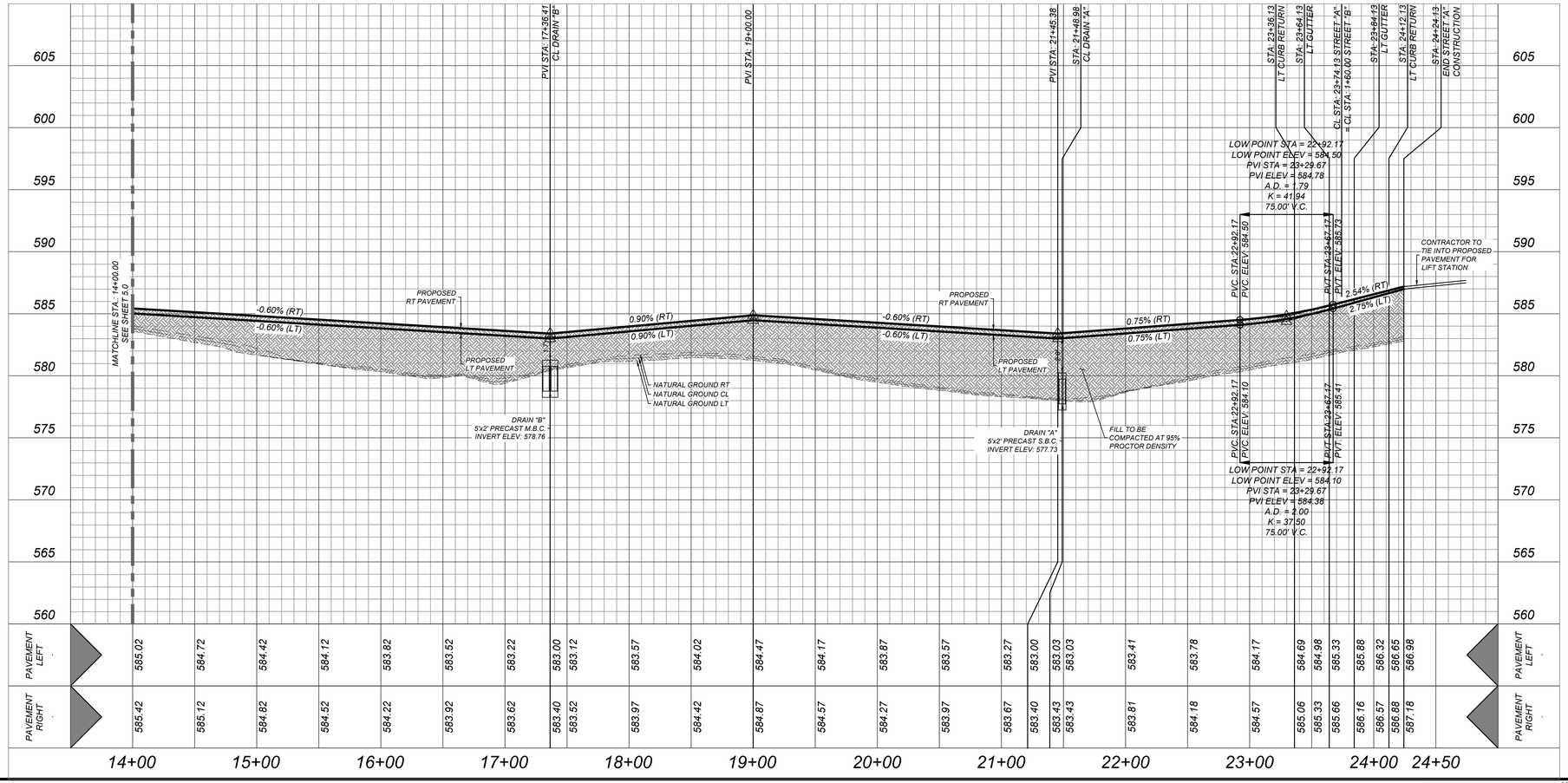
→	=	FLOW ARROW
H.P.	=	HIGH POINT
L.P.	=	LOW POINT

ACCESS ALLEY "A"
STA: 14+50.00 - END

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



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REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED
PROFESSIONAL ENGINEER
11/25/24

PRELIMINARY

FOR

VIDA SAN ANTONIO LIFT STATION
PLAT# 23-11800297

SAN ANTONIO
BEXAR COUNTY
TEXAS

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San Antonio, TX 78231
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COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	OCT. 2023	EC	OE

PROJECT NUMBER: 391-10-19
DRAWING NAME: STP3911015_AB

SHEET TITLE: ACCESS ROAD "A" PLAN & PROFILE (2 OF 2)

SHEET NUMBER: 5.1

TRENCH EXCAVATION SAFETY PROTECTION

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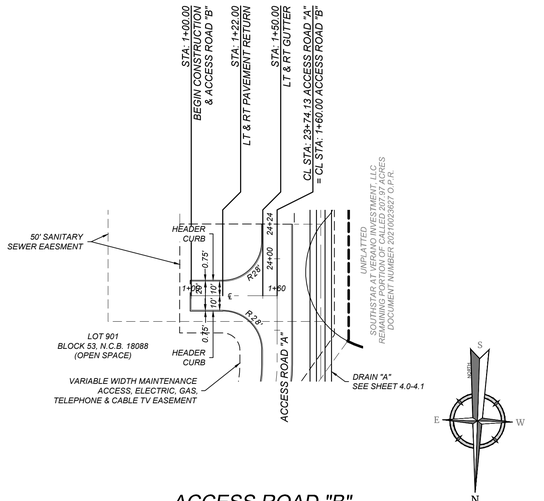
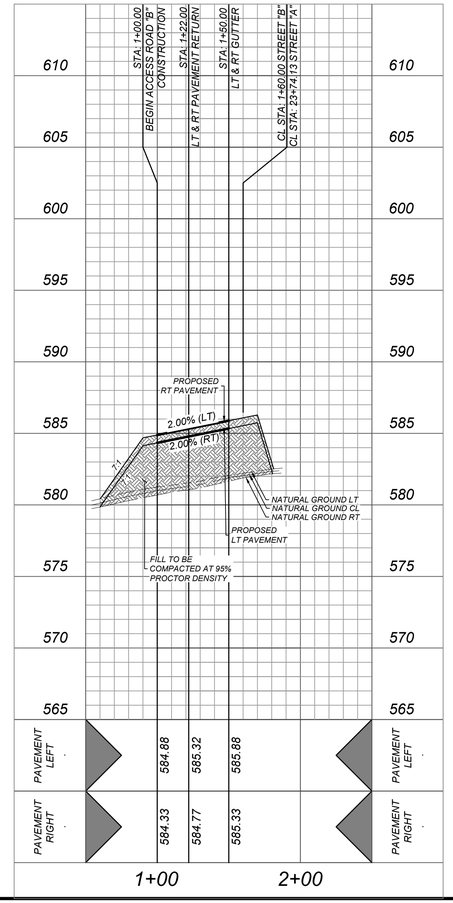


ACCESS ROAD "B"
STA: 1+00.00 - END

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



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REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED PROFESSIONAL ENGINEER

12/15/23

PRELIMINARY

FOR

VIDA SAN ANTONIO
LIFT STATION
PLAT# 23-11800297

SAN ANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design

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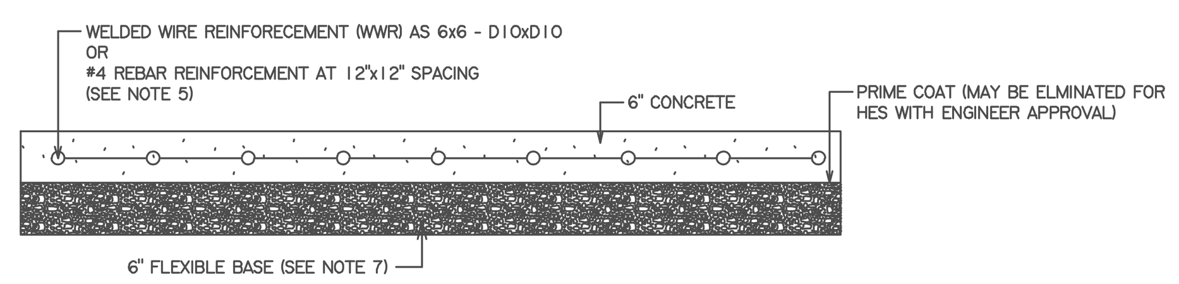
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	OCT. 2023	EC	OE

PROJECT NUMBER: 391-10-19

DRAWING NAME: STP3911015_AB

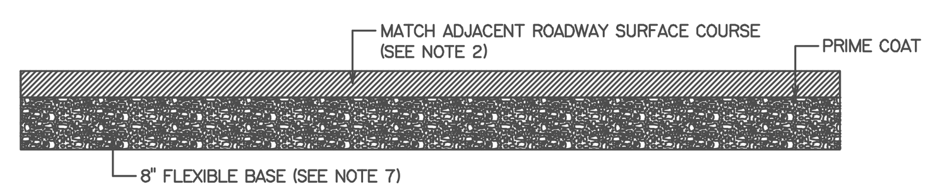
SHEET TITLE:
ACCESS ROAD "B"
PLAN & PROFILE

SHEET NUMBER: 5.2



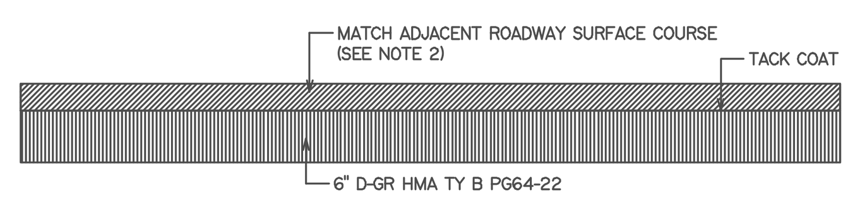
TYPICAL CONCRETE DRIVEWAY

* NOTE: STEEL SHALL BE CENTERED VERTICALLY IN CONCRETE.
PAID AS 'DRIVEWAYS CONC (HES)' OR 'DRIVEWAYS (CONC)'



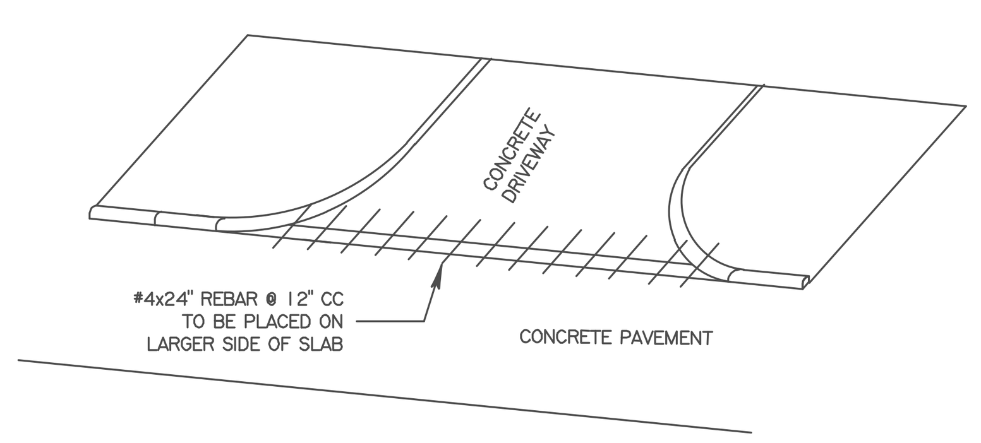
TYPICAL ROADWAY DRIVEWAY (TYPE 1)

PAID AS DRIVEWAYS ACP (TYPE 1)

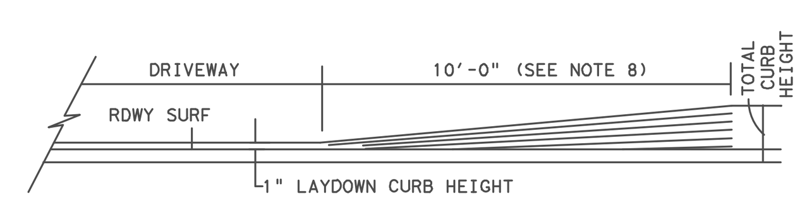


TYPICAL ROADWAY DRIVEWAY (TYPE 2)

PAID AS DRIVEWAYS ACP (TYPE 2)



TIE BAR PLACEMENT WITH CRCP



LAYDOWN CURB AT DRIVEWAYS DETAIL

NOTES:

1. USE CLASS A CONCRETE UNLESS OTHERWISE NOTED.
2. DENSE GRADED HMA MAY BE USED WHEN APPROVED BY THE ENGINEER IF THE ROADWAY SURFACE COURSE IS A PERFORMANCE MIX.
3. REFER TO PLAN SHEETS FOR GEOMETRIC DESIGN DETAILS.
4. FOR CONCRETE DRIVEWAYS, PROVIDE EXPANSION JOINT 20 FT C-C FOR WIDTH OR LENGTH OVER 25 FT.
5. FIBER REINFORCEMNT IS NOT ALLOWED.
6. MACHINE LAID HMA IS REQUIRED UNLESS OTHERWISE APPROVED BY THE ENGINEER.
7. FURNISH BASE MEETING THE REQUIREMENTS FOR ANY TYPE OF GRADE IN ACCORDANCE WITH ITEM 247. FLEXIBLE BASE COMPRESSIVE STRENGTHS ARE WAIVED. BASE IS SUBSIDIARY TO THE ITEM.
8. WHERE SIDEWALK IS PRESENT, SLOPE AND LENGTH OF CURB TRANSITION SHOULD MATCH THE SIDEWALK AND MEET ADA REQUIREMENTS.
9. IF ROOTS ARE ENCOUNTERED VERIFY WITH THE ENGINEER PRIOR TO ACCOMODATING OR REMOVING 2 IN. DIAMETER OR LARGER ROOTS. ROOT REMOVAL MUST BE IN ACCORDANCE WITH ITEM 752.4.2. ROOTS MAY REMAIN IN THE BASE. FOR IMPROVEMENTS WITHIN 6 IN. OF A ROOT, THE CONCRETE THICKNESS MAY BE REDUCED BY 1 IN. AND THE BASE INCREASED BY 1 IN. TO MINIMIZE THE IMPACT TO THE ROOTS. ADJUST BASE AND SURFACE PROFILE TO PROVIDE A 1 IN. BASE CUSHION AROUND THE ROOTS. THE SURFACE PROFILE MAY BE ADJUSTED TO THE EXTENT ALLOWED BY ADA. THIS WORK IS SUBSIDIARY.

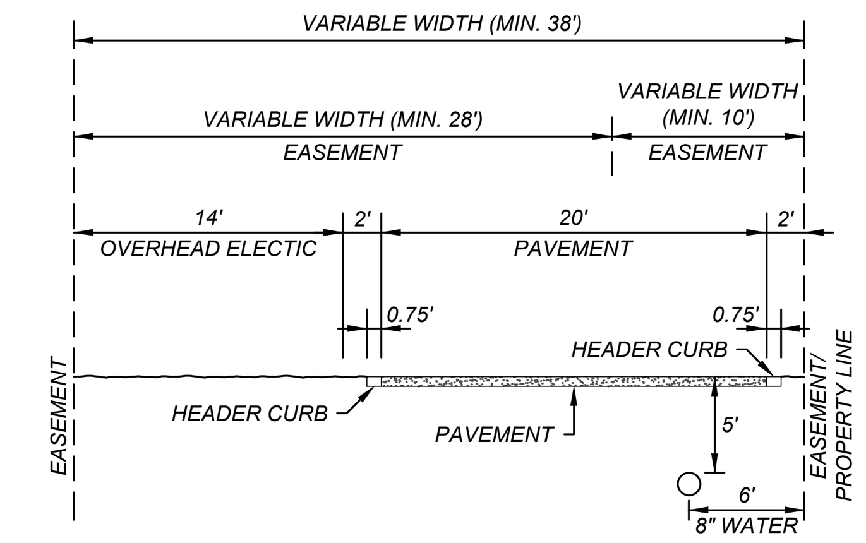
Texas Department of Transportation®
San Antonio District

DRIVEWAY DETAILS
San Antonio District Standard
Sheet (1 of 1)

T:Engdata/Standards/Drivewaydetails.dgn
ORIGINAL DRAWING DATE: 8/1/2020
REVISIONS

PREPARED BY AND FOR USE OF TxDoT.

STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT	SHEET
	6		
COUNTY	CONTROL	SECTION	JOB	HIGHWAY

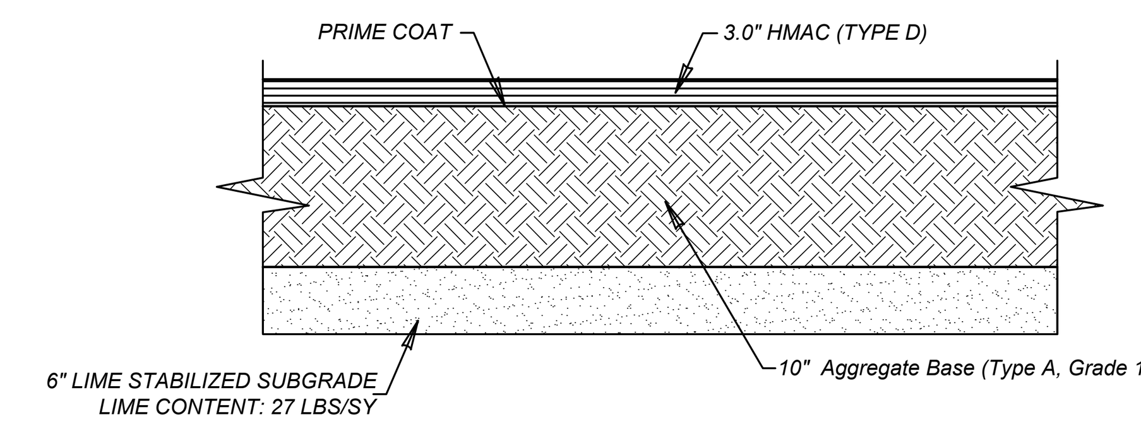


TYPICAL ACCESS ROAD SECTION

NOT TO SCALE

USE ACCESS ROAD SECTION FOR ACCESS ROADS BELOW:
ACCESS ROAD "A" - STA: 1+00.00 - END
ACCESS ROAD "B" - STA: 1+00.00 - END

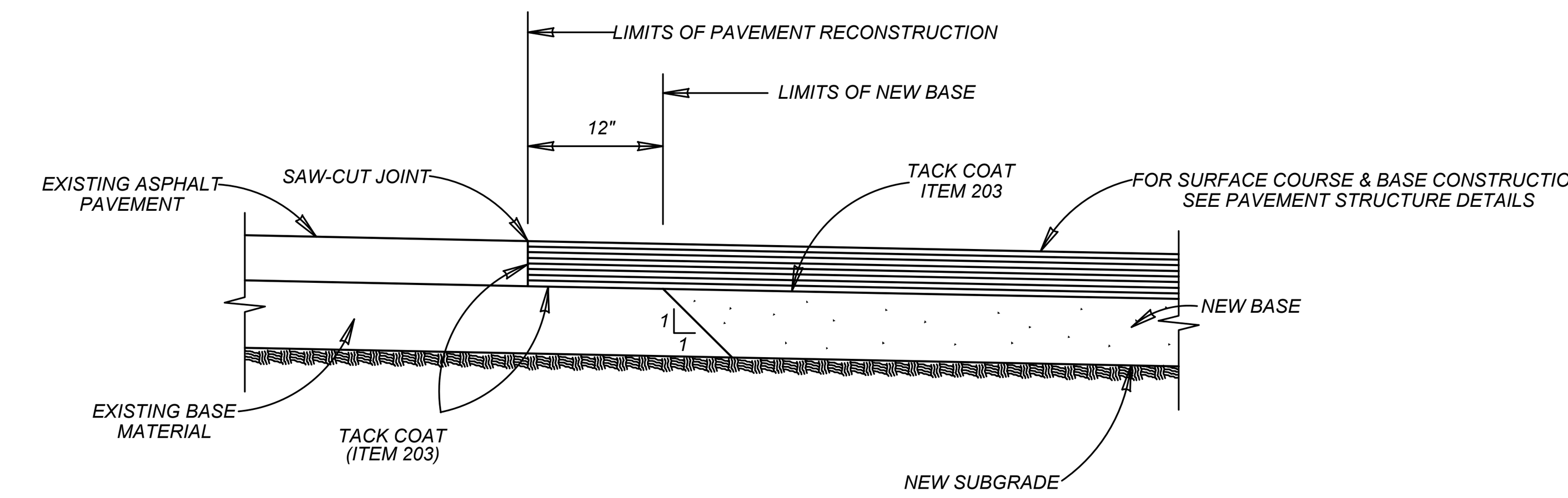
Pavement Section
3.0" HMAC Type "D"
10" Aggregate Base (Type A, Grade 1)
6" Lime Stablized Subgrade(27 LBS/SY)
Total: 19"
SUBGRADE CBR: 2.5
REQUIRED IF SUBGRADE PI > 20



