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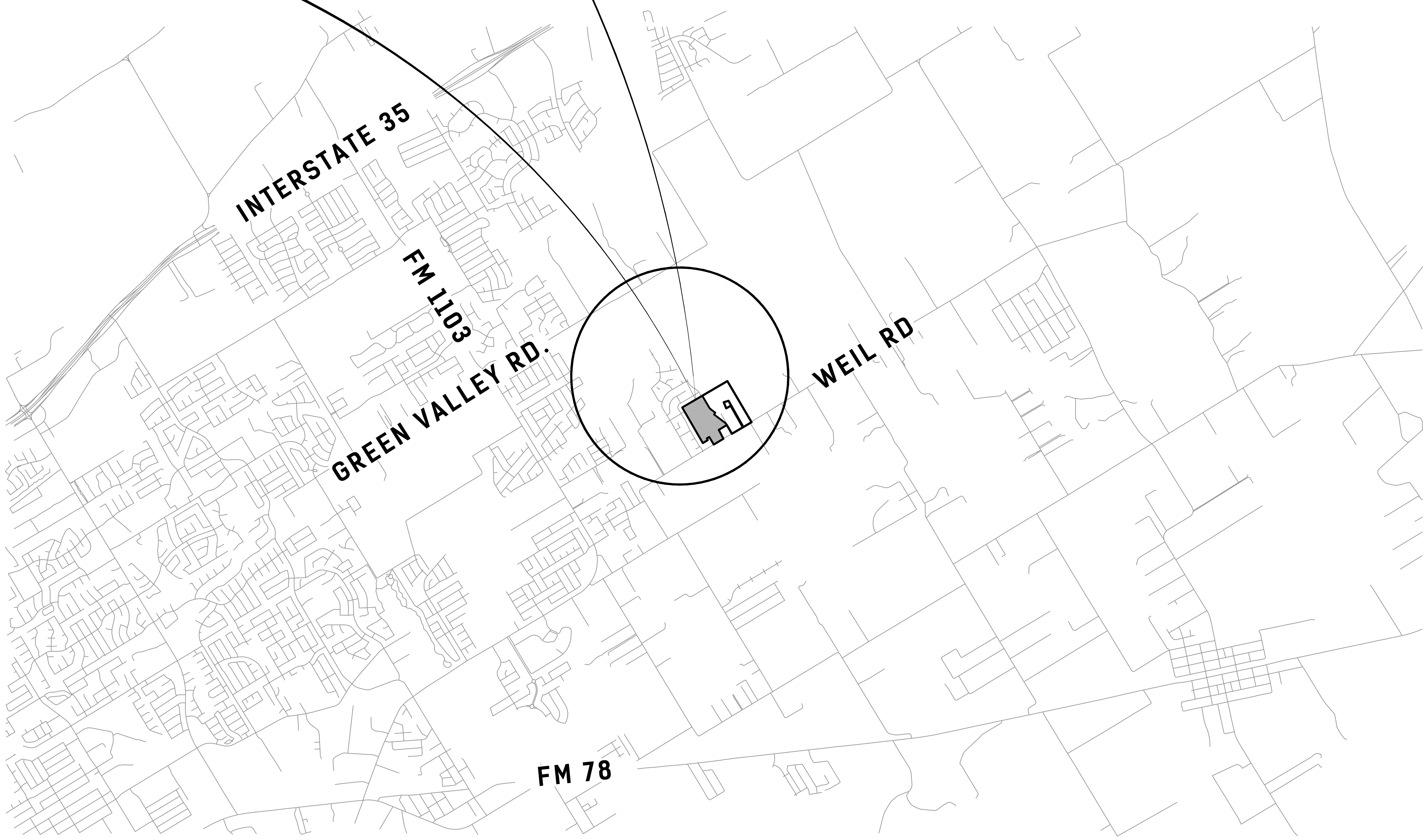
* DENOTES STANDARD DETAILS ADOPTED FOR USE ON THIS PROJECT

GREEN VALLEY RD.
WEIL RD.

LOCATION MAP



VICINITY MAP

EST. 1980
CUDE
ENGINEERS

GOERKE SUBDIVISION
PHASE 1

CONSTRUCTION PLANS

DEVELOPER:

LENNAR HOMES OF TEXAS LAND AND
CONSTRUCTION, LTD.
CONTACT: RICHARD MOTT, P.E.
100 NE LOOP 410, SUITE 1155
SAN ANTONIO, TEXAS 78216
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DRAWN BY	DATE	PLAT NO.
M.A.S./R.B.	02/25/2025	
CHECKED BY	**PROJECT NO.**	**CUDE ENGINEERS**
K.M.H./C.J.C.	03346.101	TBPE No. 455 TBPLS No. 10048500

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

KYLE M. HUDEK
138753

03/04/2025

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

STREET AND DRAINAGE GENERAL NOTES:

1. ALL WORK IS TO BE INSTALLED IN ACCORDANCE WITH STANDARDS OF THE CITY OF SANTA CLARA MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT WILL CONFORM TO APPLICABLE CITY OF SANTA CLARA SUBDIVISION REGULATIONS AND, STANDARD SPECIFICATIONS AND DETAILS.

2. FOR ALL REFERENCES TO THE TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT), THE CONTRACTOR SHALL SEE THEIR CURRENT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS, AND BRIDGES, WHICH IS ALSO LOCATED AT WWW.TXDOT.GOV.

3. ALL CONCRETE SHALL BE AS DETAILED ON THE PLAN SHEETS AND MEET MATERIAL REQUIREMENTS OF THE CITY OF SANTA CLARA.

4. ALL REINFORCING STEEL SHALL BE GRADE 60, MEET THE MATERIAL AND CONSTRUCTION REQUIREMENTS OF THE CITY OF SANTA CLARA.

5. CONCRETE CURING SHALL BE WITH AN IMPERVIOUS MEMBRANE APPLICATION AND SHALL MEET THE MATERIAL AND APPLICATION REQUIREMENTS OF THE CITY OF SAN ANTONIO'S “MEMBRANE CURING" AND BE LISTED ON THE GUADALUPE COUNTY APPROVED LIST OF SUPPLIERS IN ADDITION TO THE CONTRACTOR APPLYING THE CURING COMPOUND THEY ARE TO INSTALL CONTRACTION/EXPANSION JOINTS ON CONCRETE WORK.

6. ALL CONCRETE CONSTRUCTION AND FINISHING SHALL MEET THE REQUIREMENTS OF THE CITY OF SANTA CLARA.

7. PRIOR TO THE COMMENCEMENT OF ANY WORK, THE COUNTY SHALL ATTEND A PRECONSTRUCTION MEETING INCLUDING (BUT NOT LIMITED TO: THE CITY, ENGINEER, CONTRACTOR, DEVELOPER'S INSPECTION REPRESENTATIVE, AND DEVELOPER'S CONSTRUCTION MATERIAL TESTING REPRESENTATIVE.

8. DURING CONSTRUCTION, NOTIFY THE COUNTY AT CONSTRUCTION@CO.GUADALUPE.TX.US AT LEAST **48 HOURS** IN ADVANCE OF ANY WORK TO BE PERFORMED AFFECTING SUBGRADE, BASE, OR PAVEMENT INCLUDING BACKFILL OF ANY PROPOSED UTILITIES UNDERNEATH THE PAVEMENT AND FILL AREAS UPON WHICH PAVEMENT IS PROPOSED TO BE PLACED. SUCH NOTIFICATION IS ALSO REQUIRED BEFORE IMPLEMENTING ANY APPROVED TRAFFIC CONTROL PLANS ON EXISTING COUNTY MAINTAINED ROADS. FULL CLOSURE OF COUNTY ROADS REQUIRES AT LEAST **ONE MONTH** ADVANCE NOTICE AND IS SUBJECT TO THE DISCRETION OF THE COUNTY ENGINEER AND POSSIBLE APPROVAL BY GUADALUPE COUNTY COMMISSIONERS COURT PER TRANSPORTATION CODE, CHAPTER 251.

9. DURING CONSTRUCTION, PROVIDE ALL INSPECTION AND TESTING REPORTS TO THE COUNTY AT CONSTRUCTION@CO.GUADALUPE.TX.US AS SOON AS AVAILABLE FOR IDENTIFICATION AND CORRECTION OF ANY EMERGING DEFICIENCIES.

10. PROVIDE AS-BUILT DRAWINGS WITHIN **10 BUSINESS DAYS** OF THE COMPLETION OF CONSTRUCTION.

11. GUADALUPE COUNTY DOES NOT MAINTAIN SIDEWALKS, CURB AND GUTTER, CURB RAMPS, PAVERS, LUMINAIRES, STORM SEWER OR DETENTION APPURTENANCES.

12. MANHOLES SHALL BE BROKEN BELOW THE FINISH GRADE LEVEL UNTIL THE BASE IS COMPLETED AND THEN RESTORED.

13. THE ENGINEER WILL STAKE THE STREET ONE TIME ONLY AND FURNISH CUT SHEETS TO THE STREET CONTRACTOR: ANY CONSTRUCTION STAKES REMOVED OR DESTROYED BY THE CONTRACTOR OR HIS EMPLOYEES WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

14. AN INDEPENDENT TESTING LABORATORY APPROVED BY THE CITY OF SANTA CLARA SHALL PERFORM ALL "FIELD AND LABORATORY TESTING." THE CITY REQUIRES ALL INSPECTION AND/OR TESTING FIRMS TO BE ACCREDITED, QUALIFIED, AND IN COMPLIANCE WITH THE REQUIREMENTS OF ASTM E329, "STANDARD SPECIFICATION FOR AGENCIES ENGAGED IN CONSTRUCTION INSPECTION AND/OR TESTING." FIRMS MUST PRESENT A COPY OF THEIR CURRENT, OFFICIAL ACCREDITATION BY THE AMERICAN ASSOCIATION FOR LABORATORY ACCREDITATION (A2LA) OR THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) AND CURRENT AMRL AND CCRL PROFICIENCY RESULTS. THE FIRMS SHALL BE ACCREDITED IN ALL MATERIAL TEST PROCEDURES REQUIRED TO BE PERFORMED FOR EACH PROJECT.

15. THE DEVELOPER WILL HIRE A THIRD PARTY FOR CONSTRUCTION MATERIAL TESTING IN WHICH THE CONTRACTOR WILL REQUIRE TO COORDINATE AND PROVIDE NECESSARY INFORMATION TO THEM.THE FOLLOWING TEST SCHEDULE SHALL BE ADHERE TO:

    A. ALL IMPORT FILL PLACED IN THE STREET'S SUBGRADE SHALL BE SELECT MATERIAL, WITH A PLASTICITY INDEX LESS THAN TWENTY (20), AND COMPACTED IN MAXIMUM EIGHT (8) INCH LIFTS TO 98% DENSITY OF TXDOTS TEST METHOD TEX 113-E PROVIDE TESTING ON EACH EIGHT (8) INCH COMPACTED LIFT. SUBGRADE MOISTURE DENSITY TESTING SHALL BE AT THE MINIMUM FREQUENCY OF THREE (3) PER BLOCK AND SHALL NOT TO EXCEED ONE-HUNDRED AND TWENTY (120) FOOT SPACING.

    B. FLEXIBLE BASE TESTING SHALL INCLUDE - P.I., LL, GRADATION, AND WET BALL MILL OF MATERIAL SHALL BE TESTED UPON DELIVERY TO THE PROJECT AND AS DIRECTED BY THE CITY. MOISTURE DENSITY TESTING SHALL BE AT THE MINIMUM RATE OF THREE (3) PER BLOCK AND SHALL NOT TO EXCEED FIVE HUNDRED (500) FOOT SPACING. THE QUALITY CONTROL TEST ON THE MATERIALS SHALL BE PERFORMED BY THE CONTRACTOR'S CITY APPROVED TESTING FIRM. IN-PLACE DENSITY SHALL MEET THE REQUIREMENTS DETAILED IN THE CITY'S SUBDIVISION REGULATIONS.

    C. HOT AND WARM MIX ASPHALTIC CONCRETE (HMAC/WMAC) DENSITY - IN PLACE DENSITY TESTING SHALL RESULT BETWEEN 92% AND 97% OF THE MAXIMUM THEORETICAL GRAVITY PER TEX 207-F. A SET OF TWO (2) CORES SHALL BE RANDOMLY SAMPLED AT A DISTANCE NOT TO EXCEED FIVE HUNDRED (500) FOOT SPACING PER BLOCK. ALL QUALITY CONTROL NUCLEAR TESTING OF THE IN-PLACE HMAC/WMAC IS FOR QUALITY CONTROL INFORMATION ONLY. THE HMAC/WMAC THICKNESS IS REQUIRED TO BE MEASUREMENT BY CORE. FIELD QUALITY CONTROL PERSONNEL SHALL BE TXDOT LEVEL IB CERTIFIED AND BE PRESENT AT START AND THROUGH THE DURATION OF THE PLACEMENT OPERATIONS OF THE HMAC/WMAC TO DOCUMENT DENSITY, THICKNESS. AND COMPACTION AND PLACEMENT OPERATIONS. THE CITY OF SANTA CLARA WILL DETERMINE THE REMOVAL AND REPLACEMENT OF ALL FAILED PRODUCTION AND PLACEMENT HMAC/WMAC TEST RESULTS.

    D. RECYCLED ASPHALT SHINGLES (RAS) AND RECYCLED ASPHALT PAVEMENT (RAP) SHALL NOT BE USED IN ANY HMAC OR WMAC MIXES.

    E. CONCRETE STRUCTURES - A MINIMUM OF ONE (1) SET OF COMPRESSIVE CONCRETE STRENGTH TEST OF 4, SIX (6) INCH DIAMETER CYLINDERS EACH WILL BE TESTED PER EACH STRUCTURE AND THE FREQUENCY SHALL BE NO LESS THAN ONE (1) SET PER SIXTY (60) CUBIC YARDS OF CONCRETE PLACED AND AT LEAST ONE (1) SET PER DAY.

    F. CONCRETE CURB AND SIDEWALK - PROVIDE ONE (1) SET OF FOUR (4), SIX (6) INCH DIAMETER CYLINDERS PER EACH 500 LINEAR FEET OF CURB AND/OR SIDEWALK AND AT LEAST ONE (1) SET PER DAY.

    G. THE CONTRACTOR SHALL SUBMIT CONCRETE, WMAC, AND HMAC DESIGNS A MINIMUM OF 2 WEEKS PRIOR TO THE PLACEMENT OF THE MATERIAL.

16. PROOF ROLLING - ALL SUBGRADE AND EACH LIFT OF BASE MATERIAL SHALL BE PROOF-ROLLED TO THE SATISFACTION OF THE CITY. THE CONTRACTOR SHALL PROVIDE THE NECESSARY EQUIPMENT AND OPERATORS FOR PROOF- ROLLING AS DIRECTED BY THE CITY. SOFT AND YIELDING AREAS DISCOVERED SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR EXPENSE .

17. SURFACE STRUCTURES SUCH AS MAILBOXES, STREET SIGNS, FENCES, DRIVEWAYS, SIDEWALKS, LANDSCAPING, CONCRETE ISLANDS, CURBS OR CONCRETE DRIVEWAYS, ETC., VISIBLE AT THE TIME OF THE SURVEY ARE SHOWN ON THE PLANS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SAFEGUARD AND MAINTAIN ANY AND ALL SURFACE STRUCTURES DURING THE COURSE OF WORK AND TO REPLACE OR REPAIR THOSE ITEMS WHICH ARE DAMAGED BY THE CONTRACTOR WITH LIKE OR BETTER QUALITY AND SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION (NO SEPARATE PAY ITEM).

18. LOCATIONS AND DEPTHS OF EXISTING UTILITIES SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS MUST BE FIELD VERIFIED BY THE CONTRACTOR AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, PROTECT THEM DURING CONSTRUCTION AND REPAIR ANY DAMAGE TO OTHER UTILITIES AT NO COST TO THE CITY OF SANTA CLARA.

19. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SEE THAT ALL SIGNS AND BARRICADES ARE PROPERLY INSTALLED AND MAINTAINED. ALL LOCATIONS AND DISTANCES WILL BE DECIDED UPON IN THE FIELD BY THE CONTRACTOR, USING THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. THE CITY'S CONSTRUCTION INSPECTOR/TRAFFIC ENGINEERING REPRESENTATIVE WILL ONLY BE RESPONSIBLE TO INSPECT BARRICADES AND SIGNS. IF IN THE OPINION OF THE TRAFFIC ENGINEERING REPRESENTATIVE/ CONSTRUCTION INSPECTOR, THE TRAFIC CONTROL DEVICES DO NOT CONFORM TO ESTABLISHED STANDARDS, ARE INCORRECTLY PLACED OR INSUFFICIENT IN QUANTITY TO PROTECT THE TRAVELING GENERAL PUBLIC. THE CONSTRUCTION INSPECTOR WILL HAVE THE OPTION OF STOPPING THE OPERATIONS UNTIL SUCH TIME AS THE CONDITIONS ARE CORRECTED AT NO EXPENSE TO THE CITY OF SANTA CLARA.

20. DEVELOPER/CONTRACTOR TO INSTALL ALL STREET NAME SIGNS, STOP SIGNS, SPEED LIMIT, YIELD SIGNS, ETC. SIGNS AND STREET NAMES SHALL MEET TEXAS MUTCD STANDARDS.

21. THE STREET CONTRACTOR IS REQUIRED TO ADJUST ALL EXISTING MANHOLES (SEE "ADJUSTING EXISTING MANHOLES" OF THE SPECIFICATION) AND WATER VALVES TO MATCH THE GRADE OF THE STREET SECTION OR THE ELEVATION SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

22. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181 ACCESS TO GAS VALVES MUST BE MAINTAINED AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.

23. CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND OTHER UNDERGROUND STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. CONTRACTOR WILL NOTIFY ALL UTILITY COMPANIES AT LEAST 72 HOURS PRIOR TO EXCAVATION.

CITY OF SANTA CLARA	
GVSUD	
GVTC	
GVEC	1-800-401-8845
DIG TEST	1-800-344-8377
TEXAS STATE WIDE ONE CALL LOCATORS	1-800-545-6005 OR 811
TIME WARNER CABLE	
AT&T	
MCI	
VERIZON	

24. CONCRETE CURB SHALL BE CONSTRUCTED WITH A MAXIMUM OF EIGHTY (80) FEET BETWEEN EXPANSION JOINTS AND MARKED AT TEN (10) FOOT INTERVALS WITH APPROVED STEEL MARKING TOOLS. EXPANSION JOINTS SHALL BE PLACED AT THE BEGINNING OF ALL RADII AND AT A MAXIMUM OF EIGHTY (80) FOOT INTERVALS AS DIRECTED BY THE ENGINEER.

25. THE CONTRACTOR SHALL NOTIFY THE CITY OF SANTA CLARA PLANNING AND ENGINEERING DEPARTMENT PRIOR TO PLACING BACKFILL OR CONCRETE AND PRIOR TO ANY TESTING. CONTRACTOR SHALL REQUEST INSPECTIONS A MINIMUM OF 24 HOURS IN ADVANCE. NO INSPECTIONS ARE AVAILABLE BETWEEN 12:00 P.M. AND 1:00 P.M. OR AFTER 4:00 PM DAILY, ON WEEKENDS, OR ON CITY HOLIDAYS.

26. CONCRETE SIDEWALKS SHALL HAVE TOOLED WEAKENED PLANE JOINTS EVERY FOUR (4) FEET AND DOWELED EXPANSION JOINT WITH ONE QUARTER INCH (1/4) BITUMASTIC MATERIAL ON CENTER AND ABUTTING EXISTING STRUCTURES.

27. ALL WORKMANSHIP AND MATERIAL SHALL CONFORM TO THE CITY OF SANTA CLARA ORDINANCES FOR PUBLIC WORKS CONSTRUCTION.

28. CONTRACTOR SHALL INSTALL CURB FOR HANDICAP RAMPS AS SHOWN ON THE PLANS AND ADA STANDARD PLAN SHEETS.

29. CONTRACTOR SHALL PROVIDE BRASS KEYS TO BE USED TO OPEN LOCKING MANHOLE COVERS ON DRAINAGE STRUCTURES DURING PRELIMINARY INSPECTION FOR ACCEPTANCE OF PROJECT.

30. EXISTING STREETS TRENCHES ARE TO BE BACKFILLED WITH FLOWABLE FILL FROM THE TOP OF THE BEDDING MATERIAL TO WITHIN TWO (2) INCHES OF THE FINISHED GRADE ALLOWING FOR THE SURFACE HMAC/WMAC.

31. REMOVE EXISTING CURB ON ALL NEW DRIVEWAYS AND PLACE THE COMPLETE PAVEMENT THICKNESS WITH A MINIMUM OF FIVE (5) INCHES THICKNESS ON RESIDENTIAL AND SIX (6) INCHES MINIMUM ON COMMERCIAL; DEPENDING ON TRAFFIC WEIGHT.

32. CONCRETE PLACED IN NEW DRIVEWAYS INCLUDING ALLEYS SHALL MEET A MINIMUM 3,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.

33. EXCESS MATERIAL IS TO BE EMBANKED AND COMPACTED TO FINAL GRADE FOR FUTURE PHASES. NO EXCESS MATERIAL SHALL BE DUMPED OR ALLOWED TO ENTER ANY WATERWAY, CULVERT OR OTHER DRAINAGE STRUCTURE. THE CONTRACTOR SHALL NOT PLACE ANY MATERIAL IN THE 100-YEAR FLOODPLAIN WITHOUT OBTAINING AN APPROVED FLOOD PLAIN PERMIT.

34. ANY WORK COMPLETED WITHOUT PRIOR AUTHORIZATION WHETHER INCLUDED IN THE PLANS AND SPECIFICATIONS OR NOT. SHALL NOT BE COMPENSATED BY THE CITY OF SANTA CLARA.

MISCELLANEOUS NOTES:

1. ACCESS TO THIS SITE IS PROVIDED THROUGH TWO PROPOSED DRIVEWAYS ALONG WEIL RD.

2. DRIVEWAYS ARE SHOWN FOR ILLUSTRATIVE PURPOSES ONLY TO DENOTE A POTENTIAL CONFLICT WITH DRAINAGE FACILITY AND/OR ADA RAMP. ALL DRIVEWAYS WILL BE BUILT WITH HOMEBUILDING.

3. ALL REQUIRED ADA RAMPS ARE SHOWN ON THE PLANS. ONLY ADA RAMPS WITHOUT RESIDENTIAL LOT FRONTAGE SHALL BE BUILT WITH THE STREET INFRASTRUCTURE.

4. CONTRACTOR SHALL REFERENCE TREE PLAN AND PRIVATE GRADING PLAN FOR CLEARING AND GRADING LIMITS.

5. PRIOR TO THE INSTALLATION OF STREET BASE MATERIAL, CONTRACTOR SHALL COORDINATE WITH ENGINEER AND UTILITY PROVIDERS TO INSTALL NECESSARY CONDUITS FOR UTILITY INSTALLATION.

6. CONTRACTOR IS RESPONSIBLE FOR ENSURING POSITIVE SITE DRAINAGE AT ALL TIMES DURING AND UPON COMPLETION OF INFRASTRUCTURE.

7. CONTRACTOR IS REQUIRED TO NOTIFY ENTERPRISE UTILITIES WHEN ENCROACHING UPON THE EXISTING GAS EASEMENT ON SITE.

CONSTRUCTION SEQUENCING: (LIST PROCESS ON CONSTRUCTION PLAN SET)

1. CALL THE PLANNING AND DEVELOPMENT SERVICES DEPARTMENT 48 HOURS PRIOR TO BEGINNING ANY WORK AND SCHEDULE A RECONSTRUCTION MEETING WITH THE CITY AND ALL AFFECTED UTILITY PROVIDERS, THE GENERAL CONTRACTOR, THE DEVELOPER AND THE DEVELOPER'S ENGINEER.

2. OBTAIN A SITE DEVELOPMENT PERMIT FROM THE PLANNING AND DEVELOPMENT SERVICES DEPARTMENT.

3. PROVIDE THE PLANNING AND DEVELOPMENT SERVICES DEPARTMENT WITH EVIDENCE ALL TCEQ LICENSES AND REQUIREMENTS ARE UP TO DATE.

4. INSTALL TEMPORARY EROSION CONTROLS AND TREE PROTECTION FENCING PRIOR TO ANY CLEARING AND GRUBBING. NOTIFY THE CITY WHEN INSTALLED.

5. ROUGH-CUT ALL REQUIRED OR NECESSARY PONDS. EITHER THE PERMANENT OUTLET STRUCTURE OR A TEMPORARY OUTLET MUST BE CONSTRUCTED DURING DEVELOPMENT OF ANY EMBANKMENT OR EXCAVATION THAT LEADS TO PONDING CONDITIONS. THE OUTLET SYSTEM MUST CONSIST OF A LOW-LEVEL OUTLET AND AN EMERGENCY OVERFLOW MEETING THE REQUIREMENTS OF THE UDC. THE OUTLET SYSTEM SHALL BE PROTECTED FROM EROSION AND SHALL BE MAINTAINED THROUGHOUT THE COURSE OF CONSTRUCTION UNTIL FINAL RESTORATION IS ACHIEVED.

6. DELIVER APPROVED ROUGH CUT SHEETS TO THE CITY ENGINEER PRIOR TO CLEARING AND GRUBBING.

7. ROUGH GRADE STREETS. NO DEVELOPMENT OF EMBANKMENT WILL BE PERMITTED AT THIS TIME.

8. INSTALL ALL UTILITIES TO BE LOCATED UNDER THE PROPOSED PAVEMENT OR WITHIN THE ROAD RIGHT-OF-WAY.

9. DELIVER STORM SEWER CUT SHEETS TO THE CITY ENGINEER.

10. BEGIN INSTALLATION OF STORM SEWER LINES. UPON COMPLETION, RESTORE AS MUCH DISTURBED AREA AS POSSIBLE, PARTICULARLY CHANNELS AND LARGE OPEN AREAS.

11. DELIVER FINAL GRADE CUT SHEETS TO THE CITY ENGINEER.

12. RE-GRADE STREETS TO SUB-GRADE.

13. ENSURE THAT UNDERGROUND UTILITY CROSSINGS ARE COMPLETED. LAY 1ST COURSE BASE MATERIAL ON STREETS.

14. INSTALL CURB AND GUTTER.

15. LAY FINAL BASE COURSE ON ALL STREETS.

16. LAY ASPHALT.

17. COMPLETE FINAL GRADING AND RESTORATION OF DETENTION, SEDIMENTATION / FILTRATION PONDS.

18. COMPLETE PERMANENT EROSION CONTROL AND RESTORATION OF SITE VEGETATION.

19. REMOVE AND DISPOSE OF TEMPORARY EROSION CONTROLS.

20. COMPLETE ANY NECESSARY FINAL DRESS UP OF AREAS DISTURBED.

CITY OF SANTA CLARA NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF SANTA CLARA DESIGN AND CONSTRUCTION MANUAL AND THE UNIFIED DEVELOPMENT CODE, HERE AFTER REFERRED TO THE UDC.

2. APPROVAL OF THESE CONSTRUCTION PLANS BY THE CITY OF SANTA CLARA DOES NOT CONSTITUTE A VERIFICATION OF ALL DATA, INFORMATION AND CALCULATIONS SUPPLIED BY THE APPLICANT. THE ENGINEER OF RECORD IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY AND ADEQUACY OF HIS/HER SUBMITTAL WHETHER OR NOT THE APPLICATION IS REVIEWED FOR CODE COMPLIANCE BY THE CITY ENGINEER.

3. ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN APPROVING THESE PLANS, THE CITY OF SANTA CLARA MUST RELY ON THE ADEQUACY OF THE WORK OF THE ENGINEER.

4. DESIGN PROCEDURES ARE IN COMPLETE COMPLIANCE WITH THE CITY OF SANTA CLARA DESIGN AND CONSTRUCTION MANUAL. IT IS THE RESPONSIBILITY OF THE ENGINEER TO REQUEST A WAIVER FROM ANY ASPECT OF THESE PLANS THAT DO NOT COMPLY WITH THE UDC.

5. A MINIMUM OF TWO EXISTING BENCH MARKS TIED TO CITY OF SANTA CLARA GRID SHOULD BE SHOWN ON THE PLANS. IN ADDITION TWO PERMANENT BENCHMARKS PER SUBDIVISION SHALL BE INSTALLED IN EACH SUBDIVISION TO INCLUDE DESCRIPTION, LOCATION, AND ELEVATION AND TIE TO CITY OF SANTA CLARA STANDARDS WHEN POSSIBLE.

6. CAST BRONZE SURVEY MARKERS SHALL BE PLACED IN CONCRETE IN PERMANENT, ACCESSIBLE LOCATIONS AT THE TIME OF CONSTRUCTION. THE LOCATIONS OF THE MARKERS SHALL BE INDICATED ON THE CONSTRUCTION PLANS. A MINIMUM OF ONE MARKER SHALL BE PLACED FOR EACH 20 ACRES OF THE PROJECT.

7. PRIOR TO BEGINNING CONSTRUCTION, THE OWNER OR HIS AUTHORIZED REPRESENTATIVE SHALL CONVENE A PRE-CONSTRUCTION CONFERENCE BETWEEN THE CITY OF SANTA CLARA, CONSULTING ENGINEER, CONTRACTOR, GUADALUPE COUNTY AND ANY OTHER AFFECTED PARTIES. NOTIFY THE CITY OF SANTA CLARA AT LEAST 48 HOURS PRIOR TO THE TIME OF THE CONFERENCE AND 48 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION.

8. THE CONTRACTOR SHALL GIVE THE CITY OF SANTA CLARA AND GUADALUPE COUNTY A MINIMUM OF 48 HOURS NOTICE BEFORE BEGINNING EACH PHASE OF CONSTRUCTION.

9. BARRICADES, BUILT TO CITY OF SANTA CLARA SPECIFICATIONS, SHALL BE CONSTRUCTED ON ALL DEAD-END STREETS AND AS NECESSARY DURING CONSTRUCTION TO MAINTAIN JOB SAFETY. (STREETS, ETC. MAY BE LISTED IN ADDITION TO OR INSTEAD OF NOTE.)

10. IF BLASTING IS PLANNED BY THE CONTRACTOR, A BLASTING PERMIT MUST BE SECURED PRIOR TO COMMENCEMENT OF ANY BLASTING.

11. ANY EXISTING PAVEMENT, CURBS, AND/ OR SIDEWALKS DAMAGED OR REMOVED WILL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE BEFORE ACCEPTANCE OF THE SUBDIVISION.

12. THE LOCATION OF ANY WATER AND / OR WASTEWATER LINES SHOWN ON THE PLANS MUST BE VERIFIED BY THE CITY OF SANTA CLARA PUBLIC WORKS DEPARTMENT.

13. USE ONE CALL UTILITY SYSTEM: DIAL 1-800-344-8377, 48 HOURS BEFORE YOU DIG.

14. ALL STORM SEWER PIPES TO BE CLASS III RCP UNLESS NOTED OTHERWISE.

CERTIFICATE OF APPROVAL BY CITY ENGINEER:

APPROVED ON THIS THE _____ DAY OF ____________, 20 _____, BY THE CITY ENGINEER, CITY OF SANTA CLARA, TEXAS.

____

CITY ENGINEER, CITY OF SANTA CLARA

"RELEASE OF THIS APPLICATION DOES NOT CONSTITUTE A VERIFICATION OF ALL DATA, INFORMATION AND CALCULATIONS SUPPLIED BY THE APPLICANT. THE ENGINEER OF RECORD IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY AND ADEQUACY OF HIS/HER SUBMITTAL, WHETHER OR NOT THE APPLICATION IS REVIEWED FOR CODE COMPLIANCE BY THE CITY ENGINEER."

“ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN APPROVING THESE PLANS, THE CITY OF SANTA CLARA MUST RELY UPON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.”

CUDEENGINEERS.COM

EST. 1980
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ENGINEERS

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P:(210) 681.2951 F: (210) 523.7112

GOERKE SUBDIVISION PHASE 1

GENERAL NOTES

DATE
09/30/2024

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
1.
2.
3.
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6.
7.
8.
9.

KYLE M. HUDEK
138753
11/12/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C0.00

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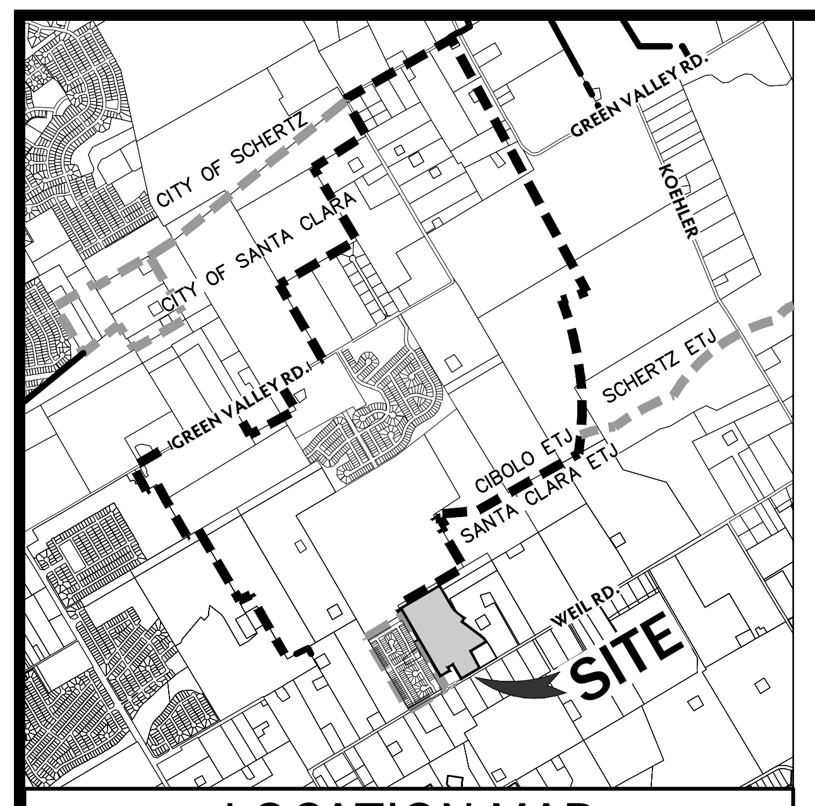

CITY OF SCHERTZ
CITY OF SANTA CLARA
GREEN VALLEY RD.
KOEHLER
SCHERTZ ETJ
CIBOLO ETJ
SANTA CLARA ETJ
WEIL RD.
SITE

LOCATION MAP

N.T.S.

LEGEND

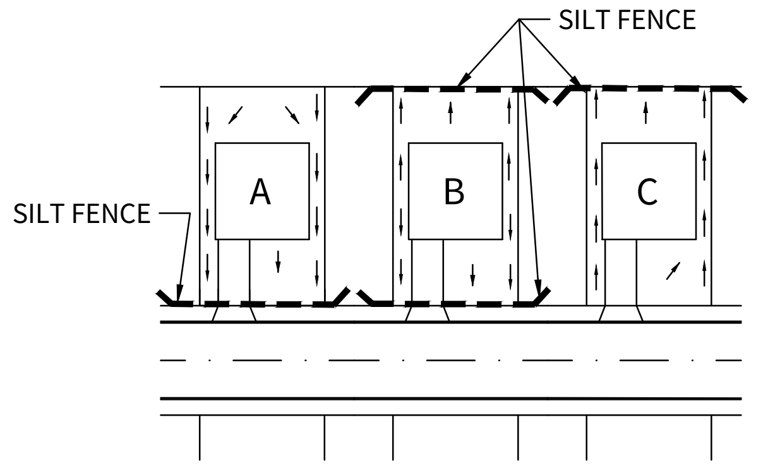
PROPERTY LINE	━━━━
LIMITS OF CONSTRUCTION	▬ ▬ ▬ ▬
PROPOSED CONTOURS	──930──
EXISTING CONTOURS	– – 930 – –
BMP ITEM NUMBER	1
TEMPORARY CONSTRUCTION ENTRANCE/EXIT	▩
SILT FENCE	━━ SF ━━
FLOW ARROW	→
STAGING AREA	■
CONCRETE WASHOUT PIT	■
PROPOSED ROCK BERM	▩
BAGGED GRAVEL INLET FILTER	○○○○○
EARTHEN BERM	▨

KEYNOTES

- ⟨1⟩ 20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE
- ⟨2⟩ 10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

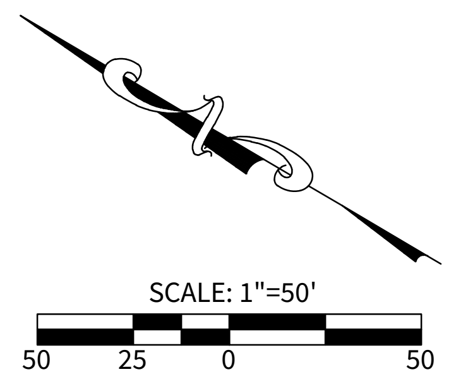
NOTE:

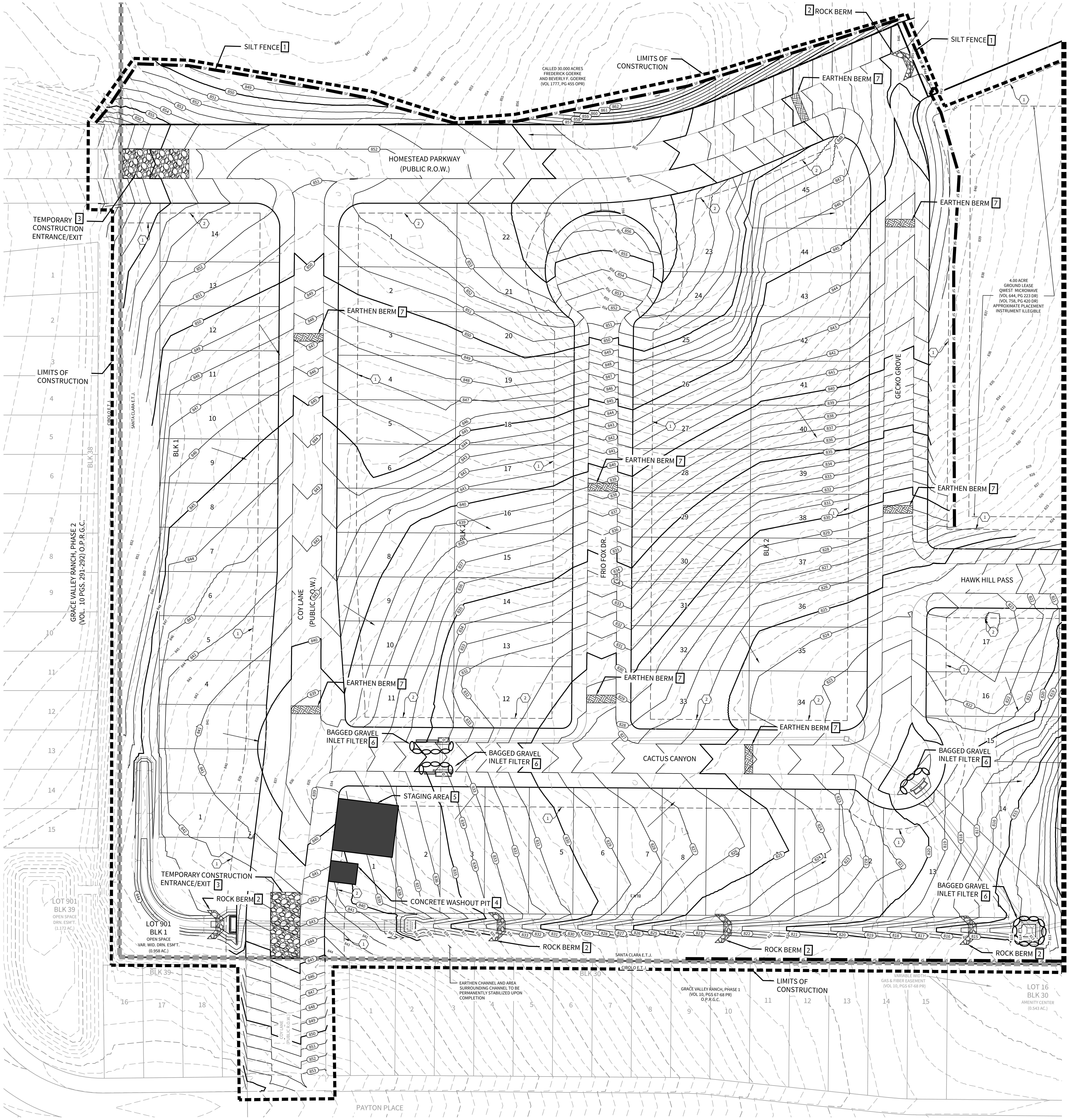
1. ALL SILT FENCES AND/OR ROCK BERMS AND TEMPORARY CONSTRUCTION ENTRANCES/EXITS SHALL BE PLACED AT THE MOST DOWN-GRADIENT POINT OF CONSTRUCTION AS SHOWN ON THIS SITE PLAN. CONTRACTOR SHALL TAKE INTO CONSIDERATION ANY PROPOSED CONSTRUCTION THAT MAY TAKE PLACE AT THESE LOCATIONS. ANY RELOCATION OF SILT FENCE, ROCK BERMS AND/OR TEMPORARY CONSTRUCTION ENTRANCES/EXITS SHALL BE AT THE CONTRACTOR'S EXPENSE.
2. AREA OF SOIL DISTURBANCES INCLUDE STREET RIGHT-OF-WAYS, UTILITY EASEMENTS & LOTS.
3. THERE WILL NOT BE STORMWATER DISCHARGES INTO THE FEMA FLOOD PLAIN.
4. THE CONTRACTOR IS REQUIRED TO MAINTAIN EROSION CONTROLS THROUGHOUT THE DURATION OF THE PROJECT.
5. 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.


SILT FENCE
SILT FENCE
A
B
C

TYPICAL LOT SITE PLAN

N.T.S.


SCALE: 1"=50'
50
25
0
50


SILT FENCE 1
ROCK BERM 2
SILT FENCE 1
LIMITS OF CONSTRUCTION
CALLED 30.000 ACRES
FREDERICK GOERKE
AND BEVERLY F. GOERKE
(VOL 1777, PG 455 OPR)
EARTHEN BERM 7
HOMESTEAD PARKWAY
(PUBLIC R.O.W.)
TEMPORARY CONSTRUCTION ENTRANCE/EXIT 3
EARTHEN BERM 7
4.00 ACRE
GROUND LEASE
QWEST MICROWAVE
(VOL 644, PG 223 DR)
(VOL 758, PG 420 DR)
APPROXIMATE PLACEMENT
INSTRUMENT ILLEGIBLE
LIMITS OF CONSTRUCTION
EARTHEN BERM 7
GECKO GROVE
EARTHEN BERM 7
BLK 1
BLK 2
COY LANE
(PUBLIC R.O.W.)
FRIO FOX DR.
EARTHEN BERM 7
GRACE VALLEY RANCH, PHASE 2
(VOL. 10 PGS. 291-292) O.P.R.G.C.
SANTA CLARA E.T.J.
MATCHLINE - SEE SHEET C1.01
HAWK HILL PASS
EARTHEN BERM 7
EARTHEN BERM 7
EARTHEN BERM 7
BAGGED GRAVEL INLET FILTER 6
BAGGED GRAVEL INLET FILTER 6
CACTUS CANYON
BAGGED GRAVEL INLET FILTER 6
STAGING AREA 5
TEMPORARY CONSTRUCTION ENTRANCE/EXIT 3
ROCK BERM 2
CONCRETE WASHOUT PIT 4
BAGGED GRAVEL INLET FILTER 6
LOT 901
BLK 39
OPEN SPACE
DRN. ESM'T.
(1.172 AC.)
LOT 901
BLK 1
OPEN SPACE
VAR. WID. DRN. ESM'T.
(0.958 AC.)
ROCK BERM 2
ROCK BERM 2
ROCK BERM 2
SANTA CLARA E.T.J.
CIBOLO E.T.J.
BLK 39
BLK 30
EARTHEN CHANNEL AND AREA SURROUNDING CHANNEL TO BE PERMANENTLY STABILIZED UPON COMPLETION
GRACE VALLEY RANCH, PHASE 1
(VOL 10, PGS 67-68 PR)
O.P.R.G.C.
LIMITS OF CONSTRUCTION
VARIABLE WIDTH
GAS & FIBER EASEMENT
(VOL 10, PGS 67-68 PR)
LOT 16
BLK 30
AMENITY CENTER
(0.543 AC.)
PAYTON PLACE

CUDEENGINEERS.COM

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

GOERKE SUBDIVISION PHASE 1

STORM WATER POLLUTION
PREVENTION PLAN

DATE
02/26/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

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

KYLE M. HUDEK
138753
03/04/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C1.00

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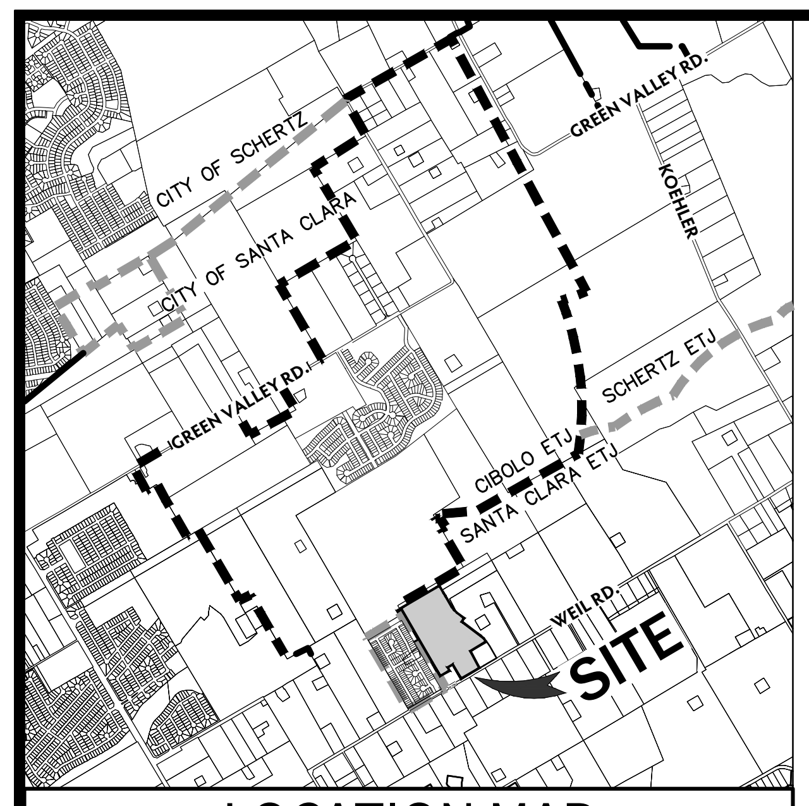
CITY OF SCHERTZ
CITY OF SANTA CLARA
GREEN VALLEY RD.
KOEHLER
SCHERTZ ETJ
CIBOLO ETJ
SANTA CLARA ETJ
WEIL RD.
SITE

LOCATION MAP

N.T.S.

LEGEND

PROPERTY LINE	━━━
LIMITS OF CONSTRUCTION	╍╍╍
PROPOSED CONTOURS	930
EXISTING CONTOURS	930
BMP ITEM NUMBER	1
TEMPORARY CONSTRUCTION ENTRANCE/EXIT	▨
SILT FENCE	SF
FLOW ARROW	→
STAGING AREA	■
CONCRETE WASHOUT PIT	■
PROPOSED ROCK BERM	▨
BAGGED GRAVEL INLET FILTER	○○○○○
EARTHEN BERM	▨

KEYNOTES

1. 20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE
2. 10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

NOTE:

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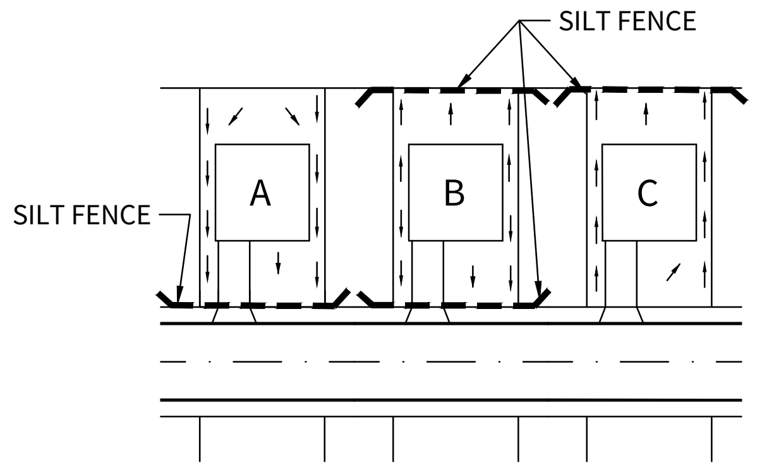
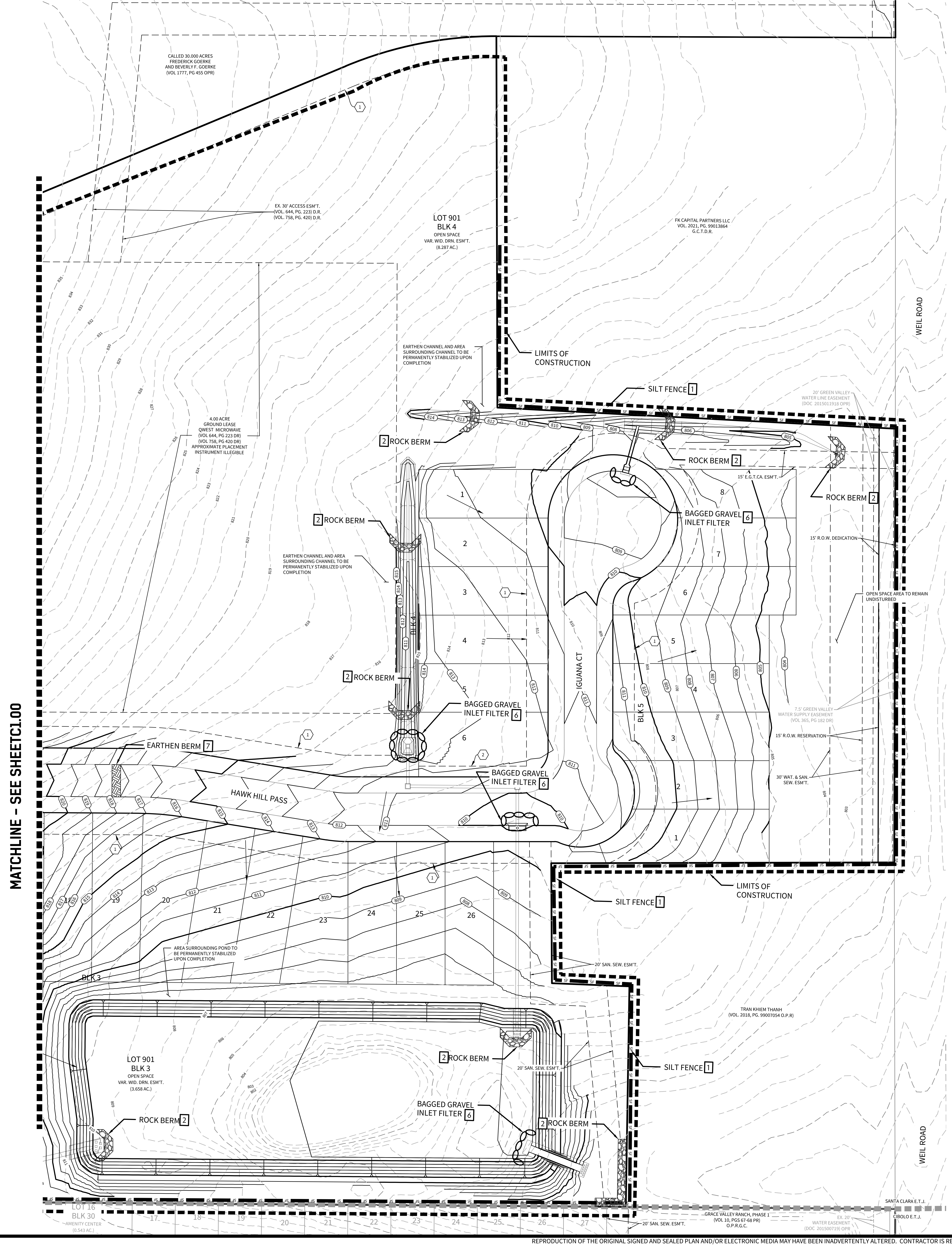

SILT FENCE
SILT FENCE
A
B
C

TYPICAL LOT SITE PLAN

N.T.S.


CALLED 30.000 ACRES
FREDERICK GOERKE
AND BEVERLY F. GOERKE
(VOL 1777, PG 455 OPR)
EX. 30' ACCESS ESM'T.
(VOL. 644, PG. 223) D.R.
(VOL. 758, PG. 420) D.R.
LOT 901
BLK 4
OPEN SPACE
VAR. WID. DRN. ESM'T.
(8.287 AC.)
FK CAPITAL PARTNERS LLC
VOL. 2021, PG. 99013864
G.C.T.D.R.
WEIL ROAD
EARTHEN CHANNEL AND AREA SURROUNDING CHANNEL TO BE PERMANENTLY STABILIZED UPON COMPLETION
LIMITS OF CONSTRUCTION
SILT FENCE 1
20' GREEN VALLEY WATER LINE EASEMENT (DOC 2015011918 OPR)
4.00 ACRE
GROUND LEASE
QWEST MICROWAVE
(VOL 644, PG 223 DR)
(VOL 758, PG 420 DR)
APPROXIMATE PLACEMENT
INSTRUMENT ILLEGIBLE
2 ROCK BERM
ROCK BERM 2
15' E.G.T.CA. ESM'T.
ROCK BERM 2
2 ROCK BERM
BAGGED GRAVEL INLET FILTER 6
15' R.O.W. DEDICATION
EARTHEN CHANNEL AND AREA SURROUNDING CHANNEL TO BE PERMANENTLY STABILIZED UPON COMPLETION
OPEN SPACE AREA TO REMAIN UNDISTURBED
BLK 4
IGUANA CT
BLK 5
2 ROCK BERM
BAGGED GRAVEL INLET FILTER 6
7.5' GREEN VALLEY WATER SUPPLY EASEMENT (VOL 365, PG 182 DR)
15' R.O.W. RESERVATION
30' WAT. & SAN. SEW. ESM'T.
EARTHEN BERM 7
BAGGED GRAVEL INLET FILTER 6
HAWK HILL PASS
MATCHLINE – SEE SHEET C1.00
LIMITS OF CONSTRUCTION
SILT FENCE 1
AREA SURROUNDING POND TO BE PERMANENTLY STABILIZED UPON COMPLETION
BLK 3
20' SAN. SEW. ESM'T.
TRAN KHIEM THANH
(VOL. 2018, PG. 99007054 O.P.R)
LOT 901
BLK 3
OPEN SPACE
VAR. WID. DRN. ESM'T.
(3.658 AC.)
2 ROCK BERM
20' SAN. SEW. ESM'T.
SILT FENCE 1
BAGGED GRAVEL INLET FILTER 6
2 ROCK BERM
ROCK BERM 2
WEIL ROAD
LOT 16
BLK 30
AMENITY CENTER
(0.543 AC.)
SANTA CLARA E.T.J.
CIBOLO E.T.J.
GRACE VALLEY RANCH, PHASE 1
(VOL 10, PGS 67-68 PR)
O.P.R.G.C.
EX. 20' WATER EASEMENT
(DOC 2015007190) OPR
20' SAN. SEW. ESM'T.

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EST. 1980
ENGINEERS

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P:(210) 681.2951 F: (210) 523.7112

GOERKE SUBDIVISION PHASE 1

STORM WATER POLLUTION PREVENTION PLAN

DATE
02/26/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
1.
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9.

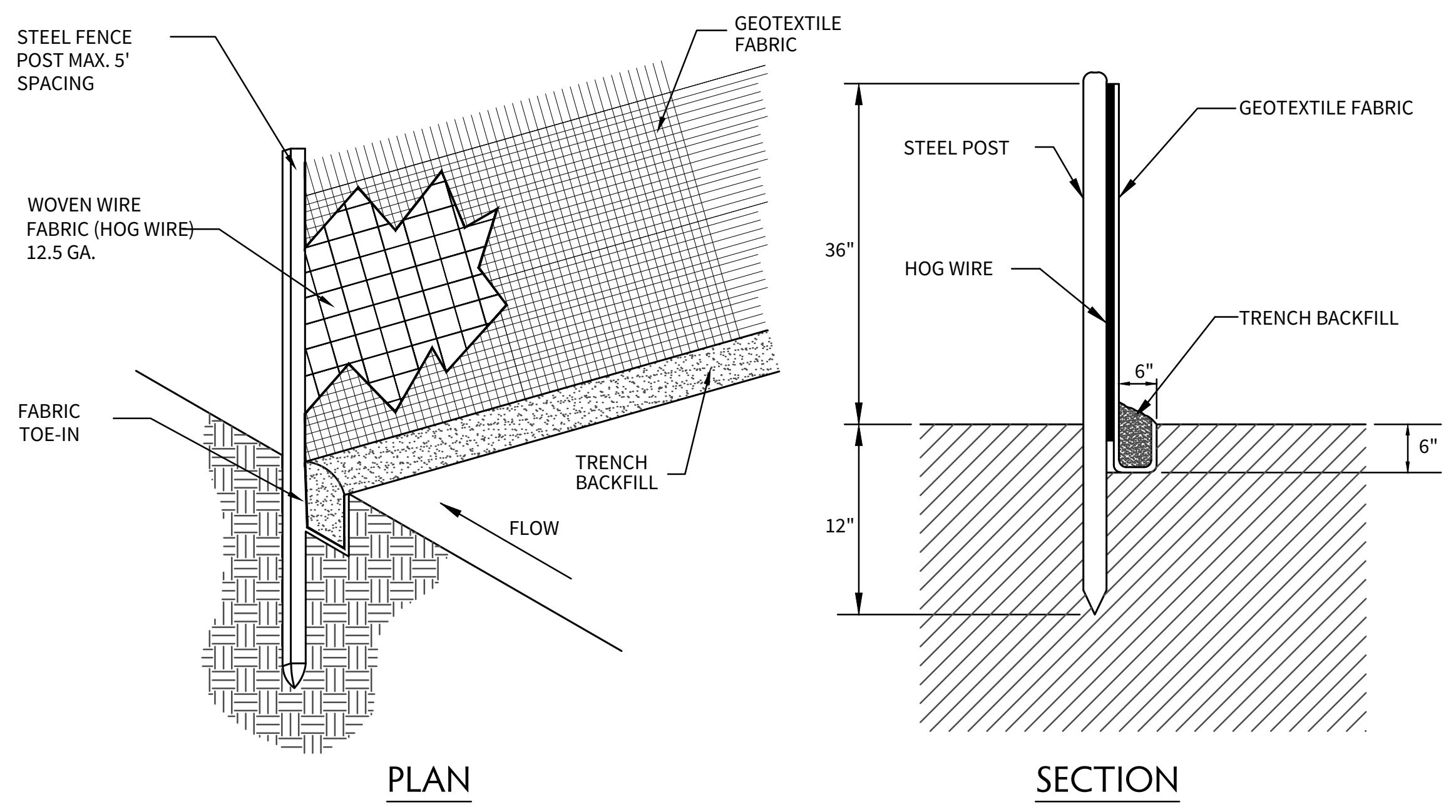
KYLE M. HUDEK
138753
03/04/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C1.01

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.

P:\03346\101\2-DWG\4-Plans\C1.00_C1.01 SWPPP.dwg 2025/02/26 11:04am rbarrera

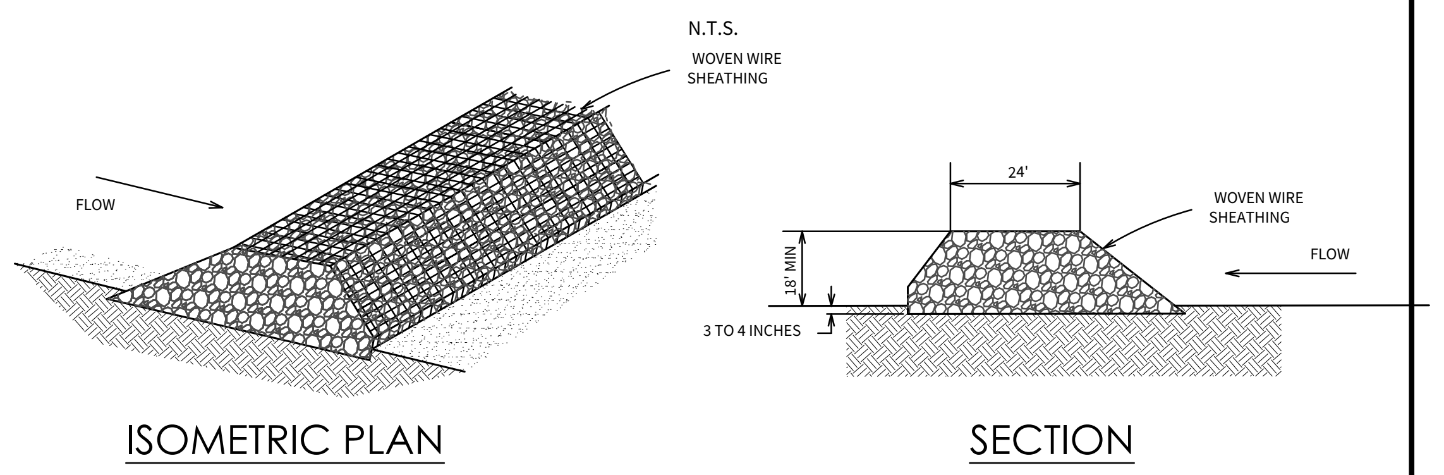

STEEL FENCE POST MAX. 5' SPACING
GEOTEXTILE FABRIC
WOVEN WIRE FABRIC (HOG WIRE) 12.5 GA.
FABRIC TOE-IN
TRENCH BACKFILL
FLOW
PLAN
STEEL POST
GEOTEXTILE FABRIC
HOG WIRE
TRENCH BACKFILL
36"
6"
6"
12"
SECTION

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

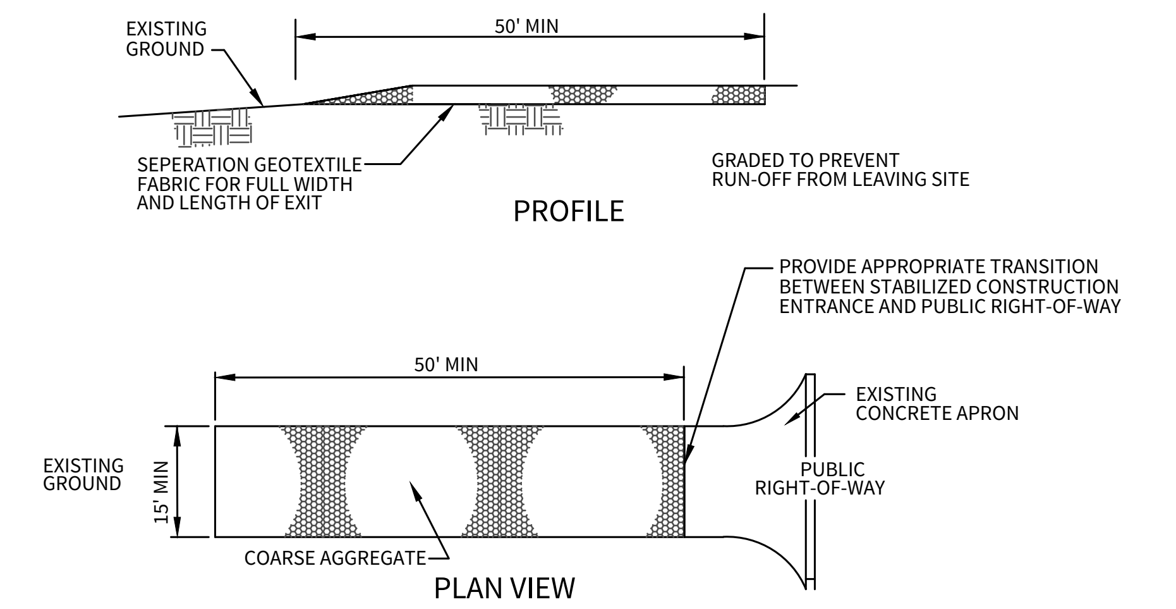

N.T.S.
WOVEN WIRE SHEATHING
FLOW
ISOMETRIC PLAN
24'
WOVEN WIRE SHEATHING
FLOW
18' MIN
3 TO 4 INCHES
SECTION

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.

2 ROCK BERM 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

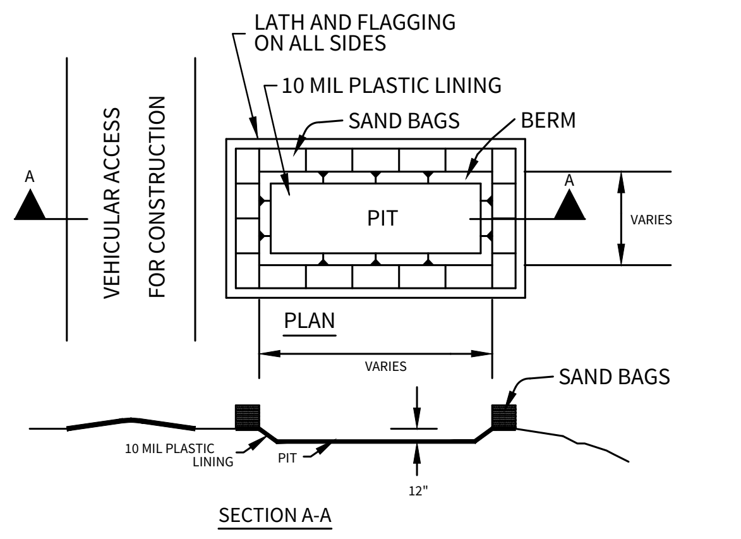
1. LENGTH SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS BUT NOT LESS THAN 50 FEET.
2. THICKNESS SHALL BE NOT LESS THAN 8 INCHES.
3. WIDTH SHALL BE NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
4. STABILIZED AREA MAY BE WIDENED OR LENGTHENED TO ACCOMODATE A TRUCK WASHING AREA WHEN SHOWN 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.

3 TEMPORARY CONSTRUCTION ENTRANCE / EXIT

SCALE: NONE

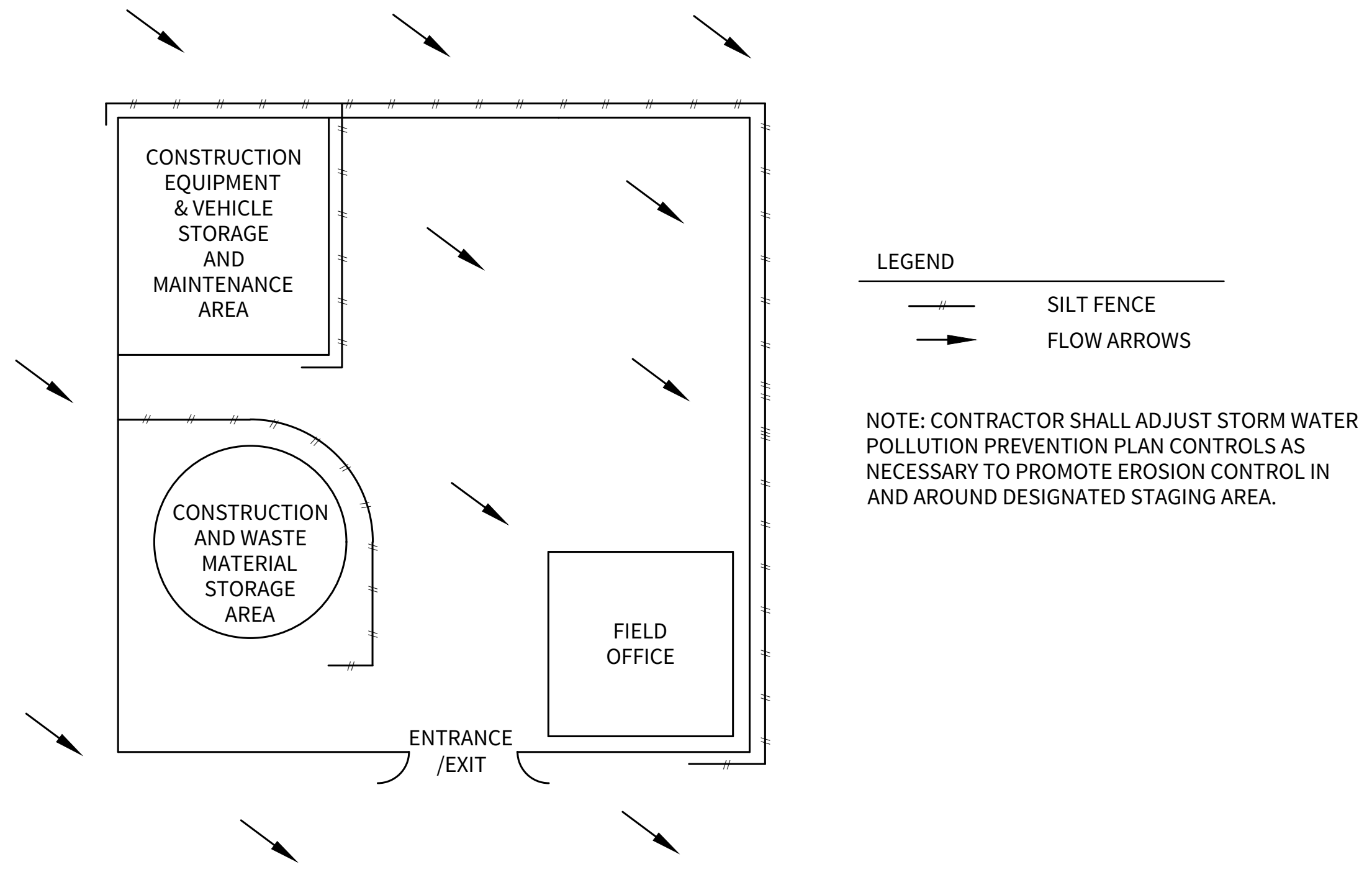

LATH AND FLAGGING ON ALL SIDES
10 MIL PLASTIC LINING
SAND BAGS
BERM
A
A
VEHICULAR ACCESS FOR CONSTRUCTION
PIT
VARIES
PLAN
VARIES
SAND BAGS
10 MIL PLASTIC LINING
PIT
12"
SECTION A-A

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.

4 CONCRETE TRUCK WASHOUT PIT

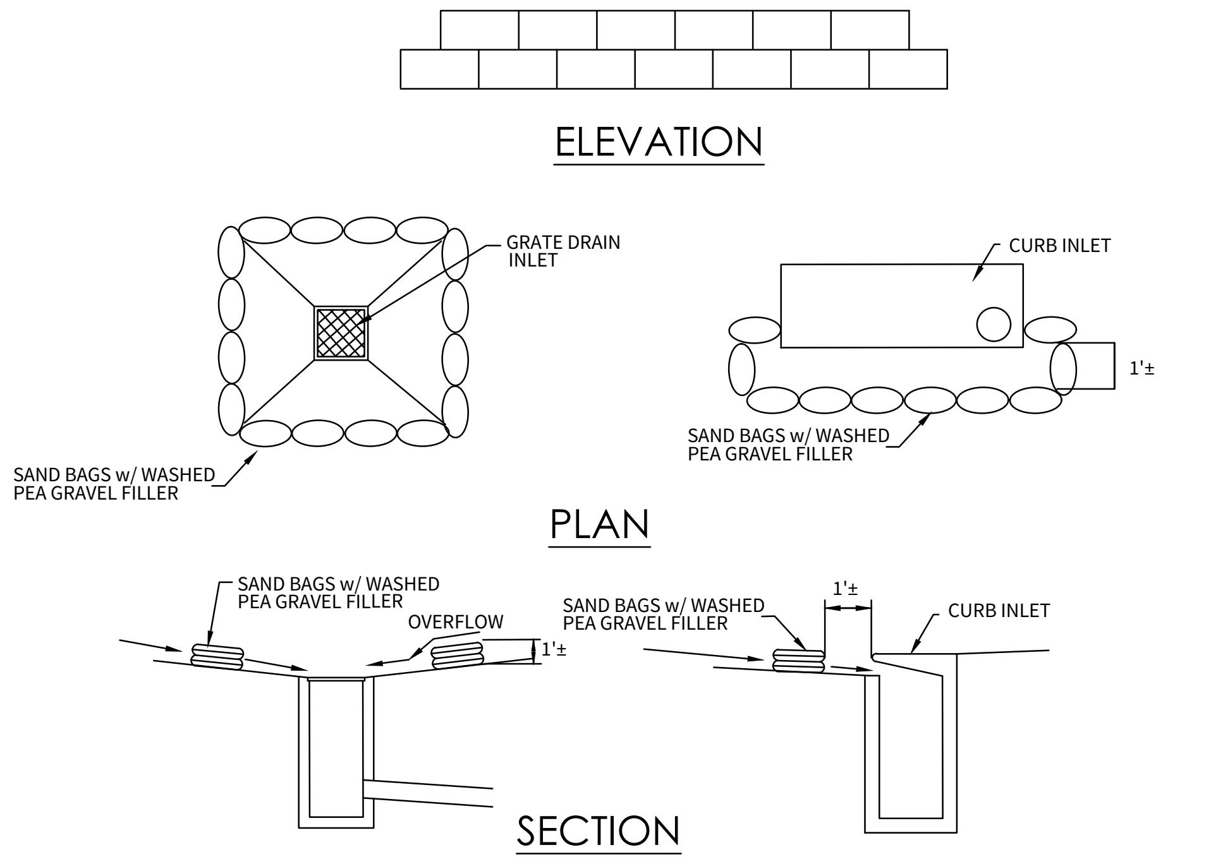
SCALE: NONE


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.

5 TYP. CONSTRUCTION STAGING AREA

SCALE: NONE

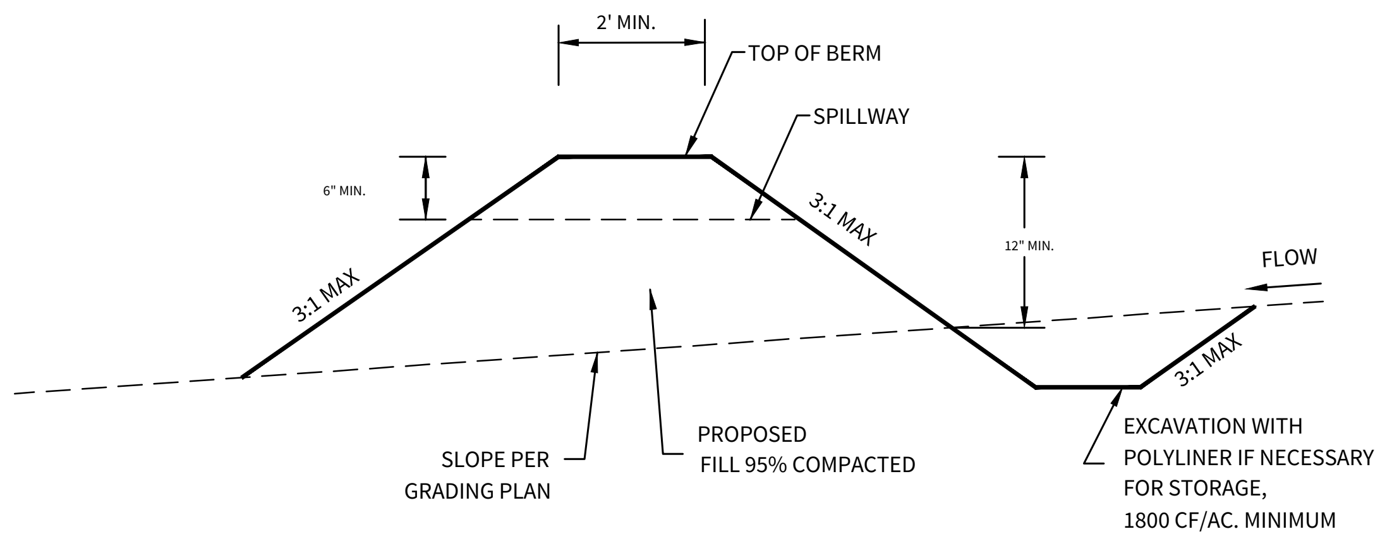

ELEVATION
GRATE DRAIN INLET
CURB INLET
1'±
SAND BAGS w/ WASHED PEA GRAVEL FILLER
SAND BAGS w/ WASHED PEA GRAVEL FILLER
PLAN
SAND BAGS w/ WASHED PEA GRAVEL FILLER
OVERFLOW
1'±
SAND BAGS w/ WASHED PEA GRAVEL FILLER
1'±
CURB INLET
SECTION

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.

6 BAGGED GRAVEL INLET FILTER

SCALE: NONE


2' MIN.
TOP OF BERM
SPILLWAY
6" MIN.
3:1 MAX
3:1 MAX
12" MIN.
FLOW
3:1 MAX
SLOPE PER GRADING PLAN
PROPOSED FILL 95% COMPACTED
EXCAVATION WITH POLYLINER IF NECESSARY FOR STORAGE, 1800 CF/AC. MINIMUM

NOTE:

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

7 EARTHEN BERM W/ POLYLINER AND SPILLWAY

SCALE: NONE

CUDEENGINEERS.COM

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

GOERKE SUBDIVISION PHASE 1

STORMWATER POLLUTION PREVENTION PLAN DETAILS

DATE
02/26/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
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9.

KYLE M. HUDEK
138753
03/04/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C1.D1

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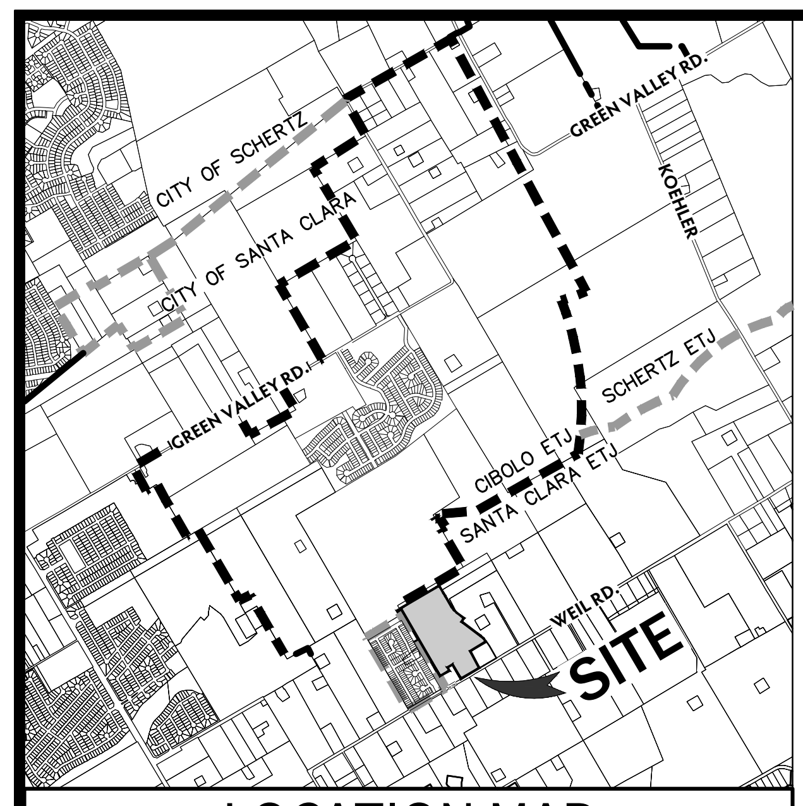

CITY OF SCHERTZ
CITY OF SANTA CLARA
GREEN VALLEY RD.
KOEHLER
SCHERTZ ETJ
CIBOLO ETJ
SANTA CLARA ETJ
WEIL RD.
SITE

LOCATION MAP

N.T.S.

LEGEND

PROPOSED CONTOUR	1000
EXISTING CONTOUR	1000
PROPOSED ELEVATION	1297.58
PROPOSED TOP OF WALL ELEVATION	1297.58 TW
PROPOSED BOTTOM OF WALL ELEVATION	1297.58 BW
EXISTING ELEVATION	672.00E
GRADE BREAK	GRADE BREAK
BUILDING SETBACK	
SWALE	
RETAINING WALL	
KEYNOTE	1

KEYNOTES

1	20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE
2	10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

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.

2. CLEARING THE AREA TO BE FILLED

ALL TIMBER, LOGS, TREES, BRUSH AND RUBBISH SHALL BE REMOVED FROM THE SITE.

3. SCARIFYING THE AREA TO BE FILLED

ALL ORGANIC MATTER SHALL BE REMOVED FROM THE SURFACE UPON WHICH THE FILL IS TO BE PLACED, AND THE SURFACE SHALL THEN BE DISKED OR SCARIFIED TO A MINIMUM DEPTH OF SIX INCHES (6"), ALL SURFACE RUTS OR OTHER UNEVEN FEATURES WILL BE LEVELED PRIOR TO FIELD DENSITY TESTING.

4. COMPACTING THE AREA TO BE FILLED

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.

8. COMPACTION OF FILL LAYER

COMPACTION EQUIPMENT SHALL BE CAPABLE OF COMPACTING THE FILL TO THE SPECIFIED DENSITY. COMPACTION SHALL BE ACCOMPLISHED WHILE THE FILL MATERIAL IS AT OR NEAR THE APPROPRIATE MOISTURE CONTENT. COMPACTION OF EACH LAYER SHALL BE CONTINUOUS OVER THE ENTIRE STRUCTURAL AREA (BENEATH PROPOSED STRUCTURES).

9. COMPACTION OF SLOPES

THE FACES OF FILL SLOPES SHALL BE COMPACTED. COMPACTING OPERATIONS SHALL BE CONTINUED UNTIL THE SLOPE FACES ARE STABLE BUT NOT TOO DENSE FOR PLANTING ON THE SLOPES. COMPACTION OF THE SLOPE FACES MAY BE DONE PROGRESSIVELY IN INCREMENTS OF THREE TO FIVE FEET (3' TO 5') IN FILL HEIGHT AS THIS FILL PROGRESSES OR AFTER THE FILL HAS BEEN BROUGHT TO ITS TOTAL HEIGHT.

10. MOISTURE CONTENT

THE FILL MATERIAL SHALL BE COMPACTED AT THE APPROPRIATE MOISTURE CONTENT SPECIFIED FOR THE SOILS BEING USED. APPROPRIATE MOISTURE CONTENT IS DEFINED, TYPICALLY, AS OPTIMUM MOISTURE CONTENT; HOWEVER, FOR EXPANSIVE SOILS IT MAY BE GREATER THAN OPTIMUM MOISTURE CONTENT, AND OTHER MOISTURE CONTENTS MAY BE NECESSARY TO PRODUCE THE DESIRED RESULTS WITH CERTAIN SOILS.

11. DENSITY TESTS

FIELD DENSITY TESTS SHALL BE PERFORMED ON LAYERS OF FILL WHEN THE FILL IS BEING PLACED AS DIRECTED BY THE GEOTECHNICAL ENGINEER. THE MAXIMUM FILL HEIGHT BETWEEN DENSITY TESTING SHALL BE EIGHTEEN INCHES (18"). ALL TESTING SHALL BE REQUESTED BY THE CONTRACTOR TO MEET THE CONTRACTOR'S CONSTRUCTION SCHEDULE. NOTIFICATION BY THE CONTRACTOR TO CONDUCT TESTS SHALL BE AT LEAST THE DAY BEFORE. THIS NOTIFICATION SHALL INCLUDE THE FILL AREA LOCATION (LOT AND BLOCK), THE LIFT OR HEIGHT OF FILL AND APPROXIMATE DESIRED TIME OF TESTING. WHEN THESE TESTS INDICATE THAT THE DENSITY OF ANY LAYER OF FILL OR PORTION THEREOF IS BELOW THE REQUIRED DENSITY, THE PARTICULAR LAYER OR PORTION SHALL BE REWORKED AND RETESTED AT THE EXPENSE OF THE CONTRACTOR UNLESS THE CONTRACTOR CAN SHOW EVIDENCE THAT CIRCUMSTANCES BEYOND HIS CONTROL REQUIRED THE RETESTING. GENERALLY, THE SPECIFIC TESTING WILL BE AS FOLLOWS AND CONDUCTED BY GEOTECHNICAL ENGINEER.

1. THE LAND TO BE FILLED (PREPARED SUBGRADE) SHALL BE PREPARED AND TESTED AT A FREQUENCY AS DETERMINED BY THE GEOTECHNICAL ENGINEER.
2. THE FIRST LIFT OF COMPACTED FILL (GENERALLY 8 TO 12-IN.) SHALL BE TESTED AS DETERMINED BY THE GEOTECHNICAL ENGINEER. ANY AREAS SUPPORTING THE PROPOSED STRUCTURES REQUIRING FILL SHALL BE TESTED FOR DENSITY COMPLIANCE.
3. FILLS SHALL BE TESTED A MAXIMUM OF EACH EIGHTEEN INCHES (18") OF FILL.
4. TEST RESULTS WILL BE PROVIDED BY THE FIELD TECHNICIAN TO THE CONTRACTOR WHEN POSSIBLE; HOWEVER, ALL TEST RESULTS ARE TO BE REVIEWED BY THE GEOTECHNICAL ENGINEER FOR COMPLIANCE. THE ENGINEER WILL NOTIFY THE CONTRACTOR OF ALL THE TEST RESULTS.

12. CUT/FILL LOTS

AREAS INVOLVING CUT ON ONE PORTION AND FILL ON ANOTHER PORTION OF A SPECIFIC LOT SHALL BE PREPARED TO A MINIMUM DEPTH OF 6-IN. AND WILL BE THE SAME MATERIAL CLASSIFICATION AT THE SAME COMPACTION AND MOISTURE CONTENT. A MINIMUM OF TWO (2) FIELD DENSITY TESTS SHALL BE REQUIRED ON EACH CUT/FILL LOT FOR THE PURPOSE OF DETERMINING UNIFORMITY OF THE AREA SUPPORTING THE PROPOSED STRUCTURES.

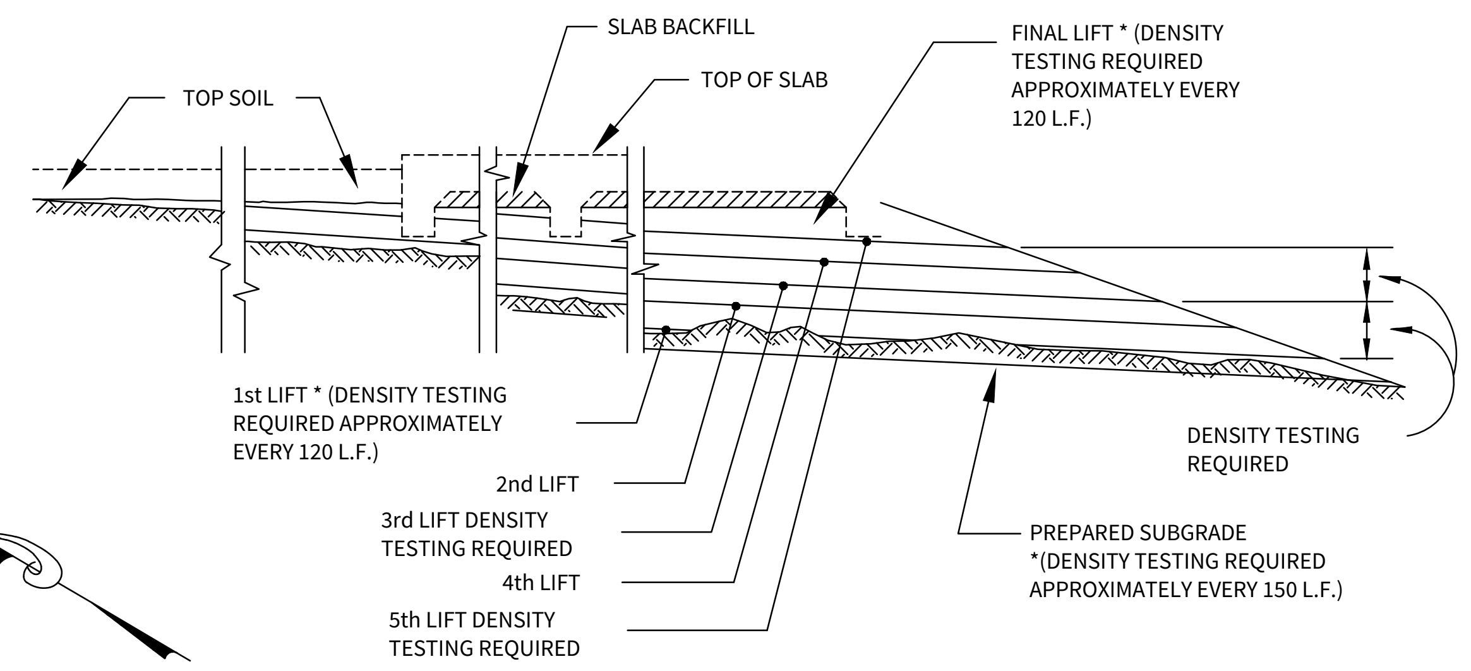
NOTE:

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

ALL ELEVATIONS AT FRONT PROPERTY LINE ARE 0.30' ABOVE CURB ELEVATION ON MINOR STREETS.

TYPICAL PAD SIZES ARE 80' x 30' ON MINOR STREETS.

CONTOURS SHOWN ON STREET ARE TOP OF STREET.

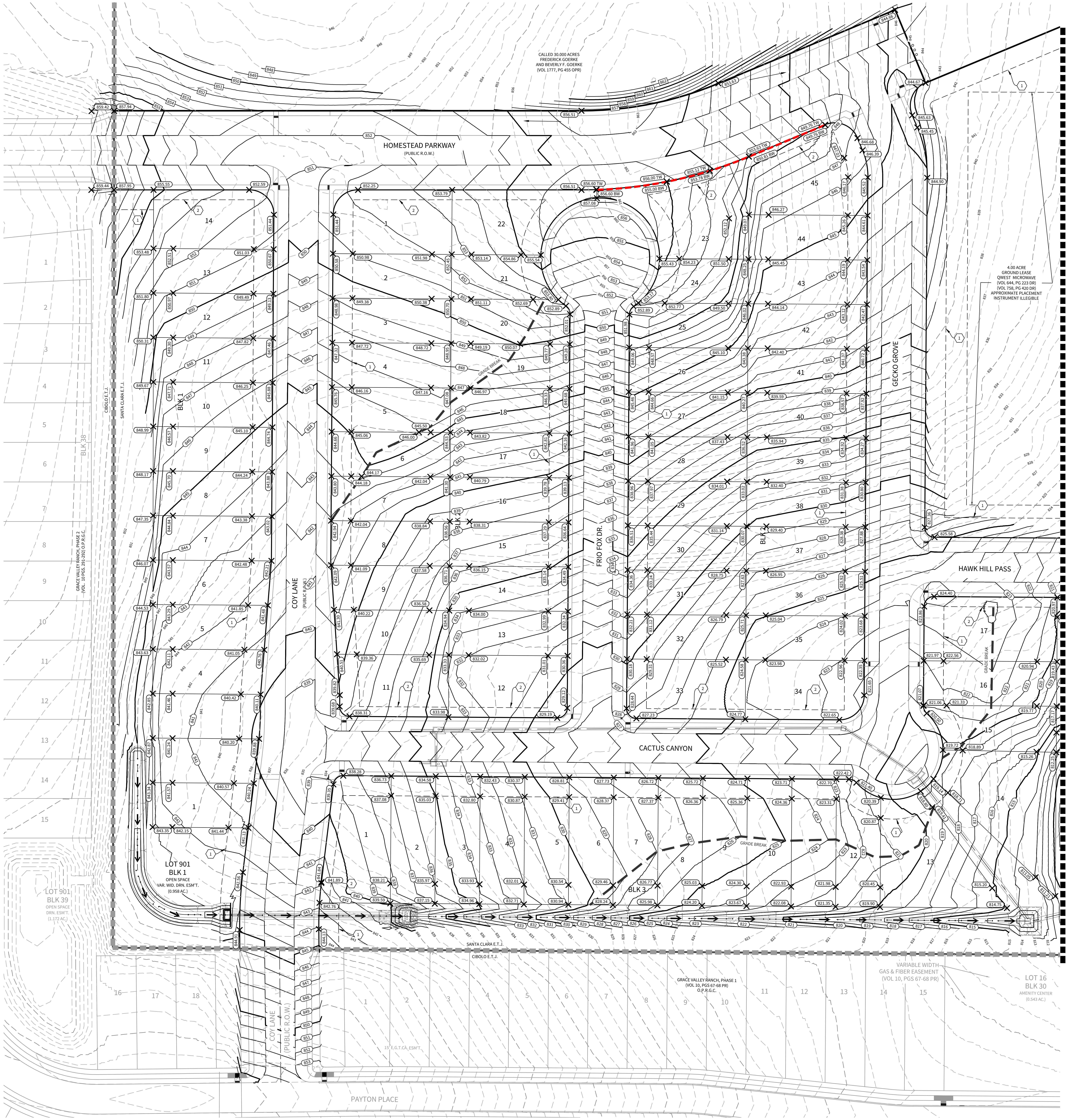

TOP SOIL
SLAB BACKFILL
TOP OF SLAB
FINAL LIFT * (DENSITY TESTING REQUIRED APPROXIMATELY EVERY 120 L.F.)
1st LIFT * (DENSITY TESTING REQUIRED APPROXIMATELY EVERY 120 L.F.)
2nd LIFT
3rd LIFT DENSITY TESTING REQUIRED
4th LIFT
5th LIFT DENSITY TESTING REQUIRED
DENSITY TESTING REQUIRED
PREPARED SUBGRADE *(DENSITY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

DENSITY TEST FREQUENCY

NOT TO SCALE

SCALE: 1"=50'

50 25 0 50


CALLED 30.000 ACRES
FREDERICK GOERKE
AND BEVERLY F. GOERKE
(VOL 1777, PG 455 OPR)
HOMESTEAD PARKWAY
(PUBLIC R.O.W.)
COY LANE
(PUBLIC R.O.W.)
FRIO FOX DR.
GECKO GROVE
HAWK HILL PASS
CACTUS CANYON
PAYTON PLACE
BLK 1
BLK 2
BLK 3
BLK 38
4.00 ACRE
GROUND LEASE
QWEST MICROWAVE
(VOL 644, PG 223 DR)
(VOL 758, PG 420 DR)
APPROXIMATE PLACEMENT
INSTRUMENT ILLEGIBLE
LOT 901
BLK 1
OPEN SPACE
VAR. WID. DRN. ESM'T.
(0.958 AC.)
LOT 901
BLK 39
OPEN SPACE
DRN. ESM'T.
(1.172 AC.)
GRACE VALLEY RANCH, PHASE 1
(VOL 10, PGS 67-68 PR)
O.P.R.G.C.
VARIABLE WIDTH
GAS & FIBER EASEMENT
(VOL 10, PGS 67-68 PR)
LOT 16
BLK 30
AMENITY CENTER
(0.543 AC.)
SANTA CLARA E.T.J.
CIBOLO E.T.J.
GRADE BREAK
MATCHLINE – SEE SHEET C2.01

CUDEENGINEERS.COM

CUDE ENGINEERS
EST. 1980

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

GOERKE SUBDIVISION PHASE 1

GRADING PLAN

DATE	04/08/2025
PROJECT NO.	03346.101
DRAWN BY	R.B./M.A.S.
CHECKED BY	K.M.H.

REVISIONS

1.
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KYLE M. HUDEK
138753
04/08/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C2.00

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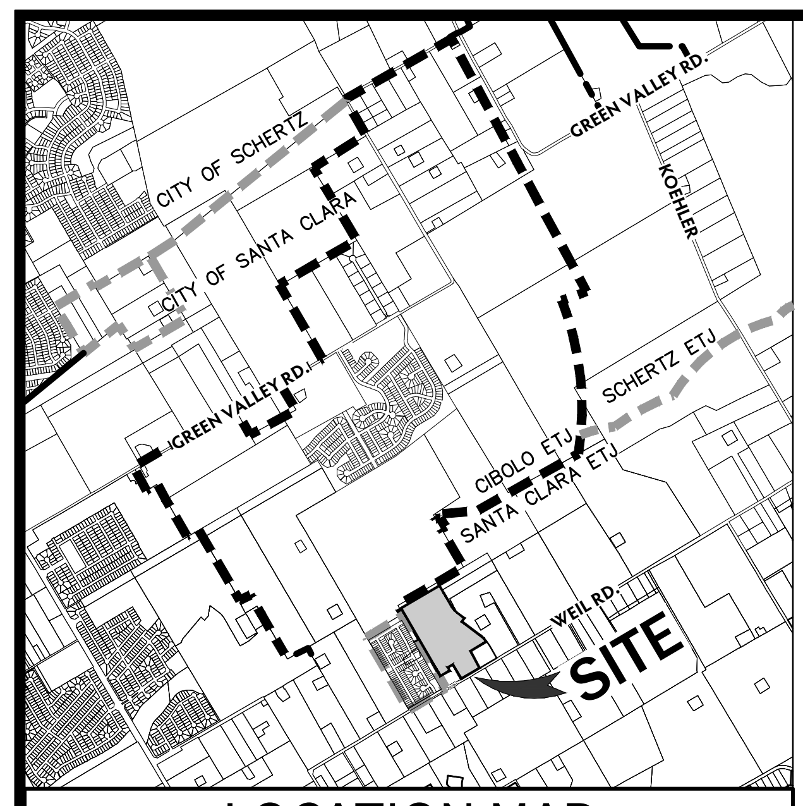
GREEN VALLEY RD.
CITY OF SCHERTZ
CITY OF SANTA CLARA
KOEHLER
GREEN VALLEY RD.
SCHERTZ ETJ
CIBOLO ETJ
SANTA CLARA ETJ
WEIL RD.
SITE

LOCATION MAP
N.T.S.

LEGEND

PROPOSED CONTOUR	1000
EXISTING CONTOUR	1000
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PROPOSED TOP OF WALL ELEVATION	1297.58 TW
PROPOSED BOTTOM OF WALL ELEVATION	1297.58 BW
EXISTING ELEVATION	672.00E
GRADE BREAK	GRADE BREAK
BUILDING SETBACK	
SWALE	
RETAINING WALL	
KEYNOTE	1

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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.
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NOTE:

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

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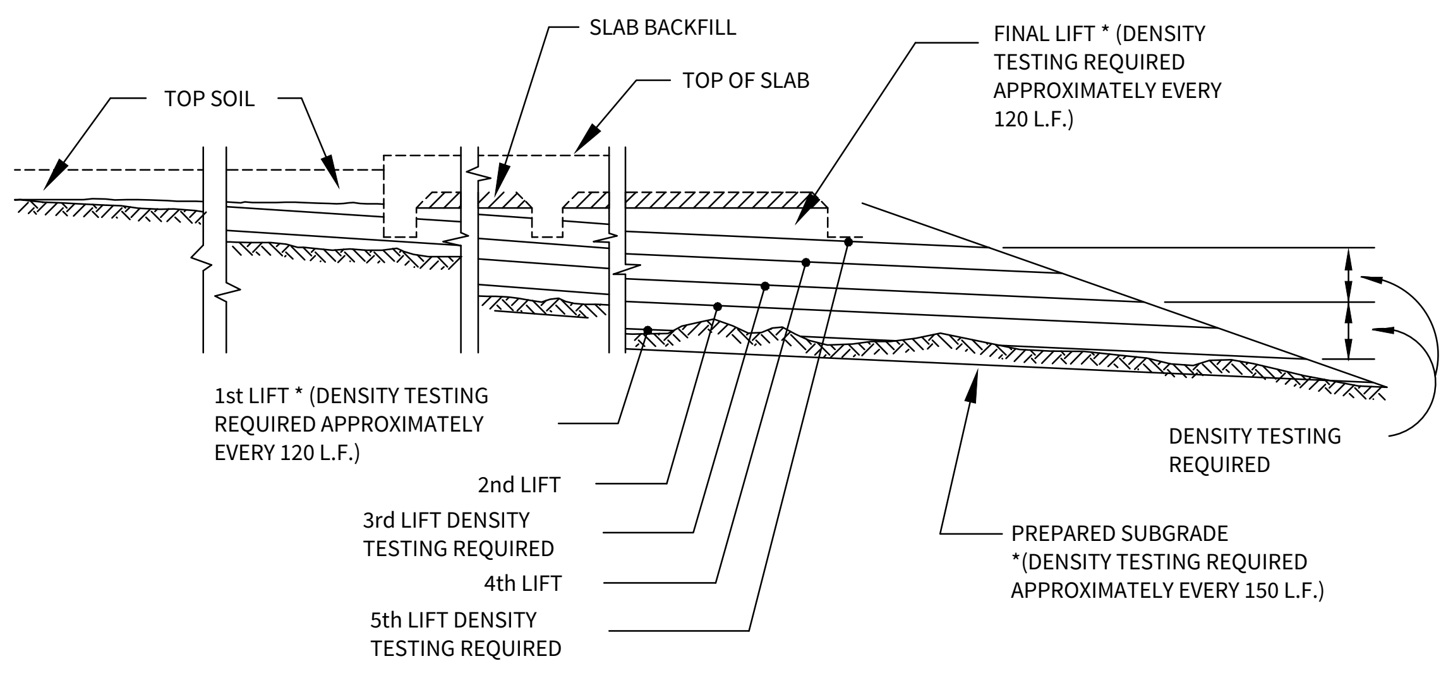
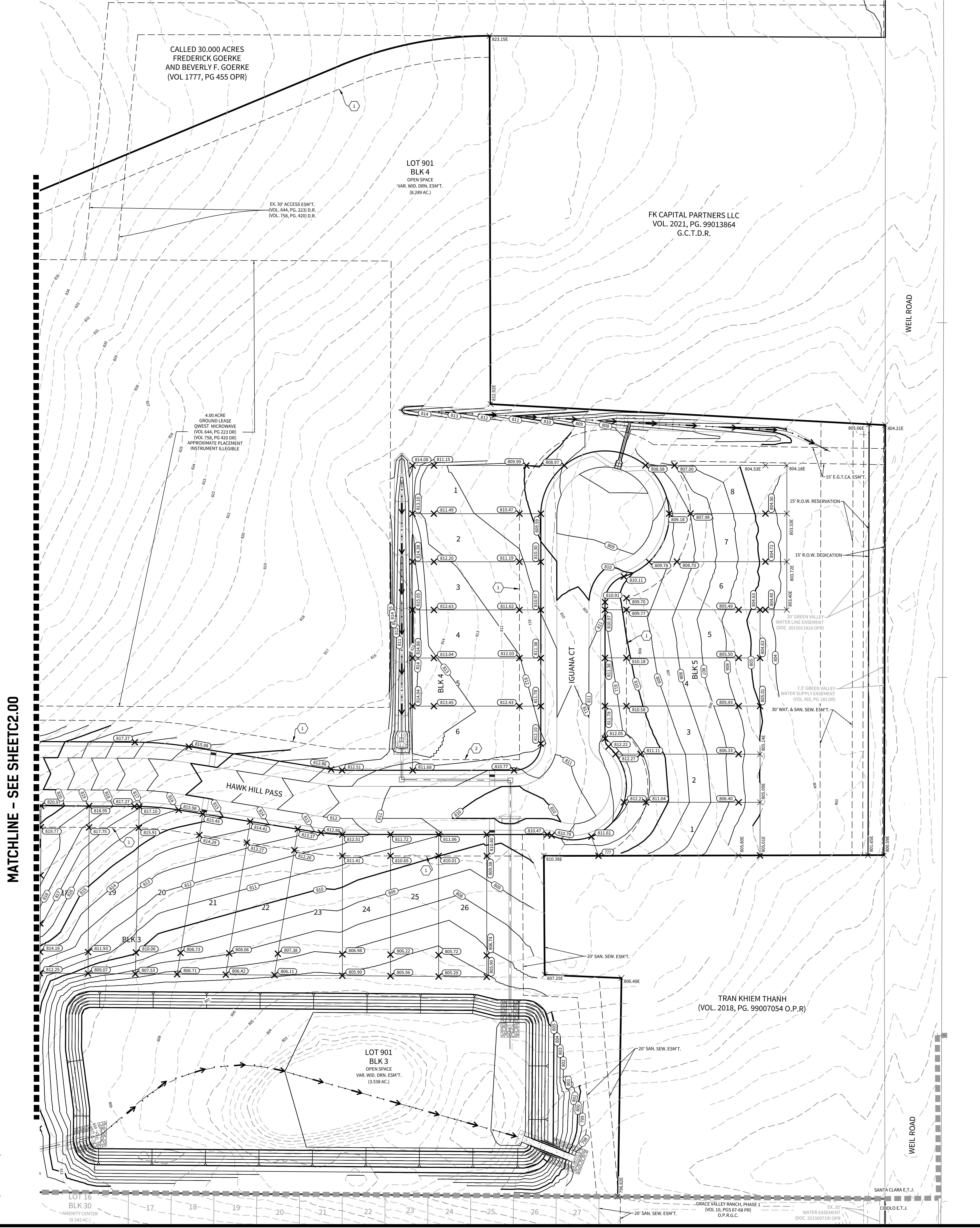
TYPICAL PAD SIZES ARE 80' x 30' ON MINOR STREETS.

CONTOURS SHOWN ON STREET ARE TOP OF STREET.


SLAB BACKFILL
FINAL LIFT * (DENSITY TESTING REQUIRED APPROXIMATELY EVERY 120 L.F.)
TOP SOIL
TOP OF SLAB
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


MATCHLINE - SEE SHEETC2.00
CALLED 30.000 ACRES
FREDERICK GOERKE
AND BEVERLY F. GOERKE
(VOL 1777, PG 455 OPR)
EX. 30' ACCESS ESM'T.
(VOL. 644, PG. 223) D.R.
(VOL. 758, PG. 420) D.R.
LOT 901
BLK 4
OPEN SPACE
VAR. WID. DRN. ESM'T.
(8.289 AC.)
FK CAPITAL PARTNERS LLC
VOL. 2021, PG. 99013864
G.C.T.D.R.
4.00 ACRE
GROUND LEASE
QWEST MICROWAVE
(VOL 644, PG 223 DR)
(VOL. 758, PG 420 DR)
APPROXIMATE PLACEMENT
INSTRUMENT ILLEGIBLE
823.15E
805.06E
804.21E
15' E.G.T.CA. ESM'T.
15' R.O.W. RESERVATION
15' R.O.W. DEDICATION
20' GREEN VALLEY WATER LINE EASEMENT
7.5' GREEN VALLEY WATER SUPPLY EASEMENT
30' WAT. & SAN. SEW. ESM'T.
WEIL ROAD
IGUANA CT
BLK 4
BLK 5
HAWK HILL PASS
BLK 3
810.38E
807.25E
806.49E
20' SAN. SEW. ESM'T.
TRAN KHIEM THANH
(VOL. 2018, PG. 99007054 O.P.R)
LOT 901
BLK 3
OPEN SPACE
VAR. WID. DRN. ESM'T.
(3.538 AC.)
LOT 16
BLK 30
AMENITY CENTER
(0.545 AC.)
796.82E
GRACE VALLEY RANCH, PHASE 1
(VOL 10, PGS 67-68 PR)
O.P.R.G.C.
EX. 20' WATER EASEMENT
(DOC 201500719) OPR
SANTA CLARA E.T.J.
CIBOLO E.T.J.
WEIL ROAD

SCALE: 1"=50'
50 25 0 50

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CUDE ENGINEERS
EST. 1980

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

GOERKE SUBDIVISION PHASE 1
GRADING PLAN

DATE	02/26/2025
PROJECT NO.	03346.101
DRAWN BY	R.B./M.A.S.
CHECKED BY	K.M.H.

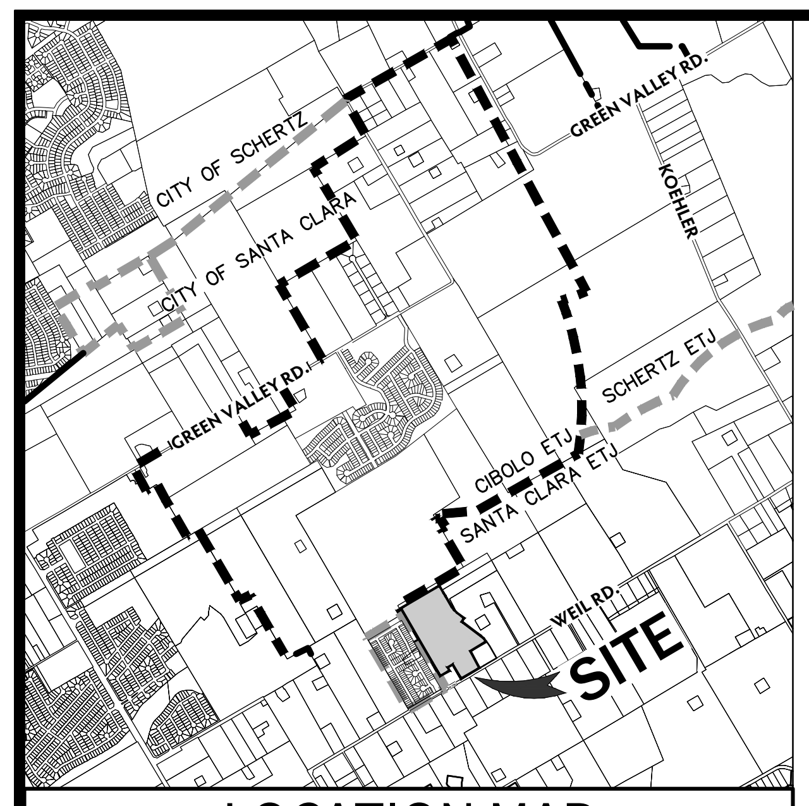
REVISIONS
1.
2.
3.
4.
5.
6.
7.
8.
9.

KYLE M. HUDEK
138753
03/04/2025
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C2.01

P:\03346\101\2-DWG\4-Plans\C2.00_C2.01 GRAD.dwg 2025/02/26 11:06am rbarrera

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.


GREEN VALLEY RD.
CITY OF SCHERTZ
CITY OF SANTA CLARA
KOEHLER
GREEN VALLEY RD.
SCHERTZ ETJ
CIBOLO ETJ
SANTA CLARA ETJ
WEIL RD.
SITE

LOCATION MAP
N.T.S.

LEGEND

PROPOSED SANITARY SEWER MANHOLE	─●─
EXISTING SANITARY SEWER MANHOLE	─●─
PROPOSED SANITARY SEWER LATERAL	S
PROPOSED SANITARY SEWER MAIN	8"SS
EXISTING SANITARY SEWER MAIN	EX. 8" SS
PROPOSED WATER MAIN	8"W
EXISTING WATER MAIN	EX. 8" W
PROPOSED STANDARD FIRE HYDRANT	⧓
PROPOSED STANDARD GATE VALVE	─┤●├─
PROPOSED PERMANENT BLOWOFF	─▶●
EXISTING OVERHEAD ELECTRIC	OHE
PROPOSED UNDERGROUND ELECTRIC	ELEC
SITE BOUNDARY	━━
ELECTRIC, GAS, TELEPHONE, & CABLE T.V. EASEMENT	E.G.T.CA. ESM'T
BUILDING SETBACK LINE	B.S.L.
KEYNOTE	⟨1⟩
STREET LIGHT	◉

KEYNOTES

⟨1⟩	20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE
⟨2⟩	10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

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1. ONLY 2 ½ INCH SCHEDULE 40 GRAY ELECTRICAL CONDUIT IS TO BE USED AND IS TO BE SUPPLIED BY THE DEVELOPER. ALL JOINTS MUST BE GLUED.
2. ROAD CROSSINGS MUST BE INSTALLED 3 FT. BELOW FINAL SUB-GRADE OR 4 FT. FROM FINAL GRADE ON NON-WATER SIDE. WHEN ELECTRICAL CROSSINGS ARE REQUIRED TO CROSS WATER MAINS, THEY MUST BE 2 FT. BELOW OR 2 FT ABOVE WATER MAINS, BUT NOT LESS THAN 48 INCHES OF COVER BELOW FINAL GRADE (PIT SAND MAY BE REQUIRED BY SOME WATER UTILITIES).
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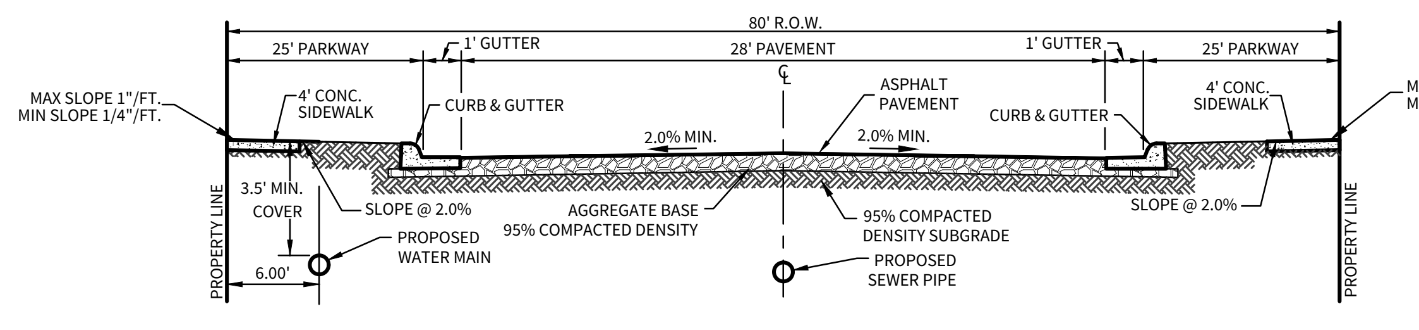
6. NO OTHER UTILITIES ARE TO BE PLACED IN THE SAME DITCH AS THE ELECTRICAL CROSSING.
7. ALL CROSSINGS ARE TO BE INSTALLED AT THE PROPERTY LINE UNLESS THERE ARE WATER METERS EXISTING ON EACH SIDE OF THE PROPERTY LINE AT THE CROSSING LOCATION. AT LOCATIONS WHERE WATER METER CONFLICTS EXIST, THE ELECTRICAL CROSSING MUST BE MOVED 7' FROM THE PROPERTY LINE TO AVOID WATER METERS. ALL OTHER UTILITY CROSSINGS MUST BE LOCATED 3 FT. ON OPPOSITE SIDE OF PROPERTY LINE.
8. ALL CROSSINGS MUST BE INSPECTED BY A GVEC REPRESENTATIVE BEFORE THEY ARE BACKFILLED. PLEASE PROVIDE ONE WEEK NOTICE AS TO WHEN INSPECTIONS WILL BE NEEDED.
9. ALL UTILITY CONDUIT LOCATIONS SHALL BE PROVIDED ON A SEPARATE EXHIBIT THAT MUST BE REQUESTED BY THE CONTRACTOR TO THE ENGINEER.

CAUTION!!!

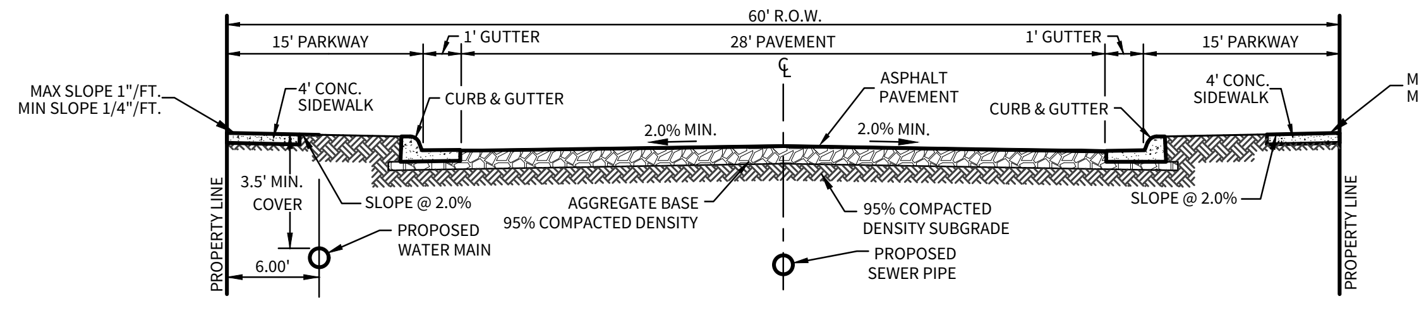
THE CONTRACTOR SHALL BE AWARE THAT EXISTING UTILITIES ARE WITHIN THE SITE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE THESE UTILITIES LOCATED PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN THIS AREA. ANY DAMAGE DONE TO THESE EXISTING FACILITIES WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR.

TRENCH EXCAVATION SAFETY PROTECTION

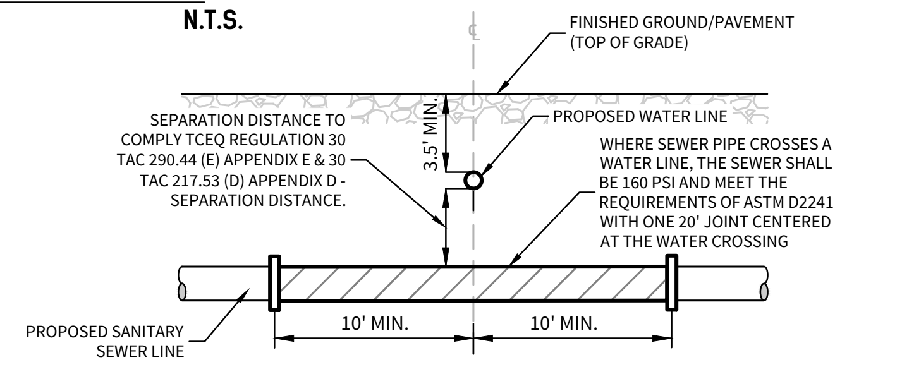
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S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


80' R.O.W.
25' PARKWAY
1' GUTTER
28' PAVEMENT
1' GUTTER
25' PARKWAY
MAX SLOPE 1"/FT.
MIN SLOPE 1/4"/FT.
4' CONC. SIDEWALK
CURB & GUTTER
ASPHALT PAVEMENT
2.0% MIN.
2.0% MIN.
CURB & GUTTER
4' CONC. SIDEWALK
MAX SLOPE 1"/FT.
MIN SLOPE 1/4"/FT.
3.5' MIN. COVER
SLOPE @ 2.0%
AGGREGATE BASE 95% COMPACTED DENSITY
95% COMPACTED DENSITY SUBGRADE
SLOPE @ 2.0%
PROPOSED WATER MAIN
PROPOSED SEWER PIPE
6.00'
PROPERTY LINE
PROPERTY LINE

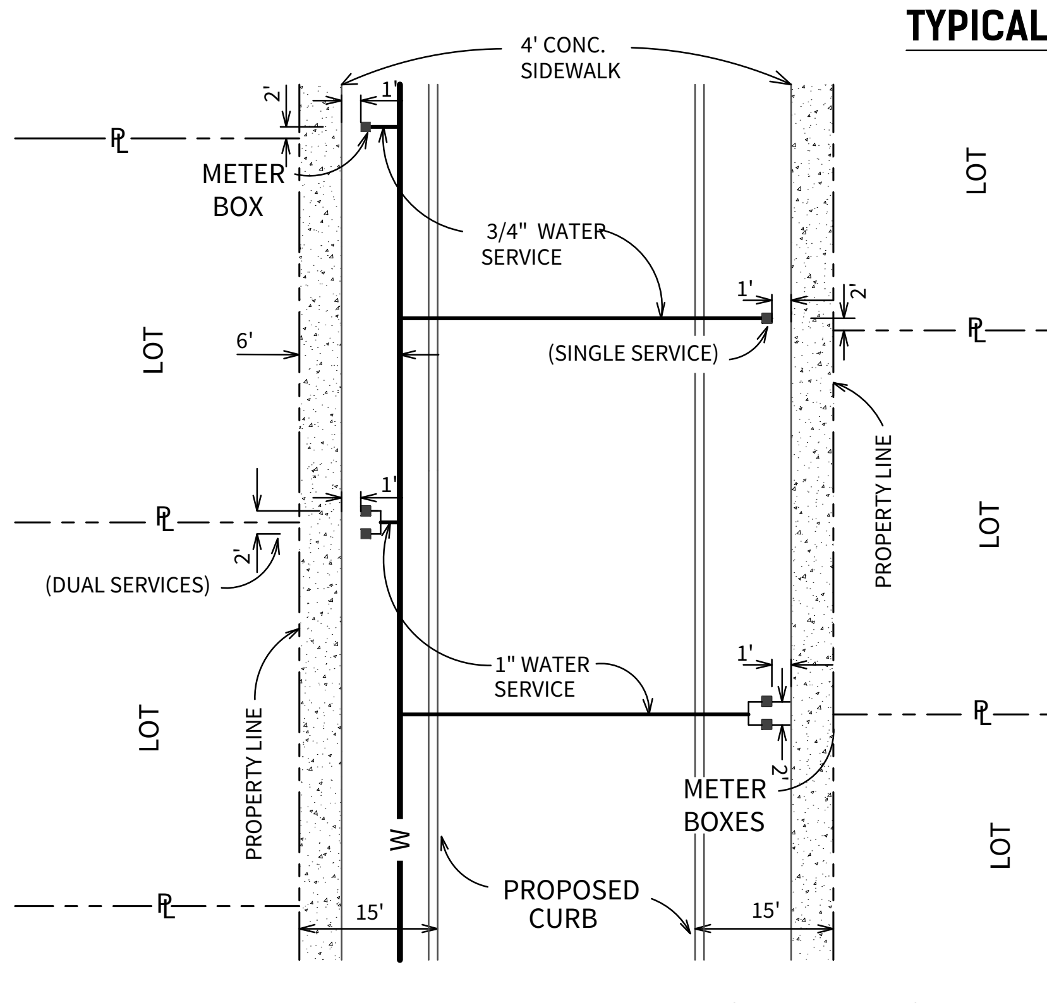
COLLECTOR STREET CROSS-SECTION
N.T.S.


60' R.O.W.
15' PARKWAY
1' GUTTER
28' PAVEMENT
1' GUTTER
15' PARKWAY
MAX SLOPE 1"/FT.
MIN SLOPE 1/4"/FT.
4' CONC. SIDEWALK
CURB & GUTTER
ASPHALT PAVEMENT
2.0% MIN.
2.0% MIN.
CURB & GUTTER
4' CONC. SIDEWALK
MAX SLOPE 1"/FT.
MIN SLOPE 1/4"/FT.
3.5' MIN. COVER
SLOPE @ 2.0%
AGGREGATE BASE 95% COMPACTED DENSITY
95% COMPACTED DENSITY SUBGRADE
SLOPE @ 2.0%
PROPOSED WATER MAIN
PROPOSED SEWER PIPE
6.00'
PROPERTY LINE
PROPERTY LINE

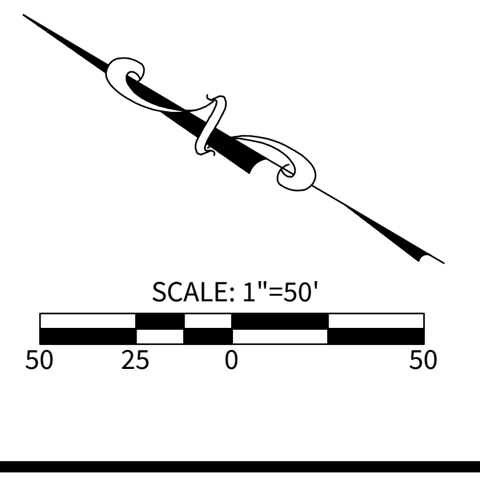
MINOR STREET CROSS-SECTION
N.T.S.

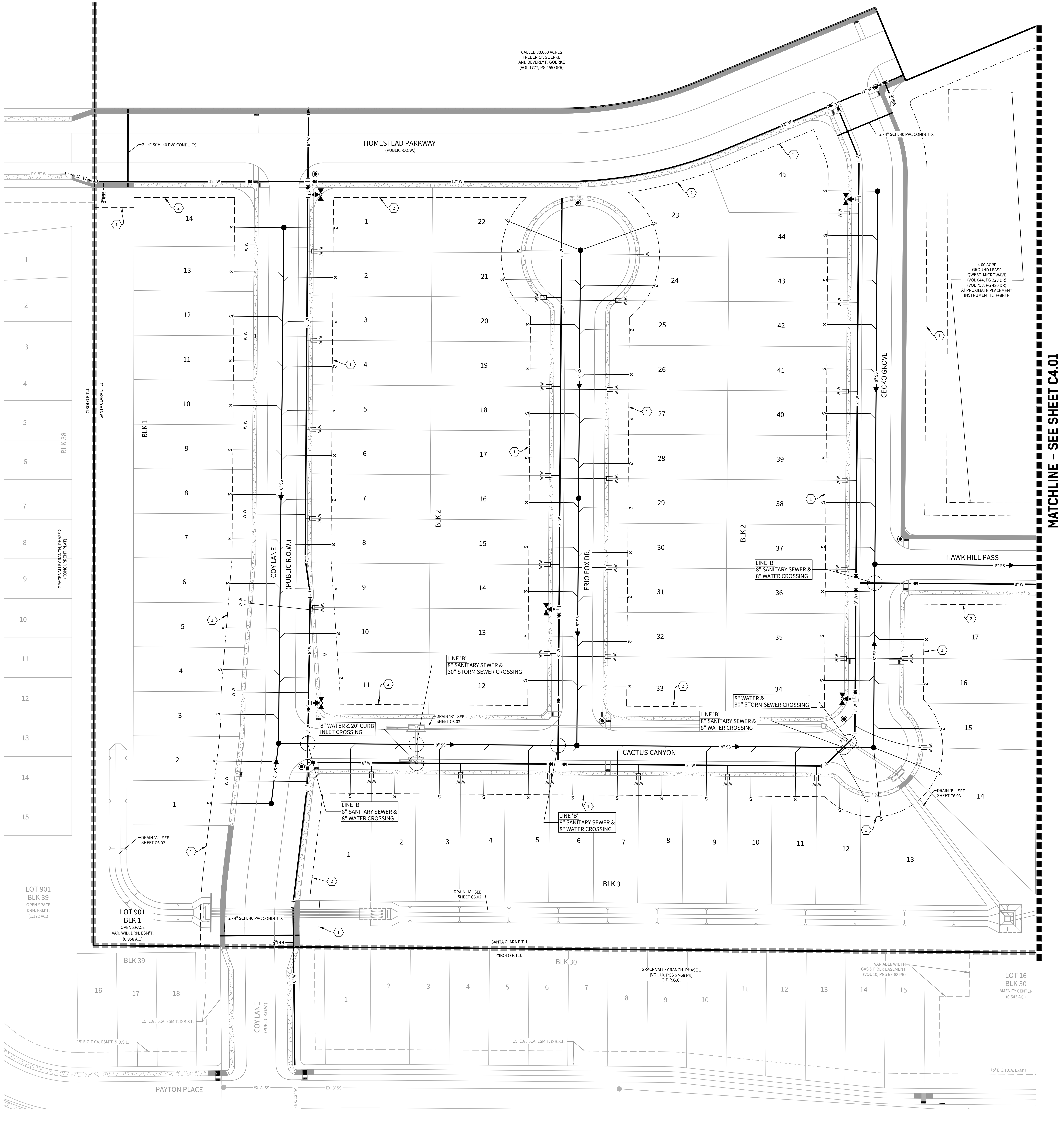

FINISHED GROUND/PAVEMENT (TOP OF GRADE)
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
3.5' MIN.
PROPOSED WATER LINE
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241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


4' CONC. SIDEWALK
2'
1'
METER BOX
3/4" WATER SERVICE
1'
2'
(SINGLE SERVICE)
6'
LOT
LOT
LOT
LOT
LOT
LOT
1'
2'
(DUAL SERVICES)
PROPERTY LINE
PROPERTY LINE
1" WATER SERVICE
1'
2'
METER BOXES
W
PROPOSED CURB
15'
15'

WATER METER BOX LOCATION (60' R.O.W.)
N.T.S.


SCALE: 1"=50'
50
25
0
50


CALLED 30.000 ACRES
FREDERICK GOERKE
AND BEVERLY F. GOERKE
(VOL 1777, PG 455 OPR)
HOMESTEAD PARKWAY
(PUBLIC R.O.W.)
2 - 4" SCH. 40 PVC CONDUITS
2 - 4" SCH. 40 PVC CONDUITS
EX. 8" W
12" W
12" W
12" W
12" W
4.00 ACRE
GROUND LEASE
QWEST MICROWAVE
(VOL 644, PG 223 DR)
(VOL 758, PG 420 DR)
APPROXIMATE PLACEMENT
INSTRUMENT ILLEGIBLE
MATCHLINE – SEE SHEET C4.01
BLK 1
BLK 2
BLK 2
BLK 3
COY LANE
(PUBLIC R.O.W.)
FRIO FOX DR.
GECKO GROVE
HAWK HILL PASS
CACTUS CANYON
8" SS
8" W
LINE 'B'
8" SANITARY SEWER &
30" STORM SEWER CROSSING
8" WATER &
30" STORM SEWER CROSSING
LINE 'B'
8" SANITARY SEWER &
8" WATER CROSSING
8" WATER & 20' CURB
INLET CROSSING
DRAIN 'B' - SEE
SHEET C6.03
DRAIN 'A' - SEE
SHEET C6.02
CIBOLO E.T.J.
SANTA CLARA E.T.J.
GRACE VALLEY RANCH, PHASE 2
(CONCURRENT PLAT)
BLK 38
LOT 901
BLK 39
OPEN SPACE
DRN. ESM'T.
(1.172 AC.)
LOT 901
BLK 1
OPEN SPACE
VAR. WID. DRN. ESM'T.
(0.958 AC.)
BLK 39
BLK 30
GRACE VALLEY RANCH, PHASE 1
(VOL 10, PGS 67-68 PR)
O.P.R.G.C.
VARIABLE WIDTH
GAS & FIBER EASEMENT
(VOL 10, PGS 67-68 PR)
LOT 16
BLK 30
AMENITY CENTER
(0.543 AC.)
15' E.G.T.CA. ESM'T. & B.S.L.
COY LANE
(PUBLIC R.O.W.)
PAYTON PLACE
EX. 8" SS
EX. 12" W

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ENGINEERS

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

GOERKE SUBDIVISION PHASE 1

UTILITY LAYOUT PLAN

DATE	01/15/2025
PROJECT NO.	03346.101
DRAWN BY	R.B./M.A.S.
CHECKED BY	K.M.H.

REVISIONS

1.
2.
3.
4.
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7.
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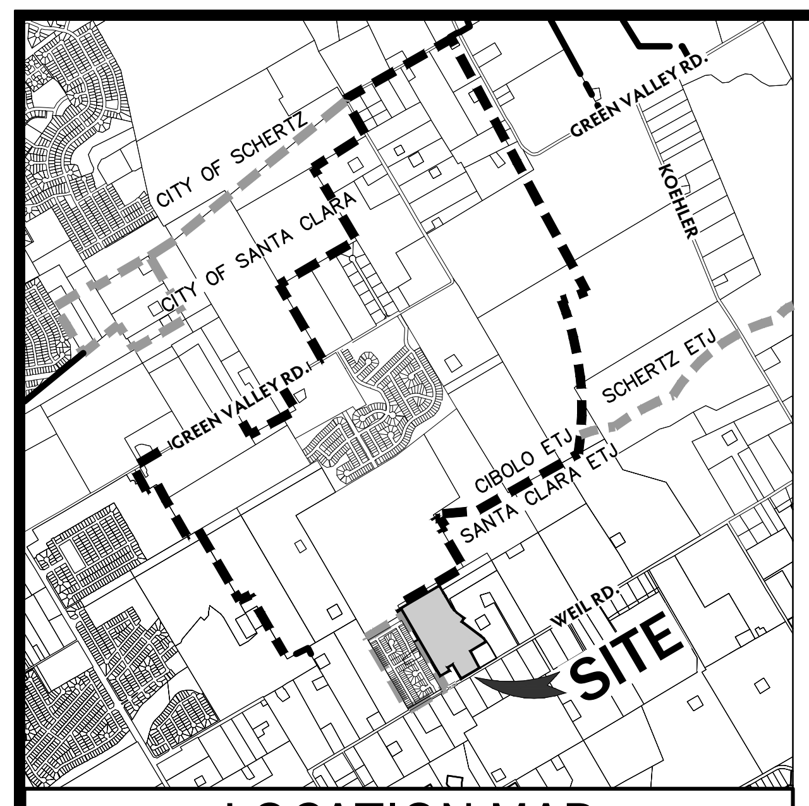
9.

KYLE M. HUDEK
138753
01/27/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C3.00

P:\03346\101\2-DWG\4-Plans\C3.00_C3.01 UTIL.dwg 2025/01/15 9:43am rbarrera


GREEN VALLEY RD.
KOEHLER
CITY OF SCHERTZ
CITY OF SANTA CLARA
SCHERTZ ETJ
GREEN VALLEY RD.
CIBOLO ETJ
SANTA CLARA ETJ
WEIL RD.
SITE

LOCATION MAP

N.T.S.

LEGEND

PROPOSED SANITARY SEWER MANHOLE	─●─
EXISTING SANITARY SEWER MANHOLE	─●─
PROPOSED SANITARY SEWER LATERAL	S───
PROPOSED SANITARY SEWER MAIN	8"SS
EXISTING SANITARY SEWER MAIN	EX. 8" SS
PROPOSED WATER MAIN	8"W
EXISTING WATER MAIN	EX. 8" W
PROPOSED STANDARD FIRE HYDRANT	⋈
PROPOSED STANDARD GATE VALVE	─┤●├─
PROPOSED PERMANENT BLOWOFF	─▶●
EXISTING OVERHEAD ELECTRIC	OHE
PROPOSED UNDERGROUND ELECTRIC	ELEC
SITE BOUNDARY	━━━
ELECTRIC, GAS, TELEPHONE, & CABLE T.V. EASEMENT	E.G.T.CA. ESM'T
BUILDING SETBACK LINE	B.S.L.
KEYNOTE	⟨1⟩
STREET LIGHT	◉

KEYNOTES

- ⟨1⟩ 20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE
- ⟨2⟩ 10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

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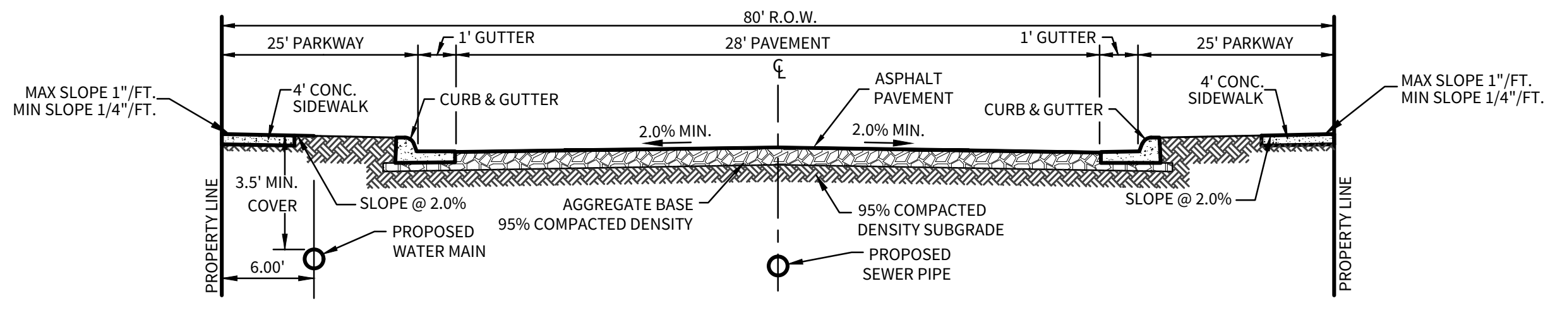
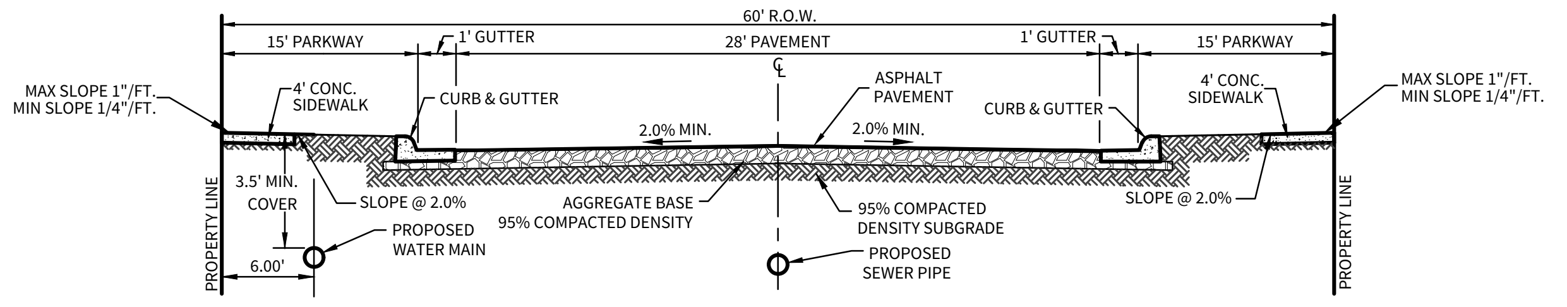

80' R.O.W.
25' PARKWAY
1' GUTTER
28' PAVEMENT
1' GUTTER
25' PARKWAY
℄
MAX SLOPE 1"/FT.
MIN SLOPE 1/4"/FT.
4' CONC. SIDEWALK
CURB & GUTTER
ASPHALT PAVEMENT
2.0% MIN.
2.0% MIN.
CURB & GUTTER
4' CONC. SIDEWALK
MAX SLOPE 1"/FT.
MIN SLOPE 1/4"/FT.
3.5' MIN. COVER
SLOPE @ 2.0%
AGGREGATE BASE 95% COMPACTED DENSITY
95% COMPACTED DENSITY SUBGRADE
SLOPE @ 2.0%
PROPOSED WATER MAIN
PROPOSED SEWER PIPE
6.00'
PROPERTY LINE
PROPERTY LINE

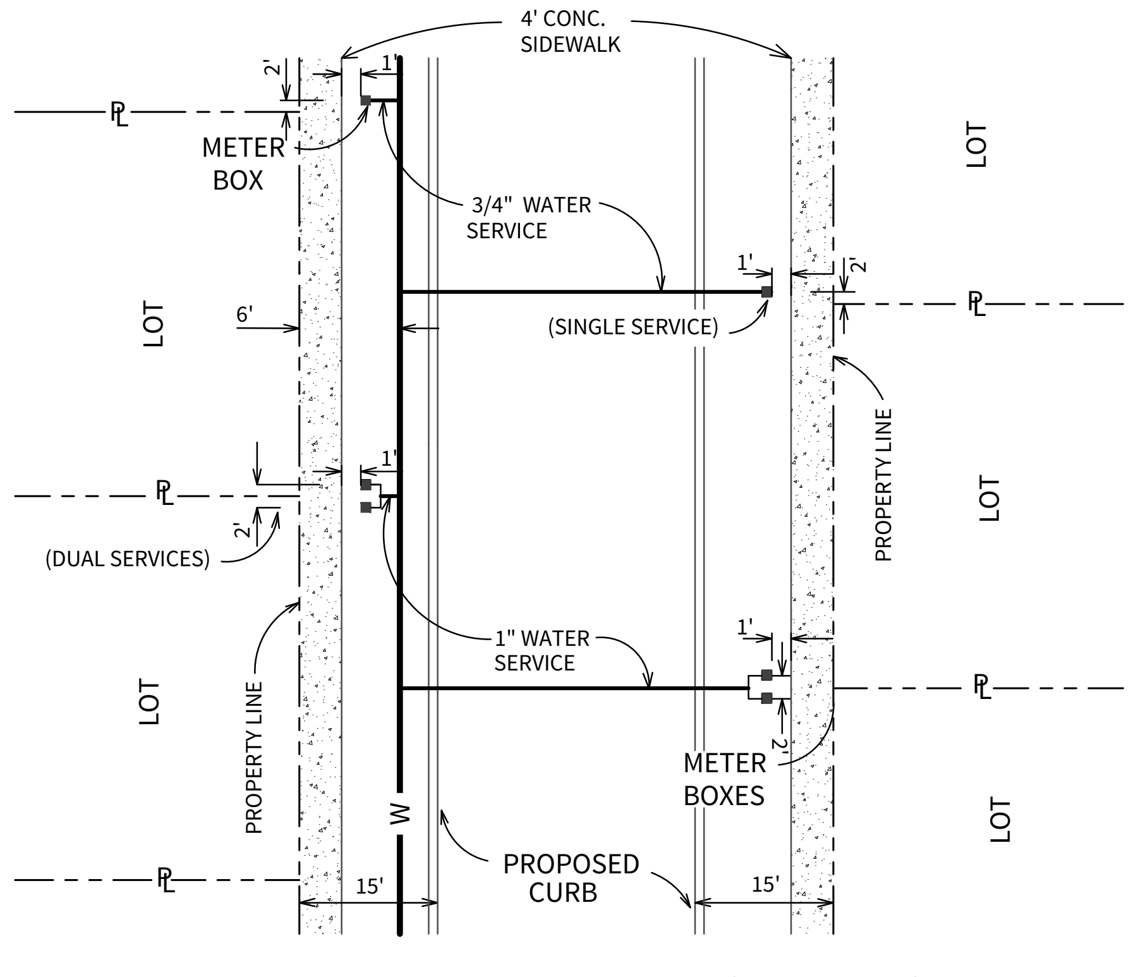
COLLECTOR STREET CROSS-SECTION

N.T.S.


