CIVIL PLANS

CUDEENGINEERS.COM

- C0.00 GENERAL NOTES

- C1.00 - STORMWATER POLLUTION PREVENTION PLAN
- C1.01 - STORMWATER POLLUTION PREVENTION PLAN
- C1.D1 - STORMWATER POLLUTION PREVENTION PLAN STANDARD DETAILS

- C2.00 - GRADING PLAN
- C2.01 - GRADING PLAN

- C3.00 - UTILITY LAYOUT PLAN
- C3.01 - UTILITY LAYOUT PLAN

- C4.00 - SANITARY SEWER MASTER PLAN
- C4.01 - SANITARY SEWER MASTER PLAN
- C4.02 - SANITARY SEWER PLAN & PROFILE - LINE '4A'
- C4.03 - SANITARY SEWER PLAN & PROFILE - LINE '4A'
- C4.04 - SANITARY SEWER PLAN & PROFILE - LINE '4B'
- C4.05 - SANITARY SEWER PLAN & PROFILE - LINE '4B'
- C4.06 - SANITARY SEWER PLAN & PROFILE - LINES '4C'
- C4.07 - SANITARY SEWER PLAN & PROFILE - LINES '4C' & '4D'
- C4.08 - SANITARY SEWER PLAN & PROFILE - LINES '4E' & '4F'
- C4.09 - SANITARY SEWER PLAN & PROFILE - LINES '4G' , '4H' & '4I'
- C4.D1 - SANITARY SEWER GENERAL NOTES
- C4.D2 - SANITARY SEWER STANDARD DETAILS

- C5.00 - WATER DISTRIBUTION PLAN
- C5.01 - WATER DISTRIBUTION PLAN
- C5.D1 - WATER DISTRIBUTION SYSTEM GENERAL NOTES

- C6.00 - PROPOSED DRAINAGE MASTER PLAN
- C6.01 - ULTIMATE DRAINAGE MASTER PLAN
- C6.02 - DRAINAGE PLAN & PROFILE - DRAIN '4A'
- C6.03 - DRAINAGE PLAN & PROFILE - DRAIN '4B'
- C6.04 - DRAINAGE PLAN & PROFILE - DRAIN '4C'
- C6.05 - DRAINAGE PLAN & PROFILE - DRAIN '4D'
- C6.D1 - DRAINAGE DETAILS
- C6.D2 - DRAINAGE DETAILS
- C6.D3 - DRAINAGE DETAILS
- C6.D4 - DRAINAGE DETAILS

- C7.01 - STREET PLAN & PROFILE - CENTURY TREE DR
- C7.02 - STREET PLAN & PROFILE - RANGER OAK RIDGE
- C7.03 - STREET PLAN & PROFILE - BURGES OAK DR
- C7.04 - STREET PLAN & PROFILE - BAPTIST OAK
- C7.05 - STREET PLAN & PROFILE - ACACIA RIDGE
- C7.06 - STREET PLAN & PROFILE - WINDING OAK RIDGE
- C7.07 - STREET PLAN & PROFILE - KISSING OAK COVE & CEDARWOOD COVE
- C7.08 - STREET PLAN & PROFILE - RED OAK BEND
- C7.D1 - STANDARD STREET DETAILS
- C7.D2 - STREET DETAILS
- C7.D3 - STREET DETAILS

- C8.00 - TRAFFIC SIGNAGE PLAN
- C8.01 - TRAFFIC SIGNAGE PLAN
- C8.D1 - TXDOT & BEXAR COUNTY DETAILS - SIGN MOUNTING
- C8.D2 - TXDOT DETAILS - SIGN MOUNTING

SEWER: SOUTH SEWERSHED - DOS RIOS W.R.C. (LOWER MEDINA RIVER WATERSHED)

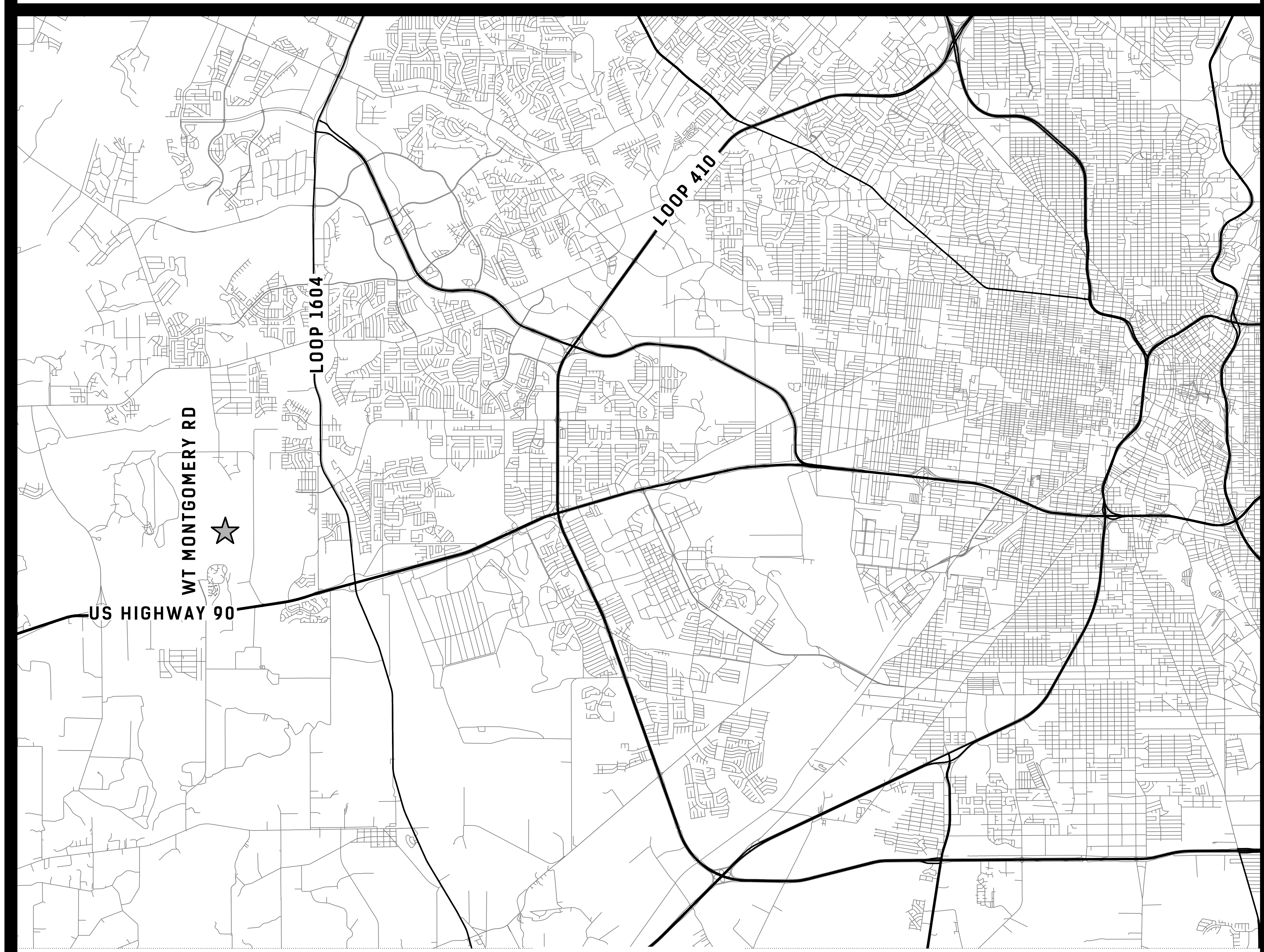
Developer's Name LENNAR HOMES
Developer's Address 100 NE LOOP 410 SUITE 1155
City SAN ANTONIO State TX Zip 78216
Phone # (210) 403-6200 Fax # -
SAWS Block Map # Total EDU's 178 Total Acreage 31.33
Total Linear Footage of Pipe 5,367 L.F. OF 8" SS - SDR 26; 427 L.F. OF 12" SS - SDR 26 Plat No. 24-11800118
Number of Lots 178 SAWS Job No. 24-1545

SAWS PRESSURE ZONE 950W

Developer's Name LENNAR HOMES
Developer's Address 100 NE LOOP 410 SUITE 1155
City SAN ANTONIO State TX Zip 78216
Phone # (210) 403-6200 Fax # -
SAWS Block Map # Total EDU's 185 Total Acreage 31.33
Total Linear Footage of Pipe 12" - 165 L.F. ; 8" - 3,727 L.F. ; 2" H.D.P.E. - 622 L.F. Plat No. 24-11800118
Number of Lots 178 SAWS Job No. 24-1050

CONSTRUCTION DOCUMENTS FOR

TRES LAURELS UNIT 4A



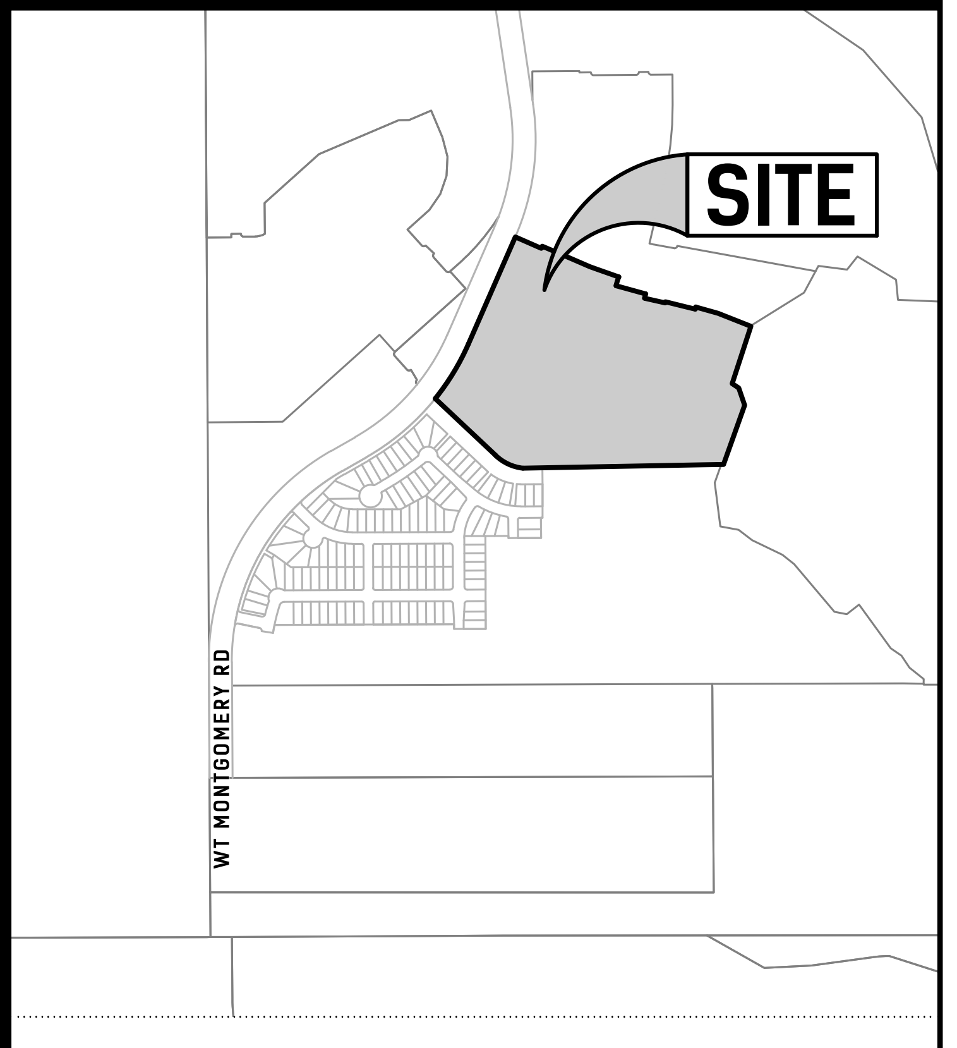
VICINITY MAP

N.T.S.

EST. 1980
CUDE
ENGINEERS

SAN ANTONIO | AUSTIN | SAN MARCOS

4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TEXAS 78231
P:(210) 681.2951
TBPE FIRM NO. 455
TBPLS FIRM NO. 10048500
SBE CERTIFIED FIRM



LOCATION MAP

SCALE: 1" = 1000'

DEVELOPER:

LENNAR HOMES OF TEXAS LAND
AND CONSTRUCTION, LTD.
CONTACT PERSON: RICHARD MOTT
100 NE LOOP 410, SUITE 1155
SAN ANTONIO, TEXAS 78216
TEL: (210) 403-6200

MDP NUMBER:
24-11100004

PLAT NUMBER:
24-11800118

PROJECT NUMBER:
03050.015

04/25/2024
CHRISTOPHER J. CHAFFEE
127282

I HAVE REVIEWED THIS PLAN SET FOR QUALITY ASSURANCE AND QUALITY CONTROL PURPOSES.

04/22/2024
MATTHEW A. TRINKLE
147558

THIS PLAN SET HAS BEEN PREPARED, DESIGNED AND REVIEWED UNDER MY DIRECT SUPERVISION.

P:\03050\015\2-DWG\4-Plans\00_cvrall.dwg 2024/04/18 4:09pm rmata

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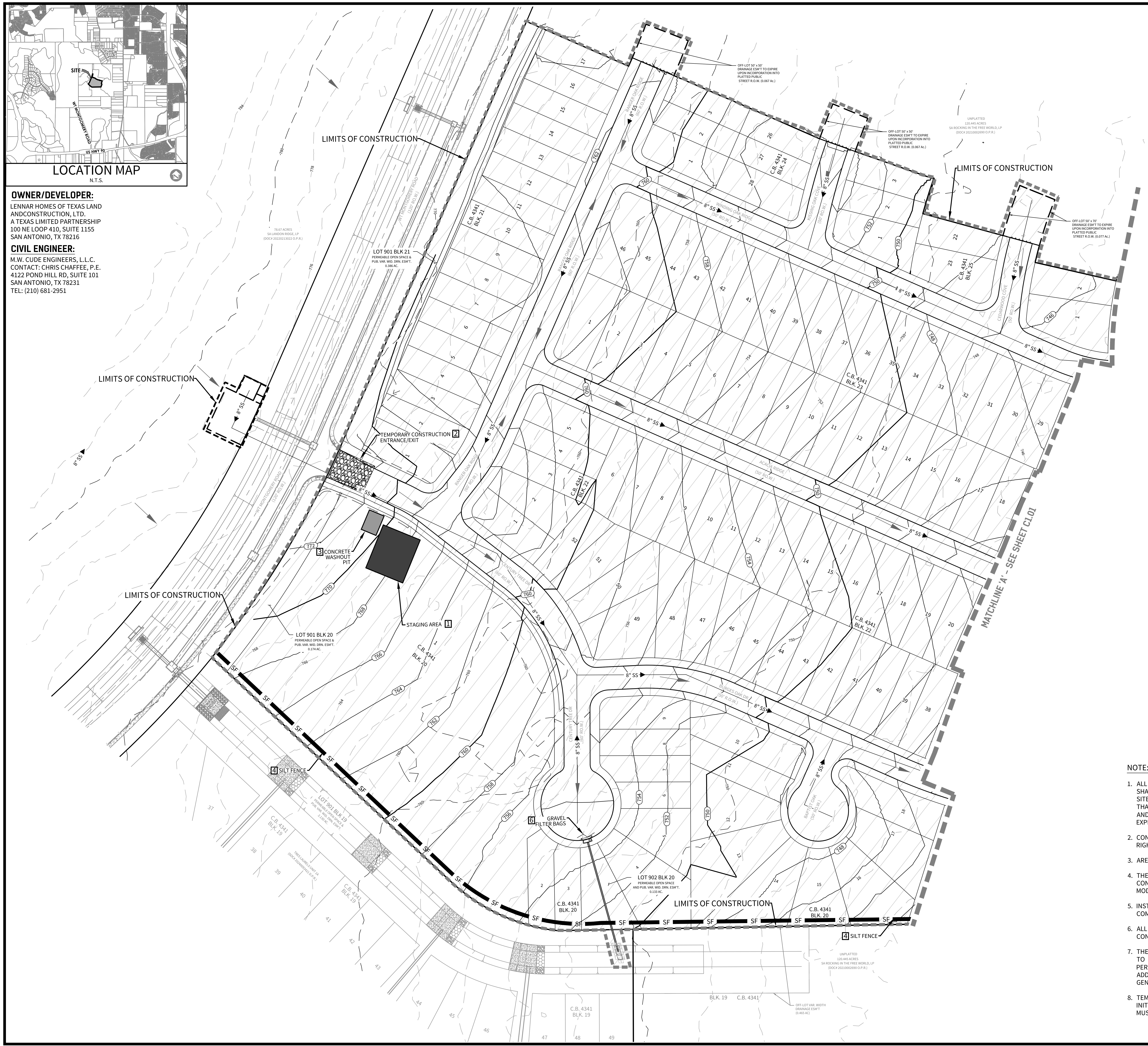

LOCATION MAP
N.T.S.
SITE
US HWY 90
LIMITS OF CONSTRUCTION
TEMPORARY CONSTRUCTION ENTRANCE/EXIT 2
3 CONCRETE WASHOUT PIT
STAGING AREA 1
LOT 901 BLK 21 PERMEABLE OPEN SPACE & PUB. VAR. WID. DRN. ESM'T. 0.386 AC.
LOT 901 BLK 20 PERMEABLE OPEN SPACE & PUB. VAR. WID. DRN. ESM'T. 0.174 AC.
LOT 902 BLK 20 PERMEABLE OPEN SPACE AND PUB. VAR. WID. DRN. ESM'T. 0.133 AC.
4 SILT FENCE
6 GRAVEL FILTER BAGS
C.B. 4341 BLK. 20
C.B. 4341 BLK. 21
C.B. 4341 BLK. 22
C.B. 4341 BLK. 23
C.B. 4341 BLK. 24
C.B. 4341 BLK. 25
C.B. 4341 BLK. 19
OFF-LOT 50' x 50' DRAINAGE ESM'T TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.067 Ac.)
OFF-LOT 50' x 70' DRAINAGE ESM'T TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.077 Ac.)
MATCHLINE 'A' - SEE SHEET C1.01
8" SS
SF
SCALE: 1"=60'
0
60
120

OWNER/DEVELOPER:

LENNAR HOMES OF TEXAS LAND
ANDCONSTRUCTION, LTD.
A TEXAS LIMITED PARTNERSHIP
100 NE LOOP 410, SUITE 1155
SAN ANTONIO, TX 78216

CIVIL ENGINEER:

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

LEGEND

PROPERTY LINE	―
EXISTING CONTOURS	— 930 —
PROPOSED CONTOURS	— 754 —
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	▨

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.
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.
8. TEMPOPRARY STABILIZATION MUST BE COMPLETED NO MORE THAN 14 CALENDAR DAYS AFTER INITIATION OF SOIL STABILIZATION MEASURES, AND FINAL STABILIZATION OF 80% COVERAGE MUST BE ACHIEVED PRIOR TO TERMINATION OF PERMIT COVERAGE.

CUDEENGINEERS.COM

EST. 1980 CUDE ENGINEERS

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

TRES LAURELS UNIT 4A

STORMWATER POLLUTION PREVENTION PLAN

DATE
06/24/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

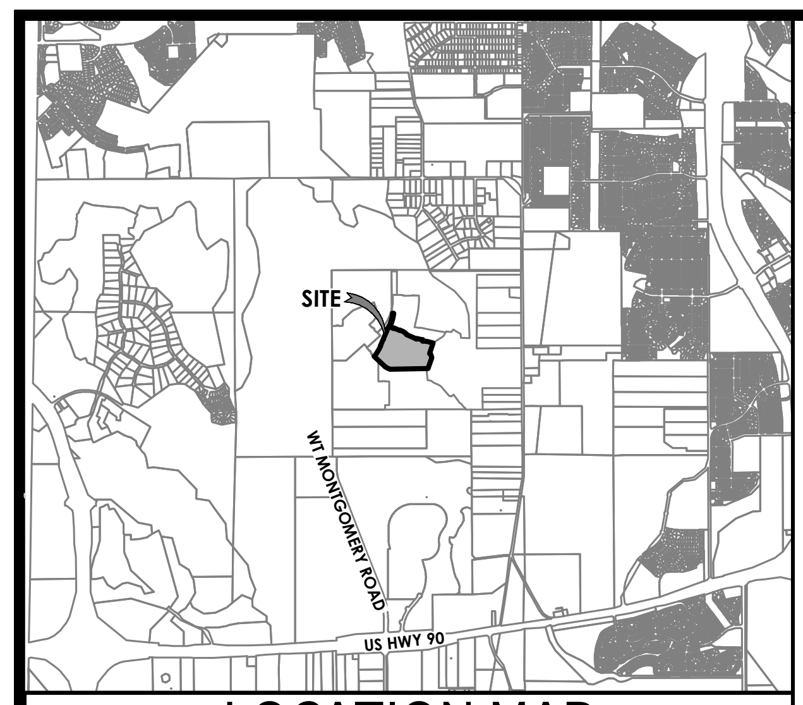
06/25/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C1.00

P:\03050\015\2-DWG\4-Plans\E01_E02 SWPPP.dwg 2024/06/24 9:31am ivilla



LOCATION MAP

N.T.S.

OWNER/DEVELOPER:

LENNAR HOMES OF TEXAS LAND
ANDCONSTRUCTION, LTD.
A TEXAS LIMITED PARTNERSHIP
100 NE LOOP 410, SUITE 1155
SAN ANTONIO, TX 78216

CIVIL ENGINEER:

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

LEGEND

PROPERTY LINE	───
EXISTING CONTOURS	— —930— —
PROPOSED CONTOURS	—(754)—
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	▩

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.
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.
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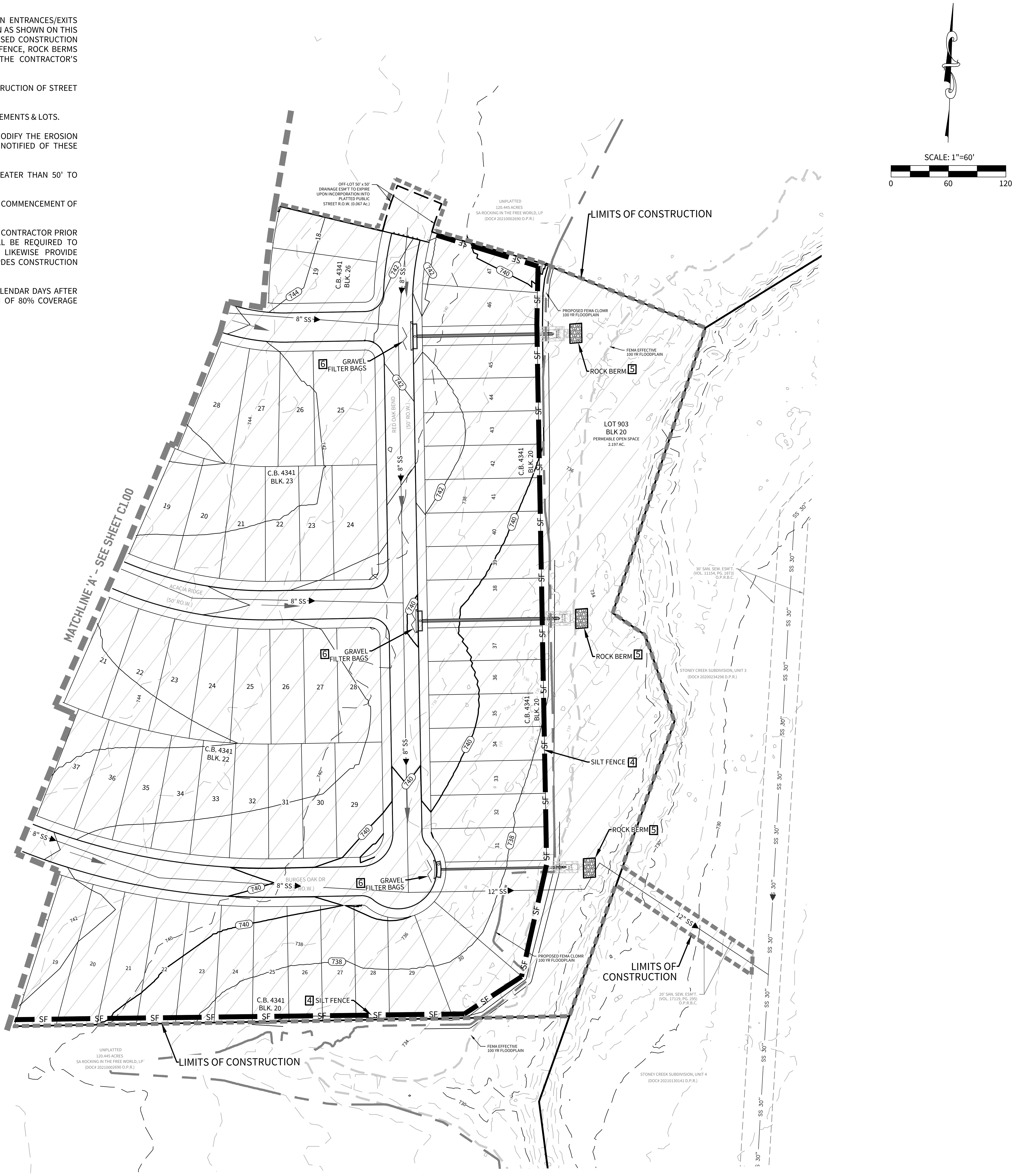
SCALE: 1"=60'
0
60
120
LIMITS OF CONSTRUCTION
OFF-LOT 50' x 50' DRAINAGE ESM'T TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.067 Ac.)
UNPLATTED 120.445 ACRES SA ROCKING IN THE FREE WORLD, LP (DOC# 20210002690 O.P.R.)
C.B. 4341 BLK. 26
C.B. 4341 BLK. 23
C.B. 4341 BLK. 22
C.B. 4341 BLK. 20
8" SS
12" SS
SF
6 GRAVEL FILTER BAGS
5 ROCK BERM
4 SILT FENCE
PROPOSED FEMA CLOMR 100 YR FLOODPLAIN
FEMA EFFECTIVE 100 YR FLOODPLAIN
LOT 903 BLK 20 PERMEABLE OPEN SPACE 2.197 AC.
RED OAK BEND (50' RO.W.)
ACACIA RIDGE (50' RO.W.)
BURGES OAK DR (50' RO.W.)
MATCHLINE 'A' - SEE SHEET C1.00
30' SAN. SEW. ESM'T. (VOL. 11154, PG. 1873) O.P.R.B.C.
20' SAN. SEW. ESM'T. (VOL. 17119, PG. 295) O.P.R.B.C.
STONEY CREEK SUBDIVISION, UNIT 3 (DOC# 20200234298 D.P.R.)
STONEY CREEK SUBDIVISION, UNIT 4 (DOC# 20210130141 D.P.R.)
SS 30"
744
742
740
738
736
734
730

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

TRES LAURELS UNIT 4A

STORMWATER POLLUTION PREVENTION PLAN

DATE
06/24/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
1.
2.
3.
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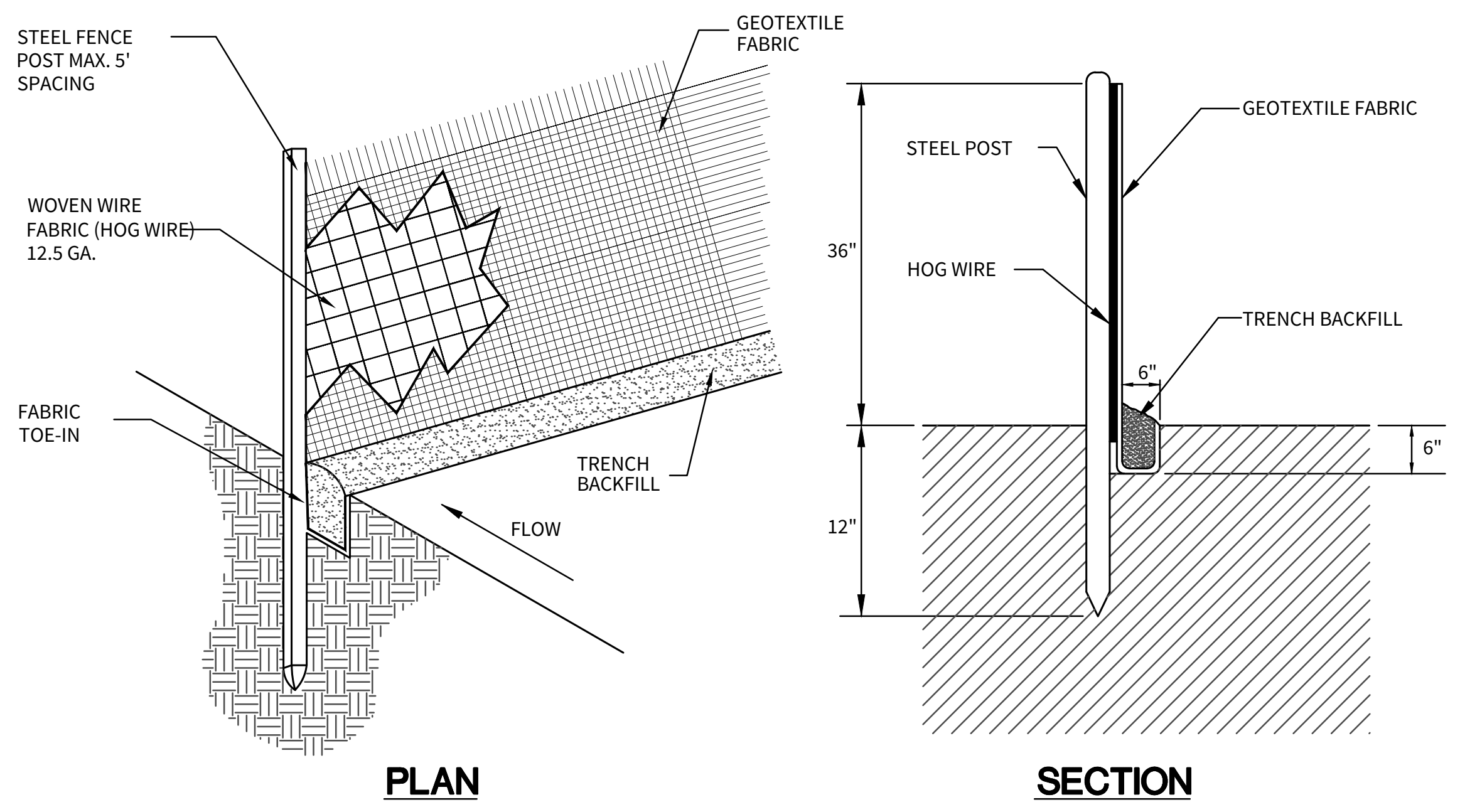
10.

06/25/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C1.01

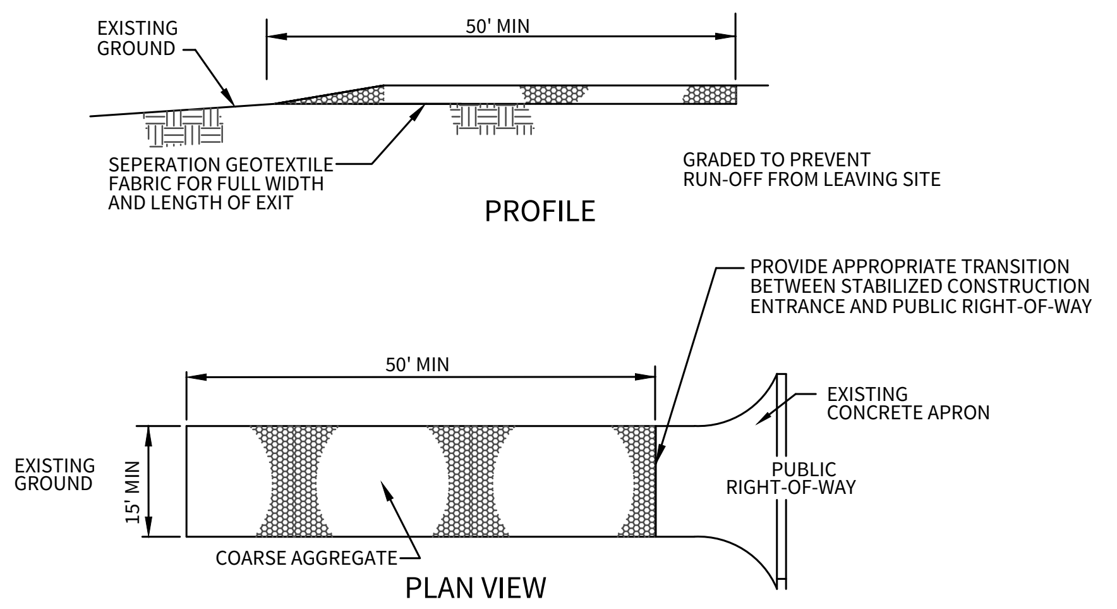


NOTES:

1. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN OR NON WOVEN FABRIC. THE FABRIC WIDTH SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/IN 2 , ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NO. 30.
2. FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR Y-BAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM NOMINAL WEIGHT 1.25 LB/FT 2 , AND BRINDELL HARDNESS EXCEEDING 140.
3. WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12.5 GAUGE MINIMUM.
4. STEEL POSTS, WHICH SUPPORT THE SILT FENCE, SHOULD BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 1 FOOT DEEP AND SPACED NOT MORE THAN 5 FEET ON CENTER.
5. LAY OUT FENCING DOWN-SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FEET OF FENCE.
6. THE TOE OF THE SILT FENCE SHOULD BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWN-SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G., PAVEMENT OR ROCK OUTCROP), WEIGHT FABRIC FLAP WITH 3 INCHES OF PEA GRAVEL ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
7. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
8. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. THERE SHOULD BE A 3-FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
9. SILT FENCE SHOULD BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
10. REMOVE SEDIMENT WHEN BUILDUP REACHES 6 INCHES, OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE OLD FENCE.
11. REPLACE ANY TORN FABRIC OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE TORN SECTION.
12. REPLACE OR REPAIR ANY SECTIONS CRUSHED OR COLLAPSED IN THE COURSE OF CONSTRUCTION ACTIVITY. IF A SECTION OF FENCE IS OBSTRUCTING VEHICULAR ACCESS, CONSIDER RELOCATING IT TO A SPOT WHERE IT WILL PROVIDE EQUAL PROTECTION, BUT WILL NOT OBSTRUCT VEHICLES. A TRIANGULAR FILTER DIKE MAY BE PREFERABLE TO A SILT FENCE AT COMMON VEHICLE ACCESS POINTS.

1 SILT FENCE DETAIL

SCALE: NONE


EXISTING GROUND
50' MIN
SEPERATION GEOTEXTILE FABRIC FOR FULL WIDTH AND LENGTH OF EXIT
GRADED TO PREVENT RUN-OFF FROM LEAVING SITE
PROFILE
PROVIDE APPROPRIATE TRANSITION BETWEEN STABILIZED CONSTRUCTION ENTRANCE AND PUBLIC RIGHT-OF-WAY
50' MIN
EXISTING CONCRETE APRON
EXISTING GROUND
15' MIN
PUBLIC RIGHT-OF-WAY
COARSE AGGREGATE
PLAN VIEW

GENERAL NOTES

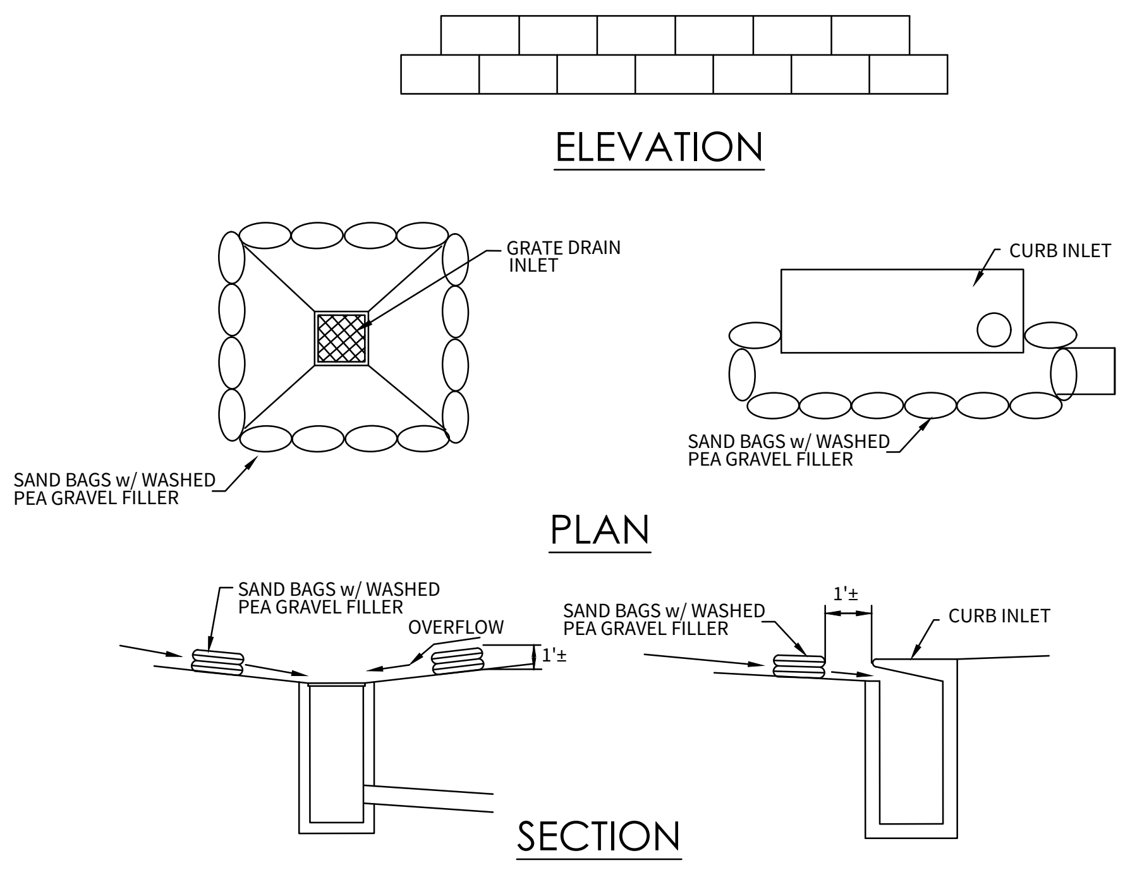
1. LENGTH SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS BUT NOT LESS THAN 50 FEET.
2. THICKNESS SHALL BE NOT LESS THAN 8 INCHES.
3. WIDTH SHALL BE NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
4. STABILIZED AREA MAY BE WIDENED OR LENGTHENED TO ACCOMODATE A TRUCK WASHING AREA WHEN SHOWN ON THE CONSTRUCTION DRAWING. AN OUTLET SEDIMENT TRAP MUST BE PROVIDED FOR THE TRUCK WASHING AREA.
5. STONE MATERIAL SHALL CONSIST OF 3 TO 5 INCH OPEN GRADED ROCK AND SHALL BE PLACED IN A LAYER OF AT LEAST 8 INCHES THICKNESS.

NOTES:

1. THE AGGREGATE SHOULD CONSIST OF 4 TO 8 INCH WASHED STONE OVER A STABLE FOUNDATION.
2. THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8 INCHES.
3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OZ/YD 2 , A MULLEN BURST RATING OF 140 LB/IN 2, AND AN EQUIVALENT OPENING SIZE GREATER THAN A NUMBER 50 SIEVE.
4. AVOID CURVES ON PUBLIC ROADS AND STEEP SLOPES. REMOVE VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE CROWN FOUNDATION FOR POSITIVE DRAINAGE.
5. THE MINIMUM WIDTH OF THE ENTRANCE/EXIT SHOULD BE 12 FEET OR THE FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER.
6. THE CONSTRUCTION ENTRANCE SHOULD BE AT LEAST 50 FEET LONG.
7. PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.
8. PLACE STONE TO DIMENSIONS AND GRADE SHOWN. LEAVE SURFACE SMOOTH AND SLOPE FOR DRAINAGE.
9. THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION, WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
10. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ON TO PUBLIC RIGHTS-OF-WAY SHOULD BE REMOVED IMMEDIATELY BY CONTRACTOR.
11. WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
12. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
13. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE.

2 TEMPORARY CONSTRUCTION ENTRANCE / EXIT

SCALE: NONE

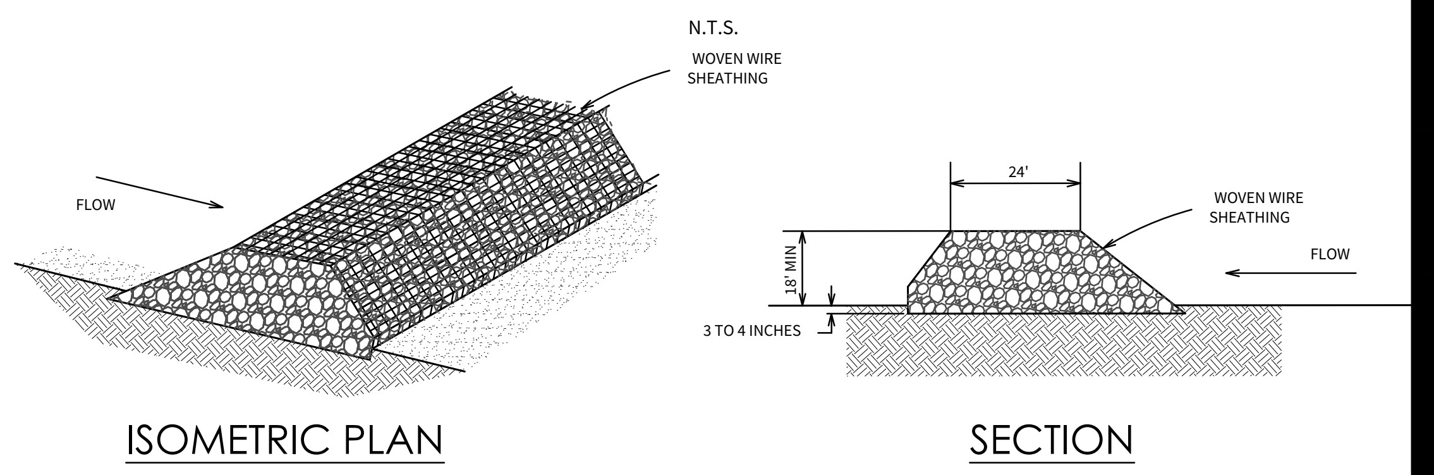

ELEVATION
GRATE DRAIN INLET
SAND BAGS w/ WASHED PEA GRAVEL FILLER
CURB INLET
1'±
SAND BAGS w/ WASHED PEA GRAVEL FILLER
PLAN
SAND BAGS w/ WASHED PEA GRAVEL FILLER
OVERFLOW
1'±
SAND BAGS w/ WASHED PEA GRAVEL FILLER
1'±
CURB INLET
SECTION

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 BAGS SHOULD BE 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 INLETS. THE BAGS SHOULD BE TIGHTLY ABUTTED AGAINST EACH OTHER TO PREVENT RUNOFF FROM 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.
9. STRUCTURES SHOULD BE REMOVED AND THE AREA STABILIZED ONLY AFTER THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

3 BAGGED GRAVEL INLET FILTER

SCALE: NONE

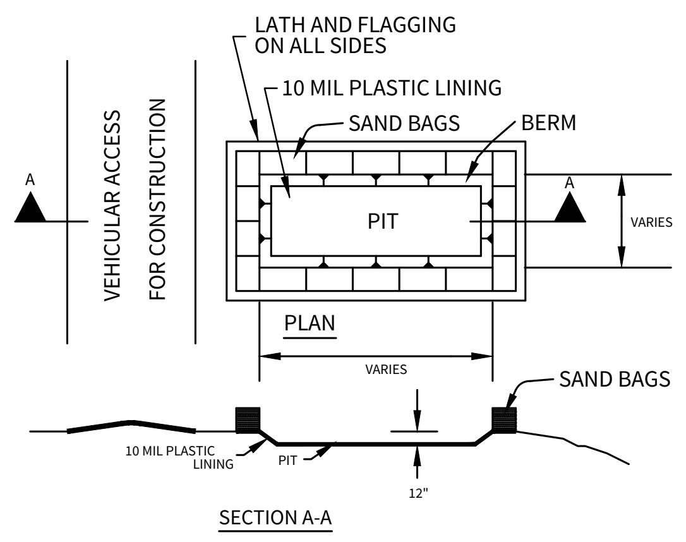


NOTES:

1. THE BERM STRUCTURE SHOULD BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED AND SHOULD BE SECURED WITH SHOAT RINGS.
2. CLEAN, OPEN GRADED 3 TO 5-INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5-TO 8-INCH DIAMETER ROCKS MAY BE USED.
3. LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE.
4. BERM SHOULD HAVE A TOP WIDTH OF 2 FEET MINIMUM WITH SIDE SLOPES BEING 2:1 (H:V) OR FLATTER.
5. PLACE THE ROCK ALONG THE SHEATHING TO A HEIGHT NOT LESS THAN 18".
6. WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON.
7. BERM SHOULD BE BUILT ALONG THE CONTOUR AT ZERO PERCENT GRADE OR AS NEAR AS POSSIBLE.
8. THE ENDS OF THE BERM SHOULD BE TIED INTO EXISTING UPSLOPE GRADE AND THE BERM SHOULD BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP TO PREVENT FAILURE OF THE CONTROL.
9. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL BY THE RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.
10. REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT OF IN AN APPROVED MANNER AND REPAIR ANY LOOSE WIRE SHEATHING.
11. THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
12. THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

4 ROCK BERM DETAIL

SCALE: NONE

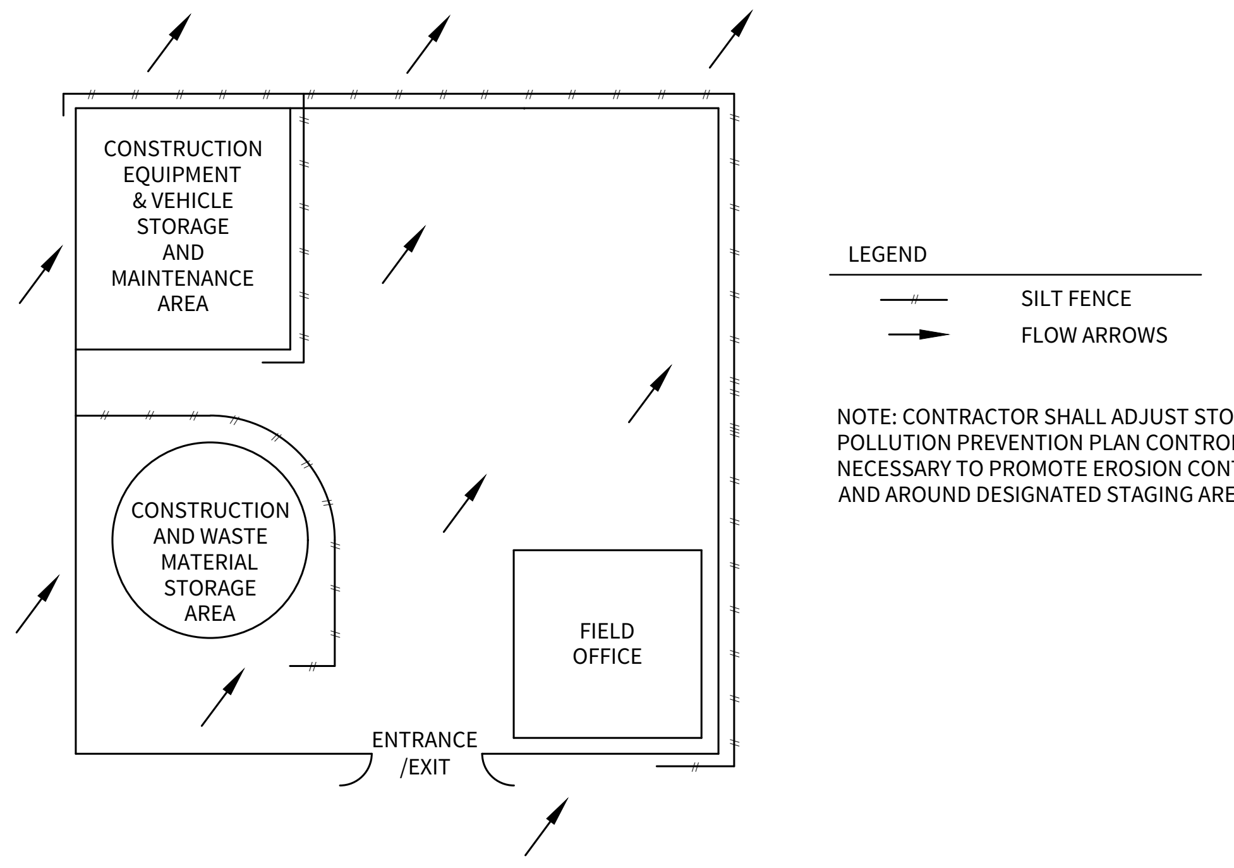


NOTES:

1. DETAIL ABOVE ILLUSTRATES MINIMUM DIMENSIONS. PIT CAN BE INCREASED IN SIZE DEPENDING ON EXPECTED FREQUENCY OF USE.
2. WASHOUT PIT SHALL BE LOCATED IN AN AREA EASILY ACCESSIBLE TO CONSTRUCTION TRAFFIC.
3. WASHOUT PIT SHALL NOT BE LOCATED IN AREAS SUBJECT TO INUNDATION FROM STORM WATER RUNOFF.

5 CONCRETE TRUCK WASHOUT PIT

SCALE: NONE


CONSTRUCTION EQUIPMENT & VEHICLE STORAGE AND MAINTENANCE AREA
CONSTRUCTION AND WASTE MATERIAL STORAGE AREA
FIELD OFFICE
ENTRANCE /EXIT

LEGEND
- SILT FENCE
- FLOW ARROWS

NOTE: CONTRACTOR SHALL ADJUST STORM WATER POLLUTION PREVENTION PLAN CONTROLS AS NECESSARY TO PROMOTE EROSION CONTROL IN AND AROUND DESIGNATED STAGING AREA.

6 TYP. CONSTRUCTION STAGING AREA

SCALE: NONE

CUDEENGINEERS.COM

EST. 1980 CUDE ENGINEERS

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

TRES LAURELS
UNIT 4A

STORMWATER POLLUTION PREVENTION PLAN STANDARD DETAILS

DATE
04/22/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
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04/22/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C1.D1

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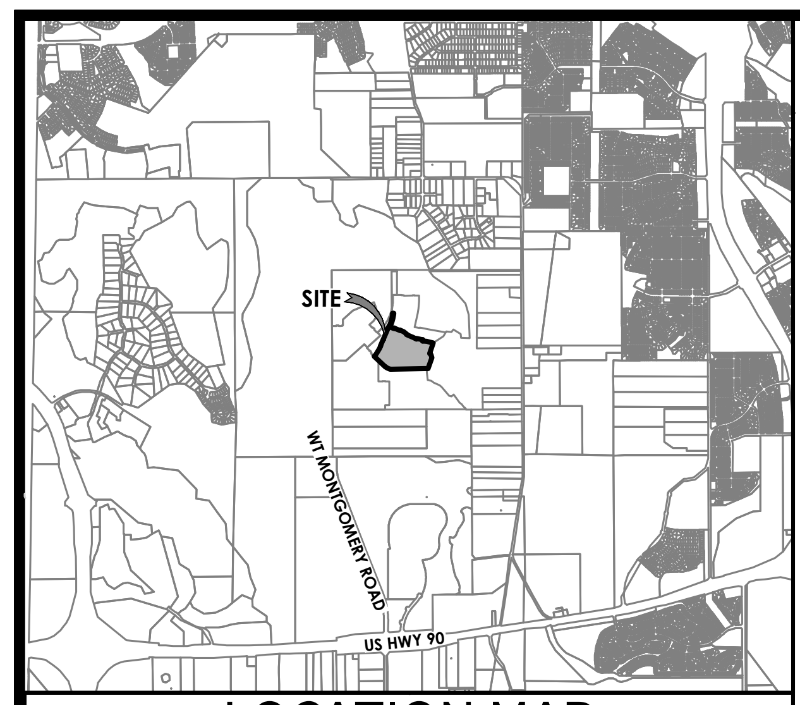


LOCATION MAP
N.T.S.

OWNER/DEVELOPER:

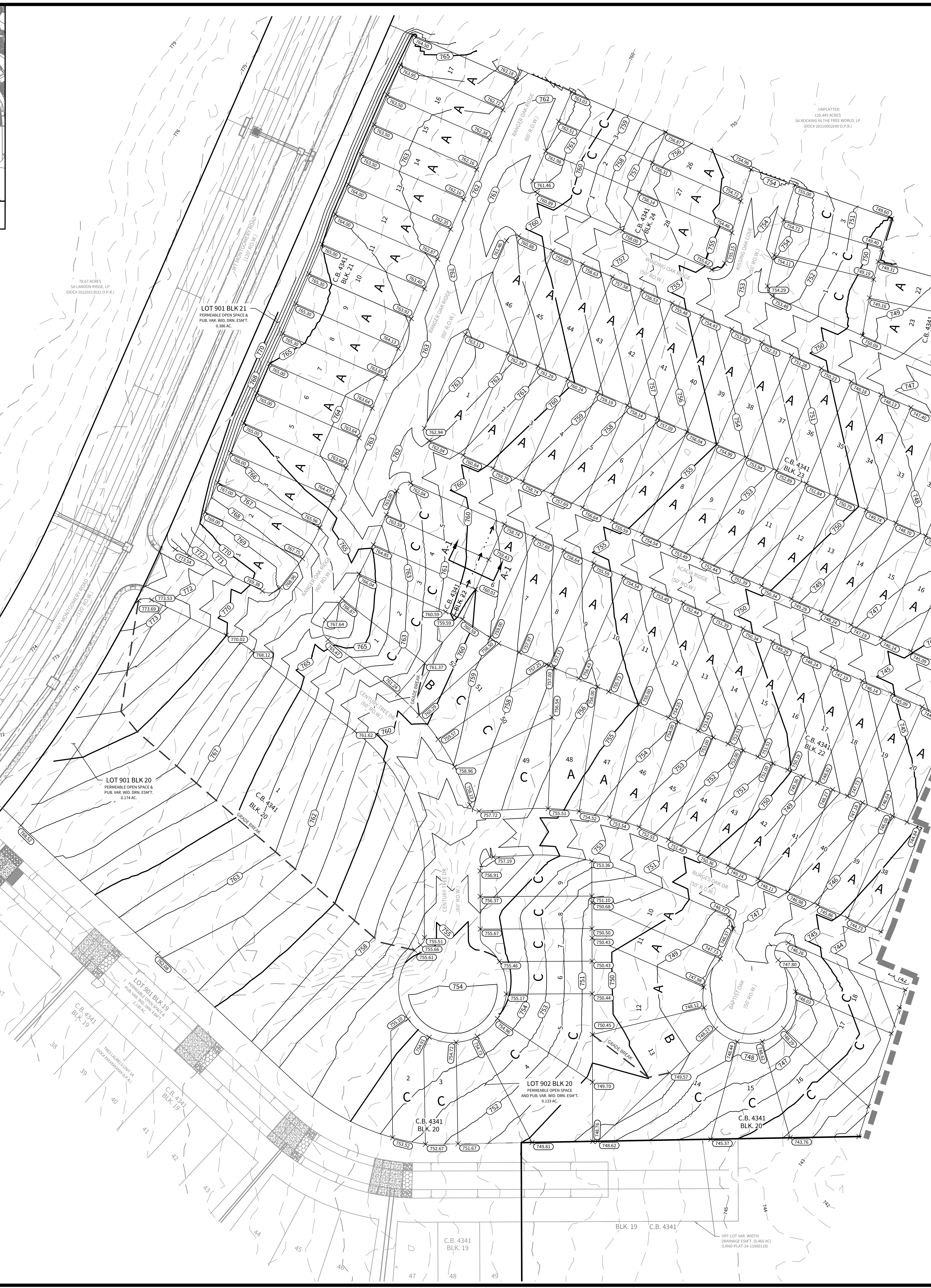
LENNAR HOMES OF TEXAS LAND
ANDCONSTRUCTION, LTD.
A TEXAS LIMITED PARTNERSHIP
100 NE LOOP 410, SUITE 1155
SAN ANTONIO, TX 78216

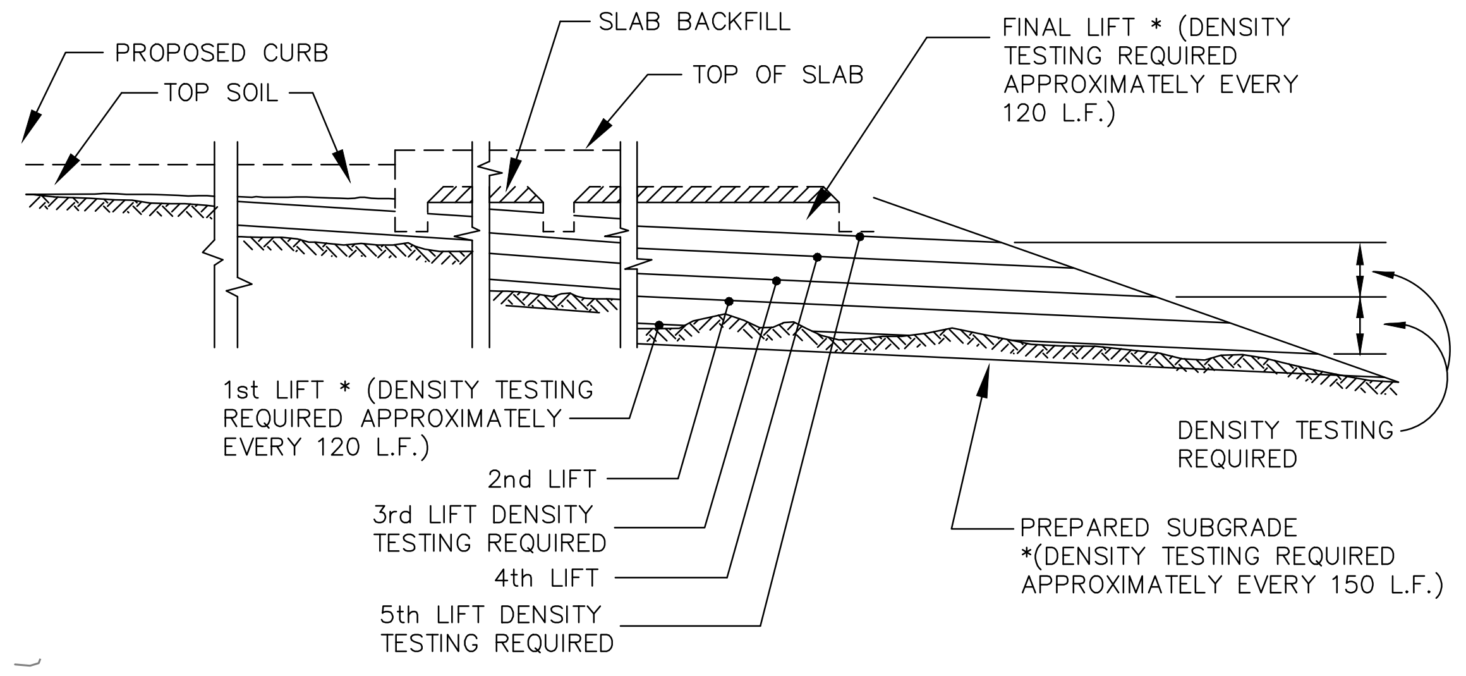
CIVIL ENGINEER:

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

LEGEND

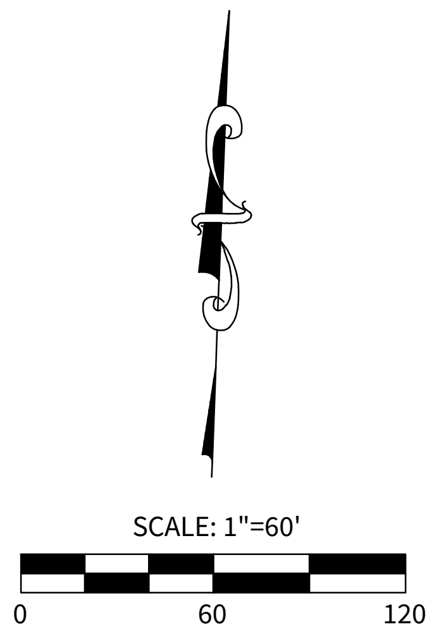
PROPOSED CONTOUR	—1000—
EXISTING CONTOUR	— — 1000 — —
PROPOSED ELEVATION	1297.58
EXISTING ELEVATION	× 672.00E
GRADE BREAK	— — GRADE BREAK — —
BUILDING SETBACK	—— — — ——
SWALE	— · · · → · · · → —
LOMR FLOODPLAIN	▬ ▬ ▬
CLOMR FLOODPLAIN	▬ ▬ ▬

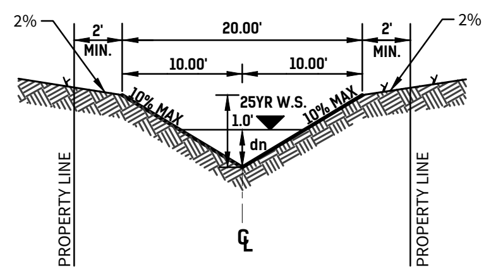




PROPOSED CURB
TOP SOIL
SLAB BACKFILL
TOP OF SLAB
FINAL LIFT * (DENSITY TESTING REQUIRED APPROXIMATELY EVERY 120 L.F.)
1st LIFT * (DENSITY TESTING REQUIRED APPROXIMATELY EVERY 120 L.F.)
2nd LIFT
3rd LIFT DENSITY TESTING REQUIRED
4th LIFT
5th LIFT DENSITY TESTING REQUIRED
DENSITY TESTING REQUIRED
PREPARED SUBGRADE *(DENSITY TESTING REQUIRED APPROXIMATELY EVERY 150 L.F.)

DENSITY TEST FREQUENCY
NOT TO SCALE





TYPICAL V-SWALE "A-1" SECTION (N.T.S.)

	"A-1"
Q_{25} (cfs)	2.00
B_W (ft)	0
z	10:1/10:1
n	0.035
S (%)	0.50
d_n (ft)	0.44
V (fps)	1.03

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.

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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

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 (90%) 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.

5. FILL MATERIALS

THE MATERIALS USED SHALL BE FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES, SUCH AS TREES, BRUSH AND RUBBISH.

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.

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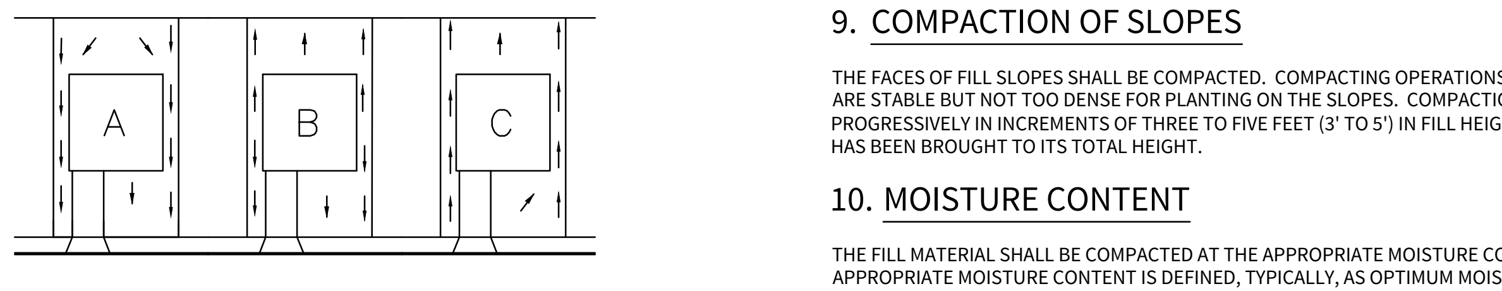
11. DENSITY TESTS

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.



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 0.2' ABOVE CURB ELEVATION ON LOCAL TYPE "A" STREETS.

TYPICAL PAD SIZES ARE 80' x 25' ON LOCAL TYPE "A" STREETS.

CONTRACTOR TO REFERENCE TREE PRESERVATION PLAN.

CONTOURS SHOWN ON STREET ARE TOP OF STREET.

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EST. 1980
ENGINEERS

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

TRES LAURELS UNIT 4A

GRADING PLAN

DATE
06/26/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
1.
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06/25/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C2.00

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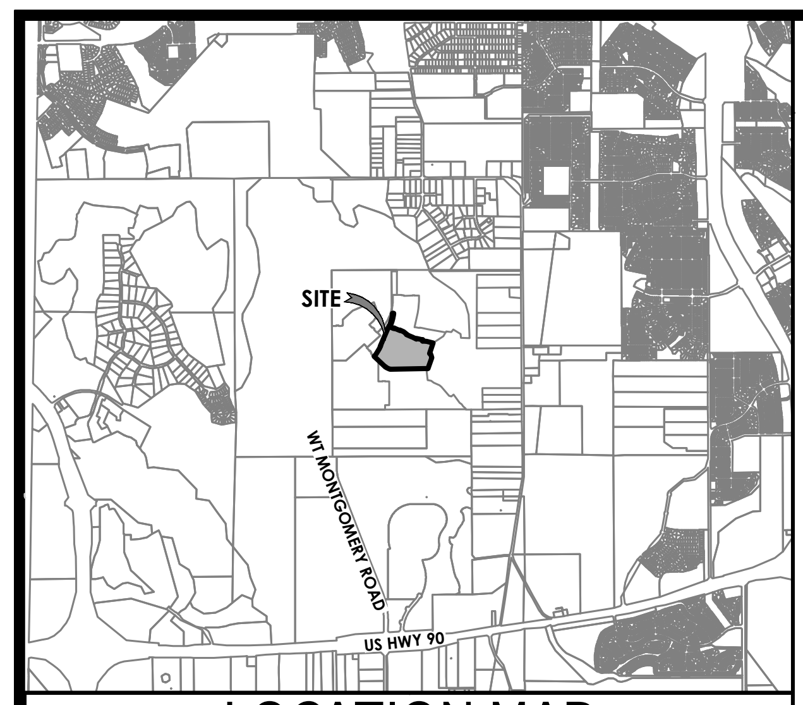

LOCATION MAP

N.T.S.

LEGEND

PROPOSED CONTOUR	1000
EXISTING CONTOUR	1000
PROPOSED ELEVATION	1297.58
EXISTING ELEVATION	× 672.00E
GRADE BREAK	GRADE BREAK
BUILDING SETBACK	
SWALE	
LOMR FLOODPLAIN	
CLOMR FLOODPLAIN	

OWNER/DEVELOPER:

LENNAR HOMES OF TEXAS LAND
ANDCONSTRUCTION, LTD.
A TEXAS LIMITED PARTNERSHIP
100 NE LOOP 410, SUITE 1155
SAN ANTONIO, TX 78216

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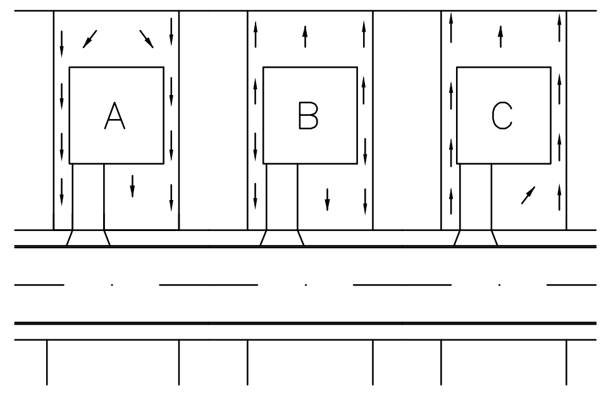

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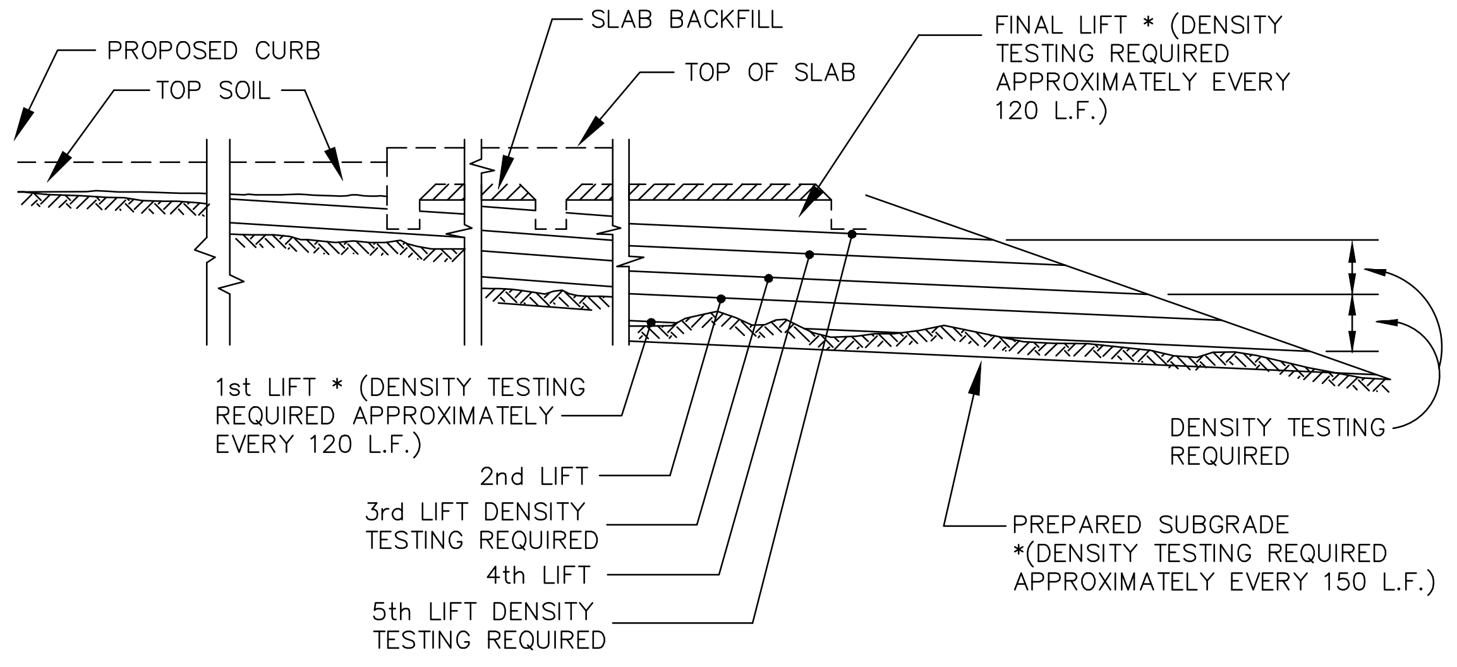
2. THE FIRST LIFT OF COMPACTED FILL (GENERALLY 8 TO 12-IN.) SHALL BE TESTED AS DETERMINED BY THE GEOTECHNICAL ENGINEER. ANY AREAS SUPPORTING THE PROPOSED STRUCTURES REQUIRING FILL SHALL BE TESTED FOR DENSITY COMPLIANCE.
3. FILLS SHALL BE TESTED A MAXIMUM OF EACH EIGHTEEN INCHES (18") OF FILL.
4. TEST 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.

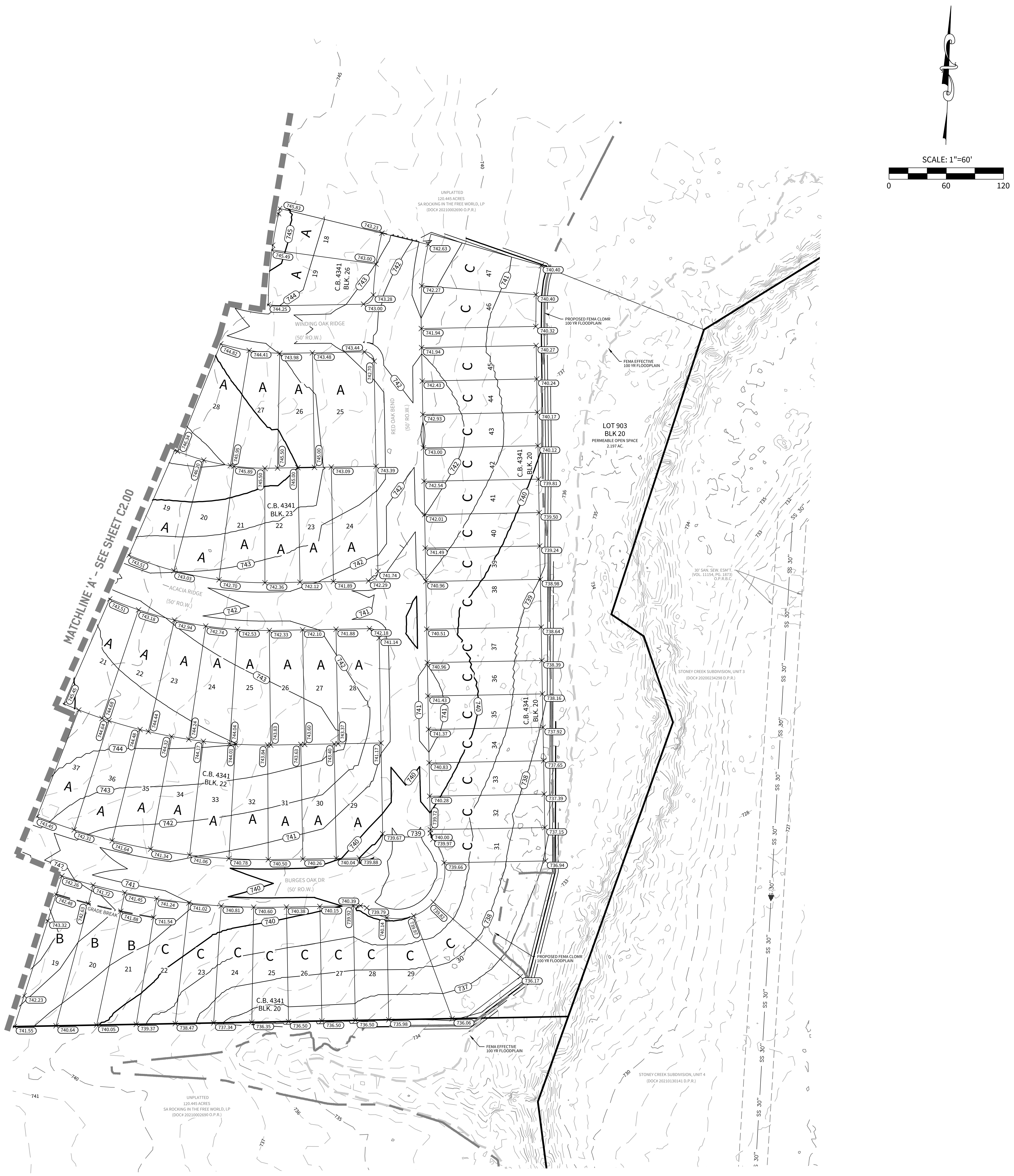
12. CUT/FILL LOTS

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.


PROPOSED CURB
TOP SOIL
SLAB BACKFILL
TOP OF SLAB
FINAL LIFT * (DENSITY TESTING REQUIRED APPROXIMATELY EVERY 120 L.F.)
1st LIFT * (DENSITY TESTING REQUIRED APPROXIMATELY EVERY 120 L.F.)
2nd LIFT
3rd LIFT DENSITY TESTING REQUIRED
4th LIFT
5th LIFT DENSITY TESTING REQUIRED
DENSITY TESTING REQUIRED
PREPARED SUBGRADE *(DENSITY TESTING REQUIRED APPROXIMATELY EVERY 150 L.F.)

DENSITY TEST FREQUENCY

NOT TO SCALE



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ENGINEERS

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

TRES LAURELS UNIT 4A

GRADING PLAN

DATE	06/27/2024
PROJECT NO.	03050.015
DRAWN BY	RM / IV
CHECKED BY	MAT/CJC

REVISIONS

1.
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06/27/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C2.01

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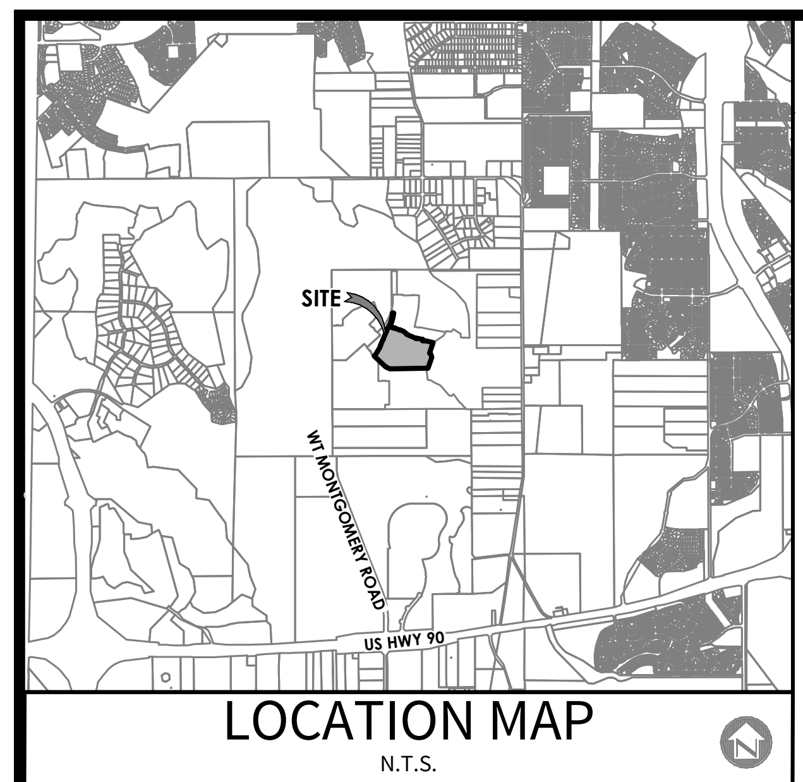


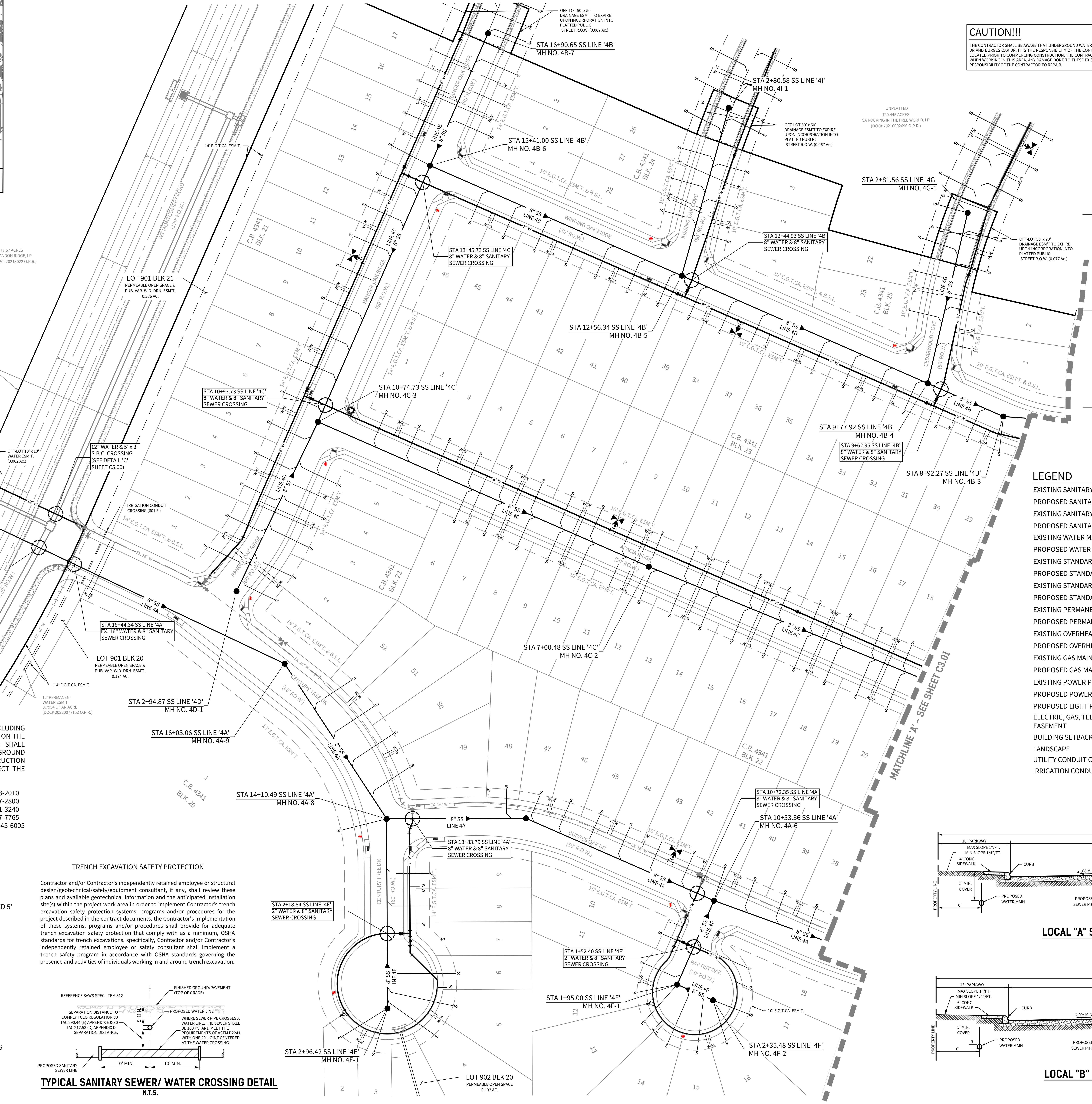
LOCATION MAP
N.T.S.

OWNER/DEVELOPER:

LENNAR HOMES OF TEXAS LAND
ANDCONSTRUCTION, LTD.
A TEXAS LIMITED PARTNERSHIP
100 NE LOOP 410, SUITE 1155
SAN ANTONIO, TX 78216

CIVIL ENGINEER:

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


OFF-LOT 50' x 50' DRAINAGE ESM'T TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.067 Ac.)
STA 16+90.65 SS LINE '4B'
MH NO. 4B-7
STA 15+41.00 SS LINE '4B'
MH NO. 4B-6
STA 2+80.58 SS LINE '4I'
MH NO. 4I-1
UNPLATTED 120.445 ACRES SA ROCKING IN THE FREE WORLD, LP
STA 2+81.56 SS LINE '4G'
MH NO. 4G-1
OFF-LOT 50' x 70' DRAINAGE ESM'T TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.077 Ac.)
78.67 ACRES SA LANDON RIDGE, LP
14' E.G.T.CA. ESM'T.
W MONTGOMERY ROAD (120' R.O.W.)
RANGER OAK RIDGE (60' R.O.W.)
WINDING OAK RIDGE (50' R.O.W.)
KISSING OAK COVE
CEDARWOOD COVE (50' R.O.W.)
10' E.G.T.CA. ESM'T. & B.S.L.
LINE 4B 8" SS
LINE 4C 8" SS
LINE 4D 8" SS
LINE 4G 8" SS
STA 13+45.73 SS LINE '4C'
8" WATER & 8" SANITARY SEWER CROSSING
STA 12+44.93 SS LINE '4B'
8" WATER & 8" SANITARY SEWER CROSSING
LOT 901 BLK 21
PERMEABLE OPEN SPACE & PUB. VAR. WID. DRN. ESM'T.
0.386 AC.
C.B. 4341 BLK. 21
C.B. 4341 BLK. 24
C.B. 4341 BLK. 25
C.B. 4341 BLK. 23
C.B. 4341 BLK. 22
C.B. 4341 BLK. 20
STA 12+56.34 SS LINE '4B'
MH NO. 4B-5
BEXAR COUNTY 5.461 ACRE RIGHT-OF-WAY DEDICATION
STA 10+93.73 SS LINE '4C'
8" WATER & 8" SANITARY SEWER CROSSING
STA 10+74.73 SS LINE '4C'
MH NO. 4C-3
OFF-LOT 20' x 20' SANITARY SEWER ESM'T. (0.009 Ac.)
STA 9+77.92 SS LINE '4B'
MH NO. 4B-4
STA 9+62.95 SS LINE '4B'
8" WATER & 8" SANITARY SEWER CROSSING
STA 8+92.27 SS LINE '4B'
MH NO. 4B-3
STA 20+46.48 SS LINE '4A'
MH NO. 4A-11
OFF-LOT 10' x 10' WATER ESM'T. (0.002 Ac.)
12" WATER & 5' x 3' S.B.C. CROSSING (SEE DETAIL 'C' SHEET C5.00)
LINE 4A 8" SS
12" W
OFF-LOT 50' x 60' DRAINAGE ESM'T TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.069 Ac.)
IRRIGATION CONDUIT CROSSING (60 LF.)
STA 19+91.48 SS LINE '4A'
MH NO. 4A-10
ACACIA RIDGE (50' R.O.W.)
8" SANITARY SEWER & 5' x 3' S.B.C. CROSSING (SEE SHEET C4.03)
STA 18+44.34 SS LINE '4A'
EX. 16" WATER & 8" SANITARY SEWER CROSSING
LOT 901 BLK 20
PERMEABLE OPEN SPACE & PUB. VAR. WID. DRN. ESM'T.
0.174 AC.
14' E.G.T.CA. ESM'T.
12' PERMANENT WATER ESM'T 0.7954 OF AN ACRE
STA 7+00.48 SS LINE '4C'
MH NO. 4C-2
MATCHLINE 'A' - SEE SHEET C3.01
CENTURY TREE DR (60' R.O.W.)
STA 2+94.87 SS LINE '4D'
MH NO. 4D-1
STA 16+03.06 SS LINE '4A'
MH NO. 4A-9
STA 14+10.49 SS LINE '4A'
MH NO. 4A-8
8" SS LINE 4A
STA 13+83.79 SS LINE '4A'
8" WATER & 8" SANITARY SEWER CROSSING
BURGES OAK DR (50' R.O.W.)
STA 10+72.35 SS LINE '4A'
8" WATER & 8" SANITARY SEWER CROSSING
STA 10+53.36 SS LINE '4A'
MH NO. 4A-6
STA 2+18.84 SS LINE '4E'
2" WATER & 8" SANITARY SEWER CROSSING
STA 1+52.40 SS LINE '4F'
2" WATER & 8" SANITARY SEWER CROSSING
BAPTIST OAK (50' R.O.W.)
LINE 4F 8" SS
8" SS LINE 4E
STA 1+95.00 SS LINE '4F'
MH NO. 4F-1
10' E.G.T.CA. ESM'T.
STA 2+35.48 SS LINE '4F'
MH NO. 4F-2
STA 2+96.42 SS LINE '4E'
MH NO. 4E-1
LOT 902 BLK 20
PERMEABLE OPEN SPACE
0.133 AC.

CAUTION!!!

THE CONTRACTOR SHALL BE AWARE THAT UNDERGROUND WATER LINES EXIST ALONG CENTURY TREE DR AND BURGES OAK DR. 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.

SCALE: 1"=50'
0 50 100

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.

SAN ANTONIO WATER SYSTEM	210-233-2010
COSA DRAINAGE	210-207-2800
CITY SIDEWALK AND TRENCHING DIVISION	210-821-3240
COSA TRAFFIC SIGNAL OPERATIONS	210-207-7765
TEXAS STATE WIDE ONE CALL LOCATOR	1-800-545-6005
CITY PUBLIC SERVICE	"
AT&T	"
TIME WARNER	"
VALERO ENERGY CO.	"

AT&T AND TIME WARNER CABLE LINES TO GO INTO JOINT TRENCH WITH C.P.S. ENERGY
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:

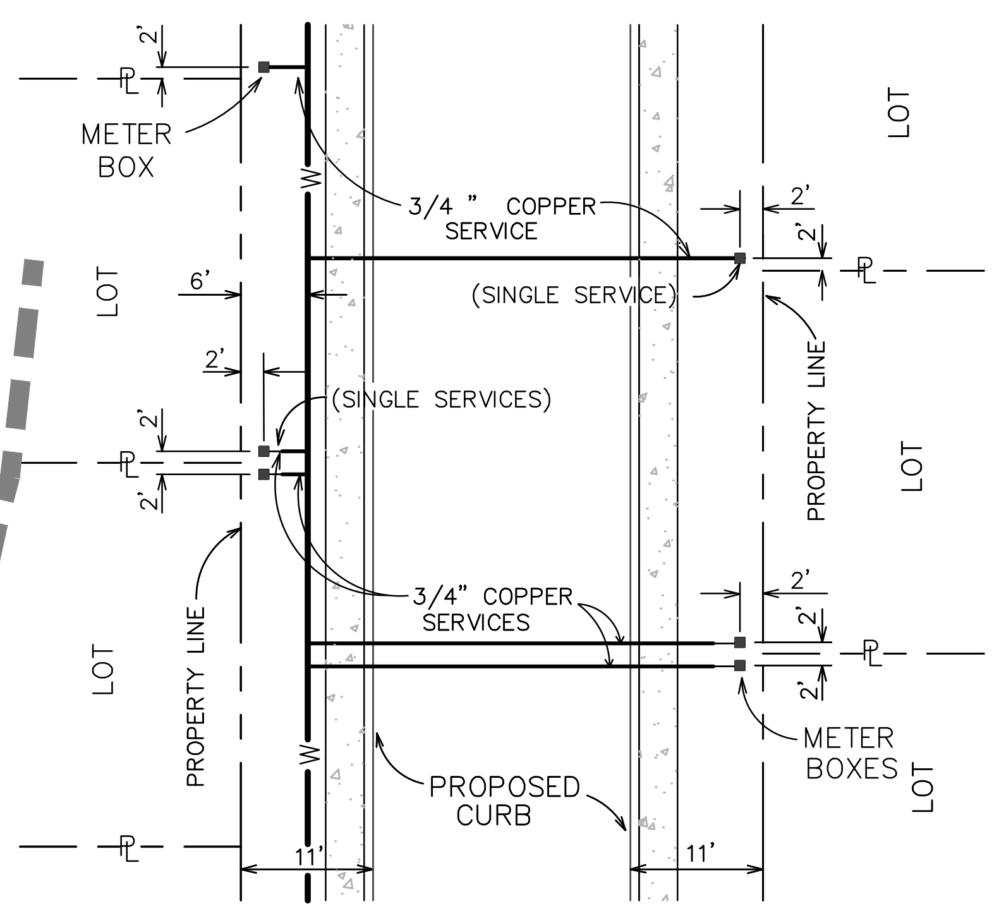
1.) STREET BASE AND DRAINAGE COMPLETION PRECEDES CPS UTILITY LINE INSTALLATION.
2.) INSTALLATION IS AUTHORIZED BY THE DEVELOPER.

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.

REFERENCE SAWS SPEC. ITEM 812
FINISHED GROUND/PAVEMENT (TOP OF GRADE)
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
5' MIN.
PROPOSED WATER LINE
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

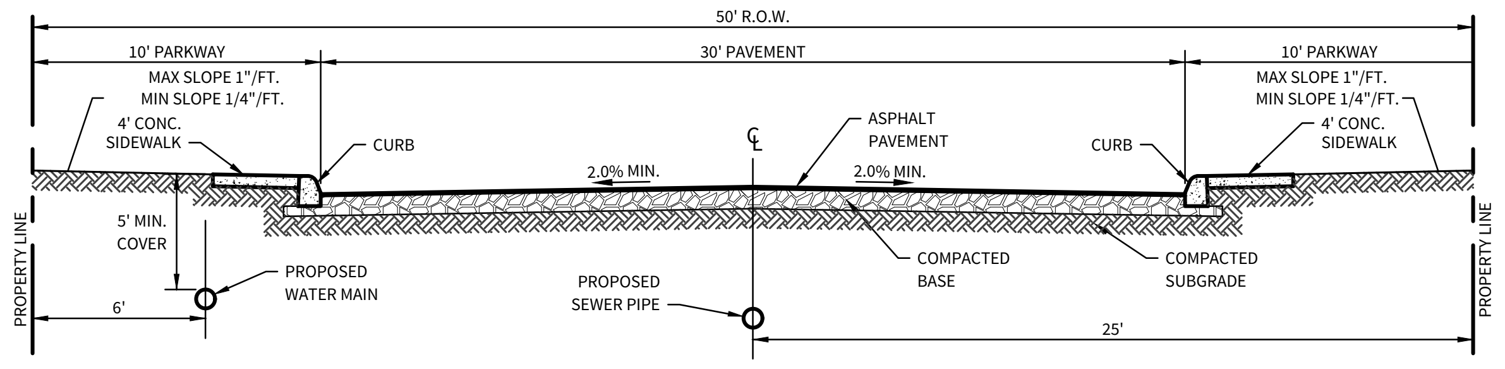
TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL
N.T.S.



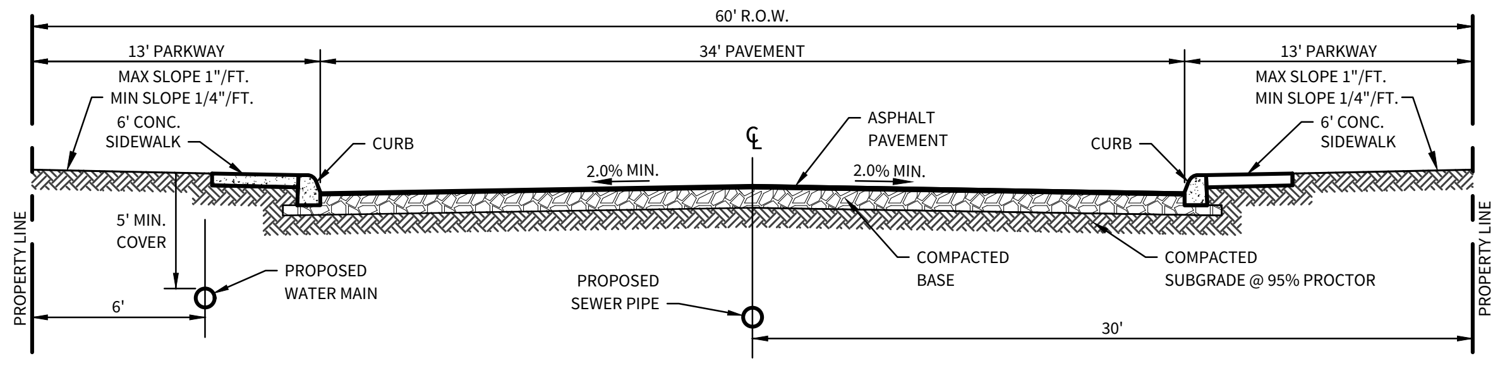
WATER METER BOX LOCATION
N.T.S.

LEGEND

EXISTING SANITARY SEWER	EX.8"SS
PROPOSED SANITARY SEWER	8"SS
EXISTING SANITARY SEWER MANHOLE	●
PROPOSED SANITARY SEWER MANHOLE	●
EXISTING WATER MAIN	EX.8"W
PROPOSED WATER MAIN	8"W
EXISTING STANDARD FIRE HYDRANT	⧓
PROPOSED STANDARD FIRE HYDRANT	⧓
EXISTING STANDARD GATE VALVE	⊣●⊢
PROPOSED STANDARD GATE VALVE	⊣●⊢
EXISTING PERMANENT BLOWOFF	▶●
PROPOSED PERMANENT BLOWOFF	▶●
EXISTING OVERHEAD ELECTRIC	EX. OHE
PROPOSED OVERHEAD ELECTRIC	OHE
EXISTING GAS MAIN	EX.2"GAS
PROPOSED GAS MAIN	2"GAS
EXISTING POWER POLE	○
PROPOSED POWER POLE	○
PROPOSED LIGHT POLE	◉
ELECTRIC, GAS, TELEPHONE, & CABLE T.V. EASEMENT	E.G.T.CA. ESM'T
BUILDING SETBACK LINE	B.S.L.
LANDSCAPE	L.S.
UTILITY CONDUIT CROSSING	UTIL
IRRIGATION CONDUIT CROSSING	IRR



LOCAL "A" STREET CROSS-SECTION



LOCAL "B" STREET CROSS-SECTION

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

TRES LAURELS UNIT 4A

UTILITY LAYOUT PLAN

DATE
06/20/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
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06/25/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C3.00

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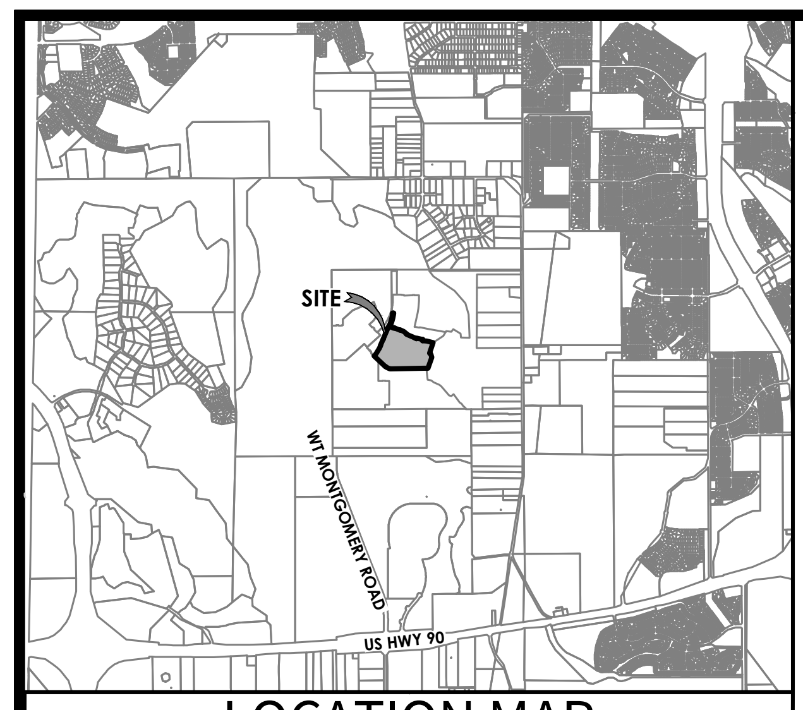


LOCATION MAP

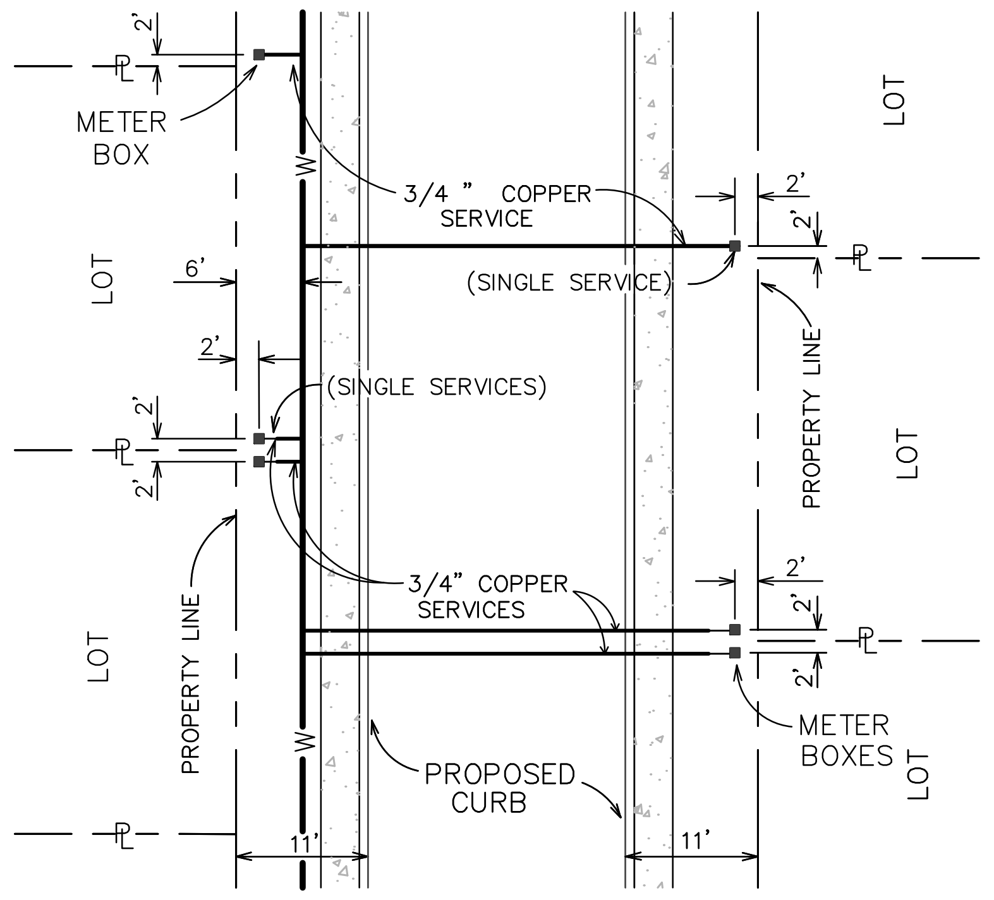
N.T.S.

OWNER/DEVELOPER:

LENNAR HOMES OF TEXAS LAND
ANDCONSTRUCTION, LTD.
A TEXAS LIMITED PARTNERSHIP
100 NE LOOP 410, SUITE 1155
SAN ANTONIO, TX 78216

CIVIL ENGINEER:

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



WATER METER BOX LOCATION

N.T.S.

LEGEND

EXISTING SANITARY SEWER	EX.8"SS
PROPOSED SANITARY SEWER	8"SS
EXISTING SANITARY SEWER MANHOLE	●
PROPOSED SANITARY SEWER MANHOLE	●
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PROPOSED WATER MAIN	8"W
EXISTING STANDARD FIRE HYDRANT	⧓
PROPOSED STANDARD FIRE HYDRANT	⧓
EXISTING STANDARD GATE VALVE	●
PROPOSED STANDARD GATE VALVE	●
EXISTING PERMANENT BLOWOFF	▶●
PROPOSED PERMANENT BLOWOFF	▶●
EXISTING OVERHEAD ELECTRIC	EX. OHE
PROPOSED OVERHEAD ELECTRIC	OHE
EXISTING GAS MAIN	EX.2"GAS
PROPOSED GAS MAIN	2"GAS
EXISTING POWER POLE	○
PROPOSED POWER POLE	○
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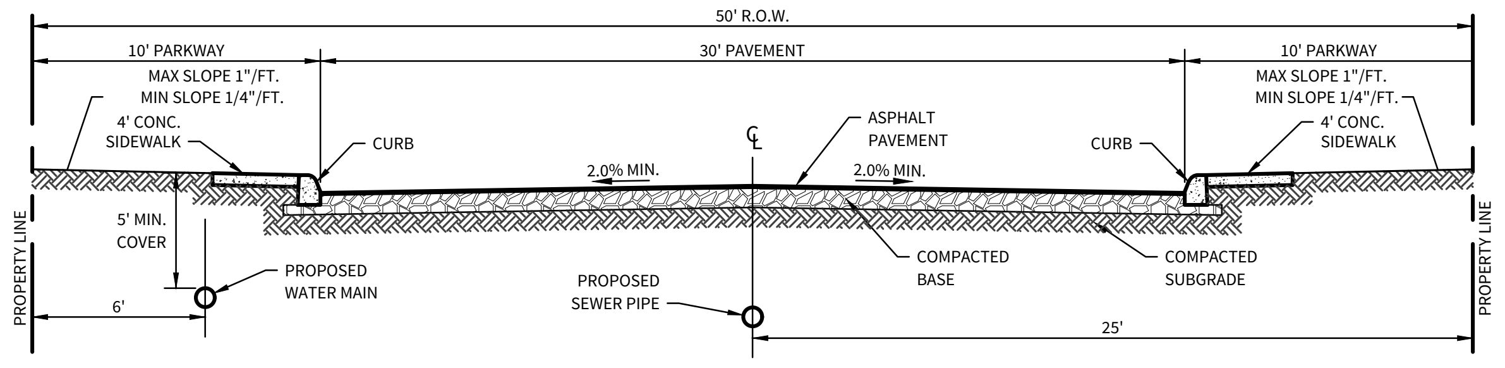
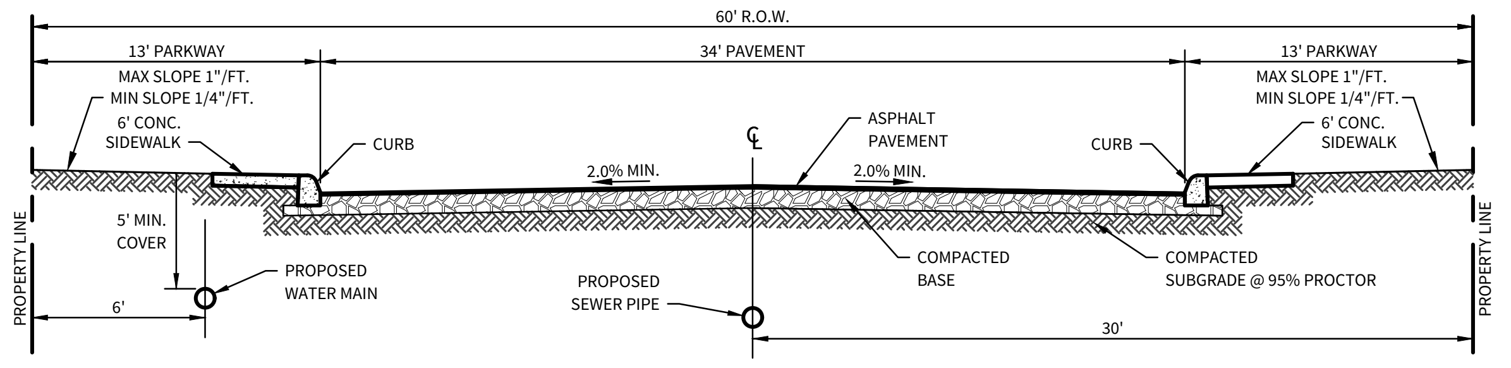
ELECTRIC, GAS, TELEPHONE, & CABLE T.V. EASEMENT	E.G.T.CA. ESM'T
BUILDING SETBACK LINE	B.S.L.
LANDSCAPE	L.S.
UTILITY CONDUIT CROSSING	UTIL
IRRIGATION CONDUIT CROSSING	IRR



LOCAL "A" STREET CROSS-SECTION



LOCAL "B" STREET CROSS-SECTION

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CITY PUBLIC SERVICE	"
AT&T	"
TIME WARNER	"
VALERO ENERGY CO.	"

AT&T AND TIME WARNER CABLE LINES TO GO INTO JOINT TRENCH WITH C.P.S. ENERGY
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:

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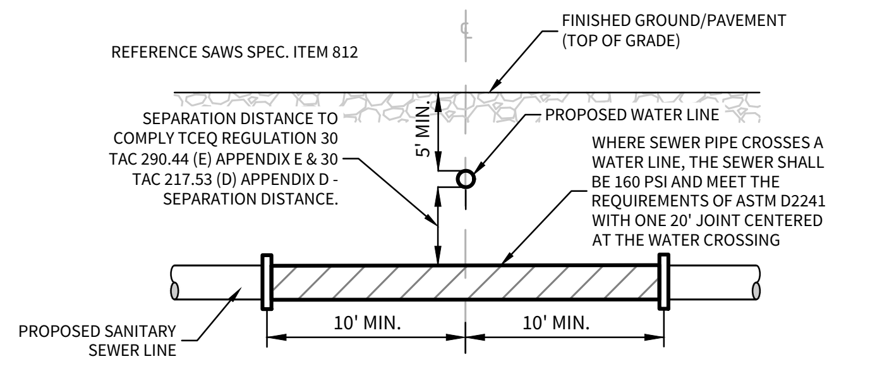
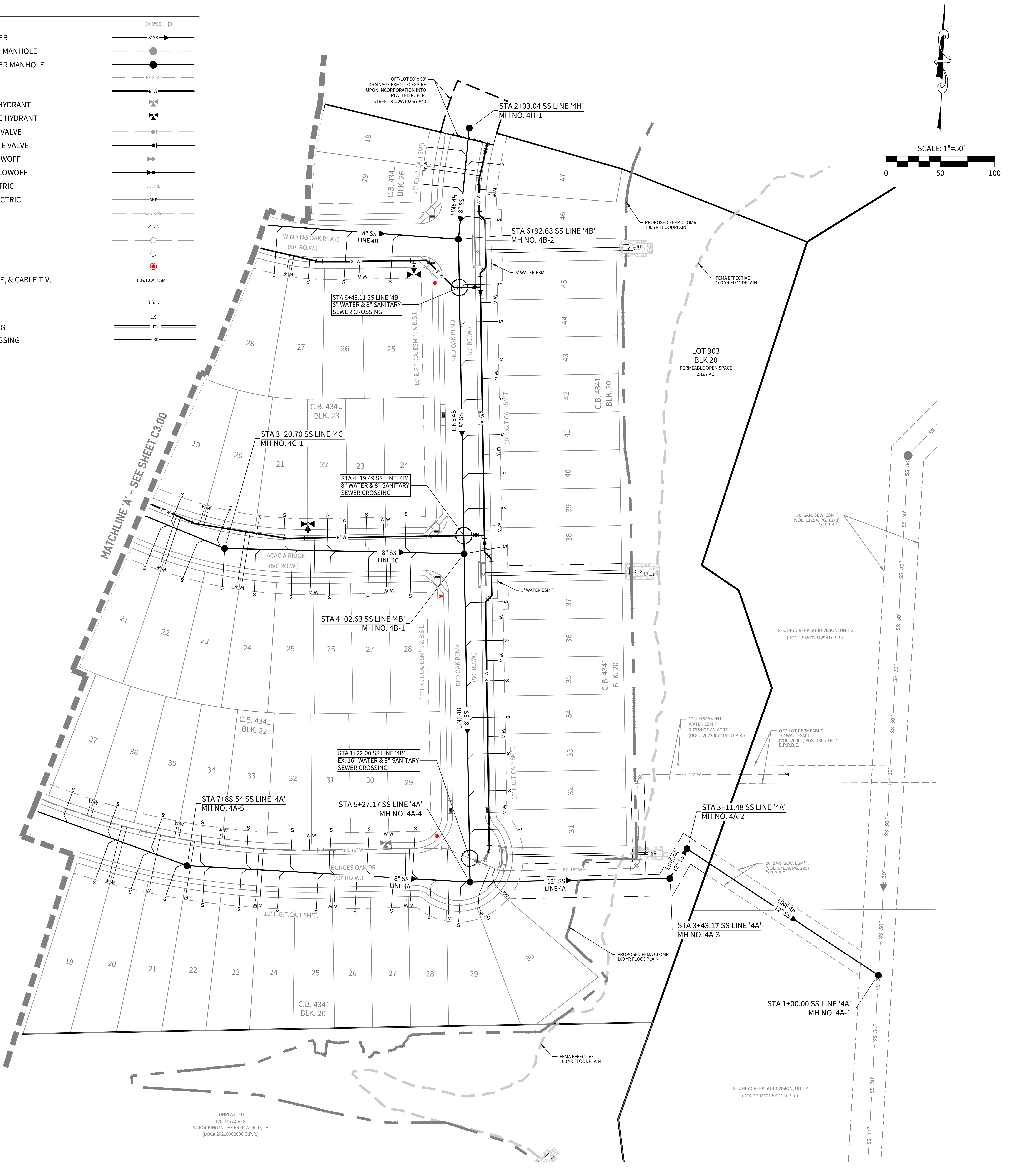

REFERENCE SAWS SPEC. ITEM 812
FINISHED GROUND/PAVEMENT
(TOP OF GRADE)
SEPARATION DISTANCE TO
COMPLY TCEQ REGULATION 30
TAC 290.44 (E) APPENDIX E & 30
TAC 217.53 (D) APPENDIX D -
SEPARATION DISTANCE.
5' MIN.
PROPOSED WATER LINE
WHERE SEWER PIPE CROSSES A
WATER LINE, THE SEWER SHALL
BE 160 PSI AND MEET THE
REQUIREMENTS OF ASTM D2241
WITH ONE 20' JOINT CENTERED
AT THE WATER CROSSING
PROPOSED SANITARY
SEWER LINE
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

N.T.S.