ASPHALT PAVEMENT DETAIL

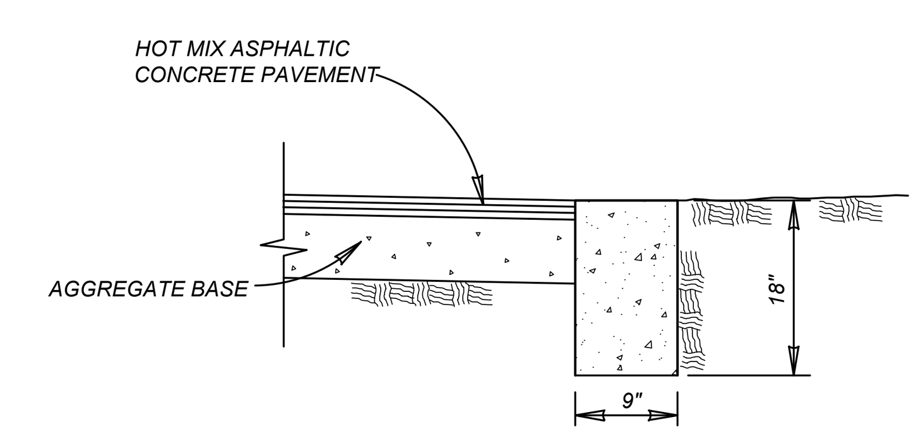
NOT TO SCALE

DETAIL FOR ALL ACCESS ROAD



PAVEMENT JUNCTION DETAILS

NOT TO SCALE



HEADER CURB

ITEM 500 ON SAND OR GRAVEL
NOT TO SCALE

Colliers
Engineering
& Design

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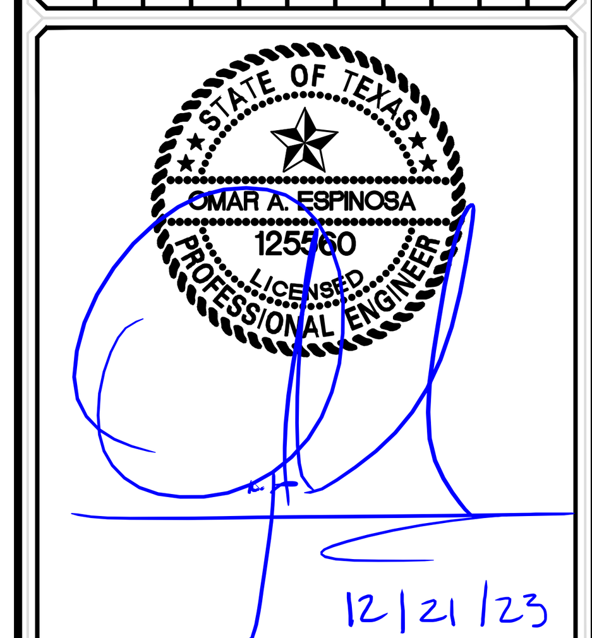

PRELIMINARY

FOR

VIDA SAN ANTONIO
LIFT STATION
PLAT# 23-11800297

SAN ANTONIO
BEXAR COUNTY
TEXAS

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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	OCT. 2023	EC	OE

PROJECT NUMBER:	DRAWING NAME:
391-10-19	STDT3911015

SHEET TITLE:
STREET DETAIL SHEET

SHEET NUMBER:
5.3

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

VIDA SAN ANTONIO LIFT STATION

BEXAR COUNTY, TEXAS

SANITARY SEWER IMPROVEMENTS

SAWS CONSTRUCTION NOTES
COUNTER PERMIT AND GENERAL CONSTRUCTION PERMIT
January 2022

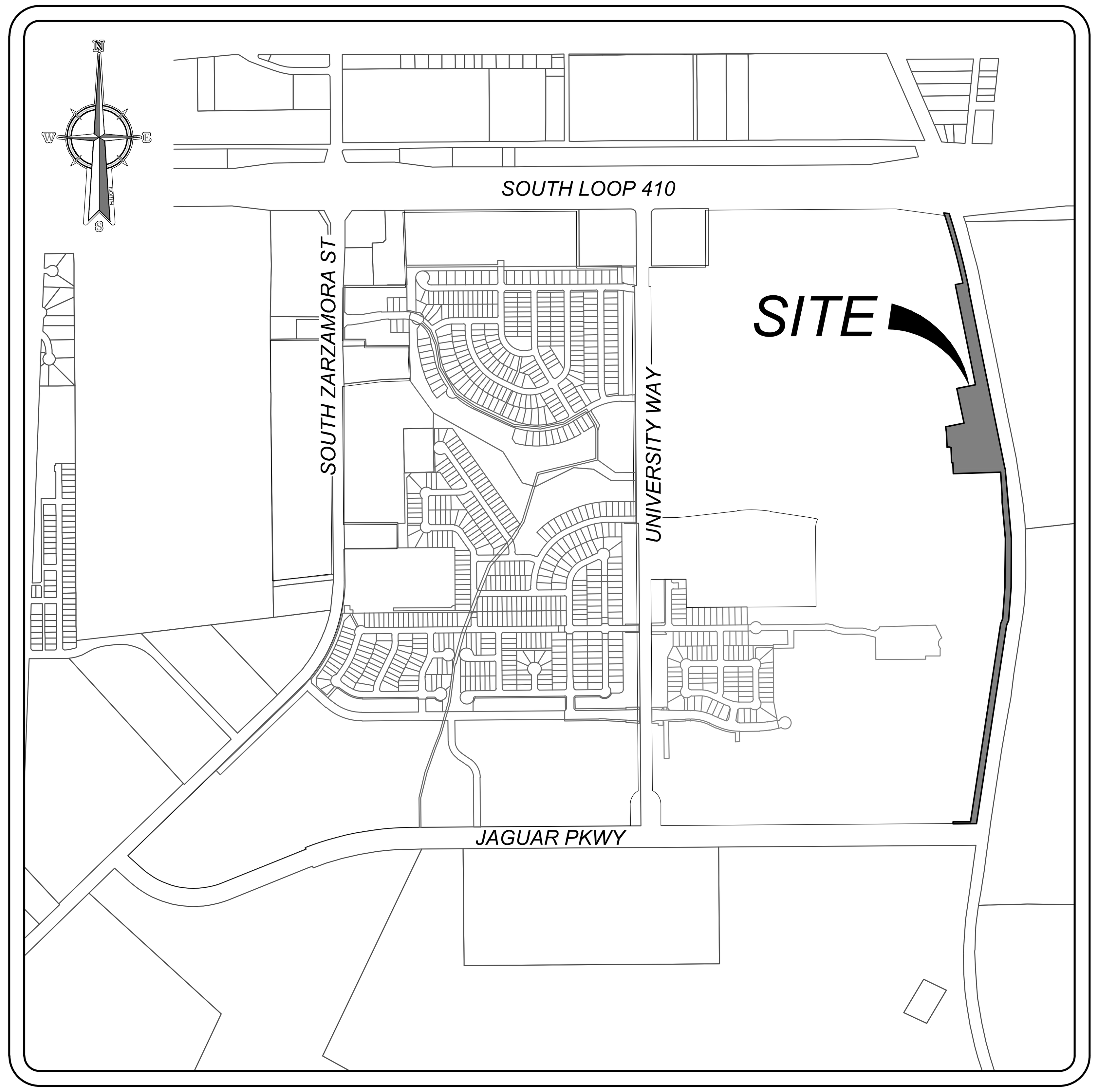
General Section

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:
SOUTHSTAR AT VERANO, LLC
2055 CENTRAL PLAZA, SUITE 110
NEW BRAUNFELS, TEXAS 78130

INDEX

LOWER - WEST SEWERSHED - DOS RIOS \ LEON CREEK W.R.C.

DEVELOPER'S NAME: SOUTHSTAR AT VERANO, LLC
DEVELOPER'S ADDRESS: 2055 CENTRAL PLAZA, SUITE 110
CITY: NEW BRAUNFELS STATE: TEXAS ZIP: 78130
PHONE#: FAX#: TOTAL ACREAGE: 2.991 ACRES
SAWS BLOCK MAP#: 154536 TOTAL EDU'S: 0
TOTAL LINEAR FOOTAGE OF PIPE: 3,266.85 LF OF 8" SDR 26 PLAT NO.: 23-11800297
NUMBER OF LOTS: 0 SAWS JOB#: 23-1645

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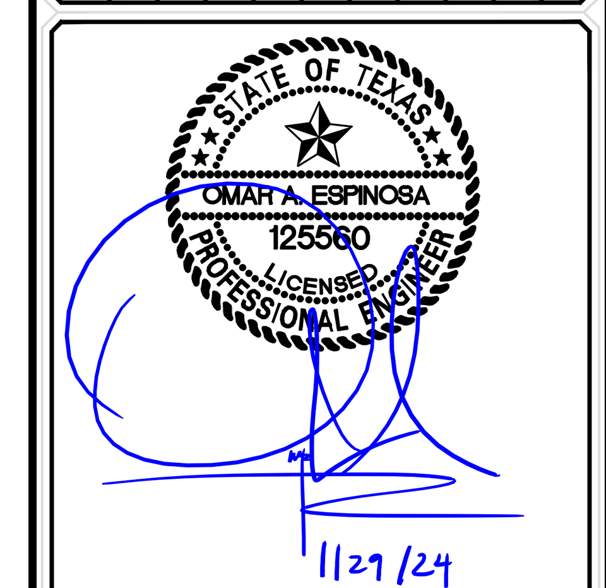
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION



PRELIMINARY
FOR
VIDA SAN ANTONIO LIFT STATION
PLAT# 23-11800297

SAN ANTONIO
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	OCT. 2023	EC	OE

PROJECT NUMBER:	DRAWING NAME:
391-10-19	CVOS3911019

SHEET TITLE:
SANITARY SEWER COVER SHEET

SHEET NUMBER:
6.0

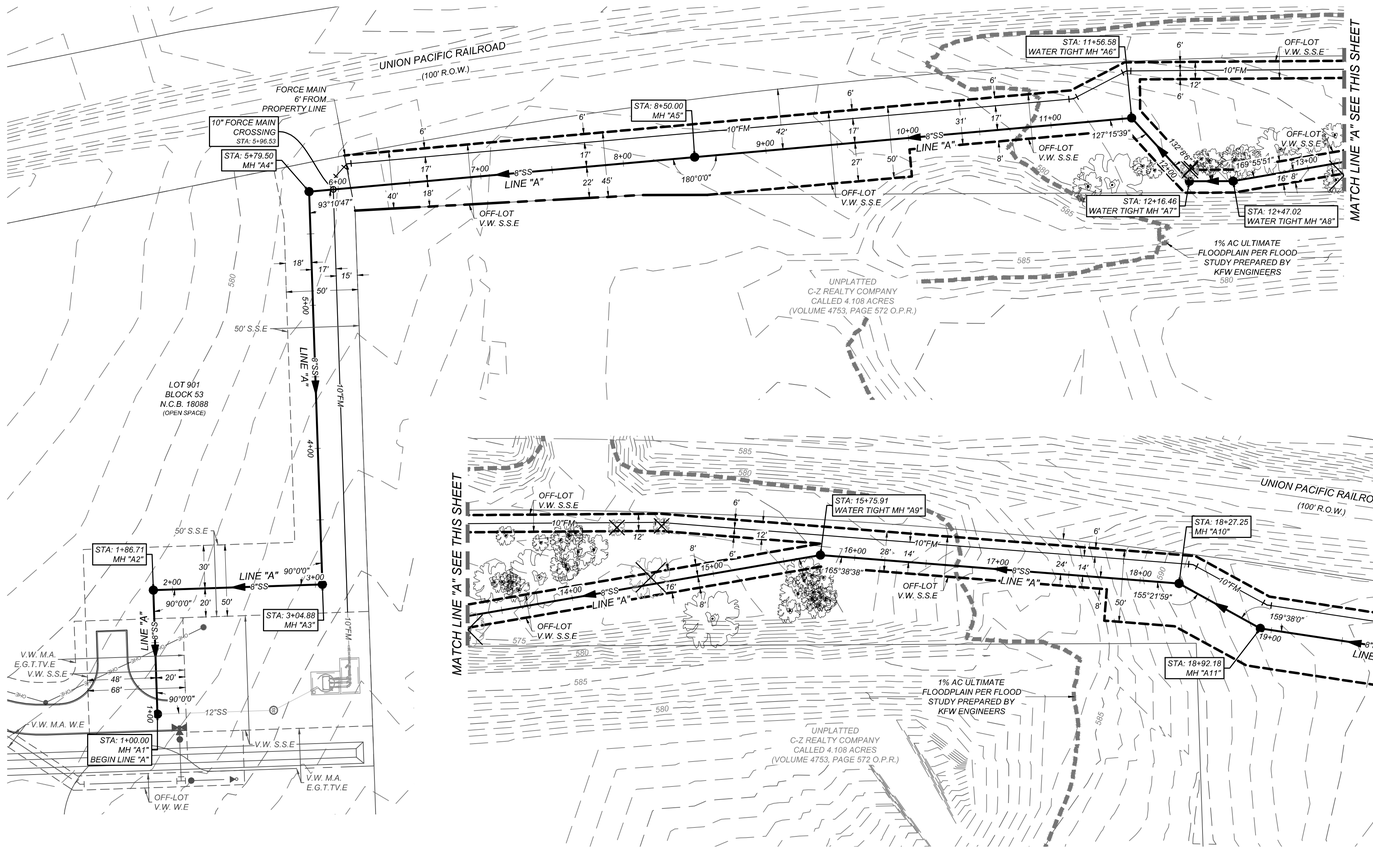
NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

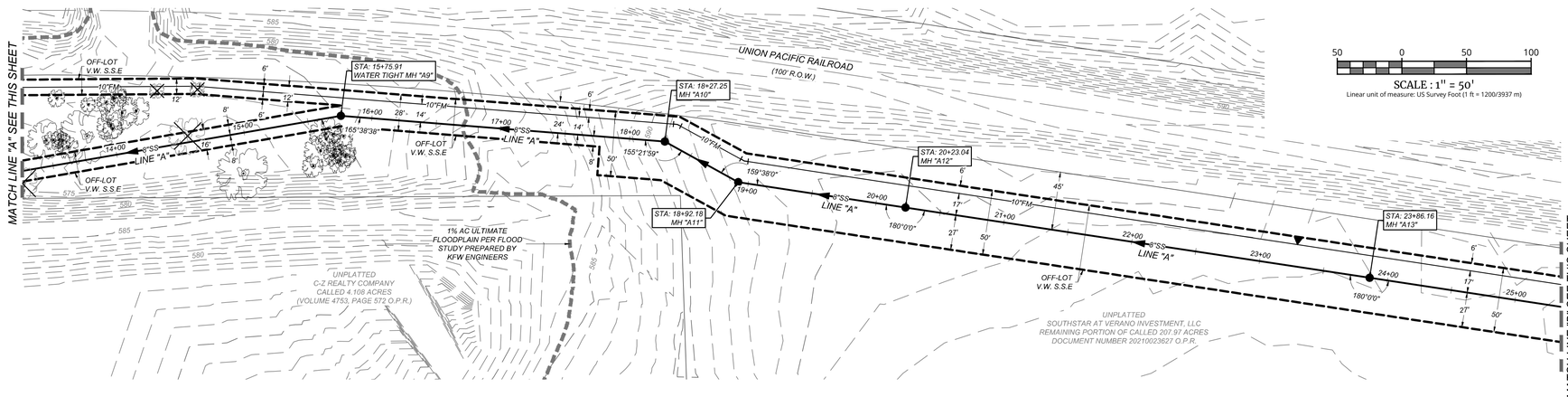
TRENCH EXCAVATION SAFETY PROTECTION

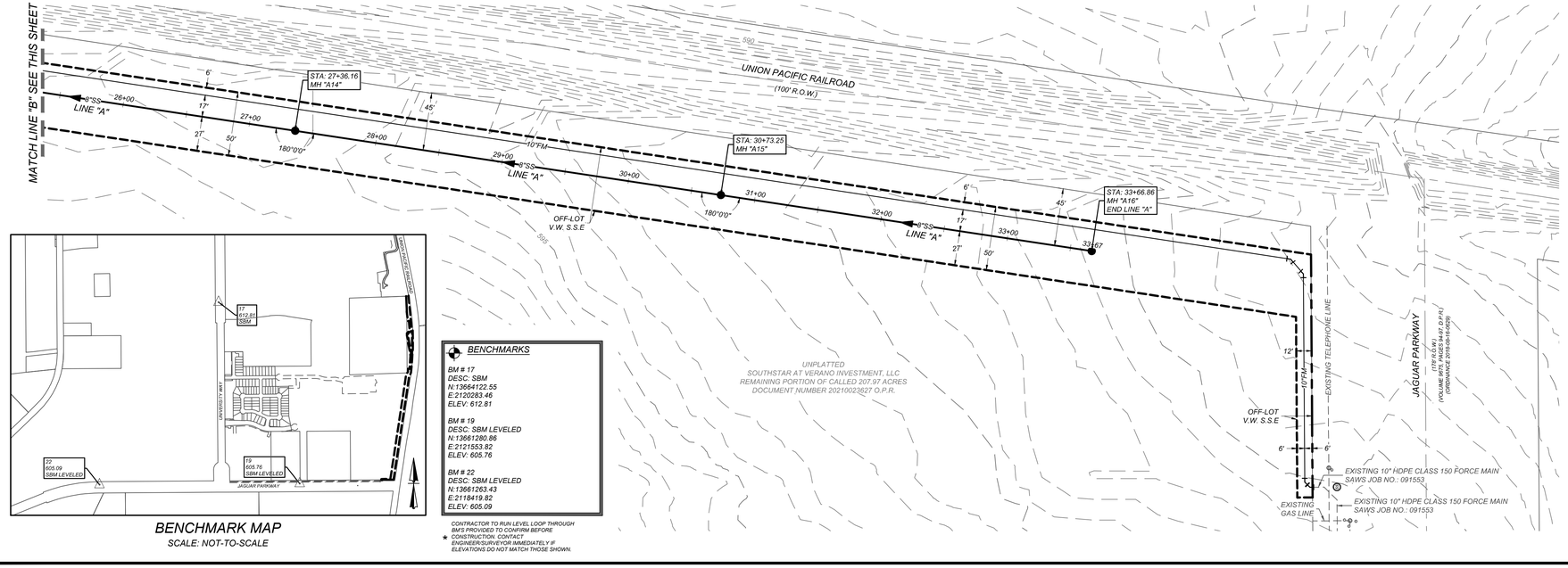
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S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







LOCATION MAP

N.T.S.

LEGEND

PROPOSED WATER MAIN	=	W
PROPOSED FIRE HYDRANT	=	
PROPOSED WATER VALVE	=	
PROPOSED SANITARY SEWER MAIN	=	SS
PROPOSED SANITARY SEWER MANHOLE	=	SS
PROPOSED FORCE MAIN	=	FM
VARIABLE WIDTH MAINTENANCE ACCESS ELECTRIC, GAS, TELEPHONE & CABLE EASEMENT	=	V.W. M.A. E.G.T.TV.E (PLAT# 23-11800297)
VARIABLE WIDTH MAINTENANCE ACCESS & WATER EASEMENT	=	V.W. M.A. W.E (PLAT# 23-11800297)
VARIABLE WIDTH SANITARY SEWER EASEMENT	=	V.W. S.S.E (PLAT# 23-11800297)
50' SANITARY SEWER EASEMENT	=	50' S.S.E (PLAT# 23-11800297)
EXISTING WATER MAIN	=	EW
EXISTING FIRE HYDRANT	=	
EXISTING WATER VALVE	=	
EXISTING SANITARY SEWER MAIN	=	ESS
EXISTING SANITARY SEWER MANHOLE	=	ESS

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. *REF. THIS SHEET FOR BENCHMARK INFORMATION.*
3. *PIPE TYPE DESIGNATIONS ARE SDR 26.*
4. *REF. THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.*
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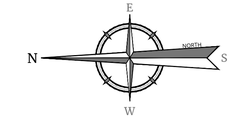


SCALE : 1" = 50'

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

BENCHMARK MAP

SCALE: NOT-TO-SCALE

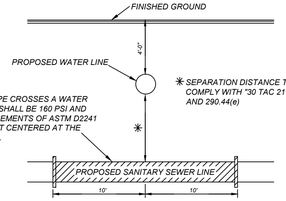
BENCHMARKS

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

BM # 19
DESC: SBM LEVELED
N:13661280.86
E:2121553.82
ELEV: 605.76

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

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



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.

