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* DENOTES STANDARD DETAILS ADOPTED FOR USE ON THIS PROJECT

ATASCOSA COUNTY MUNICIPAL UTILITY DISTRICT NO. 1



VICINITY MAP

PLEASANTON FARMS UNIT 3

CONSTRUCTION PLANS

DEVELOPER:

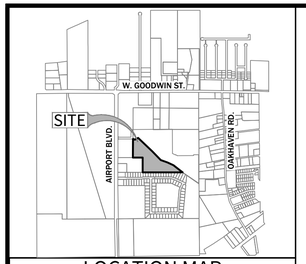
LENNAR HOMES OF TEXAS, LLC.
CONTACT PERSON: RICHARD MOTT
1922 DRY CREEK WAY, STE 101
SAN ANTONIO,TX 78259
TEL: (210) 403-6282

4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TEXAS 78231
P:(210) 681.2951 F: (210) 523.7112

DRAWN BY	DATE	PLAT NO.
MAT/IV	07/15/2025	PLEASANTON FARMS UNIT 3
CHECKED BY	**PROJECT NO.**	**CUDE ENGINEERS**
SPM/CJC	03396.005	TBPE No. 455 TBPLS No. 10048500

08/13/2025
STATE OF TEXAS
CHRISTOPHER J. CHITTIM
127282
LICENSED
PROFESSIONAL ENGINEER
I HAVE REVIEWED THIS PLAN SET FOR QUALITY ASSURANCE AND QUALITY CONTROL PURPOSES.

07/30/2025
STATE OF TEXAS
MATTHEW A. TRINKLE
147558
LICENSED
PROFESSIONAL ENGINEER
THIS PLAN SET HAS BEEN PREPARED, DESIGNED AND REVIEWED UNDER MY DIRECT SUPERVISION.



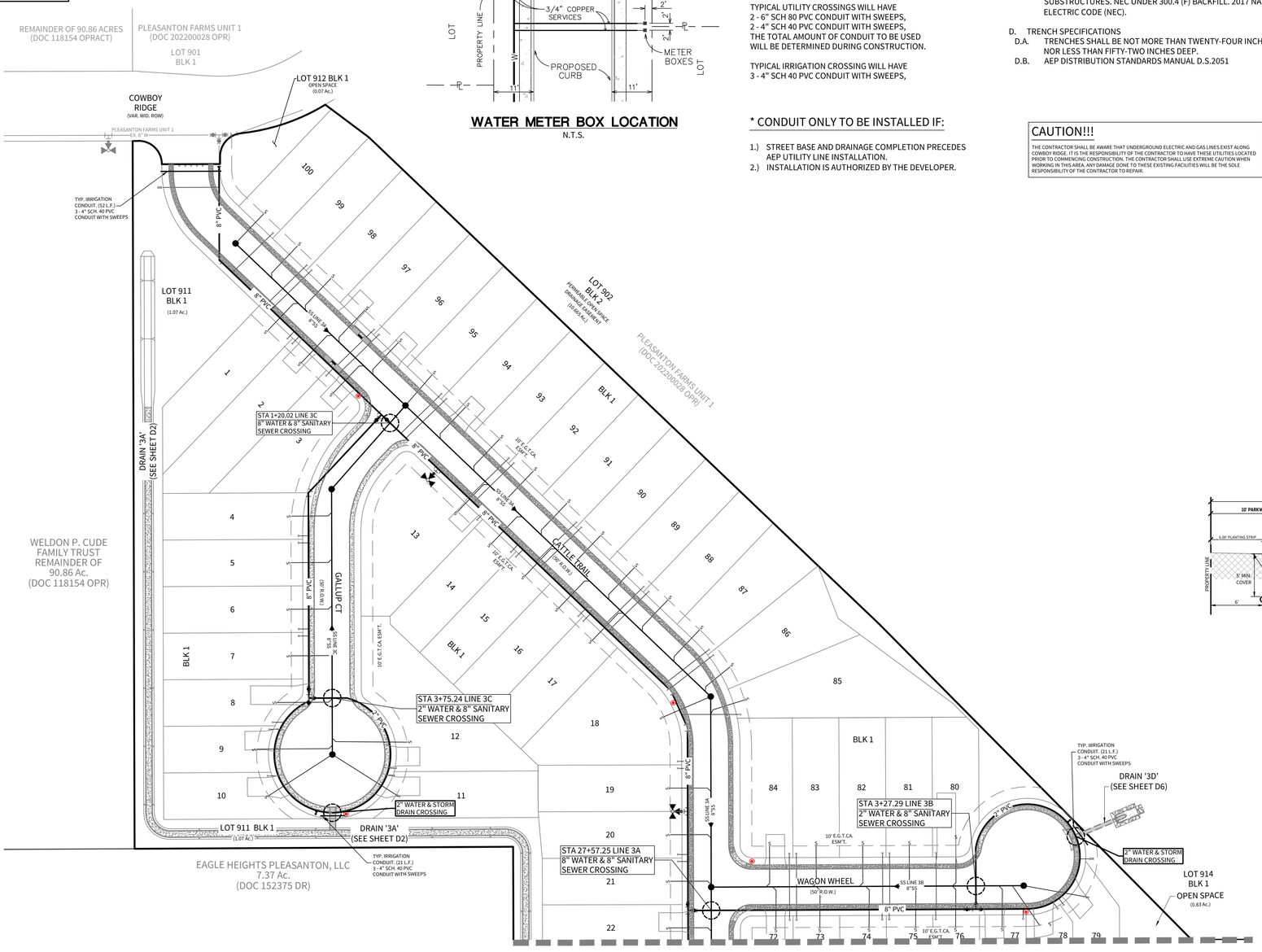
LOCATION MAP
N.T.S.

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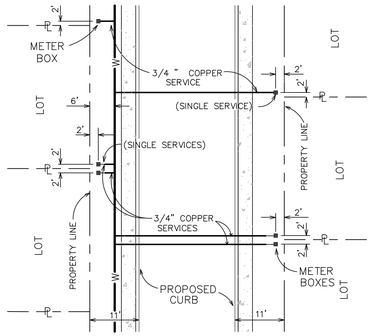
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SCALE: 1"=50'
0 50 100

MATCHLINE A
SEE SHEET U2



WATER METER BOX LOCATION
N.T.S.

NOTE:

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AEP BACKFILLING/BEDDING REQUIREMENTS:

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 B.B. AEP DISTRIBUTION STANDARDS MANUAL D.S.2051

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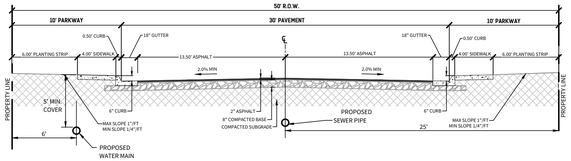
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CAUTION!!!

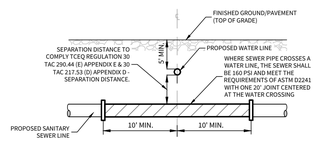
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LEGEND

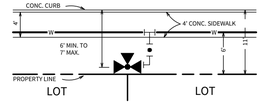
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BUILDING SETBACK LINE	B.S.L.
LANDSCAPE	L.S.
UTILITY CONDUIT CROSSING	UTIL
IRRIGATION CONDUIT CROSSING	IRR



TYPICAL "LOCAL A" STREET CROSS SECTION
1" = 5'



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



NOTE:

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TYPICAL FIRE HYDRANT DETAIL (4' SIDEWALK/ 50' ROW)
N.T.S.

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CUDEENGINEERS.COM
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San Antonio, Texas 78231
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PLEASANTON FARMS UNIT 3

UTILITY LAYOUT PLAN

DATE
08/06/2025
PROJECT NO.
03396.005
DRAWN BY
MAT/IRV/JW
CHECKED BY
SPM/CC

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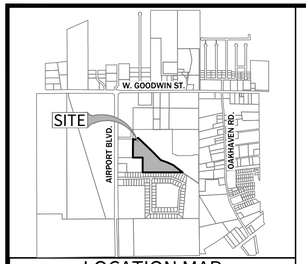
07/30/2025
STATE OF TEXAS
MATTHEW A. TRINKLE
147558
LICENSED
PROFESSIONAL ENGINEER

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

U1

P:\03396\005\3 Drawings\02_Util\UTIL.dwg 2025/08/06 3:26pm mdia

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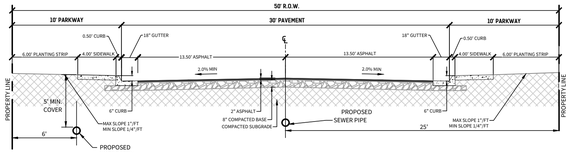
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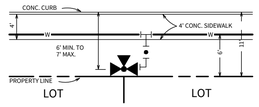
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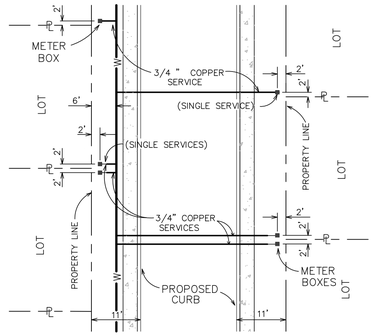


TYPICAL "LOCAL A" STREET CROSS SECTION
1" = 5'



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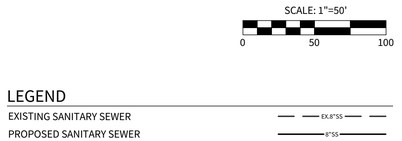


WATER METER BOX LOCATION
N.T.S.



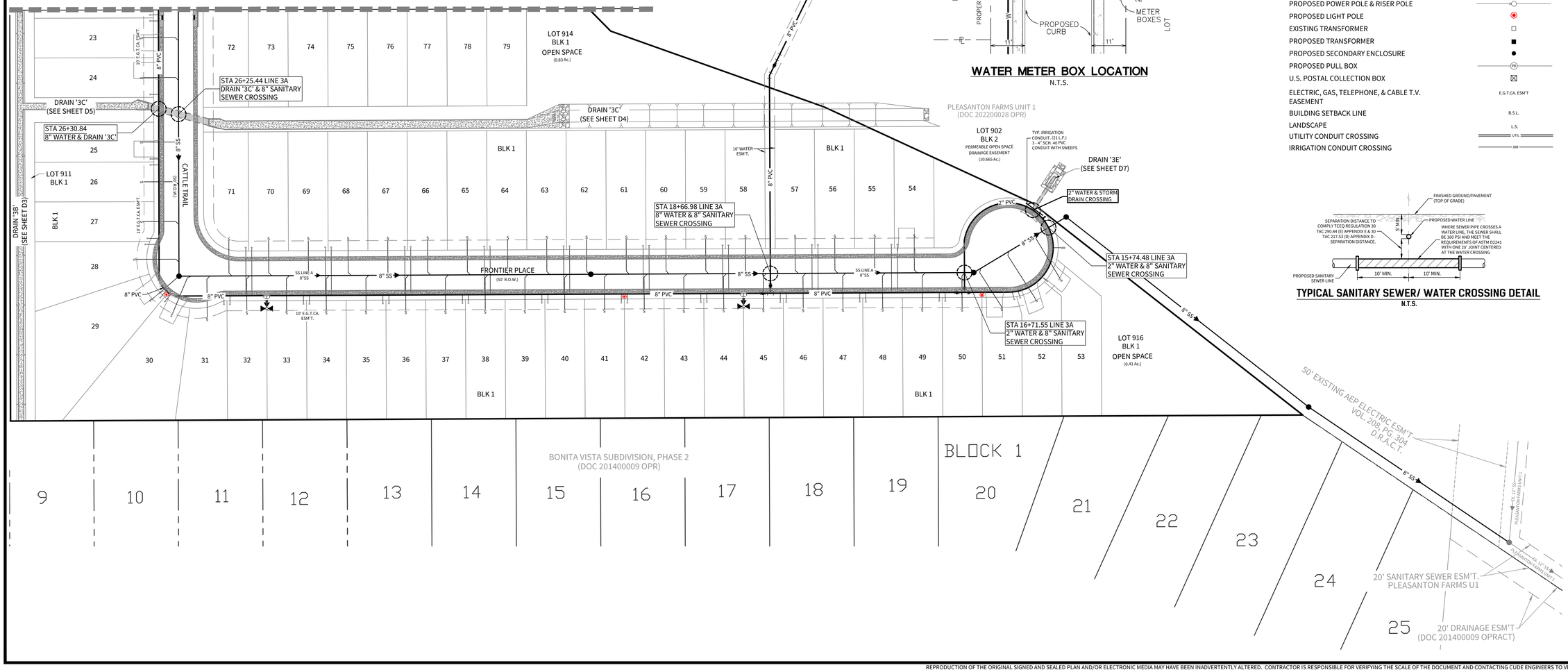
LEGEND

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UTILITY CONDUIT CROSSING	UTIL
IRRIGATION CONDUIT CROSSING	IRR



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

MATCHLINE A
SEE SHEET U1



WATER DISTRIBUTION PLAN

CUDEENGINEERS.COM

CUDE ENGINEERS
4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

PLEASANTON FARMS UNIT 3

UTILITY LAYOUT PLAN

DATE
08/06/2025

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

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REVISIONS
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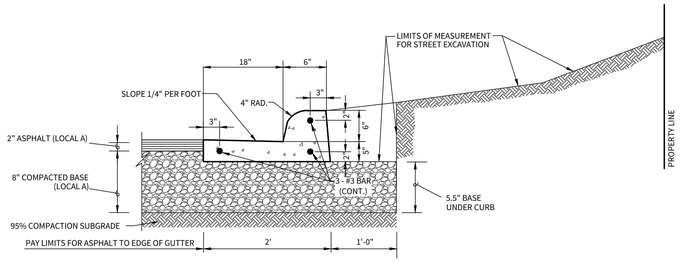
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

U2

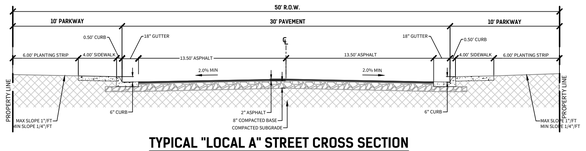
2 OF 2

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CONCRETE AND CURB



TYPICAL "LOCAL A" STREET CROSS SECTION

1" = 5'

STREET TYPE	HMAC TYPE "D"	FLEX BASE (TY A GR 2)	MOISTURE CONDITIONED SUBGRADE	BASE UNDER CURB	STRUCTURAL NUMBER
LOCAL "A"	2"	8.00"	-----	6.5"	2.00

STREET PAVEMENT DESIGN OPTIONS (TTL No. 00200902910.00)

NOTES:

1. THE SUBGRADE PLASTICITY INDEX VALUE IS EXPECTED TO BE GREATER THAN 20. AS PER ATASCOSA COUNTY REQUIREMENTS, SUBGRADE STABILIZATION IS NEEDED.

2. PAVEMENT SECTION REQUIRED IS TO BE DETERMINED BY GEOTECHNICAL ENGINEER ON-SITE.

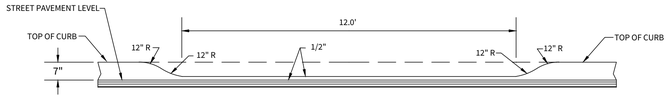
3. FOR CONSTRUCTION VERIFICATION THE FOLLOWING SHALL BE CONDUCTED IN THE FIELD:
   - AFTER INITIAL MIXING THE SOIL-LIME MIXTURE SHALL MELLOW FOR A PERIOD OF TWO TO THREE (2-3) DAYS. MAINTAIN MOISTURE DURING MELLOWING;
   - AFTER MELLOWING AND FINAL MIXING, THE PULVERIZATION SHALL BE CHECKED USING THE FOLLOWING CRITERIA (REMOVE NON-SLAKING AGGREGATES RETAINED ON THE ¾ INCH SIEVE FOR THE SAMPLE):
     - MINIMUM PASSING 1-¾ "SIEVE 100
     - MINIMUM PASSING ¾" SIEVE 85
     - MINIMUM PASSING NO. 4 SIEVE 60
   - SAMPLE SOIL-LIME MIXTURE FOR DETERMINATION OF MAXIMUM DRY DENSITY (MDD). IN THE LABORATORY, MOLD SPECIMENS TO 95% OF MDD AT OPTIMUM MOISTURE CONTENT AND VERIFY UCS TO BE AT LEAST 160 PSI IN ACCORDANCE TO PROCEDURE OUTLINED ABOVE FOR MIXTURE DESIGN.
   - COMPACT AND CHECK FIELD DENSITY (MINIMUM OF 95% OF MDD REQUIRED).
   - CURE FOR ADDITIONAL 2 TO 5 DAYS (TOTAL MELLOWING AND CURING TIME SHOULD TOTAL AT LEAST 5 DAYS).
   - VERIFY DEPTH OF LIME STABILIZED LAYER TO DEPTH AS NOTED ON PLAN TO WITHIN +/- 1.0 INCH.

4. SUBGRADE SOILS TO BE TESTED FOR SOLUBLE SULPHATE CONTENT PRIOR TO STABILIZATION. IF SOIL CONTENT IS OVER 3000 PPM, AN ALTERNATE PROCEDURE WILL BE REQUIRED.

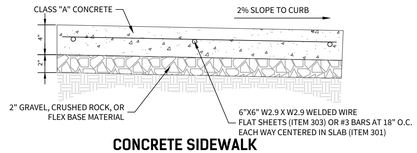
FILL MATERIAL:

- FILL USED TO RAISE THE GRADE - APPROVED FILL MATERIAL SHOULD HAVE A MINIMUM CBR VALUE OF 4.0 AND MAXIMUM PLASTICITY INDEX VALUE OF 20. LIME OR CEMENT APPLICATION RATES SHOULD BE RE-EVALUATED AND TESTED FOR SOIL SULFATE CONTENT PRIOR TO USE OF THE FILL MATERIAL.

- THE FILL MATERIAL SHOULD BE APPROVED BY THE GEOTECHNICAL ENGINEER, FREE OF DELETERIOUS MATERIAL, AND GRAVEL SIZE SHOULD NOT EXCEED 3 INCHES IN SIZE. THE MATERIAL SHOULD BE PLACED AND COMPACTED AS PER APPLICABLE CITY / COUNTY GUIDELINES.

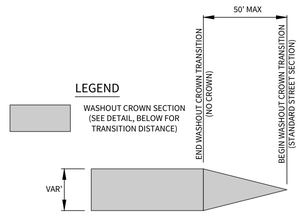


TYPICAL DRIVEWAY CUT SECTION



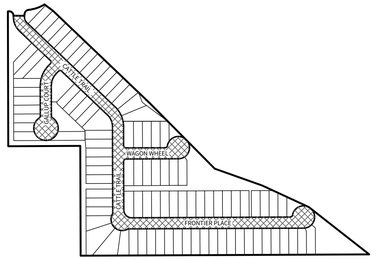
CONCRETE SIDEWALK

N.T.S.



WASHOUT CROWN TRANSITION DETAIL

N.T.S.



PAVEMENT DESIGN SCHEMATIC

NOTE:
1. REFERENCE GEOTECHNICAL REPORT (#00200902910.00) FOR BORING INFORMATION AND CBR LOCATIONS.

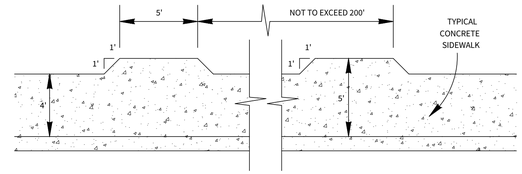
LEGEND:

LOCAL "A"

CATTLE TRAIL	STA 10+50.00 - 21+23.02
FRONTIER PLACE	STA 10+00.00 - 18+29.03
GALLUP COURT	STA 10+00.00 - 13+21.25
WAGON WHEEL	STA 10+00.00 - 12+68.33

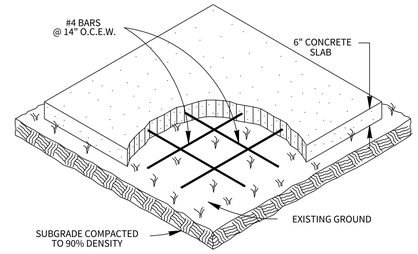
STREET PAVEMENT DESIGN DETAIL

N.T.S.



SIDEWALK PASSING SPACE

1. FOR LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 3' FROM THE BACK OF CURB.
2. SIDEWALKS LESS THAN 5 FEET IN WIDTH SHALL BE PROVIDED WITH A PASSING SPACE AT A MAXIMUM SPACING OF 200 FEET.



MAIL BOX PAD NOTE:

1. THE CONTRACTOR WILL CONSTRUCT SLABS FOR "TEMPORARY MAIL BOX COLLECTION PAD" FOR THE UNITED STATES POSTAL SERVICE WITH LOCATIONS AND SIZES SPECIFIED BY THE CITY ENGINEER DURING CONSTRUCTION.

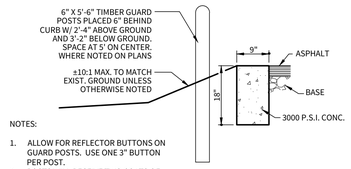
2. THE CONSTRUCTION OF SLABS SHALL CONFORM TO ITEM 513 "REMOVING AND RELOCATING MAILBOXES".

3. PAYMENT WILL BE MADE UNDER ITEM 513.2 "COMMUNITY MAILBOX SLAB - PER SQUARE YARD".

4. UNIT PRICE WILL INCLUDE REMOVAL OF "TEMPORARY MAIL BOX COLLECTION PAD" SLABS AT THE END OF THE PROJECT. NO SEPARATE PAY ITEM.

COMMUNITY MAIL BOX SLAB

ITEM 513.2



NOTES:

1. ALLOW FOR REFLECTOR BUTTONS ON GUARD POSTS. USE ONE 3" BUTTON PER POST.
2. POSTS WILL RECEIVE TWO COATS OF ALUMINUM PAINT.

HEADER CURB DETAIL

N.T.S.

GENERAL NOTES

THE LOCATIONS AND DEPTHS OF ALL EXISTING UTILITIES, INCLUDING SERVICE LATERALS AND DRAINAGE STRUCTURES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND DEPTHS OF UNDERGROUND UTILITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT, AND TO PROTECT THE SAME DURING CONSTRUCTION.

TEXAS STATE WIDE ONE CALL LOCATOR	1-800-545-6005
CITY OF PLEASANTON	"
ZOOM COMM	"
CENTERPOINT	"
	"
	"

CUDEENGINEERS.COM

4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

PLEASANTON FARMS UNIT 3

STANDARD STREET DETAILS

DATE 07/14/2025

PROJECT NO. 03396.005

DRAWN BY MAT/IRV/JW

CHECKED BY SPM/CC

REVISIONS

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07/30/2025

STATE OF TEXAS
MATTHEW A. TRINKLE
147558
LICENSED PROFESSIONAL ENGINEER

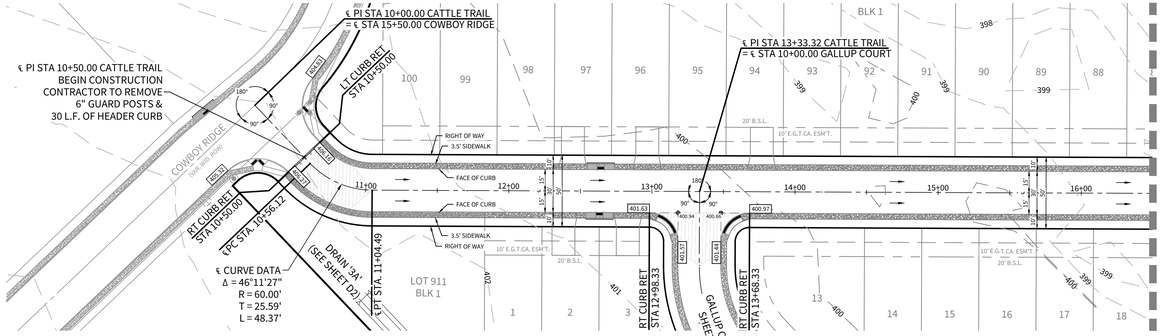
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

S1

P:\03396\Docs\2-Drawings\SHEETS\STANDARD STREET DETAILS.dwg 2025/07/14 11:00am mattia

REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



ELEVATIONS:

XXX.XX PROPOSED TOP OF CONCRETE CURB ELEVATION

xxx.xx PROPOSED ASPHALT PAVEMENT ELEVATION

- SIDEWALK CONSTRUCTED WITH INFRASTRUCTURE

- STREET WASHOUT (SEE DETAIL SHEET S1)

TxDOT TYPE "2" WHEEL CHAIR RAMPS ARE INDICATED
THUS " " UNLESS OTHERWISE NOTED.
(SEE DETAIL SHEET S7) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS

TxDOT TYPE "5" WHEEL CHAIR RAMPS ARE INDICATED
THUS " " UNLESS OTHERWISE NOTED.
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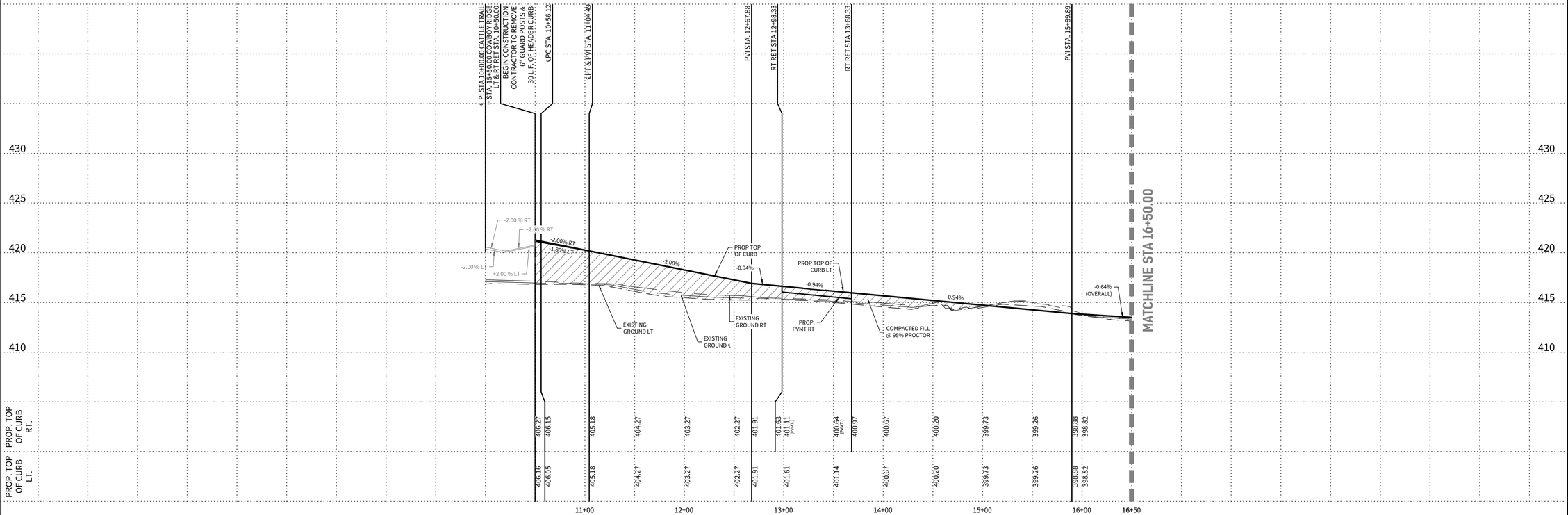
(SEE DETAIL SHEET S7) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS .
DETECTABLE WARNING PAVER WITH TRUNCATED DOMES ONLY.

CATTLE TRAIL

STA. 10+50.00 TO STA. 16+50.00

SCALE: 1"=50'
50 25 0 50

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



GENERAL SPECIFICATIONS FOR COMPACTED FILL

1. FOLLOWING THE CLEARING AND DISKING OR SCARIFYING OF THE FILL AREA, IT SHALL BE BLADED UNTIL IT IS UNIFORM AND FREE FROM LARGE CLODS. THE AREA SHALL BE BROUGHT TO THE ADEQUATE MOISTURE CONTENT AND COMPACTED (TYPICALLY) TO NOT LESS THAN NINETY PERCENT (95%) OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CURRENT ASTM D 1557 COMPACTION PROCEDURE, OR 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CURRENT THD--TEX--113--E COMPACTION PROCEDURE.
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PLEASANTON FARMS UNIT 3

STREET PLAN & PROFILE
CATTLE TRAIL

DATE
02/08/2024

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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02/28/2024

STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED PROFESSIONAL ENGINEER

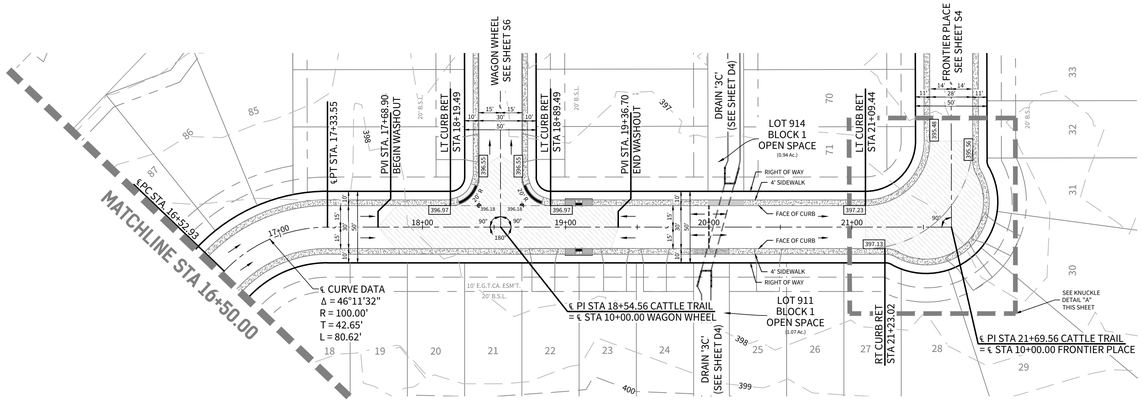
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

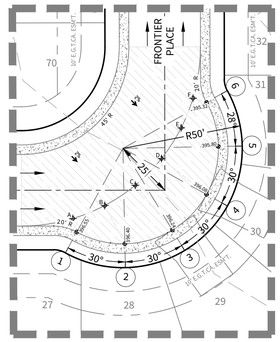
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REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



PAVEMENT ELEVATIONS	
POINT	Elevation
A	396.48
B	396.30
C	396.12
D	395.92
E	395.75
F	395.57



KNUCKLE DETAIL "A"

SCALE: 1" = 30'

- SIDEWALK CONSTRUCTED WITH INFRASTRUCTURE
- STREET WASHOUT (SEE DETAIL SHEET S1)

TxDOT TYPE "2" WHEEL CHAIR RAMPS ARE INDICATED
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(SEE DETAIL SHEET S7) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS .
DETECTABLE WARNING PAVER WITH TRUNCATED DOMES ONLY.

CATTLE TRAIL

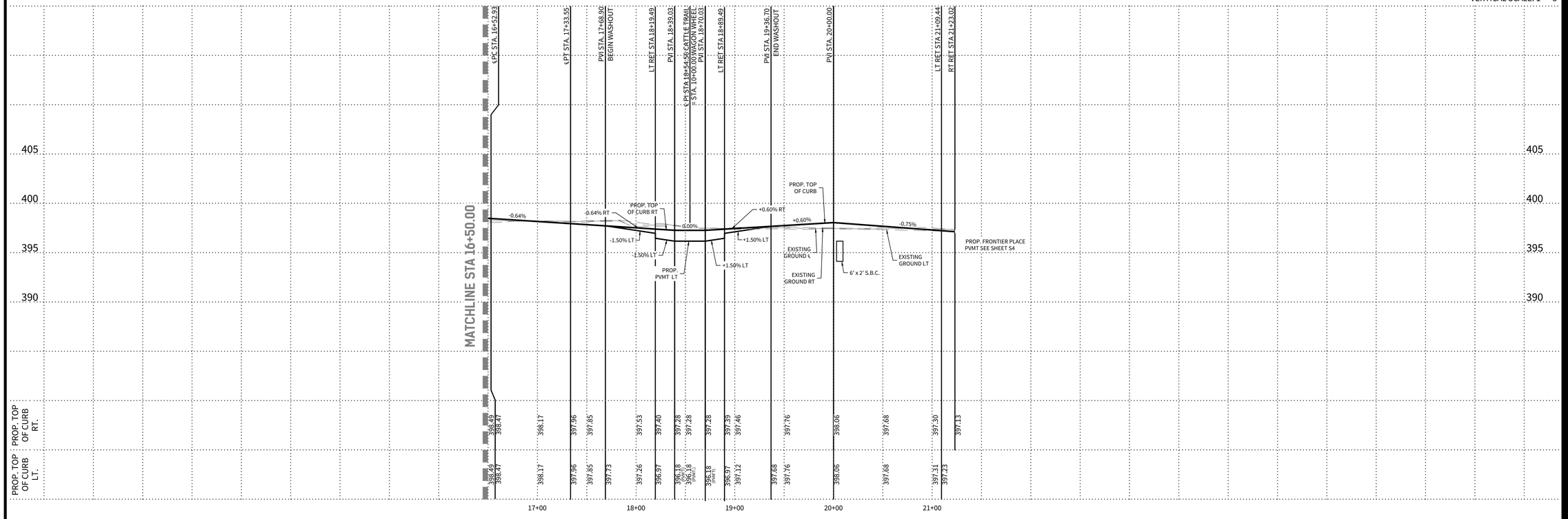
STA. 16+50.00 TO STA. 21+23.02

SCALE: 1"=50'
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GENERAL SPECIFICATIONS FOR COMPACTED FILL

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HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



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PLEASANTON FARMS UNIT 3

STREET PLAN & PROFILE
CATTLE TRAIL

DATE
07/15/2025

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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07/30/2025
STATE OF TEXAS
MATTHEW A. TRINKLE
147558
LICENSED
PROFESSIONAL ENGINEER

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

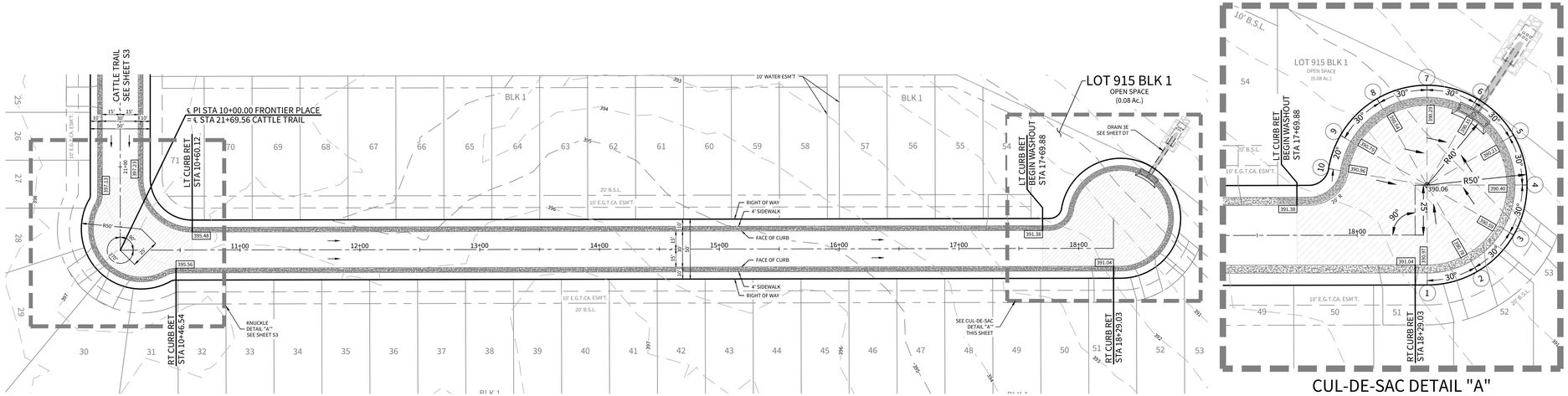
LAND-PLAT
PLEASANTON FARMS UNIT 3

S3

3 OF 8

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REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



CUL-DE-SAC DETAIL "A"

SCALE: 1" = 30'

ELEVATIONS:

XXX.XX PROPOSED TOP OF CONCRETE CURB ELEVATION

XXXX.XX PROPOSED ASPHALT PAVEMENT ELEVATION

- SIDEWALK CONSTRUCTED WITH INFRASTRUCTURE
- STREET WASHOUT (SEE DETAIL SHEET S1)

TxDOT TYPE "2" WHEEL CHAIR RAMPS ARE INDICATED THUS " " UNLESS OTHERWISE NOTED.
(SEE DETAIL SHEET S7) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS

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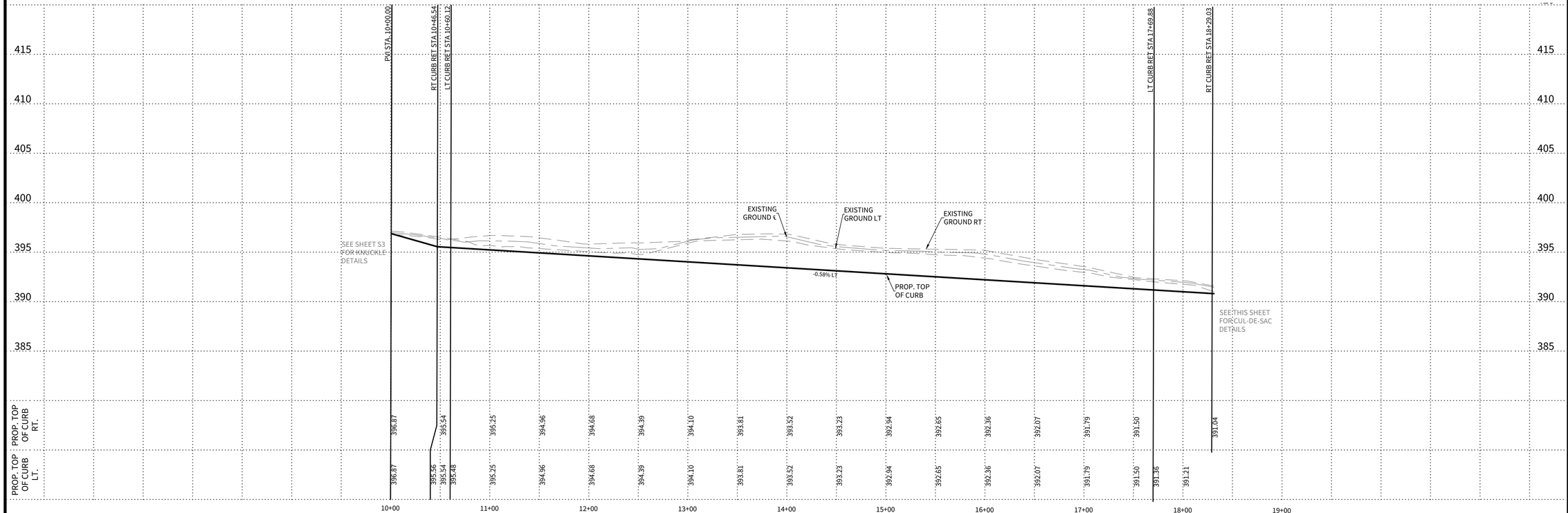
FRONTIER PLACE

STA. 10+46.54 TO STA. 18+29.03

SCALE: 1"=50'

50 25 0 50

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



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PLEASANTON FARMS UNIT 3

STREET PLAN & PROFILE
FRONTIER PLACE

DATE
08/06/2025

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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07/30/2025
STATE OF TEXAS
MATTHEW A. TRINKLE
147558
LICENSED PROFESSIONAL ENGINEER

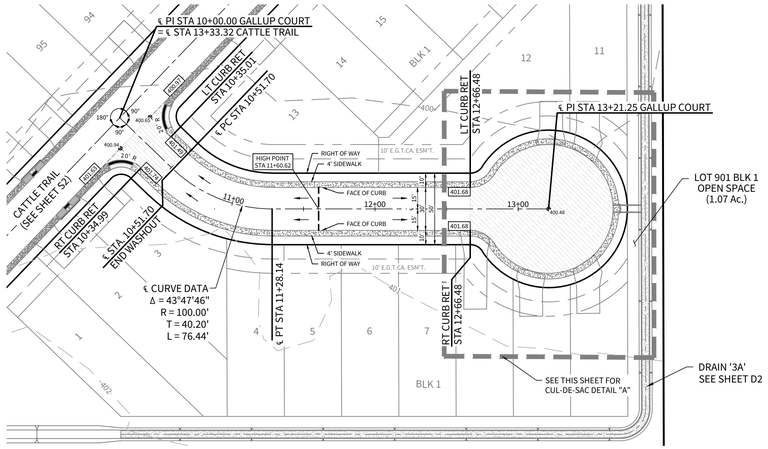
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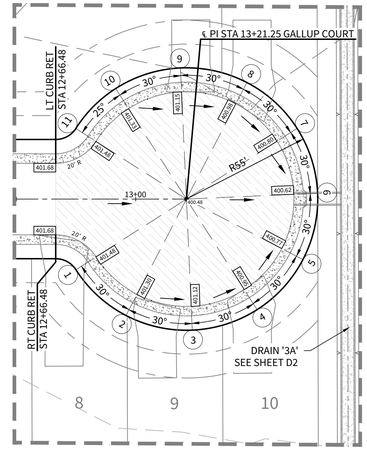
LAND-PLAT
PLEASANTON FARMS UNIT 3

S4

4 OF 8

REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.





CUL-DE-SAC DETAIL "A"

SCALE: 1" = 30'

ELEVATIONS:

XXX.XX PROPOSED TOP OF CONCRETE CURB ELEVATION

xxx.xx PROPOSED ASPHALT PAVEMENT ELEVATION

- SIDEWALK CONSTRUCTED WITH INFRASTRUCTURE

- STREET WASHOUT (SEE DETAIL SHEET S1)

TxDOT TYPE "2" WHEEL CHAIR RAMPS ARE INDICATED THUS " " UNLESS OTHERWISE NOTED.

(SEE DETAIL SHEET S7) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS

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(SEE DETAIL SHEET S7) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS . DETECTABLE WARNING PAVER WITH TRUNCATED DOMES ONLY.