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

TRES LAURELS
UNIT 4A

UTILITY LAYOUT PLAN

DATE
05/31/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
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06/05/2024
MATTHEW A. TRINKLE
147558
M. Trinkle
CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C3.01

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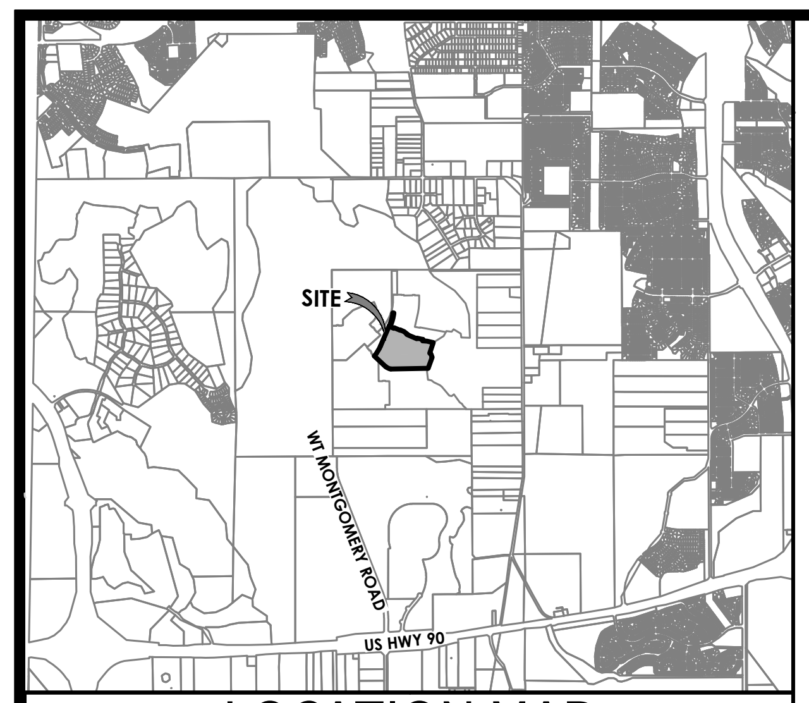

LOCATION MAP

N.T.S.

OWNER/DEVELOPER:

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ANDCONSTRUCTION, LTD.
A TEXAS LIMITED PARTNERSHIP
100 NE LOOP 410, SUITE 1155
SAN ANTONIO, TX 78216

CIVIL ENGINEER:

M.W. CUDE ENGINEERS, L.L.C.
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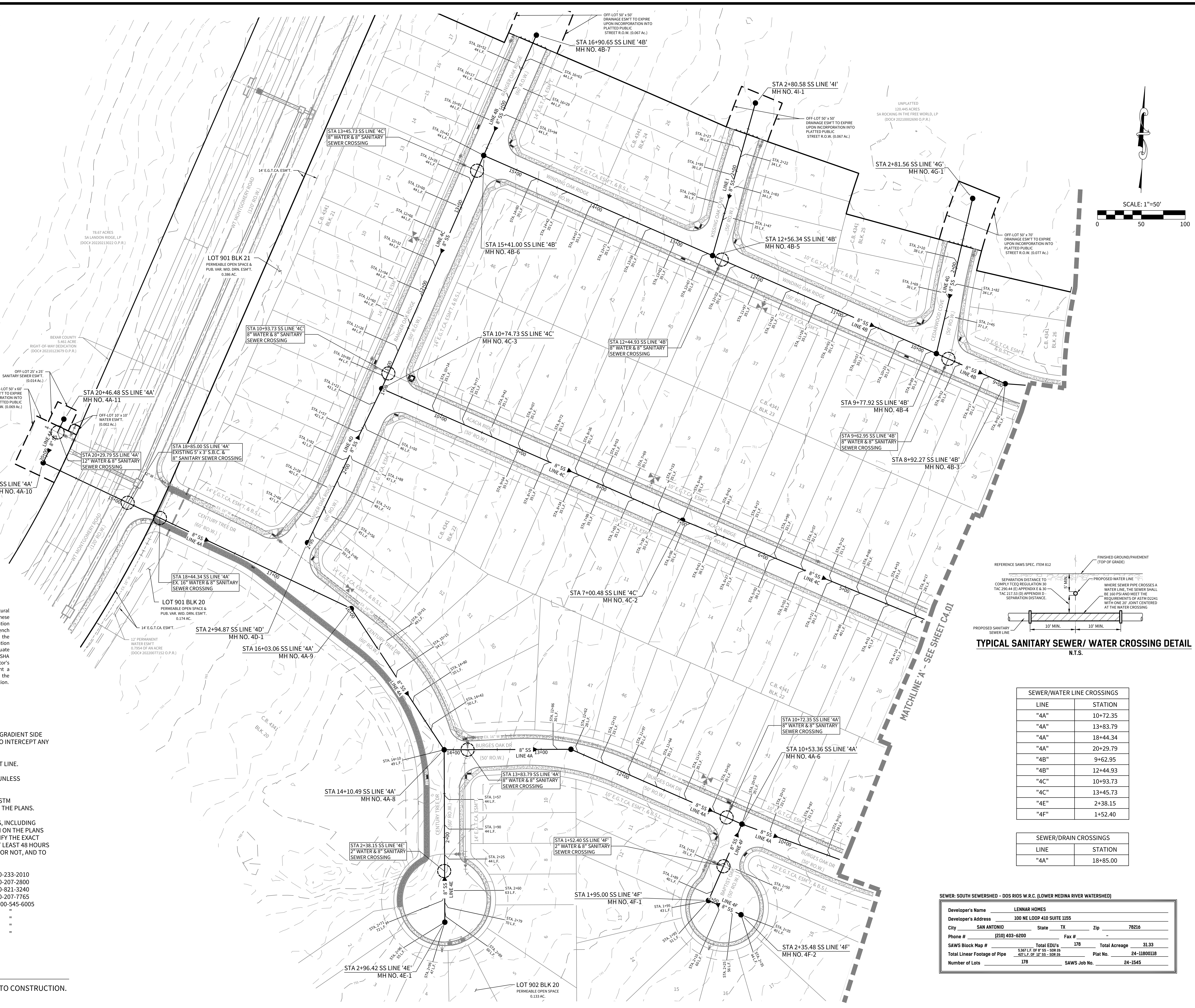
OFF-LOT 50' x 50' DRAINAGE ESM'T TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.067 Ac.)
STA 16+90.65 SS LINE '4B' MH NO. 4B-7
STA 2+80.58 SS LINE '4I' MH NO. 4I-1
OFF-LOT 50' x 50' DRAINAGE ESM'T TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.067 Ac.)
UNPLATTED 120.445 ACRES SA ROCKING IN THE FREE WORLD, LP (DOC# 20210002690 O.P.R.)
STA 2+81.56 SS LINE '4G' MH NO. 4G-1
SCALE: 1"=50'
0
50
100
OFF-LOT 50' x 70' DRAINAGE ESM'T TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.077 Ac.)
STA 13+45.73 SS LINE '4C' 8" WATER & 8" SANITARY SEWER CROSSING
STA 15+41.00 SS LINE '4B' MH NO. 4B-6
STA 12+56.34 SS LINE '4B' MH NO. 4B-5
78.67 ACRES SA LANDON RIDGE, LP (DOC# 20220213022 O.P.R.)
14' E.G.T.CA. ESM'T.
WT MONTGOMERY ROAD (120' R.O.W.)
LOT 901 BLK 21 PERMEABLE OPEN SPACE & PUB. VAR. WID. DRN. ESM'T. 0.386 AC.
RINGER OAK RIDGE (60' R.O.W.)
WINDING OAK RIDGE (50' R.O.W.)
KISSING OAK COVE (50' R.O.W.)
CEDARWOOD COVE (50' R.O.W.)
ACACIA RIDGE (50' R.O.W.)
CENTURY TREE DR (60' R.O.W.)
BURGES OAK DR (50' R.O.W.)
BAPTIST OAK
C.B. 4341 BLK. 21
C.B. 4341 BLK. 22
C.B. 4341 BLK. 23
C.B. 4341 BLK. 24
C.B. 4341 BLK. 25
C.B. 4341 BLK. 26
C.B. 4341 BLK. 20
10' E.G.T.CA. ESM'T. & B.S.L.
14' E.G.T.CA. ESM'T. & B.S.L.
STA 10+93.73 SS LINE '4C' 8" WATER & 8" SANITARY SEWER CROSSING
STA 10+74.73 SS LINE '4C' MH NO. 4C-3
STA 12+44.93 SS LINE '4B' 8" WATER & 8" SANITARY SEWER CROSSING
BEXAR COUNTY 5.461 ACRE RIGHT-OF-WAY DEDICATION (DOC# 20210123679 O.P.R.)
OFF-LOT 25' x 25' SANITARY SEWER ESM'T (0.014 Ac.)
OFF-LOT 50' x 60' DRAINAGE ESM'T TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.069 Ac.)
STA 20+46.48 SS LINE '4A' MH NO. 4A-11
OFF-LOT 10' x 10' WATER ESM'T. (0.002 Ac.)
STA 9+77.92 SS LINE '4B' MH NO. 4B-4
STA 9+62.95 SS LINE '4B' 8" WATER & 8" SANITARY SEWER CROSSING
STA 8+92.27 SS LINE '4B' MH NO. 4B-3
STA 18+85.00 SS LINE '4A' EXISTING 5' x 3' S.B.C. & 8" SANITARY SEWER CROSSING
STA 20+29.79 SS LINE '4A' 12" WATER & 8" SANITARY SEWER CROSSING
STA 19+91.48 SS LINE '4A' MH NO. 4A-10
STA 18+44.34 SS LINE '4A' EX. 16" WATER & 8" SANITARY SEWER CROSSING
LOT 901 BLK 20 PERMEABLE OPEN SPACE & PUB. VAR. WID. DRN. ESM'T. 0.174 AC.
14' E.G.T.CA. ESM'T.
12' PERMANENT WATER ESM'T 0.706 OF AN ACRE (DOC# 20220077152 O.P.R.)
STA 7+00.48 SS LINE '4C' MH NO. 4C-2
STA 2+94.87 SS LINE '4D' MH NO. 4D-1
STA 16+03.06 SS LINE '4A' MH NO. 4A-9
MATCHLINE 'A' - SEE SHEET C4.01
STA 10+72.35 SS LINE '4A' 8" WATER & 8" SANITARY SEWER CROSSING
STA 10+53.36 SS LINE '4A' MH NO. 4A-6
STA 14+10.49 SS LINE '4A' MH NO. 4A-8
STA 13+83.79 SS LINE '4A' 8" WATER & 8" SANITARY SEWER CROSSING
STA 2+38.15 SS LINE '4E' 2" WATER & 8" SANITARY SEWER CROSSING
STA 1+52.40 SS LINE '4F' 2" WATER & 8" SANITARY SEWER CROSSING
STA 1+95.00 SS LINE '4F' MH NO. 4F-1
STA 2+35.48 SS LINE '4F' MH NO. 4F-2
STA 2+96.42 SS LINE '4E' MH NO. 4E-1
LOT 902 BLK 20 PERMEABLE OPEN SPACE 0.133 AC.
8" SS LINE 4A
8" SS LINE 4B
8" SS LINE 4C
8" SS LINE 4D
8" SS LINE 4E
8" SS LINE 4F
8" SS LINE 4G
8" SS LINE 4I
REFERENCE SAWS SPEC. ITEM 812
FINISHED GROUND/PAVEMENT (TOP OF GRADE)
PROPOSED WATER LINE
5' MIN.
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

N.T.S.

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.

NOTES:

1. ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE UPGRADIENT SIDE OF THE SEWER TRENCH THUS ALLOWING THE TRENCH TO INTERCEPT ANY SILT CONTAMINATED RUNOFF.
2. ALL LATERALS TO BE BUILT TO FRONT UTILITY EASEMENT LINE.
3. ALL LATERAL SHALL BE INSTALLED @ MIN. 2.0% SLOPE, UNLESS OTHERWISE NOTED.
4. ALL SANITARY SEWER PIPE SHALL BE PVC THAT MEETS ASTM SPECIFICATION, SDR-26, UNLESS OTHERWISE NOTED ON THE PLANS.
5. 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.

SAN ANTONIO WATER SYSTEM	210-233-2010
CoSA DRAINAGE	210-207-2800
CITY SIDEWALK TRENCHING DIVISION	210-821-3240
CoSA TRAFFIC SIGNAL OPERATIONS	210-207-7765
TEXAS STATE WIDE ONE CALL LOCATOR	1-800-545-6005
CITY PUBLIC SERVICE	"
AT&T	"
TIME WARNER	"
VALERO ENERGY CO.	"

BENCHMARK BM-1

BENCHMARK TO BE SET BY ENGINEER PRIOR TO CONSTRUCTION.

SEWER/WATER LINE CROSSINGS	
LINE	STATION
"4A"	10+72.35
"4A"	13+83.79
"4A"	18+44.34
"4A"	20+29.79
"4B"	9+62.95
"4B"	12+44.93
"4C"	10+93.73
"4C"	13+45.73
"4E"	2+38.15
"4F"	1+52.40

SEWER/DRAIN CROSSINGS	
LINE	STATION
"4A"	18+85.00

SEWER: SOUTH SEWERSHED – DOS RIOS W.R.C. (LOWER MEDINA RIVER WATERSHED)

Developer's Name LENNAR HOMES
Developer's Address 100 NE LOOP 410 SUITE 1155
City SAN ANTONIO **State** TX **Zip** 78216
Phone # (210) 403-6200 **Fax #** –
SAWS Block Map # ______ **Total EDU's** 178 **Total Acreage** 31.33
Total Linear Footage of Pipe 5,367 L.F. OF 8" SS – SDR 26 / 427 L.F. OF 12" SS – SDR 26 **Plat No.** 24-11800118
Number of Lots 178 **SAWS Job No.** 24-1545

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

TRES LAURELS
UNIT 4A

SANITARY SEWER MASTER PLAN

DATE
05/21/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
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05/29/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

SAWS JOB NO.
24-1545

C4.00

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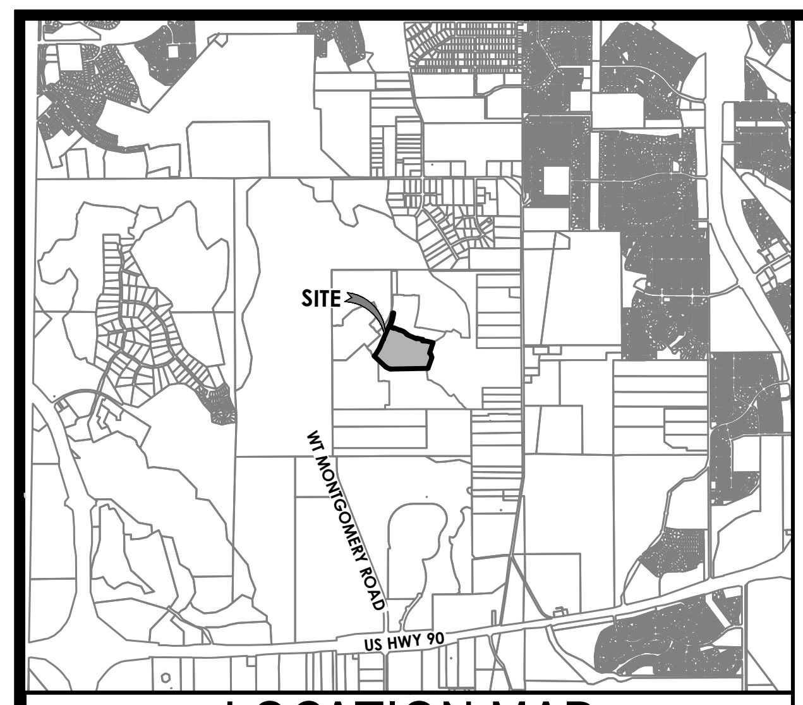

LOCATION MAP
N.T.S.

OWNER/DEVELOPER:

LENNAR HOMES OF TEXAS LAND
ANDCONSTRUCTION, LTD.
A TEXAS LIMITED PARTNERSHIP
100 NE LOOP 410, SUITE 1155
SAN ANTONIO, TX 78216

CIVIL ENGINEER:

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

SANITARY SEWER NOTES

1. SEWER PIPE WHERE WATER LINE CROSSES SHALL BE 160 P.S.I. AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT WATER MAIN.
2. NO VERTICAL STACKS SHALL BE ALLOWED, UNLESS OTHERWISE NOTED ON PLANS.
3. WHEN HORIZONTAL DISTANCE BETWEEN EWER PIPES AND WATER MAIN IS LESS THAN 9 FT. OF SEPARATION, SEWER MAIN SHALL BE INSTALLED WITH 160 PSI (MIN) PRESSURE PIPE AND FITTINGS IN ACCORDANCE WITH SAWS CONSTRUCTION CRITERIA FOR CONSTRUCTION OF SEWER MAINS IN THE VICINITY OF WATER MAINS.
4. ALL SEWER PIPES SHALL BE PVC (SDR 26), UNLESS OTHERWISE NOTED.
5. PRIOR TO CONSTRUCTION CONTRACTOR IS TO VERIFY EXISTING INVERT OF EXISTING SANITARY SEWER MAINS AND ALERT ENGINEER IMMEDIATELY OF ANY DIFFERENCE FROM INVERT SHOWN ON PLANS.
6. CONTOURS SHOWN ARE GRAPHICAL USE ONLY.
7. MANHOLE OPENING ARE 30" AS PER TCEQ CHAPTER 217.55.
8. CONTRACTOR TO INSTALL PERMANENT MARKERS AT THE END OF ALL SEWER LATERALS, PER HOUSE LATERAL DETAIL DD-854-01.
9. ALL 6" SEWER LATERALS WILL BE SET AT A MINIMUM 2% SLOPE.
10. BACKFILL MUST COMPLY WITH SAWS SPECIFICATIONS 804.4.
11. TOPS OF EXISTING MANHOLES SHALL BE ADJUSTED AS NECESSARY TO BE FLUSH WITH PROPOSED PAVEMENT ELEVATIONS, AND TO BE 0.50 FEET ABOVE FINISHED GROUND ELEVATIONS IN UNPAVED AREAS WITH WATER TIGHT LIDS.
12. CONTRACTOR TO INSTALL SERVICE LATERAL USING A LATERAL SADDLE (SAWS DETAIL DD 854-0). THE SADDLE SHALL BE PERMANENTLY BONDED TO THE EXISTING MAIN BY THE USE OF COMPOUNDS AND CLAMPS AS RECOMMENDED BY THE MANUFACTURER AND APPROVED BY THE SAN ANTONIO WATER SYSTEM.

NOTES:

1. ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE UPGRADIENT SIDE OF THE SEWER TRENCH THUS ALLOWING THE TRENCH TO INTERCEPT ANY SILT CONTAMINATED RUNOFF.
2. ALL LATERALS TO BE BUILT TO FRONT UTILITY EASEMENT LINE.
3. ALL LATERAL SHALL BE INSTALLED @ MIN. 2.0% SLOPE, UNLESS OTHERWISE NOTED.
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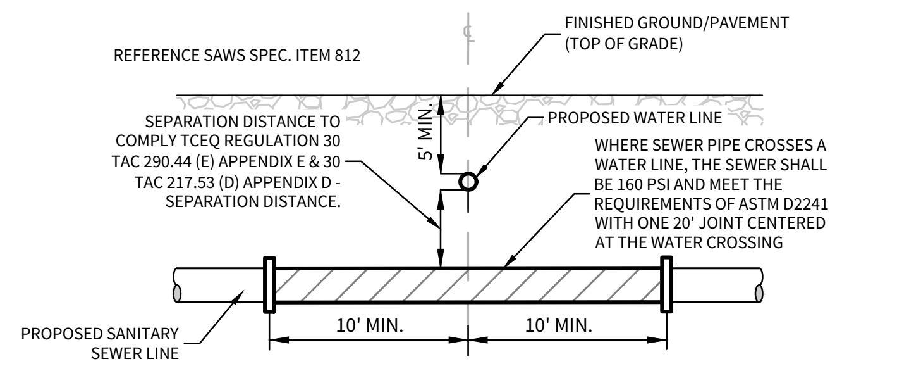
5. THE LOCATIONS AND DEPTHS OF ALL EXISTING UTILITIES, INCLUDING SERVICE LATERALS AND DRAINAGE STRUCTURES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND DEPTHS OF UNDERGROUND UTILITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT, AND TO PROTECT THE SAME DURING CONSTRUCTION.

SAN ANTONIO WATER SYSTEM	210-233-2010
CoSA DRAINAGE	210-207-2800
CITY SIDEWALK TRENCHING DIVISION	210-821-3240
CoSA TRAFFIC SIGNAL OPERATIONS	210-207-7765
TEXAS STATE WIDE ONE CALL LOCATOR	1-800-545-6005
CITY PUBLIC SERVICE	"
AT&T	"
TIME WARNER	"
VALERO ENERGY CO.	"

BENCHMARK BM-1

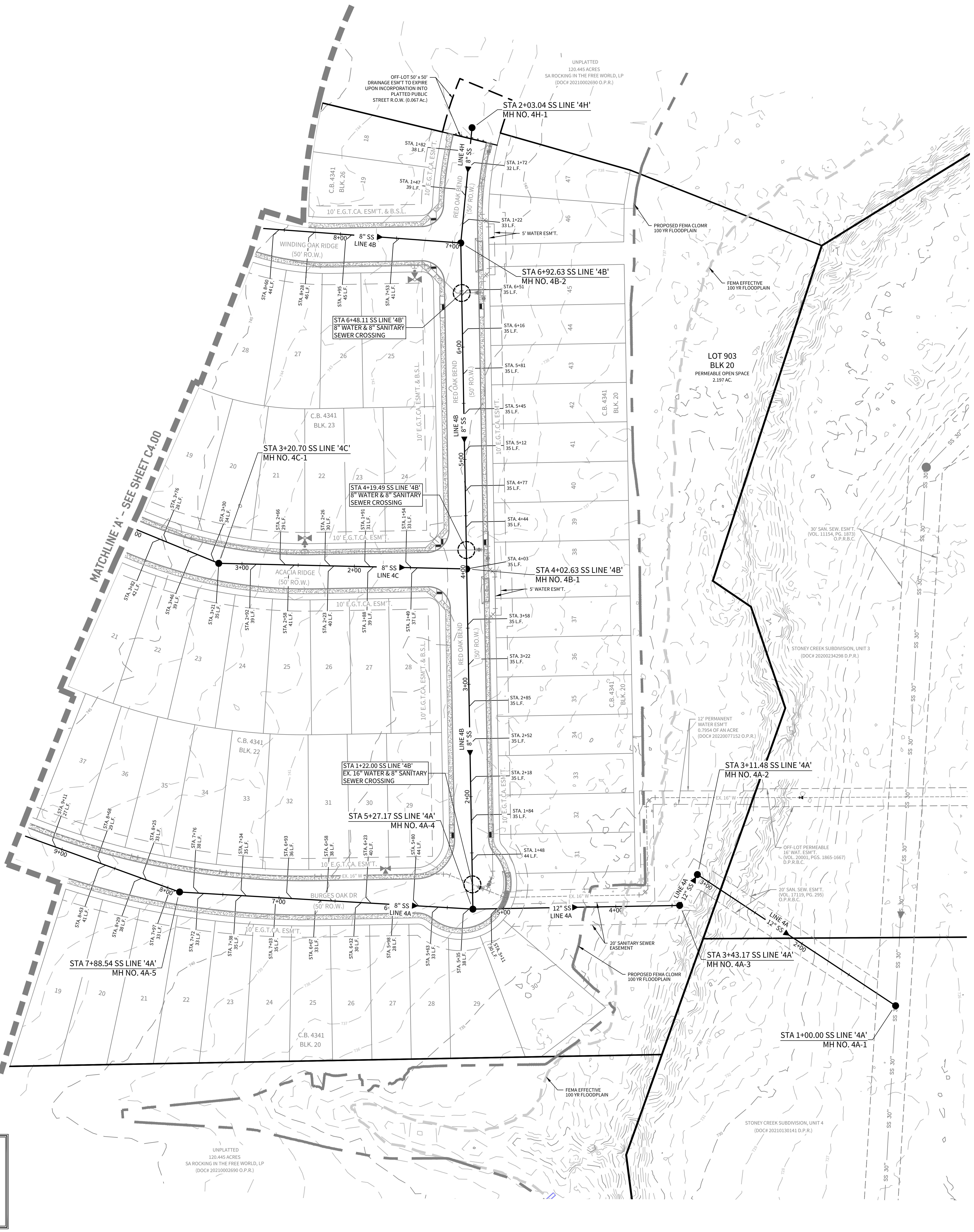
BENCHMARK TO BE SET BY ENGINEER PRIOR TO CONSTRUCTION.

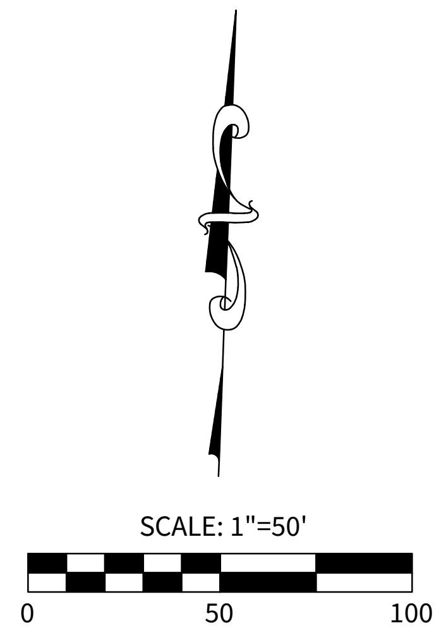

REFERENCE SAWS SPEC. ITEM 812
FINISHED GROUND/PAVEMENT (TOP OF GRADE)
PROPOSED WATER LINE
5' MIN.
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

N.T.S.

SEWER/WATER LINE CROSSINGS	
LINE	STATION
"4B"	1+22.00
"4B"	4+19.49
"4B"	6+48.11


UNPLATTED
120.445 ACRES
SA ROCKING IN THE FREE WORLD, LP
(DOC# 20210002690 O.P.R.)
OFF-LOT 50' x 50' DRAINAGE ESM'T TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.067 Ac.)
STA 2+03.04 SS LINE '4H'
MH NO. 4H-1
LINE 4H 8" SS
RED OAK BEND (50' RO.W.)
WINDING OAK RIDGE (50' RO.W.)
8" SS LINE 4B
STA 6+92.63 SS LINE '4B'
MH NO. 4B-2
STA 6+48.11 SS LINE '4B'
8" WATER & 8" SANITARY SEWER CROSSING
5' WATER ESM'T.
PROPOSED FEMA CLOMR 100 YR FLOODPLAIN
FEMA EFFECTIVE 100 YR FLOODPLAIN
LOT 903
BLK 20
PERMEABLE OPEN SPACE
2.197 AC.
C.B. 4341 BLK. 26
C.B. 4341 BLK. 23
C.B. 4341 BLK. 22
C.B. 4341 BLK. 20
10' E.G.T.CA. ESM'T. & B.S.L.
MATCHLINE 'A' - SEE SHEET C4.00
STA 3+20.70 SS LINE '4C'
MH NO. 4C-1
ACACIA RIDGE (50' RO.W.)
8" SS LINE 4C
STA 4+19.49 SS LINE '4B'
8" WATER & 8" SANITARY SEWER CROSSING
STA 4+02.63 SS LINE '4B'
MH NO. 4B-1
STA 1+22.00 SS LINE '4B'
EX. 16" WATER & 8" SANITARY SEWER CROSSING
STA 5+27.17 SS LINE '4A'
MH NO. 4A-4
BURGES OAK DR (50' RO.W.)
8" SS LINE 4A
12" SS LINE 4A
STA 7+88.54 SS LINE '4A'
MH NO. 4A-5
20' SANITARY SEWER EASEMENT
12' PERMANENT WATER ESM'T 0.7954 OF AN ACRE (DOC# 20220077152 O.P.R.)
STA 3+11.48 SS LINE '4A'
MH NO. 4A-2
OFF-LOT PERMEABLE 16' WAT. ESM'T. (VOL. 20001, PGS. 1865-1667) D.P.R.B.C.
20' SAN. SEW. ESM'T. (VOL. 17119, PG. 295) O.P.R.B.C.
STA 3+43.17 SS LINE '4A'
MH NO. 4A-3
STA 1+00.00 SS LINE '4A'
MH NO. 4A-1
30' SAN. SEW. ESM'T. (VOL. 11154, PG. 1873) O.P.R.B.C.
STONEY CREEK SUBDIVISION, UNIT 3 (DOC# 20200234298 D.P.R.)
STONEY CREEK SUBDIVISION, UNIT 4 (DOC# 20210130141 D.P.R.)
SS 30"
EX. 16" W



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.

SEWER: SOUTH SEWERSHED – DOS RIOS W.R.C. (LOWER MEDINA RIVER WATERSHED)

Developer's Name LENNAR HOMES
Developer's Address 100 NE LOOP 410 SUITE 1155
City SAN ANTONIO **State** TX **Zip** 78216
Phone # (210) 403-6200 **Fax #** -
SAWS Block Map # ____ **Total EDU's** 178 **Total Acreage** 31.33
Total Linear Footage of Pipe 5,367 L.F. OF 8" SS - SDR 26 / 427 L.F. OF 12" SS - SDR 26 **Plat No.** 24-11800118
Number of Lots 178 **SAWS Job No.** 24-1545

CUDEENGINEERS.COM

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

TRES LAURELS
UNIT 4A

SANITARY SEWER MASTER PLAN

DATE
05/22/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
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05/29/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

SAWS JOB NO.
24-1545

C4.01

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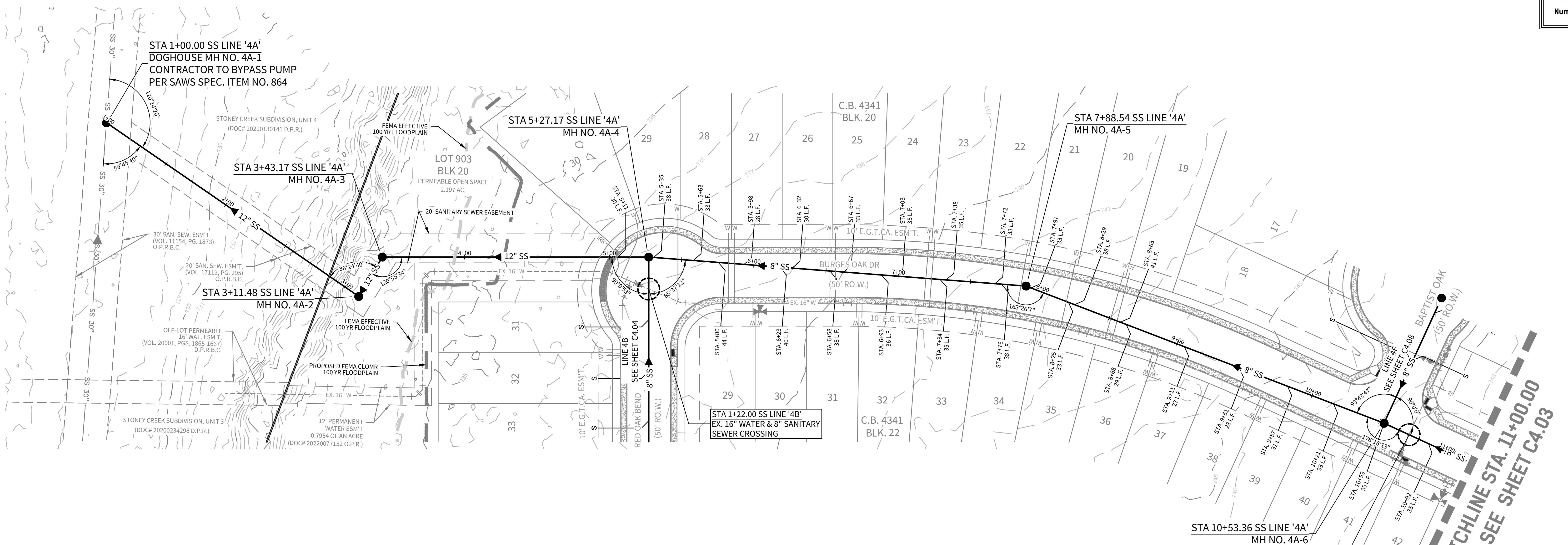
SEWER: SOUTH SEWERSHED – DOS RIOS W.R.C. (LOWER MEDINA RIVER WATERSHED)

Developer's Name	LENNAR HOMES				
Developer's Address	100 NE LOOP 410 SUITE 1155				
City	SAN ANTONIO	State	TX	Zip	78216
Phone #	(210) 403-6200	Fax #	-		
SAWS Block Map #		Total EDU's	178	Total Acreage	31.33
Total Linear Footage of Pipe	5,397 L.F. OF 8" SS - SDR 26 427 L.F. OF 12" SS - SDR 26	Plat No.	24-11800118		
Number of Lots	178	SAWS Job No.	24-1545		



STA 1+00.00 SS LINE '4A'
DOGHOUSE MH NO. 4A-1
CONTRACTOR TO BYPASS PUMP
PER SAWS SPEC. ITEM NO. 864
120°14'20"
59°45'40"
STONEY CREEK SUBDIVISION, UNIT 4 (DOC# 20210130141 D.P.R.)
STA 3+43.17 SS LINE '4A'
MH NO. 4A-3
STA 3+11.48 SS LINE '4A'
MH NO. 4A-2
12" SS
30' SAN. SEW. ESM'T. (VOL. 11154, PG. 1873) O.P.R.B.C.
20' SAN. SEW. ESM'T. (VOL. 17119, PG. 295) O.P.R.B.C.
OFF-LOT PERMEABLE 16' WAT. ESM'T. (VOL. 20001, PGS. 1865-1667) D.P.R.B.C.
STONEY CREEK SUBDIVISION, UNIT 3 (DOC# 20200234298 D.P.R.)
12' PERMANENT WATER ESM'T 0.7954 OF AN ACRE (DOC# 20220077152 O.P.R.)
FEMA EFFECTIVE 100 YR FLOODPLAIN
PROPOSED FEMA CLOMR 100 YR FLOODPLAIN
LOT 903 BLK 20
PERMEABLE OPEN SPACE 2.197 AC.
20' SANITARY SEWER EASEMENT
86°24'40"
120°55'34"
EX. 16" W
SS 30"
STA 5+27.17 SS LINE '4A'
MH NO. 4A-4
90°0'53"
85°37'12"
LINE 4B
SEE SHEET C4.04
8" SS
RED OAK BEND
(50' RO.W.)
10' E.G.T.CA. ESM'T.
BURGES OAK DR
C.B. 4341 BLK. 20
C.B. 4341 BLK. 22
STA 1+22.00 SS LINE '4B'
EX. 16" WATER & 8" SANITARY
SEWER CROSSING
STA 7+88.54 SS LINE '4A'
MH NO. 4A-5
163°26'7"
LINE 4F
SEE SHEET C4.08
BAPTIST OAK
93°43'47"
176°16'13"
STA 10+53.36 SS LINE '4A'
MH NO. 4A-6
STA 10+72.35 SS LINE '4A'
8" WATER & 8" SANITARY
SEWER CROSSING
MATCHLINE STA. 11+00.00 – SEE SHEET C4.03

NOTE:

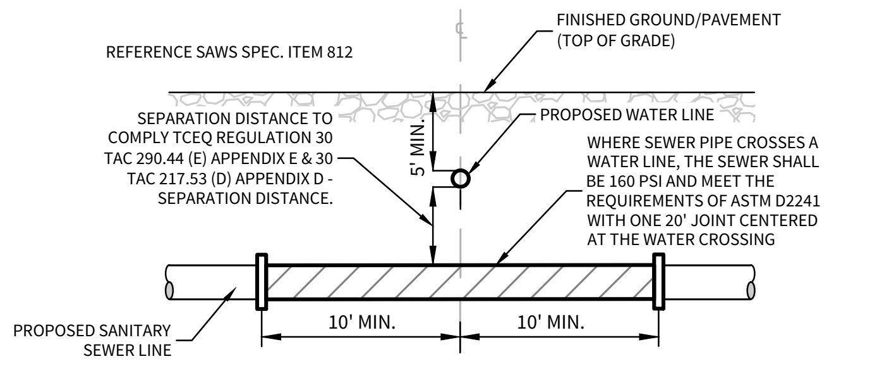
CONTRACTOR TO VERIFY LOCATION AND INVERT OF EXISTING SEWER MAIN AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO INSTALLATION.

CAUTION!!!

THE CONTRACTOR SHALL BE AWARE THAT UNDERGROUND WATER LINES EXIST ALONG WT MONTGOMERY ROAD. 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.



REFERENCE SAWS SPEC. ITEM 812
FINISHED GROUND/PAVEMENT (TOP OF GRADE)
PROPOSED WATER LINE
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
5' MIN.
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

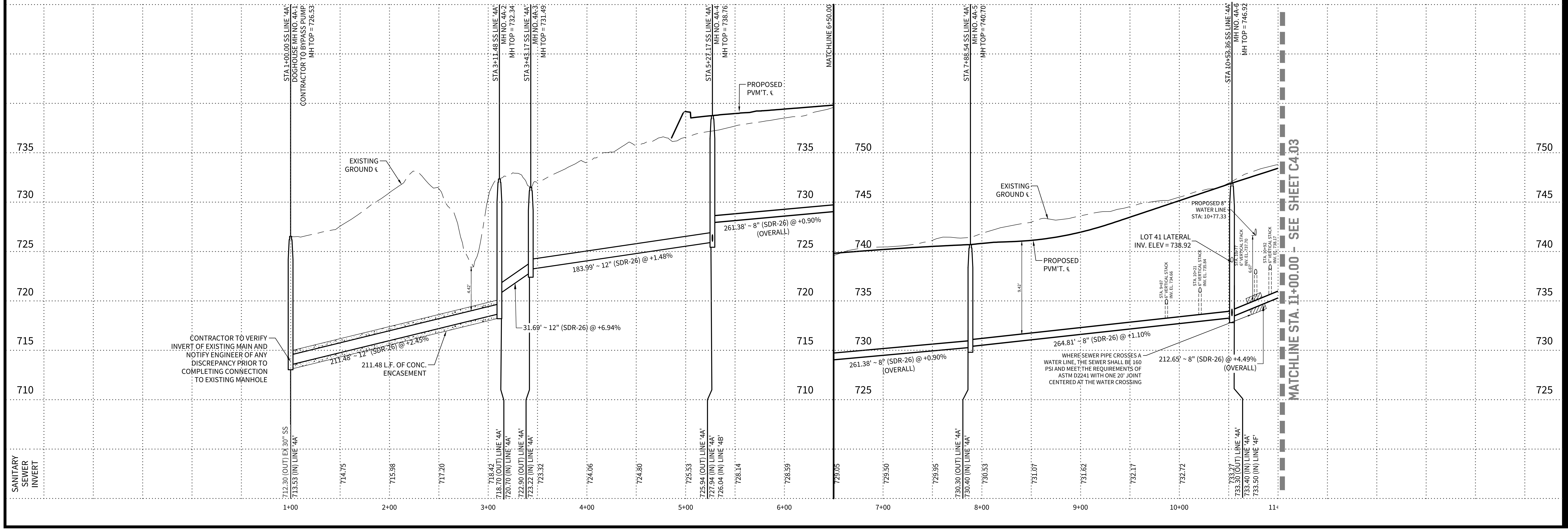
TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

N.T.S.

LINE 4A

STA. 1+00.00 TO STA. 11+00.00

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



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

TRES LAURELS
UNIT 4A

SANITARY SEWER PLAN & PROFILE -
LINE '4A'

DATE
06/20/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
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06/25/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

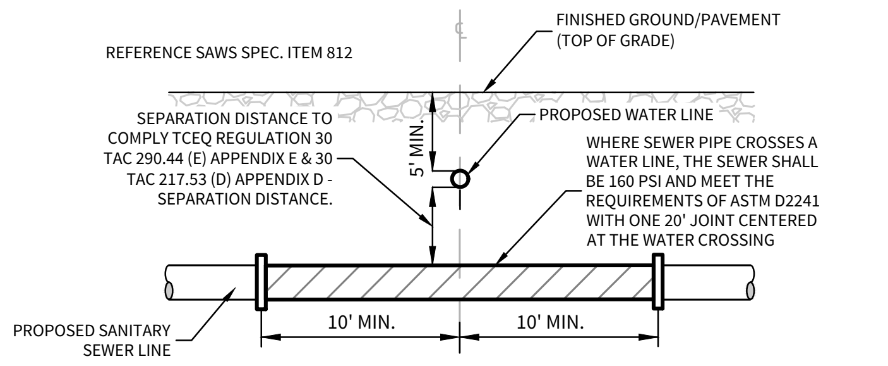
SAWS JOB NO.
24-1545

C4.02

P:\03050\015\2-DWG\4-Plans\04_01 SSPP.dwg 2024/06/20 11:30am ivilla

SEWER: SOUTH SEWERSHED – DOS RIOS W.R.C. (LOWER MEDINA RIVER WATERSHED)

Developer's Name: LENNAR HOMES
Developer's Address: 100 NE LOOP 410 SUITE 1155
City: SAN ANTONIO State: TX Zip: 78216
Phone #: (210) 403-6200 Fax #: –
SAWS Block Map #: Total EDU's: 178 Total Acreage: 31.33
Total Linear Footage of Pipe: 5,397 L.F. OF 8" SS – SDR 26
427 L.F. OF 12" SS – SDR 26 Plat No.: 24-11800118
Number of Lots: 178 SAWS Job No.: 24-1545



REFERENCE SAWS SPEC. ITEM 812
FINISHED GROUND/PAVEMENT (TOP OF GRADE)
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
5' MIN.
PROPOSED WATER LINE
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

N.T.S.

NOTE:

CONTRACTOR TO VERIFY LOCATION AND INVERT OF EXISTING SEWER MAIN AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO INSTALLATION.

CAUTION!!!

THE CONTRACTOR SHALL BE AWARE THAT UNDERGROUND WATER LINES EXIST ALONG WT MONTGOMERY ROAD. 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

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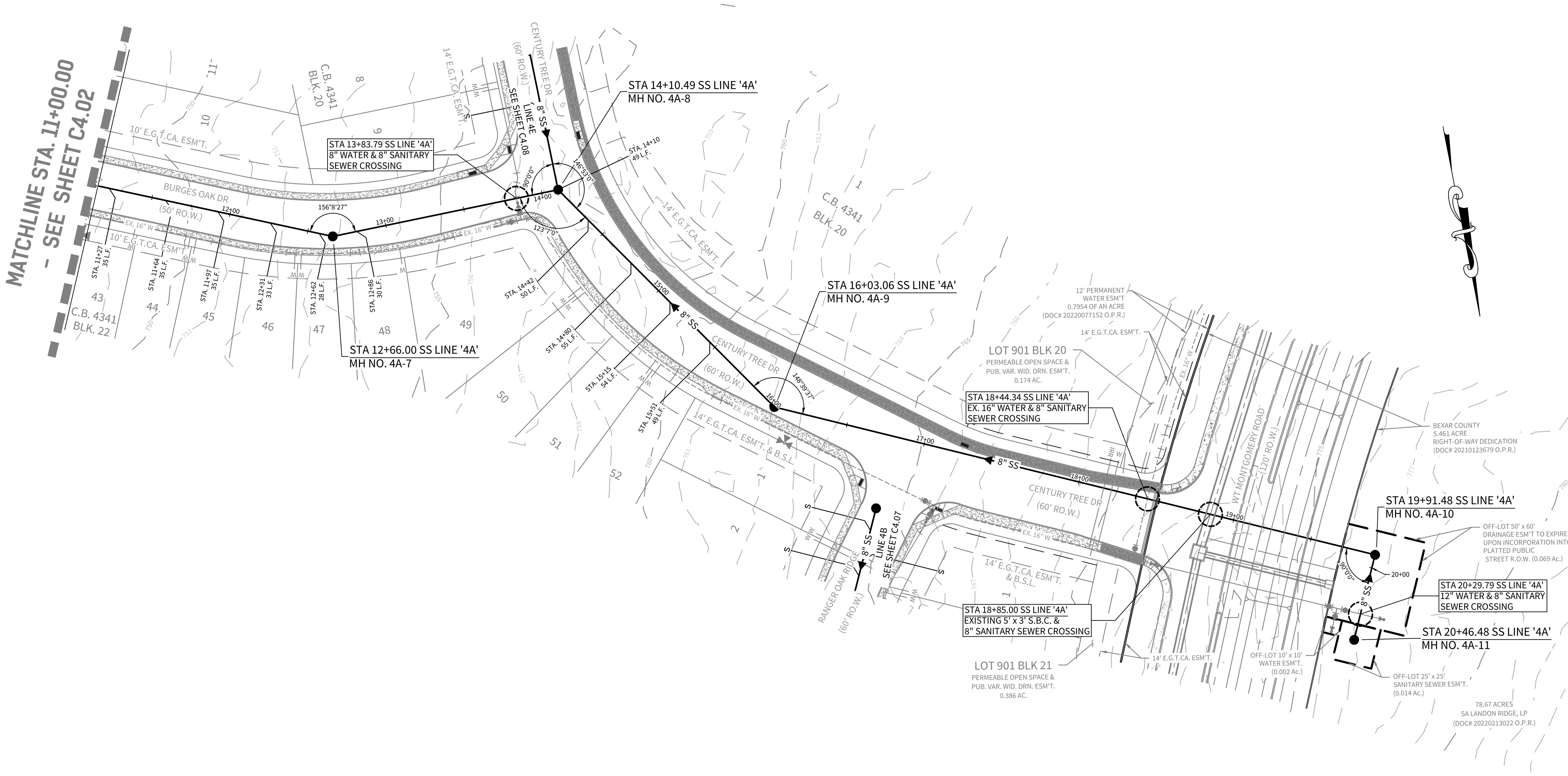
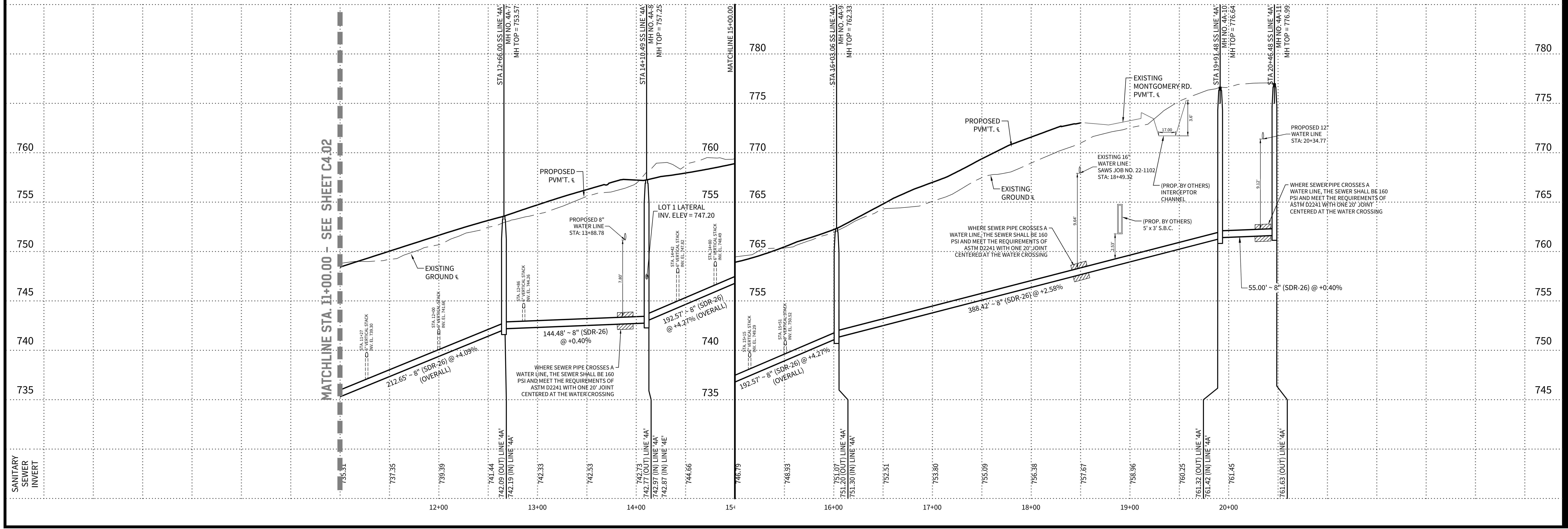


MATCHLINE STA. 11+00.00 – SEE SHEET C4.02
C.B. 4341 BLK. 20
C.B. 4341 BLK. 22
10' E.G.T.CA. ESM'T.
14' E.G.T.CA. ESM'T.
BURGES OAK DR (50' RO.W.)
CENTURY TREE DR (60' RO.W.)
EX. 16" W
SEE SHEET C4.08 LINE 4E
8" SS
STA 13+83.79 SS LINE '4A' 8" WATER & 8" SANITARY SEWER CROSSING
STA 14+10.49 SS LINE '4A' MH NO. 4A-8
STA 12+66.00 SS LINE '4A' MH NO. 4A-7
STA 16+03.06 SS LINE '4A' MH NO. 4A-9
156°8'27"
90°0'0"
146°53'0"
123°7'0"
148°39'37"
12+00
13+00
14+00
15+00
16+00
17+00
18+00
19+00
20+00
STA. 11+27 35 L.F.
STA. 11+64 35 L.F.
STA. 11+97 35 L.F.
STA. 12+31 33 L.F.
STA. 12+62 28 L.F.
STA. 12+86 30 L.F.
STA. 14+10 49 L.F.
STA. 14+42 50 L.F.
STA. 14+80 55 L.F.
STA. 15+15 54 L.F.
STA. 15+51 49 L.F.
14' E.G.T.CA. ESM'T. & B.S.L.
SEE SHEET C4.07 LINE 4B
LOT 901 BLK 20 PERMEABLE OPEN SPACE & PUB. VAR. WID. DRN. ESM'T. 0.174 AC.
12' PERMANENT WATER ESM'T 0.7954 OF AN ACRE (DOC# 20220077152 O.P.R.)
STA 18+44.34 SS LINE '4A' EX. 16" WATER & 8" SANITARY SEWER CROSSING
STA 18+85.00 SS LINE '4A' EXISTING 5' x 3' S.B.C. & 8" SANITARY SEWER CROSSING
LOT 901 BLK 21 PERMEABLE OPEN SPACE & PUB. VAR. WID. DRN. ESM'T. 0.386 AC.
WT MONTGOMERY ROAD (120' RO.W.)
BEXAR COUNTY 5.461 ACRE RIGHT-OF-WAY DEDICATION (DOC# 20210123679 O.P.R.)
STA 19+91.48 SS LINE '4A' MH NO. 4A-10
OFF-LOT 50' x 60' DRAINAGE ESM'T TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.069 Ac.)
STA 20+29.79 SS LINE '4A' 12" WATER & 8" SANITARY SEWER CROSSING
STA 20+46.48 SS LINE '4A' MH NO. 4A-11
OFF-LOT 10' x 10' WATER ESM'T. (0.002 Ac.)
OFF-LOT 25' x 25' SANITARY SEWER ESM'T. (0.014 Ac.)
78.67 ACRES SA LANDON RIDGE, LP (DOC# 20220213022 O.P.R.)

LINE 4A

STA. 11+00.00 TO STA. 20+51.46

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



MATCHLINE STA. 11+00.00 – SEE SHEET C4.02
STA 12+66.00 SS LINE '4A' MH NO. 4A-7 MH TOP = 753.57
STA 14+10.49 SS LINE '4A' MH NO. 4A-8 MH TOP = 757.25
MATCHLINE 15+00.00
STA 16+03.06 SS LINE '4A' MH NO. 4A-9 MH TOP = 762.33
STA 19+91.48 SS LINE '4A' MH NO. 4A-10 MH TOP = 776.64
STA 20+46.48 SS LINE '4A' MH NO. 4A-11 MH TOP = 776.99
PROPOSED PVM'T. ℄
EXISTING GROUND ℄
PROPOSED 8" WATER LINE STA: 13+88.78
7.80'
LOT 1 LATERAL INV. ELEV = 747.20
STA. 11+27 6" VERTICAL STACK INV. EL. 739.30
STA. 12+00 6" VERTICAL STACK INV. EL. 741.66
STA. 12+86 6" VERTICAL STACK INV. EL. 744.26
STA. 14+42 6" VERTICAL STACK INV. EL. 747.82
STA. 14+80 6" VERTICAL STACK INV. EL. 748.49
STA. 15+15 6" VERTICAL STACK INV. EL. 749.29
STA. 15+51 6" VERTICAL STACK INV. EL. 750.52
212.65' ~ 8" (SDR-26) @ +4.09% (OVERALL)
144.48' ~ 8" (SDR-26) @ +0.40%
192.57' ~ 8" (SDR-26) @ +4.27% (OVERALL)
388.42' ~ 8" (SDR-26) @ +2.58%
55.00' ~ 8" (SDR-26) @ +0.40%
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
EXISTING MONTGOMERY RD. PVM'T. ℄
EXISTING 16" WATER LINE SAWS JOB NO. 22-1102 STA: 18+49.32
9.64'
2.53'
(PROP. BY OTHERS) INTERCEPTOR CHANNEL
17.00
3.6'
(PROP. BY OTHERS) 5' x 3' S.B.C.
PROPOSED 12" WATER LINE STA: 20+34.77
9.12'
735
740
745
750
755
760
765
770
775
780
SANITARY SEWER INVERT
735.31
737.35
739.39
741.44
742.09 (OUT) LINE '4A'
742.19 (IN) LINE '4A'
742.33
742.53
742.73
742.77 (OUT) LINE '4A'
742.97 (IN) LINE '4A'
742.87 (IN) LINE '4E'
744.66
746.79
748.93
751.07
751.20 (OUT) LINE '4A'
751.30 (IN) LINE '4A'
752.51
753.80
755.09
756.38
757.67
758.96
760.25
761.32 (OUT) LINE '4A'
761.42 (IN) LINE '4A'
761.45
761.63 (OUT) LINE '4A'
12+00
13+00
14+00
15+00
16+00
17+00
18+00
19+00
20+00

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

TRES LAURELS UNIT 4A

SANITARY SEWER PLAN & PROFILE - LINE '4A'

DATE
06/25/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
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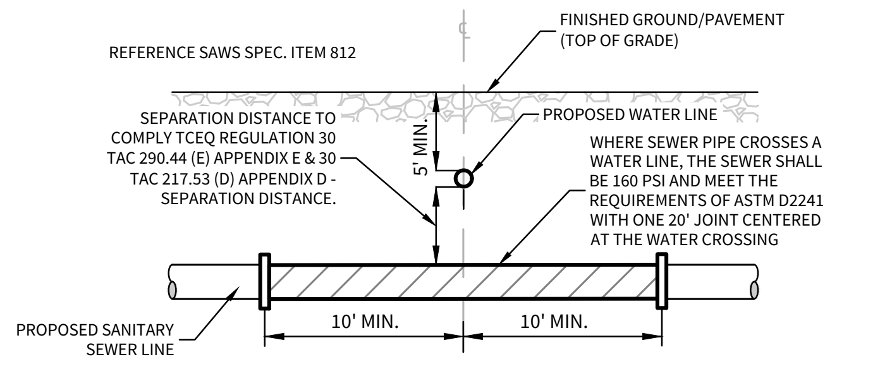
06/25/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

SAWS JOB NO.
24-1545

C4.03


REFERENCE SAWS SPEC. ITEM 812
FINISHED GROUND/PAVEMENT (TOP OF GRADE)
PROPOSED WATER LINE
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
5' MIN.
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

N.T.S.

NOTE:

CONTRACTOR TO VERIFY LOCATION AND INVERT OF EXISTING SEWER MAIN AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO INSTALLATION.

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TRENCH EXCAVATION SAFETY PROTECTION

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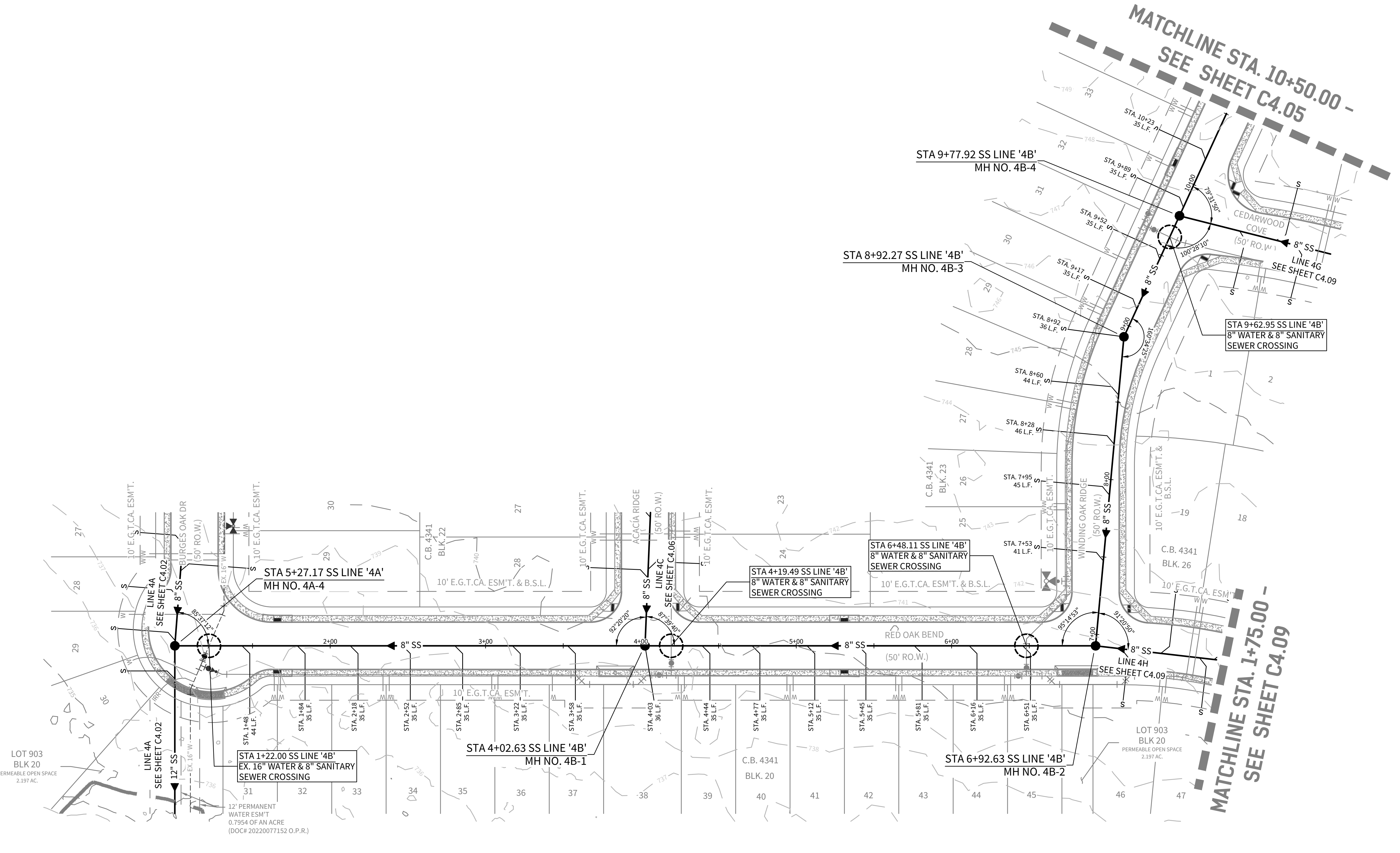

MATCHLINE STA. 10+50.00 - SEE SHEET C4.05
STA 9+77.92 SS LINE '4B' MH NO. 4B-4
STA 8+92.27 SS LINE '4B' MH NO. 4B-3
STA 9+62.95 SS LINE '4B' 8" WATER & 8" SANITARY SEWER CROSSING
8" SS LINE 4G SEE SHEET C4.09
CEDARWOOD COVE
(50' RO.W.)
WINDING OAK RIDGE
STA 6+48.11 SS LINE '4B' 8" WATER & 8" SANITARY SEWER CROSSING
STA 4+19.49 SS LINE '4B' 8" WATER & 8" SANITARY SEWER CROSSING
STA 5+27.17 SS LINE '4A' MH NO. 4A-4
LINE 4A SEE SHEET C4.02
LINE 4C SEE SHEET C4.06
ACACIA RIDGE
RED OAK BEND
(50' RO.W.)
8" SS
8" SS LINE 4H SEE SHEET C4.09
MATCHLINE STA. 1+75.00 - SEE SHEET C4.09
STA 1+22.00 SS LINE '4B' EX. 16" WATER & 8" SANITARY SEWER CROSSING
STA 4+02.63 SS LINE '4B' MH NO. 4B-1
STA 6+92.63 SS LINE '4B' MH NO. 4B-2
12" SS
10' E.G.T.CA. ESM'T. & B.S.L.
C.B. 4341 BLK. 20
C.B. 4341 BLK. 22
C.B. 4341 BLK. 23
C.B. 4341 BLK. 26
LOT 903 BLK 20 PERMEABLE OPEN SPACE 2.197 AC.
12' PERMANENT WATER ESM'T 0.7954 OF AN ACRE (DOC# 20220077152 O.P.R.)
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47

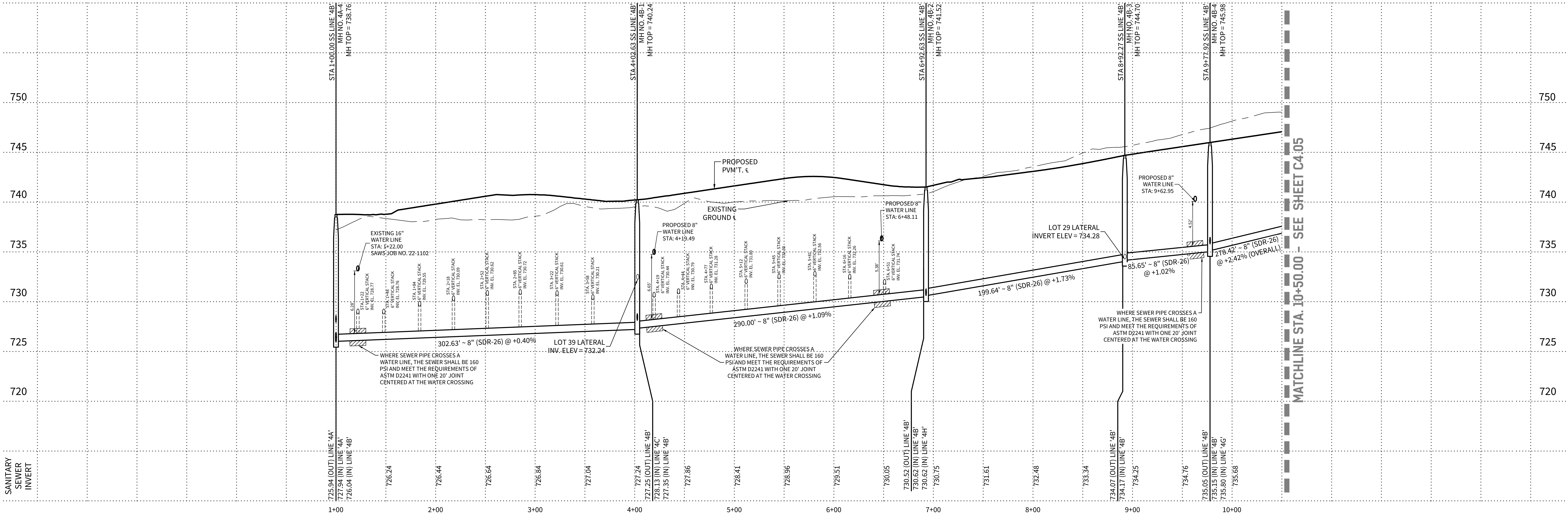
SEWER: SOUTH SEWERSHED - DOS RIOS W.R.C. (LOWER MEDINA RIVER WATERSHED)

Developer's Name: LENNAR HOMES
Developer's Address: 100 NE LOOP 410 SUITE 1155
City: SAN ANTONIO State: TX Zip: 78216
Phone #: (210) 403-6200 Fax #: -
SAWS Block Map #: Total EDU's: 178 Total Acreage: 31.33
Total Linear Footage of Pipe: 5,397 L.F. OF 8" SS - SDR 26
427 L.F. OF 12" SS - SDR 26 Plat No.: 24-11800118
Number of Lots: 178 SAWS Job No.: 24-1545

LINE 4B

STA. 1+00.00 TO STA. 10+50.00

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


STA 1+00.00 SS LINE '4B' MH NO. 4A-4 MH TOP = 738.76
STA 4+02.63 SS LINE '4B' MH NO. 4B-1 MH TOP = 740.24
STA 6+92.63 SS LINE '4B' MH NO. 4B-2 MH TOP = 741.52
STA 8+92.27 SS LINE '4B' MH NO. 4B-3 MH TOP = 744.70
STA 9+77.92 SS LINE '4B' MH NO. 4B-4 MH TOP = 745.98
750
745
740
735
730
725
720
PROPOSED PVM'T. ℄
EXISTING GROUND ℄
EXISTING 16" WATER LINE STA: 1+22.00 SAWS JOB NO. 22-1102
PROPOSED 8" WATER LINE STA: 4+19.49
PROPOSED 8" WATER LINE STA: 6+48.11
PROPOSED 8" WATER LINE STA: 9+62.95
302.63' ~ 8" (SDR-26) @ +0.40%
290.00' ~ 8" (SDR-26) @ +1.09%
199.64' ~ 8" (SDR-26) @ +1.73%
85.65' ~ 8" (SDR-26) @ +1.02%
278.42' ~ 8" (SDR-26) @ +2.42% (OVERALL)
LOT 39 LATERAL INV. ELEV = 732.24
LOT 29 LATERAL INVERT ELEV = 734.28
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
MATCHLINE STA. 10+50.00 - SEE SHEET C4.05
SANITARY SEWER INVERT
725.94 (OUT) LINE '4A'
727.94 (IN) LINE '4A'
726.04 (IN) LINE '4B'
726.24
726.44
726.64
726.84
727.04
727.24
727.25 (OUT) LINE '4B'
728.13 (IN) LINE '4C'
727.35 (IN) LINE '4B'
727.86
728.41
728.96
729.51
730.05
730.52 (OUT) LINE '4B'
730.62 (IN) LINE '4B'
730.62 (IN) LINE '4H'
730.75
731.61
732.48
733.34
734.07 (OUT) LINE '4B'
734.17 (IN) LINE '4B'
734.25
734.76
735.05 (OUT) LINE '4B'
735.15 (IN) LINE '4B'
735.80 (IN) LINE '4G'
735.68
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
10+00

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P:(210) 681.2951

TRES LAURELS UNIT 4A

SANITARY SEWER PLAN & PROFILE - LINE '4B'

DATE
06/25/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
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06/25/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

SAWS JOB NO.
24-1545

C4.04

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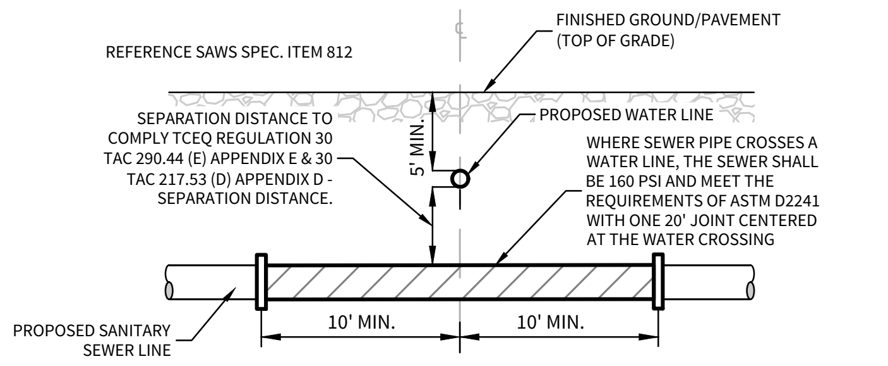
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FINISHED GROUND/PAVEMENT (TOP OF GRADE)
PROPOSED WATER LINE
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
5' MIN.
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

N.T.S.

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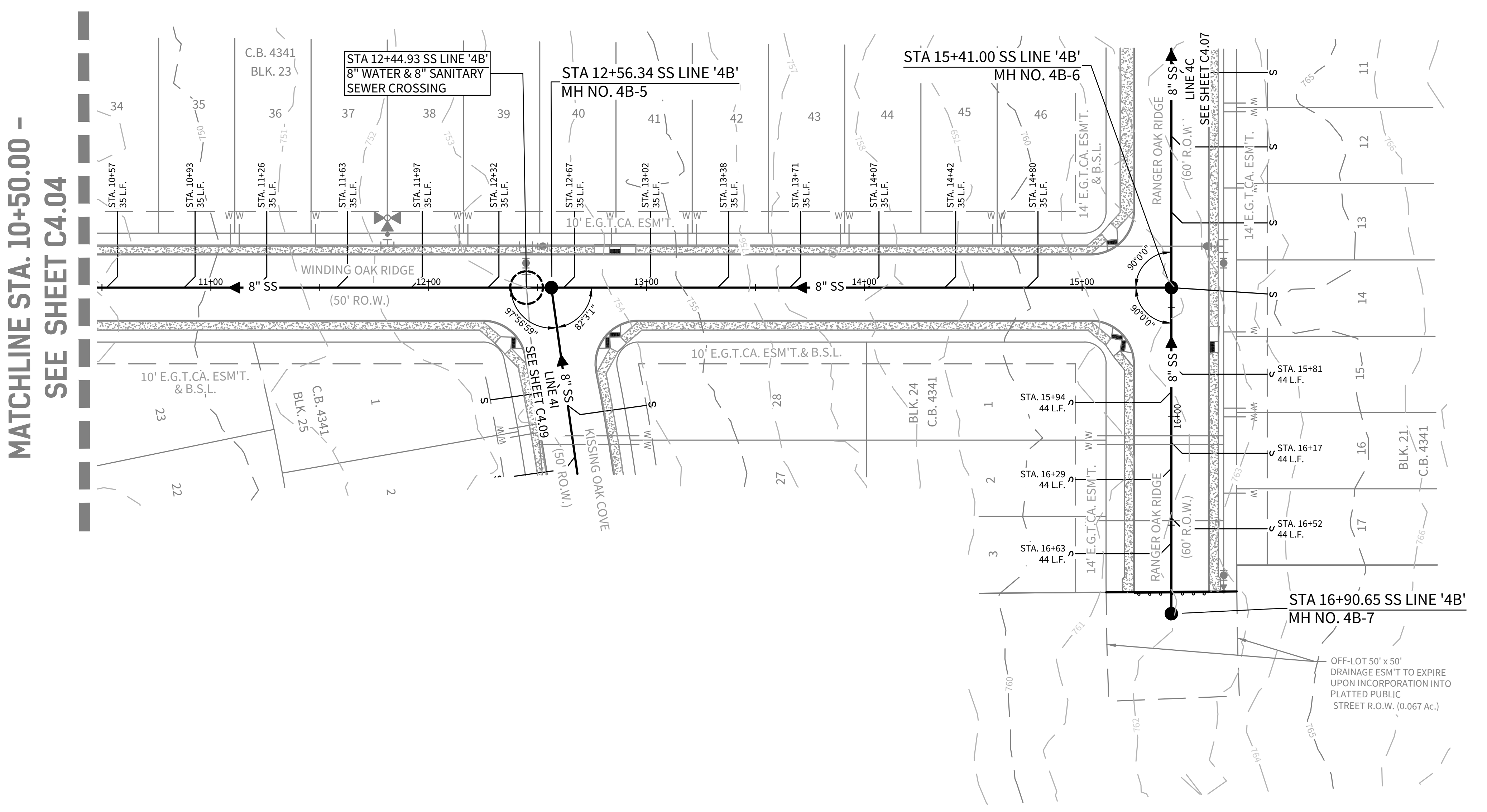


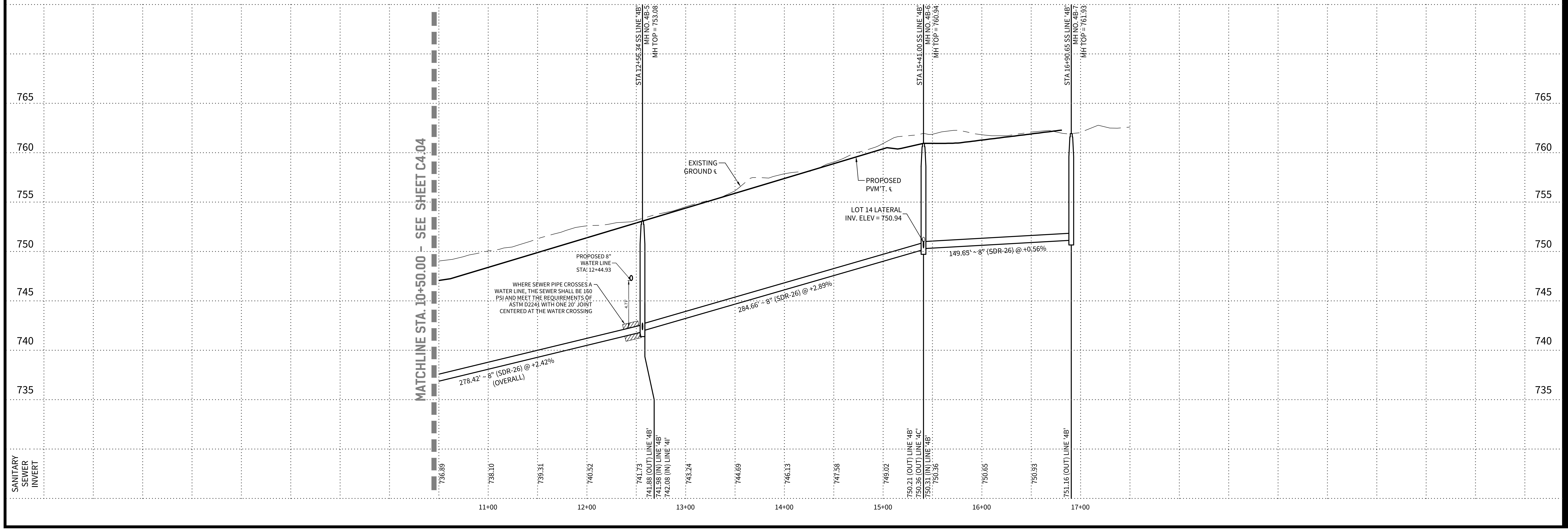
SEWER: SOUTH SEWERSHED – DOS RIOS W.R.C. (LOWER MEDINA RIVER WATERSHED)

Developer's Name LENNAR HOMES
Developer's Address 100 NE LOOP 410 SUITE 1155
City SAN ANTONIO State TX Zip 78216
Phone # (210) 403-6200 Fax # –
SAWS Block Map # ______ Total EDU's 178 Total Acreage 31.33
Total Linear Footage of Pipe 5,367 L.F. OF 8" SS – SDR 26 / 427 L.F. OF 12" SS – SDR 26 Plat No. 24-11800118
Number of Lots 178 SAWS Job No. 24-1545

LINE 4B

STA. 10+50.00 TO STA. 16+90.65

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


STA 12+56.34 SS LINE '4B'
MH NO. 4B-5
MH TOP = 753.08
STA 15+41.00 SS LINE '4B'
MH NO. 4B-6
MH TOP = 760.94
STA 16+90.65 SS LINE '4B'
MH NO. 4B-7
MH TOP = 761.93
765
760
755
750
745
740
735
MATCHLINE STA. 10+50.00 – SEE SHEET C4.04
EXISTING GROUND ℄
PROPOSED PVM'T. ℄
LOT 14 LATERAL INV. ELEV = 750.94
PROPOSED 8" WATER LINE STA: 12+44.93
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
4.77'
278.42' ~ 8" (SDR-26) @ +2.42% (OVERALL)
284.66' ~ 8" (SDR-26) @ +2.89%
149.65' ~ 8" (SDR-26) @ +0.56%
SANITARY SEWER INVERT
736.89
738.10
739.31
740.52
741.73
741.88 (OUT) LINE '4B'
741.98 (IN) LINE '4B'
742.08 (IN) LINE '4I'
743.24
744.69
746.13
747.58
749.02
750.21 (OUT) LINE '4B'
750.36 (OUT) LINE '4C'
750.31 (IN) LINE '4B'
750.36
750.65
750.93
751.16 (OUT) LINE '4B'
11+00
12+00
13+00
14+00
15+00
16+00
17+00

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San Antonio, Texas 78231
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TRES LAURELS UNIT 4A

SANITARY SEWER PLAN & PROFILE - LINE '4B'

DATE
05/22/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
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05/29/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

SAWS JOB NO.
24-1545

C4.05

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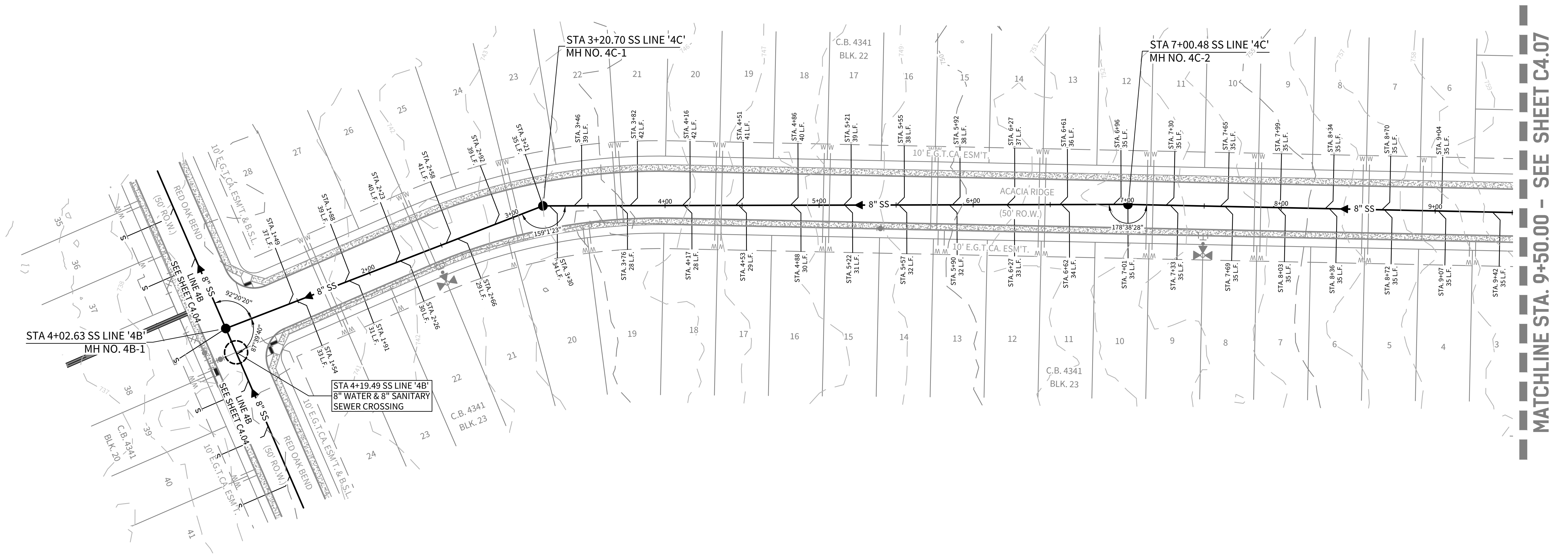

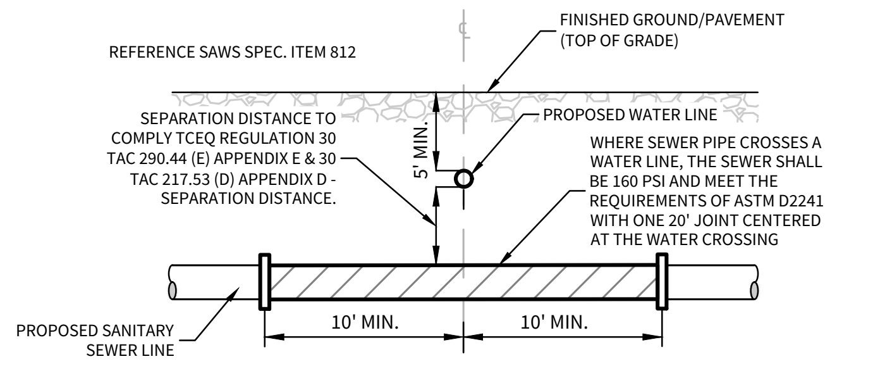
REFERENCE SAWS SPEC. ITEM 812
FINISHED GROUND/PAVEMENT (TOP OF GRADE)
PROPOSED WATER LINE
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
5' MIN.
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

N.T.S.

NOTE:

CONTRACTOR TO VERIFY LOCATION AND INVERT OF EXISTING SEWER MAIN AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO INSTALLATION.

CAUTION!!!

THE CONTRACTOR SHALL BE AWARE THAT UNDERGROUND WATER LINES EXIST ALONG WT MONTGOMERY ROAD. 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

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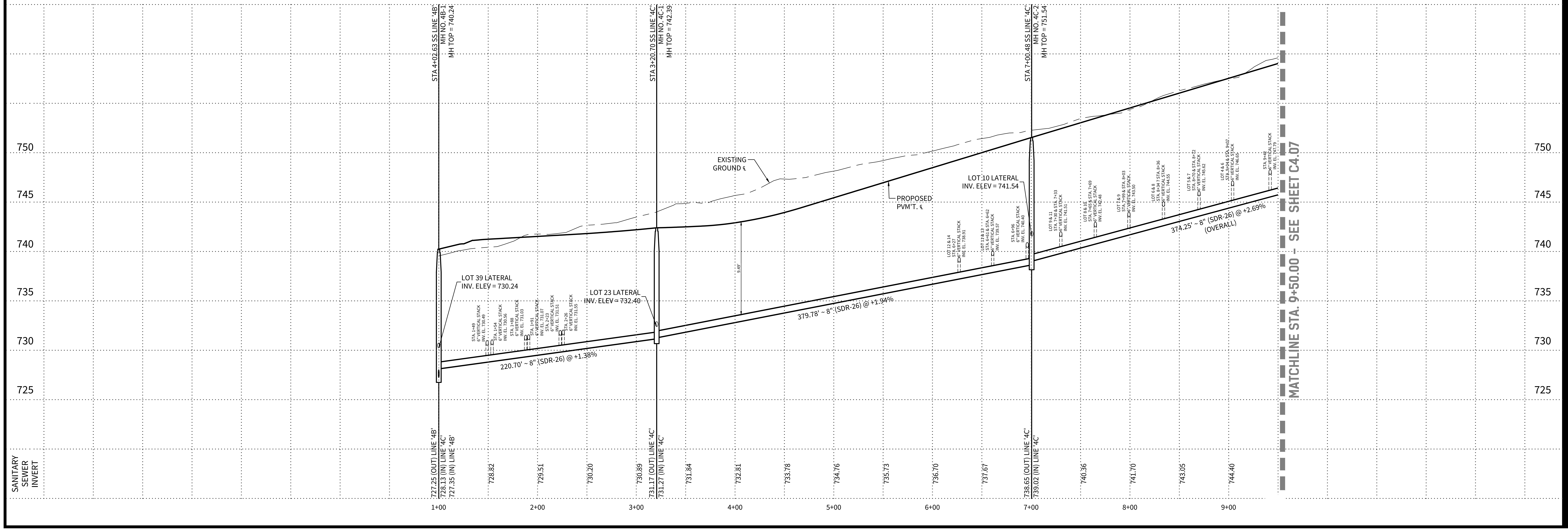
SEWER: SOUTH SEWERSHED – DOS RIOS W.R.C. (LOWER MEDINA RIVER WATERSHED)

Developer's Name	LENNAR HOMES				
Developer's Address	100 NE LOOP 410 SUITE 1155				
City	SAN ANTONIO	State	TX	Zip	78216
Phone #	(210) 403-6200	Fax #	-		
SAWS Block Map #		Total EDU's	178	Total Acreage	31.33
Total Linear Footage of Pipe	5,367 L.F. OF 8" SS – SDR 26 427 L.F. OF 12" SS – SDR 26	Plat No.	24-11800118		
Number of Lots	178	SAWS Job No.	24-1545		

LINE 4C

STA. 1+00.00 TO STA. 9+50.00

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



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San Antonio, Texas 78231
P:(210) 681.2951

TRES LAURELS UNIT 4A

SANITARY SEWER PLAN & PROFILE - LINES '4C'

DATE	05/22/2024
PROJECT NO.	03050.015
DRAWN BY	RM / IV
CHECKED BY	MAT/CJC

REVISIONS

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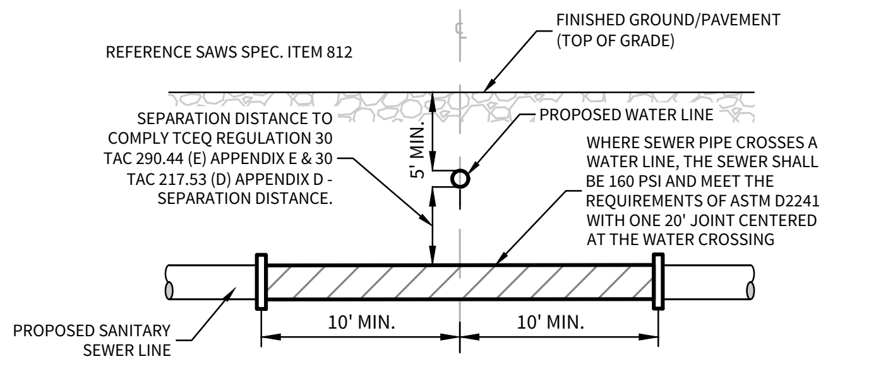
05/29/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

SAWS JOB NO.
24-1545

C4.06


REFERENCE SAWS SPEC. ITEM 812
FINISHED GROUND/PAVEMENT (TOP OF GRADE)
PROPOSED WATER LINE
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
5' MIN.
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

N.T.S.

NOTE:

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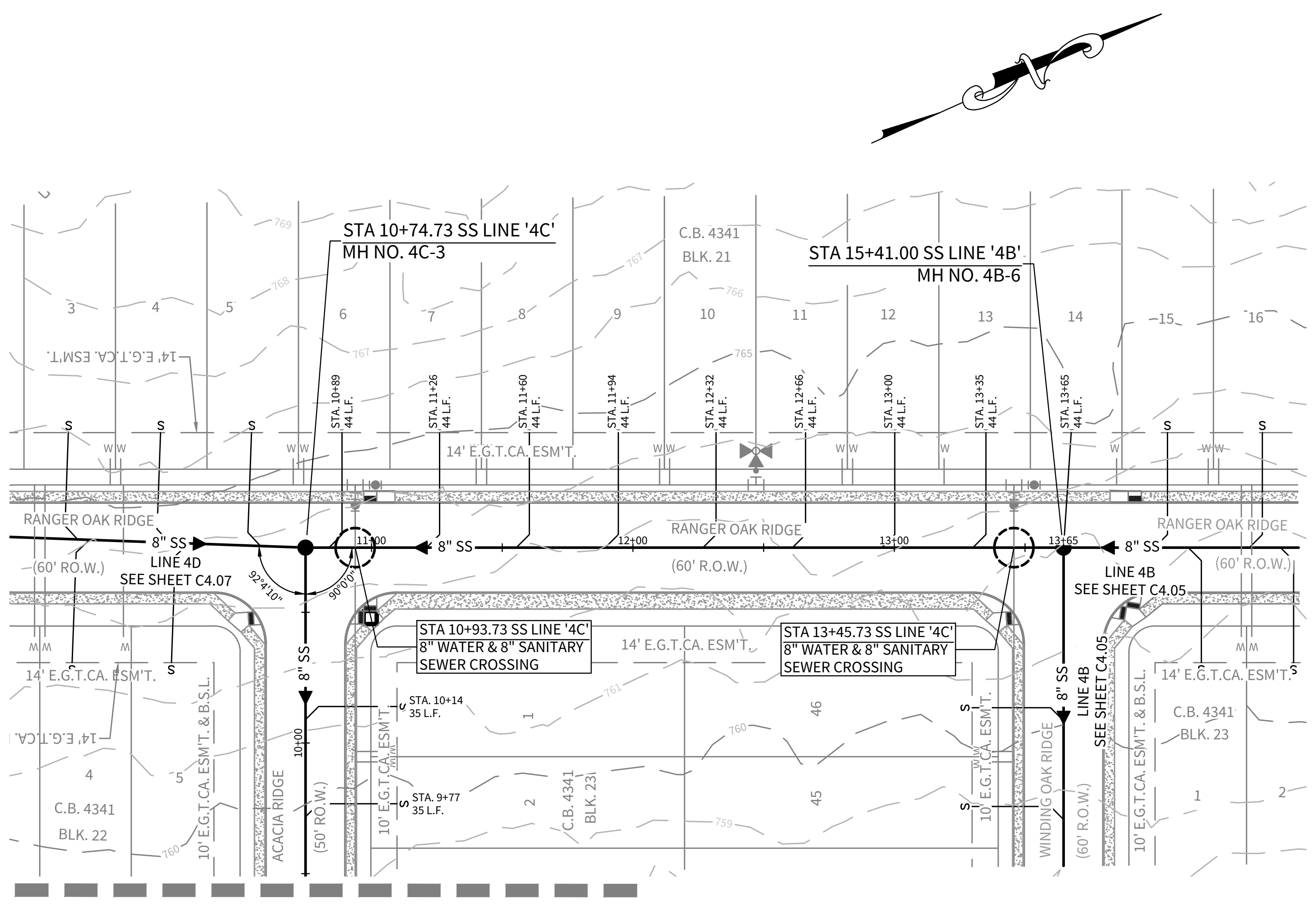
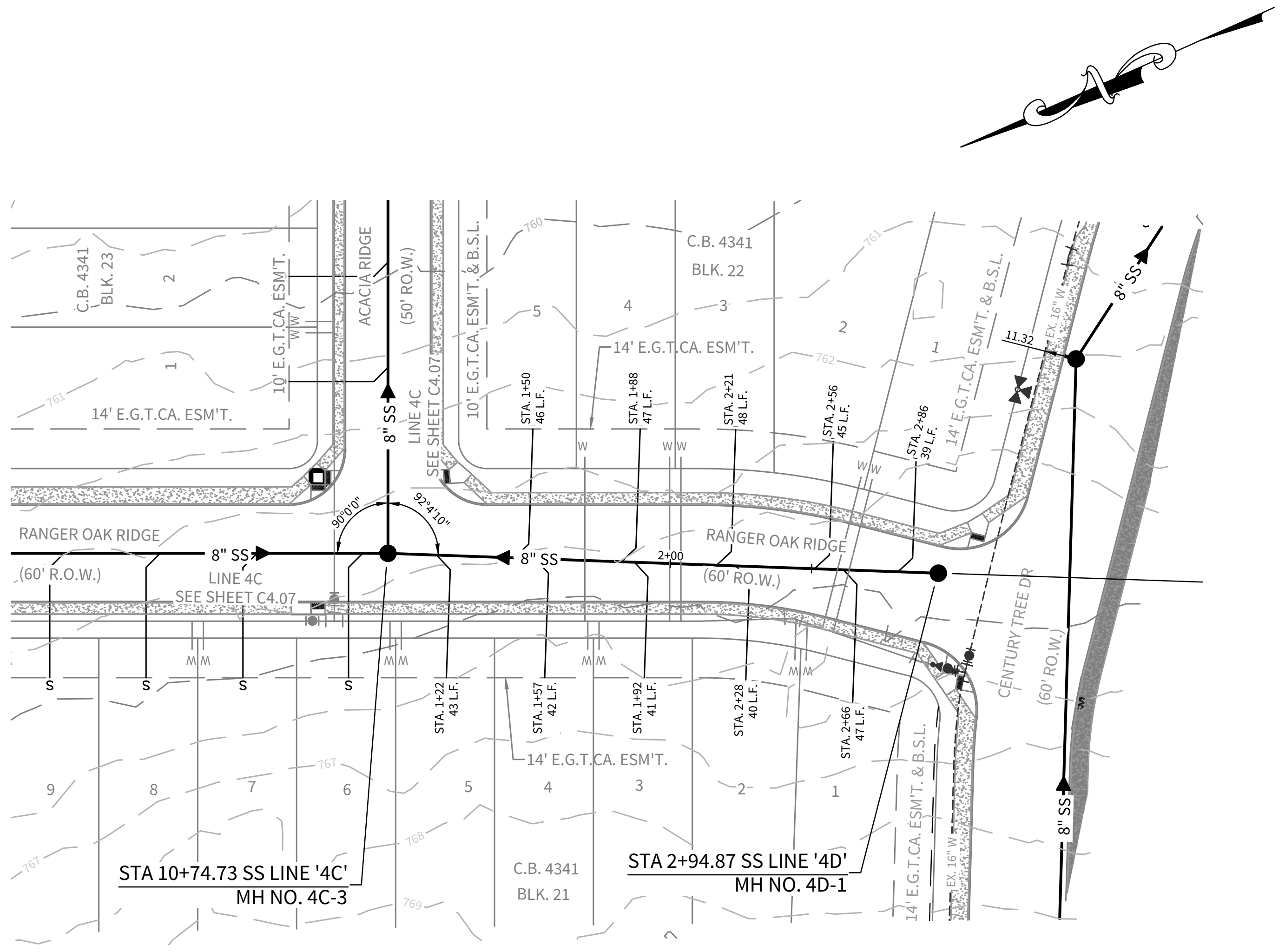




SEWER: SOUTH SEWERSHED - DOS RIOS W.R.C. (LOWER MEDINA RIVER WATERSHED)

Developer's Name LENNAR HOMES
Developer's Address 100 NE LOOP 410 SUITE 1155
City SAN ANTONIO State TX Zip 78216
Phone # (210) 403-6200 Fax # -
SAWS Block Map # ______ Total EDU's 178 Total Acreage 31.33
Total Linear Footage of Pipe 5,367 L.F. OF 8" SS - SDR 26 / 427 L.F. OF 12" SS - SDR 26 Plat No. 24-11800118
Number of Lots 178 SAWS Job No. 24-1545

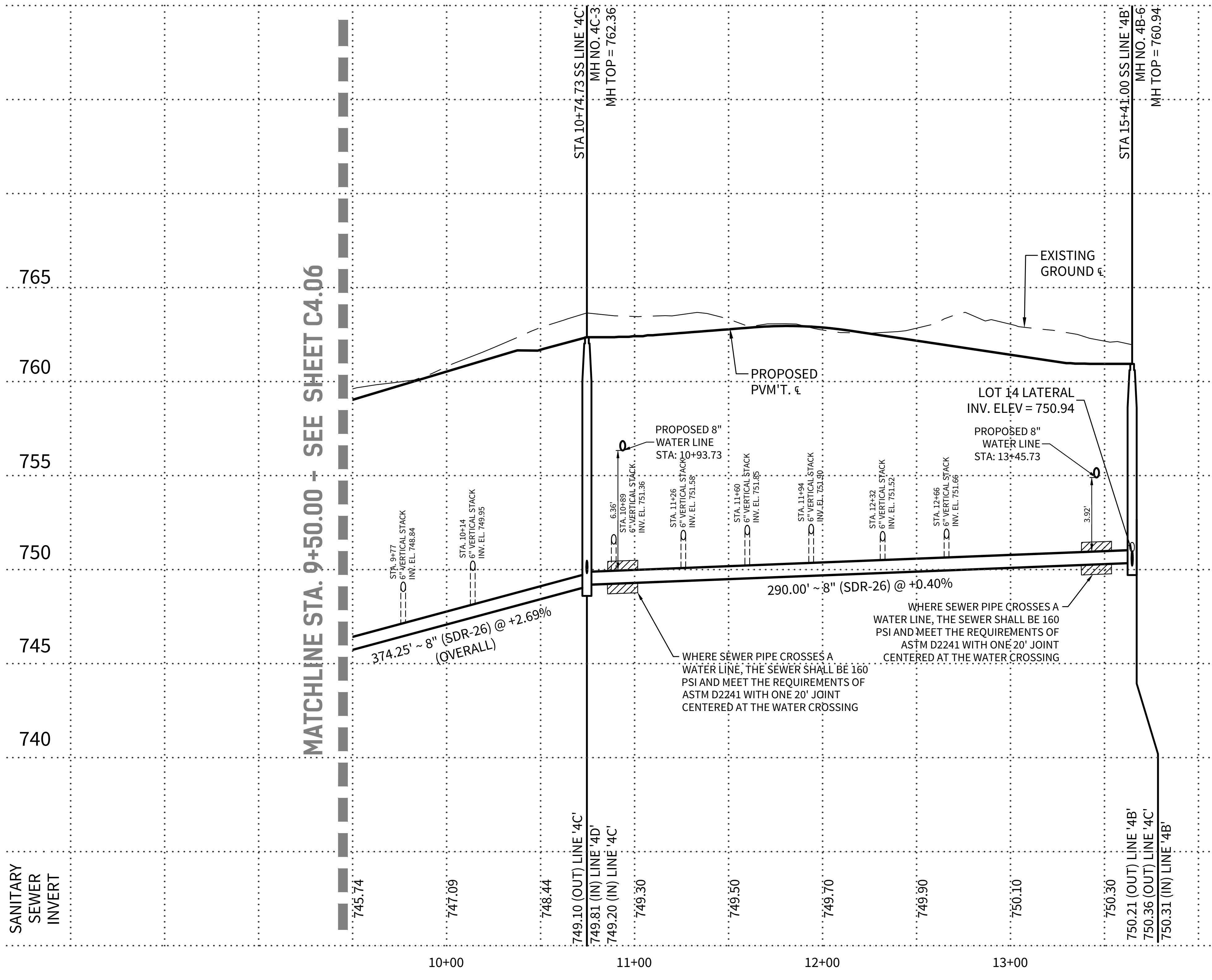
LINE 4C

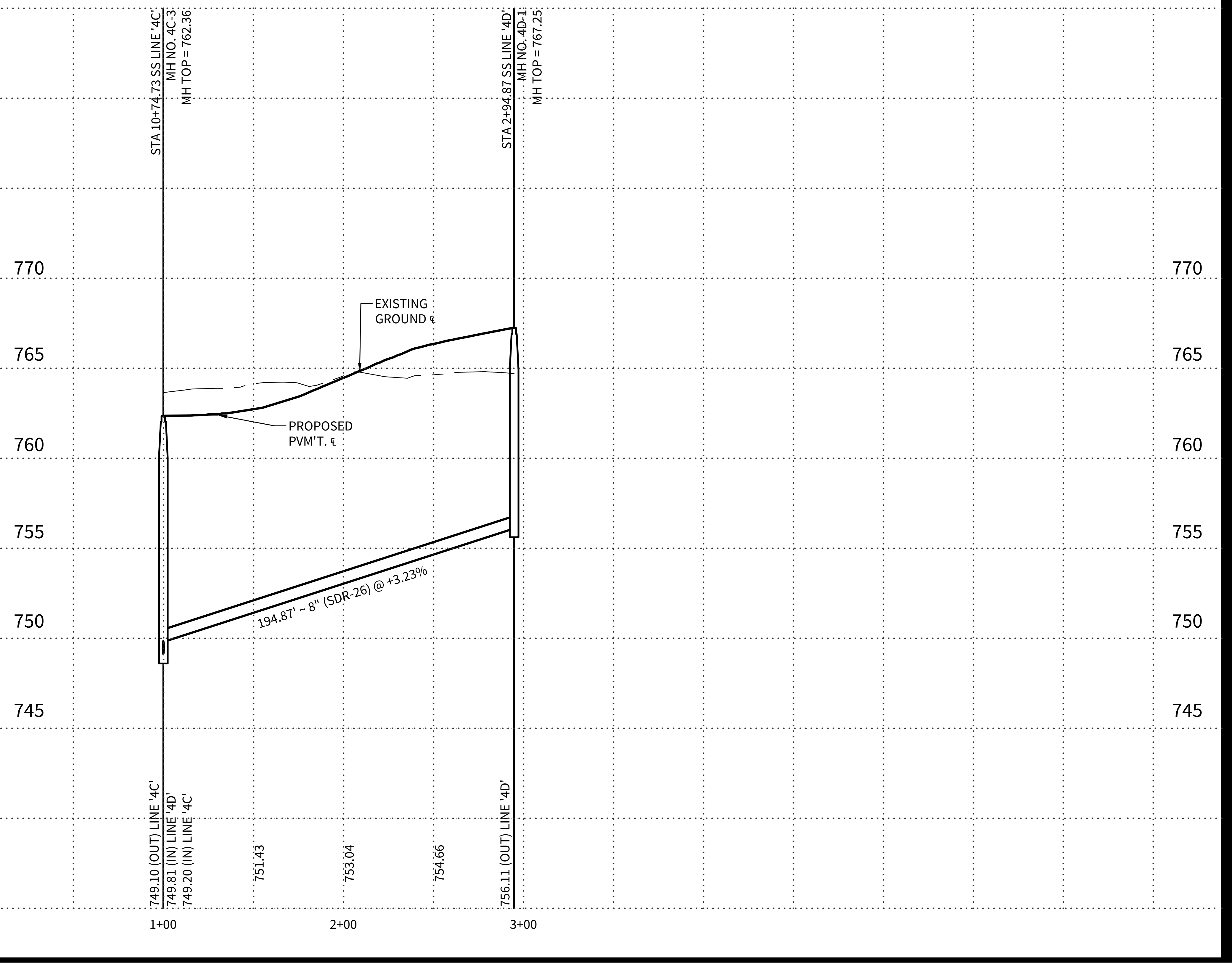
STA. 9+50.00 TO STA. 15+41.00

LINE 4D

STA. 1+00.00 TO STA. 2+94.87

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


STA 10+74.73 SS LINE '4C'
MH NO. 4C-3
MH TOP = 762.36
STA 15+41.00 SS LINE '4B'
MH NO. 4B-6
MH TOP = 760.94
765
760
755
750
745
740
MATCHLINE STA. 9+50.00 - SEE SHEET C4.06
EXISTING GROUND ℄
PROPOSED PVM'T. ℄
LOT 14 LATERAL INV. ELEV = 750.94
PROPOSED 8" WATER LINE STA: 10+93.73
PROPOSED 8" WATER LINE STA: 13+45.73
STA. 9+77 6" VERTICAL STACK INV. EL. 748.84
STA. 10+14 6" VERTICAL STACK INV. EL. 749.95
6.36'
STA. 10+89 6" VERTICAL STACK INV. EL. 751.36
STA. 11+26 6" VERTICAL STACK INV. EL. 751.58
STA. 11+60 6" VERTICAL STACK INV. EL. 751.85
STA. 11+94 6" VERTICAL STACK INV. EL. 751.90
STA. 12+32 6" VERTICAL STACK INV. EL. 751.52
STA. 12+66 6" VERTICAL STACK INV. EL. 751.66
3.92'
374.25' ~ 8" (SDR-26) @ +2.69% (OVERALL)
290.00' ~ 8" (SDR-26) @ +0.40%
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
SANITARY SEWER INVERT
745.74
747.09
748.44
749.10 (OUT) LINE '4C'
749.81 (IN) LINE '4D'
749.20 (IN) LINE '4C'
749.30
749.50
749.70
749.90
750.10
750.30
750.21 (OUT) LINE '4B'
750.36 (OUT) LINE '4C'
750.31 (IN) LINE '4B'
10+00
11+00
12+00
13+00



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TRES LAURELS UNIT 4A

SANITARY SEWER PLAN & PROFILE - LINES '4C' & '4D'

DATE	05/22/2024
PROJECT NO.	03050.015
DRAWN BY	RM / IV
CHECKED BY	MAT/CJC

REVISIONS
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05/29/2024
MATTHEW A. TRINKLE
147558
M. Trinkle
CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118
SAWS JOB NO.
24-1545

C4.07

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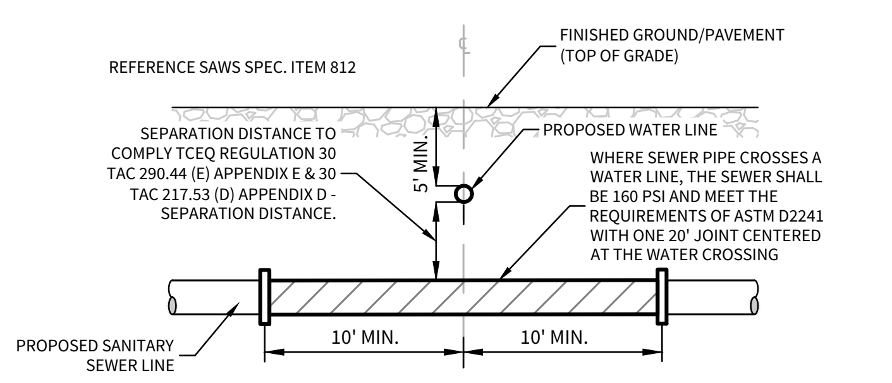
REFERENCE SAWS SPEC. ITEM 812
FINISHED GROUND/PAVEMENT (TOP OF GRADE)
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
5' MIN.
PROPOSED WATER LINE
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

N.T.S.