CAUTION!!:

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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.

LOWER - WEST SEWERSHED - DOS RIOS \ LEON CREEK W.R.C.

DEVELOPER'S NAME: SOUTHSTAR AT VERANO, LLC

DEVELOPER'S ADDRESS: 2055 CENTRAL PLAZA, SUITE 110

CITY: NEW BRAUNFELS STATE: TEXAS ZIP: 78130

PHONE#: FAX#: TOTAL ACREAGE: 2.991 ACRES

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TOTAL LINEAR FOOTAGE OF PIPE: 3,266.85 LF OF 8" SDR 26 PLAT NO.: 23-11800297

NUMBER OF LOTS: 0 SAWS JOB#: 23-1645

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REV	DESCRIPTION	DRAWN BY	DATE

OMAR A. ESPINOSA
125560
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
11/29/24

PRELIMINARY

FOR

VIDA SAN ANTONIO LIFT STATION PLAT# 23-11800297

SAN ANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
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San Antonio, TX 78231
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COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	OCT. 2023	EC	OE

PROJECT NUMBER:	DRAWING NAME:
391-10-19	OS53911019

SHEET TITLE:

OVERALL SANITARY SEWER PLAN

SHEET NUMBER:

6.1

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

H:\ESEWER\OS53911019.dwg\6.1 By: JARIOS

TRENCH EXCAVATION SAFETY PROTECTION

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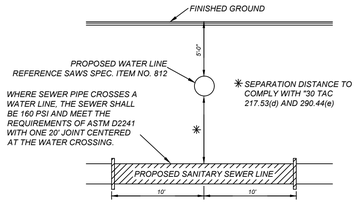

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
N.T.S.

NOTES:

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LOWER - WEST SEWERSHED - DOS RIOS \ LEON CREEK W.R.C.

DEVELOPER'S NAME: SOUTHSTAR AT VERANO, LLC

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NUMBER OF LOTS: 0 SAWS JOB#: 23-1645

LEGEND

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V.W. M.A. W.E	=	*VARIABLE WIDTH MAINTENANCE ACCESS & WATER EASEMENT (PLAT# 23-11800297)*
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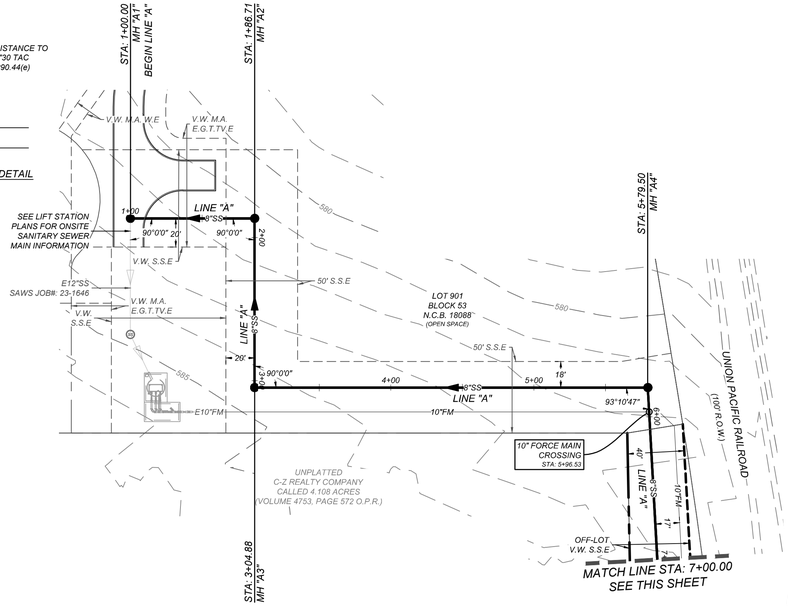
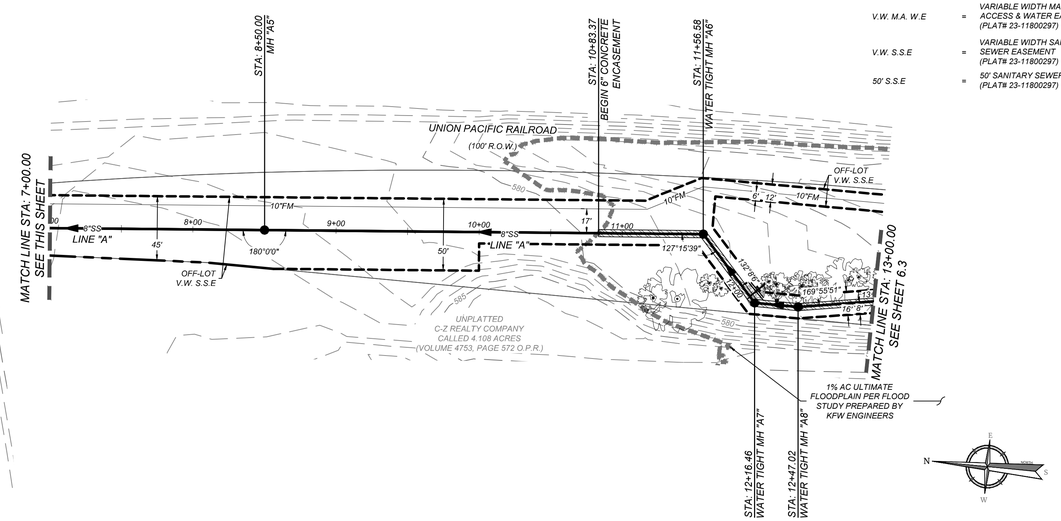
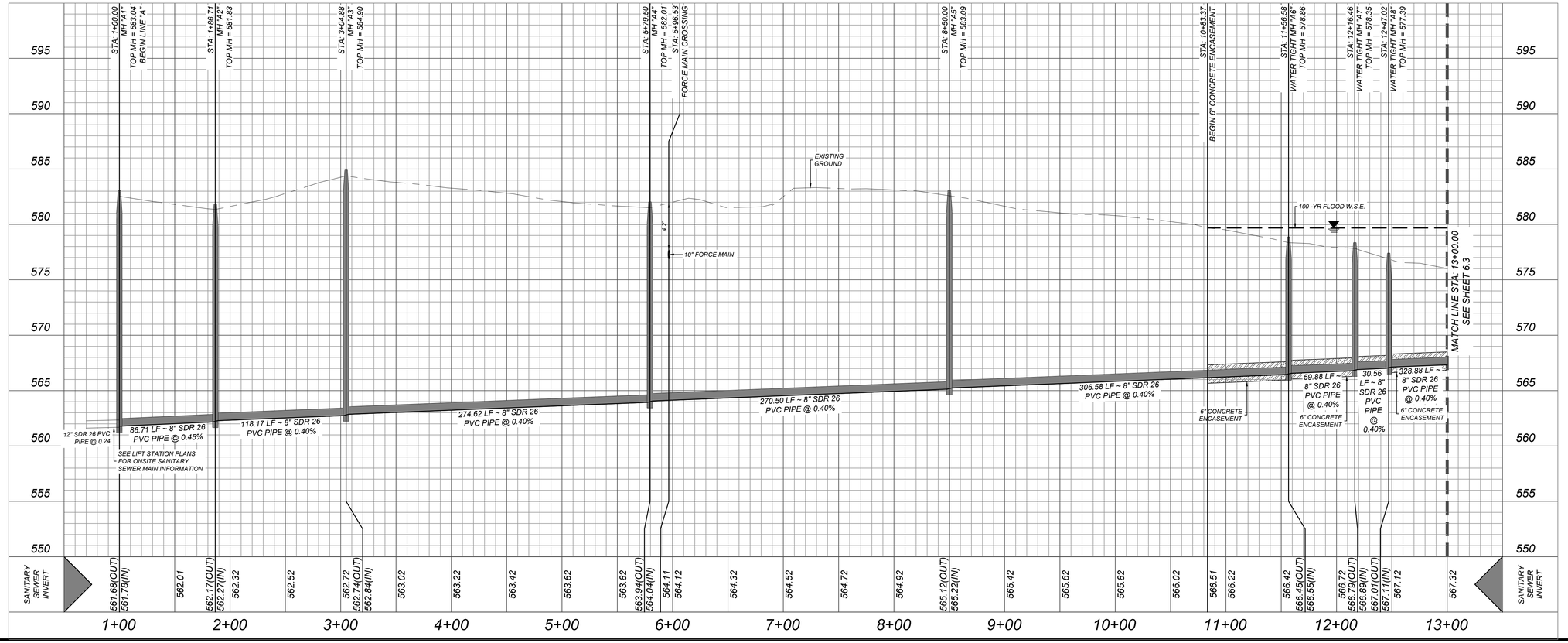




LINE "A"
STA: 1+00.00 - 13+00.00

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



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REV	DESCRIPTION	DRAWN BY	DATE

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED PROFESSIONAL ENGINEER
1/29/24

PRELIMINARY

FOR

VIDA SAN ANTONIO LIFT STATION
PLAT# 23-11800297

SAN ANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
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COLLIERS ENGINEERING & DESIGN, INC.
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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	OCT. 2023	EC	OE

PROJECT NUMBER: 391-10-19
DRAWING NAME: SSPP3911019_A

SHEET TITLE:
LINE "A" PLAN & PROFILE
(1 OF 3)

SHEET NUMBER:
6.2

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

M:\ESWER\SSPP3911019_A.dwg\6.2 By: SCHAVEZ

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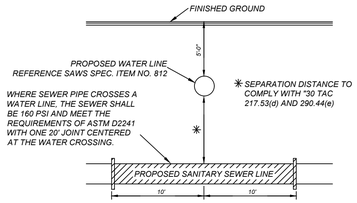

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5. *ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM (SAWS) STANDARD SPECIFICATIONS.*
6. *THE EXISTING UTILITIES SHOWN ARE BASED ON THE BEST RECORDS AVAILABLE AT THE TIME OF DESIGN AND ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE. CONTRACTOR TO FIELD VERIFY THE LOCATION (BOTH HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO START OF CONSTRUCTION.*
7. *ALL MANHOLE WITHIN FEMA 100-YEAR FLOODPLAIN MUST BE WATER TIGHT.*

CAUTION!!:
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MANHOLE NOTE:
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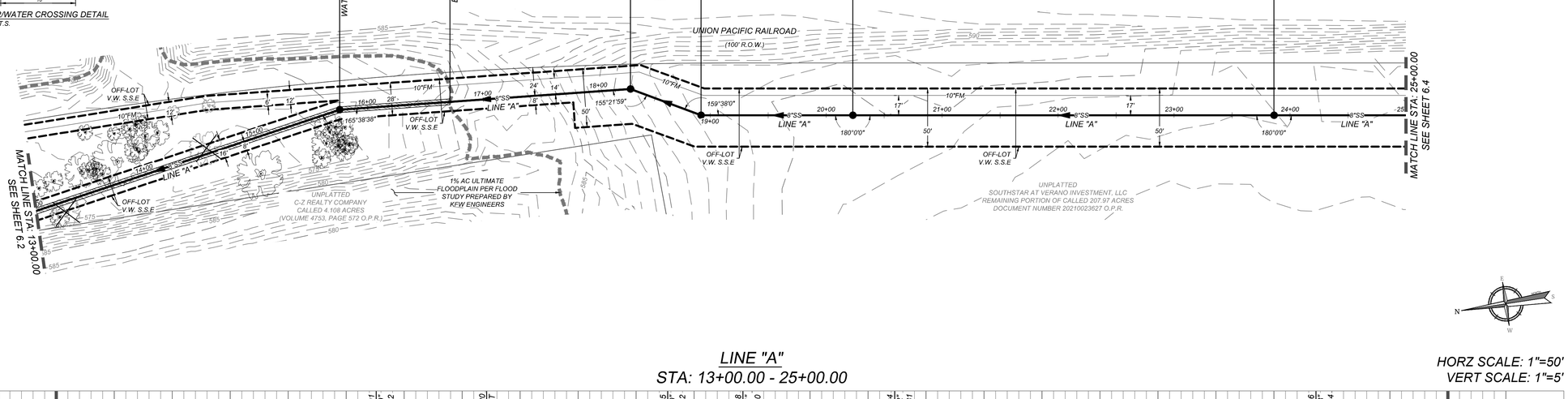
LOWER - WEST SEWERSHED - DOS RIOS \ LEON CREEK W.R.C.

DEVELOPER'S NAME: SOUTHSTAR AT VERANO, LLC
DEVELOPER'S ADDRESS: 2055 CENTRAL PLAZA, SUITE 110
CITY: NEW BRAUNFELS STATE: TEXAS ZIP: 78130
PHONE#: FAX#: TOTAL ACREAGE: 2.991 ACRES
SAWS BLOCK MAP#: 154536 TOTAL EDU'S: 0
TOTAL LINEAR FOOTAGE OF PIPE: 3,266.85 LF OF 8" SDR 26 PLAT NO.: 23-11800297
NUMBER OF LOTS: 0 SAWS JOB#: 23-1645

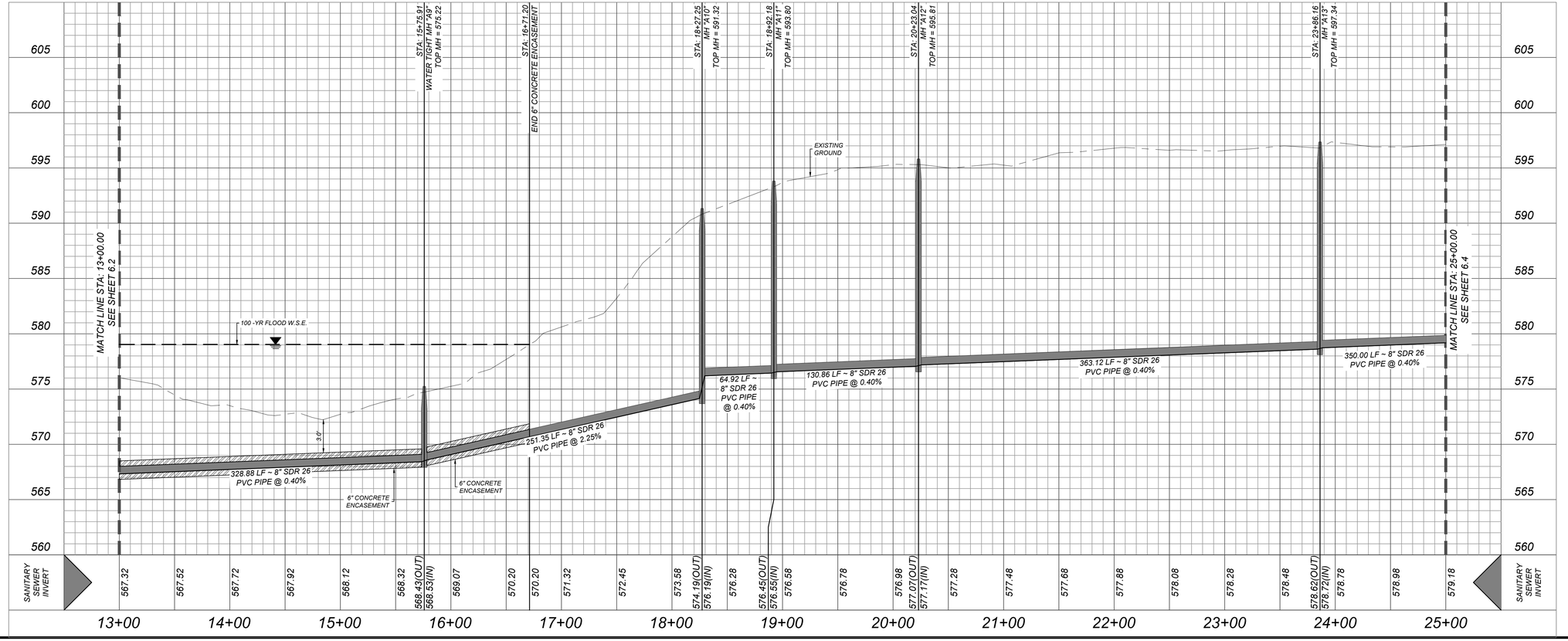
LEGEND

V.W. M.A. E.G.T.TV.E	=	*VARIABLE WIDTH MAINTENANCE ACCESS ELECTRIC, GAS, TELEPHONE & CABLE EASEMENT (PLAT# 23-11800297)*
V.W. M.A. W.E	=	*VARIABLE WIDTH MAINTENANCE ACCESS & WATER EASEMENT (PLAT# 23-11800297)*
V.W. S.S.E	=	*VARIABLE WIDTH SANITARY SEWER EASEMENT (PLAT# 23-11800297)*
50' S.S.E	=	*50' SANITARY SEWER EASEMENT (PLAT# 23-11800297)*



LINE "A"
STA: 13+00.00 - 25+00.00

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



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www.colliersengineering.com

Formerly Known as KFW

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

REV	DESCRIPTION	DRAWN BY	DATE

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED PROFESSIONAL ENGINEER
11/27/24

PRELIMINARY

FOR

VIDA SAN ANTONIO LIFT STATION
PLAT# 23-11800297

SAN ANTONIO
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	OCT. 2023	EC	OE

PROJECT NUMBER: 391-10-19
DRAWING NAME: SSPP3911019_A

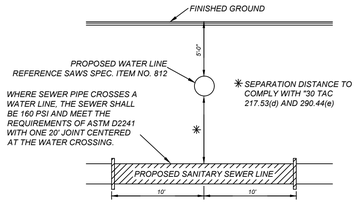
SHEET TITLE:
LINE "A" PLAN & PROFILE (2 OF 3)

SHEET NUMBER:
6.3

M:\ESEWER\SSPP3911019_A.dwg\6.3 By: ECHAVEZ

TRENCH EXCAVATION SAFETY PROTECTION

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



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

NOTES:

