CONSTRUCTION PLANS

CUDEENGINEERS.COM

GUADALUPE COUNTY MUNICIPAL UTILITY DISTRICT #4

MISCELLANEOUS CONSTRUCTION PLANS

- C1.00 – STORM WATER POLLUTION PREVENTION PLAN
- C1.01 – STORM WATER POLLUTION PREVENTION PLAN
- C3.00 – UTILITY LAYOUT PLAN
- C3.01 – UTILITY LAYOUT PLAN

SANITARY SEWER CONSTRUCTION PLANS

- C4.00 – OVERALL SANITARY SEWER PLAN
- C4.01 – OVERALL SANITARY SEWER PLAN
- C4.02 – SANITARY SEWER PLAN & PROFILE – LINE W
- C4.03 – SANITARY SEWER PLAN & PROFILE – LINE W
- C4.04 – SANITARY SEWER PLAN & PROFILE – LINE W
- C4.05 – SANITARY SEWER PLAN & PROFILE – LINE W
- C4.06 – SANITARY SEWER PLAN & PROFILE – LINE AI & X
- C4.07 – SANITARY SEWER PLAN & PROFILE – LINE Y & Z
- C4.08 – SANITARY SEWER PLAN & PROFILE – LINE AA
- C4.09 – SANITARY SEWER PLAN & PROFILE – LINE AH
- C4.10 – SANITARY SEWER PLAN & PROFILE – LINE K
- C4.11 – SANITARY SEWER PLAN & PROFILE – LINE K
- C4.12 – SANITARY SEWER PLAN & PROFILE – LINE AJ & G
- C4.D1 – SANITARY SEWER GENERAL NOTES
- C4.D2 – SANITARY SEWER DETAILS

WATER DISTRIBUTION CONSTRUCTION PLANS

- C5.00 – WATER DISTRIBUTION PLAN
- C5.01 – WATER DISTRIBUTION PLAN
- C5.D1 – WATER DISTRIBUTION PLAN DETAILS
- C5.D2 – WATER DISTRIBUTION PLAN DETAILS
- C5.D3 – WATER DISTRIBUTION PLAN DETAILS

DRAINAGE CONSTRUCTION PLANS

- C6.00 – ULTIMATE MASTER DRAINAGE PLAN
- C6.01 – ULTIMATE MASTER DRAINAGE PLAN
- C6.02 – DRAIN PLAN & PROFILE – DRAIN '1-FA'
- C6.03 – DRAIN PLAN & PROFILE – DRAIN '1-FA'
- C6.04 – DRAIN PLAN & PROFILE – DRAIN '1-FA'
- C6.05 – DRAIN PLAN & PROFILE – DRAIN '3-A
- C6.06 – DRAIN PLAN & PROFILE – DRAIN '3-B'
- C6.07 – DRAIN PLAN & PROFILE – DRAIN '3-C' & DRAIN '3-E'
- C6.08 – DRAIN PLAN & PROFILE – DRAIN '3-D'
- C6.09 – DRAIN PLAN & PROFILE – DRAIN '1-MA'
- C6.D1 – DRAINAGE DETAILS
- C6.D2 – CURB INLET DETAILS

STREET CONSTRUCTION PLANS

- C7.00 – STREET PLAN & PROFILE – BIRDSONG AVE & WHISTLERS WAY
- C7.01 – STREET PLAN & PROFILE – CHICKADEE COURT
- C7.02 – STREET PLAN & PROFILE – CHICKADEE COURT
- C7.03 – STREET PLAN & PROFILE – DOVE SONG WAY
- C7.04 – STREET PLAN & PROFILE – KINGLET DRIVE
- C7.05 – STREET PLAN & PROFILE – MALLARD WAY
- C7.06 – STREET PLAN & PROFILE – QUAIL RUN
- C7.07 – STREET PLAN & PROFILE–STARLING DRIVE & HAWKS HILL DRIVE
- C7.08 – STREET PLAN & PROFILE – WREN PLACE & CARDINAL DRIVE
- C7.09 – TRAFFIC SIGNAGE PLAN
- C7.D1 – CITY OF MARION STANDARD STREET DETAILS
- C7.D2 – TXDOT DETAILS – PEDESTRIAN FACILITIES – PED-18
- C7.D3 – TXDOT DETAILS – SIGN MOUNTING DETAILS
- C7.D4 – TXDOT DETAILS – PAVEMENT MARKINGS & GUARD RAILS

CIVIL CONSTRUCTION DOCUMENTS

DOVE SONG UNIT 3

DISTRICT:

GUADALUPE COUNTY MUNICIPAL
UTILITY DISTRICT #4
CONTACT PERSON: SEAN MILLER
1718 DRY CREEK WAY, STE. 120
SAN ANTONIO, TX 78259
PH: (210) 496–1985

DEVELOPER:

PULTE HOMES OF TEXAS, L.P.
CONTACT PERSON: TREY ROGERS
1718 DRY CREEK WAY, SUITE 120
SAN ANTONIO, TX 78259
PH: (210) 496–1985

DESIGN ENGINEER:

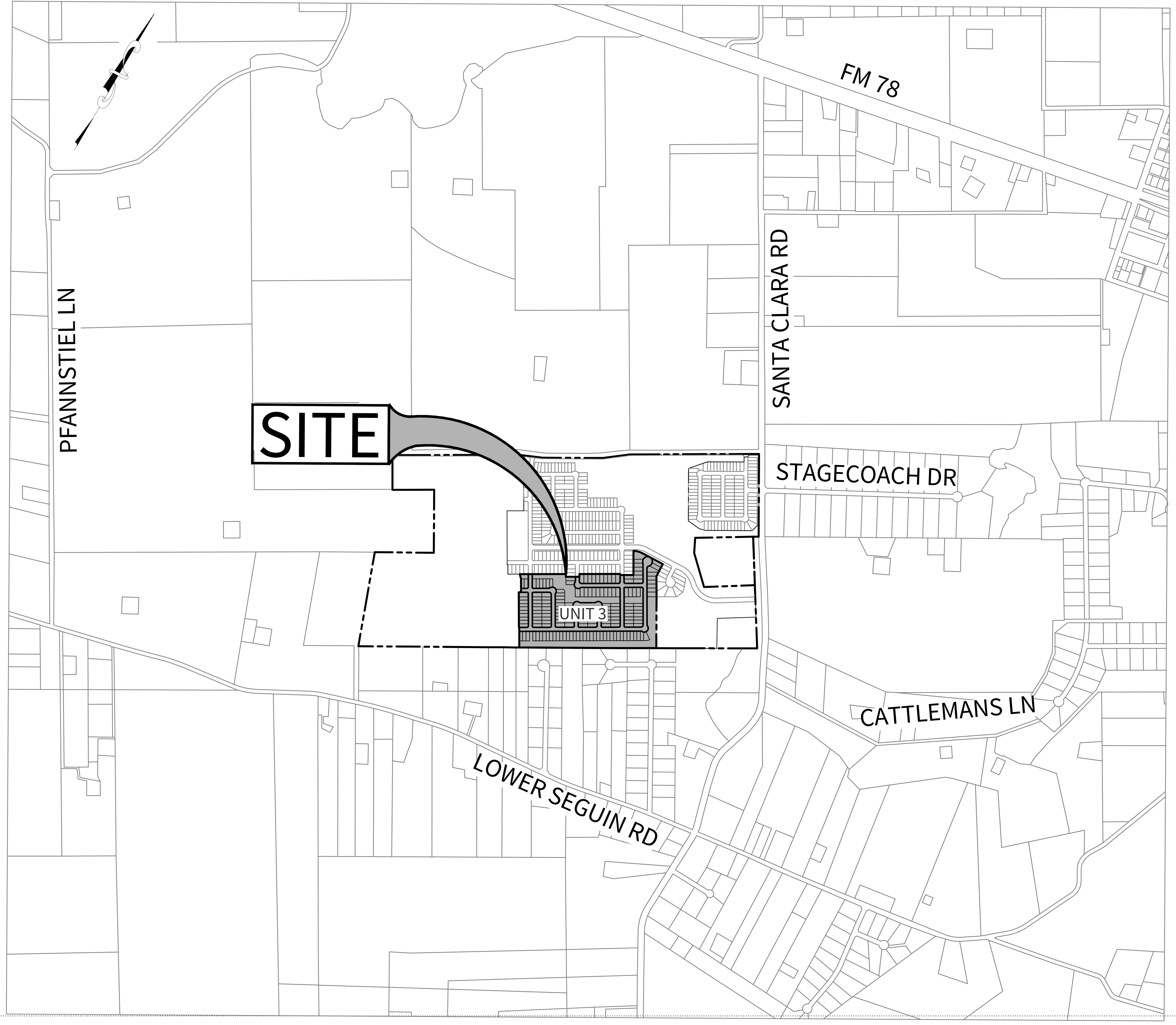
CUDE ENGINEERS
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TEXAS 78231
PHONE :(210) 681–2951

SURVEYOR:

CUDE ENGINEERS
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TEXAS 78231
PHONE :(210) 681–2951

DISTRICT ENGINEER:

JONES–HEROY & ASSOCIATES, INC.
CONTACT PERSON: KEN HEROY
13915 N. MOPAC EXPY, SUITE 408
AUSTIN, TEXAS 78725
PHONE :(512) 989–2200



DISTRICT NOTES

THE DISTRICT ENGINEER, JONES-HEROY & ASSOCIATES, INC. (KEN HEROY, PH:512-989-220) SHALL BE CONTACTED 48 HOURS PRIOR TO:

i) PRE-CONSTRUCTION MEETINGS;
ii) BEGINNING EACH PHASE OF CONSTRUCTION;
iii) TESTING OF WATER AND/OR WASTEWATER LINES; AND,
iv)FINAL WALK-THROUGH OF FACILITIES.

LOCATION MAP

DISTRICT ENGINEER'S APPROVAL

THESE PLANS HAVE BEEN REVIEW AND APPROVED BY______________________ ON ________________

REVIEW OF THE PLANS BY THE DISTRICT IS LIMITED TO STREETS, WATER, WASTEWATER, AND DRAINAGE AND DOES NOT INDICATE A REVIEW OF THE ADEQUACY OF THE DESIGN FOR THE FACILITIES. IN APPROVING THESE PLANS, THE DISTRICT MUST RELY ON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.

____
DISTRICT ENGINEER

LEGAL DESCRIPTION:

DOVE SONG, UNIT 3

BEING 38.69 ACRES OF LAND OUT OF THE JOSEPH N. DE LOS CORTINAS SURVEY 64, ABSTRACT 90, SITUATED IN GUADALUPE COUNTY, TEXAS, AND BEING OUT OF A CALLED 117.714 ACRE TRACT AS DESCRIBED IN THE DOCUMENT 202199021067 OF THE OFFICIAL PUBLIC RECORD OF GUADALUPE COUNTY, TEXAS.

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

DRAWN BY	DATE
CG/JG	06/27/2024
CHECKED BY	**PROJECT NO.**
XV/AL	03608.004

EST. 1980
CUDE
ENGINEERS

DOVE SONG UNIT 3

CONSTRUCTION PLANS

ANDREW R. LOWRY
123410
07/11/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES

SEQUENCE OF INSTALLATION DURING CONSTRUCTION PROCESS:

1. STORM WATER MANAGEMENT FACILITIES MUST BE INSTALLED PRIOR TO SITE CONSTRUCTION. SUBD. ORD. 6.01.003

2. THE TEMPORARY CONSTRUCTION ENTRANCE/EXIT (ITEM 2) SHALL BE INSTALLED PRIOR TO DISTURBING ANY SOIL EXCEPT AT THE LOCATION OF THE TEMPORARY CONSTRUCTION ENTRANCE/EXIT. IT SHALL STAY IN PLACE AND BE MAINTAINED UNTIL THE END OF THE INFRASTRUCTURE CONSTRUCTION

3. SILT FENCE (ITEM 4) SHALL BE INSTALLED ALONG THE DOWN-GRADIENT BOUNDARY OF THE SITE PRIOR TO ANY DISTURBANCE OF THE SITE AS SHOWN ON THE SITE PLAN.

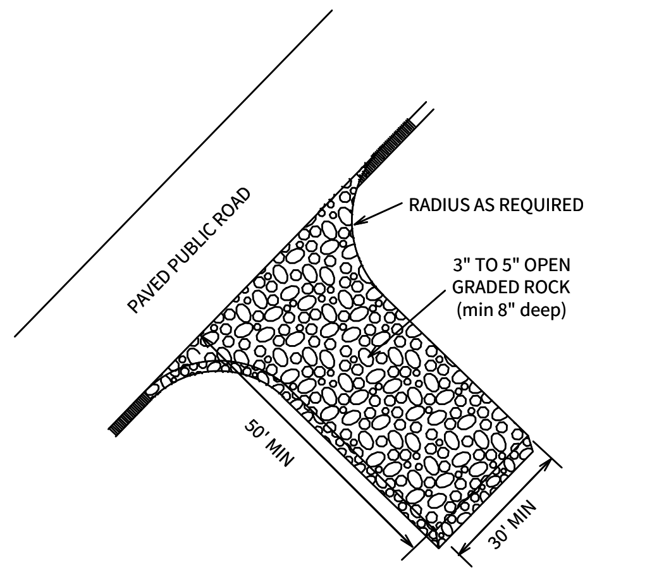
4. BAGGED GRAVEL INLET FILTERS (ITEM 6) SHALL BE PLACED AROUND ALL INLETS FOLLOWING INSTALLATION.

5. ROCK BERMS (ITEM 5) SHALL BE INSTALLED AROUND THE PERIMETER OF THE PROJECT AT NATURAL LOW POINTS FOLLOWING ROUGH GRADING OF THE SITE AND SHALL BE REMOVED ONCE GRADING TO THE ON-SITE STORMWATER DRAINAGE SYSTEM WITH BAGGED GRAVEL INLET FILTERS IN SUMP IS COMPLETE, ROCK BERMS WILL ALSO BE UTILIZED AT THE OUTLET OF THE POND WHILE IT IS BEING CONSTRUCTED.

INSPECTIONS:

DESIGNATED AND QUALIFIED PERSON(S) SHALL INSPECT POLLUTION CONTROL MEASURES EVERY SEVEN DAYS AND WITHIN 24 HOURS AFTER A STORM EVENT GREATER THAN 0.5 INCHES OF RAINFALL, AN INSPECTION REPORT THAT SUMMARIZES THE SCOPE OF THE INSPECTION, NAMES AND QUALIFICATIONS OF PERSONNEL CONDUCTING THE INSPECTION, DATE OF THE INSPECTION, MAJOR OBSERVATIONS, AND ACTIONS TAKEN AS A RESULT OF THE INSPECTION SHALL BE RECORDED AND MAINTAINED AS PART OF STORM WATER TPDES DATA FOR A PERIOD OF THREE YEARS AFTER THE DATE OF THE INSPECTION. COPY OF THE INSPECTION REPORT FORM IS PROVIDED IN THIS STORM WATER POLLUTION PREVENTION PLAN.

AS A MINIMUM, THE INSPECTOR SHALL OBSERVE: (1) SIGNIFICANT DISTURBED AREAS FOR EVIDENCE OF EROSION, (2) STORAGE AREAS FOR EVIDENCE OF LEAKAGE FROM THE EXPOSED STORED MATERIALS, (3) STRUCTURAL CONTROLS (ROCK BERM OUTLETS. SILT FENCES, DRAINAGE SWALES, ETC.) FOR EVIDENCE OF FAILURE OR EXCESS SILTATION (OVER 6 INCHES DEEP). (4) VEHICLE EXIT POINT FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING, (5) VEHICLE STORAGE AREAS FOR SIGNS OF LEAKING EQUIPMENT OR SPILLS, AND (6) CONCRETE TRUCK RINSE-OUT PIT FOR SIGNS OF POTENTIAL FAILURE. DEFICIENCIES NOTED DURING THE INSPECTION WILL BE CORRECTED AND DOCUMENTED WITHIN SEVEN (7) CALENDAR DAYS FOLLOWING THE INSPECTION OR BEFORE THE NEXT ANTICIPATED STORM EVENT IF PRACTICABLE.

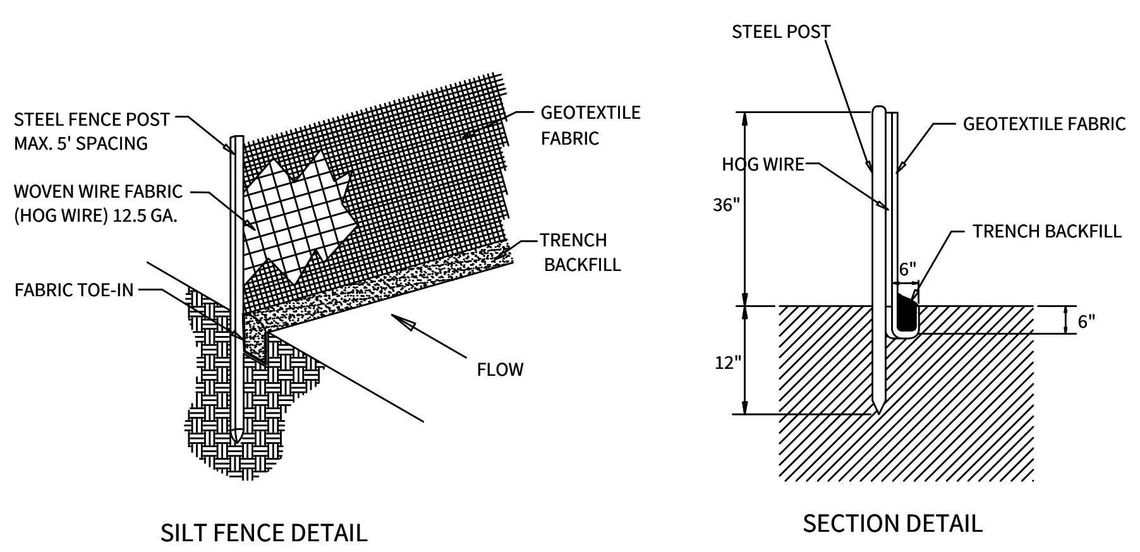


STABILIZED CONSTRUCTION EXIT NOTES:

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

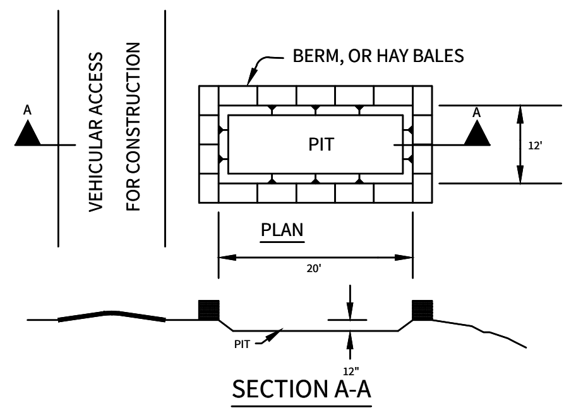
1 TEMPORARY CONSTRUCTION ENTRANCE/EXIT

N.T.S.



2 STANDARD SILT FENCE

N.T.S.



GENERAL NOTES:

- Detail above illustrates minimum dimensions. Pit can be increased in size depending on expected frequency of use.
- If hay bales are used, they shall be placed in accordance with details shown on Exhibit for hay bales.
- Washout pit shall be located in an area easily accessible to construction traffic.
- Washout pit shall not be located in areas subject to inundation from storm water runoff.
- Washout pit shall be lined with a 10-mil thick polyethylene sheeting free of holes, tears and other defects.

3 CONCRETE TRUCK WASHOUT PIT

N.T.S.

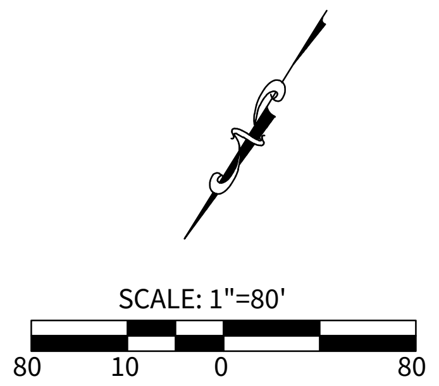
NOTE:

1. ALL SILT FENCES AND/OR ROCK BERMS AND TEMPORARY CONSTRUCTION ENTRANCES/EXITS SHALL BE PLACED AT THE MOST DOWN-GRADIENT POINT OF CONSTRUCTION AS SHOWN ON THIS SITE PLAN. CONTRACTOR SHALL TAKE INTO CONSIDERATION ANY PROPOSED CONSTRUCTION THAT MAY TAKE PLACE AT THESE LOCATIONS. ANY RELOCATION OF THE 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, EASEMENTS AND LOTS.

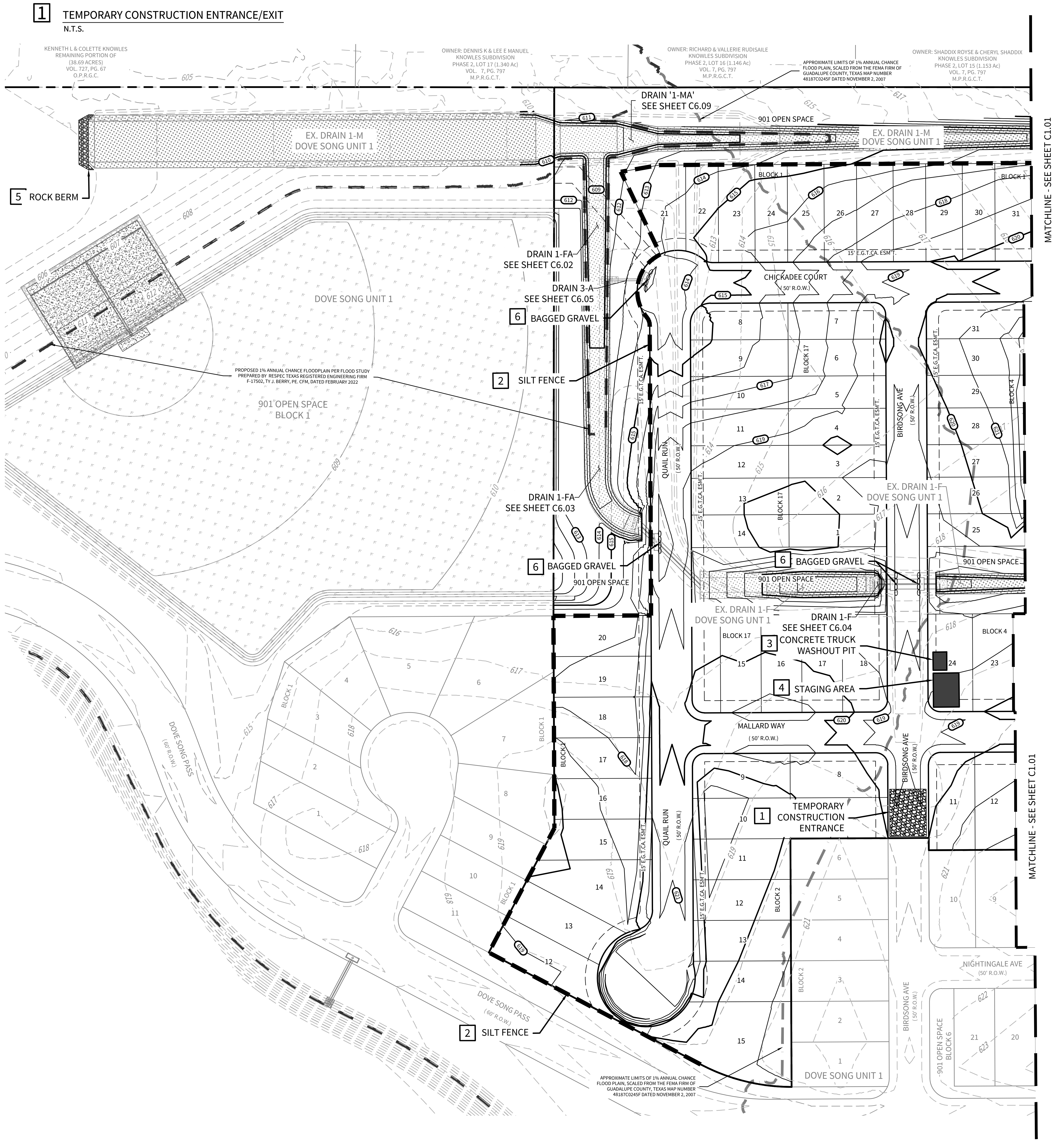
3. THE CONTRACTOR IS REQUIRED TO MAINTAIN EROSION CONTROLS THROUGHOUT THE DURATION OF THE PROJECT.

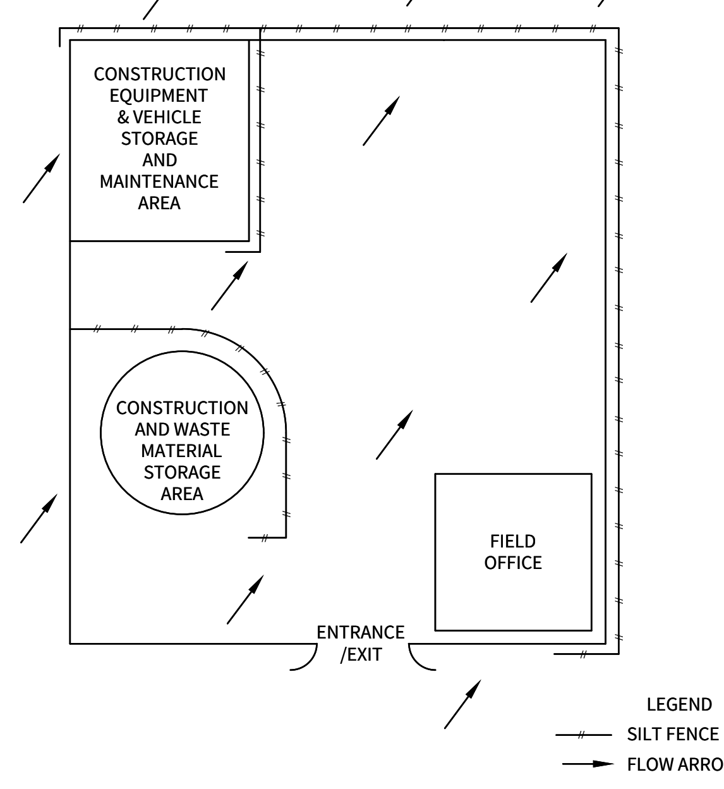
4. THE CITY AND/OR COUNTY INSPECTOR HAS THE AUTHORITY TO HAVE THE CONTRACTOR MODIFY THE EROSION CONTROLS AT THE DEVELOPER'S EXPENSE. THE DEVELOPER SHALL BE NOTIFIED OF THESE MODIFICATIONS PRIOR TO COMMENCEMENT OF MODIFICATIONS.



LEGEND

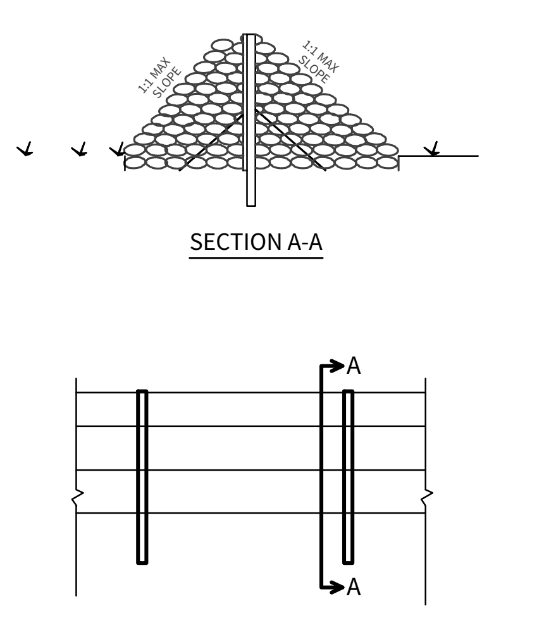
OVERALL UNIT BOUNDARY	━━━
PROPOSED LOT LINE	───
PROPOSED RIGHT OF WAY	━━━
E.G.T.CA. EASEMENT	– – –
EXISTING 1' CONTOUR	– – 499 – –
EXISTING 5' CONTOUR	– – 500 – –
PROPOSED 1' CONTOUR	─ 499 ─
PROPOSED 5' CONTOUR	─ 500 ─
BMP ITEM NUMBER	1
TEMPORARY CONSTRUCTION ENTRANCE/EXIT	▨
ROCK BERM	▨
SILT FENCE	━ ━ ━
FLOW ARROW	→
STAGING AREA	■
CONCRETE WASHOUT PIT	■




CONSTRUCTION EQUIPMENT & VEHICLE STORAGE AND MAINTENANCE AREA
CONSTRUCTION AND WASTE MATERIAL STORAGE AREA
FIELD OFFICE
ENTRANCE /EXIT
LEGEND
SILT FENCE
FLOW ARROWS

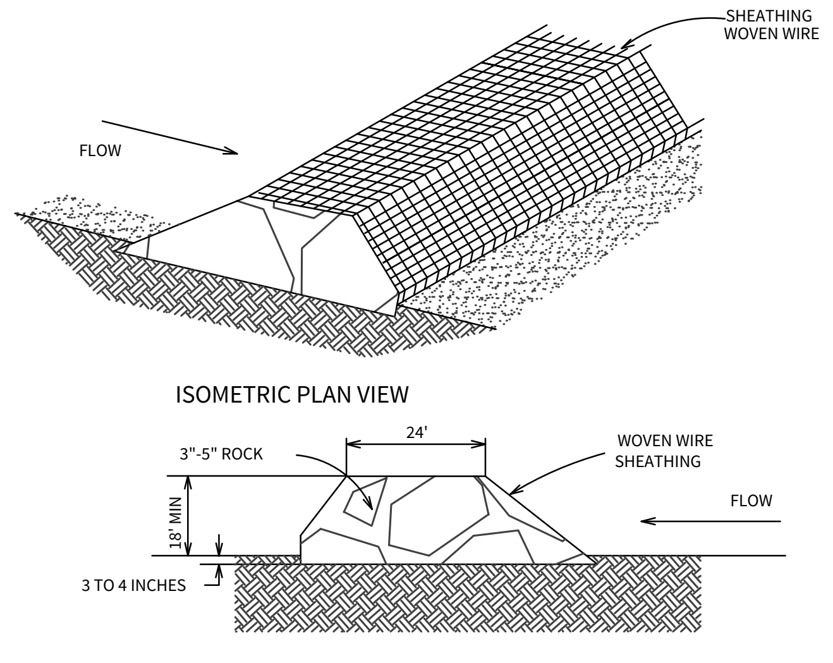
4 TYP. CONSTRUCTION STAGING AREA

N.T.S.



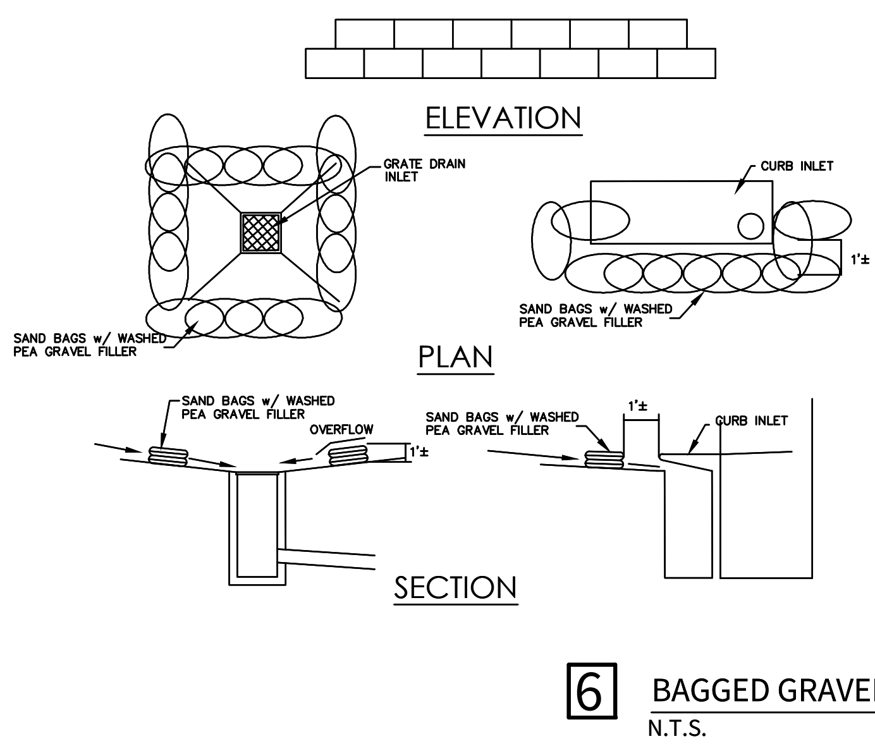
5 ROCK BERM W/ SILT FENCE DETAIL

N.T.S.



ROCK BERM

N.T.S.


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

N.T.S.

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CUDEENGINEERS.COM

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

DOVE SONG SUBDIVISION
UNIT 3

STORM WATER POLLUTION PREVENTION PLAN

DATE
06/27/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG

CHECKED BY
XV/AL

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

ANDREW R. LOWRY
123410
07/03/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C1.00

P:\03608\004\2-DWG\4-Plans\C1.00-01 STORM WATER POLLUTION PREVENTION PLAN.dwg 2024/06/27 6:46pm jguerrero

TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES

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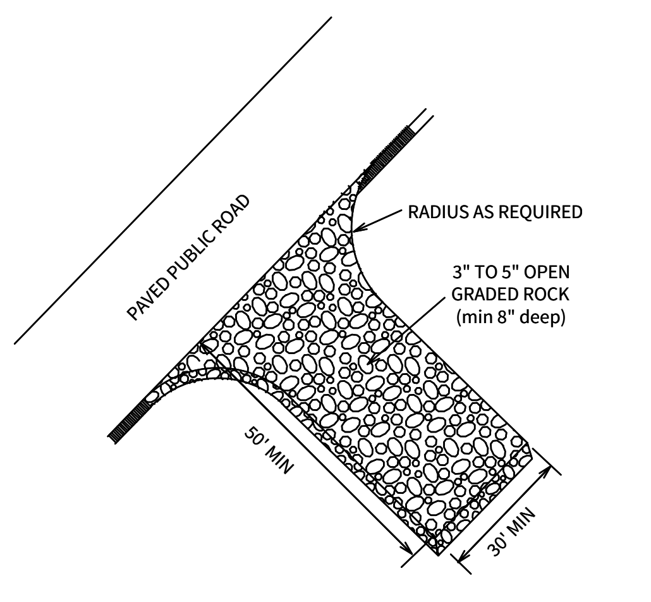

STABILIZED CONSTRUCTION EXIT NOTES:

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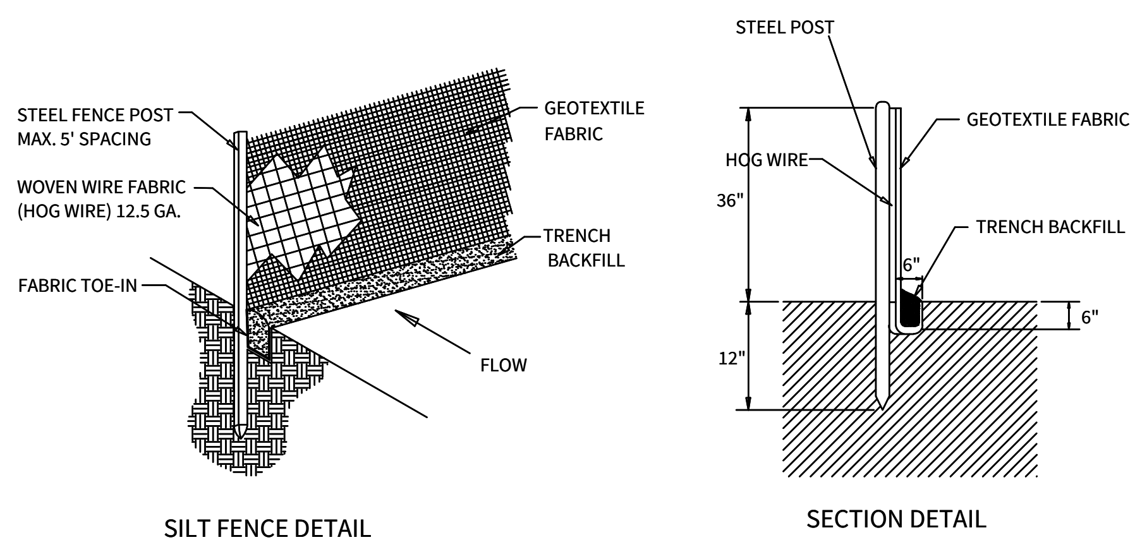
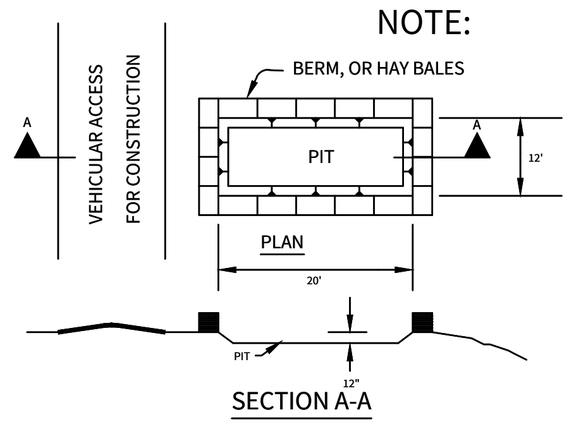
1 TEMPORARY CONSTRUCTION ENTRANCE/EXIT
N.T.S.



2 STANDARD SILT FENCE
N.T.S.

NOTE:



GENERAL NOTES:

- Detail above illustrates minimum dimensions. Pit can be increased in size depending on expected frequency of use.
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construction traffic.

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Washout pit shall not be located in areas subject to inundation from storm water runoff.

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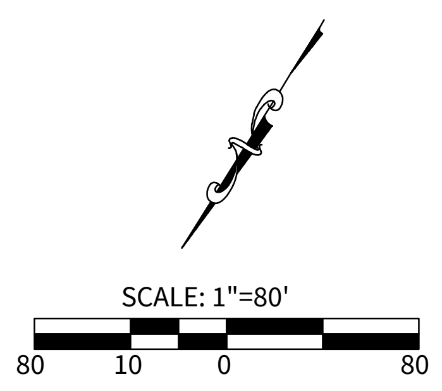
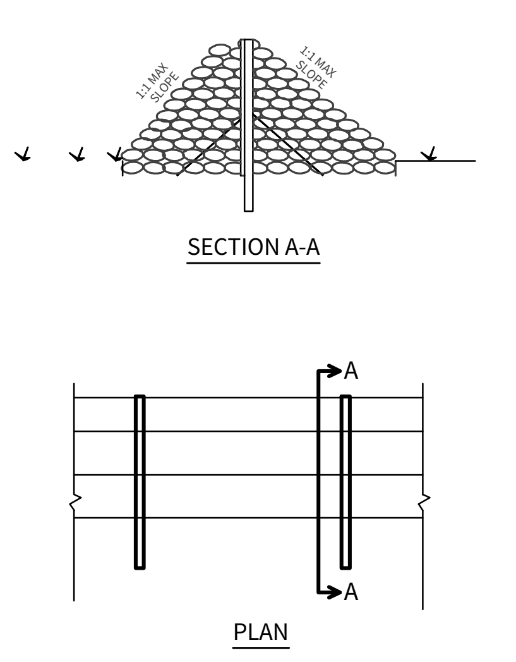
3 CONCRETE TRUCK WASHOUT PIT
N.T.S.

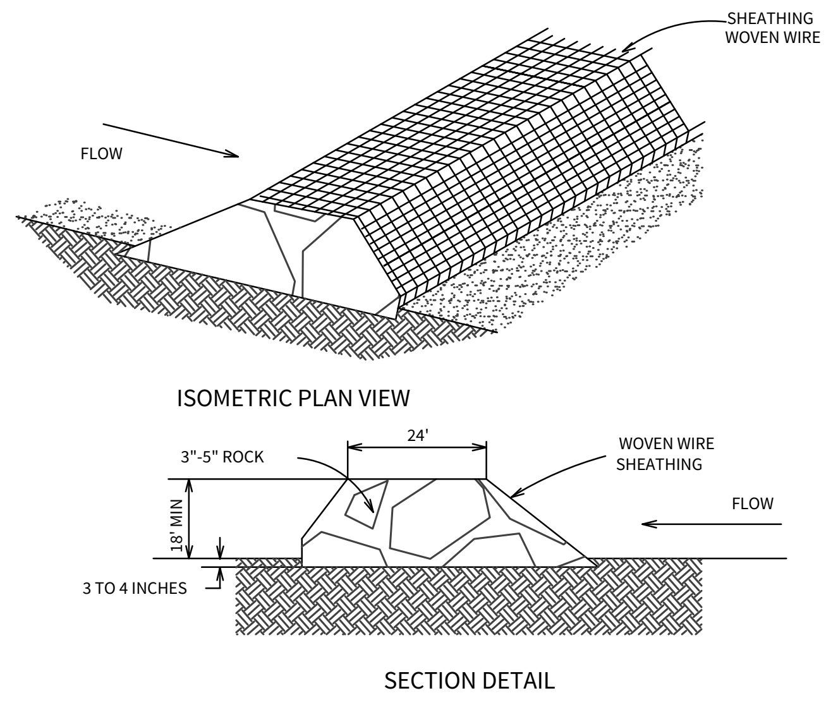


LEGEND

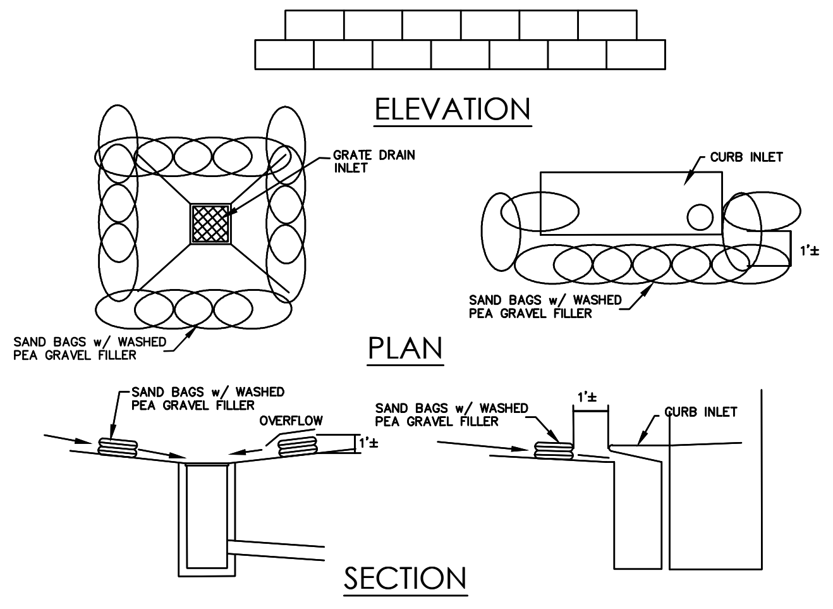
OVERALL UNIT BOUNDARY	━━━━
PROPOSED LOT LINE	────
PROPOSED RIGHT OF WAY	━━━━
E.G.T.CA. EASEMENT	— — — —
EXISTING 1' CONTOUR	— — 499 — —
EXISTING 5' CONTOUR	— — 500 — —
PROPOSED 1' CONTOUR	── 499 ──
PROPOSED 5' CONTOUR	── 500 ──
BMP ITEM NUMBER	1
TEMPORARY CONSTRUCTION ENTRANCE/EXIT	▨
ROCK BERM	▨
SILT FENCE	▬ ▬ ▬
FLOW ARROW	→
STAGING AREA	■
CONCRETE WASHOUT PIT	■



5 ROCK BERM W/ SILT FENCE DETAIL
N.T.S.



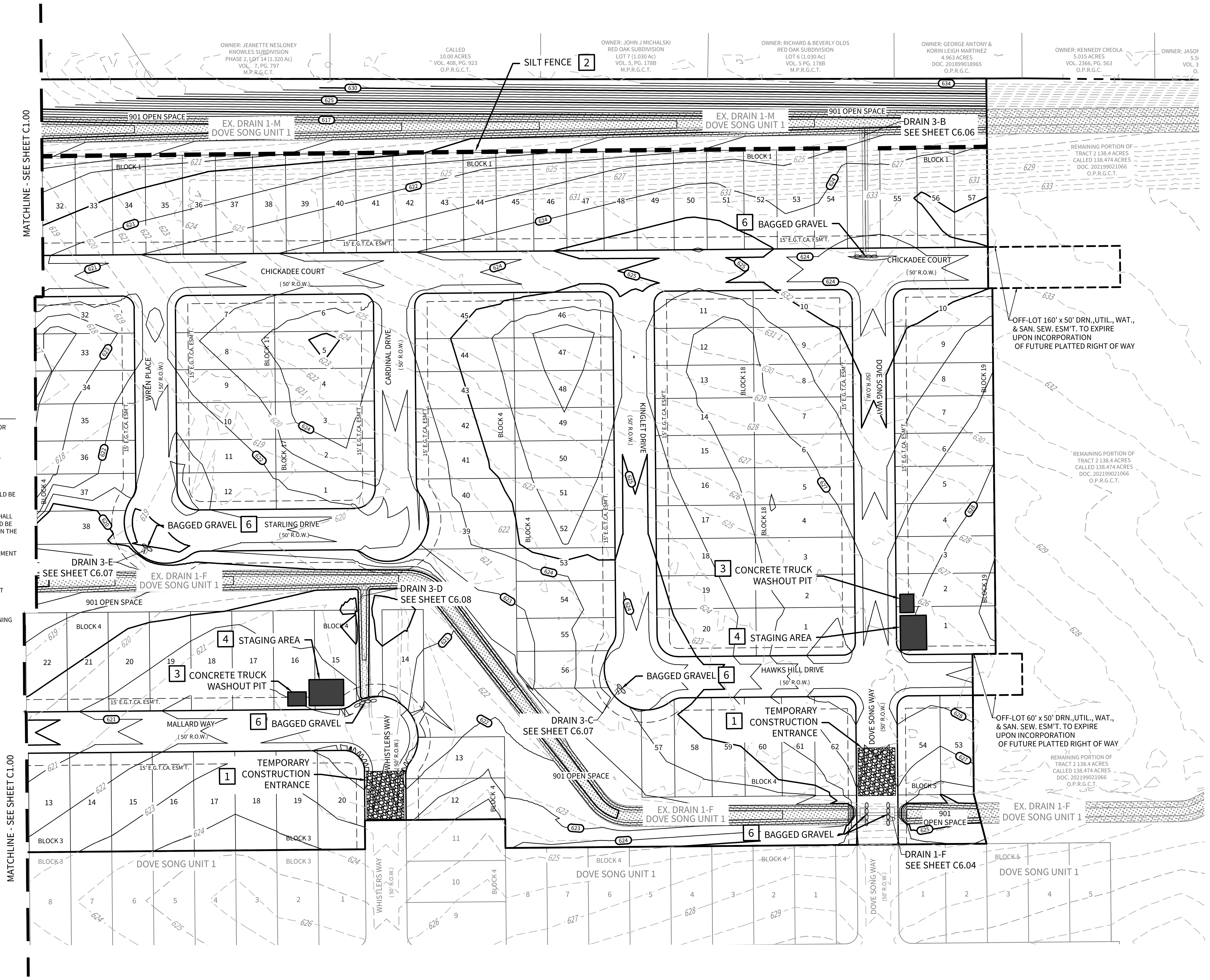
ROCK BERM
N.T.S.

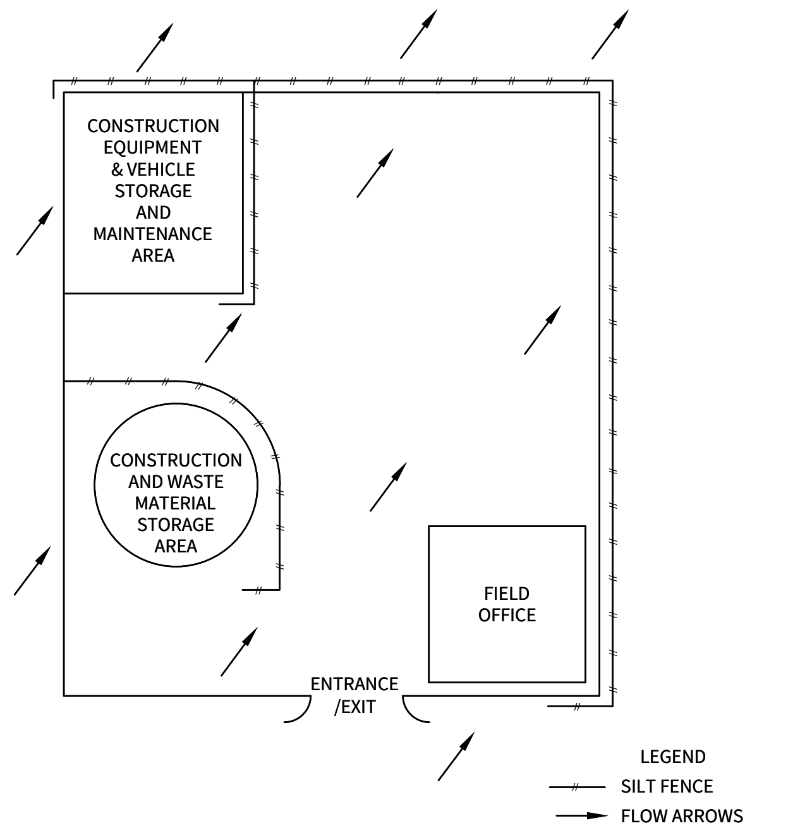

ELEVATION
GRATE DRAIN INLET
CURB INLET
1'±
PLAN
SAND BAGS w/ WASHED PEA GRAVEL FILLER
SAND BAGS w/ WASHED PEA GRAVEL FILLER
GRATE DRAIN INLET
OVERFLOW
SAND BAGS w/ WASHED PEA GRAVEL FILLER
1'±
CURB INLET
SECTION

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 NOTES
N.T.S.


MATCHLINE - SEE SHEET C1.00
SILT FENCE 2
901 OPEN SPACE
EX. DRAIN 1-M DOVE SONG UNIT 1
EX. DRAIN 1-M DOVE SONG UNIT 1
901 OPEN SPACE
DRAIN 3-B SEE SHEET C6.06
BLOCK 1
6 BAGGED GRAVEL
CHICKADEE COURT (50' R.O.W.)
CHICKADEE COURT (50' R.O.W.)
15' E.G.T.CA. ESM'T.
OFF-LOT 160' x 50' DRN.,UTIL., WAT., & SAN. SEW. ESM'T. TO EXPIRE UPON INCORPORATION OF FUTURE PLATTED RIGHT OF WAY
REMAINING PORTION OF TRACT 2 138.4 ACRES CALLED 138.474 ACRES DOC. 20219001066 O.P.R.G.C.
WREN PLACE (50' R.O.W.)
CARDINAL DRIVE
KINGLET DRIVE (50' R.O.W.)
DOVE SONG WAY (50' R.O.W.)
BLOCK 17
BLOCK 4
BLOCK 18
BLOCK 19
6 BAGGED GRAVEL
STARLING DRIVE (50' R.O.W.)
DRAIN 3-E SEE SHEET C6.07
EX. DRAIN 1-F DOVE SONG UNIT 1
901 OPEN SPACE
DRAIN 3-D SEE SHEET C6.08
3 CONCRETE TRUCK WASHOUT PIT
4 STAGING AREA
4 STAGING AREA
3 CONCRETE TRUCK WASHOUT PIT
6 BAGGED GRAVEL
HAWKS HILL DRIVE (50' R.O.W.)
6 BAGGED GRAVEL
MALLARD WAY (50' R.O.W.)
1 TEMPORARY CONSTRUCTION ENTRANCE
1 TEMPORARY CONSTRUCTION ENTRANCE
WHISTLERS WAY (50' R.O.W.)
DRAIN 3-C SEE SHEET C6.07
901 OPEN SPACE
EX. DRAIN 1-F DOVE SONG UNIT 1
6 BAGGED GRAVEL
901 OPEN SPACE
EX. DRAIN 1-F DOVE SONG UNIT 1
DRAIN 1-F SEE SHEET C6.04
OFF-LOT 60' x 50' DRN.,UTIL., WAT., & SAN. SEW. ESM'T. TO EXPIRE UPON INCORPORATION OF FUTURE PLATTED RIGHT OF WAY
BLOCK 3
BLOCK 5
DOVE SONG UNIT 1
DOVE SONG UNIT 1
DOVE SONG UNIT 1
MATCHLINE - SEE SHEET C1.00


CONSTRUCTION EQUIPMENT & VEHICLE STORAGE AND MAINTENANCE AREA
CONSTRUCTION AND WASTE MATERIAL STORAGE AREA
FIELD OFFICE
ENTRANCE /EXIT
LEGEND
SILT FENCE
FLOW ARROWS

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

CUDEENGINEERS.COM

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

DOVE SONG SUBDIVISION
UNIT 3

STORM WATER POLLUTION PREVENTION PLAN

DATE
06/27/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG

CHECKED BY
XV/AL

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

ANDREW R. LOWRY
123410
07/03/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C1.01

CUDEENGINEERS.COM

P:\03608\004\2-DWG\4-Plans\C1.00-01 STORM WATER POLLUTION PREVENTION PLAN.dwg 2024/06/27 6:50pm jguerrero

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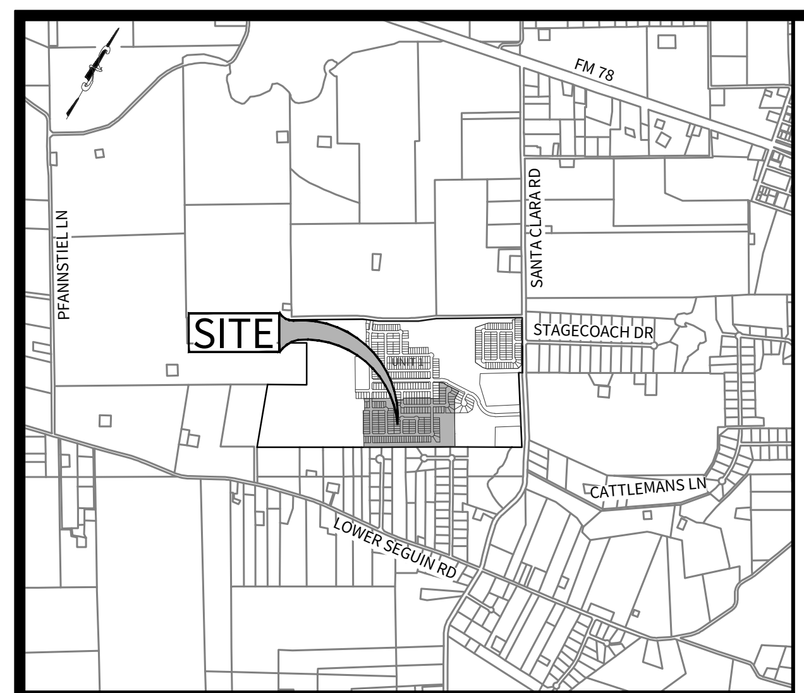


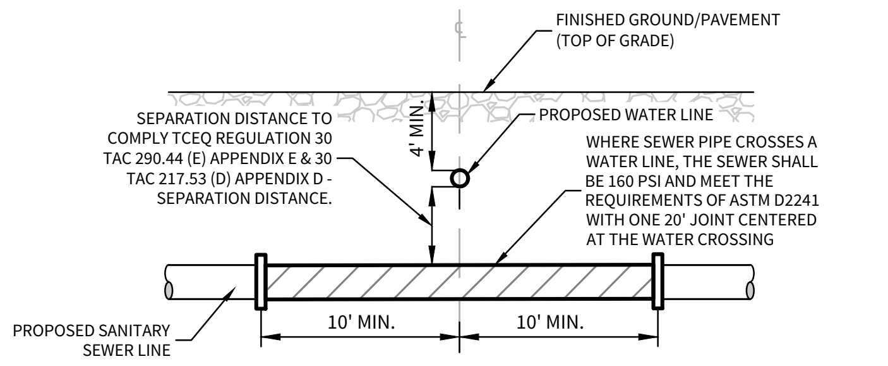
LOCATION MAP

N.T.S.

BENCHMARK BM-1

BENCHMARK TO BE SET BY ENGINEER PRIOR TO CONSTRUCTION.

SEWER/WATER LINE CROSSINGS	
LINE	STATION
"W"	17+81.35
"W"	20+70.31
"AJ"	1+21.25
"K"	8+05.17


FINISHED GROUND/PAVEMENT (TOP OF GRADE)
PROPOSED WATER LINE
4' 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.

NOTES:

1. CONTRACTOR TO POTHOLE AND VERIFY EXISTING MAIN, SIZE, AND TYPE WITH GVSUD INSPECTOR A MINIMUM OF 300 L.F. PRIOR TO TIE-IN LOCATION.
2. CONTRACTOR TO CURB CUT V's FOR VALVES AND X's FOR METERS.
3. 2" TEMPORARY BLOWOFFS, TO BE REMOVED FOR TIE-IN AFTER NEW MAIN IS TESTED AND ACCEPTED.
4. DISINFECTION SHALL BE BY MACHINE CHLORINATION.
5. MOISTURE DENSITY COMPACTION TESTING FREQUENCY-WATER MAIN TRENCHES REQUIRED EVERY 300 L.F. FOR EACH VERTICAL FOOT OF COMPACTED BACK FILL. SERVICES RANDOMLY SELECTED AS REQUIRED BY GVSUD INSPECTOR
6. ALL TESTING AND TEST REPORTS SHALL BE COORDINATED WITH GVSUD INSPECTOR BY THE CONTRACTOR.
7. ALL DUCTILE IRON PIPE TO BE AMERICAN ZINC COATED, AWWA/ANSI C-151
8. WHERE TIE-INS TO EXISTING INFRASTRUCTURE EXIST, CONTRACTOR TO UTILIZE APPROVED WATER LINE STOPS AND/OR MUELLER INSERTION-VALVES TO MINIMIZE WATER OUTAGES AS REQUIRED BY GVSUD DURING CONSTRUCTION.

NOTE:

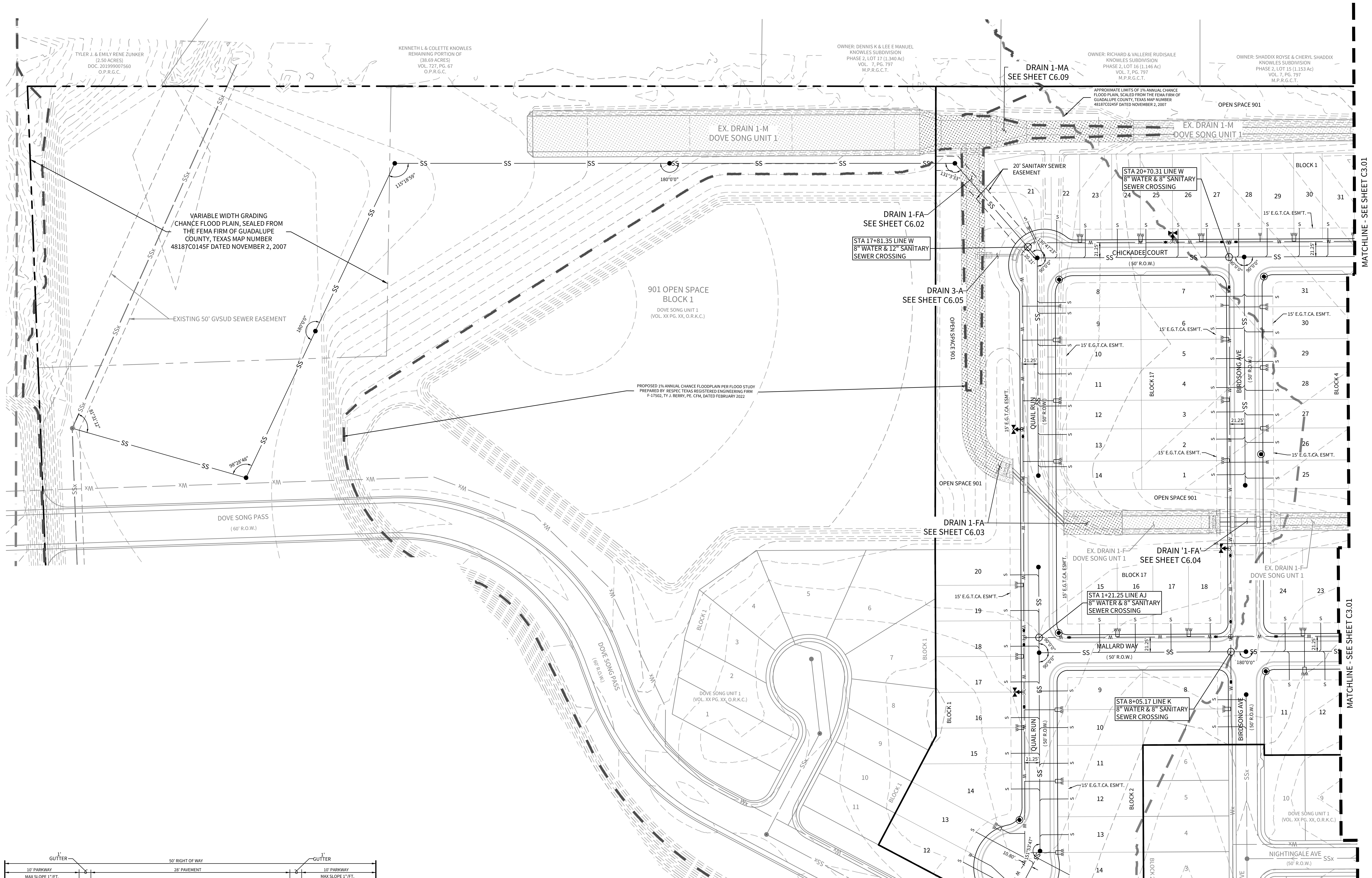
CONTRACTOR TO INSTALL WATERTIGHT MANHOLES WITH 30" OPENING AND INTERIOR WALL COATED WITH A GVSUD APPROVED SEWER STRUCTURE FOR ALL MANHOLES WITHIN THIS DEVELOPMENT.

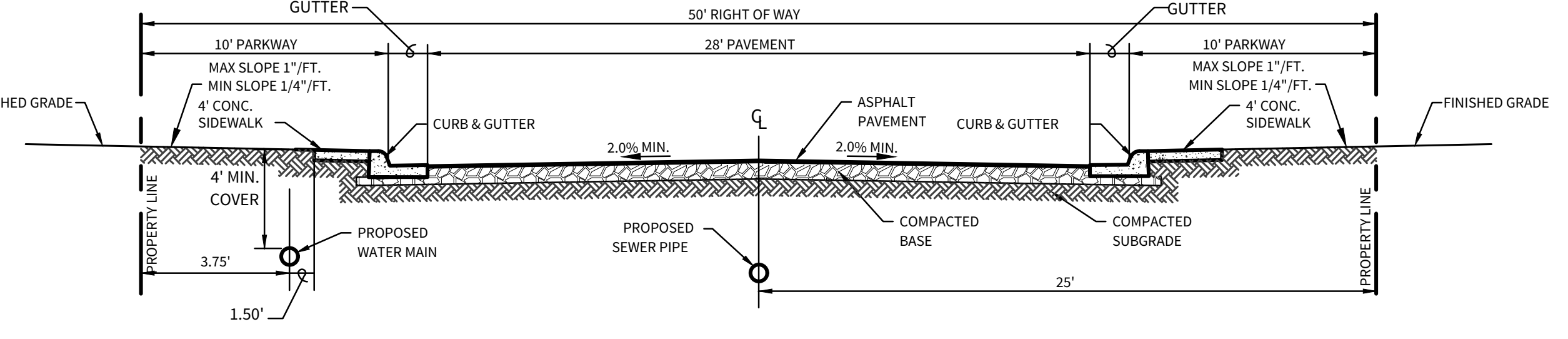
SCALE: 1"=80'

80 10 0 80

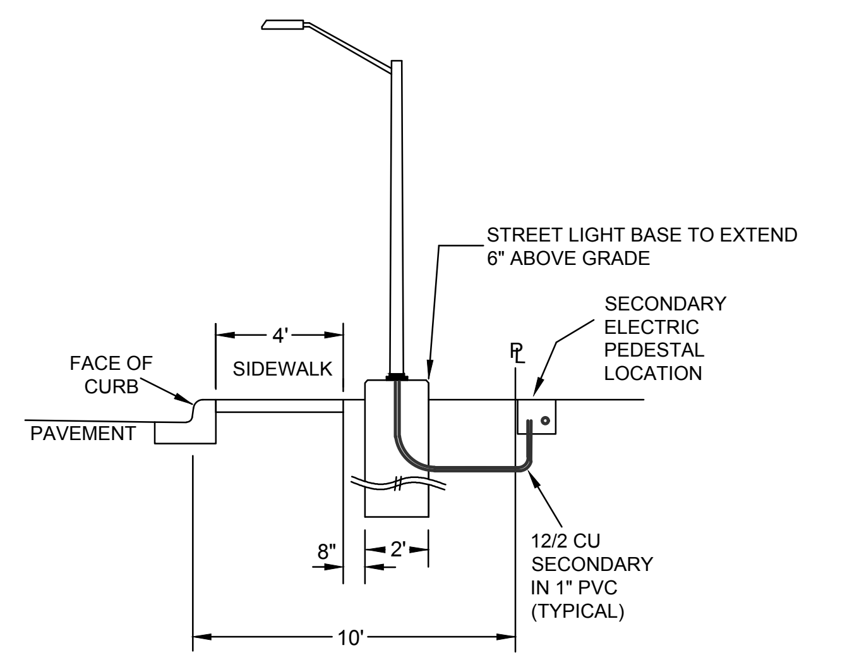
LEGEND

OVERALL UNIT BOUNDARY	— — — —
UNIT BOUNDARY	——
PROPOSED LOT LINE	——
PROPOSED RIGHT OF WAY	——
E.G.T.CA. EASEMENT	- - - -
EXISTING 1' CONTOUR	— — 499 — —
EXISTING 5' CONTOUR	— — 500 — —
PROJECT 100 YR. FLOOD PLAIN	▬ ▬
EFFECTIVE 100 YR. FLOOD PLAIN	▬ ▬
EXISTING WATER LINE	— — Wx — —
EXISTING SEWER LINE	— — SSx — —
EXISTING MANHOLE	●
PROPOSED WATER LINE	—— W ——
PROPOSED WATER SERVICE	WW▭—
PROPOSED FIRE HYDRANT	⧓
PROPOSED SEWER MAIN	—— SS ——
PROPOSED MANHOLE	●
PROPOSED SEWER SERVICE	S——⁄
PROPOSED STREET LIGHT	◉


TYLER J. & EMILY RENE ZUNKER (2.50 ACRES) DOC. 201999007560 O.P.R.G.C.
KENNETH L & COLETTE KNOWLES REMAINING PORTION OF (38.69 ACRES) VOL. 727, PG. 67 O.P.R.G.C.
OWNER: DENNIS K & LEE E MANUEL KNOWLES SUBDIVISION PHASE 2, LOT 17 (1.340 Ac) VOL. 7, PG. 797 M.P.R.G.C.T.
OWNER: RICHARD & VALLERIE RUDISAILE KNOWLES SUBDIVISION PHASE 2, LOT 16 (1.146 Ac) VOL. 7, PG. 797 M.P.R.G.C.T.
OWNER: SHADDIX ROYSE & CHERYL SHADDIX KNOWLES SUBDIVISION PHASE 2, LOT 15 (1.153 Ac) VOL. 7, PG. 797 M.P.R.G.C.T.
DRAIN 1-MA SEE SHEET C6.09
APPROXIMATE LIMITS OF 1% ANNUAL CHANCE FLOOD PLAIN, SCALED FROM THE FEMA FIRM OF GUADALUPE COUNTY, TEXAS MAP NUMBER 48187C0145F DATED NOVEMBER 2, 2007
OPEN SPACE 901
EX. DRAIN 1-M DOVE SONG UNIT 1
EX. DRAIN 1-M DOVE SONG UNIT 1
20' SANITARY SEWER EASEMENT
STA 20+70.31 LINE W 8" WATER & 8" SANITARY SEWER CROSSING
DRAIN 1-FA SEE SHEET C6.02
STA 17+81.35 LINE W 8" WATER & 12" SANITARY SEWER CROSSING
VARIABLE WIDTH GRADING CHANCE FLOOD PLAIN, SEALED FROM THE FEMA FIRM OF GUADALUPE COUNTY, TEXAS MAP NUMBER 48187C0145F DATED NOVEMBER 2, 2007
EXISTING 50' GVSUD SEWER EASEMENT
901 OPEN SPACE BLOCK 1 DOVE SONG UNIT 1 (VOL. XX PG. XX, O.R.K.C.)
DRAIN 3-A SEE SHEET C6.05
PROPOSED 1% ANNUAL CHANCE FLOODPLAIN PER FLOOD STUDY PREPARED BY: RESPEC TEXAS REGISTERED ENGINEERING FIRM F-17502, TY J. BERRY, PE, CFM, DATED FEBRUARY 2022
CHICKADEE COURT (50' R.O.W.)
BIRDSONG AVE (50' R.O.W.)
QUAIL RUN (50' R.O.W.)
MALLARD WAY (50' R.O.W.)
NIGHTINGALE AVE (50' R.O.W.)
DOVE SONG PASS (60' R.O.W.)
BLOCK 1
BLOCK 2
BLOCK 4
BLOCK 6
BLOCK 17
15' E.G.T.CA. ESM'T.
OPEN SPACE 901
DRAIN 1-FA SEE SHEET C6.03
EX. DRAIN 1-F DOVE SONG UNIT 1
DRAIN '1-FA' SEE SHEET C6.04
STA 1+21.25 LINE AJ 8" WATER & 8" SANITARY SEWER CROSSING
STA 8+05.17 LINE K 8" WATER & 8" SANITARY SEWER CROSSING
MATCHLINE - SEE SHEET C3.01
MATCHLINE - SEE SHEET C3.01
DOVE SONG UNIT 1 (VOL. XX PG. XX, O.R.K.C.)
30' SANITARY SEWER EASEMENT
OPEN SPACE BLOCK 6
SS
Wx
SSx



LOCAL "A" STREET CROSS-SECTION


STREET LIGHT BASE TO EXTEND 6" ABOVE GRADE
SECONDARY ELECTRIC PEDESTAL LOCATION
FACE OF CURB
PAVEMENT
4'
SIDEWALK
PL
8"
2'
10'
12/2 CU SECONDARY IN 1" PVC (TYPICAL)

STREET LIGHT NOTE:

CONT. ---- ---- (--) STREET LIGHTS, USE FLUSH-MOUNT PEDESTALS.

GVEC STREET LIGHT DETAIL

N.T.S.

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 MARION	(830) 914-2391
GVSUD	(830) 914-2330
GVTC	(830) 885-4411
GVEC	1-800-401-8345
DIG TESS	1-800-344-8377
TEXAS STATE WIDE ONE CALL LOCATORS	1-800-545-6005 OR 811

NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TEST WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE GVSUD INSPECTOR/TEST ADMINISTER, PER EACH 12-INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY GVSUD WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

TRENCH EXCAVATION PROTECTION

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

CAUTION!!

EXISTING UTILITIES ARE WITHIN THE LIMITS OF CONSTRUCTION. CONTRACTORS SHALL EXERCISE EXTRA CARE IN DIGGING ANY TRENCH FOR PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE, VERIFY THE EXACT LOCATION & IDENTIFY AREA OF CONFLICTS WITH EXISTING UTILITIES AND SHALL NOTIFY THE ENGINEER IF CONFLICT IS FOUND.

CAUTION!!

THE CONTRACTOR SHALL BE AWARE THAT OVERHEAD ELECTRIC LINES EXIST WITHIN THE VICINITY OF 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.

CUDEENGINEERS.COM

EST. 1980 CUDE ENGINEERS

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

DOVE SONG SUBDIVISION
UNIT 3

UTILITY LAYOUT PLAN

DATE
06/28/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG/KM

CHECKED BY
AM/AL

REVISIONS

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

ANDREW R. LOWRY
123410

07/03/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

4-Plans\C3.00-01 UTILITY LAYOUT PLAN.dwg 2024/06/28 2:41pm jguerrero

C3.00

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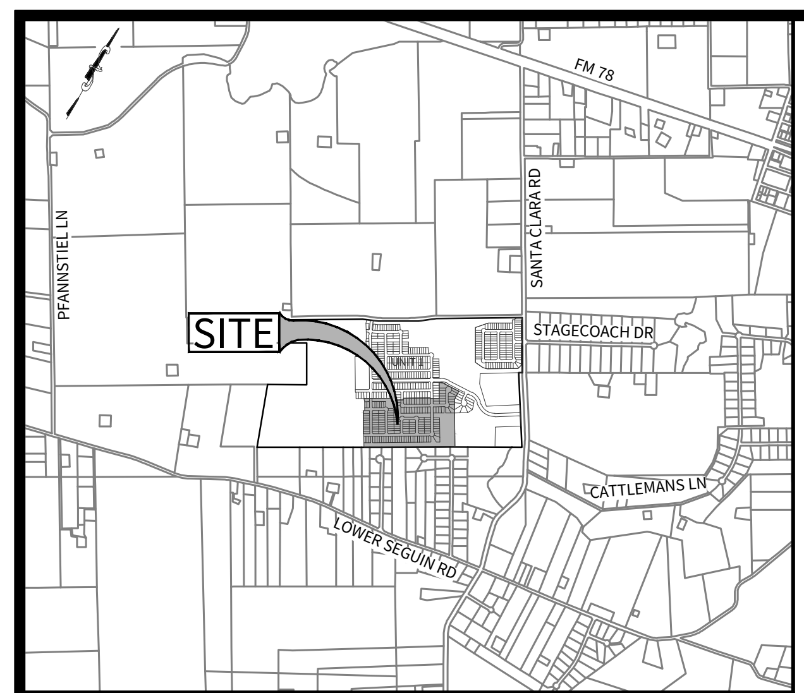


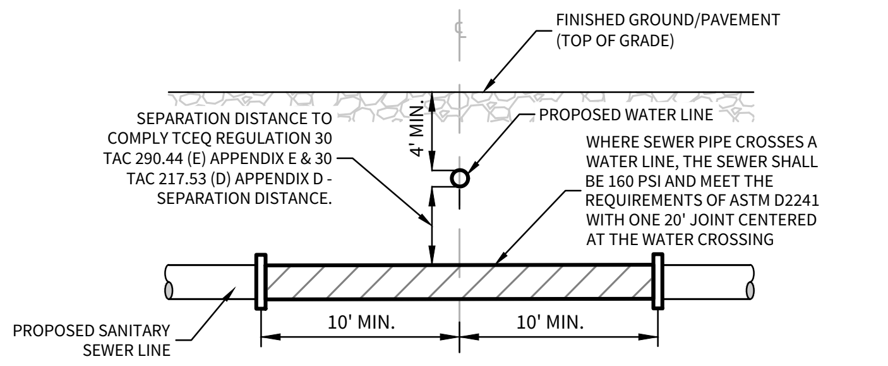
LOCATION MAP

N.T.S.

BENCHMARK **BM-1**

BENCHMARK TO BE SET BY ENGINEER PRIOR TO CONSTRUCTION.

SEWER/WATER LINE CROSSINGS	
LINE	STATION
"W"	23+60.31
"W"	26+92.81
"W"	29+40.31
"W"	37+23.41


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

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

N.T.S.

NOTE:

CONTRACTOR TO INSTALL WATERTIGHT MANHOLES WITH 30" OPENING AND INTERIOR WALL COATED WITH A GVSUD APPROVED SEWER STRUCTURE FOR ALL MANHOLES WITHIN THIS DEVELOPMENT.

NOTES:

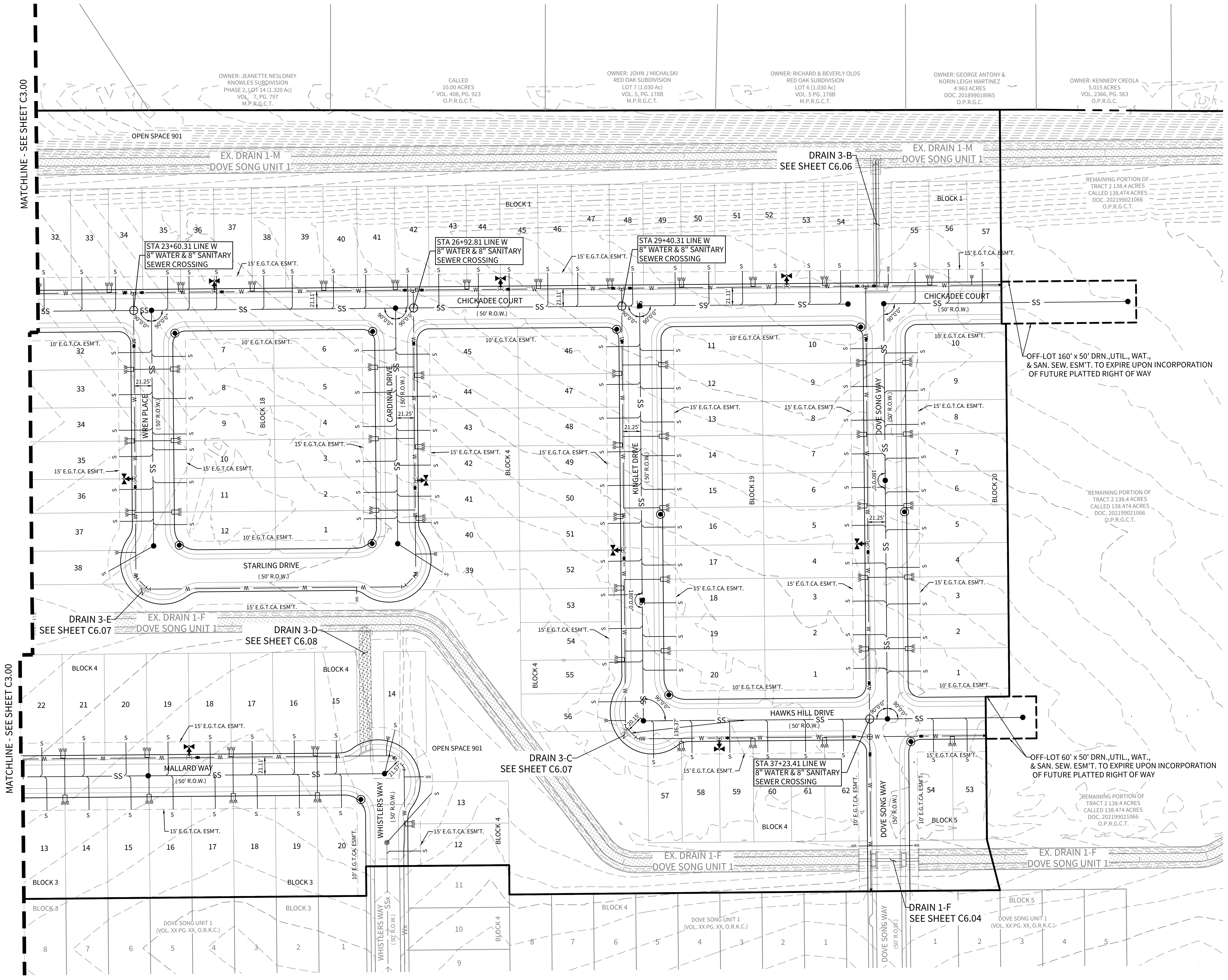
1. CONTRACTOR TO POTHOLE AND VERIFY EXISTING MAIN, SIZE, AND TYPE WITH GVSUD INSPECTOR A MINIMUM OF 300 L.F. PRIOR TO TIE-IN LOCATION.
2. CONTRACTOR TO CURB CUT V's FOR VALVES AND X's FOR METERS.
3. 2" TEMPORARY BLOWOFFS, TO BE REMOVED FOR TIE-IN AFTER NEW MAIN IS TESTED AND ACCEPTED.
4. DISINFECTION SHALL BE BY MACHINE CHLORINATION.
5. MOISTURE DENSITY COMPACTION TESTING FREQUENCY-WATER MAIN TRENCHES REQUIRED EVERY 300 L.F. FOR EACH VERTICAL FOOT OF COMPACTED BACK FILL. SERVICES RANDOMLY SELECTED AS REQUIRED BY GVSUD INSPECTOR
6. ALL TESTING AND TEST REPORTS SHALL BE COORDINATED WITH GVSUD INSPECTOR BY THE CONTRACTOR.
7. ALL DUCTILE IRON PIPE TO BE AMERICAN ZINC COATED, AWWA/ANSI C-151
8. WHERE TIE-INS TO EXISTING INFRASTRUCTURE EXIST, CONTRACTOR TO UTILIZE APPROVED WATER LINE STOPS AND/OR MUELLER INSERTION-VALVES TO MINIMIZE WATER OUTAGES AS REQUIRED BY GVSUD DURING CONSTRUCTION.

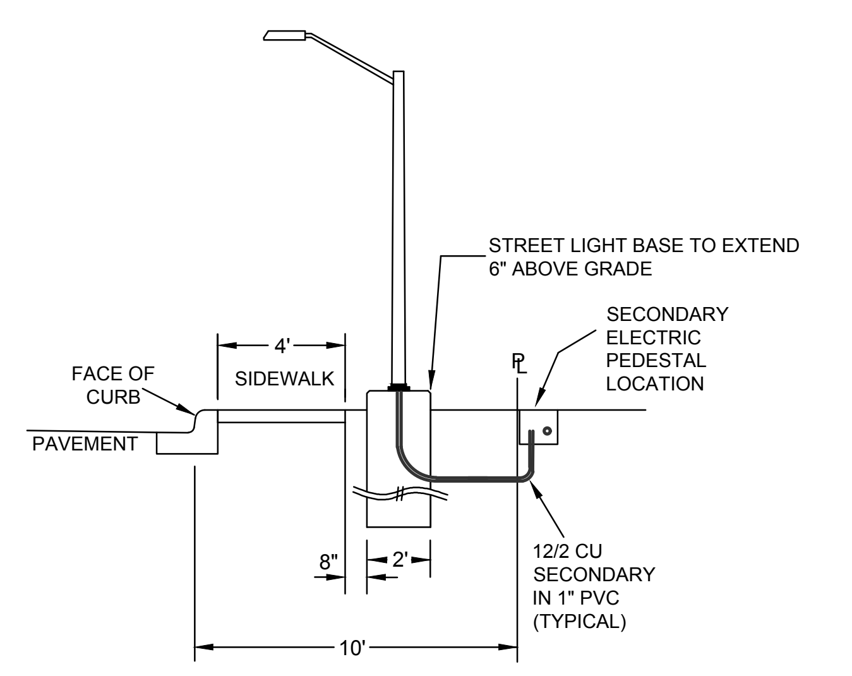
SCALE: 1"=80'

80 10 0 80

LEGEND

OVERALL UNIT BOUNDARY	— – – —
UNIT BOUNDARY	——
PROPOSED LOT LINE	——
PROPOSED RIGHT OF WAY	——
E.G.T.CA. EASEMENT	– – – –
EXISTING 1' CONTOUR	— — 499 — —
EXISTING 5' CONTOUR	— — 500 — —
PROJECT 100 YR. FLOOD PLAIN	▬ ▬
EFFECTIVE 100 YR. FLOOD PLAIN	▬ ▬
EXISTING WATER LINE	— — Wx — —
EXISTING SEWER LINE	— — — SSx —
EXISTING MANHOLE	●
PROPOSED WATER LINE	—— W ——
PROPOSED WATER SERVICE	W W ⊐—
PROPOSED FIRE HYDRANT	⋈
PROPOSED SEWER MAIN	—— SS ——
PROPOSED MANHOLE	●
PROPOSED SEWER SERVICE	S ——
PROPOSED STREET LIGHT	◉


MATCHLINE - SEE SHEET C3.00
MATCHLINE - SEE SHEET C3.00
OWNER: JEANETTE NESLONEY KNOWLES SUBDIVISION PHASE 2, LOT 14 (1.320 Ac) VOL. 7, PG. 797 M.P.R.G.C.T.
CALLED 10.00 ACRES VOL. 408, PG. 923 O.P.R.G.C.T.
OWNER: JOHN J MICHALSKI RED OAK SUBDIVISION LOT 7 (1.030 Ac) VOL. 5, PG. 178B M.P.R.G.C.T.
OWNER: RICHARD & BEVERLY OLDS RED OAK SUBDIVISION LOT 6 (1.030 Ac) VOL. 5 PG. 178B M.P.R.G.C.T.
OWNER: GEORGE ANTONY & KORIN LEIGH MARTINEZ 4.963 ACRES DOC. 201899018065 O.P.R.G.C.T.
OWNER: KENNEDY CREOLA 5.015 ACRES VOL. 2366, PG. 563 O.P.R.G.C.
OPEN SPACE 901
EX. DRAIN 1-M DOVE SONG UNIT 1
EX. DRAIN 1-M DOVE SONG UNIT 1
DRAIN 3-B SEE SHEET C6.06
BLOCK 1
REMAINING PORTION OF TRACT 2 138.4 ACRES CALLED 138.474 ACRES DOC. 202199021066 O.P.R.G.C.T.
STA 23+60.31 LINE W 8" WATER & 8" SANITARY SEWER CROSSING
STA 26+92.81 LINE W 8" WATER & 8" SANITARY SEWER CROSSING
STA 29+40.31 LINE W 8" WATER & 8" SANITARY SEWER CROSSING
STA 37+23.41 LINE W 8" WATER & 8" SANITARY SEWER CROSSING
15' E.G.T.CA. ESM'T.
10' E.G.T.CA. ESM'T.
CHICKADEE COURT (50' R.O.W.)
CHICKADEE COURT (50' R.O.W.)
WREN PLACE (50' R.O.W.)
CARDINAL DRIVE (50' R.O.W.)
KINGLET DRIVE (50' R.O.W.)
DOVE SONG WAY (50' R.O.W.)
STARLING DRIVE (50' R.O.W.)
HAWKS HILL DRIVE
MALLARD WAY (50' R.O.W.)
WHISTLERS WAY (50' R.O.W.)
BLOCK 18
BLOCK 4
BLOCK 19
BLOCK 20
BLOCK 3
BLOCK 5
OFF-LOT 160' x 50' DRN.,UTIL., WAT., & SAN. SEW. ESM'T. TO EXPIRE UPON INCORPORATION OF FUTURE PLATTED RIGHT OF WAY
OFF-LOT 60' x 50' DRN.,UTIL., WAT., & SAN. SEW. ESM'T. TO EXPIRE UPON INCORPORATION OF FUTURE PLATTED RIGHT OF WAY
DRAIN 3-E SEE SHEET C6.07
DRAIN 3-D SEE SHEET C6.08
DRAIN 3-C SEE SHEET C6.07
DRAIN 1-F SEE SHEET C6.04
EX. DRAIN 1-F DOVE SONG UNIT 1
EX. DRAIN 1-F DOVE SONG UNIT 1
EX. DRAIN 1-F DOVE SONG UNIT 1
OPEN SPACE 901
DOVE SONG UNIT 1 (VOL. XX PG. XX, O.R.K.C.)
SS
W


STREET LIGHT BASE TO EXTEND 6" ABOVE GRADE
SECONDARY ELECTRIC PEDESTAL LOCATION
FACE OF CURB
SIDEWALK
4'
PAVEMENT
PL
8"
2'
10'
12/2 CU SECONDARY IN 1" PVC (TYPICAL)

STREET LIGHT NOTE:

CONT. ---- ---- (--) STREET LIGHTS, USE FLUSH-MOUNT PEDESTALS.

GVEC STREET LIGHT DETAIL

N.T.S.

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 MARION	(830) 914-2391
GVSUD	(830) 914-2330
GVTC	(830) 885-4411
GVEC	1-800-401-8345
DIG TESS	1-800-344-8377
TEXAS STATE WIDE ONE CALL LOCATORS	1-800-545-6005 OR 811

NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TEST WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE GVSUD INSPECTOR/TEST ADMINISTER, PER EACH 12-INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY GVSUD WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

TRENCH EXCAVATION PROTECTION

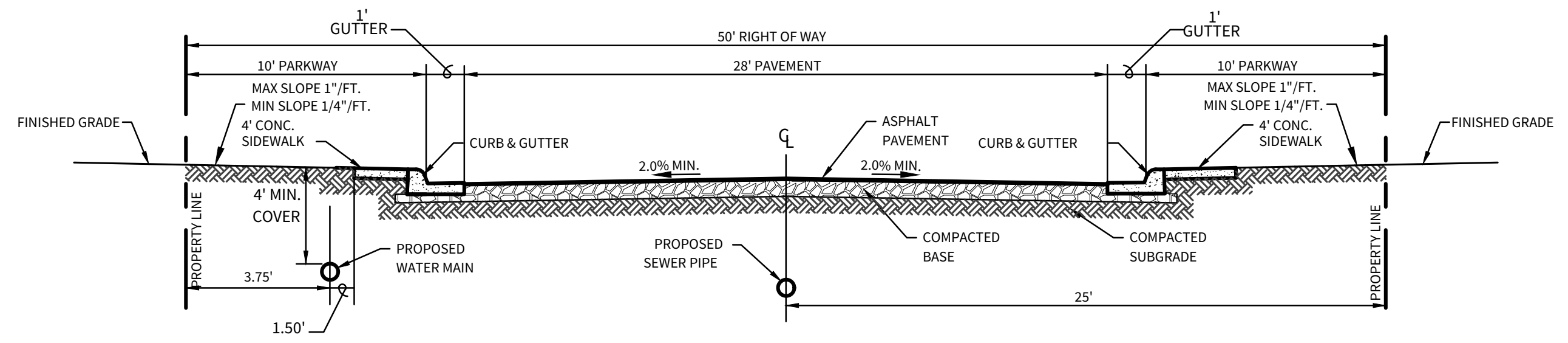
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S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

CAUTION!!

EXISTING UTILITIES ARE WITHIN THE LIMITS OF CONSTRUCTION. CONTRACTORS SHALL EXERCISE EXTRA CARE IN DIGGING ANY TRENCH FOR PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE, VERIFY THE EXACT LOCATION & IDENTIFY AREA OF CONFLICTS WITH EXISTING UTILITIES AND SHALL NOTIFY THE ENGINEER IF CONFLICT IS FOUND.

CAUTION!!

THE CONTRACTOR SHALL BE AWARE THAT OVERHEAD ELECTRIC LINES EXIST WITHIN THE VICINITY OF 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.



LOCAL "A" STREET CROSS-SECTION

CUDEENGINEERS.COM

CUDE ENGINEERS EST. 1980

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

DOVE SONG SUBDIVISION UNIT 3

UTILITY LAYOUT PLAN

DATE
06/28/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG/KM

CHECKED BY
AM/AL

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

ANDREW R. LOWRY
123410
07/03/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C3.01

CUDEENGINEERS.COM

P:\03608\004\2-DWG\4-Plans\C3.00-01 UTILITY LAYOUT PLAN.dwg 2024/06/28 2:43pm jguerrero

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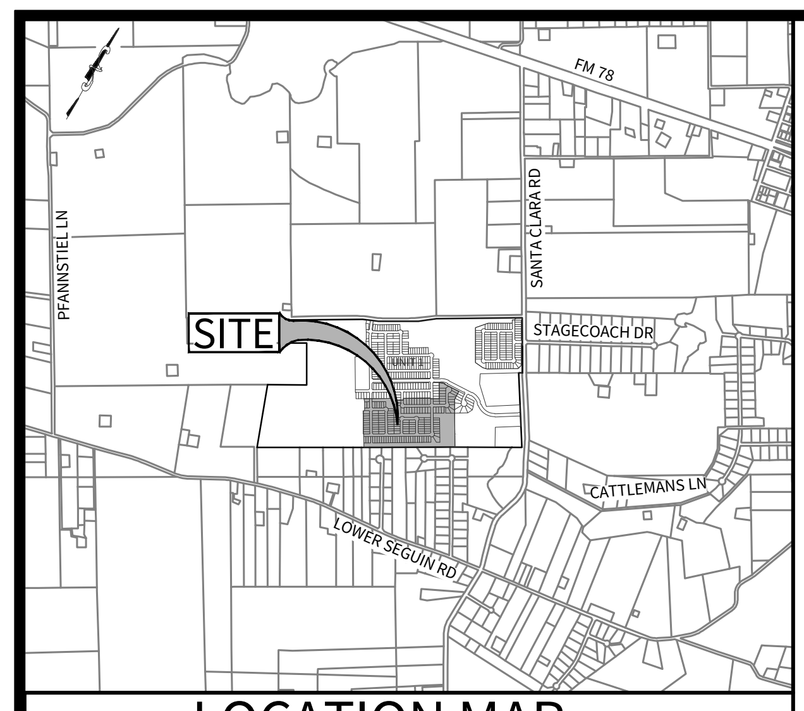
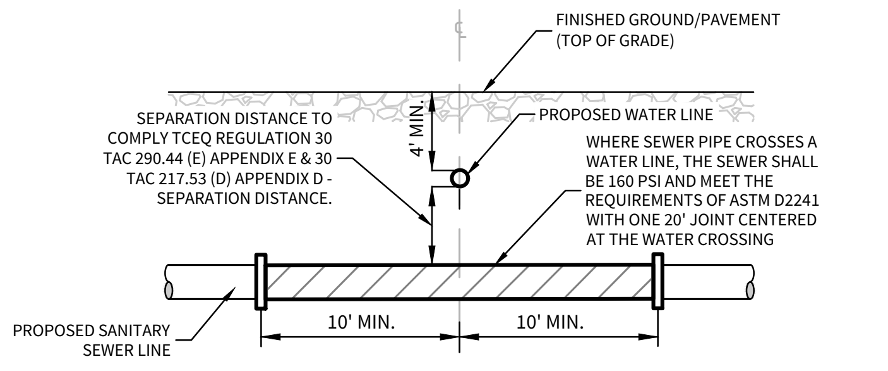


LOCATION MAP
N.T.S.

BENCHMARK BM-1

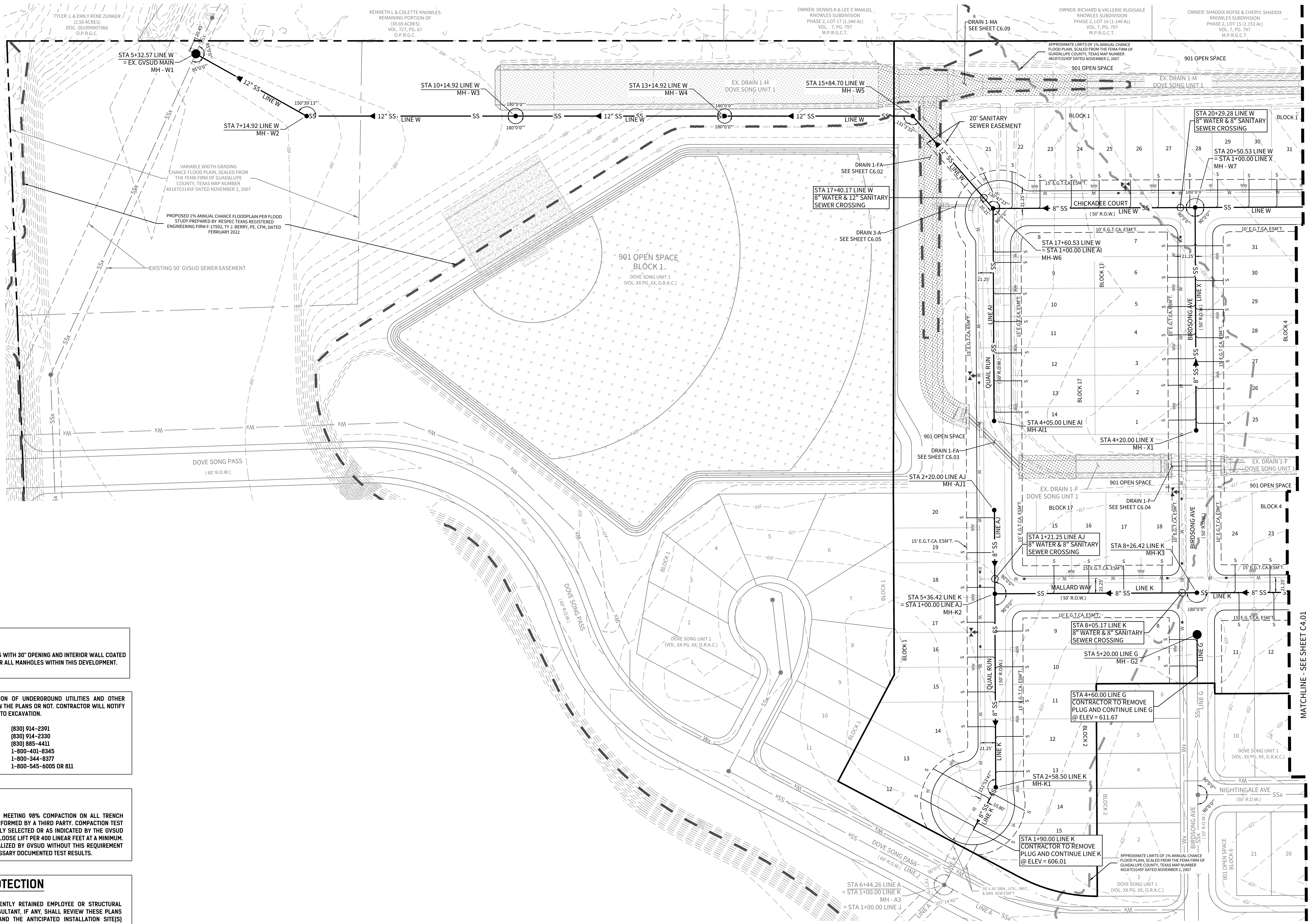
BENCHMARK TO BE SET BY ENGINEER PRIOR TO CONSTRUCTION.

SEWER/WATER LINE CROSSINGS	
LINE	STATION
"W"	17+40.17
"W"	20+29.28
"W"	23+19.28
"W"	26+51.78
"W"	28+99.28
"W"	36+82.38
"AJ"	1+21.25
"K"	8+05.17


FINISHED GROUND/PAVEMENT (TOP OF GRADE)
PROPOSED WATER LINE
4' 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.