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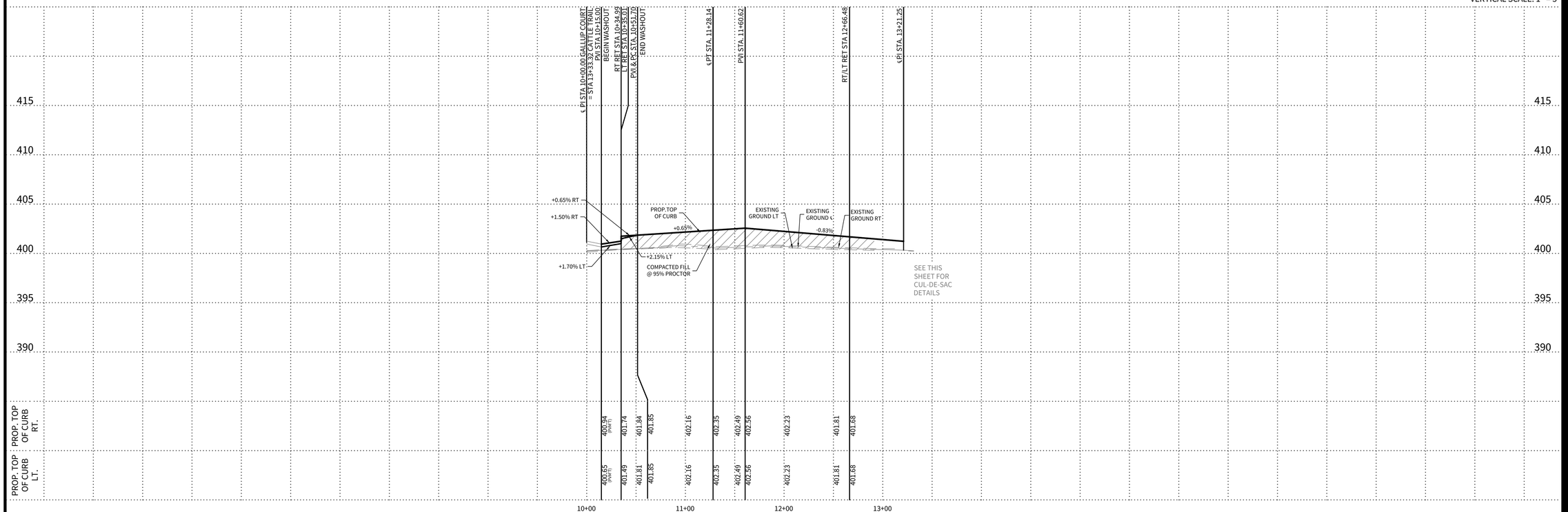
GALLUP COURT

STA. 10+00.00 TO STA. 13+21.25

SCALE: 1"=50'

50 25 0 50

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



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CUDE ENGINEERS

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San Antonio, Texas 78231
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PLEASANTON FARMS UNIT 3

STREET PLAN & PROFILE
GALLUP COURT

DATE
08/06/2025

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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07/30/2025

STATE OF TEXAS
MATTHEW A. TRINKLE
147558
LICENSED PROFESSIONAL ENGINEER

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

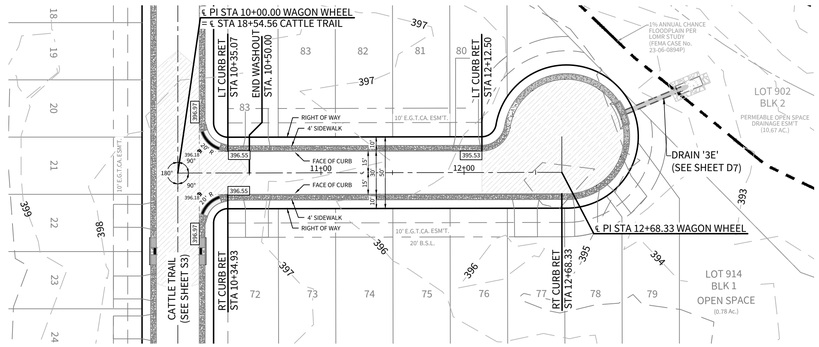
LAND-PLAT
PLEASANTON FARMS UNIT 3

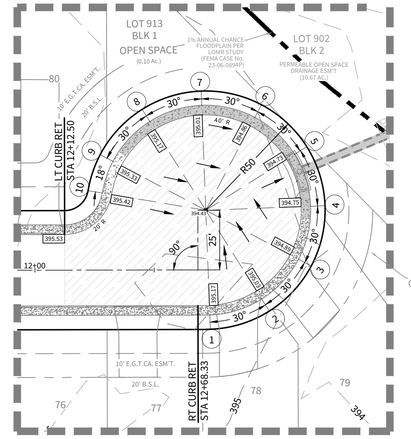
S5

5 OF 8

REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.

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CUL-DE-SAC DETAIL "A"

SCALE: 1" = 30'

ELEVATIONS:

- XXX.XX — PROPOSED TOP OF CONCRETE CURB ELEVATION
- XXXX.XX — PROPOSED ASPHALT PAVEMENT ELEVATION

- SIDEWALK CONSTRUCTED WITH INFRASTRUCTURE
- STREET WASHOUT (SEE DETAIL SHEET S1)

TxDOT TYPE "2" WHEEL CHAIR RAMPS ARE INDICATED THUS " " UNLESS OTHERWISE NOTED.
(SEE DETAIL SHEET S7) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS

TxDOT TYPE "5" WHEEL CHAIR RAMPS ARE INDICATED THUS " " UNLESS OTHERWISE NOTED.
(SEE DETAIL SHEET S7) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS

(SEE DETAIL SHEET S7) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS . DETECTABLE WARNING PAVER WITH TRUNCATED DOMES ONLY.

WAGON WHEEL

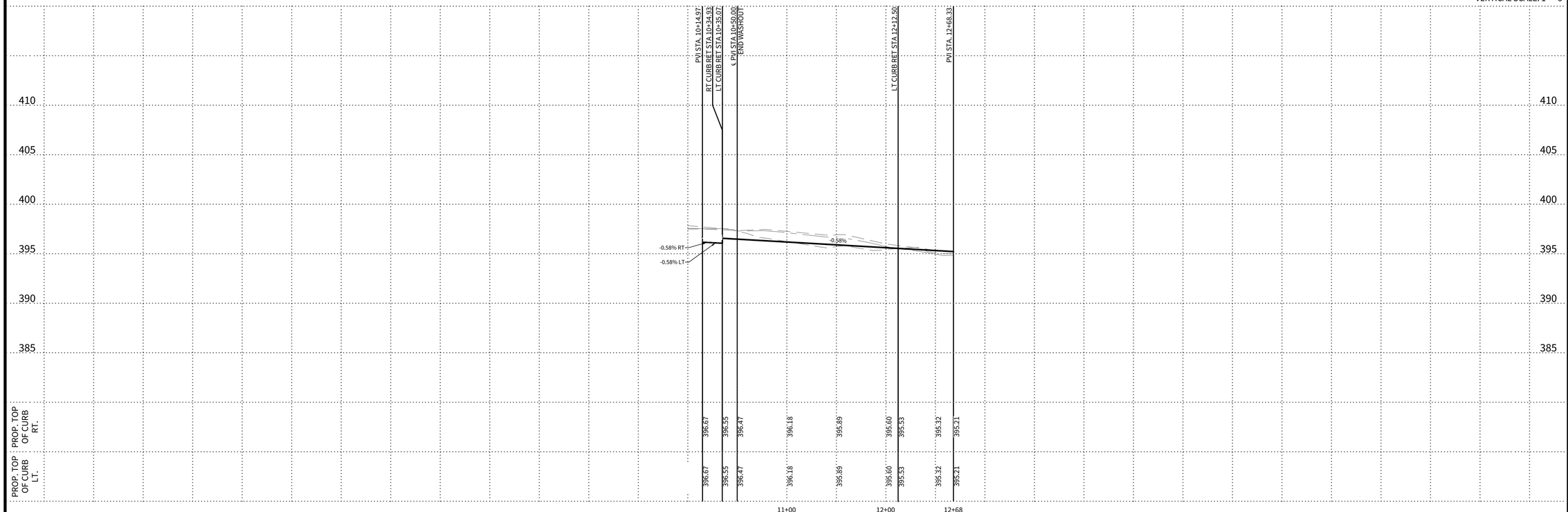
STA. 10+15.53 TO STA. 12+68.33

SCALE: 1"=50'
50 25 0 50

GENERAL SPECIFICATIONS FOR COMPACTED FILL

1. FOLLOWING THE CLEARING AND DISKING OR SCARIFYING OF THE FILL AREA, IT SHALL BE BLADED UNTIL IT IS UNIFORM AND FREE FROM LARGE CLODS. THE AREA SHALL BE BROUGHT TO THE ADEQUATE MOISTURE CONTENT AND COMPACTED (TYPICALLY) TO NOT LESS THAN NINETY PERCENT (95%) OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CURRENT ASTM D 1557 COMPACTION PROCEDURE, OR 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CURRENT THD--TEX--113--E COMPACTION PROCEDURE.
2. THE MATERIALS USED SHALL BE FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES, SUCH AS TREES, BRUSH AND RUBBISH.
3. THE FILL MATERIAL SHALL BE COMPACTED AT THE APPROPRIATE MOISTURE CONTENT SPECIFIED FOR THE SOILS BEING USED. APPROPRIATE MOISTURE CONTENT IS DEFINED, TYPICALLY, AS OPTIMUM MOISTURE CONTENT; HOWEVER, FOR EXPANSIVE SOILS IT MAY BE GREATER THAN OPTIMUM MOISTURE CONTENT, AND OTHER MOISTURE CONTENTS MAY BE NECESSARY TO PRODUCE THE DESIRED RESULTS WITH CERTAIN SOILS.

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



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CUDE ENGINEERS

4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

PLEASANTON FARMS UNIT 3

STREET PLAN & PROFILE
WAGON WHEEL

DATE
07/15/2025

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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07/30/2025

STATE OF TEXAS
MATTHEW A. TRINKLE
147558
LICENSED PROFESSIONAL ENGINEER

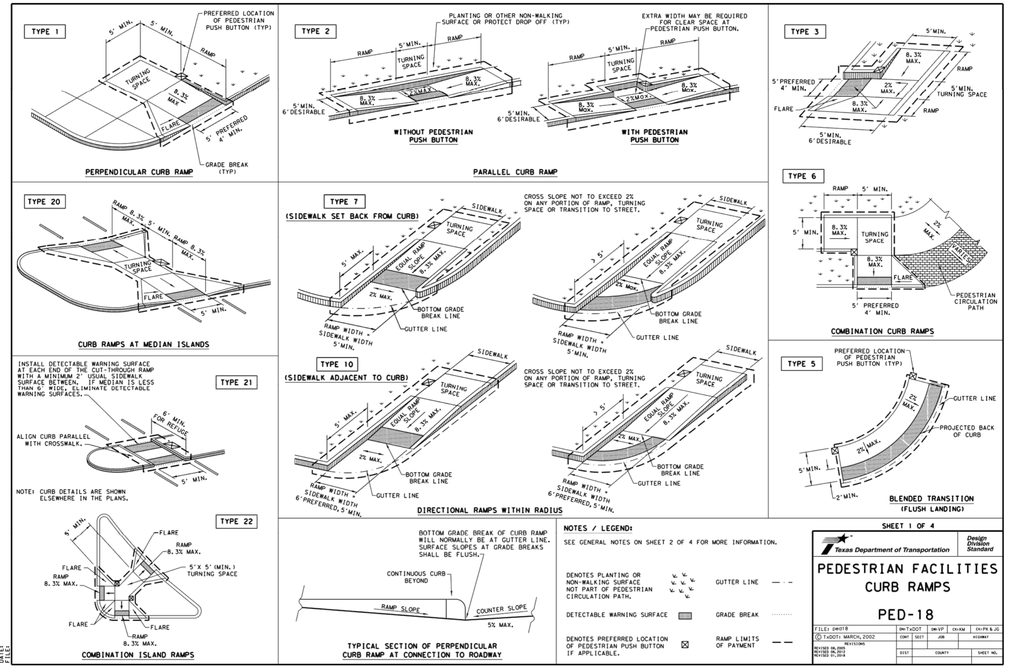
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

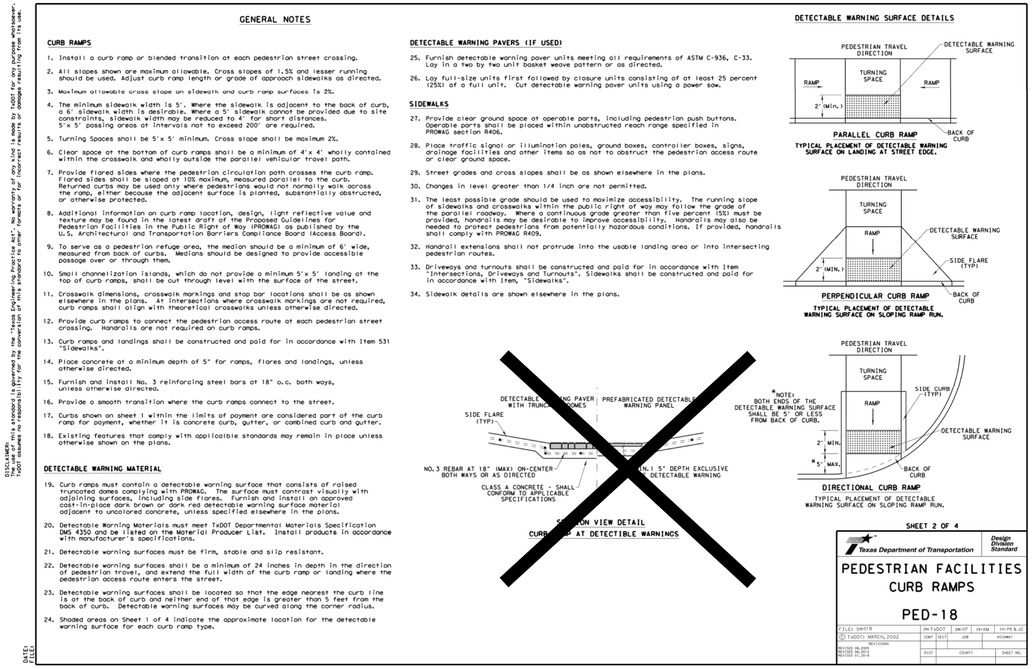
LAND-PLAT
PLEASANTON FARMS UNIT 3

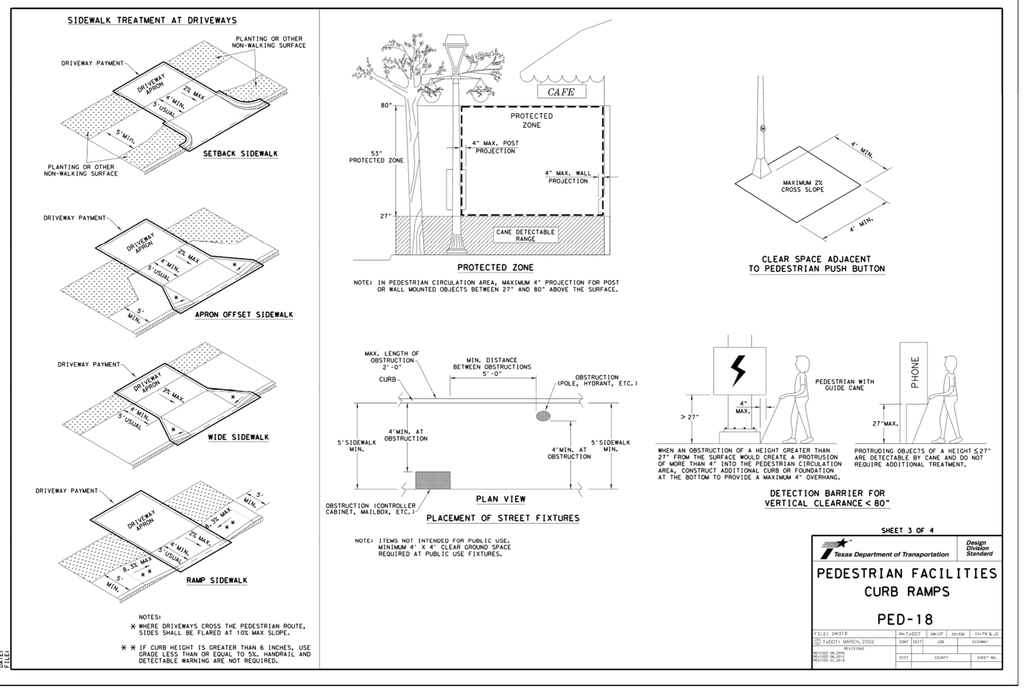
S6

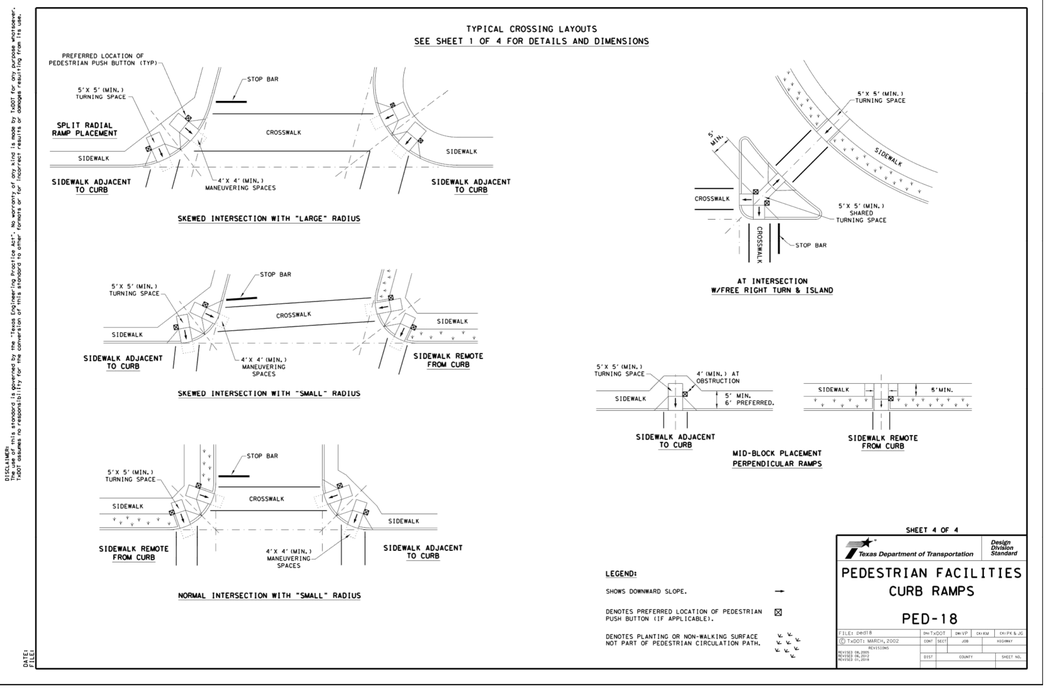
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REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.









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CUDE ENGINEERS
4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

PLEASANTON FARMS
UNIT 3

TXDOT DETAILS – PEDESTRIAN FACILITIES – PED 18

DATE
11/29/2023
PROJECT NO.
03396.005
DRAWN BY
MAT/IRV/JW
CHECKED BY
SPM/CC

REVISIONS
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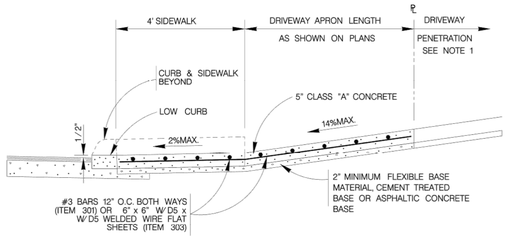
02/06/2024
STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED PROFESSIONAL ENGINEER
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

S7

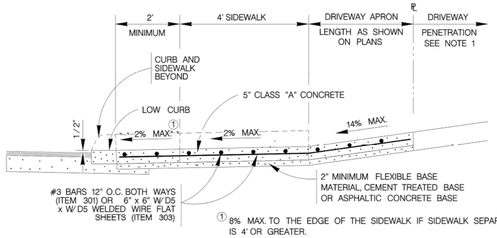
7 OF 8

REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



TYPICAL RESIDENTIAL DRIVEWAY SECTION

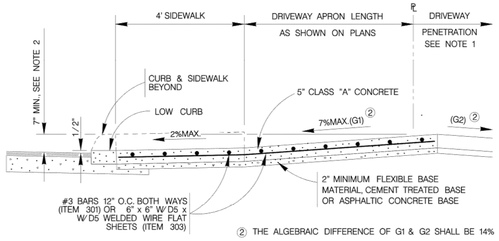
WITH SIDEWALK ABUTTING CURB
ITEM 503.1



TYPICAL RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK SEPARATED FROM CURB
ITEM 503.1

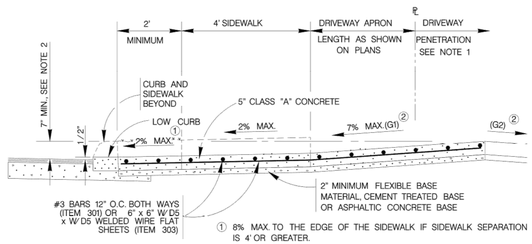
① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.



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

TYPICAL RESIDENTIAL DRIVEWAY SECTION

WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS ABUTTING CURB
ITEM 503.1

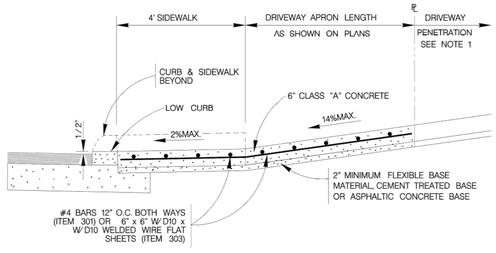


① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

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

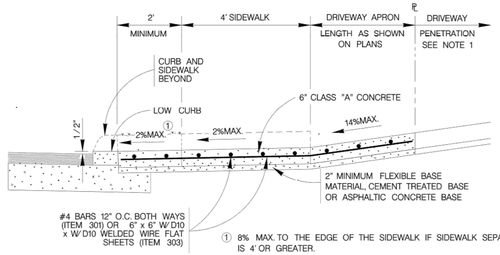
TYPICAL RESIDENTIAL DRIVEWAY SECTION

WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS SEPARATED FROM CURB
ITEM 503.1



TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB
ITEM 503.2



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

TYPICAL COMMERCIAL DRIVEWAY SECTION

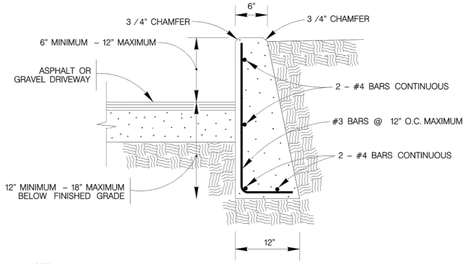
WITH SIDEWALK SEPARATED FROM CURB
ITEM 503.2

CONCRETE DRIVEWAY NOTES

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

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

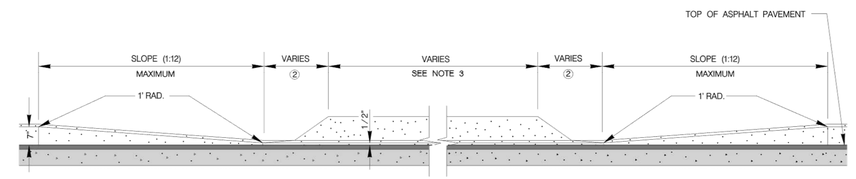
4. FOR LOCAL TYPE "A" STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 2' FROM THE BACK OF CURB.
5. FOR OTHER THAN LOCAL TYPE "A" STREETS, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND SEPARATED A MINIMUM OF 2' FROM THE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



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

DRIVEWAY – CONCRETE RETAINING WALL

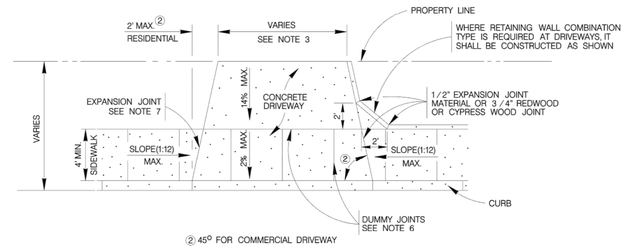
ON COMPACTED SUBGRADE
ITEM 307.1



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

CURB PROFILE AT DRIVEWAY

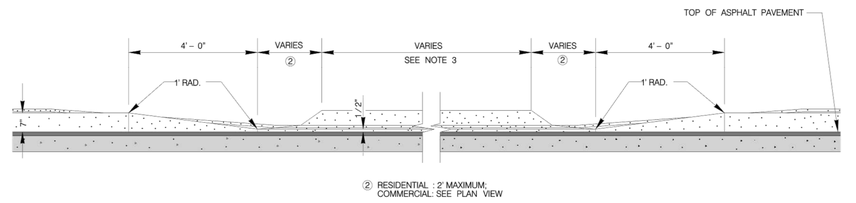
WITH SIDEWALK ABUTTING CURB



② 45º FOR COMMERCIAL DRIVEWAY

TYPICAL DRIVEWAY PLAN VIEW

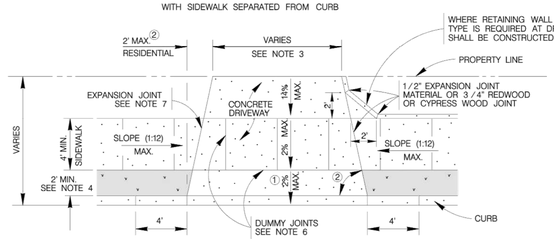
WITH SIDEWALK ABUTTING CURB



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

CURB PROFILE AT DRIVEWAY

WITH SIDEWALK SEPARATED FROM CURB



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

② 45º FOR COMMERCIAL DRIVEWAY

TYPICAL DRIVEWAY PLAN VIEW

WITH SIDEWALK SEPARATED FROM CURB

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

CONCRETE DRIVEWAY STANDARDS

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

CUDEENGINEERS.COM
4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

PLEASANTON FARMS UNIT 3

CITY OF SAN ANTONIO DETAILS

DATE 01/16/2024
PROJECT NO. 03396.005
DRAWN BY MAT/IRV/JW
CHECKED BY SPM/CC

REVISIONS
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02/06/2024
STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED
PROFESSIONAL ENGINEER

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

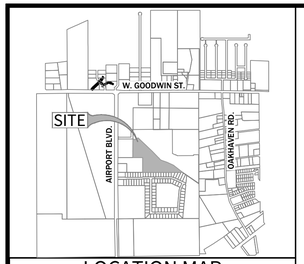
LAND-PLAT
PLEASANTON FARMS UNIT 3

S8

8 OF 8

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REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



LOCATION MAP
N.T.S.

OWNER/DEVELOPER:

LENNAR HOMES
CONTACT PERSON: RICHARD MOTT
1922 DRY CREEK WAY, SUITE 101
SAN ANTONIO,TX 78259
TEL: (210) 403-6282

CIVIL ENGINEER:

M.W. CUDE ENGINEERS, L.L.C.
CONTACT PERSON: CHRIS CHAFFEE, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112

WELDON P. CUDE
FAMILY TRUST
REMAINDER OF
90.86 Ac.
(DOC 118154 OPR)

SCALE: 1"=60'
0 60 120

COWBOY RIDGE
(VAR. WID. ROW)

EXISTING
STREET LIGHT

R1-1 STOP SIGN
"STOP"
SIZE = 30" X 30"
ITEM# 531.3

D3-1 STREET NAME
"CATTLE TRAIL"
SIZE = 9"
ITEM# 531.57

D3-1 STREET NAME
"COWBOY RIDGE"
SIZE = 9"
ITEM# 531.57

PLEASANTON FARMS UNIT 1
(DOC 202200028 OPR)

LOT 911
BLK 1

PROPOSED
STREET LIGHT

R1-1 STOP SIGN
"STOP"
SIZE = 30" X 30"
ITEM# 531.3

D3-1 STREET NAME
"GALLUP CT"
SIZE = 9"
ITEM# 531.57

D3-1 STREET NAME
"CATTLE TRAIL"
SIZE = 9"
ITEM# 531.57

TYPE II BLUE RAISED
PAVEMENT MARKER
ITEM# 537

CATTLE TRAIL
(50' R.O.W.)

GALLUP CT
(50' R.O.W.)

BLK 1

LOT 911 BLK 1
(1.07 Ac.)

PROPOSED
STREET LIGHT

TYPE II BLUE RAISED
PAVEMENT MARKER
ITEM# 537

BLK 1

PROPOSED
STREET LIGHT

R1-1 STOP SIGN
"STOP"
SIZE = 30" X 30"
ITEM# 531.3

D3-1 STREET NAME
"WAGON WHEEL"
SIZE = 9"
ITEM# 531.57

D3-1 STREET NAME
"CATTLE TRAIL"
SIZE = 9"
ITEM# 531.57

WAGON WHEEL
(50' R.O.W.)

PROPOSED
STREET LIGHT

LOT 914
BLK 1
OPEN SPACE
(0.78 Ac.)

EAGLE HEIGHTS PLEASANTON, LLC
7.37 Ac.
(DOC 152375 DR)

D3-1 STREET NAME
"CATTLE TRAIL"
SIZE = 9"
ITEM# 531.57

D3-1 STREET NAME
"FRONTIER PLACE"
SIZE = 9"
ITEM# 531.57

LOT 911 BLK 1

CATTLE TRAIL
(50' R.O.W.)

BLK 1

BLK 1

PROPOSED
STREET LIGHT

TYPE II BLUE RAISED
PAVEMENT MARKER
ITEM# 537

FRONTIER PLACE
(50' R.O.W.)

PROPOSED
STREET LIGHT

PROPOSED
STREET LIGHT

TYPE II BLUE RAISED
PAVEMENT MARKER
ITEM# 537

BLK 1

BLK 1

LOT 916
BLK 1
OPEN SPACE
(0.41 Ac.)

BLOCK 1

BLOCK 1

CUDEENGINEERS.COM

4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

PLEASANTON FARMS UNIT 3

TRAFFIC SIGNAGE PLAN

DATE
07/14/2025

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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07/30/2025
STATE OF TEXAS
MATTHEW A. TRINKLE
147558
LICENSED
PROFESSIONAL ENGINEER

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

T1

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REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.

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SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

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

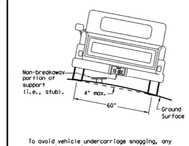
Post Type
- FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))
- TWT = Thin-Walled Tubing (see SMD(TWT))
- 10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
- SCH 80 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

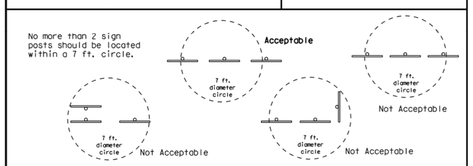
Anchor Type
- UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))
- UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))
- WS = Wedge Anchor Steel - (see SMD(TWT))
- WP = Wedge Anchor Plastic (see SMD(TWT))
- SA = Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))
- SB = Slipbase - Bolted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

Sign Mounting Designation
- P = Prefab. "Plate" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))
- T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))
- U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))
- IF REQUIRED
- TEXT or TEXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
- BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
- BC = 1.12 #/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))
- EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT

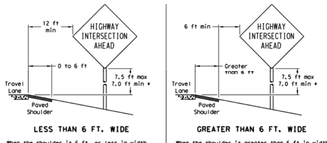


To avoid vehicle undercarriage snagging, any substantial resizing of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).



SIGN LOCATION

PAVED SHOULDERS



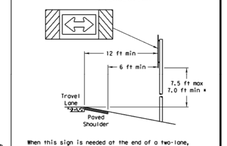
LESS THAN 6 FT. WIDE

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

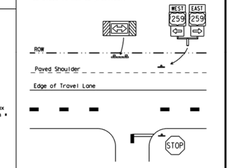
GREATER THAN 6 FT. WIDE

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

T-INTERSECTION



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



* Signs shall be mounted using the following condition that results in the greatest sign elevation:

(1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or

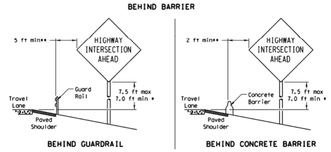
(2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

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

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

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

BEHIND BARRIER

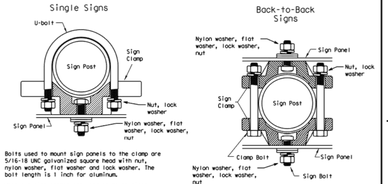


BEHIND GUARDRAIL

BEHIND CONCRETE BARRIER

**Sign clearance based on distance required for proper guard rail or concrete barrier performance.

TYPICAL SIGN ATTACHMENT DETAIL



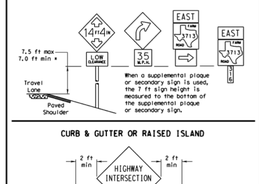
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

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

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

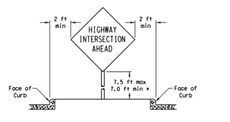
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES

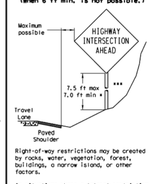


When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND



RESTRICTED RIGHT-OF-WAY (When 6 ft min. is not possible.)



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

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

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

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

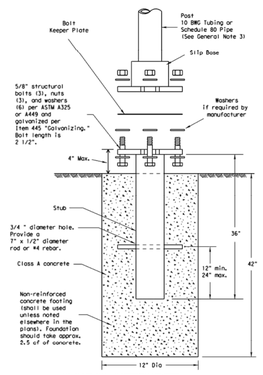
SMD(GEN)-08

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TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS

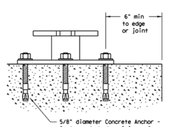


SM RD SGN ASSM TY XXXXX(X)XX(X-XXXX)

NOTE

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

CONCRETE ANCHOR



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

Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end, heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have a minimum yield and ultimate tensile strength of 50 and 75 KSI, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt shall extend at least flush with top of the nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively.

GENERAL NOTES:

1. Slip base shall be permanently marked to indicate manufacturer, Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
2. Material used as post with this system shall conform to the following specifications:
   10 BWG Tubing (2.875" outside diameter)
   0.134" nominal wall thickness
   Seamless or electric-resistance welded steel tubing or pipe
   Steel shall be HSLAS Or 55 per ASTM A1011 or ASTM A1008
   Other steels may be used if they meet the following:
   55,000 PSI minimum yield strength
   70,000 PSI minimum tensile strength
   20% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of 0.122" to 0.138"
   Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"
   Galvanization per ASTM A123 or ASTM A653 G210, for precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metalizing with zinc wire per ASTM B833.
   Schedule 80 Pipe (2.875" outside diameter)
   0.276" nominal wall thickness
   Steel tubing per ASTM A500 Gr C
   Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following:
   46,000 PSI minimum yield strength
   62,000 PSI minimum tensile strength
   21% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
   Outside diameter (uncoated) shall be within the range of 2.855" to 2.895"
   Galvanization per ASTM A123
3. See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is:
   http://www.txdot.gov/publications/traffic.htm
4. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

ASSEMBLY PROCEDURE

Foundation
1. Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor-driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Push the pipe and of the slip base stub into the center of the concrete. Rotate the stub back and forth while pushing it down into the concrete to assure good contact between the concrete and stub. Continue to work the stub into the concrete until it is between 2 to 4 inches above the ground.
4. Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
5. The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

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

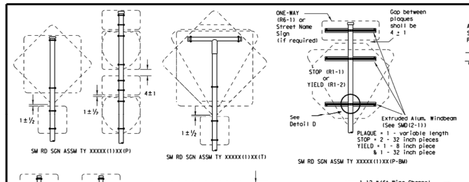
Texas Department of Transportation
Traffic Operations Division

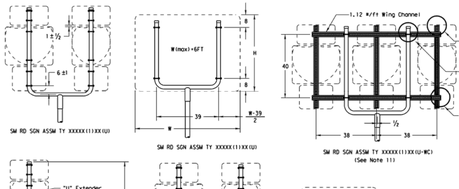
SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

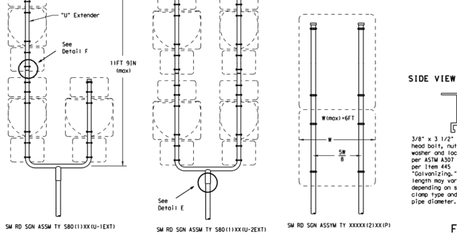
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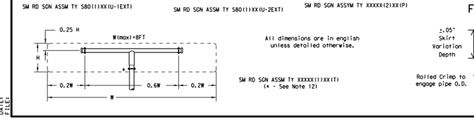
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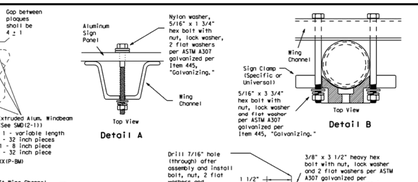


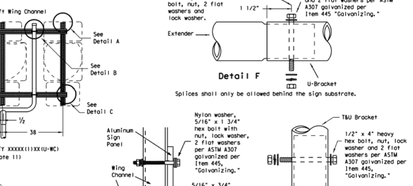


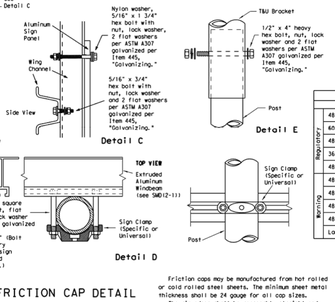




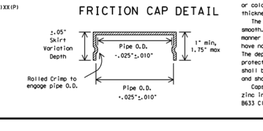
All dimensions are in english unless detailed otherwise.







FRICTION CAP DETAIL



Friction caps may be manufactured from hot rolled or cold rolled steel sheets. The minimum sheet metal thickness shall be 24 gauge for all cap sizes.

The rim edges shall be reasonably straight and smooth. Caps shall be sized and formed in such a manner as to produce a drive-on friction fit and have no tendency to rock when seated on the pipe. The depth shall be sufficient to give positive protection against entrance of rainwater. They shall be free of sharp creases or indentations and show no evidence of metal fracture.

Caps shall have an electrodeposited coating of zinc in accordance with the requirements of ASTM B633 Class FE/ZN 8.

GENERAL NOTES:

1. | SIGN SUPPORT | # OF POSTS | MAX. SIGN AREA |
   |---|---|---|
   | 10 BWG | 1 | 16 SF |
   | 10 BWG | 2 | 32 SF |
   | Sch 80 | 1 | 32 SF |
   | Sch 80 | 2 | 64 SF |
2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
5. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
6. For horizontal reinforcement, Unistrut or equal may be used.
7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
10. Additional route markers may be added vertically, provided the total sign area does not exceed the maximum allowable amount per Note 1.
11. Additional sign clamp required on the "T-bracket" post for 24 inch height signs. Place the clamp 3 inches above bottom of sign when possible.
12. Post open ends shall be fitted with Friction Caps.
13. Sign blanks shall be the sizes and shapes shown on the plans.

REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) / TY 10BWG(1)XX(F-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) / TY 10BWG(1)XX(F-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) / TY 10BWG(1)XX(F-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY SB01(1)XX(T)
	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY SB01(1)XX(T)
Warning	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
Traffic Operations Division

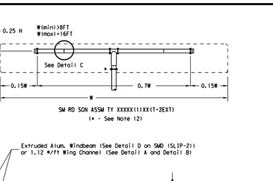
SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

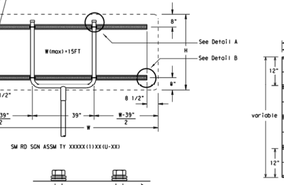
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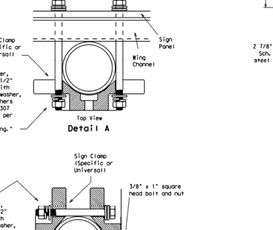
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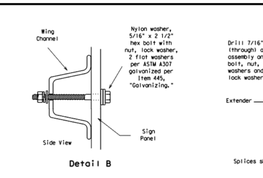
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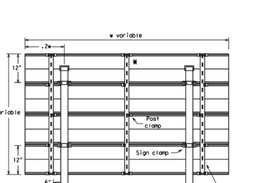
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GENERAL NOTES:

1. | SIGN SUPPORT | # OF POSTS | MAX. SIGN AREA |
   |---|---|---|
   | 10 BWG | 1 | 16 SF |
   | 10 BWG | 2 | 32 SF |
   | Sch 80 | 1 | 32 SF |
   | Sch 80 | 2 | 64 SF |
2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
5. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
6. For horizontal reinforcement, Unistrut or equal may be used.
7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
10. Sign blanks shall be the sizes and shapes shown on the plans.
11. Additional sign clamp required on the "T-bracket" post for 24 inch high signs. Place the clamp 3 inches above bottom of sign when possible.
12. Post open ends shall be fitted with Friction Caps.

REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) / TY 10BWG(1)XX(F-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) / TY 10BWG(1)XX(F-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) / TY 10BWG(1)XX(F-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY SB01(1)XX(T)
	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY SB01(1)XX(T)
Warning	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

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Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

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CUDEENGINEERS.COM

CUDE ENGINEERS EST. 1980

4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

PLEASANTON FARMS UNIT 3

TXDOT DETAIL - SIGN MOUNTING DETAILS

DATE
01/16/2024

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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02/06/2024

STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED PROFESSIONAL ENGINEER

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

T2

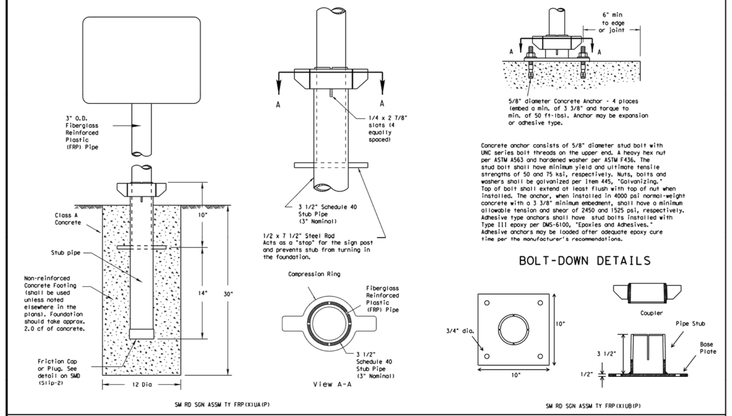
P:\03396\005\2 Drawings\05_TXDOT SIGN DETAILS.dwg, 2024.02.06 3:56:39 PM, mmiske

REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.

DISCLAIMER: The use of this standard is governed by the Texas Engineering Practice Act. No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT disclaims responsibility for the proper use of this standard and shall not be liable for any damages resulting from its use.

DATE:
FILE:

Universal Anchor System with Fiberglass Reinforced Plastic (FRP) Post



Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. A heavy hex nut per ASTM A563 and hardened washer per ASTM F436. The stud bolt shall have minimum yield and ultimate tensile strengths of 50 and 75 ksi, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Top of bolt shall extend at least flush with top of nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 3 3/8" minimum embedment, shall have a minimum allowable tension and shear of 2450 and 1525 psi, respectively. Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations.

BOLT-DOWN DETAILS

SM RD SGN ASSM TY FRP(X)(A)(P)

GENERAL NOTES:

1. FRP sign supports for a single type sign support may be used for signs up to and including 16 square feet. Dual post installation may be used for signs up to and including 32 square feet.
2. All nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing."
3. See the Traffic Operations Division website for detailed drawings of sign clamps. The website address is: http://www.txdot.gov/publications/traffic.htm

FRP POST REQUIREMENTS

1. Materials shall conform to the requirements of Departmental Material Specification DMS-4410 and will be furnished in a yellow or gray color as specified elsewhere in the plans.
2. Thickness of FRP sign support is 0.125" + 0.031", - 0.0".
3. FRP sign supports are prequalified by the Traffic Operations Division. Prequalification procedures are obtained by writing:
   Texas Department of Transportation
   Traffic Operations Division
   125 East 11th Street
   Austin, Texas 78701-2483

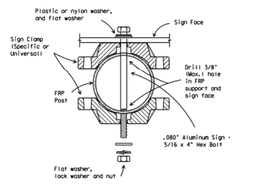
UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURES

1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(SIGN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Insert base post in foundation hole to depths shown and fill hole with concrete. Cut base post from bottom and ensure a minimum of 18" embedment if installed in solid rock.
4. Level and plumb the base post with coupler using a torpedo level and let concrete set a minimum of 4 days, unless otherwise directed by Engineer. Bottom of base post slots shall be above the concrete footing.
5. Attach sign to FRP post.
6. Insert sign post into base post. Lower until the post comes to rest on the steel rod.
7. Use hammer to ensure the coupler is firmly seated. Top of coupler should be level with top of base post in most instances.
8. Check sign to ensure there is no twist. If loose, increase the tightening of coupler.