1. SEWER PIPE WHERE WATER LINE CROSSES SHALL BE MEET THE REQUIREMENTS OF ASTM D2241.
2. 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.
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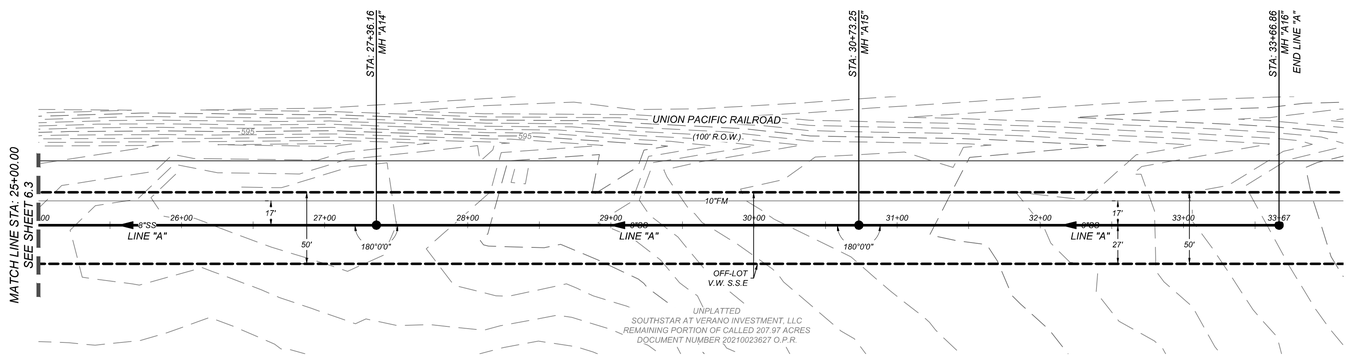
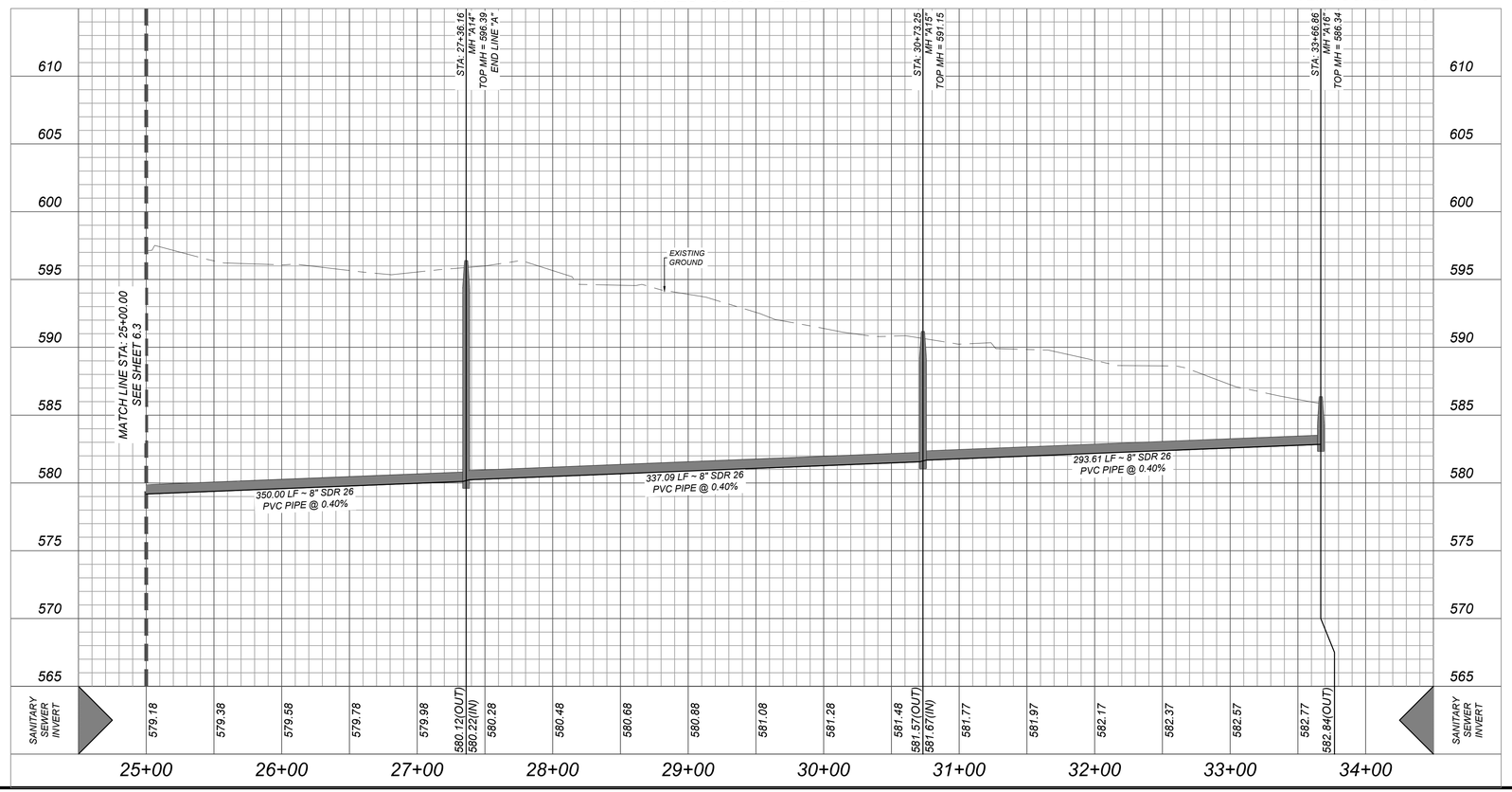


LINE "A"
STA: 25+00.00 - END

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



REV	DESCRIPTION	DRAWN BY	DATE

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED PROFESSIONAL ENGINEER

1/29/24

PRELIMINARY

FOR

VIDA SAN ANTONIO LIFT STATION
PLAT# 23-11800297

SAN ANTONIO
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
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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	OCT. 2023	EC	OE

PROJECT NUMBER: 391-10-19
DRAWING NAME: SSPP3911019_A

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

SHEET NUMBER:
6.4

M:\ESEWER\SSPP3911019_A.dwg\6.4 By: SCHAVEZ

VIDA SAN ANTONIO LIFT STATION

BEXAR COUNTY, TEXAS

FORCE MAIN IMPROVEMENTS

SAWS CONSTRUCTION NOTES
COUNTER PERMIT AND GENERAL CONSTRUCTION PERMIT
January 2022

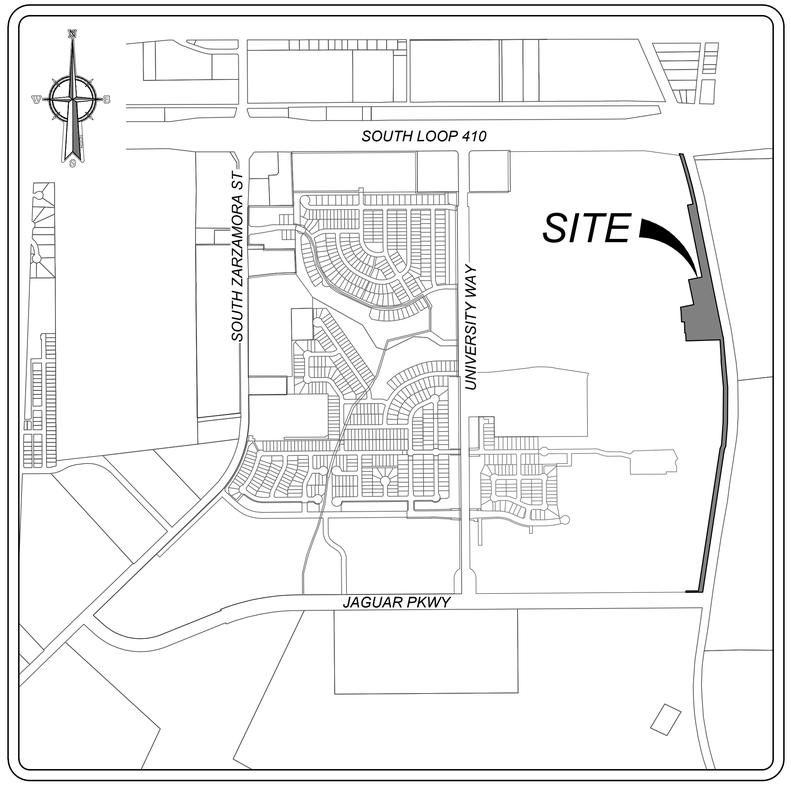
General Section

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:
SOUTHSTAR AT VERANO, LLC
2055 CENTRAL PLAZA, SUITE 110
NEW BRAUNFELS, TEXAS 78130

INDEX

Colliers Engineering & Design

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REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED PROFESSIONAL ENGINEER
11/25/24

PRELIMINARY

FOR

VIDA SAN ANTONIO LIFT STATION
PLAT# 23-11800297

SAN ANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	OCT. 2023	EC	OE

PROJECT NUMBER: 391-10-19
DRAWING NAME: CVFM3911019

SHEET TITLE:
FORCE MAIN COVER SHEET

SHEET NUMBER:
6.5

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

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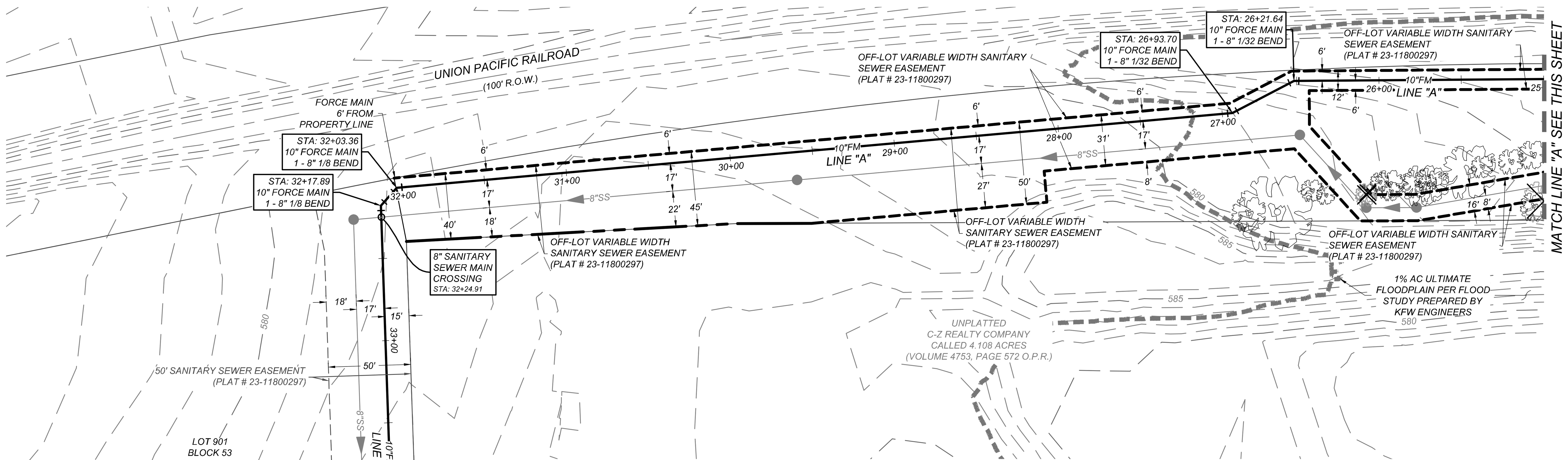
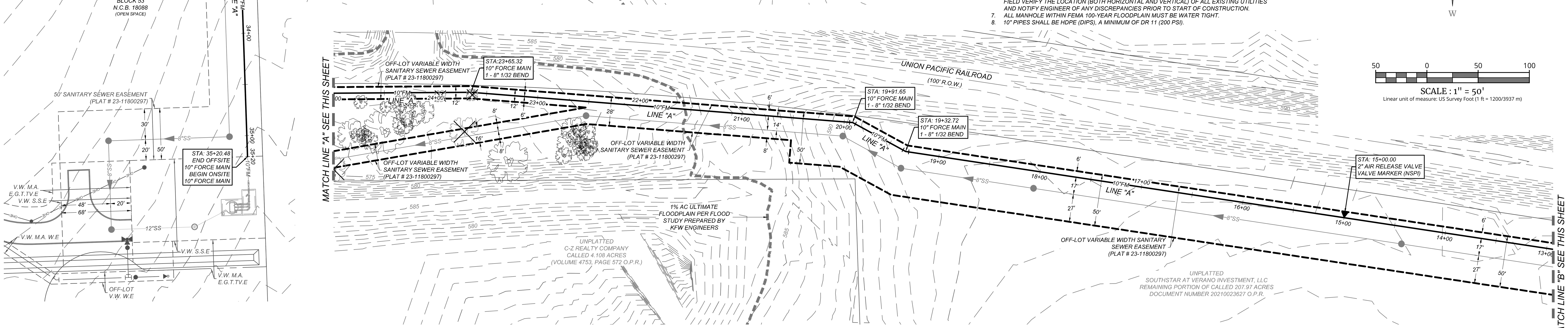
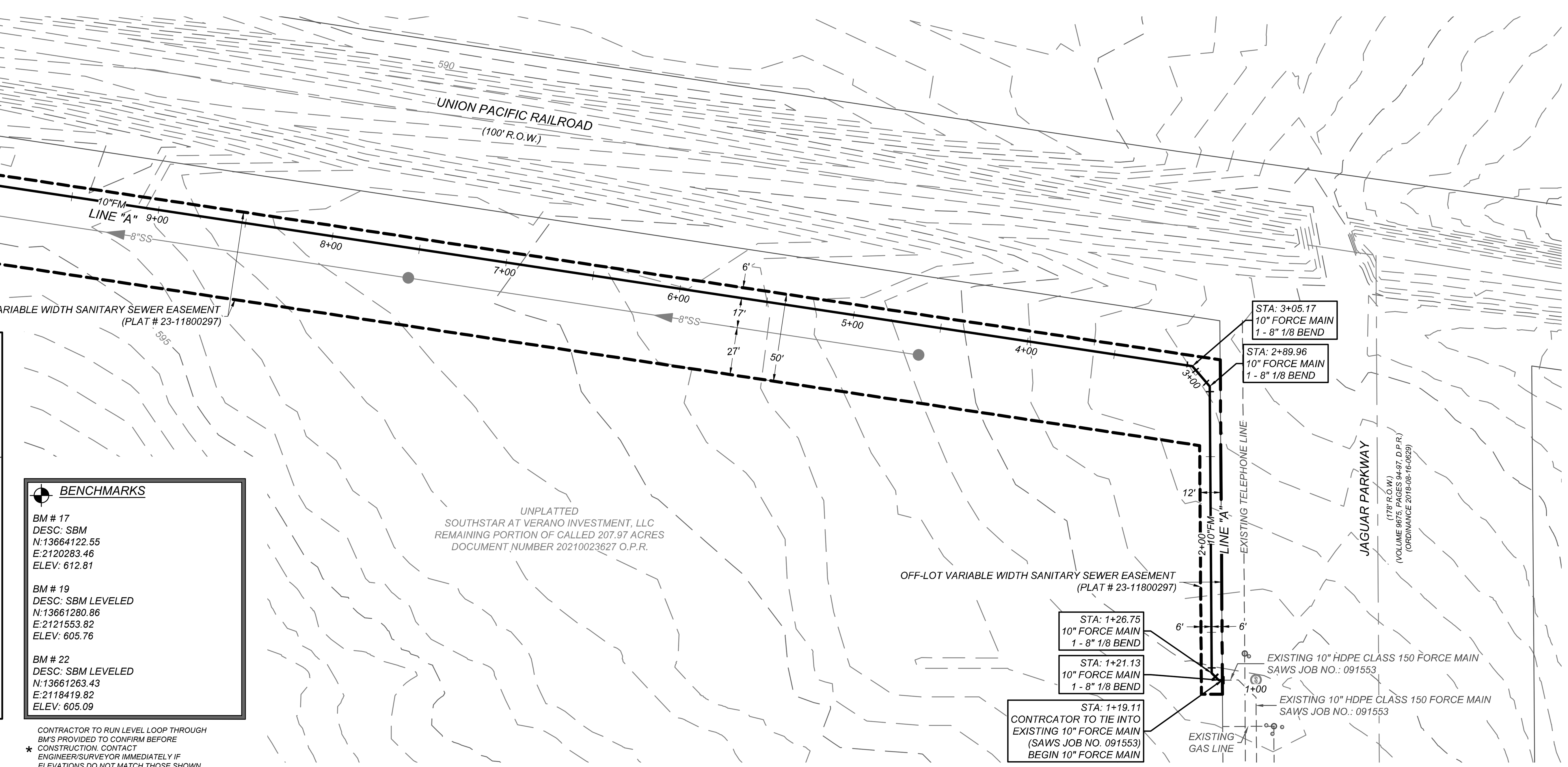
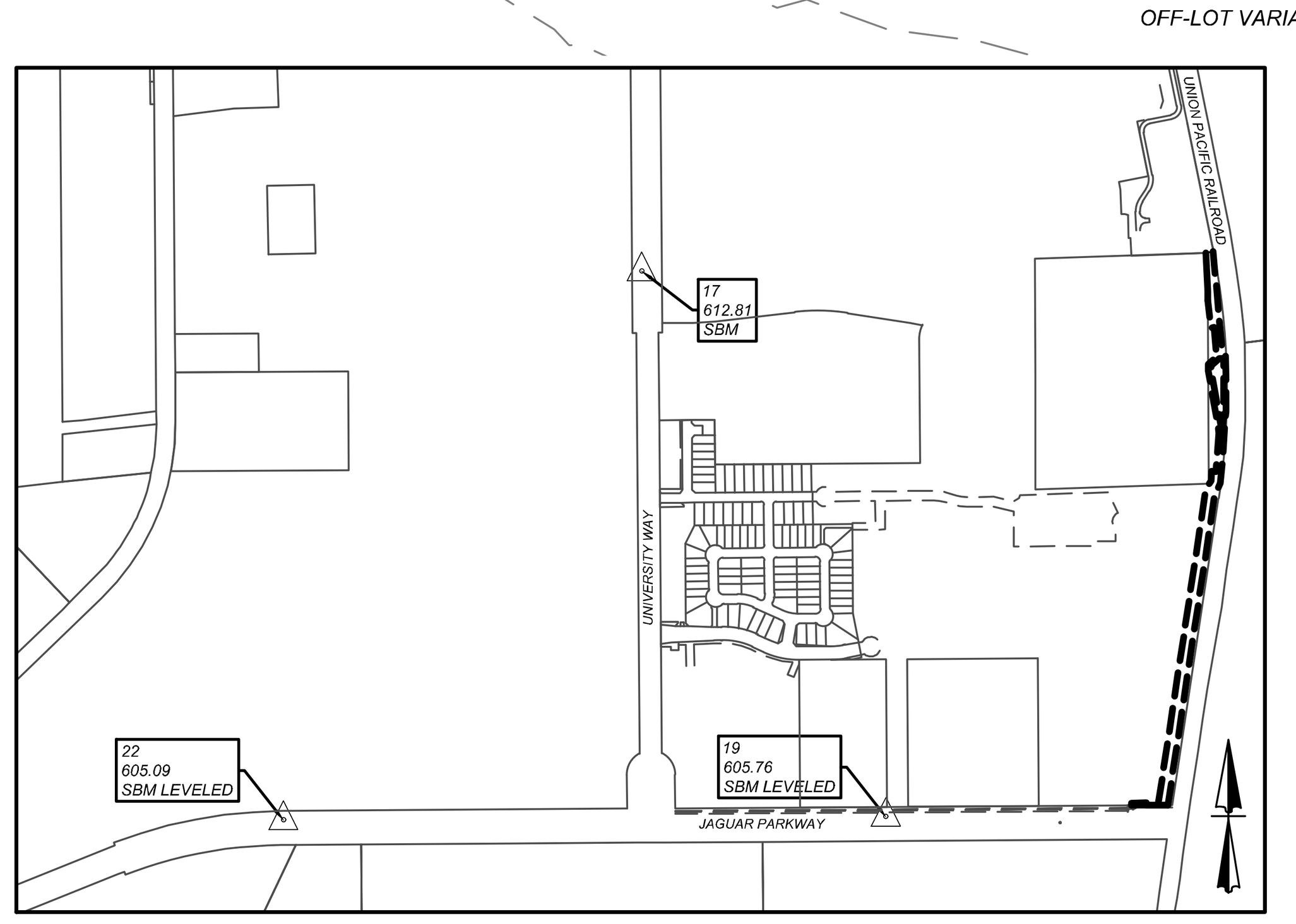
COMPACTION NOTE:

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.