TYLER J. & EMILY RENE ZUNKER (2.50 ACRES) DOC. 201999007560 O.P.R.G.C.
KENNETH L & COLETTE KNOWLES REMAINING PORTION OF (38.69 ACRES) VOL. 727, PG. 67 O.P.R.G.C.
OWNER: DENNIS K & LEE E MANUEL KNOWLES SUBDIVISION PHASE 2, LOT 17 (1.340 Ac) VOL. 7, PG. 797 M.P.R.G.C.T.
OWNER: RICHARD & VALLERIE RUDISAILE KNOWLES SUBDIVISION PHASE 2, LOT 16 (1.146 Ac) VOL. 7, PG. 797 M.P.R.G.C.T.
OWNER: SHADDIX ROYSE & CHERYL SHADDIX KNOWLES SUBDIVISION PHASE 2, LOT 15 (1.153 Ac) VOL. 7, PG. 797 M.P.R.G.C.T.
STA 5+32.57 LINE W = EX. GVSUD MAIN MH - W1
STA 7+14.92 LINE W MH - W2
STA 10+14.92 LINE W MH - W3
STA 13+14.92 LINE W MH - W4
STA 15+84.70 LINE W MH - W5
12" SS
LINE W
150°39'13"
180°0'0"
131°3'33"
VARIABLE WIDTH GRADING CHANCE FLOOD PLAIN, SEALED FROM THE FEMA FIRM OF GUADALUPE COUNTY, TEXAS MAP NUMBER 48187C0145F DATED NOVEMBER 2, 2007
PROPOSED 1% ANNUAL CHANCE FLOODPLAIN PER FLOOD STUDY PREPARED BY RESPEC TEXAS REGISTERED ENGINEERING FIRM F-17502, TY J. BERRY, PE. CFM, DATED FEBRUARY 2022
EXISTING 50' GVSUD SEWER EASEMENT
EX. DRAIN 1-M DOVE SONG UNIT 1
DRAIN 1-MA SEE SHEET C6.09
APPROXIMATE LIMITS OF 1% ANNUAL CHANCE FLOOD PLAIN, SCALED FROM THE FEMA FIRM OF GUADALUPE COUNTY, TEXAS MAP NUMBER 48187C0245F DATED NOVEMBER 2, 2007
901 OPEN SPACE
20' SANITARY SEWER EASEMENT
DRAIN 1-FA SEE SHEET C6.02
DRAIN 3-A SEE SHEET C6.05
STA 17+40.17 LINE W 8" WATER & 12" SANITARY SEWER CROSSING
STA 17+60.53 LINE W = STA 1+00.00 LINE AI MH-W6
STA 20+29.28 LINE W 8" WATER & 8" SANITARY SEWER CROSSING
STA 20+50.53 LINE W = STA 1+00.00 LINE X MH - W7
CHICKADEE COURT (50' R.O.W.)
8" SS
15' E.G.T.CA. ESM'T.
10' E.G.T.CA. ESM'T.
BLOCK 1
BLOCK 4
BLOCK 17
BLOCK 2
901 OPEN SPACE BLOCK 1 DOVE SONG UNIT 1 (VOL. XX PG. XX, O.R.K.C.)
QUAIL RUN (50' R.O.W.)
LINE AI
BIRDSONG AVE (50' R.O.W.)
LINE X
STA 4+05.00 LINE AI MH-AI1
STA 4+20.00 LINE X MH - X1
DRAIN 1-FA SEE SHEET C6.03
EX. DRAIN 1-F DOVE SONG UNIT 1
DRAIN 1-F SEE SHEET C6.04
STA 2+20.00 LINE AJ MH -AJ1
LINE AJ
STA 1+21.25 LINE AJ 8" WATER & 8" SANITARY SEWER CROSSING
STA 8+26.42 LINE K MH-K3
STA 5+36.42 LINE K = STA 1+00.00 LINE AJ MH-K2
MALLARD WAY (50' R.O.W.)
LINE K
STA 8+05.17 LINE K 8" WATER & 8" SANITARY SEWER CROSSING
STA 5+20.00 LINE G MH - G2
LINE G
STA 4+60.00 LINE G CONTRACTOR TO REMOVE PLUG AND CONTINUE LINE G @ ELEV = 611.67
STA 2+58.50 LINE K MH-K1
151°53'47"
10.80'
STA 1+90.00 LINE K CONTRACTOR TO REMOVE PLUG AND CONTINUE LINE K @ ELEV = 606.01
DOVE SONG PASS (60' R.O.W.)
LINE J
LINE A
STA 6+44.26 LINE A = STA 1+00.00 LINE K MH - A3 = STA 1+00.00 LINE J
107°14'45"
73°17'9"
30' x 30' DRN., UTIL., WAT., & SAN. SEW ESM'T
NIGHTINGALE AVE (50' R.O.W.)
901 OPEN SPACE BLOCK 6
DOVE SONG UNIT 1 (VOL. XX PG. XX, O.R.K.C.)
MATCHLINE - SEE SHEET C4.01
21.25'
90°0'0"

SCALE: 1"=80'
80 10 0 80

LEGEND

OVERALL UNIT BOUNDARY	— — — —
UNIT BOUNDARY	——
PROPOSED LOT LINE	——
PROPOSED RIGHT OF WAY	——
E.G.T.CA. EASEMENT	– – – –
EXISTING 1' CONTOUR	— — 499 — —
EXISTING 5' CONTOUR	— — 500 — —
PROJECT 100 YR. FLOOD PLAIN	▬ ▬
EFFECTIVE 100 YR. FLOOD PLAIN	▬ ▬
EXISTING WATER LINE	— Wx —
EXISTING SEWER LINE	— SSx —
EXISTING MANHOLE	●
PROPOSED WATER LINE	— W —
PROPOSED WATER SERVICE	W W
PROPOSED FIRE HYDRANT	
PROPOSED SEWER MAIN	— SS —
PROPOSED MANHOLE	●
PROPOSED SEWER SERVICE	S

NOTE:

CONTRACTOR TO INSTALL WATERTIGHT MANHOLES WITH 30" OPENING AND INTERIOR WALL COATED WITH A GVSUD APPROVED SEWER STRUCTURE FOR ALL MANHOLES WITHIN THIS DEVELOPMENT.

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 MARION	(830) 914-2391
GVSUD	(830) 914-2330
GVTC	(830) 885-4411
GVEC	1-800-401-8345
DIG TESS	1-800-344-8377
TEXAS STATE WIDE ONE CALL LOCATORS	1-800-545-6005 OR 811

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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.

CAUTION!!

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CAUTION!!

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TRENCH EXCAVATION PROTECTION

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

NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL. COMPACTION TEST WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE DISTRICT INSPECTOR. PER EACH 12-INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY THE DISTRICT WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.
2. ALL SANITARY SEWER PIPE SHALL BE SDR-26 PVC PIPE MEETING ASTM SPECIFICATION D-3034.
3. MANHOLE OPENING INCREASED TO 30" AS PER TAC CHAPTER 217.55.
4. REFERENCE STREET DETAIL SHEET AND GEOTECHNICAL ENGINEERING REPORT FOR PAVEMENT DESIGN INFORMATION.
5. ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE UPGRADIENT SIDE OF THE SEWER TRENCH THUS ALLOWING THE TRENCH TO INTERCEPT ANY SILT CONTAMINATED RUNOFF.
6. ALL LATERALS SHALL BE INSTALLED AT A MINIMUM 2.0% SLOPE UNLESS OTHERWISE NOTED.
7. BENCHMARK TO BE SET BY ENGINEER PRIOR TO THE START OF CONSTRUCTION.
8. ALL SEWER LATERALS TO BE INSTALLED WITH A MINIMUM 150 PSI PRESSURE RATED PIPE AND EMBEDDED IN CEMENT STABILIZED SAND AT ALL WATER MAIN AND LATERAL SERVICE CROSSINGS PER 30 TAC CHAPTER 290.44(e)
9. CONTRACTOR TO INSTALL A 2" X 4" LUMBER ON EACH SEWER LATERAL LOCATION AND PAINT IT IN GREEN.

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

DOVE SONG SUBDIVISION
UNIT 3

OVERALL SANITARY SEWER PLAN

DATE
09/05/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG/KM

CHECKED BY
AM/AL

#	DATE	REVISIONS
1.		
2.		
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9.		

ANDREW R. LOWRY
123410
09/05/2024
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C4.00

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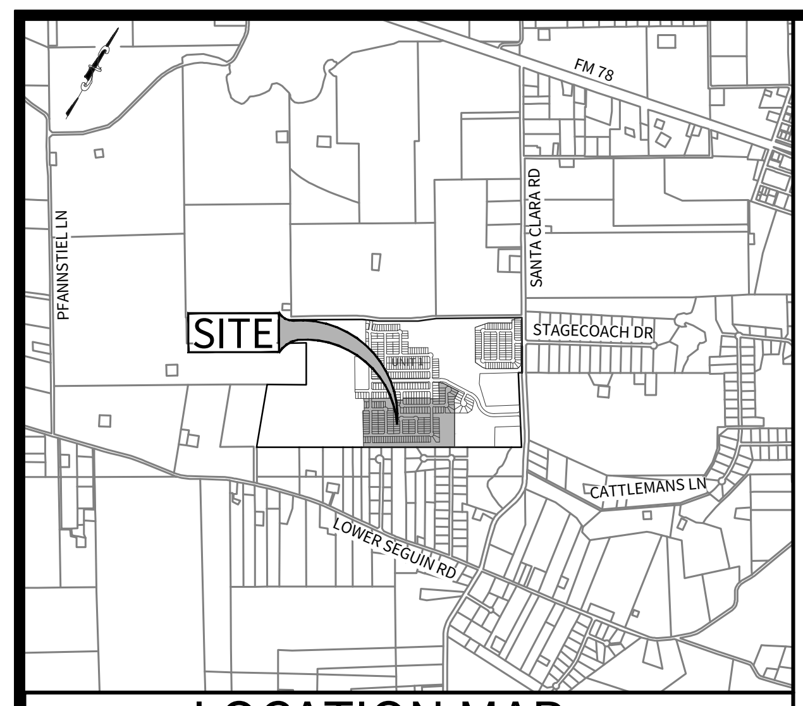
P:\03608\004\2-DWG\4-Plans\C4.00-01 OVERALL SANITARY SEWER PLAN.dwg 2024/09/05 11:56am jguerrero

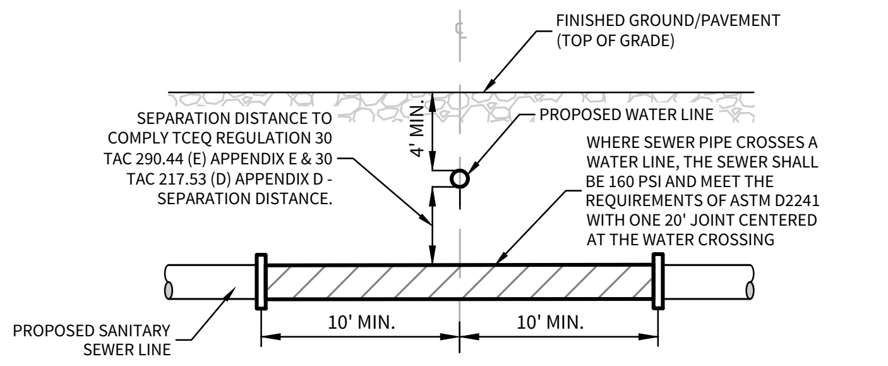


LOCATION MAP
N.T.S.

BENCHMARK **BM-1**

BENCHMARK TO BE SET BY ENGINEER PRIOR TO CONSTRUCTION.

SEWER/WATER LINE CROSSINGS	
LINE	STATION
"W"	17+40.17
"W"	20+29.28
"W"	23+19.28
"W"	26+51.78
"W"	28+99.28
"W"	36+82.38
"AJ"	1+21.25
"K"	8+05.17


FINISHED GROUND/PAVEMENT (TOP OF GRADE)
PROPOSED WATER LINE
4' 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

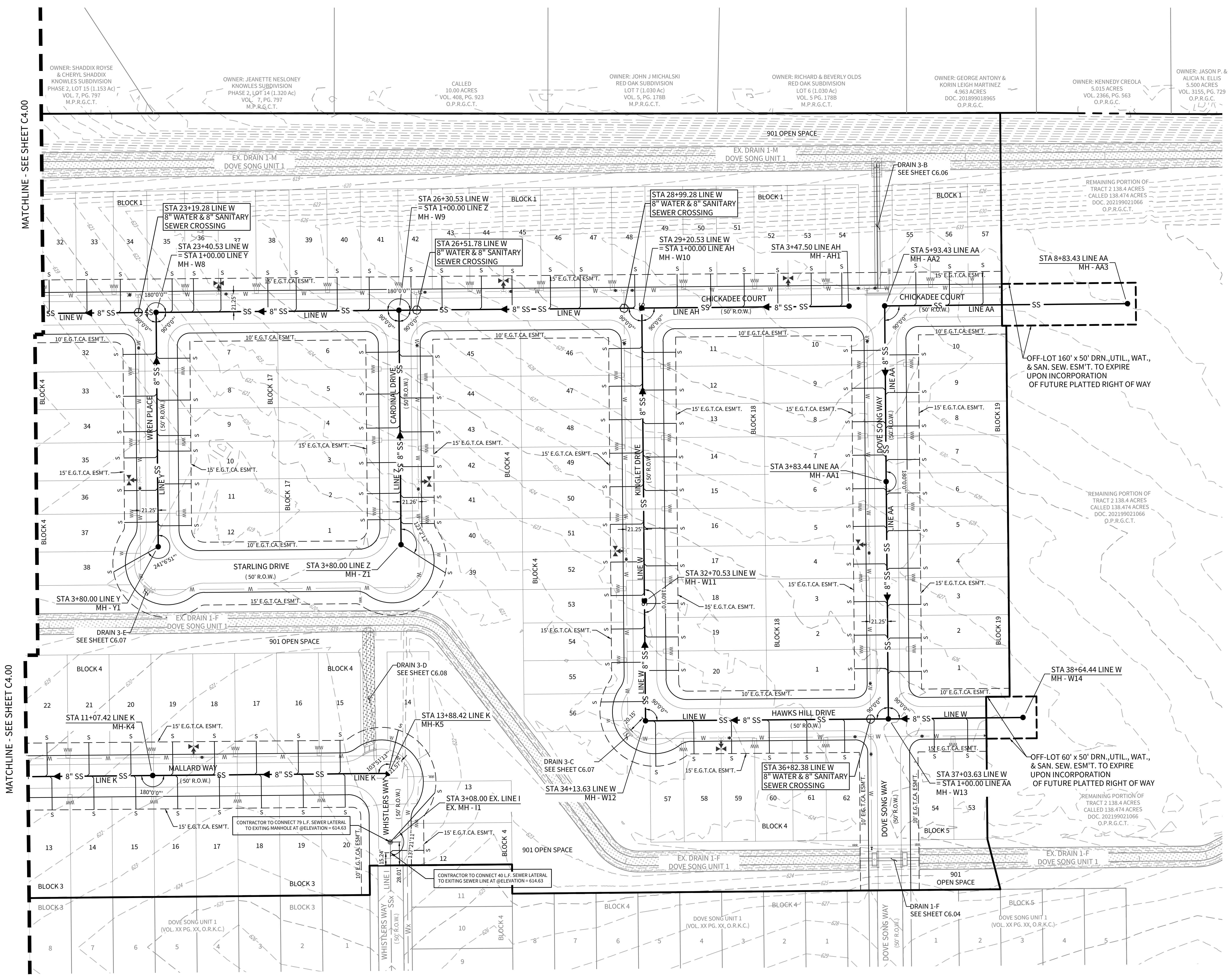
N.T.S.

SCALE: 1"=80'

80 10 0 80

LEGEND

OVERALL UNIT BOUNDARY	— — — —
UNIT BOUNDARY	——
PROPOSED LOT LINE	——
PROPOSED RIGHT OF WAY	——
E.G.T.CA. EASEMENT	- - - - -
EXISTING 1' CONTOUR	— — 499 — —
EXISTING 5' CONTOUR	— — 500 — —
PROJECT 100 YR. FLOOD PLAIN	▬ ▬
EFFECTIVE 100 YR. FLOOD PLAIN	▬ ▬
EXISTING WATER LINE	— — Wx — —
EXISTING SEWER LINE	— — SSx — —
EXISTING MANHOLE	●
PROPOSED WATER LINE	—— W ——
PROPOSED WATER SERVICE	
PROPOSED FIRE HYDRANT	
PROPOSED SEWER MAIN	—— SS ——
PROPOSED MANHOLE	●
PROPOSED SEWER SERVICE	S ——


MATCHLINE - SEE SHEET C4.00
MATCHLINE - SEE SHEET C4.00
901 OPEN SPACE
EX. DRAIN 1-M DOVE SONG UNIT 1
BLOCK 1
STA 23+19.28 LINE W 8" WATER & 8" SANITARY SEWER CROSSING
STA 23+40.53 LINE W = STA 1+00.00 LINE Y MH - W8
STA 26+30.53 LINE W = STA 1+00.00 LINE Z MH - W9
STA 26+51.78 LINE W 8" WATER & 8" SANITARY SEWER CROSSING
STA 28+99.28 LINE W 8" WATER & 8" SANITARY SEWER CROSSING
STA 29+20.53 LINE W = STA 1+00.00 LINE AH MH - W10
STA 3+47.50 LINE AH MH - AH1
STA 5+93.43 LINE AA MH - AA2
STA 8+83.43 LINE AA MH - AA3
DRAIN 3-B SEE SHEET C6.06
CHICKADEE COURT (50' R.O.W.)
LINE W
LINE AH
LINE AA
OFF-LOT 160' x 50' DRN.,UTIL., WAT., & SAN. SEW. ESM'T. TO EXPIRE UPON INCORPORATION OF FUTURE PLATTED RIGHT OF WAY
WREN PLACE (50' R.O.W.)
CARDINAL DRIVE (50' R.O.W.)
KINGLET DRIVE (50' R.O.W.)
DOVE SONG WAY (50' R.O.W.)
LINE Y
LINE Z
LINE AA
BLOCK 4
BLOCK 17
BLOCK 18
BLOCK 19
15' E.G.T.CA. ESM'T.
10' E.G.T.CA. ESM'T.
STA 3+83.44 LINE AA MH - AA1
STA 32+70.53 LINE W MH - W11
STARLING DRIVE (50' R.O.W.)
STA 3+80.00 LINE Z MH - Z1
STA 3+80.00 LINE Y MH - Y1
DRAIN 3-E SEE SHEET C6.07
EX. DRAIN 1-F DOVE SONG UNIT 1
901 OPEN SPACE
DRAIN 3-D SEE SHEET C6.08
STA 38+64.44 LINE W MH - W14
HAWKS HILL DRIVE (50' R.O.W.)
OFF-LOT 60' x 50' DRN.,UTIL., WAT., & SAN. SEW. ESM'T. TO EXPIRE UPON INCORPORATION OF FUTURE PLATTED RIGHT OF WAY
STA 11+07.42 LINE K MH-K4
STA 13+88.42 LINE K MH-K5
MALLARD WAY (50' R.O.W.)
LINE K
CONTRACTOR TO CONNECT 73 L.F. SEWER LATERAL TO EXISTING MANHOLE AT @ELEVATION = 614.63
STA 3+08.00 EX. LINE I EX. MH - I1
CONTRACTOR TO CONNECT 40 L.F. SEWER LATERAL TO EXISTING SEWER LINE AT @ELEVATION = 614.63
WHISTLERS WAY (50' R.O.W.)
DRAIN 3-C SEE SHEET C6.07
STA 34+13.63 LINE W MH - W12
STA 36+82.38 LINE W 8" WATER & 8" SANITARY SEWER CROSSING
STA 37+03.63 LINE W = STA 1+00.00 LINE AA MH - W13
DRAIN 1-F SEE SHEET C6.04
901 OPEN SPACE
EX. DRAIN 1-F DOVE SONG UNIT 1
BLOCK 3
BLOCK 5
DOVE SONG UNIT 1 (VOL. XX PG. XX, O.R.K.C.)
8" SS

NOTE:

CONTRACTOR TO INSTALL WATERTIGHT MANHOLES WITH 30" OPENING AND INTERIOR WALL COATED WITH A GVSUD APPROVED SEWER STRUCTURE FOR ALL MANHOLES WITHIN THIS DEVELOPMENT.

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 MARION	(830) 914-2391
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GVTC	(830) 885-4411
GVEC	1-800-401-8345
DIG TESS	1-800-344-8377
TEXAS STATE WIDE ONE CALL LOCATORS	1-800-545-6005 OR 811

NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TEST WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE GVSUD INSPECTOR/TEST ADMINISTER, PER EACH 12-INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY GVSUD WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

TRENCH EXCAVATION PROTECTION

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

CAUTION!!

EXISTING UTILITIES ARE WITHIN THE LIMITS OF CONSTRUCTION. CONTRACTORS SHALL EXERCISE EXTRA CARE IN DIGGING ANY TRENCH FOR PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE, VERIFY THE EXACT LOCATION & IDENTIFY AREA OF CONFLICTS WITH EXISTING UTILITIES AND SHALL NOTIFY THE ENGINEER IF CONFLICT IS FOUND.

CAUTION!!

THE CONTRACTOR SHALL BE AWARE THAT OVERHEAD ELECTRIC LINES EXIST WITHIN THE VICINITY OF 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 PROTECTION

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2. ALL SANITARY SEWER PIPE SHALL BE SDR-26 PVC PIPE MEETING ASTM SPECIFICATION D-3034.
3. MANHOLE OPENING INCREASED TO 30" AS PER TAC CHAPTER 217.55.
4. REFERENCE STREET DETAIL SHEET AND GEOTECHNICAL ENGINEERING REPORT FOR PAVEMENT DESIGN INFORMATION.
5. ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE UPGRADIENT SIDE OF THE SEWER TRENCH THUS ALLOWING THE TRENCH TO INTERCEPT ANY SILT CONTAMINATED RUNOFF.
6. ALL LATERALS SHALL BE INSTALLED AT A MINIMUM 2.0% SLOPE UNLESS OTHERWISE NOTED.
7. BENCHMARK TO BE SET BY ENGINEER PRIOR TO THE START OF CONSTRUCTION.
8. ALL SEWER LATERALS TO BE INSTALLED WITH A MINIMUM 150 PSI PRESSURE RATED PIPE AND EMBEDDED IN CEMENT STABILIZED SAND AT ALL WATER MAIN AND LATERAL SERVICE CROSSINGS PER 30 TAC CHAPTER 290.44(e)
9. CONTRACTOR TO INSTALL A 2" X 4" LUMBER ON EACH SEWER LATERAL LOCATION AND PAINT IT IN GREEN.

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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

DOVE SONG SUBDIVISION
UNIT 3

OVERALL SANITARY SEWER PLAN

DATE
09/05/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG/KM

CHECKED BY
AM/AL

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

ANDREW R. LOWRY
123410
09/05/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C4.01

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P:\03608\004\2-DWG\4-Plans\C4.00-01 OVERALL SANITARY SEWER PLAN.dwg 2024/09/05 11:56am jguerrero

NOTE:

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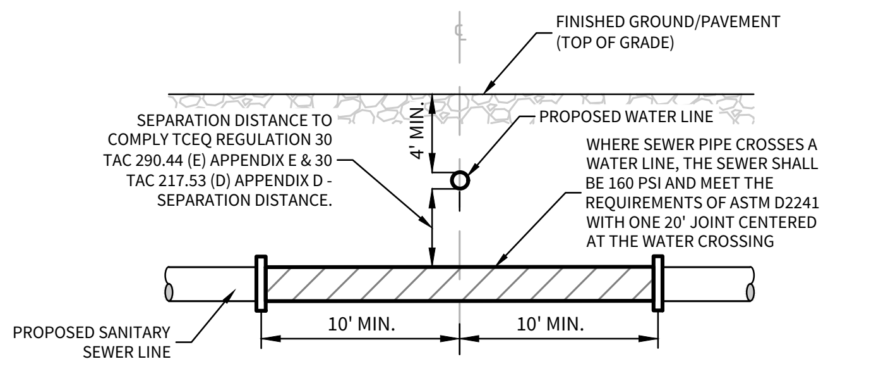
FINISHED GROUND/PAVEMENT (TOP OF GRADE)
PROPOSED WATER LINE
4' MIN.
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
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PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

N.T.S.

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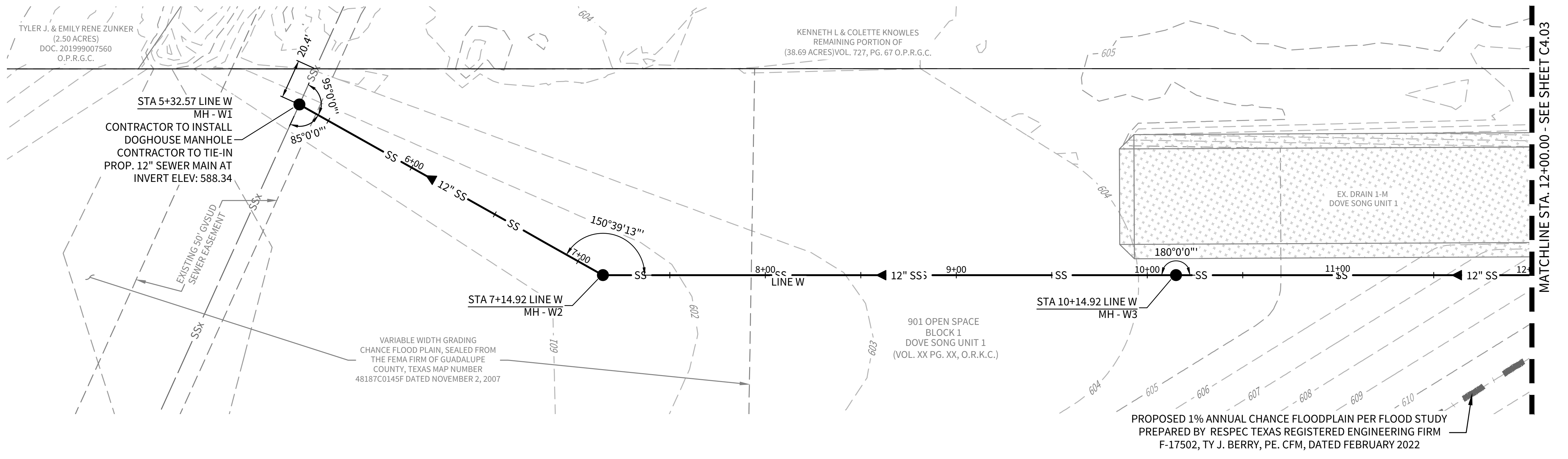

TYLER J. & EMILY RENE ZUNKER
(2.50 ACRES)
DOC. 201999007560
O.P.R.G.C.
KENNETH L & COLETTE KNOWLES
REMAINING PORTION OF
(38.69 ACRES)VOL. 727, PG. 67 O.P.R.G.C.
20.4'
95°0'0"
85°0'0"
STA 5+32.57 LINE W
MH - W1
CONTRACTOR TO INSTALL DOGHOUSE MANHOLE
CONTRACTOR TO TIE-IN PROP. 12" SEWER MAIN AT INVERT ELEV: 588.34
SS
6+00
12" SS
150°39'13"
7+00
STA 7+14.92 LINE W
MH - W2
8+00
LINE W
9+00
10+00
180°0'0"
STA 10+14.92 LINE W
MH - W3
11+00
12" SS
EXISTING 50' GVSUD SEWER EASEMENT
SSx
VARIABLE WIDTH GRADING
CHANCE FLOOD PLAIN, SEALED FROM THE FEMA FIRM OF GUADALUPE COUNTY, TEXAS MAP NUMBER 48187C0145F DATED NOVEMBER 2, 2007
901 OPEN SPACE
BLOCK 1
DOVE SONG UNIT 1
(VOL. XX PG. XX, O.R.K.C.)
EX. DRAIN 1-M
DOVE SONG UNIT 1
601
602
603
604
605
606
607
608
609
610
PROPOSED 1% ANNUAL CHANCE FLOODPLAIN PER FLOOD STUDY PREPARED BY RESPEC TEXAS REGISTERED ENGINEERING FIRM F-17502, TY J. BERRY, PE. CFM, DATED FEBRUARY 2022
MATCHLINE STA. 12+00.00 - SEE SHEET C4.03

SCALE: 1"=50'

0 50 100

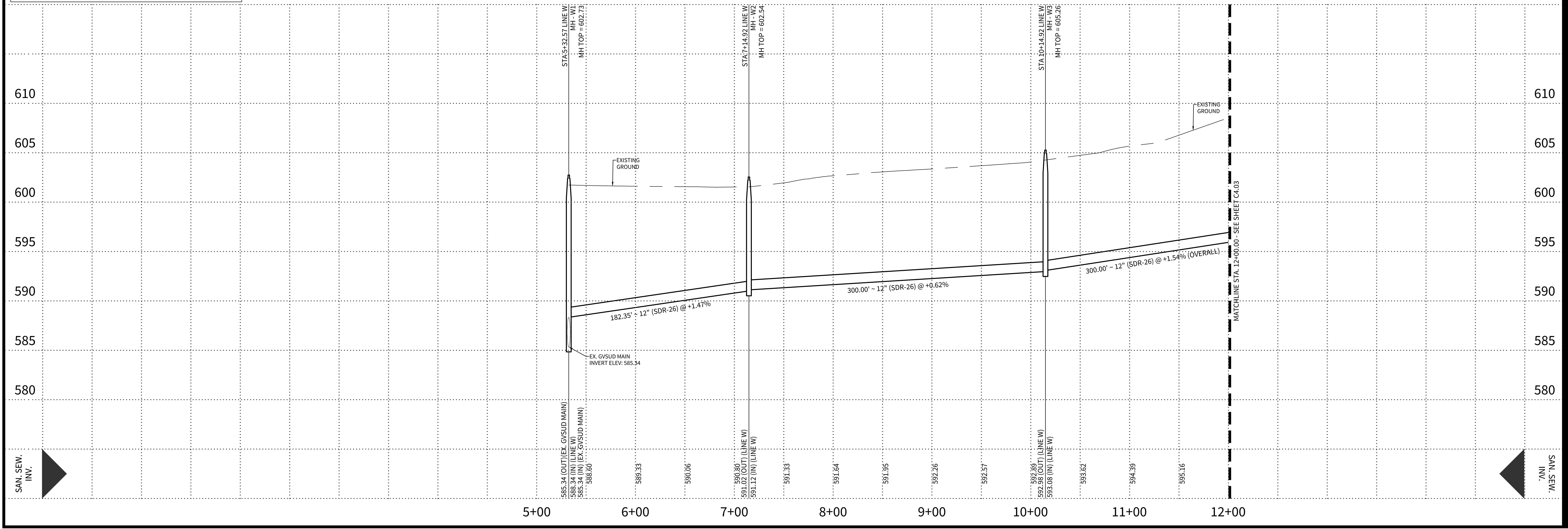
LEGEND

OVERALL UNIT BOUNDARY	━━━━
UNIT BOUNDARY	━━━━
PROPOSED LOT LINE	────
PROPOSED RIGHT OF WAY	────
E.G.T.CA. EASEMENT	— — — —
EXISTING 1' CONTOUR	— — 631 — —
EXISTING 5' CONTOUR	— — 631 — —
PROJECT 100 YR. FLOOD PLAIN	▬ ▬
EFFECTIVE 100 YR. FLOOD PLAIN	▬ ▬
EXISTING WATER LINE	— — Wx — —
EXISTING SEWER LINE	— — SSx — —
EXISTING MANHOLE	●
PROPOSED WATER LINE	────
PROPOSED WATER SERVICE	W W ─
PROPOSED FIRE HYDRANT	⧓
PROPOSED SEWER MAIN	── SS ──
PROPOSED MANHOLE	●
PROPOSED SEWER SERVICE	S ─

LINE W

STA. 5+32.57 TO 12+00.00

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



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ENGINEERS

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

DOVE SONG SUBDIVISION UNIT 3

SANITARY SEWER PLAN & PROFILE - LINE W

DATE
09/05/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG/KM

CHECKED BY
AM/AL

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

ANDREW R. LOWRY
123410
09/05/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C4.02

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P:\03608\004\2-DWG\4-Plans\C4.02-05 SANITARY SEWER LINE A - PLAN & PROFILE.dwg 2024/09/05 11:53am jguerrero

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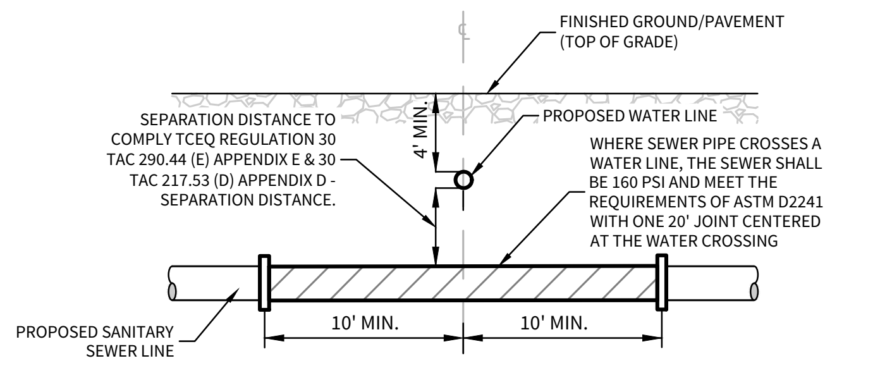
FINISHED GROUND/PAVEMENT (TOP OF GRADE)
4' MIN.
PROPOSED WATER LINE
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10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

N.T.S.

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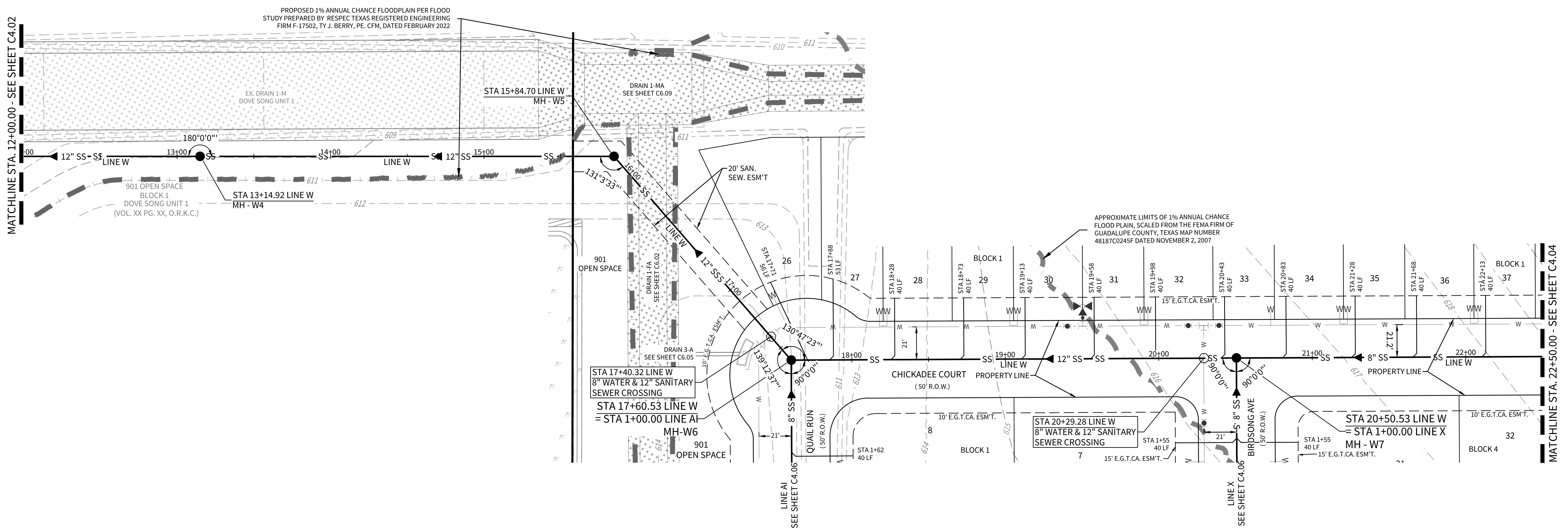
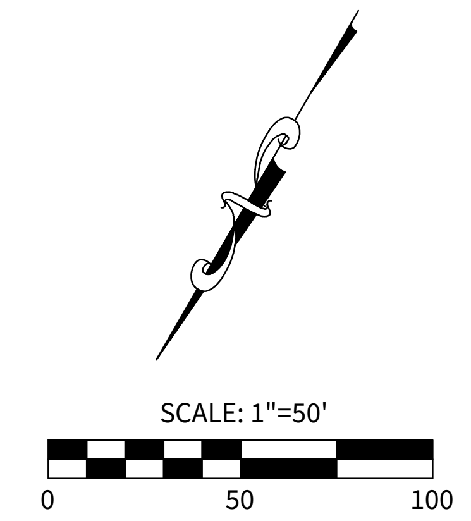




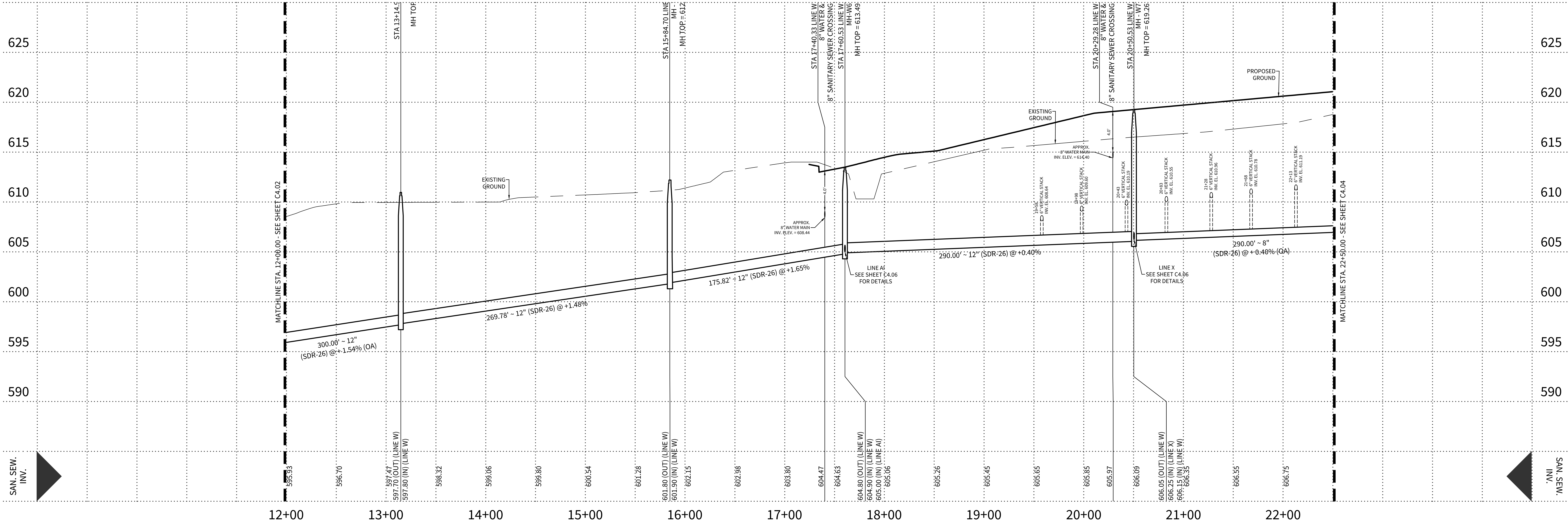
LEGEND

OVERALL UNIT BOUNDARY	▬
UNIT BOUNDARY	▬
PROPOSED LOT LINE	—
PROPOSED RIGHT OF WAY	—
E.G.T.CA. EASEMENT	- - -
EXISTING 1' CONTOUR	- - 631 - -
EXISTING 5' CONTOUR	- - 631 - -
PROJECT 100 YR. FLOOD PLAIN	▬ ▬
EFFECTIVE 100 YR. FLOOD PLAIN	▬ ▬
EXISTING WATER LINE	— Wx —
EXISTING SEWER LINE	— SSx —
EXISTING MANHOLE	●
PROPOSED WATER LINE	—
PROPOSED WATER SERVICE	
PROPOSED FIRE HYDRANT	
PROPOSED SEWER MAIN	— SS —
PROPOSED MANHOLE	●
PROPOSED SEWER SERVICE	

LINE W

STA. 12+00.00 TO 22+50.00

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


625
620
615
610
605
600
595
590
MATCHLINE STA. 12+00.00 - SEE SHEET C4.02
STA 13+14.9
MH TOP
STA 15+84.70 LINE
MH -
MH TOP = 612
STA 17+40.33 LINE W
8" WATER &
8" SANITARY SEWER CROSSING
STA 17+60.53 LINE W
MH-W6
MH TOP = 613.49
STA 20+29.28 LINE W
8" WATER &
8" SANITARY SEWER CROSSING
STA 20+50.53 LINE W
MH - W7
MH TOP = 619.26
PROPOSED GROUND
EXISTING GROUND
EXISTING GROUND
4.0'
4.0'
APPROX. 8" WATER MAIN INV. ELEV. = 608.44
APPROX. 8" WATER MAIN INV. ELEV. = 614.40
19+58 6" VERTICAL STACK INV. EL. 608.64
19+98 6" VERTICAL STACK INV. EL. 609.60
20+43 6" VERTICAL STACK INV. EL. 610.19
20+83 6" VERTICAL STACK INV. EL. 610.55
21+28 6" VERTICAL STACK INV. EL. 610.96
21+68 6" VERTICAL STACK INV. EL. 610.78
22+13 6" VERTICAL STACK INV. EL. 611.19
300.00' ~ 12" (SDR-26) @ +1.54% (OA)
269.78' ~ 12" (SDR-26) @ +1.48%
175.82' ~ 12" (SDR-26) @ +1.65%
290.00' ~ 12" (SDR-26) @ +0.40%
290.00' ~ 8" (SDR-26) @ +0.40% (OA)
LINE AI SEE SHEET C4.06 FOR DETAILS
LINE X SEE SHEET C4.06 FOR DETAILS
MATCHLINE STA. 22+50.00 - SEE SHEET C4.04
SAN. SEW. INV.
595.93
596.70
597.47
597.70 (OUT) (LINE W)
597.80 (IN) (LINE W)
598.32
599.06
599.80
600.54
601.28
601.80 (OUT) (LINE W)
601.90 (IN) (LINE W)
602.15
602.98
603.80
604.47
604.63
604.80 (OUT) (LINE W)
604.90 (IN) (LINE W)
605.00 (IN) (LINE AI)
605.06
605.26
605.45
605.65
605.85
605.97
606.09
606.05 (OUT) (LINE W)
606.25 (IN) (LINE X)
606.15 (IN) (LINE W)
606.35
606.55
606.75
12+00
13+00
14+00
15+00
16+00
17+00
18+00
19+00
20+00
21+00
22+00

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

DOVE SONG SUBDIVISION UNIT 3

SANITARY SEWER PLAN & PROFILE - LINE W

DATE	08/27/2024
PROJECT NO.	03608.004
DRAWN BY	JG/SG/KM
CHECKED BY	AM/AL

REVISIONS

	DATE
1.	
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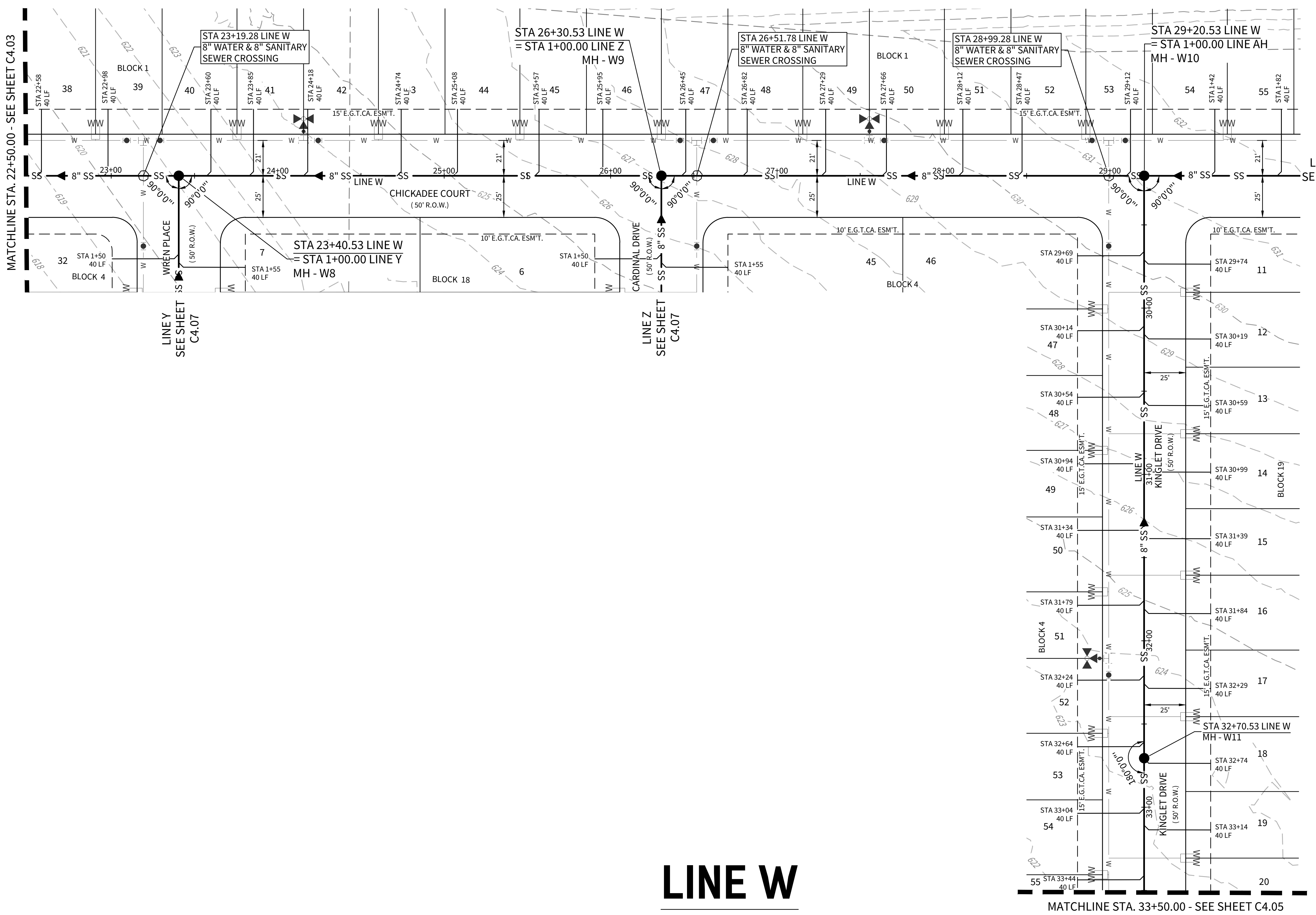
ANDREW R. LOWRY
123410
09/05/2024

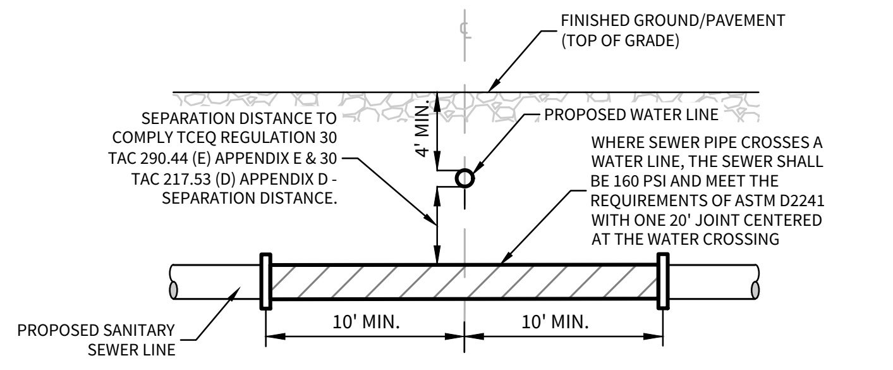
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C4.03



NOTE:

CONTRACTOR TO INSTALL WATERTIGHT MANHOLES WITH 30" OPENING AND INTERIOR WALL COATED WITH A GVSUD APPROVED SEWER STRUCTURE FOR ALL MANHOLES WITHIN THIS DEVELOPMENT.



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.
4' 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.

NOTES:

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CITY OF MARION	(830) 914-2391
GVSUD	(830) 914-2330
GVTC	(830) 885-4411
GVEC	1-800-401-8345
DIG TESS	1-800-344-8377
TEXAS STATE WIDE ONE CALL LOCATORS	1-800-545-6005 OR 811

TRENCH EXCAVATION PROTECTION

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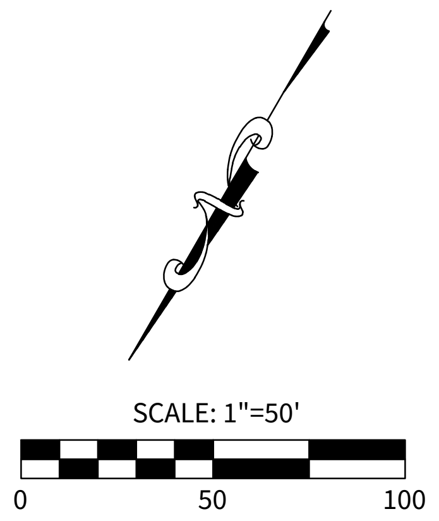


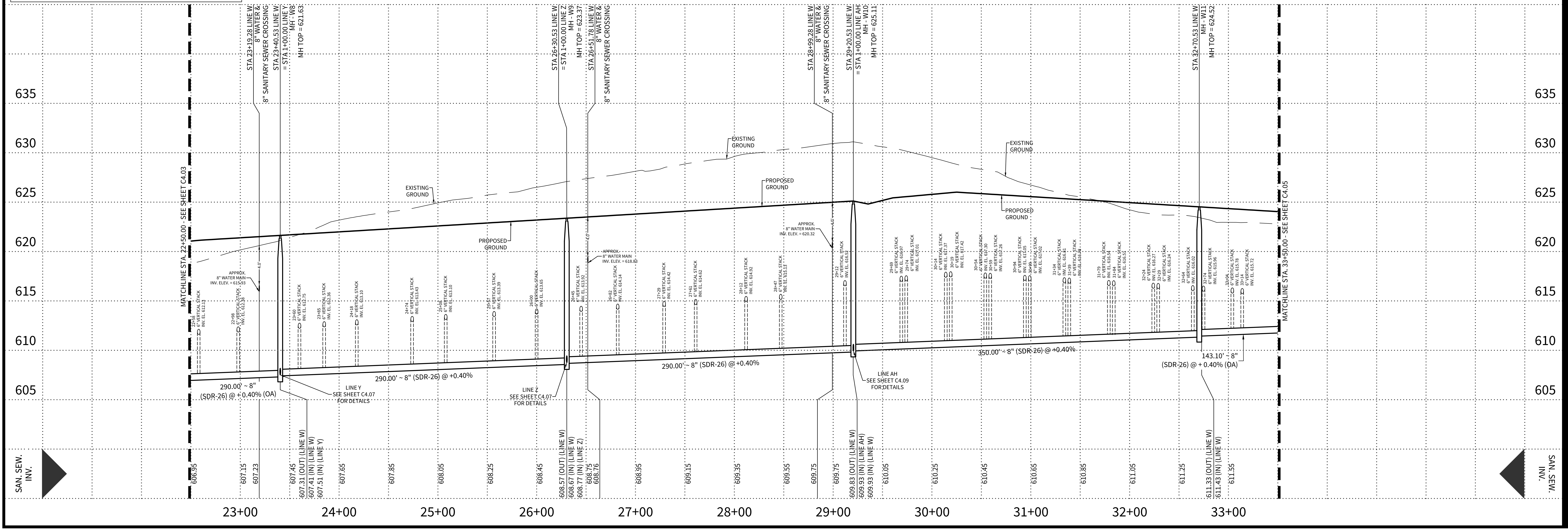
LEGEND

OVERALL UNIT BOUNDARY	━━━
UNIT BOUNDARY	━━━
PROPOSED LOT LINE	───
PROPOSED RIGHT OF WAY	───
E.G.T.CA. EASEMENT	– – –
EXISTING 1' CONTOUR	631
EXISTING 5' CONTOUR	632
PROJECT 100 YR. FLOOD PLAIN	▬ ▬
EFFECTIVE 100 YR. FLOOD PLAIN	▬ ▬
EXISTING WATER LINE	Wx
EXISTING SEWER LINE	SSx
EXISTING MANHOLE	●
PROPOSED WATER LINE	───
PROPOSED WATER SERVICE	─□
PROPOSED FIRE HYDRANT	✦
PROPOSED SEWER MAIN	─SS─
PROPOSED MANHOLE	●
PROPOSED SEWER SERVICE	─┘

LINE W

STA. 22+50.00 TO 33+50.00

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



STA 23+19.28 LINE W: 8" WATER & 8" SANITARY SEWER CROSSING
STA 23+40.53 LINE W: = STA 1+00.00 LINE Y: MH - W8: MH TOP = 621.63
STA 26+30.53 LINE W: = STA 1+00.00 LINE Z: MH - W9: MH TOP = 623.37
STA 26+51.78 LINE W: 8" WATER & 8" SANITARY SEWER CROSSING
STA 28+99.28 LINE W: 8" WATER & 8" SANITARY SEWER CROSSING
STA 29+20.53 LINE AH: = STA 1+00.00 LINE AH: MH - W10: MH TOP = 625.11
STA 32+70.53 LINE W: MH - W11: MH TOP = 624.52
635
630
625
620
615
610
605
EXISTING GROUND
PROPOSED GROUND
APPROX. 8" WATER MAIN INV. ELEV. = 615.03
APPROX. 8" WATER MAIN INV. ELEV. = 618.63
APPROX. 8" WATER MAIN INV. ELEV. = 620.32
290.00' ~ 8" (SDR-26) @ +0.40% (OA)
290.00' ~ 8" (SDR-26) @ +0.40%
290.00' ~ 8" (SDR-26) @ +0.40%
350.00' ~ 8" (SDR-26) @ +0.40%
143.10' ~ 8" (SDR-26) @ + 0.40% (OA)
LINE Y SEE SHEET C4.07 FOR DETAILS
LINE Z SEE SHEET C4.07 FOR DETAILS
LINE AH SEE SHEET C4.09 FOR DETAILS
MATCHLINE STA. 22+50.00 - SEE SHEET C4.03
MATCHLINE STA. 33+50.00 - SEE SHEET C4.05
SAN. SEW. INV.
608.95
607.15
607.23
607.46
607.41 (OUT) (LINE W)
607.51 (IN) (LINE W)
607.51 (IN) (LINE Y)
607.65
607.85
608.05
608.25
608.45
608.57 (OUT) (LINE W)
608.67 (IN) (LINE W)
608.77 (IN) (LINE Z)
608.75
608.76
608.95
609.15
609.35
609.55
609.75
609.75
609.83 (OUT) (LINE W)
609.93 (IN) (LINE W)
609.93 (IN) (LINE AH)
610.05
610.25
610.45
610.65
610.85
611.05
611.25
611.33 (OUT) (LINE W)
611.43 (IN) (LINE W)
611.55
23+00
24+00
25+00
26+00
27+00
28+00
29+00
30+00
31+00
32+00
33+00

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DOVE SONG SUBDIVISION
UNIT 3

SANITARY SEWER PLAN & PROFILE - LINE W

DATE
08/27/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG/KM

CHECKED BY
AM/AL

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

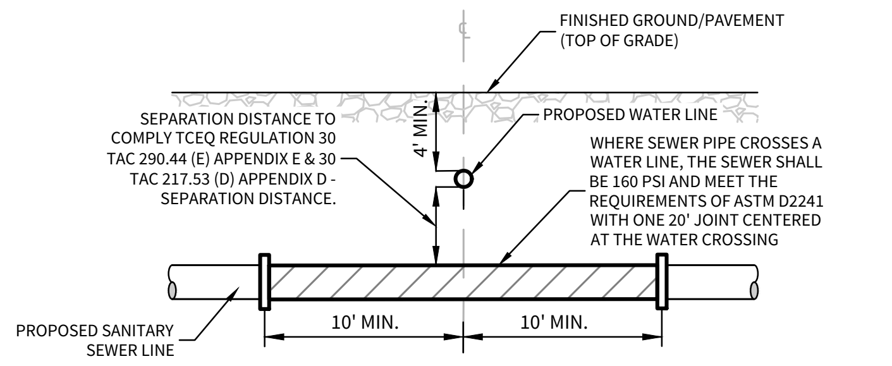
ANDREW R. LOWRY
123410
09/05/2024
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C4.04

P:\03608\004\2-DWG\4-Plans\C4.02-05 SANITARY SEWER LINE A - PLAN & PROFILE.dwg 2024/08/27 12:06pm jguerrero

NOTE:

CONTRACTOR TO INSTALL WATERTIGHT MANHOLES WITH 30" OPENING AND INTERIOR WALL COATED WITH A GVSUD APPROVED SEWER STRUCTURE FOR ALL MANHOLES WITHIN THIS DEVELOPMENT.


FINISHED GROUND/PAVEMENT (TOP OF GRADE)
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4' 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.

NOTES:

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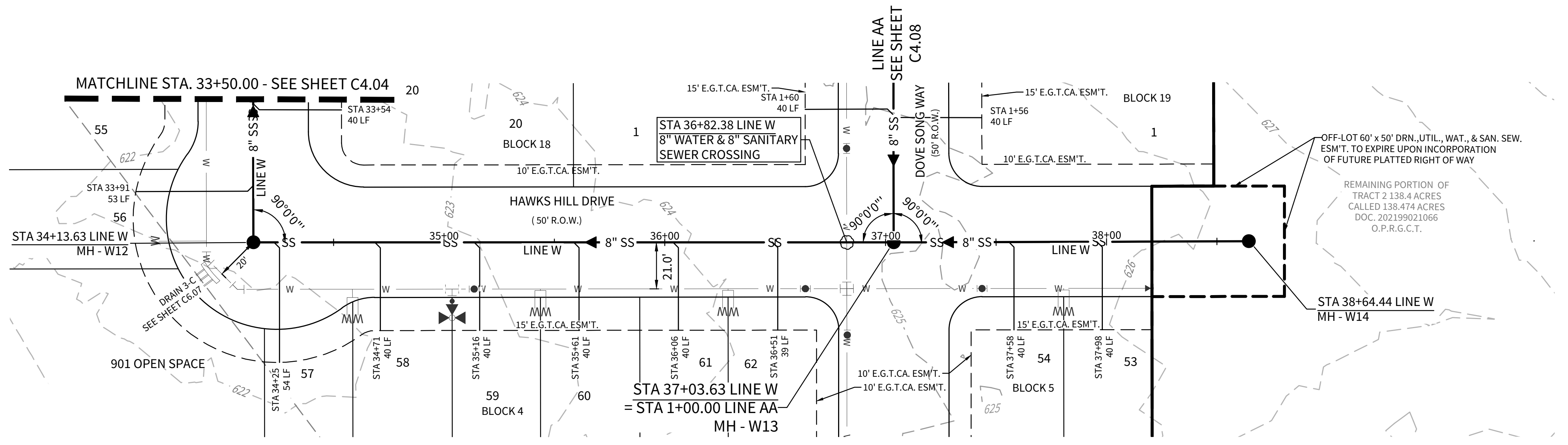


SCALE: 1"=50'

0 50 100

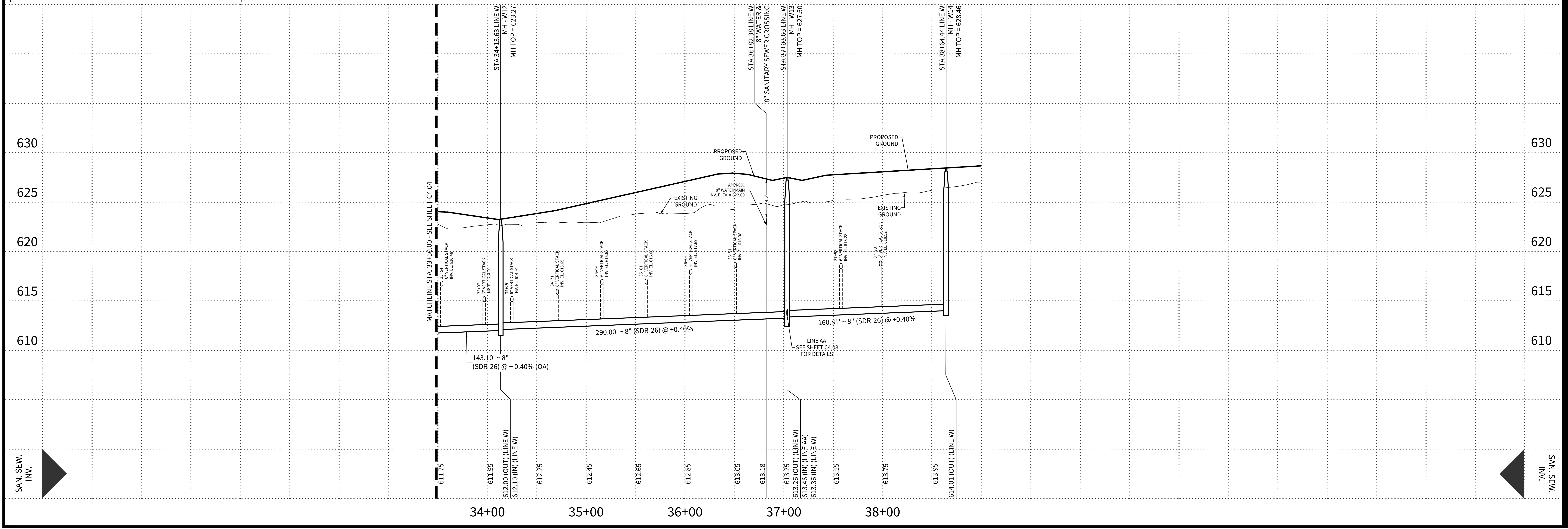
LEGEND

OVERALL UNIT BOUNDARY	━━━━
UNIT BOUNDARY	━━━━
PROPOSED LOT LINE	────
PROPOSED RIGHT OF WAY	────
E.G.T.CA. EASEMENT	— — — —
EXISTING 1' CONTOUR	— — 631 — —
EXISTING 5' CONTOUR	— — 631 — —
PROJECT 100 YR. FLOOD PLAIN	▬ ▬
EFFECTIVE 100 YR. FLOOD PLAIN	▬ ▬
EXISTING WATER LINE	—— Wx ——
EXISTING SEWER LINE	—— SSx ——
EXISTING MANHOLE	●
PROPOSED WATER LINE	────
PROPOSED WATER SERVICE	W W
PROPOSED FIRE HYDRANT	
PROPOSED SEWER MAIN	—— SS ——
PROPOSED MANHOLE	●
PROPOSED SEWER SERVICE	S

LINE W

STA. 33+50.00 TO END

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


STA 34+13.63 LINE W
MH - W12
MH TOP= 623.27
STA 36+82.38 LINE W
8" WATER & 8" SANITARY SEWER CROSSING
STA 37+03.63 LINE W
MH - W13
MH TOP= 627.50
STA 38+64.44 LINE W
MH - W14
MH TOP= 628.46
630
625
620
615
610
MATCHLINE STA. 33+50.00 - SEE SHEET C4.04
PROPOSED GROUND
EXISTING GROUND
APPROX. 8" WATER MAIN INV. ELEV. = 622.69
4.0'
33+54 6" VERTICAL STACK INV. EL. 616.48
33+97 6" VERTICAL STACK INV. EL. 614.91
34+25 6" VERTICAL STACK INV. EL. 614.91
34+71 6" VERTICAL STACK INV. EL. 615.65
35+16 6" VERTICAL STACK INV. EL. 616.67
35+61 6" VERTICAL STACK INV. EL. 616.68
36+06 6" VERTICAL STACK INV. EL. 617.69
36+51 6" VERTICAL STACK INV. EL. 618.38
37+58 6" VERTICAL STACK INV. EL. 618.28
37+98 6" VERTICAL STACK INV. EL. 618.52
290.00' ~ 8" (SDR-26) @ +0.40%
160.81' ~ 8" (SDR-26) @ +0.40%
143.10' ~ 8" (SDR-26) @ + 0.40% (OA)
LINE AA SEE SHEET C4.08 FOR DETAILS
SAN. SEW. INV.
611.75
611.95
612.00 (OUT) (LINE W)
612.10 (IN) (LINE W)
612.25
612.45
612.65
612.85
613.05
613.18
613.25
613.26 (OUT) (LINE W)
613.46 (IN) (LINE AA)
613.36 (IN) (LINE W)
613.55
613.75
613.95
614.01 (OUT) (LINE W)
34+00
35+00
36+00
37+00
38+00

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CUDE EST. 1980 ENGINEERS

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

DOVE SONG SUBDIVISION
UNIT 3

SANITARY SEWER PLAN & PROFILE - LINE W

DATE	08/27/2024
PROJECT NO.	03608.004
DRAWN BY	JG/SG/KM
CHECKED BY	AM/AL

#	REVISIONS	DATE
1.		
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7.		
8.		
9.		

ANDREW R. LOWRY
123410
09/05/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C4.05

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P:\03608\004\2-DWG\4-Plans\C4.02-05 SANITARY SEWER LINE A - PLAN & PROFILE.dwg 2024/08/27 12:08pm jguerrero

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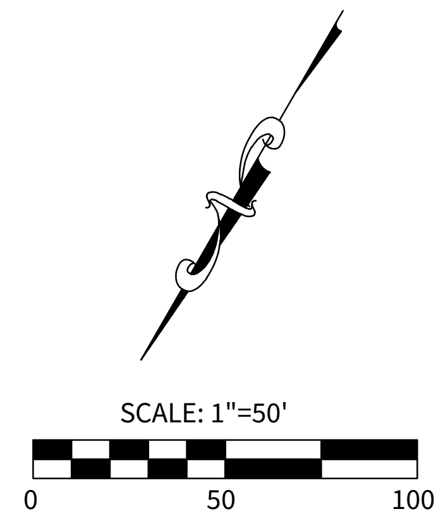

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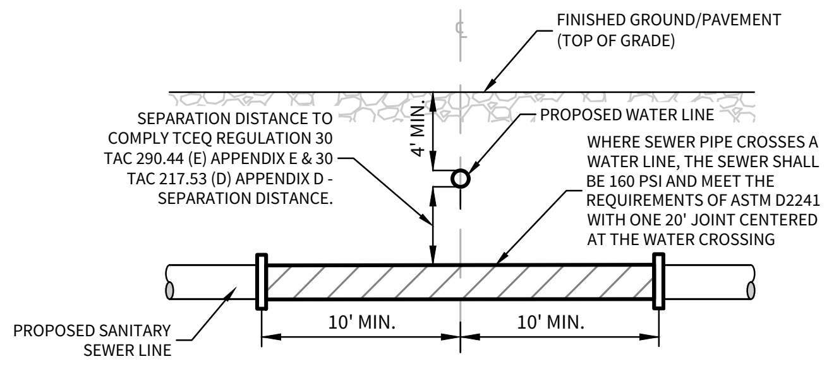
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PROPOSED WATER LINE
4' MIN.
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PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

N.T.S.

NOTES:

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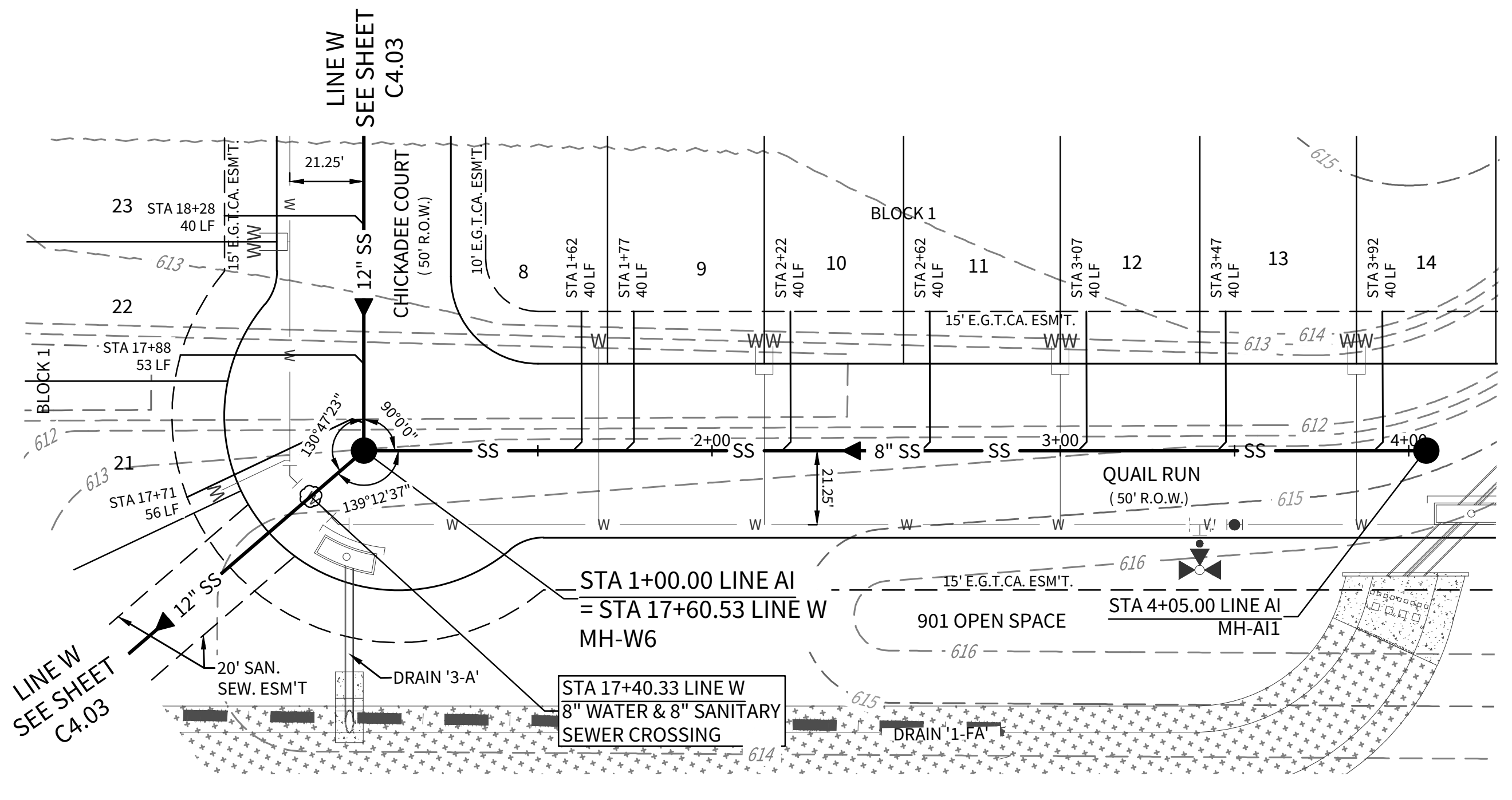
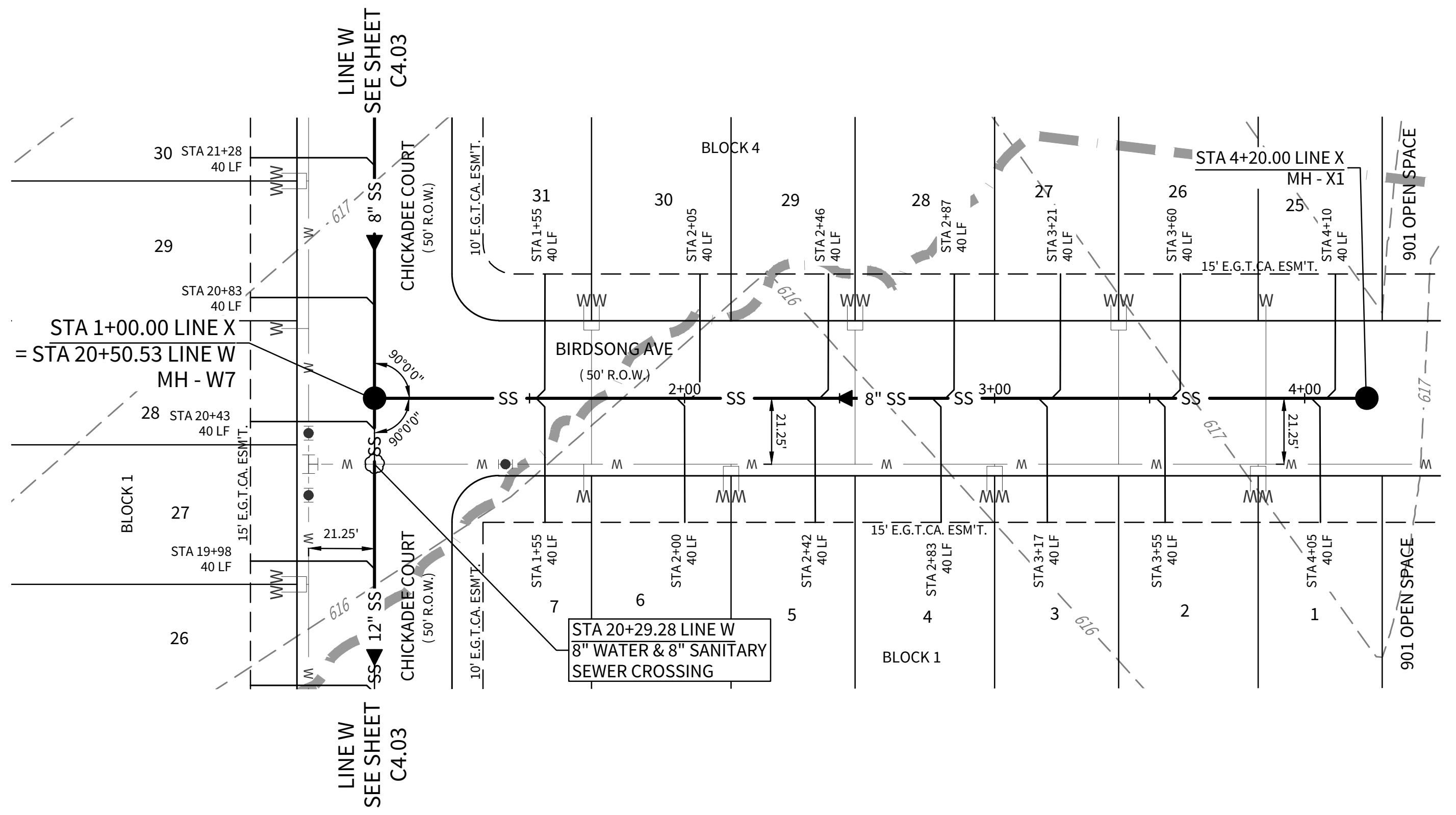




LEGEND

OVERALL UNIT BOUNDARY	— — —
UNIT BOUNDARY	——
PROPOSED LOT LINE	——
PROPOSED RIGHT OF WAY	——
E.G.T.CA. EASEMENT	- - - -
EXISTING 1' CONTOUR	— — —
EXISTING 5' CONTOUR	— — —
PROJECT 100 YR. FLOOD PLAIN	▬ ▬
EFFECTIVE 100 YR. FLOOD PLAIN	▬ ▬
EXISTING WATER LINE	— Wx —
EXISTING SEWER LINE	— SSx —
EXISTING MANHOLE	●
PROPOSED WATER LINE	— W —
PROPOSED WATER SERVICE	
PROPOSED FIRE HYDRANT	
PROPOSED SEWER MAIN	— SS —
PROPOSED MANHOLE	●
PROPOSED SEWER SERVICE	

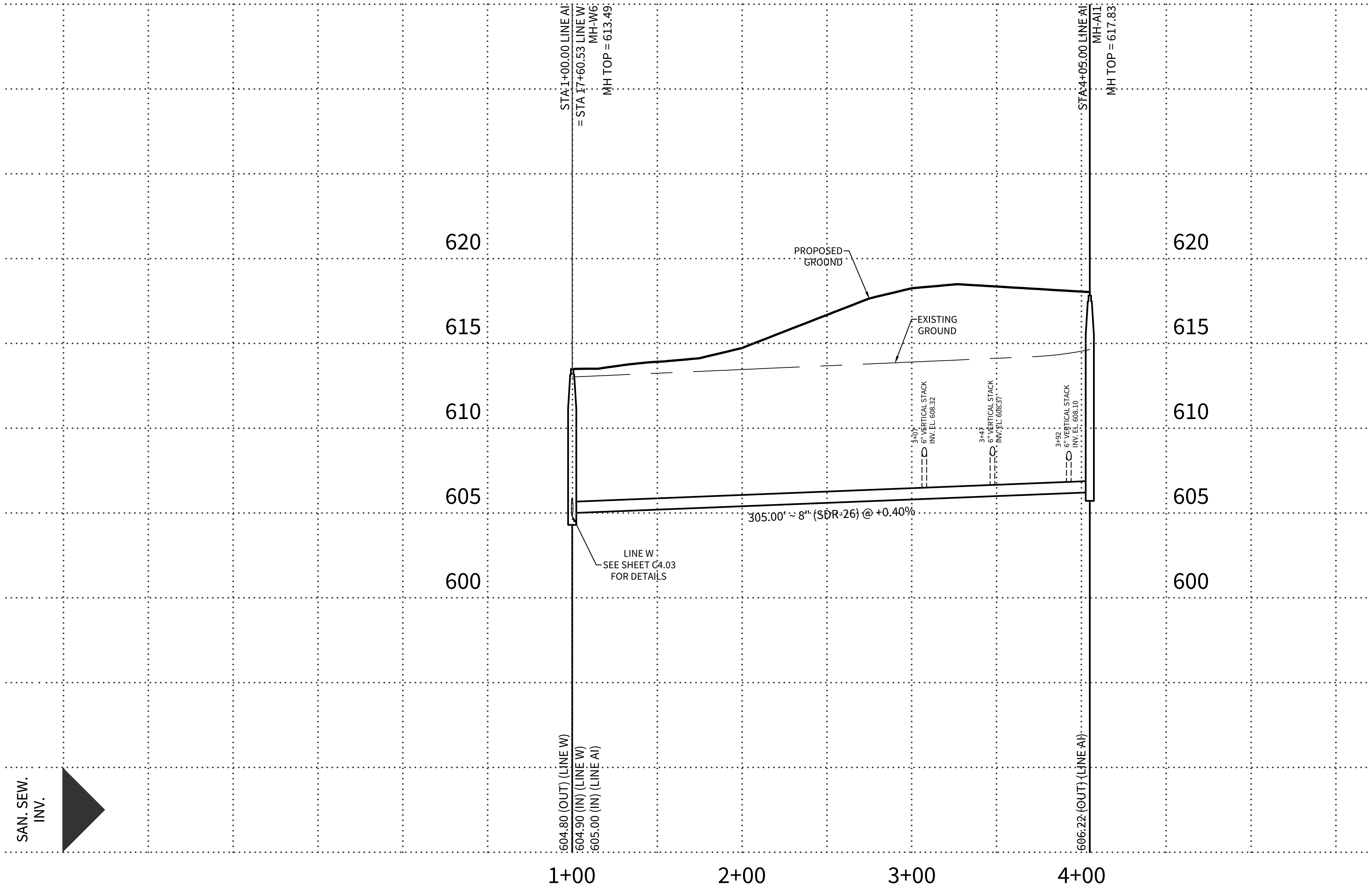
LINE AI

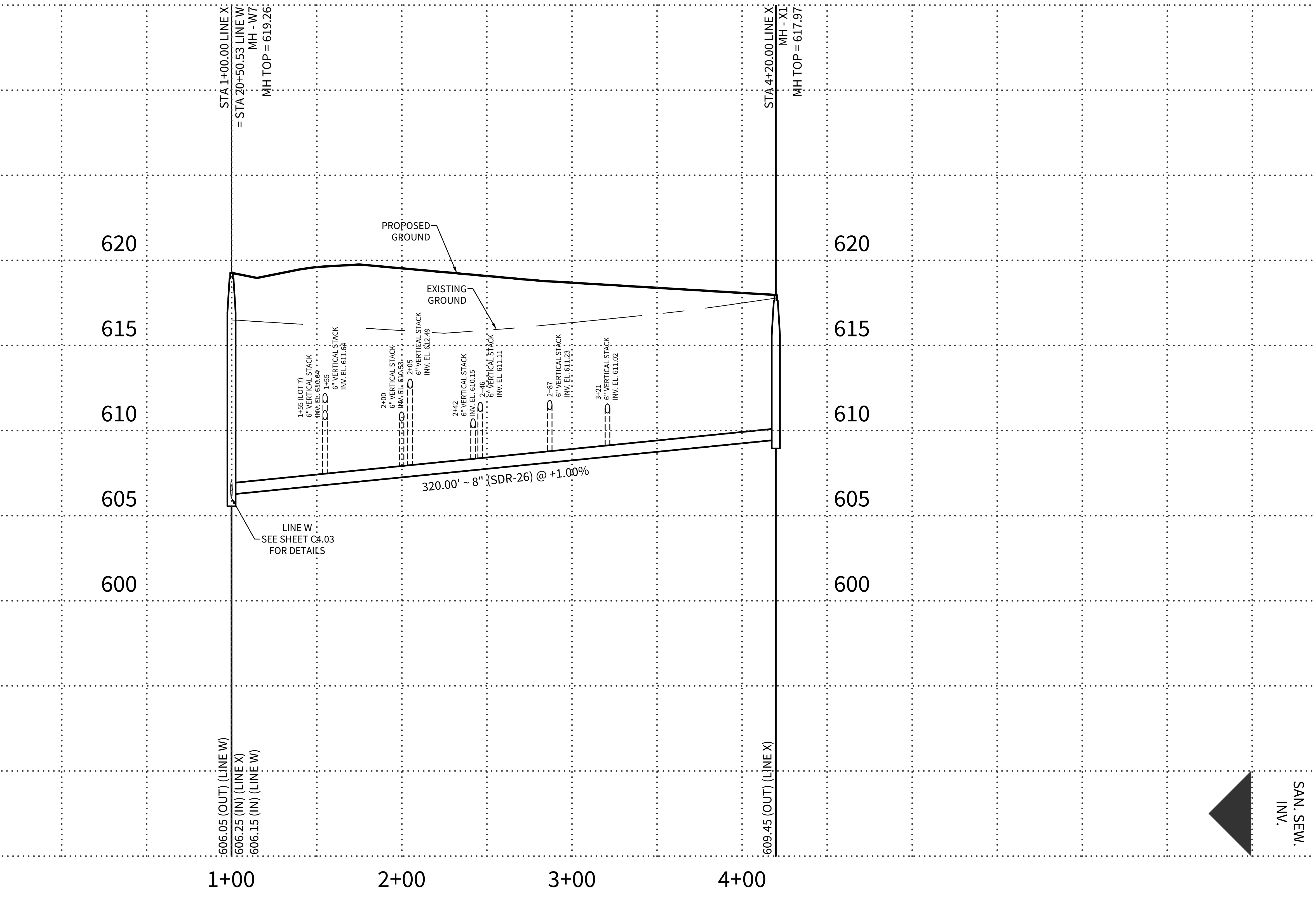
STA. 1+00.00 TO END

LINE X

STA. 1+00.00 TO END

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





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

DOVE SONG SUBDIVISION
UNIT 3

SANITARY SEWER PLAN & PROFILE - LINE AI & X

DATE	08/20/2024
PROJECT NO.	03608.004
DRAWN BY	JG/SG/KM
CHECKED BY	AM/AL

REVISIONS

DATE

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

ANDREW R. LOWRY
123410
09/05/2024

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C4.06

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P:\03608\004\2-DWG\4-Plans\C4.06 SANITARY SEWER LINE AI & X - PLAN & PROFILE.dwg 2024/08/20 12:03pm jguerrero

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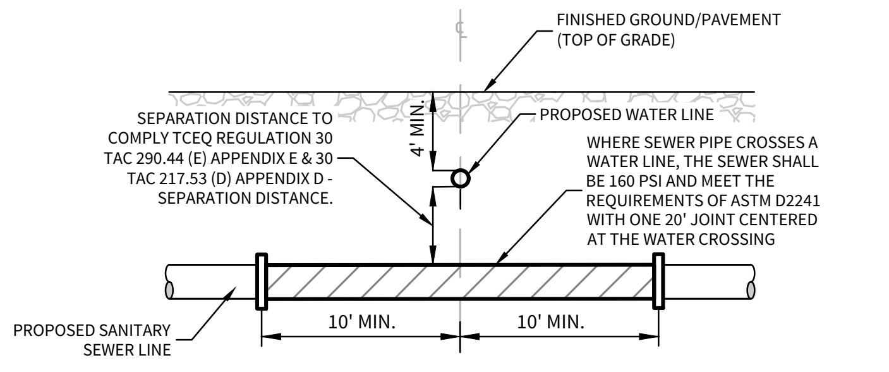
FINISHED GROUND/PAVEMENT (TOP OF GRADE)
4' MIN.
PROPOSED WATER LINE
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241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

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

N.T.S.

NOTE:

CONTRACTOR TO INSTALL WATERTIGHT MANHOLES WITH 30" OPENING AND INTERIOR WALL COATED WITH A GVSUD APPROVED SEWER STRUCTURE FOR ALL MANHOLES WITHIN THIS DEVELOPMENT.

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1. CONTRACTOR TO INSTALL WATERTIGHT MANHOLES WITH 30" OPENING AND INTERIOR WALL COATED WITH A GVSUD APPROVED SEWER STRUCTURE FOR ALL MANHOLES WITHIN THIS DEVELOPMENT.
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GVSUD	(830) 914-2330
GVTC	(830) 885-4411
GVEC	1-800-401-8345
DIG TESS	1-800-344-8377
TEXAS STATE WIDE ONE CALL LOCATORS	1-800-545-6005 OR 811

TRENCH EXCAVATION PROTECTION

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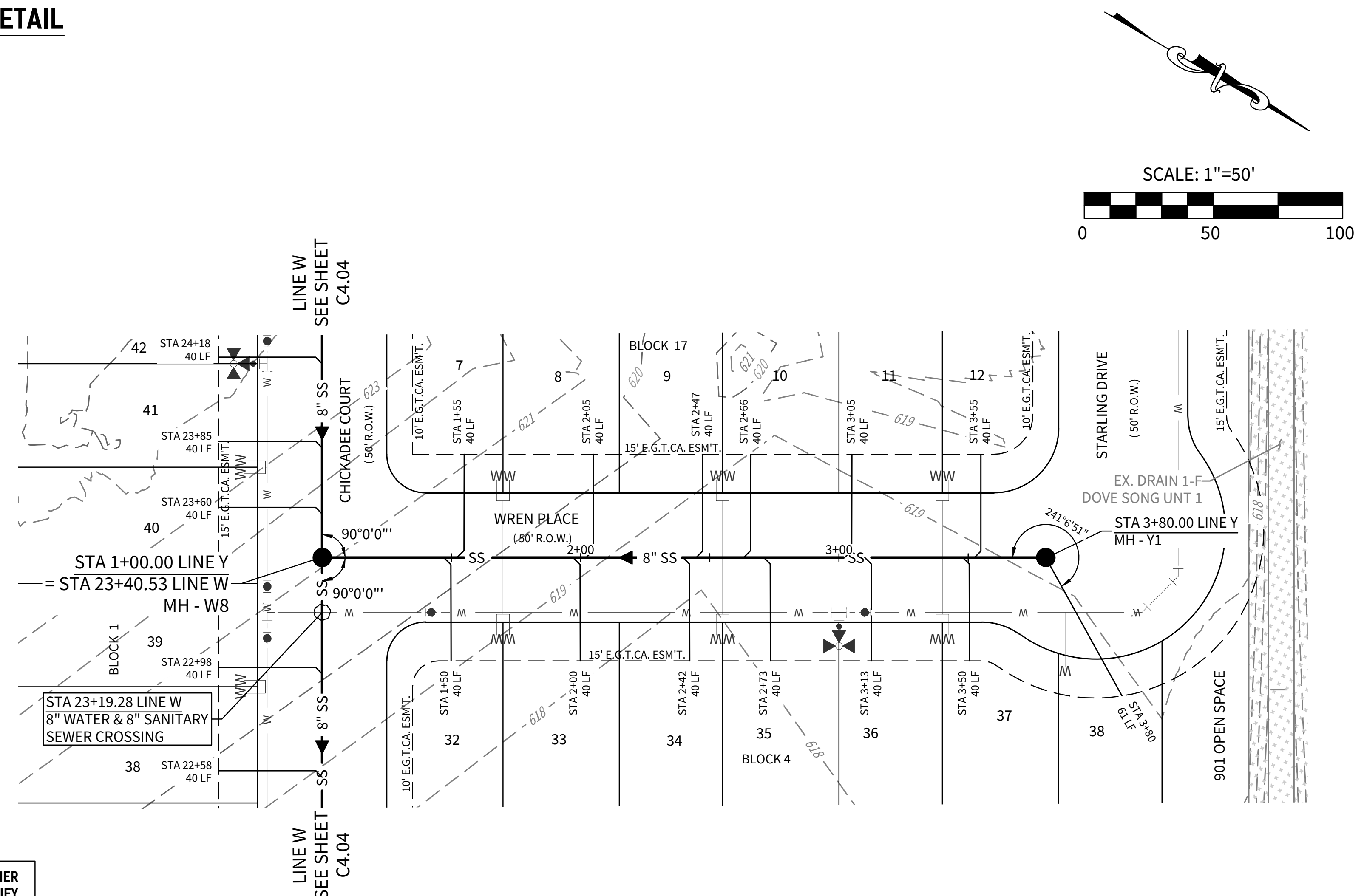
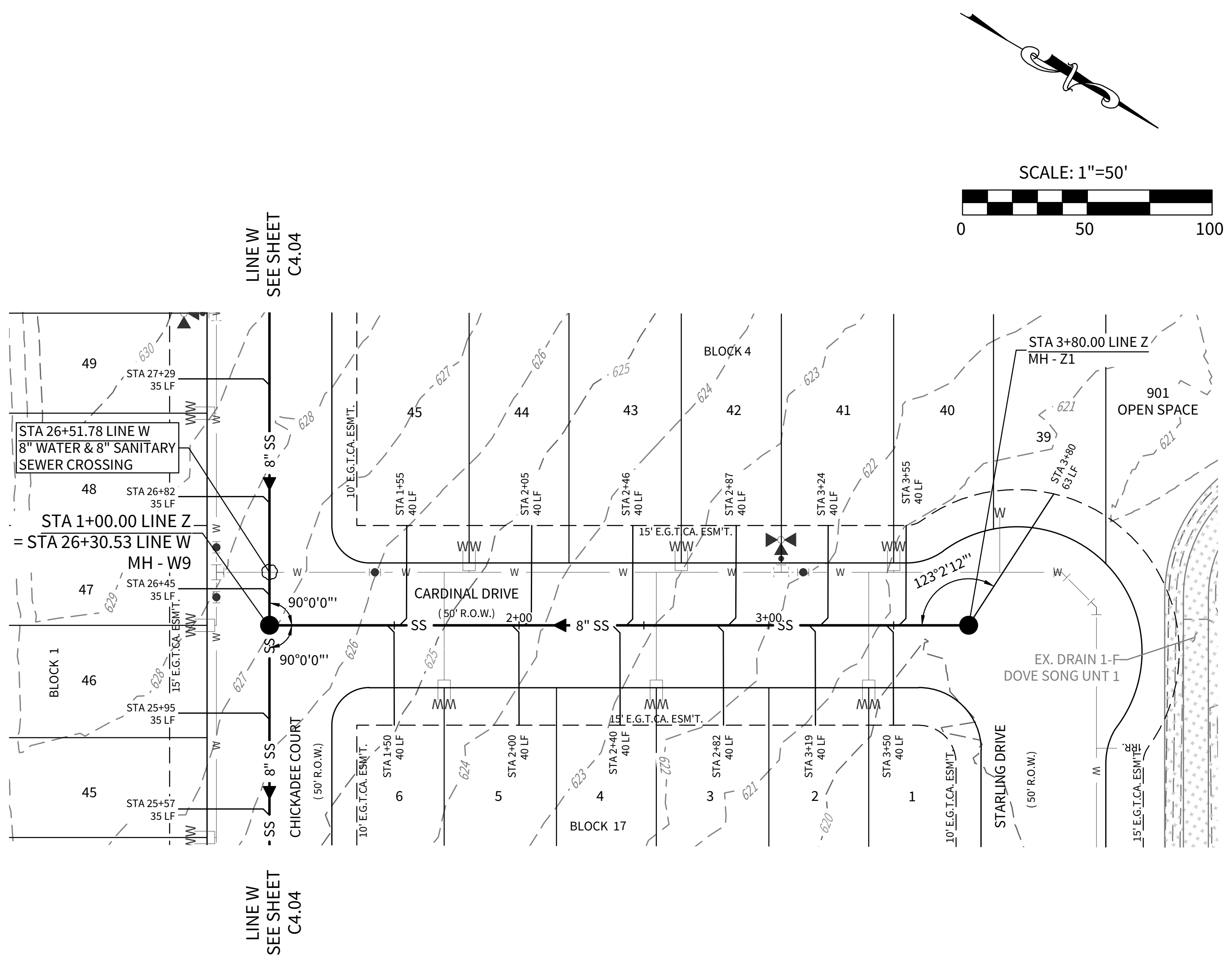



SCALE: 1"=50'
0
50
100
LINE W SEE SHEET C4.04
STA 1+00.00 LINE Z = STA 26+30.53 LINE W MH - W9
STA 3+80.00 LINE Z MH - Z1
STA 26+51.78 LINE W 8" WATER & 8" SANITARY SEWER CROSSING
CARDINAL DRIVE (50' R.O.W.)
CHICKADEE COURT (50' R.O.W.)
STARLING DRIVE (50' R.O.W.)
EX. DRAIN 1-F DOVE SONG UNIT 1
901 OPEN SPACE
BLOCK 4
BLOCK 17
BLOCK 1
15' E.G.T.CA. ESM'T
8" SS
90°0'0"
90°0'0"
123°2'12"
STA 27+29 35 LF
STA 26+82 35 LF
STA 26+45 35 LF
STA 25+95 35 LF
STA 25+57 35 LF
49
48
47
46
45
45
44
43
42
41
40
39
6
5
4
3
2
1

LEGEND

OVERALL UNIT BOUNDARY	— — — —
UNIT BOUNDARY	——
PROPOSED LOT LINE	——
PROPOSED RIGHT OF WAY	——
E.G.T.CA. EASEMENT	— — — —
EXISTING 1' CONTOUR	— — — —
EXISTING 5' CONTOUR	— — — —
PROJECT 100 YR. FLOOD PLAIN	▬ ▬
EFFECTIVE 100 YR. FLOOD PLAIN	▬ ▬
EXISTING WATER LINE	— — Wx — —
EXISTING SEWER LINE	— — SSx — —
EXISTING MANHOLE	●
PROPOSED WATER LINE	—— W ——
PROPOSED WATER SERVICE	WW
PROPOSED FIRE HYDRANT	⧓
PROPOSED SEWER MAIN	—— SS ——
PROPOSED MANHOLE	●
PROPOSED SEWER SERVICE	S ——

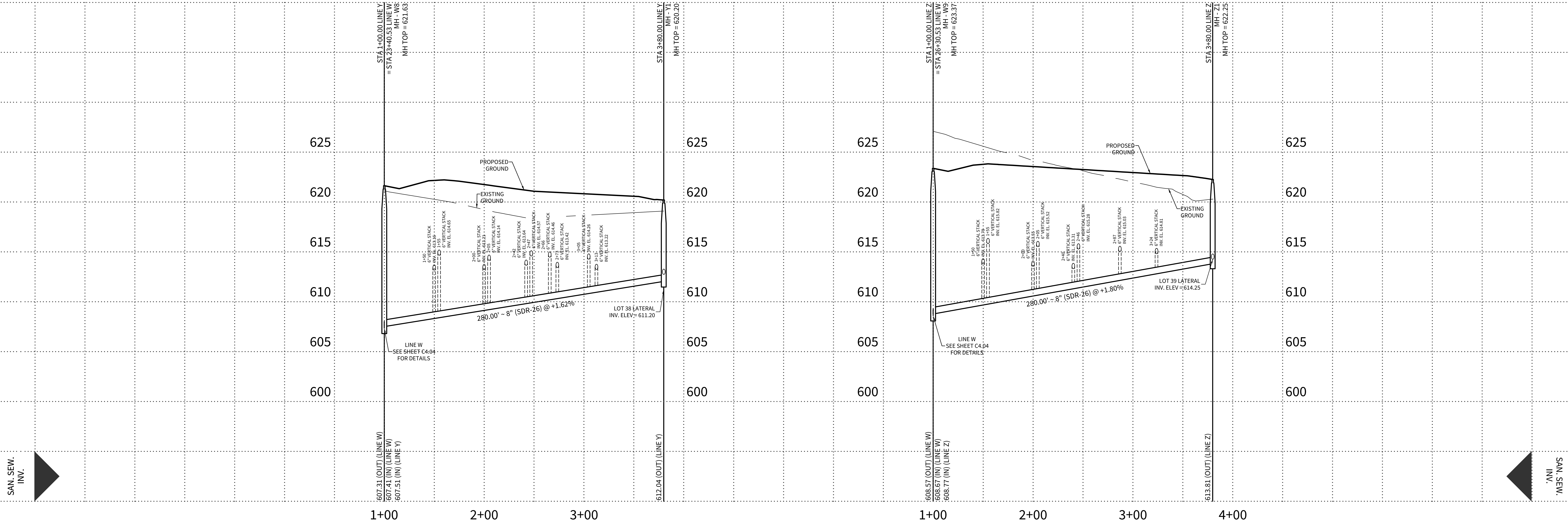
LINE Y

STA. 1+00.00 TO END

LINE Z

STA. 1+00.00 TO END

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


STA 1+00.00 LINE Y = STA 23+40.53 LINE W MH - W8 MH TOP = 621.63
STA 3+80.00 LINE Y MH - Y1 MH TOP = 620.20
STA 1+00.00 LINE Z = STA 26+30.53 LINE W MH - W9 MH TOP = 623.37
STA 3+80.00 LINE Z MH - Z1 MH TOP = 622.25
625
620
615
610
605
600
PROPOSED GROUND
EXISTING GROUND
280.00' - 8" (SDR-26) @ +1.62%
280.00' - 8" (SDR-26) @ +1.80%
LOT 38 LATERAL INV. ELEV= 611.20
LOT 39 LATERAL INV. ELEV =614.25
LINE W SEE SHEET C4.04 FOR DETAILS
6" VERTICAL STACK
SAN. SEW. INV.
607.31 (OUT) (LINE W)
607.41 (IN) (LINE W)
607.51 (IN) (LINE Y)
612.04 (OUT) (LINE Y)
608.57 (OUT) (LINE W)
608.67 (IN) (LINE W)
608.77 (IN) (LINE Z)
613.81 (OUT) (LINE Z)
1+00
2+00
3+00
4+00

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EST. 1980 CUDE ENGINEERS

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

DOVE SONG SUBDIVISION UNIT 3

SANITARY SEWER PLAN & PROFILE - LINE Y & Z

DATE	08/20/2024
PROJECT NO.	03608.004
DRAWN BY	JG/SG/KM
CHECKED BY	AM/AL

REVISIONS	DATE
1.	
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ANDREW R. LOWRY
123410
09/05/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C4.07

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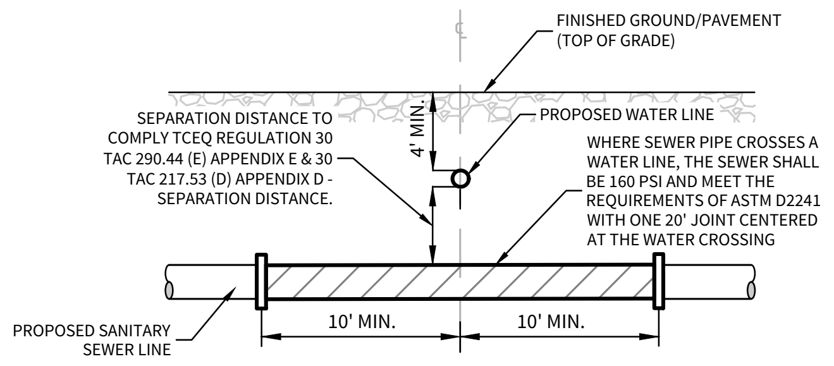
FINISHED GROUND/PAVEMENT (TOP OF GRADE)
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PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

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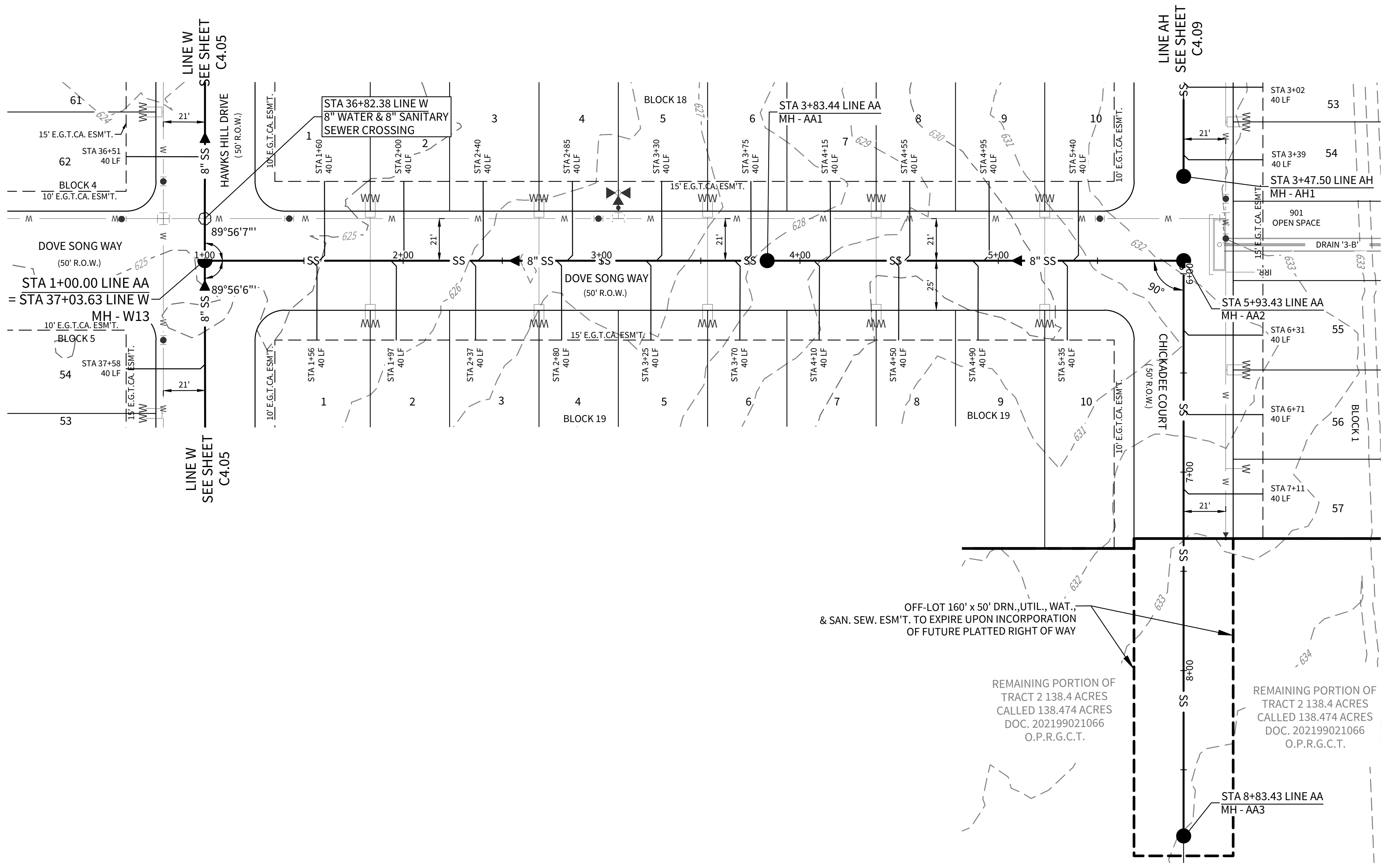