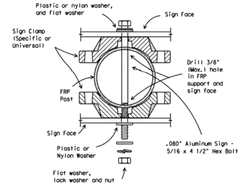
BOLT DOWN SIGN SUPPORT

1. Position base plate with coupler on existing concrete.
2. Drill holes into concrete and insert the 5/8" diameter bolts with wedge anchors, and tighten nuts.
3. Attach sign to FRP post.
4. Insert bottom of sign post into pipe stub.
5. Use hammer to ensure the coupler is firmly seated. Top of coupler should be level with top of base post in most instances.
6. Check sign to ensure there is no twist. If loose, increase the tightening of coupler.

Typical Sign Mounting Detail for FRP Support with Single Sign



Typical Sign Mounting Detail for FRP Support with Back-to-Back Signs



Texas Department of Transportation
Traffic Operations Division

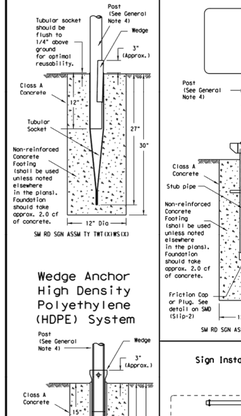
SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS UNIVERSAL ANCHOR SYSTEM WITH FRP POST

SMD(FRP)-08

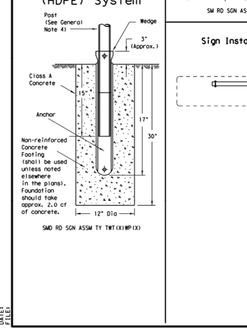
©TxDOT July 2002	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS	CONT	SECT	JOB	HIGHWAY
9-08	DIST	COUNTY		SHEET NO.

26F

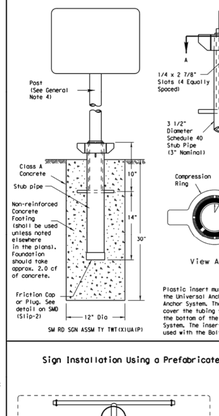
Wedge Anchor Steel System

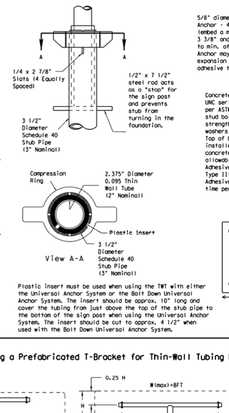


Wedge Anchor High Density Polyethylene (HDPE) System



Universal Anchor System with Thin-Walled Tubing Post





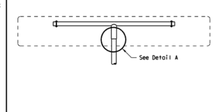
Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. A heavy hex nut per ASTM A563 and hardened washer per ASTM F436. The stud bolt shall have minimum yield and ultimate tensile strengths of 50 and 75 ksi, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Top of bolt shall extend at least flush with top of nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 3 3/8" minimum embedment, shall have a minimum allowable tension and shear of 2450 and 1525 psi, respectively. Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations.

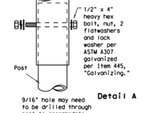
SM RD SGN ASSM TY TWT(X)(B)(P)

Compression Ring
2.375" Diameter 0.095 thin Wall Tube (3" Nominal)
Plastic Insert
3 1/2" Diameter Schedule 40 Stub Pipe (3" Nominal)
View A-A

Plastic insert must be used when using the TWT with either the Universal Anchor System or the Bolt Down Universal Anchor System. The insert should be approx. 10" long and cover the tubing from just above the top of the stub pipe to the bottom of the sign post when using the Universal Anchor System. The insert should be cut to approx. 4 1/2" when used with the Bolt Down Universal Anchor System.

Sign Installation Using a Prefabricated T-Bracket for Thin-Wall Tubing Post





NOTE

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

GENERAL NOTES:

1. The Wedge Anchor System and the Universal Anchor System with thin wall tubing post may be used to support up to 10 square feet of sign area.
2. The tubular socket, wedge and prefabricated T-bracket shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to the approval of the TxDOT Traffic Standards Engineer.
3. Except for posts 113 BWG Tubing), clamps, nuts and bolts, all components shall be prequalified. A list of prequalified vendors may be obtained from the Material Producer List web page. The website address is: http://www.txdot.gov/business/producer list.htm
4. Material used as post with this system shall conform to the following specifications:
   13 BWG Tubing (2.375" outside diameter) (TWT)
   0.095" nominal wall thickness
   Seamless or electric-resistance welded steel tubing
   Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
   Other steels may be used if they meet the following:
   55,000 PSI minimum yield strength
   70,000 PSI minimum tensile strength
   18% minimum elongation in 2"
   Wall thickness (uncoated) shall be w/min the range of .083" to .099"
   Outside diameter (uncoated) shall be w/min the range of 2.369" to 2.381"
   Galvanization per ASTM 123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
5. Sign blanks shall be the sizes and shapes shown on the plans.
6. Additional sign clamp required on the T-bracket* post for 24" high signs. Place clamp at least 3" above bottom of sign when possible.
7. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
8. See the Traffic Operations Division website for detailed drawings of sign clamps and Wedge Anchor System components. The website address is: http://www.txdot.gov/publications/traffic.htm

WEDGE ANCHOR SYSTEM INSTALLATION PROCEDURE

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

UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURE

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

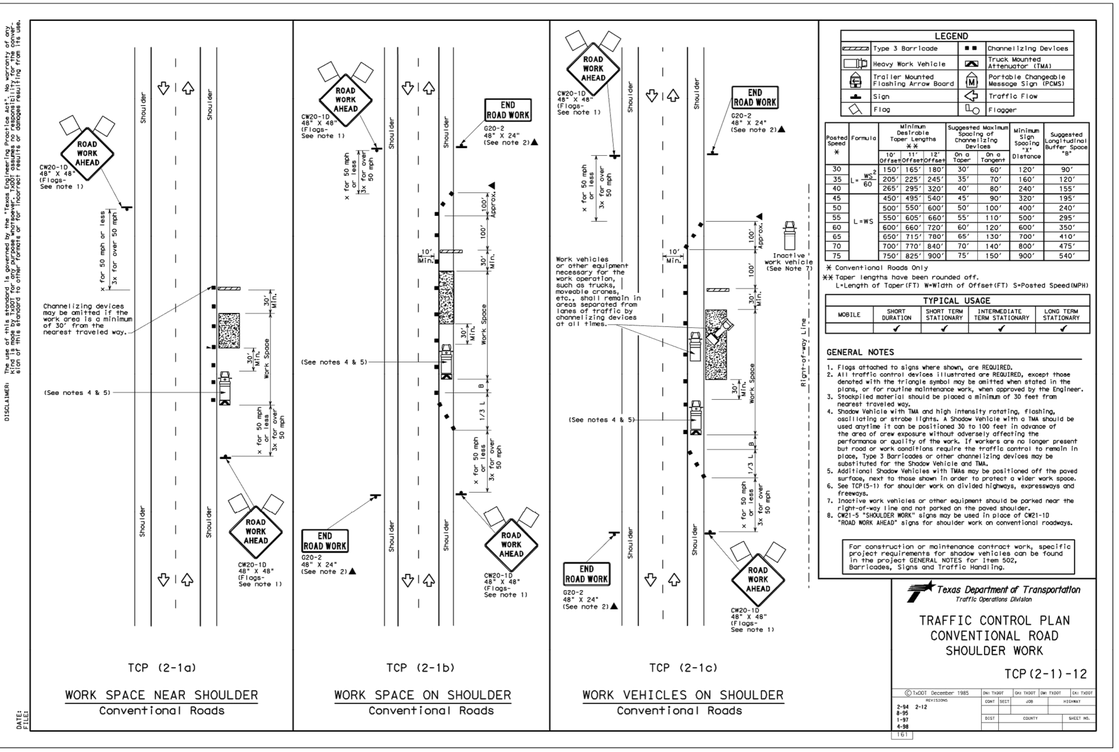
Texas Department of Transportation
Traffic Operations Division

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

SMD(TWT)-08

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REVISIONS	CONT	SECT	JOB	HIGHWAY
9-08	DIST	COUNTY		SHEET NO.

26E



LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing Distance	Suggested Longitudinal Buffer Space "B"
30	L= WS 2 / 60	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L=WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only
** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓	✓	✓

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated in the plans, or for routine maintenance work, when approved by the Engineer.
3. Stockpiled material should be placed a minimum of 30 feet from nearest traveled way.
4. Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
6. See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
7. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
8. CW21-5 "SHOULDER WORK" signs may be used in place of CW21-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

TCP(2-1)-12

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REVISIONS	CONT	SECT	JOB	HIGHWAY
2-94 2-12				
8-95	DIST	COUNTY		SHEET NO.
1-97				
4-98				
10-01				

16I

REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.

CUDEENGINEERS.COM
CUDE ENGINEERS EST. 1980
4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

PLEASANTON FARMS UNIT 3

TXDOT DETAIL - SIGN MOUNTING DETAILS

DATE
01/16/2024

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
1.
2.
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02/06/2024
STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED
PROFESSIONAL ENGINEER

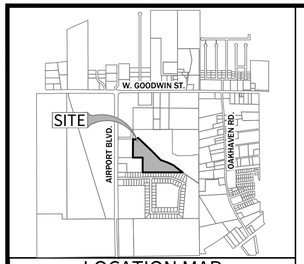
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

T3

3 OF 3

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LOCATION MAP
N.T.S.

OWNER/DEVELOPER:

LENNAR HOMES
CONTACT PERSON: RICHARD MOTT
1922 DRY CREEK WAY, SUITE 101
SAN ANTONIO,TX 78259
TEL: (210) 403-6282

CIVIL ENGINEER:

M.W. CUDE ENGINEERS, L.L.C.
CONTACT PERSON: CHRIS CHAFFEE, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112

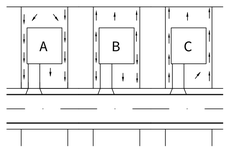
LEGEND

= SITE BOUNDARY

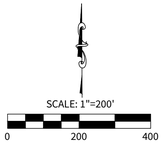
= DRAINAGE BOUNDARY

= Tc FLOW PATH (SHEET FLOW)

XX = ACCUMULATION POINT



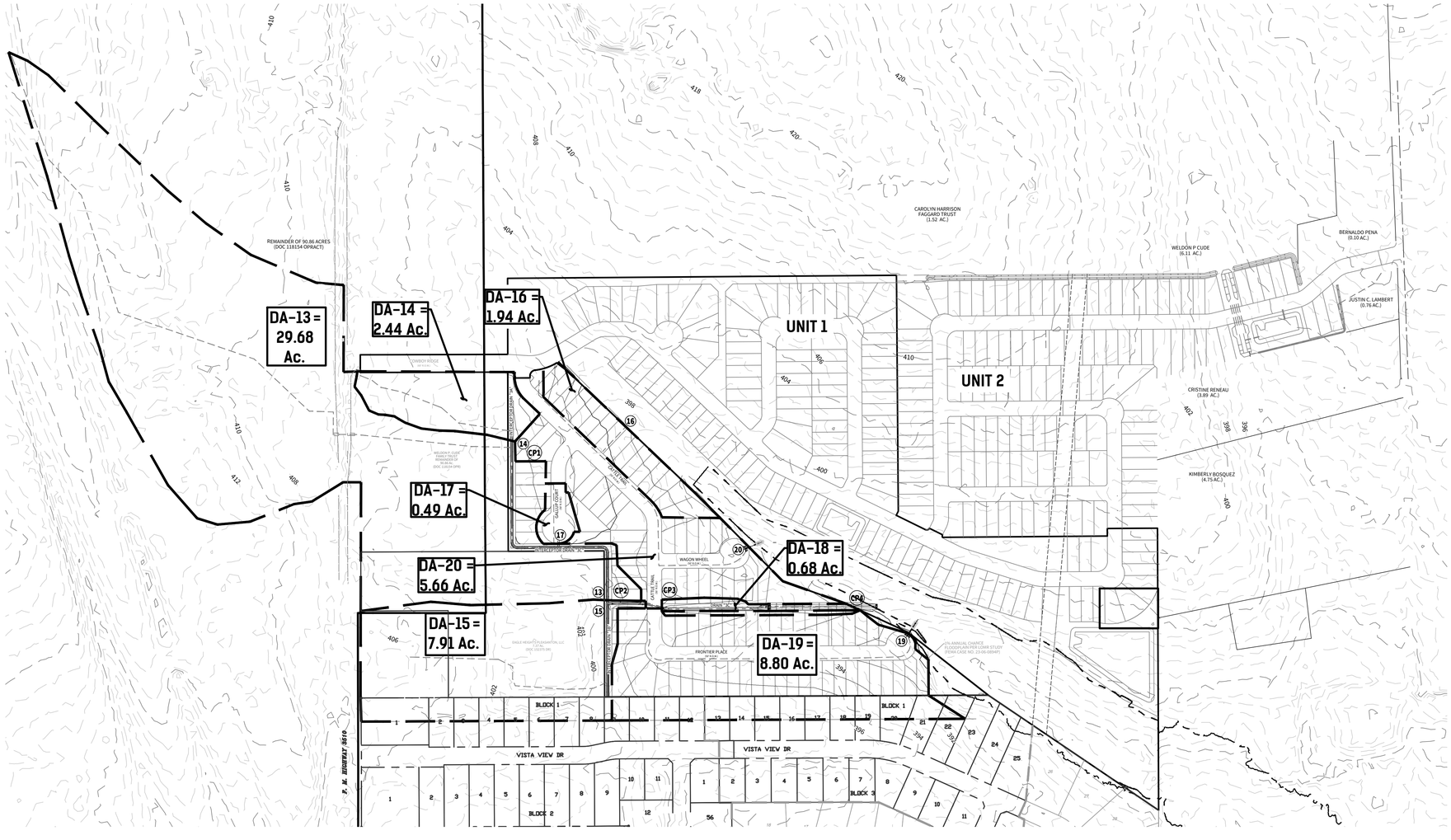
TYPICAL LOT SITE PLAN
N.T.S.



Project Name: Pleasanton Farms Unit 3 — **Precipitation: PA5**

Calculation Summary for Time of Concentrations & Proposed Flow (USED FOR SIZING CURB INLET AND VERIFYING STREET CAPACITY)

	HYDROLOGY			Sheet Flow Tc Computations						Shallow Conc. Tc Computations					Concentrated Tc Computations			Overall	INTENSITY			Q FLOW			
Drainage Shed/ Computation Point	Shed Area (Ac.)	AREA OF ACCUMULATION (Ac.)	C	*Length - 300'*	Paved (Y or N)	Upstream Elev.	Downstream Elev	Slope	Time of Concentration	*Length*	Paved (Y or N)	Downstream Elev	Slope	Time of Concentration	*Length*	Velocity (fps)	Time of Concentration	Time of Concentration (min)	I5	I25	I100	Q5	Q25	Q100	Drainage Shed
DA-1	6.83	= DA-1	0.59	*300.00*	N	424.48	420.00	1.49%	20	*650.00*	N	408.93	1.70%	5	*413.00*	6	1.15	26	3.93	5.40	6.73	15.84	21.76	27.12	DA-1
DA-2	7.45	= DA-2	0.47	*300.00*	N	424.48	420.74	1.25%	20	*542.14*	N	410.33	1.92%	4	*452.63*	6	1.26	25	4.01	5.51	6.86	14.04	19.29	24.02	DA-2
DA-3	1.77	= DA-3	0.67	*300.00*	N	424.48	420.66	1.27%	20	*598.04*	N	406.76	2.32%	4	*136.32*	6	0.38	24	4.09	5.62	7.01	4.85	6.66	8.31	DA-3
DA-4	6.45	= DA-4	0.67	*272.47*	N	410.07	408.46	0.59%	20	*25.00*	N	406.48	7.92%	0	*752.04*	6	2.09	22	4.28	5.88	7.34	18.50	25.41	31.72	DA-4
DA-5	0.93	= DA-5	0.67												*585.82*	6	1.63	1	9.18	12.71	15.88	5.72	7.92	9.89	DA-5
DA-6	7.08	= DA-6	0.67	*60.00*	N	408.68	408.00	1.13%	15	*195.06*	N	405.26	1.40%	2	*544.82*	6	1.51	17	4.87	6.73	8.42	23.10	31.92	39.94	DA-6
DA-7	4.80	= DA-7	0.67	*60.00*	N	403.45	402.19	2.10%	13	*102.44*	N	399.83	2.30%	1				13	5.59	7.77	9.76	17.98	24.99	31.39	DA-7
DA-8	5.12	= DA8	0.47	*300.00*	N	424.48	422.13	0.78%	20	*650.00*	N	415.62	1.00%	7	*729.98*	6	2.03	28	3.79	5.20	6.47	9.12	12.51	15.57	DA-8
DA-9	2.27	= DA-9	0.59	*60.00*	N	395.86	395.20	1.10%	15	*240.00*	N	386.33	3.70%	1				16	5.03	6.95	8.71	6.74	9.31	11.67	DA-9
DA-10	4.37	= DA-10	0.67	*120.00*	N	415.00	413.00	1.67%	15						*1030.00*	6	2.86	17	4.87	6.73	8.42	14.26	19.70	24.65	DA-10
DA-11	7.20	= DA-11	0.67	*60.00*	N	410.29	408.54	2.92%	12	*204.49*	N	404.89	1.78%	2	*1076.35*	6	2.99	16	5.03	6.95	8.71	24.26	33.53	42.02	DA-11
DA-12	7.87	= DA-12	0.67	*60.00*				0.00%	6	*213.49*	N		0.00%	3	*954.64*	6	2.65	11	6.01	8.37	10.53	31.69	44.13	55.52	DA-12
DA-13	29.68	= DA-13	0.37	*300.00*	N	426.70	422.65	1.35%	20	*2157.00*	N	402.10	0.95%	23	*841.63*	6	2.34	45	2.93	4.03	5.02	32.51	44.72	55.71	DA-13
DA-14	2.44	= DA-14	0.37	*300.00*	N	407.97	403.60	1.46%	20	*253.32*	N	402.33	0.50%	3	*32.00*	6	0.09	23	4.18	5.75	7.17	3.77	5.19	6.47	DA-14
DA-15	7.91	= DA-15	0.75	*300.00*	N	406.70	401.60	1.70%	20	*434.00*	N	398.71	0.67%	5	*396.13*	6	1.10	26	3.93	5.40	6.73	23.31	32.04	39.93	DA-15
DA-16	1.94	= DA-16	0.67	*118.00*	N	400.71	399.35	1.15%	16									15	5.20	7.20	9.03	6.76	9.36	11.74	DA-16
DA-17	0.49	= DA-17	0.67	*126.00*	N	404.05	402.34	1.36%	16	*196.21*	Y	401.52	0.42%	2				17	4.87	6.73	8.42	1.60	2.21	2.76	DA-17
DA-18	0.68	= DA-18	0.81												*638.11*	6	1.77	1.00	9.18	12.71	15.88	5.06	7.01	8.75	DA-18
DA-19	8.80	= DA-19	0.67	*120.00*	N	399.64	397.70	1.62%	15	*1031.00*	Y	390.85	0.66%	10				25	4.01	5.51	6.86	23.64	32.49	40.45	DA-19
DA-20	5.66	= DA-20	0.67	*49.00*	N	404.20	403.20	2.04%	13	*1031.00*	Y	394.34	0.86%	9				22	4.28	5.88	7.34	16.23	22.30	27.83	DA-20
CP1	32.12	= DA13+DA14	0.37	*300.00*	N	426.70	422.65	1.35%	20	*2157.00*	N	402.10	0.95%	23	*841.63*	6	2.34	45	2.93	4.03	5.02	35.16	48.36	60.24	CP1
CP2	32.61	=CP1+DA17	0.38	*300.00*	N	426.70	422.65	1.35%	20	*2157.00*	N	402.10	0.95%	23	*841.63*	6	2.34	45	2.93	4.03	5.02	36.12	49.68	61.89	CP2
CP3	40.52	=CP2+DA15	0.45	*300.00*	N	426.70	422.65	1.35%	20	*2157.00*	N	402.10	0.95%	23	*841.63*	6	2.34	45	2.93	4.03	5.02	53.50	73.59	91.67	CP3
CP4	41.20	=CP3+DA18	0.46	*300.00*	N	426.70	422.65	1.35%	20	*2157.00*	N	402.10	0.95%	23	*841.63*	6	2.34	45	2.93	4.03	5.02	55.12	75.81	94.44	CP4



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4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

PLEASANTON FARMS UNIT 3

DRAINAGE MASTER PLAN

DATE
03/20/2024

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
1.
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8.
9.

03/25/2024
STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED PROFESSIONAL ENGINEER

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

D1

© 2024 M.W. CUDE ENGINEERS, L.L.C. | 03396.005\D-1.0\working\DA_001.DWG | Plotted: 2024.03.20 8:52am | mattia

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GENERAL SPECIFICATIONS FOR COMPACTED FILL

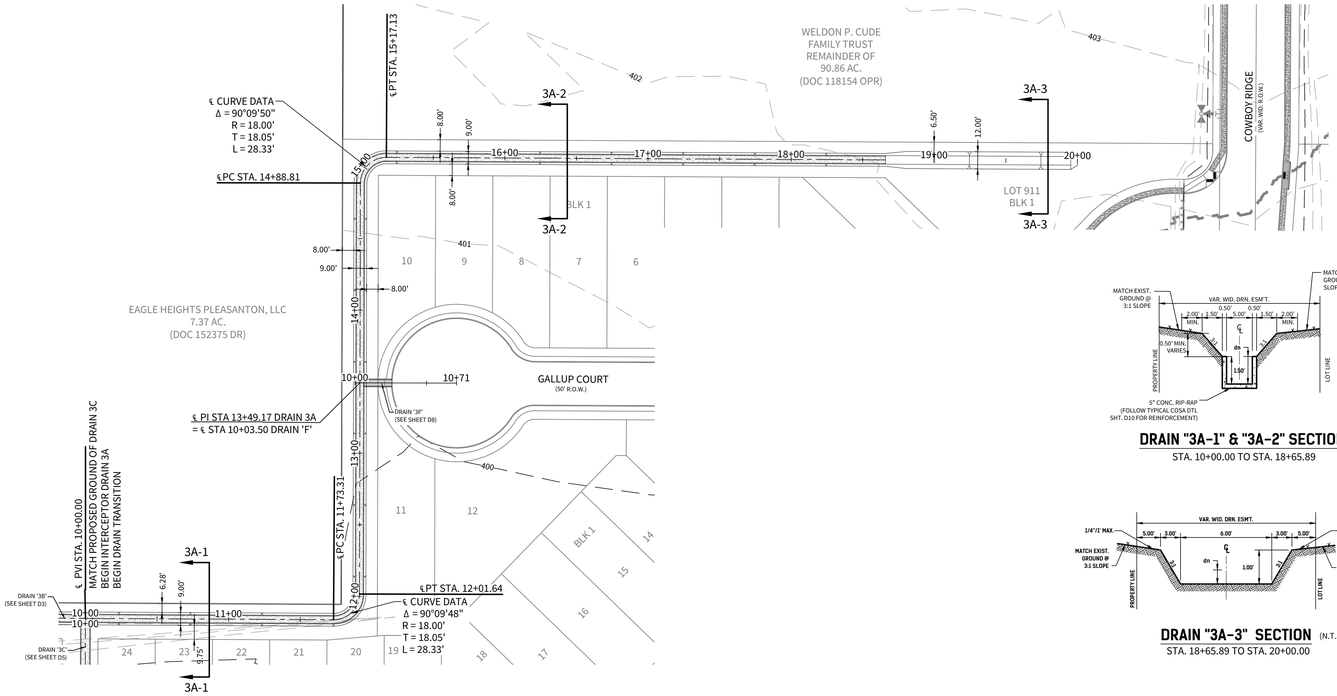
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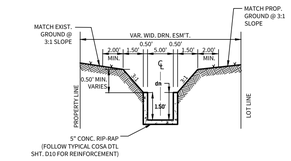
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TRENCH EXCAVATION SAFETY PROTECTION

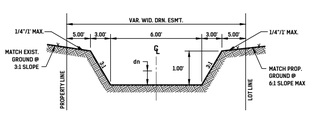
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DRAIN "3A-1" & "3A-2" SECTION (N.T.S.)
STA. 10+00.00 TO STA. 18+65.89

	"3A-1"	"3A-2"	"3A-3"
Q_{25yr} (cfs)	49.68	48.36	5.19
B_W (ft)	5.00'	5.00'	6.00'
z	3:1	3:1	3:1
n	0.015	0.015	0.035
S (%)	0.50	0.50	0.50
d_n (ft)	1.49	1.46	0.46
V (fps)	6.67	6.62	1.53



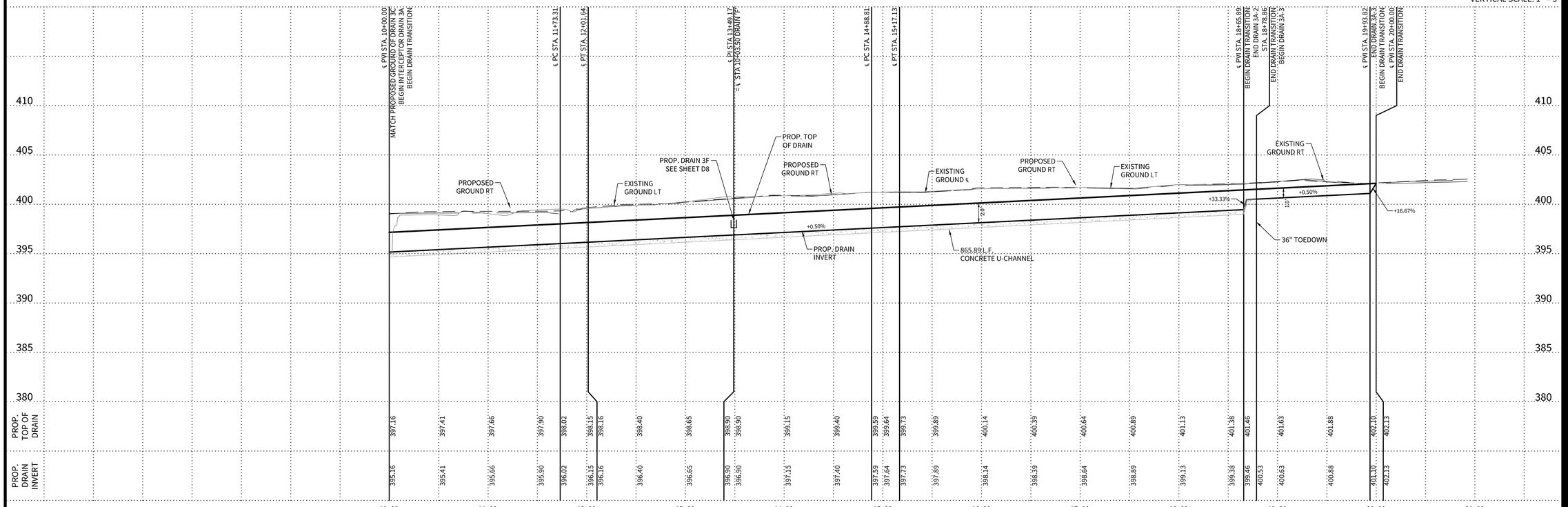
DRAIN "3A-3" SECTION (N.T.S.)
STA. 18+65.89 TO STA. 20+00.00

INTERCEPTOR DRAIN "3A"

STA. 10+00+00 TO STA. 20+00.00

SCALE: 1"=50'
50 25 0 50

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'



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CUDE ENGINEERS EST. 1980

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PLEASANTON FARMS UNIT 3

DRAIN PLAN & PROFILE
INTERCEPTOR DRAIN "3A"

DATE
07/15/2025

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
1.
2.
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07/30/2025
STATE OF TEXAS
MATTHEW A. TRINKLE
147558
LICENSED PROFESSIONAL ENGINEER

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

D2

P:\03396.005\2 Drawings\04_Dsn\Dsn\Plan_03152025.dgn 7/15/2025 1:52:22pm mdila

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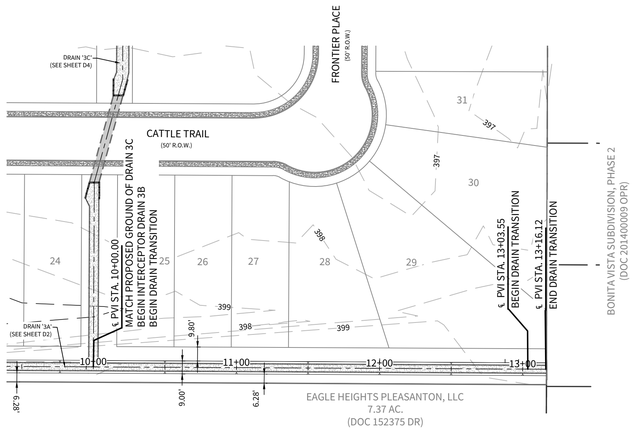
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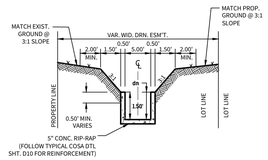
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DRAIN "3B" SECTION (N.T.S.)
STA. 10+00.00 TO STA. 13+16.12

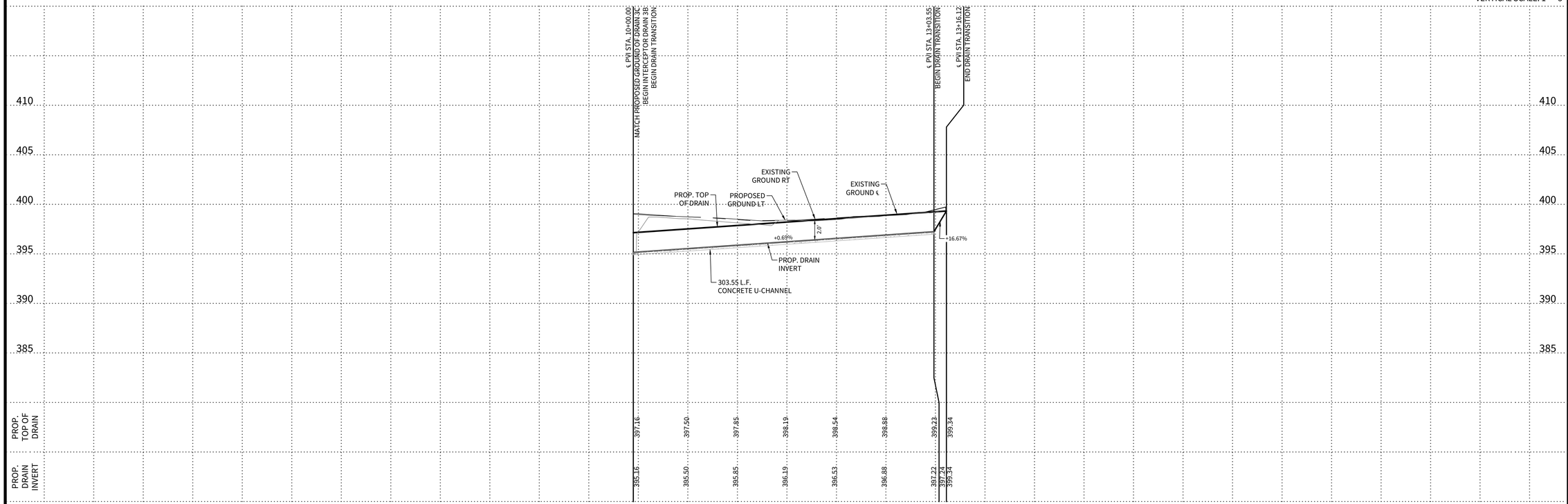
	"3B"
Q_{25yr} (cfs)	32.04
B_W (ft)	5.00'
z	3:1
n	0.019
S (%)	0.69
d_n (ft)	1.15
V (fps)	5.57

INTERCEPTOR DRAIN "3B"

STA. 10+00+00 TO STA. 13+16.12

SCALE: 1"=50'
50 25 0 50

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'



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PLEASANTON FARMS UNIT 3

DRAIN PLAN & PROFILE
INTERCEPTOR DRAIN "3B"

DATE
03/20/2024

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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03/25/2024
STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED PROFESSIONAL ENGINEER

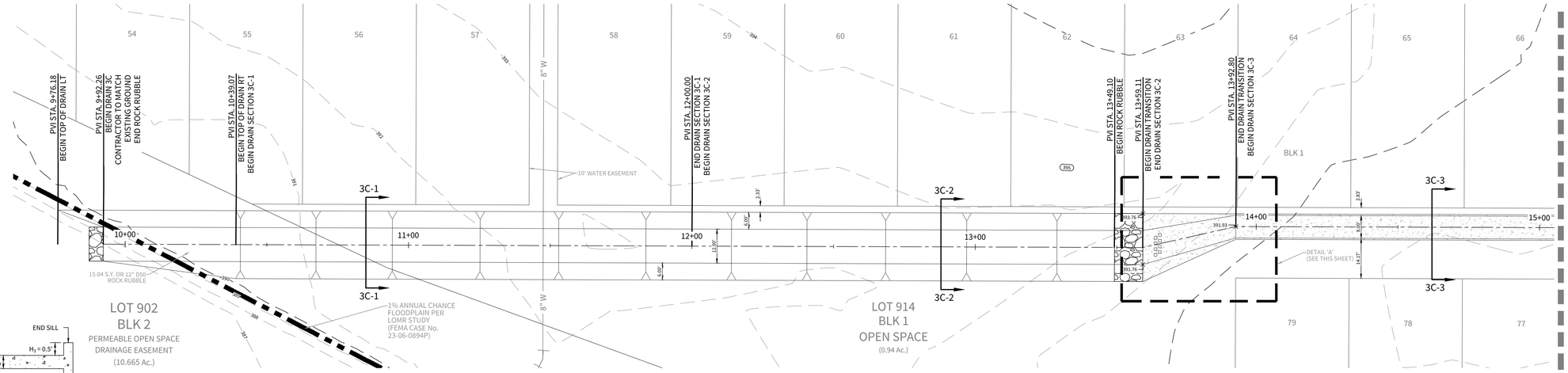
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

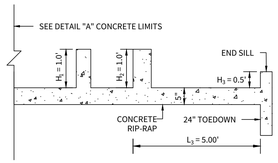
LAND-PLAT
PLEASANTON FARMS UNIT 3

D3

P:\03396\005\3 Drawings\04_ADD DWFP\dwg\03396005 D3 Interceptor Drain 3B.dwg, 03/25/2024 8:33:13 AM, Matt Wells

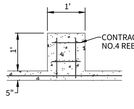
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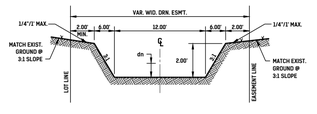


BAFFLE BLOCK CALCULATIONS
(N.T.S.)

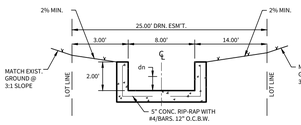
TAILWATER DEPTH = 1.41'
Fr = 1.033
Y_c = 1.032 FT
Y_2 = 1.690 FT
Y_1 = 1.410 FT
BASIN OUTLET VELOCITY = 3.947 FT/S



BAFFLE BLOCK
DRAIN "3C" REINFORCEMENT DETAIL
(N.T.S.)

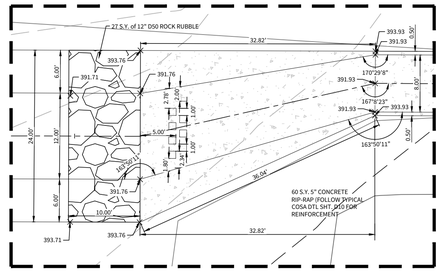


DRAIN "3C–1" & "3C–2" SECTIONS (N.T.S.)
"3C-1" STA. 10+40.00 TO STA. 12+00.00
"3C-2" STA. 12+00.00 TO STA. 13+59.16



DRAIN "3C–3" SECTION (N.T.S.)
STA. 13+59.16 TO STA. 15+00.00

	"3C-1"	"3C-2"	"3C-3"
$Q_{25yr.T}$ (cfs)	75.81	75.81	75.81
B_{FP} (ft)	12.00'	12.00'	8.00'
z	3:1	3:1	0:0
n	0.035	0.035	0.015
S (%)	1.91	0.50	0.50
d_n (ft)	1.00	1.45	1.35
V (fps)	5.05	3.20	7.02



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

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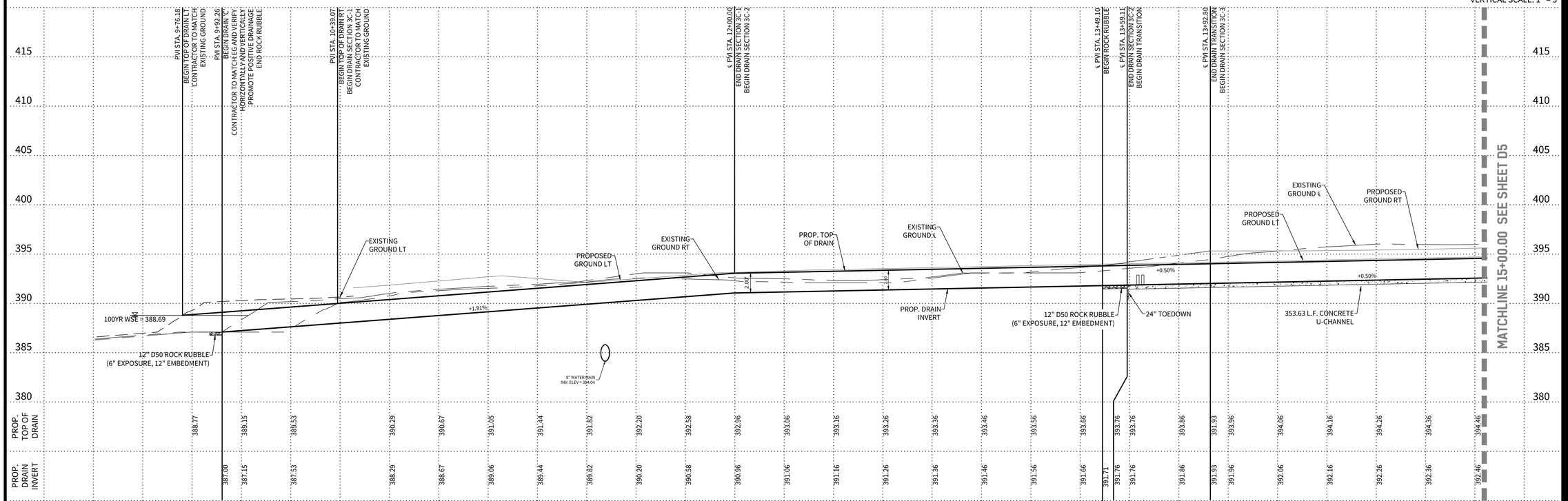
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DRAIN "3C"

STA. 9+91.74 TO STA. 15+00.00

SCALE: 1"=20'
20 10 0 20

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'



CUDEENGINEERS.COM
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San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

PLEASANTON FARMS
UNIT 3

DRAIN PLAN & PROFILE
INTERCEPTOR DRAIN "3C"

DATE
03/27/2024
PROJECT NO.
03396.005
DRAWN BY
MAT/IRV/JW
CHECKED BY
SPM/CC

REVISIONS
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03/28/2024
STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED ENGINEER
SURVEYOR

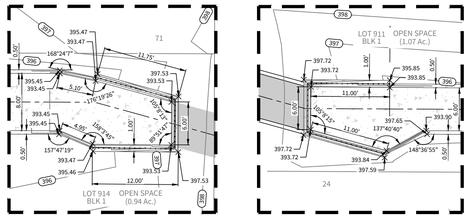
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

D4

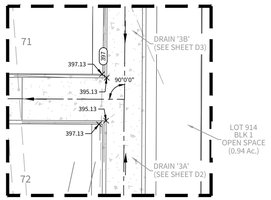
P:\03396\005\2-Drawings\04_PDF\03396005-Drawings.dwg, 3/28/2024 8:53:27 AM, Sean McFarland

REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.

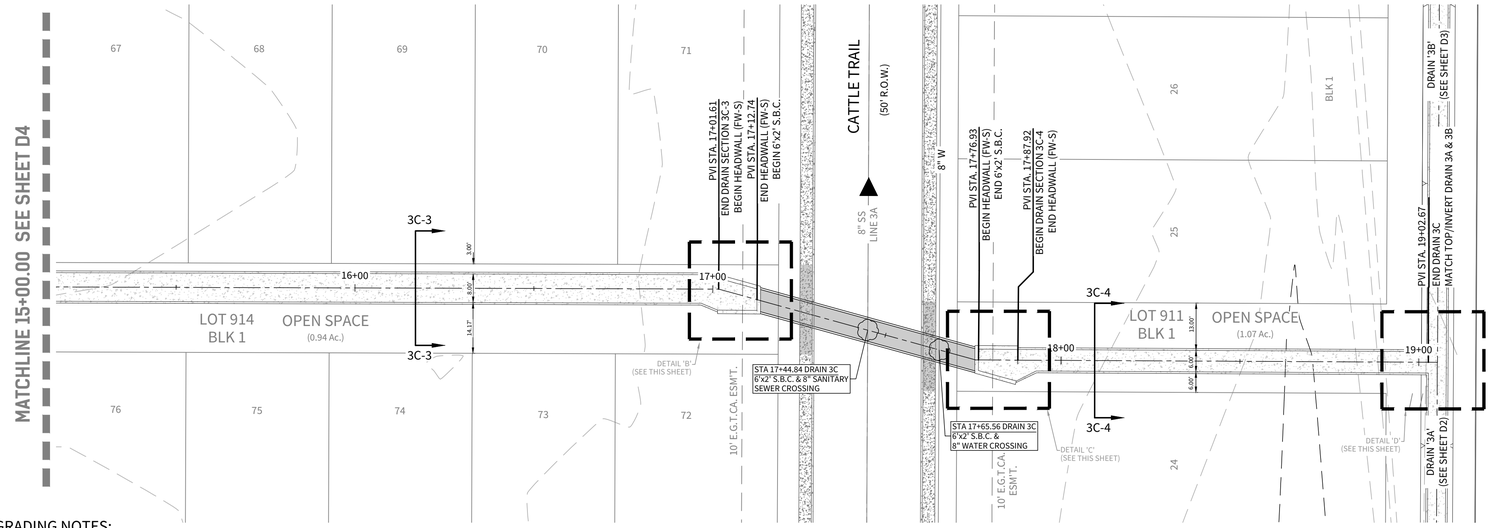


DETAIL 'B'
(SCALE: 1" = 10')

DETAIL 'C'
(SCALE: 1" = 10')



DETAIL 'D'
(SCALE: 1" = 10')



GENERAL SPECIFICATIONS FOR COMPACTED FILL

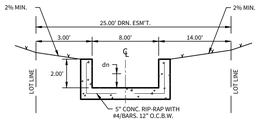
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2. THE MATERIALS USED SHALL BE FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES, SUCH AS TREES, BRUSH AND RUBBISH.
3. THE FILL MATERIAL SHALL BE COMPACTED AT THE APPROPRIATE MOISTURE CONTENT SPECIFIED FOR THE SOILS BEING USED. APPROPRIATE MOISTURE CONTENT IS DEFINED, TYPICALLY, AS OPTIMUM MOISTURE CONTENT; HOWEVER, FOR EXPANSIVE SOILS IT MAY BE GREATER THAN OPTIMUM MOISTURE CONTENT, AND OTHER MOISTURE CONTENTS MAY BE NECESSARY TO PRODUCE THE DESIRED RESULTS WITH CERTAIN SOILS.
4. BEDDING MATERIAL TO BE 1½" CRUSHED GRAVEL PER ASTM D2321.