BENCHMARK MAP

SCALE: NOT-TO-SCALE

BENCHMARKS

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

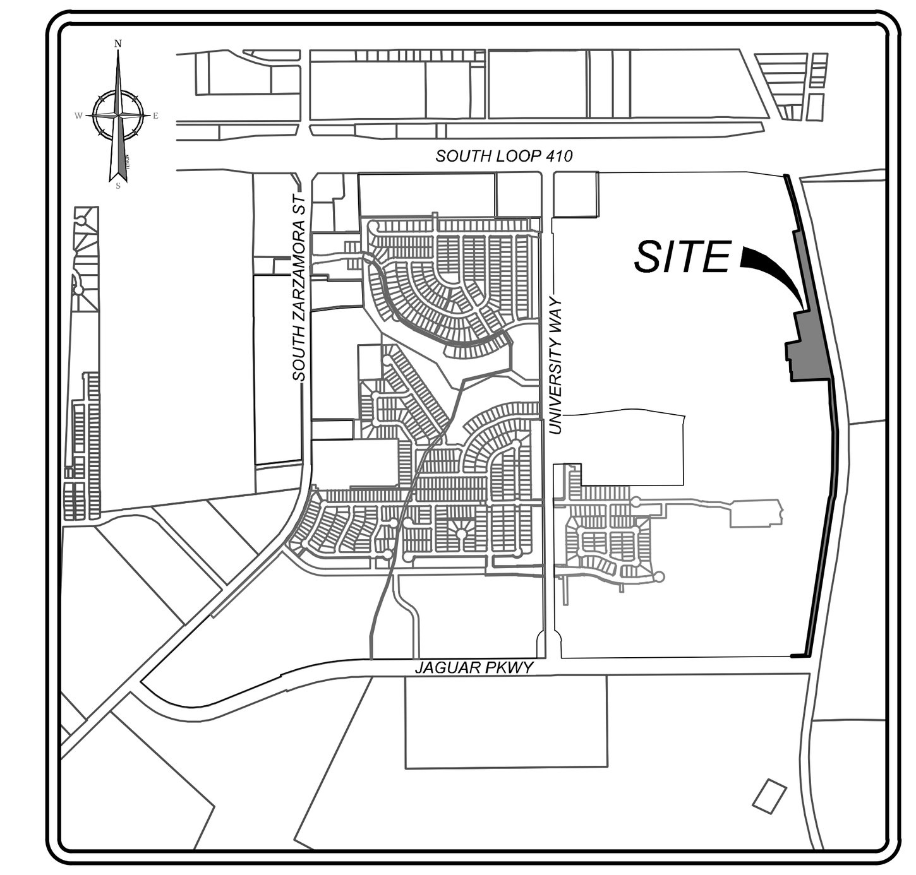
BM # 19
DESC: SBM LEVELED
N:13661280.86
E:2121553.82
ELEV: 605.76

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

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

LEGEND

PROPOSED WATER MAIN	=	W
PROPOSED FIRE HYDRANT	=	
PROPOSED WATER VALVE	=	
PROPOSED SANITARY SEWER MAIN	=	SS
PROPOSED SANITARY SEWER MANHOLE	=	SS
PROPOSED FORCE MAIN	=	FM
VARIABLE WIDTH MAINTENANCE ACCESS ELECTRIC, GAS, TELEPHONE & CABLE EASEMENT	=	V.W. M.A. E.G.T.TV.E (PLAT# 23-11800297)
VARIABLE WIDTH MAINTENANCE ACCESS & WATER EASEMENT	=	V.W. M.A. W.E (PLAT# 23-11800297)
VARIABLE WIDTH SANITARY SEWER EASEMENT	=	V.W. S.S.E (PLAT# 23-11800297)
50' SANITARY SEWER EASEMENT	=	50' S.S.E (PLAT# 23-11800297)
EXISTING WATER MAIN	=	EW
EXISTING FIRE HYDRANT	=	
EXISTING WATER VALVE	=	
EXISTING SANITARY SEWER MAIN	=	ESS
EXISTING SANITARY SEWER MANHOLE	=	ESS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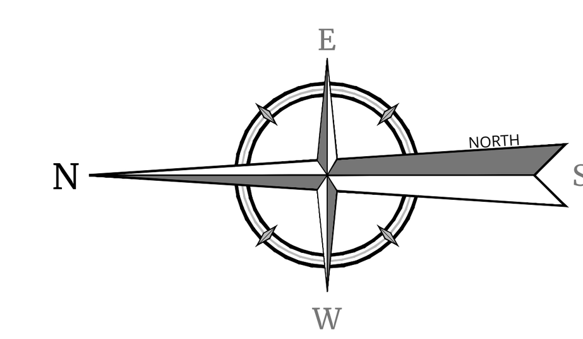
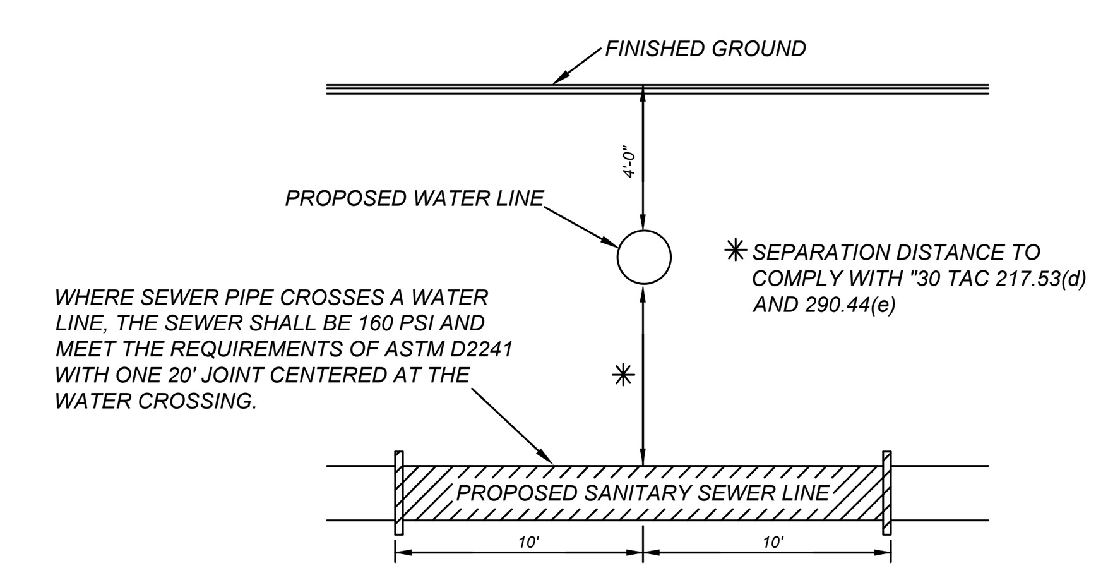


50 0 50 100

SCALE : 1" = 50'

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



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

N.T.S.

CAUTION!!:

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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.

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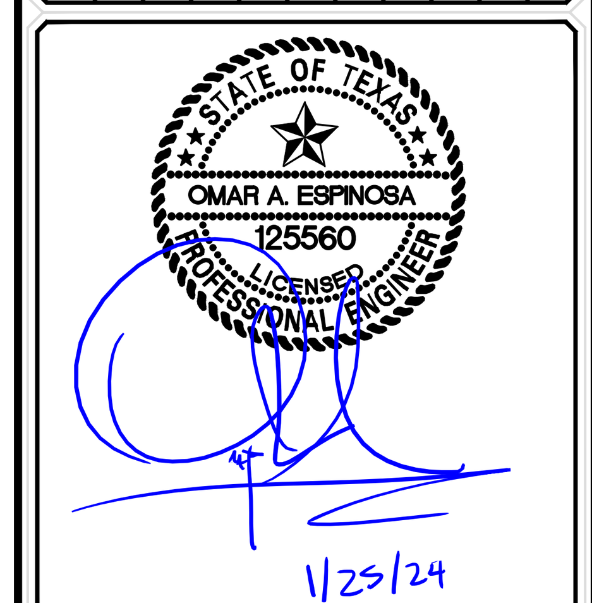
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION



PRELIMINARY

FOR

VIDA SAN ANTONIO LIFT STATION PLAT# 23-11800297

SAN ANTONIO
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	OCT. 2023	EC	OE

PROJECT NUMBER:	DRAWING NAME:
391-10-19	OFM3911019

SHEET TITLE: OVERALL FORCE MAIN PLAN

SHEET NUMBER: 6.6

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

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.

NOTES:

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2. REF. SHEET 6.6 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.
6. THE EXISTING UTILITIES SHOWN ARE BASED ON THE BEST RECORDS AVAILABLE AT THE TIME OF DESIGN AND ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE. CONTRACTOR TO FIELD VERIFY THE LOCATION (BOTH HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO START OF CONSTRUCTION.
7. ALL MANHOLE WITHIN FEMA 100-YEAR FLOODPLAIN MUST BE WATER TIGHT.
8. 10" PIPES SHALL BE HDPE (DIPS), A MINIMUM OF DR 11 (200 PSI)

CAUTION!!:

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MANHOLE NOTE:

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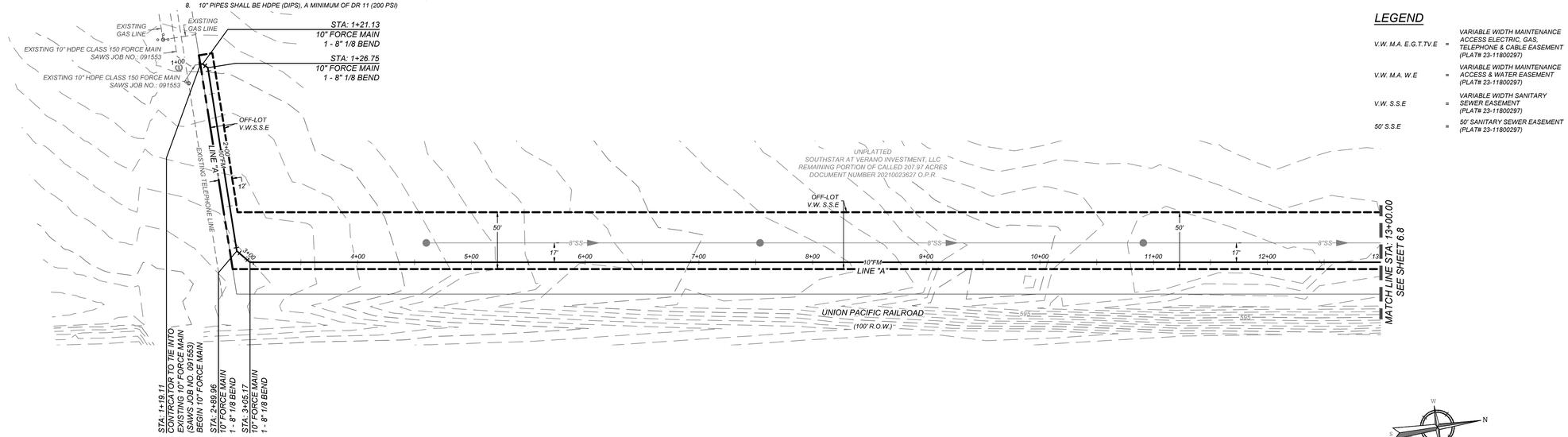


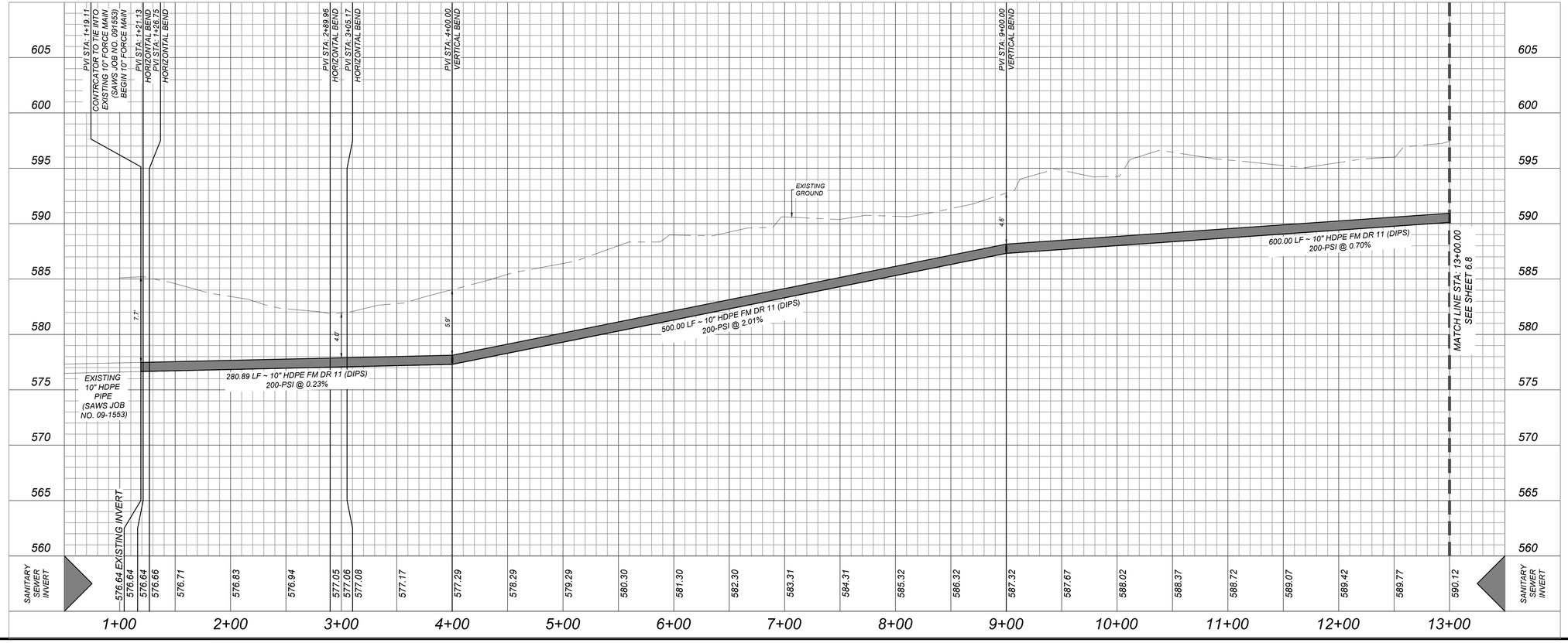
LEGEND

V.W. M.A. E.G.T.TV.E	=	VARIABLE WIDTH MAINTENANCE ACCESS ELECTRIC, GAS, TELEPHONE & CABLE EASEMENT (PLAT# 23-11800297)
V.W. M.A. W.E	=	VARIABLE WIDTH MAINTENANCE ACCESS & WATER EASEMENT (PLAT# 23-11800297)
V.W. S.S.E	=	VARIABLE WIDTH SANITARY SEWER EASEMENT (PLAT# 23-11800297)
50' S.S.E	=	50' SANITARY SEWER EASEMENT (PLAT# 23-11800297)

ANGULAR DEFLECTION SHALL BE INSTALLED IN ACCORDANCE WITH AWWA AND MANUFACTURER ALLOWABLE STANDARDS

LINE "A" - FORCE MAIN
STA: 1+19.11 - 13+00.00

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



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REV	DESCRIPTION	DRAWN BY	DATE

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED PROFESSIONAL ENGINEER
11/25/24

PRELIMINARY

FOR

VIDA SAN ANTONIO LIFT STATION
PLAT# 23-11800297

SAN ANTONIO
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
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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	OCT. 2023	EC	OE

PROJECT NUMBER: 391-10-19
DRAWING NAME: SSPP3911019_A-FM

SHEET TITLE:
LINE "A" - FORCE MAIN PLAN & PROFILE (1 OF 3)

SHEET NUMBER: 6.7

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

TRENCH EXCAVATION SAFETY PROTECTION

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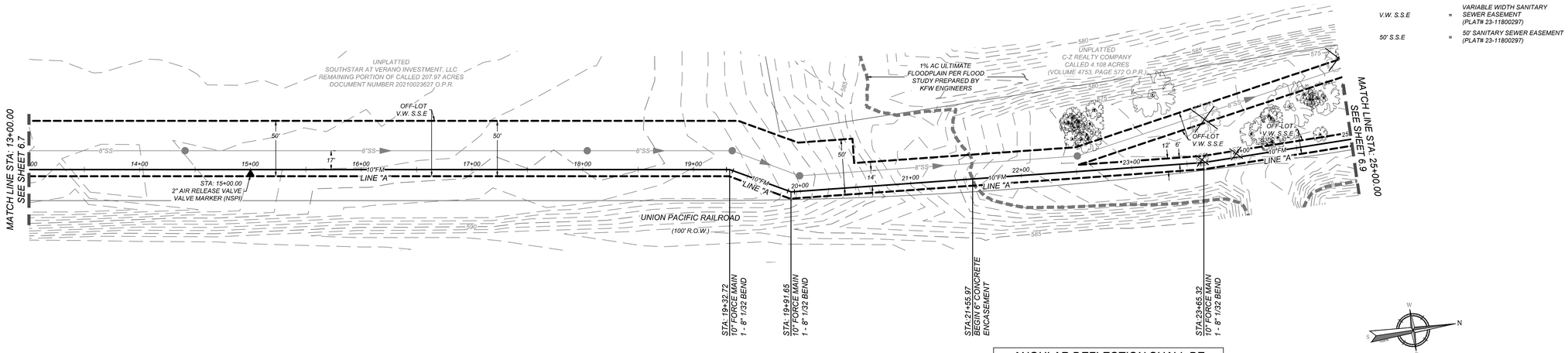

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LINE "A" - FORCE MAIN
STA: 13+00.00 - 25+00.00

HORZ SCALE: 1"=50'
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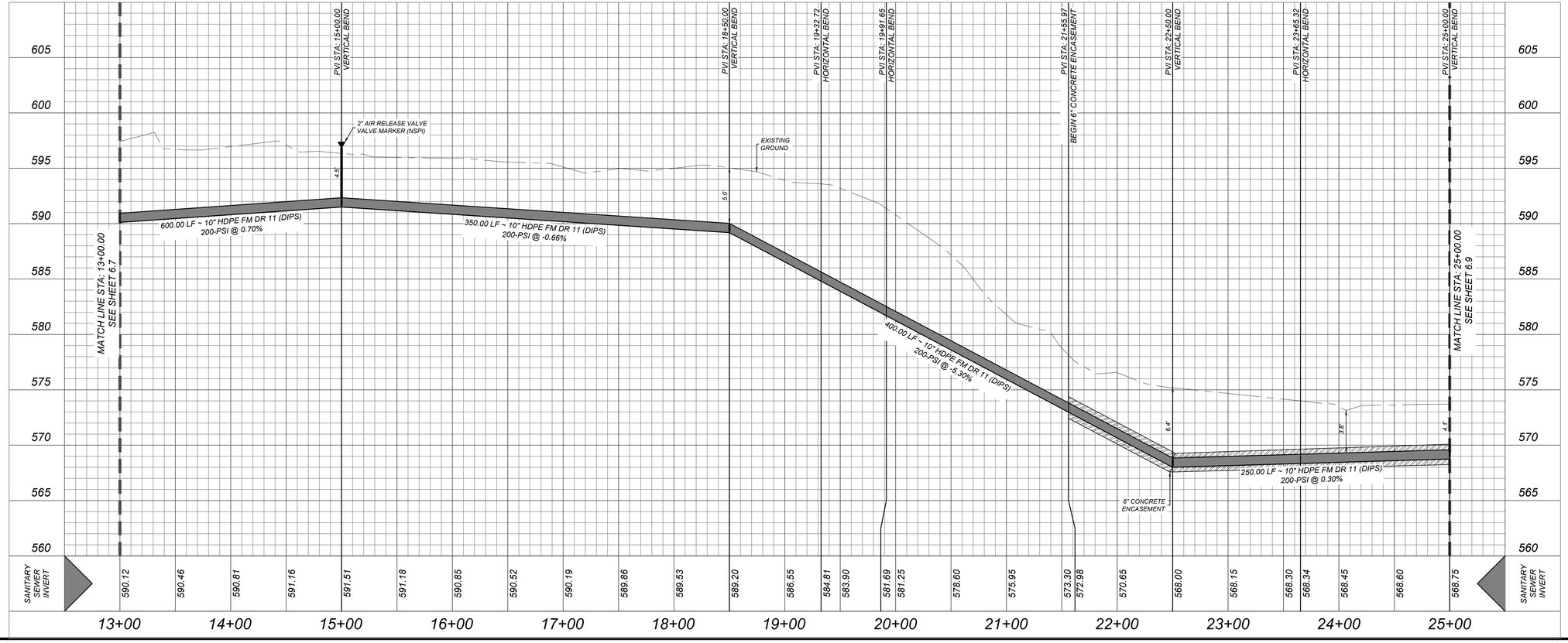

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REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED PROFESSIONAL ENGINEER
1/25/24

PRELIMINARY

FOR

VIDA SAN ANTONIO
LIFT STATION
PLAT# 23-11800297

SAN ANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design

SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	OCT. 2023	EC	OE

PROJECT NUMBER: 391-10-19
DRAWING NAME: SSPP3911019_A-FM

SHEET TITLE:
LINE "A" - FORCE MAIN
PLAN & PROFILE (2 OF 3)

SHEET NUMBER: 6.8

M:\ESWEK\SSPP3911019_A-FM.dwg\6.8 By: SCHAVEZ

TRENCH EXCAVATION SAFETY PROTECTION

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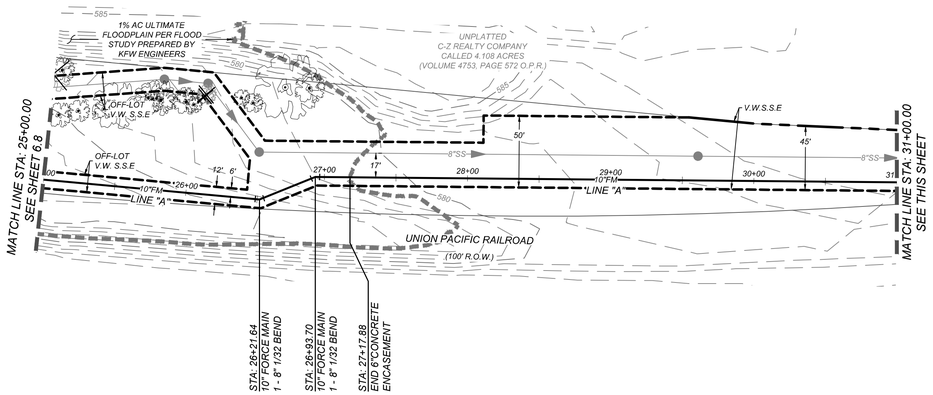