NOTE:

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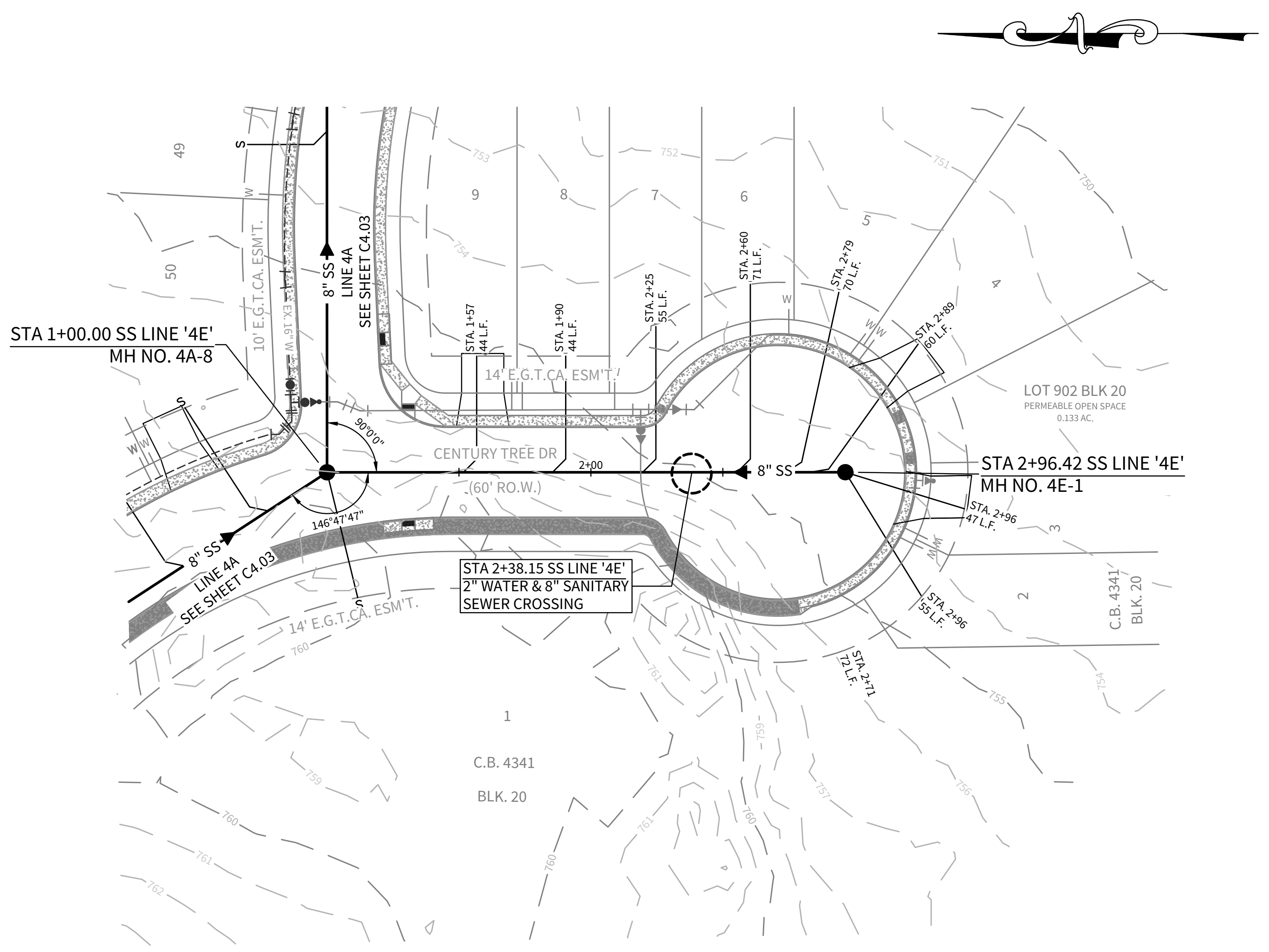
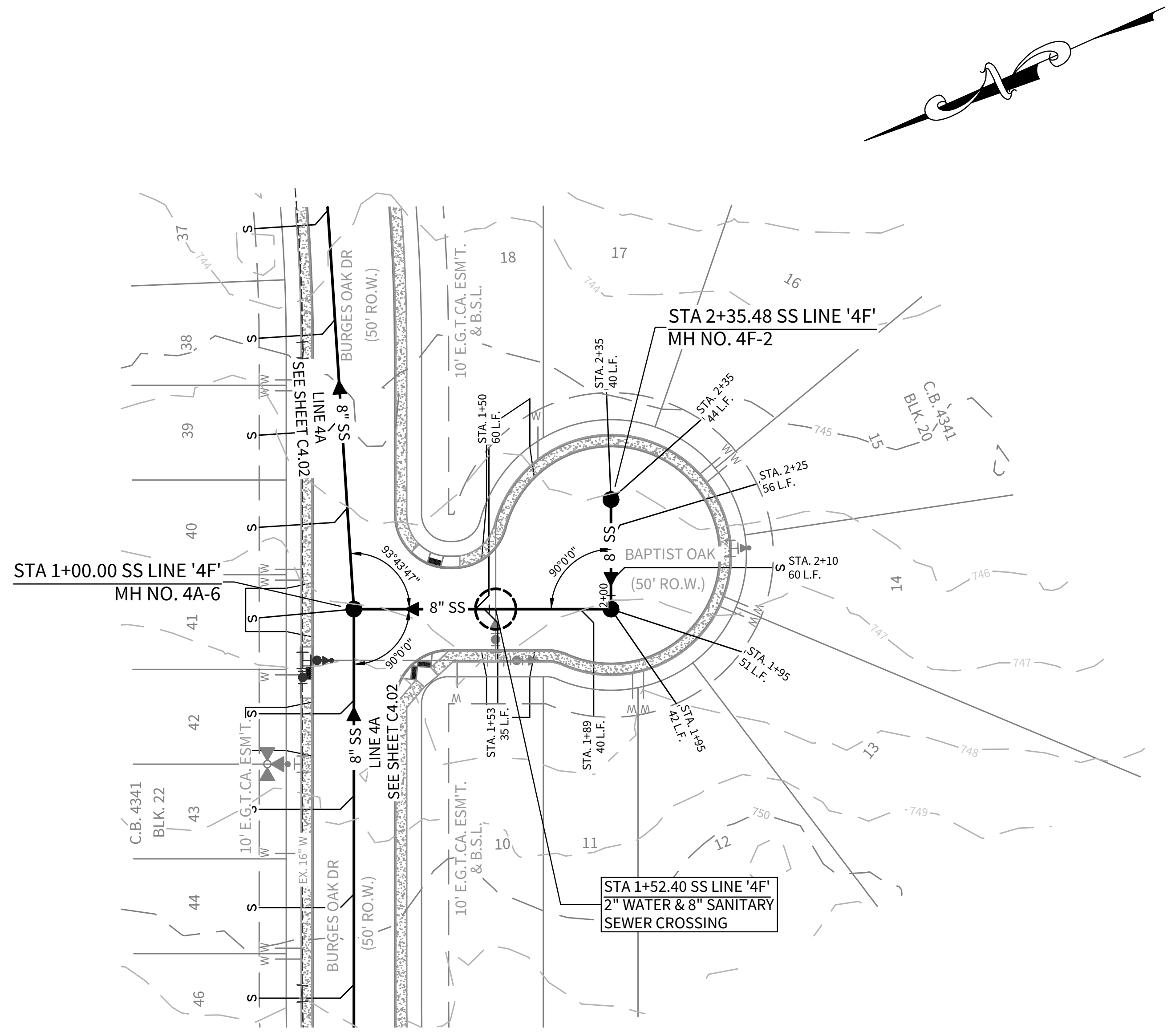


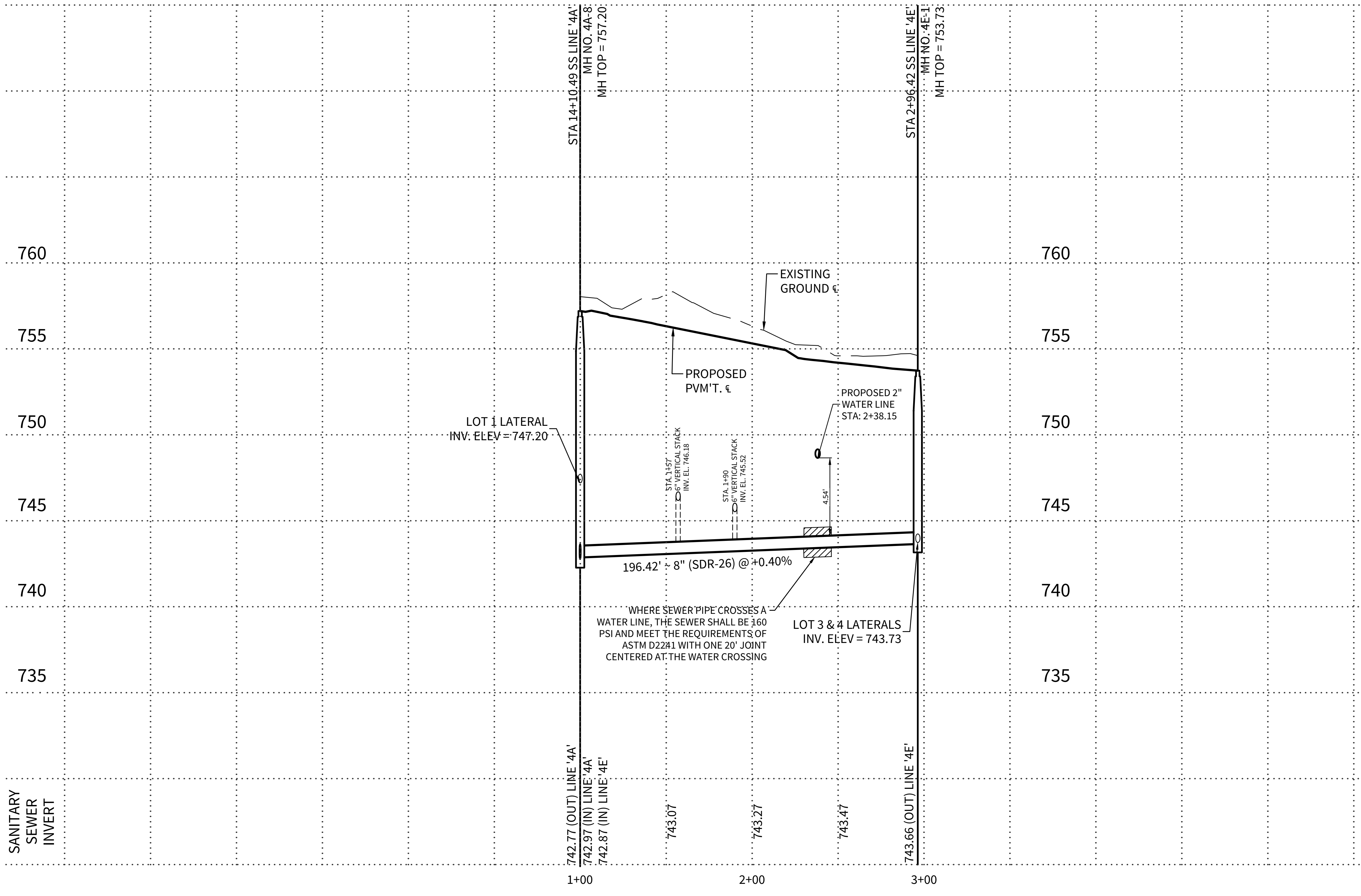


SEWER: SOUTH SEWERSHED – DOS RIOS W.R.C. (LOWER MEDINA RIVER WATERSHED)

Developer's Name LENNAR HOMES
Developer's Address 100 NE LOOP 410 SUITE 1155
City SAN ANTONIO State TX Zip 78216
Phone # (210) 403-6200 Fax # –
SAWS Block Map # ______ Total EDU's 178 Total Acreage 31.33
Total Linear Footage of Pipe 5,367 L.F. OF 8" SS – SDR 26 / 427 L.F. OF 12" SS – SDR 26 Plat No. 24-11800118
Number of Lots 178 SAWS Job No. 24-1545

LINE 4E

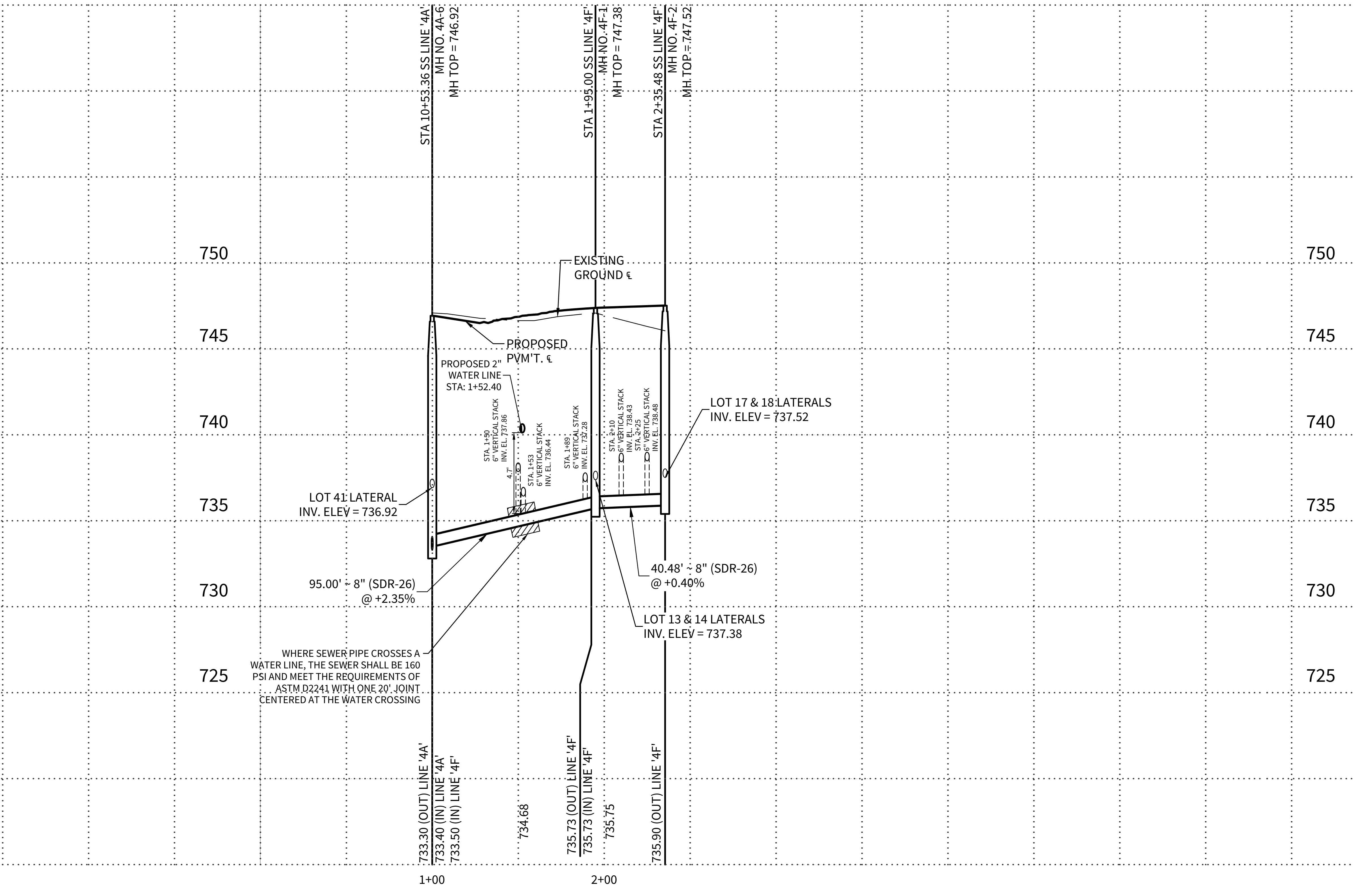
STA. 1+00.00 TO STA. 2+96.42


STA 14+10.49 SS LINE '4A'
MH NO. 4A-8
MH TOP = 757.20
STA 2+96.42 SS LINE '4E'
MH NO. 4E-1
MH TOP = 753.73
760
755
750
745
740
735
EXISTING GROUND ℄
PROPOSED PVM'T. ℄
PROPOSED 2" WATER LINE STA: 2+38.15
LOT 1 LATERAL INV. ELEV = 747.20
STA. 1+57 6" VERTICAL STACK INV. EL. 746.18
STA. 1+90 6" VERTICAL STACK INV. EL. 745.52
4.54'
196.42' ~ 8" (SDR-26) @ +0.40%
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
LOT 3 & 4 LATERALS INV. ELEV = 743.73
SANITARY SEWER INVERT
742.77 (OUT) LINE '4A'
742.97 (IN) LINE '4A'
742.87 (IN) LINE '4E'
743.07
743.27
743.47
743.66 (OUT) LINE '4E'
1+00
2+00
3+00

LINE 4F

STA. 1+00.00 TO STA. 2+35.48

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


STA 10+53.36 SS LINE '4A'
MH NO. 4A-6
MH TOP = 746.92
STA 1+95.00 SS LINE '4F'
MH NO. 4F-1
MH TOP = 747.38
STA 2+35.48 SS LINE '4F'
MH NO. 4F-2
MH TOP = 747.52
750
745
740
735
730
725
EXISTING GROUND ℄
PROPOSED PVM'T. ℄
PROPOSED 2" WATER LINE STA: 1+52.40
STA. 1+50 6" VERTICAL STACK INV. EL. 737.86
STA. 1+53 6" VERTICAL STACK INV. EL. 736.44
4.7'
STA. 1+89 6" VERTICAL STACK INV. EL. 737.28
STA. 2+10 6" VERTICAL STACK INV. EL. 738.43
STA. 2+25 6" VERTICAL STACK INV. EL. 738.48
LOT 17 & 18 LATERALS INV. ELEV = 737.52
LOT 41 LATERAL INV. ELEV = 736.92
95.00' ~ 8" (SDR-26) @ +2.35%
40.48' ~ 8" (SDR-26) @ +0.40%
LOT 13 & 14 LATERALS INV. ELEV = 737.38
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
733.30 (OUT) LINE '4A'
733.40 (IN) LINE '4A'
733.50 (IN) LINE '4F'
734.68
735.73 (OUT) LINE '4F'
735.73 (IN) LINE '4F'
735.75
735.90 (OUT) LINE '4F'
1+00
2+00

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TRES LAURELS
UNIT 4A

SANITARY SEWER PLAN & PROFILE - LINES '4E' & '4F'

DATE
05/22/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
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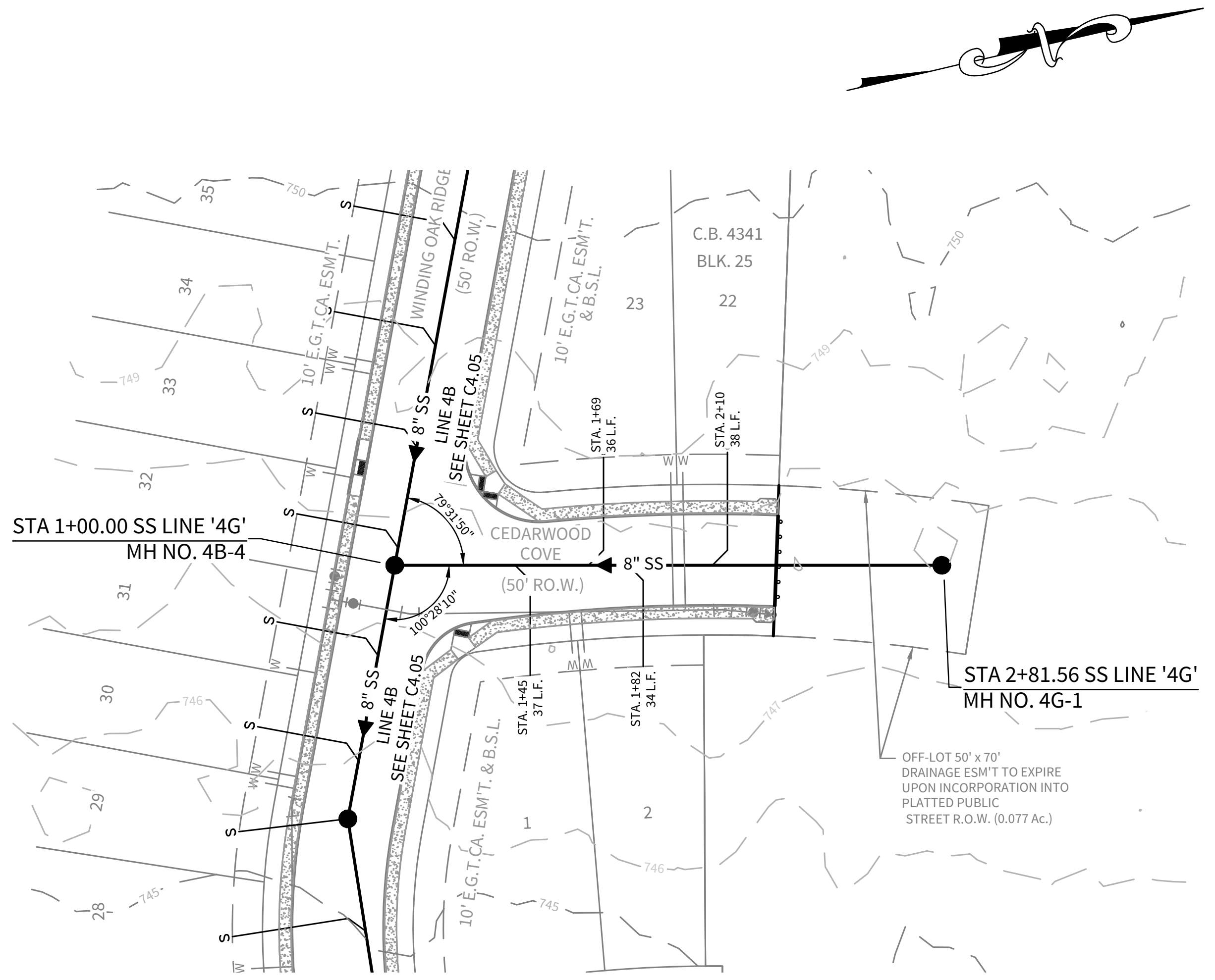
05/29/2024
MATTHEW A. TRINKLE
147558

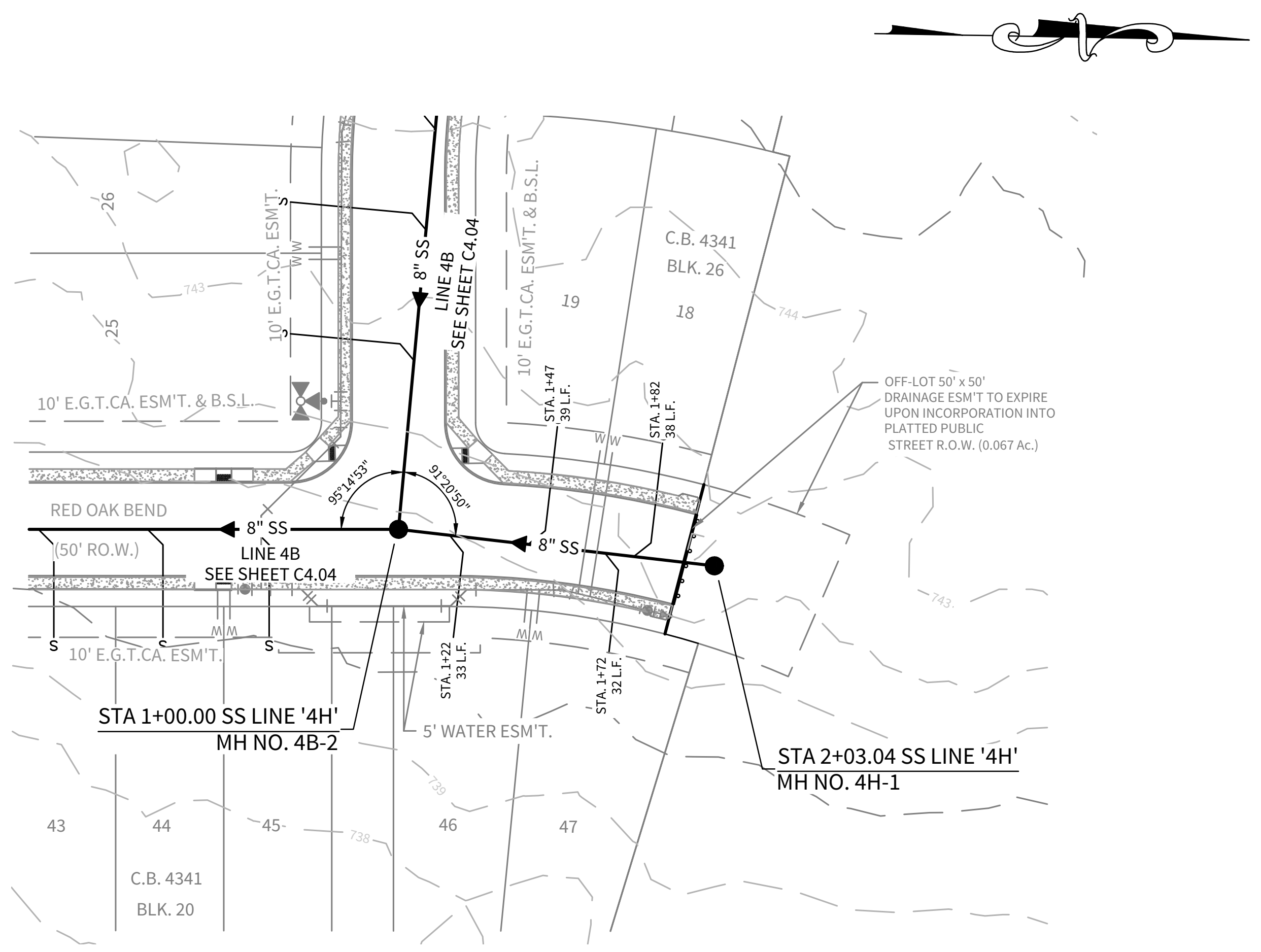
CUDE ENGINEERS
TBPELS No. 10048500

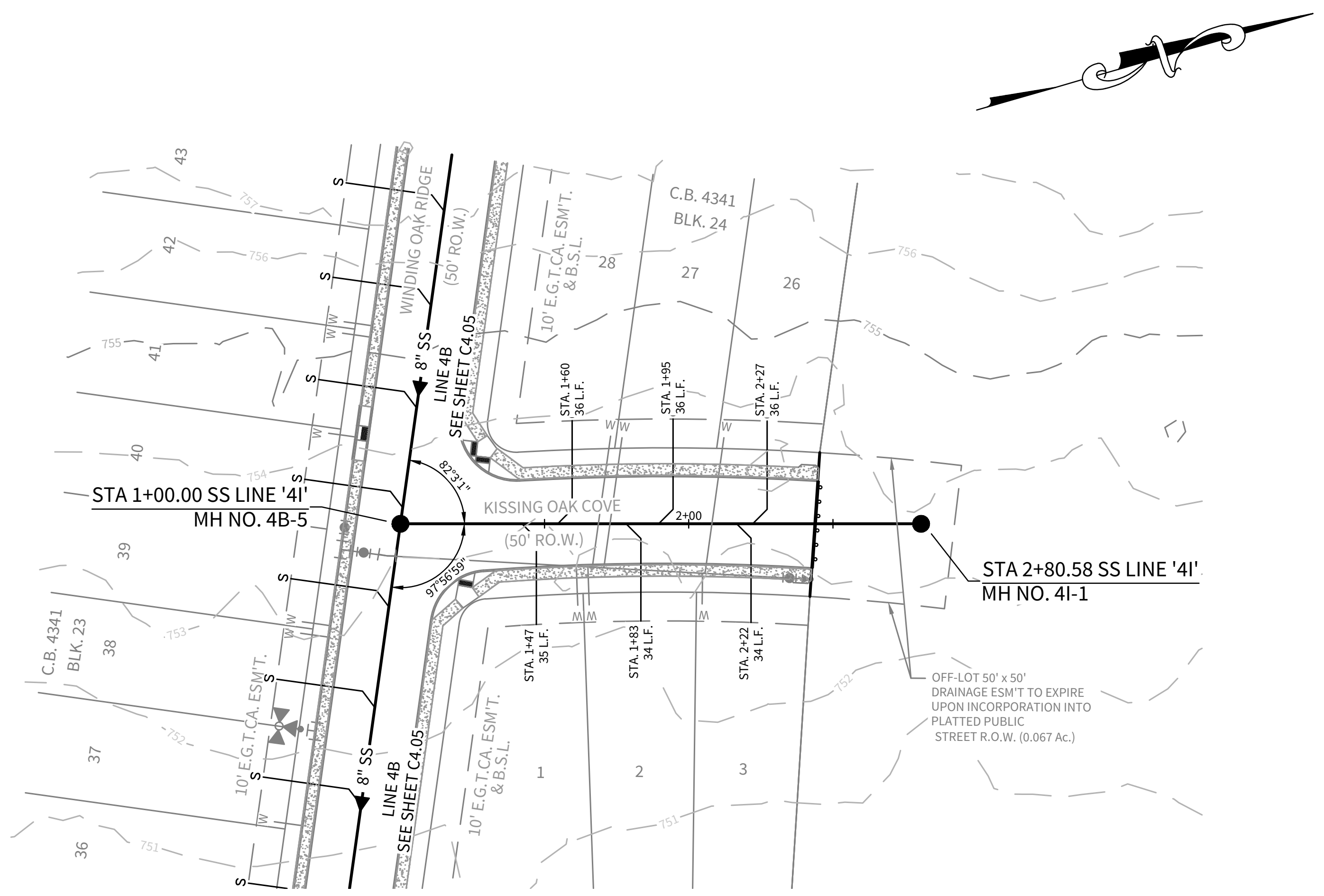
PLAT NO.
24-11800118

SAWS JOB NO.
24-1545

C4.08







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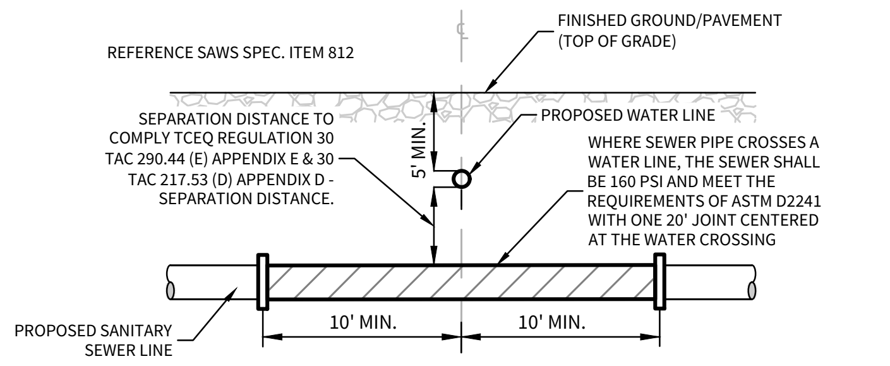

REFERENCE SAWS SPEC. ITEM 812
FINISHED GROUND/PAVEMENT (TOP OF GRADE)
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
PROPOSED WATER LINE
5' MIN.
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

N.T.S.

SEWER: SOUTH SEWERSHED - DOS RIOS W.R.C. (LOWER MEDINA RIVER WATERSHED)

Developer's Name LENNAR HOMES

Developer's Address 100 NE LOOP 410 SUITE 1155

City SAN ANTONIO State TX Zip 78216

Phone # (210) 403-6200 Fax # -

SAWS Block Map # Total EDU's 178 Total Acreage 31.33

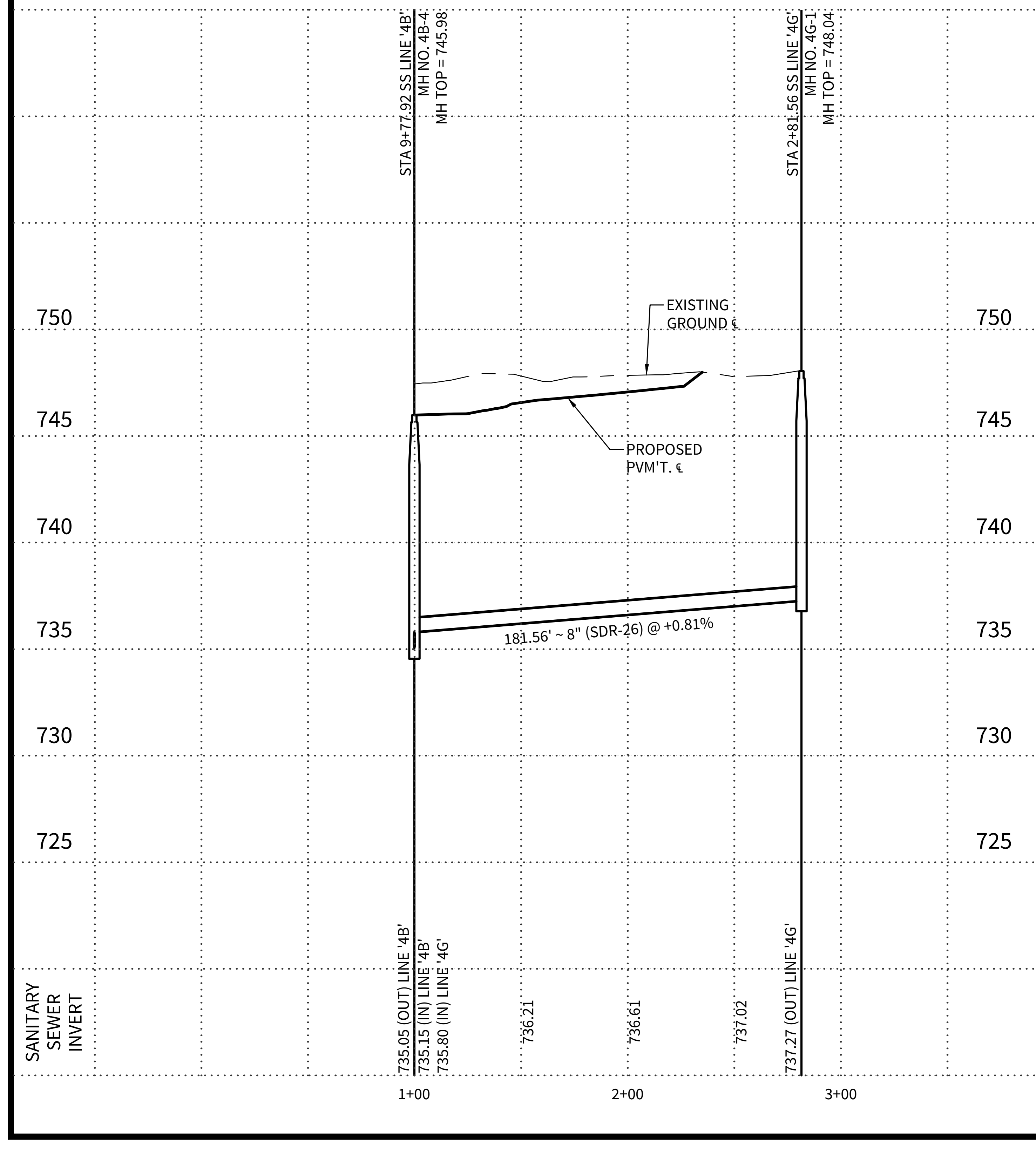
Total Linear Footage of Pipe 5,367 L.F. OF 8" SS - SDR 26 / 427 L.F. OF 12" SS - SDR 26 Plat No. 24-11800118

Number of Lots 178 SAWS Job No. 24-1545

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

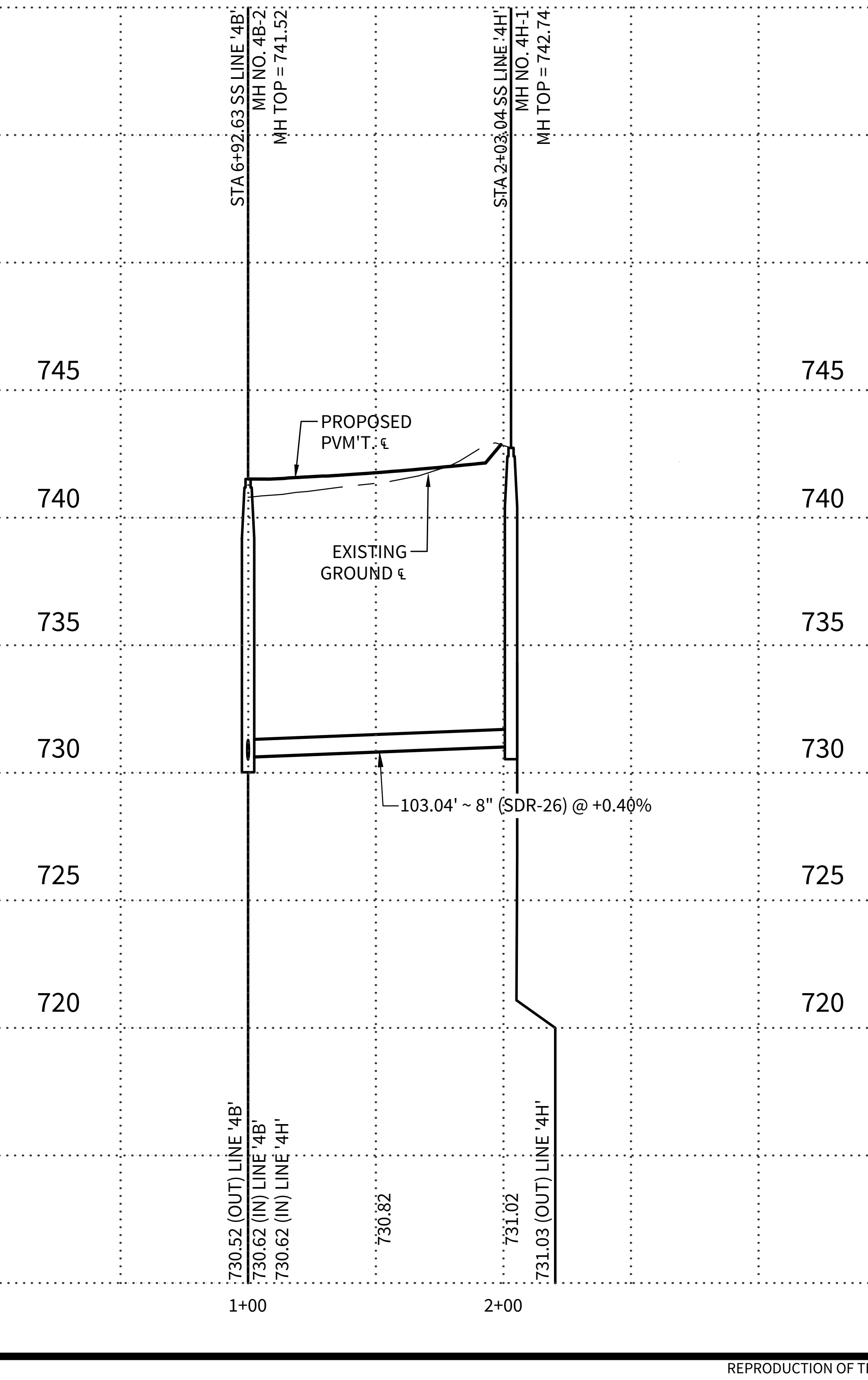
LINE 4G

STA. 1+00.00 TO STA. 2+81.56



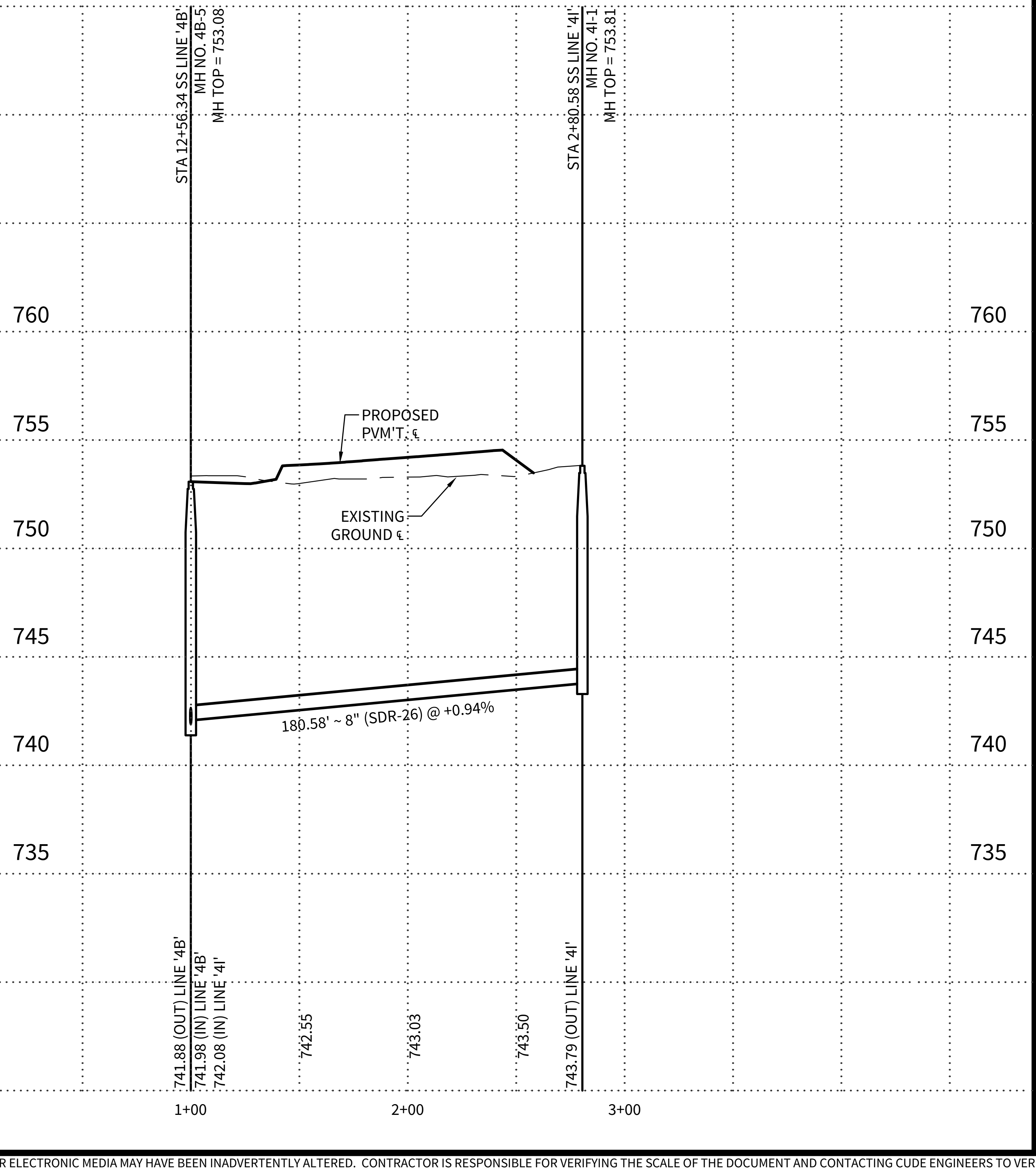
LINE 4H

STA. 1+00.00 TO STA. 2+03.04



LINE 4I

STA. 1+00.00 TO STA. 2+80.58



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San Antonio, Texas 78231
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TRES LAURELS UNIT 4A

SANITARY SEWER PLAN & PROFILE - LINES '4G', '4H' & '4I'

DATE	05/22/2024
PROJECT NO.	03050.015
DRAWN BY	RM / IV
CHECKED BY	MAT/CJC

REVISIONS
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05/29/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO. 24-11800118

SAWS JOB NO. 24-1545

C4.09

SAWS STANDARD GENERAL CONSTRUCTION NOTES ASSOCIATED WITH 2021 SAWS STANDARD SPECS *REVISED DECEMBER 2021*

GENERAL CONSTRUCTION

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITH THE SCOPE OF 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 I CHAPTER 217 AND "PUBLIC DRINKING WATER," TAX TITLE 30 PART I 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 CONSTRUCTION."

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

2. THE CONTRACTOR SHALL OBTAIN SAWS STANDARD DETAILS FROM SAWS WEBSITE, https://apps.saws.org/business_center/specs/constspecs/ UNLESS OTHERWISE NOTED WITHIN DESIGN PLANS.
3. THE CONTRACTOR IS TO NOTIFY AND MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT 210-233-3500 (DURING REGULAR SAWS WORKING HOURS) AND PROVIDE NOTIFICATION PROCEDURES THE CONTRACTOR WILL USE TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS TWO (2) WEEKS PRIOR TO EXCAVATION. OUTSIDE OF REGULAR SAWS WORKING HOURS THE SAWS EOC SHOULD BE CONTACTED AT 210-704-7297.
4. IF NECESSARY, CONTRACTOR WILL COORDINATE USE OF SAWS PREMISES AT NO ADDITIONAL COST TO SAWS. SUCH EFFORTS INCLUDE, BUT ARE NOT LIMITED TO, OBTAINING SECURITY IDENTIFICATION BADGES REQUIRED FOR ACCESS TO SAWS FACILITIES.
5. LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR 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 PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT. AS-BUILTS FOR SAWS INFRASTRUCTURE CAN BE OBTAINED AT WEBSITE BELOW. CONTRACTOR SHALL COORDINATE PHYSICAL LOCATES FOR SAWS INFRASTRUCTURE THROUGH THE SAWS INSPECTOR. PLEASE ALLOW UP TO 7 BUSINESS DAYS FOR LOCATES REQUESTING PIPE LOCATION MARKERS ON SAWS INFRASTRUCTURE. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIED FOR VERIFICATION PURPOSES:

   SAN ANTONIO WATER SYSTEM:
   REQUEST AS-BUILTS: https://www.saws.org/service/locates-service/

   COSA DRAINAGE: 210-206-8433
   COSA TRAFFIC SIGNAL OPERATIONS: 210-207-7720
   TEXAS STATEWIDE 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 AS A RESULT OF DAMAGES DONE BY THE PROJECT'S CONSTRUCTION.
8. CONTRACTOR SHALL NOT MAKE USE OF DUMPSTERS OR WASTE BINS THAT ARE INTENDED TO SERVE RESIDENTS AND/OR BUSINESS.
9. ALL WORK IN TEXAS DEPARTMENT OF TRANSPORTATION AND BEXAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT.
10. THE CONTRACTOR SHALL COMPLY WITH CITY OF SAN ANTONIO OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.
11. ALL WORK WITHIN THE 100-YEAR FLOODPLAIN SHALL BE DONE IN ACCORDANCE WITH FLOODPLAIN DEVELOPMENT PERMIT.
12. ANY WORK COMPLETED WITHOUT PRIOR WRITTEN AUTHORIZATION WHICH IS NOT INCLUDED IN THESE PLANS AND SPECIFICATIONS WITH NOT BE COMPENSATED BY THE SAN ANTONIO WATER SYSTEM.
13. HOLIDAY WORK: CONTRACTORS WILL NOT BE ALLOWED TO PERFORM SAWS WORK ON SAWS RECOGNIZED HOLIDAYS.

    WEEKEND WORK: CONTRACTORS ARE REQUIRED TO SUBMIT REQUEST TO THE SAWS INSPECTION CONSTRUCTION DEPARTMENT BY 12:00 PM ON THE WEDNESDAY PRIOR TO THE WEEKEND BEING REQUESTED. REQUEST SHOULD BE SENT TO constworkreq@saws.org.

    ANY AND ALL SAWS UTILITY INSTALLED WITHOUT WEEKEND APPROVAL WILL BE SUBJECT TO BY UNCOVERED FOR PROPER INSPECTION AT NO COST TO SAWS.

14. PRE-CON SITE VIDEO: BEFORE THE START OF ANY CONSTRUCTION. THE SITE MUST BE VIDEO RECORDED BY THE CONTRACTOR WITH ONE COPY SUBMITTED TO SAWS INSPECTIONS. A PRE-SITE VIDEO WILL PROVIDE ACCURATE DOCUMENTATION OF THE EXISTING CONDITIONS (NSPI).
15. POWER POLE BRACING: CONTRACTORS SHOULD BE ADVISED THAT THERE ARE EXISTING OVERHEAD UTILITY POLES ALONG THE PROJECT CORRIDOR. CONTRACTORS SHOULD FURTHER BE ADVISED THAT IS DISTANCE FROM THE OUTSIDE FACE OF A UTILITY TRENCH TO THE FACE OF A UTILITY POLE IS LESS THAN 5 FEET, SAID UTILITY POLE IS SUBJECT TO BRACING, BASED ON DOCUMENTATION MADE BY UTILITY POLE OWNER. COSTS INCURRED BY CONTRACTOR FOR BRACING OF THESE UTILITY POLES IS SUBSIDIARY TO THAT RESPECTIVE UTILITY COMPANY'S WORK. IT IS ADVISABLE FOR THE CONTRACTOR TO REVIEW THE CONSTRUCTION DOCUMENTS AND VISIT THE CONSTRUCTION SITE TO DETERMINE POTENTIAL IMPACTS.
16. CONSTRUCTION SEQUENCING: IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO SCHEDULE SEQUENCING FOR REMOVAL AND INSTALLATION OF EXISTING AND PROPOSED SAWS UTILITIES IN CONJUNCTION WITH GENERAL PROJECT CONSTRUCTION. SEQUENCE OF CONSTRUCTION ACTIVITIES SHALL BE CONSIDERED IN ORDER TO MINIMIZE THE EXTENT AND DURATION OF DISTURBANCES.
17. CONTRACTOR SHALL COMPLY WITH APPLICABLE REGULATIONS INCLUDING, BUT NOT LIMITED TO, THOSE OVERSEEN BY THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA). OSHA INFORMATION AND RELATED MATERIALS MAY BE OBTAINED AT https://www.osha.gov/ OR AT THE OSHA SAN ANTONIO OFFICE LOCATED AT FOUNTAINHEAD TOWER, SUITE 605 8200 W. INTERSTATE 10 SAN ANTONIO, TX 78230 WHICH IS ALSO REACHABLE AT (210) 472-5040.
18. TRENCH EXCAVATION SAFETY PROTECTION: CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTAL 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 AREAS IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION, PROGRAMS, AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS, AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION PROTECTION THAT COMPLIES WITH, AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
19. 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 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.

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. **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.**
2. **ALL LATERALS SHALL BE INSTALLED AT A MINIMUM 2.0% SLOPE UNLESS OTHERWISE NOTED.**

SEWER NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT NO SANITARY SEWER OVERFLOW (SSO) OCCURS AS A RESULT OF THEIR WORK. ALL CONTRACTORS PERSONNEL RESPONSIBLE FOR SSO PREVENTION AND CONTROL SHALL BE TRAINED ON A 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 210-704-SAWS (210-704-7297). PROVIDE THE ADDRESS OF THE SPILL AND AN ESTIMATED VOLUME OF 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 THE CONTAMINATED SOIL/MATERIALS.

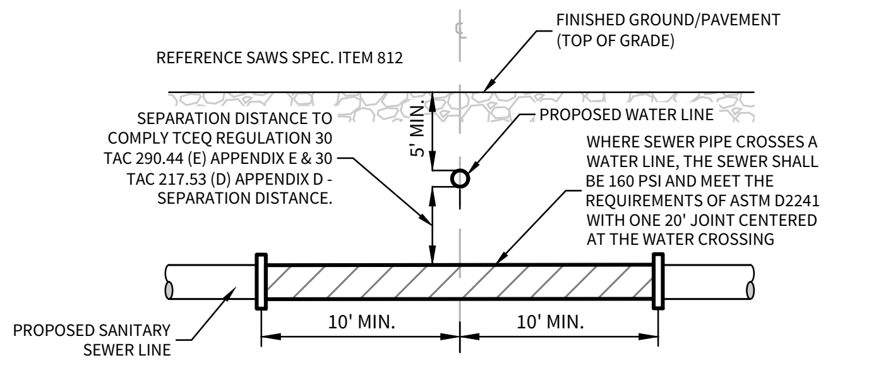
   E. CLEAN THE AFFECTED SEWER MAINS AND REMOVE ANY DEBRIS.

   F. MEET ALL POST-SSO REQUIREMENTS AS PER THE EPA CONSENT DECREE, INCLUDING LINE CLEANING AND TELEVISING THE AFFECTED SEWER MAINS (AT SAWS DIRECTION) WITHIN 25 HOURS.

   SHOULD THE CONTRACTOR FAIL TO ADDRESS AN SSO IMMEDIATELY AND TO SAWS SATSIFACTION, THEY WILL BE RESPONSIBLE FOR ALL COSTS INCURRED BY SAWS, INCLUDING AND FINES FROM EPA.

   NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THIS WORK. ALL WORK SHALL BE DONE ACCORDING TO GUIDELINES SET BY THE TCEQ AND SAWS.

2. THE CONTRACTOR SHALL PROVIDE BYPASS PUMPING OF SEWAGE AROUND EACH SEGMENT OF PIPE TO BE REPLACED, IN ACCORDANCE WITH SAWS STANDARD SPECIFICATION ITEM NO. 865, "BYPASS PUMPING SMALL DIAMETER SANITARY SEWER MAINS" AND STANDARD SPECIFICATION ITEM NO. 864, "BYPASS PUMPING LARGE DIAMETER SANITARY SEWER MAINS" AS APPLICABLE. PAYMENT FOR SUCH WORK WILL BE MADE UNDER THE APPROPRIATE BID ITEM ASSOCIATED WITH SANITARY SEWER BYPASS PUMPING IN ACCORDANCE WITH SAWS STANDARD SPECIFICATIONS 865 AND 864.
3. PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING FORCE MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT 210-233-3500 AND/OR SAWS PRODUCTION GROUPS AT LEAST TWO WEEKS 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.
4. ELEVATIONS POSTED FOR TOP OF MANHOLES ARE FOR REFERENCE ONLY: IT SHALL BE THE RESPONSIBILITY FOR THE CONTRACTOR TO MAKE ALLOWANCES AND ADJUSTMENTS FOR TOP OF MANHOLES TO MATCH THE FINISHED GRADE OF THE PROJECT'S IMPROVEMENTS (NSPI).
5. MANHOLE REMOVAL: WHERE EXISTING MANHOLES ARE TO BE REPLACED BY THE CONTRACTOR, THE EXISTING MANHOLES SHALL BE REMOVED (NSPI).
6. SMART MANHOLE COVERS: THE CONTRACTOR SHALL NOTIFY SAWS EOC AT 210-704-SAWS (210-233-7297) AND EITHER AMERICA ESPINOZA AT 210-233-2934 OR JOSE A. MARTINEZ AT 210-233-3071 A MINIMUM OF 72 HOURS, NOT COUNTING WEEKENDS OR SAWS HOLIDAYS, BEFORE WORKING ON THE PIPE OR MANHOLE, IN ORDER TO HAVE SAWS REMOVE THE SMART COVER. ANY DAMAGE DONE TO THE SMART COVER WILL BE CHARGED TO THE CONTRACTOR THROUGH A CHANGE ORDER.
7. FLOW METERS IN MANHOLES: THE CONTRACTOR SHALL NOTIFY BOBBY JOHNSON AT 210-233-3493 OR ABEL BORUNDA AT 210-233-3704 A MINIMUM OF 72 HOURS, NOT COUNTING WEEKENDS OR SAWS HOLIDAYS, BEFORE WORKING ON THE PIPE MANHOLE, IN ORDER TO HAVE SAWS REMOVE THE FLOW METER IN THE MANHOLE. ANY DAMAGE DONE TO THE FLOW METER WILL BE CHARGED TO THE CONTRACTOR THROUGH A CHANGE ORDER.


REFERENCE SAWS SPEC. ITEM 812
FINISHED GROUND/PAVEMENT (TOP OF GRADE)
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
5' MIN.
PROPOSED WATER LINE
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

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 San Antonio Water System. The San Antonio Water System will own and maintain said sanitary sewer mains which are located within this particular subdivision. (As applicable)

The Developer will be responsible for the lift station maintenance fee in effect at the time of certification. The current maintenance fee per lift station will be collected prior to plat recordation.

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 SAWS Construction Inspections Division at 233-3500.

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 San Antonio Water System.

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:

   1. All. fines, penalties, or other costs assessed to or against SAWS by any State, Federal, or other governmental agency.

2. 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.

3. All damages caused to SAWS, or any other persons or entities that result from the spill, overflow or discharge.

NOTES:

1. ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE UPGRADIENT SIDE OF THE SEWER TRENCH THUS ALLOWING THE TRENCH TO INTERCEPT ANY SILT CONTAMINATED RUNOFF.
2. ALL LATERALS TO BE BUILT TO FRONT UTILITY EASEMENT LINE.
3. ALL LATERAL SHALL BE INSTALLED @ MIN. 2.0% SLOPE, UNLESS OTHERWISE NOTED.
4. ALL SANITARY SEWER PIPE SHALL BE PVC THAT MEETS ASTM SPECIFICATION, SDR-26, UNLESS OTHERWISE NOTED ON THE PLANS.
5. 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.

SAN ANTONIO WATER SYSTEM	210-233-2010
CoSA DRAINAGE	210-207-2800
CITY SIDEWALK TRENCHING DIVISION	210-821-3240
CoSA TRAFFIC SIGNAL OPERATIONS	210-207-7765
TEXAS STATE WIDE ONE CALL LOCATOR	1-800-545-6005
CITY PUBLIC SERVICE	"
AT&T	"
TIME WARNER	"
VALERO ENERGY CO.	"

SAN ANTONIO WATER SYSTEM
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.

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.

SAN ANTONIO WATER SYSTEM	210-233-2010
COSA DRAINAGE	210-207-2800
CITY SIDEWALK AND TRENCHING DIVISION	210-821-3240
COSA TRAFFIC SIGNAL OPERATIONS	210-207-7765
TEXAS STATE WIDE ONE CALL LOCATOR	1-800-545-6005
CITY PUBLIC SERVICE	"
AT&T	"
TIME WARNER	"
VALERO ENERGY CO.	"

AT&T AND TIME WARNER CABLE LINES TO GO INTO JOINT TRENCH WITH C.P.S. ENERGY
LOTS WITH CONFLICTING TRANSFORMER / SECONDARY ENCLOSURE ELECTRIC SERVICE AND WATER METER PLACED 5' FROM PROPERTY LINE WHERE THE CONFLICT OCCURS.

SEWER: SOUTH SEWERSHED – DOS RIOS W.R.C. (LOWER MEDINA RIVER WATERSHED)

Developer's Name LENNAR HOMES
Developer's Address 100 NE LOOP 410 SUITE 1155
City SAN ANTONIO **State** TX **Zip** 78216
Phone # (210) 403-6200 **Fax #** -
SAWS Block Map # ____ **Total EDU's** 178 **Total Acreage** 31.33
Total Linear Footage of Pipe 5,367 L.F. OF 8" SS – SDR 26 / 427 L.F. OF 12" SS – SDR 26 **Plat No.** 24-11800118
Number of Lots 178 **SAWS Job No.** 24-1545

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

TRES LAURELS UNIT 4A
SANITARY SEWER GENERAL NOTES

DATE 05/22/2024
PROJECT NO. 03050.015
DRAWN BY RM / IV
CHECKED BY MAT/CJC

REVISIONS
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8.
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10.

05/29/2024
MATTHEW A. TRINKLE
147558
CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO. 24-11800118
SAWS JOB NO. 24-1545

C4.D1

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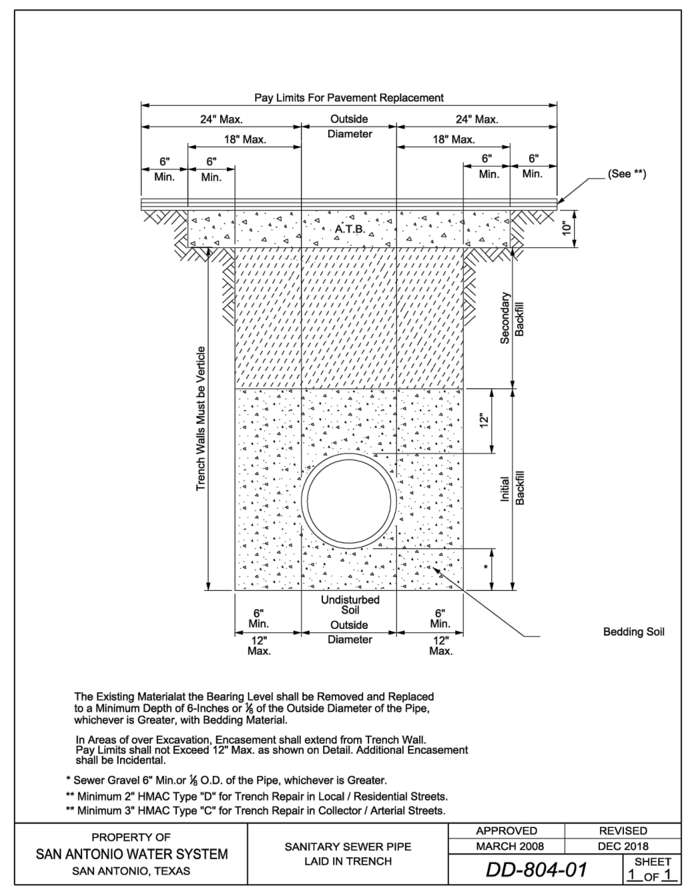
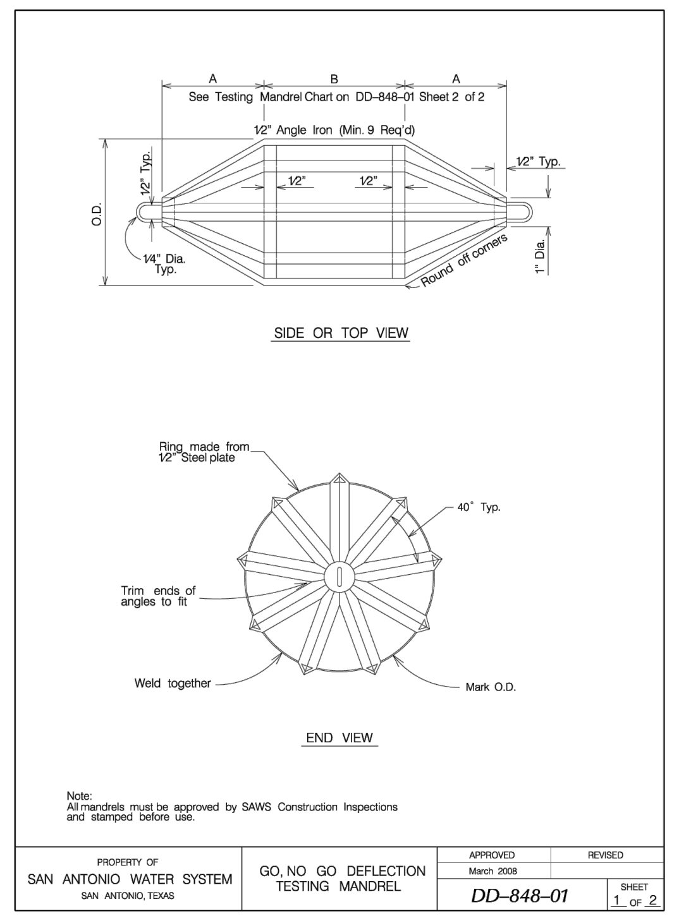

PROPERTY OF SAN ANTONIO WATER SYSTEM
SAN ANTONIO, TEXAS
SANITARY SEWER PIPE LAID IN TRENCH
DD-804-01


SIDE OR TOP VIEW
END VIEW
PROPERTY OF SAN ANTONIO WATER SYSTEM
GO, NO GO DEFLECTION TESTING MANDREL
DD-848-01

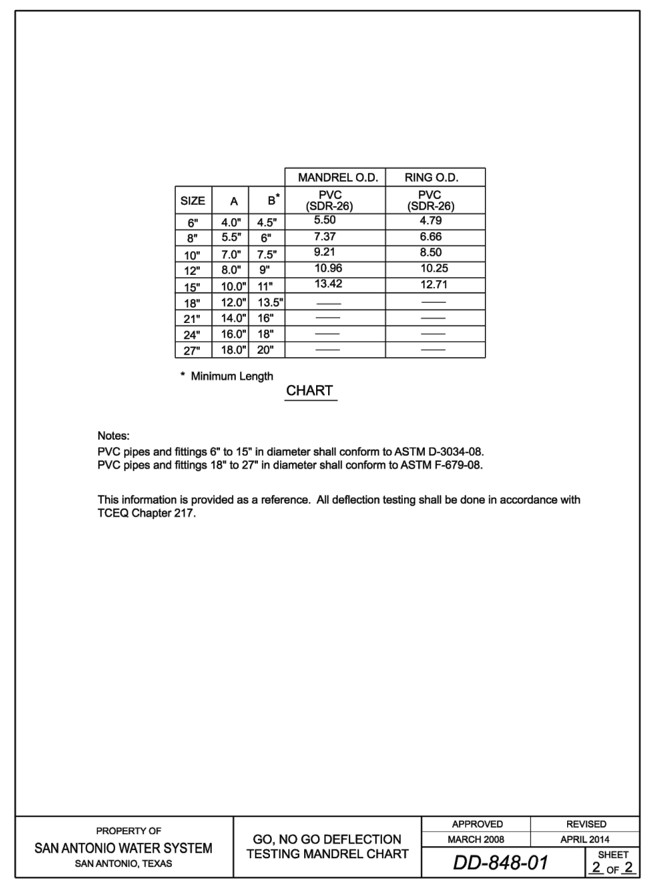
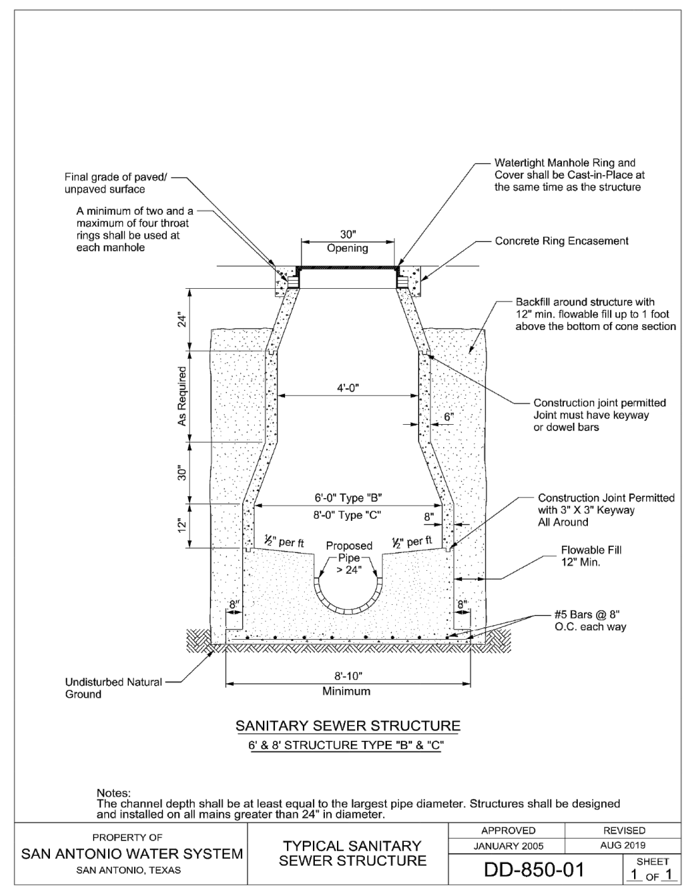
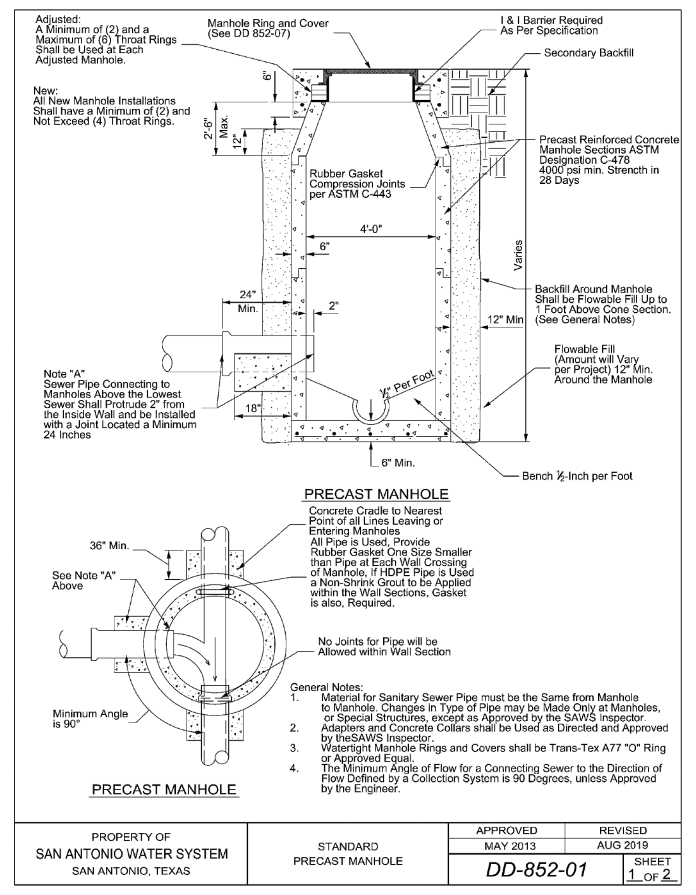
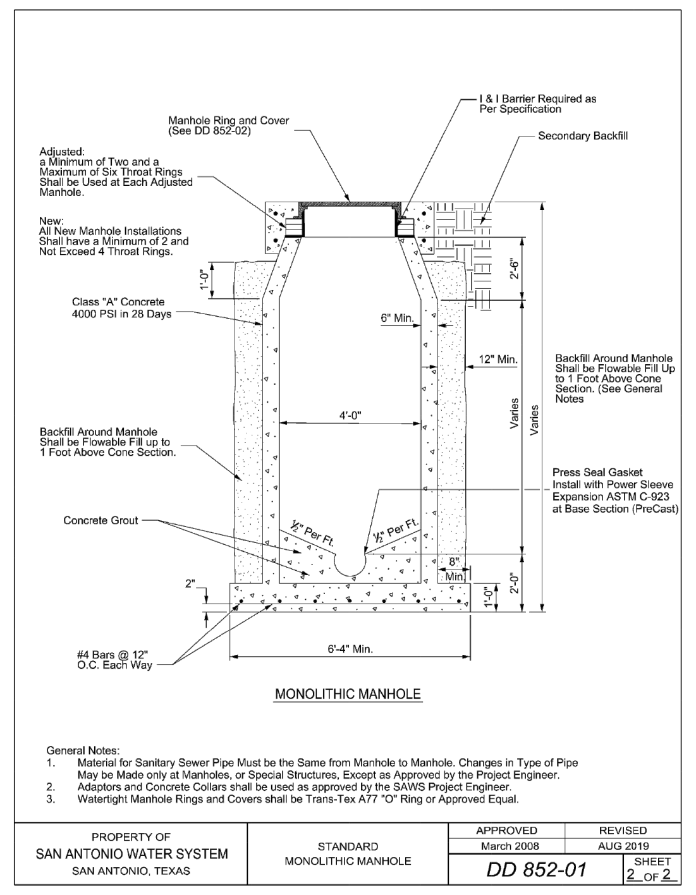
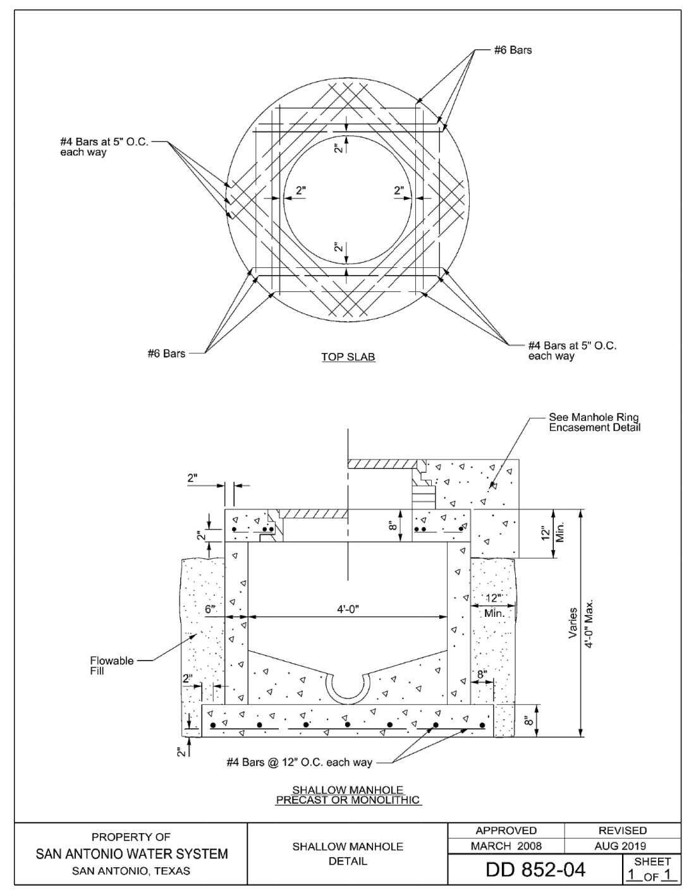


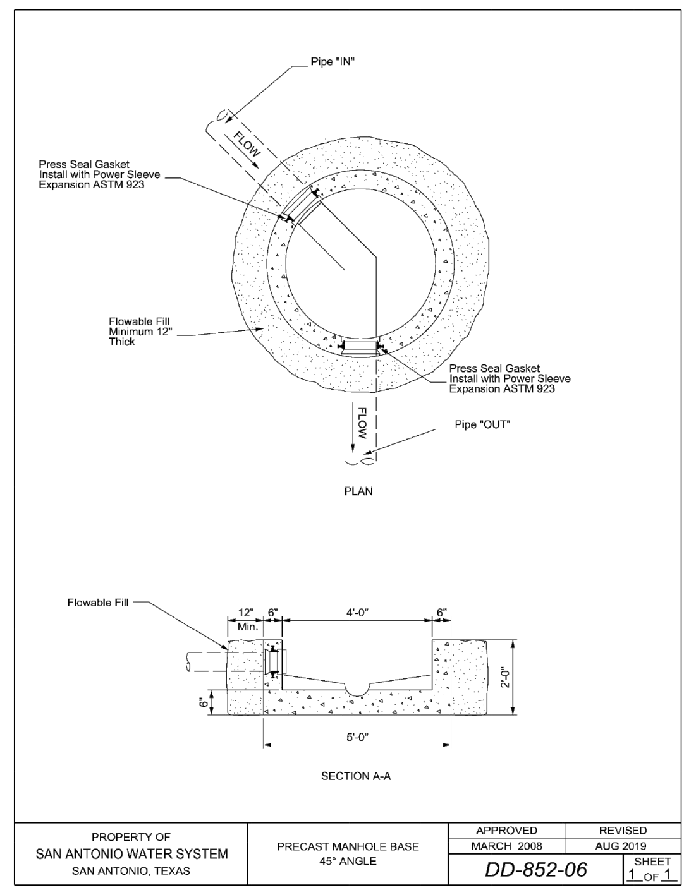
CHART
PROPERTY OF SAN ANTONIO WATER SYSTEM
GO, NO GO DEFLECTION TESTING MANDREL CHART
DD-848-01

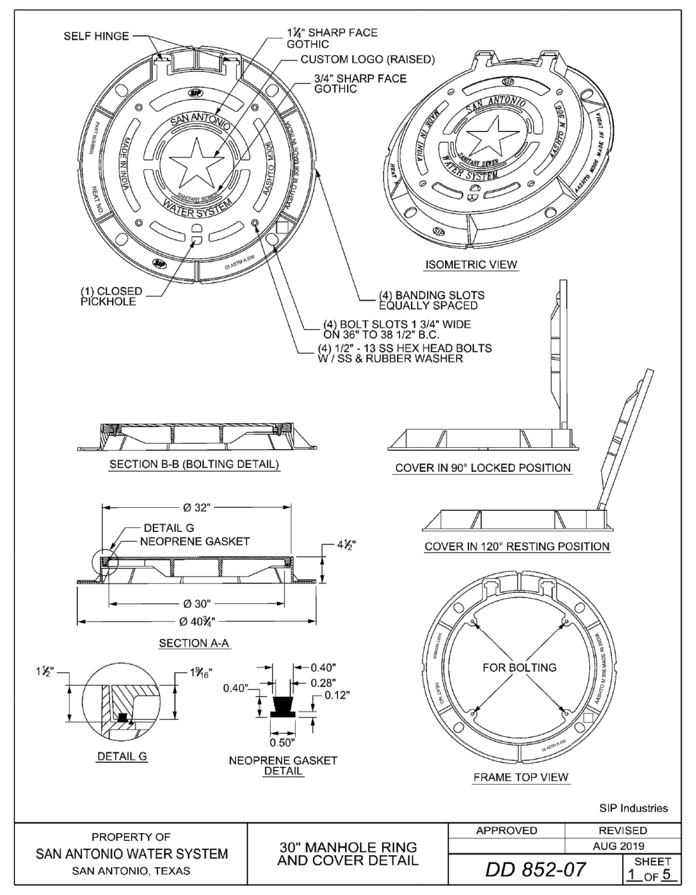

SANITARY SEWER STRUCTURE
PROPERTY OF SAN ANTONIO WATER SYSTEM
TYPICAL SANITARY SEWER STRUCTURE
DD-850-01

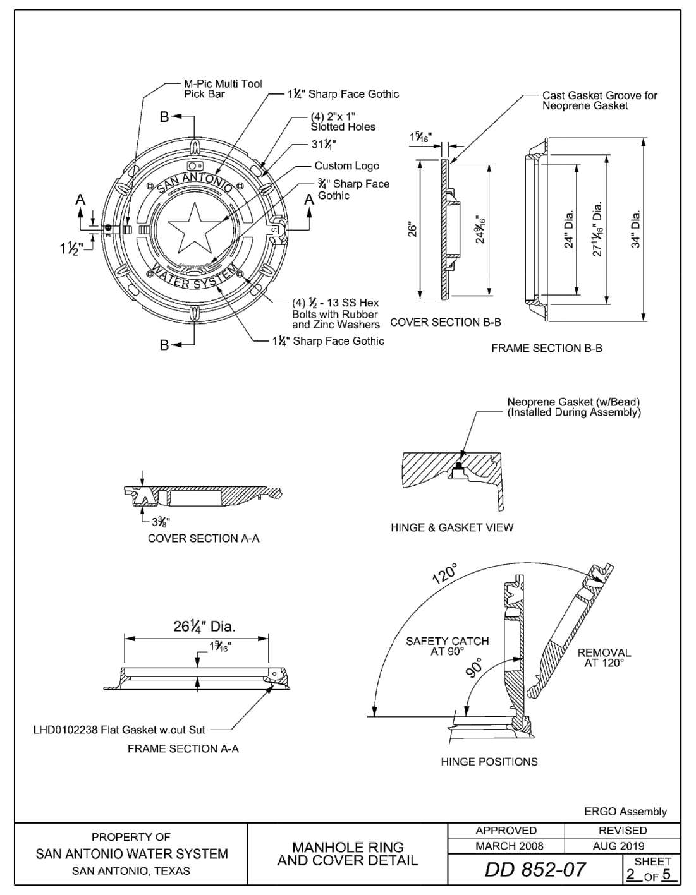


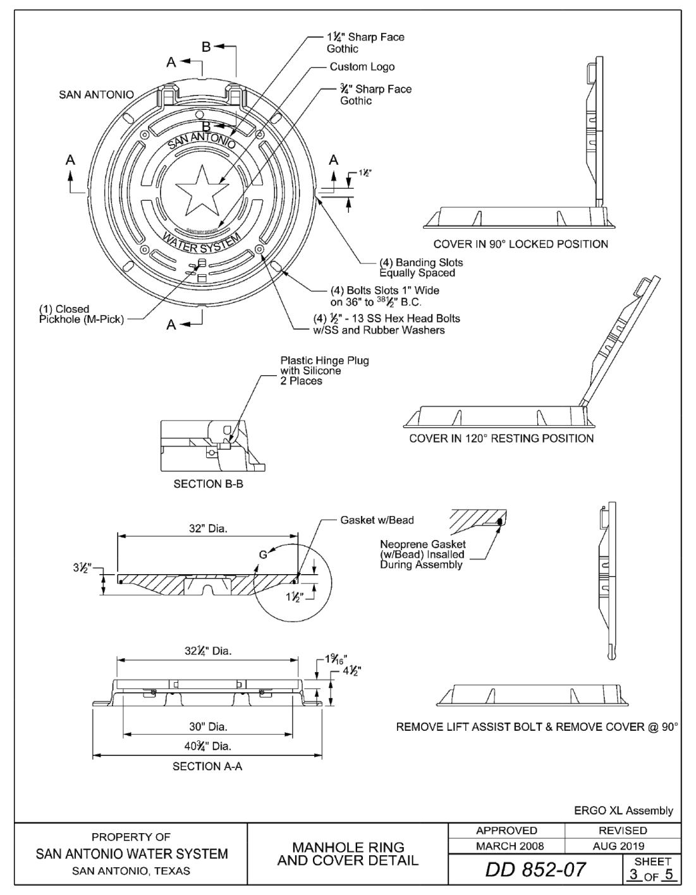

MONOLITHIC MANHOLE
PROPERTY OF SAN ANTONIO WATER SYSTEM
STANDARD MONOLITHIC MANHOLE
DD 852-01

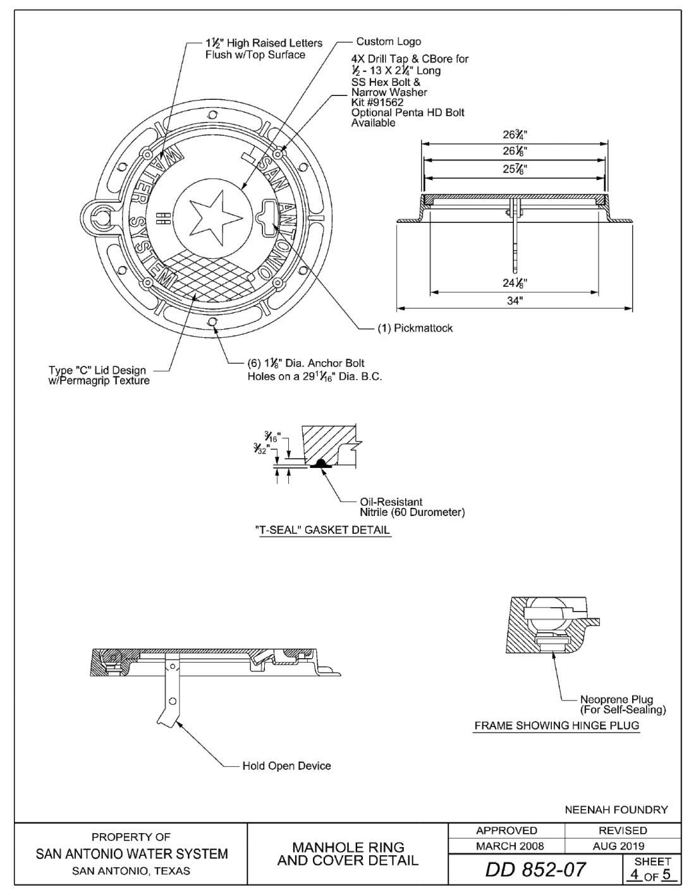


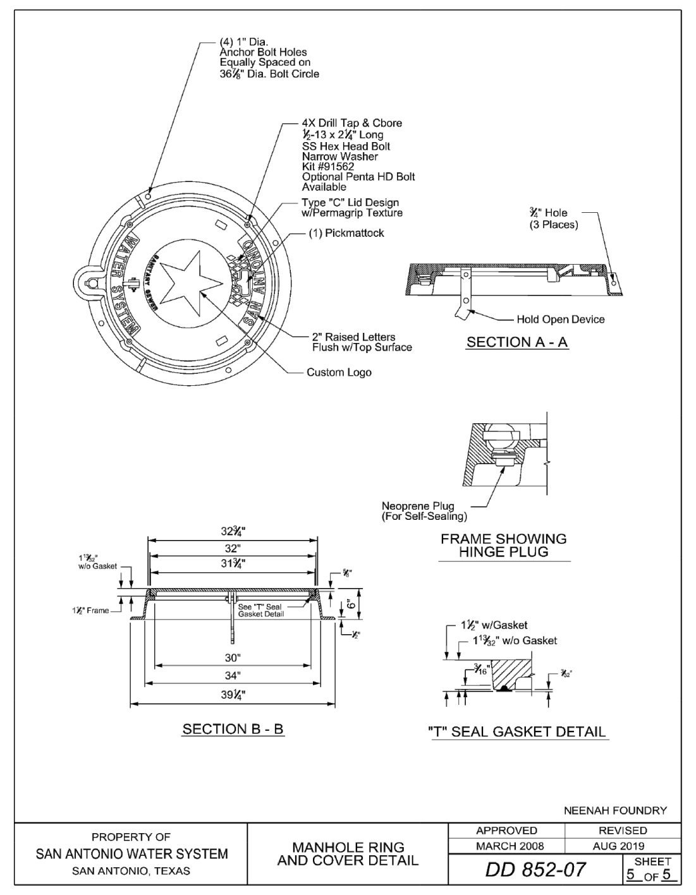

PLAN
SECTION A-A
PROPERTY OF SAN ANTONIO WATER SYSTEM
PRECAST MANHOLE BASE 45° ANGLE
DD-852-06

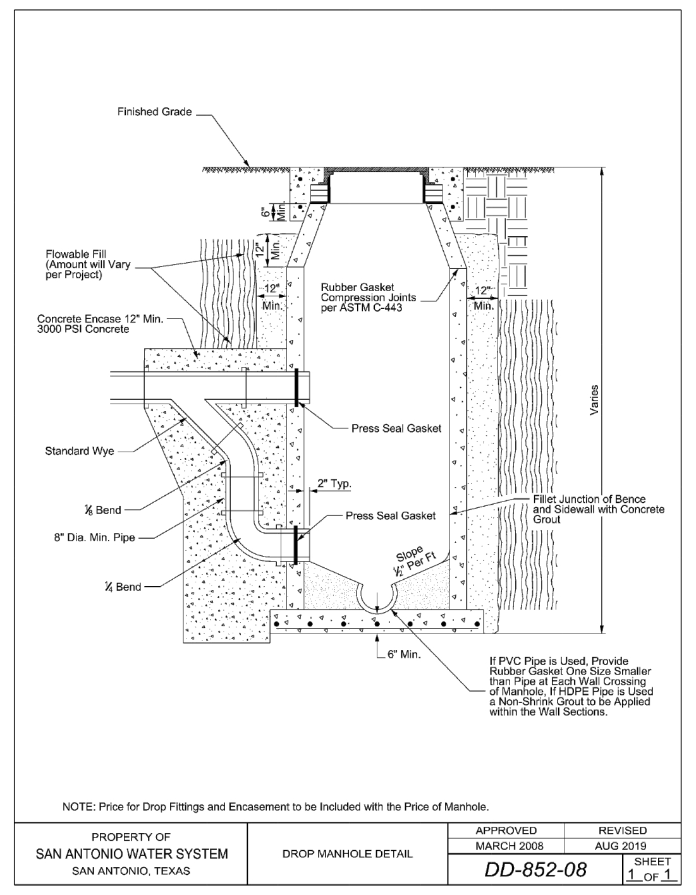

ISOMETRIC VIEW
SECTION B-B (BOLTING DETAIL)
COVER IN 90° LOCKED POSITION
COVER IN 120° RESTING POSITION
FRAME TOP VIEW
PROPERTY OF SAN ANTONIO WATER SYSTEM
30" MANHOLE RING AND COVER DETAIL
DD 852-07

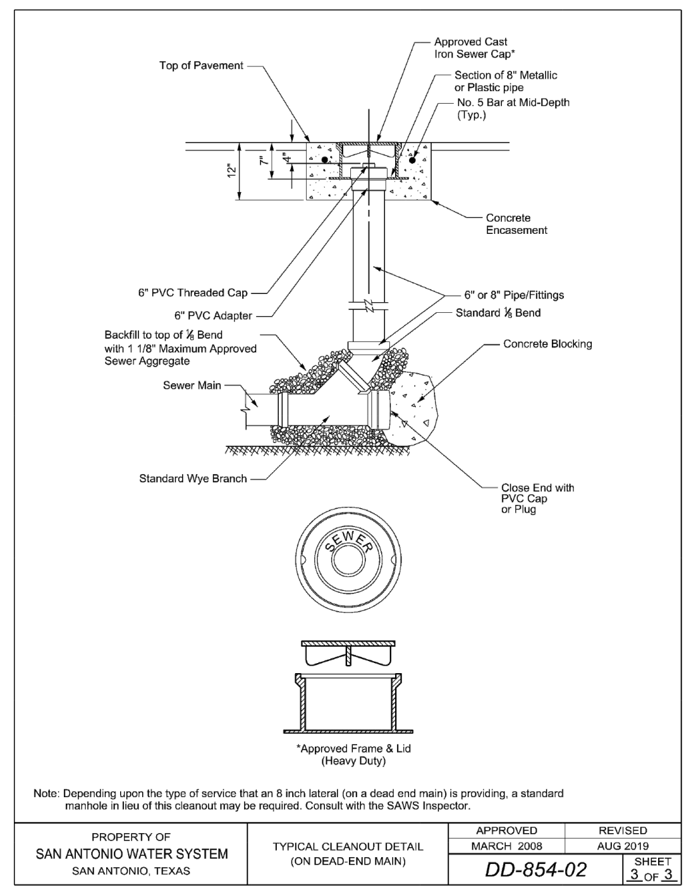


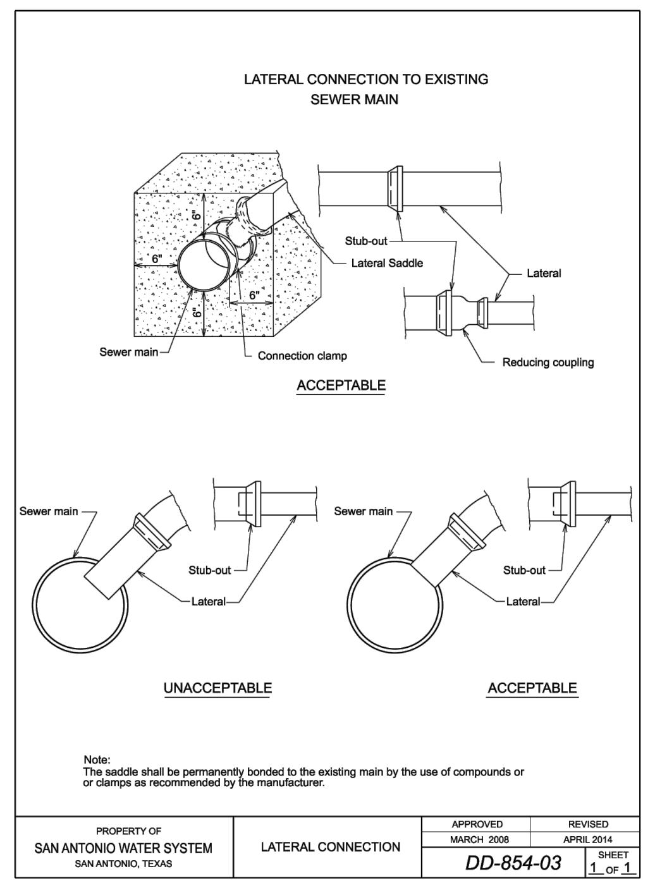

COVER IN 90° LOCKED POSITION
COVER IN 120° RESTING POSITION
SECTION B-B
SECTION A-A
PROPERTY OF SAN ANTONIO WATER SYSTEM
MANHOLE RING AND COVER DETAIL
DD 852-07

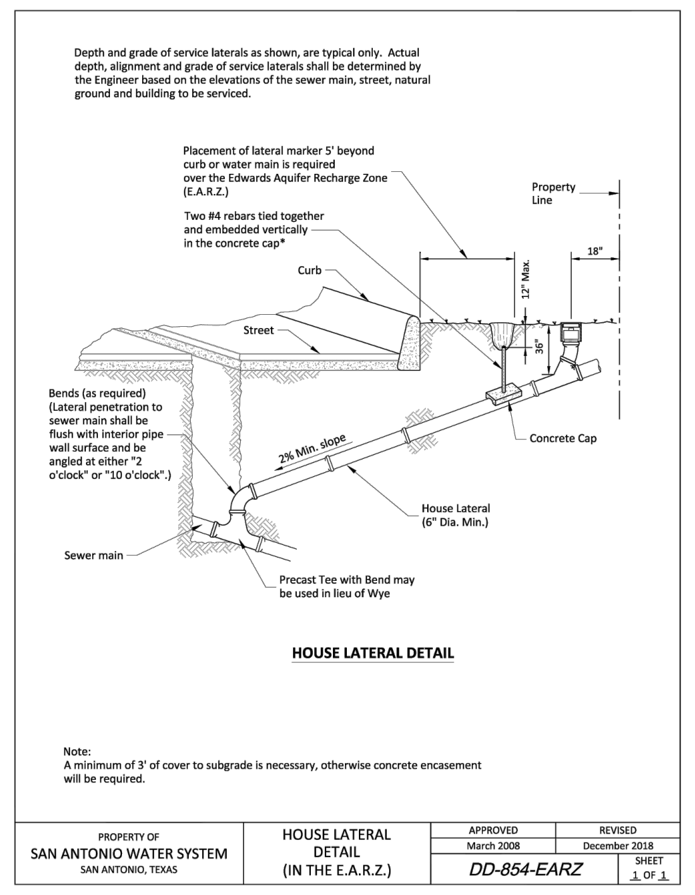


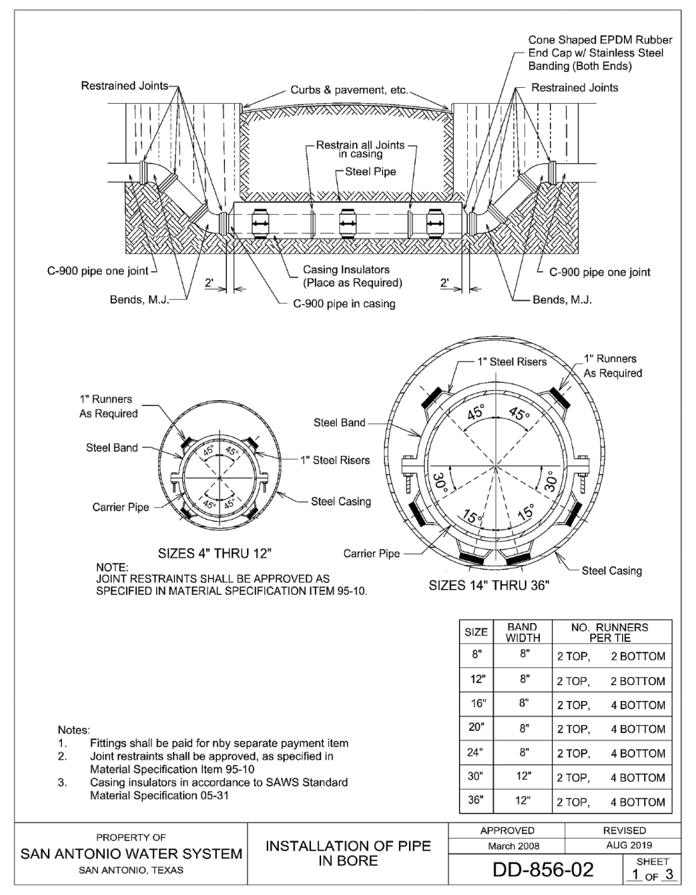


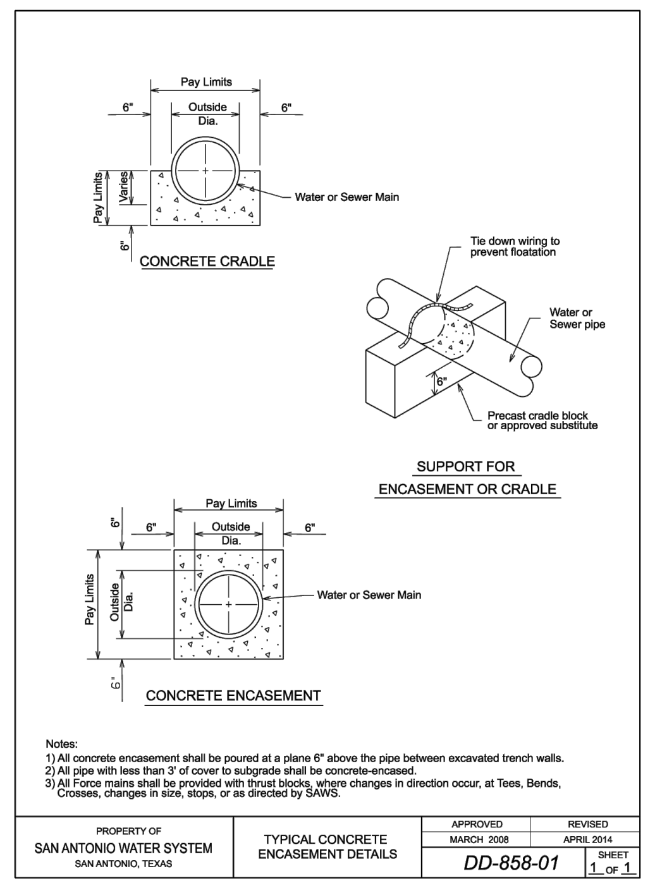


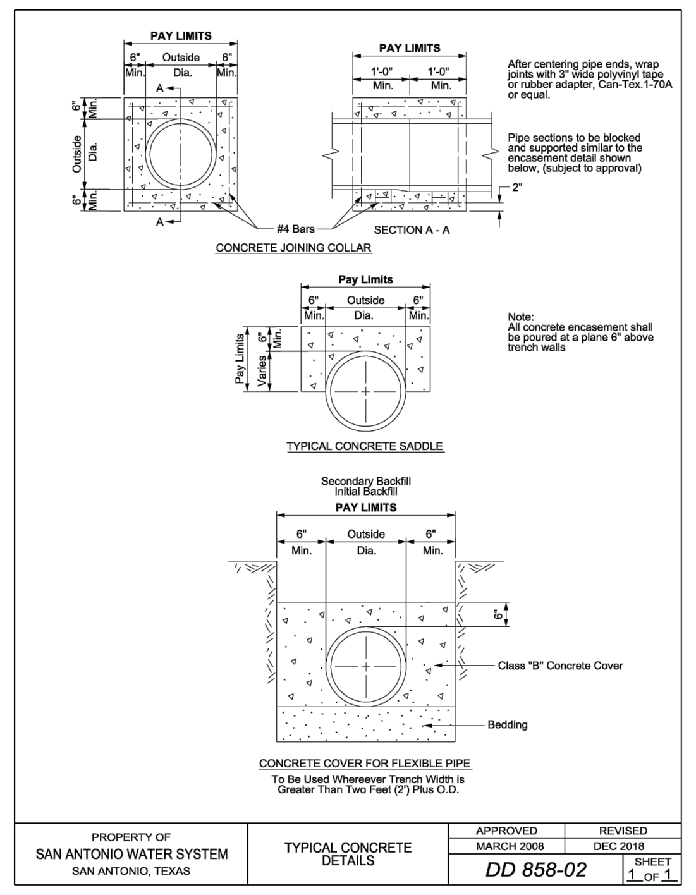

PROPERTY OF SAN ANTONIO WATER SYSTEM
TYPICAL CLEANOUT DETAIL (ON DEAD END MAIN)
DD-854-02

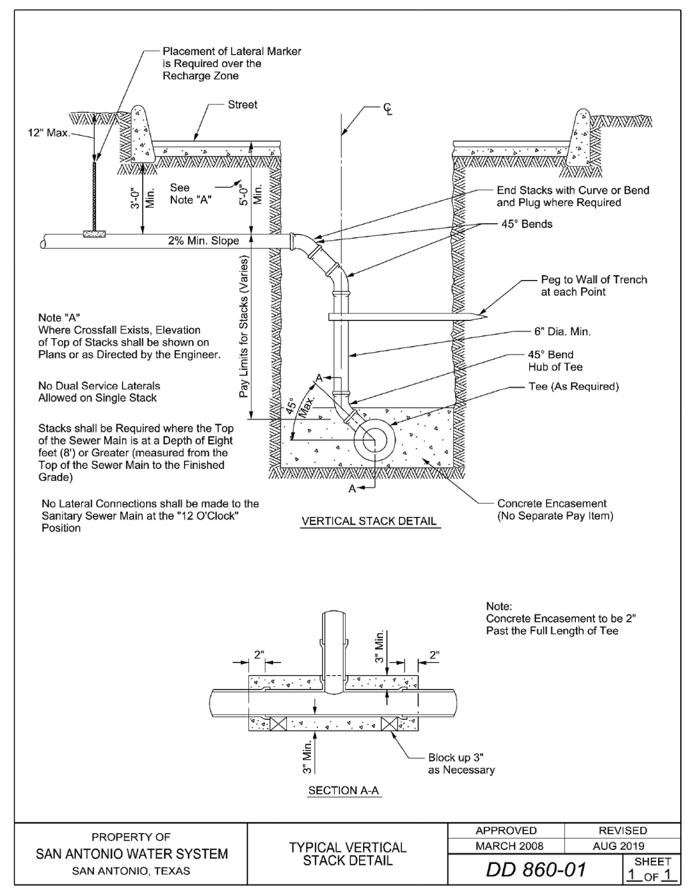

LATERAL CONNECTION TO EXISTING SEWER MAIN
ACCEPTABLE
UNACCEPTABLE
ACCEPTABLE
PROPERTY OF SAN ANTONIO WATER SYSTEM
LATERAL CONNECTION
DD-854-03

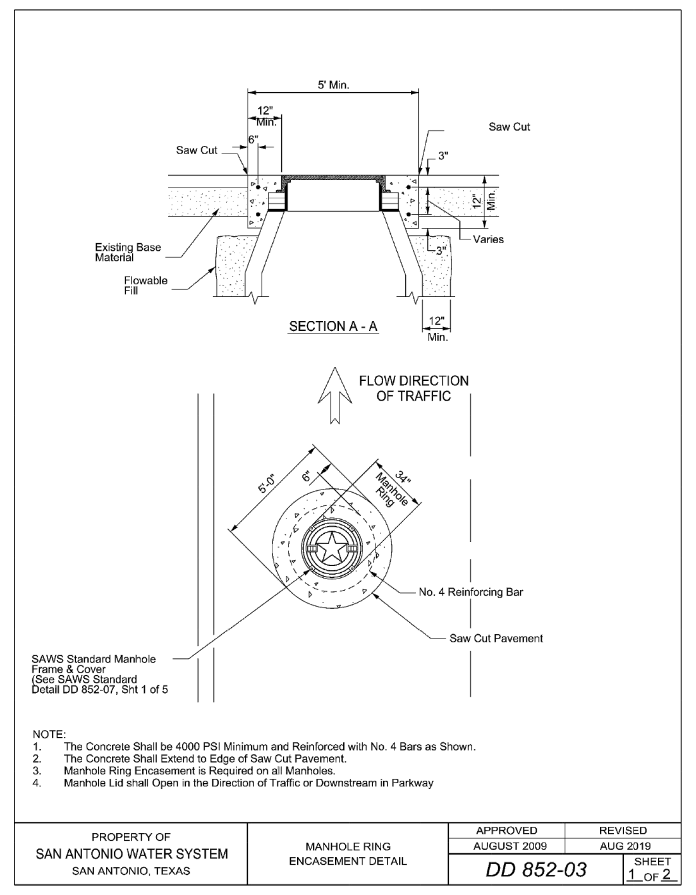

HOUSE LATERAL DETAIL
PROPERTY OF SAN ANTONIO WATER SYSTEM
HOUSE LATERAL DETAIL (IN THE E.A.R.Z.)
DD-854-EARZ


SIZES 4" THRU 12"
SIZES 14" THRU 30"
PROPERTY OF SAN ANTONIO WATER SYSTEM
INSTALLATION OF PIPE IN BORE
DD-856-02


CONCRETE CRADLE
SUPPORT FOR ENCASEMENT OR CRADLE
CONCRETE ENCASEMENT
PROPERTY OF SAN ANTONIO WATER SYSTEM
TYPICAL CONCRETE ENCASEMENT DETAILS
DD-858-01




VERTICAL STACK DETAIL
SECTION A-A
PROPERTY OF SAN ANTONIO WATER SYSTEM
TYPICAL VERTICAL STACK DETAIL
DD 860-01


SECTION A - A
FLOW DIRECTION OF TRAFFIC
PROPERTY OF SAN ANTONIO WATER SYSTEM
MANHOLE RING ENCASEMENT DETAIL
DD 852-03

SEWER: SOUTH SEWERSHED - DOS RIOS W.R.C. (LOWER MEDINA RIVER WATERSHED)

Developer's Name LENNAR HOMES
Developer's Address 100 NE LOOP 410 SUITE 1155
City SAN ANTONIO State TX Zip 78216
Phone # (210) 403-6200 Fax # -
SAWS Block Map # Total EDU's 178 Total Acreage 31.33
Total Linear Footage of Pipe 5,367 L.F. OF 8" SS - SDR 26
427 L.F. OF 12" SS - SDR 26 Plat No. 24-11800118
Number of Lots 178 SAWS Job No. 24-1545

CUDEENGINEERS.COM

EST. 1980 CUDE ENGINEERS

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

TRES LAURELS UNIT 4A

SANITARY SEWER STANDARD DETAILS

DATE
05/22/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

05/29/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

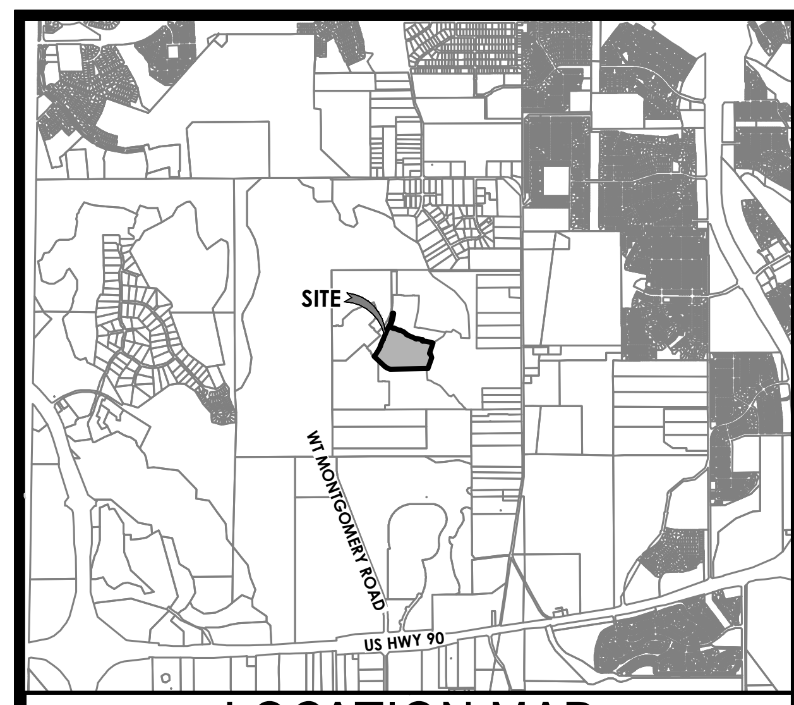
PLAT NO.
24-11800118

SAWS JOB NO.
24-1545

C4.D2

P:\03050\015\2-DWG\4-Plans\04_D2 SSDT.dwg 2024/05/22 3:26pm rmata

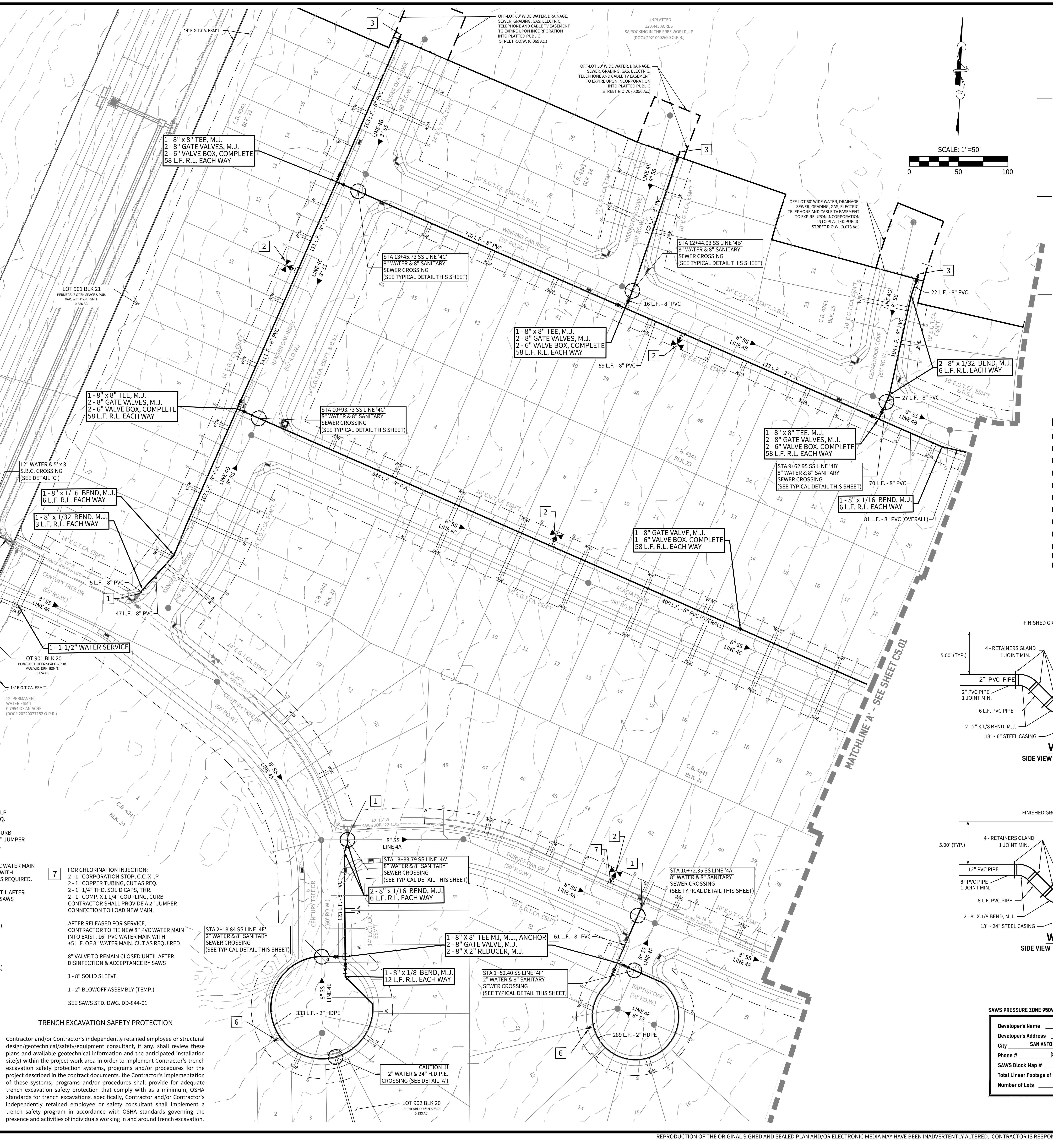
REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



LOCATION MAP
N.T.S.