DRAINAGE & GRADING NOTES:

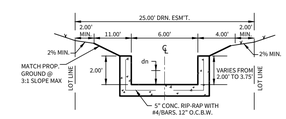
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2. ALL CONCRETE FOR TxDOT DRAINAGE STRUCTURES SHALL MEET TxDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS 'A' 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
3. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
4. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
5. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
6. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF 'D' AS SHOWN IN THE PROFILE.

TRENCH EXCAVATION SAFETY PROTECTION

Contractor and/or Contractor's independently retained employee or structural design/geotechnical/safety/equipment consultant, if any, shall review these plans and available geotechnical information and the anticipated installation site(s) within the project work area in order to implement Contractor's trench excavation safety protection systems, programs and/or procedures for the project described in the contract documents. the Contractor's implementation of these systems, programs and/or procedures shall provide for adequate trench excavation safety protection that comply with as a minimum, OSHA standards for trench excavations. specifically, Contractor and/or Contractor's independently retained employee or safety consultant shall implement a trench safety program in accordance with OSHA standards governing the presence and activities of individuals working in and around trench excavation.



DRAIN "3C–3" SECTION (N.T.S.)
STA. 15+00.00 TO STA. 17+12.74



DRAIN "3C–4" SECTION (N.T.S.)
STA. 17+68.33 TO STA. 19+05.18

	"3C-3"	"3C-4"
Q_{25ULT} (cfs)	75.81	73.59
B_W (ft)	8.00'	6.00'
z		
n	0.015	0.015
S (%)	0.50	1.12
d_n (ft)	1.35	1.27
V (fps)	7.02	9.66

NOTE:

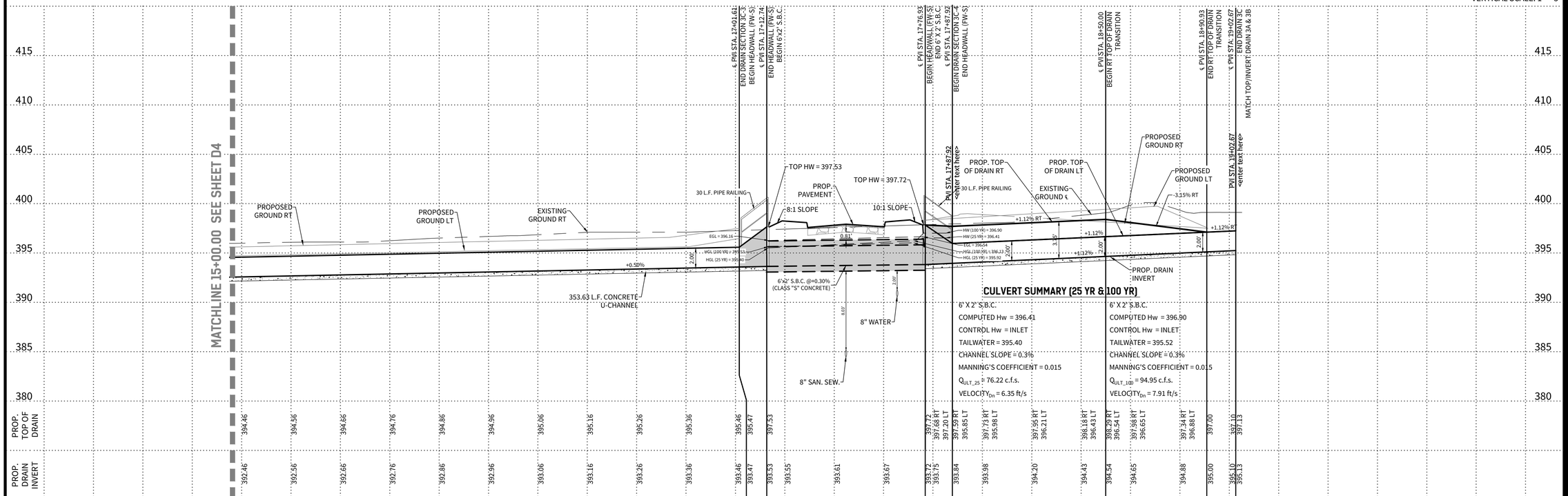
IF WALL EXCEEDS 4' OR HIGHER, THIS DRAIN IS TO BE DESIGNED BY A STRUCTURAL ENGINEER AND A SEPARATE PERMIT MAY BE REQUIRED.

DRAIN "3C"

STA. 15+00.00 TO STA. 19+02.67

SCALE: 1"=20'
20 10 0 20

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'



CULVERT SUMMARY (25 YR & 100 YR)

6' X 2' S.B.C.	6' X 2' S.B.C.
COMPUTED Hw = 396.41	COMPUTED Hw = 396.90
CONTROL Hw = INLET	CONTROL Hw = INLET
TAILWATER = 395.40	TAILWATER = 395.52
CHANNEL SLOPE = 0.3%	CHANNEL SLOPE = 0.3%
MANNING'S COEFFICIENT = 0.015	MANNING'S COEFFICIENT = 0.015
Q_{ULT_25} = 76.22 c.f.s.	Q_{ULT_100} = 94.95 c.f.s.
VELOCITY$_{Dn}$ = 6.35 ft/s	VELOCITY$_{Dn}$ = 7.91 ft/s

CUDEENGINEERS.COM

CUDE ENGINEERS

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PLEASANTON FARMS UNIT 3

DRAIN PLAN & PROFILE
INTERCEPTOR DRAIN "3C"

DATE
03/27/2024

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03/28/2024

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SEAN P. McFARLAND
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TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

D5

5 OF 12

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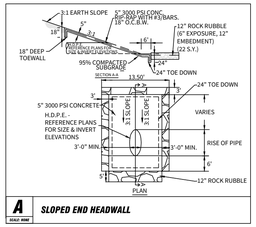
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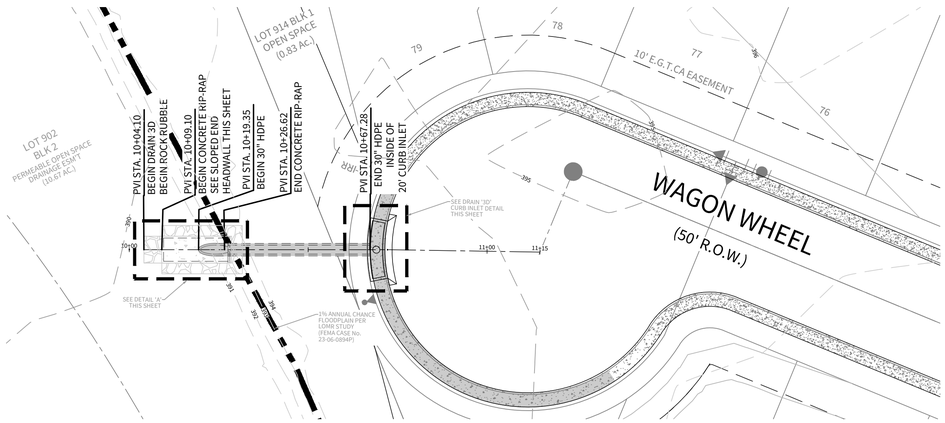
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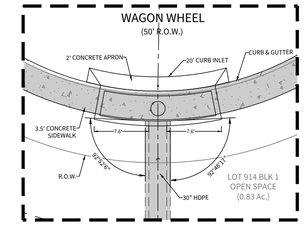
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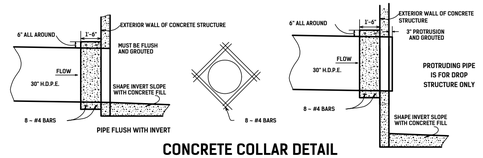
A SCALE: NONE **SLOPED END HEADWALL**





DRAIN "3D" CURB INLET DETAIL
(SCALE: 1" = 10')

CURB INLET REBAR QUANTITIES SHEET D9



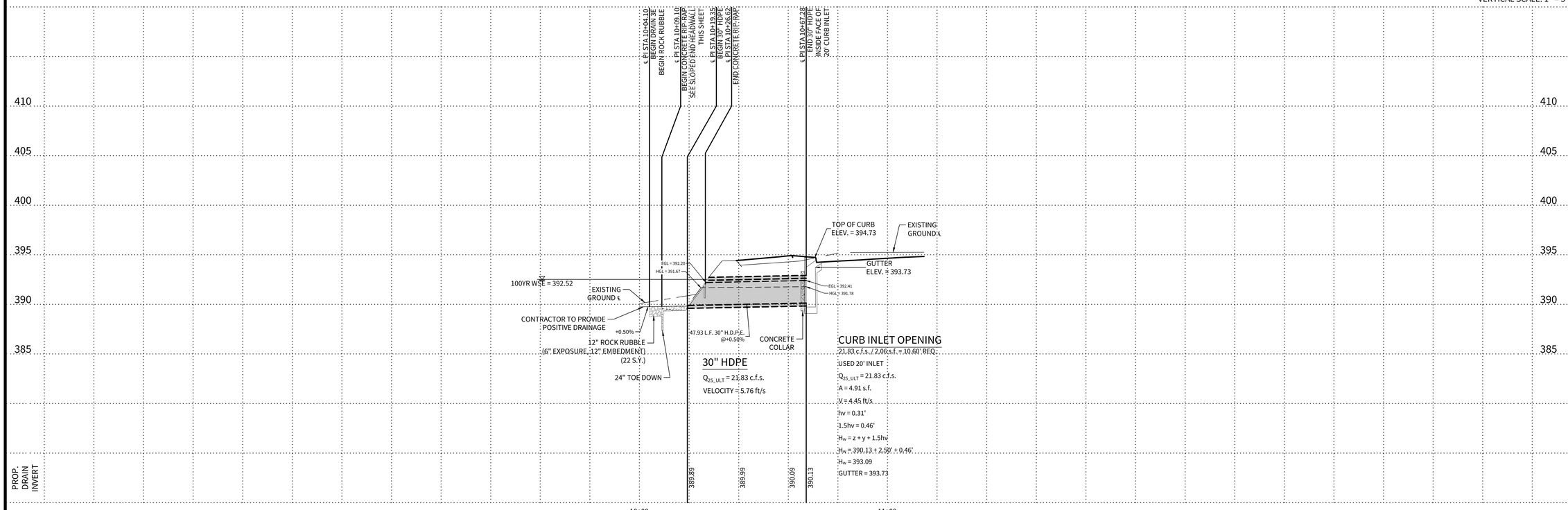
CONCRETE COLLAR DETAIL
(N.T.S.)

DRAIN "3D"

STA. 10+04.10 TO STA. 10+67.28

SCALE: 1"=20'
20 10 0 20

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'



CUDEENGINEERS.COM

CUDE ENGINEERS

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San Antonio, Texas 78231
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PLEASANTON FARMS UNIT 3

DRAIN PLAN & PROFILE
DRAIN "3D"

DATE
04/01/2024

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

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SPM/CC

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04/01/2024

STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED PROFESSIONAL ENGINEER

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

D6

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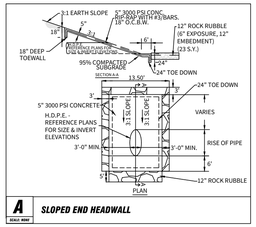
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DRAINAGE & GRADING NOTES:

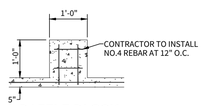
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TRENCH EXCAVATION SAFETY PROTECTION

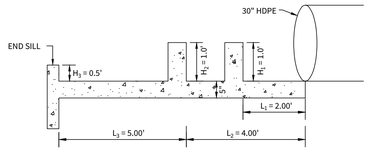
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A (DMS-4600) ***SLOPED END HEADWALL***

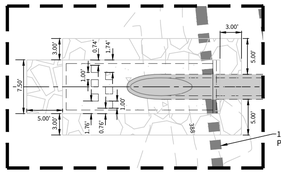


BAFFLE BLOCK DRAIN "3E" REINFORCEMENT DETAIL
(N.T.S.)

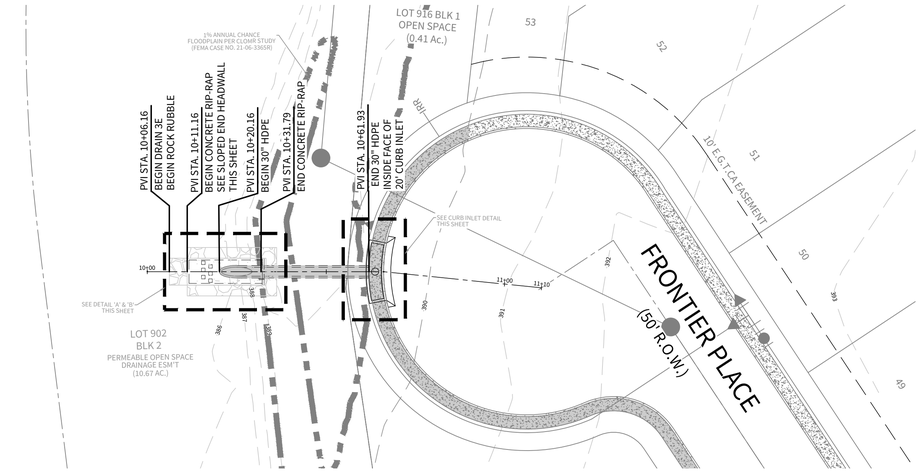


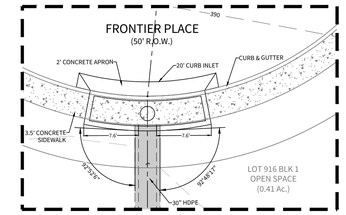
BAFFLE BLOCK CALCULATIONS

TAILWATER DEPTH = 1.93'
Fr = 1.018
Y_c = 0.799 FT
Y_2 = 1.776 FT
Y_1 = 0.799 FT
BASIN OUTLET VELOCITY = 4.844 FT/S



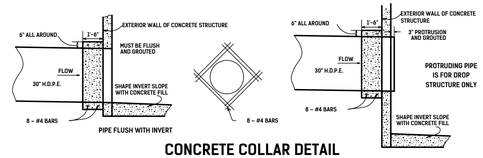
DETAIL 'B'
(SCALE: 1" = 10')





DRAIN "3E" CURB INLET DETAIL
(SCALE: 1" = 10')

CURB INLET REBAR QUANTITIES SHEET D9



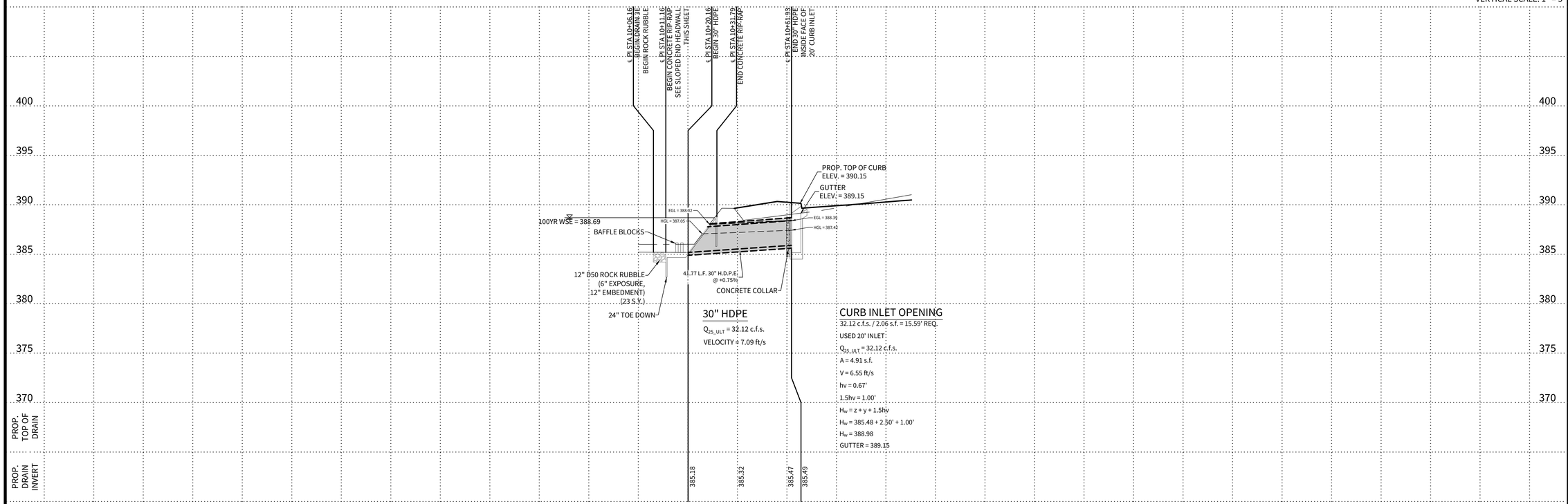
CONCRETE COLLAR DETAIL
(N.T.S.)

DRAIN "3E"

STA. 10+08.13 TO STA. 10+61.93

SCALE: 1"=20'
20 10 0 20

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'



30" HDPE

Q_{25_ULT} = 32.12 c.f.s.
VELOCITY = 7.09 ft/s

CURB INLET OPENING

32.12 c.f.s. / 2.06 s.f. = 15.59' REQ.
USED 20' INLET
Q_{25_ULT} = 32.12 c.f.s.
A = 4.91 s.f.
V = 6.55 ft/s
hv = 0.67'
1.5hv = 1.00'
H_W = z + y + 1.5hv
H_W = 385.48 + 2.50' + 1.00'
H_W = 388.98
GUTTER = 389.15

CUDEENGINEERS.COM

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04/01/2024

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LAND-PLAT
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D7

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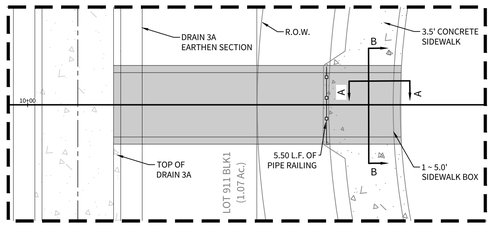
REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.

GENERAL SPECIFICATIONS FOR COMPACTED FILL

1. FOLLOWING THE CLEARING AND DISKING OR SCARIFYING OF THE FILL AREA, IT SHALL BE BLADED UNTIL IT IS UNIFORM AND FREE FROM LARGE CLODS. THE AREA SHALL BE BROUGHT TO THE ADEQUATE MOISTURE CONTENT AND COMPACTED (TYPICALLY) TO NOT LESS THAN NINETY PERCENT (95%) OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CURRENT ASTM D 1557 COMPACTION PROCEDURE, OR 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CURRENT THD--TEX--113--E COMPACTION PROCEDURE.
2. THE MATERIALS USED SHALL BE FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES, SUCH AS TREES, BRUSH AND RUBBISH.
3. THE FILL MATERIAL SHALL BE COMPACTED AT THE APPROPRIATE MOISTURE CONTENT SPECIFIED FOR THE SOILS BEING USED. APPROPRIATE MOISTURE CONTENT IS DEFINED, TYPICALLY, AS OPTIMUM MOISTURE CONTENT; HOWEVER, FOR EXPANSIVE SOILS IT MAY BE GREATER THAN OPTIMUM MOISTURE CONTENT, AND OTHER MOISTURE CONTENTS MAY BE NECESSARY TO PRODUCE THE DESIRED RESULTS WITH CERTAIN SOILS.

DRAINAGE & GRADING NOTES:

1. THE CONTRACTOR IWLL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
2. ALL CONCRETE FOR TxDOT DRAINAGE STRUCTURES SHALL MEET TxDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS 'A' 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
3. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
4. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
5. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
6. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF 'D' AS SHOWN IN THE PROFILE.

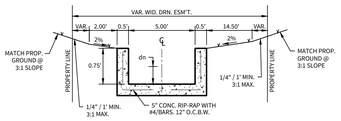


DETAIL 'A'
(SCALE: 1" = 5')

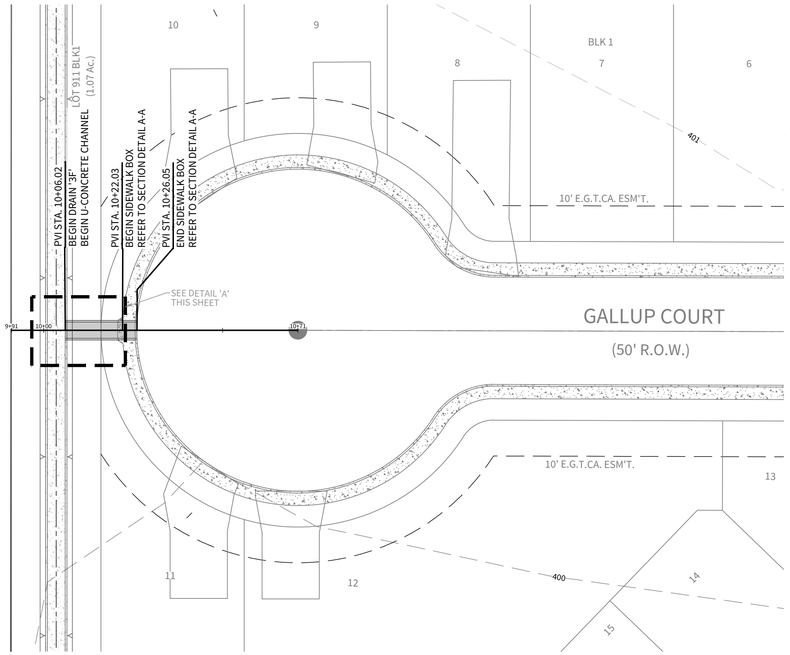
TRENCH EXCAVATION SAFETY PROTECTION

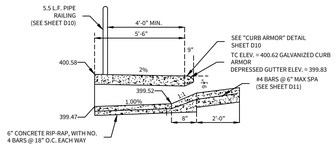
Contractor and/or Contractor's independently retained employee or structural design/geotechnical/safety/equipment consultant, if any, shall review these plans and available geotechnical information and the anticipated installation site(s) within the project work area in order to implement Contractor's trench excavation safety protection systems, programs and/or procedures for the project described in the contract documents. the Contractor's implementation of these systems, programs and/or procedures shall provide for adequate trench excavation safety protection that comply with as a minimum, OSHA standards for trench excavations. specifically, Contractor and/or Contractor's independently retained employee or safety consultant shall implement a trench safety program in accordance with OSHA standards governing the presence and activities of individuals working in and around trench excavation.

	"3F"
Q_{25} (cfs)	2.21
B_W (ft)	5.00
z	-
n	0.015
S (%)	1.00
d_n (ft)	0.16
V (fps)	2.76

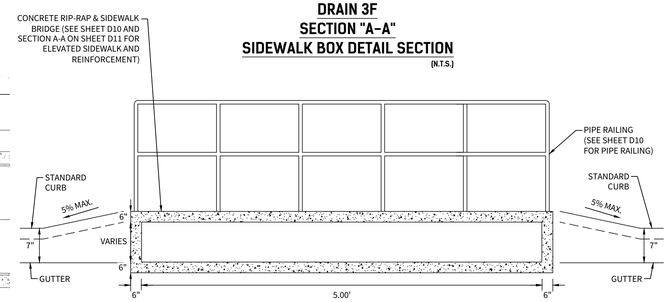


DRAIN "3F" SECTION (N.T.S.)
"3F–1" STA. 10+22.03 TO STA. 10+25.53





DRAIN 3F
SECTION "A–A"
SIDEWALK BOX DETAIL SECTION
(N.T.S.)



DRAIN 3F
SECTION "B–B"
SECTION THRU SIDEWALK BOX
(N.T.S.)

NOTES:

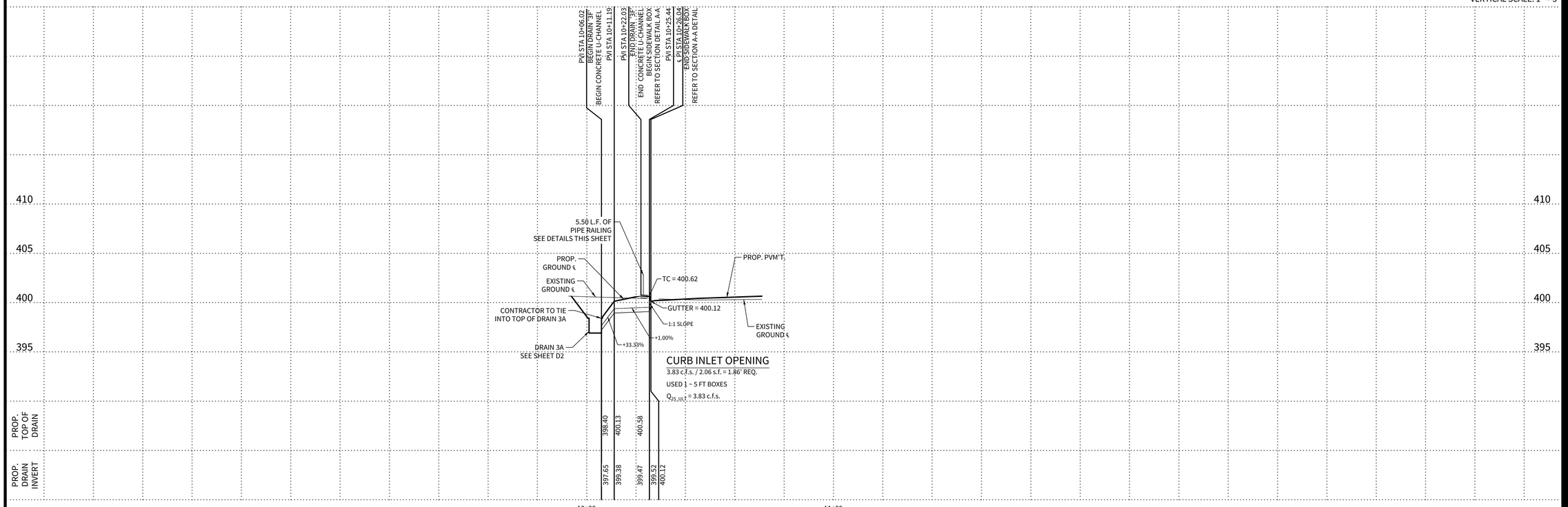
1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.
2. 85% OF CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION PRIOR TO ACCEPTANCE OF THE CHANNEL BY THE CITY OF SAN ANTONIO & BEXAR COUNTY. HYDROMULCH PAY ITEM TO INCLUDE SOIL, SEEDING, OR SODDING & WATERING FOR THE TIME PERIOD NEEDED TO ACHIEVE 85% VEGETATION.
3. REFERENCE TYPICAL CONCRETE CHANNEL RIP-RAP STANDARDS FOUND ON SHEET XX.
4. REFERENCE ELEVATED SIDEWALK AND RETARD STANDARDS FOUND ON SHEET XX.
5. A BEXAR COUNTY R.O.W. PERMIT MUST BE OBTAINED PRIOR TO WORKING IN EXISTING BEXAR COUNTY R.O.W.
6. CONTRACTOR TO RECONSTRUCT EXISTING SIDEWALK, AS NECESSARY, FOR PROPOSED SIDEWALK TRANSITION.

DRAIN "3F"

STA. 10+06.02 TO STA. 10+26.05

SCALE: 1"=20'
20 10 0 20

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'



CUDEENGINEERS.COM

CUDE ENGINEERS EST. 1980

4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

PLEASANTON FARMS
UNIT 3

DRAIN PLAN & PROFILE
DRAIN "3F"

DATE
03/27/2024

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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03/28/2024

STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED
PROFESSIONAL ENGINEER

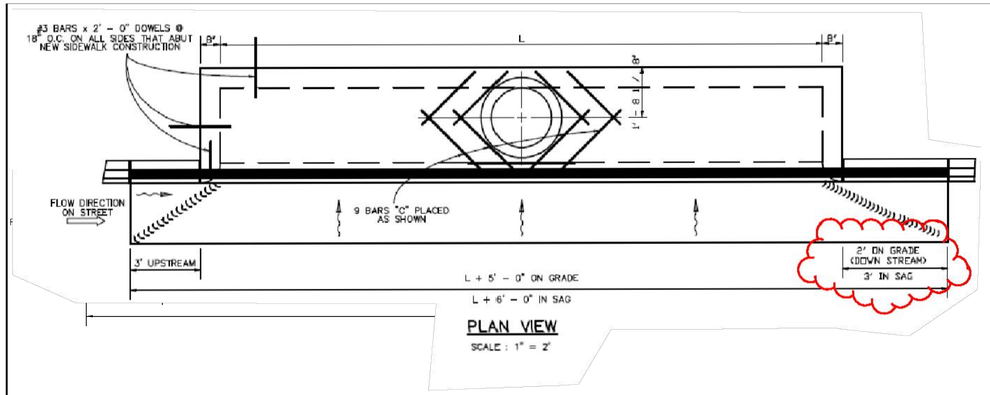
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

D8

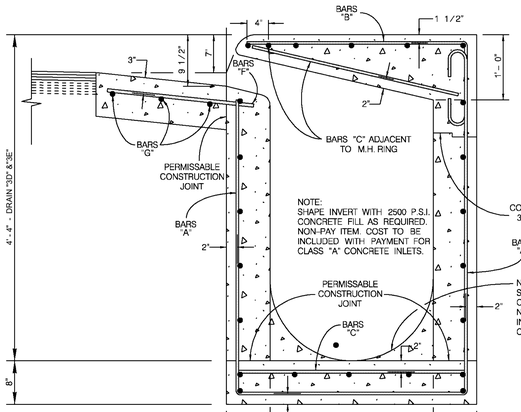
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REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



PLAN VIEW

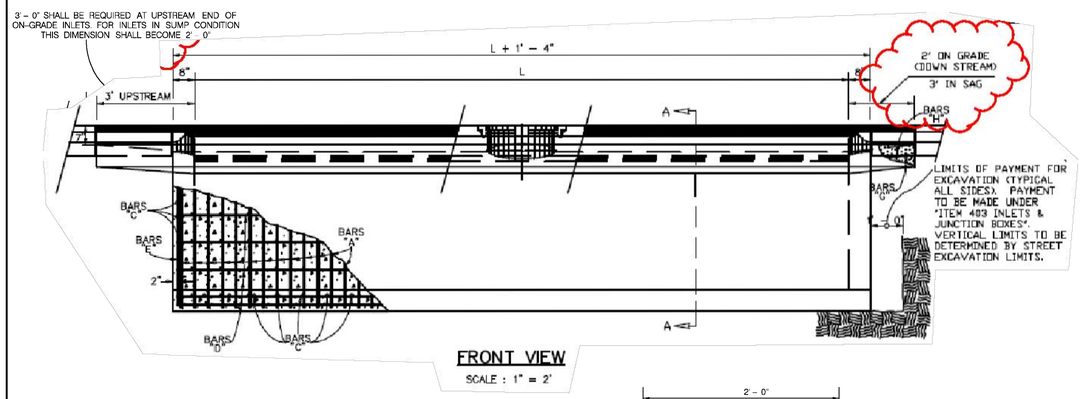
SCALE : 1" = 2'



SECTION STREET TO MATCH CROSS SLOPE

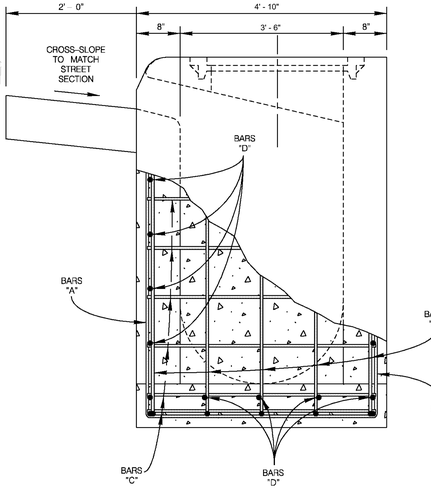
SECTION "A-A"

SCALE : 1" = 1'



FRONT VIEW

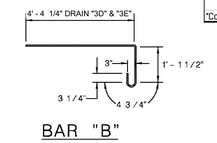
SCALE : 1" = 2'



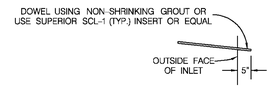
SIDE VIEW

SCALE : 1" = 1'

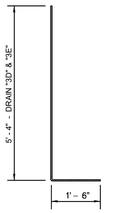
BAR "A"



BAR "B"



BAR "F"



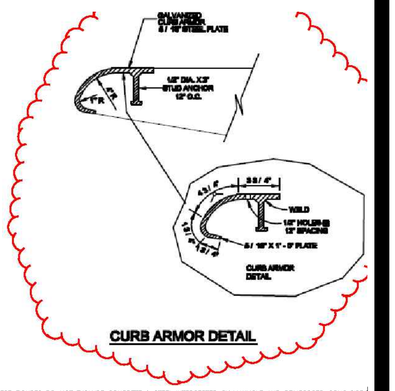
BAR "E"

INLET LENGTH	REINFORCING STEEL SCHEDULE					
	BAR	No.	Size	Spa.	Length	Weight lbs.
	A	51	4	5" o.c.	14' 9 1/2"	503.92
DRAIN "3D"	B	51	4	5"	6' 1 3/4"	209.38
L= 20'	C	50	4	9"	4' 6"	150.30
DEPTH= 5'	D	24	4	10"	21' 1"	338.01
	E	12	4	10 1/2"	6' 10"	54.78
	F	22	5	12"	2' 3"	51.63
	G	3	4	12"	24' 8"	49.43
	H	5	5	12"	1' 8"	8.69

*Concrete Total = 11.16 C.Y. Manhole Casting = 260 lbs. Steel Total = 1626.13 lbs.

INLET LENGTH	REINFORCING STEEL SCHEDULE					
	BAR	No.	Size	Spa.	Length	Weight lbs.
	A	51	4	5" o.c.	14' 9 1/2"	503.92
DRAIN "3E"	B	51	4	5"	6' 1 3/4"	209.38
L= 20'	C	50	4	9"	4' 6"	150.30
DEPTH= 5'	D	24	4	10"	21' 1"	338.01
	E	12	4	10 1/2"	6' 10"	54.78
	F	22	5	12"	2' 3"	51.63
	G	3	4	12"	24' 8"	49.43
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*Concrete Total = 11.16 C.Y. Manhole Casting = 260 lbs. Steel Total = 1626.13 lbs.

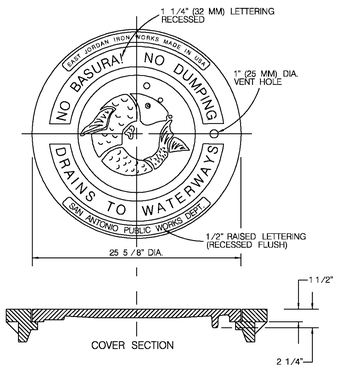


CURB ARMOR DETAIL

* THESE FIGURES DO NOT EXCLUDE CONCRETE & STEEL INTERCEPTED BY MANHOLE AND REINFORCED CONC. PIPE
* INCLUDES CONCRETE GUTTER FOR ON GRADE INLET. REDUCE BY .05 C.Y. FOR INLETS IN SUMP.

GENERAL NOTES

1. ALL BARS INTERCEPTING MANHOLE RING & REINFORCING CONCRETE PIPE SHALL BE FIELD CUT.
2. CONCRETE FOR STRUCTURES SHALL BE CLASS "A", 3000 PSI IN 28 DAYS.
3. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER BARS.
4. ALL EXPOSED CORNERS SHALL BE CHAMFERED TO 3 /4"
5. CONSTRUCTION JOINT SHOWN AT FLOWLINE MAY BE RAISED A MAXIMUM OF 6" AT THE CONTRACTOR'S DISCRETION. ADJUST LENGTH OF VERTICAL STEEL AS REQUIRED.
6. ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A-615, GRADE 60 REQUIREMENTS.
7. INVERT OF DROP INLET TO BE SHAPED WITH CONCRETE FILL TO AFFECT DRAINAGE TO OUTLET PIPE.
8. DELETE 4 "C" BARS FROM SCHEDULE QUANTITIES IF MANHOLE RING AND COVER ARE PLACED AT END OF INLET.
9. CAST IRON MANHOLE RING AND COVER TO BE PLACED NEXT TO OUTLET PIPE, EXCEPT FOR VERTICAL OUTLET PIPE IN WHICH CASE MANHOLE RING AND COVER WILL BE OFFSET.
10. PAYMENT FOR ALL EXCAVATION, BACK FILLING, CONCRETE, REINFORCING STEEL RING AND COVER SHALL BE INCLUDED IN THE UNIT COST OF ITEM 403 "STORM SEWER JUNCTION BOXES AND INLETS".

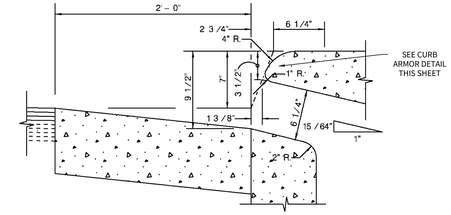


MANHOLE LID & RING DETAIL (ITEM 409)

SCALE : 1" = 8"

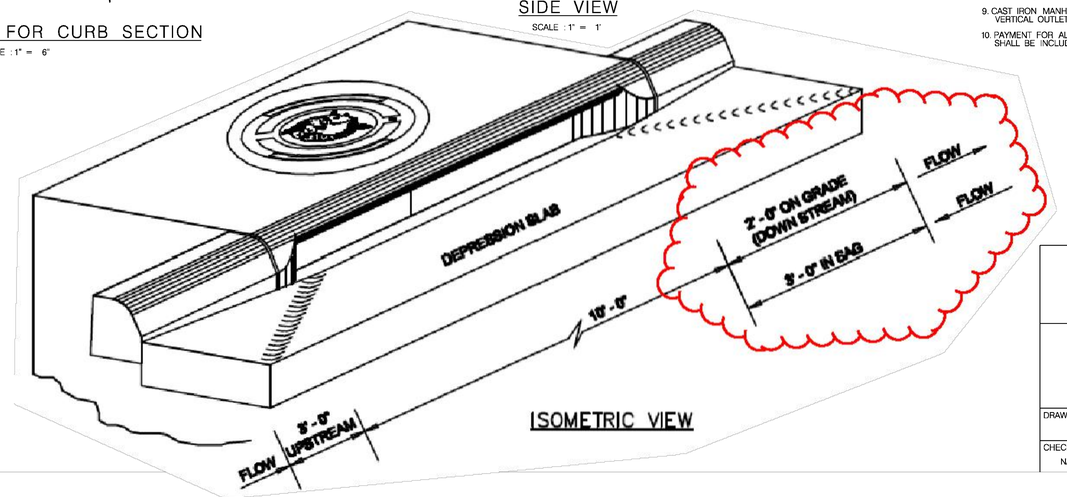
NOTES FOR MANHOLE LID AND RING

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



OPENING DETAIL FOR CURB SECTION

SCALE : 1" = 6"



ISOMETRIC VIEW

JANUARY 2005

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

TYPE "C" INLET DETAILS

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

CUDEENGINEERS.COM

CUDE ENGINEERS

4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

PLEASANTON FARMS
UNIT 3

COSA DRAIN INLET DETAILS - TYPE C MODIFIED

DATE
02/09/2024

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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02/28/2024

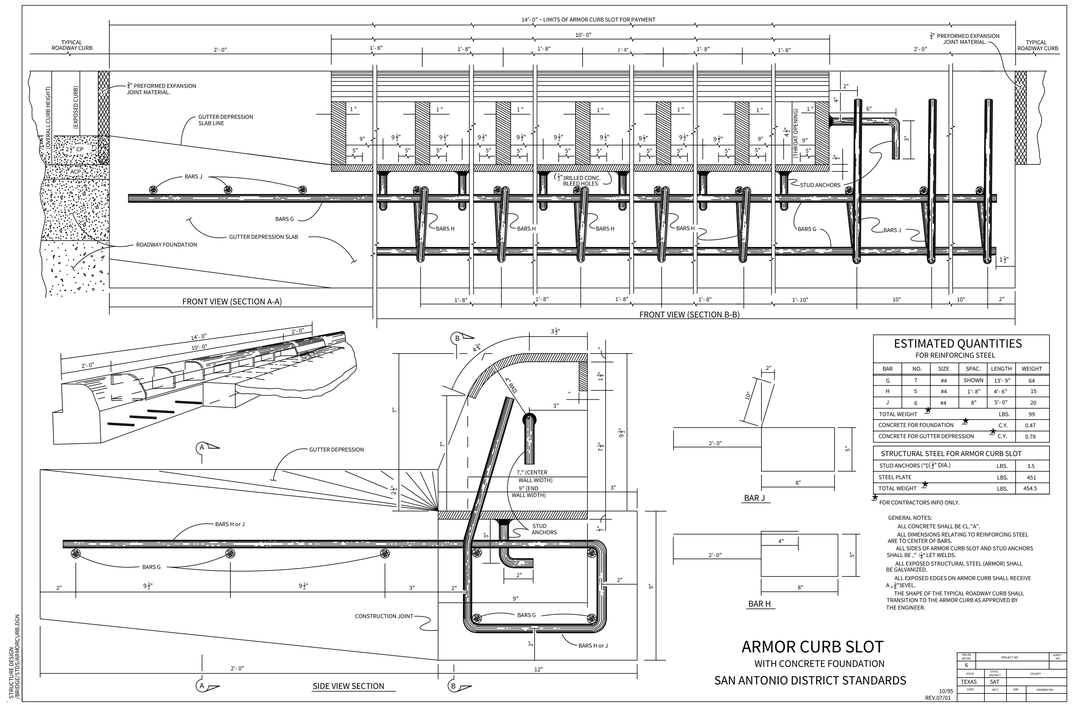
STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED PROFESSIONAL ENGINEER

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

D9

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ESTIMATED QUANTITIES
FOR REINFORCING STEEL

BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
G	7	#4	SHOWN	13'-9"	64
H	5	#4	1'-8"	4'-6"	15
J	6	#4	8"	5'-0"	20
TOTAL WEIGHT				LBS.	99
CONCRETE FOR FOUNDATION				C.Y.	0.47
CONCRETE FOR GUTTER DEPRESSION				C.Y.	0.78

STRUCTURAL STEEL FOR ARMOR CURB SLOT

STUD ANCHORS ("t" [1" DIA.)	LBS.	3.5
STEEL PLATE	LBS.	451
TOTAL WEIGHT	LBS.	454.5

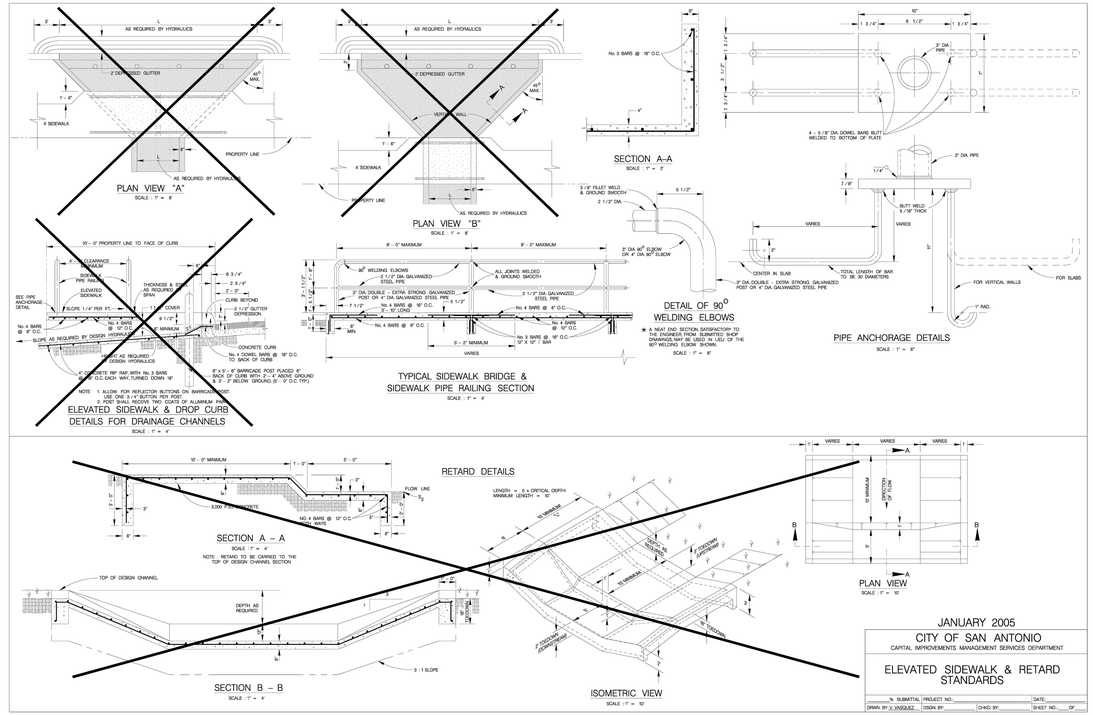
FOR CONTRACTORS INFO ONLY.