60' R.O.W.
15' PARKWAY
1' GUTTER
28' PAVEMENT
1' GUTTER
15' PARKWAY
℄
MAX SLOPE 1"/FT.
MIN SLOPE 1/4"/FT.
4' CONC. SIDEWALK
CURB & GUTTER
ASPHALT PAVEMENT
2.0% MIN.
2.0% MIN.
CURB & GUTTER
4' CONC. SIDEWALK
MAX SLOPE 1"/FT.
MIN SLOPE 1/4"/FT.
3.5' MIN. COVER
SLOPE @ 2.0%
AGGREGATE BASE 95% COMPACTED DENSITY
95% COMPACTED DENSITY SUBGRADE
SLOPE @ 2.0%
PROPOSED WATER MAIN
PROPOSED SEWER PIPE
6.00'
PROPERTY LINE
PROPERTY LINE

MINOR STREET CROSS-SECTION

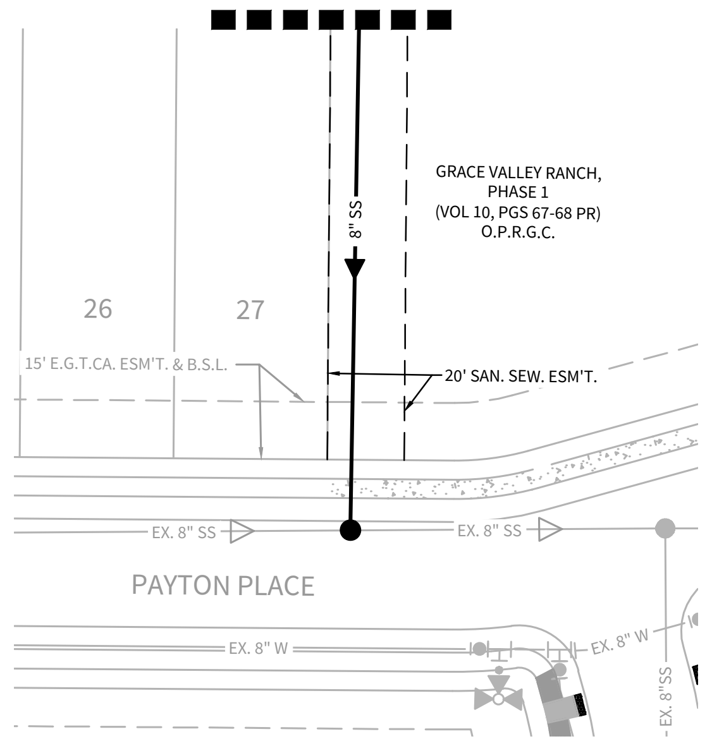
N.T.S.

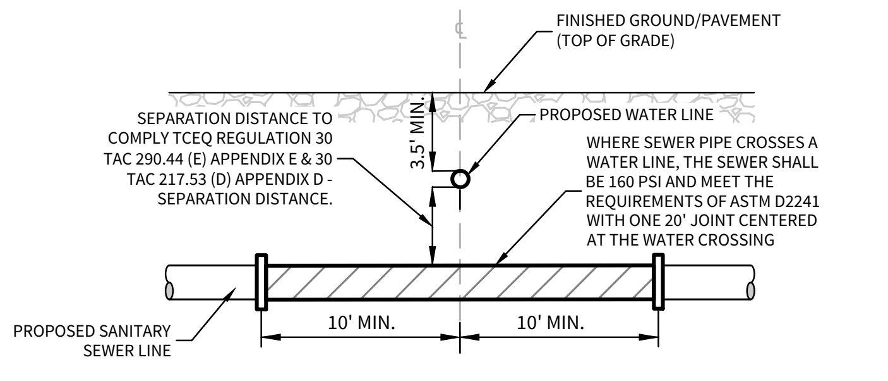

4' CONC. SIDEWALK
2'
METER BOX
3/4" WATER SERVICE
(SINGLE SERVICE)
1'
2'
LOT
6'
LOT
LOT
(DUAL SERVICES)
2'
PROPERTY LINE
1" WATER SERVICE
1'
METER BOXES
PROPERTY LINE
LOT
LOT
W
PROPOSED CURB
15'
15'
℄
℄
℄
℄
℄

WATER METER BOX LOCATION (60' R.O.W.)

N.T.S.

MATCHLINE – SEE THIS SHEET


8" SS
GRACE VALLEY RANCH, PHASE 1 (VOL 10, PGS 67-68 PR) O.P.R.G.C.
26
27
15' E.G.T.CA. ESM'T. & B.S.L.
20' SAN. SEW. ESM'T.
EX. 8" SS
EX. 8" SS
PAYTON PLACE
EX. 8" W
EX. 8" W
EX. 8"SS

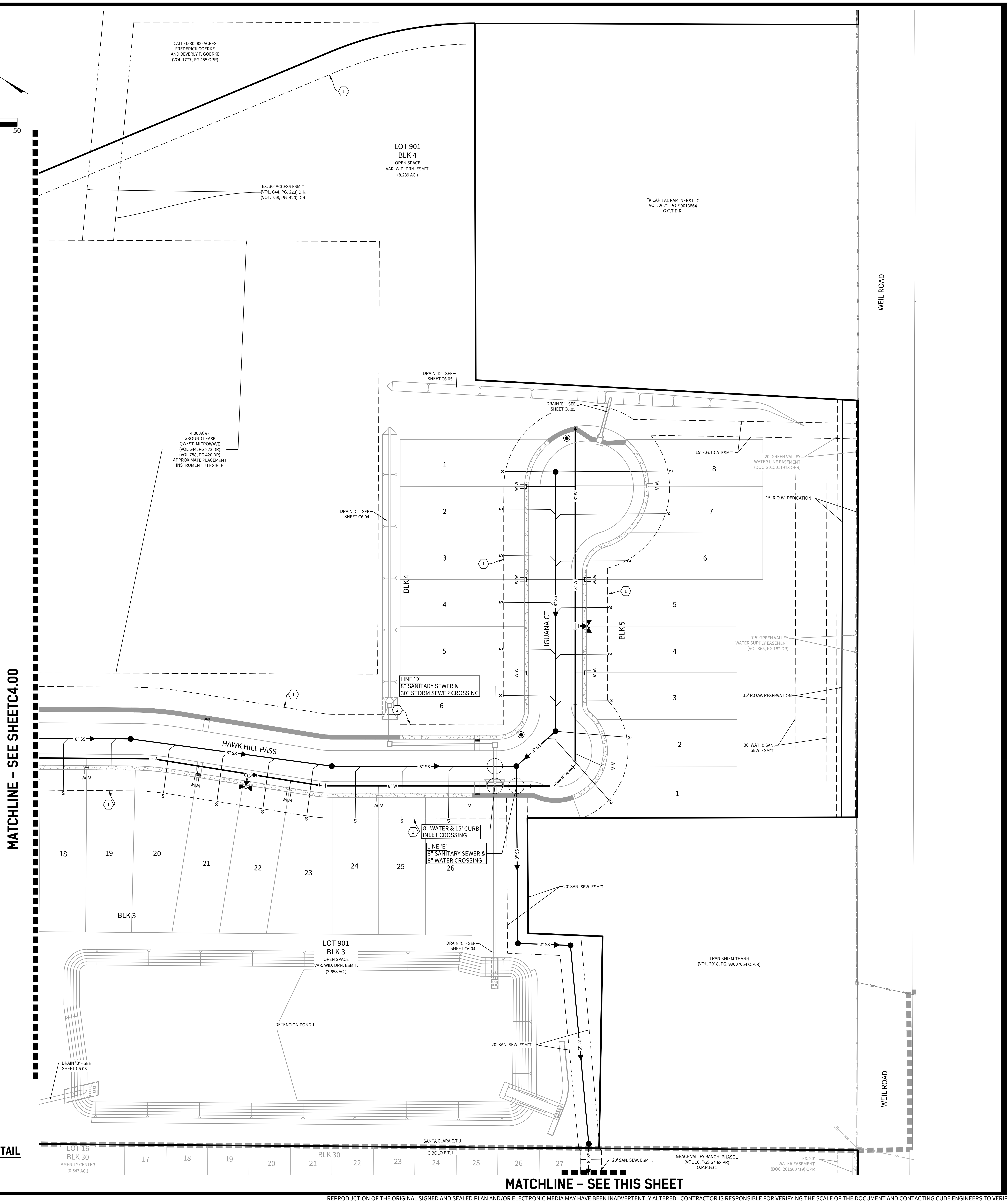

℄
FINISHED GROUND/PAVEMENT (TOP OF GRADE)
PROPOSED WATER LINE
3.5' MIN.
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM 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.

SCALE: 1"=50'

50 25 0 50


MATCHLINE – SEE SHEETC4.00
CALLED 30.000 ACRES FREDERICK GOERKE AND BEVERLY F. GOERKE (VOL 1777, PG 455 OPR)
1
LOT 901 BLK 4 OPEN SPACE VAR. WID. DRN. ESM'T. (8.289 AC.)
EX. 30' ACCESS ESM'T. (VOL. 644, PG. 223) D.R. (VOL. 758, PG. 420) D.R.
FK CAPITAL PARTNERS LLC VOL. 2021, PG. 99013864 G.C.T.D.R.
WEIL ROAD
4.00 ACRE GROUND LEASE QWEST MICROWAVE (VOL 644, PG 223 DR) (VOL 758, PG 420 DR) APPROXIMATE PLACEMENT INSTRUMENT ILLEGIBLE
DRAIN 'D' - SEE SHEET C6.05
DRAIN 'E' - SEE SHEET C6.05
DRAIN 'C' - SEE SHEET C6.04
15' E.G.T.CA. ESM'T.
20' GREEN VALLEY WATER LINE EASEMENT (DOC 2015011918 OPR)
15' R.O.W. DEDICATION
7.5' GREEN VALLEY WATER SUPPLY EASEMENT (VOL 365, PG 182 DR)
15' R.O.W. RESERVATION
30' WAT. & SAN. SEW. ESM'T.
BLK 4
BLK 5
IGUANA CT
8" W
8" SS
8" SS
8" W
1
2
3
4
5
6
8
7
6
5
4
3
2
1
LINE 'D' 8" SANITARY SEWER & 30" STORM SEWER CROSSING
HAWK HILL PASS
8" SS
8" SS
8" SS
8" W
8" W
8" WATER & 15' CURB INLET CROSSING
LINE 'E' 8" SANITARY SEWER & 8" WATER CROSSING
18
19
20
21
22
23
24
25
26
BLK 3
20' SAN. SEW. ESM'T.
8" SS
TRAN KHIEM THANH (VOL. 2018, PG. 99007054 O.P.R)
LOT 901 BLK 3 OPEN SPACE VAR. WID. DRN. ESM'T. (3.658 AC.)
DRAIN 'C' - SEE SHEET C6.04
DETENTION POND 1
20' SAN. SEW. ESM'T.
DRAIN 'B' - SEE SHEET C6.03
WEIL ROAD
SANTA CLARA E.T.J.
CIBOLO E.T.J.
LOT 16 BLK 30 AMENITY CENTER (0.543 AC.)
17
18
19
20
21
BLK 30
22
23
24
25
26
27
20' SAN. SEW. ESM'T.
GRACE VALLEY RANCH, PHASE 1 (VOL 10, PGS 67-68 PR) O.P.R.G.C.
EX. 20' WATER EASEMENT (DOC 201500719) OPR

MATCHLINE – SEE THIS SHEET

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San Antonio, Texas 78231
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GOERKE SUBDIVISION PHASE 1

UTILITY LAYOUT PLAN

DATE
01/15/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
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KYLE M. HUDEK
138753
01/27/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C3.01

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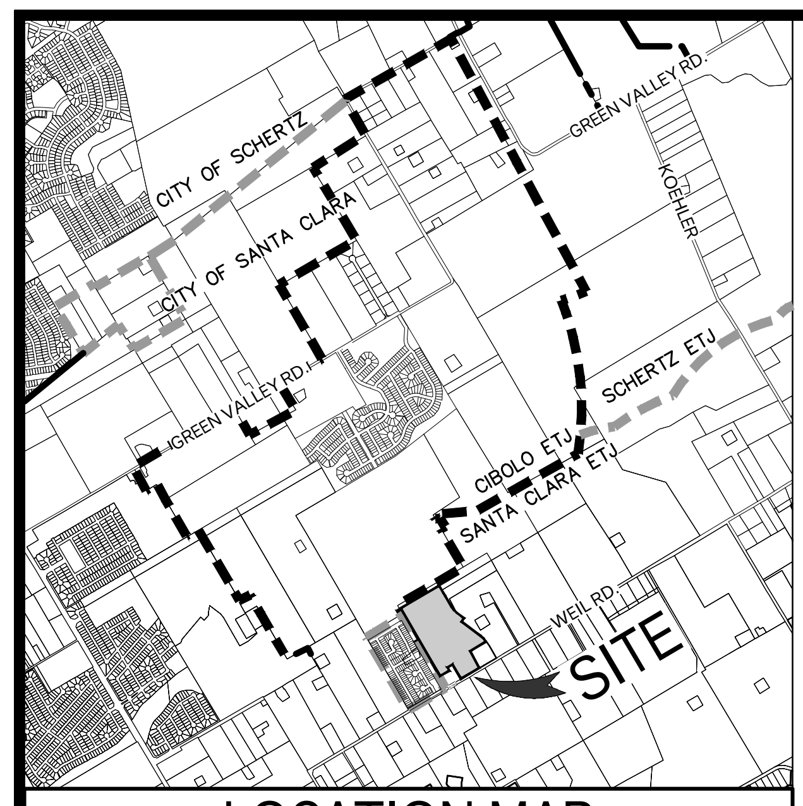

CITY OF SCHERTZ
CITY OF SANTA CLARA
GREEN VALLEY RD.
KOEHLER
SCHERTZ ETJ
CIBOLO ETJ
SANTA CLARA ETJ
SITE

LOCATION MAP
N.T.S.

KEYNOTES

①	20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE
②	10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

LEGEND

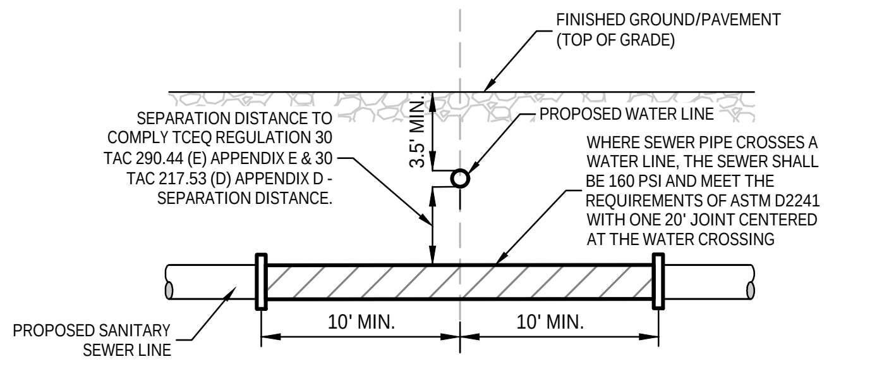
PROPOSED SANITARY SEWER MANHOLE	●
EXISTING SANITARY SEWER MANHOLE	●
PROPOSED SANITARY SEWER LATERAL	S
PROPOSED SANITARY SEWER MAIN	8"SS
EXISTING SANITARY SEWER MAIN	EX. 8" SS
PROPOSED WATER MAIN	8"W
EXISTING WATER MAIN	
PROPOSED STANDARD FIRE HYDRANT	
PROPOSED STANDARD GATE VALVE	
PROPOSED PERMANENT BLOWOFF	
ELECTRIC, GAS, TELEPHONE, & CABLE T.V. EASEMENT	E.G.T.CA. ESM'T
BUILDING SETBACK LINE	B.S.L.
KEYNOTE	①

CAUTION!!!

THE CONTRACTOR SHALL BE AWARE THAT EXISTING UTILITIES ARE WITHIN HOMESTEAD PARKWAY. 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.

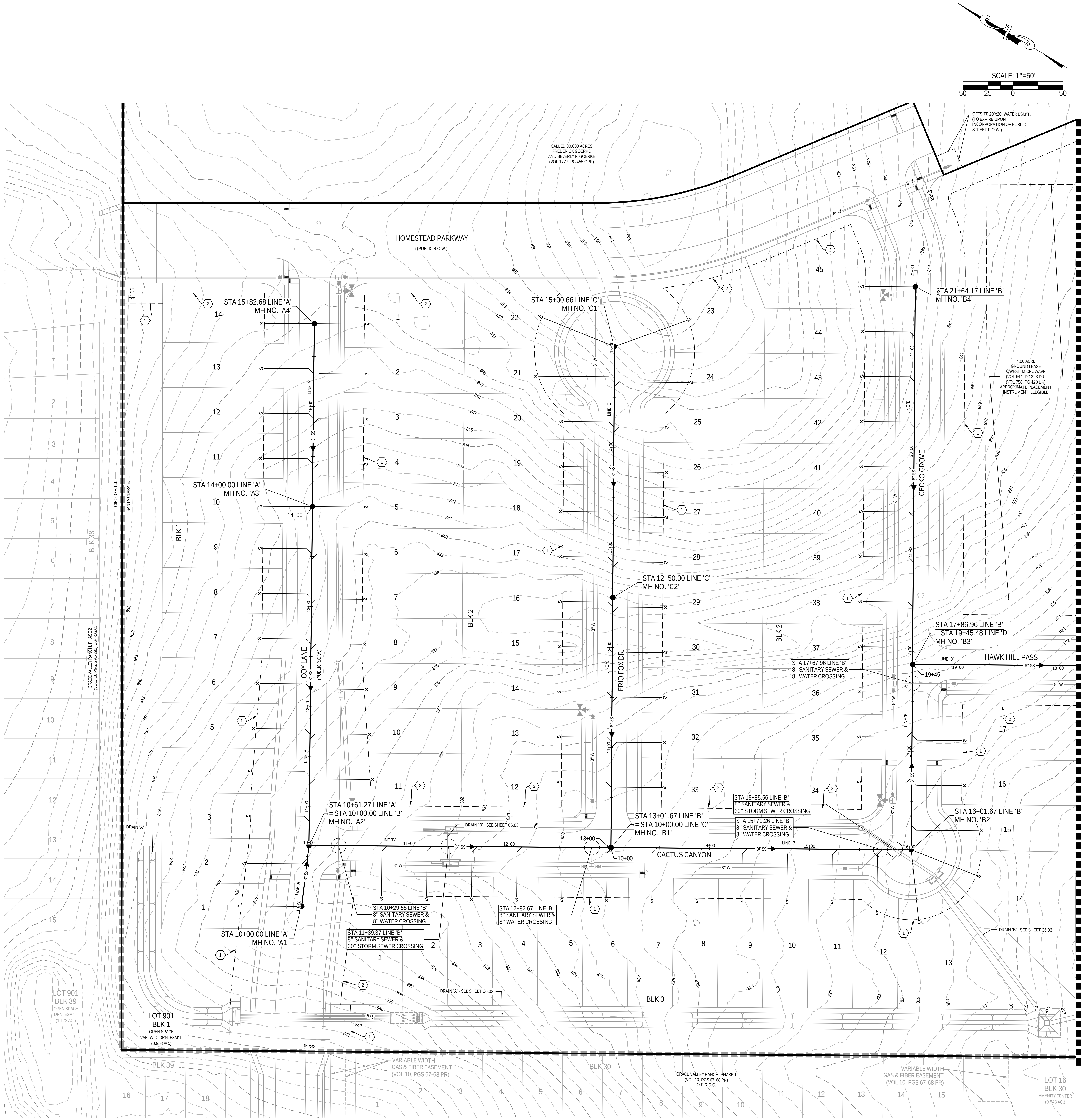
TRENCH EXCAVATION SAFETY PROTECTION

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.


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.
3.5' 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.

GOERKE PHASE 1		
SANITARY SEWER QUANTITIES		
TRENCH EXCAVATION PROTECTION	9,085	L.F.
8" PVC SANITARY SEWER LINE (SDR-26)	3,749	L.F.
SANITARY SEWER MANHOLE (0'-6')	19	EA.
EXTRA DEPTH MANHOLE (>6')	83	V.F.
SANITARY SEWER LATERALS (SDR-26) (W/ CLEANOUT)	5,336	L.F.
6" DIA. VERTICAL STACK	134	V.F.
CONCRETE ENCASEMENT	12	C.Y.
MANHOLE RING ENCASEMENT	3	EA.


SCALE: 1"=50'
50 25 0 50
HOMESTEAD PARKWAY
(PUBLIC R.O.W.)
CALLED 30.000 ACRES FREDERICK GOERKE AND BEVERLY F. GOERKE (VOL 1777, PG 455 OPR)
OFFSITE 20'x20' WATER ESM'T. (TO EXPIRE UPON INCORPORATION OF PUBLIC STREET R.O.W.)
4.00 ACRE GROUND LEASE QWEST MICROWAVE (VOL 644, PG 223 DR) (VOL 758, PG 420 DR) APPROXIMATE PLACEMENT INSTRUMENT ILLEGIBLE
STA 15+82.68 LINE 'A' MH NO. 'A4'
STA 14+00.00 LINE 'A' MH NO. 'A3'
STA 10+61.27 LINE 'A' = STA 10+00.00 LINE 'B' MH NO. 'A2'
STA 10+00.00 LINE 'A' MH NO. 'A1'
STA 15+00.66 LINE 'C' MH NO. 'C1'
STA 12+50.00 LINE 'C' MH NO. 'C2'
STA 13+01.67 LINE 'B' = STA 10+00.00 LINE 'C' MH NO. 'B1'
STA 16+01.67 LINE 'B' MH NO. 'B2'
STA 17+86.96 LINE 'B' = STA 19+45.48 LINE 'D' MH NO. 'B3'
STA 21+64.17 LINE 'B' MH NO. 'B4'
STA 10+29.55 LINE 'B' 8" SANITARY SEWER & 8" WATER CROSSING
STA 11+39.37 LINE 'B' 8" SANITARY SEWER & 30" STORM SEWER CROSSING
STA 12+82.67 LINE 'B' 8" SANITARY SEWER & 8" WATER CROSSING
STA 15+71.26 LINE 'B' 8" SANITARY SEWER & 8" WATER CROSSING
STA 15+85.56 LINE 'B' 8" SANITARY SEWER & 30" STORM SEWER CROSSING
STA 17+67.96 LINE 'B' 8" SANITARY SEWER & 8" WATER CROSSING
DRAIN 'A' - SEE SHEET C6.02
DRAIN 'B' - SEE SHEET C6.03
COY LANE
FRIO FOX DR.
GECKO GROVE
CACTUS CANYON
HAWK HILL PASS
LINE 'A'
LINE 'B'
LINE 'C'
LINE 'D'
8" SS
8" W
BLK 1
BLK 2
BLK 3
BLK 38
BLK 39
BLK 30
LOT 901 BLK 1 OPEN SPACE VAR. WID. DRN. ESM'T. (0.958 AC.)
LOT 901 BLK 39 OPEN SPACE DRN. ESM'T. (1.172 AC.)
LOT 16 BLK 30 AMENITY CENTER (0.543 AC.)
GRACE VALLEY RANCH, PHASE 2 (VOL 10, PGS 291-292) O.P.R.G.C.
GRACE VALLEY RANCH, PHASE 1 (VOL 10, PGS 67-68 PR) O.P.R.G.C.
VARIABLE WIDTH GAS & FIBER EASEMENT (VOL 10, PGS 67-68 PR)
CIBOLO E.T.J.
SANTA CLARA E.T.J.
MATCHLINE - SEE SHEET C4.01

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GOERKE SUBDIVISION PHASE 1
SANITARY SEWER MASTER PLAN

DATE	02/27/2025
PROJECT NO.	03346.101
DRAWN BY	R.B./M.A.S.
CHECKED BY	K.M.H.

REVISIONS
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KYLE M. HUDEK
138753
03/04/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C4.00

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

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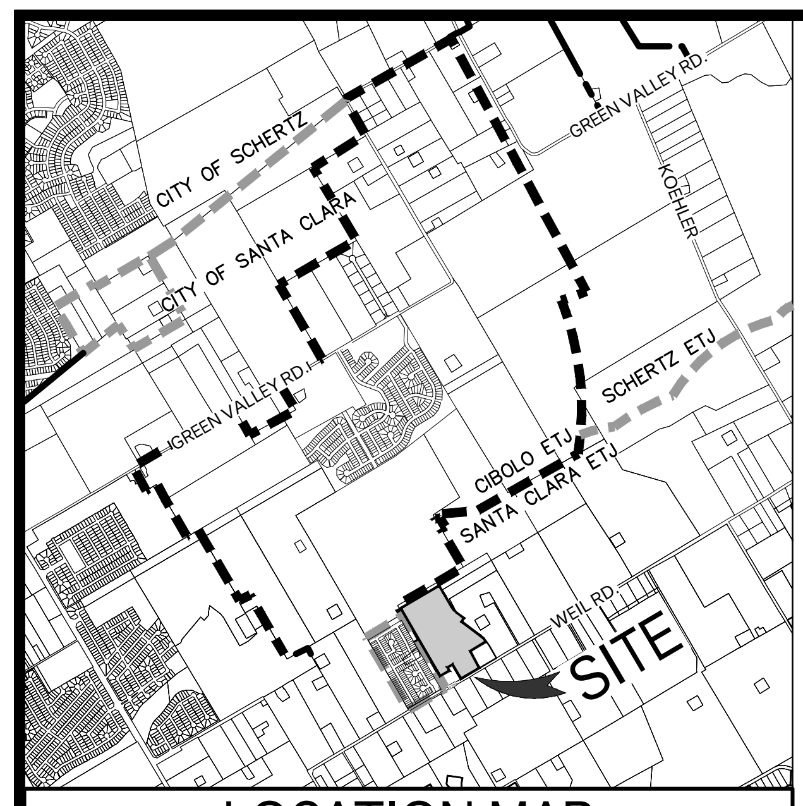
CITY OF SCHERTZ
CITY OF SANTA CLARA
GREEN VALLEY RD.
KOEHLER
SCHERTZ ETJ
CIBOLO ETJ
SANTA CLARA ETJ
WEIL RD.
SITE

LOCATION MAP

N.T.S.

KEYNOTES

1. 20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE
2. 10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

LEGEND

PROPOSED SANITARY SEWER MANHOLE	●
EXISTING SANITARY SEWER MANHOLE	●
PROPOSED SANITARY SEWER LATERAL	S
PROPOSED SANITARY SEWER MAIN	8"SS
EXISTING SANITARY SEWER MAIN	EX. 8" SS
PROPOSED WATER MAIN	8"W
EXISTING WATER MAIN	EX. 8" W
PROPOSED STANDARD FIRE HYDRANT	
PROPOSED STANDARD GATE VALVE	
PROPOSED PERMANENT BLOWOFF	
ELECTRIC, GAS, TELEPHONE, & CABLE T.V. EASEMENT	E.G.T.CA. ESM'T
BUILDING SETBACK LINE	B.S.L.
KEYNOTE	1

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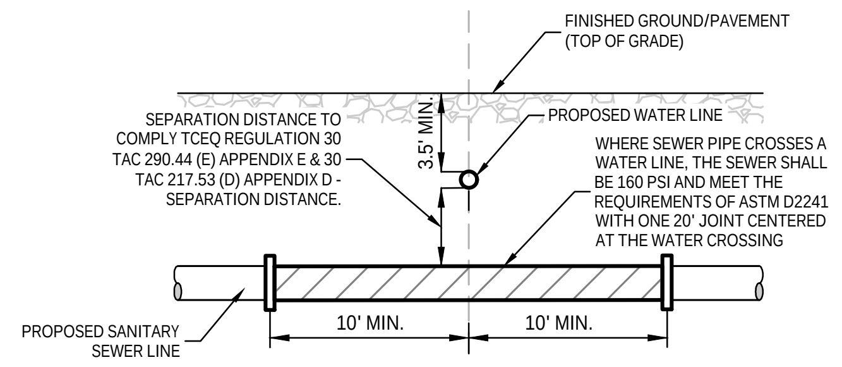
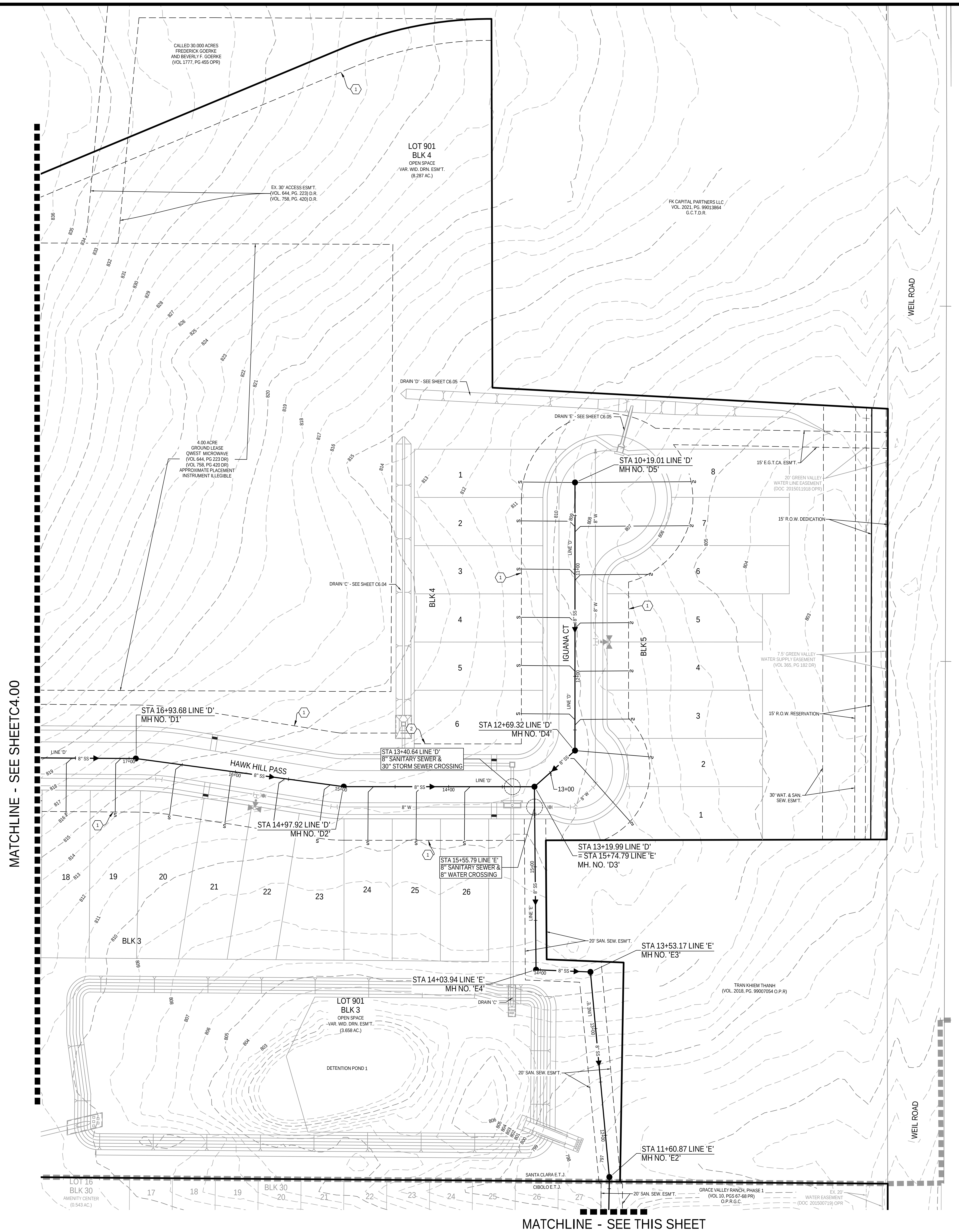
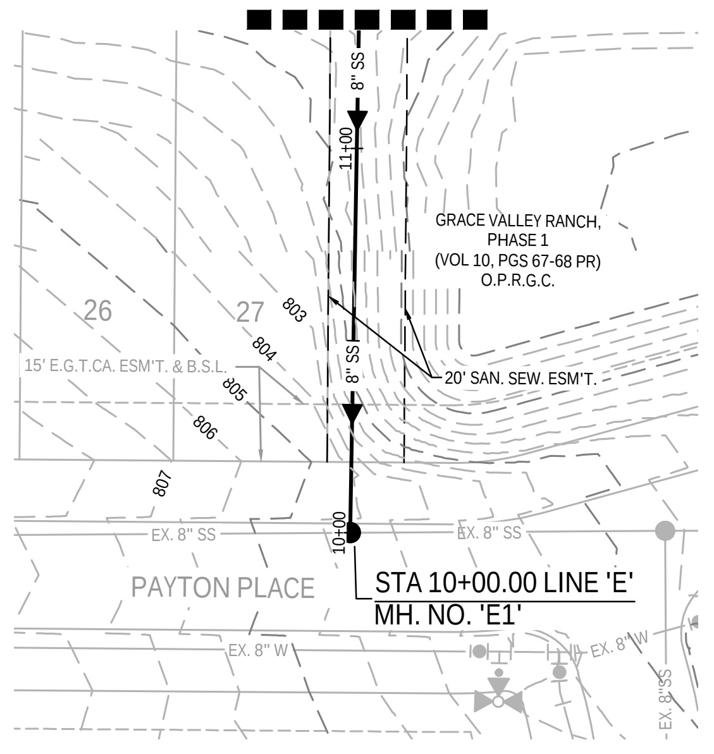

FINISHED GROUND/PAVEMENT (TOP OF GRADE)
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
3.5' MIN.
PROPOSED WATER LINE
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241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

GOERKE PHASE 1		
SANITARY SEWER QUANTITIES		
TRENCH EXCAVATION PROTECTION	9,085	L.F.
8" PVC SANITARY SEWER LINE (SDR-26)	3,749	L.F.
SANITARY SEWER MANHOLE (0'-6')	19	EA.
EXTRA DEPTH MANHOLE (>6')	83	V.F.
SANITARY SEWER LATERALS (SDR-26) (W/ CLEANOUT)	5,336	L.F.
6" DIA. VERTICAL STACK	134	V.F.
CONCRETE ENCASEMENT	12	C.Y.
MANHOLE RING ENCASEMENT	3	EA.


CALLED 30.000 ACRES FREDERICK GOERKE AND BEVERLY F. GOERKE (VOL. 1777, PG 455 OPR)
LOT 901 BLK 4 OPEN SPACE VAR. WID. DRN. ESM'T. (8.287 AC.)
EX. 30' ACCESS ESM'T. (VOL. 644, PG. 223) D.R. (VOL. 758, PG. 420) D.R.
FK CAPITAL PARTNERS LLC VOL. 2021, PG. 99013864 G.C.T.D.R.
4.00 ACRE GROUND LEASE QWEST MICROWAVE (VOL 644, PG 223 DR) (VOL 758, PG 420 DR) APPROXIMATE PLACEMENT INSTRUMENT ILLEGIBLE
DRAIN 'D' - SEE SHEET C6.05
DRAIN 'E' - SEE SHEET C6.05
DRAIN 'C' - SEE SHEET C6.04
STA 10+19.01 LINE 'D' MH NO. 'D5'
15' E.G.T.CA. ESM'T.
20' GREEN VALLEY WATER LINE EASEMENT (DOC 2015011918 OPR)
15' R.O.W. DEDICATION
7.5' GREEN VALLEY WATER SUPPLY EASEMENT (VOL 365, PG 182 DR)
15' R.O.W. RESERVATION
30' WAT. & SAN. SEW. ESM'T.
IGUANA CT
LINE 'D'
BLK 4
BLK 5
8" W
8" SS
11+00
12+00
13+00
14+00
15+00
16+00
17+00
STA 12+69.32 LINE 'D' MH NO. 'D4'
STA 13+40.64 LINE 'D' 8" SANITARY SEWER & 30" STORM SEWER CROSSING
STA 16+93.68 LINE 'D' MH NO. 'D1'
HAWK HILL PASS
STA 14+97.92 LINE 'D' MH NO. 'D2'
STA 13+19.99 LINE 'D' = STA 15+74.79 LINE 'E' MH. NO. 'D3'
STA 15+55.79 LINE 'E' 8" SANITARY SEWER & 8" WATER CROSSING
LINE 'E'
20' SAN. SEW. ESM'T.
STA 13+53.17 LINE 'E' MH NO. 'E3'
STA 14+03.94 LINE 'E' MH NO. 'E4'
TRAN KHIEM THANH (VOL. 2018, PG. 99007054 O.P.R)
LOT 901 BLK 3 OPEN SPACE VAR. WID. DRN. ESM'T. (3.658 AC.)
DETENTION POND 1
DRAIN 'C'
BLK 3
STA 11+60.87 LINE 'E' MH NO. 'E2'
SANTA CLARA E.T.J.
CIBOLO E.T.J.
GRACE VALLEY RANCH, PHASE 1 (VOL 10, PGS 67-68 PR) O.P.R.G.C.
EX. 20' WATER EASEMENT (DOC 201500719) OPR
LOT 16 BLK 30 AMENITY CENTER (0.543 AC.)
BLK 30
WEIL ROAD
MATCHLINE - SEE SHEETC4.00
MATCHLINE - SEE THIS SHEET


MATCHLINE - SEE THIS SHEET
8" SS
11+00
GRACE VALLEY RANCH, PHASE 1 (VOL 10, PGS 67-68 PR) O.P.R.G.C.
26
27
15' E.G.T.CA. ESM'T. & B.S.L.
20' SAN. SEW. ESM'T.
EX. 8" SS
10+00
PAYTON PLACE
STA 10+00.00 LINE 'E' MH. NO. 'E1'
EX. 8" W

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

GOERKE SUBDIVISION PHASE 1

SANITARY SEWER MASTER PLAN

DATE
02/27/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
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KYLE M. HUDEK
138753

K. Hudek
03/04/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C4.01

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LEGEND

PROPOSED SANITARY SEWER MANHOLE	●
EXISTING SANITARY SEWER MANHOLE	●
PROPOSED SANITARY SEWER LATERAL	S
PROPOSED SANITARY SEWER MAIN	8"SS
EXISTING SANITARY SEWER MAIN	EX. 8" SS
PROPOSED WATER MAIN	8"W
EXISTING WATER MAIN	EX. 8" W
PROPOSED STANDARD FIRE HYDRANT	
PROPOSED STANDARD GATE VALVE	
PROPOSED PERMANENT BLOWOFF	
ELECTRIC, GAS, TELEPHONE, & CABLE T.V. EASEMENT	E.G.T.CA. ESM'T
BUILDING SETBACK LINE	B.S.L.

KEYNOTES

1. 20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE
2. 10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

CAUTION!!!

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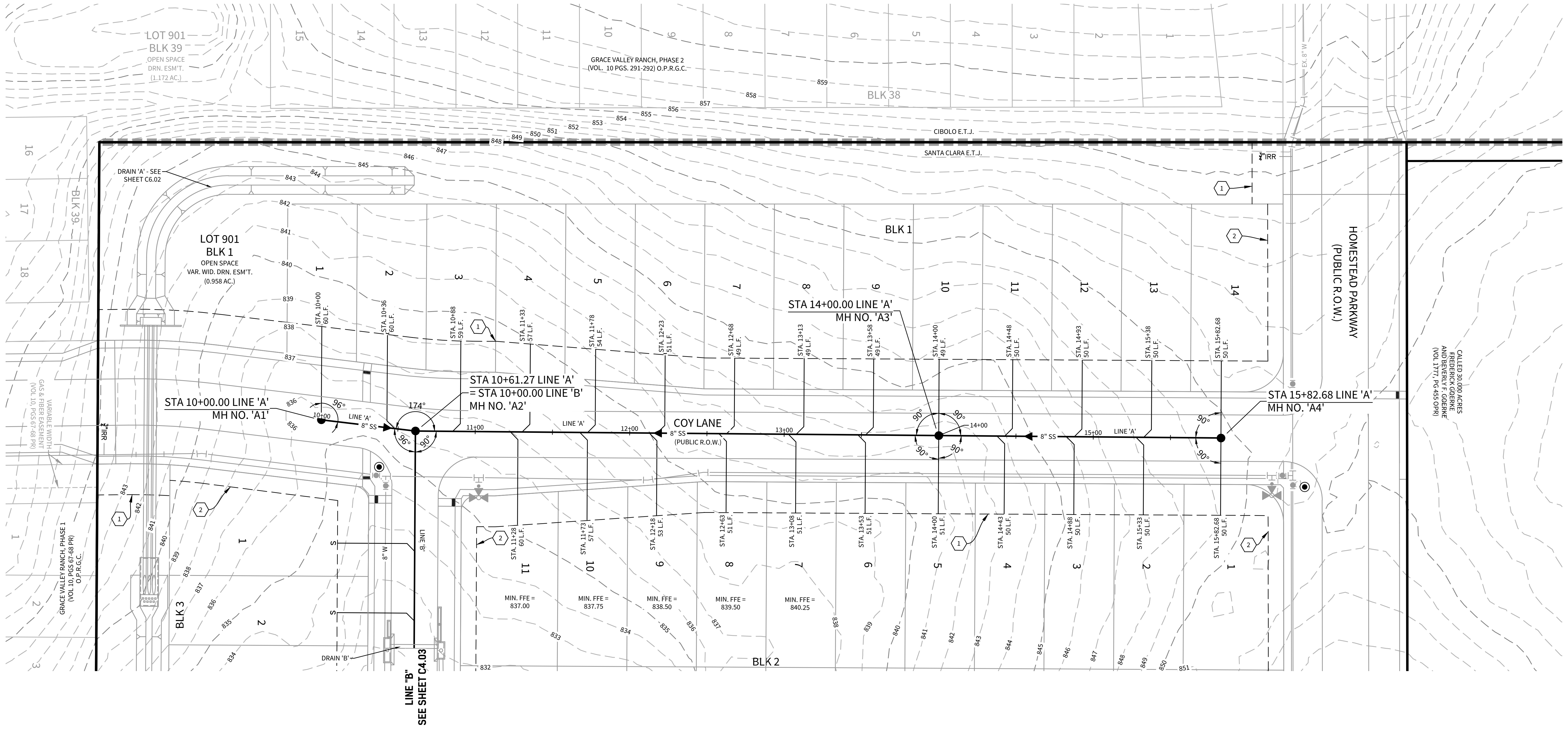
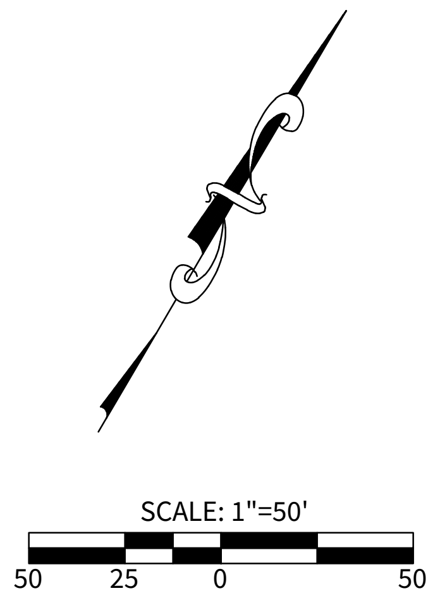
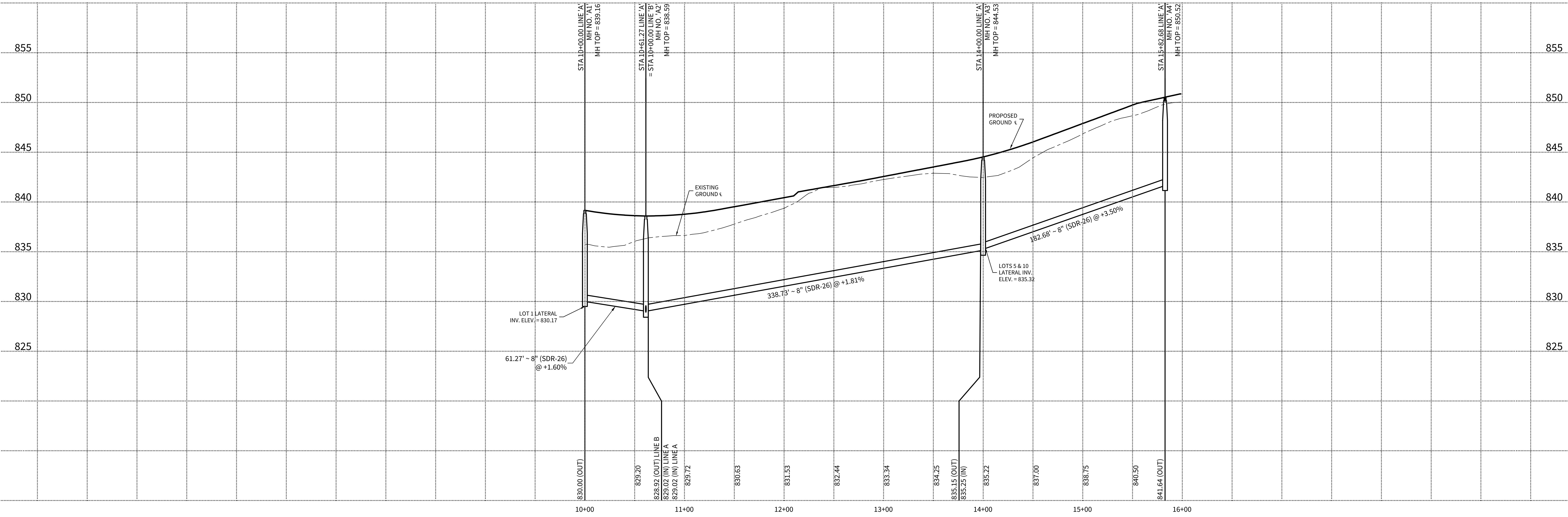

LOT 901
BLK 39
OPEN SPACE
DRN. ESM'T.
(1.172 AC.)
GRACE VALLEY RANCH, PHASE 2
(VOL. 10 PGS. 291-292) O.P.R.G.C.
BLK 38
CIBOLO E.T.J.
SANTA CLARA E.T.J.
DRAIN 'A' - SEE SHEET C6.02
LOT 901
BLK 1
OPEN SPACE
VAR. WID. DRN. ESM'T.
(0.958 AC.)
BLK 1
BLK 39
STA 10+00.00 LINE 'A'
MH NO. 'A1'
STA 10+61.27 LINE 'A'
= STA 10+00.00 LINE 'B'
MH NO. 'A2'
STA 14+00.00 LINE 'A'
MH NO. 'A3'
STA 15+82.68 LINE 'A'
MH NO. 'A4'
COY LANE
8" SS
(PUBLIC R.O.W.)
LINE 'A'
HOMESTEAD PARKWAY
(PUBLIC R.O.W.)
CALLED 30.000 ACRES
FREDERICK GOERKE
AND BEVERLY F. GOERKE
(VOL 1777, PG 455 OPR)
VARIABLE WIDTH GAS & FIBER EASEMENT (VOL 10, PGS 67-68 PR)
GRACE VALLEY RANCH, PHASE 1
(VOL 10, PGS 67-68 PR)
O.P.R.G.C.
BLK 3
BLK 2
DRAIN 'B'
MIN. FFE = 837.00
MIN. FFE = 837.75
MIN. FFE = 838.50
MIN. FFE = 839.50
MIN. FFE = 840.25
LINE "B"
SEE SHEET C4.03

LINE "A"

STA. 10+00.00 TO STA. 15+82.68


SCALE: 1"=50'
50
25
0
50

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


855
850
845
840
835
830
825
STA 10+00.00 LINE 'A'
MH NO. 'A1'
MH TOP = 839.16
STA 10+61.27 LINE 'A'
= STA 10+00.00 LINE 'B'
MH NO. 'A2'
MH TOP = 838.59
STA 14+00.00 LINE 'A'
MH NO. 'A3'
MH TOP = 844.53
STA 15+82.68 LINE 'A'
MH NO. 'A4'
MH TOP = 850.52
PROPOSED GROUND ℄
EXISTING GROUND ℄
LOTS 5 & 10 LATERAL INV. ELEV. = 835.32
182.68' ~ 8" (SDR-26) @ +3.50%
338.73' ~ 8" (SDR-26) @ +1.81%
LOT 1 LATERAL INV. ELEV. = 830.17
61.27' ~ 8" (SDR-26) @ +1.60%
830.00 (OUT)
829.20
828.92 (OUT) LINE B
829.02 (IN) LINE A
829.02 (IN) LINE A
829.72
830.63
831.53
832.44
833.34
834.25
835.15 (OUT)
835.25 (IN)
835.22
837.00
838.75
840.50
841.64 (OUT)
10+00
11+00
12+00
13+00
14+00
15+00
16+00

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GOERKE SUBDIVISION PHASE 1

SANITARY SEWER PLAN & PROFILE - LINE 'A'

DATE
02/26/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
1.
2.
3.
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7.
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9.

KYLE M. HUDEK
138753
03/04/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C4.02

P:\03346\101\2-DWG\4-Plans\C4.02_SSPP - LINE A.dwg 2025/02/26 5:48pm rbarrera

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.

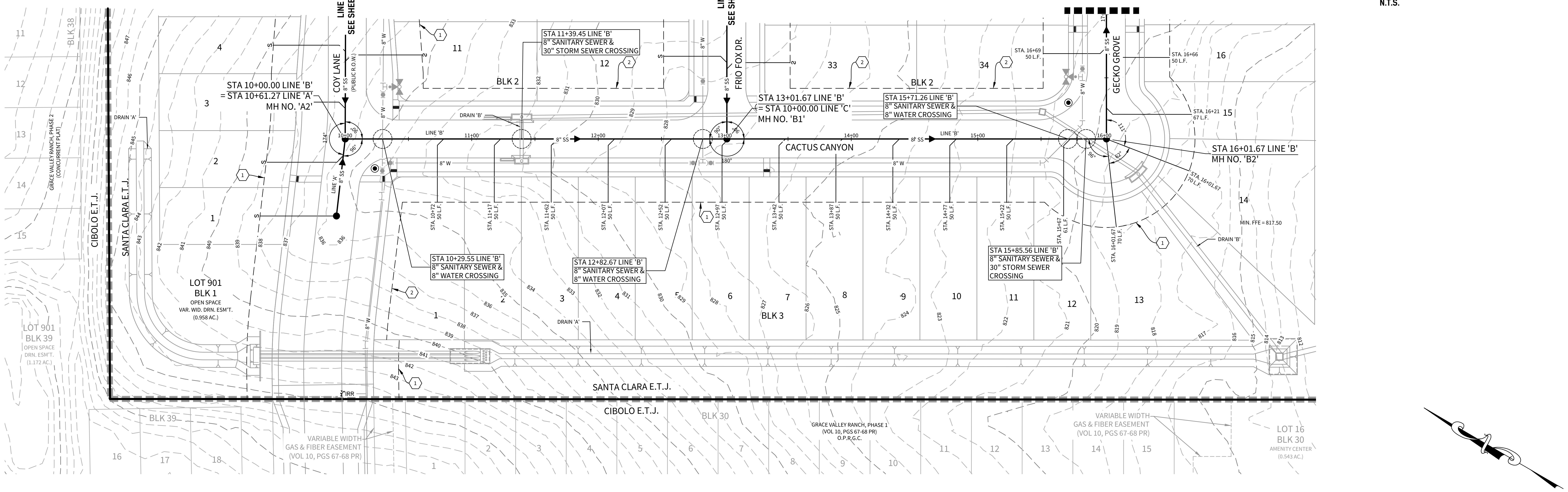
LEGEND

PROPOSED SANITARY SEWER MANHOLE	━●━
EXISTING SANITARY SEWER MANHOLE	─●─
PROPOSED SANITARY SEWER LATERAL	S
PROPOSED SANITARY SEWER MAIN	8"SS
EXISTING SANITARY SEWER MAIN	EX. 8" SS
PROPOSED WATER MAIN	8"W
EXISTING WATER MAIN	EX. 8" W
PROPOSED STANDARD FIRE HYDRANT	⧓
PROPOSED STANDARD GATE VALVE	─┤●├─
PROPOSED PERMANENT BLOWOFF	─▶●
ELECTRIC, GAS, TELEPHONE, & CABLE T.V. EASEMENT	E.G.T.CA. ESM'T
BUILDING SETBACK LINE	B.S.L.

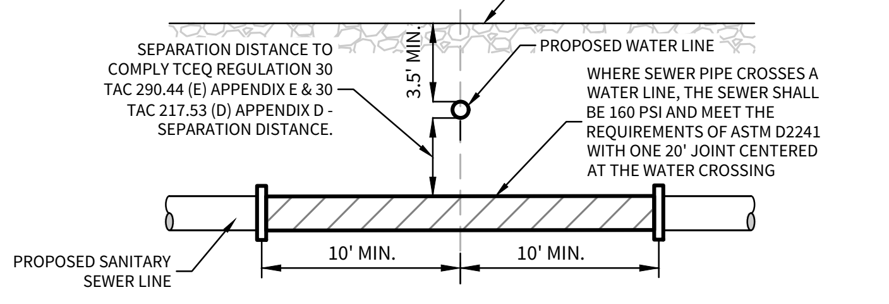
KEYNOTES

1	20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE
2	10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

MATCHLINE STA 17+00.00
– SEE SHEET C4.04


LINE "A"
SEE SHEET C4.02
LINE "C"
SEE SHEET C4.05
COY LANE
FRIO FOX DR.
GECKO GROVE
CACTUS CANYON
CIBOLO E.T.J.
SANTA CLARA E.T.J.
BLK 2
BLK 3
BLK 1
BLK 38
BLK 39
BLK 30
LOT 901
BLK 1
OPEN SPACE
VAR. WID. DRN. ESM'T.
(0.958 AC.)
LOT 901
BLK 39
LOT 16
BLK 30
STA 10+00.00 LINE 'B'
= STA 10+61.27 LINE 'A'
MH NO. 'A2'
STA 11+39.45 LINE 'B'
8" SANITARY SEWER &
30" STORM SEWER CROSSING
STA 13+01.67 LINE 'B'
= STA 10+00.00 LINE 'C'
MH NO. 'B1'
STA 15+71.26 LINE 'B'
8" SANITARY SEWER &
8" WATER CROSSING
STA 16+01.67 LINE 'B'
MH NO. 'B2'
STA 10+29.55 LINE 'B'
8" SANITARY SEWER &
8" WATER CROSSING
STA 12+82.67 LINE 'B'
8" SANITARY SEWER &
8" WATER CROSSING
STA 15+85.56 LINE 'B'
8" SANITARY SEWER &
30" STORM SEWER
CROSSING
DRAIN 'A'
DRAIN 'B'
MIN. FFE = 817.50
VARIABLE WIDTH
GAS & FIBER EASEMENT
(VOL 10, PGS 67-68 PR)
GRACE VALLEY RANCH, PHASE 1

SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.


FINISHED GROUND/PAVEMENT
(TOP OF GRADE)
PROPOSED WATER LINE
3.5' 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.

SCALE: 1"=50'
50 25 0 50

CAUTION!!!

THE CONTRACTOR SHALL BE AWARE THAT EXISTING UTILITIES ARE WITHIN HOMESTEAD PARKWAY. 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.

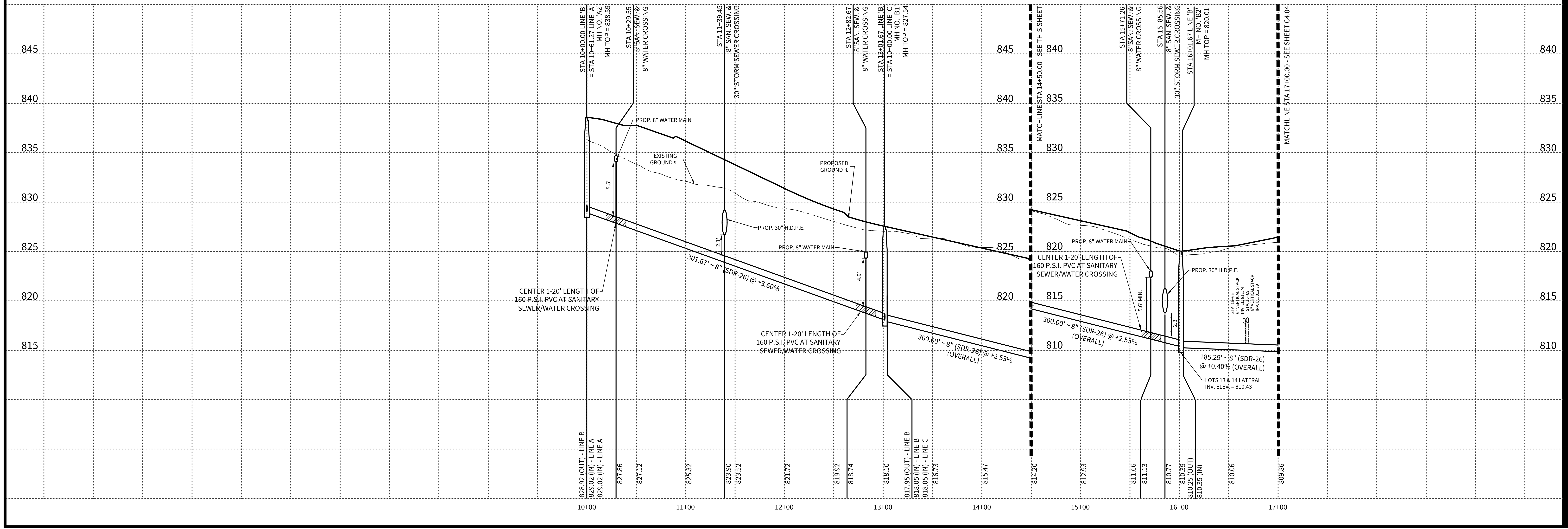
TRENCH EXCAVATION SAFETY PROTECTION

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.

LINE "B"

STA. 10+00.00 TO STA. 17+00.00

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


845
840
835
830
825
820
815
STA 10+00.00 LINE 'B'
= STA 10+61.27 LINE 'A'
MH NO. 'A2'
MH TOP = 838.59
STA 10+29.55
8" SAN. SEW. &
8" WATER CROSSING
STA 11+39.45
8" SAN. SEW. &
30" STORM SEWER CROSSING
STA 12+82.67
8" SAN. SEW. &
8" WATER CROSSING
STA 13+01.67 LINE 'B'
= STA 10+00.00 LINE 'C'
MH NO. 'B1'
MH TOP = 827.54
MATCHLINE STA 14+50.00 - SEE THIS SHEET
STA 15+71.26
8" SAN. SEW. &
8" WATER CROSSING
STA 15+85.56
8" SAN. SEW. &
30" STORM SEWER CROSSING
STA 16+01.67 LINE 'B'
MH NO. 'B2'
MH TOP = 820.01
MATCHLINE STA 17+00.00 - SEE SHEET C4.04
PROP. 8" WATER MAIN
EXISTING GROUND
PROPOSED GROUND
PROP. 30" H.D.P.E.
PROP. 8" WATER MAIN
5.5'
2.1'
4.9'
5.6' MIN.
2.3'
301.67' ~ 8" (SDR-26) @ +3.60%
300.00' ~ 8" (SDR-26) @ +2.53% (OVERALL)
300.00' ~ 8" (SDR-26) @ +2.53% (OVERALL)
185.29' ~ 8" (SDR-26) @ +0.40% (OVERALL)
CENTER 1-20' LENGTH OF 160 P.S.I. PVC AT SANITARY SEWER/WATER CROSSING
CENTER 1-20' LENGTH OF 160 P.S.I. PVC AT SANITARY SEWER/WATER CROSSING
CENTER 1-20' LENGTH OF 160 P.S.I. PVC AT SANITARY SEWER/WATER CROSSING
PROP. 8" WATER MAIN
PROP. 30" H.D.P.E.
STA. 16+66
6" VERTICAL STACK
INV. EL. 812.74
STA. 16+69
6" VERTICAL STACK
INV. EL. 812.79
LOTS 13 & 14 LATERAL
INV. ELEV. = 810.43
828.92 (OUT) - LINE B
829.02 (IN) - LINE A
829.02 (IN) - LINE A
827.86
827.12
825.32
823.90
823.52
821.72
819.92
818.74
818.10
817.95 (OUT) - LINE B
818.05 (IN) - LINE B
818.05 (IN) - LINE C
816.73
815.47
814.20
812.93
811.66
811.13
810.77
810.39
810.25 (OUT)
810.35 (IN)
810.06
809.86
10+00
11+00
12+00
13+00
14+00
15+00
16+00
17+00

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GOERKE SUBDIVISION PHASE 1

SANITARY SEWER PLAN & PROFILE - LINE 'B'

DATE	01/23/2025
PROJECT NO.	03346.101
DRAWN BY	R.B./M.A.S.
CHECKED BY	K.M.H.

REVISIONS

1.
2.
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7.
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9.

KYLE M. HUDEK
138753
01/27/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C4.03

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.

LEGEND

PROPOSED SANITARY SEWER MANHOLE	●
EXISTING SANITARY SEWER MANHOLE	●
PROPOSED SANITARY SEWER LATERAL	
PROPOSED SANITARY SEWER MAIN	8"SS
EXISTING SANITARY SEWER MAIN	EX. 8" SS
PROPOSED WATER MAIN	8"W
EXISTING WATER MAIN	EX. 8" W
PROPOSED STANDARD FIRE HYDRANT	
PROPOSED STANDARD GATE VALVE	
PROPOSED PERMANENT BLOWOFF	
ELECTRIC, GAS, TELEPHONE, & CABLE T.V. EASEMENT	E.G.T.CA. ESM'T
BUILDING SETBACK LINE	B.S.L.

KEYNOTES

⟨1⟩	20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE
⟨2⟩	10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

CAUTION!!!

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TRENCH EXCAVATION SAFETY PROTECTION

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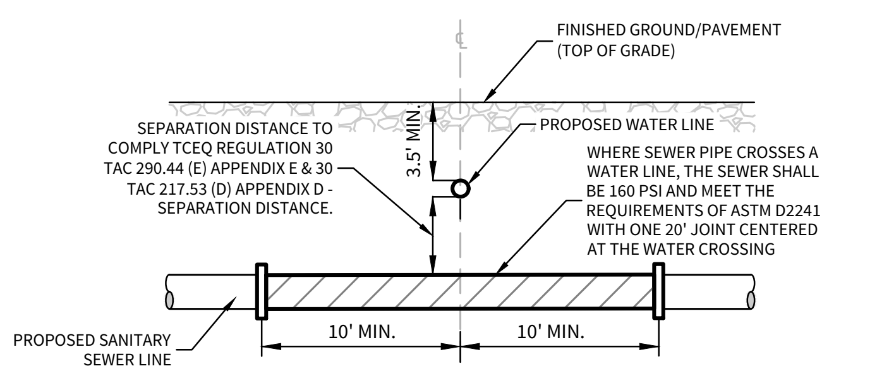
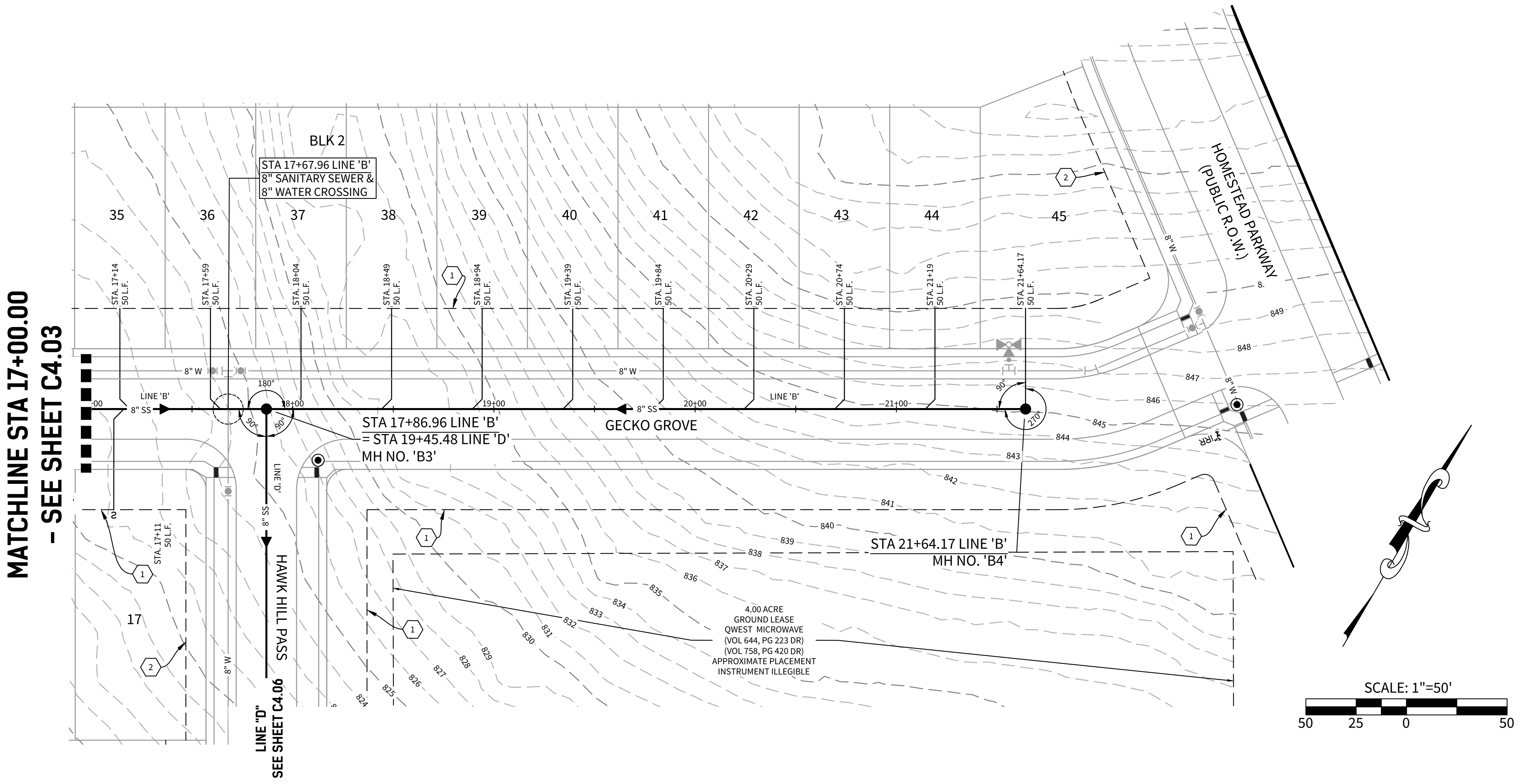

FINISHED GROUND/PAVEMENT (TOP OF GRADE)
PROPOSED WATER LINE
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
3.5' MIN.
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241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

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

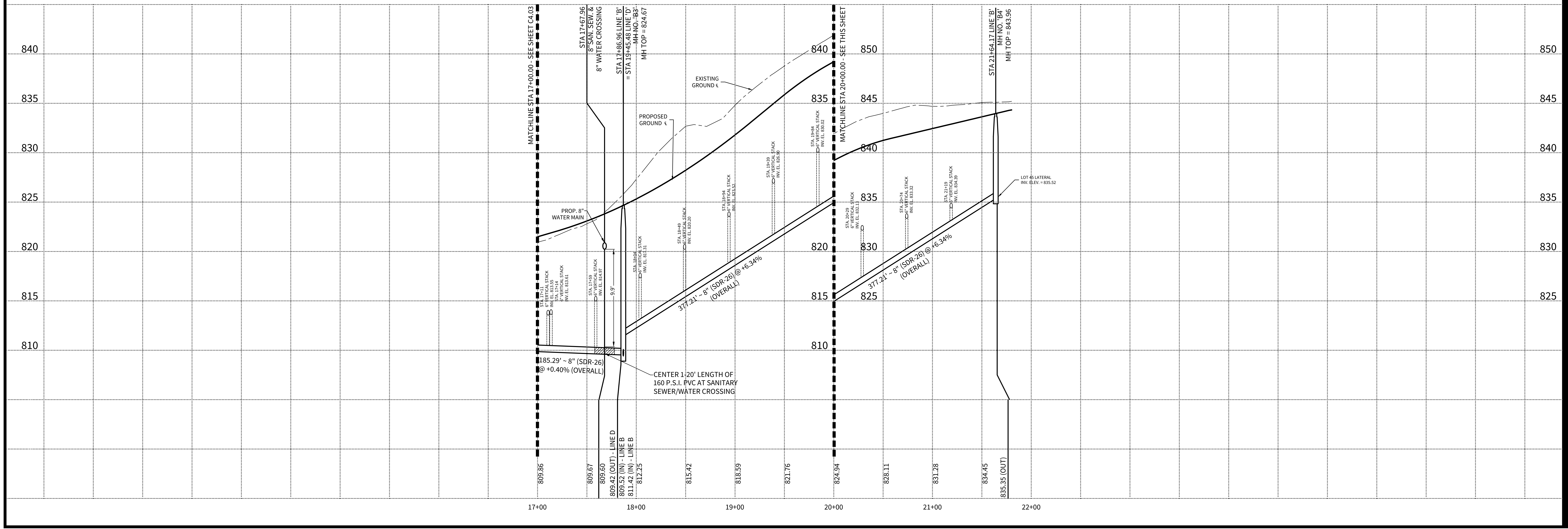
N.T.S.


MATCHLINE STA 17+00.00 - SEE SHEET C4.03
BLK 2
STA 17+67.96 LINE 'B'
8" SANITARY SEWER &
8" WATER CROSSING
35
36
37
38
39
40
41
42
43
44
45
17
STA. 17+14 50 L.F.
STA. 17+59 50 L.F.
STA. 18+04 50 L.F.
STA. 18+49 50 L.F.
STA. 18+94 50 L.F.
STA. 19+39 50 L.F.
STA. 19+84 50 L.F.
STA. 20+29 50 L.F.
STA. 20+74 50 L.F.
STA. 21+19 50 L.F.
STA. 21+64.17 50 L.F.
STA. 17+11 50 L.F.
8" W
LINE 'B'
8" SS
180°
90°
18+00
19+00
20+00
21+00
STA 17+86.96 LINE 'B'
= STA 19+45.48 LINE 'D'
MH NO. 'B3'
LINE 'D'
GECKO GROVE
HAWK HILL PASS
LINE "D" SEE SHEET C4.06
STA 21+64.17 LINE 'B'
MH NO. 'B4'
270°
HOMESTEAD PARKWAY (PUBLIC R.O.W.)
4.00 ACRE GROUND LEASE QWEST MICROWAVE (VOL 644, PG 223 DR) (VOL 758, PG 420 DR) APPROXIMATE PLACEMENT INSTRUMENT ILLEGIBLE
849
848
847
846
845
844
843
842
841
840
839
838
837
836
835
834
833
832
SCALE: 1"=50'
50
25
0
50

LINE "B"

STA. 17+00.00 TO STA. 21+64.17

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


MATCHLINE STA 17+00.00 - SEE SHEET C4.03
STA 17+67.96 8"SAN. SEW. & 8" WATER CROSSING
STA 17+86.96 LINE 'B' = STA 19+45.48 LINE 'D' MH NO. 'B3' MH TOP = 824.67
MATCHLINE STA 20+00.00 - SEE THIS SHEET
STA 21+64.17 LINE 'B' MH NO. 'B4' MH TOP = 843.96
EXISTING GROUND ℄
PROPOSED GROUND ℄
PROP. 8" WATER MAIN
9.9'
STA. 17+11 6" VERTICAL STACK INV. EL. 813.55
STA. 17+14 6" VERTICAL STACK INV. EL. 813.61
STA. 17+59 6" VERTICAL STACK INV. EL. 814.97
STA. 18+04 6" VERTICAL STACK INV. EL. 817.31
STA. 18+49 6" VERTICAL STACK INV. EL. 820.20
STA. 18+94 6" VERTICAL STACK INV. EL. 823.52
STA. 19+39 6" VERTICAL STACK INV. EL. 826.90
STA. 19+84 6" VERTICAL STACK INV. EL. 830.02
STA. 20+29 6" VERTICAL STACK INV. EL. 832.13
STA. 20+74 6" VERTICAL STACK INV. EL. 833.32
STA. 21+19 6" VERTICAL STACK INV. EL. 834.39
LOT 45 LATERAL INV. ELEV. = 835.52
185.29' ~ 8" (SDR-26) @ +0.40% (OVERALL)
377.21' ~ 8" (SDR-26) @ +6.34% (OVERALL)
377.21' ~ 8" (SDR-26) @ +6.34% (OVERALL)
CENTER 1-20' LENGTH OF 160 P.S.I. PVC AT SANITARY SEWER/WATER CROSSING
840
835
830
825
820
815
810
850
845
840
835
830
825
809.86
809.67
809.60
809.42 (OUT) - LINE D
809.52 (IN) - LINE B
811.42 (IN) - LINE B
812.25
815.42
818.59
821.76
824.94
828.11
831.28
834.45
835.35 (OUT)
17+00
18+00
19+00
20+00
21+00
22+00

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GOERKE SUBDIVISION PHASE 1

SANITARY SEWER PLAN & PROFILE - LINE 'B'

DATE
01/23/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
1.
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3.
4.
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7.
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9.

KYLE M. HUDEK
138753
01/27/2025
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

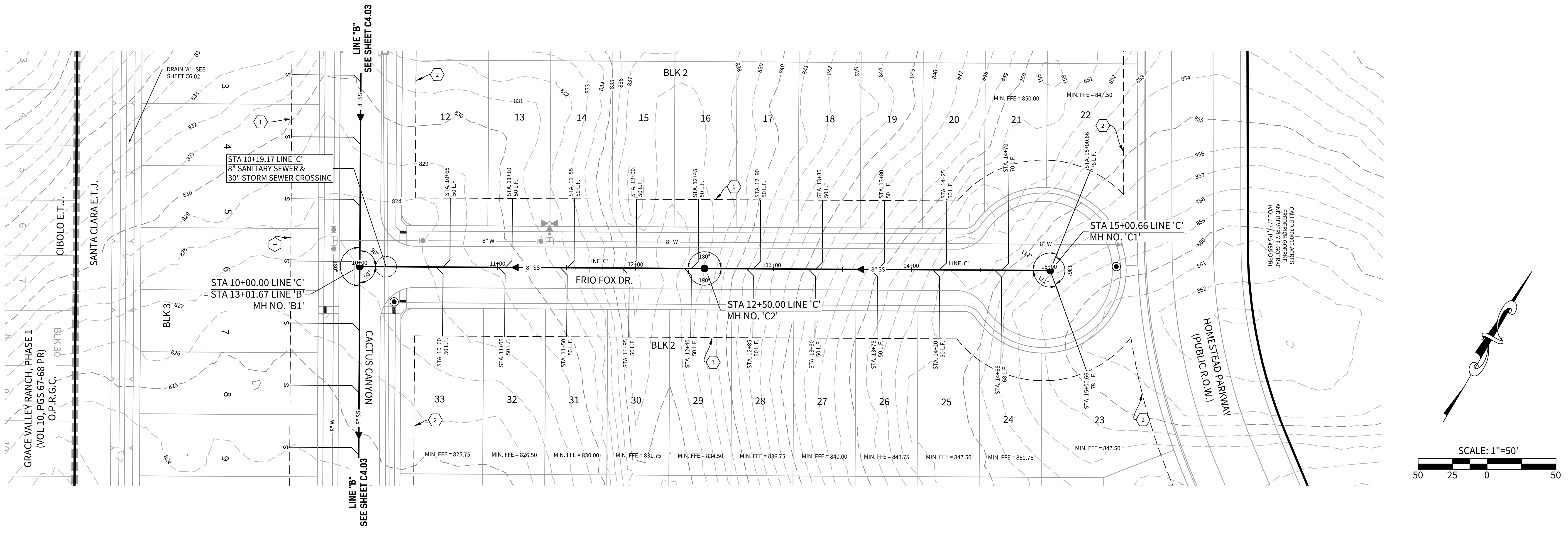
C4.04

LEGEND

PROPOSED SANITARY SEWER MANHOLE	—●—
EXISTING SANITARY SEWER MANHOLE	—●—
PROPOSED SANITARY SEWER LATERAL	S—
PROPOSED SANITARY SEWER MAIN	— 8"SS —
EXISTING SANITARY SEWER MAIN	— EX. 8" SS —
PROPOSED WATER MAIN	— 8"W —
EXISTING WATER MAIN	— EX. 8" W —
PROPOSED STANDARD FIRE HYDRANT	⋈
PROPOSED STANDARD GATE VALVE	—|●|—
PROPOSED PERMANENT BLOWOFF	—▶●
ELECTRIC, GAS, TELEPHONE, & CABLE T.V. EASEMENT	E.G.T.CA. ESM'T
BUILDING SETBACK LINE	B.S.L.

KEYNOTES

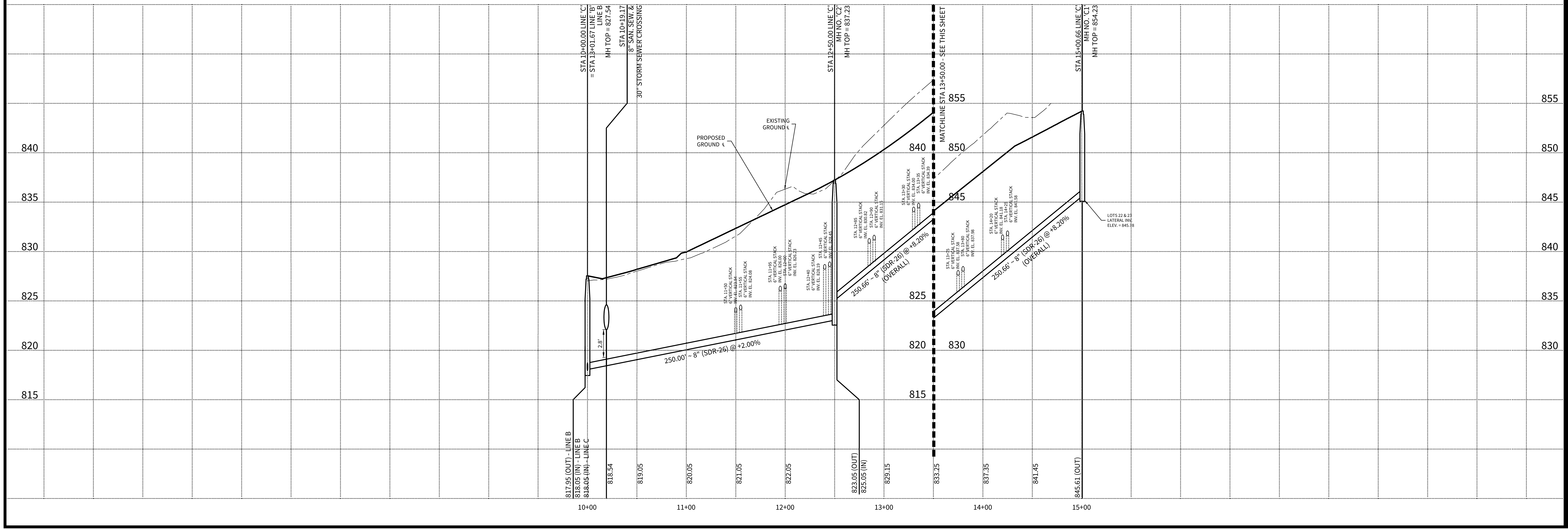
1	20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE
2	10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE


LINE "B"
SEE SHEET C4.03
STA 10+19.17 LINE 'C'
8" SANITARY SEWER &
30" STORM SEWER CROSSING
STA 10+00.00 LINE 'C'
= STA 13+01.67 LINE 'B'
MH NO. 'B1'
STA 12+50.00 LINE 'C'
MH NO. 'C2'
STA 15+00.66 LINE 'C'
MH NO. 'C1'
FRIO FOX DR.
CACTUS CANYON
HOMESTEAD PARKWAY
(PUBLIC R.O.W.)
BLK 2
BLK 3
BLK 30
CIBOLO E.T.J.
SANTA CLARA E.T.J.
GRACE VALLEY RANCH, PHASE 1
(VOL 10, PGS 67-68 PR)
O.P.R.G.C.
DRAIN 'A' - SEE SHEET C6.02
8" SS
8" W
LINE 'C'
MIN. FFE = 825.75
MIN. FFE = 826.50
MIN. FFE = 830.00
MIN. FFE = 831.75
MIN. FFE = 834.50
MIN. FFE = 836.75
MIN. FFE = 840.00
MIN. FFE = 843.75
MIN. FFE = 847.50
MIN. FFE = 850.75
MIN. FFE = 850.00
SCALE: 1"=50'
50 25 0 50

LINE "C"

STA. 10+00.00 TO STA. 15+00.66

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


STA 10+00.00 LINE 'C'
= STA 13+01.67 LINE 'B'
MH NO. 'B1'
MH TOP = 827.54
STA 10+19.17
8" SAN. SEW. &
30" STORM SEWER CROSSING
STA 12+50.00 LINE 'C'
MH NO. 'C2'
MH TOP = 837.23
MATCHLINE STA 13+50.00 - SEE THIS SHEET
STA 15+00.66 LINE 'C'
MH NO. 'C1'
MH TOP = 854.23
EXISTING GROUND ℄
PROPOSED GROUND ℄
250.00' ~ 8" (SDR-26) @ +2.00%
250.66' ~ 8" (SDR-26) @ +8.20% (OVERALL)
2.8'
STA. 11+50 6" VERTICAL STACK INV. EL. 823.84
STA. 11+55 6" VERTICAL STACK INV. EL. 824.08
STA. 11+95 6" VERTICAL STACK INV. EL. 826.00
STA. 12+00 6" VERTICAL STACK INV. EL. 826.23
STA. 12+40 6" VERTICAL STACK INV. EL. 828.19
STA. 12+45 6" VERTICAL STACK INV. EL. 828.45
STA. 12+85 6" VERTICAL STACK INV. EL. 830.82
STA. 12+90 6" VERTICAL STACK INV. EL. 831.15
STA. 13+30 6" VERTICAL STACK INV. EL. 834.00
STA. 13+35 6" VERTICAL STACK INV. EL. 834.39
STA. 13+75 6" VERTICAL STACK INV. EL. 837.58
STA. 13+80 6" VERTICAL STACK INV. EL. 837.98
STA. 14+20 6" VERTICAL STACK INV. EL. 841.18
STA. 14+25 6" VERTICAL STACK INV. EL. 841.58
LOTS 22 & 23 LATERAL INV. ELEV. = 845.78
840
835
830
825
820
815
855
850
845
840
835
830
817.95 (OUT) - LINE B
818.05 (IN) - LINE B
818.05 (IN) - LINE C
818.54
819.05
820.05
821.05
822.05
823.05 (OUT)
825.05 (IN)
829.15
833.25
837.35
841.45
845.61 (OUT)
10+00
11+00
12+00
13+00
14+00
15+00

CAUTION!!!

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TRENCH EXCAVATION SAFETY PROTECTION

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

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

GOERKE SUBDIVISION PHASE 1

SANITARY SEWER PLAN & PROFILE - LINE 'C'

DATE
01/23/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
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KYLE M. HUDEK
138753
01/27/2025
K. Hudek

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

P:\03346\101\2-DWG\4-Plans\C4.05_SSPP - LINE C.dwg 2025/01/23 6:17pm rbarrera

C4.05

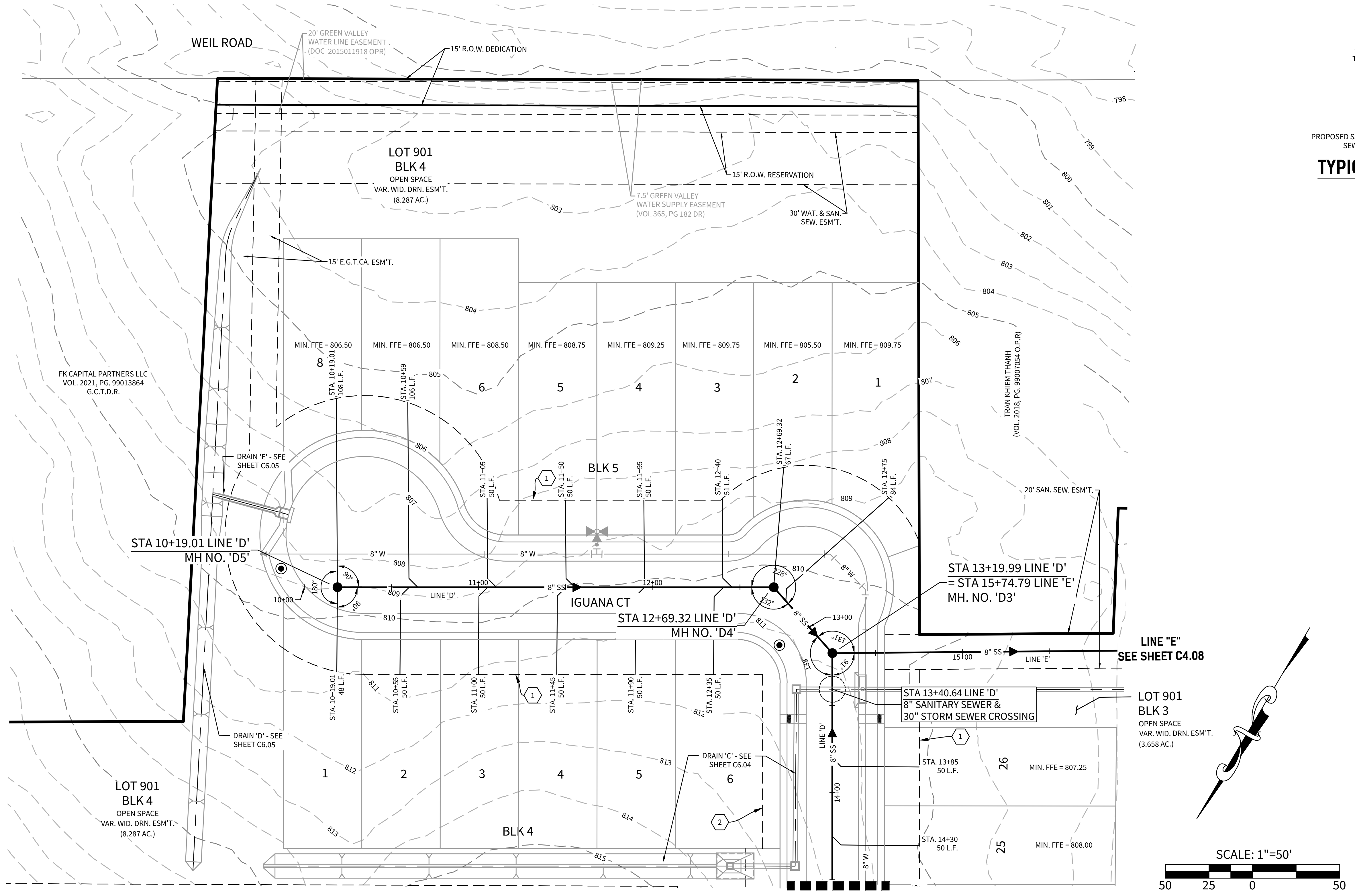
LEGEND

PROPOSED SANITARY SEWER MANHOLE	
EXISTING SANITARY SEWER MANHOLE	
PROPOSED SANITARY SEWER LATERAL	S
PROPOSED SANITARY SEWER MAIN	8"SS
EXISTING SANITARY SEWER MAIN	EX. 8" SS
PROPOSED WATER MAIN	8"W
EXISTING WATER MAIN	EX. 8" W
PROPOSED STANDARD FIRE HYDRANT	
PROPOSED STANDARD GATE VALVE	
PROPOSED PERMANENT BLOWOFF	
ELECTRIC, GAS, TELEPHONE, & CABLE T.V. EASEMENT	E.G.T.CA. ESM'T
BUILDING SETBACK LINE	B.S.L.

KEYNOTES

① 20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

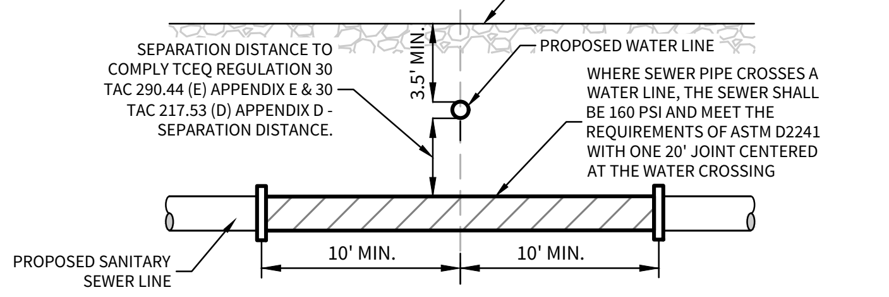
② 10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE


WEIL ROAD
20' GREEN VALLEY WATER LINE EASEMENT (DOC 2015011918 OPR)
15' R.O.W. DEDICATION
15' R.O.W. RESERVATION
7.5' GREEN VALLEY WATER SUPPLY EASEMENT (VOL 365, PG 182 DR)
30' WAT. & SAN. SEW. ESM'T.
LOT 901
BLK 4
OPEN SPACE
VAR. WID. DRN. ESM'T.
(8.287 AC.)
15' E.G.T.CA. ESM'T.
FK CAPITAL PARTNERS LLC
VOL. 2021, PG. 99013864
G.C.T.D.R.
TRAN KHIEM THANH
(VOL. 2018, PG. 99007054 O.P.R)
MIN. FFE = 806.50
MIN. FFE = 806.50
MIN. FFE = 808.50
MIN. FFE = 808.75
MIN. FFE = 809.25
MIN. FFE = 809.75
MIN. FFE = 805.50
MIN. FFE = 809.75
8
6
5
4
3
2
1
BLK 5
STA. 10+19.01 108 L.F.
STA. 10+59 106 L.F.
STA. 11+05 50 L.F.
STA. 11+50 50 L.F.
STA. 11+95 50 L.F.
STA. 12+40 51 L.F.
STA. 12+69.32 67 L.F.
STA. 12+75 84 L.F.
DRAIN 'E' - SEE SHEET C6.05
STA 10+19.01 LINE 'D'
MH NO. 'D5'
8" W
8" W
8" SS
LINE 'D'
10+00
11+00
12+00
13+00
14+00
15+00
90°
180°
228°
132°
131°
138°
91°
IGUANA CT
STA 12+69.32 LINE 'D'
MH NO. 'D4'
STA 13+19.99 LINE 'D'
= STA 15+74.79 LINE 'E'
MH. NO. 'D3'
20' SAN. SEW. ESM'T.
LINE "E"
SEE SHEET C4.08
LINE 'E'
STA 13+40.64 LINE 'D'
8" SANITARY SEWER &
30" STORM SEWER CROSSING
LOT 901
BLK 3
OPEN SPACE
VAR. WID. DRN. ESM'T.
(3.658 AC.)
STA. 10+19.01 48 L.F.
STA. 10+55 50 L.F.
STA. 11+00 50 L.F.
STA. 11+45 50 L.F.
STA. 11+90 50 L.F.
STA. 12+35 50 L.F.
STA. 13+85 50 L.F.
STA. 14+30 50 L.F.
26
25
MIN. FFE = 807.25
MIN. FFE = 808.00
DRAIN 'D' - SEE SHEET C6.05
DRAIN 'C' - SEE SHEET C6.04
1
2
3
4
5
6
BLK 4
LOT 901
BLK 4
OPEN SPACE
VAR. WID. DRN. ESM'T.
(8.287 AC.)
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
SCALE: 1"=50'
50
25
0
50

MATCHLINE STA 13+50.00
– SEE SHEET C4.07

LINE "D"

STA. 10+00.00 TO STA. 13+50.00


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.
3.5' 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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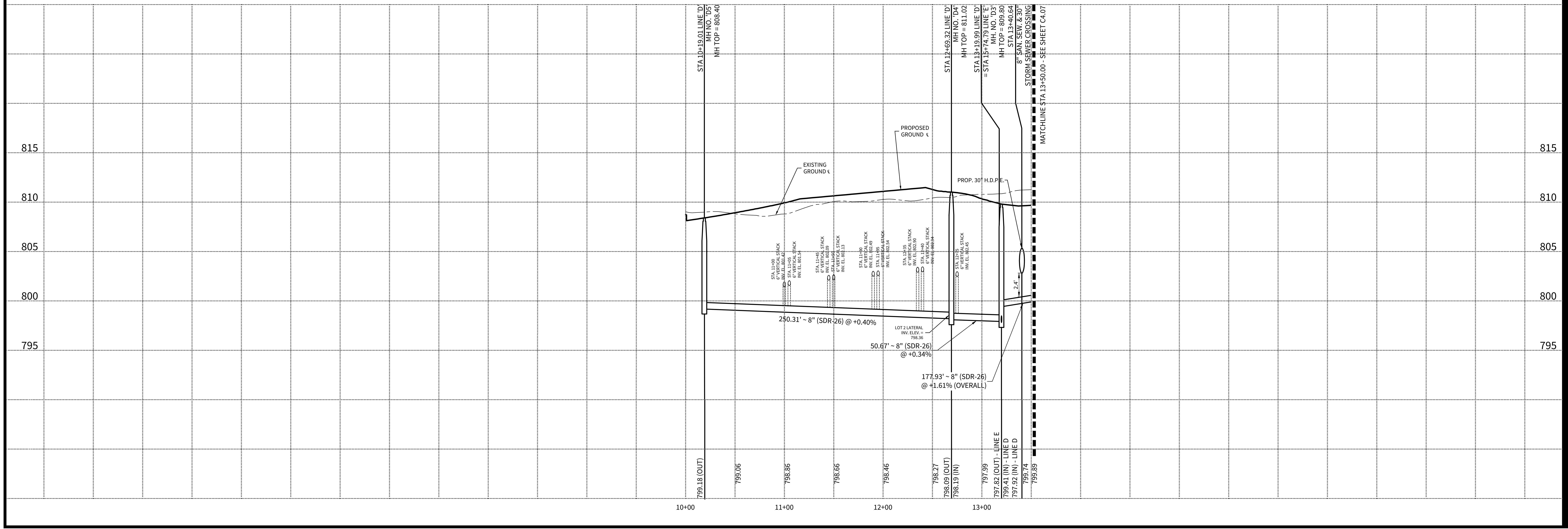
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'


STA 10+19.01 LINE 'D'
MH NO. 'D5'
MH TOP = 808.40
STA 12+69.32 LINE 'D'
MH NO. 'D4'
MH TOP = 811.02
STA 13+19.99 LINE 'D'
= STA 15+74.79 LINE 'E'
MH. NO. 'D3'
MH TOP = 809.80
STA 13+40.64
8" SAN. SEW. & 30"
STORM SEWER CROSSING
MATCHLINE STA 13+50.00 - SEE SHEET C4.07
PROPOSED GROUND ℄
EXISTING GROUND ℄
PROP. 30" H.D.P.E.
STA. 11+00 6" VERTICAL STACK INV. EL. 801.42
STA. 11+05 6" VERTICAL STACK INV. EL. 801.54
STA. 11+45 6" VERTICAL STACK INV. EL. 802.09
STA. 11+50 6" VERTICAL STACK INV. EL. 802.13
STA. 11+90 6" VERTICAL STACK INV. EL. 802.49
STA. 11+95 6" VERTICAL STACK INV. EL. 802.54
STA. 12+35 6" VERTICAL STACK INV. EL. 802.90
STA. 12+40 6" VERTICAL STACK INV. EL. 802.94
STA. 12+75 6" VERTICAL STACK INV. EL. 802.45
2.4'
250.31' ~ 8" (SDR-26) @ +0.40%
LOT 2 LATERAL INV. ELEV. = 798.36
50.67' ~ 8" (SDR-26) @ +0.34%
177.93' ~ 8" (SDR-26) @ +1.61% (OVERALL)
815
810
805
800
795
815
810
805
800
795
799.18 (OUT)
799.06
798.86
798.66
798.46
798.27
798.09 (OUT)
798.19 (IN)
797.99
797.82 (OUT) - LINE E
799.41 (IN) - LINE D
797.92 (IN) - LINE D
799.74
799.89
10+00
11+00
12+00
13+00

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

GOERKE SUBDIVISION PHASE 1

SANITARY SEWER PLAN & PROFILE - LINE 'D'

DATE	01/15/2025
PROJECT NO.	03346.101
DRAWN BY	R.B./M.A.S.
CHECKED BY	K.M.H.

REVISIONS

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KYLE M. HUDEK
138753
01/27/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

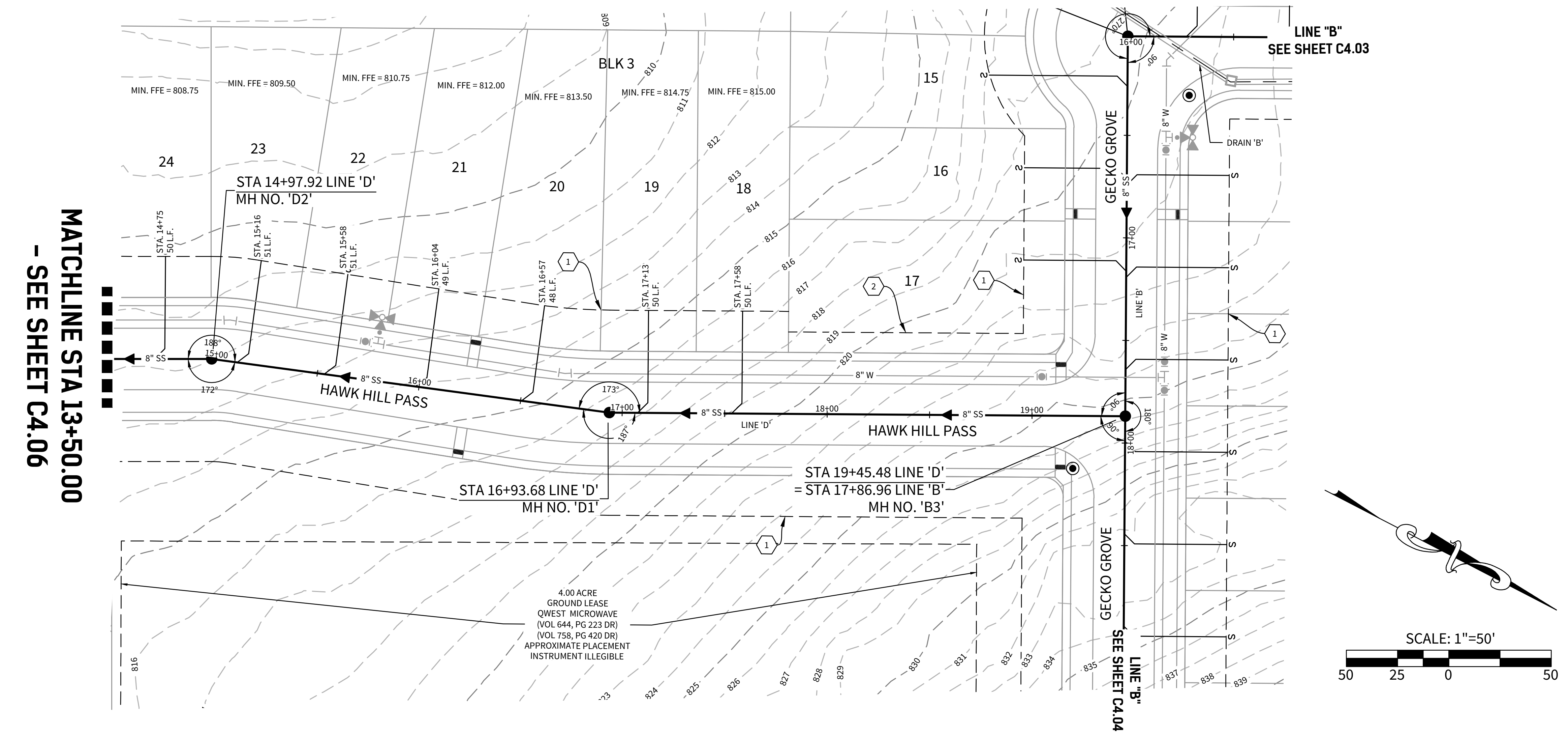
P:\03346\101\2-DWG\4-Plans\C4.06_C4.07 SSPP - LINE D.dwg 2025/01/15 9:09am rbarrera

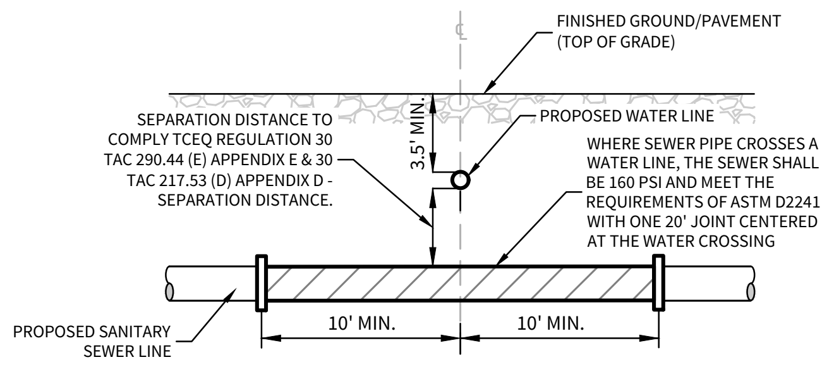
LEGEND

PROPOSED SANITARY SEWER MANHOLE	●
EXISTING SANITARY SEWER MANHOLE	●
PROPOSED SANITARY SEWER LATERAL	S
PROPOSED SANITARY SEWER MAIN	8"SS
EXISTING SANITARY SEWER MAIN	EX. 8" SS
PROPOSED WATER MAIN	8"W
EXISTING WATER MAIN	EX. 8" W
PROPOSED STANDARD FIRE HYDRANT	
PROPOSED STANDARD GATE VALVE	
PROPOSED PERMANENT BLOWOFF	
ELECTRIC, GAS, TELEPHONE, & CABLE T.V. EASEMENT	E.G.T.CA. ESM'T
BUILDING SETBACK LINE	B.S.L.

KEYNOTES

1	20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE
2	10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE


MATCHLINE STA 13+50.00 – SEE SHEET C4.06
BLK 3
MIN. FFE = 808.75
MIN. FFE = 809.50
MIN. FFE = 810.75
MIN. FFE = 812.00
MIN. FFE = 813.50
MIN. FFE = 814.75
MIN. FFE = 815.00
24
23
22
21
20
19
18
17
16
15
STA 14+97.92 LINE 'D'
MH NO. 'D2'
STA. 14+75 50 L.F.
STA. 15+16 51 L.F.
STA. 15+58 51 L.F.
STA. 16+04 49 L.F.
STA. 16+57 48 L.F.
STA. 17+13 50 L.F.
STA. 17+58 50 L.F.
8" SS
188°
15+00
172°
16+00
HAWK HILL PASS
173°
17+00
187°
LINE 'D'
18+00
19+00
8" W
STA 16+93.68 LINE 'D'
MH NO. 'D1'
STA 19+45.48 LINE 'D'
= STA 17+86.96 LINE 'B'
MH NO. 'B3'
4.00 ACRE
GROUND LEASE
QWEST MICROWAVE
(VOL 644, PG 223 DR)
(VOL 758, PG 420 DR)
APPROXIMATE PLACEMENT
INSTRUMENT ILLEGIBLE
LINE "B"
SEE SHEET C4.03
GECKO GROVE
LINE 'B'
DRAIN 'B'
270°
90°
180°
16+00
17+00
18+00
LINE "B"
SEE SHEET C4.04
SCALE: 1"=50'
50 25 0 50


FINISHED GROUND/PAVEMENT (TOP OF GRADE)
PROPOSED WATER LINE
3.5' 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.

CAUTION!!!

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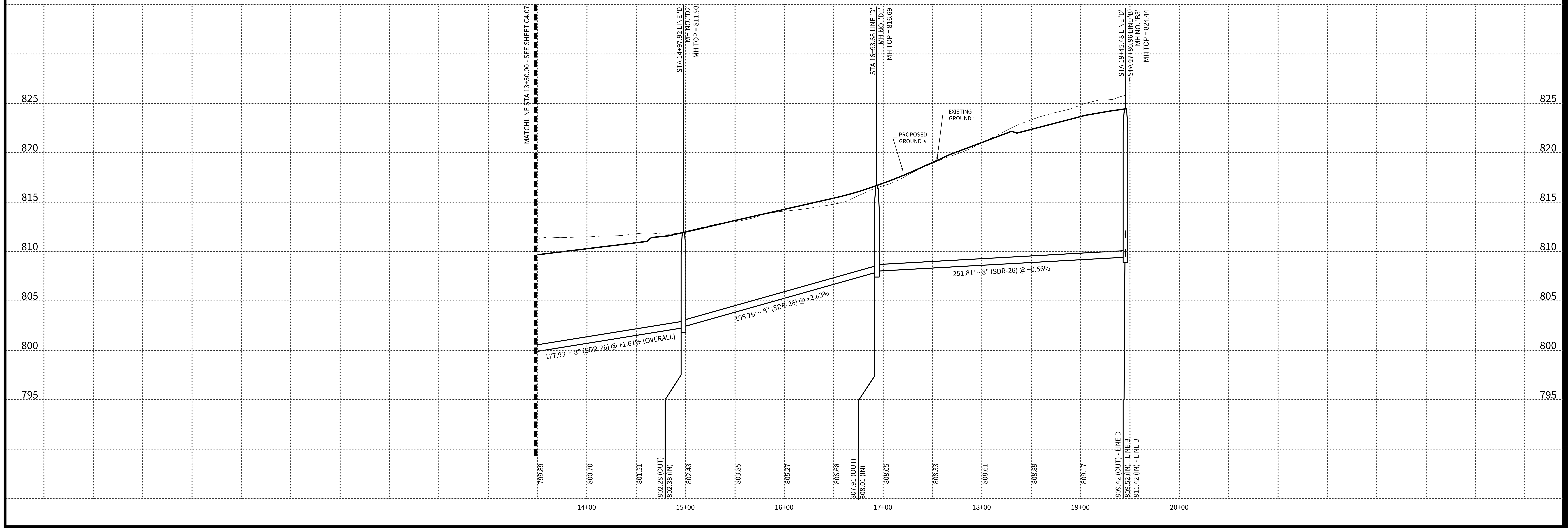
LINE "D"

STA. 13+50.00 TO STA. 19+45.48

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


MATCHLINE STA 13+50.00 - SEE SHEET C4.07
STA 14+97.92 LINE 'D'
MH NO. 'D2'
MH TOP = 811.93
STA 16+93.68 LINE 'D'
MH NO. 'D1'
MH TOP = 816.69
STA 19+45.48 LINE 'D'
= STA 17+86.96 LINE 'B'
MH NO. 'B3'
MH TOP = 824.44
EXISTING GROUND ℄
PROPOSED GROUND ℄
177.93' ~ 8" (SDR-26) @ +1.61% (OVERALL)
195.76' ~ 8" (SDR-26) @ +2.83%
251.81' ~ 8" (SDR-26) @ +0.56%
825
820
815
810
805
800
795
799.89
800.70
801.51
802.28 (OUT)
802.38 (IN)
802.43
803.85
805.27
806.68
807.91 (OUT)
808.01 (IN)
808.05
808.33
808.61
808.89
809.17
809.42 (OUT) - LINE D
809.52 (IN) - LINE B
811.42 (IN) - LINE B
14+00
15+00
16+00
17+00
18+00
19+00
20+00

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GOERKE SUBDIVISION PHASE 1

SANITARY SEWER PLAN & PROFILE - LINE 'D'

DATE
01/15/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
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KYLE M. HUDEK
138753
01/27/2025
K Hudek

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C4.07

P:\03346\101\2-DWG\4-Plans\C4.06_C4.07 SSPP - LINE D.dwg 2025/01/15 9:09am rbarrera

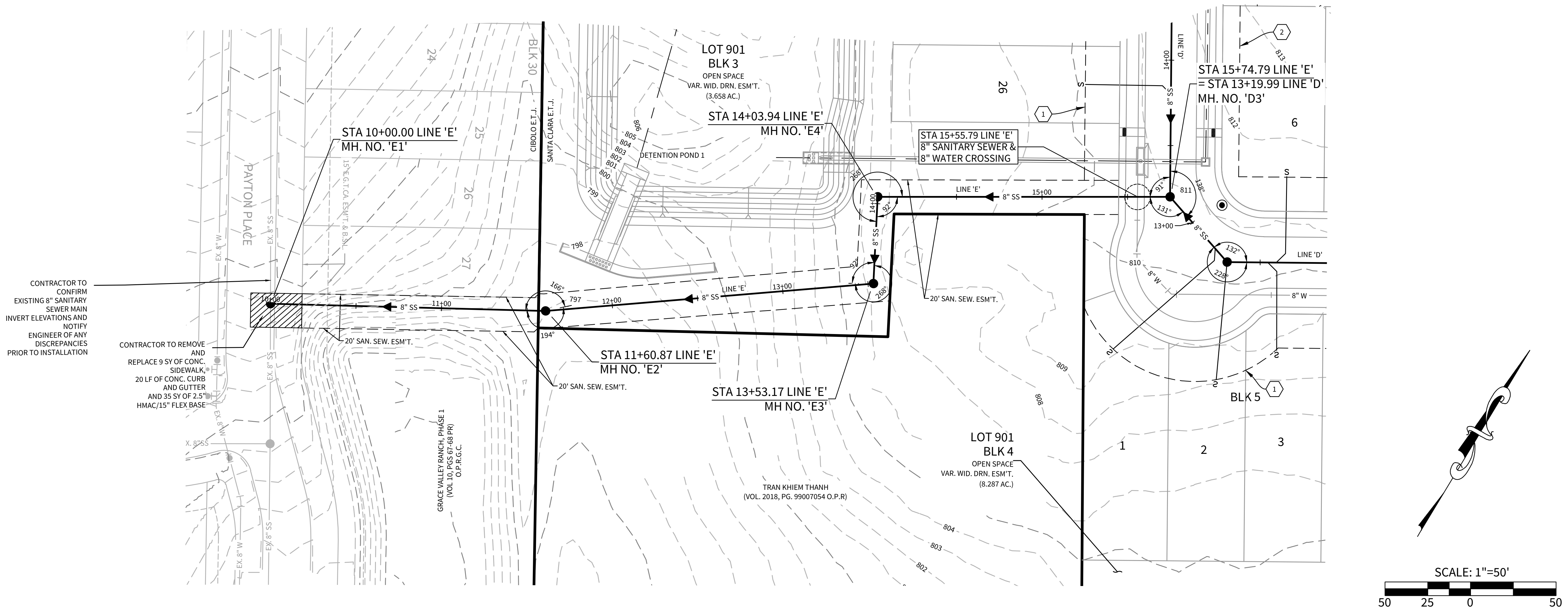
LEGEND

PROPOSED SANITARY SEWER MANHOLE	●
EXISTING SANITARY SEWER MANHOLE	●
PROPOSED SANITARY SEWER LATERAL	S
PROPOSED SANITARY SEWER MAIN	8"SS
EXISTING SANITARY SEWER MAIN	EX. 8" SS
PROPOSED WATER MAIN	8"W
EXISTING WATER MAIN	EX. 8" W
PROPOSED STANDARD FIRE HYDRANT	
PROPOSED STANDARD GATE VALVE	
PROPOSED PERMANENT BLOWOFF	
ELECTRIC, GAS, TELEPHONE, & CABLE T.V. EASEMENT	E.G.T.CA. ESM'T
BUILDING SETBACK LINE	B.S.L.

KEYNOTES

① 20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

② 10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE


CONTRACTOR TO CONFIRM EXISTING 8" SANITARY SEWER MAIN INVERT ELEVATIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO INSTALLATION
CONTRACTOR TO REMOVE AND REPLACE 9 SY OF CONC. SIDEWALK, 20 LF OF CONC. CURB AND GUTTER AND 35 SY OF 2.5" HMAC/15" FLEX BASE
PAYTON PLACE
EX. 8" W
EX. 8" SS
15' E.G.T.CA. ESM'T. & B.S.L.
24
25
26
27
BLK 30
CIBOLO E.T.J.
SANTA CLARA E.T.J.
STA 10+00.00 LINE 'E'
MH. NO. 'E1'
10+00
11+00
12+00
13+00
14+00
15+00
8" SS
20' SAN. SEW. ESM'T.
166°
194°
797
STA 11+60.87 LINE 'E'
MH NO. 'E2'
GRACE VALLEY RANCH, PHASE 1 (VOL 10, PGS 67-68 PR) O.P.R.G.C.
LOT 901
BLK 3
OPEN SPACE
VAR. WID. DRN. ESM'T.
(3.658 AC.)
DETENTION POND 1
STA 14+03.94 LINE 'E'
MH NO. 'E4'
STA 13+53.17 LINE 'E'
MH NO. 'E3'
STA 15+55.79 LINE 'E'
8" SANITARY SEWER &
8" WATER CROSSING
LINE 'E'
92°
268°
26
STA 15+74.79 LINE 'E'
= STA 13+19.99 LINE 'D'
MH. NO. 'D3'
LINE 'D'
91°
131°
138°
132°
228°
811
810
809
808
812
813
8" W
6
LOT 901
BLK 4
OPEN SPACE
VAR. WID. DRN. ESM'T.
(8.287 AC.)
TRAN KHIEM THANH
(VOL. 2018, PG. 99007054 O.P.R)
804
803
802
BLK 5
1
2
3
SCALE: 1"=50'
50
25
0
50

CAUTION!!!

THE CONTRACTOR SHALL BE AWARE THAT EXISTING UTILITIES ARE WITHIN HOMESTEAD PARKWAY. 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.

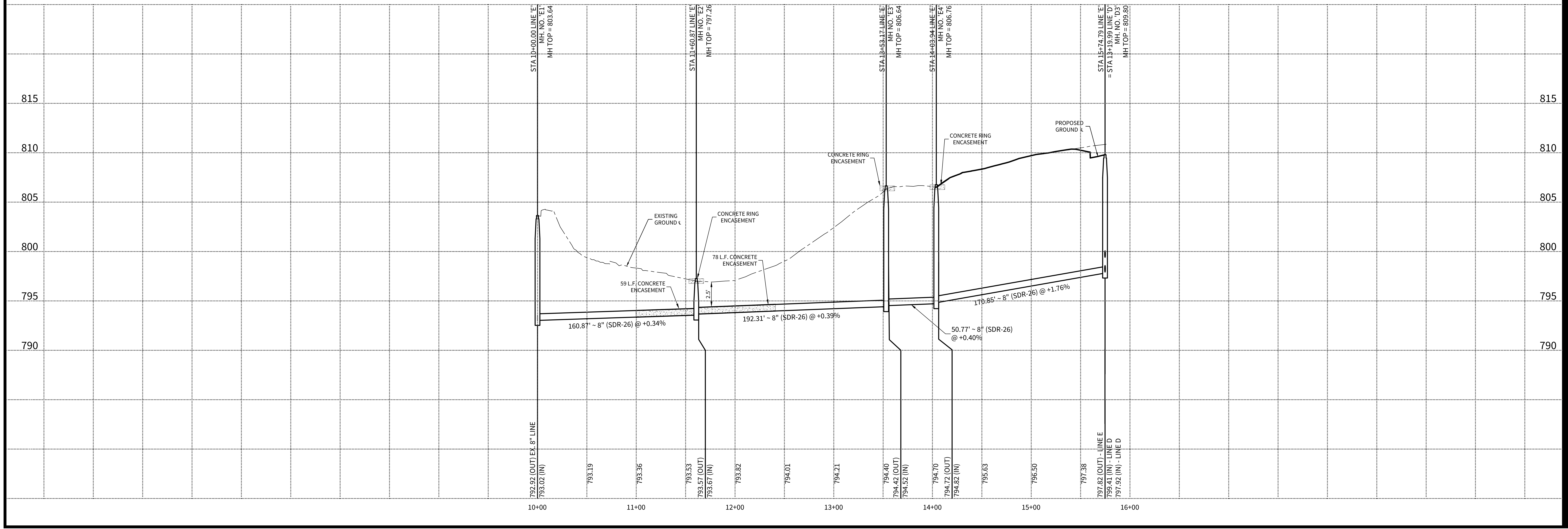
TRENCH EXCAVATION SAFETY PROTECTION

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.

LINE "E"

STA. 10+00.00 TO STA. 15+74.79

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


STA 10+00.00 LINE 'E'
MH. NO. 'E1'
MH TOP = 803.64
STA 11+60.87 LINE 'E'
MH NO. 'E2'
MH TOP = 797.26
STA 13+53.17 LINE 'E'
MH NO. 'E3'
MH TOP = 806.64
STA 14+03.94 LINE 'E'
MH NO. 'E4'
MH TOP = 806.76
STA 15+74.79 LINE 'E'
= STA 13+19.99 LINE 'D'
MH. NO. 'D3'
MH TOP = 809.80
815
810
805
800
795
790
PROPOSED GROUND ℄
CONCRETE RING ENCASEMENT
CONCRETE RING ENCASEMENT
EXISTING GROUND ℄
CONCRETE RING ENCASEMENT
78 L.F. CONCRETE ENCASEMENT
59 L.F. CONCRETE ENCASEMENT
2.5'
160.87' ~ 8" (SDR-26) @ +0.34%
192.31' ~ 8" (SDR-26) @ +0.39%
50.77' ~ 8" (SDR-26) @ +0.40%
170.85' ~ 8" (SDR-26) @ +1.76%
792.92 (OUT) EX. 8" LINE
793.02 (IN)
793.19
793.36
793.53
793.57 (OUT)
793.67 (IN)
793.82
794.01
794.21
794.40
794.42 (OUT)
794.52 (IN)
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794.72 (OUT)
794.82 (IN)
795.63
796.50
797.38
797.82 (OUT) - LINE E
799.41 (IN) - LINE D
797.92 (IN) - LINE D
10+00
11+00
12+00
13+00
14+00
15+00
16+00

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

GOERKE SUBDIVISION PHASE 1

SANITARY SEWER PLAN & PROFILE - LINE 'E'

DATE
01/15/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
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KYLE M. HUDEK
138753
01/27/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C4.08

P:\03346\101\2-DWG\4-Plans\C4.08 SSPP - LINE E.dwg 2025/01/15 9:10am rbarrera

GREEN VALLEY SPECIAL UTILITY DISTRICT SANITARY SEWER SYSTEM GENERAL NOTES:

THE STANDARD SPECIFICATIONS AND DRAWING (DD) ARE PROVIDED AS A TECHNICAL RESOURCE FOR ENGINEERING PROFESSIONALS FOR USE IN DESIGN AND CONSTRUCTION OF SEWER COLLECTION SYSTEMS PROJECTS MANAGED AND CONTRACTED BY THE GREEN VALLEY SPECIAL UTILITY DISTRICT (GVSUD)

GENERAL: THE OWNER, DEVELOPER, ENGINEERING FIRM SHALL SUBMIT TO THE GREEN VALLEY SPECIAL UTILITY DISTRICT (GVSUD) ENGINEER, FOR APPROVAL, TWO (2) COPIES OF ALL PLATES, PLANS AND PROFILES, PLUMBING LAYOUT, WHICH HAVE BEEN DESIGNED AND THE DRAWINGS SEALED BY A REGISTERED PROFESSIONAL ENGINEER. WHEN APPROVED, ONE (1) COPY WILL BE RETURNED TO THE OWNER, DEVELOPER, ENGINEERING FIRM, SO MARKED. THE OWNER WILL BE REQUIRED TO MAKE ALL CHANGES INDICATED BY THE GVSUD ENGINEER, AND RETURN WITH ALL CHANGES, CORRECTIONS, BACK TO GVSUD FOR APPROVAL.

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE GVSUD AND COMPLY WITH:
   A. CURRENT GVSUD TECHNICAL SPECIFICATIONS FOR UTILITIES CONSTRUCTION.
   B. TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ), FORMERLY TEXAS NATURAL RESOURCE CONSERVATION COMMISSION (TNRCC), DESIGN CRITERIA FOR SEWAGE SYSTEMS 31 TAC 317.1, 31 TAC 317.2 AND 31 TAC 317.3, 30 TAC & 213 40 TAC &217.
2. THE CONTRACTOR IS TO NOTIFY AND MAKE ARRANGEMENTS WITH THE GVSUD INSPECTIONS DIVISION AT (830)914-2330 OR (210)372-2228 - 48 HOURS PRIOR TO ANY EXCAVATION. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD BEFORE ANY EXCAVATION OR START OF PROJECT.
3. WORK SHALL NOT BE PERFORMED ON SATURDAYS, SUNDAYS OR HOLIDAYS BEFORE 7:30 A.M. OR AFTER 4:30 P.M., UNLESS PRIOR APPROVAL IS GRANTED BY THE GVSUD ENGINEER.
   A. THE LOCATIONS AND DEPTHS OF EXISTING UTILITIES TO INCLUDE SURFACE LATERALS, SHOWN IN THESE PLANS ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO LOCATION (POT HOLE, VERIFY LOCATION, ELEVATIONS OF ALL) UTILITY SERVICE LINES 48 HOURS PRIOR TO EXCAVATION AND TO PROTECT THE SAME DURING CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGES OF EXISTING UTILITIES AND REPAIRS WILL BE AT THE CONTRACTORS EXPENSE.

EXISTING MANHOLES/SEWER

4. CONTRACTOR WILL MAINTAIN SERVICE TO ALL EXISTING SANITARY SEWERS AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR WILL MARK, CLEAN ALL DEBRIS, GRAVEL, DIRT, ETC. OUT OF MANHOLES AND ANY STOPPAGES CAUSED BY DEBRIS DURING CONSTRUCTION. CONTRACTOR WILL UNPLUG STOPPAGE AT CONTRACTORS EXPENSE. ANY DAMAGE TO EXISTING MANHOLES OR SEWER MAIN WILL BE CORRECTED AT THE CONTRACTORS EXPENSE. CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PREVENT DAMAGE TO EXISTING OR NEW RINGS, COVERS, OR CONES FROM EQUIPMENT AND MATERIALS USED OR TAKEN THROUGH THE WORK AREA. IF AN EXISTING OR NEW MANHOLE COVER, RING, OR CONE IS DAMAGED BY THE CONTRACTOR IT SHALL BE REPLACED AS DIRECTED BY THE GVSUD INSPECTOR. MANHOLES WILL NEED TO BE RESEALED WITH THE GVSUD APPROVED SEALING. IF SEAL COATING IS BROKEN, CONTRACTOR WILL HAVE MANHOLE RECOATED. RESEAL ALL LEAKS AT CONTRACTORS EXPENSE.
   A. CONTRACTOR TO ENSURE ALL PLUGS USED TO PLUG SEWER LINES, WHILE TESTING THE PROJECT (SUCH AS AIR PLUGS, SCREW TYPE PLUGS, ETC.) ARE LABELED, MARKED OR TAGGED. PROJECT INSPECTOR WILL RECORD HOW MANY PLUGS ARE BEING USED, LOCATION AND I.D., WITHIN COLLECTION SYSTEM. CONTRACTOR WILL REPORT TO PROJECT INSPECTOR OF ANY LOST OR UNRESTRAINED PLUGS INTO SEWER COLLECTION SYSTEM.
   B. CONTRACTOR WILL BE HELD LIABLE FOR ANY DAMAGES TO SEWER COLLECTION SYSTEM STOPPAGES, OVER-FLOWS, BACKUP INTO HOMES CAUSED BY LOST RUN-AWAY SEWER PLUGS THAT WERE USED ON THAT PROJECT OR OUTFALL LINE WASTEWATER TREATMENT PLANTS.
   C. CONTRACTOR WILL ALSO BE RESPONSIBLE FOR ANY DAMAGE TO WASTEWATER TREATMENT APPARATUS, SUCH AS SCREW PUMPS, ETC. CAUSED BY LOST OF RUN-AWAY SEWER PLUGS. CONTRACTOR WILL BE HELD LIABLE FOR DAMAGES, AS WELL AS COST OF REPAIRS.
5. ALL WORK IN THE TEXAS HIGHWAY DEPARTMENT, BEXAR COUNTY, GUADALUPE COUNTY, AND CITY OF CIBOLO RIGHT OF WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT.
6. ALL WORK IN PUBLIC STREETS SHALL BE COORDINATED WITH AND APPROVED BY THE BEXAR COUNTY OR GUADALUPE COUNTY PUBLIC WORKS DEPARTMENT TRAFFIC DIVISION AND STREET ENGINEER.
7. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.161, CITY PUBLIC SERVICE MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND VALVES THAT ARE IN THE PROTECTED AREAS.
8. NO TESTING WILL BE PERFORMED PRIOR TO 30 DAYS FROM THE COMPLETE INSTALLATION OF THE SANITARY SEWER LINES.

   THE FOLLOWING SEQUENCE WILL BE STRICTLY ADHERED TO:
   A. PULL MANDREL - AFTER 30 DAYS OF INSTALLATION
   B. PERFORM AIR TEST
   C. PULL WIPER (AFTER STREET HAS BE ASPHALTED IN NEW SUBDIVISIONS)
   D. VACUUM TEST ALL MANHOLES WITHIN THE PROJECT
   E. CCTV-ALL NEW LINE-PAN (TILL ALL SERVICE LATERALS TO 6"X6" CLEAN OUT. FLOOD ALL LINES BEFORE CCTV, SUMMIT DVD)
9. CONTRACTOR SHALL SUBMIT FIELD COPY PLANS AND PROFILES SHOWING AS-BUILT WORK AT END OF PROJECT, CCTV DVD AND COMPACTION DENSITY REPORTS FOR MAIN SEWER LINE AND ALL SERVICE LATERALS TRENCHES. WARRANTY LETTERS ON MATERIALS, WORKMANSHIP FOR 24 MONTHS AFTER FINAL ACCEPTANCE.
10. ALL MANHOLES SHALL BE CONSTRUCTED SO THAT THE TOP OF THE RING IS AT LEAST TWELVE (12) INCHES ABOVE THE FINISHED GRADE OF THE SURROUNDING GROUND EXCEPT WHEN LOCATED IN PAVED AREAS. IN PAVED AREAS THE MANHOLE RING SHALL BE FLUSH WITH THE PAVEMENT. ALL NEW INSTALLED MANHOLES WILL BE WITH A 30" INCH OPENING, MINIMUM, WITH THE GVSUD LOGO ON THE COVER. EVERY THIRD MANHOLE COVER WILL HAVE A 1" HOLE FOR A VENT.
11. ALL MANHOLES SHALL BE WITH A 30" INCH OPENING, HAVE WATERTIGHT RING AND COVERS, WITH THE GVSUD LOGO. ON PRIVATE PROPERTY, MANHOLE RING AND COVER SHALL BE TYPICAL MANHOLE COVER WATER TIGHT.
    A. BEFORE BACK FILLING/COMPACTION/CONCRETE ENCASEMENT

       ALL MANHOLE JOINT SECTION RISERS, CONE SECTIONS AND GRADE RING SHALL BE WRAPPED WITH GATOR WRAP SEALING SYSTEMS, BUTYL ADHESIVE SEALANT WITH A MINIMUM THICKNESS OF 30 MILS. INFI-SHIELD WRAPPED WITH RISER-WRAP SEALING SYSTEM, GATOR WRAP

       MATERIAL: RUBBER MEETS ASTM C923/MASTIC MEETS ASTM C 990 OR APPROVE BY THE GVSUD ENGINEER SUBSTITUTION ON OUTSIDE FOR I/I, GROUND WATER TABLE.
12. IF CONCRETE THROAT RINGS ARE TO BE INSTALLED, A MINIMUM OF TWO AND A MAXIMUM OF FOUR THROAT RINGS WILL BE USED AT EACH MANHOLE FOR ADJUSTMENT.
13. INFILTRATION DISHES WILL BE REQUIRED IN MANHOLES WHERE APPLICABLE (I.E., SUCH AS LOW DRAINAGE AREAS) AND EVERY THIRD MANHOLE SHALL BE VENTED. 30" INCH MANHOLE COVER WITH 1" INCH HOLE CENTER OF COVER WHERE APPLICABLE.

Note: Manhole cover inserts shall be FRW Industries, inc., "Inflow Protector-Cover" "Preco Industries Ltd.", "Sewer Guard", or approved equal, and shall be installed in strict accordance with the manufacturer's recommendations. The contractor shall be responsible for making the necessary field measurements for the manufacturer prior to construction.

   A. ALL MANHOLES MUST HAVE 350-400 FEET SPACING BETWEEN MANHOLES TO PROVIDE ACCESS TO SEWER LINES FOR CLEANING, ON THE GVSUD PUBLIC SEWER EASEMENT. A 16 FOOT GATE WITH LOCK WILL BE PROVIDED BY THE CONTRACTOR FOR ACCESS TO CLEANING AND MAINTAINING SEWER LINES.
   B. DROP MANHOLES SHALL BE REQUIRED WHEN THE INFLOW ELEVATION IS MORE THAN TWENTY-FOUR (24) INCHES ABOVE THE OUTFLOW ELEVATION. DROP SHALL BE LOCATED OUTSIDE THE MANHOLE WITH ITS FLOW LINE ELEVATION LOCATED BETWEEN THE CENTER LINE AND TOP OF SEWER LINE.

14. ALL MANHOLES WILL BE CONCRETE ENCASEMENT 1 FOOT AROUND RING, 28-INCH DEEP AFTER GATOR WRAP SEALING SYSTEM HAS BEEN APPLIED.
15. NEW MANHOLE PROTECTIVE COATING, LINER IS FOR THE PURPOSE OF INFILTRATION BECAUSE OF HIGH WATER TABLE. APPLICATION PROCEDURES ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION AND PER THE FOLLOWING SPECIFICATIONS:
    A. MANHOLE PROTECTIVE COATING: CONTRACTOR WILL BE RESPONSIBLE FOR MANHOLES ON PROJECT SAFETY ASSESSMENT; CONFINED SPACE ENTRY SET BY OCCUPATIONAL SAFETY AND HEALTH STANDARDS, 29 CFR 1910.146 APP E.
    B. THE CONTRACTOR, SHALL NOTIFY THE GVSUD UTILITIES INSPECTIONS DEPARTMENT WITH A MINIMUM OF 2 DAYS ADVANCE NOTICE OF THE START OF ANY FIELD SURFACE PREPARATION WORK OF COATING APPLICATION WORK OF MANHOLES.
    C. ALL NEW MANHOLES IN NEW DEVELOPMENTS SHALL BE 30" INCH OPENING, WATERTIGHT AND THE INTERIOR WALL COATED WITH A GVSUD APPROVED SEWER STRUCTURE FOR ALL MANHOLES, SEWPERCOAT 2000 HR REGULAR, WITH THE REQUIRED ONE-INCH THICK APPLICATION.

APPROVED MATERIALS ARE AS FOLLOWS:

CEMENTITIOUS COATING WITH REQUIRED HALF-INCH THICK APPLICATION

- SEWPERCOAT 2000 HR REGULAR
- REFRATTA HAC 100
- MAXIMUM CA PLUS

EPOXY COATING: WITH SPECIFIED THICKNESS APPLICATION

- AROMATIC POLYUREA SCP DROPLINER REQUIRED THICKNESS 125 MILS

   D. WARRANTY LETTER ON MANHOLE PROTECTIVE COATING FOR 10 YEARS AFTER FINAL ACCEPTANCE OF PROTECTIVE COATINGS CONTRACTOR IS NOT RELIEVED OF ITS RESPONSIBILITIES UNDER THE CONTRACT DOCUMENTS.
      i. ANY CONNECTIONS TO EXISTING MANHOLES WILL REQUIRE A 36-INCH CRADLE TO SUPPORT INCOMING PIPE. A RUBBER GASKET WILL ALSO BE REQUIRED (CENTERED AT MANHOLE WALL) WITH GROUTING AT INTERIOR AND EXTERIOR PENETRATIONS.

         PENETRATION INTO MANHOLE WILL BE CORE DRILLED. ANY DAMAGE EXITING THE MANHOLE WILL BE REPLACED AT CONTRACTOR'S EXPENSE. IF COATING SEAL IS BROKEN, THE MANHOLE WILL BE RECOATED WITH THE SAME MATERIALS. IF EXISTING SEWER MANHOLE SEAL COATING IS BROKEN, ALL OF MANHOLE WILL BE RELEASED WITH SAME MATERIALS AND ONE-INCH THICKNESS.
      ii. ANY AND ALL EXISTING MANHOLES WITHIN CONSTRUCTION PROJECT THAT TIE IN, ARE DONE BY CONTRACTOR TO STUB-OUT ADJUSTMENT, RECONSTRUCTION, OR LEAKING. MANHOLE WILL BE COAT SEALED AT CONTRACTOR'S EXPENSE.
      iii. MANHOLES WITH STUB-OUTS (8") INCH OR LARGER MUST BE LOCATED AT THE END OF ALL SEWER LINES THAT MAY BE EXTENDED IN THE FUTURE. MANHOLES PLACED AT THE END OF THE WASTEWATER COLLECTION SYSTEM PIPES THAT MAY BE EXTENDED IN THE FUTURE MUST INCLUDE STUB-OUTS WITH PLUGS.