OWNER/DEVELOPER:
LENNAR HOMES OF TEXAS LAND
ANDCONSTRUCTION, LTD.
A TEXAS LIMITED PARTNERSHIP
100 NE LOOP 410, SUITE 1155
SAN ANTONIO, TX 78216

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



SCALE: 1"=50'
0
50
100
OFF-LOT 60' WIDE WATER, DRAINAGE, SEWER, GRADING, GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.069 Ac.)
UNPLATTED 120.445 ACRES SA ROCKING IN THE FREE WORLD, LP (DOC# 20210002690 O.P.R.)
OFF-LOT 50' WIDE WATER, DRAINAGE, SEWER, GRADING, GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.056 Ac.)
OFF-LOT 50' WIDE WATER, DRAINAGE, SEWER, GRADING, GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.073 Ac.)
14' E.G.T.CA. ESM'T.
163 L.F. - 8" PVC
LINE 4B 8" SS
RANGER OAK RIDGE (60' R.O.W.)
14' E.G.T.CA. ESM'T.
C.B. 4341 BLK. 21
C.B. 4341 BLK. 24
C.B. 4341 BLK. 25
10' E.G.T.CA. ESM'T. & B.S.L.
KISSING OAK COVE (50' R.O.W.)
LINE 4I 8" SS
152 L.F. - 8" PVC
WINDING OAK RIDGE (50' R.O.W.)
320 L.F. - 8" PVC
1 - 8" x 8" TEE, M.J.
2 - 8" GATE VALVES, M.J.
2 - 6" VALVE BOX, COMPLETE
58 L.F. R.L. EACH WAY
STA 13+45.73 SS LINE '4C'
8" WATER & 8" SANITARY SEWER CROSSING
(SEE TYPICAL DETAIL THIS SHEET)
STA 12+44.93 SS LINE '4B'
8" WATER & 8" SANITARY SEWER CROSSING
(SEE TYPICAL DETAIL THIS SHEET)
16 L.F. - 8" PVC
59 L.F. - 8" PVC
8" SS LINE 4B
223 L.F. - 8" PVC
CEDARWOOD COVE (50' R.O.W.)
LINE 4G 8" SS
104 L.F. - 8" PVC
22 L.F. - 8" PVC
27 L.F. - 8" PVC
2 - 8" x 1/32 BEND, M.J.
6 L.F. R.L. EACH WAY
LOT 901 BLK 21
PERMEABLE OPEN SPACE & PUB. VAR. WID. DRN. ESM'T. 0.386 AC.
111 L.F. - 8" PVC
LINE 4C 8" SS
141 L.F. - 8" PVC
BEXAR COUNTY 5.461 ACRE RIGHT-OF-WAY DEDICATION (DOC# 20210123679 O.P.R.)
78.67 ACRES SA LANDON RIDGE, LP (DOC# 20220213022 O.P.R.)
OFF-LOT 20' x 20' SANITARY SEWER ESM'T. (0.009 Ac.)
STA 20+29.79 SS LINE '4A'
12" WATER & 8" SANITARY SEWER CROSSING
(SEE TYPICAL DETAIL THIS SHEET)
OFF-LOT 10' x 10' WATER ESM'T. (0.002 Ac.)
30 L.F. - 12" PVC
17 L.F. - 12" PVC
LINE 4A 8" SS
OFF-LOT 50' x 60' DRAINAGE ESM'T TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.069 Ac.)
118 L.F. - 12" PVC
1 - 12" X 12" TEE MJ, M.J., ANCHOR
2 - 12" GATE VALVE, M.J.
1 - 8" GATE VALVE, M.J.
3 - 6" VALVE BOX, COMPLETE
12" WATER & 5' x 3' S.B.C. CROSSING (SEE DETAIL 'C')
1 - 8" x 8" TEE, M.J.
2 - 8" GATE VALVES, M.J.
2 - 6" VALVE BOX, COMPLETE
58 L.F. R.L. EACH WAY
STA 10+93.73 SS LINE '4C'
8" WATER & 8" SANITARY SEWER CROSSING
(SEE TYPICAL DETAIL THIS SHEET)
1 - 8" x 1/16 BEND, M.J.
6 L.F. R.L. EACH WAY
1 - 8" x 1/32 BEND, M.J.
3 L.F. R.L. EACH WAY
162 L.F. - 8" PVC
LINE 4D 8" SS
344 L.F. - 8" PVC
8" SS LINE 4C
WT MONTGOMERY ROAD (120' R.O.W.)
EX. 16" W SAWS JOB #22-1102
CENTURY TREE DR (60' R.O.W.)
14' E.G.T.CA. ESM'T.
5 L.F. - 8" PVC
47 L.F. - 8" PVC
RANGER OAK RIDGE (60' R.O.W.)
C.B. 4341 BLK. 22
8" SS LINE 4A
1 - 1-1/2" WATER SERVICE
LOT 901 BLK 20
PERMEABLE OPEN SPACE & PUB. VAR. WID. DRN. ESM'T. 0.174 AC.
14' E.G.T.CA. ESM'T.
12' PERMANENT WATER ESM'T 0.7954 OF AN ACRE (DOC# 20220077152 O.P.R.)
C.B. 4341 BLK. 23
1 - 8" x 8" TEE, M.J.
2 - 8" GATE VALVES, M.J.
2 - 6" VALVE BOX, COMPLETE
58 L.F. R.L. EACH WAY
STA 9+62.95 SS LINE '4B'
8" WATER & 8" SANITARY SEWER CROSSING
(SEE TYPICAL DETAIL THIS SHEET)
70 L.F. - 8" PVC
1 - 8" x 1/16 BEND, M.J.
6 L.F. R.L. EACH WAY
81 L.F. - 8" PVC (OVERALL)
8" SS LINE 4B
1 - 8" GATE VALVE, M.J.
1 - 6" VALVE BOX, COMPLETE
58 L.F. R.L. EACH WAY
ACACIA RIDGE (50' R.O.W.)
10' E.G.T.CA. ESM'T.
400 L.F. - 8" PVC (OVERALL)
8" SS LINE 4C
MATCHLINE 'A' - SEE SHEET C5.01
C.B. 4341 BLK. 20
C.B. 4341 BLK. 22
8" SS LINE 4A
EX. 16" W SAWS JOB #22-1102
STA 13+83.79 SS LINE '4A'
8" WATER & 8" SANITARY SEWER CROSSING
(SEE TYPICAL DETAIL THIS SHEET)
2 - 8" x 1/16 BEND, M.J.
6 L.F. R.L. EACH WAY
123 L.F. - 8" PVC
CENTURY TREE DR (60' R.O.W.)
14' E.G.T.CA. ESM'T.
BURGES OAK DR (50' R.O.W.)
10' E.G.T.CA. ESM'T.
STA 10+72.35 SS LINE '4A'
8" WATER & 8" SANITARY SEWER CROSSING
(SEE TYPICAL DETAIL THIS SHEET)
STA 2+18.84 SS LINE '4E'
2" WATER & 8" SANITARY SEWER CROSSING
(SEE TYPICAL DETAIL THIS SHEET)
1 - 8" X 8" TEE MJ, M.J., ANCHOR
2 - 8" GATE VALVE, M.J.
2 - 8" X 2" REDUCER, M.J.
61 L.F. - 8" PVC
1 - 8" x 1/8 BEND, M.J.
12 L.F. R.L. EACH WAY
STA 1+52.40 SS LINE '4F'
2" WATER & 8" SANITARY SEWER CROSSING
(SEE TYPICAL DETAIL THIS SHEET)
8" SS LINE 4E
8" SS LINE 4F
LINE 4F 8" SS
BAPTIST OAK (50' R.O.W.)
333 L.F. - 2" HDPE
289 L.F. - 2" HDPE
CAUTION !!!
2" WATER & 24" H.D.P.E. CROSSING (SEE DETAIL 'A')
LOT 902 BLK 20
PERMEABLE OPEN SPACE 0.133 AC.
1
2
3
4
5
6
7

KEYNOTES:

1 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
CONTRACTOR SHALL PROVIDE A 2" JUMPER CONNECTION TO LOAD NEW MAIN.

AFTER RELEASED FOR SERVICE, CONTRACTOR TO TIE NEW 8" PVC WATER MAIN INTO EXIST. 12" PVC 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.)

SEE SAWS STD. DWG. DD-844-01

2 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 (SHEET 1 OF 3)

3 1 - 8" GATE VALVE, M.J.
1 - 6" VALVE BOX, COMPLETE
1 - 2" BLOWOFF ASSEMBLY (PERM.)
SEE SAWS STD DWG. DD-844-02

4 1 - 12" GATE VALVE, M.J.
1 - 2" BLOWOFF ASSEMBLY (PERM.)
SEE SAWS STD DWG. DD-844-02

5 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
CONTRACTOR SHALL PROVIDE A 2" JUMPER CONNECTION TO LOAD NEW MAIN.

AFTER RELEASED FOR SERVICE, CONTRACTOR TO TIE NEW 12" PVC WATER MAIN INTO EXIST. 16" PVC WATER MAIN WITH ±5 L.F. OF 12" WATER MAIN. CUT AS REQUIRED.

12" VALVE TO REMAIN CLOSED UNTIL AFTER DISINFECTION & ACCEPTANCE BY SAWS

1 - 12" SOLID SLEEVE

1 - 2" BLOWOFF ASSEMBLY (TEMP.)

SEE SAWS STD. DWG. DD-844-01

6 1 - 2" BLOWOFF ASSEMBLY (PERM.)
1 - 2" x 2" TEE, M.J. ANCHOR
SEE SAWS STD DWG. DD-844-02

7 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
CONTRACTOR SHALL PROVIDE A 2" JUMPER CONNECTION TO LOAD NEW MAIN.

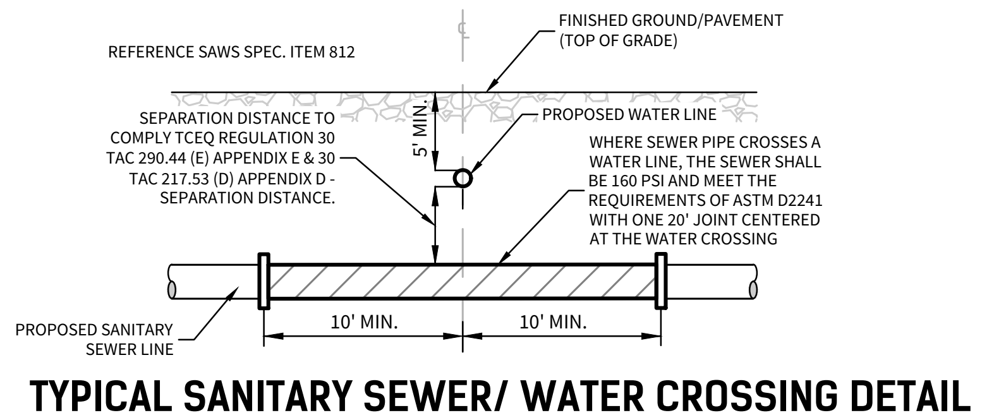
AFTER RELEASED FOR SERVICE, CONTRACTOR TO TIE NEW 8" PVC WATER MAIN INTO EXIST. 16" PVC WATER MAIN WITH ±5 L.F. OF 8" WATER MAIN. CUT AS REQUIRED.

8" VALVE TO REMAIN CLOSED UNTIL AFTER DISINFECTION & ACCEPTANCE BY SAWS

1 - 8" SOLID SLEEVE

1 - 2" BLOWOFF ASSEMBLY (TEMP.)

SEE SAWS STD. DWG. DD-844-01

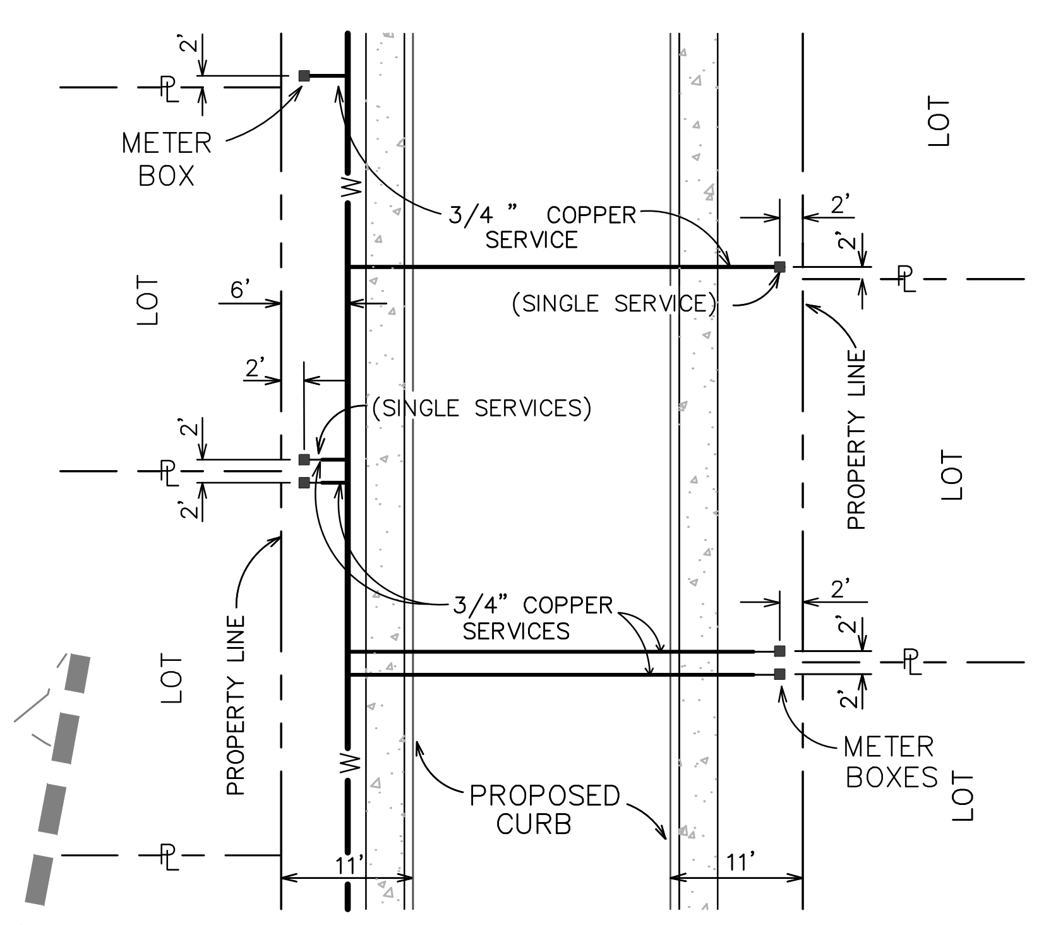


REFERENCE SAWS SPEC. ITEM 812
FINISHED GROUND/PAVEMENT (TOP OF GRADE)
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
5' MIN.
PROPOSED WATER LINE
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

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

TRENCH EXCAVATION SAFETY PROTECTION

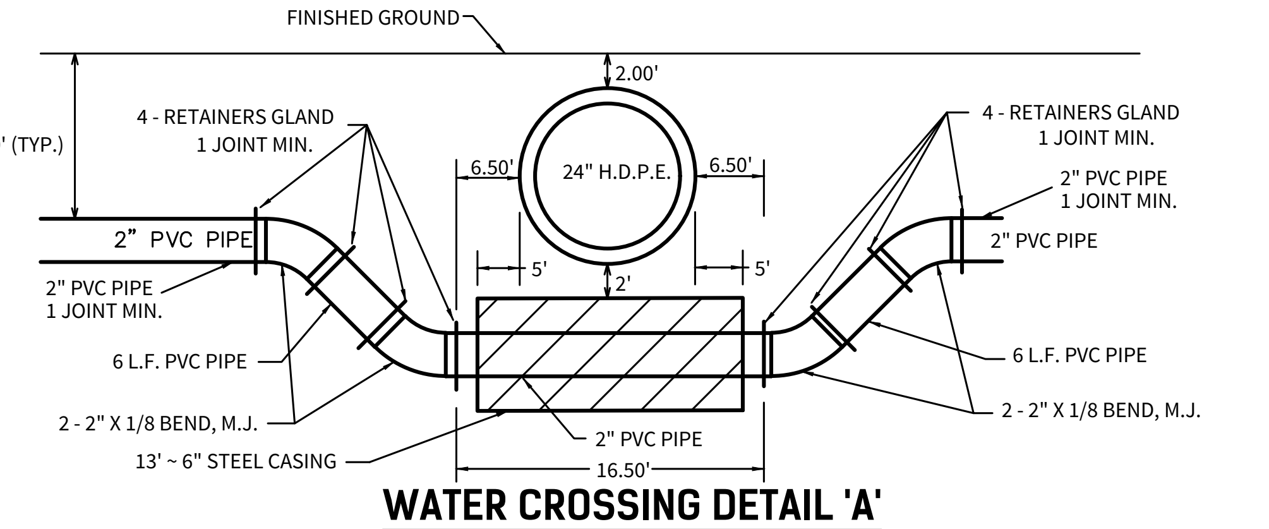
Contractor and/or Contractor's independently retained employee or structural design/geotechnical/safety/equipment consultant, if any, shall review these plans and available geotechnical information and the anticipated installation site(s) within the project work area in order to implement Contractor's 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.



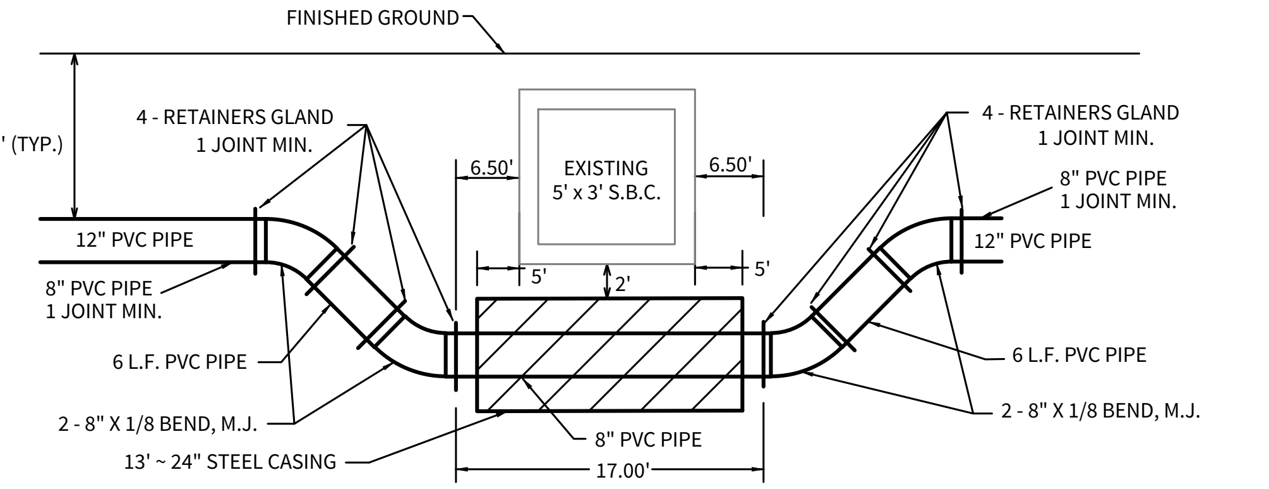
WATER METER BOX LOCATION
N.T.S.

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	≥



WATER CROSSING DETAIL 'A'
SIDE VIEW (THIS DETAIL IS VERTICAL ONLY, NOT HORIZONTAL.) N.T.S.



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

SAWS PRESSURE ZONE 950W

Developer's Name LENNAR HOMES
Developer's Address 100 NE LOOP 410 SUITE 1155
City SAN ANTONIO State TX Zip 78216
Phone # (210) 403-6200 Fax # -
SAWS Block Map # ______ Total EDU's 185 Total Acreage 31.33
Total Linear Footage of Pipe 12" - 165 L.F. ; 8" - 3,727 L.F. ; 2" H.D.P.E. - 622 L.F. Plat No. 24-11800118
Number of Lots 178 SAWS Job No. 24-1050

CUDEENGINEERS.COM

CUDE
EST. 1980
ENGINEERS

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

TRES LAURELS UNIT 4A

WATER DISTRIBUTION PLAN

DATE
06/24/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
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10.

06/25/2024
STATE OF TEXAS
MATTHEW A. TRINKLE
147558
LICENSED PROFESSIONAL ENGINEER

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

SAWS JOB NO.
24-1050

C5.00

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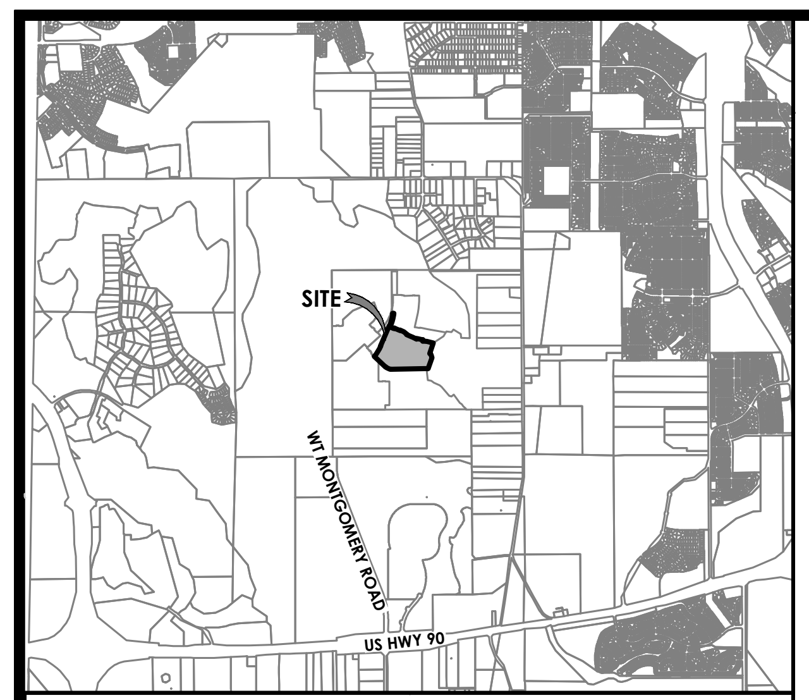


LOCATION MAP
N.T.S.

OWNER/DEVELOPER:

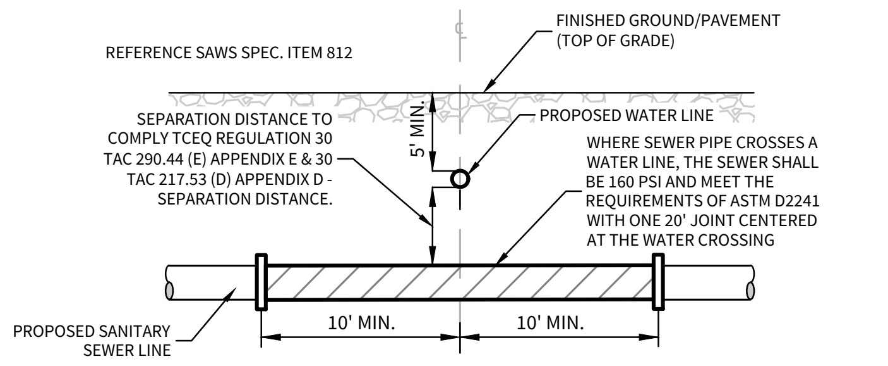
LENNAR HOMES OF TEXAS LAND
ANDCONSTRUCTION, LTD.
A TEXAS LIMITED PARTNERSHIP
100 NE LOOP 410, SUITE 1155
SAN ANTONIO, TX 78216

CIVIL ENGINEER:

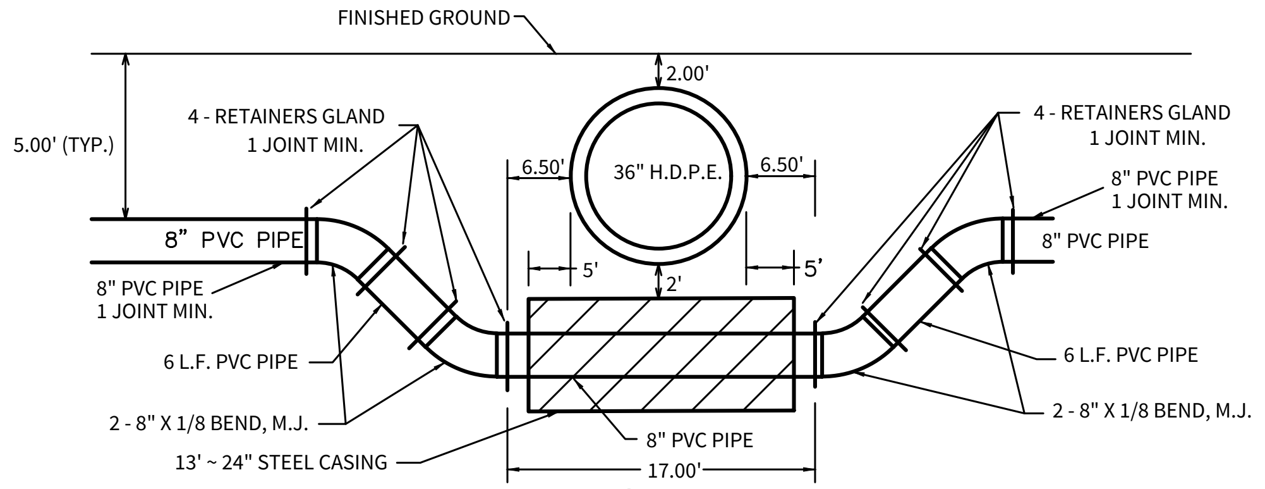
M.W. CUDE ENGINEERS, L.L.C.
CONTACT: CHRIS CHAFFEE, P.E.
4122 POND HILL RD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951

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.


REFERENCE SAWS SPEC. ITEM 812
FINISHED GROUND/PAVEMENT (TOP OF GRADE)
℄
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
5' MIN.
PROPOSED WATER LINE
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

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



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

SAWS PRESSURE ZONE 950W

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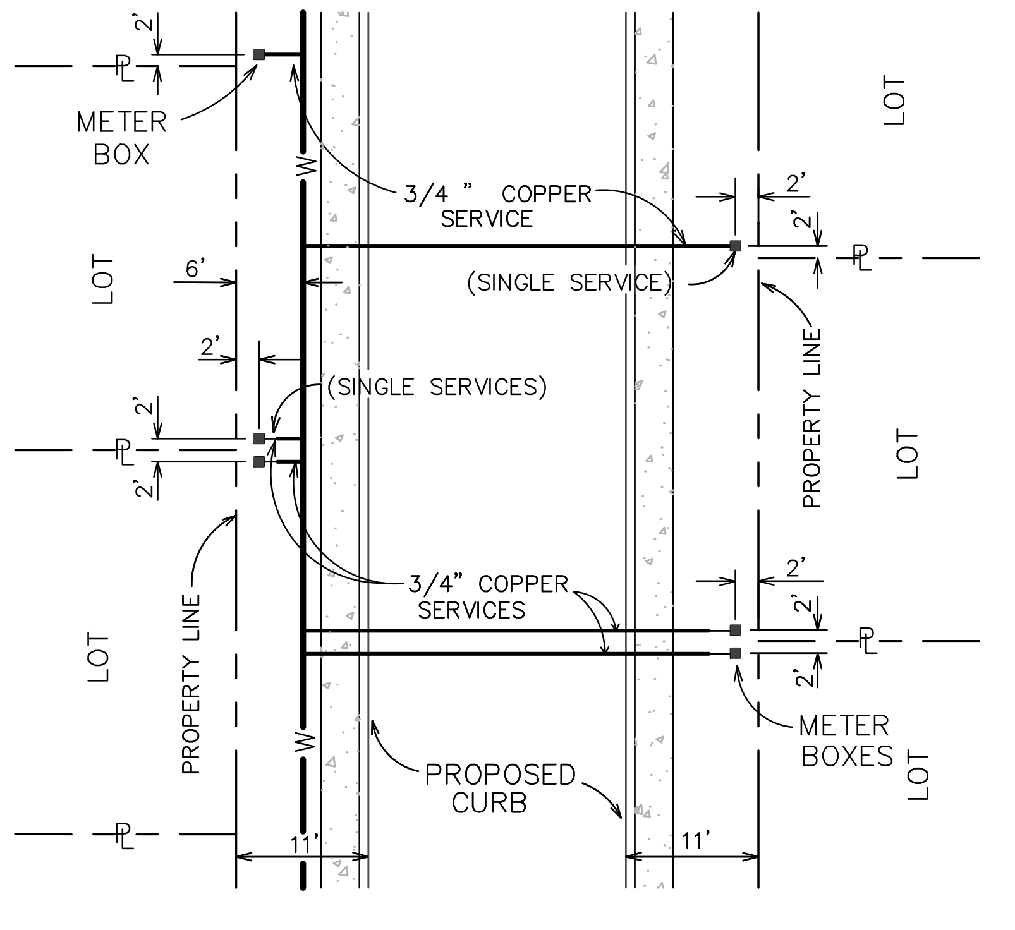
Phone # (210) 403-6200 Fax # -
SAWS Block Map # ____ Total EDU's 185 Total Acreage 31.33
Total Linear Footage of Pipe 12" - 165 L.F. ; 8" - 3,727 L.F. ; 2" H.D.P.E. - 622 L.F. Plat No. 24-11800118
Number of Lots 178 SAWS Job No. 24-1050



WATER METER BOX LOCATION
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	M

KEYNOTES:

1
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
CONTRACTOR SHALL PROVIDE A 2" JUMPER CONNECTION TO LOAD NEW MAIN.

AFTER RELEASED FOR SERVICE, CONTRACTOR TO TIE NEW 8" PVC WATER MAIN INTO EXIST. 12" PVC WATER MAIN WITH ±5 L.F. OF 8" WATER MAIN. CUT AS REQUIRED.

8" VALVE TO REMAIN CLOSED UNTIL AFTER DISINFECTION & ACCEPTANCE BY SAWS

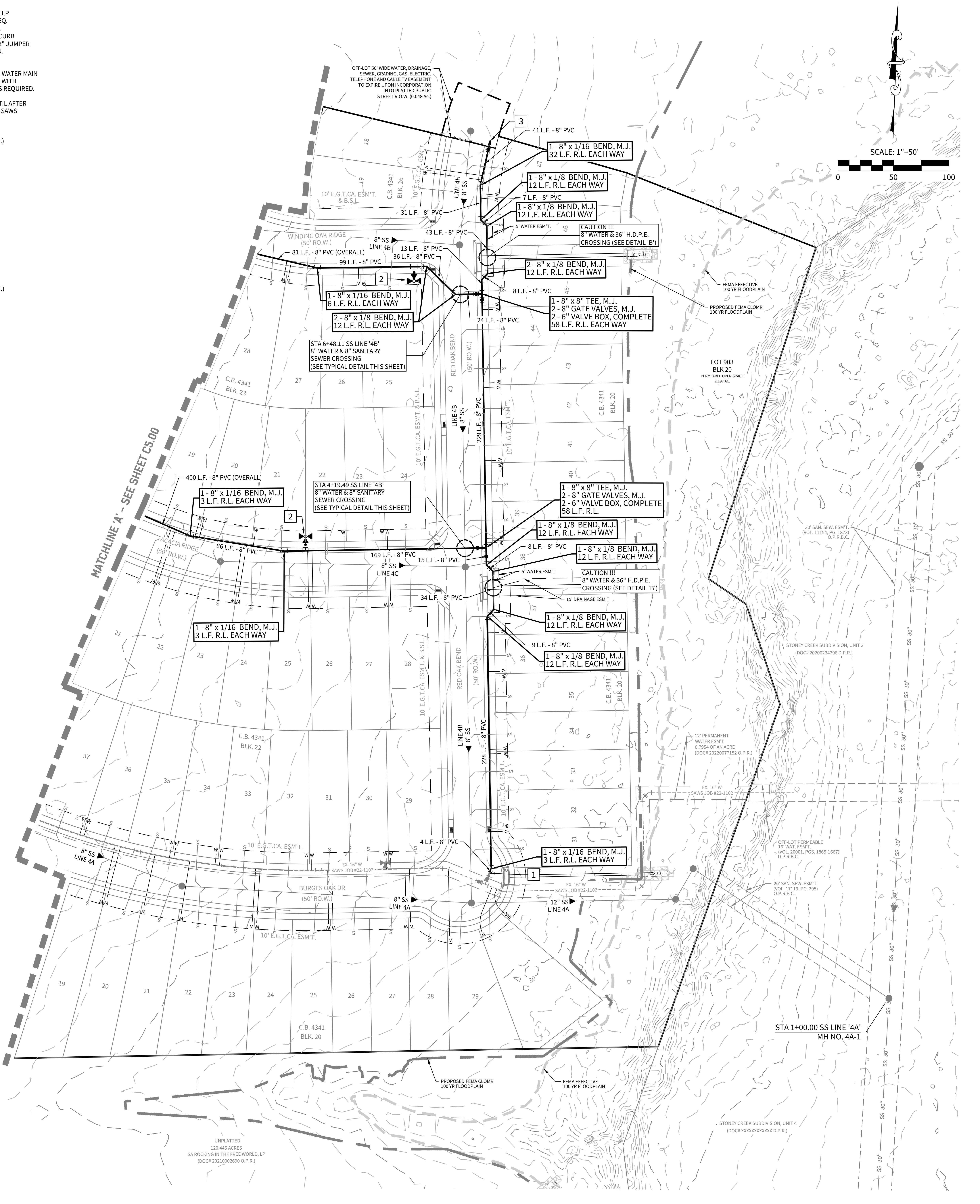
1 - 8" SOLID SLEEVE

1 - 2" BLOWOFF ASSEMBLY (TEMP.)

SEE SAWS STD. DWG. DD-844-01

2
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 (SHEET 1 OF 3)

3
1 - 8" GATE VALVE, M.J.
1 - 6" VALVE BOX, COMPLETE
1 - 2" BLOWOFF ASSEMBLY (PERM.)
SEE SAWS STD DWG. DD-844-02


SCALE: 1"=50'
0
50
100
OFF-LOT 50' WIDE WATER, DRAINAGE, SEWER, GRADING, GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.048 Ac.)
3
41 L.F. - 8" PVC
1 - 8" x 1/16 BEND, M.J. 32 L.F. R.L. EACH WAY
1 - 8" x 1/8 BEND, M.J. 12 L.F. R.L. EACH WAY
7 L.F. - 8" PVC
1 - 8" x 1/8 BEND, M.J. 12 L.F. R.L. EACH WAY
LINE 4H 8" SS
10' E.G.T.CA. ESM'T. & B.S.L.
C.B. 4341 BLK. 26
31 L.F. - 8" PVC
5' WATER ESM'T.
43 L.F. - 8" PVC
CAUTION !!! 8" WATER & 36" H.D.P.E. CROSSING (SEE DETAIL 'B')
WINDING OAK RIDGE (50' RO.W.)
8" SS LINE 4B
13 L.F. - 8" PVC
36 L.F. - 8" PVC
81 L.F. - 8" PVC (OVERALL)
99 L.F. - 8" PVC
2
2 - 8" x 1/8 BEND, M.J. 12 L.F. R.L. EACH WAY
8 L.F. - 8" PVC
1 - 8" x 1/16 BEND, M.J. 6 L.F. R.L. EACH WAY
2 - 8" x 1/8 BEND, M.J. 12 L.F. R.L. EACH WAY
1 - 8" x 8" TEE, M.J. 2 - 8" GATE VALVES, M.J. 2 - 6" VALVE BOX, COMPLETE 58 L.F. R.L. EACH WAY
24 L.F. - 8" PVC
FEMA EFFECTIVE 100 YR FLOODPLAIN
PROPOSED FEMA CLOMR 100 YR FLOODPLAIN
STA 6+48.11 SS LINE '4B' 8" WATER & 8" SANITARY SEWER CROSSING (SEE TYPICAL DETAIL THIS SHEET)
RED OAK BEND (50' RO.W.)
C.B. 4341 BLK. 23
LOT 903 BLK 20 PERMEABLE OPEN SPACE 2.197 AC.
LINE 4B 8" SS
229 L.F. - 8" PVC
10' E.G.T.CA. ESM'T.
C.B. 4341 BLK. 20
MATCHLINE 'A' - SEE SHEET C5.00
400 L.F. - 8" PVC (OVERALL)
1 - 8" x 1/16 BEND, M.J. 3 L.F. R.L. EACH WAY
STA 4+19.49 SS LINE '4B' 8" WATER & 8" SANITARY SEWER CROSSING (SEE TYPICAL DETAIL THIS SHEET)
1 - 8" x 8" TEE, M.J. 2 - 8" GATE VALVES, M.J. 2 - 6" VALVE BOX, COMPLETE 58 L.F. R.L.
1 - 8" x 1/8 BEND, M.J. 12 L.F. R.L. EACH WAY
8 L.F. - 8" PVC
1 - 8" x 1/8 BEND, M.J. 12 L.F. R.L. EACH WAY
ACACIA RIDGE (50' RO.W.)
86 L.F. - 8" PVC
169 L.F. - 8" PVC
15 L.F. - 8" PVC
8" SS LINE 4C
5' WATER ESM'T.
CAUTION !!! 8" WATER & 36" H.D.P.E. CROSSING (SEE DETAIL 'B')
34 L.F. - 8" PVC
15' DRAINAGE ESM'T.
1 - 8" x 1/16 BEND, M.J. 3 L.F. R.L. EACH WAY
1 - 8" x 1/8 BEND, M.J. 12 L.F. R.L. EACH WAY
9 L.F. - 8" PVC
1 - 8" x 1/8 BEND, M.J. 12 L.F. R.L. EACH WAY
10' E.G.T.CA. ESM'T. & B.S.L.
C.B. 4341 BLK. 22
LINE 4B 8" SS
228 L.F. - 8" PVC
12' PERMANENT WATER ESM'T 0.7954 OF AN ACRE (DOC# 20220077152 O.P.R.)
EX. 16" W SAWS JOB #22-1102
4 L.F. - 8" PVC
1 - 8" x 1/16 BEND, M.J. 3 L.F. R.L. EACH WAY
1
8" SS LINE 4A
10' E.G.T.CA. ESM'T.
BURGES OAK DR (50' RO.W.)
8" SS LINE 4A
12" SS LINE 4A
C.B. 4341 BLK. 20
OFF-LOT PERMEABLE 16' WAT. ESM'T. (VOL. 20001, PGS. 1865-1667) D.P.R.B.C.
20' SAN. SEW. ESM'T. (VOL. 17119, PG. 295) O.P.R.B.C.
30' SAN. SEW. ESM'T. (VOL. 11154, PG. 1873) O.P.R.B.C.
STONEY CREEK SUBDIVISION, UNIT 3 (DOC# 20200234298 D.P.R.)
SS 30"
STA 1+00.00 SS LINE '4A' MH NO. 4A-1
PROPOSED FEMA CLOMR 100 YR FLOODPLAIN
FEMA EFFECTIVE 100 YR FLOODPLAIN
UNPLATTED 120.445 ACRES SA ROCKING IN THE FREE WORLD, LP (DOC# 20210002690 O.P.R.)
STONEY CREEK SUBDIVISION, UNIT 4 (DOC# XXXXXXXXXXXX D.P.R.)

CUDEENGINEERS.COM

EST. 1980
CUDE
ENGINEERS

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TRES LAURELS
UNIT 4A

WATER DISTRIBUTION PLAN

DATE
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PROJECT NO.
03050.015

DRAWN BY
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CHECKED BY
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06/25/2024
MATTHEW A. TRINKLE
147558
CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

SAWS JOB NO.
24-1050

C5.01

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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.

SAWS PRESSURE ZONE 950W

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Number of Lots 178 SAWS Job No. 24-1050

WATER SECTION

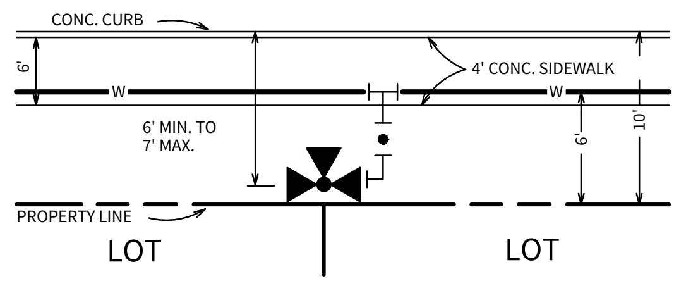
1. PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT LEAST ONE WEEK IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS; THIS IS AT NO ADDITIONAL COST TO SAWS OR THE 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 765 FEET WHERE THE STATIC PRESSURE WILL NORMALLY EXCEED 80 PSI. AT ALL SUCH LOCATIONS WHERE THE GROUND LEVEL IS BELOW 765 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. IN AN EFFORT TO MEET THE CITY OF SAN ANTONIO'S FIRE FLOW REQUIREMENTS FOR THE PROPOSED RESIDENTIAL DEVELOPMENT, THE PUBLIC WATER MAIN SYSTEM HAS BEEN DESIGNED FOR A MINIMUM FIRE FLOW DEMAND OF 1000 G.P.M. AT 25 P.S.I. RESIDUAL PRESSURE. THE FIRE FLOW REQUIREMENTS FOR INDIVIDUAL STRUCTURES WILL BE REVIEWED DURING THE BUILDING PERMIT PROCESS IN ACCORDANCE WITH THE PROCEDURES SET FORTH BY THE CITY OF SAN ANTONIO DIRECTOR OF DEVELOPMENT SERVICES AND THE SAN ANTONIO FIRE DEPARTMENT FIRE MARSHAL
12. ALL PIPES SHALL BE C900 CLASS 235 DR-18, UNLESS OTHERWISE NOTED.
13. ALL METERS SHALL BE 5/8", UNLESS OTHERWISE NOTED.

CAUTION!!!

THE CONTRACTOR SHALL BE AWARE THAT UNDERGROUND ELECTRIC AND GAS LINES EXIST ALONG WT MONTGOMERY RD. 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

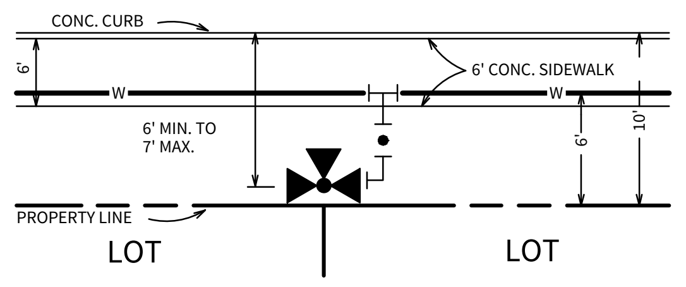
Contractor and/or Contractor's independently retained employee or structural design/geotechnical/safety/equipment consultant, if any, shall review these plans and available geotechnical information and the anticipated installation site(s) within the project work area in order to implement Contractor's 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.



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.

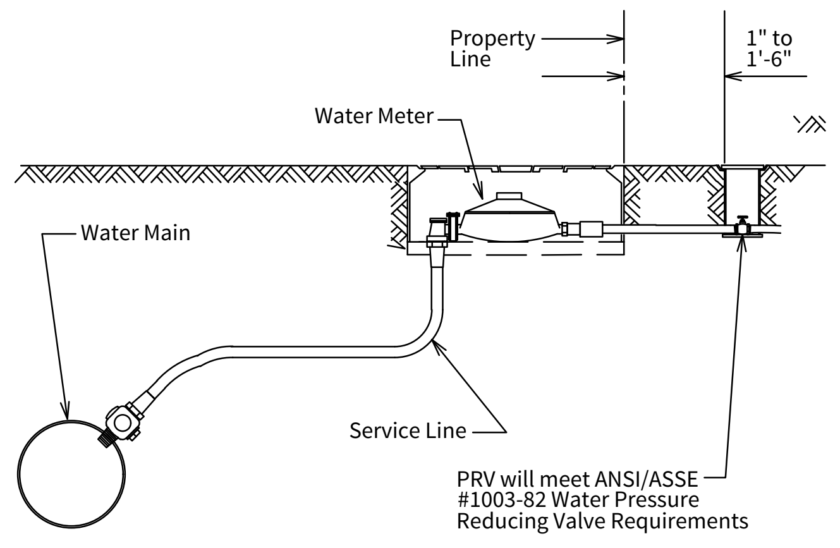
TYPICAL FIRE HYDRANT DETAIL (4' SIDEWALK/ 50' ROW)
N.T.S.



NOTE:

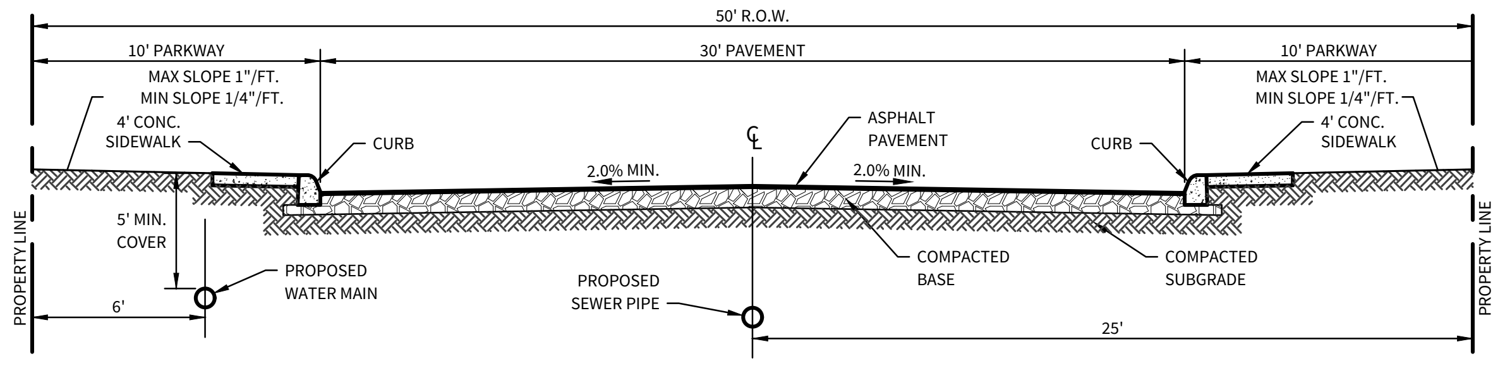
1. EXCLUSIVE OF THE TEE, PAYMENT FOR THE FIRE HYDRANT SHALL INCLUDE ALL FITTINGS, 6" D.I. PIPE AND 6" GATE VALVE & BOX.
2. FIRE HYDRANT TO BE INSTALLED OUTSIDE OF THE LIMITS OF ALL PROPOSED SIDEWALKS.

TYPICAL FIRE HYDRANT DETAIL (6' SIDEWALK/ 60' ROW)
N.T.S.

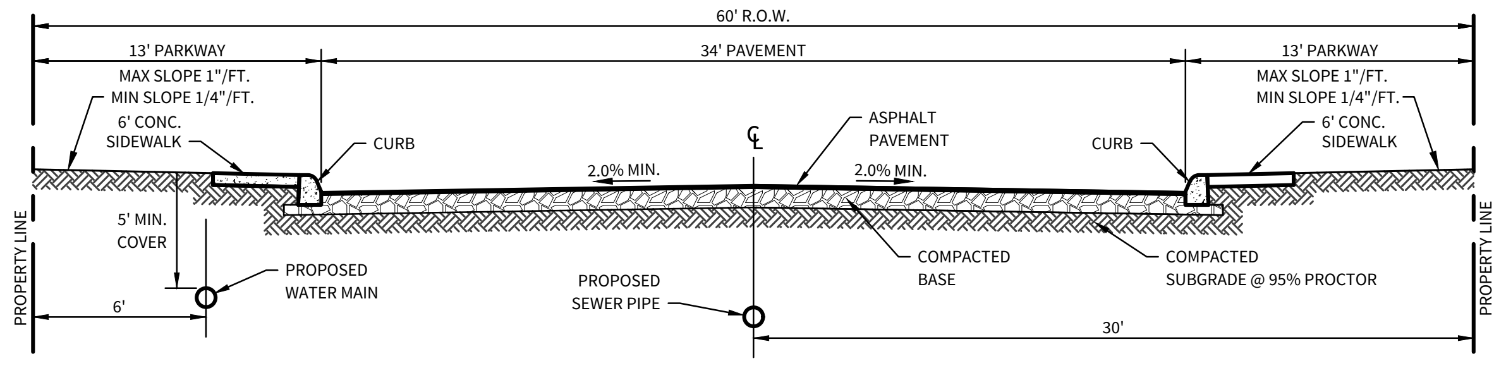


Property Line
1" to 1'-6"
Water Meter
Water Main
Service Line
PRV will meet ANSI/ASSE #1003-82 Water Pressure Reducing Valve Requirements

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



LOCAL "A" STREET CROSS-SECTION



LOCAL "B" STREET CROSS-SECTION

CUDEENGINEERS.COM

EST. 1980 CUDE ENGINEERS

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

TRES LAURELS
UNIT 4A

WATER DISTRIBUTION SYSTEM
GENERAL NOTES

DATE
06/10/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
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2.
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10.

06/05/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

SAWS JOB NO.
24-1050

C5.D1

P:\03050\015\2-DWG\4-Plans\W01-W02 WDDP.dwg 2024/06/10 5:06pm ivilla

LOCATION MAP
N.T.S.

OWNER/DEVELOPER:

LENNAR HOMES OF TEXAS LAND
ANDCONSTRUCTION, LTD.
A TEXAS LIMITED PARTNERSHIP
100 NE LOOP 410, SUITE 1155
SAN ANTONIO, TX 78216

CIVIL ENGINEER:

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

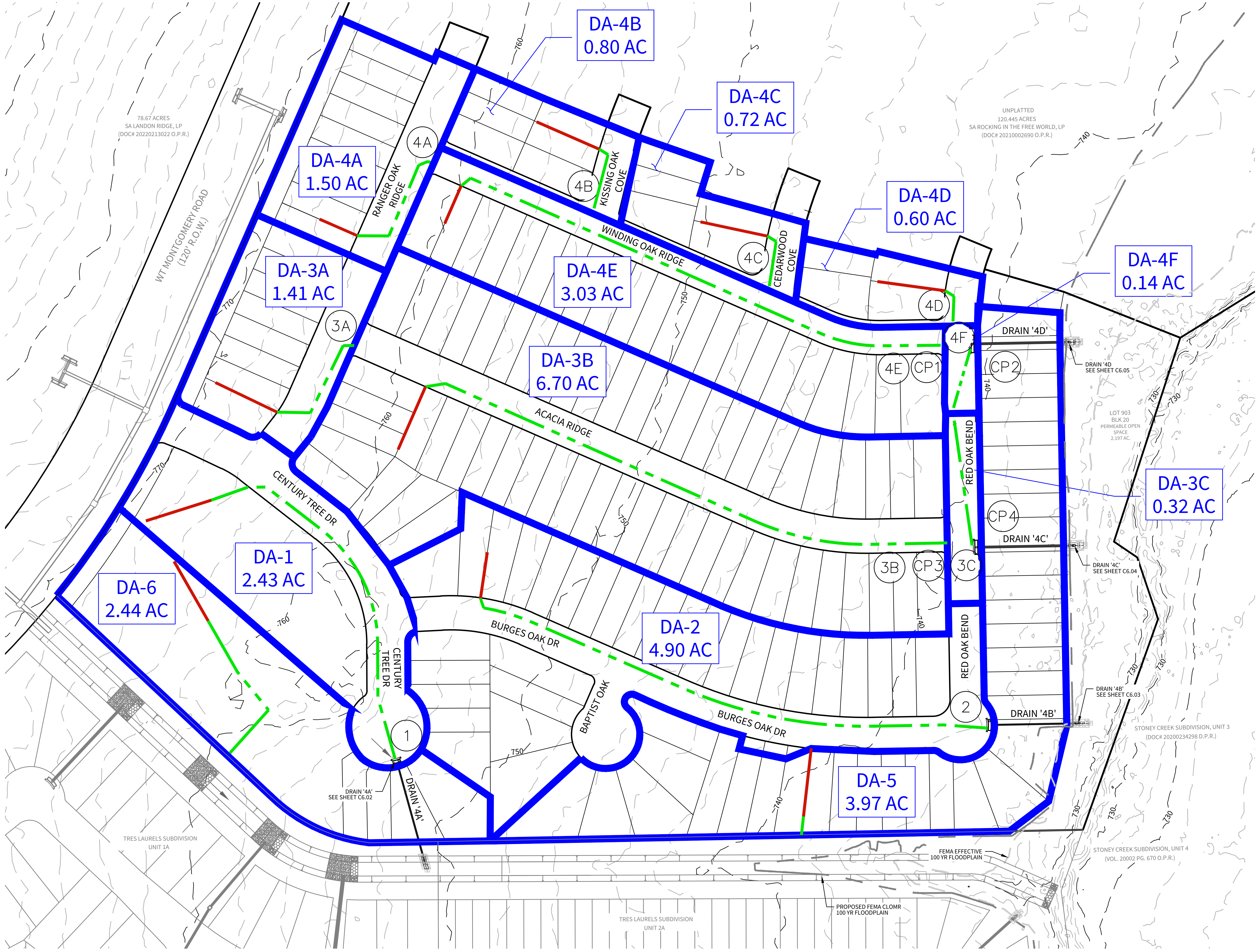
LEGEND

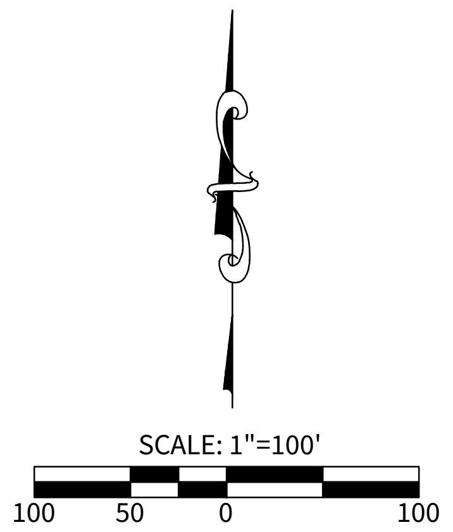
SITE BOUNDARY	▭
DRAINAGE AREA	━━━
Tc FLOW PATH (SHEET FLOW)	━ ‐ ‐ ━
Tc FLOW PATH (SHALLOW CONC.)	━ ‐ ‐ ━
Tc FLOW PATH (CONCENTRATED)	━ ‐ ‐ ━
FLOW ARROW PROP. GROUND	→
FLOW ARROW EX. GROUND	→
ACCUMULATION POINT	(XX)

Project Name: Tres Laurels – Unit 4A Precipitation **PA4**

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

HYDROLOGY					Sheet Flow Tc Compuations						Shallow Conc. Tc Compuations					Concentrated Tc Computations			Overall	INTENSITY			Q FLOW		
Drainage Shed/ Computation Point	Structure/ Description	Shed Area (Ac.)	AREA OF ACCUMULATION (Ac.)	C	*Length ‹ 100'*	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
1	Century Tree Dr Curb Inlet 4A-1 10' Curb Inlet (In Sag)	**2.43**	= 1	0.65	*100*	N	771	769	2.09%	13	*550*	Y	753	2.82%	3				**15**	5.24	7.24	9.03	**8.22**	**11.35**	**14.16**
2	Burges Oak Dr Curb Inlet 4B-1 15' Curb Inlet (In Sag)	**4.90**	= 2	0.77	*100*	N	756	754	1.51%	14	*783*	Y	738	2.02%	5				**18**	4.76	6.56	8.16	**17.96**	**24.75**	**30.79**
3A	Ranger Oak Ridge	**1.41**	= 3A	0.77	*100*	N	769	768	1.02%	15	*174*	Y	762	3.47%	1				**15**	5.24	7.24	9.03	**5.69**	**7.86**	**9.80**
3B	Acacia Ridge	**6.70**	= 3B	0.77	*100*	N	760	759	1.02%	15	*851*	Y	740	2.22%	5				**19**	4.63	6.37	7.93	**23.89**	**32.86**	**40.91**
3C	Red Oak Bend	**0.32**	= 3C	0.96					#DIV/0!		*184*	Y	740		1				**5**	7.76	10.83	13.54	**2.38**	**3.33**	**4.16**
4A	Ranger Oak Ridge	**1.50**	= 4A	0.77	*100*	N	770	768	1.50%	14	*182*	Y	760	4.33%	1				**14**	5.42	7.53	9.39	**6.26**	**8.70**	**10.85**
4B	Kissing Oak Cove	**0.80**	= 4B	0.77	*100*	N	756	755	1.42%	14	*96*	Y	753	1.60%	1				**14**	5.42	7.53	9.39	**3.34**	**4.64**	**5.78**
4C	Cedarwood Cove	**0.72**	= 4C	0.77	*100*	N	749	748	1.68%	14	*81*	Y	746	1.83%	0				**14**	5.42	7.53	9.39	**3.00**	**4.17**	**5.21**
4D	Red Oak Bend	**0.60**	= 4D	0.77	*100*	N	745	743	2.05%	13	*52*	Y	742	2.35%	0				**13**	5.61	7.82	9.76	**2.59**	**3.61**	**4.51**
4E	Winding Oak Ridge	**3.03**	= 4E	0.77	*100*	N	761	760	1.65%	14	*799*	Y	741	2.30%	4				**18**	4.76	6.56	8.16	**11.11**	**15.31**	**19.04**
4F	Red Oak Bend	**0.14**	= 4F	0.96					#DIV/0!		*89*	Y	741		1				**5**	7.76	10.83	13.54	**1.04**	**1.46**	**1.82**
5		**3.97**	= 5	0.77	*100*	N	741	740	1.06%	15	*42*	N	740	0.69%	1				**15**	5.24	7.24	9.03	**16.02**	**22.13**	**27.60**
6		**3.83**	= 6	0.41	*100*	N	772	767	4.71%	11	*402*	N	757	2.52%	3				**13**	5.61	7.82	9.76	**8.81**	**12.28**	**15.33**
CP1		**6.05**	= 4A+4B+4C +4E	0.77	*100*	N	770	768	1.50%	14	*981*	Y	741	2.76%	5				**18**	4.76	6.56	8.16	**22.17**	**30.56**	**38.01**
CP2		**6.79**	= CP1+4D+4F	0.77	*100*	N	770	768	1.50%	14	*1031*	Y	741	2.63%	5				**19**	4.63	6.37	7.93	**24.33**	**33.47**	**41.67**
CP3		**8.11**	=3A+3B	0.77	*100*	N	769	768	1.02%	15	*1025*	Y	741	2.62%	5				**20**	4.51	6.21	7.71	**28.16**	**38.78**	**48.15**
CP4		**8.43**	=CP3+3C	0.77	*100*	N	769	768	1.02%	15	*1075*	Y	741	2.50%	6				**20**	4.51	6.21	7.71	**29.27**	**40.31**	**50.05**





CUDEENGINEERS.COM

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

TRES LAURELS UNIT 4A

PROPOSED DRAINAGE MASTER PLAN

DATE
06/24/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS

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10.

06/25/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C6.00

P:\03050\015\2-DWG\4-Plans\DRMP.dwg 2024/06/24 10:36am ivilla

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:

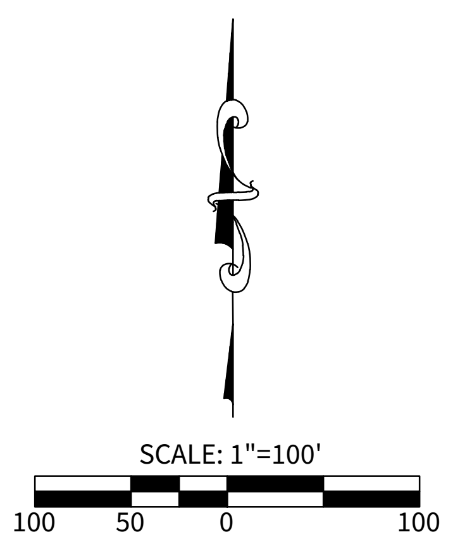
LENNAR HOMES OF TEXAS LAND
ANDCONSTRUCTION, LTD.
A TEXAS LIMITED PARTNERSHIP
100 NE LOOP 410, SUITE 1155
SAN ANTONIO, TX 78216

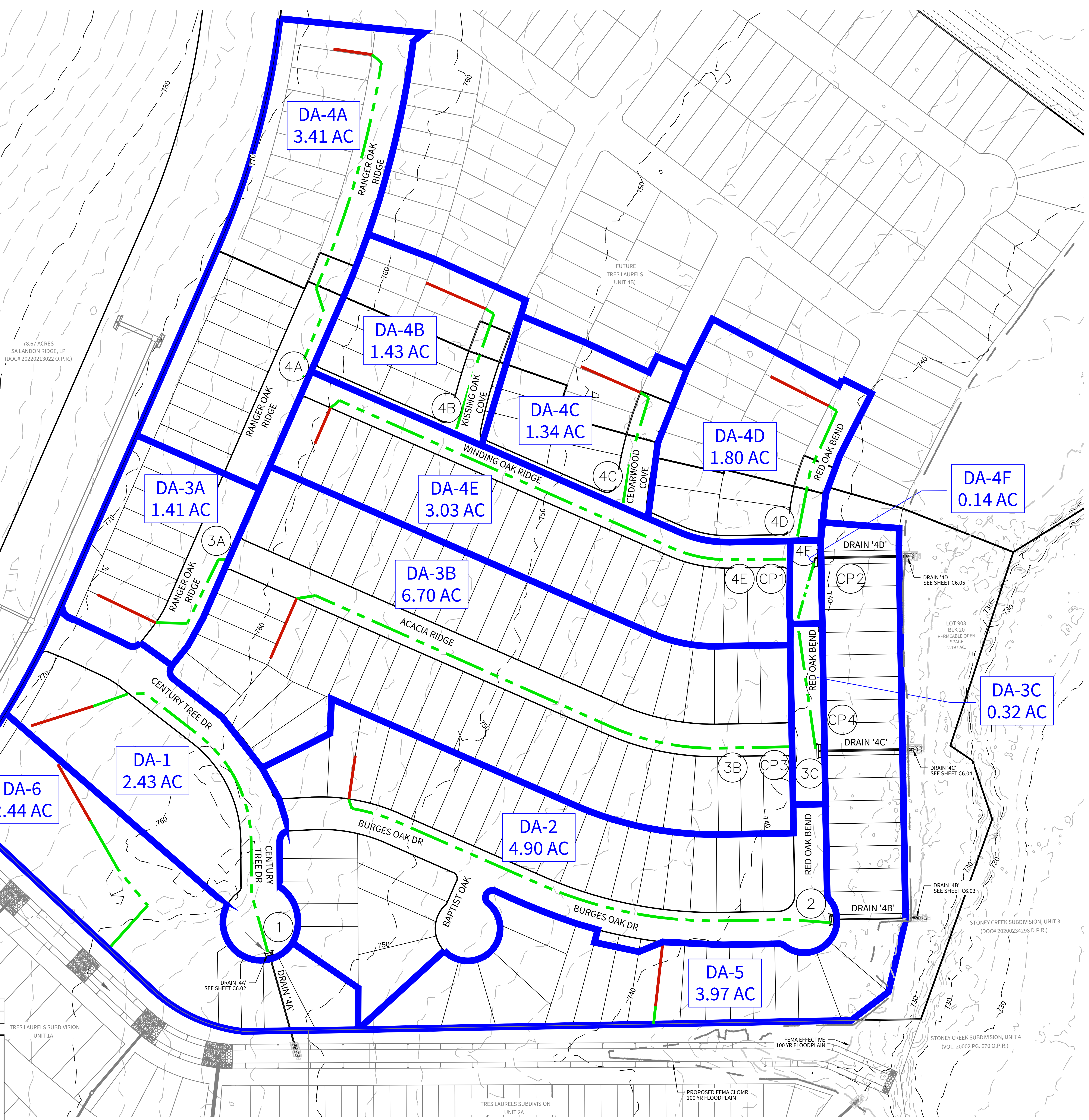
CIVIL ENGINEER:

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

LEGEND

SITE BOUNDARY	▭
DRAINAGE AREA	━
Tc FLOW PATH (SHEET FLOW)	━ ‐ ‐ ━
Tc FLOW PATH (SHALLOW CONC.)	━ ‐ ‐ ━
Tc FLOW PATH (CONCENTRATED)	━ ‐ ‐ ━
FLOW ARROW PROP. GROUND	→
FLOW ARROW EX. GROUND	→
ACCUMULATION POINT	(XX)





Project Name: Tres Laurels – Unit 4A

Precipitation: PA4

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

HYDROLOGY					Sheet Flow Tc Compuations						Shallow Conc. Tc Compuations					Concentrated Tc Computations			Overall	INTENSITY			Q FLOW		
Drainage Shed/ Computation Point	Structure/ Description	Shed Area (Ac.)	AREA OF ACCUMULATION (Ac.)	C	Length < 100'	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
1	Century Tree Dr Curb Inlet 4A-1 10' Curb Inlet (In Sag)	**2.43**	= 1	0.65	100	N	771	769	2.09%	13	550	Y	753	2.82%	3				**15**	5.24	7.24	9.03	**8.22**	**11.35**	**14.16**
2	Burges Oak Dr Curb Inlet 4B-1 15' Curb Inlet (In Sag)	**4.90**	= 2	0.77	100	N	756	754	1.51%	14	783	Y	738	2.02%	5				**18**	4.76	6.56	8.16	**17.96**	**24.75**	**30.79**
3A	Ranger Oak Ridge	**1.41**	= 3A	0.77	100	N	769	768	1.02%	15	174	Y	762	3.47%	1				**15**	5.24	7.24	9.03	**5.69**	**7.86**	**9.80**
3B	Acacia Ridge	**6.70**	= 3B	0.77	100	N	760	759	1.02%	15	851	Y	740	2.22%	5				**19**	4.63	6.37	7.93	**23.89**	**32.86**	**40.91**
3C	Red Oak Bend	**0.32**	= 3C	0.96							184	Y	740		1				**5**	7.76	10.83	13.54	**2.38**	**3.33**	**4.16**
4A	Ranger Oak Ridge	**3.41**	= 4A	0.77	100	N	770	768	1.50%	14	529	Y	760	1.49%	4				**17**	4.91	6.76	8.42	**12.89**	**17.75**	**22.11**
4B	Kissing Oak Cove	**1.43**	= 4B	0.77	100	N	757	755	1.50%	14	201	Y	753	1.07%	2				**15**	5.24	7.24	9.03	**5.77**	**7.97**	**9.94**
4C	Cedarwood Cove	**1.34**	= 4C	0.77	100	N	750	748	1.50%	14	182	Y	746	1.27%	1				**15**	5.24	7.24	9.03	**5.41**	**7.47**	**9.32**
4D	Red Oak Bend	**1.80**	= 4D	0.77	100	N	745	743	2.05%	13	52	Y	742	2.35%	0				**13**	5.61	7.82	9.76	**7.78**	**10.84**	**13.53**
4E	Winding Oak Ridge	**3.03**	= 4E	0.77	100	N	761	760	1.65%	14	799	Y	741	2.30%	4				**18**	4.76	6.56	8.16	**11.11**	**15.31**	**19.04**
4F	Red Oak Bend	**0.14**	= 4E	0.96							90	Y	741		1				**5**	7.76	10.83	13.54	**1.04**	**1.46**	**1.82**
5		**3.97**	= 5	0.77	100	N	741	740	1.06%	15	42	N	740	0.69%	1				**15**	5.24	7.24	9.03	**16.02**	**22.13**	**27.60**
6		**3.83**	= 6	0.41	100	N	772	767	4.71%	11	402	N	757	2.52%	3				**13**	5.61	7.82	9.76	**8.81**	**12.28**	**15.33**
CP1		**9.21**	= 4A+4B+4C +4E	0.77	100	N	770	768	1.50%	14	1330	Y	741	2.04%	8				**21**	4.40	6.05	7.52	**31.20**	**42.90**	**53.33**
CP2		**11.15**	= CP1+4D+4 F	0.77	100	N	770	768	1.50%	14	1380	Y	741	1.96%	8				**22**	4.30	5.91	7.34	**36.92**	**50.74**	**63.02**
CP3		**8.11**	=3A+3B	0.77	100	N	769	768	1.02%	15	1025	Y	741	2.62%	5				**20**	4.51	6.21	7.71	**28.16**	**38.78**	**48.15**
CP4		**8.43**	=CP3+3C	0.77	100	N	769	768	1.02%	15	1075	Y	741	2.50%	6				**20**	4.51	6.21	7.71	**29.27**	**40.31**	**50.05**

CUDEENGINEERS.COM

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

TRES LAURELS
UNIT 4A

ULTIMATE DRAINAGE MASTER PLAN

DATE
06/24/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
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06/25/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C6.01

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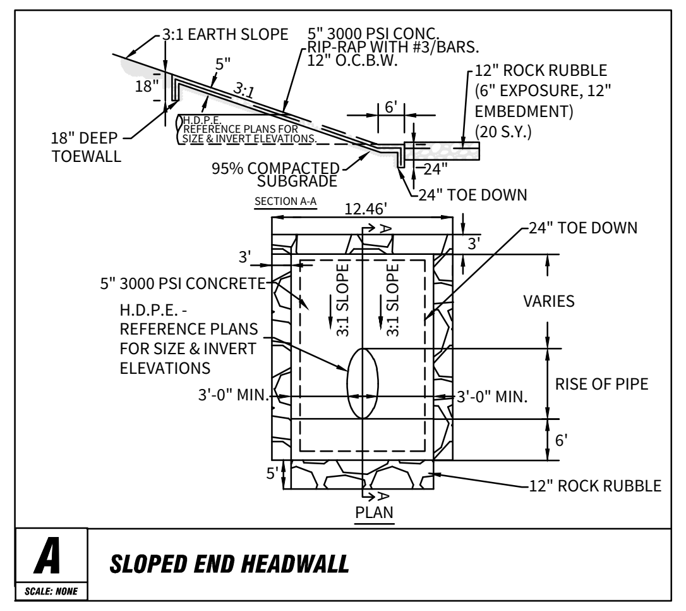
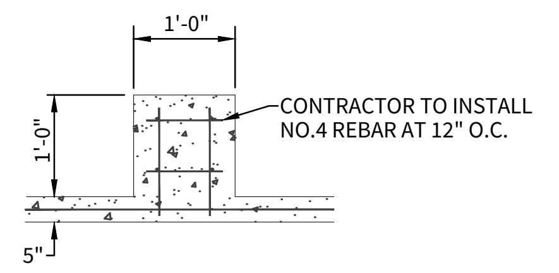
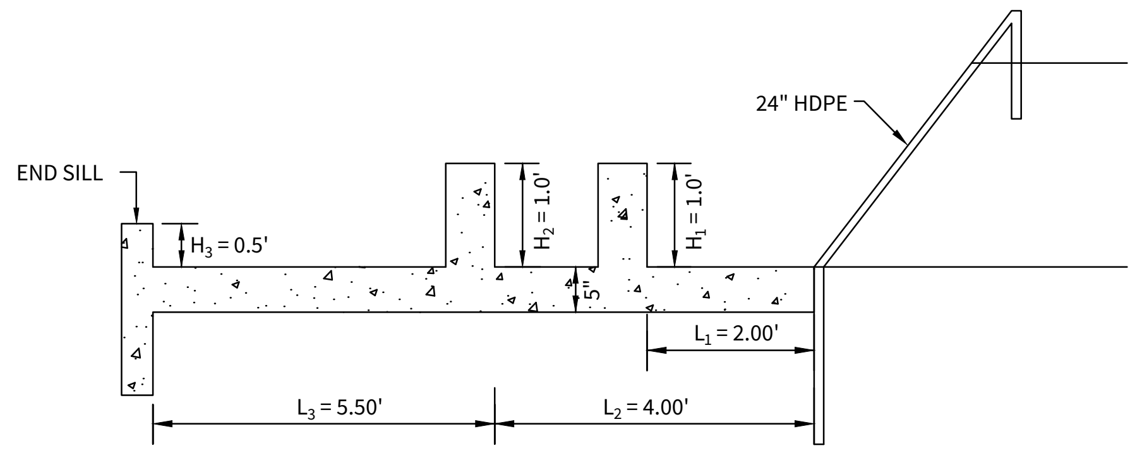


A SLOPED END HEADWALL



BAFFLE BLOCK DRAIN '4A' REINFORCEMENT DETAIL

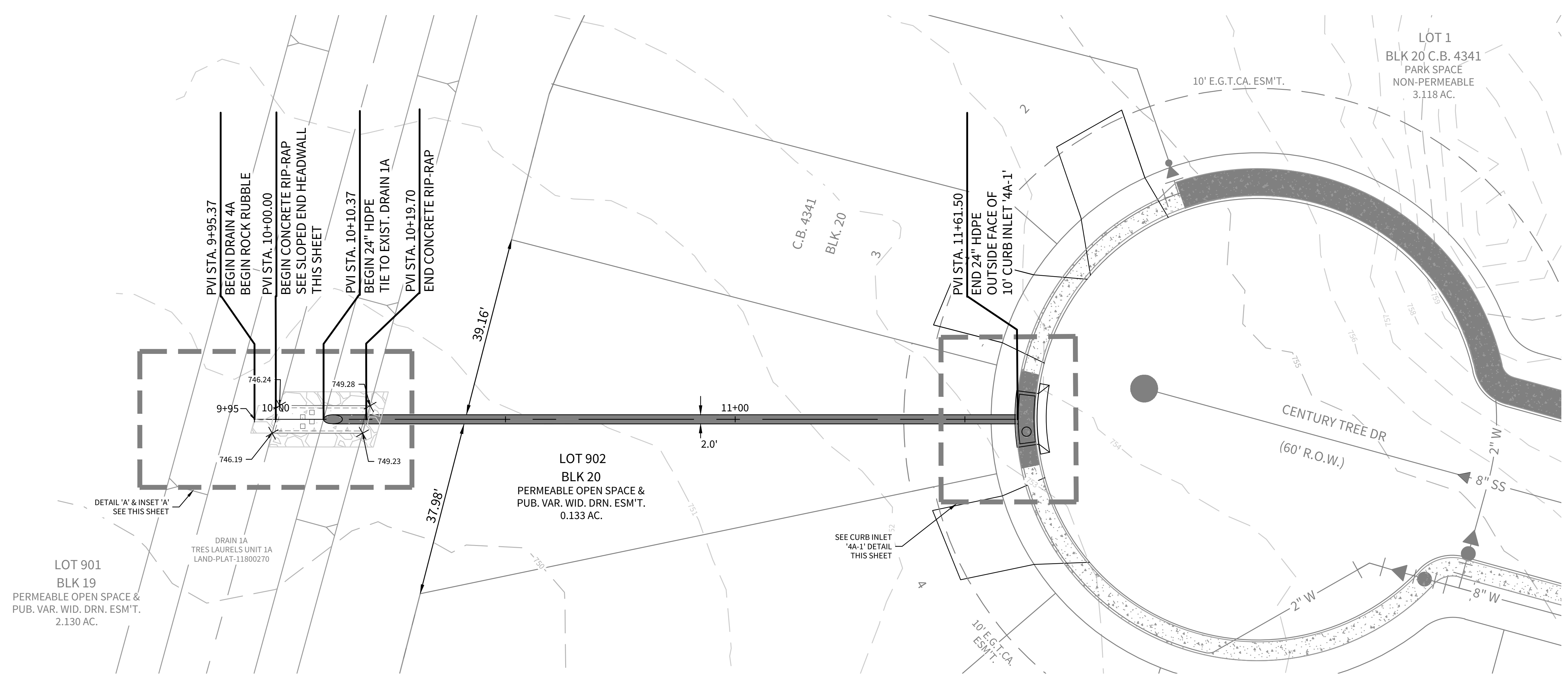
(N.T.S.)



BAFFLE BLOCK CALCULATIONS

(N.T.S.)

TAILWATER DEPTH = 0.79'
Fr = 1.99
$Y_C = 0.47$ FT
$Y_2 = 1.86$ FT
$Y_3 = 0.47$ FT
BASIN OUTLET VELOCITY = 3.75 FT/S



GENERAL SPECIFICATIONS FOR COMPACTED FILL

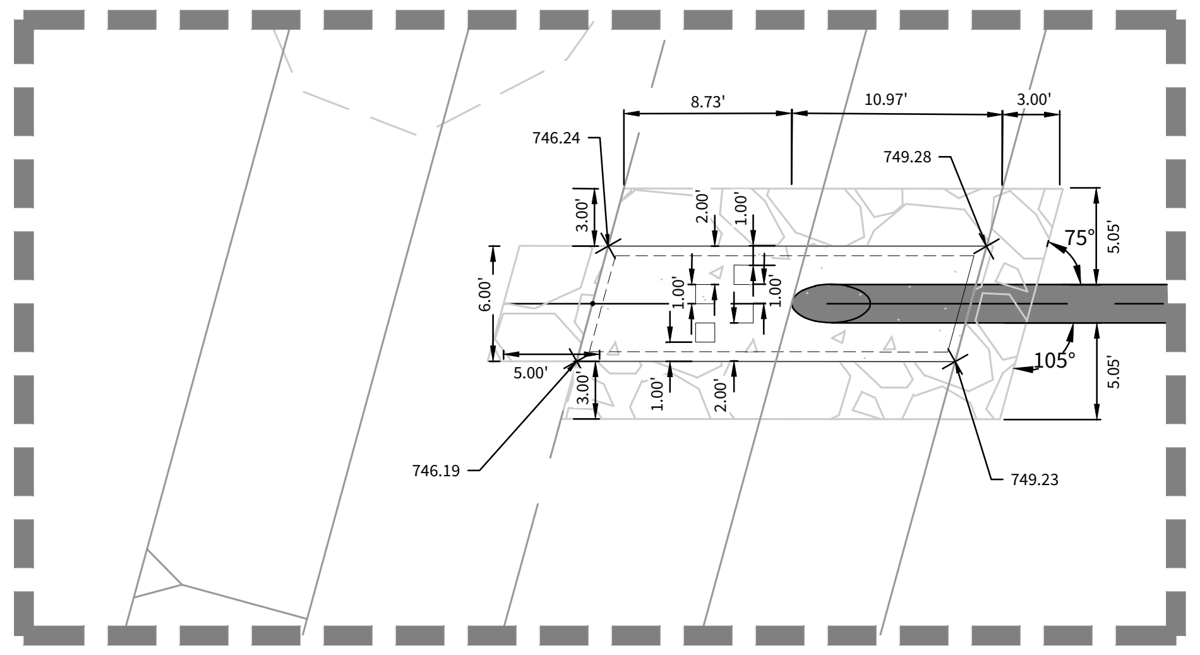
1. FOLLOWING THE CLEARING AND DISKING OR SCARIFYING OF THE FILL AREA, IT SHALL BE BLADED UNTIL IT IS UNIFORM AND FREE FROM LARGE CLODS. THE AREA SHALL BE BROUGHT TO THE ADEQUATE MOISTURE CONTENT AND COMPACTED (TYPICALLY) TO NOT LESS THAN NINETY PERCENT (90%) OF MAXIMUM DENSITY IN ACCORDANCE WITH THE 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.

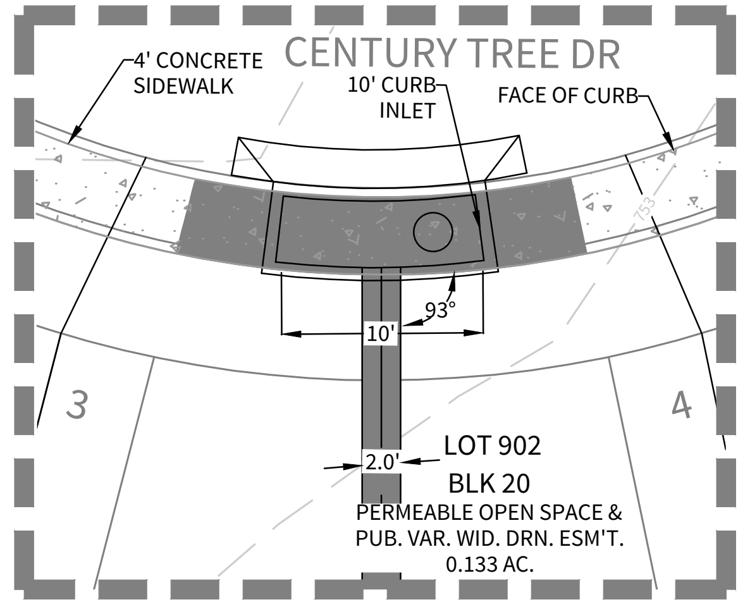
NOTES:

1. REFER TO GENERAL NOTES AND SPECIFICATIONS C0.00.
2. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AT ALL GRADE BREAKS.
3. THE CONTRACTOR SHALL NOTIFY A UTILITY COORDINATOR AT LEAST 48 HOURS PRIOR TO PERFORMING ANY EXCAVATION ACTIVITY ADJACENT TO THE CONSTRUCTION OF AN ON-SITE DRAINAGE FACILITIES TO PROTECT ANY UNIDENTIFIED EXISTING UNDERGROUND UTILITY FACILITY FROM DAMAGE OR HARM. THE CONTRACTOR SHALL HAVE THE SOLE RESPONSIBILITY FOR ANY DAMAGES TO UTILITIES AS A RESULT OF NOT LOCATING UNDERGROUND UTILITY RESOURCES.
4. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY OF SAN ANTONIO.
5. ANY AREAS EXPOSED TO HIGH VELOCITY FLOWS SHALL EITHER HAVE A 6" THICK GABION MATTRESS INSTALLED OR THE INSTALLATION OF APPROPRIATE GEOTECHNICAL LINER AS DIRECTED BY THE CONSTRUCTION ENGINEER IN CHARGE.
6. ALL CONCRETE SHALL BE A MINIMUM OF 3500 PSI @ 28 DAYS COMPRESSIVE STRENGTH UNLESS OTHERWISE SPECIFIED HEREIN ON THESE DOCUMENTS.
7. 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.
8. REFERENCE TYPICAL CONCRETE CHANNEL RIP-RAP STANDARDS FOUND ON SHEET --.
9. A BEXAR COUNTY R.O.W. PERMIT MUST BE OBTAINED PRIOR TO WORKING IN EXISTING BEXAR COUNTY R.O.W.
10. CONTRACTOR TO RECONSTRUCT EXISTING SIDEWALK, AS NECESSARY, FOR PROPOSED SIDEWALK TRANSITION.
11. CONTRACTOR TO GROUT BOTTOM/FLOW LINE OF SEWER MANHOLES AND/OR CURB INLETS AS NECESSARY TO PROVIDE POSITIVE DRAINAGE



INSET 'A'

(SCALE 1" = 10')

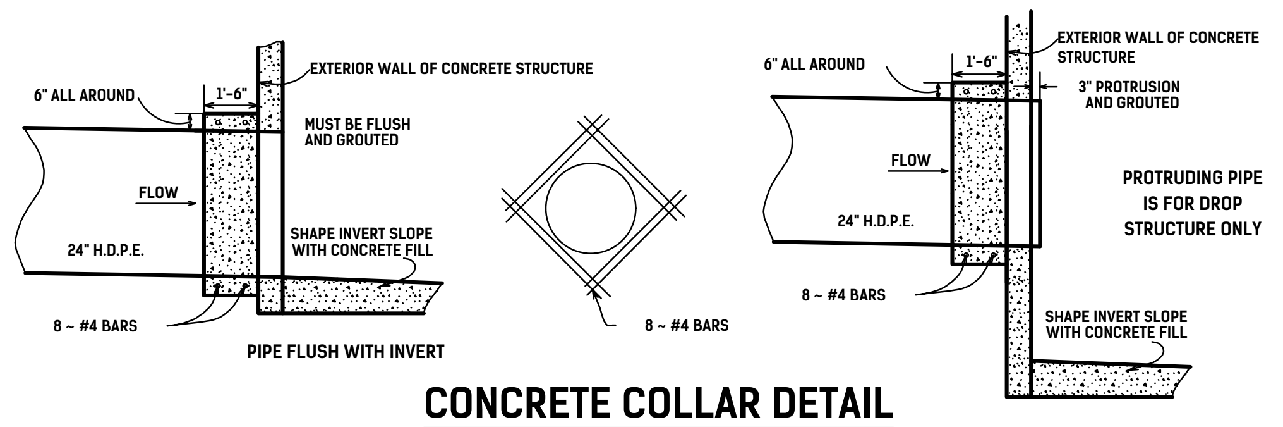


CURB INLET '4A-1' DETAIL

(SCALE 1" = 10')

DRAIN 4A

STA. 9+95.37 TO STA. 11+61.50

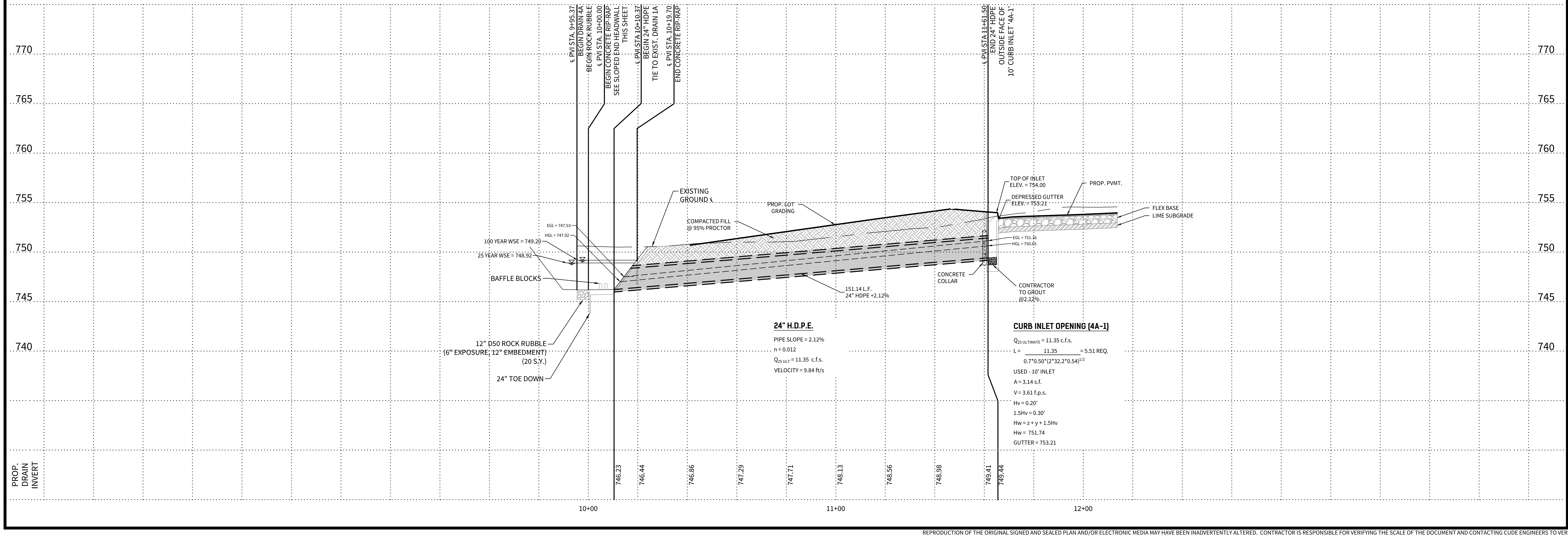

6" ALL AROUND
1'-6"
EXTERIOR WALL OF CONCRETE STRUCTURE
MUST BE FLUSH AND GROUTED
FLOW
24" H.D.P.E.
SHAPE INVERT SLOPE WITH CONCRETE FILL
8 ~ #4 BARS
PIPE FLUSH WITH INVERT
8 ~ #4 BARS
6" ALL AROUND
1'-6"
EXTERIOR WALL OF CONCRETE STRUCTURE
3" PROTRUSION AND GROUTED
FLOW
24" H.D.P.E.
PROTRUDING PIPE IS FOR DROP STRUCTURE ONLY
8 ~ #4 BARS
SHAPE INVERT SLOPE WITH CONCRETE FILL

CONCRETE COLLAR DETAIL

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.

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



24" H.D.P.E.

PIPE SLOPE = 2.12%
n = 0.012
$Q_{25\ ULT} = 11.35$ c.f.s.
VELOCITY = 9.84 ft/s

CURB INLET OPENING (4A-1)

$Q_{25\ ULTIMATE} = 11.35$ c.f.s.

$$L = \frac{11.35}{0.7*0.50*(2*32.2*0.54)^{1/2}} = 5.51 \text{ REQ.}$$

USED - 10' INLET
A = 3.14 s.f.
V = 3.61 f.p.s.
Hv = 0.20'
1.5Hv = 0.30'
Hw = z + y + 1.5Hv
Hw = 751.74
GUTTER = 753.21

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

TRES LAURELS UNIT 4A

DRAINAGE PLAN & PROFILE - DRAIN '4A'

DATE
06/24/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
1.
2.
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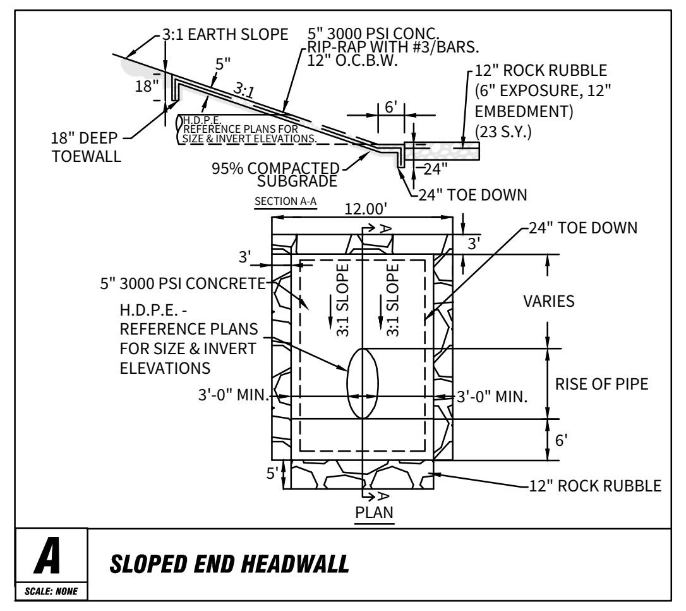
06/25/2024
MATTHEW A. TRINKLE
147558
M. Trinkle

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

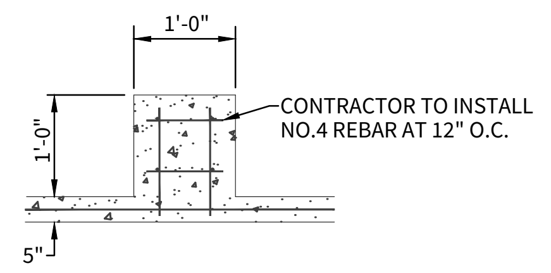
C6.02

2-DWG\4-Plans\07_D01 DRPP.dwg 2024/06/24 4:34pm ivilla


3:1 EARTH SLOPE
5" 3000 PSI CONC. RIP-RAP WITH #3/BARS. 12" O.C.B.W.
5"
18"
3:1
18" DEEP TOEWALL
H.D.P.E. REFERENCE PLANS FOR SIZE & INVERT ELEVATIONS.
12" ROCK RUBBLE (6" EXPOSURE, 12" EMBEDMENT) (23 S.Y.)
6'
95% COMPACTED SUBGRADE
24"
24" TOE DOWN
SECTION A-A
12.00'
3'
3'
5" 3000 PSI CONCRETE
H.D.P.E. - REFERENCE PLANS FOR SIZE & INVERT ELEVATIONS
3:1 SLOPE
3:1 SLOPE
24" TOE DOWN
VARIES
RISE OF PIPE
3'-0" MIN.
3'-0" MIN.
6'
5'
12" ROCK RUBBLE
PLAN
A
A

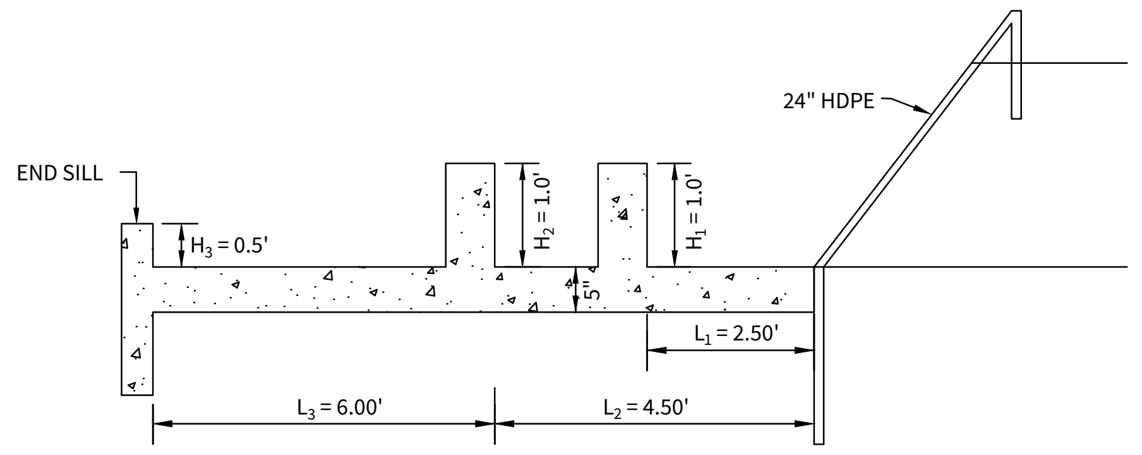
A ***SLOPED END HEADWALL***

SCALE: NONE



BAFFLE BLOCK DRAIN '4B' REINFORCEMENT DETAIL

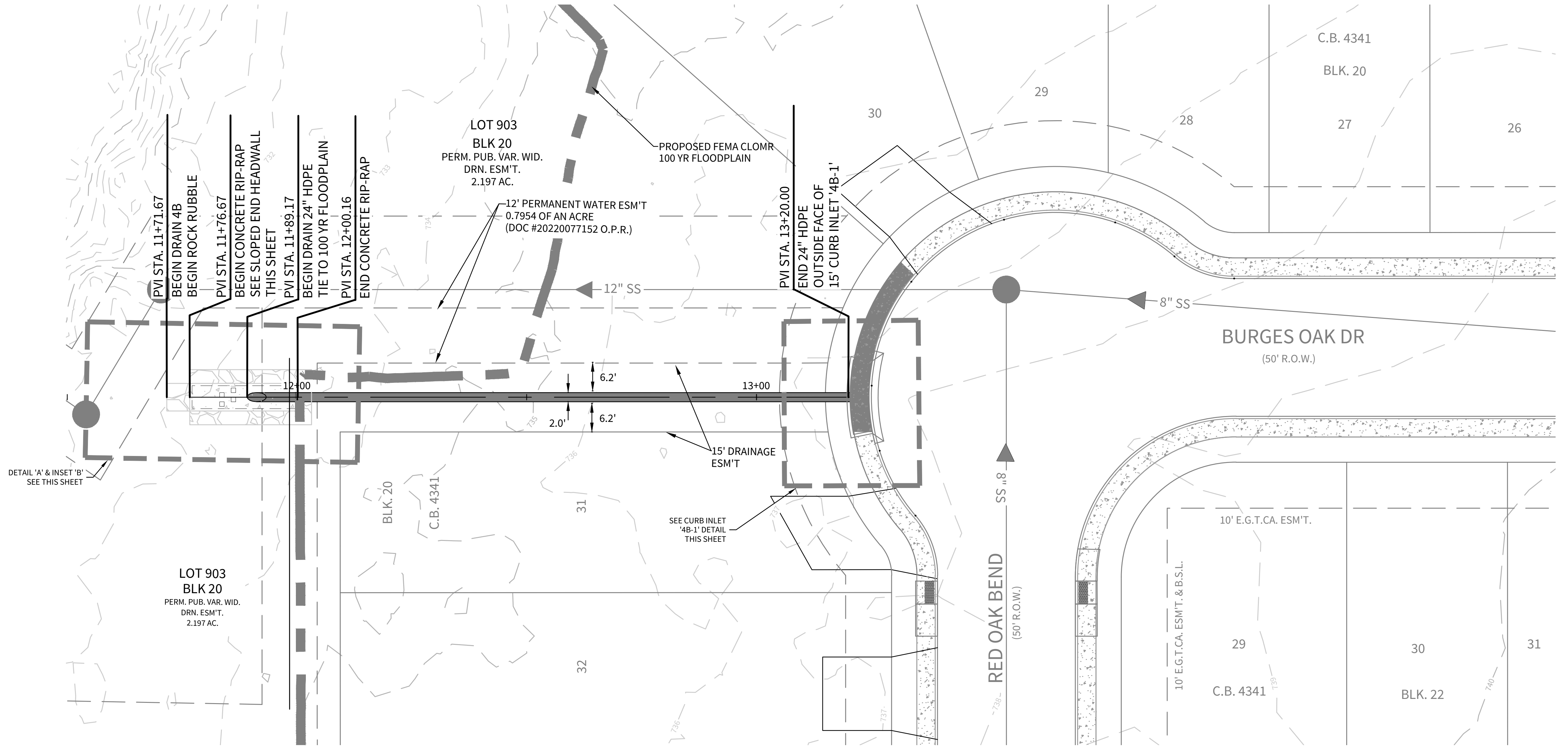
(N.T.S.)



BAFFLE BLOCK CALCULATIONS

(N.T.S.)

TAILWATER DEPTH = 1.31'
Fr = 1.96
Y_C = 0.77 FT
Y_2 = 2.52 FT
Y_3 = 0.77 FT
BASIN OUTLET VELOCITY = 4.73 FT/S

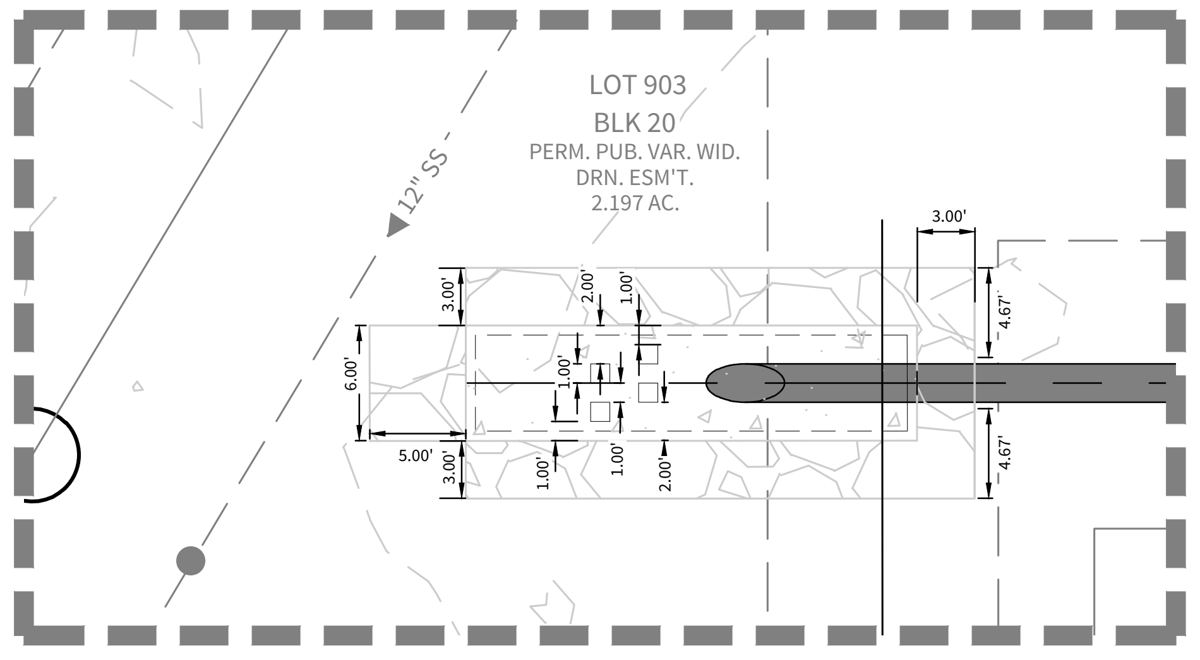


GENERAL SPECIFICATIONS FOR COMPACTED FILL

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 (90%) 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.