GENERAL NOTES:
ALL CONCRETE SHALL BE CL."A".
ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
ALL SIDES OF ARMOR CURB SLOT AND STUD ANCHORS SHALL BE ¿" -¼" LIET WELDS.
ALL EXPOSED STRUCTURAL STEEL (ARMOR) SHALL BE GALVANIZED.
ALL EXPOSED EDGES ON ARMOR CURB SHALL RECEIVE A ¿" BEVEL.
THE SHAPE OF THE TYPICAL ROADWAY CURB SHALL TRANSITION TO THE ARMOR CURB AS APPROVED BY THE ENGINEER.

ARMOR CURB SLOT
WITH CONCRETE FOUNDATION
SAN ANTONIO DISTRICT STANDARDS

ISSUE DATE	PROJECT NO.		SHT. NO.
6			
DIVISION	STATE	COUNTY	
TEXAS	SAT		
CONT.	SECT.	JOB	HIGHWAY NO.

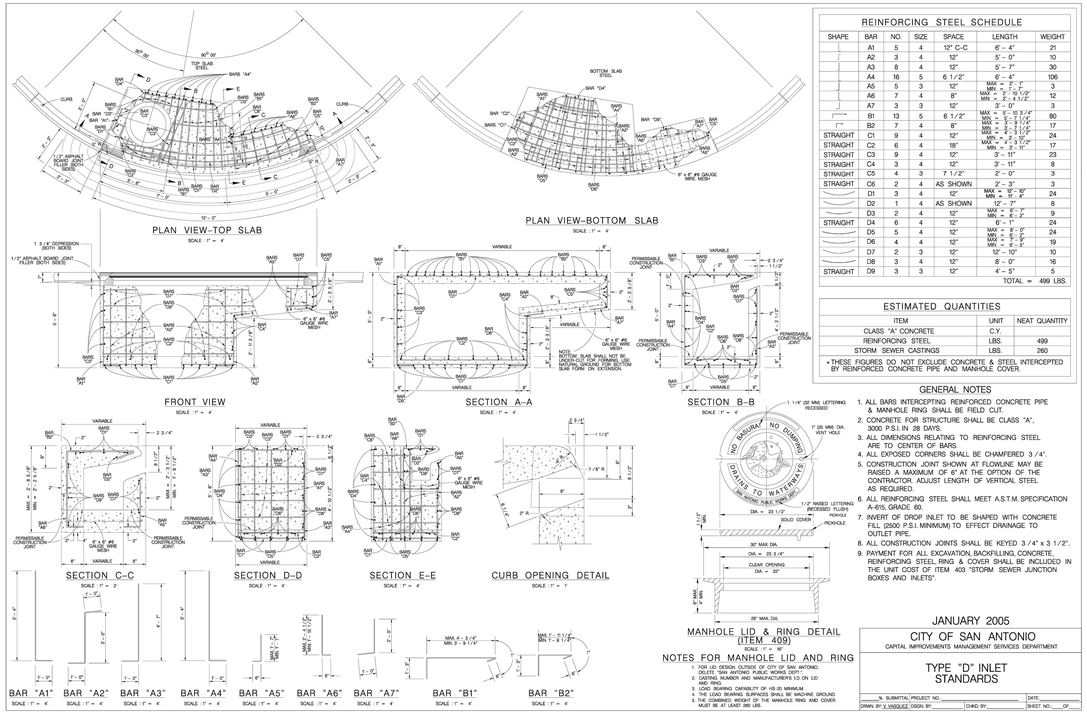
10/95
REV.07/01



JANUARY 2005
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

ELEVATED SIDEWALK & RETARD STANDARDS

% SUBMITTAL	PROJECT NO.	DATE
DRAWN BY V. VASQUEZ	DSGN BY	CHKD. BY	SHEET NO. OF



REINFORCING STEEL SCHEDULE

SHAPE	BAR	NO.	SIZE	SPACE	LENGTH	WEIGHT
	A1	5	4	12" C-C	6'-- 4"	21
	A2	3	4	12"	5'-- 0"	10
	A3	8	4	12"	5'-- 7"	30
	A4	16	5	6 1/2"	6'-- 4"	106
	A5	5	3	12"	MIN. = 3'-- 7" MAX. = 5'-10 1/2"	3
	A6	7	4	8"	MIN. = 2'-10 1/2" MIN. = 2'-4 1/2"	12
	A7	3	3	12"	3'-- 0"	3
	B1	13	5	6 1/2"	MAX. = 5'-10 3/4" MIN. = 3'-- 7 1/2"	80
	B2	7	4	8"	MAX. = 5'-10 1/2" MIN. = 3'-- 7 1/2"	17
STRAIGHT	C1	9	4	12"	MIN. = 3'-- 7"	24
STRAIGHT	C2	6	4	18"	MAX. = 4'-- 3 1/2" MIN. = 3'-- 11"	17
STRAIGHT	C3	9	4	12"	3'-- 11"	23
STRAIGHT	C4	3	4	12"	3'-- 11"	8
STRAIGHT	C5	4	3	7 1/2"	2'-- 0"	3
STRAIGHT	C6	2	4	AS SHOWN	2'-- 3"	3
	D1	3	4	12"	MAX = 5'-- 10" MIN = 5'-- 4"	24
	D2	1	4	AS SHOWN	12'-- 7"	8
	D3	2	4	12"	MAX = 6'-- 7" MIN = 6'-- 1"	9
STRAIGHT	D4	6	4	12"	6'-- 1"	24
	D5	5	4	12"	MAX = 8'-- 0" MIN = 6'-- 6"	24
	D6	4	4	12"	MAX = 9'-- 9" MIN = 8'-- 5"	19
	D7	2	3	12"	12'-- 10"	10
	D8	3	4	12"	5'-- 0"	16
STRAIGHT	D9	3	3	12"	4'-- 5"	5
					TOTAL =	499 LBS.

ESTIMATED QUANTITIES

ITEM	UNIT	NEAT QUANTITY
CLASS "A" CONCRETE	C.Y.	
REINFORCING STEEL	LBS.	499
STORM SEWER CASTINGS	LBS.	260

* THESE FIGURES DO NOT EXCLUDE CONCRETE & STEEL INTERCEPTED BY REINFORCED CONCRETE PIPE AND MANHOLE COVER.

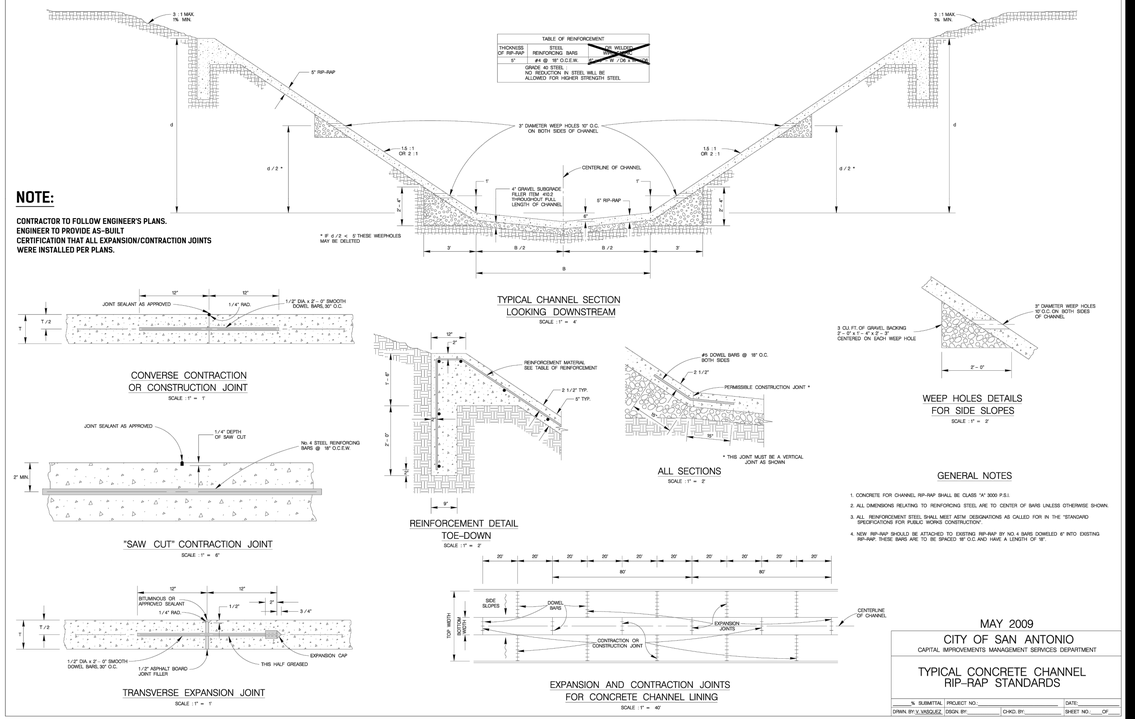
GENERAL NOTES
1. ALL BARS INTERCEPTING REINFORCED CONCRETE PIPE & MANHOLE RING SHALL BE FIELD CUT.
2. CONCRETE FOR STRUCTURE SHALL BE CLASS "A", 3000 P.S.I. IN 28 DAYS.
3. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
4. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3 /4".
5. CONSTRUCTION JOINT SHOWN AT FLOWLINE MAY BE RAISED A MAXIMUM OF 6" AT THE OPTION OF THE CONTRACTOR. ADJUST LENGTH OF VERTICAL STEEL AS REQUIRED.
6. ALL REINFORCING STEEL SHALL MEET A.S.T.M. SPECIFICATION A-615, GRADE 60.
7. INVERT OF DROP INLET TO BE SHAPED WITH CONCRETE FILL (SIXO P.S.I MINIMUM) TO EFFECT DRAINAGE TO OUTLET PIPE.
8. ALL CONSTRUCTION JOINTS SHALL BE KEYED 3 /4" x 3 1/2".
9. PAYMENT FOR ALL EXCAVATION, BACKFILLING, CONCRETE, REINFORCING STEEL RING & COVER SHALL BE INCLUDED IN THE UNIT COST OF ITEM 403 "STORM SEWER JUNCTION BOXES AND INLETS".

NOTES FOR MANHOLE LID AND RING
1. FOR LID DESIGN OUTSIDE OF CITY OF SAN ANTONIO, DELETE "SAN ANTONIO PUBLIC WORKS DEPT." AND INSERT NAME AND MANUFACTURER'S ID ON LID AND RING.
2. LOAD BEARING CAPABILITY OF HS-20 MINIMUM.
3. THE LOAD BEARING SURFACES SHALL BE MACHINE GROUND.
4. THE COMBINED WEIGHT OF THE MANHOLE RING AND COVER MUST BE AT LEAST 280 LBS.

JANUARY 2005
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TYPE "D" INLET STANDARDS

% SUBMITTAL	PROJECT NO.	DATE
DRAWN BY V. VASQUEZ	DSGN BY	CHKD. BY	SHEET NO. OF



MAY 2009
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TYPICAL CONCRETE CHANNEL RIP–RAP STANDARDS

% SUBMITTAL	PROJECT NO.	DATE
DRAWN BY V. VASQUEZ	DSGN BY	CHKD. BY	SHEET NO. OF

CUDEENGINEERS.COM
4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

PLEASANTON FARMS UNIT 3

COSA TYPICAL CONCRETE CHANNEL RIP–RAP STANDARDS & PRECAST INLET

DATE
03/25/2024

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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9.

03/25/2024
STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED PROFESSIONAL ENGINEER
SURVEYOR
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

LAND–PLAT
PLEASANTON FARMS UNIT 3

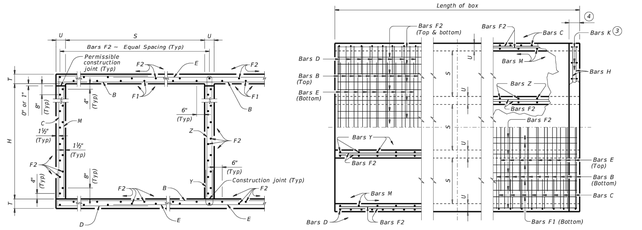
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10 OF 12

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REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.

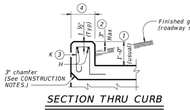
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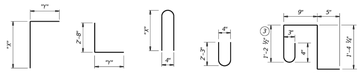
TYPICAL SECTION

BOTTOM SLAB — PART PLANS — TOP SLAB



SECTION THRU CURB

TABLE OF BAR DIMENSIONS		
H	"X"	"Y"
2'-0"	2'-3 ½"	4'-1"
3'-0"	3'-3 ½"	4'-1"
4'-0"	4'-3 ½"	4'-1"
5'-0"	5'-3 ½"	4'-1"
6'-0"	6'-3 ½"	4'-1"



① 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 without 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 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.

③ 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.

④ 1'-0" typical. 2'-3" when the Rail Anchorage Curb (RAC) standard sheet is referred to elsewhere in the plans.

The Contractor may replace Bars B, C, D, E, F1, F2, M, Y, and/or Z with deformed welded wire reinforcement (WWR) meeting the requirements of ASTM A1064. The area of required reinforcement may be reduced by the ratio of 60 ksi / 70 ksi. Spacing of WWR is limited to 4" Min and 18" Max. When required, provide lap splices in the WWR of the same length required for the equivalent bar size, rounded up for wire sizes between conventional bar sizes. The lap length required for WWR is never less than the lap length required for uncoated #4 bars.

Example conversion: Replacing No. 6 Gr 60 at 6" Spacing with WWR
Required WWR = (0.44 sq. in. per 0.5 ft.) x (60 ksi / 70 ksi) = 0.755 sq. in. per ft.
If D30.6 wire is used to meet the 0.755 sq. in. per ft. requirement in this example, the required spacing = (0.306 sq. in.) / (0.755 sq. in. per ft.) x (12 in. per ft.) = 4.86"
Max spacing. Required lap length for the provided D30.6 wire is 2'-1" (the same minimum lap length required for uncoated #5 bars, as listed under MATERIAL NOTES).

CONSTRUCTION NOTES:
Do not use permanent forms.
Chamfer the bottom edge of the top slab 3" at the entrance.
Optionally, raise construction joints shown at the flow line by a maximum of 6". If this option is taken, Bars M may be cut off or raised, Bars C and D may be reversed, and Bars Y and Z may be reversed.

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

Provide bar laps, where required, as follows:
- Uncoated or galvanized — #4 = 1'-8" Min
- Uncoated or galvanized — #5 = 2'-1" Min
- Uncoated or galvanized — #6 = 2'-6" Min

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications for the range of fill heights shown.
See the Multiple Box Culverts Cast-In-Place Miscellaneous Detail (MC-MD) standard sheet for details pertaining to skewed ends, angle sections, and lengthening.

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

HL93 LOADING — SHEET 1 OF 2

Texas Department of Transportation — Bridge Division Standard

MULTIPLE BOX CULVERTS CAST-IN-PLACE
6'-0" SPAN
0' TO 16' FILL

MC-6-16

file:	mc616ste-20.dgn	dn: TBE	ck: BRP	dw: TxDOT	ck: TxDOT
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REVISIONS		DIST	COUNTY		SHEET NO.

NUMBER OF SPANS

BILLS OF REINFORCING STEEL (For Box Length = 40 feet)

SECTION DIMENSIONS					Bars B				Bars C & D						Bars E				Bars F1 – #4				Bars F2 – #4				Bars M – #4				Bars Y & Z – #4						Bars H 4 – #4		Bars K		QUANTITIES			
									Bars C		Bars D																				Bars Y				Bars Z								Per Foot of Barrel		Curb		Total	
NUMBER OF SPANS	S	H	T	U	No.	Size	Spa	Length	Wt	No.	Size	Spa	Length	Wt	No.	Size	Spa	Length	Wt	No.	Size	Spa	Length	Wt	No.	Size	Spa	Length	Wt	No.	Size	Spa	Length	Wt	No.	Size	Spa	Length	Wt	No.	Size	Length	Wt	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)
2	6'-0"	2'-0"	9"	7"	108	#6	9"	13'-6"	2,190	108	#5	9"	6'-8"	751	6'-9"	760	108	#6	9"	10'-2"	1,649	10	18"	39'-9"	266	44	18"	39'-9"	1,168	108	9"	2'-0"	144	54	9"	4'-9"	171	5'-5"	195	13'-6"	36	30	84	0.894	182.4	1.0	120	36.8	7,414
3	6'-0"	2'-0"	9"	7"	108	#6	9"	20'-1"	3,258	108	#5	9"	6'-8"	751	6'-9"	760	108	#6	9"	16'-9"	2,717	15	18"	39'-9"	398	63	18"	39'-9"	1,673	108	9"	2'-0"	144	108	9"	4'-9"	343	5'-5"	391	20'-1"	54	44	122	1.302	260.9	1.5	176	53.6	10,611
4	6'-0"	2'-0"	9"	7"	108	#6	9"	26'-8"	4,326	108	#5	9"	6'-8"	751	6'-9"	760	108	#6	9"	23'-4"	3,785	20	18"	39'-9"	531	82	18"	39'-9"	2,177	108	9"	2'-0"	144	162	9"	4'-9"	514	5'-5"	586	26'-8"	71	56	156	1.711	339.4	2.0	227	70.4	13,801
5	6'-0"	2'-0"	9"	7"	108	#6	9"	33'-3"	5,394	108	#5	9"	6'-8"	751	6'-9"	760	108	#6	9"	29'-11"	4,853	25	18"	39'-9"	664	101	18"	39'-9"	2,682	108	9"	2'-0"	144	216	9"	4'-9"	685	5'-5"	782	33'-3"	89	70	195	2.120	417.9	2.5	284	87.3	16,999
6	6'-0"	2'-0"	9"	7"	108	#6	9"	39'-10"	6,462	108	#5	9"	6'-8"	751	6'-9"	760	108	#6	9"	36'-6"	5,921	30	18"	39'-9"	797	120	18"	39'-9"	3,186	108	9"	2'-0"	144	270	9"	4'-9"	857	5'-5"	977	39'-10"	106	82	228	2.529	496.4	3.0	334	104.1	20,189
2	6'-0"	3'-0"	9"	7"	108	#6	9"	13'-6"	2,190	108	#5	9"	7'-8"	864	6'-9"	760	108	#6	9"	10'-2"	1,649	10	18"	39'-9"	266	50	18"	39'-9"	1,328	108	9"	3'-0"	216	54	9"	4'-9"	171	7'-5"	268	13'-6"	36	30	84	0.958	192.8	1.0	120	39.3	7,832
3	6'-0"	3'-0"	9"	7"	108	#6	9"	20'-1"	3,258	108	#5	9"	7'-8"	864	6'-9"	760	108	#6	9"	16'-9"	2,717	15	18"	39'-9"	398	71	18"	39'-9"	1,885	108	9"	3'-0"	216	108	9"	4'-9"	343	7'-5"	535	20'-1"	54	44	122	1.389	274.4	1.5	176	57.1	11,152
4	6'-0"	3'-0"	9"	7"	108	#6	9"	26'-8"	4,326	108	#5	9"	7'-8"	864	6'-9"	760	108	#6	9"	23'-4"	3,785	20	18"	39'-9"	531	92	18"	39'-9"	2,443	108	9"	3'-0"	216	162	9"	4'-9"	514	7'-5"	803	26'-8"	71	56	156	1.819	356.1	2.0	227	74.7	14,469
5	6'-0"	3'-0"	9"	7"	108	#6	9"	33'-3"	5,394	108	#5	9"	7'-8"	864	6'-9"	760	108	#6	9"	29'-11"	4,853	25	18"	39'-9"	664	113	18"	39'-9"	3,000	108	9"	3'-0"	216	216	9"	4'-9"	685	7'-5"	1,070	33'-3"	89	70	195	2.250	437.7	2.5	284	92.5	17,790
6	6'-0"	3'-0"	9"	7"	108	#6	9"	39'-10"	6,462	108	#5	9"	7'-8"	864	6'-9"	760	108	#6	9"	36'-6"	5,921	30	18"	39'-9"	797	134	18"	39'-9"	3,558	108	9"	3'-0"	216	270	9"	4'-9"	857	7'-5"	1,338	39'-10"	106	82	228	2.681	519.3	3.0	334	110.2	21,107
2	6'-0"	4'-0"	9"	7"	108	#6	9"	13'-6"	2,190	108	#5	9"	8'-8"	976	6'-9"	760	108	#6	9"	10'-2"	1,649	10	18"	39'-9"	266	50	18"	39'-9"	1,328	108	9"	4'-0"	289	54	9"	4'-9"	171	9'-5"	340	13'-6"	36	30	84	1.023	199.2	1.0	120	41.9	8,089
3	6'-0"	4'-0"	9"	7"	108	#6	9"	20'-1"	3,258	108	#5	9"	8'-8"	976	6'-9"	760	108	#6	9"	16'-9"	2,717	15	18"	39'-9"	398	71	18"	39'-9"	1,885	108	9"	4'-0"	289	108	9"	4'-9"	343	9'-5"	679	20'-1"	54	44	122	1.475	282.6	1.5	176	60.5	11,481
4	6'-0"	4'-0"	9"	7"	108	#6	9"	26'-8"	4,326	108	#5	9"	8'-8"	976	6'-9"	760	108	#6	9"	23'-4"	3,785	20	18"	39'-9"	531	92	18"	39'-9"	2,443	108	9"	4'-0"	289	162	9"	4'-9"	514	9'-5"	1,019	26'-8"	71	56	156	1.927	366.1	2.0	227	79.1	14,870
5	6'-0"	4'-0"	9"	7"	108	#6	9"	33'-3"	5,394	108	#5	9"	8'-8"	976	6'-9"	760	108	#6	9"	29'-11"	4,853	25	18"	39'-9"	664	113	18"	39'-9"	3,000	108	9"	4'-0"	289	216	9"	4'-9"	685	9'-5"	1,359	33'-3"	89	70	195	2.380	449.5	2.5	284	97.7	18,264
6	6'-0"	4'-0"	9"	7"	108	#6	9"	39'-10"	6,462	108	#5	9"	8'-8"	976	6'-9"	760	108	#6	9"	36'-6"	5,921	30	18"	39'-9"	797	134	18"	39'-9"	3,558	108	9"	4'-0"	289	270	9"	4'-9"	857	9'-5"	1,698	39'-10"	106	82	228	2.832	533.0	3.0	334	116.2	21,652
2	6'-0"	5'-0"	9"	7"	108	#6	9"	13'-6"	2,190	108	#5	9"	9'-8"	1,089	6'-9"	760	108	#6	9"	10'-2"	1,649	10	18"	39'-9"	266	56	18"	39'-9"	1,487	108	9"	5'-0"	361	54	9"	4'-9"	171	11'-5"	412	13'-6"	36	30	84	1.088	209.6	1.0	120	44.5	8,305
3	6'-0"	5'-0"	9"	7"	108	#6	9"	20'-1"	3,258	108	#5	9"	9'-8"	1,089	6'-9"	760	108	#6	9"	16'-9"	2,717	15	18"	39'-9"	398	79	18"	39'-9"	2,098	108	9"	5'-0"	361	108	9"	4'-9"	343	11'-5"	824	20'-1"	54	44	122	1.562	296.2	1.5	176	64.0	12,024
4	6'-0"	5'-0"	9"	7"	108	#6	9"	26'-8"	4,326	108	#5	9"	9'-8"	1,089	6'-9"	760	108	#6	9"	23'-4"	3,785	20	18"	39'-9"	531	102	18"	39'-9"	2,708	108	9"	5'-0"	361	162	9"	4'-9"	514	11'-5"	1,235	26'-8"	71	56	156	2.035	382.7	2.0	227	83.4	15,536
5	6'-0"	5'-0"	9"	7"	108	#6	9"	33'-3"	5,394	108	#5	9"	9'-8"	1,089	6'-9"	760	108	#6	9"	29'-11"	4,853	25	18"	39'-9"	664	125	18"	39'-9"	3,319	108	9"	5'-0"	361	216	9"	4'-9"	685	11'-5"	1,647	33'-3"	89	70	195	2.509	469.3	2.5	284	102.8	19,056
6	6'-0"	5'-0"	9"	7"	108	#6	9"	39'-10"	6,462	108	#5	9"	9'-8"	1,089	6'-9"	760	108	#6	9"	36'-6"	5,921	30	18"	39'-9"	797	148	18"	39'-9"	3,930	108	9"	5'-0"	361	270	9"	4'-9"	857	11'-5"	2,059	39'-10"	106	82	228	2.983	555.9	3.0	334	122.3	22,570
2	6'-0"	6'-0"	9"	7"	108	#6	9"	13'-6"	2,190	108	#5	9"	10'-8"	1,202	6'-9"	760	108	#6	9"	10'-2"	1,649	10	18"	39'-9"	266	62	18"	39'-9"	1,646	108	9"	6'-0"	433	54	9"	4'-9"	171	13'-5"	484	13'-6"	36	30	84	1.153	220.0	1.0	120	47.1	8,921
3	6'-0"	6'-0"	9"	7"	108	#6	9"	20'-1"	3,258	108	#5	9"	10'-8"	1,202	6'-9"	760	108	#6	9"	16'-9"	2,717	15	18"	39'-9"	398	87	18"	39'-9"	2,310	108	9"	6'-0"	433	108	9"	4'-9"	343	13'-5"	968	20'-1"	54	44	122	1.648	309.7	1.5	176	67.4	12,765
4	6'-0"	6'-0"	9"	7"	108	#6	9"	26'-8"	4,326	108	#5	9"	10'-8"	1,202	6'-9"	760	108	#6	9"	23'-4"	3,785	20	18"	39'-9"	531	112	18"	39'-9"	2,974	108	9"	6'-0"	433	162	9"	4'-9"	514	13'-5"	1,452	26'-8"	71	56	156	2.144	399.4	2.0	227	87.7	16,204
5	6'-0"	6'-0"	9"	7"	108	#6	9"	33'-3"	5,394	108	#5	9"	10'-8"	1,202	6'-9"	760	108	#6	9"	29'-11"	4,853	25	18"	39'-9"	664	137	18"	39'-9"	3,638	108	9"	6'-0"	433	216	9"	4'-9"	685	13'-5"	1,936	33'-3"	89	70	195	2.639	489.1	2.5	284	108.0	19,849
6	6'-0"	6'-0"	9"	7"	108	#6	9"	39'-10"	6,462	108	#5	9"	10'-8"	1,202	6'-9"	760	108	#6	9"	36'-6"	5,921	30	18"	39'-9"	797	162	18"	39'-9"	4,302	108	9"	6'-0"	433	270	9"	4'-9"	857	13'-5"	2,420	39'-10"	106	82	228	3.134	578.9	3.0	334	128.3	23,488

HL93 LOADING — SHEET 2 OF 2

Texas Department of Transportation — Bridge Division Standard

MULTIPLE BOX CULVERTS CAST-IN-PLACE
6'-0" SPAN
0' TO 16' FILL

MC-6-16

file:	mc616ste-20.dgn	dn: TBE	ck: BRP	dw: TxDOT	ck: TxDOT
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REVISIONS		DIST	COUNTY		SHEET NO.

DATE:
FILE:

TABLE OF DIMENSIONS AND REINFORCING STEEL (Wings for one structure end)									
Dimensions					Variable Reinforcing				Estimated Quantities per ft of wing length (2-wings) ⑨
Maximum Wingwall Height Hw	W	X	Y	Z	Bars J1		Bars J2		
					Size	Spa	Size	Spa	Reinf (Lb/Ft) / Conc (CY/Ft)
2'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	33.73 / 0.248
3'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.07 / 0.261
3'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.74 / 0.273
4'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	38.41 / 0.285
4'-6"	2'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	41.75 / 0.330
5'-0"	2'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.09 / 0.343
5'-6"	2'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.73 / 0.355
6'-0"	2'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	51.36 / 0.367
7'-0"	3'-8"	1'-9"	1'-3"	7"	#4	1'-0"	#4	1'-0"	52.77 / 0.414
8'-0"	4'-2"	2'-0"	1'-6"	8"	#5	1'-0"	#4	1'-0"	60.19 / 0.486
9'-0"	4'-8"	2'-3"	1'-9"	8"	#4	6"	#4	6"	81.49 / 0.535
10'-0"	5'-2"	2'-6"	2'-0"	8"	#5	6"	#4	6"	97.25 / 0.584
11'-0"	5'-8"	2'-9"	2'-3"	8"	#6	6"	#5	6"	133.65 / 0.634
12'-0"	6'-2"	3'-0"	2'-6"	9"	#7	6"	#5	6"	162.29 / 0.721
13'-0"	6'-8"	3'-3"	2'-9"	11"	#7	6"	#5	6"	178.80 / 0.856
14'-0"	7'-2"	3'-6"	3'-0"	1'-0"	#8	6"	#5	6"	216.78 / 0.959
15'-0"	7'-8"	4'-0"	3'-0"	1'-1"	#9	6"	#6	6"	283.06 / 1.068
16'-0"	8'-2"	4'-6"	3'-0"	1'-3"	#9	6"	#6	6"	297.02 / 1.234

TABLE OF WINGWALL REINFORCING (2-wings)			
Bar	Size	No.	Spa
DL	#5	–	1'-0"
DS	#5	–	1'-0"
E	#4	–	1'-0"
F	#4	–	1'-0"
G	#6	4	–
M	#4	4	–
P	#4	–	1'-0"
RS	#5	3	–
RL	#5	3	–
V	#4	–	1'-0"

TABLE OF ESTIMATED CULVERT TOEWALL QUANTITIES			
Bar	Size	No.	Spa
L	#4	–	1'-0"
Q	#4	1	–
Reinf (Lb/Ft)			2.45
Conc (CY/Ft)			0.037

WING DIMENSION FORMULAS:
(All values are in feet.)

Hw = H + T + C – 0.250
A = (Hw – 0.333*SL)
B = (A) (tangent (θ + 15°))
Lw = (A) ÷ (cosine (θ + 15°))

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

For precast culverts:
Ltw = ((N) (2U + S) + (N – 1) (0.5)) ÷ cosine θ

Total wingwall area (two wings – SF) = 0.5 (Hw + 0.333) (Lw + A)

Hw = Height of wingwall
SL:1 = Side slope ratio (horizontal:1 vertical)
L = Length of short wingwalls
Lw = Length of long wingwall
Ltw = Culvert toewall length
N = Number of culvert spans
θ = Culvert skew

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

BARS DS (Short wing) — BARS DL (Long wing) — BARS RS (Short wing) — BARS RL (Long wing)

① Extend Bars P 3'-0" minimum into bottom slab of box culvert.

② Adjust as necessary to maintain 1 1#2" clear cover and 4" minimum between bars.

③ Quantities shown are based on an average wing height for two wings (one structure end). To determine total quantities for two wings, multiply the tabulated values by 0.5 x (A + Lw).

④ Recommended values of side slope are: 2:1, 3:1, 4:1, and 6:1.

⑤ When shown elsewhere on the plans, construct 5" deep concrete riprap. Payment for riprap is as required by Item 432, "Riprap." Unless otherwise shown on the plans or directed by the Engineer, provide a 6" wide by 1'-0" deep reinforced concrete toewall along all edges of the riprap adjacent to natural ground; reinforce the toewall by extending typical riprap reinforcing into the toewall. Provide expansion joints in the toewall parallel to and oriented in the direction of flow across the full distance of the riprap at intervals of approximately 20'. When such riprap is provided, the culvert toewall shown in SECTION B-B will not be required.

⑥ At Contractor's option, culvert toewall may be ended flush with wingwall toewall. Adjust reinforcing as needed.

⑦ Applicable values of skew are: 15°, 30°, and 45°.

⑧ Typical wingwall angle for all skews.

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 without 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.

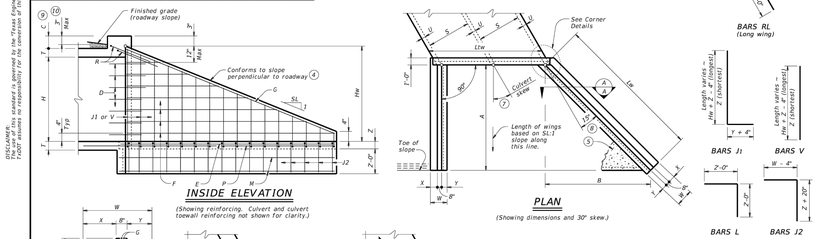
⑩ For vehicle safety, the following requirements must be met:
- For structures without bridge rail, construct curbs no more than 3" above finished grade.
- For structures with bridge rail, construct curbs flush with finished grade.

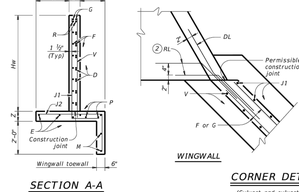
Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

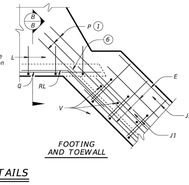
MATERIAL NOTES:
Provide Class C concrete (f'_c=3,600 psi).
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
In riprap concrete, synthetic fibers listed on the "Fibers for Concrete" Material Producer List (NPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
When structure is founded on solid rock, depth of toewalls for culverts and wingwalls may be reduced or eliminated as directed by the Engineer.
See Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.
The quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for Contractor's information only.

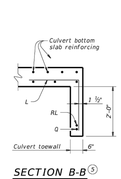
Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing dimensions are out-to-out of bars.







CORNER DETAILS
(Culvert and culvert toewall reinforcing not shown for clarity.)

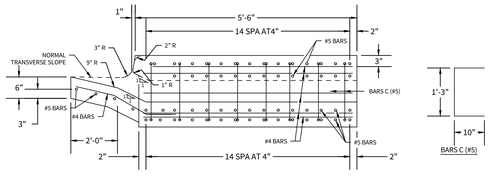


Texas Department of Transportation — Bridge Division Standard

CONCRETE WINGWALLS WITH FLARED WINGS FOR SKEWED BOX CULVERTS

FW-S

file:	CD-FW5-20.dgn	dn: GAF	ck: CAT	dw: TxDOT	ck: TxDOT
©TxDOT	February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS		DIST	COUNTY		SHEET NO.



SECTION A-A

GENERAL NOTES:
1. ALL REINFORCEMENT TO BE GRADE 60.
2. CONCRETE STRENGTH = 3,600 PSI.
3. ALL LAPS FOR #4 BARS TO BE 1'-0" MIN.
4. FIELDS BEND #4 BARS AS REQUIRED TO FIT.
5. ALL BARS TO HAVE 1" MIN. END CLEAR.

CUDEENGINEERS.COM
CUDE ENGINEERS
4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

PLEASANTON FARMS UNIT 3

TXDOT DETAILS & SIDEWALK BOX REINFORCEMENT DETAIL

DATE
03/25/2024

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
1.
2.
3.
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7.
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9.

03/25/2024
STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

D11

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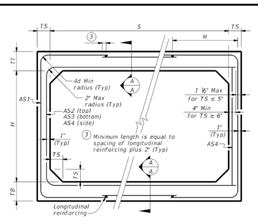
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BOX DATA

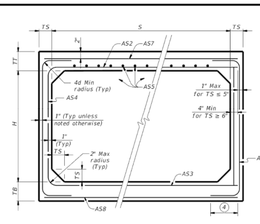
SECTION DIMENSIONS							REINFORCING (sq. in. / ft.) ②							①
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	Fill Height (ft.)	W (Max) (in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	Lift Weight (tons)
6	2	8	7	7	< 2	-	0.23	0.27	0.19	0.17	0.19	0.19	0.17	7.2
6	2	7	7	7	2 < 3	43	0.25	0.21	0.17	0.17	-	-	-	6.8
6	2	7	7	7	3 – 5	43	0.20	0.17	0.17	0.17	-	-	-	6.8
6	2	7	7	7	10	39	0.20	0.17	0.17	0.17	-	-	-	6.8
6	2	7	7	7	15	39	0.26	0.20	0.20	0.17	-	-	-	6.8
6	2	7	7	7	20	39	0.26	0.26	0.26	0.17	-	-	-	6.8
6	2	7	7	7	25	39	0.43	0.32	0.32	0.17	-	-	-	6.8
6	2	7	7	7	30	39	0.52	0.38	0.39	0.17	-	-	-	6.8
6	3	8	7	7	< 2	-	0.20	0.31	0.22	0.17	0.19	0.19	0.17	7.9
6	3	7	7	7	2 < 3	43	0.21	0.24	0.19	0.17	-	-	-	7.5
6	3	7	7	7	3 – 5	39	0.17	0.18	0.17	0.17	-	-	-	7.5
6	3	7	7	7	10	39	0.19	0.18	0.19	0.17	-	-	-	7.5
6	3	7	7	7	15	38	0.22	0.24	0.24	0.17	-	-	-	7.5
6	3	7	7	7	20	38	0.28	0.31	0.31	0.17	-	-	-	7.5
6	3	7	7	7	25	38	0.35	0.38	0.39	0.17	-	-	-	7.5
6	3	7	7	7	30	38	0.42	0.46	0.46	0.17	-	-	-	7.5
6	4	8	7	7	< 2	-	0.19	0.34	0.25	0.17	0.19	0.19	0.17	8.6
6	4	7	7	7	2 < 3	43	0.19	0.27	0.21	0.17	-	-	-	8.2
6	4	7	7	7	3 – 5	39	0.17	0.21	0.19	0.17	-	-	-	8.2
6	4	7	7	7	10	39	0.17	0.20	0.21	0.17	-	-	-	8.2
6	4	7	7	7	15	38	0.18	0.27	0.27	0.17	-	-	-	8.2
6	4	7	7	7	20	38	0.24	0.34	0.35	0.17	-	-	-	8.2
6	4	7	7	7	25	38	0.29	0.43	0.42	0.17	-	-	-	8.2
6	4	7	7	7	30	38	0.35	0.51	0.52	0.17	-	-	-	8.2
6	5	8	7	7	< 2	-	0.19	0.37	0.28	0.17	0.19	0.19	0.17	9.3
6	5	7	7	7	2 < 3	43	0.17	0.30	0.24	0.17	-	-	-	8.9
6	5	7	7	7	3 – 5	43	0.17	0.23	0.21	0.17	-	-	-	8.9
6	5	7	7	7	10	39	0.17	0.22	0.23	0.17	-	-	-	8.9
6	5	7	7	7	15	38	0.17	0.28	0.29	0.17	-	-	-	8.9
6	5	7	7	7	20	38	0.20	0.37	0.38	0.17	-	-	-	8.9
6	5	7	7	7	25	38	0.25	0.45	0.46	0.17	-	-	-	8.9
6	5	7	7	7	30	38	0.30	0.54	0.55	0.17	-	-	-	8.9
6	6	8	7	7	< 2	-	0.19	0.38	0.30	0.17	0.19	0.19	0.17	10
6	6	7	7	7	2 < 3	52	0.17	0.32	0.26	0.17	-	-	-	9.6
6	6	7	7	7	3 – 5	52	0.17	0.24	0.22	0.17	-	-	-	9.6
6	6	7	7	7	10	43	0.17	0.23	0.24	0.17	-	-	-	9.6
6	6	7	7	7	15	39	0.17	0.29	0.31	0.17	-	-	-	9.6
6	6	7	7	7	20	39	0.18	0.38	0.39	0.17	-	-	-	9.6
6	6	7	7	7	25	38	0.23	0.46	0.48	0.17	-	-	-	9.6
6	6	7	7	7	30	38	0.27	0.55	0.57	0.17	-	-	-	9.6

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.

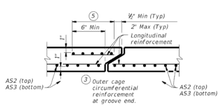


FILL HEIGHT 2 FT AND GREATER



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.
If the fill height is greater than 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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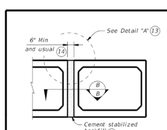
SINGLE BOX CULVERTS PRECAST 6'-0" SPAN

SCP-6

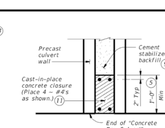
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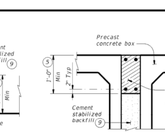
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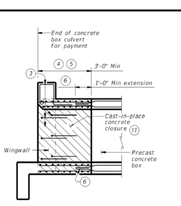
MULTIPLE UNIT PLACEMENT



SECTION B-B



DETAIL "A" ⑬



WINGWALL CONNECTION
(Also applies to safety end treatment.)

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'-6", 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 2'-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 2'-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.

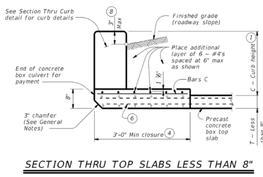
⑩ All curb concrete and reinforcing is considered part of the box culvert for payment.

⑪ Any additional concrete and reinforcing required for the closures will be considered subsidiary to the box culvert for payment.

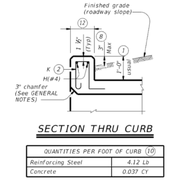
⑫ 1'-0" typical. 2'-3" when the Box Culvert Rail Mounting Details (RAC) standard sheet is referred to elsewhere in the plans.

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.