LINE W SEE SHEET C4.05
HAWKS HILL DRIVE (50' R.O.W.)
STA 36+82.38 LINE W 8" WATER & 8" SANITARY SEWER CROSSING
BLOCK 18
STA 3+83.44 LINE AA MH - AA1
LINE AH SEE SHEET C4.09
STA 3+47.50 LINE AH MH - AH1
901 OPEN SPACE
DRAIN '3-B'
DOVE SONG WAY (50' R.O.W.)
STA 1+00.00 LINE AA = STA 37+03.63 LINE W MH - W13
89°56'7"
89°56'6"
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
8" SS
BLOCK 4
BLOCK 5
BLOCK 19
BLOCK 1
15' E.G.T.CA. ESM'T.
10' E.G.T.CA. ESM'T.
21'
STA 5+93.43 LINE AA MH - AA2
CHICKADEE COURT (50' R.O.W.)
OFF-LOT 160' x 50' DRN.,UTIL., WAT., & SAN. SEW. ESM'T. TO EXPIRE UPON INCORPORATION OF FUTURE PLATTED RIGHT OF WAY
REMAINING PORTION OF TRACT 2 138.4 ACRES CALLED 138.474 ACRES DOC. 202199021066 O.P.R.G.C.T.
STA 8+83.43 LINE AA MH - AA3
LINE W SEE SHEET C4.05

SCALE: 1"=50'
0 50 100

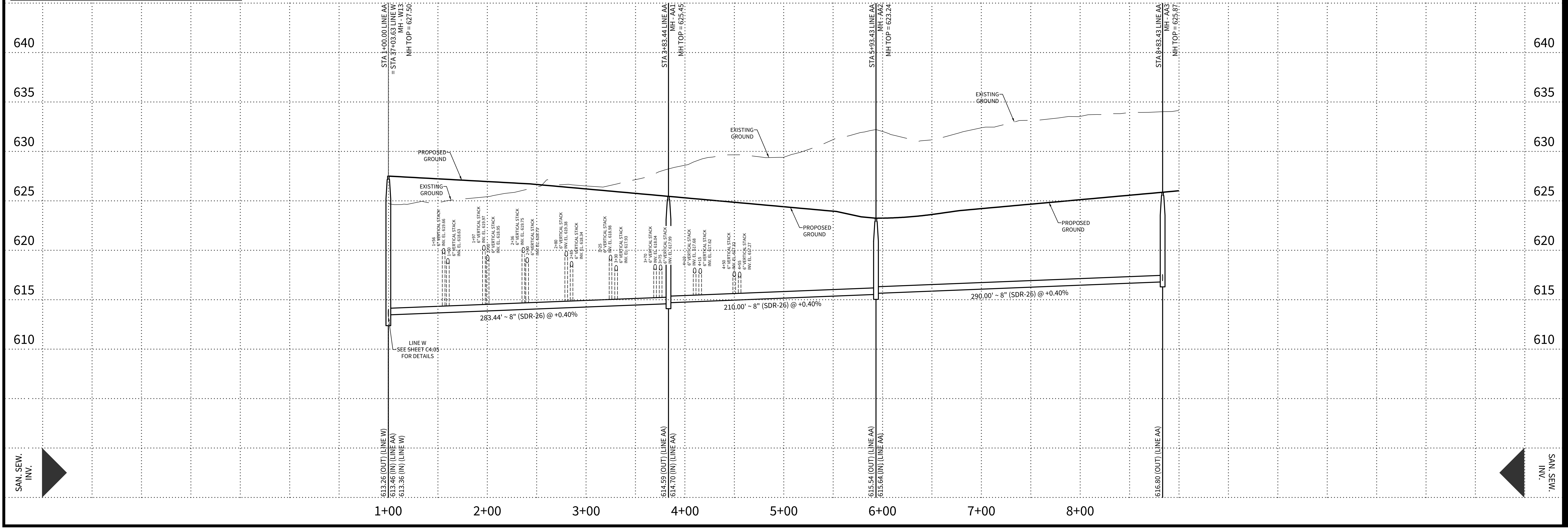
LEGEND

OVERALL UNIT BOUNDARY	— — —
UNIT BOUNDARY	——
PROPOSED LOT LINE	——
PROPOSED RIGHT OF WAY	——
E.G.T.CA. EASEMENT	- - - -
EXISTING 1' CONTOUR	— —
EXISTING 5' CONTOUR	— —
PROJECT 100 YR. FLOOD PLAIN	▬ ▬
EFFECTIVE 100 YR. FLOOD PLAIN	▬ ▬
EXISTING WATER LINE	— Wx —
EXISTING SEWER LINE	— SSx —
EXISTING MANHOLE	●
PROPOSED WATER LINE	— W —
PROPOSED WATER SERVICE	
PROPOSED FIRE HYDRANT	
PROPOSED SEWER MAIN	— SS —
PROPOSED MANHOLE	●
PROPOSED SEWER SERVICE	S
PROPOSED STREET LIGHT	⊙

LINE AA

STA. 1+00.00 TO END

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


640
635
630
625
620
615
610
STA 1+00.00 LINE AA = STA 37+03.63 LINE W MH - W13 MH TOP = 627.50
STA 3+83.44 LINE AA MH - AA1 MH TOP = 625.45
STA 5+93.43 LINE AA MH - AA2 MH TOP = 623.24
STA 8+83.43 LINE AA MH - AA3 MH TOP = 625.87
PROPOSED GROUND
EXISTING GROUND
1+56 6" VERTICAL STACK INV. EL. 619.66
1+60 6" VERTICAL STACK INV. EL. 618.63
1+97 6" VERTICAL STACK INV. EL. 619.97
2+00 6" VERTICAL STACK INV. EL. 618.95
2+36 6" VERTICAL STACK INV. EL. 619.75
2+40 6" VERTICAL STACK INV. EL. 618.73
2+80 6" VERTICAL STACK INV. EL. 619.38
2+85 6" VERTICAL STACK INV. EL. 618.34
3+25 6" VERTICAL STACK INV. EL. 618.98
3+30 6" VERTICAL STACK INV. EL. 617.93
3+70 6" VERTICAL STACK INV. EL. 618.04
3+75 6" VERTICAL STACK INV. EL. 617.99
4+10 6" VERTICAL STACK INV. EL. 617.68
4+15 6" VERTICAL STACK INV. EL. 617.62
4+50 6" VERTICAL STACK INV. EL. 617.32
4+55 6" VERTICAL STACK INV. EL. 617.27
283.44' ~ 8" (SDR-26) @ +0.40%
210.00' ~ 8" (SDR-26) @ +0.40%
290.00' ~ 8" (SDR-26) @ +0.40%
LINE W SEE SHEET C4.05 FOR DETAILS
SAN. SEW. INV.
613.26 (OUT) (LINE W)
613.46 (IN) (LINE AA)
613.36 (IN) (LINE W)
614.59 (OUT) (LINE AA)
614.70 (IN) (LINE AA)
615.54 (OUT) (LINE AA)
615.64 (IN) (LINE AA)
616.80 (OUT) (LINE AA)
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00

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DOVE SONG SUBDIVISION UNIT 3

SANITARY SEWER PLAN & PROFILE - LINE AA

DATE	08/20/2024
PROJECT NO.	03608.004
DRAWN BY	JG/SG/KM
CHECKED BY	AM/AL

#	DATE	REVISIONS
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ANDREW R. LOWRY
123410
09/05/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C4.08

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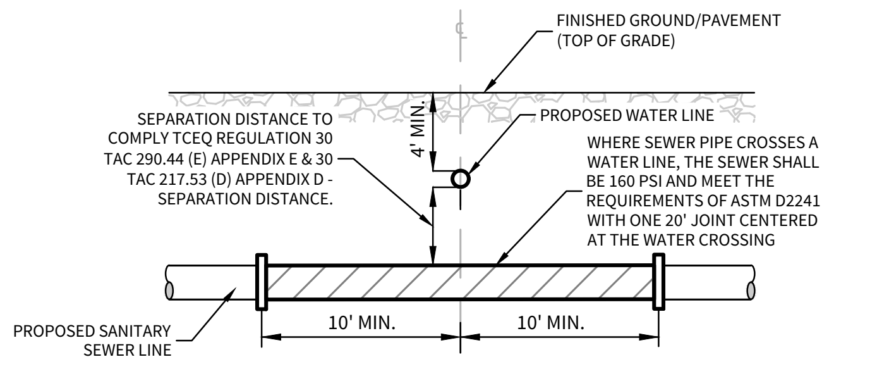
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PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

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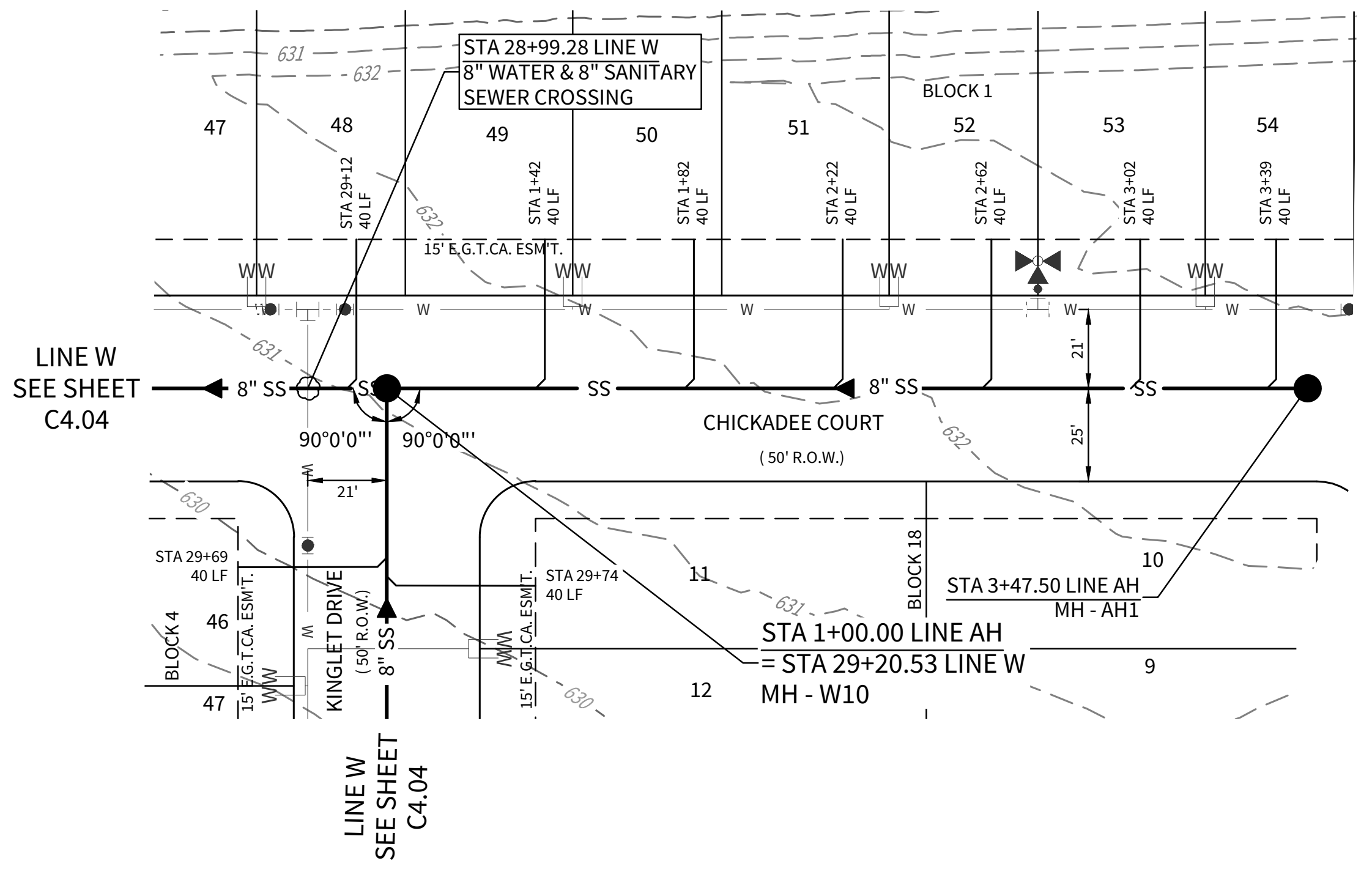
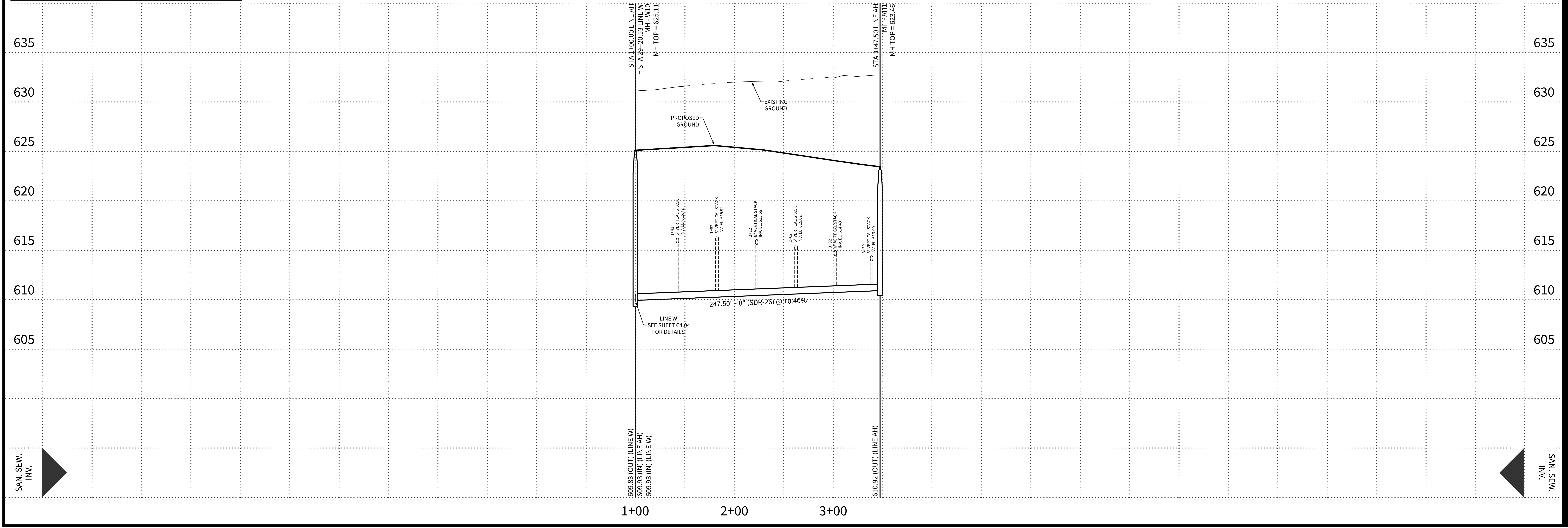


SCALE: 1"=50'
0 50 100

LINE AH

STA. 1+00.00 TO END

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



LEGEND

OVERALL UNIT BOUNDARY
UNIT BOUNDARY
PROPOSED LOT LINE
PROPOSED RIGHT OF WAY
E.G.T.CA. EASEMENT
EXISTING 1' CONTOUR — 499
EXISTING 5' CONTOUR — 500
PROJECT 100 YR. FLOOD PLAIN
EFFECTIVE 100 YR. FLOOD PLAIN
EXISTING WATER LINE — Wx
EXISTING SEWER LINE — SSx
EXISTING MANHOLE ●
PROPOSED WATER LINE — W
PROPOSED WATER SERVICE
PROPOSED FIRE HYDRANT
PROPOSED SEWER MAIN — SS
PROPOSED MANHOLE ●
PROPOSED SEWER SERVICE — S
PROPOSED STREET LIGHT ⊙

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C4.09

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P:\03608\004\2-DWG\4-Plans\C4.09 SANITARY SEWER LINE AH - PLAN & PROFILE.dwg 2024/08/20 1:15pm jguerrero

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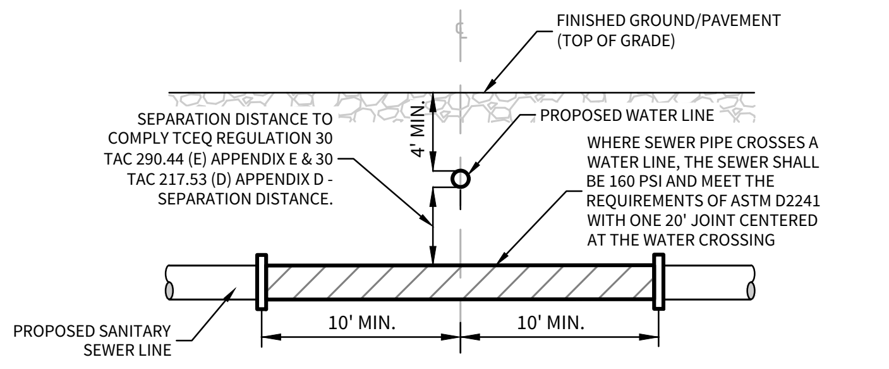
NOTE:

CONTRACTOR TO INSTALL WATERTIGHT MANHOLES WITH 30" OPENING AND INTERIOR WALL COATED WITH A GVSUD APPROVED SEWER STRUCTURE FOR ALL MANHOLES WITHIN THIS DEVELOPMENT.


FINISHED GROUND/PAVEMENT (TOP OF GRADE)
PROPOSED WATER LINE
4' MIN.
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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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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 MARION	(830) 914-2391
GVSUD	(830) 914-2330
GVTC	(830) 885-4411
GVEC	1-800-401-8345
DIG TESS	1-800-344-8377
TEXAS STATE WIDE ONE CALL LOCATORS	1-800-545-6005 OR 811

TRENCH EXCAVATION PROTECTION

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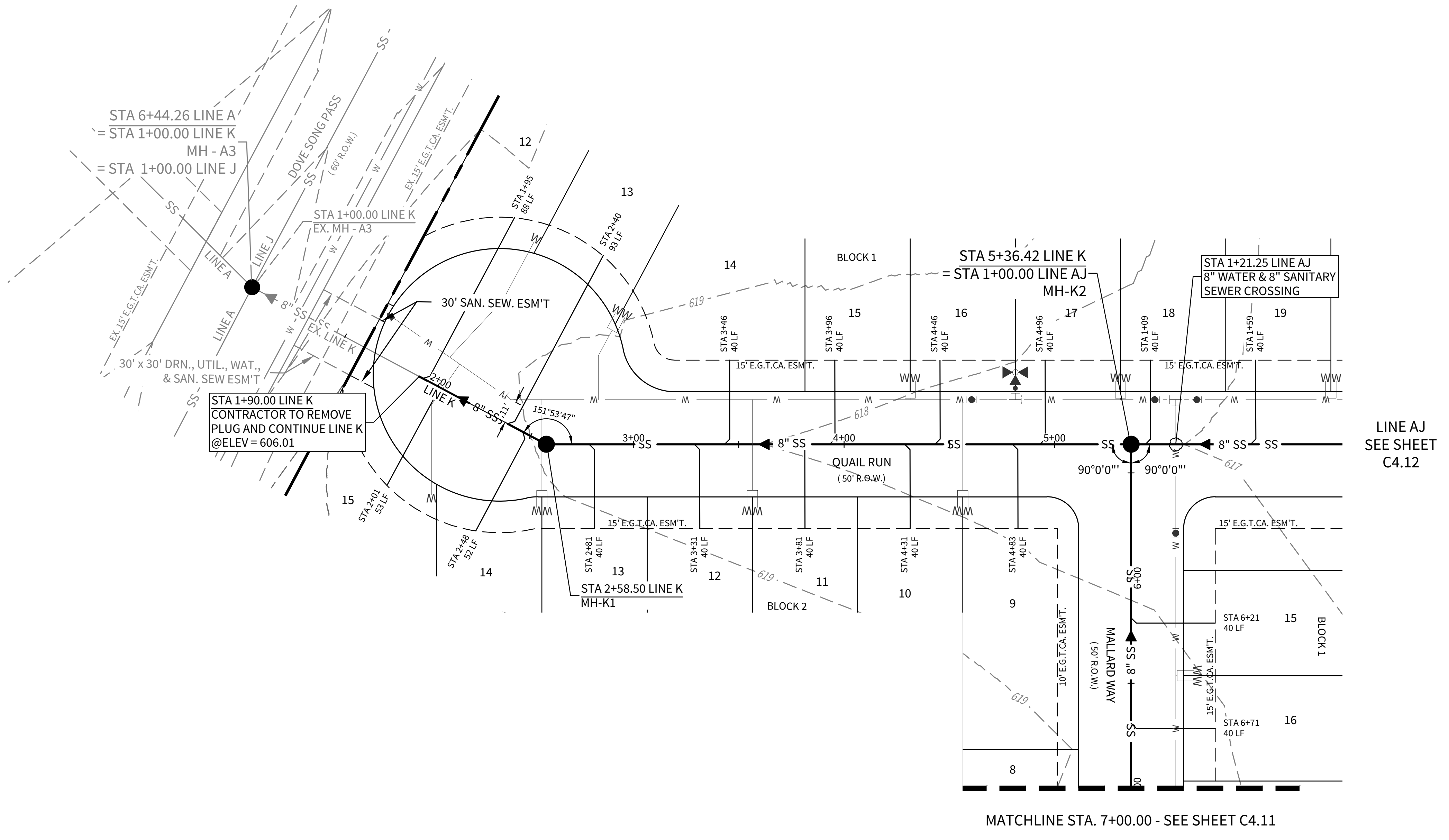
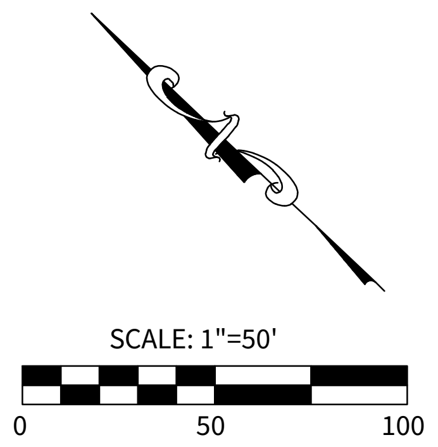




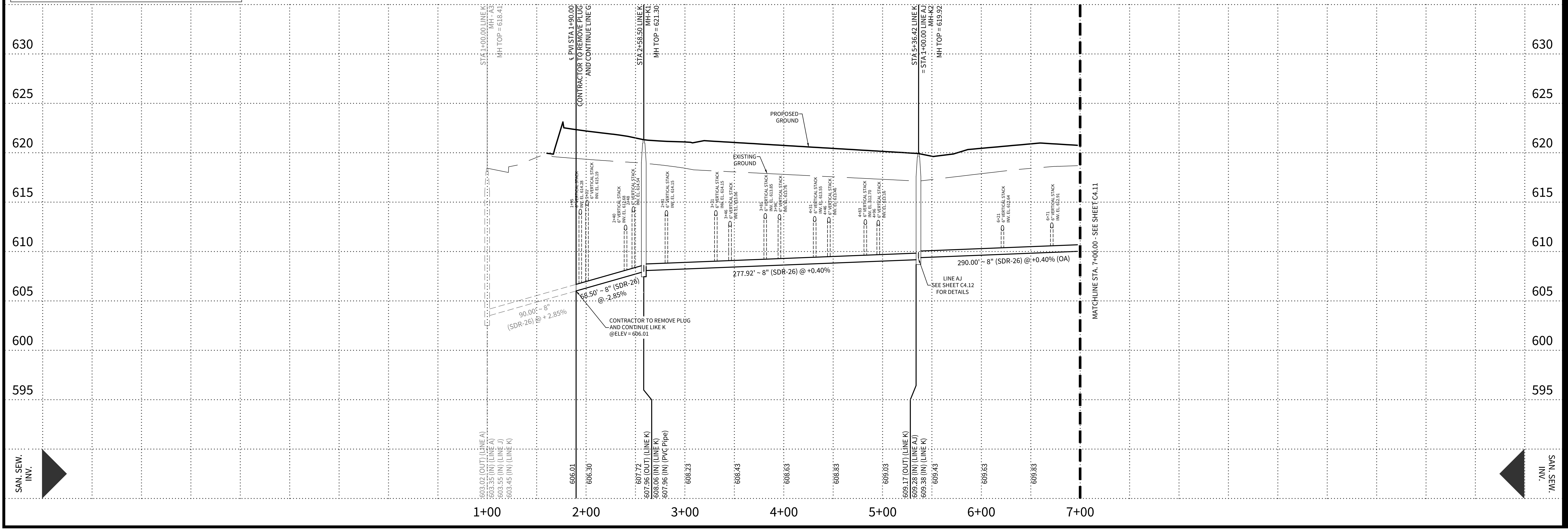
LEGEND

OVERALL UNIT BOUNDARY	━━━
UNIT BOUNDARY	━━━
PROPOSED LOT LINE	───
PROPOSED RIGHT OF WAY	───
E.G.T.CA. EASEMENT	– – –
EXISTING 1' CONTOUR	— — 499 — —
EXISTING 5' CONTOUR	— — 500 — —
PROJECT 100 YR. FLOOD PLAIN	▬ ▬
EFFECTIVE 100 YR. FLOOD PLAIN	▬ ▬
EXISTING WATER LINE	—— Wx ——
EXISTING SEWER LINE	—— SSx ——
EXISTING MANHOLE	●
PROPOSED WATER LINE	───
PROPOSED WATER SERVICE	WW
PROPOSED FIRE HYDRANT	⧓
PROPOSED SEWER MAIN	—— SS ——
PROPOSED MANHOLE	●
PROPOSED SEWER SERVICE	S ——
PROPOSED STREET LIGHT	◉

LINE K

STA. 1+00.00 TO 7+00.00

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


630
625
620
615
610
605
600
595
SAN. SEW. INV.
STA 1+00.00 LINE K
MH - A3
MH TOP = 618.41
℄ PVI STA 1+90.00
CONTRACTOR TO REMOVE PLUG AND CONTINUE LINE G
STA 2+58.50 LINE K
MH-K1
MH TOP = 621.30
STA 5+36.42 LINE K
= STA 1+00.00 LINE AJ
MH-K2
MH TOP = 619.92
PROPOSED GROUND
EXISTING GROUND
1+95 6" VERTICAL STACK INV. EL. 614.28
2+01 6" VERTICAL STACK INV. EL. 615.19
2+40 6" VERTICAL STACK INV. EL. 612.68
2+48 6" VERTICAL STACK INV. EL. 614.54
2+81 6" VERTICAL STACK INV. EL. 614.15
3+31 6" VERTICAL STACK INV. EL. 614.15
3+46 6" VERTICAL STACK INV. EL. 613.06
3+81 6" VERTICAL STACK INV. EL. 613.85
3+96 6" VERTICAL STACK INV. EL. 613.76
4+31 6" VERTICAL STACK INV. EL. 613.55
4+46 6" VERTICAL STACK INV. EL. 613.46
4+83 6" VERTICAL STACK INV. EL. 612.70
4+96 6" VERTICAL STACK INV. EL. 613.16
6+21 6" VERTICAL STACK INV. EL. 612.64
6+71 6" VERTICAL STACK INV. EL. 612.91
90.00' ~ 8" (SDR-26) @ + 2.85%
68.50' ~ 8" (SDR-26) @ -2.85%
277.92' ~ 8" (SDR-26) @ +0.40%
290.00' ~ 8" (SDR-26) @ +0.40% (OA)
CONTRACTOR TO REMOVE PLUG AND CONTINUE LIKE K @ELEV = 606.01
LINE AJ SEE SHEET C4.12 FOR DETAILS
MATCHLINE STA. 7+00.00 - SEE SHEET C4.11
603.02 (OUT) (LINE A)
603.35 (IN) (LINE A)
603.55 (IN) (LINE J)
603.45 (IN) (LINE K)
606.01
606.30
607.72
607.96 (OUT) (LINE K)
608.06 (IN) (LINE K)
607.96 (IN) (PVC Pipe)
608.23
608.43
608.63
608.83
609.03
609.17 (OUT) (LINE K)
609.28 (IN) (LINE AJ)
609.38 (IN) (LINE K)
609.43
609.63
609.83
1+00
2+00
3+00
4+00
5+00
6+00
7+00

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

DOVE SONG SUBDIVISION
UNIT 3

SANITARY SEWER PLAN & PROFILE - LINE K

DATE
08/20/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG/KM

CHECKED BY
AM/AL

#	DATE	REVISIONS
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9.		

ANDREW R. LOWRY
123410
09/05/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C4.10

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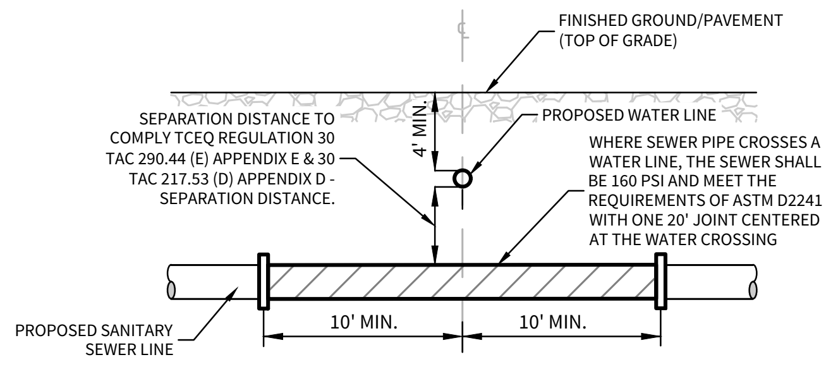
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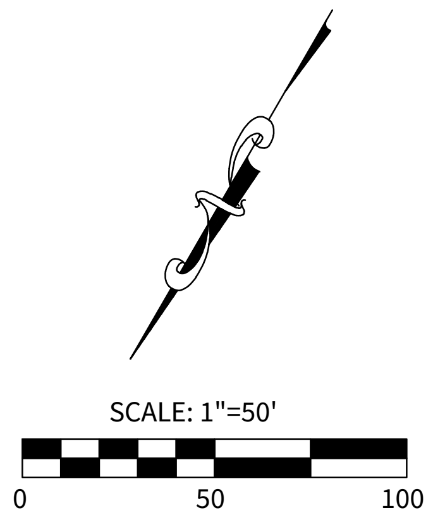

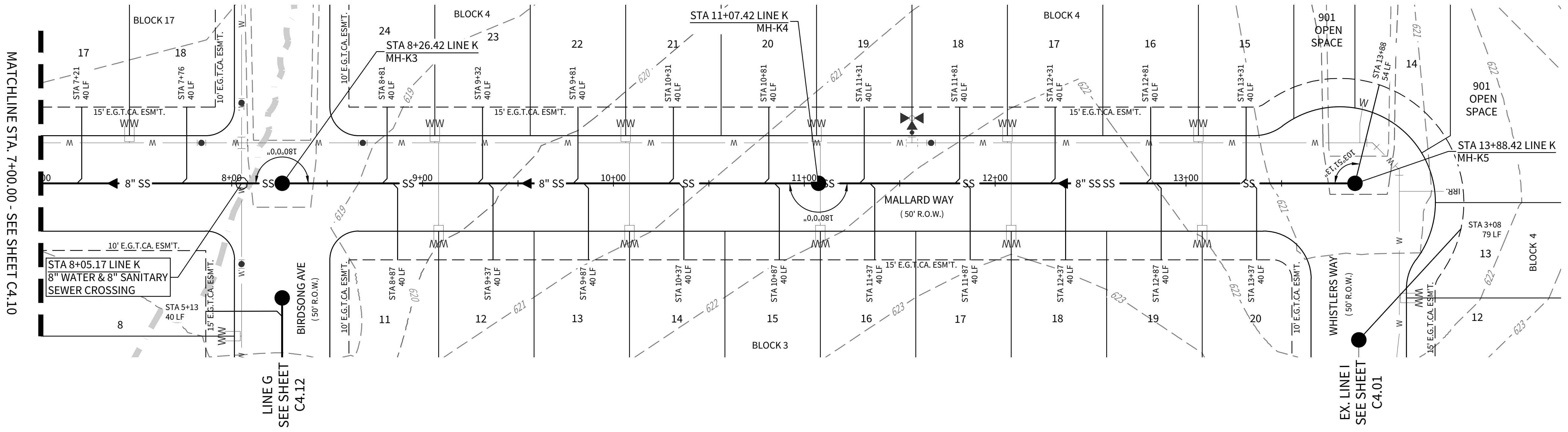

LEGEND

OVERALL UNIT BOUNDARY	━━
UNIT BOUNDARY	──
PROPOSED LOT LINE	──
PROPOSED RIGHT OF WAY	──
E.G.T.C.A. EASEMENT	– – –
EXISTING 1' CONTOUR	– – 499 – –
EXISTING 5' CONTOUR	– – 500 – –
PROJECT 100 YR. FLOOD PLAIN	━ ━
EFFECTIVE 100 YR. FLOOD PLAIN	━ ━
EXISTING WATER LINE	– – Wx – –
EXISTING SEWER LINE	– – SSx – –
EXISTING MANHOLE	●
PROPOSED WATER LINE	──
PROPOSED WATER SERVICE	
PROPOSED FIRE HYDRANT	
PROPOSED SEWER MAIN	── SS ──
PROPOSED MANHOLE	●
PROPOSED SEWER SERVICE	
PROPOSED STREET LIGHT	◉

LINE K

STA. 7+00.00 TO END

HORIZONTAL SCALE: 1" = 50'
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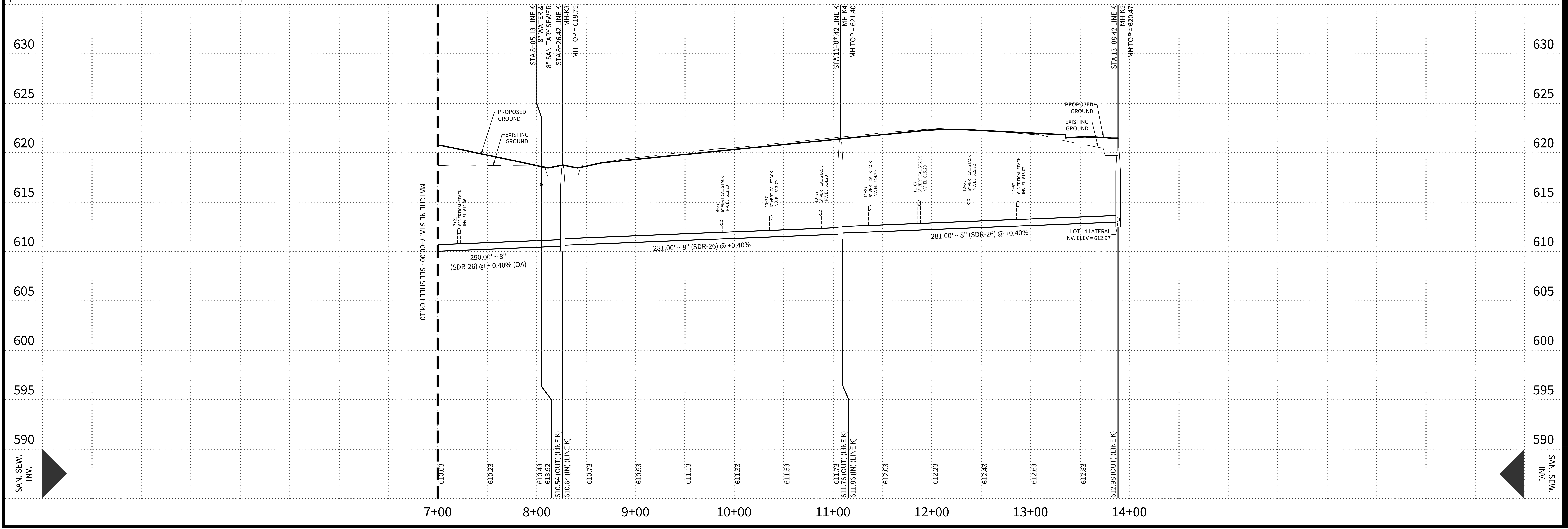

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DOVE SONG SUBDIVISION
UNIT 3

SANITARY SEWER PLAN & PROFILE - LINE K

DATE
08/20/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG/KM

CHECKED BY
AM/AL

REVISIONS

	DATE
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ANDREW R. LOWRY
123410
09/05/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

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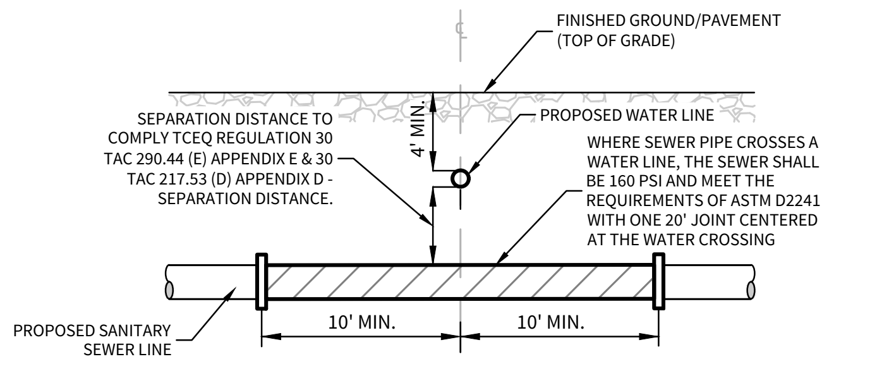
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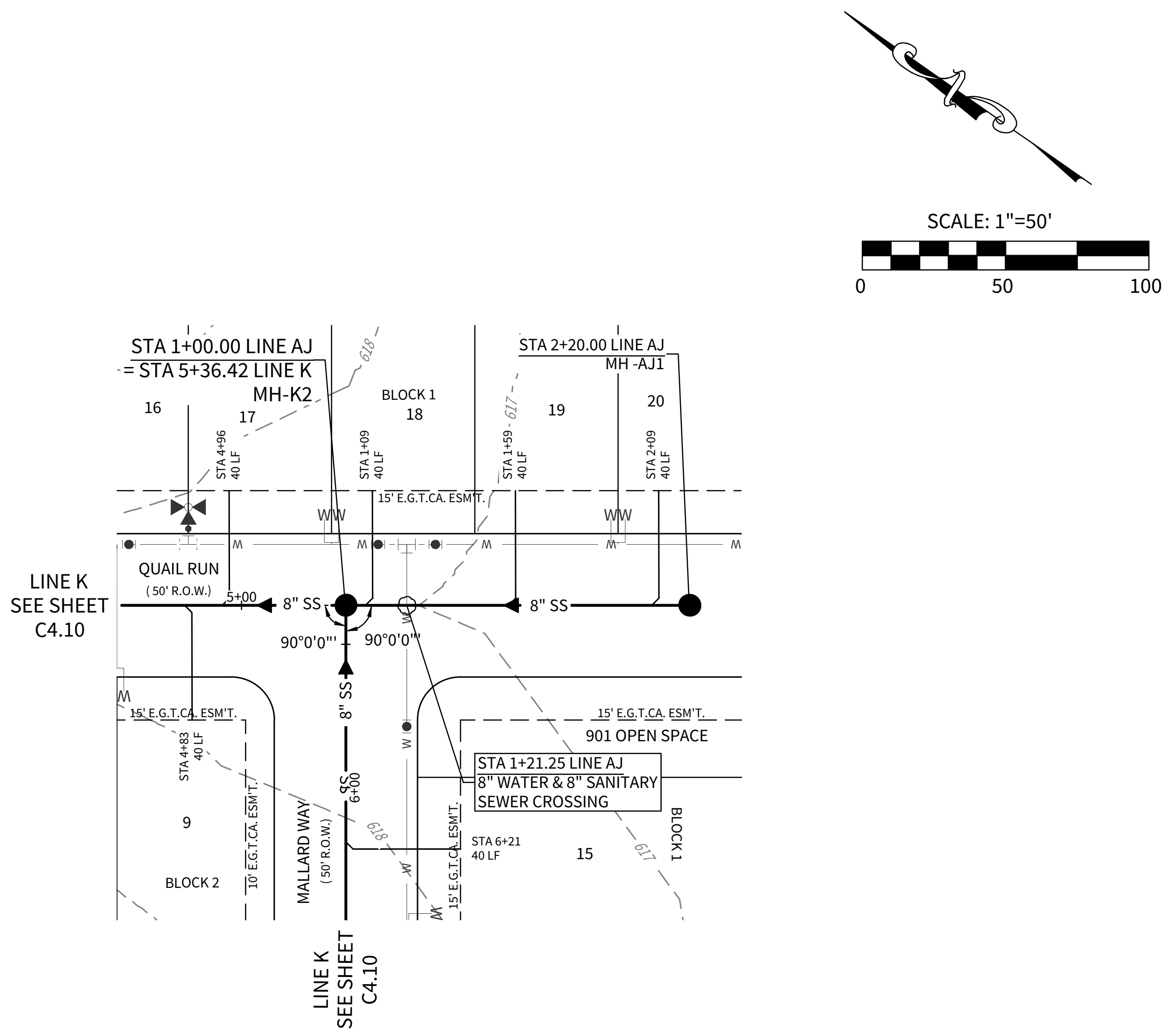
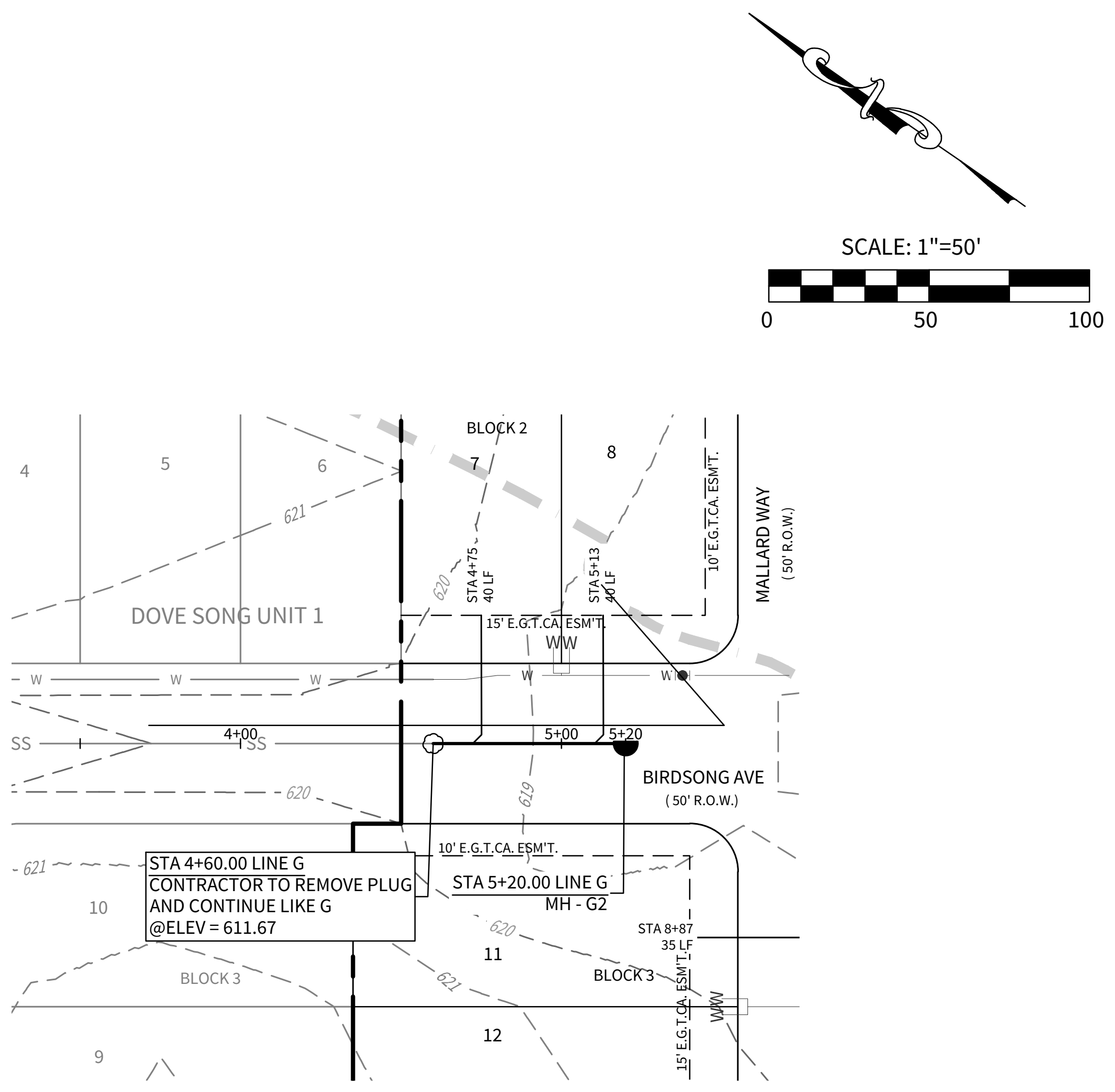


LINE AJ

STA. 1+00.00 TO END



LINE G

STA. 4+60.00 TO END

LEGEND

OVERALL UNIT BOUNDARY	━━━━
UNIT BOUNDARY	━━━━
PROPOSED LOT LINE	────
PROPOSED RIGHT OF WAY	────
E.G.T.CA. EASEMENT	— — — —
EXISTING 1' CONTOUR	— — 499 — —
EXISTING 5' CONTOUR	— — 500 — —
PROJECT 100 YR. FLOOD PLAIN	━━ ╎ ━━
EFFECTIVE 100 YR. FLOOD PLAIN	━━ ╎ ━━
EXISTING WATER LINE	—— Wx ——
EXISTING SEWER LINE	—— SSx ——
EXISTING MANHOLE	●
PROPOSED WATER LINE	────
PROPOSED WATER SERVICE	W W ─
PROPOSED FIRE HYDRANT	⧓
PROPOSED SEWER MAIN	—— SS ——
PROPOSED MANHOLE	●
PROPOSED SEWER SERVICE	S ──
PROPOSED STREET LIGHT	◉

HORIZONTAL SCALE: 1" = 50'
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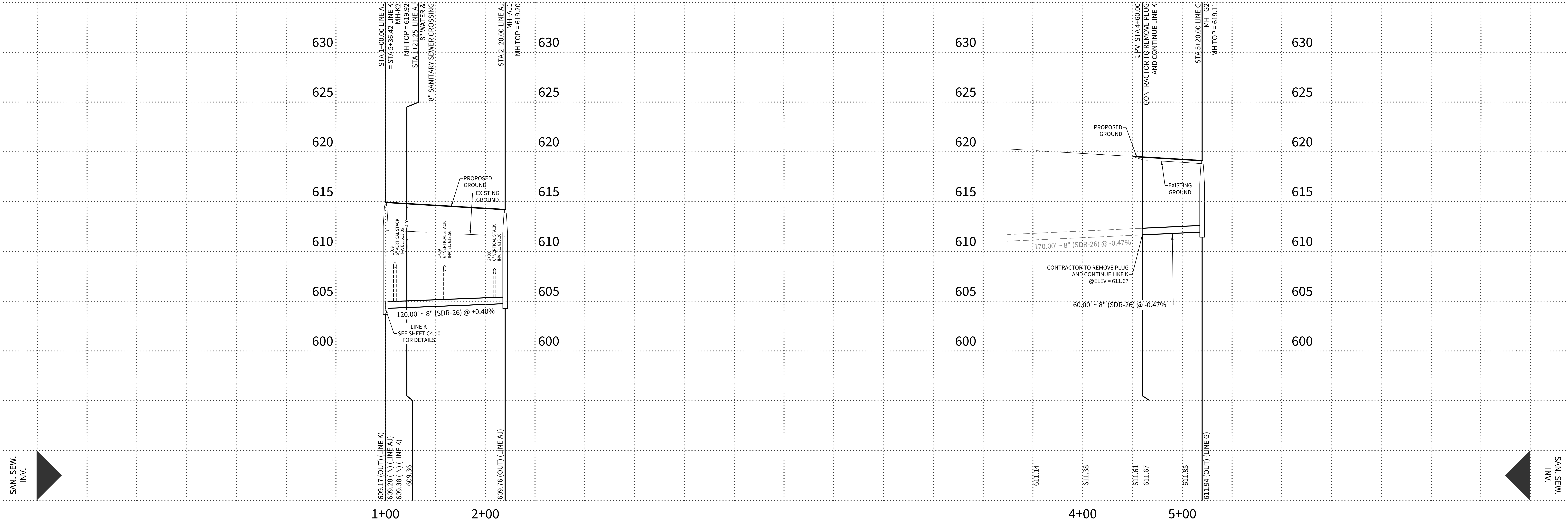

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DOVE SONG SUBDIVISION UNIT 3

SANITARY SEWER PLAN & PROFILE - LINE AJ & G

DATE	08/20/2024
PROJECT NO.	03608.004
DRAWN BY	JG/SG/KM
CHECKED BY	AM/AL

REVISIONS

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123410
09/05/2024

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DISTRICT NOTES

THE DISTRICT ENGINEER, JONES-HEROY & ASSOCIATES, INC. (KEN HEROY, PH:512-989-220) SHALL BE CONTACTED 48 HOURS PRIOR TO:

i) PRE-CONSTRUCTION MEETINGS;
ii) BEGINNING EACH PHASE OF CONSTRUCTION;
iii) TESTING OF WATER AND/OR WASTEWATER LINES; AND,
iv)FINAL WALK-THROUGH OF FACILITIES.

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.	$1\frac{3}{4}$"	100.0%
c.	$1\frac{1}{2}$"	100.0%
d.	1"	52.6%
e.	$\frac{3}{4}$"	10.7%
f.	$\frac{3}{8}$"	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

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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 $\frac{1}{2}$" 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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EST. 1980 CUDE ENGINEERS

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

DOVE SONG SUBDIVISION UNIT 3

## SANITARY SEWER GENERAL NOTES

DATE
06/19/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG

CHECKED BY
XV/AL

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TBPLS No. 10048500

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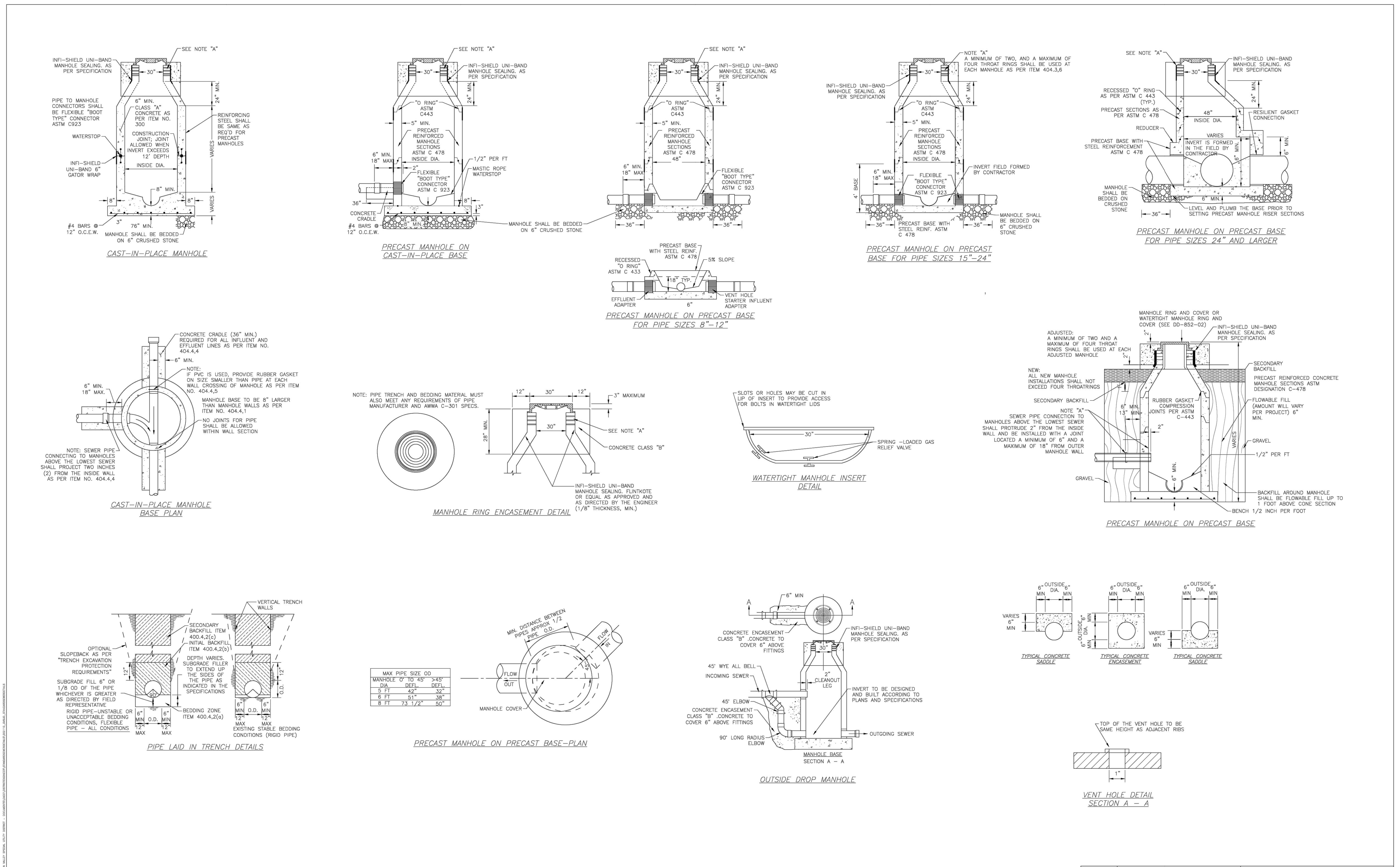

CAST-IN-PLACE MANHOLE
PRECAST MANHOLE ON CAST-IN-PLACE BASE
PRECAST MANHOLE ON PRECAST BASE FOR PIPE SIZES 8"-12"
PRECAST MANHOLE ON PRECAST BASE FOR PIPE SIZES 15"-24"
PRECAST MANHOLE ON PRECAST BASE FOR PIPE SIZES 24" AND LARGER
CAST-IN-PLACE MANHOLE BASE PLAN
MANHOLE RING ENCASEMENT DETAIL
WATERTIGHT 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
1"

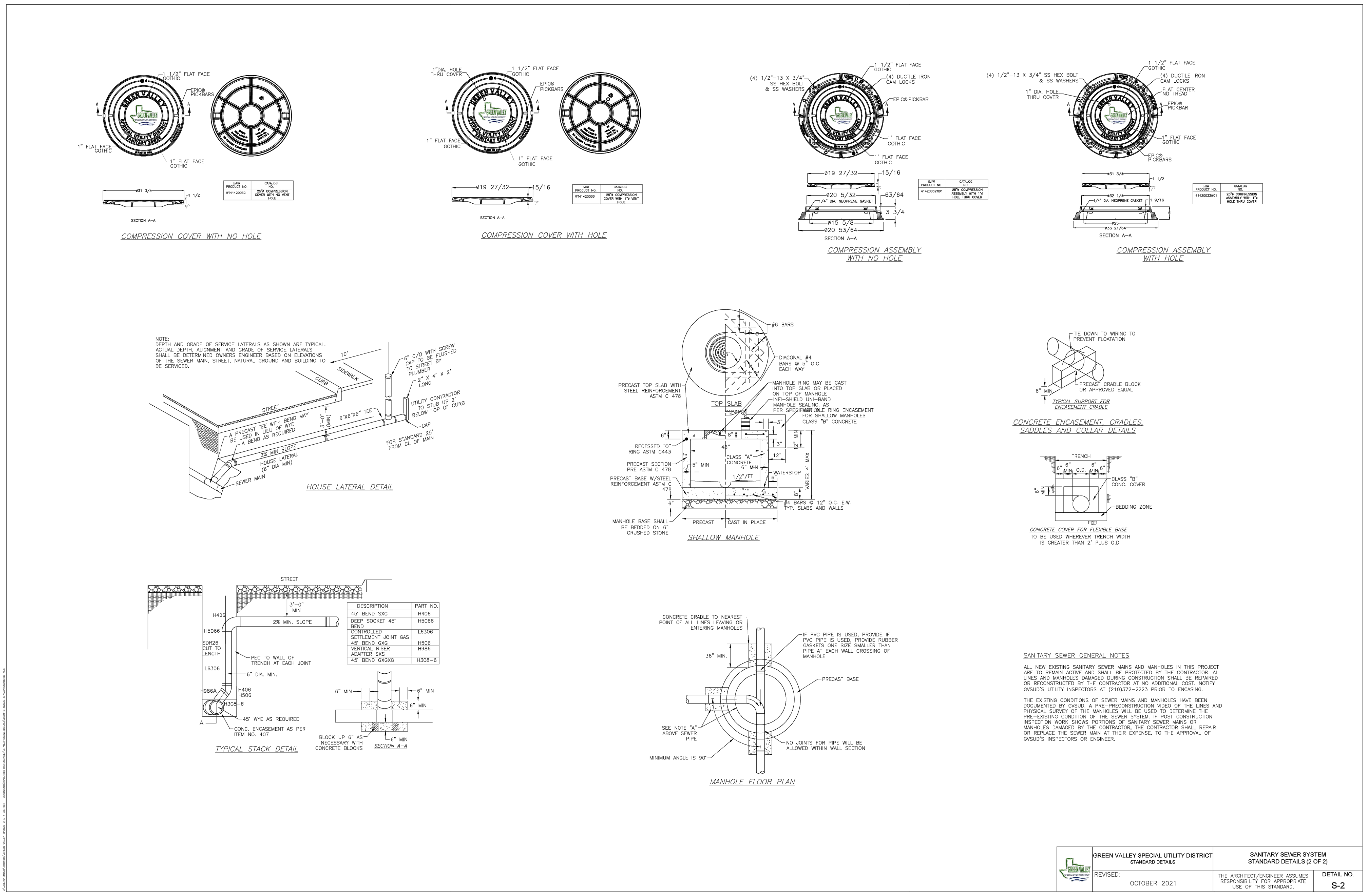
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS

SANITARY SEWER SYSTEM
STANDARD DETAILS (1 OF 2)

REVISED:
OCTOBER 2021

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 BASE
TYPICAL STACK DETAIL
MANHOLE FLOOR PLAN
(4) 1/2"-13 X 3/4" SS HEX BOLT & SS WASHERS
1 1/2" FLAT FACE GOTHIC
(4) DUCTILE IRON CAM LOCKS

SANITARY SEWER GENERAL NOTES

ALL NEW EXISTING SANITARY SEWER MAINS AND MANHOLES IN THIS PROJECT ARE TO REMAIN ACTIVE AND SHALL BE PROTECTED BY THE CONTRACTOR. ALL LINES AND MANHOLES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR RECONSTRUCTED BY THE CONTRACTOR AT NO ADDITIONAL COST. NOTIFY GVSUD'S UTILITY INSPECTORS AT (210)372–2223 PRIOR TO ENCASING.

THE EXISTING CONDITIONS OF SEWER MAINS AND MANHOLES HAVE BEEN DOCUMENTED BY GVSUD. A PRE–PRECONSTRUCTION VIDEO OF THE LINES AND PHYSICAL SURVEY OF THE MANHOLES WILL BE USED TO DETERMINE THE PRE–EXISTING CONDITION OF THE SEWER SYSTEM. IF POST CONSTRUCTION INSPECTION WORK SHOWS PORTIONS OF SANITARY SEWER MAINS OR MANHOLES DAMAGED BY THE CONTRACTOR, THE CONTRACTOR SHALL REPAIR OR REPLACE THE SEWER MAIN AT THEIR EXPENSE, TO THE APPROVAL OF GVSUD'S INSPECTORS OR ENGINEER.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS

SANITARY SEWER SYSTEM
STANDARD DETAILS (2 OF 2)

REVISED:
OCTOBER 2021

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

DETAIL NO.
S-2

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

DOVE SONG SUBDIVISION UNIT 3

SANITARY SEWER DETAILS

DATE
06/19/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG

CHECKED BY
XV/AL

REVISIONS

DATE

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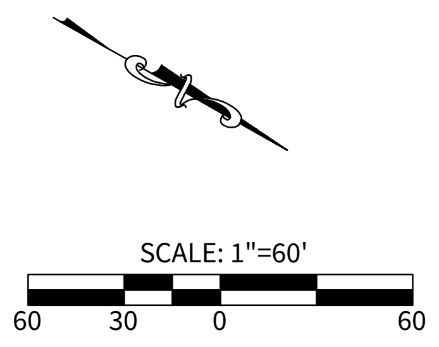


LEGEND

OVERALL UNIT BOUNDARY	━━━
PROPOSED LOT LINE	───
PROPOSED RIGHT OF WAY	───
E.G.T.CA. EASEMENT	— — —
EXISTING 1' CONTOUR	— — 499 — —
EXISTING 5' CONTOUR	— — 500 — —
PROJECT 100 YR. FLOOD PLAIN	▬ ▬
EFFECTIVE 100 YR. FLOOD PLAIN	▬ ▬
EXISTING WATER LINE	— — Wx — —
EXISTING SEWER LINE	— — SSx — —
EXISTING MANHOLE	●
PROPOSED WATER LINE	━━ W ━━
PROPOSED SEWER MAIN	── SS ──
PROPOSED MANHOLE	●
PROPOSED JOINT RESTRAINT	X' X'
LENGTH TO BE JOINT RESTRAINT	XX L.F.

BENCHMARK BM-1

BENCHMARK TO BE SET BY ENGINEER PRIOR TO CONSTRUCTION.

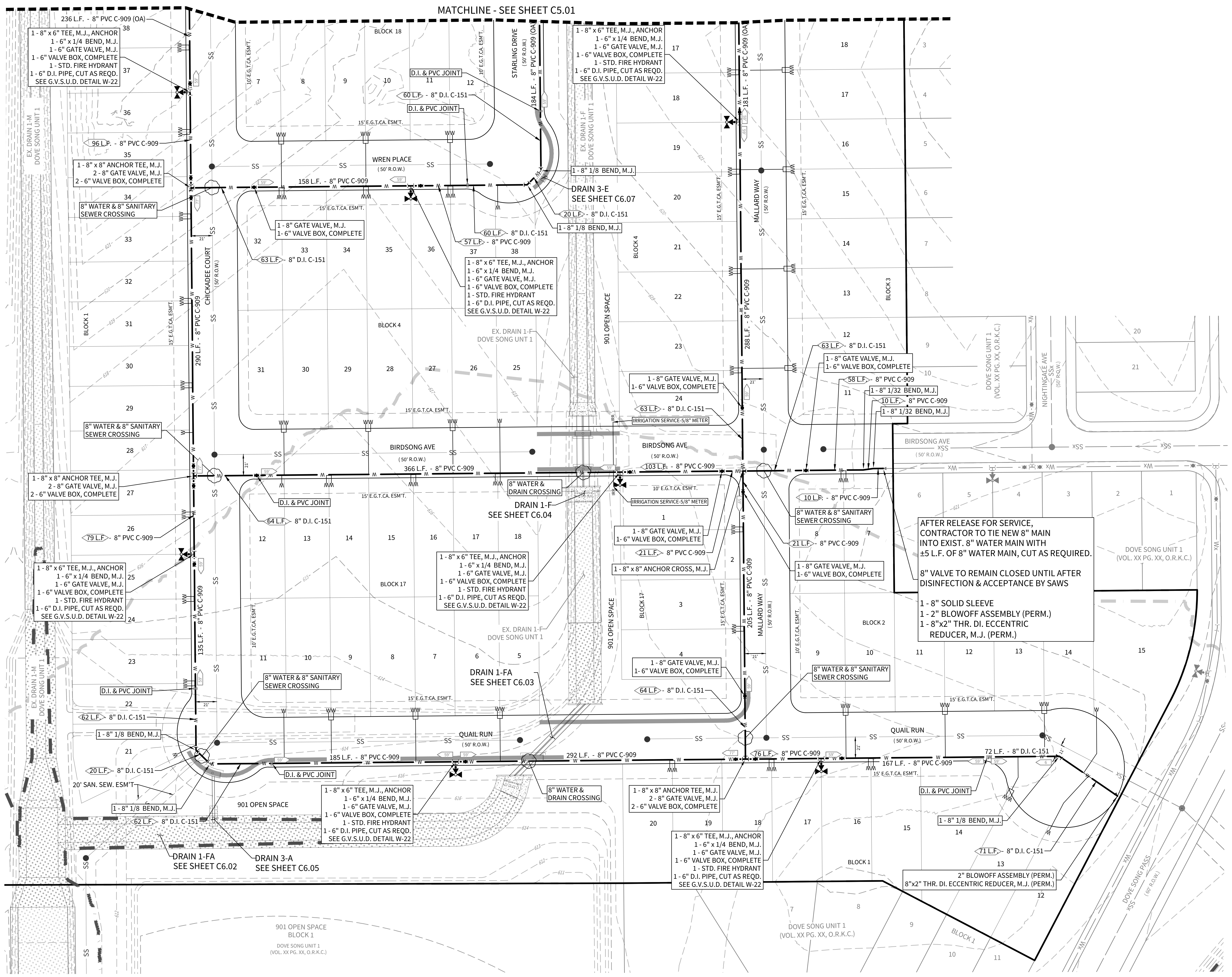
SEWER/WATER LINE CROSSINGS	
LINE	STATION
"W"	17+40.17
"W"	20+29.28
"W"	23+19.28
"W"	26+51.78
"W"	28+99.28
"W"	36+82.38
"AJ"	1+21.25
"K"	8+05.17

TOTAL WATER QUANTITIES TABLE
DOVE SONG UNIT 3 - WATER DISTRIBUTION
ESTIMATED QUANTITY TAKE-OFF

(CONTRACTOR RESPONSIBLE FOR DETERMINING ACTUAL QUANTITIES REQUIRED)

Item No.	Description	Quantity	Units
1	8" PVC C-909 PC 235	5399	LF
2	8" DUCTILE IRON C-151	1498	LF
3	8" GATE VALVES	39	EA
4	FIRE HYDRANTS	13	EA
5	PIPE FITTINGS, ALL SIZES AND TYPES	2.97	TON
6	2" BLOWOFF, TEMPORARY	2	EA
7	2" BLOWOFF, PERMANENT	2	EA
8	NEW 1" IRRIGATION SERVICE	7	EA
9	NEW 1" DUAL LONG SERVICE	31	EA
10	NEW 1" DUAL SHORT SERVICE	52	EA
11	NEW 1" SHORT SERVICE	9	EA
12	NEW 1" LONG SERVICE	3	EA
13	5/8" WATER METER	185	EA
14	TRENCH EXCAVATION SAFETY PROTECTION	6897	LF
15	HYDROSTATIC TESTING	1	EA
16	METER BOX (NON-STANDARD METER BOX)	185	EA
17	DISINFECTION SAMPLE PORT	1	EA

TOTAL ACERAGE	38.69
TOTAL EDU'S	185
TOTAL NUMBER OF LOTS	178



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

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

1 - 8" SOLID SLEEVE
1 - 2" BLOWOFF ASSEMBLY (PERM.)
1 - 8"x2" THR. DI. ECCENTRIC
REDUCER, M.J. (PERM.)

NOTES:

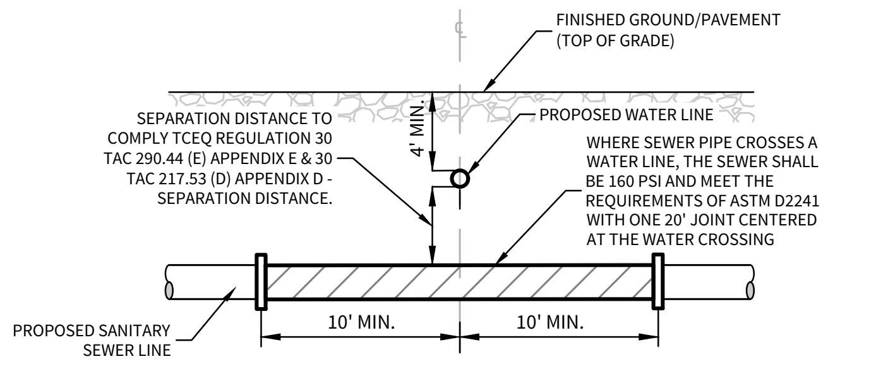
1. CONTRACTOR TO POTHOLE AND VERIFY EXISTING MAIN, SIZE, AND TYPE WITH GVSUD INSPECTOR A MINIMUM OF 300 L.F. PRIOR TO TIE-IN LOCATION.
2. CONTRACTOR TO CURB CUT V's FOR VALVES AND X's FOR METERS.
3. 2" TEMPORARY BLOWOFFS, TO BE REMOVED FOR TIE-IN AFTER NEW MAIN IS TESTED AND ACCEPTED.
4. DISINFECTION SHALL BE BY MACHINE CHLORINATION.
5. MOISTURE DENSITY COMPACTION TESTING FREQUENCY-WATER MAIN TRENCHES REQUIRED EVERY 300 L.F. FOR EACH VERTICAL FOOT OF COMPACTED BACK FILL. SERVICES RANDOMLY SELECTED AS REQUIRED BY GVSUD INSPECTOR
6. ALL TESTING AND TEST REPORTS SHALL BE COORDINATED WITH GVSUD INSPECTOR BY THE CONTRACTOR.
7. ALL DUCTILE IRON PIPE TO BE AMERICAN ZINC COATED, AWWA/ANSI C-151
8. WHERE TIE-INS TO EXISTING INFRASTRUCTURE EXIST, CONTRACTOR TO UTILIZE APPROVED WATER LINE STOPS AND/OR MUELLER INSERTION-VALVES TO MINIMIZE WATER OUTAGES AS REQUIRED BY GVSUD DURING CONSTRUCTION.

CAUTION!!

EXISTING UTILITIES ARE WITHIN THE LIMITS OF CONSTRUCTION. CONTRACTORS SHALL EXERCISE EXTRA CARE IN DIGGING ANY TRENCH FOR PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE, VERIFY THE EXACT LOCATION & IDENTIFY AREA OF CONFLICTS WITH EXISTING UTILITIES AND SHALL NOTIFY THE ENGINEER IF CONFLICT IS FOUND.

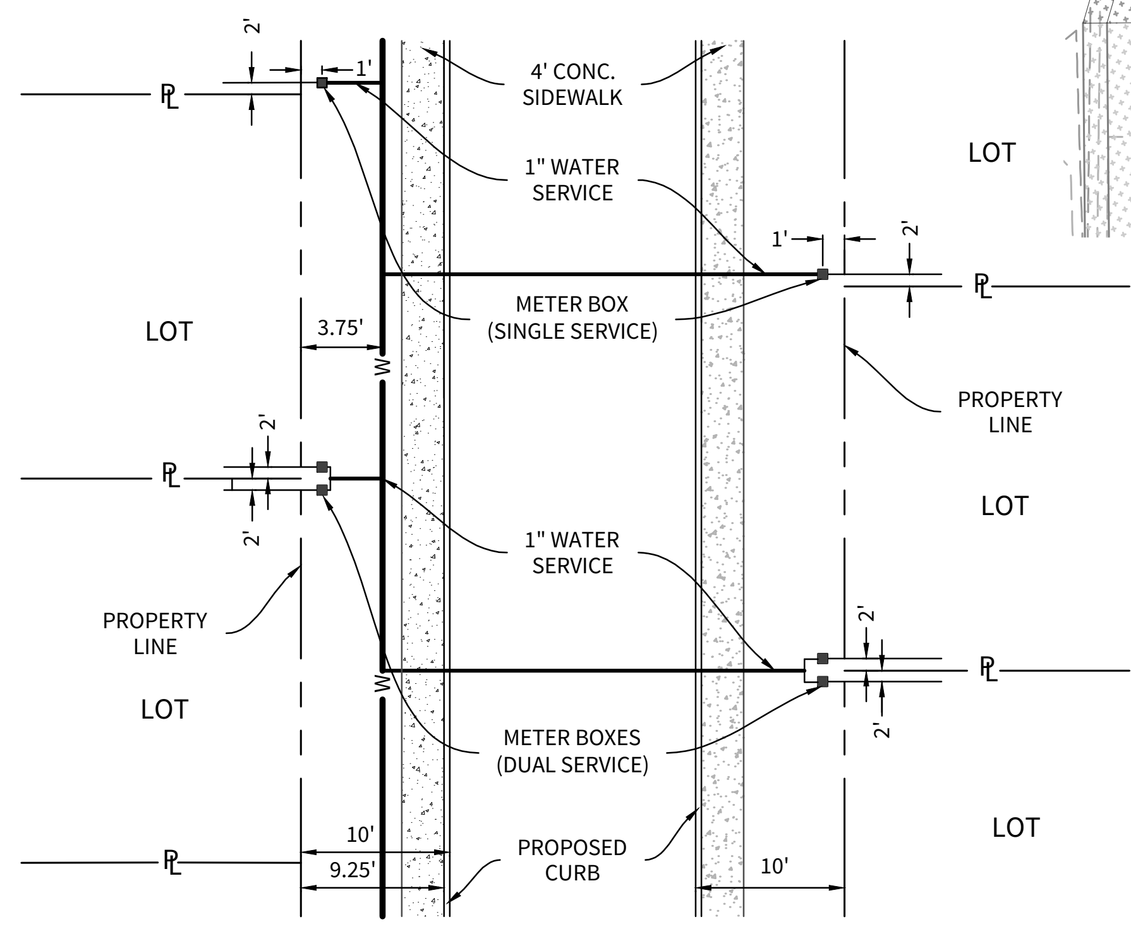
NOTE:

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 OR ANY PROPOSED UTILITIES UNDERNEATH THE PAVEMENT AND FILL AREAS UPON WHICH PAVEMENT IS PROPOSED TO BE PLACED.


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.
4' 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.

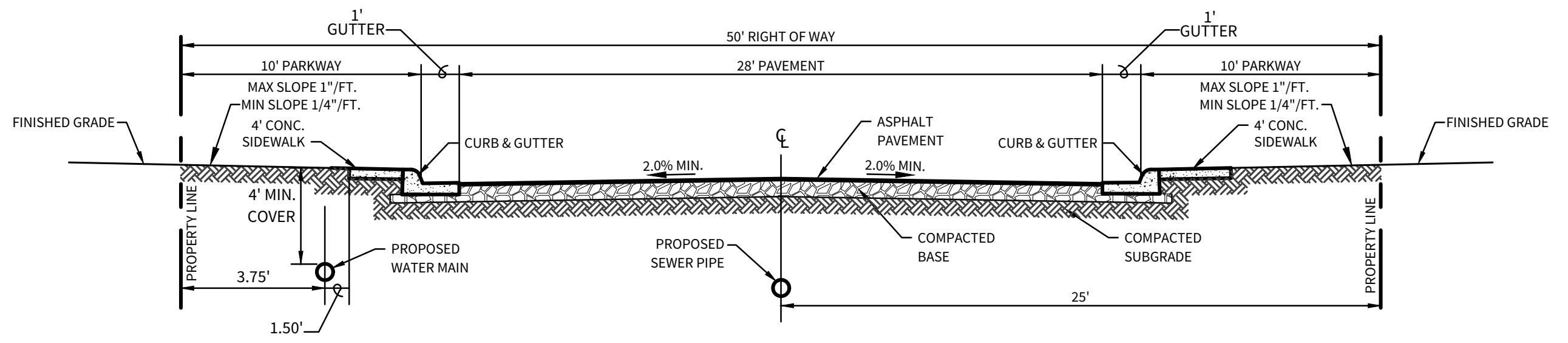
TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

N.T.S.

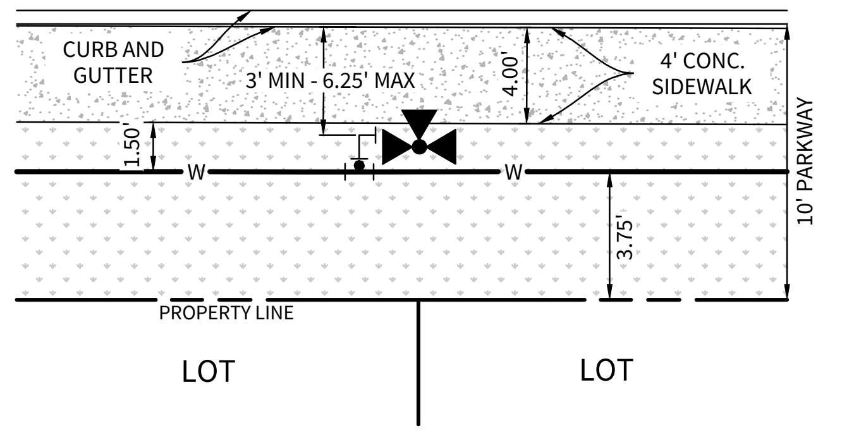


WATER METER BOX LOCATION (50' R.O.W.)

N.T.S.



LOCAL "A" STREET CROSS-SECTION



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)

N.T.S.

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

DOVE SONG SUBDIVISION UNIT 3

WATER DISTRIBUTION PLAN

DATE
09/05/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG/KM

CHECKED BY
AM/AL

#	REVISIONS	DATE
1.		
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ANDREW R. LOWRY
123410
09/05/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C5.00

CUDEENGINEERS.COM

P:\03608\004\2-DWG\4-Plans\C5.01 WATER DISTRIBUTION PLAN.dwg 2024/09/05 12:50pm jguerrero

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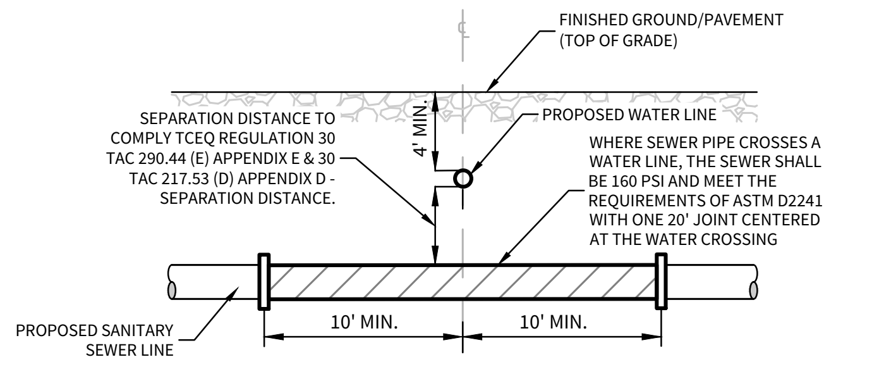
TOTAL WATER QUANTITIES TABLE
DOVE SONG UNIT 3 - WATER DISTRIBUTION
ESTIMATED QUANTITY TAKE-OFF
(CONTRACTOR RESPONSIBLE FOR DETERMINING ACTUAL QUANTITIES REQUIRED)

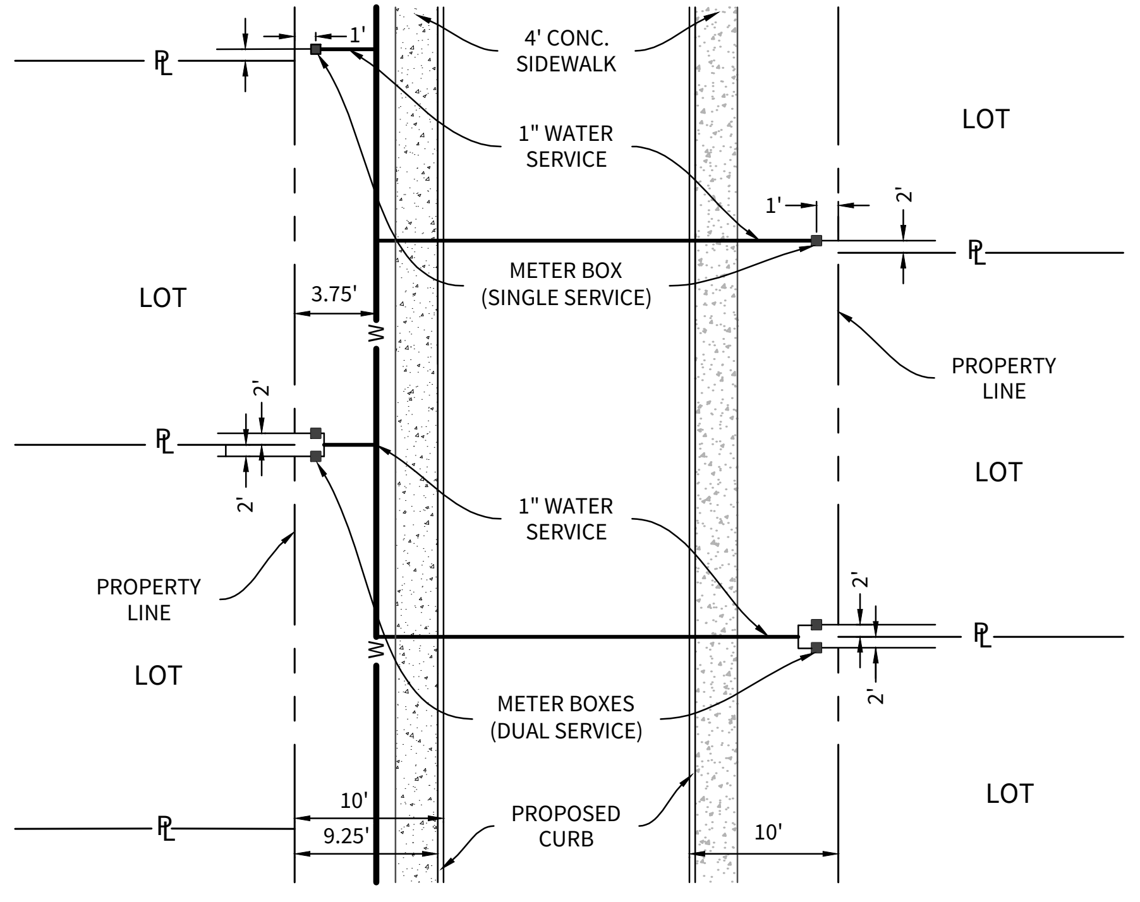
Item No.	Description	Quantity	Units
1	8" PVC C-909 PC 235	5399	LF
2	8" DUCTILE IRON C-151	1498	LF
3	8" GATE VALVES	39	EA
4	FIRE HYDRANTS	13	EA
5	PIPE FITTINGS, ALL SIZES AND TYPES	2.97	TON
6	2" BLOWOFF, TEMPORARY	2	EA
7	2" BLOWOFF, PERMANENT	2	EA
8	NEW 1" IRRIGATION SERVICE	7	EA
9	NEW 1" DUAL LONG SERVICE	31	EA
10	NEW 1" DUAL SHORT SERVICE	52	EA
11	NEW 1" SHORT SERVICE	9	EA
12	NEW 1" LONG SERVICE	3	EA
13	5/8" WATER METER	185	EA
14	TRENCH EXCAVATION SAFETY PROTECTION	6897	LF
15	HYDROSTATIC TESTING	1	EA
16	METER BOX (NON-STANDARD METER BOX)	185	EA
17	DISINFECTION SAMPLE PORT	1	EA

TOTAL ACERAGE	38.69
TOTAL EDU'S	185
TOTAL NUMBER OF LOTS	178


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.
4' 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.



WATER METER BOX LOCATION (50' R.O.W.)

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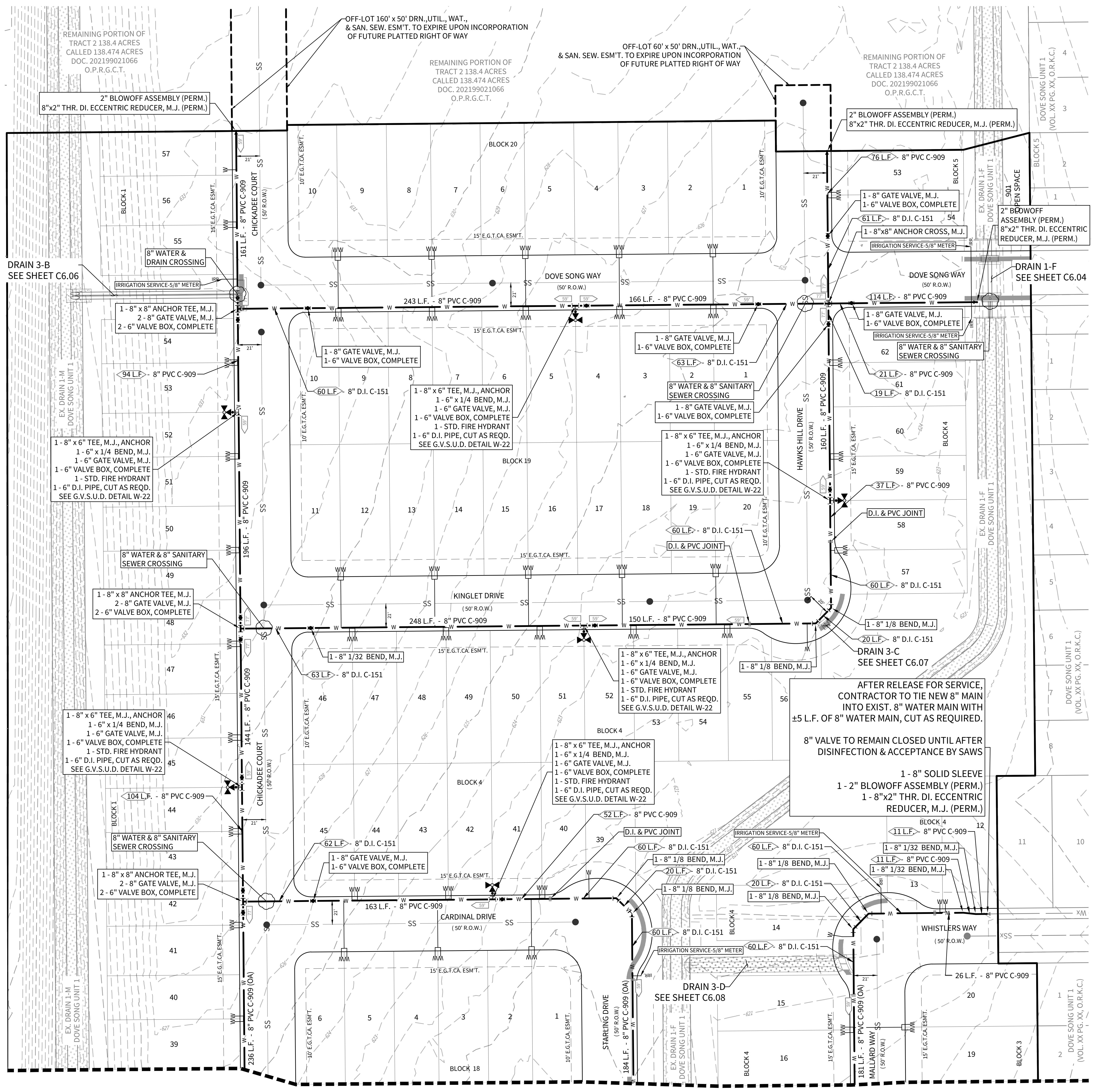
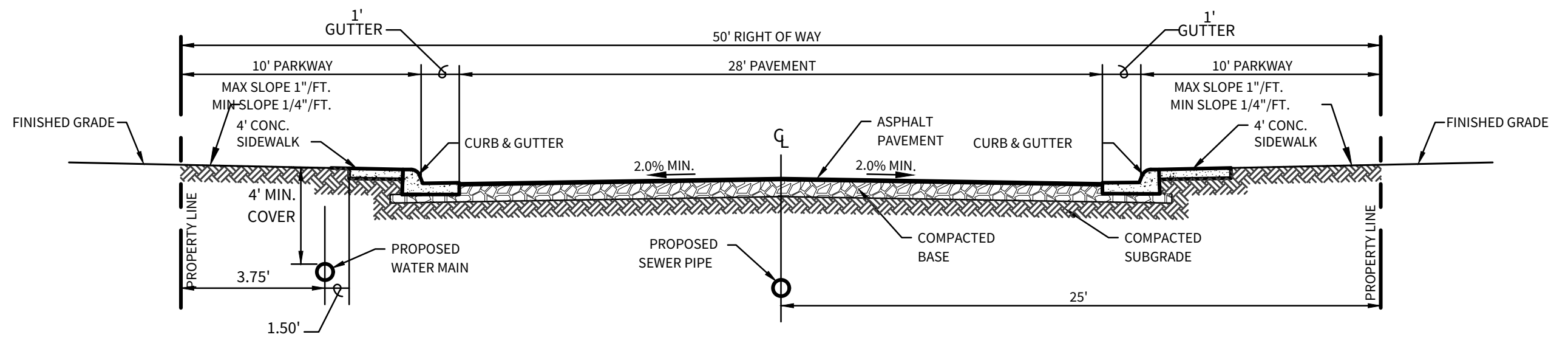

OFF-LOT 160' x 50' DRN.,UTIL., WAT., & SAN. SEW. ESM'T. TO EXPIRE UPON INCORPORATION OF FUTURE PLATTED RIGHT OF WAY
OFF-LOT 60' x 50' DRN.,UTIL., WAT., & SAN. SEW. ESM'T. TO EXPIRE UPON INCORPORATION OF FUTURE PLATTED RIGHT OF WAY
REMAINING PORTION OF TRACT 2 138.4 ACRES CALLED 138.474 ACRES DOC. 202199021066 O.P.R.G.C.T.
2" BLOWOFF ASSEMBLY (PERM.) 8"x2" THR. DI. ECCENTRIC REDUCER, M.J. (PERM.)
BLOCK 20
BLOCK 19
BLOCK 18
BLOCK 1
BLOCK 4
BLOCK 5
BLOCK 3
DOVE SONG WAY (50' R.O.W.)
KINGLET DRIVE (50' R.O.W.)
CARDINAL DRIVE (50' R.O.W.)
WHISTLERS WAY (50' R.O.W.)
HAWKS HILL DRIVE (50' R.O.W.)
CHICKADEE COURT (50' R.O.W.)
STARLING DRIVE (50' R.O.W.)
MALLARD WAY (50' R.O.W.)
DRAIN 3-B SEE SHEET C6.06
DRAIN 1-F SEE SHEET C6.04
DRAIN 3-C SEE SHEET C6.07
DRAIN 3-D SEE SHEET C6.08
EX. DRAIN 1-M DOVE SONG UNIT 1
EX. DRAIN 1-F DOVE SONG UNIT 1
DOVE SONG UNIT 1 (VOL. XX PG. XX, O.R.K.C.)
243 L.F. - 8" PVC C-909
166 L.F. - 8" PVC C-909
248 L.F. - 8" PVC C-909
150 L.F. - 8" PVC C-909
163 L.F. - 8" PVC C-909
161 L.F. - 8" PVC C-909
196 L.F. - 8" PVC C-909
141 L.F. - 8" PVC C-909
236 L.F. - 8" PVC C-909 (OA)
160 L.F. - 8" PVC C-909
184 L.F. - 8" PVC C-909 (OA)
181 L.F. - 8" PVC C-909 (OA)
8" WATER & DRAIN CROSSING
8" WATER & 8" SANITARY SEWER CROSSING
IRRIGATION SERVICE-5/8" METER
1 - 8" x 8" ANCHOR TEE, M.J. 2 - 8" GATE VALVE, M.J. 2 - 6" VALVE BOX, COMPLETE
1 - 8" GATE VALVE, M.J. 1 - 6" VALVE BOX, COMPLETE
1 - 8"x8" ANCHOR CROSS, M.J.
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 REQD. SEE G.V.S.U.D. DETAIL W-22
D.I. & PVC JOINT
1 - 8" 1/8 BEND, M.J.
1 - 8" 1/32 BEND, M.J.
20 L.F. - 8" D.I. C-151
60 L.F. - 8" D.I. C-151
AFTER RELEASE FOR SERVICE, CONTRACTOR TO TIE NEW 8" MAIN INTO EXIST. 8" WATER MAIN WITH ±5 L.F. OF 8" WATER MAIN, CUT AS REQUIRED.
8" VALVE TO REMAIN CLOSED UNTIL AFTER DISINFECTION & ACCEPTANCE BY SAWS
1 - 8" SOLID SLEEVE
1 - 2" BLOWOFF ASSEMBLY (PERM.)
1 - 8"x2" THR. DI. ECCENTRIC REDUCER, M.J. (PERM.)
15' E.G.T.CA. ESM'T.

MATCHLINE - SEE SHEET C5.00



LOCAL "A" STREET CROSS-SECTION

SCALE: 1"=60'

LEGEND

OVERALL UNIT BOUNDARY	— — —
PROPOSED LOT LINE	—
PROPOSED RIGHT OF WAY	—
E.G.T.CA. EASEMENT	- - -
EXISTING 1' CONTOUR	499
EXISTING 5' CONTOUR	500
PROJECT 100 YR. FLOOD PLAIN	▬ ▬
EFFECTIVE 100 YR. FLOOD PLAIN	▬ ▬
EXISTING WATER LINE	Wx
EXISTING SEWER LINE	SSx
EXISTING MANHOLE	●
PROPOSED WATER LINE	W
PROPOSED SEWER MAIN	SS
PROPOSED MANHOLE	●
PROPOSED JOINT RESTRAINT	X' X'
LENGTH TO BE JOINT RESTRAINT	XX L.F.

BENCHMARK BM-1

BENCHMARK TO BE SET BY ENGINEER PRIOR TO CONSTRUCTION.

SEWER/WATER LINE CROSSINGS	
LINE	STATION
"W"	17+40.17
"W"	20+29.28
"W"	23+19.28
"W"	26+51.78
"W"	28+99.28
"W"	36+82.38
"AJ"	1+21.25
"K"	8+05.17

NOTES:

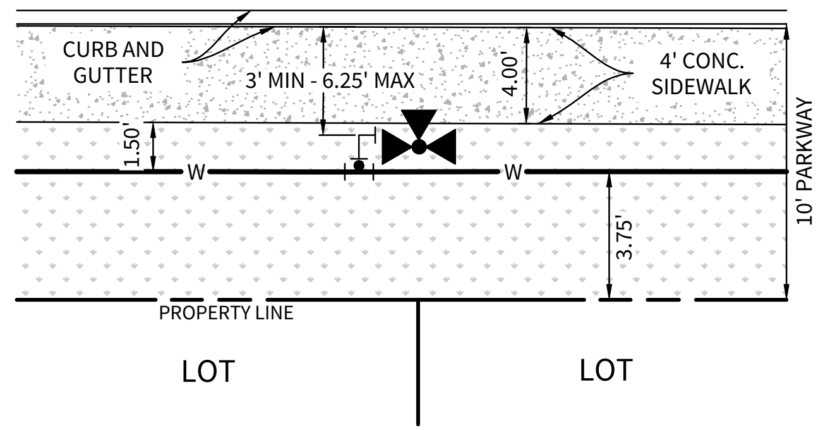
1. CONTRACTOR TO POTHOLE AND VERIFY EXISTING MAIN, SIZE, AND TYPE WITH GVSUD INSPECTOR A MINIMUM OF 300 L.F. PRIOR TO TIE-IN LOCATION.
2. CONTRACTOR TO CURB CUT V's FOR VALVES AND X's FOR METERS.
3. 2" TEMPORARY BLOWOFFS, TO BE REMOVED FOR TIE-IN AFTER NEW MAIN IS TESTED AND ACCEPTED.
4. DISINFECTION SHALL BE BY MACHINE CHLORINATION.
5. MOISTURE DENSITY COMPACTION TESTING FREQUENCY-WATER MAIN TRENCHES REQUIRED EVERY 300 L.F. FOR EACH VERTICAL FOOT OF COMPACTED BACK FILL. SERVICES RANDOMLY SELECTED AS REQUIRED BY GVSUD INSPECTOR
6. ALL TESTING AND TEST REPORTS SHALL BE COORDINATED WITH GVSUD INSPECTOR BY THE CONTRACTOR.
7. ALL DUCTILE IRON PIPE TO BE AMERICAN ZINC COATED, AWWA/ANSI C-151
8. WHERE TIE-INS TO EXISTING INFRASTRUCTURE EXIST, CONTRACTOR TO UTILIZE APPROVED WATER LINE STOPS AND/OR MUELLER INSERTION-VALVES TO MINIMIZE WATER OUTAGES AS REQUIRED BY GVSUD DURING CONSTRUCTION.

CAUTION!!

EXISTING UTILITIES ARE WITHIN THE LIMITS OF CONSTRUCTION. CONTRACTORS SHALL EXERCISE EXTRA CARE IN DIGGING ANY TRENCH FOR PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE, VERIFY THE EXACT LOCATION & IDENTIFY AREA OF CONFLICTS WITH EXISTING UTILITIES AND SHALL NOTIFY THE ENGINEER IF CONFLICT IS FOUND.

NOTE:

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 OR ANY PROPOSED UTILITIES UNDERNEATH THE PAVEMENT AND FILL AREAS UPON WHICH PAVEMENT IS PROPOSED TO BE PLACED.



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)

N.T.S.

CUDEENGINEERS.COM

CUDE ENGINEERS EST. 1980

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

DOVE SONG SUBDIVISION UNIT 3

WATER DISTRIBUTION PLAN

DATE
09/05/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG/KM

CHECKED BY
AM/AL

#	DATE	REVISIONS
1.		
2.		
3.		
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9.		

ANDREW R. LOWRY
123410
09/05/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C5.01

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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.

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.

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 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.