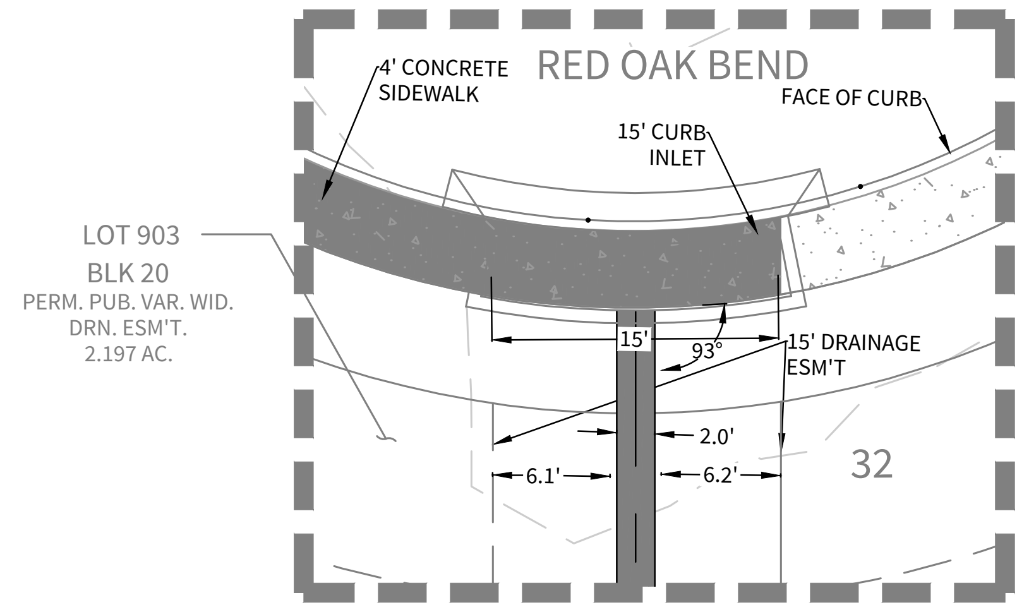
NOTES:

1. REFER TO GENERAL NOTES AND SPECIFICATIONS C0.00.
2. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AT ALL GRADE BREAKS.
3. THE CONTRACTOR SHALL NOTIFY A UTILITY COORDINATOR AT LEAST 48 HOURS PRIOR TO PERFORMING ANY EXCAVATION ACTIVITY ADJACENT TO THE CONSTRUCTION OF AN ON-SITE DRAINAGE FACILITIES TO PROTECT ANY UNIDENTIFIED EXISTING UNDERGROUND UTILITY FACILITY FROM DAMAGE OR HARM. THE CONTRACTOR SHALL HAVE THE SOLE RESPONSIBILITY FOR ANY DAMAGES TO UTILITIES AS A RESULT OF NOT LOCATING UNDERGROUND UTILITY RESOURCES.
4. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY OF SAN ANTONIO.
5. ANY AREAS EXPOSED TO HIGH VELOCITY FLOWS SHALL EITHER HAVE A 6" THICK GABION MATTRESS INSTALLED OR THE INSTALLATION OF APPROPRIATE GEOTECHNICAL LINER AS DIRECTED BY THE CONSTRUCTION ENGINEER IN CHARGE.
6. ALL CONCRETE SHALL BE A MINIMUM OF 3500 PSI @ 28 DAYS COMPRESSIVE STRENGTH UNLESS OTHERWISE SPECIFIED HEREIN ON THESE DOCUMENTS.
7. 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.
8. REFERENCE TYPICAL CONCRETE CHANNEL RIP-RAP STANDARDS FOUND ON SHEET --.
9. A BEXAR COUNTY R.O.W. PERMIT MUST BE OBTAINED PRIOR TO WORKING IN EXISTING BEXAR COUNTY R.O.W.
10. CONTRACTOR TO RECONSTRUCT EXISTING SIDEWALK, AS NECESSARY, FOR PROPOSED SIDEWALK TRANSITION.
11. CONTRACTOR TO GROUT BOTTOM/FLOW LINE OF SEWER MANHOLES AND/OR CURB INLETS AS NECESSARY TO PROVIDE POSITIVE DRAINAGE



INSET 'B'

(SCALE 1" = 10')

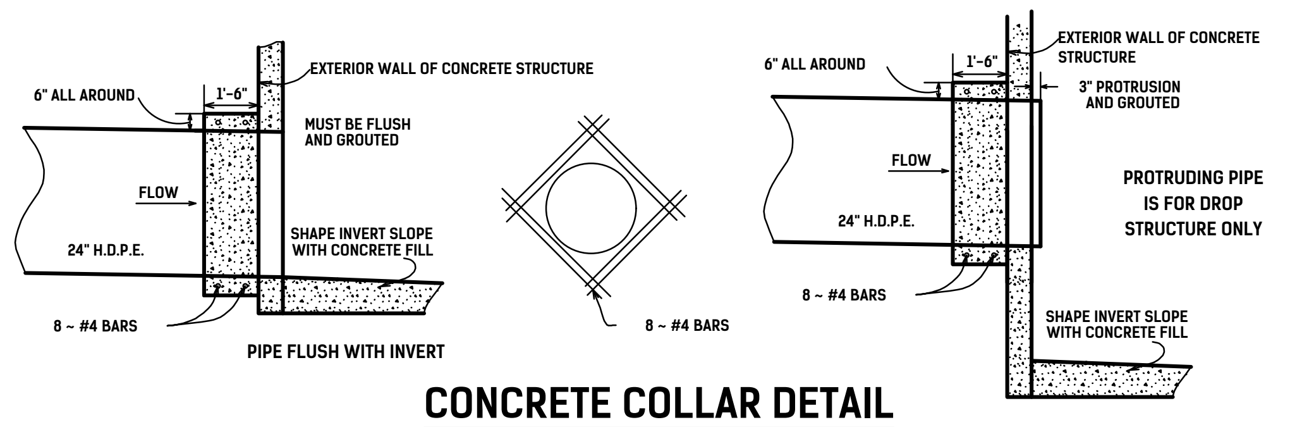


CURB INLET '4B-1' DETAIL

(SCALE 1" = 10')

DRAIN 4B

STA. 11+71.67 TO STA. 13+20.00

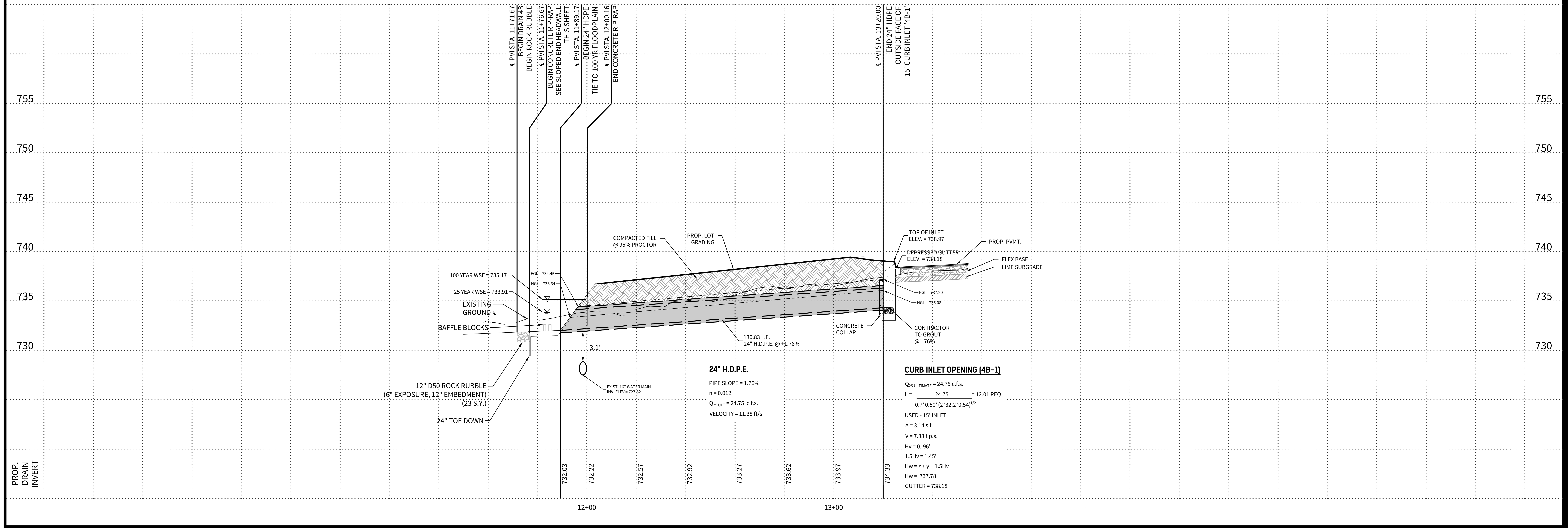

6" ALL AROUND
1'-6"
EXTERIOR WALL OF CONCRETE STRUCTURE
MUST BE FLUSH AND GROUTED
FLOW
24" H.D.P.E.
SHAPE INVERT SLOPE WITH CONCRETE FILL
8 ~ #4 BARS
PIPE FLUSH WITH INVERT
8 ~ #4 BARS
6" ALL AROUND
1'-6"
EXTERIOR WALL OF CONCRETE STRUCTURE
3" PROTRUSION AND GROUTED
FLOW
24" H.D.P.E.
PROTRUDING PIPE IS FOR DROP STRUCTURE ONLY
8 ~ #4 BARS
SHAPE INVERT SLOPE WITH CONCRETE FILL

CONCRETE COLLAR DETAIL

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.

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



24" H.D.P.E.

PIPE SLOPE = 1.76%
n = 0.012
$Q_{25\ ULT}$ = 24.75 c.f.s.
VELOCITY = 11.38 ft/s

CURB INLET OPENING (4B–1)

$Q_{25\ ULTIMATE}$ = 24.75 c.f.s.

$$L = \frac{24.75}{0.7*0.50*(2*32.2*0.54)^{1/2}} = 12.01\ \text{REQ.}$$

USED - 15' INLET
A = 3.14 s.f.
V = 7.88 f.p.s.
Hv = 0..96'
1.5Hv = 1.45'
Hw = z + y + 1.5Hv
Hw = 737.78
GUTTER = 738.18

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

TRES LAURELS UNIT 4A

DRAINAGE PLAN & PROFILE - DRAIN '4B'

DATE
06/24/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
1.
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06/25/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C6.03

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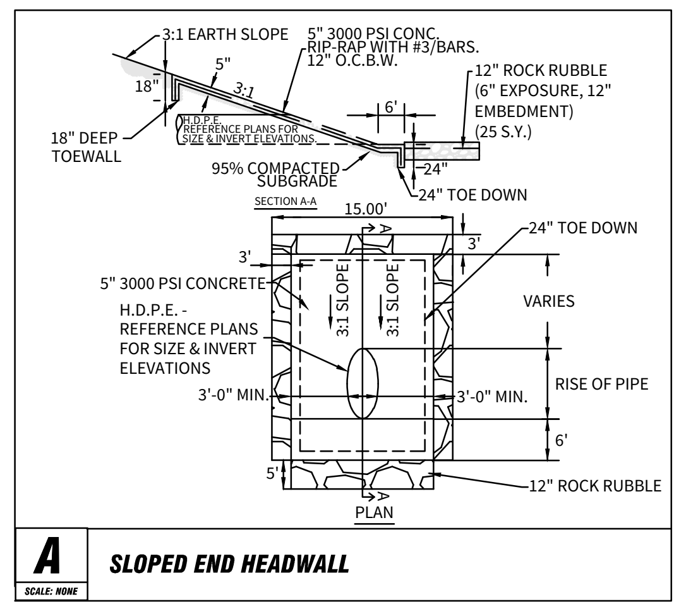
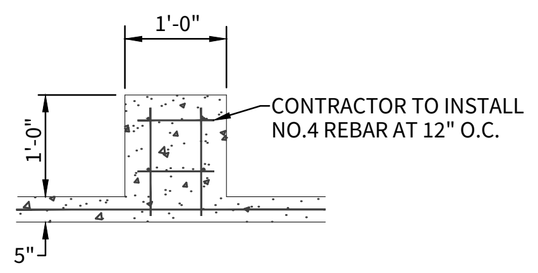
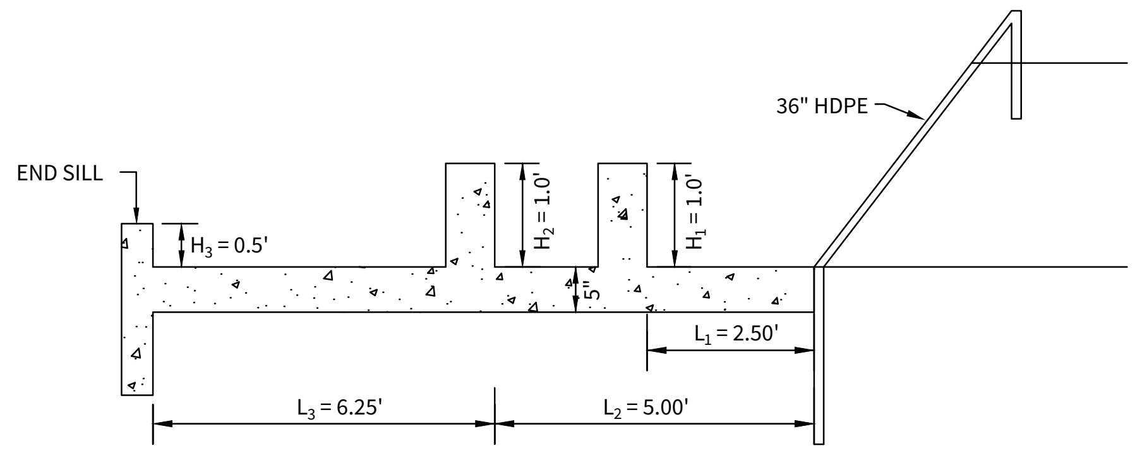




BAFFLE BLOCK DRAIN '4C' REINFORCEMENT DETAIL

(N.T.S.)



BAFFLE BLOCK CALCULATIONS

(N.T.S.)

TAILWATER DEPTH = 1.79'

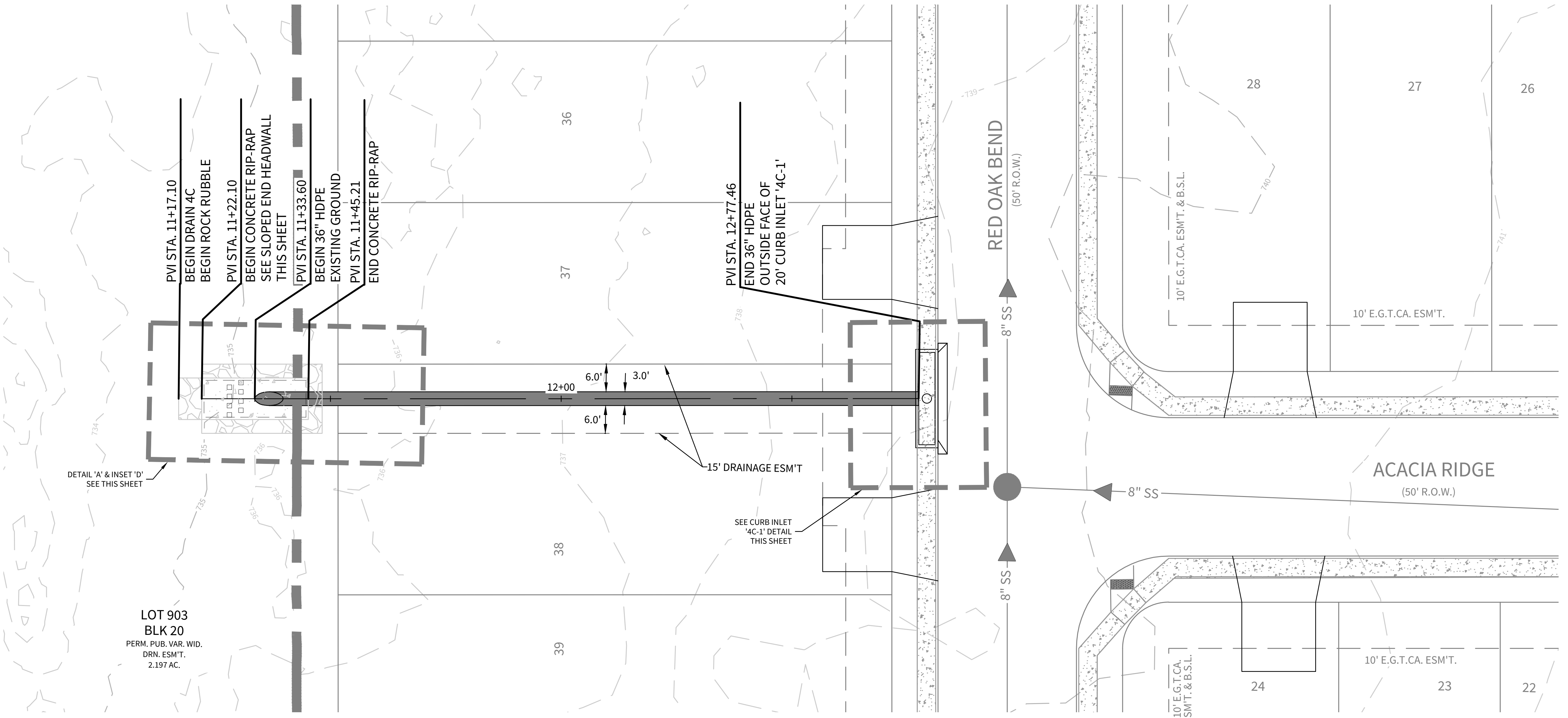
Fr = 1.33

Y_C = 0.83 FT

Y_2 = 2.30 FT

Y_3 = 0.83 FT

BASIN OUTLET VELOCITY = 4.96 FT/S

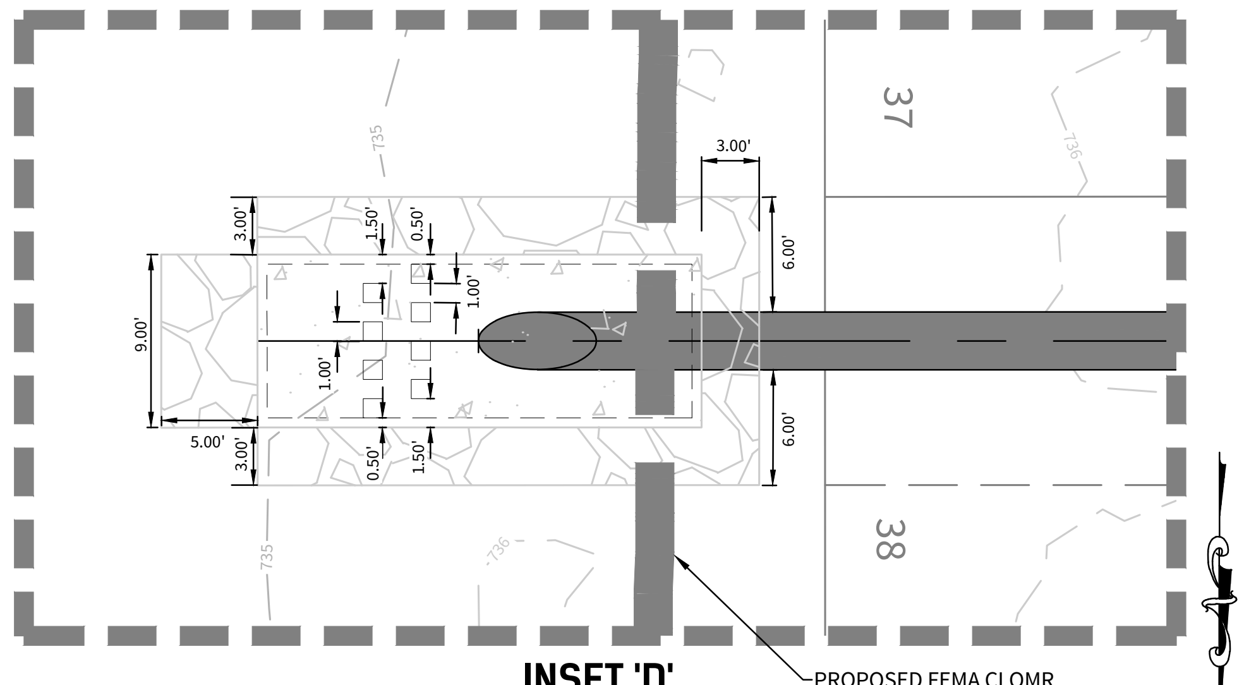


GENERAL SPECIFICATIONS FOR COMPACTED FILL

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 (90%) 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.

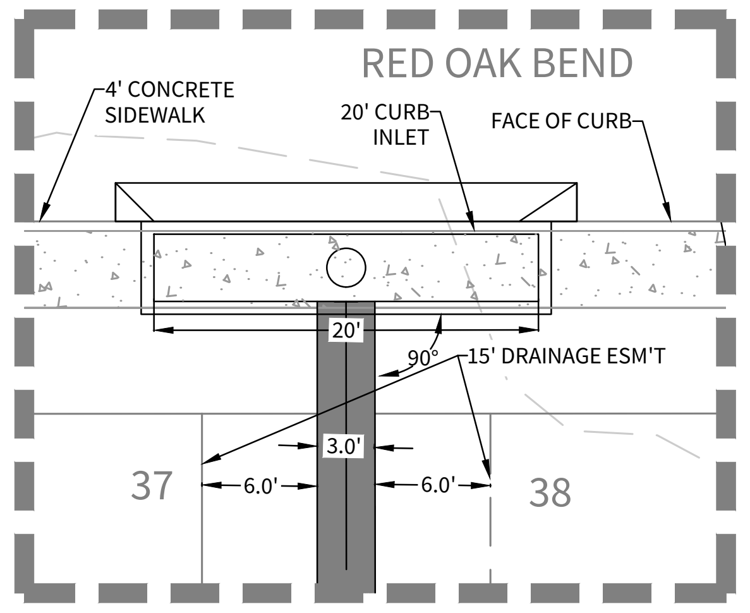
NOTES:

1. REFER TO GENERAL NOTES AND SPECIFICATIONS C0.00.
2. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AT ALL GRADE BREAKS.
3. THE CONTRACTOR SHALL NOTIFY A UTILITY COORDINATOR AT LEAST 48 HOURS PRIOR TO PERFORMING ANY EXCAVATION ACTIVITY ADJACENT TO THE CONSTRUCTION OF AN ON-SITE DRAINAGE FACILITIES TO PROTECT ANY UNIDENTIFIED EXISTING UNDERGROUND UTILITY FACILITY FROM DAMAGE OR HARM. THE CONTRACTOR SHALL HAVE THE SOLE RESPONSIBILITY FOR ANY DAMAGES TO UTILITIES AS A RESULT OF NOT LOCATING UNDERGROUND UTILITY RESOURCES.
4. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY OF SAN ANTONIO.
5. ANY AREAS EXPOSED TO HIGH VELOCITY FLOWS SHALL EITHER HAVE A 6" THICK GABION MATTRESS INSTALLED OR THE INSTALLATION OF APPROPRIATE GEOTECHNICAL LINER AS DIRECTED BY THE CONSTRUCTION ENGINEER IN CHARGE.
6. ALL CONCRETE SHALL BE A MINIMUM OF 3500 PSI @ 28 DAYS COMPRESSIVE STRENGTH UNLESS OTHERWISE SPECIFIED HEREIN ON THESE DOCUMENTS.
7. 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.
8. REFERENCE TYPICAL CONCRETE CHANNEL RIP-RAP STANDARDS FOUND ON SHEET --.
9. A BEXAR COUNTY R.O.W. PERMIT MUST BE OBTAINED PRIOR TO WORKING IN EXISTING BEXAR COUNTY R.O.W.
10. CONTRACTOR TO RECONSTRUCT EXISTING SIDEWALK, AS NECESSARY, FOR PROPOSED SIDEWALK TRANSITION.
11. CONTRACTOR TO GROUT BOTTOM/FLOW LINE OF SEWER MANHOLES AND/OR CURB INLETS AS NECESSARY TO PROVIDE POSITIVE DRAINAGE



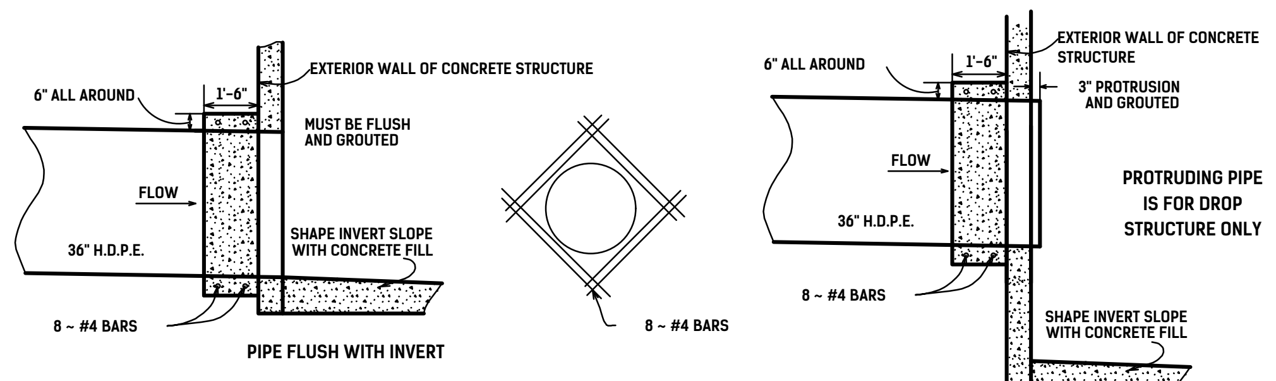
INSET 'D'

(SCALE 1" = 10')



CURB INLET '4C-1' DETAIL

(SCALE 1" = 10')


EXTERIOR WALL OF CONCRETE STRUCTURE
6" ALL AROUND
1'-6"
MUST BE FLUSH AND GROUTED
FLOW
36" H.D.P.E.
SHAPE INVERT SLOPE WITH CONCRETE FILL
8 - #4 BARS
PIPE FLUSH WITH INVERT
8 - #4 BARS
EXTERIOR WALL OF CONCRETE STRUCTURE
6" ALL AROUND
1'-6"
3" PROTRUSION AND GROUTED
FLOW
36" H.D.P.E.
PROTRUDING PIPE IS FOR DROP STRUCTURE ONLY
SHAPE INVERT SLOPE WITH CONCRETE FILL
8 - #4 BARS

CONCRETE COLLAR DETAIL

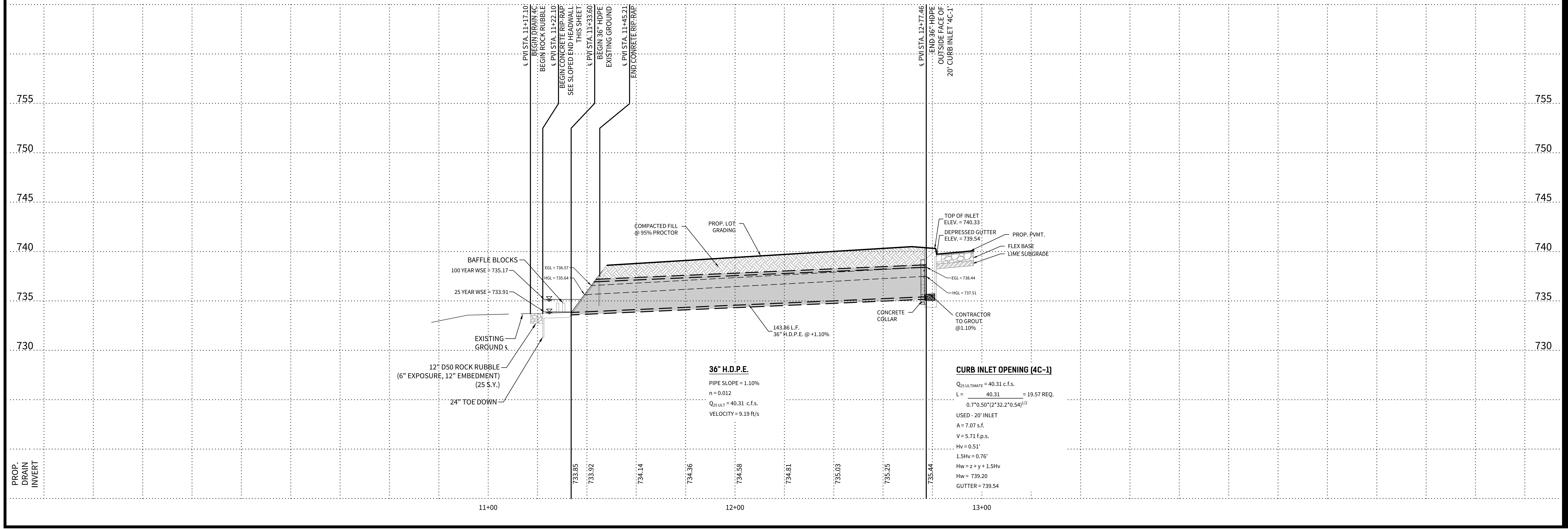
TRENCH EXCAVATION PROTECTION

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.

DRAIN 4C

STA. 11+17.10 TO STA. 12+77.46

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



36" H.D.P.E.

PIPE SLOPE = 1.10%

n = 0.012

$Q_{25\ ULT}$ = 40.31 c.f.s.

VELOCITY = 9.19 ft/s

CURB INLET OPENING (4C-1)

$Q_{25\ ULTIMATE}$ = 40.31 c.f.s.

$$L = \frac{40.31}{0.7*0.50*(2*32.2*0.54)^{1/2}} = 19.57\ \text{REQ.}$$

USED - 20' INLET

A = 7.07 s.f.

V = 5.71 f.p.s.

Hv = 0.51'

1.5Hv = 0.76'

Hw = z + y + 1.5Hv

Hw = 739.20

GUTTER = 739.54

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San Antonio, Texas 78231
P:(210) 681.2951

TRES LAURELS
UNIT 4A

DRAINAGE PLAN & PROFILE - DRAIN '4C'

DATE
06/24/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
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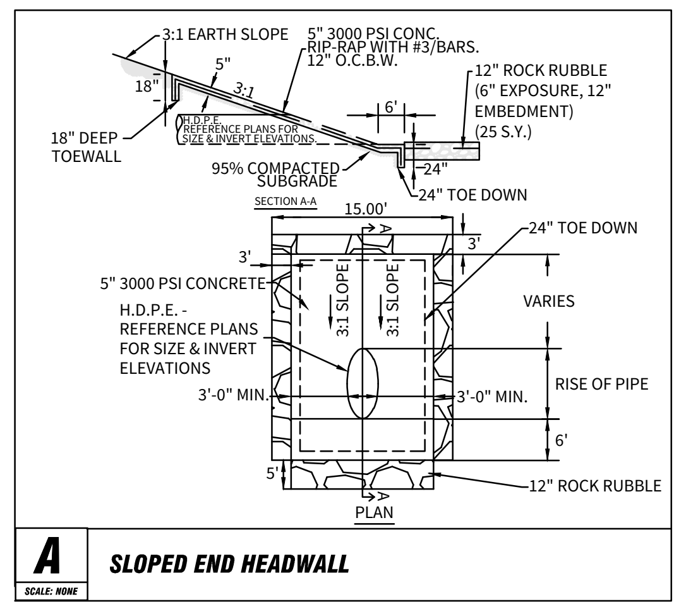
06/25/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

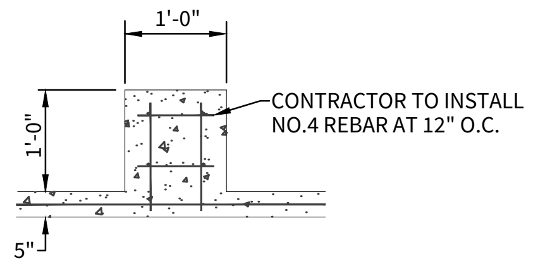
PLAT NO.
24-11800118

C6.04

P:\03050\015\2-DWG\4-Plans\07_D03 DRPP.dwg 2024/06/24 4:53pm ivilla

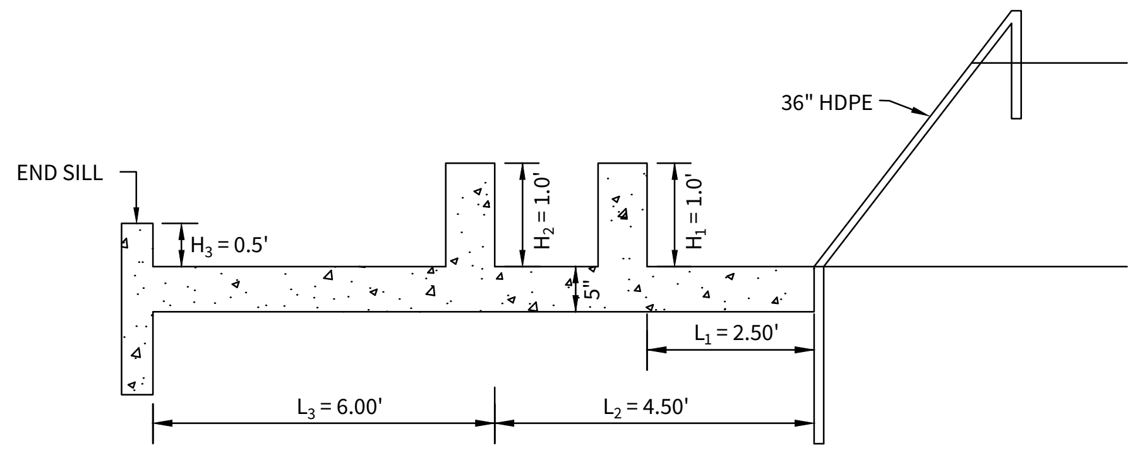

3:1 EARTH SLOPE
5" 3000 PSI CONC. RIP-RAP WITH #3 BARS, 12" O.C.B.W.
12" ROCK RUBBLE (6" EXPOSURE, 12" EMBEDMENT) (25 S.Y.)
18" DEEP TOEWALL
95% COMPACTED SUBGRADE
24" TOE DOWN
SECTION A-A
15.00'
5" 3000 PSI CONCRETE
H.D.P.E.- REFERENCE PLANS FOR SIZE & INVERT ELEVATIONS
3'-0" MIN.
VARIES
RISE OF PIPE
6'
5'
12" ROCK RUBBLE
PLAN

A *SLOPED END HEADWALL*



BAFFLE BLOCK DRAIN '4D' REINFORCEMENT DETAIL

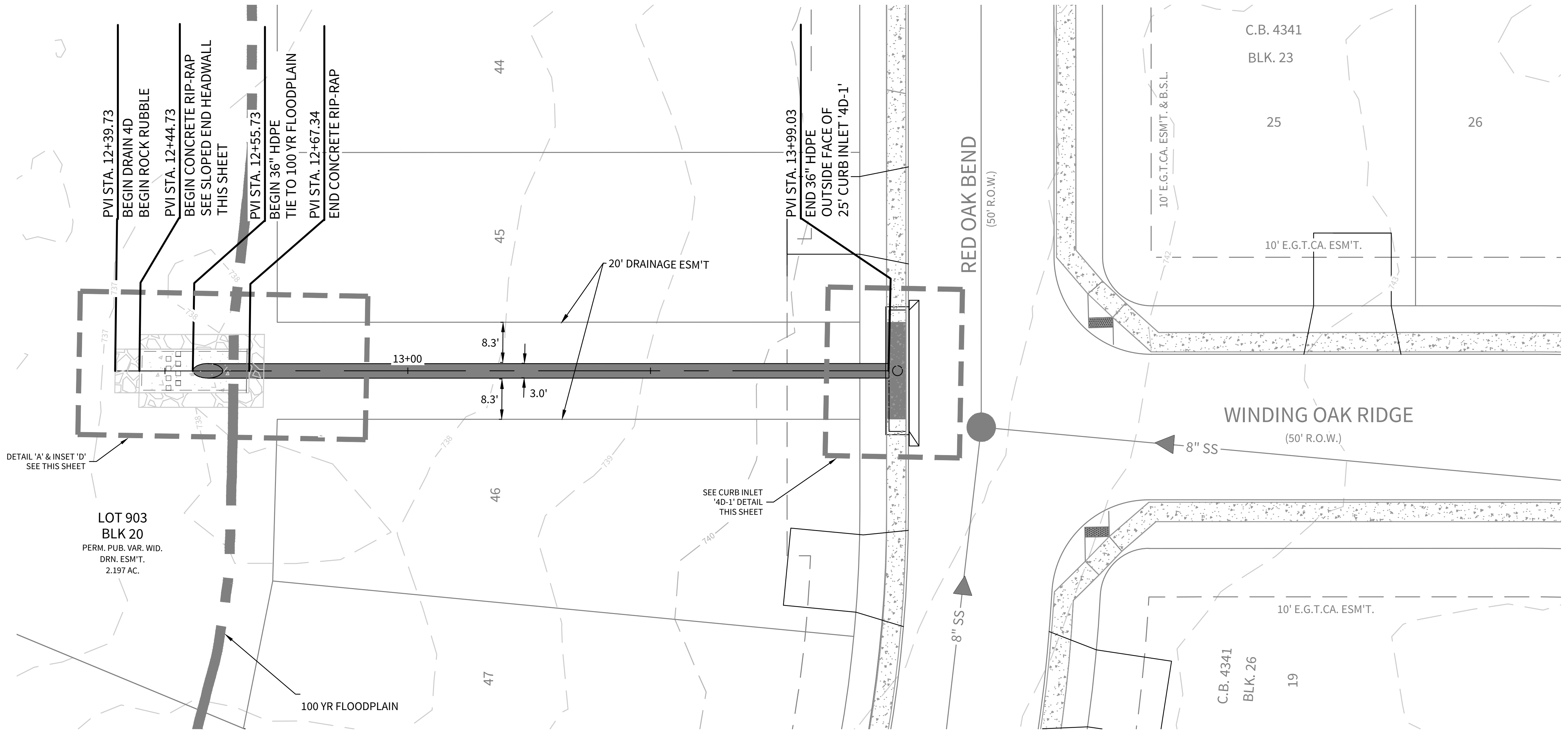
(N.T.S.)



BAFFLE BLOCK CALCULATIONS

(N.T.S.)

TAILWATER DEPTH = 2.63'
Fr = 1.01
Y_C = 0.96 FT
Y_2 = 2.12 FT
Y_3 = 0.96 FT
BASIN OUTLET VELOCITY = 5.31 FT/S



GENERAL SPECIFICATIONS FOR COMPACTED FILL

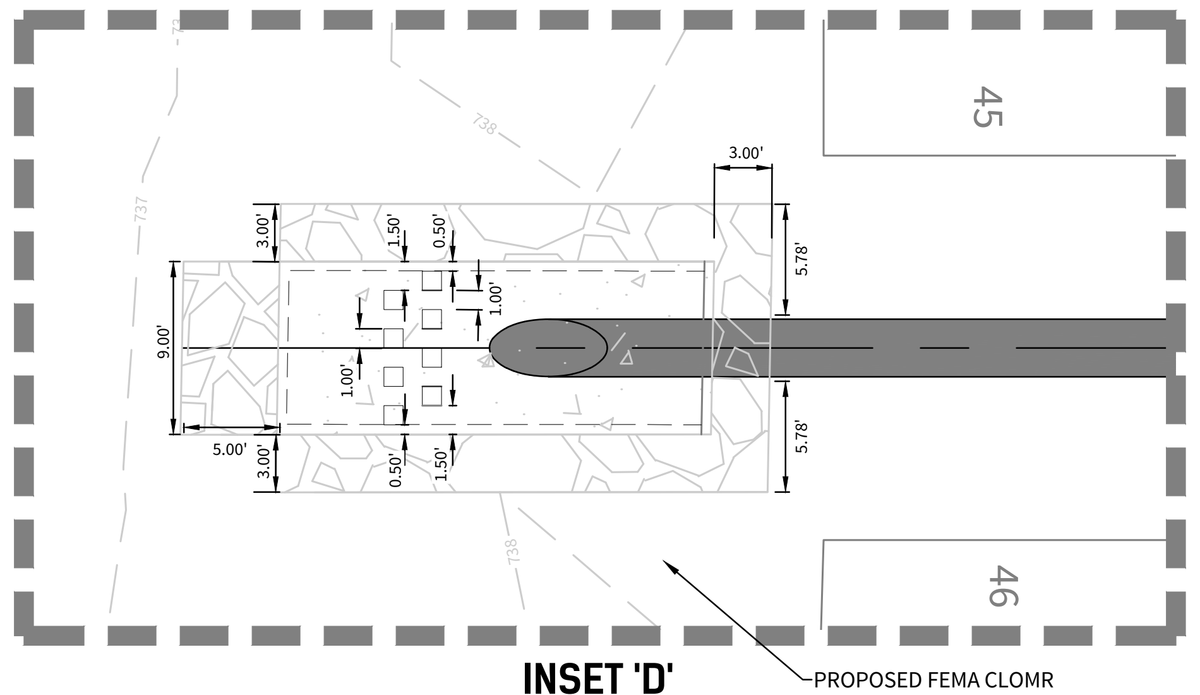
1. FOLLOWING THE CLEARING AND DISKING OR SCARIFYING OF THE FILL AREA, IT SHALL BE BLADED UNTIL IT IS UNIFORM AND FREE FROM LARGE CLODS. THE AREA SHALL BE BROUGHT TO THE ADEQUATE MOISTURE CONTENT AND COMPACTED (TYPICALLY) TO NOT LESS THAN NINETY PERCENT (90%) OF MAXIMUM DENSITY IN ACCORDANCE WITH THE 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.

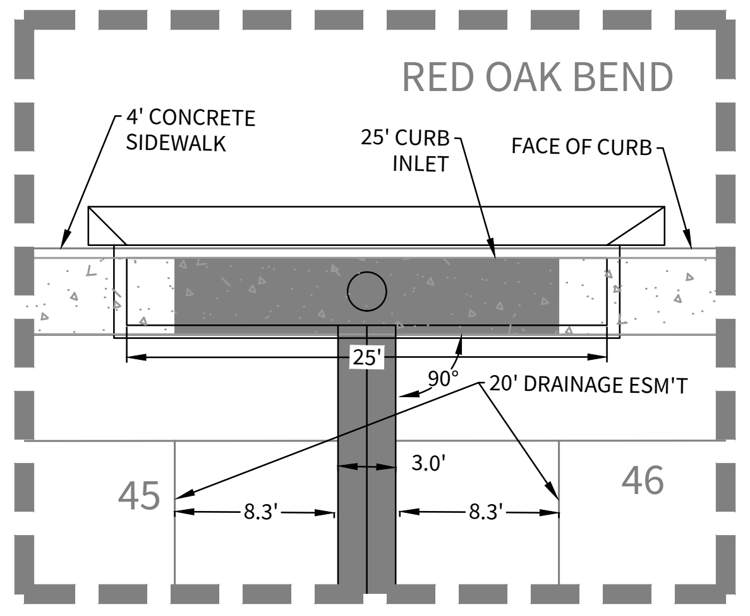
NOTES:

1. REFER TO GENERAL NOTES AND SPECIFICATIONS C0.00.
2. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AT ALL GRADE BREAKS.
3. THE CONTRACTOR SHALL NOTIFY A UTILITY COORDINATOR AT LEAST 48 HOURS PRIOR TO PERFORMING ANY EXCAVATION ACTIVITY ADJACENT TO THE CONSTRUCTION OF AN ON-SITE DRAINAGE FACILITIES TO PROTECT ANY UNIDENTIFIED EXISTING UNDERGROUND UTILITY FACILITY FROM DAMAGE OR HARM. THE CONTRACTOR SHALL HAVE THE SOLE RESPONSIBILITY FOR ANY DAMAGES TO UTILITIES AS A RESULT OF NOT LOCATING UNDERGROUND UTILITY RESOURCES.
4. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY OF SAN ANTONIO.
5. ANY AREAS EXPOSED TO HIGH VELOCITY FLOWS SHALL EITHER HAVE A 6" THICK GABION MATTRESS INSTALLED OR THE INSTALLATION OF APPROPRIATE GEOTECHNICAL LINER AS DIRECTED BY THE CONSTRUCTION ENGINEER IN CHARGE.
6. ALL CONCRETE SHALL BE A MINIMUM OF 3500 PSI @ 28 DAYS COMPRESSIVE STRENGTH UNLESS OTHERWISE SPECIFIED HEREIN ON THESE DOCUMENTS.
7. 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.
8. REFERENCE TYPICAL CONCRETE CHANNEL RIP-RAP STANDARDS FOUND ON SHEET --.
9. A BEXAR COUNTY R.O.W. PERMIT MUST BE OBTAINED PRIOR TO WORKING IN EXISTING BEXAR COUNTY R.O.W.
10. CONTRACTOR TO RECONSTRUCT EXISTING SIDEWALK, AS NECESSARY, FOR PROPOSED SIDEWALK TRANSITION.
11. CONTRACTOR TO GROUT BOTTOM/FLOW LINE OF SEWER MANHOLES AND/OR CURB INLETS AS NECESSARY TO PROVIDE POSITIVE DRAINAGE



INSET 'D'

(SCALE 1" = 10')

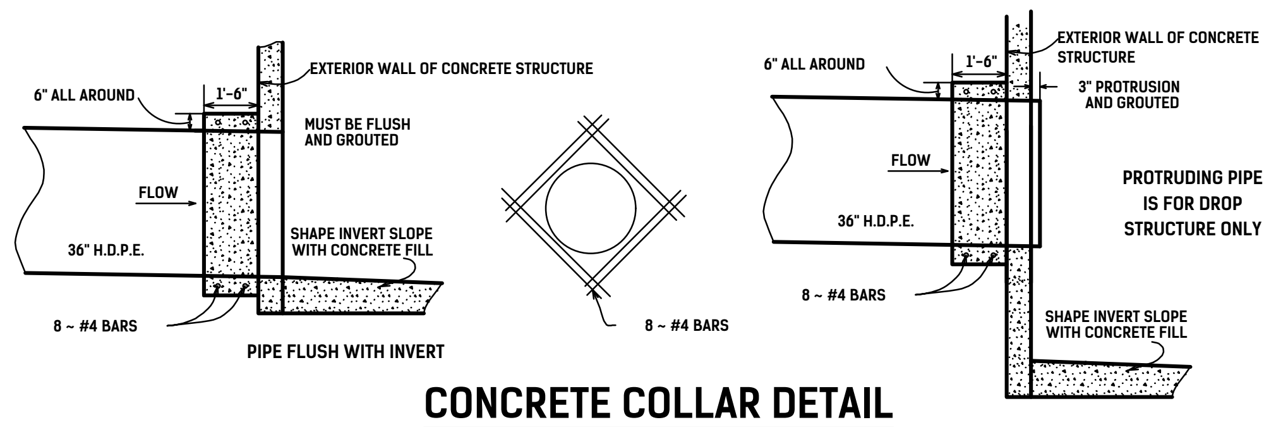


CURB INLET '4D-1' DETAIL

(SCALE 1" = 10')

DRAIN 4D

STA. 12+39.73 TO STA. 13+99.03


6" ALL AROUND
1'-6"
EXTERIOR WALL OF CONCRETE STRUCTURE
MUST BE FLUSH AND GROUTED
FLOW
36" H.D.P.E.
SHAPE INVERT SLOPE WITH CONCRETE FILL
8 – #4 BARS
PIPE FLUSH WITH INVERT
8 – #4 BARS
6" ALL AROUND
1'-6"
EXTERIOR WALL OF CONCRETE STRUCTURE
3" PROTRUSION AND GROUTED
PROTRUDING PIPE IS FOR DROP STRUCTURE ONLY
FLOW
36" H.D.P.E.
8 – #4 BARS
SHAPE INVERT SLOPE WITH CONCRETE FILL

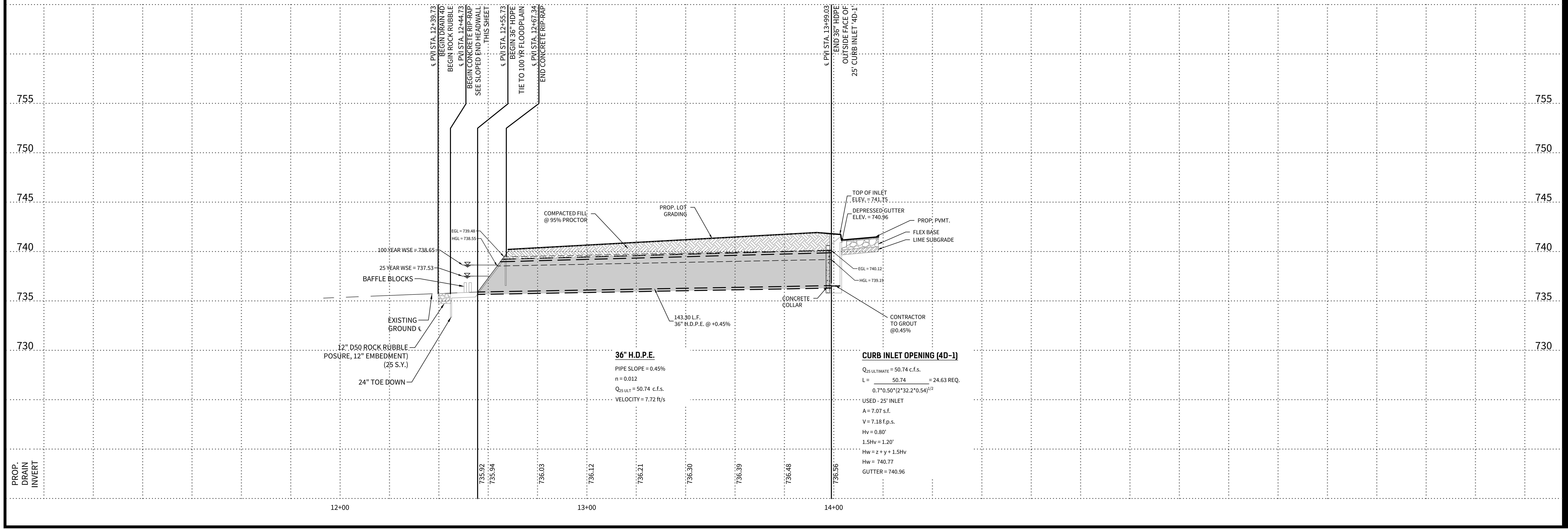
CONCRETE COLLAR DETAIL

(N.T.S.)

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.

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



36" H.D.P.E.

PIPE SLOPE = 0.45%
n = 0.012
$Q_{25\ ULT}$ = 50.74 c.f.s.
VELOCITY = 7.72 ft/s

CURB INLET OPENING (4D-1)

$Q_{25\ ULTIMATE}$ = 50.74 c.f.s.
$L = \frac{50.74}{0.7*0.50*(2*32.2*0.54)^{1/2}}$ = 24.63 REQ.
USED - 25' INLET
A = 7.07 s.f.
V = 7.18 f.p.s.
Hv = 0.80'
1.5Hv = 1.20'
Hw = z + y + 1.5Hv
Hw = 740.77
GUTTER = 740.96

CUDEENGINEERS.COM

CUDE ENGINEERS EST. 1980

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

TRES LAURELS
UNIT 4A

DRAINAGE PLAN & PROFILE - DRAIN '4D'

DATE	06/25/2024
PROJECT NO.	03050.015
DRAWN BY	RM / IV
CHECKED BY	MAT/CJC

REVISIONS
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

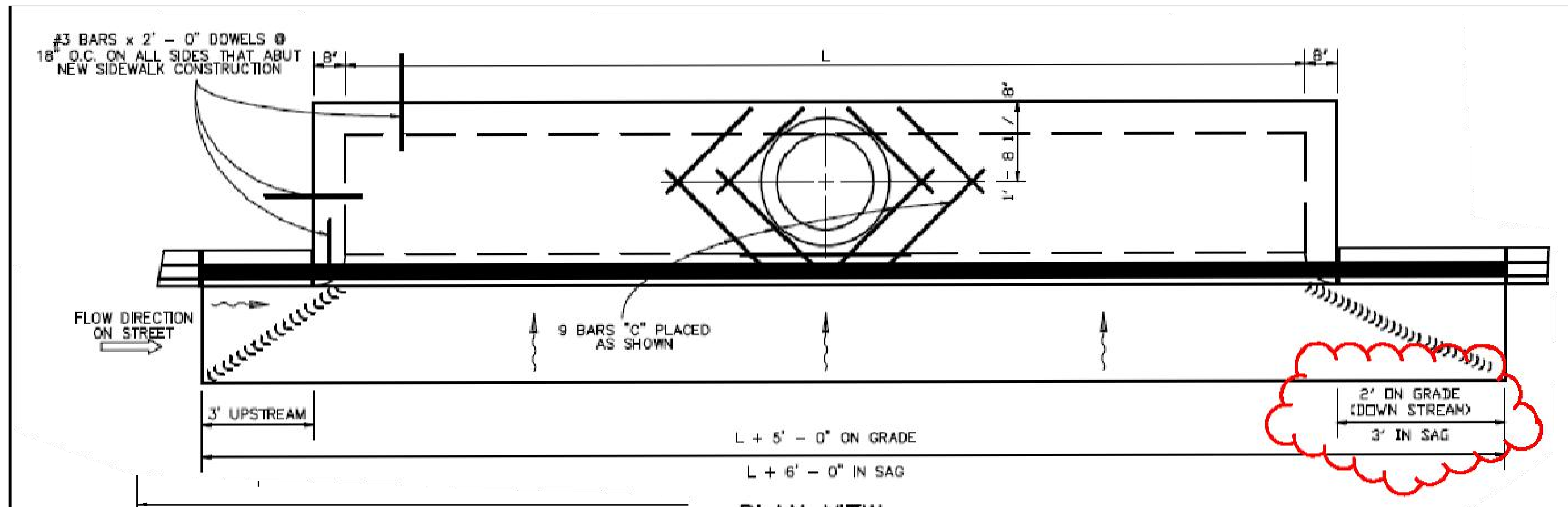
06/25/2024
MATTHEW A. TRINKLE
147558
M. Trinkle

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

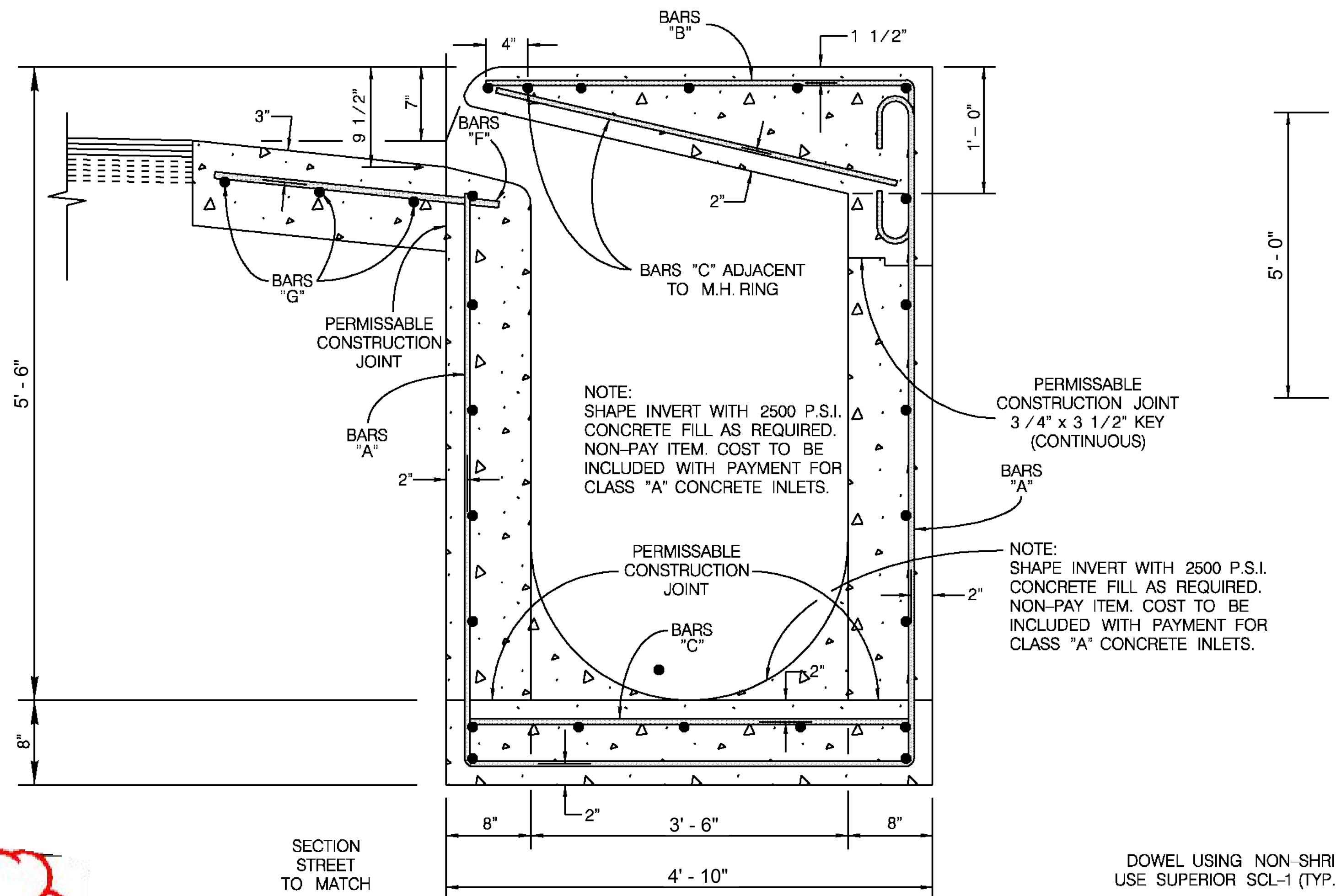
C6.05

P:\03050\015\2-DWG\4-Plans\07_D04 DRPP.dwg 2024/06/25 8:21am ivilla


#3 BARS x 2' – 0" DOWELS @ 18" O.C. ON ALL SIDES THAT ABUT NEW SIDEWALK CONSTRUCTION
8"
L
8"
1' – 8 1/8"
FLOW DIRECTION ON STREET
9 BARS "C" PLACED AS SHOWN
3' UPSTREAM
2' ON GRADE (DOWN STREAM)
3' IN SAG
L + 5' – 0" ON GRADE
L + 6' – 0" IN SAG

PLAN VIEW

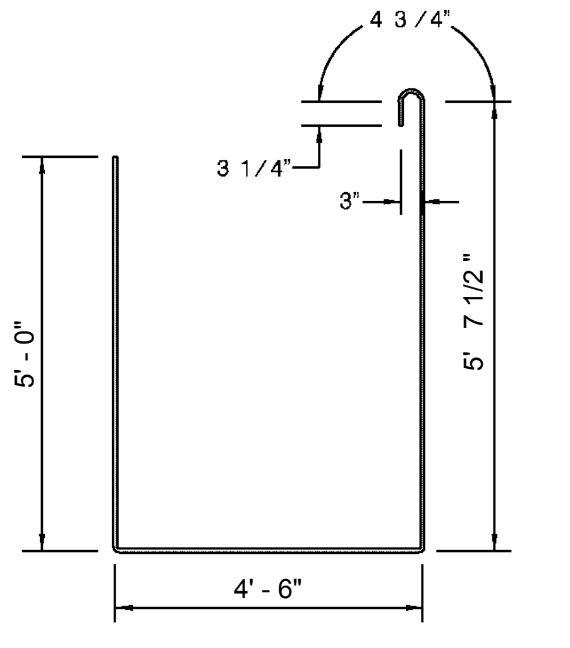
SCALE : 1" = 2'


BARS "B"
1 1/2"
4"
3"
9 1/2"
7"
1' – 0"
BARS "F"
2"
BARS "G"
BARS "C" ADJACENT TO M.H. RING
PERMISSABLE CONSTRUCTION JOINT
BARS "A"
NOTE: SHAPE INVERT WITH 2500 P.S.I. CONCRETE FILL AS REQUIRED. NON–PAY ITEM. COST TO BE INCLUDED WITH PAYMENT FOR CLASS "A" CONCRETE INLETS.
PERMISSABLE CONSTRUCTION JOINT 3 / 4" x 3 1/2" KEY (CONTINUOUS)
BARS "A"
PERMISSABLE CONSTRUCTION JOINT
BARS "C"
NOTE: SHAPE INVERT WITH 2500 P.S.I. CONCRETE FILL AS REQUIRED. NON–PAY ITEM. COST TO BE INCLUDED WITH PAYMENT FOR CLASS "A" CONCRETE INLETS.
5' - 6"
8"
8"
3' - 6"
8"
4' - 10"

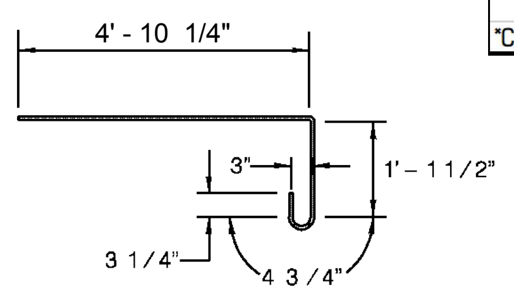
SECTION STREET TO MATCH CROSS–SLOPE

SECTION "A–A"

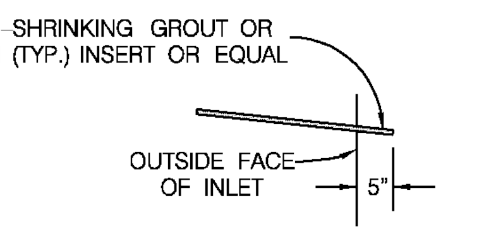
SCALE : 1" = 1'



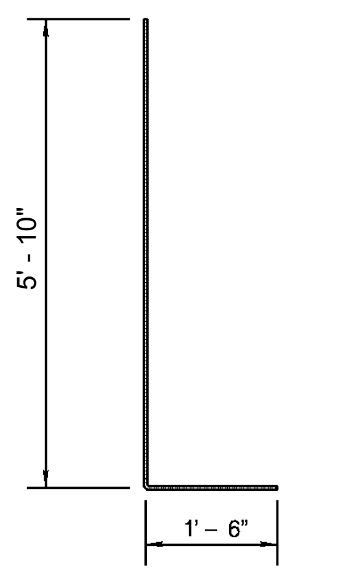
BAR "A"



BAR "B"


DOWEL USING NON–SHRINKING GROUT OR USE SUPERIOR SCL–1 (TYP.) INSERT OR EQUAL
OUTSIDE FACE OF INLET
5"

BAR "F"



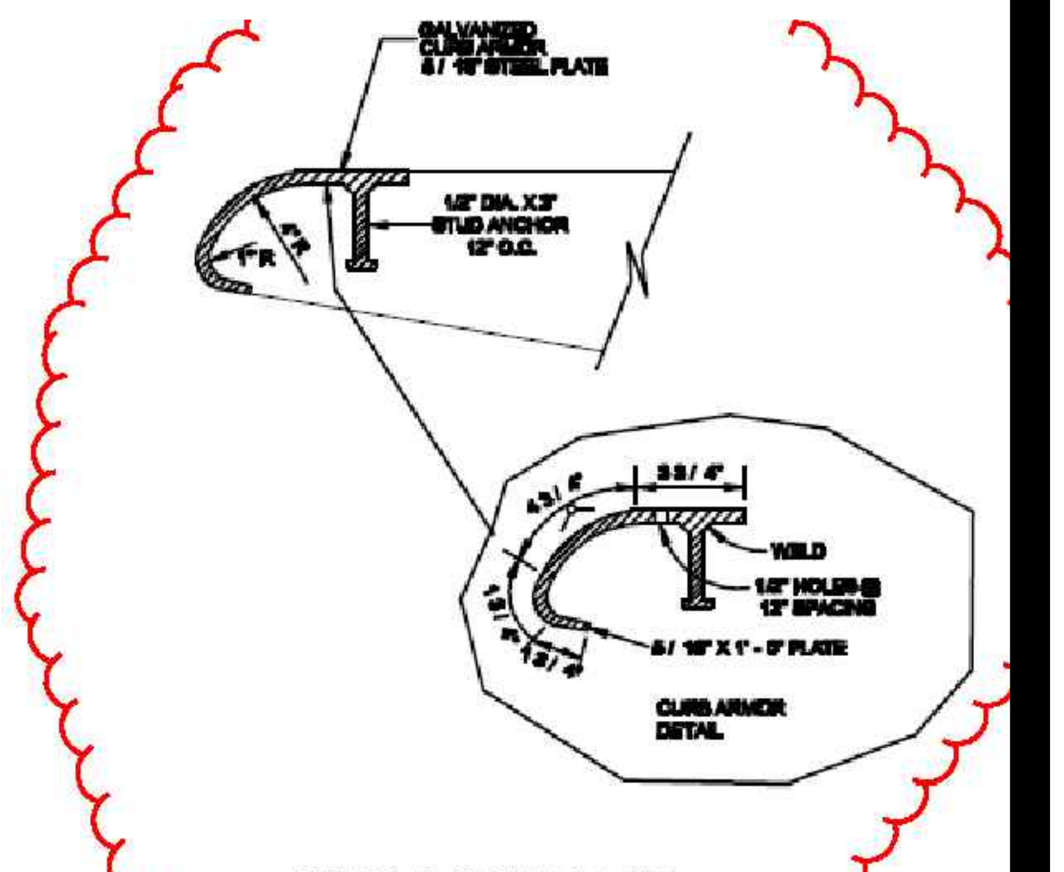
BAR "E"

REINFORCING STEEL SCHEDULE

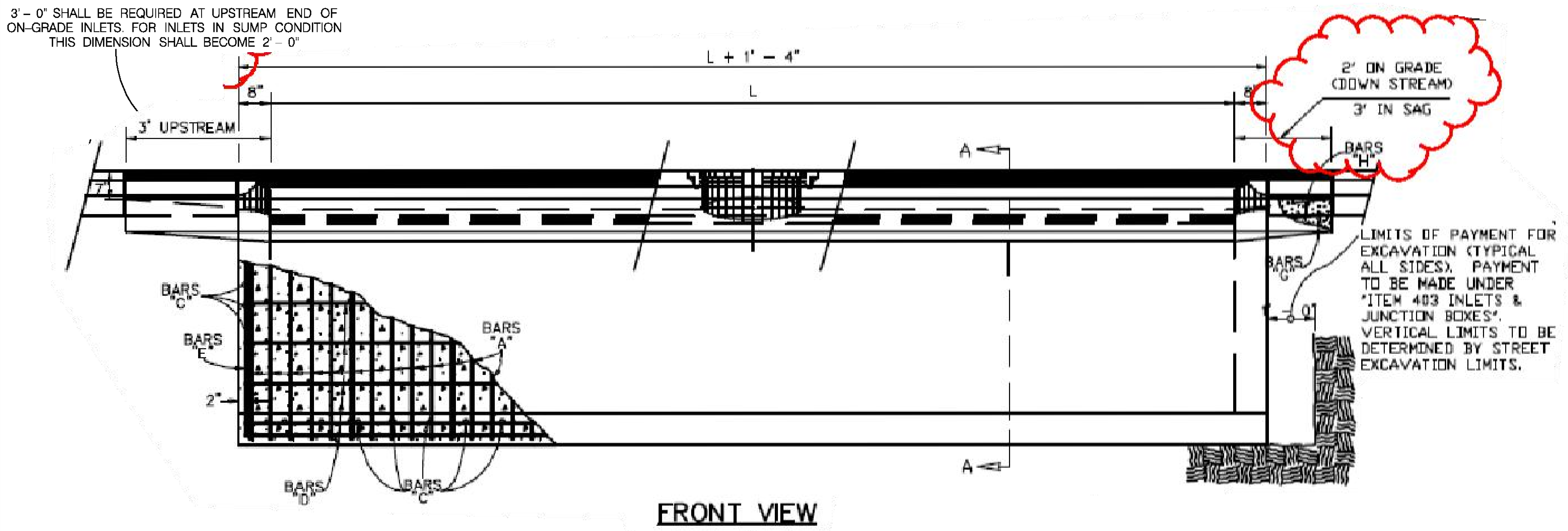
INLET LENGTH		BAR	No.	Size	Spa.	Length	Weight lbs.
		A	27	4	5" o.c.	15' 9 1/2"	284.82
DRAIN	"4A"	B	27	4	5"	6' 7 3/4"	119.86
L=	10'	C	38	4	9"	4' 6"	114.23
DEPTH=	5.5'	D	25	4	10"	11' 1"	185.09
		E	12	4	10 1/2"	7' 4"	58.78
		F	12	5	12"	2' 3"	28.16
		G	3	4	12"	14' 8"	29.39
		H	5	5	12"	1' 8"	8.69
*Concrete Total =	6.62 C.Y.	Manhole Casting = 260 lbs.				Steel Total =	1089.03 lbs.

REINFORCING STEEL SCHEDULE

INLET LENGTH		BAR	No.	Size	Spa.	Length	Weight lbs.
		A	39	4	5" o.c.	15' 9 1/2"	411.40
DRAIN	"4B"	B	39	4	5"	6' 7 3/4"	173.14
L=	15'	C	44	4	9"	4' 6"	132.26
DEPTH=	5.5'	D	25	4	10"	16' 1"	268.59
		E	12	4	10 1/2"	7' 4"	58.78
		F	17	5	12"	2' 3"	39.89
		G	3	4	12"	19' 8"	39.41
		H	5	5	12"	1' 8"	8.69
*Concrete Total =	9.19 C.Y.	Manhole Casting = 260 lbs.				Steel Total =	1392.18 lbs.

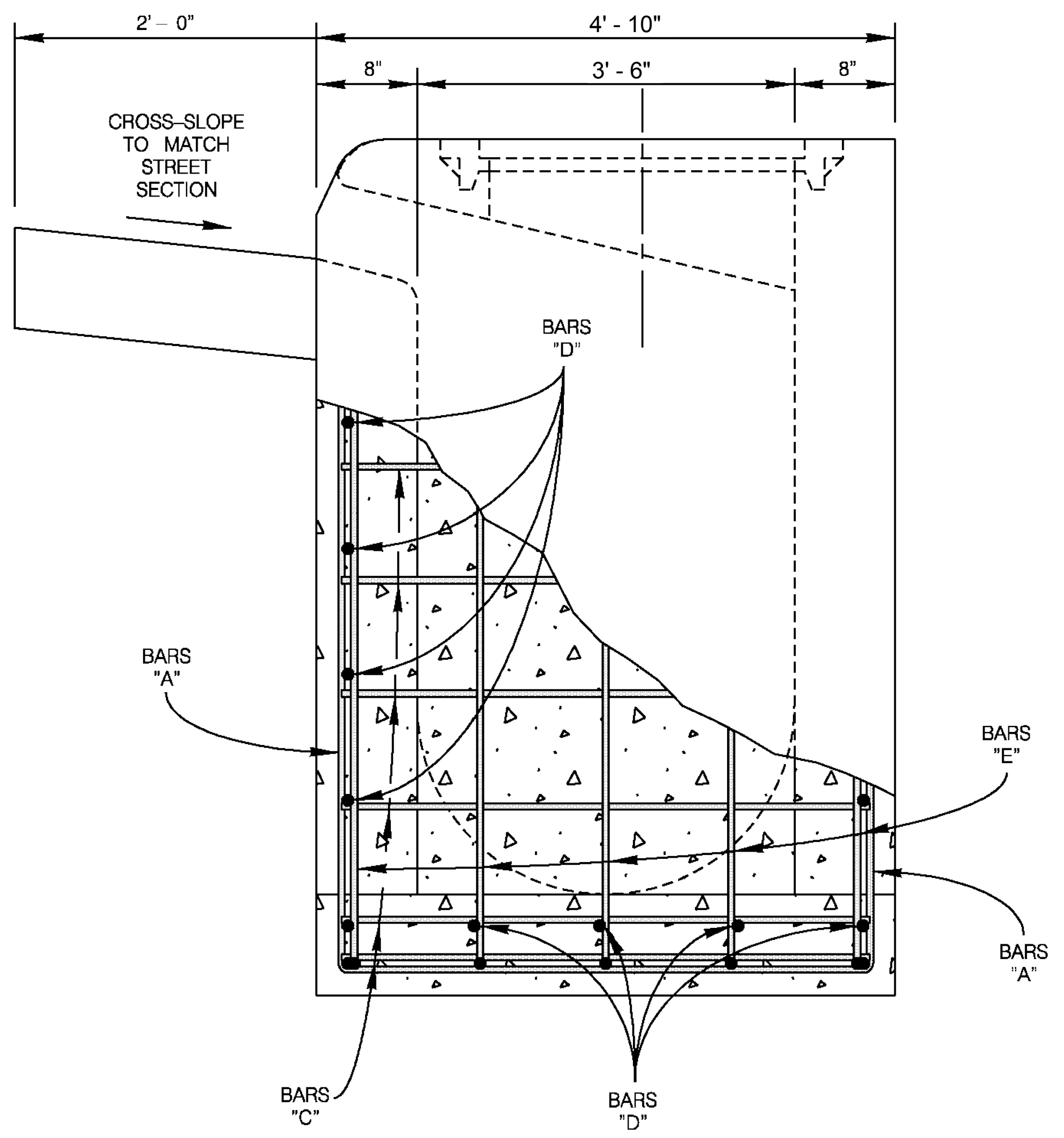


CURB ARMOR DETAIL


3' – 0" SHALL BE REQUIRED AT UPSTREAM END OF ON–GRADE INLETS. FOR INLETS IN SUMP CONDITION THIS DIMENSION SHALL BECOME 2' – 0"
L + 1' – 4"
8"
L
3' UPSTREAM
2' ON GRADE (DOWN STREAM)
3' IN SAG
BARS "H"
A
7"
BARS "C"
BARS "E"
2"
BARS "A"
BARS "G"
LIMITS OF PAYMENT FOR EXCAVATION (TYPICAL ALL SIDES). PAYMENT TO BE MADE UNDER "ITEM 403 INLETS & JUNCTION BOXES". VERTICAL LIMITS TO BE DETERMINED BY STREET EXCAVATION LIMITS.
BARS "D"
BARS "C"
A

FRONT VIEW

SCALE : 1" = 2'



SIDE VIEW

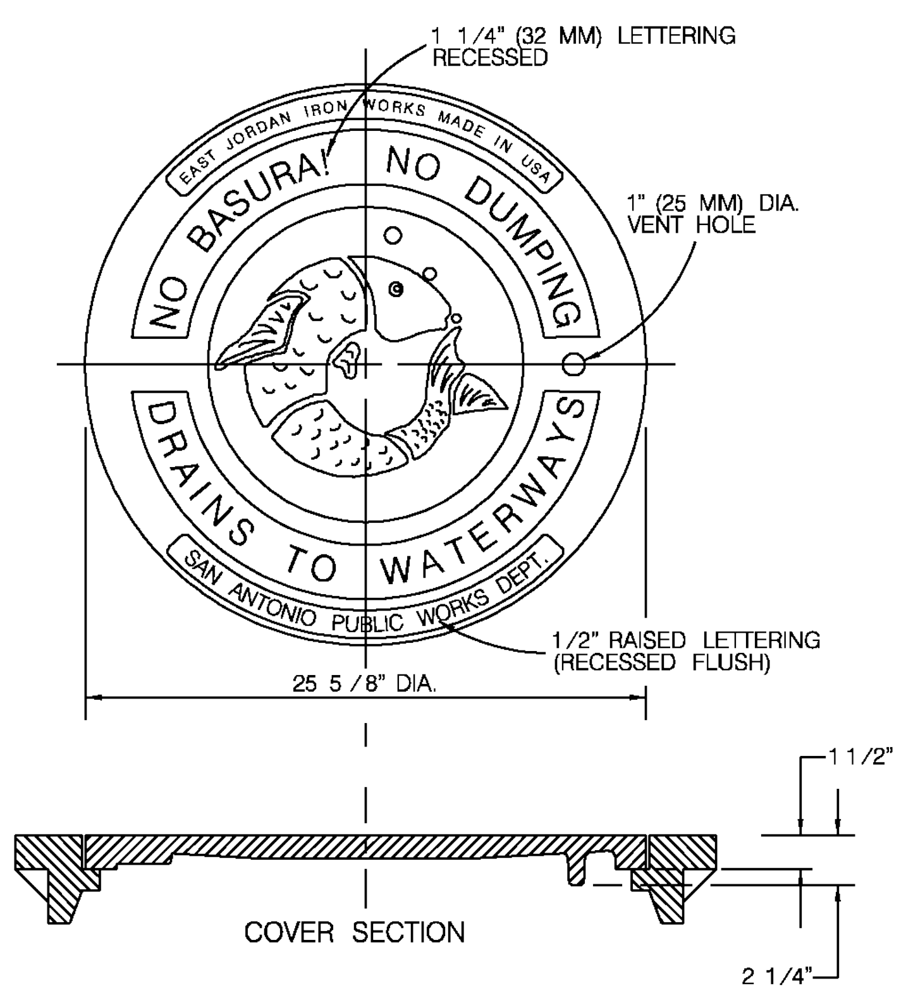
SCALE : 1" = 1'

* 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.

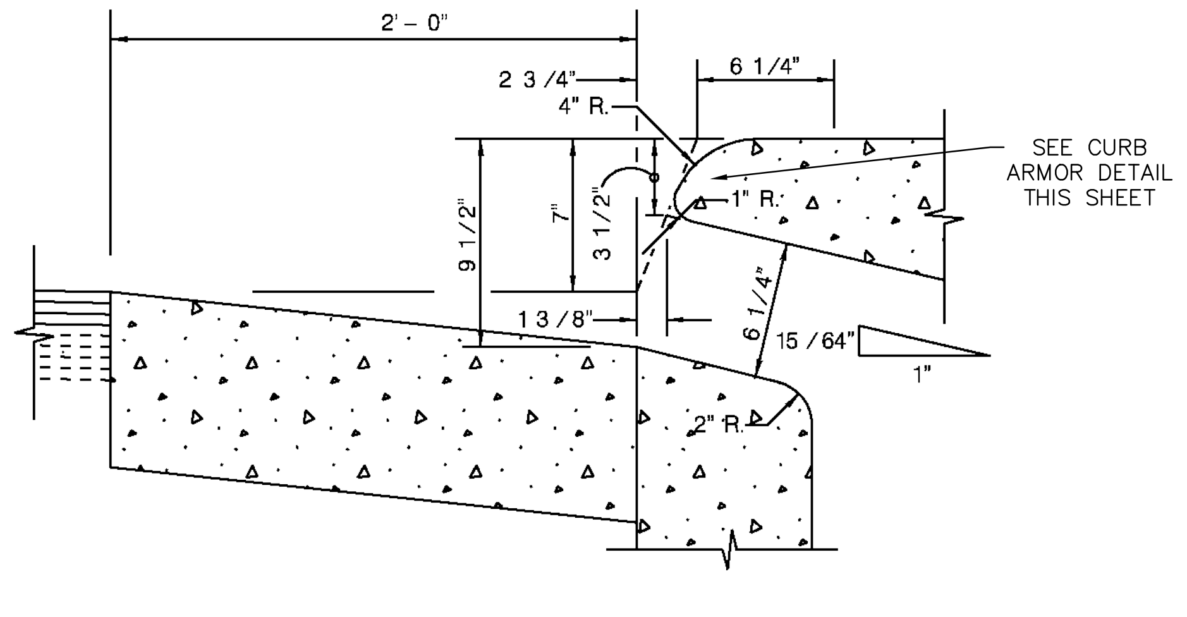
GENERAL NOTES

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".


1 1/4" (32 MM) LETTERING RECESSED
EAST JORDAN IRON WORKS MADE IN USA
NO BASURA!
NO DUMPING
DRAINS TO WATERWAYS
SAN ANTONIO PUBLIC WORKS DEPT.
1" (25 MM) DIA. VENT HOLE
1/2" RAISED LETTERING (RECESSED FLUSH)
25 5 / 8" DIA.
1 1/2"
COVER SECTION
2 1/4"

MANHOLE LID & RING DETAIL (ITEM 409)

SCALE : 1" = 8"

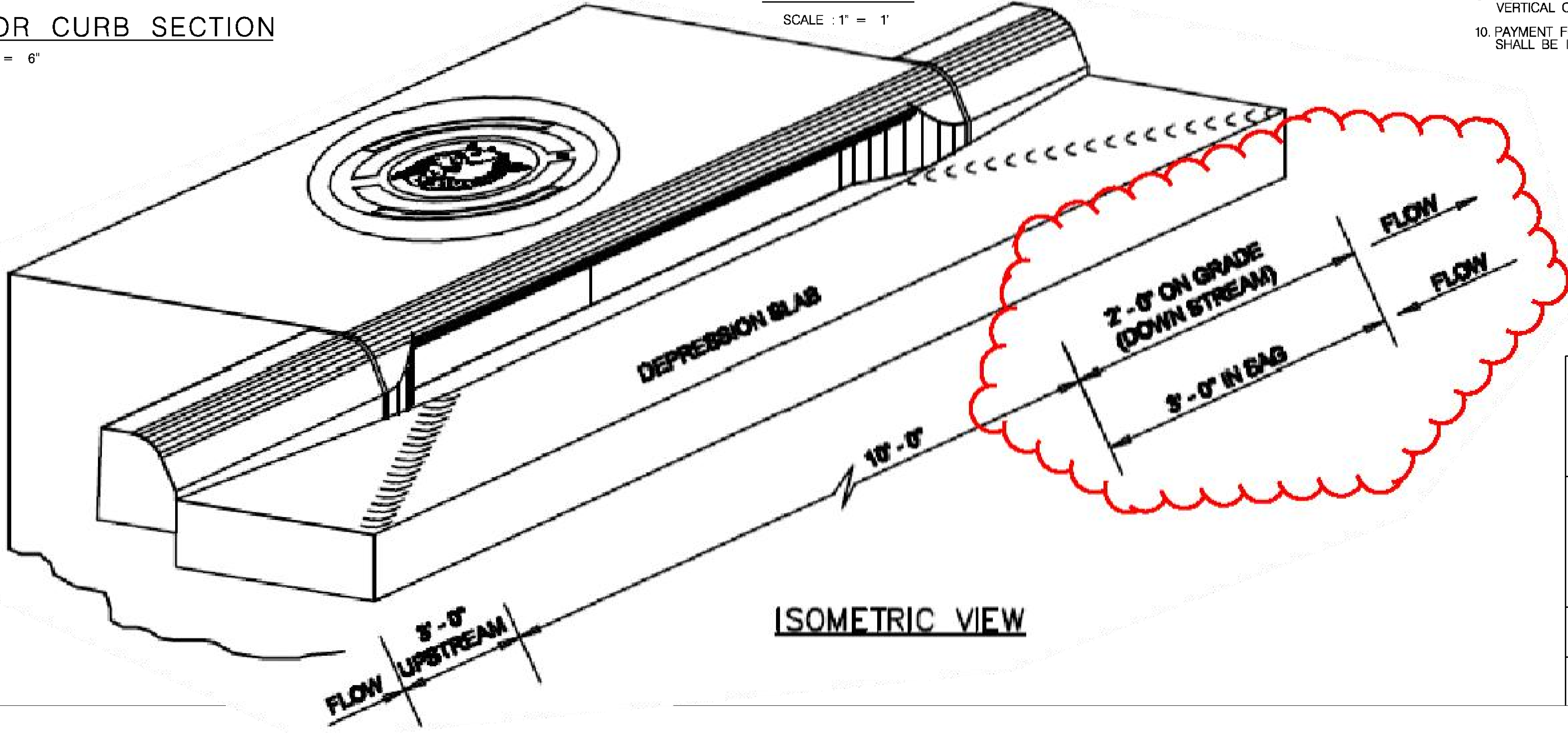


OPENING DETAIL FOR CURB SECTION

SCALE : 1" = 6"

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.



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
			DATE:
CHECKED BY: NAT HARDY, P.E.			SHEET: OF

CUDEENGINEERS.COM

EST. 1980
CUDE
ENGINEERS

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

TRES LAURELS UNIT 4A

DRAINAGE DETAILS

DATE
05/28/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
1.
2.
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7.
8.
9.
10.

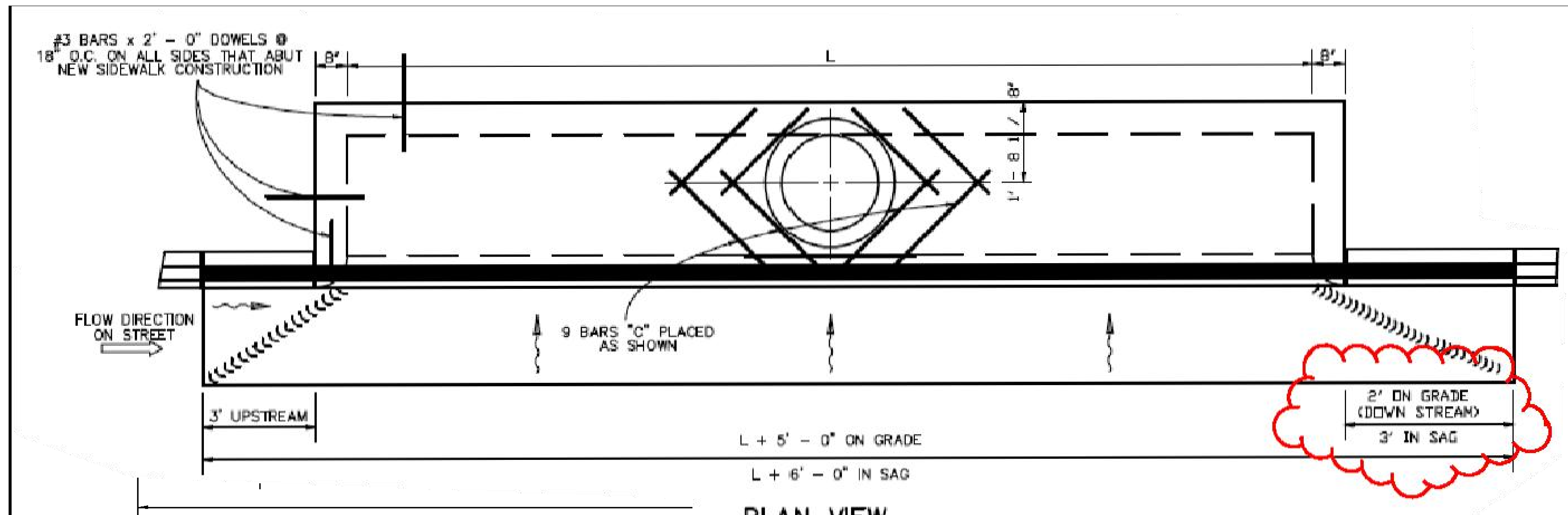
06/05/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

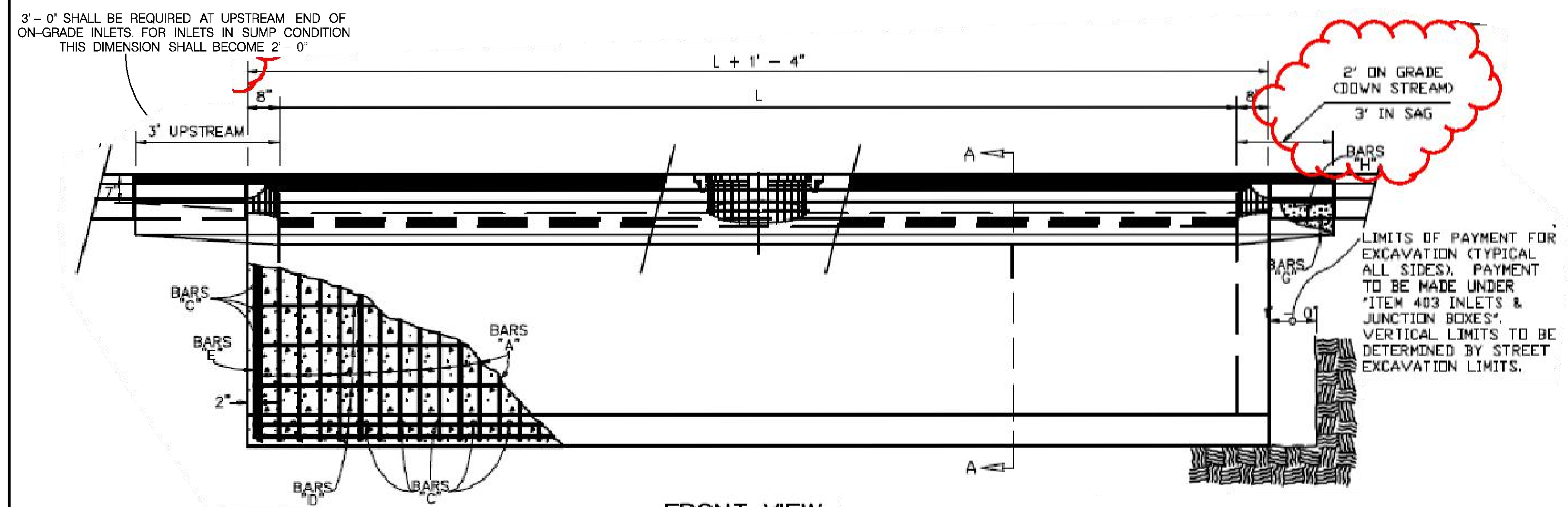
C6.D1

P:\03050\015\2-DWG\4-Plans\08_D1_D2 DRDP.dwg 2024/05/28 1:43pm rmata


#3 BARS x 2' – 0" DOWELS @ 18" O.C. ON ALL SIDES THAT ABUT NEW SIDEWALK CONSTRUCTION
8"
L
8"
1' – 8 1/8"
FLOW DIRECTION ON STREET
9 BARS "C" PLACED AS SHOWN
3' UPSTREAM
2' ON GRADE (DOWN STREAM)
3' IN SAG
L + 5' – 0" ON GRADE
L + 6' – 0" IN SAG

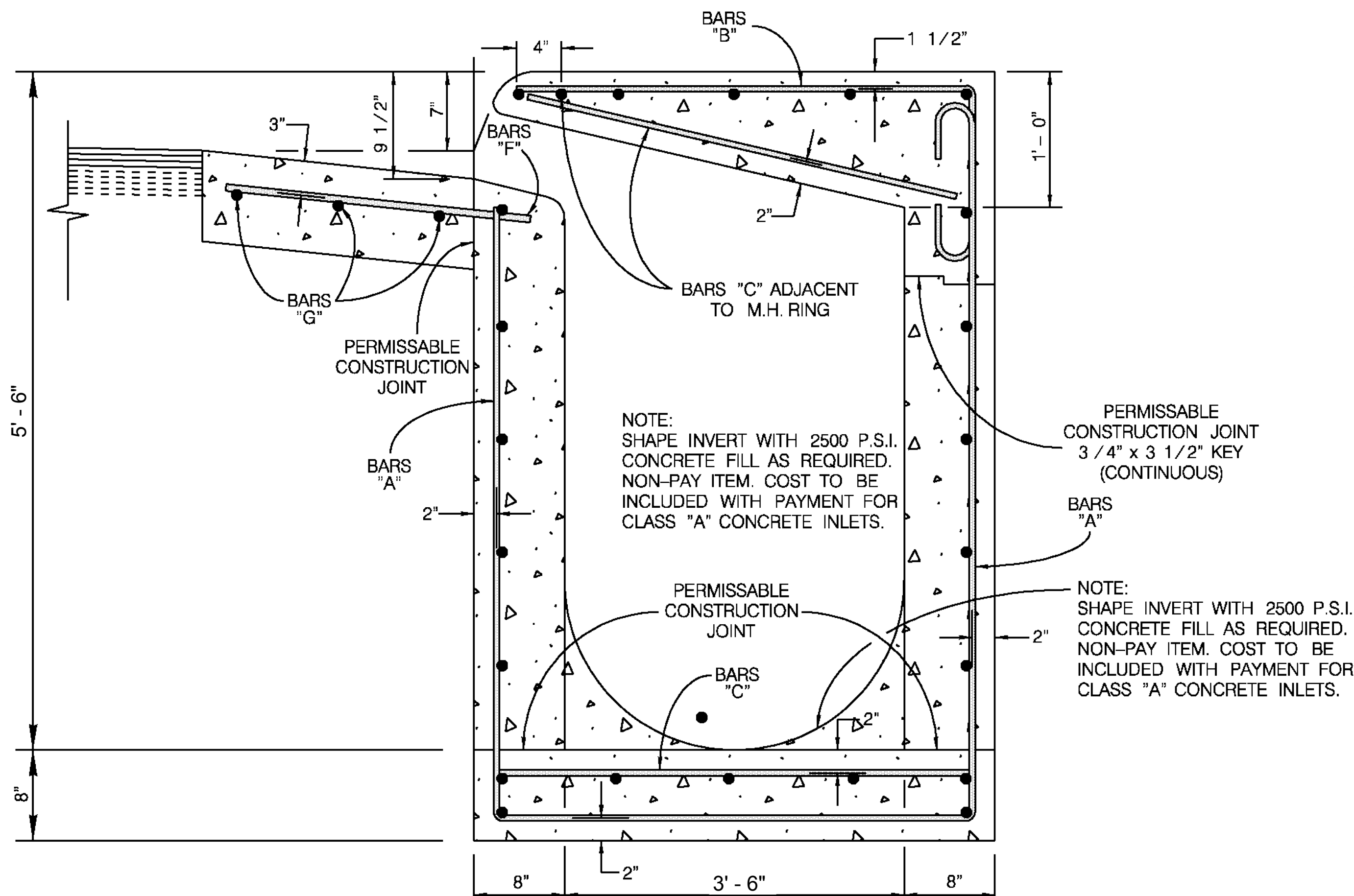
PLAN VIEW

SCALE : 1" = 2'


3' – 0" SHALL BE REQUIRED AT UPSTREAM END OF ON-GRADE INLETS. FOR INLETS IN SUMP CONDITION THIS DIMENSION SHALL BECOME 2' – 0"
L + 1' – 4"
8"
L
3' UPSTREAM
2' ON GRADE (DOWN STREAM)
3' IN SAG
BARS "H"
A
7"
BARS "C"
BARS "E"
2"
BARS "A"
BARS "G"
BARS "D"
BARS "C"
LIMITS OF PAYMENT FOR EXCAVATION (TYPICAL ALL SIDES). PAYMENT TO BE MADE UNDER "ITEM 403 INLETS & JUNCTION BOXES". VERTICAL LIMITS TO BE DETERMINED BY STREET EXCAVATION LIMITS.

FRONT VIEW

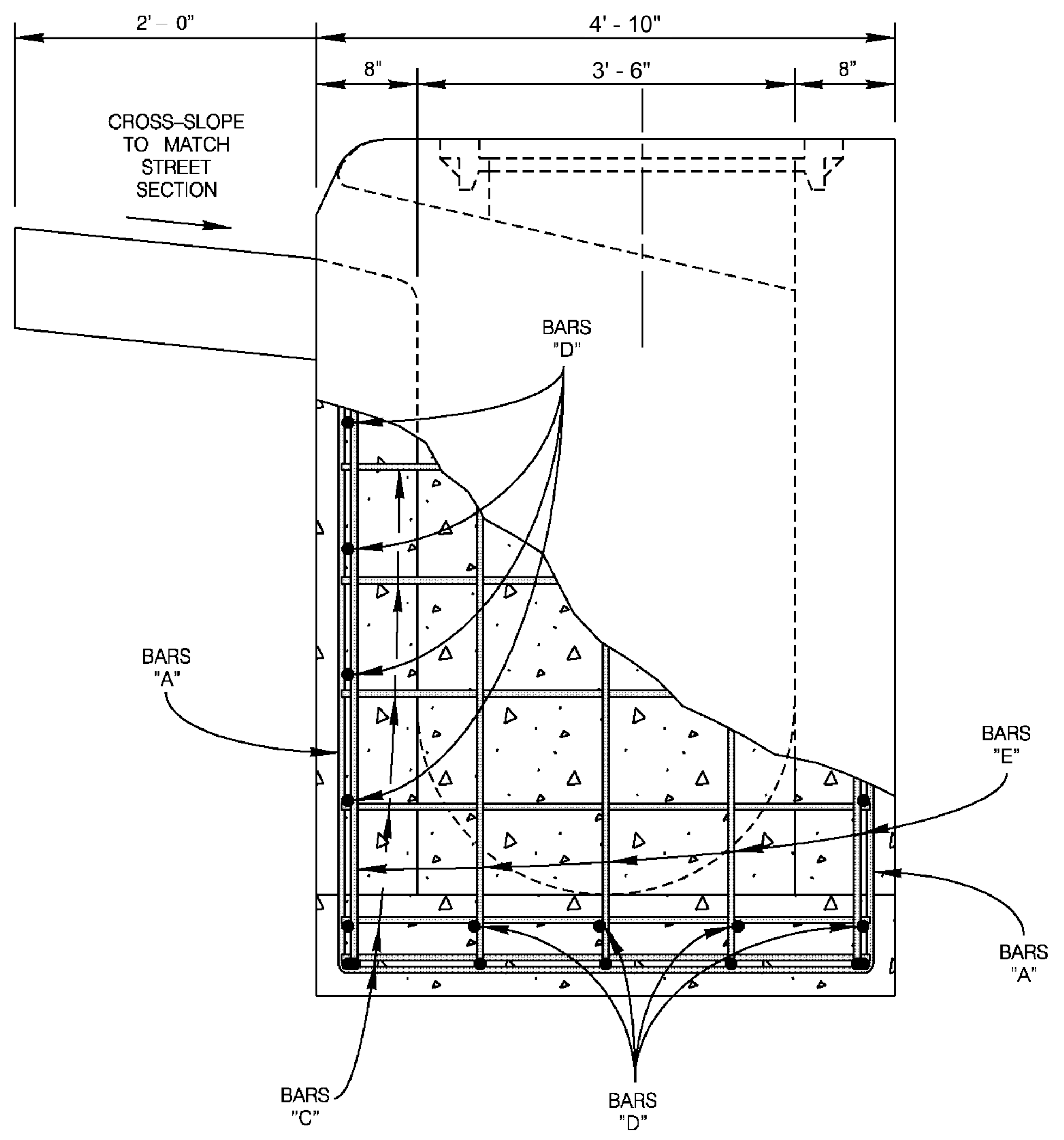
SCALE : 1" = 2'


BARS "B"
4"
1 1/2"
3"
9 1/2"
7"
BARS "F"
1' – 0"
2"
BARS "G"
BARS "C" ADJACENT TO M.H. RING
PERMISSABLE CONSTRUCTION JOINT
5' - 6"
BARS "A"
2"
NOTE: SHAPE INVERT WITH 2500 P.S.I. CONCRETE FILL AS REQUIRED. NON-PAY ITEM. COST TO BE INCLUDED WITH PAYMENT FOR CLASS "A" CONCRETE INLETS.
PERMISSABLE CONSTRUCTION JOINT 3 / 4" x 3 1/2" KEY (CONTINUOUS)
BARS "A"
PERMISSABLE CONSTRUCTION JOINT
BARS "C"
NOTE: SHAPE INVERT WITH 2500 P.S.I. CONCRETE FILL AS REQUIRED. NON-PAY ITEM. COST TO BE INCLUDED WITH PAYMENT FOR CLASS "A" CONCRETE INLETS.
2"
8"
2"
8"
3' - 6"
8"
4' - 10"

SECTION STREET TO MATCH CROSS-SLOPE

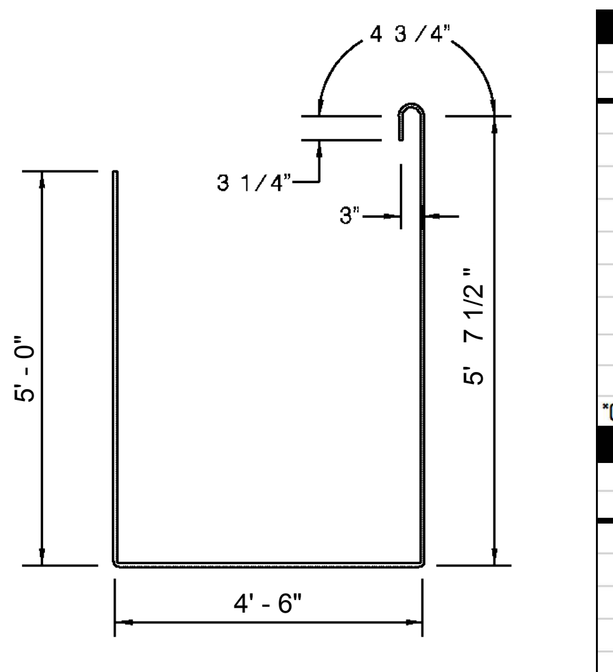
SECTION "A–A"

SCALE : 1" = 1'

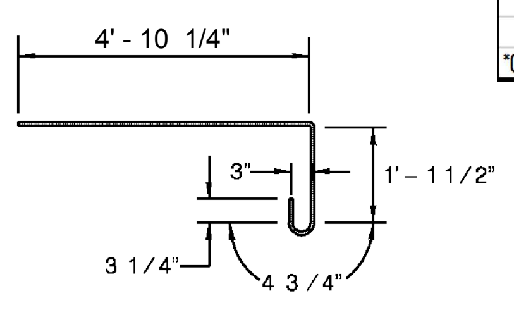


SIDE VIEW

SCALE : 1" = 1'

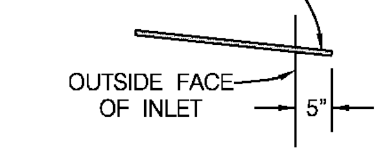


BAR "A"

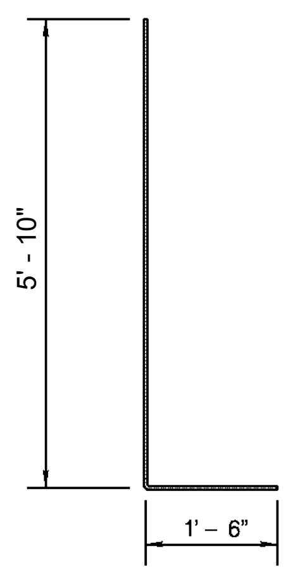


BAR "B"

DOWEL USING NON-SHRINKING GROUT OR USE SUPERIOR SCL-1 (TYP.) INSERT OR EQUAL



BAR "F"

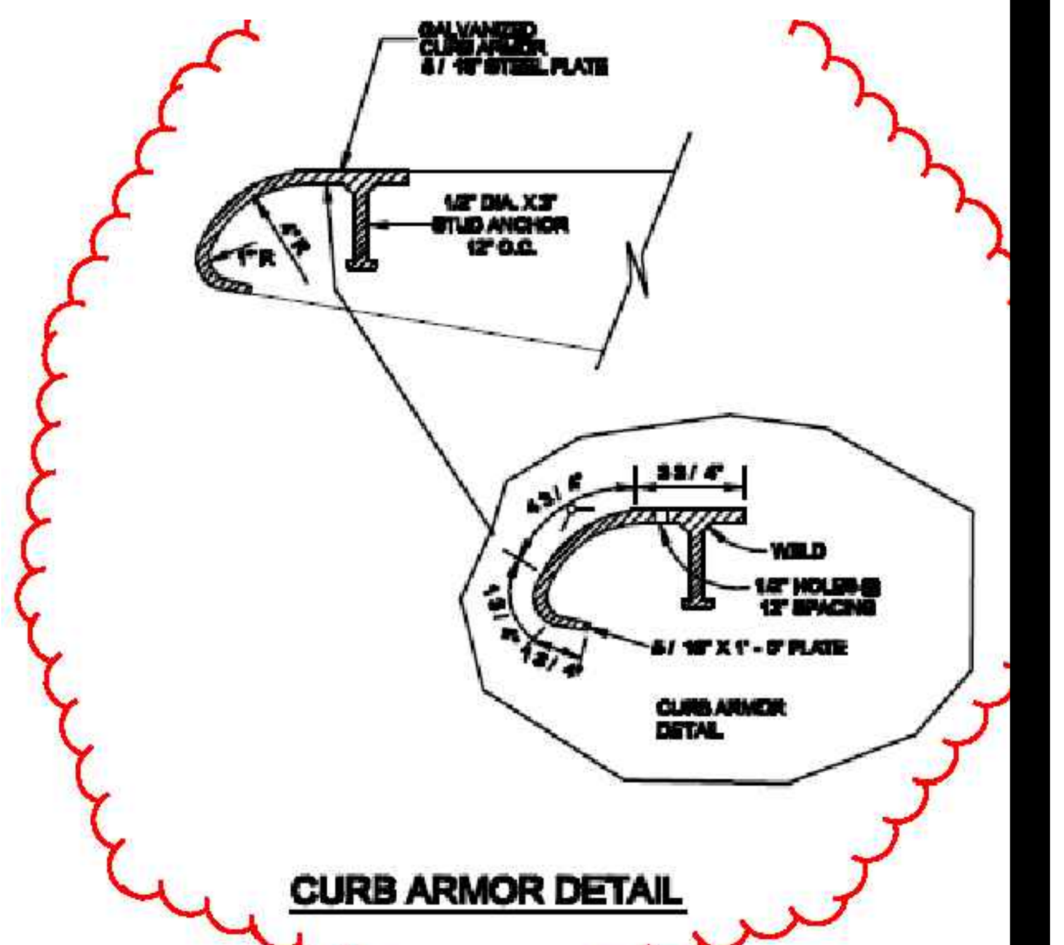


BAR "E"

INLET LENGTH			BAR	No.	Size	Spa.	Length	Weight lbs.
			A	51	4	5" o.c.	15' 9 1/2"	537.99
DRAIN	"4C"		B	51	4	5"	6' 7 3/4"	226.41
L=	20'		C	51	4	9"	4' 6"	153.31
DEPTH=	5.5'		D	25	4	10"	21' 1"	352.09
			E	12	4	10 1/2"	7' 4"	58.78
			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 =		11.77 C.Y.	Manhole Casting = 260 lbs.				Steel Total =	1698.33 lbs.

REINFORCING STEEL SCHEDULE

INLET LENGTH			BAR	No.	Size	Spa.	Length	Weight lbs.
			A	63	4	5" o.c.	15' 9 1/2"	664.58
DRAIN	"4D"		B	63	4	5"	6' 7 3/4"	279.68
L=	25'		C	58	4	9"	4' 6"	174.35
DEPTH=	5.5'		D	25	4	10"	26' 1"	435.59
			E	12	4	10 1/2"	7' 4"	58.78
			F	27	5	12"	2' 3"	63.36
			G	3	4	12"	29' 8"	59.45
			H	5	5	12"	1' 8"	8.69
*Concrete Total =		14.34 C.Y.	Manhole Casting = 260 lbs.				Steel Total =	2004.49 lbs.


GALVANIZED CURB ARMOR 5/16" STEEL PLATE
1/2" DIA. X 3" STUD ANCHOR 12" O.C.
1" R
WELD
1/2" HOLES @ 12" SPACING
5/16" X 1' - 6" PLATE
CURB ARMOR DETAIL

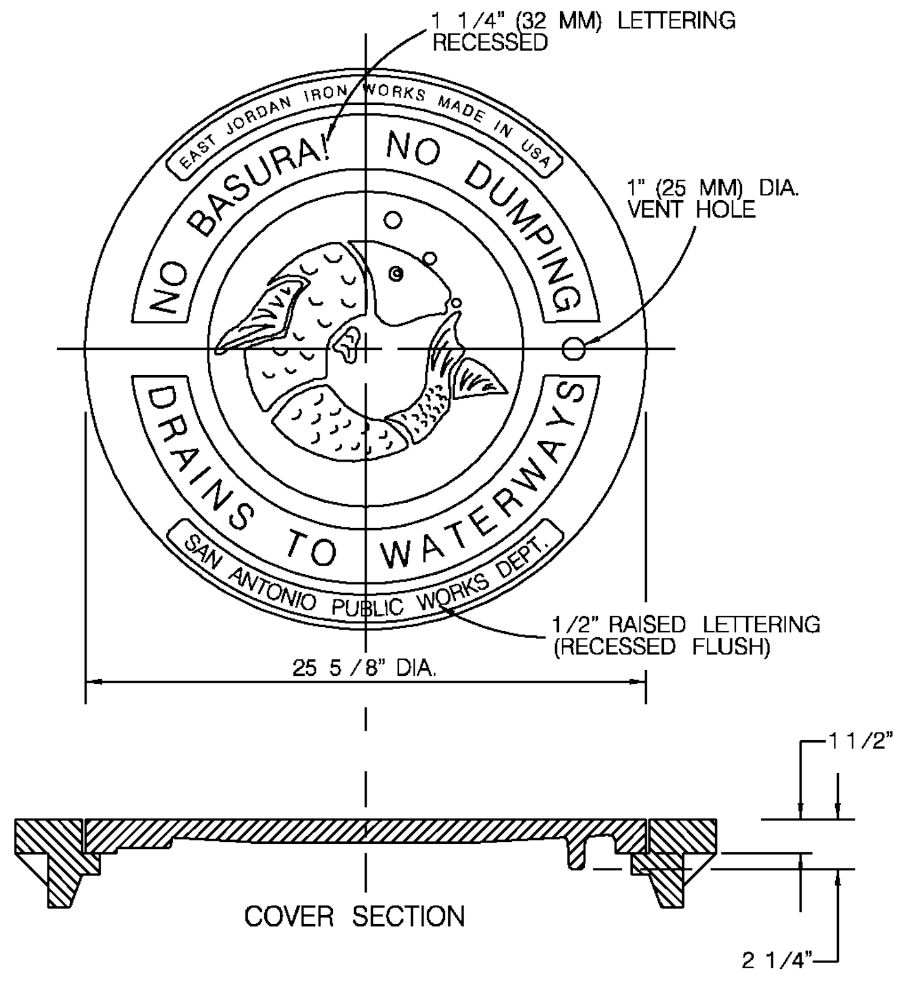
CURB ARMOR DETAIL

* 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.