SECTION THRU TOP SLABS LESS THAN 8"

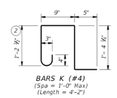


SECTION THRU CURB

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



BARS C (#4)
(Spa = 1'-0" Max)

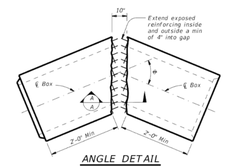


BARS K (#4)
(Spa = 1'-0" Max)
(Length = 4'-2")

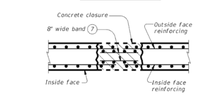
MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide ASTM A1064 welded wire reinforcement.
Provide Class C concrete (f'c = 3,600 psi) for the closures.
Provide cement stabilized backfill meeting the requirements of Item 400, "Excavation and Backfill for Structures".
Any additional concrete required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

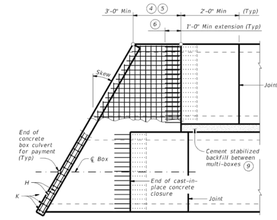
Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bars dimensions are out-to-out of bars.



ANGLE DETAIL



SECTION A-A



PLAN OF SKEWED ENDS
(Showing multi-box placement.)

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BOX CULVERTS PRECAST MISCELLANEOUS DETAILS

SCP-MD

FILE:	scpmdtx-20.dgn	DN: GAF	CK: LRW	DW: BWHCT-HDT	CK: GAF
©TxDOT	February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS		DIST	COUNTY		SHEET NO.

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San Antonio, Texas 78231
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PLEASANTON FARMS UNIT 3

TXDOT DETAILS

DATE
01/04/2024

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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02/06/2024

STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED
PROFESSIONAL ENGINEER

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

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12 OF 12

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REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.

SAWS CONSTRUCTION NOTES
COUNTER PERMIT AND GENERAL CONSTRUCTION PERMIT *REVISED JANUARY 2022*

GENERAL SECTION

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE CITY OF PLEASANTON 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 "CITY OF PLEASANTON WATER SYSTEM STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION".

D. CURRENT CITY OF PLEASANTON "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION".

E. CURRENT CITY OF PLEASANTON "UTILITY EXCAVATION CRITERIA MANUAL" (UECM).

2. 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 THE CITY OF PLEASANTON.

3. 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:

☐ TEXAS STATE WIDE ONE CALL LOCATOR 1-800-545-6005 OR 811

4. 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.

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

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

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

8. 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 CITY OF PLEASANTON 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 CITY OF PLEASANTON WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

9. A COPY OF ALL TESTING REPORTS SHALL BE FORWARDED TO CITY OF PLEASANTON 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 CITY OF PLEASANTON DIRECTION) WITHIN 24 HOURS. SHOULD THE CONTRACTOR FAIL TO ADDRESS AN SSO IMMEDIATELY AND TO CITY OF PLEASANTON SATISFACTION, THEY WILL BE RESPONSIBLE FOR ALL COSTS INCURRED BY CITY OF PLEASANTON, 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 CITY OF PLEASANTON.

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 CITY OF PLEASANTON 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 CITY OF PLEASANTON 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.

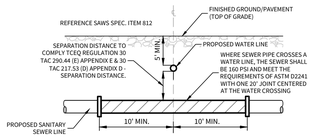
5. ELEVATIONS POSTED FOR TOP OF MANHOLES ARE FOR REFERENCE ONLY: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ALLOWANCES AND ADJUSTMENTS FOR TOP OF MANHOLES TO MATCH THE FINISHED GRADE OF THE PROJECT'S IMPROVEMENTS. (NSPI)

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 CITY OF PLEASANTON INSPECTOR. 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 CITY OF PLEASANTON 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

9. BEDDING MATERIAL TO BE 1 ½" CRUSHED GRAVEL PER ASTM D2321.



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

SUPPLEMENTARY

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

THE DEVELOPER DEDICATES THE SANITARY SEWER MAINS UPON COMPLETION BY THE DEVELOPER AND ACCEPTANCE BY THE CITY OF PLEASANTON. THE CITY OF PLEASANTON WILL OWN AND MAINTAIN SAID SANITARY SEWER MAINS WHICH ARE LOCATED WITHIN THIS PARTICULAR SUBDIVISION. (AS APPLICABLE)

ALL PVC SEWER PIPE WITH OVER 14 FEET OF COVER SHALL BE EXTRA STRENGTH PIPE, MINIMUM STIFFNESS OF 115 PSI.

WORK COMPLETED BY THE CONTRACTOR WHICH HAS NOT RECEIVED A WORK ORDER OR THE NOTICE TO PROCEED WITH THE SAN ANTONIO WATER SYSTEM CONSTRUCTION INSPECTION DIVISION WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.

THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT NO OVERFLOWS OF SEWAGE OCCURS. SHOULD THIS OCCUR THE CONTRACTOR SHALL:

A. IDENTIFY THE SOURCE OF THE SPILL AND ATTEMPT TO ELIMINATE ANY ADDITIONAL SPILLAGE. NOTIFY CITY OF PLEASANTON.

B. CONTAIN THE SPILL IN PLACE AND PREVENT CONTAMINATION OF STREAMS.

C. CLEAN UP THE SPILL AND DISPOSE OF CONTAMINATED MATERIALS.

D. DISINFECT THE AREA OF THE SPILL WITH A MIXTURE OF HTH CHLORINE AND WATER.

E. IDENTIFY AND TRAIN PERSONNEL RESPONSIBLE FOR SPILLAGE PREVENTION AND CONTROL.

NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THIS WORK. ALL WORK SHALL BE DONE IN ACCORDING TO GUIDELINES SET BY THE TEXAS NATURAL RESOURCE CONTAMINATION COMMISSION (TNRCC) AND THE CITY OF PLEASANTON.

SERVICE LATERAL CONNECTIONS:

A. THE EXACT LOCATION AND ELEVATION OF THE SERVICE LATERALS AND MANHOLES SHALL BE FIELD VERIFIED BY THE CONTRACTOR (NSPI).

B. A MINIMUM OF 3 FEET OF COVER IS TO BE MAINTAINED OVER THE SANITARY SEWER LATERALS OR SUBGRADE.

C. ALL SEWER LATERAL SERVICES FOR FUTURE CONNECTIONS AS IDENTIFIED ON PLAN AND PROFILES, SHALL BE CAPPED AND SEALED.

D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISCONNECTING EACH EXISTING SERVICE LINE FROM THE EXISTING WATER MAIN AND RE-CONNECTING THE SERVICE TO THE NEW SERVICE MAIN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTINUOUS SERVICE (NSPI).

E. LATERALS SHALL BE CONSTRUCTED TO SERVE ALL EXISTING HOUSES AND VACANT LOTS.

THE CONTRACTOR SHALL PROVIDE BY-PASS PUMPING OF SEWAGE AROUND EACH SEGMENT OF PIPE TO BE REPLACED, IN ACCORDANCE WITH SAWS SPECIAL SPECIFICATION "SANITARY SEWER". PAYMENT FOR SUCH WORK WILL BE MADE UNDER THE BID ITEM "SANITARY SEWER (BY-PASS PUMPING)" AS PER SAWS SPECIAL SPECIFICATION "SANITARY SEWER".

PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING FORCE MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS INSPECTION AND/OR SAWS PRODUCTION GROUPS AT LEAST ONE WEEK OR MORE 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.

WASTEWATER SPILLS, OVERFLOWS OR DISCHARGES

1. SPILLS, OVERFLOWS, OR DISCHARGES OF WASTEWATER
ATTENTION CONTRACTORS: ALL SPILLS, OVERFLOWS, OR DISCHARGES OF WASTEWATER, RECYCLED WATER, PETROLEUM PRODUCTS, OR CHEMICALS MUST BE REPORTED IMMEDIATELY TO THE SAWS INSPECTOR ASSIGNED TO YOUR COUNTER PERMIT OR GENERAL CONSTRUCTION PERMIT (GCP). THIS REQUIREMENT APPLIES TO EVERY SPILL, OVERFLOW, OR DISCHARGE - REGARDLESS OF SIZE. YOUR COMPLIANCE WILL ENABLE SAWS TO FULFILL REGULATORY REPORTING REQUIREMENTS.

   IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTROL SEWER FLOWS SO THAT A SPILL OVERFLOW, OR DISCHARGE DOES NOT OCCUR. IN THE EVENT THAT A SPILL, OVERFLOW, OR DISCHARGE OCCURS, THE CONTRACTOR MAY BE LIABLE FOR:

2. ALL FINES, PENALTIES, OR OTHER COSTS ASSESSED TO OR AGAINST SAWS BY ANY STATE, FEDERAL, OR OTHER GOVERNMENTAL AGENCY.

3. SAWS STAFF AND MATERIAL COSTS TO RESPOND TO THE SPILL, OVERFLOW, OR DISCHARGE, OR TO MITIGATE THE EFFECTS OF THE SPILL, OVERFLOW, OR DISCHARGE, OR TO SUPPORT THE CLEANUP EFFORT.

4. ALL DAMAGES CAUSED TO SAWS, OR ANY OTHER PERSONS OR ENTITIES THAT RESULT FROM THE SPILL, OVERFLOW OR DISCHARGE.

CITY OF PLEASANTON
CRITERIA FOR SEWER MAIN CONSTRUCTION
IN THE VICINITY OF WATER MAINS

I. FOR SEPARATION DISTANCE REQUIREMENTS BETWEEN SEWER MAINS & WATER MAINS, SEE THE 30 TAC §217.53 PIPE DESIGN NOTES INCLUDED ON THIS SHEET.

II. CORROSION PROTECTED MECHANICAL COUPLING DEVICES OF A CAST IRON OR DUCTILE IRON MATERIAL SHALL BE USED.

III. PLAN & PROFILE MUST SHOW TYPE OF CROSSING AND MATERIAL TO USE.

TCEQ - 30 TAC290.44(e)

(e) LOCATION OF WATERLINES. THE FOLLOWING RULES APPLY TO INSTALLATIONS OF WATERLINES, WASTEWATER MAINS OR LATERALS, AND OTHER CONVEYANCES/APPURTENANCES IDENTIFIED AS POTENTIAL SOURCES OF CONTAMINATION. FURTHERMORE, ALL RATINGS SPECIFIED SHALL BE DEFINED BY ASTM OR AWWA STANDARDS UNLESS STATED OTHERWISE. NEW MAINS, SERVICE LINES, OR LATERALS ARE THOSE THAT ARE INSTALLED WHERE NO MAIN, SERVICE LINE, OR LATERAL PREVIOUSLY EXISTED, OR WHERE EXISTING MAINS, SERVICE LINES, OR LATERALS ARE REPLACED WITH PIPES OF DIFFERENT SIZE OR MATERIAL.

(1) WHEN NEW POTABLE WATER DISTRIBUTION LINES ARE CONSTRUCTED, THEY SHALL BE INSTALLED NO CLOSER THAN NINE FEET IN ALL DIRECTIONS TO WASTEWATER COLLECTION FACILITIES. ALL SEPARATION DISTANCES SHALL BE MEASURED FROM THE OUTSIDE SURFACE OF EACH OF THE RESPECTIVE PIECES.

(2) POTABLE WATER DISTRIBUTION LINES AND WASTEWATER MAINS OR LATERALS THAT FORM PARALLEL UTILITY LINES SHALL BE INSTALLED IN SEPARATE TRENCHES.

(3) NO PHYSICAL CONNECTION SHALL BE MADE BETWEEN A DRINKING WATER SUPPLY AND A SEWER LINE, ANY APPURTENANCE SHALL BE DESIGNED AND CONSTRUCTED SO AS TO PREVENT ANY POSSIBILITY OF SEWAGE ENTERING THE DRINKING WATER SYSTEM.

(4) WHERE THE NINE-FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE FOLLOWING CRITERIA SHALL APPLY.

(A) NEW WATERLINE INSTALLATION - PARALLEL LINES.

(i) WHERE A NEW POTABLE WATERLINE PARALLELS AN EXISTING, NON-PRESSURE OR PRESSURE RATED WASTEWATER MAIN OR LATERAL AND THE LICENSED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS IS ABLE TO DETERMINE THAT THE EXISTING WASTEWATER MAIN OR LATERAL IS NOT LEAKING, THE NEW POTABLE WATERLINE SHALL BE LOCATED AT LEAST TWO FEET ABOVE THE EXISTING WASTEWATER MAIN OR LATERAL, MEASURED VERTICALLY, AND AT LEAST FOUR FEET AWAY, MEASURED HORIZONTALLY, FROM THE EXISTING WASTEWATER MAIN OR LATERAL. EVERY EFFORT SHALL BE EXERTED NOT TO DISTURB THE BEDDING AND BACKFILL OF THE EXISTING WASTEWATER MAIN OR LATERAL.

(ii) WHERE A NEW POTABLE WATERLINE PARALLELS AN EXISTING PRESSURE-RATED WASTEWATER MAIN OR LATERAL AND IT CANNOT BE DETERMINED BY THE LICENSED PROFESSIONAL ENGINEER IF THE EXISTING LINE IS LEAKING, THE EXISTING WASTEWATER MAIN OR LATERAL SHALL BE REPLACED WITH AT LEAST 150 PSI PRESSURE-RATED PIPE. THE NEW POTABLE WATERLINE SHALL BE LOCATED AT LEAST TWO FEET ABOVE THE NEW WASTEWATER LINE, MEASURED VERTICALLY, AND AT LEAST FOUR FEET AWAY, MEASURED HORIZONTALLY, FROM THE REPLACED WASTEWATER MAIN OR LATERAL.

(iii) WHERE A NEW POTABLE WATERLINE PARALLELS A NEW WASTEWATER MAIN, THE WASTEWATER MAIN OR LATERAL SHALL BE CONSTRUCTED OF AT LEAST 150 PSI PRESSURE-RATED PIPE. THE NEW POTABLE WATERLINE SHALL BE LOCATED AT LEAST TWO FEET ABOVE THE WASTEWATER MAIN OR LATERAL, MEASURED VERTICALLY, AND AT LEAST FOUR FEET AWAY, MEASURED HORIZONTALLY, FROM THE WASTEWATER MAIN OR LATERAL.

(B) NEW WATERLINE INSTALLATION - CROSSING LINES.

(i) WHERE A NEW POTABLE WATERLINE CROSSES ABOVE A WASTEWATER MAIN OR LATERAL, THE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER AND MUST BE PERPENDICULAR TO THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. WHEN CROSSING AN EXISTING WASTEWATER MAIN OR LATERAL AND IT IS DISTURBED OR SHOWS SIGNS OF LEAKING, THE WASTEWATER MAIN OR LATERAL SHALL BE REPLACED FOR AT LEAST NINE FEET IN BOTH DIRECTIONS (18 FEET TOTAL) WITH AT LEAST 150 PSI PRESSURE-RATED PIPE EMBEDDED IN CEMENT STABILIZED SAND (SEE CLAUSE (V) OF THIS SUBPARAGRAPH) FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END.

(I) THE POTABLE WATERLINE SHALL BE AT LEAST TWO FEET ABOVE AN EXISTING, NON-PRESSURE RATED WASTEWATER MAIN OR LATERAL.

(II) THE POTABLE WATERLINE SHALL BE AT LEAST SIX INCHES ABOVE AN EXISTING, PRESSURE-RATED WASTEWATER MAIN OR LATERAL.

(ii) WHERE A NEW POTABLE WATERLINE CROSSES A NEW, NON-PRESSURE RATED WASTEWATER MAIN OR LATERAL, THE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER AND SHALL BE PERPENDICULAR TO THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST TWO FEET ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. THE WASTEWATER PIPE SHALL HAVE A MINIMUM PIPE STIFFNESS OF 115 PSI AT 5.0% DEFLECTION. THE WASTEWATER MAIN OR LATERAL SHALL BE EMBEDDED IN CEMENT STABILIZED SAND (SEE CLAUSE (V) OF THIS SUBPARAGRAPH) FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END. THE MATERIALS AND METHOD OF INSTALLATION SHALL CONFORM TO ONE OF THE FOLLOWING OPTIONS:

(I) WITHIN NINE FEET HORIZONTALLY OF EITHER SIDE OF THE WATERLINE, THE WASTEWATER PIPE AND JOINTS SHALL BE CONSTRUCTED WITH PIPE MATERIAL HAVING A MINIMUM PRESSURE RATING OF AT LEAST 150 PSI. AN ABSOLUTE MINIMUM VERTICAL SEPARATION DISTANCE OF TWO FEET SHALL BE PROVIDED. THE WASTEWATER MAIN OR LATERAL SHALL BE LOCATED BELOW THE WATERLINE.

NOTES:

1. **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 TEST WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE CITY OF PLEASANTON INSPECTOR/TEST ADMINISTER, 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.**
2. **CONTRACTOR TO MAINTAIN A MINIMUM 1' VERTICAL SEPARATION DISTANCE BETWEEN OF THE BOTTOM PROPOSED WATER MAIN AND TOP OF PROPOSED SANITARY SEWER MAIN AT WATER AND SANITARY SEWER CROSSINGS.**
3. **ALL LATERALS SHALL BE INSTALLED AT A MINIMUM 2.0% SLOPE UNLESS OTHERWISE NOTED.**

TRENCH EXCAVATION PROTECTION

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

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PLEASANTON FARMS UNIT 3

SANITARY SEWER GENERAL NOTES

DATE
01/16/2024

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED ENGINEER
02/06/2024

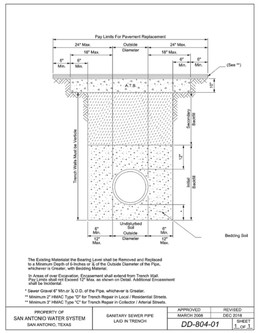
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TBPE No. 455
TBPLS No. 10048500

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PLEASANTON FARMS UNIT 3

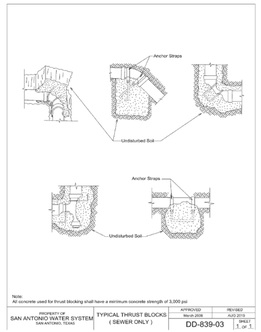
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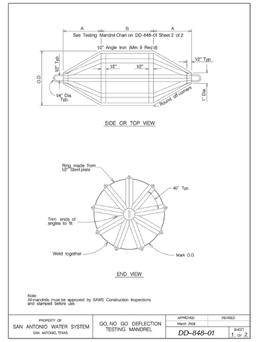
REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



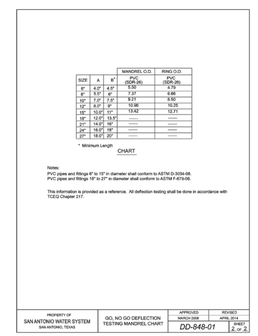
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	SANITARY SEWER PIPE LAID IN TRENCH	APPROVED MARCH 2008	REVISED DEC 2018
		DD-804-01	SHEET 1 of 1



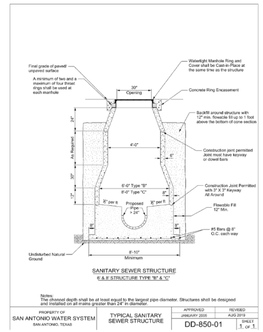
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TYPICAL THRUST BLOCKS (SEWER ONLY)	APPROVED March 2008	REVISED AUG 2019
		DD-839-03	SHEET 1 of 1



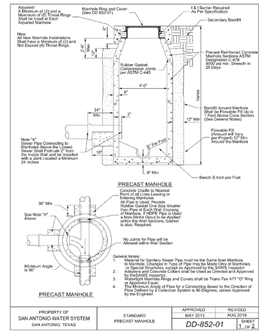
PROPERTY OF SAN ANTONIO WATER SYSTEM San Antonio, TEXAS	GO, NO GO DEFLECTION TESTING MANDREL	APPROVED March 2008	REVISED APRIL 2014
		DD-848-02	SHEET 1 of 2



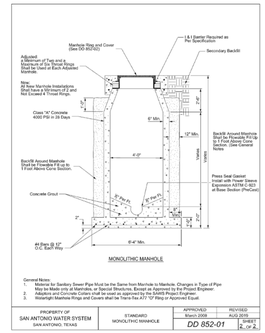
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	GO, NO GO DEFLECTION TESTING MANDREL CHART	APPROVED MARCH 2008	REVISED APRIL 2014
		DD-848-01	SHEET 2 of 2



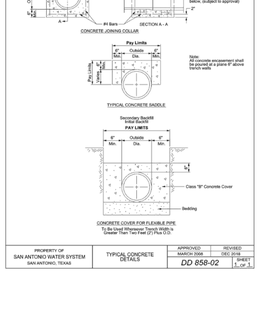
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TYPICAL SANITARY SEWER STRUCTURE	APPROVED JANUARY 2008	REVISED AUG 2019
		DD-850-01	SHEET 1 of 1



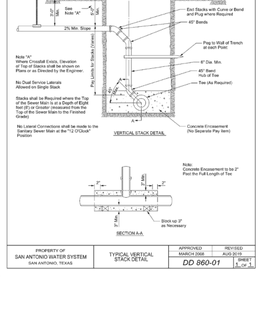
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	STANDARD PRECAST MANHOLE	APPROVED MAY 2013	REVISED AUG 2019
		DD-852-01	SHEET 1 of 2



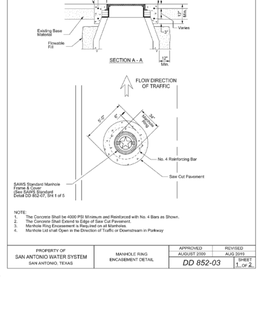
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	STANDARD MONOLITHIC MANHOLE	APPROVED March 2008	REVISED AUG 2019
		DD-852-01	SHEET 2 of 2



PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	SHALLOW MANHOLE DETAIL	APPROVED MARCH 2008	REVISED AUG 2019
		DD 852-04	SHEET 1 of 1



PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	PRECAST MANHOLE BASE STRAIGHT THROUGH	APPROVED MARCH 2008	REVISED AUG 2019
		DD-852-05	SHEET 1 of 1



PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	PRECAST MANHOLE BASE 45° ANGLE	APPROVED MARCH 2008	REVISED AUG 2019
		DD-852-06	SHEET 1 of 1

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	30" MANHOLE RING AND COVER DETAIL	APPROVED AUG 2019	REVISED
		DD 852-07	SHEET 1 of 5

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PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	MANHOLE RING AND COVER DETAIL	APPROVED MARCH 2008	REVISED AUG 2019
		DD 852-07	SHEET 2 of 5

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	MANHOLE RING AND COVER DETAIL	APPROVED MARCH 2008	REVISED AUG 2019
		DD 852-07	SHEET 3 of 5

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	MANHOLE RING AND COVER DETAIL	APPROVED MARCH 2008	REVISED AUG 2019
		DD 852-07	SHEET 4 of 5

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	MANHOLE RING AND COVER DETAIL	APPROVED MARCH 2008	REVISED AUG 2019
		DD 852-07	SHEET 5 of 5

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	DROP MANHOLE DETAIL	APPROVED March 2008	REVISED AUG 2019
		DD-852-08	SHEET 1 of 1

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TYPICAL CLEANOUT DETAIL (ON DEAD END MAIN)	APPROVED MARCH 2008	REVISED APRIL 2014
		DD-854-02	SHEET 2 of 3

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	LATERAL CONNECTION	APPROVED MARCH 2008	REVISED APRIL 2014
		DD-854-03	SHEET 1 of 1

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	HOUSE LATERAL DETAIL (IN THE E.A.R.Z.)	APPROVED March 2008	REVISED September 2018
		DD-854-EARZ	SHEET 1 of 1

SIZE	BAND WIDTH	NO. BLANKETS REQ'D
4"	6"	2 TOP, 2 BOTTOM
12"	8"	2 TOP, 2 BOTTOM
12"	8"	2 TOP, 4 BOTTOM
20"	8"	2 TOP, 4 BOTTOM
24"	8"	2 TOP, 4 BOTTOM
30"	12"	2 TOP, 4 BOTTOM
36"	12"	2 TOP, 4 BOTTOM

Notes:
1. Fittings shall be paid for sby separate payment item
2. Joint restraints shall be approved, as specified in Material Specification 05-16
3. Casing insulators in accordance to SAWS Standard Material Specification 05-21

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	INSTALLATION OF PIPE IN BORE	APPROVED March 2008	REVISED AUG 2019
	DD-856-02	SHEET 1 of 3	

Notes:
1) All concrete encasement shall be poured at a plane 6" above the pipe between excavated trench walls.
2) Pipe sections to be blocked and supported similar to the concrete encasement detail below. (subject to approval)
3) All frame mates shall be provided with Small Mark, where changes in direction occur, at Tees, Bends, Crosses, changes in size, slope, or as directed by SAWS.

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TYPICAL CONCRETE ENCASEMENT DETAILS	APPROVED March 2008	REVISED APRIL 2014
		DD-858-01	SHEET 1 of 1

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TYPICAL CONCRETE DETAILS	APPROVED MARCH 2008	REVISED DEC 2018
		DD 858-02	SHEET 1 of 1

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TYPICAL VERTICAL STACK DETAIL	APPROVED MARCH 2008	REVISED AUG 2019
		DD 860-01	SHEET 1 of 1

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	MANHOLE RING ENCASEMENT DETAIL	APPROVED AUGUST 2000	REVISED AUG 2019
		DD 852-03	SHEET 1 of 1

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PLEASANTON FARMS UNIT 3

SANITARY SEWER STANDARD DETAILS

DATE
01/04/2024

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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02/06/2024
STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED PROFESSIONAL ENGINEER

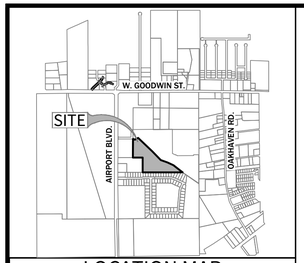
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TBPE No. 455
TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

SS2

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REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



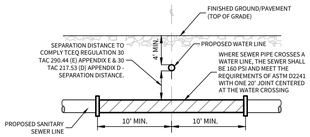
LOCATION MAP
N.T.S.

OWNER/DEVELOPER:

LENNAR HOMES
CONTACT PERSON: RICHARD MOTT
1922 DRY CREEK WAY, SUITE 101
SAN ANTONIO,TX 78259
TEL: (210) 403-6282

CIVIL ENGINEER:

M.W. CUDE ENGINEERS, L.L.C.
CONTACT PERSON: CHRIS CHAFFEE, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112

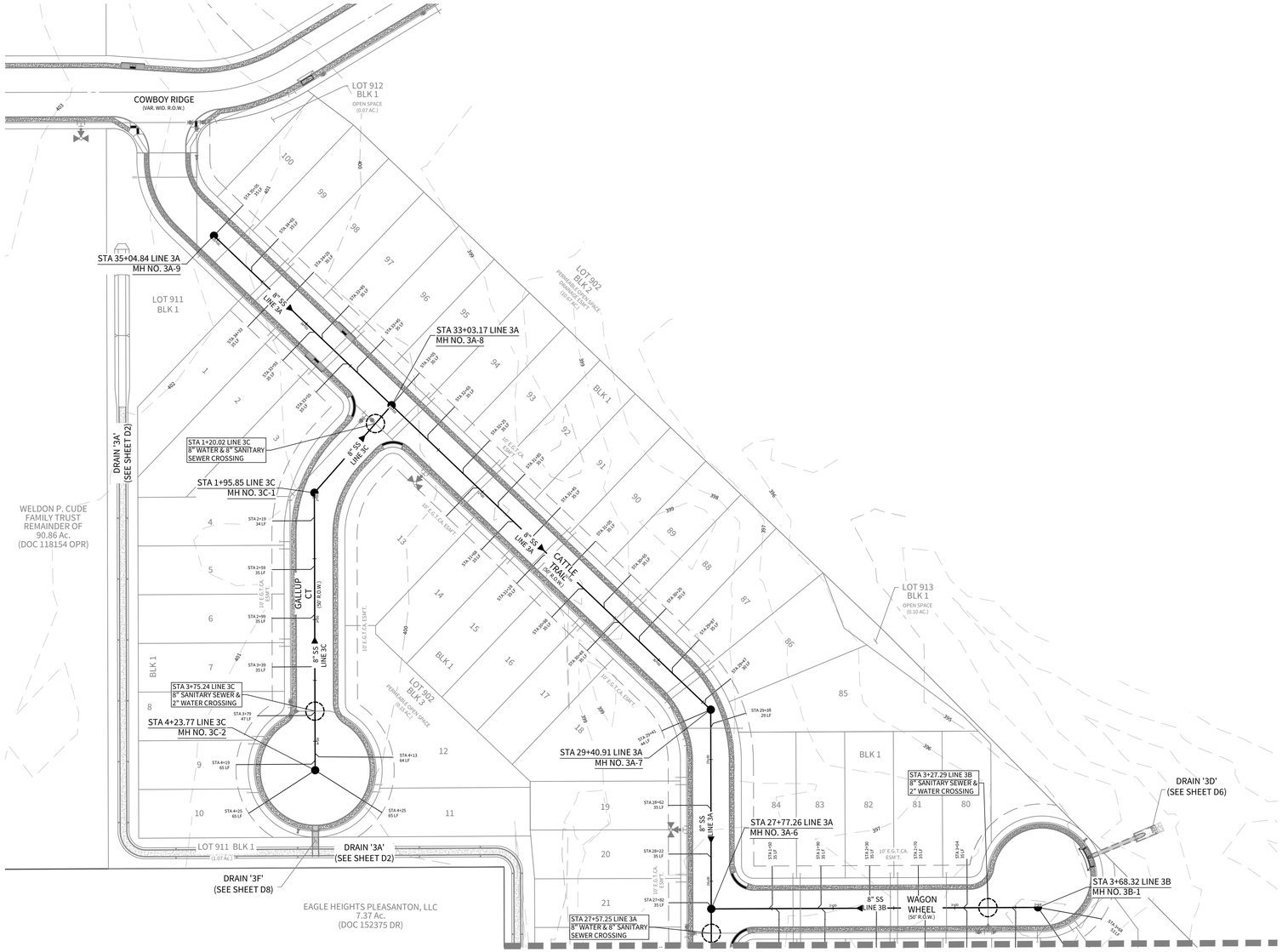


TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL
N.T.S.

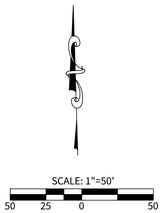
TOTAL PIPE FOOTAGE

8" SAN SEWER PIPE ~ 3,127 L.F.

SEWER/WATER LINE CROSSINGS	
LINE	STATION
"3C"	1+20.02
"3A"	16+09.78
"3A"	27+87.06



MATCHLINE A
SEE SHEET SS4



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PLEASANTON FARMS UNIT 3

SANITARY SEWER MASTER PLAN

DATE
01/29/2024

PROJECT NO.
03396.005

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MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED
PROFESSIONAL ENGINEER
02/06/2024

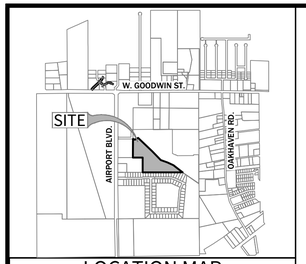
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

SS3

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REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



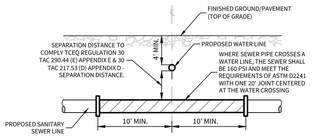
LOCATION MAP
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OWNER/DEVELOPER:

LENNAR HOMES
CONTACT PERSON: RICHARD MOTT
1922 DRY CREEK WAY, SUITE 101
SAN ANTONIO,TX 78259
TEL: (210) 403-6282

CIVIL ENGINEER:

M.W. CUDE ENGINEERS, L.L.C.
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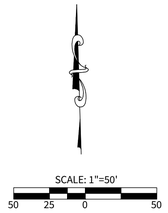


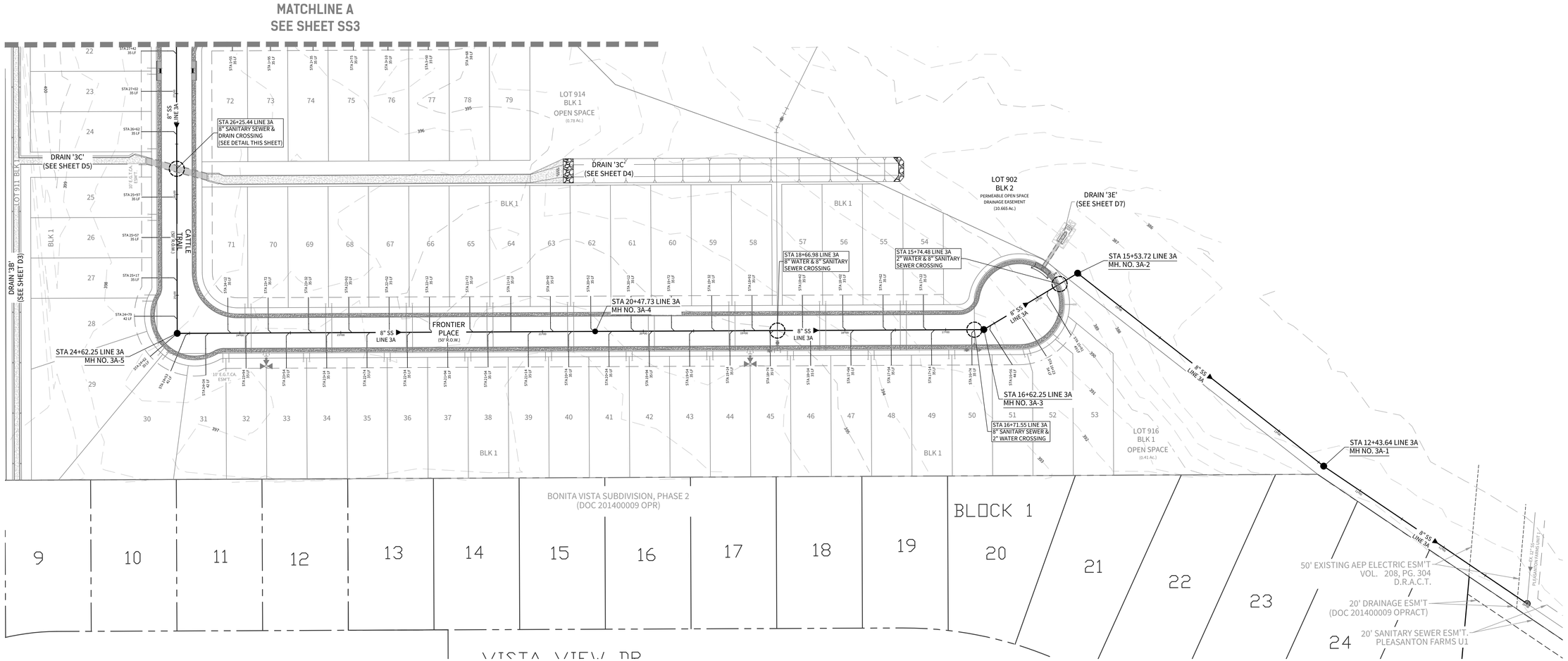
TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL
N.T.S.

TOTAL PIPE FOOTAGE

8" SAN SEWER PIPE ~ 3,127 L.F.

SEWER/WATER LINE CROSSINGS	
LINE	STATION
"3C"	1+20.02
"3A"	16+09.78
"3A"	27+87.06





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SANITARY SEWER MASTER PLAN

DATE
01/29/2024

PROJECT NO.
03396.005

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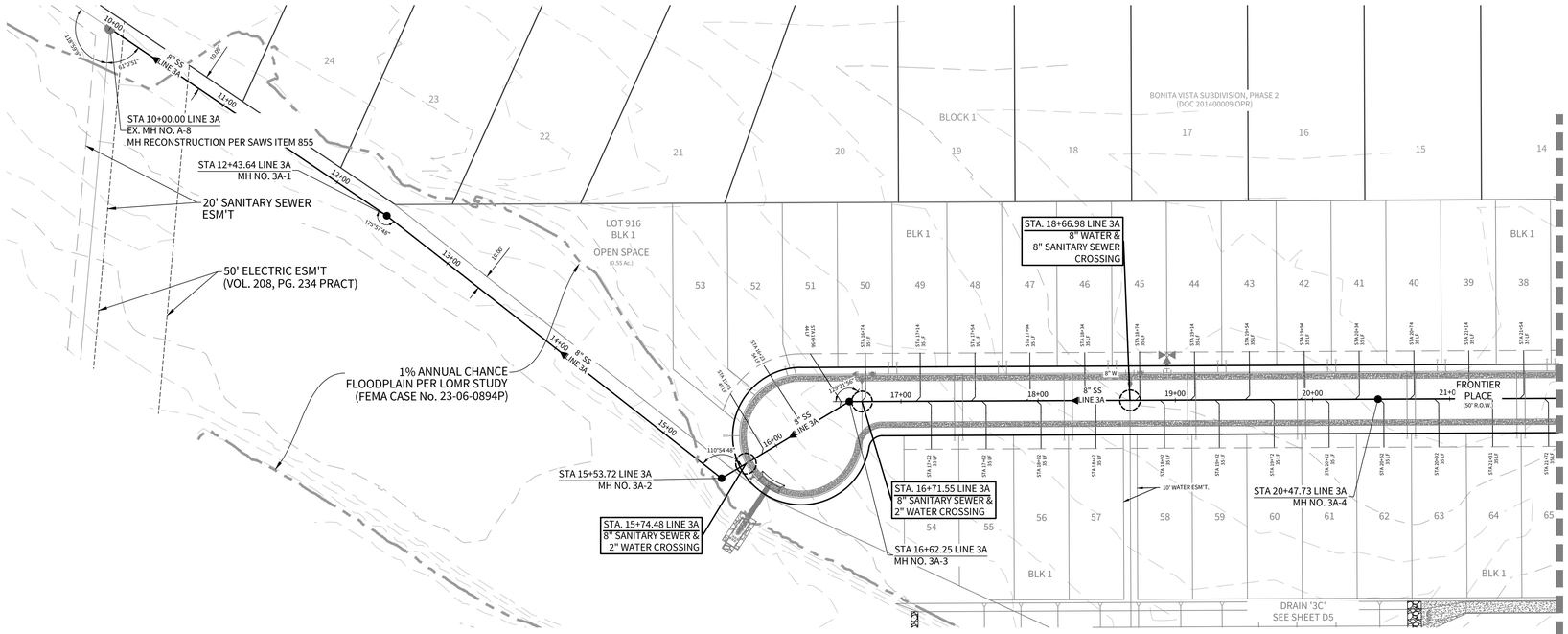
02/06/2024
STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED PROFESSIONAL ENGINEER

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TBPE No. 455
TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

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REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



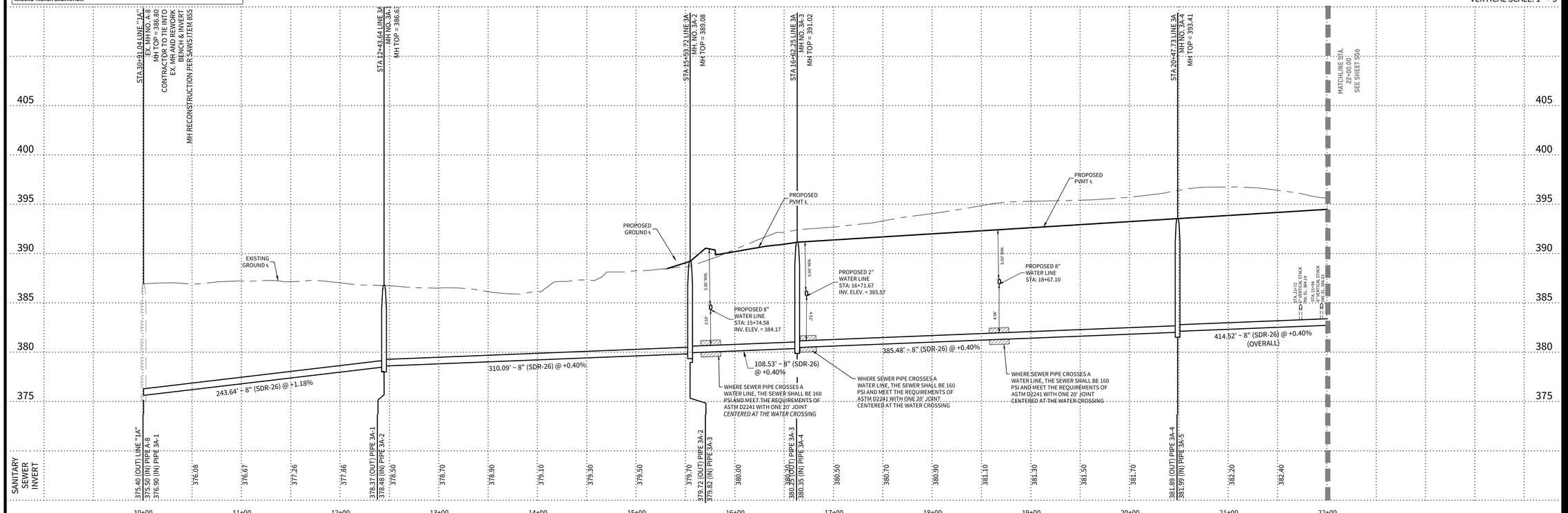
LINE "3A"

STA. 10+00.00 TO STA. 22+00.00

SCALE: 1"=50'

0 50 100

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



TRENCH EXCAVATION PROTECTION

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

NOTES:

1. 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 TEST WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE CITY OF PLEASANTON INSPECTOR/TEST ADMINISTER, 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.
2. CONTRACTOR TO MAINTAIN A MINIMUM 1' VERTICAL SEPARATION DISTANCE BETWEEN OF THE BOTTOM PROPOSED WATER MAIN AND TOP OF PROPOSED SANITARY SEWER MAIN AT WATER AND SANITARY SEWER CROSSINGS.
3. ALL LATERALS SHALL BE INSTALLED AT A MINIMUM 2.0% SLOPE UNLESS OTHERWISE NOTED.