PIPING

16. THE KIND AND DESCRIPTION OF THE PIPE CONDUIT IS SHOWN ON THE PLANS (IF PVC, SDR AND ASTM/ANSI DESIGNATION CLASS). AS SDR 26 PVC, ASTM D-3034 WITH A MINIMUM STIFFNESS OF 115 PSI TEXAS ADMINISTRATIVE CODE (TAC) RULES TO INCLUDE30 TAC & 213, OR ANY REVISIONS THERE TO APPLICABLE TECQ, 30 TAC 7 217, FOR ALL NEW DEVELOPMENT.
17. THE USE OF ASBESTOS CEMENT PIPE WILL BE PROHIBITED UNDER THIS CONTRACT. ALL DUCTILE IRON PIPE USED IN THIS SYSTEM SHALL BE CORROSION PROTECTED ON BOTH THE INTERIOR AND EXTERIOR SURFACES. ALL CORROSION PROTECTION SHALL BE APPLIED AND INSTALLED IN SUCH A MANNER AS TO MAINTAIN A CONTINUOUSLY PROTECTED SURFACE AFTER FINAL PIPE INSTALLATION.
18. ALL PVC SEWER PIPE WITH OVER 14 FEET OF COVER SHALL BE EXTRA STRENGTH; MINIMUM PIPE STIFFNESS OF 150 PSI.
19. ALL SEWER PIPES SHALL HAVE COMPRESSION OR MECHANICAL JOINTS.
20. SEWER PIPE CONNECTIONS TO PRECAST MANHOLES SHALL BE APPROVED BY THE GVSUD. THIS CONNECTION SHALL USE FLEXIBLE "BOOT" TYPE CONNECTOR SUCH AS THE PSX POSITIVE SEAL SYSTEM OR ENGINEER APPROVED EQUAL AND COMPLY WITH ASTM C-923. SEWER PIPE CONNECTIONS TO MONOLITHIC MANHOLES WILL BE AS SHOWN ON THE STANDARD DETAIL SHEET. ANY CHANGES IN THESE METHODS MUST BE APPROVED BY GVSUD ENGINEER.
21. ALL PIPE TRENCHING, BEDDING AND BACKFILL SHALL BE DONE IN ACCORDANCE WITH APPROPRIATE ASTM/ANSI SPECIFICATIONS [REFERENCE 31 TAC 317.2(A)(5)(A); ASTMC-12 (ANSI A106.2) OR ASTM D-2321 (ANSI K65.171)]. ALL COMPACTION @ 98% DENSITY TESTS ACROSS THE BOARD, 1 RANDOM DENSITY TEST PER LIFT FOR EVERY 400 FEET.
    A. SAND MIGRATION, SEEPAGE PREVENTION COLLAR WHEN CHANGING THE INITIAL BACKFILL FROM SELECT INITIAL BACKFILL TO OPTIONAL SELECT INITIAL BACKFILL. A TWO (2) FOOT LONG CLASS D CONCRETE ENCASEMENT, EVERY 180 FEET ALONG PIPE AND 20 FEET FROM WALL OF MANHOLE IN EACH DIRECTION. NO EXTRA PAY ITEM.
    B. BEDDING SHALL CONSIST OF TXDOT-GRADE 4 (1 1/2"-1 5/8") COMMONLY KNOWN AS SEWER GRAVEL.
       i. THE BEDDING SHALL MEET THE FOLLOWING GRADATION:

a.	2"	100.0%
b.	1 ¾"	100.0%
c.	1 ½"	100.0%
d.	1"	52.6%
e.	¾"	10.7%
f.	⅜"	1.3%

    C. SEWER LINE LOCATION
       i. SEWER LINES SHALL BE SIZED AND EXTENDED THROUGH THE LIMITS OF A DEVELOPMENT TO SERVE ADJACENT PROPERTY, WITH MANHOLE AND STUB-OUT AT END OF SEWER LINE.
          a. IN PHASED CONSTRUCTION OF THOROUGHFARES, THE SEWER LINE SHALL BE EXTENDED THE ENTIRE LENGTH OF THE THOROUGHFARE BEING CONSTRUCTED.
       ii. NO PUBLIC SEWER LINE SHALL BE LOCATED NEARER THAN FIVE (5) FEET FROM ANY TREE.
       iii. SIZES AND GRADES FOR SANITARY SEWER SHALL BE AS REQUIRED BY THE GVSUD ENGINEER AND CONSIDERATION SHALL BE GIVE AS TO POSSIBLE EXTENSIONS FOR FUTURE DEVELOPMENT. NO SANITARY SEWERS, OTHER THAN LATERALS AND FORCE MAINS, SHALL BE LESS THAN EIGHT (8) INCH IN DIAMETER.
22. WHEN SEWER LATERALS ARE TO BE CONNECTED TO EXISTING SEWER MAINS AND NO STUB-OUT HAS BEEN EARLIER PROVIDED, THE CONNECTION MUST BE MADE WITH AN APPROVED SERVICE SADDLE AS PER 31 TAC 313.5(C) (7). NEW INVERT TO BE BUILT, SMOOTH CHANNEL FOR NEW PIPE/SLOPE AT 2% FLOW.
23. ALL RESIDENTIAL SERVICE LATERALS SHALL BE SDR 26 WITH RATING OF 115 PSI, BE EXTENDED TO THE PROPERTY LINE AT (6 X 6) CAPPED AND SEALED. ATTACH SEWER BURIAL TAPE TO THE END OF ALL SEWER LATERALS AND BRING UP TO THE GROUND LEVEL FOR MARKER (GREEN). (SEE HOUSE LATERALS DETAILS)
    AA. SEWER SERVICE LATERALS. THE SIZES AND LOCATIONS OF LATERALS SHALL BE DESIGNATED AS FOLLOWS UNLESS OTHERWISE DIRECTED BY THE GVSUD ENGINEER:
       i. IN GENERAL FOR SINGLE FAMILY DWELLING, THE LATERAL SIZE SHALL BE FOUR (4) INCH MINIMUM. HOUSE LATERALS SHALL BE IN STALL CENTER OF THE LOT AND SHALL HAVE A TEN(10) FOOT SEPARATION FROM THE WATER SERVICE. THE SERVICE SHALL THEN BE EXTENDED AT A FORTY-FIVE (45) DEGREE ANGLE TO FOUR (4) FEET ABOVE THE FINISHED GRADE AND CAPPED. USE SEWER BURIAL TAPE TO MARK ALL SEWER SERVICE LATERALS.
       ii. MULTIPLE UNITS, APARTMENTS, LOCAL RETAIL AND COMMERCIAL SIX (6) INCH MINIMUM, MANUFACTURING AND INDUSTRIAL - EIGHT (8) INCH MINIMUM, OR LARGER AS REQUIRED.

TRAPS AND INTERCEPTORS (FOG - TECQ)

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

OIL SEPARATORS

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

SAND INTERCEPTORS

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

AUTOMATIC CAR WASHES

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

NEUTRALIZING DEVICES

IN NO CASE SHALL CORROSIVE LIQUIDS, SPENT ACIDS, OR OTHER HARMFUL CHEMICALS WHICH MIGHT DESTROY OR INJURE A DRAIN, SEWER, SOIL, OR WASTE PIPE, OR WHICH MIGHT CREATE NOXIOUS OR TOXIC FUMES, DISCHARGE INTO THE SANITARY SEWER SYSTEM WITH OUT BEING THOROUGHLY NEUTRALIZED BY PASSING THOROUGHLY CONSTRUCTED AND ACCEPTABLE NEUTRALIZING DEVICE. SUCH DEVICE SHALL BE PROVIDED WITH A SUFFICIENT INTAKE OF NEUTRALIZING MEDIUM, CONSISTING OF LIMESTONE OR MARBLE CHIPS, SO AS THE MAKE ITS CONTENTS NON-INJURIOUS BEFORE BEING DISCHARGED INTO THE SANITARY SEWER SYSTEM.

LINT TRAPS

PUBLIC AND PRIVATE WASHATERIAS AND COMMERCIAL LAUNDRIES SHALL INSTALL A LINT TRAP EQUIPPED WITH A CONVENIENTLY LOCATED AND EASILY REMOVABLE WIRE BASKET OR OTHER SIMILAR DEVICE THAT WILL PREVENT THE STRINGS, RAGS, BUTTONS, OR OTHER PROHIBITED MATERIAL FROM ENTERING THE SANITARY SEWER SYSTEM. THE BASKET OR OTHER SIMILAR DEVICE SHALL PREVENT PASSAGE TO THE SANITARY SEWER SYSTEM OF SOLIDS GREATER THAN 1/2" INCH DIAMETER. THE LINT TRAP SIZE SHALL BE BASED ON THE TOTAL G.P.M. OF ALL FIXTURES, APPLIANCES AND APPURTENANCES DRAINING TO IT IN LIEU OF A LINT TRAP, A LINT INTERCEPTOR MAY BE INSTALL. THE INTERCEPTOR SHALL BE SIZED AND DESIGNED BY A TEXAS REGISTERED ENGINEER WITH HIS SEAL AND SIGNATURE ON THE DRAWINGS.

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	SANITARY SEWER SYSTEM GENERAL NOTES (1 OF 2)	
REVISED: OCTOBER 2021	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. G-1

SILVER RECOVERY UNITS

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

SOLID INTERCEPTORS

SOLIDS INTERCEPTORS SHALL BE INSTALLED WHEN PRE-TREATMENT OF WASTE STREAMS IS NECESSARY TO PREVENT SOLIDS GREATER THAN ½" IN DIAMETER, WHICH MAY CAUSE LINE STOPPAGE FROM ENTERING THE SANITARY SEWER SYSTEM.

INTERCEPTORS

a. INTERCEPTORS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DESIGN APPROVED BY THE GVSUD CONSISTING OF A MINIMUM OF TWO COMPARTMENTS WITH FITTINGS DESIGNED FOR GREASE RETENTION AND PROVIDE FOR A MINIMUM OF TWELVE (12) MINUTES RETENTION
b. THERE SHALL BE AN ADEQUATE NUMBER OF MANHOLES TO PROVIDE ACCESS FOR CLEANING ALL AREAS OF AN INTERCEPTOR, ONE MANHOLE PER TRAP COMPARTMENT. MANHOLE COVERS SHALL BE GAS TIGHT IN CONSTRUCTION HAVING A MINIMUM OPENING DIMENSION OF 20 INCHES (0.5 M).
c. IN AREAS WHERE TRAFFIC MAY EXIST THE INTERCEPTOR SHALL BE DESIGNED TO HAVE ADEQUATE REINFORCEMENT AND COVER.
d. ALL INTERCEPTORS SHALL HAVE THE SIZE OF THE INTERCEPTOR (IN GALLON PER MINUTE OR GALLON CAPACITY) PERMANENTLY AFFIXED TO THE DEVICE.
e. ALL CONCRETE UTILIZED IN THE CONSTRUCTION OF INTERCEPTOR SHALL HAVE A MINIMUM STRENGTH OF 3000 PSI.
f. AN EFFLUENT SAMPLING WELL ON ALL INTERCEPTORS SHALL BE REQUIRED. THE SAMPLE WELL SHALL HAVE A RISER A MINIMUM OF 6" INCHES IN DIAMETER AND SHALL BE INSTALLED AFTER THE CONFLUENCE OF ALL WASTE STREAMS FROM THE FACILITY AND PRIOR TO DISCHARGING INTO SANITARY SEWER COLLECTION SYSTEM. THE WELL SHALL BE PERPENDICULAR TO THE EFFLUENT LATERAL TO ALLOW VISUAL OBSERVATION OF THE FLOW STREAM AND PROVIDE FOR SAMPLING OF WASTEWATER.

WATERTIGHT TESTING (24 HOURS)

g. ALL INTERCEPTORS SHALL BE WATER TESTED OUT AT JOB SITE AFTER BEING INSTALLED (PLUG BOTH ENDS AND FILL TO TOP OF INTERCEPTOR). INTERCEPTOR SHALL SHOW NO LEAKAGE FROM SECTION SEAMS, PINHOLES, OR OTHER IMPERFECTIONS. ANY LEAKAGE IS CAUSE FOR REJECTION. WHEN LEAKAGE OCCURS, ADDITIONAL WATER TESTING SHALL BE MADE. AFTER CORRECTING MEASURE TEST, REPORTS SHALL SHOW TOTAL NUMBER OF INTERCEPTORS TESTED. WHEN LEAKAGE OCCURS, CORRECTIVE MEASURES TAKEN SHALL BE REPORTED BY GVSUD INSPECTORS. GVSUD INSPECTORS SHALL RECORD IN DAILY LOG WITH PROJECT NAME, DATE IT WAS TESTED AND COMPLETED.

B. MANHOLES WILL BE REQUIRED ON SIX (6) INCH AND LARGER LATERALS WHERE THEY CONNECT TO THE MAIN.
   a. LATERALS WILL NOT BE ATTACHED TO SEWER MAINS THAT ARE DEEPER THAN TWELVE (12) FEET.
   b. FITTINGS ARE NOT PERMITTED ON LATERALS BETWEEN THE WYE AND THE PROPERTY LINE.
   c. DEEP CUT OR DROP CONNECTIONS SHALL NOT BE PERMITTED.
   d. A MINIMUM OF ONE (1) LATERAL PER BUILDING SHALL BE REQUIRED. ALSO, A MINIMUM OF ONE (1) LATERAL PER RESIDENTIAL LOT SHALL BE REQUIRED. DUPLEXES SHALL HAVE TWO (2) LATERALS THAT SHALL BE INDEPENDENTLY ATTACHED TO THE MAIN.
   e. ALL SEWER LATERAL CROSSING WATER MAINS SHALL CONFORM TO THE REQUIREMENTS OF THE TCEQ CHAPTER 317 (DESIGN CRITERIA FOR SEWERAGE SYSTEMS) LATEST REVISION, SDR 26 150 PSI, OR DUCTILE IRON PIPE, CONCRETE ENCASEMENT.

24. WHERE REQUIRED CONCRETE ENCASEMENT SHALL BE PLACED FOR FULL WIDTH OF THE TRENCH TO A PLAIN SIX (6) INCHES ABOVE THE TOP OF THE PIPE WITH PAY UNITS AS SHOWN ON THE STANDARD DETAILS SHEET.
25. A MINIMUM OF FOUR (4) FEET OF COVER IS TO BE MAINTAINED OVER THE SANITARY SEWER MAIN AND LATERALS AT GRADE, OTHERWISE CONCRETE ENCASEMENT IS REQUIRED.
26. WHERE POROUS MATERIAL , INCLUDING "SUBGRADE FILLER" IS USED FOR BACKFILL IN THE BEDDING AND INITIAL BACKFILL ZONES, SEEPAGE RETAINERS ARE REQUIRED AT AN APPROXIMATE OF 180 FEET. RETAINERS SHALL CONSIST OF CLASS "D" CONCRETE ENCASEMENT. THE RETAINERS SHALL EXTEND FROM THE BOTTOM OF THE TRENCH TO THE TOP OF THE GRANULAR MATERIAL FOR THE ENTIRE TRENCH WIDTH. ENCASEMENT SHALL BE 24 INCHES LONG. NO EXTRA PAY ITEM

BLASTING

27. WHEN ALLOWABLE, BLASTING SHALL BE PREFORMED IN ACCORDANCE WITH THE ABOVE CRITERIA ESTABLISHED BY THE NATIONAL FIRE PROTECTION ASSOCIATION 312 TAC 313.5(C) (6).
28. BLASTING SEWER LINE EXCAVATION MUST BE DONE IN SUCH A MANNER AS TO MINIMIZE THE FRACTURING OF ROCK BEYOND THE REQUIRED EXCAVATION. THE CONTRACTOR SHALL CONSIDER THE ELEVATION OF THE EXISTING SANITARY SEWER MAIN IN RELATION TO THE BLASTING CHARGE AND RELATIVE DIRECTION OF EXISTING AND PROPOSED TRENCHES. BLASTING WITHIN SUCH AREAS SHALL BE ACCOMPLISHED ONLY BY QUALIFIED BLASTING CONTRACTORS WHO HOLD BLASTING LICENSES FROM A QUALIFIED AGENCY SUCH AS THE SAN ANTONIO FIRE DEPARTMENT IN BEXAR COUNTY. ANY DAMAGE TO EXISTING SANITARY SEWERS RESULTING FROM BLASTING SHALL BE REPAIRED AND RESTORED BY THE CONTRACTOR AT HIS OWN EXPENSE.
29. NO BLASTING SHALL BE PERFORMED WITHIN 75 FEET OF EXISTING UTILITIES.

TESTING

30. ALL SEWER LINES MUST BE TESTED IN ACCORDANCE WITH THE FOLLOWING:
    A. 317.2(A)(5)(B); DEFLECTION TEST FOR FLEXIBLE AND SEMI-RIGID PIPE CONDUCTED AFTER FINAL BACKFILL AS BEEN IN PLACE AT LEAST 30 DAYS.
    B. 317.2(A)(4)(A) & (B) OR GVSUD SPECIFICATIONS INFILTRATION AND OR EXFILTRATION AND OR LOW-PRESSURE AIR TEST.
    C. 313.5(C)(10)(C) OR GVSUD SPECIFICATIONS: ALL MANHOLES AND WET WELLS MUST BE TESTED SEPARATELY AND INDEPENDENTLY OF THE COLLECTION LINES.
    D. IN THE EVENT THAT TESTING REQUIREMENTS CONFLICT, THE LATEST TCEQ DESIGN CRITERIA SHALL BE USED.
31. SEWER LINES SHALL BE TESTED FROM MANHOLE TO MANHOLE.
32. SANITARY SEWER CONNECTIONS MADE DIRECTLY TO EXISTING MANHOLES WHICH REQUIRE PENETRATION INTO MANHOLE WILL BE CORE DRILLED. ANY DAMAGE TO EXISTING MANHOLE WILL BE REPLACED AT CONTRACTORS EXPENSE AND WILL REQUIRE SUCCESSFUL TESTING OF THE EXISTING MANHOLE IN ACCORDANCE WITH THE GVSUD SPECIFICATIONS. HANG A GOLF BALL IN FRONT OF CAMERA, PIPE GRADE IS OUT OF TOLERANCE IF GOLF BALL BECOMES 50% SUBMERGED.
33. AFTER CONSTRUCTION, TESTING WILL BE DONE BY PAN/TILT TV CAMERA BY THE CONTRACTOR AND OBSERVED BY INSPECTOR, WASTEWATER ENGINEERING PERSONNEL AND CONTRACTOR AS CAMERA IS RUN THROUGH THE LINES. PAN/TILT ALL 6" SERVICE LATERALS TO 6"X6" STUB-OUT. VIDEOS MUST INCLUDE SUBDIVISION NAME, MANHOLE NUMBER, SERVICE LATERAL STATION NUMBER, FLOW DIRECTION, LOCATION ANY ABNORMALITIES, SUCH AS BROKEN PIPE OR MISALIGNED, JOINT, GRAVEL, DIRT, MUST BE CLEANED OUT, REPLACE AT CONTRACTOR'S EXPENSE. NEW SEWER SYSTEM WILL BE FLOODED WITH H20 BEFORE BEING TV. ALL SEWER LINES MUST BE PRESSURE CLEANED TO INCLUDE SERVICE LATERALS 6" INCH TO STUB-OUT. ALL VIDEOS SHALL BE SUBMITTED IN DVD FORMAT WITH WRITTEN REPORTS.
34. A COPY OF ALL TESTING REPORTS INCLUDING BACKFILL COMPACTION TESTS SHALL BE FORWARDED TO GVSUD.
    A. DENSITY TEST WILL BE REQUIRED ON ALL SANITARY SEWER TRENCHES INCLUDING SERVICE LATERALS. SERVICE LATERALS TO BE CHOSEN RANDOMLY BY FIELD INSPECTOR. DENSITIES ON SERVICE LATERAL SHALL NOT EXCEED 25% OF TOTAL NUMBER OF SERVICES.

EXCAVATION

35. 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 CONTRACTORS TRENCH EXCAVATION SAFETY SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTORS IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITHIN OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
36. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL WASTE MATERIALS UPON PROJECT COMPLETION. THE CONTRACTOR SHALL NOT PERMANENTLY PLACE ANY WASTE MATERIALS IN THE 100 YEAR FLOODPLAIN WITHOUT AN APPROVED FLOODPLAIN PERMIT.
37. WATER JETTING THE BACKFILL WITHIN A STREET WILL NOT BE PERMITTED. SANITARY SEWER TRENCHES SUBJECT TO TRAFFIC SHALL CONFORM TO GVSUD SPECIFICATIONS.

WATERLINE CROSSING

38. WHERE THE MINIMUM 9 FOOT SEPARATION DISTANCE BETWEEN SEWER LINES AND WATERLINES CANNOT BE MAINTAINED, THE INSTALLATION OF SEWER LINES SHALL BE IN STRICT ACCORDANCE WITH TCEQ RULES (31 TAC 317.3 APPENDIX E), SDR 26 ASTM 150 PSI OR CONCRETE ENCASEMENT DUCT IRON.

EROSION AND SEDIMENTATION

39. THE TCEQ AND THE ENVIRONMENTAL PROTECTION AGENCY (EPA) REQUIRE EROSION AND SEDIMENTATION CONTROL FOR CONSTRUCTION OF SEWER COLLECTION SYSTEMS. DEVELOPER OR AUTHORIZED REPRESENTATIVE SHALL PROVIDE EROSION AND SEDIMENTATION CONTROL AS NOTED ON THE PROJECT PLAN AND PROFILE SHEETS.
40. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED BY THE CONTRACTOR AT FINAL ACCEPTANCE OF THE PROJECT BY GVSUD.

SUPPLEMENTING

41. 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 PAY ITEM 10 WHICH IT RELATES TO.
42. UNLESS THE DEVELOPMENT IS PRIVATELY OWNED, THE DEVELOPERS DEDICATES THE SANITARY SEWER MAIN AND MANHOLES TO THE GVSUD. UPON COMPLETION BY THE DEVELOPER AND FINAL ACCEPTANCE BY THE GVSUD. GVSUD WILL OWN AND MAINTAIN THE SANITARY SEWER MAINS AND MANHOLES WHICH ARE LOCATED WITHIN THIS PARTICULAR SUBDIVISION.
43. WORK COMPLETED BY CONTRACTOR WHICH HAS NOT RECEIVED A WORK ORDER OR THE CONSENT OF THE GVSUD CONSTRUCTION INSPECTION DIVISION WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.
44. GVSUD IS NOT TO BE RESPONSIBLE FOR ANY ABNORMALITIES ON STUB-OUT, INVERT, GRADE OR SLOPE FOR ANY EXISTING MANHOLE TIE IN OR SERVICE LATERAL TIE IN.
45. ENGINEER, DEVELOPER, AND BUILDER, WILL HAVE PLUMBER AND CONTRACTOR WITH BID PRICE ON NEW INSTALLATION OF ALL 4" INCH SEWER SERVICE LATERALS TO COMPLY WITH TRENCH SAFETY (OSHA) SHORING PROTECTION ON ALL NEW INSTALLATION OF 4" INCH SEWER SERVICE LATERALS. GVSUD WILL NOT BE HELD RESPONSIBLE FOR ANY INJURIES OR DEATH CAUSED BY TRENCH FAILURE OR A WRONG OR DAMAGE DONE TO A PERSON OR TO HIS PROPERTY, OSHA GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
46. ALL 4" INCH SEWER SERVICE LATERALS WILL BE HYDRAULIC TESTED AND OR LOW AIR PRESSURE TESTED. ALL 4" INCH SEWER SERVICE LATERALS WILL BE TELEVISED (TV) FROM 4" INCH CLEAN OUT AT OUTSIDE EACH RESIDENCE TO 6"X6" CLEAN OUT. CONTRACTOR AND PLUMBER WILL SUBMIT REPORTS AND/OR VIDEOS TO GVSUD, WITH THE FOLLOWING INFORMATION: SUBDIVISION NAME, LOT NUMBER, BLOCK NUMBER, STATION NUMBER, STREET NAME AND ADDRESS OF EACH SEWER SERVICE LATERAL.

PLUMBER WILL BE PROVIDED PLAN/PROFILE BY ENGINEER/BUILDER. PLUMBER WILL WORK CLOSELY WITH THE GVSUD INSPECTOR ON DAILY TESTING AND TELEVISION BY MAKING ARRANGEMENTS 48 HOURS IN ADVANCE. SEWER SERVICE LATERALS THAT HAVE NOT BEEN INSPECTED OR APPROVED AND/OR COVERED UP, WILL HAVE TO BE RE-DUG AT CONTRACTOR/PLUMBER EXPENSE AND RE-INSPECTED.

   A. A PROPERTY LINE CLEAN OUT (6"X6") SHALL BE INSTALLED FOR RESIDENTIAL SERVICES. CLEAN OUTS IN THE SIDEWALK OR DRIVEWAY SHALL HAVE A CAST IRON BOOT. CLEAN OUT NOT LOCATED IN A SIDEWALK OR DRIVEWAY SHALL BE LOCATED ON REINFORCED CONCRETE PAD A MINIMUM OF TWELVE (12") INCHES BY TWELVE (12") INCHES BY SIX (6") INCHES THICK. ALL PROPERTY LINE CLEAN OUTS SHALL INCLUDE A LID WITH SEWER IN GREEN COLOR.

47. N1 FENCING: ANY AND ALL FENCING, INCLUDING ELECTRIC FENCE, WHETHER OR NOTE IDENTIFIED ON THE PLANS, MUST BE MAINTAINED AT ALL TIMES. ANY AND ALL DAMAGES DIRECTLY ATTRIBUTED TO THE CONTRACTOR MUST BE REPLACED TO EQUAL OR BETTER CONDITIONS AT THE CONTRACTOR'S EXPENSE AND AS APPROVED BY THE PROJECT MANAGER. GAPS IN THE FENCING MUST BE PROVIDED AT ALL LOCATIONS WHERE THE SEWER LINE EASEMENT CROSSES FENCING. FENCING REQUIRED TO MAINTAIN LIVESTOCK MUST BE MAINTAINED AT ALL TIMES.
48. N2 DAMAGE TO ADJACENT LAND: THE CONTRACTOR MUST AVOID DAMAGE TO ADJACENT LAND OUTSIDE THE IDENTIFIED CONSTRUCTION LIMITS. ANY AND ALL CLAIMS DIRECTORY ATTRIBUTED TO THE CONTRACTOR RESULTING FROM HIS STRAYING BEYOND THE CONSTRUCTION LIMITS MUST BE SETTLED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH THE APPROPRIATE LANDOWNER.
49. N3 PROPERTY OWNER ACCESS: THE CONTRACTOR MUST MAINTAIN ACCESS FOR PRIVATE INDIVIDUALS AT ALL TIMES. IF NORMAL ACCESS IS DAMAGED DURING CONSTRUCTION THE CONTRACTOR MUST REPLACE THE ACCESS TO EQUAL OR BETTER CONDITIONS AT THE CONTRACTOR'S EXPENSE, AS APPROVED BY THE ENGINEER.
50. N4 CONTRACTOR IS RESPONSIBLE FOR LOCATION AND PROTECTION ALL UTILITIES WHETHER OR NOT SHOWN ON THE PLANS. SHOULD THE CONTRACTOR DAMAGE ANY UTILITIES THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL COSTS TO REPAIR THE UTILITIES TO THEIR ORIGINAL CONDITION. CONTRACTOR IS SOLELY RESPONSIBLE FOR LOST REVENUE, LOSSES, ETC CLAIMED BY UTILITY COMPANIES DUE TO CONTRACTORS WORK. CONTRACTOR SHALL NOTIFY GVSUD AND IMPACTED UTILITY COMPANIES 48 HRS. PRIOR TO BEGINNING WORK. CONTRACTOR SHALL VERIFY THE LOCATION OF UTILITIES AND REPORT ANY DISCREPANCIES TO THE ENGINEER.
51. N5 CLEARING PERMANENT EASEMENTS: THE LIMITS OF BOTH THE EXISTING AND PARALLEL SEWER LINES PERMANENT EASEMENTS, AS DELINEATED IN THESE PLANS, MUST BE CLEARED IN ACCORDANCE WITH THE SPECIFICATION. THE CONTRACTOR MAY BE DIRECTED BY THE ENGINEER TO PROTECT AND AVOID CERTAIN TRESS WITHIN THE LIMITS OF THE PERMANENT CONSTRUCTION EASEMENTS. ALL BRUSH MUST BE REMOVED FROM SITE. NO BRUSH PILES TO REMAIN AFTER CONSTRUCTION. BURNING OF BRUSH OR TRASH WILL NOT BE ACCEPTABLE.
52. N7 CONTRACTOR SHALL PROVIDE APPROPRIATE SAFE ACCESS AND BARRICADE WORK AT ALL TIMES TO PROTECT THE PUBLIC. THIS INCLUDES SUBSTANTIAL BARRICADES AROUND ALL TRENCHES, BORE PITS, OPEN EXCAVATIONS, EQUIPMENT, ETC. THE SITE MUST BE LEFT IN SECURE SAFE CONDITION AT NIGHT. IT IS THE CONTRACTORS RESPONSIBILITY TO TAKE NECESSARY PRECAUTIONS TO PROTECT THE PUBLIC THROUGHOUT THE DURATION OF THE PROJECT.
53. N14 SHOULD CONTRACTOR SELECT A TRENCH EXCAVATION PROCEDURE THAT EXTENDS THE LIMITS OF SEEDING OR PAVING AND FINAL SITE PREPARATION (I.E. SLOPE BACK PROTECTION SYSTEM) HE WILL BE RESPONSIBLE FOR MEETING PLAN AND SPECIFICATION REQUIREMENTS TO THE NEW LIMITS AT NO ADDITIONAL COST TO GVSUD.
54. N16 WARNING: NOTE THAT CERTAIN PORTIONS OF THE PROJECT MAY PARALLEL AND/OR CROSS EXISTING UTILITIES. THE CONTRACTORS WILL BE REQUIRED TO PROTECT EXISTING UTILITIES. ADDITIONAL SUPPORTIVE SHORING MAY BE REQUIRED. IT IS SPECIFICALLY THE CONTRACTORS RESPONSIBILITY TO PROTECT HIS WORKERS, EXISTING UTILITIES, AND FINISHED WORK THROUGHOUT THE JOB.
55. N17 OVERHEAD ELECTRIC, CITY PUBLIC SERVICE (CPS) AN APPROPRIATELY SAFE OVERHEAD CLEARANCE MUST BE MAINTAINED BETWEEN ALL EQUIPMENT AND PERSONNEL. THE CONTRACTOR SHALL NOTIFY CITY PUBLIC SERVICE AT 353-2700 AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION IN THE VICINITY OF THE CPS OVERHEAD ELECTRIC LINE CONTRACTOR SHALL MAINTAIN CPS RECOMMENDED CLEARANCE REQUIREMENTS.
56. N23 BYPASS PUMPING: THE CONTRACTOR IS RESPONSIBLE FOR ALL BYPASS PUMPING REQUIRED TO COMPLETE THE WORK. BYPASS PUMPS SHALL BE ADEQUATE TO HANDLE PEAK FLOW EVENTS DURING STORM EVENTS. CONTRACTOR SHALL HAVE STANDBY PUMPS AVAILABLE TO BYPASS FLOW IN CASE PRIMARY PUMP FAILS. CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR ALL COSTS FOR CLEANUP OF AN UNAUTHORIZED DISCHARGE AND ANY ASSOCIATED FINES.
57. N26 CONTRACTOR SHALL BACKFILL ALL OPEN TRENCHES AT THE END OF THE DAY. CONTRACTOR SHALL NO INSTALL MORE PIPE THAN CAN BE COVERED. NO OPEN TRENCHES WILL BE PERMITTED OVERNIGHT ALL END OF OPEN PIPE WILL BE PLUGGED OVERNIGHT.
58. N33 THE PROJECT AREA MAY BE SUBJECT TO ARCHEOLOGICAL MONITORING, SHOULD THE CONTRACTOR ENCOUNTER ANY ARCHEOLOGICAL DEPOSITS DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL STOP ALL WORK IN THE AREA OF THE DEPOSITS AND IMMEDIATELY CALL THE PROJECT MANAGER.
59. N37 CONTRACTOR TO NOTE THAT PORTIONS OF THE CONSTRUCTION ARE WITHIN THE LIMITS OF THE 100 YEAR FLOODPLAIN. THE CONTRACTOR IS REQUIRED TO KEEP THE CHANNEL CLEAR OF POTENTIAL OBSTRUCTIONS TO FLOOD FLOWS. POTENTIAL OBSTRUCTIONS INCLUDE HEAVY CONSTRUCTION EQUIPMENT, TEMPORARY ROADS ACROSS CHANNEL, EXCAVATED MATERIAL, STOCKPILED DEBRIS, ETC. UNDER THREATENING WEATHER CONDITIONS WHERE FLOODING IS LIKELY, OBSTRUCTIONS SHALL BE IMMEDIATELY REMOVED BY THE CONTRACTOR AT NO ADDITIONAL COST TO GVSUD. THE CONTRACTOR ASSUMES ALL RISK FOR UNFINISHED WORK.

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	SANITARY SEWER SYSTEM GENERAL NOTES (2 OF 2)	
REVISED: OCTOBER 2021	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. G-2

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GOERKE SUBDIVISION PHASE 1

SANITARY SEWER GENERAL NOTES AND STANDARD DETAILS

DATE
09/30/2024

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
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KYLE M. HUDEK
138753
11/12/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C4.D1

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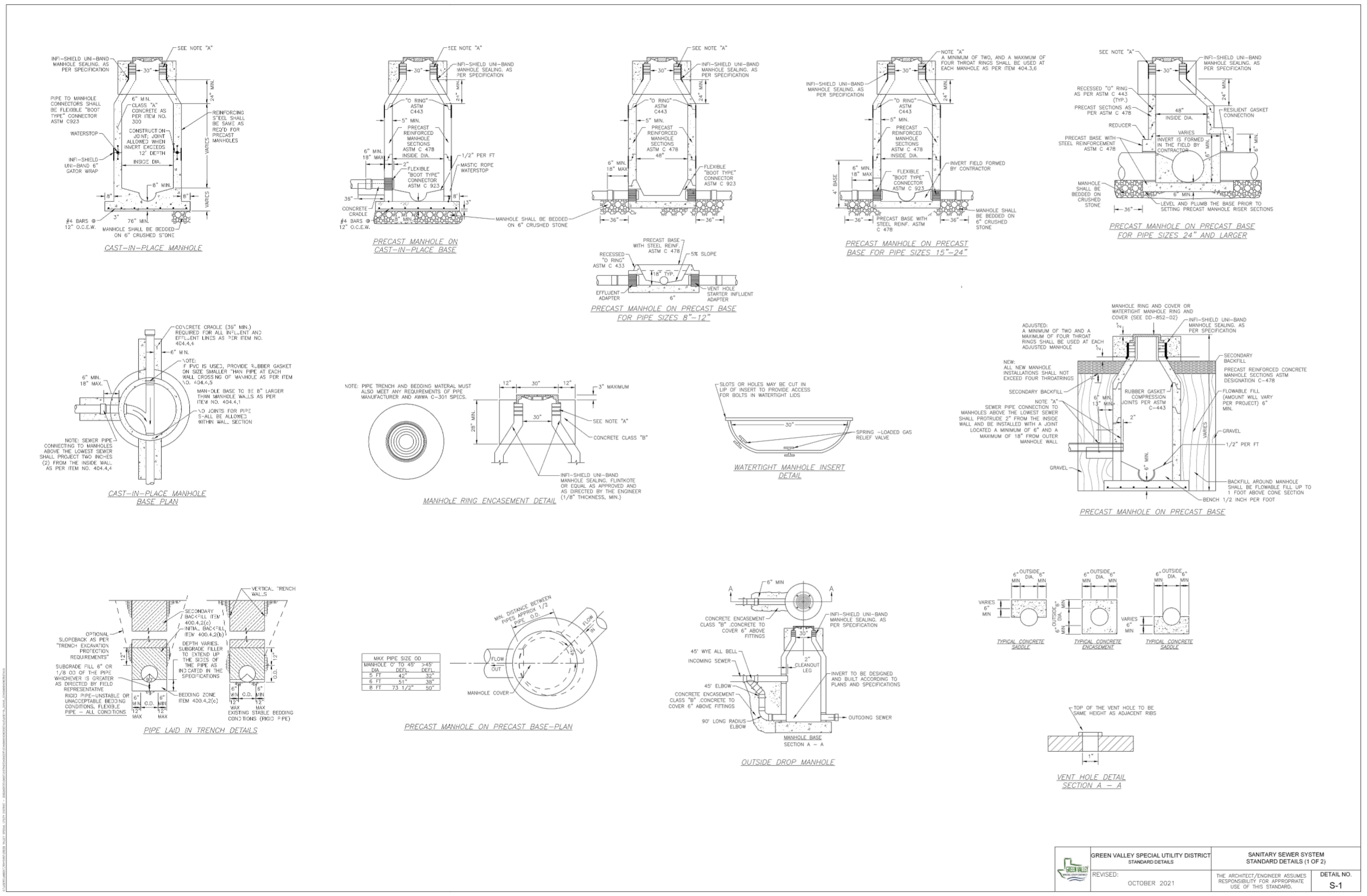
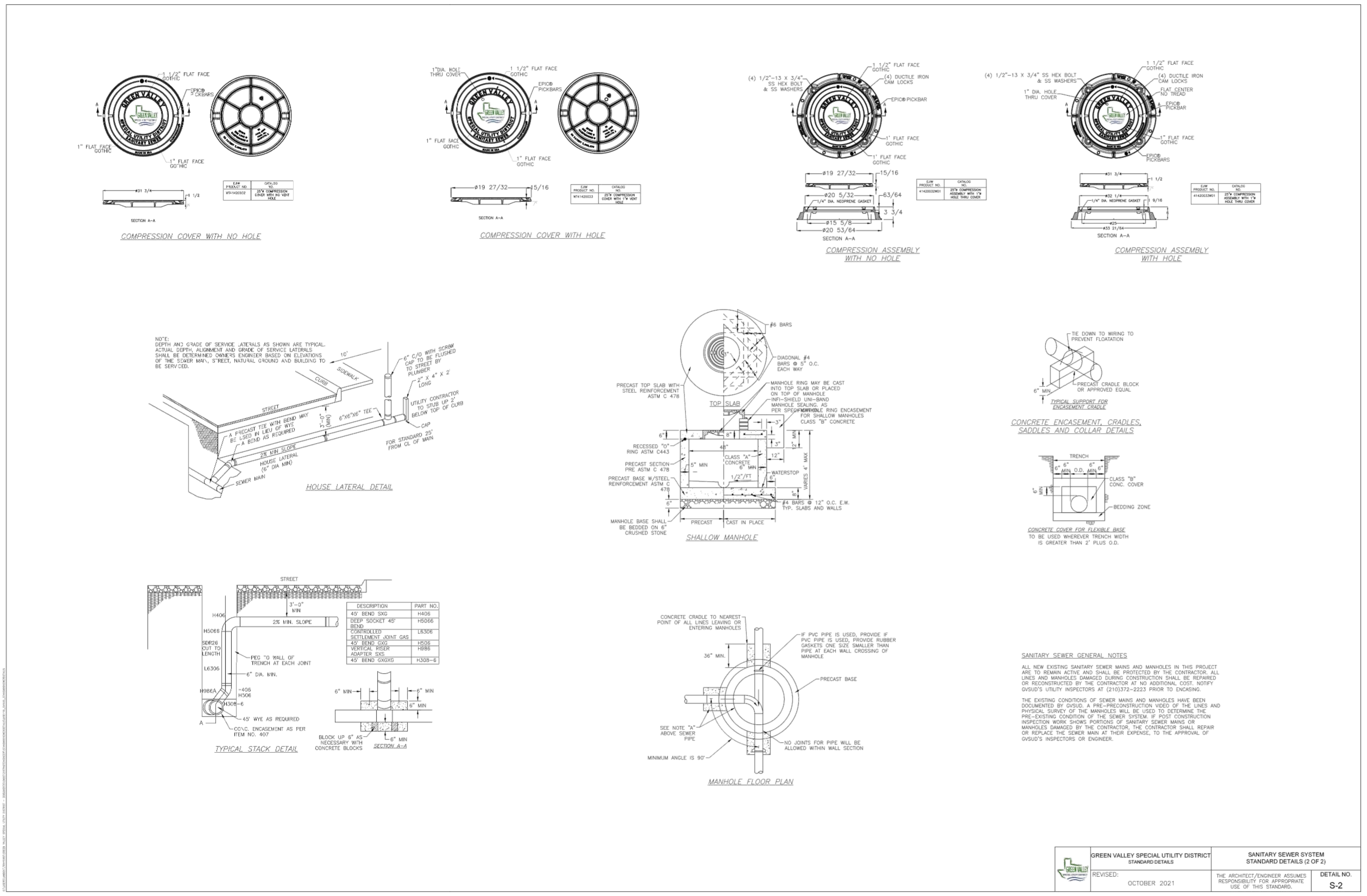
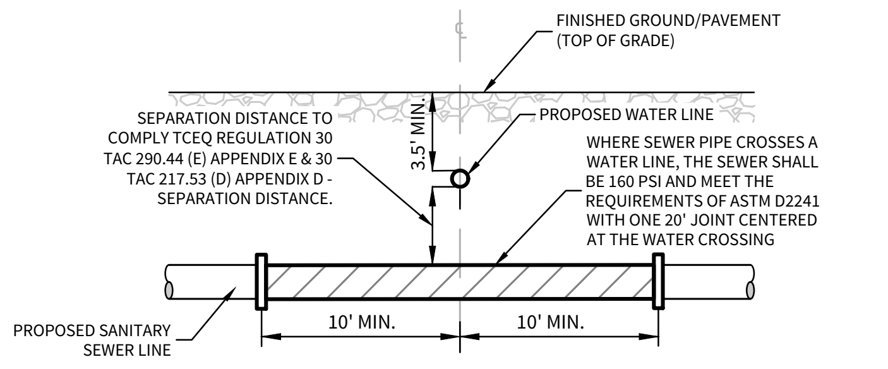

CAST-IN-PLACE MANHOLE
PRECAST MANHOLE ON CAST-IN-PLACE BASE
PRECAST MANHOLE ON PRECAST BASE FOR PIPE SIZES 8"-12"
PRECAST MANHOLE ON PRECAST BASE FOR PIPE SIZES 15"-24"
PRECAST MANHOLE ON PRECAST BASE FOR PIPE SIZES 24" AND LARGER
CAST-IN-PLACE MANHOLE BASE PLAN
MANHOLE RING ENCASEMENT DETAIL
WATERTIGHT MANHOLE INSERT DETAIL
PRECAST MANHOLE ON PRECAST BASE
PIPE LAID IN TRENCH DETAILS
PRECAST MANHOLE ON PRECAST BASE-PLAN
OUTSIDE DROP MANHOLE
TYPICAL CONCRETE SADDLE
TYPICAL CONCRETE ENCASEMENT
TYPICAL CONCRETE SADDLE
VENT HOLE DETAIL
SECTION A – A
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
REVISED:
OCTOBER 2021
SANITARY SEWER SYSTEM
STANDARD DETAILS (1 OF 2)
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO.
S-1


COMPRESSION COVER WITH NO HOLE
COMPRESSION COVER WITH HOLE
COMPRESSION ASSEMBLY WITH NO HOLE
COMPRESSION ASSEMBLY WITH HOLE
HOUSE LATERAL DETAIL
SHALLOW MANHOLE
CONCRETE ENCASEMENT, CRADLES, SADDLES AND COLLAR DETAILS
CONCRETE COVER FOR FLEXIBLE PIPE
TYPICAL STACK DETAIL
SECTION A-A
MANHOLE FLOOR PLAN
SANITARY SEWER GENERAL NOTES
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
REVISED:
OCTOBER 2021
SANITARY SEWER SYSTEM
STANDARD DETAILS (2 OF 2)
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO.
S-2

ENGINEER SANITARY SEWER GENERAL NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY FENCING THAT IS REMOVED OR DAMAGED DURING CONSTRUCTION TO EXISTING OR BETTER CONDITION.
2. CONTRACTOR IS TO NOTIFY ENGINEER OF ANY DISCREPANCIES OR UTILITY CONFLICTS.
3. CONTRACTOR SHALL REFERENCE TREE PLAN AND PRIVATE GRADING PLAN FOR CLEARING AND GRADING LIMITS.
4. CONTRACTOR SHALL REVEGETATE ALL DISTURBED AREAS WITHIN EASEMENT LIMITS UPON COMPLETION OF INFRASTRUCTURE


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.
3.5' 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 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.

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.

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P:(210) 681.2951 F: (210) 523.7112

GOERKE SUBDIVISION PHASE 1

SANITARY SEWER STANDARD NOTES AND DETAILS

DATE
09/30/2024

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
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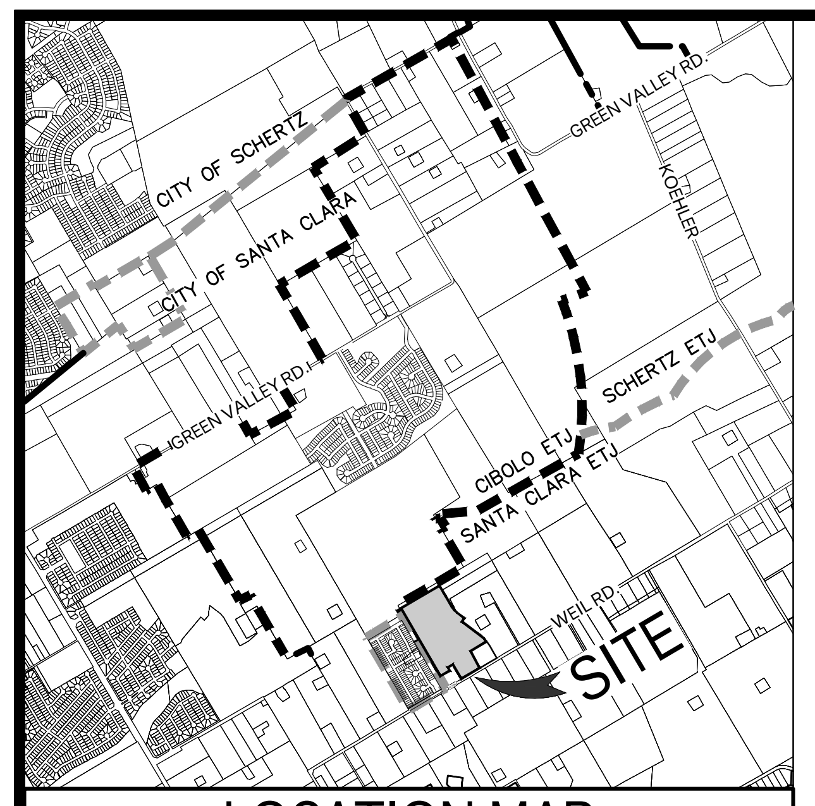
KYLE M. HUDEK
138753
K. Hudek
11/12/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C4.D2


CITY OF SCHERTZ
CITY OF SANTA CLARA
GREEN VALLEY RD.
SCHERTZ ETJ
CIBOLO ETJ
SANTA CLARA ETJ
SITE

LOCATION MAP

N.T.S.

KEYNOTES

① 20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

② 10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

③ AFTER RELEASED FOR SERVICE, CONTRACTOR TO TIE NEW 12" WATER MAIN INTO EXIST. 12" WATER MAIN. CUT AS REQUIRED. VALVE TO REMAIN CLOSED UNTIL AFTER DISINFECTION & ACCEPTANCE BY GVSUD.

CONTRACTOR TO REMOVE:
2" BLOW-OFF ASSEMBLY (PERM.)
12" M.J.X2" THR. D.I. ECCENTRIC REDUCER (PERM.)

CONTRACTOR TO INSTALL:
1 - 12 " M.J. X 2" THR. D.I. ECCENTRIC (TEMP.)
1 - 2" BLOW-OFF ASSEMBLY (TEMP.)
TO BE INSTALLED FOR TIE-IN AFTER NEW MAIN IS TESTED AND ACCEPTED.
1 - 12" 1/16 BEND
1 - 12" SOLID SLEEVE, M.J.

④ AFTER RELEASED FOR SERVICE, CONTRACTOR TO TIE NEW 8" WATER MAIN INTO EXISTING 12" WATER MAIN. CUT AS REQUIRED. VALVE TO REMAIN CLOSED UNTIL AFTER DISINFECTION & ACCEPTANCE BY GVSUD.

CONTRACTOR TO REMOVE:
12" CAP, M.J.

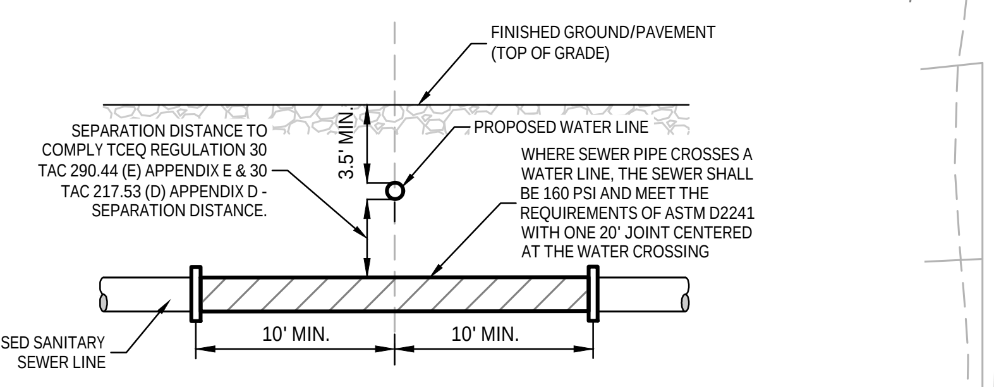
CONTRACTOR TO INSTALL:
1 - 8 " M.J. X 2" THR. D.I. ECCENTRIC (TEMP.)
1 - 2" BLOW-OFF ASSEMBLY (TEMP.)

TO BE INSTALLED FOR TIE-IN AFTER NEW MAIN IS TESTED AND ACCEPTED.
1 - 12" SOLID SLEEVE, M.J.
1 - 12"X8" ECCENTRIC REDUCER, M.J.

SCALE: 1"=50'
50 25 0 50

LEGEND

PROPOSED SANITARY SEWER MANHOLE	●
EXISTING SANITARY SEWER MANHOLE	●
PROPOSED SANITARY SEWER LATERAL	S
PROPOSED SANITARY SEWER MAIN	8"SS
EXISTING SANITARY SEWER MAIN	EX. 8" SS
PROPOSED WATER MAIN	8"W
EXISTING WATER MAIN	EX. 8" W
PROPOSED STANDARD FIRE HYDRANT	⧓
EXISTING STANDARD FIRE HYDRANT	⧓
PROPOSED STANDARD GATE VALVE	●
EXISTING STANDARD GATE VALVE	●
PROPOSED PERMANENT BLOWOFF	▶●
ELECTRIC, GAS, TELEPHONE, & CABLE T.V. EASEMENT	E.G.T.CA. ESM'T
BUILDING SETBACK LINE	B.S.L.
IRRIGATION SERVICE	IRR.


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.
3.5' 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.

Developer's Name LENNAR HOMES OF TEXAS LAND AND CONSTRUCTION, LTD
Developer's Address 100 NE LOOP 410, SUITE 1155
City SAN ANTONIO State TEXAS Zip 78216
Phone # (210) 403-6282 Fax # -
Total EDU's 103.5 Total Acreage 33.17
Total Linear Footage of Pipe 8" W - 3,688 L.F., 12" W - 874 L.F. Plat No. N/A
Meter Size 99 - 5/8" METER , 4.5 - 3/4" METER (IRR.)
Number of Lots 99 Job No. N/A

CAUTION!!!

THE CONTRACTOR SHALL BE AWARE THAT EXISTING UTILITIES ARE WITHIN THE SITE. 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.

NOTES:

1. LOTS WITH CONFLICTING TRANSFORMER / SECONDARY ENCLOSURE ELECTRIC SERVICE AND WATER METER LOCATION SHALL HAVE WATER METER PLACED 5' FROM PROPERTY LINE WHERE THE CONFLICT OCCURS.

2. DISINFECTION SHALL BE BY MACHINE CHLORINATION.

3. CONTRACTOR TO UTILIZE APPROVED WATER LINE STOPS AND/OR MUELLER INSERTION-VALVES TO MINIMIZE WATER OUTAGES AS REQUIRED BY GVSUD DURING CONSTRUCTION.

4. MOISTURE DENSITY COMPACTION TESTING FREQUENCY- WATER MAIN TRENCHES REQUIRED EVERY 300 L.F. FOR EACH VERTICAL FOOT OF COMPACTED BACKFILL. SERVICES RANDOMLY SELECTED AS REQUIRED BY GVSUD INSPECTOR.

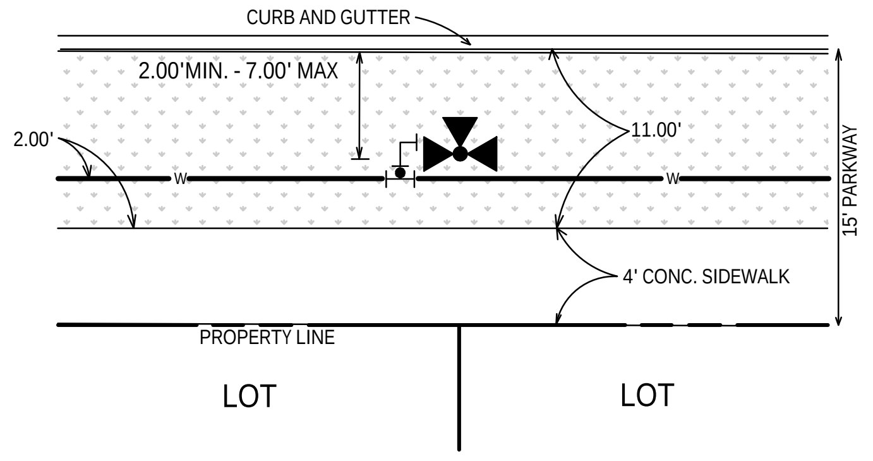
5. ALL TESTING AND TEST REPORTS SHALL BE COORDINATED WITH GVSUD INSPECTOR BY THE CONTRACTOR.

6. ALL DUCTILE IRON PIPE TO BE AMERICAN, ZINC COATED, AWWA/ANSI C-151

7. FIRE HYDRANTS SHALL BE MUELLER OR EJ TYPE AND SHALL BE 1' MINIMUM AND 7' MAXIMUM FROM THE BACK OF CURB.

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 EMPLOYEES 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.

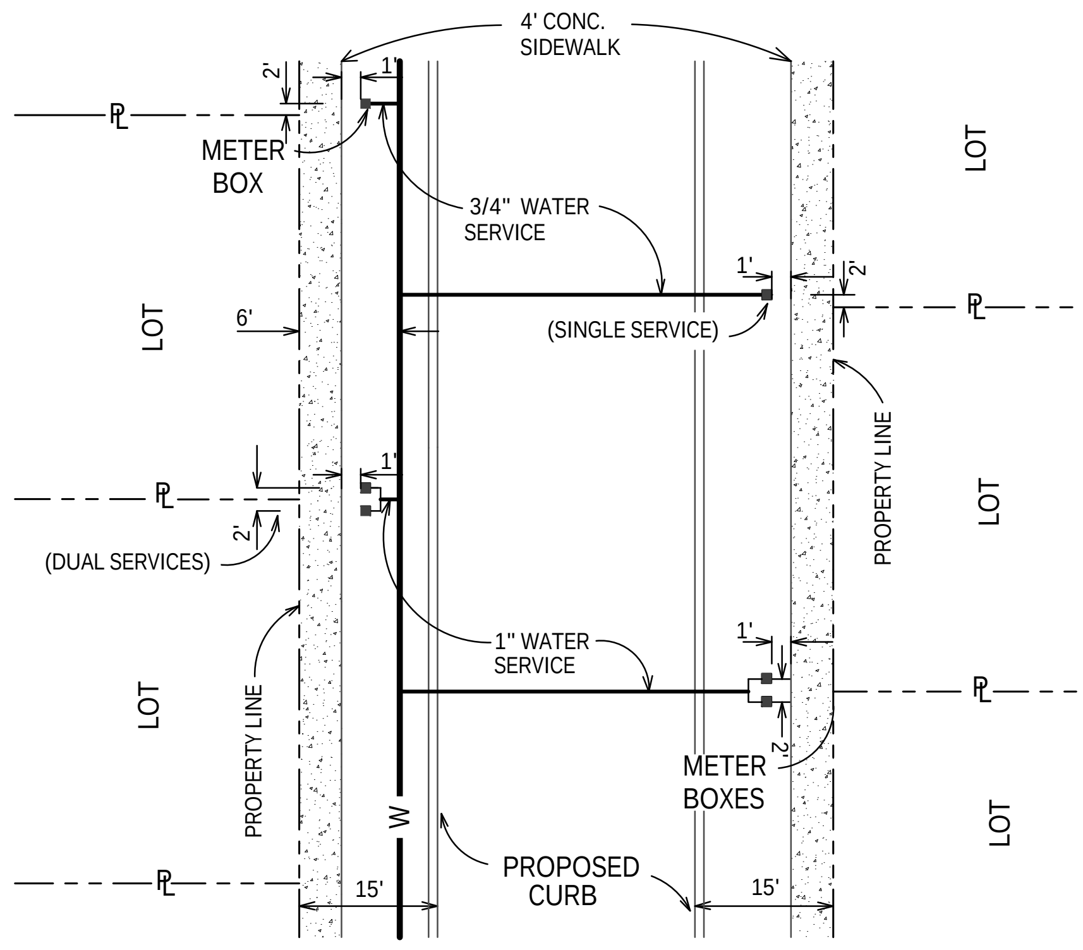

CURB AND GUTTER
2.00'MIN. - 7.00' MAX
2.00'
11.00'
15' PARKWAY
4" CONC. SIDEWALK
PROPERTY LINE
LOT
LOT

NOTE:

1. EXCLUSIVE OF THE TEE, PAYMENT FOR THE FIRE HYDRANT SHALL INCLUDE ALL FITTINGS, 6" D.I. PIPE AND 6" GATE VALVE & BOX.

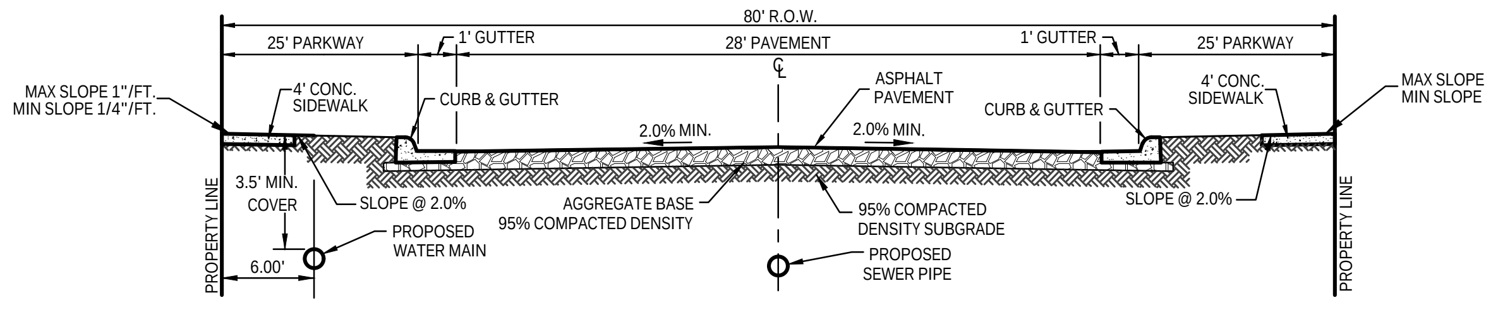
2. FIRE HYDRANT TO BE INSTALLED OUTSIDE OF THE LIMITS OF ALL PROPOSED SIDEWALKS.

LOCAL RESIDENTIAL FIRE HYDRANT DETAIL (4' SIDEWALK)


4' CONC. SIDEWALK
METER BOX
3/4" WATER SERVICE
(SINGLE SERVICE)
6'
1'
2'
(DUAL SERVICES)
1" WATER SERVICE
METER BOXES
PROPOSED CURB
PROPERTY LINE
LOT
W
15'
15'

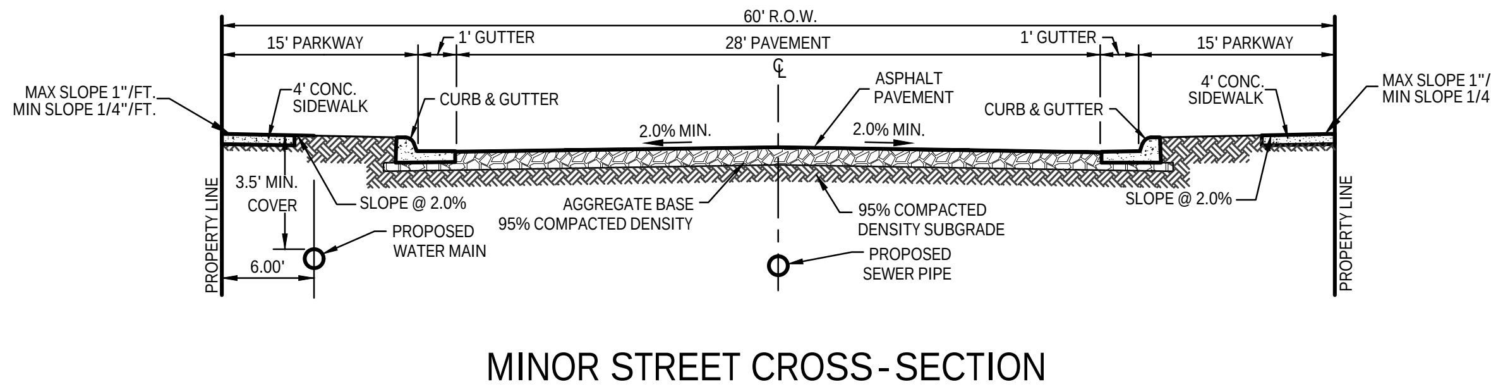
WATER METER BOX LOCATION (60' R.O.W.)

N.T.S.


80' R.O.W.
25' PARKWAY
1' GUTTER
28' PAVEMENT
28' PAVEMENT
1' GUTTER
25' PARKWAY
MAX SLOPE 1"/FT. MIN SLOPE 1/4"/FT.
4' CONC. SIDEWALK
CURB & GUTTER
ASPHALT PAVEMENT
2.0% MIN.
3.5' MIN. COVER
SLOPE @ 2.0%
AGGREGATE BASE 95% COMPACTED DENSITY
95% COMPACTED DENSITY SUBGRADE
PROPOSED SEWER PIPE
PROPOSED WATER MAIN
6.00'
PROPERTY LINE

COLLECTOR STREET CROSS-SECTION

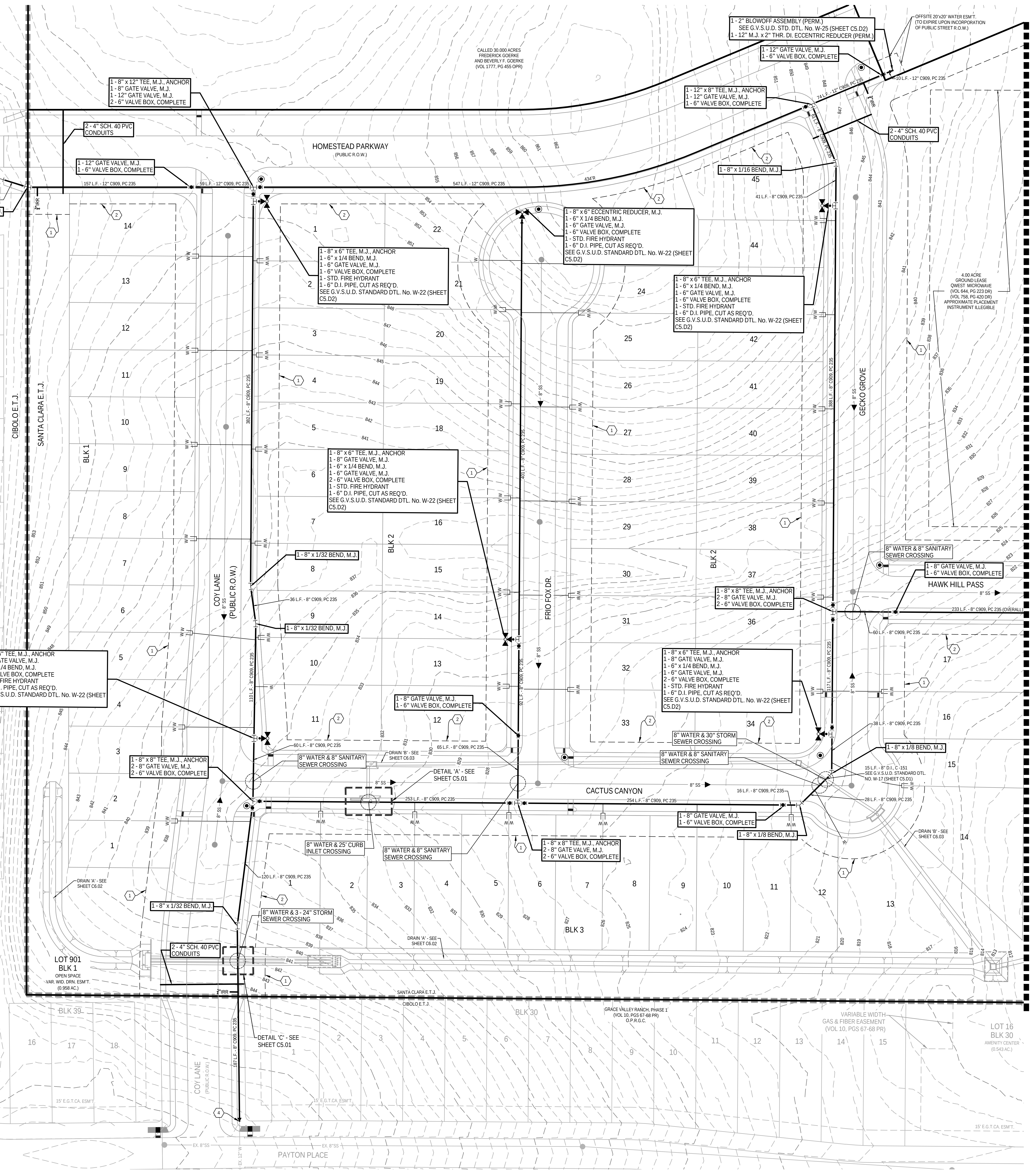
N.T.S.


60' R.O.W.
15' PARKWAY
1' GUTTER
28' PAVEMENT
1' GUTTER
15' PARKWAY
MAX SLOPE 1"/FT. MIN SLOPE 1/4"/FT.
4' CONC. SIDEWALK
CURB & GUTTER
ASPHALT PAVEMENT
2.0% MIN.
3.5' MIN. COVER
SLOPE @ 2.0%
AGGREGATE BASE 95% COMPACTED DENSITY
95% COMPACTED DENSITY SUBGRADE
PROPOSED SEWER PIPE
PROPOSED WATER MAIN
6.00'
PROPERTY LINE

MINOR STREET CROSS-SECTION

N.T.S.

GOERKE PHASE 1		
Water Quantities		
TRENCH EXCAVATION PROTECTION	4,562	L.F.
8" D.I. C-151 PIPE	15	L.F.
8" PVC C-909 PIPE	3,673	L.F.
12" PVC C-909 PIPE	874	L.F.
FIRE HYDRANT ASSEMBLY W/ VALVE	8	EA.
8" GATE VALVE MJ W/ BOX, COMPLETE	14	EA.
12" GATE VALVE MJ W/ BOX, COMPLETE	4	EA.
METER BOXES	102	EA.
24" STEEL CASING	82	L.F.
12" SOLID SLEEVE, M.J.	2	EA.
2" PERM. BLOW-OFF	2	EA.
2" TEMPORARY BLOW-OFF	2	EA.
8" X 6" ECCENTRIC REDUCER, M.J.	1	EA.
8" X 2" THR D.I. ECCENTRIC REDUCER, M.J.	2	EA.
12" X 2" THR D.I. ECCENTRIC REDUCER, M.J.	2	EA.
8"x6" TEE, M.J.	7	EA.
8"x8" TEE, M.J.	3	EA.
8"x12" TEE, M.J.	2	EA.
8" - 1/8 BEND, M.J	4	EA.
8" - 1/16 BEND, M.J.	1	EA.
8" - 1/32 BEND, M.J.	5	EA.
12" - 1/16 BEND, M.J.	1	EA.
12" - 1/32 BEND, M.J.	1	EA.
1" LONG WATER SERVICE (DUAL)	19	EA.
1" SHORT WATER SERVICE (DUAL)	28	EA.
3/4" LONG WATER SERVICE (SINGLE)	3	EA.
3/4" SHORT WATER SERVICE (SINGLE)	2	EA.
3/4" IRRIGATION SERVICE	3	EA.
DISINFECTION AND HYDROSTATIC TESTING	1	EA.


HOMESTEAD PARKWAY (PUBLIC R.O.W.)
COY LANE (PUBLIC R.O.W.)
FRIO FOX DR.
GECKO GROVE
HAWK HILL PASS
CACTUS CANYON
PAYTON PLACE
CIBOLO E.T.J.
SANTA CLARA E.T.J.
BLK 1
BLK 2
BLK 3
BLK 38
BLK 39
BLK 30
CALLED 30.000 ACRES FREDERICK GOERKE AND BEVERLY F. GOERKE (VOL 1777, PG 455 OPR)
GRACE VALLEY RANCH, PHASE 2 (VOL. 10 PGS. 291-292) O.P.R.G.C.
GRACE VALLEY RANCH, PHASE 1 (VOL 10, PGS 67-68 PR) O.P.R.G.C.
4.00 ACRE GROUND LEASE QWEST MICROWAVE (VOL 644, PG 223 DR) (VOL 758, PG 420 DR) APPROXIMATE PLACEMENT INSTRUMENT ILLEGIBLE
OFFSITE 20'x20' WATER ESM'T. (TO EXPIRE UPON INCORPORATION OF PUBLIC STREET R.O.W.)
VARIABLE WIDTH GAS & FIBER EASEMENT (VOL 10, PGS 67-68 PR)
LOT 901 BLK 39 OPEN SPACE DRN. ESM'T. (1.172 AC.)
LOT 901 BLK 1 OPEN SPACE VAR. WID. DRN. ESM'T. (0.958 AC.)
LOT 16 BLK 30 AMENITY CENTER (0.543 AC.)
1 - 8" x 12" TEE, M.J., ANCHOR
1 - 8" GATE VALVE, M.J.
1 - 12" GATE VALVE, M.J.
2 - 6" VALVE BOX, COMPLETE
2 - 4" SCH. 40 PVC CONDUITS
1 - 12" GATE VALVE, M.J.
1 - 6" VALVE BOX, COMPLETE
1 - 12" x 1/32 BEND, M.J.
EX. 12" W
27 L.F. - 12" C909, PC 235
157 L.F. - 12" C909, PC 235
59 L.F. - 12" C909, PC 235
547 L.F. - 12" C909, PC 235
434'R
1 - 2" BLOWOFF ASSEMBLY (PERM.) SEE G.V.S.U.D. STD. DTL. No. W-25 (SHEET C5.D2)
1 - 12" M.J. x 2" THR. DI. ECCENTRIC REDUCER (PERM.)
1 - 12" GATE VALVE, M.J.
1 - 6" VALVE BOX, COMPLETE
10 L.F. - 12" C909, PC 235
1 - 12" x 8" TEE, M.J., ANCHOR
1 - 12" GATE VALVE, M.J.
1 - 6" VALVE BOX, COMPLETE
74 L.F. - 12" C909, PC 235
61 L.F. - 8" C909, PC 235
1 - 8" x 1/16 BEND, M.J.
41 L.F. - 8" C909, PC 235
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 G.V.S.U.D. STANDARD DTL. No. W-22 (SHEET C5.D2)
1 - 8" x 6" ECCENTRIC REDUCER, M.J.
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 G.V.S.U.D. STANDARD DTL. No. W-22 (SHEET C5.D2)
1 - 8" x 6" TEE, M.J., ANCHOR
1 - 8" GATE VALVE, M.J.
1 - 6" x 1/4 BEND, M.J.
1 - 6" GATE VALVE, M.J.
2 - 6" VALVE BOX, COMPLETE
1 - STD. FIRE HYDRANT
1 - 6" D.I. PIPE, CUT AS REQ'D.
SEE G.V.S.U.D. STANDARD DTL. No. W-22 (SHEET C5.D2)
382 L.F. - 8" C909, PC 235
401 L.F. - 8" C909, PC 235
388 L.F. - 8" C909, PC 235
1 - 8" x 1/32 BEND, M.J.
36 L.F. - 8" C909, PC 235
1 - 8" x 1/32 BEND, M.J.
110 L.F. - 8" C909, PC 235
1 - 8" x 6" TEE, M.J., ANCHOR
1 - 6" GATE VALVE, M.J.
1 - 6" x 1/4 BEND, M.J.
1 - 6" VALVE BOX, COMPLETE
1 - STD. FIRE HYDRANT
1 - 6" D.I. PIPE, CUT AS REQ'D.
SEE G.V.S.U.D. STANDARD DTL. No. W-22 (SHEET C5.D2)
1 - 8" GATE VALVE, M.J.
1 - 6" VALVE BOX, COMPLETE
92 L.F. - 8" C909, PC 235
60 L.F. - 8" C909, PC 235
65 L.F. - 8" C909, PC 235
8" WATER & 8" SANITARY SEWER CROSSING
DRAIN 'B' - SEE SHEET C6.03
1 - 8" x 8" TEE, M.J., ANCHOR
2 - 8" GATE VALVE, M.J.
2 - 6" VALVE BOX, COMPLETE
DETAIL 'A' - SEE SHEET C5.01
8" SS
253 L.F. - 8" C909, PC 235
8" WATER & 25' CURB INLET CROSSING
8" WATER & 8" SANITARY SEWER CROSSING
1 - 8" x 8" TEE, M.J., ANCHOR
2 - 8" GATE VALVE, M.J.
2 - 6" VALVE BOX, COMPLETE
120 L.F. - 8" C909, PC 235
DRAIN 'A' - SEE SHEET C6.02
1 - 8" x 1/32 BEND, M.J.
8" WATER & 3 - 24" STORM SEWER CROSSING
2 - 4" SCH. 40 PVC CONDUITS
3/4"IRR
DETAIL 'C' - SEE SHEET C5.01
8" WATER & 8" SANITARY SEWER CROSSING
1 - 8" GATE VALVE, M.J.
1 - 6" VALVE BOX, COMPLETE
1 - 8" x 8" TEE, M.J., ANCHOR
2 - 8" GATE VALVE, M.J.
2 - 6" VALVE BOX, COMPLETE
233 L.F. - 8" C909, PC 235 (OVERALL)
60 L.F. - 8" C909, PC 235
117 L.F. - 8" C909, PC 235
38 L.F. - 8" C909, PC 235
1 - 8" x 1/8 BEND, M.J.
8" WATER & 30" STORM SEWER CROSSING
8" WATER & 8" SANITARY SEWER CROSSING
15 L.F. - 8" D.I., C-151 SEE G.V.S.U.D. STANDARD DTL. NO. W-17 (SHEET C5.D1)
16 L.F. - 8" C909, PC 235
254 L.F. - 8" C909, PC 235
28 L.F. - 8" C909, PC 235
1 - 8" GATE VALVE, M.J.
1 - 6" VALVE BOX, COMPLETE
1 - 8" x 1/8 BEND, M.J.
DRAIN 'B' - SEE SHEET C6.03
SANTA CLARA E.T.J.
CIBOLO E.T.J.
MATCHLINE - SEE SHEET C5.01

CUDEENGINEERS.COM

CUDE ENGINEERS EST. 1980

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GOERKE SUBDIVISION PHASE 1

WATER DISTRIBUTION PLAN

DATE
03/04/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
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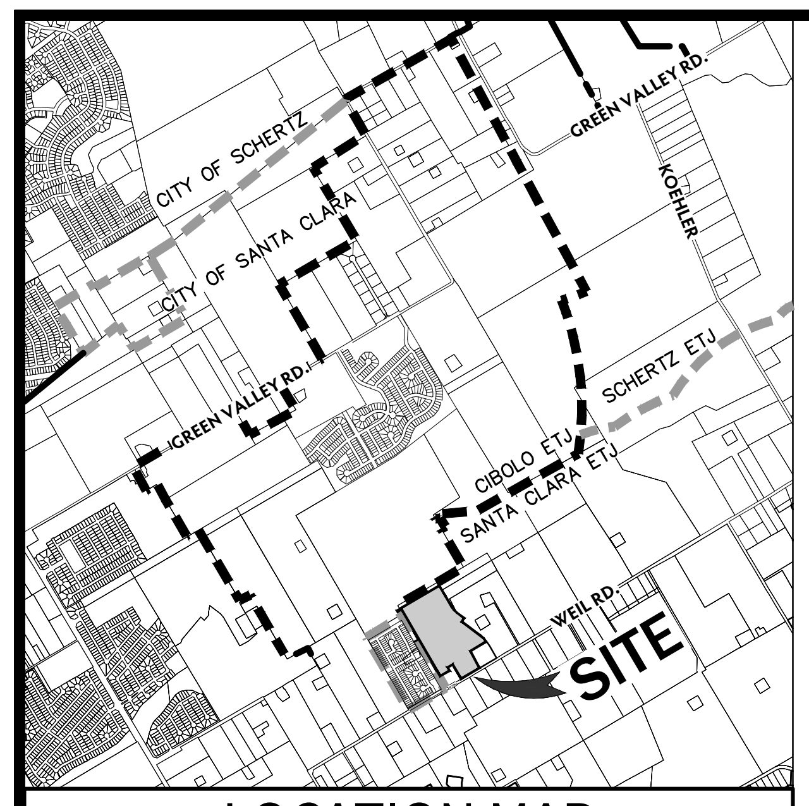
KYLE M. HUDEK
138753
03/04/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C5.00

P:\03346\101\12-DWG\4-Plans\C5.00_C5.01 WDMP.dwg 2025/03/04 8:18am rbarrera


CITY OF SCHERTZ
CITY OF SANTA CLARA
GREEN VALLEY RD.
KOEHLER
SCHERTZ ETJ
CIBOLO ETJ
SANTA CLARA ETJ
WEIL RD.
SITE

LOCATION MAP
N.T.S.

KEYNOTES

① 20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

② 10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

③ AFTER RELEASED FOR SERVICE, CONTRACTOR TO TIE NEW 12" WATER MAIN INTO EXIST. 12" WATER MAIN. CUT AS REQUIRED. VALVE TO REMAIN CLOSED UNTIL AFTER DISINFECTION & ACCEPTANCE BY GVSUD.

CONTRACTOR TO REMOVE:
- 2" BLOW-OFF ASSEMBLY (PERM.)
- 12" M.J.X2" THR. D.I. ECCENTRIC REDUCER (PERM.)

CONTRACTOR TO INSTALL:
- 1 - 12 " M.J. X 2" THR. D.I. ECCENTRIC (TEMP.)
- 1 - 2" BLOW-OFF ASSEMBLY (TEMP.)

TO BE INSTALLED FOR TIE-IN AFTER NEW MAIN IS TESTED AND ACCEPTED.
- 1 - 12" 1/16 BEND
- 1 - 12" SOLID SLEEVE, M.J.

④ AFTER RELEASED FOR SERVICE, CONTRACTOR TO TIE NEW 8" WATER MAIN INTO EXISTING 12" WATER MAIN. CUT AS REQUIRED. VALVE TO REMAIN CLOSED UNTIL AFTER DISINFECTION & ACCEPTANCE BY GVSUD.

CONTRACTOR TO REMOVE:
- 12" CAP, M.J.

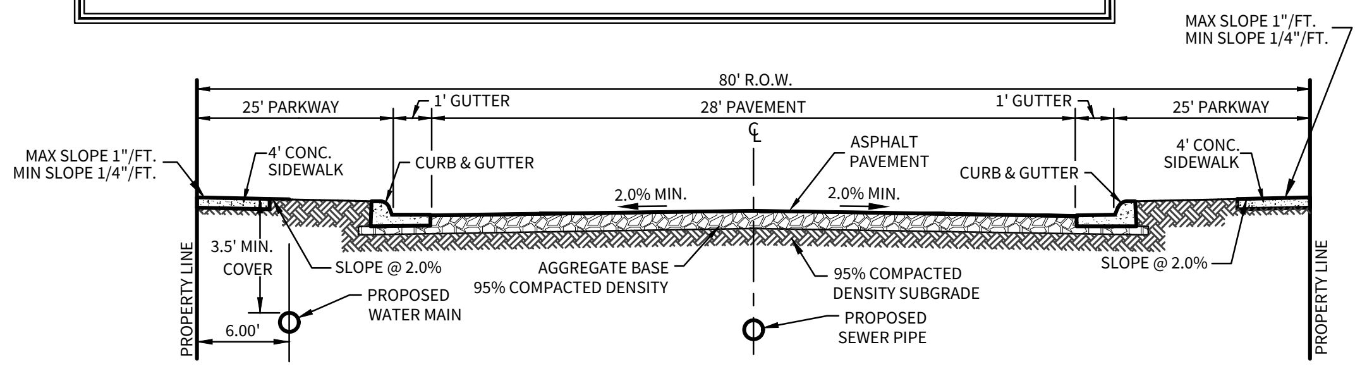
CONTRACTOR TO INSTALL:
- 1 - 8 " M.J. X 2" THR. D.I. ECCENTRIC (TEMP.)
- 1 - 2" BLOW-OFF ASSEMBLY (TEMP.)

TO BE INSTALLED FOR TIE-IN AFTER NEW MAIN IS TESTED AND ACCEPTED.
- 1 - 12" SOLID SLEEVE, M.J.
- 1 - 12"X8" ECCENTRIC REDUCER, M.J.

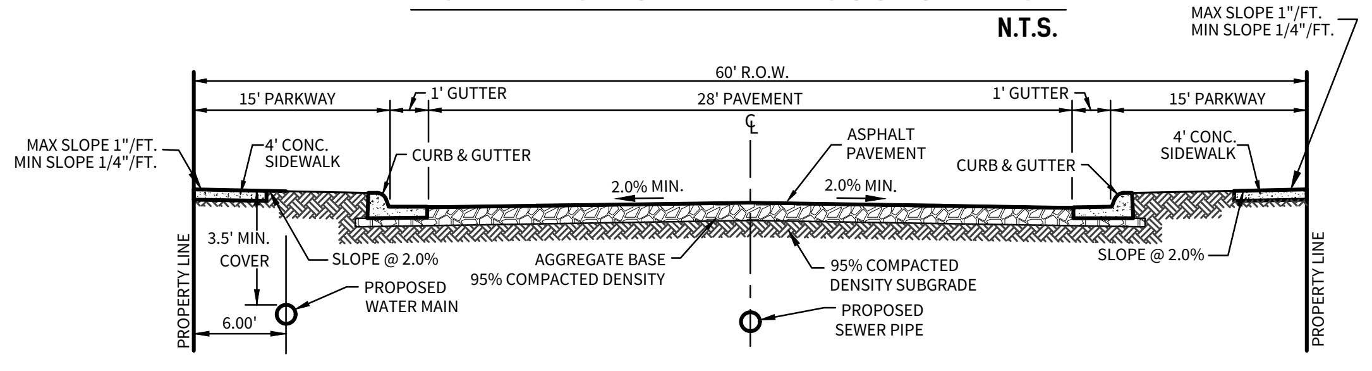
LEGEND

PROPOSED SANITARY SEWER MANHOLE	
EXISTING SANITARY SEWER MANHOLE	
PROPOSED SANITARY SEWER LATERAL	S
PROPOSED SANITARY SEWER MAIN	8"SS
EXISTING SANITARY SEWER MAIN	EX. 8" SS
PROPOSED WATER MAIN	8"W
EXISTING WATER MAIN	EX. 8" W
PROPOSED STANDARD FIRE HYDRANT	
EXISTING STANDARD FIRE HYDRANT	
PROPOSED STANDARD GATE VALVE	
EXISTING STANDARD GATE VALVE	
PROPOSED PERMANENT BLOWOFF	
ELECTRIC, GAS, TELEPHONE, & CABLE T.V. EASEMENT	E.G.T.CA. ESM'T
BUILDING SETBACK LINE	B.S.L.
IRRIGATION SERVICE	IRR.

Developer's Name	LENNAR HOMES OF TEXAS LAND AND CONSTRUCTION, LTD
Developer's Address	100 NE LOOP 410, SUITE 1155
City	SAN ANTONIO
State	TEXAS
Zip	78216
Phone #	(210) 403-6282
Fax #	-
Total EDU's	103.5
Total Acreage	33.17
Total Linear Footage of Pipe	8" W - 3,688 L.F., 12" W - 874 L.F.
Plat No.	N/A
Meter Size	99 - 5/8" METER , 4.5 - 3/4" METER (IRR.)
Number of Lots	99
Job No.	N/A


80' R.O.W.
25' PARKWAY
1' GUTTER
28' PAVEMENT
1' GUTTER
25' PARKWAY
MAX SLOPE 1"/FT.
MIN SLOPE 1/4"/FT.
4' CONC. SIDEWALK
CURB & GUTTER
ASPHALT PAVEMENT
2.0% MIN.
2.0% MIN.
3.5' MIN. COVER
SLOPE @ 2.0%
AGGREGATE BASE 95% COMPACTED DENSITY
95% COMPACTED DENSITY SUBGRADE
PROPOSED WATER MAIN
PROPOSED SEWER PIPE
6.00'
PROPERTY LINE

COLLECTOR STREET CROSS-SECTION
N.T.S.


60' R.O.W.
15' PARKWAY
1' GUTTER
28' PAVEMENT
1' GUTTER
15' PARKWAY
MAX SLOPE 1"/FT.
MIN SLOPE 1/4"/FT.
4' CONC. SIDEWALK
CURB & GUTTER
ASPHALT PAVEMENT
2.0% MIN.
3.5' MIN. COVER
SLOPE @ 2.0%
AGGREGATE BASE 95% COMPACTED DENSITY
95% COMPACTED DENSITY SUBGRADE
PROPOSED WATER MAIN
PROPOSED SEWER PIPE
6.00'
PROPERTY LINE

MINOR STREET CROSS-SECTION
N.T.S.

NOTES:

1. LOTS WITH CONFLICTING TRANSFORMER / SECONDARY ENCLOSURE ELECTRIC SERVICE AND WATER METER LOCATION SHALL HAVE WATER METER PLACED 5' FROM PROPERTY LINE WHERE THE CONFLICT OCCURS.

2. DISINFECTION SHALL BE BY MACHINE CHLORINATION.

3. CONTRACTOR TO UTILIZE APPROVED WATER LINE STOPS AND/OR MUELLER INSERTION-VALVES TO MINIMIZE WATER OUTAGES AS REQUIRED BY GVSUD DURING CONSTRUCTION.

4. MOISTURE DENSITY COMPACTION TESTING FREQUENCY- WATER MAIN TRENCHES REQUIRED EVERY 300 L.F. FOR EACH VERTICAL FOOT OF COMPACTED BACKFILL. SERVICES RANDOMLY SELECTED AS REQUIRED BY GVSUD INSPECTOR.

5. ALL TESTING AND TEST REPORTS SHALL BE COORDINATED WITH GVSUD INSPECTOR BY THE CONTRACTOR.

6. ALL DUCTILE IRON PIPE TO BE AMERICAN, ZINC COATED, AWWA/ANSI C-151

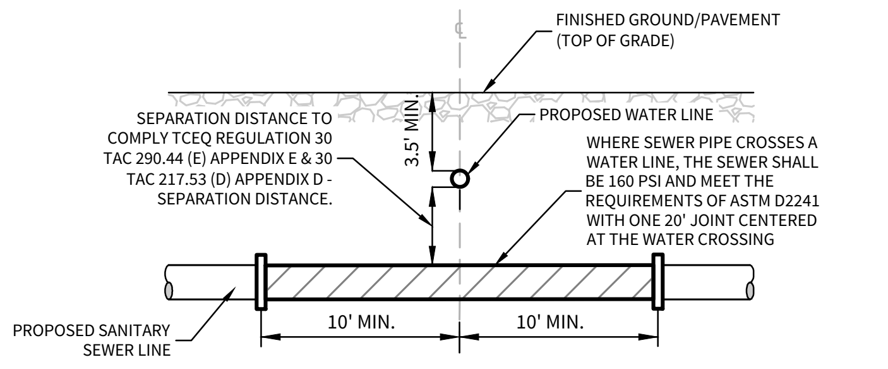
7. FIRE HYDRANTS SHALL BE MUELLER OR EJ TYPE AND SHALL BE 1' MINIMUM AND 7' MAXIMUM FROM THE BACK OF CURB.

TRENCH EXCAVATION SAFETY PROTECTION

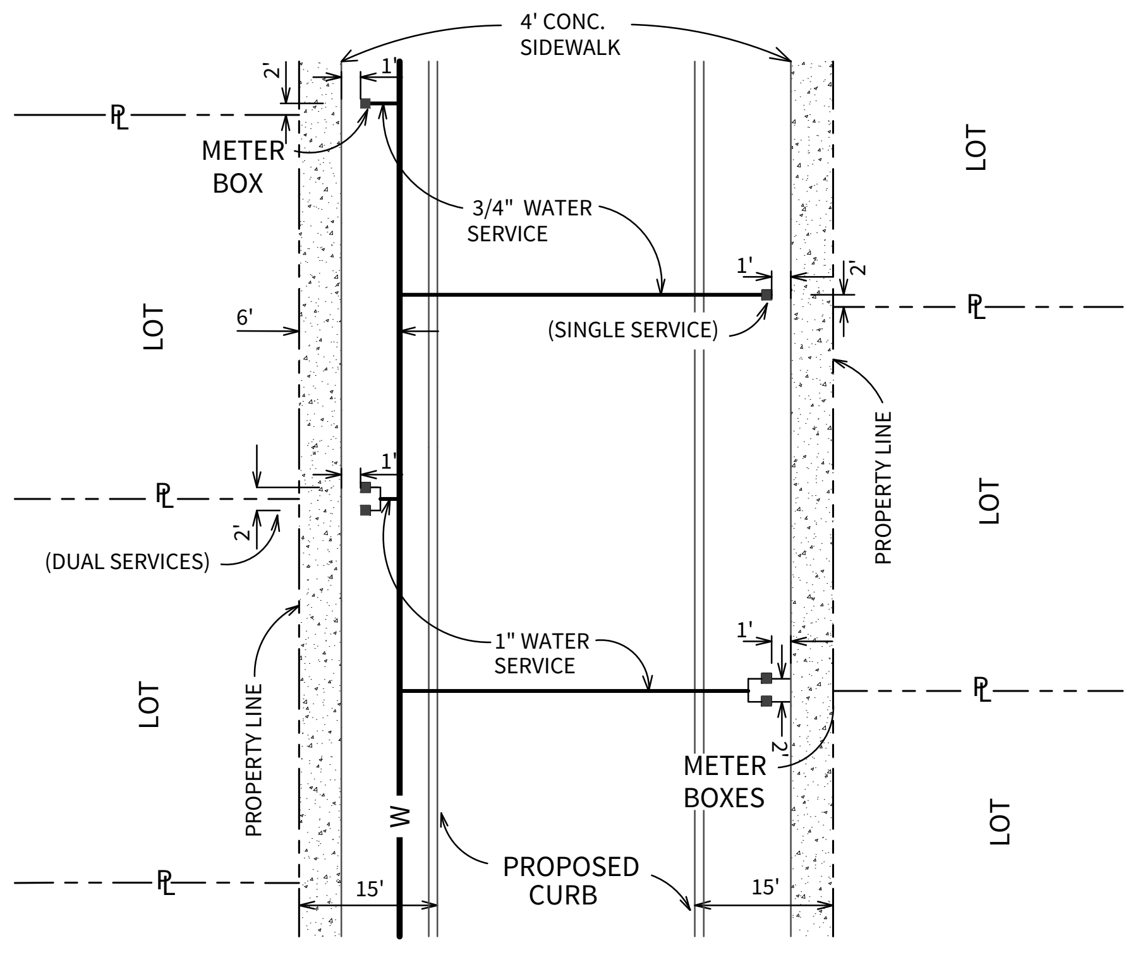
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S 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 EMPLOYEES OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

CAUTION!!!

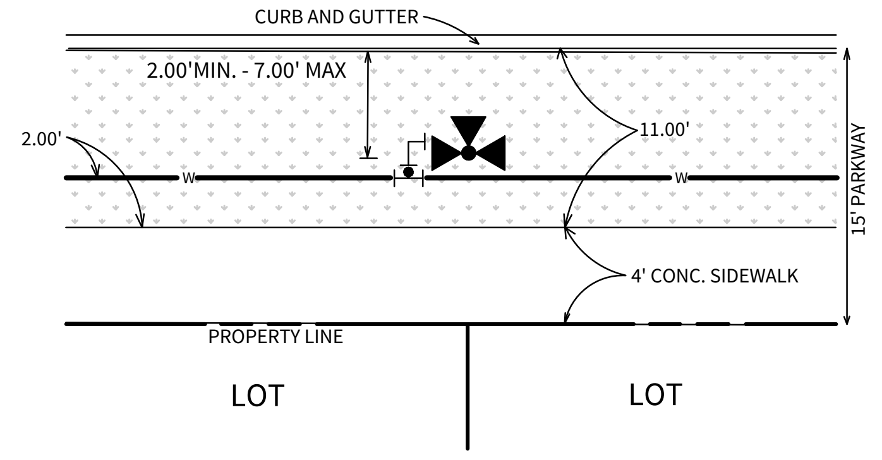
THE CONTRACTOR SHALL BE AWARE THAT EXISTING UTILITIES ARE WITHIN THE SITE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE THESE UTILITIES LOCATED PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN THIS AREA. ANY DAMAGE DONE TO THESE EXISTING FACILITIES WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR.


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.
3.5' 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.


4' CONC. SIDEWALK
METER BOX
3/4" WATER SERVICE
(SINGLE SERVICE)
(DUAL SERVICES)
1" WATER SERVICE
METER BOXES
PROPOSED CURB
PROPERTY LINE
LOT
6'
2'
1'
15'
W

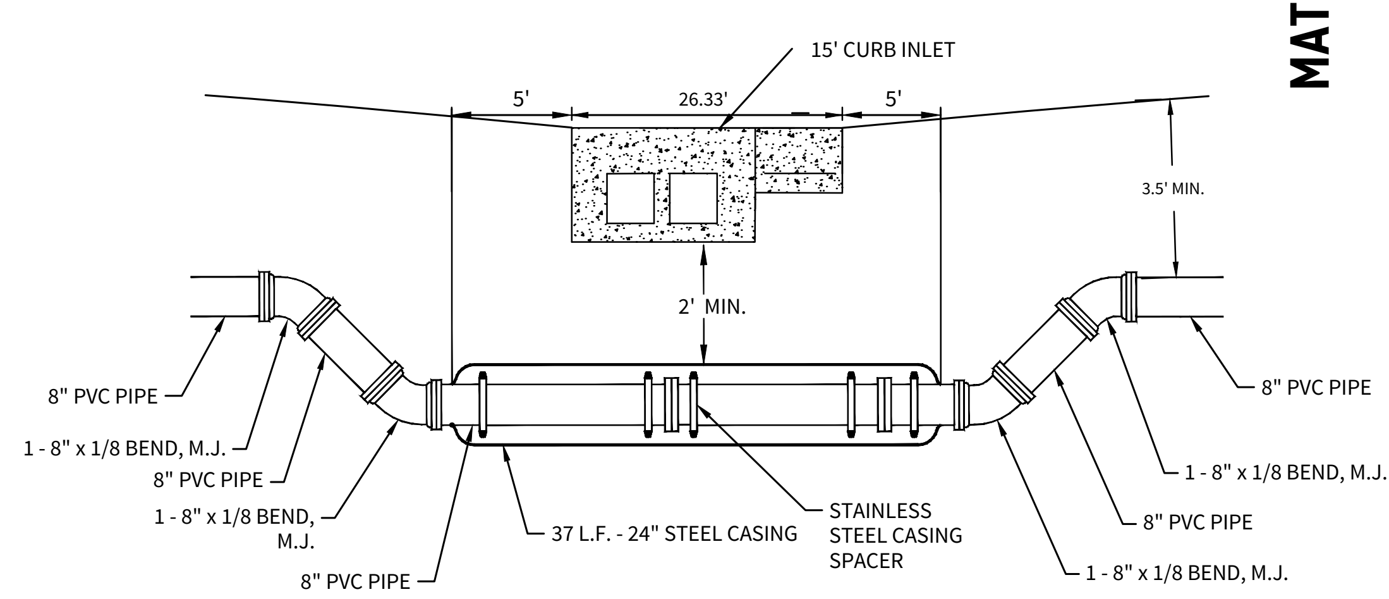
WATER METER BOX LOCATION (60' R.O.W.)
N.T.S.


CURB AND GUTTER
2.00'MIN. - 7.00' MAX
2.00'
11.00'
15' PARKWAY
4' CONC. SIDEWALK
PROPERTY LINE
LOT
LOT

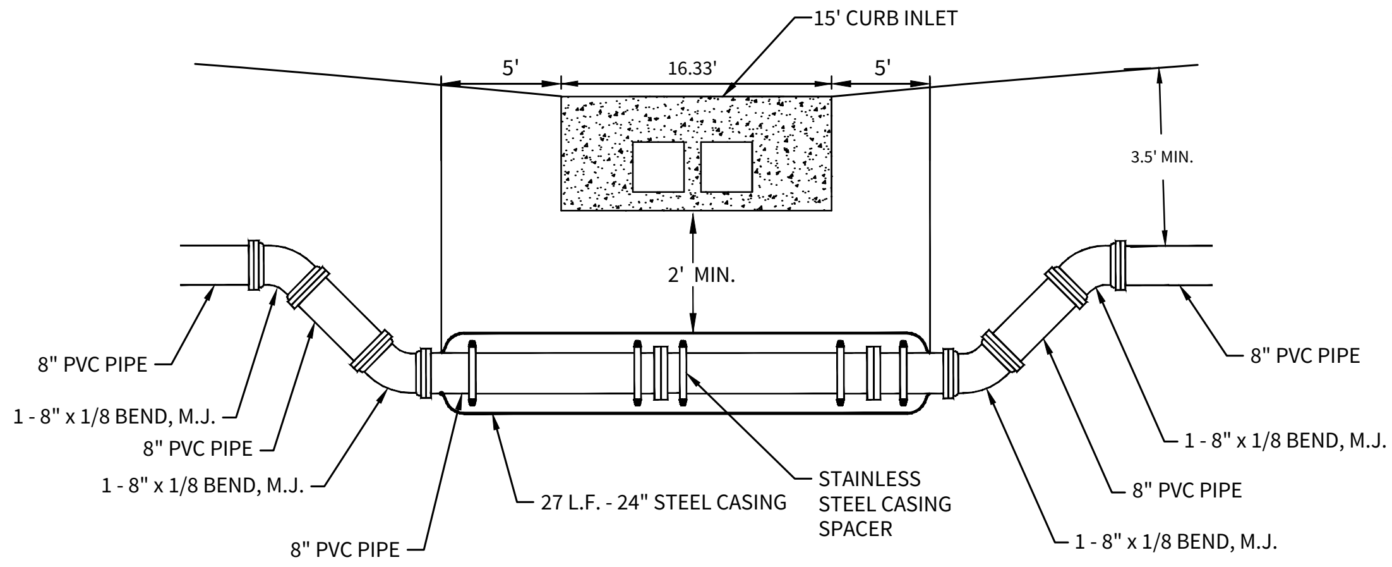
NOTE:

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.

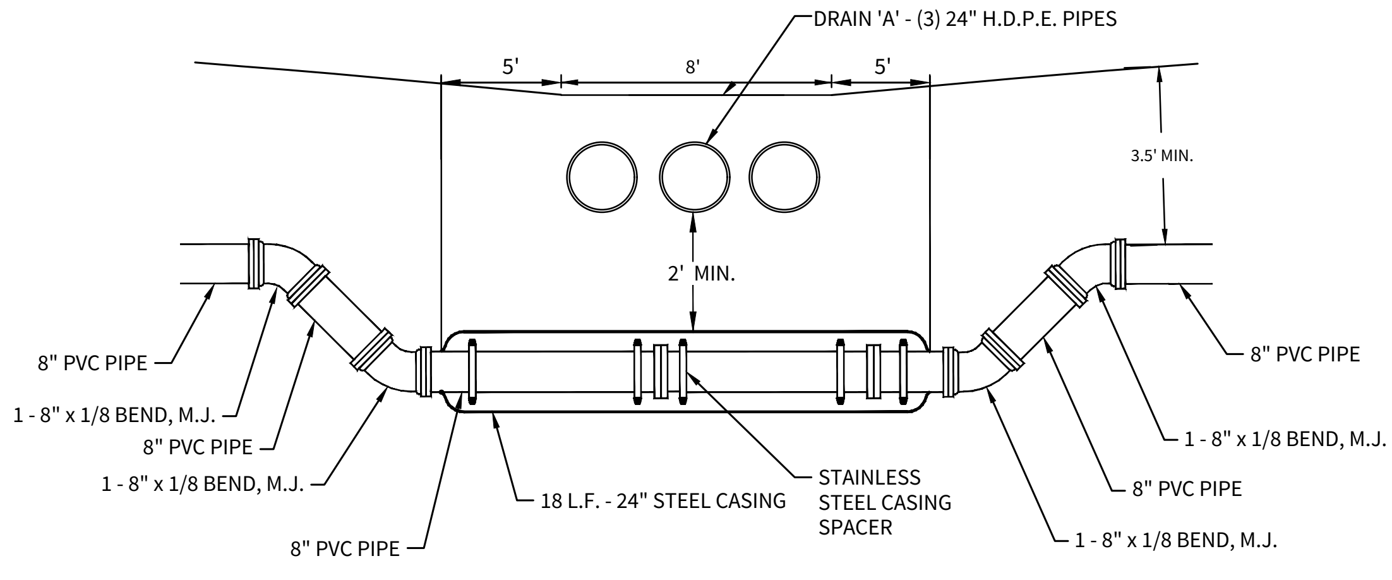
LOCAL RESIDENTIAL FIRE HYDRANT DETAIL (4' SIDEWALK)


15' CURB INLET
5'
26.33'
5'
3.5' MIN.
2' MIN.
8" PVC PIPE
1 - 8" x 1/8 BEND, M.J.
37 L.F. - 24" STEEL CASING
STAINLESS STEEL CASING SPACER

CURB INLET / WATER CROSSING - DETAIL "A"
N.T.S.

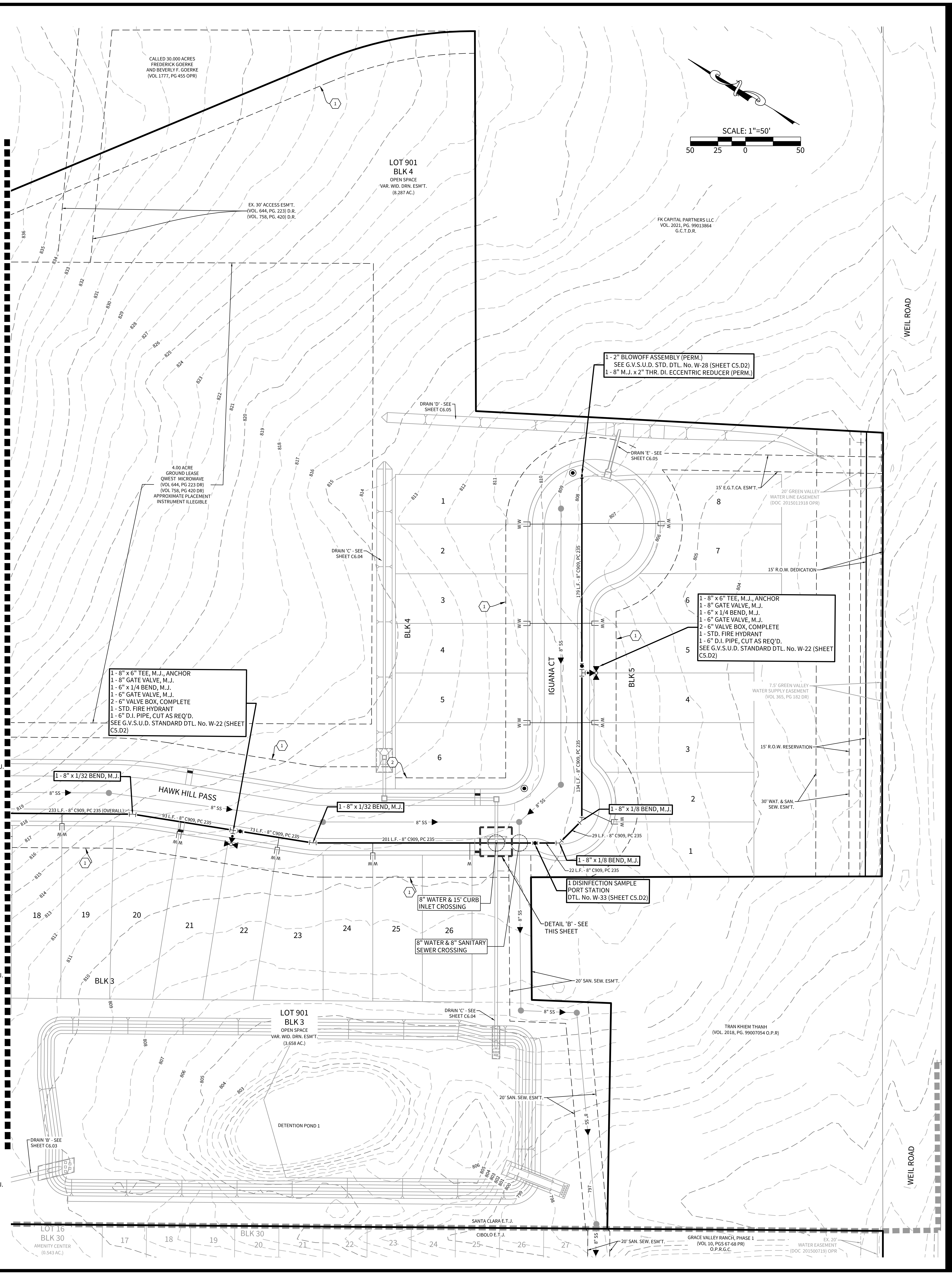

15' CURB INLET
5'
16.33'
5'
3.5' MIN.
2' MIN.
8" PVC PIPE
1 - 8" x 1/8 BEND, M.J.
27 L.F. - 24" STEEL CASING
STAINLESS STEEL CASING SPACER

CURB INLET / WATER CROSSING - DETAIL "B"
N.T.S.


DRAIN 'A' - (3) 24" H.D.P.E. PIPES
5'
8'
5'
3.5' MIN.
2' MIN.
8" PVC PIPE
1 - 8" x 1/8 BEND, M.J.
18 L.F. - 24" STEEL CASING
STAINLESS STEEL CASING SPACER

STORM SEWER / WATER CROSSING - DETAIL "C"
N.T.S.

MATCHLINE - SEE SHEET C5.00


SCALE: 1"=50'
50 25 0 50
CALLED 30.000 ACRES FREDERICK GOERKE AND BEVERLY F. GOERKE (VOL 1777, PG 455 OPR)
LOT 901 BLK 4 OPEN SPACE VAR. WID. DRN. ESM'T. (8.287 AC.)
EX. 30' ACCESS ESM'T. (VOL. 644, PG. 223) D.R. (VOL. 758, PG. 420) D.R.
FK CAPITAL PARTNERS LLC VOL. 2021, PG. 99013864 G.C.T.D.R.
4.00 ACRE GROUND LEASE QWEST MICROWAVE (VOL 644, PG 223 DR) (VOL 758, PG 420 DR) APPROXIMATE PLACEMENT INSTRUMENT ILLEGIBLE
1 - 2" BLOWOFF ASSEMBLY (PERM.) SEE G.V.S.U.D. STD. DTL. No. W-28 (SHEET C5.D2)
1 - 8" M.J. x 2" THR. DI. ECCENTRIC REDUCER (PERM.)
DRAIN 'D' - SEE SHEET C6.05
DRAIN 'E' - SEE SHEET C6.05
15' E.G.T.CA. ESM'T.
20' GREEN VALLEY WATER LINE EASEMENT (DOC 2015011918 OPR)
15' R.O.W. DEDICATION
DRAIN 'C' - SEE SHEET C6.04
1 - 8" x 6" TEE, M.J., ANCHOR
1 - 8" GATE VALVE, M.J.
1 - 6" x 1/4 BEND, M.J.
1 - 6" GATE VALVE, M.J.
2 - 6" VALVE BOX, COMPLETE
1 - STD. FIRE HYDRANT
1 - 6" D.I. PIPE, CUT AS REQ'D.
SEE G.V.S.U.D. STANDARD DTL. No. W-22 (SHEET C5.D2)
7.5' GREEN VALLEY WATER SUPPLY EASEMENT (VOL 365, PG 182 DR)
15' R.O.W. RESERVATION
30' WAT. & SAN. SEW. ESM'T.
IGUANA CT
BLK 4
BLK 5
HAWK HILL PASS
179 L.F. - 8" C909, PC 235
134 L.F. - 8" C909, PC 235
233 L.F. - 8" C909, PC 235 (OVERALL)
93 L.F. - 8" C909, PC 235
73 L.F. - 8" C909, PC 235
201 L.F. - 8" C909, PC 235
29 L.F. - 8" C909, PC 235
22 L.F. - 8" C909, PC 235
1 - 8" x 1/32 BEND, M.J.
1 - 8" x 1/32 BEND, M.J.
1 - 8" x 1/8 BEND, M.J.
1 - 8" x 1/8 BEND, M.J.
1 DISINFECTION SAMPLE PORT STATION DTL. No. W-33 (SHEET C5.D2)
8" WATER & 15' CURB INLET CROSSING
DETAIL 'B' - SEE THIS SHEET
8" WATER & 8" SANITARY SEWER CROSSING
8" SS
20' SAN. SEW. ESM'T.
BLK 3
LOT 901 BLK 3 OPEN SPACE VAR. WID. DRN. ESM'T. (3.658 AC.)
DETENTION POND 1
DRAIN 'B' - SEE SHEET C6.03
TRAN KHIEM THANH (VOL. 2018, PG. 99007054 O.P.R)
SANTA CLARA E.T.J.
CIBOLO E.T.J.
GRACE VALLEY RANCH, PHASE 1 (VOL 10, PGS 67-68 PR) O.P.R.G.C.
EX. 20' WATER EASEMENT (DOC. 201500[illegible] OPR)
LOT 16 BLK 30 AMENITY CENTER (0.543 AC.)
BLK 30
WEIL ROAD
WEIL ROAD

CUDEENGINEERS.COM

EST. 1980
CUDE
ENGINEERS

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

GOERKE SUBDIVISION PHASE 1
WATER DISTRIBUTION PLAN

DATE	04/07/2025
PROJECT NO.	03346.101
DRAWN BY	R.B./M.A.S.
CHECKED BY	K.M.H.

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

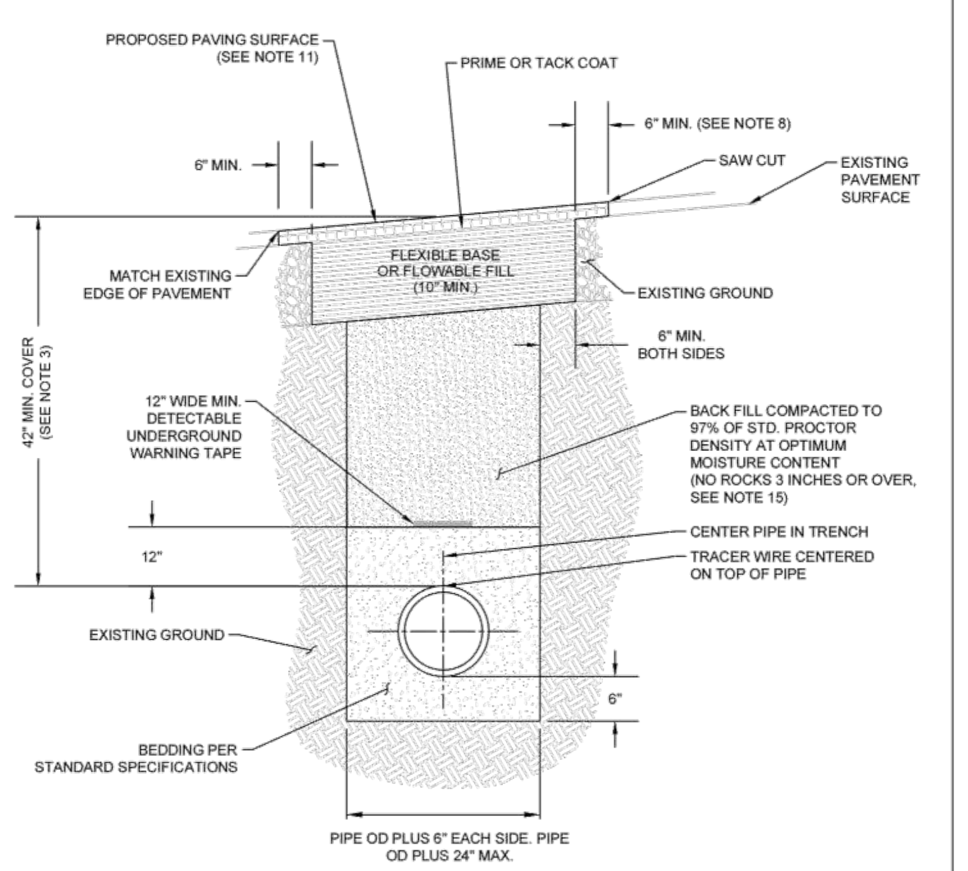
KYLE M. HUDEK
138753
04/08/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C5.01

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.

ish_8488\C5.00_C5.01 WDMP.dwg 2025/04/07 11:43am rbarrera

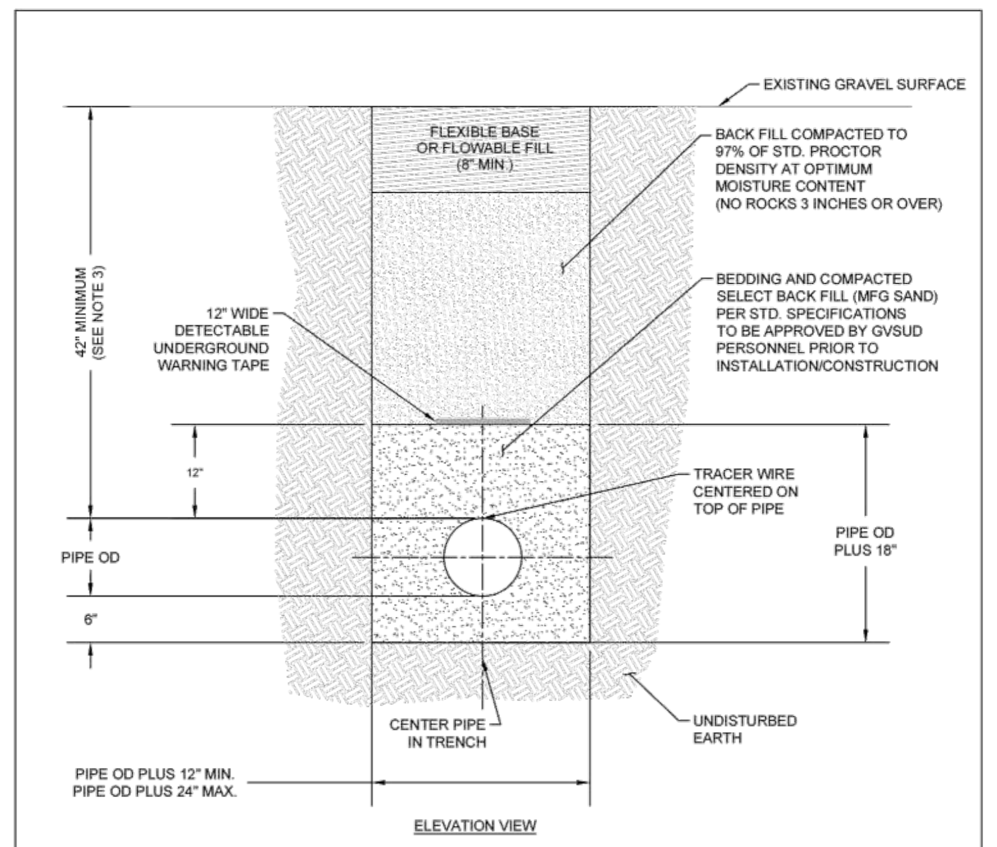

PROPOSED PAVING SURFACE (SEE NOTE 11)
PRIME OR TACK COAT
6" MIN. (SEE NOTE 8)
6" MIN.
SAW CUT
EXISTING PAVEMENT SURFACE
MATCH EXISTING EDGE OF PAVEMENT
FLEXIBLE BASE OR FLOWABLE FILL (10" MIN.)
EXISTING GROUND
6" MIN. BOTH SIDES
42" MIN. COVER (SEE NOTE 3)
12" WIDE MIN. DETECTABLE UNDERGROUND WARNING TAPE
BACK FILL COMPACTED TO 97% OF STD. PROCTOR DENSITY AT OPTIMUM MOISTURE CONTENT (NO ROCKS 3 INCHES OR OVER, SEE NOTE 15)
CENTER PIPE IN TRENCH
TRACER WIRE CENTERED ON TOP OF PIPE
12"
EXISTING GROUND
6"
BEDDING PER STANDARD SPECIFICATIONS
PIPE OD PLUS 6" EACH SIDE. PIPE OD PLUS 24" MAX.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
TRENCH DETAIL FOR PAVED AREAS (1 OF 2)
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-1

NOTES:

1. ALL WASTEWATER PVC PIPING SHALL BE GREEN IN COLOR. NO WATER DESIGNATED PIPE SHALL BE USED IN WASTEWATER WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
2. ALL WATER PIPING SHALL HAVE A MINIMUM PRESSURE CLASS OF 235 PSI WATER PVC PIPING SHALL BE BLUE IN COLOR.
3. ALL WATER LINES AND WASTEWATER FORCEMAIN SHALL HAVE 42 INCH MINIMUM COVER AND 72 INCH MAXIMUM COVER. WASTEWATER GRAVITY LINES SHALL HAVE 42 INCH MINIMUM COVER AND 15 FOOT MAXIMUM COVER.
4. GENERAL CONTRACTOR SHALL CONTACT THE APPROPRIATE STREET OWNER AND PROCESS, POST FISCAL SURETY, AND HAVE STREET CUT PERMIT ISSUED IN THEIR NAME.
5. CONTRACTOR TO REPAIR PAVED AREA TO STREET OWNER'S ROAD STANDARDS FOR ALL DISTURBED AREA. GREEN VALLEY SPECIAL UTILITY DISTRICT PAYS FOR QUANTITY OF REPAIR SHOWN IN DETAIL.
6. CONTRACTOR SHALL NOT EXCEED THE MAXIMUM TRENCH ALLOWED AS INDICATED IN THE PLANS AND SPECIFICATIONS.
7. THE EXISTING PAVED SURFACE SHALL BE SAW CUT IN A STRAIGHT LINE, A MINIMUM OF 12 INCHES WIDER THAN UNDISTURBED SIDES OF THE TRENCH AND SYMMETRICAL ABOUT THE CENTER LINE OF THE EXCAVATION.
8. ANY CONCRETE PAVING SHALL BE CUT 6 INCHES WIDER THAN UNDISTURBED SIDES OF EXCAVATION.
9. IF EXCAVATION AREA IS OPEN FOR TEMPORARY PUBLIC USE, THE SURFACE SHALL BE MAINTAINED LEVEL WITH ADJACENT RIDING SURFACE WITH TEMPORARY COLD MIX ASPHALT CONCRETE OR TEMPORARY HOT MIXED ASPHALT CONCRETE. TEMPORARY MIX SHALL BE PLACED OVER FLEXIBLE BASE.
10. FLEXIBLE BASE SHALL BE REPLACED IN KIND WITH BASE AND PAVEMENT THICKNESS WITH BASE EQUAL TO EXISTING BASE THICKNESS PLUS 3 INCHES, BUT IN NO CASE LESS THAN 10 INCHES.
11. DAMAGED PAVEMENT OUTSIDE THE TRENCH CUT SHALL BE REMOVED AND REPLACED WITH A MINIMUM OF 2 INCHES HOT MIXED ASPHALT CONCRETE AND A BASE OF 10 INCHES OR A THICKNESS MATCHING EXISTING, WHICHEVER IS GREATER.
12. TACK COAT ALL EXPOSED EDGES AND SURFACES.
13. TYPE AND THICKNESS OF PROPOSED PAVING SURFACE SHALL BE AS FOLLOWS:
    - TWO COURSE SURFACE TREATMENT: SHALL MATCH EXISTING SURFACE AND SHALL BE IN ACCORDANCE WITH SPECIFICATION 02770.
    - ASPHALT PAVING: SHALL BE IN ACCORDANCE WITH SPECIFICATION 02740. HOT MIXED ASPHALT CONCRETE TYPE 'D' SHALL BE USED FOR LIFT THICKNESS UP TO 2 INCHES, AND TYPE 'C' FOR LIFT THICKNESS OVER 2 INCHES AND UP TO 3 INCHES. LIFT THICKNESS SHALL NOT BE MORE THAN 3 INCHES.
14. DETECTABLE UNDERGROUND WARNING TAPE SHALL BE PLACED DIRECTLY ABOVE THE CENTERLINE OF THE PIPE AND ABOVE BEDDING, IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS. THE DETECTABLE UNDERGROUND WARNING TAPE SHALL CONFORM TO THE SPECIFICATIONS AND COLOR CODED IN ACCORDANCE WITH THE AMERICAN PUBLIC WORKS ASSOCIATION UNIFORM COLOR CODE.
15. PIPE BEDDING SHALL BE PLACED BEFORE PIPING IS LAID, UP TO BOTTOM OF PIPE, AND COMPACTED TO 97% STANDARD PROCTOR DENSITY.
16. PLACE PIPE BEDDING IN 12 INCH LIFTS AFTER PIPE IS LAID TO 12 INCHES ABOVE THE PIPE.
17. SELECT BACKFILL MATERIAL PLACED TO REQUIRED HEIGHT IN 6 INCH LIFTS.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
TRENCH DETAIL FOR PAVED AREAS (2 OF 2)
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-1

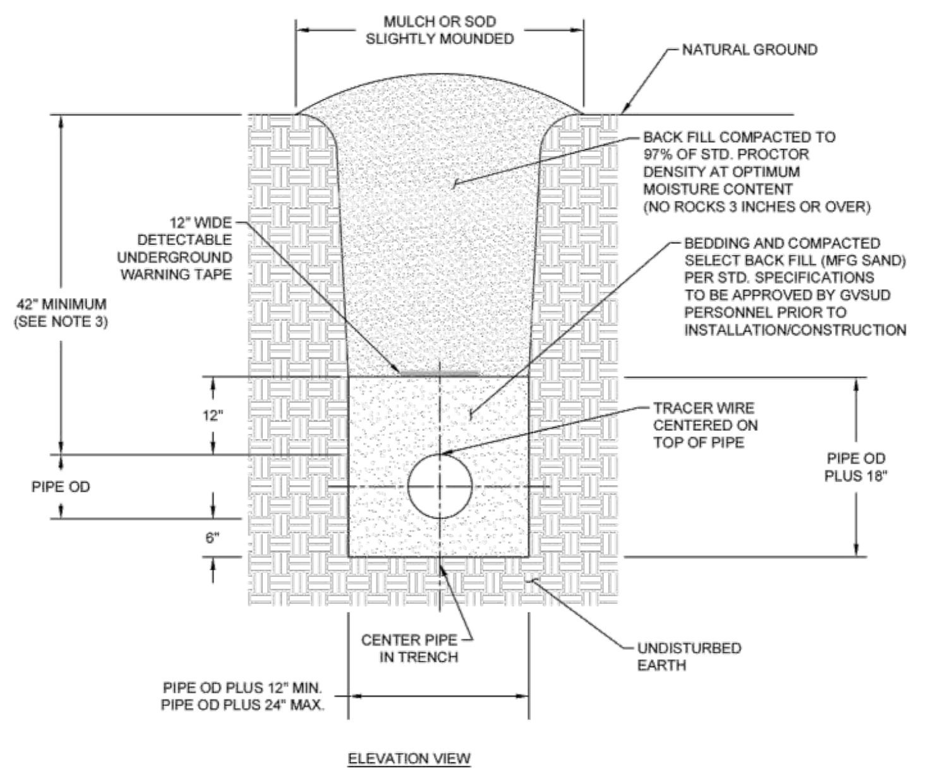

EXISTING GRAVEL SURFACE
FLEXIBLE BASE OR FLOWABLE FILL (8" MIN.)
BACK FILL COMPACTED TO 97% OF STD. PROCTOR DENSITY AT OPTIMUM MOISTURE CONTENT (NO ROCKS 3 INCHES OR OVER)
42" MINIMUM (SEE NOTE 3)
12" WIDE DETECTABLE UNDERGROUND WARNING TAPE
BEDDING AND COMPACTED SELECT BACK FILL (MFG SAND) PER STD. SPECIFICATIONS TO BE APPROVED BY GVSUD PERSONNEL PRIOR TO INSTALLATION/CONSTRUCTION
TRACER WIRE CENTERED ON TOP OF PIPE
12"
PIPE OD
PIPE OD PLUS 18"
6"
CENTER PIPE IN TRENCH
UNDISTURBED EARTH
PIPE OD PLUS 12" MIN. PIPE OD PLUS 24" MAX.

ELEVATION VIEW

NOTES:

1. ALL WASTEWATER PVC PIPING SHALL BE GREEN IN COLOR. NO WATER DESIGNATED PIPE WILL BE USED IN WASTEWATER.
2. ALL WATER PIPING SHALL HAVE A MINIMUM PRESSURE CLASS OF 235 PSI. WATER PVC PIPING SHALL BE COLOR CODED BLUE.
3. ALL WATER LINES AND WASTEWATER FORCEMAIN SHALL HAVE 42 INCHES MINIMUM COVER AND 72 INCHES MAXIMUM COVER. WASTEWATER GRAVITY LINES SHALL HAVE 42 INCHES MINIMUM COVER AND 15 FEET MAXIMUM COVER.
4. CONTRACTOR SHALL NOT EXCEED THE MAXIMUM TRENCH ALLOWED AS INDICATED IN THE PLANS AND SPECIFICATIONS.
5. DETECTABLE UNDERGROUND WARNING TAPE SHALL BE PLACED DIRECTLY ABOVE THE CENTERLINE OF THE PIPE AND ABOVE BEDDING, IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS. THE TAPE SHALL CONFORM TO THE SPECIFICATIONS AND COLOR CODED IN ACCORDANCE WITH APWA UNIFORM COLOR CODE.
6. PIPE BEDDING PLACED BEFORE PIPING IS LAID UP TO BOTTOM OF PIPE COMPACTED TO 95% ASHTO DENSITY.
7. PLACE IN 12 INCH LIFTS AFTER PIPE IS LAID TO 12 INCHES ABOVE THE PIPE.
8. SELECT BACKFILL MATERIAL PLACED TO REQUIRED HEIGHT IN 6 INCH LIFTS.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
TRENCH DETAIL FOR GRAVEL SURFACED AREAS
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-2

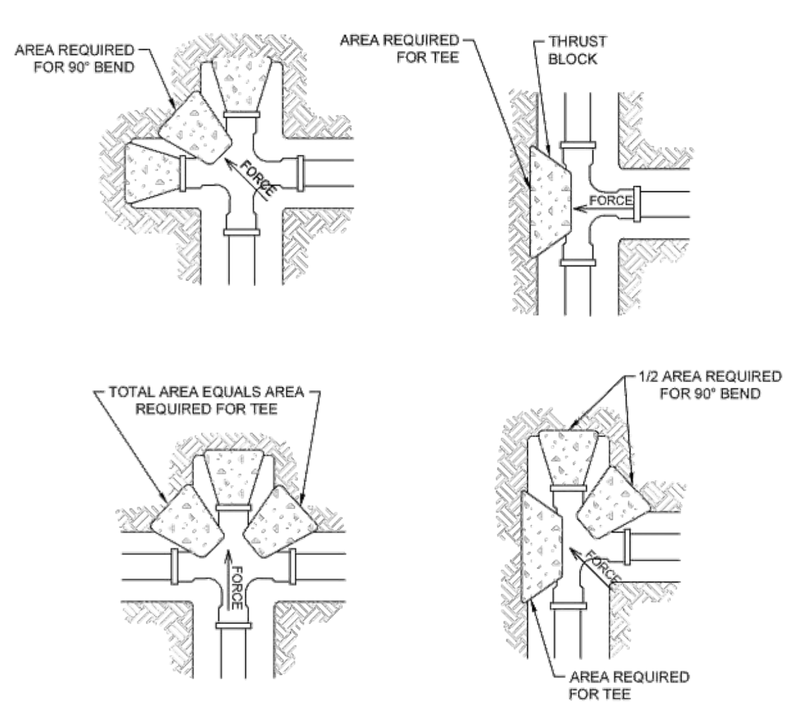

MULCH OR SOD SLIGHTLY MOUNDED
NATURAL GROUND
BACK FILL COMPACTED TO 97% OF STD. PROCTOR DENSITY AT OPTIMUM MOISTURE CONTENT (NO ROCKS 3 INCHES OR OVER)
12" WIDE DETECTABLE UNDERGROUND WARNING TAPE
42" MINIMUM (SEE NOTE 3)
BEDDING AND COMPACTED SELECT BACK FILL (MFG SAND) PER STD. SPECIFICATIONS TO BE APPROVED BY GVSUD PERSONNEL PRIOR TO INSTALLATION/CONSTRUCTION
TRACER WIRE CENTERED ON TOP OF PIPE
12"
PIPE OD
PIPE OD PLUS 18"
6"
CENTER PIPE IN TRENCH
UNDISTURBED EARTH
PIPE OD PLUS 12" MIN. PIPE OD PLUS 24" MAX.

ELEVATION VIEW

NOTES:

1. ALL WASTEWATER PVC PIPING SHALL BE GREEN IN COLOR. NO WATER DESIGNATED PIPE WILL BE USED IN WASTEWATER.
2. ALL WATER PIPING SHALL HAVE A MINIMUM PRESSURE CLASS OF 235 PSI WATER PVC PIPING SHALL BE COLOR CODED BLUE.
3. ALL WATER LINES AND WASTEWATER FORCEMAIN SHALL HAVE 42 INCHES MINIMUM COVER AND 72 INCHES MAXIMUM COVER. WASTEWATER GRAVITY LINES SHALL HAVE 42 INCHES MINIMUM COVER AND 15 FEET MAXIMUM COVER.
4. CONTRACTOR SHALL NOT EXCEED THE MAXIMUM TRENCH ALLOWED AS INDICATED IN THE PLANS AND SPECIFICATIONS.
5. DETECTABLE UNDERGROUND WARNING TAPE SHALL BE PLACED DIRECTLY ABOVE THE CENTERLINE OF THE PIPE AND ABOVE BEDDING, IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS. THE TAPE SHALL CONFORM TO THE SPECIFICATIONS AND COLOR CODED IN ACCORDANCE WITH APWA UNIFORM COLOR CODE.
6. PIPE BEDDING PLACED BEFORE PIPING IS LAID UP TO BOTTOM OF PIPE COMPACTED TO 95% AASHTO DENSITY.
7. PLACE IN 12 INCH LIFTS AFTER PIPE IS LAID TO 12 INCHES ABOVE THE PIPE.
8. SELECT BACKFILL MATERIAL PLACED TO REQUIRED HEIGHT IN 6 INCH LIFTS.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
TRENCH DETAIL FOR NON-PAVED AREAS
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-3

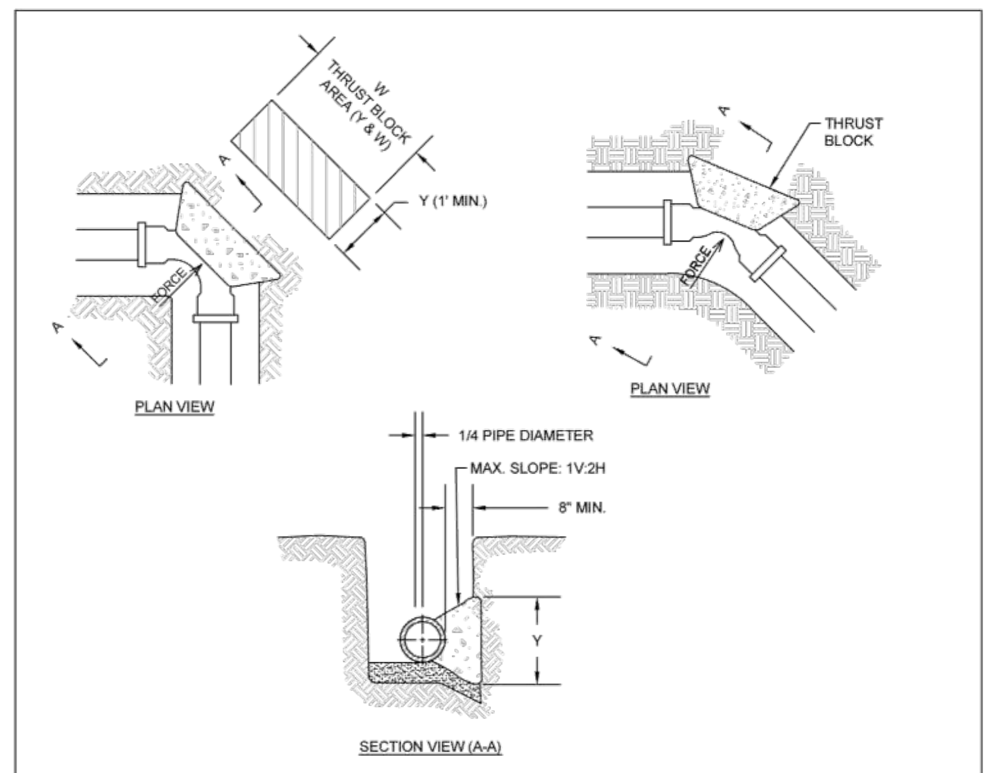

AREA REQUIRED FOR 90° BEND
AREA REQUIRED FOR TEE
THRUST BLOCK
TOTAL AREA EQUALS AREA REQUIRED FOR TEE
1/2 AREA REQUIRED FOR 90° BEND
FORCE
AREA REQUIRED FOR TEE

MINIMUM THRUST BLOCK AREA REQUIRED (Y AND W)		
PIPE SIZE	WATER PIPE	
	TEE, DEAD END, 90° BEND	45° AND 22.5° BENDS
4" & LESS	3 SQ. FEET	3 SQ. FEET
6"	4 SQ. FEET	3 SQ. FEET
8"	6 SQ. FEET	3 SQ. FEET
10"	9 SQ. FEET	5 SQ. FEET
12"	13 SQ. FEET	7 SQ. FEET
16"	23 SQ. FEET	12 SQ. FEET
18"	29 SQ. FEET	15 SQ. FEET

NOTES:

1. TABLE IS BASED ON SOILS WITH A MINIMUM BEARING CAPACITY OF 3,000 PSF. IF CONDITIONS ARE FOUND TO INDICATE SOIL BEARING IS LESS, THE AREAS SHALL BE INCREASED ACCORDINGLY.
2. AREAS FOR PIPE LARGER THAN 18 INCHES SHALL BE RESTRAINED.
3. THRUST BLOCKS SHALL EXTEND TO UNDISTURBED GROUND. CONCRETE SHALL BE CLASS "C" (MIN. 2,500 PSI).
4. FITTINGS SHALL BE DUCTILE IRON MECHANICAL JOINT WITH A MINIMUM PRESSURE RATING OF 250 PSI AND SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWWA A21.10/C110 OR A21.53/C153.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
CONCRETE THRUST BLOCKING (1 OF 2)
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-4


THRUST BLOCK
W
Y (1' MIN.)
A
PLAN VIEW
PLAN VIEW
1/4 PIPE DIAMETER
MAX. SLOPE: 1V:2H
8" MIN.
Y

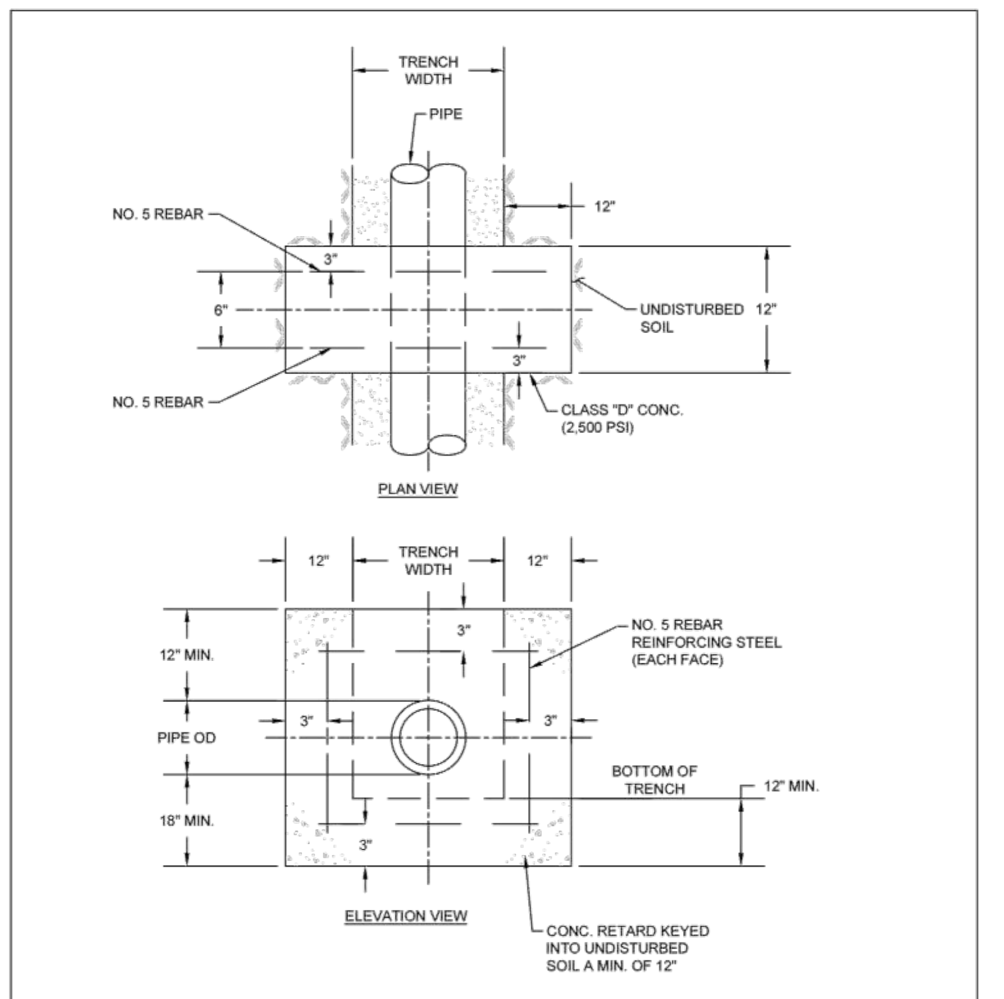
SECTION VIEW (A-A)

MINIMUM THRUST BLOCK AREA REQUIRED (Y AND W)		
PIPE SIZE	WATER PIPE	
	TEE, DEAD END, 90° BEND	45° AND 22.5° BENDS
4" & LESS	3 SQ. FEET	3 SQ. FEET
6"	4 SQ. FEET	3 SQ. FEET
8"	6 SQ. FEET	3 SQ. FEET
10"	9 SQ. FEET	5 SQ. FEET
12"	13 SQ. FEET	7 SQ. FEET
16"	23 SQ. FEET	12 SQ. FEET
18"	29 SQ. FEET	15 SQ. FEET

NOTES:

1. TABLE IS BASED ON SOILS WITH A MINIMUM BEARING CAPACITY OF 3,000 PSF. IF CONDITIONS ARE FOUND TO INDICATE SOIL BEARING IS LESS, THE AREAS SHALL BE INCREASED ACCORDINGLY.
2. AREAS FOR PIPE LARGER THAN 18 INCHES SHALL BE RESTRAINED.
3. THRUST BLOCKS SHALL EXTEND TO UNDISTURBED GROUND. CONCRETE SHALL BE CLASS "C" (MIN. 2,500 PSI).
4. FITTINGS SHALL BE DUCTILE IRON MECHANICAL JOINT WITH A MINIMUM PRESSURE RATING OF 250 PSI AND SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWWA A21.10/C110 OR A21.53/C153.