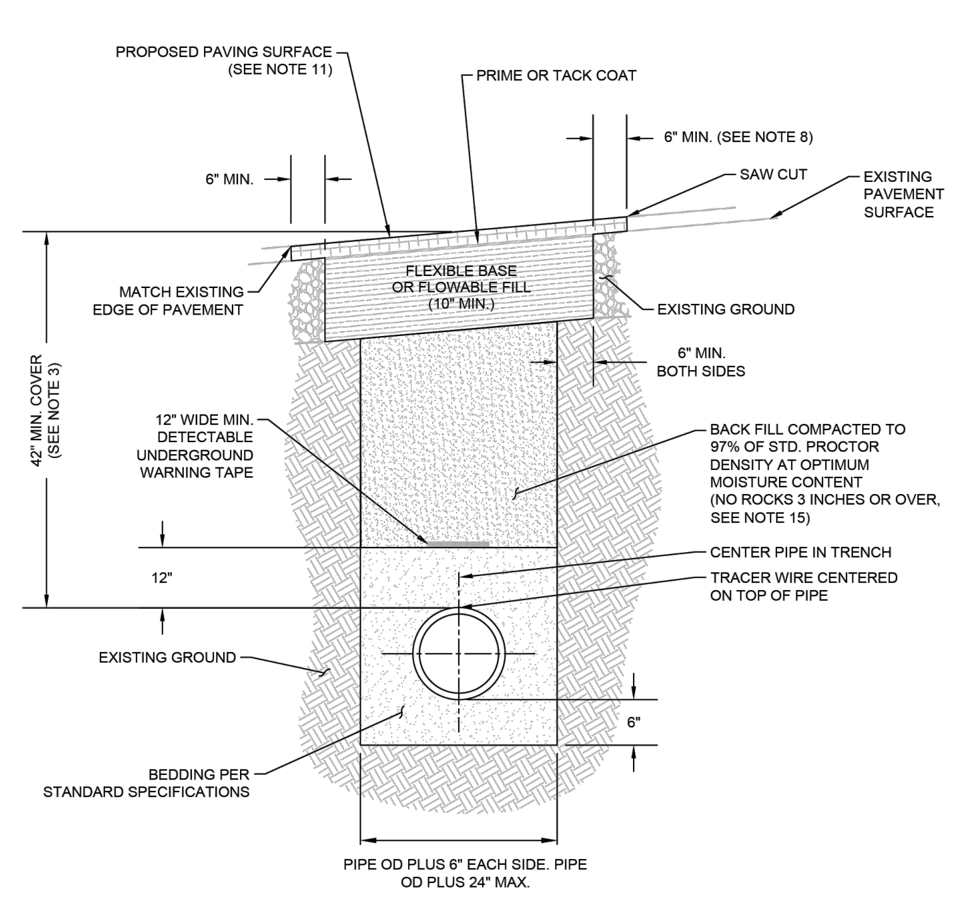
30. CONTRACTOR MUST PROTECT ALL UNATTENDED TRENCHES AND EXCAVATIONS WITH TEMPORARY FENCING.
31. NO TREES MAY BE PLANTED IN THE AREAS DESIGNATED AS WATER OR UTILITY EASEMENTS, OR AREAS WHERE WATER MAINS AND WATER SERVICE CROSSINGS EXIST OR ARE PLANNED TO BE CONSTRUCTED.
32. ALL GARBAGE OR SPOIL MATERIAL 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

NOTES:

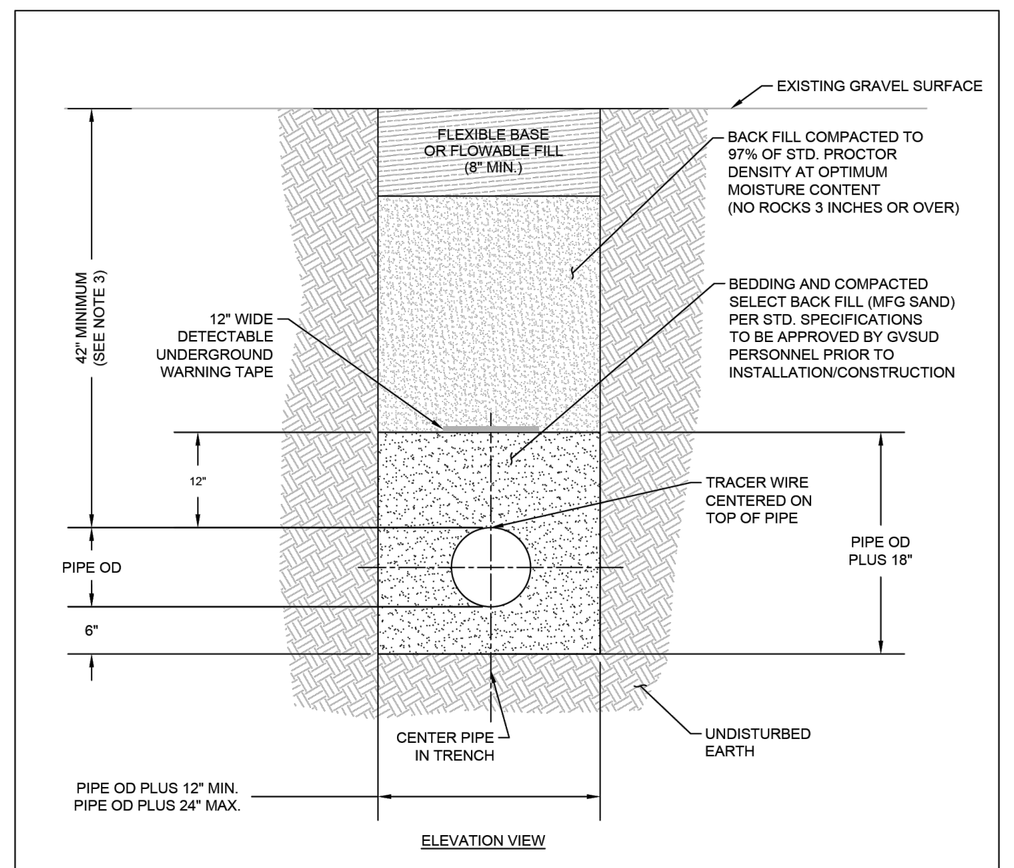
1. ALL WASTEWATER PVC PIPING SHALL BE GREEN IN COLOR. NO WATER DESIGNATED PIPE SHALL BE USED IN WASTEWATER WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
2. ALL WATER PIPING SHALL HAVE A MINIMUM PRESSURE CLASS OF 235 PSI WATER PVC PIPING SHALL BE BLUE IN COLOR.
3. ALL WATER LINES AND WASTEWATER FORCEMAIN 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
REVISED: JANUARY 2024
TRENCH DETAIL FOR PAVED AREAS
(2 OF 2)
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-1



PROPOSED PAVING SURFACE (SEE NOTE 11)
PRIME OR TACK COAT
6" MIN. (SEE NOTE 8)
SAW CUT
EXISTING PAVEMENT SURFACE
6" MIN.
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
REVISED: JANUARY 2024
TRENCH DETAIL FOR PAVED AREAS
(1 OF 2)
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-1



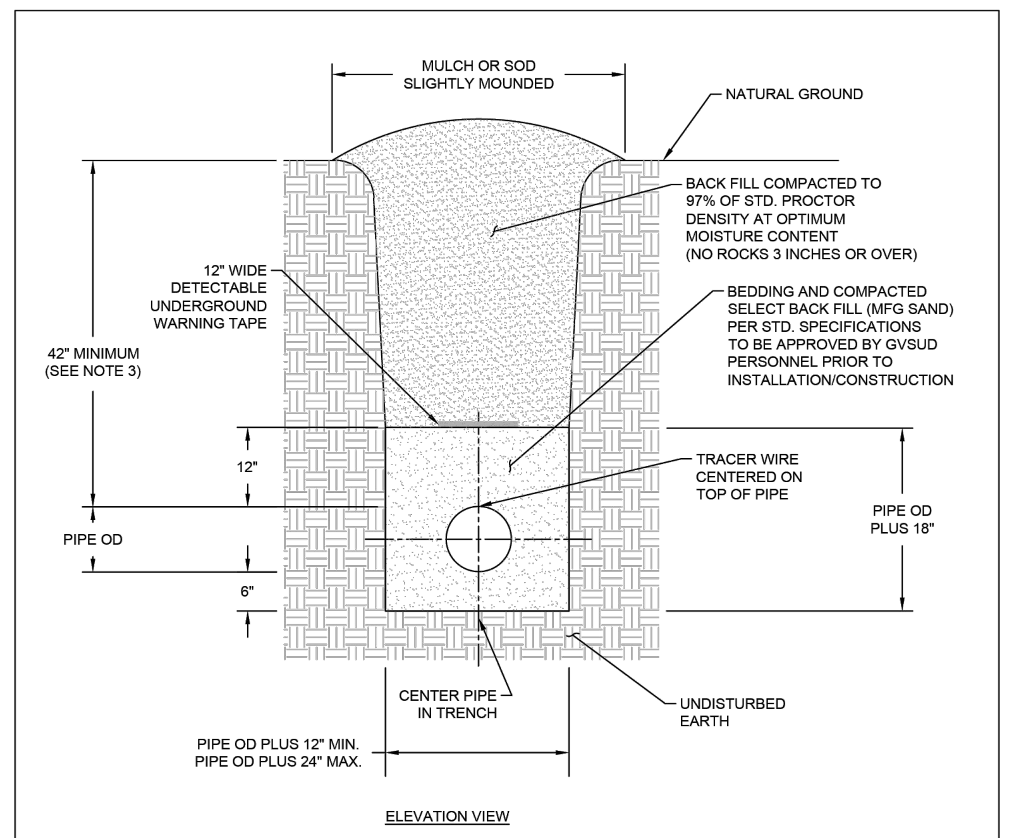
EXISTING GRAVEL SURFACE
FLEXIBLE BASE OR FLOWABLE FILL (8" MIN.)
BACK FILL COMPACTED TO 97% OF STD. PROCTOR DENSITY AT OPTIMUM MOISTURE CONTENT (NO ROCKS 3 INCHES OR OVER)
42" MINIMUM (SEE NOTE 3)
12" WIDE DETECTABLE UNDERGROUND WARNING TAPE
BEDDING AND COMPACTED SELECT BACK FILL (MFG SAND) PER STD. SPECIFICATIONS TO BE APPROVED BY GVSUD PERSONNEL PRIOR TO INSTALLATION/CONSTRUCTION
12"
TRACER WIRE CENTERED ON TOP OF PIPE
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
REVISED: JANUARY 2024
TRENCH DETAIL FOR GRAVEL SURFACED AREAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-2



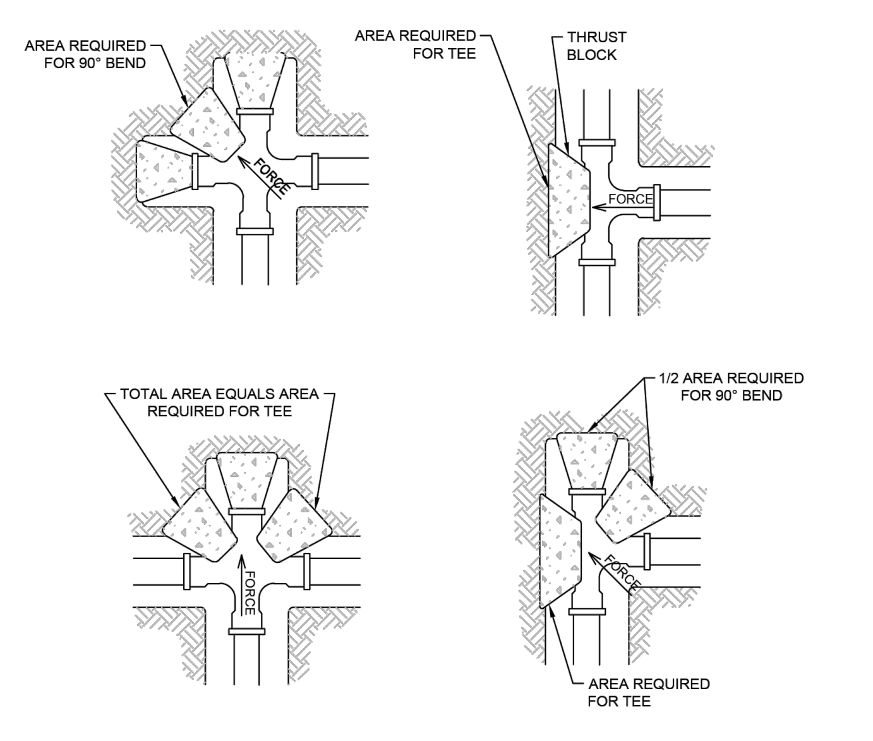
MULCH OR SOD SLIGHTLY MOUNDED
NATURAL GROUND
BACK FILL COMPACTED TO 97% OF STD. PROCTOR DENSITY AT OPTIMUM MOISTURE CONTENT (NO ROCKS 3 INCHES OR OVER)
12" WIDE DETECTABLE UNDERGROUND WARNING TAPE
42" MINIMUM (SEE NOTE 3)
BEDDING AND COMPACTED SELECT BACK FILL (MFG SAND) PER STD. SPECIFICATIONS TO BE APPROVED BY GVSUD PERSONNEL PRIOR TO INSTALLATION/CONSTRUCTION
12"
TRACER WIRE CENTERED ON TOP OF PIPE
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
REVISED: JANUARY 2024
TRENCH DETAIL FOR NON-PAVED AREAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-3



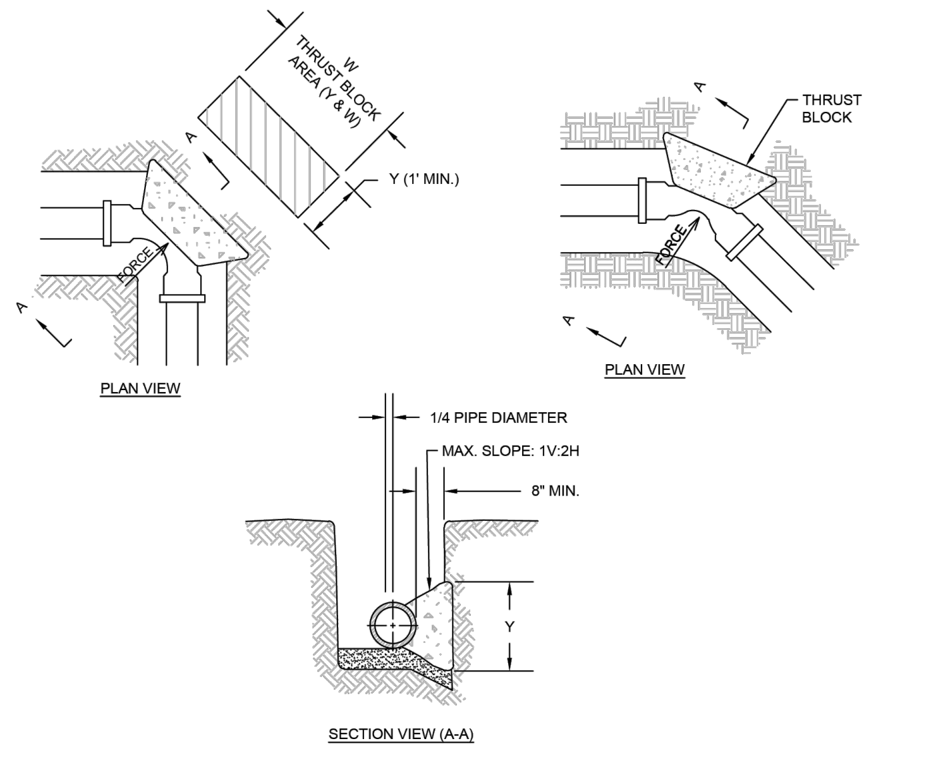
AREA REQUIRED FOR 90° BEND
AREA REQUIRED FOR TEE
THRUST BLOCK
FORCE
TOTAL AREA EQUALS AREA REQUIRED FOR TEE
1/2 AREA REQUIRED FOR 90° BEND
AREA REQUIRED FOR TEE

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



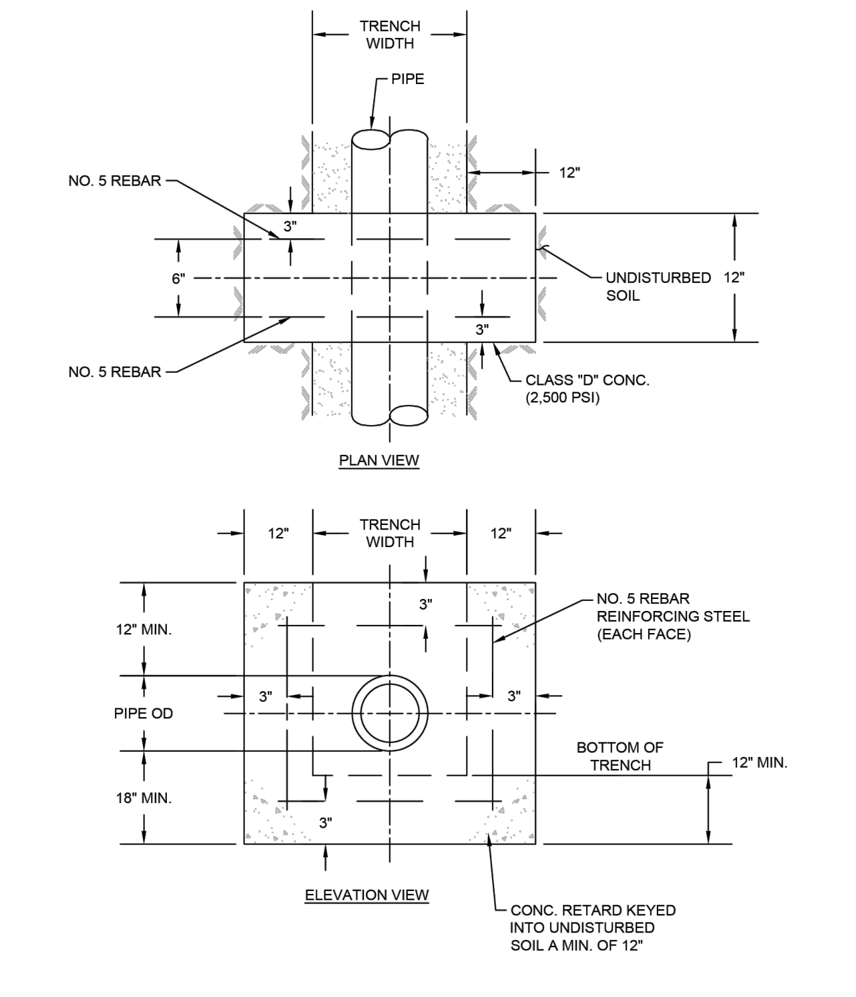
SECTION VIEW (A-A)

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.

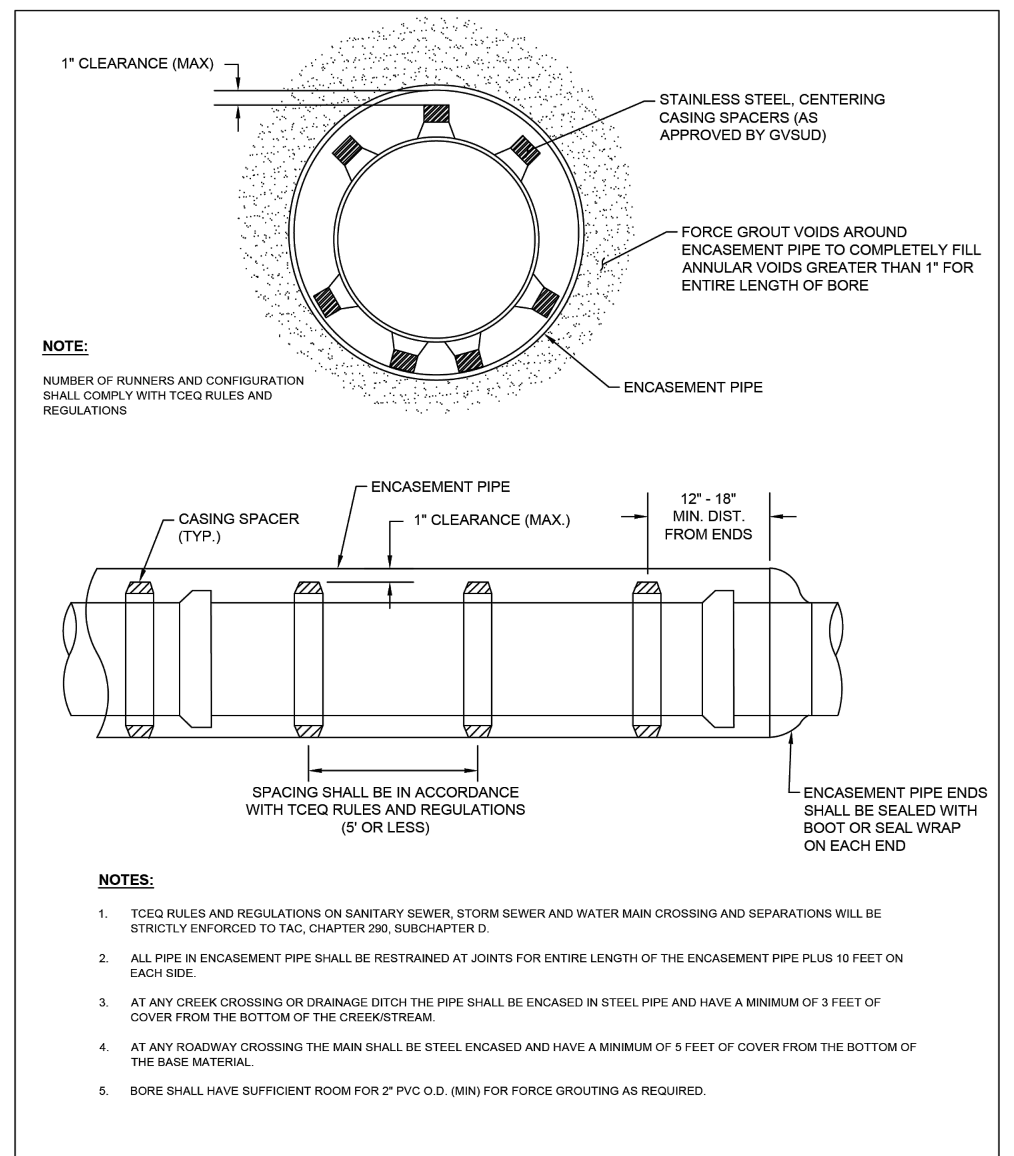
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
REVISED: JANUARY 2024
CONCRETE THRUST BLOCKING
(2 OF 2)
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-4



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

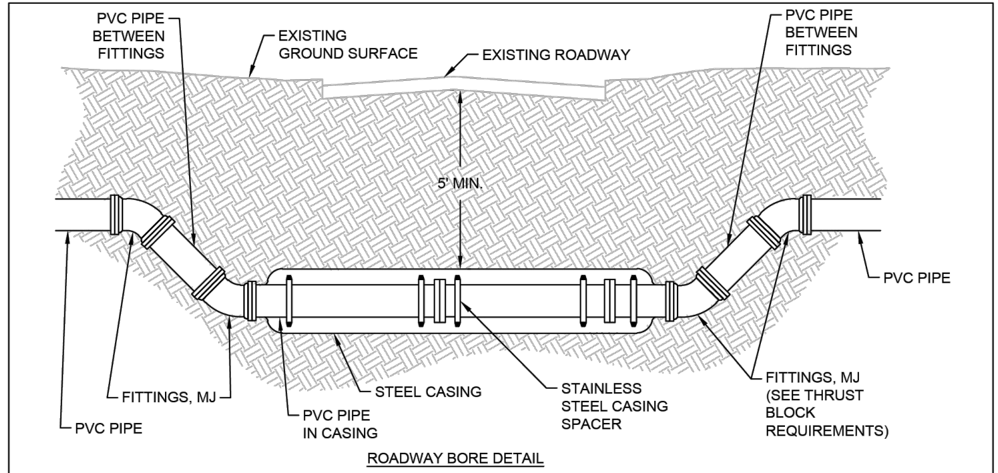


1" CLEARANCE (MAX)
STAINLESS STEEL, CENTERING CASING SPACERS (AS APPROVED BY GVSUD)
FORCE GROUT VOIDS AROUND ENCASEMENT PIPE TO COMPLETELY FILL ANNULAR VOIDS GREATER THAN 1" FOR ENTIRE LENGTH OF BORE
ENCASEMENT PIPE
CASING SPACER (TYP.)
ENCASEMENT PIPE
1" CLEARANCE (MAX.)
12" - 18" MIN. DIST. FROM ENDS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

NOTE:
NUMBER OF RUNNERS AND CONFIGURATION SHALL COMPLY WITH TCEQ RULES AND REGULATIONS.

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
REVISED: JANUARY 2024
ENCASEMENT DETAIL WITH ENCASEMENT SPACERS
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
PVC PIPE IN CASING
STEEL CASING
STAINLESS STEEL CASING SPACER
FITTINGS, MJ (SEE THRUST BLOCK REQUIREMENTS)
PVC PIPE

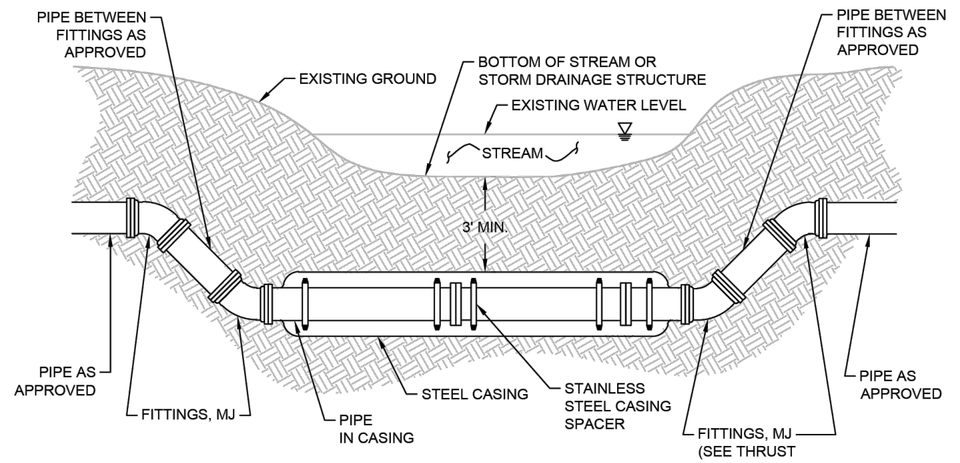
ROADWAY BORE DETAIL

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 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
REVISED: JANUARY 2024
INSTALLATION OF PIPE IN STEEL ENCASEMENT UNDER ROADS
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
PIPE BETWEEN FITTINGS AS APPROVED
3' MIN.
PIPE AS APPROVED
FITTINGS, MJ
STEEL CASING
STAINLESS STEEL CASING SPACER
PIPE IN CASING
FITTINGS, MJ (SEE THRUST BLOCK REQUIREMENTS)
PIPE AS APPROVED

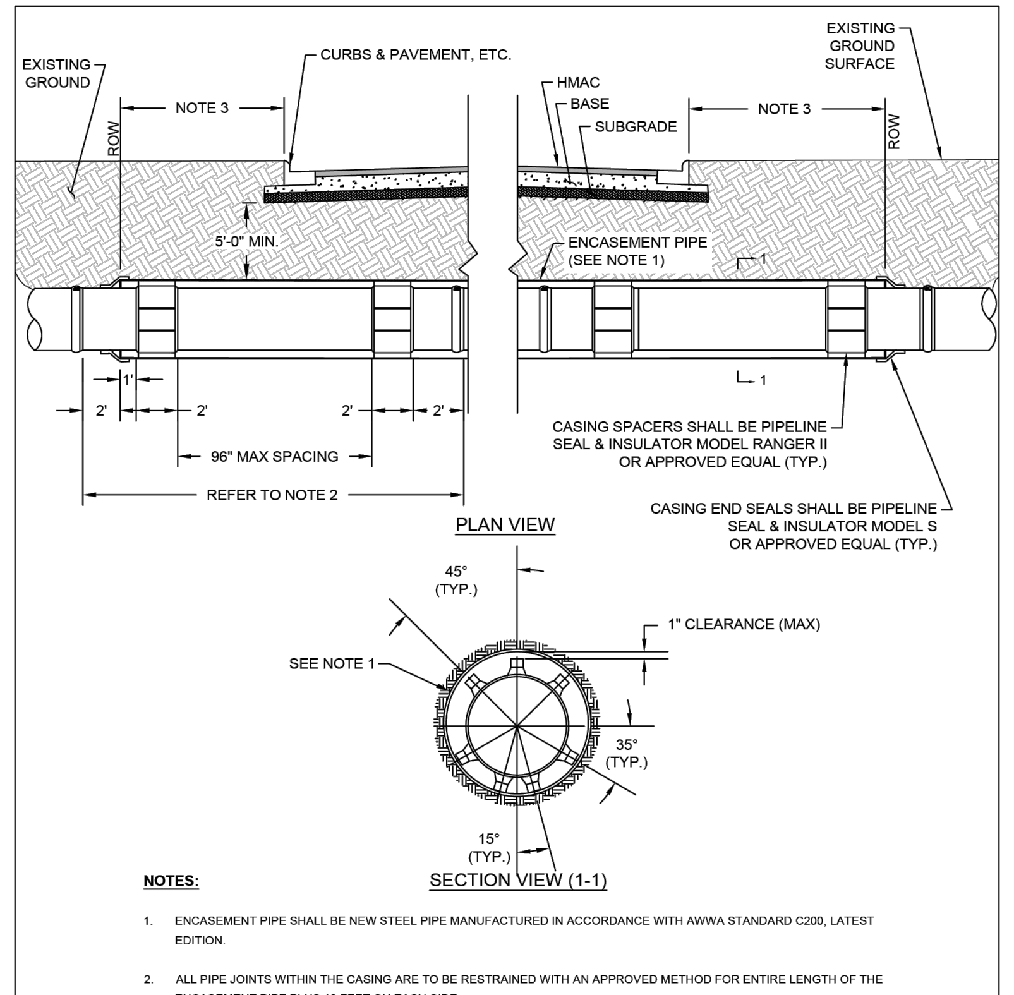
STREAM / STORM SEWER DETAIL

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. ALL PIPE FITTINGS, VALVES, AND APPURTENANCES SHALL MATCH OR EXCEED PIPE CLASS RATING AS SHOWN ON THE PLANS.
6. SEE ENCASEMENT DETAIL WITH ENCASEMENT SPACER DETAIL W-6.
7. ANNULAR SPACE TO BE FILLED WITH SAND-CEMENT SLURRY.
8. 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
REVISED: JANUARY 2024
INSTALLATION OF PIPE IN STEEL ENCASEMENT UNDER STREAMS / STORM SEWERS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-8



NOTES:

1. ENCASEMENT PIPE SHALL BE NEW STEEL PIPE MANUFACTURED IN ACCORDANCE WITH AWWA STANDARD C200, LATEST EDITION.
2. ALL PIPE JOINTS WITHIN THE CASING ARE TO BE RESTRAINED WITH AN APPROVED METHOD FOR ENTIRE LENGTH OF THE ENCASEMENT PIPE PLUS 10 FEET ON EACH SIDE.
3. FOR ROADWAY CROSSINGS, THE ENDS OF THE CASING PIPE SHALL EXTEND TO THE RIGHT OF WAY LINES.
4. ALL PIPE FITTINGS, VALVES, AND APPURTENANCES SHALL MATCH OR EXCEED PIPE CLASS RATING AS SHOWN ON THE PLANS.
5. REFER TO SPECIFICATION 02300 FOR CASING PIPE THICKNESS.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
REVISED: JANUARY 2024
TYPICAL JACKING, BORING, AND TUNNELING DETAIL
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-9

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

DOVE SONG SUBDIVISION
UNIT 3

WATER DISTRIBUTION PLAN DETAILS

DATE
08/21/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG/KM

CHECKED BY
AM/AL

REVISIONS

DATE

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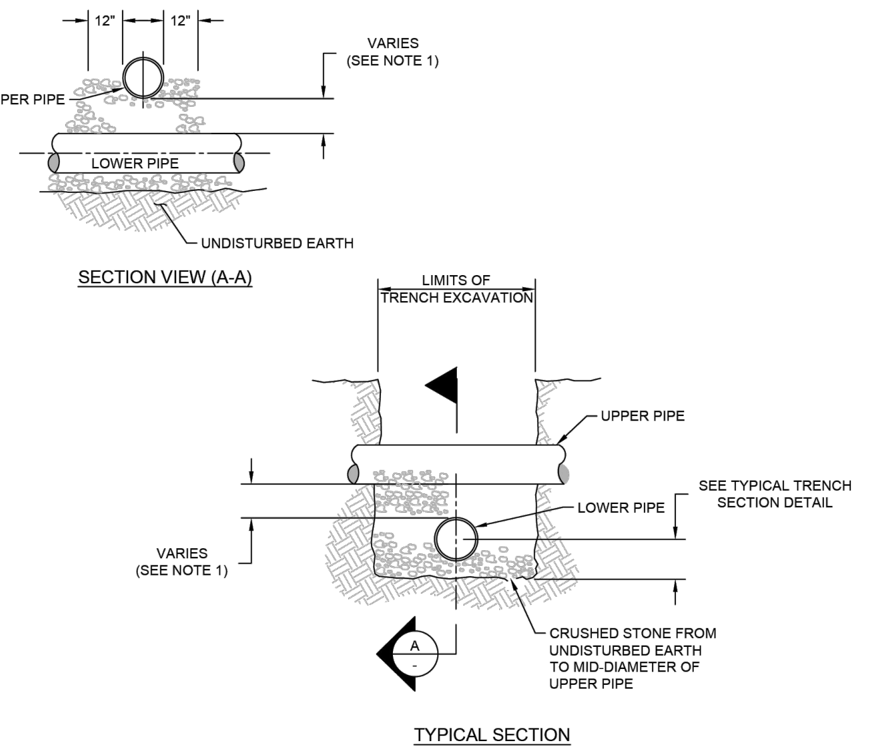
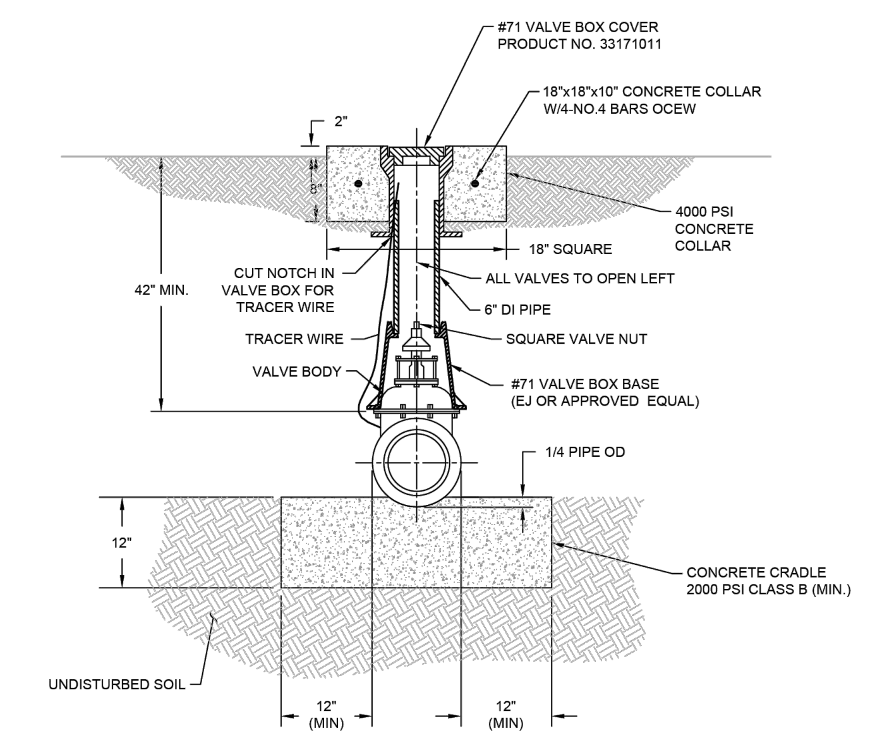


NOTES:

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.

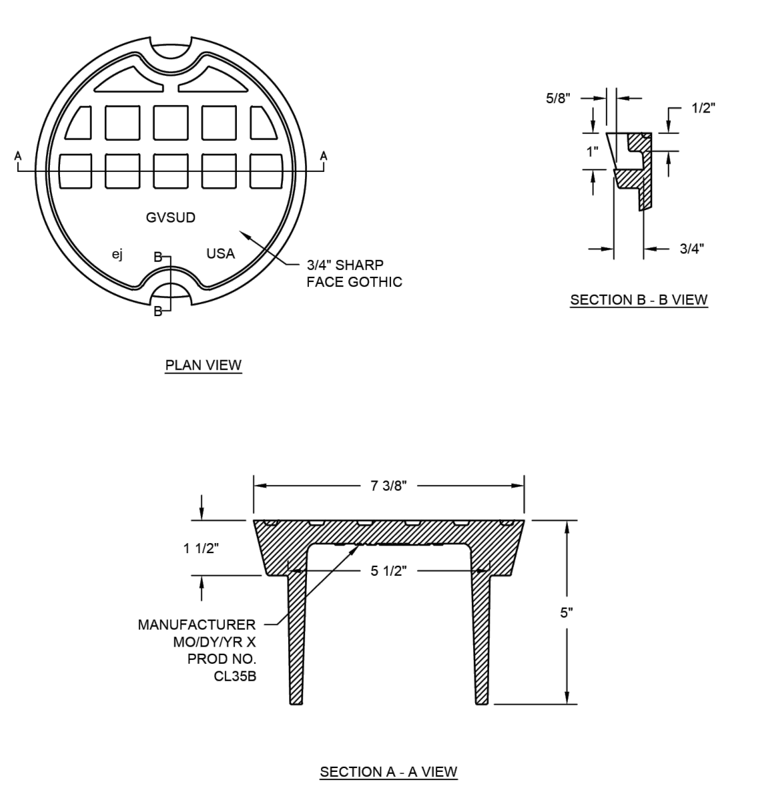
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
UTILITIES CROSSING DETAIL
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-10



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.

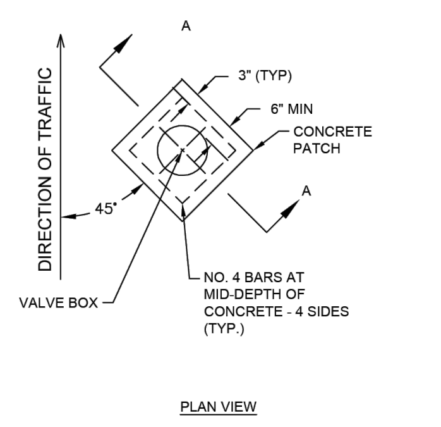
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
NON-RISING STEM VERTICAL GATE VALVE WITH BOX ASSEMBLY
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-11



NOTES:

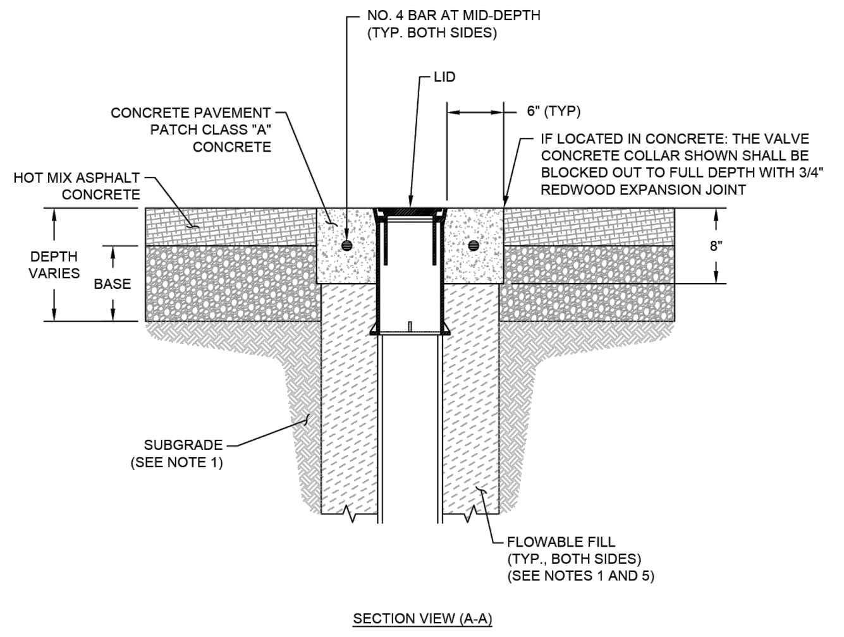
1. VALVE BOX COVER SHALL BE EJ GROUP, INC. $71 VALVE BOX COVER PRODUCT NUMBER 33171011, OR APPROVED EQUIVALENT WITH GVSUD LOGO.
2. TYPICAL FILLET IS 3/16 INCH RADIUS.
3. LETTERING SHALL BE 3/4 INCH SHARP FACE GOTHIC AND LOCATED AS SHOWN.
4. LID REQUIRES TWO (2) PICK SLOTS.
5. THE MANUFACTURER'S IDENTIFICATION, 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

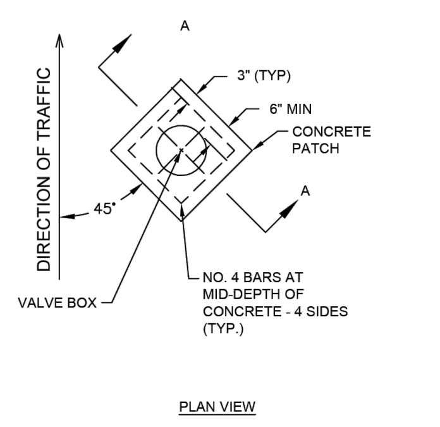


NOTES:

1. SUBGRADE SHALL BE COMPACTED PER SPECIFICATIONS, SUBGRADE PREPARATION.
2. VALVE BOXES 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.

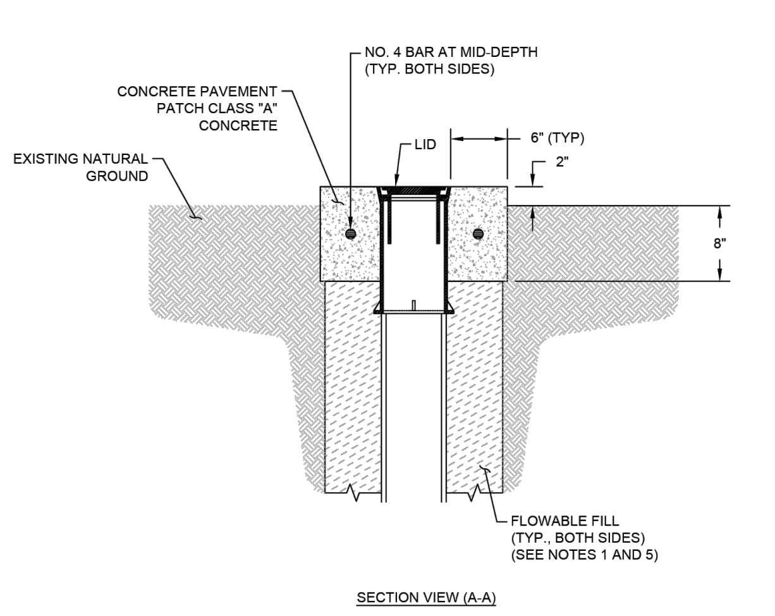


GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
VALVE BOX ADJUSTMENT IN PAVEMENT
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-13



NOTES:

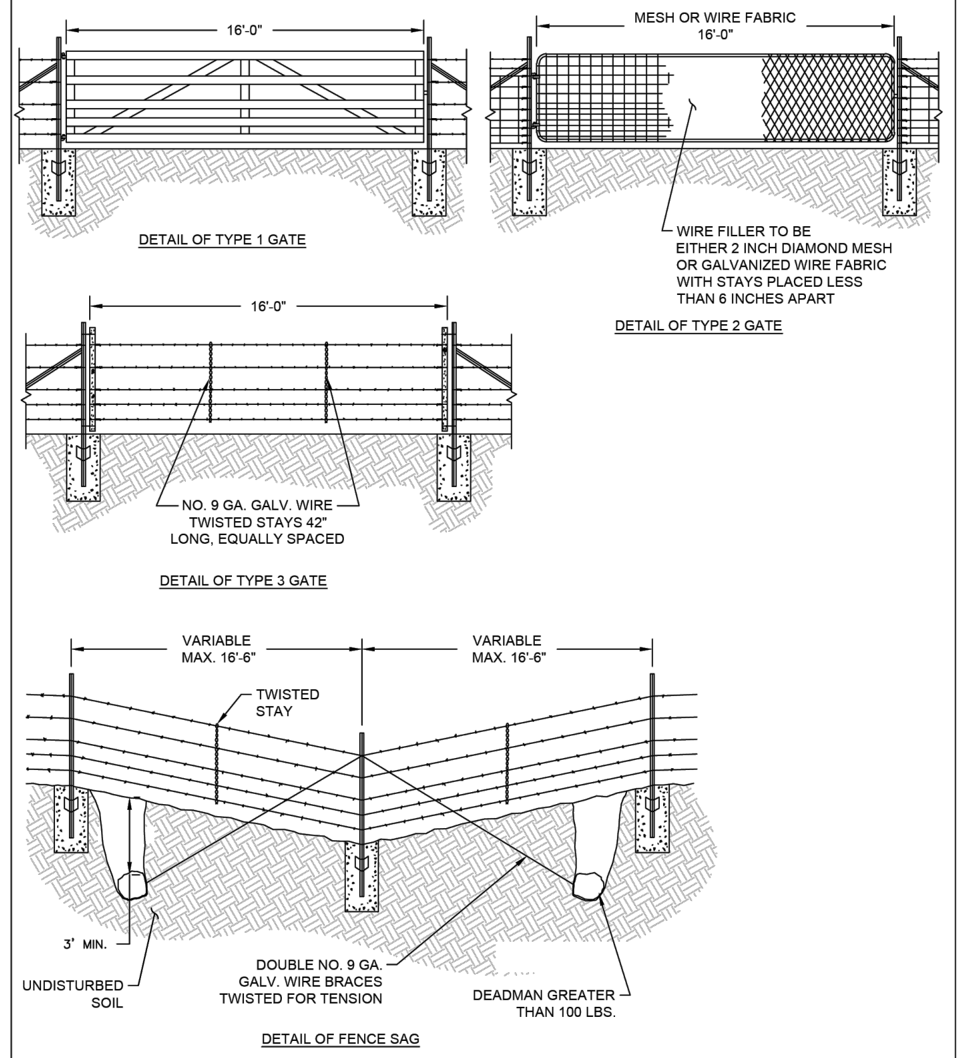
1. SUBGRADE SHALL BE COMPACTED PER SPECIFICATIONS, SUBGRADE PREPARATION.
2. VALVE CASTINGS SHALL BE ADJUSTED TO GRADE AFTER FINAL LIFT OF OVERLAY IS IN PLACE.
3. CLEAN VALVE BOX OF ALL DEBRIS DOWN TO BASE OF THE VALVE.
4. CONTRACTOR TO USE VALVE BOX ADJUSTING RISER TO ADJUST VALVE BOX TO GRADE.
5. WHERE 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.



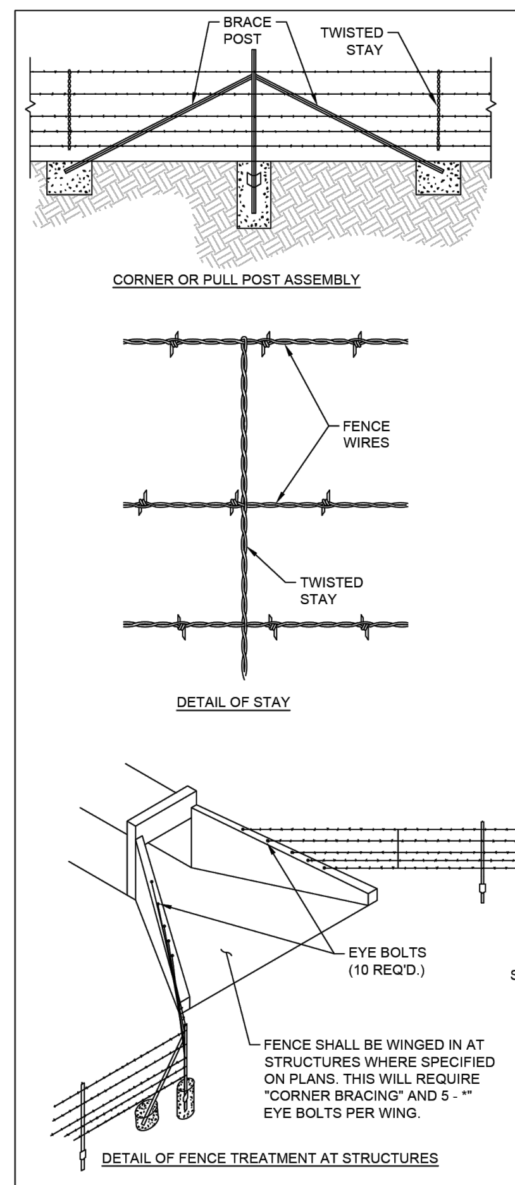
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
VALVE BOX ADJUSTMENT OUTSIDE OF PAVEMENT
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-14

NOTE:

METAL GATE SHALL CONSIST OF 5 PANELS NOT LESS THAN 4'-4" HIGH AND SHALL BE MANUFACTURED WITH 1 1/2" ALUMINUM OR GALVANIZED METAL PIPE. GATE AND HARDWARE SHALL MEET THE APPROVAL OF THE ENGINEER.

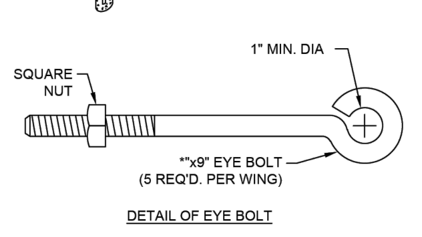


GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
BARBED WIRE FENCE AND WOVEN WIRE FENCE WITH STEEL POSTS
(1 OF 2)
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-15

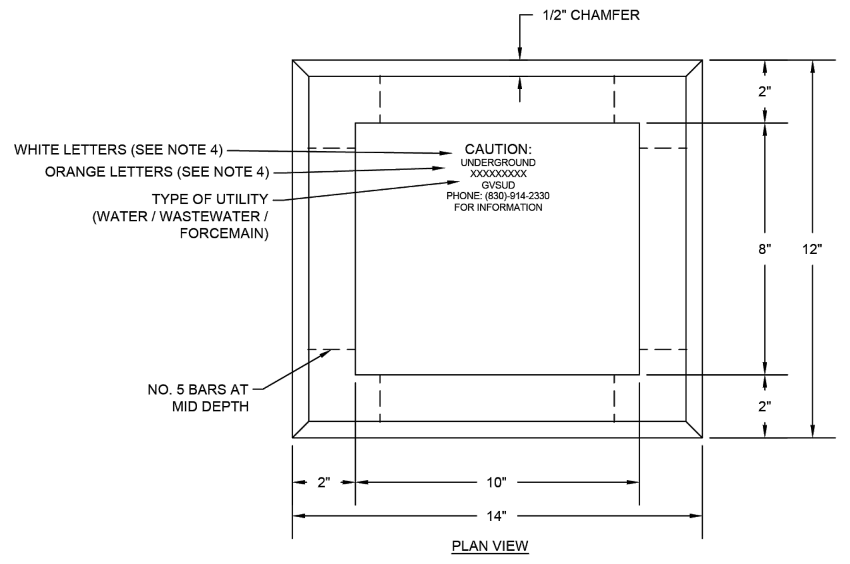

BRACE
POST
TWISTED
STAY
CORNER OR PULL POST ASSEMBLY
FENCE
WIRES
TWISTED
STAY
DETAIL OF STAY
EYE BOLTS
(10 REQ'D.)
FENCE SHALL BE WINGED IN AT
STRUCTURES WHERE SPECIFIED
ON PLANS. THIS WILL REQUIRE
"CORNER BRACING" AND 5 - *"
EYE BOLTS PER WING.
DETAIL OF FENCE TREATMENT AT STRUCTURES

NOTES:

1. ANY HIGH POINT WHICH INTERFERES WITH THE PLACING OF WIRE MESH SHALL BE EXCAVATED TO PROVIDE A 2 INCH CLEARANCE.
2. LATCHES FOR TYPE 1 AND TYPE 2 GATES SHALL BE OF THE SPRING, FORK, OR CHAIN TYPE.
3. CONCRETE SHALL BE OF THE DESIGN AND CONSISTENCY APPROVED BY THE ENGINEER AND SHALL CONTAIN NOT LESS THAN 4 SACKS OF CEMENT PER CUBIC YARD.
4. ANCHOR PLATES SHALL BE OF A DESIGN AND THICKNESS SUFFICIENT TO PREVENT TURNING OF THE POST IN FIRM SOIL. METAL END, CORNER, AND PULL POST SHALL BE A MINIMUM OF 2 INCH INSIDE DIAMETER PIPE (3.65 LBS./L.F.), WITH A 1 INCH INSIDE DIAMETER PIPE BRACE (2.27 LBS./L.F.), 2"x2 "x," ANGLE
(4.1 LBS./LIN.FT.) 2"x2"x," ANGLE BRACE (3.19 LBS./LIN.FT.) OR OTHER SECTION APPROVED BY THE ENGINEER. FASTENERS FOR SECURING BARBED WIRE OR WIRE MESH TO METAL POSTS SHALL BE A MINIMUM OF 11 GAUGE GALVANIZED STEEL WIRE. TUBULAR POSTS SHALL BE FITTED WITH WATER TIGHT MALLEABLE IRON CAPS.
5. METAL LINE POSTS SHALL BE NOT LESS THAN 6'-6" IN LENGTH AND SHALL WEIGH NOT LESS THAN 1.33 LBS./L.F.



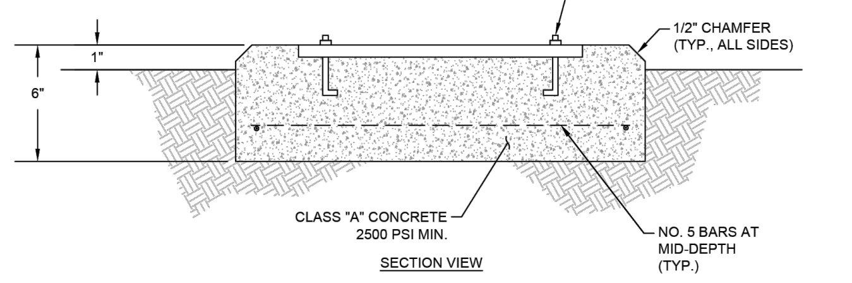
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
BARBED WIRE FENCE AND WOVEN WIRE FENCE WITH STEEL POSTS
(2 OF 2)
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-15



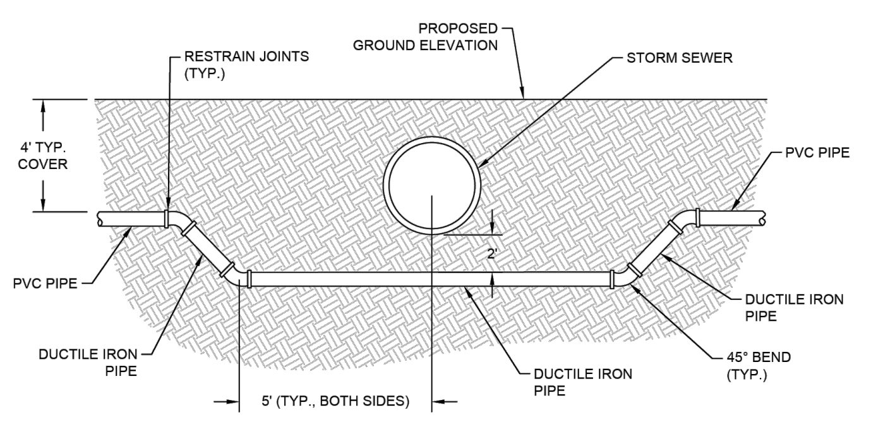
NOTES:

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.



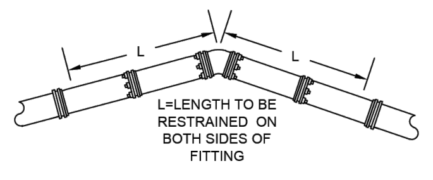
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
UTILITY MARKER DETAIL
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-16



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



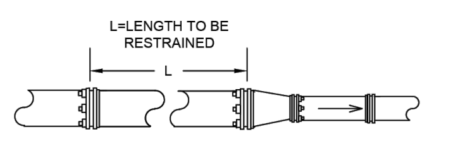
RESTRAINED LENGTH FOR BENDS

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



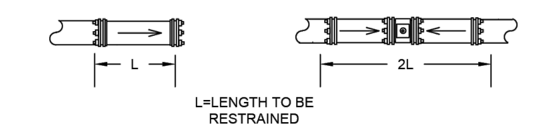
RESTRAINED LENGTH FOR REDUCERS

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



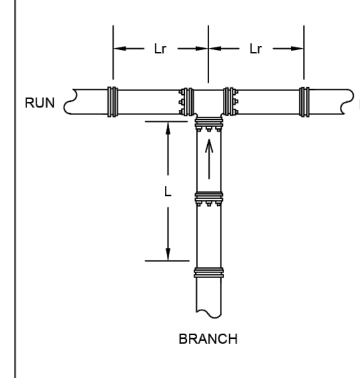
RESTRAINED LENGTH FOR DEAD ENDS/INLINE VALVES

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

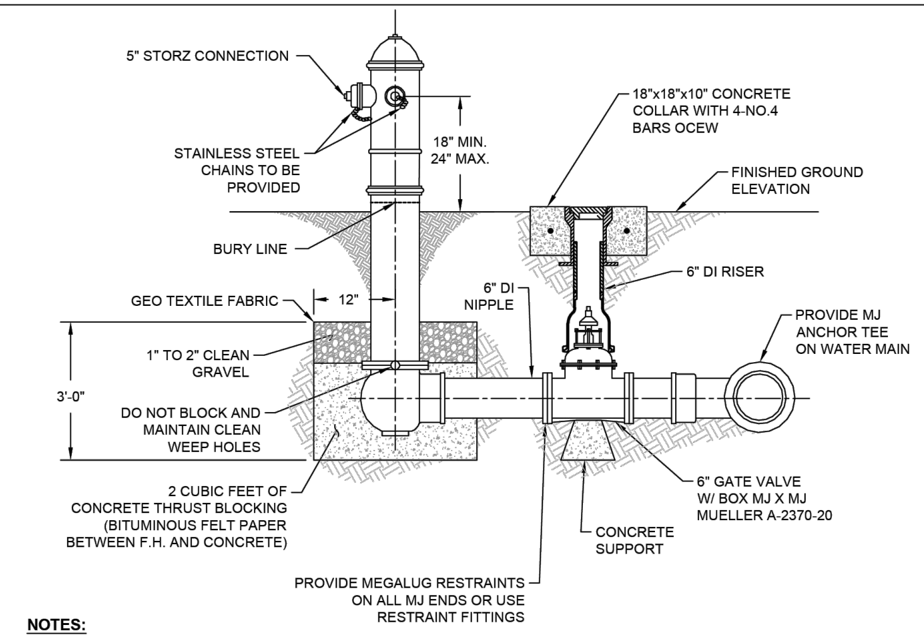
RESTRAINED LENGTH FOR TEES

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.

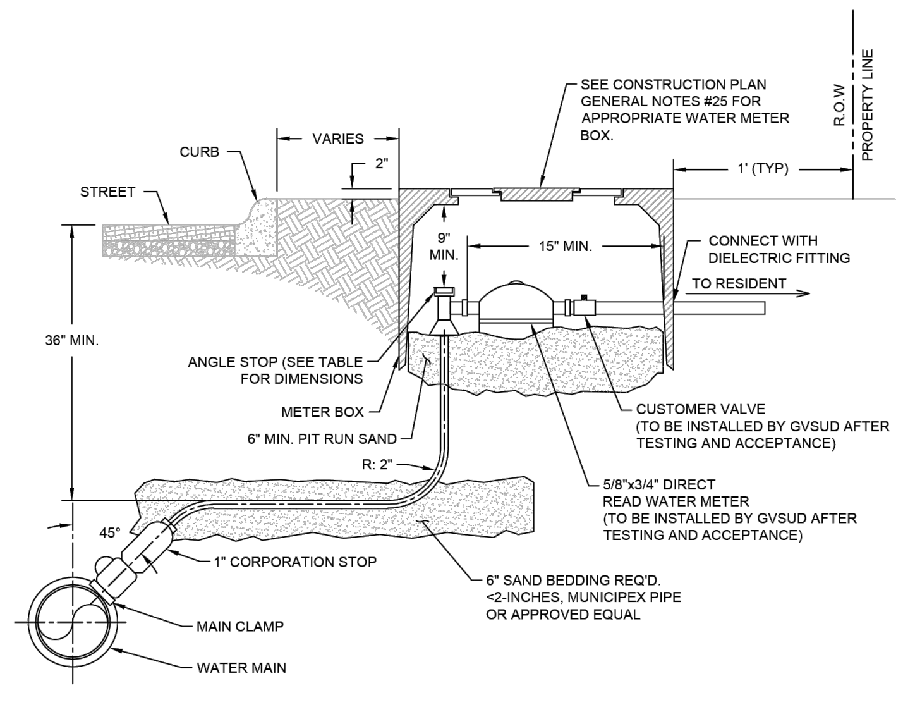
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
TEE RESTRAINED LENGTH DESIGN
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-21



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

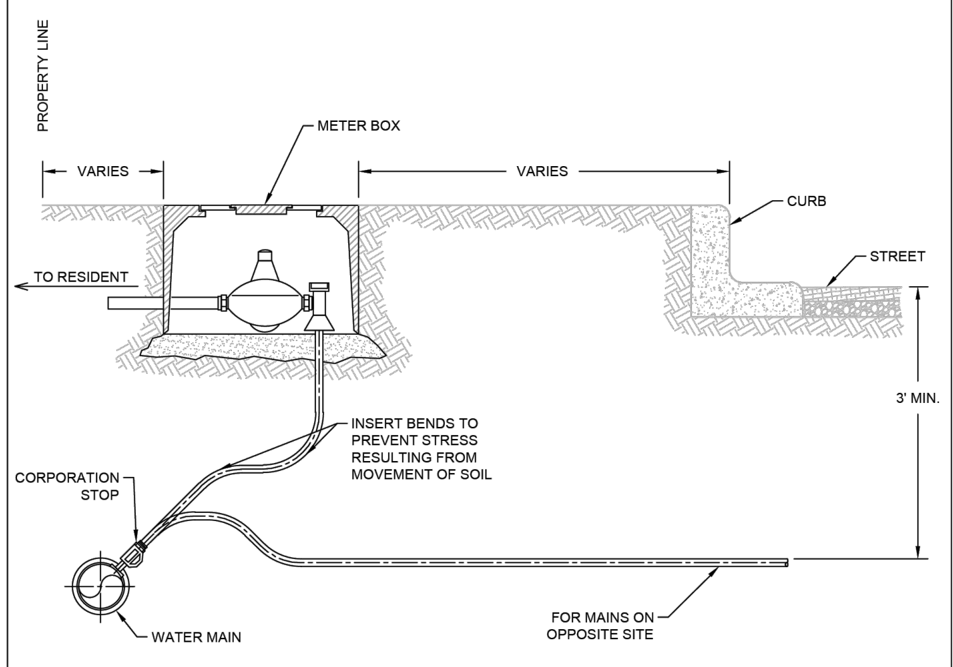


MAIN SIZE	METER SIZE	MAIN SADDLE	CORPORATION	ANGLE STOP
<12"	5/8" OR 3/4"	S-91804 IP	H-15028 IP 1"	B-24258N: 1"x 3/4"
<12"	1"	S-91804 IP	H-15028 IP 1"	B-24258N: 1"X1"

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.

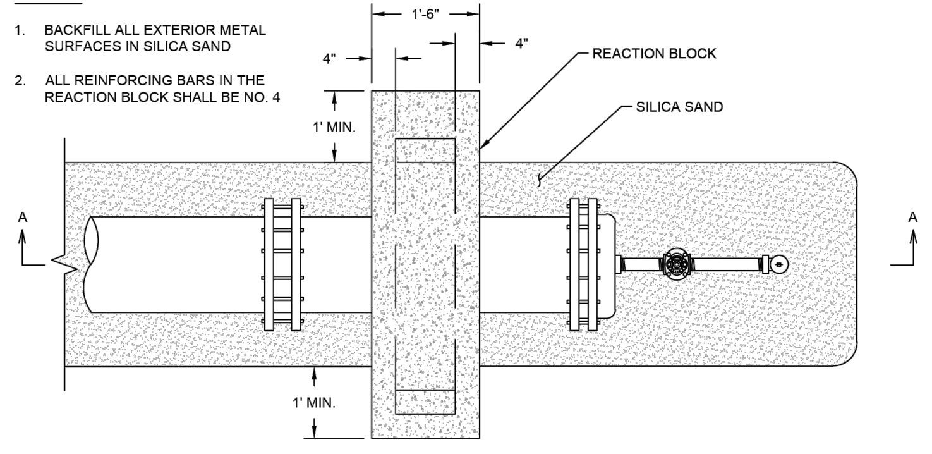
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
STANDARD SERVICE CONNECTION
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-23

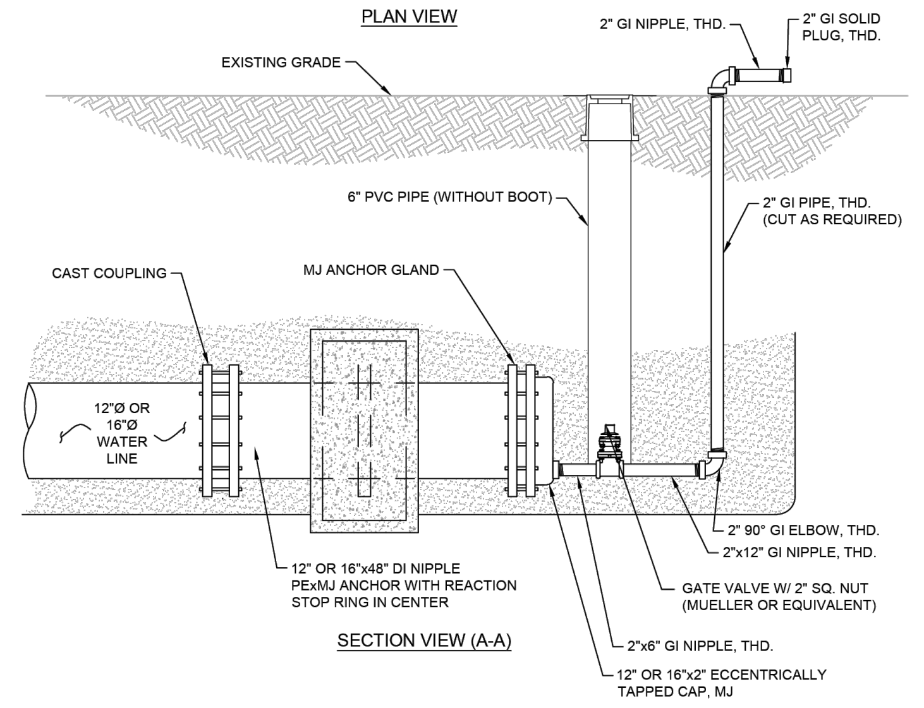


GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
TYPICAL SERVICE LOCATION DETAIL
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-24

NOTES:

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

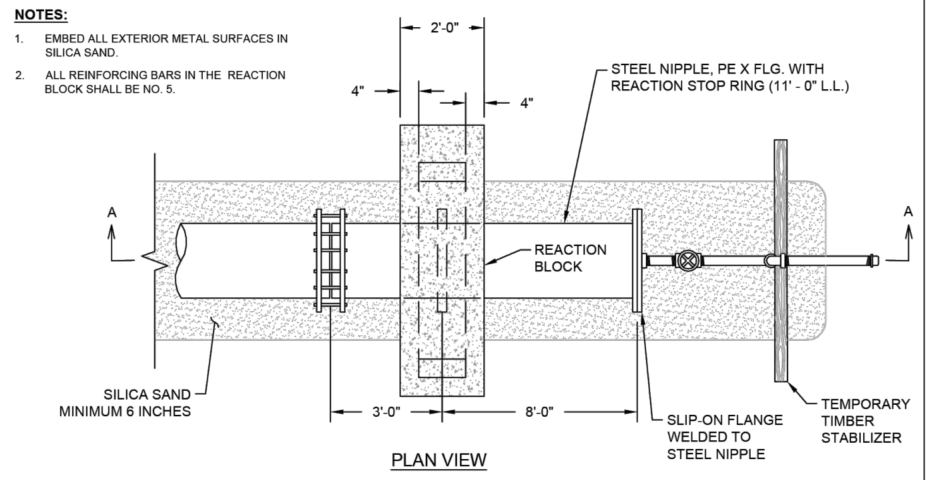


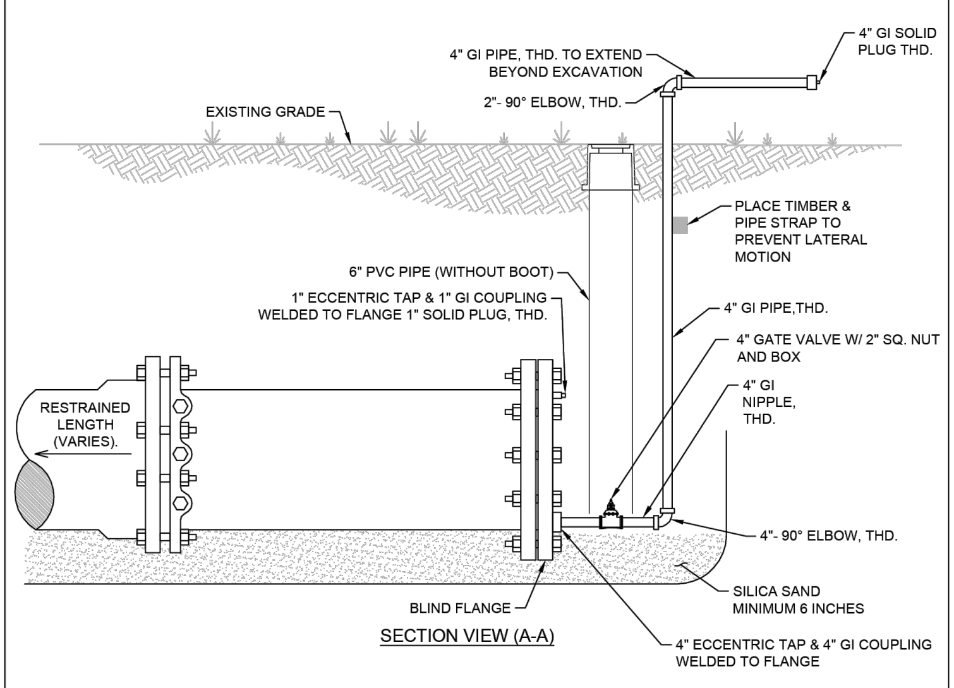


GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
2" TEMPORARY BLOW-OFF ASSEMBLY ON 12" TO 16" MAINS
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-25

NOTES:

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





GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
4" TEMPORARY BLOW-OFF ASSEMBLY ON 20" OR LARGER MAINS
(JOINT RESTRAINT)
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-26

CUDEENGINEERS.COM

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

DOVE SONG SUBDIVISION
UNIT 3

WATER DISTRIBUTION PLAN DETAILS

DATE
08/21/2024
PROJECT NO.
03608.004
DRAWN BY
JG/SG/KM
CHECKED BY
AM/AL

#	DATE	REVISIONS
1.		
2.		
3.		
4.		
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8.		
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CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C5.D2

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P:\03608\004\2-DWG\4-Plans\C5.D2 WATER DISTRIBUTION PLAN DETAILS.dwg 2024/08/21 1:27pm jguerrero

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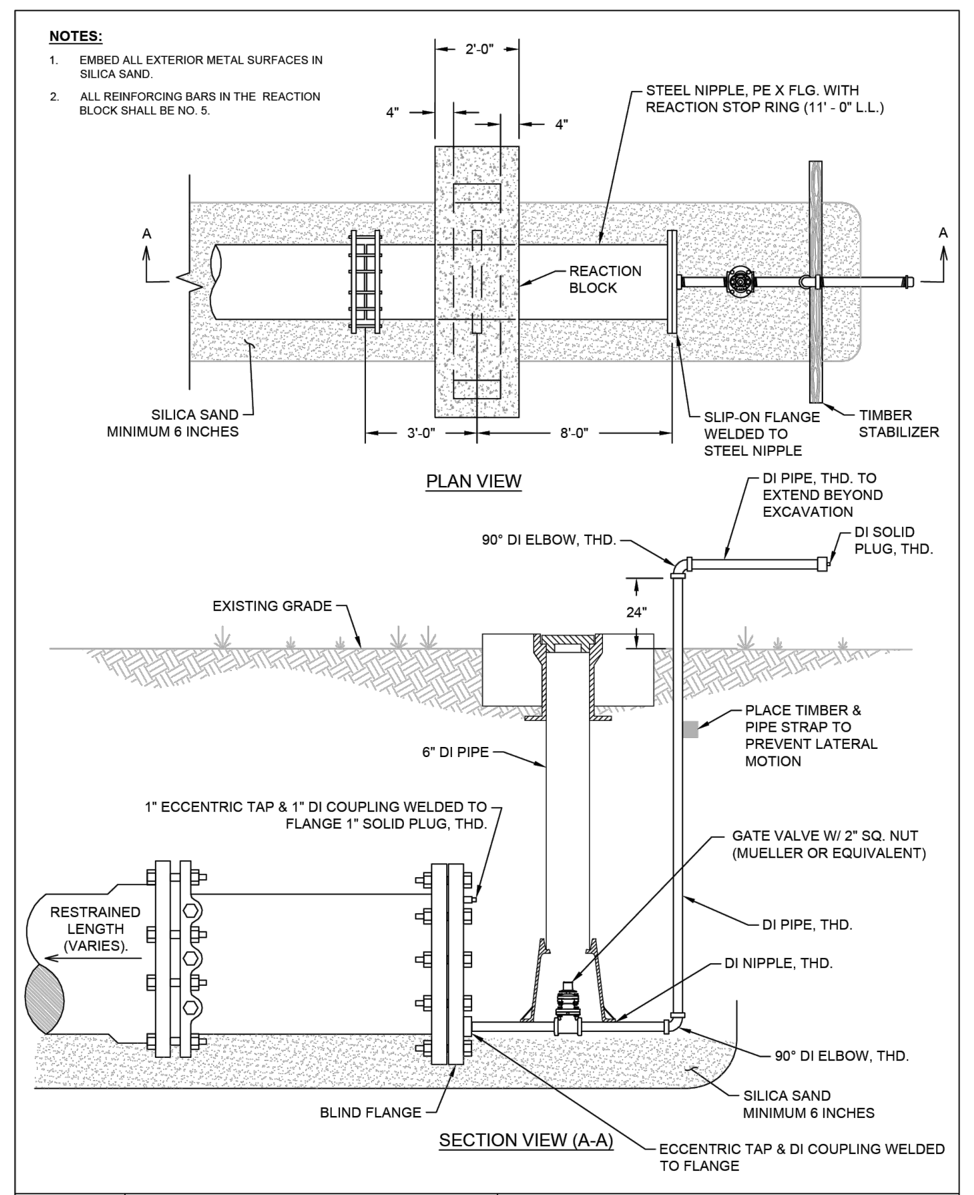
NOTES:

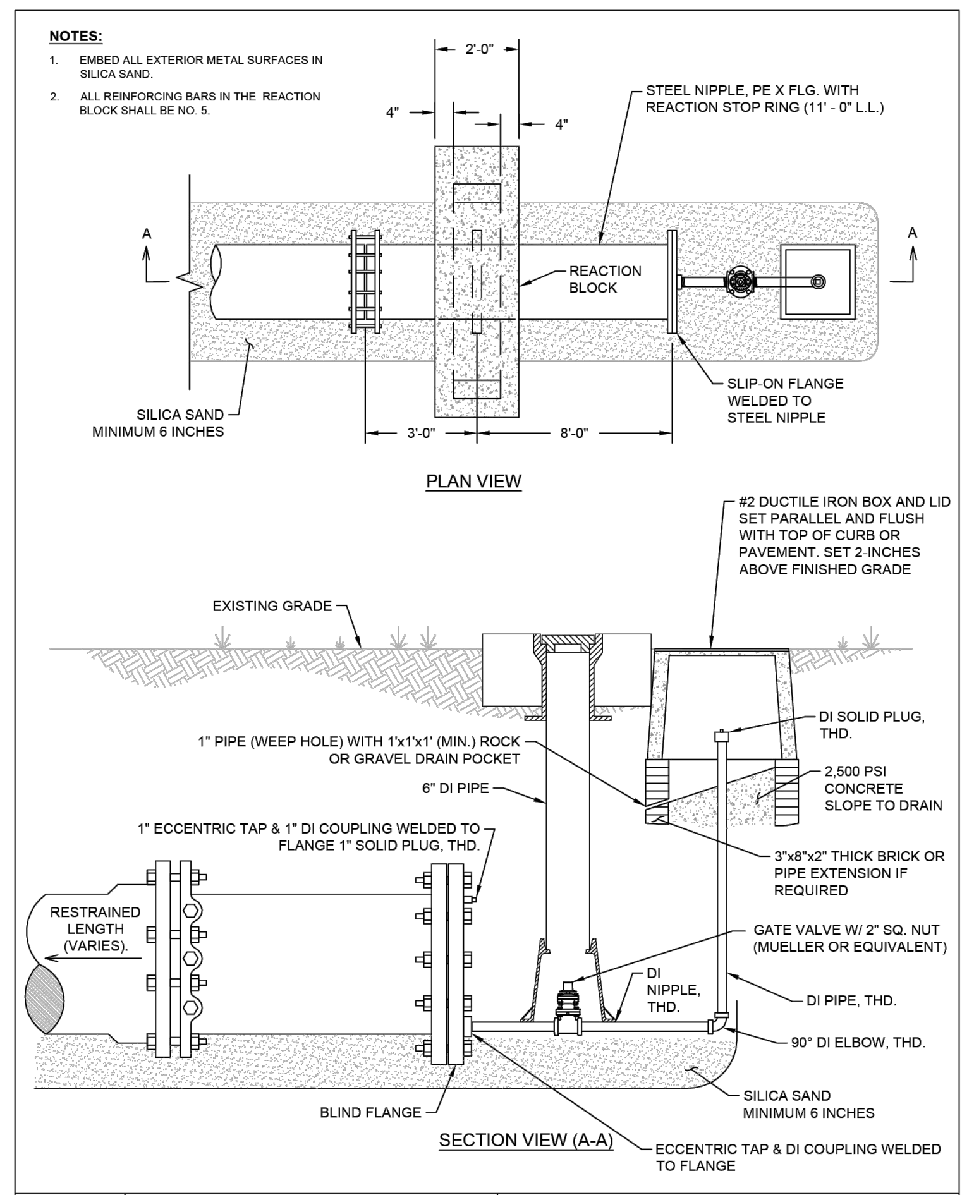
1. EMBED ALL EXTERIOR METAL SURFACES IN SILICA SAND.
2. ALL REINFORCING BARS IN THE REACTION BLOCK SHALL BE NO. 5.


2'-0"
4"
STEEL NIPPLE, PE X FLG. WITH REACTION STOP RING (11' - 0" L.L.)
REACTION BLOCK
SILICA SAND MINIMUM 6 INCHES
SLIP-ON FLANGE WELDED TO STEEL NIPPLE
TIMBER STABILIZER
PLAN VIEW
DI PIPE, THD. TO EXTEND BEYOND EXCAVATION
90° DI ELBOW, THD.
DI SOLID PLUG, THD.
EXISTING GRADE
24"
6" DI PIPE
PLACE TIMBER & PIPE STRAP TO PREVENT LATERAL MOTION
1" ECCENTRIC TAP & 1" DI COUPLING WELDED TO FLANGE 1" SOLID PLUG, THD.
GATE VALVE W/ 2" SQ. NUT (MUELLER OR EQUIVALENT)
RESTRAINED LENGTH (VARIES)
DI PIPE, THD.
DI NIPPLE, THD.
SILICA SAND MINIMUM 6 INCHES
90° DI ELBOW, THD.
BLIND FLANGE
ECCENTRIC TAP & DI COUPLING WELDED TO FLANGE
SECTION VIEW (A-A)

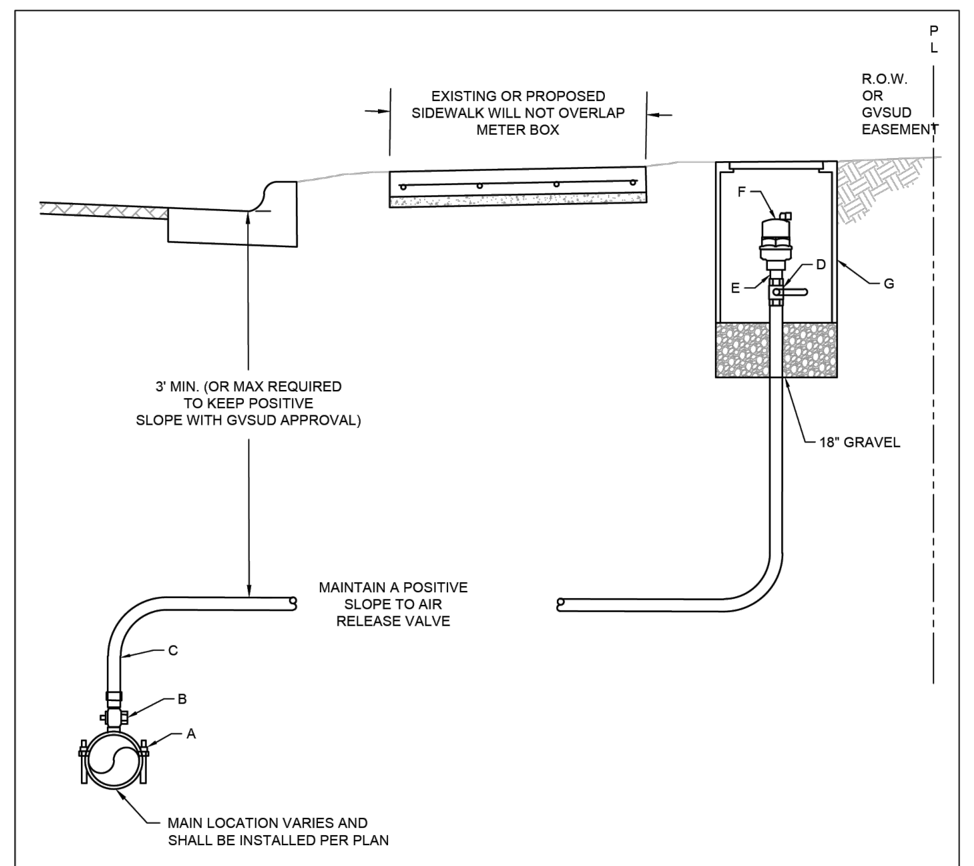
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
2" & 4" PERMANENT RURAL BLOW-OFF ASSEMBLY
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-27

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"
STEEL NIPPLE, PE X FLG. WITH REACTION STOP RING (11' - 0" L.L.)
REACTION BLOCK
SILICA SAND MINIMUM 6 INCHES
SLIP-ON FLANGE WELDED TO STEEL NIPPLE
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
6" DI PIPE
2,500 PSI CONCRETE SLOPE TO DRAIN
1" ECCENTRIC TAP & 1" DI COUPLING WELDED TO FLANGE 1" SOLID PLUG, THD.
2"x8"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)

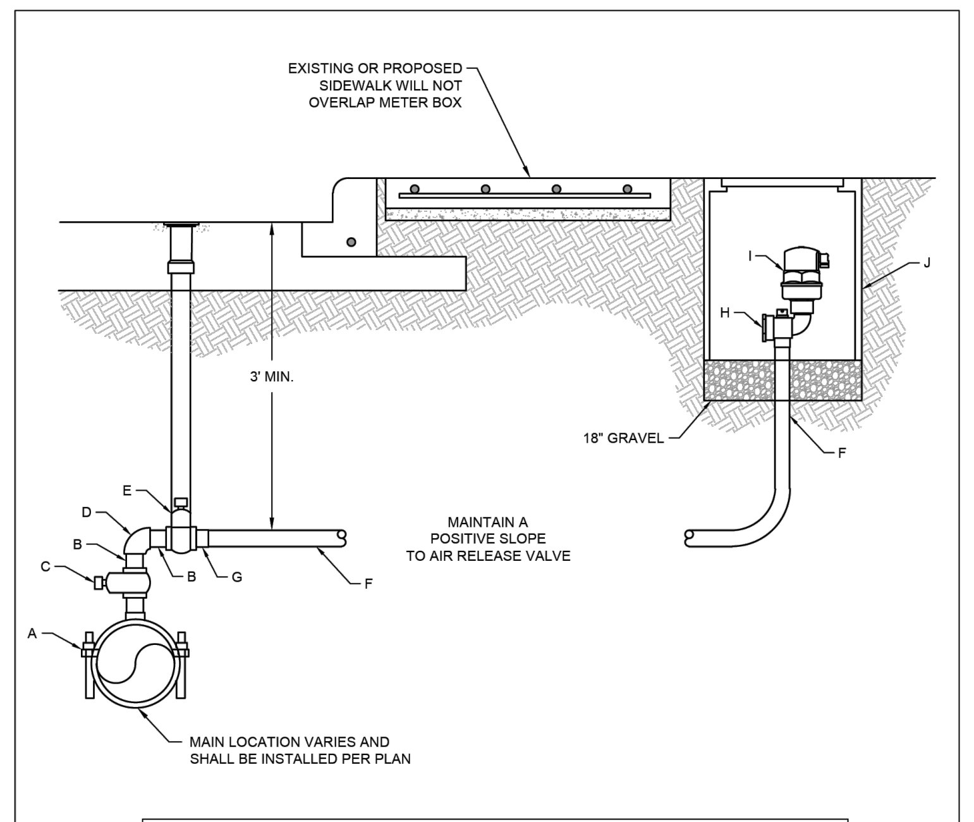
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
2" & 4" PERMANENT URBAN BLOW-OFF ASSEMBLY
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-28


EXISTING OR PROPOSED SIDEWALK WILL NOT OVERLAP METER BOX.
R.O.W. OR GVSUD EASEMENT
3' MIN. (OR MAX REQUIRED TO KEEP POSITIVE SLOPE WITH GVSUD APPROVAL)
18" GRAVEL
MAINTAIN A POSITIVE SLOPE TO AIR RELEASE VALVE
MAIN LOCATION VARIES AND SHALL BE INSTALLED PER PLAN
A
B
C
D
E
F
G

MATERIAL LIST**	
LABEL	ITEM
A*	1" TAPPING SADDLE/SLEEVE
B	1" CORPORATION STOP (COMPRESSION-TYPE FITTING)
C	1" MUNICIPEX WATER SERVICE LINE
D	1" BRASS BALL VALVE WITH LEVER HANDLE
E	1" BRASS NIPPLE, THREADED
F	1" AIR RELEASE VALVE
G	DFW38CNP-J26-AFM1MS VALVE BOX

* SERVICE SADDLES SHALL BE WRAPPED COMPLETELY WITH 8 MIL. POLYETHYLENE FILM.
** MATERIAL LIST TO BE IN ACCORDANCE WITH GVSUD STANDARD PRODUCT LIST.

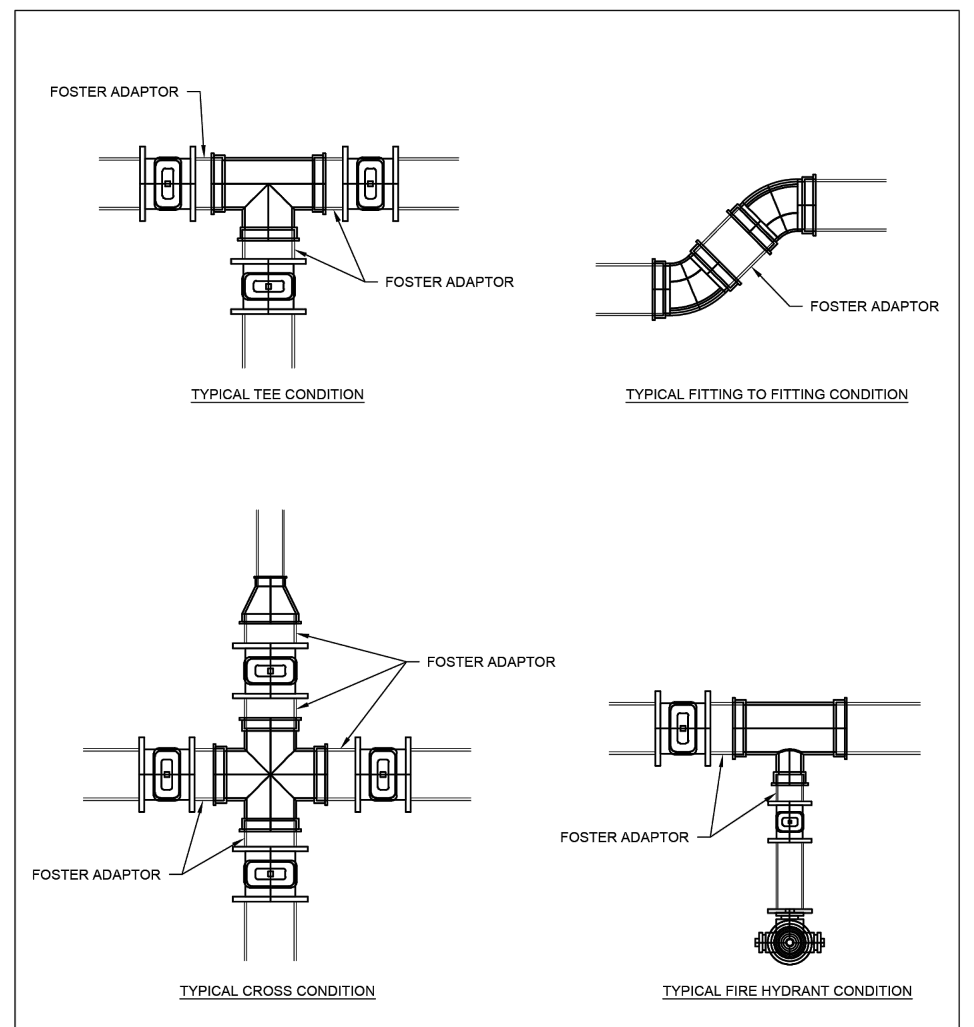
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
1" AIR RELEASE VALVE
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-29


EXISTING OR PROPOSED SIDEWALK WILL NOT OVERLAP METER BOX
3' MIN.
18" GRAVEL
MAINTAIN A POSITIVE SLOPE TO AIR RELEASE VALVE
MAIN LOCATION VARIES AND SHALL BE INSTALLED PER PLAN
A
B
C
D
E
F
G
H
I
J

MATERIAL LIST***	
LABEL	ITEM
A*	2" TAPPING SADDLE/SLEEVE
B	2" BRASS NIPPLE - THREADED
C**	2" BRASS CORPORATION STOP, MIP X FIP
D	2" BRASS 90° BEND, FIP
E	2" VALVE, RESILIENT WEDGE GATE, IRON BODY. FIP X FIP, WITH VALVE BOX
F	2" MUNICIPEX WATER SERVICE LINE
G	2" BRASS ADAPTER, MIP X CTS COMPRESSION
H	2" BRASS STOP, ANGLED OR STRAIGHT, CTS COMPRESSION X FIP
I	2" AIR RELEASE VALVE
J	DFW38CNP-J26-AF1MS VALVE BOX

* SERVICE SADDLES SHALL BE WRAPPED COMPLETELY WITH 8 MIL. POLYETHYLENE FILM.
** ALL FITTING CONNECTED TO POLYETHYLENE PIPE WILL REQUIRE A STAINLESS STEEL INSERT.
*** MATERIAL LIST TO BE IN ACCORDANCE WITH GVSUD STANDARD PRODUCT LIST.

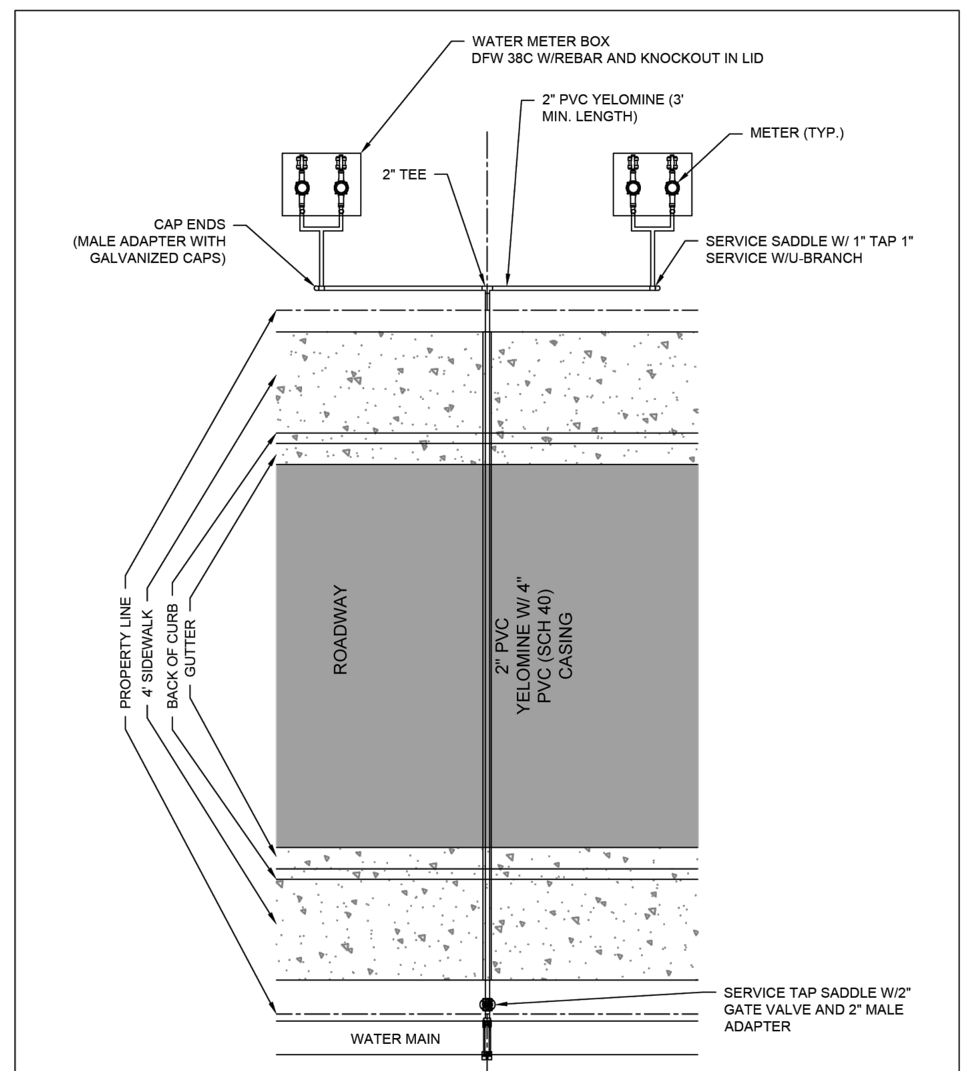
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
2" AIR RELEASE VALVE
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-30


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.

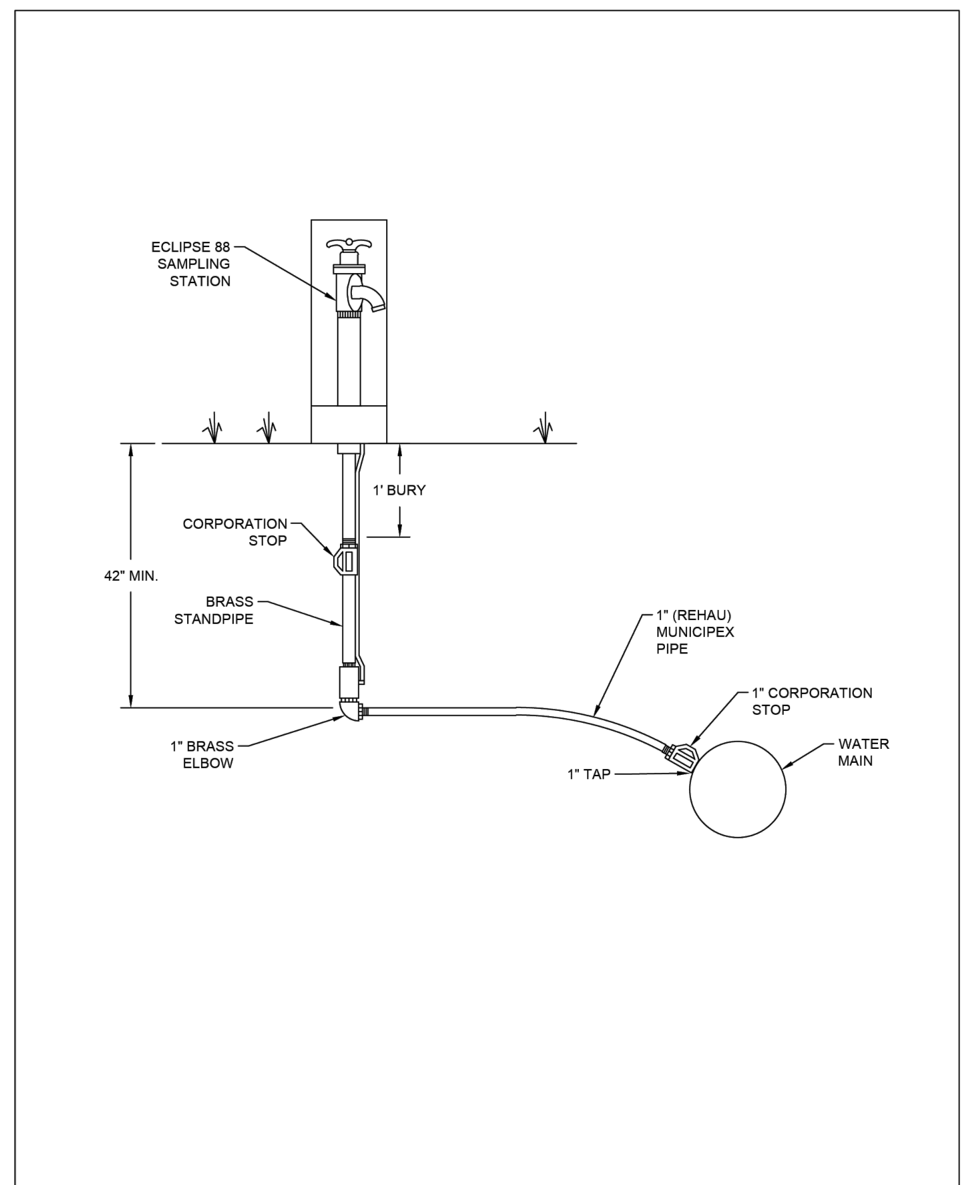
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
MECHANICAL JOINT ADAPTOR DETAIL
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-31


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

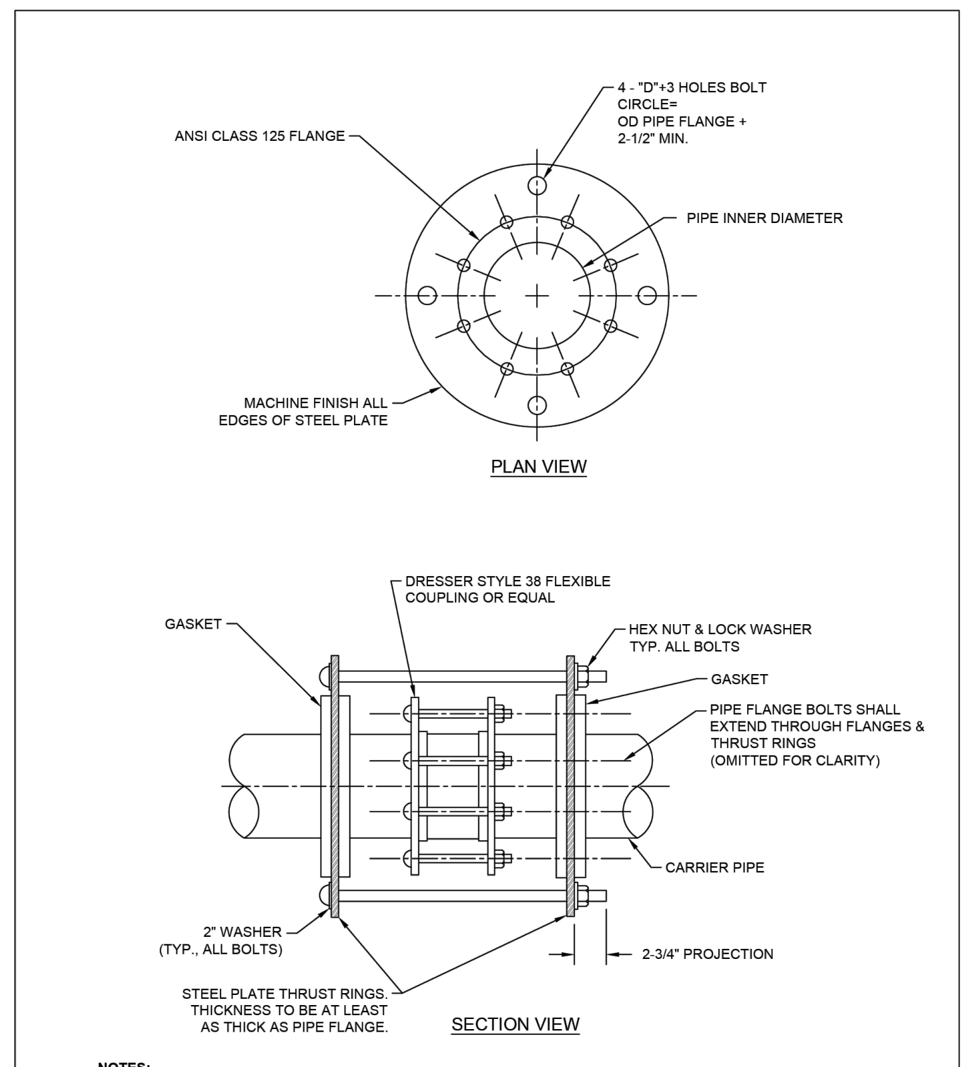
NOTE:

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



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


ANSI CLASS 125 FLANGE
4 - "D"+3 HOLES BOLT CIRCLE= OD PIPE FLANGE + 2-1/2" MIN.
PIPE INNER DIAMETER
MACHINE FINISH ALL EDGES OF STEEL PLATE
PLAN VIEW
DRESSER STYLE 38 FLEXIBLE COUPLING OR EQUAL
GASKET
HEX NUT & LOCK WASHER TYP. ALL BOLTS
GASKET
PIPE FLANGE BOLTS SHALL EXTEND THROUGH FLANGES & THRUST RINGS (OMITTED FOR CLARITY)
CARRIER PIPE
2" WASHER (TYP., ALL BOLTS)
2-3/4" PROJECTION
STEEL PLATE THRUST RINGS. THICKNESS TO BE AT LEAST AS THICK AS PIPE FLANGE.
SECTION VIEW

NOTES:

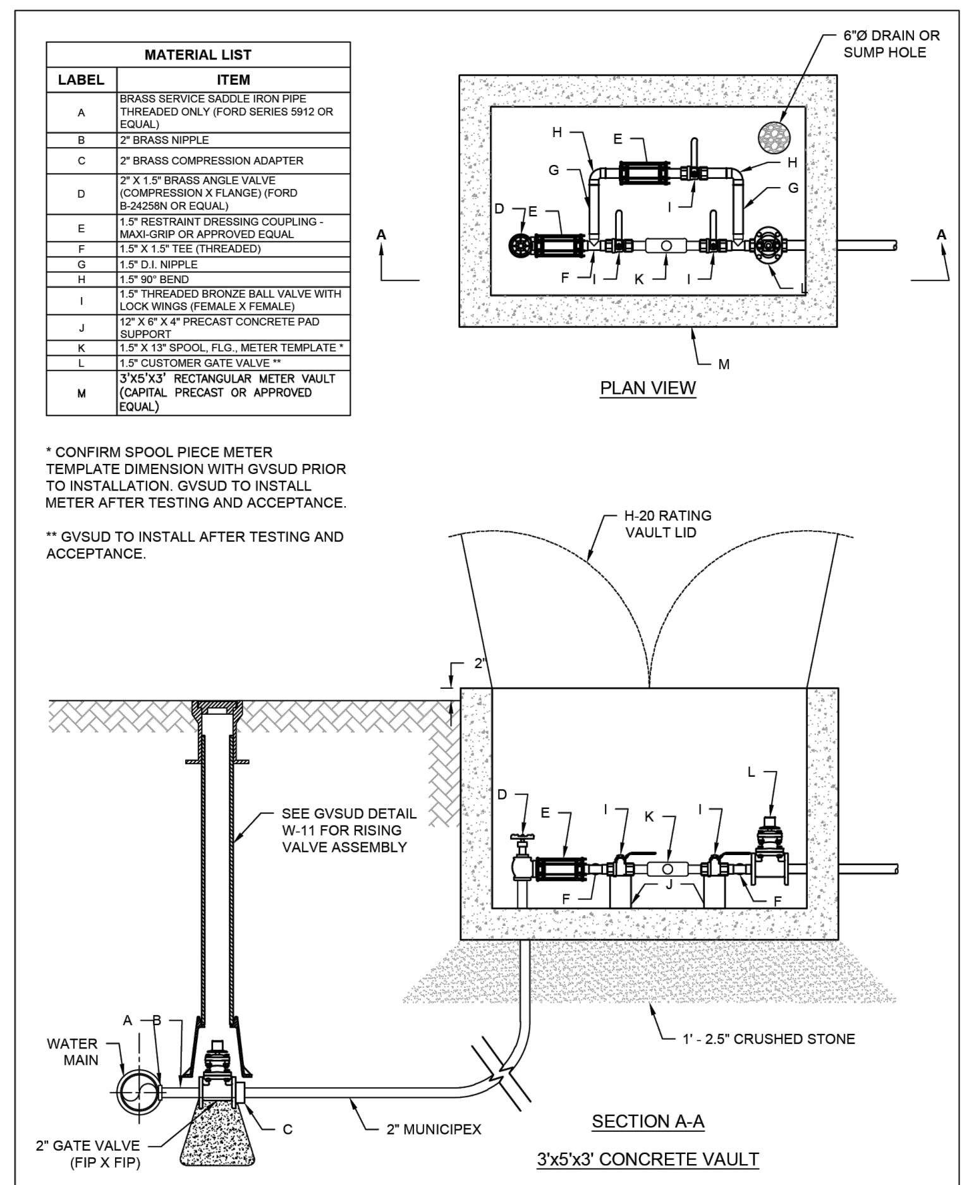
1. A MINIMUM OF 2 TIE RODS SHALL BE USED FOR CARRIER PIPES 6 INCHES OR LESS. PIPES GREATER THAN 6 INCHES SHALL HAVE A MINIMUM OF 4 TIE RODS.
2. TIE RODS SHALL HAVE MINIMUM DIAMETER OF 3/4 INCH FOR PIPES 6 INCHES OR LESS, AND 1 INCH FOR PIPES GREATER THAN 6 INCHES.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
FLEXIBLE COUPLING AND THRUST RESTRAINT HARNESS DETAIL
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-34

MATERIAL LIST	
LABEL	ITEM
A	BRASS SERVICE SADDLE IRON PIPE THREADED ONLY (FORD SERIES 5912 OR EQUAL)
B	2" BRASS NIPPLE
C	2" BRASS COMPRESSION ADAPTER
D	2" X 1.5" BRASS ANGLE VALVE (COMPRESSION X FLANGE) (FORD B-24258N OR EQUAL)
E	1.5" RESTRAINT DRESSING COUPLING - MAXI-GRIP OR APPROVED EQUAL
F	1.5" X 1.5" TEE (THREADED)
G	1.5" D.I. NIPPLE
H	1.5" 90° BEND
I	1.5" THREADED BRONZE BALL VALVE WITH LOCK WINGS (FEMALE X FEMALE)
J	12" X 6" X 4" PRECAST CONCRETE PAD SUPPORT
K	1.5" X 13" SPOOL, FLG., METER TEMPLATE *
L	1.5" CUSTOMER GATE VALVE **
M	3'X5'X3' RECTANGULAR METER VAULT (CAPITAL PRECAST OR APPROVED EQUAL)

* CONFIRM SPOOL PIECE METER TEMPLATE DIMENSION WITH GVSUD PRIOR TO INSTALLATION. GVSUD TO INSTALL METER AFTER TESTING AND ACCEPTANCE.