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PLEASANTON FARMS UNIT 3

SANITARY SEWER PLAN & PROFILE - LINE "3A"

DATE
03/16/2024

PROJECT NO.
03396.005

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SPM/CC

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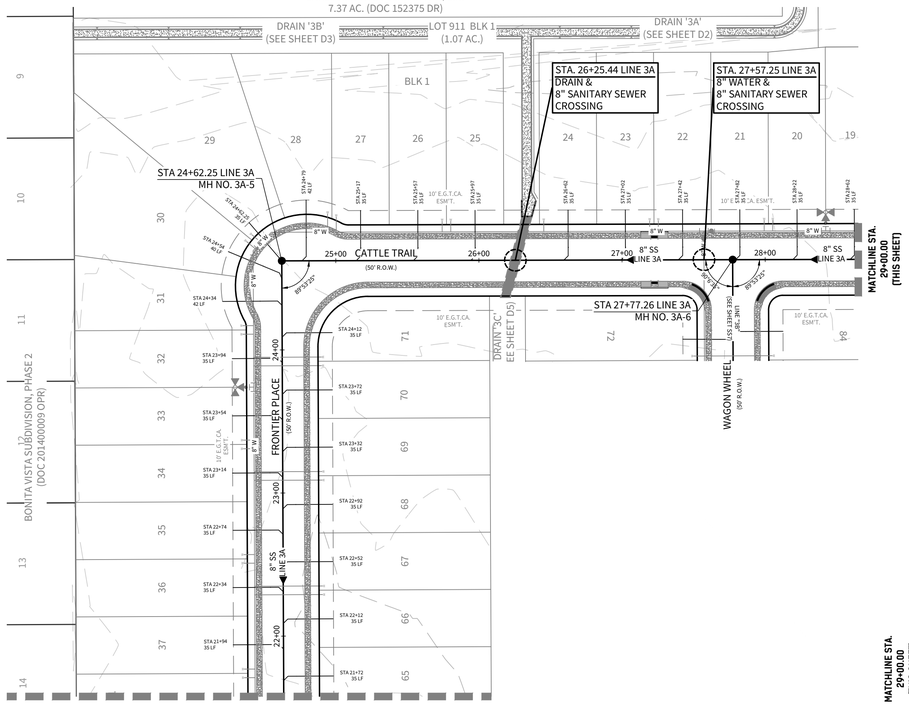
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TBPE No. 455
TBPLS No. 10048500

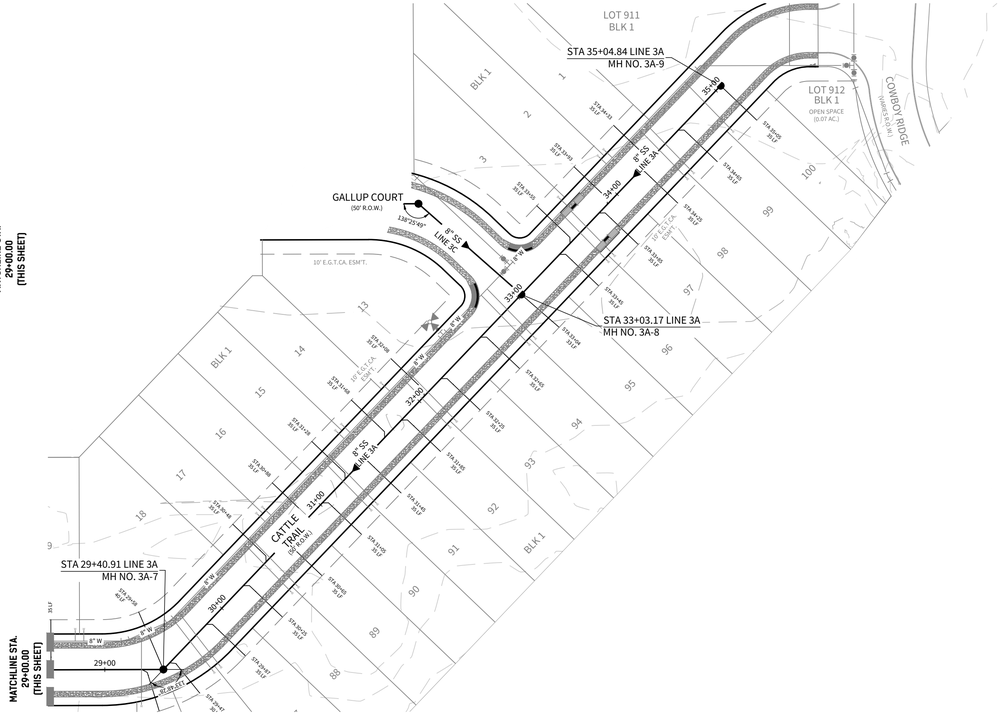
LAND-PLAT
PLEASANTON FARMS UNIT 3

SS5

5 OF 8

REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.





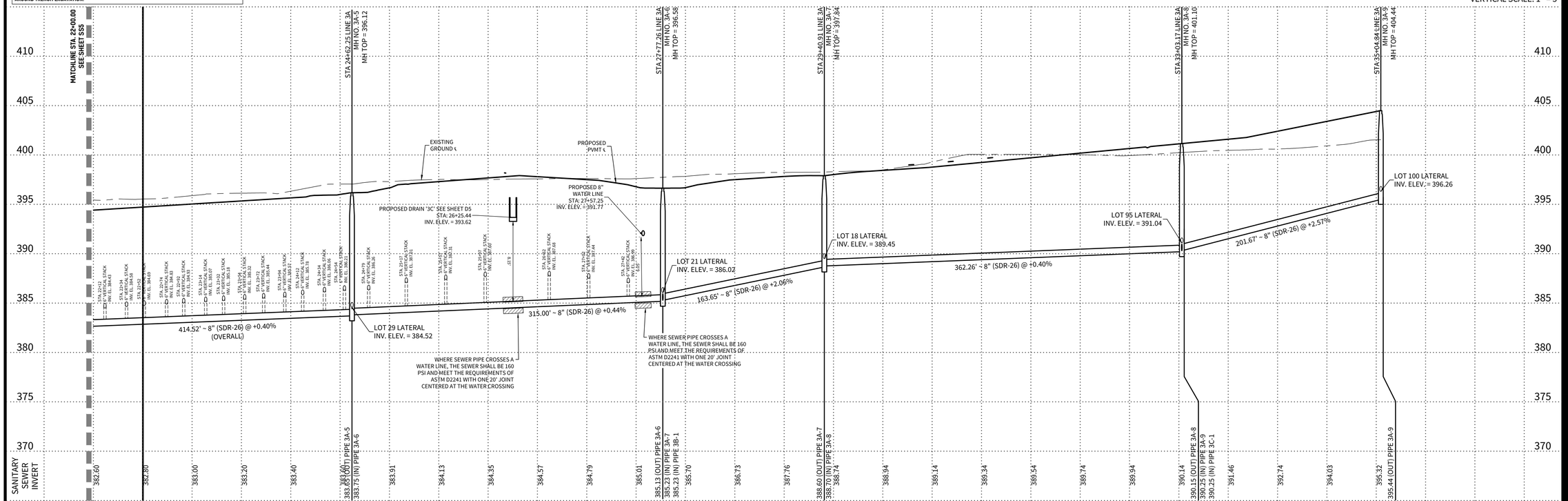
SCALE: 1"=50'
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SCALE: 1"=50'
0 50 100

LINE "3A"

STA. 22+00.00 TO STA. 35+04.84

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



TRENCH EXCAVATION PROTECTION

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PLEASANTON FARMS UNIT 3

SANITARY SEWER PLAN & PROFILE - LINE "3A"

DATE
02/08/2024

PROJECT NO.
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02/28/2024

STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED PROFESSIONAL ENGINEER

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

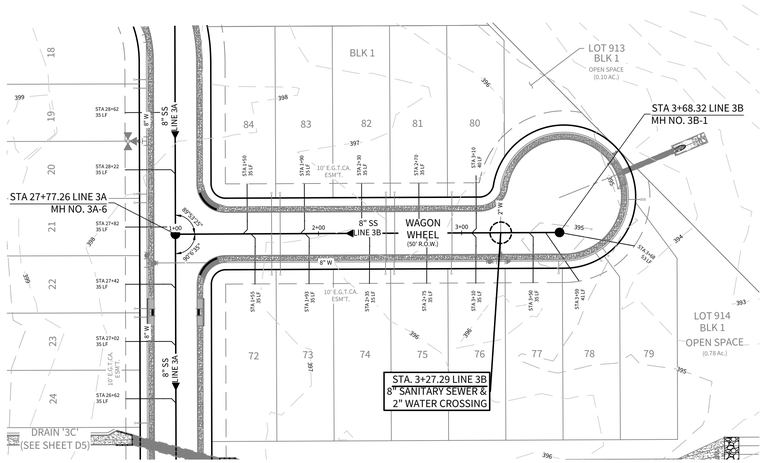
LAND-PLAT
PLEASANTON FARMS UNIT 3

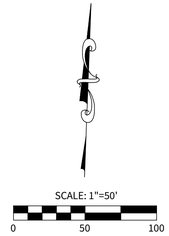
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6 OF 8

REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.

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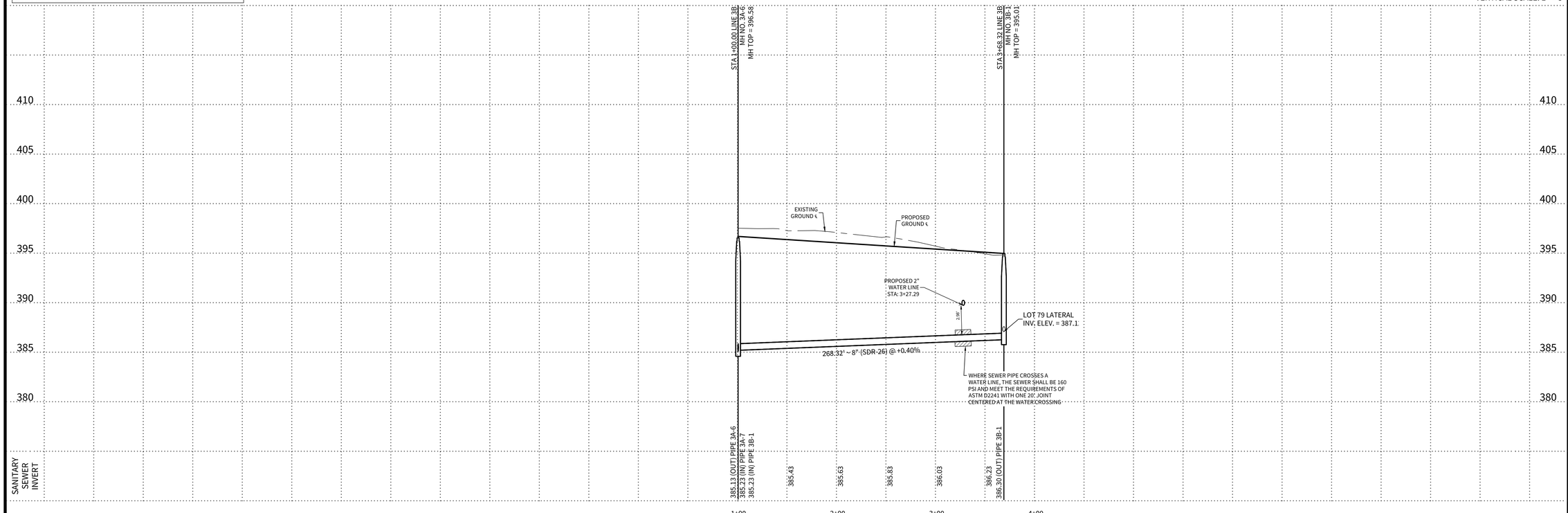




LINE "3B"

STA. 1+00.00 TO STA. 3+68.32

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



TRENCH EXCAVATION PROTECTION

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

CUDEENGINEERS.COM

CUDE ENGINEERS

4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

PLEASANTON FARMS UNIT 3

SEWER PLAN AND PROFILE - LINE 3B

DATE
02/08/2024

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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02/28/2024

STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED PROFESSIONAL ENGINEER

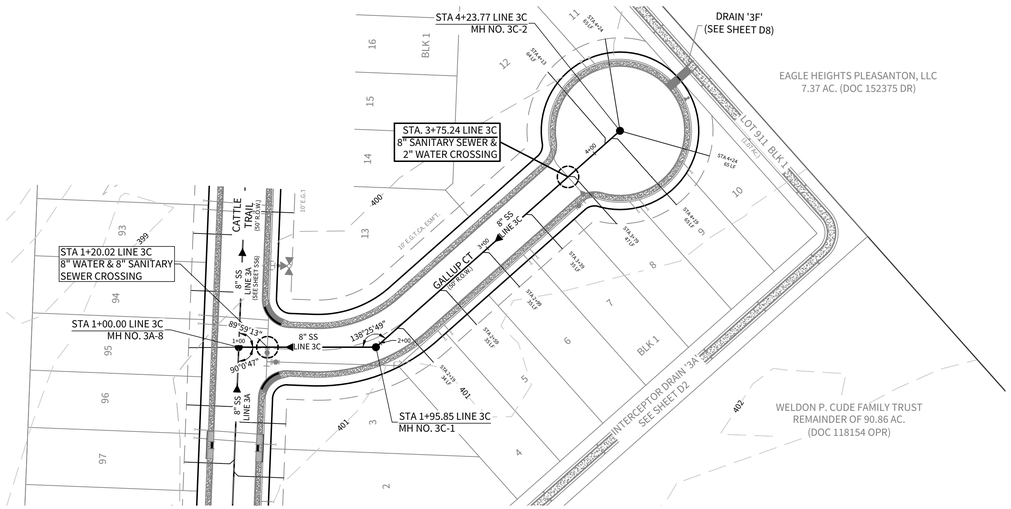
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

SS7

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REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



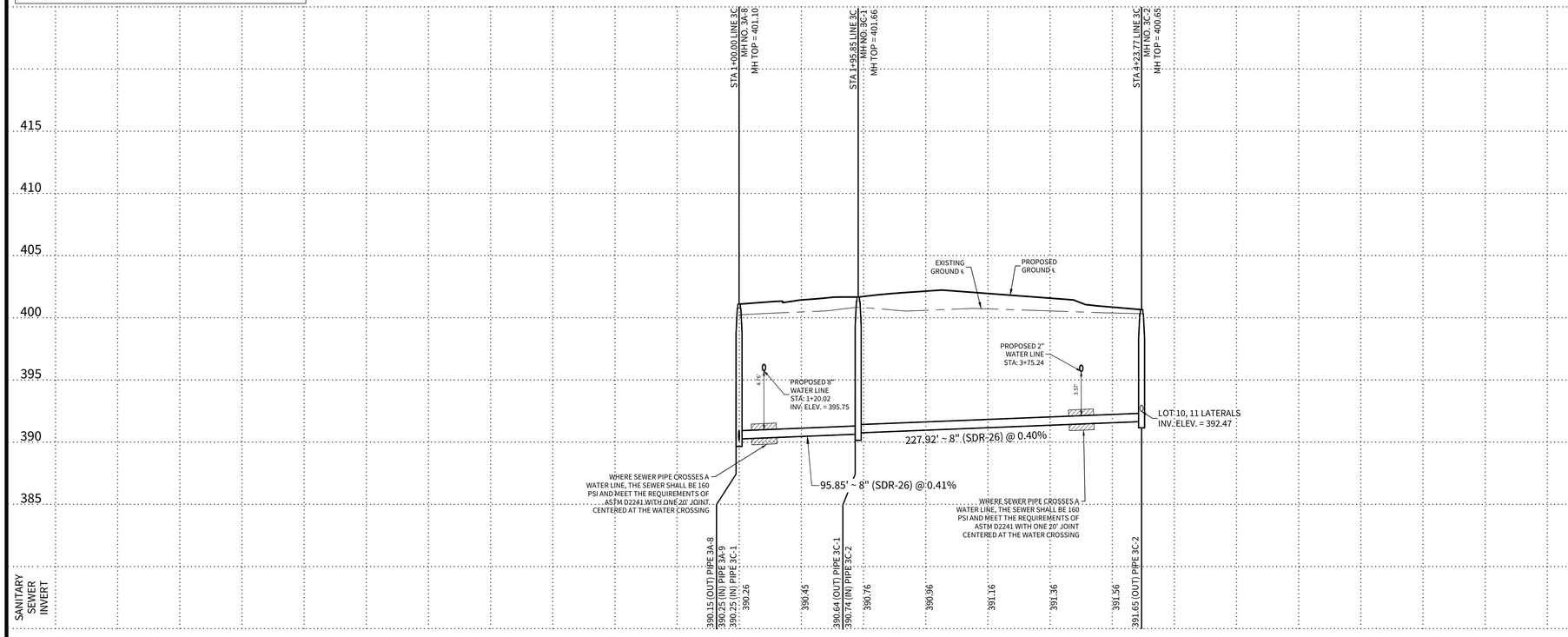
TRENCH EXCAVATION PROTECTION

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

LINE "3C"

STA. 1+00.00 TO STA. 4+23.77

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



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PLEASANTON FARMS UNIT 3

SEWER PLAN AND PROFILE - LINE 3C

DATE
02/08/2024

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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02/28/2024

STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED
PROFESSIONAL ENGINEER

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

SS8

8 OF 8

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REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.

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 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 ASBESTOSCONTAINING 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 985 FEET WHERE THE STATIC PRESSURE WILL NORMALLY EXCEED 80 PSI. AT ALL SUCH LOCATIONS WHERE THE GROUND LEVEL IS BELOW 985 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 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.
11. ALL PIPES SHALL BE C900 CLASS 235 DR-18, UNLESS OTHERWISE NOTED.
12. ALL METERS SHALL BE 5/8", UNLESS OTHERWISE NOTED.

NOTE:

THE LOCATIONS AND DEPTHS OF EXISTING UTILITIES, INCLUDING SERVICE LATERALS AND DRAINAGE STRUCTURES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND DEPTHS OF UNDERGROUND UTILITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT, AND TO PROTECT THE SAME DURING CONSTRUCTION.

CITY OF PLEASANTON	830-569-3867
TEXAS STATE WIDE ONE CALL LOCATOR	1-800-545-6005
AEP TEXAS	1-877-373-4858
HOTWIRE	1-800-355-5668

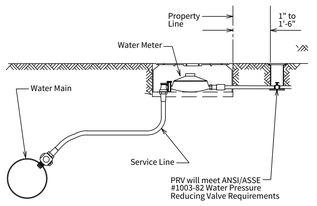
HOTWIRE LINES TO GO INTO JOINT TRENCH WITH AEP
LOTS WITH CONFLICTING TRANSFORMER / SECONDARY
ENCLOSURE ELECTRIC SERVICE AND WATER METER PLACED 5'
FROM PROPERTY LINE WHERE THE CONFLICT OCCURS.

TYPICAL UTILITY CROSSINGS WILL HAVE
2 - 6" SCH 80 PVC CONDUIT WITH SWEEPS,
2 - 4" SCH 40 PVC CONDUIT WITH SWEEPS,
THE TOTAL AMOUNT OF CONDUIT TO BE USED
WILL BE DETERMINED DURING CONSTRUCTION.

TYPICAL IRRIGATION CROSSING WILL HAVE
3 - 4" SCH 40 PVC CONDUIT WITH SWEEPS,

* CONDUIT ONLY TO BE INSTALLED IF:

1.) STREET BASE AND DRAINAGE COMPLETION PRECEDES AEP UTILITY LINE INSTALLATION.
2.) INSTALLATION IS AUTHORIZED BY THE DEVELOPER.



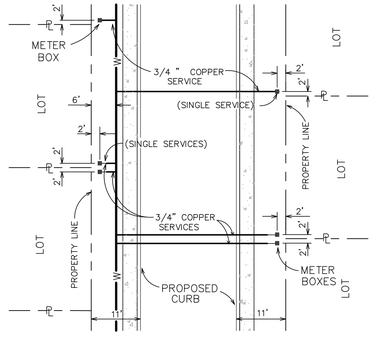
3/4" THRU 2" SERVICE PRESSURE REDUCING VALVE
N.T.S.

CAUTION!!!

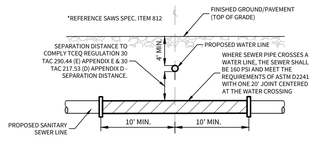
THE CONTRACTOR SHALL BE AWARE THAT UNDERGROUND ELECTRIC AND GAS LINES EXIST ALONG COWBOY RIDGE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE THESE UTILITIES LOCATED PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN THIS AREA. ANY DAMAGE DONE TO THESE EXISTING FACILITIES WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR.

TRENCH EXCAVATION SAFETY PROTECTION

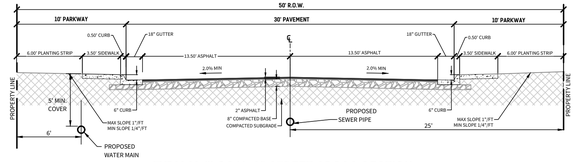
Contractor and/or Contractor's independently retained employee or structural design/geotechnical/safety/equipment consultant, if any, shall review these plans and available geotechnical information and the anticipated installation site(s) within the project work area in order to implement Contractor's trench excavation safety protection systems, programs and/or procedures for the project described in the contract documents. the Contractor's implementation of these systems, programs and/or procedures shall provide for adequate trench excavation safety protection that comply with as a minimum, OSHA standards for trench excavations. specifically, Contractor and/or Contractor's independently retained employee or safety consultant shall implement a trench safety program in accordance with OSHA standards governing the presence and activities of individuals working in and around trench excavation.



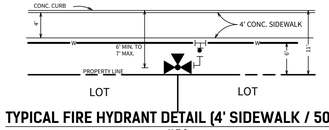
WATER METER BOX LOCATION
N.T.S.



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



TYPICAL "LOCAL A" STREET CROSS SECTION
1" = 5'



NOTE:
1. EXCLUSIVE OF THE TEE, PAYMENT FOR THE FIRE HYDRANT SHALL INCLUDE ALL FITTINGS, 6" D.I. PIPE AND 6" GATE VALVE & BOX.
2. FIRE HYDRANT TO BE INSTALLED OUTSIDE OF THE LIMITS OF ALL PROPOSED SIDEWALKS.

TYPICAL FIRE HYDRANT DETAIL (4' SIDEWALK / 50' ROW)
N.T.S.

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CUDE ENGINEERS — EST. 1980

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San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

PLEASANTON FARMS UNIT 3

WATER DISTRIBUTION SYSTEM
GENERAL NOTES

DATE
01/04/2024

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

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02/06/2024

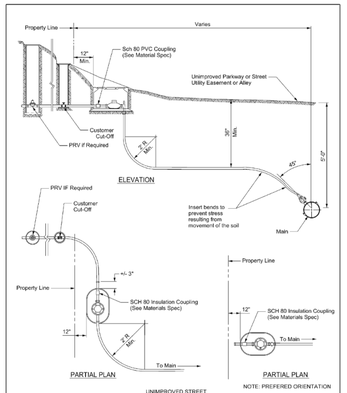
STATE OF TEXAS — SEAN P. McFARLAND — 138893 — LICENSED PROFESSIONAL ENGINEER

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

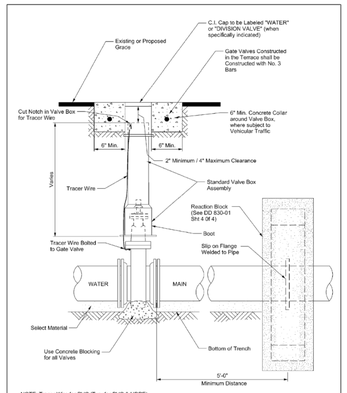
LAND-PLAT
PLEASANTON FARMS UNIT 3

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REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



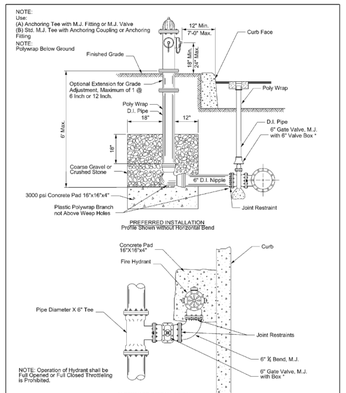
PROPERTY OF	COPPER AND HDPE	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	SERVICE INSTALLATION	MARCH 2008	AUG 2019
SAN ANTONIO, TEXAS	UNIMPROVED STREET	DD-824-01	SHEET 2 OF 3



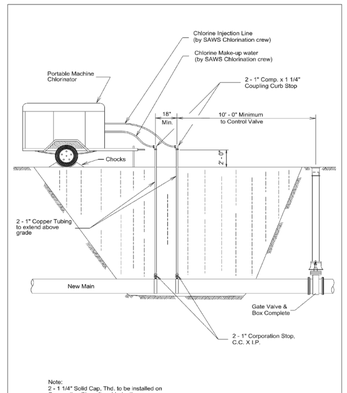
NOTE: Tracer Wire for PVC (Typ. for PVC & HDPE)
NOTE: All Concrete to be 3,000 psi

Note: For all work associated with Rcycycled Water Valves, refer to DD 110-10, Sht. 1 of 1

PROPERTY OF	INSTALLATION OF NON-GEARED GATE VALVE WITH VALVE BOX AND EXTENSION	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		MARCH 2008	AUG 2019
SAN ANTONIO, TEXAS		DD 828-01	SHEET 1 OF 1

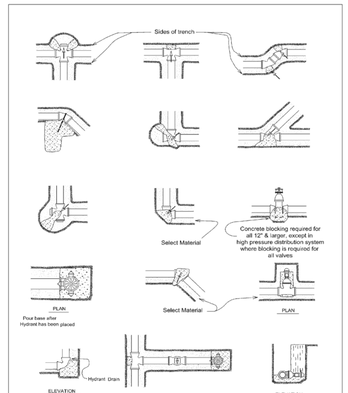


PROPERTY OF	FIRE HYDRANT INSTALLATION (JOINT RESTRAINT)	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		MAY 2013	AUG 2019
SAN ANTONIO, TEXAS		DD-834-01	SHEET 1 OF 3

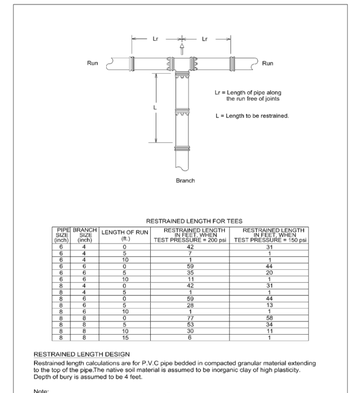


Note:
2 - 1 1/4" Solid Cap, Thd. to be installed on Corporation Stop after chlorination

PROPERTY OF	STANDARD CHLORINATION INSTALLATION	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		March 2008	AUG 2019
SAN ANTONIO, TEXAS		DD-847-01	SHEET 1 OF 1



PROPERTY OF	THRUST BLOCKS FOR FITTINGS (WATER ONLY)	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		March 2008	AUG 2019
SAN ANTONIO, TEXAS		DD-839-01	SHEET 1 OF 2



RESTRAINED LENGTH FOR TEES

PIPE SIZE (inch)	BRANCH SIZE (inch)	LENGTH OF RUN (ft.)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	4	0	42	31
6	4	10		1
6	6	0	59	44
6	6	5	35	20
6	6	10	11	1
8	4	0	42	31
8	4	5	1	1
8	6	0	59	44
8	6	5	28	13
8	6	10	7	1
8	8	0	77	58
8	8	5	53	34
8	8	10	30	11
8	8	15	8	1

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

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

PROPERTY OF	RESTRAINED LENGTHS FOR TEES	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		March 2008	AUG 2019
SAN ANTONIO, TEXAS		DD-839-04	SHEET 1 OF 2

RESTRAINED LENGTH FOR TEES (Cont'd)

PIPE SIZE (inch)	BRANCH SIZE (inch)	LENGTH OF RUN (ft.)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
12	4	0	42	31
12	4	10	1	1
12	6	0	59	44
12	6	5	13	1
12	6	10	1	1
12	8	0	77	58
12	8	5	42	23
12	8	10	7	1
12	8	15	1	1
12	12	0	109	82
12	12	5	86	59
12	12	10	63	35
12	12	15	39	12

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

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

PROPERTY OF	RESTRAINED LENGTHS FOR TEES	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		MARCH 2008	AUG 2019
SAN ANTONIO, TEXAS		DD-839-04	SHEET 2 OF 2



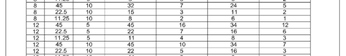
L=LENGTH TO BE RESTRAINED

PIPE SIZE (inch)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	59	44
8	77	58
10	93	69
12	109	82

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

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

PROPERTY OF	RESTRAINED LENGTHS FOR DEAD ENDS / INLINE VALVES	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		MARCH 2008	AUG 2019
SAN ANTONIO, TEXAS		DD-839-05	SHEET 1 OF 1

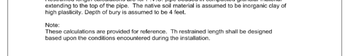


PIPE SIZE (inch)	BEND ANGLE (deg.)	LOW SIDE DEPTH	UPPER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 200 psi	LOWER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE =200psi	UPPER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE =150 psi	LOWER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 150 psi
6	45	5	24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

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

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

PROPERTY OF	RESTRAINED LENGTHS VERTICAL OFFSETS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		MARCH 2008	AUG 2019
SAN ANTONIO, TEXAS		DD-839-06	SHEET 1 OF 1



PIPE SIZE (inch)	SMALL SIZE (inch)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	4	30	23
6	6	59	44
8	6	52	54
12	4	95	71
12	6	80	60
12	8	58	43

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

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

PROPERTY OF	RESTRAINED LENGTHS FOR REDUCERS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		MARCH 2008	AUG 2019
SAN ANTONIO, TEXAS		DD-839-07	SHEET 1 OF 1



PIPE SIZE (INCH)	BEND ANGLE (DEG)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	90	23	17
6	45	9	7
6	22.5	5	3
6	11.25	2	1
8	90	33	22
8	45	12	9
8	22.5	6	4
8	11.25	3	2
12	90	43	32
12	45	18	13
12	22.5	8	6
12	11.25	4	3

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

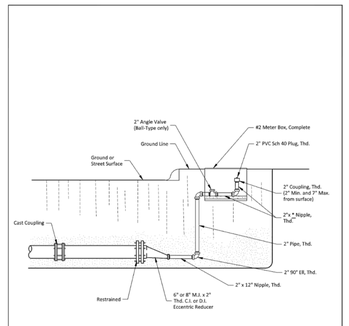
Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF	RESTRAINED LENGTHS FOR HORIZONTAL BENDS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		MARCH 2008	AUG 2019
SAN ANTONIO, TEXAS		DD-839-08	SHEET 1 OF 1



* Cut as required to extend beyond excavation

PROPERTY OF	2" TEMPORARY BLOW-OFF ASSEMBLY ON 6" & 8" MAINS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		MARCH 2008	AUG 2019
SAN ANTONIO, TEXAS		DD-844-01	SHEET 1 OF 4



* Cut to fit in meter box

PROPERTY OF	2" PERMANENT BLOW-OFF ASSEMBLY ON 6" & 8" MAINS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		MARCH 2008	AUG 2019
SAN ANTONIO, TEXAS		DD-844-02	SHEET 3 OF 3

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4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

PLEASANTON FARMS UNIT 3

WATER DISTRIBUTION SYSTEM DETAILS

DATE
01/04/2024

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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02/06/2024

STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED PROFESSIONAL ENGINEER

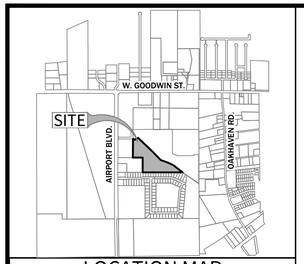
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

W2

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REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



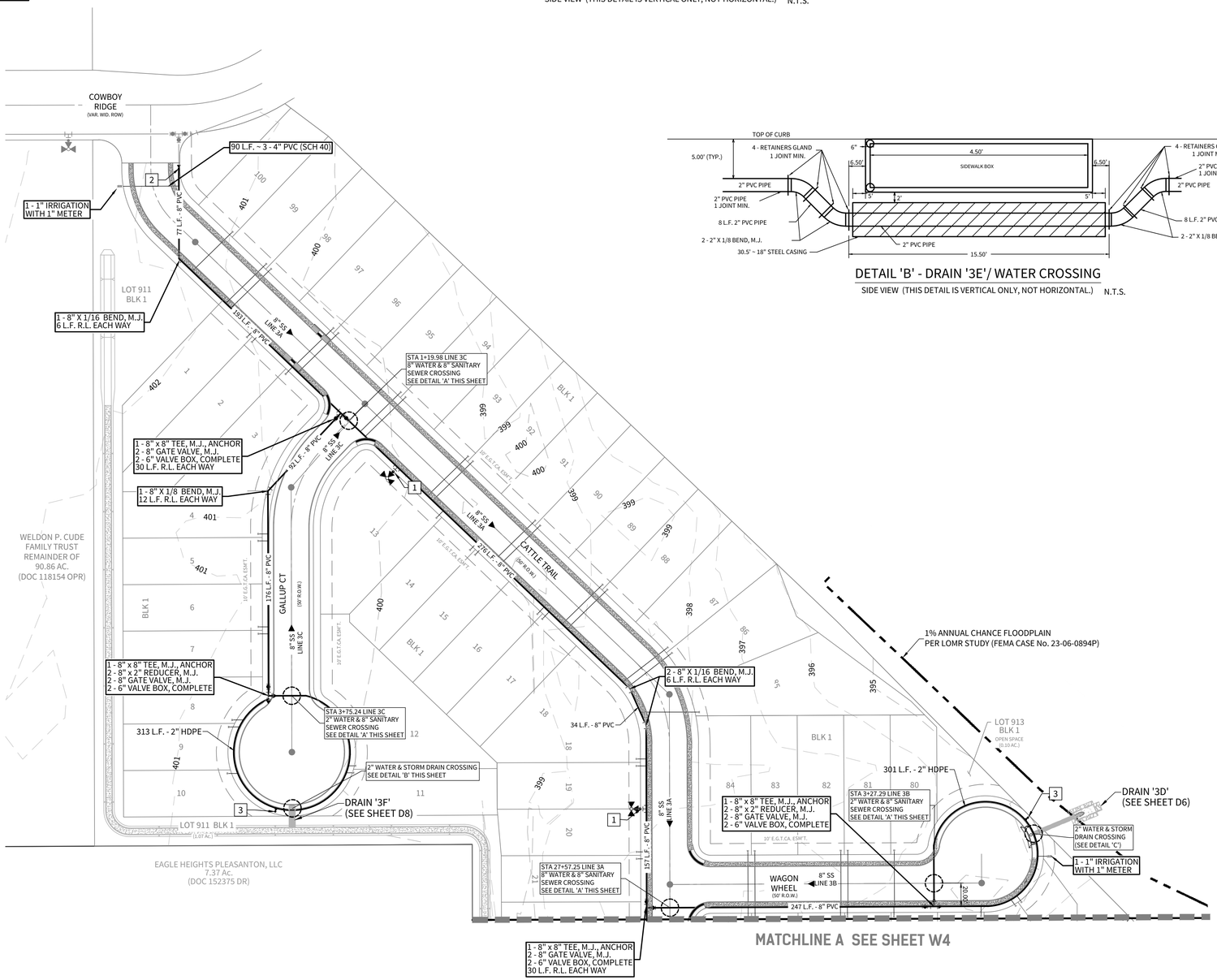
LOCATION MAP
N.T.S.

OWNER/DEVELOPER:

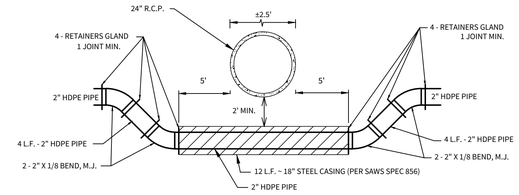
LENNAR HOMES
CONTACT PERSON: RICHARD MOTT
1922 DRY CREEK WAY, SUITE 101
SAN ANTONIO,TX 78259
TEL: (210) 403-6282

CIVIL ENGINEER:

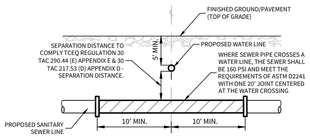
M.W. CUDE ENGINEERS, L.L.C.
CONTACT PERSON: CHRIS CHAFFEE, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112



SCALE: 1"=50'
0 50 100



DETAIL 'C' - DRAIN '3D'/ WATER CROSSING
SIDE VIEW (THIS DETAIL IS VERTICAL ONLY, NOT HORIZONTAL.) N.T.S.



DETAIL 'A' – TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL
N.T.S.

DETAIL 'B' - DRAIN '3E'/ WATER CROSSING
SIDE VIEW (THIS DETAIL IS VERTICAL ONLY, NOT HORIZONTAL.) N.T.S.

LEGEND

EXISTING SANITARY SEWER	EX. 8"SS
PROPOSED SANITARY SEWER	8"SS
EXISTING SANITARY SEWER MANHOLE	
PROPOSED WATER MAIN	8"W
EXISTING WATER MAIN	EX. 8"W
EXISTING STANDARD FIRE HYDRANT	
PROPOSED STANDARD FIRE HYDRANT	
PROPOSED STANDARD GATE VALVE	
PROPOSED PERMANENT BLOWOFF	
ELECTRIC, GAS, TELEPHONE, & CABLE T.V. EASEMENT	E.G.T.CA. ESM'T
PROPOSED 3/4" WATER SERVICE WITH 5/8" METER	
JOINT RESTRAINT	X
JOINT RESTRAINT ENTIRE LENGTH	X

KEYNOTES:

1 - 8" X 6" TEE, M.J., ANCHOR
1 - 6" X 1/4 BEND, M.J.
1 - 6" GATE VALVE, M.J.
1 - 6" VALVE BOX, COMPLETE
1 - STD. FIRE HYDRANT
1 - 6" D.I. PIPE, CUT AS REQ'D.
SEE S.A.W.S. STD. DWG DD-834-01

2 - FOR CHLORINATION INJECTION:
2 - 1" CORPORATION STOP, C.C. X I.P.
2 - 1" COPPER TUBING, CUT AS REQ.
2 - 1 1/4" THD. SOLID CAPS, THR.
2 - 1" COMP. X 1 1/4" COUPLING, CURB STOP
CONTRACTOR SHALL PROVIDE A 2" JUMPER CONNECTION TO LOAD NEW MAIN.

AFTER RELEASED FOR SERVICE, CONTRACTOR TO TIE NEW 8" WATER MAIN INTO EXIST. 8" WATER MAIN WITH ±5 L.F. OF 8" WATER MAIN. CUT AS REQUIRED. 8" VALVE TO REMAIN CLOSED UNTIL AFTER DISINFECTION & ACCEPTANCE BY SAWS

1 - 8" SOLID SLEEVE
1 - 2" BLOWOFF ASSEMBLY (TEMP.)
1 - 8" M.J. X 2" THR. DI. ECCENTRIC REDUCER (TEMP.)

SEE SAWS STD. DWG. DD-844-01 (SHEET 1 OF 3)

3 - 1 - 2" BLOWOFF ASSEMBLY (PERM.)
1 - 8" X 2" THR. DI. ECCENTRIC REDUCER, M.J. (PERM.)
SEE SAWS STD DWG. DD-844-02 (SEE SHEET 3 OF 5)

TOTAL PIPE FOOTAGE

8" WATER PVC PIPE ~ 2,563 L.F.
2" WATER PVC PIPE ~ 915 L.F.

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4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
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PLEASANTON FARMS UNIT 3

WATER DISTRIBUTION PLAN

DATE
07/15/2025

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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07/30/2025
STATE OF TEXAS
MATTHEW A. TRINKLE
147558
LICENSED PROFESSIONAL ENGINEER
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

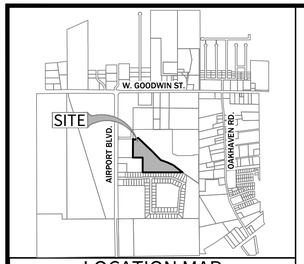
LAND-PLAT
PLEASANTON FARMS UNIT 3

W3

3 OF 4

REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.

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LOCATION MAP
N.T.S.

OWNER/DEVELOPER:

LENNAR HOMES
CONTACT PERSON: RICHARD MOTT
1922 DRY CREEK WAY, SUITE 101
SAN ANTONIO,TX 78259
TEL: (210) 403-6282

CIVIL ENGINEER:

M.W. CUDE ENGINEERS, L.L.C.
CONTACT PERSON: CHRIS CHAFFEE, P.E.
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KEYNOTES:

1 - 8" X 6" TEE, M.J., ANCHOR
1 - 6" X 1/4 BEND, M.J.
1 - 6" GATE VALVE, M.J.
1 - 6" VALVE BOX, COMPLETE
1 - STD. FIRE HYDRANT
1 - 6" D.I. PIPE, CUT AS REQ'D.
SEE S.A.W.S. STD. DWG DD-834-01

2 - FOR CHLORINATION INJECTION:
2 - 1" CORPORATION STOP, C.C. X I.P.
2 - 1" COPPER TUBING, CUT AS REQ.
2 - 1 1/4" THD. SOLID CAPS, THR.
2 - 1" COMP. X 1 1/4" COUPLING, CURB STOP
CONTRACTOR SHALL PROVIDE A 2" JUMPER CONNECTION TO LOAD NEW MAIN.

AFTER RELEASED FOR SERVICE, CONTRACTOR TO TIE NEW 8" WATER MAIN INTO EXIST. 8" WATER MAIN WITH ±5 L.F. OF 8" WATER MAIN. CUT AS REQUIRED. 8" VALVE TO REMAIN CLOSED UNTIL AFTER DISINFECTION & ACCEPTANCE BY SAWS

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1 - 2" BLOWOFF ASSEMBLY (TEMP.)
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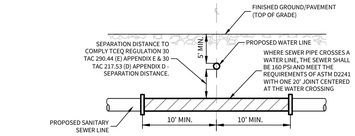
SEE SAWS STD. DWG. DD-844-01 (SHEET 1 OF 3)

3 - 1 - 2" BLOWOFF ASSEMBLY (PERM.)
1 - 8" x 2" THR. DI. ECCENTRIC REDUCER, M.J. (PERM.)

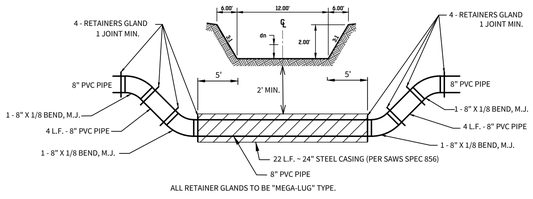
SEE SAWS STD. DWG. DD-844-02 (SHEET 3 OF 5)

LEGEND

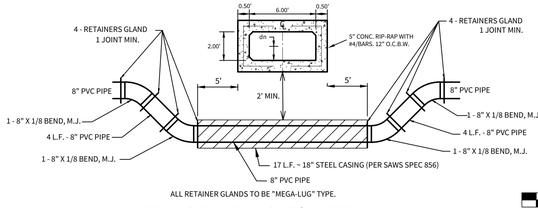
EXISTING SANITARY SEWER — EX. 8"SS
PROPOSED SANITARY SEWER — 8"SS
EXISTING SANITARY SEWER MANHOLE
PROPOSED WATER MAIN — 8"W
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JOINT RESTRAINT — X'
JOINT RESTRAINT ENTIRE LENGTH — X



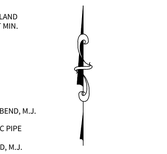
DETAIL 'A' - TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL
N.T.S.



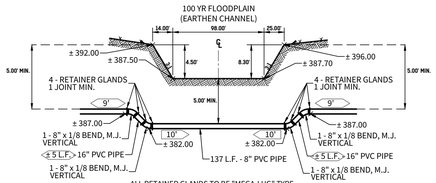
DETAIL 'B' - DRAIN '3C'/ WATER CROSSING
SIDE VIEW (THIS DETAIL IS VERTICAL ONLY, NOT HORIZONTAL.) N.T.S.



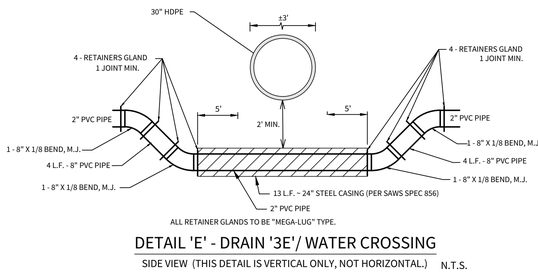
DETAIL 'C' - DRAIN '3C'/ WATER CROSSING
SIDE VIEW (THIS DETAIL IS VERTICAL ONLY, NOT HORIZONTAL.) N.T.S.