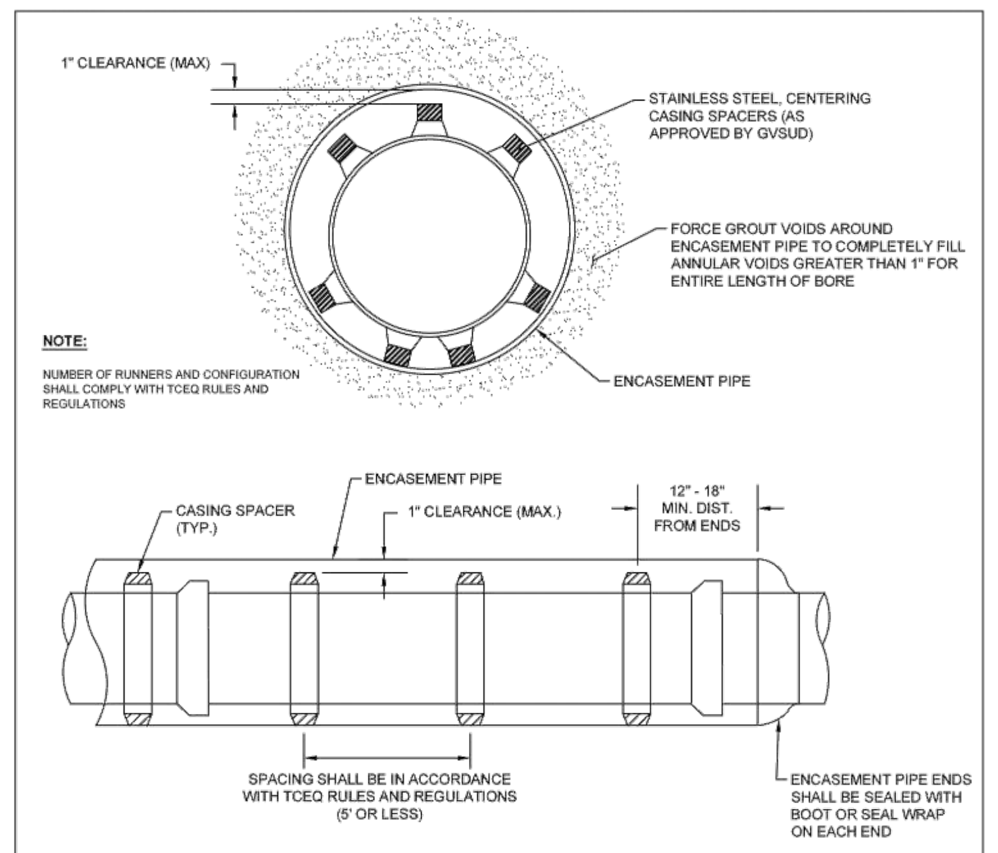
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
CONCRETE THRUST BLOCKING (2 OF 2)
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-4


TRENCH WIDTH
PIPE
12"
NO. 5 REBAR
3"
6"
UNDISTURBED SOIL
12"
3"
NO. 5 REBAR
CLASS "D" CONC. (2,500 PSI)
PLAN VIEW
12"
TRENCH WIDTH
12"
3"
NO. 5 REBAR REINFORCING STEEL (EACH FACE)
12" MIN.
3"
3"
PIPE OD
BOTTOM OF TRENCH
12" MIN.
18" MIN.
3"
ELEVATION VIEW
CONC. RETARD KEYED INTO UNDISTURBED SOIL A MIN. OF 12"

NOTES:

1. TO BE PLACED ON SLOPES GREATER THAN 10% WITH MAXIMUM SPACING OF 20 FEET.
2. WHEN TRENCHING IN ROCK CONDITIONS, WIDTH MAY BE REDUCED FROM 12 INCHES DOWN TO 6 INCHES.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
CONCRETE RETARD
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-5


1" CLEARANCE (MAX)
STAINLESS STEEL, CENTERING CASING SPACERS (AS APPROVED BY GVSUD)
FORCE GROUT VOIDS AROUND ENCASEMENT PIPE TO COMPLETELY FILL ANNULAR VOIDS GREATER THAN 1" FOR ENTIRE LENGTH OF BORE
ENCASEMENT PIPE
ENCASEMENT PIPE
CASING SPACER (TYP.)
1" CLEARANCE (MAX.)
12" - 18" MIN. DIST. FROM ENDS
SPACING SHALL BE IN ACCORDANCE WITH TCEQ RULES AND REGULATIONS (5' OR LESS)
ENCASEMENT PIPE ENDS SHALL BE SEALED WITH BOOT OR SEAL WRAP ON EACH END

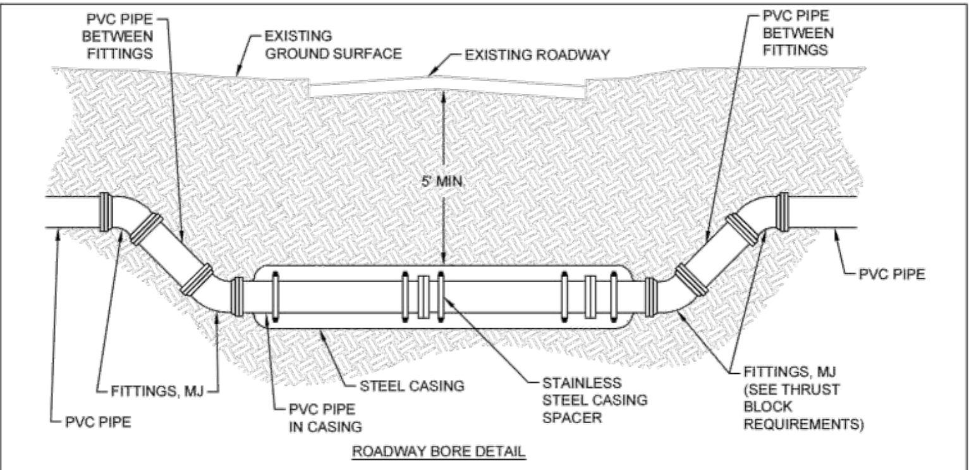
NOTE:

NUMBER OF RUNNERS AND CONFIGURATION SHALL COMPLY WITH TCEQ RULES AND REGULATIONS

NOTES:

1. TCEQ RULES AND REGULATIONS ON SANITARY SEWER, STORM SEWER AND WATER MAIN CROSSING AND SEPARATIONS WILL BE STRICTLY ENFORCED TO TAC, CHAPTER 290, SUBCHAPTER D.
2. ALL PIPE IN ENCASEMENT PIPE SHALL BE RESTRAINED AT JOINTS FOR ENTIRE LENGTH OF THE ENCASEMENT PIPE PLUS 10 FEET ON EACH SIDE.
3. AT ANY CREEK CROSSING OR DRAINAGE DITCH THE PIPE SHALL BE ENCASED IN STEEL PIPE AND HAVE A MINIMUM OF 3 FEET OF COVER FROM THE BOTTOM OF THE CREEK/STREAM.
4. AT ANY ROADWAY CROSSING THE MAIN SHALL BE STEEL ENCASED AND HAVE A MINIMUM OF 5 FEET OF COVER FROM THE BOTTOM OF THE BASE MATERIAL.
5. BORE SHALL HAVE SUFFICIENT ROOM FOR 2" PVC O.D. (MIN) FOR FORCE GROUTING AS REQUIRED.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
ENCASEMENT DETAIL WITH ENCASEMENT SPACERS
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-6


PVC PIPE BETWEEN FITTINGS
EXISTING GROUND SURFACE
EXISTING ROADWAY
PVC PIPE BETWEEN FITTINGS
5' MIN.
PVC PIPE
FITTINGS, MJ
STEEL CASING
STAINLESS STEEL CASING SPACER
FITTINGS, MJ (SEE THRUST BLOCK REQUIREMENTS)
PVC PIPE
PVC PIPE IN CASING

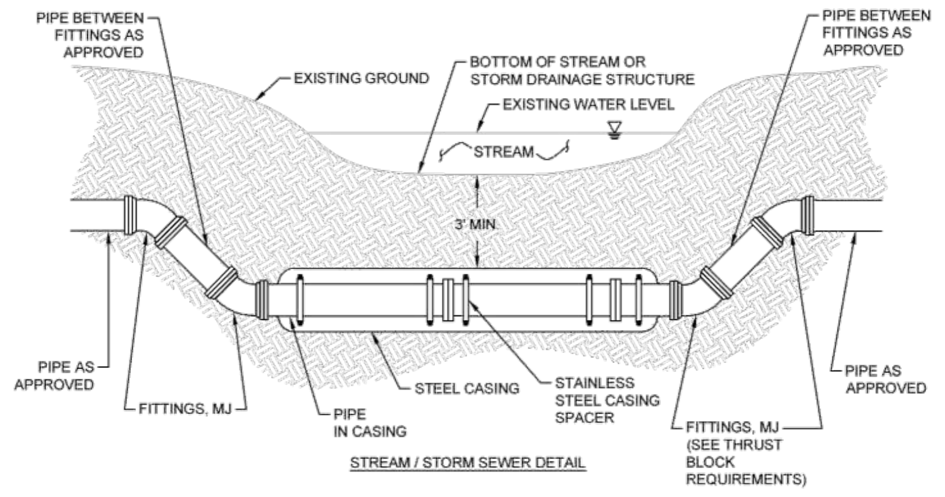
ROADWAY BORE DETAIL

NOTES:

1. ALL PIPE IN ENCASEMENT PIPE SHALL BE RESTRAINED WITH AN APPROVED METHOD FOR ENTIRE LENGTH OF THE ENCASEMENT PIPE PLUS 10 FEET ON EACH SIDE.
2. FOR A PIPE 20 FEET IN LENGTH, A MINIMUM OF 4 SPACERS ARE REQUIRED. FOR A PIPE 13 FEET IN LENGTH, A MINIMUM OF 3 SPACERS ARE REQUIRED.
3. FOR ENCASED PIPE LOCATED IN PROXIMITY TO SANITARY SEWERS, SPACERS SHALL CONFORM TO TEXAS ADMINISTRATIVE CODE (TAC) CHAPTER 290, SUBCHAPTER D.
4. AT ANY ROADWAY CROSSING THE PIPE SHALL BE STEEL ENCASED AND HAVE A MINIMUM OF 5 FEET OF COVER FROM THE BOTTOM OF THE BASE MATERIAL.
5. FOR ROAD WAY CROSSINGS, THE ENDS OF THE CASING PIPE SHALL EXTEND TO THE RIGHT OF WAY LINES.
6. ALL PIPE FITTINGS, VALVES, AND APPURTENANCES SHALL MATCH OR EXCEED CLASS RATING OF PIPE AS SHOWN ON THE PLANS.
7. SEE ENCASEMENT DETAIL WITH ENCASEMENT SPACER DETAIL W-6.
8. DUCTILE IRON PIPE,AMERICAN ZINC COATED AWWA/ANSI C-151 MAY BE USED IN LIEU OF STEEL CASING WHEN APPROVED BY GVSUD.

WATER LINE IN ENCASEMENT PIPE			
WATER LINE SIZE (INCHES)	NOM. DIA. STEEL (INCHES)	ENCASEMENT PIPE THICKNESS (INCHES)	PIPE WEIGHT (LBS./FT.)
6	18	0.375	70.59
8	24	0.375	94.62
12	24	0.375	94.62
16	30	0.375	118.65
20	36	0.438	166.19
24	42	0.438	194.02
30	48	0.50	259.02
36	54	0.50	291.07

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
INSTALLATION OF PIPE IN STEEL ENCASEMENT UNDER ROADS
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-7


PIPE BETWEEN FITTINGS AS APPROVED
EXISTING GROUND
BOTTOM OF STREAM OR STORM DRAINAGE STRUCTURE
EXISTING WATER LEVEL
STREAM
3' MIN.
PIPE BETWEEN FITTINGS AS APPROVED
PIPE AS APPROVED
FITTINGS, MJ
STEEL CASING
STAINLESS STEEL CASING SPACER
PIPE IN CASING
FITTINGS, MJ (SEE THRUST BLOCK REQUIREMENTS)
PIPE AS APPROVED

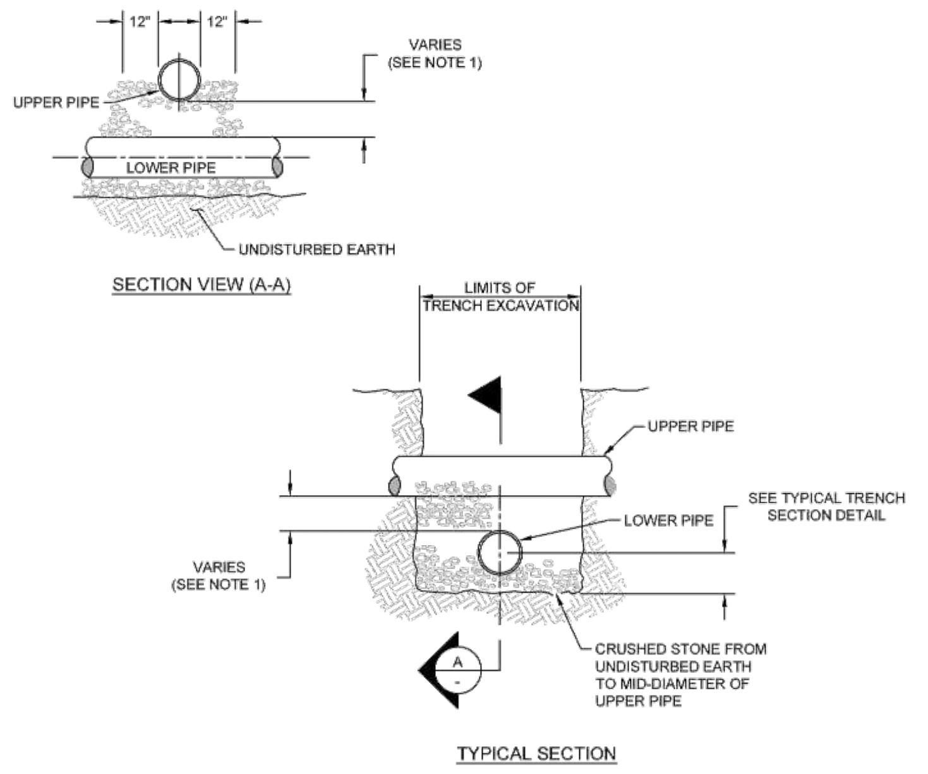
STREAM / STORM SEWER DETAIL

NOTES:

1. ALL PIPE IN ENCASEMENT PIPE SHALL BE RESTRAINED WITH AN APPROVED METHOD FOR ENTIRE LENGTH OF THE ENCASEMENT PIPE PLUS 10 FEET ON EACH SIDE.
2. FOR A PIPE 20 FEET IN LENGTH, A MINIMUM OF 4 SPACERS ARE REQUIRED. FOR A PIPE 13 FEET IN LENGTH, A MINIMUM OF 3 SPACERS ARE REQUIRED.
3. FOR ENCASED PIPE LOCATED IN PROXIMITY TO SANITARY SEWERS, SPACERS SHALL CONFORM TO TEXAS ADMINISTRATIVE CODE (TAC) CHAPTER 290, SUBCHAPTER D.
4. AT ANY CREEK CROSSING OR DRAINAGE DITCH THE PIPE SHALL BE STEEL ENCASED AND HAVE A MINIMUM OF 3 FEET OF COVER FROM THE BOTTOM OF THE CREEK/STREAM.
5. SEE ENCASEMENT DETAIL WITH ENCASEMENT SPACER DETAIL W-6.
6. ANNULAR SPACE TO BE FILLED WITH SAND-CEMENT SLURRY.
7. MINIMUM DEPTH BETWEEN CASING PIPE AND BOX CULVERTS OR STORM SEWER PIPE IS 2 FEET.

WATER LINE IN ENCASEMENT PIPE			
WATER LINE SIZE (INCHES)	NOM. DIA. STEEL (INCHES)	ENCASEMENT PIPE THICKNESS (INCHES)	PIPE WEIGHT (LBS./FT.)
6	18	0.375	70.59
8	24	0.375	94.62
12	24	0.375	94.62
16	30	0.375	118.65
20	36	0.438	166.19
24	42	0.438	194.02
30	48	0.50	259.02
36	54	0.50	291.07

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
INSTALLATION OF PIPE IN STEEL ENCASEMENT UNDER STREAMS / STORM SEWERS
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-8

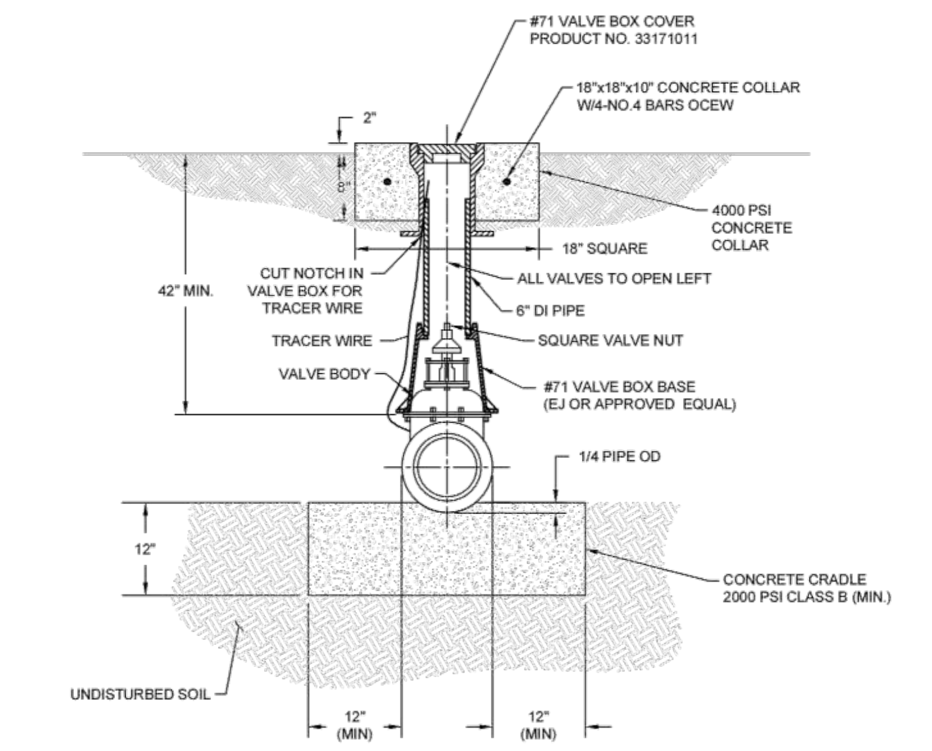

12"
12"
VARIES (SEE NOTE 1)
UPPER PIPE
LOWER PIPE
UNDISTURBED EARTH
SECTION VIEW (A-A)
LIMITS OF TRENCH EXCAVATION
UPPER PIPE
SEE TYPICAL TRENCH SECTION DETAIL
LOWER PIPE
VARIES (SEE NOTE 1)
A
CRUSHED STONE FROM UNDISTURBED EARTH TO MID-DIAMETER OF UPPER PIPE

TYPICAL SECTION

NOTES:

1. MAINTAIN A MINIMUM 5 FOOT HORIZONTAL AND 2 FOOT VERTICAL SEPARATION FROM BETWEEN UTILITIES AND WATER AND WASTEWATER PIPES AND SERVICES. GAS, ELECTRIC, CABLE, ETC. TO BE LOCATED OPPOSITE SIDES OF PROPERTIES.
2. UTILITY CROSSINGS SEPARATED BY LESS THAN 5 FEET SHALL BE ENCASED WITH A MINIMUM OF 6 INCHES OF CONCRETE.
3. SPECIFICATIONS: BEDDING MATERIAL MUST BE APPROVED BY AUTHORIZED GVSUD PERSONNEL, BEFORE START OF JOB.
4. AT ANY CREEK CROSSING OR DRAINAGE DITCH THE MAIN SHALL BE ENCASED WITH STEEL PIPE AND/OR 6 INCHES CONCRETE ENCASEMENT TO WITHIN 10 FEET OUTSIDE OF CREEK OR DRAINAGE DITCH AREA.
5. PIPE JOINTS SHALL BE AT LEAST 9 FEET HORIZONTALLY FROM CROSSINGS.

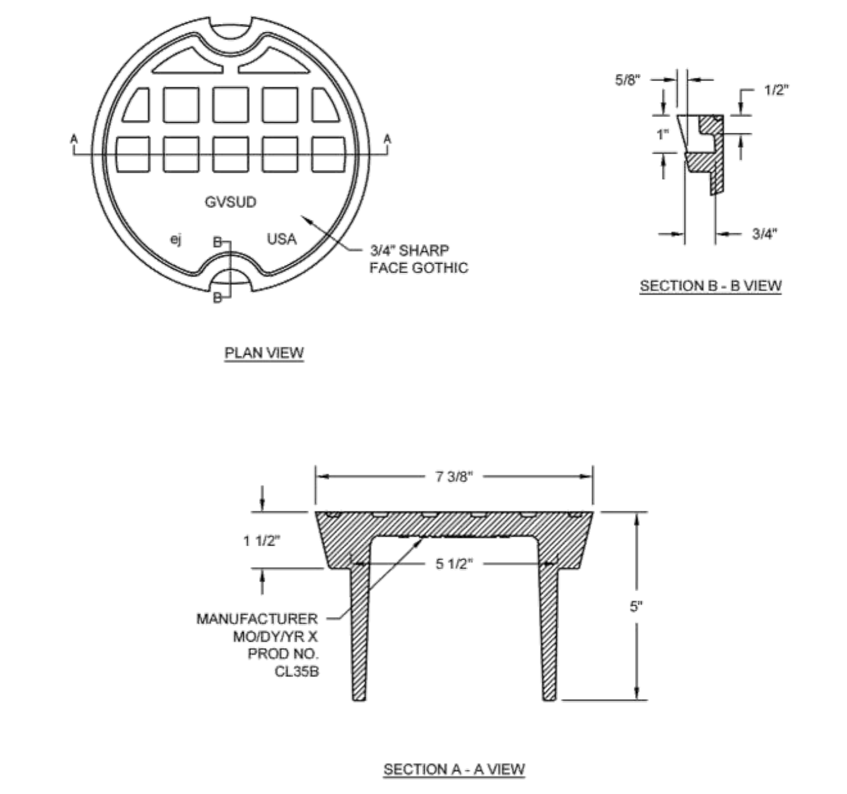
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
UTILITIES CROSSING DETAIL
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-10


#71 VALVE BOX COVER PRODUCT NO. 33171011
18"x18"x10" CONCRETE COLLAR W/4-NO.4 BARS OCEW
2"
4000 PSI CONCRETE COLLAR
18" SQUARE
42" MIN.
CUT NOTCH IN VALVE BOX FOR TRACER WIRE
ALL VALVES TO OPEN LEFT
6" DI PIPE
TRACER WIRE
SQUARE VALVE NUT
VALVE BODY
#71 VALVE BOX BASE (EJ OR APPROVED EQUAL)
1/4 PIPE OD
12"
CONCRETE CRADLE 2000 PSI CLASS B (MIN.)
UNDISTURBED SOIL
12" (MIN)
12" (MIN)

NOTES:

1. WELD 2 1/2 INCH X 2 INCH DEEP SOCKET TO 1 INCH (SCHEDULE 40) ROUND STEM EXTENSION AND ON OPERATING NUT. FOR PIPE EXTENSIONS OVER 10 FEET, STEM EXTENSION SHALL BE A SCHEDULE 80 PIPE.
2. VALVE EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 3 FEET DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 18 TO 24 INCHES FROM FINISHED GRADE.
3. CONCRETE COLLARS TO BE INSTALLED ON ALL VALVE BOXES LOCATED OUTSIDE PAVEMENT. SEE APPROPRIATE VALVE BOX ADJUSTMENT DETAILS.
4. GATE VALVES SHALL BE MUELLER TYPE OR APPROVED EQUAL.
5. FOR VALVE DEEPER THAN 5 FEET, ADD EXTENSION.
6. VALVE TURNS UNDERNEATH CAP.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
NON-RISING STEM VERTICAL GATE VALVE WITH BOX ASSEMBLY
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-11


A
A
GVSUD
ej
B
USA
B
3/4" SHARP FACE GOTHIC
PLAN VIEW
5/8"
1/2"
1"
3/4"
SECTION B - B VIEW
7 3/8"
1 1/2"
5 1/2"
5"
MANUFACTURER MO/DY/YR X PROD NO. CL35B
SECTION A - A VIEW

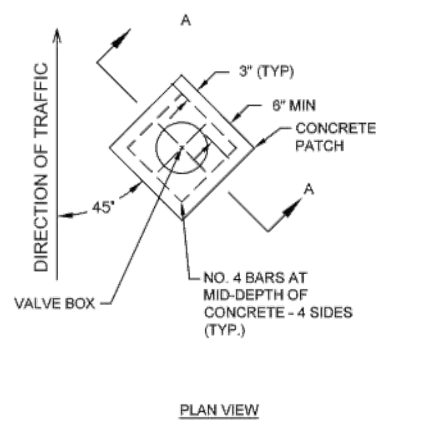
NOTES:

1. VALVE BOX COVER SHALL BE EJ GROUP, INC. $71 VALVE BOX COVER PRODUCT NUMBER 33171011, OR APPROVED EQUIVALENT WITH GVSUD LOGO.
2. TYPICAL FILLET IS 3/16 INCH RADIUS.
3. LETTERING SHALL BE 3/4 INCH SHARP FACE GOTHIC AND LOCATED AS SHOWN.
4. LID REQUIRES TWO (2) PICK SLOTS.
5. THE MANUFACTURER'S IDENTIFICATION, CASTING NUMBER, AND THE COUNTRY WHERE CAST, SHALL BE DISTINCTLY CAST ONTO EACH LID.
6. DRAFT AND SHRINKAGE ALLOWANCE SHALL BE IN ACCORDANCE WITH NORMAL FOUNDRY PRACTICE.
7. FINISH BY REMOVING FINS AND FLASHING AND PAINT WITH BLACK ASPHALT COATING.

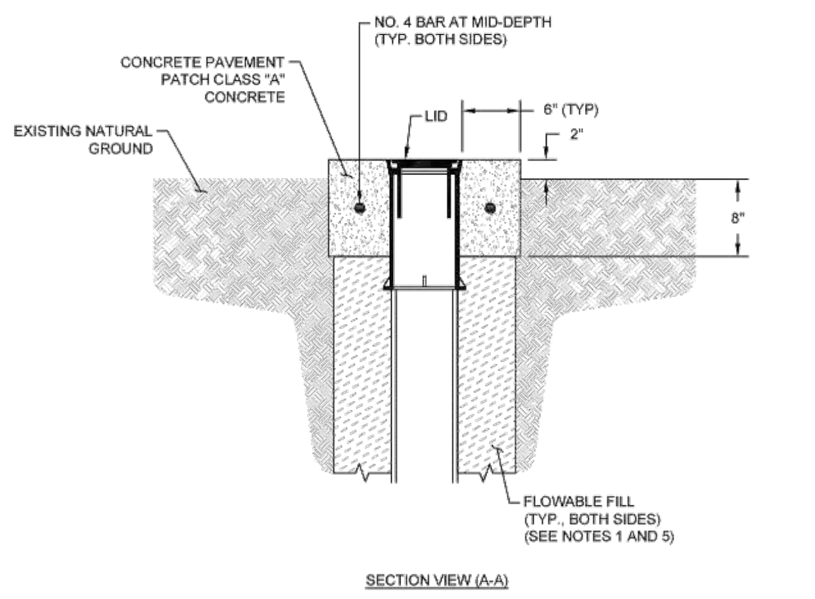
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
VALVE BOX CASTING LID
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-12

NOTES:

1. SUBGRADE SHALL BE COMPACTED PER SPECIFICATIONS, SUBGRADE PREPARATION.
2. VALVE CASTINGS SHALL BE ADJUSTED TO GRADE AFTER FINAL LIFT OF OVERLAY IS IN PLACE.
3. CLEAN VALVE BOX OF ALL DEBRIS DOWN TO BASE OF THE VALVE.
4. CONTRACTOR TO USE VALVE BOX ADJUSTING RISER TO ADJUST VALVE BOX TO GRADE.
5. WHERE CAST IRON CASTINGS ARE TO BE REMOVED IN EXCAVATION GREATER THAN 20 INCHES DEEP, CONTRACTOR MAY ELECT TO FILL EXCAVATION WITH CONTROLLED LOW STRENGTH MATERIAL TO THE UNDERSIDE OF THE CONCRETE PAVEMENT PATCH IN LIEU OF COMPACTED BACKFILL.
6. REINFORCING STEEL SHALL MEET SPECIFICATIONS FOR REINFORCING STEEL.

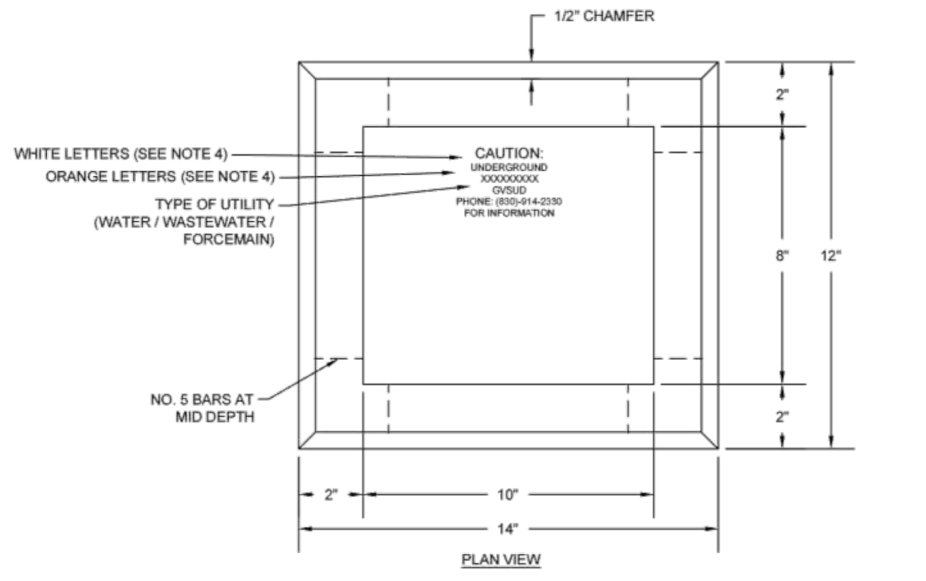

A
3" (TYP)
6" MIN
CONCRETE PATCH
DIRECTION OF TRAFFIC
45°
A
VALVE BOX
NO. 4 BARS AT MID-DEPTH OF CONCRETE - 4 SIDES (TYP.)

PLAN VIEW


NO. 4 BAR AT MID-DEPTH (TYP. BOTH SIDES)
CONCRETE PAVEMENT PATCH CLASS "A" CONCRETE
LID
6" (TYP)
2"
EXISTING NATURAL GROUND
8"
FLOWABLE FILL (TYP., BOTH SIDES) (SEE NOTES 1 AND 5)

SECTION VIEW (A-A)

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
VALVE BOX ADJUSTMENT OUTSIDE OF PAVEMENT
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-14

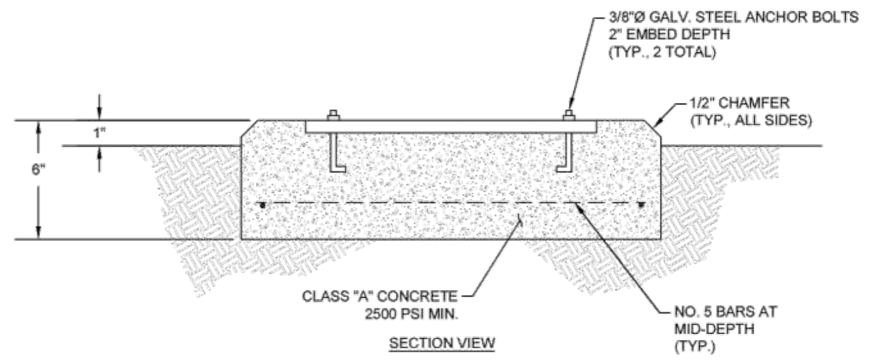

1/2" CHAMFER
2"
WHITE LETTERS (SEE NOTE 4)
ORANGE LETTERS (SEE NOTE 4)
TYPE OF UTILITY (WATER / WASTEWATER / FORCEMAIN)
CAUTION:
UNDERGROUND
XXXXXXXXX
GVSUD
PHONE: (830)-914-2330
FOR INFORMATION
8"
12"
NO. 5 BARS AT MID DEPTH
2"
2"
10"
14"

PLAN VIEW

NOTES:

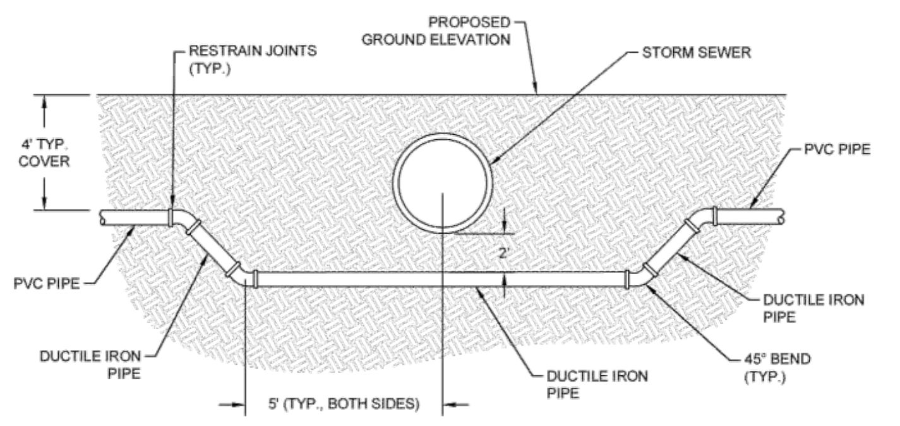
1. MARKERS SHALL BE PLACED AT VALVES, AIR VALVES, AND ACCESS PORTS.
2. PLACE WATER/WASTEWATER LINE MARKERS AT EVERY FENCE, ROAD CROSSING, AND AT 500' INTERVALS ALONG THE PIPELINE.
3. SIGNS SHALL BE 20 GA. WITH BLACK BACKGROUND FINISH.
4. LETTERS USED FOR "CAUTION" SHALL BE WHITE. ALL REMAINING LETTERS SHALL BE ORANGE.
5. MARKERS SHALL BE OBTAINED FROM:
    - 5.1. RURAL WATER SPECIALTY CO.
      POST OFFICE BOX 927
      TULSA, OKLAHOMA 74101

      OR APPROVED EQUAL.


3/8"Ø GALV. STEEL ANCHOR BOLTS 2" EMBED DEPTH (TYP., 2 TOTAL)
1/2" CHAMFER (TYP., ALL SIDES)
1"
6"
CLASS "A" CONCRETE 2500 PSI MIN.
NO. 5 BARS AT MID-DEPTH (TYP.)

SECTION VIEW

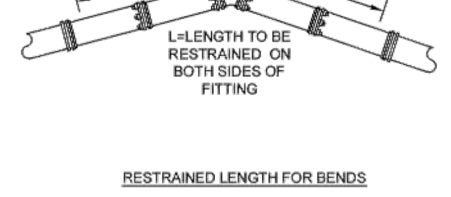
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
UTILITY MARKER DETAIL
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-16


PROPOSED GROUND ELEVATION
RESTRAIN JOINTS (TYP.)
STORM SEWER
4' TYP. COVER
PVC PIPE
PVC PIPE
2'
DUCTILE IRON PIPE
DUCTILE IRON PIPE
45° BEND (TYP.)
DUCTILE IRON PIPE
5' (TYP., BOTH SIDES)

NOTES:

1. MAINTAIN 24 INCH (MIN.) SEPARATION FROM STORM SEWER LINE.
2. 45° BENDS MUST BE THRUST BLOCKED AND RESTRAINED AT BOTTOM BENDS. SEE STANDARD DETAIL.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
STORM SEWER CROSSING
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-17


L
L
L=LENGTH TO BE RESTRAINED ON BOTH SIDES OF FITTING

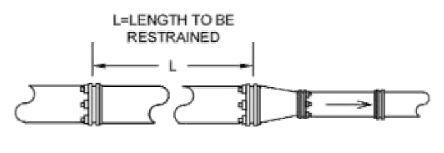
RESTRAINED LENGTH FOR BENDS

PIPE SIZE (INCHES)	BEND ANGLE (DEG)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 PSI
6	90	23
6	45	9
6	22.5	5
6	11.25	2
8	90	30
8	45	12
8	22.5	6
8	11.25	3
12	90	43
12	45	18
12	22.5	8
12	11.25	4
16	90	63
16	45	26
16	22.5	13
16	11.25	7
24	90	85
24	45	35
24	22.5	17
24	11.25	9

NOTES:

1. RESTRAINED LENGTH CALCULATIONS FOR P.V.C PIPE BEDDED IN COMPACTED GRANULAR MATERIAL EXTENDING TO THE TOP OF THE PIPE. NATIVE SOIL MATERIAL IS ASSUMED TO BE INORGANIC CLAY OF HIGH PLASTICITY. DEPTH OF BURY IS ASSUMED TO BE 4 FEET.
2. THESE CALCULATIONS ARE PROVIDED FOR REFERENCE. THE RESTRAINED LENGTH SHALL BE DESIGNED BASED UPON THE CONDITIONS ENCOUNTERED DURING INSTALLATION.
3. CONTRACTOR SHALL RESTRAIN ALL JOINTS WITHIN THE REQUIRED RESTRAINT DISTANCE PLUS THE NEXT JOINT OUTSIDE THE REQUIRED RESTRAINT DISTANCE.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
BEND RESTRAINED LENGTH DESIGN
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-18


L=LENGTH TO BE RESTRAINED
L

RESTRAINED LENGTH FOR REDUCERS

PIPE SIZE (INCHES)	SMALL SIZE (INCHES)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 PSI
6	4	30
8	4	55
8	6	32
12	4	95
12	6	80
12	8	58
16	4	131
16	6	120
16	8	104
16	12	60
24	16	110

NOTES:

1. RESTRAINED LENGTH CALCULATIONS FOR P.V.C PIPE BEDDED IN COMPACTED GRANULAR MATERIAL EXTENDING TO THE TOP OF THE PIPE. NATIVE SOIL MATERIAL IS ASSUMED TO BE INORGANIC CLAY OF HIGH PLASTICITY. DEPTH OF BURY IS ASSUMED TO BE 4 FEET.
2. THESE CALCULATIONS ARE PROVIDED FOR REFERENCE. THE RESTRAINED LENGTH SHALL BE DESIGNED BASED UPON THE CONDITIONS ENCOUNTERED DURING INSTALLATION.
3. CONTRACTOR SHALL RESTRAIN ALL JOINTS WITHIN THE REQUIRED RESTRAINT DISTANCE PLUS THE NEXT JOINT OUTSIDE THE REQUIRED RESTRAINT DISTANCE.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
REDUCER RESTRAINED LENGTH DESIGN
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-19

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

GOERKE SUBDIVISION PHASE 1

WATER DISTRIBUTION STANDARD NOTES AND DETAILS

DATE
02/10/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

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

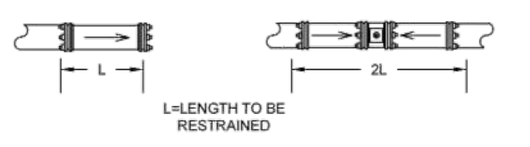
KYLE M. HUDEK
138753
02/11/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C5.D1

P:\03346\101\2-DWG\4-Plans\C5.D1_C5.D2 WDDP.dwg 2025/02/10 10:21am rbarrera

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.


L
2L
L=LENGTH TO BE RESTRAINED

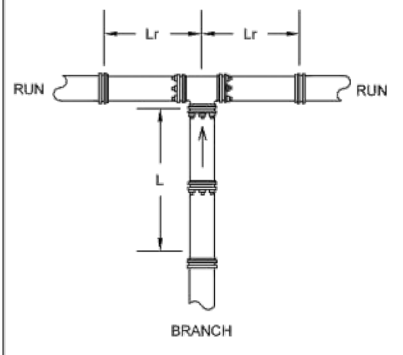
RESTRAINED LENGTH FOR DEAD ENDS/INLINE VALVES

PIPE SIZE (INCHES)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 PSI
4	42
6	59
8	77
12	109
16	142
24	202

NOTES:

1. RESTRAINED LENGTH CALCULATIONS FOR P.V.C PIPE BEDDED IN COMPACTED GRANULAR MATERIAL EXTENDING TO THE TOP OF THE PIPE. NATIVE SOIL MATERIAL IS ASSUMED TO BE INORGANIC CLAY OF HIGH PLASTICITY. DEPTH OF BURY IS ASSUMED TO BE 4 FEET.
2. THESE CALCULATIONS ARE PROVIDED FOR REFERENCE. THE RESTRAINED LENGTH SHALL BE DESIGNED BASED UPON THE CONDITIONS ENCOUNTERED DURING INSTALLATION.
3. CONTRACTOR SHALL RESTRAIN ALL JOINTS WITHIN THE REQUIRED RESTRAINT DISTANCE PLUS THE NEXT JOINT OUTSIDE THE REQUIRED RESTRAINT DISTANCE.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
VALVE AND DEAD END RESTRAINED LENGTH DESIGN
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-20


Lr
Lr
RUN
RUN
L
BRANCH

Lr=LENGTH OF PIPE ALONG THE RUN FREE OF JOINTS.
L=LENGTH TO BE RESTRAINED

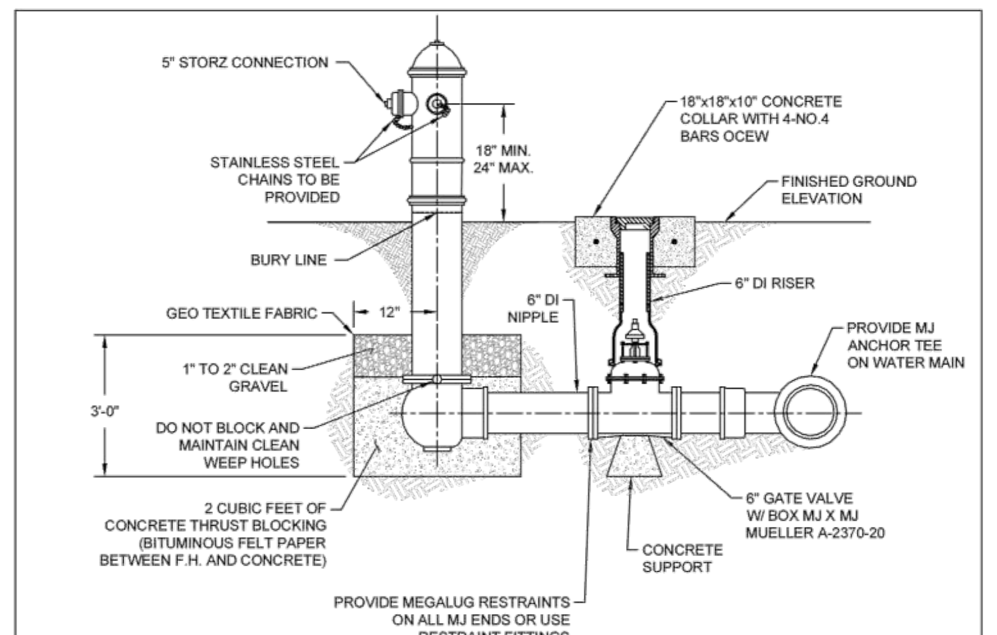
RESTRAINED LENGTH FOR TEES

PIPE SIZE (INCHES)	BRANCH SIZE (INCHES)	LENGTH OF RUN (FEET)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 PSI
6	4	0	42
6	4	5	7
6	4	10	1
6	6	0	59
6	6	5	35
6	6	10	11
8	4	0	42
8	4	5	1
8	6	0	59
8	6	5	28
8	6	10	1
8	8	0	77
8	8	5	53
8	8	10	30
8	8	15	6
12	4	0	42
12	4	5	1
12	6	0	59
12	6	5	13
12	6	10	1
12	8	0	77
12	8	5	42
12	8	10	7
12	8	15	1
12	12	0	109
12	12	5	86
12	12	10	63
12	12	15	39
16	4	0	42
16	4	5	1
16	6	0	59
16	6	5	1
16	8	0	78
16	8	5	39
16	8	10	1
16	12	0	110
16	12	5	84
16	12	10	59
16	12	15	33
16	12	20	7
16	16	0	142
16	16	5	123
16	16	10	104
16	16	15	85
16	16	20	65
24	24	5	169
24	24	10	136
24	24	15	103
24	24	20	70

NOTES:

1. RESTRAINED LENGTH CALCULATIONS FOR P.V.C PIPE BEDDED IN COMPACTED GRANULAR MATERIAL EXTENDING TO THE TOP OF THE PIPE. NATIVE SOIL MATERIAL IS ASSUMED TO BE INORGANIC CLAY OF HIGH PLASTICITY. DEPTH OF BURY IS ASSUMED TO BE 4 FEET.
2. THESE CALCULATIONS ARE PROVIDED FOR REFERENCE. THE RESTRAINED LENGTH SHALL BE DESIGNED BASED UPON THE CONDITIONS ENCOUNTERED DURING INSTALLATION.
3. CONTRACTOR SHALL RESTRAIN ALL JOINTS WITHIN THE REQUIRED RESTRAINT DISTANCE PLUS THE NEXT JOINT OUTSIDE THE REQUIRED RESTRAINT DISTANCE.

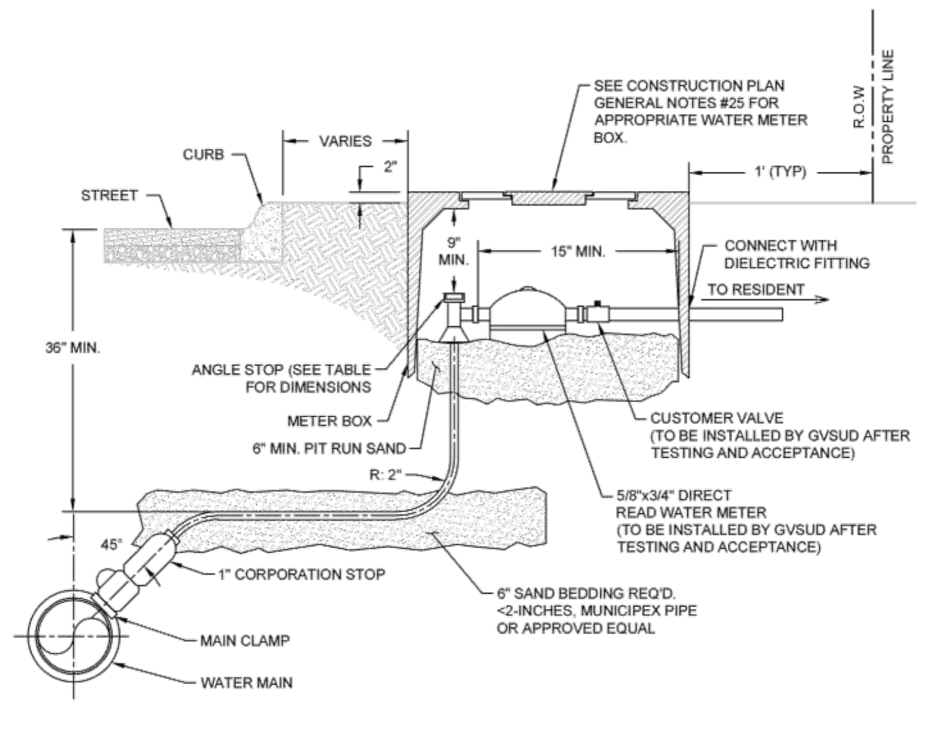
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
TEE RESTRAINED LENGTH DESIGN
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-21


5" STORZ CONNECTION
STAINLESS STEEL CHAINS TO BE PROVIDED
18" MIN 24" MAX.
BURY LINE
18"x18"x10" CONCRETE COLLAR WITH 4-NO.4 BARS OCEW
FINISHED GROUND ELEVATION
6" DI RISER
GEO TEXTILE FABRIC
12"
6" DI NIPPLE
1" TO 2" CLEAN GRAVEL
PROVIDE MJ ANCHOR TEE ON WATER MAIN
3'-0"
DO NOT BLOCK AND MAINTAIN CLEAN WEEP HOLES
2 CUBIC FEET OF CONCRETE THRUST BLOCKING (BITUMINOUS FELT PAPER BETWEEN F.H. AND CONCRETE)
6" GATE VALVE W/ BOX MJ X MJ MUELLER A-2370-20
CONCRETE SUPPORT
PROVIDE MEGALUG RESTRAINTS ON ALL MJ ENDS OR USE RESTRAINT FITTINGS

NOTES:

1. HYDRANT ASSEMBLY INCLUDES FIRE HYDRANT, VALVE, DIP, DI FITTINGS, ANCHOR RESTRAINERS, AND PIPE TO DISTRIBUTION SYSTEM.
2. FIRE HYDRANTS SHALL HAVE A MINIMUM OF 3 FEET OF CLEARANCE SURROUNDING HYDRANT.
3. HYDRANTS SHALL BE A MINIMUM DISTANCE OF 3 FEET BEHIND THE CURB OR 3 FEET FROM THE R.O.W. UNDER NO CIRCUMSTANCES SHALL VALVES OR HYDRANTS BE PLACED IN A CURB OR SIDEWALK. IN AREAS WITHOUT CURBS OR SIDEWALKS, HYDRANT SHALL BE PLACED 3-6 FEET FROM THE DISTRIBUTION SYSTEM.
4. FOR BURY DEPTHS GREATER THAN 5 FEET, ONE BARREL EXTENSION NOT EXCEEDING 3 FEET IN LENGTH SHALL BE INSTALLED DIRECTLY BELOW THE FIRE HYDRANT.
5. 1 CU FOOT (MIN) OF CRUSHED STONE OR GRAVEL SHALL BE PLACED AROUND WEEP HOLE FOR A RADIUS OF 12 INCHES AND EXTEND 12 INCHES ABOVE THE OUTLET.
6. VALVE, DUCTILE IRON PIPE, AND STANDARD FIRE HYDRANT SYSTEM SHALL BE RESTRAINT JOINT CONTINUOUSLY TOGETHER.
7. FIRE HYDRANT SHALL BE 6 INCH (3) WAY HYDRANT WITH BREAK AWAY BOLTS (SHOE TYPES) PROVIDED WITH STORZ CONNECTION. DEPTH OF BURY SHALL BE 42 INCHES MINIMUM. FIRE HYDRANTS MUST BE SET PLUMB. HOSE CONNECTION MUST FACE ROADWAY.
8. HYDRANT ASSEMBLY SHALL BE RESTRAINED FROM TEE TO HYDRANT.
9. IN THE CITY OF CIBOLO'S CITY LIMITS, FIRE HYDRANTS SHALL BE MUELLER TYPE AND SHALL BE 1 FOOT MINIMUM AND 7 FEET MAXIMUM FROM THE BACK OF CURB.
10. HYDRANTS UPPER BARREL SHALL BE FACTORY PAINTED RED WITH BONNET AND CAPS COATED PER CURRENT NFPA 291 STANDARDS.
11. HYDRANTS LOCATED IN RURAL AREAS SHALL HAVE 6' TALL POLLARD WATER FLEXIFLAG #PP68802.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
STANDARD HYDRANT ASSEMBLY INSTALLATION
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-22


SEE CONSTRUCTION PLAN GENERAL NOTES #25 FOR APPROPRIATE WATER METER BOX
R.O.W.
PROPERTY LINE
CURB
VARIES
2"
STREET
1' (TYP)
9" MIN
15" MIN
CONNECT WITH DIELECTRIC FITTING TO RESIDENT
36" MIN.
ANGLE STOP (SEE TABLE FOR DIMENSIONS)
METER BOX
6" MIN. PIT RUN SAND
R: 2'
CUSTOMER VALVE (TO BE INSTALLED BY GVSUD AFTER TESTING AND ACCEPTANCE)
5/8"x3/4" DIRECT READ WATER METER (TO BE INSTALLED BY GVSUD AFTER TESTING AND ACCEPTANCE)
45°
1" CORPORATION STOP
6" SAND BEDDING REQ'D. <2-INCHES, MUNICIPEX PIPE OR APPROVED EQUAL
MAIN CLAMP
WATER MAIN

MAIN SIZE	METER SIZE	MAIN SADDLE	CORPORATION	ANGLE STOP
<12"	5/8" OR 3/4"	S-91804 IP	H-15028 IP 1"	B-24258N: 1"x 3/4"
<12"	1"	S-91804 IP	H-15028 IP 1"	B-24258N: 1"X1"

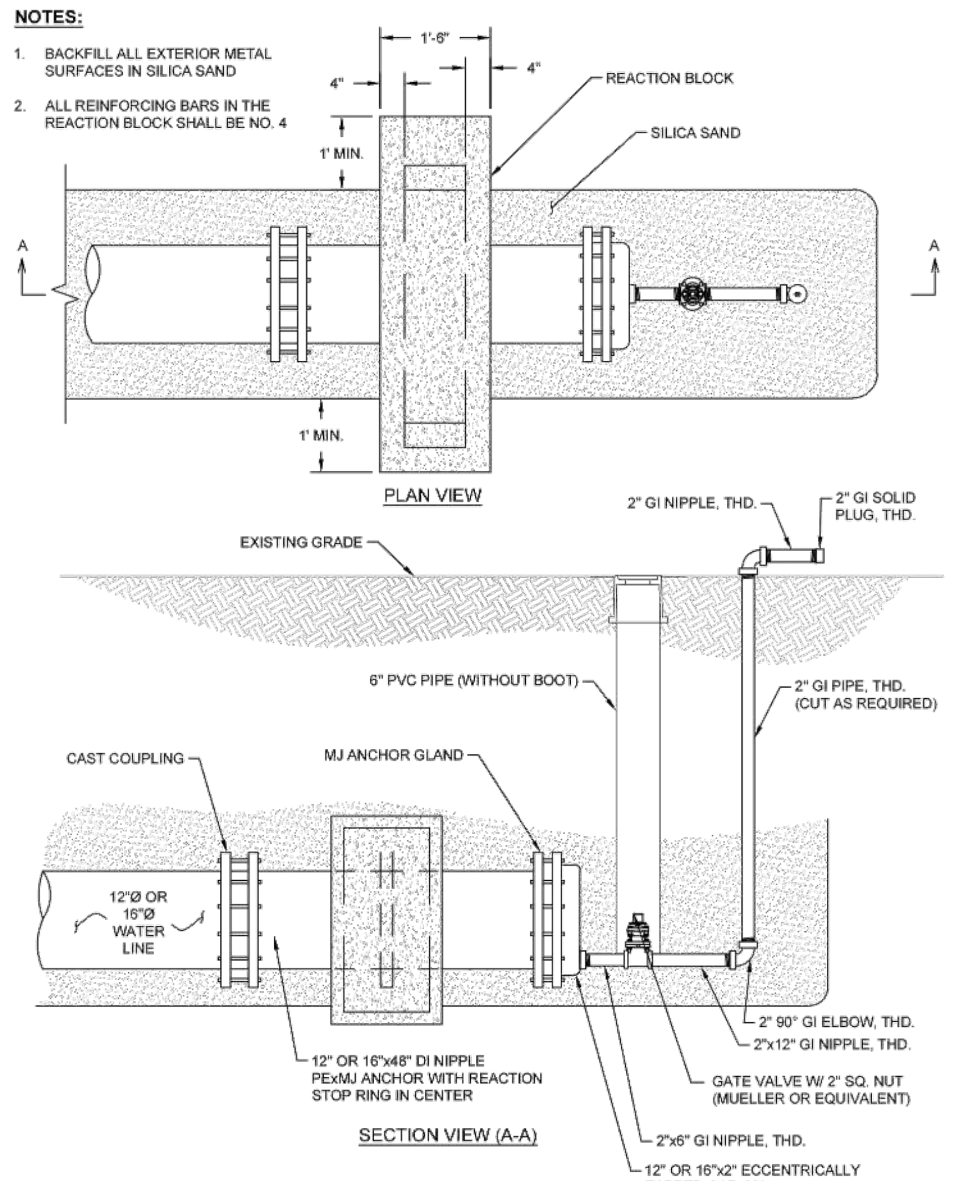
NOTES:

1. FITTINGS SHALL BE MUELLER OR APPROVED EQUAL.
2. A TRACER WIRE SHALL BE INSTALLED ON THE SERVICE LINE TAPED AT 10-INCH INCREMENTS.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
STANDARD SERVICE CONNECTION
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-23

NOTES:

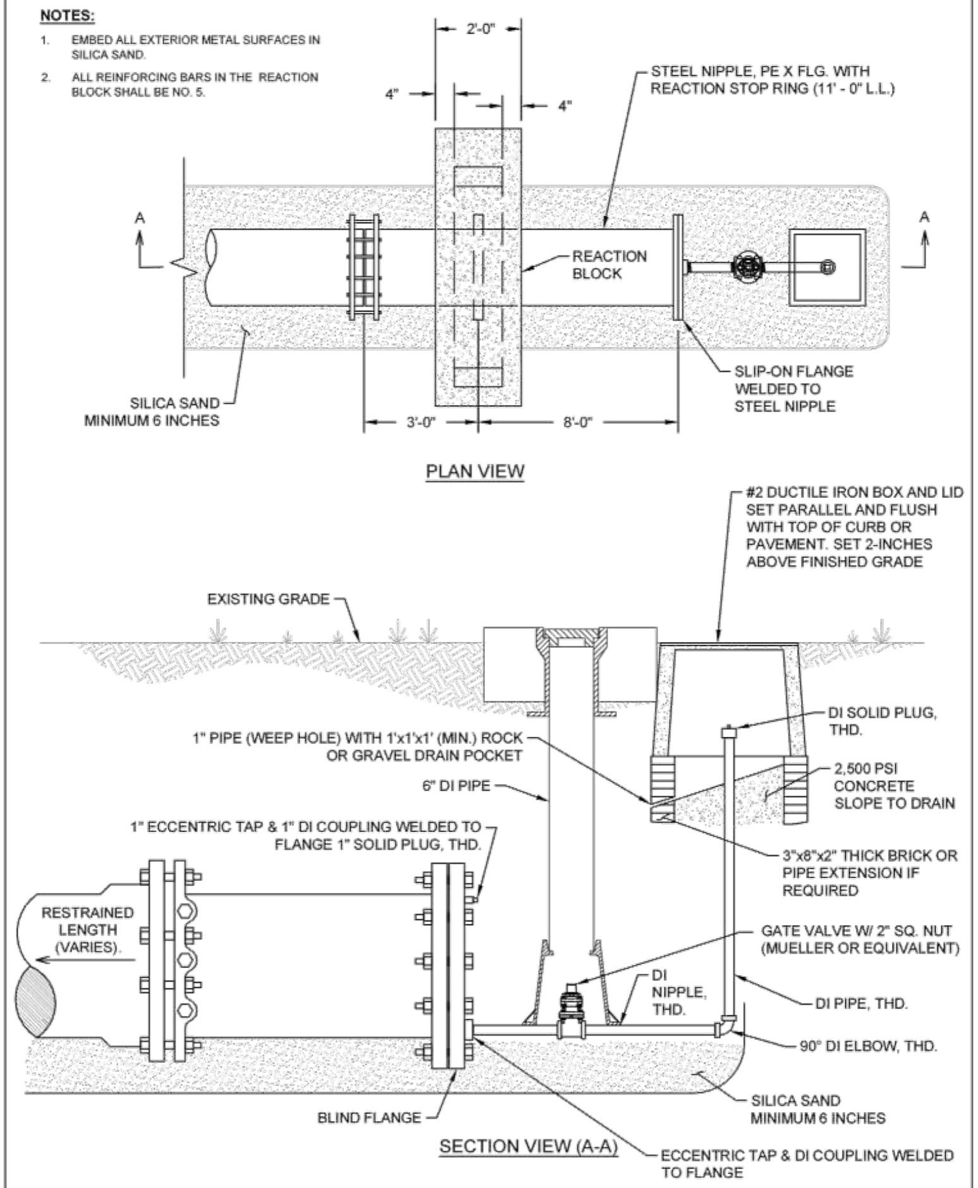
1. BACKFILL ALL EXTERIOR METAL SURFACES IN SILICA SAND
2. ALL REINFORCING BARS IN THE REACTION BLOCK SHALL BE NO. 4


1'-6"
4"
4"
REACTION BLOCK
SILICA SAND
1' MIN.
A
A
1' MIN.
PLAN VIEW
2" GI NIPPLE, THD.
2" GI SOLID PLUG, THD.
EXISTING GRADE
6" PVC PIPE (WITHOUT BOOT)
2" GI PIPE, THD. (CUT AS REQUIRED)
CAST COUPLING
MJ ANCHOR GLAND
12"Ø OR 16"Ø WATER LINE
2" 90° GI ELBOW, THD.
2"x12" GI NIPPLE, THD.
12" OR 16"x6" DI NIPPLE PExMJ ANCHOR WITH REACTION STOP RING IN CENTER
GATE VALVE W/ 2" SQ. NUT (MUELLER OR EQUIVALENT)
2"x6" GI NIPPLE, THD.
12" OR 16"x2" ECCENTRICALLY TAPPED CAP, MJ
SECTION VIEW (A-A)

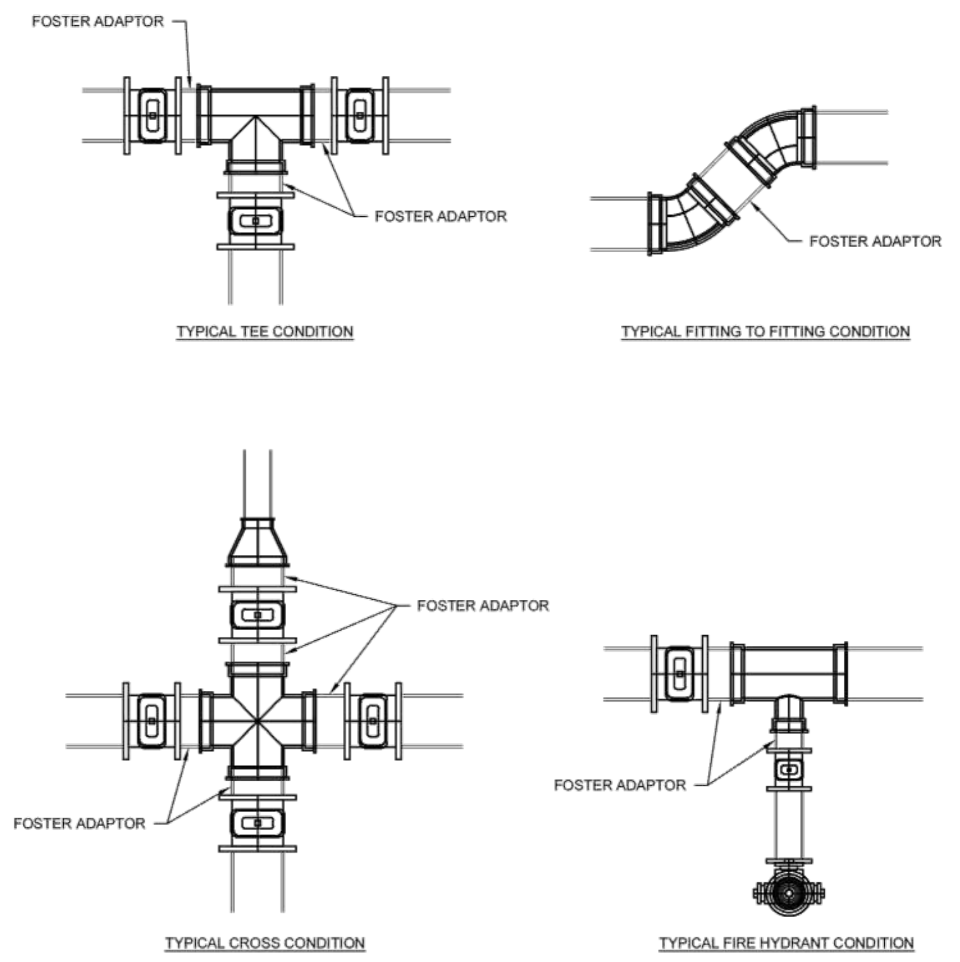
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
2" TEMPORARY BLOW-OFF ASSEMBLY ON 12" TO 16" MAINS
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-25

NOTES:

1. EMBED ALL EXTERIOR METAL SURFACES IN SILICA SAND.
2. ALL REINFORCING BARS IN THE REACTION BLOCK SHALL BE NO. 5.


2'-0"
4"
4"
STEEL NIPPLE, PE X FLG. WITH REACTION STOP RING (11' - 0" L.L.)
REACTION BLOCK
A
A
SILICA SAND MINIMUM 6 INCHES
SLIP-ON FLANGE WELDED TO STEEL NIPPLE
3'-0"
6'-0"
PLAN VIEW
#2 DUCTILE IRON BOX AND LID SET PARALLEL AND FLUSH WITH TOP OF CURB OR PAVEMENT, SET 2-INCHES ABOVE FINISHED GRADE
EXISTING GRADE
DI SOLID PLUG, THD.
1" PIPE (WEEP HOLE) WITH 1'x1'x1' (MIN.) ROCK OR GRAVEL DRAIN POCKET
2,500 PSI CONCRETE SLOPE TO DRAIN
6" DI PIPE
1" ECCENTRIC TAP & 1" DI COUPLING WELDED TO FLANGE 1" SOLID PLUG, THD.
3"x6"x2" THICK BRICK OR PIPE EXTENSION IF REQUIRED
RESTRAINED LENGTH (VARIES)
GATE VALVE W/ 2" SQ. NUT (MUELLER OR EQUIVALENT)
DI NIPPLE, THD.
DI PIPE, THD.
90° DI ELBOW, THD.
SILICA SAND MINIMUM 6 INCHES
BLIND FLANGE
ECCENTRIC TAP & DI COUPLING WELDED TO FLANGE
SECTION VIEW (A-A)

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
2" & 4" PERMANENT URBAN BLOW-OFF ASSEMBLY
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-28


FOSTER ADAPTOR
FOSTER ADAPTOR
FOSTER ADAPTOR
FOSTER ADAPTOR
FOSTER ADAPTOR
FOSTER ADAPTOR

TYPICAL TEE CONDITION

TYPICAL FITTING TO FITTING CONDITION

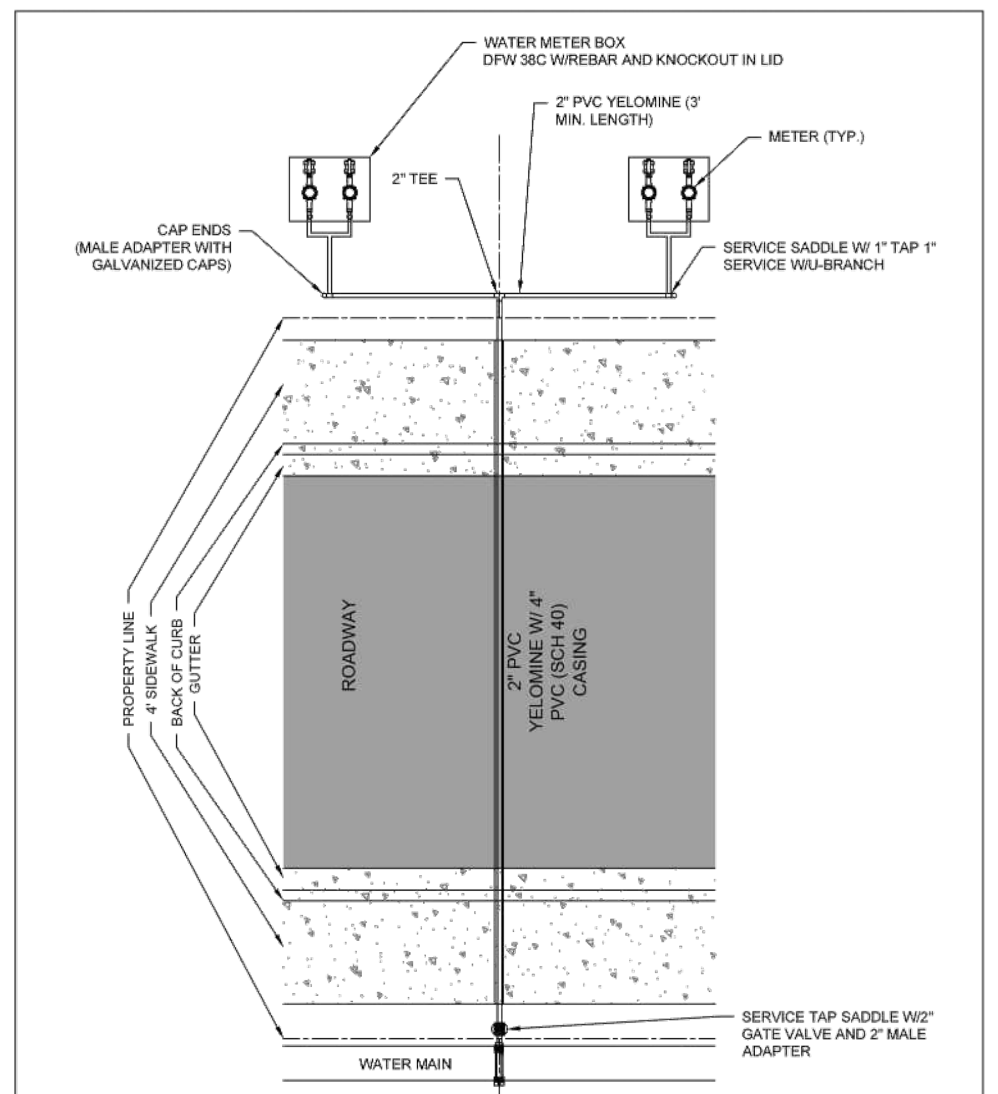
TYPICAL CROSS CONDITION

TYPICAL FIRE HYDRANT CONDITION

NOTE:

1. FOSTER ADAPTORS, OR APPROVED EQUAL, REQUIRED AT ALL FITTING TO FITTING CONNECTIONS AND FITTING TO VALVE CONNECTIONS.
2. ANCHOR COUPLINGS MAY BE SUBSTITUTED FOR FOSTER ADAPTORS AT GVSUD'S DISCRETION.

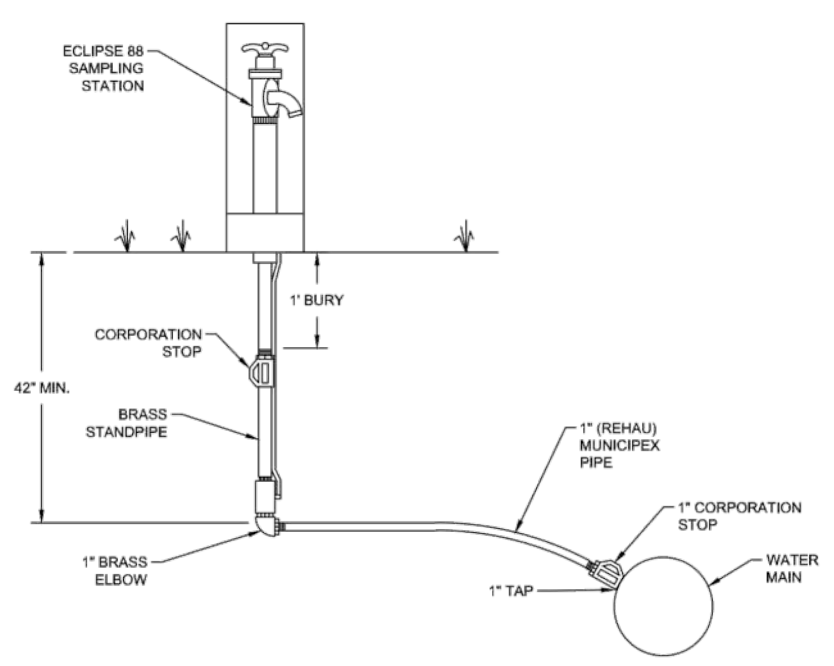
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
MECHANICAL JOINT ADAPTOR DETAIL
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-31


WATER METER BOX DFW 38C W/REBAR AND KNOCKOUT IN LID
2" PVC YELOMINE (3' MIN. LENGTH)
2" TEE
METER (TYP.)
CAP ENDS (MALE ADAPTER WITH GALVANIZED CAPS)
SERVICE SADDLE W/ 1" TAP 1" SERVICE W/U-BRANCH
PROPERTY LINE
4' SIDEWALK
BACK OF CURB
GUTTER
ROADWAY
2" PVC YELOMINE W/ 4" PVC (SCH. 40) CASING
SERVICE TAP SADDLE W/2" GATE VALVE AND 2" MALE ADAPTER
WATER MAIN

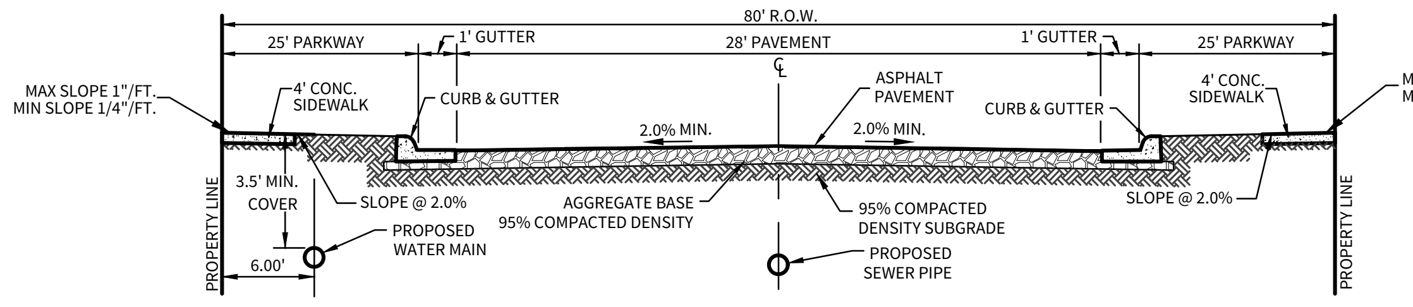
NOTE:

1. MALE ADAPTOR AND TEE SHALL BE HARCO TYPE FITTINGS OR APPROVED EQUAL.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
MULTI-DWELLING UNIT WATER SERVICE DETAIL
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-32

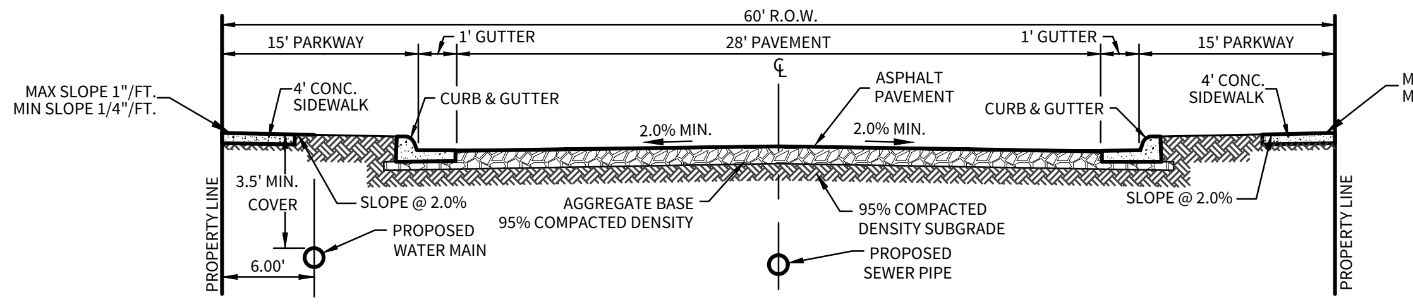

ECLIPSE 88 SAMPLING STATION
1' BURY
CORPORATION STOP
42" MIN.
BRASS STANDPIPE
1" (REHAU) MUNICIPEX PIPE
1" CORPORATION STOP
WATER MAIN
1" BRASS ELBOW
1" TAP

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
WATER SAMPLING STATION DETAIL
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-33


80' R.O.W.
25' PARKWAY
1' GUTTER
28' PAVEMENT
28' PAVEMENT
1' GUTTER
25' PARKWAY
MAX SLOPE 1"/FT. MIN SLOPE 1/4"/FT.
4' CONC. SIDEWALK
CURB & GUTTER
ASPHALT PAVEMENT
2.0% MIN.
2.0% MIN.
CURB & GUTTER
4' CONC. SIDEWALK
MAX SLOPE 1"/FT. MIN SLOPE 1/4"/FT.
3.5' MIN. COVER
SLOPE @ 2.0%
AGGREGATE BASE 95% COMPACTED DENSITY
95% COMPACTED DENSITY SUBGRADE
SLOPE @ 2.0%
6.00'
PROPOSED WATER MAIN
PROPOSED SEWER PIPE
PROPERTY LINE
PROPERTY LINE

COLLECTOR STREET CROSS-SECTION

N.T.S.


60' R.O.W.
15' PARKWAY
1' GUTTER
28' PAVEMENT
1' GUTTER
15' PARKWAY
MAX SLOPE 1"/FT. MIN SLOPE 1/4"/FT.
4' CONC. SIDEWALK
CURB & GUTTER
ASPHALT PAVEMENT
2.0% MIN.
2.0% MIN.
CURB & GUTTER
4' CONC. SIDEWALK
MAX SLOPE 1"/FT. MIN SLOPE 1/4"/FT.
3.5' MIN. COVER
SLOPE @ 2.0%
AGGREGATE BASE 95% COMPACTED DENSITY
95% COMPACTED DENSITY SUBGRADE
SLOPE @ 2.0%
6.00'
PROPOSED WATER MAIN
PROPOSED SEWER PIPE
PROPERTY LINE
PROPERTY LINE

MINOR STREET CROSS-SECTION

N.T.S.

GVSUD CONSTRUCTION PLAN GENERAL NOTES

1. ALL WORKMANSHIP AND MATERIALS FOR THE WATER SYSTEM SHALL CONFORM TO THE WATER STANDARDS AND DESIGN CRITERIA OF GREEN VALLEY SPECIAL UTILITY DISTRICT (GVSUD).
2. PVC MAINS 12-INCHES AND BELOW SHALL CONFORM TO AWWA C-909 PRESSURE CLASS 235 OR ABOVE DEPENDING ON SYSTEM PRESSURES. PVC MAIN GREATER THAN 12 INCHES SHALL CONFORM TO AWWA C-900 DR 18 OR ABOVE DEPENDING ON SYSTEM PRESSURES. WATER MAINS SHALL HAVE AN ABSOLUTE MINIMUM DEPTH OF 5-FEET BELOW ROADWAY LEVEL AND 42-INCHES IN ALL OTHER AREAS.
3. ALL WATER MAIN DUCTILE IRON FITTINGS SHALL BE MECHANICAL JOINT AND CONFORM TO ANSI/AWWA C-153 OR C-110. ALL BOLTS SHALL HAVE KOPR KOTE OR APPROVED EQUAL ANTI-SEIZE CORROSION RESISTANT COATING. VALVES SHALL BE ATTACHED TO TEES BY FOSTER ADAPTOR OR ANCHOR NIPPLE. FOSTER ADAPTER, ANCHOR NIPPLE, OR FORD UNI-FLANGE RETAINER GLANDS AND THRUST BLOCKS SHALL BE USED ON ALL FITTINGS AND VALVES.
4. TRACER WIRE SHALL BE INSTALLED ON ALL PIPELINES INCLUDING SERVICE LINES AND BROUGHT INTO VALVE AND METER BOXES FOR LOCATING PURPOSES. INSULATED WATER PROOF CONNECTORS SHALL BE USED TO SPLICE WIRES TOGETHER. A 12-INCH-WIDE DETECTABLE METAL TAPE SHALL BE PLACED ABOVE BEDDING INITIAL BACKFILL.
5. EXCEEDING MAXIMUM DEFLECTION IS PROHIBITED. THE ANGULAR DEFLECTION AT BELL-SPIGOT JOINTS SHOULD NOT EXCEED ONE (1) DEGREE. THIS WILL PRODUCE A 4-INCH OFFSET FOR EVERY 20-FOOT SECTION OF PIPE. JOINT DEFLECTION IS ACHIEVED AFTER THE JOINT IS ASSEMBLED IN STRAIGHT ALIGNMENT AND DEFLECTED TO THE REFERENCE MARK. THE BELL SHOULD BE BRACED TO ALLOW THE FREE END TO MOVE LATERALLY UNDER STEADY PRESSURE USING A PRY BAR OR OTHER SUITABLE MEANS. CARE SHOULD BE TAKEN NOT TO EXCEED THE MAXIMUM DEFLECTION ALLOWED OR TO DAMAGE THE PIPE WITH MACHINERY. ABRUPT CHANGES IN DIRECTION SHALL BE ACCOMPLISHED WITH FITTINGS.
6. OVER STRESSING THE BELL BY OVER INSERTING THE JOINTS, OVERBELLING, AND PASSING THE INSERTION REFERENCE MARK IS PROHIBITED AND WILL REQUIRE REMOVAL AND REINSTALLATION.
7. STANDARD FIRE HYDRANT SHALL INCLUDE HYDRANT, 6-INCH RESILIENT GATE VALVE AND BOX, ANCHOR FITTINGS, DUCTILE IRON PIPE, AND ALL APPURTENANCES. HYDRANTS SHALL BE LIMITED TO THOSE MANUFACTURED BY MUELLER, AVK, AMERICAN FLOW, CLOW, OR EAST JORDAN. ONLY MUELLER HYDRANTS AND EJ SHALL BE USED IN CITY OF CIBOLO'S JURISDICTION. HYDRANT UPPER BARREL SHALL BE FACTORY PAINTED RED. HYDRANTS SHALL HAVE A STORTZ CONNECTION ON STEAMER NOZZLE. FITTINGS FOR PLUG SHALL BE FULLY RESTRAINED AND TIED TO VALVE.

GVSUD CONSTRUCTION PLAN GENERAL NOTES

8. VALVES SHALL BE AWWA APPROVED RESILIENT WEDGE SEATED GATE VALVE, OPEN LEFT, AND LIMITED TO THOSE MANUFACTURED BY MUELLER, AVK, AMERICAN FLOW, CLOW, OR EAST JORDAN.
9. VALVES ARE PROHIBITED IN ADA RAMPS, CURBS, AND ROADWAYS. VALVES ARE PROHIBITED IN SIDEWALKS IN CITY OF NEW BRAUNFELS.
10. METER BOXES ARE PROHIBITED IN ANY SIDEWALKS, DRIVEWAYS, OR ROADWAYS.
11. SMALL SERVICE TAPS SHALL BE EITHER 1-INCH OR 2 INCH AND SHALL BE REHAU MUNICIPEX WITH CTS 200 PSI PLASTIC INSERT. SMALL SERVICE TAPS TO BE MADE WITH SINGLE BRASS STRAP TAPPING SADDLE WITH IRON PIPE THREADS. EXCEPTION: IF LOCATED WITHIN CITY OF CIBOLO- SERVICE TAPS TO BE MADE WITH DOUBLE STAINLESS STRAP EPOXY COATING SADDLES WITH IRON PIPE THREADS.
12. CASING REQUIRED FOR ALL LONG SMALL SERVICES. 1 INCH SERVICE REQUIRES 3 INCH CASING AND 2 INCH SERVICE REQUIRES 4 INCH CASING. CASING SHALL BE PVC SCHEDULE 40 OR APPROVED EQUAL.
13. SINGLE 5/8" & ¾" METER BOXES SHALL BE DFW36C 16" X 11". DUAL 5/8" & ¾" METER BOXES SHALL BE DFW38C 17" X 15". 1-INCH METER BOXES SHALL BE DFW65C-14-1A 15 1/4" X 30 3/8". ALL METER BOXES SHALL BE PLASTIC WITH LIDS HAVING REBAR, ARM, AND KNOCKOUT.
14. THE FORD U BRANCH IS TO BE USED ON ALL DUAL SERVICES (U48-43Q) WITH THE 5/8" X 3/4" FEMALE THREAD ANGLE HEAD. ALL OTHER ANGLE HEADS WILL BE THE FORD Q NUT. ALL CORPORATION STOPS WILL BE IPS X Q NUT. ALL BRASS VALVES TO BE 'BALL' TYPE MINIMUM 200 PSI PRESSURE RATING. "CC" THREADED CORPORATION STOPS PROHIBITED.
15. TAPPING MACHINES UTILIZED FOR INSTALLING ANY TYPE OF TAP 1-INCH TO 2-INCHES WILL BE OF THE PURGE TYPE, WHICH AT THE TIME OF TAPPING SHALL EXPEL ALL CHIPS AND RESIDUE TO ATMOSPHERE THROUGH AN APPROPRIATE OUTLET AND/OR BE ABLE TO RETAIN THE COUPON.
16. ALL WATER MAIN, PIPE, CASINGS, FITTINGS, AND VALVES SHALL BE LAID IN MANUFACTURED SAND EMBEDMENT PER DETAILS. THE SAND SHALL FULLY ENCASE ALL PIPES, INCLUDING FITTINGS AND VALVES, BY A MINIMUM OF 12-INCHES. ALL FITTINGS AND VALVES ARE TO RECEIVE THRUST BLOCKING, FOSTER ADAPTER, ANCHOR NIPPLE, FORD UNI-FLANGE RETAINER GLAND JOINT RESTRAINTS, AND BELL JOINT RESTRAINTS WHEN SPECIFIED BY GVSUD OR THE DISTRICT'S ENGINEER.
17. CONTRACTOR TO CURB CUT V'S FOR VALVES AND X'S FOR METERS.
18. PRIOR TO CONSTRUCTION OF THE SEWER AND WATER MAINS, ALL R.O.W. ROADWAYS AND PARKWAY SHALL HAVE REFERENCE SURVEY STAKING AND BE EXCAVATED OR PROPERLY FILLED TO SUB-GRADE ELEVATION.

GVSUD CONSTRUCTION PLAN GENERAL NOTES

19. SURVEY STAKING OFFSETS ARE REQUIRED FOR ALL WATER MAIN AND APPURTENANCES.
20. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM AVAILABLE RECORDS AND ARE NOT GUARANTEED. CONTRACTOR SHALL INVESTIGATE AND FIELD VERIFY UTILITY LOCATIONS A MINIMUM OF 300 LF AHEAD OF CROSSING AND TIE-IN LOCATIONS. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY DAMAGE TO AND FOR MAINTENANCE PROTECTION OF THE EXISTING UTILITIES, WHETHER THEY ARE SHOWN ON THE PLANS OR NOT.
21. ALL WASTEWATER PIPES CROSSING THE POTABLE WATER DISTRIBUTION SYSTEM WILL BE HELD IN STRICT ACCORDANCE WITH TCEQ RULES AND REGULATIONS. PROPOSED SUB-GRADE LIMITS AND DIMENSIONS MUST BE SHOWN ON THE PLANS, AND CONSTRUCTION PROCEDURES WILL BE INSPECTED TO VERIFY COMPLIANCE WITH TCEQ 290.44(E).
22. OTHER UTILITIES SHALL NOT BE LOCATED CLOSER THAN 3-FEET TO WATER MAINS.
23. THE GREEN VALLEY INSPECTOR SHALL BE NOTIFIED AT LEAST FORTY-EIGHT HOURS PRIOR TO BACK FILLING OR TESTING.
24. A FIELD PRE-CONSTRUCTION MEETING SHALL BE HELD BEFORE CONSTRUCTION BEGINS AND MATERIAL SHALL BE AVAILABLE ON-SITE FOR INSPECTION.
25. CONTRACTOR SHALL CHLORINATE NEW MAINS PER TCEQ AND ANSI/AWWA C651 AND DECHLORINATE DURING FLUSHING PER ANSI/AWWA C655; THE CONTRACTOR SHALL COORDINATE WITH THE GVSUD INSPECTOR TO WITNESS CHLORINATING AND PRESSURE TESTING OF NEW MAINS. ALL TEST RESULTS MUST BE PROVIDED TO GVSUD.
26. OPERATION OF EXISITNG VALVES IN THE GVSUD WATER DISTRIBUTION SYSTEM SHALL ONLY BE AS APPROVED BY GVSUD AND IN THE PRESENCE OF GVSUD PERSONNEL. THE CONTRACTOR SHALL NOTIFY GVSUD WHEN A VALVE NEEDS TO BE OPERATED AND MAY ONLY OPERATE A VALVE IN THE PRESENCE OF THE GVSUD INSPECTOR.
27. NEW WATER MAINS AND APPURTENANCES SHALL PASS PRESSURE TESTING AND PASS THE MINIMUM PUBLIC HEALTH STANDARDS FOR BACTERIOLOGICAL QUALITY TESTING PRIOR TO ANY TIE IN TO THE EXISTING GVSUD WATER SYSTEM AS REQUIRED BY TCEQ AND ANSI/AWWA.
28. HYDROSTATIC PRESSURE TESTING SHALL BE EVERY 200 LF (MAX) OF LINE OR AS APPROVED BY THE ENGINEER. ALL ERRORS OF WORKMANSHIP SHALL BE CORRECTED IMMEDIATELY. ALL PARTS OF THE PIPELINE SHALL BE BACKFILLED AND BRACED SUFFICIENTLY TO PREVENT MOVEMENT UNDER PRESSURE.
29. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH AND CONFINED SPACE ENTRY SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION AND ALL RELATED WORK. ANY

GVSUD CONSTRUCTION PLAN GENERAL NOTES

TRENCH PROTECTION SAFETY VIOLATION WILL BE DOCUMENTED AND WILL RESULT IN AN IMMEDIATE WORK STOPPAGE BY THE GVSUD INSPECTOR AT MINUMUM UNTIL THE NEXT WORKDAY.

30. CONTRACTOR MUST PROTECT ALL UNATTENDED TRENCHES AND EXCAVATIONS WITH TEMPORARY FENCING.
31. NO TREES MAY BE PLANTED IN THE AREAS DESIGNATED AS WATER OR UTILITY EASEMENTS, OR AREAS WHERE WATER MAINS AND WATER SERVICE CROSSINGS EXIST OR ARE PLANNED TO BE CONSTRUCTED.
32. ALL GARBAGE OR SPOIL MATERIAL FROM THE WORK SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE.
33. CONTRACTOR SHALL PROVIDE "AS-BUILT" WATER LINE PLANS AT THE PRELIMINARY WALK THRU FOR THE GVSUD INSPECTOR AND ENGINEER. THE PLANS SHALL LIST MATERIAL MANUFACTURERS, LINE LENGTH FROM FITTING TO FITTING, AND TAP LOCATIONS.
34. GPS FILES SHALL BE PROVIDED BY THE CONTRACTOR TO THE ENGINEER AND GVSUD INSPECTOR FOR THE PLAN OF RECORD. CONTRACTOR SHALL PROVIDE AN ASCII COMMA DELIMITED OR EXCEL FILE CONTAINING THREE-DIMENSIONAL GPS SURVEY POINTS WITH FOUR (4) DECIMAL PLACES OF PRECISION, LESS THAN FOUR (4) INCHES OF HORIZONTAL POSITION ACCURACY, AND LESS THAN EIGHT (8) INCHES OF VERTICAL POSITION ACCURACY. POINTS SHALL BE PROVIDED FOR A MINIMUM OF THREE (3) CONTROL POINTS AND ALL FITTINGS, APPURTENANCES, ENCASEMENTS, VAULTS, AND TANKS. THE ENGINEER SHALL FURNISH PLAN OF RECORD DRAWINGS TO GVSUD FOR APPROVAL HAVING FINAL MEASUREMENTS AND THAT MATCH THE GPS 'X', 'Y', AND 'Z' COORDINATES.
35. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH ALL THE INFORMATION AS REQUIRED SO THAT THE ENGINEER CAN SUPPLY GVSUD THE GIS PACKAGE FOR APPROVAL.
36. A FINAL WALK THRU FOR FINAL FIELD ACCPETANCE WILL BE SCHEDULED WITH THE CONTRACTOR AFTER THE PRELIMINARY WALK THRU PUNCH LIST ITEMS HAVE BEEN COMPLETED AND AFTER THE GIS PACKAGE IS APPROVED AND ACCEPTED BY GVSUD.
37. GVSUD CONTACT NUMBER: 830-914-2330

REVISED: JULY 22,2022

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GOERKE SUBDIVISION PHASE 1

WATER DISTRIBUTION STANDARD NOTES AND DETAILS

DATE
02/10/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
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KYLE M. HUDEK
138753
02/11/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C5.D2

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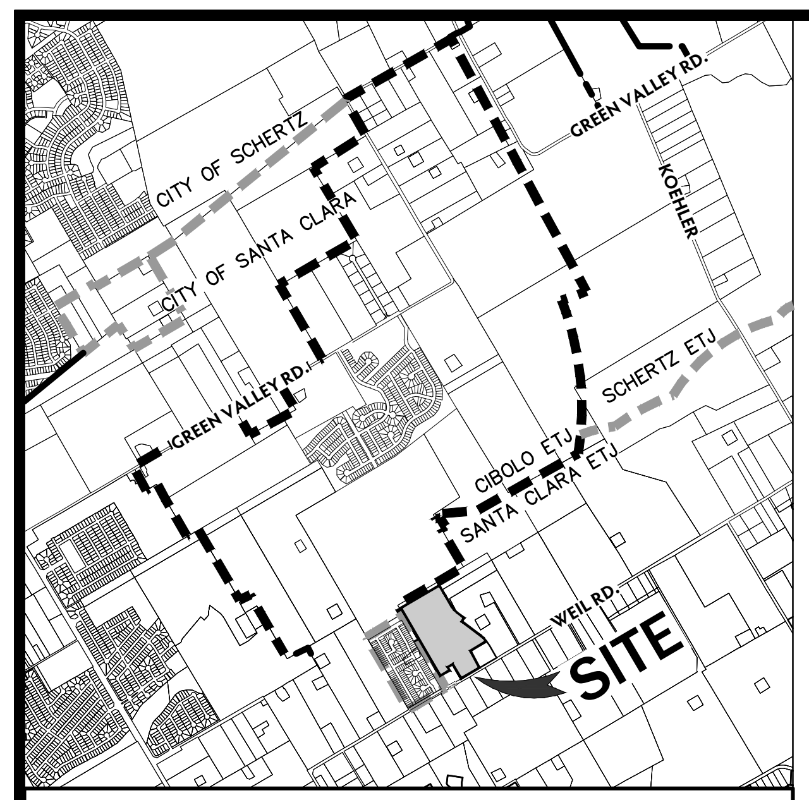

CITY OF SCHERTZ
CITY OF SANTA CLARA
GREEN VALLEY RD.
KOEHLER
SCHERTZ ETJ
CIBOLO ETJ
SANTA CLARA ETJ
WEIL RD.
SITE

LOCATION MAP

N.T.S.

LEGEND

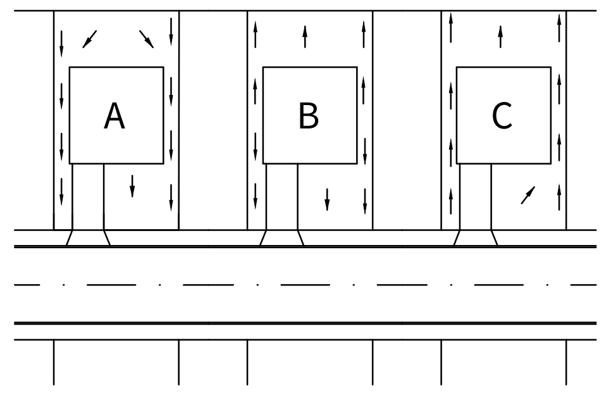
▨ = UNIT 1 BOUNDARY
━ = DRAINAGE BOUNDARY
- - - = SHEET FLOW Tc LINE
- - - = SHALLOW CONCENTRATED Tc LINE
- - - = CONCENTRATED Tc LINE
ⓧⓧ = ACCUMULATION POINT

OWNER/DEVELOPER:

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

CIVIL ENGINEER:

CUDE ENGINEERS
CONTACT PERSON: KYLE HUDEK, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112



TYPICAL LOT SITE PLAN

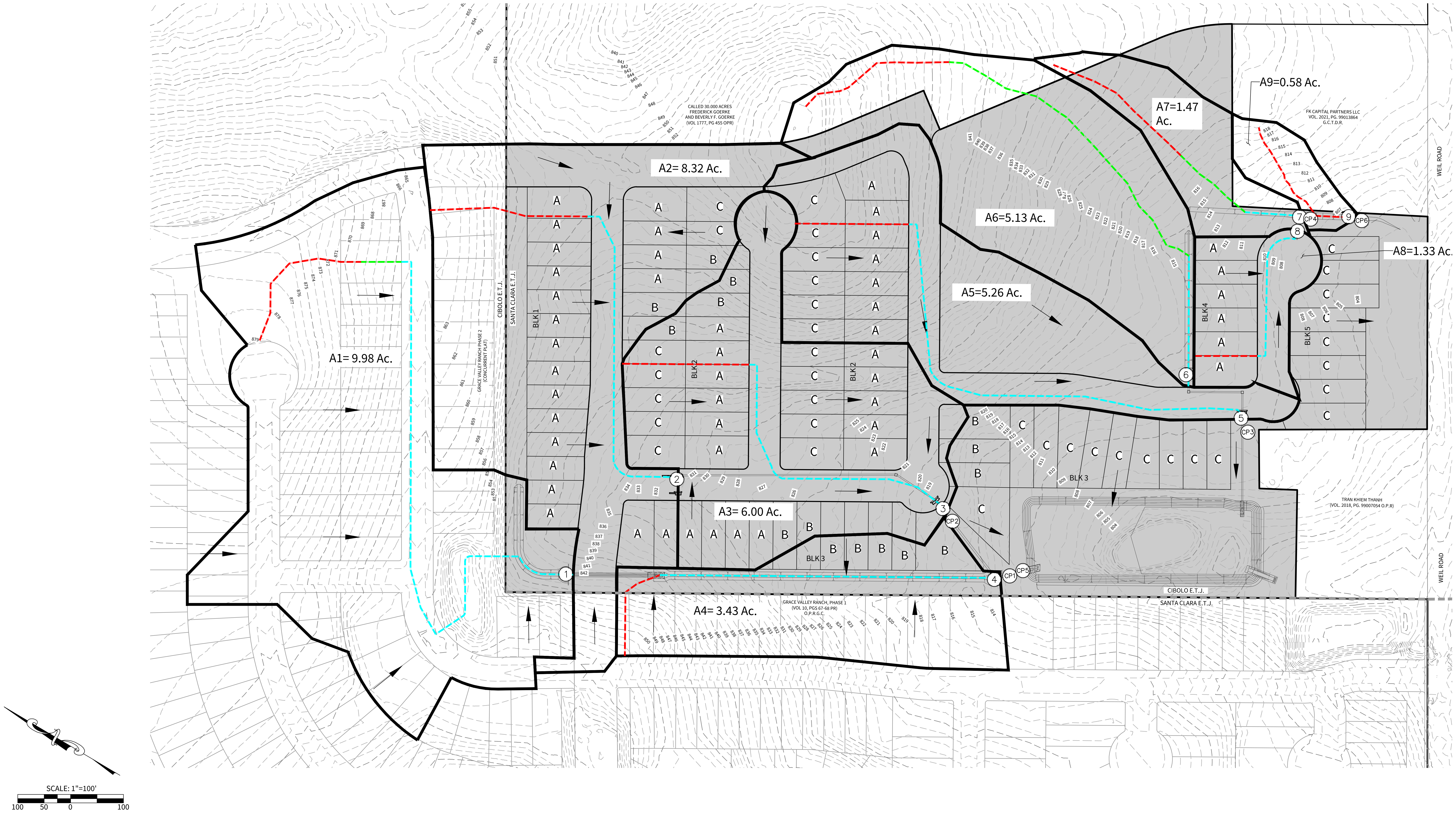
N.T.S.

TIME OF CONCENTRATION CALCULATIONS

Project Name: Goerke Phase 1
Calculation Summary for Time of Concentrations & Ultimate Flow

Preci: PA2

HYDROLOGY						Sheet Flow Tc Compuations						Shallow Conc. Tc Compuations					Concentrated Tc Computations			Overall	INTENSITY			Q FLOW			
Drainage Shed	Shed Area (Ac.)	AREA OF ACCUMULATION (Ac.)	C (5-YR)	C (25-YR)	C (100-YR)	Length ‹ 300'	Paved (Y or N)	Upstream Elev.	Downstream Elev	Slope	Time of Concentration	Length ‹ 650'	Paved (Y or N)	Downstream Elev	Slope	Time of Concentration	Length	Velocity (fps)	Time of Concentration	Time of Concentration (min)	I5	I25	I100	Q5	Q25	Q100	Drainage Shed
A1	9.98	=A1	0.52	0.64	0.72	300.00	N	879.06	868.47	3.53%	18.00	76.23	N	864.42	5.31%	0.34	1111.80	5	3.71	22.00	4.52	6.30	7.94	23.46	40.24	57.05	A1
A2	8.32	=A2	0.52	0.64	0.72	300.00	N	864.34	849.21	5.04%	16.96						627.58	5	2.09	19.00	4.84	6.75	8.51	20.94	35.94	45.70	A2
A3	6.00	=A3	0.52	0.64	0.72	240.00	N	842.63	835.69	2.89%	17.22						559.48	5	1.86	19.00	4.84	6.75	8.51	15.10	25.92	36.76	A3
A4	3.43	=A4	0.52	0.64	0.72	193.74	N	852.52	839.64	6.65%	13.24						635.01	5	2.12	15.00	5.26	7.34	9.27	9.38	16.11	22.89	A4
A5	5.27	=A5	0.47	0.57	0.65	215.29	N	854.96	843.54	5.30%	14.53						911.32	5	3.04	17.00	5.05	7.04	8.89	12.46	21.10	30.24	A5
A6	5.13	=A6	0.37	0.43	0.50	300.00	N	862.00	843.04	6.32%	16.00	606.69	N	813.42	4.88%	2.82	246.17	5	0.82	19.00	4.84	6.75	8.51	9.16	14.97	21.96	A6
A7	1.47	=A7	0.36	0.42	0.49	300.00	N	834.06	819.82	4.75%	17.25	162.84	N	811.69	4.99%	0.75	108.63	5	0.36	18.00	4.94	6.89	8.70	2.61	4.25	6.27	A7
A8	1.33	=A8	0.52	0.64	0.72	119.90	N	814.02	811.79	1.86%	14.28						290.69	5	0.97	15.00	5.26	7.34	9.27	3.64	6.25	8.88	A8
A9	0.58	=A9	0.36	0.42	0.49	275.70	N	818.93	805.84	4.75%	16.25									16.00	5.15	7.19	9.08	1.08	1.75	2.58	A9
CP1	13.41	=A1+A4	0.52	0.64	0.72	300.00	N	879.06	868.47	3.53%	18.00	76.23	N	864.42	5.31%	0.34	1929.89	5	6.43	24.00	4.31	6.00	7.55	30.05	51.49	72.90	CP1
CP2	14.32	=A2+A3	0.52	0.64	0.72	300.00	N	864.34	849.21	5.04%	16.96						1188.14	5	3.96	20.00	4.73	6.60	8.32	35.22	60.49	85.78	CP2
CP3	10.40	=A5+A6	0.37	0.43	0.50	300.00	N	862.00	841.83	6.72%	16.00	538.08	N	813.35	5.29%	2.41	374.94	5	1.25	19.00	4.84	6.75	8.51	18.57	30.35	44.51	CP3
CP4	2.80	=A7+A8	0.36	0.42	0.49	300.00	N	834.06	819.80	4.75%	17.25	152.50	N	812.15	5.02%	0.70	108.63	5	0.36	18.00	4.94	6.89	8.70	4.98	8.10	11.94	CP4
CP5	27.73	=CP1+CP2	0.52	0.64	0.72	300.00	N	879.06	868.47	3.53%	18.00	76.23	N	864.42	5.31%	0.34	1929.89	5	6.43	24.00	4.31	6.00	7.55	62.15	106.48	150.74	CP5
CP6	3.38	=CP4+A9	0.36	0.42	0.49	300.00	N	834.06	819.80	4.75%	17.25	152.50	N	812.15	5.02%	0.70	206.26	5	0.69	18.00	4.94	6.89	8.70	6.01	9.78	14.41	CP6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CP1
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CALLED 30.000 ACRES
FREDERICK GOERKE
AND BEVERLY F. GOERKE
(VOL 1777, PG 455 OPR)
FK CAPITAL PARTNERS LLC
VOL. 2021, PG. 99013864
G.C.T.D.R.
TRAN KHIEM THANH
(VOL. 2018, PG. 99007054 O.P.R)
GRACE VALLEY RANCH, PHASE 1
(VOL 10, PGS 67-68 PR)
O.P.R.G.C.
GRACE VALLEY RANCH PHASE 2
(CONCURRENT PLAT)
CIBOLO E.T.J.
SANTA CLARA E.T.J.
WEIL ROAD
SCALE: 1"=100'
100
50
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GOERKE SUBDIVISION PHASE 1

OVERALL DRAINAGE MASTER PLAN - PROPOSED CONDITIONS

DATE	02/18/2025
PROJECT NO.	03346.101
DRAWN BY	R.B./M.A.S.
CHECKED BY	K.M.H.

REVISIONS
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KYLE M. HUDEK
138753
03/04/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C6.00

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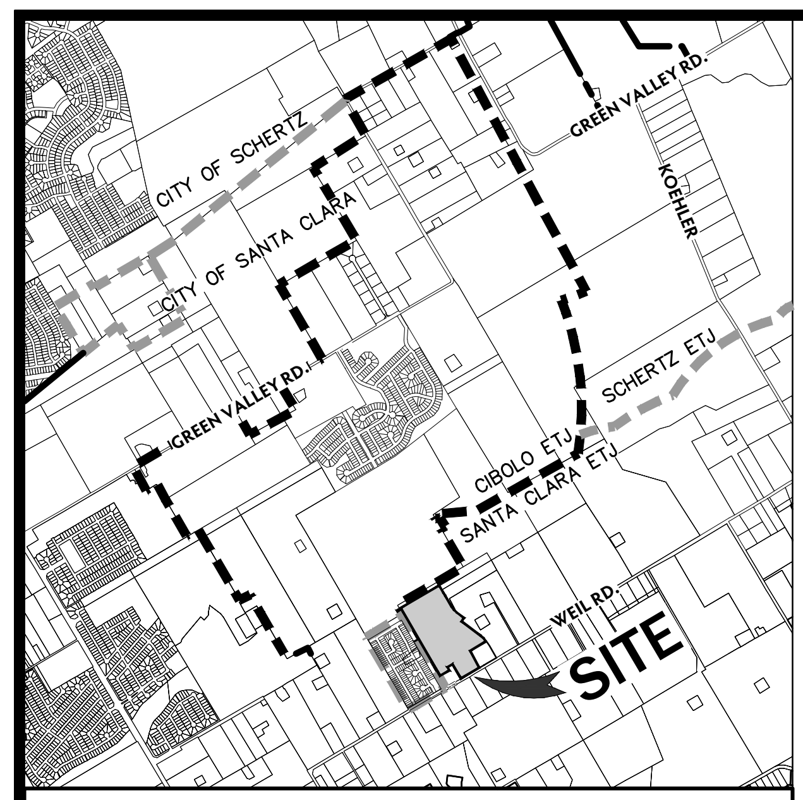

CITY OF SCHERTZ
CITY OF SANTA CLARA
GREEN VALLEY RD.
KOEHLER
SCHERTZ ETJ
CIBOLO ETJ
SANTA CLARA ETJ
WEIL RD.
SITE

LOCATION MAP

N.T.S.

LEGEND

- ▨ = UNIT 1 BOUNDARY
- ▬ = DRAINAGE BOUNDARY
- 🟥 = SHEET FLOW Tc LINE
- 🟩 = SHALLOW CONCENTRATED Tc LINE
- ▬ = CONCENTRATED Tc LINE
- ⓧ = ACCUMULATION POINT

TIME OF CONCENTRATION CALCULATIONS

Project Name: Goerke Phase 1
Calculation Summary for Time of Concentrations & Ultimate Flow

Preci: PA2

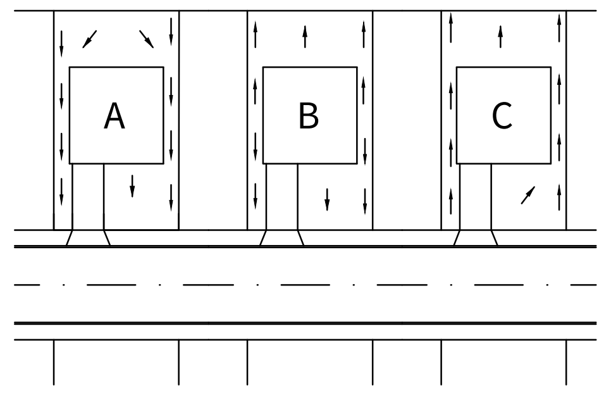
HYDROLOGY						Sheet Flow Tc Compuations						Shallow Conc. Tc Compuations					Concentrated Tc Computations			Overall	INTENSITY			Q FLOW			
Drainage Shed	Shed Area (Ac.)	AREA OF ACCUMULATION (Ac.)	C (5-YR)	C (25-YR)	C (100-YR)	*Length ‹ 300'*	Paved (Y or N)	Upstream Elev.	Downstream Elev	Slope	Time of Concentration	*Length ‹ 650'*	Paved (Y or N)	Downstream Elev	Slope	Time of Concentration	*Length*	Velocity (fps)	Time of Concentration	Time of Concentration (min)	I5	I25	I100	Q5	Q25	Q100	Drainage Shed
A1	9.98	=A1	0.52	0.64	0.72	*300.00*	N	879.06	868.47	3.53%	18.00	*76.23*	N	864.42	5.31%	0.34	*1111.80*	5	3.71	22.00	4.52	6.30	7.94	23.46	40.24	57.05	A1
A2	8.32	=A2	0.52	0.64	0.72	*300.00*	N	864.34	849.21	5.04%	16.96						*627.58*	5	2.09	19.00	4.84	6.75	8.51	20.94	35.94	45.79	A2
A3	6.00	=A3	0.52	0.64	0.72	*240.00*	N	842.63	835.69	2.89%	17.22						*559.48*	5	1.86	19.00	4.84	6.75	8.51	15.10	25.92	36.76	A3
A4	3.43	=A4	0.52	0.64	0.72	*193.74*	N	852.52	839.64	6.65%	13.24						*635.01*	5	2.12	15.00	5.26	7.34	9.27	9.38	16.11	22.89	A4
A5	5.26	=A5	0.47	0.57	0.65	*215.29*	N	854.96	843.54	5.30%	14.53						*911.32*	5	3.04	17.00	5.05	7.04	8.89	12.46	21.10	30.24	A5
A6	3.71	=A6	0.36	0.42	0.49	*300.00*	N	844.00	824.19	6.60%	16.00	*246.16*	N	813.42	4.38%	1.21	*246.17*	5	0.82	18.00	4.94	6.89	8.70	6.60	10.74	15.82	A6
A7	1.40	=A7	0.36	0.42	0.49	*300.00*	N	832.87	817.00	5.29%	16.71	*118.73*	N	811.69	4.47%	0.58	*108.63*	5	0.36	17.00	5.05	7.04	8.89	2.55	4.14	6.10	A7
A8	1.31	=A8	0.52	0.64	0.72	*119.90*	N	814.02	811.79	1.86%	14.28						*290.69*	5	0.97	15.00	5.26	7.34	9.27	3.58	6.15	8.74	A8
A9	0.58	=A9	0.36	0.42	0.49	*275.70*	N	818.93	805.84	4.75%	16.25									16.00	5.15	7.19	9.08	1.08	1.75	2.58	A9
CP1	13.41	=A1+A4	0.52	0.64	0.72	*300.00*	N	879.06	868.47	3.53%	18.00	*76.23*	N	864.42	5.31%	0.34	*1929.89*	5	6.43	24.00	4.31	6.00	7.55	30.05	51.49	72.90	CP1
CP2	14.32	=A2+A3	0.52	0.64	0.72	*300.00*	N	864.34	849.21	5.04%	16.96						*1188.14*	5	3.96	20.00	4.73	6.60	8.32	35.22	60.49	85.78	CP2
CP3	8.97	=A5+A6	0.36	0.42	0.49	*300.00*	N	862.00	841.83	6.72%	16.00	*538.08*	N	813.35	5.29%	2.41	*374.94*	5	1.25	19.00	4.84	6.75	8.51	15.63	25.43	37.40	CP3
CP4	2.71	=A7+A8	0.36	0.42	0.49	*300.00*	N	834.06	819.80	4.75%	17.25	*152.50*	N	812.15	5.02%	0.70	*108.63*	5	0.36	18.00	4.94	6.89	8.70	4.82	7.84	11.55	CP4
CP5	27.73	=CP1+CP2	0.52	0.64	0.72	*300.00*	N	879.06	868.47	3.53%	18.00	*76.23*	N	864.42	5.31%	0.34	*1929.89*	5	6.43	24.00	4.31	6.00	7.55	62.15	106.48	150.74	CP5
CP6	3.29	=CP4+A9	0.36	0.42	0.49	*300.00*	N	834.06	819.80	4.75%	17.25	*152.50*	N	812.15	5.02%	0.70	*206.26*	5	0.69	18.00	4.94	6.89	8.70	5.85	9.52	14.03	CP6

OWNER/DEVELOPER:

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

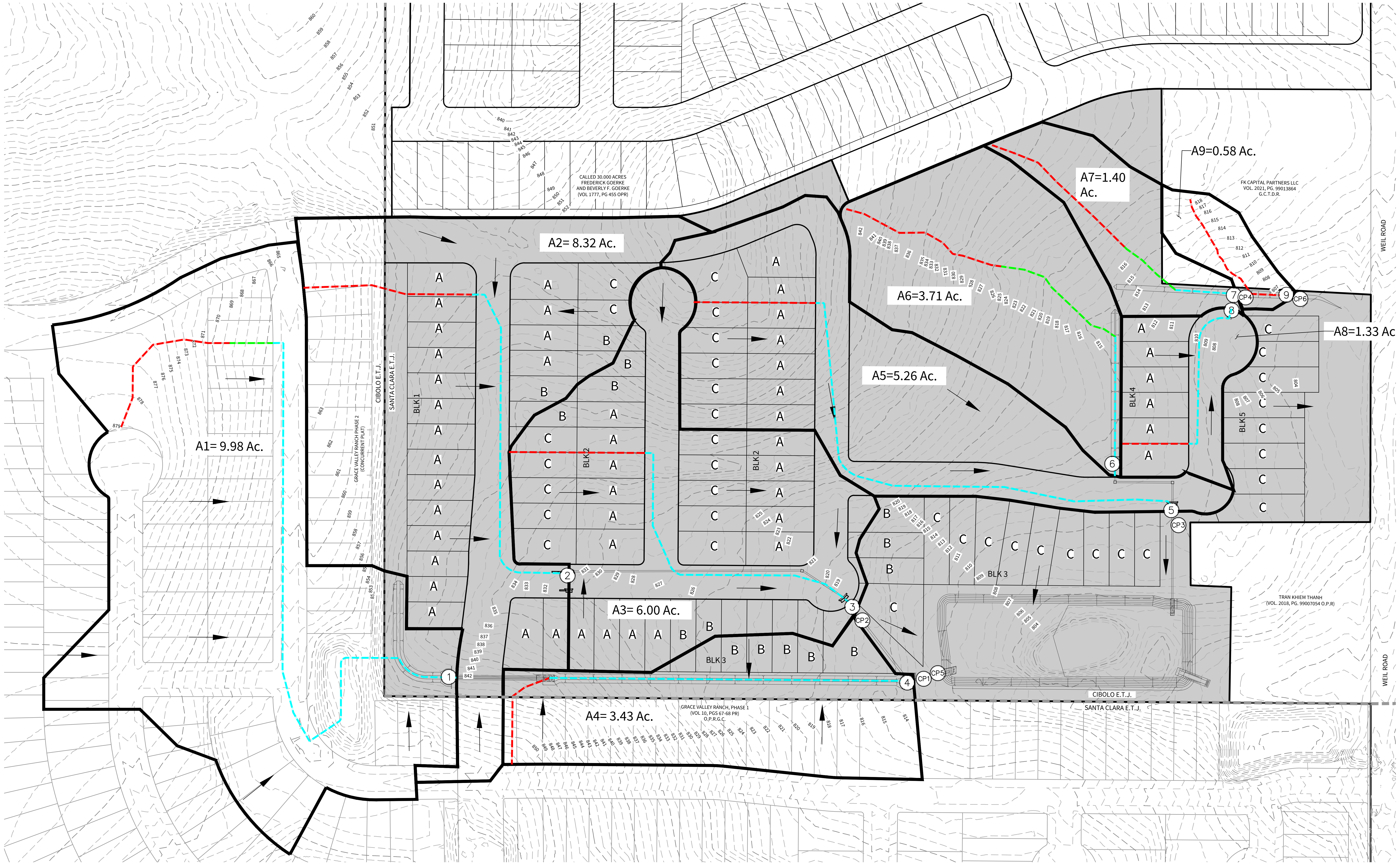
CIVIL ENGINEER:

CUDE ENGINEERS
CONTACT PERSON: KYLE HUDEK, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112



TYPICAL LOT SITE PLAN

N.T.S.


A1= 9.98 Ac.
A2= 8.32 Ac.
A3= 6.00 Ac.
A4= 3.43 Ac.
A5=5.26 Ac.
A6=3.71 Ac.
A7=1.40 Ac.
A8=1.33 Ac
A9=0.58 Ac.
CALLED 30.000 ACRES
FREDERICK GOERKE
AND BEVERLY F. GOERKE
(VOL 1777, PG 455 OPR)
FK CAPITAL PARTNERS LLC
VOL. 2021, PG. 99013864
G.C.T.D.R.
GRACE VALLEY RANCH, PHASE 1
(VOL 10, PGS 67-68 PR)
O.P.R.G.C.
GRACE VALLEY RANCH PHASE 2 (CONCURRENT PLAT)
TRAN KHIEM THANH
(VOL. 2018, PG. 99007054 O.P.R)
CIBOLO E.T.J.
SANTA CLARA E.T.J.
WEIL ROAD
BLK 1
BLK 2
BLK 3
BLK 4
BLK 5
1
2
3
4
5
6
7
8
9
CP1
CP2
CP3
CP4
CP5
CP6

SCALE: 1"=100'

100 50 0 100

CUDEENGINEERS.COM

EST. 1980 CUDE ENGINEERS

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

GOERKE SUBDIVISION PHASE 1

OVERALL DRAINAGE MASTER PLAN - ULTIMATE CONDITIONS

DATE
02/18/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
1.
2.
3.
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6.
7.
8.
9.

KYLE M. HUDEK
138753
03/04/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C6.01

P:\03346\101\2-DWG\4-Plans\C6.01_DRMP.dwg 2025/02/18 4:05pm rbarrera

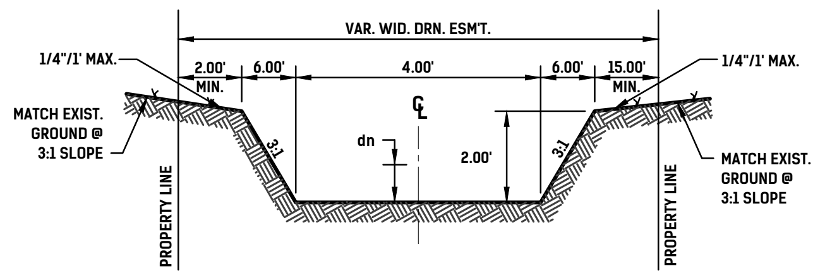
LEGEND

EARTHEN CHANNEL	+
CONCRETE RIP-RAP	▨
TURF REINFORCEMENT MAT	▨
8"X12" ROCK RUBBLE	▨

KEYNOTES

① 20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

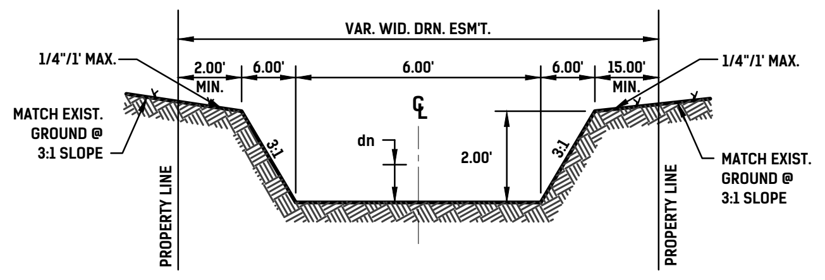
② 10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE


VAR. WID. DRN. ESMT.
1/4"/1' MAX.
2.00'
6.00'
4.00'
6.00'
15.00'
MIN.
MATCH EXIST. GROUND @ 3:1 SLOPE
PROPERTY LINE
dn
2.00'
℄

DRAIN "A-1" SECTION

(N.T.S.)

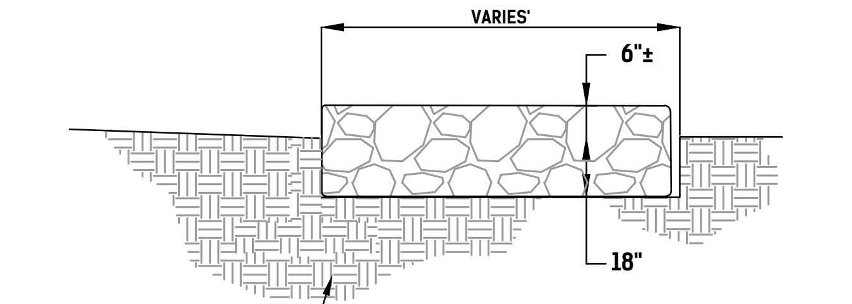
STA. 10+29.03 TO STA. 16+37.19


VAR. WID. DRN. ESMT.
1/4"/1' MAX.
2.00'
6.00'
6.00'
6.00'
15.00'
MIN.
MATCH EXIST. GROUND @ 3:1 SLOPE
PROPERTY LINE
dn
2.00'
℄

DRAIN "A-2" SECTION

(N.T.S.)

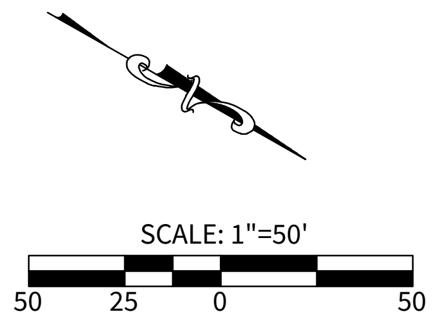
STA. 18+44.06 TO STA. 20+63.05



95% COMPACTED SUBGRADE

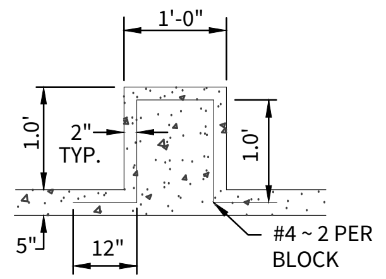
8"X12" ROCK RUBBLE DETAIL

N.T.S.


SCALE: 1"=50'
50
25
0
50

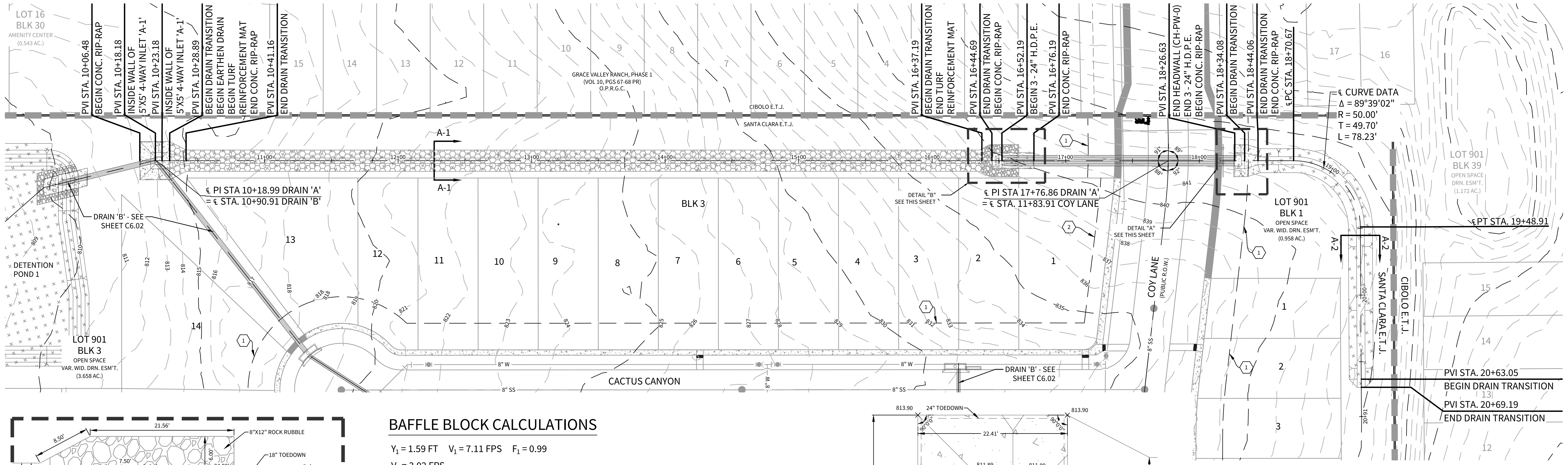
NOTES:

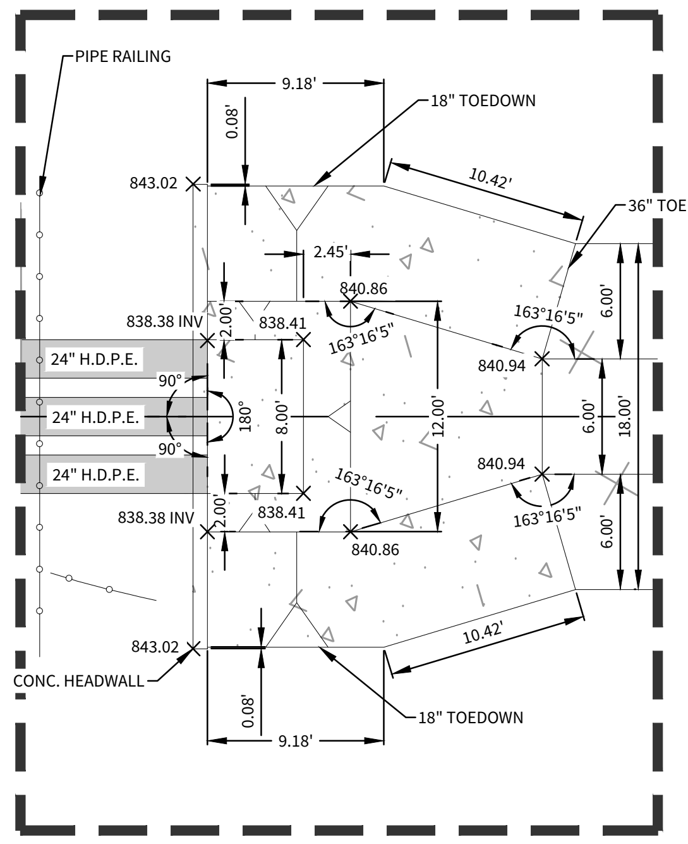
1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.
2. 85% OF DETENTION POND SURFACE MUST HAVE ESTABLISHED VEGETATION PRIOR TO ACCEPTANCE OF THE CHANNEL BY THE CITY OF SANTA CLARA & GUADALUPE COUNTY. HYDROMULCH PAY ITEM TO INCLUDE SOIL, SEEDING, OR SODDING & WATERING FOR THE TIME PERIOD NEEDED TO ACHIEVE 85% VEGETATION.
3. REFERENCE TYPICAL CONCRETE CHANNEL RIP-RAP STANDARDS FOUND ON SHEET C6.D1.


1'-0"
1.0'
2"
TYP.
1.0'
5"
12"
TYP.
#4 ~ 2 PER BLOCK

1'x1'x1' BAFFLE BLOCK REINFORCEMENT

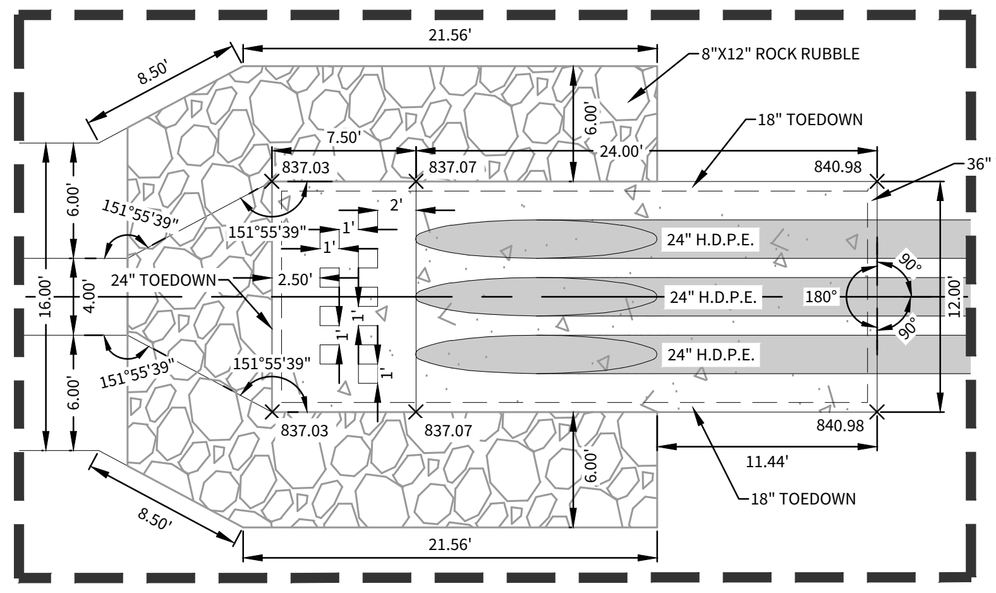
(N.T.S.)


LOT 16
BLK 30
AMENITY CENTER
PVI STA. 10+06.48
BEGIN CONC. RIP-RAP
PVI STA 10+18.18
INSIDE WALL OF 5'X5' 4-WAY INLET 'A-1'
PVI STA. 10+23.18
INSIDE WALL OF 5'X5' 4-WAY INLET 'A-1'
PVI STA. 10+28.89
BEGIN DRAIN TRANSITION
BEGIN EARTHEN DRAIN
BEGIN TURF REINFORCEMENT MAT
END CONC. RIP-RAP
PVI STA. 10+41.16
END DRAIN TRANSITION
GRACE VALLEY RANCH, PHASE 1 (VOL 10, PGS 67-68 PR) O.P.R.G.C.
CIBOLO E.T.J.
SANTA CLARA E.T.J.
PVI STA. 16+37.19
BEGIN DRAIN TRANSITION
END TURF REINFORCEMENT MAT
PVI STA. 16+44.69
END DRAIN TRANSITION
BEGIN CONC. RIP-RAP
PVI STA. 16+52.19
BEGIN 3 - 24" H.D.P.E.
PVI STA. 16+76.19
END CONC. RIP-RAP
PVI STA. 18+26.63
END HEADWALL (CH-PW-0)
END 3 - 24" H.D.P.E.
BEGIN CONC. RIP-RAP
PVI STA. 18+34.08
BEGIN DRAIN TRANSITION
PVI STA. 18+44.06
END DRAIN TRANSITION
END CONC. RIP-RAP
℄ PC STA. 18+70.67
℄ CURVE DATA
Δ = 89°39'02"
R = 50.00'
T = 49.70'
L = 78.23'
A-1
A-1
A-2
A-2
℄ PI STA 10+18.99 DRAIN 'A' = ℄ STA. 10+90.91 DRAIN 'B'
℄ PI STA 17+76.86 DRAIN 'A' = ℄ STA. 11+83.91 COY LANE
DRAIN 'B' - SEE SHEET C6.02
DETAIL "B" SEE THIS SHEET
DETAIL "A" SEE THIS SHEET
DETENTION POND 1
BLK 3
LOT 901
BLK 3
OPEN SPACE
VAR. WID. DRN. ESMT.
(3.658 AC.)
LOT 901
BLK 1
OPEN SPACE
VAR. WID. DRN. ESMT.
(0.958 AC.)
LOT 901
BLK 39
OPEN SPACE
DRN. ESMT.
COY LANE
(PUBLIC R.O.W.)
CACTUS CANYON
8" W
8" SS
DRAIN 'B' - SEE SHEET C6.02
℄ PT STA. 19+48.91
SANTA CLARA E.T.J.
CIBOLO E.T.J.
PVI STA. 20+63.05
BEGIN DRAIN TRANSITION
PVI STA. 20+69.19
END DRAIN TRANSITION
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17


PIPE RAILING
18" TOEDOWN
36" TOEDOWN
24" H.D.P.E.
838.38 INV.
838.41
843.02
840.86
840.94
163°16'5"
90°
180°
9.18'
10.42'
2.45'
12.00'
6.00'
CONC. HEADWALL
18" TOEDOWN

DETAIL "A"

SCALE: 1"=10'


8"X12" ROCK RUBBLE
18" TOEDOWN
36" TOEDOWN
24" TOEDOWN
24" H.D.P.E.
837.03
837.07
840.98
21.56'
7.50'
2.50'
6.00'
11.44'
151°55'39"
180°
18" TOEDOWN

DETAIL "B"

SCALE: 1"=10'

BAFFLE BLOCK CALCULATIONS

$Y_1 = 1.59$ FT $V_1 = 7.11$ FPS $F_1 = 0.99$

$V_2 = 3.02$ FPS

$Y_2/Y_1 = \frac{1}{2}(\sqrt{1+8(F1)^2}-1) = 0.99$

$Y_2 = 1.58$ FT

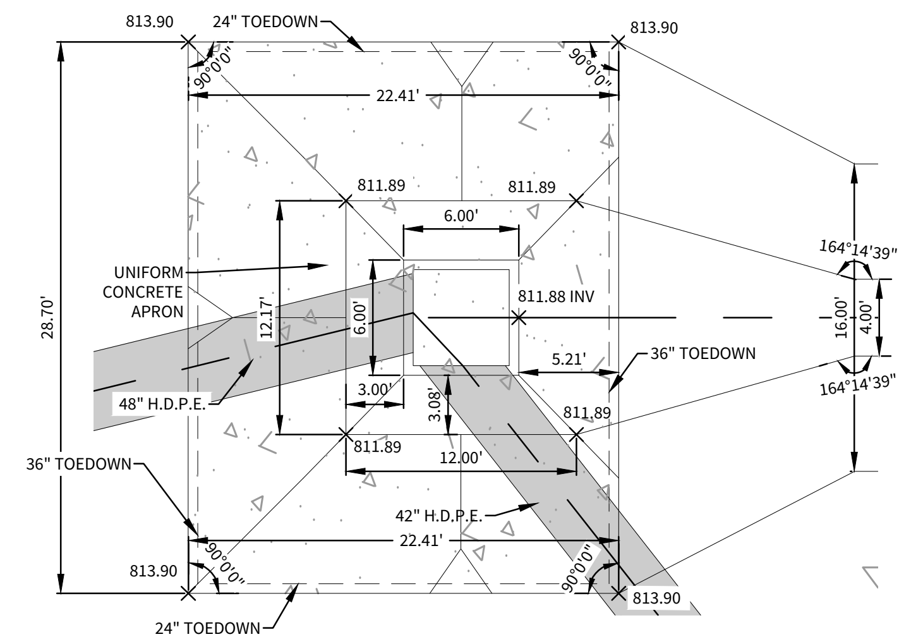
$L_b = 4.5(Y_2)/(F_1)^{0.76} = 7.12$ FT

$= 7.5$ FT (USED)

$L_b/3 = 2.50$ FT

DRAIN "A"

STA. 10+06.48 TO STA. 20+69.19

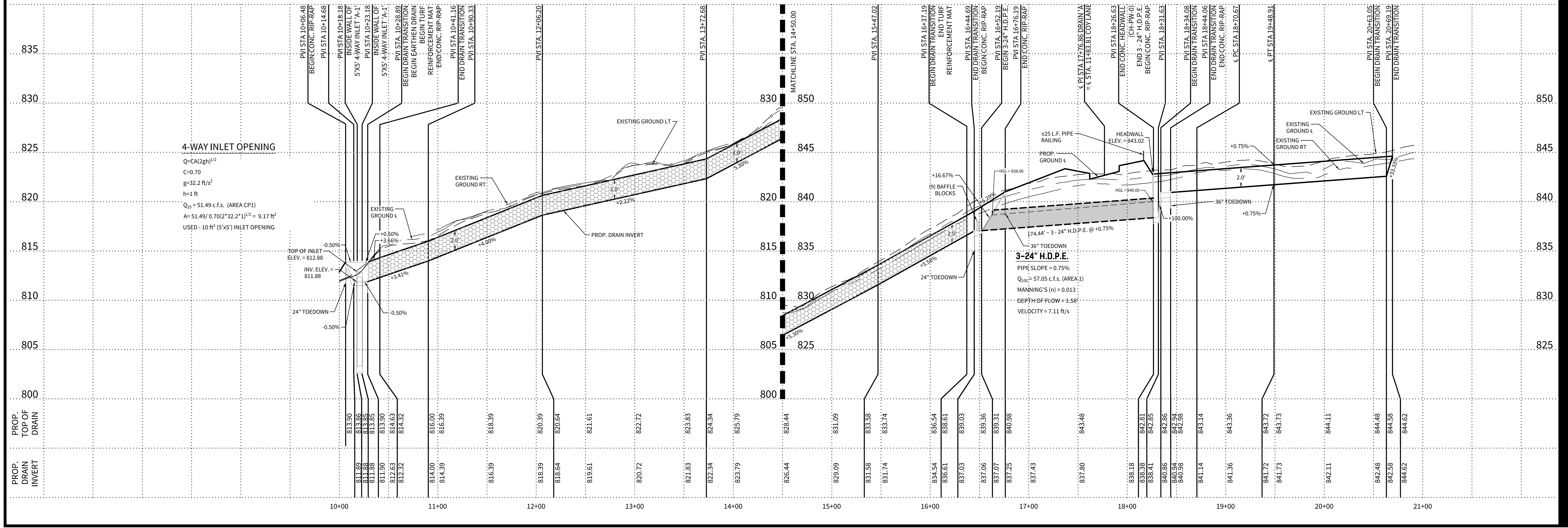

813.90
24" TOEDOWN
22.41'
811.89
6.00'
811.88 INV
UNIFORM CONCRETE APRON
48" H.D.P.E.
36" TOEDOWN
5.21'
3.00'
12.00'
42" H.D.P.E.
164°14'39"
16.00'
4.00'
36" TOEDOWN
24" TOEDOWN

4-WAY INLET "A-1" DETAIL

SCALE: 1"=10'

DRAIN 'A' HYDRAULIC SUMMARY						
SECTION	"A-1"					"A-2"
STATION	10+29.03 - 10+90.33	10+90.33 - 12+06.20	12+06.20 - 13+72.68	13+72.68 - 15+47.02	15+47.02 - 16+37.19	18+44.06 - 20+63.05
Q_{100} (cfs)	72.90	72.90	72.90	72.90	72.90	57.05
n	0.035	0.035	0.035	0.035	0.035	0.035
S (%)	3.41	4.00	2.22	5.30	5.58	0.75
D (ft)	2.00	2.00	2.00	2.00	2.00	2.00
d_n (ft)	1.32	1.27	1.46	1.18	1.17	1.49
V (fps)	6.94	7.35	5.96	8.19	8.30	3.66

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


835
830
825
820
815
810
805
800
850
845
840
835
830
825
MATCHLINE STA. 14+50.00
EXISTING GROUND LT
EXISTING GROUND RT
EXISTING GROUND ℄
PROP. DRAIN INVERT
TOP OF INLET ELEV. = 812.88
INV. ELEV. = 811.88
24" TOEDOWN
-0.50%
+0.50%
+3.66%
+3.41%
+4.00%
+2.22%
+5.30%
+5.58%
+16.67%
(9) BAFFLE BLOCKS
HGL = 838.66
±25 L.F. PIPE RAILING
HEADWALL ELEV. = 843.02
PROP. GROUND ℄
HGL = 840.00
174.44' ~ 3 - 24" H.D.P.E. @ +0.75%
36" TOEDOWN
+100.00%
+0.75%
+33.33%
2.0'
PROP. TOP OF DRAIN
PROP. DRAIN INVERT
10+00
11+00
12+00
13+00
14+00
15+00
16+00
17+00
18+00
19+00
20+00
21+00

4-WAY INLET OPENING

$Q=CA(2gh)^{1/2}$

C=0.70

$g=32.2\ ft/s^2$

h=1 ft

Q_{25} = 51.49 c.f.s. (AREA CP1)

$A= 51.49/0.70(2*32.2*1)^{1/2} = 9.17\ ft^2$

USED - 10 ft^2 (5'x5') INLET OPENING

3-24" H.D.P.E.