** GVSUD TO INSTALL AFTER TESTING AND ACCEPTANCE.

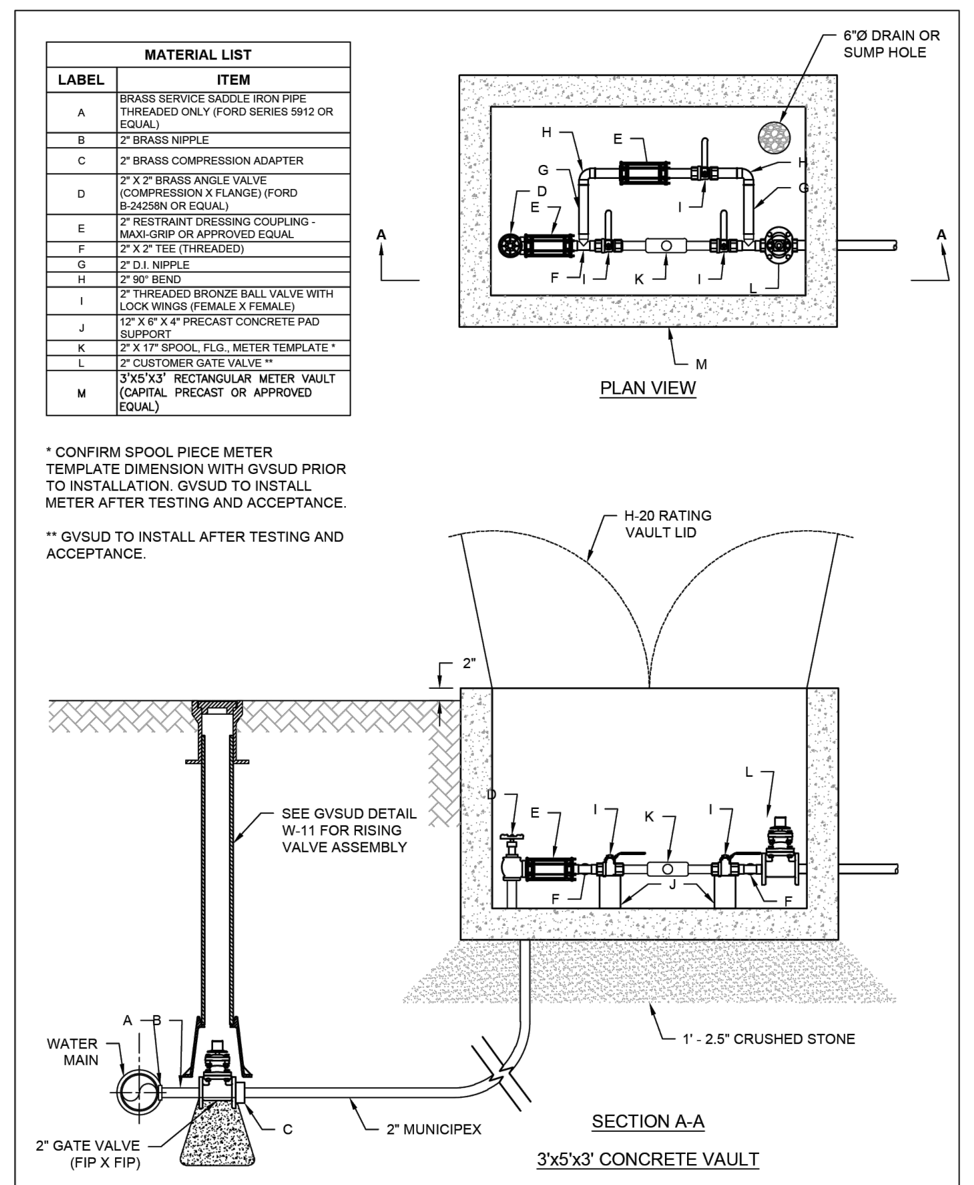


GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
1.5-INCH METER INSTALLATION
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-35

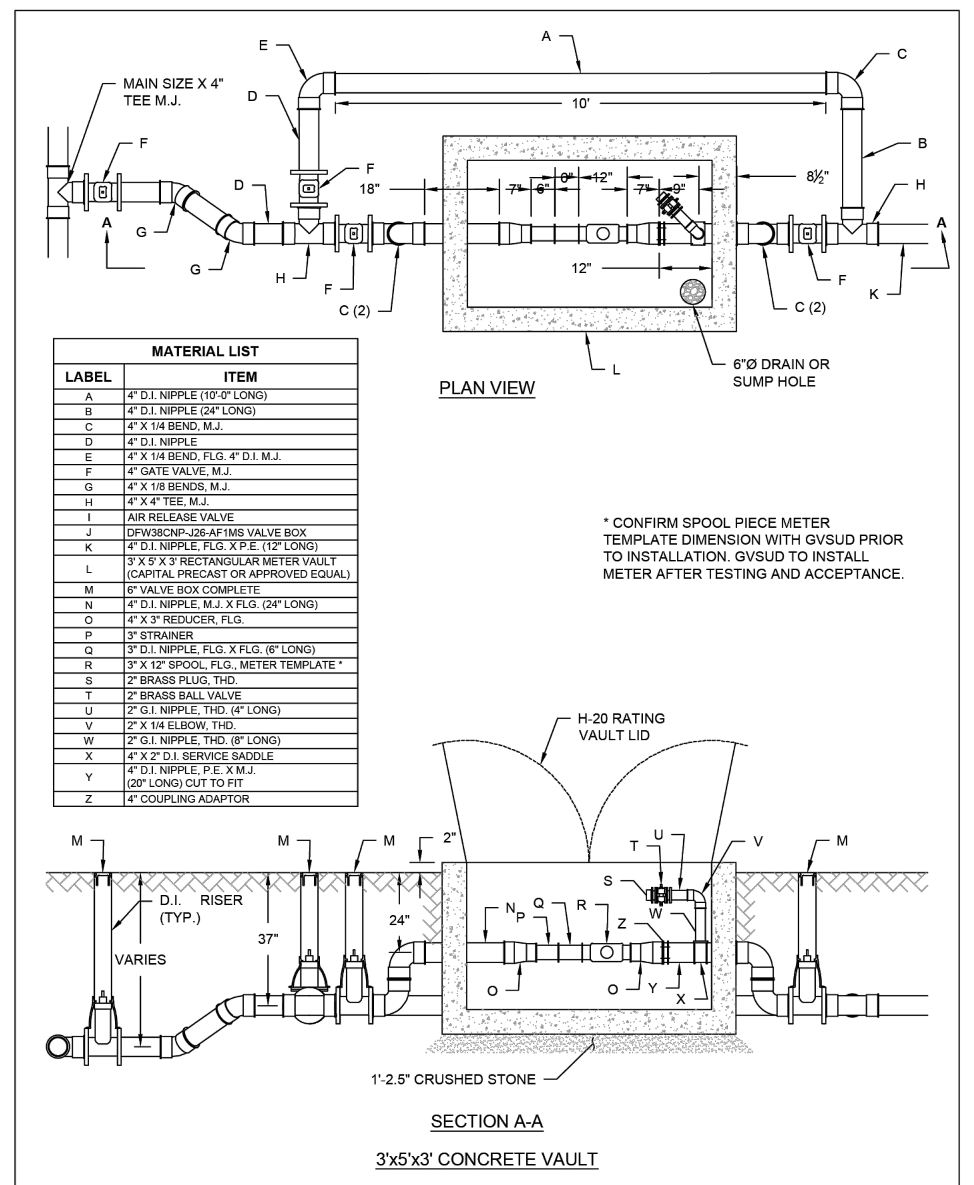
MATERIAL LIST	
LABEL	ITEM
A	BRASS SERVICE SADDLE IRON PIPE THREADED ONLY (FORD SERIES 5912 OR EQUAL)
B	2" BRASS NIPPLE
C	2" BRASS COMPRESSION ADAPTER
D	2" X 2" BRASS ANGLE VALVE (COMPRESSION X FLANGE) (FORD B-24258N OR EQUAL)
E	2" RESTRAINT DRESSING COUPLING - MAXI-GRIP OR APPROVED EQUAL
F	2" X 2" TEE (THREADED)
G	2" D.I. NIPPLE
H	2" 90° BEND
I	2" THREADED BRONZE BALL VALVE WITH LOCK WINGS (FEMALE X FEMALE)
J	12" X 6" X 4" PRECAST CONCRETE PAD SUPPORT
K	2" X 17" SPOOL, FLG., METER TEMPLATE *
L	2" CUSTOMER GATE VALVE **
M	3'X5'X3' RECTANGULAR METER VAULT (CAPITAL PRECAST OR APPROVED EQUAL)

* CONFIRM SPOOL PIECE METER TEMPLATE DIMENSION WITH GVSUD PRIOR TO INSTALLATION. GVSUD TO INSTALL METER AFTER TESTING AND ACCEPTANCE.

** GVSUD TO INSTALL AFTER TESTING AND ACCEPTANCE.



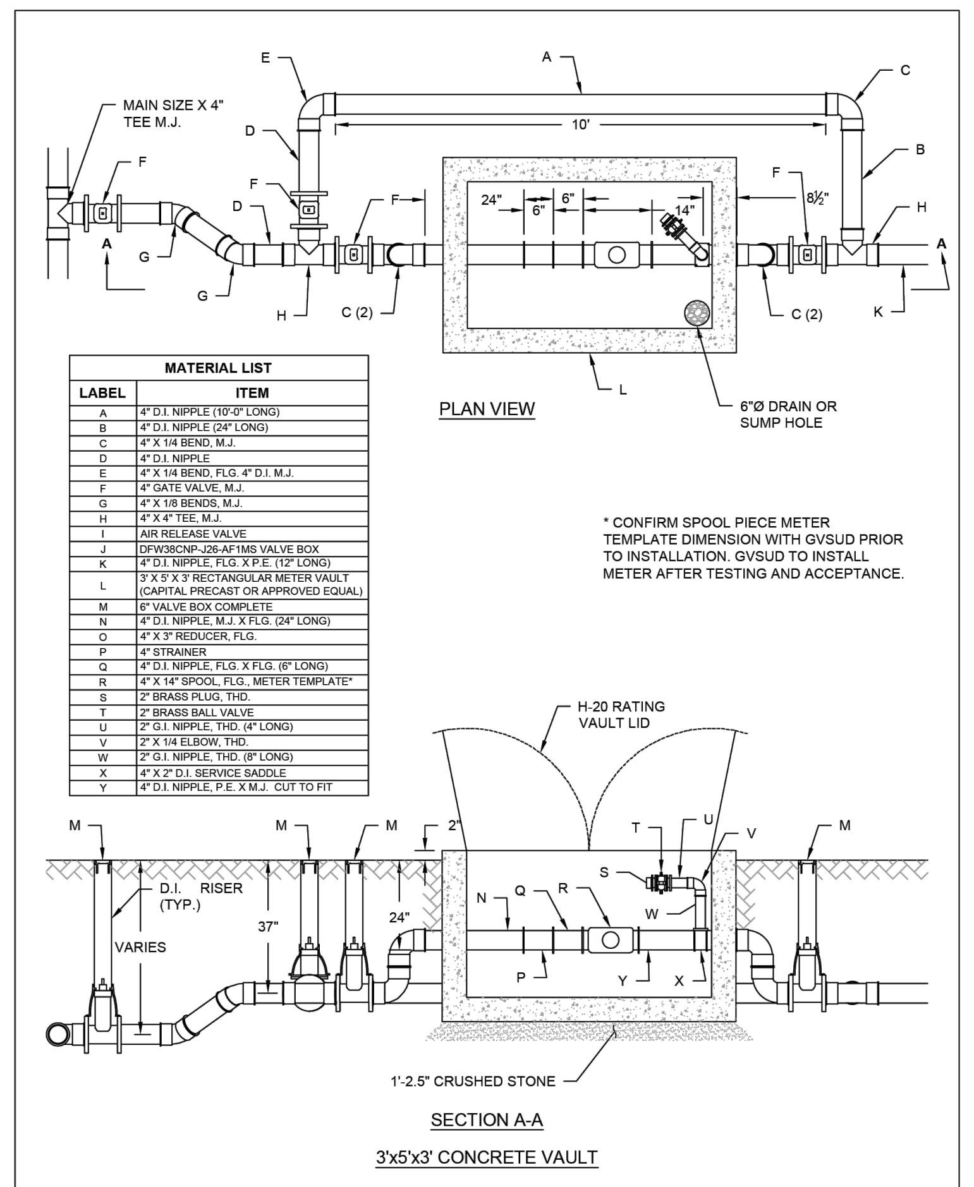
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
2-INCH METER INSTALLATION
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-36



MATERIAL LIST	
LABEL	ITEM
A	4" D.I. NIPPLE (10'-0" LONG)
B	4" D.I. NIPPLE (24" LONG)
C	4" X 1/4 BEND, M.J.
D	4" D.I. NIPPLE
E	4" X 1/4 BEND, FLG. 4" D.I. M.J.
F	4" GATE VALVE, M.J.
G	4" X 1/8 BENDS, M.J.
H	4" X 4" TEE, M.J.
I	AIR RELEASE VALVE
J	DFW38CNP-J26-AF1MS VALVE BOX
K	4" D.I. NIPPLE, FLG. X P.E. (12" LONG)
L	3' X 5' X 3' RECTANGULAR METER VAULT (CAPITAL PRECAST OR APPROVED EQUAL)
M	6" VALVE BOX COMPLETE
N	4" D.I. NIPPLE, M.J. X FLG. (24" LONG)
O	4" X 3" REDUCER, FLG.
P	3" STRAINER
Q	3" D.I. NIPPLE, FLG. X FLG. (6" LONG)
R	3" X 12" SPOOL, FLG., METER TEMPLATE *
S	2" BRASS PLUG, THD.
T	2" BRASS BALL VALVE
U	2" G.I. NIPPLE, THD. (4" LONG)
V	2" X 1/4 ELBOW, THD.
W	2" G.I. NIPPLE, THD. (8" LONG)
X	4" X 2" D.I. SERVICE SADDLE
Y	4" D.I. NIPPLE, P.E. X M.J. (20" LONG) CUT TO FIT
Z	4" COUPLING ADAPTOR

* CONFIRM SPOOL PIECE METER TEMPLATE DIMENSION WITH GVSUD PRIOR TO INSTALLATION. GVSUD TO INSTALL METER AFTER TESTING AND ACCEPTANCE.

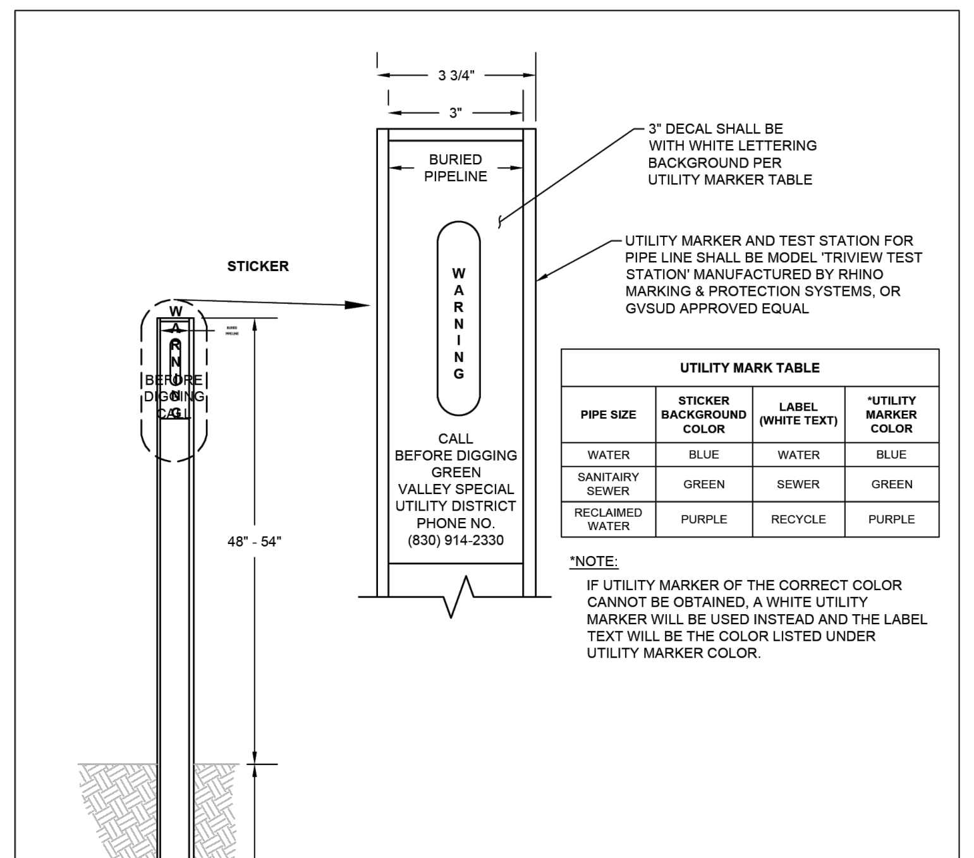
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
3-INCH METER INSTALLATION
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-37



MATERIAL LIST	
LABEL	ITEM
A	4" D.I. NIPPLE (10'-0" LONG)
B	4" D.I. NIPPLE (24" LONG)
C	4" X 1/4 BEND, M.J.
D	4" D.I. NIPPLE
E	4" X 1/4 BEND, FLG. 4" D.I. M.J.
F	4" GATE VALVE, M.J.
G	4" X 1/8 BENDS, M.J.
H	4" X 4" TEE, M.J.
I	AIR RELEASE VALVE
J	DFW38CNP-J26-AF1MS VALVE BOX
K	4" D.I. NIPPLE, FLG. X P.E. (12" LONG)
L	3' X 5' X 3' RECTANGULAR METER VAULT (CAPITAL PRECAST OR APPROVED EQUAL)
M	6" VALVE BOX COMPLETE
N	4" D.I. NIPPLE, M.J. X FLG. (24" LONG)
O	4" X 3" REDUCER, FLG.
P	4" STRAINER
Q	4" D.I. NIPPLE, FLG. X FLG. (6" LONG)
R	4" X 14" SPOOL, FLG., METER TEMPLATE*
S	2" BRASS PLUG, THD.
T	2" BRASS BALL VALVE
U	2" G.I. NIPPLE, THD. (4" LONG)
V	2" X 1/4 ELBOW, THD.
W	2" G.I. NIPPLE, THD. (8" LONG)
X	4" X 2" D.I. SERVICE SADDLE
Y	4" D.I. NIPPLE, P.E. X M.J. CUT TO FIT

* CONFIRM SPOOL PIECE METER TEMPLATE DIMENSION WITH GVSUD PRIOR TO INSTALLATION. GVSUD TO INSTALL METER AFTER TESTING AND ACCEPTANCE.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
4-INCH METER INSTALLATION
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-38


3 3/4"
3"
BURIED PIPELINE
W A R N I N G
CALL BEFORE DIGGING GREEN VALLEY SPECIAL UTILITY DISTRICT PHONE NO. (830) 914-2330
3" DECAL SHALL BE WITH WHITE LETTERING BACKGROUND PER UTILITY MARKER TABLE
UTILITY MARKER AND TEST STATION FOR PIPE LINE SHALL BE MODEL 'TRIVIEW TEST STATION' MANUFACTURED BY RHINO MARKING & PROTECTION SYSTEMS, OR GVSUD APPROVED EQUAL
STICKER
BEFORE DIGGING CALL
48" - 54"
24"

UTILITY MARK TABLE			
PIPE SIZE	STICKER BACKGROUND COLOR	LABEL (WHITE TEXT)	*UTILITY MARKER COLOR
WATER	BLUE	WATER	BLUE
SANITAIRY SEWER	GREEN	SEWER	GREEN
RECLAIMED WATER	PURPLE	RECYCLE	PURPLE

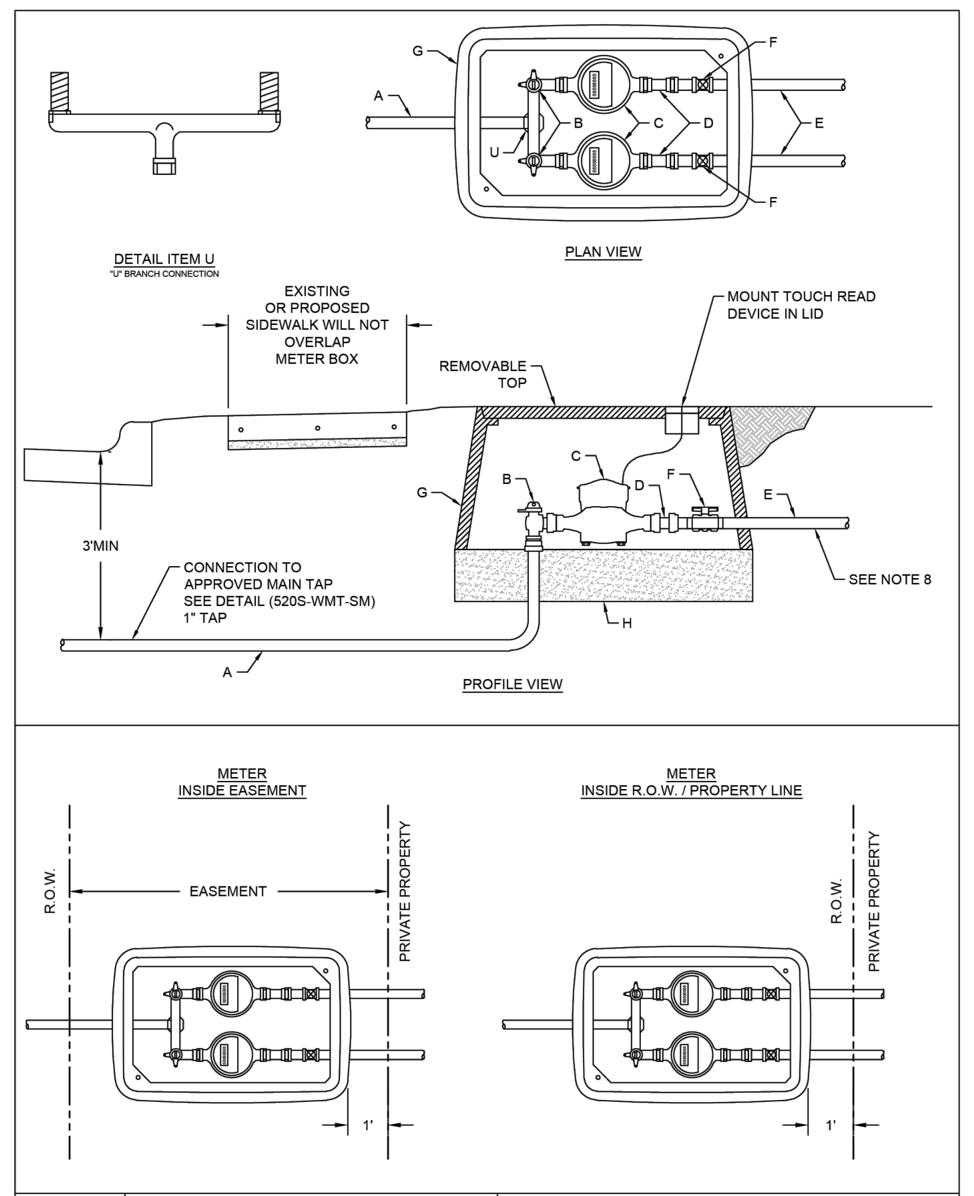
*NOTE:

IF UTILITY MARKER OF THE CORRECT COLOR CANNOT BE OBTAINED, A WHITE UTILITY MARKER WILL BE USED INSTEAD AND THE LABEL TEXT WILL BE THE COLOR LISTED UNDER UTILITY MARKER COLOR.

NOTES:

1. IN RURAL AREAS, PIPELINE MARKERS SHALL BE INSTALLED AT THE FOLLOWING LOCATIONS:
   - A. 500' INTERVALS ALONG PIPE
   - B. FENCE CROSSINGS
   - C. SURFACE APPURTENANCES (VALVES, AIR RELEASE VALVES, ETC.).
   - D. RAILROAD CROSSINGS
   - E. STREAM BEDS
   - F. OTHER UTILITY CROSSINGS
   - G. LOCATIONS OF MAJOR CHANGES IN DIRECTION (OUT OF PAVEMENT).
2. IN URBAN AREAS, PIPELINE MARKERS SHALL BE INSTALLED ONLY WHEN REQUIRED PER APPROVED PLANS.
3. PIPELINE MARKERS SHALL BE CONNECTED TO WATER MAIN TRACER WIRE.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
PIPE LINE MARKER
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-39


DETAIL ITEM U
PLAN VIEW
EXISTING OR PROPOSED SIDEWALK WILL NOT OVERLAP METER BOX
REMOVABLE TOP
MOUNT TOUCH READ DEVICE IN LID
SEE NOTE 8
3'MIN
CONNECTION TO APPROVED MAIN TAP SEE DETAIL (S200-WMT-SM) 1" TAP
PROFILE VIEW
METER INSIDE EASEMENT
METER INSIDE R.O.W. / PROPERTY LINE
EASEMENT
R.O.W.
PRIVATE PROPERTY

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
5/8", & 3/4" DUAL METER SERVICE CONNECTIONS (IRRIGATION OR DOMESTIC) (1 OF 2)
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-40

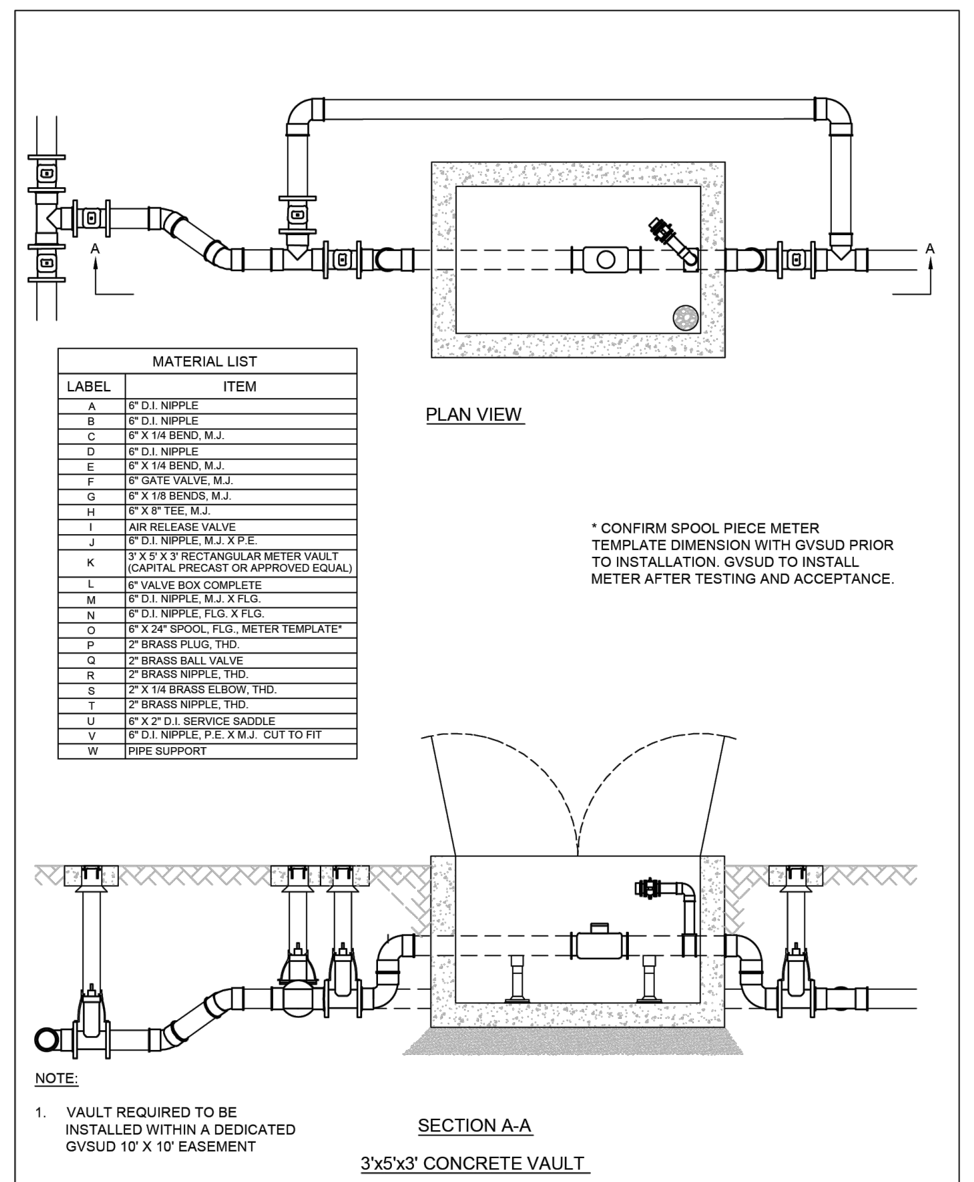
<table>
<tr><th colspan="4">MATERIAL LIST</th></tr>
<tr><th rowspan="2">LABEL</th><th rowspan="2">ITEMS</th><th colspan="2">METER SIZE</th></tr>
<tr><th>5/8"</th><th>3/4"</th></tr>
<tr><td>A*</td><td>TUBING SHALL BE REHAU MUNICIPEX WITH CTS 200 PSI PLASTIC INSERT</td><td>1"</td><td>1"</td></tr>
<tr><td>B</td><td>APPROVED ANGLE METER STOP WITH PADLOCK WING. (FORD TYPE Q COMPRESSION FITTING OR APPROVED EQUIVALENT.)</td><td>5/8"</td><td>3/4"</td></tr>
<tr><td>C</td><td>WATER METER</td><td>5/8"</td><td>3/4"</td></tr>
<tr><td>D</td><td>WATER METER COUPLING - CONNECTION SWIVEL NUT</td><td>5/8"</td><td>3/4"</td></tr>
<tr><td>E</td><td>CUSTOMER YARD PIPE - AS SPECIFIED</td><td colspan="2">▨</td></tr>
<tr><td>F</td><td>CUT-OFF VALVE **</td><td colspan="2">▨</td></tr>
<tr><td>G</td><td>PLASTIC METER BOX AND LID WITH REBAR, ARM, AND KNOCKOUT</td><td colspan="2">▨</td></tr>
<tr><td>H</td><td>6" COMPACTED SAND</td><td colspan="2">▨</td></tr>
<tr><td>U</td><td>"U" BRANCH CONNECTION (COMPRESSION - TYPE FITTING)</td><td>1"X3/4"</td><td>1"X3/4"</td></tr>
</table>

* ALL FITTING CONNECTED TO POLYETHYLENE PIPE WILL REQUIRE A STAINLESS STEEL INSERT.
** TO BE INSTALLED BY GVSUD AFTER TESTING AND ACCEPTANCE

NOTES:

1. REFERENCE GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAIL W-23 FOR METER AND METER BOX DIMENSIONS.
2. TOP OF METER BOX SHALL BE 1" ABOVE GRADE AFTER REVEGETATION OR FLUSH WITH PAVEMENT SURFACE. METER BOX ARE PROHIBITED IN ANY SIDEWALKS, DRIVEWAYS, OR ROADWAYS.
3. FOR PIPES AND FITTINGS OUTSIDE THE METER BOX SHALL BE EMBEDDED AND BACKFILLED, 6" SAND BEDDING MINIMUM, WITHIN THE R.O.W. OR EASEMENT.
4. WATER METER WILL BE HORIZONTALLY CENTERED WITH THE METER BOX.
5. TAP TO CITY WATER LINE SHALL HAVE A 1" CORPORATION STOP AND A 1" TAP TO THE MAIN.
6. CUT-OFF VALVE AND CONNECTION TO YARD PIPING TO BE SUBMITTED FOR APPROVAL.
7. METERS TO BE SUPPLIED BY CONTRACTOR FOR COMMERCIAL ACCOUNTS.
8. ALL PARTS WILL BE PER THE CURRENT GREEN VALLEY SPECIAL UTILITY DISTRICT WATER STANDARDS AND DESIGN CRITERIA.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
5/8", & 3/4" DUAL METER SERVICE CONNECTIONS (IRRIGATION OR DOMESTIC) (2 OF 2)
REVISED: JANUARY 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-40



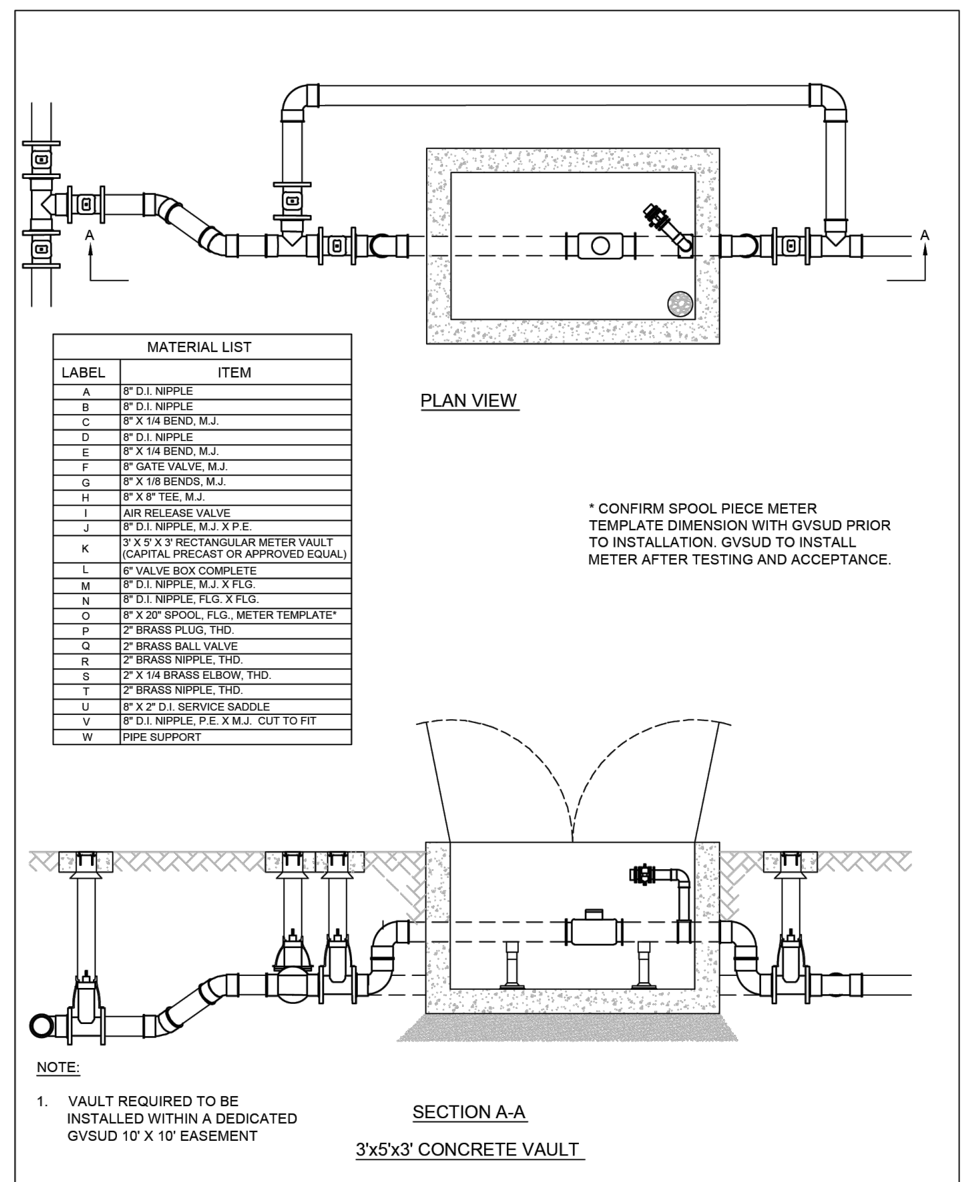
MATERIAL LIST	
LABEL	ITEM
A	6" D.I. NIPPLE
B	6" D.I. NIPPLE
C	6" X 1/4 BEND, M.J.
D	6" D.I. NIPPLE
E	6" X 1/4 BEND, M.J.
F	6" GATE VALVE, M.J.
G	6" X 1/8 BENDS, M.J.
H	6" X 8" TEE, M.J.
I	AIR RELEASE VALVE
J	6" D.I. NIPPLE, M.J. X P.E.
K	3' X 5' X 3' RECTANGULAR METER VAULT (CAPITAL PRECAST OR APPROVED EQUAL)
L	6" VALVE BOX COMPLETE
M	6" D.I. NIPPLE, M.J. X FLG.
N	6" D.I. NIPPLE, FLG. X FLG.
O	6" X 24" SPOOL, FLG., METER TEMPLATE*
P	2" BRASS PLUG, THD.
Q	2" BRASS BALL VALVE
R	2" BRASS NIPPLE, THD.
S	2" X 1/4 BRASS ELBOW, THD.
T	2" BRASS NIPPLE, THD.
U	6" X 2" D.I. SERVICE SADDLE
V	6" D.I. NIPPLE, P.E. X M.J. CUT TO FIT
W	PIPE SUPPORT

* CONFIRM SPOOL PIECE METER TEMPLATE DIMENSION WITH GVSUD PRIOR TO INSTALLATION. GVSUD TO INSTALL METER AFTER TESTING AND ACCEPTANCE.

NOTE:

1. VAULT REQUIRED TO BE INSTALLED WITHIN A DEDICATED GVSUD 10' X 10' EASEMENT

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
6" SERVICE METER AND VAULT ASSEMBLY FOR 6" ULTRASONIC METER
REVISED: APRIL 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-41



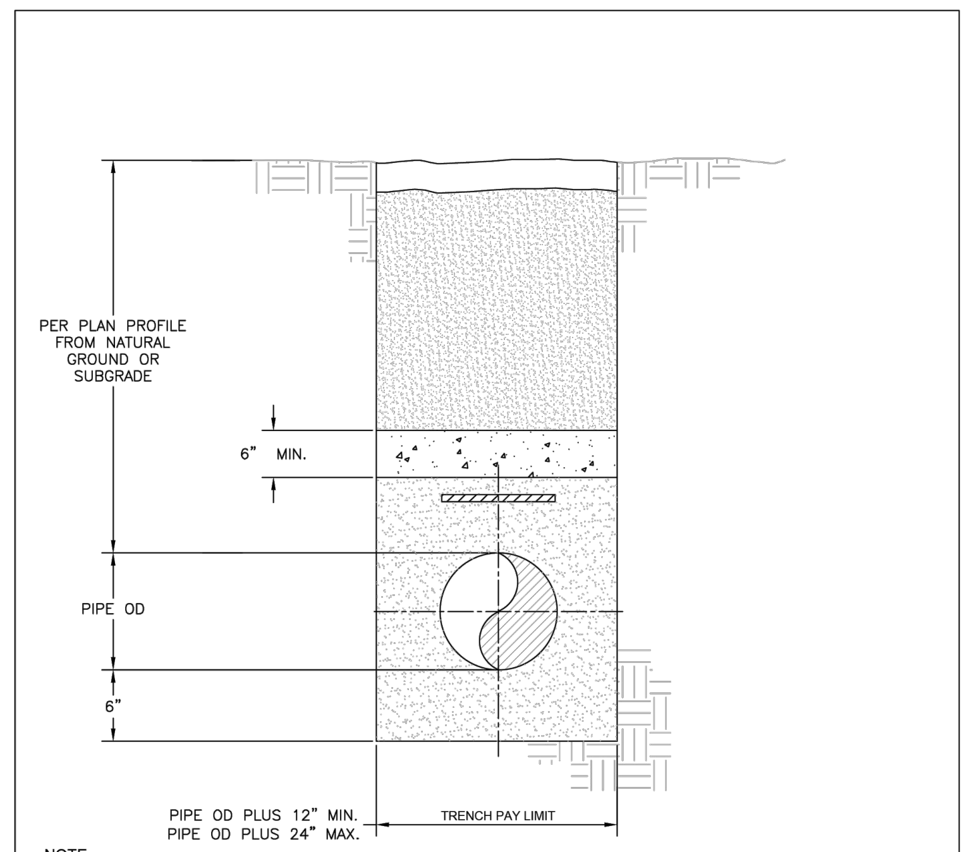
MATERIAL LIST	
LABEL	ITEM
A	8" D.I. NIPPLE
B	8" D.I. NIPPLE
C	8" X 1/4 BEND, M.J.
D	8" D.I. NIPPLE
E	8" X 1/4 BEND, M.J.
F	8" GATE VALVE, M.J.
G	8" X 1/8 BENDS, M.J.
H	8" X 8" TEE, M.J.
I	AIR RELEASE VALVE
J	8" D.I. NIPPLE, M.J. X P.E.
K	3' X 5' X 3' RECTANGULAR METER VAULT (CAPITAL PRECAST OR APPROVED EQUAL)
L	6" VALVE BOX COMPLETE
M	8" D.I. NIPPLE, M.J. X FLG.
N	8" D.I. NIPPLE, FLG. X FLG.
O	8" X 20" SPOOL, FLG., METER TEMPLATE*
P	2" BRASS PLUG, THD.
Q	2" BRASS BALL VALVE
R	2" BRASS NIPPLE, THD.
S	2" X 1/4 BRASS ELBOW, THD.
T	2" BRASS NIPPLE, THD.
U	8" X 2" D.I. SERVICE SADDLE
V	8" D.I. NIPPLE, P.E. X M.J. CUT TO FIT
W	PIPE SUPPORT

* CONFIRM SPOOL PIECE METER TEMPLATE DIMENSION WITH GVSUD PRIOR TO INSTALLATION. GVSUD TO INSTALL METER AFTER TESTING AND ACCEPTANCE.

NOTE:

1. VAULT REQUIRED TO BE INSTALLED WITHIN A DEDICATED GVSUD 10' X 10' EASEMENT

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
8" SERVICE METER AND VAULT ASSEMBLY FOR 8" ULTRASONIC METER
REVISED: APRIL 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-42



NOTE

1. RESTORE ALL DISTURBED SURFACES TO EXISTING CONDITION AND ELEVATION. NATURAL GROUND WILL HAVE 6" OR DEPTH TO TRENCH CAP FROM EXISTING ELEVATION (WHICH EVER IS LESS) OF TOP SOIL AND BE REVEGETATED. ALL OTHER PAVEMENT AND SURFACE STRUCTURES SHALL BE REPLACED TO MATCH EXISTING CONDITIONS.
2. SELECT BACKFILL COMPACTED TO NO LESS THAN 97% NOR MORE THAN 102% OF THE DENSITY ACCORDING TO TEX. 114E AT A MOISTURE CONTENT OF -2% TO +3% OF OPTIMUM FILL. THIS APPLIES UNDER ALL EXISTING OR PROPOSED TRAFFIC LOADING STRUCTURES, 2' FROM BUILDINGS, UNDER FLEX BASE OR IN 100 YEAR FLOOD PLAIN. ALL OTHER BACKFILL WILL BE COMPACTED TO 95% OF MAX DENSITY.
3. PIPE BEDDING PLACED BEFORE PIPING IS LAID UP TO BOTTOM OF PIPE COMPACTED TO 95% ASHTO DENSITY.
4. PLACE IN 12 INCH LIFTS AFTER PIPE IS LAID TO 12 INCHES ABOVE THE PIPE.
5. SELECT BACKFILL MATERIAL PLACED TO REQUIRED HEIGHT IN 6 INCH LIFTS.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
CONCRETE TRENCH CAP
REVISED: APRIL 2024
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-50

DISTRICT NOTES

THE DISTRICT ENGINEER, JONES-HEROY & ASSOCIATES, INC.
(KEN HEROY, PH:512-989-220) SHALL BE CONTACTED 48 HOURS
PRIOR TO:
i) PRE-CONSTRUCTION MEETINGS;
ii) BEGINNING EACH PHASE OF CONSTRUCTION;
iii) TESTING OF WATER AND/OR WASTEWATER LINES; AND,
iv)FINAL WALK-THROUGH OF FACILITIES.

CUDEENGINEERS.COM

EST. 1980
CUDE
ENGINEERS

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

DOVE SONG SUBDIVISION UNIT 3

WATER DISTRIBUTION PLAN DETAILS

DATE
08/21/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG/KM

CHECKED BY
AM/AL

#	DATE	REVISIONS
1.		
2.		
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7.		
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9.		

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C5.D3

CUDEENGINEERS.COM

P:\03608\004\2-DWG\4-Plans\C5.D3 WATER DISTRIBUTION PLAN DETAILS.dwg 2024/08/21 1:47pm jguerrero

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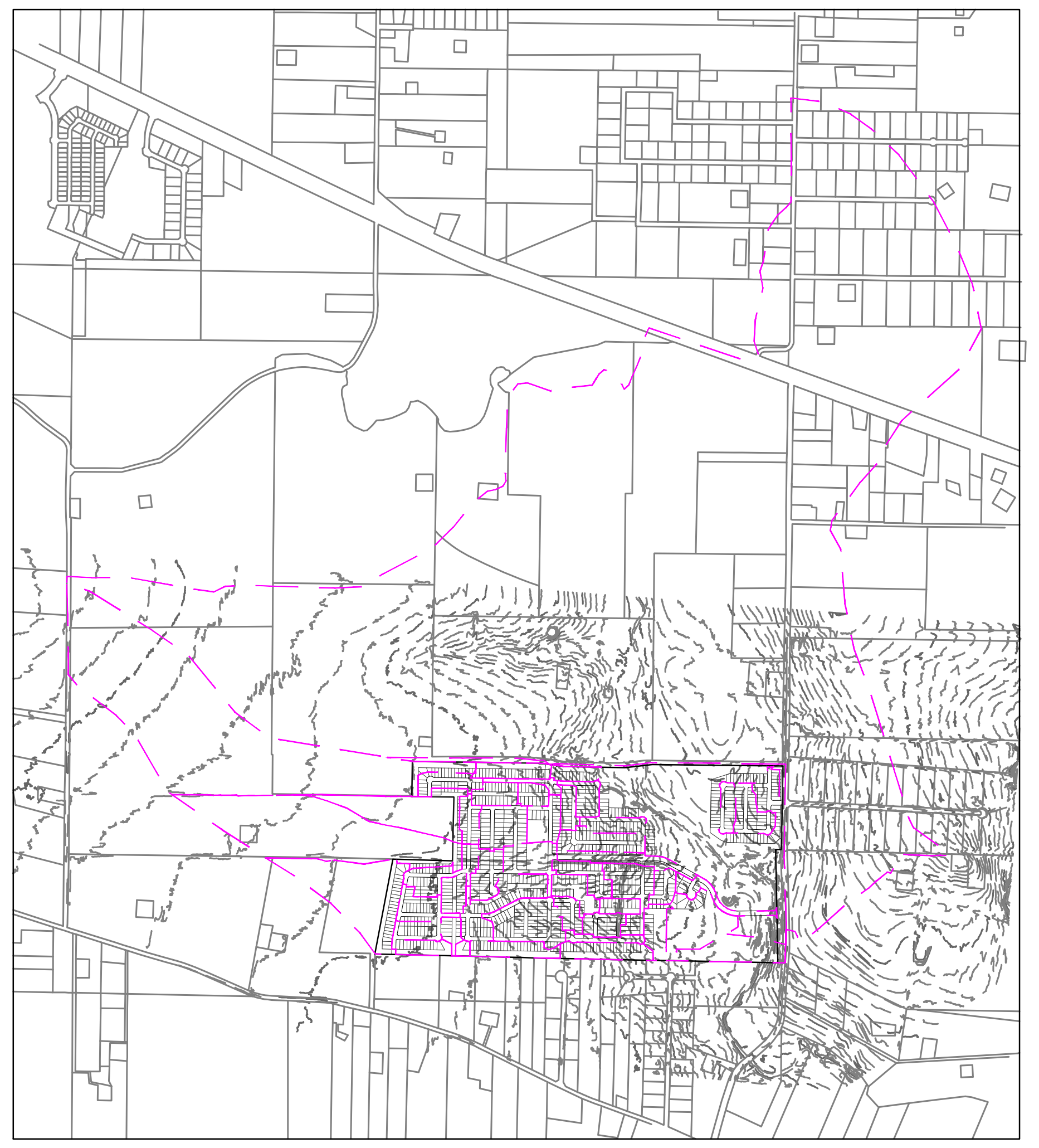


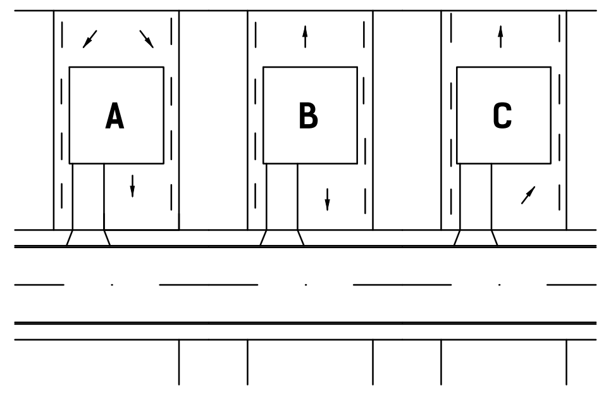
INSET MAP

N.T.S.

DOVE SONG UNIT 3

CALCULATION SUMMARY FOR TIME OF CONCENTRATION & ULTIMATE FLOW

COMPUTATION PT. #	AREA (Ac.)	DRAINAGE AREA	TOTAL ACRES	C	Tc	I5	I25	I100	Q5	Q25	Q100	COMPUTATION PT. #
46	2.34	A46	2.34	0.65	17.54	4.90	6.80	8.50	7.45	10.34	12.93	46
47	3.88	A47	3.88	0.65	20.37	4.54	6.29	7.84	11.42	15.86	19.77	47
48	3.12	A48	3.12	0.65	20.58	4.51	6.25	7.80	9.15	12.68	15.82	48
49	1.58	A49	1.58	0.65	16.87	5.00	6.94	8.68	5.14	7.13	8.91	49



TYPICAL LOT SITE PLAN

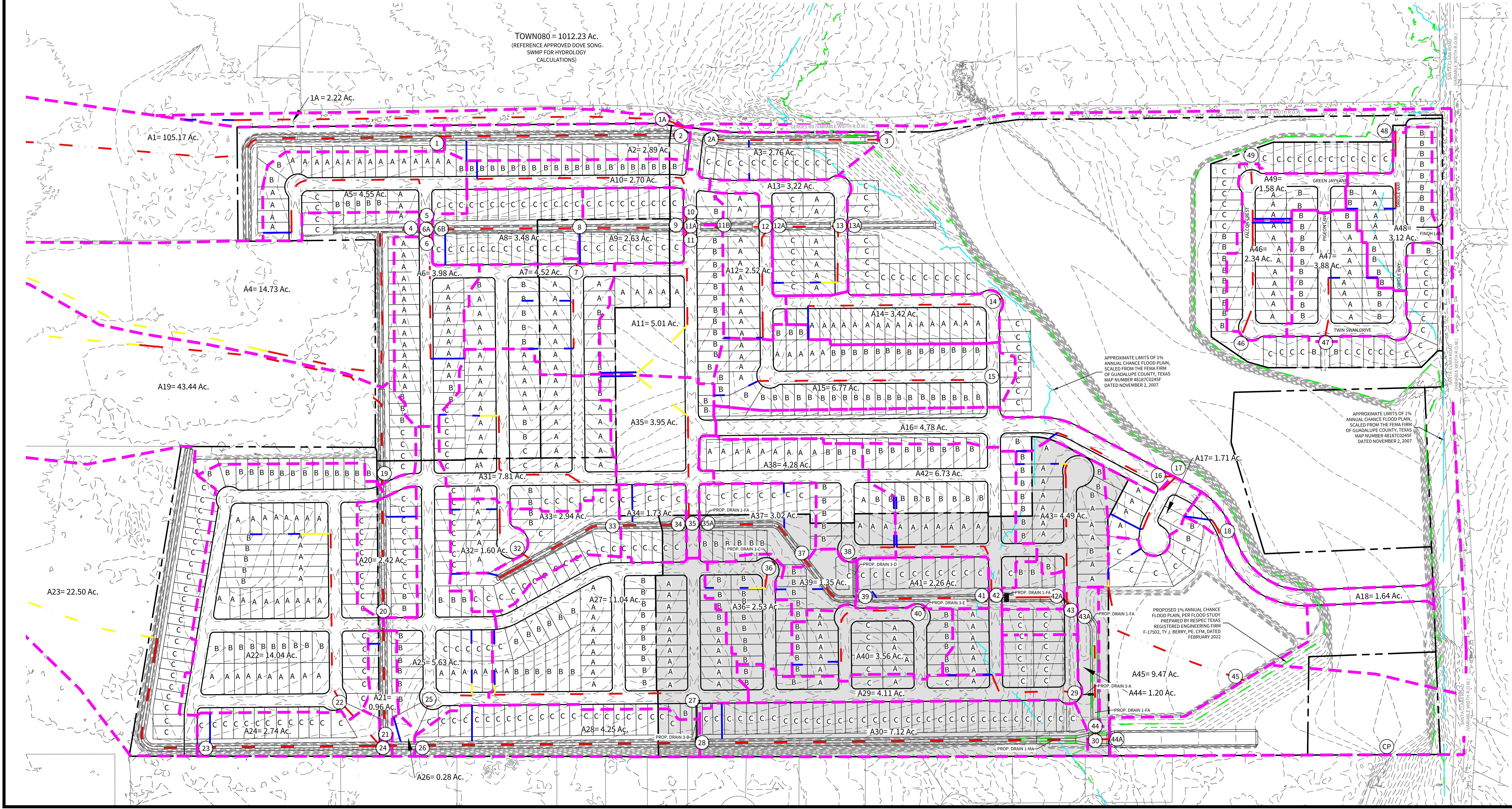
N.T.S.

SCALE: 1"=200'

200 100 0 200

LEGEND

UNIT BOUNDARY	▭
DRAINAGE AREA BOUNDARY	▬ ▬ ▬
SHEET FLOW Tc PATH	— > —
SHALLOW CONC. Tc PATH	— > —
CONCENTRATED Tc PATH	— > —
ACCUMULATION POINT	(XX)
FLOW ARROWS	→
100 YEAR FEMA FLOODPLAIN	— —
100 YEAR PROPOSED FLOODPLAIN	— · —
EXISTING 1' CONTOUR	— — 499 — —
EXISTING 5' CONTOUR	— — 500 — —



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DOVE SONG SUBDIVISION
UNIT 3

ULTIMATE MASTER DRAINAGE PLAN

DATE
06/25/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG

CHECKED BY
XV/AL

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

ANDREW R. LOWRY
123410
07/03/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C6.00

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Project Name: Dove Song Subdivision **Precipitation Area Atlas 14 =** **PA2**

Calculation Summary for Time of Concentrations & Ultimate Flow

HYDROLOGY				Sheet Flow Tc Computations				Shallow Conc. Tc Computations				Concentrated Tc Computations			Overall	INTENSITY			Q FLOW			
Drainage Shed/ Computation Point	Shed Area (Ac.)	AREA OF ACCUMULATION (Ac.)	C	*Length < 300'*	Manning's (n)	Slope (%)	Time of Concentration	*Length*	Paved (Y or N)	Slope (%)	Time of Concentration	*Length*	Velocity (fps)	Time of Concentration (min)	Time of Concentration (min)	I5	I25	I100	Q5	Q25	Q100	Drainage Shed
A1/1	105.17	= A1	0.65	111.00	0.13	0.50%	19.95	1460.00	N	0.50%	21.33	4518.00	6	12.55	53.82	2.65	3.71	4.65	181.16	253.62	317.88	A1/1
A1A/1A	2.22	= A1A	0.65	190.00	0.15	2.00%	19.75	0.00	N	0.50%	0.00	1734.00	6	4.82	24.56	4.12	5.71	7.12	5.95	8.24	10.27	A1A/1A
A2/-	2.89	= A2	0.65	77.00	0.15	4.54%	6.91	0.00	N	0.50%	0.00	864.00	6	2.40	9.31	6.53	9.12	11.55	12.27	17.13	21.70	A2/-
-/2	108.06	= A1+A2	0.65	111.00	0.13	0.50%	19.95	1460.00	N	0.50%	21.33	5465.00	6	15.18	56.46	2.56	3.59	4.50	179.81	252.16	316.08	-/2
-/2A	110.28	= 1A+2	0.65	111.00	0.13	0.50%	19.95	1460.00	N	0.50%	21.33	5530.00	6	15.36	56.64	2.56	3.58	4.50	183.51	256.62	322.57	-/2A
A3/-	2.76	= A3	0.65	137.00	0.15	3.18%	12.63	0.00	N	0.50%	0.00	500.00	6	1.39	14.02	5.51	7.67	9.63	9.88	13.76	17.28	A3/-
-/3	113.04	= A3+2A	0.65	111.00	0.13	0.50%	19.95	1460.00	N	0.50%	21.33	6188.00	6	17.19	58.46	2.50	3.51	4.40	183.69	257.90	323.29	-/3
A4/4	14.73	= A4	0.65	111.00	0.13	0.50%	19.95	1455.00	N	0.50%	21.26	1143.00	6	3.18	44.38	3.00	4.18	5.21	28.72	40.02	49.88	A4/4
A5/5	4.55	= A5	0.65	110.00	0.15	1.67%	13.71	0.00	N	2.00%	0.00	865.00	6	2.40	16.11	5.12	7.12	8.90	15.14	21.06	26.32	A5/5
A6/6	3.98	= A6	0.65	130.00	0.15	2.44%	13.46	0.00	N	2.00%	0.00	620.00	6	1.72	15.18	5.29	7.35	9.21	13.69	19.01	23.83	A6/6
-/6A	8.53	= A5+A6	0.65	110.00	0.15	1.67%	13.71	0.00	N	0.50%	0.00	865.00	6	2.40	16.11	5.12	7.12	8.90	28.39	39.48	49.35	-/6A
-/6B	23.26	= A4+A5+A6	0.65	111.00	0.13	0.50%	19.95	1455.00	N	0.50%	21.26	1535.00	6	4.26	45.47	2.96	4.12	5.14	44.75	62.29	77.71	-/6B
A7/7	4.52	= A7	0.65	173.00	0.15	1.94%	18.55	0.00	N	2.00%	0.00	327.00	6	0.91	19.45	4.64	6.44	8.04	13.63	18.92	23.62	A7/7
A8/-	3.48	= A8	0.65	124.00	0.15	3.55%	11.16	0.00	N	2.00%	0.00	518.00	6	1.44	12.60	5.79	8.07	10.17	13.10	18.25	23.00	A8/-
-/8	31.26	= 6B+A7+A8	0.65	111.00	0.13	0.50%	19.95	1455.00	N	0.50%	21.26	1759.00	6	4.89	46.09	2.93	4.09	5.10	59.53	83.10	103.63	-/8
A9/-	2.63	= A9	0.65	124.00	0.15	3.42%	11.32	0.00	N	2.00%	0.00	399.00	6	1.11	12.43	5.83	8.12	10.24	9.97	13.88	17.51	A9/-
-/9	33.89	= 8+A9	0.65	111.00	0.13	0.50%	19.95	1455.00	N	0.50%	21.26	2157.00	6	5.99	47.19	2.89	4.03	5.03	63.66	88.77	110.80	-/9
A10/10	2.70	= A10	0.65	70.00	0.15	2.41%	8.24	0.00	N	2.00%	0.00	970.00	6	2.69	10.94	6.15	8.58	10.84	10.79	15.06	19.02	A10/10
A11/11	5.01	= A11	0.65	138.00	0.15	1.03%	19.94	272.00	N	1.49%	2.30	384.00	6	1.07	23.31	4.23	5.87	7.31	13.77	19.12	23.81	A11/11
-/11A	7.71	= A10+A11	0.65	138.00	0.15	1.03%	19.94	272.00	N	1.49%	2.30	384.00	6	1.07	23.31	4.23	5.87	7.31	21.20	29.42	36.63	-/11A
-/11B	41.60	= 9+11A	0.65	111.00	0.13	0.50%	19.95	1455.00	N	0.50%	21.26	2307.00	6	6.41	47.61	2.88	4.01	5.01	77.88	108.43	135.47	-/11B
A12/12	2.52	= A12	0.65	150.00	0.15	1.82%	16.97	0.00	N	2.00%	0.00	449.00	6	1.25	18.22	4.80	6.67	8.33	7.86	10.93	13.64	A12/12
-/12A	44.12	= 11B+A12	0.65	111.00	0.13	0.50%	19.95	1455.00	N	0.50%	21.26	2516.00	6	6.99	48.19	2.85	3.98	4.97	81.73	114.14	142.53	-/12A
A13/13	3.27	= A13	0.65	186.00	0.15	1.86%	19.99	64.00	N	2.62%	0.41	248.00	6	0.69	21.09	4.45	6.18	7.70	9.46	13.14	16.37	A13/13
-/13A	47.39	= 12A+A13	0.65	111.00	0.13	0.50%	19.95	1455.00	N	0.50%	21.26	2802.00	6	7.78	48.99	2.82	3.94	4.92	86.87	121.37	151.55	-/13A
A14/14	3.42	= A14	0.65	129.00	0.15	1.55%	16.04	0.00	N	2.00%	0.00	750.00	6	2.08	18.13	4.81	6.68	8.35	10.69	14.85	18.56	A14/14
A15/15	6.28	= A15	0.65	183.00	0.15	1.80%	19.99	0.00	N	2.00%	0.00	931.00	6	2.59	22.57	4.30	5.96	7.43	17.55	24.33	30.33	A15/15
A16/16	4.78	= A16	0.65	181.00	0.15	2.02%	18.92	0.00	N	2.00%	0.00	480.00	6	1.33	20.25	4.54	6.31	7.87	14.11	19.61	24.45	A16/16
A17/-	1.71	= A17	0.65	176.00	0.15	2.04%	18.43	0.00	N	2.00%	0.00	239.00	6	0.66	19.09	4.68	6.50	8.12	5.20	7.22	9.03	A17/-
-/17	6.49	= A16+A17	0.65	181.00	0.15	2.02%	18.92	0.00	N	2.00%	0.00	480.00	6	1.33	20.25	4.54	6.31	7.87	19.15	26.62	33.20	-/17
A18/18	1.64	= A18	0.65	107.00	0.15	3.14%	10.41	0.00	N	2.00%	0.00	60.00	6	0.17	10.58	6.23	8.69	10.99	6.64	9.26	11.72	A18/18
A19/19	43.44	= A19	0.65	111.40	0.13	0.50%	20.00	1700.00	N	0.50%	24.83	1287.00	6	3.58	48.41	2.85	3.97	4.96	80.47	112.10	140.05	A19/19
A20/-	2.42	= A20	0.65	117.00	0.15	1.62%	14.58	0.00	N	2.00%	0.00	382.00	6	1.06	15.64	5.20	7.24	9.06	8.18	11.39	14.25	A20/-
-/20	45.86	= A19+A20	0.65	111.40	0.13	0.50%	20.00	1700.00	N	0.50%	24.83	1851.00	6	5.14	49.98	2.79	3.89	4.86	83.17	115.96	144.87	-/20
A21/-	0.96	= A21	0.65	46.00	0.15	3.90%	4.86	0.00	N	2.00%	0.00	372.00	6	1.03	5.89	7.56	10.58	13.36	4.72	6.60	8.34	A21/-
-/21	46.82	= 20+A21	0.65	111.40	0.13	0.50%	20.00	1700.00	N	0.50%	24.83	2293.00	6	6.37	51.21	2.74	3.83	4.79	83.39	116.56	145.77	-/21
A22/22	14.04	= A22	0.65	193.00	0.15	2.00%	20.00	117.00	N	2.18%	0.82	663.00	6	1.84	22.66	4.29	5.95	7.42	39.15	54.30	67.71	A22/22
A23/23	23.05	= A23	0.65	111.40	0.13	0.50%	20.00	1551.00	N	0.50%	22.66	619.00	6	1.72	44.38	3.00	4.18	5.21	44.95	62.63	78.06	A23/23
A24/-	2.74	= A24	0.65	117.00	0.15	1.85%	13.82	0.00	N	2.00%	0.00	706.00	6	1.96	15.78	5.18	7.20	9.01	9.23	12.82	16.05	A24/-
-/24	86.65	= 21+A22+A23+A24	0.65	111.40	0.13	0.50%	20.00	1700.00	N	0.50%	24.83	2293.00	6	6.37	51.21	2.74	3.83	4.79	154.32	215.72	269.78	-/24
A25/25	5.63	= A25	0.65	205.00	0.15	2.27%	19.95	45.00	N	2.25%	0.31	189.00	6	0.53	20.78	4.48	6.22	7.76	16.39	22.76	28.40	A25/25
A26/-	1.97	= A26	0.65	97.00	0.15	1.96%	11.63	0.00	N	1.00%	0.00	64.00	6	0.18	11.80	5.96	8.31	10.49	7.63	10.64	13.43	A26/-
-/26	94.25	= 24+A25+A26	0.65	111.40	0.13	0.50%	20.00	1700.00	N	0.50%	24.83	2408.00	6	6.69	51.53	2.73	3.82	4.77	167.25	234.02	292.22	-/26
A27/27	11.04	= A27	0.65	213.00	0.15	2.44%	19.98	37.00	N	3.52%	0.20	780.00	6	2.17	22.35	4.32	5.99	7.47	31.00	42.98	53.60	A27/27
A28/-	4.25	= A28	0.65	137.00	0.15	1.76%	16.00	0.00	N	1.00%	0.00	875.00	6	2.43	18.43	4.77	6.63	8.27	13.18	18.32	22.85	A28/-
-/28	109.54	= 26+A27+A28	0.65	111.40	0.13	0.50%	20.00	1700.00	N	0.50%	24.83	3504.00	6	9.73	54.57	2.63	3.68	4.61	187.26	262.02	328.24	-/28
A29/29	4.11	= A29	0.65	172.00	0.15	2.24%	17.43	0.00	N	2.00%	0.00	115.00	6	0.32	17.75	4.87	6.76	8.44	13.01	18.06	22.55	A29/29
A30/-	7.12	= A30	0.65	137.00	0.13	1.83%	14.05	0.00	N	0.50%	0.00	1420.00	6	3.94	17.99	4.83	6.71	8.38	22.35	31.05	38.78	A30/-
-/30	120.77	= 28+A29+A30	0.65	111.40	0.13	0.50%	20.00	1700.00	N	0.50%	24.83	4790.00	6	13.31	58.14	2.51	3.52	4.42	197.04	276.32	346.97	-/30
A31/31	7.81	= A31	0.65	158.00	0.15	1.35%	19.94	72.00	N	2.63%	0.46	532.00	6	1.48	21.88	4.37	6.06	7.56	22.18	30.76	38.38	A31/31
A32/32	1.60	= A32	0.65	177.00	0.15	1.69%	19.96	0.00	N	2.00%	0.00	210.00	6	0.58	20.54	4.51	6.26	7.81	4.69	6.51	8.12	A32/32
A33/-	2.94	= A33	0.65	179.00	0.15	1.85%	19.42	0.00	N	0.50%	0.00	516.00	6	1.43	20.86	4.48	6.21	7.75	8.56	11.87	14.81	A33/-
-/33	4.54	=A32+A33	0.65	177.00	0.15	1.69%	19.96	0.00	N	2.00%	0.00	633.00	6	1.76	21.72	4.38	6.08	7.58	12.93	17.94	22.37	-/33
A34/-	1.73	= A34	0.65	145.00	0.15	3.20%	13.18	0.00	N	2.00%	0.00	206.00	6	0.57	13.75	5.56	7.74	9.73	6.25	8.70	10.94	A34/-
-/34	6.27	= 33+A34	0.65	177.00	0.15	1.69%	19.96	0.00	N	2.00%	0.00	887.00	6	2.46	22.42	4.31	5.99	7.46	17.57	24.41	30.40	-/34
A35/35	3.95	= A35	0.65	135.00	0.15	1.01%	19.74	252.00	N	1.60%	2.06	418.00	6	1.16	22.96	4.26	5.91	7.37	10.94	15.17	18.92	A35/35
-/35A	10.22	= 34+A35	0.65	177.00	0.15	1.69%	19.96	0.00	N	2.00%	0.00	934.00	6	2.59	22.55	4.30	5.97	7.44	28.56	39.66	49.42	-/35A
A36/36	2.53	= A36	0.65	167.00	0.15	1.51%	19.93	63.00	N	2.27%	0.43	110.00	6	0.31	20.67	4.50	6.24	7.78	7.40	10.26	12.79	A36/36
A37/-	3.02	= A37	0.65	172.00	0.15	3.37%	14.80	0.00	N	0.50%	0.00	149.00	6	0.41	15.21	5.28	7.34	9.20	10.36	14.41	18.06	A37/-
-/37	15.77	= 35+36+A37	0.65	177.00	0.15	1.69%	19.96	0.00	N	2.00%	0.00	1419.00	6	3.94	23.90	4.18	5.79	7.22	42.85	59.35	74.01	-/37
A38/38	4.28	= A38	0.65	193.00	0.15	2.00%	20.00	0.00	N	2.00%	0.00	206.00	6	0.57	20.57	4.51	6.26	7.80	12.55	17.42	21.70	A38/38
A39/-	1.35	= A39	0.65	183.00	0.15	1.93%	19.44	0.00	N	2.00%	0.00	122.00	6	0.34	19.78	4.60	6.39	7.97	4.04	5.61	6.99	A39/-
-/39	21.40	= 37+38+A39	0.65	177.00	0.15	1.69%	19.96	0.00	N	2.00%	0.00	1673.00	6	4.65	24.61	4.12	5.71	7.11	57.31	79.43	98.90	-/39
A40/40	3.56	= A40	0.65	182.00	0.15	1.93%	19.35	0.00	N	2.00%	0.00	496.00	6	1.38	20.73	4.49	6.23	7.77	10.39	14.42	17.98	A40/40
A41/-	2.26	= A41	0.65	162.00	0.15	1.42%	19.93	0.00	N	2.00%	0.00	428.00	6	1.19	21.12	4.45	6.17	7.70	6.54	9.06	11.31	A41/-
-/41	27.22	= 39+40+A41	0.65	177.00	0.15	1.69%	19.96	0.00	N	2.00%	0.00	2184.00	6	6.07	26.03	4.00	5.55	6.91	70.77	98.20	122.26	-/41
A42/42	6.73	= A42	0.65	193.00	0.15	2.00%	20.00	0.00	N	2.00%	0.00	540.00	6	1.50	21.50	4.41	6.12	7.63	19.29	26.77	33.38	A42/42
-/42A	33.95	= 41+A42	0.65	177.00	0.15	1.69%	19.96	0.00	N	2.00%	0.00	2249.00	6	6.25	26.21	3.99	5.53	6.88	88.05	122.03	151.82	-/42A
A43/43	4.49	= A43	0.65	165.00	0.15	1.50%	19.79	33.00	N	3.44%	0.18	584.37	6	1.62	21.60	4.40	6.10	7.61	12.84	17.80	22.21	A43/43
-/43A	38.44	= 42+A43	0.65	177.00	0.15	1.69%	19.96	0.00	N	2.00%	0.00	2319.00	6	6.44	26.40	3.97	5.51	6.86	99.19	137.67	171.40	-/43A
A44/-	1.20	= A44	0.65	48.00	0.15	2.00%	6.57	0.00	N	2.00%	0.00	432.00	6	1.20	7.77	6.94	9.71	12.29	5.41	7.57	9.59	A44/-
-/44	39.64	= 43A+A44	0.65	177.00	0.15	1.69%	19.96	0.00	N	2.00%	0.00	2841.00	6	7.89	27.85	3.86	5.36	6.67	99.46	138.11	171.86	-/44
-/44A	160.41	= 30+44	0.65	111.40	0.13	0.50%	20.00	1700.00	N	0.50%	24.83	5081.00	6	14.11	58.95	2.48	3.48	4.38	258.58	362.85	456.69	-/44A
A45/45	9.47	= A45	0.65	190.00	0.15	2.00%	19.75	28.00	N	2.00%	0.20	697.00	6	1.94	21.89	4.37	6.06	7.55	26.90	37.30	46.47	A45/45
A46/46	2.34	= A46	0.65	150.00	0.15	2.00%	16.34	0.00	N	0.50%	0.00	430.00	6	1.19	17.54	4.90	6.80	8.50	7.45	10.34	12.93	A46/46
A47/47	3.88	= A47	0.65	190.00	0.15	2.00%	19.75	0.00	N	0.50%	0.00	226.00	6	0.63	20.37	4.53	6.29	7.84	11.42	15.86	19.77	A47/47
A48/48	3.12	= A48	0.65	190.00	0.15	2.00%	19.75	0.00	N	0.50%	0.00	300.00	6	0.83	20.58	4.51	6.25	7.80	9.15	12.68	15.82	A48/48
A49/49	1.58	= A49	0.65	150.00	0.15	2.00%	16.34	0.00	N	0.50%	0.00	190.00	6	0.53	16.87	5.00	6.94	8.68	5.14	7.13	8.91	A49/49
CP	**Reference approved Dove Song SWMP for hydrology calculations*																				22832.6	CP

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

DOVE SONG SUBDIVISION
UNIT 3

ULTIMATE MASTER DRAINAGE PLAN

DATE
06/24/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG

CHECKED BY
XV/AL

REVISIONS

DATE

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ANDREW R. LOWRY
123410
07/03/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C6.01

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P:\03608\004\2-DWG\4-Plans\C6.00-01 ULTIMATE MASTER DRAINAGE PLAN.dwg 2024/06/24 7:04pm jguerrero

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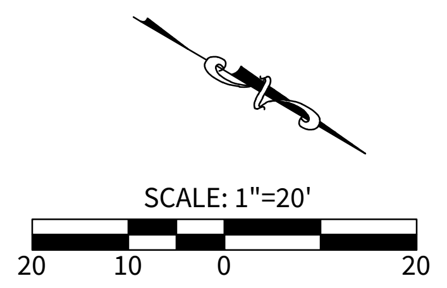
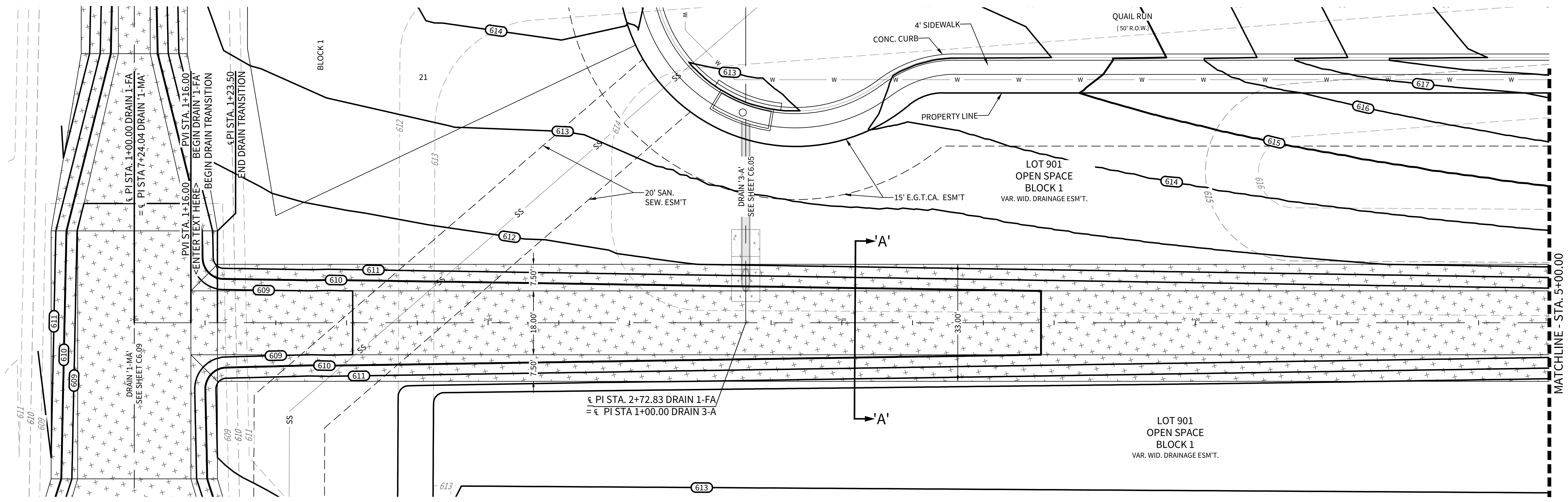


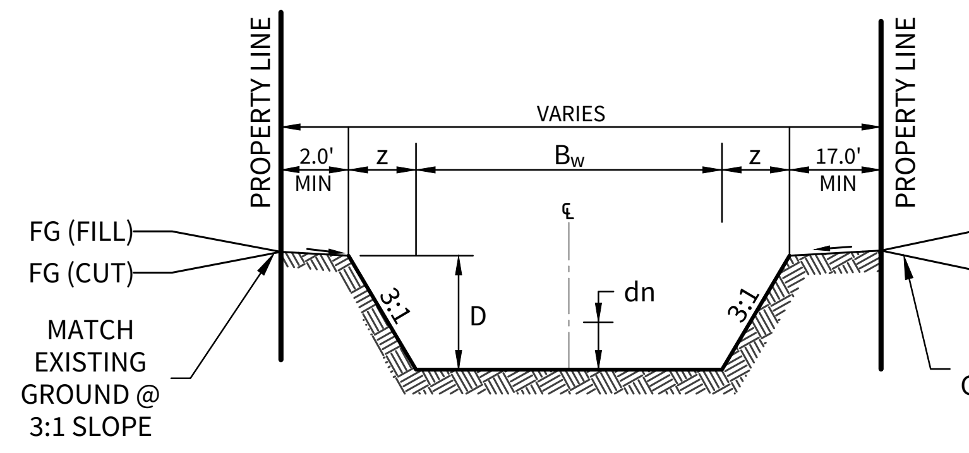
LEGEND

OVERALL UNIT BOUNDARY	— — —
PROPOSED LOT LINE	———
PROPOSED RIGHT OF WAY	———
E.G.T.CA. EASEMENT	- - -
EXISTING 1' CONTOUR	— 499 —
EXISTING 5' CONTOUR	— 500 —
PROPOSED 1' CONTOUR	— 499 —
PROPOSED 5' CONTOUR	— 500 —
CONCRETE RIP RAP	▨
EARTHEN DRAINAGE CHANNEL	▨
PROPOSED WATER LINE	— W —
PROPOSED SEWER LINE	— SS —



DRAIN '1-FA'

STA. 1+00.00 TO STA. 5+00.00



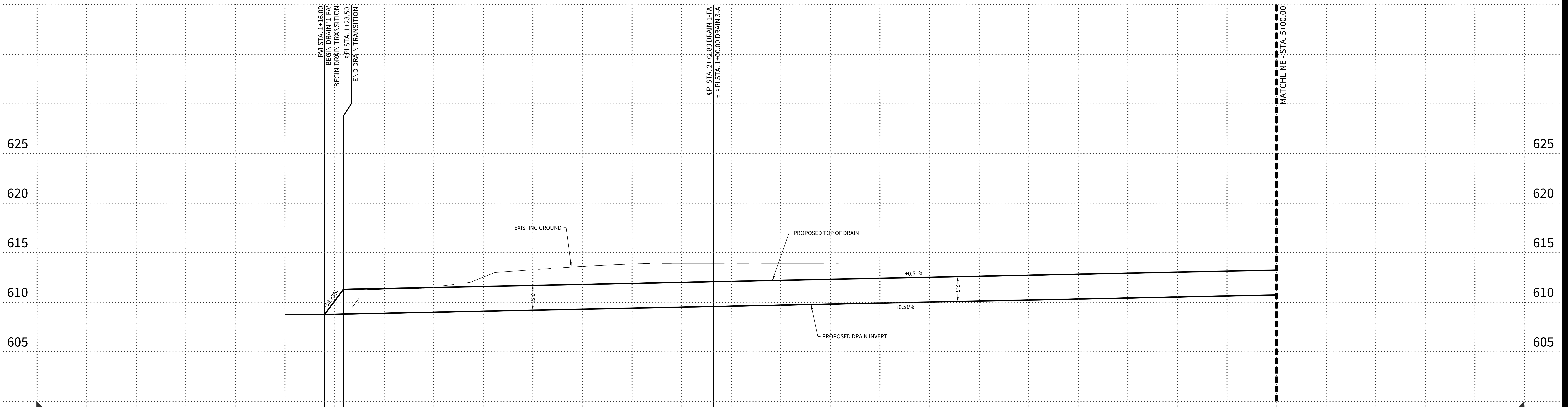
	"A-A"
Q_{25} (cfs)	138.11
B_w (ft)	18.00'
z (ft)	7.50'
n	0.035
D (ft)	2.50'
S (%)	0.51
d_n (ft)	1.65
V (fps)	3.65

DRAIN '1-FA' EARTHEN CHANNEL

(N.T.S.)

'A-A' STA. 1+23.50 TO STA. 5+84.17

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



PROP. TOP OF DRAIN	608.77	610.10	611.26	611.39	611.49	611.59	611.70	611.80	611.90	612.00	612.07	612.11	612.21	612.31	612.42	612.52	612.62	612.72	612.83	612.93	613.03	613.14
PROP. DRAIN INVERT	608.76	608.79	608.80	608.89	608.99	609.09	609.20	609.30	609.40	609.50	609.57	609.61	609.71	609.81	609.92	610.02	610.12	610.22	610.33	610.43	610.53	610.64

1+00 2+00 3+00 4+00 5+00

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

DOVE SONG SUBDIVISION
UNIT 3

DRAIN PLAN & PROFILE - DRAIN '1-FA'

DATE
06/26/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG

CHECKED BY
XV/AL

△	DATE	REVISIONS
1.		
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9.		

ANDREW R. LOWRY
123410
07/03/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C6.02

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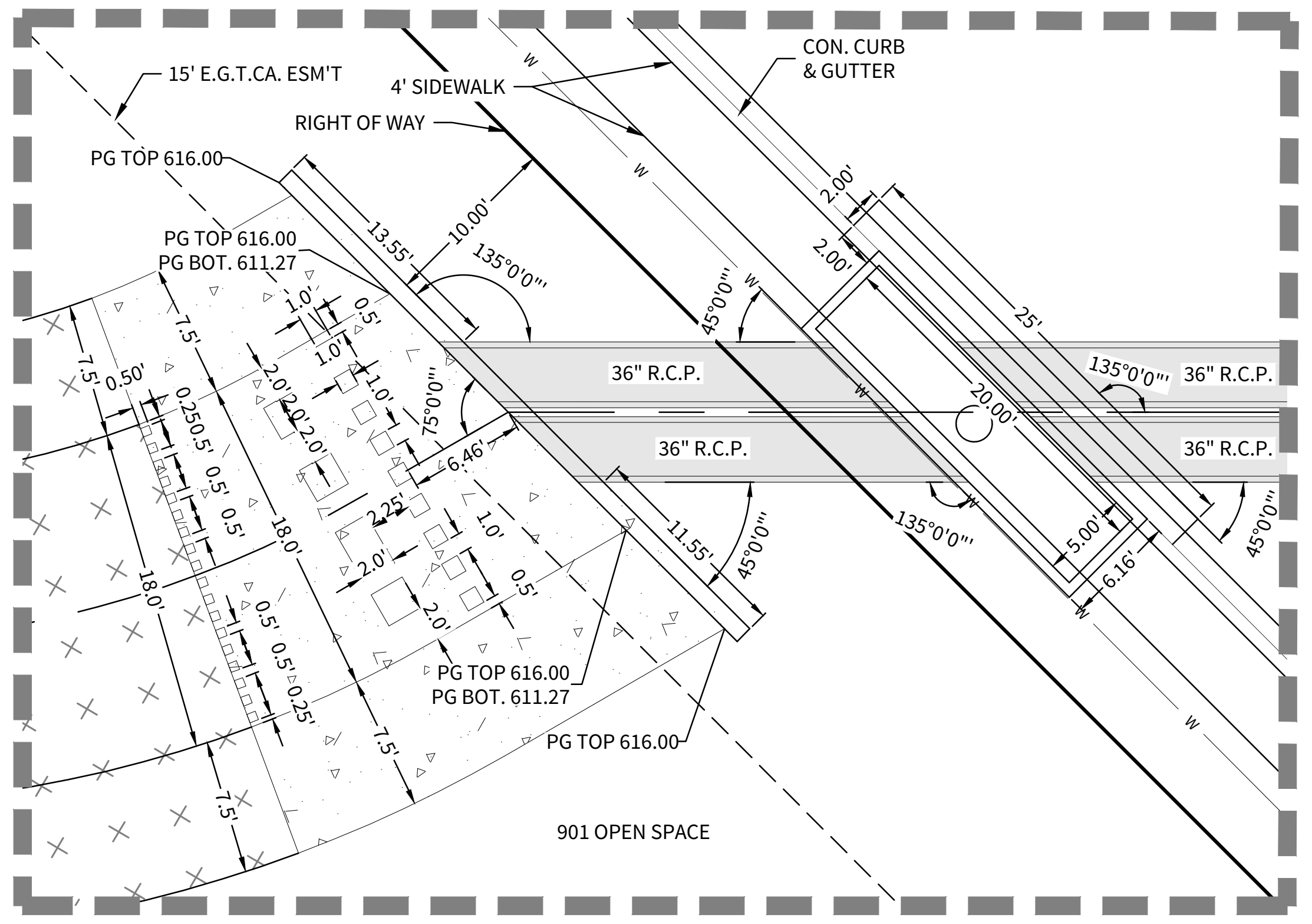
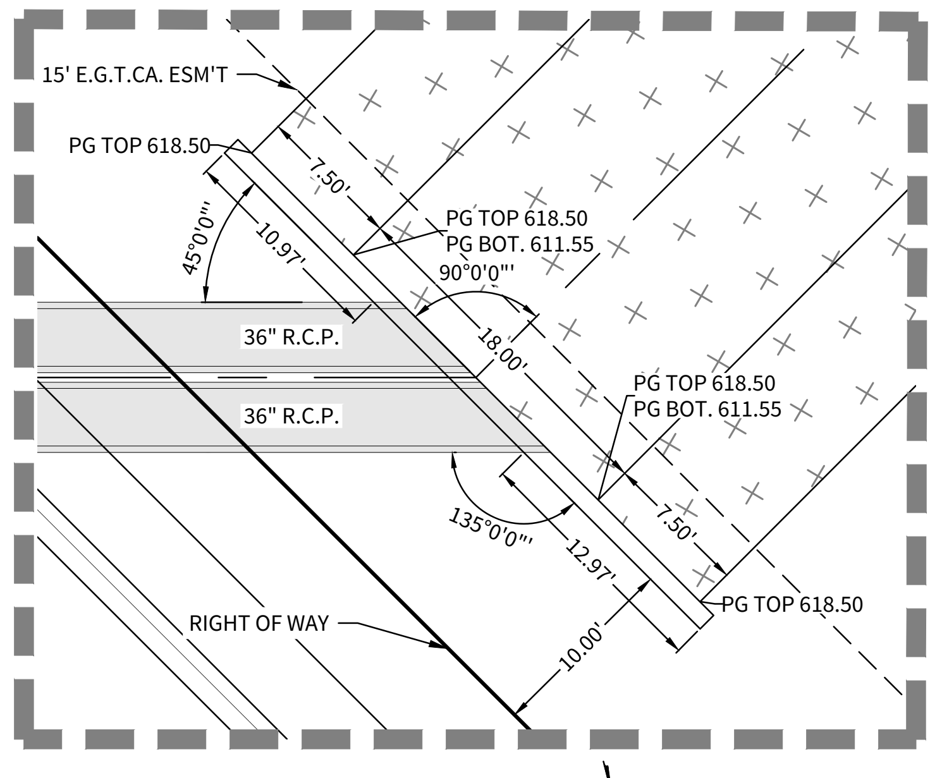


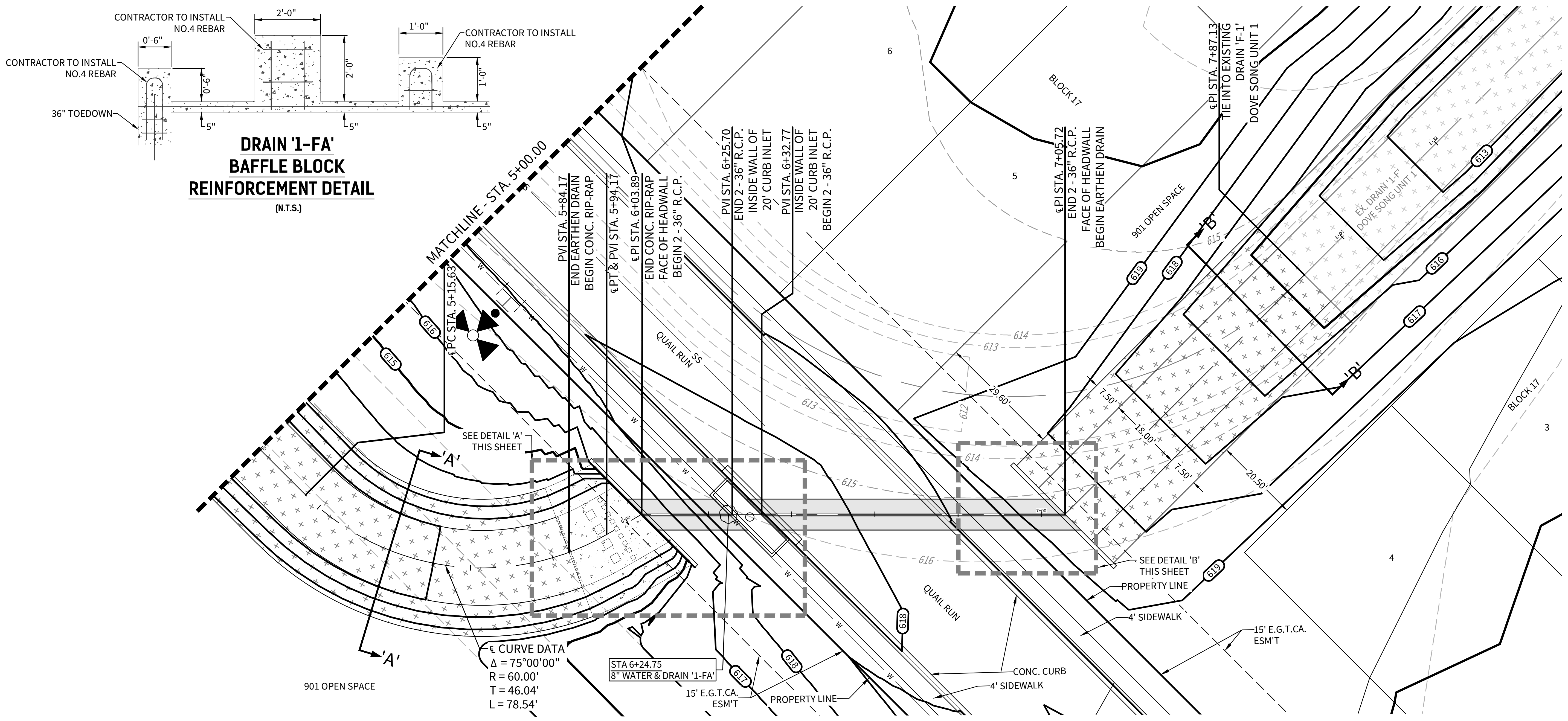
DETAIL 'A'

SCALE 1" = 10'



DETAIL 'B'

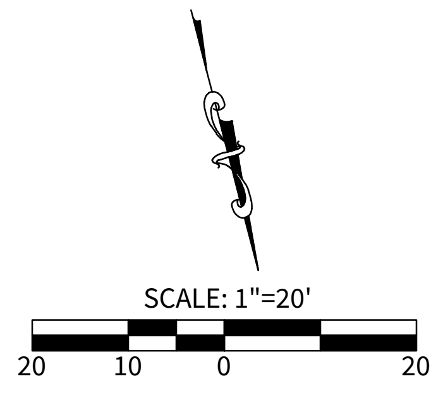
SCALE 1" = 10'


CONTRACTOR TO INSTALL NO.4 REBAR
2'-0"
1'-0"
CONTRACTOR TO INSTALL NO.4 REBAR
0'-6"
CONTRACTOR TO INSTALL NO.4 REBAR
36" TOEDOWN
5"

DRAIN '1-FA' BAFFLE BLOCK REINFORCEMENT DETAIL

(N.T.S.)