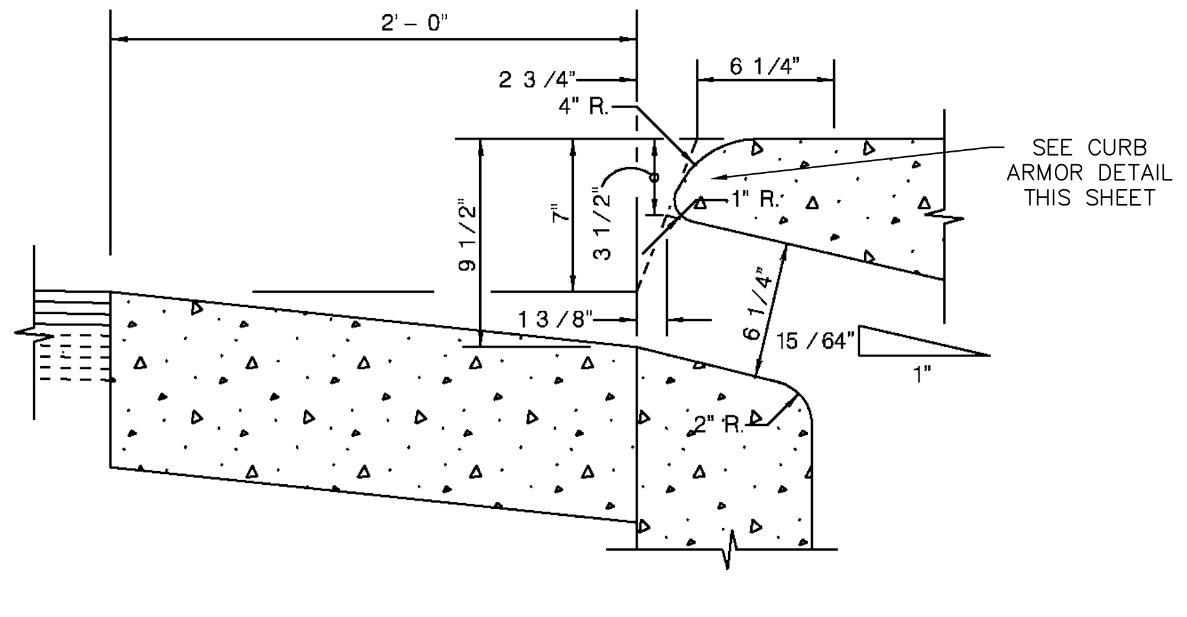
GENERAL NOTES

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".


1 1/4" (32 MM) LETTERING RECESSED
EAST JORDAN IRON WORKS MADE IN USA
NO BASURA!
NO DUMPING
DRAINS TO WATERWAYS
SAN ANTONIO PUBLIC WORKS DEPT.
1" (25 MM) DIA. VENT HOLE
1/2" RAISED LETTERING (RECESSED FLUSH)
25 5 /8" DIA.
1 1/2"
COVER SECTION
2 1/4"

MANHOLE LID & RING DETAIL (ITEM 409)

SCALE : 1" = 8"

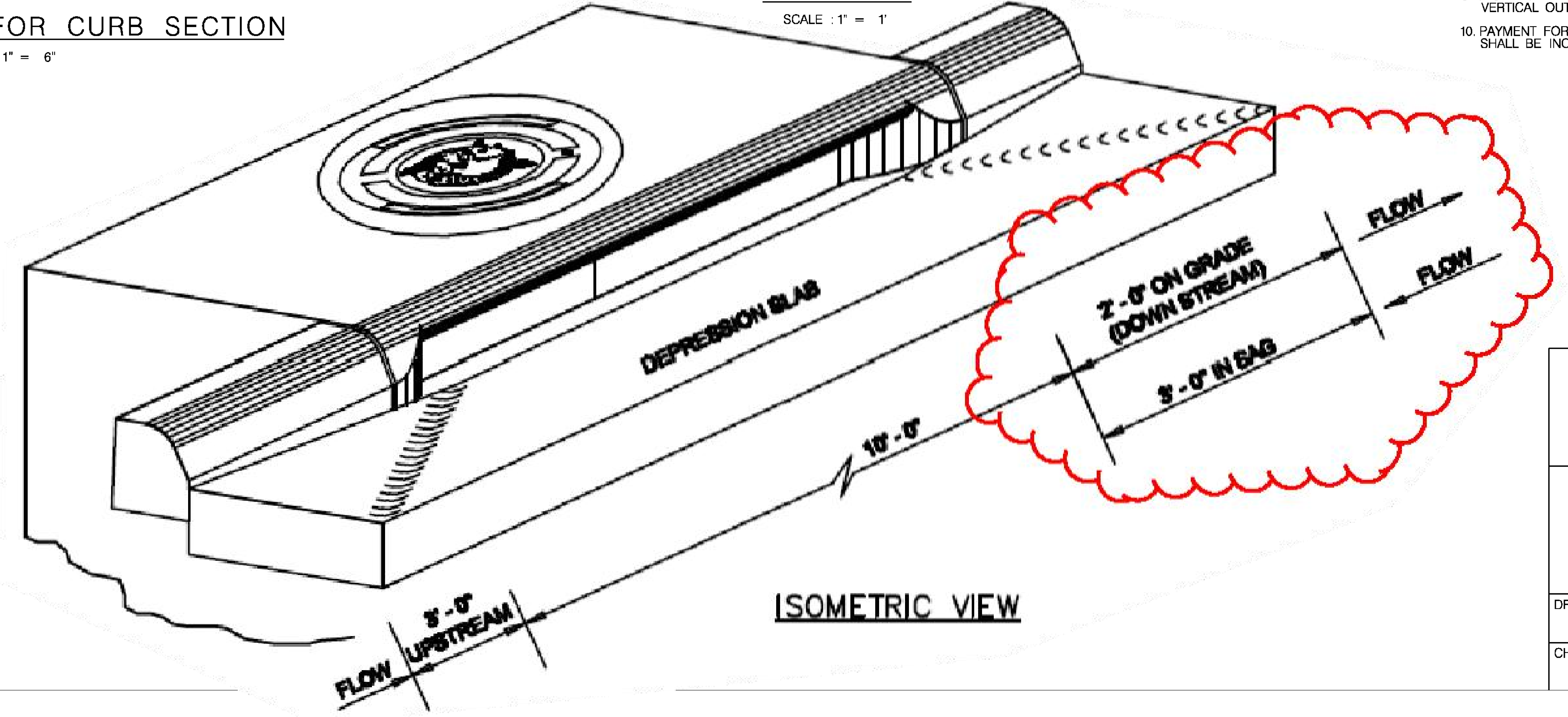


OPENING DETAIL FOR CURB SECTION

SCALE : 1" = 6"

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.



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
			DATE:
CHECKED BY: NAT HARDY, P.E.			SHEET: OF

CUDEENGINEERS.COM

EST. 1980
CUDE
ENGINEERS

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

TRES LAURELS UNIT 4A

DRAINAGE DETAILS

DATE
05/28/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

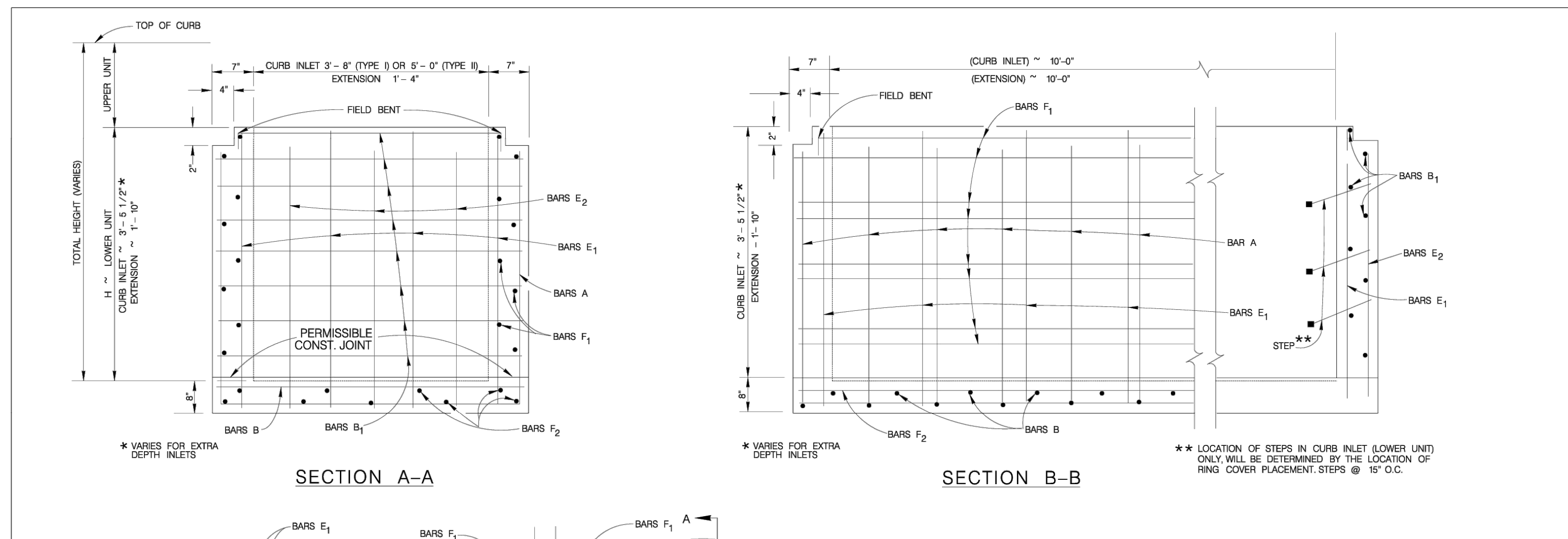
06/05/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

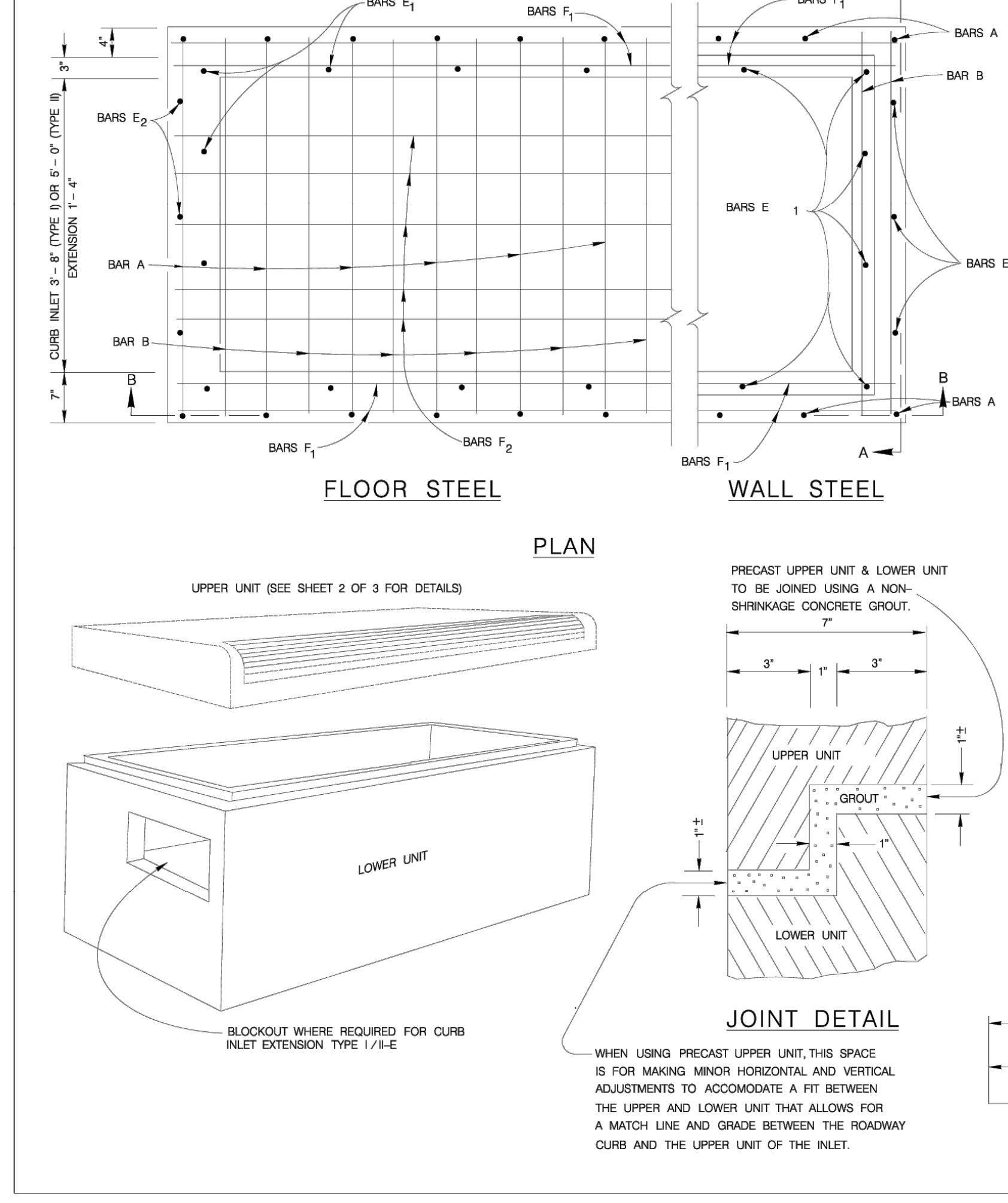
PLAT NO.
24-11800118

C6.D2

P:\03050\015\2-DWG\4-Plans\08_D1_D2 DRDP.dwg 2024/05/28 1:43pm rmata


SECTION A–A

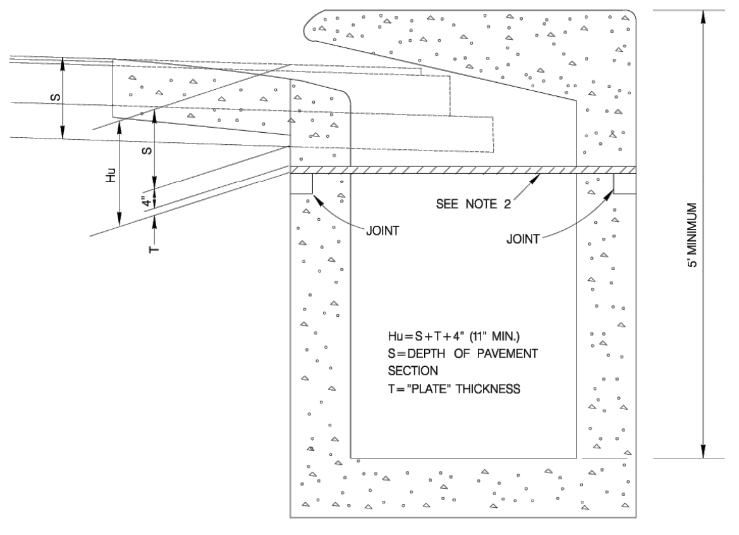
SECTION B–B


FLOOR STEEL

WALL STEEL

PLAN

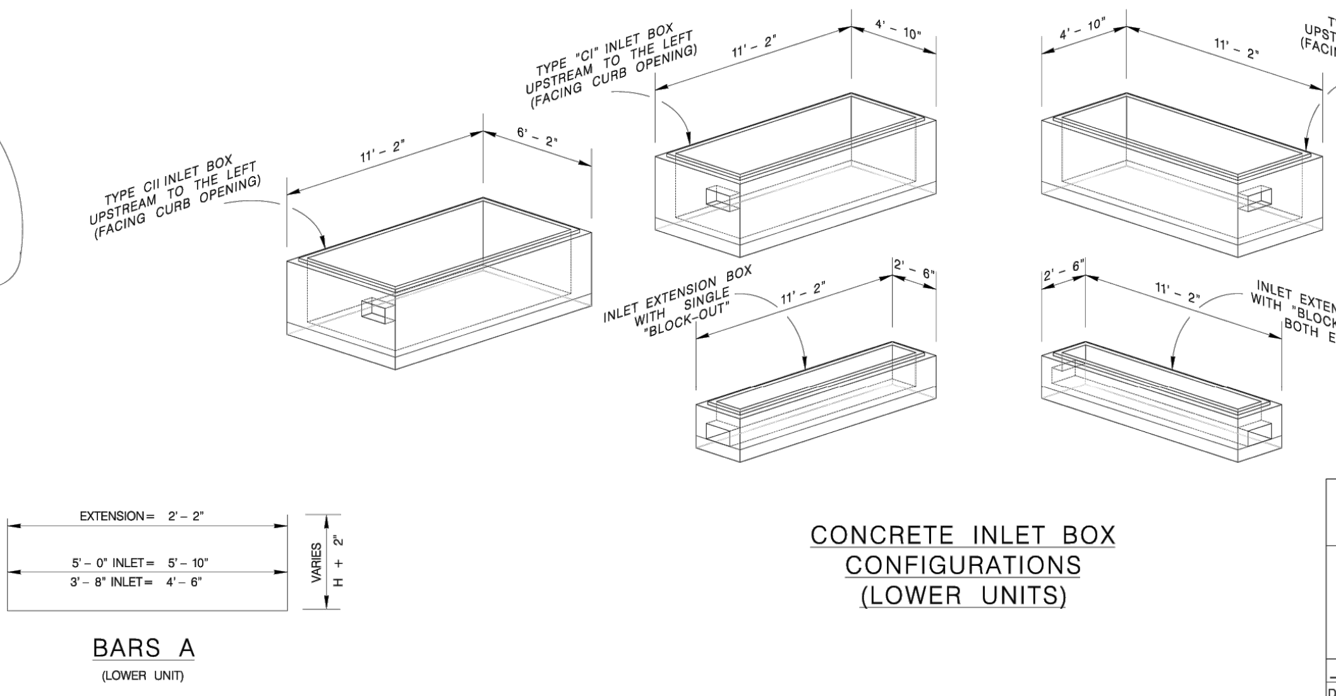
JOINT DETAIL



PHASE CONSTRUCTION

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

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


CONCRETE INLET BOX CONFIGURATIONS (LOWER UNITS)

BARS A (LOWER UNIT)

REINFORCING STEEL

LOWER UNIT 10' X 3' – 8" (TYPE I)				
BAR	NO.	SIZE	SPAC.	LENGTH
A	12	#4	12"	VARIES
B	11	#4	12"	4'–6"
B_1	VARIES	#4	12"	4'–6"
E_1	20	#4	18" ±	VARIES
E_2	6	#4	18" ±	VARIES
F_1	VARIES	#4	12" ±	10'–10"
F_2	9	#4	—	10'–10"

LOWER UNIT 10' X 5' – 0" (TYPE II)				
BAR	NO.	SIZE	SPAC.	LENGTH
A	12	#4	12"	VARIES
B	11	#4	12"	5'–10"
B_1	VARIES	#4	12"	5'–10"
E_1	22	#4	18" ±	VARIES
E_2	8	#4	18" ±	VARIES
F_1	VARIES	#4	12" ±	10'–10"
F_2	11	#4	—	10'–10"

GENERAL NOTES

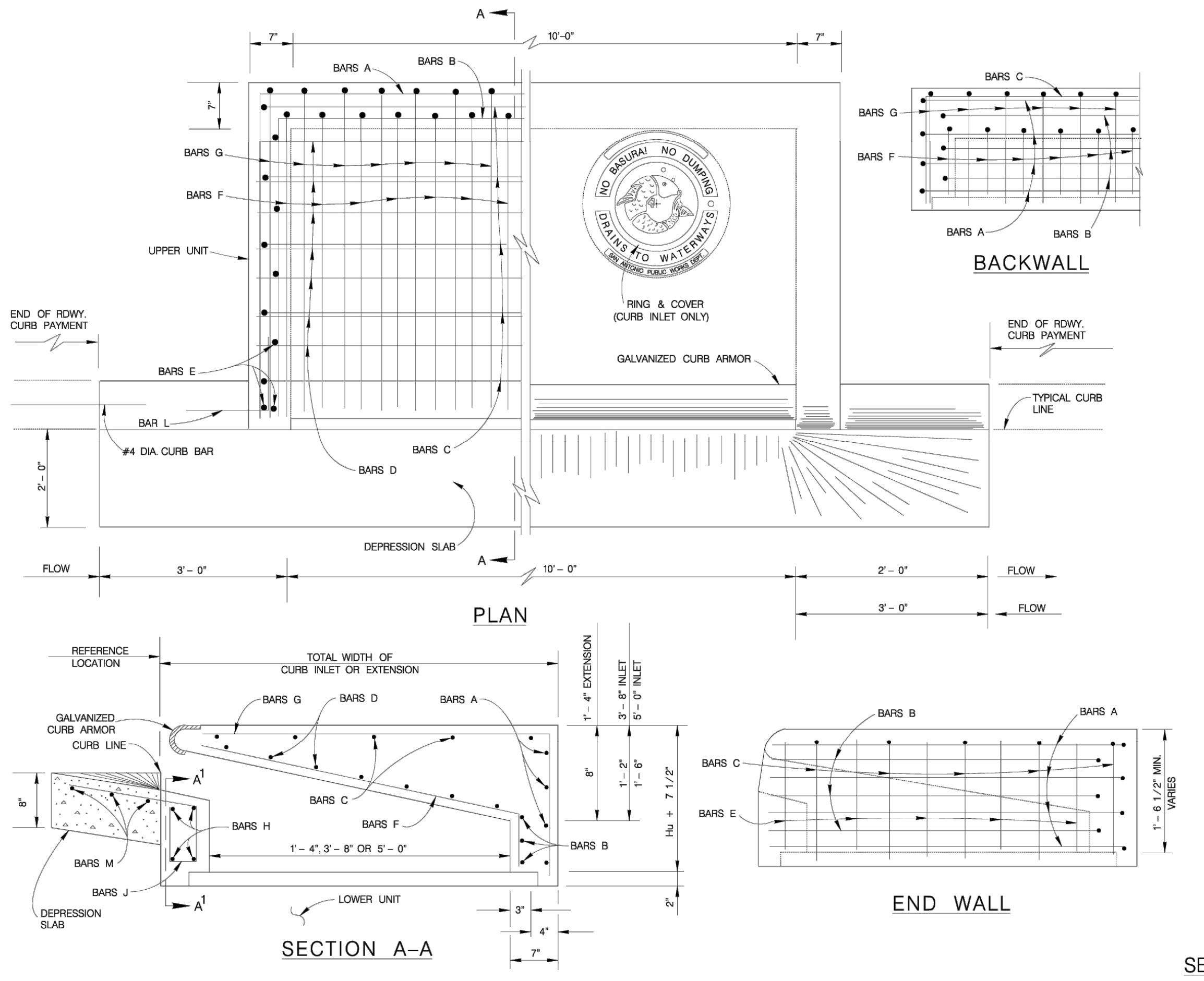
1. 5' INLETS AND 5' EXTENSIONS MUST BE IN ACCORDANCE WITH THE LATEST TXDOT CURB INLET TYPE "C" AND EXTENSION TYPE E (IL–C).
2. TYPE C–II INLET TO BE USED ONLY WHEN STORM DRAIN PIPE IS IN–LINE WITH CURB INLET AND APPROVED BY THE ENGINEER.
3. QUANTITIES SHOWN ARE FOR CONTRACTORS INFORMATION ONLY.
4. CONCRETE FOR STRUCTURES SHALL BE CLASS "A", 3000 PSI IN 28 DAYS.
5. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
6. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 1 1/2".
7. ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A–615, GRADE 60 REQUIREMENTS.
8. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3 / 4".
9. DEPRESSION SLAB SHALL RECEIVE A WOOD FLOAT FINISH.
10. FACE OF INLET TO CONFORM TO FACE OF CURB LINE.
11. ALL BARS INTERCEPTING MANHOLE RING & COVER SHALL BE CUT OR BENT.
12. PAYMENT FOR ALL EXCAVATION, BACK–FILLING, CONCRETE, REINFORCING STEEL, RING AND COVER, CURB ARMOR AND STEPS SHALL BE INCLUDED IN THE UNIT COST OF ITEM 403 "STORM SEWER JUNCTION BOXES AND INLETS".
13. CAST IRON MANHOLE RING AND COVER TO BE PLACED NEXT TO OUTLET PIPE, EXCEPT FOR VERTICAL OUTLET PIPE IN WHICH CASE MANHOLE RING AND COVER WILL BE OFFSET.
14. GALVANIZED BOLTS, NUTS, WASHERS, PLATES AND GASKETS ARE SUBSIDIARY TO INLETS.
15. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE MEANS TO LIFT AND PLACE THE INLETS, WHEN USING PRECAST UNITS.
16. ALL BARS AT PIPE BLOCKOUT LOCATIONS SHALL BE CUT OR BEND.
17. ALL LOWER UNITS SHALL RECEIVE INVERT MORTAR SHAPING.
18. PIPE BLOCKOUTS IN INLET WALLS SHOULD NOT EXCEED 3" BEYOND THE OUTER SHELL OF THE PIPE, TAKING INTO ACCOUNT THE SKEW OF THE PIPE AS NECESSARY. CONSTRUCTION JOINT MAY BE RAISED A MAXIMUM OF 6".

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

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

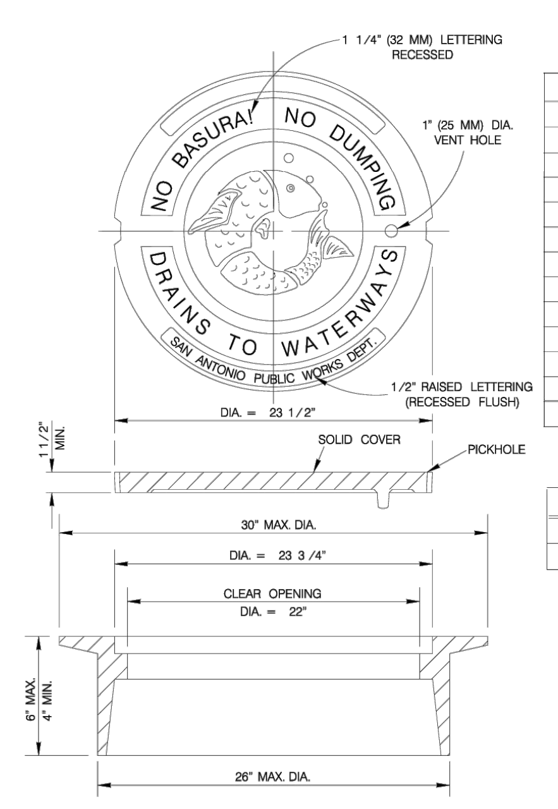
____% SUBMITTAL	PROJECT NO.:____		DATE:____
DRWN. BY: V. VASQUEZ	DSGN. BY: L.E. MALTOS, P.E.	CHKD. BY: R.S. HOSSEINI, P.E.	SHEET NO.:____OF____


PLAN

BACKWALL

SECTION A–A

END WALL



MANHOLE LID & RING DETAIL (ITEM 409)

NOTES FOR MANHOLE LID AND RING

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

SEE SHEET 1 OF 3 FOR GENERAL NOTES.

REINFORCING STEEL (FOR Hu = 11")

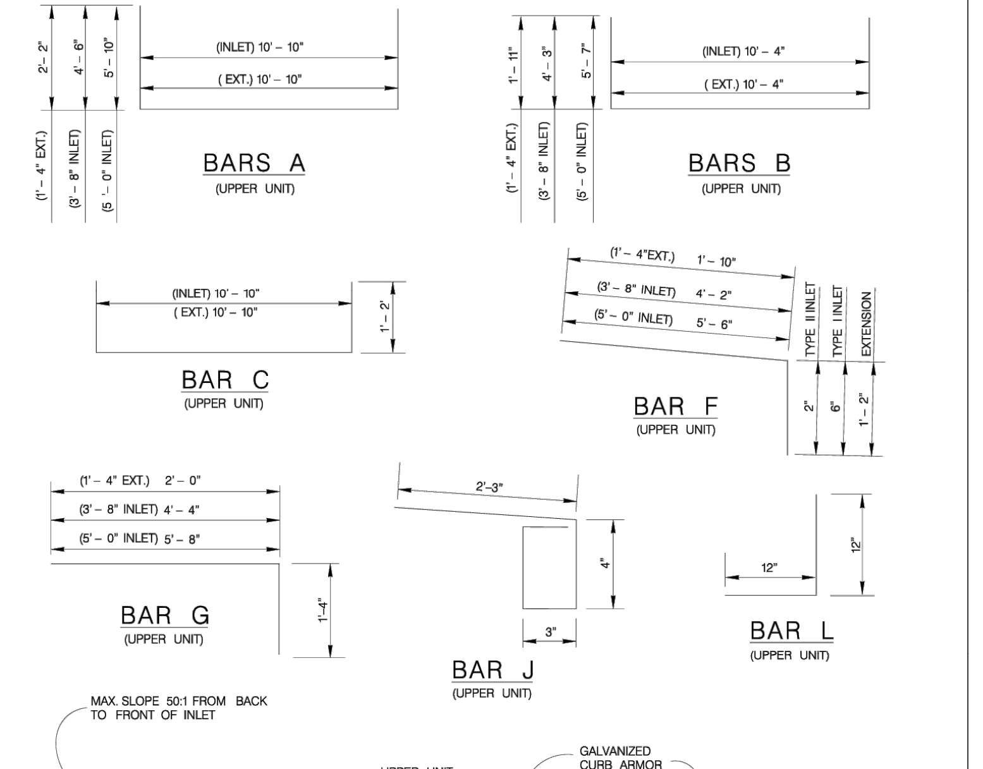
UPPER UNIT 10' X 3'–8" (TYPE I)					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	—	19'–10"	53
B	3	#4	—	18'–10"	38
C	5	#4	11"	13'–2"	44
D	7	#4	6"	10'–10"	51
E	12	#4	11"	1'–2"	9
F	21	#6	6"	4'–8"	147
G	22	#6	6"	5'–8"	187
H	4	#4	—	10'–10"	29
J	12	#4	12"	3'–6"	28
L	4	#4	—	2'–0"	5
M	3	#4	—	14'–8"	29
TOTAL WEIGHT					620 LBS.

UPPER UNIT 10' X 5' (TYPE II)					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	—	22'–6"	60
B	3	#4	—	21'–6"	43
C	7	#4	11"	13'–2"	62
D	11	#4	6"	10'–10"	80
E	16	#4	11"	1'–2"	13
F	21	#6	6"	5'–8"	179
G	22	#6	6"	7'–0"	231
H	4	#4	—	10'–10"	29
J	12	#4	12"	3'–6"	28
L	4	#4	—	2'–0"	5
M	3	#4	—	14'–8"	29
TOTAL WEIGHT					759 LBS.

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

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

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


BARS A (UPPER UNIT)

BARS B (UPPER UNIT)

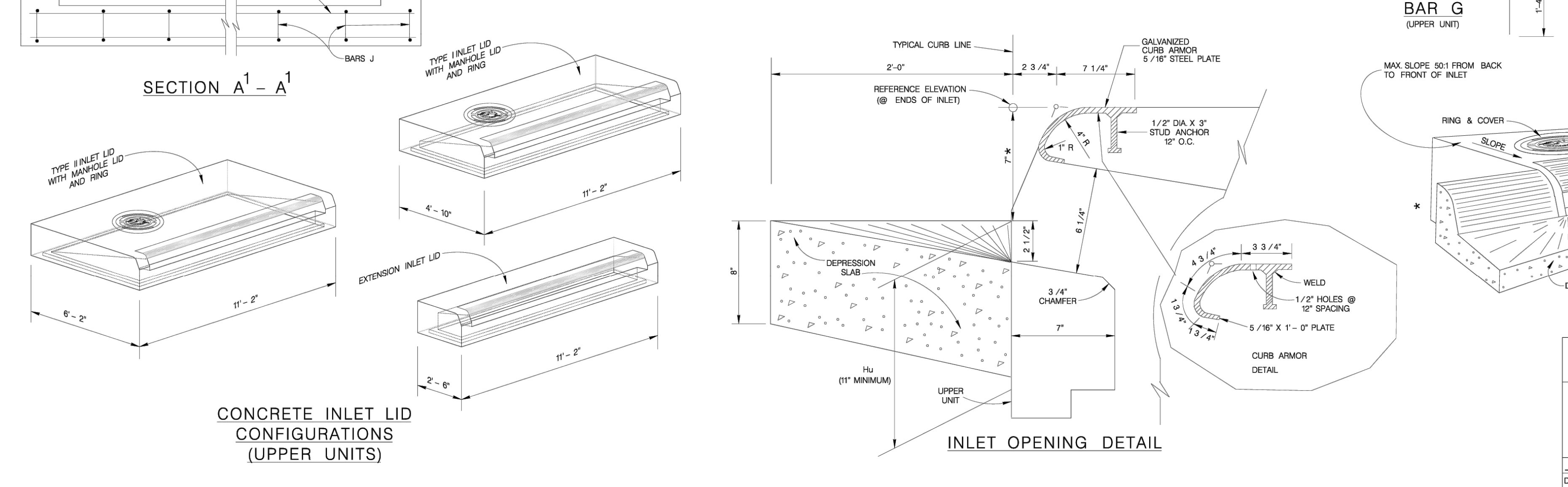
BAR C (UPPER UNIT)

BAR F (UPPER UNIT)

BAR G (UPPER UNIT)

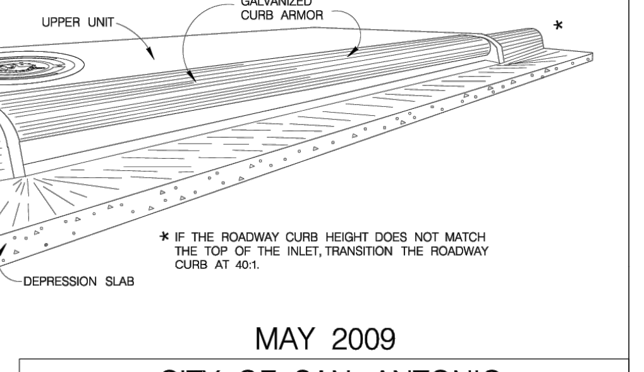
BAR J (UPPER UNIT)

BAR L (UPPER UNIT)


SECTION A¹ – A¹

CONCRETE INLET LID CONFIGURATIONS (UPPER UNITS)

INLET OPENING DETAIL

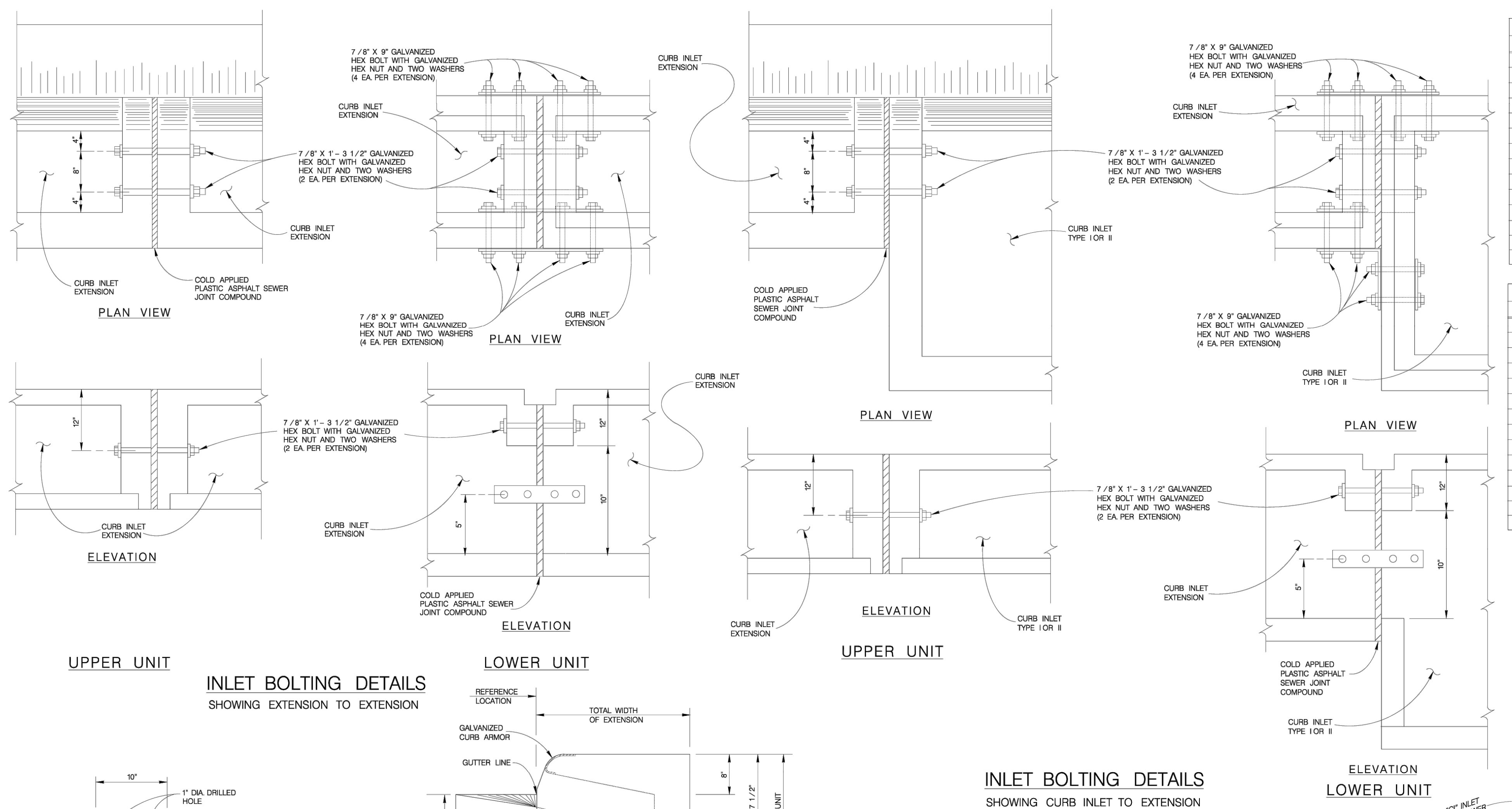

★ IF THE ROADWAY CURB HEIGHT DOES NOT MATCH THE TOP OF THE INLET, TRANSITION THE ROADWAY CURB AT 40:1.

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

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

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


PLAN VIEW

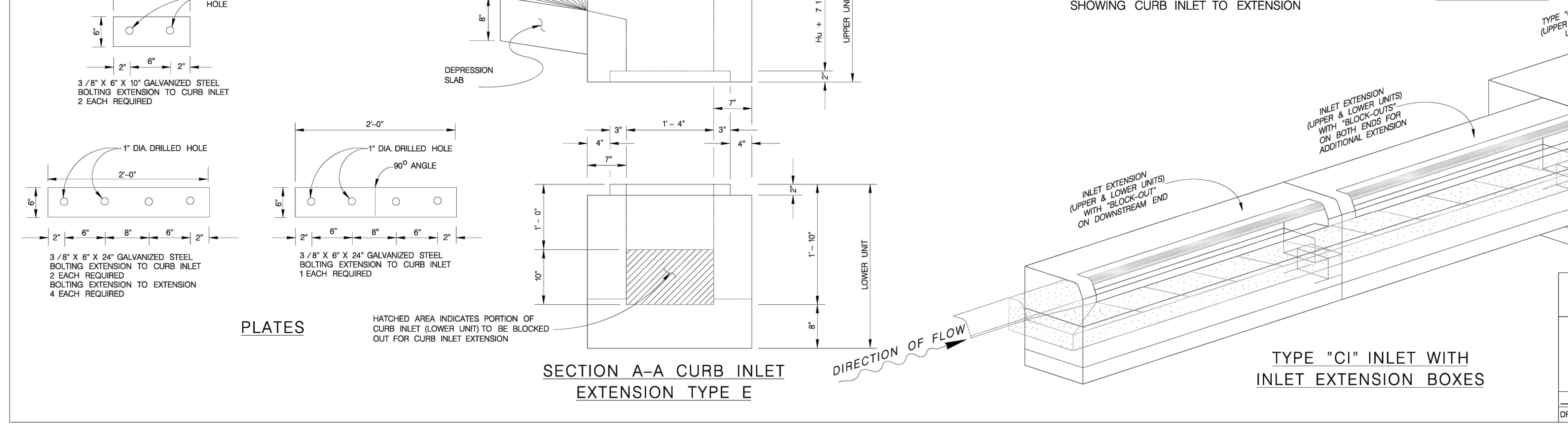
ELEVATION

UPPER UNIT

INLET BOLTING DETAILS
SHOWING EXTENSION TO EXTENSION

LOWER UNIT

INLET BOLTING DETAILS
SHOWING CURB INLET TO EXTENSION


PLATES

SECTION A–A CURB INLET EXTENSION TYPE E

TYPE "CI" INLET WITH INLET EXTENSION BOXES

UPPER UNIT EXTENSION (FOR Hu = 11")					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	—	15' – 2"	41
B	3	#4	—	14' – 2"	28
C	3	#4	11"	13' – 2"	26
D	3	#4	6"	10' – 10"	22
E	8	#4	11"	1 '– 2"	6
F	21	#6	6"	2' – 0"	63
G	22	#6	6"	3' – 4"	110
H	4	#4	—	10' – 10"	29
J	12	#4	12"	3' – 6"	28
L	4	#4	—	2' – 0"	5
M	3	#4	—	14' – 8"	29
REINFORCING STEEL				LBS.	387
CLASS "A" CONCRETE				C.Y.	1.0

LOWER UNIT EXTENSION					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	12	#4	12"	6' – 2"	49
B	11	#4	12"	2' – 2"	16
B_1	3	#4	12"	2' – 2"	4
E_1	18	#4	18" ±	2' – 3"	27
E_2	4	#4	18" ±	2' – 1"	6
F_1	16	#4	12" ±	10' – 10"	116
F_2	5	#4	—	10' – 10"	36
REINFORCING STEEL				LBS.	254
CLASS. "A" CONCRETE				C.Y.	1.4

GENERAL NOTES

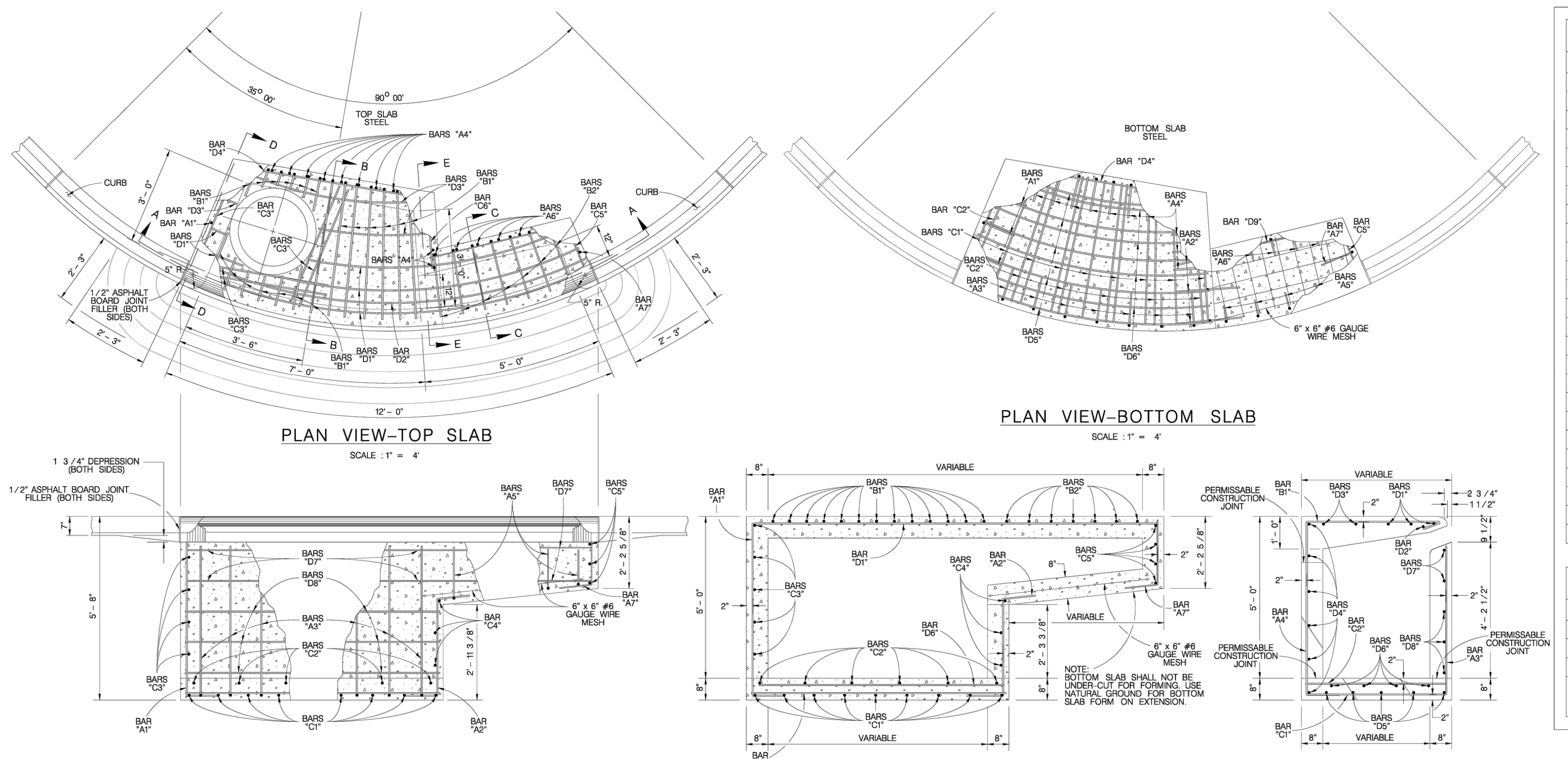
1. WHEN INLET EXTENSIONS ARE REQUIRED FOR ON GRADE INLETS THE EXTENSION(S) SHALL BE PLACED ON THE UPSTREAM END OF THE INLET.
2. FOR CURB INLET EXTENSION REINFORCING STEEL, NOTES & VARIOUS OTHER APPLICABLE DETAILS NOT FOUND ON THIS SHEET, REFER TO SHEETS 1 & 2.

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

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

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

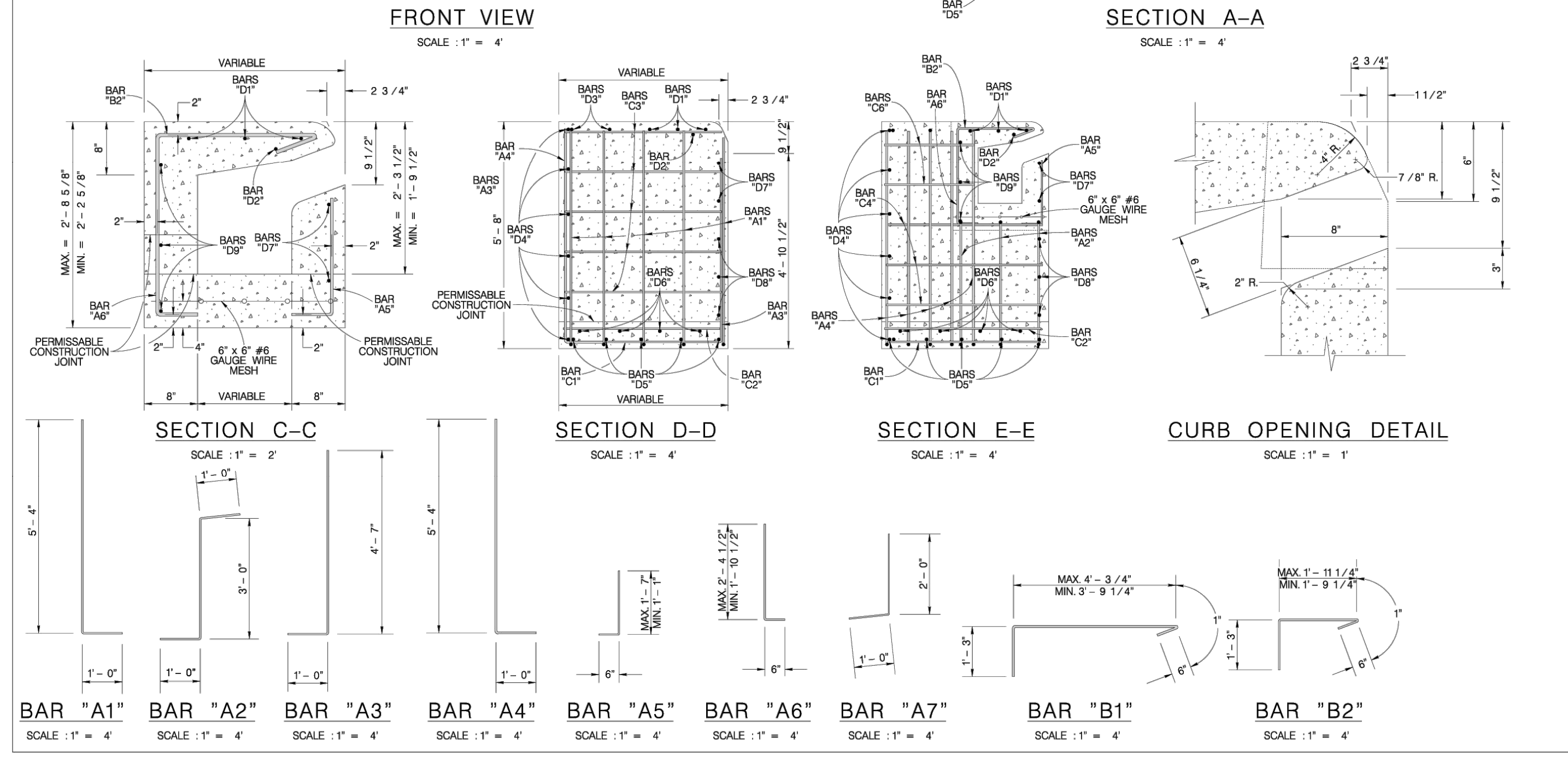

PLAN VIEW–TOP SLAB
SCALE : 1" = 4'

PLAN VIEW–BOTTOM SLAB
SCALE : 1" = 4'

FRONT VIEW
SCALE : 1" = 4'

SECTION A–A
SCALE : 1" = 4'

SECTION B–B
SCALE : 1" = 4'

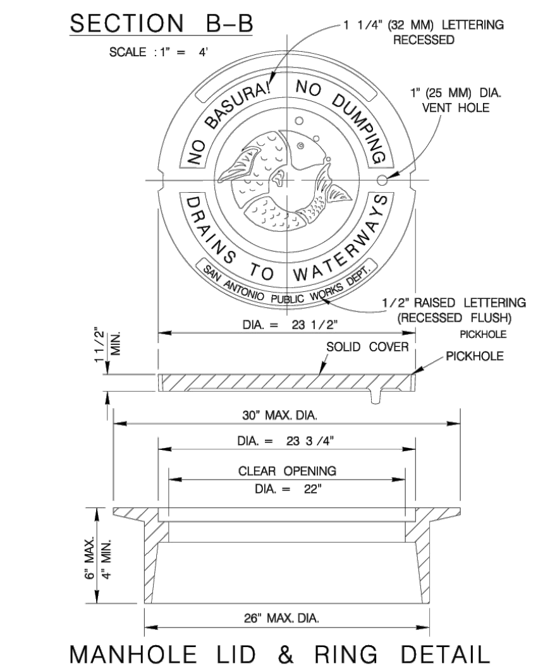

SECTION C–C
SCALE : 1" = 4'

SECTION D–D
SCALE : 1" = 4'

SECTION E–E
SCALE : 1" = 4'

CURB OPENING DETAIL
SCALE : 1" = 1'

BAR "A1" BAR "A2" BAR "A3" BAR "A4" BAR "A5" BAR "A6" BAR "A7" BAR "B1" BAR "B2"
SCALE : 1" = 4'


MANHOLE LID & RING DETAIL (ITEM 409)
SCALE : 1" = 16"

NOTES FOR MANHOLE LID AND RING

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

REINFORCING STEEL SCHEDULE

SHAPE	BAR	NO.	SIZE	SPACE	LENGTH	WEIGHT
⌊	A1	5	4	12" C–C	6' – 4"	21
ʃ	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"	MAX = 2' – 1" MIN = 1' – 7"	3
⌊	A6	7	4	8"	MAX = 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 = 5' – 7 1/4"	80
⌈	B2	7	4	8"	MAX = 3' – 9 1/4" MIN = 3' – 7 1/4"	17
STRAIGHT	C1	9	4	12"	MAX = 4' – 3 1/2" MIN = 3' – 10"	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 = 12' – 10" MIN = 11' – 4"	24
◡	D2	1	4	AS SHOWN	12' – 7"	8
◡	D3	2	4	12"	MAX = 6' – 7" MIN = 6' – 2"	9
STRAIGHT	D4	6	4	12"	6' – 1"	24
◡	D5	5	4	12"	MAX = 8' – 0" MIN = 6' – 2"	24
◡	D6	4	4	12"	MAX = 7' – 9" MIN = 6' – 5"	19
◡	D7	2	3	12"	12' – 10"	10
◡	D8	3	4	12"	8' – 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 (2500 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".

JANUARY 2005

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TYPE "D" INLET
STANDARDS

____% SUBMITTAL	PROJECT NO.:____		DATE:____
DRWN. BY: V. VASQUEZ	DSGN. BY:____	CHKD. BY:____	SHEET NO.:____OF____

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

TRES LAURELS UNIT 4A

DRAINAGE DETAILS

DATE
05/28/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
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06/05/2024
MATTHEW A. TRINKLE
147558
CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C6.D3

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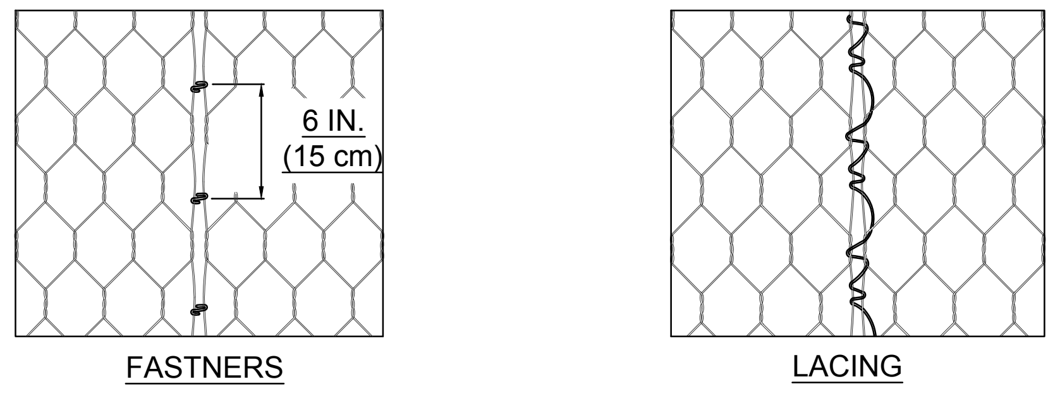
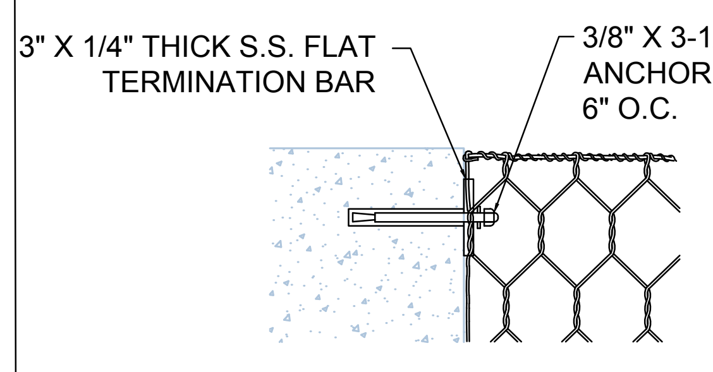
NOTES:

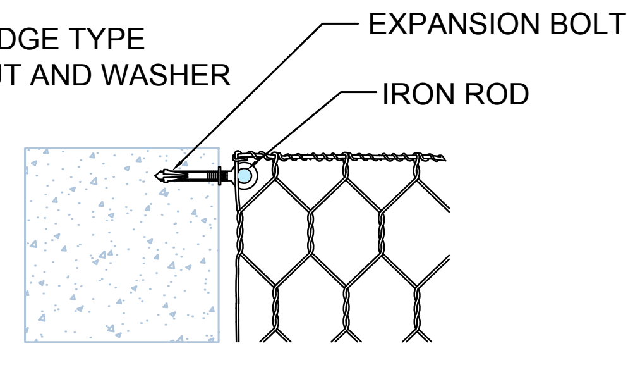
1. GABION MATRESS MESH TO ASTM A975.
2. GABIONS USED SHALL BE ZINC.
3. BACKFILL COMPACTION 95% TO ASTM D698/D1557
4. GABION FILL TO ASTM D6711:
    - 6.1. ROCK SIZE 4" - 12", D50 = 6"
    - 6.2. ROCK UNIT WEIGHT 157 PCF MIN.
    - 6.3. VOIDS 30% MAX.
5. TYPE 2 FILTER FABRIC IN ACCORDANCE WITH DMS-6200, TO BE USED BELOW GABION BASKET AND GABION MATTRESS AT ALL LOCATIONS.
6. GABION WIRE SHALL MEET THE REQUIREMENTS OF 12 WIRE GAUGE FOR GABION BASKET AND 13.5 WIRE GAUGE FOR GABION MATTRESS.



FASTNERS LACING


3" X 1/4" THICK S.S. FLAT TERMINATION BAR
3/8" X 3-1/2" LG. S.S. WEDGE TYPE ANCHOR BOLT WITH NUT AND WASHER 6" O.C.

GABION TO CONCRETE CONNECTION - A



GABION TO CONCRETE CONNECTION - B

NOTES:

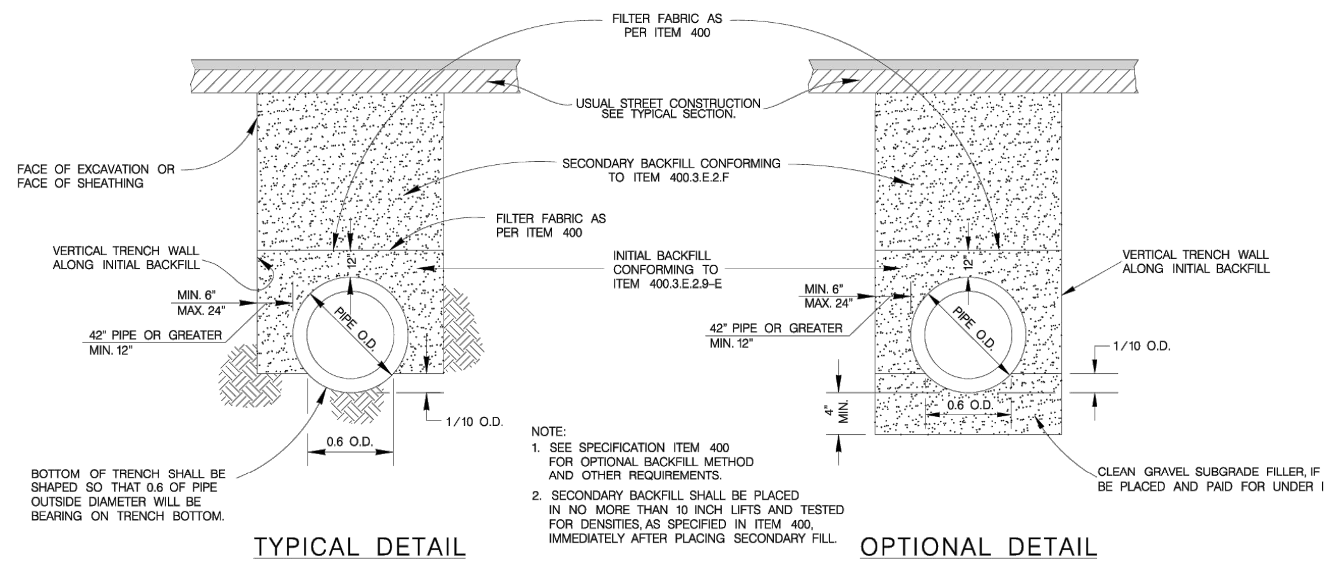
1. EDGES ARE JOINED TOGETHER, USING THE APPROPRIATE LACING TECHNIQUES OR FASTENERS.

    LACING: CONTINUOUS WIRE LOOPED TIGHTLY AROUND EVERY MESH OPENING, ALTERNATING SINGLE AND DOUBLE LOOPS

    FASTENERS: USE A PNEUMATIC OR HAND POWER TOOL, EMPLOYING SPENAX "C" SHAPED FASTENERS (FIG. 6.). FOR CLOSURE AND STRENGTH, THE RECOMMENDED SPACING IS EVERY MESH OPENING, NOT TO EXCEED 6 INCHES (150 MM).

1 GABION MATTRESS CONNECTION DETAILS

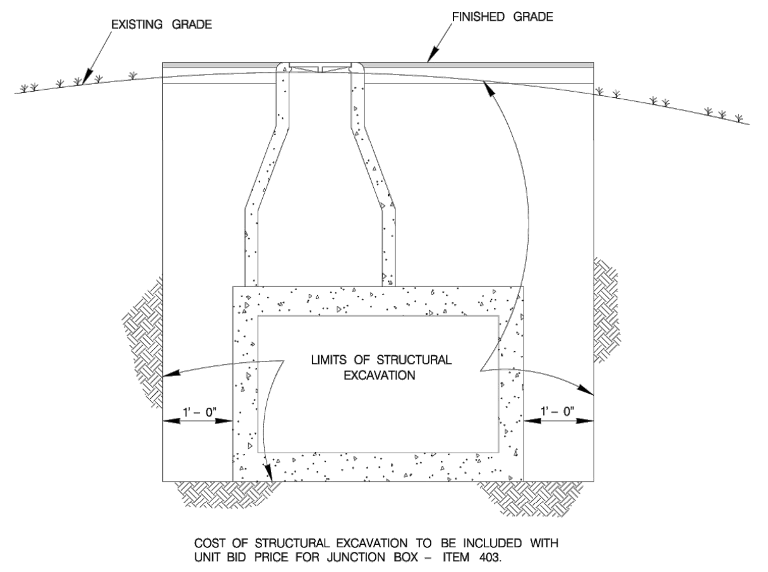
SCALE: NONE


FILTER FABRIC AS PER ITEM 400
USUAL STREET CONSTRUCTION SEE TYPICAL SECTION.
FACE OF EXCAVATION OR FACE OF SHEATHING
SECONDARY BACKFILL CONFORMING TO ITEM 400.3.E.2.F
FILTER FABRIC AS PER ITEM 400
VERTICAL TRENCH WALL ALONG INITIAL BACKFILL
INITIAL BACKFILL CONFORMING TO ITEM 400.3.E.2.9–E
MIN. 6" MAX. 24"
42" PIPE OR GREATER MIN. 12"
12"
PIPE O.D.
1/10 O.D.
0.6 O.D.
4" MIN.
BOTTOM OF TRENCH SHALL BE SHAPED SO THAT 0.6 OF PIPE OUTSIDE DIAMETER WILL BE BEARING ON TRENCH BOTTOM.
CLEAN GRAVEL SUBGRADE FILLER, IF REQUIRED, TO BE PLACED AND PAID FOR UNDER ITEM NO. 410.

NOTE:
1. SEE SPECIFICATION ITEM 400 FOR OPTIONAL BACKFILL METHOD AND OTHER REQUIREMENTS.
2. SECONDARY BACKFILL SHALL BE PLACED IN NO MORE THAN 10 INCH LIFTS AND TESTED FOR DENSITIES, AS SPECIFIED IN ITEM 400, IMMEDIATELY AFTER PLACING SECONDARY FILL.

TYPICAL DETAIL OPTIONAL DETAIL

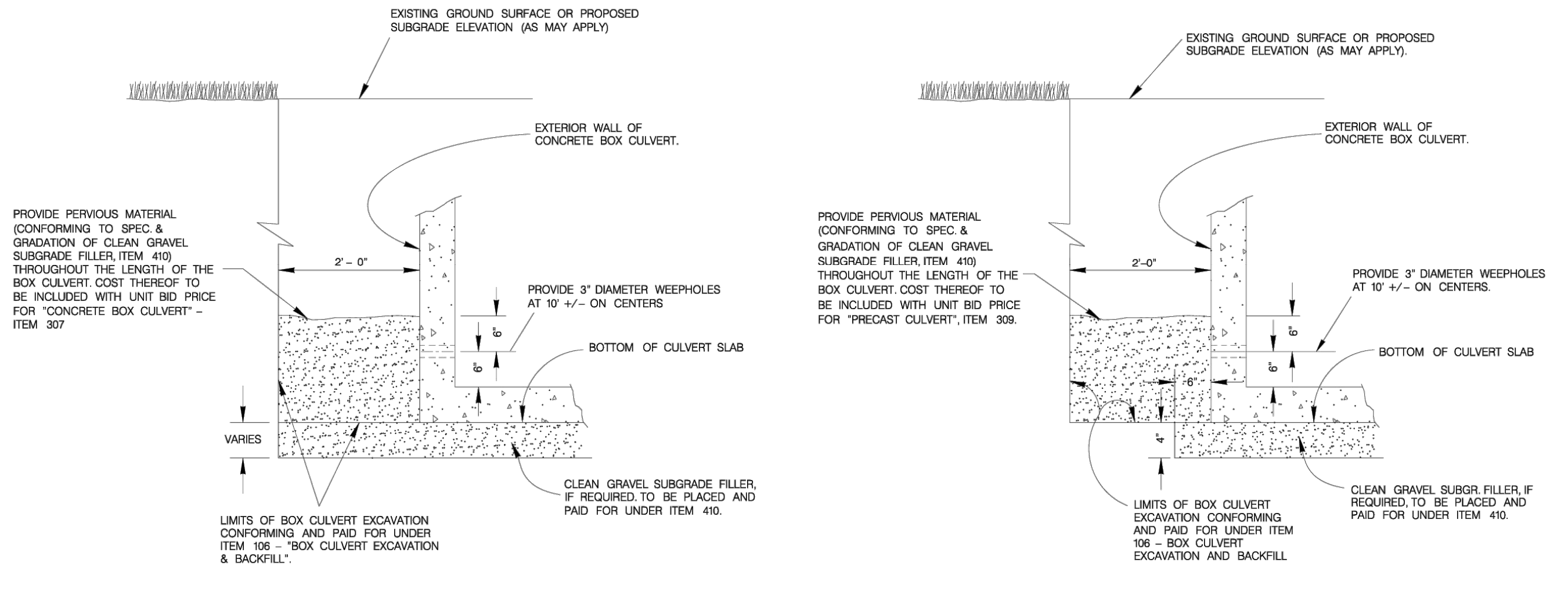
PIPE BEDDING & BACKFILL DETAILS



COST OF STRUCTURAL EXCAVATION TO BE INCLUDED WITH UNIT BID PRICE FOR JUNCTION BOX – ITEM 403.

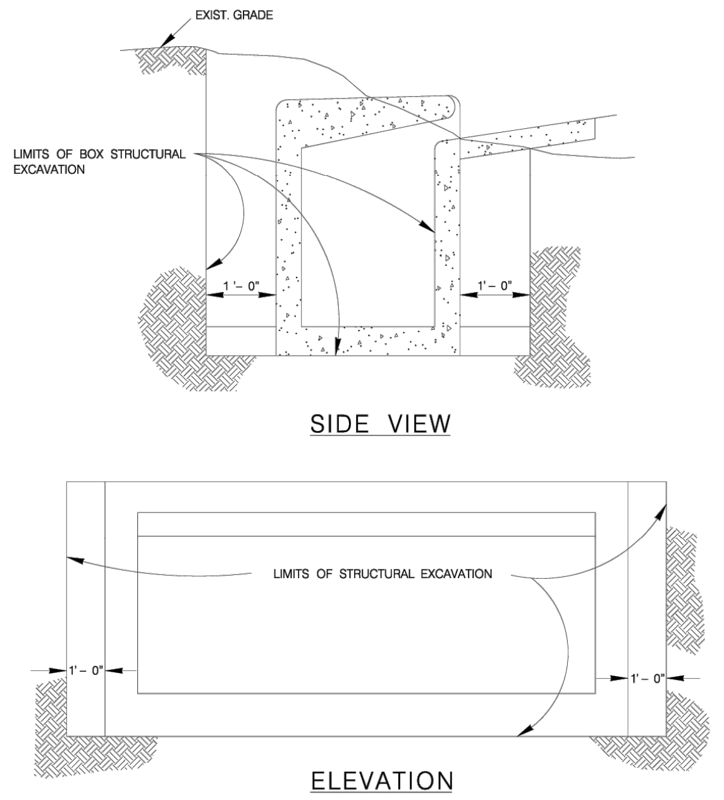
STRUCTURAL EXCAVATION AT JUNCTION BOXES

NO SCALE


EXISTING GROUND SURFACE OR PROPOSED SUBGRADE ELEVATION (AS MAY APPLY)
EXTERIOR WALL OF CONCRETE BOX CULVERT.
PROVIDE PERVIOUS MATERIAL (CONFORMING TO SPEC. & GRADATION OF CLEAN GRAVEL SUBGRADE FILLER, ITEM 410) THROUGHOUT THE LENGTH OF THE BOX CULVERT. COST THEREOF TO BE INCLUDED WITH UNIT BID PRICE FOR "CONCRETE BOX CULVERT" – ITEM 307
2' – 0"
PROVIDE 3" DIAMETER WEEPHOLES AT 10' +/– ON CENTERS
6"
6"
BOTTOM OF CULVERT SLAB
VARIES
CLEAN GRAVEL SUBGRADE FILLER, IF REQUIRED. TO BE PLACED AND PAID FOR UNDER ITEM 410.
LIMITS OF BOX CULVERT EXCAVATION CONFORMING AND PAID FOR UNDER ITEM 106 – "BOX CULVERT EXCAVATION & BACKFILL".
EXISTING GROUND SURFACE OR PROPOSED SUBGRADE ELEVATION (AS MAY APPLY).
EXTERIOR WALL OF CONCRETE BOX CULVERT.
PROVIDE PERVIOUS MATERIAL (CONFORMING TO SPEC. & GRADATION OF CLEAN GRAVEL SUBGRADE FILLER, ITEM 410) THROUGHOUT THE LENGTH OF THE BOX CULVERT. COST THEREOF TO BE INCLUDED WITH UNIT BID PRICE FOR "PRECAST CULVERT", ITEM 309.
2'–0"
PROVIDE 3" DIAMETER WEEPHOLES AT 10' +/– ON CENTERS.
6"
6"
6"
4"
BOTTOM OF CULVERT SLAB
LIMITS OF BOX CULVERT EXCAVATION CONFORMING AND PAID FOR UNDER ITEM 106 – BOX CULVERT EXCAVATION AND BACKFILL
CLEAN GRAVEL SUBGR. FILLER, IF REQUIRED, TO BE PLACED AND PAID FOR UNDER ITEM 410.

CAST–IN–PLACE BOX CULVERT PRECAST BOX CULVERT

CONCRETE BOX CULVERT


EXIST. GRADE
LIMITS OF BOX STRUCTURAL EXCAVATION
1'– 0"
1'– 0"
SIDE VIEW
LIMITS OF STRUCTURAL EXCAVATION
1'– 0"
1'– 0"

ELEVATION

COST OF STRUCTURAL EXCAVATION TO BE INCLUDED WITH UNIT BID PRICE FOR INLETS – ITEM 403.

STRUCTURAL EXCAVATIONS AT DRAINAGE INLETS

NO SCALE

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

PIPE BEDDING & MISCELLANEOUS DRAINAGE DETAILS

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

CUDEENGINEERS.COM

CUDE EST. 1980 ENGINEERS

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

TRES LAURELS
UNIT 4A

DRAINAGE DETAILS

DATE
05/28/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
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06/05/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C6.D4

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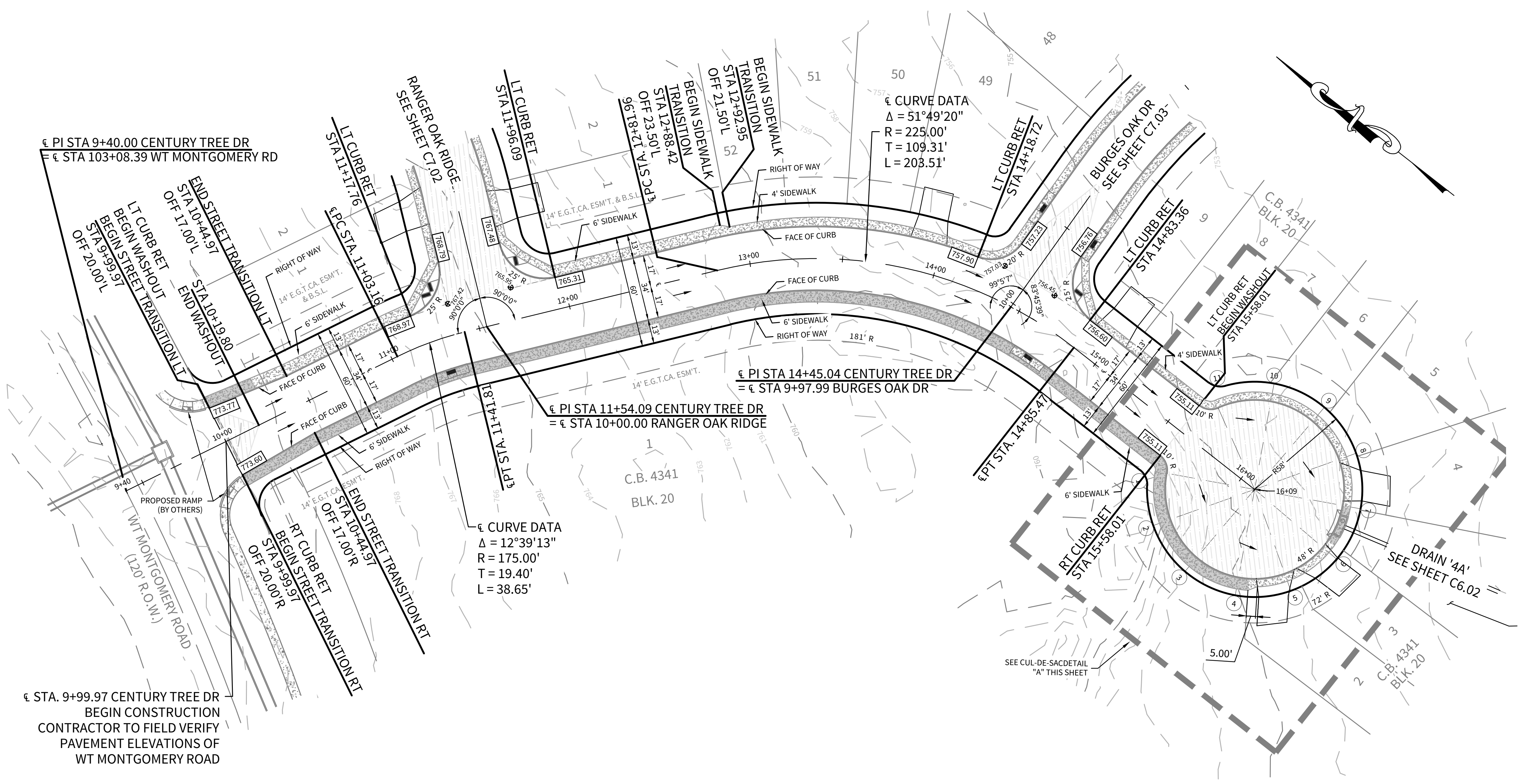
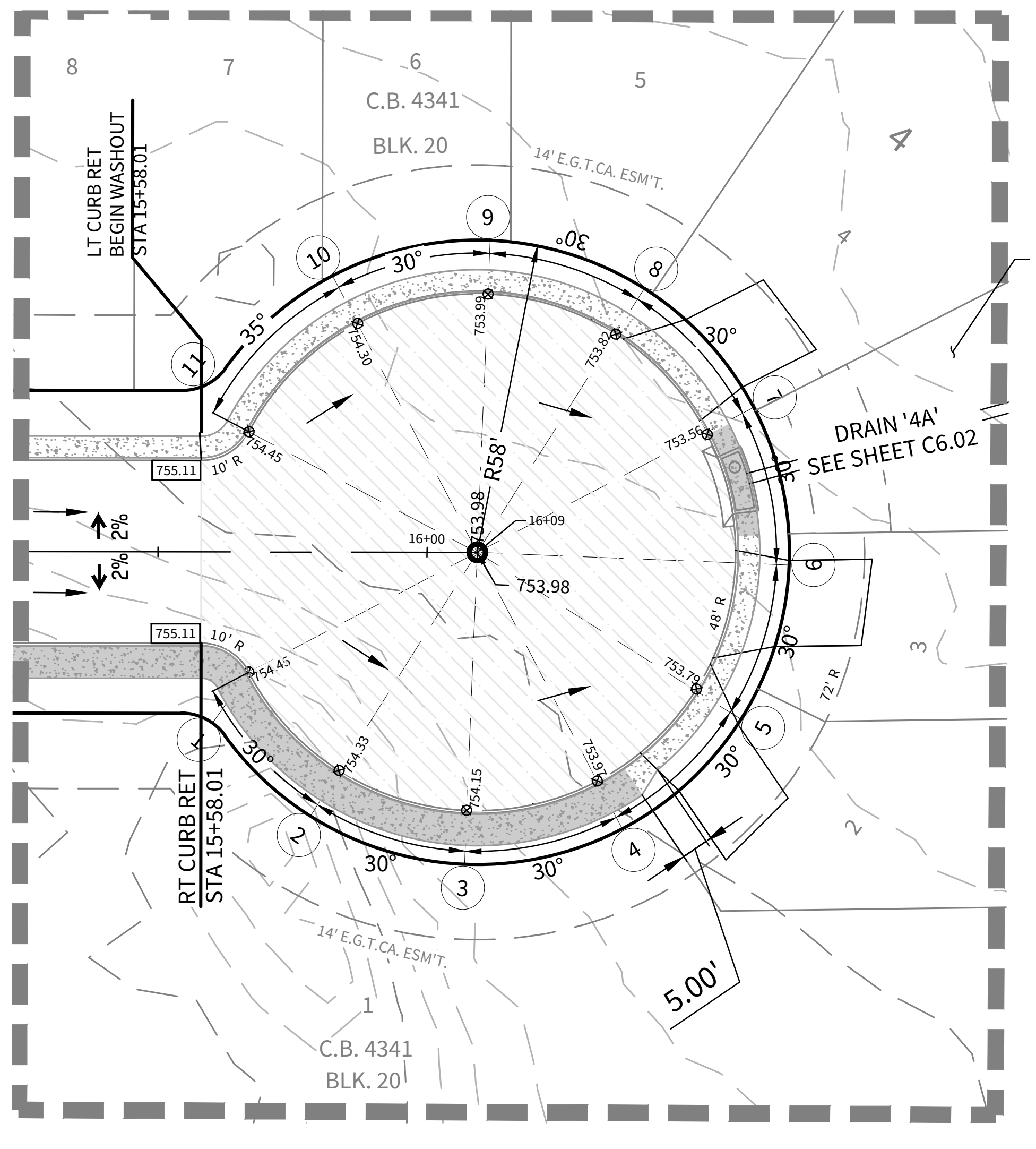
REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.


℄ PI STA 9+40.00 CENTURY TREE DR
= ℄ STA 103+08.39 WT MONTGOMERY RD
RANGER OAK RIDGE SEE SHEET C7.02
LT CURB RET STA 11+17.76
LT CURB RET STA 11+96.09
BEGIN SIDEWALK TRANSITION STA 12+92.95 OFF 21.50'L
BEGIN SIDEWALK TRANSITION STA 12+88.42 OFF 23.50'L
℄ CURVE DATA Δ = 51°49'20" R = 225.00' T = 109.31' L = 203.51'
LT CURB RET STA 14+18.72
BURGES OAK DR SEE SHEET C7.03
LT CURB RET STA 14+83.36
LT CURB RET BEGIN WASHOUT STA 15+58.01
℄ PI STA 14+45.04 CENTURY TREE DR = ℄ STA 9+97.99 BURGES OAK DR
℄ PT STA. 14+85.47
℄ PI STA 11+54.09 CENTURY TREE DR = ℄ STA 10+00.00 RANGER OAK RIDGE
℄ PT STA. 11+41.81
℄ CURVE DATA Δ = 12°39'13" R = 175.00' T = 19.40' L = 38.65'
END STREET TRANSITION LT STA 10+44.97 OFF 17.00'L
END WASHOUT STA 10+19.80
LT CURB RET BEGIN WASHOUT BEGIN STREET TRANSITION LT STA 9+99.97 OFF 20.00'L
RT CURB RET BEGIN STREET TRANSITION RT STA 9+99.97 OFF 20.00'R
END STREET TRANSITION RT STA 10+44.97 OFF 17.00'R
℄ PC STA. 11+03.16
RT CURB RET STA 15+58.01
DRAIN '4A' SEE SHEET C6.02
LOT 902 BLK 20 PERMEABLE OPEN SPACE 0.133 AC.
SEE CUL-DE-SAC DETAIL "A" THIS SHEET
WT MONTGOMERY ROAD (120' R.O.W.)
PROPOSED RAMP (BY OTHERS)
C.B. 4341 BLK. 20
RIGHT OF WAY
6' SIDEWALK
FACE OF CURB
14' E.G.T.CA. ESM'T.
5.00'

℄ STA. 9+99.97 CENTURY TREE DR
BEGIN CONSTRUCTION
CONTRACTOR TO FIELD VERIFY
PAVEMENT ELEVATIONS OF
WT MONTGOMERY ROAD


C.B. 4341
BLK. 20
LT CURB RET BEGIN WASHOUT STA 15+58.01
RT CURB RET STA 15+58.01
LOT 902 BLK 20 PERMEABLE OPEN SPACE 0.133 AC.
DRAIN '4A' SEE SHEET C6.02
R58'
16+09
753.98
30'
35'
5.00'
14' E.G.T.CA. ESM'T.
2%

CUL-DE-SAC DETAIL "A"

SCALE: 1" = 30'

ELEVATIONS:

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

▨ - STREET WASHOUT (SEE DETAIL SHEET C7.D1)

▩ - SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE (DEVELOPER RESPONSIBLE)

TxDOT TYPE "2" WHEEL CHAIR RAMPS ARE INDICATED THUS " ▥ " UNLESS OTHERWISE NOTED. (SHEET C7.D1)

TYPE "10" DIRECTIONAL WHEEL CHAIR RAMPS ARE INDICATED THUS " ▥ " UNLESS OTHERWISE NOTED. (SHEET C7.D1)

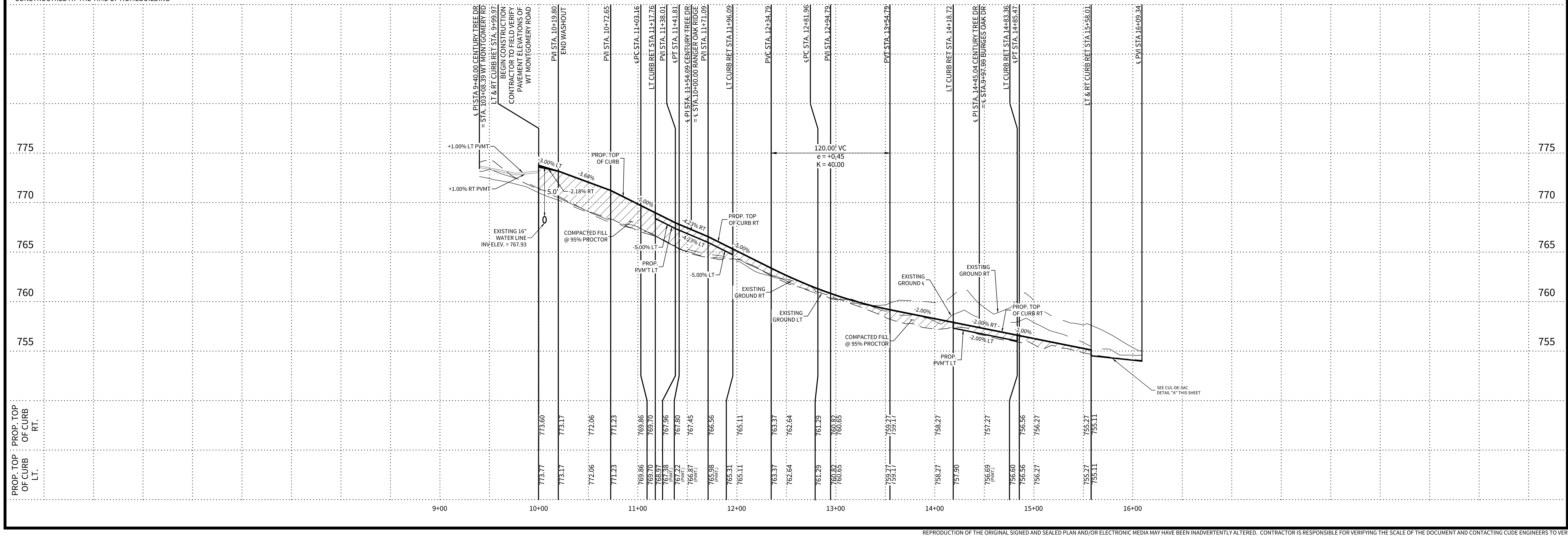
FOR ADA RAMPS AT SIDEWALK INTERSECTIONS .
DETECTABLE WARNING PAVER WITH TRUNCATED DOMES ONLY.
ADA RAMPS TO BE CONSTRUCTED WITH INFRASTRUCTURE.
WHERE RESIDENTIAL LOT FRONTAGE DOES NOT EXIST, ALL ADA RAMPS ADJACENT TO A RESIDENTIAL LOT SHALL BE CONSTRUCTRED AT THE TIME OF HOMEBUILDING

CENTURY TREE DR

STA. 9+40.00 TO STA. 16+09.34

NOTE: A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY RIGHT OF WAY

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



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San Antonio, Texas 78231
P:(210) 681.2951

TRES LAURELS UNIT 4A

STREET PLAN & PROFILE - CENTURY TREE DR

DATE
06/25/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
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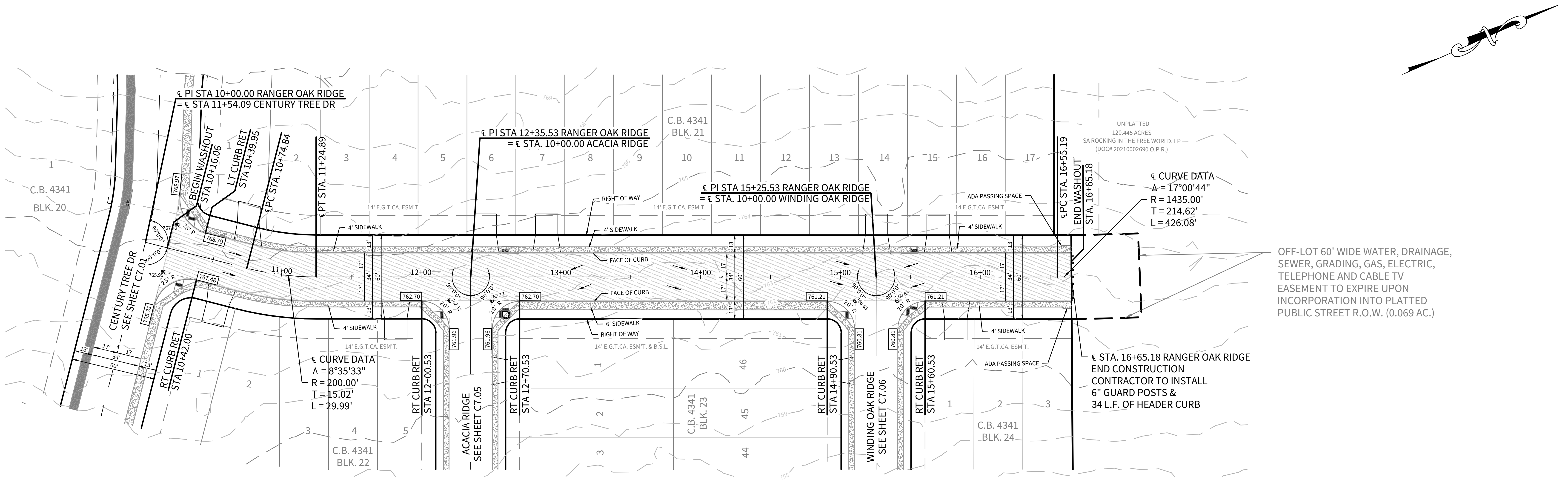
06/25/2024
MATTHEW A. TRINKLE
147558

M. Trinkle

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C7.01


℄ PI STA 10+00.00 RANGER OAK RIDGE
= ℄ STA 11+54.09 CENTURY TREE DR
BEGIN WASHOUT STA 10+16.06
LT CURB RET STA 10+39.95
℄ PC STA. 10+74.84
℄ PT STA. 11+24.89
℄ PI STA 12+35.53 RANGER OAK RIDGE
= ℄ STA. 10+00.00 ACACIA RIDGE
C.B. 4341 BLK. 21
℄ PI STA 15+25.53 RANGER OAK RIDGE
= ℄ STA. 10+00.00 WINDING OAK RIDGE
UNPLATTED 120.445 ACRES SA ROCKING IN THE FREE WORLD, LP (DOC# 20210002690 O.P.R.)
ADA PASSING SPACE
℄ PC STA. 16+55.19
END WASHOUT STA. 16+65.18
℄ CURVE DATA
Δ = 17°00'44"
R = 1435.00'
T = 214.62'
L = 426.08'
OFF-LOT 60' WIDE WATER, DRAINAGE, SEWER, GRADING, GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.069 AC.)
C.B. 4341 BLK. 20
CENTURY TREE DR SEE SHEET C7.01
4' SIDEWALK
RIGHT OF WAY
FACE OF CURB
6' SIDEWALK
14' E.G.T.CA. ESM'T.
14' E.G.T.CA. ESM'T. & B.S.L.
11+00
12+00
13+00
14+00
15+00
16+00
℄ CURVE DATA
Δ = 8°35'33"
R = 200.00'
T = 15.02'
L = 29.99'
RT CURB RET STA 10+42.00
C.B. 4341 BLK. 22
RT CURB RET STA 12+00.53
ACACIA RIDGE SEE SHEET C7.05
RT CURB RET STA 12+70.53
C.B. 4341 BLK. 23
RT CURB RET STA 14+90.53
WINDING OAK RIDGE SEE SHEET C7.06
RT CURB RET STA 15+60.53
C.B. 4341 BLK. 24
℄ STA. 16+65.18 RANGER OAK RIDGE
END CONSTRUCTION
CONTRACTOR TO INSTALL
6" GUARD POSTS &
34 L.F. OF HEADER CURB

ELEVATIONS:

XXXX.XX PROPOSED TOP OF CONCRETE CURB ELEVATION

XXXX.XX PROPOSED ASPHALT PAVEMENT ELEVATION

▨ - STREET WASHOUT (SEE DETAIL SHEET C7.D1)

▩ - SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE (DEVELOPER RESPONSIBLE)

TxDOT TYPE "2" WHEEL CHAIR RAMPS ARE INDICATED THUS " ▥ " UNLESS OTHERWISE NOTED. (SHEET C7.D1)

TYPE "10" DIRECTIONAL WHEEL CHAIR RAMPS ARE INDICATED THUS " ▥ " UNLESS OTHERWISE NOTED. (SHEET C7.D1)

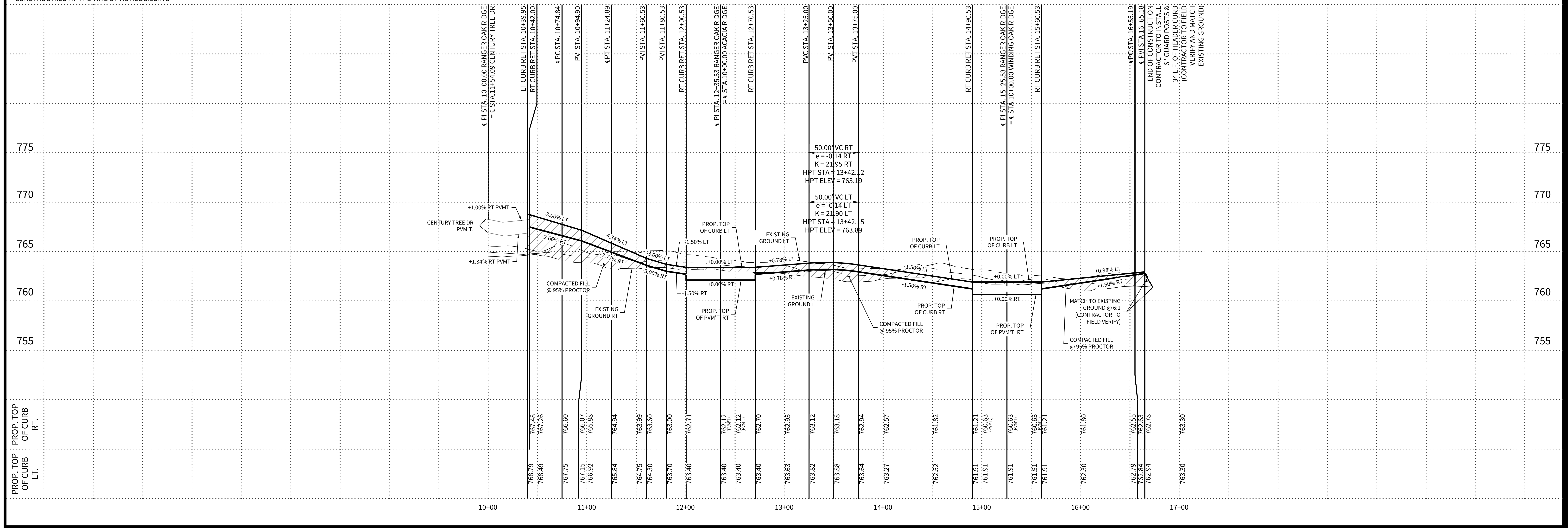
FOR ADA RAMPS AT SIDEWALK INTERSECTIONS .
DETECTABLE WARNING PAVER WITH TRUNCATED DOMES ONLY.
ADA RAMPS TO BE CONSTRUCTED WITH INFRASTRUCTURE.
WHERE RESIDENTIAL LOT FRONTAGE DOES NOT EXIST, ALL ADA RAMPS ADJACENT TO A RESIDENTIAL LOT SHALL BE CONSTRUCTRED AT THE TIME OF HOMEBUILDING

RANGER OAK RIDGE

STA. 10+00.00 TO STA. 16+65.18

NOTE: A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY RIGHT OF WAY

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



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TRES LAURELS UNIT 4A

STREET PLAN & PROFILE - RANGER OAK RIDGE

DATE	06/23/2024
PROJECT NO.	03050.015
DRAWN BY	RM / IV
CHECKED BY	MAT/CJC

REVISIONS
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06/25/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C7.02

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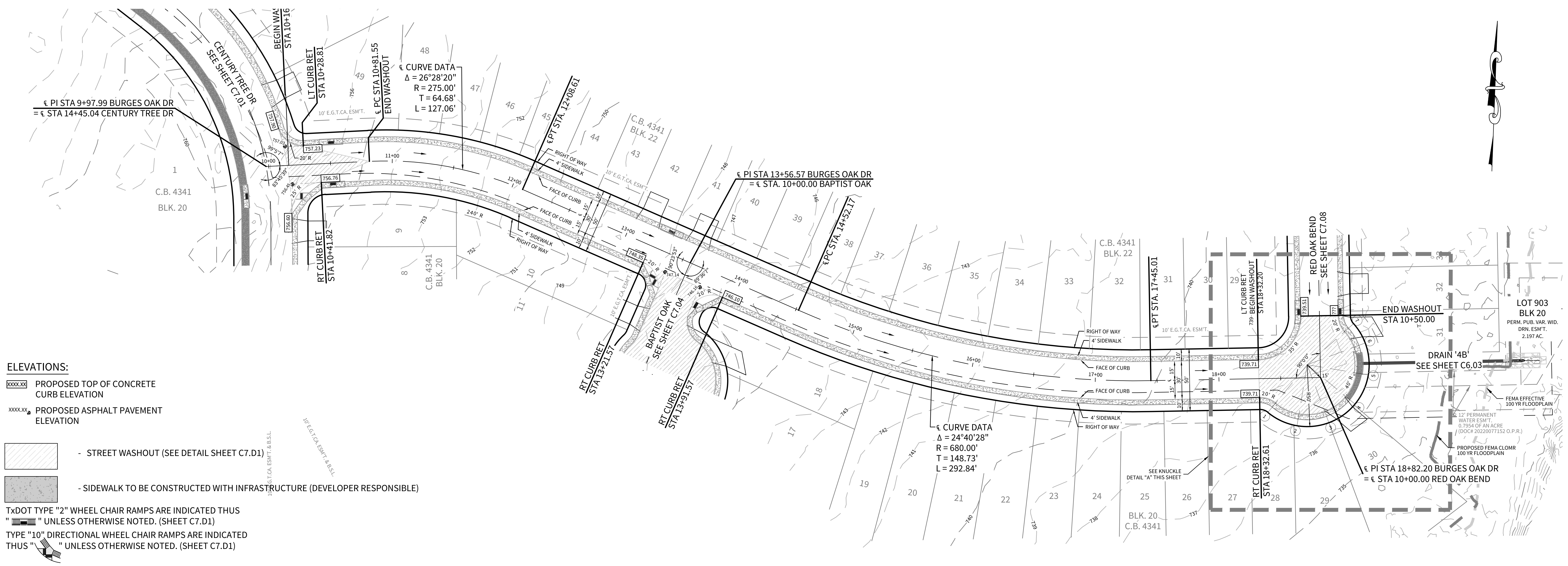


CENTURY TREE DR SEE SHEET C7.01
BEGIN WASHOUT STA 10+16
LT CURB RET STA 10+28.81
PC STA 10+81.55 END WASHOUT
℄ PI STA 9+97.99 BURGES OAK DR = ℄ STA 14+45.04 CENTURY TREE DR
CURVE DATA
Δ = 26°28'20"
R = 275.00'
T = 64.68'
L = 127.06'
PT STA. 12+08.61
C.B. 4341 BLK. 22
℄ PI STA 13+56.57 BURGES OAK DR = ℄ STA. 10+00.00 BAPTIST OAK
PC STA. 14+52.17
C.B. 4341 BLK. 20
RT CURB RET STA 10+41.82
RT CURB RET STA 13+21.57
BAPTIST OAK SEE SHEET C7.04
RT CURB RET STA 13+91.57
RIGHT OF WAY
4' SIDEWALK
FACE OF CURB
10' E.G.T.CA. ESM'T.
CURVE DATA
Δ = 24°40'28"
R = 680.00'
T = 148.73'
L = 292.84'
PT STA. 17+45.01
LT CURB RET BEGIN WASHOUT STA 18+32.20
RED OAK BEND SEE SHEET C7.08
END WASHOUT STA 10+50.00
LOT 903 BLK 20 PERM. PUB. VAR. WID. DRN. ESM'T. 2.197 AC.
DRAIN '4B' SEE SHEET C6.03
FEMA EFFECTIVE 100 YR FLOODPLAIN
12' PERMANENT WATER ESM'T.
PROPOSED FEMA CLOMR 100 YR FLOODPLAIN
RT CURB RET STA 18+32.61
SEE KNUCKLE DETAIL "A" THIS SHEET
℄ PI STA 18+82.20 BURGES OAK DR = ℄ STA 10+00.00 RED OAK BEND
BLK. 20 C.B. 4341

ELEVATIONS:

XXXX.XX PROPOSED TOP OF CONCRETE CURB ELEVATION

XXXX.XX PROPOSED ASPHALT PAVEMENT ELEVATION

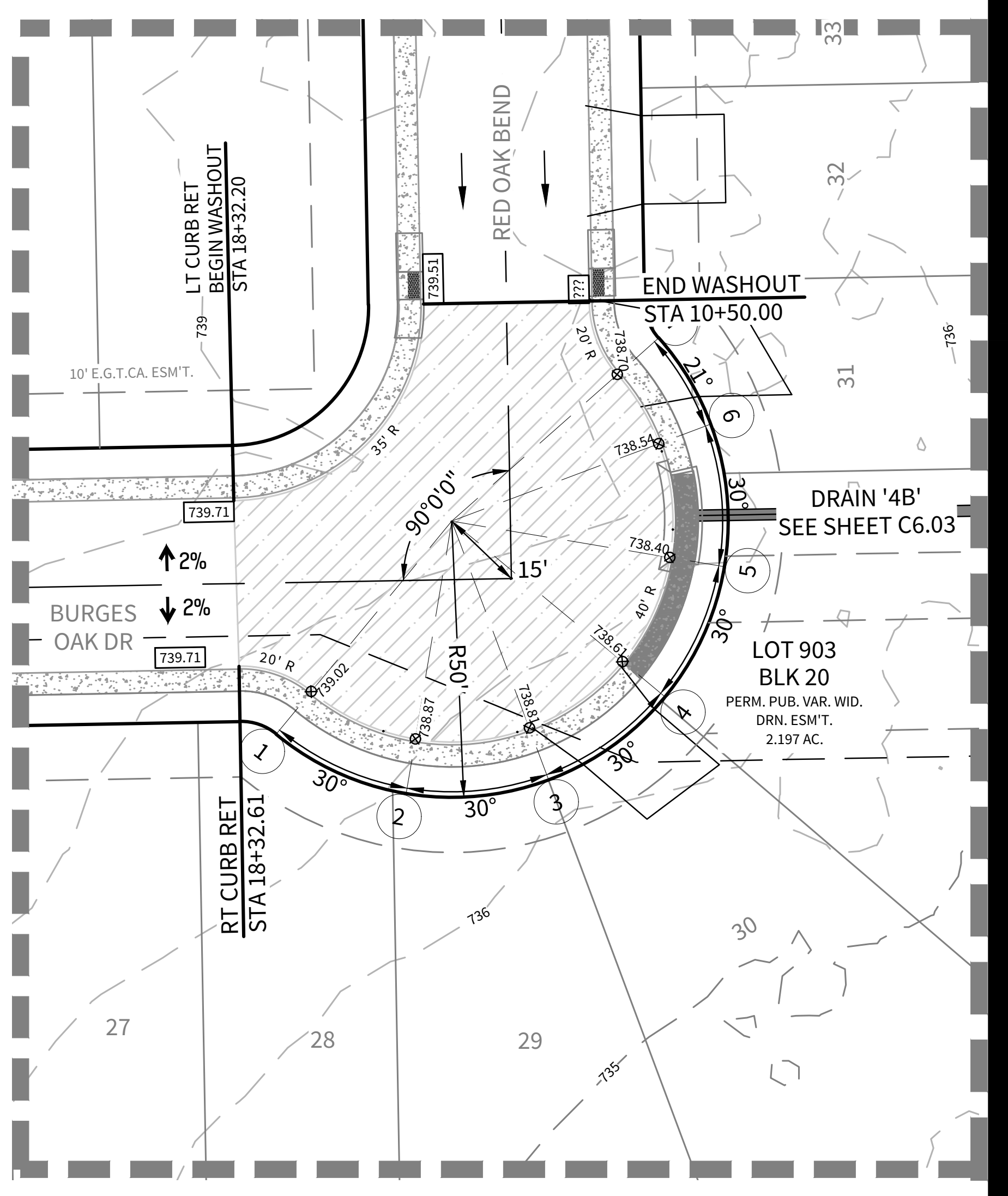
▨ - STREET WASHOUT (SEE DETAIL SHEET C7.D1)

▩ - SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE (DEVELOPER RESPONSIBLE)

TxDOT TYPE "2" WHEEL CHAIR RAMPS ARE INDICATED THUS " ▤ " UNLESS OTHERWISE NOTED. (SHEET C7.D1)

TYPE "10" DIRECTIONAL WHEEL CHAIR RAMPS ARE INDICATED THUS " ▤ " UNLESS OTHERWISE NOTED. (SHEET C7.D1)

FOR ADA RAMPS AT SIDEWALK INTERSECTIONS .
DETECTABLE WARNING PAVER WITH TRUNCATED DOMES ONLY.
ADA RAMPS TO BE CONSTRUCTED WITH INFRASTRUCTURE.
WHERE RESIDENTIAL LOT FRONTAGE DOES NOT EXIST, ALL ADA RAMPS ADJACENT TO A RESIDENTIAL LOT SHALL BE CONSTRUCTRED AT THE TIME OF HOMEBUILDING



LT CURB RET BEGIN WASHOUT STA 18+32.20
RED OAK BEND
END WASHOUT STA 10+50.00
DRAIN '4B' SEE SHEET C6.03
BURGES OAK DR
2%
90°0'0"
15'
R50'
30'
LOT 903 BLK 20 PERM. PUB. VAR. WID. DRN. ESM'T. 2.197 AC.
RT CURB RET STA 18+32.61
739.71
27
28
29
30
31
32

KNUCKLE DETAIL "A"

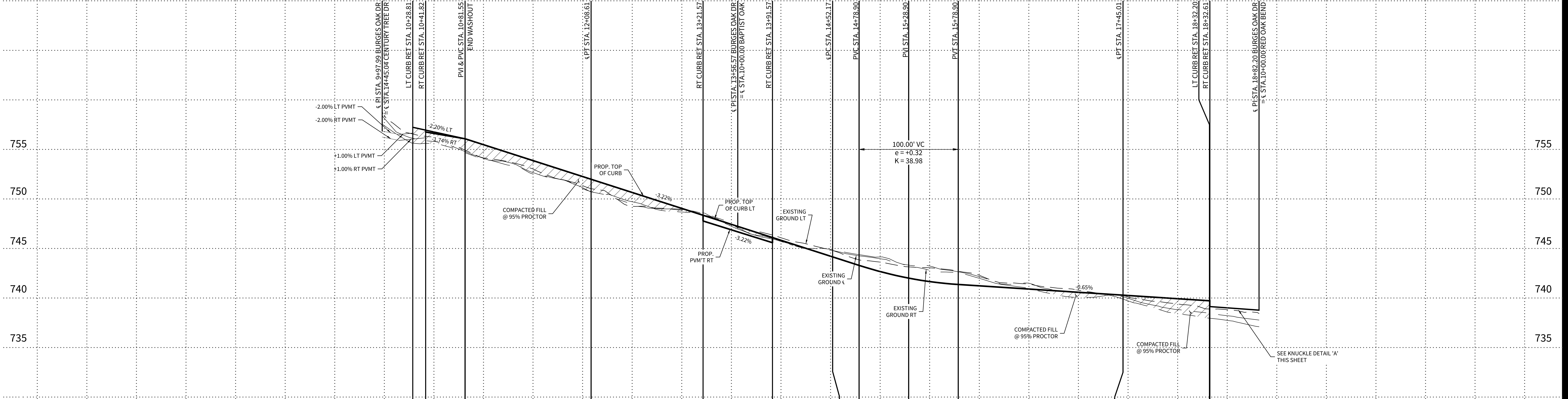
SCALE: 1" = 30'

BURGES OAK DR

STA. 9+97.99 TO STA. 18+82.20

NOTE: A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY RIGHT OF WAY

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



℄ PI STA. 9+97.99 BURGES OAK DR = ℄ STA.14+45.04 CENTURY TREE DR
LT CURB RET STA. 10+28.81
RT CURB RET STA. 10+41.82
PVI & PVC STA. 10+81.55 END WASHOUT
℄ PT STA. 12+08.61
RT CURB RET STA. 13+21.57
℄ PI STA. 13+56.57 BURGES OAK DR = ℄ STA.10+00.00 BAPTIST OAK
RT CURB RET STA. 13+91.57
℄ PC STA. 14+52.17
PVC STA. 14+78.90
PVI STA. 15+28.90
PVT STA. 15+78.90
℄ PT STA. 17+45.01
LT CURB RET STA. 18+32.20
RT CURB RET STA. 18+32.61
℄ PI STA. 18+82.20 BURGES OAK DR = ℄ STA.10+00.00 RED OAK BEND
-2.00% LT PVMT
-2.00% RT PVMT
+1.00% LT PVMT
+1.00% RT PVMT
-2.20% LT
-1.74% RT
100.00' VC
e = +0.32
K = 38.98
PROP. TOP OF CURB
-3.22%
PROP. TOP OF CURB LT
EXISTING GROUND LT
COMPACTED FILL @ 95% PROCTOR
PROP. PVM'T RT
-3.22%
EXISTING GROUND ℄
EXISTING GROUND RT
-0.65%
COMPACTED FILL @ 95% PROCTOR
COMPACTED FILL @ 95% PROCTOR
SEE KNUCKLE DETAIL 'A' THIS SHEET
755
750
745
740
735
10+00
11+00
12+00
13+00
14+00
15+00
16+00
17+00
18+00
19+00