PIPE SLOPE = 0.75%

Q_{100} = 57.05 c.f.s. (AREA 1)

MANNING'S (n) = 0.013

DEPTH OF FLOW = 1.58'

VELOCITY = 7.11 ft/s

PROP. TOP OF DRAIN	PROP. DRAIN INVERT
813.90	811.89
813.86	811.88
813.85	811.88
813.90	811.90
814.32	812.63
	812.32
816.00	814.00
816.39	814.39
818.39	816.39
820.39	818.39
820.64	818.64
821.61	819.61
822.72	820.72
823.83	821.83
824.34	822.34
825.79	823.79
828.44	826.44
831.09	829.09
833.58	831.58
833.74	831.74
836.54	834.54
838.61	836.61
839.03	837.03
839.36	837.06
839.31	837.07
840.98	837.25
	837.43
843.48	837.80
842.81	838.18
842.85	838.38
	838.41
842.86	840.86
842.94	840.94
842.98	840.98
843.14	841.14
843.36	841.36
843.72	841.72
843.73	841.73
844.11	842.11
844.48	842.48
844.58	842.58
844.62	844.62

CUDEENGINEERS.COM

CUDE
EST. 1980
ENGINEERS

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

GOERKE SUBDIVISION PHASE 1
DRAINAGE PLAN & PROFILE - DRAIN 'A'

DATE
04/08/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
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KYLE M. HUDEK
138753
04/08/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C6.02

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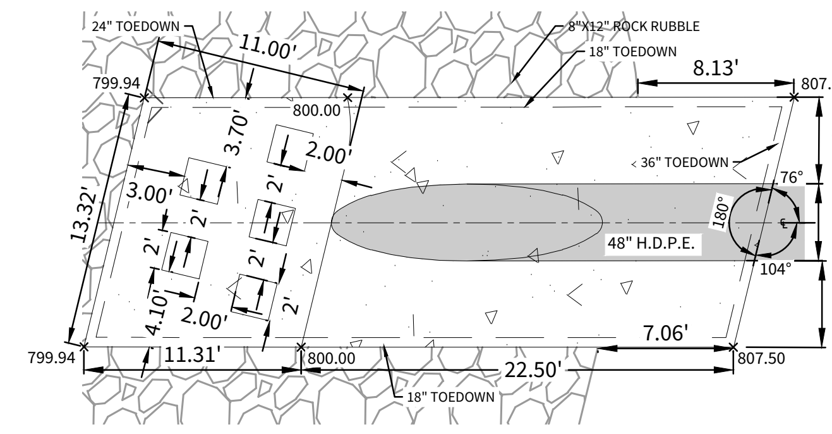
LEGEND

CONCRETE RIP-RAP	▨
8"X12" ROCK RUBBLE	▨
EARTHEN CHANNEL	▨

KEYNOTES

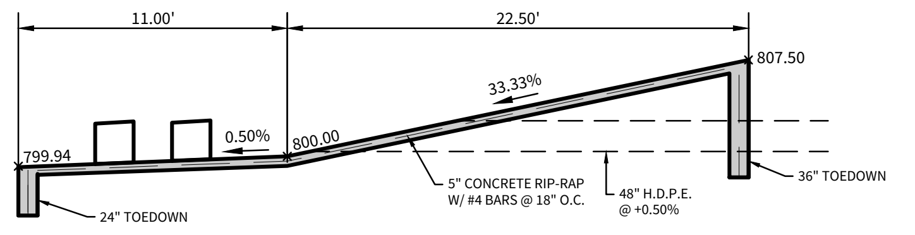
⟨1⟩ 20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

⟨2⟩ 10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE


24" TOEDOWN
8"X12" ROCK RUBBLE
18" TOEDOWN
11.00'
8.13'
799.94
807.50
800.00
3.70'
2.00'
13.32'
3.00'
2'
2'
4.10'
2.00'
36" TOEDOWN
76°
104°
4.50'
4.00'
4.50'
48" H.D.P.E.
7.06'
11.31'
22.50'
800.00
807.50
18" TOEDOWN

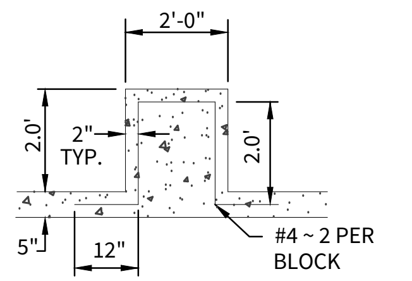
DRAIN 'B' OUTFALL DETAIL

SCALE: 1"=10'


11.00'
22.50'
807.50
33.33%
0.50%
800.00
799.94
24" TOEDOWN
5" CONCRETE RIP-RAP W/ #4 BARS @ 18" O.C.
48" H.D.P.E. @ +0.50%
36" TOEDOWN

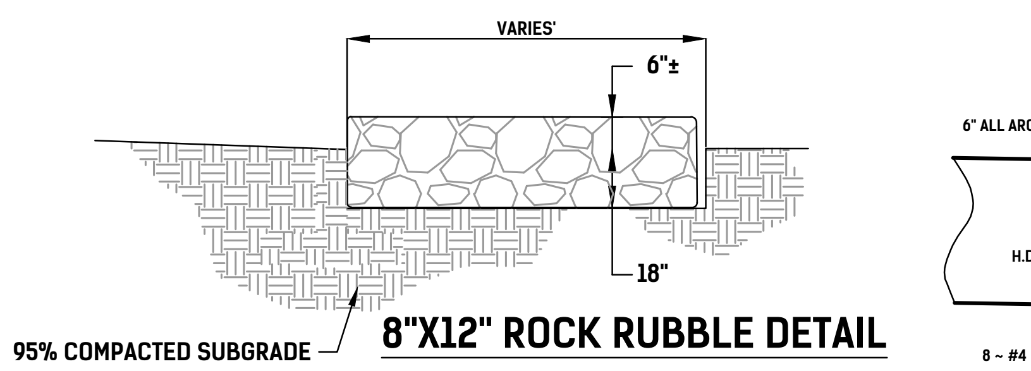
DRAIN 'B' OUTFALL DETAIL

(N.T.S.)


2'-0"
2"
TYP.
2.0'
2.0'
5"
12"
TYP.
#4 ~ 2 PER BLOCK

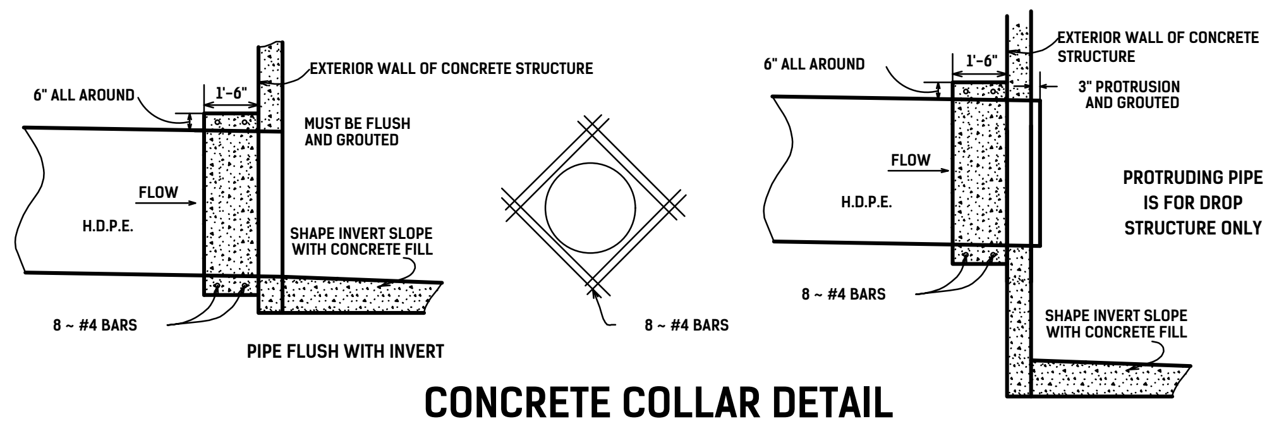
2'x2'x2' BAFFLE BLOCK REINFORCEMENT

(N.T.S.)


VARIES'
6"±
18"
95% COMPACTED SUBGRADE

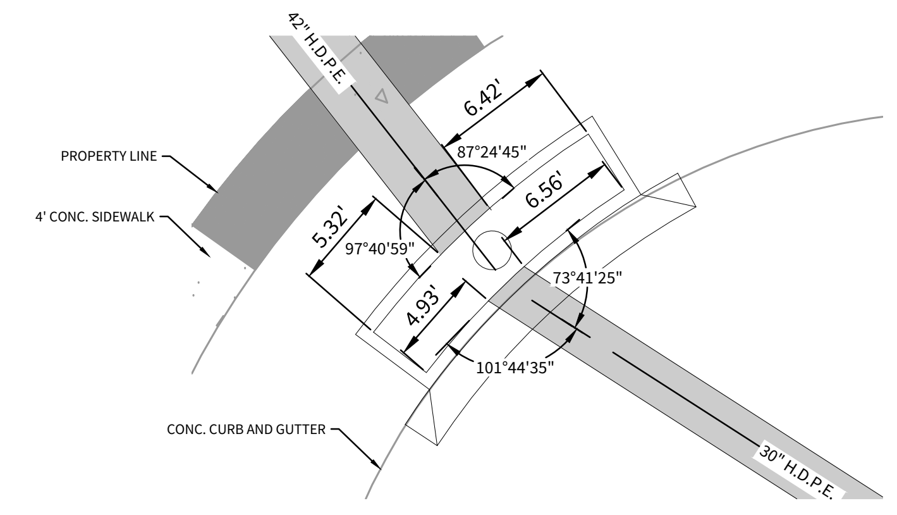
8"X12" ROCK RUBBLE DETAIL

N.T.S.


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

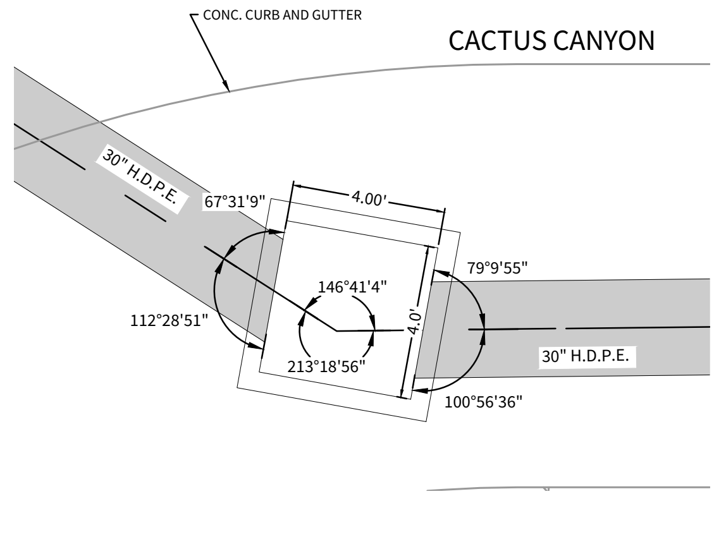
CONCRETE COLLAR DETAIL

(N.T.S.)


42" H.D.P.E.
PROPERTY LINE
4' CONC. SIDEWALK
6.42'
87°24'45"
6.56'
5.32'
97°40'59"
4.93'
73°41'25"
101°44'35"
CONC. CURB AND GUTTER
30" H.D.P.E.

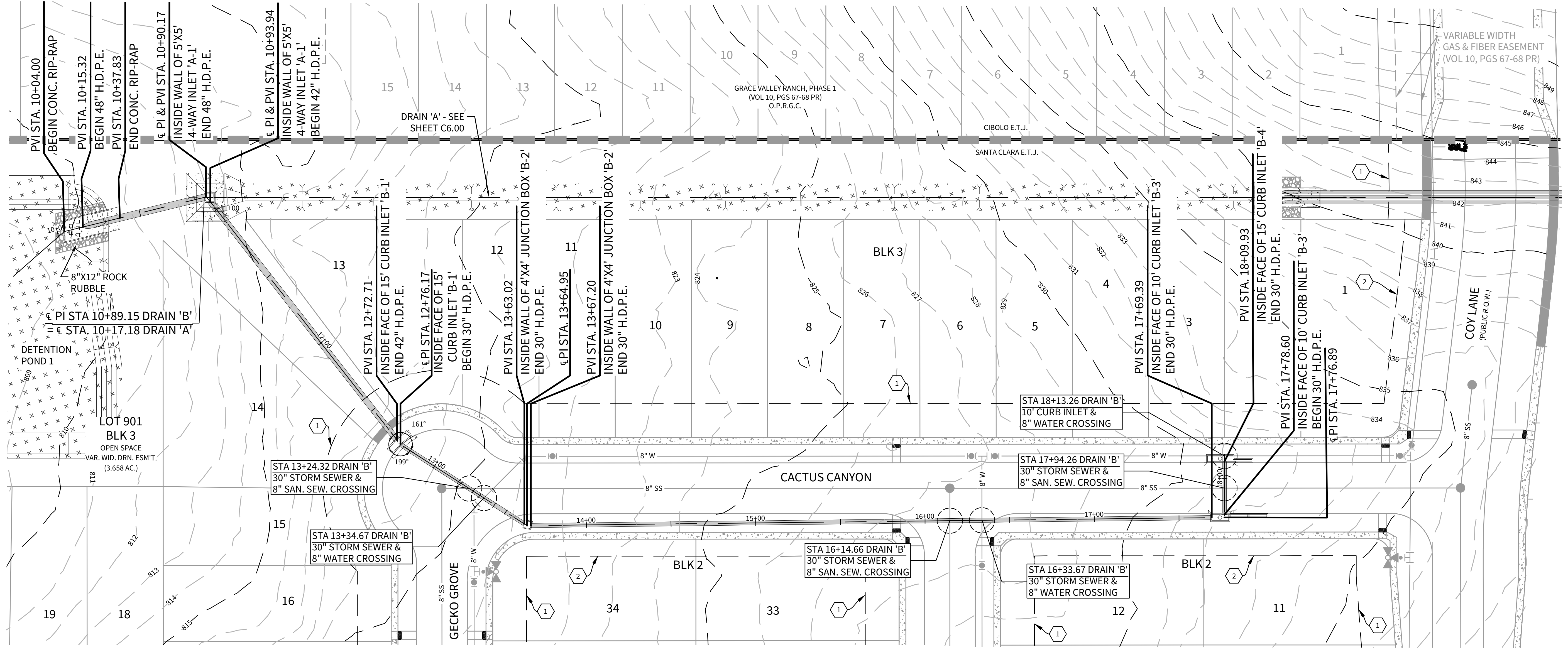
CURB INLET 'B-1' DETAIL

SCALE: 1"=10'


CONC. CURB AND GUTTER
CACTUS CANYON
30" H.D.P.E.
67°31'9"
4.00'
79°9'55"
146°41'4"
112°28'51"
213°18'56"
30" H.D.P.E.
100°56'36"

JUNCTION BOX 'B-2' DETAIL

SCALE: 1"=5'


PVI STA. 10+04.00
BEGIN CONC. RIP-RAP
PVI STA. 10+15.32
BEGIN 48" H.D.P.E.
PVI STA. 10+37.83
END CONC. RIP-RAP
℄ PI & PVI STA. 10+90.17
INSIDE WALL OF 5'X5'
4-WAY INLET 'A-1'
END 48" H.D.P.E.
℄ PI & PVI STA. 10+93.94
INSIDE WALL OF 5'X5'
4-WAY INLET 'A-1'
BEGIN 42" H.D.P.E.
DRAIN 'A' - SEE SHEET C6.00
PVI STA. 12+72.71
INSIDE FACE OF 15' CURB INLET 'B-1'
END 42" H.D.P.E.
℄ PI STA. 12+76.17
INSIDE FACE OF 15' CURB INLET 'B-1'
BEGIN 30" H.D.P.E.
PVI STA. 13+63.02
INSIDE WALL OF 4'X4' JUNCTION BOX 'B-2'
END 30" H.D.P.E.
℄ PI STA. 13+64.95
PVI STA. 13+67.20
INSIDE WALL OF 4'X4' JUNCTION BOX 'B-2'
END 30" H.D.P.E.
GRACE VALLEY RANCH, PHASE 1 (VOL 10, PGS 67-68 PR) O.P.R.G.C.
CIBOLO E.T.J.
SANTA CLARA E.T.J.
VARIABLE WIDTH GAS & FIBER EASEMENT (VOL 10, PGS 67-68 PR)
PVI STA. 17+69.39
INSIDE FACE OF 10' CURB INLET 'B-3'
END 30" H.D.P.E.
PVI STA. 18+09.93
INSIDE FACE OF 15' CURB INLET 'B-4'
END 30" H.D.P.E.
PVI STA. 17+78.60
INSIDE FACE OF 10' CURB INLET 'B-3'
BEGIN 30" H.D.P.E.
℄ PI STA. 17+76.89
8"X12" ROCK RUBBLE
℄ PI STA 10+89.15 DRAIN 'B'
℄ STA. 10+17.18 DRAIN 'A'
DETENTION POND 1
LOT 901
BLK 3
OPEN SPACE VAR. WID. DRN. ESM'T. (3.658 AC.)
STA 13+24.32 DRAIN 'B' 30" STORM SEWER & 8" SAN. SEW. CROSSING
STA 13+34.67 DRAIN 'B' 30" STORM SEWER & 8" WATER CROSSING
STA 16+14.66 DRAIN 'B' 30" STORM SEWER & 8" SAN. SEW. CROSSING
STA 16+33.67 DRAIN 'B' 30" STORM SEWER & 8" WATER CROSSING
STA 18+13.26 DRAIN 'B' 10' CURB INLET & 8" WATER CROSSING
STA 17+94.26 DRAIN 'B' 30" STORM SEWER & 8" SAN. SEW. CROSSING
CACTUS CANYON
GECKO GROVE
COY LANE
BLK 3
BLK 2
BLK 2
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
13 12 10 9 8 7 6 5 4 3 1
14 15 16 19 18
34 33 12 11
8" W
8" SS
14+00
15+00
16+00
17+00
161°
199°

SCALE: 1"=50'

50 25 0 50

DRAIN "B"

STA. 10+00.00 TO STA. 18+09.35

CURB INLET OPENING

Q_{25} = 25.88 c.f.s. / 2.06 = 12.56' REQ. (AREA 3)

USED - 15' INLET OPENING

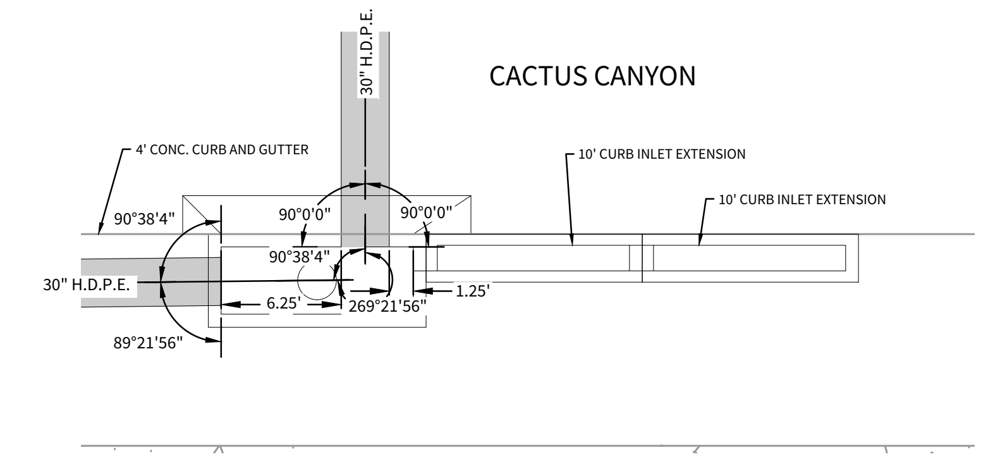
GUTTER = 818.02

GUTTER SPREAD CALCULATIONS

$D=1.24(QnS_x/S^{1/2})^{3/8}$
$T=D/S_x$

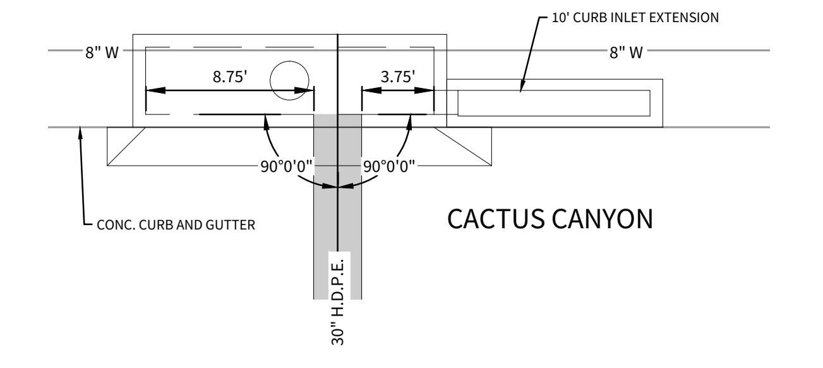
Q_{25} = 25.88 C.F.S. (AREA 3)
n=0.015
Sx=0.04
S=0.96

D=0.26'
T=6.55'


CACTUS CANYON
30" H.D.P.E.
4' CONC. CURB AND GUTTER
10' CURB INLET EXTENSION
10' CURB INLET EXTENSION
90°38'4"
90°0'0"
90°0'0"
90°38'4"
30" H.D.P.E.
1.25'
6.25'
269°21'56"
89°21'56"

CURB INLET 'B-3' DETAIL

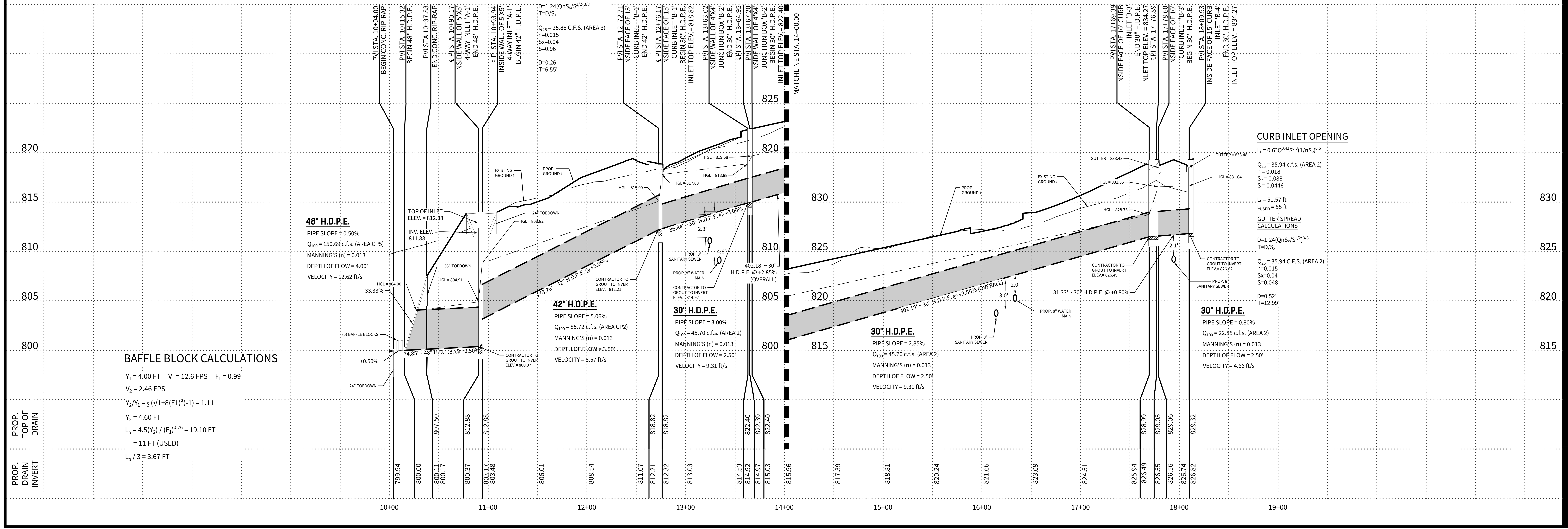
SCALE: 1"=10'


10' CURB INLET EXTENSION
8" W
8" W
8.75'
3.75'
90°0'0"
90°0'0"
CONC. CURB AND GUTTER
CACTUS CANYON
30" H.D.P.E.

CURB INLET 'B-4' DETAIL

SCALE: 1"=10'

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


PVI STA. 10+04.00
BEGIN CONC. RIP-RAP
PVI STA. 10+15.32
BEGIN 48" H.D.P.E.
PVI STA. 10+37.83
END CONC. RIP-RAP
℄ PI & PVI STA. 10+90.17
INSIDE WALL OF 5'X5'
4-WAY INLET 'A-1'
END 48" H.D.P.E.
℄ PI STA. 10+93.94
INSIDE WALL OF 5'X5'
4-WAY INLET 'A-1'
BEGIN 42" H.D.P.E.
PVI STA. 12+72.71
INSIDE FACE OF 15'
CURB INLET 'B-1'
END 42" H.D.P.E.
℄ PI STA. 12+76.17
INSIDE FACE OF 15'
CURB INLET 'B-1'
BEGIN 30" H.D.P.E.
INLET TOP ELEV. = 818.82
PVI STA. 13+63.02
INSIDE WALL OF 4'X4'
JUNCTION BOX 'B-2'
END 30" H.D.P.E.
℄ PI STA. 13+64.95
PVI STA. 13+67.20
INSIDE WALL OF 4'X4'
JUNCTION BOX 'B-2'
BEGIN 30" H.D.P.E.
INLET TOP ELEV. = 822.40
MATCHLINE STA. 14+00.00
PVI STA. 17+69.39
INSIDE FACE OF 10' CURB
INLET 'B-3'
END 30" H.D.P.E.
INLET TOP ELEV. = 834.27
℄ PI STA. 17+76.89
PVI STA. 17+78.60
INSIDE FACE OF 10'
CURB INLET 'B-3'
BEGIN 30" H.D.P.E.
PVI STA. 18+09.93
INSIDE FACE OF 15' CURB
INLET 'B-4'
END 30" H.D.P.E.
INLET TOP ELEV. = 834.27
820
815
810
805
800
825
820
815
810
805
800
830
825
820
815
830
825
820
815
TOP OF INLET ELEV. = 812.88
INV. ELEV. = 811.88
24" TOEDOWN
HGL = 808.82
36" TOEDOWN
HGL = 804.00
HGL = 804.91
33.33%
(5) BAFFLE BLOCKS
+0.50%
24" TOEDOWN
74.85' ~ 48" H.D.P.E. @ +0.50%
CONTRACTOR TO GROUT TO INVERT ELEV.= 800.37
EXISTING GROUND ℄
PROP. GROUND ℄
178.76' ~ 42" H.D.P.E. @ +5.06%
CONTRACTOR TO GROUT TO INVERT ELEV.= 812.21
HGL = 815.09
HGL = 817.80
HGL = 819.68
HGL = 818.88
86.84' ~ 30" H.D.P.E. @ +3.00%
2.3'
PROP. 8" SANITARY SEWER
4.6'
PROP. 8" WATER MAIN
CONTRACTOR TO GROUT TO INVERT ELEV.= 814.92
402.18' ~ 30" H.D.P.E. @ +2.85% (OVERALL)
PROP. GROUND ℄
EXISTING GROUND ℄
402.18' ~ 30" H.D.P.E. @ +2.85% (OVERALL)
2.0'
3.0'
PROP. 8" WATER MAIN
PROP. 8" SANITARY SEWER
GUTTER = 833.48
HGL = 831.55
HGL = 828.73
CONTRACTOR TO GROUT TO INVERT ELEV.= 826.49
31.33' ~ 30" H.D.P.E. @ +0.80%
2.1'
GUTTER = 833.48
HGL = 831.64
CONTRACTOR TO GROUT TO INVERT ELEV.= 826.82
PROP. 8" SANITARY SEWER
PROP. TOP OF DRAIN
807.50
812.88
812.88
818.82
818.82
822.40
822.39
822.40
828.99
829.05
829.06
829.32
PROP. DRAIN INVERT
799.94
800.00
800.11
800.17
800.37
803.17
803.48
806.01
808.54
811.07
812.21
812.32
813.03
814.53
814.92
814.97
815.03
815.96
817.39
818.81
820.24
821.66
823.09
824.51
825.94
826.49
826.55
826.56
826.74
826.82
10+00
11+00
12+00
13+00
14+00
15+00
16+00
17+00
18+00
19+00

48" H.D.P.E.

PIPE SLOPE = 0.50%

Q_{100} = 150.69 c.f.s. (AREA CP5)

MANNING'S (n) = 0.013

DEPTH OF FLOW = 4.00'

VELOCITY = 12.62 ft/s

42" H.D.P.E.

PIPE SLOPE = 5.06%

Q_{100} = 85.72 c.f.s. (AREA CP2)

MANNING'S (n) = 0.013

DEPTH OF FLOW = 3.50'

VELOCITY = 8.57 ft/s

30" H.D.P.E.

PIPE SLOPE = 3.00%

Q_{100} = 45.70 c.f.s. (AREA 2)

MANNING'S (n) = 0.013

DEPTH OF FLOW = 2.50'

VELOCITY = 9.31 ft/s

30" H.D.P.E.

PIPE SLOPE = 2.85%

Q_{100} = 45.70 c.f.s. (AREA 2)

MANNING'S (n) = 0.013

DEPTH OF FLOW = 2.50'

VELOCITY = 9.31 ft/s

30" H.D.P.E.

PIPE SLOPE = 0.80%

Q_{100} = 22.85 c.f.s. (AREA 2)

MANNING'S (n) = 0.013

DEPTH OF FLOW = 2.50'

VELOCITY = 4.66 ft/s

CURB INLET OPENING

$L_r = 0.6 * Q^{0.42} S^{0.3} (1/nS_e)^{0.6}$

Q_{25} = 35.94 c.f.s. (AREA 2)
n = 0.018
S_e = 0.088
S = 0.0446

L_r = 51.57 ft
L_{USED} = 55 ft

GUTTER SPREAD CALCULATIONS

$D=1.24(QnS_x/S^{1/2})^{3/8}$
$T=D/S_x$

Q_{25} = 35.94 C.F.S. (AREA 2)
n=0.015
Sx=0.04
S=0.048

D=0.52'
T=12.99'

BAFFLE BLOCK CALCULATIONS

Y_1 = 4.00 FT V_1 = 12.6 FPS F_1 = 0.99

V_2 = 2.46 FPS

$Y_2/Y_1 = \frac{1}{2}(\sqrt{1+8(F1)^2}-1) = 1.11$

Y_2 = 4.60 FT

$L_b = 4.5(Y_2) / (F_1)^{0.76}$ = 19.10 FT

= 11 FT (USED)

L_b / 3 = 3.67 FT

CUDEENGINEERS.COM

CUDE ENGINEERS EST. 1980

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

GOERKE SUBDIVISION PHASE 1

DRAINAGE PLAN & PROFILE - DRAIN 'B'

DATE	02/26/2025
PROJECT NO.	03346.101
DRAWN BY	R.B./M.A.S.
CHECKED BY	K.M.H.

REVISIONS

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

KYLE M. HUDEK
138753
03/04/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C6.03

P:\03346\101\2-DWG\4-Plans\C6.03_DRPF - DRAIN B.dwg 2025/02/26 5:56pm rbarrera

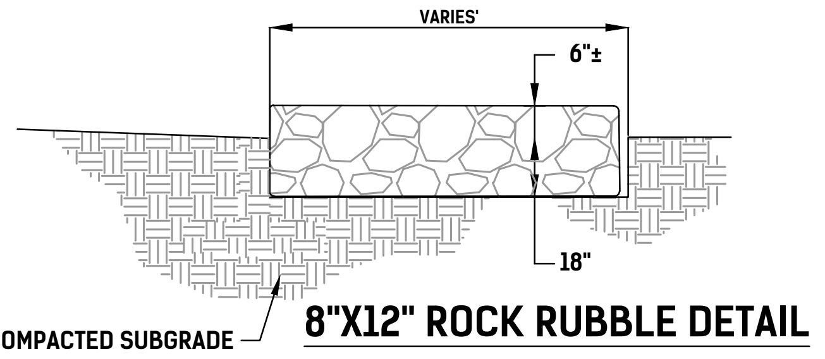
LEGEND

EARTHEN CHANNEL	▨
CONCRETE RIP-RAP	▨
8"X12" ROCK RUBBLE	▨

KEYNOTES

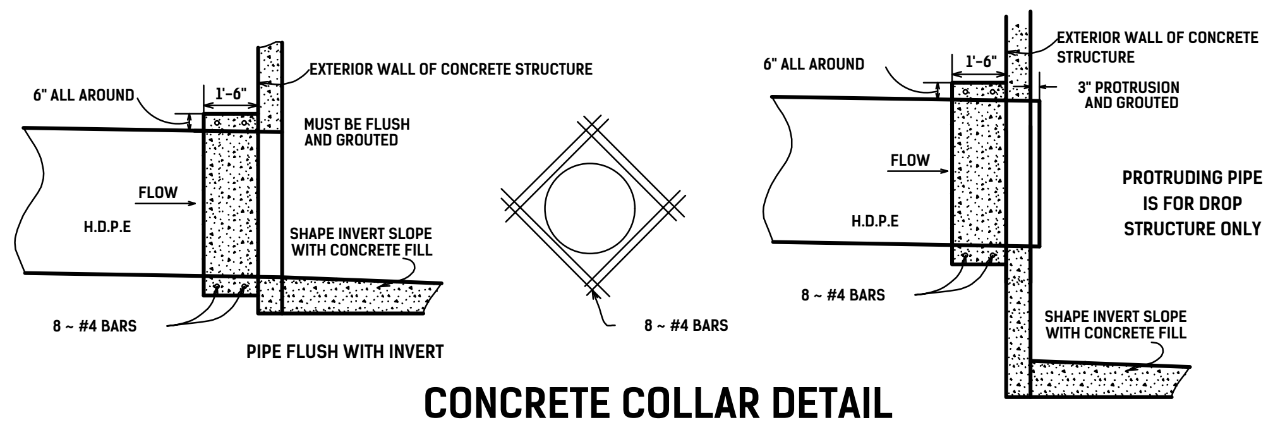
① 20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

② 10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE


VARIES'
6"±
18"
95% COMPACTED SUBGRADE

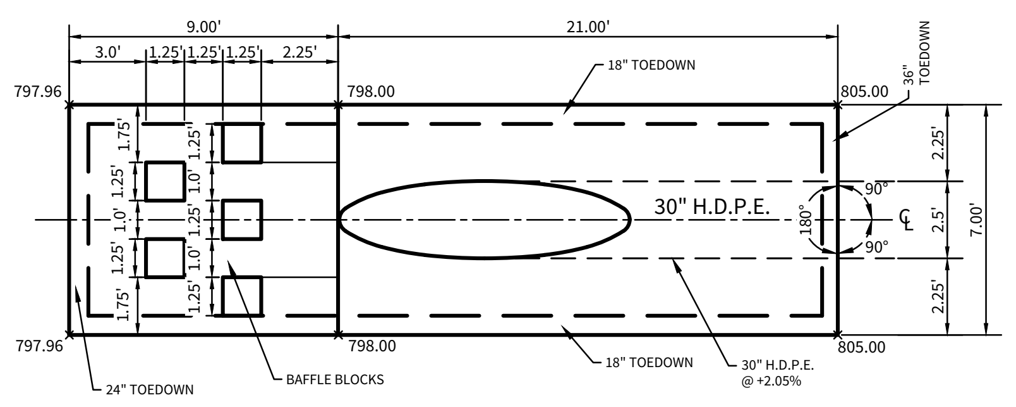
8"X12" ROCK RUBBLE DETAIL

N.T.S.


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

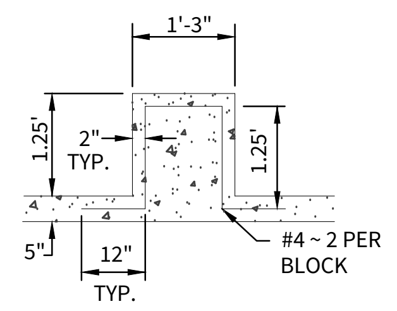
CONCRETE COLLAR DETAIL

[N.T.S.]


9.00'
21.00'
797.96
798.00
805.00
18" TOEDOWN
30" H.D.P.E.
BAFFLE BLOCKS
24" TOEDOWN

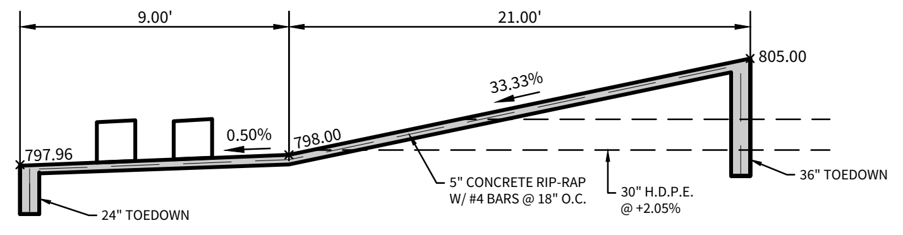
DRAIN 'C' OUTFALL DETAIL

[N.T.S.]


1'-3"
2"
TYP.
1.25'
12"
5"
#4 – 2 PER BLOCK

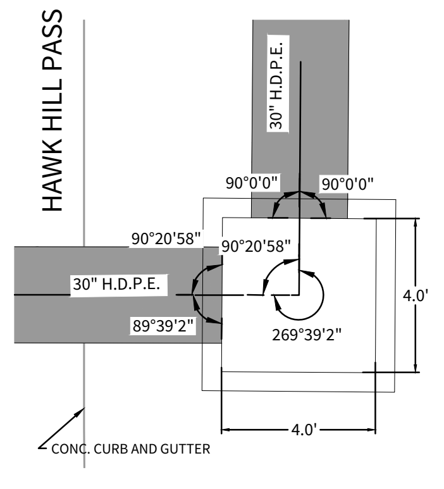
1.25'x1.25'x1.25' BAFFLE BLOCK REINFORCEMENT

(N.T.S.)


9.00'
21.00'
805.00
33.33%
797.96
0.50%
798.00
5" CONCRETE RIP-RAP W/ #4 BARS @ 18" O.C.
30" H.D.P.E. @ +2.05%
36" TOEDOWN
24" TOEDOWN

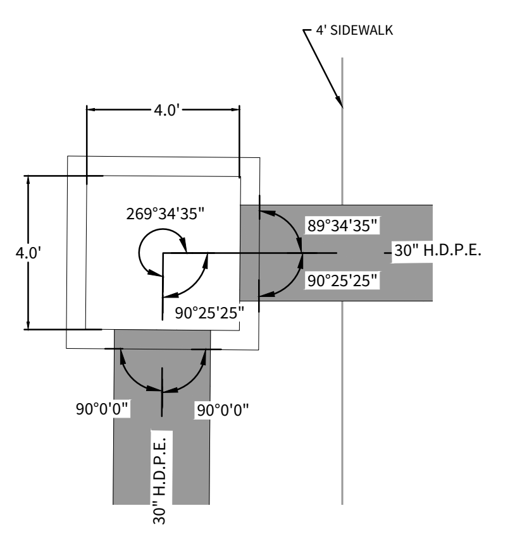
DRAIN 'C' OUTFALL DETAIL

[N.T.S.]


HAWK HILL PASS
30" H.D.P.E.
90°0'0"
90°20'58"
269°39'2"
89°39'2"
4.0'
CONC. CURB AND GUTTER

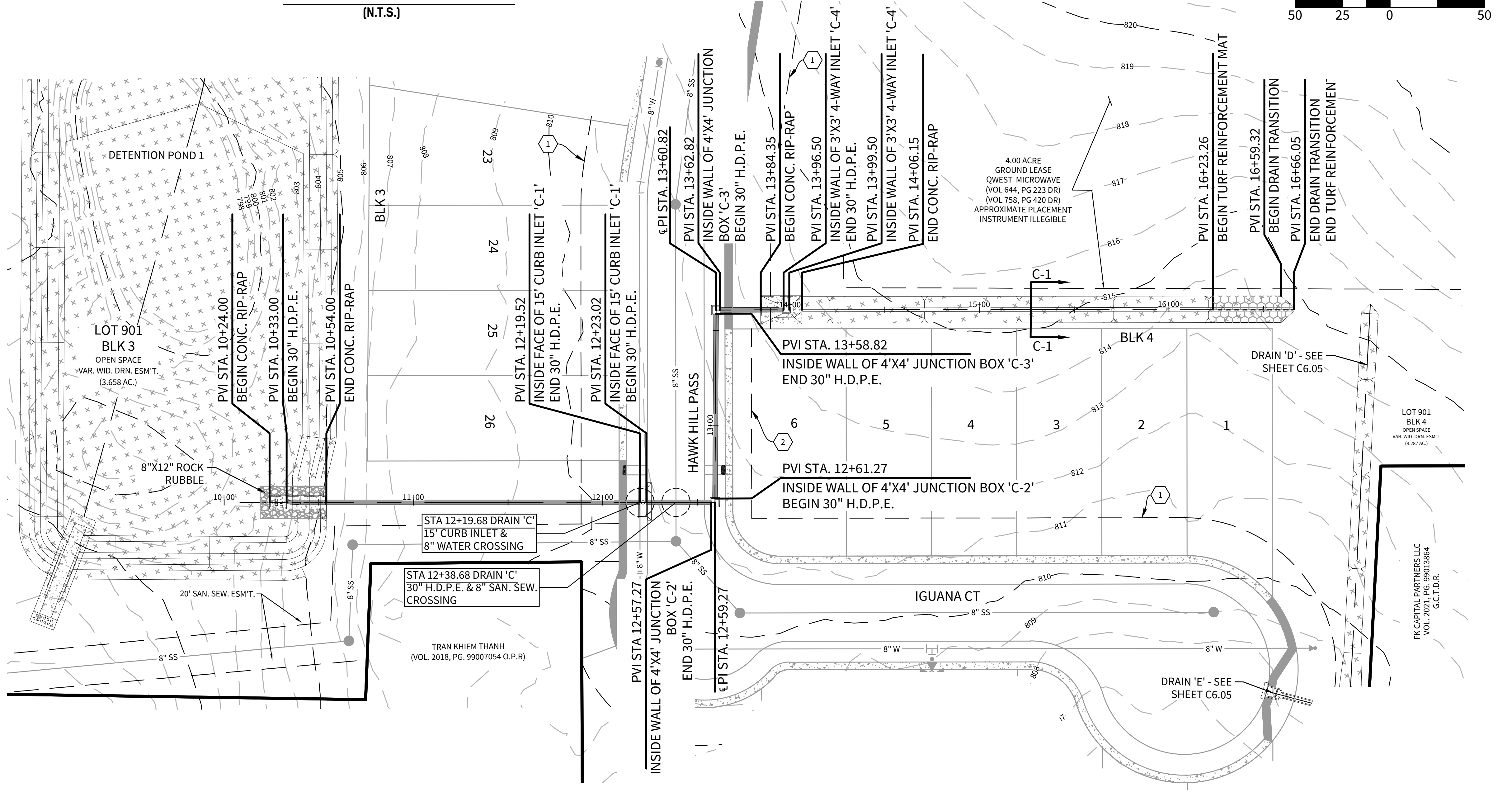
JUNCTION BOX 'C-2' DETAIL

SCALE: 1"=5'


4' SIDEWALK
4.0'
269°34'35"
89°34'35"
90°25'25"
30" H.D.P.E.
90°0'0"

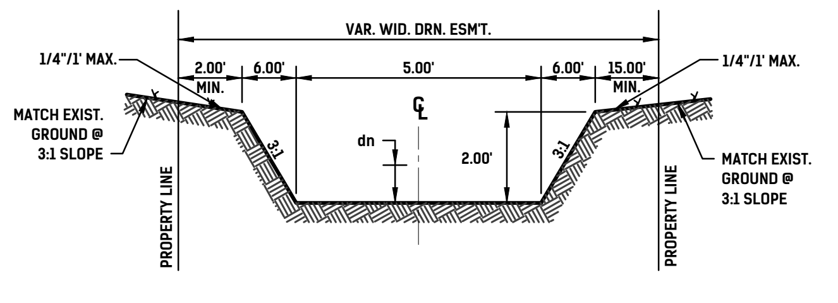
JUNCTION BOX 'C-3' DETAIL

SCALE: 1"=5'


SCALE: 1"=50'
50 25 0 50
DETENTION POND 1
LOT 901 BLK 3 OPEN SPACE VAR. WID. DRN. ESM'T. (3.656 AC.)
8"X12" ROCK RUBBLE
PVI STA. 10+24.00 BEGIN CONC. RIP-RAP
PVI STA. 10+33.00 BEGIN 30" H.D.P.E.
PVI STA. 10+54.00 END CONC. RIP-RAP
BLK 3
23
24
25
26
PVI STA. 12+19.52 INSIDE FACE OF 15' CURB INLET 'C-1' END 30" H.D.P.E.
PVI STA. 12+23.02 INSIDE FACE OF 15' CURB INLET 'C-1' BEGIN 30" H.D.P.E.
STA 12+19.68 DRAIN 'C' 15' CURB INLET & 8" WATER CROSSING
STA 12+38.68 DRAIN 'C' 30" H.D.P.E. & 8" SAN. SEW. CROSSING
20' SAN. SEW. ESM'T.
TRAN KHIEM THANH (VOL. 2018, PG. 99007054 O.P.R)
PVI STA 12+57.27 INSIDE WALL OF 4'X4' JUNCTION BOX 'C-2' END 30" H.D.P.E.
PI STA. 12+59.27
PVI STA. 12+61.27 INSIDE WALL OF 4'X4' JUNCTION BOX 'C-2' BEGIN 30" H.D.P.E.
HAWK HILL PASS
PI STA. 13+60.82
PVI STA. 13+62.82 INSIDE WALL OF 4'X4' JUNCTION BOX 'C-3' BEGIN 30" H.D.P.E.
PVI STA. 13+58.82 INSIDE WALL OF 4'X4' JUNCTION BOX 'C-3' END 30" H.D.P.E.
PVI STA. 13+84.35 BEGIN CONC. RIP-RAP
PVI STA. 13+96.50 INSIDE WALL OF 3'X3' 4-WAY INLET 'C-4' END 30" H.D.P.E.
PVI STA. 13+99.50 INSIDE WALL OF 3'X3' 4-WAY INLET 'C-4'
PVI STA. 14+06.15 END CONC. RIP-RAP
4.00 ACRE GROUND LEASE QWEST MICROWAVE (VOL 644, PG 223 DR) (VOL 758, PG 420 DR) APPROXIMATE PLACEMENT INSTRUMENT ILLEGIBLE
PVI STA. 16+23.26 BEGIN TURF REINFORCEMENT MAT
PVI STA. 16+59.32 BEGIN DRAIN TRANSITION
PVI STA. 16+66.05 END DRAIN TRANSITION END TURF REINFORCEMENT
C-1
BLK 4
DRAIN 'D' - SEE SHEET C6.05
LOT 901 BLK 4 OPEN SPACE
6
5
4
3
2
1
IGUANA CT
PV CAPITAL PARTNERS LLC
DRAIN 'E' - SEE SHEET C6.05

NOTES:

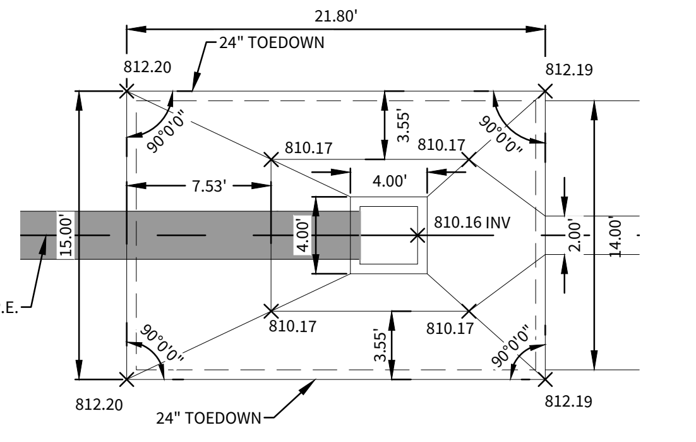
1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.
2. 85% OF DETENTION POND SURFACE MUST HAVE ESTABLISHED VEGETATION PRIOR TO ACCEPTANCE OF THE CHANNEL BY THE CITY OF SANTA CLARA & GUADALUPE COUNTY. HYDROMULCH PAY ITEM TO INCLUDE SOIL, SEEDING, OR SODDING & WATERING FOR THE TIME PERIOD NEEDED TO ACHIEVE 85% VEGETATION.
3. REFERENCE TYPICAL CONCRETE CHANNEL RIP-RAP STANDARDS FOUND ON SHEET C6.D1.


VAR. WID. DRN. ESM'T.
1/4"/1' MAX.
2.00' MIN.
6.00'
5.00'
6.00'
15.00' MIN.
MATCH EXIST. GROUND @ 3:1 SLOPE
dn
2.00'
PROPERTY LINE

DRAIN "C-1" SECTION (N.T.S.)

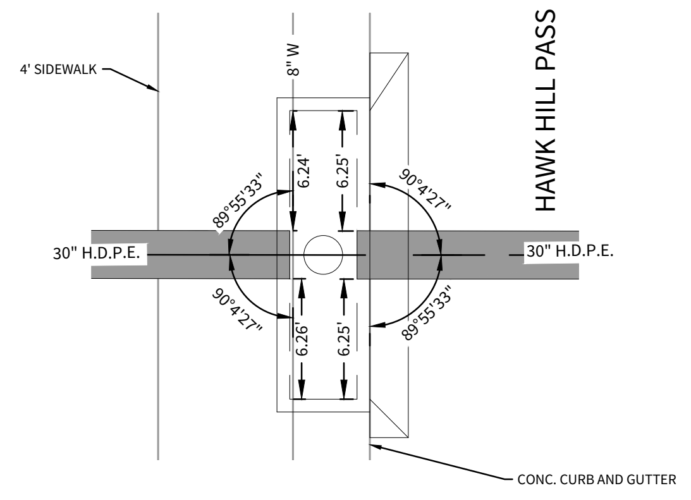
STA. 14+06.15 TO STA. 16+59.32

DRAIN 'C' HYDRAULIC SUMMARY		
SECTION	"C-1"	
STATION	14+06.15 - 16+23.26	16+23.26 - 16+59.32
Q_{100} (cfs)	21.96	21.96
n	0.035	0.035
S (%)	0.50	3.60
D (ft)	2.00	2.00
d_n (ft)	1.39	0.89
V (fps)	2.56	5.28


21.80'
24" TOEDOWN
812.20
812.19
810.17
810.16 INV
7.53'
4.00'
30" H.D.P.E.
812.20
812.19

4-WAY INLET 'C-4' DETAIL

SCALE: 1"=10'


4' SIDEWALK
8" W
HAWK HILL PASS
30" H.D.P.E.
CONC. CURB AND GUTTER

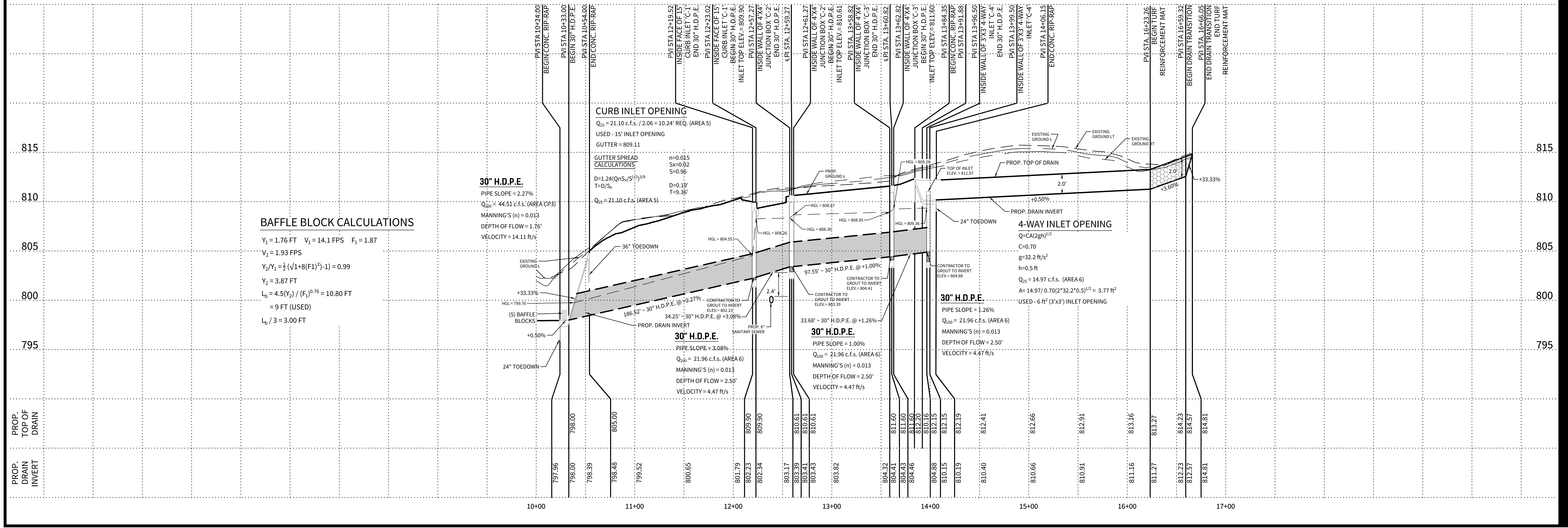
CURB INLET 'C-1' DETAIL

SCALE: 1"=10'

DRAIN "C"

STA. 10+24.00 TO STA. 16+66.05

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


PVI STA 10+24.00 BEGIN CONC. RIP-RAP
PVI STA 10+33.00 BEGIN 30" H.D.P.E.
PVI STA 10+54.00 END CONC. RIP-RAP
PVI STA 12+19.52 INSIDE FACE OF 15' CURB INLET 'C-1' END 30" H.D.P.E.
PVI STA 12+23.02 INSIDE FACE OF 15' CURB INLET 'C-1' BEGIN 30" H.D.P.E. INLET TOP ELEV = 809.90
PVI STA 12+57.27 INSIDE WALL OF 4'X4' JUNCTION BOX 'C-2' END 30" H.D.P.E.
℄ PI STA. 12+59.27
PVI STA 12+61.27 INSIDE WALL OF 4'X4' JUNCTION BOX 'C-2' BEGIN 30" H.D.P.E. INLET TOP ELEV = 810.61
PVI STA. 13+58.82 INSIDE WALL OF 4'X4' JUNCTION BOX 'C-3' END 30" H.D.P.E.
℄ PI STA. 13+60.82
PVI STA. 13+62.82 INSIDE WALL OF 4'X4' JUNCTION BOX 'C-3' BEGIN 30" H.D.P.E. INLET TOP ELEV = 811.60
PVI STA 13+84.35 BEGIN CONC. RIP-RAP
PVI STA 13+91.88
PVI STA 13+96.50 INSIDE WALL OF 3'X3' 4-WAY INLET 'C-4' END 30" H.D.P.E.
PVI STA 13+99.50 INSIDE WALL OF 3'X3' 4-WAY INLET 'C-4'
PVI STA 14+06.15 END CONC. RIP-RAP
PVI STA. 16+23.26 BEGIN TURF REINFORCEMENT MAT
PVI STA 16+59.32 BEGIN DRAIN TRANSITION
PVI STA. 16+66.05 END DRAIN TRANSITION END TURF REINFORCEMENT MAT
815
810
805
800
795
EXISTING GROUND ℄
+33.33%
HGL = 799.76
(5) BAFFLE BLOCKS
+0.50%
24" TOEDOWN
36" TOEDOWN
186.52' ~ 30" H.D.P.E. @ +2.27%
CONTRACTOR TO GROUT TO INVERT ELEV.= 802.23
34.25' ~ 30" H.D.P.E. @ +3.08%
PROP. DRAIN INVERT
2.4'
PROP. 8" SANITARY SEWER
HGL = 804.55
HGL = 808.26
HGL = 808.67
HGL = 808.36
HGL = 808.95
HGL = 809.36
HGL = 809.26
PROP. GROUND ℄
97.55' ~ 30" H.D.P.E. @ +1.00%
CONTRACTOR TO GROUT TO INVERT ELEV.= 803.39
CONTRACTOR TO GROUT TO INVERT ELEV.= 804.41
33.68' ~ 30" H.D.P.E. @ +1.26%
CONTRACTOR TO GROUT TO INVERT ELEV.= 804.88
TOP OF INLET ELEV.= 811.07
24" TOEDOWN
PROP. TOP OF DRAIN
2.0'
+0.50%
PROP. DRAIN INVERT
EXISTING GROUND LT
EXISTING GROUND RT
EXISTING GROUND ℄
2.0'
+3.60%
+33.33%
PROP. TOP OF DRAIN
PROP. DRAIN INVERT
798.00
805.00
809.90
809.90
810.61
810.61
810.61
811.60
811.60
811.60
812.20
810.16
812.15
812.15
812.19
812.41
812.66
812.91
813.16
813.27
814.23
814.57
814.81
797.96
798.00
798.39
798.48
799.52
800.65
801.79
802.34
803.17
803.39
803.41
803.43
803.82
804.32
804.41
804.43
804.46
804.88
810.15
810.19
810.40
810.66
810.91
811.16
811.27
812.23
812.57
814.81
10+00
11+00
12+00
13+00
14+00
15+00
16+00
17+00

BAFFLE BLOCK CALCULATIONS

$Y_1 = 1.76$ FT $V_1 = 14.1$ FPS $F_1 = 1.87$

$V_2 = 1.93$ FPS

$Y_2/Y_1 = \frac{1}{2}(\sqrt{1+8(F1)^2}-1) = 0.99$

$Y_2 = 3.87$ FT

$L_b = 4.5(Y_2) / (F_1)^{0.76} = 10.80$ FT

= 9 FT (USED)

$L_b / 3 = 3.00$ FT

30" H.D.P.E.

PIPE SLOPE = 2.27%

Q_{100} = 44.51 c.f.s. (AREA CP3)

MANNING'S (n) = 0.013

DEPTH OF FLOW = 1.76'

VELOCITY = 14.11 ft/s

CURB INLET OPENING

Q_{25} = 21.10 c.f.s. / 2.06 = 10.24' REQ. (AREA 5)

USED - 15' INLET OPENING

GUTTER = 809.11

GUTTER SPREAD CALCULATIONS

n=0.015
Sx=0.02
S=0.96

$D=1.24(QnS_x/S^{1/2})^{3/8}$
$T=D/S_x$

D=0.19'
T=9.36'

Q_{25} = 21.10 c.f.s. (AREA 5)

30" H.D.P.E.

PIPE SLOPE = 3.08%

Q_{100} = 21.96 c.f.s. (AREA 6)

MANNING'S (n) = 0.013

DEPTH OF FLOW = 2.50'

VELOCITY = 4.47 ft/s

30" H.D.P.E.

PIPE SLOPE = 1.00%

Q_{100} = 21.96 c.f.s. (AREA 6)

MANNING'S (n) = 0.013

DEPTH OF FLOW = 2.50'

VELOCITY = 4.47 ft/s

30" H.D.P.E.

PIPE SLOPE = 1.26%

Q_{100} = 21.96 c.f.s. (AREA 6)

MANNING'S (n) = 0.013

DEPTH OF FLOW = 2.50'

VELOCITY = 4.47 ft/s

4-WAY INLET OPENING

$Q=CA(2gh)^{1/2}$

C=0.70

$g=32.2\ ft/s^2$

h=0.5 ft

Q_{25} = 14.97 c.f.s. (AREA 6)

$A= 14.97/ 0.70(2*32.2*0.5)^{1/2} = 3.77\ ft^2$

USED - 6 ft^2 (3'x3') INLET OPENING

PROP. TOP OF DRAIN

PROP. DRAIN INVERT

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

GOERKE SUBDIVISION PHASE 1

DRAINAGE PLAN & PROFILE - DRAIN 'C'

DATE
02/18/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

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

KYLE M. HUDEK
138753
03/04/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C6.04

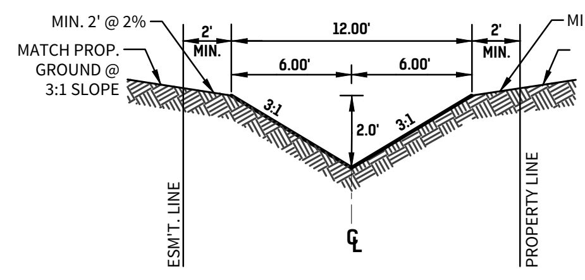
LEGEND

EARTHEN CHANNEL	✛
CONCRETE RIP-RAP	▨

KEYNOTES

① 20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

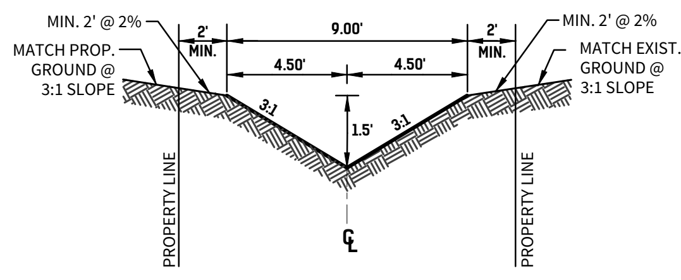
② 10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE


MIN. 2' @ 2%
MATCH PROP. GROUND @ 3:1 SLOPE
12.00'
6.00'
6.00'
2'
MIN.
2.0'
3:1
MIN. 2' @ 2%
MATCH EXIST. GROUND @ 3:1 SLOPE
ESM'T. LINE
PROPERTY LINE
℄

DRAIN "D-1" SECTION

STA 11+51.38 TO STA 11+79.16

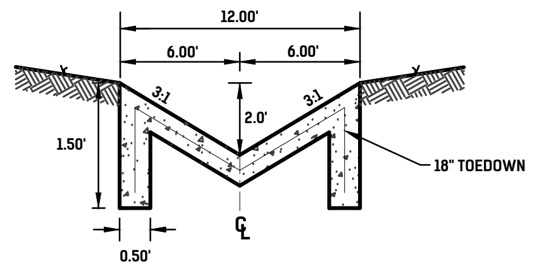
(N.T.S.)


MIN. 2' @ 2%
MATCH PROP. GROUND @ 3:1 SLOPE
9.00'
4.50'
4.50'
2'
MIN.
1.5'
3:1
MIN. 2' @ 2%
MATCH EXIST. GROUND @ 3:1 SLOPE
PROPERTY LINE
PROPERTY LINE
℄

DRAIN "D-2" SECTION

STA 12+23.51 TO STA 14+02.89

(N.T.S.)

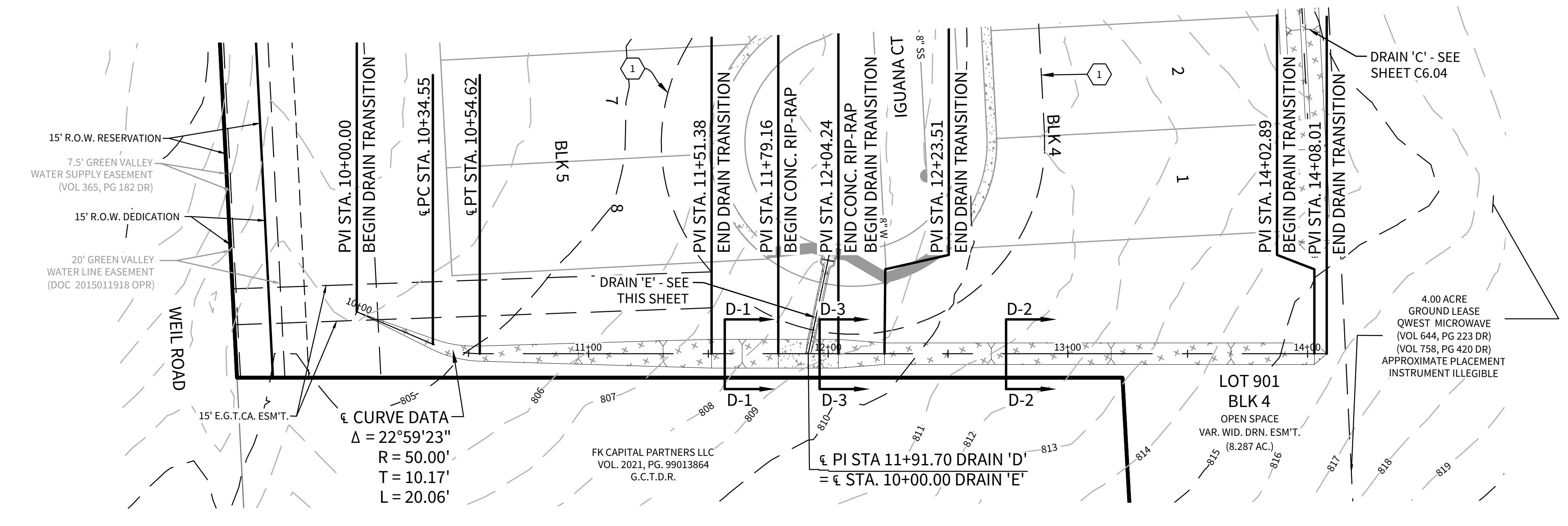

12.00'
6.00'
6.00'
3:1
2.0'
1.50'
0.50'
18" TOEDOWN
℄

DRAIN "D-3" SECTION

STA 11+79.16 TO STA 12+04.24

(N.T.S.)

DRAIN 'D' HYDRAULIC SUMMARY				
SECTION	"D-1"	"D-3"	"D-2"	
STATION	11+51.38 - 11+79.16	11+79.16 - 12+04.24	12+23.51 - 13+19.96	13+19.96 - 14+02.89
Q_{100} (cfs)	14.24	14.24	6.18	6.18
n	0.035	0.015	0.035	0.035
S (%)	1.00	1.00	3.76	4.00
D (ft)	2.00	2.00	1.50	1.50
d_n (ft)	1.26	0.92	0.72	0.71
V (fps)	2.99	5.61	3.97	4.09


SCALE: 1"=50'
50 25 0 50
15' R.O.W. RESERVATION
7.5' GREEN VALLEY WATER SUPPLY EASEMENT (VOL. 365, PG 182 DR)
15' R.O.W. DEDICATION
20' GREEN VALLEY WATER LINE EASEMENT (DOC. 201501918 OPR)
WEIL ROAD
15' E.G.T.CA. ESM'T.
PVI STA. 10+00.00
BEGIN DRAIN TRANSITION
℄ PC STA. 10+34.55
℄ PT STA. 10+54.62
BLK 5
PVI STA. 11+51.38
END DRAIN TRANSITION
PVI STA. 11+79.16
BEGIN CONC. RIP-RAP
PVI STA. 12+04.24
END CONC. RIP-RAP
BEGIN DRAIN TRANSITION
IGUANA CT
PVI STA. 12+23.51
END DRAIN TRANSITION
BLK 4
PVI STA. 14+02.89
BEGIN DRAIN TRANSITION
PVI STA. 14+08.01
END DRAIN TRANSITION
DRAIN 'C' - SEE SHEET C6.04
DRAIN 'E' - SEE THIS SHEET
D-1
D-3
D-2
℄ CURVE DATA
Δ = 22°59'23"
R = 50.00'
T = 10.17'
L = 20.06'
FK CAPITAL PARTNERS LLC VOL. 2021, PG. 99013864 G.C.T.D.R.
℄ PI STA 11+91.70 DRAIN 'D' = ℄ STA. 10+00.00 DRAIN 'E'
LOT 901
BLK 4
OPEN SPACE VAR. WID. DRN. ESM'T. (8.287 AC.)
4.00 ACRE GROUND LEASE QWEST MICROWAVE (VOL 644, PG 223 DR) (VOL 758, PG 420 DR) APPROXIMATE PLACEMENT INSTRUMENT ILLEGIBLE
1
2

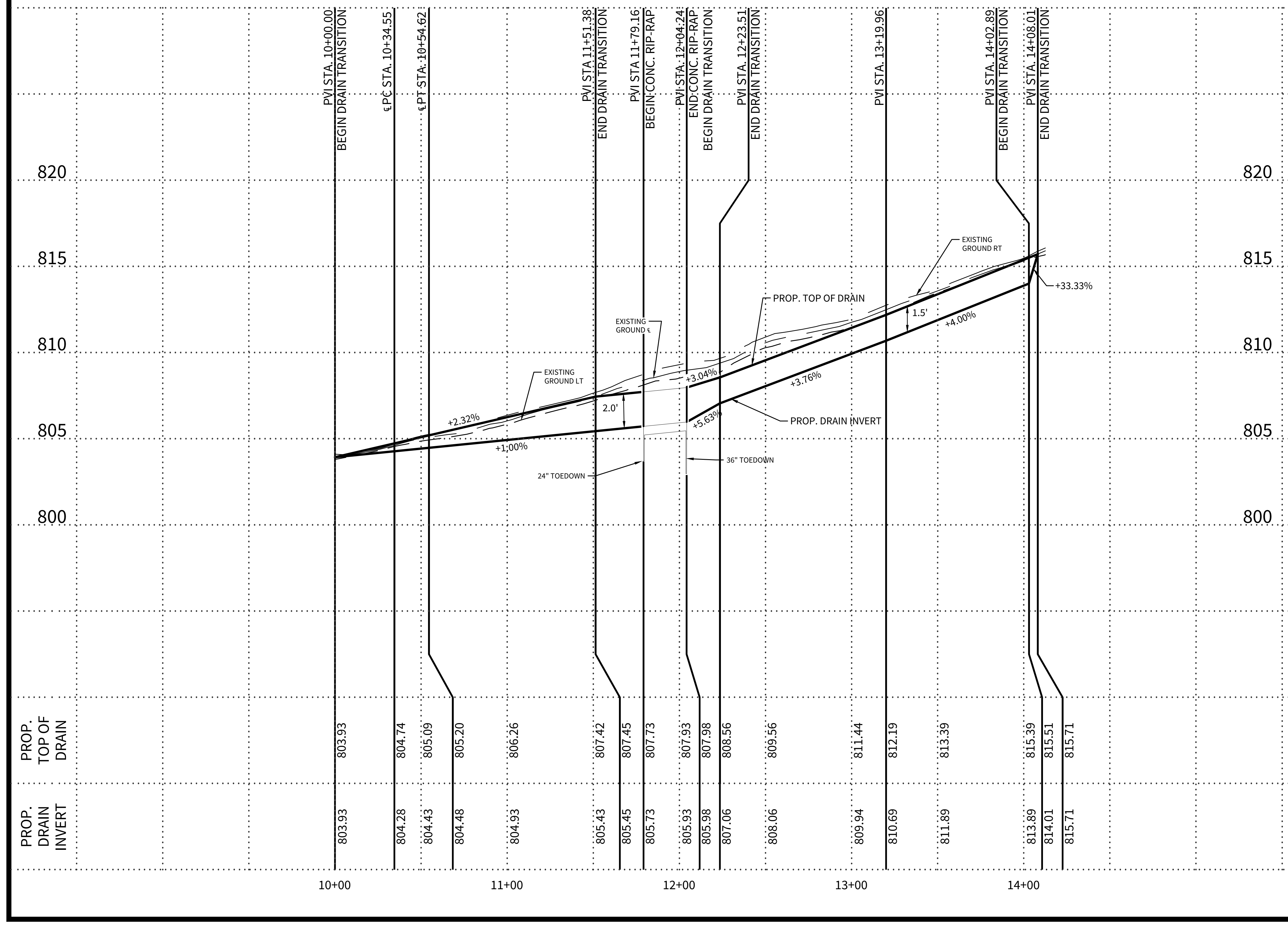
DRAIN "D"

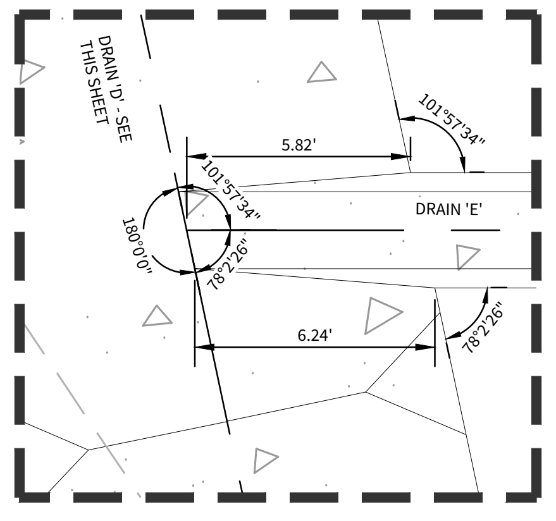
STA. 10+00.00 TO STA. 14+08.01

NOTES:

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.
2. 85% OF DETENTION POND SURFACE MUST HAVE ESTABLISHED VEGETATION PRIOR TO ACCEPTANCE OF THE CHANNEL BY THE CITY OF SANTA CLARA & GUADALUPE COUNTY. HYDROMULCH PAY ITEM TO INCLUDE SOIL, SEEDING, OR SODDING & WATERING FOR THE TIME PERIOD NEEDED TO ACHIEVE 85% VEGETATION.
3. REFERENCE TYPICAL CONCRETE CHANNEL RIP-RAP STANDARDS FOUND ON SHEET C6.D1.

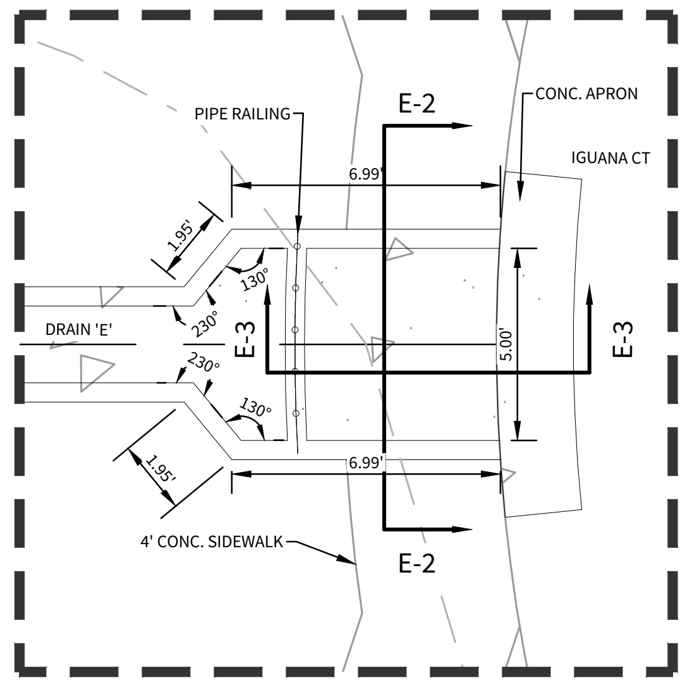
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'


PVI STA. 10+00.00 BEGIN DRAIN TRANSITION
℄ PC STA. 10+34.55
℄ PT STA. 10+54.62
PVI STA. 11+51.38 END DRAIN TRANSITION
PVI STA. 11+79.16 BEGIN CONC. RIP-RAP
PVI STA. 12+04.24 END CONC. RIP-RAP BEGIN DRAIN TRANSITION
PVI STA. 12+23.51 END DRAIN TRANSITION
PVI STA. 13+19.96
PVI STA. 14+02.89 BEGIN DRAIN TRANSITION
PVI STA. 14+08.01 END DRAIN TRANSITION
820
815
810
805
800
EXISTING GROUND RT
PROP. TOP OF DRAIN
EXISTING GROUND ℄
EXISTING GROUND LT
+2.32%
+1.00%
2.0'
+3.04%
+5.63%
+3.76%
1.5'
+4.00%
+33.33%
PROP. DRAIN INVERT
24" TOEDOWN
36" TOEDOWN
PROP. TOP OF DRAIN
803.93 804.74 805.09 805.20 806.26 807.42 807.45 807.93 807.98 808.56 809.56 811.44 812.19 813.39 815.39 815.51 815.71
PROP. DRAIN INVERT
803.93 804.28 804.43 804.48 804.93 805.43 805.45 805.73 805.93 805.98 807.06 808.06 809.94 810.69 811.89 813.89 814.01 815.71
10+00
11+00
12+00
13+00
14+00


5.82'
DRAIN 'E'
6.24'

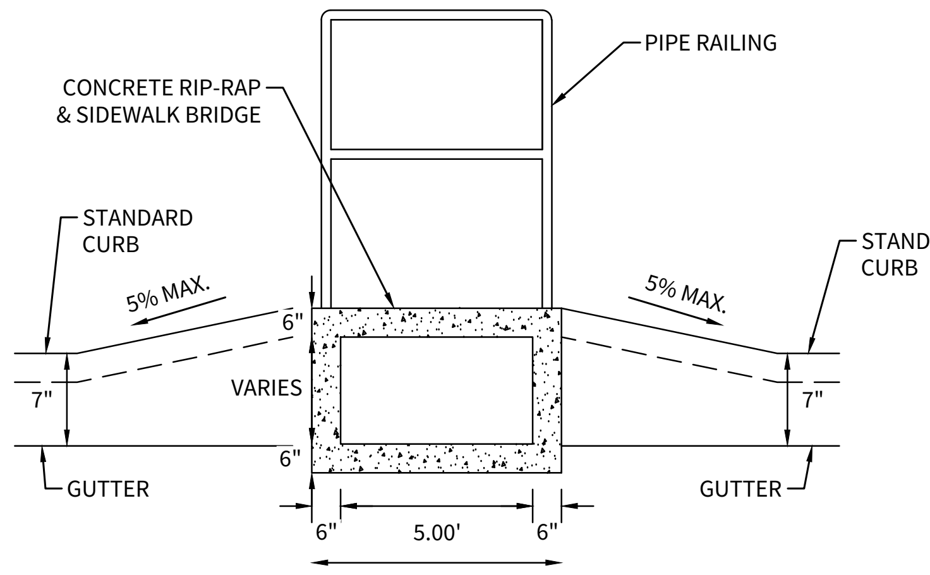
DETAIL "A"

SCALE: 1"= 5'

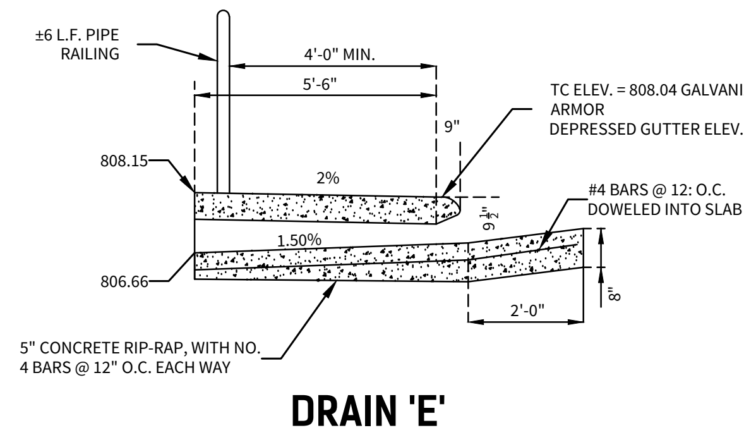

PIPE RAILING
CONC. APRON
IGUANA CT
E-2
E-3
E-3
E-2
6.99'
6.99'
5.00'
DRAIN 'E'
4" CONC. SIDEWALK

DETAIL "B"

SCALE: 1"= 5'


PIPE RAILING
CONCRETE RIP-RAP & SIDEWALK BRIDGE
STANDARD CURB
STANDARD CURB
5% MAX.
5% MAX.
6"
7"
7"
VARIES
6"
6"
6"
5.00'
6.00'
GUTTER
GUTTER

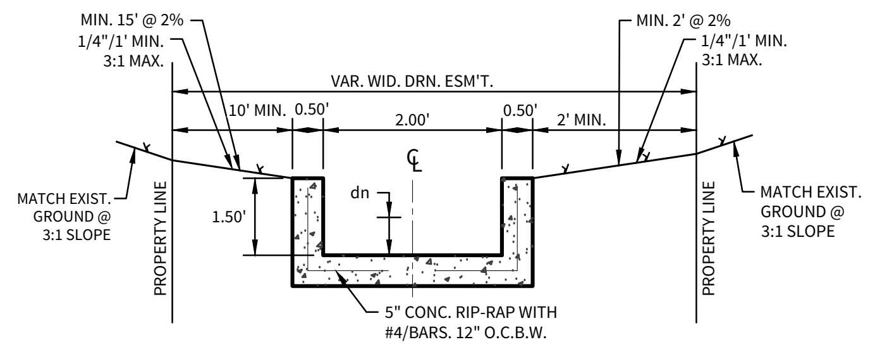
DRAIN 'E'
SECTION 'E-2' THRU SIDEWALK BOX


±6 L.F. PIPE RAILING
4'-0" MIN.
5'-6"
9"
TC ELEV. = 808.04 GALVANIZED CURB ARMOR
DEPRESSED GUTTER ELEV. = 807.25
808.15
2%
#4 BARS @ 12: O.C. DOWELED INTO SLAB
1.50%
806.66
2'-0"
5" CONCRETE RIP-RAP, WITH NO. 4 BARS @ 12" O.C. EACH WAY

DRAIN 'E'
SECTION 'E-3'
SIDEWALK BOX DETAIL SECTION

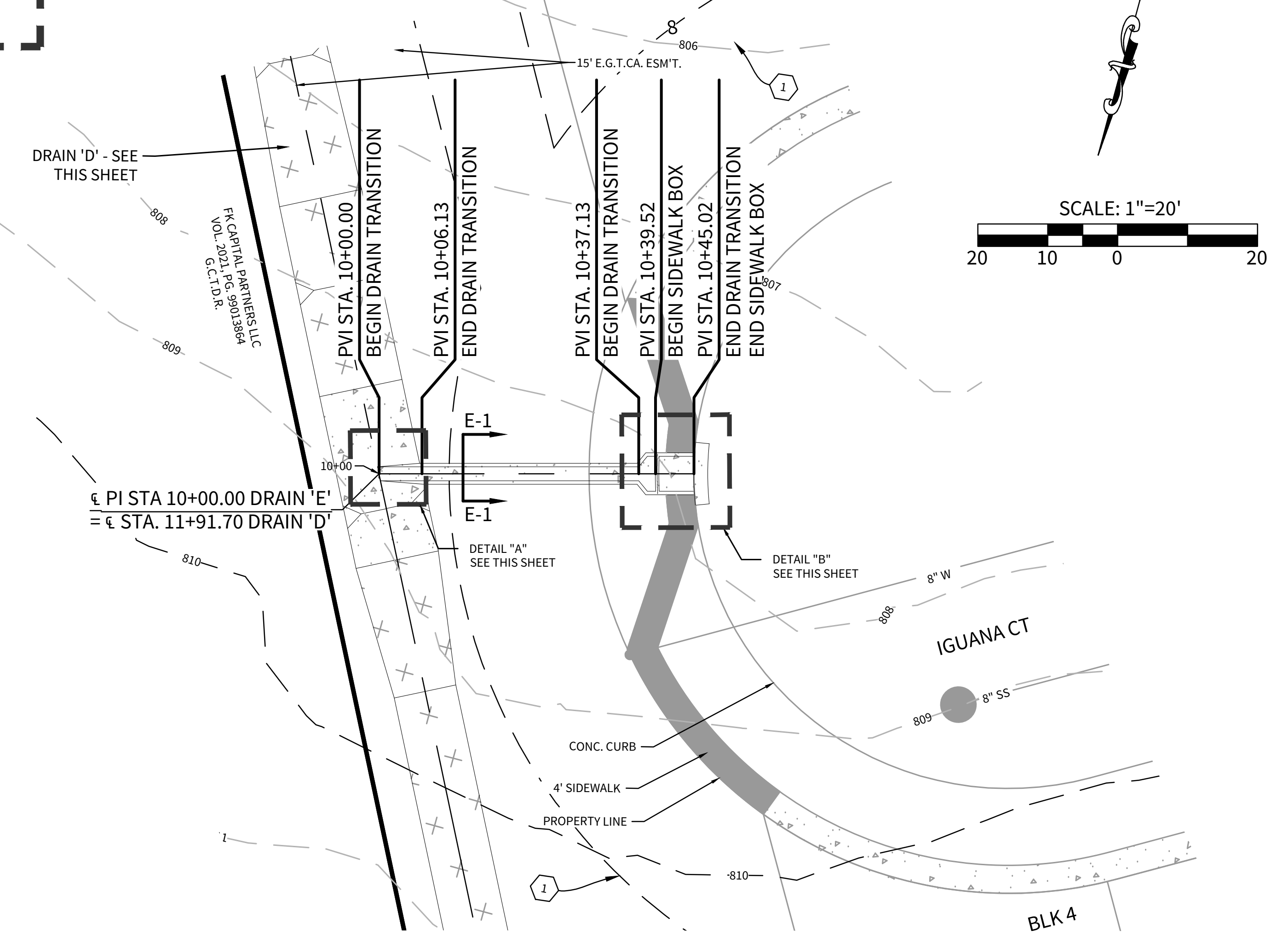
(N.T.S.)

DRAIN 'E' HYDRAULIC SUMMARY	
SECTION	"E-1"
STATION	10+00.00 - 10+37.13
Q_{100} (cfs)	8.88
n	0.015
S (%)	1.50
D (ft)	1.50
d_n (ft)	0.68
V (fps)	6.53


MIN. 15' @ 2%
1/4"/1' MIN.
3:1 MAX.
VAR. WID. DRN. ESM'T.
10' MIN.
0.50'
2.00'
0.50'
2' MIN.
MIN. 2' @ 2%
1/4"/1' MIN.
3:1 MAX.
MATCH EXIST. GROUND @ 3:1 SLOPE
1.50'
dn
MATCH EXIST. GROUND @ 3:1 SLOPE
5" CONC. RIP-RAP WITH #4 BARS, 12" O.C.B.W.
PROPERTY LINE
PROPERTY LINE
℄

DRAIN "E-1" SECTION (N.T.S.)

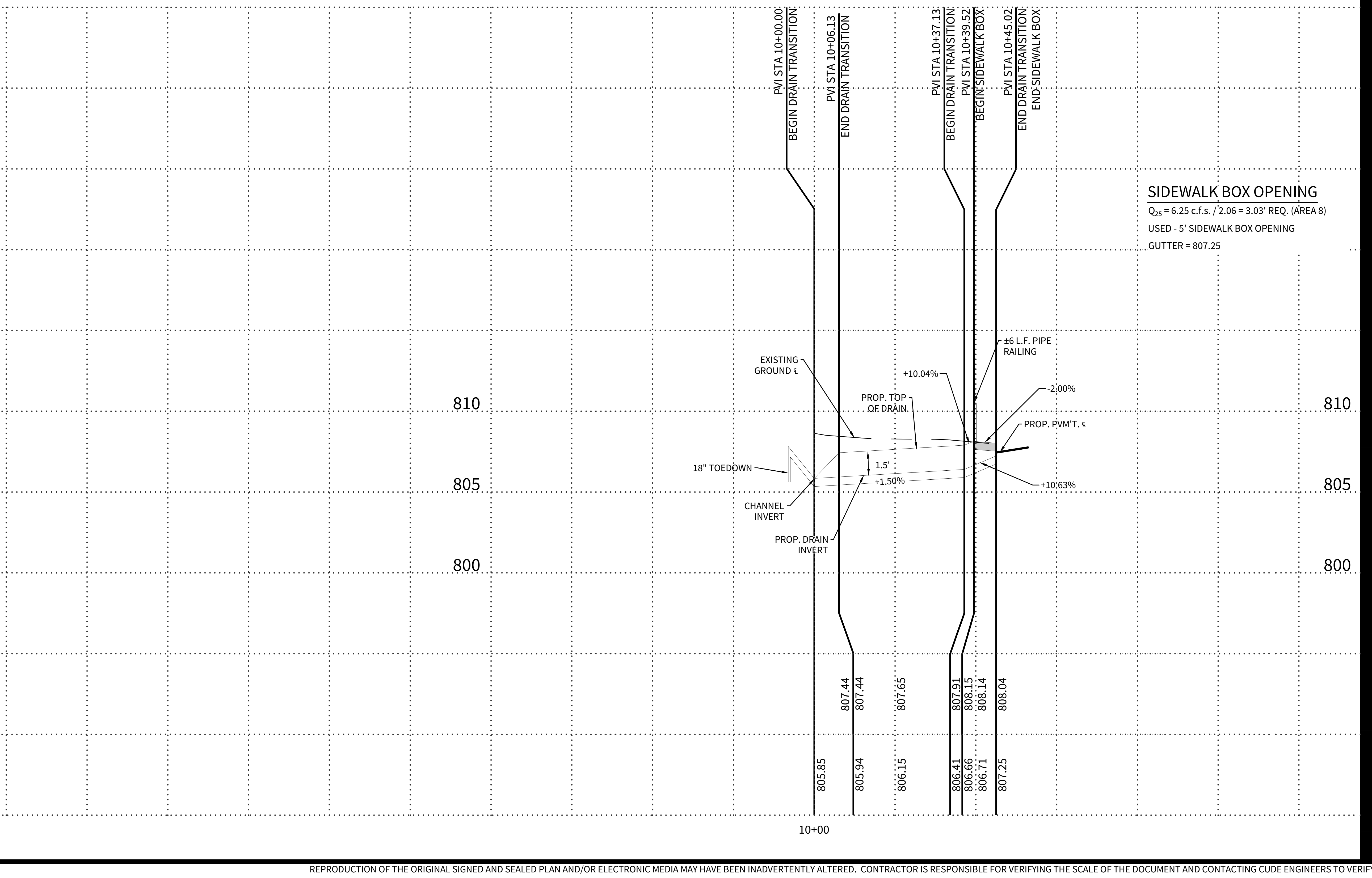
STA. 10+00.00 TO STA. 10+37.13


15' E.G.T.CA. ESM'T.
DRAIN 'D' - SEE THIS SHEET
FK CAPITAL PARTNERS LLC VOL. 2021, PG. 99013864 G.C.T.D.R.
PVI STA. 10+00.00 BEGIN DRAIN TRANSITION
PVI STA. 10+06.13 END DRAIN TRANSITION
PVI STA. 10+37.13 BEGIN DRAIN TRANSITION
PVI STA. 10+39.52 BEGIN SIDEWALK BOX
PVI STA. 10+45.02 END DRAIN TRANSITION END SIDEWALK BOX
E-1
E-1
℄ PI STA 10+00.00 DRAIN 'E' = ℄ STA. 11+91.70 DRAIN 'D'
DETAIL "A" SEE THIS SHEET
DETAIL "B" SEE THIS SHEET
IGUANA CT
CONC. CURB
4' SIDEWALK
PROPERTY LINE
BLK 4
SCALE: 1"=20'
20 10 0 20
1
2

DRAIN "E"

STA. 10+00.00 TO STA. 10+37.13

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


PVI STA 10+00.00 BEGIN DRAIN TRANSITION
PVI STA. 10+06.13 END DRAIN TRANSITION
PVI STA 10+37.13 BEGIN DRAIN TRANSITION
PVI STA. 10+39.52 BEGIN SIDEWALK BOX
PVI STA 10+45.02 END DRAIN TRANSITION END SIDEWALK BOX
820
815
810
805
800
EXISTING GROUND ℄
PROP. TOP OF DRAIN
+10.04%
±6 L.F. PIPE RAILING
-2.00%
PROP. PVM'T. ℄
1.5'
+1.50%
+10.63%
18" TOEDOWN
CHANNEL INVERT
PROP. DRAIN INVERT
PROP. TOP OF DRAIN
807.44 807.44 807.65 807.91 808.15 808.14 808.04
PROP. DRAIN INVERT
805.85 805.94 806.15 806.41 806.66 806.71 807.25
10+00

SIDEWALK BOX OPENING

Q_{25} = 6.25 c.f.s. / 2.06 = 3.03' REQ. (AREA 8)

USED - 5' SIDEWALK BOX OPENING

GUTTER = 807.25

CUDEENGINEERS.COM

EST. 1980
CUDE
ENGINEERS

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

GOERKE SUBDIVISION PHASE 1

DRAINAGE PLAN & PROFILE - DRAIN 'D' & 'E'

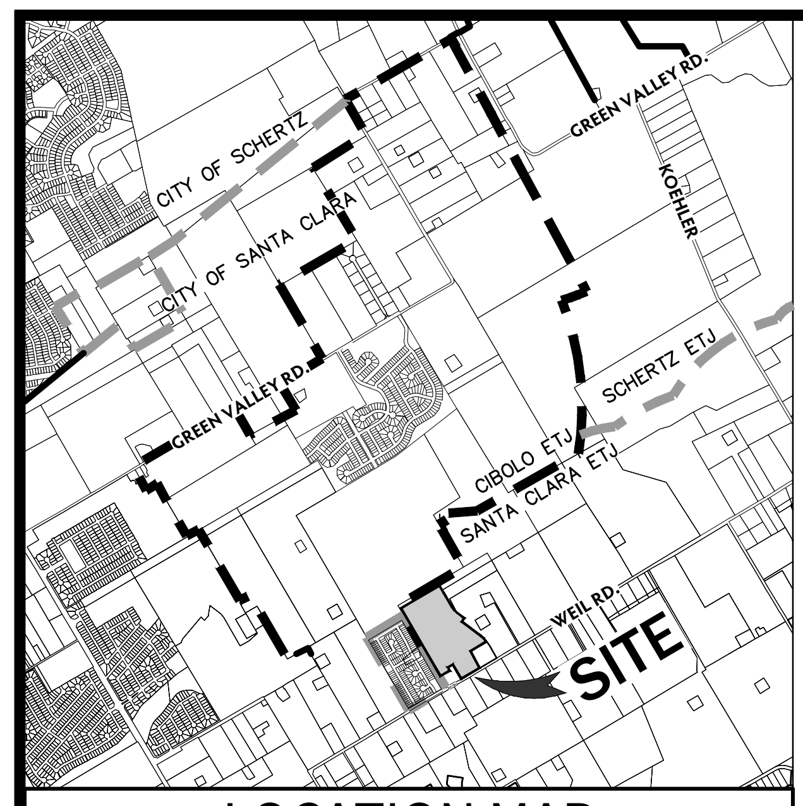
DATE	01/24/2025
PROJECT NO.	03346.101
DRAWN BY	R.B./M.A.S.
CHECKED BY	K.M.H.

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

KYLE M. HUDEK
138753
01/27/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

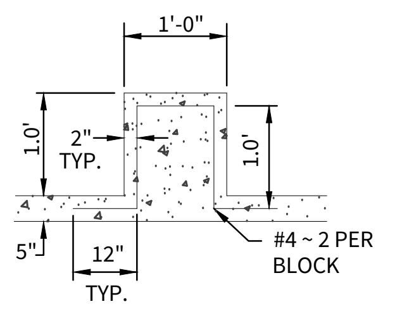
C6.05


CITY OF SCHERTZ
CITY OF SANTA CLARA
GREEN VALLEY RD.
KOHLER
SCHERTZ ETJ
CIBOLO ETJ
SANTA CLARA ETJ
WEIL RD.
SITE

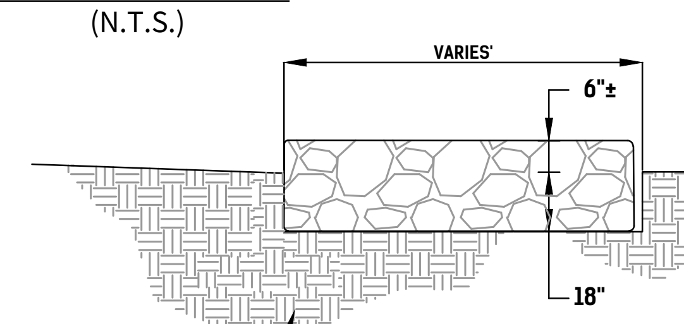
LOCATION MAP
N.T.S.

LEGEND

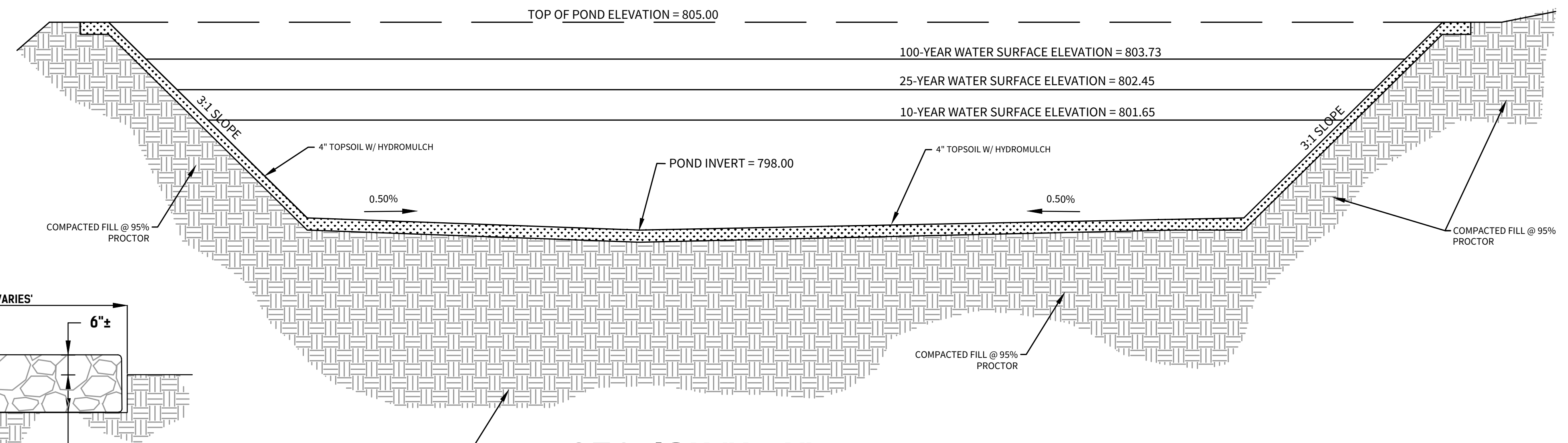
EXISTING CONTOUR	— —1290— —
PROPOSED CONTOUR	—1290—
PROPOSED FLOW ARROW	X.XX% →
POND FLOW LINE	←··· ←··· ←···
EARTHEN	▨
CONCRETE	▨
8"X12" ROCK RUBBLE	▨


1'-0"
1.0'
2" TYP.
1.0'
5"
12" TYP.
#4 ~ 2 PER BLOCK

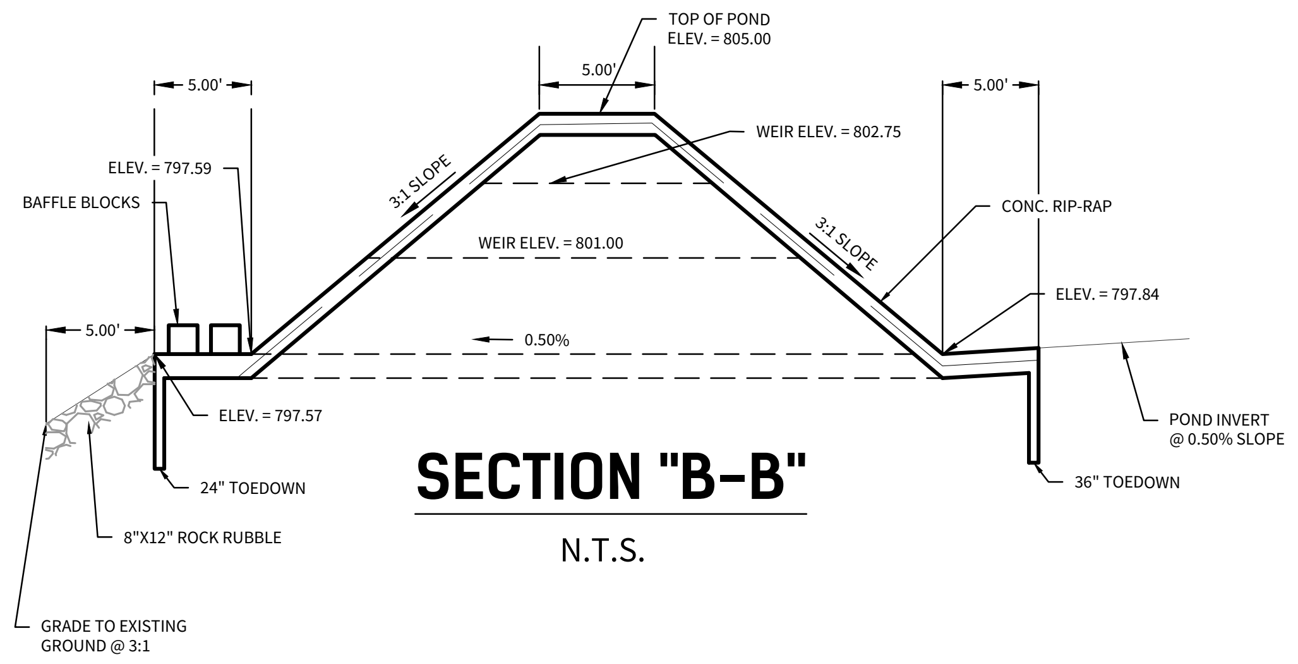
1'x1'x1' BAFFLE BLOCK REINFORCEMENT
(N.T.S.)


VARIES'
6"±
18"
95% COMPACTED SUBGRADE

8"X12" ROCK RUBBLE DETAIL
N.T.S.


TOP OF POND ELEVATION = 805.00
100-YEAR WATER SURFACE ELEVATION = 803.73
25-YEAR WATER SURFACE ELEVATION = 802.45
10-YEAR WATER SURFACE ELEVATION = 801.65
3:1 SLOPE
4" TOPSOIL W/ HYDROMULCH
POND INVERT = 798.00
0.50%
4" TOPSOIL W/ HYDROMULCH
0.50%
3:1 SLOPE
COMPACTED FILL @ 95% PROCTOR
COMPACTED FILL @ 95% PROCTOR
COMPACTED FILL @ 95% PROCTOR
COMPACTED FILL @ 95% PROCTOR

SECTION "A-A"
N.T.S.


TOP OF POND ELEV. = 805.00
5.00'
5.00'
5.00'
ELEV. = 797.59
BAFFLE BLOCKS
3:1 SLOPE
WEIR ELEV. = 802.75
WEIR ELEV. = 801.00
CONC. RIP-RAP
3:1 SLOPE
ELEV. = 797.84
0.50%
5.00'
ELEV. = 797.57
24" TOEDOWN
8"X12" ROCK RUBBLE
GRADE TO EXISTING GROUND @ 3:1
POND INVERT @ 0.50% SLOPE
36" TOEDOWN

SECTION "B-B"
N.T.S.

OWNER/DEVELOPER:

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

CIVIL ENGINEER:

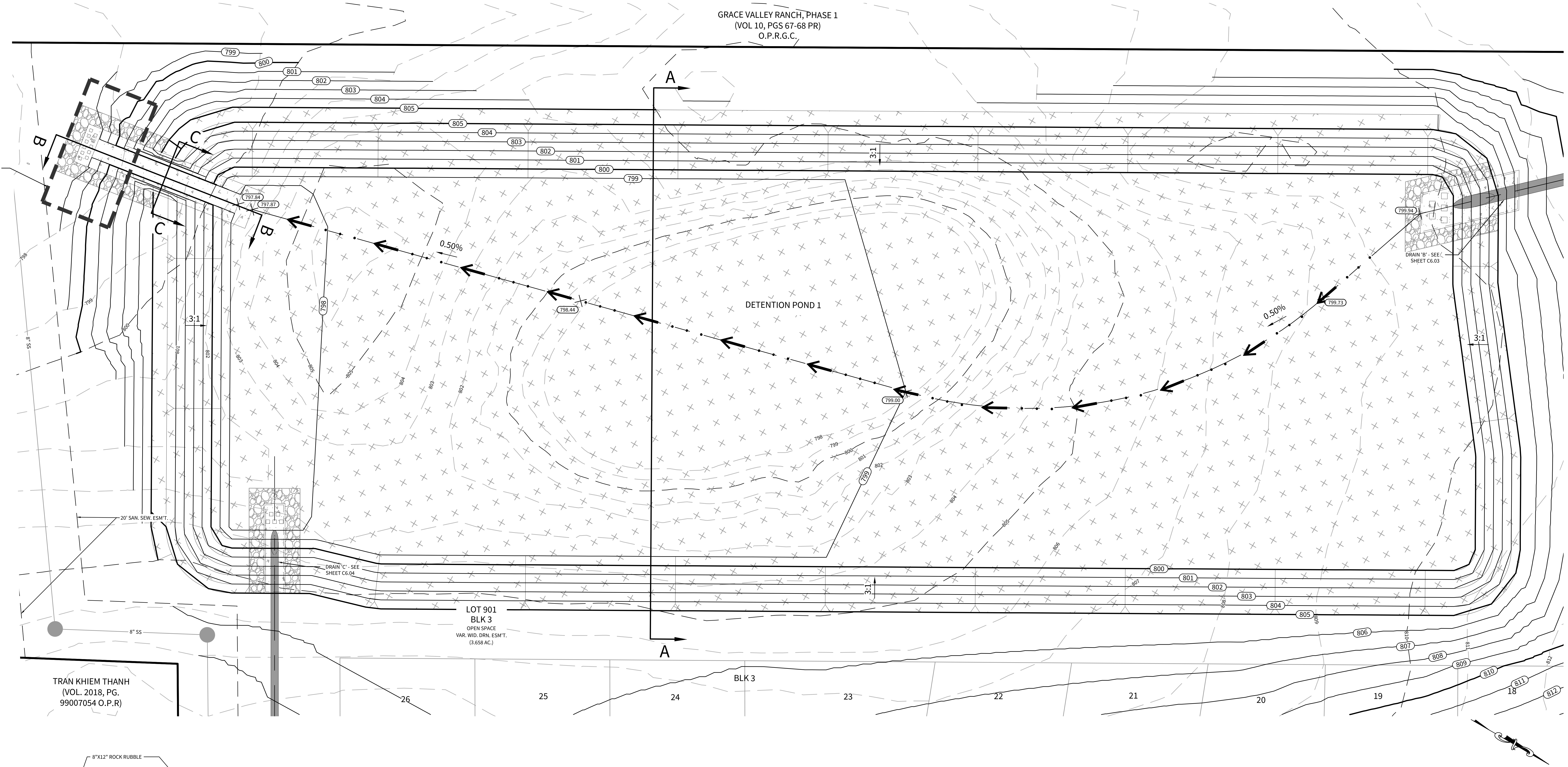
CUDE ENGINEERS
CONTACT PERSON: KYLE HUDEK, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112

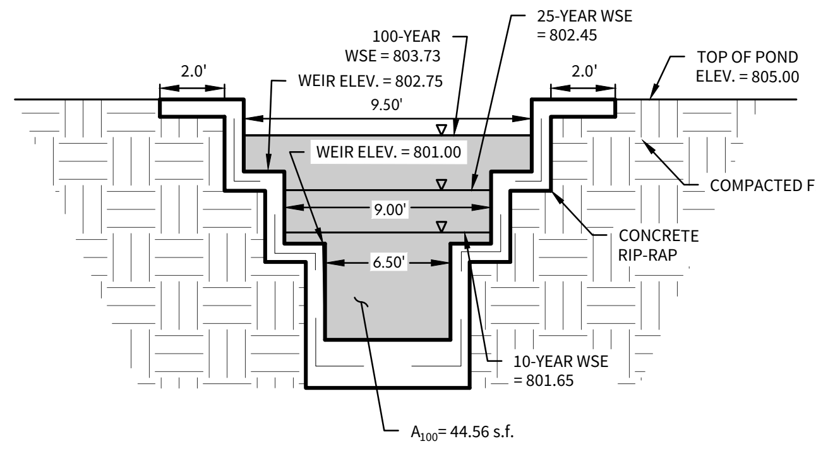
DETENTION POND 1 SUMMARY

STORM EVENT	POND OUTLET FLOW (CFS)	WATER SURFACE ELEV.
2 YR	62.94	800.40
10 YR	121.36	801.65
25 YR	170.17	802.45
50 YR	213.37	803.08
100 YR	262.66	803.73

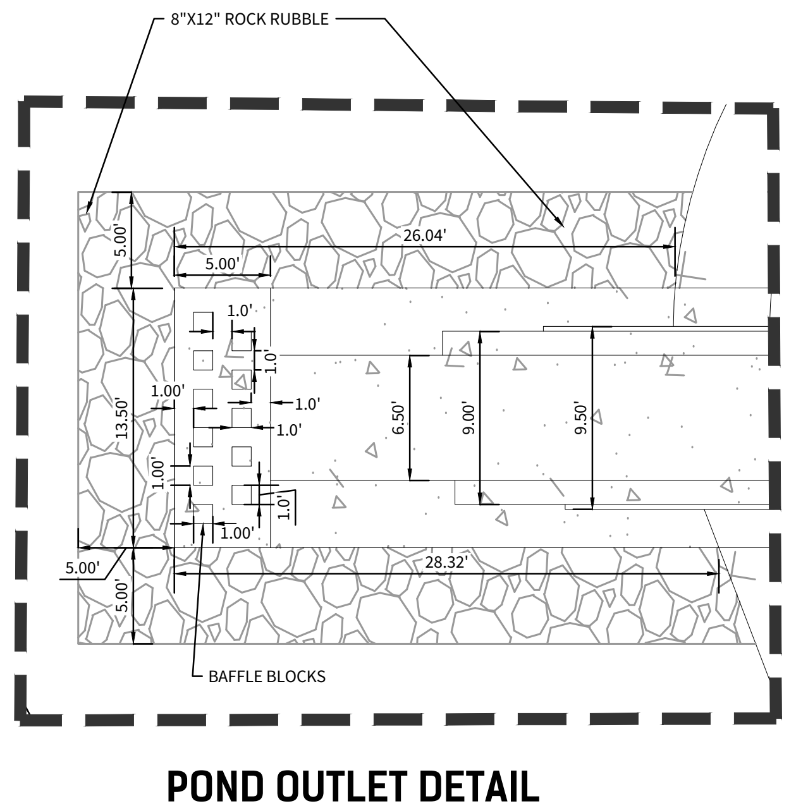
DETENTION POND 1 VOLUME:

CONTOUR	AREA (SQ. FT.)	VOL. (CU. FT.)	CUM. VOL. (CU. FT.)
798	3,407	----	----
799	27,099	15,253	15,253
800	54,870	40,985	56,238
801	58,148	56,509	112,747
802	61,483	59,816	172,562
803	64,874	63,179	235,741
804	68,322	66,598	302,339
805	71,826	70,074	372,413


GRACE VALLEY RANCH, PHASE 1
(VOL 10, PGS 67-68 PR)
O.P.R.G.C.
A
A
B
B
C
C
OUTLET DETAIL - SEE THIS SHEET
799
800
801
802
803
804
805
3:1
797.84
797.87
0.50%
798.44
DETENTION POND 1
799.00
0.50%
799.73
799.94
DRAIN 'B' - SEE SHEET C6.03
3:1
3:1
20" SAN. SEW. ESM'T.
DRAIN 'C' - SEE SHEET C6.04
LOT 901
BLK 3
OPEN SPACE
VAR. WID. DRN. ESM'T.
(3.658 AC.)
8" SS
TRAN KHIEM THANH
(VOL. 2018, PG.
99007054 O.P.R)
BLK 3
26
25
24
23
22
21
20
19
18
806
807
808
809
810
811
812
SCALE: 1"=20'
20
10
0
20


100-YEAR WSE = 803.73
25-YEAR WSE = 802.45
2.0'
WEIR ELEV. = 802.75
2.0'
TOP OF POND ELEV. = 805.00
9.50'
WEIR ELEV. = 801.00
COMPACTED FILL
9.00'
CONCRETE RIP-RAP
6.50'
10-YEAR WSE = 801.65
A_{100}= 44.56 s.f.

SECTION "C-C"
N.T.S.


8"X12" ROCK RUBBLE
5.00'
26.04'
5.00'
1.0'
1.0'
1.00'
1.0'
1.0'
13.50'
6.50'
9.00'
9.50'
1.00'
1.0'
1.00'
5.00'
28.32'
5.00'
BAFFLE BLOCKS

POND OUTLET DETAIL
SCALE: 1"=10'

DETENTION POND 1 WEIR ANALYSIS	
100 YR. ELEV.	803.73
Q_{100} IN FLOW (cfs)	262.66
S (%)	0.50
D (ft)	7.00
d_n (ft)	5.73
A_{100} (sq. ft.)	44.56
V = Q_{100}/A_{100} (fps)	5.89

NOTES:

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.
2. 85% OF DETENTION POND SURFACE MUST HAVE ESTABLISHED VEGETATION PRIOR TO ACCEPTANCE OF THE CHANNEL BY THE CITY OF SANTA CLARA & GUADALUPE COUNTY. HYDROMULCH PAY ITEM TO INCLUDE SOIL, SEEDING, OR SODDING & WATERING FOR THE TIME PERIOD NEEDED TO ACHIEVE 85% VEGETATION.
3. REFERENCE TYPICAL CONCRETE CHANNEL RIP-RAP STANDARDS FOUND ON SHEET C6.D1.

CUDEENGINEERS.COM

EST. 1980
CUDE
ENGINEERS

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

GOERKE SUBDIVISION PHASE 1

DETENTION POND 1

DATE	02/25/2025
PROJECT NO.	03346.101
DRAWN BY	R.B./M.A.S.
CHECKED BY	K.M.H.

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

KYLE M. HUDEK
138753
03/04/2025
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C6.06

P:\03346\101\2-DWG\4-Plans\C6.06_DETN - POND1.dwg 2025/02/25 5:53pm rbarrera

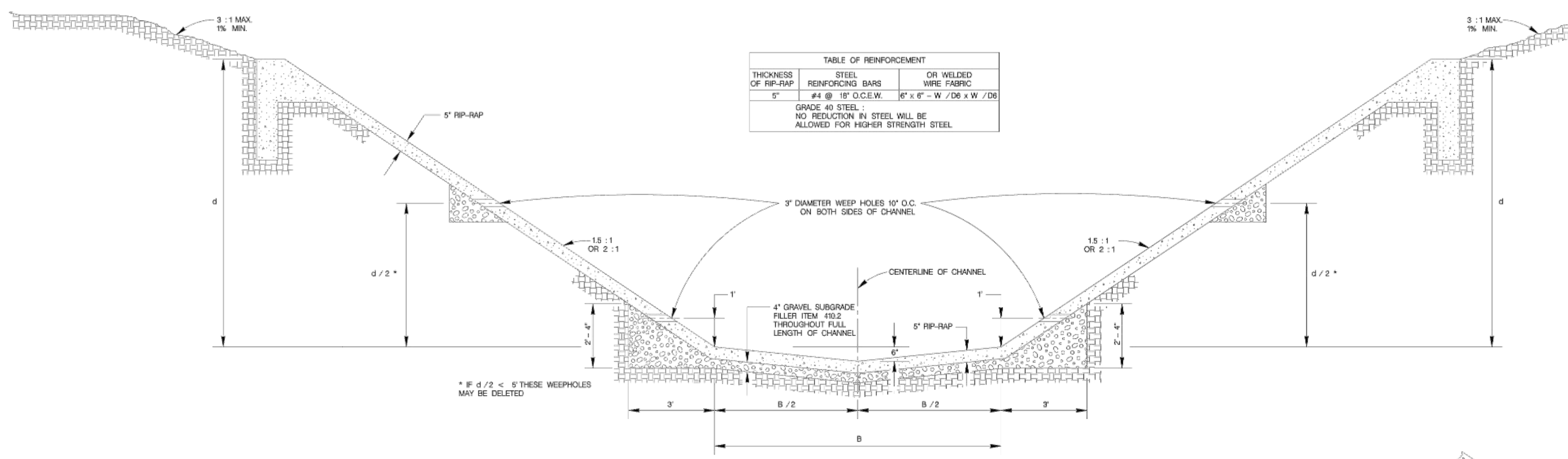
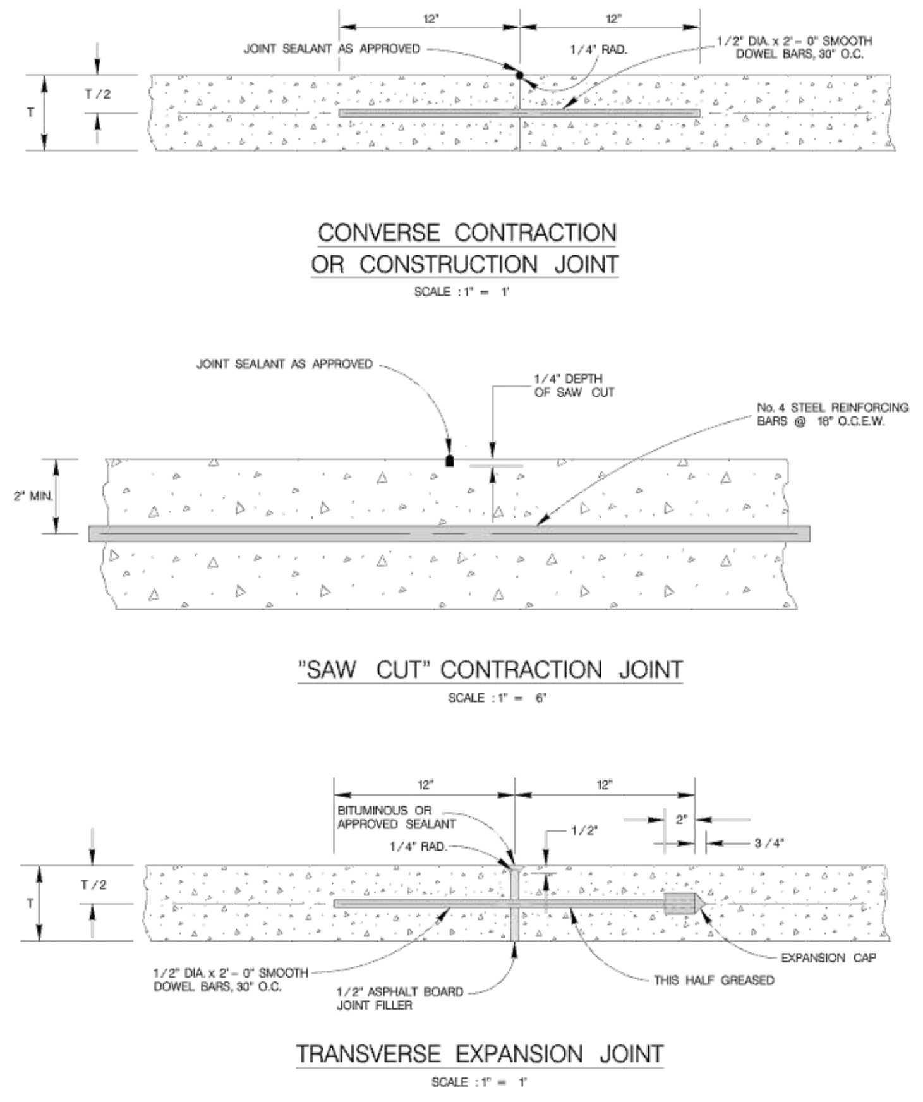

3 : 1 MAX.
1% MIN.
5" RIP-RAP
3" DIAMETER WEEP HOLES 10" O.C. ON BOTH SIDES OF CHANNEL
1.5 : 1 OR 2 : 1
CENTERLINE OF CHANNEL
4" GRAVEL SUBGRADE FILLER ITEM 610.2 THROUGHOUT FULL LENGTH OF CHANNEL
5" RIP-RAP
d
d / 2 *
* IF d / 2 < 6' THESE WEEPHOLES MAY BE DELETED
B / 2
B

TABLE OF REINFORCEMENT		
THICKNESS OF RIP-RAP	STEEL REINFORCING BARS	OR WELDED WIRE FABRIC
5"	#4 @ 18" O.C.E.W.	6" x 6" – W /D6 x W /D6
GRADE 40 STEEL : NO REDUCTION IN STEEL WILL BE ALLOWED FOR HIGHER STRENGTH STEEL		

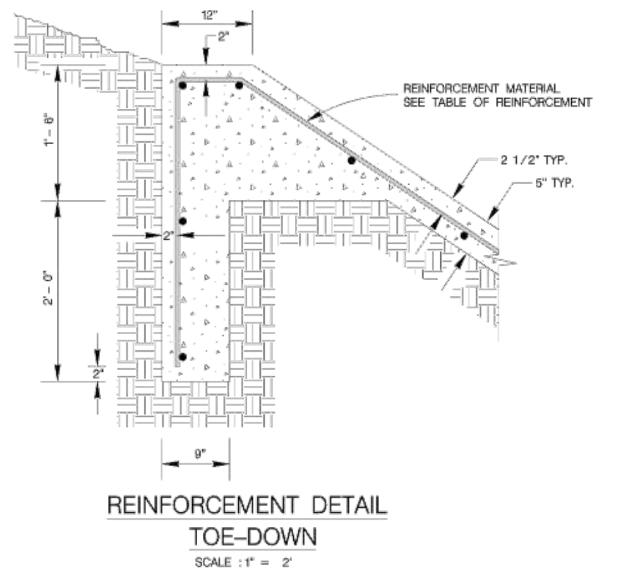
TYPICAL CHANNEL SECTION
LOOKING DOWNSTREAM
SCALE : 1" = 4'


JOINT SEALANT AS APPROVED
1/4" RAD.
1/2" DIA x 2' - 0" SMOOTH DOWEL BARS, 30" O.C.
T / 2
JOINT SEALANT AS APPROVED
1/4" DEPTH OF SAW CUT
No. 4 STEEL REINFORCING BARS @ 18" O.C.E.W.
BITUMINOUS OR APPROVED SEALANT
1/2" DIA x 2' - 0" SMOOTH DOWEL BARS, 30" O.C.
1/2" ASPHALT BOARD JOINT FILLER
THIS HALF GREASED
EXPANSION CAP

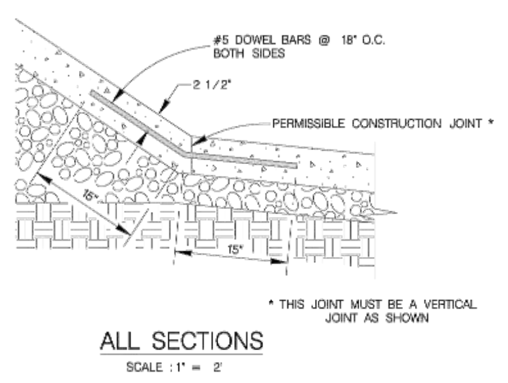
CONVERSE CONTRACTION
OR CONSTRUCTION JOINT
SCALE : 1" = 1'

"SAW CUT" CONTRACTION JOINT
SCALE : 1" = 1'

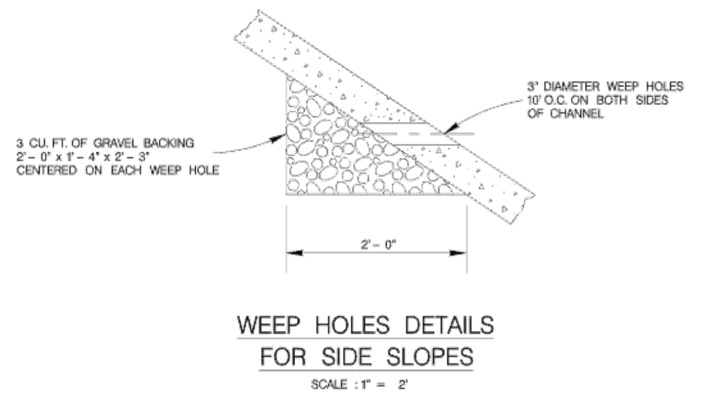
TRANSVERSE EXPANSION JOINT
SCALE : 1" = 1'


REINFORCEMENT MATERIAL SEE TABLE OF REINFORCEMENT
2 1/2" TYP.
5" TYP.

REINFORCEMENT DETAIL
TOE–DOWN
SCALE : 1" = 2'


#5 DOWEL BARS @ 18" O.C. BOTH SIDES
PERMISSIBLE CONSTRUCTION JOINT *
* THIS JOINT MUST BE A VERTICAL JOINT AS SHOWN

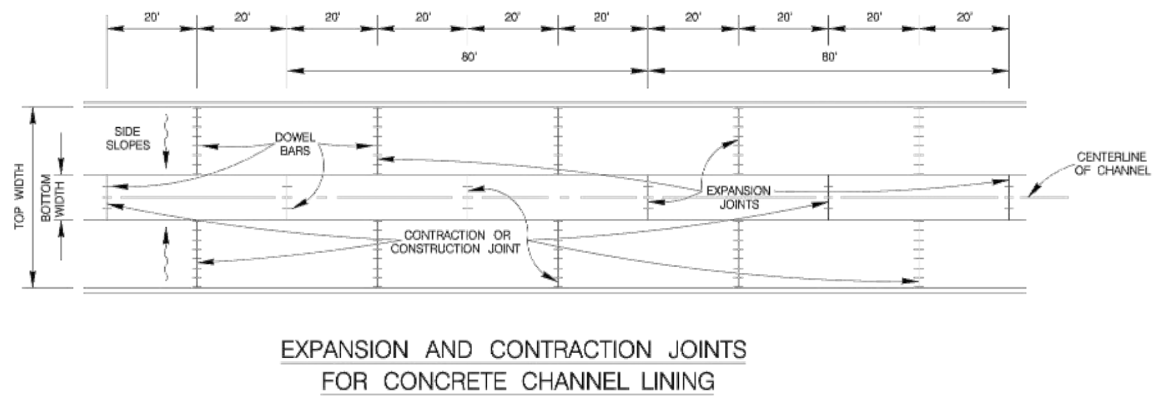
ALL SECTIONS
SCALE : 1" = 2'


3" DIAMETER WEEP HOLES 10' O.C. ON BOTH SIDES OF CHANNEL
2 CU FT OF GRAVEL BACKING 2' - 0" x 1' - 0" x 2' - 0" CENTERED ON EACH WEEP HOLE
2' - 0"

WEEP HOLES DETAILS
FOR SIDE SLOPES
SCALE : 1" = 2'

GENERAL NOTES

1. CONCRETE FOR CHANNEL RIP–RAP SHALL BE CLASS "A" 3000 P.S.I.
2. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS UNLESS OTHERWISE SHOWN.
3. ALL REINFORCEMENT STEEL SHALL MEET ASTM DESIGNATIONS AS CALLED FOR IN THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION".
4. NEW RIP–RAP SHOULD BE ATTACHED TO EXISTING RIP–RAP BY NO. 4 BARS DOWELED 6" INTO EXISTING RIP–RAP. THESE BARS ARE TO BE SPACED 18" O.C. AND HAVE A LENGTH OF 18".


20'
80'
SIDE SLOPES
DOWEL BARS
TOP WIDTH
BOTTOM WIDTH
CONTRACTION OR CONSTRUCTION JOINT
EXPANSION JOINTS
CENTERLINE OF CHANNEL

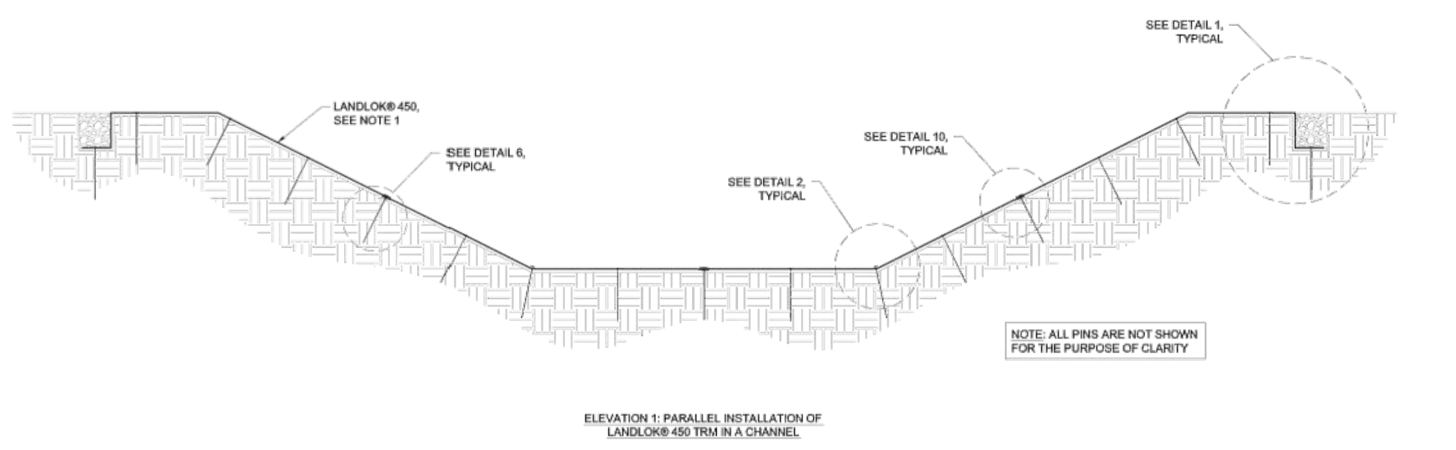
EXPANSION AND CONTRACTION JOINTS
FOR CONCRETE CHANNEL LINING
SCALE : 1" = 40'

MAY 2009

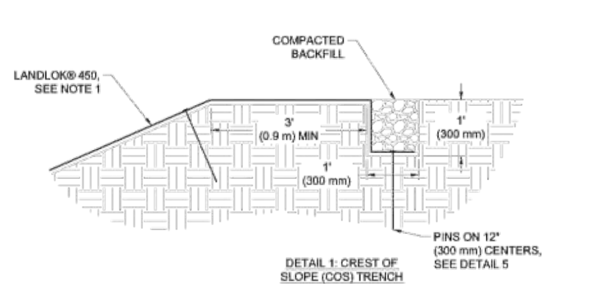
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TYPICAL CONCRETE CHANNEL
RIP–RAP STANDARDS

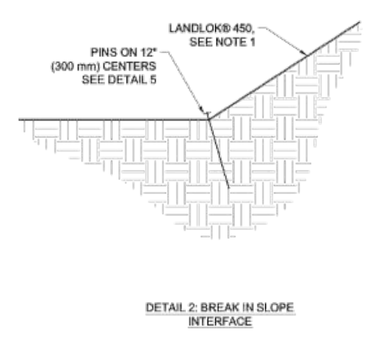
____% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: V. VASQUEZ	DSGN. BY:	CHKD. BY:	SHEET NO.:____OF____


SEE DETAIL 3, TYPICAL
LANDLOK® 450, SEE NOTE 1
SEE DETAIL 6, TYPICAL
SEE DETAIL 2, TYPICAL
SEE DETAIL 10, TYPICAL
NOTE: ALL PINS ARE NOT SHOWN FOR THE PURPOSE OF CLARITY

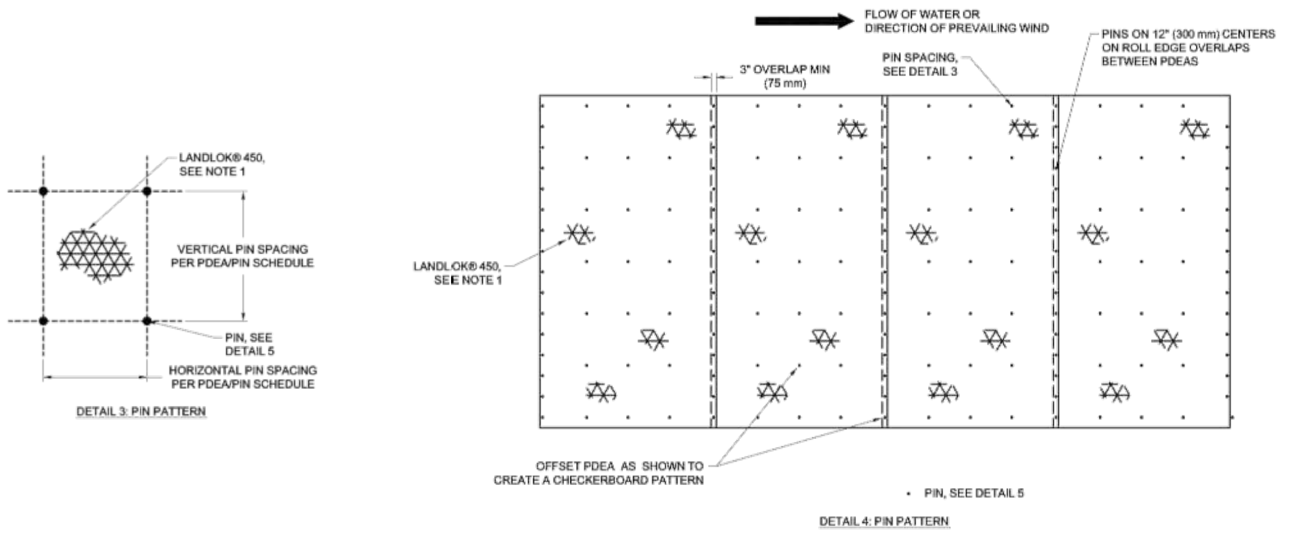
ELEVATION 1: PARALLEL INSTALLATION OF LANDLOK® 450 TRM IN A CHANNEL


LANDLOK® 450, SEE NOTE 1
COMPACTED BACKFILL
PINS ON 12" (300 mm) CENTERS, SEE DETAIL 5

DETAIL 1: CREST OF SLOPE (COS) TRENCH

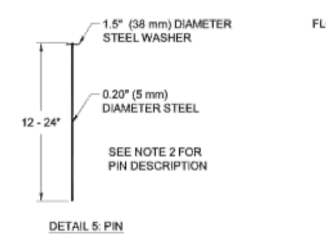

LANDLOK® 450, SEE NOTE 1
PINS ON 12" (300 mm) CENTERS SEE DETAIL 5

DETAIL 2: BREAK IN SLOPE INTERFACE

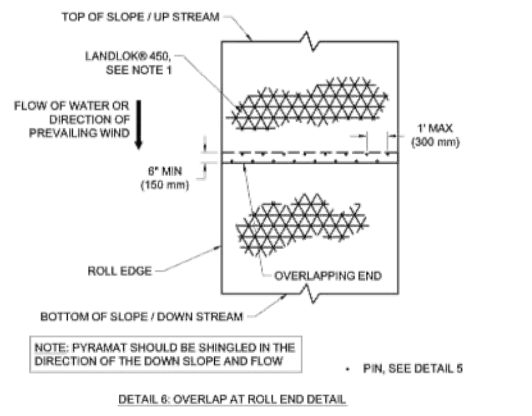

FLOW OF WATER OR DIRECTION OF PREVAILING WIND
3" OVERLAP MIN (75 mm)
PIN SPACING, SEE DETAIL 3
PINS ON 12" (300 mm) CENTERS ON ROLL EDGE OVERLAPS BETWEEN PDEAS
LANDLOK® 450, SEE NOTE 1
VERTICAL PIN SPACING PER PDEA/PIN SCHEDULE
PIN, SEE DETAIL 5
HORIZONTAL PIN SPACING PER PDEA/PIN SCHEDULE
OFFSET PDEA AS SHOWN TO CREATE A CHECKERBOARD PATTERN
PIN, SEE DETAIL 5

DETAIL 3: PIN PATTERN

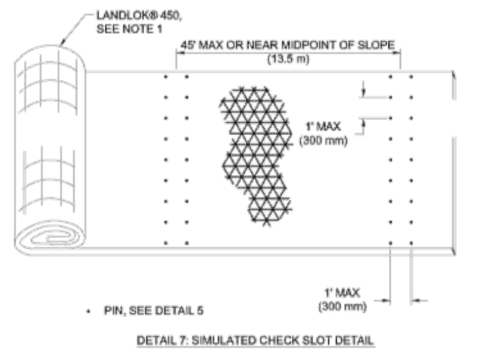
DETAIL 4: PIN PATTERN


1.5" (38 mm) DIAMETER STEEL WASHER
0.20" (5 mm) DIAMETER STEEL
12 – 24"
SEE NOTE 2 FOR PIN DESCRIPTION

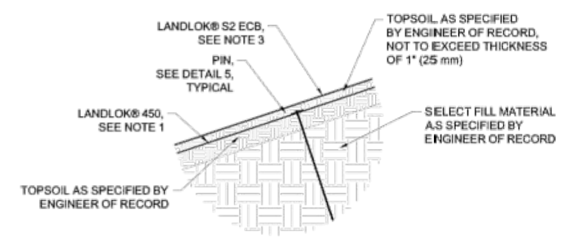
DETAIL 5: PIN


TOP OF SLOPE / UP STREAM
LANDLOK® 450, SEE NOTE 1
FLOW OF WATER OR DIRECTION OF PREVAILING WIND
6" MIN (150 mm)
1' MAX (300 mm)
ROLL EDGE
OVERLAPPING END
BOTTOM OF SLOPE / DOWN STREAM
NOTE: PYRAMAT SHOULD BE SHINGLED IN THE DIRECTION OF THE DOWN SLOPE AND FLOW
PIN, SEE DETAIL 5

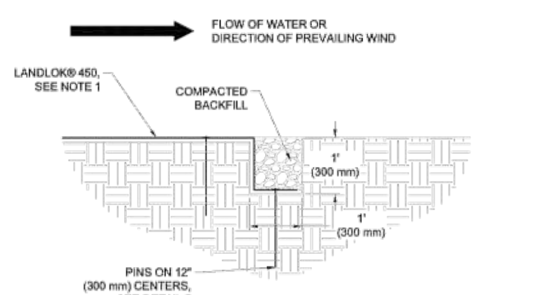
DETAIL 6: OVERLAP AT ROLL END DETAIL


LANDLOK® 450, SEE NOTE 1
40' MAX OR NEAR MIDPOINT OF SLOPE (12.5 m)
1' MAX (300 mm)
PIN, SEE DETAIL 5

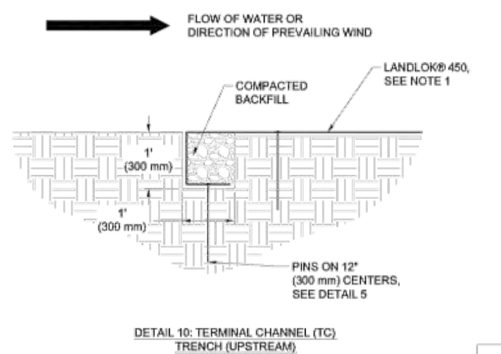
DETAIL 7: SIMULATED CHECK SLOT DETAIL


LANDLOK® 450, SEE NOTE 1
PIN, SEE DETAIL 5, TYPICAL
TOPSOIL AS SPECIFIED BY ENGINEER OF RECORD, NOT TO EXCEED THICKNESS OF 1" (25 mm)
SELECT FILL MATERIAL AS SPECIFIED BY ENGINEER OF RECORD
TOPSOIL AS SPECIFIED BY ENGINEER OF RECORD

DETAIL 8: VEGETATION ESTABLISHMENT


FLOW OF WATER OR DIRECTION OF PREVAILING WIND
LANDLOK® 450, SEE NOTE 1
COMPACTED BACKFILL
1' (300 mm)
PINS ON 12" (300 mm) CENTERS, SEE DETAIL 5

DETAIL 9: INITIAL CHANNEL (IC)
TRENCH (DOWNSTREAM)


FLOW OF WATER OR DIRECTION OF PREVAILING WIND
COMPACTED BACKFILL
LANDLOK® 450, SEE NOTE 1
1' (300 mm)
PINS ON 12" (300 mm) CENTERS, SEE DETAIL 5

DETAIL 10: TERMINAL CHANNEL (TC) TRENCH (UPSTREAM)

PIN SCHEDULE	
SECURING DEVICE	PIN
HORIZONTAL PDEA SPACING	2' (0.60 m)
VERTICAL PDEA SPACING	2.5' (0.75 m)
EMBEDMENT DEPTH	PER MANUFACTURES DESIGN

LANDLOK® 450 TRM IN A CHANNEL FOR EROSION CONTROL GENERAL INSTALLATION GUIDELINES

GENERAL NOTES

1. Landlok® 450 TRM is a three-dimensional, lofty, stitch-bonded polypropylene geotextile which is specially designed for erosion control applications on steep slopes and vegetated waterways. The matrix is composed of a dense web of crimped,interlocking fibers featuring X3® technology positioned between two biaxially oriented nets and mechanically bound together by parallel stitching with polypropylene thread. The material exhibits very high interlock and reinforcement capacity with both soil and root systems, demonstrates superior UV resistance, and enhances seedling emergence.
2. The 12", 18", and 24" Securing Pins are composed of a wire, mushroomed at the top. A washer is then placed on the wire and the wire is crimped or swedged about 3-1/2" below the top so the washer will not slide off. The end of the wire is cut at a 45 degree angle for easy penetration of the soil. These Pins with washers conform to industry standards for erosion control pins with washers.