MATCHLINE - STA. 5+00.00
PC STA. 5+15.63
PVI STA. 5+84.17 END EARTHEN DRAIN BEGIN CONC. RIP-RAP
PT & PVI STA. 5+94.17
PVI STA. 6+03.89 END CONC. RIP-RAP FACE OF HEADWALL BEGIN 2 - 36" R.C.P.
PVI STA. 6+25.70 END 2 - 36" R.C.P. INSIDE WALL OF 20' CURB INLET
PVI STA. 6+32.77 INSIDE WALL OF 20' CURB INLET BEGIN 2 - 36" R.C.P.
PI STA. 7+05.72 END 2 - 36" R.C.P. FACE OF HEADWALL BEGIN EARTHEN DRAIN
PI STA. 7+87.13 TIE INTO EXISTING DRAIN 'F-1' DOVE SONG UNIT 1
BLOCK 17
901 OPEN SPACE
QUAIL RUN
SEE DETAIL 'A' THIS SHEET
SEE DETAIL 'B' THIS SHEET
PROPERTY LINE
4' SIDEWALK
15' E.G.T.C.A. ESM'T
CONC. CURB
CURVE DATA
Δ = 75°00'00"
R = 60.00'
T = 46.04'
L = 78.54'
STA 6+24.75 8" WATER & DRAIN '1-FA'
EX. DRAIN 'F-1' DOVE SONG UNIT 1
901 OPEN SPACE



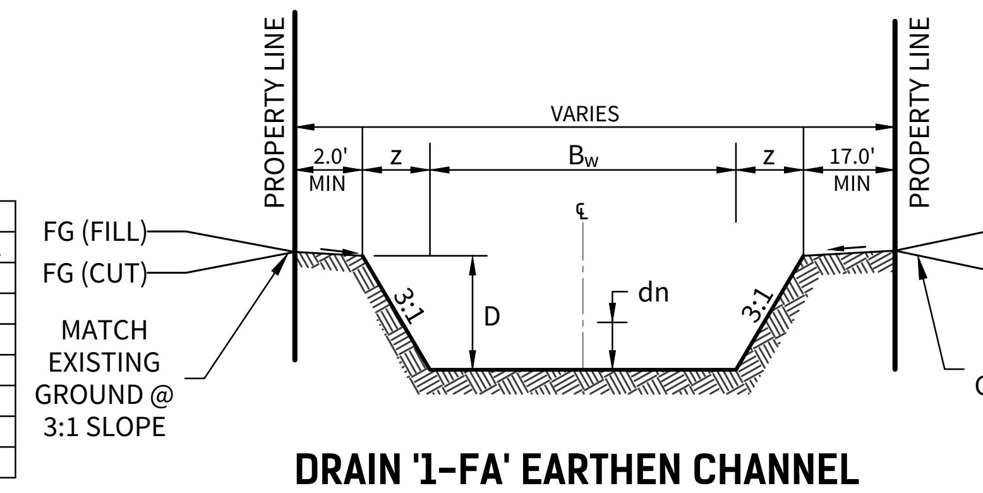
LEGEND

OVERALL UNIT BOUNDARY	— — —
PROPOSED LOT LINE	——
PROPOSED RIGHT OF WAY	——
E.G.T.C.A. EASEMENT	- - -
EXISTING 1' CONTOUR	499
EXISTING 5' CONTOUR	500
PROPOSED 1' CONTOUR	499
PROPOSED 5' CONTOUR	500
CONCRETE RIP RAP	▨
EARTHEN DRAINAGE CHANNEL	▨
EXISTING EARTHEN DRAINAGE CHANNEL	▨
PROPOSED WATER LINE	W
PROPOSED SEWER LINE	SS

DRAIN '1-FA'

STA. 5+00.00 TO END

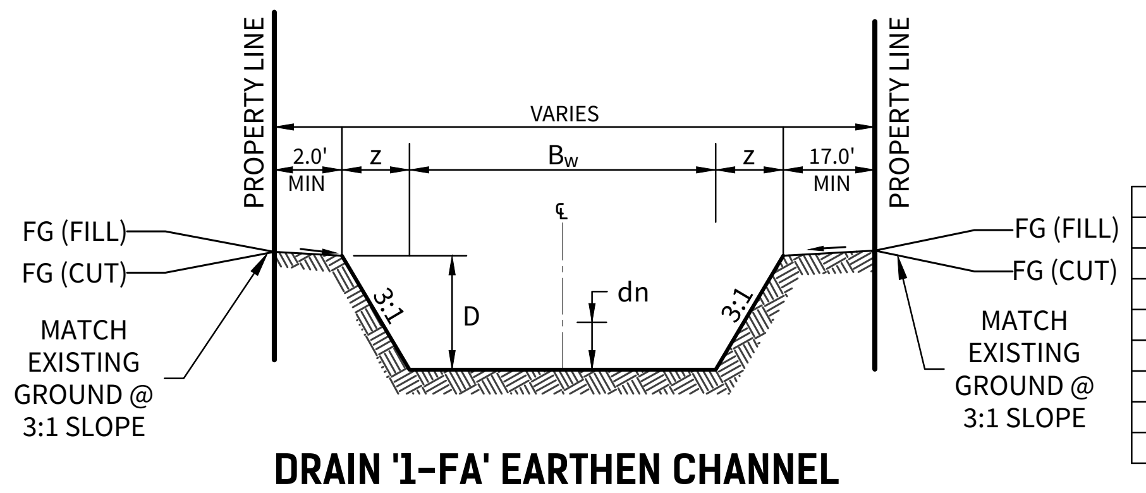
	"A-A"
Q_{25} (cfs)	138.11
B_w (ft)	18.00'
z (ft)	7.50'
n	0.035
D (ft)	2.50'
S (%)	0.51
d_n (ft)	1.65
V (fps)	3.65



DRAIN '1-FA' EARTHEN CHANNEL

(N.T.S.)

'A-A' STA. 1+23.50 TO STA. 5+84.17



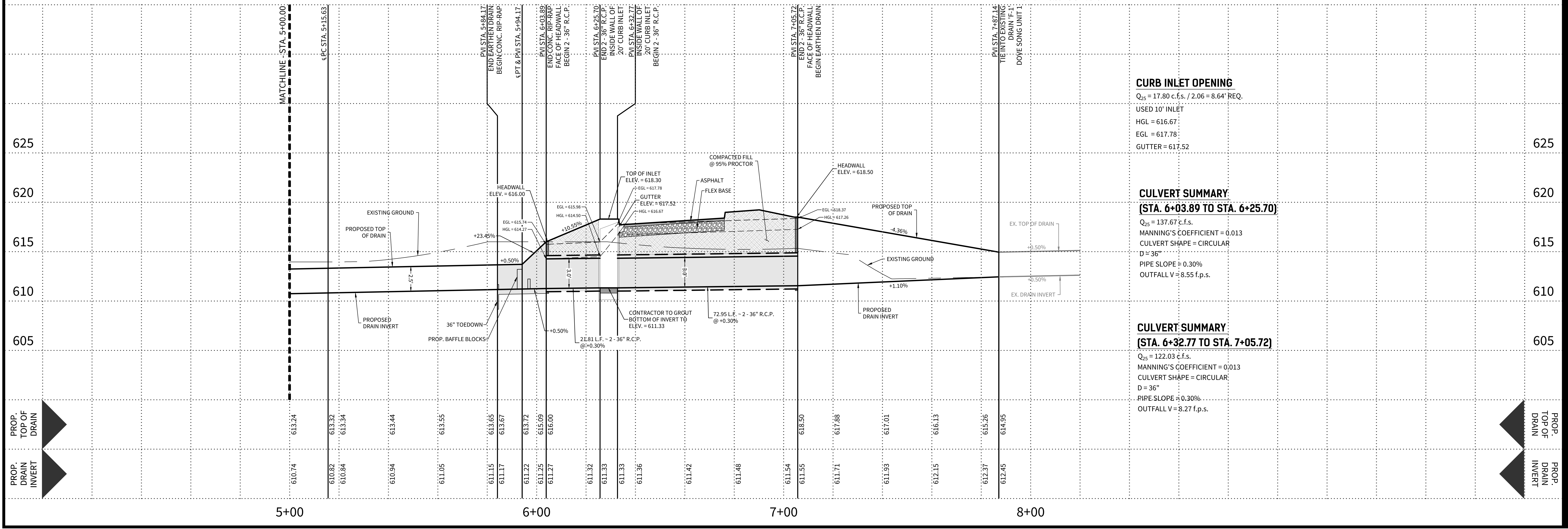
	"A-A"
Q_{25} (cfs)	10.34
B_w (ft)	18.00'
z (ft)	7.50'
n	0.035
D (ft)	2.50'
S (%)	0.50
d_n (ft)	0.50
V (fps)	1.69

DRAIN '1-FA' EARTHEN CHANNEL

(N.T.S.)

'B-B' STA. 7+05.72 TO STA. 7+87.13

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



CURB INLET OPENING

Q_{25} = 17.80 c.f.s. / 2.06 = 8.64' REQ.

USED 10' INLET

HGL = 616.67

EGL = 617.78

GUTTER = 617.52

CULVERT SUMMARY
(STA. 6+03.89 TO STA. 6+25.70)

Q_{25} = 137.67 c.f.s.
MANNING'S COEFFICIENT = 0.013
CULVERT SHAPE = CIRCULAR
D = 36"
PIPE SLOPE = 0.30%
OUTFALL V = 8.55 f.p.s.

CULVERT SUMMARY
(STA. 6+32.77 TO STA. 7+05.72)

Q_{25} = 122.03 c.f.s.
MANNING'S COEFFICIENT = 0.013
CULVERT SHAPE = CIRCULAR
D = 36"
PIPE SLOPE = 0.30%
OUTFALL V = 8.27 f.p.s.

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

DOVE SONG SUBDIVISION UNIT 3

DRAIN PLAN & PROFILE - DRAIN '1-FA'

DATE
06/26/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG

CHECKED BY
XV/AL

REVISIONS

DATE

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ANDREW R. LOWRY
123410
07/03/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C6.03

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P:\03608\004\...\DRAIN PLAN & PROFILE - DRAIN '1-FA'.dwg 2024/06/26 3:32pm jguerrero

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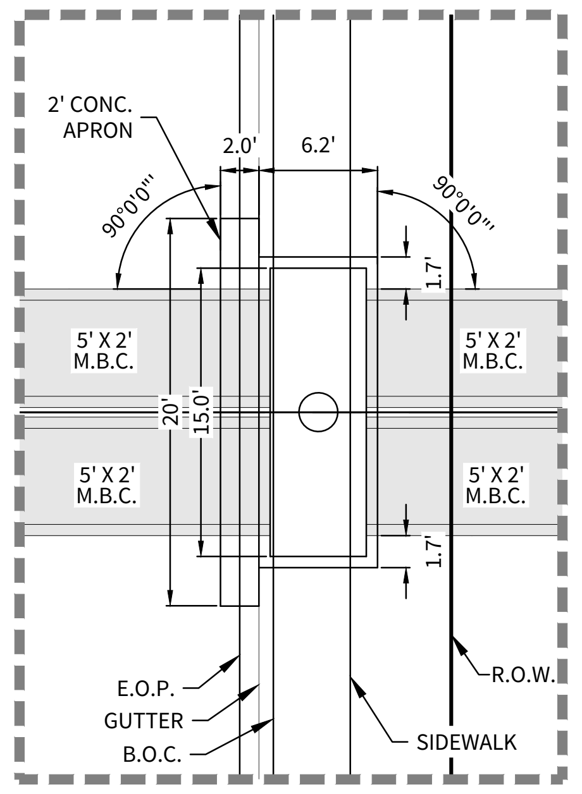
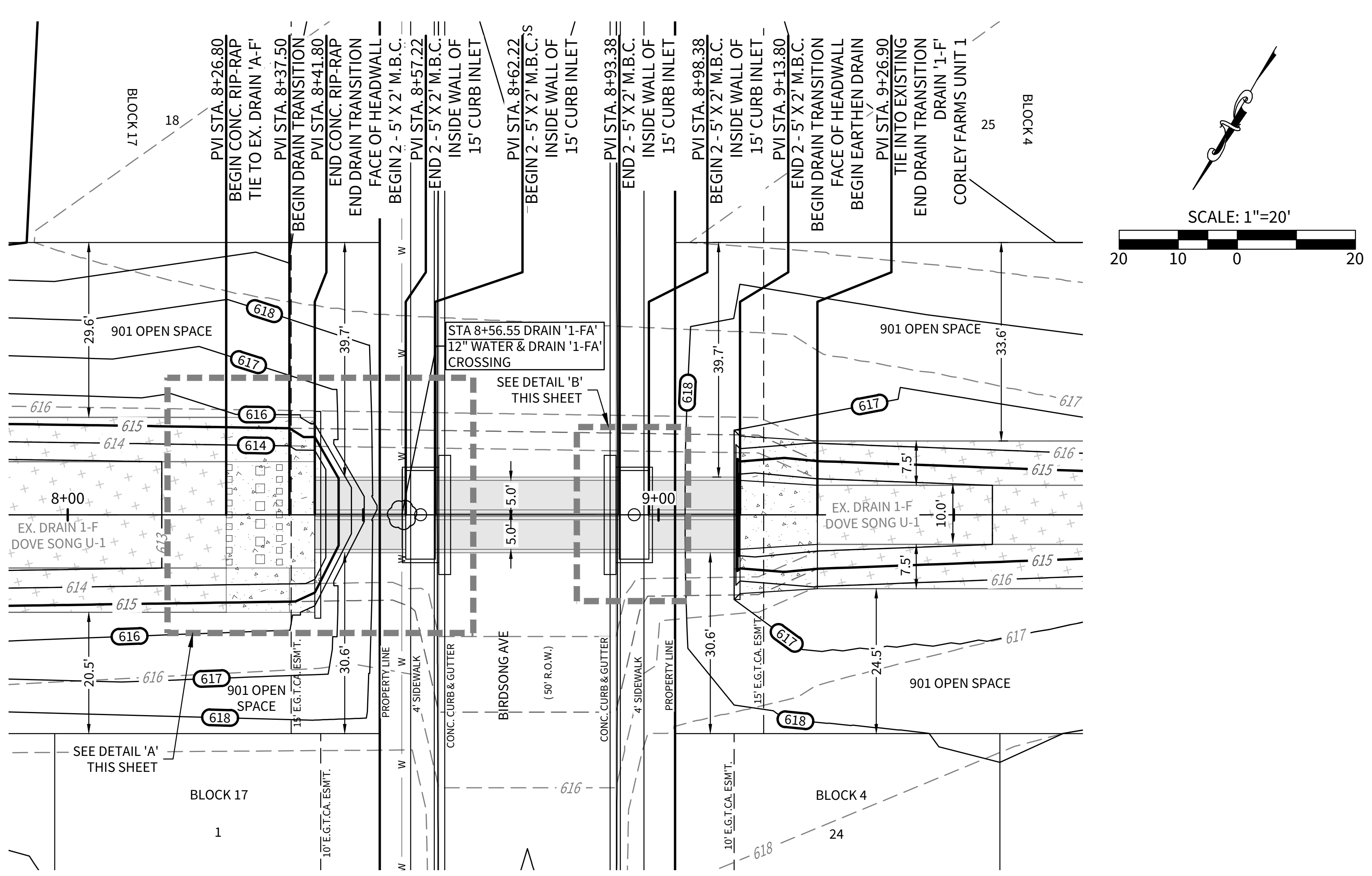
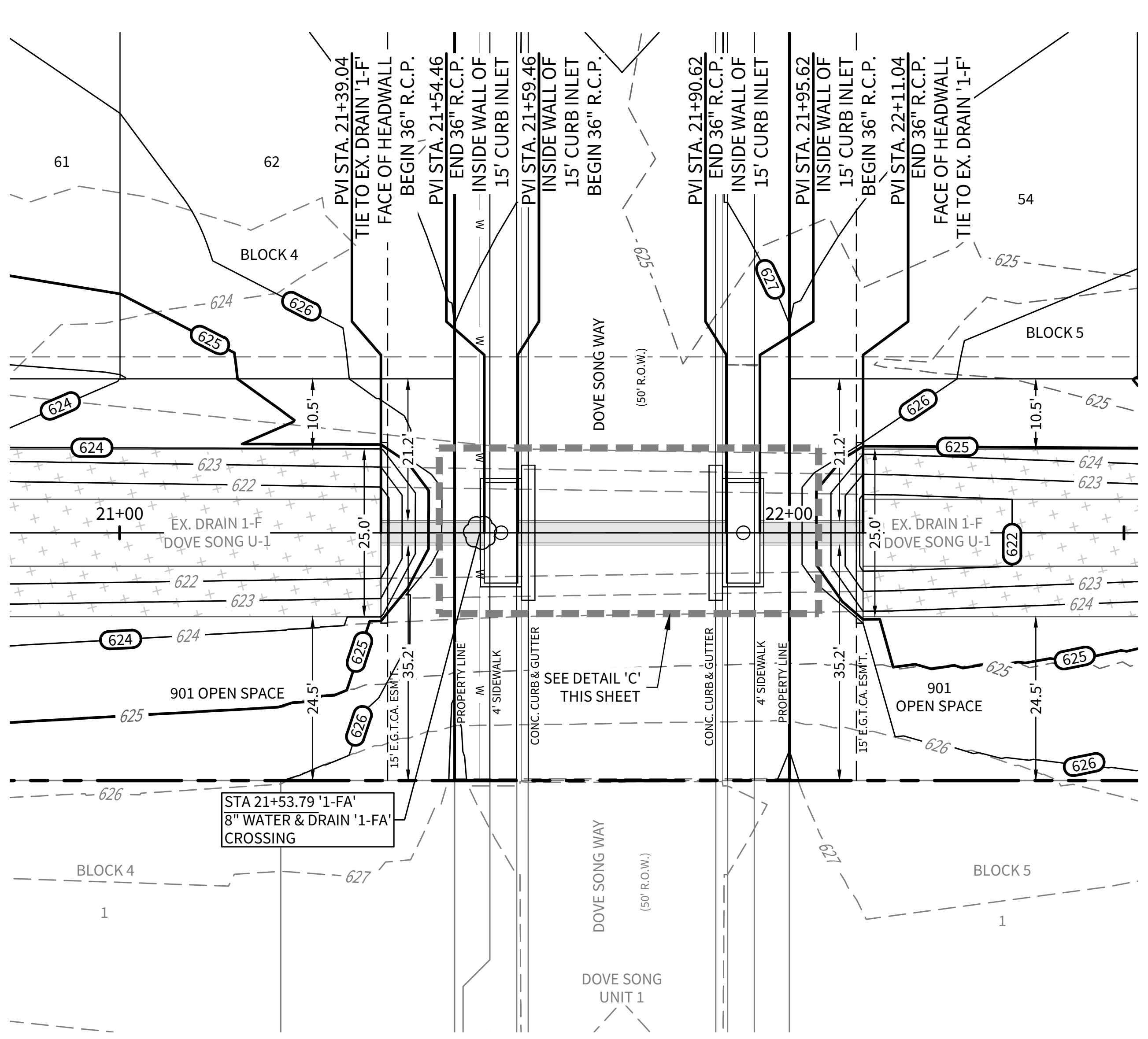


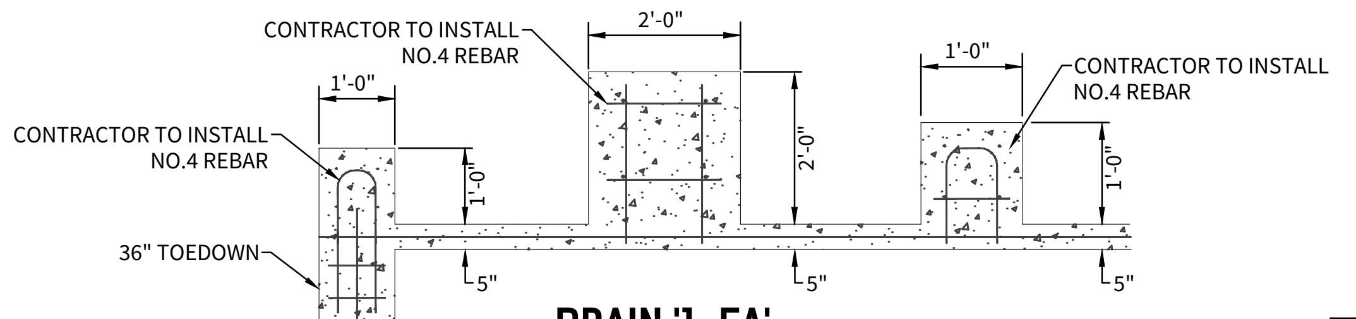
DETAIL 'B'
SCALE 1" = 10'


PVI STA. 8+26.80 BEGIN CONC. RIP-RAP TIE TO EX. DRAIN 'A-F'
PVI STA. 8+37.50 BEGIN DRAIN TRANSITION
PVI STA. 8+41.80 END CONC. RIP-RAP END DRAIN TRANSITION FACE OF HEADWALL BEGIN 2 - 5' X 2' M.B.C.
PVI STA. 8+57.22 END 2 - 5' X 2' M.B.C. INSIDE WALL OF 15' CURB INLET
PVI STA. 8+62.22 BEGIN 2 - 5' X 2' M.B.C. INSIDE WALL OF 15' CURB INLET
PVI STA. 8+93.38 END 2 - 5' X 2' M.B.C. INSIDE WALL OF 15' CURB INLET
PVI STA. 8+98.38 BEGIN 2 - 5' X 2' M.B.C. INSIDE WALL OF 15' CURB INLET
PVI STA. 9+13.80 END 2 - 5' X 2' M.B.C. BEGIN DRAIN TRANSITION FACE OF HEADWALL BEGIN EARTHEN DRAIN
PVI STA. 9+26.90 TIE INTO EXISTING END DRAIN TRANSITION DRAIN '1-F' CORLEY FARMS UNIT 1
BLOCK 17
BLOCK 4
SCALE: 1"=20'
20 10 0 20
901 OPEN SPACE
STA 8+56.55 DRAIN '1-FA' 12" WATER & DRAIN '1-FA' CROSSING
SEE DETAIL 'B' THIS SHEET
SEE DETAIL 'A' THIS SHEET
EX. DRAIN 1-F DOVE SONG U-1
8+00
9+00
BIRDSONG AVE
(50' R.O.W.)
CONC. CURB & GUTTER
4' SIDEWALK
PROPERTY LINE
15' E.G.T.C.A. ESMT.
614 615 616 617 618

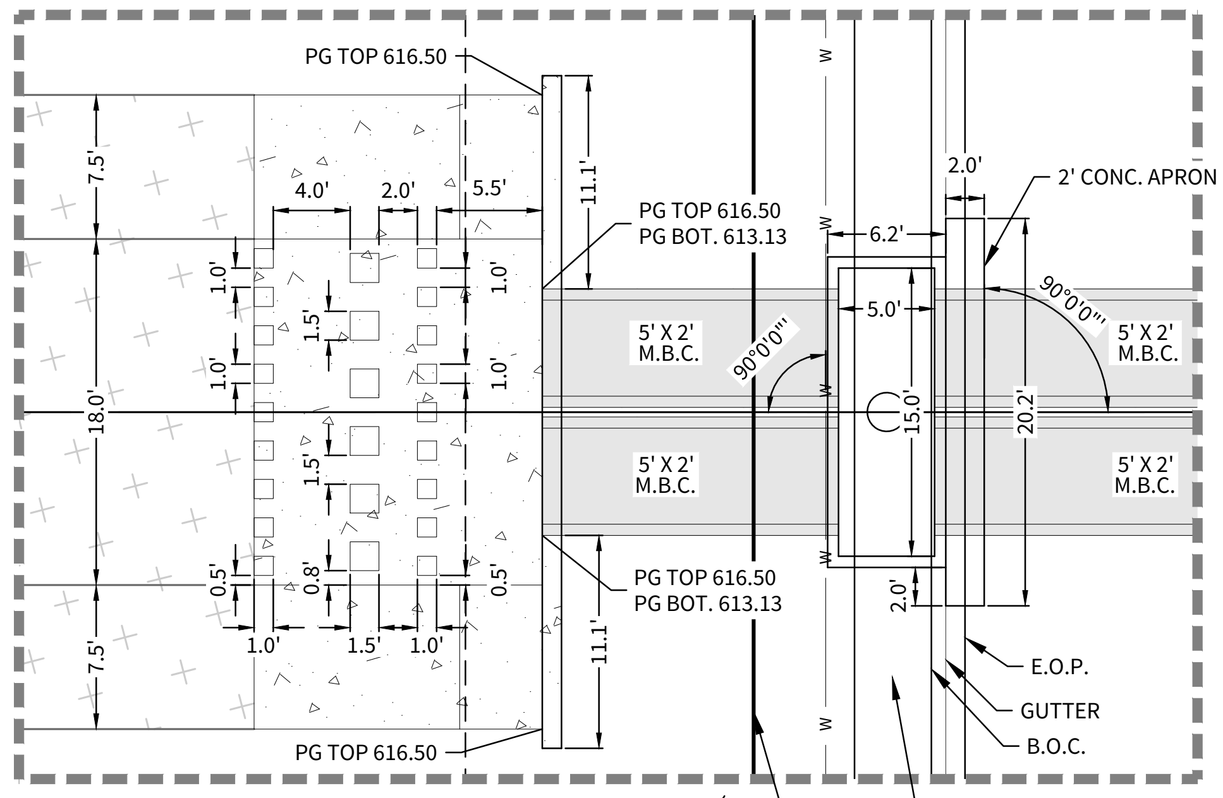

PVI STA. 21+39.04 TIE TO EX. DRAIN '1-F' FACE OF HEADWALL BEGIN 36" R.C.P.
PVI STA. 21+54.46 END 36" R.C.P. INSIDE WALL OF 15' CURB INLET
PVI STA. 21+59.46 INSIDE WALL OF 15' CURB INLET BEGIN 36" R.C.P.
PVI STA. 21+90.62 END 36" R.C.P. INSIDE WALL OF 15' CURB INLET
PVI STA. 21+95.62 INSIDE WALL OF 15' CURB INLET BEGIN 36" R.C.P.
PVI STA. 22+11.04 END 36" R.C.P. FACE OF HEADWALL TIE TO EX. DRAIN '1-F'
BLOCK 4
BLOCK 5
61 62 54
21+00
22+00
EX. DRAIN 1-F DOVE SONG U-1
901 OPEN SPACE
DOVE SONG WAY
(50' R.O.W.)
DOVE SONG UNIT 1
SEE DETAIL 'C' THIS SHEET
STA 21+53.79 '1-FA' 8" WATER & DRAIN '1-FA' CROSSING
SCALE: 1"=20'
20 10 0 20
622 623 624 625 626 627

LEGEND

OVERALL UNIT BOUNDARY	— — —
PROPOSED LOT LINE	———
PROPOSED RIGHT OF WAY	———
E.G.T.C.A. EASEMENT	- - - -
EXISTING 1' CONTOUR	499
EXISTING 5' CONTOUR	500
PROPOSED 1' CONTOUR	(499)
PROPOSED 5' CONTOUR	(500)
CONCRETE RIP RAP	▨
EARTHEN DRAINAGE CHANNEL	▨
EXISTING EARTHEN DRAINAGE CHANNEL	▨
PROPOSED WATER LINE	W
PROPOSED SEWER LINE	SS


CONTRACTOR TO INSTALL NO.4 REBAR
CONTRACTOR TO INSTALL NO.4 REBAR
CONTRACTOR TO INSTALL NO.4 REBAR
2'-0"
1'-0"
1'-0"
2'-0"
1'-0"
1'-0"
36" TOEDOWN
5"
5"
5"

DRAIN '1-FA' BAFFLE BLOCK REINFORCEMENT DETAIL
[N.T.S.]



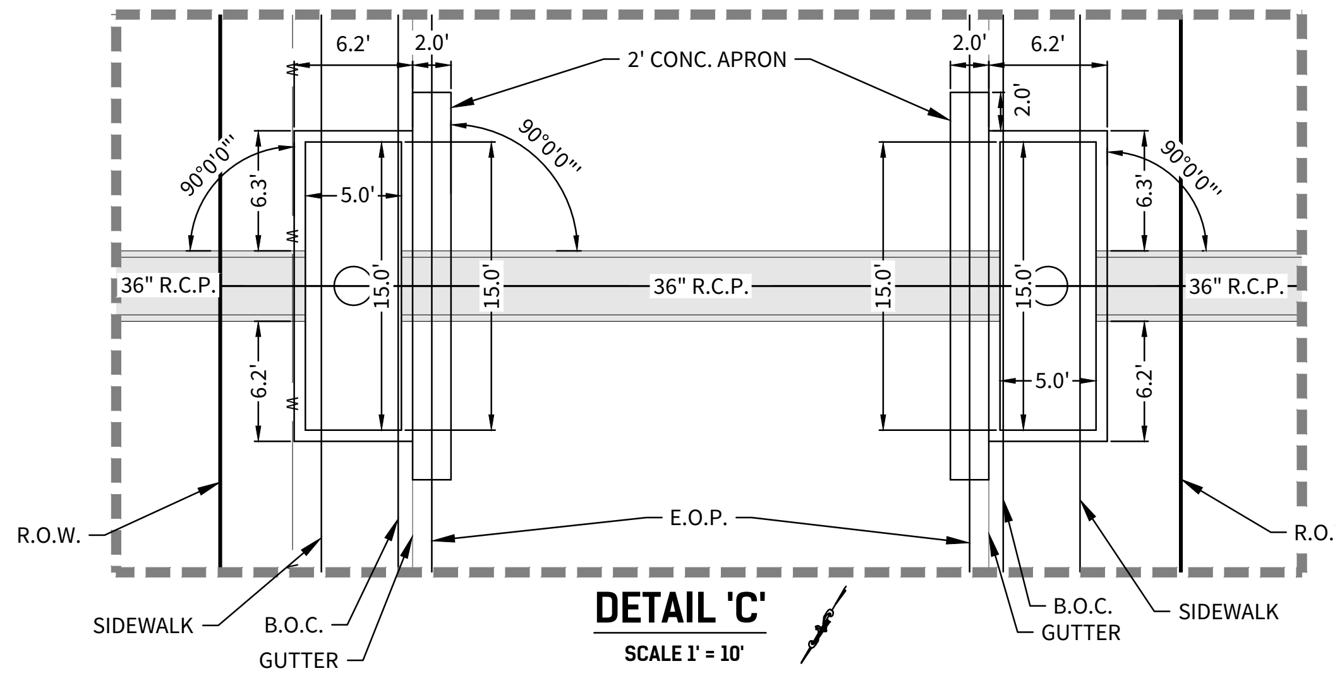
DETAIL 'A'
SCALE 1" = 10'

DRAIN '1-FA'

STA. 8+26.80 TO STA. 9+26.90

DRAIN '1-FA'

STA. 21+39.04 TO STA. 22+11.04



DETAIL 'C'
SCALE 1" = 10'

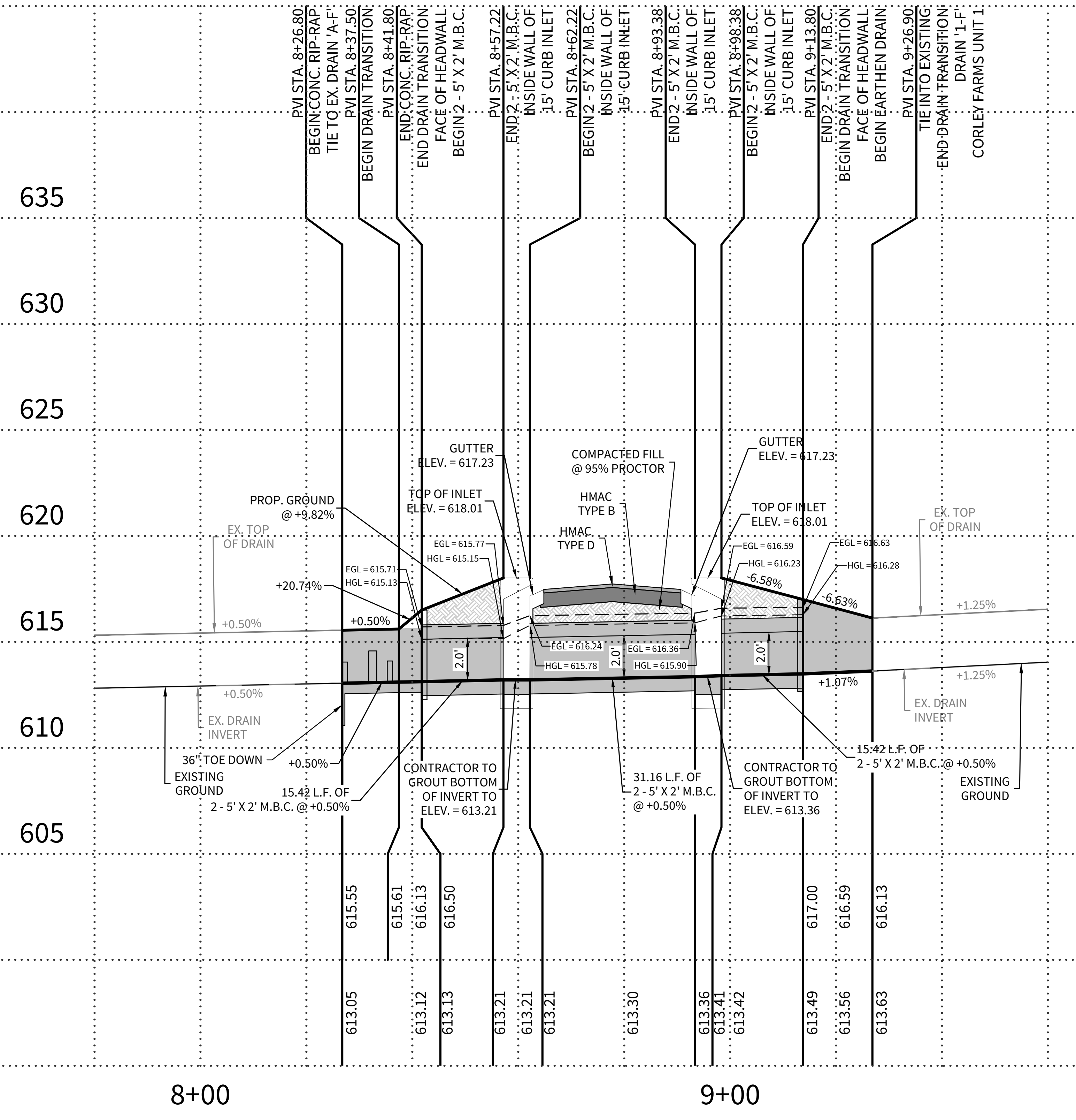
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'

CURB INLET OPENING (STA. 8+57.22)

Q_{25} = 26.77 c.f.s. / 2.06 = 12.96' REQ.
USED 15' INLET
HGL = 615.78
EGL = 616.24
GUTTER = 617.23

CURB INLET OPENING (STA. 8+93.38)

Q_{25} = 26.22 c.f.s. / 2.06 = 12.96' REQ.
USED 15' INLET
HGL = 616.23
EGL = 616.59
GUTTER = 617.23


PVI STA. 8+26.80 BEGIN CONC. RIP-RAP TIE TO EX. DRAIN 'A-F'
PVI STA. 8+37.50 BEGIN DRAIN TRANSITION
PVI STA. 8+41.80 END CONC. RIP-RAP END DRAIN TRANSITION FACE OF HEADWALL BEGIN 2 - 5' X 2' M.B.C.
PVI STA. 8+57.22 END 2 - 5' X 2' M.B.C. INSIDE WALL OF 15' CURB INLET
PVI STA. 8+62.22 BEGIN 2 - 5' X 2' M.B.C. INSIDE WALL OF 15' CURB INLET
PVI STA. 8+93.38 END 2 - 5' X 2' M.B.C. INSIDE WALL OF 15' CURB INLET
PVI STA. 8+98.38 BEGIN 2 - 5' X 2' M.B.C. INSIDE WALL OF 15' CURB INLET
PVI STA. 9+13.80 END 2 - 5' X 2' M.B.C. BEGIN DRAIN TRANSITION FACE OF HEADWALL BEGIN EARTHEN DRAIN
PVI STA. 9+26.90 TIE INTO EXISTING END DRAIN TRANSITION DRAIN '1-F' CORLEY FARMS UNIT 1
635
630
625
620
615
610
605
PROP. GROUND @ +9.82%
EX. TOP OF DRAIN
+20.74%
+0.50%
GUTTER ELEV. = 617.23
TOP OF INLET ELEV. = 618.01
COMPACTED FILL @ 95% PROCTOR
HMAC TYPE B
HMAC TYPE D
-6.58%
-6.63%
+1.25%
+1.07%
EX. DRAIN INVERT
36" TOE DOWN
EXISTING GROUND
15.42 L.F. OF 2 - 5' X 2' M.B.C. @ +0.50%
CONTRACTOR TO GROUT BOTTOM OF INVERT TO ELEV. = 613.21
31.16 L.F. OF 2 - 5' X 2' M.B.C. @ +0.50%
CONTRACTOR TO GROUT BOTTOM OF INVERT TO ELEV. = 613.36
15.42 L.F. OF 2 - 5' X 2' M.B.C. @ +0.50%
EXISTING GROUND
PROP. TOP OF DRAIN
615.55 615.61 616.13 616.50 617.00 616.59 616.13
PROP. DRAIN INVERT
613.05 613.12 613.13 613.21 613.21 613.21 613.30 613.36 613.41 613.42 613.49 613.56 613.63
8+00
9+00

CULVERT SUMMARY (STA. 8+41.80 TO STA. 8+57.22)

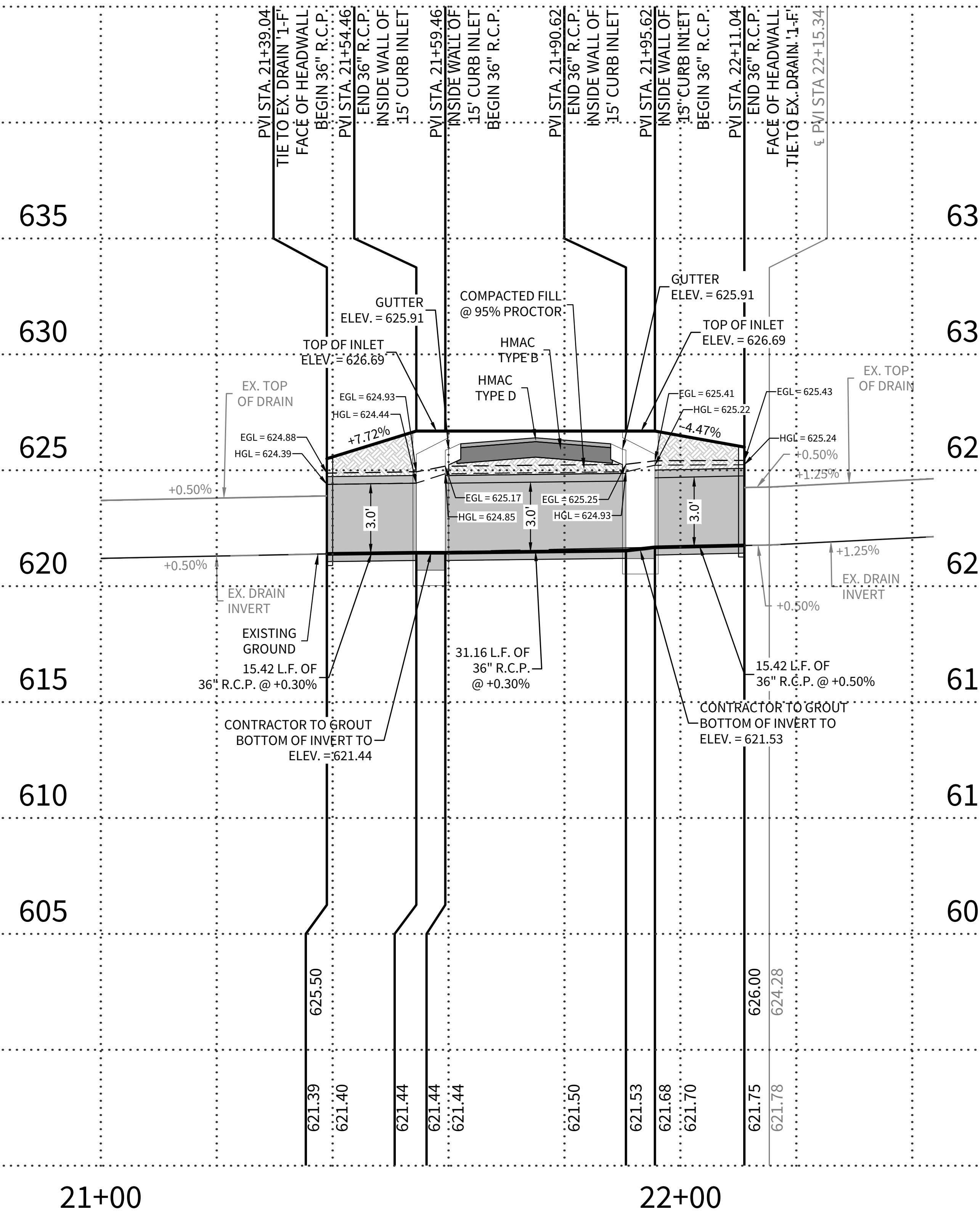
Q_{25} = 122.0 c.f.s.
MANNING'S COEFFICIENT = 0.013
CULVERT SHAPE = CONC. BOX (2)
RISE = 24"
SPAN = 60"
PIPE SLOPE = 0.50%
OUTFALL V = 6.10 f.p.s.

CULVERT SUMMARY (STA. 8+62.22 TO STA. 8+93.38)

Q_{25} = 108.70 c.f.s.
MANNING'S COEFFICIENT = 0.013
CULVERT SHAPE = CONC. BOX (2)
RISE = 24"
SPAN = 60"
PIPE SLOPE = 0.50%
OUTFALL V = 5.43 f.p.s.

CULVERT SUMMARY (STA. 8+98.38 TO STA. 9+13.80)

Q_{25} = 95.26 c.f.s.
MANNING'S COEFFICIENT = 0.013
CULVERT SHAPE = CONC. BOX (2)
RISE = 24"
SPAN = 60"
PIPE SLOPE = 0.50%
OUTFALL V = 4.76 f.p.s.


PVI STA. 21+39.04 TIE TO EX. DRAIN '1-F' FACE OF HEADWALL BEGIN 36" R.C.P.
PVI STA. 21+54.46 END 36" R.C.P. INSIDE WALL OF 15' CURB INLET
PVI STA. 21+59.46 INSIDE WALL OF 15' CURB INLET BEGIN 36" R.C.P.
PVI STA. 21+90.62 END 36" R.C.P. INSIDE WALL OF 15' CURB INLET
PVI STA. 21+95.62 INSIDE WALL OF 15' CURB INLET BEGIN 36" R.C.P.
PVI STA. 22+11.04 END 36" R.C.P. FACE OF HEADWALL TIE TO EX. DRAIN '1-F'
635
630
625
620
615
610
605
GUTTER ELEV. = 625.91
TOP OF INLET ELEV. = 626.69
COMPACTED FILL @ 95% PROCTOR
HMAC TYPE B
HMAC TYPE D
GUTTER ELEV. = 625.91
TOP OF INLET ELEV. = 626.69
EX. TOP OF DRAIN
+7.72%
-4.47%
+0.50%
+1.25%
EX. DRAIN INVERT
EXISTING GROUND
15.42 L.F. OF 36" R.C.P. @ +0.30%
31.16 L.F. OF 36" R.C.P. @ +0.30%
15.42 L.F. OF 36" R.C.P. @ +0.50%
CONTRACTOR TO GROUT BOTTOM OF INVERT TO ELEV. = 621.44
CONTRACTOR TO GROUT BOTTOM OF INVERT TO ELEV. = 621.53
EX. DRAIN INVERT
625.50 626.00 624.28
621.39 621.40 621.44 621.44 621.50 621.53 621.68 621.70 621.75 621.78
21+00
22+00

CURB INLET OPENING (STA. 21+54.46)

Q_{25} = 15.17 c.f.s. / 2.06 = 7.36' REQ.
USED 15' INLET
HGL = 624.85
EGL = 625.17
GUTTER = 625.91

CULVERT SUMMARY (STA. 21+39.04 TO STA. 21+54.46)

Q_{25} = 39.67 c.f.s.
MANNING'S COEFFICIENT = 0.013
CULVERT SHAPE = CIRCULAR
D = 36"
PIPE SLOPE = 0.30%
OUTFALL V = 5.61 f.p.s.

CURB INLET OPENING (STA. 21+90.62)

Q_{25} = 15.17 c.f.s. / 2.06 = 7.36' REQ.
USED 15' INLET
HGL = 624.93
EGL = 625.24
GUTTER = 625.91

CULVERT SUMMARY (STA. 21+59.46 TO STA. 21+90.62)

Q_{25} = 32.08 c.f.s.
MANNING'S COEFFICIENT = 0.013
CULVERT SHAPE = CIRCULAR
D = 36"
PIPE SLOPE = 0.30%
OUTFALL V = 4.54 f.p.s.

CULVERT SUMMARY (STA. 21+95.62 TO STA. 22+11.04)

Q_{25} = 24.49 c.f.s.
MANNING'S COEFFICIENT = 0.013
CULVERT SHAPE = CIRCULAR
D = 36"
PIPE SLOPE = 0.50%
OUTFALL V = 3.47 f.p.s.

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

DOVE SONG SUBDIVISION UNIT 3

DRAIN PLAN & PROFILE - DRAIN '1-FA'

DATE	06/26/2024
PROJECT NO.	03608.004
DRAWN BY	JG/SG
CHECKED BY	XV/AL

REVISIONS

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ANDREW R. LOWRY
123410
07/03/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

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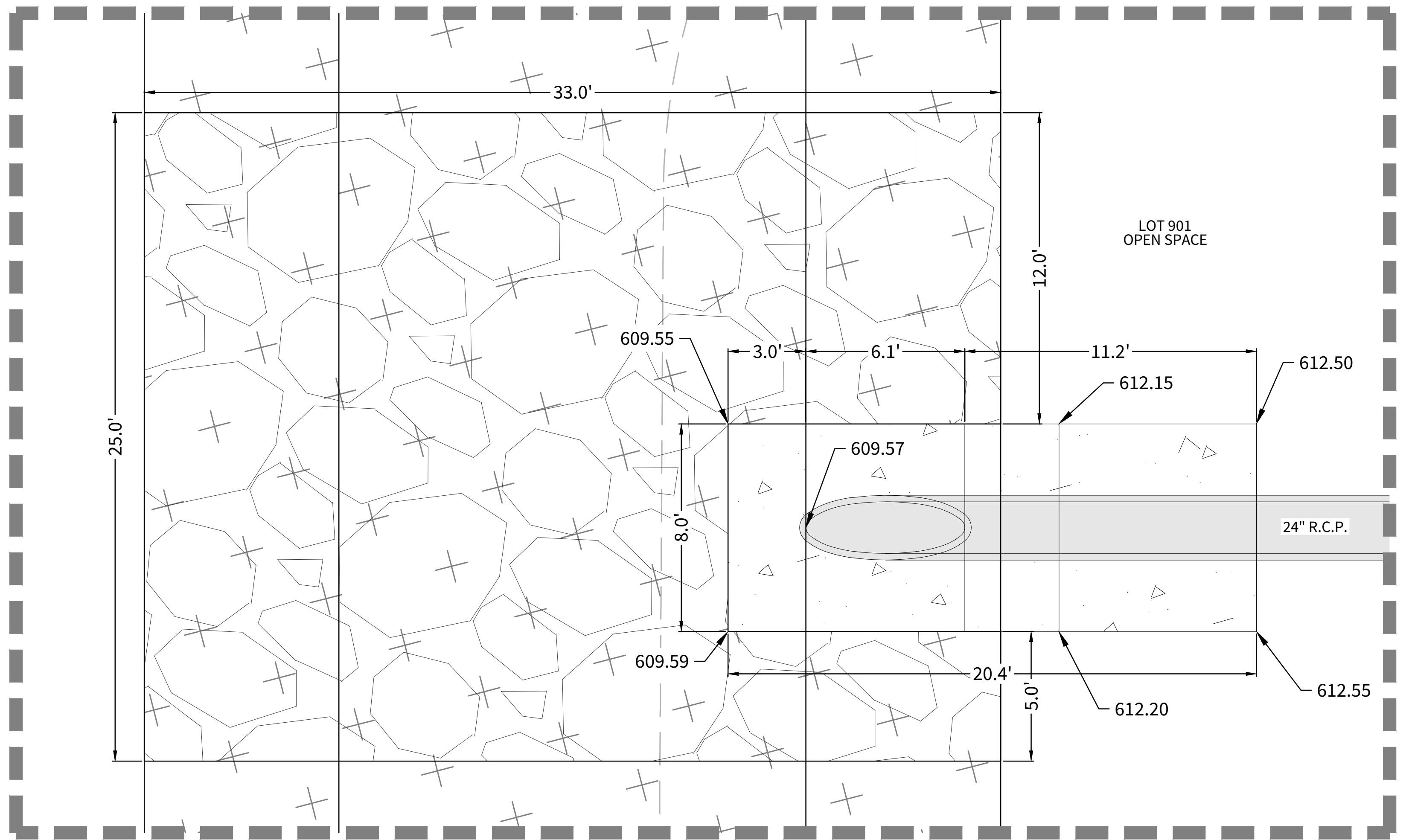
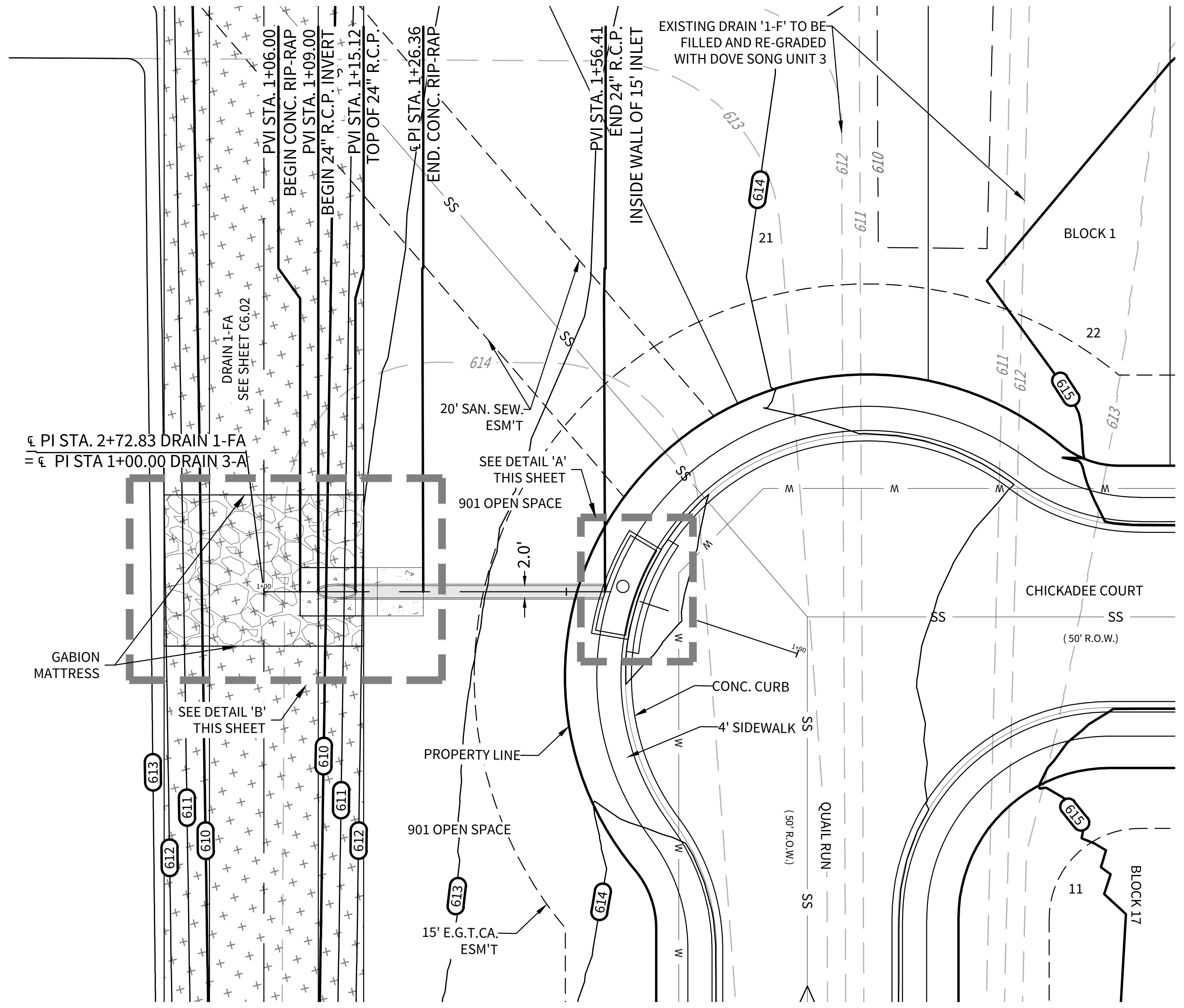
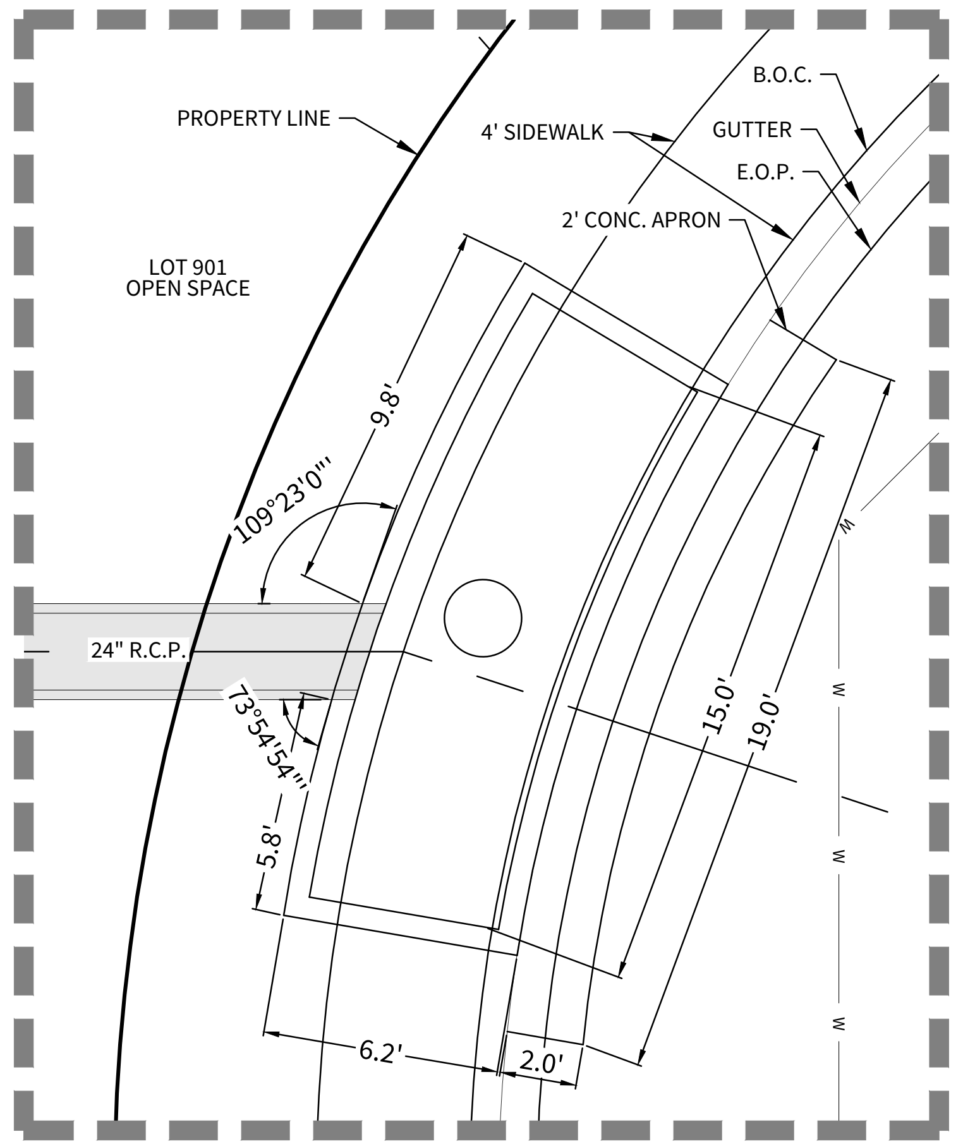


DETAIL 'B' - DRAIN '3-A'

SCALE 1' = 5'





DETAIL 'A' - DRAIN '3-A' 15' INLET

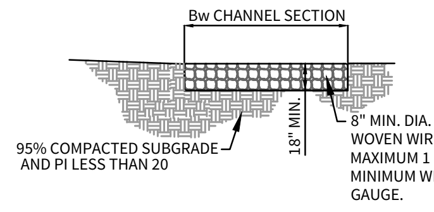
SCALE 1' = 5'

SCALE: 1"=20'

20 10 0 20

LEGEND

OVERALL UNIT BOUNDARY	━━
PROPOSED LOT LINE	──
PROPOSED RIGHT OF WAY	──
E.G.T.CA. EASEMENT	– – –
EXISTING 1' CONTOUR	– – 499 – –
EXISTING 5' CONTOUR	– – 500 – –
PROPOSED 1' CONTOUR	── 499 ──
PROPOSED 5' CONTOUR	── 500 ──
CONCRETE RIP RAP	▨
EARTHEN DRAINAGE CHANNEL	▨
EXISTING EARTHEN DRAINAGE CHANNEL	▨
PROPOSED WATER LINE	— W —
PROPOSED SEWER LINE	──


Bw CHANNEL SECTION
95% COMPACTED SUBGRADE AND PI LESS THAN 20
18" MIN.
8" MIN. DIA. ROCK SECURED WITH A WOVEN WIRE SHEATING HAVING MAXIMUM 1 INCH OPENING AND MINIMUM WIRE DIAMETER OF 20 GAUGE.

GABION STYLE ROCK EROSION CONTROL MATRESS DETAIL

NOTE: GABION MATTRESS TO BE FREE OF GEO-TEXTILE FABRIC LINING.

(N.T.S.)

DRAIN '3-A'

STA. 1+00.00 TO STA. END

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

CURB INLET OPENING

Q_{25} = 18.06 c.f.s. / 2.06 = 8.77' REQ.

USED 10' INLET

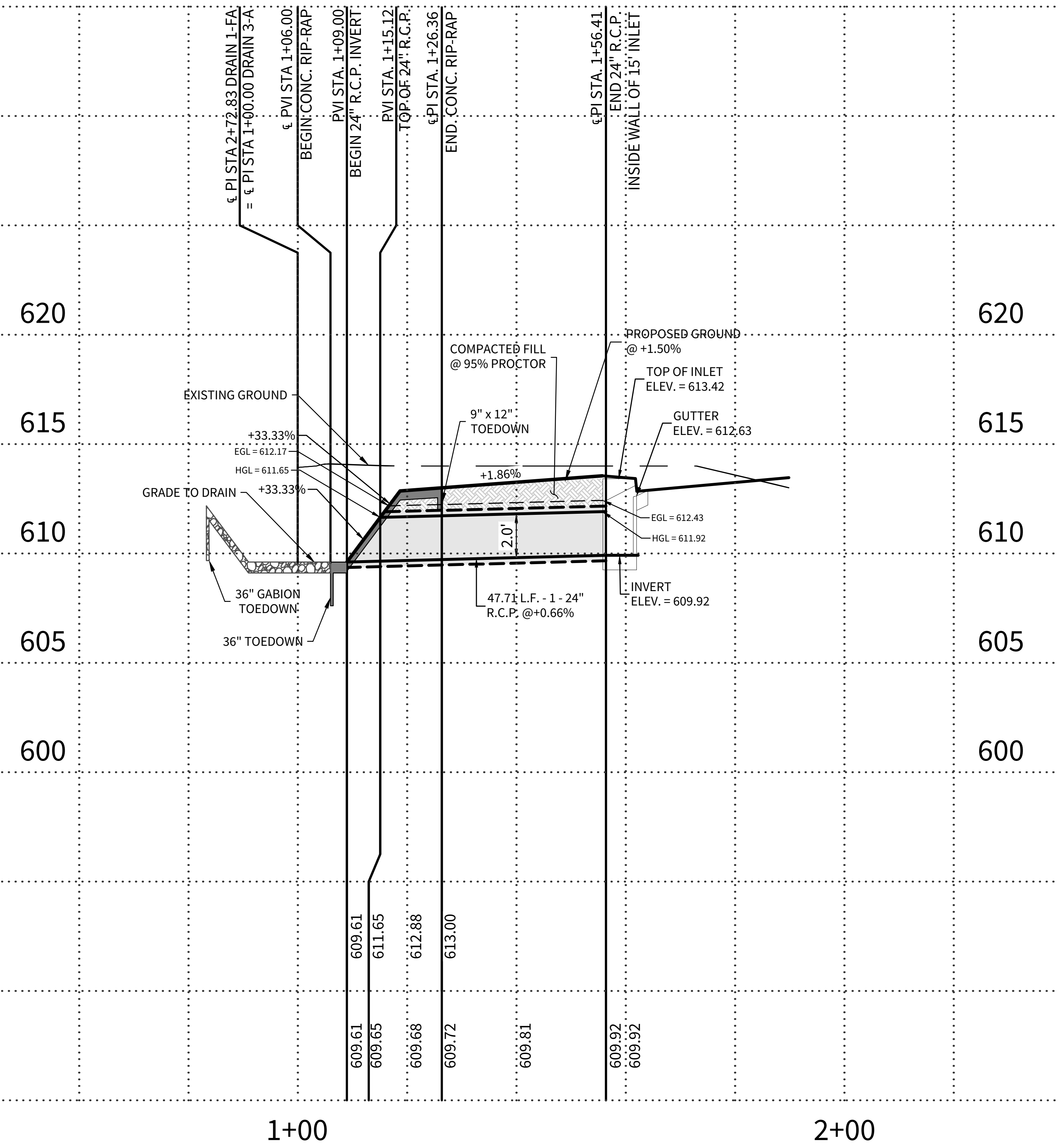
HGL = 611.92

EGL = 612.43

GUTTER = 612.63

PIPE SUMMARY

Q_{25} = 18.06 c.f.s.
MANNING'S COEFFICIENT = 0.013
CULVERT SHAPE = CIRCULAR
D = 24"
PIPE SLOPE = 0.64%
OUTFALL V = 6.54 f.p.s.



620
615
610
605
600

PROP. TOP OF DRAIN

PROP. DRAIN INVERT

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

DOVE SONG SUBDIVISION UNIT 3

DRAIN PLAN & PROFILE - DRAIN '3-A

DATE
06/27/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG

CHECKED BY
XV/AL

REVISIONS

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STATE OF TEXAS
ANDREW R. LOWRY
123410
LICENSED
PROFESSIONAL ENGINEER
07/03/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C6.05

CUDEENGINEERS.COM

P:\03608\004\2-DWG\4-Plans\C6.05 DRAIN PLAN & PROFILE - DRAIN '3-A.dwg 2024/06/27 9:20am jguerrero

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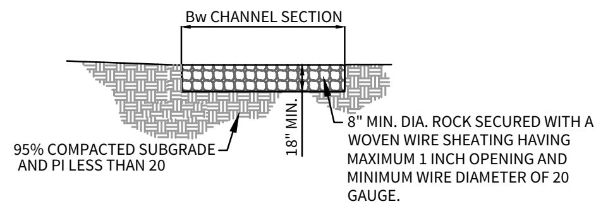
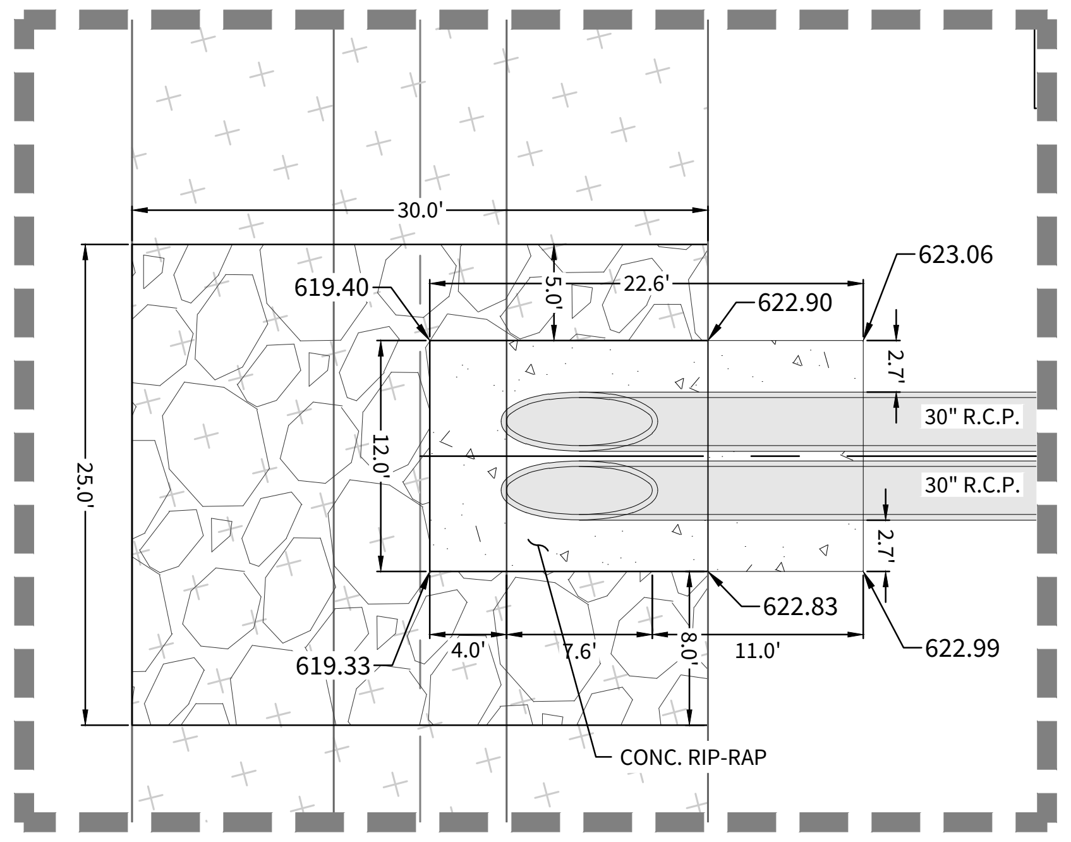

Bw CHANNEL SECTION
18" MIN.
95% COMPACTED SUBGRADE AND PI LESS THAN 20
8" MIN. DIA. ROCK SECURED WITH A WOVEN WIRE SHEATING HAVING MAXIMUM 1 INCH OPENING AND MINIMUM WIRE DIAMETER OF 20 GAUGE.

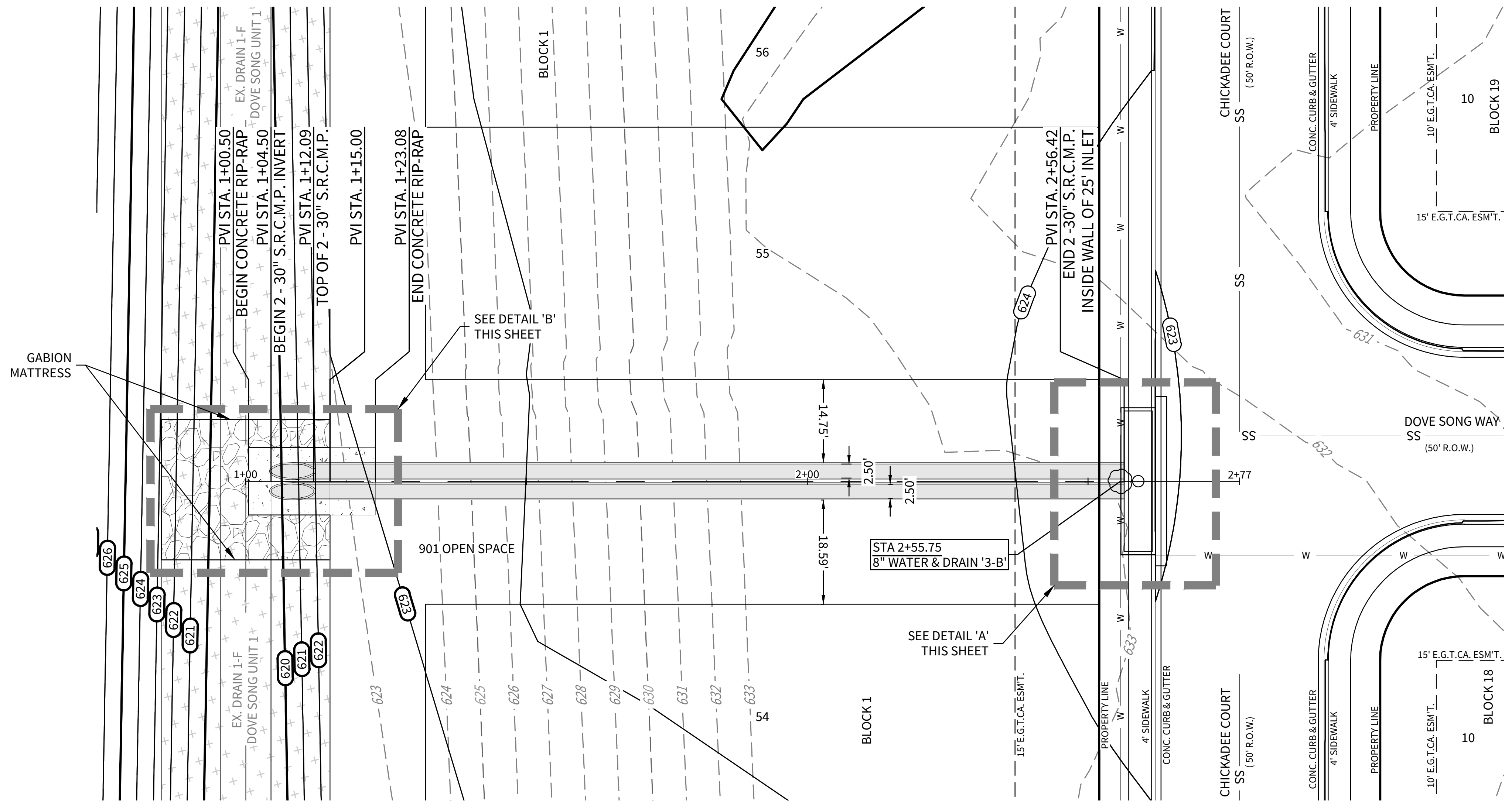
GABION STYLE ROCK EROSION CONTROL MATRESS DETAIL

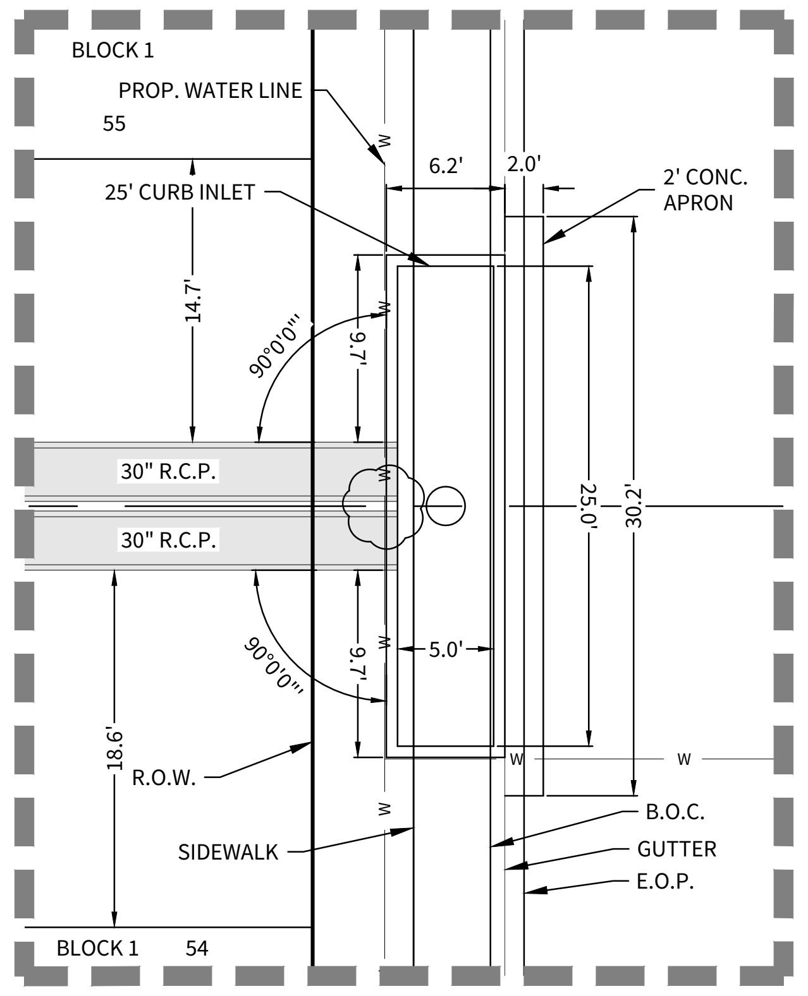
NOTE: GABION MATTRESS TO BE FREE OF GEO-TEXTILE FABRIC LINING.
(N.T.S.)



DETAIL 'B' - DRAIN '3-B'

SCALE 1" = 10'


EX. DRAIN 1-F DOVE SONG UNIT 1
PVI STA. 1+00.50 BEGIN CONCRETE RIP-RAP
PVI STA. 1+04.50 BEGIN 2 - 30" S.R.C.M.P. INVERT
PVI STA. 1+12.09 TOP OF 2 - 30" S.R.C.M.P.
PVI STA. 1+15.00
PVI STA. 1+23.08 END CONCRETE RIP-RAP
BLOCK 1
56
55
54
GABION MATTRESS
SEE DETAIL 'B' THIS SHEET
14.75'
2.50'
2.50'
18.59'
1+00
2+00
2+77
901 OPEN SPACE
STA 2+55.75
8" WATER & DRAIN '3-B'
SEE DETAIL 'A' THIS SHEET
PVI STA. 2+56.42 END 2 - 30" S.R.C.M.P. INSIDE WALL OF 25' INLET
CHICKADEE COURT (50' R.O.W.)
DOVE SONG WAY (50' R.O.W.)
CONC. CURB & GUTTER
4' SIDEWALK
PROPERTY LINE
15' E.G.T.C.A. ESM'T.
10' E.G.T.CA. ESM'T.
BLOCK 19
BLOCK 18
10
EX. DRAIN 1-F DOVE SONG UNIT 1
SS
W



DETAIL 'A' - DRAIN '3-B' INLET

SCALE 1" = 10'

SCALE: 1"=20'
20 10 0 20

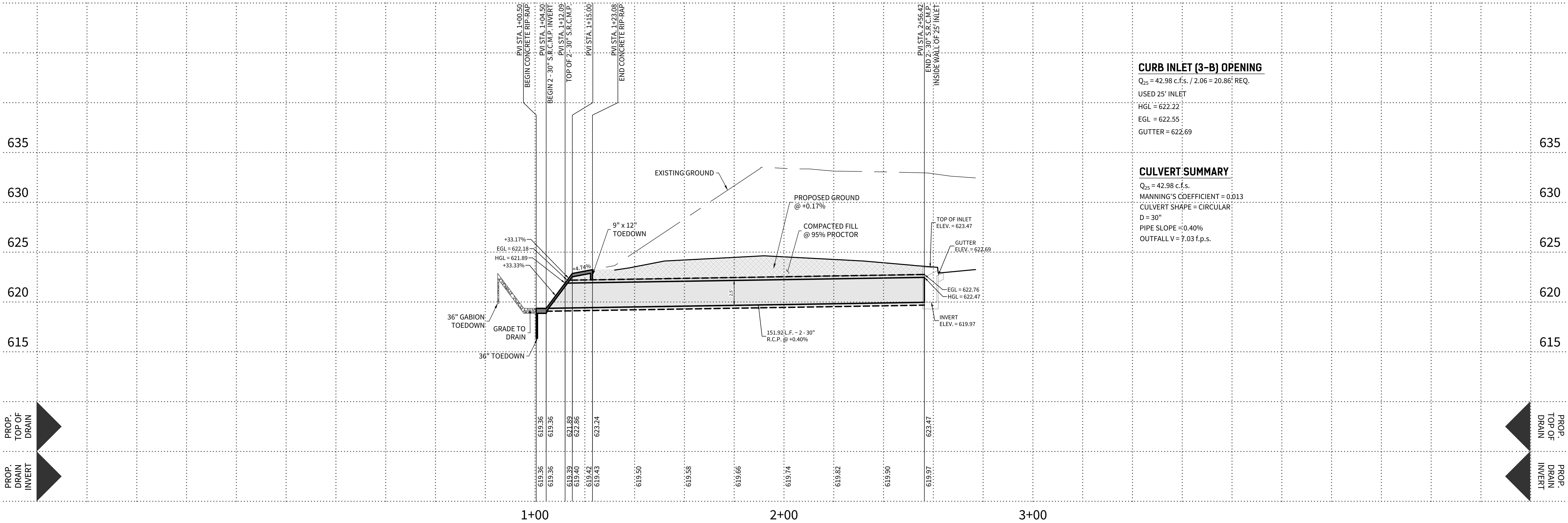
LEGEND

OVERALL UNIT BOUNDARY	— — —
PROPOSED LOT LINE	——
PROPOSED RIGHT OF WAY	——
E.G.T.C.A. EASEMENT	- - - -
EXISTING 1' CONTOUR	499
EXISTING 5' CONTOUR	500
PROPOSED 1' CONTOUR	499
PROPOSED 5' CONTOUR	500
PROPOSED PIPE	▭
EARTHEN DRAINAGE CHANNEL	▨
EXISTING EARTHEN DRAINAGE CHANNEL	▨
CONCRETE RIP RAP	▨
PROPOSED WATER LINE	W
PROPOSED SEWER LINE	SS

DRAIN '3-B'

STA. 1+00.50 TO END

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



CURB INLET (3-B) OPENING

Q_{25} = 42.98 c.f.s. / 2.06 = 20.86' REQ.

USED 25' INLET

HGL = 622.22

EGL = 622.55

GUTTER = 622.69

CULVERT SUMMARY

Q_{25} = 42.98 c.f.s.
MANNING'S COEFFICIENT = 0.013
CULVERT SHAPE = CIRCULAR
D = 30"
PIPE SLOPE = 0.40%
OUTFALL V = 7.03 f.p.s.

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DOVE SONG SUBDIVISION
UNIT 3

DRAIN PLAN & PROFILE - DRAIN '3-B'

DATE	06/27/2024
PROJECT NO.	03608.004
DRAWN BY	JG/SG
CHECKED BY	XV/AL

REVISIONS

	DATE
1.	
2.	
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6.	
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ANDREW R. LOWRY
123410
07/03/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C6.06

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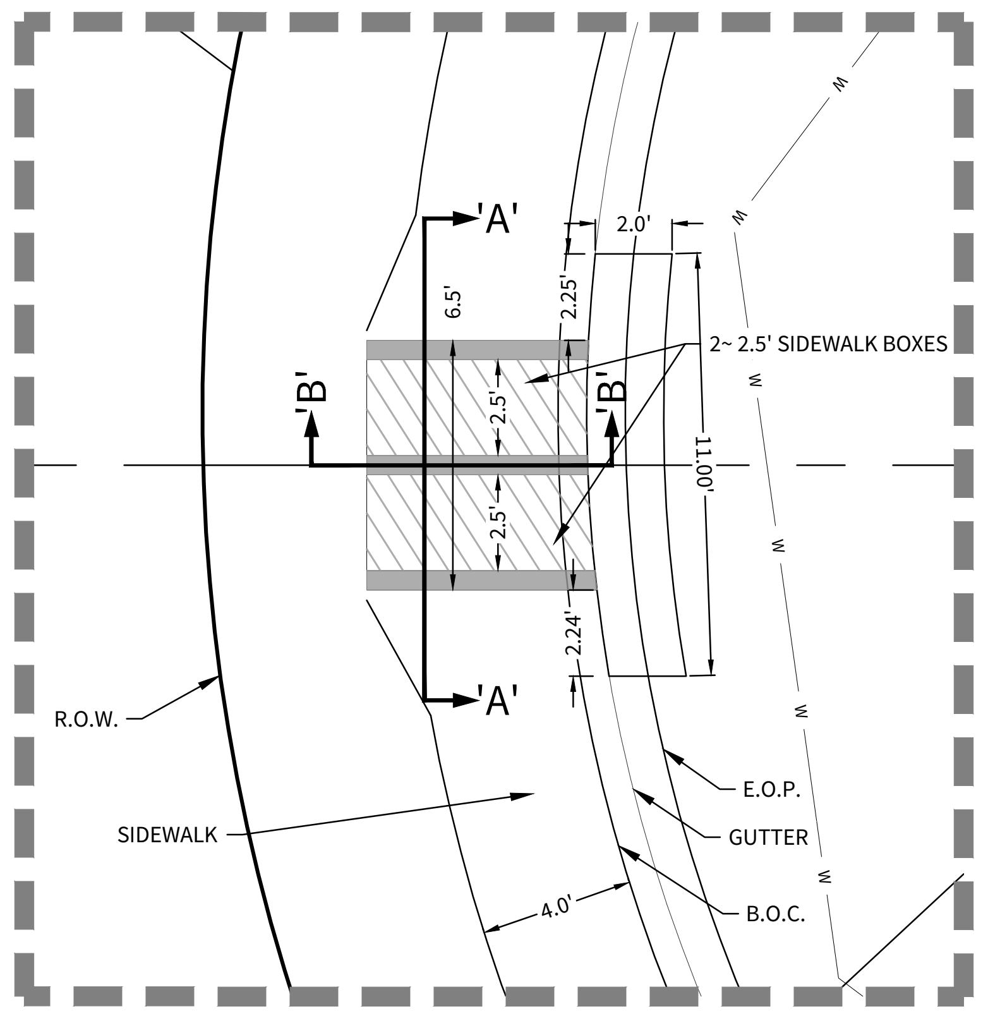
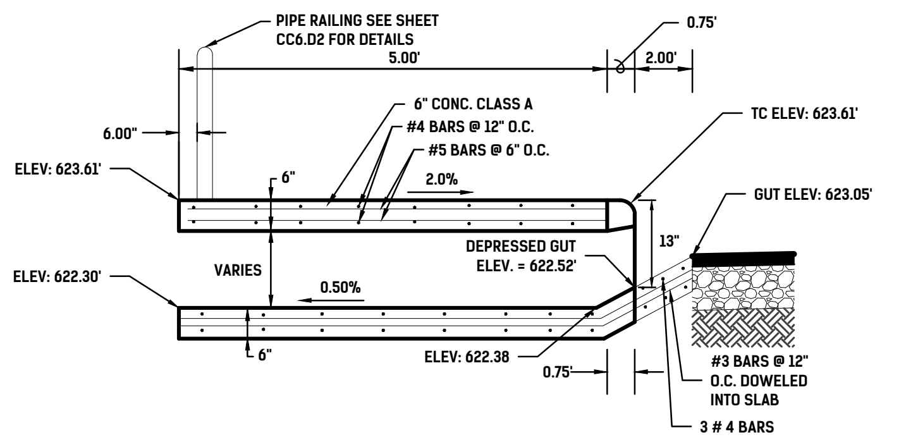


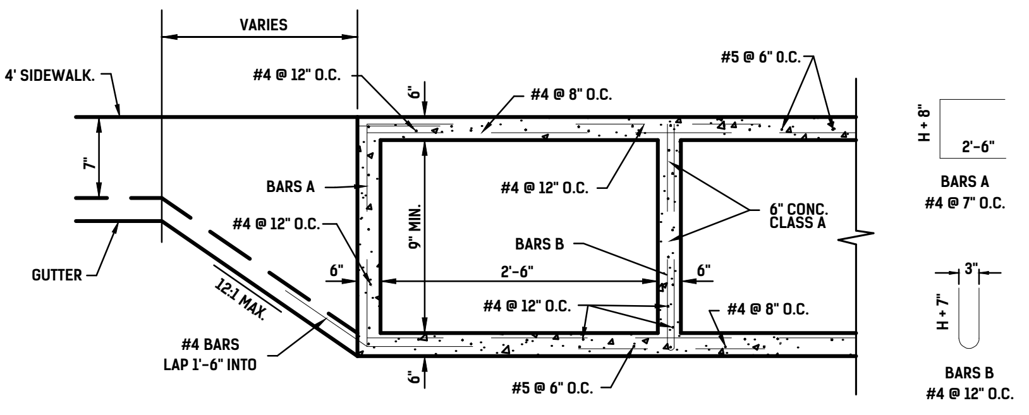
DETAIL 'A'

SCALE 1' = 5'



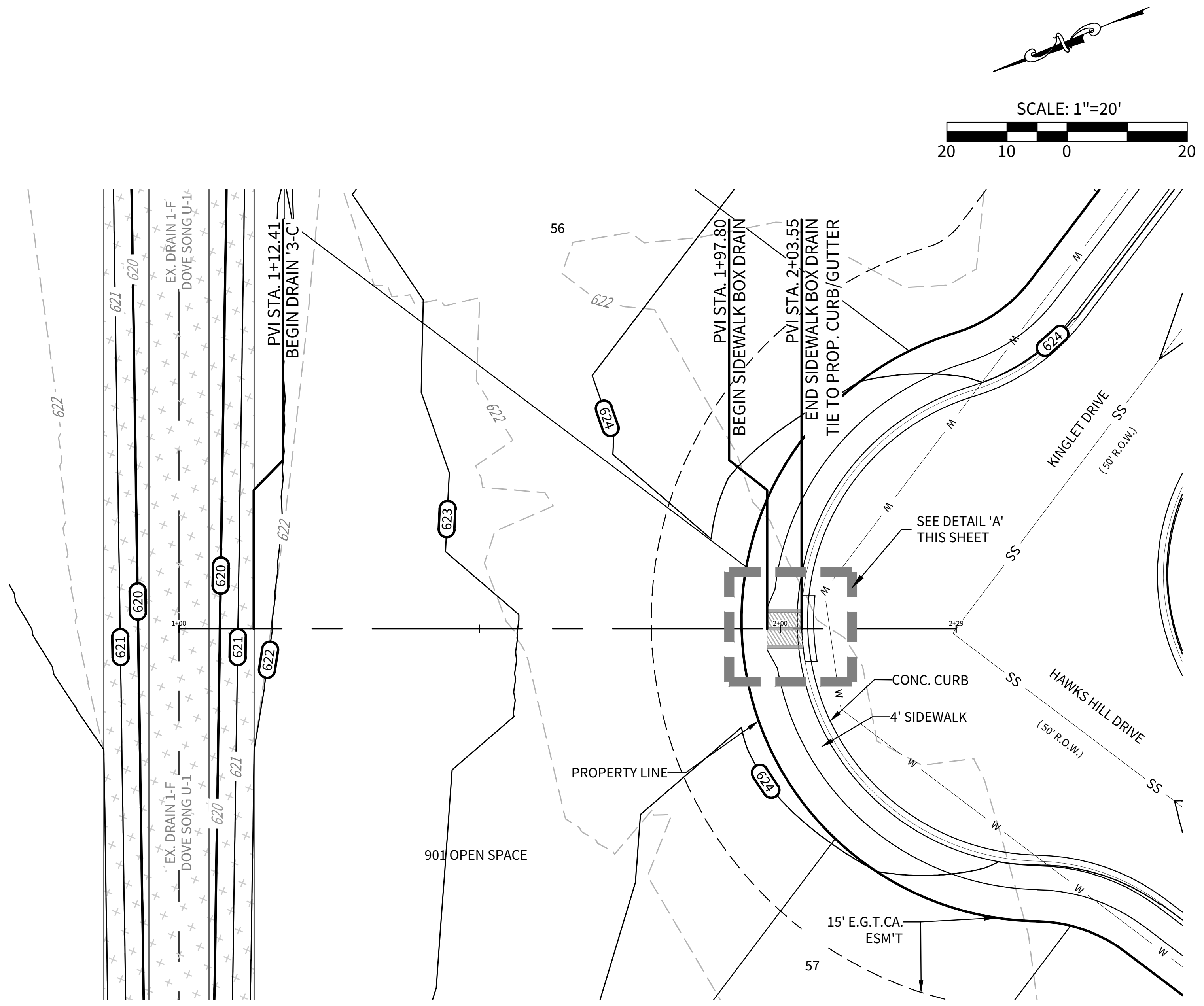
DRAIN "3-C" INLET SECTION 'B-B'

(N.T.S)



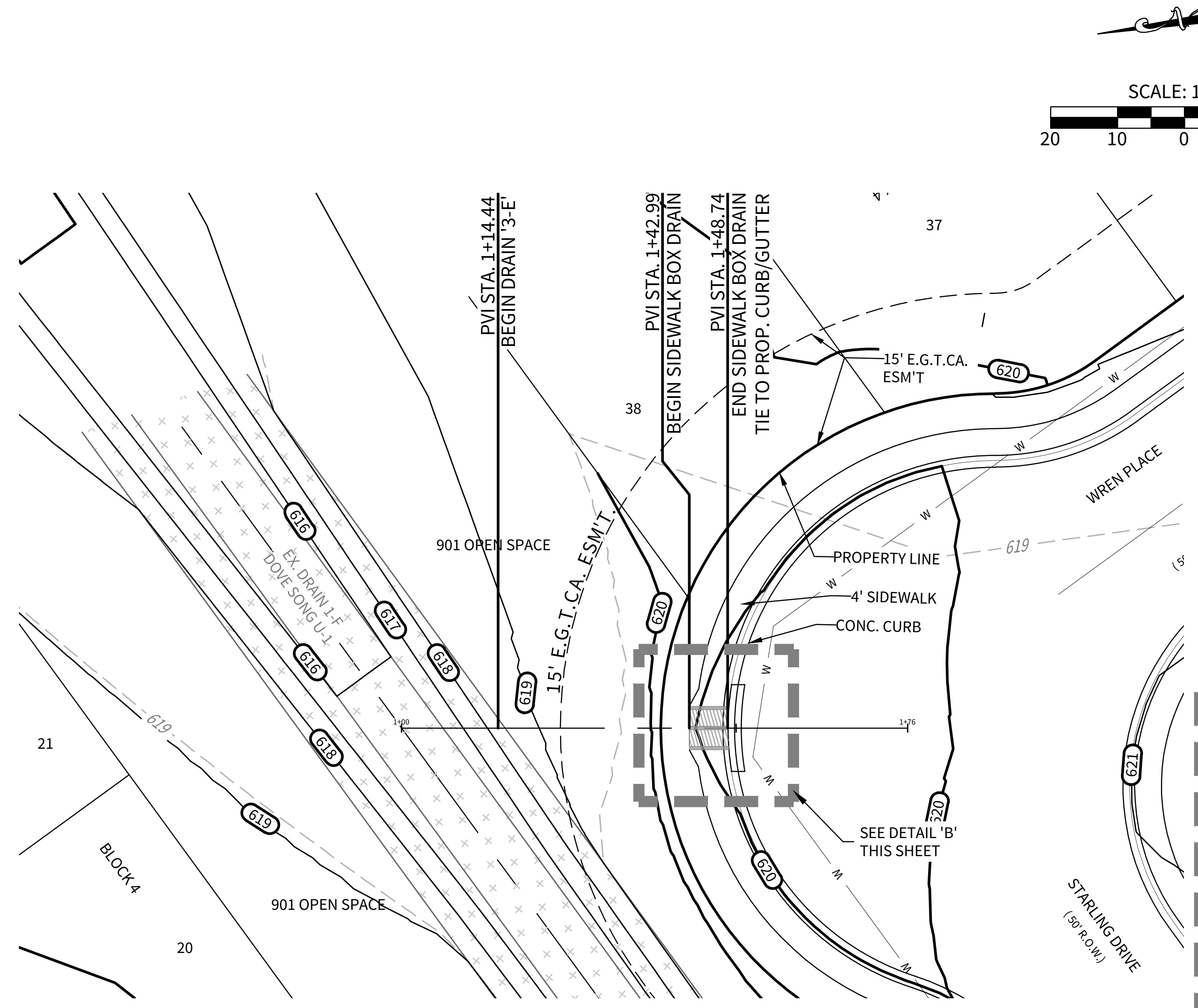
TYPICAL SIDEWALK BOX DRAIN SECTION 'A-A'

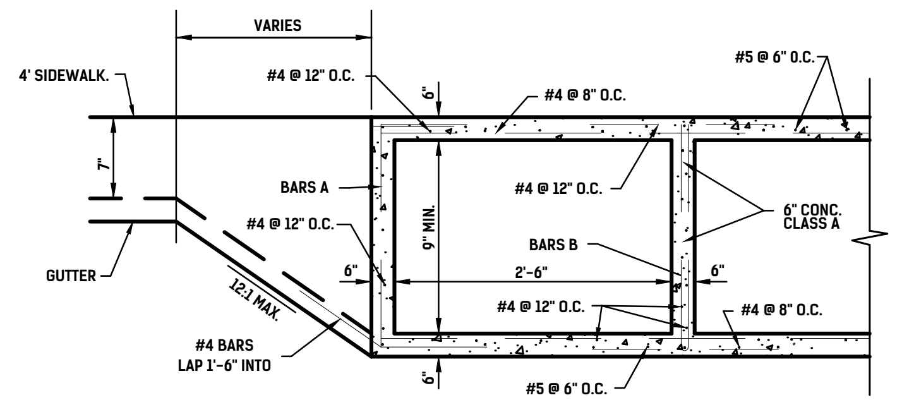
(N.T.S)


SCALE: 1"=20'
20
10
0
20
PVI STA. 1+12.41 BEGIN DRAIN '3-C'
PVI STA. 1+97.80 BEGIN SIDEWALK BOX DRAIN
PVI STA. 2+03.55 END SIDEWALK BOX DRAIN TIE TO PROP. CURB/GUTTER
56
622
621
620
EX. DRAIN 1-F DOVE SONG U-1
624
623
622
620
621
622
SEE DETAIL 'A' THIS SHEET
KINGLET DRIVE (50' R.O.W.)
SS
W
1+00
2+00
2+29
CONC. CURB
4' SIDEWALK
HAWKS HILL DRIVE (50' R.O.W.)
PROPERTY LINE
624
901 OPEN SPACE
15' E.G.T.CA. ESM'T
57

DRAIN '3-C'

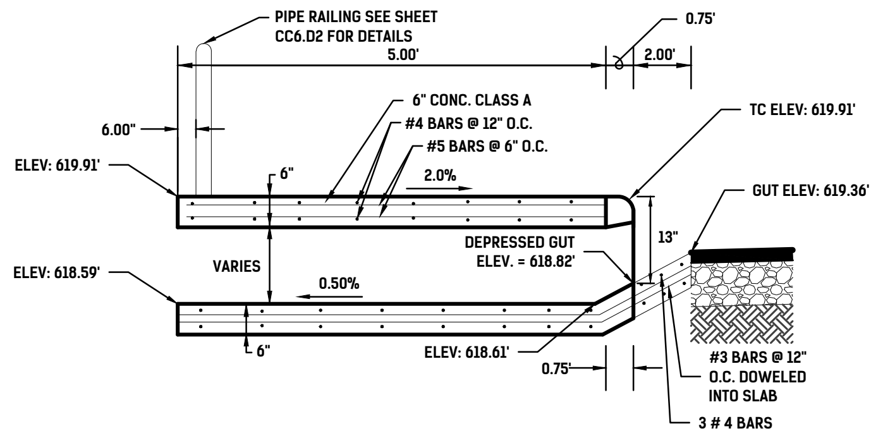
STA. 1+12.41 TO END


SCALE: 1"=20'
20
10
0
20
PVI STA. 1+14.44 BEGIN DRAIN '3-E'
PVI STA. 1+42.99 BEGIN SIDEWALK BOX DRAIN
PVI STA. 1+48.74 END SIDEWALK BOX DRAIN TIE TO PROP. CURB/GUTTER
37
38
15' E.G.T.CA. ESM'T
620
WREN PLACE
901 OPEN SPACE
15' E.G.T.CA. ESM'T
PROPERTY LINE
619
4' SIDEWALK
CONC. CURB
616
617
618
EX. DRAIN 1-F DOVE SONG U-1
619
1+00
1+76
21
SEE DETAIL 'B' THIS SHEET
BLOCK 4
901 OPEN SPACE
20
620
STARLING DRIVE (50' R.O.W.)
621
W



TYPICAL SIDEWALK BOX DRAIN SECTION 'A-A'

(N.T.S)



DRAIN "3-E" INLET SECTION 'D-D'

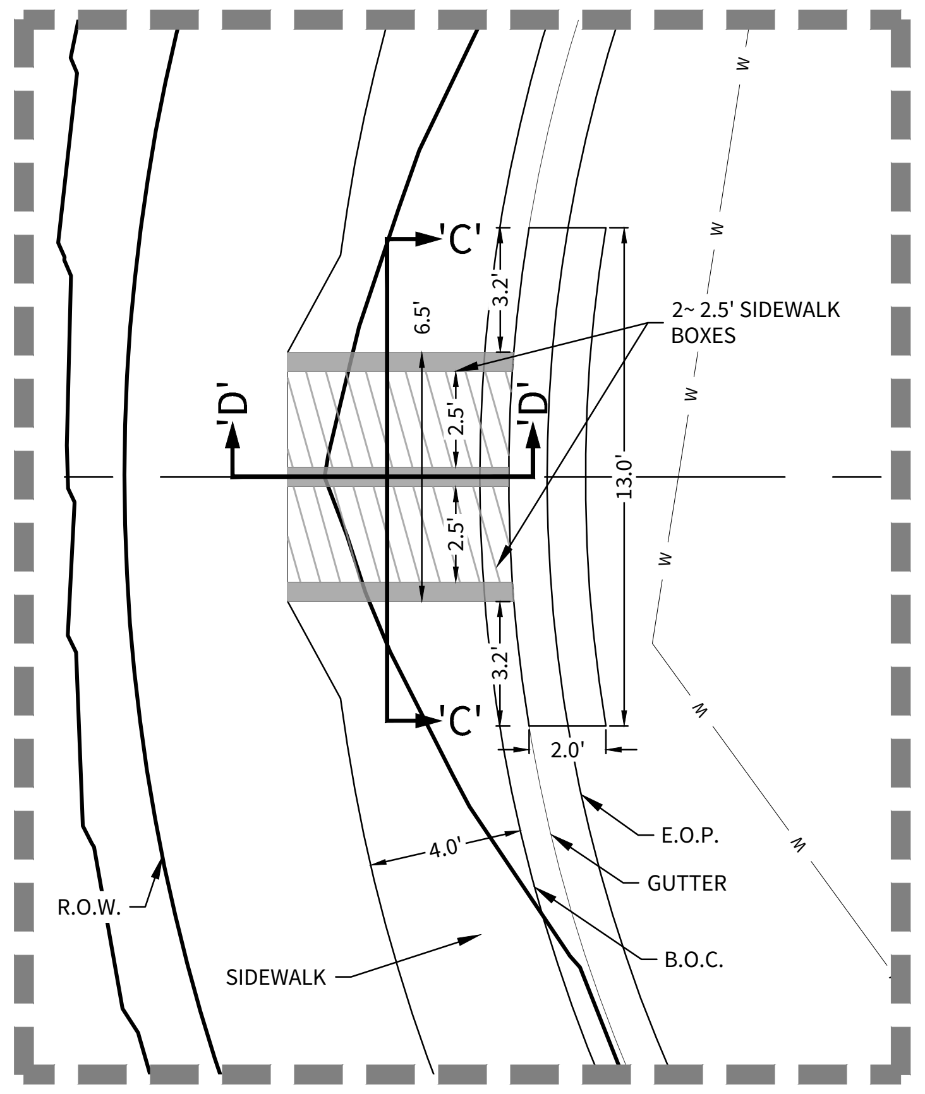
(N.T.S)

DRAIN '3-E'

STA. 1+14.44 TO END

LEGEND

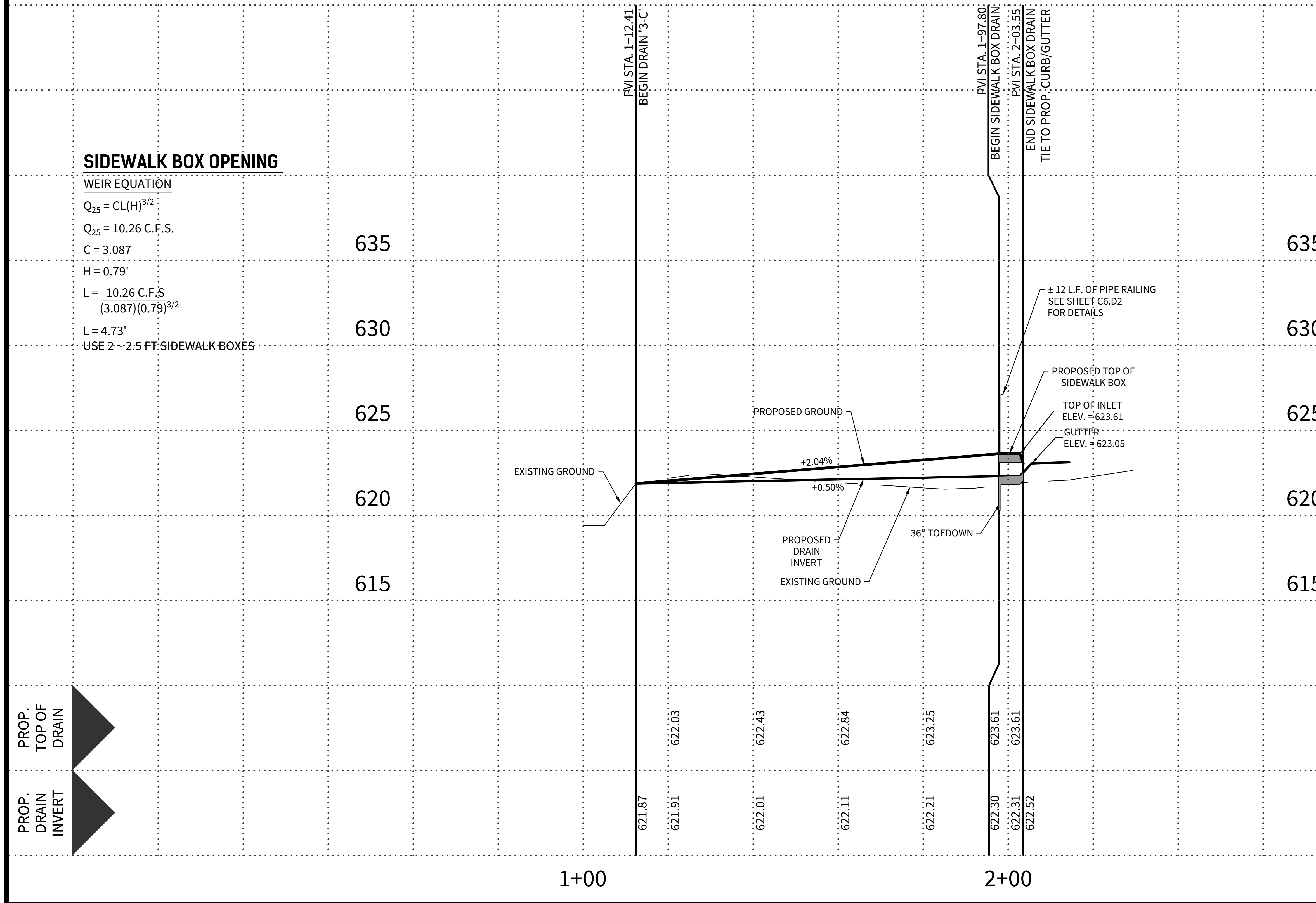
OVERALL UNIT BOUNDARY	— — —
PROPOSED LOT LINE	—
PROPOSED RIGHT OF WAY	—
E.G.T.CA. EASEMENT	
EXISTING 1' CONTOUR	— — 499 — —
EXISTING 5' CONTOUR	— — 500 — —
PROPOSED 1' CONTOUR	— (499) —
PROPOSED 5' CONTOUR	— (500) —
CONCRETE RIP RAP	▨
EARTHEN DRAINAGE CHANNEL	▨
EXISTING EARTHEN DRAINAGE CHANNEL	▨
PROPOSED WATER LINE	— W —
PROPOSED SEWER LINE	— SS —



DETAIL 'B'

SCALE 1' = 5'

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



SIDEWALK BOX OPENING

WEIR EQUATION

$Q_{25} = CL(H)^{3/2}$

$Q_{25} = 10.26$ C.F.S.