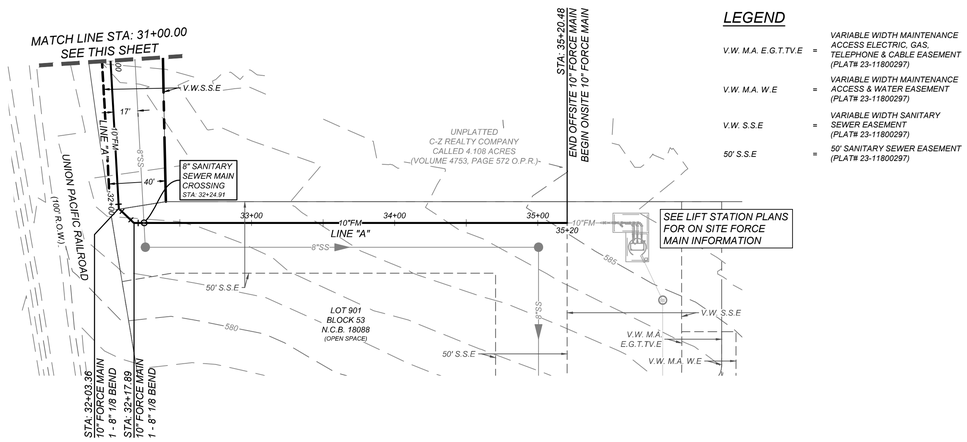

LEGEND

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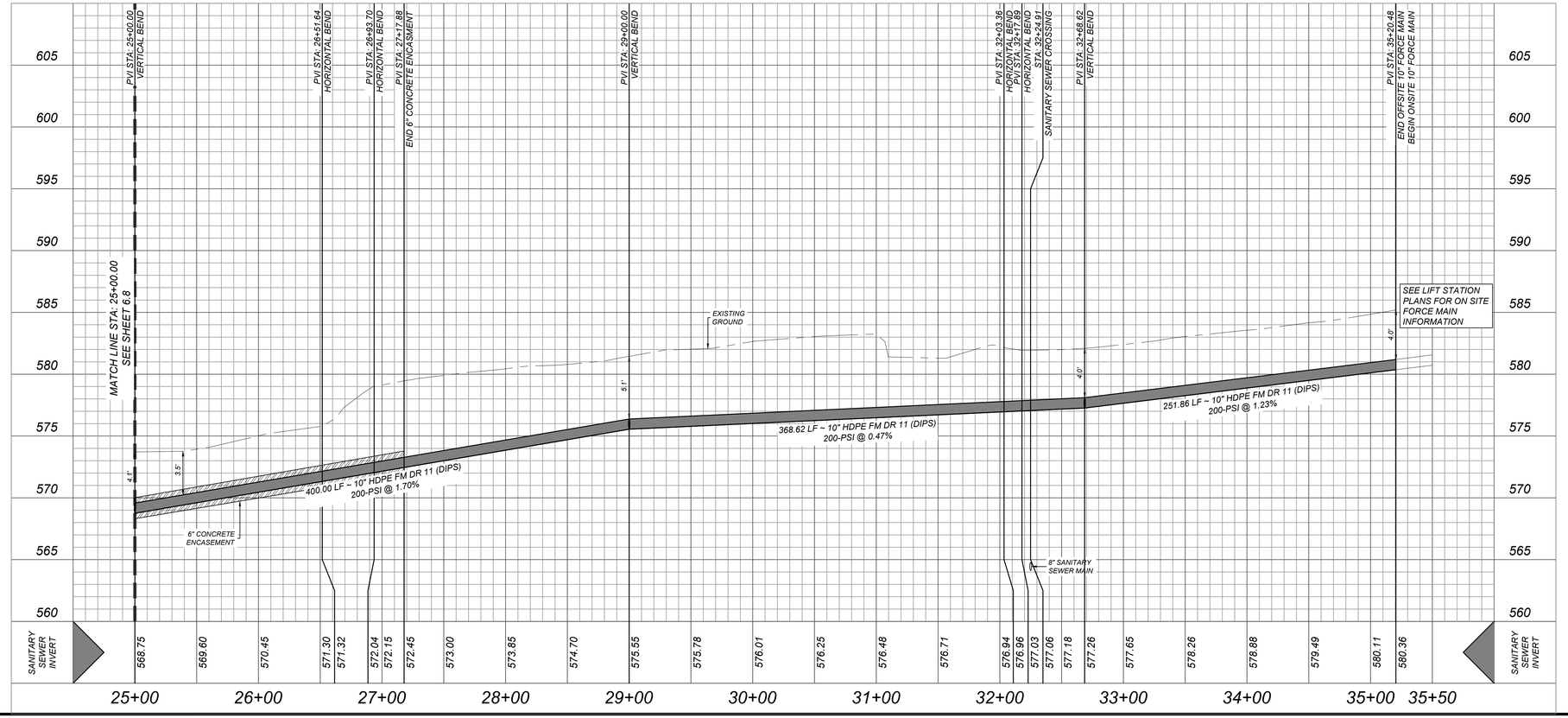
HORZ SCALE: 1"=50'
VERT SCALE: 1"=5'

LINE "A" - FORCE MAIN
STA: 25+00.00 - END



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STATE OF TEXAS
OMAR A. ESPINOSA
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LICENSED PROFESSIONAL ENGINEER
1/25/24

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PROJECT NUMBER: 391-10-19
DRAWING NAME: SSPP3911019_A-FM

SHEET TITLE:
LINE "A" - FORCE MAIN
PLAN & PROFILE (3 OF 3)

SHEET NUMBER:
6.9

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

M:\ESIWER\SSPP3911019_A-FM.dwg\6.9 By: SCHAVEZ

VIDA SAN ANTONIO LIFT STATION

BEXAR COUNTY, TEXAS

WATER IMPROVEMENTS

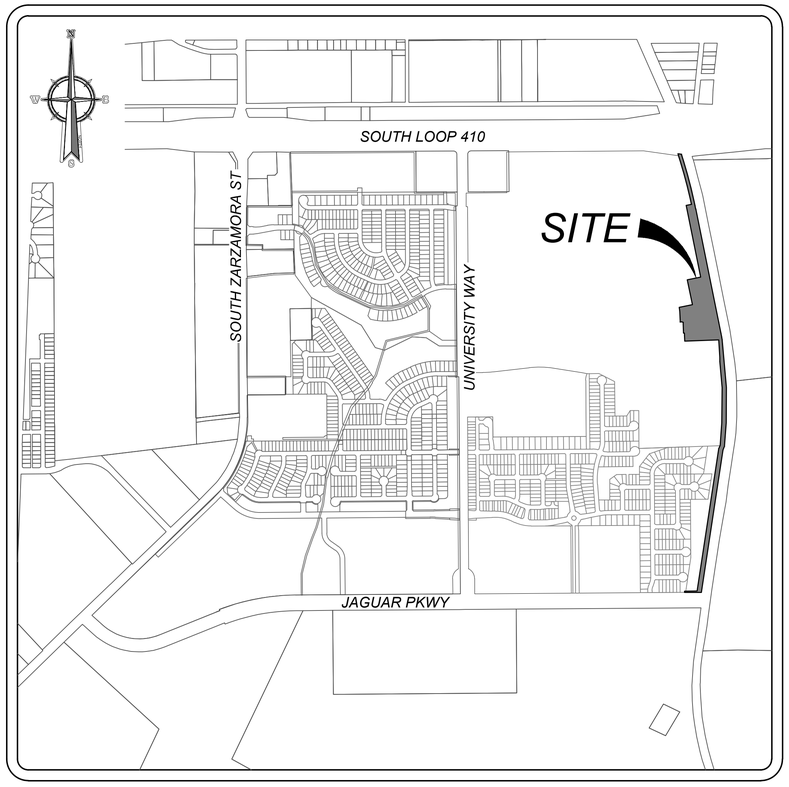
SAWS CONSTRUCTION NOTES
COUNTER PERMIT AND GENERAL CONSTRUCTION PERMIT
January 2022

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:
SOUTHSTAR AT VERANO, LLC
2055 CENTRAL PLAZA, SUITE 110
NEW BRAUNFELS, TEXAS 78130

INDEX

SAWS PRESSURE ZONE 790 HGL

DEVELOPER'S NAME: SOUTHSTAR AT VERANO, LLC		
DEVELOPER'S ADDRESS: 2055 CENTRAL PLAZA, SUITE 110		
CITY: NEW BRAUNFELS	STATE: TEXAS	ZIP: 78130
PHONE#:	FAX#:	TOTAL ACREAGE: 8.186 ACRES
SAWS BLOCK MAP#: 152540		TOTAL EDU'S: 1
TOTAL LINEAR FOOTAGE OF PIPE:	2,244 LF ~ 8" C-900 16 LF ~ 12" C-900	PLAT NO.: 23-11800297
NUMBER OF LOTS: 0	SAWS JOB#: 23-1176	

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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
11/25/24

PRELIMINARY

FOR

VIDA SAN ANTONIO LIFT STATION
PLAT# 23-11800297

SAN ANTONIO
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	OCT. 2023	EC	OE

PROJECT NUMBER:	DRAWING NAME:
391-10-19	CVOW3911015

SHEET TITLE:
WATER DISTRIBUTION COVER SHEET

SHEET NUMBER:
7.0

H:\WATER\CVOW3911015.dwg7.0 By: SCHAVEZ

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 35 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.

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

JOINT RESTRAINT NOTE:

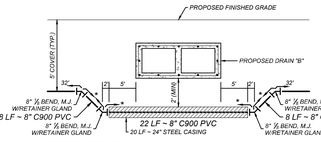
CONTRACTOR SHALL INSTALL RETAINER GLANDS AT ALL FITTINGS AND PROVIDE JOINT RESTRAINING HARNESS OR FIELD LOCK GASKETS AT ALL JOINTS WITHIN THE LENGTH SHOWN. CONTRACTOR SHALL INSURE THAT ALL TEES, BENDS, VALVES, ETC. HAVE A MINIMUM OF 5 FT OF PIPE WITH NO JOINTS ON EACH SIDE OF THE FITTING. JOINT RESTRAINTS 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.

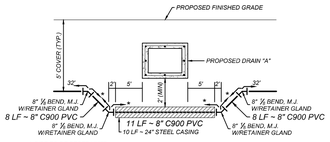
SAWS NOTE:

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



* PIPE TO BE RESTRAINED THROUGH ENTIRE LENGTH

DETAIL "B"
DRAIN "B" CROSSING
N.T.S.

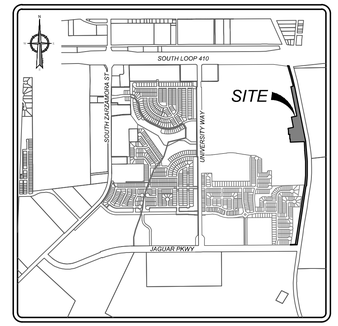


* PIPE TO BE RESTRAINED THROUGH ENTIRE LENGTH

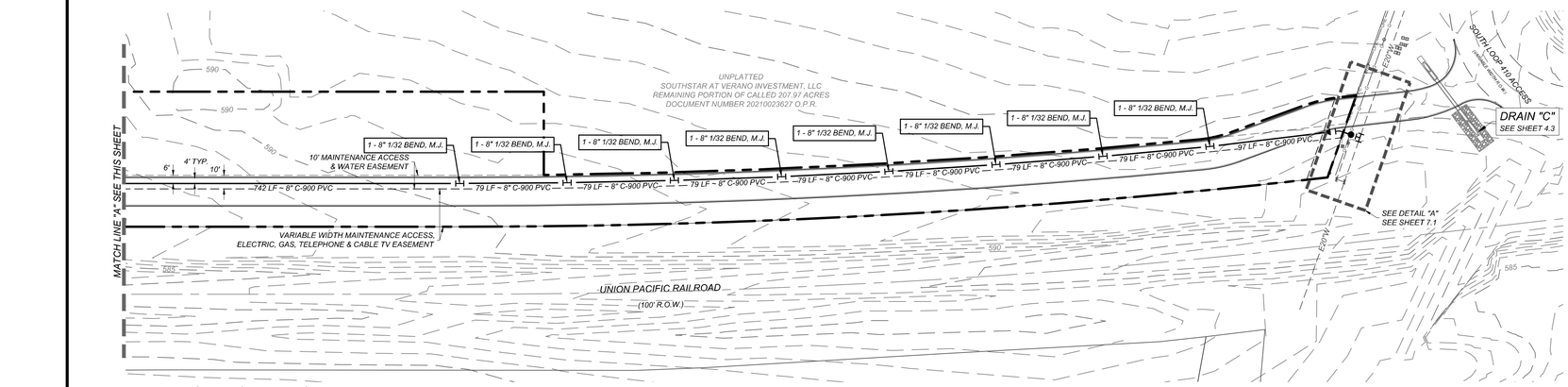
DETAIL "C"
DRAIN "A" CROSSING
N.T.S.

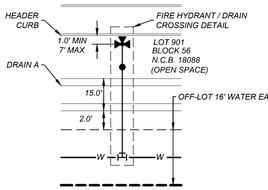
LEGEND

PROPOSED WATER MAIN	=	W
PROPOSED 3/4" WATER SERVICE WITH 5/8" METER & BOX	=	W
PROPOSED WATER 3/4" IRRIGATION SERVICE WITH 3/4" METER & BOX	=	IRR
PROPOSED FIRE HYDRANT	=	
PROPOSED WATER VALVE	=	
PROPOSED SANITARY SEWER MAIN	=	SS
PROPOSED SANITARY SEWER MANHOLE	=	
EXISTING WATER MAIN	=	EW
EXISTING FIRE HYDRANT	=	
EXISTING WATER VALVE	=	
EXISTING SANITARY SEWER MAIN	=	ESS
EXISTING SANITARY SEWER MANHOLE	=	
EXISTING OVERHEAD ELECTRIC W/POWER POLE	=	OHE
EXISTING GUY WIRE/OVERHEAD ELECTRIC	=	OHE

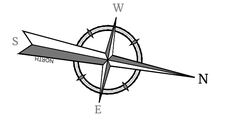


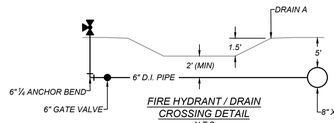
LOCATION MAP
N.T.S.



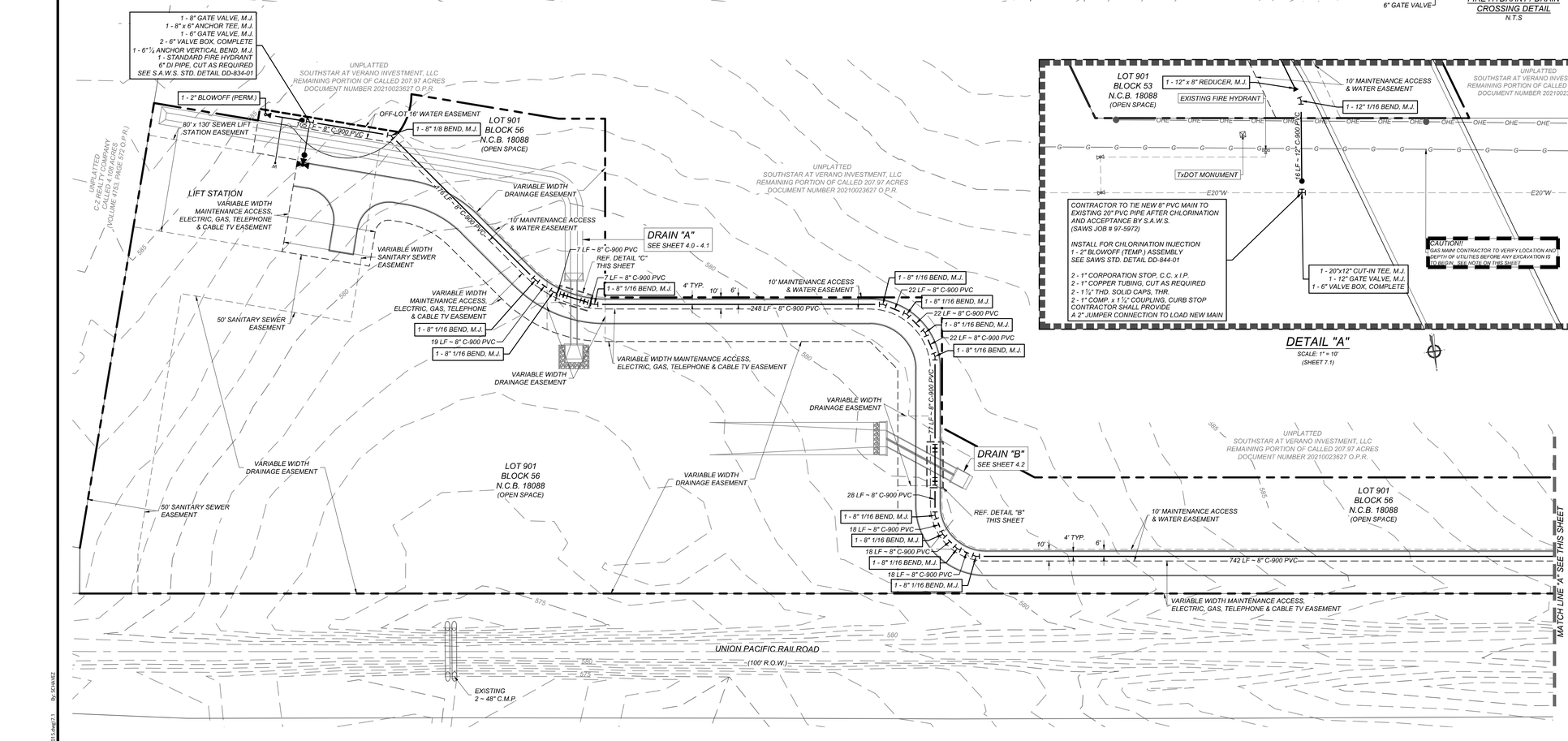


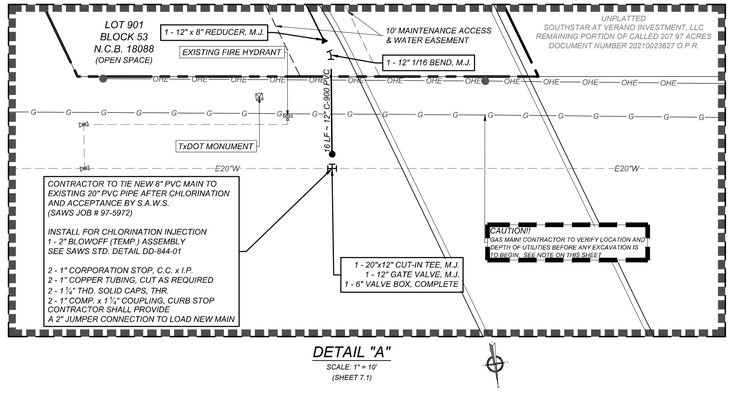
FIRE HYDRANT DETAIL CROSSING
N.T.S



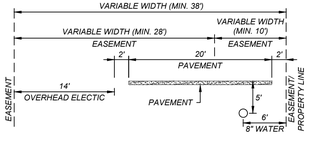


FIRE HYDRANT / DRAIN CROSSING DETAIL
N.T.S





DETAIL "A"
SCALE: 1" = 10'
(SHEET 7.1)



TYPICAL ACCESS ROAD SECTION
NOT TO SCALE

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.