BEFORE INSTALLATION BEGINS

1. Coordinate with a Propex Representative: A pre-construction meeting is suggested with the construction team and a representative from Propex. This meeting should be scheduled by the contractor with at least a two week notice.
2. Gather the Tools Needed: Tools that you will need to install Landlok 450 include a pair of industrial shears to cut Landlok 450 and tape measure.
3. Determine how to Establish Vegetation: The method of vegetation establishment should be determined prior to the start of installation. Different vegetation establishment methods require different orders of installation. Refer to Establish Vegetation for further guidance.
4. Please consult the Propex Website for the most up to date installation guidelines.

Propex™ Geotextile Systems
© 2014 Propex Operating Company, LLC

EROSION CONTROL INSTALLATION DETAILS

Please note that the information presented herein is general information only. It is for conceptual use only and not intended to be used for construction. While every effort has been made to ensure its accuracy, this information should not be used for a specific application without independent professional examination and verification of its suitability, applicability, and accuracy. This engineering drawing is protected by the Copyright Act, 17 U.S.C. §101 et seq. and may be used ONLY with the express written permission of Propex in connection with Propex products. Any copying, distributing, and/or creation of a derivative work without permission of Propex is prohibited and is subject of actual damages, statutory damages and attorney's fees under the Copyright Act.

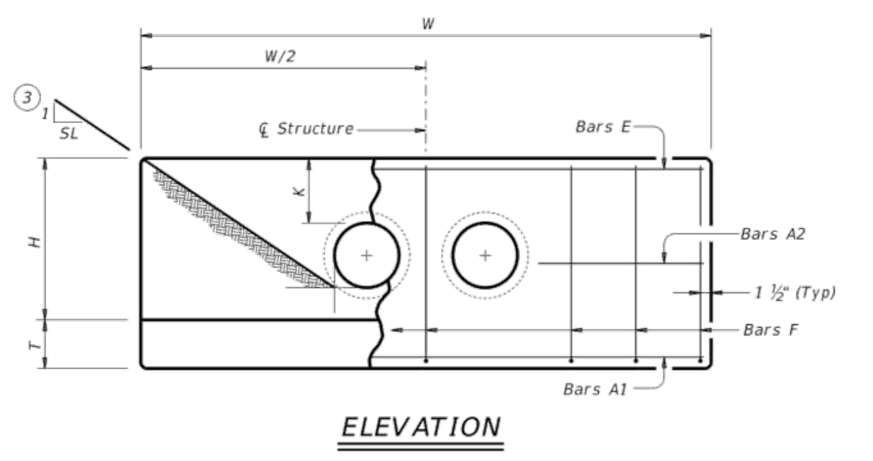
1 of 1
LANDLOK® BY PROPEX
TURF REINFORCEMENT MAT (HPTRM)
LANDLOK® 450 INSTALLATION DETAILS FOR CHANNELS

Rev	Date:	Drawn By:	Scale:	
	04/07/2015	N. HEMNANI	NTS	*ALL DIMENSIONS ARE TO BE VERIFIED BY ENGINEER OF RECORD

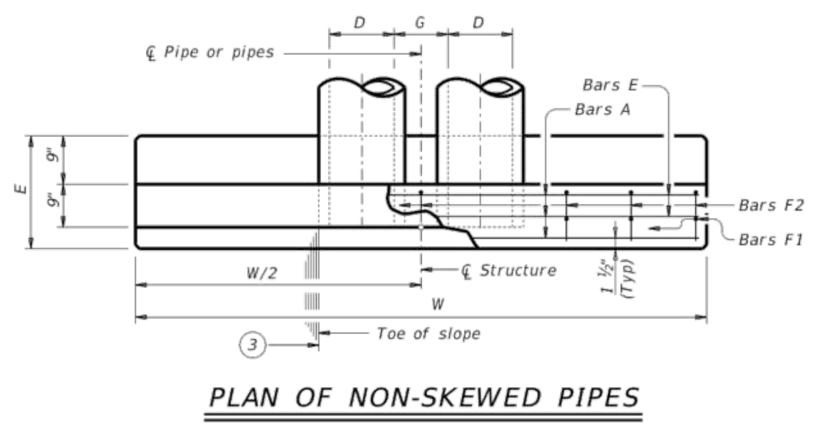
TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL ⑤							
Slope	Dia of Pipe (D)	Values for One Pipe			Values To Be Added for Each Addt'l Pipe		
		W	Reinf (Lbs) ①	Conc (CY) ②	W	Reinf (Lbs) ①	Conc (CY) ②
2:1	12"	9' – 0"	122	1.1	1' – 9"	15	0.2
	15"	10' – 3"	136	1.3	2' – 2"	16	0.2
	18"	11' – 6"	163	1.5	2' – 8"	19	0.3
	21"	12' – 9"	200	1.8	3' – 1"	31	0.4
	24"	14' – 0"	217	2.1	3' – 7"	34	0.4
	27"	15' – 3"	254	2.4	3' – 11"	37	0.5
	30"	16' – 6"	272	2.7	4' – 4"	40	0.6
	33"	17' – 9"	314	3.1	4' – 8"	43	0.6
	36"	19' – 0"	371	3.9	5' – 1"	46	0.8
	42"	21' – 6"	442	4.9	5' – 10"	52	1.0
	48"	25' – 0"	569	6.4	6' – 7"	59	1.3
	54"	27' – 6"	701	7.5	7' – 6"	82	1.6
	60"	30' – 0"	794	8.8	8' – 3"	90	1.8
	66"	32' – 6"	894	10.2	8' – 9"	96	2.0
	72"	35' – 0"	1,055	11.7	9' – 4"	103	2.3
3:1	12"	13' – 0"	175	1.6	1' – 9"	14	0.2
	15"	14' – 9"	193	1.9	2' – 2"	17	0.2
	18"	16' – 6"	228	2.2	2' – 8"	19	0.3
	21"	18' – 3"	299	2.6	3' – 1"	31	0.4
	24"	20' – 0"	323	3.0	3' – 7"	33	0.4
	27"	21' – 9"	371	3.5	3' – 11"	37	0.5
	30"	23' – 6"	415	4.0	4' – 4"	40	0.5
	33"	25' – 3"	469	4.6	4' – 8"	43	0.6
	36"	27' – 0"	556	5.7	5' – 1"	46	0.8
	42"	30' – 6"	675	7.1	5' – 10"	52	1.0
	48"	35' – 6"	837	9.2	6' – 7"	59	1.3
	54"	39' – 0"	1,015	11.0	7' – 6"	84	1.6
	60"	42' – 6"	1,171	12.9	8' – 3"	91	1.8
	66"	46' – 0"	1,298	14.9	8' – 9"	98	2.0
	72"	49' – 6"	1,561	17.1	9' – 4"	103	2.3
4:1	12"	17' – 0"	229	2.0	1' – 9"	15	0.2
	15"	19' – 3"	266	2.4	2' – 2"	17	0.2
	18"	21' – 6"	308	2.9	2' – 8"	19	0.3
	21"	23' – 9"	382	3.5	3' – 1"	31	0.3
	24"	26' – 0"	430	3.9	3' – 7"	34	0.4
	27"	28' – 3"	486	4.7	3' – 11"	37	0.5
	30"	30' – 6"	539	5.2	4' – 4"	40	0.6
	33"	32' – 9"	603	6.0	4' – 8"	42	0.6
	36"	35' – 0"	738	7.5	5' – 1"	47	0.8
	42"	39' – 6"	881	9.3	5' – 10"	52	1.0
	48"	46' – 0"	1,102	12.1	6' – 7"	61	1.3
	54"	50' – 6"	1,364	14.4	7' – 6"	84	1.6
	60"	55' – 0"	1,547	16.9	8' – 3"	91	1.8
	66"	59' – 6"	1,741	19.5	8' – 9"	98	2.0
	72"	64' – 0"	2,077	22.4	9' – 4"	102	2.3
6:1	12"	25' – 0"	336	3.0	1' – 9"	14	0.2
	15"	28' – 3"	384	3.6	2' – 2"	17	0.2
	18"	31' – 6"	452	4.2	2' – 8"	19	0.3
	21"	34' – 9"	581	5.1	3' – 1"	31	0.4
	24"	38' – 0"	644	5.8	3' – 7"	34	0.4
	27"	41' – 3"	737	6.9	3' – 11"	37	0.5
	30"	44' – 6"	807	7.7	4' – 4"	39	0.6
	33"	47' – 9"	912	8.9	4' – 8"	44	0.6
	36"	51' – 0"	1,108	11.0	5' – 1"	48	0.8
	42"	57' – 6"	1,318	13.7	5' – 10"	54	1.0
	48"	67' – 0"	1,682	17.9	6' – 7"	59	1.3
	54"	73' – 6"	2,072	21.3	7' – 6"	83	1.6
	60"	80' – 0"	2,351	24.9	8' – 3"	89	1.8
	66"	86' – 6"	2,643	28.9	8' – 9"	96	2.0
	72"	93' – 0"	3,121	33.1	9' – 4"	101	2.3

DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

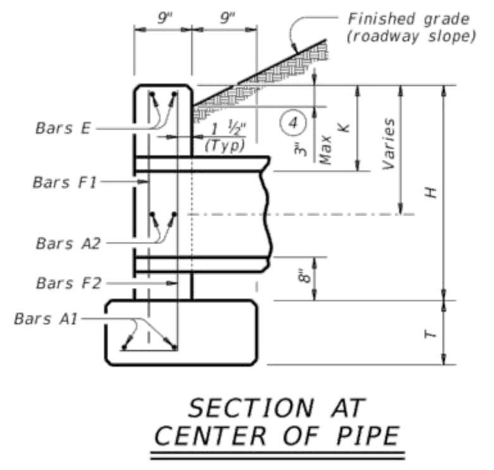
DATE:
FILE:


W
W/2
③
SL
℄ Structure
Bars E
Bars A2
1 ½" (Typ)
Bars F
Bars A1
H
T

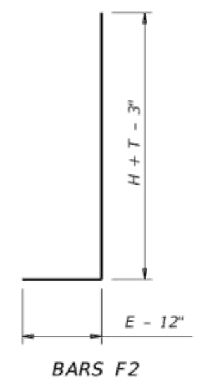
ELEVATION


D
G
D
℄ Pipe or pipes
Bars E
Bars A
Bars F2
Bars F1
W/2
℄ Structure
③
Toe of slope
1 ½" (Typ)
E

PLAN OF NON-SKEWED PIPES


9"
9"
Finished grade (roadway slope)
Bars E
Bars F1
Bars A2
Bars F2
Bars A1
1 ½" (Typ)
Varies
④
H
T
K

SECTION AT
CENTER OF PIPE



BARS F2

① Total quantities include one 3'–1" lap for bars over 60' in length.

② Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.

③ Indicated slope is perpendicular to centerline pipe or pipes.

④ For vehicle safety, construct curbs no more than 3" above finished grade. Reduce curb heights, if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

⑤ Dimensions shown are usual and maximum.

⑥ Quantities shown are for one structure end only (one headwall).

TABLE OF CONSTANT DIMENSIONS					
Dia of Pipe (D)	G	K ⑤	H	T	E
12"	0' – 9"	1' – 0"	2' – 8"	0' – 9"	1' – 9"
15"	0' – 11"	1' – 0"	2' – 11"	0' – 9"	1' – 9"
18"	1' – 2"	1' – 0"	3' – 2"	0' – 9"	1' – 9"
21"	1' – 4"	1' – 0"	3' – 5"	0' – 9"	2' – 0"
24"	1' – 7"	1' – 0"	3' – 8"	0' – 9"	2' – 0"
27"	1' – 8"	1' – 0"	3' – 11"	0' – 9"	2' – 3"
30"	1' – 10"	1' – 0"	4' – 2"	0' – 9"	2' – 3"
33"	1' – 11"	1' – 0"	4' – 5"	0' – 9"	2' – 6"
36"	2' – 1"	1' – 0"	4' – 8"	1' – 0"	2' – 6"
42"	2' – 4"	1' – 0"	5' – 2"	1' – 0"	2' – 9"
48"	2' – 7"	1' – 3"	5' – 11"	1' – 0"	3' – 0"
54"	3' – 0"	1' – 3"	6' – 5"	1' – 0"	3' – 3"
60"	3' – 3"	1' – 3"	6' – 11"	1' – 0"	3' – 6"
66"	3' – 3"	1' – 3"	7' – 5"	1' – 0"	3' – 9"
72"	3' – 4"	1' – 3"	7' – 11"	1' – 0"	4' – 0"

TABLE OF REINFORCING STEEL ⑥			
Bar	Size	Spa	No.
A1	#5	~	2
A2	#5	1' – 6"	~
E	#5	~	2
F	#5	1' – 0"	~

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide Class C concrete (f'c = 3,600 psi).

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
Do not mount bridge rails of any type directly to these culvert headwalls.
This standard may not be used for wall heights, H, exceeding the values shown.

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

Texas Department of Transportation
Bridge Division Standard

CONCRETE HEADWALLS
WITH PARALLEL WINGS FOR
NON-SKEWED PIPE CULVERTS

CH-PW-0

FILE: CD-CH-PW0-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY	
REVISIONS					
	DIST	COUNTY		SHEET NO.	

CUDEENGINEERS.COM

EST. 1980
CUDE
ENGINEERS

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

GOERKE SUBDIVISION PHASE 1

CONCRETE RIP-RAP AND EROSION CONTROL DETAIL

DATE
01/14/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

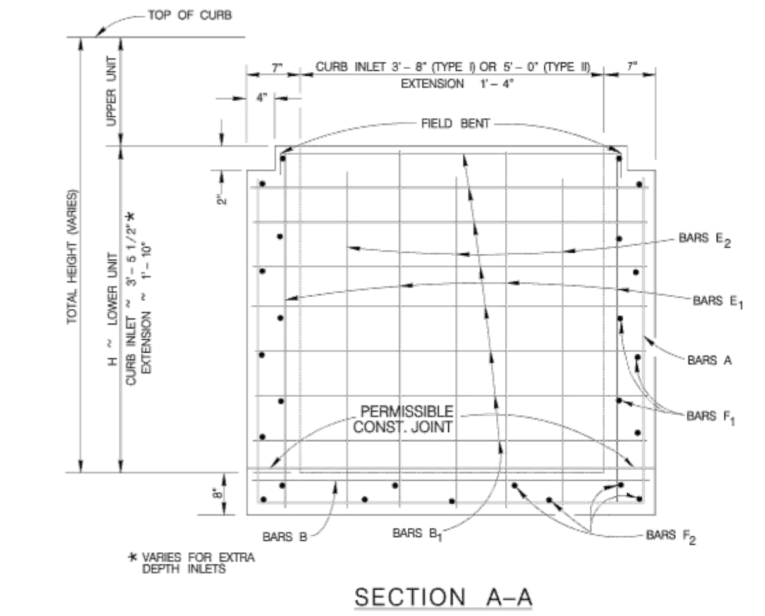
REVISIONS
1.
2.
3.
4.
5.
6.
7.
8.
9.

KYLE M. HUDEK
138753
01/27/2025

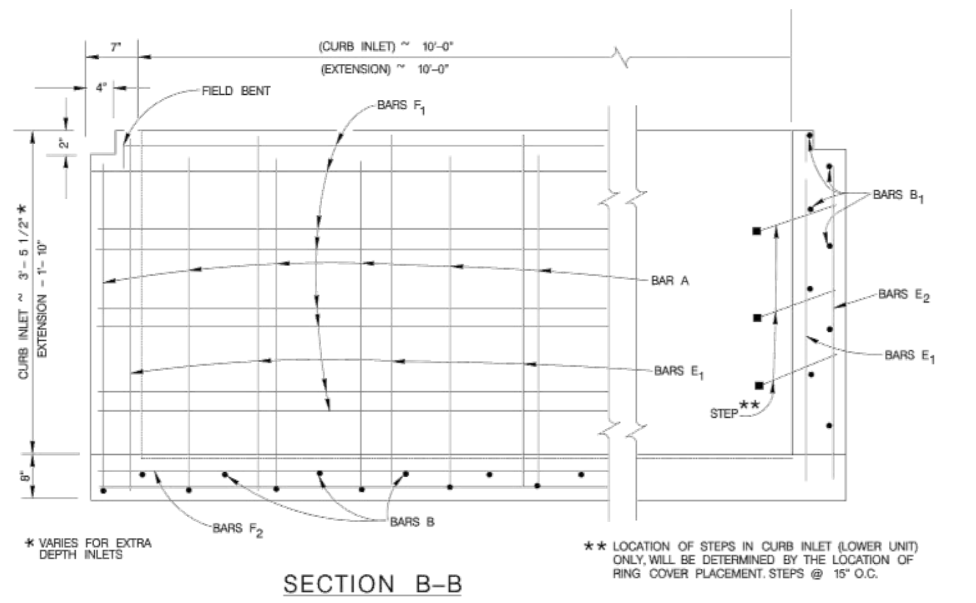
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C6.D1

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.


TOP OF CURB
CURB INLET 7' - 8" (TYPE I) OR 5' - 0" (TYPE II)
EXTENSION 1' - 4"
FIELD BENT
BARS E2
BARS E1
BARS A
BARS F1
PERMISSIBLE CONST. JOINT
BARS B
BARS B1
BARS F2
* VARIES FOR EXTRA DEPTH INLETS

SECTION A–A


FIELD BENT
BARS E1
BARS E2
BAR A
STEP
BARS B
BARS F2
* VARIES FOR EXTRA DEPTH INLETS
** LOCATION OF STEPS IN CURB INLET (LOWER UNIT) ONLY WILL BE DETERMINED BY THE LOCATION OF RING COVER PLACEMENT. STEPS @ 15" O.C.

SECTION B–B

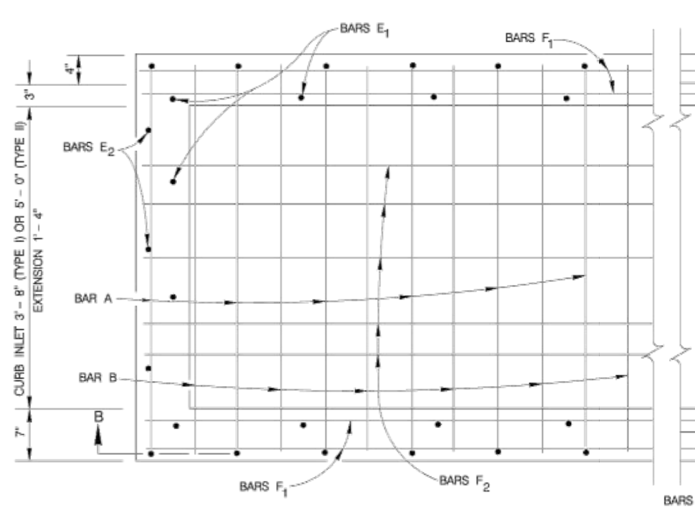
REINFORCING STEEL

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

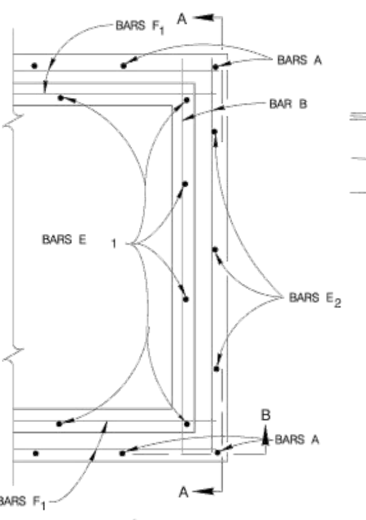
LOWER UNIT 10' X 5' – 0" (TYPE II)				
BAR	NO.	SIZE	SPAC.	LENGTH
A	12	#4	12"	VARIES
B	11	#4	12"	5'–10"
B_1	VARIES	#4	12"	5'–10"
E_1	22	#4	18" ±	VARIES
E_2	8	#4	18" ±	VARIES
F_1	VARIES	#4	12" ±	10'–10"
F_2	11	#4	—	10'–10"

GENERAL NOTES

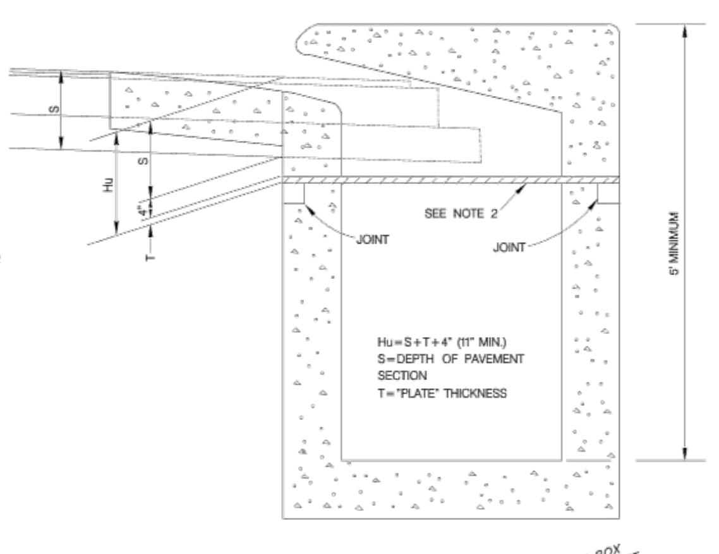
1. 5' INLETS AND 5' EXTENSIONS MUST BE IN ACCORDANCE WITH THE LATEST TXDOT CURB INLET TYPE "C" AND EXTENSION TYPE E (IL–C).
2. TYPE C–II INLET TO BE USED ONLY WHEN STORM DRAIN PIPE IS IN–LINE WITH CURB INLET AND APPROVED BY THE ENGINEER.
3. QUANTITIES SHOWN ARE FOR CONTRACTORS INFORMATION ONLY.
4. CONCRETE 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".


BARS E1
BARS E2
BARS A
BARS B
BARS F2

FLOOR STEEL


BARS F1
BARS A
BARS E
BARS E1
BARS F2

WALL STEEL

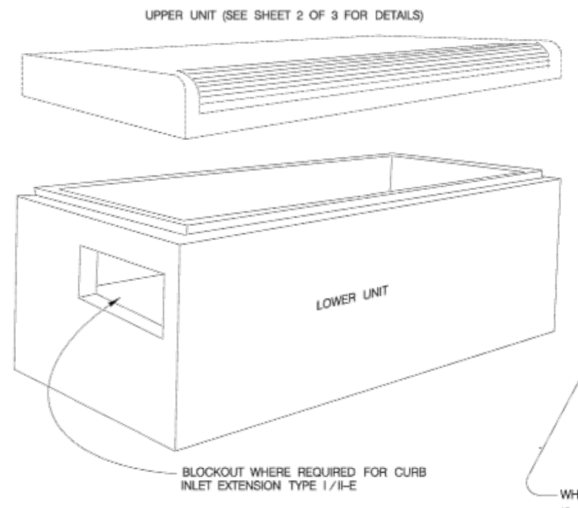

SEE NOTE 2
JOINT
5' MINIMUM
Hu=S+T+4" (11" MIN.)
S=DEPTH OF PAVEMENT SECTION
T="PLATE" THICKNESS

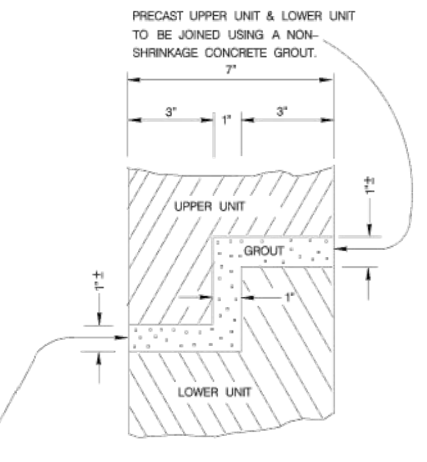
PHASE CONSTRUCTION

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.

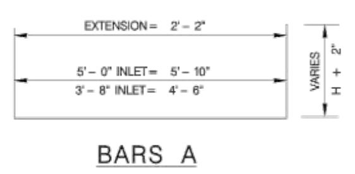
PLAN


UPPER UNIT (SEE SHEET 2 OF 3 FOR DETAILS)
LOWER UNIT
BLOCKOUT WHERE REQUIRED FOR CURB INLET EXTENSION TYPE II-E

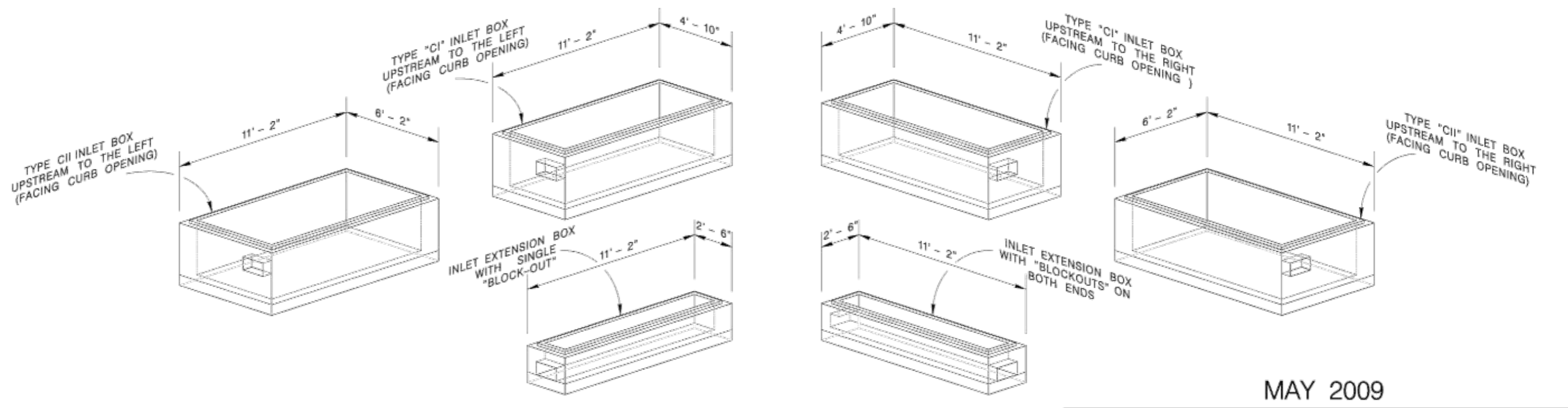

PRECAST UPPER UNIT & LOWER UNIT TO BE JOINED USING A NON-SHRINKAGE CONCRETE GROUT
UPPER UNIT
GROUT
LOWER UNIT

JOINT DETAIL

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


EXTENSION = 2' - 2"
5' - 0" INLET = 5' - 10"
3' - 8" INLET = 4' - 6"
VARIES

BARS A
(LOWER UNIT)


TYPE "CI" INLET BOX UPSTREAM TO THE LEFT (FACING CURB OPENING)
11' - 2"
4' - 10"
TYPE "CI" INLET BOX UPSTREAM TO THE RIGHT (FACING CURB OPENING)
6' - 2"
TYPE "CII" INLET BOX UPSTREAM TO THE RIGHT (FACING CURB OPENING)
INLET EXTENSION BOX WITH SINGLE "BLOCK-OUT"
2' - 6"
INLET EXTENSION BOX WITH "BLOCKOUTS" ON BOTH ENDS

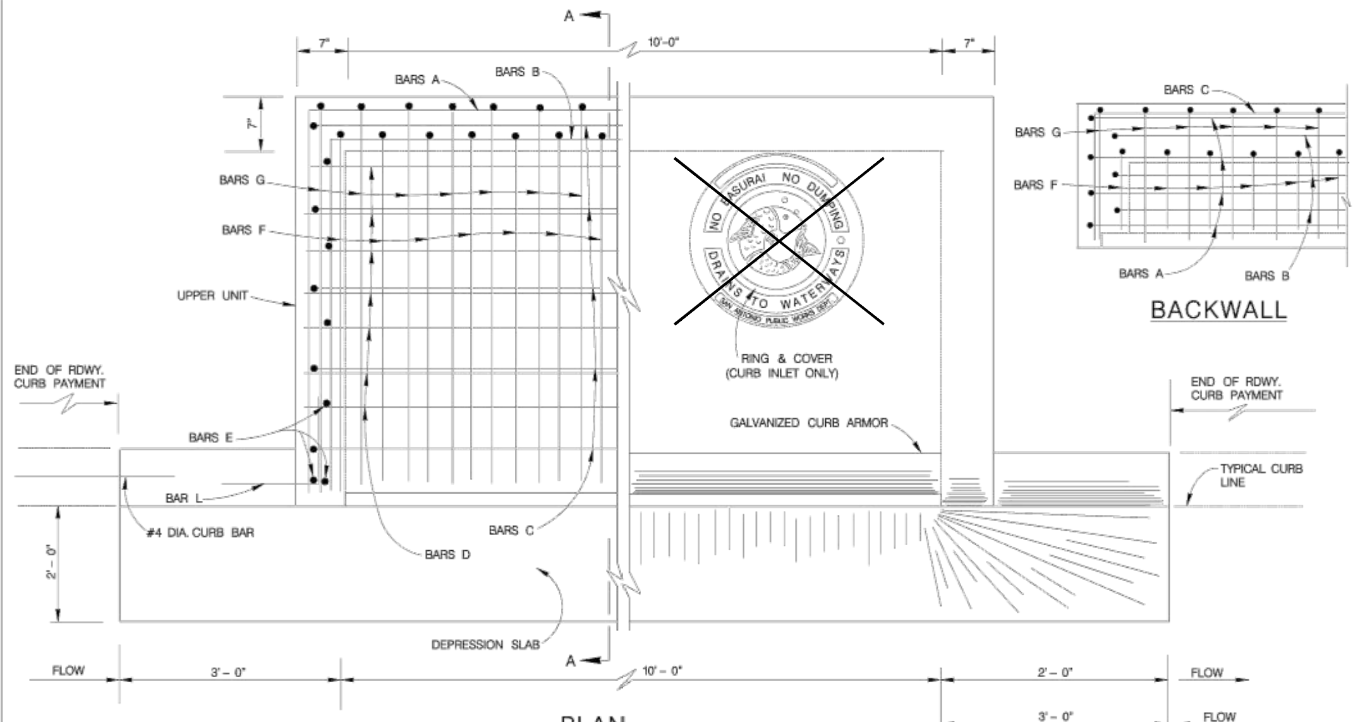
CONCRETE INLET BOX
CONFIGURATIONS
(LOWER UNITS)

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

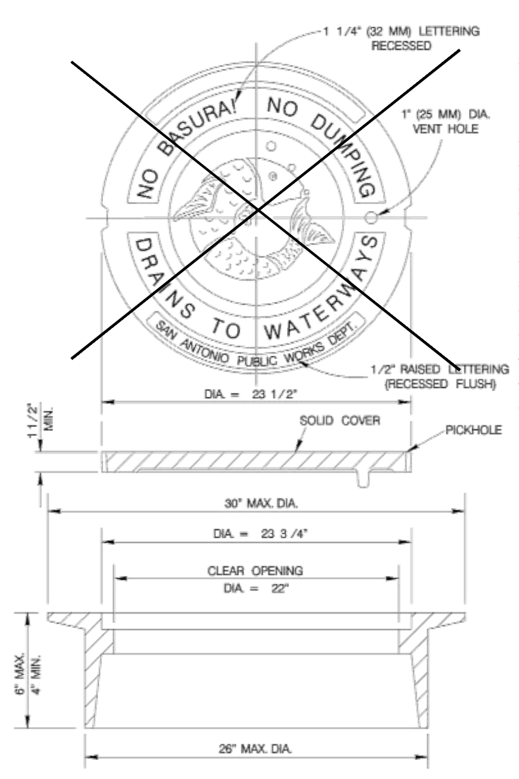
TYPE "C" INLET (TYPE I & II)
& INLET EXTENSION STANDARDS
SHEET 1 OF 3

____% 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____


BARS A
BARS B
BARS G
BARS F
UPPER UNIT
END OF ROWY. CURB PAYMENT
BARS E
BARS L
#4 DIA. CURB BAR
BARS C
BARS D
DEPRESSION SLAB
RING & COVER (CURB INLET ONLY)
GALVANIZED CURB ARMOR
TYPICAL CURB LINE
FLOW
BARS C
BARS A
BARS B
END OF RDWY. CURB PAYMENT

PLAN

BACKWALL


1 1/4" (32 MM) LETTERING RECESSED
1" (25 MM) DIA. VENT HOLE
1/2" RAISED LETTERING (RECESSED FLUSH)
NO DUMPING
DRAINS TO WATERWAYS
SAN ANTONIO PUBLIC WORKS DEPT.
SOLID COVER
PICKHOLE
CLEAR OPENING DIA. = 22"
26" MAX. DIA.
6" MAX. 4" MIN.

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")

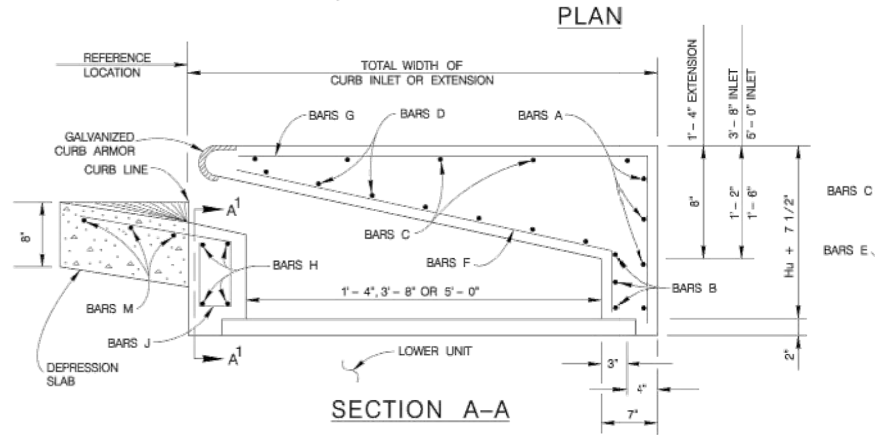
UPPER UNIT 10' X 3'–8" (TYPE I)					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	—	19'–10"	53
B	3	#4	—	18'–10"	38
C	5	#4	11"	13'–2"	44
D	7	#4	6"	10'–10"	51
E	12	#4	11"	1'–2"	9
F	21	#6	6"	4'–8"	147
G	22	#6	6"	5'–8"	187
H	4	#4	—	10'–10"	29
J	12	#4	12"	3'–6"	28
L	4	#4	—	2'–0"	5
M	3	#4	—	14'–8"	29
TOTAL WEIGHT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

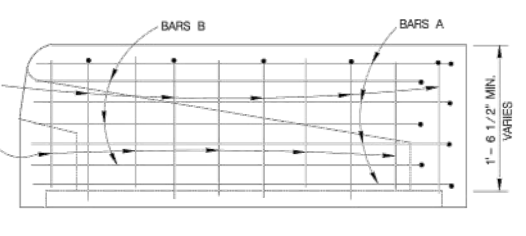
CLASS "A" CONCRETE QUANTITIES (FOR Hu = 11")

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

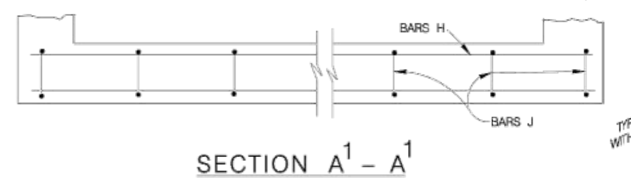
UPPER UNIT (ONLY)	C.Y.
10' X 3'–8" CURB INLET	1.9
10' X 5'–0" CURB INLET	2.7
10' EXTENSION	1.0


REFERENCE LOCATION
TOTAL WIDTH OF CURB INLET OR EXTENSION
GALVANIZED CURB ARMOR
CURB LINE
BARS G
BARS D
BARS A
BARS H
BARS B
BARS J
DEPRESSION SLAB
LOWER UNIT
1' - 4", 3' - 8" OR 5' - 0"

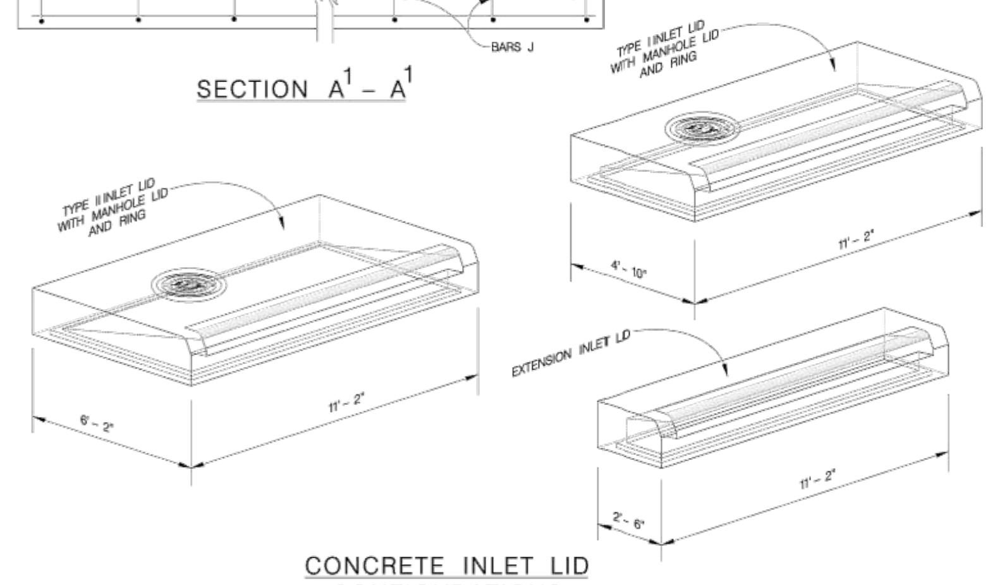
SECTION A–A


BARS B
BARS A
BARS C
BARS E
1' - 6 1/2" MIN. VARIES

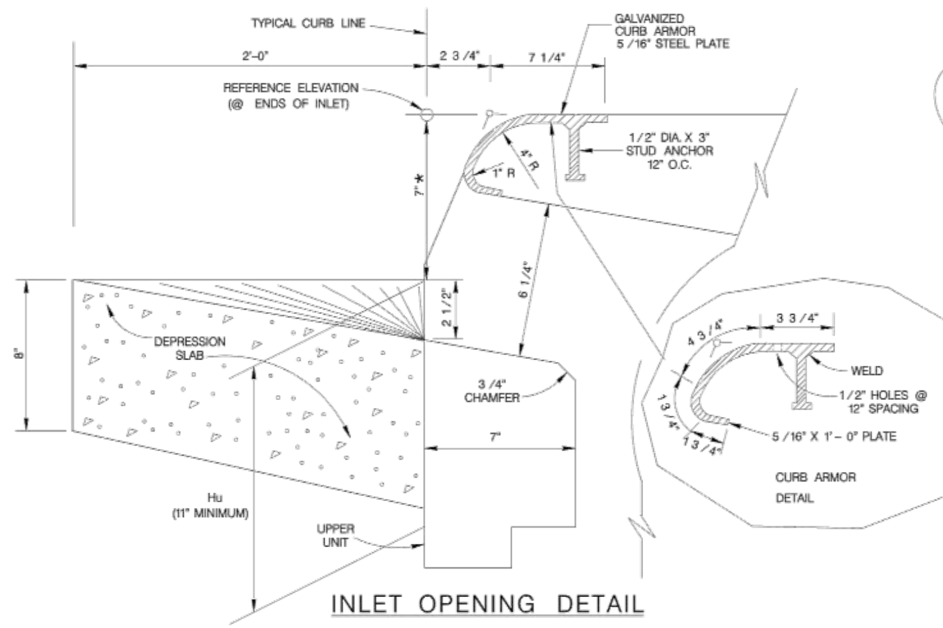
END WALL


BARS H
BARS J

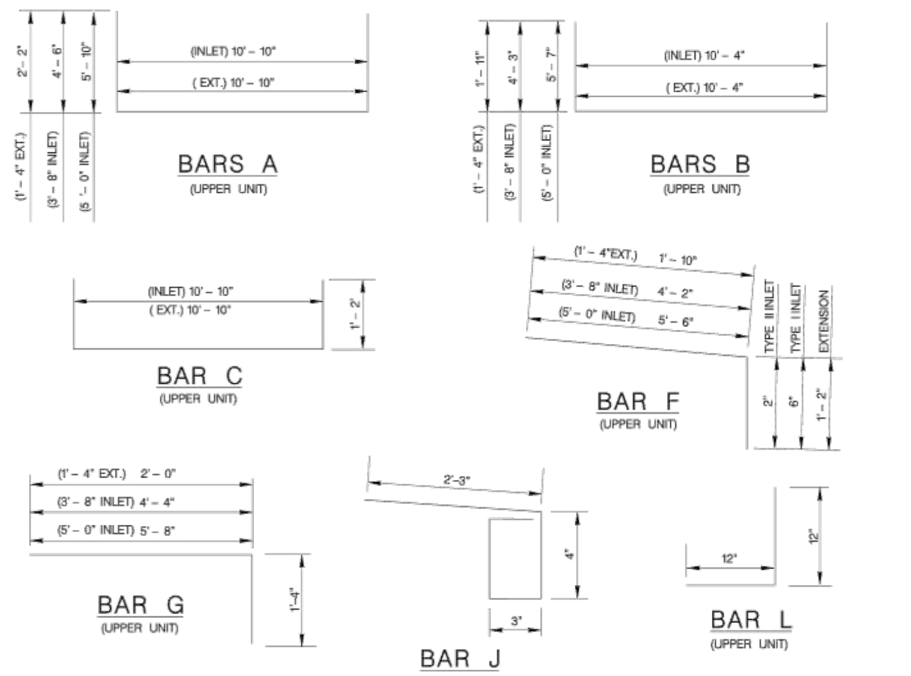
SECTION $A^1 – A^1$

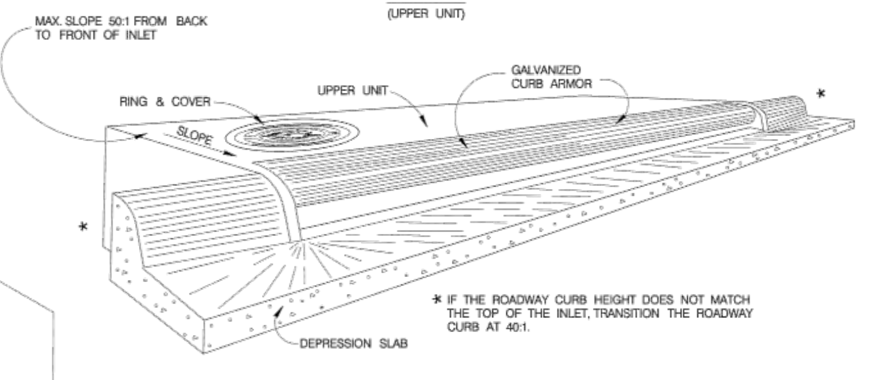

TYPE I INLET LID WITH MANHOLE LID AND RING
TYPE II INLET LID WITH MANHOLE LID AND RING
EXTENSION INLET LID
11' - 2"
4' - 10"
6' - 2"
2' - 6"

CONCRETE INLET LID
CONFIGURATIONS
(UPPER UNITS)


TYPICAL CURB LINE
2'-0"
2 3/4"
7 1/4"
GALVANIZED CURB ARMOR 5/16" STEEL PLATE
REFERENCE ELEVATION (@ ENDS OF INLET)
1/2" DIA. X 3" STUD ANCHOR 12" O.C.
4" R
1" R
7" *
6 1/4"
2 1/2"
3/4" CHAMFER
7"
Hu (11" MINIMUM)
UPPER UNIT
DEPRESSION SLAB
3 3/4"
4 3/4"
WELD
1/2" HOLES @ 12" SPACING
5/16" X 1' - 0" PLATE
1 3/4"
CURB ARMOR DETAIL

INLET OPENING DETAIL


2' - 2"
4' - 6"
5' - 10"
(1' - 4" EXT.)
(3' - 8" INLET)
(5 '- 0" INLET)
(INLET) 10' – 10"
(EXT.) 10' – 10"
BARS A
(UPPER UNIT)
1' – 11"
4' – 3"
5' – 7"
(INLET) 10' – 4"
(EXT.) 10' – 4"
BARS B
(UPPER UNIT)
(INLET) 10' – 10"
(EXT.) 10' – 10"
1' - 2'
BAR C
(UPPER UNIT)
(1' – 4"EXT.) 1' – 10"
(3' – 8" INLET) 4' – 2"
(5' – 0" INLET) 5' – 6"
TYPE II INLET
TYPE I INLET
EXTENSION
2"
6"
1' – 2"
BAR F
(UPPER UNIT)
(1' – 4" EXT.) 2' – 0"
(3' – 8" INLET) 4' – 4"
(5' – 0" INLET) 5' – 8"
1'-4"
BAR G
(UPPER UNIT)
2'-3"
4"
3"
BAR J
(UPPER UNIT)
12"
12"
BAR L
(UPPER UNIT)


MAX. SLOPE 50:1 FROM BACK TO FRONT OF INLET
RING & COVER
UPPER UNIT
GALVANIZED CURB ARMOR
SLOPE
DEPRESSION SLAB

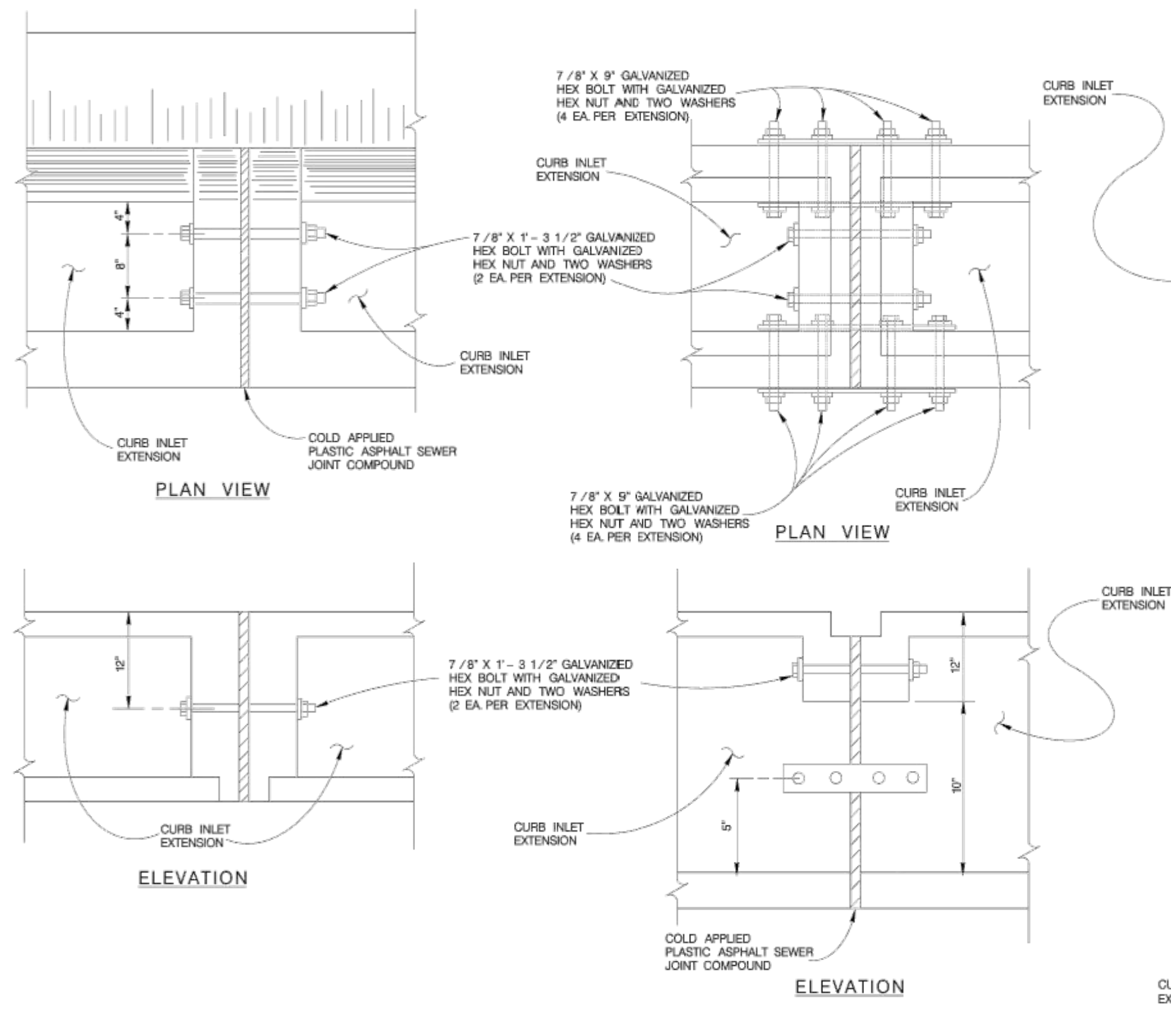
* IF THE ROADWAY CURB HEIGHT DOES NOT MATCH THE TOP OF THE INLET, TRANSITION THE ROADWAY CURB AT 40:1.

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

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

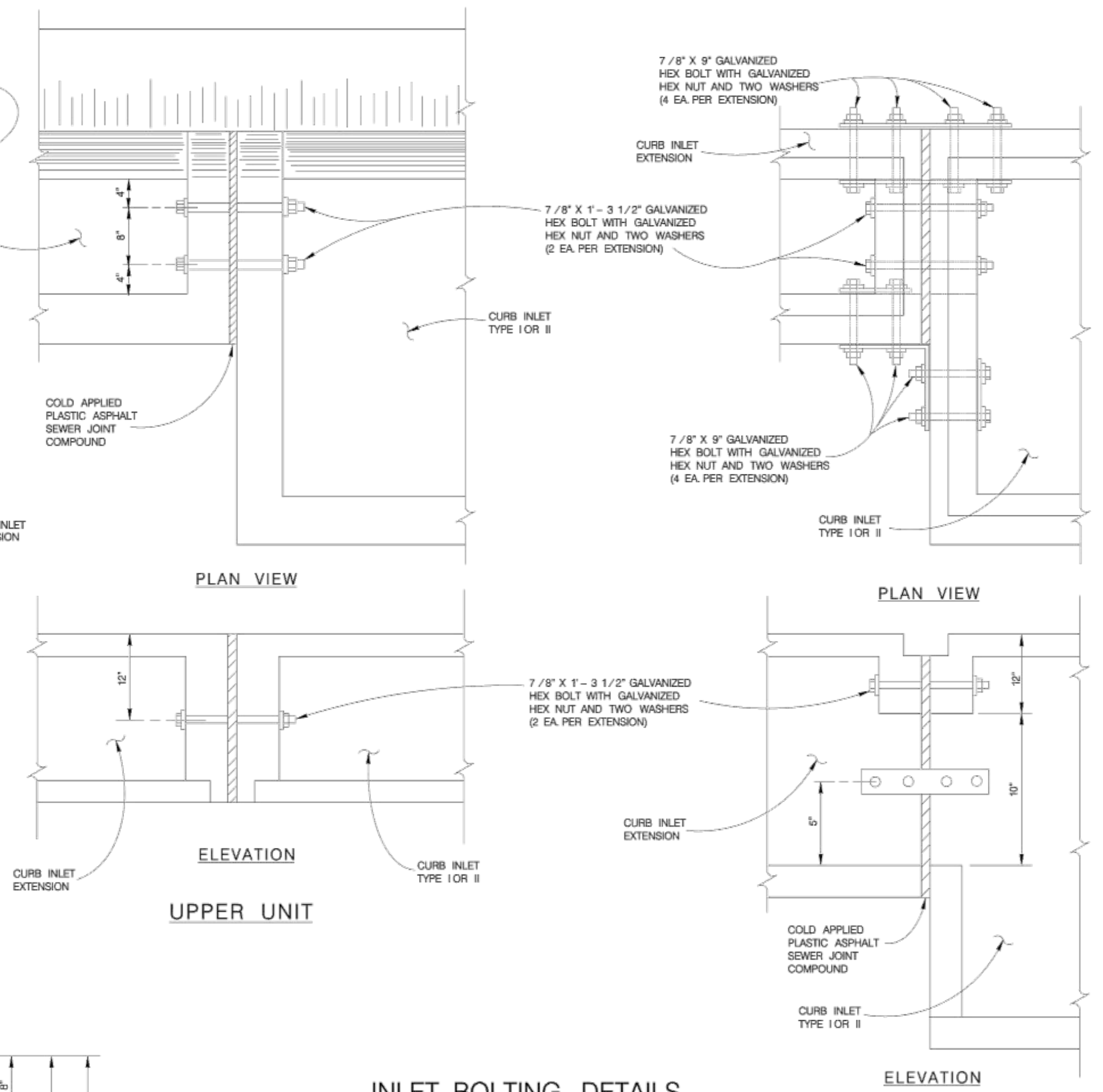
____% SUBMITTAL	PROJECT NO.:____		DATE:____
DRWN. BY: V. VASQUEZ	DSGN. BY: L.E. MALTOS, P.E.	CHKD. BY: R.S. HOSSEINI, P.E.	SHEET NO.:____ OF____


7/8" X 9" GALVANIZED HEX BOLT WITH GALVANIZED HEX NUT AND TWO WASHERS (4 EA. PER EXTENSION)
CURB INLET EXTENSION
7/8" X 1' - 3 1/2" GALVANIZED HEX BOLT WITH GALVANIZED HEX NUT AND TWO WASHERS (2 EA. PER EXTENSION)
CURB INLET EXTENSION
COLD APPLIED PLASTIC ASPHALT SEWER JOINT COMPOUND
PLAN VIEW
PLAN VIEW
ELEVATION
ELEVATION

UPPER UNIT

LOWER UNIT

INLET BOLTING DETAILS
SHOWING EXTENSION TO EXTENSION


CURB INLET EXTENSION
7/8" X 9" GALVANIZED HEX BOLT WITH GALVANIZED HEX NUT AND TWO WASHERS (4 EA. PER EXTENSION)
7/8" X 1' - 3 1/2" GALVANIZED HEX BOLT WITH GALVANIZED HEX NUT AND TWO WASHERS (2 EA. PER EXTENSION)
CURB INLET TYPE I OR II
COLD APPLIED PLASTIC ASPHALT SEWER JOINT COMPOUND
PLAN VIEW
PLAN VIEW
ELEVATION
ELEVATION

UPPER UNIT

LOWER UNIT

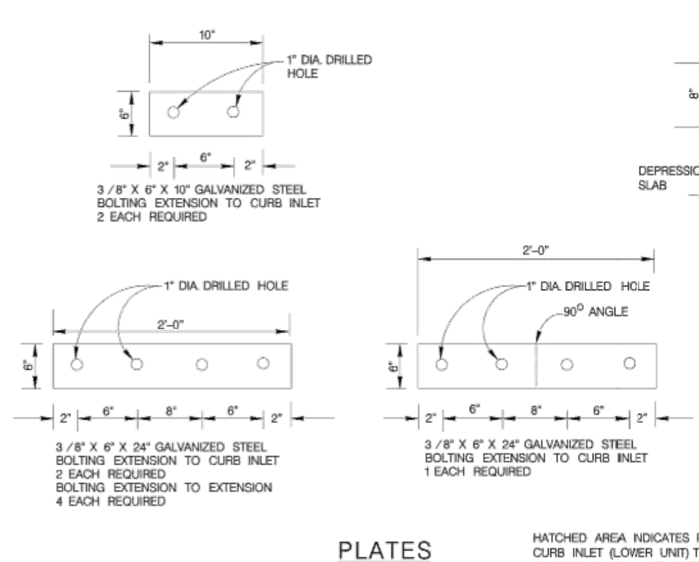
INLET BOLTING DETAILS
SHOWING CURB INLET TO EXTENSION

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

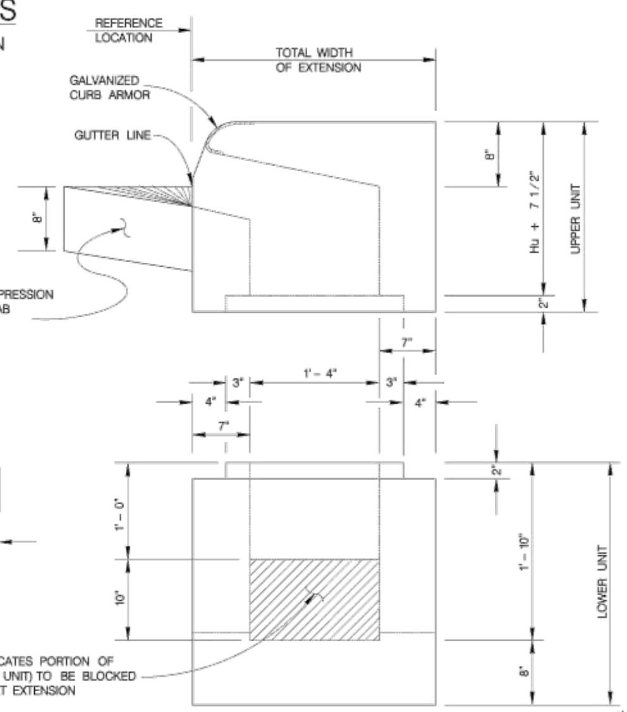
LOWER UNIT EXTENSION					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	12	#4	12"	6' – 2"	49
B	11	#4	12"	2' – 2"	16
B_1	3	#4	12"	2' – 2"	4
E_1	18	#4	18" ±	2' – 3"	27
E_2	4	#4	18" ±	2' – 1"	6
F_1	16	#4	12" ±	10' – 10"	116
F_2	5	#4	—	10' – 10"	36
REINFORCING STEEL				LBS.	254
CLASS. "A" CONCRETE				C.Y.	1.4

GENERAL NOTES

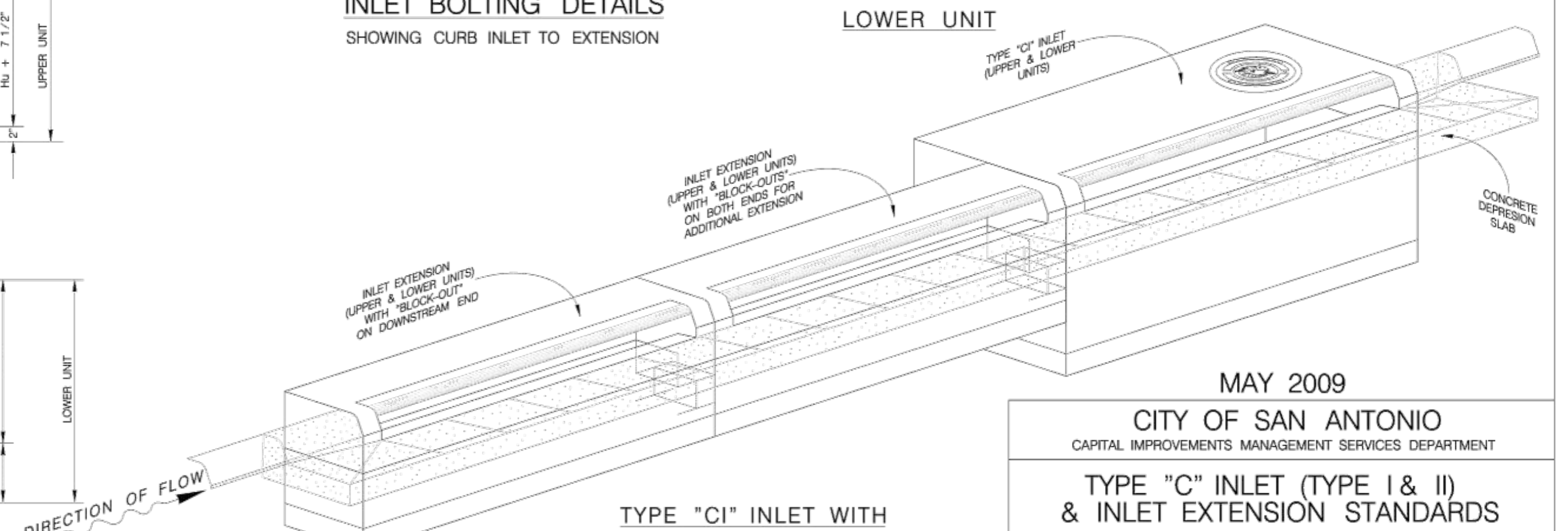
1. WHEN INLET EXTENSIONS ARE REQUIRED FOR ON GRADE INLETS THE EXTENSION(S) SHALL BE PLACED ON THE UPSTREAM END OF THE INLET.
2. FOR CURB INLET EXTENSION REINFORCING STEEL, NOTES & VARIOUS OTHER APPLICABLE DETAILS NOT FOUND ON THIS SHEET, REFER TO SHEETS 1 & 2.


1" DIA. DRILLED HOLE
3/8" X 6" X 10" GALVANIZED STEEL BOLTING EXTENSION TO CURB INLET 2 EACH REQUIRED
1" DIA. DRILLED HOLE
3/8" X 6" X 24" GALVANIZED STEEL BOLTING EXTENSION TO CURB INLET 2 EACH REQUIRED BOLTING EXTENSION TO EXTENSION 4 EACH REQUIRED
1" DIA. DRILLED HOLE
90° ANGLE
3/8" X 6" X 24" GALVANIZED STEEL BOLTING EXTENSION TO CURB INLET 1 EACH REQUIRED

PLATES


REFERENCE LOCATION
TOTAL WIDTH OF EXTENSION
GALVANIZED CURB ARMOR
GUTTER LINE
DEPRESSION SLAB
UPPER UNIT
LOWER UNIT
HATCHED AREA INDICATES PORTION OF CURB INLET (LOWER UNIT) TO BE BLOCKED OUT FOR CURB INLET EXTENSION

SECTION A–A CURB INLET
EXTENSION TYPE E


TYPE "CI" INLET (UPPER & LOWER UNITS)
INLET EXTENSION (UPPER & LOWER UNITS) WITH "BLOCK-OUT" ON DOWNSTREAM END
INLET EXTENSION (UPPER & LOWER UNITS) WITH "BLOCK-OUTS" ON BOTH ENDS FOR ADDITIONAL EXTENSION
CONCRETE DEPRESION SLAB
DIRECTION OF FLOW

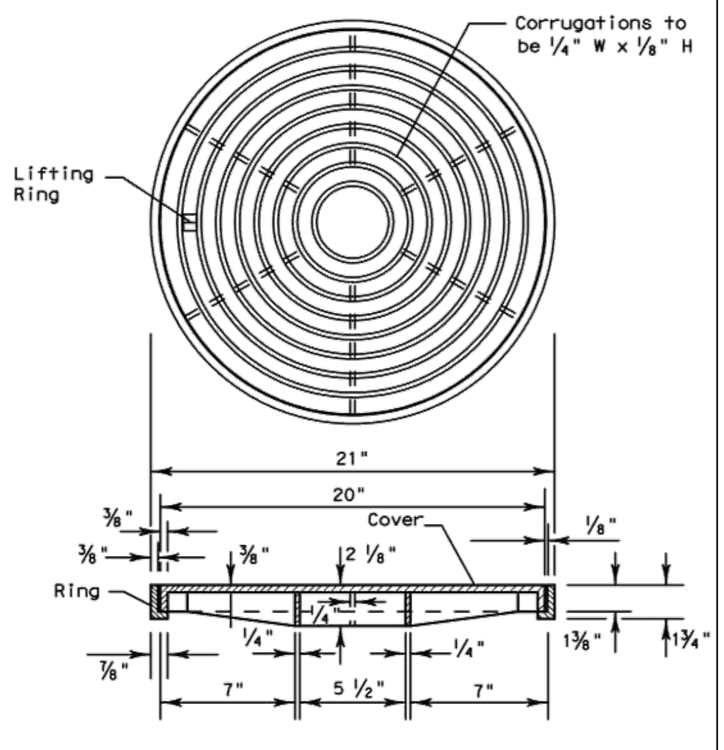
TYPE "CI" INLET WITH
INLET EXTENSION BOXES

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____


Corrugations to be 1/4" W x 1/8" H
Lifting Ring
21"
20"
Cover
1/8"
3/8"
3/8"
2 1/8"
Ring
1/4"
5 1/2"
7"
7"
1 3/8"
1 3/4"
7/8"

CAST IRON RING & COVER
DETAIL

CUDEENGINEERS.COM

EST. 1980
CUDE
ENGINEERS

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

GOERKE SUBDIVISION PHASE 1

INLET DETAILS

DATE
01/14/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

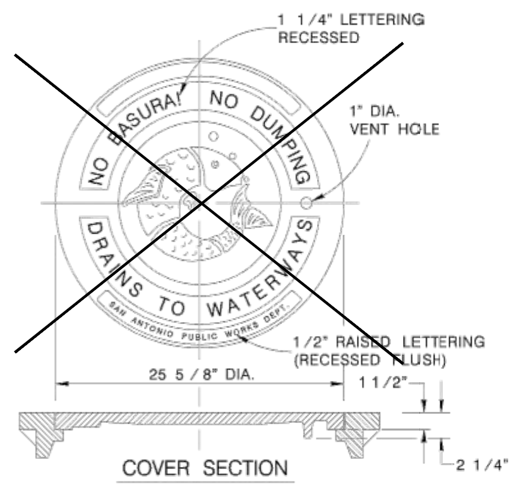
REVISIONS
1.
2.
3.
4.
5.
6.
7.
8.
9.

KYLE M. HUDEK
138753
01/27/2025
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C6.D2

P:\03346\101\2-DWG\4-Plans\C6.D1 - DROP.dwg 2025/01/14 5:45pm rbarrera

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.


1 1/4" LETTERING
RECESSED
1" DIA.
VENT HOLE
NO BASURA! NO DUMPING
DRAINS TO WATERWAYS
SAN ANTONIO PUBLIC WORKS DEPT.
1/2" RAISED LETTERING
(RECESSED FLUSH)
25 5/8" DIA.
1 1/2"
2 1/4"

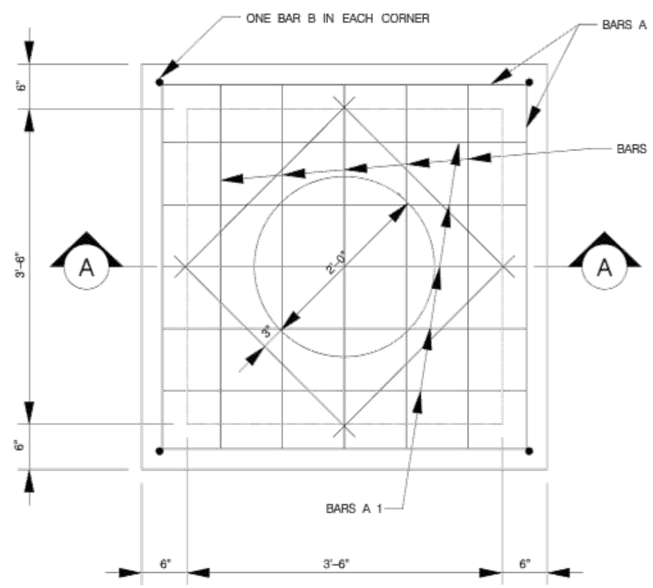
COVER SECTION

MANHOLE LID & RING DETAIL

SCALE: 1 : 16

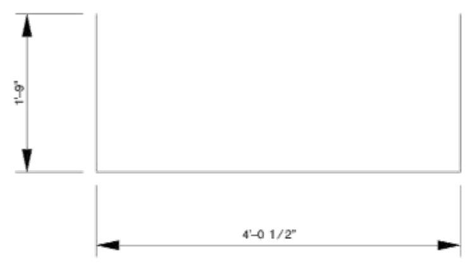
NOTES FOR MANHOLE LID AND RING

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


ONE BAR B IN EACH CORNER
BARS A
BARS A 1
BARS A 1
A
A
2'-0"
3"
6"
3'-6"
6"
6"
3'-6"
6"

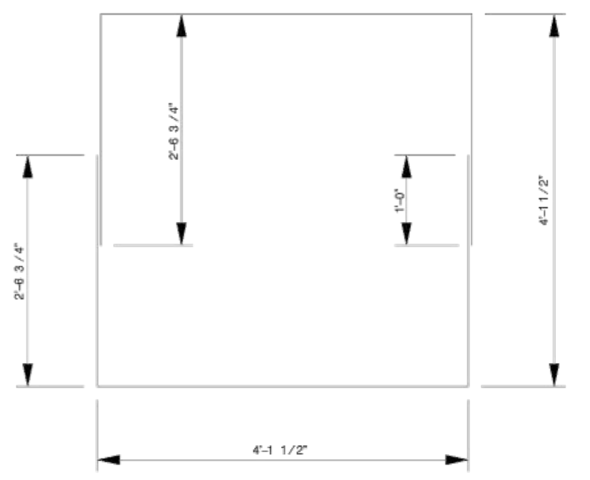
TOP SLAB PLAN VIEW

SCALE: 1" = 2' – 0"



BARS A

SCALE: 1" = 2' – 0"

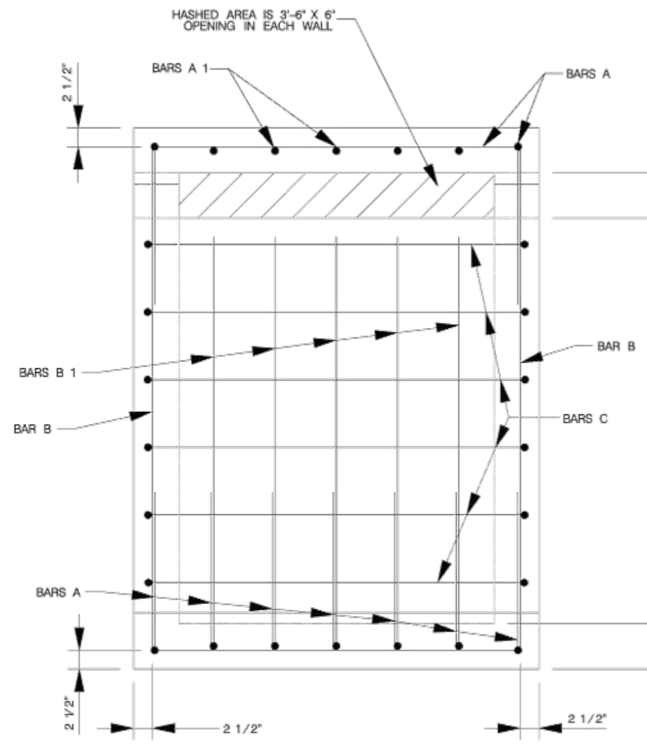

2'-6 3/4"
2'-6 3/4"
1'-0"
4'-1 1/2"
4'-1 1/2"

BARS C

SCALE: 1" = 2' – 0"

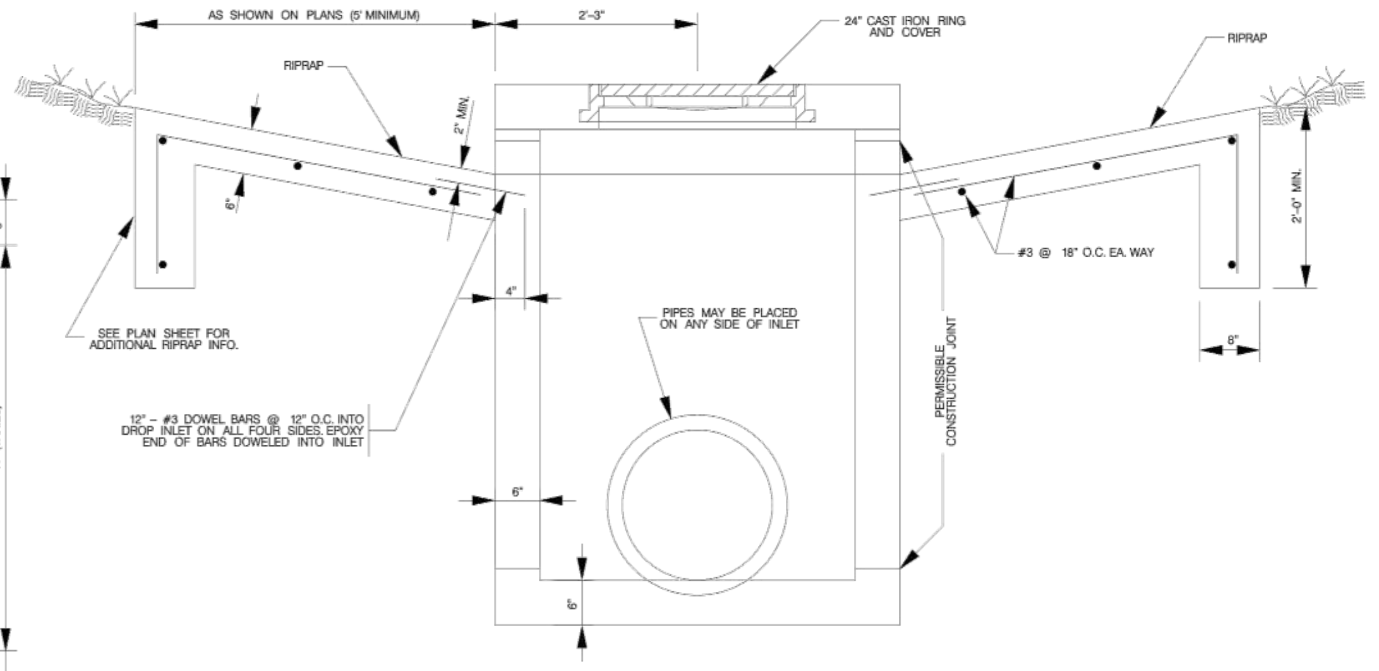
ESTIMATED QUANTITIES FOR "H" = 4'–6"					
REINFORCING STEEL					
BAR	NO.	SIZE	SPACE	LENGTH	WEIGHT
A	18	4	8" +/–	7'–6 1/2"	79
A 1	10	4	8" +/–	4'–0 1/2"	27
B	4	4	AS SHOWN	5'–7"	15
B 1	20	4	8" +/–	4'–7"	61
C	12	4	9" +/–	18'–6"	148
J	4	4	AS SHOWN	2'–8"	6
TOTAL REINFORCING STEEL					336 Lbs. *
CLASS A CONCRETE					2.10 CY *

* FOR CONTRACTOR'S INFORMATION ONLY.
QUANTITIES VARY WITH "H".
SEE INLET & MANHOLE SUMMARY SHEETS FOR "H".


HASHED AREA IS 3'-6" X 6"
OPENING IN EACH WALL
BARS A 1
BARS A
2 1/2"
6"
BARS B 1
BAR B
BAR B
BARS C
"H" (VARIES)
BARS A
6"
2 1/2"
2 1/2"
2 1/2"

SIDE VIEW WALL

SCALE: 1" = 2' – 0"


AS SHOWN ON PLANS (5' MINIMUM)
2'-3"
24" CAST IRON RING
AND COVER
RIPRAP
RIPRAP
2" MIN.
6"
4"
SEE PLAN SHEET FOR
ADDITIONAL RIPRAP INFO.
12" – #3 DOWEL BARS @ 12" O.C. INTO
DROP INLET ON ALL FOUR SIDES. EPOXY
END OF BARS DOWELED INTO INLET
PIPES MAY BE PLACED
ON ANY SIDE OF INLET
PERMISSIBLE
CONSTRUCTION JOINT
#3 @ 18" O.C. EA. WAY
2'-0" MIN.
8"
6"
6"

SECTION A–A

SCALE: 1" = 2' – 0"

GENERAL NOTES:

1. ALL BARS INTERCEPTING THE RING AND COVER OPENING AND PIPE OPENINGS. SHALL BE FIELD CUT
2. CONCRETE SHALL BE CLASS "A", 3000 PSI IN 28 DAYS.
3. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
4. ALL EXPOSED CORNERS SHALL HAVE 3/4" CHAMFER
5. PAYMENT FOR ALL EXCAVATION, BACKFILLING, CONCRETE, REINFORCING STEEL, RING, AND 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

4–WAY INLET STANDARDS

____% SUBMITTAL	PROJECT NO.:____		DATE:____
DRWN. BY: M. BARRERA, P.E.	DSGN. BY:____	CHKD. BY:____	SHEET NO.:____OF____

CUDEENGINEERS.COM

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

GOERKE SUBDIVISION PHASE 1

INLET DETAILS

DATE
01/14/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
1.
2.
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5.
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7.
8.
9.

KYLE M. HUDEK
138753
01/27/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C6.D3

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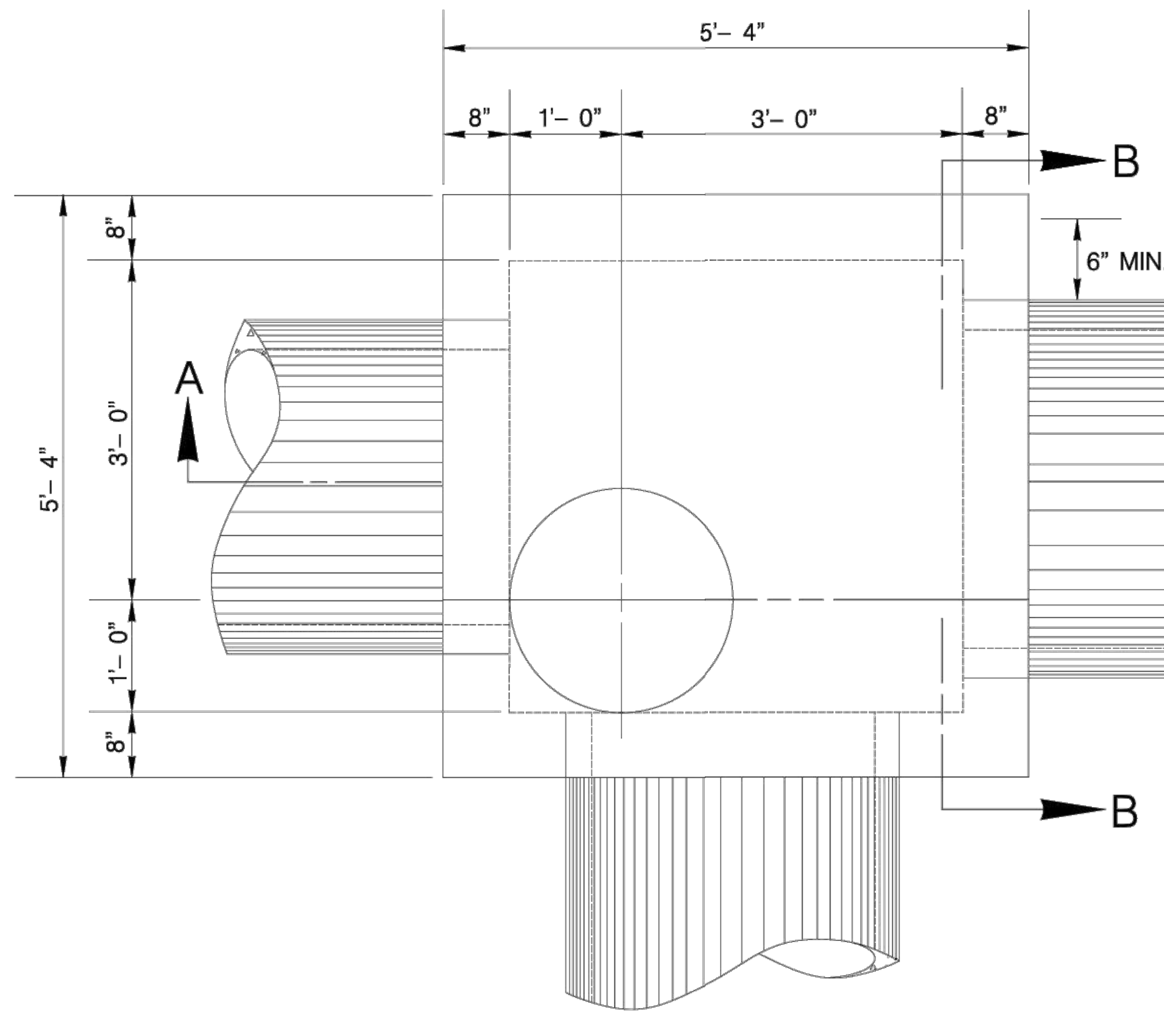
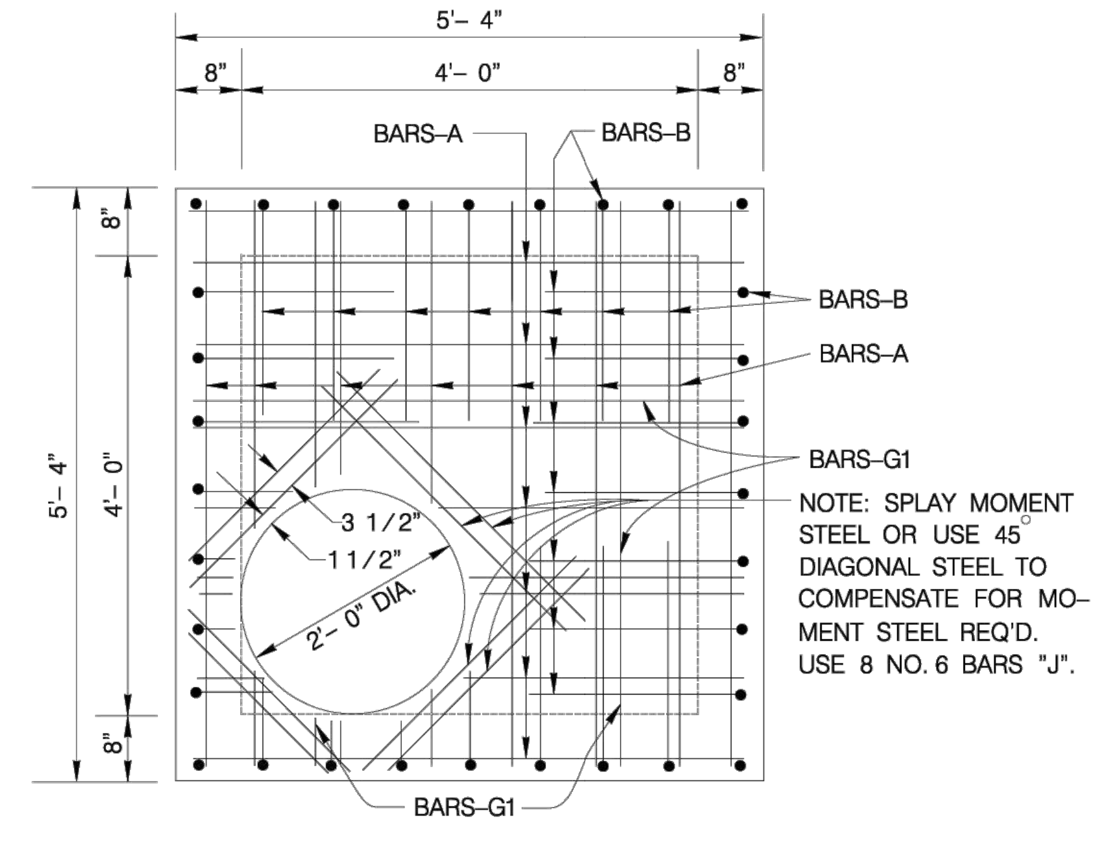
P:\03346\101\2-DWG\4-Plans\C6.D1 - DRDP.dwg 2025/01/14 5:45pm rbarrera


5'– 4"
8"
1'– 0"
3'– 0"
8"
B
B
6" MIN. (TYP.)
A
A
5'– 4"
8"
3'– 0"
1'– 0"
8"

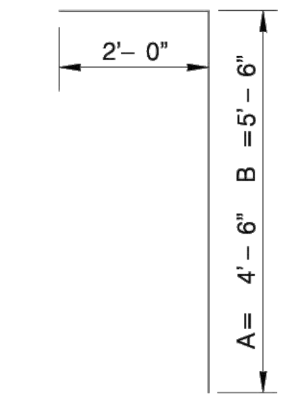
PLAN


5'– 4"
8"
4'– 0"
8"
BARS–A
BARS–B
BARS–B
BARS–A
BARS–G1
3 1/2"
1 1/2"
2'– 0" DIA.
5'– 4"
8"
4'– 0"
8"
BARS–G1

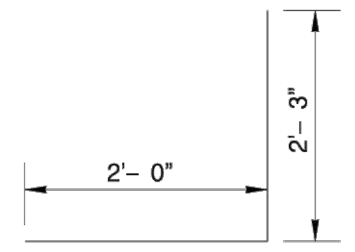
NOTE: SPLAY MOMENT STEEL OR USE 45° DIAGONAL STEEL TO COMPENSATE FOR MOMENT STEEL REQ'D. USE 8 NO. 6 BARS "J".

PLAN

JUNCTION BOX TOP SLAB SHOWING STEEL



BARS–B



BARS–C

SCHEDULE FOR REINFORCING STEEL

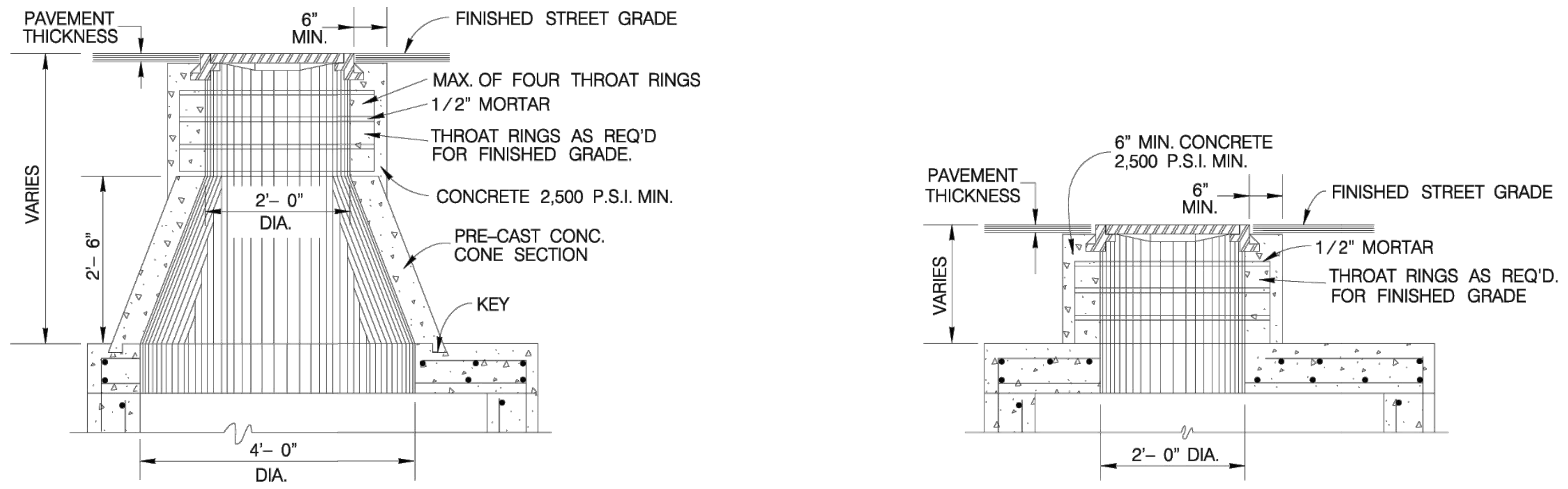
A= 4' X 4' X 4' J.B. NO. 1 & 4

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

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

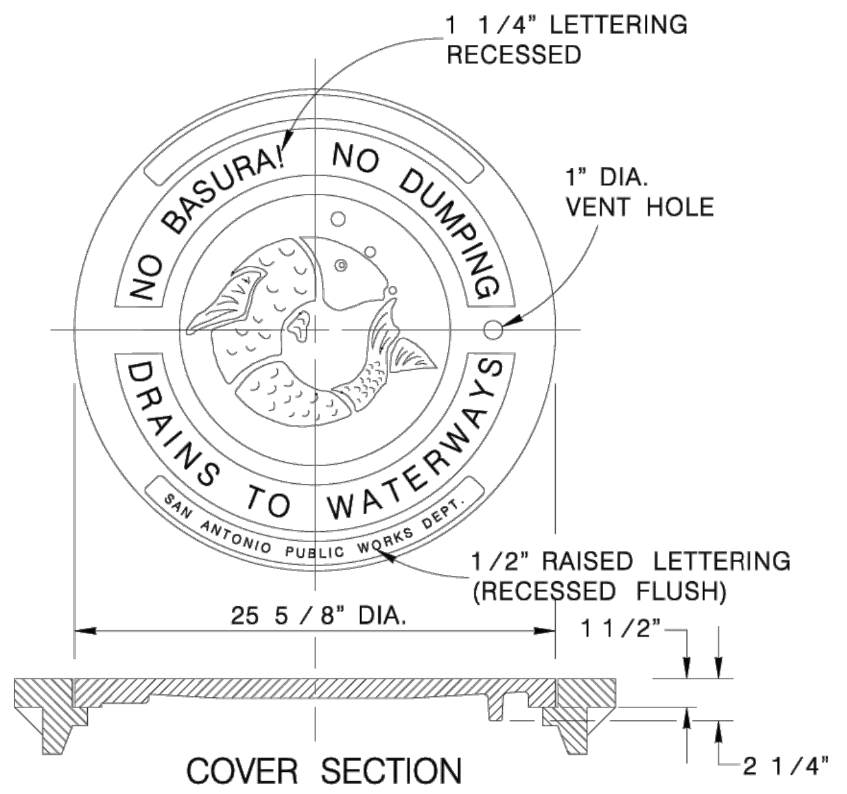
* NOTE: BAR SIZE AND SPACING BASED ON SPANS AS SHOWN – ANY REVISIONS TO THESE SPANS SHALL INCLUDE A RE–DESIGN ON STEEL REQD.

1. CONCRETE FOR STRUCTURE SHALL BE CLASS "A," 3,000 P.S.I. AT 28 DAYS.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
3. REINFORCING STEEL SHALL BE NEW BILLET STEEL, INTERMEDIATE GRADE, ASTM. A–15. THE DEFORMATION SHALL CONFORM TO ASTM. A–305.
4. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
5. ALL BARS INTERCEPTING MANHOLE OPENING AND REINFORCED CONCRETE PIPE SHALL BE FIELD–CUT.
6. WHERE LAPPING OF BARS IS REQUIRED, A MINIMUM LAP OF 33 DIAMETERS SHALL BE USED.
7. INVERT OF JUNCTION BOX TO BE SHAPED WITH CONCRETE FILL (2,500 P.S.I. MIN.) TO EFFECT DRAINAGE TO OUTLET PIPE. COST SUBSIDIARY TO CLASS "A" CONCRETE (JUNCTION BOXES).
8. PAYMENT FOR ALL EXCAVATION, BACKFILLING, CONCRETE, REINFORCING STEEL, VERTICAL STACK, RING AND COVER SHALL BE INCLUDED IN THE UNIT COST OF ITEM 403 – "STORM SEWER JUNCTION BOXES AND INLETS".


PAVEMENT THICKNESS
6" MIN.
FINISHED STREET GRADE
MAX. OF FOUR THROAT RINGS
1/2" MORTAR
THROAT RINGS AS REQ'D FOR FINISHED GRADE.
CONCRETE 2,500 P.S.I. MIN.
VARIES
2'– 0" DIA.
2'– 6"
PRE–CAST CONC. CONE SECTION
KEY
4'– 0" DIA.
6" MIN. CONCRETE 2,500 P.S.I. MIN.
PAVEMENT THICKNESS
6" MIN.
FINISHED STREET GRADE
1/2" MORTAR
THROAT RINGS AS REQ'D. FOR FINISHED GRADE
VARIES
2'– 0" DIA.

VARIATION OF VERTICAL STACK

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


1 1/4" LETTERING RECESSED
NO BASURA! NO DUMPING
DRAINS TO WATERWAYS
SAN ANTONIO PUBLIC WORKS DEPT.
1" DIA. VENT HOLE
1/2" RAISED LETTERING (RECESSED FLUSH)
25 5/8" DIA.
1 1/2"
2 1/4"

COVER SECTION

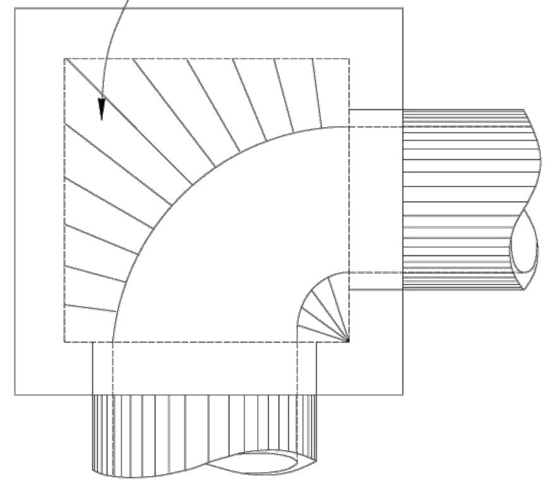
MANHOLE LID & RING DETAIL

SCALE: 1 : 16

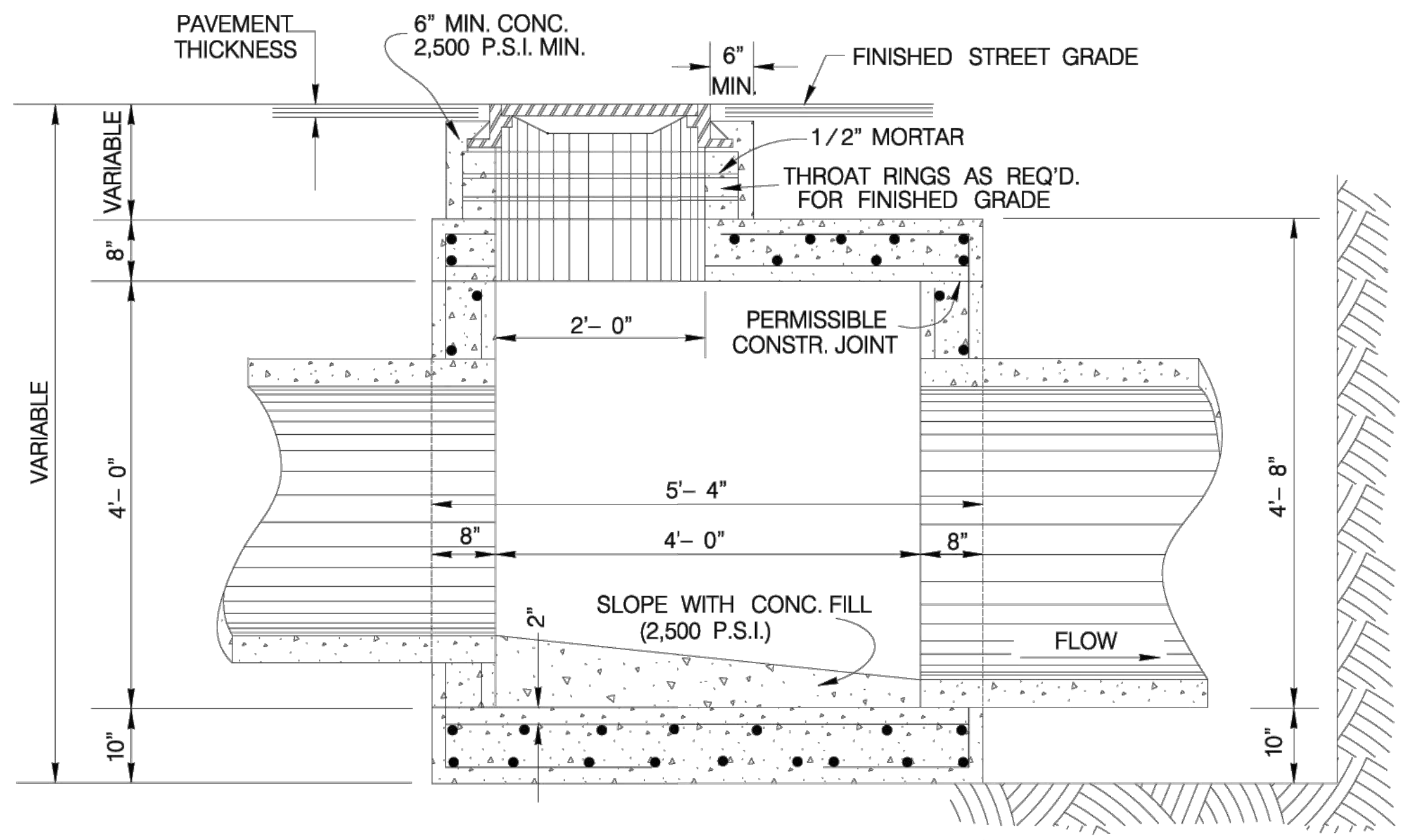
NOTES FOR MANHOLE LID AND RING

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

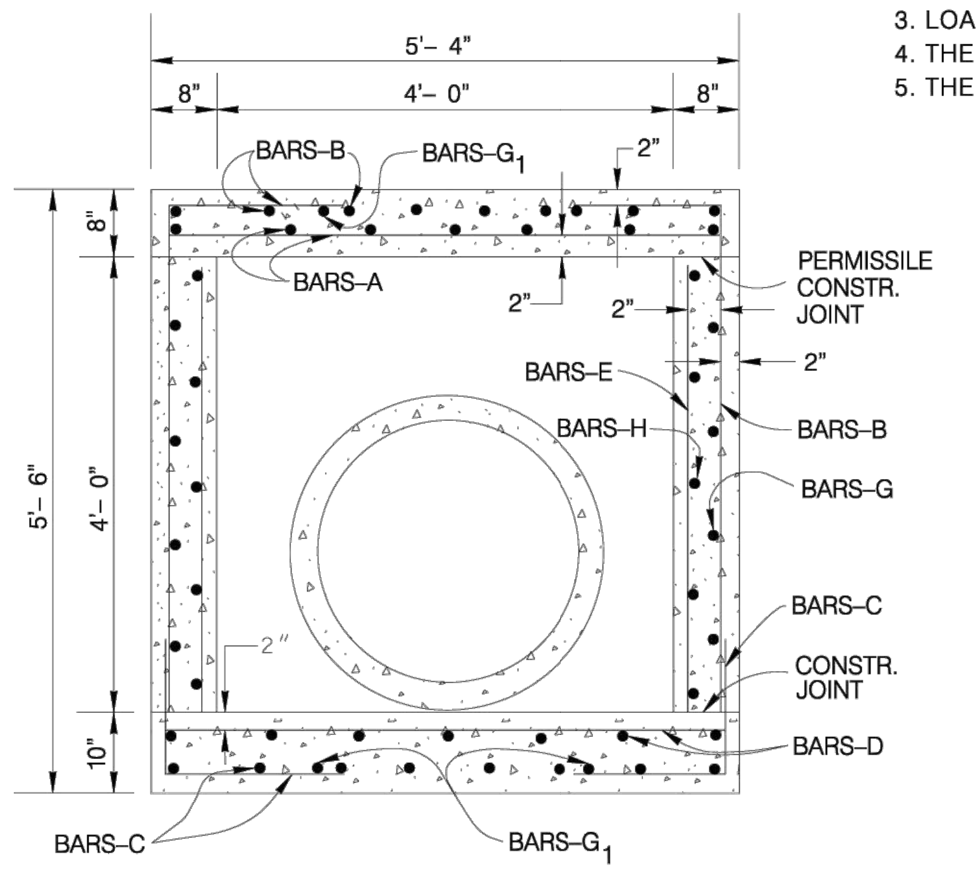
FILL TO SPRING LINE OF PIPE WITH 2,500 P.S.I. CONCRETE NON–PAY ITEM. COST SUBSIDIARY TO CLASS "A" CONCRETE (JUNCTION BOX).



CURVED DEFLECTOR DETAIL


PAVEMENT THICKNESS
6" MIN. CONC. 2,500 P.S.I. MIN.
6" MIN.
FINISHED STREET GRADE
1/2" MORTAR
THROAT RINGS AS REQ'D. FOR FINISHED GRADE
VARIABLE
VARIABLE
8"
2'– 0"
PERMISSIBLE CONSTR. JOINT
4'– 0"
5'– 4"
8"
4'– 0"
8"
2"
SLOPE WITH CONC. FILL (2,500 P.S.I.)
FLOW
4'– 8"
10"
10"
1'– 0"

SECTION A–A


5'– 4"
8"
4'– 0"
8"
BARS–B
BARS–G1
2"
BARS–A
2"
2"
PERMISSILE CONSTR. JOINT
2"
BARS–E
BARS–H
BARS–B
BARS–G
BARS–C
CONSTR. JOINT
BARS–D
5'– 6"
8"
4'– 0"
10"
2"
BARS–C
BARS–G1

SECTION B–B

JANUARY 2005

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

4'x4'x4' JUNCTION BOX
STANDARDS

______% SUBMITTAL	PROJECT NO.:______		DATE:______
DRWN. BY:______	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 F: (210) 523.7112

GOERKE SUBDIVISION PHASE 1

JUNCTION BOX DETAILS

DATE
09/30/2024

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
1.
2.
3.
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5.
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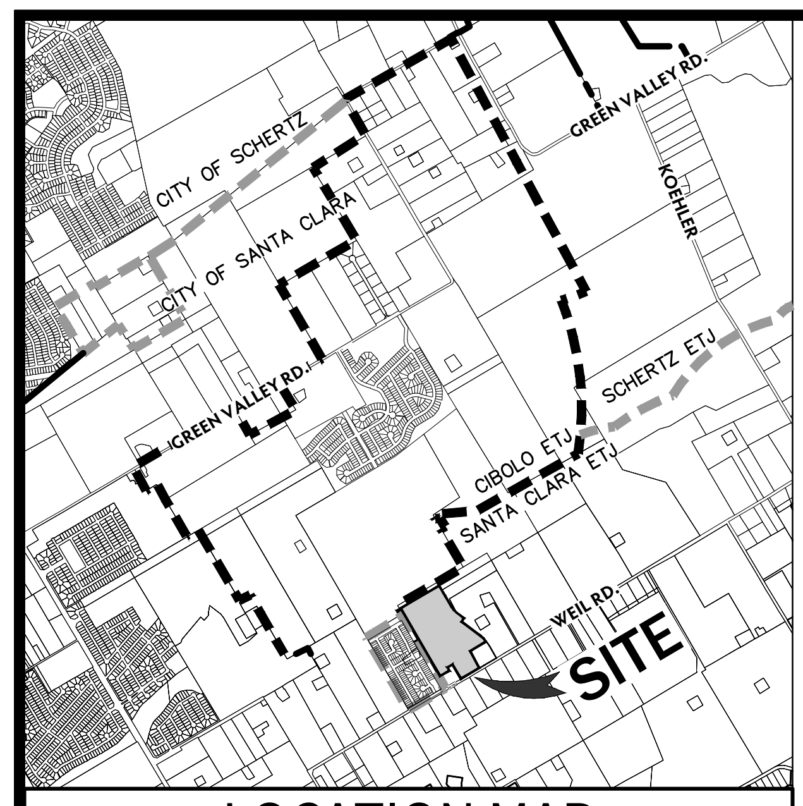
7.
8.
9.

KYLE M. HUDEK
138753
11/12/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C6.D4

P:\03346\101\2-DWG\4-Plans\C6.D1 - DRDP.dwg 2024/09/30 3:39pm rbarrera


CITY OF SCHERTZ
CITY OF SANTA CLARA
GREEN VALLEY RD.
SCHERTZ ETJ
CIBOLO ETJ
SANTA CLARA ETJ
SITE

LOCATION MAP
N.T.S.

KEYNOTES

① 20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

② 10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

OWNER/DEVELOPER:

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

CIVIL ENGINEER:

CUDE ENGINEERS
CONTACT PERSON: KYLE HUDEK, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112

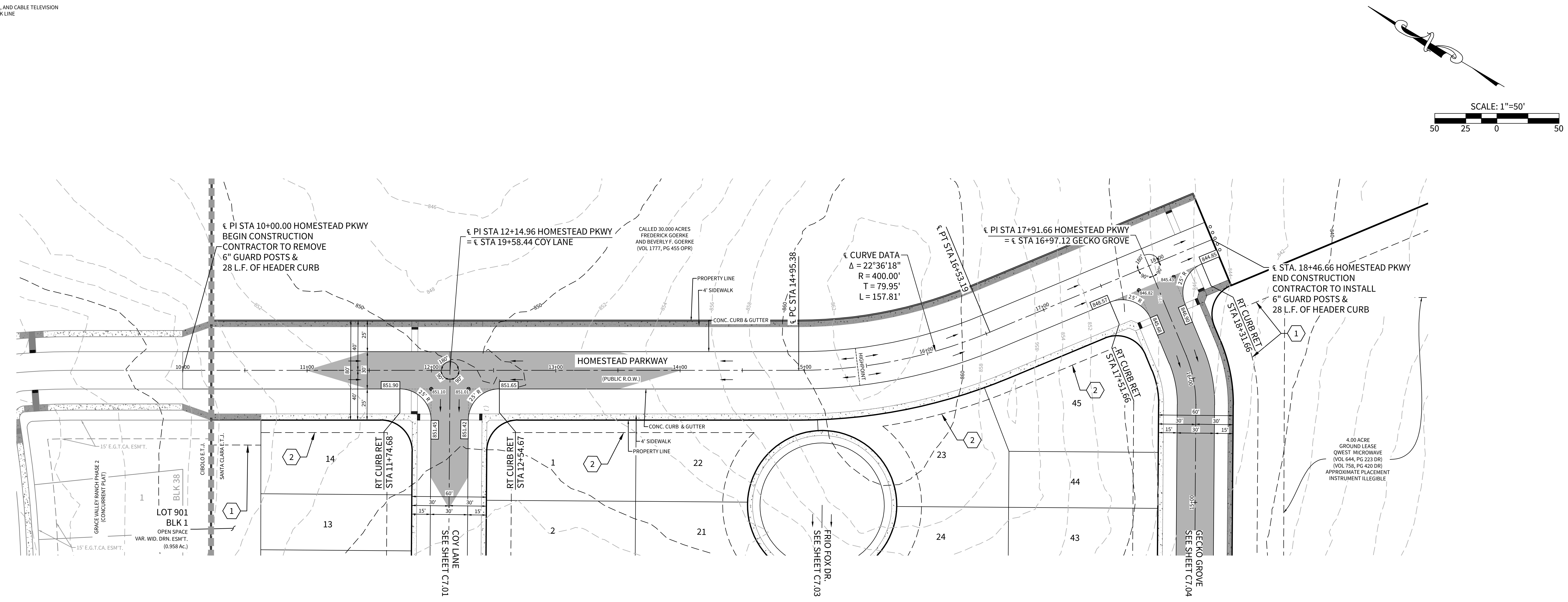
LEGEND

▨	- SIDEWALK CONSTRUCTED WITH INFRASTRUCTURE
■	- STREET WASHOUT (SEE DETAIL SHEET C7.D1)
—·—·—	- STREET CENTERLINE
— — —	- EXISTING CONTOURS
⊕ XXX.XX	- TOP OF CURB SPOT ELEVATION
▯	- DRIVEWAY
XXX.XX	- PAVEMENT ELEVATION

TxDOT TYPE "2" WHEEL CHAIR RAMPS ARE INDICATED THUS " ▬ " UNLESS OTHERWISE NOTED.
(SEE DETAIL SHEET C7.D1) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS

TxDOT TYPE "10" WHEEL CHAIR RAMPS ARE INDICATED THUS " ⌐ " UNLESS OTHERWISE NOTED.
(SEE DETAIL SHEET C7.D1) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS

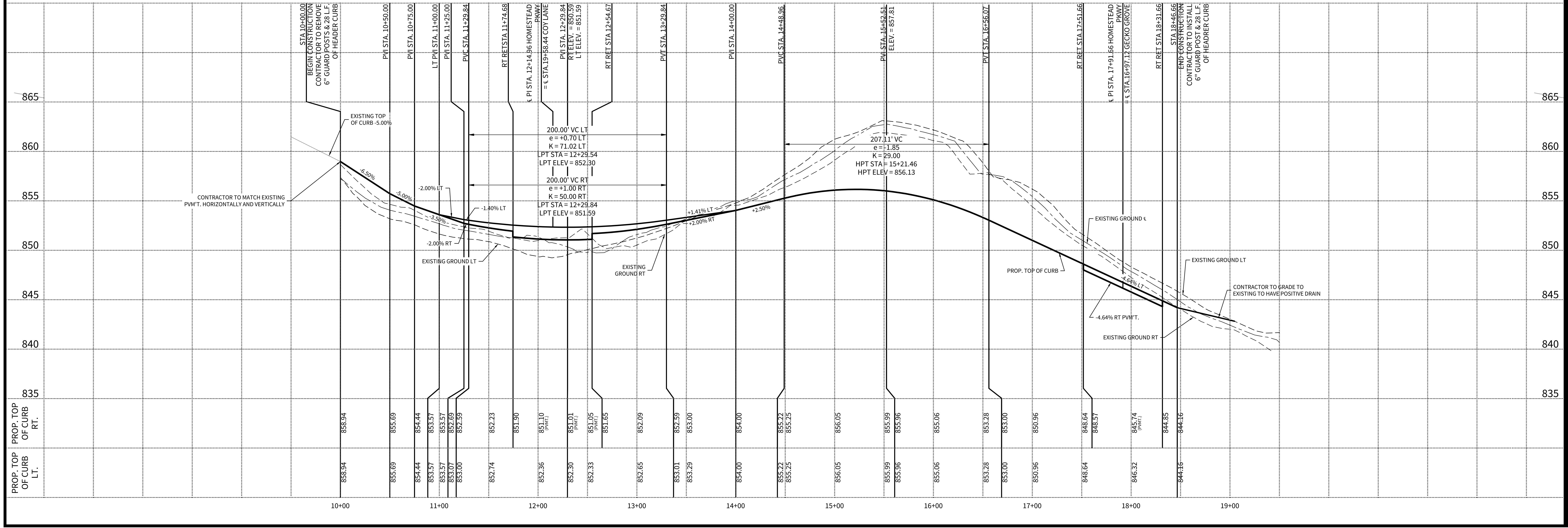
(SEE DETAIL SHEET C7.D1) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS . DETECTABLE WARNING PAVER WITH TRUNCATED DOMES ONLY.


SCALE: 1"=50'
50 25 0 50
℄ PI STA 10+00.00 HOMESTEAD PKWY
BEGIN CONSTRUCTION
CONTRACTOR TO REMOVE
6" GUARD POSTS &
28 L.F. OF HEADER CURB
℄ PI STA 12+14.96 HOMESTEAD PKWY
= ℄ STA 19+58.44 COY LANE
CALLED 30.000 ACRES
FREDERICK GOERKE
AND BEVERLY F. GOERKE
(VOL 1777, PG 455 OPR)
PROPERTY LINE
4' SIDEWALK
CONC. CURB & GUTTER
℄ PC STA 14+95.38
℄ CURVE DATA
Δ = 22°36'18"
R = 400.00'
T = 79.95'
L = 157.81'
℄ PT STA 16+53.19
℄ PI STA 17+91.66 HOMESTEAD PKWY
= ℄ STA 16+97.12 GECKO GROVE
℄ STA. 18+46.66 HOMESTEAD PKWY
END CONSTRUCTION
CONTRACTOR TO INSTALL
6" GUARD POSTS &
28 L.F. OF HEADER CURB
HOMESTEAD PARKWAY
(PUBLIC R.O.W.)
HIGHPOINT
10+00
11+00
12+00
13+00
14+00
15+00
16+00
17+00
18+00
851.90
851.10
851.01
851.65
851.45
851.42
848.57
846.82
845.43
844.85
845.68
846.90
25' R
180°
90°
40'
25'
80'
30'
60'
15'
RT CURB RET
STA 11+74.68
RT CURB RET
STA 12+54.67
RT CURB RET
STA 17+51.66
RT CURB RET
STA 18+31.66
CONC. CURB & GUTTER
4' SIDEWALK
PROPERTY LINE
LOT 901
BLK 1
OPEN SPACE
VAR. WID. DRN. ESM'T.
(0.958 Ac.)
GRACE VALLEY RANCH PHASE 2
BLK 38
CIBOLO E.T.J.
SANTA CLARA E.T.J.
15' E.G.T.C.A. ESM'T.
14
13
1
2
22
21
23
24
45
44
43
COY LANE
SEE SHEET C7.01
FRIO FOX DR.
SEE SHEET C7.03
GECKO GROVE
SEE SHEET C7.04
4.00 ACRE
GROUND LEASE
QWEST MICROWAVE
(VOL 644, PG 223 DR)
(VOL 758, PG 420 DR)
APPROXIMATE PLACEMENT
INSTRUMENT ILLEGIBLE
846
848
850
852
854
856
858
860
862
842
840
844

HOMESTEAD PARKWAY

STA. 10+00.00 TO STA. 18+46.66

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


STA 10+00.00
BEGIN CONSTRUCTION
CONTRACTOR TO REMOVE
6" GUARD POSTS & 28 L.F.
OF HEADER CURB
PVI STA. 10+50.00
PVI STA. 10+75.00
LT PVI STA. 11+00.00
PVI STA. 11+25.00
PVC STA. 11+29.84
RT RETSTA 11+74.68
℄ PI STA. 12+14.96 HOMESTEAD PKWY
= ℄ STA.19+58.44 COY LANE
PVI STA. 12+29.84
RT ELEV. = 850.59
LT ELEV. = 851.59
RT RET STA 12+54.67
PVT STA. 13+29.84
PVI STA. 14+00.00
PVC STA. 14+48.96
PVI STA. 15+52.51
ELEV. = 857.81
PVT STA. 16+56.07
RT RET STA 17+51.66
℄ PI STA. 17+91.66 HOMESTEAD PKWY
= ℄ STA.16+97.12 GECKO GROVE
RT RET STA 18+31.66
STA 18+46.66
END CONSTRUCTION
CONTRACTOR TO INSTALL
6" GUARD POST & 28 L.F.
OF HEADRER CURB
865
860
855
850
845
840
835
EXISTING TOP
OF CURB -5.00%
CONTRACTOR TO MATCH EXISTING
PVM'T. HORIZONTALLY AND VERTICALLY
-6.50%
-5.00%
-2.00% LT
-3.50%
-1.40% LT
-2.00% RT
EXISTING GROUND LT
200.00' VC LT
e = +0.70 LT
K = 71.02 LT
LPT STA = 12+29.54
LPT ELEV = 852.30
200.00' VC RT
e = +1.00 RT
K = 50.00 RT
LPT STA = 12+29.84
LPT ELEV = 851.59
EXISTING
GROUND RT
+1.41% LT
+2.00% RT
+2.50%
207.11' VC
e = -1.85
K = 29.00
HPT STA = 15+21.46
HPT ELEV = 856.13
EXISTING GROUND ℄
PROP. TOP OF CURB
EXISTING GROUND LT
-4.64% LT
-4.64% RT PVM'T.
EXISTING GROUND RT
CONTRACTOR TO GRADE TO
EXISTING TO HAVE POSITIVE DRAIN
PROP. TOP OF CURB RT.
858.94
855.69
854.44
853.57
853.57
852.69
852.59
852.23
851.90
851.10 (PVMT.)
851.01 (PVMT.)
851.05 (PVMT.)
851.65
852.09
852.59
853.00
854.00
855.22
855.25
856.05
855.99
855.96
855.06
853.28
853.00
850.96
848.64
848.57
845.74 (PVMT.)
844.85
844.16
PROP. TOP OF CURB LT.
858.94
855.69
854.44
853.57
853.57
853.07
853.00
852.74
852.36
852.30
852.33
852.65
853.01
853.29
854.00
855.22
855.25
856.05
855.99
855.96
855.06
853.28
853.00
850.96
848.64
846.32
844.16
10+00
11+00
12+00
13+00
14+00
15+00
16+00
17+00
18+00
19+00

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

GOERKE SUBDIVISION PHASE 1

STREET PLAN & PROFILE -
HOMESTEAD PARKWAY

DATE
01/27/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
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6.
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9.

KYLE M. HUDEK
138753
01/27/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C7.00

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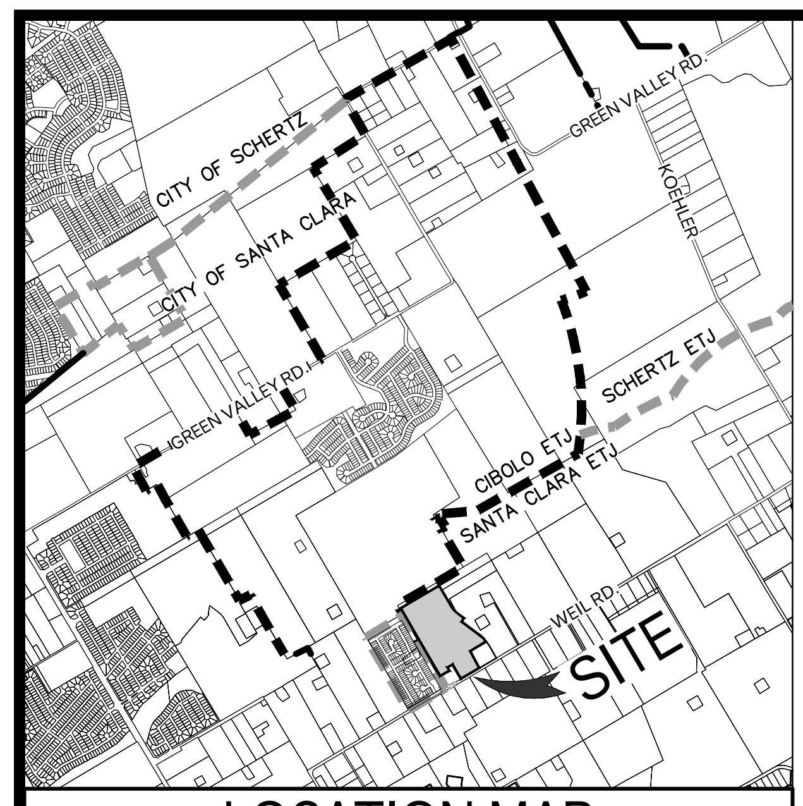

CITY OF SCHERTZ
CITY OF SANTA CLARA
GREEN VALLEY RD.
KOEHLER
SCHERTZ ETJ
CIBOLO ETJ
SANTA CLARA ETJ
WEIL RD.
SITE

LOCATION MAP

N.T.S.

KEYNOTES

- ⟨1⟩ 20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE
- ⟨2⟩ 10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

OWNER/DEVELOPER:

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

CIVIL ENGINEER:

CUDE ENGINEERS
CONTACT PERSON: KYLE HUDEK, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112

LEGEND

▨	- SIDEWALK CONSTRUCTED WITH INFRASTRUCTURE
▇	- STREET WASHOUT (SEE DETAIL SHEET C7.D1)
—·—·—	- STREET CENTERLINE
— — —	- EXISTING CONTOURS
⊕ XXX.XX	- TOP OF CURB SPOT ELEVATION
▨	- DRIVEWAY
XXX.XX	- PAVEMENT ELEVATION

TxDOT TYPE "2" WHEEL CHAIR RAMPS ARE INDICATED THUS " ▭ " UNLESS OTHERWISE NOTED.
(SEE DETAIL SHEET C7.D1) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS

TxDOT TYPE "10" WHEEL CHAIR RAMPS ARE INDICATED THUS " ⌐ " UNLESS OTHERWISE NOTED.
(SEE DETAIL SHEET C7.D1) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS

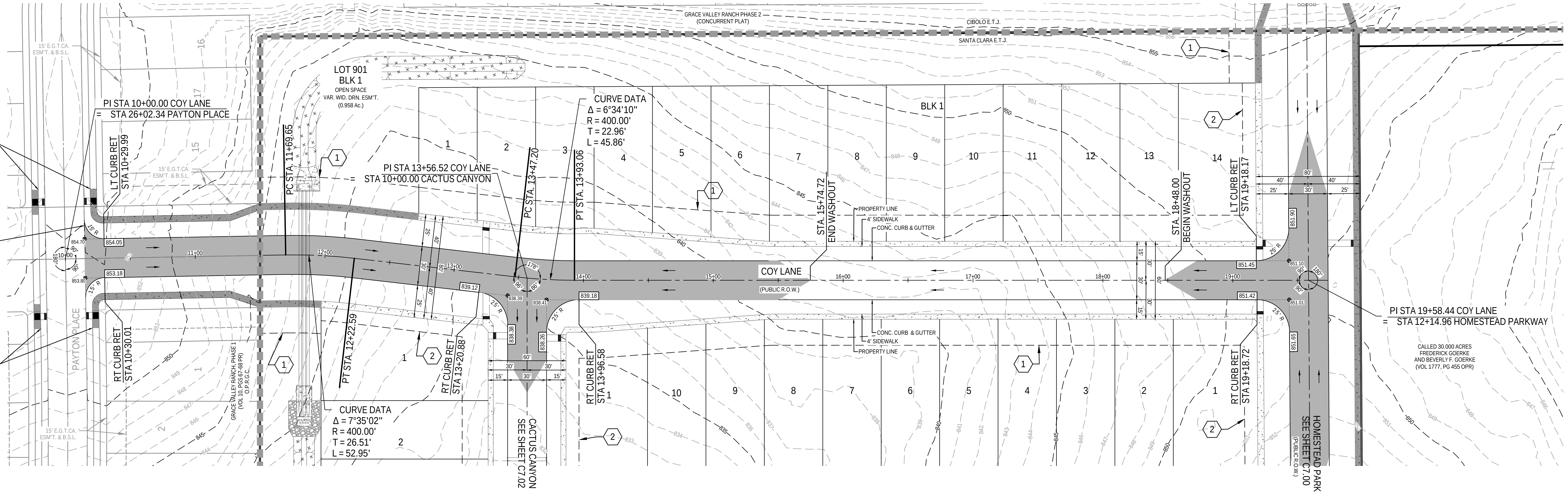
(SEE DETAIL SHEET C7.D1) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS .
DETECTABLE WARNING PAVER WITH TRUNCATED DOMES ONLY.

SCALE: 1"=50'
50 25 0 50

CONTRACTOR TO REMOVE CONC. SIDEWALK AND CURB & GUTTER TO INSTALL ADA RAMP

CONTRACTOR TO SAWCUT 65 LF OF ASPHALT PVM'T. AND REMOVE 64 LF OF CONC. CURB & GUTTER AND 256 SY OF CONC. SIDEWALK

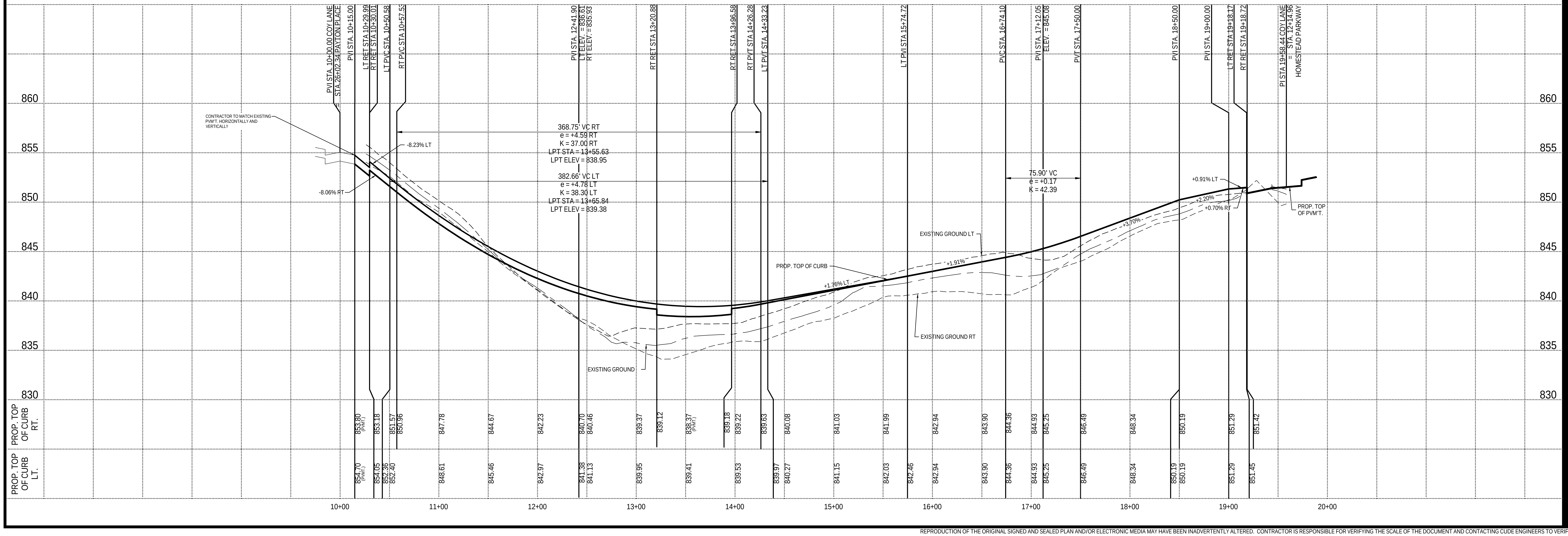
CONTRACTOR TO REMOVE CONC. SIDEWALK AND CURB & GUTTER TO INSTALL ADA RAMP


GRACE VALLEY RANCH PHASE 2 (CONCURRENT PLAT)
CIBOLO E.T.J.
SANTA CLARA E.T.J.
15' E.G.T.CA. ESM'T. & B.S.L.
LOT 901
BLK 1
OPEN SPACE
VAR. WID. DRN. ESM'T.
(0.958 Ac.)
PI STA 10+00.00 COY LANE
= STA 26+02.34 PAYTON PLACE
LT CURB RET STA 10+29.99
RT CURB RET STA 10+30.01
PC STA. 11+69.65
PT STA. 12+22.59
PI STA 13+56.52 COY LANE
= STA 10+00.00 CACTUS CANYON
PC STA. 13+47.20
PT STA. 13+93.06
CURVE DATA
Δ = 6°34'10"
R = 400.00'
T = 22.96'
L = 45.86'
CURVE DATA
Δ = 7°35'02"
R = 400.00'
T = 26.51'
L = 52.95'
RT CURB RET STA 13+20.88
RT CURB RET STA 13+96.58
CACTUS CANYON SEE SHEET C7.02
GRACE VALLEY RANCH, PHASE 1 (VOL 10, PGS 67-68 PR) O.P.R.G.C.
PAYTON PLACE
854.70
854.05
853.18
853.80
839.12
839.18
838.39
838.41
838.38
838.26
15' R
25' R
10+00
11+00
12+00
13+00
14+00
15+00
16+00
17+00
18+00
19+00
COY LANE
(PUBLIC R.O.W.)
STA. 15+74.72 END WASHOUT
STA. 18+48.00 BEGIN WASHOUT
PROPERTY LINE
4' SIDEWALK
CONC. CURB & GUTTER
BLK 1
LT CURB RET STA 19+18.17
RT CURB RET STA 19+18.72
851.90
851.45
851.10
851.42
851.01
851.65
PI STA 19+58.44 COY LANE
= STA 12+14.96 HOMESTEAD PARKWAY
HOMESTEAD PARKWAY SEE SHEET C7.00
(PUBLIC R.O.W.)
CALLED 30.000 ACRES
FREDERICK GOERKE
AND BEVERLY F. GOERKE
(VOL 1777, PG 455 OPR)
80'
40'
30'
25'
60'
15'

COY LANE

STA. 10+00.00 TO STA. 19+58.44

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


PVI STA. 10+00.00 COY LANE
= STA 26+02.34 PAYTON PLACE
PVI STA. 10+15.00
LT RET STA 10+29.99
RT RET STA 10+30.01
LT PVC STA. 10+50.58
RT PVC STA 10+57.53
PVI STA. 12+41.90
LT ELEV. = 836.61
RT ELEV. = 835.93
RT RET STA 13+20.88
RT RET STA 13+96.58
RT PVT STA 14+26.28
LT PVT STA. 14+33.23
LT PVI STA 15+74.72
PVC STA. 16+74.10
PVI STA. 17+12.05
ELEV. = 845.08
PVT STA. 17+50.00
PVI STA. 18+50.00
PVI STA. 19+00.00
LT RET STA 19+18.17
RT RET STA 19+18.72
PI STA 19+58.44 COY LANE
= STA. 12+14.96 HOMESTEAD PARKWAY
CONTRACTOR TO MATCH EXISTING PVM'T. HORIZONTALLY AND VERTICALLY
-8.23% LT
-8.06% RT
368.75' VC RT
e = +4.59 RT
K = 37.00 RT
LPT STA = 13+55.63
LPT ELEV = 838.95
382.66' VC LT
e = +4.78 LT
K = 38.30 LT
LPT STA = 13+65.84
LPT ELEV = 839.38
EXISTING GROUND
PROP. TOP OF CURB
+1.76% LT
+1.91%
EXISTING GROUND LT
EXISTING GROUND RT
75.90' VC
e = +0.17
K = 42.39
+3.70%
+2.20%
+0.91% LT
+0.70% RT
PROP. TOP OF PVM'T.
860
855
850
845
840
835
830
PROP. TOP OF CURB RT.
853.80 (PVMT.)
853.18
851.57
850.96
847.78
844.67
842.23
840.70
840.46
839.37
839.12
838.37 (PVMT.)
839.18
839.22
839.63
840.08
841.03
841.99
842.94
843.90
844.36
844.93
845.25
846.49
848.34
850.19
851.29
851.42
PROP. TOP OF CURB LT.
854.70 (PVMT.)
854.05
852.36
852.40
848.61
845.46
842.97
841.38
841.13
839.95
839.41
839.53
839.97
840.27
841.15
842.03
842.46
842.94
843.90
844.36
844.93
845.25
846.49
848.34
850.19
850.19
851.29
851.45
10+00
11+00
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 F: (210) 523.7112

GOERKE SUBDIVISION PHASE 1

STREET PLAN & PROFILE -
COY LANE

DATE
04/03/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
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2.
3.
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5.
6.
7.
8.
9.

KYLE M. HUDEK
138753
04/08/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C7.01

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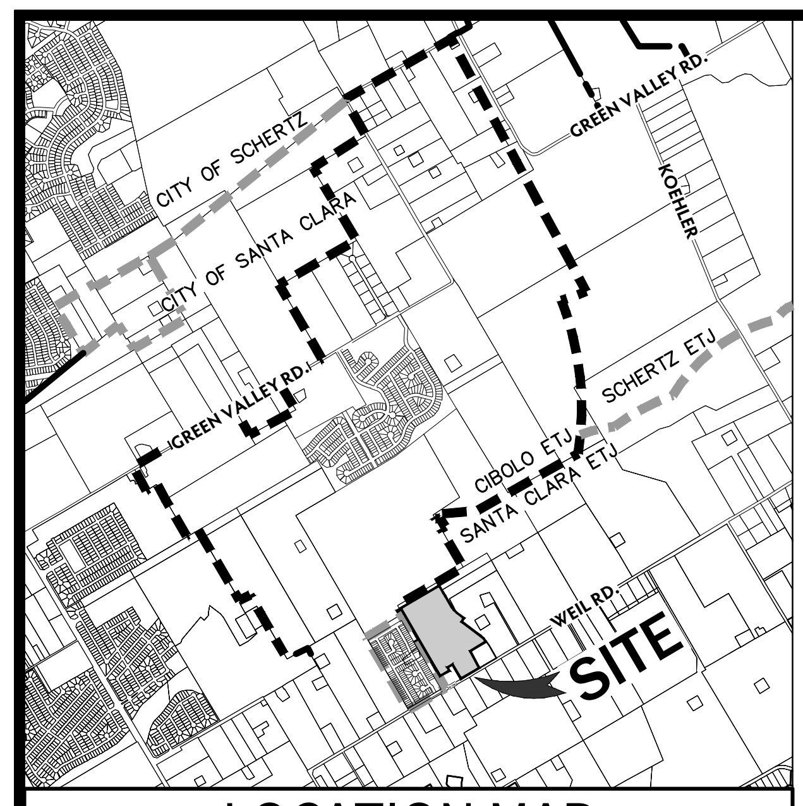
P:\03346\10112-DWG\4-Plans\C7.01_STPP COY LANE.dwg 2025/04/03 4:32pm rbarrera


GREEN VALLEY RD.
KOEHLER
CITY OF SCHERTZ
CITY OF SANTA CLARA
GREEN VALLEY RD.
SCHERTZ ETJ
CIBOLO ETJ
SANTA CLARA ETJ
WEIL RD.
SITE

LOCATION MAP
N.T.S.

KEYNOTES

① 20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

② 10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

CACTUS CANYON KNUCKLE	
POINT	TOP OF CURB ELEVATION
1	821.10
2	820.20
3	819.31
4	818.81
5	819.12
6	819.61
7	820.09
8	820.20

SCALE: 1"=50'
50 25 0 50

OWNER/DEVELOPER:

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

CIVIL ENGINEER:

CUDE ENGINEERS
CONTACT PERSON: KYLE HUDEK, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112

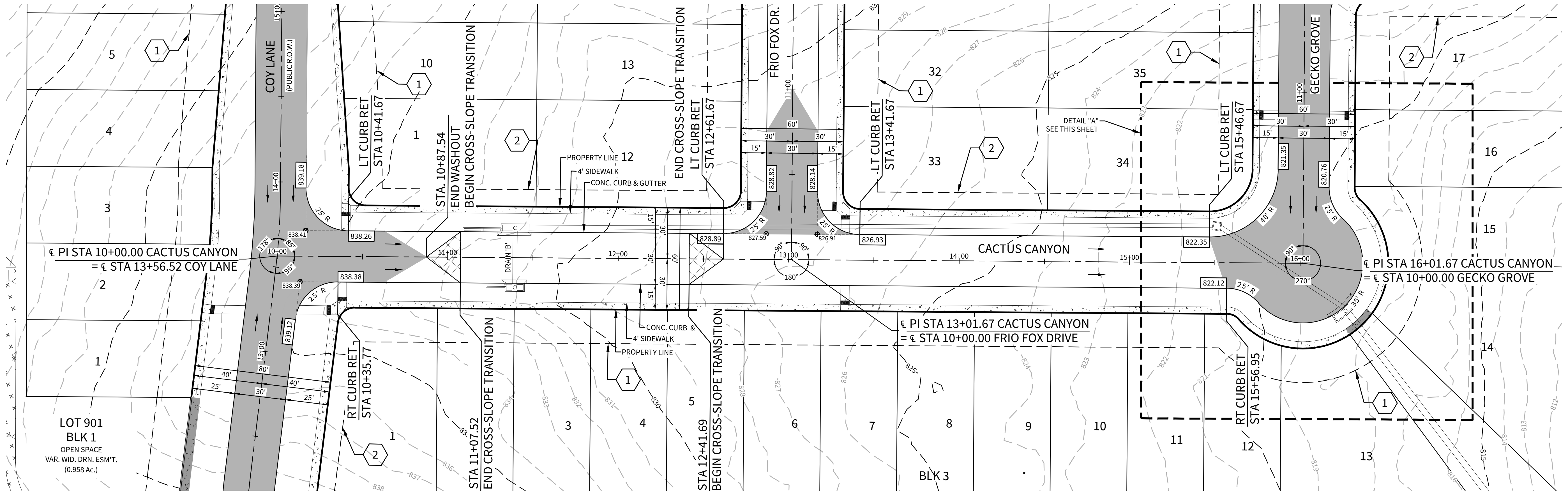
LEGEND

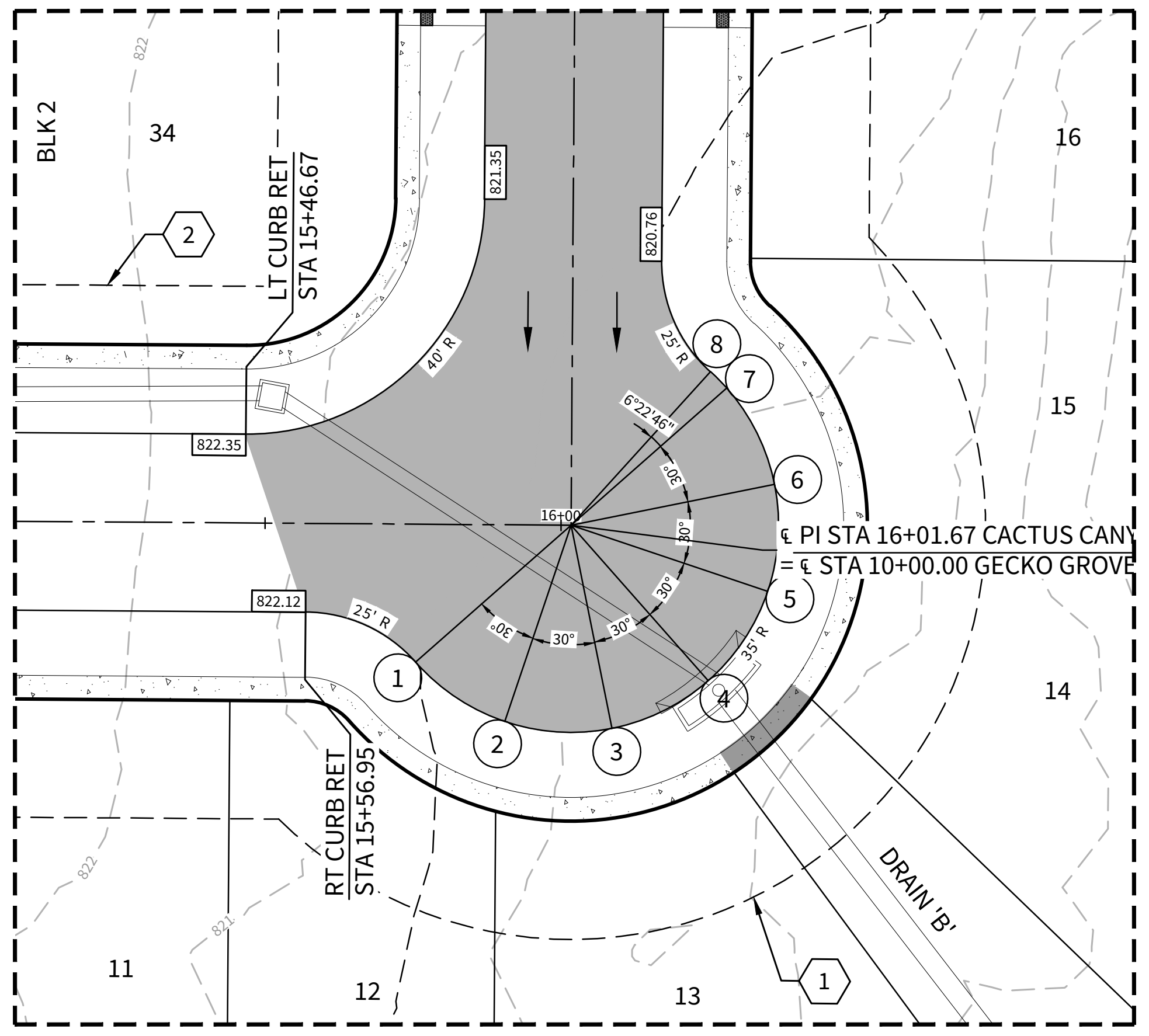
▨	- SIDEWALK CONSTRUCTED WITH INFRASTRUCTURE
■	- STREET WASHOUT (SEE DETAIL SHEET C7.D1)
—·—·—	- STREET CENTERLINE
— — —	- EXISTING CONTOURS
⊕ XXX.XX	- TOP OF CURB SPOT ELEVATION
▨	- DRIVEWAY
XXX.XX	- PAVEMENT ELEVATION

TxDOT TYPE "2" WHEEL CHAIR RAMPS ARE INDICATED
THUS " ▬ " UNLESS OTHERWISE NOTED.
(SEE DETAIL SHEET C7.D1) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS

TxDOT THUS " ⌐ " TYPE "10" WHEEL CHAIR RAMPS ARE INDICATED UNLESS OTHERWISE NOTED.
(SEE DETAIL SHEET C7.D1) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS

(SEE DETAIL SHEET C7.D1) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS .
DETECTABLE WARNING PAVER WITH TRUNCATED DOMES ONLY.