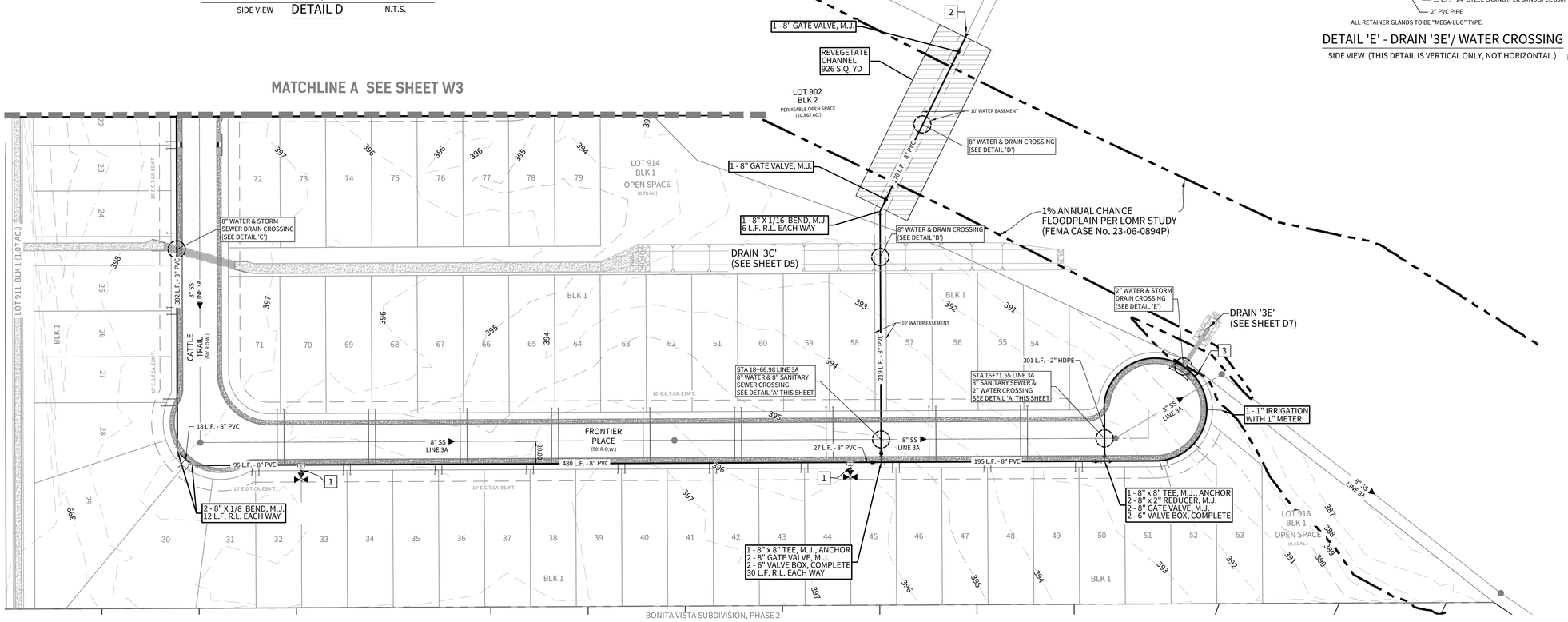
SCALE: 1"=50'
0 50 100



EARTHEN CHANNEL / WATER CROSSING
SIDE VIEW DETAIL D N.T.S.



DETAIL 'E' - DRAIN '3E'/ WATER CROSSING
SIDE VIEW (THIS DETAIL IS VERTICAL ONLY, NOT HORIZONTAL.) N.T.S.



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4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
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PLEASANTON FARMS UNIT 3

WATER DISTRIBUTION PLAN

DATE
07/15/2025

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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07/30/2025
STATE OF TEXAS
MATTHEW A. TRINKLE
147558
LICENSED PROFESSIONAL ENGINEER

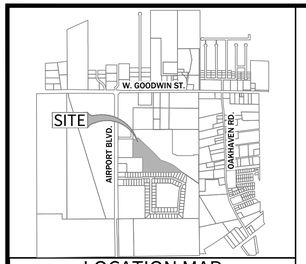
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TBPE No. 455
TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

W4

4 OF 4

REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



LOCATION MAP
N.T.S.

SCALE: 1"=50'
50 25 0 50

OWNER/DEVELOPER:

LENNAR HOMES
CONTACT PERSON: RICHARD MOTT
1922 DRY CREEK WAY, SUITE 101
SAN ANTONIO,TX 78259
TEL: (210) 403-6282

CIVIL ENGINEER:

M.W. CUDE ENGINEERS, L.L.C.
CONTACT PERSON: CHRIS CHAFFEE, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112

LEGEND

PROPOSED CONTOUR 1000
EXISTING CONTOUR 1000
PROPOSED ELEVATION 297.50
EXISTING ELEVATION 672.00E
GRADE BREAK GRADE BREAK
BUILDING SETBACK
SWALE

GENERAL SPECIFICATIONS FOR SITE PREPARATION

1. General Description

This item shall consist of all clearing and grubbing, demolition, preparation of land to be filled, filling of the land, spreading, compaction testing and inspection of the fill, and all subsidiary work necessary to complete the grading of the cut and fill areas to conform with the lines, grades and slopes as shown on the approved plans.

ALL LOT GRADING MUST MEET REQUIREMENTS OF FHA/HUD HANDBOOK 4140.3, SPECIFICATIONS FOR LAND DEVELOPMENTS ON CONTROLLED EARTHWORK, DATASHEET 79g. HUD 79g REQUIREMENTS FOR FILL MATERIAL OF 6 INCHES AND MORE WILL BE CONDUCTED. ALL CUT AREAS WILL ALSO MEET THE REQUIREMENTS FOR HUD 79g COMPACTION TESTING. IN ADDITION, ENGINEERS MUST PROVIDED VERIFICATION OF ALL AREAS WHICH DO NOT REQUIRE HUD 79g.

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All timber, logs, trees, brush and rubbish shall be removed from the site.

3. Scarifying the Area to be Filled

All organic matter shall be removed from the surface upon which the fill is to be placed, and the surface shall then be disked or scarified to a minimum depth of six inches (6"), all surface ruts or other uneven features will be leveled prior to field density testing.

4. Compacting the Area to be Filled

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5. Fill Materials

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6. Depth and Mixing of Fill Layers

The selected fill material shall be placed in level, uniform layers which, when compacted, shall have a density conforming to that stipulated above. Each layer shall be thoroughly mixed during the spreading to ensure uniformity of material in each layer. Compacted layer thickness may vary depending on the compaction equipment of demonstrated capability. The maximum loose depth for any material shall not exceed twelve inches (12"). For testing requirements of fill material, see density testing.

7. Rock

When fill material includes rock, the maximum rock size shall be as approved by the Geotechnical Engineer. No large rocks shall be allowed to nest and all voids must be filled with small stones or soil and adequately compacted. No large rocks will be permitted within eighteen inches (18") of the finished grade.

8. Compaction of Fill Layer

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The faces of fill slopes shall be compacted. Compacting operations shall be continued until the slope faces are stable but not too dense for planting on the slopes. Compaction of the slope faces may be done progressively in increments of three to five feet (3' to 5') in fill height as this fill progresses or after the fill has been brought to its total height.

10. Moisture Content

The fill material shall be compacted at the appropriate moisture content specified for the soils being used. Appropriate moisture content is defined, typically, as optimum moisture content; however, for expansive soils it may be greater than optimum moisture content, and other moisture contents may be necessary to produce the desired results with certain soils.

11. Density Tests

Field density tests shall be performed on layers of fill when the fill is being placed as directed by the Geotechnical Engineer. The maximum fill height between density testing shall be eighteen inches (18"). All testing shall be requested by the contractor to meet the contractor's construction schedule. Notification by the contractor to conduct tests shall be at least the day before. This notification shall include the fill area location (Lot and Block), the lift or height of fill and approximate desired time of testing. When these tests indicate that the density of any layer of fill or portion thereof is below the required density, the particular layer or portion shall be reworked and retested at the expense of the contractor unless the contractor can show evidence that circumstances beyond his control required the retesting. Generally, the specific testing will be as follows and conducted by Geotechnical Engineer.

1. The land to be filled (prepared subgrade) shall be prepared and tested at a frequency as determined by the Geotechnical Engineer.
2. The first lift of compacted fill (generally 8 to 12-in.) shall be tested as determined by the Geotechnical Engineer. Any areas supporting the proposed structures requiring fill shall be tested for density compliance.
3. Fills shall be tested a maximum of each eighteen inches (18") of fill.
4. Test results will be provided by the field technician to the contractor when possible; however, all test results are to be reviewed by the Geotechnical Engineer for compliance. The engineer will notify the contractor of all the test results.

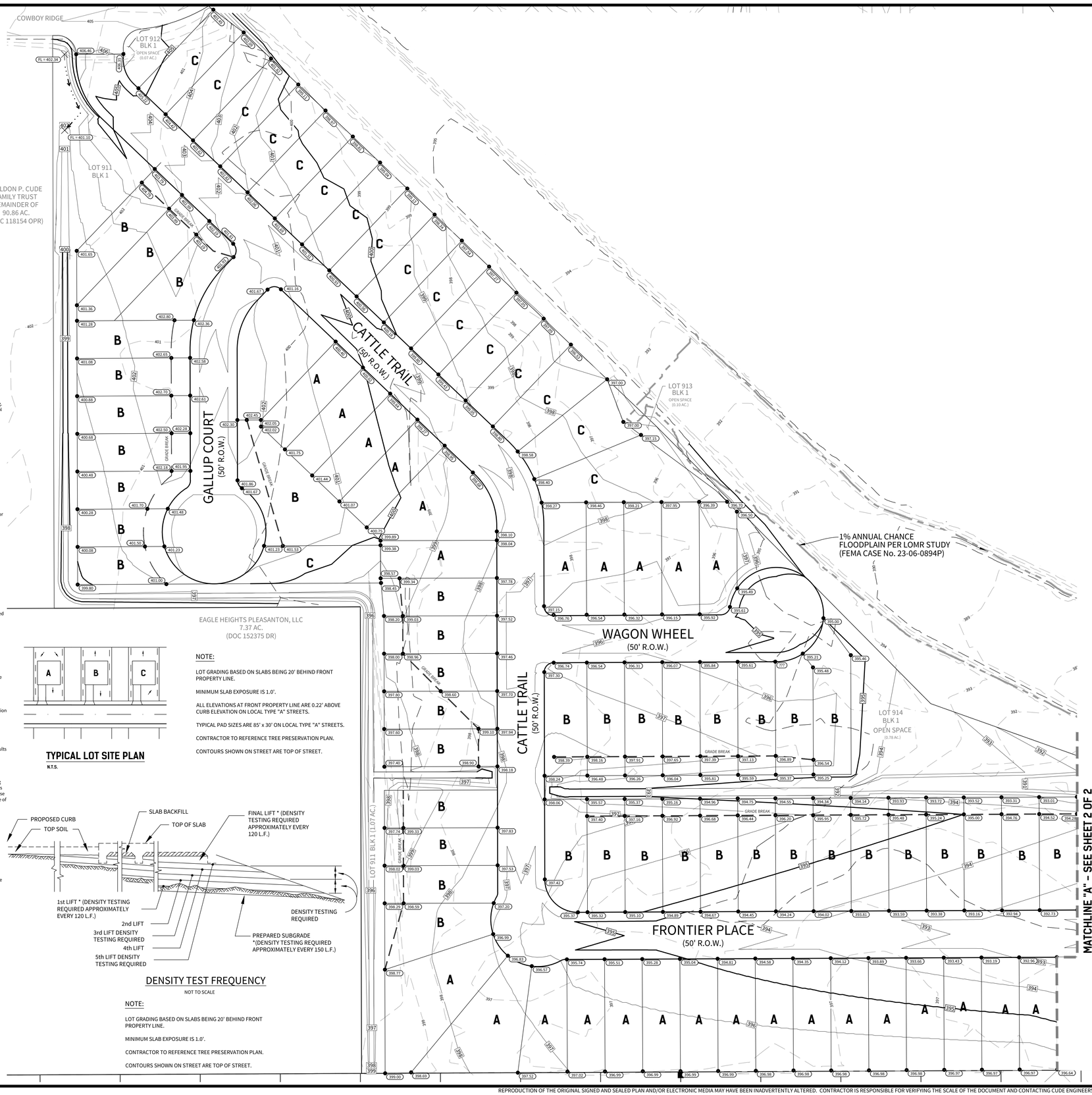
12. Cut/Fill Lots

Areas involving cut on one portion and fill on another portion of a specific lot shall be prepared to a minimum depth of 6-in. and will be the same material classification at the same compaction and moisture content. A minimum of two (2) field density tests shall be required on each cut/fill lot for the purpose of determining uniformity of the area supporting the proposed structures.

POND AREA:

THE AREA OF THE EXISTING POND SHOULD BE DRAINED (IF WATER IS PRESENT) AND THE SOILS WITHIN THE POND BE MUCKED OUT DOWN TO STABLE SOILS. MUCK FROM THE POND SHOULD BE REMOVED FROM THE SITE OR DISPOSED OF AT DESIGNATED ON-SITE AREAS LOCATED OUTSIDE THE LIMITS OF CURRENT OR FUTURE DEVELOPMENT. ON-SITE SOILS (I.E., GENERAL FILL) OR SELECT FILL MEETING THE SPECIFICATIONS PROVIDED IN SECTION 4.2 OF THIS REPORT SHOULD THEN BE PLACED TO THE MATCH THE DESIRED FINAL GRADE.

IT IS LIKELY THAT THE EXCAVATION REQUIRED TO REACH STABLE SOILS WILL RESULT IN EXCAVATION DEPTHS GREATER THAN 5 FEET. EVEN WITH PROPER COMPACTION, IT IS LIKELY THAT FILL SOILS PLACED WITHIN THIS EXCAVATION WILL EXPERIENCE SETTLEMENT OVER TIME. AS A RESULT, RESIDENTIAL FOUNDATIONS, PAVEMENTS, AND/OR UTILITIES MAY BE ADVERSELY AFFECTED BY THAT SETTLEMENT. ONCE FINAL GRADES ARE DETERMINED AND THE POND IS MUCKED OUT, AN EVALUATION SHOULD BE UNDERTAKEN TO DETERMINE THE MOST APPROPRIATE APPROACH FOR BACKFILLING THE EXCAVATION TO ENSURE THAT ANY STRUCTURES OR OTHER FACILITIES CONSTRUCTED OVER THE AREA PERFORM AS INTENDED.



TYPICAL LOT SITE PLAN
N.T.S.

NOTE:

LOT GRADING BASED ON SLABS BEING 20' BEHIND FRONT PROPERTY LINE.

MINIMUM SLAB EXPOSURE IS 1.0'.

ALL ELEVATIONS AT FRONT PROPERTY LINE ARE 0.22' ABOVE CURB ELEVATION ON LOCAL TYPE "A" STREETS.

TYPICAL PAD SIZES ARE 85' x 30' ON LOCAL TYPE "A" STREETS.

CONTRACTOR TO REFERENCE TREE PRESERVATION PLAN.

CONTOURS SHOWN ON STREET ARE TOP OF STREET.

DENSITY TEST FREQUENCY
NOT TO SCALE

NOTE:

LOT GRADING BASED ON SLABS BEING 20' BEHIND FRONT PROPERTY LINE.

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CUDEENGINEERS.COM

4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

PLEASANTON FARMS UNIT 3

GRADING PLAN

DATE
08/06/2025

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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6.
7.
8.
9.

07/30/2025

STATE OF TEXAS
MATTHEW A. TRINKLE
147558
LICENSED PROFESSIONAL ENGINEER

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

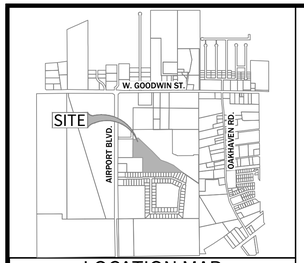
LAND-PLAT
PLEASANTON FARMS UNIT 3

GR1

1 OF 2

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REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



LOCATION MAP
N.T.S.

SCALE: 1"=50'
50 25 0 50

OWNER/DEVELOPER:

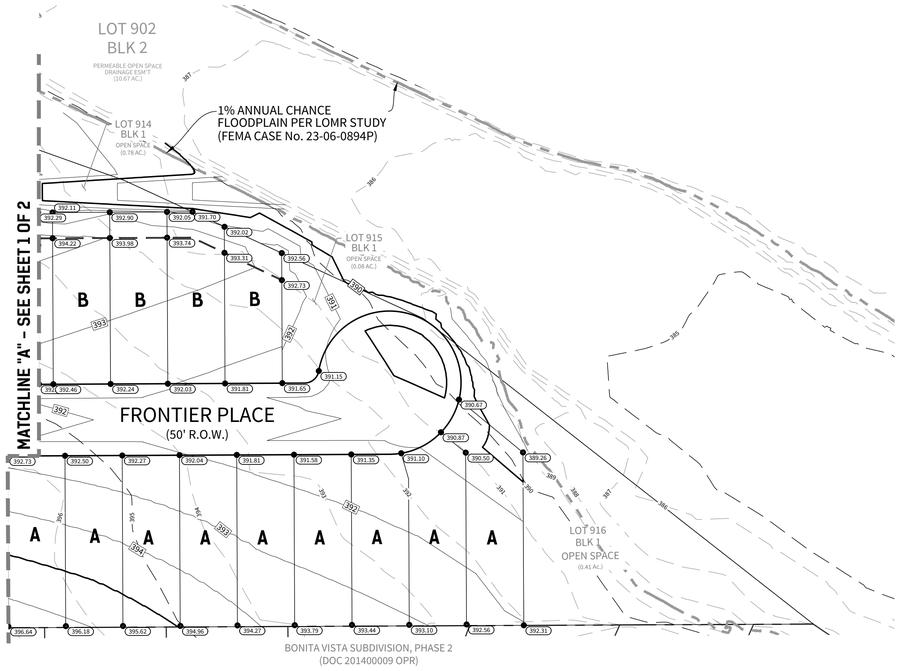
LENNAR HOMES
CONTACT PERSON: RICHARD MOTT
1922 DRY CREEK WAY, SUITE 101
SAN ANTONIO,TX 78259
TEL: (210) 403-6282

CIVIL ENGINEER:

M.W. CUDE ENGINEERS, L.L.C.
CONTACT PERSON: CHRIS CHAFFEE, P.E.
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SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112

LEGEND

PROPOSED CONTOUR	1000
EXISTING CONTOUR	1000
PROPOSED ELEVATION	297.50
EXISTING ELEVATION	672.00E
GRADE BREAK	GRADE BREAK
BUILDING SETBACK	



BONITA VISTA SUBDIVISION, PHASE 2
(DOC 201400009 OPR)

GENERAL SPECIFICATIONS FOR SITE PREPARATION

1. General Description

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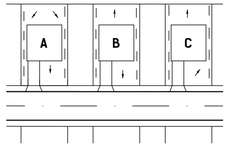
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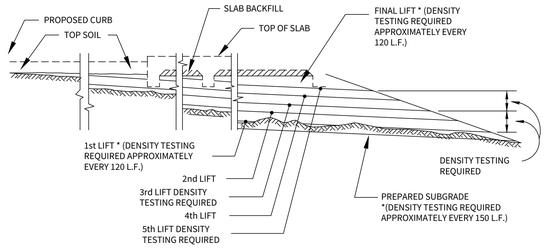
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TYPICAL LOT SITE PLAN
N.T.S.



DENSITY TEST FREQUENCY
NOT TO SCALE

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PLEASANTON FARMS UNIT 3

GRADING PLAN

DATE
07/15/2025

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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07/30/2025

STATE OF TEXAS
MATTHEW A. TRINKLE
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LICENSED PROFESSIONAL ENGINEER

CUDE ENGINEERS
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TBPLS No. 10048500

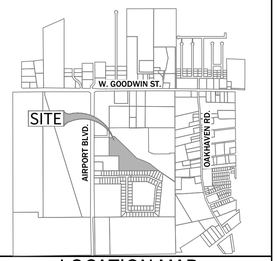
LAND-PLAT
PLEASANTON FARMS UNIT 3

GR2

2 OF 2

P:\03396\005\Drawings\05_GIS_GIS_Dwg [05_GIS_GIS.dwg] 2025/07/23 2:[illegible]

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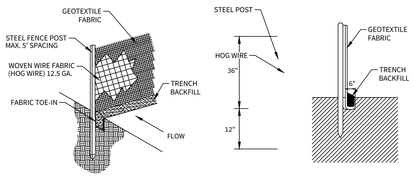
LOCATION MAP
N.T.S.

OWNER/DEVELOPER:

LENNAR HOMES
CONTACT PERSON: RICHARD MOTT
1922 DRY CREEK WAY, SUITE 101
SAN ANTONIO,TX 78259
TEL: (210) 403-6282

CIVIL ENGINEER:

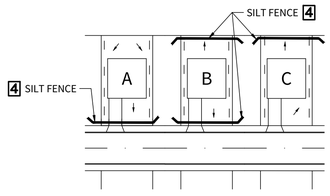
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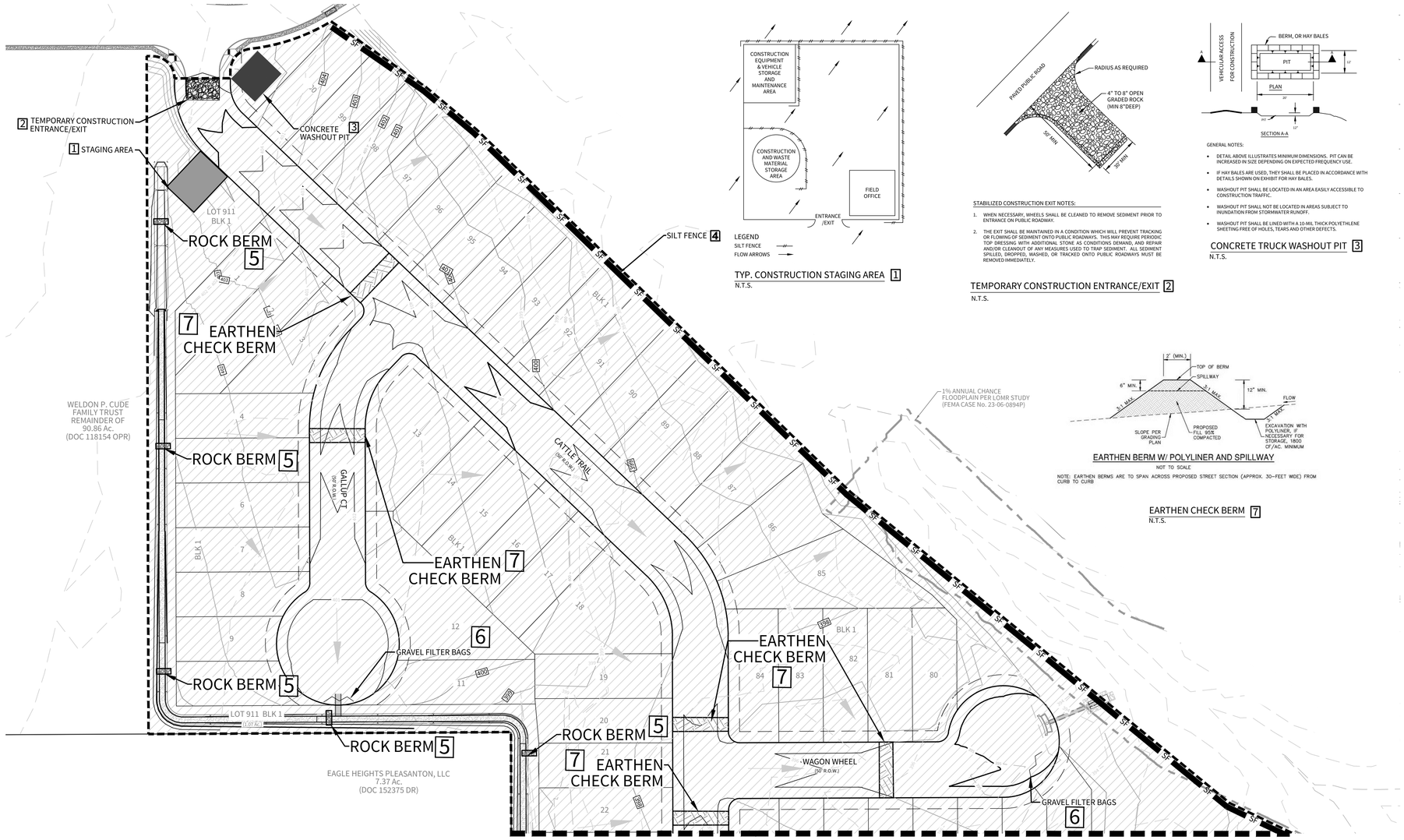
SILT FENCE DETAIL

SECTION DETAIL

STANDARD SILT FENCE 4
N.T.S.



TYPICAL LOT SITE PLAN
N.T.S.



MATCHLINE A
SEE SHEET E2

TYP. CONSTRUCTION STAGING AREA 1
N.T.S.

STABILIZED CONSTRUCTION EXIT NOTES:

1. WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ON PUBLIC ROADWAY.
2. THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS MUST BE REMOVED IMMEDIATELY.

TEMPORARY CONSTRUCTION ENTRANCE/EXIT 2
N.T.S.

GENERAL NOTES:

- DETAIL ABOVE ILLUSTRATES MINIMUM DIMENSIONS. PIT CAN BE INCREASED IN SIZE DEPENDING ON EXPECTED FREQUENCY USE.
- IF HAY BALES ARE USED, THEY SHALL BE PLACED IN ACCORDANCE WITH DETAILS SHOWN ON EXHIBIT FOR HAY BALES.
- 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 STORMWATER RUNOFF.
- WASHOUT PIT SHALL BE LINED WITH A 10-MIL THICK POLYETHLENE SHEETING FREE OF HOLES, TEARS AND OTHER DEFECTS.

CONCRETE TRUCK WASHOUT PIT 3
N.T.S.

EARTHEN BERM W/ POLYLINER AND SPILLWAY
NOT TO SCALE

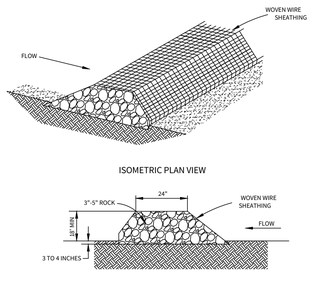
NOTE: EARTHEN BERMS ARE TO SPAN ACROSS PROPOSED STREET SECTION (APPROX. 30-FEET WIDE) FROM CURB TO CURB

EARTHEN CHECK BERM 7
N.T.S.

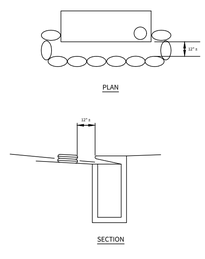


NOTE:

1. ALL SILT FENCES AND/OR ROCK BERMS AND TEMPORARY CONSTRUCTION ENTRANCES/EXITS SHALL BE PLACED AT THE MOST DOWN-GRADIENT POINT OF CONSTRUCTION AS SHOWN ON THIS SITE PLAN. CONTRACTOR SHALL TAKE INTO CONSIDERATION ANY PROPOSED CONSTRUCTION THAT MAY TAKE PLACE AT THESE LOCATIONS. ANY RELOCATION OF SILT FENCE, ROCK BERMS AND/OR TEMPORARY CONSTRUCTION ENTRANCES/EXITS SHALL BE AT THE CONTRACTOR'S EXPENSE.
2. CONTRACTOR TO PROVIDE SILT FENCE ALONG BACK OF CURB POST-CONSTRUCTION OF STREET RIGHT-OF-WAY AND PRIOR TO COMMENCEMENT OF HOME CONSTRUCTION.
3. AREA OF SOIL DISTURBANCES INCLUDE STREET RIGHT-OF-WAYS, UTILITY EASEMENTS & LOTS.
4. THE CITY INSPECTOR HAS THE AUTHORITY TO HAVE THE CONTRACTOR MODIFY THE EROSION CONTROLS AT THE DEVELOPER'S EXPENSE. THE DEVELOPER SHALL BE NOTIFIED OF THESE MODIFICATIONS PRIOR TO COMMENCEMENT OF MODIFICATIONS.
5. INSTALL SILT FENCE "J" HOOKS AS NECESSARY AT AN INTERVAL NO GREATER THAN 50' TO COMPLETE INSTALLATION.
6. ALL SWPPP PERMITS AND TEMPORARY CONTROLS TO BE IN PLACE PRIOR TO COMMENCEMENT OF CONSTRUCTION.
7. THE SWPPP PLAN AND BMP'S SHOWN ARE INTENDED TO BE PLACED BY THE CONTRACTOR PRIOR TO THE RESPECTIVE WORK TO BE PERFORMED. THE CONTRACTOR WILL BE REQUIRED TO PERFORM ROUTINE INSPECTIONS, MAINTAIN/ADJUST ALL BMP'S, AND LIKEWISE PROVIDE ADDITIONAL BMP'S IF ANY PROVE TO BE INEFFECTIVE AS REQUIRED BY TPDES CONSTRUCTION GENERAL PERMIT TXR150000.



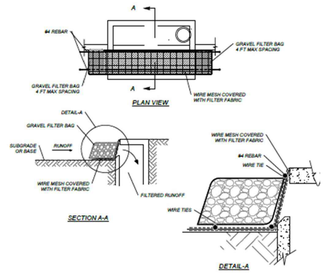
ROCK BERM 5
N.T.S.



BAGGED GRAVEL INLET FILTER NOTES:

1. THE GRAVEL BAG MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, POLYAMIDE OR COTTON BURLAP WOVEN FABRIC, MINIMUM UNIT WEIGHT 4 OZ/YD 2, MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70 PERCENT.
2. THE BAG LENGTH SHOULD BE 24 INCHES, WIDTH SHOULD BE 18 INCHES AND THICKNESS SHOULD BE 6 INCHES.
3. THE GRAVEL BAG IS FILLED WITH 3/4" GRAVEL.
4. WHEN A GRAVEL BAG IS FILLED WITH GRAVEL, THE OPEN END OF THE GRAVEL BAG SHOULD BE STAPLED OR TIED WITH NYLON OR POLY CORD.
5. THE GRAVEL BAGS SHOULD BE PLACED AS SHOWN ON THE DETAIL. THE GRAVEL BAGS SHALL BE STACKED TO FORM A CONTINUOUS BARRIER AROUND THE INTLETS. THE BAGS SHOULD BE TIGHTLY ABUTTED AGAINST EACH OTHER TO PREVENT RUNOFF FROM THE FLOWING BETWEEN THE BAGS.
6. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
7. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.
8. REMOVE SEDIMENT WHEN BUILDUP REACHES A DEPTH OF 3 INCHES. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
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BAGGED GRAVEL INLET FILTER 6
N.T.S.



CURB INLET PROTECTION (ALTERNATE)

CURB INLET PROTECTION (ALTERNATE) 6
N.T.S.

LEGEND

PROPERTY LINE	
EXISTING CONTOURS	— 930 —
BMP ITEM NUMBER	1
TEMPORARY CONSTRUCTION ENTRANCE/EXIT	
SILT FENCE	SF
FLOW ARROW EX. GROUND	
FLOW ARROW PROP. GROUND	
STAGING AREA	
CONCRETE WASHOUT PIT	
LIMITS OF CONSTRUCTION	
ROCK BERM	

CUDEENGINEERS.COM
4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

PLEASANTON FARMS UNIT 3

STORM WATER POLLUTION PREVENTION PLAN

DATE
03/17/2024

PROJECT NO.
03396.005

DRAWN BY
MAT/IRV/JW

CHECKED BY
SPM/CC

REVISIONS
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9.

03/25/2024
STATE OF TEXAS
SEAN P. McFARLAND
138893
LICENSED
PROFESSIONAL ENGINEER

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

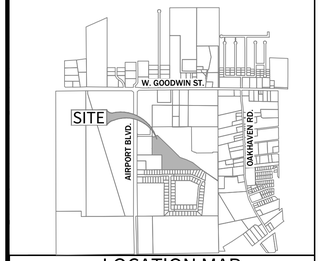
LAND-PLAT
PLEASANTON FARMS UNIT 3

E1

1 OF 2

P:\03396\005\3 Drawings\E1 GWPP.dwg 3/25/2024 1:43pm rvela

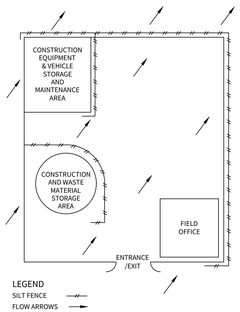
REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



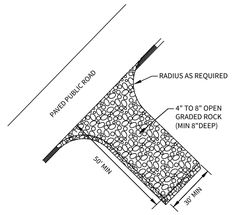
LOCATION MAP
N.T.S.

OWNER/DEVELOPER:
LENNAR HOMES
CONTACT PERSON: RICHARD MOTT
1922 DRY CREEK WAY, SUITE 101
SAN ANTONIO,TX 78259
TEL: (210) 403-6282

CIVIL ENGINEER:
M.W. CUDE ENGINEERS, L.L.C.
CONTACT PERSON: CHRIS CHAFFEE, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112



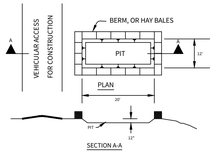
TYP. CONSTRUCTION STAGING AREA 1
N.T.S.



STABILIZED CONSTRUCTION EXIT NOTES:

1. WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ON PUBLIC ROADWAY.
2. THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS MUST BE REMOVED IMMEDIATELY.

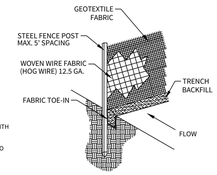
TEMPORARY CONSTRUCTION ENTRANCE/EXIT 2
N.T.S.



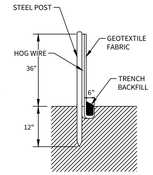
GENERAL NOTES:

- DETAIL ABOVE ILLUSTRATES MINIMUM DIMENSIONS. PIT CAN BE INCREASED IN SIZE DEPENDING ON EXPECTED FREQUENCY USE.
- IF HAY BALES ARE USED, THEY SHALL BE PLACED IN ACCORDANCE WITH DETAILS SHOWN ON EXHIBIT FOR HAY BALES.
- 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 STORMWATER RUNOFF.
- WASHOUT PIT SHALL BE LINED WITH A 10-MIL THICK POLYETHLENE SHEETING FREE OF HOLES, TEARS AND OTHER DEFECTS.

CONCRETE TRUCK WASHOUT PIT 3
N.T.S.

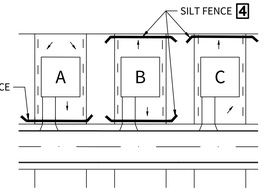


SILT FENCE DETAIL

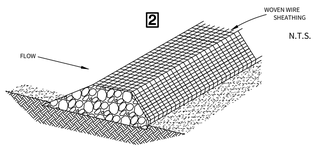


SECTION DETAIL

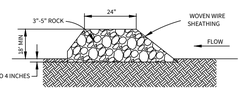
STANDARD SILT FENCE 4
N.T.S.



TYPICAL LOT SITE PLAN
N.T.S.



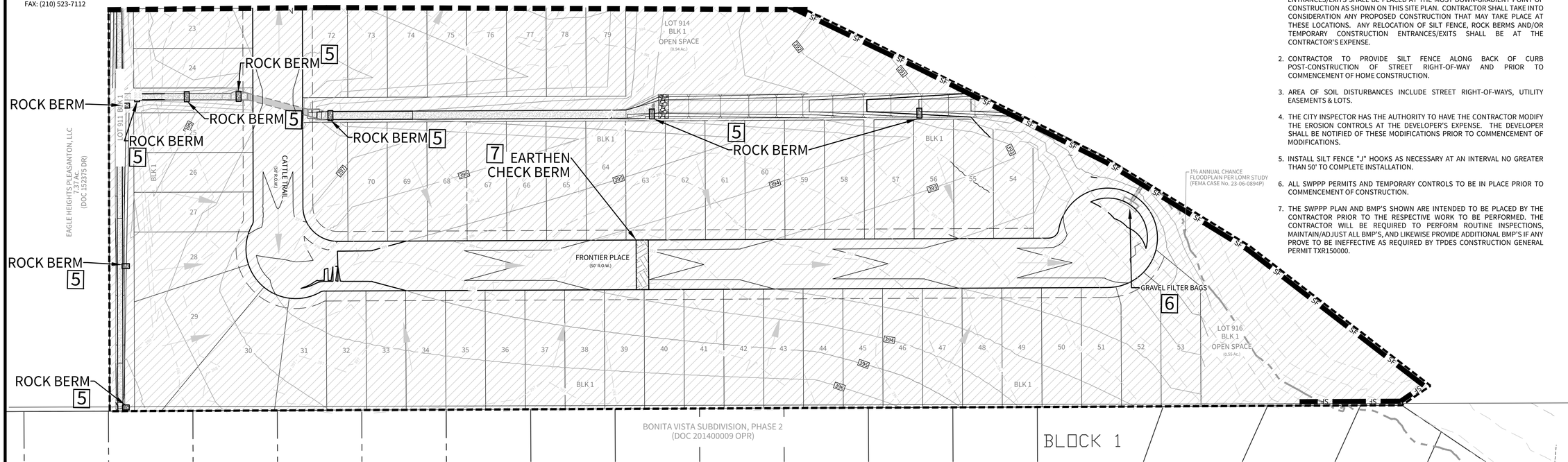
ISOMETRIC PLAN VIEW



SECTION DETAIL

ROCK BERM 5
N.T.S.

MATCHLINE A
SEE SHEET E1



NOTE:

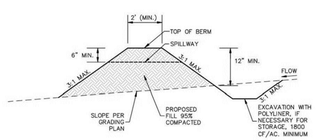
1. ALL SILT FENCES AND/OR ROCK BERMS AND TEMPORARY CONSTRUCTION ENTRANCES/EXITS SHALL BE PLACED AT THE MOST DOWN-GRADIENT POINT OF CONSTRUCTION AS SHOWN ON THIS SITE PLAN. CONTRACTOR SHALL TAKE INTO CONSIDERATION ANY PROPOSED CONSTRUCTION THAT MAY TAKE PLACE AT THESE LOCATIONS. ANY RELOCATION OF SILT FENCE, ROCK BERMS AND/OR TEMPORARY CONSTRUCTION ENTRANCES/EXITS SHALL BE AT THE CONTRACTOR'S EXPENSE.
2. CONTRACTOR TO PROVIDE SILT FENCE ALONG BACK OF CURB POST-CONSTRUCTION OF STREET RIGHT-OF-WAY AND PRIOR TO COMMENCEMENT OF HOME CONSTRUCTION.
3. AREA OF SOIL DISTURBANCES INCLUDE STREET RIGHT-OF-WAYS, UTILITY EASEMENTS & LOTS.
4. THE CITY INSPECTOR HAS THE AUTHORITY TO HAVE THE CONTRACTOR MODIFY THE EROSION CONTROLS AT THE DEVELOPER'S EXPENSE. THE DEVELOPER SHALL BE NOTIFIED OF THESE MODIFICATIONS PRIOR TO COMMENCEMENT OF MODIFICATIONS.
5. INSTALL SILT FENCE "J" HOOKS AS NECESSARY AT AN INTERVAL NO GREATER THAN 50' TO COMPLETE INSTALLATION.
6. ALL SWPPP PERMITS AND TEMPORARY CONTROLS TO BE IN PLACE PRIOR TO COMMENCEMENT OF CONSTRUCTION.
7. THE SWPPP PLAN AND BMP'S SHOWN ARE INTENDED TO BE PLACED BY THE CONTRACTOR PRIOR TO THE RESPECTIVE WORK TO BE PERFORMED. THE CONTRACTOR WILL BE REQUIRED TO PERFORM ROUTINE INSPECTIONS, MAINTAIN/ADJUST ALL BMP'S, AND LIKEWISE PROVIDE ADDITIONAL BMP'S IF ANY PROVE TO BE INEFFECTIVE AS REQUIRED BY TPDES CONSTRUCTION GENERAL PERMIT TXR150000.

LEGEND

- PROPERTY LINE
- EXISTING CONTOURS — 930 —
- BMP ITEM NUMBER 1
- TEMPORARY CONSTRUCTION ENTRANCE/EXIT
- SILT FENCE SF
- FLOW ARROW EX. GROUND
- FLOW ARROW PROP. GROUND
- STAGING AREA
- CONCRETE WASHOUT PIT
- LIMITS OF CONSTRUCTION
- ROCK BERM

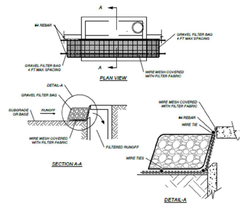


SCALE: 1"=50'
0 50 100



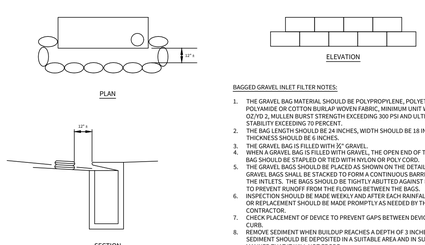
EARTHEN BERM W/ POLYLINER AND SPILLWAY
NOT TO SCALE
NOTE: EARTHEN BERMS ARE TO SPAN ACROSS PROPOSED STREET SECTION (APPROX. 30-FEET WIDE) FROM CURB TO CURB

EARTHEN CHECK BERM 7
N.T.S.



CURB INLET PROTECTION (ALTERNATE)

CURB INLET PROTECTION (ALTERNATE) 6
N.T.S.



BAGGED GRAVEL INLET FILTER NOTES:

1. THE GRAVEL BAG MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, POLYAMIDE OR COTTON BURLAP WOVEN FABRIC, MINIMUM UNIT WEIGHT 4 OZ/YD 2, MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70 PERCENT.
2. THE BAG LENGTH SHOULD BE 24 INCHES, WIDTH SHOULD BE 18 INCHES AND THICKNESS SHOULD BE 6 INCHES.
3. THE GRAVEL BAG IS FILLED WITH ¾" GRAVEL.
4. WHEN A GRAVEL BAG IS FILLED WITH GRAVEL, THE OPEN END OF THE GRAVEL BAG SHOULD BE STAPLED OR TIED WITH NYLON OR POLY CORD.
5. THE GRAVEL BAGS SHOULD BE PLACED AS SHOWN ON THE DETAIL. THE GRAVEL BAGS SHALL BE STACKED TO FORM A CONTINUOUS BARRIER AROUND THE INTLETS. THE BAGS SHOULD BE TIGHTLY ABUTTED AGAINST EACH OTHER TO PREVENT RUNOFF FROM THE FLOWING BETWEEN THE BAGS.
6. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
7. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.
8. REMOVE SEDIMENT WHEN BUILDUP REACHES A DEPTH OF 3 INCHES. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
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BAGGED GRAVEL INLET FILTER 6
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SEAN P. McFARLAND
138893
LICENSED PROFESSIONAL ENGINEER

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

LAND-PLAT
PLEASANTON FARMS UNIT 3

E2

2 OF 2

P:\03396\005\2-Drawings\E2-SWPPP.dwg 3/25/2024 11:43 Lperrella