PROP. TOP OF CURB RT.	PROP. TOP OF CURB LT.
	757.23
756.76	
756.62	756.76
756.07	756.07
755.47	755.47
753.87	753.87
752.26	752.26
751.98	751.98
750.65	750.65
749.04	749.04
748.35	
746.85 (PVMT.)	747.44
746.10	
745.83	745.83
744.22	744.22
744.15	744.15
743.29	743.29
742.67	742.67
742.00	742.00
741.65	741.65
741.36	741.36
741.22	741.22
740.90	740.90
740.57	740.57
740.28	740.28
740.25	740.25
739.92	739.92
739.71	739.71

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CUDE ENGINEERS EST. 1980

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

TRES LAURELS UNIT 4A

STREET PLAN & PROFILE - BURGES OAK DR

DATE
06/23/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
1.
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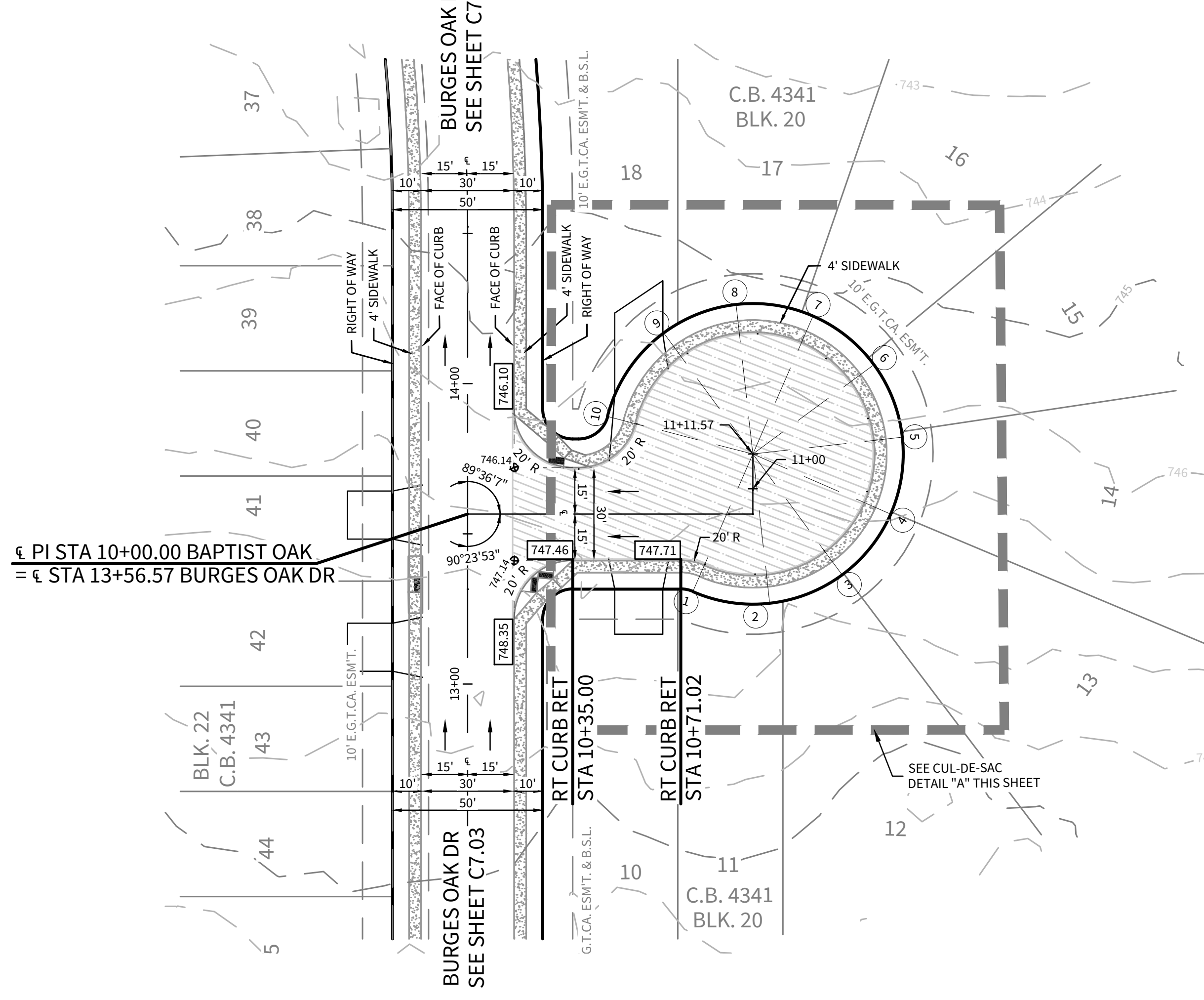
06/25/2024
MATTHEW A. TRINKLE
147558
M. Trinkle

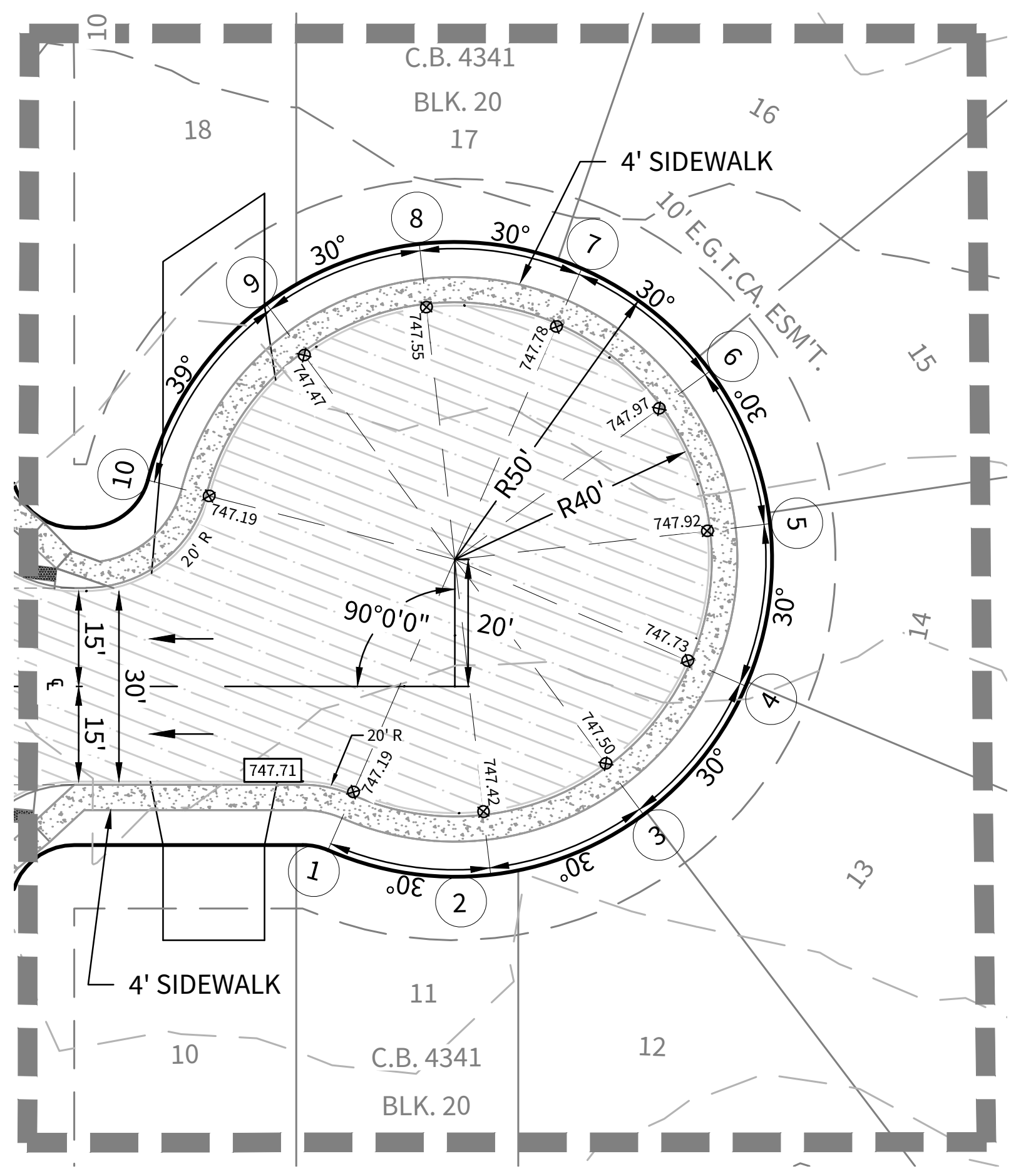
CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C7.03

P:\03050\015\2-DWG\4-Plans\03_S02 STP.dwg 2024/06/23 9:03pm ivilla





CUL-DE-SAC DETAIL "A"

SCALE: 1" = 30'

ELEVATIONS:

XXXX.XX PROPOSED TOP OF CONCRETE CURB ELEVATION

XXXX.XX PROPOSED ASPHALT PAVEMENT ELEVATION

▨ - STREET WASHOUT (SEE DETAIL SHEET C7.D1)

▩ - SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE (DEVELOPER RESPONSIBLE)

TxDOT TYPE "2" WHEEL CHAIR RAMPS ARE INDICATED THUS " ▥ " UNLESS OTHERWISE NOTED. (SHEET C7.D1)

TYPE "10" DIRECTIONAL WHEEL CHAIR RAMPS ARE INDICATED THUS " ▥ " UNLESS OTHERWISE NOTED. (SHEET C7.D1)

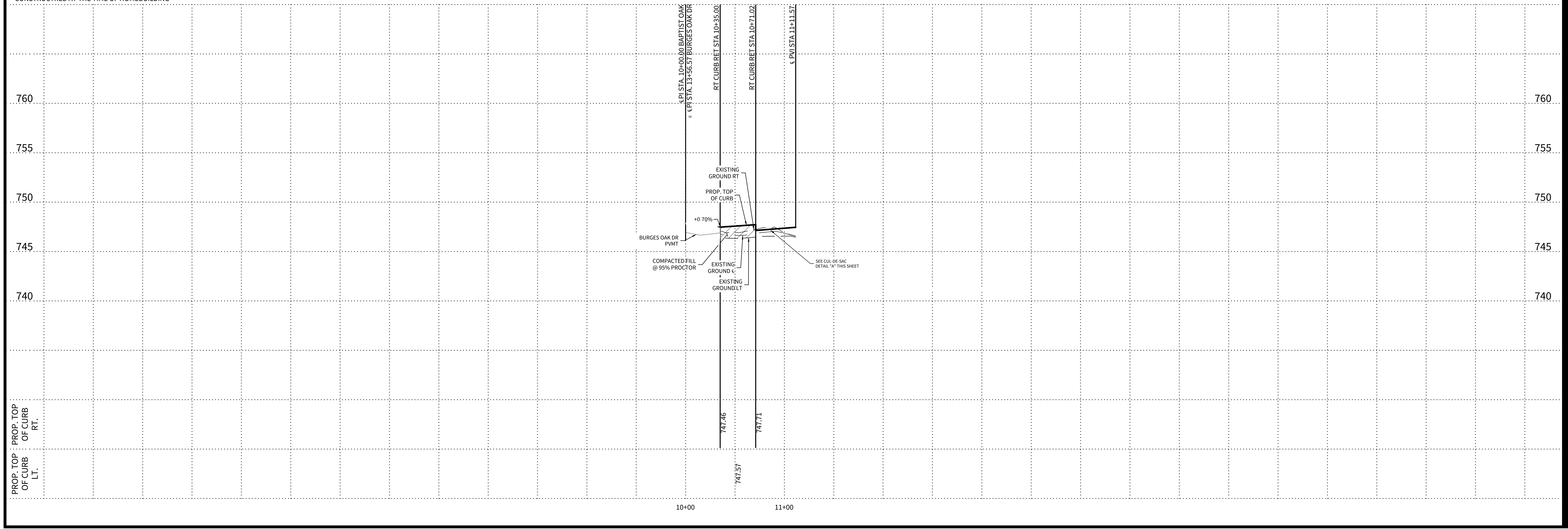
FOR ADA RAMPS AT SIDEWALK INTERSECTIONS .
DETECTABLE WARNING PAVER WITH TRUNCATED DOMES ONLY.
ADA RAMPS TO BE CONSTRUCTED WITH INFRASTRUCTURE.
WHERE RESIDENTIAL LOT FRONTAGE DOES NOT EXIST, ALL ADA RAMPS ADJACENT TO A RESIDENTIAL LOT SHALL BE CONSTRUCTRED AT THE TIME OF HOMEBUILDING

BAPTIST OAK

STA. 10+00.00 TO STA. 11+11.57

NOTE: A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY RIGHT OF WAY

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



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EST. 1980

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

TRES LAURELS UNIT 4A

STREET PLAN & PROFILE - BAPTIST OAK

DATE	06/21/2024
PROJECT NO.	03050.015
DRAWN BY	RM / IV
CHECKED BY	MAT/CJC

REVISIONS

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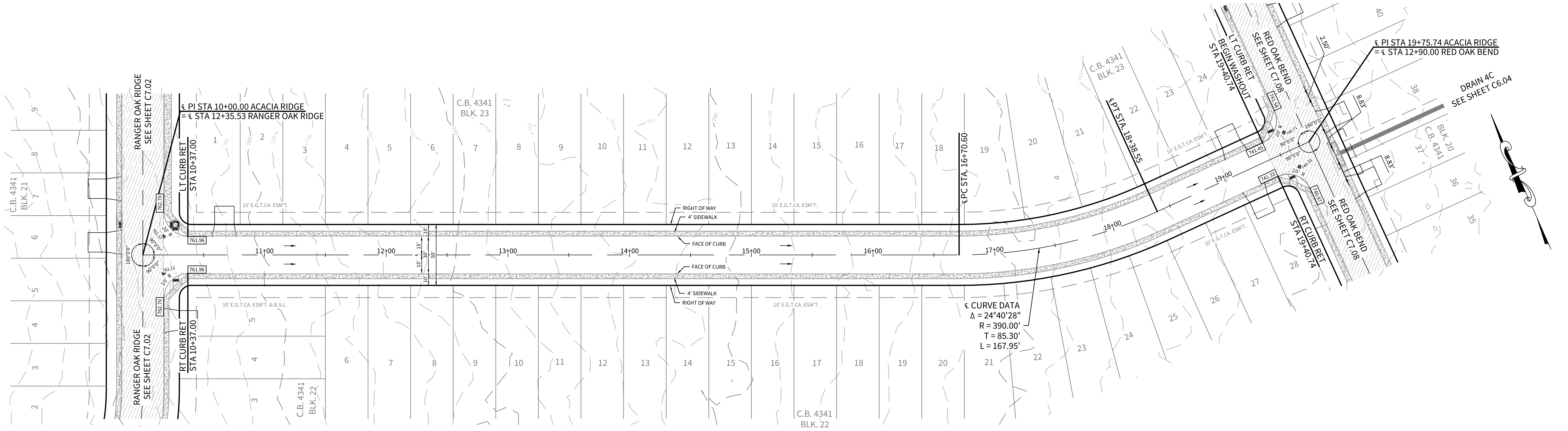
06/25/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C7.04

P:\03050\015\2-DWG\4-Plans\03_S09 STP.dwg 2024/06/21 11:15am ivilla



ELEVATIONS:

▨ PROPOSED TOP OF CONCRETE CURB ELEVATION

XXX.XX PROPOSED ASPHALT PAVEMENT ELEVATION

▨ - STREET WASHOUT (SEE DETAIL SHEET C7.D1)

▨ - SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE (DEVELOPER RESPONSIBLE)

TxDOT TYPE "2" WHEEL CHAIR RAMPS ARE INDICATED THUS "▬" UNLESS OTHERWISE NOTED. (SHEET C7.D1)

TYPE "10" DIRECTIONAL WHEEL CHAIR RAMPS ARE INDICATED THUS "◣" UNLESS OTHERWISE NOTED. (SHEET C7.D1)

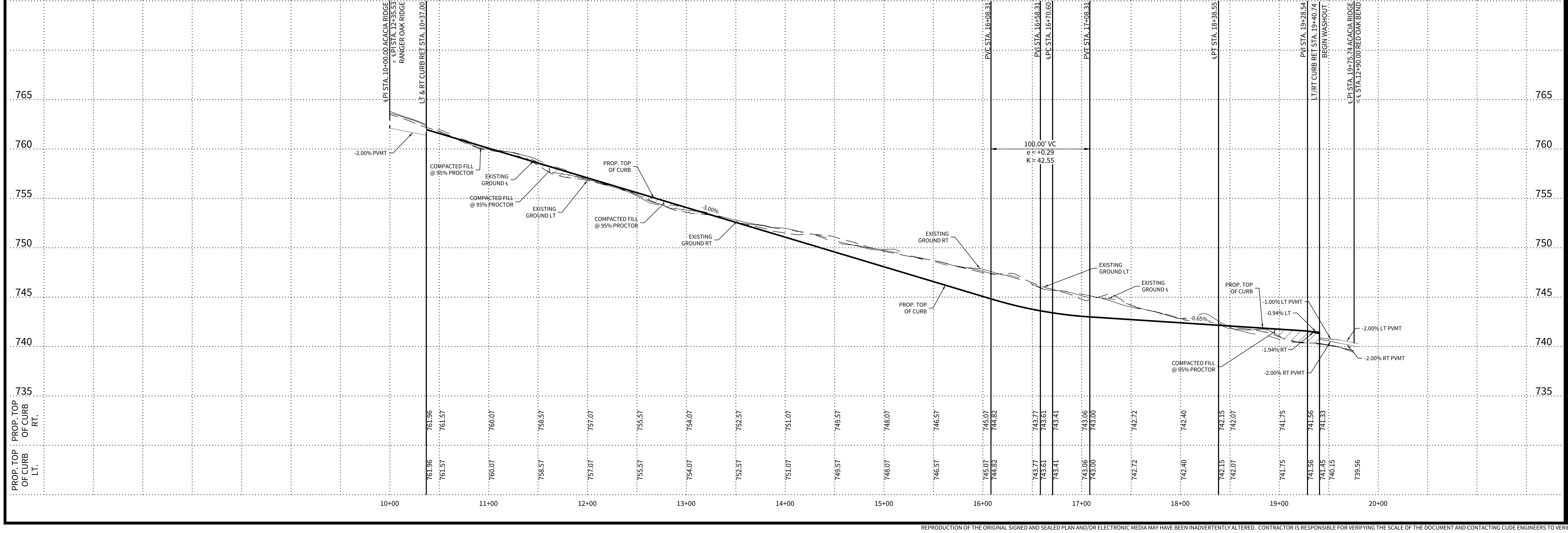
FOR ADA RAMPS AT SIDEWALK INTERSECTIONS. DETECTABLE WARNING PAVER WITH TRUNCATED DOMES ONLY. ADA RAMPS TO BE CONSTRUCTED WITH INFRASTRUCTURE. WHERE RESIDENTIAL LOT FRONTAGE DOES NOT EXIST, ALL ADA RAMPS ADJACENT TO A RESIDENTIAL LOT SHALL BE CONSTRUCTRED AT THE TIME OF HOMEBUILDING

ACACIA RIDGE

STA. 10+00.00 TO STA. 19+75.74

NOTE: A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY RIGHT OF WAY

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



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San Antonio, Texas 78231
P:(210) 681.2951

TRES LAURELS UNIT 4A

STREET PLAN & PROFILE - ACACIA RIDGE

DATE	06/21/2024
PROJECT NO.	03050.015
DRAWN BY	RM / IV
CHECKED BY	MAT/CJC

REVISIONS
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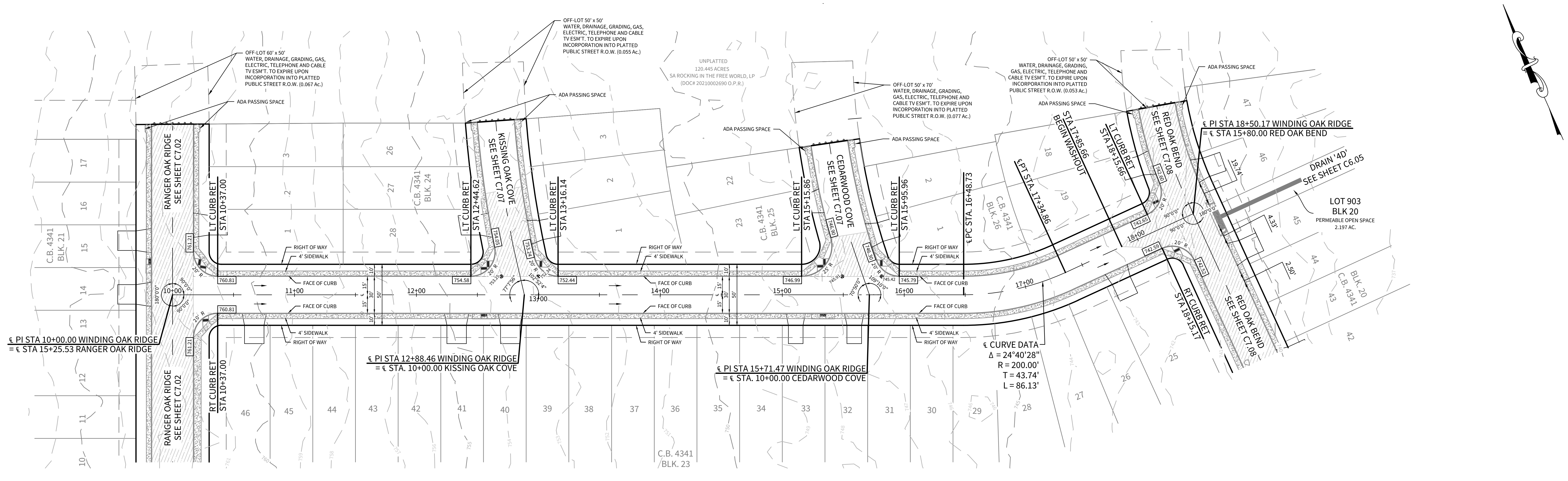
06/25/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C7.05



OFF-LOT 60' x 50' WATER, DRAINAGE, GRADING, GAS, ELECTRIC, TELEPHONE AND CABLE TV ESM'T. TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.067 Ac.)
OFF-LOT 50' x 50' WATER, DRAINAGE, GRADING, GAS, ELECTRIC, TELEPHONE AND CABLE TV ESM'T. TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.055 Ac.)
UNPLATTED 120.445 ACRES SA ROCKING IN THE FREE WORLD, LP (DOC# 20210002680 O.P.R.)
OFF-LOT 50' x 70' WATER, DRAINAGE, GRADING, GAS, ELECTRIC, TELEPHONE AND CABLE TV ESM'T. TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.077 Ac.)
OFF-LOT 50' x 50' WATER, DRAINAGE, GRADING, GAS, ELECTRIC, TELEPHONE AND CABLE TV ESM'T. TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.053 Ac.)
ADA PASSING SPACE
RANGER OAK RIDGE SEE SHEET C7.02
LT CURB RET STA 10+37.00
RT CURB RET STA 10+37.00
KISSING OAK COVE SEE SHEET C7.07
LT CURB RET STA 12+44.62
LT CURB RET STA 13+16.14
CEDARWOOD COVE SEE SHEET C7.07
LT CURB RET STA 15+15.86
LT CURB RET STA 15+95.96
℄ PC STA. 16+48.73
℄ PT STA. 17+34.96
STA 17+85.66 BEGIN WASHOUT
LT CURB RET STA 18+15.66
RED OAK BEND SEE SHEET C7.08
RT CURB RET STA 18+15.17
℄ PI STA 18+50.17 WINDING OAK RIDGE = ℄ STA 15+80.00 RED OAK BEND
DRAIN '4D' SEE SHEET C6.05
LOT 903 BLK 20 PERMEABLE OPEN SPACE 2.197 AC.
C.B. 4341 BLK. 21
C.B. 4341 BLK. 24
C.B. 4341 BLK. 25
C.B. 4341 BLK. 26
C.B. 4341 BLK. 23
BLK. 20 C.B. 4341
RIGHT OF WAY
4' SIDEWALK
FACE OF CURB
10+00
11+00
12+00
13+00
14+00
15+00
16+00
17+00
18+00
℄ PI STA 10+00.00 WINDING OAK RIDGE = ℄ STA 15+25.53 RANGER OAK RIDGE
℄ PI STA 12+88.46 WINDING OAK RIDGE = ℄ STA. 10+00.00 KISSING OAK COVE
℄ PI STA 15+71.47 WINDING OAK RIDGE = ℄ STA. 10+00.00 CEDARWOOD COVE
℄ CURVE DATA
Δ = 24°40'28"
R = 200.00'
T = 43.74'
L = 86.13'

ELEVATIONS:

- xxx.xx PROPOSED TOP OF CONCRETE CURB ELEVATION
- xxx.xx PROPOSED ASPHALT PAVEMENT ELEVATION

▨	- STREET WASHOUT (SEE DETAIL SHEET C7.D1)
▩	- SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE (DEVELOPER RESPONSIBLE)

TxDOT TYPE "2" WHEEL CHAIR RAMPS ARE INDICATED THUS " ▬ " UNLESS OTHERWISE NOTED. (SHEET C7.D1)
TYPE "10" DIRECTIONAL WHEEL CHAIR RAMPS ARE INDICATED THUS " ◣ " UNLESS OTHERWISE NOTED. (SHEET C7.D1)

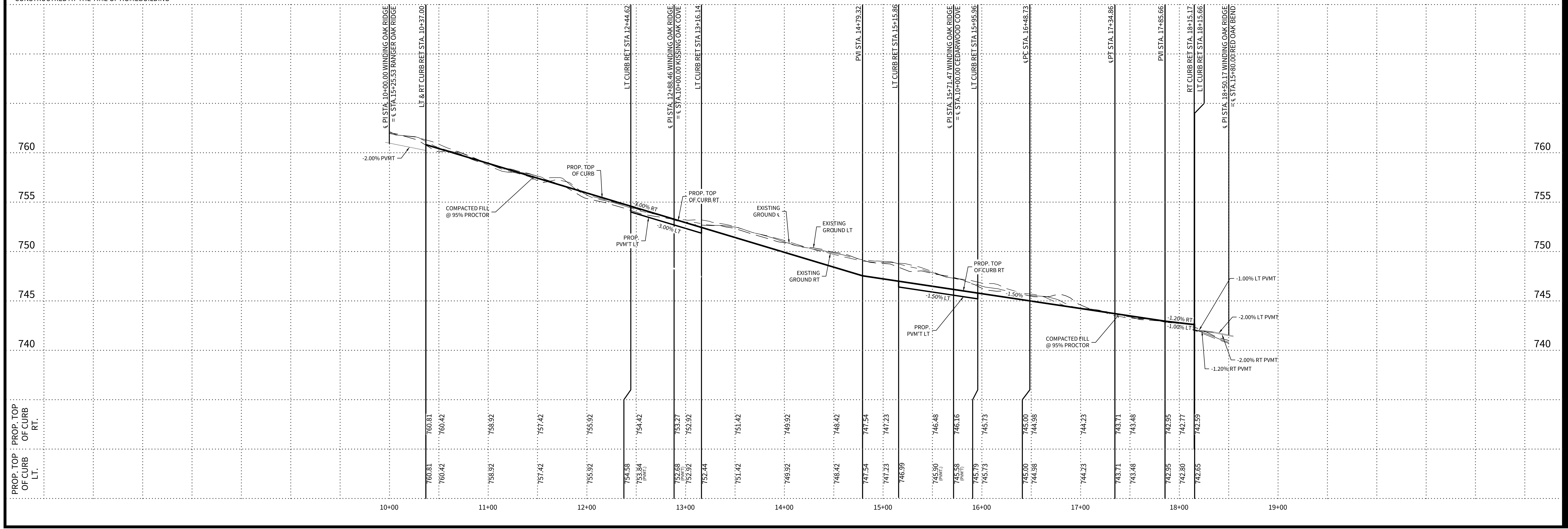
FOR ADA RAMPS AT SIDEWALK INTERSECTIONS . DETECTABLE WARNING PAVER WITH TRUNCATED DOMES ONLY. ADA RAMPS TO BE CONSTRUCTED WITH INFRASTRUCTURE. WHERE RESIDENTIAL LOT FRONTAGE DOES NOT EXIST, ALL ADA RAMPS ADJACENT TO A RESIDENTIAL LOT SHALL BE CONSTRUCTRED AT THE TIME OF HOMEBUILDING

WINDING OAK RIDGE

STA. 10+00.00 TO STA. 18+50.17

NOTE: A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY RIGHT OF WAY

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



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San Antonio, Texas 78231
P:(210) 681.2951

TRES LAURELS UNIT 4A

STREET PLAN & PROFILE - WINDING OAK RIDGE

DATE	06/23/2024
PROJECT NO.	03050.015
DRAWN BY	RM / IV
CHECKED BY	MAT/CJC

REVISIONS

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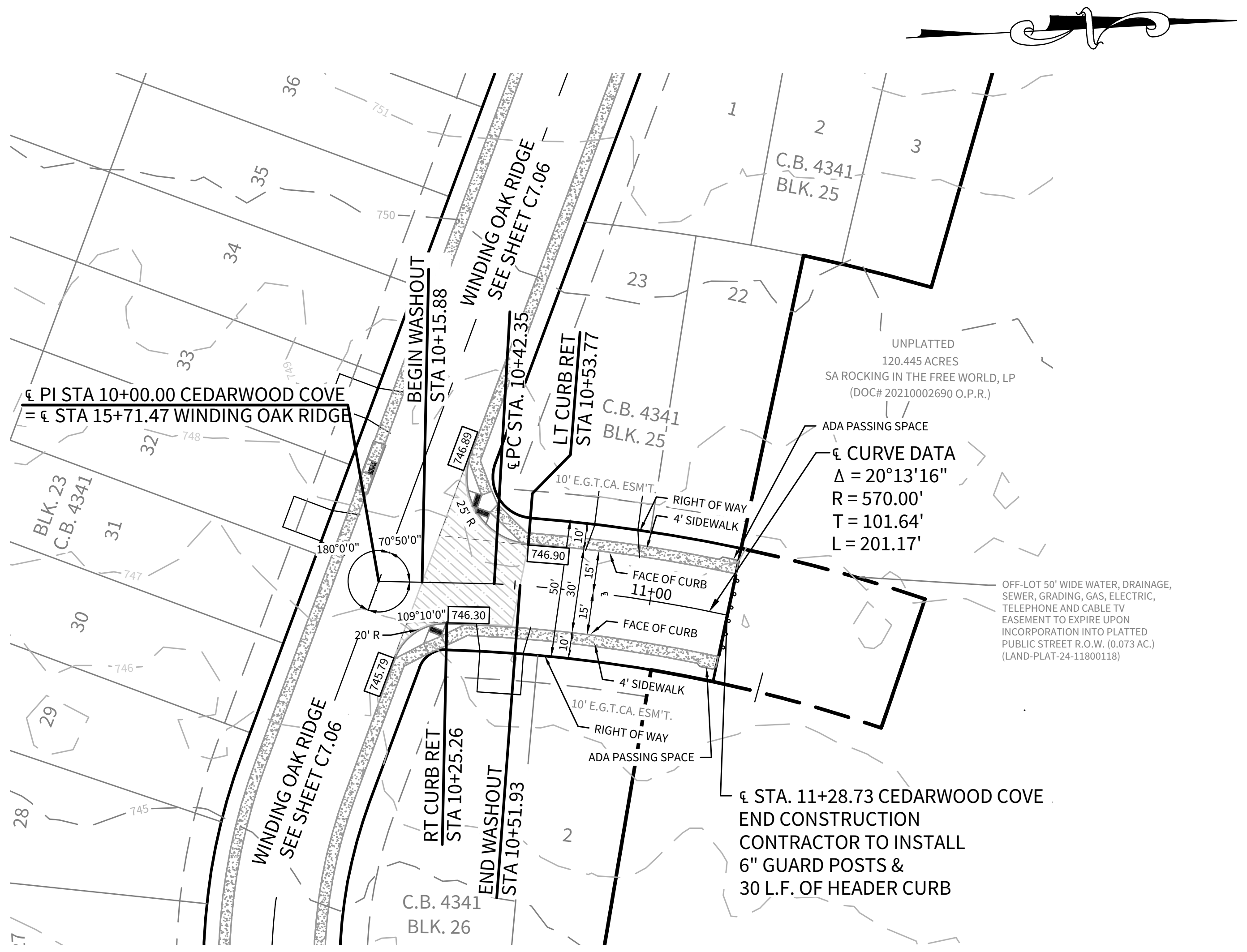
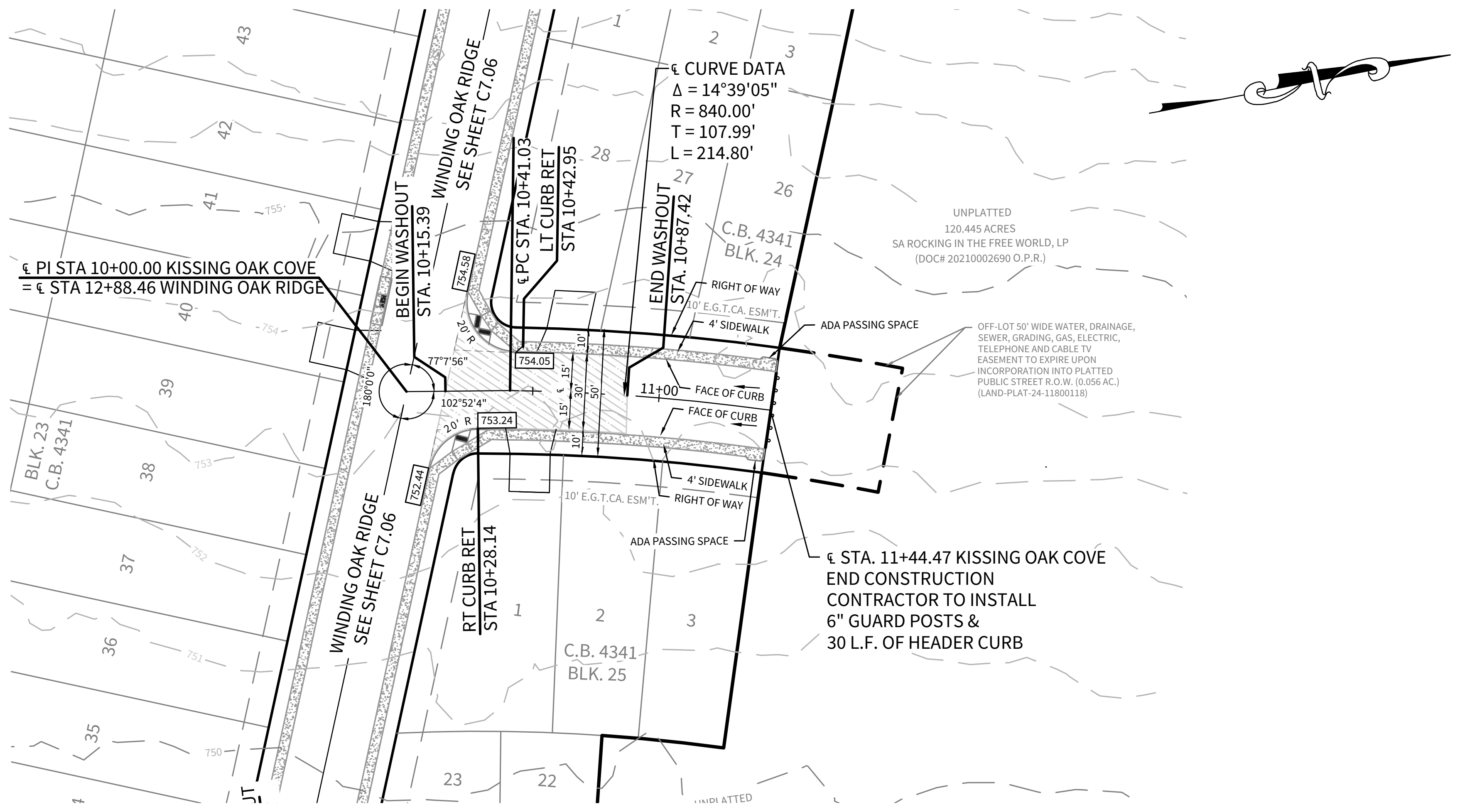
06/25/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C7.06





ELEVATIONS:

XXXX.XX PROPOSED TOP OF CONCRETE CURB ELEVATION

XXXX.XX PROPOSED ASPHALT PAVEMENT ELEVATION

▨ - STREET WASHOUT (SEE DETAIL SHEET C7.D1)

▨ - SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE (DEVELOPER RESPONSIBLE)

TxDOT TYPE "2" WHEEL CHAIR RAMPS ARE INDICATED THUS " ▥ " UNLESS OTHERWISE NOTED. (SHEET C7.D1)

TYPE "10" DIRECTIONAL WHEEL CHAIR RAMPS ARE INDICATED THUS " ▥ " UNLESS OTHERWISE NOTED. (SHEET C7.D1)

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DETECTABLE WARNING PAVER WITH TRUNCATED DOMES ONLY.
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CEDARWOOD COVE

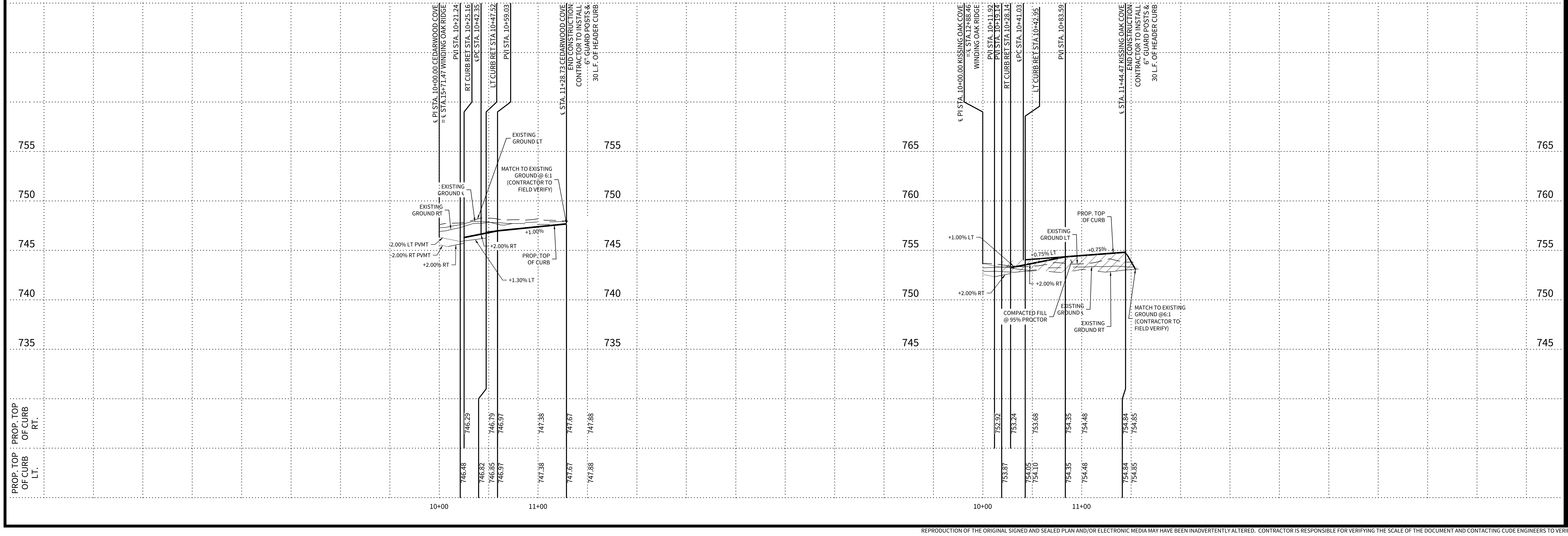
STA. 10+00.00 TO STA. 11+28.73

KISSING OAK COVE

STA. 10+00.00 TO STA. 11+44.47

NOTE: A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY RIGHT OF WAY

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



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ENGINEERS

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San Antonio, Texas 78231
P:(210) 681.2951

TRES LAURELS
UNIT 4A

STREET PLAN & PROFILE - KISSING OAK COVE & CEDARWOOD COVE

DATE	06/23/2024
PROJECT NO.	03050.015
DRAWN BY	RM / IV
CHECKED BY	MAT/CJC

REVISIONS
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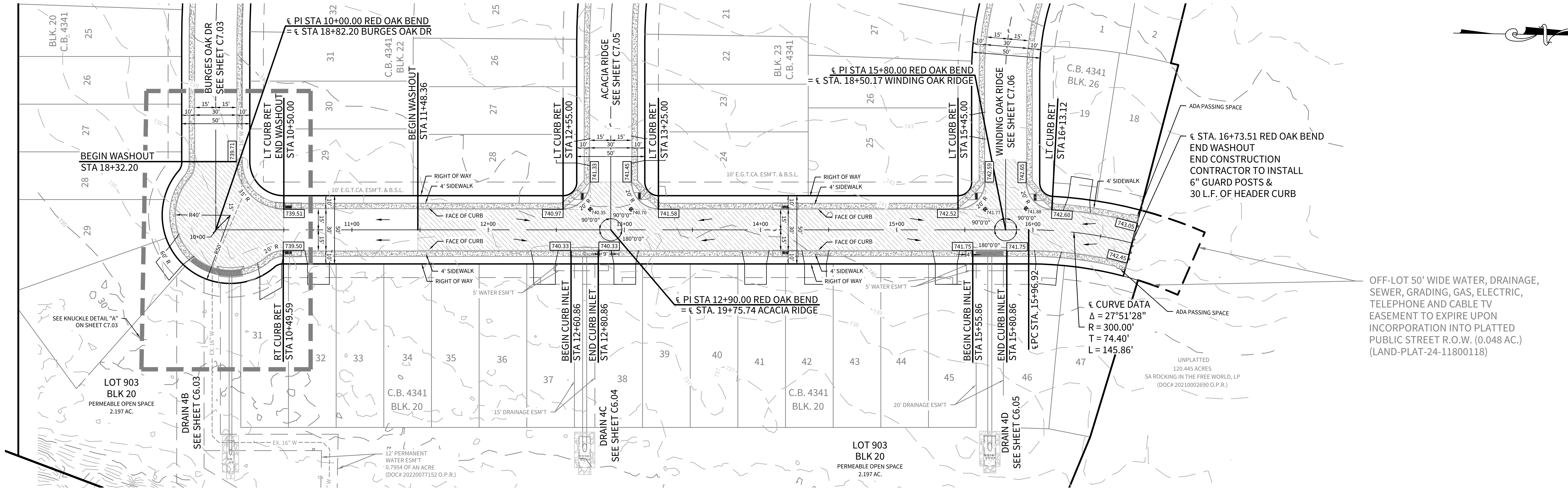
06/25/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C7.07



℄ PI STA 10+00.00 RED OAK BEND = ℄ STA 18+82.20 BURGES OAK DR
BURGES OAK DR SEE SHEET C7.03
BEGIN WASHOUT STA 18+32.20
LT CURB RET END WASHOUT STA 10+50.00
BEGIN WASHOUT STA 11+48.36
LT CURB RET STA 12+55.00
ACACIA RIDGE SEE SHEET C7.05
LT CURB RET STA 13+25.00
℄ PI STA 15+80.00 RED OAK BEND = ℄ STA. 18+50.17 WINDING OAK RIDGE
LT CURB RET STA 15+45.00
WINDING OAK RIDGE SEE SHEET C7.06
LT CURB RET STA 16+13.12
℄ STA. 16+73.51 RED OAK BEND END WASHOUT END CONSTRUCTION CONTRACTOR TO INSTALL 6" GUARD POSTS & 30 L.F. OF HEADER CURB
ADA PASSING SPACE
RIGHT OF WAY
4' SIDEWALK
FACE OF CURB
SEE KNUCKLE DETAIL "A" ON SHEET C7.03
RT CURB RET STA 10+49.59
BEGIN CURB INLET STA 12+60.86
END CURB INLET STA 12+80.86
℄ PI STA 12+90.00 RED OAK BEND = ℄ STA. 19+75.74 ACACIA RIDGE
BEGIN CURB INLET STA 15+55.86
END CURB INLET STA 15+80.86
℄ PC STA. 15+96.92
℄ CURVE DATA
Δ = 27°51'28"
R = 300.00'
T = 74.40'
L = 145.86'
OFF-LOT 50' WIDE WATER, DRAINAGE, SEWER, GRADING, GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.048 AC.) (LAND-PLAT-24-11800118)
UNPLATTED 120.445 ACRES SA ROCKING IN THE FREE WORLD, LP (DOC# 20210002690 O.P.R.)
LOT 903 BLK 20 PERMEABLE OPEN SPACE 2.197 AC.
DRAIN 4B SEE SHEET C6.03
DRAIN 4C SEE SHEET C6.04
DRAIN 4D SEE SHEET C6.05
C.B. 4341 BLK. 20
C.B. 4341 BLK. 22
C.B. 4341 BLK. 23
C.B. 4341 BLK. 26
12' PERMANENT WATER ESM'T 0.7054 OF AN ACRE (DOC# 20220077152 O.P.R.)
15' DRAINAGE ESM'T
20' DRAINAGE ESM'T
5' WATER ESM'T
10' E.G.T.CA. ESM'T. & B.S.L.
739.51
739.50
740.97
740.33
741.58
742.52
741.75
742.60
743.05
742.45

ELEVATIONS:

▭ PROPOSED TOP OF CONCRETE CURB ELEVATION

xxx.xx PROPOSED ASPHALT PAVEMENT ELEVATION

▨ - STREET WASHOUT (SEE DETAIL SHEET C7.D1)

▩ - SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE (DEVELOPER RESPONSIBLE)

TxDOT TYPE "2" WHEEL CHAIR RAMPS ARE INDICATED THUS " " UNLESS OTHERWISE NOTED. (SHEET C7.D1)
TYPE "10" DIRECTIONAL WHEEL CHAIR RAMPS ARE INDICATED THUS " " UNLESS OTHERWISE NOTED. (SHEET C7.D1)

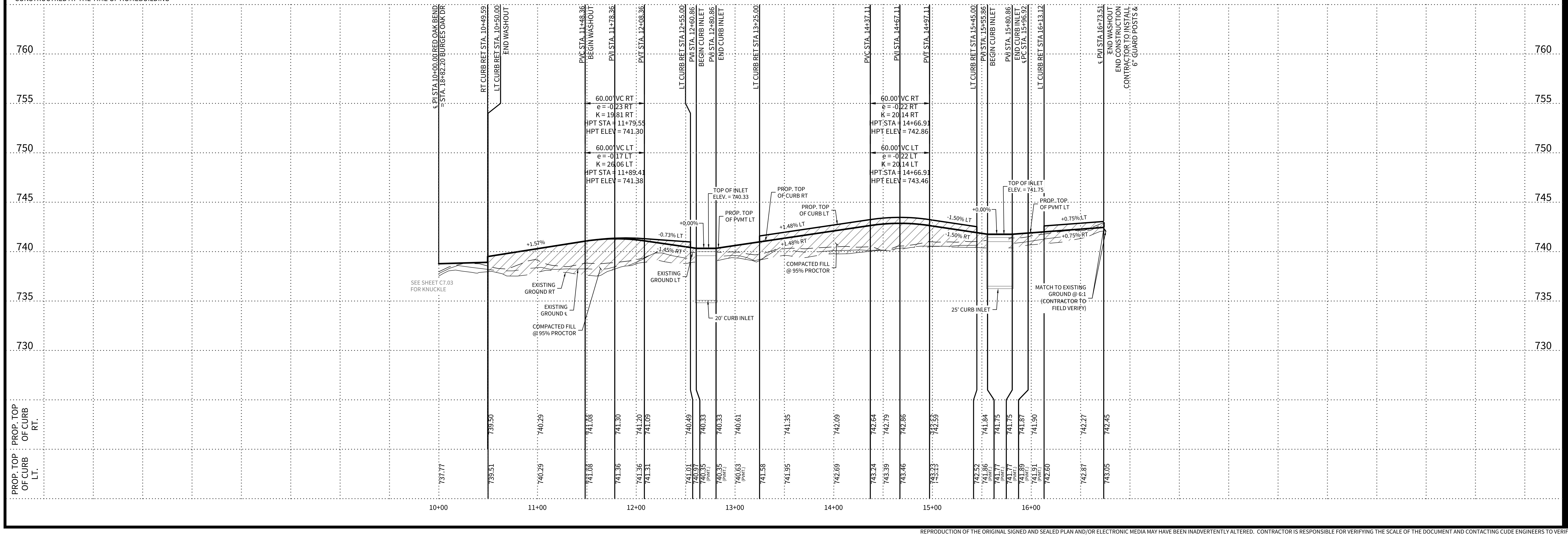
FOR ADA RAMPS AT SIDEWALK INTERSECTIONS. DETECTABLE WARNING PAVER WITH TRUNCATED DOMES ONLY. ADA RAMPS TO BE CONSTRUCTED WITH INFRASTRUCTURE. WHERE RESIDENTIAL LOT FRONTAGE DOES NOT EXIST, ALL ADA RAMPS ADJACENT TO A RESIDENTIAL LOT SHALL BE CONSTRUCTRED AT THE TIME OF HOMEBUILDING

RED OAK BEND

STA. 10+00.00 TO STA. 16+73.51

NOTE: A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY RIGHT OF WAY

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



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

TRES LAURELS UNIT 4A

STREET PLAN & PROFILE - RED OAK BEND

DATE	06/23/2024
PROJECT NO.	03050.015
DRAWN BY	RM / IV
CHECKED BY	MAT/CJC

REVISIONS
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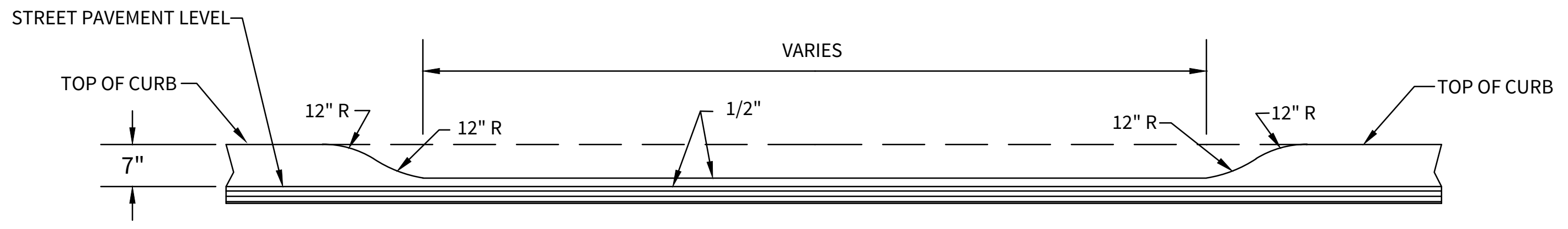
06/25/2024
MATTHEW A. TRINKLE
147558

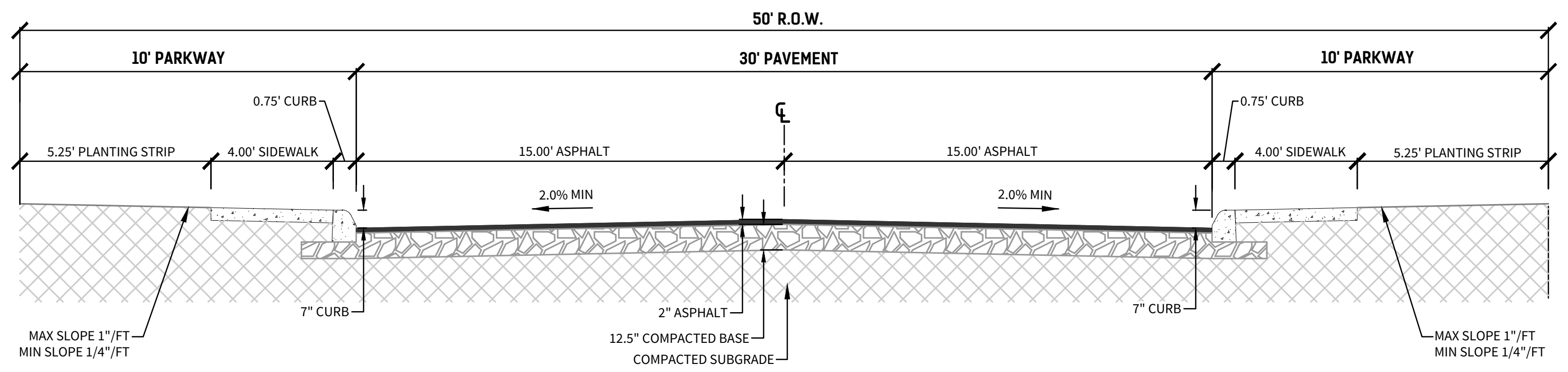
CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C7.08

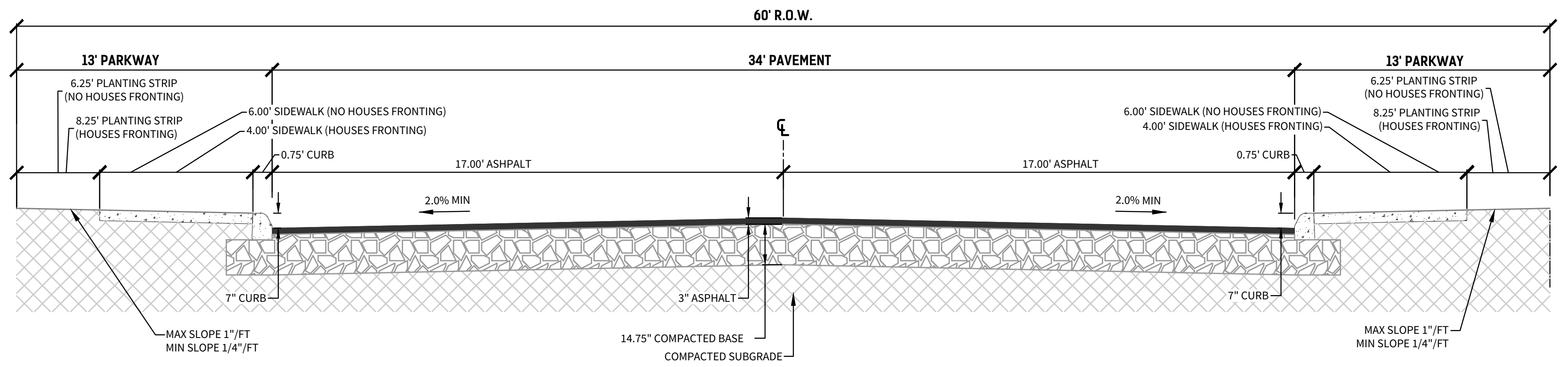


TYPICAL DRIVEWAY CUT SECTION



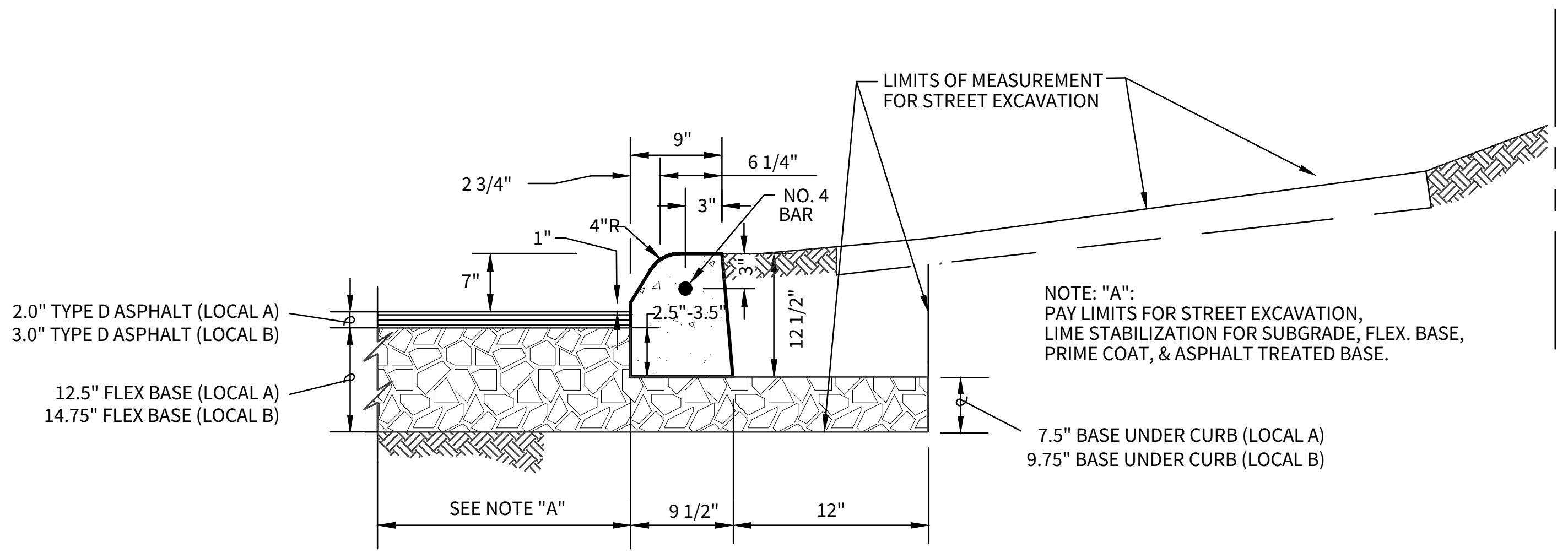
TYPICAL "LOCAL A" STREET CROSS SECTION

1" = 5'



TYPICAL LOCAL "B" STREET CROSS SECTION

1" = 5'


LIMITS OF MEASUREMENT
FOR STREET EXCAVATION
9"
6 1/4"
2 3/4"
3"
NO. 4
BAR
4"R
1"
7"
2.0" TYPE D ASPHALT (LOCAL A)
3.0" TYPE D ASPHALT (LOCAL B)
2.5"-3.5"
3"
12 1/2"
12.5" FLEX BASE (LOCAL A)
14.75" FLEX BASE (LOCAL B)
7.5" BASE UNDER CURB (LOCAL A)
9.75" BASE UNDER CURB (LOCAL B)
SEE NOTE "A"
9 1/2"
12"

NOTE: "A":
PAY LIMITS FOR STREET EXCAVATION,
LIME STABILIZATION FOR SUBGRADE, FLEX. BASE,
PRIME COAT, & ASPHALT TREATED BASE.

CURB SECTIONS

N.T.S.

STREET PAVEMENT DESIGN OPTIONS

GEOTECH ENGINEER WILL BE PRESENT TO DETERMINE IF LIME STABILIZATION IS REQUIRED. IF LIME STABILIZATION IS REQUIRED, BEXAR COUNTY PUBLIC WORKS WILL BE INFORMED OF ALL CHANGES. REVISIONS WILL BE SUBMITTED INDICATING WHERE LIME STABILIZATION WAS USED, ALONG WITH STATIONING. CONTRACTOR TO REVIEW GEOTECH RECOMMENDATIONS PRIOR TO FINAL SUBGRADE PREP. (REF. FROST GEOSCIENCES, INC. PROJECT #FGS-G-20016 JULY 23RD, 2020 & PAVEMENT SUPPLEMENT NOVEMBER 2ND, 2022)

STREET TYPE (CBR = 4.5)	HMAC TYPE "D"	FLEX BASE (TY A GR 2)	LIME STABILIZED SUBGRADE	BASE UNDER CURB	STRUCTURAL NUMBER
LOCAL "A"	2"	12.50"	6" (27 LB/SY)	5"	3.11
LOCAL "B"	3"	14.75"	6" (27 LB/SY)	15"	3.87

NOTE:

1. FILL MATERIAL FOR SUBGRADES BELOW PAVED AREAS SHALL BE OF NATIVE MATERIALS (NO STONES LARGER THAN 3") & BE OF SIMILAR CHARACTERISTICS AS FOUND WITHIN THE PAVED AREAS. FILL MATERIAL SHALL BE PLACED IN MAX. 8" LOOSE LIFTS & BE COMPACTED TO AT LEAST 95% MAX DRY DENSITY. FILL MATERIAL SHALL HAVE A PLASTICITY INDEX OF 20 & A CBR OF 4.5.

2. IF THE FILL MATERIAL CONSISTS OF A PLASTICITY INDEX OF LESS THAN 20, THEN LIME STABILIZATION WILL NOT BE NEEDED. CONTRACTOR SHALL MAKE ALL EFFORTS TO USE FILL MATERIAL FROM AREAS OF SIMILAR SUBGRADE MATERIAL FOR ROADWAY EMBANKMENTS. ANY OFFSITE FILL MATERIAL SHALL BE TESTED TO VERIFY MINIMUM PI AND CBR VALUES ARE WITHIN CALCULATED PARAMETERS.

3. PI VALUES OBTAINED FROM THE SOIL SAMPLES TAKEN NEAR THE SURFACE RANGES FROM 46 TO 51 IN THE CLAY SUBGRADE SOIL. PER GEOTECH REPORT, LIME STABILIZATION IS RECOMMENDED WHERE SUITABLE FILL MATERIAL IS NOT USED.

LIME STABILIZATION

LIME STABILIZATION:

TO INCLUDE A LIME STABILIZED LAYER AS PART OF THE STRUCTURAL PAVEMENT SYSTEM, THE APPLICATION RATE OF LIME SHALL BE DETERMINED BASED ON LABORATORY TESTING AND SHALL BE THE LOWEST PERCENTAGE OF LIME THAT PROVIDES:

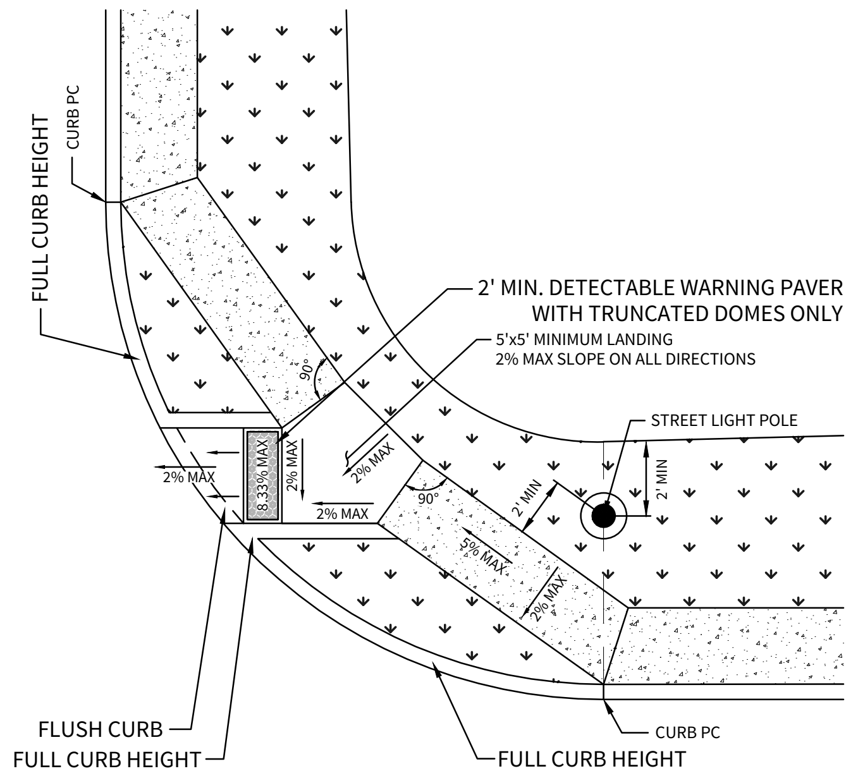
- A pH OF 12.4 OR THE HIGHEST pH ACHIEVED IN ACCORDANCE WITH ASTM D6276 STANDARD TEST METHOD FOR USING pH TO ESTIMATE THE SOIL-LIME PROPORTION REQUIREMENT FOR SOIL STABILIZATION,
- A PI OF LESS THAN 20 IN ACCORDANCE WITH ASTM D4318 STANDARD TEST METHODS FOR LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS,
- AN UNCONFINED COMPRESSIVE STRENGTH (UCS) AT 7-DAYS OF AT LEAST 160 PSI IN ACCORDANCE WITH ASTM D5102 STANDARD TEST METHODS FOR UNCONFINED COMPRESSIVE STRENGTH OF COMPACTED SOIL-LIME MIXTURES (PROCEDURE B) (IN ADDITION, CURING SHOULD OCCUR FOR 7 DAYS AT 40°C AND SPECIMENS SHOULD BE SUBJECTED TO 24-HR CAPILLARY SOAK PRIOR TO TESTING), AND
- [OPTIONAL CRITERIA FOR EXPANSIVE SOILS] A THREE DIMENSIONAL EXPANSION OF LESS THAN 1% (OR MAYBE 2%).

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 A 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:

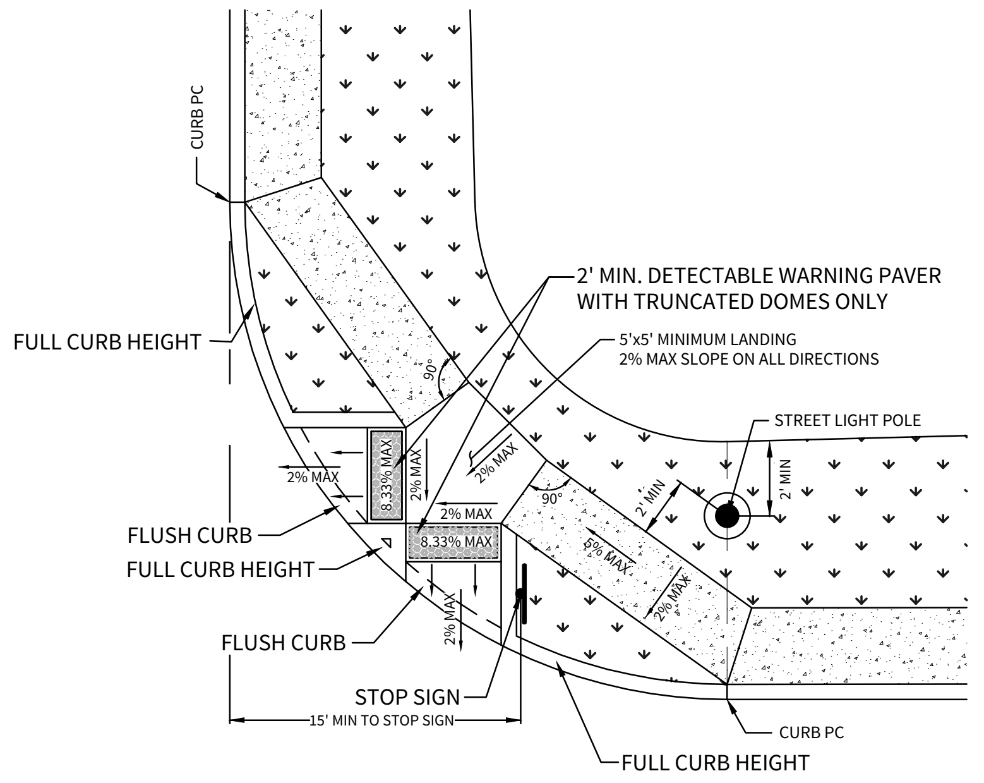
MINIMUM PASSING 1 ¾" SIEVE	100
MINIMUM PASSING ¾" SIEVE	85
MINIMUM PASSING NO. 4 SIEVE	60

- SAMPLE SOIL-LIME MIXTURE FOR DETERMINATION OF MDD. IN THE LABORATORY, MOLD SPECIMENS TO 95% OF MDD AT OPTIMUM MOISTURE CONTENT AND VERIFY UCS TO BE AT LEAST 160 PSI IN ACCORDANCE WITH PROCEDURE OUTLINED ABOVE FOR MIXTURE DESIGN.
- COMPACT AND CHECK FIELD DENSITY (MINIMUM OF 95% MDD REQUIRED);
- CURE FOR AN ADDITIONAL 2 TO 5 DAYS (TOTAL MELLOWING AND CURING TIME SHOULD TOTAL AT LEAST 5 DAYS).
- VERIFY DEPTH OF LIME STABILIZED LAYER TO DEPTH AS NOTED ON PLAN WITHIN +/- 1.0 INCHES.



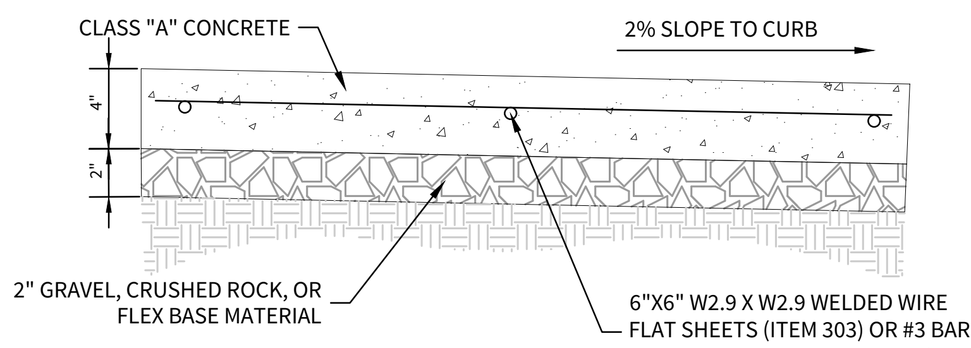
SINGLE ADA RAMP INTERSECTION LAYOUT DETAIL (TYPE 10 DIRECTIONAL RAMPS)

N.T.S.



DUAL ADA RAMP INTERSECTION LAYOUT DETAIL (TYPE 10 DIRECTIONAL RAMPS)

N.T.S.


CLASS "A" CONCRETE
2% SLOPE TO CURB
2" GRAVEL, CRUSHED ROCK, OR
FLEX BASE MATERIAL
6"X6" W2.9 X W2.9 WELDED WIRE
FLAT SHEETS (ITEM 303) OR #3 BARS AT 18" O.C.
EACH WAY CENTERED IN SLAB (ITEM 301)

CONCRETE SIDEWALK

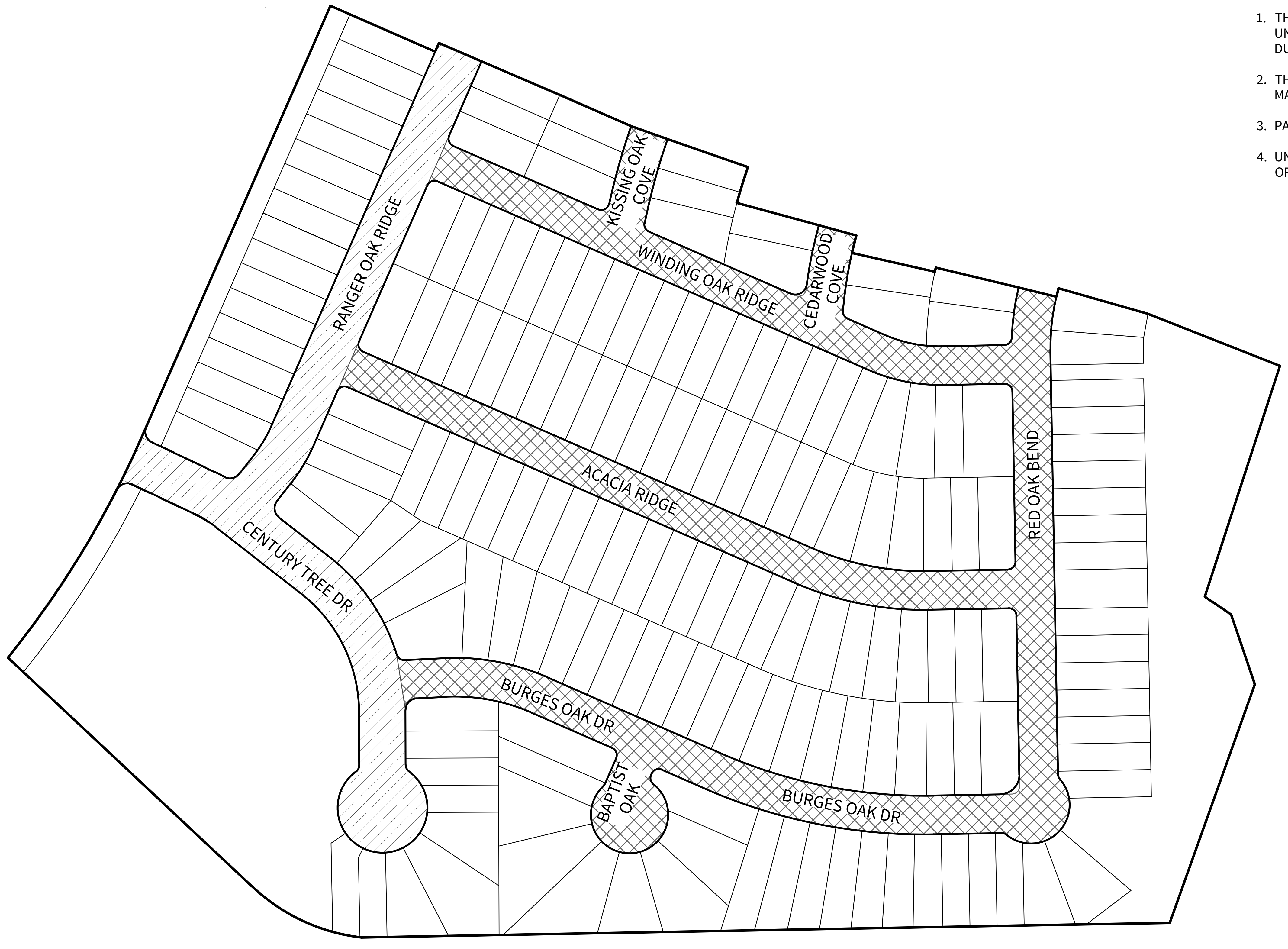
N.T.S.

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 (90%) 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.

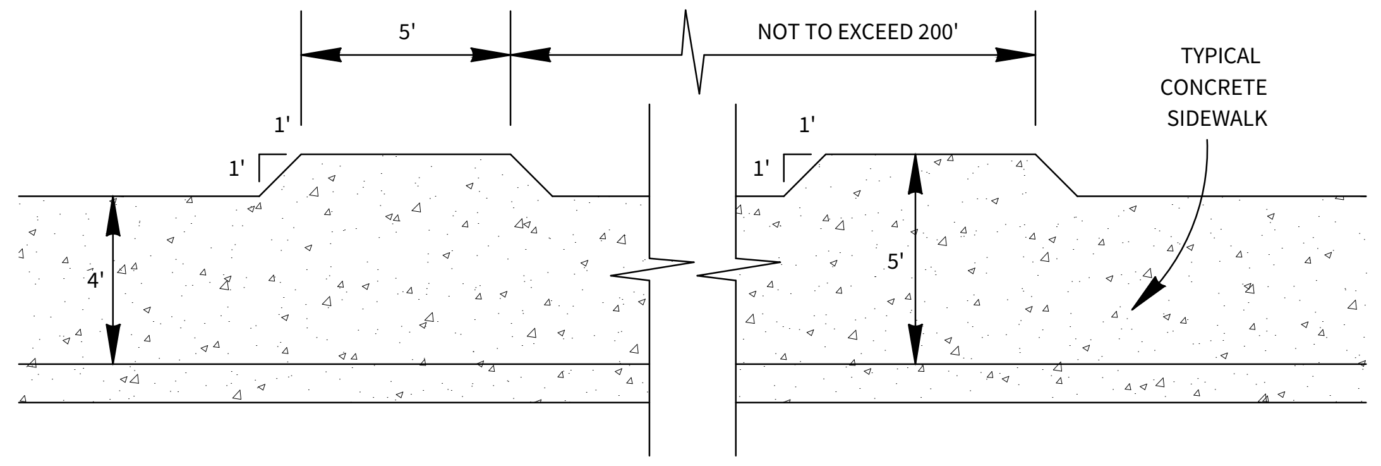
2. THE MATERIALS USED SHALL BE FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES, SUCH AS TREES, BRUSH AND RUBBISH.

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.



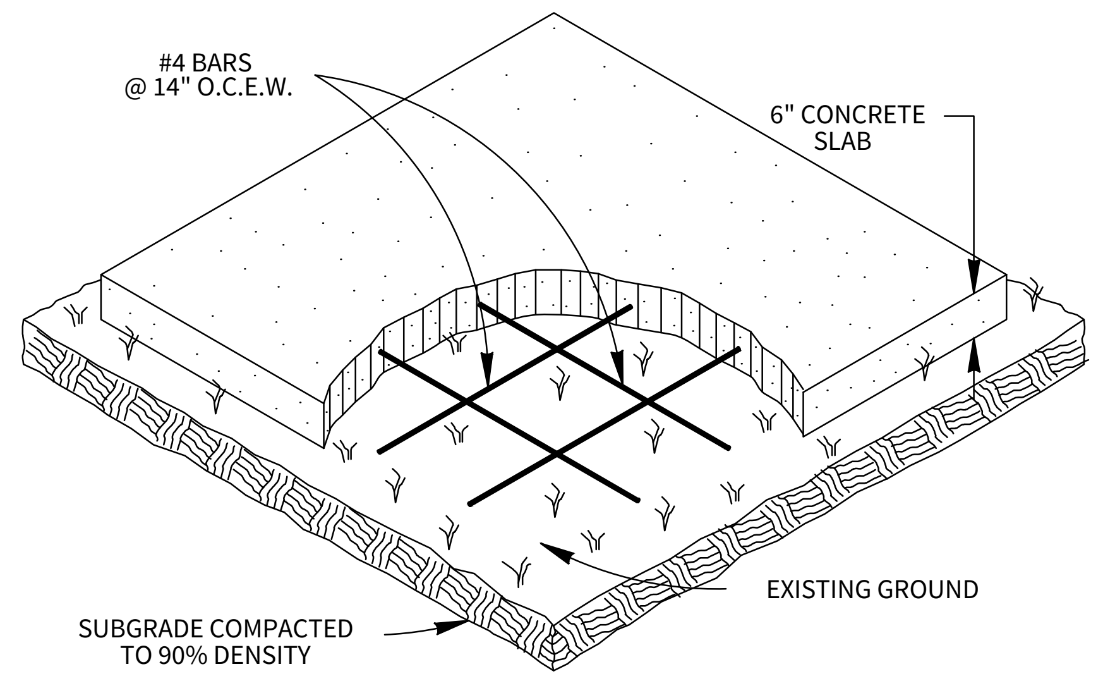
STREET PAVEMENT DESIGN DETAIL

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.

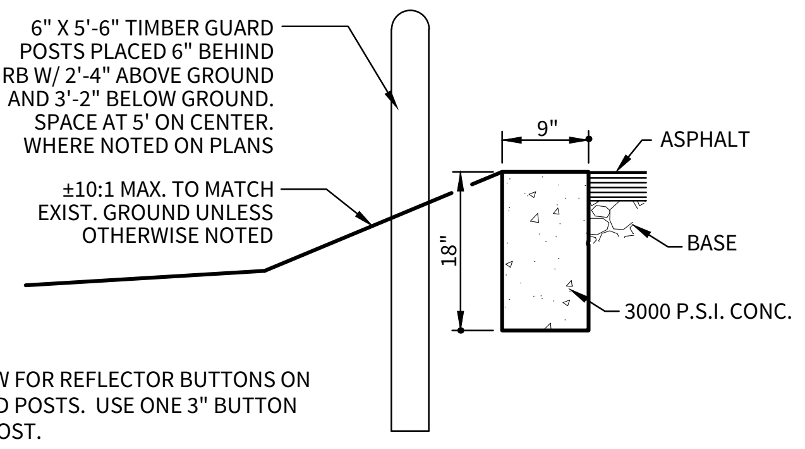
2. THE CONSTRUCTION OF SLABS SHALL CONFORM TO ITEM 513 "REMOVING AND RELOCATING MAILBOXES".

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

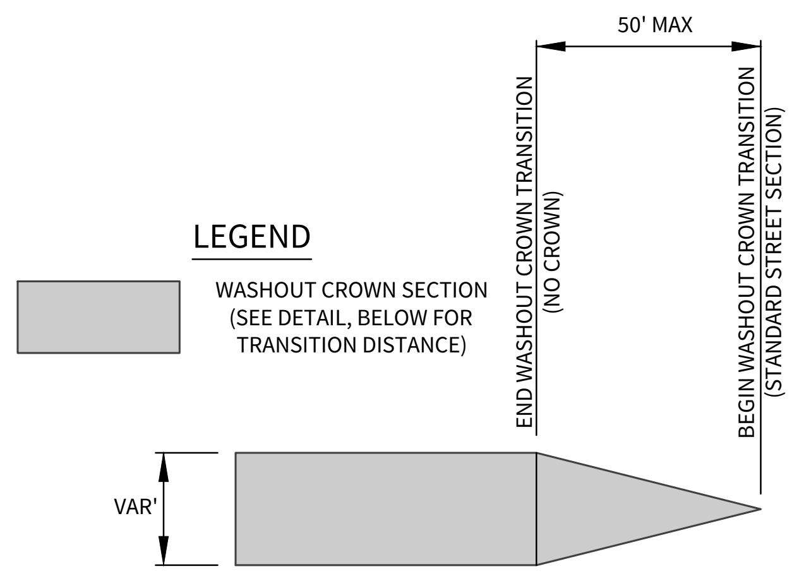


NOTES:

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.



WASHOUT CROWN TRANSITION DETAIL

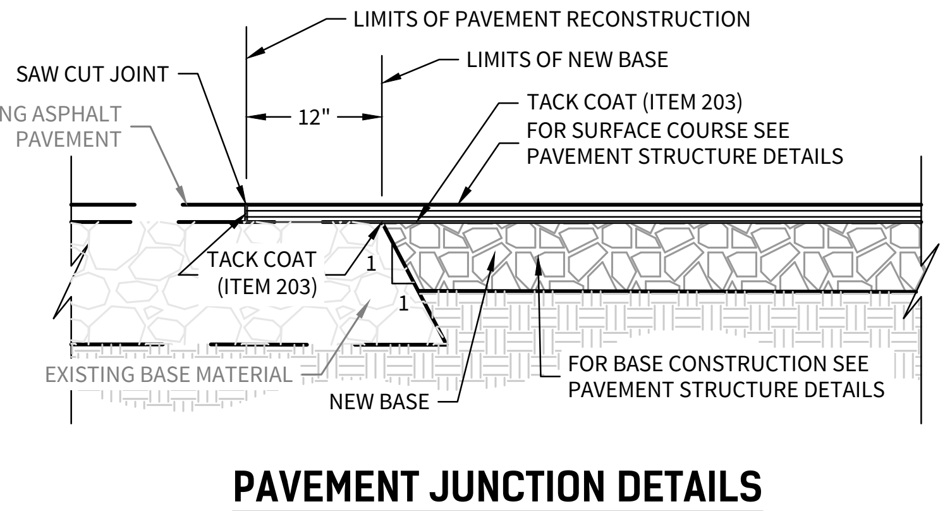
N.T.S.

PAVEMENT DESIGN SCHEMATIC

NOTE:
1. REFERENCE GEOTECHNICAL REPORT (#FGS-G-20016 JULY 23RD, 2020) FOR BORING INFORMATION AND CBR LOCATIONS.

LEGEND:

▦	LOCAL "A"	
	BURGES OAK DR	STA 9+97.99 - 18+82.20
	BAPTIST OAK	STA 10+00.00 - 11+11.57
	ACACIA RIDGE	STA 10+00.00 - 19+75.74
	WINDING OAK RIDGE	STA 10+00.00 - 18+50.17
	KISSING OAK COVE	STA 10+00.00 - 11+44.47
	CEDARWOOD COVE	STA 10+00.00 - 11+28.73
	RED OAK BEND	STA 10+00.00 - 16+73.51
▨	LOCAL "B"	
	CENTURY TREE DR	STA 9+40.00 - 16+09.34
	RANGER OAK RIDGE	STA 10+00.00 - 16+65.18



PAVEMENT JUNCTION DETAILS

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.

SAN ANTONIO WATER SYSTEM	233-2010
TEXAS STATE WIDE ONE CALL LOCATOR	1-800-545-6005
C.P.S. ENERGY	"
AT&T	"
TIME WARNER CABLE	"
VALERO ENERGY CO.	"
GREY FOREST UTILITIES	"

CUDEENGINEERS.COM

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

TRES LAURELS
UNIT 4A

STANDARD STREET DETAILS

DATE
05/29/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

06/05/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C7.D1

P:\03050\015\2-DWG\4-Plans\07_D1 STDP (STD DETAILS).dwg 2024/05/29 1:15pm ivilla

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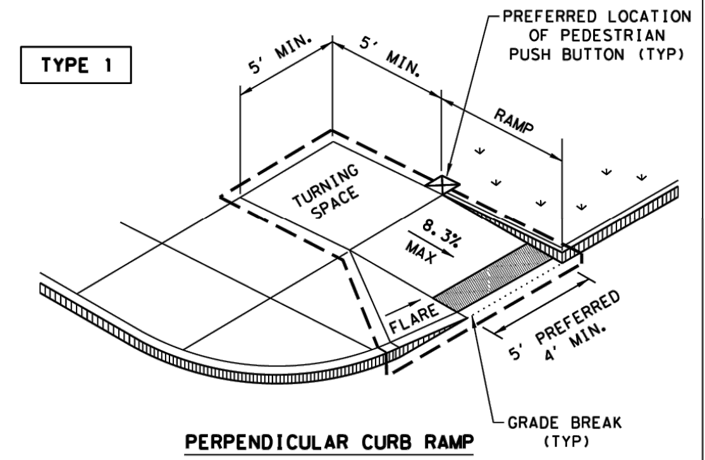
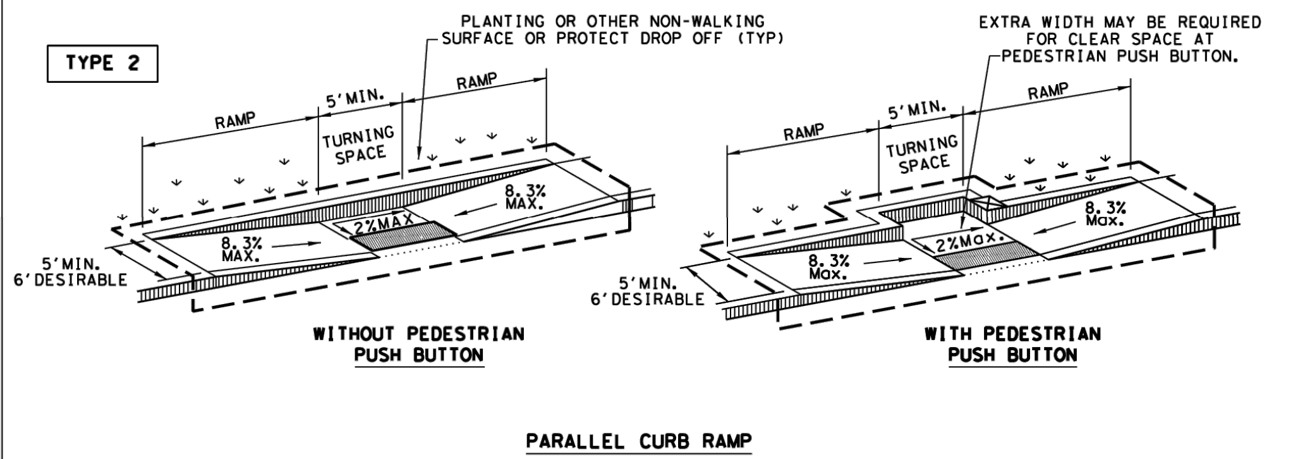
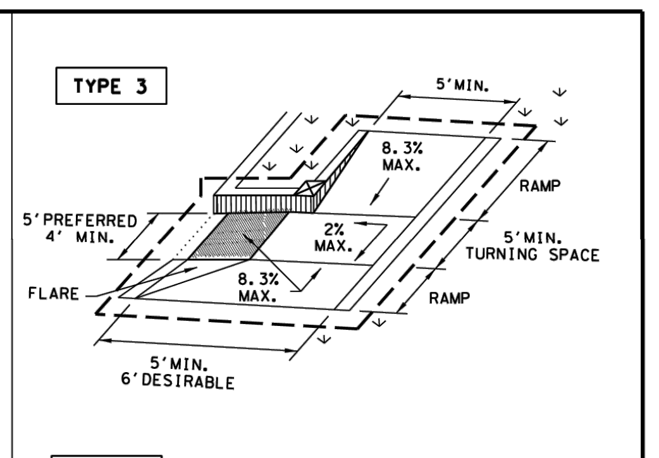
DATE:
FILE:

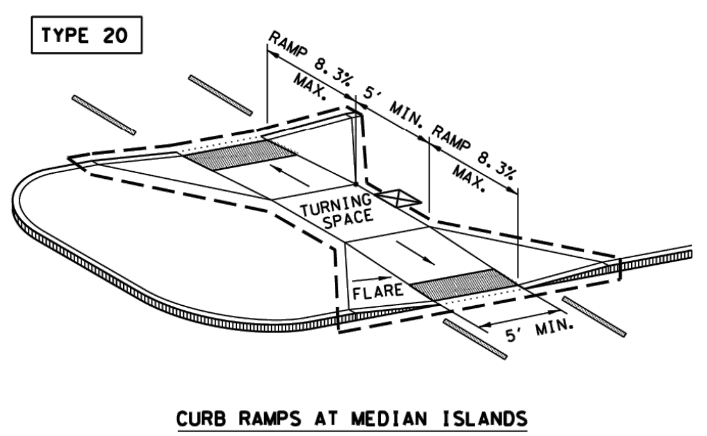


PERPENDICULAR CURB RAMP

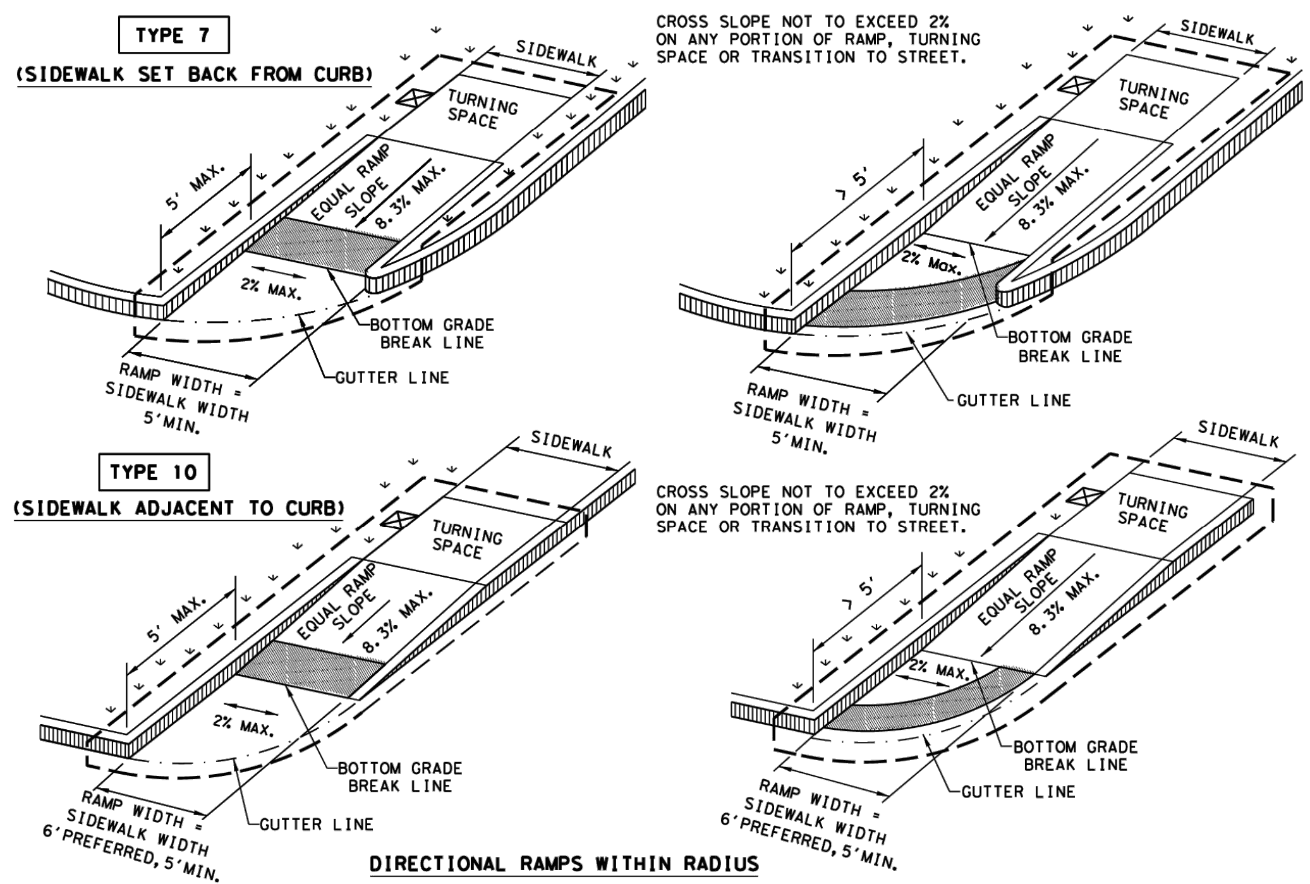

TYPE 2
PLANTING OR OTHER NON-WALKING SURFACE OR PROTECT DROP OFF (TYP)
EXTRA WIDTH MAY BE REQUIRED FOR CLEAR SPACE AT PEDESTRIAN PUSH BUTTON.
RAMP
TURNING SPACE
5' MIN.
8.3% MAX.
2% MAX.
5' MIN., 6' DESIRABLE
WITHOUT PEDESTRIAN PUSH BUTTON
WITH PEDESTRIAN PUSH BUTTON

PARALLEL CURB RAMP

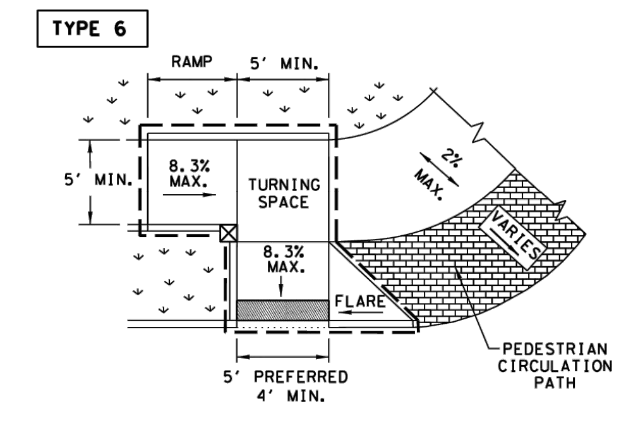




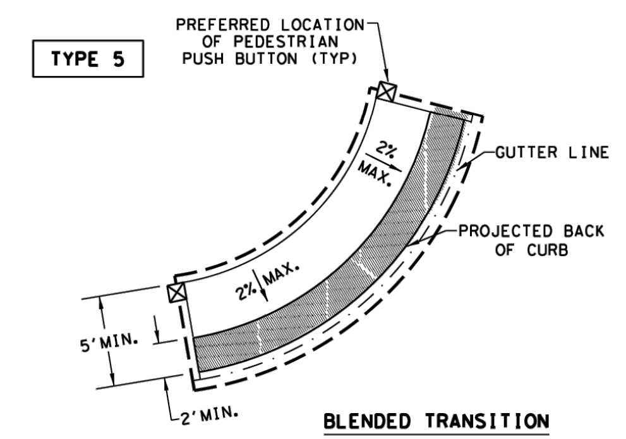
CURB RAMPS AT MEDIAN ISLANDS


TYPE 7
(SIDEWALK SET BACK FROM CURB)
CROSS SLOPE NOT TO EXCEED 2% ON ANY PORTION OF RAMP, TURNING SPACE OR TRANSITION TO STREET.
SIDEWALK
TURNING SPACE
EQUAL RAMP SLOPE 8.3% MAX.
2% MAX.
5' MIN.
BOTTOM GRADE BREAK LINE
GUTTER LINE
RAMP WIDTH = SIDEWALK WIDTH 5'MIN.
TYPE 10
(SIDEWALK ADJACENT TO CURB)
RAMP WIDTH = SIDEWALK WIDTH 6'PREFERRED, 5'MIN.

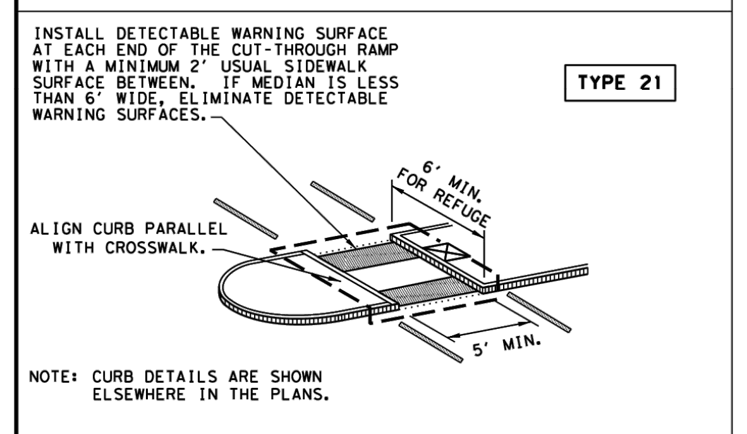
DIRECTIONAL RAMPS WITHIN RADIUS



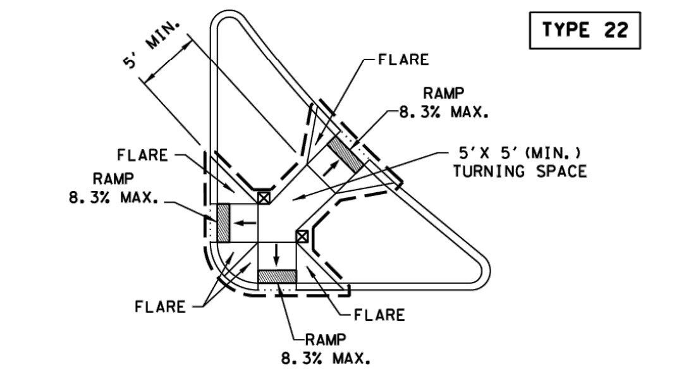
COMBINATION CURB RAMPS



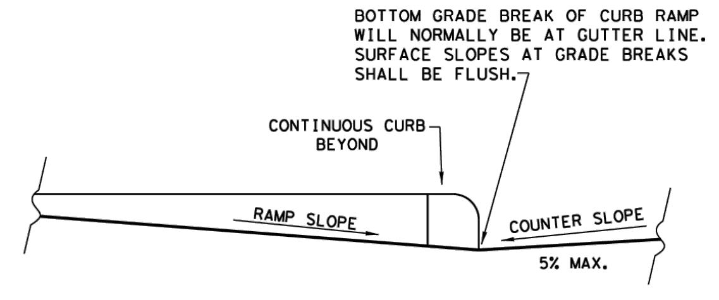
BLENDED TRANSITION
(FLUSH LANDING)


TYPE 21
INSTALL DETECTABLE WARNING SURFACE AT EACH END OF THE CUT-THROUGH RAMP WITH A MINIMUM 2' USUAL SIDEWALK SURFACE BETWEEN. IF MEDIAN IS LESS THAN 6' WIDE, ELIMINATE DETECTABLE WARNING SURFACES.
ALIGN CURB PARALLEL WITH CROSSWALK.
6' MIN. FOR REFUGE
5' MIN.

NOTE: CURB DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.



COMBINATION ISLAND RAMPS


BOTTOM GRADE BREAK OF CURB RAMP WILL NORMALLY BE AT GUTTER LINE. SURFACE SLOPES AT GRADE BREAKS SHALL BE FLUSH.
CONTINUOUS CURB BEYOND
RAMP SLOPE
COUNTER SLOPE
5% MAX.

TYPICAL SECTION OF PERPENDICULAR CURB RAMP AT CONNECTION TO ROADWAY

NOTES / LEGEND:

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

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.	✓ ✓ ✓	GUTTER LINE	— · —
DETECTABLE WARNING SURFACE	▨	GRADE BREAK	········
DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.	☒	RAMP LIMITS OF PAYMENT	— —

SHEET 1 OF 4

Texas Department of Transportation
Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS

PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS REVISED 08, 2005 REVISED 06, 2012 REVISED 01, 2018	DIST	COUNTY		SHEET NO.

GENERAL NOTES

CURB RAMPS

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

DETECTABLE WARNING MATERIAL

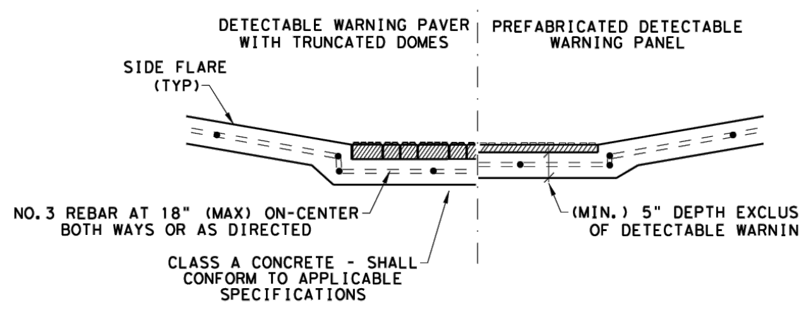
19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material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

DETECTABLE WARNING PAVERS (IF USED)

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

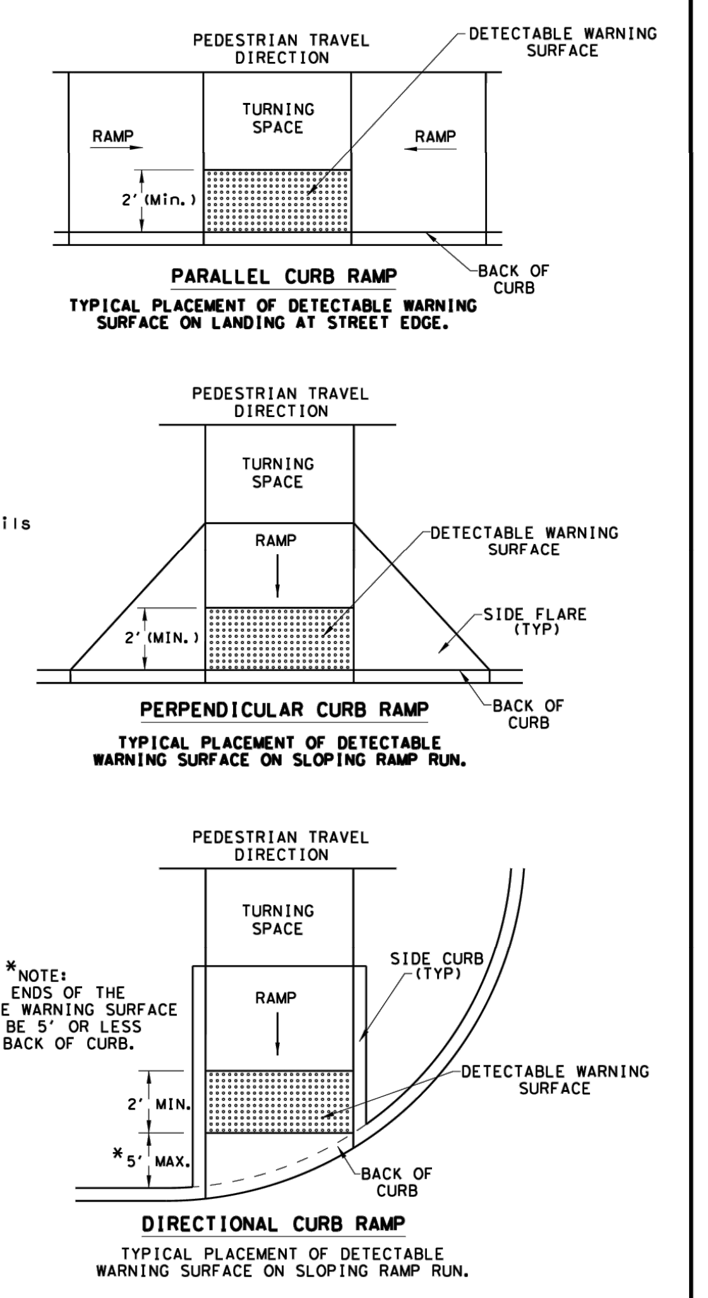
SIDEWALKS

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


DETECTABLE WARNING PAVER WITH TRUNCATED DOMES
PREFABRICATED DETECTABLE WARNING PANEL
SIDE FLARE (TYP)
NO. 3 REBAR AT 18" (MAX) ON-CENTER BOTH WAYS OR AS DIRECTED
CLASS A CONCRETE - SHALL CONFORM TO APPLICABLE SPECIFICATIONS
(MIN.) 5' DEPTH EXCLUSIVE OF DETECTABLE WARNING

SECTION VIEW DETAIL
CURB RAMP AT DETECTIBLE WARNINGS

DETECTABLE WARNING SURFACE DETAILS


PEDESTRIAN TRAVEL DIRECTION
DETECTABLE WARNING SURFACE
TURNING SPACE
RAMP
2' (Min.)
BACK OF CURB
SIDE FLARE (TYP)
NOTE: BOTH ENDS OF THE DETECTABLE WARNING SURFACE SHALL BE 5' OR LESS FROM BACK OF CURB.
SIDE CURB (TYP)
5' MIN.