COY LANE
FRIO FOX DR.
GECKO GROVE
CACTUS CANYON
℄ PI STA 10+00.00 CACTUS CANYON = ℄ STA 13+56.52 COY LANE
℄ PI STA 13+01.67 CACTUS CANYON = ℄ STA 10+00.00 FRIO FOX DRIVE
℄ PI STA 16+01.67 CACTUS CANYON = ℄ STA 10+00.00 GECKO GROVE
LT CURB RET STA 10+41.67
RT CURB RET STA 10+35.77
STA. 10+87.54 END WASHOUT BEGIN CROSS-SLOPE TRANSITION
STA 11+07.52 END CROSS-SLOPE TRANSITION
END CROSS-SLOPE TRANSITION LT CURB RET STA 12+61.67
STA 12+41.69 BEGIN CROSS-SLOPE TRANSITION
LT CURB RET STA 13+41.67
LT CURB RET STA 15+46.67
RT CURB RET STA 15+56.95
PROPERTY LINE
4' SIDEWALK
CONC. CURB & GUTTER
DETAIL "A" SEE THIS SHEET
LOT 901 BLK 1 OPEN SPACE VAR. WID. DRN. ESM'T. (0.958 Ac.)
BLK 3
838.26
838.38
828.89
826.93
822.35
822.12

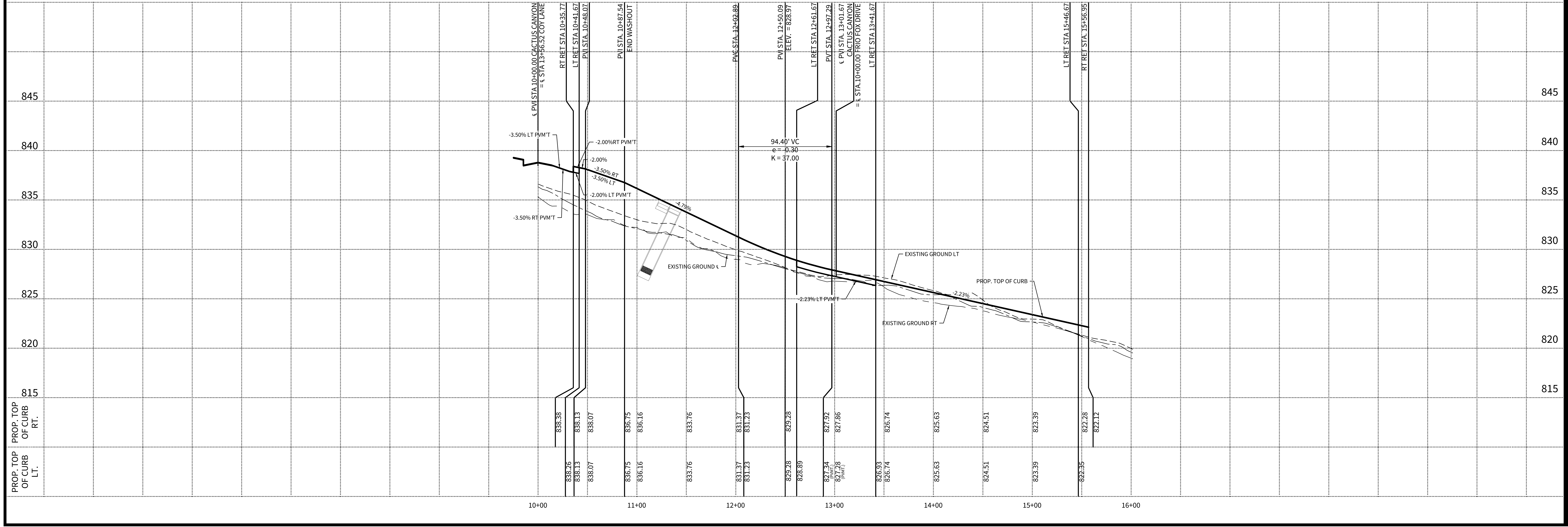

BLK 2
LT CURB RET STA 15+46.67
RT CURB RET STA 15+56.95
℄ PI STA 16+01.67 CACTUS CANYON = ℄ STA 10+00.00 GECKO GROVE
DRAIN 'B'
822.35
822.12
821.35

DETAIL "A"
SCALE: 1" = 30'

CACTUS CANYON

STA. 10+00.00 TO STA. 16+01.67

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



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CUDE ENGINEERS EST. 1980

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

GOERKE SUBDIVISION PHASE 1

STREET PLAN & PROFILE - CACTUS CANYON

DATE
01/26/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

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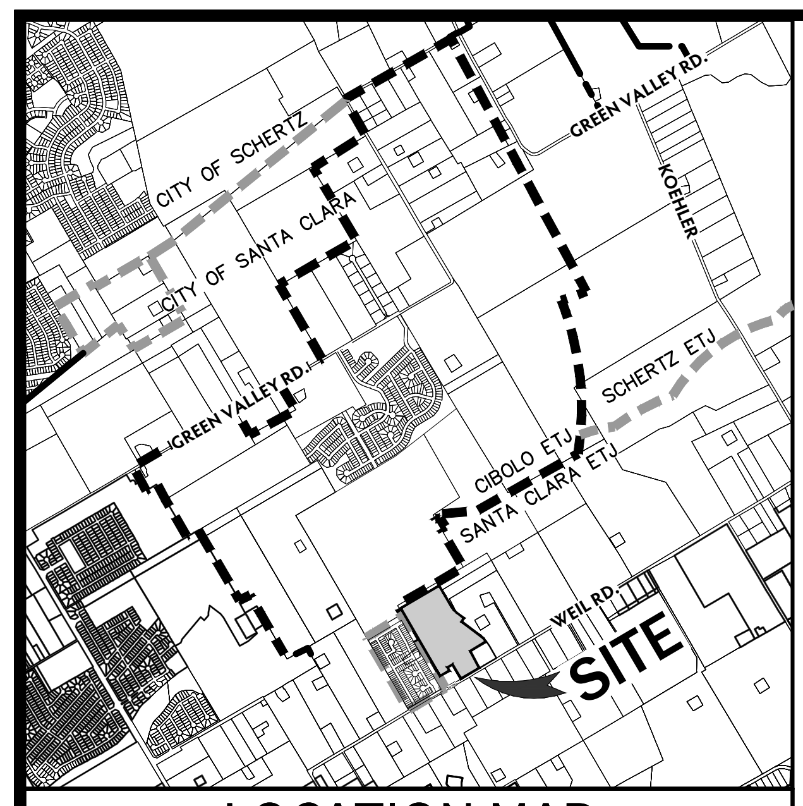
3.
4.
5.
6.
7.
8.
9.

KYLE M. HUDEK
138753
01/27/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C7.02

P:\03346\101\2-DWG\4-Plans\C7.00_STPP CACTUS CANYON.dwg 2025/01/26 2:15pm rbarrera


CITY OF SCHERTZ
CITY OF SANTA CLARA
GREEN VALLEY RD.
KOEHLER
SCHERTZ ETJ
CIBOLO ETJ
SANTA CLARA ETJ
WEIL RD.
SITE

LOCATION MAP
N.T.S.

KEYNOTES

1. 20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE
2. 10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

OWNER/DEVELOPER:

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

CIVIL ENGINEER:

CUDE ENGINEERS
CONTACT PERSON: KYLE HUDEK, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112

LEGEND

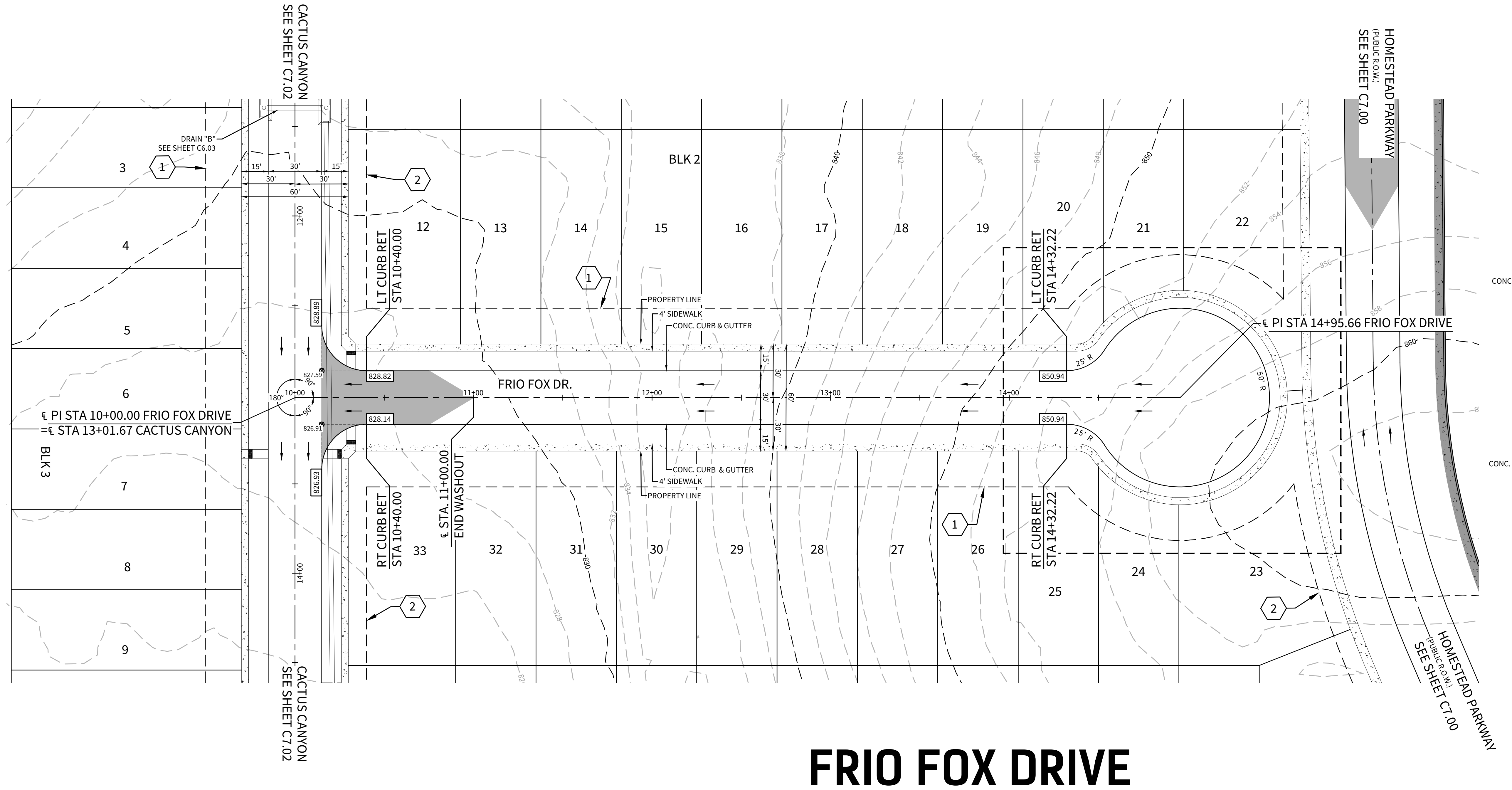
▨	SIDEWALK CONSTRUCTED WITH INFRASTRUCTURE
▨	STREET WASHOUT (SEE DETAIL SHEET C7.D1)
—·—·—	STREET CENTERLINE
— — —	EXISTING CONTOURS
⊕XXX.XX	TOP OF CURB SPOT ELEVATION
▨	DRIVEWAY
XXX.XX	PAVEMENT ELEVATION

TxDOT TYPE "2" WHEEL CHAIR RAMPS ARE INDICATED THUS " ▬ " UNLESS OTHERWISE NOTED.
(SEE DETAIL SHEET C7.D1) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS

TxDOT TYPE "10" WHEEL CHAIR RAMPS ARE INDICATED THUS " ▬ " UNLESS OTHERWISE NOTED.
(SEE DETAIL SHEET C7.D1) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS

(SEE DETAIL SHEET C7.D1) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS .
DETECTABLE WARNING PAVER WITH TRUNCATED DOMES ONLY.

SCALE: 1"=50'
50 25 0 50


CACTUS CANYON SEE SHEET C7.02
HOMESTEAD PARKWAY (PUBLIC R.O.W.) SEE SHEET C7.00
DRAIN "B" SEE SHEET C6.03
BLK 2
BLK 3
FRIO FOX DR.
LT CURB RET STA 10+40.00
RT CURB RET STA 10+40.00
LT CURB RET STA 14+32.22
RT CURB RET STA 14+32.22
℄ STA. 11+00.00 END WASHOUT
℄ PI STA 10+00.00 FRIO FOX DRIVE = ℄ STA 13+01.67 CACTUS CANYON
℄ PI STA 14+95.66 FRIO FOX DRIVE
PROPERTY LINE
4' SIDEWALK
CONC. CURB & GUTTER
828.82
828.14
850.94
10+00
11+00
12+00
13+00
14+00
3
4
5
6
7
8
9
12
13
14
15
16
17
18
19
20
21
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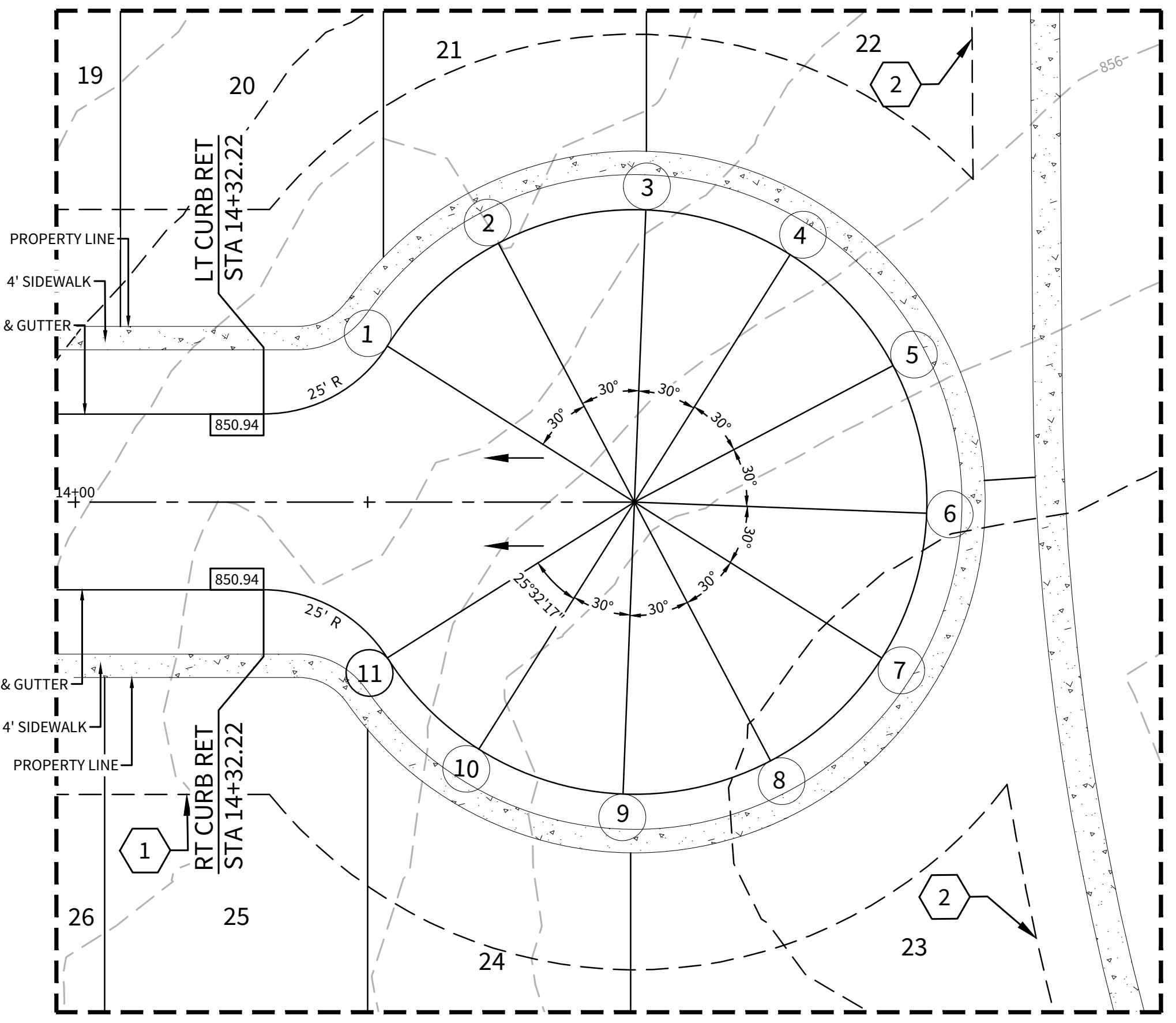
31
32
33

FRIO FOX DRIVE

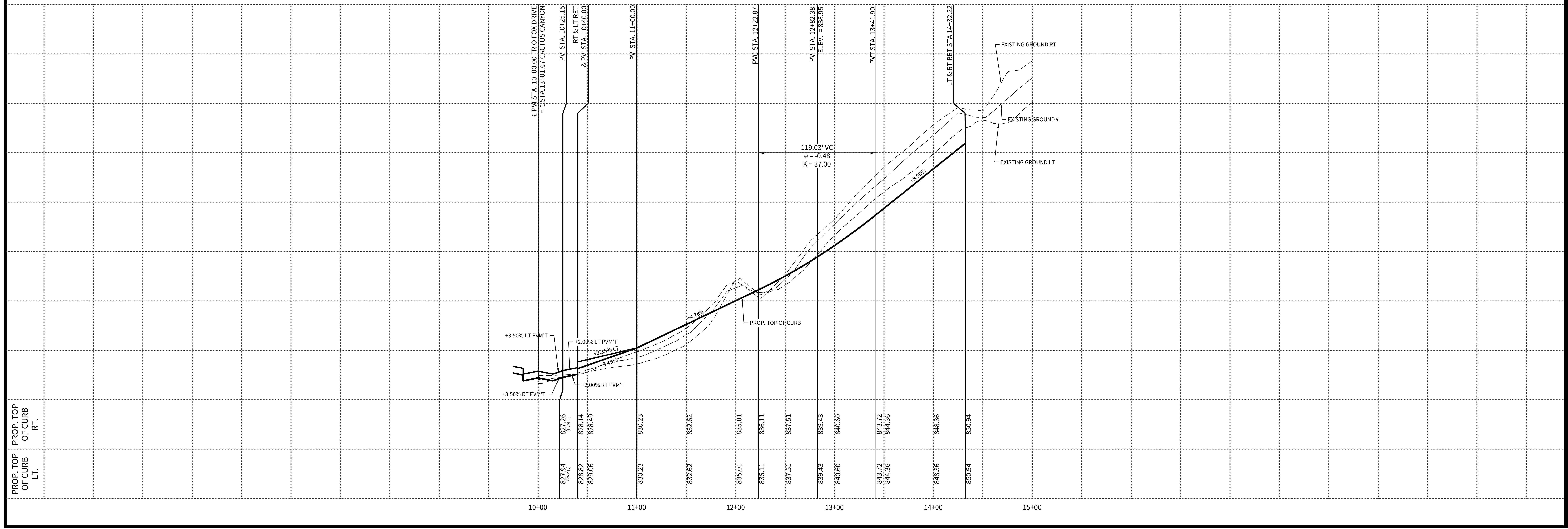
STA. 10+00.00 TO STA. 14+95.66


19
20
21
22
23
24
25
26
PROPERTY LINE
4' SIDEWALK
CONC. CURB & GUTTER
LT CURB RET STA 14+32.22
RT CURB RET STA 14+32.22
850.94
25' R
50' R
30°
1
2
3
4
5
6
7
8
9
10
11

DETAIL "B"
SCALE: 1" = 30'

FRIO FOX DRIVE CDS	
POINT	TOP OF CURB ELEVATION
1	852.54
2	854.12
3	855.35
4	856.22
5	856.74
6	856.89
7	856.70
8	856.10
9	855.17
10	853.88
11	852.52

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


℄ PVI STA. 10+00.00 FRIO FOX DRIVE = ℄ STA.13+01.67 CACTUS CANYON
PVI STA. 10+25.15
RT & LT RET & PVI STA. 10+40.00
PVI STA. 11+00.00
PVC STA. 12+22.87
PVI STA. 12+82.38 ELEV. = 838.95
PVT STA. 13+41.90
LT & RT RET STA 14+32.22
119.03' VC
e = -0.48
K = 37.00
EXISTING GROUND RT
EXISTING GROUND ℄
EXISTING GROUND LT
PROP. TOP OF CURB
+3.50% LT PVM'T
+3.50% RT PVM'T
+2.00% LT PVM'T
+2.00% RT PVM'T
+2.35% LT
+3.4%
+4.78%
+8.00%
10+00
11+00
12+00
13+00
14+00
15+00

PROP. TOP OF CURB RT.	827.26 (PVM'T)	828.14	828.49	830.23	832.62	835.01	836.11	837.51	839.43	840.60	843.72	844.36	848.36	850.94
PROP. TOP OF CURB LT.	827.94 (PVM'T)	828.82	829.06	830.23	832.62	835.01	836.11	837.51	839.43	840.60	843.72	844.36	848.36	850.94

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

GOERKE SUBDIVISION PHASE 1

STREET PLAN & PROFILE - FRIO FOX DRIVE

DATE
01/23/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
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9.

KYLE M. HUDEK
138753
01/27/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C7.03

P:\03346\101\2-DWG\4-Plans\C7.02_STPP FRIO FOX DRIVE.dwg 2025/01/23 11:13pm rbarrera

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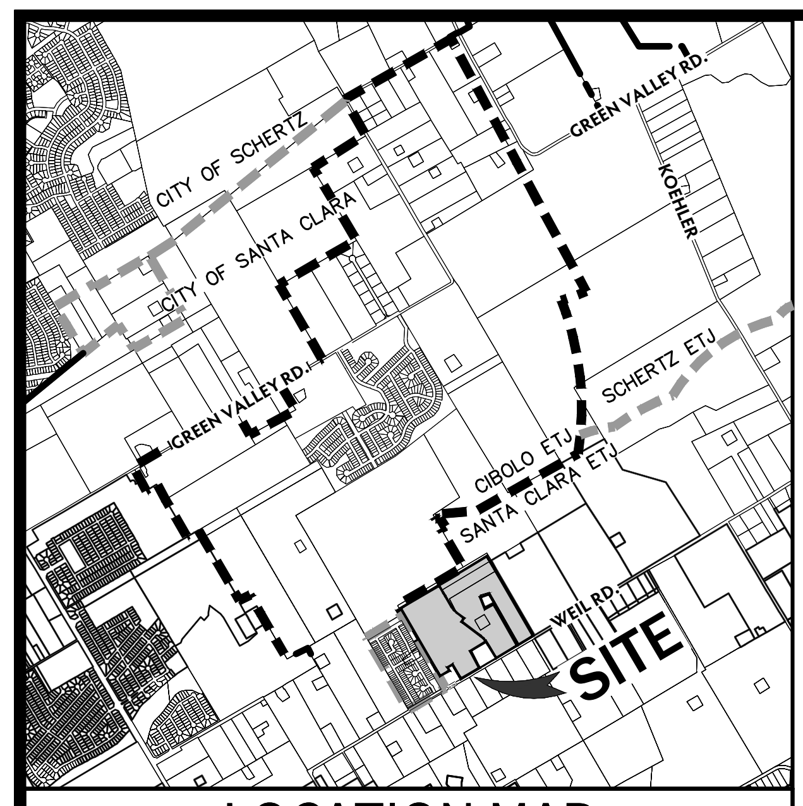

CITY OF SCHERTZ
CITY OF SANTA CLARA
GREEN VALLEY RD.
KOEHLER
SCHERTZ ETJ
CIBOLO ETJ
SANTA CLARA ETJ
WEIL RD.
SITE

LOCATION MAP

N.T.S.

OWNER/DEVELOPER:

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

CIVIL ENGINEER:

CUDE ENGINEERS
CONTACT PERSON: KYLE HUDEK, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112

LEGEND

▨	- SIDEWALK CONSTRUCTED WITH INFRASTRUCTURE
▨	- STREET WASHOUT (SEE DETAIL SHEET C7.D1)
—·—·—	- STREET CENTERLINE
— — —	- EXISTING CONTOURS
⊕XXX.XX	- TOP OF CURB SPOT ELEVATION
▨	- DRIVEWAY
XXX.XX	- PAVEMENT ELEVATION

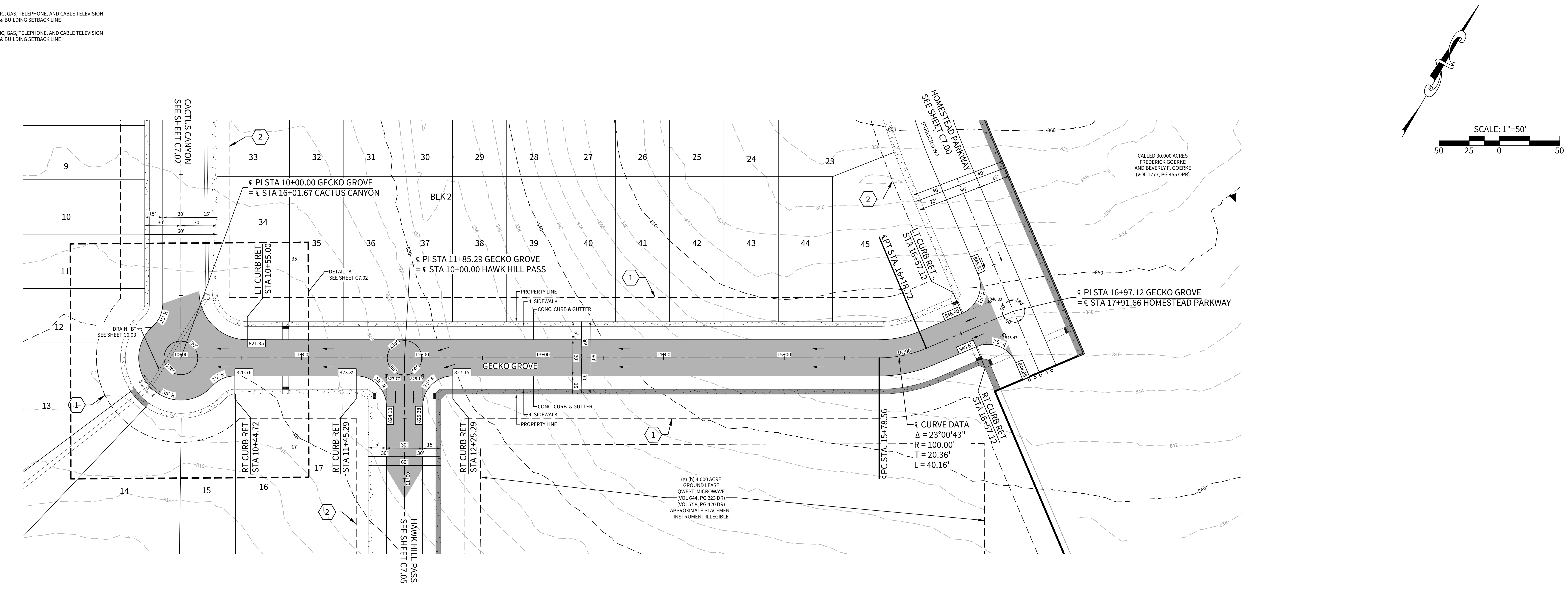
TxDOT TYPE "2" WHEEL CHAIR RAMPS ARE INDICATED
THUS " ▭ " UNLESS OTHERWISE NOTED.
(SEE DETAIL SHEET C7.D1) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS

TxDOT TYPE "10" WHEEL CHAIR RAMPS ARE INDICATED
THUS " ⌐ " UNLESS OTHERWISE NOTED.
(SEE DETAIL SHEET C7.D1) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS

(SEE DETAIL SHEET C7.D1) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS .
DETECTABLE WARNING PAVER WITH TRUNCATED DOMES ONLY.

KEYNOTES

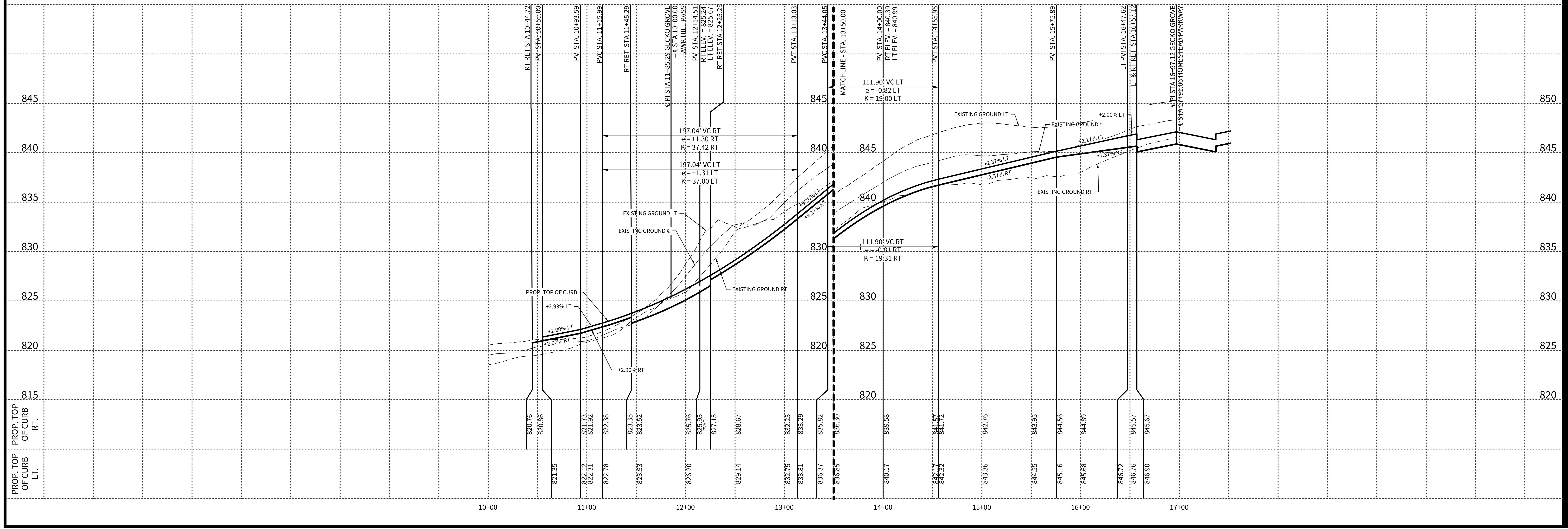
1. 20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE
2. 10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE


CACTUS CANYON
SEE SHEET C7.02
HOMESTEAD PARKWAY
SEE SHEET C7.00
HAWK HILL PASS
SEE SHEET C7.05
℄ PI STA 10+00.00 GECKO GROVE
= ℄ STA 16+01.67 CACTUS CANYON
BLK 2
℄ PI STA 11+85.29 GECKO GROVE
= ℄ STA 10+00.00 HAWK HILL PASS
℄ PI STA 16+97.12 GECKO GROVE
= ℄ STA 17+91.66 HOMESTEAD PARKWAY
LT CURB RET
STA 10+55.00
RT CURB RET
STA 10+44.72
RT CURB RET
STA 11+45.29
RT CURB RET
STA 12+25.29
LPT STA 16+18.72
LT CURB RET
STA 16+57.12
RT CURB RET
STA 16+57.12
PC STA 15+78.56
℄ CURVE DATA
Δ = 23°00'43"
R = 100.00'
T = 20.36'
L = 40.16'
GECKO GROVE
DETAIL "A"
SEE SHEET C7.02
DRAIN "B"
SEE SHEET C6.03
PROPERTY LINE
4' SIDEWALK
CONC. CURB & GUTTER
CALLED 30.000 ACRES
FREDERICK GOERKE
AND BEVERLY F. GOERKE
(VOL 1777, PG 455 OPR)
(g) (h) 4.000 ACRE
GROUND LEASE
QWEST MICROWAVE
(VOL 644, PG 223 DR)
(VOL 758, PG 420 DR)
APPROXIMATE PLACEMENT
INSTRUMENT ILLEGIBLE
SCALE: 1"=50'
50 25 0 50

GECKO GROVE

STA. 10+00.00 TO STA. 16+97.12

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


RT RET STA 10+44.72
PVI STA 10+55.00
PVI STA 10+93.59
PVI STA 11+15.99
RT RET STA 11+45.29
℄ PI STA 11+85.29 GECKO GROVE
= ℄ STA 10+00.00 HAWK HILL PASS
RT PVI STA 12+14.51
RT ELEV. = 825.67
LT ELEV. = 825.67
RT RET STA 12+25.29
PVI STA 13+13.03
PVC STA 13+44.05
MATCHLINE - STA. 13+50.00
PVI STA 14+00.00
RT ELEV. = 840.39
LT ELEV. = 840.39
PVI STA 14+55.95
PVI STA 15+75.89
LT PVI STA 16+47.62
LT & RT RET STA 16+57.12
℄ PI STA 16+97.12 GECKO GROVE
= ℄ STA 17+91.66 HOMESTEAD PARKWAY
197.04' VC RT
e = +1.30 RT
K = 37.42 RT
197.04' VC LT
e = +1.31 LT
K = 37.00 LT
111.90' VC LT
e = -0.82 LT
K = 19.00 LT
111.90' VC RT
e = -0.81 RT
K = 19.31 RT
EXISTING GROUND LT
EXISTING GROUND ℄
EXISTING GROUND RT
PROP. TOP OF CURB
+2.93% LT
+2.00% LT
+2.00% RT
+2.90% RT
+8.76% LT
+8.17% RT
+2.37% LT
+2.37% RT
+2.17% LT
+1.37% RT
+2.00% LT
845
840
835
830
825
820
815
850
845
840
835
830
825
820
PROP. TOP OF CURB RT.
820.76
820.86
821.73
821.92
822.38
823.35
823.52
825.76
825.95
827.15
828.67
832.25
833.29
835.82
836.30
839.58
841.57
841.72
842.76
843.95
844.56
844.89
845.57
845.67
PROP. TOP OF CURB LT.
821.35
822.12
822.31
822.78
823.93
826.20
829.14
832.75
833.81
836.37
836.85
840.17
842.17
842.32
843.36
844.55
845.16
845.68
846.72
846.76
846.90
10+00
11+00
12+00
13+00
14+00
15+00
16+00
17+00

CUDEENGINEERS.COM

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ENGINEERS

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

GOERKE SUBDIVISION PHASE 1

STREET PLAN & PROFILE -
GECKO GROVE

DATE
01/23/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS

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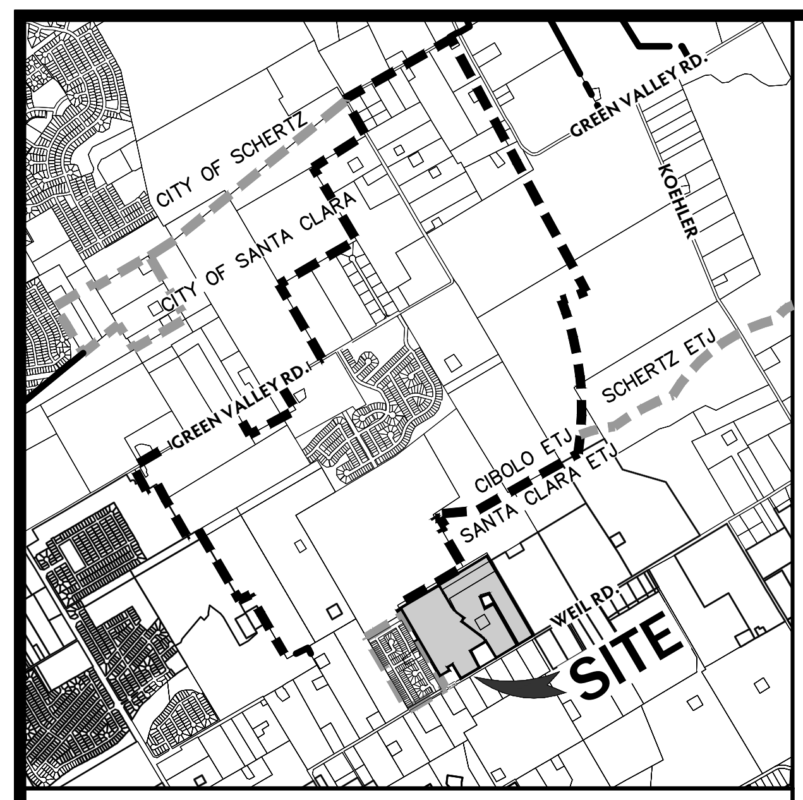
KYLE M. HUDEK
138753
01/27/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C7.04

P:\03346\101\2-DWG\4-Plans\C7.03_STPP GECKO GROVE.dwg 2025/01/23 11:29pm rbarrera


CITY OF SCHERTZ
CITY OF SANTA CLARA
GREEN VALLEY RD.
SCHERTZ ETJ
CIBOLO ETJ
SANTA CLARA ETJ
SITE

LOCATION MAP

N.T.S.

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4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112

LEGEND

▨	SIDEWALK CONSTRUCTED WITH INFRASTRUCTURE
■	STREET WASHOUT (SEE DETAIL SHEET C7.D1)
—·—·—	STREET CENTERLINE
— — —	EXISTING CONTOURS
⊕ XXX.XX	TOP OF CURB SPOT ELEVATION
▨	DRIVEWAY
XXX.XX	PAVEMENT ELEVATION

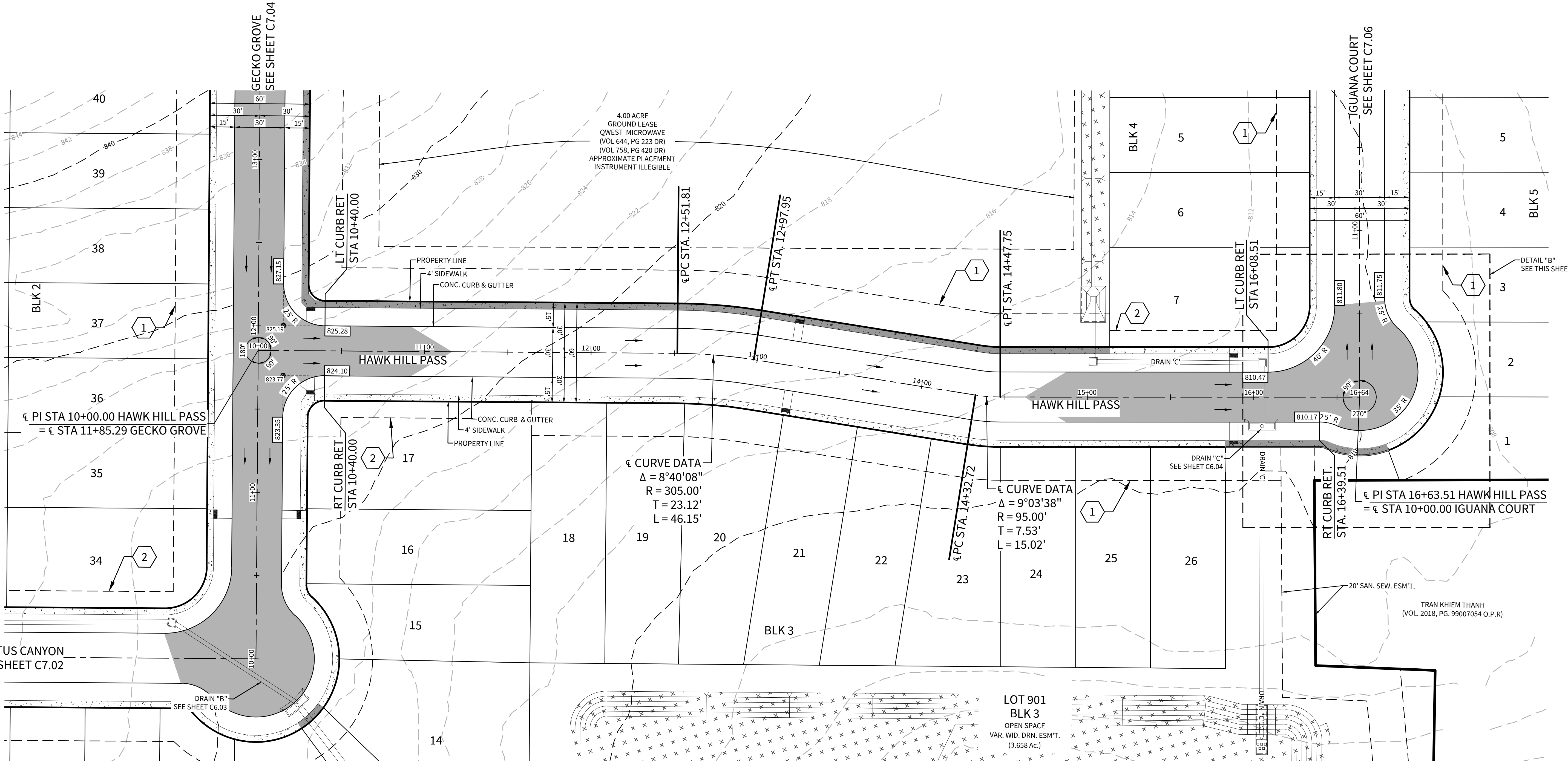
TxDOT TYPE "2" WHEEL CHAIR RAMPS ARE INDICATED
THUS " ▭ " UNLESS OTHERWISE NOTED.
(SEE DETAIL SHEET C7.D1) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS

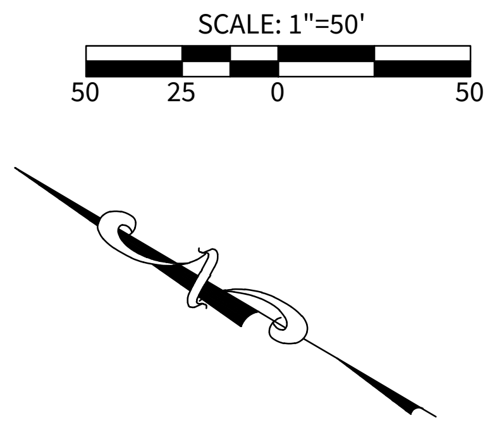
TxDOT TYPE "10" WHEEL CHAIR RAMPS ARE INDICATED
THUS " ⌐ " UNLESS OTHERWISE NOTED.
(SEE DETAIL SHEET C7.D1) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS

(SEE DETAIL SHEET C7.D1) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS .
DETECTABLE WARNING PAVER WITH TRUNCATED DOMES ONLY.

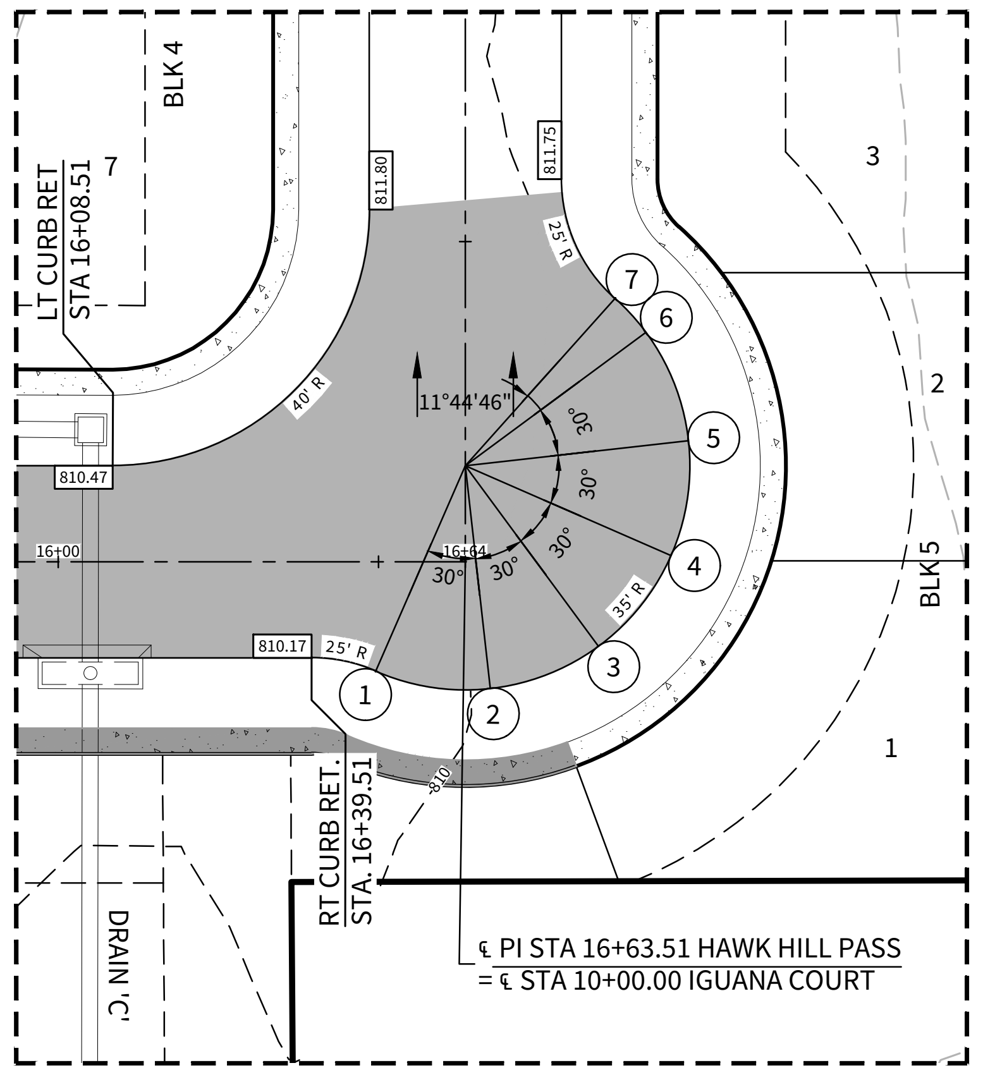
KEYNOTES

1. 20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE
2. 10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE


GECKO GROVE
SEE SHEET C7.04
IGUANA COURT
SEE SHEET C7.06
HAWK HILL PASS
LT CURB RET
STA 10+40.00
RT CURB RET
STA 10+40.00
PROPERTY LINE
4' SIDEWALK
CONC. CURB & GUTTER
℄ PI STA 10+00.00 HAWK HILL PASS
= ℄ STA 11+85.29 GECKO GROVE
4.00 ACRE
GROUND LEASE
QWEST MICROWAVE
(VOL 644, PG 223 DR)
(VOL 758, PG 420 DR)
APPROXIMATE PLACEMENT
INSTRUMENT ILLEGIBLE
℄ PC STA. 12+51.81
℄ PT STA. 12+97.95
℄ PT STA. 14+47.75
℄ PC STA. 14+32.72
℄ CURVE DATA
Δ = 8°40'08"
R = 305.00'
T = 23.12'
L = 46.15'
℄ CURVE DATA
Δ = 9°03'38"
R = 95.00'
T = 7.53'
L = 15.02'
LT CURB RET
STA 16+08.51
RT CURB RET.
STA. 16+39.51
℄ PI STA 16+63.51 HAWK HILL PASS
= ℄ STA 10+00.00 IGUANA COURT
DETAIL "B"
SEE THIS SHEET
DRAIN 'C'
DRAIN "C"
SEE SHEET C6.04
DRAIN "B"
SEE SHEET C6.03
20' SAN. SEW. ESM'T.
TRAN KHIEM THANH
(VOL. 2018, PG. 99007054 O.P.R)
CACTUS CANYON
SEE SHEET C7.02
LOT 901
BLK 3
OPEN SPACE
VAR. WID. DRN. ESM'T.
(3.658 Ac.)
BLK 2
BLK 3
BLK 4
BLK 5
810.47
810.17
811.80
811.75
825.28
824.10


SCALE: 1"=50'
50
25
0
50

CACTUS CANYON KNUCKLE	
POINT	TOP OF CURB ELEVATION
1	810.49
2	811.07
3	811.56
4	811.88
5	812.01
6	811.98
7	811.92

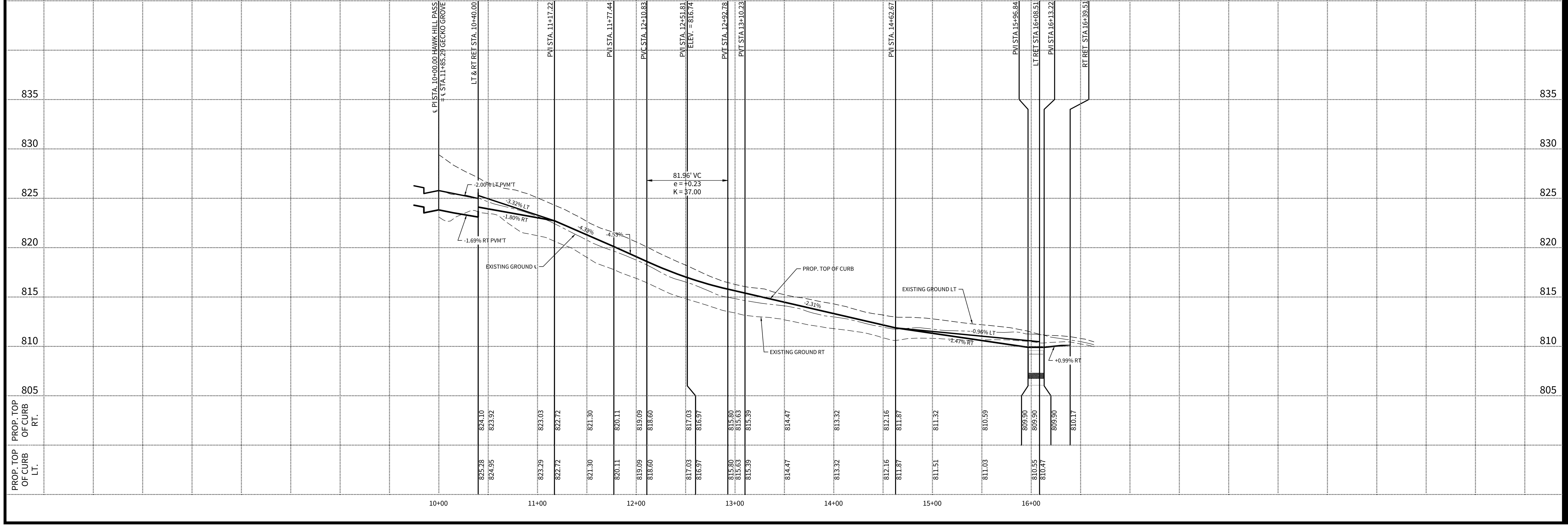

LT CURB RET
STA 16+08.51
RT CURB RET.
STA. 16+39.51
℄ PI STA 16+63.51 HAWK HILL PASS
= ℄ STA 10+00.00 IGUANA COURT
DRAIN 'C'
BLK 4
BLK 5
810.47
810.17
11°44'46"
30°
1
2
3
4
5
6
7

DETAIL "B"
SCALE: 1" = 30'

HAWK HILL PASS

STA. 10+00.00 TO STA. 16+63.51

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



CUDEENGINEERS.COM

CUDE
EST. 1980
ENGINEERS

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

GOERKE SUBDIVISION PHASE 1

STREET PLAN & PROFILE -
HAWK HILL PASS

DATE
01/23/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS

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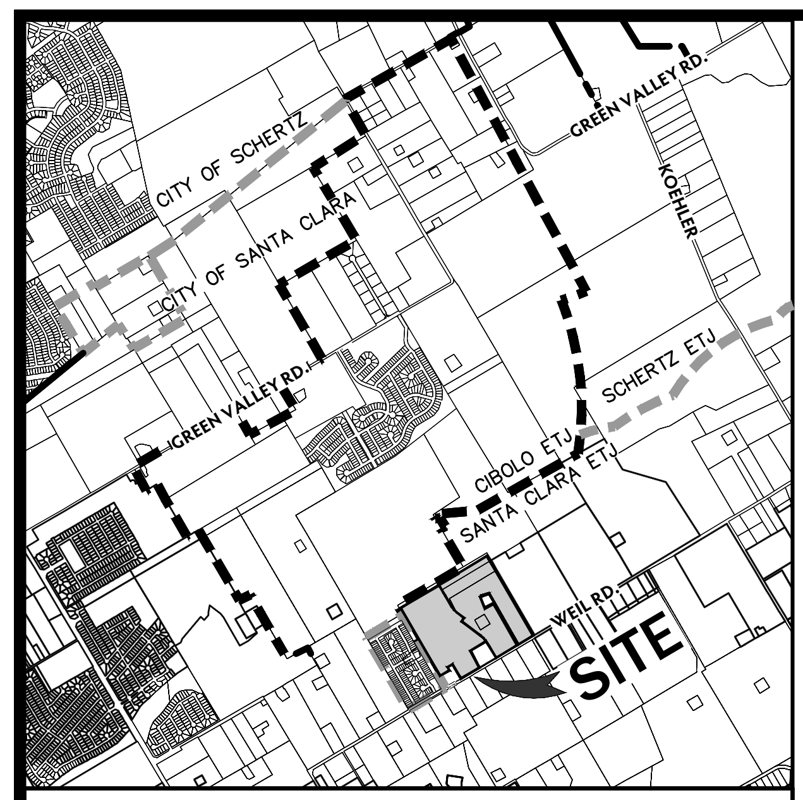
9.

KYLE M. HUDEK
138753
01/27/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C7.05

P:\03346\101\2-DWG\4-Plans\C7.04_STPP HAWK HILL PASS.dwg 2025/01/23 11:38pm rbarrera



CITY OF SCHERTZ
CITY OF SANTA CLARA
GREEN VALLEY RD.
KOHLER
SCHERTZ ETJ
CIBOLO ETJ
SANTA CLARA ETJ
SITE

LOCATION MAP
N.T.S.

OWNER/DEVELOPER:

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

CIVIL ENGINEER:

CUDE ENGINEERS
CONTACT PERSON: KYLE HUDEK, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112

LEGEND

▨	SIDEWALK CONSTRUCTED WITH INFRASTRUCTURE
■	STREET WASHOUT (SEE DETAIL SHEET C7.D1)
—·—·—	STREET CENTERLINE
— — —	EXISTING CONTOURS
⊕ XXX.XX	TOP OF CURB SPOT ELEVATION
▨	DRIVEWAY
XXX.XX	PAVEMENT ELEVATION

TxDOT TYPE "2" WHEEL CHAIR RAMPS ARE INDICATED
THUS " ▨ " UNLESS OTHERWISE NOTED.
(SEE DETAIL SHEET C7.D1) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS

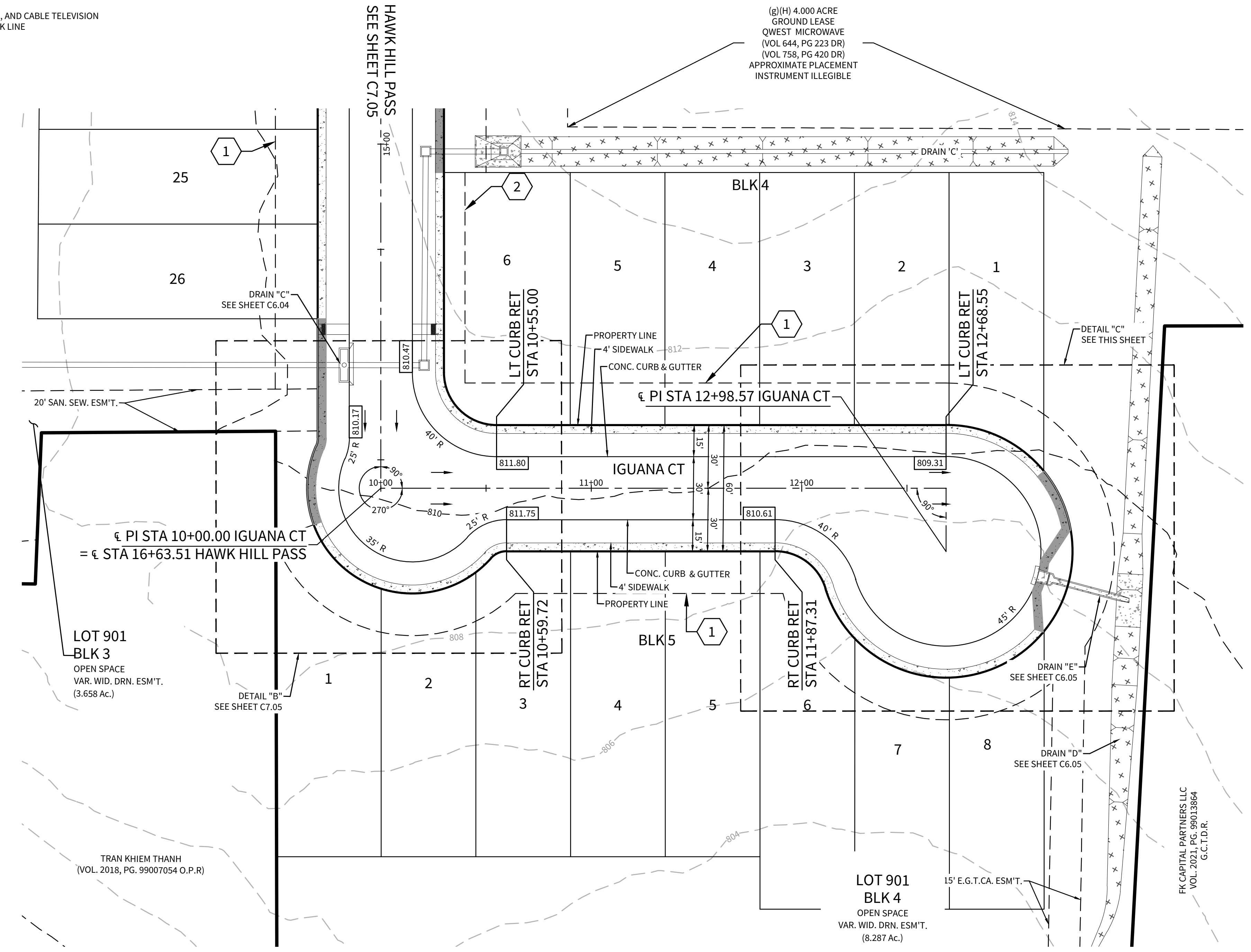
TxDOT TYPE "10" WHEEL CHAIR RAMPS ARE INDICATED
THUS " ▨ " UNLESS OTHERWISE NOTED.
(SEE DETAIL SHEET C7.D1) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS

(SEE DETAIL SHEET C7.D1) FOR ADA RAMPS AT SIDEWALK INTERSECTIONS .
DETECTABLE WARNING PAVER WITH TRUNCATED DOMES ONLY.

KEYNOTES

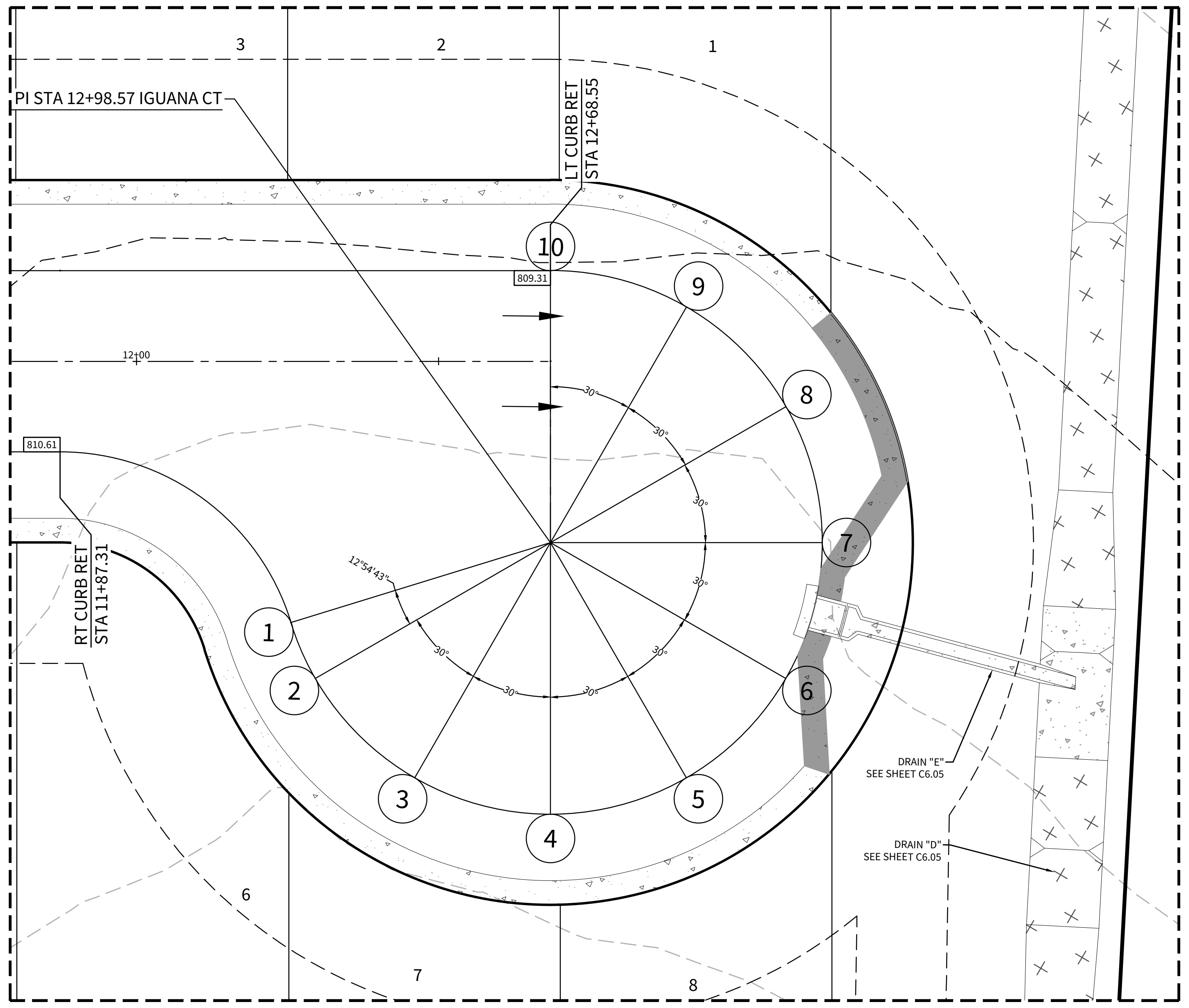
① 20' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE

② 10' ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION EASEMENT & BUILDING SETBACK LINE



HAWK HILL PASS
SEE SHEET C7.05
15+00
(g)(H) 4.000 ACRE
GROUND LEASE
QWEST MICROWAVE
(VOL 644, PG 223 DR)
(VOL 758, PG 420 DR)
APPROXIMATE PLACEMENT
INSTRUMENT ILLEGIBLE
DRAIN 'C'
BLK 4
25
26
6
5
4
3
2
1
DRAIN "C"
SEE SHEET C6.04
20' SAN. SEW. ESM'T.
810.47
810.17
LT CURB RET
STA 10+55.00
PROPERTY LINE
4' SIDEWALK
CONC. CURB & GUTTER
℄ PI STA 12+98.57 IGUANA CT
LT CURB RET
STA 12+68.55
DETAIL "C"
SEE THIS SHEET
811.80
IGUANA CT
10+00
11+00
12+00
90°
270°
25' R
40' R
35' R
45' R
15'
30'
60'
811.75
810.61
809.31
℄ PI STA 10+00.00 IGUANA CT
= ℄ STA 16+63.51 HAWK HILL PASS
CONC. CURB & GUTTER
4' SIDEWALK
PROPERTY LINE
BLK 5
RT CURB RET
STA 10+59.72
RT CURB RET
STA 11+87.31
LOT 901
BLK 3
OPEN SPACE
VAR. WID. DRN. ESM'T.
(3.658 Ac.)
DETAIL "B"
SEE SHEET C7.05
DRAIN "E"
SEE SHEET C6.05
DRAIN "D"
SEE SHEET C6.05
7
8
TRAN KHIEM THANH
(VOL. 2018, PG. 99007054 O.P.R)
LOT 901
BLK 4
OPEN SPACE
VAR. WID. DRN. ESM'T.
(8.287 Ac.)
15' E.G.T.CA. ESM'T.
FK CAPITAL PARTNERS LLC
VOL. 2021, PG. 99013864
G.C.T.D.R.
808
806
804
810
812
814

SCALE: 1"=50'
50 25 0 50



PI STA 12+98.57 IGUANA CT
LT CURB RET
STA 12+68.55
RT CURB RET
STA 11+87.31
809.31
810.61
12+00
1
2
3
4
5
6
7
8
9
10
DRAIN "E"
SEE SHEET C6.05
DRAIN "D"
SEE SHEET C6.05

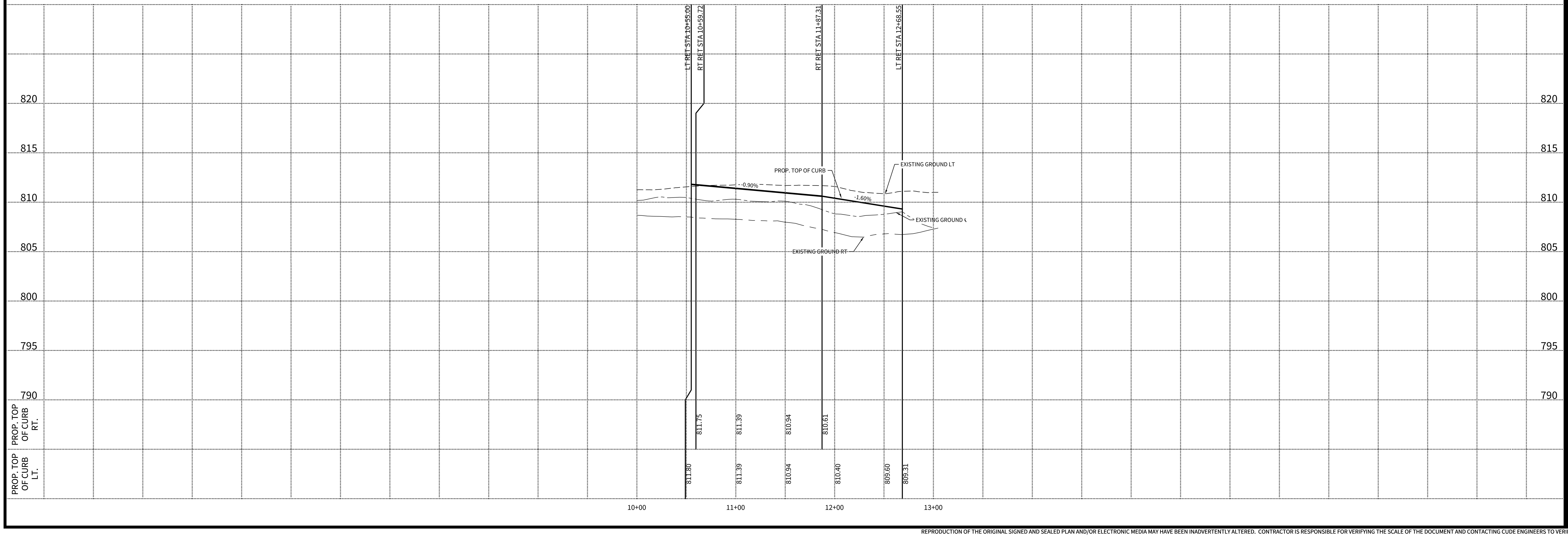
DETAIL "C"
SCALE: 1" = 20'

IGUANA CT CUL-DE-SAC	
POINT	TOP OF CURB ELEVATION
1	809.81
2	809.65
3	809.28
4	808.91
5	808.54
6	808.17
7	808.18
8	808.55
9	808.93
10	809.31

IGUANA COURT

STA. 10+00.00 TO STA. 13+04.00

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



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GOERKE SUBDIVISION PHASE 1

STREET PLAN & PROFILE -
IGUANA COURT

DATE
01/15/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
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9.

KYLE M. HUDEK
138753
01/27/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C7.06

STREET PAVEMENT DESIGN OPTIONS (TTL , INC. - 00240900938.00)

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

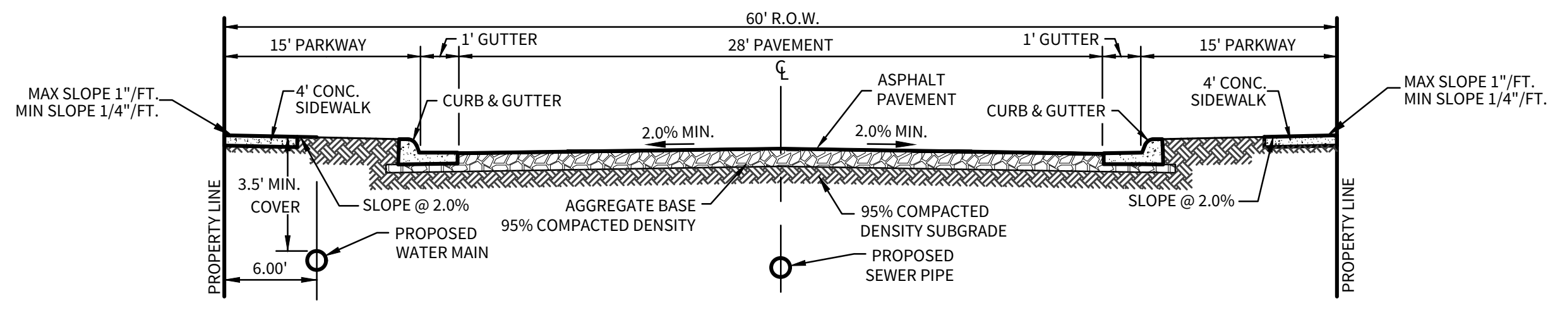
SUBGRADE NOTES (*):
- THE SUBGRADE WILL BE PROOF ROLLED TO IDENTIFY SOFT AREAS BEFORE STABILIZATION.
- THE SUBGRADE PLASTICITY INDEX VALUE IS EXPECTED TO BE GREATER THAN 20. SUBGRADE LIME STABILIZATION IS NEEDED.
- UNDERCUT SOFT, WEAK, AND UNSTABLE SOILS BY EXCAVATING BELOW SUBGRADE LEVEL TO EXPOSE STABLE SOILS. THE EXCAVATED SOIL CAN BE USED TO RESTORE THE EXCAVATION SUBGRADE, PROVIDED THAT THE SOILS ARE RELATIVELY FREE AND CLEAN OF DELETERIOUS MATERIAL AND MATERIALS EXCEEDING 3 INCHES IN MAXIMUM DIMENSION. THE EXCAVATED SOIL, OR IMPORTED FILL SOIL, SHALL BE PLACED IN MAXIMUM 6-INCH COMPACTED LIFTS. EACH LIFT OF SOIL SHALL BE MOISTURE CONDITIONED BETWEEN PLUS OR MINUS TWO (±2) PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT AND COMPACTED TO AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY DETERMINED IN ACCORDANCE WITH THE STANDARD COMPACTION EFFORT (ASTM D 698). IF UNDERCUTTING DEEPER THAN ABOUT 3 FEET IS NEEDED, CONTACT TTL, INC.
- SOIL SUBGRADE AREAS REQUIRING FILL PLACEMENT SHOULD BE SCARIFIED TO A DEPTH OF ABOUT EIGHT (8) INCHES AND MOISTURE CONDITIONED BETWEEN PLUS OR MINUS TWO (±2) POINTS OF THE OPTIMUM MOISTURE CONTENT. THE MOISTURE CONDITIONED SUBGRADE SHOULD THEN BE COMPACTED TO AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY DETERMINED IN ACCORDANCE WITH THE STANDARD COMPACTION EFFORT (ASTM D 6998). THE SUBGRADE SHOULD BE MOISTURE CONDITIONED JUST PRIOR TO FILL PLACEMENT SO THE SUBGRADE MAINTAINS ITS COMPACTION MOISTURE LEVELS AND DOES NOT DRY OUT.
- ON-SITE SOILS (GENERAL FILL), SELECT FILL OR GRANULAR FILL SOIL SHOULD BE PLACED TO ACHIEVE THE DESIRED ELEVATION.

GENERAL NOTES (**)
- INPUT PARAMETERS ARE SHOWN IN TABLE NO. 6. PLEASE CALL US TO PROVIDE PAVEMENT RECOMMENDATIONS, IF NEEDED, FOR DIFFERENT INPUT VALUES.
- IF REPETITIVE TRUCK OR HEAVY TRUCK TRAFFIC IS ANTICIPATED, PLEASE CONTACT US FOR REVISED PAVEMENT RECOMMENDATIONS.
- PAVEMENT SECTION RECOMMENDATIONS ARE BASED ON A CBR VALUE OF 2.0. THE PAVEMENT RECOMMENDATIONS PRESENTED ABOVE ARE NOT BASED ON THE SHRINK / SWELL CHARACTERISTICS OF THE UNDERLYING SOILS. IF WATER IS ALLOWED TO GET UNDERNEATH THE ASPHALT / CONCRETE OR IF MOISTURE CONTENT OF THE BASE OR SUBGRADE CHANGES SIGNIFICANTLY, THEN PAVEMENT DISTRESS WILL OCCUR. MOISTURE PENETRATION UNDERNEATH THE ASPHALT PAVEMENT SURFACE WILL BE REDUCED BY USING DEEPER CURBS; CURBS EXTENDING A MINIMUM OF 3 INCHES INTO BASE.

SUBGRADE VERIFICATION:
- AT THE TIME OF CONSTRUCTION, THE FINAL PAVEMENT SUBGRADE WILL BE OBSERVED AND VERIFIED BY A REPRESENTATIVE OF TTL, INC.

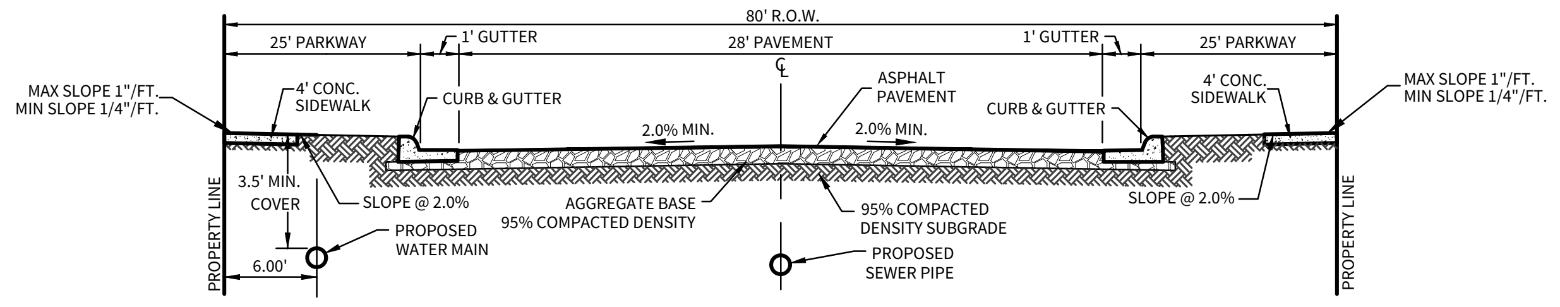
PRIME COAT:
- THE PRIME COAT SHOULD CONSIST OF SEALING THE BASE WITH AN OIL SUCH AS MC-30 OR AE-P ASPHALT CEMENT. THE PRIME COAT SHOULD BE APPLIED AT A RATE NOT TO EXCEED 0.35 GALLONS PER SQUARE YARD WITH MATERIALS WHICH MEET TXDOT ITEM 300. THE PRIME COAT WILL HELP TO MINIMIZE PENETRATION OF RAINFALL AND OTHER MOISTURE THAT PENETRATES THE BASE.

TACK COAT:
- THE ASPHALTIC MATERIAL USED FOR TACK COAT SHALL MEET THE REQUIREMENTS FOR “ASPHALT CEMENT”, “CUT-BACK ASPHALT” OR “EMULSIFIED ASPHALT” IN ITEM NO. 300, “ASPHALTS, OILS AND EMULSIONS” OF THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS. THE ASPHALTIC MATERIAL USED FOR TACK COAT SHALL BE THE TYPE OR GRADE SHOWN IN THE REFERRING SPECIFICATION, OR ON THE PLANS, OR AS DIRECTED/APPROVED BY THE ENGINEER.


60' R.O.W.
15' PARKWAY
1' GUTTER
28' PAVEMENT
1' GUTTER
15' PARKWAY
MAX SLOPE 1"/FT. MIN SLOPE 1/4"/FT.
4' CONC. SIDEWALK
CURB & GUTTER
ASPHALT PAVEMENT
2.0% MIN.
3.5' MIN. COVER
SLOPE @ 2.0%
AGGREGATE BASE
95% COMPACTED DENSITY
95% COMPACTED DENSITY SUBGRADE
PROPOSED WATER MAIN
PROPOSED SEWER PIPE
6.00'
PROPERTY LINE

MINOR ACCESS STREET CROSS-SECTION

N.T.S.

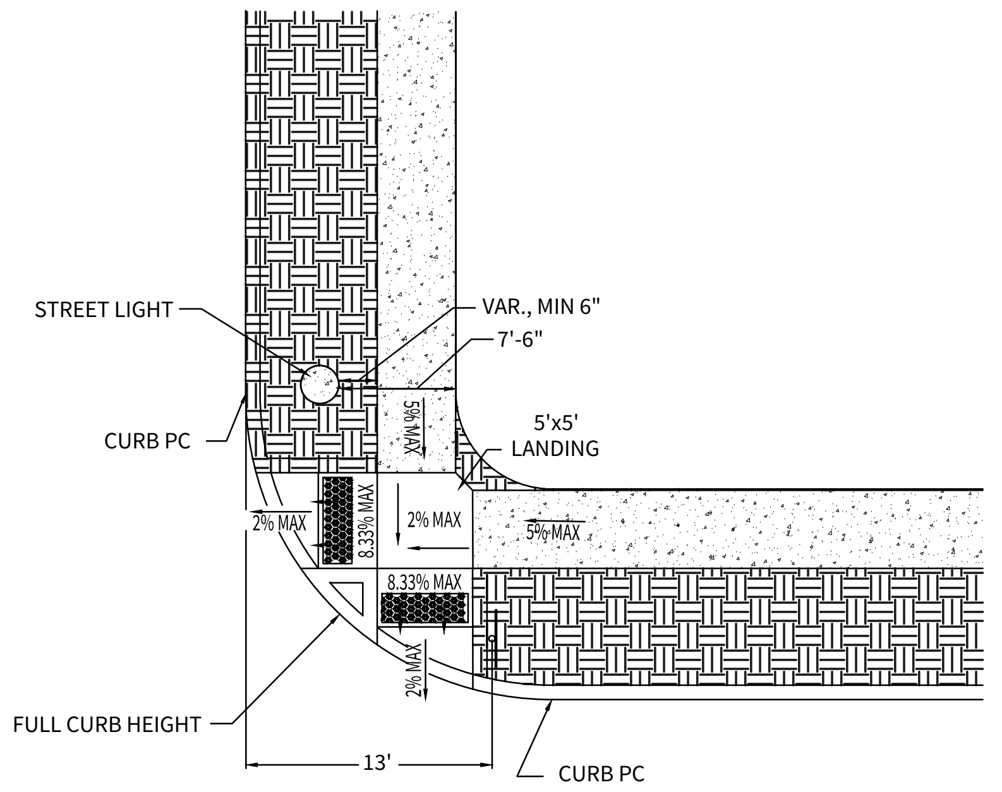

80' R.O.W.
25' PARKWAY
1' GUTTER
28' PAVEMENT
1' GUTTER
25' PARKWAY
MAX SLOPE 1"/FT. MIN SLOPE 1/4"/FT.
4' CONC. SIDEWALK
CURB & GUTTER
ASPHALT PAVEMENT
2.0% MIN.
3.5' MIN. COVER
SLOPE @ 2.0%
AGGREGATE BASE
95% COMPACTED DENSITY
95% COMPACTED DENSITY SUBGRADE
PROPOSED WATER MAIN
PROPOSED SEWER PIPE
6.00'
PROPERTY LINE

SECONDARY COLLECTOR STREET CROSS-SECTION

N.T.S.

STREET TYPE	HMAC TYPE "D"	FLEX BASE (TY A OR B GR 2)	LIME SUBGRADE	STRUCTURAL NUMBER
MINOR ACCESS	2.5"	15"	6" (54 LB/SY)	3.68
SECONDARY COLLECTOR	4.0"	19"	6" (54 LB/SY)	4.90

STREET PAVEMENT DESIGN

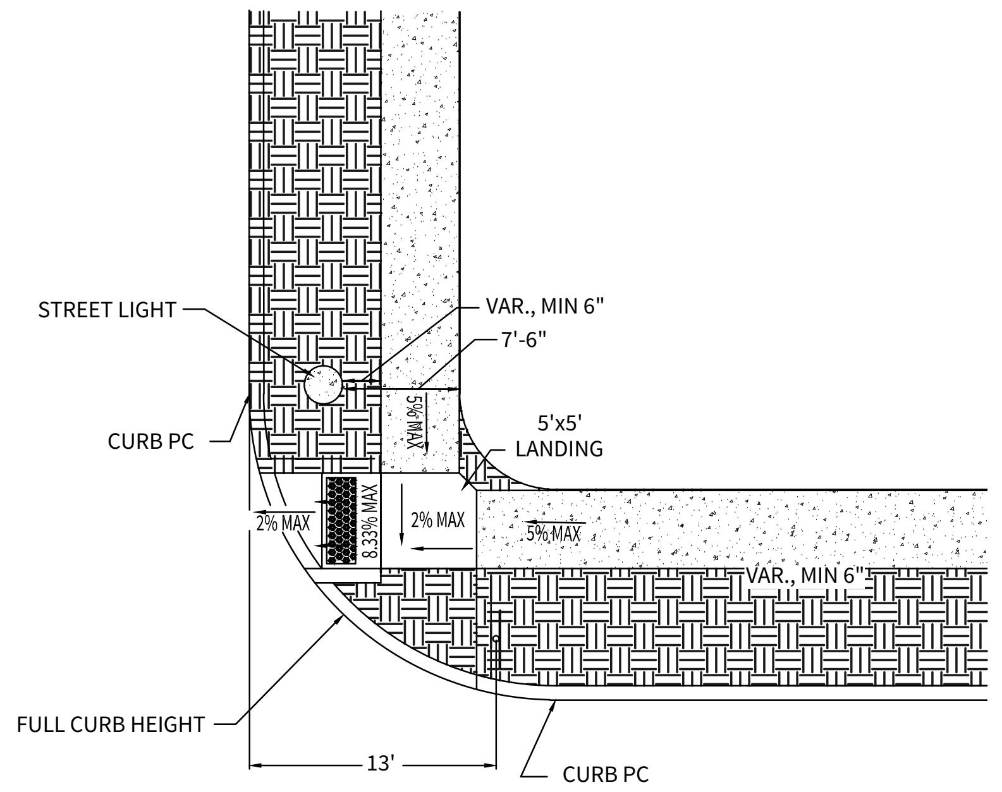

STREET LIGHT
VAR., MIN 6"
7'-6"
CURB PC
5'x5' LANDING
2% MAX
8.33% MAX
FULL CURB HEIGHT
13'
CURB PC

ADA RAMP INTERSECTION LAYOUT DETAIL
(TYPE 10 DIRECTIONAL RAMPS)

N.T.S.

NOTES:

1. STREET LIGHTS SHALL BE INSTALLED 7.5' WITHIN R.O.W. AND A MINIMUM DISTANCE OF 6" FROM THE PROPOSED SIDEWALK.

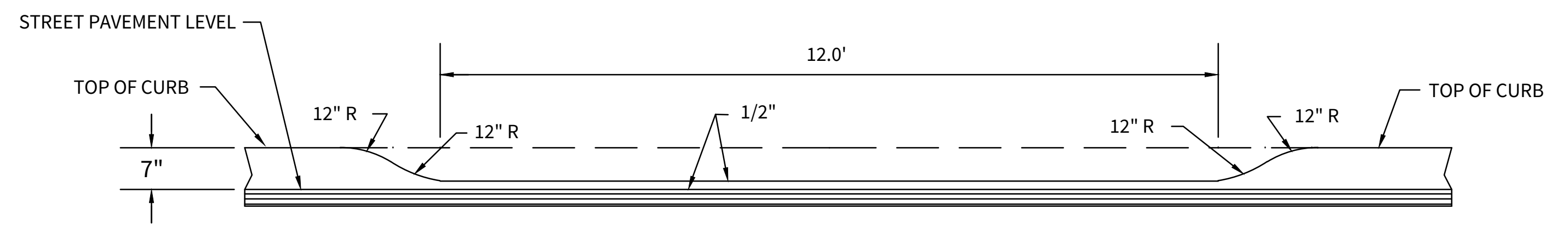

STREET LIGHT
VAR., MIN 6"
7'-6"
CURB PC
5'x5' LANDING
2% MAX
8.33% MAX
VAR., MIN 6"
FULL CURB HEIGHT
13'
CURB PC

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

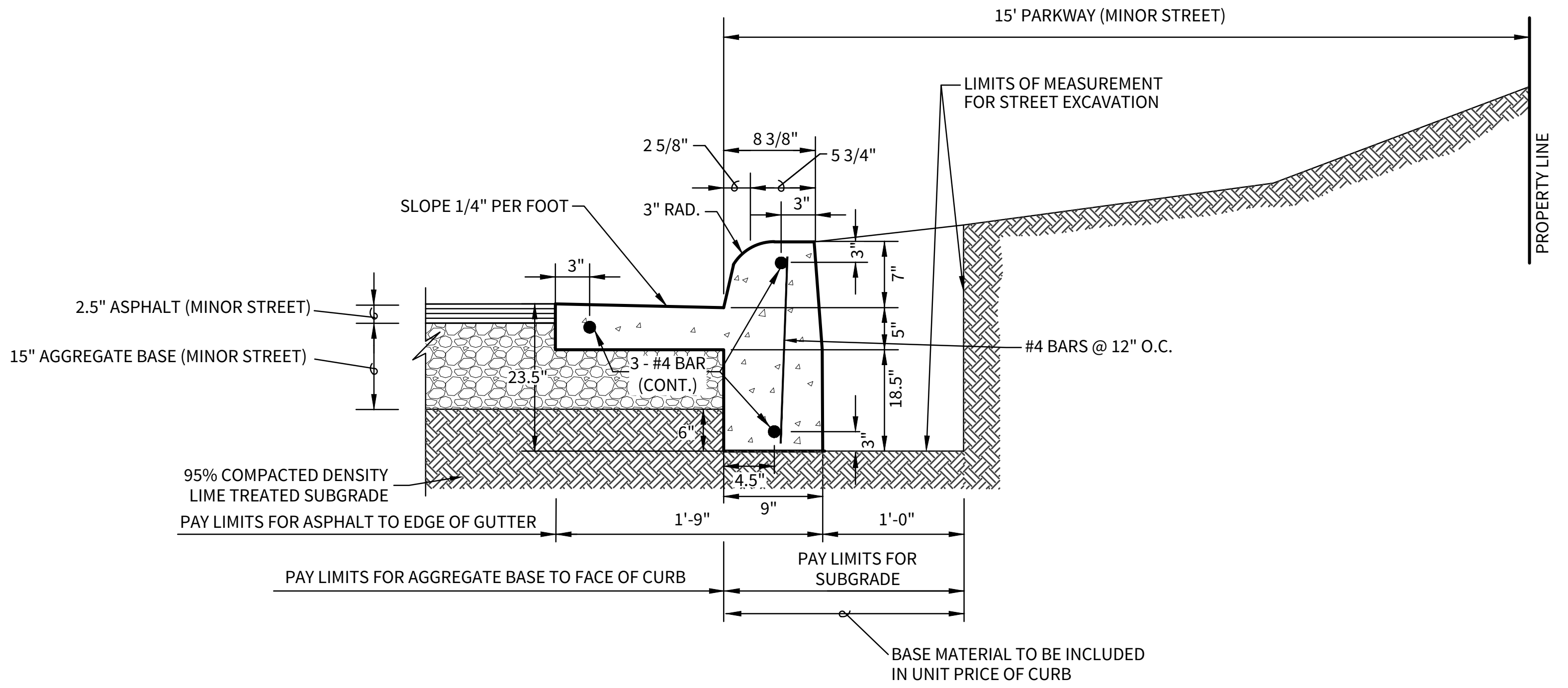
N.T.S.

NOTES:

1. STREET LIGHTS SHALL BE INSTALLED 7.5' WITHIN R.O.W. AND A MINIMUM DISTANCE OF 6" FROM THE PROPOSED SIDEWALK.

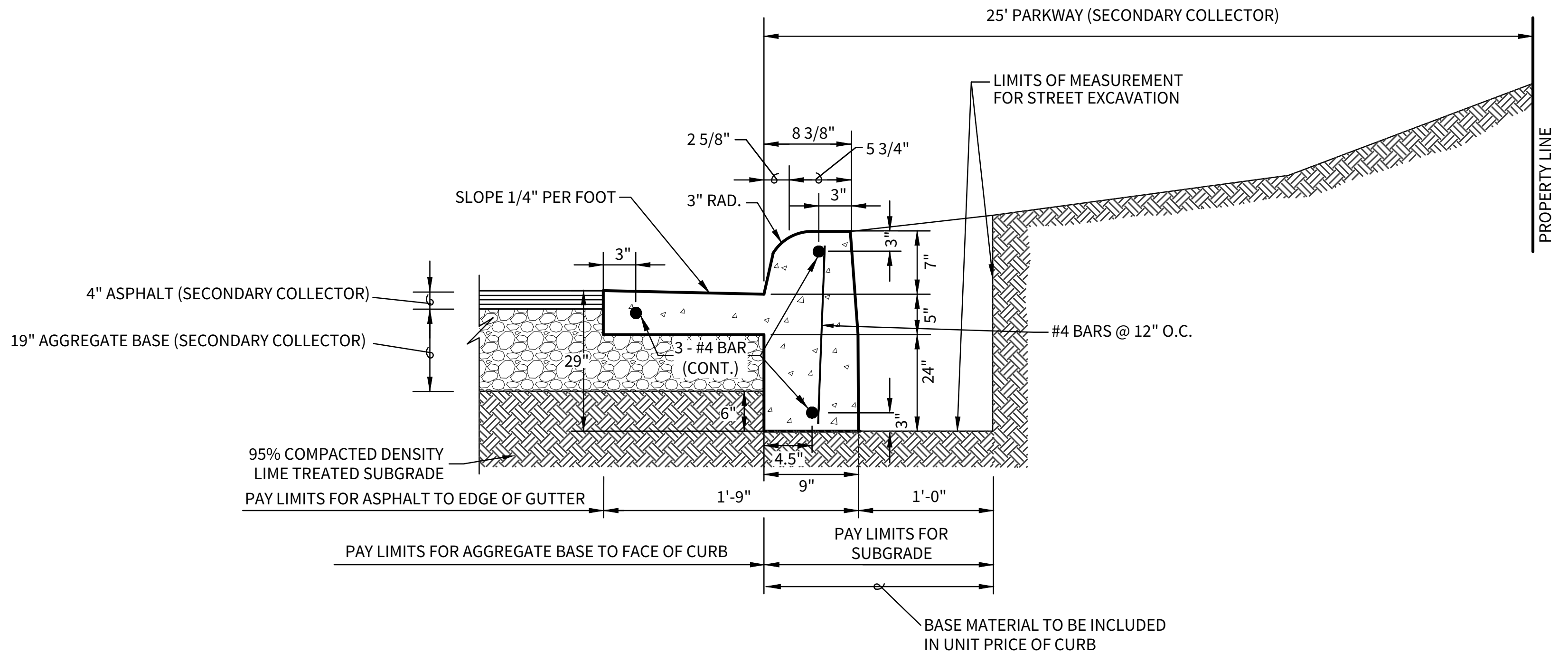

STREET PAVEMENT LEVEL
TOP OF CURB
12.0'
12" R
12" R
1/2"
12" R
12" R
TOP OF CURB
7"

TYPICAL DRIVEWAY CUT SECTION


15' PARKWAY (MINOR STREET)
LIMITS OF MEASUREMENT FOR STREET EXCAVATION
2 5/8"
8 3/8"
5 3/4"
3"
SLOPE 1/4" PER FOOT
3" RAD.
2.5" ASPHALT (MINOR STREET)
15" AGGREGATE BASE (MINOR STREET)
3 - #4 BAR (CONT.)
#4 BARS @ 12" O.C.
23.5"
18.5"
7"
5"
4.5"
95% COMPACTED DENSITY LIME TREATED SUBGRADE
PAY LIMITS FOR ASPHALT TO EDGE OF GUTTER
1'-9"
9"
1'-0"
PAY LIMITS FOR AGGREGATE BASE TO FACE OF CURB
PAY LIMITS FOR SUBGRADE
BASE MATERIAL TO BE INCLUDED IN UNIT PRICE OF CURB
PROPERTY LINE

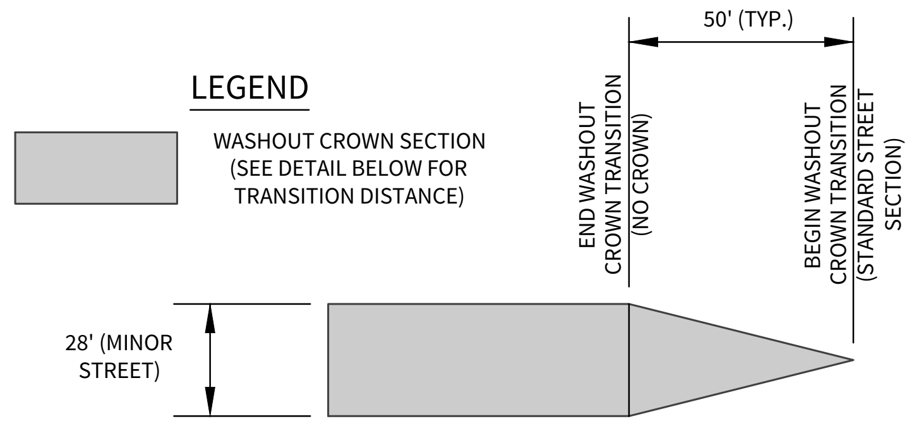
MINOR ACCESS STREET - CURB & GUTTER DETAIL

N.T.S.


25' PARKWAY (SECONDARY COLLECTOR)
LIMITS OF MEASUREMENT FOR STREET EXCAVATION
2 5/8"
8 3/8"
5 3/4"
3"
SLOPE 1/4" PER FOOT
3" RAD.
4" ASPHALT (SECONDARY COLLECTOR)
19" AGGREGATE BASE (SECONDARY COLLECTOR)
3 - #4 BAR (CONT.)
#4 BARS @ 12" O.C.
29
24"
7"
5"
4.5"
95% COMPACTED DENSITY LIME TREATED SUBGRADE
PAY LIMITS FOR ASPHALT TO EDGE OF GUTTER
1'-9"
9"
1'-0"
PAY LIMITS FOR AGGREGATE BASE TO FACE OF CURB
PAY LIMITS FOR SUBGRADE
BASE MATERIAL TO BE INCLUDED IN UNIT PRICE OF CURB
PROPERTY LINE

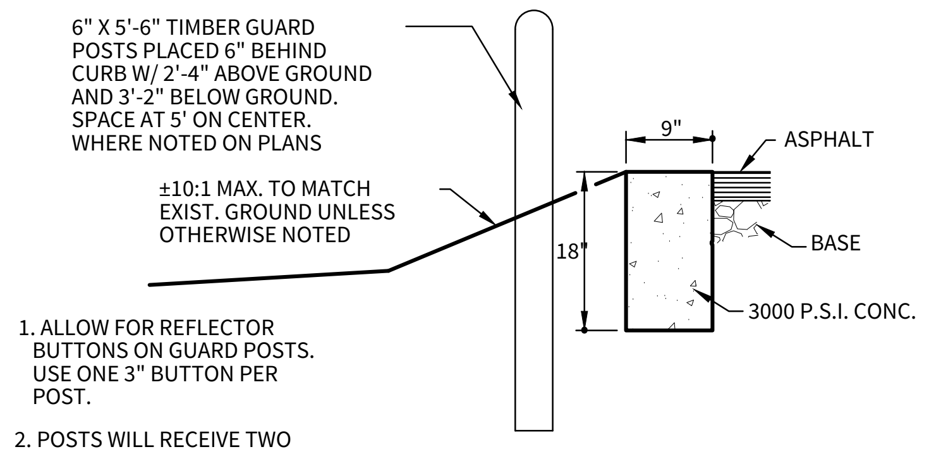
SECONDARY COLLECTOR - CURB & GUTTER DETAIL

N.T.S.


LEGEND
WASHOUT CROWN SECTION (SEE DETAIL BELOW FOR TRANSITION DISTANCE)
50' (TYP.)
END WASHOUT CROWN TRANSITION (NO CROWN)
BEGIN WASHOUT CROWN TRANSITION (STANDARD STREET SECTION)
28' (MINOR STREET)

WASHOUT CROWN TRANSITION DETAIL

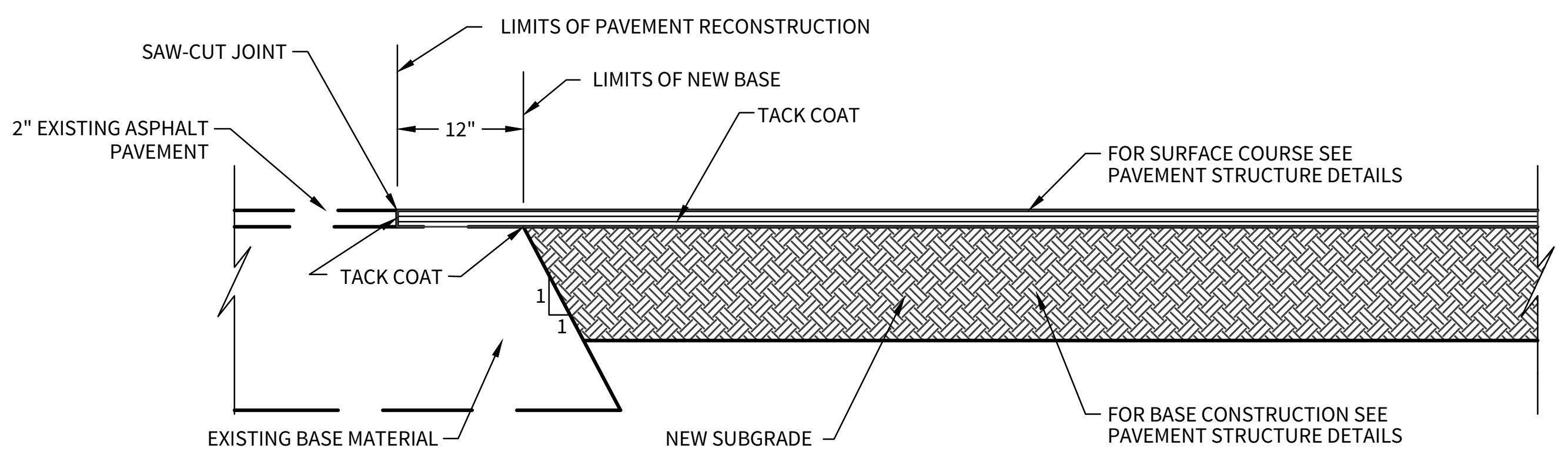
N.T.S.


6" X 5'-6" TIMBER GUARD POSTS PLACED 6" BEHIND CURB W/ 2'-4" ABOVE GROUND AND 3'-2" BELOW GROUND. SPACE AT 5' ON CENTER. WHERE NOTED ON PLANS
±10:1 MAX. TO MATCH EXIST. GROUND UNLESS OTHERWISE NOTED
9"
ASPHALT
BASE
18"
3000 P.S.I. CONC.

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

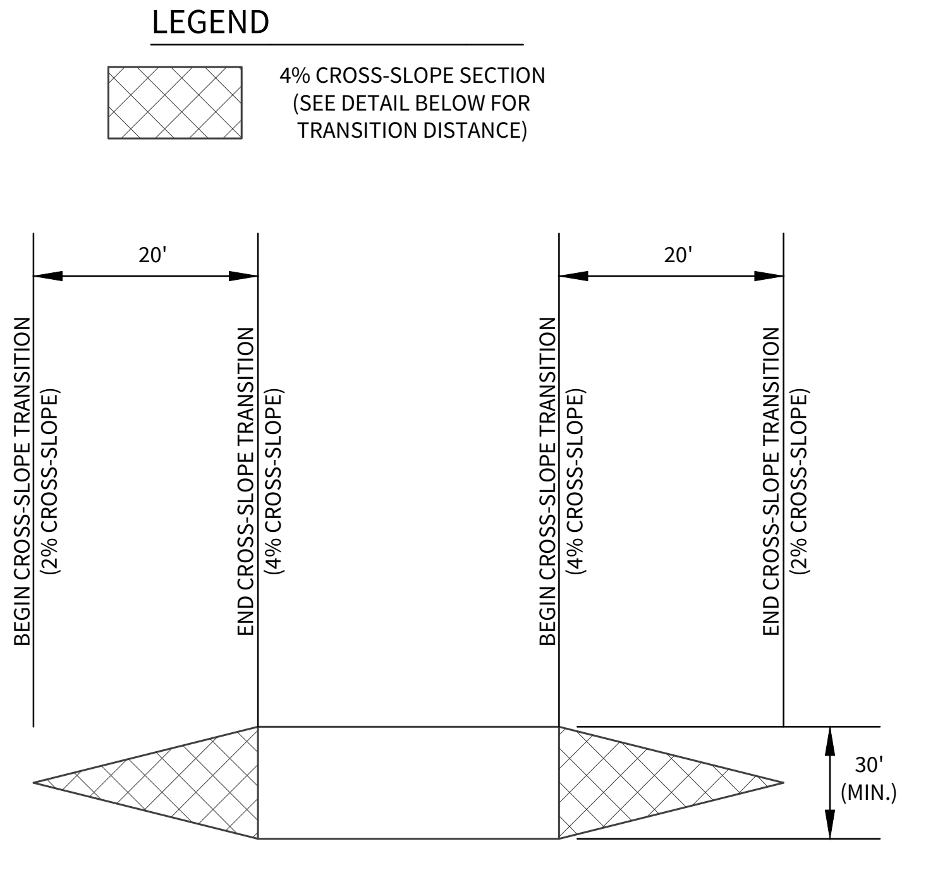
HEADER CURB DETAIL

N.T.S.

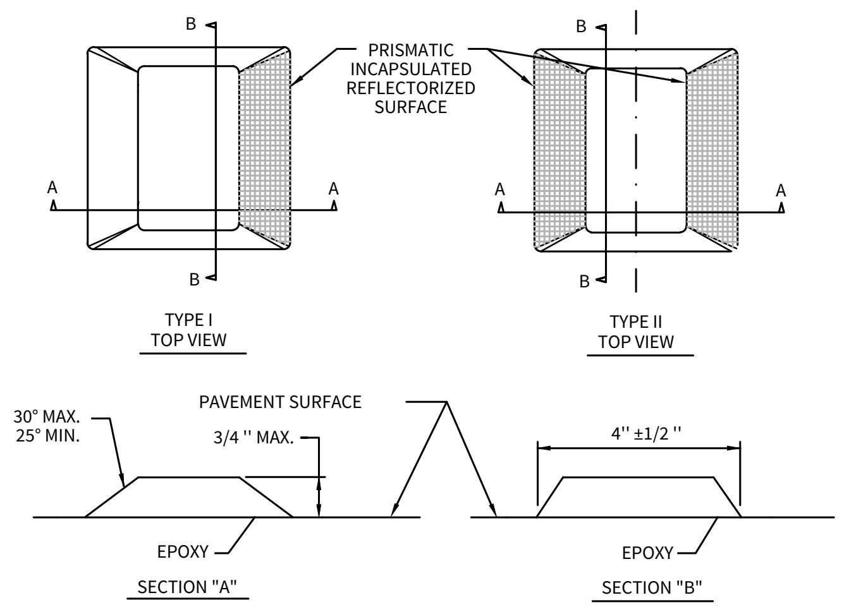

SAW-CUT JOINT
LIMITS OF PAVEMENT RECONSTRUCTION
LIMITS OF NEW BASE
2" EXISTING ASPHALT PAVEMENT
12"
TACK COAT
FOR SURFACE COURSE SEE PAVEMENT STRUCTURE DETAILS
TACK COAT
1
1
EXISTING BASE MATERIAL
NEW SUBGRADE
FOR BASE CONSTRUCTION SEE PAVEMENT STRUCTURE DETAILS

PAVEMENT JUNCTION DETAILS

N.T.S.


LEGEND
4% CROSS-SLOPE SECTION (SEE DETAIL BELOW FOR TRANSITION DISTANCE)
20'
20'
BEGIN CROSS-SLOPE TRANSITION (2% CROSS-SLOPE)
END CROSS-SLOPE TRANSITION (4% CROSS-SLOPE)
BEGIN CROSS-SLOPE TRANSITION (4% CROSS-SLOPE)
END CROSS-SLOPE TRANSITION (2% CROSS-SLOPE)
30' (MIN.)

CROSS-SLOPE TRANSITION DETAIL


B
A
A
B
PRISMATIC INCAPSULATED REFLECTORIZED SURFACE
TYPE I TOP VIEW
TYPE II TOP VIEW
30° MAX. 25° MIN.
PAVEMENT SURFACE
3/4" MAX.
4" ±1/2"
EPOXY
EPOXY
SECTION "A"
SECTION "B"

1) REFLECTORIZED BLUE - FIRE HYDRANT

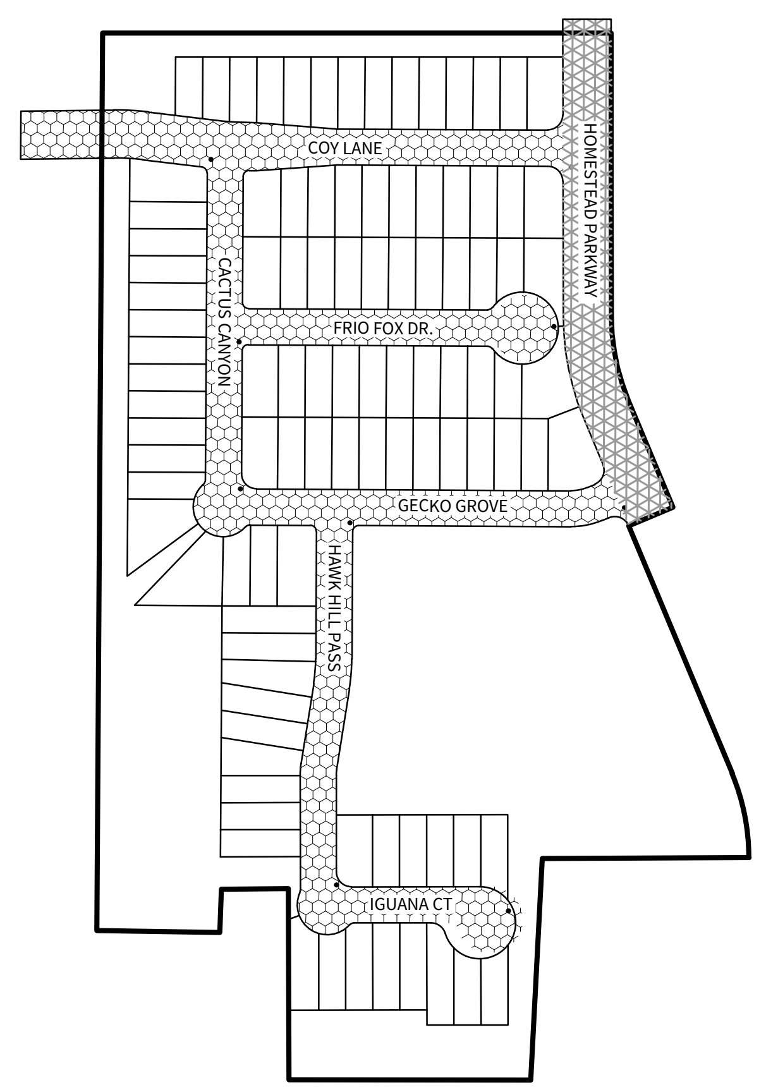
2) ADHENSIVE SHALL BE APPLIED IN SUFFICIENT TO ENSURE THE FOLLOWING:
   a) 100 PERCENT OF THE BONDING AREA OF RAISED PAVEMENT MARKERS SHALL BE IN CONTACT WITH THE ADHESIVE.
   b) RAISED PAVEMENT MARKERS SHALL NOT BE IN CONTACT WITH THE PAVEMENT SURFACE, BUT SHALL BE SEATED ON A CONTINUOUS LAYER OF ADHESIVE.
   c) BITUMINOUS ADHESIVE FOR MARKERS ON BITUMIOUS PAVEMENTS. EPOXY ADHENSIVE FOR MARKERS ON PORTLAND CEMENT CONCRETE PAVEMENTS. EPOXY ADHESIVE SHALL BE MACHINE MIXED.

3) RAISED PAVEMENT MARKERS SHALL BE FREE OF RUST, SCALE, DIRT, OIL, GREASE, MOISTURE, OR CONTAMINATES WHICH MIGHT ADVERSELY AFFECT THE ADHESIVE BOND. ADHESIVE OR ANY OTHER MATERIAL THAT IMPAIRS THE FUNCTIONAL REFLECTIVITY WILL NOT BE ACCEPTABLE.

4) PLACEMENT OF RAISED PAVEMENT MARKERS SHALL BE 4 FEET OFF STREET CENTELINE TOWARD ITEM MARKED.

PAVEMENT REFLECTORS DETAIL

N.T.S.


COY LANE
HOMESTEAD PARKWAY
CACTUS CANYON
FRIO FOX DR.
GECKO GROVE
HAWK HILL PASS
IGUANA CT.

PAVEMENT DESIGN SCHEMATIC N.T.S.

NOTE:
REFERENCE GEOTECHNICAL REPORT TTL. INC NO. 00240900938.00 FOR BORING INFORMATION AND CBR LOCATIONS.

LEGEND:

⬡	MINOR STREET	
	COY LANE	STA. 10+00.00 - 20+23.83
	FRIO FOX DRIVE	STA. 10+00.00 - 14+50.00
	CACTUS CANYON	STA. 10+00.00 - 16+01.67
	GECKO GROVE	STA. 10+44.72 - 16+97.12
	HAWK HILL PASS	STA. 10+00.00 - 16+74.00
	IGUANA COURT	STA. 10+00.00 - 13+04.00
▨	SECONDARY COLLECTOR	
	HOMESTEAD PARKWAY	STA. 10+00.00 - 18+31.66

CUDEENGINEERS.COM

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CUDE
ENGINEERS

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

GOERKE SUBDIVISION PHASE 1

STANDARD STREET DETAILS

DATE
01/15/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
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9.

KYLE M. HUDEK
138753
01/27/2025
K. Hudek

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C7.D1

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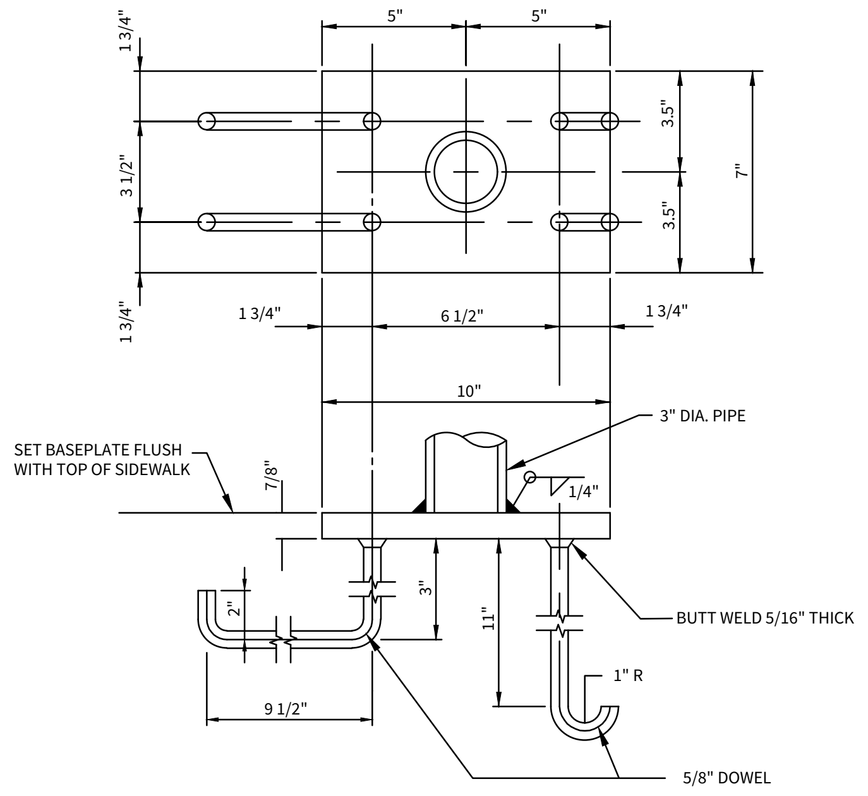
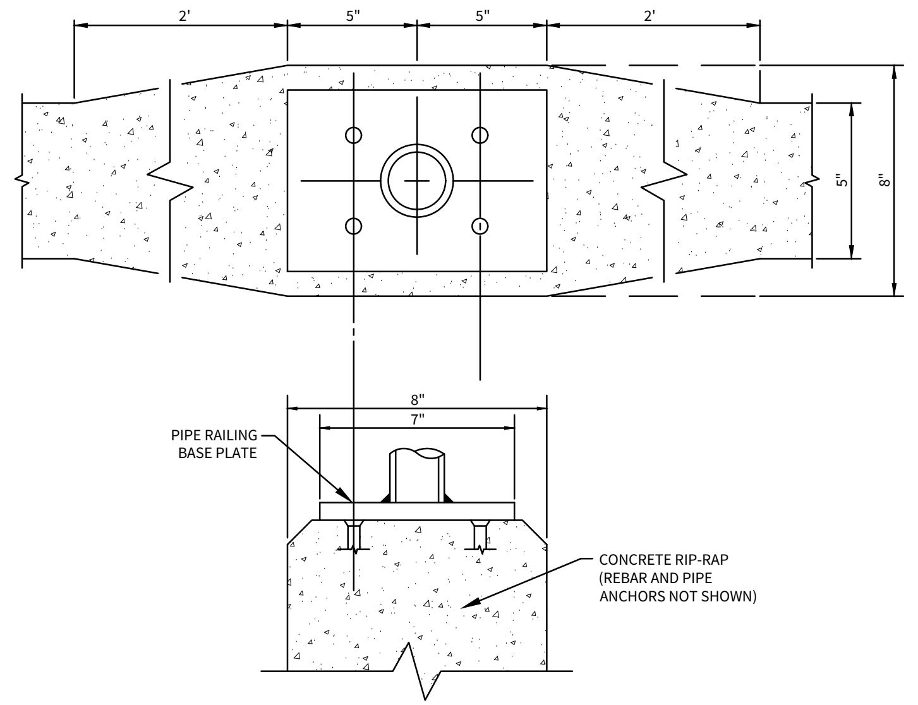

5"
5"
1 3/4"
3 1/2"
1 3/4"
3.5"
3.5"
7"
1 3/4"
6 1/2"
1 3/4"
10"
3" DIA. PIPE
SET BASEPLATE FLUSH WITH TOP OF SIDEWALK
7/8"
1/4"
2"
3"
11"
BUTT WELD 5/16" THICK
1" R
9 1/2"
5/8" DOWEL

PIPE ANCHORAGE DETAILS

N.T.S.

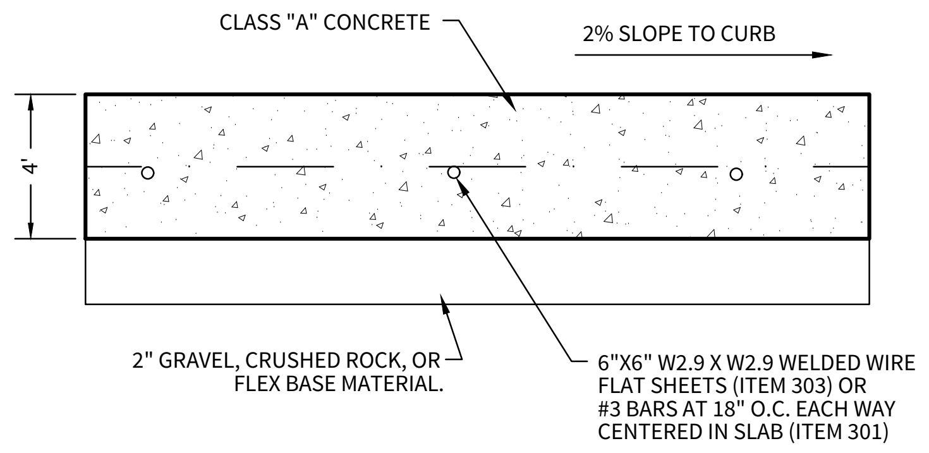

2'
5"
5"
2'
5"
8"
8"
7"
PIPE RAILING BASE PLATE
CONCRETE RIP-RAP (REBAR AND PIPE ANCHORS NOT SHOWN)

CONCRETE RIP-RAP AT PIPE RAILING BASE PLATE DETAIL

N.T.S.

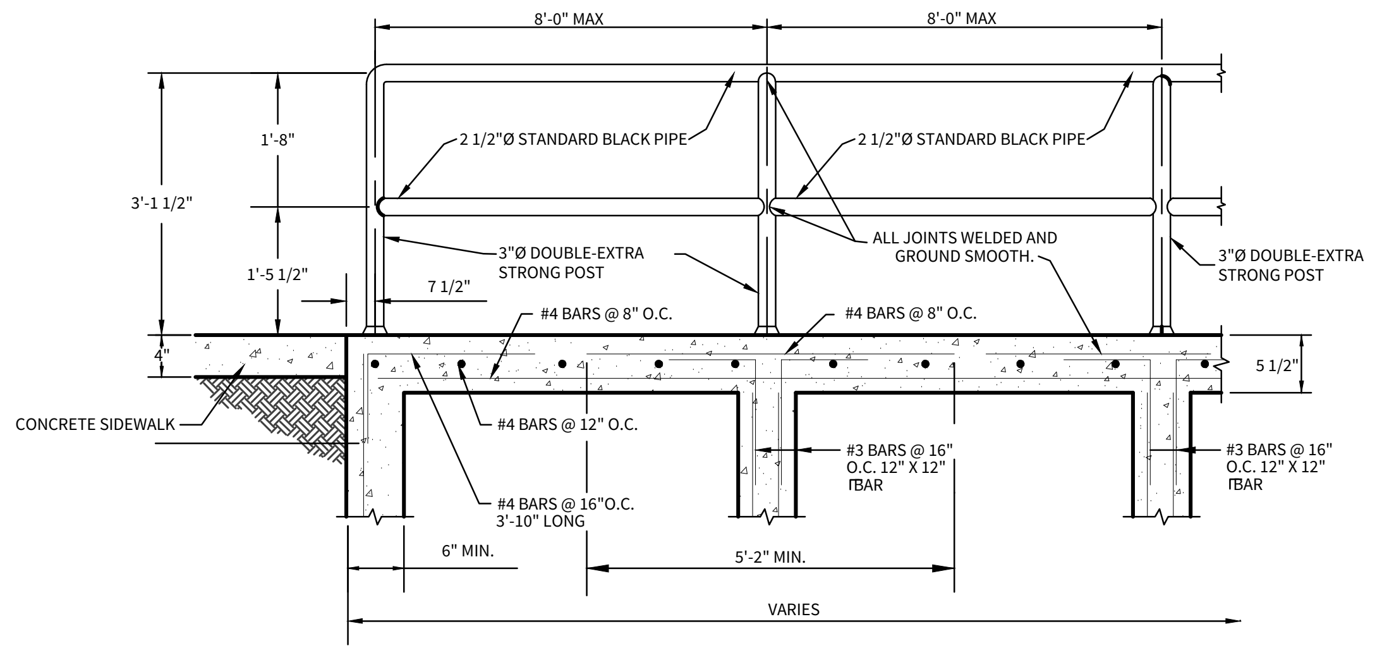
NOTES:

1) CONTRACTOR TO FLARE CONCRETE RIP-RAP TO 8" AT PROPOSED PIPE RAILING BASE PLATE LOCATIONS.


CLASS "A" CONCRETE
2% SLOPE TO CURB
4'
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)

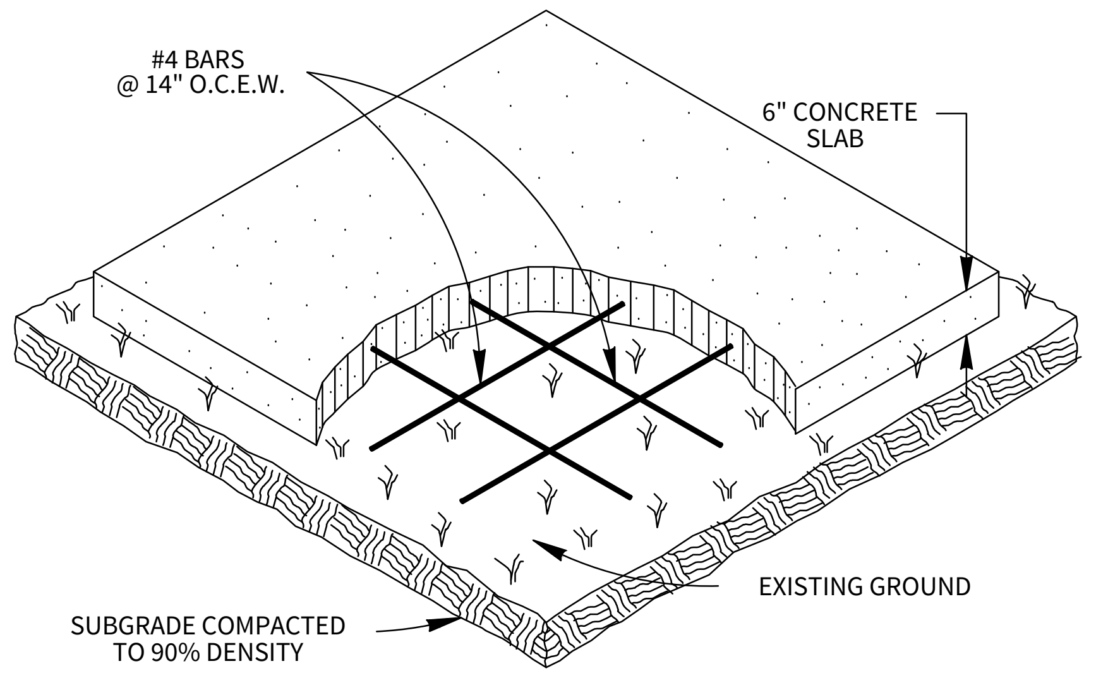
CONCRETE SIDEWALK

N.T.S.


8'-0" MAX
8'-0" MAX
3'-1 1/2"
1'-8"
1'-5 1/2"
2 1/2"Ø STANDARD BLACK PIPE
2 1/2"Ø STANDARD BLACK PIPE
3"Ø DOUBLE-EXTRA STRONG POST
ALL JOINTS WELDED AND GROUND SMOOTH.
3"Ø DOUBLE-EXTRA STRONG POST
7 1/2"
#4 BARS @ 8" O.C.
#4 BARS @ 8" O.C.
4"
5 1/2"
CONCRETE SIDEWALK
#4 BARS @ 12" O.C.
#3 BARS @ 16" O.C. 12" X 12" ⴶBAR
#3 BARS @ 16" O.C. 12" X 12" ⴶBAR
#4 BARS @ 16"O.C. 3'-10" LONG
6" MIN.
5'-2" MIN.
VARIES

TYPICAL SIDEWALK BRIDGE SECTION AND SIDEWALK PIPE RAILING

N.T.S.


#4 BARS @ 14" O.C.E.W.
6" CONCRETE SLAB
EXISTING GROUND
SUBGRADE COMPACTED TO 90% DENSITY

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

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GOERKE SUBDIVISION PHASE 1

STANDARD STREET DETAILS

DATE
09/30/2024

PROJECT NO.
03346.101

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KYLE M. HUDEK
138753
11/12/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C7.D2

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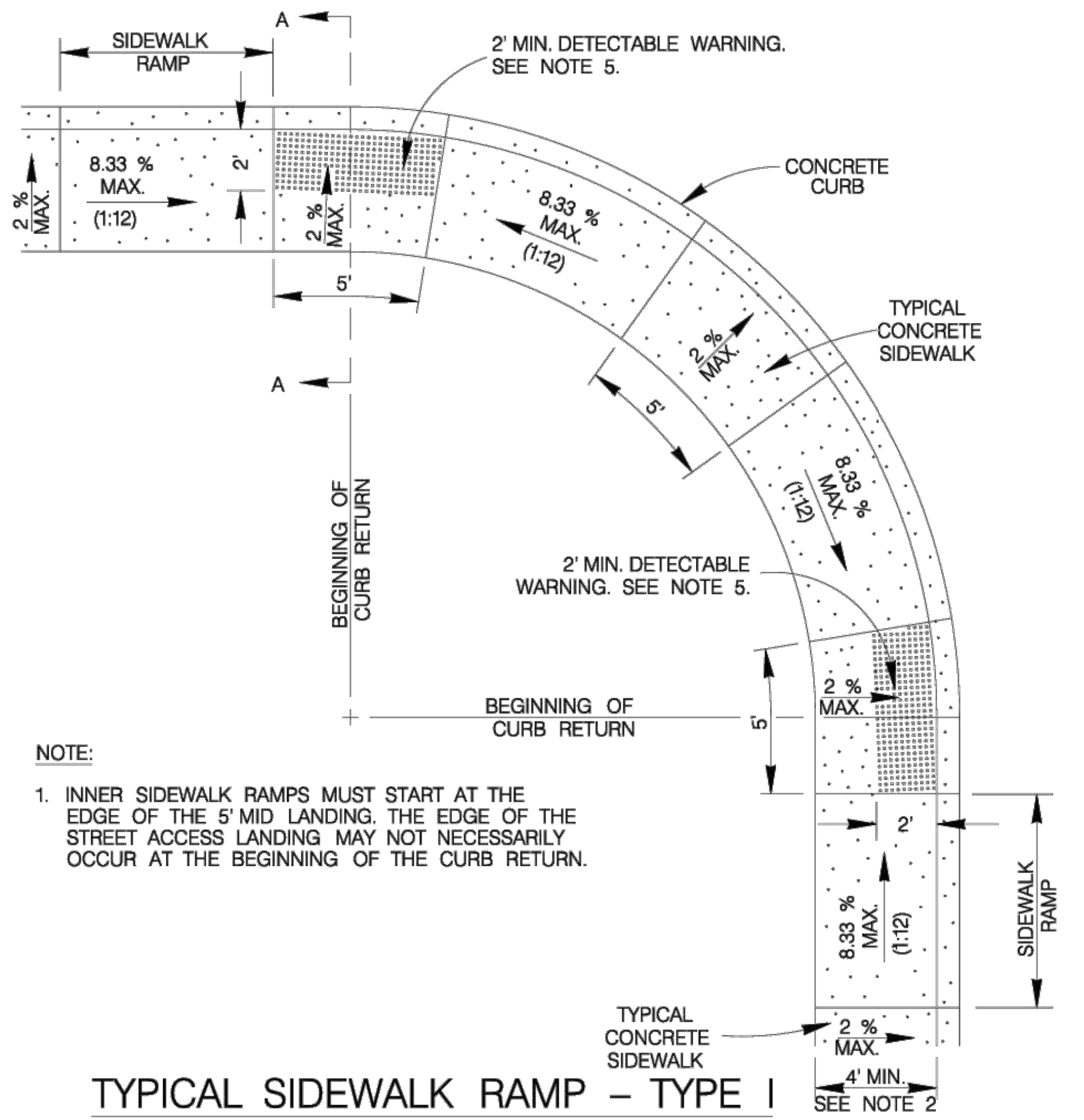
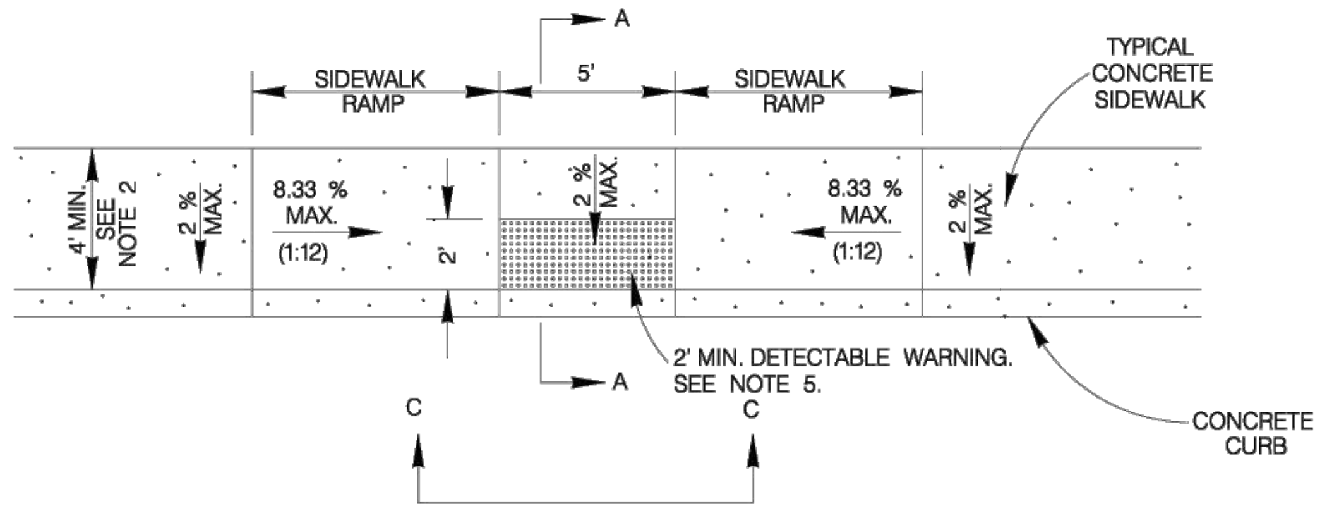

SIDEWALK RAMP
A
2' MIN. DETECTABLE WARNING. SEE NOTE 5.
CONCRETE CURB
2 % MAX.
8.33 % MAX. (1:12)
5'
TYPICAL CONCRETE SIDEWALK
BEGINNING OF CURB RETURN
2' MIN. DETECTABLE WARNING. SEE NOTE 5.
C
SIDEWALK RAMP
TYPICAL CONCRETE SIDEWALK
4' MIN. SEE NOTE 2

NOTE:

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

TYPICAL SIDEWALK RAMP – TYPE I

SIDEWALK ABUTS THE CURB
SCALE : 1" = 10'

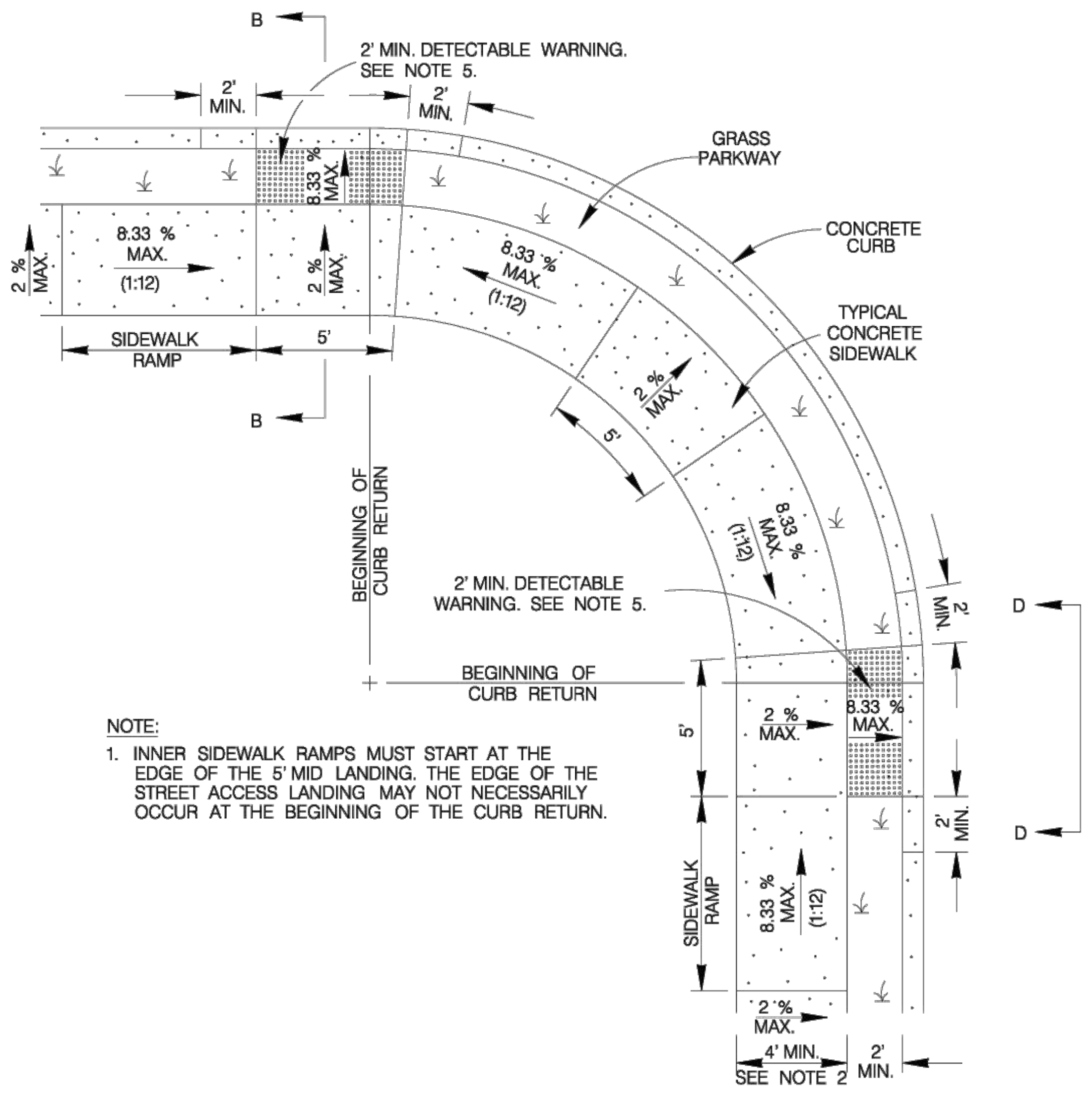

A
SIDEWALK RAMP
5'
SIDEWALK RAMP
TYPICAL CONCRETE SIDEWALK
4' MIN. SEE NOTE 2
2 % MAX.
8.33 % MAX. (1:12)
2'
2' MIN. DETECTABLE WARNING. SEE NOTE 5.
CONCRETE CURB
C
C

TYPICAL SIDEWALK RAMP – TYPE II

USED AT TEE INTERSECTIONS WHERE SIDEWALK ABUTS CURB
SCALE : 1" = 10'

GENERAL NOTES

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

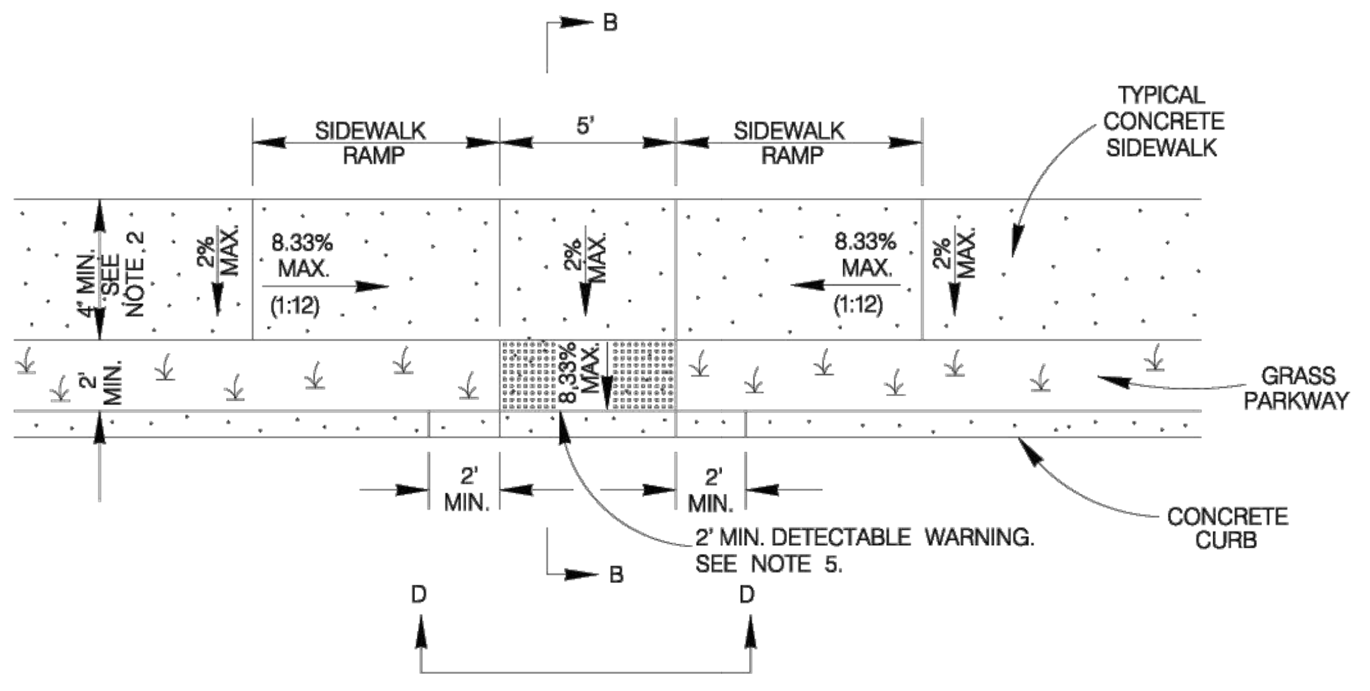

B
2' MIN.
2' MIN. DETECTABLE WARNING. SEE NOTE 5.
GRASS PARKWAY
CONCRETE CURB
TYPICAL CONCRETE SIDEWALK
2 % MAX.
8.33 % MAX. (1:12)
SIDEWALK RAMP
5'
BEGINNING OF CURB RETURN
2' MIN. DETECTABLE WARNING. SEE NOTE 5.
D
SIDEWALK RAMP
4' MIN. SEE NOTE 2
2' MIN.