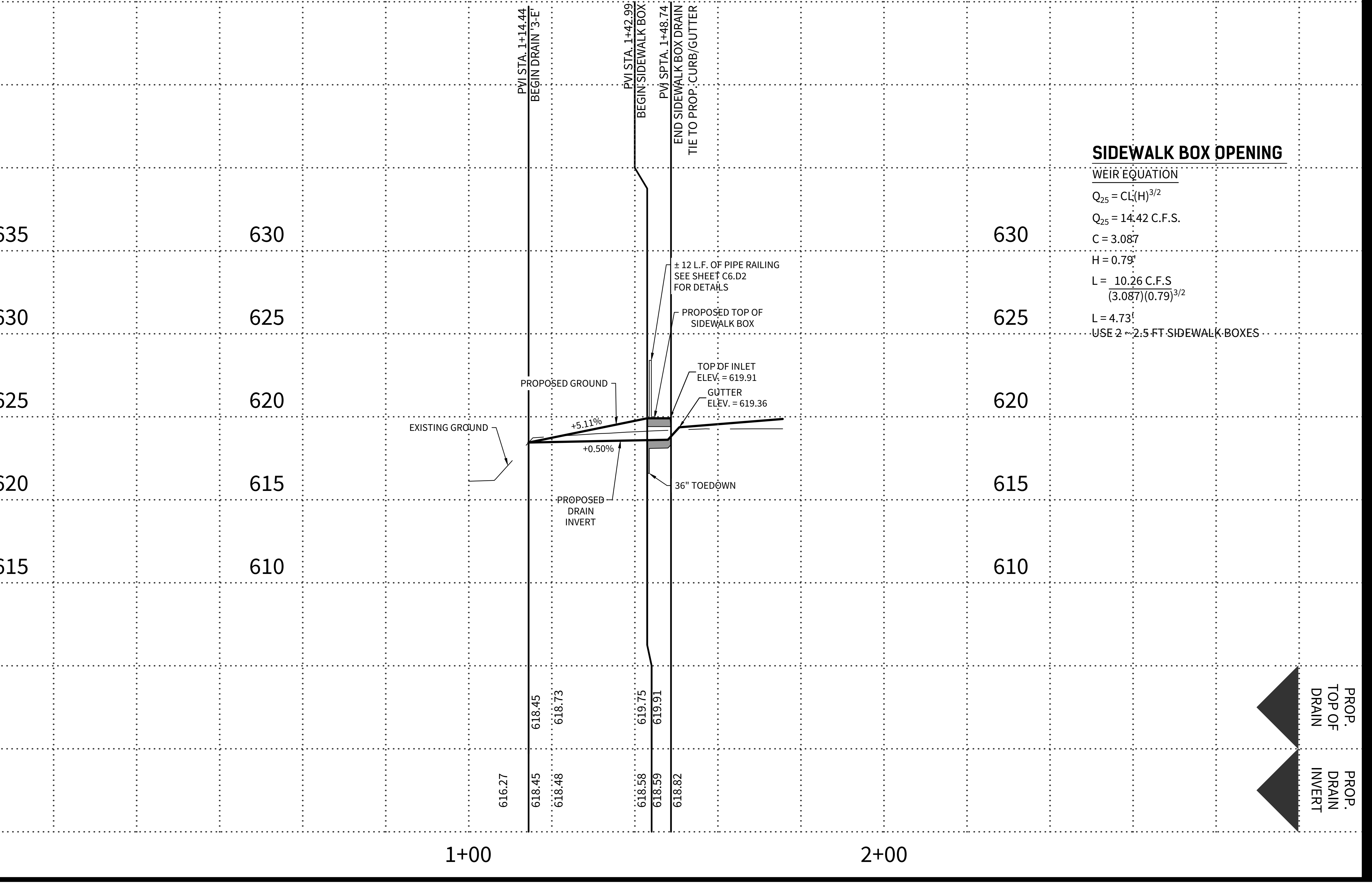
$C = 3.087$

$H = 0.79'$

$L = \frac{10.26 \text{ C.F.S}}{(3.087)(0.79)^{3/2}}$

$L = 4.73'$

USE 2 ~ 2.5 FT SIDEWALK BOXES



SIDEWALK BOX OPENING

WEIR EQUATION

$Q_{25} = CL(H)^{3/2}$

$Q_{25} = 14.42$ C.F.S.

$C = 3.087$

$H = 0.79'$

$L = \frac{10.26 \text{ C.F.S}}{(3.087)(0.79)^{3/2}}$

$L = 4.73'$

USE 2 ~ 2.5 FT SIDEWALK BOXES

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DOVE SONG SUBDIVISION
UNIT 3

DRAIN PLAN & PROFILE - DRAIN '3-C' & DRAIN '3-E'

DATE
07/03/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG/KM

CHECKED BY
AM/AL

#	DATE	REVISIONS
1.		
2.		
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ANDREW R. LOWRY
123410
07/03/2024

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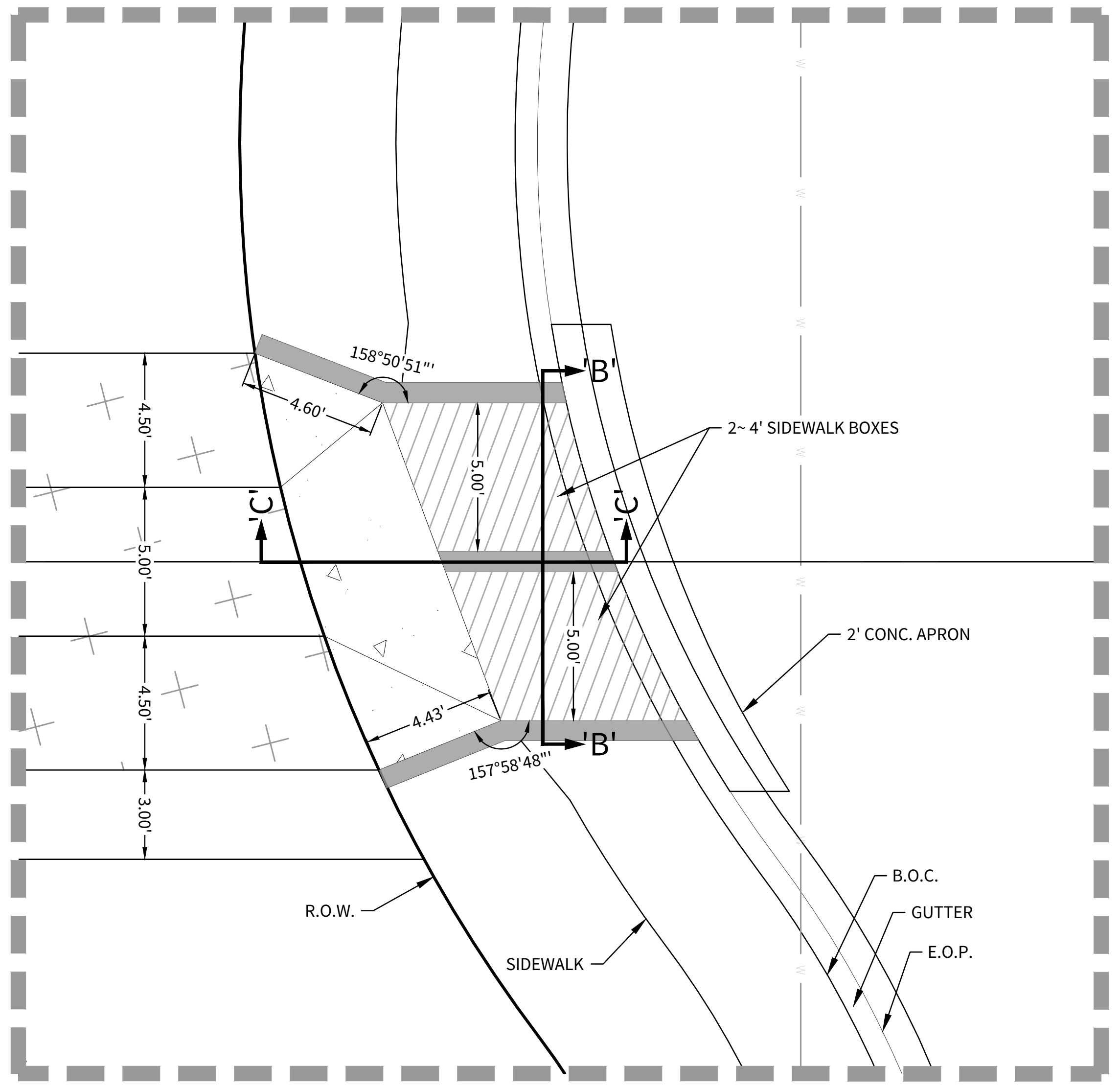
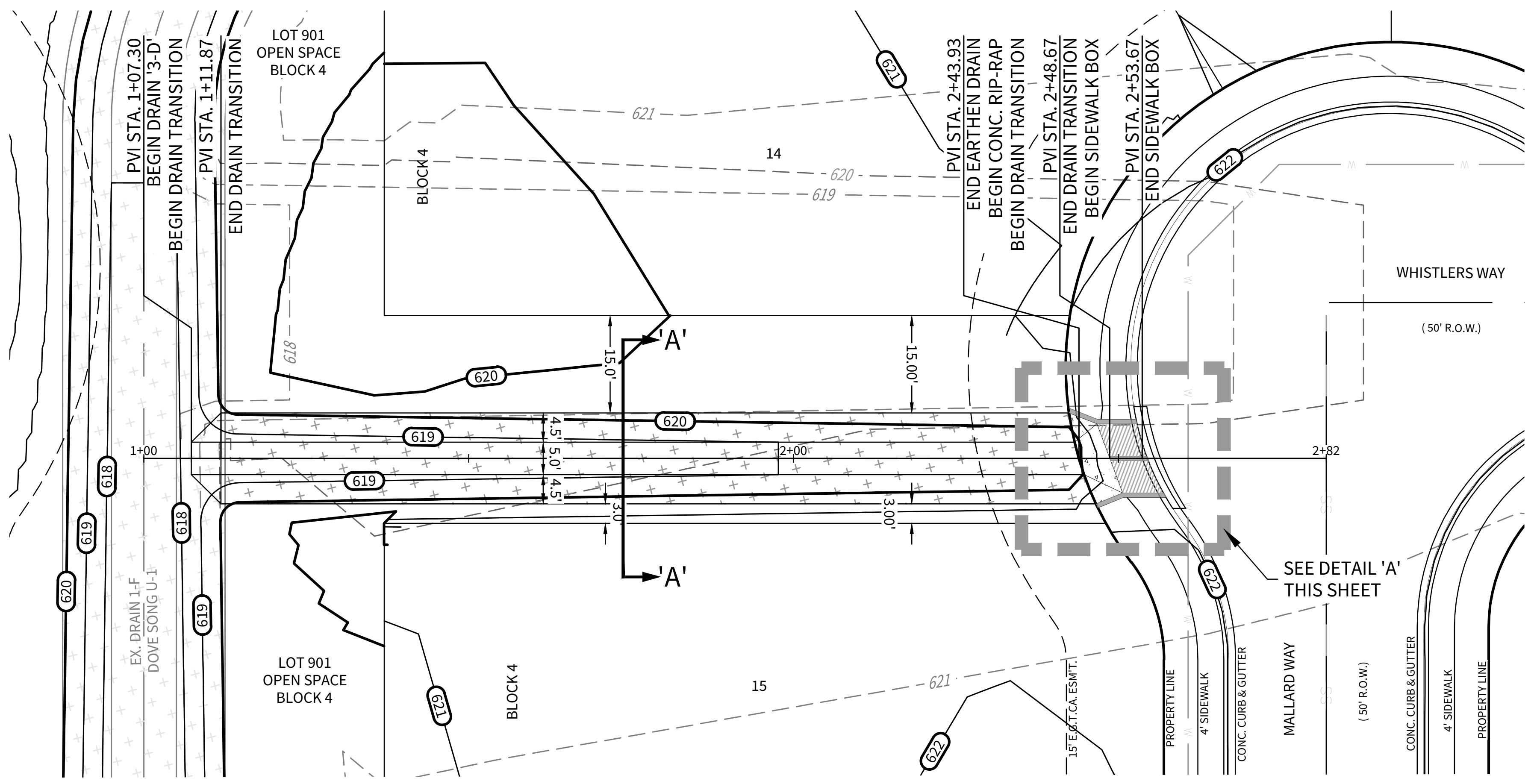
P:\03608\004\2-DWG\4-Plans\C6.06 DRAIN PLAN & PROFILE - DRAIN '3-C' & '3-E'.dwg 2024/07/03 10:32am jguerrero



DETAIL 'A'

SCALE 1' = 5'

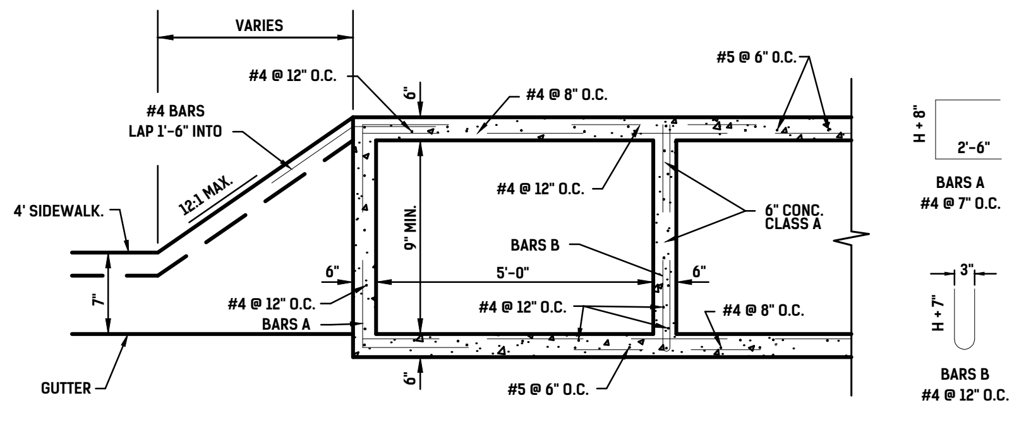


SCALE: 1"=20'

20 10 0 20

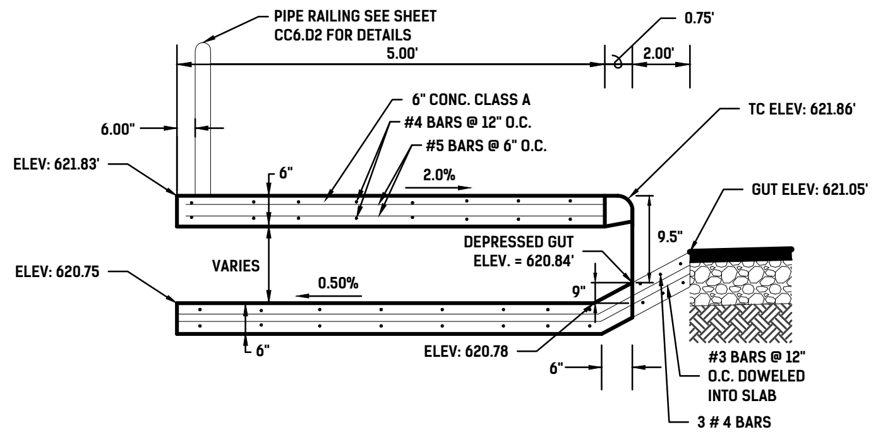
LEGEND

- OVERALL UNIT BOUNDARY
- PROPOSED LOT LINE
- PROPOSED RIGHT OF WAY
- E.G.T.C.A. EASEMENT
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- PROPOSED 1' CONTOUR
- PROPOSED 5' CONTOUR
- CONCRETE RIP RAP
- EARTHEN DRAINAGE CHANNEL
- EXISTING EARTHEN DRAINAGE CHANNEL
- PROPOSED WATER LINE
- PROPOSED SEWER LINE



TYPICAL SIDEWALK BOX DRAIN SECTION 'B-B'

(N.T.S)



DRAIN "3-C" INLET SECTION 'C-C'

(N.T.S)

SIDEWALK BOX OPENING

WEIR EQUATION

$Q_{25} = CL(H)^{3/2}$

$Q_{25} = 17.42$ C.F.S.

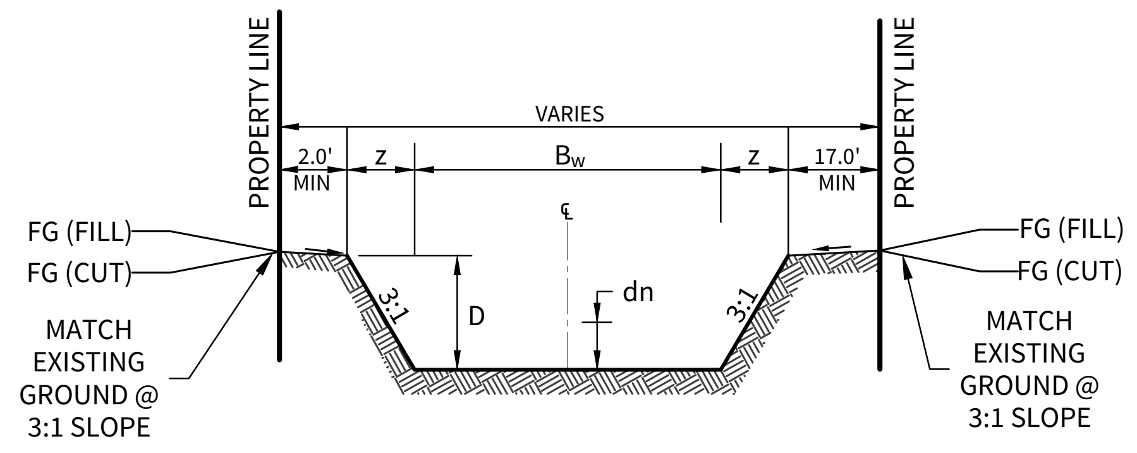
C = 3.087

H = 0.79'

$L = \dfrac{17.42 \text{ C.F.S}}{(3.087)(0.79)^{3/2}}$

L = 8.04'

USE 2 ~ 5 FT SIDEWALK BOXES



	"A-A"
Q_{25} (cfs)	17.42
B_w (ft)	5.00'
z (ft)	4.50'
n	0.035
D (ft)	1.50'
S (%)	0.50
d_n (ft)	0.96
V (fps)	2.30

DRAIN '3-D' EARTHEN CHANNEL

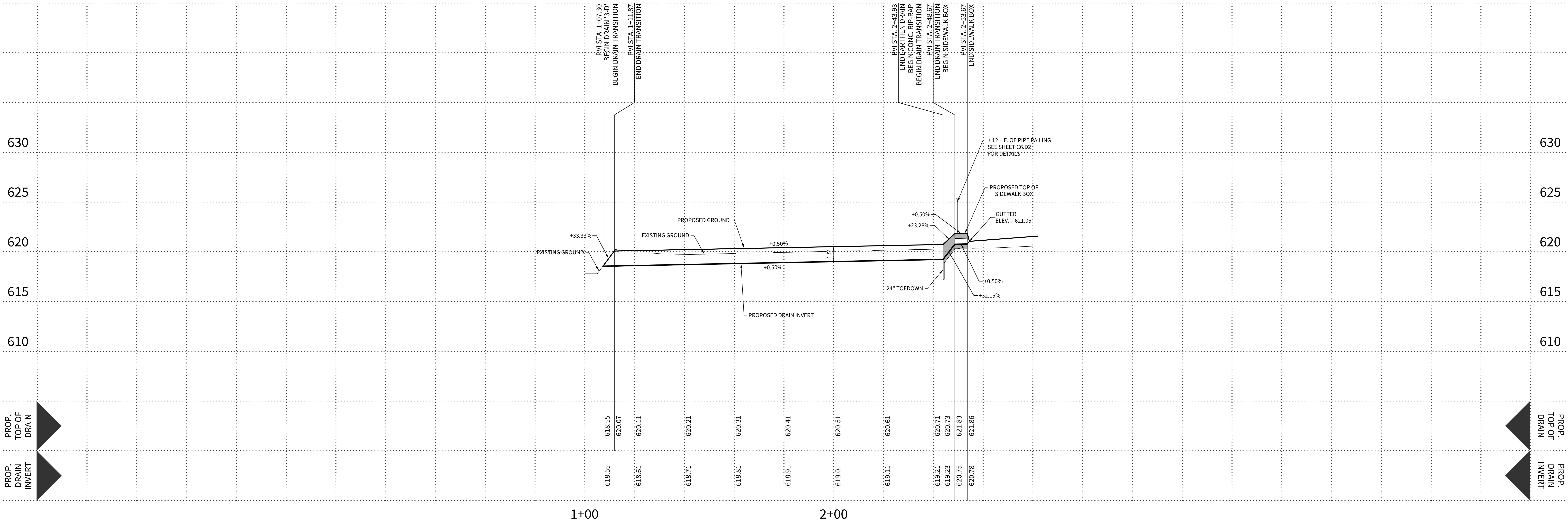
(N.T.S.)

'A-A' STA. 1+11.87 TO STA. 2+43.93

DRAIN '3-D'

STA. 1+07.30 TO END

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



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

DOVE SONG SUBDIVISION
UNIT 3

DRAIN PLAN & PROFILE - DRAIN '3-D'

DATE
07/03/2024
PROJECT NO.
03608.004
DRAWN BY
JG/SG/KM
CHECKED BY
AM/AL

REVISIONS

	DATE
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ANDREW R. LOWRY
123410
07/03/2024

CUDE ENGINEERS
TBPE No. 455
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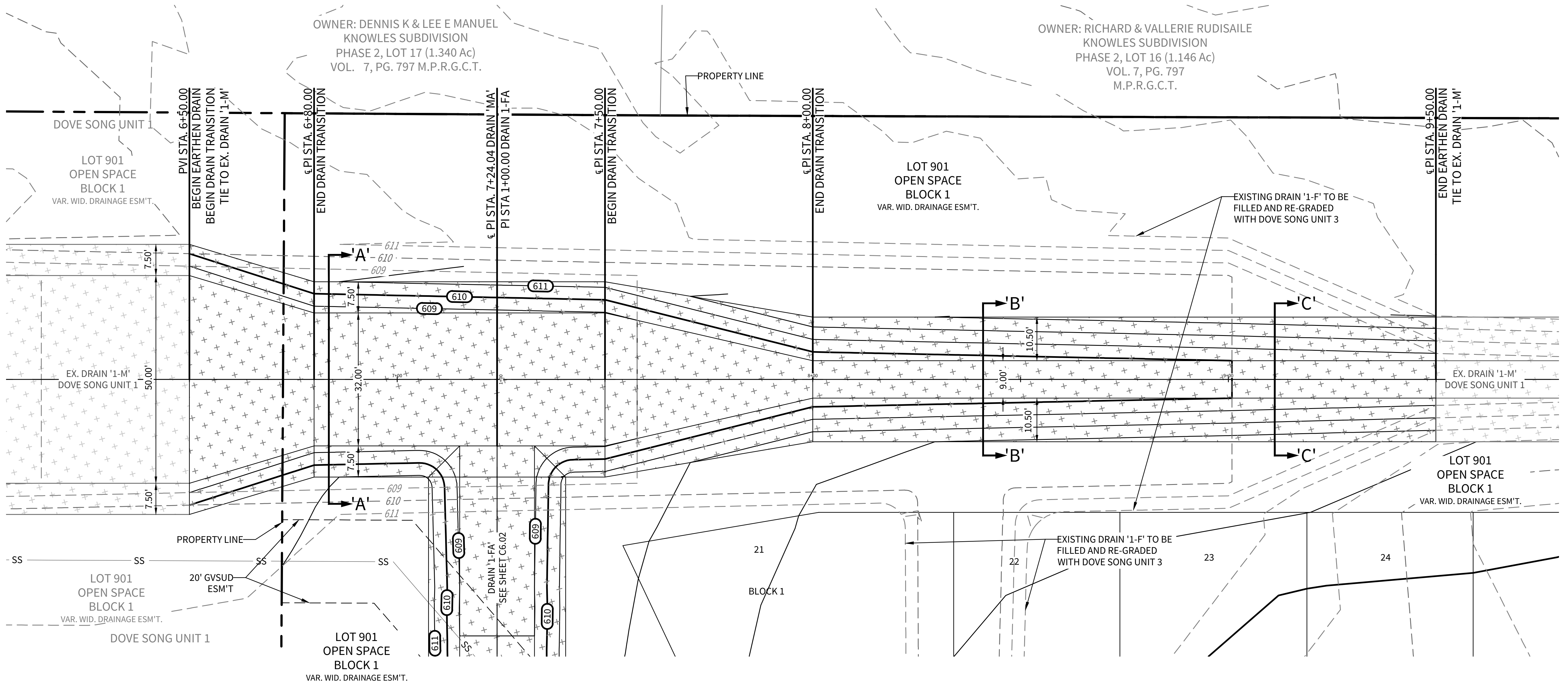
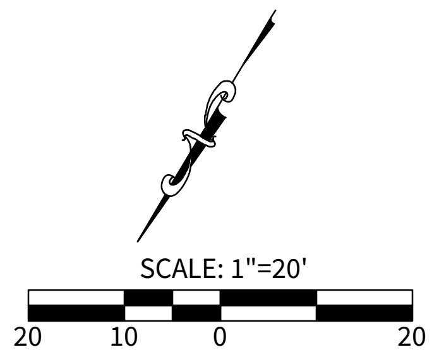
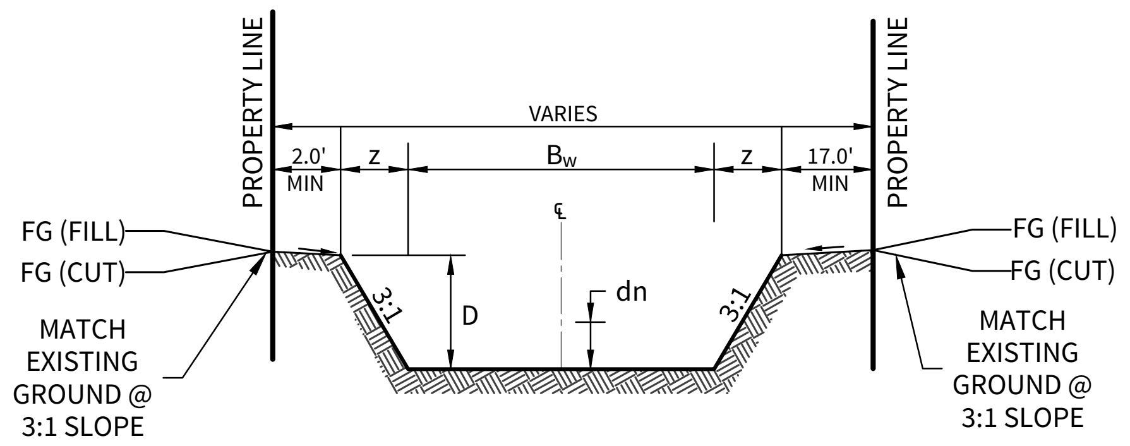




LEGEND

OVERALL UNIT BOUNDARY	— — —
PROPOSED LOT LINE	——
PROPOSED RIGHT OF WAY	——
E.G.T.C.A. EASEMENT	- - - -
EXISTING 1' CONTOUR	499
EXISTING 5' CONTOUR	500
PROPOSED 1' CONTOUR	499
PROPOSED 5' CONTOUR	500
CONCRETE RIP RAP	▨
EARTHEN DRAINAGE CHANNEL	▨
EXISTING EARTHEN DRAINAGE CHANNEL	▨
PROPOSED WATER LINE	W
PROPOSED SEWER LINE	SS



	"A-A"
Q_{25} (cfs)	362.85
B_W (ft)	32.00'
z (ft)	7.50'
n	0.035
D (ft)	2.50'
S (%)	0.70
d_n (ft)	1.94'
V (fps)	4.95

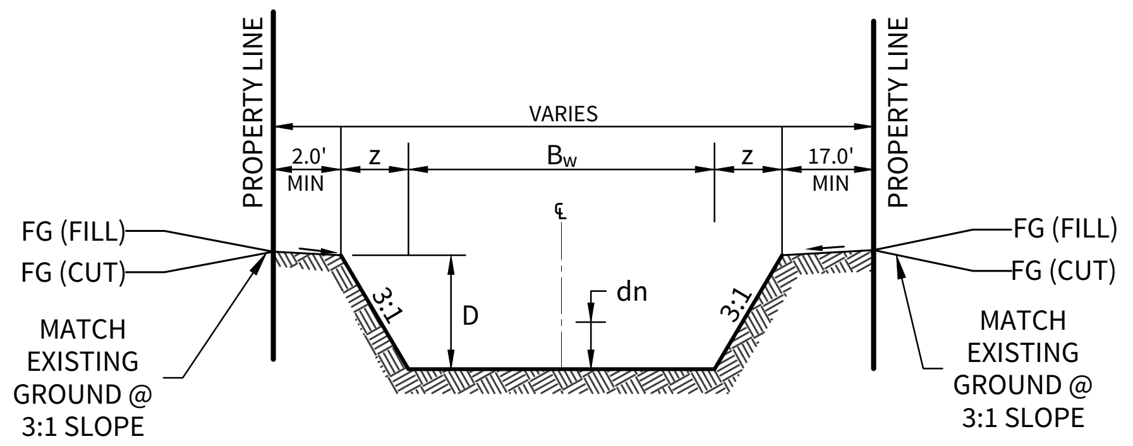
DRAIN '1-FA' EARTHEN CHANNEL

[N.T.S.]

'A-A' STA. 6+80.00 TO STA. 7+50.00

DRAIN '1-MA'

STA. 6+50.00 TO STA. 9+50.00

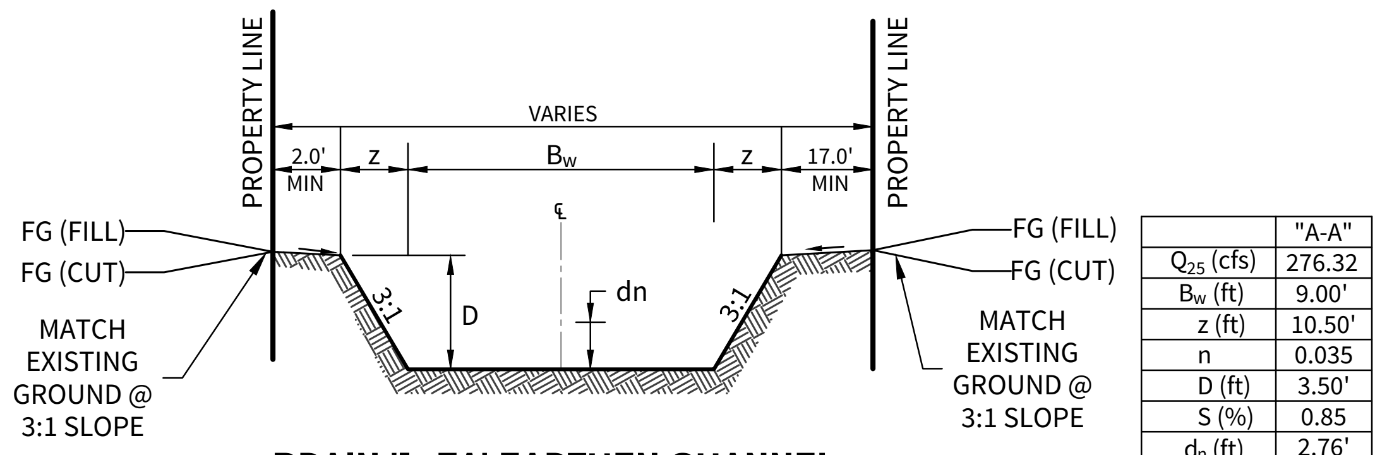


	"A-A"
Q_{25} (cfs)	276.32
B_W (ft)	9.00'
z (ft)	10.50'
n	0.035
D (ft)	3.50'
S (%)	0.70
d_n (ft)	2.90'
V (fps)	5.38

DRAIN '1-FA' EARTHEN CHANNEL

[N.T.S.]

'B-B' STA. 8+00.00 TO STA. 9+00.00



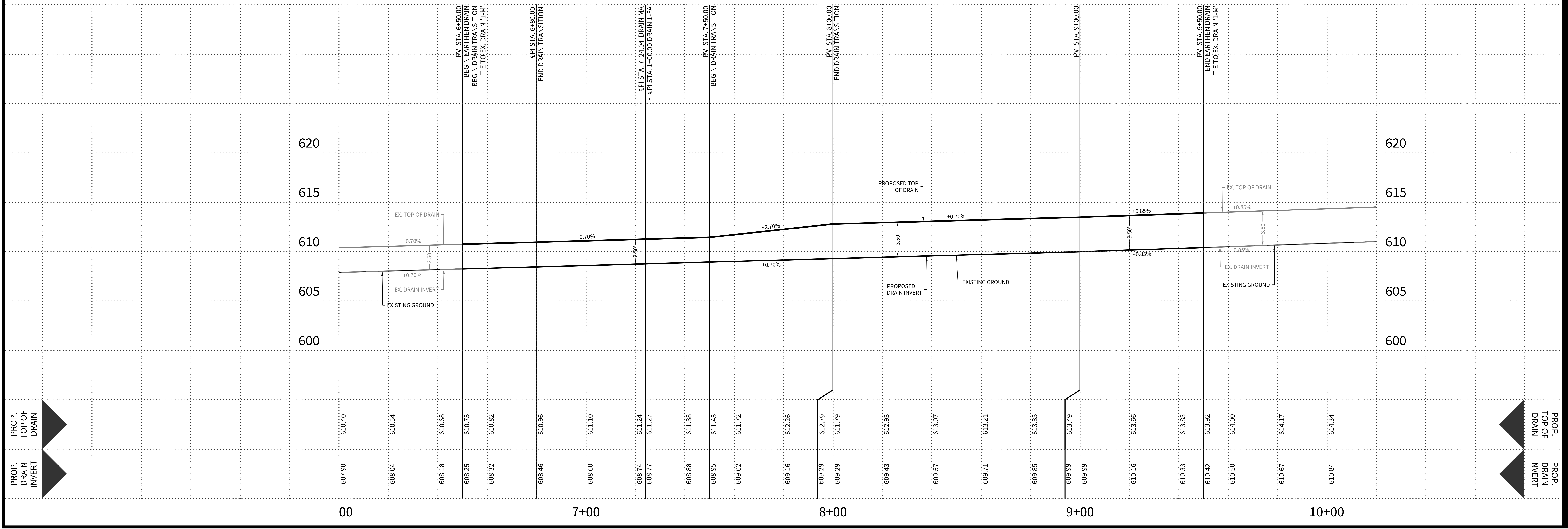
	"A-A"
Q_{25} (cfs)	276.32
B_W (ft)	9.00'
z (ft)	10.50'
n	0.035
D (ft)	3.50'
S (%)	0.85
d_n (ft)	2.76'
V (fps)	5.79

DRAIN '1-FA' EARTHEN CHANNEL

[N.T.S.]

'C-C' STA. 9+00.00 TO STA. 9+50.00

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



PROP. TOP OF DRAIN	610.40	610.54	610.68	610.75	610.82	610.96	611.10	611.24	611.27	611.38	611.45	611.72	612.26	612.79	611.79	612.93	613.07	613.21	613.35	613.49		613.66	613.83	613.92	614.00	614.17	614.34
PROP. DRAIN INVERT	607.90	608.04	608.18	608.25	608.32	608.46	608.60	608.74	608.77	608.88	608.95	609.02	609.16	609.29	609.29	609.43	609.57	609.71	609.85	609.99	609.99	610.16	610.33	610.42	610.50	610.67	610.84

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

**DOVE SONG SUBDIVISION
UNIT 3**

DRAIN PLAN & PROFILE - DRAIN '1-MA'

DATE
06/27/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG

CHECKED BY
XV/AL

REVISIONS

#	DATE
1.	
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ANDREW R. LOWRY
123410
07/03/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C6.09

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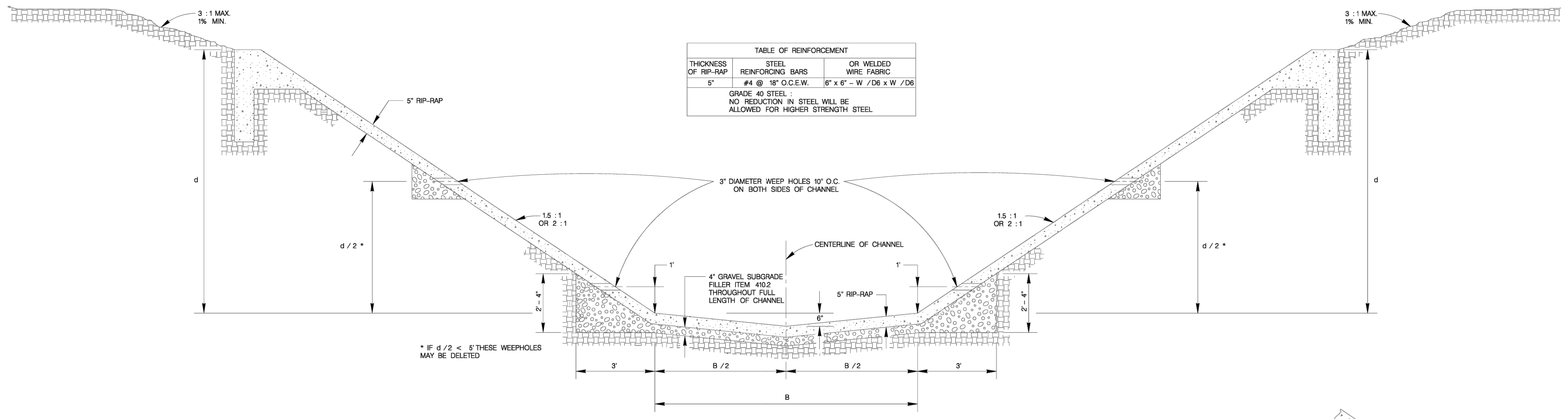
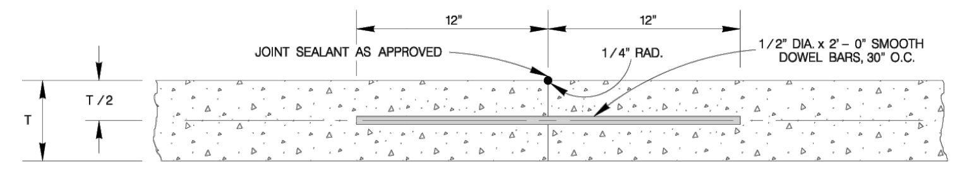
P:\03608\004\2-DWG\4-Plans\C6.09 DRAIN PLAN & PROFILE - DRAIN 'MA'.dwg 2024/06/27 11:50am jguerrero

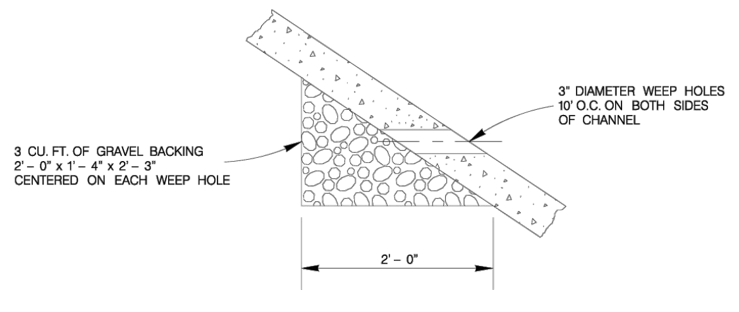
TABLE OF REINFORCEMENT		
THICKNESS OF RIP–RAP	STEEL REINFORCING BARS	OR WELDED WIRE FABRIC
5"	#4 @ 18" O.C.E.W.	6" x 6" – W /D6 x W /D6
GRADE 40 STEEL : NO REDUCTION IN STEEL WILL BE ALLOWED FOR HIGHER STRENGTH STEEL		


3 : 1 MAX.
1% MIN.
5" RIP–RAP
d
d / 2 *
3" DIAMETER WEEP HOLES 10" O.C. ON BOTH SIDES OF CHANNEL
1.5 : 1 OR 2 : 1
CENTERLINE OF CHANNEL
1'
4" GRAVEL SUBGRADE FILLER ITEM 410.2 THROUGHOUT FULL LENGTH OF CHANNEL
5" RIP–RAP
6"
2' – 4"
* IF d / 2 < 5' THESE WEEPHOLES MAY BE DELETED
3'
B / 2
B

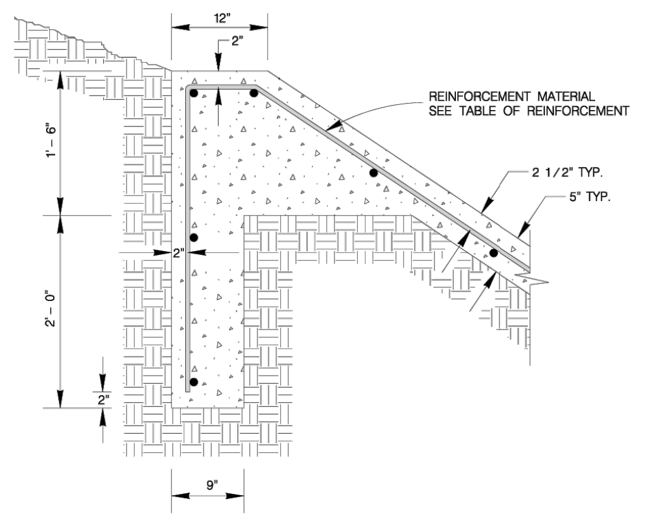
TYPICAL CHANNEL SECTION
LOOKING DOWNSTREAM
SCALE : 1" = 4'


12"
12"
JOINT SEALANT AS APPROVED
1/4" RAD.
1/2" DIA. x 2' – 0" SMOOTH DOWEL BARS, 30" O.C.
T / 2
T

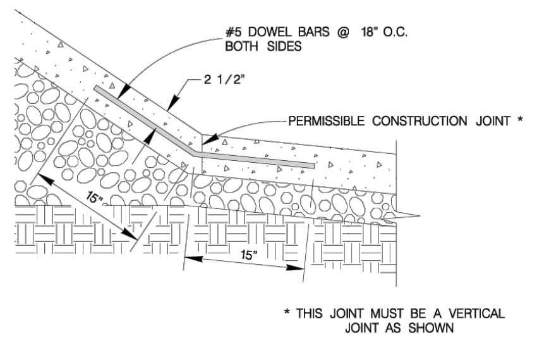
CONVERSE CONTRACTION
OR CONSTRUCTION JOINT
SCALE : 1" = 1'


3" DIAMETER WEEP HOLES 10' O.C. ON BOTH SIDES OF CHANNEL
3 CU. FT. OF GRAVEL BACKING 2' – 0" x 1' – 4" x 2' – 3" CENTERED ON EACH WEEP HOLE
2' – 0"

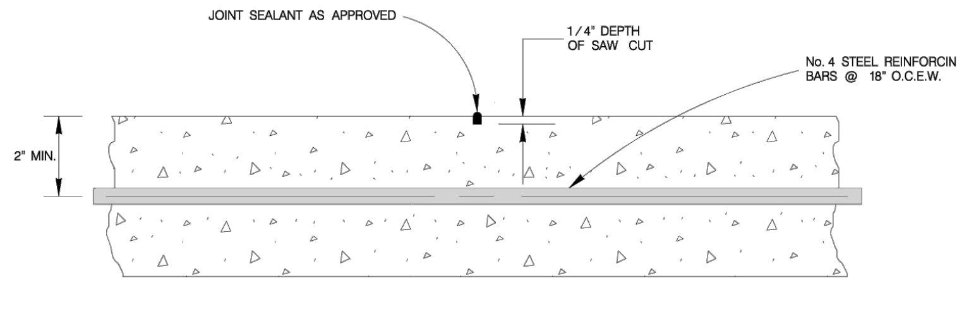
WEEP HOLES DETAILS
FOR SIDE SLOPES
SCALE : 1" = 2'



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


#5 DOWEL BARS @ 18" O.C. BOTH SIDES
2 1/2"
PERMISSIBLE CONSTRUCTION JOINT *
15"
15"
* THIS JOINT MUST BE A VERTICAL JOINT AS SHOWN

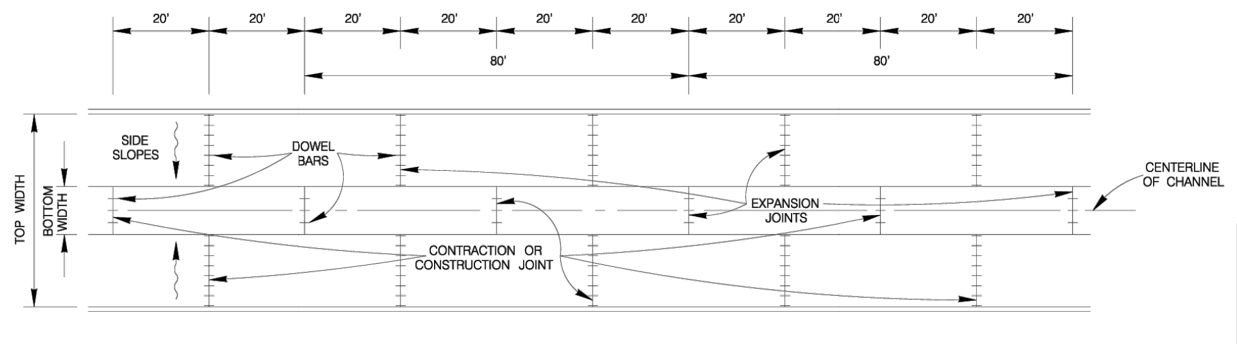
ALL SECTIONS
SCALE : 1" = 2'


JOINT SEALANT AS APPROVED
1/4" DEPTH OF SAW CUT
No. 4 STEEL REINFORCING BARS @ 18" O.C.E.W.
2" MIN.

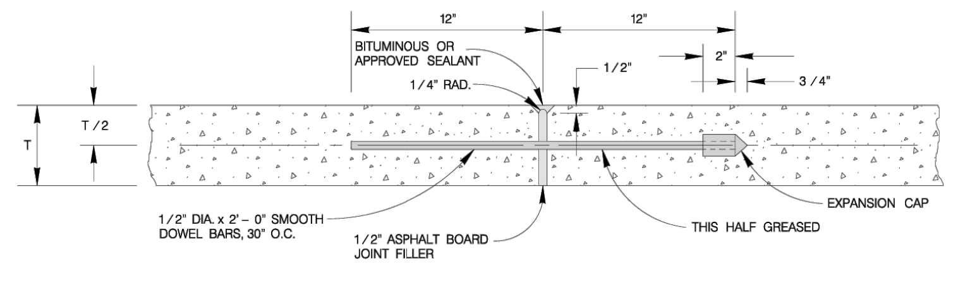
"SAW CUT" CONTRACTION JOINT
SCALE : 1" = 6"

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".



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


12"
12"
BITUMINOUS OR APPROVED SEALANT
1/4" RAD.
1/2"
2"
3/4"
T / 2
T
1/2" DIA. x 2' – 0" SMOOTH DOWEL BARS, 30" O.C.
1/2" ASPHALT BOARD JOINT FILLER
THIS HALF GREASED
EXPANSION CAP

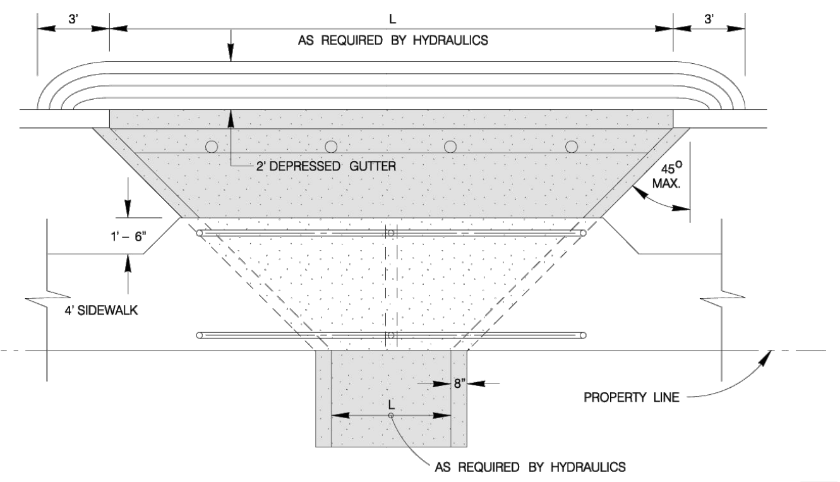
TRANSVERSE EXPANSION JOINT
SCALE : 1" = 1'

MAY 2009

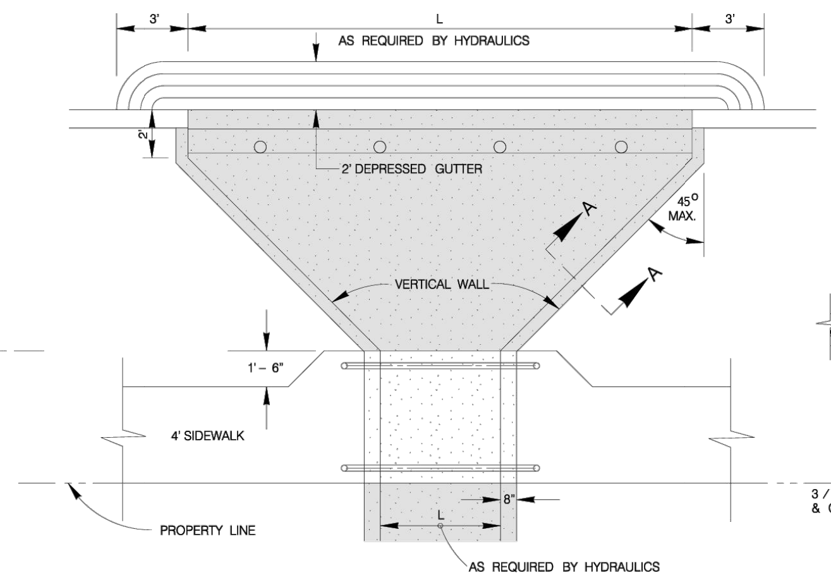
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TYPICAL CONCRETE CHANNEL
RIP–RAP STANDARDS

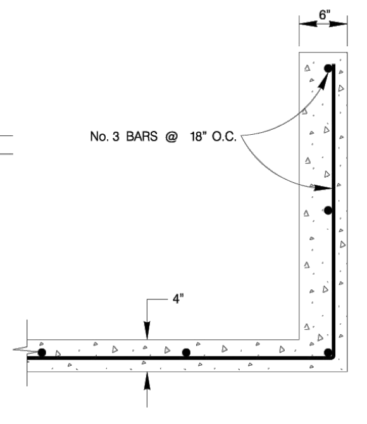
______% SUBMITTAL	PROJECT NO.:______		DATE:______
DRWN. BY: V. VASQUEZ	DSGN. BY:______	CHKD. BY:______	SHEET NO.:____OF____



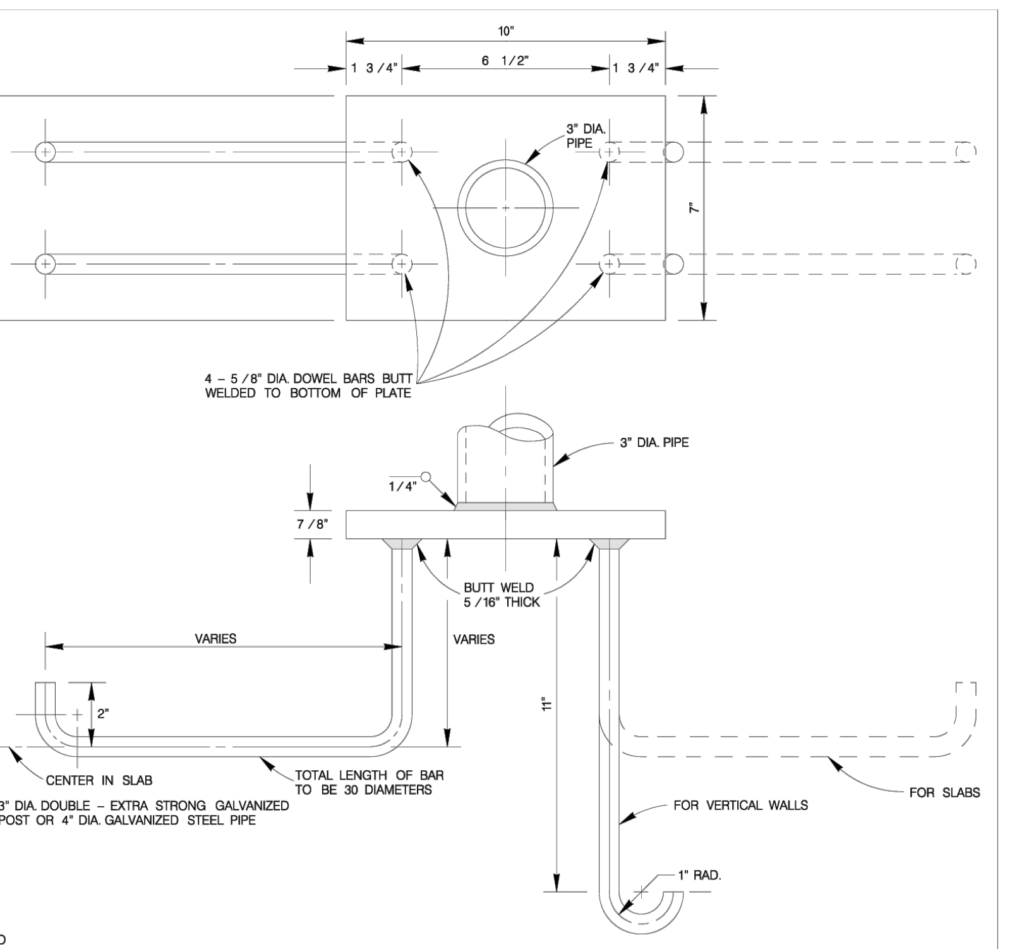
PLAN VIEW "A"
SCALE : 1" = 8'



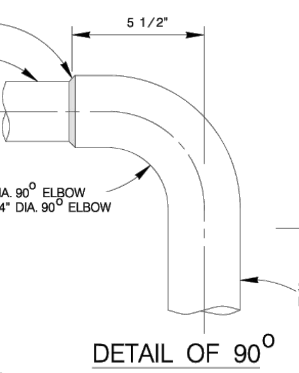
PLAN VIEW "B"
SCALE : 1" = 8'



SECTION A–A
SCALE : 1" = 2'



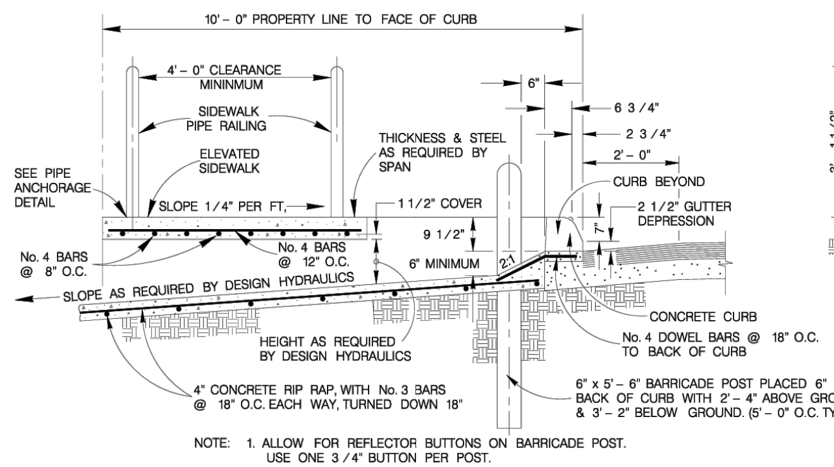
PIPE ANCHORAGE DETAILS
SCALE : 1" = 6"


3/8" FILLET WELD & GROUND SMOOTH
2 1/2" DIA.
5 1/2"
3" DIA. 90° ELBOW OR 4" DIA. 90° ELBOW
3" DIA. DOUBLE – EXTRA STRONG GALVANIZED POST OR 4" DIA. GALVANIZED STEEL PIPE

DETAIL OF 90°
WELDING ELBOWS

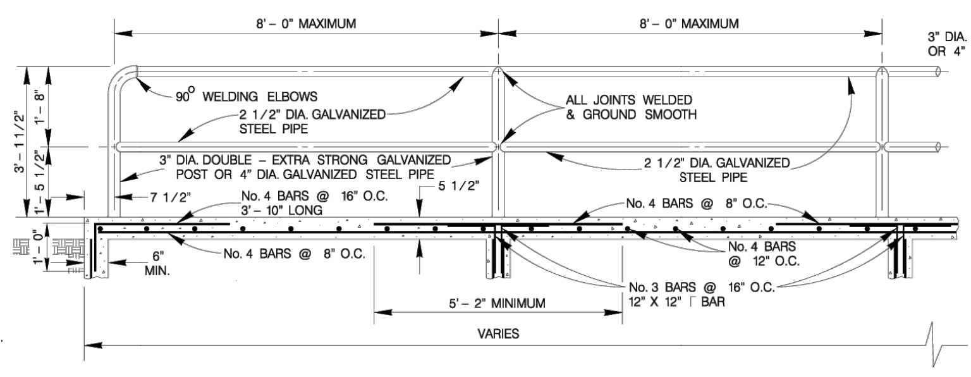
* A NEAT END SECTION, SATISFACTORY TO THE ENGINEER, FROM SUBMITTED SHOP DRAWINGS, MAY BE USED IN LIEU OF THE 90° WELDING ELBOW SHOWN.

SCALE : 1" = 8"


10' – 0" PROPERTY LINE TO FACE OF CURB
4' – 0" CLEARANCE MININMUM
SIDEWALK PIPE RAILING
ELEVATED SIDEWALK
SEE PIPE ANCHORAGE DETAIL
SLOPE 1/4" PER FT,
THICKNESS & STEEL AS REQUIRED BY SPAN
6"
6 3/4"
2 3/4"
2' – 0"
CURB BEYOND
1 1/2" COVER
9 1/2"
2 1/2" GUTTER DEPRESSION
7"
No. 4 BARS @ 8" O.C.
No. 4 BARS @ 12" O.C.
6" MINIMUM
2:1
SLOPE AS REQUIRED BY DESIGN HYDRAULICS
HEIGHT AS REQUIRED BY DESIGN HYDRAULICS
CONCRETE CURB
No. 4 DOWEL BARS @ 18" O.C. TO BACK OF CURB
4" CONCRETE RIP RAP, WITH No. 3 BARS @ 18" O.C. EACH WAY, TURNED DOWN 18"
6" x 5' – 6" BARRICADE POST PLACED 6" BACK OF CURB WITH 2' – 4" ABOVE GROUND & 3' – 2" BELOW GROUND. (5' – 0" O.C. TYP.)

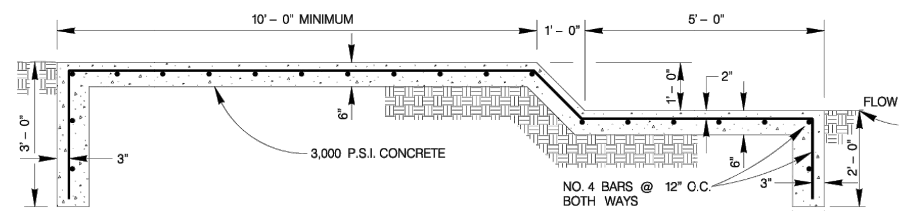
NOTE: 1. ALLOW FOR REFLECTOR BUTTONS ON BARRICADE POST. USE ONE 3/4" BUTTON PER POST.
2. POST SHALL RECEIVE TWO COATS OF ALUMINUM PAINT.

ELEVATED SIDEWALK & DROP CURB
DETAILS FOR DRAINAGE CHANNELS
SCALE : 1" = 4'

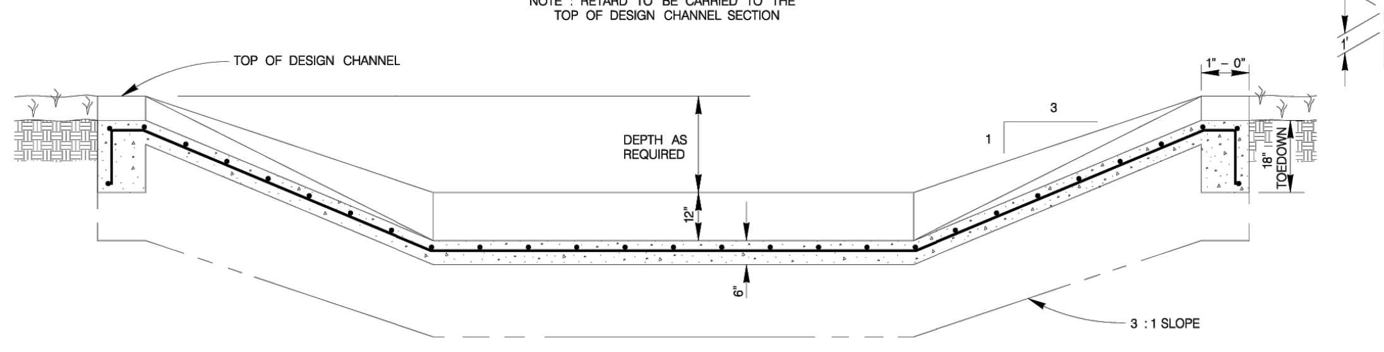

8' – 0" MAXIMUM
90° WELDING ELBOWS
2 1/2" DIA. GALVANIZED STEEL PIPE
ALL JOINTS WELDED & GROUND SMOOTH
3" DIA. DOUBLE – EXTRA STRONG GALVANIZED POST OR 4" DIA. GALVANIZED STEEL PIPE
3' – 11/2"
1' – 8"
1' – 5 1/2"
7 1/2"
No. 4 BARS @ 16" O.C. 3' – 10" LONG
5 1/2"
No. 4 BARS @ 8" O.C.
No. 4 BARS @ 12" O.C.
1' – 0"
6" MIN.
No. 3 BARS @ 16" O.C. 12" X 12" ⌐ BAR
5' – 2" MINIMUM
VARIES

TYPICAL SIDEWALK BRIDGE &
SIDEWALK PIPE RAILING SECTION
SCALE : 1" = 4'

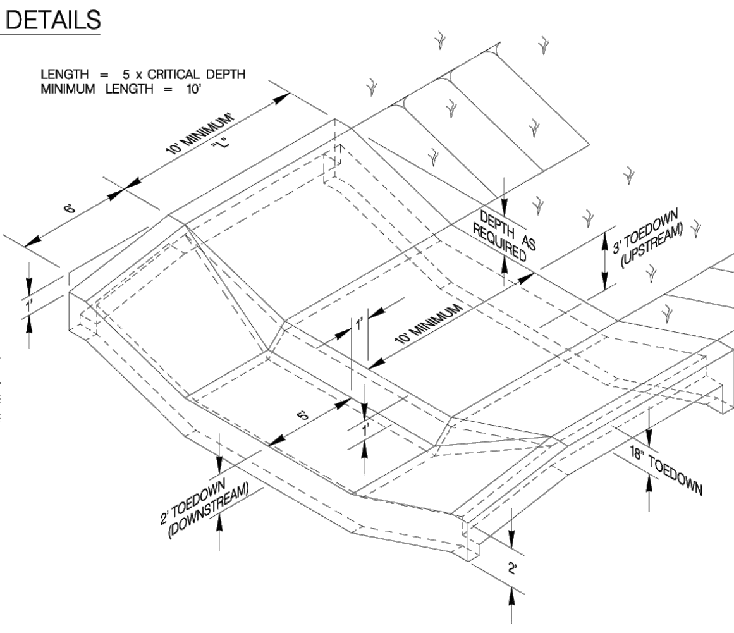
RETARD DETAILS



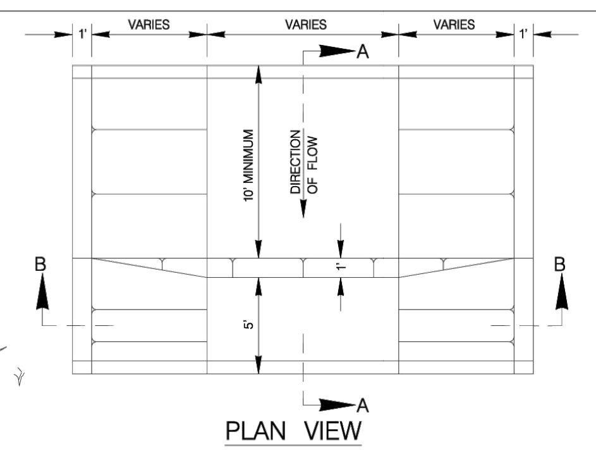
SECTION A – A
SCALE : 1" = 4'
NOTE : RETARD TO BE CARRIED TO THE TOP OF DESIGN CHANNEL SECTION



SECTION B – B
SCALE : 1" = 4'



ISOMETRIC VIEW
SCALE : 1" = 10'



PLAN VIEW
SCALE : 1" = 10'

JANUARY 2005

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

ELEVATED SIDEWALK & RETARD
STANDARDS

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

CUDEENGINEERS.COM

EST. 1980
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ENGINEERS

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

DOVE SONG SUBDIVISION
UNIT 3

DRAINAGE DETAILS

DATE
06/24/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG

CHECKED BY
XV/AL

REVISIONS

DATE

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1.	
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CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

# C6.D1

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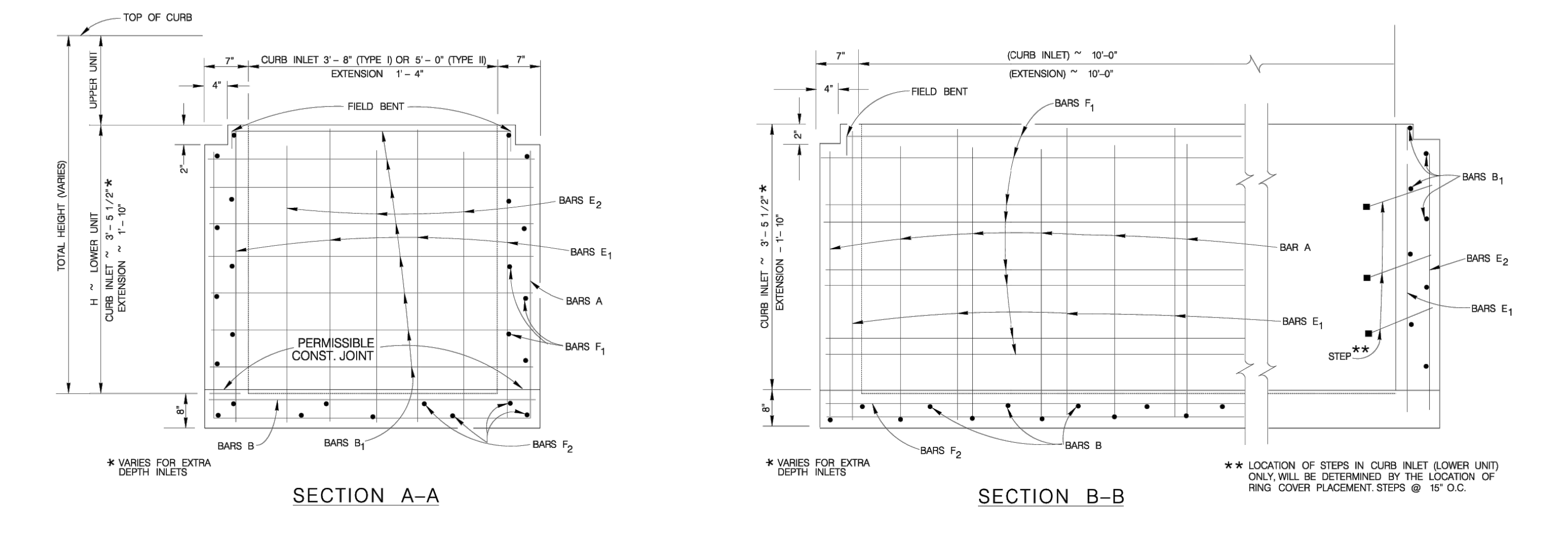
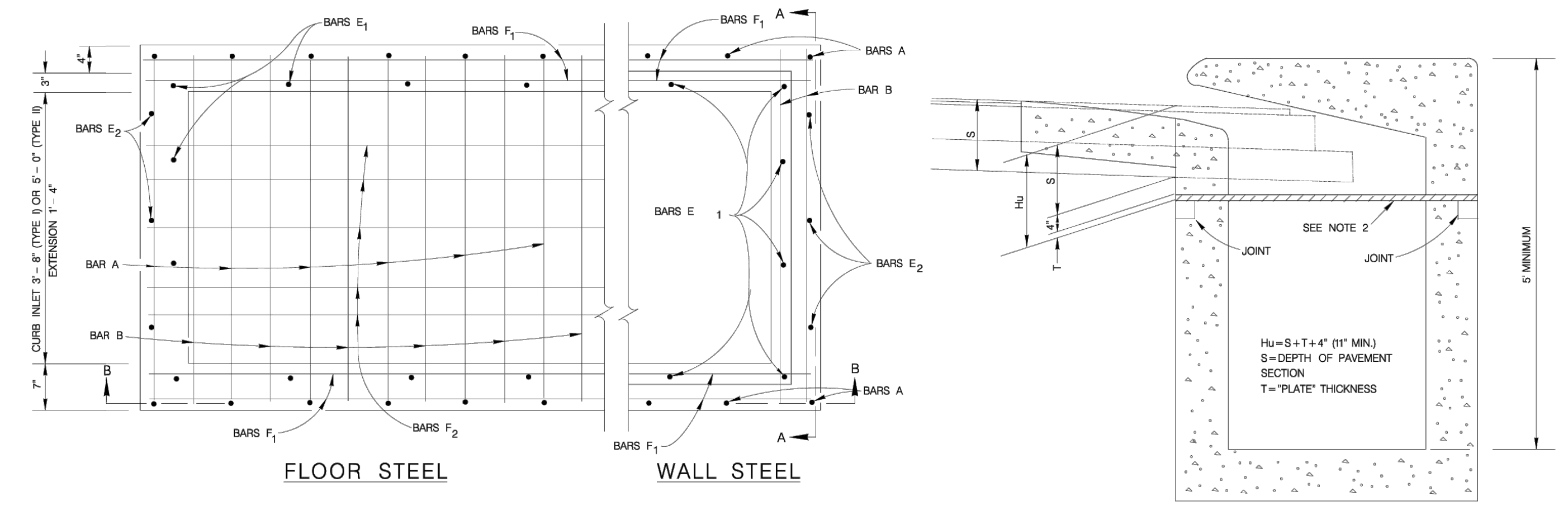
P:\03608\004\2-DWG\4-Plans\C6.D1 DRAINAGE DETAILS.dwg 2024/06/24 7:09pm jguerrero


SECTION A–A
SECTION B–B
PERMISSIBLE CONST. JOINT
* 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.

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"



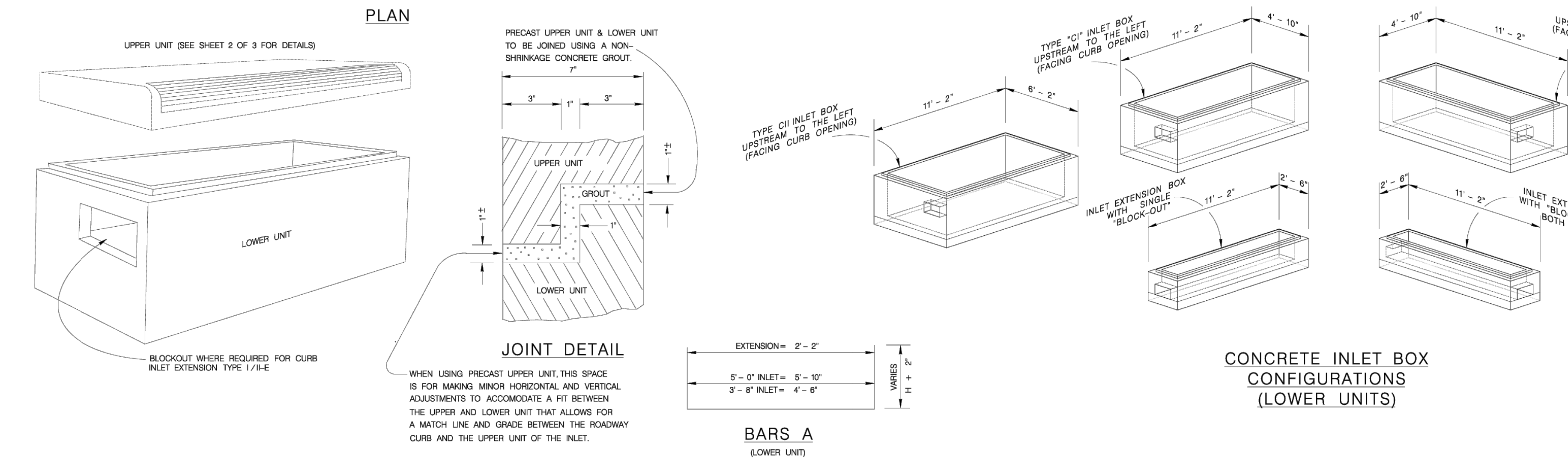
PHASE CONSTRUCTION

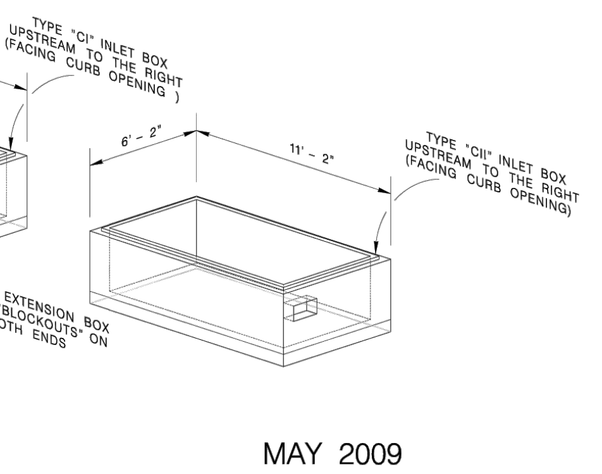
NOTES FOR PHASE CONSTRUCTION (WHEN DIRECTED BY THE ENGINEER):

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.

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".


UPPER UNIT (SEE SHEET 2 OF 3 FOR DETAILS)
LOWER UNIT
BLOCKOUT WHERE REQUIRED FOR CURB INLET EXTENSION TYPE I / II-E
PRECAST UPPER UNIT & LOWER UNIT TO BE JOINED USING A NON-SHRINKAGE CONCRETE GROUT.
JOINT DETAIL
WHEN USING PRECAST UPPER UNIT, THIS SPACE IS FOR MAKING MINOR HORIZONTAL AND VERTICAL ADJUSTMENTS TO ACCOMODATE A FIT BETWEEN THE UPPER AND LOWER UNIT THAT ALLOWS FOR A MATCH LINE AND GRADE BETWEEN THE ROADWAY CURB AND THE UPPER UNIT OF THE INLET.
BARS A
(LOWER UNIT)
CONCRETE INLET BOX CONFIGURATIONS (LOWER UNITS)
TYPE "CI" INLET BOX UPSTREAM TO THE LEFT (FACING CURB OPENING)
INLET EXTENSION BOX WITH SINGLE "BLOCK-OUT"

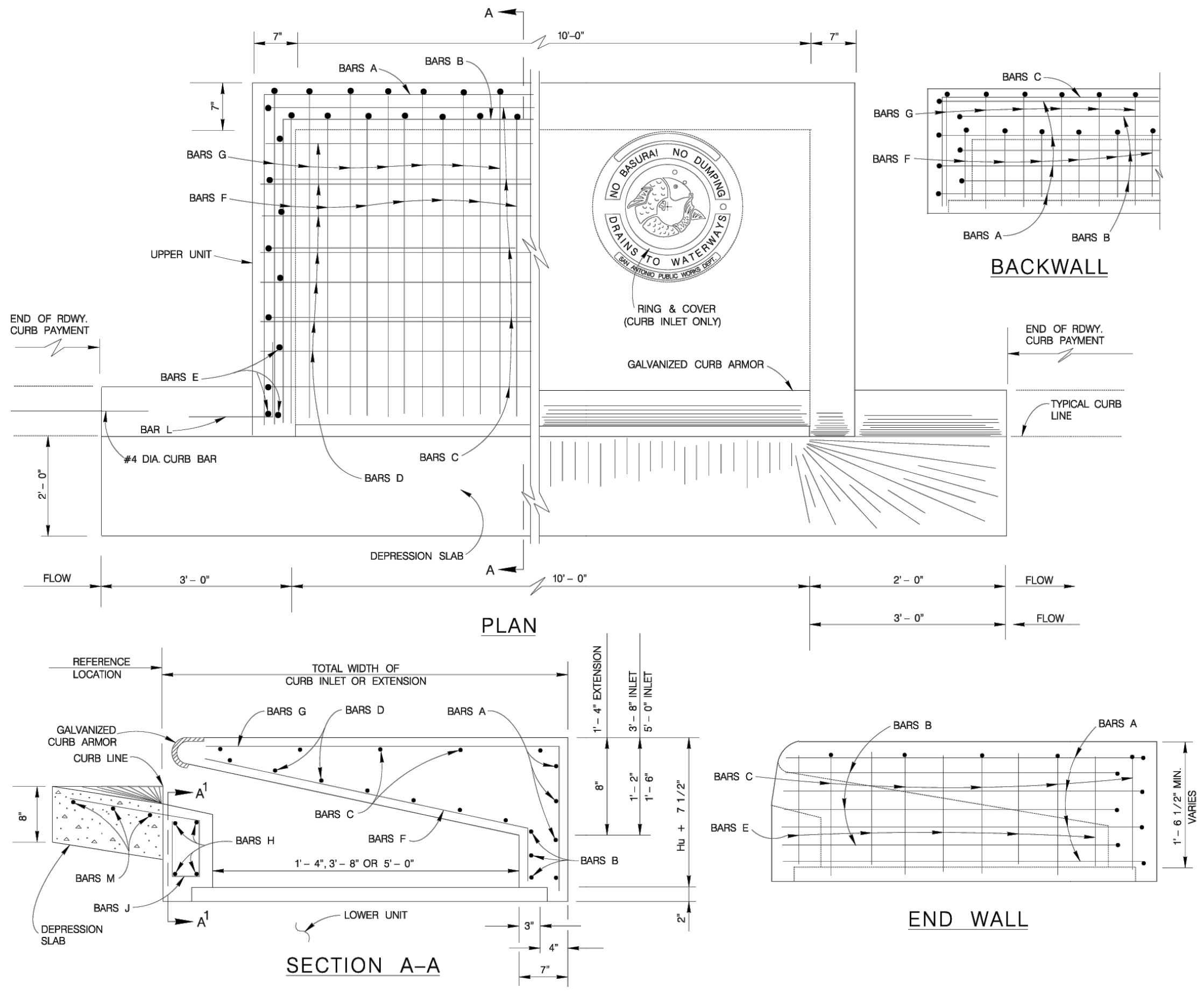

TYPE "CI" INLET BOX UPSTREAM TO THE RIGHT (FACING CURB OPENING)
INLET EXTENSION BOX WITH "BLOCKOUTS" ON BOTH ENDS

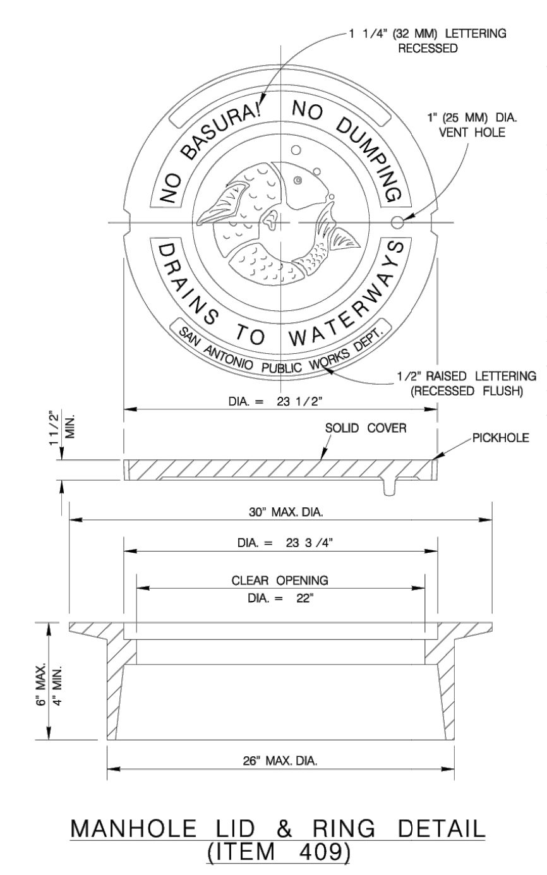
MAY 2009

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____




NO BASURA! NO DUMPING
DRAINS TO WATERWAYS
SAN ANTONIO PUBLIC WORKS DEPT.
1 1/4" (32 MM) LETTERING RECESSED
1" (25 MM) DIA. VENT HOLE
1/2" RAISED LETTERING (RECESSED FLUSH)
PICKHOLE
26" MAX. DIA.

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")

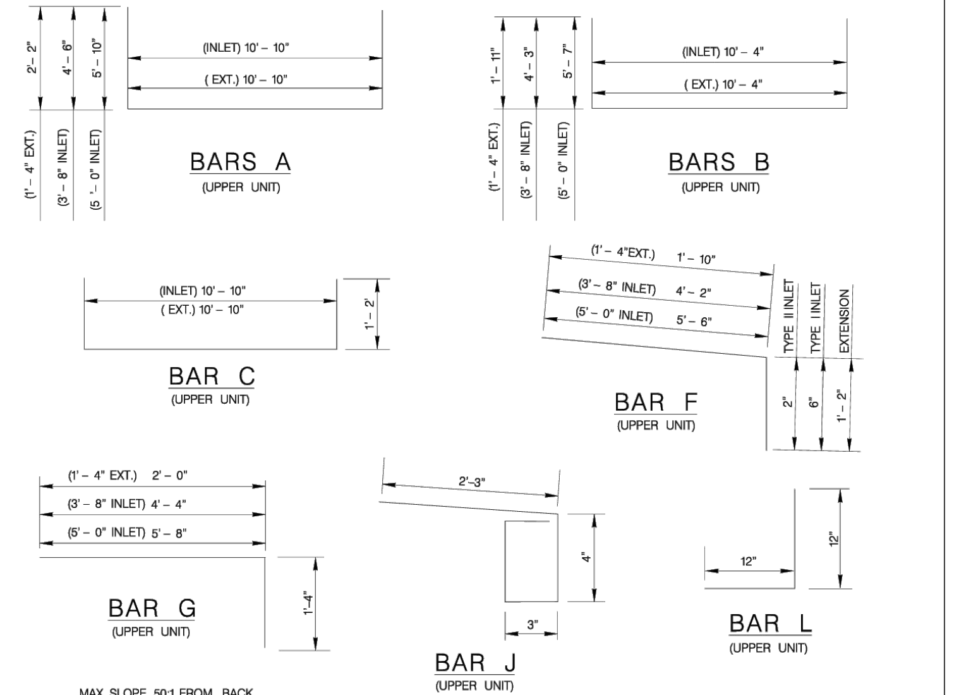
UPPER UNIT 10' X 3'–8" (TYPE I)					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	—	19'–10"	53
B	3	#4	—	18'–10"	38
C	5	#4	11"	13'–2"	44
D	7	#4	6"	10'–10"	51
E	12	#4	11"	1'–2"	9
F	21	#6	6"	4'–8"	147
G	22	#6	6"	5'–8"	187
H	4	#4	—	10'–10"	29
J	12	#4	12"	3'–6"	28
L	4	#4	—	2'–0"	5
M	3	#4	—	14'–8"	29
TOTAL WEIGHT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

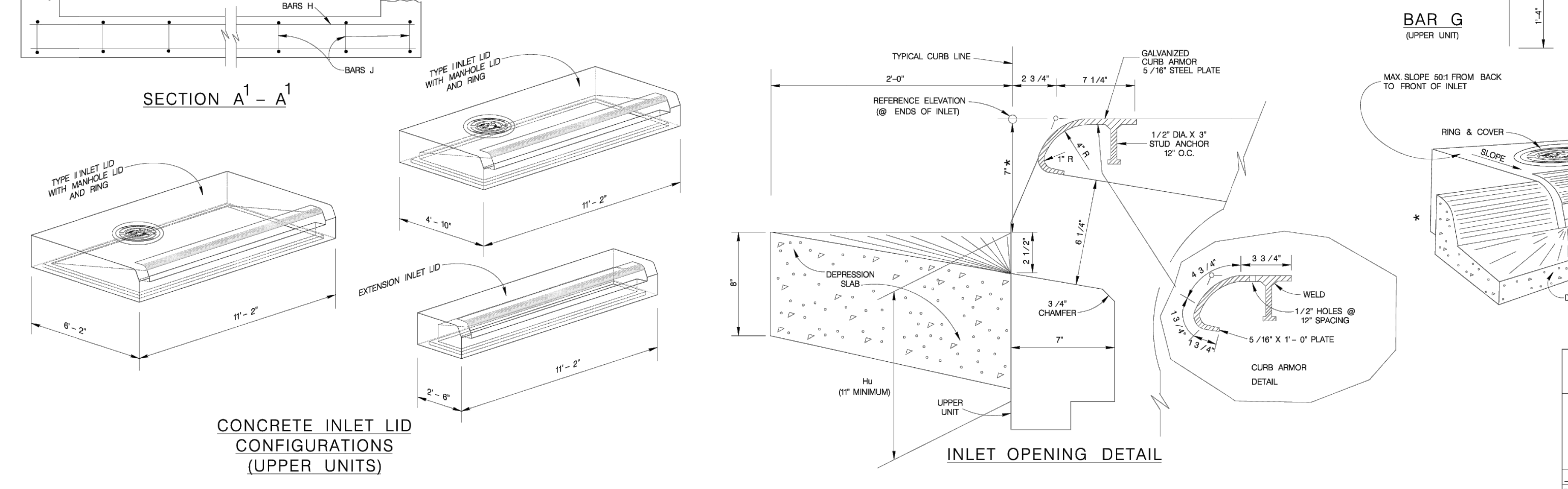
UPPER UNIT 10' X 5' (TYPE II)					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	—	22'–6"	60
B	3	#4	—	21'–6"	43
C	7	#4	11"	13'–2"	62
D	11	#4	6"	10'–10"	80
E	16	#4	11"	1'–2"	13
F	21	#6	6"	5'–8"	179
G	22	#6	6"	7'–0"	231
H	4	#4	—	10'–10"	29
J	12	#4	12"	3'–6"	28
L	4	#4	—	2'–0"	5
M	3	#4	—	14'–8"	29
TOTAL WEIGHT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

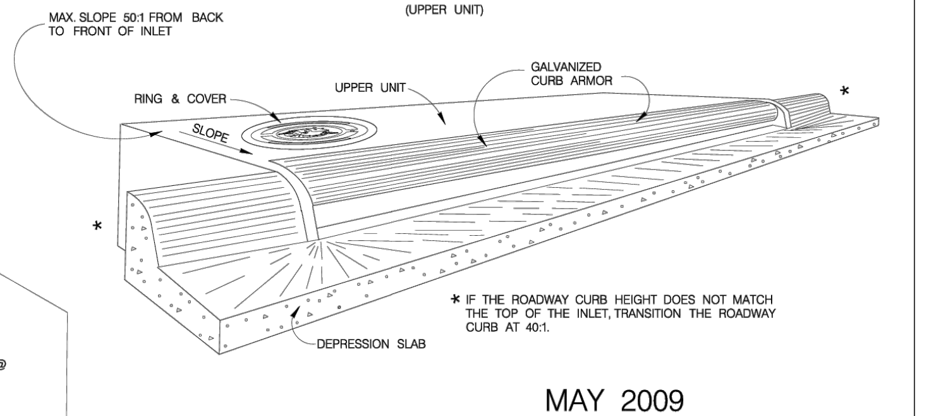
CLASS "A" CONCRETE QUANTITIES (FOR Hu = 11")

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




SECTION A1 – A1
CONCRETE INLET LID CONFIGURATIONS (UPPER UNITS)
INLET OPENING DETAIL
TYPICAL CURB LINE
REFERENCE ELEVATION (@ ENDS OF INLET)
GALVANIZED CURB ARMOR 5 /16" STEEL PLATE
1/2" DIA. X 3" STUD ANCHOR 12" O.C.
2'–0"
2 3 /4"
7 1/4"

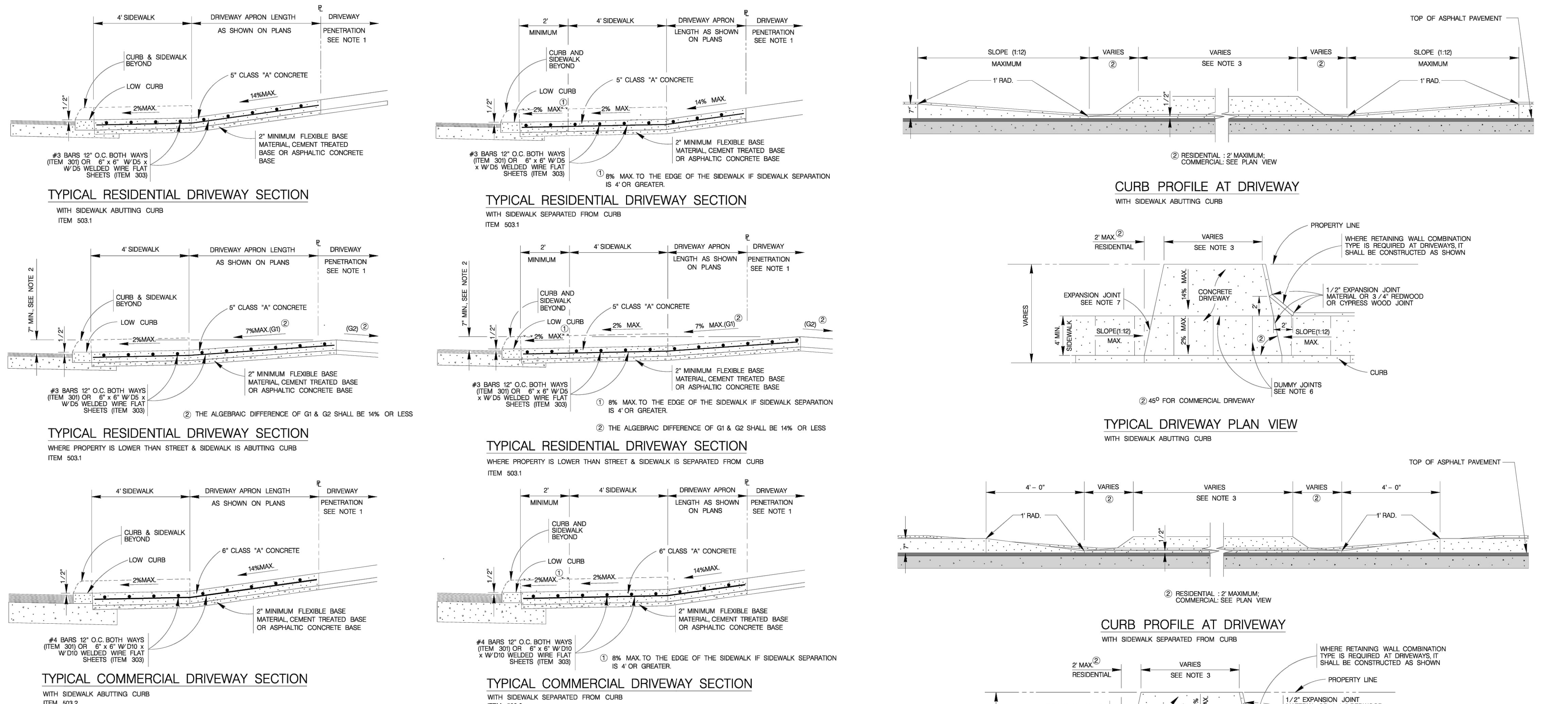

MAX. SLOPE 50:1 FROM BACK TO FRONT OF INLET
RING & COVER
GALVANIZED CURB ARMOR
UPPER UNIT
DEPRESSION SLAB
* IF THE ROADWAY CURB HEIGHT DOES NOT MATCH THE TOP OF THE INLET, TRANSITION THE ROADWAY CURB AT 40:1.

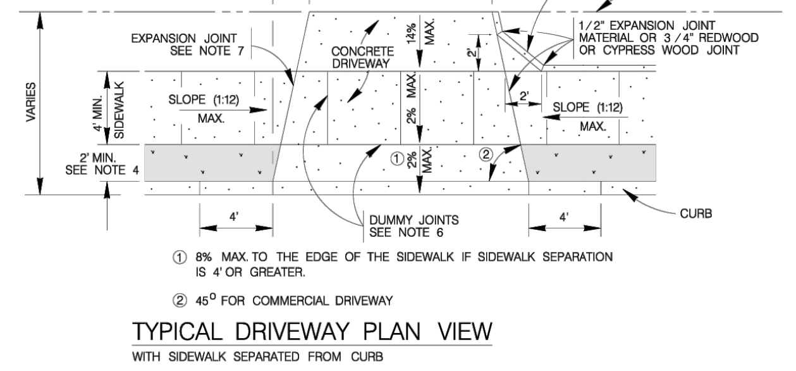
MAY 2009

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____


TYPICAL RESIDENTIAL DRIVEWAY SECTION
WITH SIDEWALK ABUTTING CURB
ITEM 503.1
TYPICAL RESIDENTIAL DRIVEWAY SECTION
WITH SIDEWALK SEPARATED FROM CURB
ITEM 503.1
CURB PROFILE AT DRIVEWAY
WITH SIDEWALK ABUTTING CURB
TYPICAL RESIDENTIAL DRIVEWAY SECTION
WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS ABUTTING CURB
TYPICAL RESIDENTIAL DRIVEWAY SECTION
WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS SEPARATED FROM CURB
TYPICAL DRIVEWAY PLAN VIEW
WITH SIDEWALK ABUTTING CURB
TYPICAL COMMERCIAL DRIVEWAY SECTION
WITH SIDEWALK ABUTTING CURB
ITEM 503.2
TYPICAL COMMERCIAL DRIVEWAY SECTION
WITH SIDEWALK SEPARATED FROM CURB
ITEM 503.2
CURB PROFILE AT DRIVEWAY
WITH SIDEWALK SEPARATED FROM CURB
#4 BARS 12" O.C. BOTH WAYS (ITEM 301) OR 6" x 6" W/D10 x W/D10 WELDED WIRE FLAT SHEETS (ITEM 303)
2" MINIMUM FLEXIBLE BASE MATERIAL, CEMENT TREATED BASE OR ASPHALTIC CONCRETE BASE
6" CLASS "A" CONCRETE
2%MAX.
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

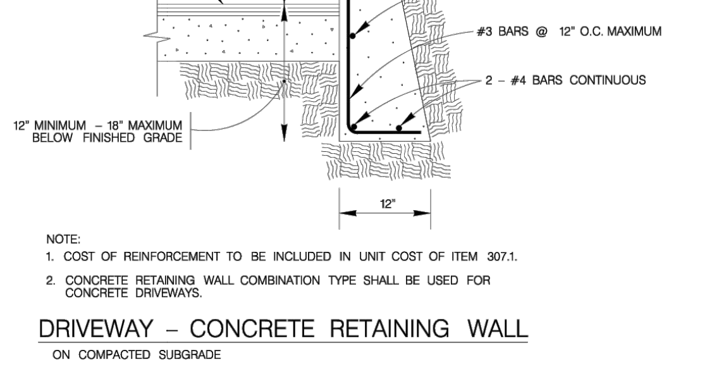


CONCRETE DRIVEWAY NOTES

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.


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

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

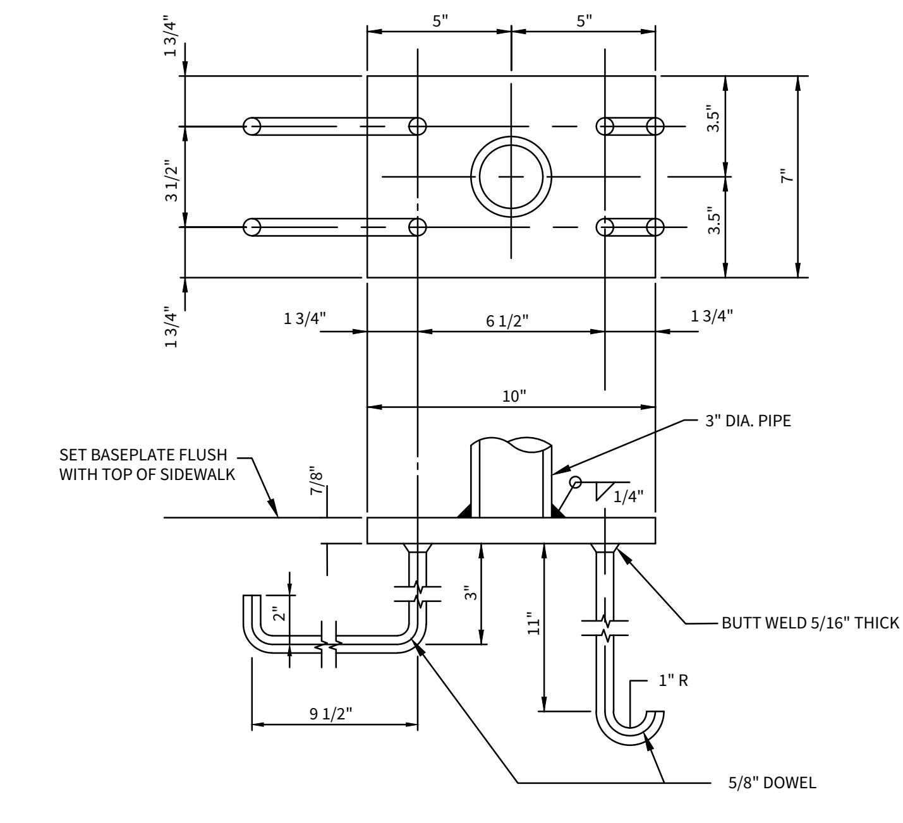
DRIVEWAY – CONCRETE RETAINING WALL
ON COMPACTED SUBGRADE
ITEM 307.1

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

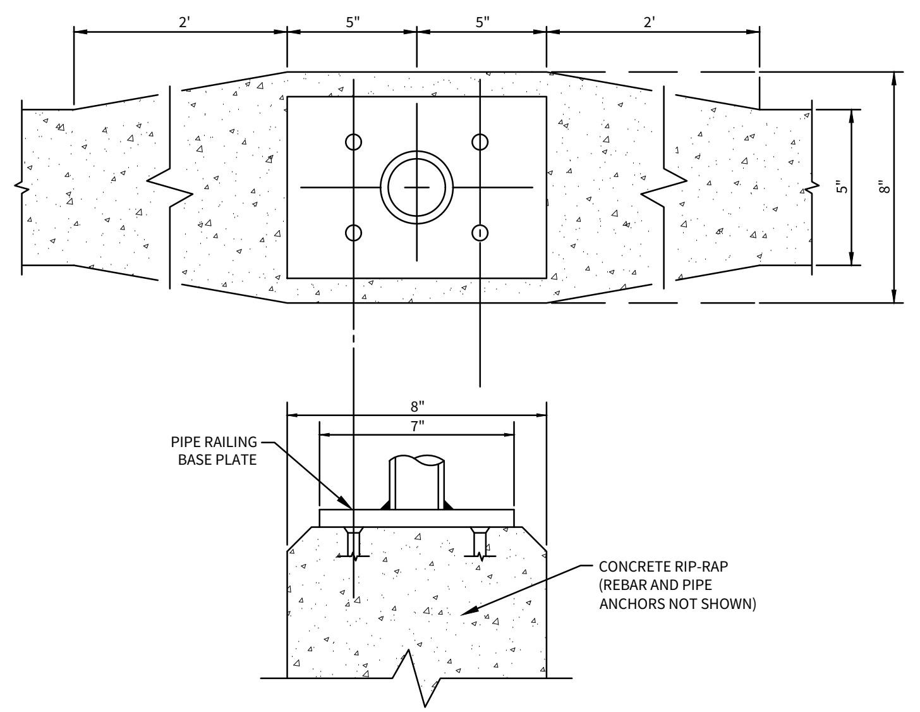
CONCRETE DRIVEWAY STANDARDS

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



PIPE ANCHORAGE DETAILS

N.T.S.