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

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

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

SHEET 2 OF 4

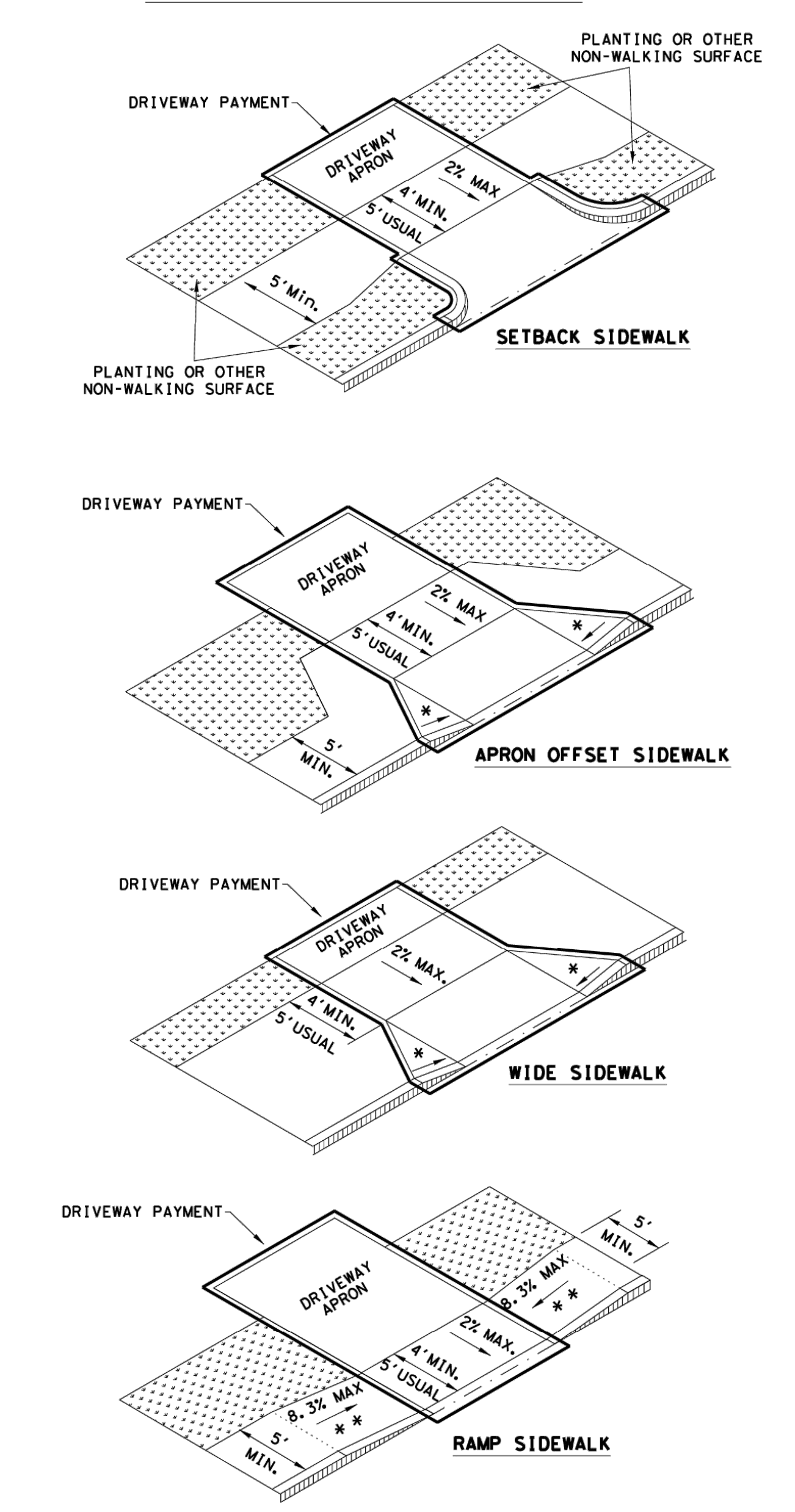
Texas Department of Transportation
Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS

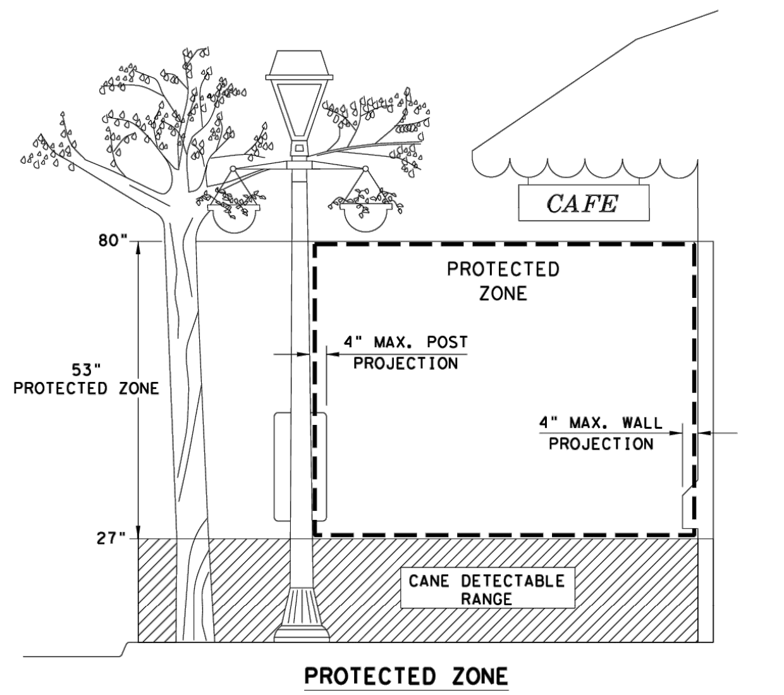
PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS REVISED 08, 2005 REVISED 06, 2012 REVISED 01, 2018	DIST	COUNTY		SHEET NO.

SIDEWALK TREATMENT AT DRIVEWAYS

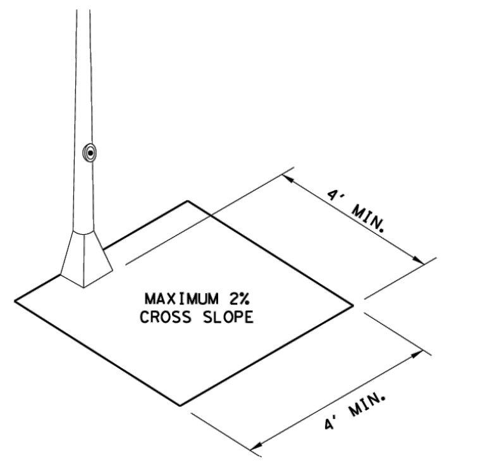


NOTES:
- ✱ WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.
- ✱ ✱ IF CURB HEIGHT IS GREATER THAN 6 INCHES, USE GRADE LESS THAN OR EQUAL TO 5%. HANDRAIL AND DETECTABLE WARNING ARE NOT REQUIRED.

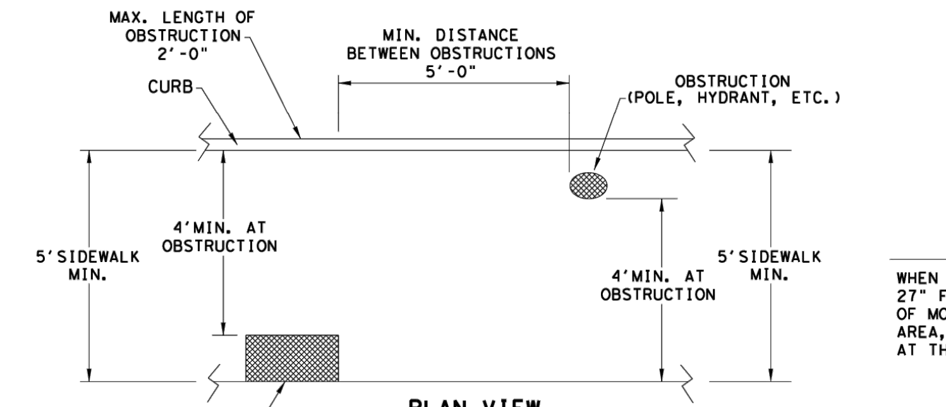


PROTECTED ZONE

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



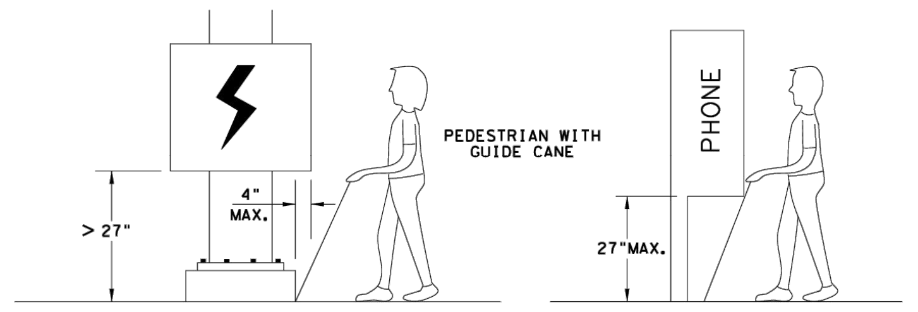
CLEAR SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON


MAX. LENGTH OF OBSTRUCTION 2'-0"
MIN. DISTANCE BETWEEN OBSTRUCTIONS 5'-0"
CURB
OBSTRUCTION (POLE, HYDRANT, ETC.)
5'SIDEWALK MIN.
4'MIN. AT OBSTRUCTION
OBSTRUCTION (CONTROLLER CABINET, MAILBOX, ETC.)

PLAN VIEW

PLACEMENT OF STREET FIXTURES

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



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

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

DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"

SHEET 3 OF 4

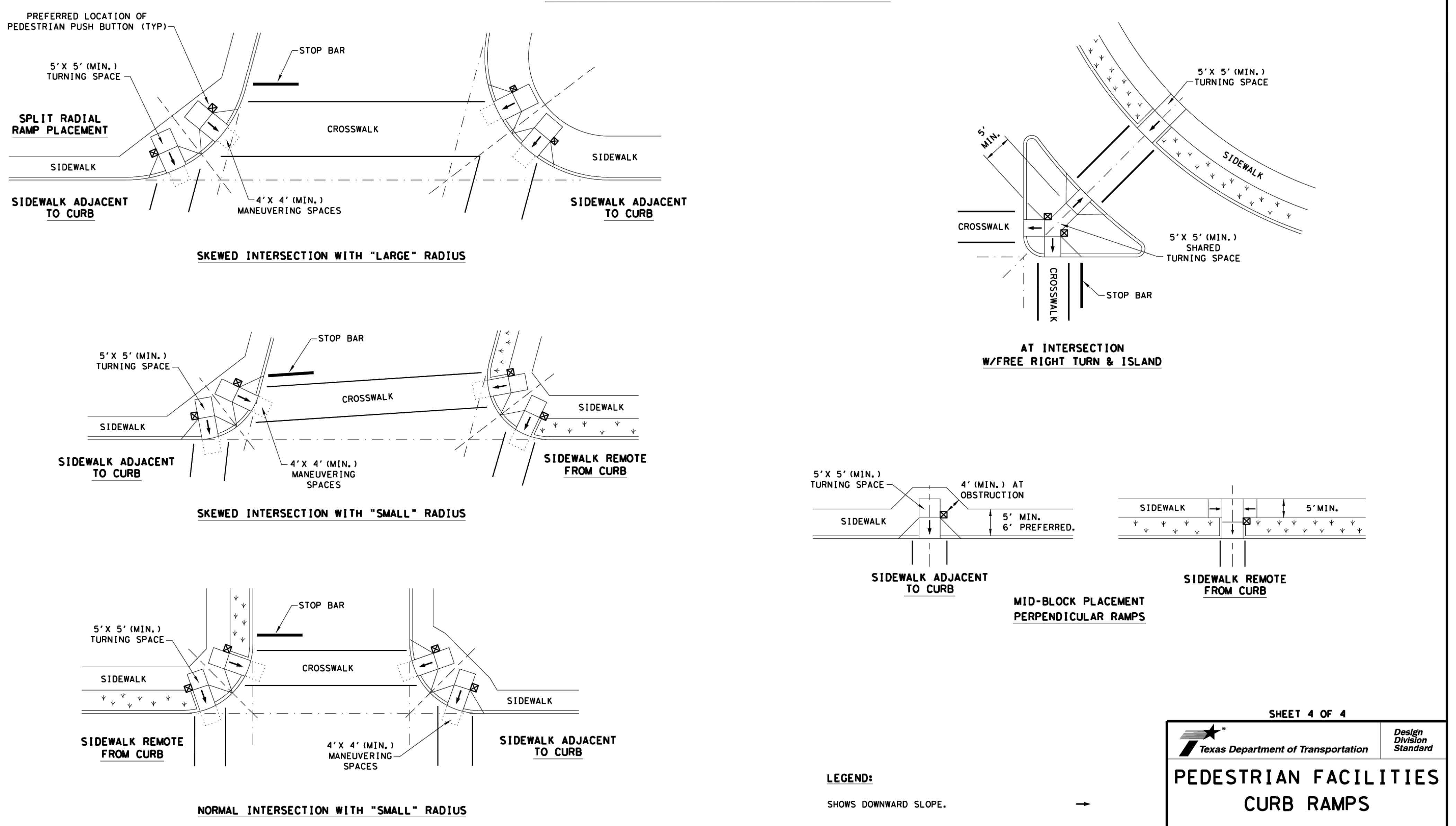
Texas Department of Transportation
Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS

PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS REVISED 08, 2005 REVISED 06, 2012 REVISED 01, 2018	DIST	COUNTY		SHEET NO.

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


PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON (TYP)
5'X 5' (MIN.) TURNING SPACE
STOP BAR
SPLIT RADIAL RAMP PLACEMENT
CROSSWALK
SIDEWALK
SIDEWALK ADJACENT TO CURB
4'X 4' (MIN.) MANEUVERING SPACES
SKEWED INTERSECTION WITH "LARGE" RADIUS
SIDEWALK REMOTE FROM CURB
SKEWED INTERSECTION WITH "SMALL" RADIUS
NORMAL INTERSECTION WITH "SMALL" RADIUS
5'X 5' (MIN.) SHARED TURNING SPACE
AT INTERSECTION W/FREE RIGHT TURN & ISLAND
4' (MIN.) AT OBSTRUCTION
5' MIN. 6' PREFERRED.
5'MIN.
MID-BLOCK PLACEMENT PERPENDICULAR RAMPS

LEGEND:

SHOWS DOWNWARD SLOPE.	→
DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON (IF APPLICABLE).	☒
DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.	✓ ✓ ✓

SHEET 4 OF 4

Texas Department of Transportation
Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS

PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS REVISED 08, 2005 REVISED 06, 2012 REVISED 01, 2018	DIST	COUNTY		SHEET NO.

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

TRES LAURELS UNIT 4A

STREET DETAILS

DATE
04/22/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
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04/22/2024
MATTHEW A. TRINKLE
147558

M Trinkle

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C7.D2

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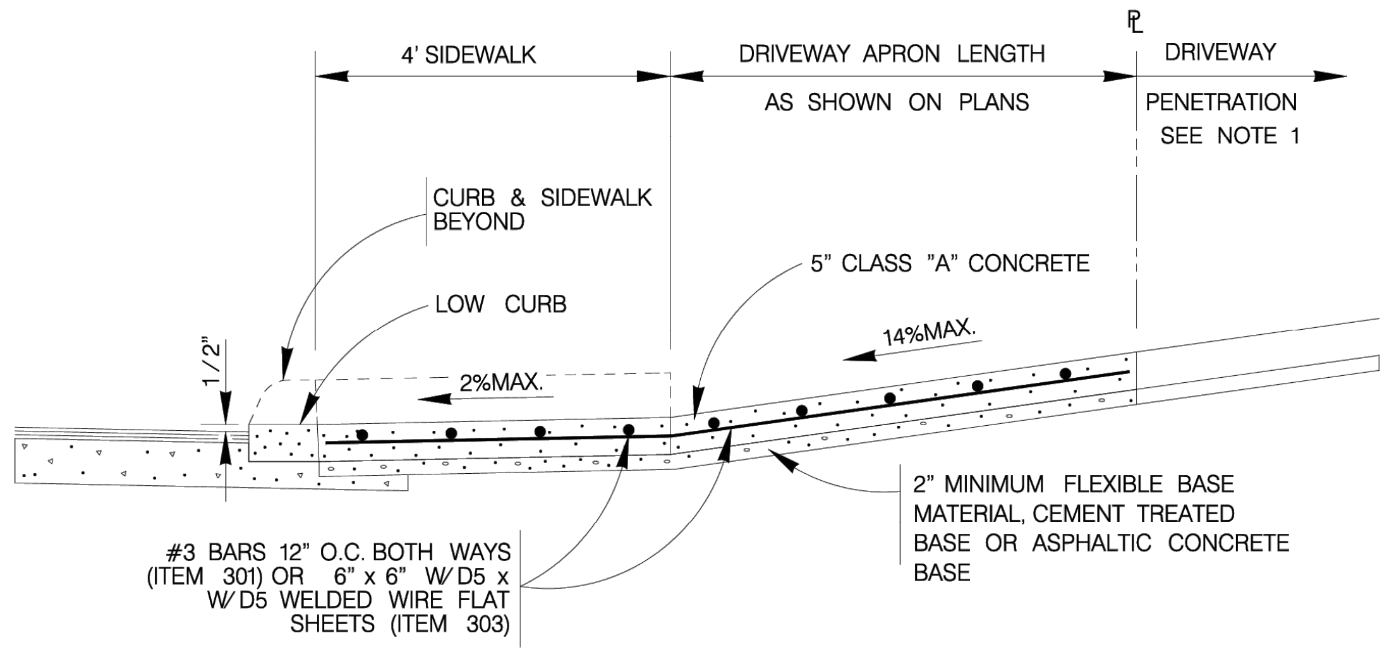
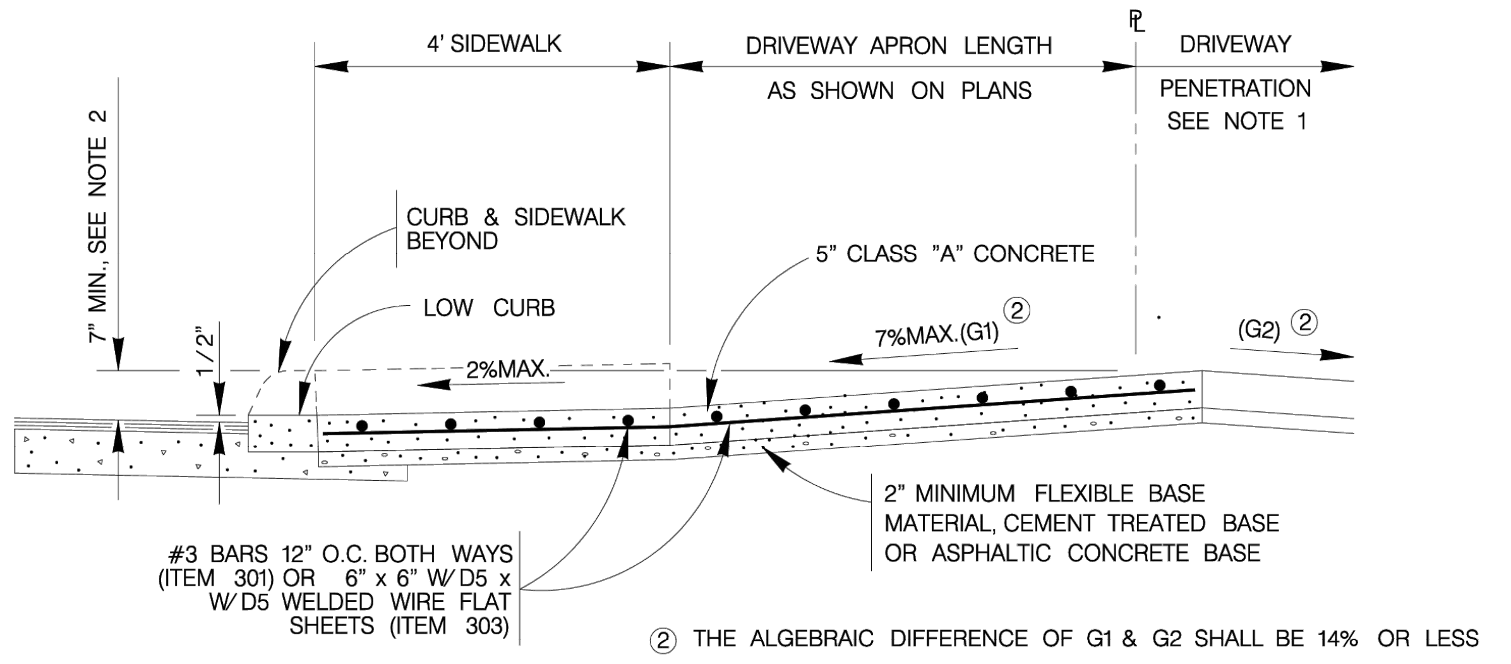

4' SIDEWALK
DRIVEWAY APRON LENGTH
AS SHOWN ON PLANS
℗L
DRIVEWAY
PENETRATION
SEE NOTE 1
CURB & SIDEWALK BEYOND
LOW CURB
5" CLASS "A" CONCRETE
14%MAX.
2%MAX.
1/2"
2" MINIMUM FLEXIBLE BASE MATERIAL, CEMENT TREATED BASE OR ASPHALTIC CONCRETE BASE
#3 BARS 12" O.C. BOTH WAYS (ITEM 301) OR 6" x 6" W/D5 x W/D5 WELDED WIRE FLAT SHEETS (ITEM 303)

TYPICAL RESIDENTIAL DRIVEWAY SECTION

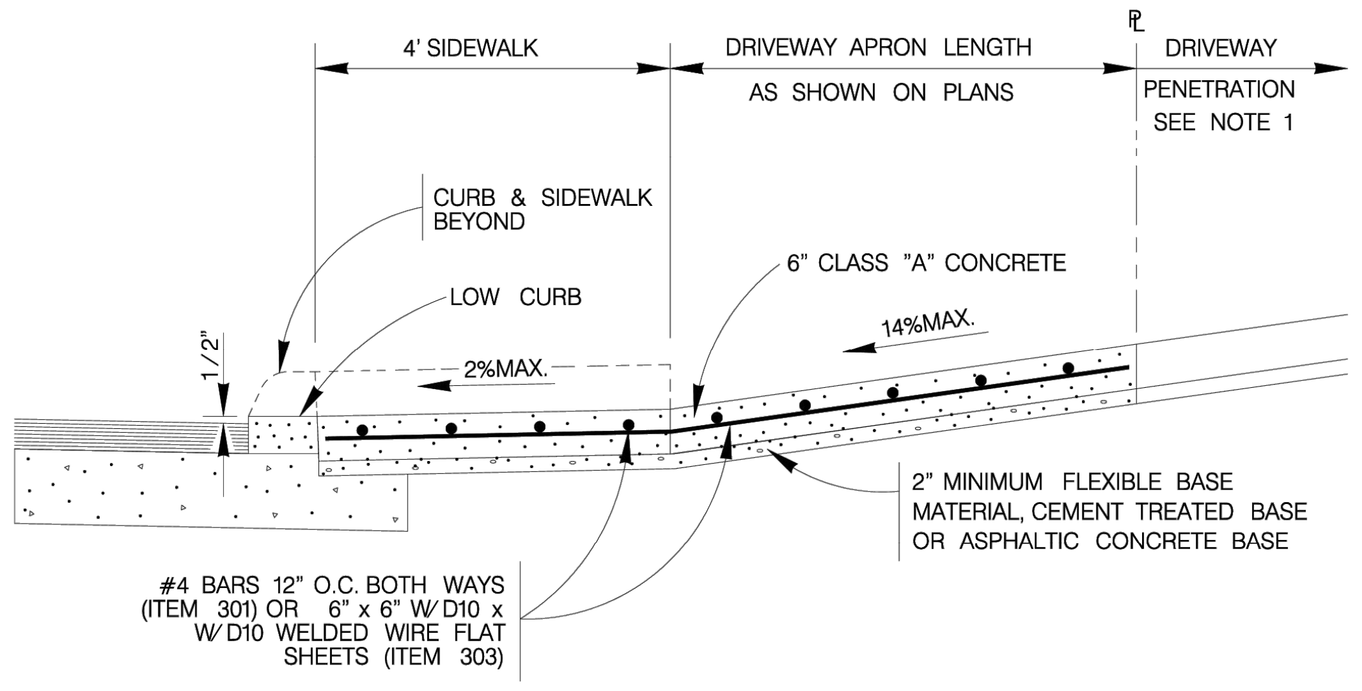
WITH SIDEWALK ABUTTING CURB
ITEM 503.1



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


4' SIDEWALK
DRIVEWAY APRON LENGTH
AS SHOWN ON PLANS
℗L
DRIVEWAY
PENETRATION
SEE NOTE 1
CURB & SIDEWALK BEYOND
LOW CURB
6" CLASS "A" CONCRETE
14%MAX.
2%MAX.
1/2"
2" MINIMUM FLEXIBLE BASE MATERIAL, CEMENT TREATED BASE OR ASPHALTIC CONCRETE BASE
#4 BARS 12" O.C. BOTH WAYS (ITEM 301) OR 6" x 6" W/D10 x W/D10 WELDED WIRE FLAT SHEETS (ITEM 303)

TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB
ITEM 503.2

CONCRETE DRIVEWAY NOTES

1. DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE. THIS PORTION OF THE DRIVEWAY SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS AS MAY APPLY:
   A.) CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503.1 OR 503.2.
   B.) ASPHALTIC CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503.4 AND SHALL INCLUDE A MINIMUM OF 1" ASPHALT TYPE 'D' & 6" FLEXIBLE BASE
   C.) GRAVEL DRIVEWAY PAID FOR UNDER ITEM NO. 503.5 AND SHALL INCLUDE A MINIMUM OF 6" FLEXIBLE BASE

2. 7" MINIMUM HEIGHT WILL NOT NECESSARILY OCCUR AT THE PROPERTY LINE. IT MAY OCCUR WITHIN THE RIGHT OF WAY OR WITHIN THE DRIVEWAY PENETRATION ON PRIVATE PROPERTY.

3. THE PROPOSED DRIVEWAY SHOULD MATCH THE EXISTING WIDTH AT THE PROPERTY LINE BUT UNLESS AUTHORIZED BY THE CITY TRAFFIC ENGINEER, THE WIDTH SHALL BE WITHIN THE FOLLOWING VALUES:

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

4. FOR LOCAL TYPE "A" STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 3' FROM THE BACK OF CURB.

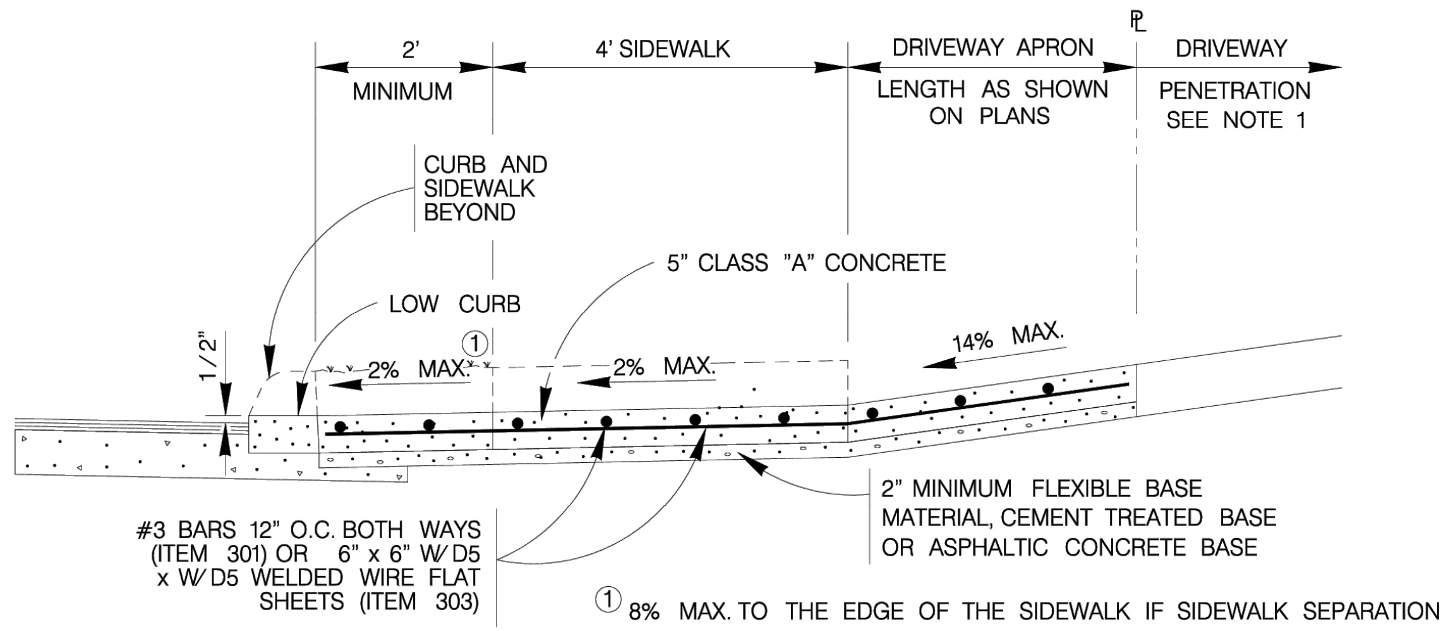
5. FOR OTHER THAN LOCAL TYPE "A" STREETS, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND SEPARATED A MINIMUM OF 3' FROM THE BACK OF CURB OR, AS AN OPTION, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 6' WHEN LOCATED AT THE BACK OF CURB.

6. DUMMY JOINTS PARALLEL TO THE CURB SHALL BE PLACED WHERE THE SIDEWALK MEETS THE DRIVEWAY. DUMMY JOINTS PERPENDICULAR TO THE CURB, AND WITHIN THE BOUNDARIES OF THE PARALLEL DUMMY JOINTS, SHALL BE PLACED AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK.

7. A MINIMUM OF TWO ROUND AND SMOOTH DOWEL BARS 3/8" IN DIAMETER AND 18" IN LENGTH SHALL BE SPACED 18" APART AT EACH EXPANSION JOINT.

8. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE. WHERE SIDEWALKS CROSS DRIVEWAYS, SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

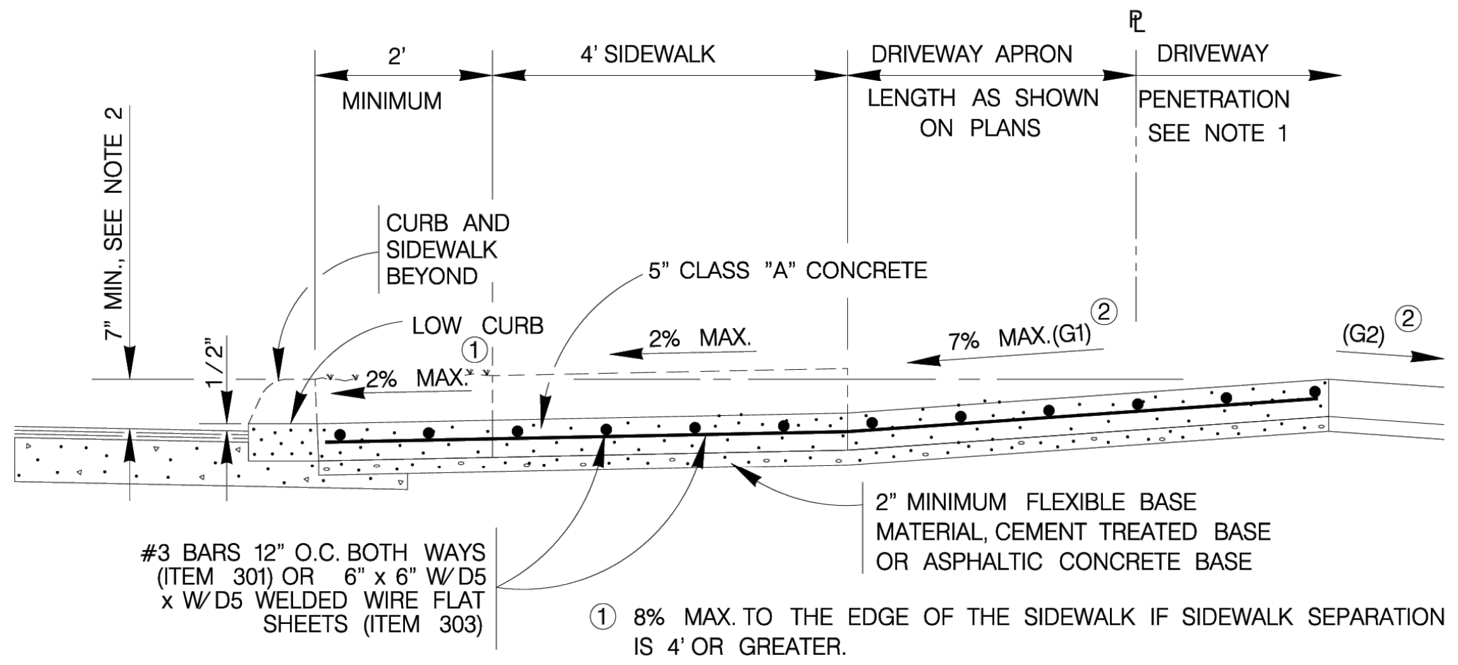
9. SIDEWALK RAMP SURFACE SHALL BE BRUSH FINISHED.


2'
MINIMUM
4' SIDEWALK
DRIVEWAY APRON
LENGTH AS SHOWN ON PLANS
℗L
DRIVEWAY
PENETRATION
SEE NOTE 1
CURB AND SIDEWALK BEYOND
LOW CURB
5" CLASS "A" CONCRETE
①
2% MAX.
2% MAX.
14% MAX.
1/2"
2" MINIMUM FLEXIBLE BASE MATERIAL, CEMENT TREATED BASE OR ASPHALTIC CONCRETE BASE
#3 BARS 12" O.C. BOTH WAYS (ITEM 301) OR 6" x 6" W/D5 x W/D5 WELDED WIRE FLAT SHEETS (ITEM 303)

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

TYPICAL RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK SEPARATED FROM CURB
ITEM 503.1

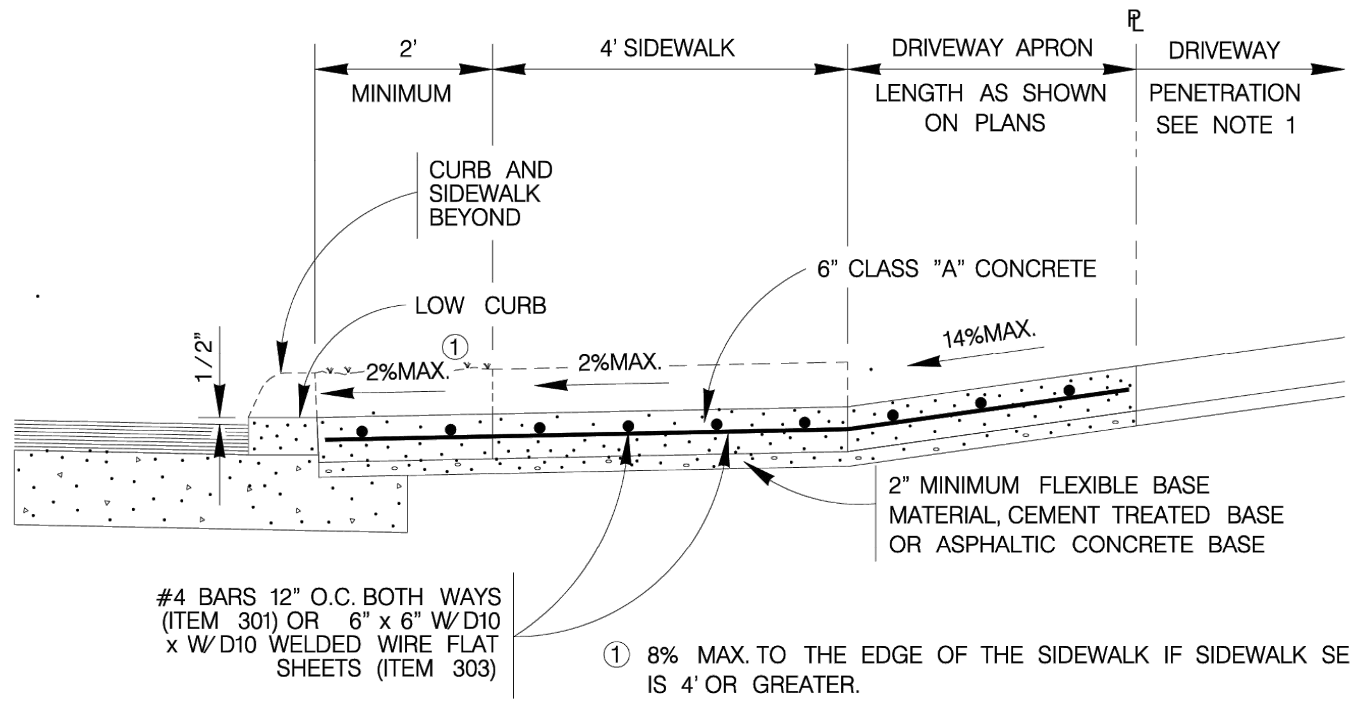


① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

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

TYPICAL RESIDENTIAL DRIVEWAY SECTION

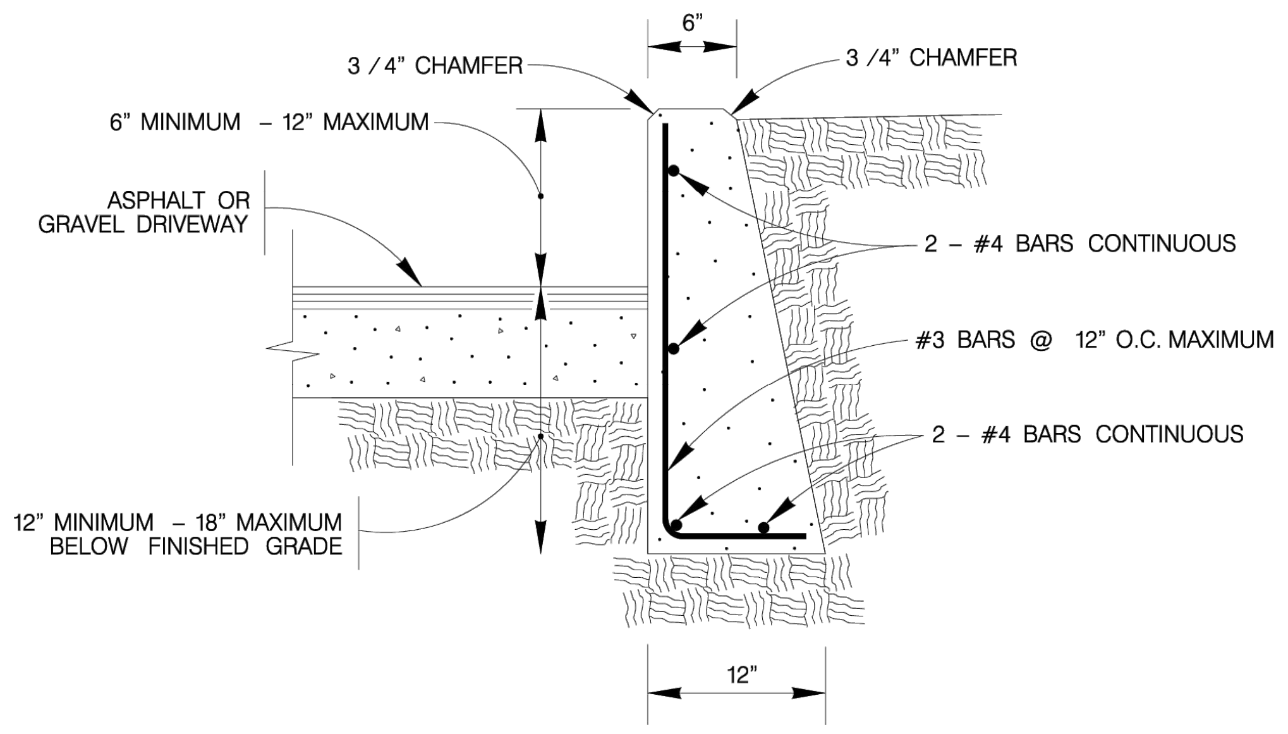
WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS SEPARATED FROM CURB
ITEM 503.1


2'
MINIMUM
4' SIDEWALK
DRIVEWAY APRON
LENGTH AS SHOWN ON PLANS
℗L
DRIVEWAY
PENETRATION
SEE NOTE 1
CURB AND SIDEWALK BEYOND
LOW CURB
①
2%MAX.
2%MAX.
6" CLASS "A" CONCRETE
14%MAX.
1/2"
2" MINIMUM FLEXIBLE BASE MATERIAL, CEMENT TREATED BASE OR ASPHALTIC CONCRETE BASE
#4 BARS 12" O.C. BOTH WAYS (ITEM 301) OR 6" x 6" W/D10 x W/D10 WELDED WIRE FLAT SHEETS (ITEM 303)

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

TYPICAL COMMERCIAL DRIVEWAY SECTION

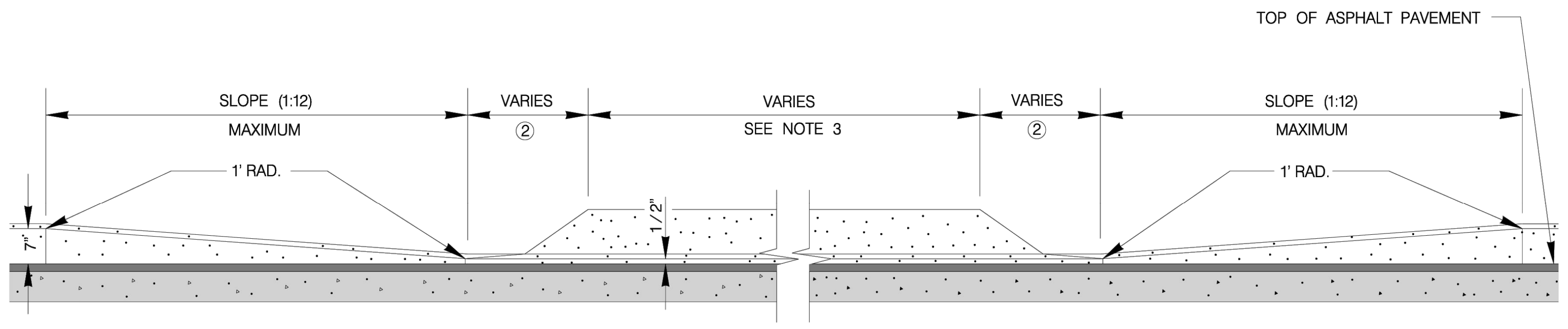
WITH SIDEWALK SEPARATED FROM CURB
ITEM 503.2


6"
3/4" CHAMFER
3/4" CHAMFER
6" MINIMUM – 12" MAXIMUM
ASPHALT OR GRAVEL DRIVEWAY
2 – #4 BARS CONTINUOUS
#3 BARS @ 12" O.C. MAXIMUM
2 – #4 BARS CONTINUOUS
12" MINIMUM – 18" MAXIMUM BELOW FINISHED GRADE
12"

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

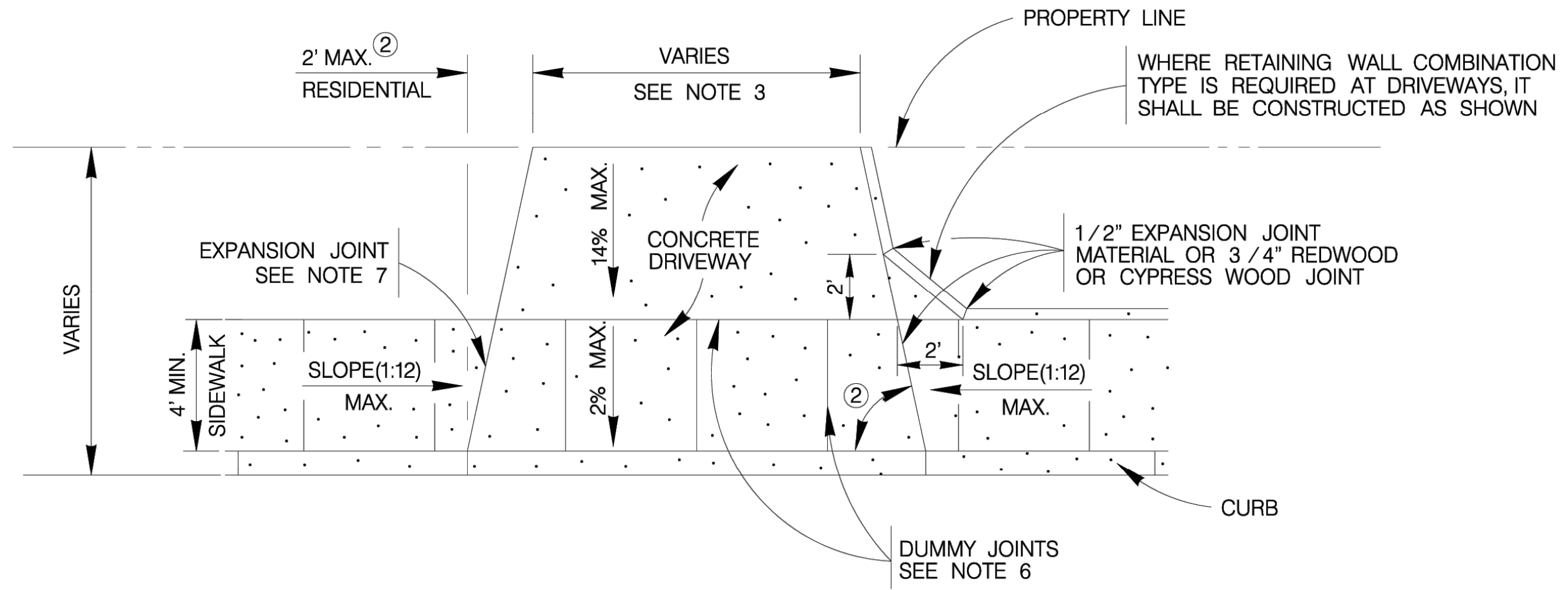
ON COMPACTED SUBGRADE
ITEM 307.1



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

CURB PROFILE AT DRIVEWAY

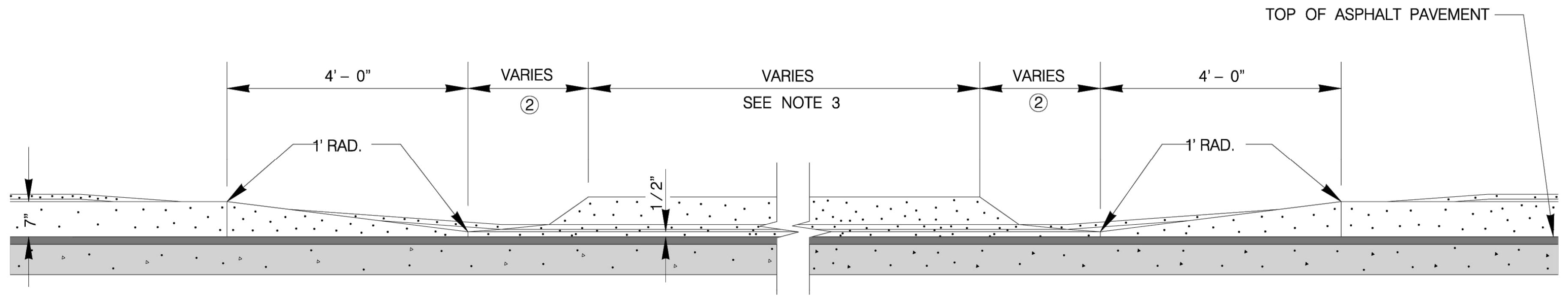
WITH SIDEWALK ABUTTING CURB


PROPERTY LINE
2' MAX. ②
RESIDENTIAL
VARIES
SEE NOTE 3
WHERE RETAINING WALL COMBINATION TYPE IS REQUIRED AT DRIVEWAYS, IT SHALL BE CONSTRUCTED AS SHOWN
VARIES
14% MAX.
CONCRETE DRIVEWAY
EXPANSION JOINT SEE NOTE 7
1/2" EXPANSION JOINT MATERIAL OR 3/4" REDWOOD OR CYPRESS WOOD JOINT
2'
2'
4' MIN. SIDEWALK
SLOPE(1:12) MAX.
2% MAX.
②
SLOPE(1:12) MAX.
CURB
DUMMY JOINTS SEE NOTE 6

② 45° FOR COMMERCIAL DRIVEWAY

TYPICAL DRIVEWAY PLAN VIEW

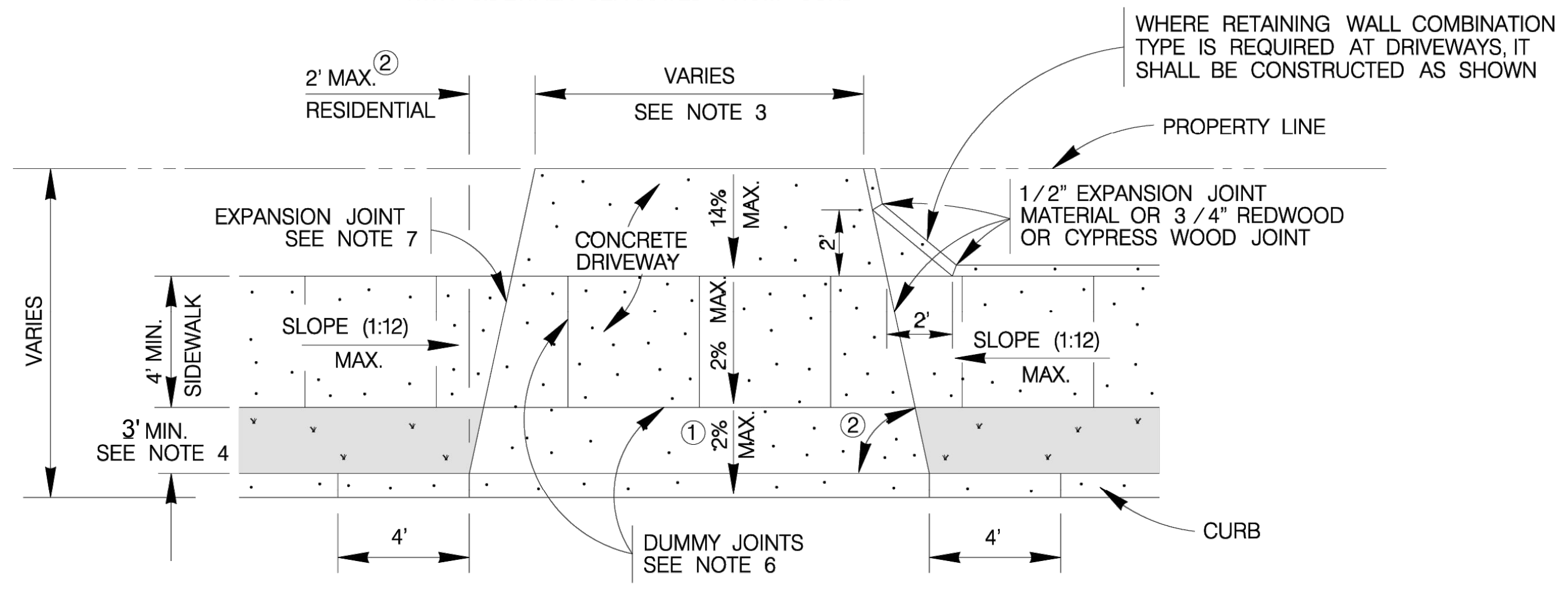
WITH SIDEWALK ABUTTING CURB



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

CURB PROFILE AT DRIVEWAY

WITH SIDEWALK SEPARATED FROM CURB



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

② 45° FOR COMMERCIAL DRIVEWAY

TYPICAL DRIVEWAY PLAN VIEW

WITH SIDEWALK SEPARATED FROM CURB

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

CONCRETE DRIVEWAY STANDARDS

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

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TRES LAURELS UNIT 4A

STREET DETAILS

DATE
04/22/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
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04/22/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

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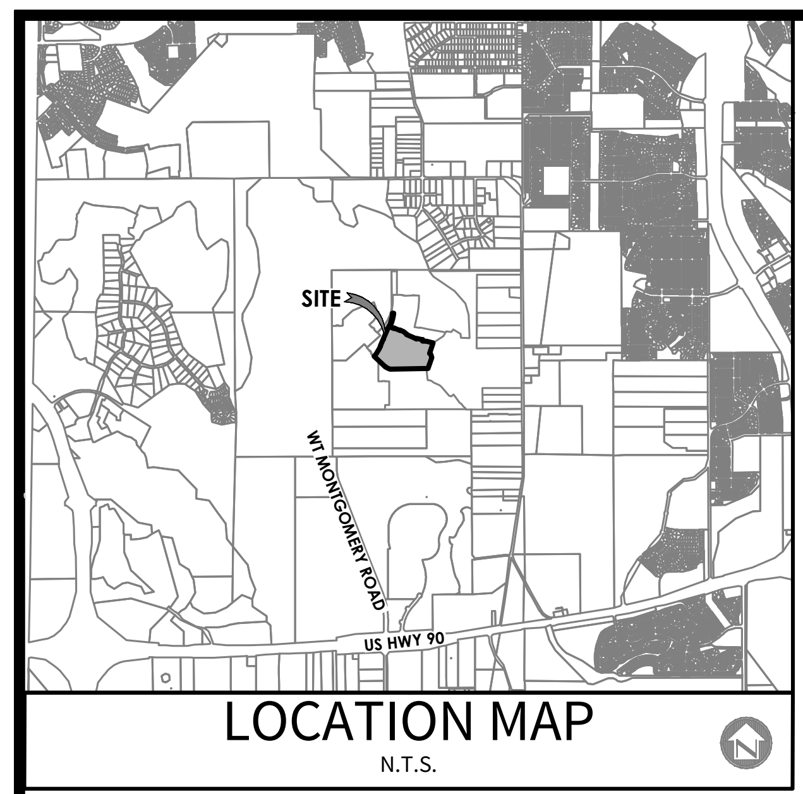


LOCATION MAP
N.T.S.

NOTE:

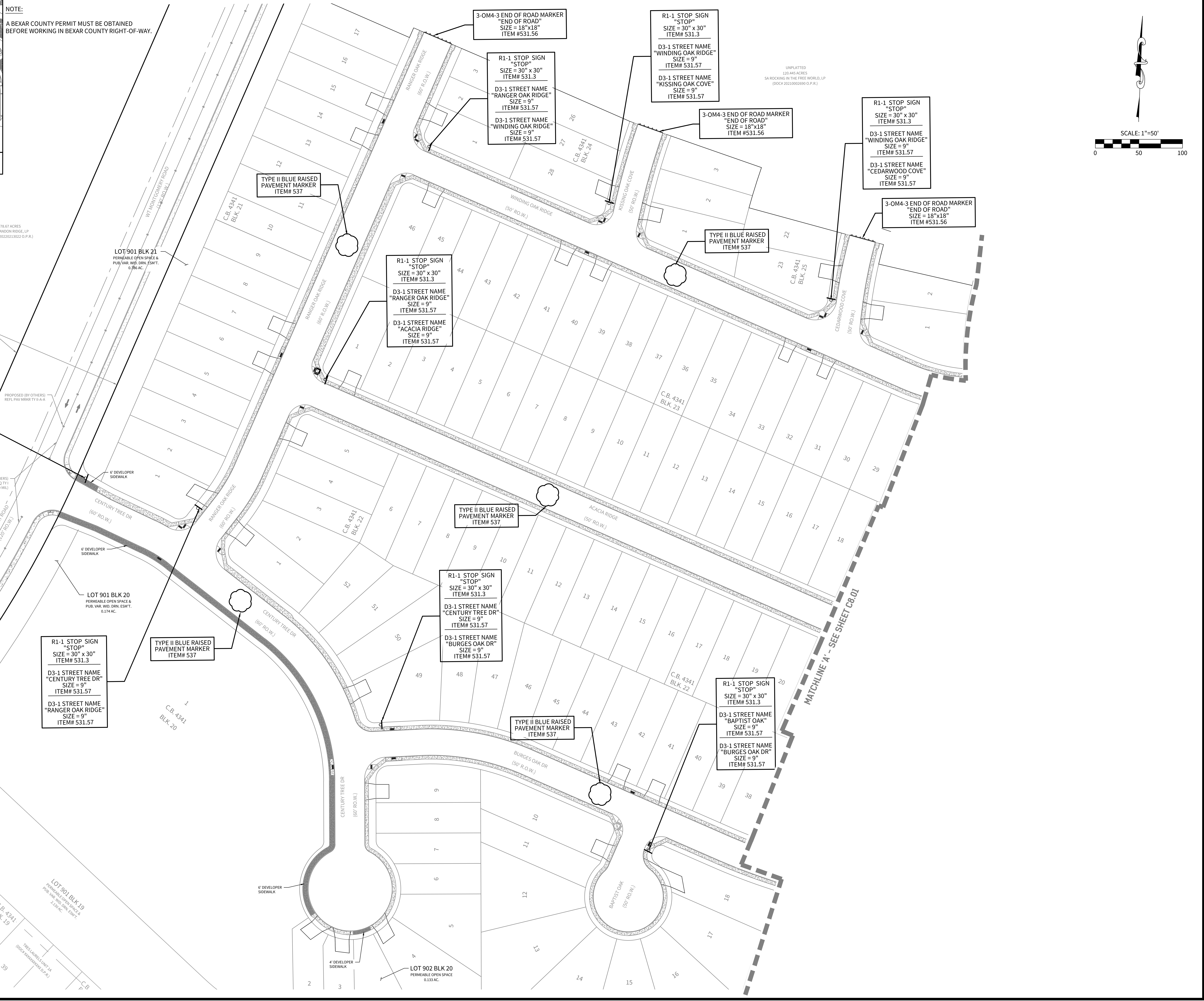
A BEXAR COUNTY PERMIT MUST BE OBTAINED
BEFORE WORKING IN BEXAR COUNTY RIGHT-OF-WAY.

OWNER/DEVELOPER:

LENNAR HOMES OF TEXAS LAND
ANDCONSTRUCTION, LTD.
A TEXAS LIMITED PARTNERSHIP
100 NE LOOP 410, SUITE 1155
SAN ANTONIO, TX 78216

CIVIL ENGINEER:

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



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TRES LAURELS
UNIT 4A

TRAFFIC SIGNAGE PLAN

DATE
06/24/2024

PROJECT NO.
03050.015

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06/25/2024
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147558

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24-11800118

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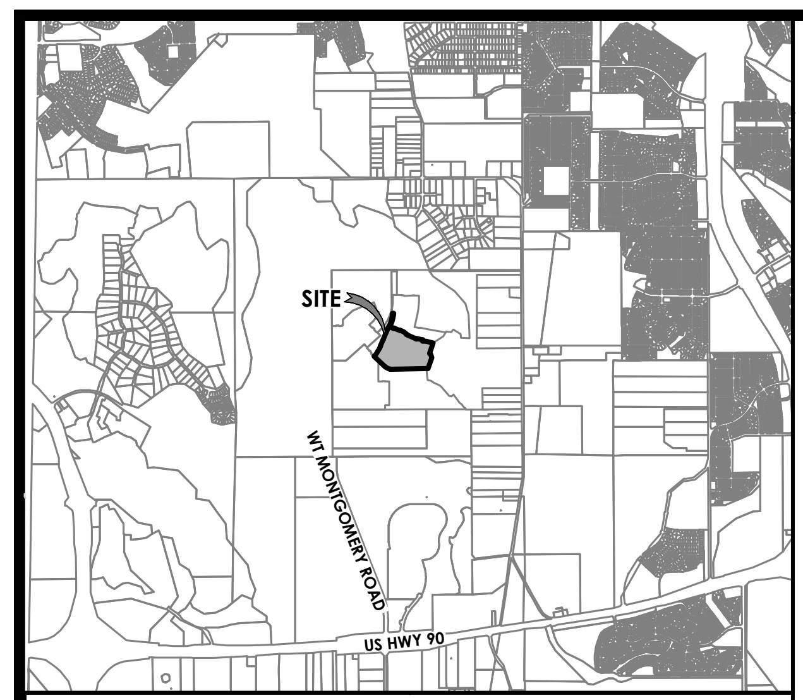

LOCATION MAP
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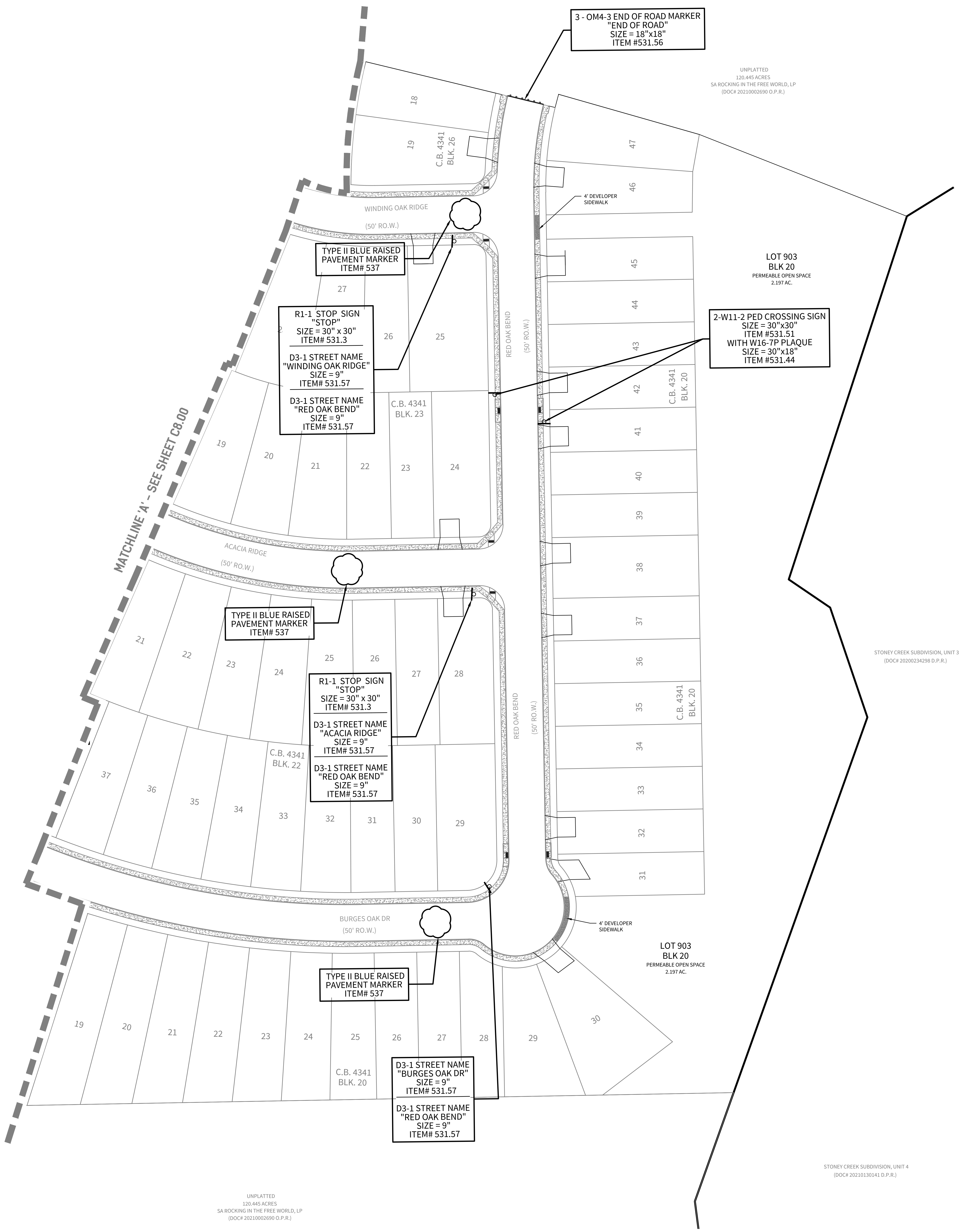
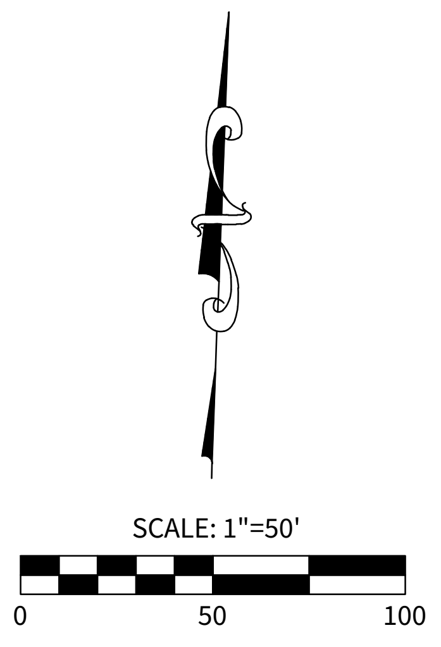
CIVIL ENGINEER:

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





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TRES LAURELS
UNIT 4A

TRAFFIC SIGNAGE PLAN

DATE
06/24/2024

PROJECT NO.
03050.015

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06/25/2024
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CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

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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))
- S80 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

Anchor Type

- UA = Universal Anchor - Concreted (see SMD(FRP) and (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))

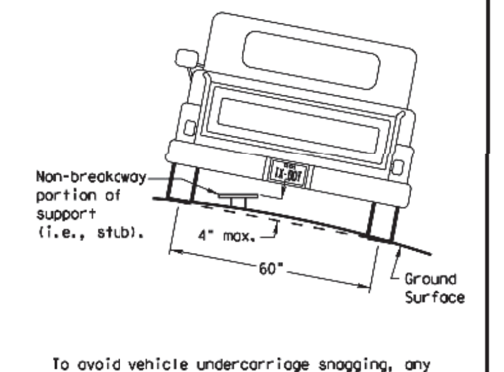
Sign Mounting Designation

- P = Prefab. "Plain" (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))

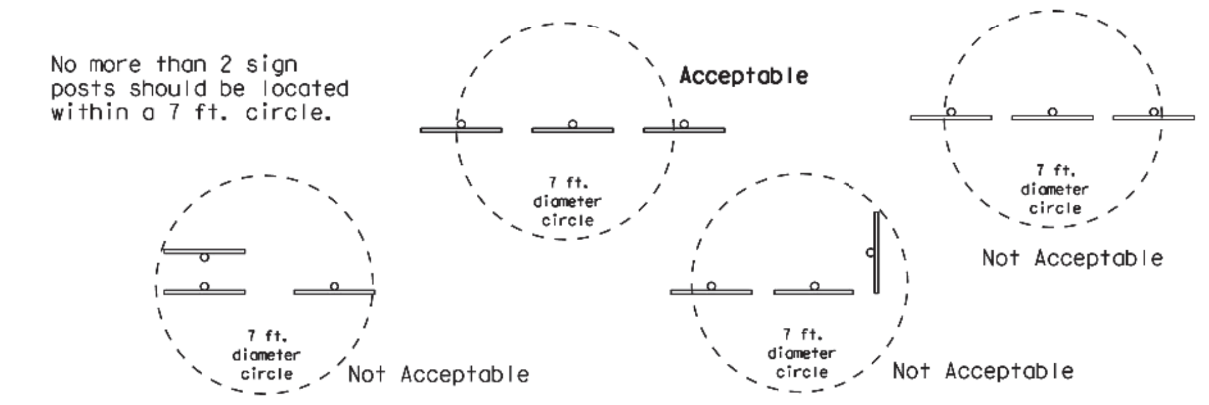
IF REQUIRED

- 1EXT or 2EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
- BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
- WC = 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

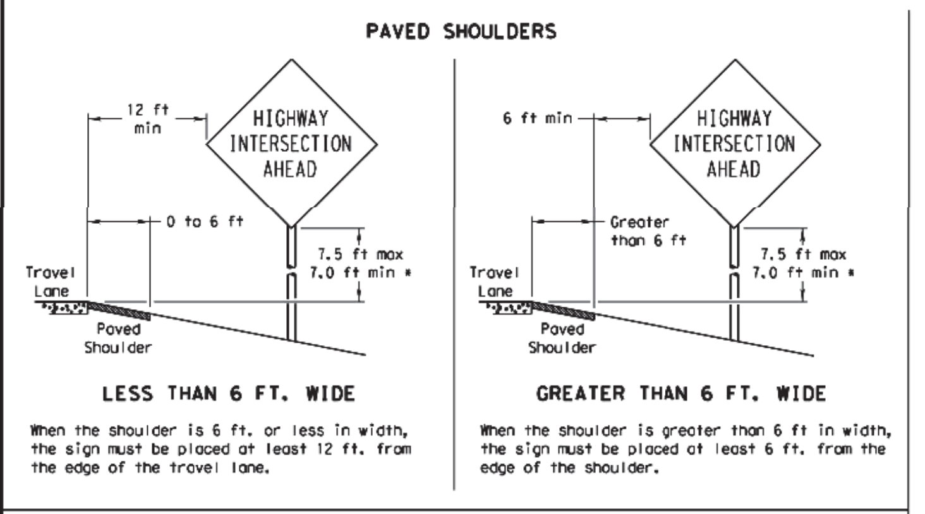


To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).



No more than 2 sign posts should be located within a 7 ft. circle.

SIGN LOCATION

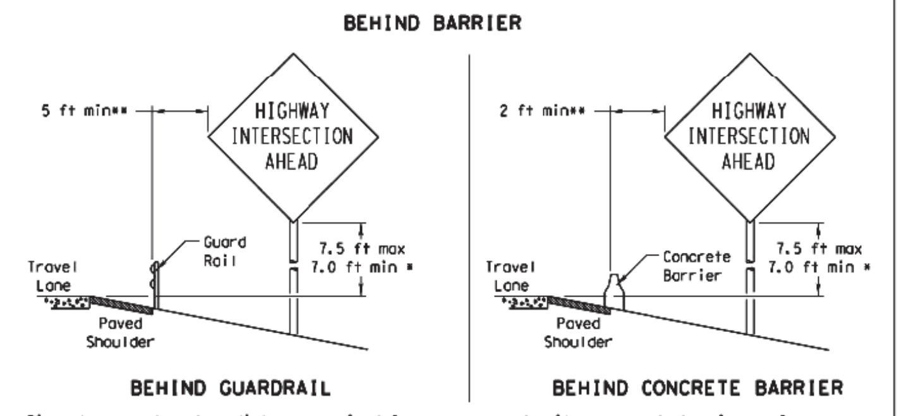


LESS THAN 6 FT. WIDE

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

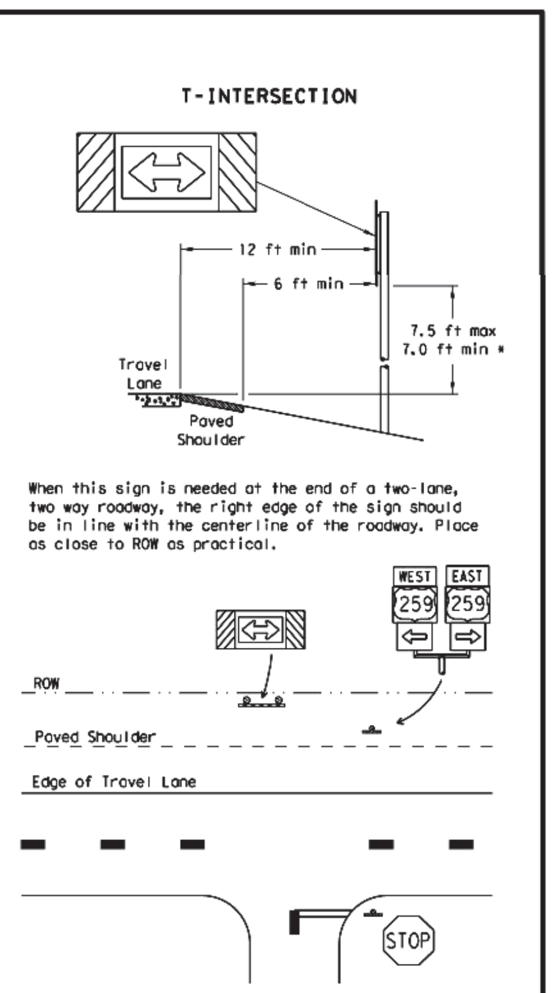
When the shoulder is greater than 6 ft in width, the sign must be placed at least 6 ft. from the edge of the shoulder.



BEHIND GUARDRAIL

BEHIND CONCRETE BARRIER

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



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

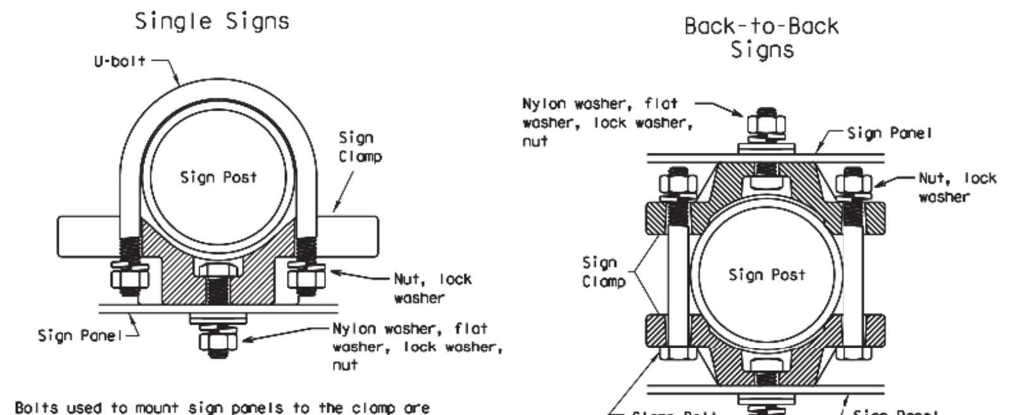
(2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

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

TYPICAL SIGN ATTACHMENT DETAIL



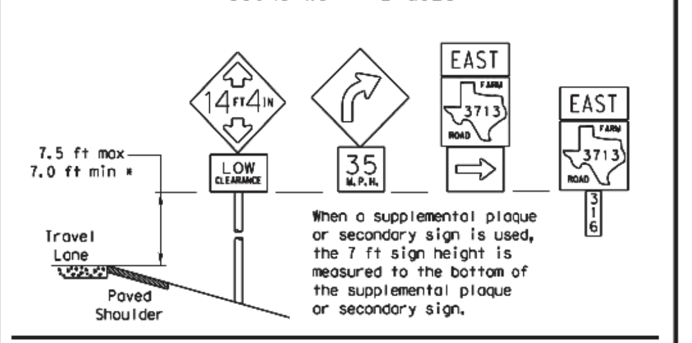
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

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.

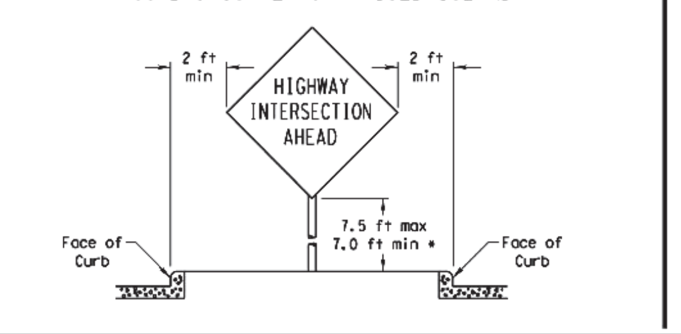
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES



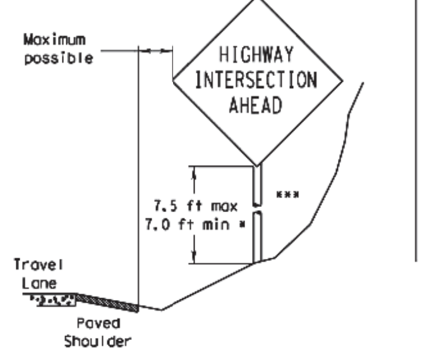
When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

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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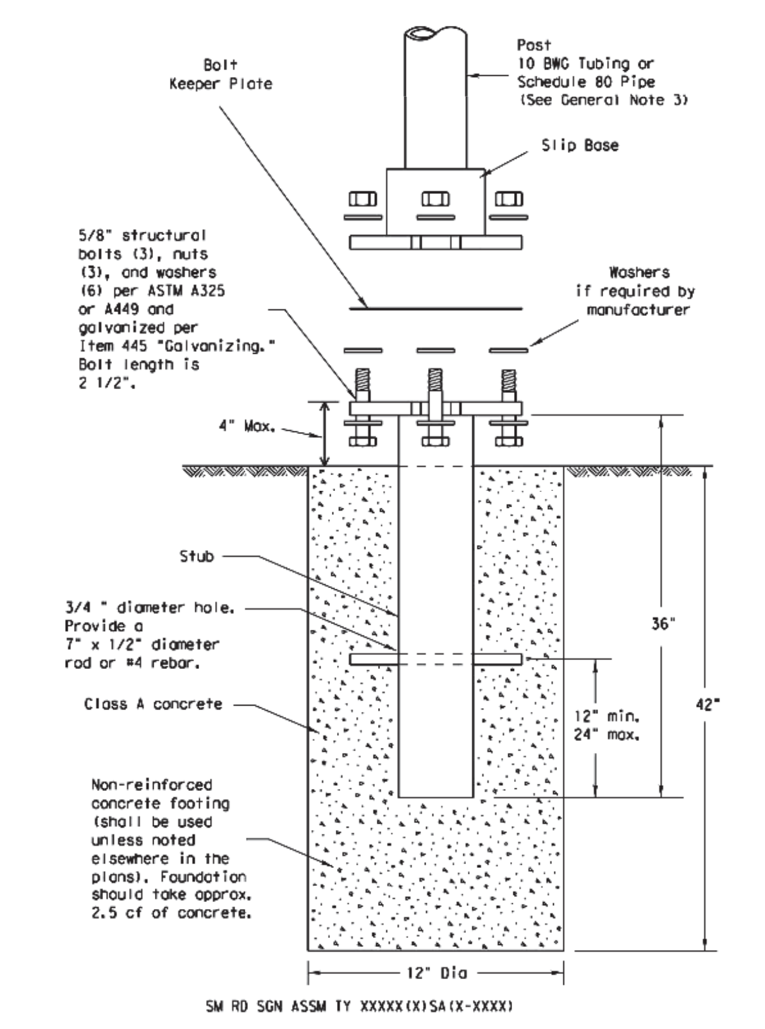
TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



Bolt Keeper Plate
Post 10 BWG Tubing or Schedule 80 Pipe (See General Note 3)
Slip Base
5/8" structural bolts (3), nuts (3), and washers (6) per ASTM A325 or A449 and galvanized per Item 445 "Galvanizing." Bolt length is 2 1/2".
Washers if required by manufacturer
4" Max.
Stub
3/4" diameter hole. Provide a 7" x 1/2" diameter rod or #4 rebar.
Class A concrete
Non-reinforced concrete footing (shall be used unless noted elsewhere in the plans). Foundation should take approx. 2.5 cf of concrete.
36"
42"
12" min. 24" max.
12" Dia
SM RD SGN ASSM TY XXXXX(X)SA(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.

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 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
       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 metallizing 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

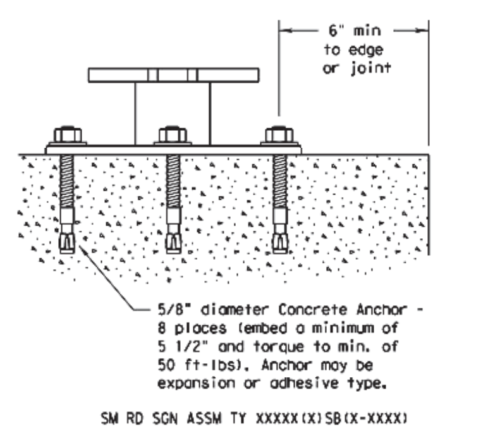
Foundation

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 end 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 travelway (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 travelway. 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.

CONCRETE ANCHOR



6" min to edge or joint
5/8" diameter Concrete Anchor - 8 places (embed a minimum of 5 1/2" and torque to min. of 50 ft-lbs). Anchor may be expansion or adhesive type.
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.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM
SMD(SLIP-1)-08

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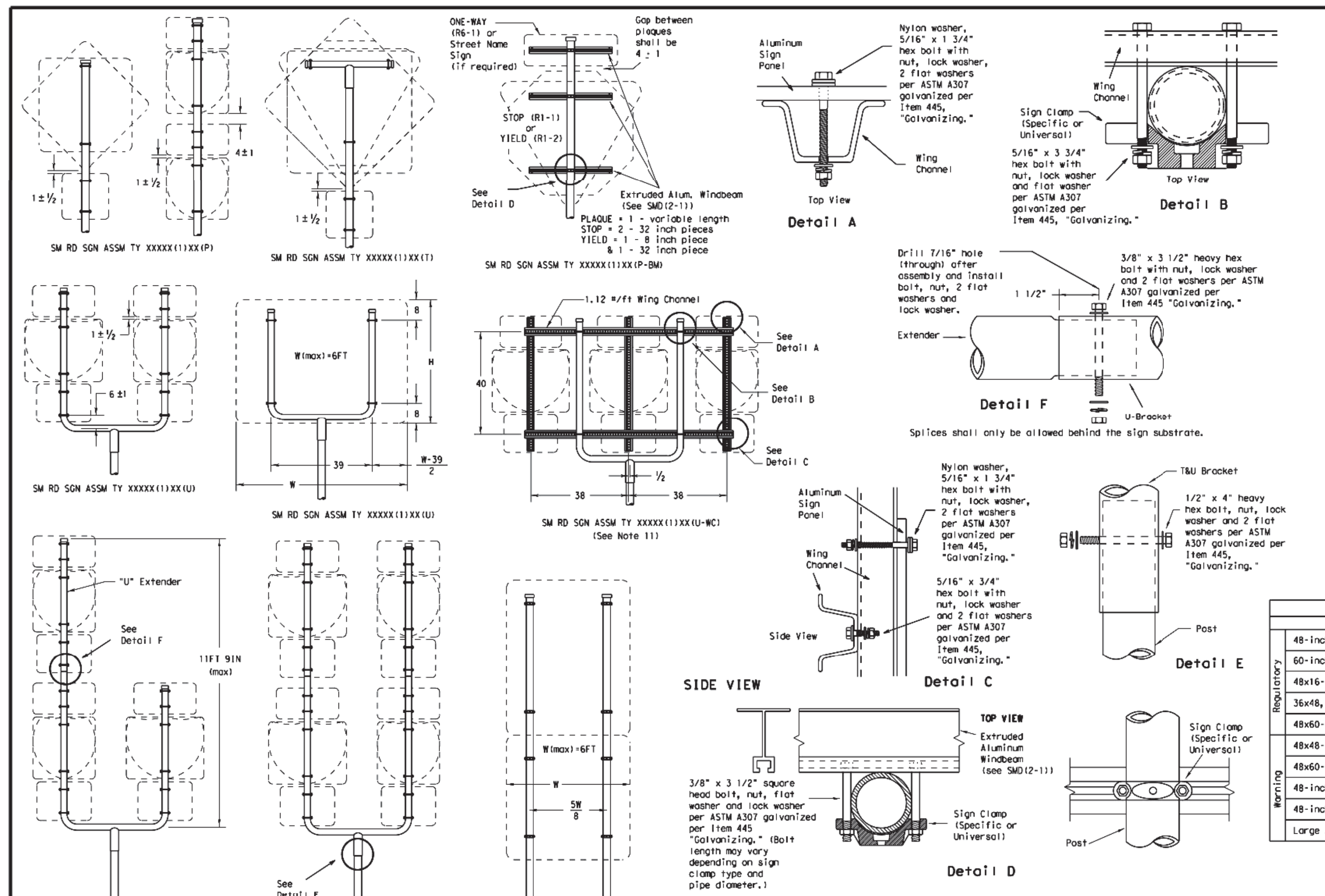
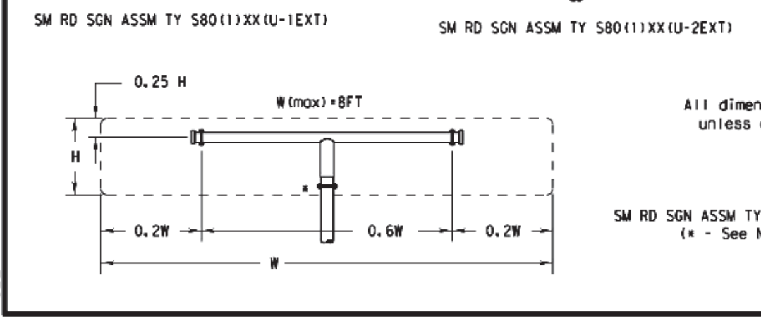
26B

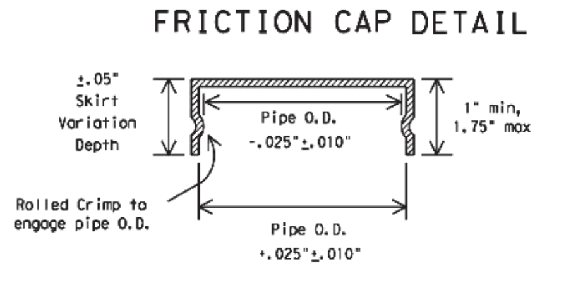


SM RD SGN ASSM TY XXXXX(1)XX(P)
SM RD SGN ASSM TY XXXXX(1)XX(T)
SM RD SGN ASSM TY XXXXX(1)XX(P-BM)
ONE-WAY (R6-1) or Street Name Sign (if required)
STOP (R1-1) or YIELD (R1-2)
Gap between plaques shall be 6" ± 1"
Extruded Alum. Windbeam (see SMD(2-1))
PLAQUE = 1 - variable length
STOP = 2 - 32 inch pieces
YIELD = 1 - 8 inch piece & 1 - 32 inch piece
SM RD SGN ASSM TY XXXXX(1)XX(U)
SM RD SGN ASSM TY XXXXX(1)XX(U)
1.12 #/ft Wing Channel
SM RD SGN ASSM TY XXXXX(1)XX(U-WC) (See Note 11)
SM RD SGN ASSM TY S80(1)XX(U-1EXT)
SM RD SGN ASSM TY S80(1)XX(U-2EXT)
SM RD SGN ASSM TY XXXXX(2)XX(P)
"U" Extender
See Detail F
See Detail A
See Detail B
See Detail C
See Detail E
Detail A
Detail B
Detail C
Detail D
Detail E
Detail F
Aluminum Sign Panel
Top View
Side View
Wing Channel
Nylon washer, 5/16" x 1 3/4" hex bolt with nut, lock washer, 2 flat washers per ASTM A307 galvanized per Item 445, "Galvanizing."
Sign Clamp (Specific or Universal)
5/16" x 3/4" hex bolt with nut, lock washer and flat washer per ASTM A307 galvanized per Item 445, "Galvanizing."
Drill 7/16" hole through after assembly and install bolt, nut, 2 flat washers and lock washer.
3/8" x 3 1/2" heavy hex bolt with nut, lock washer and 2 flat washers per ASTM A307 galvanized per Item 445 "Galvanizing."
Extender
U-Bracket
Splices shall only be allowed behind the sign substrate.
T&U Bracket
1/2" x 4" heavy hex bolt, nut, lock washer and 2 flat washers per ASTM A307 galvanized per Item 445, "Galvanizing."
Post
3/8" x 3 1/2" square head bolt, nut, flat washer and lock washer per ASTM A307 galvanized per Item 445 "Galvanizing." (Bolt length may vary depending on sign clamp type and pipe diameter.)
Extruded Aluminum Windbeam (see SMD(2-1))
SIDE VIEW



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 rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
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(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	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
SMD(SLIP-2)-08

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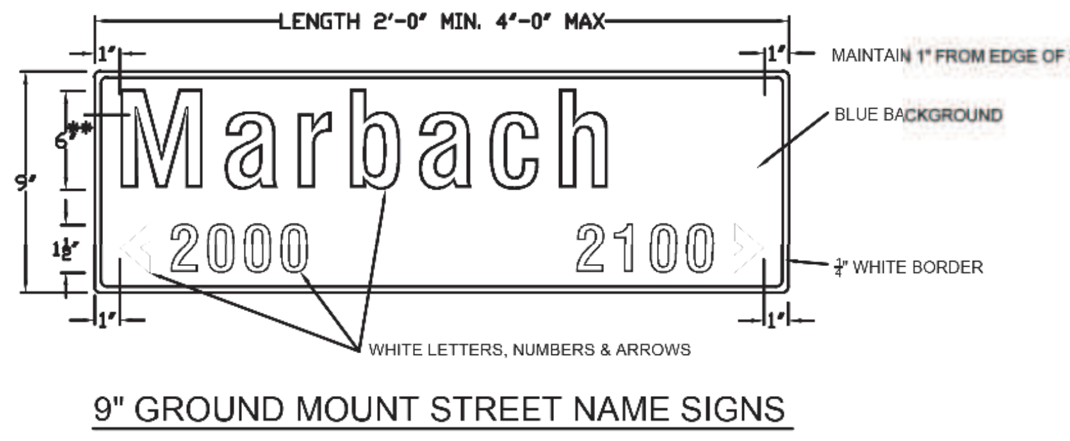
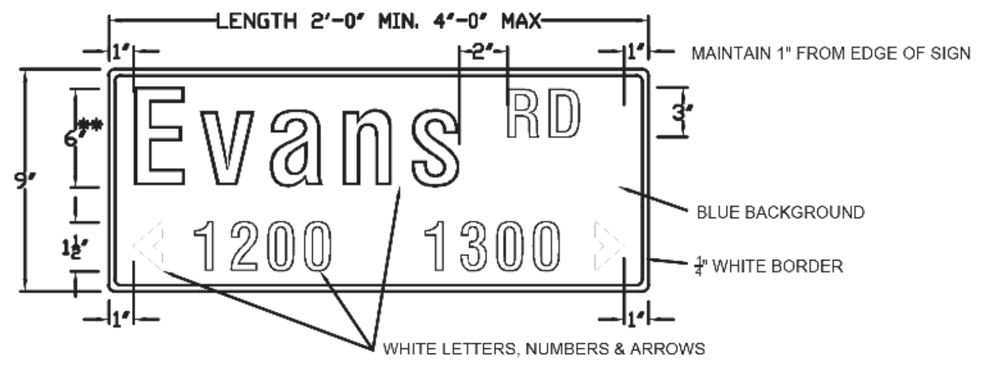


LENGTH 2'-0" MIN. 4'-0" MAX.
MAINTAIN 1" FROM EDGE OF SIGN
BLUE BACKGROUND
Marbach
2000
2100
1/4" WHITE BORDER
WHITE LETTERS, NUMBERS & ARROWS

**Capital = 6"
Lower case = 4 1/2"

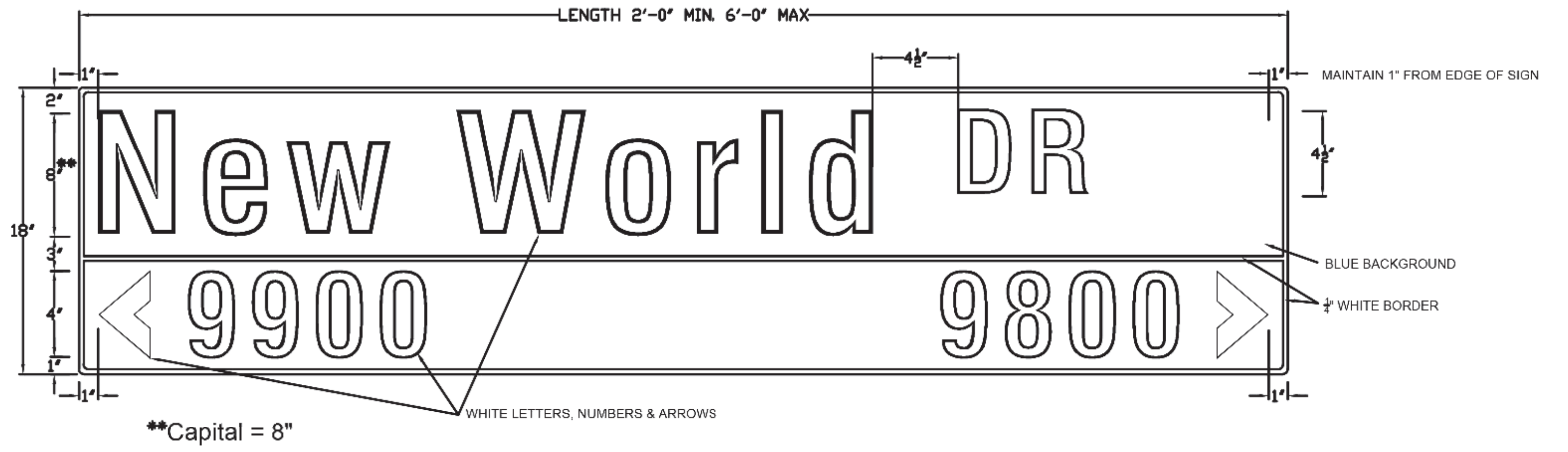
9" GROUND MOUNT STREET NAME SIGNS



LENGTH 2'-0" MIN. 4'-0" MAX.
MAINTAIN 1" FROM EDGE OF SIGN
Evans
RD
1200
1300
BLUE BACKGROUND
1/4" WHITE BORDER
WHITE LETTERS, NUMBERS & ARROWS

**Capital = 6"
Lower case = 4 1/2"

9" GROUND MOUNT STREET NAME SIGNS
WITH STREET DESIGNATION



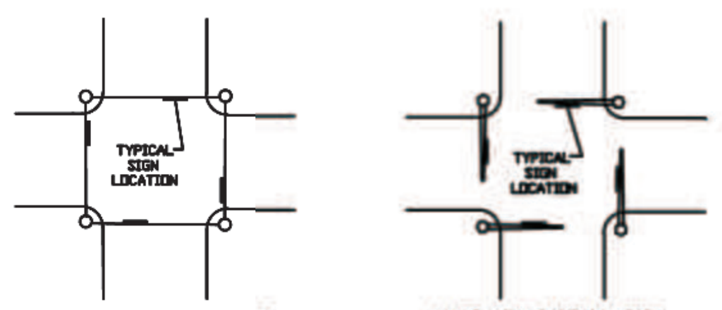
LENGTH 2'-0" MIN. 6'-0" MAX.
MAINTAIN 1" FROM EDGE OF SIGN
New World
DR
9900
9800
4 1/2"
18"
BLUE BACKGROUND
1/4" WHITE BORDER
WHITE LETTERS, NUMBERS & ARROWS

**Capital = 8"
Lower case = 6"

18" OVERHEAD STREET NAME SIGNS

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

✱ ACRYLIC ELECTRONIC CUTTABLE FILM



SPAN WIRE INSTALLATION

MAST ARM INSTALLATION

SIGN FACE MATERIALS SHALL CONFORM TO:

1. STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS & BRIDGES ON FEDERAL HIGHWAY PROJECTS - FP-03 U.S. CUSTOMARY UNITS SECTION 718
2. GENERAL SERVICES ADMINISTRATION FEDERAL SPECIFICATIONS L-S-300C
3. ASTM D 4956 - 09e1

INFRASTRUCTURE SERVICES DEPARTMENT
PUBLIC WORKS DIVISION

STREET NAME SIGNING DETAILS

SHEET 1

CUDEENGINEERS.COM

CUDE ENGINEERS EST. 1980

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

TRES LAURELS
UNIT 4A

TXDOT & BEXAR COUNTY DETAILS - SIGN MOUNTING

DATE
04/22/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

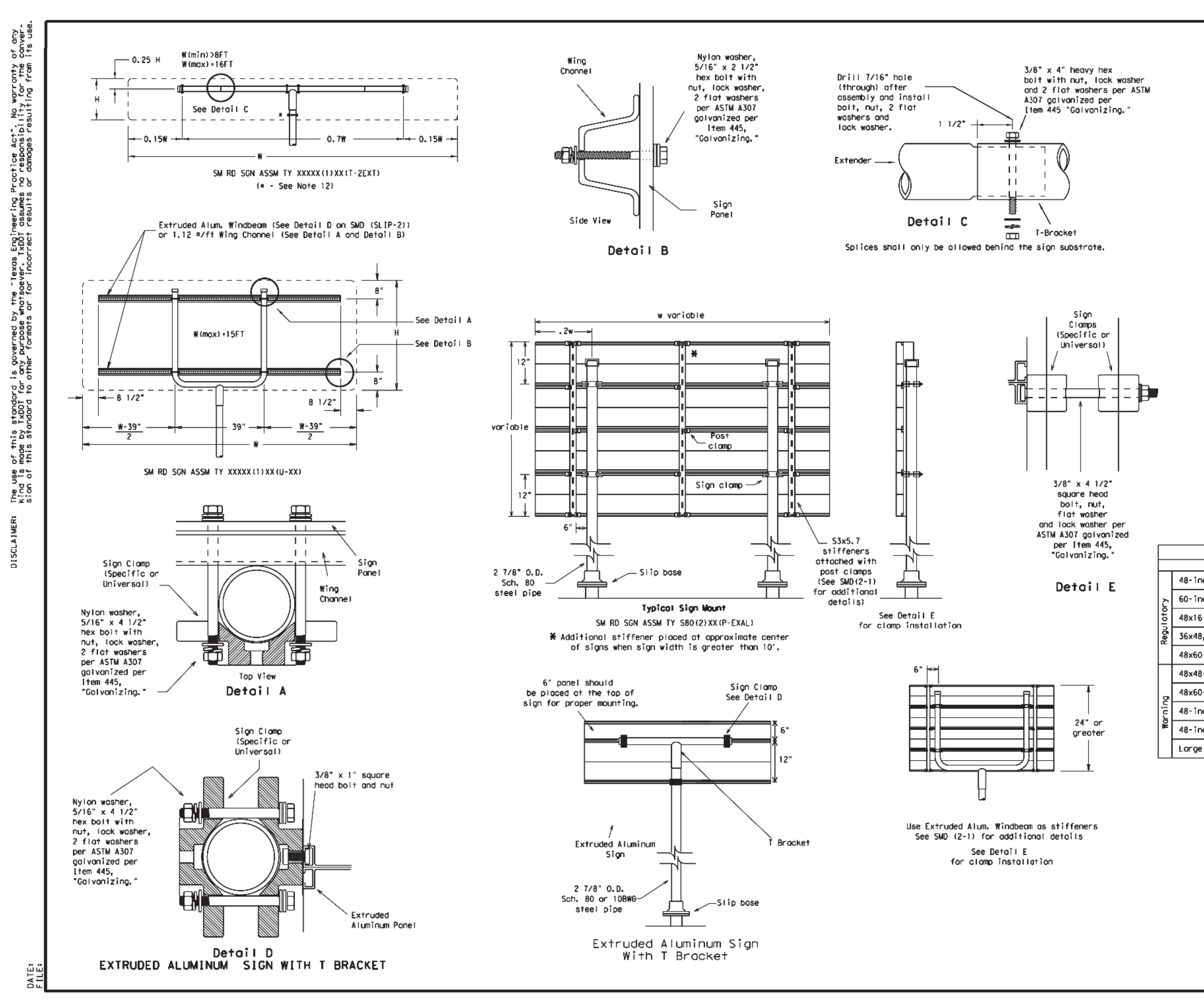
04/22/2024
MATTHEW A. TRINKLE
147558

CUDE ENGINEERS
TBPELS No. 10048500

PLAT NO.
24-11800118

C8.D1

P:\03050\015\2-DWG\4-Plans\02_01 TRAF.dwg 2024/04/22 11:09am rmata


SM RD SGN ASSM TY XXXXX(1)XX(T-2EXT)
Extruded Alum. Windbeam
SM RD SGN ASSM TY XXXXX(1)XX(U-XX)
Detail A
Detail B
Detail C
Detail D
Detail E
Typical Sign Mount
Extruded Aluminum Sign With T Bracket
EXTRUDED ALUMINUM SIGN WITH T BRACKET
Slip base

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 rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
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(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	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

SMD(SLIP-3)-08

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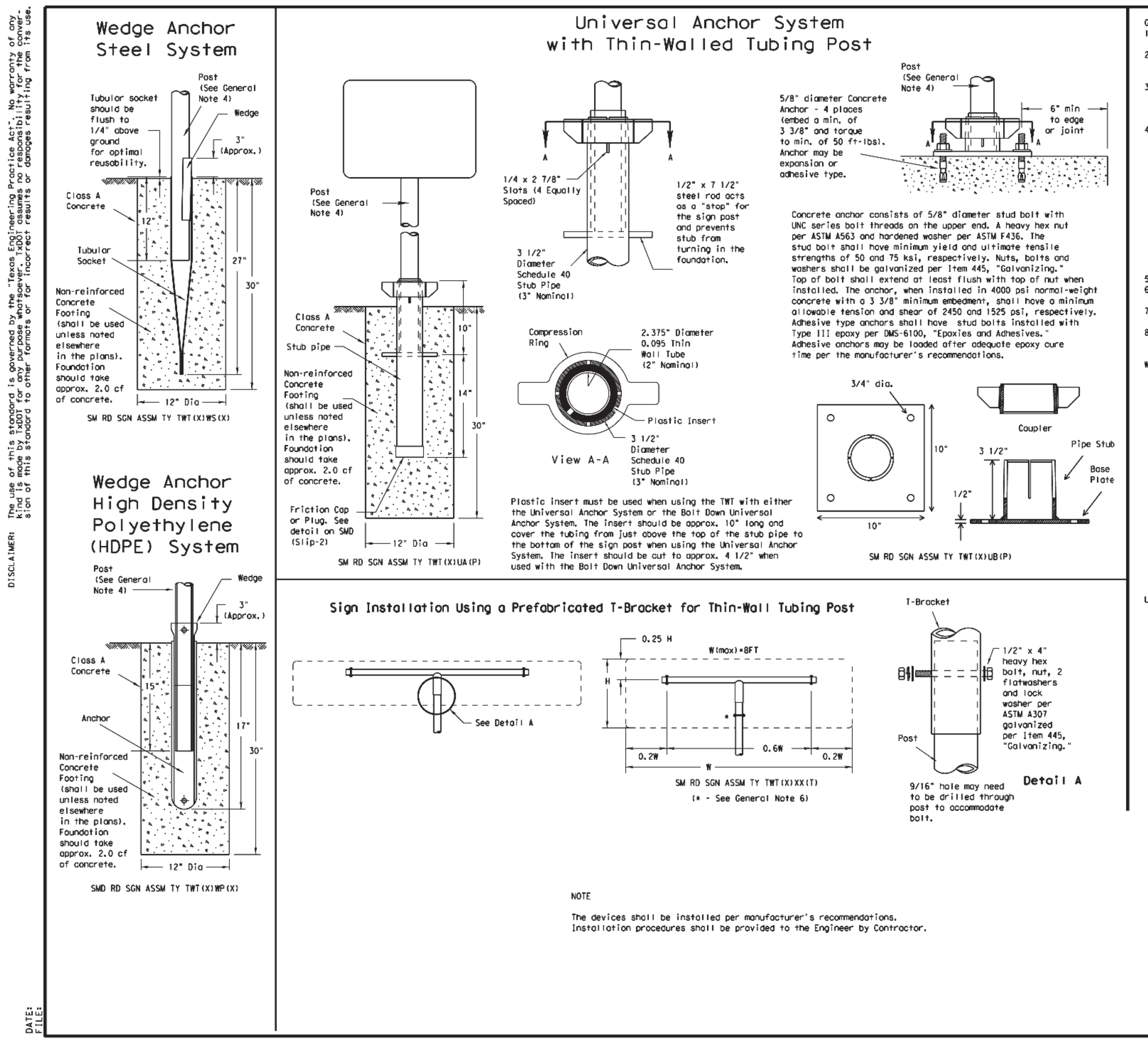
Wedge Anchor Steel System
Wedge Anchor High Density Polyethylene (HDPE) System
Universal Anchor System with Thin-Walled Tubing Post
SM RD SGN ASSM TY TWT(X)WS(X)
SM RD SGN ASSM TY TWT(X)WP(X)
SM RD SGN ASSM TY TWT(X)UA(P)
SM RD SGN ASSM TY TWT(X)UB(P)
View A-A
Plastic Insert
3 1/2" Diameter Schedule 40 Stub Pipe (3" Nominal)
3/4" dia.
10"
Coupler
Pipe Stub
Base Plate
Sign Installation Using a Prefabricated T-Bracket for Thin-Wall Tubing Post
0.25 H
W(max)=8FT
H
0.2W
0.6W
0.2W
W
SM RD SGN ASSM TY TWT(X)XX(T)
(* - See General Note 6)
See Detail A
T-Bracket
Detail A
9/16" hole may need to be drilled through post to accommodate bolt.

5/8" diameter Concrete Anchor - 4 places (embed a min. of 3 3/8" and torque to min. of 50 ft-lbs). Anchor may be expansion or adhesive type.

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.

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.

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 (13 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 within the range of .083" to .099"
     - Outside diameter (uncoated) shall be within 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(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. 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 approximaely 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(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. Insert base post in hole to depths shown and backfill hole with concrete.
3. Level and plumb the base post using a torpedo level and allow concrete adequate time to set. 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

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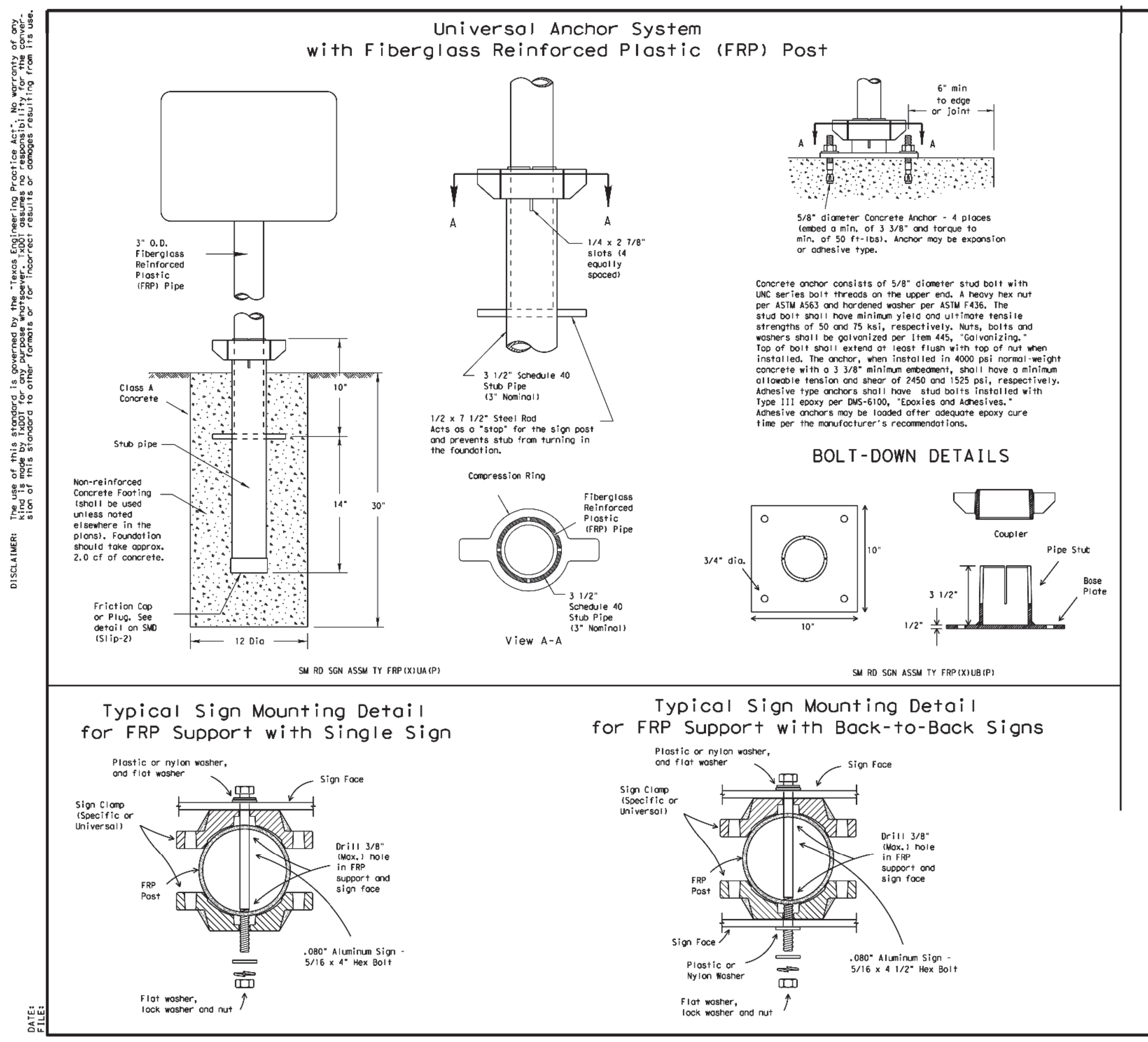
Universal Anchor System with Fiberglass Reinforced Plastic (FRP) Post
3" O.D. Fiberglass Reinforced Plastic (FRP) Pipe
Class A Concrete
Stub pipe
Friction Cap or Plug. See detail on SMD (Slip-2)
12 Dia
SM RD SGN ASSM TY FRP(X)UA(P)
3 1/2" Schedule 40 Stub Pipe (3" Nominal)
1/2 x 7 1/2" Steel Rod
View A-A
Compression Ring
BOLT-DOWN DETAILS
3/4" dia.
10"
Coupler
Pipe Stub
Base Plate
SM RD SGN ASSM TY FRP(X)UB(P)
Typical Sign Mounting Detail for FRP Support with Single Sign
Typical Sign Mounting Detail for FRP Support with Back-to-Back Signs
Sign Clamp (Specific or Universal)
FRP Post
Sign Face
.080" Aluminum Sign - 5/16 x 4" Hex Bolt
.080" Aluminum Sign - 5/16 x 4 1/2" Hex Bolt
Flat washer, lock washer and nut

5/8" diameter Concrete Anchor - 4 places (embed a min. of 3 3/8" and torque to min. of 50 ft-lbs). Anchor may be expansion or adhesive type.

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.

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(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Insert 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.

Texas Department of Transportation
Traffic Operations Division

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

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TRES LAURELS
UNIT 4A

TXDOT DETAIL - SIGN MOUNTING

DATE
04/22/2024

PROJECT NO.
03050.015

DRAWN BY
RM / IV

CHECKED BY
MAT/CJC

REVISIONS
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04/22/2024
MATTHEW A. TRINKLE
147558

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PLAT NO.
24-11800118

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