NOTE:

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

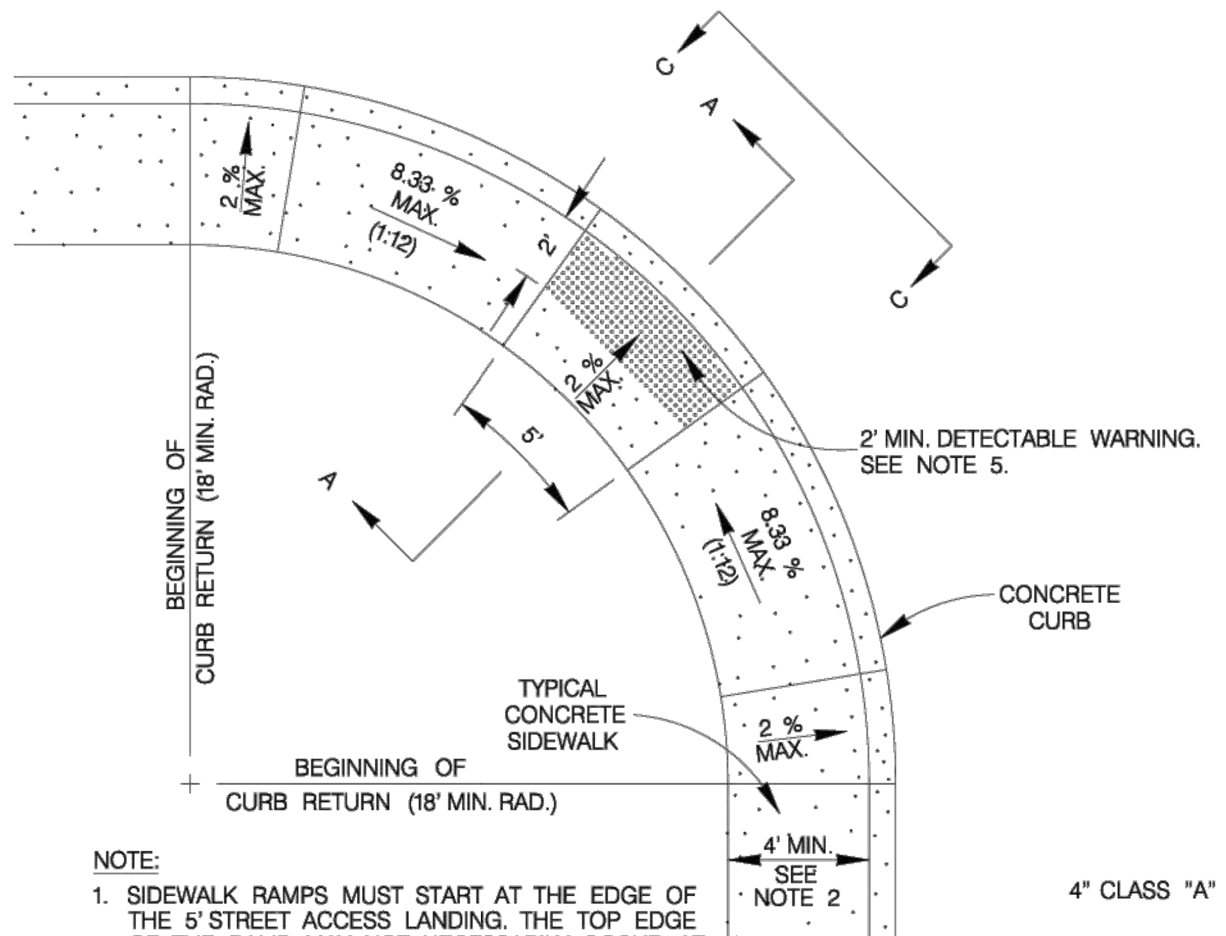
TYPICAL SIDEWALK RAMP – TYPE III

SIDEWALK SEPARATED FROM CURB
SCALE : 1" = 10'


B
SIDEWALK RAMP
5'
SIDEWALK RAMP
TYPICAL CONCRETE SIDEWALK
4' MIN. SEE NOTE 2
8.33% MAX. (1:12)
2% MAX.
2' MIN.
GRASS PARKWAY
2' MIN. DETECTABLE WARNING. SEE NOTE 5.
CONCRETE CURB
D
D

TYPICAL SIDEWALK RAMP – TYPE IV

USED AT TEE INTERSECTIONS WHERE SIDEWALK IS SEPARATED FROM CURB
SCALE : 1" = 10'

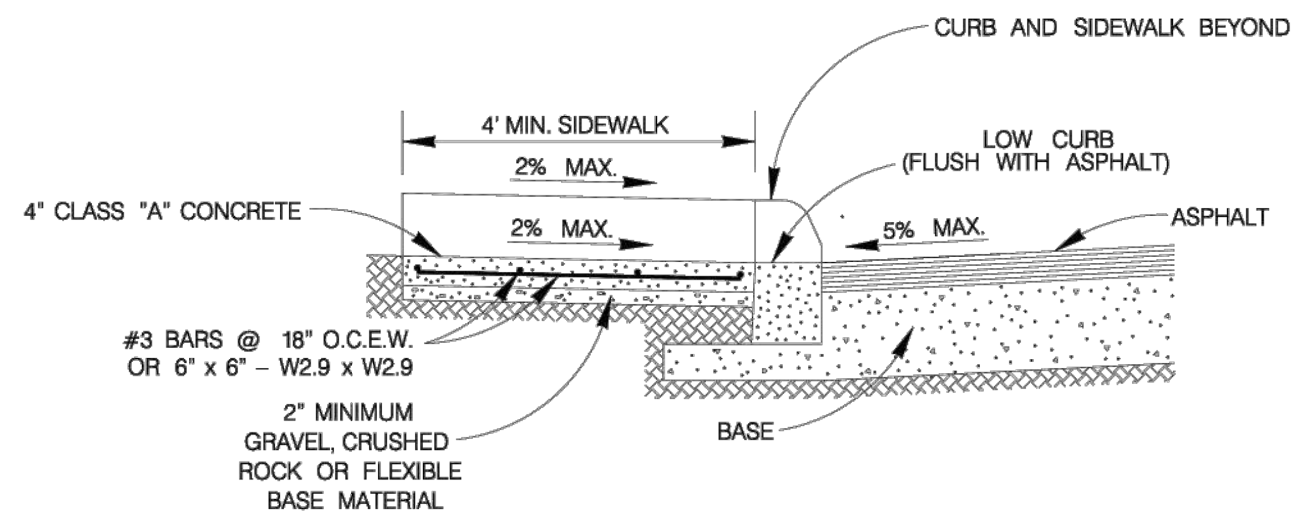

C
A
C
A
8.33 % MAX. (1:12)
2 % MAX.
5'
BEGINNING OF CURB RETURN (18' MIN. RAD.)
2' MIN. DETECTABLE WARNING. SEE NOTE 5.
CONCRETE CURB
TYPICAL CONCRETE SIDEWALK
BEGINNING OF CURB RETURN (18' MIN. RAD.)
4' MIN. SEE NOTE 2

NOTE:

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

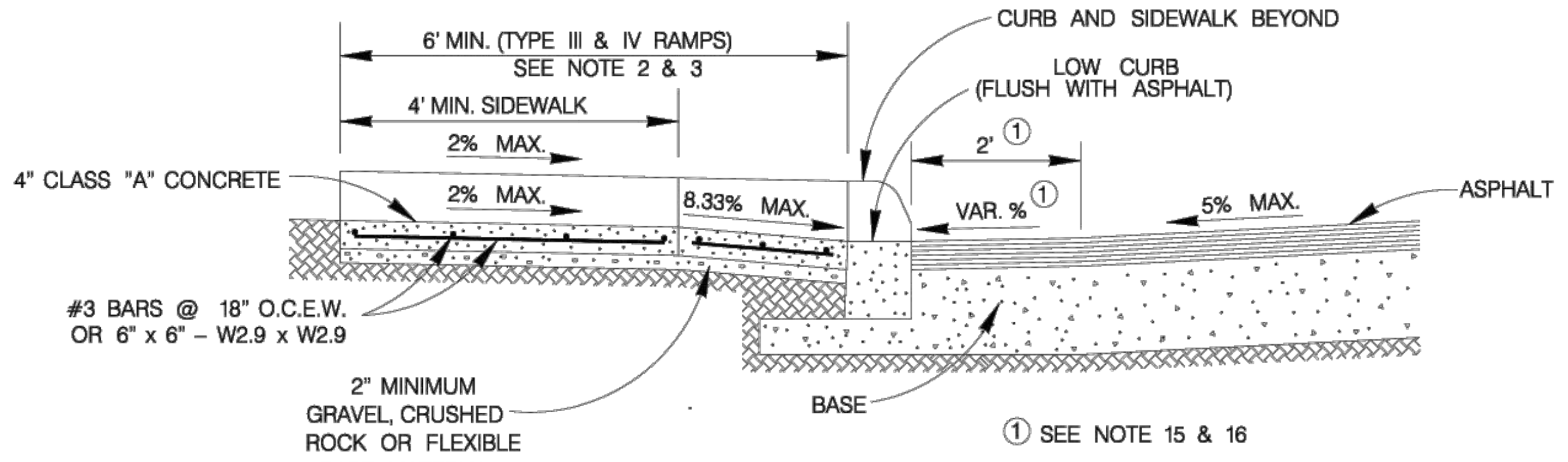
TYPICAL SIDEWALK RAMP – TYPE V

SIDEWALK ABUTS CURB
SCALE : 1" = 10'


CURB AND SIDEWALK BEYOND
4' MIN. SIDEWALK
2% MAX.
LOW CURB (FLUSH WITH ASPHALT)
4" CLASS "A" CONCRETE
2% MAX.
5% MAX.
ASPHALT
#3 BARS @ 18" O.C.E.W. OR 6" x 6" – W2.9 x W2.9
2" MINIMUM GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL
BASE

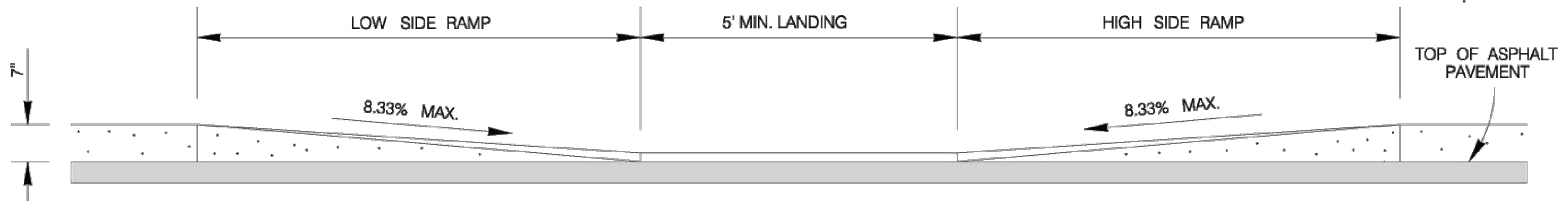
SECTION A–A

SCALE : 1" = 4'


6' MIN. (TYPE III & IV RAMPS) SEE NOTE 2 & 3
CURB AND SIDEWALK BEYOND
LOW CURB (FLUSH WITH ASPHALT)
4' MIN. SIDEWALK
2% MAX.
2' ①
4" CLASS "A" CONCRETE
2% MAX.
8.33% MAX.
VAR. % ①
5% MAX.
ASPHALT
#3 BARS @ 18" O.C.E.W. OR 6" x 6" – W2.9 x W2.9
2" MINIMUM GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL
BASE
① SEE NOTE 15 & 16

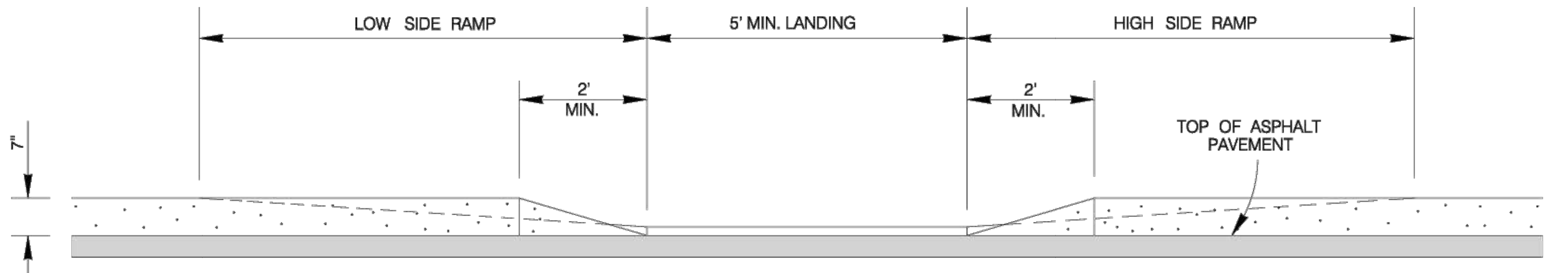
SECTION B–B

SCALE : 1" = 4'


LOW SIDE RAMP
5' MIN. LANDING
HIGH SIDE RAMP
TOP OF ASPHALT PAVEMENT
7"
8.33% MAX.
8.33% MAX.

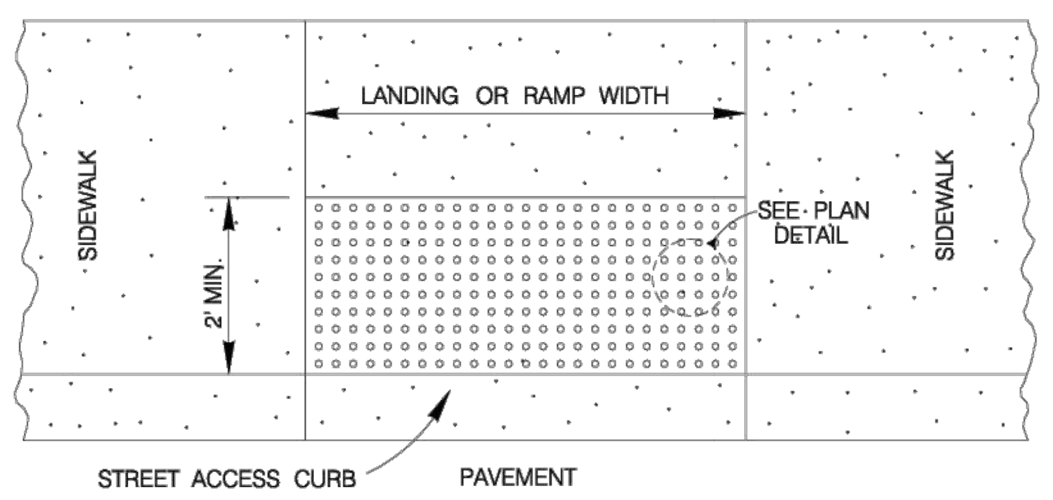
SECTION C–C

CURB PROFILE WHERE SIDEWALK ABUTS CURB
SCALE : 1" = 4'


LOW SIDE RAMP
5' MIN. LANDING
HIGH SIDE RAMP
2' MIN.
2' MIN.
TOP OF ASPHALT PAVEMENT
7"

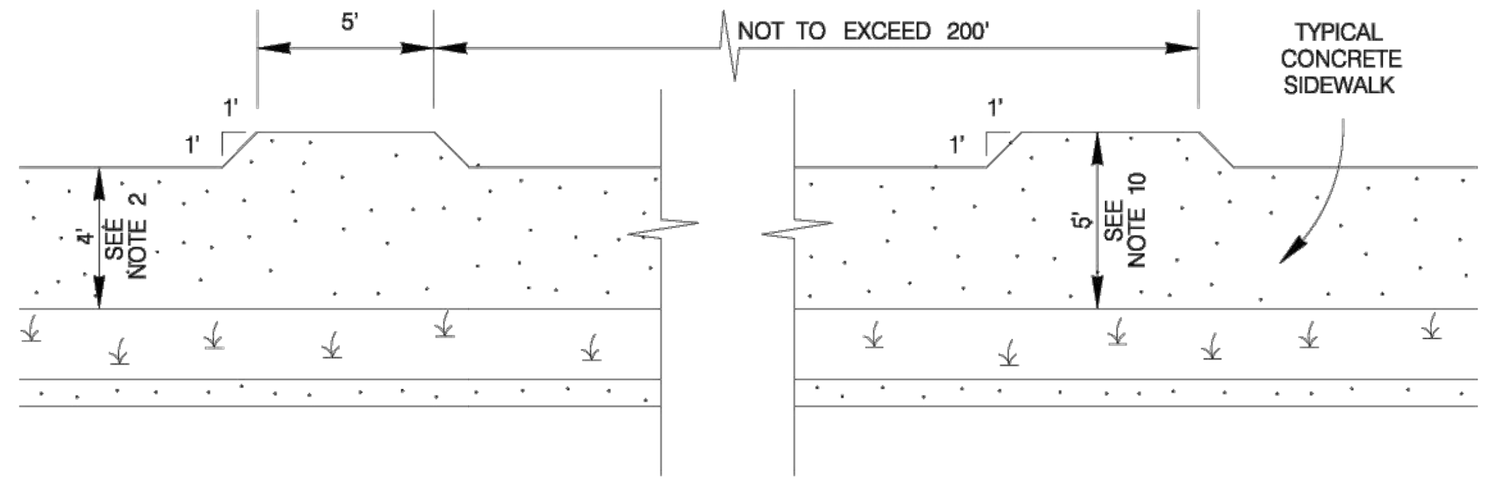
SECTION D–D

CURB PROFILE WHERE SIDEWALK IS SEPARATED FROM CURB
SCALE : 1" = 4'


LANDING OR RAMP WIDTH
SIDEWALK
2' MIN.
SEE PLAN DETAIL
SIDEWALK
STREET ACCESS CURB
PAVEMENT

DETECTABLE WARNING SURFACE

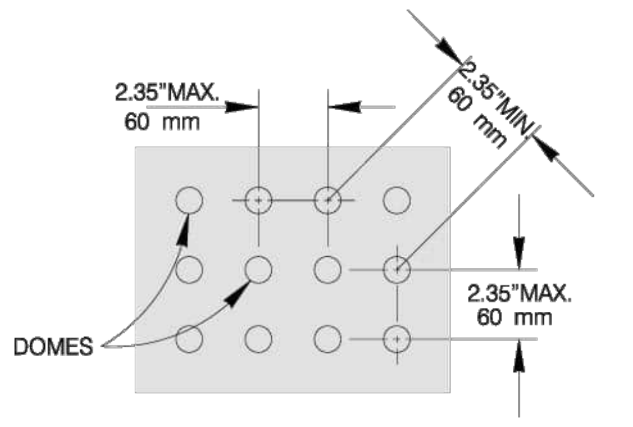
SCALE : 1" = 4'


5'
NOT TO EXCEED 200'
TYPICAL CONCRETE SIDEWALK
1'
1'
1'
1'
4' SEE NOTE 2
5' SEE NOTE 10

SIDEWALK PASSING SPACE

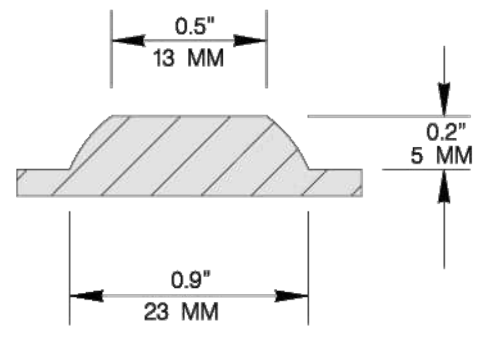
SCALE : 1" = 10'

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


2.35" MAX. 60 mm
2.35" MIN. 60 mm
2.35" MAX. 60 mm
DOMES

PLAN DETAIL

NO SCALE


0.5" 13 MM
0.2" 5 MM
0.9" 23 MM

DOME SECTION

NO SCALE

NOTE:

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

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

WHEELCHAIR RAMP STANDARDS

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

CUDEENGINEERS.COM

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WHEELCHAIR RAMP DETAILS

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138753
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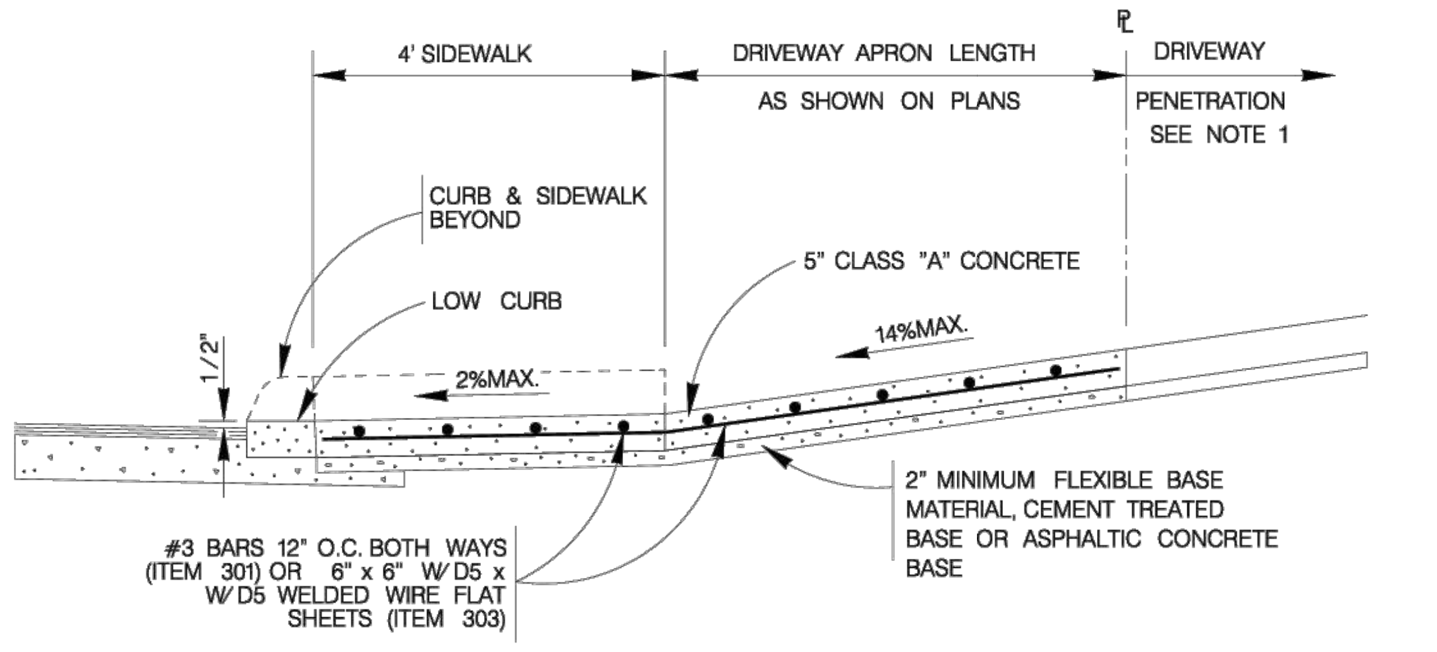
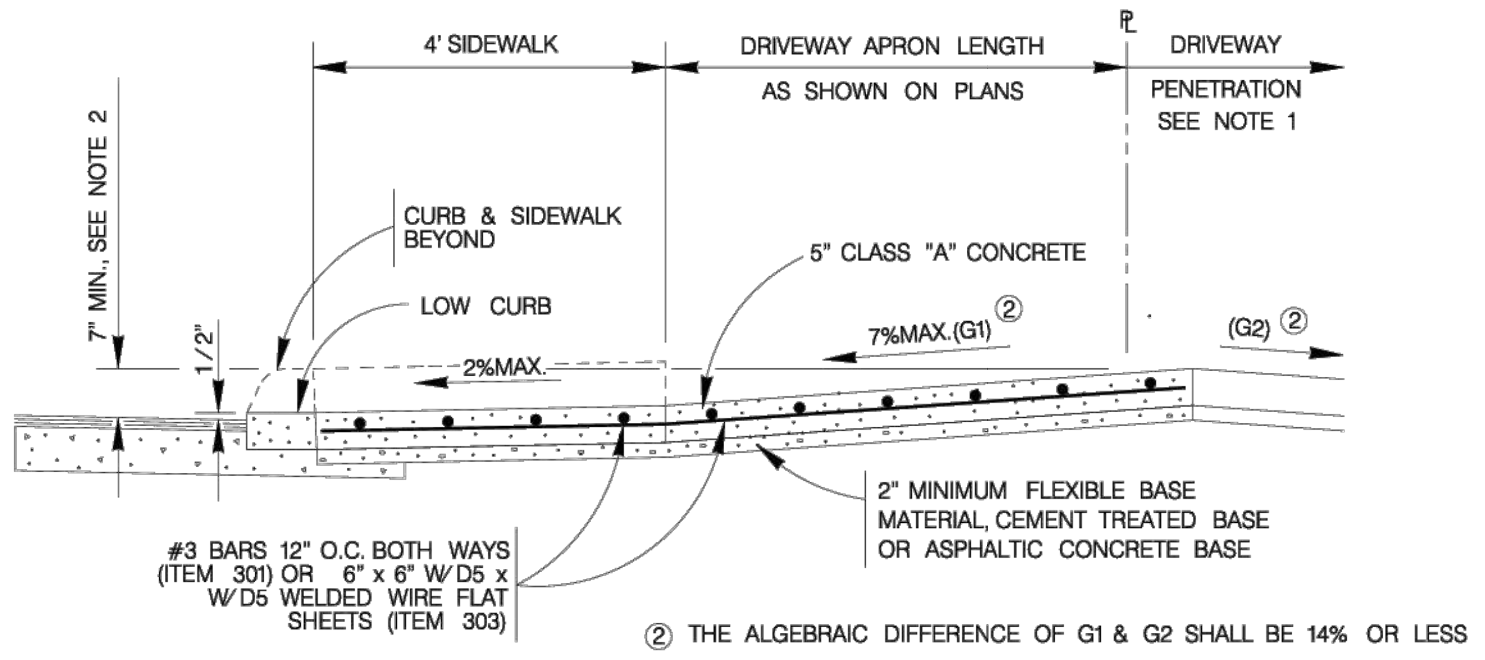

4' SIDEWALK
DRIVEWAY APRON LENGTH
AS SHOWN ON PLANS
PL
DRIVEWAY
PENETRATION
SEE NOTE 1
CURB & SIDEWALK BEYOND
LOW CURB
5" CLASS "A" CONCRETE
14%MAX.
2%MAX.
1/2"
2" MINIMUM FLEXIBLE BASE MATERIAL, CEMENT TREATED BASE OR ASPHALTIC CONCRETE BASE
#3 BARS 12" O.C. BOTH WAYS (ITEM 301) OR 6" x 6" W/D5 x W/D5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

TYPICAL RESIDENTIAL DRIVEWAY SECTION

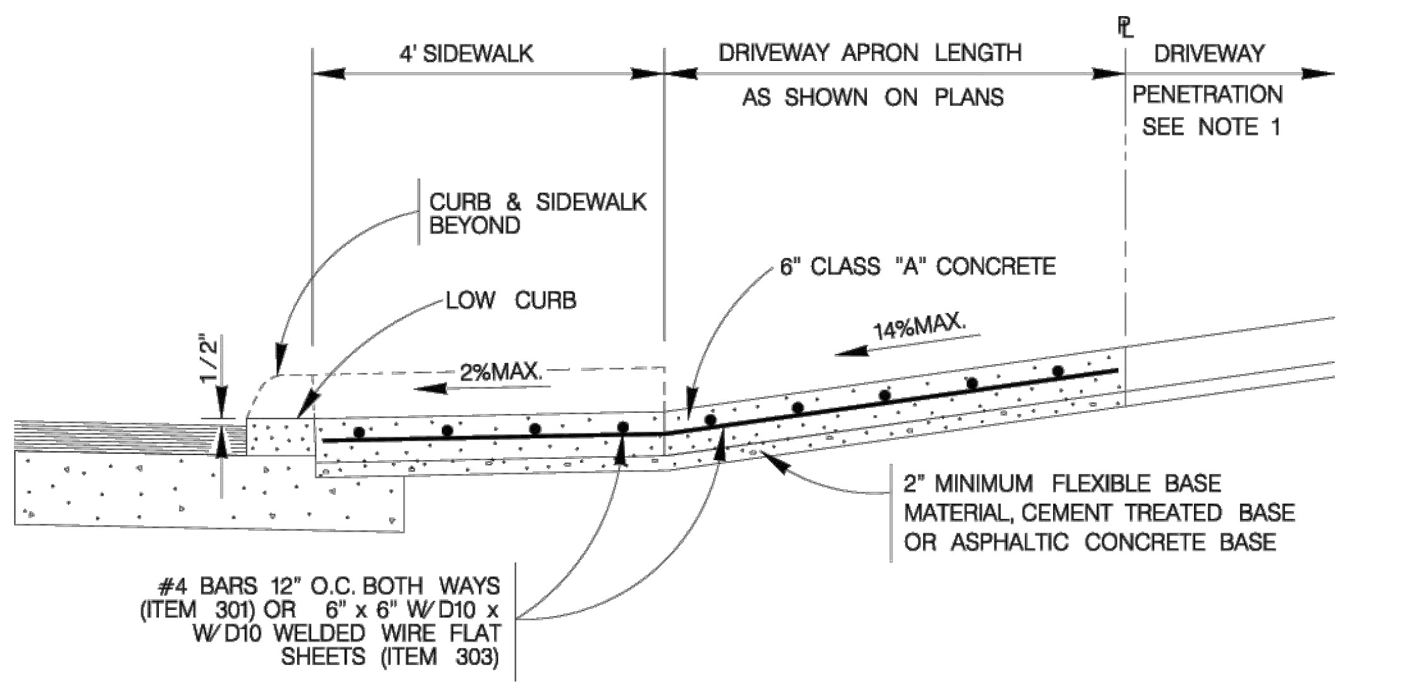
WITH SIDEWALK ABUTTING CURB
ITEM 503.1


4' SIDEWALK
DRIVEWAY APRON LENGTH
AS SHOWN ON PLANS
PL
DRIVEWAY
PENETRATION
SEE NOTE 1
7" MIN., SEE NOTE 2
CURB & SIDEWALK BEYOND
LOW CURB
5" CLASS "A" CONCRETE
7%MAX.(G1) ②
(G2) ②
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)

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

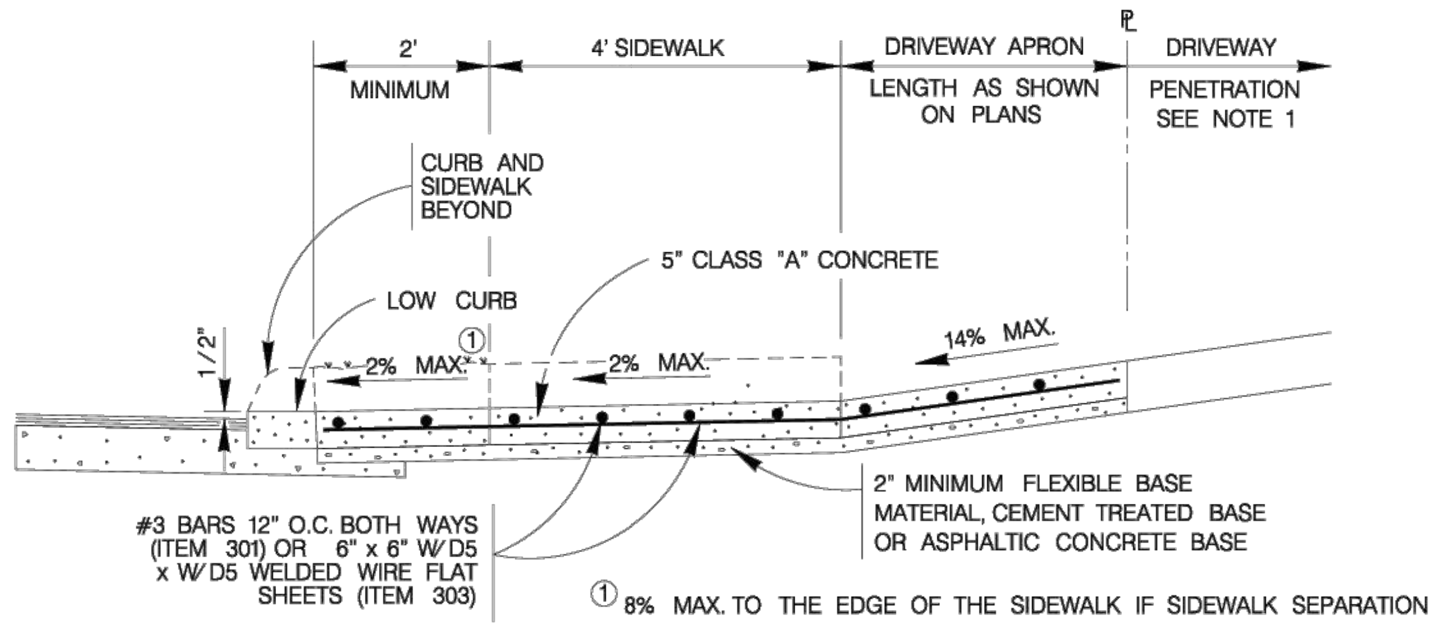
TYPICAL RESIDENTIAL DRIVEWAY SECTION

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


4' SIDEWALK
DRIVEWAY APRON LENGTH
AS SHOWN ON PLANS
PL
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

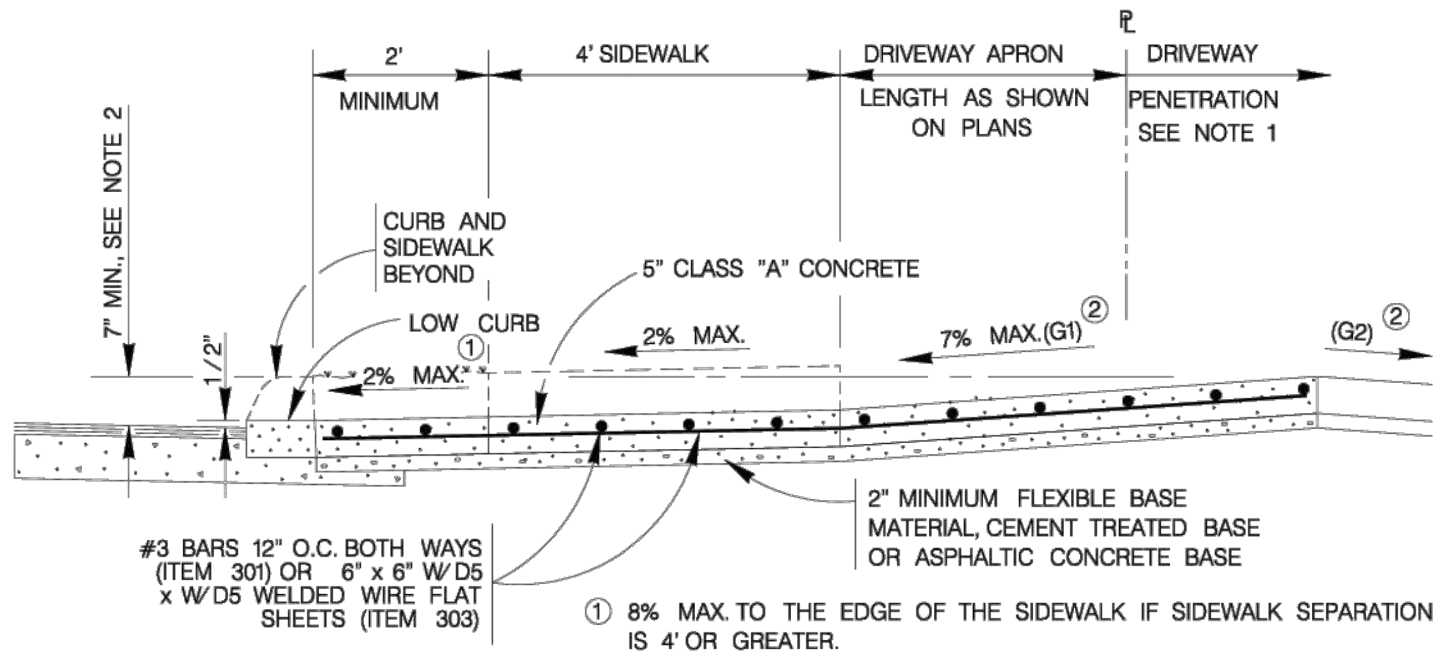
WITH SIDEWALK ABUTTING CURB
ITEM 503.2


2'
MINIMUM
4' SIDEWALK
DRIVEWAY APRON
LENGTH AS SHOWN ON PLANS
PL
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

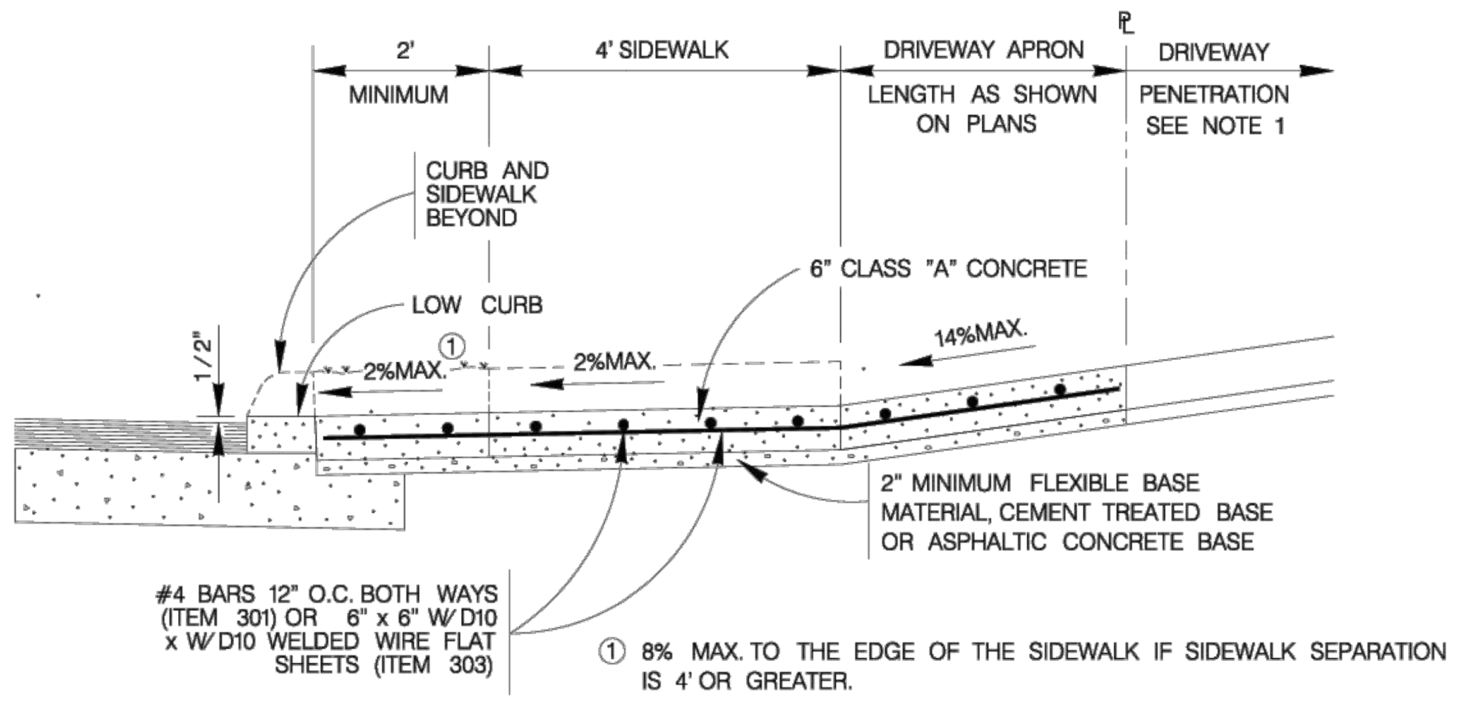

2'
MINIMUM
4' SIDEWALK
DRIVEWAY APRON
LENGTH AS SHOWN ON PLANS
PL
DRIVEWAY
PENETRATION
SEE NOTE 1
7" MIN., SEE NOTE 2
CURB AND SIDEWALK BEYOND
LOW CURB
5" CLASS "A" CONCRETE
①
2% MAX.
2% MAX.
7% MAX.(G1) ②
(G2) ②
1/2"
2" MINIMUM FLEXIBLE BASE MATERIAL, CEMENT TREATED BASE OR ASPHALTIC CONCRETE BASE
#3 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.

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
PL
DRIVEWAY
PENETRATION
SEE NOTE 1
CURB AND SIDEWALK BEYOND
LOW CURB
6" CLASS "A" CONCRETE
①
2%MAX.
2%MAX.
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

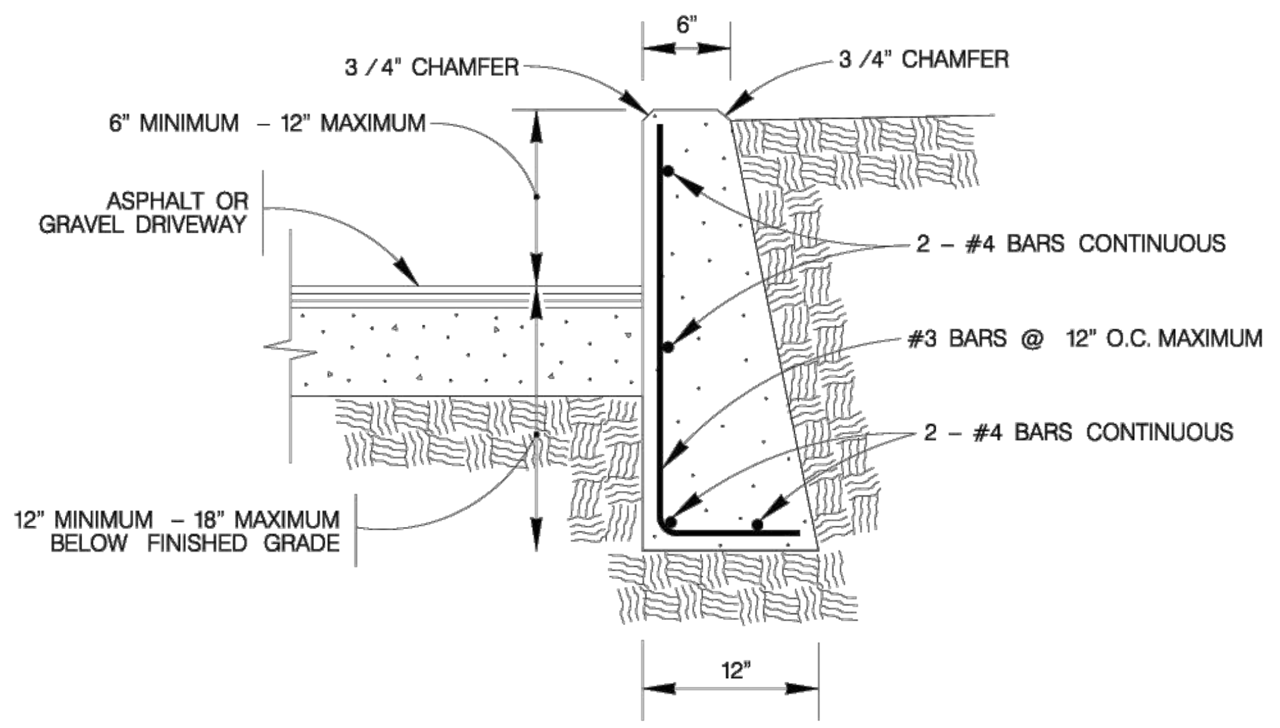
WITH SIDEWALK SEPARATED FROM CURB
ITEM 503.2

CONCRETE DRIVEWAY NOTES

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

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

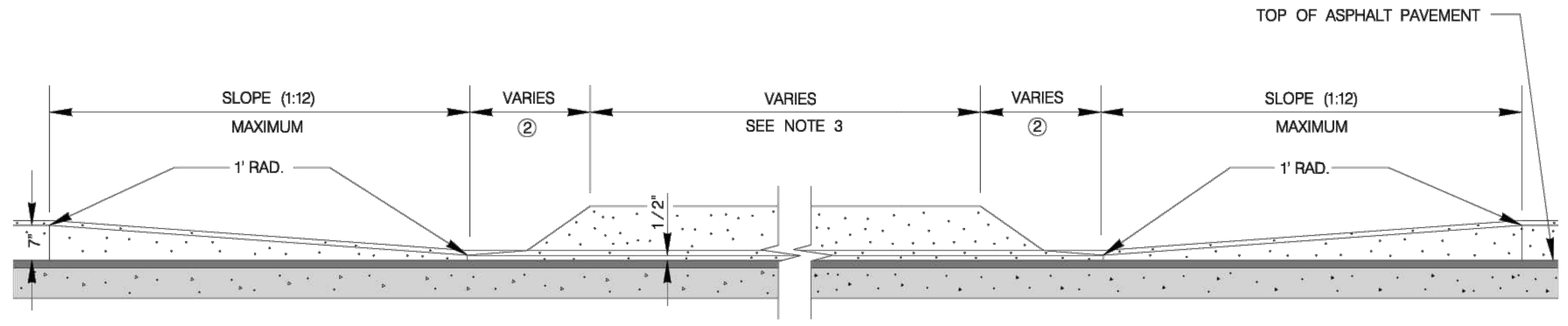
4. FOR LOCAL TYPE "A" STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 2' FROM THE BACK OF CURB.
5. FOR OTHER THAN LOCAL TYPE "A" STREETS, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND SEPARATED A MINIMUM OF 2' FROM THE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


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

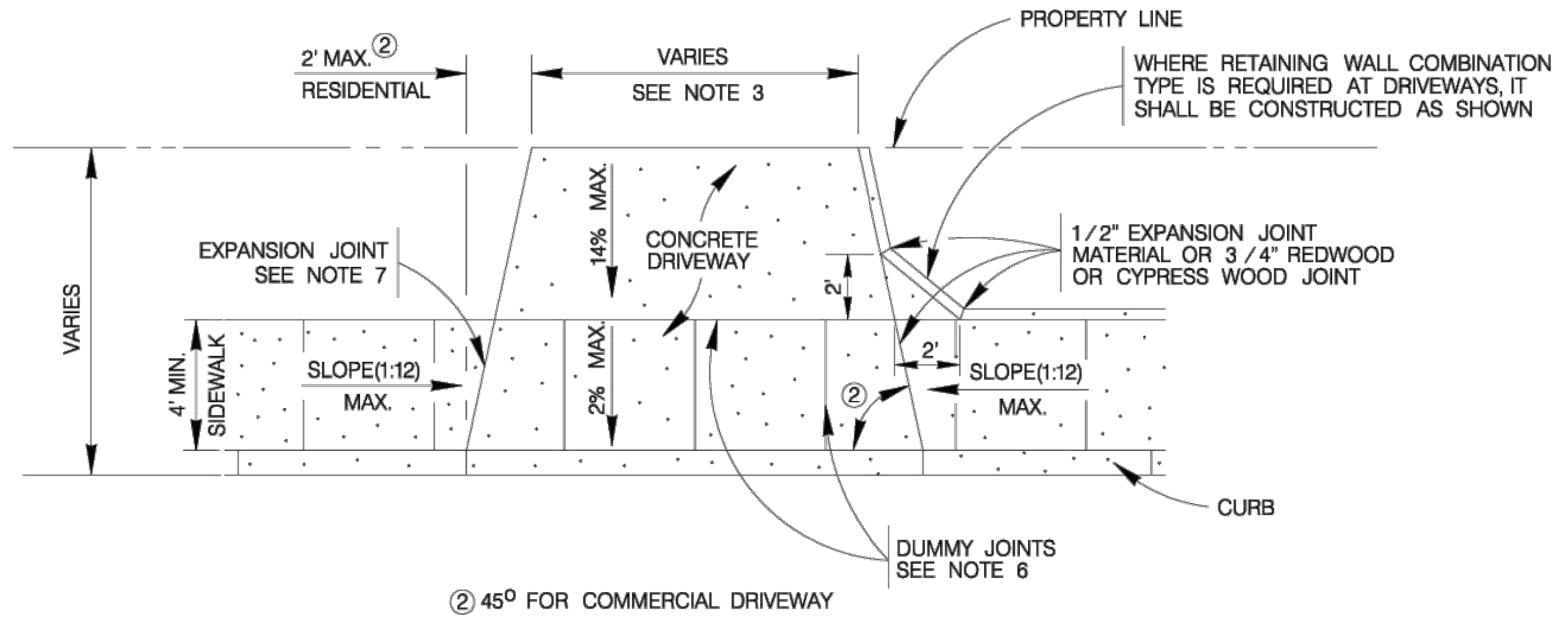
ON COMPACTED SUBGRADE
ITEM 307.1


TOP OF ASPHALT PAVEMENT
SLOPE (1:12)
MAXIMUM
VARIES
②
VARIES
SEE NOTE 3
VARIES
②
SLOPE (1:12)
MAXIMUM
1' RAD.
1' RAD.
7"
1/2"

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

CURB PROFILE AT DRIVEWAY

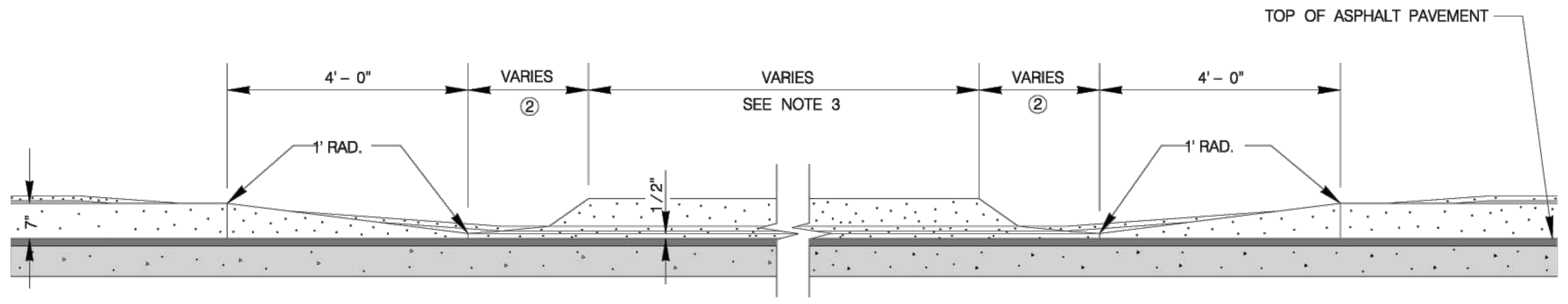
WITH SIDEWALK ABUTTING CURB


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
EXPANSION JOINT SEE NOTE 7
14% MAX.
CONCRETE DRIVEWAY
1/2" EXPANSION JOINT MATERIAL OR 3/4" REDWOOD OR CYPRESS WOOD JOINT
2'
4' MIN.
SIDEWALK
SLOPE(1:12) MAX.
2% MAX.
2'
②
SLOPE(1:12) MAX.
CURB
DUMMY JOINTS SEE NOTE 6

② 45° FOR COMMERCIAL DRIVEWAY

TYPICAL DRIVEWAY PLAN VIEW

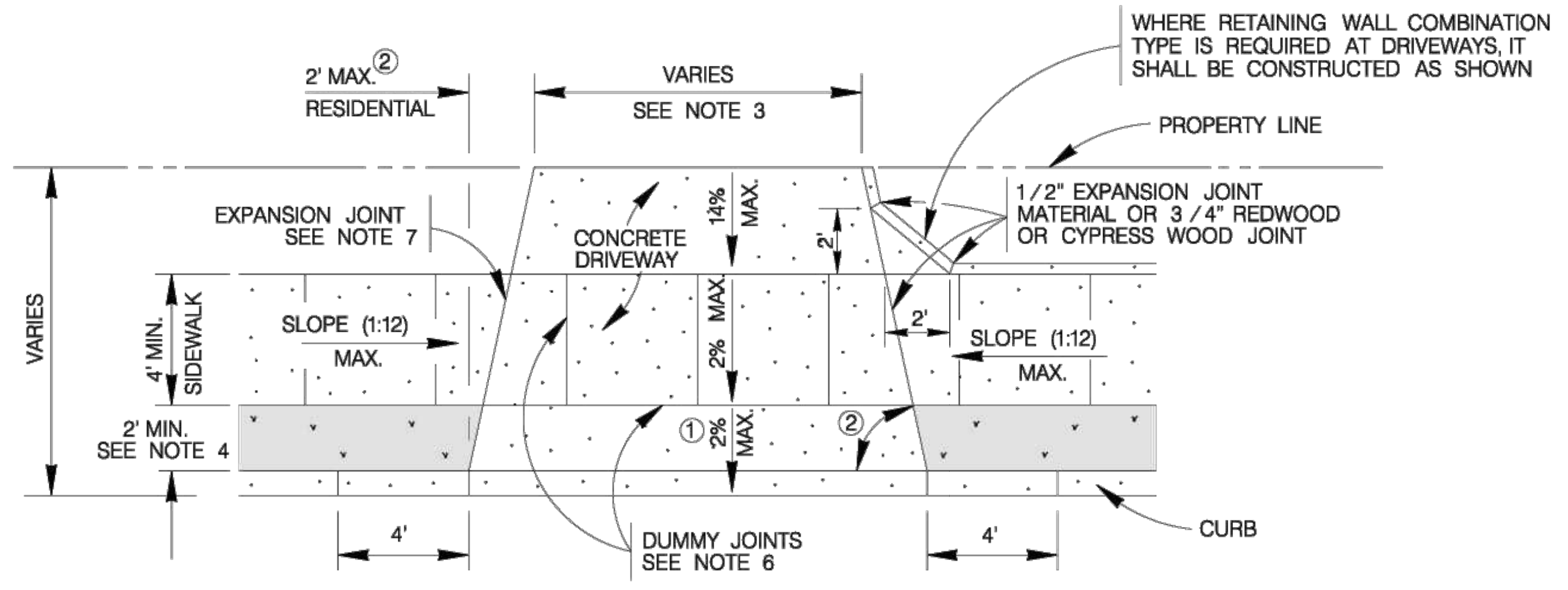
WITH SIDEWALK ABUTTING CURB


TOP OF ASPHALT PAVEMENT
4' – 0"
VARIES
②
VARIES
SEE NOTE 3
VARIES
②
4' – 0"
1' RAD.
1' RAD.
7"
1/2"

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

CURB PROFILE AT DRIVEWAY

WITH SIDEWALK SEPARATED FROM CURB


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

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____

CUDEENGINEERS.COM

EST. 1980
CUDE
ENGINEERS

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

GOERKE SUBDIVISION PHASE 1

CONCRETE DRIVEWAY DETAILS

DATE
09/30/2024

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
1.
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5.
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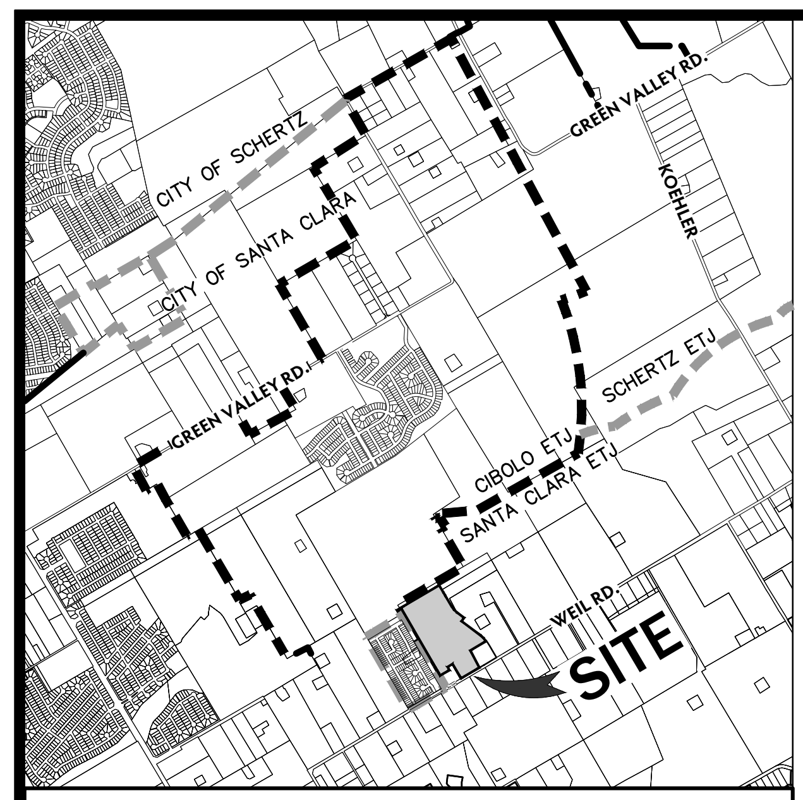
7.
8.
9.

KYLE M. HUDEK
138753
11/12/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C7.D4

P:\03346\101\2-DWG\4-Plans\C7.D1 - STDP.dwg 2024/09/30 3:43pm rbarrera


CITY OF SCHERTZ
CITY OF SANTA CLARA
GREEN VALLEY RD.
KOEHLER
SCHERTZ ETJ
CIBOLO ETJ
SANTA CLARA ETJ
WEIL RD.
SITE

LOCATION MAP
N.T.S.

NOTE:

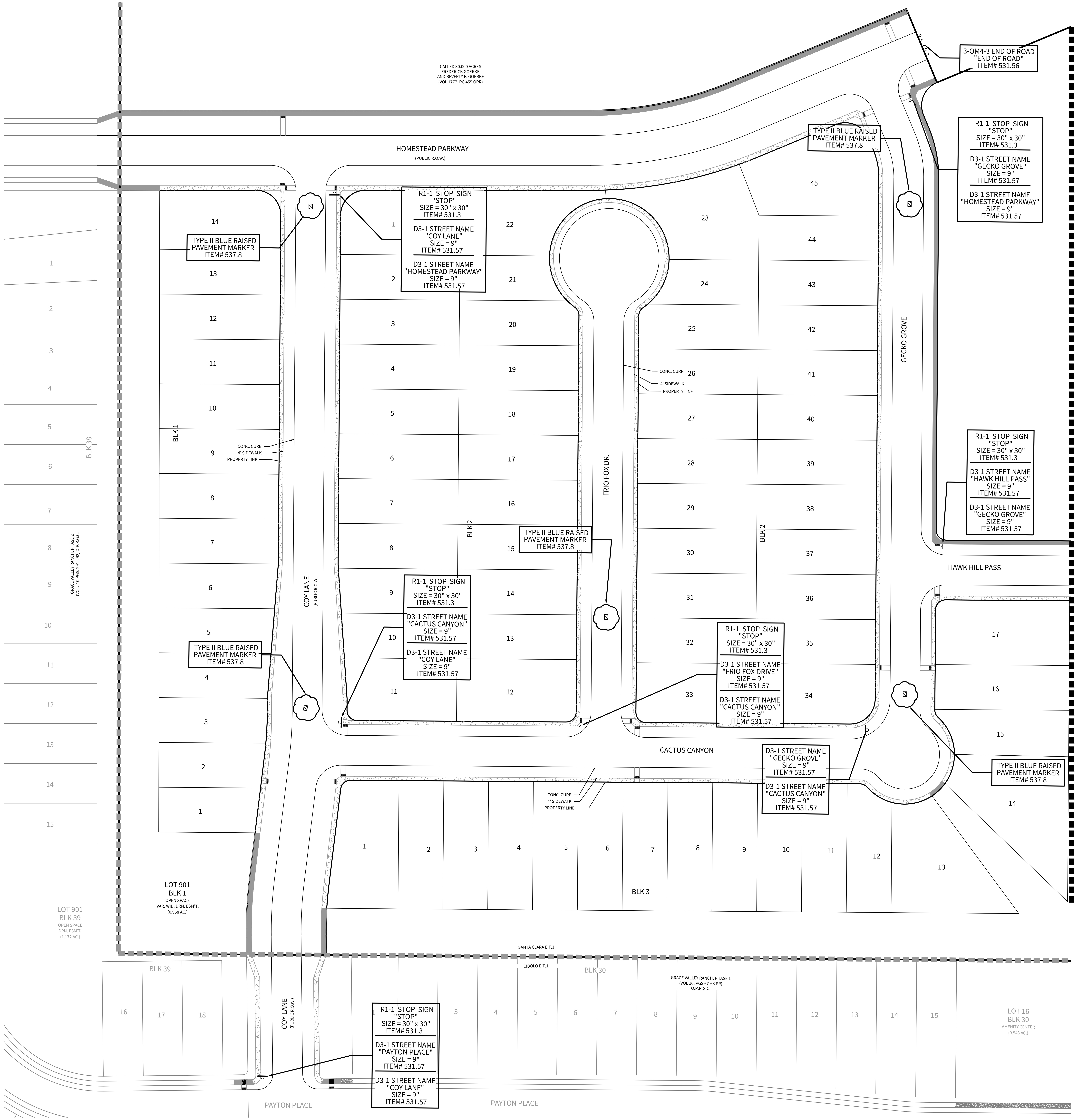
CONTRACTOR TO COORDINATE SIGN PLACEMENT WITH SIDEWALK/ADA RAMP CONSTRUCTION TO AVOID ANY POSSIBLE CONFLICTS.

OWNER/DEVELOPER:

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

CIVIL ENGINEER:

CUDE ENGINEERS
CONTACT PERSON: KYLE HUDEK, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112


CALLED 30.000 ACRES
FREDERICK GOERKE
AND BEVERLY F. GOERKE
(VOL 1777, PG 455 OPR)
HOMESTEAD PARKWAY
(PUBLIC R.O.W.)
3-OM4-3 END OF ROAD
"END OF ROAD"
ITEM# 531.56
TYPE II BLUE RAISED
PAVEMENT MARKER
ITEM# 537.8
R1-1 STOP SIGN
"STOP"
SIZE = 30" x 30"
ITEM# 531.3
D3-1 STREET NAME
"GECKO GROVE"
SIZE = 9"
ITEM# 531.57
D3-1 STREET NAME
"HOMESTEAD PARKWAY"
SIZE = 9"
ITEM# 531.57
R1-1 STOP SIGN
"STOP"
SIZE = 30" x 30"
ITEM# 531.3
D3-1 STREET NAME
"COY LANE"
SIZE = 9"
ITEM# 531.57
D3-1 STREET NAME
"HOMESTEAD PARKWAY"
SIZE = 9"
ITEM# 531.57
TYPE II BLUE RAISED
PAVEMENT MARKER
ITEM# 537.8
CONC. CURB
4' SIDEWALK
PROPERTY LINE
GECKO GROVE
FRIO FOX DR.
BLK 1
BLK 2
BLK 38
GRACE VALLEY RANCH, PHASE 2
(VOL. 10 PGS. 291-292) O.P.R.G.C.
COY LANE
(PUBLIC R.O.W.)
TYPE II BLUE RAISED
PAVEMENT MARKER
ITEM# 537.8
R1-1 STOP SIGN
"STOP"
SIZE = 30" x 30"
ITEM# 531.3
D3-1 STREET NAME
"HAWK HILL PASS"
SIZE = 9"
ITEM# 531.57
D3-1 STREET NAME
"GECKO GROVE"
SIZE = 9"
ITEM# 531.57
MATCHLINE 'A' SEE SHEET C8.01
HAWK HILL PASS
R1-1 STOP SIGN
"STOP"
SIZE = 30" x 30"
ITEM# 531.3
D3-1 STREET NAME
"CACTUS CANYON"
SIZE = 9"
ITEM# 531.57
D3-1 STREET NAME
"COY LANE"
SIZE = 9"
ITEM# 531.57
TYPE II BLUE RAISED
PAVEMENT MARKER
ITEM# 537.8
R1-1 STOP SIGN
"STOP"
SIZE = 30" x 30"
ITEM# 531.3
D3-1 STREET NAME
"FRIO FOX DRIVE"
SIZE = 9"
ITEM# 531.57
D3-1 STREET NAME
"CACTUS CANYON"
SIZE = 9"
ITEM# 531.57
CACTUS CANYON
D3-1 STREET NAME
"GECKO GROVE"
SIZE = 9"
ITEM# 531.57
D3-1 STREET NAME
"CACTUS CANYON"
SIZE = 9"
ITEM# 531.57
TYPE II BLUE RAISED
PAVEMENT MARKER
ITEM# 537.8
BLK 3
LOT 901
BLK 1
OPEN SPACE
VAR. WID. DRN. ESM'T.
(0.958 AC.)
LOT 901
BLK 39
OPEN SPACE
DRN. ESM'T.
(1.172 AC.)
SANTA CLARA E.T.J.
CIBOLO E.T.J.
BLK 39
BLK 30
GRACE VALLEY RANCH, PHASE 1
(VOL 10, PGS 67-68 PR)
O.P.R.G.C.
LOT 16
BLK 30
AMENITY CENTER
(0.543 AC.)
COY LANE
(PUBLIC R.O.W.)
R1-1 STOP SIGN
"STOP"
SIZE = 30" x 30"
ITEM# 531.3
D3-1 STREET NAME
"PAYTON PLACE"
SIZE = 9"
ITEM# 531.57
D3-1 STREET NAME
"COY LANE"
SIZE = 9"
ITEM# 531.57
PAYTON PLACE
PAYTON PLACE
SCALE: 1"=50'
50
25
0
50

CUDEENGINEERS.COM

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

GOERKE SUBDIVISION PHASE 1

TRAFFIC SIGNAGE PLAN

DATE
01/16/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
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KYLE M. HUDEK
138753
01/27/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C8.00

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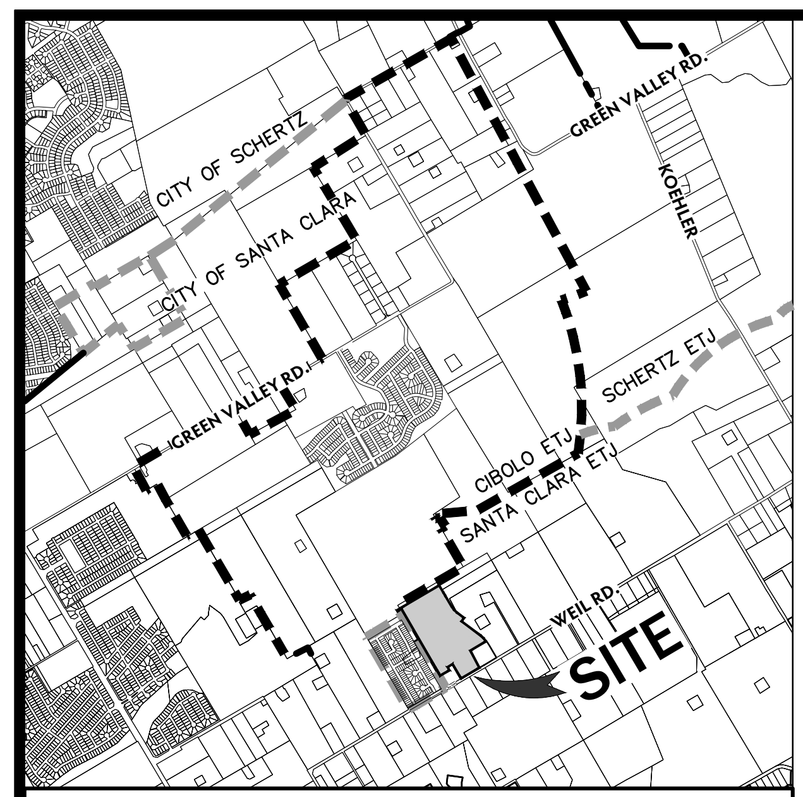
CITY OF SCHERTZ
CITY OF SANTA CLARA
GREEN VALLEY RD.
KOEHLER
SCHERTZ ETJ
CIBOLO ETJ
SANTA CLARA ETJ
WEIL RD.
SITE

LOCATION MAP
N.T.S.

NOTE:

CONTRACTOR TO COORDINATE SIGN PLACEMENT WITH SIDEWALK/ADA RAMP CONSTRUCTION TO AVOID ANY POSSIBLE CONFLICTS.

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CIVIL ENGINEER:

CUDE ENGINEERS
CONTACT PERSON: KYLE HUDEK, P.E.
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TEL: (210) 681-2951
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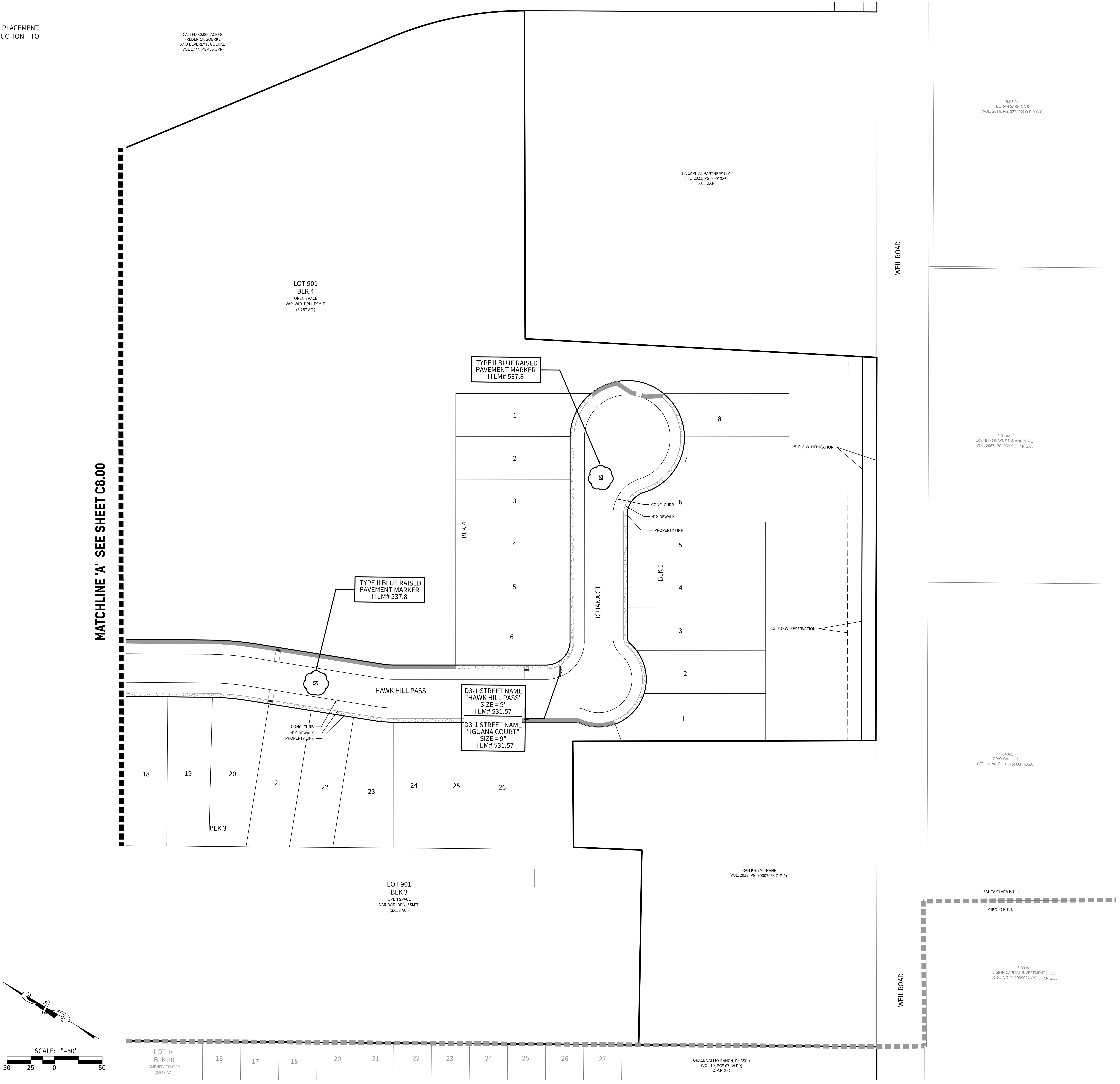
CALLED 30.000 ACRES
FREDERICK GOERKE
AND BEVERLY F. GOERKE
(VOL 1777, PG 455 OPR)
LOT 901
BLK 4
OPEN SPACE
VAR. WID. DRN. ESM'T.
(8.287 AC.)
FK CAPITAL PARTNERS LLC
VOL. 2021, PG. 99013864
G.C.T.D.R.
5.05 Ac.
DURAN SABRINA R
(VOL. 2016, PG. 022092) O.P.R.G.C.
WEIL ROAD
TYPE II BLUE RAISED
PAVEMENT MARKER
ITEM# 537.8
1
2
3
4
5
6
BLK 4
8
7
6
5
4
3
2
1
BLK 5
IGUANA CT
CONC. CURB
4' SIDEWALK
PROPERTY LINE
15' R.O.W. DEDICATION
15' R.O.W. RESERVATION
5.07 Ac.
CASTILLO WAYNE D & ANDREA L
(VOL. 2067, PG. 0523) O.P.R.G.C.
MATCHLINE 'A' SEE SHEET C8.00
TYPE II BLUE RAISED
PAVEMENT MARKER
ITEM# 537.8
HAWK HILL PASS
D3-1 STREET NAME
"HAWK HILL PASS"
SIZE = 9"
ITEM# 531.57
D3-1 STREET NAME
"IGUANA COURT"
SIZE = 9"
ITEM# 531.57
CONC. CURB
4' SIDEWALK
PROPERTY LINE
18
19
20
21
22
23
24
25
26
BLK 3
5.04 Ac.
GRAY GAIL FEY
(VOL. 4180, PG. 0675) O.P.R.G.C.
LOT 901
BLK 3
OPEN SPACE
VAR. WID. DRN. ESM'T.
(3.658 AC.)
TRAN KHIEM THANH
(VOL. 2018, PG. 99007054 O.P.R)
SANTA CLARA E.T.J.
CIBOLO E.T.J.
3.00 Ac.
VISION CAPITAL INVESTMENTS, LLC
(DOC. NO. 201999022679) O.P.R.G.C.
WEIL ROAD
SCALE: 1"=50'
50
25
0
50
LOT 16
BLK 30
AMENITY CENTER
(0.543 AC.)
16
17
18
20
21
22
23
24
25
26
27
GRACE VALLEY RANCH, PHASE 1
(VOL 10, PGS 67-68 PR)
O.P.R.G.C.

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

CUDEENGINEERS.COM

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ENGINEERS

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

GOERKE SUBDIVISION PHASE 1

TRAFFIC SIGNAGE PLAN

DATE
01/16/2025

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
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KYLE M. HUDEK
138753
01/27/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C8.01

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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)

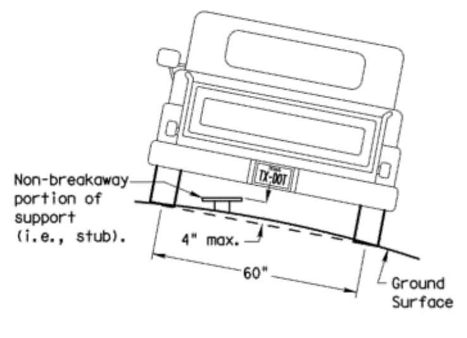
Anchor Type

- 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))

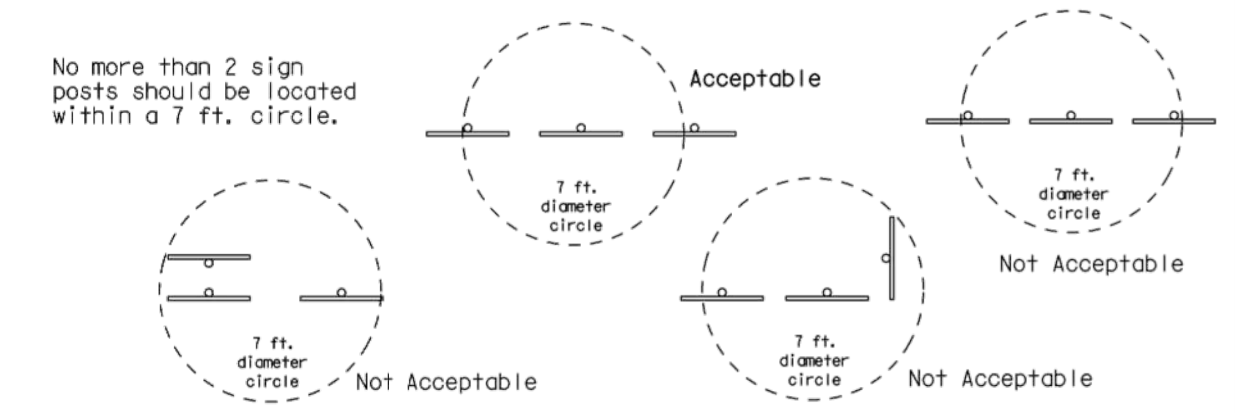
Sign Mounting Designation

- 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))

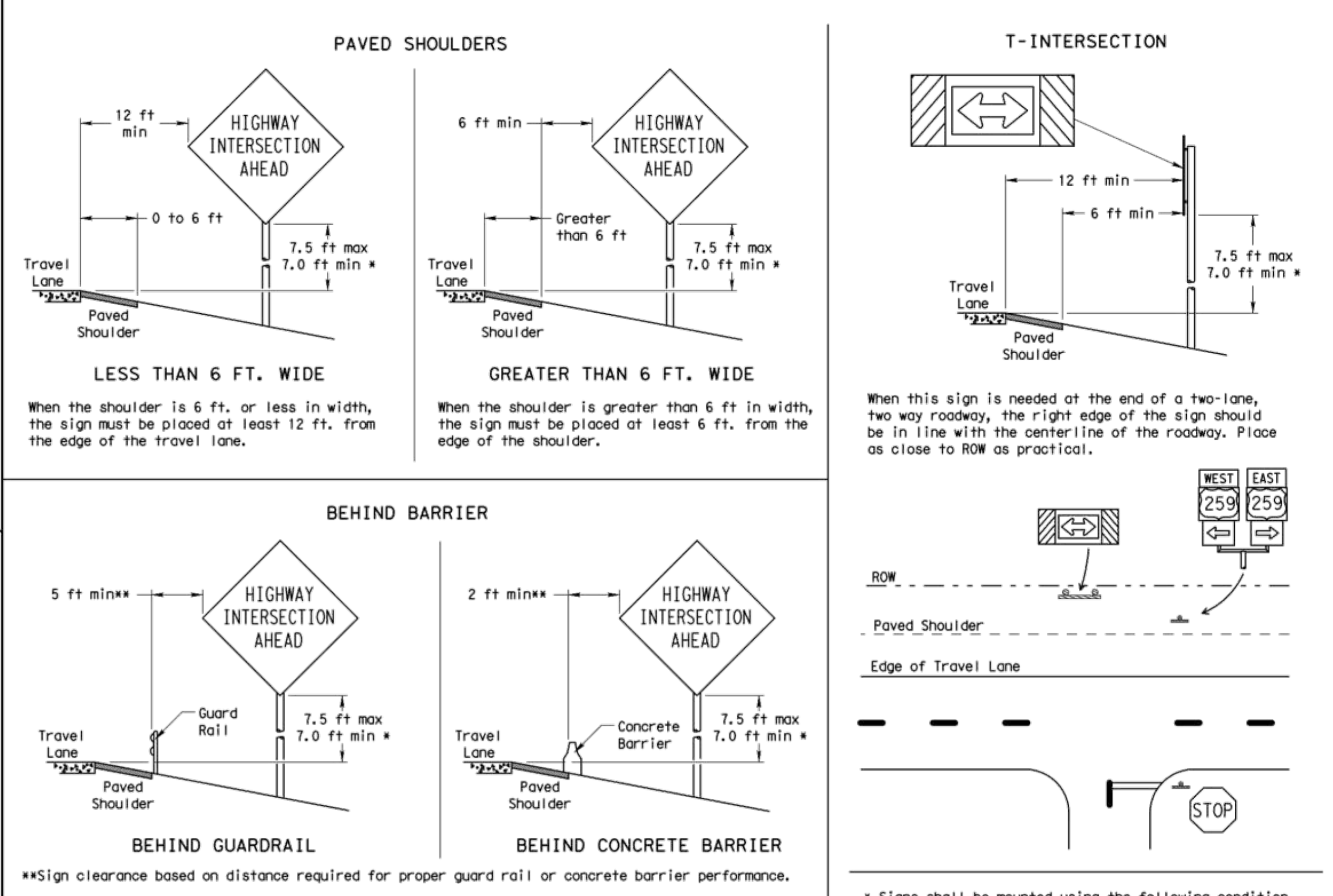
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT


Non-breakaway portion of support (i.e., stub).
4" max.
60"
Ground Surface

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.
Acceptable
7 ft. diameter circle
Not Acceptable

SIGN LOCATION


PAVED SHOULDERS
12 ft min
0 to 6 ft
6 ft min
Greater than 6 ft
HIGHWAY INTERSECTION AHEAD
7.5 ft max
7.0 ft min *
Travel Lane
Paved Shoulder
LESS THAN 6 FT. WIDE
GREATER THAN 6 FT. WIDE
T-INTERSECTION
12 ft min
6 ft min
ROW
Paved Shoulder
Edge of Travel Lane
WEST 259
EAST 259
STOP
BEHIND BARRIER
5 ft min**
2 ft min**
Guard Rail
Concrete Barrier
BEHIND GUARDRAIL
BEHIND CONCRETE BARRIER

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.

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.

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.

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

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

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

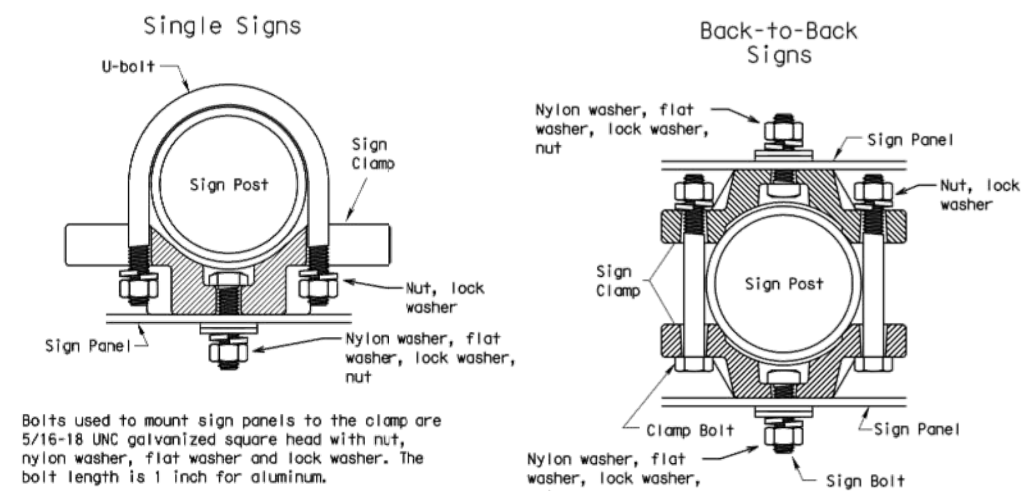
(2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

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


Single Signs
U-bolt
Sign Post
Sign Clamp
Nut, lock washer
Sign Panel
Nylon washer, flat washer, lock washer, nut
Back-to-Back Signs
Nylon washer, flat washer, lock washer, nut
Sign Panel
Nut, lock washer
Sign Clamp
Sign Post
Clamp Bolt
Sign Bolt

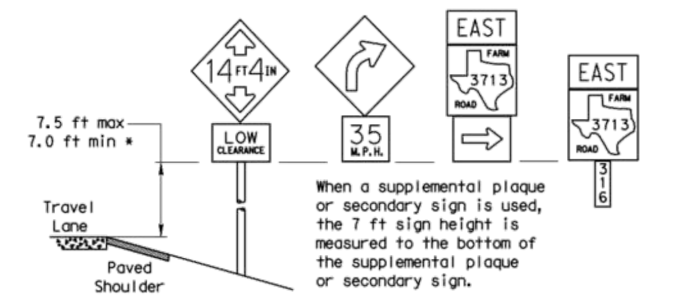
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

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.

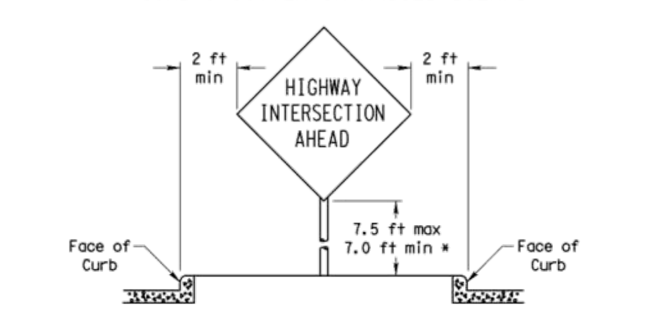
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES


7.5 ft max
7.0 ft min *
Travel Lane
Paved Shoulder
14
LOW
35
EAST 3713
EAST 3713 316

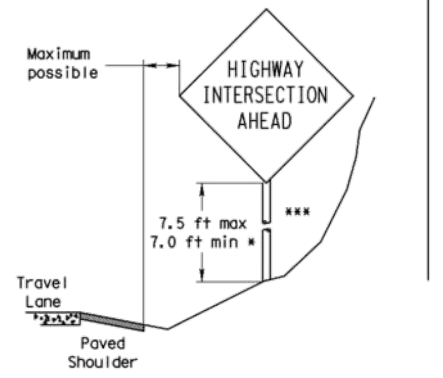
When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND


2 ft min
2 ft min
HIGHWAY INTERSECTION AHEAD
7.5 ft max
7.0 ft min *
Face of Curb
Face of Curb

RESTRICTED RIGHT-OF-WAY

(When 6 ft min. is not possible.)


Maximum possible
HIGHWAY INTERSECTION AHEAD
7.5 ft max
7.0 ft min *
***
Travel Lane
Paved Shoulder

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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26A

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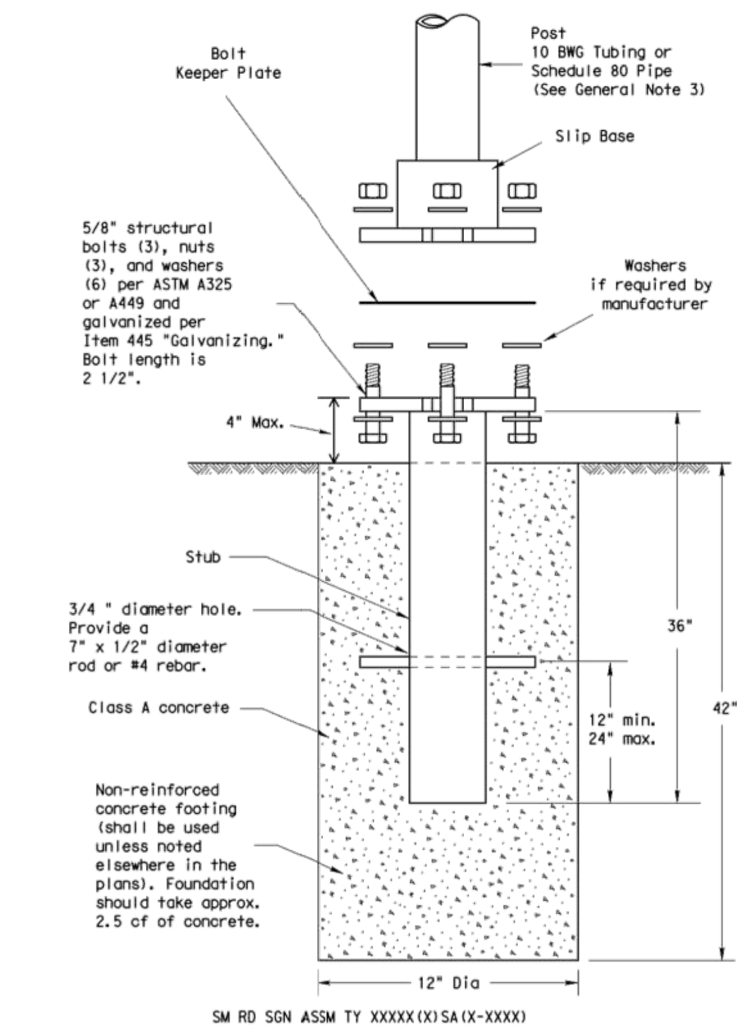
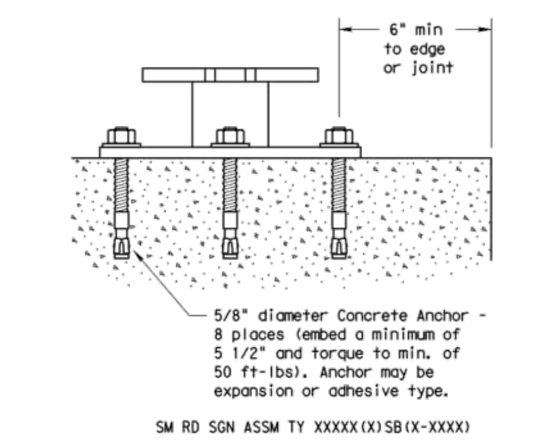
TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS


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.

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.

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.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-1)-08

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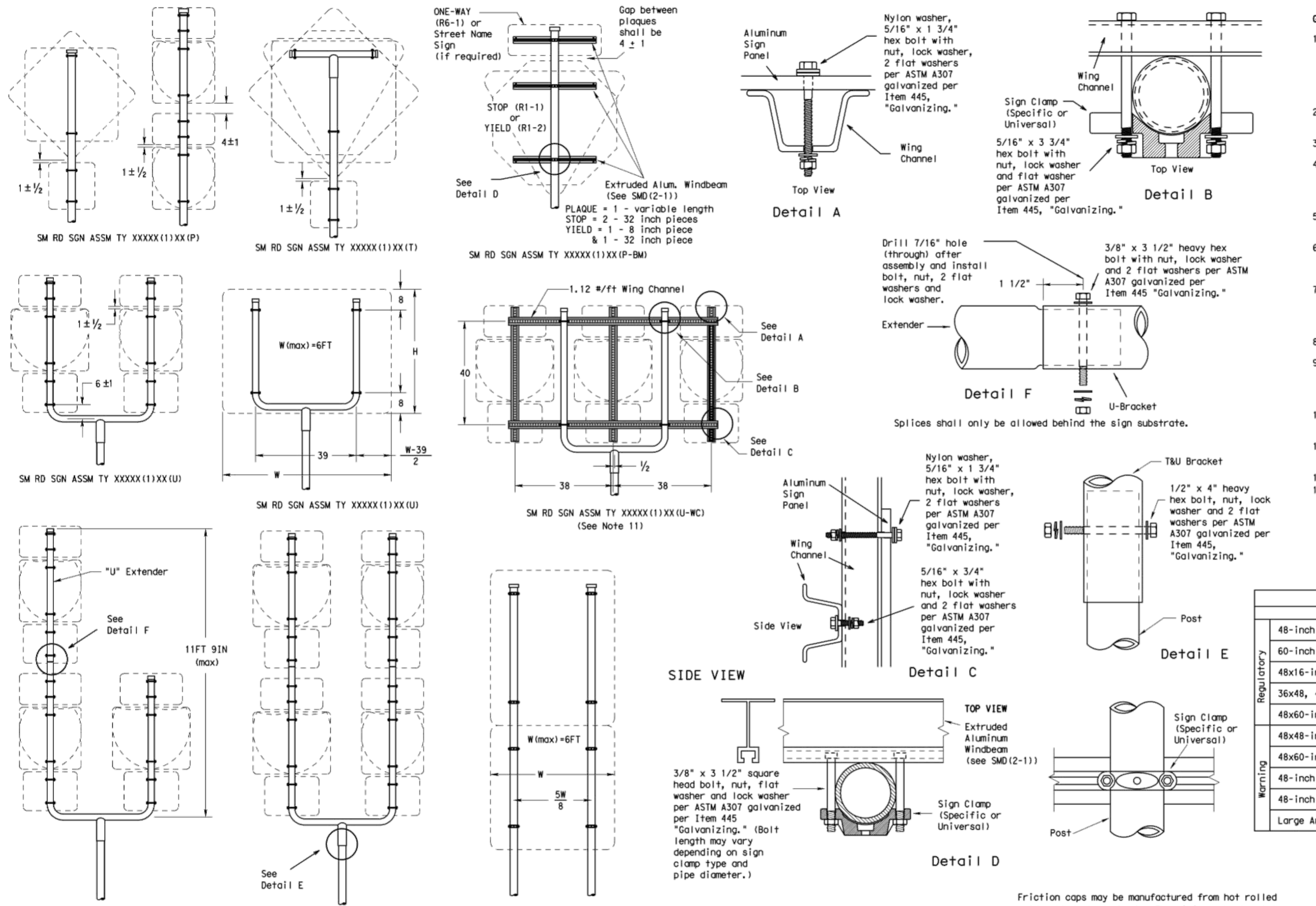
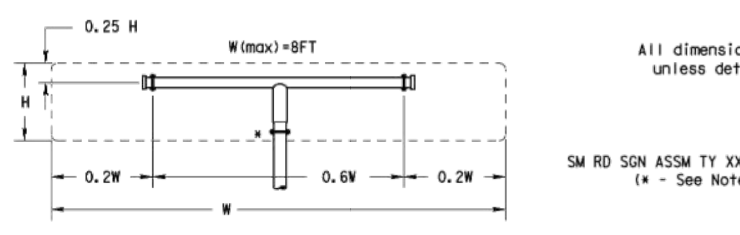
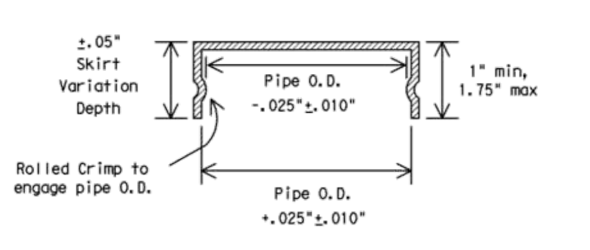

1 ± 1/2
4 ± 1
SM RD SGN ASSM TY XXXXX(1)XX(P)
SM RD SGN ASSM TY XXXXX(1)XX(T)
ONE-WAY (R6-1) or Street Name Sign (if required)
Gap between plaques shall be 4 ± 1
STOP (R1-1)
YIELD (R1-2)
See Detail D
Extruded Alum. Windbeam (See SMD(2-1))
PLAQUE = 1 - variable length
STOP = 2 - 32 inch pieces
YIELD = 1 - 8 inch pieces & 1 - 32 inch pieces
SM RD SGN ASSM TY XXXXX(1)XX(P-BM)
Aluminum Sign Panel
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."
Wing Channel
Top View
Detail A
Sign Clamp (Specific or Universal)
5/16" x 3 3/4" hex bolt with nut, lock washer and flat washer per ASTM A307 galvanized per Item 445, "Galvanizing."
Detail B
W(max)=6FT
SM RD SGN ASSM TY XXXXX(1)XX(U)
1.12 #/ft Wing Channel
See Detail A
See Detail B
See Detail C
SM RD SGN ASSM TY XXXXX(1)XX(U-WC) (See Note 11)
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
Detail F
Splices shall only be allowed behind the sign substrate.
"U" Extender
See Detail F
11FT 9IN (max)
SIDE VIEW
Aluminum Sign Panel
Wing Channel
Side View
Detail C
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
Detail E
TOP VIEW
Extruded Aluminum Windbeam (see SMD(2-1))
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.)
Sign Clamp (Specific or Universal)
Detail D
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)


0.25 H
W(max)=6FT
0.2W
0.6W
0.2W
SM RD SGN ASSM TY XXXXX(1)XX(T) (* - See Note 12)

All dimensions are in english unless detailed otherwise.

FRICTION CAP DETAIL


±.05" Skirt Variation Depth
Pipe O.D. -.025"±.010"
1" min, 1.75" max
Rolled Crimp to engage pipe O.D.
Pipe O.D. +.025"±.010"

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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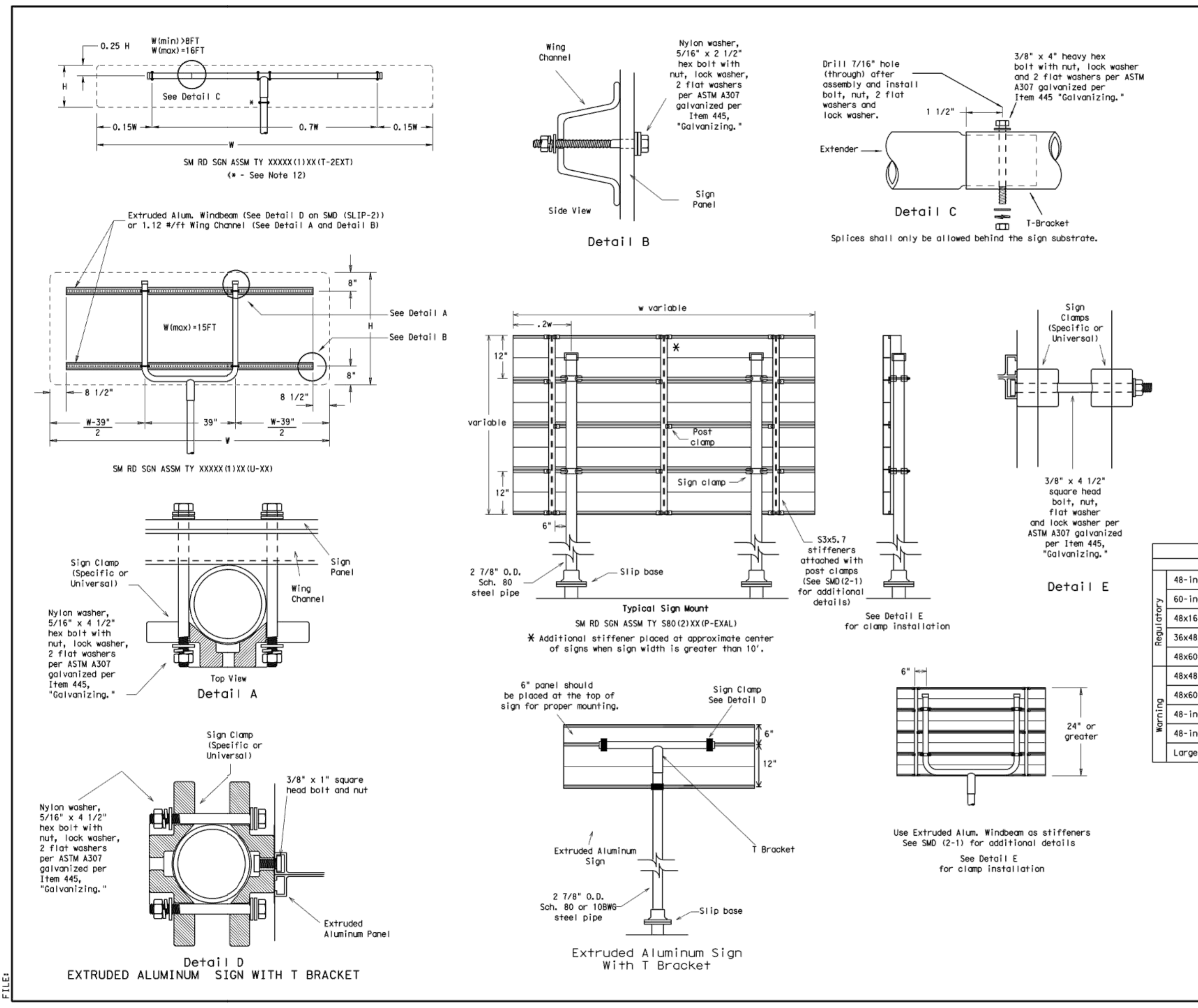
0.25 H
W(min)=3FT
W(max)=16FT
See Detail C
0.15W
0.7W
0.15W
SM RD SGN ASSM TY XXXXX(1)XX(T-2EXT) (* - See Note 12)
Extruded Alum. Windbeam (See Detail D on SMD (SLIP-2)) or 1.12 #/ft Wing Channel (See Detail A and Detail B)
W(max)=15FT
See Detail A
See Detail B
SM RD SGN ASSM TY XXXXX(1)XX(U-XX)
Wing Channel
Nylon washer, 5/16" x 2 1/2" hex bolt with nut, lock washer, 2 flat washers per ASTM A307 galvanized per Item 445, "Galvanizing."
Side View
Sign Panel
Detail B
Drill 7/16" hole (through) after assembly and install bolt, nut, 2 flat washers and lock washer.
3/8" x 4" heavy hex bolt with nut, lock washer and 2 flat washers per ASTM A307 galvanized per Item 445 "Galvanizing."
Extender
T-Bracket
Detail C
Splices shall only be allowed behind the sign substrate.
W variable
Post clamp
Sign clamp
Slip base
2 7/8" O.D. Sch. 80 steel pipe
S3x5.7 stiffeners attached with post clamps (see SMD(2-1) for additional details)
Typical Sign Mount
SM RD SGN ASSM TY S80(2)XX(P-EXAL)
Additional stiffener placed at approximate center of signs when sign width is greater than 10'.
Sign Clamps (Specific or Universal)
3/8" x 4 1/2" square head bolt, nut, flat washer and lock washer per ASTM A307 galvanized per Item 445, "Galvanizing."
See Detail E for clamp installation
Detail E
Sign Clamp (Specific or Universal)
Nylon washer, 5/16" x 4 1/2" hex bolt with nut, lock washer, 2 flat washers per ASTM A307 galvanized per Item 445, "Galvanizing."
Top View
Detail A
6" panel should be placed at the top of sign for proper mounting.
Sign Clamp See Detail D
T Bracket
Extruded Aluminum Sign
Slip base
Extruded Aluminum Sign With T Bracket
24" or greater
Use Extruded Alum. Windbeam as stiffeners See SMD (2-1) for additional details
See Detail E for clamp installation
Sign Clamp (Specific or Universal)
3/8" x 1" square head bolt and nut
Extruded Aluminum Panel
Detail D
EXTRUDED ALUMINUM SIGN WITH T BRACKET

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

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San Antonio, Texas 78231
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GOERKE SUBDIVISION PHASE 1

TXDOT SIGN MOUNTING DETAILS

DATE
09/30/2024

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS

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KYLE M. HUDEK
138753
11/12/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

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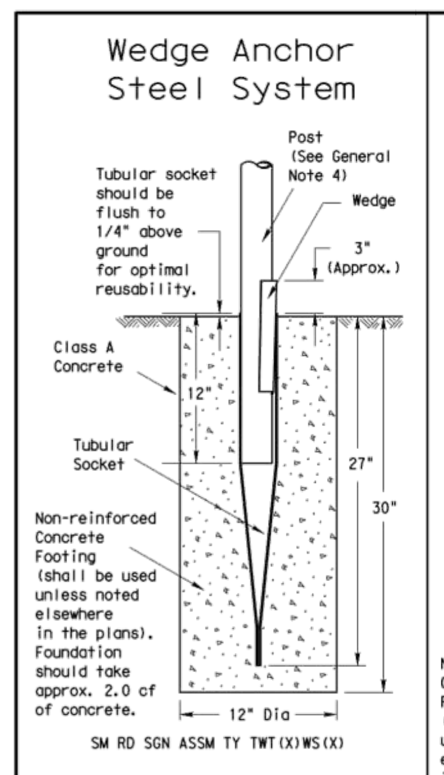
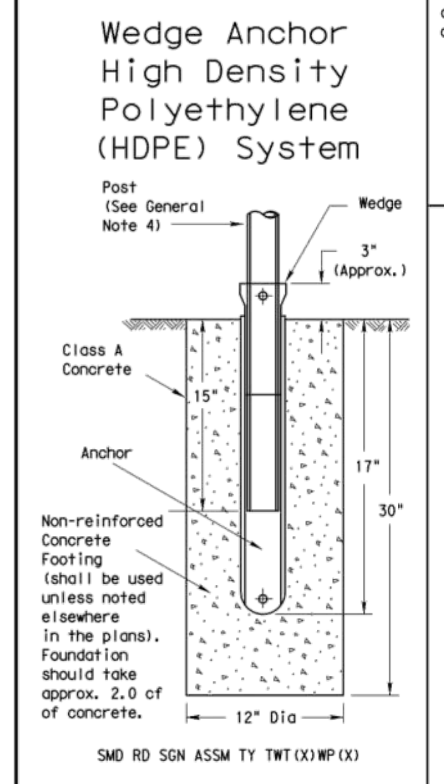
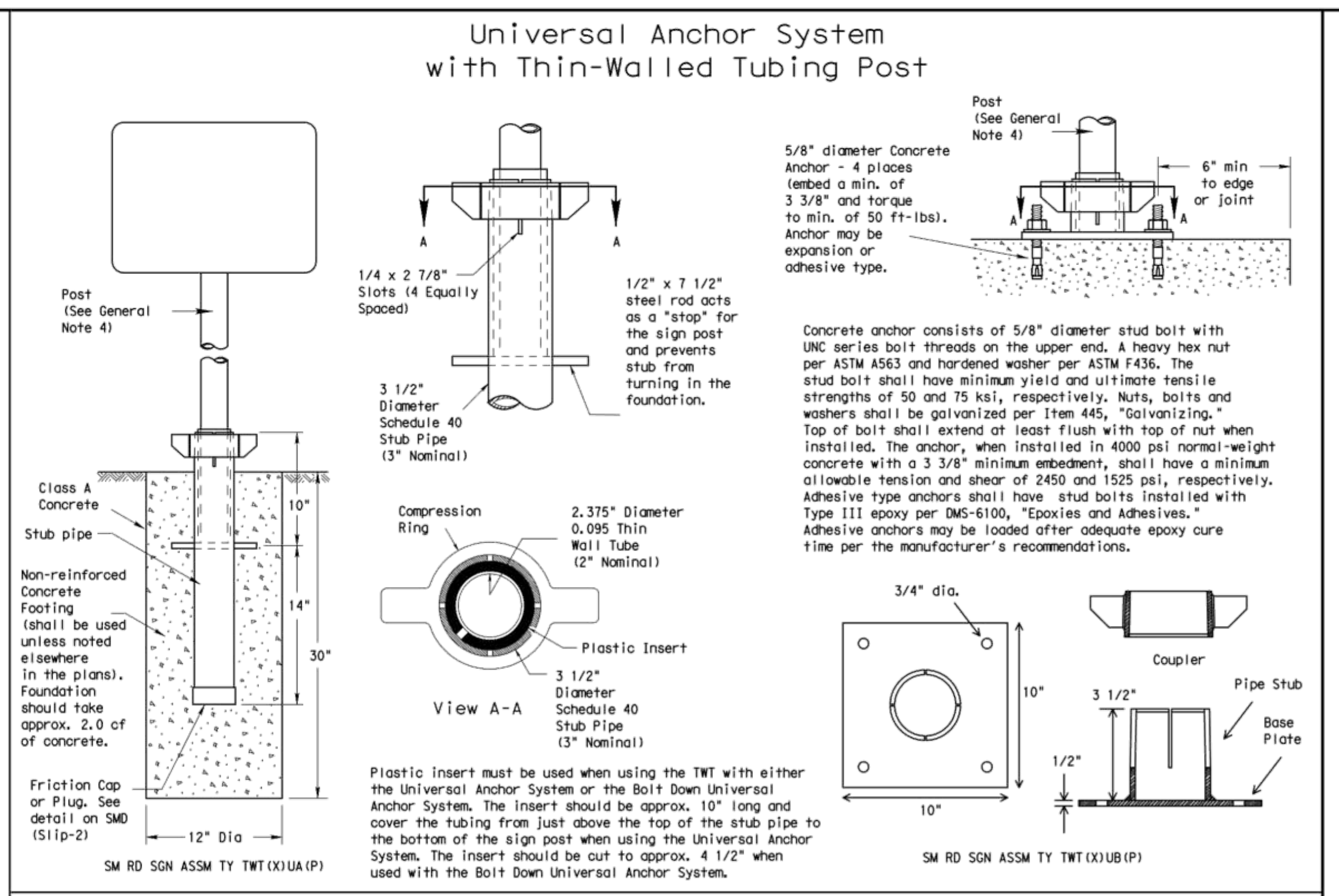
Wedge Anchor Steel System


Post (See General Note 4)
Wedge
Tubular socket should be flush to 1/4" above ground for optimal reusability.
3" (Approx.)
Class A Concrete
12"
27"
30"
Tubular Socket
Non-reinforced Concrete Footing (shall be used unless noted elsewhere in the plans). Foundation should take approx. 2.0 cf of concrete.
12" Dia
SM RD SGN ASSM TY TWT(X)WS(X)

Wedge Anchor High Density Polyethylene (HDPE) System


Post (See General Note 4)
Wedge
3" (Approx.)
Class A Concrete
15"
Anchor
17"
30"
Non-reinforced Concrete Footing (shall be used unless noted elsewhere in the plans). Foundation should take approx. 2.0 cf of concrete.
12" Dia
SM RD SGN ASSM TY TWT(X)WP(X)

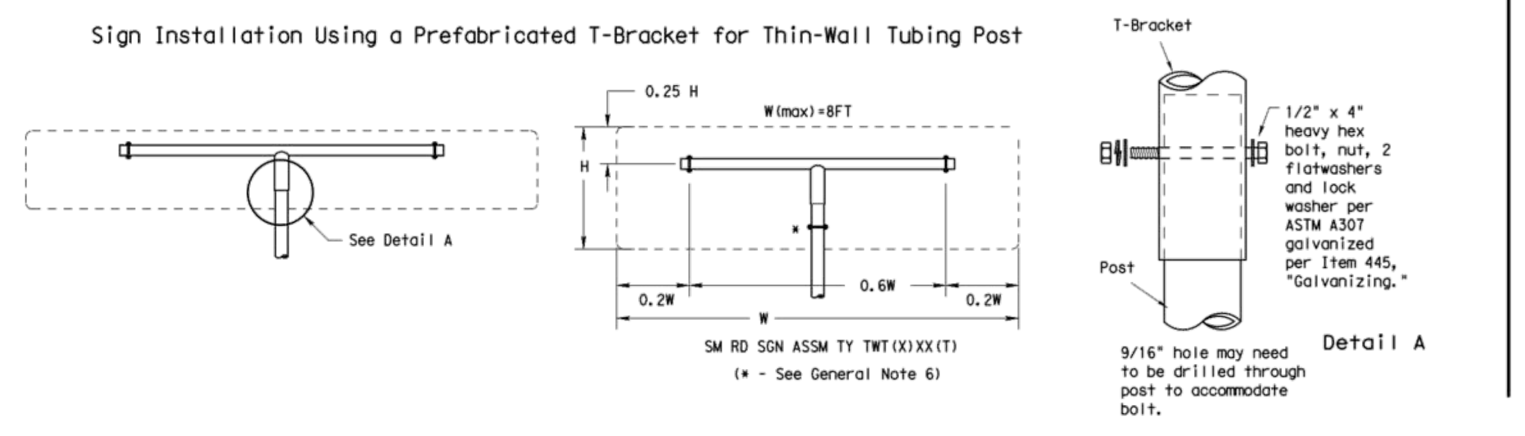
Universal Anchor System with Thin-Walled Tubing Post


Post (See General Note 4)
Class A Concrete
Stub pipe
Non-reinforced Concrete Footing (shall be used unless noted elsewhere in the plans). Foundation should take approx. 2.0 cf of concrete.
Friction Cap or Plug. See detail on SMD (Slip-2)
10"
14"
30"
12" Dia
SM RD SGN ASSM TY TWT(X)UA(P)
1/4 x 2 7/8" Slots (4 Equally Spaced)
3 1/2" Diameter Schedule 40 Stub Pipe (3" Nominal)
1/2" x 7 1/2" steel rod acts as a "stop" for the sign post and prevents stub from turning in the foundation.
Compression Ring
2.375" Diameter 0.095 Thin Wall Tube (2" Nominal)
Plastic Insert
3 1/2" Diameter Schedule 40 Stub Pipe (3" Nominal)
View A-A
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.
6" min to edge or joint
A
A
3/4" dia.
10"
10"
Coupler
Pipe Stub
Base Plate
3 1/2"
1/2"
SM RD SGN ASSM TY TWT(X)UB(P)

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.

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


See Detail A
0.25 H
W(max)=8FT
H
0.2W
0.6W
0.2W
SM RD SGN ASSM TY TWT(X)XX(T)
(* - See General Note 6)
T-Bracket
1/2" x 4" heavy hex bolt, nut, 2 flatwashers and lock washer per ASTM A307 galvanized per Item 445, "Galvanizing."
Post
9/16" hole may need to be drilled through post to accommodate bolt.
Detail A

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

SMD(TWT)-08

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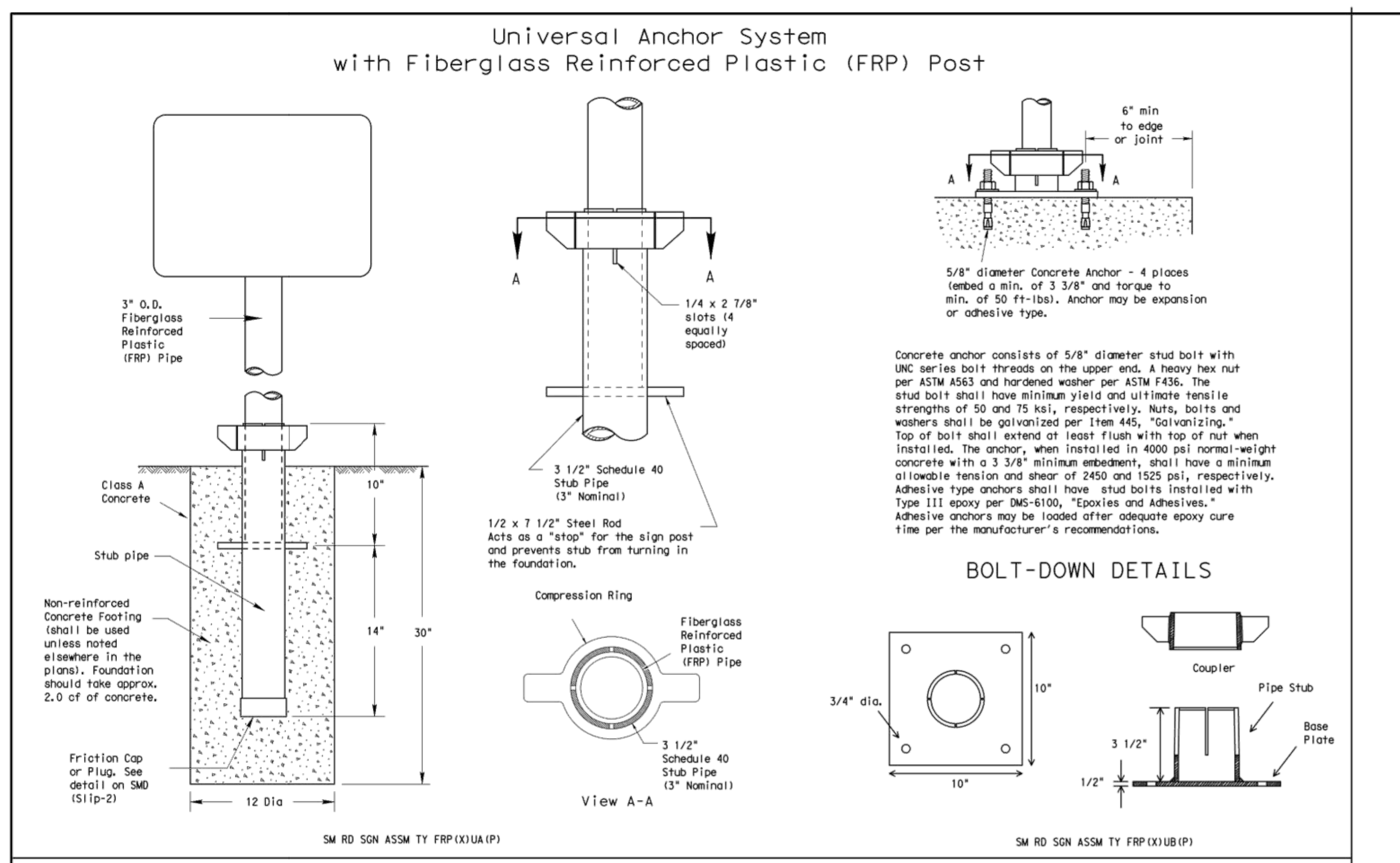
9-08 REVISIONS

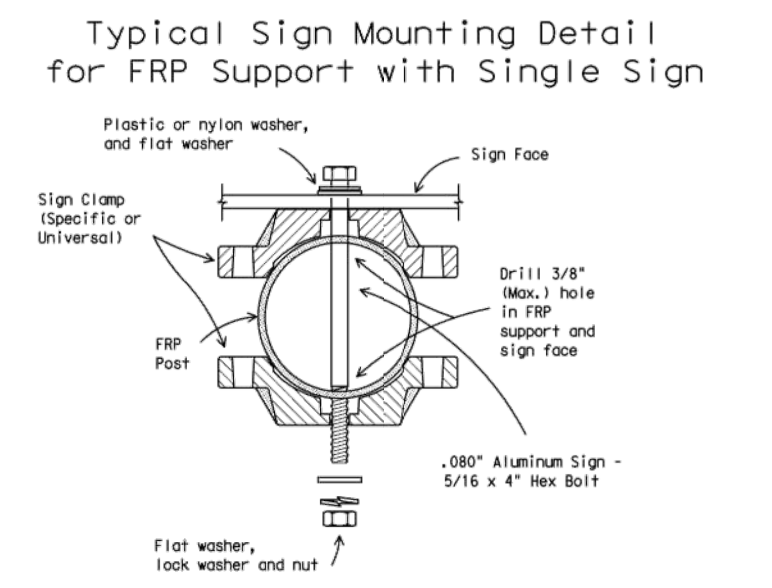
26E

Universal Anchor System with Fiberglass Reinforced Plastic (FRP) Post

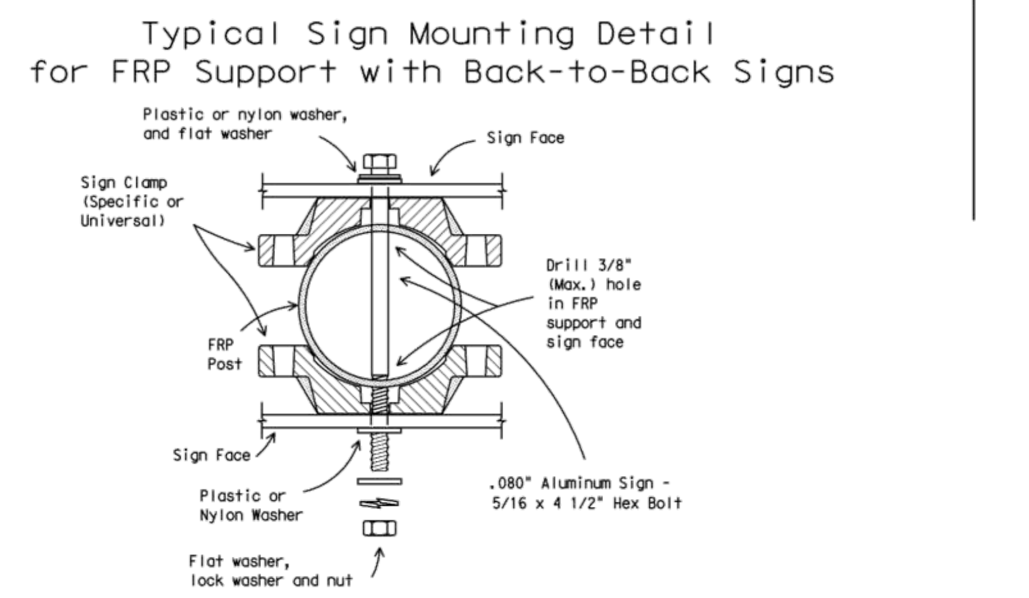

3" O.D. Fiberglass Reinforced Plastic (FRP) Pipe
Class A Concrete
Stub pipe
Non-reinforced Concrete Footing (shall be used unless noted elsewhere in the plans). Foundation should take approx. 2.0 cf of concrete.
Friction Cap or Plug. See detail on SMD (Slip-2)
10"
14"
30"
12" Dia
SM RD SGN ASSM TY FRP(X)UA(P)
A
A
1/4 x 2 7/8" slots (4 equally spaced)
3 1/2" Schedule 40 Stub Pipe (3" Nominal)
1/2 x 7 1/2" Steel Rod Acts as a "stop" for the sign post and prevents stub from turning in the foundation.
Compression Ring
Fiberglass Reinforced Plastic (FRP) Pipe
3 1/2" Schedule 40 Stub Pipe (3" Nominal)
View A-A
6" min to edge or joint
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.
BOLT-DOWN DETAILS
3/4" dia.
10"
10"
Coupler
Pipe Stub
Base Plate
3 1/2"
1/2"
SM RD SGN ASSM TY FRP(X)UB(P)

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.

Typical Sign Mounting Detail for FRP Support with Single Sign


Plastic or nylon washer, and flat washer
Sign Face
Sign Clamp (Specific or Universal)
Drill 3/8" (Max.) hole in FRP support and sign face
FRP Post
.080" Aluminum Sign - 5/16 x 4" Hex Bolt
Flat washer, lock washer and nut

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


Plastic or nylon washer, and flat washer
Sign Face
Sign Clamp (Specific or Universal)
Drill 3/8" (Max.) hole in FRP support and sign face
FRP Post
Sign Face
Plastic or Nylon Washer
.080" Aluminum Sign - 5/16 x 4 1/2" Hex Bolt
Flat washer, lock washer and nut

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

SMD(FRP)-08

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9-08 REVISIONS

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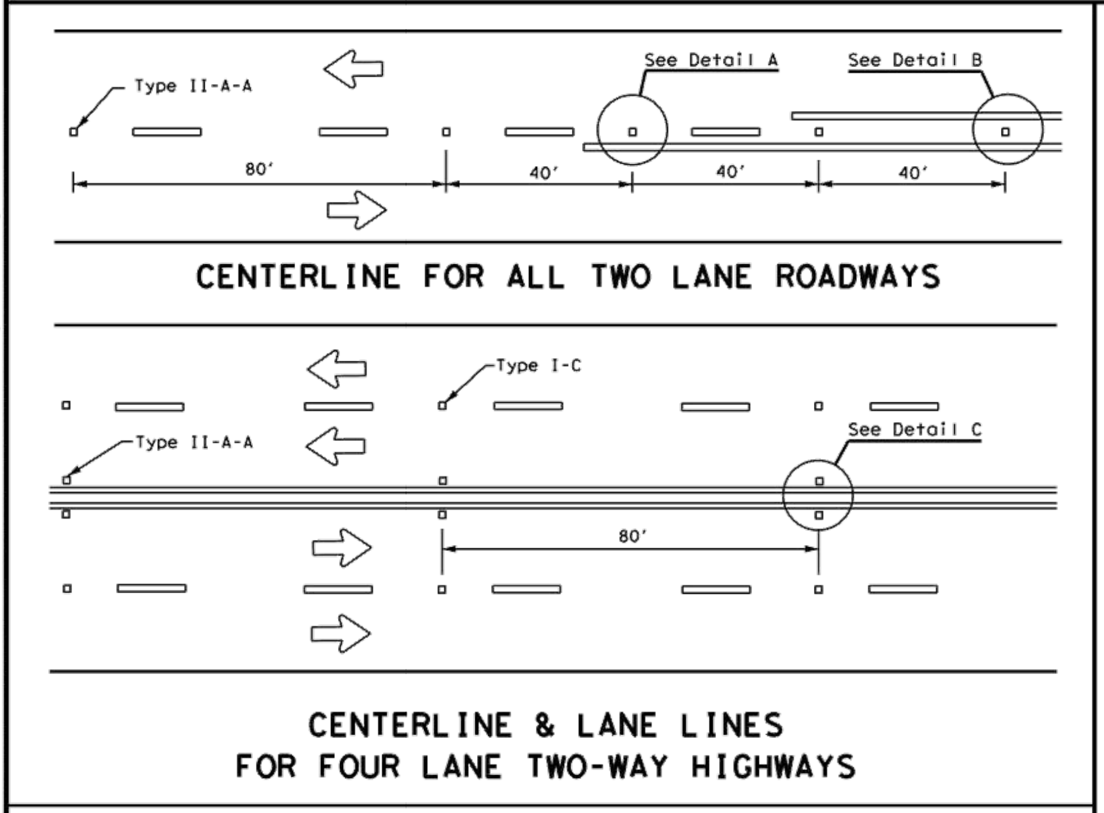
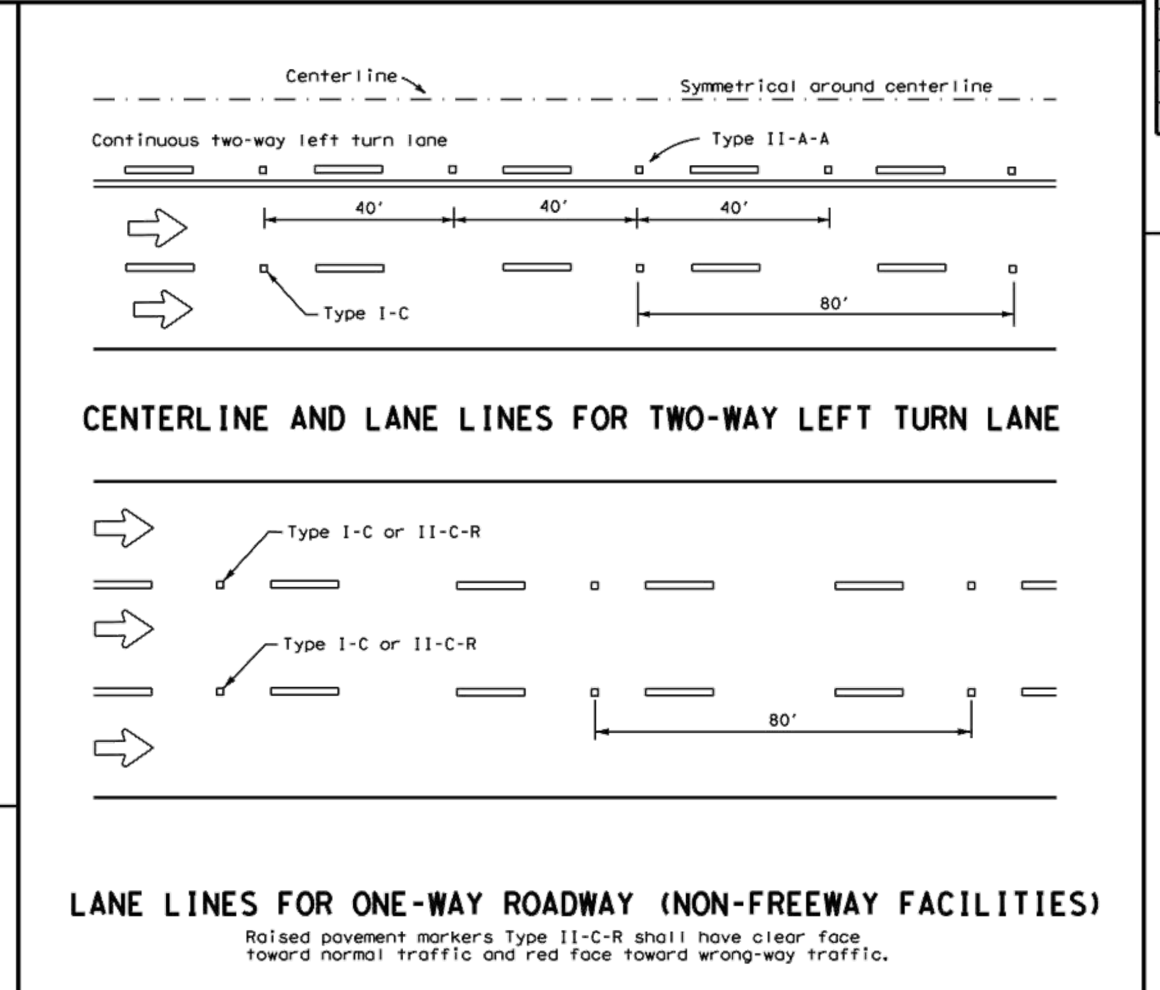
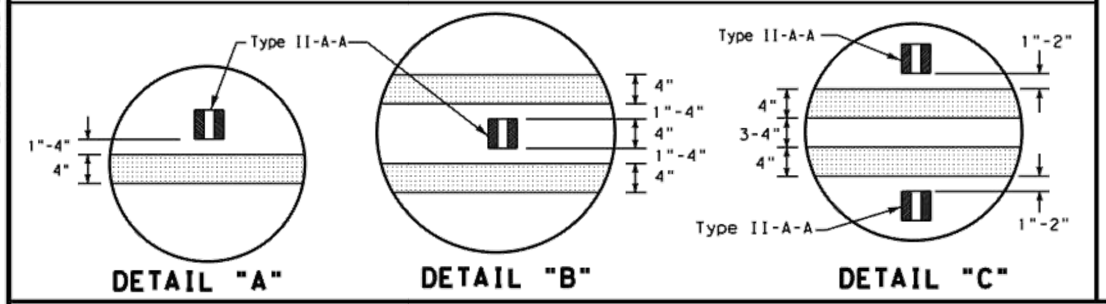
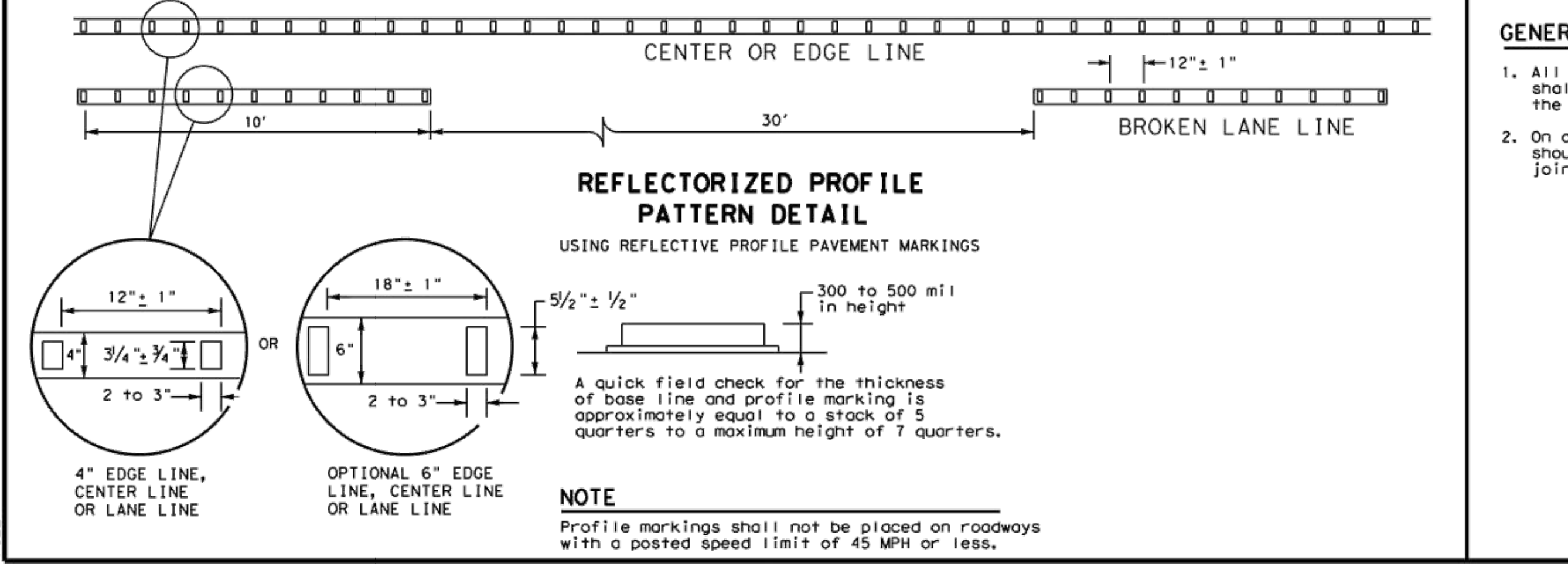
REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE


Type II-A-A
See Detail A
See Detail B
80'
40'
40'
40'
CENTERLINE FOR ALL TWO LANE ROADWAYS
Type I-C
Type II-A-A
See Detail C
80'
CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY HIGHWAYS


Centerline
Symmetrical around centerline
Continuous two-way left turn lane
Type II-A-A
40'
40'
40'
Type I-C
80'
CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE
Type I-C or II-C-R
Type I-C or II-C-R
80'
LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.


Type II-A-A
1"-4"
4"
DETAIL "A"
4"
1"-4"
4"
1"-4"
4"
DETAIL "B"
Type II-A-A
4"
3-4"
4"
Type II-A-A
1"-2"
1"-2"
DETAIL "C"


CENTER OR EDGE LINE
12"± 1"
10'
30'
BROKEN LANE LINE
12"± 1"
4"
3/4"± 3/4"
2 to 3"
OR
18"± 1"
6"
2 to 3"
4" EDGE LINE, CENTER LINE OR LANE LINE
OPTIONAL 6" EDGE LINE, CENTER LINE OR LANE LINE
5½"± ½"
300 to 500 mil in height

REFLECTORIZED PROFILE PATTERN DETAIL

USING REFLECTIVE PROFILE PAVEMENT MARKINGS

A quick field check for the thickness of base line and profile marking is approximately equal to a stack of 5 quarters to a maximum height of 7 quarters.

NOTE

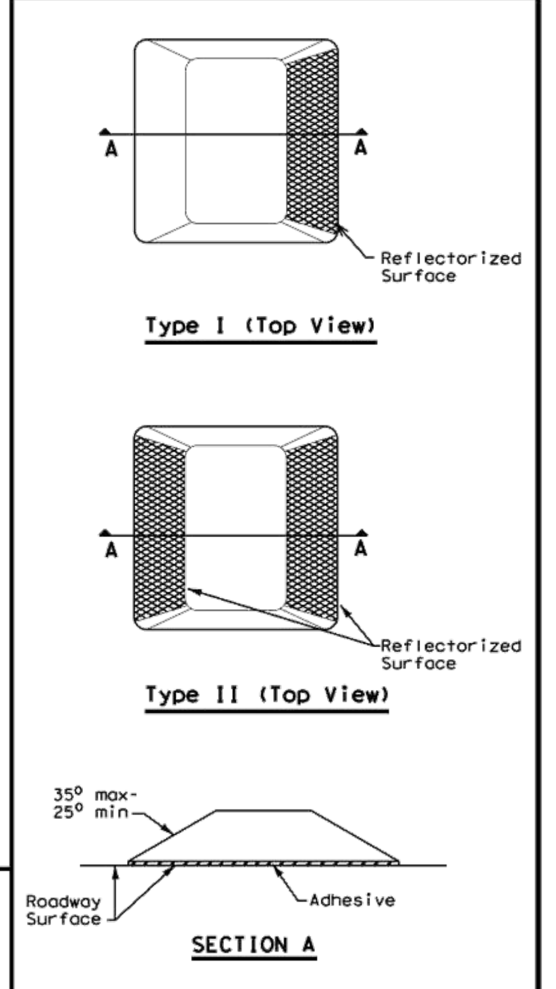
Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

GENERAL NOTES

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

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

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


A
A
Reflectorized Surface
Type I (Top View)
A
A
Reflectorized Surface
Type II (Top View)
35° max-
25° min
Roadway Surface
Adhesive
SECTION A

RAISED PAVEMENT MARKERS

Texas Department of Transportation
Traffic Safety Division Standard

POSITION GUIDANCE USING RAISED MARKERS RELECTORIZED PROFILE MARKINGS

PM(2)-20

FILE: pm2-20.dgn
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4-92 2-10 REVISIONS
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ENGINEERS

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GOERKE SUBDIVISION PHASE 1

TXDOT SIGN MOUNTING DETAILS

DATE
09/30/2024

PROJECT NO.
03346.101

DRAWN BY
R.B./M.A.S.

CHECKED BY
K.M.H.

REVISIONS
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KYLE M. HUDEK
138753
K Hudek
11/12/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

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