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)*

SAWS PRESSURE ZONE 790 HGL

DEVELOPER'S NAME: SOUTHSTAR AT VERANO, LLC		
DEVELOPER'S ADDRESS: 2055 CENTRAL PLAZA, SUITE 110		
CITY: NEW BRAUNFELS	STATE: TEXAS	ZIP: 78130
PHONE#:	FAX#:	TOTAL ACREAGE: 8.186 ACRES
SAWS BLOCK MAP#: 152540		TOTAL EDU'S: 1
TOTAL LINEAR FOOTAGE OF PIPE:	2,244 LF ~ 8" C-900 16 LF ~ 12" C-900	PLAT NO.: 23-11800297
NUMBER OF LOTS: 0	SAWS JOB#: 23-1176	

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REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED PROFESSIONAL ENGINEER
11/20/24

PRELIMINARY

FOR

VIDA SAN ANTONIO LIFT STATION PLAT# 23-11800297

SAN ANTONIO
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	OCT. 2023	EC	OE

PROJECT NUMBER:	DRAWING NAME:
391-10-19	OW3911015

SHEET TITLE:
WATER DISTRIBUTION PLAN

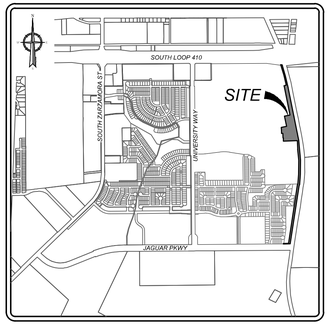
SHEET NUMBER:
7.1

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

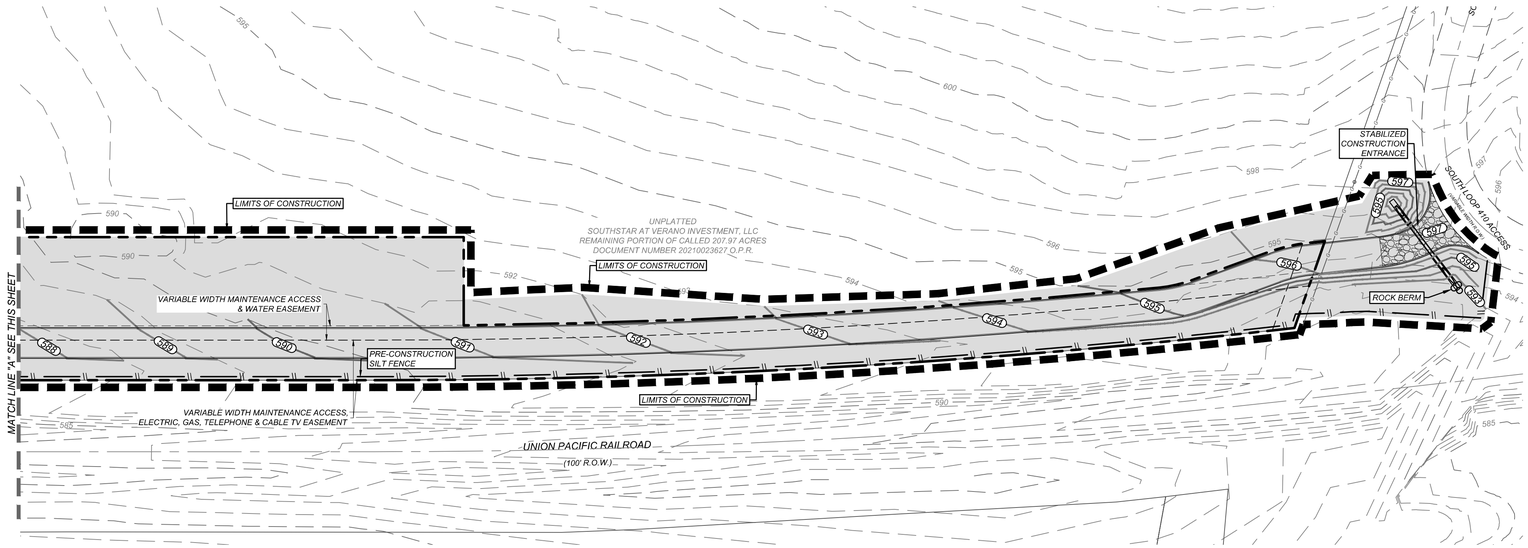
W:\WATER\OW3911015.dwg(7.1 By: SCHAVEZ

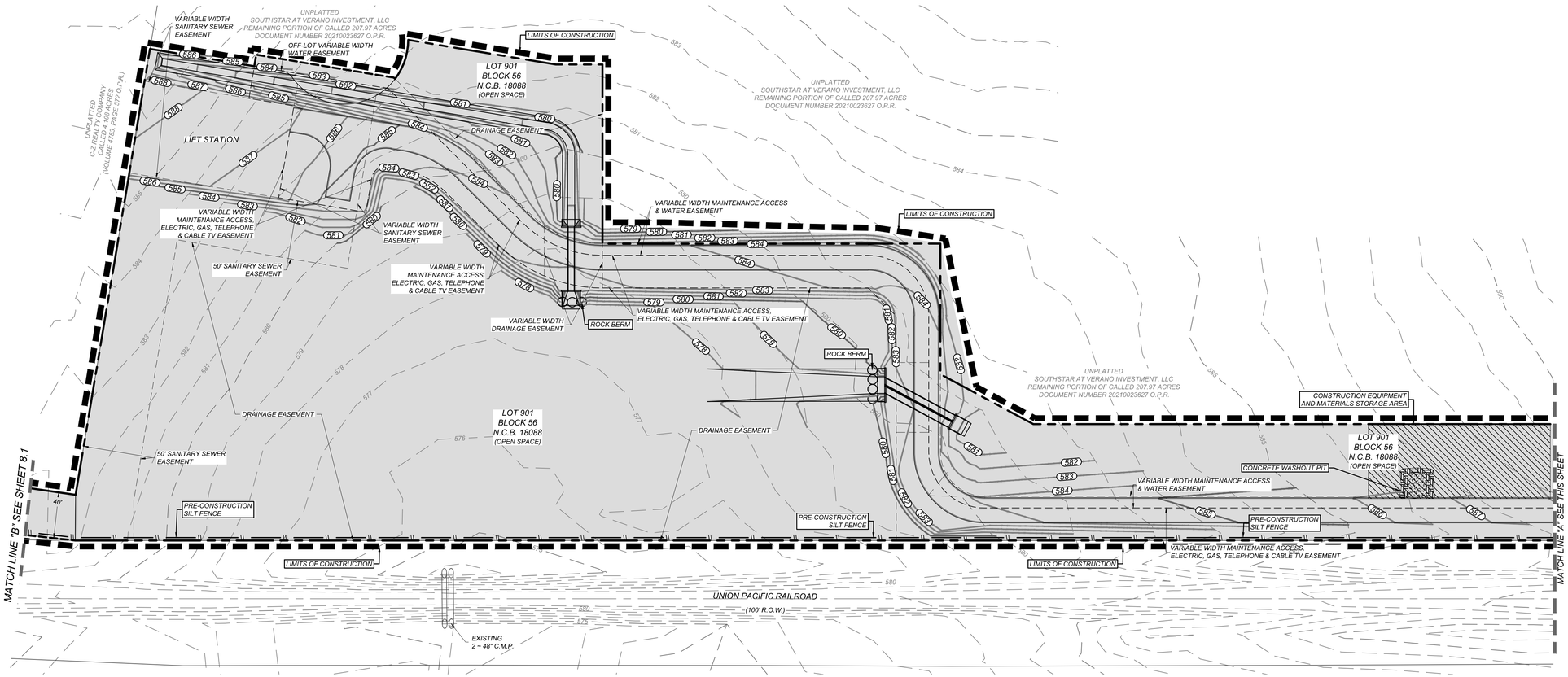
LEGEND

LIMITS OF CONSTRUCTION	=
EXISTING CONTOURS	= 570
PROPOSED CONTOURS	= 1008
FLOW ARROW	=
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)	=



LOCATION MAP
N.T.S.





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REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
OMAR A. ESPINOSA
125560
LICENSED PROFESSIONAL ENGINEER
11/25/24

PRELIMINARY

FOR

VIDA SAN ANTONIO LIFT STATION
PLAT# 23-11800297

SAN ANTONIO
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	OCT. 2023	EC	OE

PROJECT NUMBER:	DRAWING NAME:
391-10-19	SW3P3911015

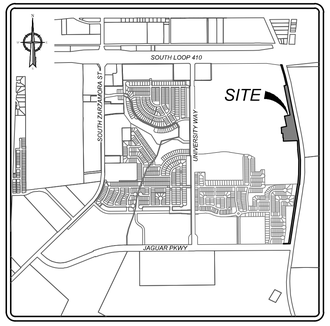
SHEET TITLE:
STORMWATER POLLUTION PREVENTION PLAN (1 OF 2)

SHEET NUMBER:
8.0

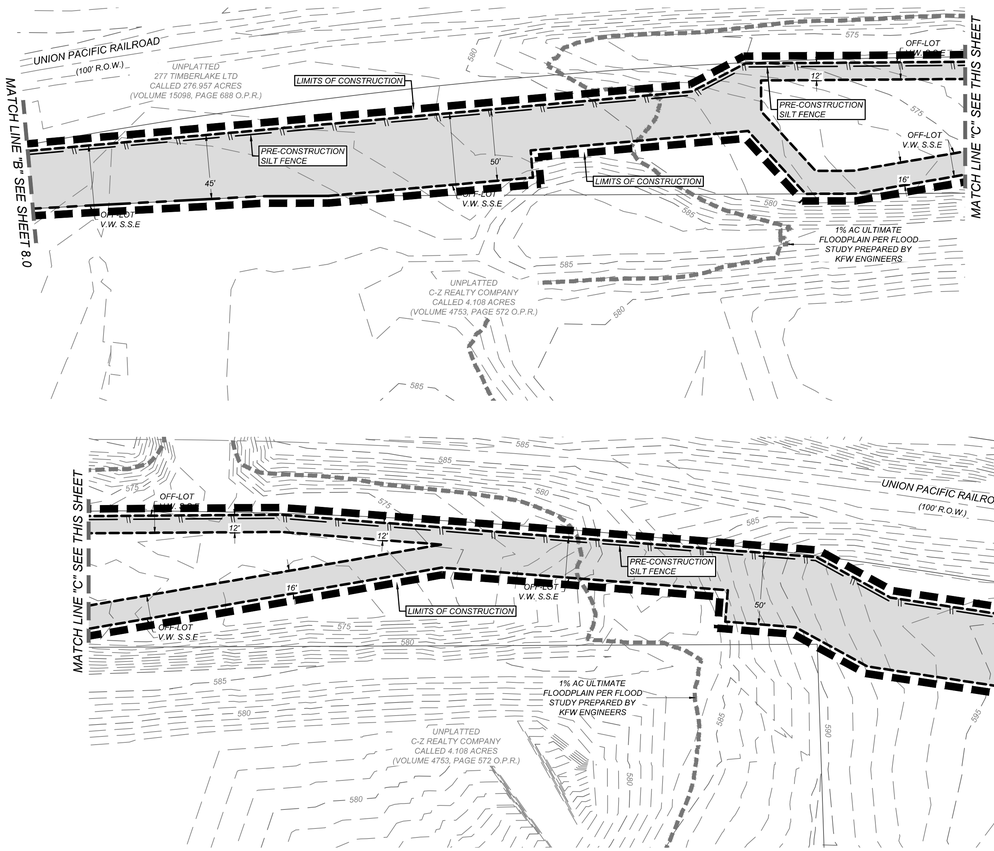
NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

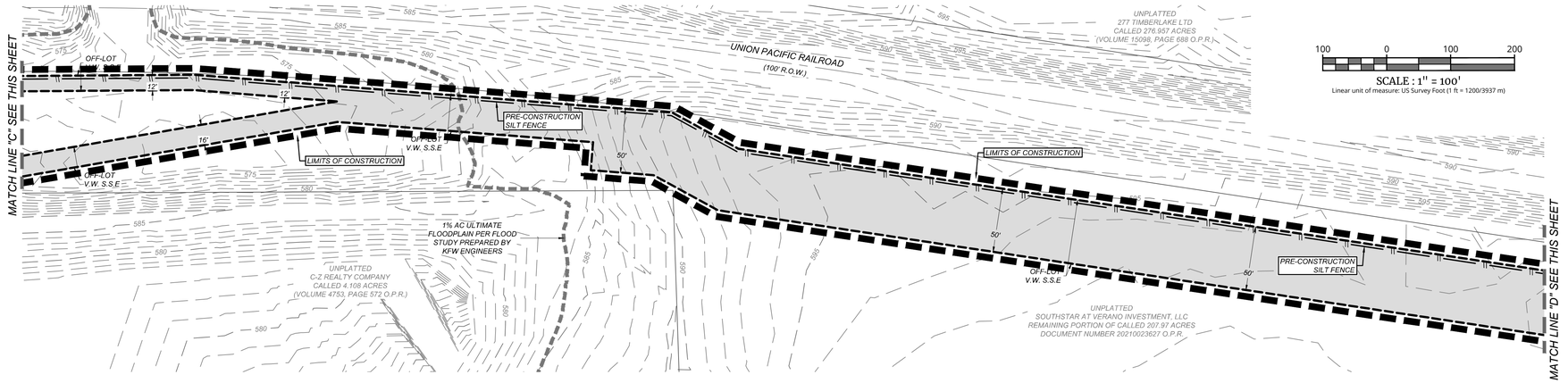
LEGEND

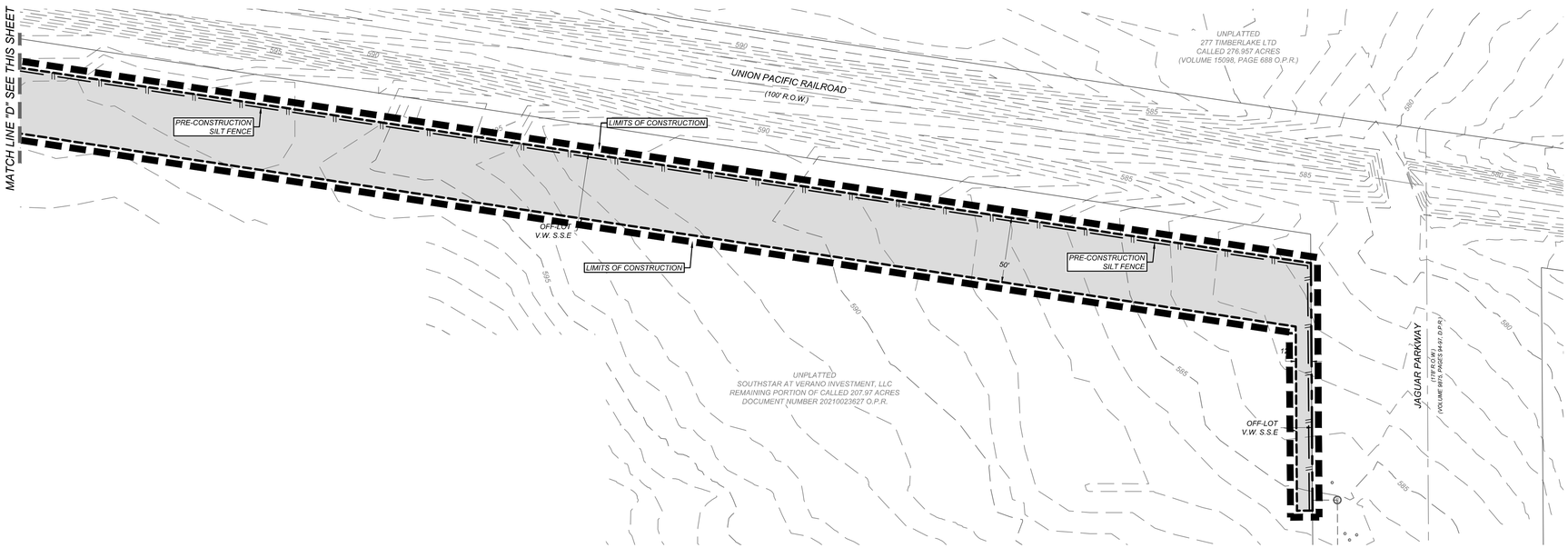
LIMITS OF CONSTRUCTION	=	
EXISTING CONTOURS	=	570
PROPOSED CONTOURS	=	1008
FLOW ARROW	=	
SILT FENCE	=	
TYPE 4 SACK GABIONS	=	
DISTURBED AREA	=	
STABILIZED CONSTRUCTION ENTRANCE/EXIT	=	
CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA.	=	
NATURAL VEGETATIVE BUFFER	=	
CONCRETE TRUCK WASHOUT PIT	=	
ROCK BERM	=	
INLET WITH PROTECTION (GRAVEL FILTERS BAGS)	=	

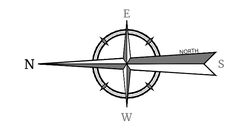


LOCATION MAP
N.T.S.









100 0 100 200

SCALE : 1" = 100'
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

12/19/23

PRELIMINARY

FOR

VIDA SAN ANTONIO LIFT STATION
PLAT# 23-11800297

SAN ANTONIO
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

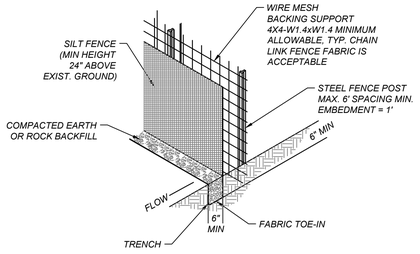
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	OCT. 2023	EC	OE

PROJECT NUMBER:	DRAWING NAME:
391-10-19	SW3P3911015

SHEET TITLE:
STORMWATER POLLUTION PREVENTION PLAN (2 OF 2)

SHEET NUMBER:
8.1

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.



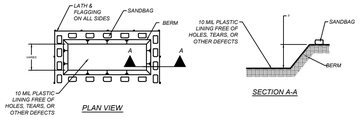
ISOMETRIC PLAN VIEW

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 acre/l 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



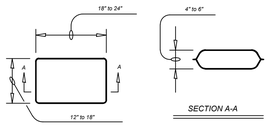
TYPE "BELOW GRADE"

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.*

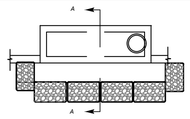
CONCRETE TRUCK WASHOUT PIT

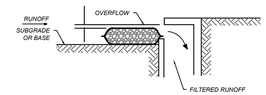


GENERAL NOTES:

- *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

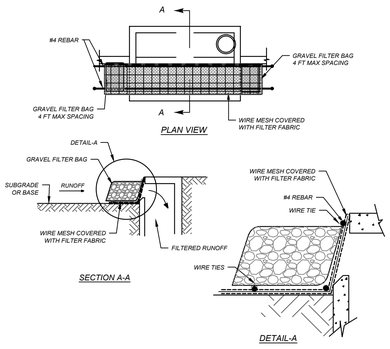




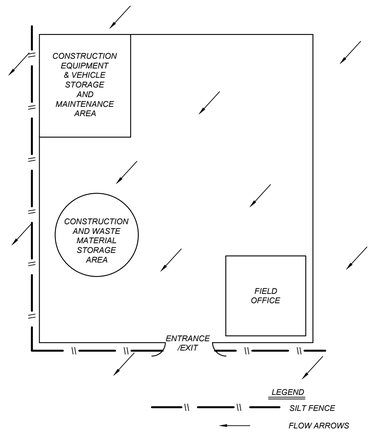
GENERAL NOTES:

- *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.*

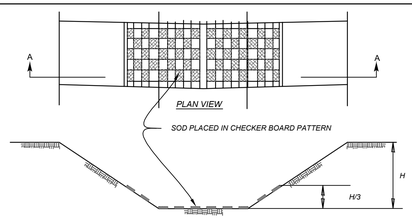
CURB INLET PROTECTION GRAVEL FILTER BAGS



CURB INLET PROTECTION (ALTERNATE)

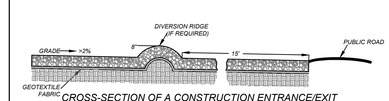


TYPICAL CONSTRUCTION STAGING AREA

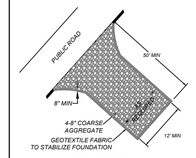


- *CHANNEL TO BE STABILIZED WITH SOD PLACED IN A CHECKER BOARD PATTERN TON THE CHANNEL BOTTOM AND ON THE SIDES UP TO 1/3 THE DEPTH OF CHANNEL.*

CHANNEL LINING



CROSS-SECTION OF A CONSTRUCTION ENTRANCE/EXIT



TEMPORARY CONSTRUCTION ENTRANCE/EXIT

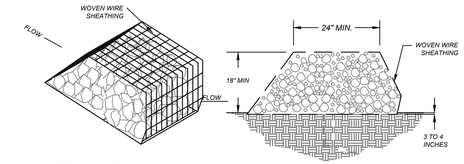
Materials:

(1) The aggregate should consist of 4 to 8 inch washed stone over a stable foundation as specified in the plan.
(2) The aggregate should be placed with a minimum thickness of 8 inches.
(3) The geotextile fabric should be designed specifically for use as a soil filtration media with an approximate weight of 6 oz/yd2, a mullen burst rating of 140 lb/in2, and an equivalent opening size greater than a number 50 sieve.
(4) If a washing facility is required, a level area with a minimum of 4 inch diameter washed stone or commercial rack should be included in the plans. Divert wastewater to a sediment trap or basin.

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

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

STABILIZED CONSTRUCTION ENTRANCE / EXIT



ISOMETRIC PLAN VIEW

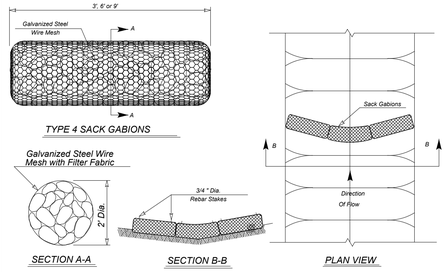
CROSS SECTION

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, air 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



- *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: REISTANT 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: ±4"-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 RESILTATION CONTAMINATED SEDIMENT MUST BE REMOVED AND DISPOSED OF OFF-SITE IN ACCORDANCE WITH APPLICABLE REGULATIONS.*

TYPE 4 SACK GABIONS

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PROFESSIONAL ENGINEER
12/15/23

PRELIMINARY

FOR

VIDA SAN ANTONIO LIFT STATION
PLAT# 23-11800297

SAN ANTONIO
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	OCT. 2023	EC	OE

PROJECT NUMBER:	DRAWING NAME:
391-10-19	SW3P3911015

SHEET TITLE:
STORMWATER POLLUTION PREVENTION PLAN DETAILS

SHEET NUMBER:
8.2

APPLICATION:

1. ALONG CURBED AREAS: PAINT RED LANE STRIPE ON BOTH FACE AND TOP OF CURB. PAINT WHITE LETTERS ON FACE OF CURB ONLY.

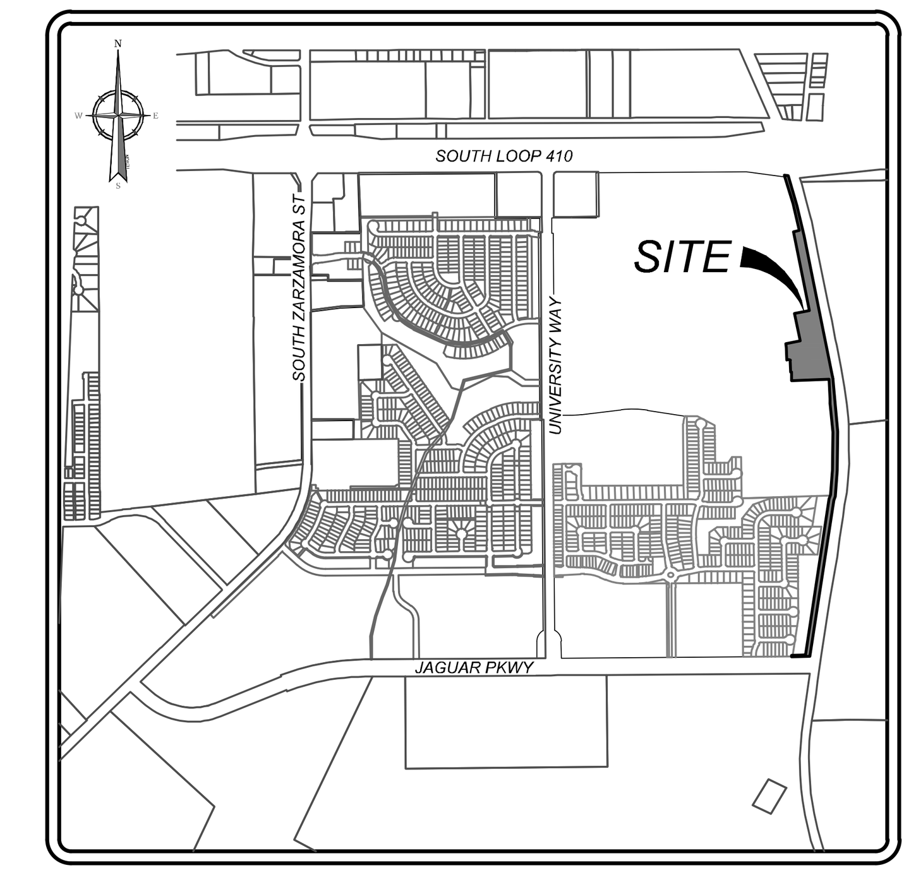
2. ALONG NON-CURBED AREAS: PAINT RED LANE STRIPE ON PAVEMENT AND PAINT WHITE LETTERS.

3. 40' FOOT SPACING BETWEEN THE BEGINNING OF THE WHITE LETTERING.

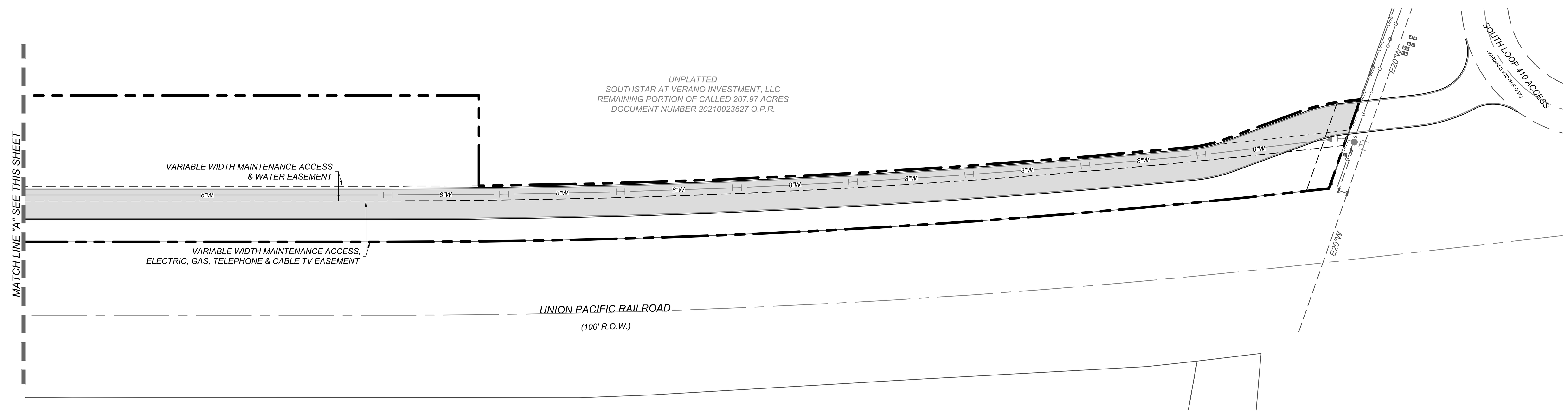
LEGEND

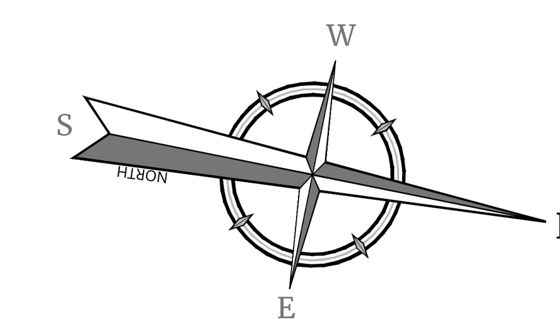
LIMITS OF CONSTRUCTION	=
EXISTING CURB	=
PROPERTY LINE	=
PROPOSED CONCRETE	=
PROPOSED CURB	=
150' MANUAL HOSE PULL	=
PROPOSED FIRE LANE	=
PROPOSED FIRE HYDRANT	=

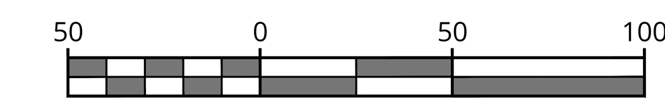
FIRE SIGN LOCATION NOTE:
FIRE SIGN LOCATION SHALL BE DETERMINED BY FIRE MARSHAL / INSPECTOR PRIOR TO CONSTRUCTION



LOCATION MAP
N.T.S.



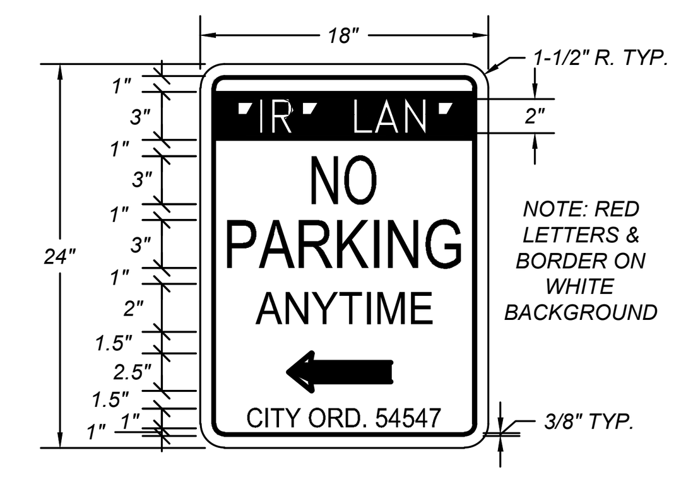




SCALE : 1" = 50'
Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)

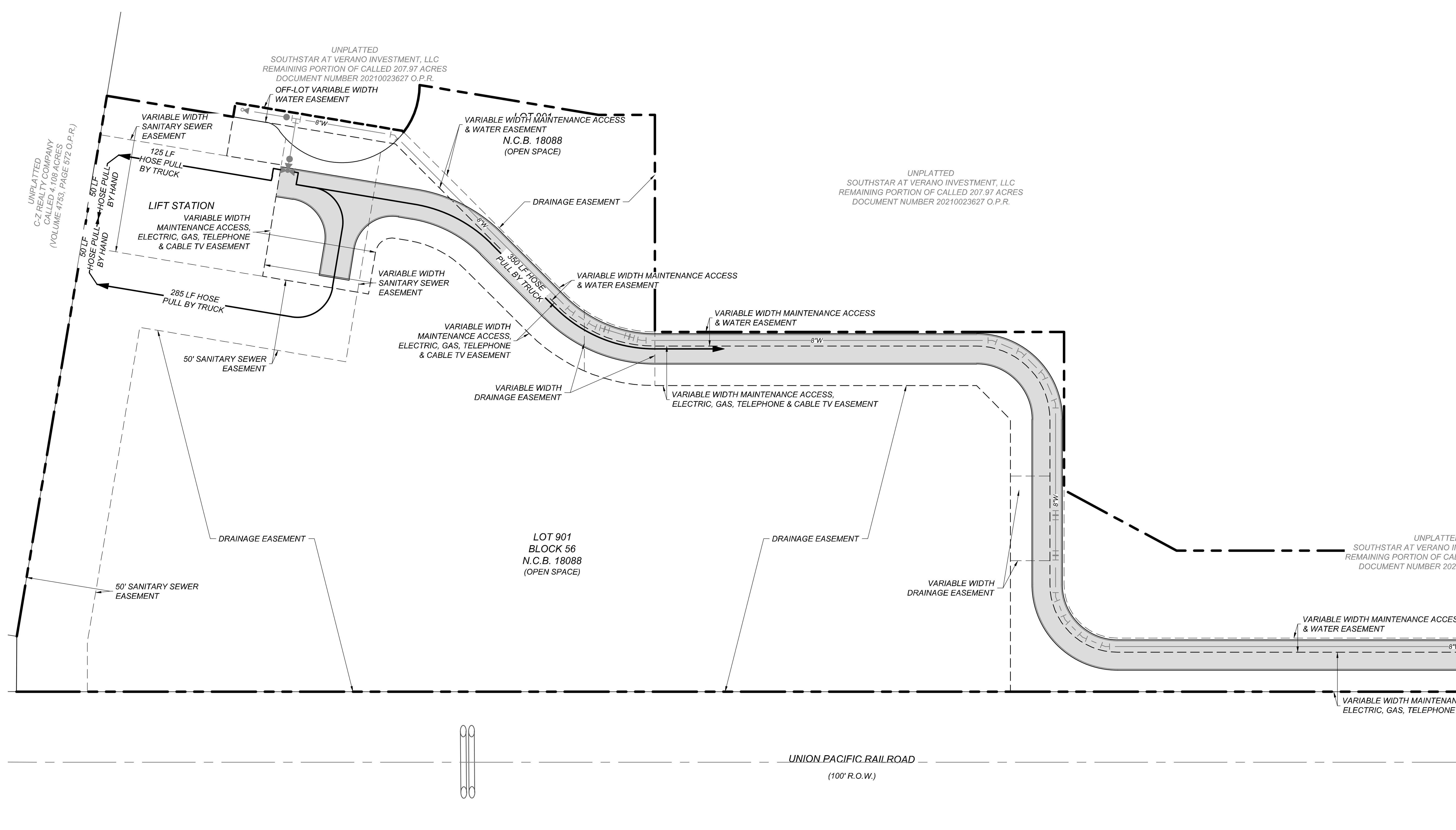
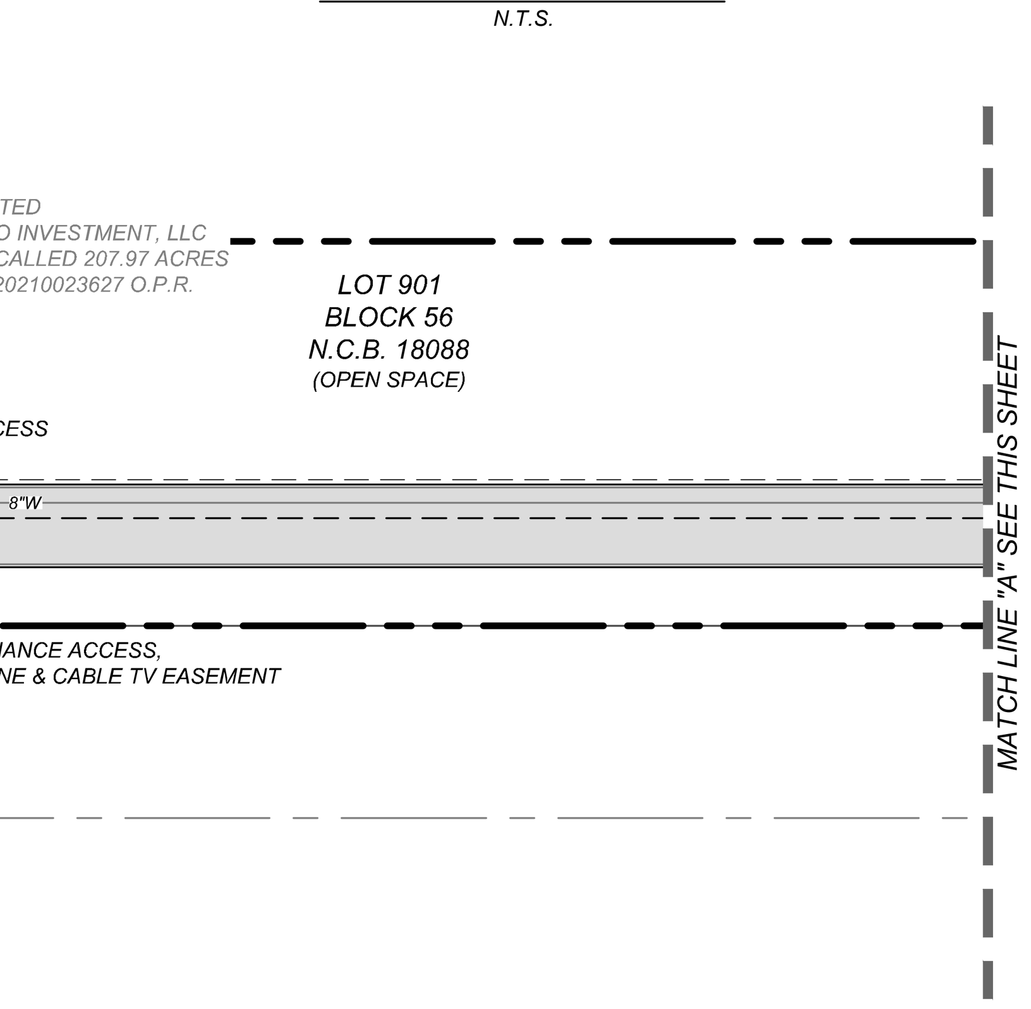
LESS THAN 40' : ONE SIGN WITH DOUBLE ARROW
40' TO 90' : TWO SIGNS WITH RIGHT AND LEFT ARROWS
100' OR MORE : THREE SIGNS WITH RIGHT/LEFT AND DOUBLE ARROWS IN THE MIDDLE
ALL SIGNS SHOULD BE VISIBLE TO THE DRIVER

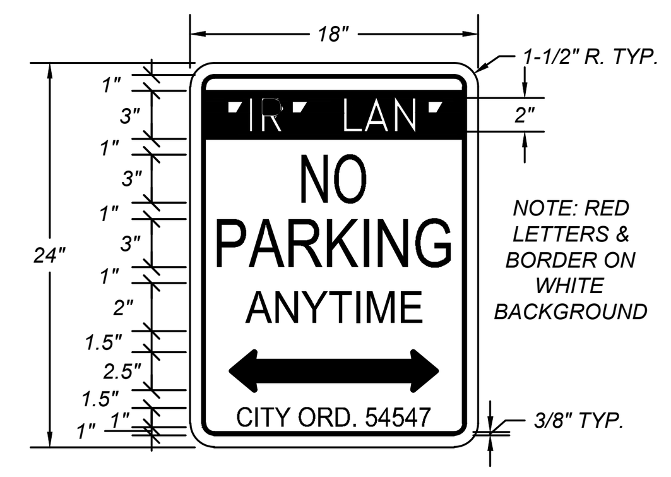
FIRE LANE SIGN TYPE "A"
N.T.S.



LESS THAN 40' : ONE SIGN WITH DOUBLE ARROW
40' TO 90' : TWO SIGNS WITH RIGHT AND LEFT ARROWS
100' OR MORE : THREE SIGNS WITH RIGHT/LEFT AND DOUBLE ARROWS IN THE MIDDLE
ALL SIGNS SHOULD BE VISIBLE TO THE DRIVER

FIRE LANE SIGN TYPE "B"
N.T.S.



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ALL SIGNS SHOULD BE VISIBLE TO THE DRIVER

FIRE LANE SIGN TYPE "C"
N.T.S.

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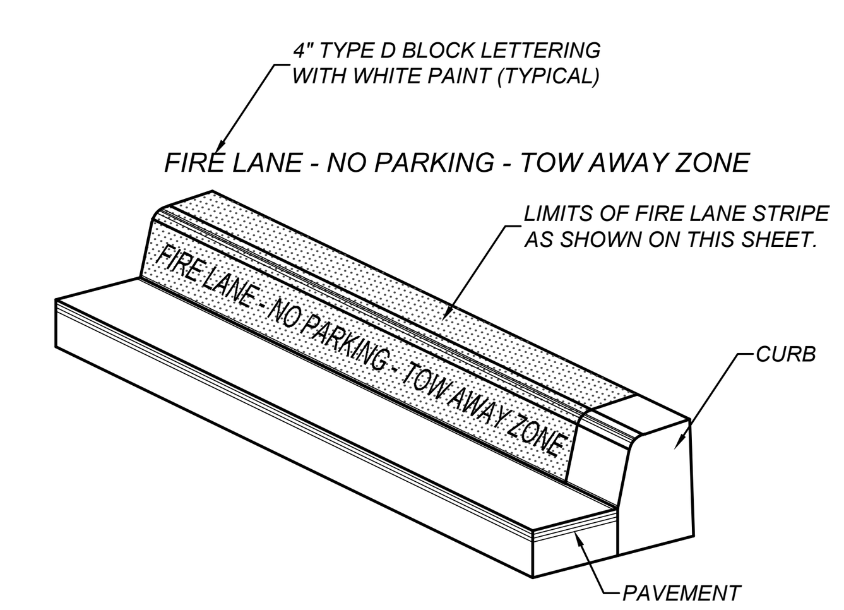

TYPICAL FIRE LANE MARKING DETAIL
N.T.S.

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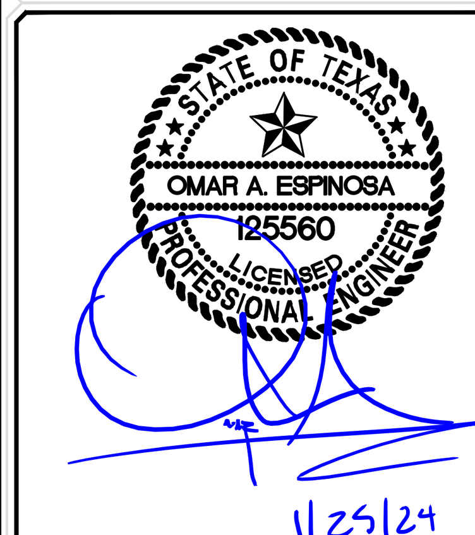

PRELIMINARY

FOR

VIDA SAN ANTONIO
LIFT STATION
PLAT# 23-11800297

SAN ANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	OCT. 2023	EC	OE

PROJECT NUMBER:	DRAWING NAME:
391-10-19	FPP3911015

SHEET TITLE:
FIRE PREVENTION PLAN

SHEET NUMBER:
9.0

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.