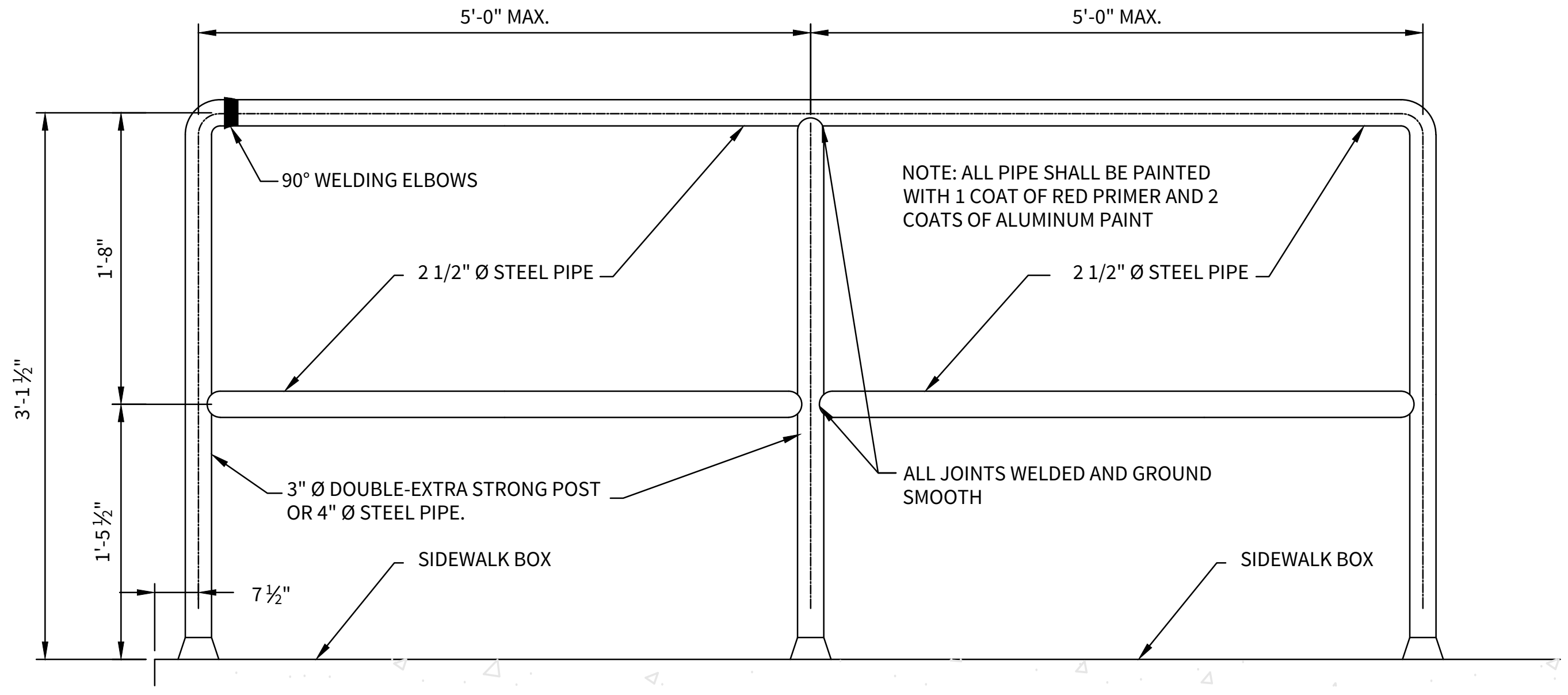


CONCRETE RIP–RAP AT PIPE RAILING BASE PLATE DETAIL

NOTES:

1) CONTRACTOR TO FLARE CONCRETE RIP-RAP TO 8" AT PROPOSED PIPE RAILING BASE PLATE LOCATIONS.

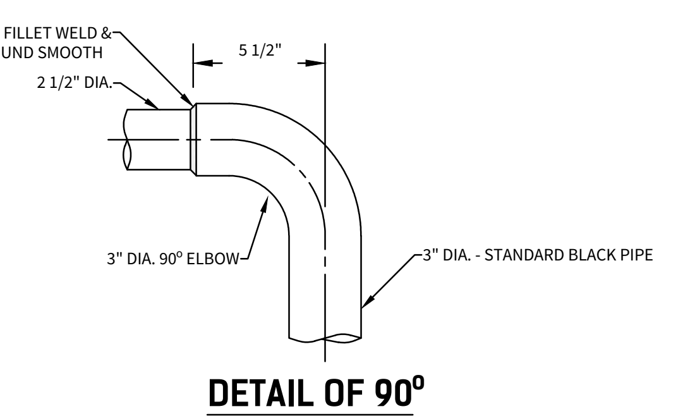
N.T.S.



NOTE: ALL PIPE SHALL BE PAINTED WITH 1 COAT OF RED PRIMER AND 2 COATS OF ALUMINUM PAINT

NOTE: ALL CONSTRUCTION OF HANDRAIL SHALL FOLLOW THE CITY OF MARION STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

PIPE RAILING DETAIL


3/8" FILLET WELD & GROUND SMOOTH
2 1/2" DIA.
5 1/2"
3" DIA. 90° ELBOW
3" DIA. - STANDARD BLACK PIPE

DETAIL OF 90° WELDING ELBOWS

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

SCALE: 1" = 8"

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

DOVE SONG SUBDIVISION
UNIT 3

CURB INLET DETAILS

DATE
06/24/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG

CHECKED BY
XV/AL

#	DATE	REVISIONS
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9.		

ANDREW R. LOWRY
123410
07/03/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C6.D2

CUDEENGINEERS.COM

P:\03608\004\2-DWG\4-Plans\C6.D2 CURB INLET DETAILS.dwg 2024/06/24 7:10pm jguerrero

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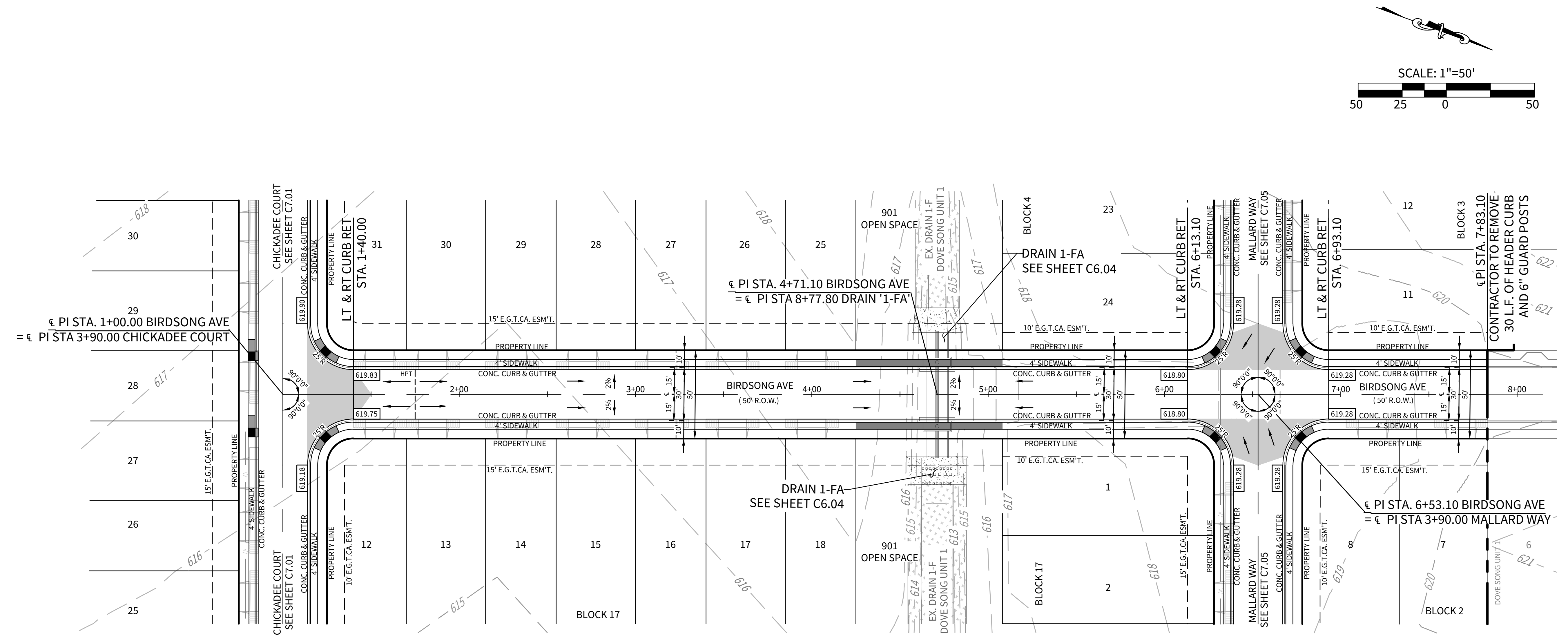
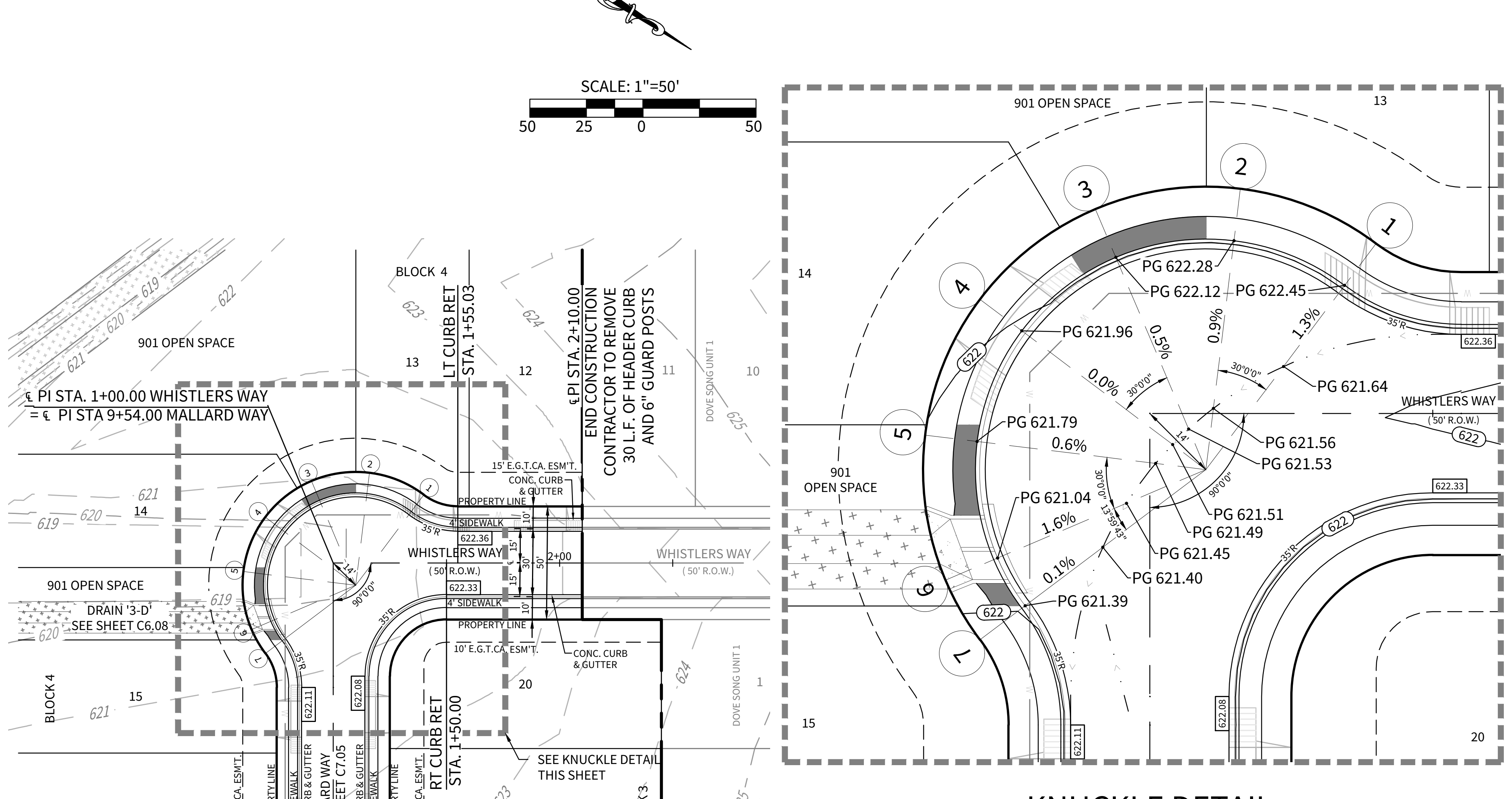

SCALE: 1"=50'
50 25 0 50
¢ PI STA. 1+00.00 BIRDSONG AVE
= ¢ PI STA 3+90.00 CHICKADEE COURT
CHICKADEE COURT SEE SHEET C7.01
LT & RT CURB RET STA. 1+40.00
¢ PI STA. 4+71.10 BIRDSONG AVE
= ¢ PI STA 8+77.80 DRAIN '1-FA'
DRAIN 1-FA SEE SHEET C6.04
EX. DRAIN 1-F DOVE SONG UNIT 1
901 OPEN SPACE
BIRDSONG AVE (50' R.O.W.)
4' SIDEWALK
CONC. CURB & GUTTER
PROPERTY LINE
15' E.G.T.CA. ESM'T.
10' E.G.T.CA. ESM'T.
LT & RT CURB RET STA. 6+13.10
MALLARD WAY SEE SHEET C7.05
LT & RT CURB RET STA. 6+93.10
¢ PI STA. 7+83.10 CONTRACTOR TO REMOVE 30 L.F. OF HEADER CURB AND 6" GUARD POSTS
¢ PI STA. 6+53.10 BIRDSONG AVE
= ¢ PI STA 3+90.00 MALLARD WAY
BLOCK 4
BLOCK 17
BLOCK 2
BLOCK 3
2+00
3+00
4+00
5+00
6+00
7+00
8+00



KNUCKLE DETAIL
SCALE: 1"= 20'

CUL-DE-SAC BACK OF CURB ELEVATIONS	
NUMBER	TOC ELEV.
1	622.45
2	622.28
3	622.12
4	621.96
5	621.79
6	621.04
7	621.39

LEGEND

- — · > · — **PAVEMENT GUTTER LINE**
- ▭ DRIVEWAY TO BE BUILT WITH HOMEBUILDING
- ░ **STREET WASHOUT – SEE DETAIL SHEET C7.D1**
- ▓ **SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE**
- ┳ **ADA SIDEWALK CURB RAMP – SEE DETAIL SHEET C7.D2**

ONLY ADA RAMPS WITH A 900 SERIES OPEN SPACE
WILL BE BUILT WITH INFRASTRUCTURE

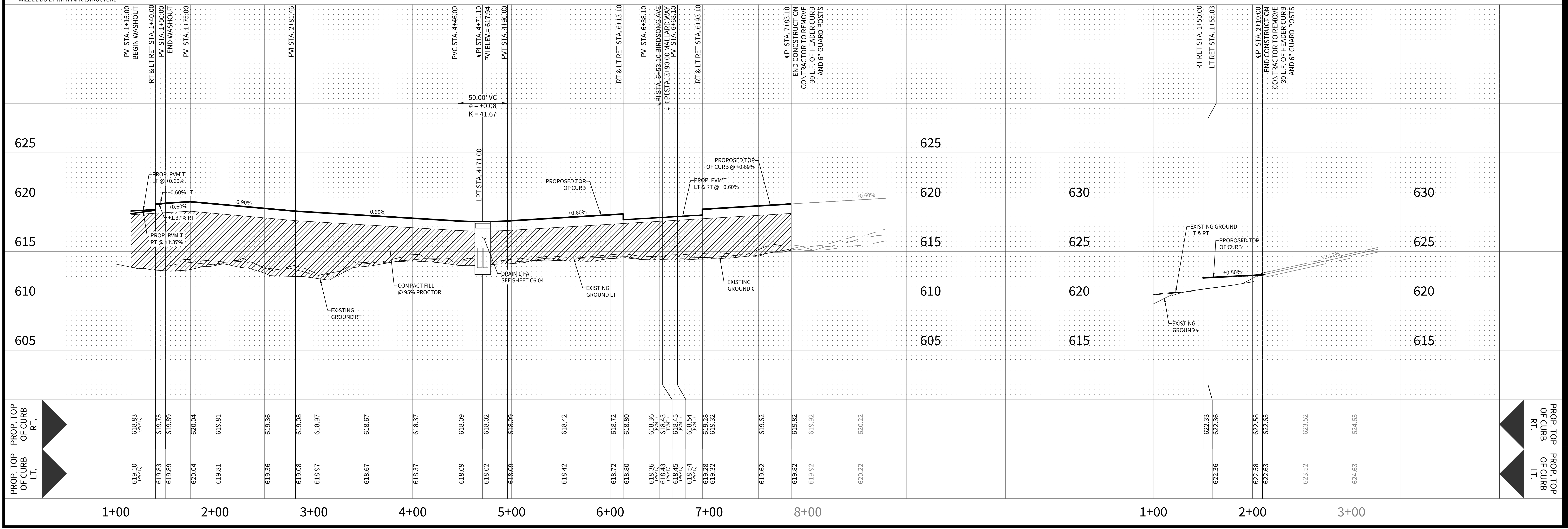
BIRDSONG AVE

STA. 1+00.00 TO STA. 7+83.10

WHISTLERS WAY

STA. 1+00.00 TO STA. 2+10.00

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



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

DOVE SONG SUBDIVISION
UNIT 3

STREET PLAN & PROFILE - BIRDSONG AVE & WHISTLERS WAY

DATE
06/28/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG/KM

CHECKED BY
AM/AL

REVISIONS

DATE

#	REVISIONS	DATE
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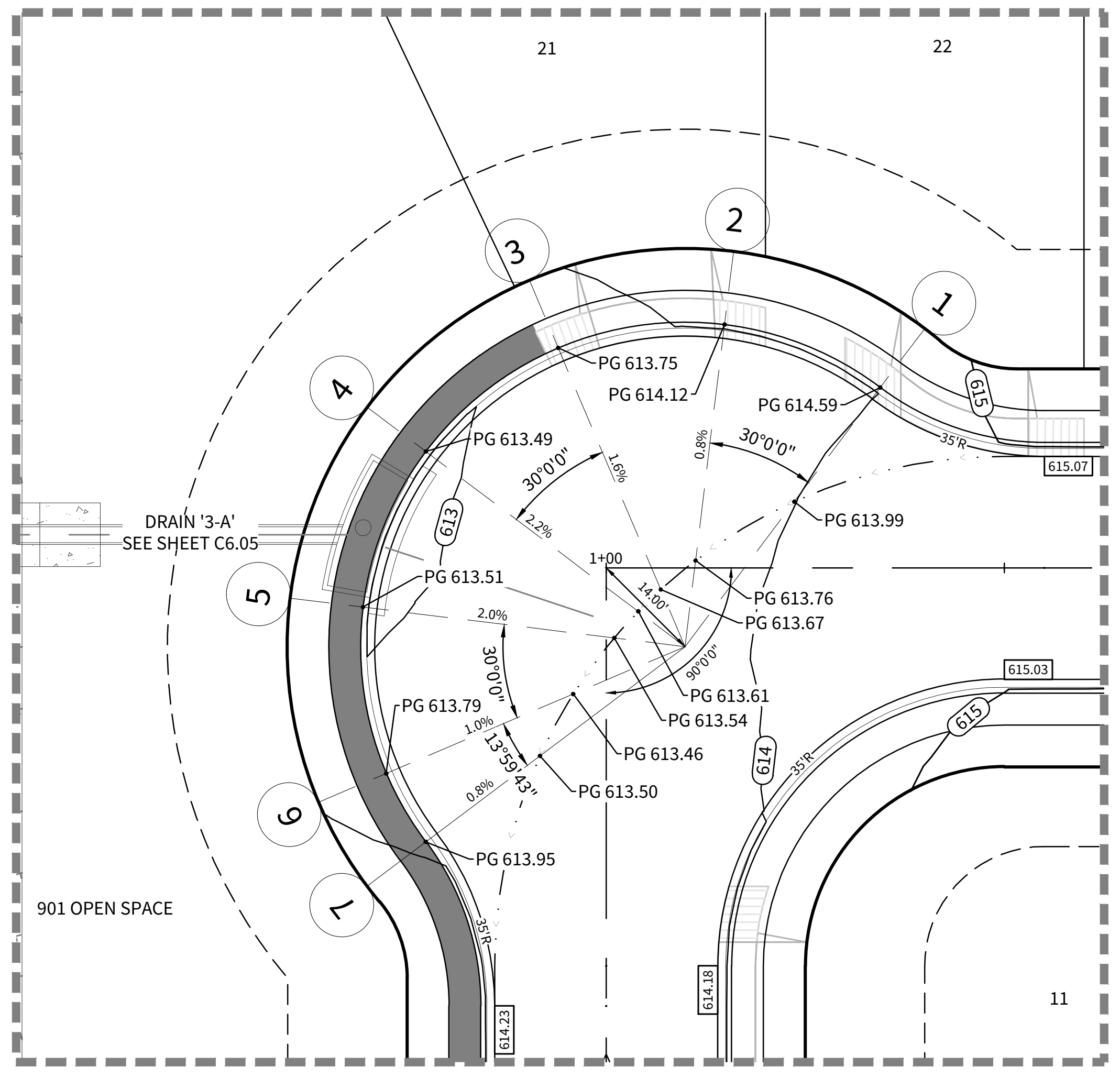
ANDREW R. LOWRY
123410
07/03/2024

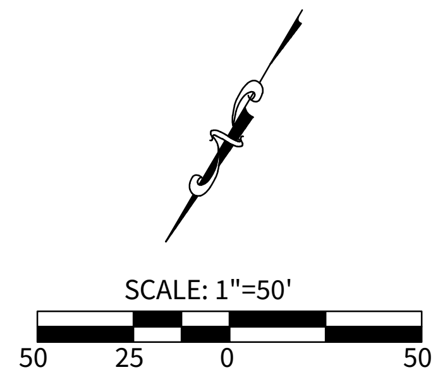
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

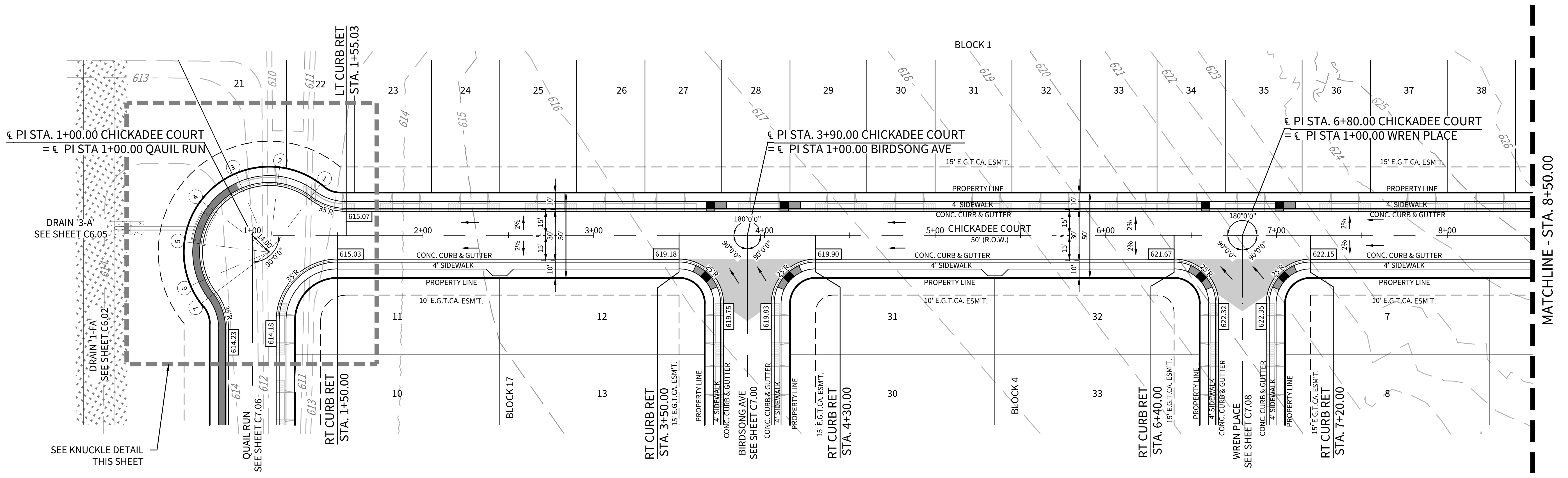
C7.00



KNUCKLE DETAIL

SCALE: 1"= 20'





LEGEND

— · > · —	**PAVEMENT GUTTER LINE**
	DRIVEWAY TO BE BUILT WITH HOMEBUILDING
▨	**STREET WASHOUT – SEE DETAIL SHEET C7.D1**
■	**SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE**
┣	**ADA SIDEWALK CURB RAMP – SEE DETAIL SHEET C7.D2**

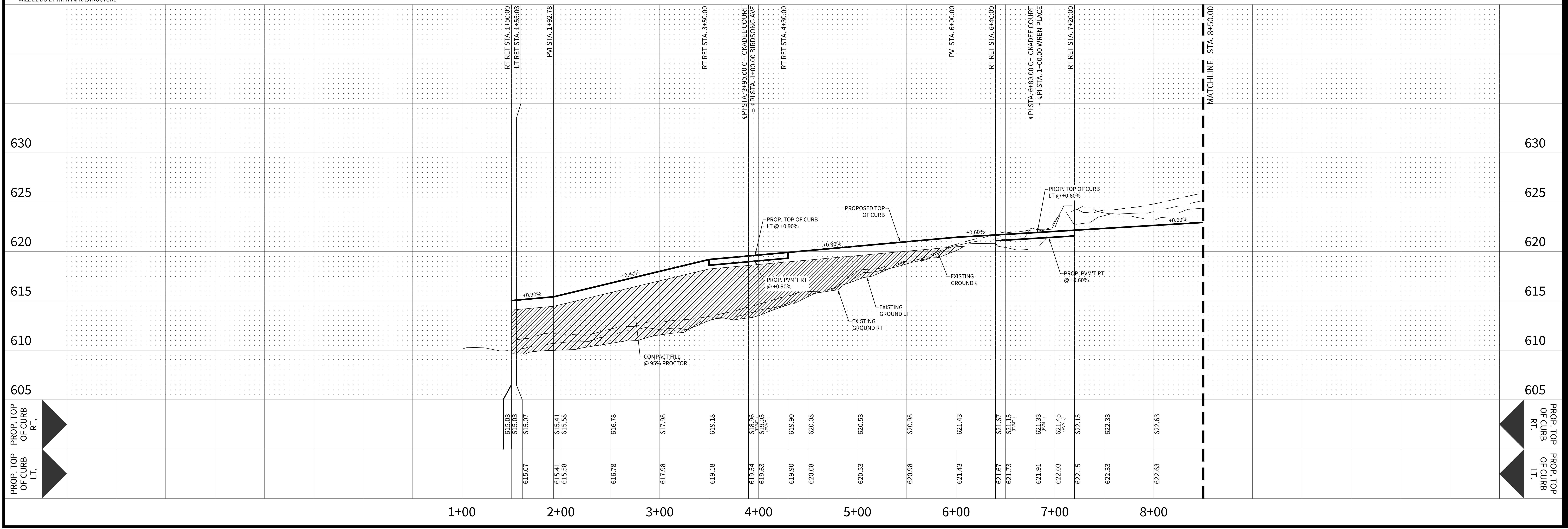
ONLY ADA RAMPS WITH A 900 SERIES OPEN SPACE
WILL BE BUILT WITH INFRASTRUCTURE

CUL-DE-SAC BACK OF CURB ELEVATIONS	
NUMBER	TOC ELEV.
1	614.59
2	614.12
3	613.75
4	613.49
5	613.51
6	613.79
7	613.95

CHICKADEE COURT

STA. 1+00.00 TO STA. 8+50.00

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



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DOVE SONG SUBDIVISION
UNIT 3

STREET PLAN & PROFILE - CHICKADEE COURT

DATE
06/28/2024

PROJECT NO.
03608.004

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JG/SG/KM

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AM/AL

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ANDREW R. LOWRY
123410
07/03/2024

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TBPE No. 455
TBPLS No. 10048500

C7.01

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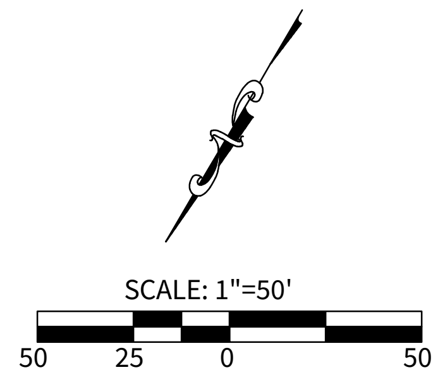
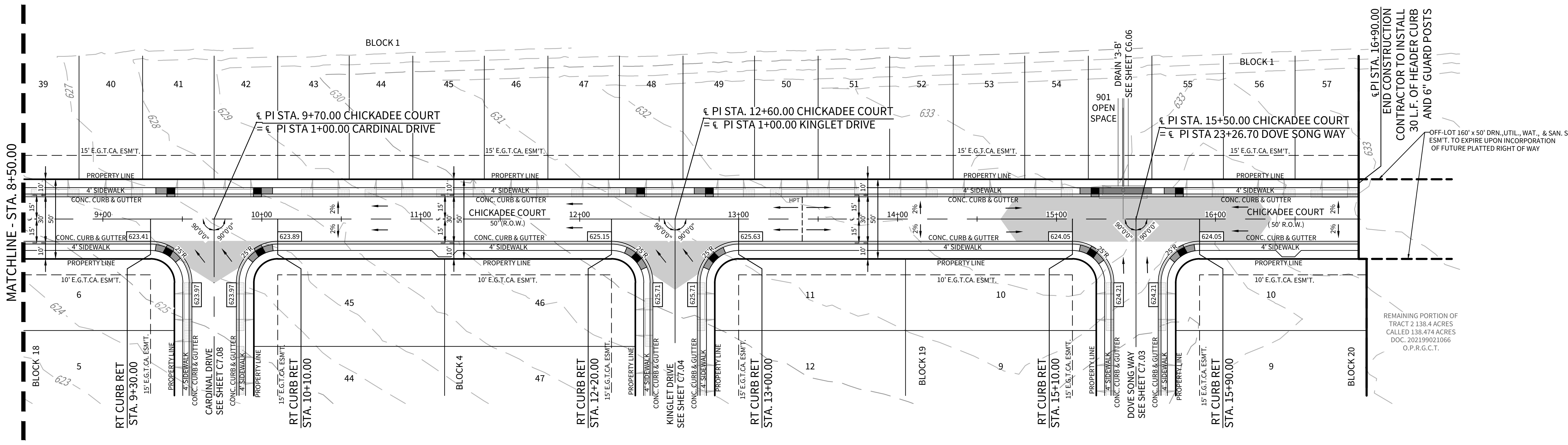
P:\03608\004\2-DWG\4-Plans\C7.01 STREET PLAN & PROFILE - CHICKADEE COURT.dwg 2024/06/28 7:19pm jguerrero





LEGEND

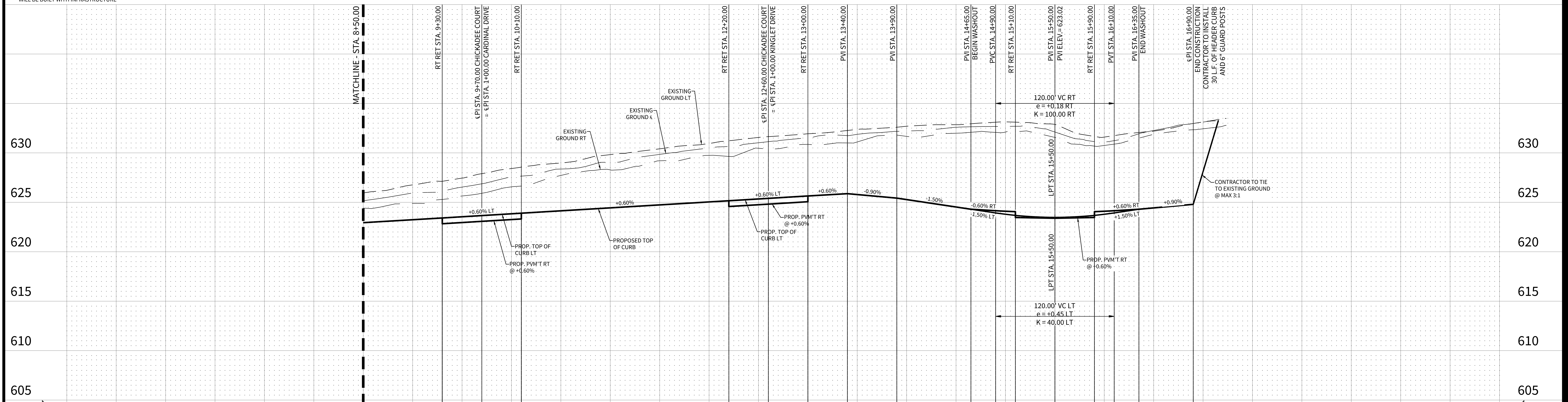
—— · > · ——	PAVEMENT GUTTER LINE
	DRIVEWAY TO BE BUILT WITH HOMEBUILDING
▭	STREET WASHOUT – SEE DETAIL SHEET C7.D1
▨	SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE
	ADA SIDEWALK CURB RAMP – SEE DETAIL SHEET C7.D2

ONLY ADA RAMPS WITH A 900 SERIES OPEN SPACE
WILL BE BUILT WITH INFRASTRUCTURE

CHICKADEE COURT

STA. 8+50.00 TO STA. 16+90.00

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



PROP. TOP OF CURB RT.	622.93	623.23	623.41	622.95 (PVMT.)	623.07 (PVMT.)	623.25 (PVMT.)	623.89	624.13	624.43	624.73	625.03	625.15	624.75 (PVMT.)	624.81 (PVMT.)	625.63	625.87	625.78	625.42	625.27	624.52	624.30	624.15	624.09	624.05	623.97 (PVMT.)	624.05	624.09	624.15	624.30	624.43	624.80
PROP. TOP OF CURB LT.	622.93	623.23	623.41	623.53	623.65	623.83	623.89	624.13	624.43	624.73	625.03	625.15	625.33	625.39	625.63	625.87	625.78	625.42	625.27	624.52	624.30	623.92	623.79	623.67	623.47	623.67	623.79	623.92	624.30	624.43	624.80

9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00

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

DOVE SONG SUBDIVISION
UNIT 3

STREET PLAN & PROFILE - CHICKADEE COURT

DATE
06/28/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG/KM

CHECKED BY
AM/AL

#	DATE	REVISIONS
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ANDREW R. LOWRY
123410
07/03/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C7.02

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P:\03608\004\2-DWG\4-Plans\C7.01 STREET PLAN & PROFILE - CHICKADEE COURT.dwg 2024/06/28 7:26pm jguerrero

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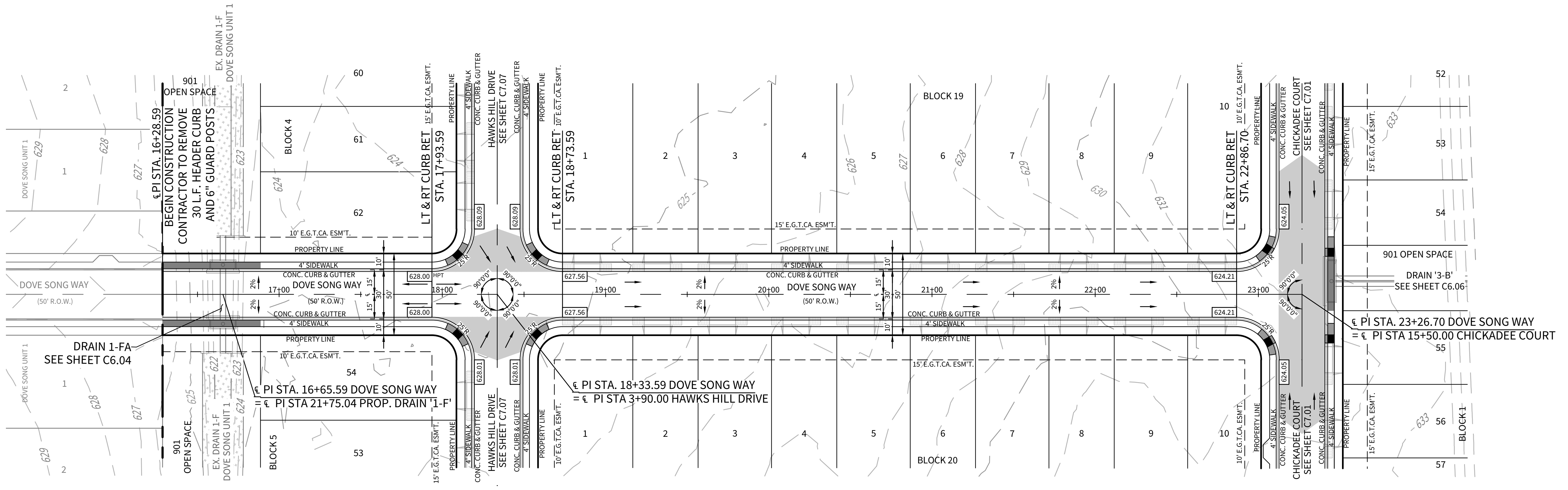

SCALE: 1"=50'
50 25 0 50
EX. DRAIN 1-F DOVE SONG UNIT 1
901 OPEN SPACE
¢ PI STA. 16+28.59 BEGIN CONSTRUCTION CONTRACTOR TO REMOVE 30 L.F. HEADER CURB AND 6" GUARD POSTS
BLOCK 4
60
61
62
LT & RT CURB RET STA. 17+93.59
HAWKS HILL DRIVE SEE SHEET C7.07
LT & RT CURB RET STA. 18+73.59
BLOCK 19
LT & RT CURB RET STA. 22+86.70
CHICKADEE COURT SEE SHEET C7.01
52
53
54
901 OPEN SPACE
DRAIN '3-B' SEE SHEET C6.06
¢ PI STA. 23+26.70 DOVE SONG WAY = ¢ PI STA 15+50.00 CHICKADEE COURT
55
56
57
BLOCK 1
DOVE SONG WAY (50' R.O.W.)
17+00
18+00
19+00
20+00
21+00
22+00
23+00
15' E.G.T.CA. ESM'T.
PROPERTY LINE
4' SIDEWALK
CONC. CURB & GUTTER
DRAIN 1-FA SEE SHEET C6.04
¢ PI STA. 16+65.59 DOVE SONG WAY = ¢ PI STA 21+75.04 PROP. DRAIN '1-F'
¢ PI STA. 18+33.59 DOVE SONG WAY = ¢ PI STA 3+90.00 HAWKS HILL DRIVE
54
53
BLOCK 5
BLOCK 20
1
2
3
4
5
6
7
8
9
10
628.00
627.56
624.21

LEGEND

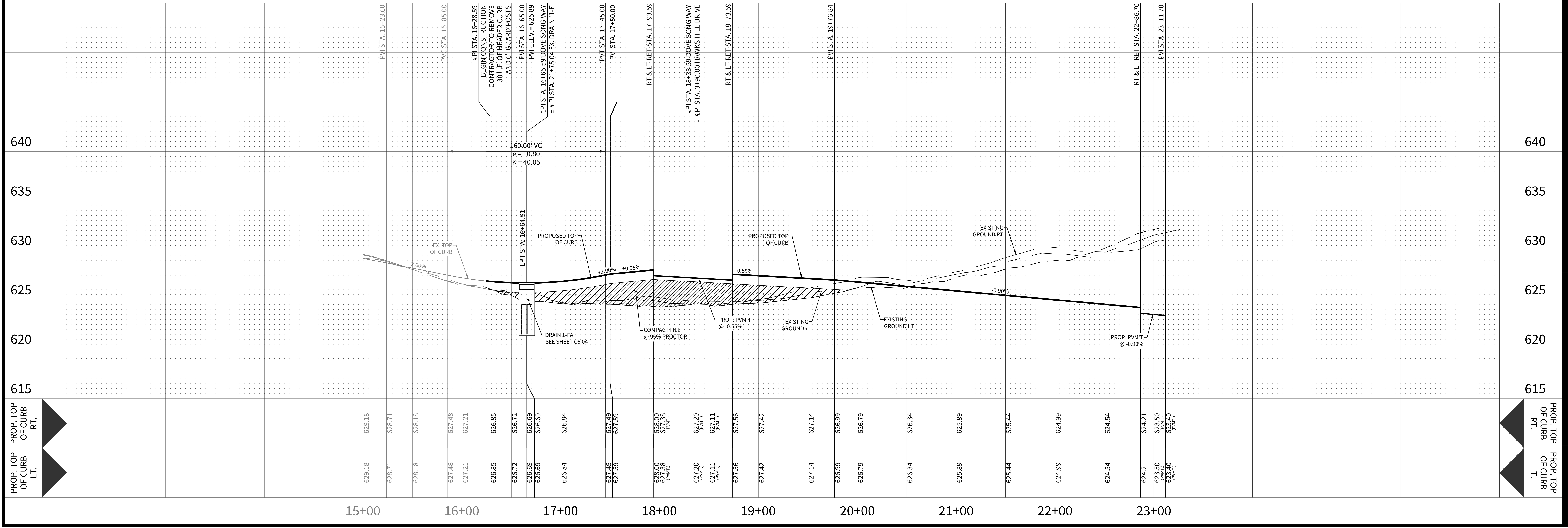
- — · > · — **PAVEMENT GUTTER LINE**
- DRIVEWAY TO BE BUILT WITH HOMEBUILDING
- ▢ **STREET WASHOUT – SEE DETAIL SHEET C7.D1**
- ■ **SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE**
- **ADA SIDEWALK CURB RAMP – SEE DETAIL SHEET C7.D2**

ONLY ADA RAMPS WITH A 900 SERIES OPEN SPACE
WILL BE BUILT WITH INFRASTRUCTURE

DOVE SONG WAY

STA. 16+28.59 TO END

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



PROP. TOP OF CURB RT.	629.18	628.71	628.18	627.48	627.21	626.85	626.72	626.69	626.69	626.84	627.49	627.59	628.00	627.38 (PVMT.)	627.20 (PVMT.)	627.11 (PVMT.)	627.56	627.42	627.14	626.99	626.79	626.34	625.89	625.44	624.99	624.54	624.21	623.50 (PVMT.)	623.40 (PVMT.)
PROP. TOP OF CURB LT.	629.18	628.71	628.18	627.48	627.21	626.85	626.72	626.69	626.69	626.84	627.49	627.59	628.00	627.38 (PVMT.)	627.20 (PVMT.)	627.11 (PVMT.)	627.56	627.42	627.14	626.99	626.79	626.34	625.89	625.44	624.99	624.54	624.21	623.50 (PVMT.)	623.40 (PVMT.)

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

DOVE SONG SUBDIVISION
UNIT 3

STREET PLAN & PROFILE - DOVE SONG WAY

DATE
06/28/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG/KM

CHECKED BY
AM/AL

REVISIONS

DATE

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ANDREW R. LOWRY
123410
07/03/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C7.03

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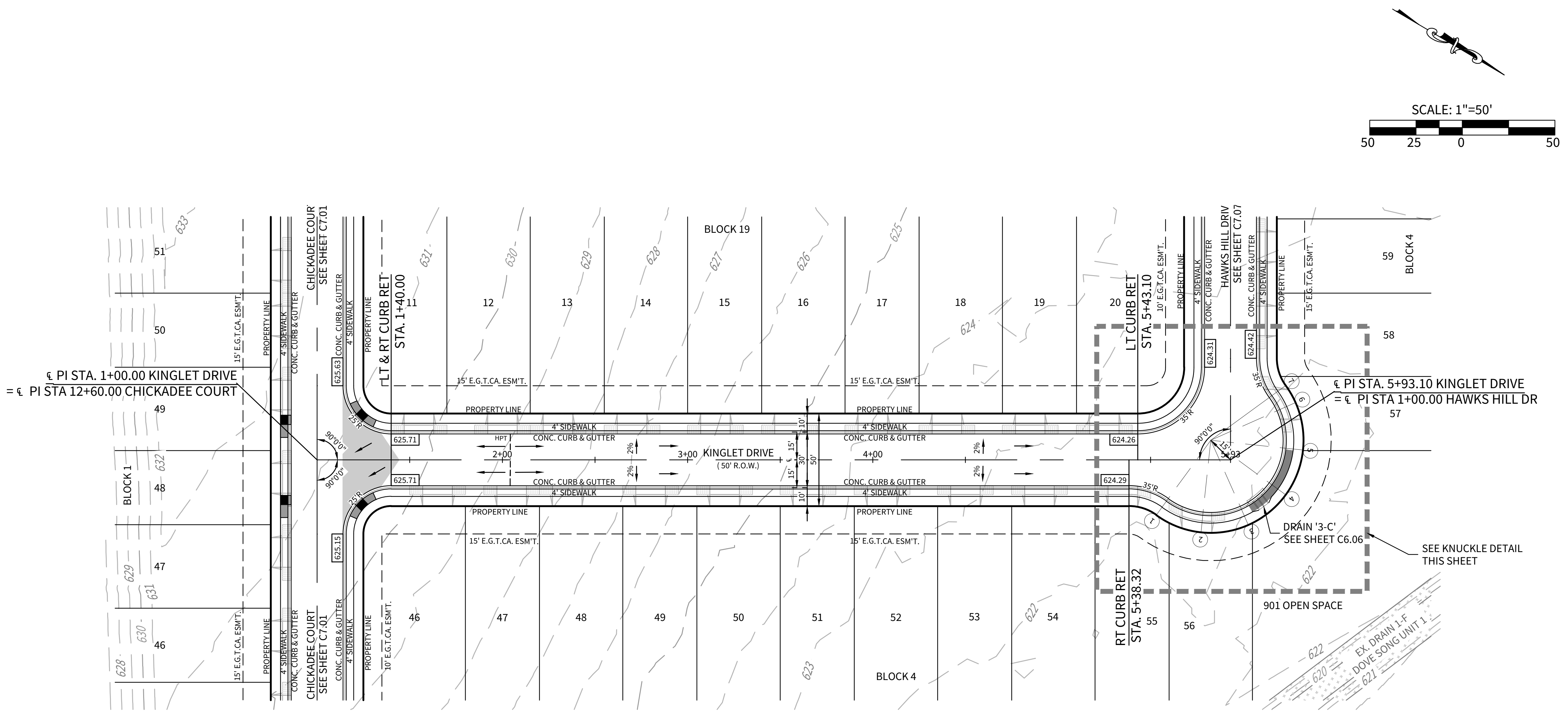
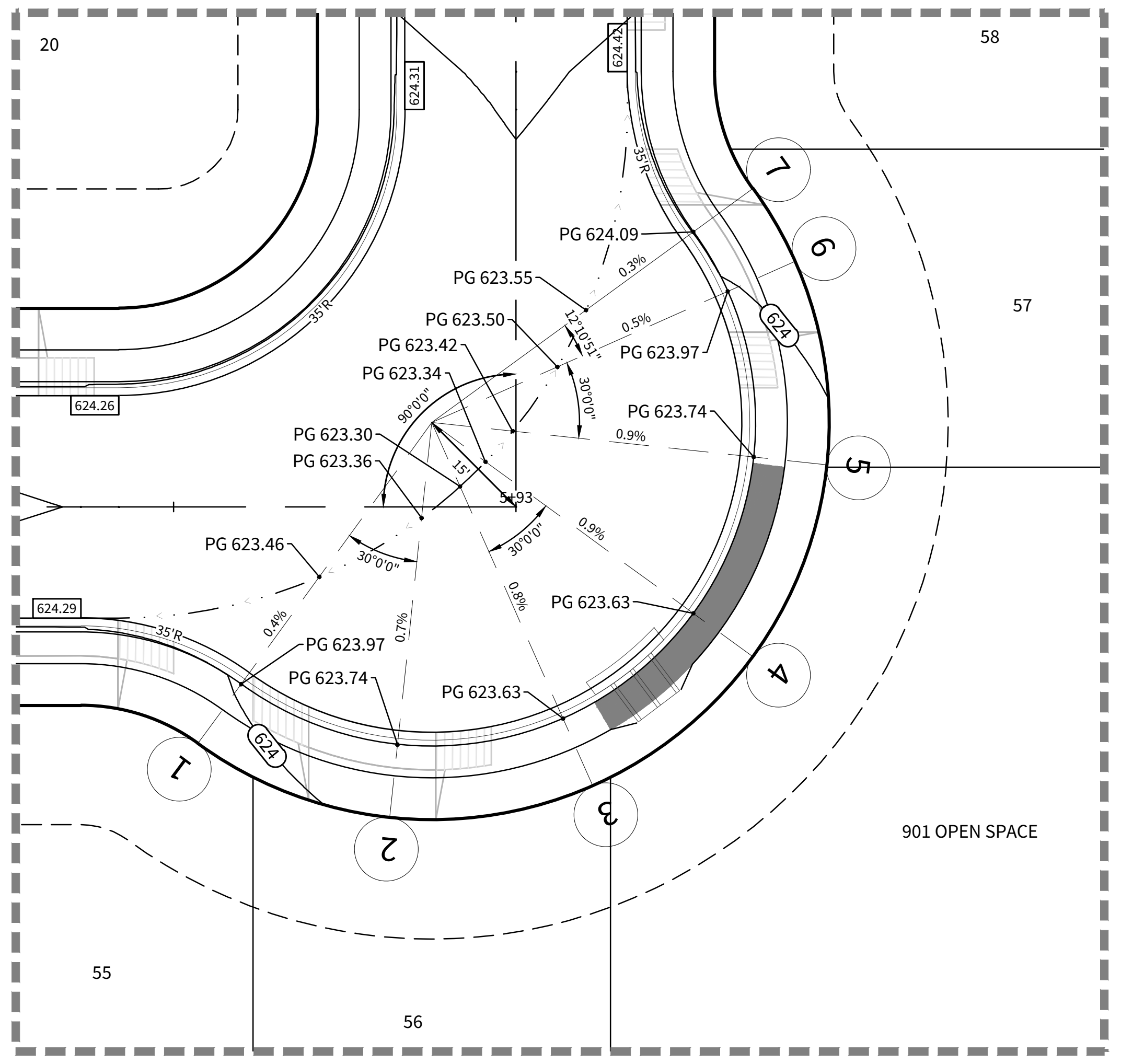

SCALE: 1"=50'
50 25 0 50
BLOCK 19
BLOCK 1
BLOCK 4
℄ PI STA. 1+00.00 KINGLET DRIVE
= ℄ PI STA 12+60.00 CHICKADEE COURT
CHICKADEE COURT SEE SHEET C7.01
LT & RT CURB RET STA. 1+40.00
KINGLET DRIVE (50' R.O.W.)
2+00
3+00
4+00
4' SIDEWALK
CONC. CURB & GUTTER
PROPERTY LINE
15' E.G.T.CA. ESM'T.
LT CURB RET STA. 5+43.10
RT CURB RET STA. 5+38.32
HAWKS HILL DRIVE SEE SHEET C7.07
℄ PI STA. 5+93.10 KINGLET DRIVE
= ℄ PI STA 1+00.00 HAWKS HILL DR
DRAIN '3-C' SEE SHEET C6.06
SEE KNUCKLE DETAIL THIS SHEET
901 OPEN SPACE
EX. DRAIN 1-F DOVE SONG UNIT 1
625.71
625.15
624.26
624.29
624.31
624.42



KNUCKLE DETAIL

SCALE: 1"= 20'

CUL-DE-SAC BACK OF CURB ELEVATIONS	
NUMBER	TOC ELEV.
1	623.97
2	623.74
3	623.63
4	623.63
5	623.74
6	623.97
7	624.09

LEGEND

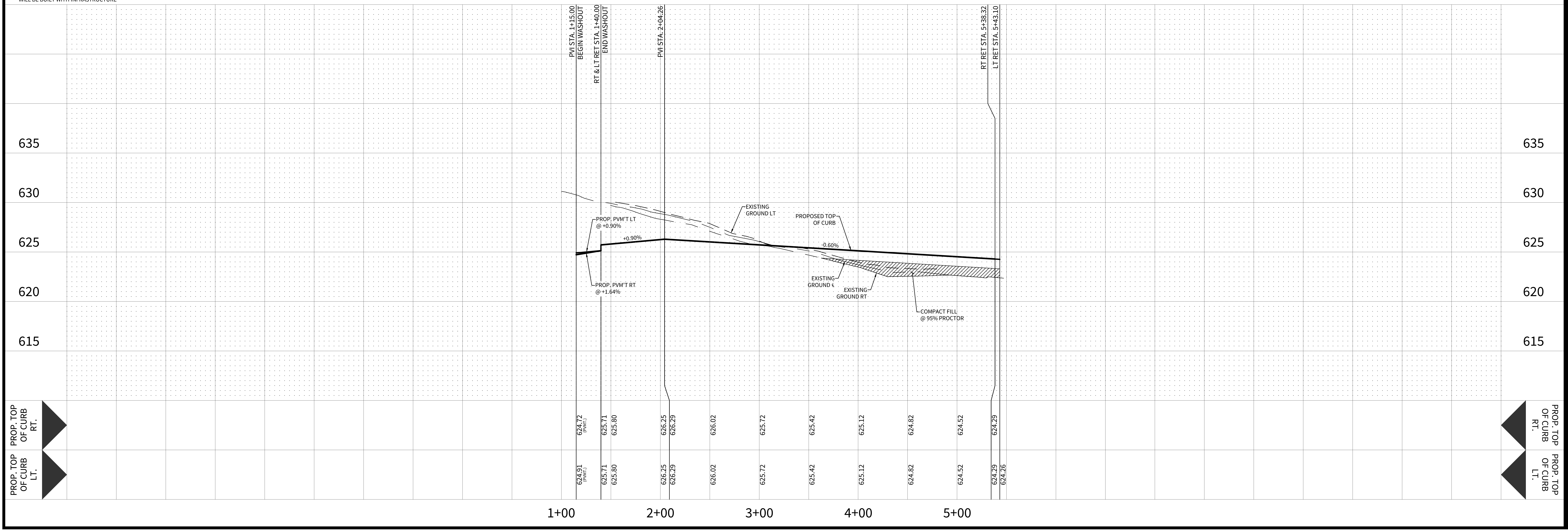
— · > · —	**PAVEMENT GUTTER LINE**
▭	DRIVEWAY TO BE BUILT WITH HOMEBUILDING
▒	**STREET WASHOUT – SEE DETAIL SHEET C7.D1**
▓	**SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE**
┣	**ADA SIDEWALK CURB RAMP – SEE DETAIL SHEET C7.D2**

ONLY ADA RAMPS WITH A 900 SERIES OPEN SPACE
WILL BE BUILT WITH INFRASTRUCTURE

KINGLET DRIVE

STA. 1+00.00 TO STA. END

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



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DOVE SONG SUBDIVISION UNIT 3

STREET PLAN & PROFILE - KINGLET DRIVE

DATE
06/28/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG/KM

CHECKED BY
AM/AL

REVISIONS

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ANDREW R. LOWRY
123410
07/03/2024

CUDE ENGINEERS
TBPE No. 455
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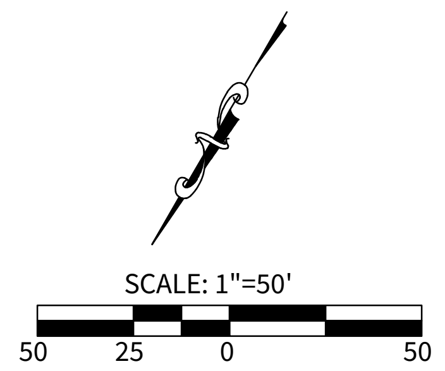
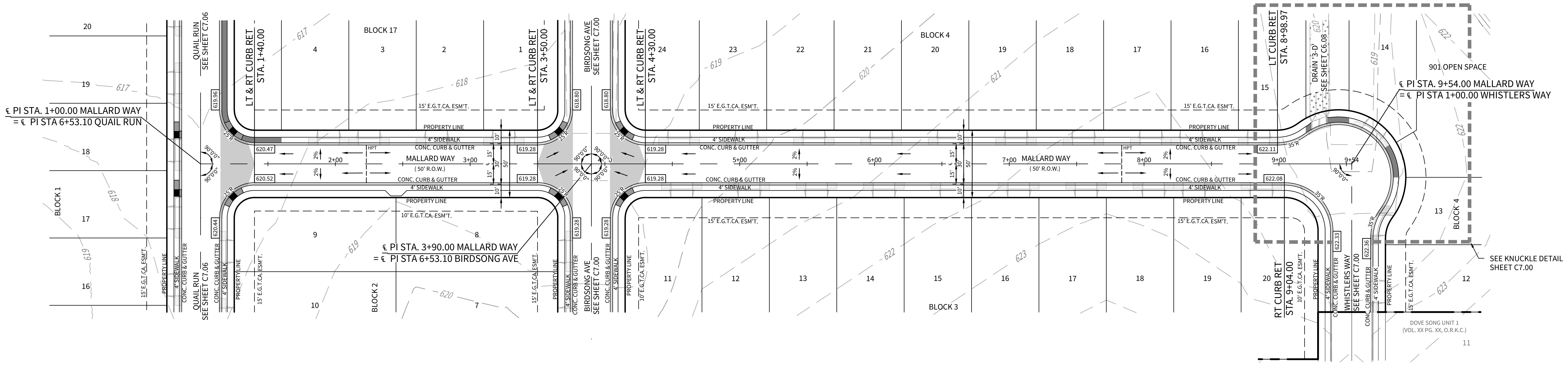




LEGEND

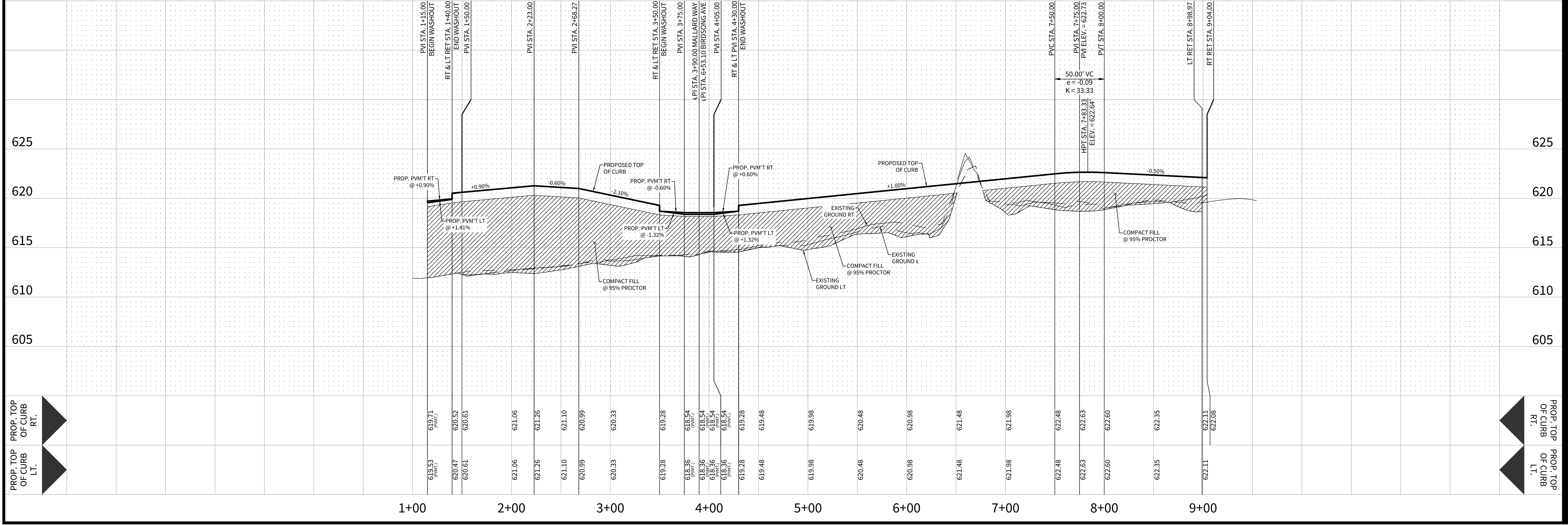
- PAVEMENT GUTTER LINE
- DRIVEWAY TO BE BUILT WITH HOMEBUILDING
- ▨ **STREET WASHOUT – SEE DETAIL SHEET C7.D1**
- ▩ **SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE**
- **ADA SIDEWALK CURB RAMP – SEE DETAIL SHEET C7.D2**

ONLY ADA RAMPS WITH A 900 SERIES OPEN SPACE
WILL BE BUILT WITH INFRASTRUCTURE

MALLARD WAY

STA. 1+00.00 TO STA. END

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



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DOVE SONG SUBDIVISION
UNIT 3

STREET PLAN & PROFILE - MALLARD WAY

DATE
06/28/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG/KM

CHECKED BY
AM/AL

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ANDREW R. LOWRY
123410
07/03/2024

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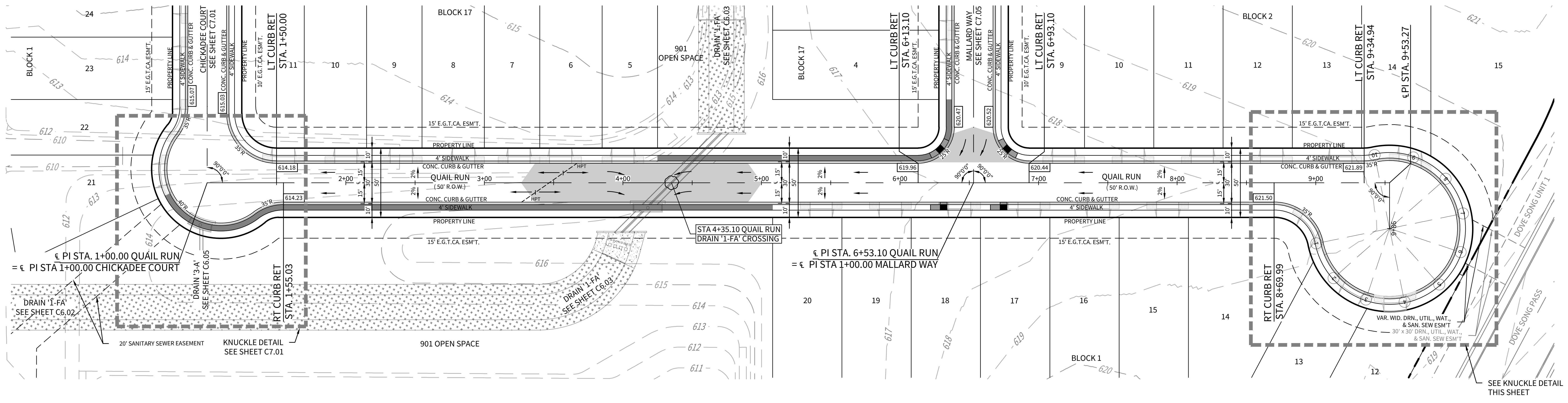
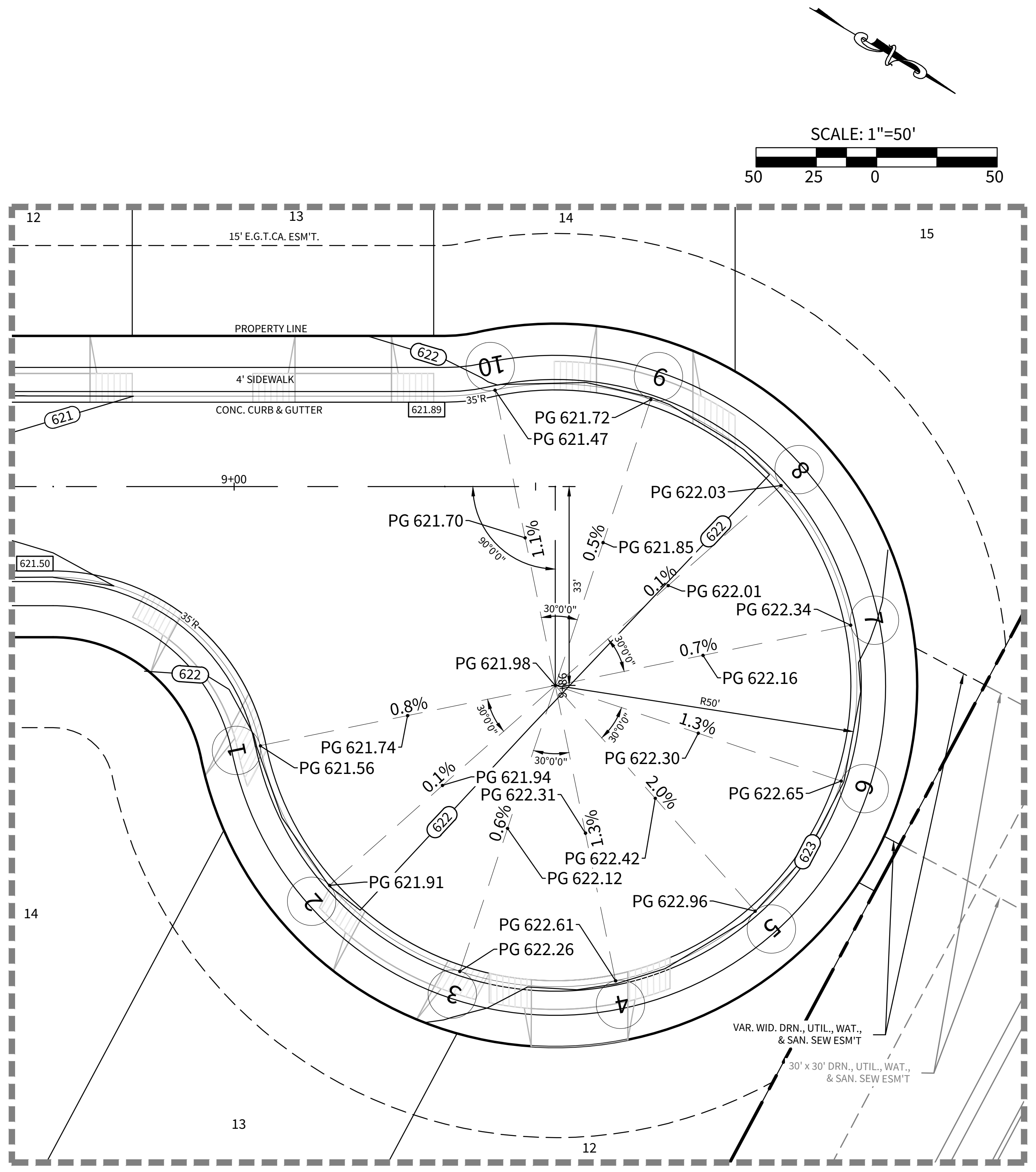
TBPE No. 455
TBPLS No. 10048500

C7.05

P:\03608\004\2-DWG\4-Plans\C7.05 STREET PLAN & PROFILE - MALLARD WAY.dwg 2024/06/28 7:31pm jguerrero


BLOCK 1
BLOCK 17
BLOCK 2
901 OPEN SPACE
QUAIL RUN (50' R.O.W.)
4' SIDEWALK
CONC. CURB & GUTTER
PROPERTY LINE
15' E.G.T.CA. ESM'T.
CHICKADEE COURT SEE SHEET C7.01
LT CURB RET STA. 1+50.00
LT CURB RET STA. 6+13.10
MALLARD WAY SEE SHEET C7.05
LT CURB RET STA. 6+93.10
LT CURB RET STA. 9+34.94
℄ PI STA. 9+53.27
STA 4+35.10 QUAIL RUN DRAIN '1-FA' CROSSING
℄ PI STA. 6+53.10 QUAIL RUN = ℄ PI STA 1+00.00 MALLARD WAY
℄ PI STA. 1+00.00 QUAIL RUN = ℄ PI STA 1+00.00 CHICKADEE COURT
DRAIN '3-A' SEE SHEET C6.05
RT CURB RET STA. 1+55.03
DRAIN '1-FA' SEE SHEET C6.02
DRAIN '1-FA' SEE SHEET C6.03
20' SANITARY SEWER EASEMENT
KNUCKLE DETAIL SEE SHEET C7.01
RT CURB RET STA. 8+69.99
VAR. WID. DRN., UTIL., WAT., & SAN. SEW ESM'T
SEE KNUCKLE DETAIL THIS SHEET
DOVE SONG PASS
DOVE SONG UNIT 1



KNUCKLE DETAIL

SCALE: 1"= 20'

CUL-DE-SAC BACK OF CURB ELEVATIONS	
NUMBER	TOC ELEV.
1	622.14
2	622.49
3	622.84
4	623.19
5	623.54
6	623.23
7	622.92
8	622.61
9	622.30
10	622.05

LEGEND

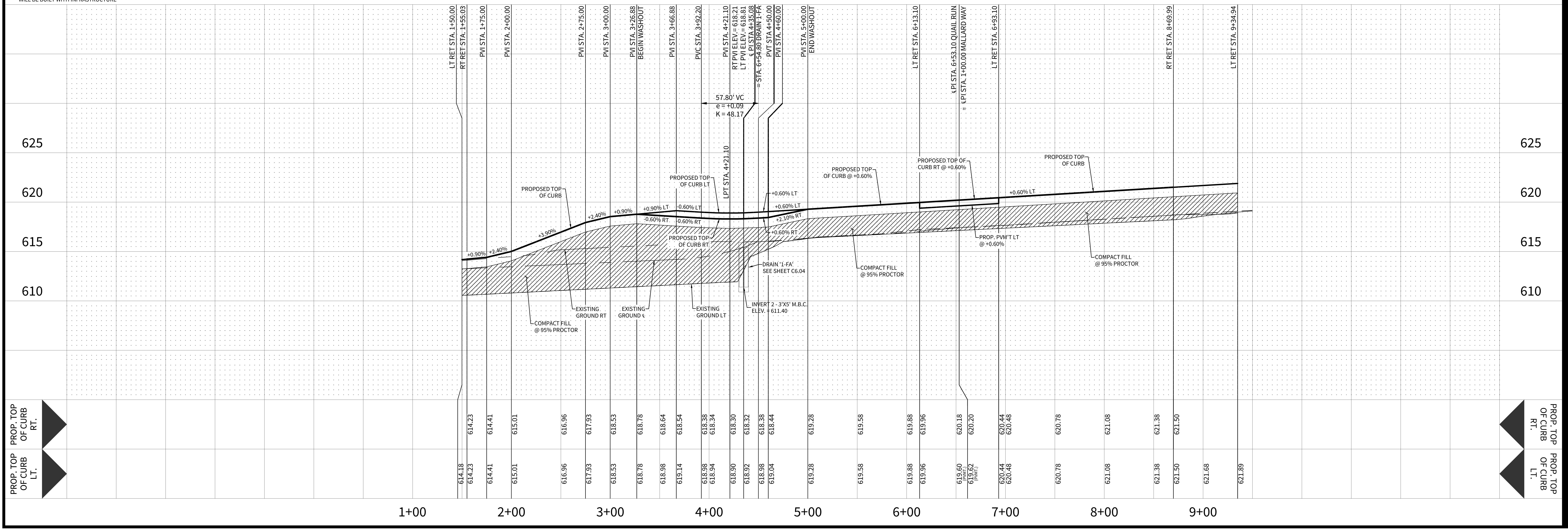
— · > · —	**PAVEMENT GUTTER LINE**
▭	DRIVEWAY TO BE BUILT WITH HOMEBUILDING
▨	**STREET WASHOUT – SEE DETAIL SHEET C7.D1**
■	**SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE**
┣	**ADA SIDEWALK CURB RAMP – SEE DETAIL SHEET C7.D2**

ONLY ADA RAMPS WITH A 900 SERIES OPEN SPACE
WILL BE BUILT WITH INFRASTRUCTURE

QUAIL RUN

STA. 1+00.00 TO STA. END

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



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DOVE SONG SUBDIVISION
UNIT 3

STREET PLAN & PROFILE - QUAIL RUN

DATE
06/28/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG/KM

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AM/AL

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ANDREW R. LOWRY
123410
07/03/2024

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TBPE No. 455
TBPLS No. 10048500

C7.06

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P:\03608\004\2-DWG\4-Plans\C7.06 STREET PLAN & PROFILE - QUAIL RUN.dwg 2024/06/28 7:35pm jguerrero

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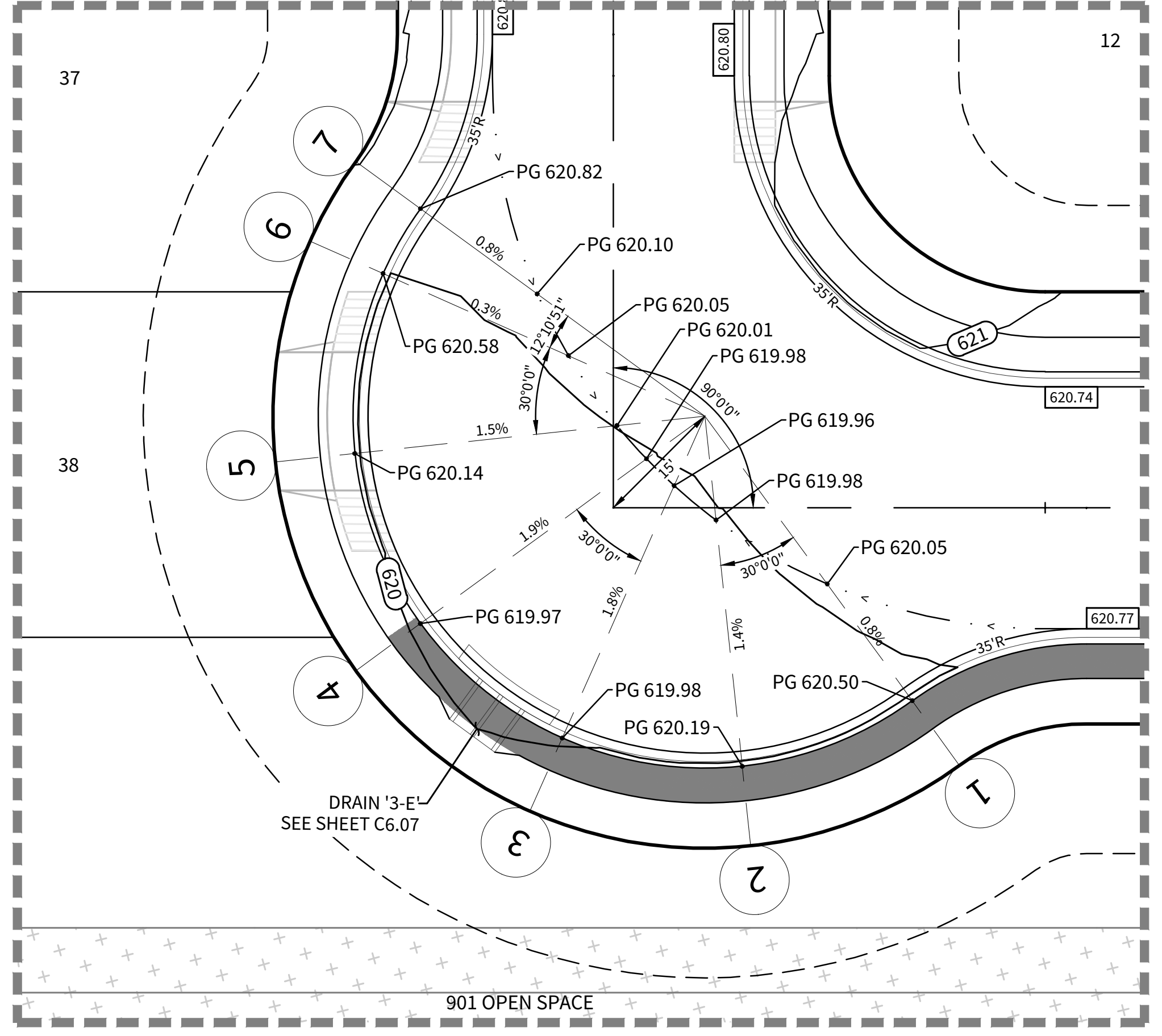
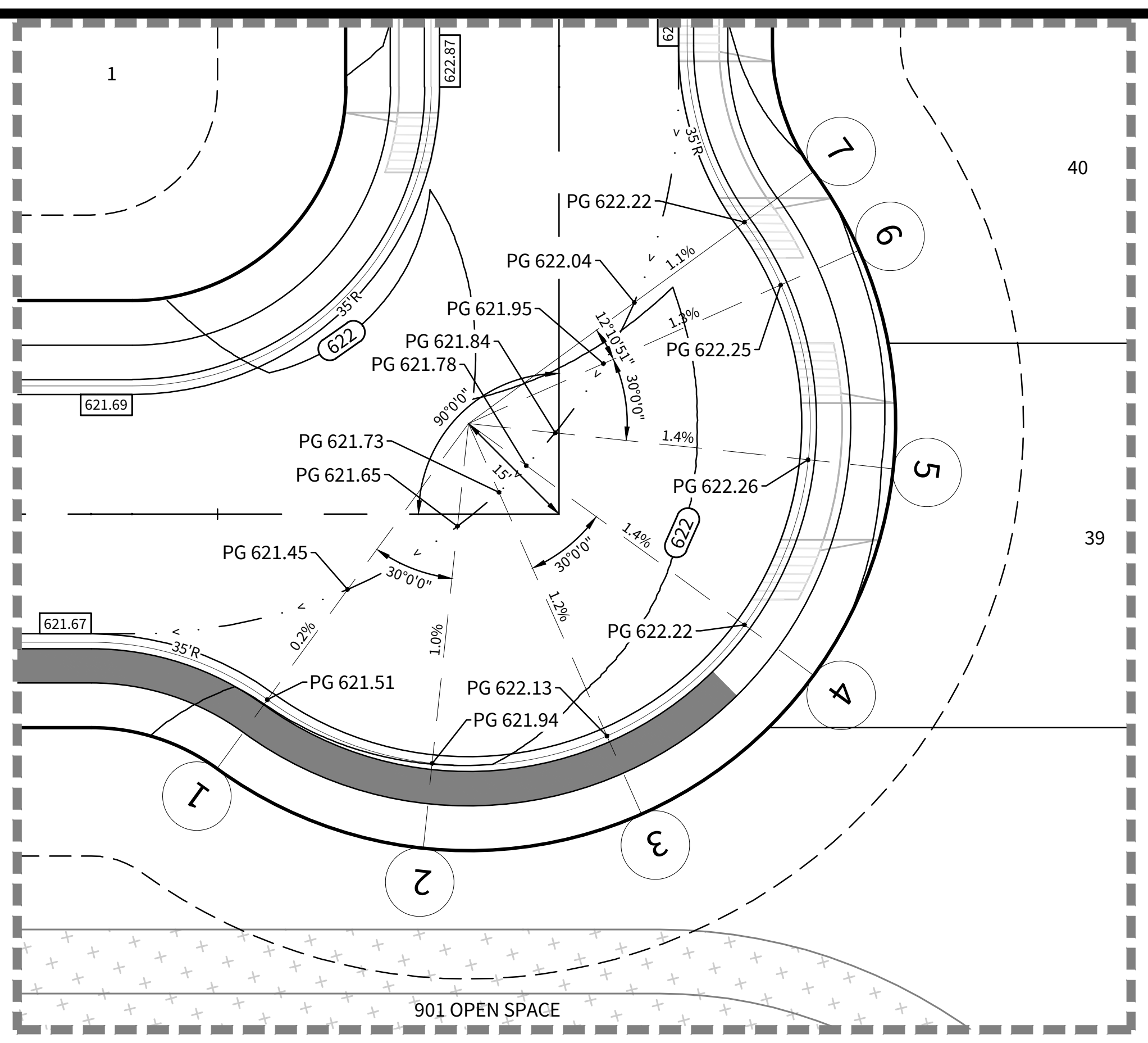


KNUCKLE 'A'

CUL-DE-SAC BACK OF CURB ELEVATIONS	
NUMBER	TOC ELEV.
1	620.50
2	620.19
3	619.98
4	619.97
5	620.14
6	620.58
7	620.82

KNUCKLE DETAIL 'A'

SCALE: 1"= 20'



KNUCKLE DETAIL 'B'

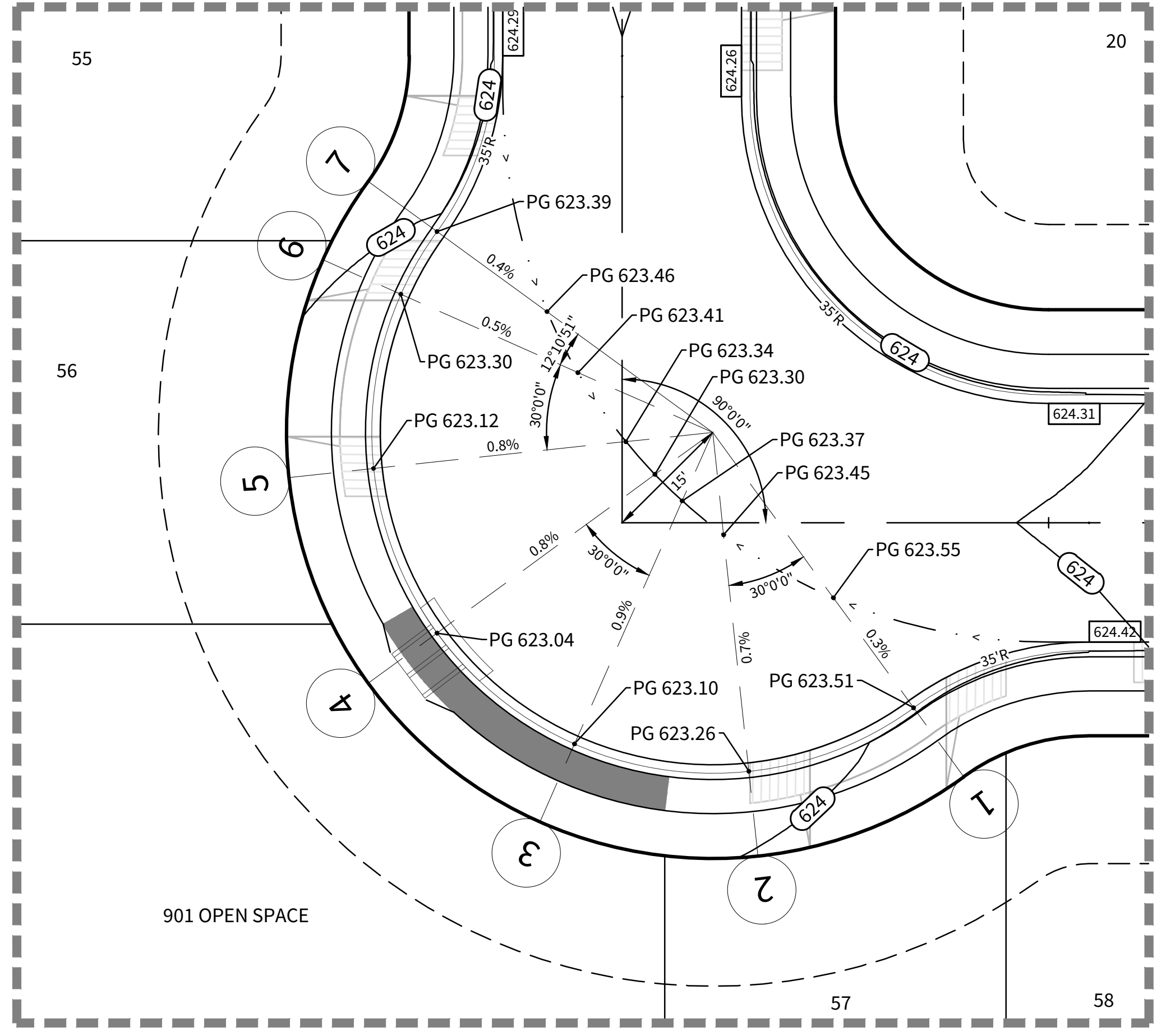
SCALE: 1"= 20'

SCALE: 1"=50'

50 25 0 50

KNUCKLE 'B'

CUL-DE-SAC BACK OF CURB ELEVATIONS	
NUMBER	TOC ELEV.
1	622.09
2	622.52
3	622.71
4	622.80
5	622.84
6	622.83
7	622.80



KNUCKLE DETAIL 'C'

SCALE: 1"= 20'

SCALE: 1"=50'

50 25 0 50

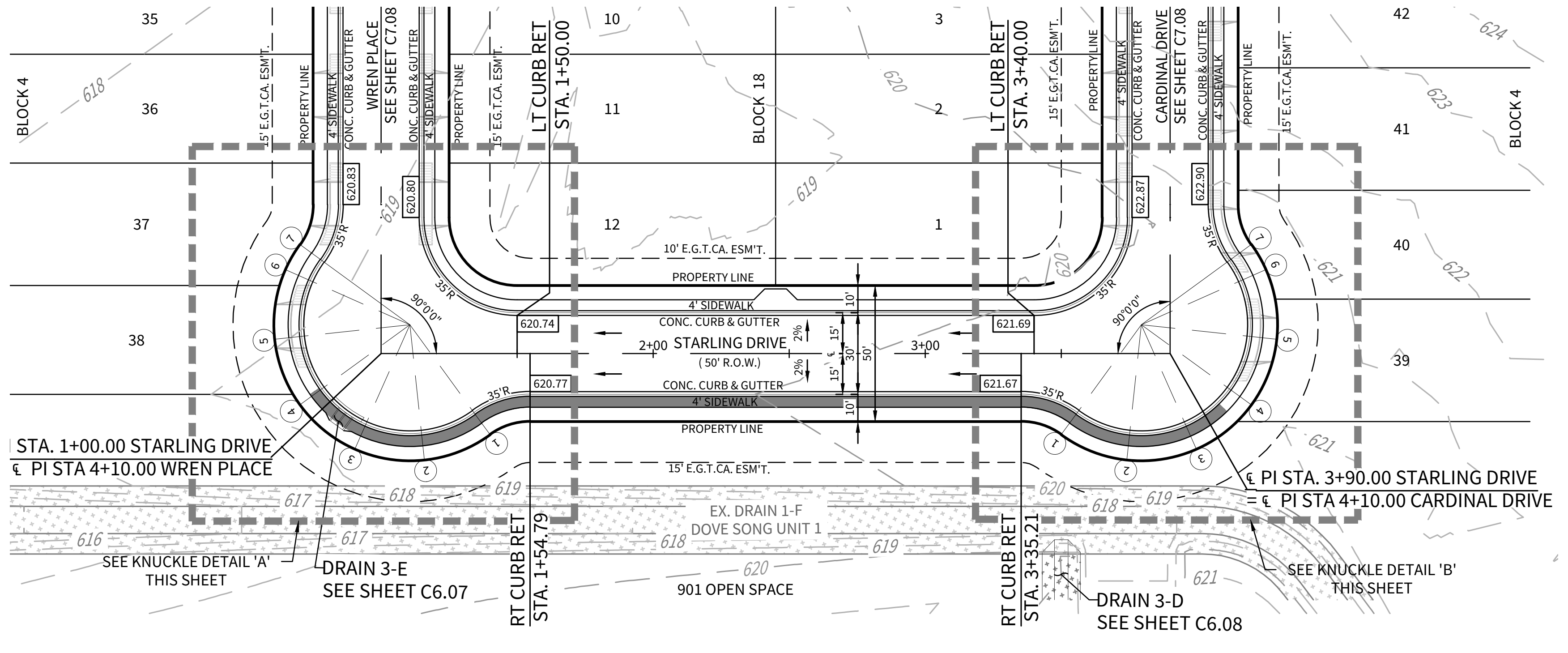
KNUCKLE 'C'

CUL-DE-SAC BACK OF CURB ELEVATIONS	
NUMBER	TOC ELEV.
1	624.09
2	623.84
3	623.68
4	623.62
5	623.70
6	623.88
7	623.97

LEGEND

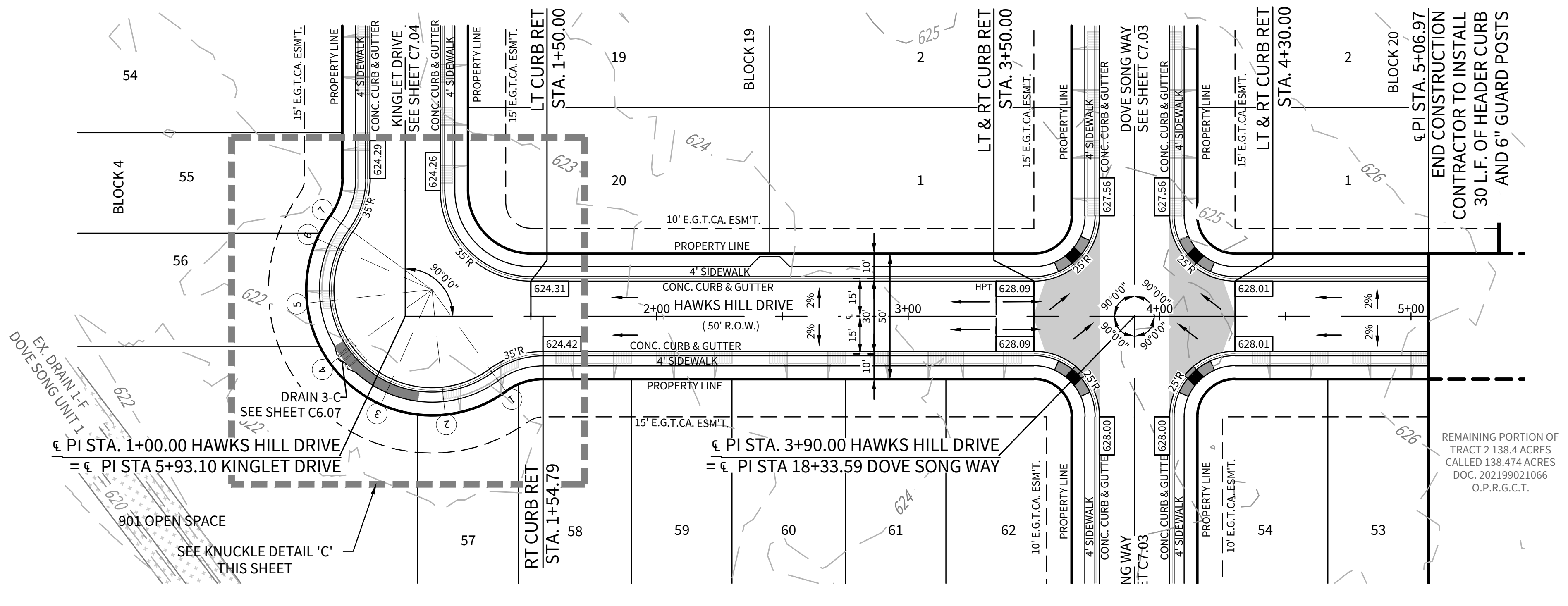
— · > · —	**PAVEMENT GUTTER LINE**
▭	DRIVEWAY TO BE BUILT WITH HOMEBUILDING
▭	**STREET WASHOUT – SEE DETAIL SHEET C7.D1**
■	**SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE**
┣	**ADA SIDEWALK CURB RAMP – SEE DETAIL SHEET C7.D2**

ONLY ADA RAMPS WITH A 900 SERIES OPEN SPACE
WILL BE BUILT WITH INFRASTRUCTURE



STARLING DRIVE

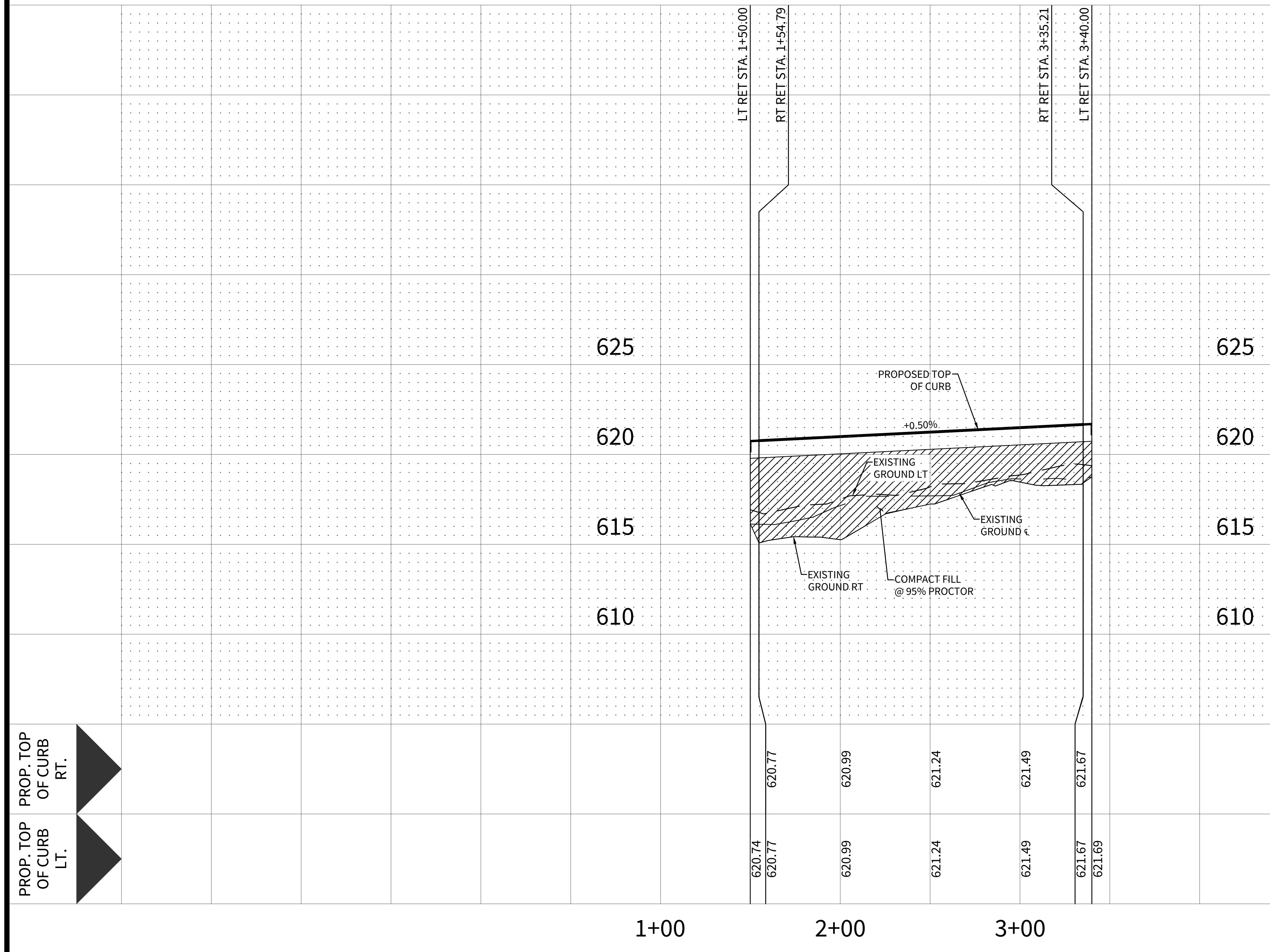
STA. 1+00.00 TO STA. END

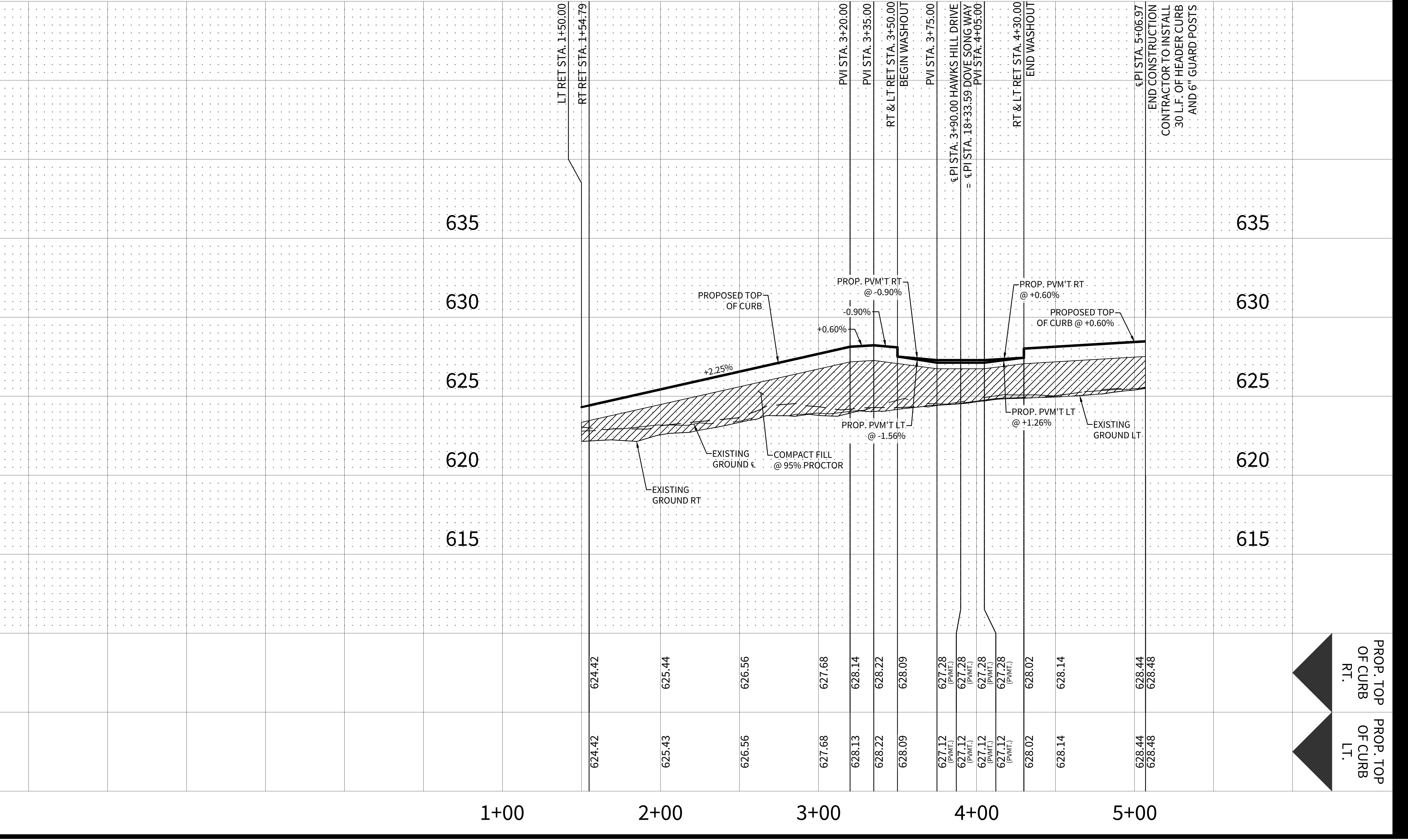


HAWKS HILL DRIVE

STA. 1+00.00 TO STA. 5+06.97

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





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DOVE SONG SUBDIVISION
UNIT 3

STREET PLAN & PROFILE-STARLING DRIVE & HAWKS HILL DRIVE

DATE
06/28/2024

PROJECT NO.
03608.004

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JG/SG/KM

CHECKED BY
AM/AL

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ANDREW R. LOWRY
123410

07/03/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

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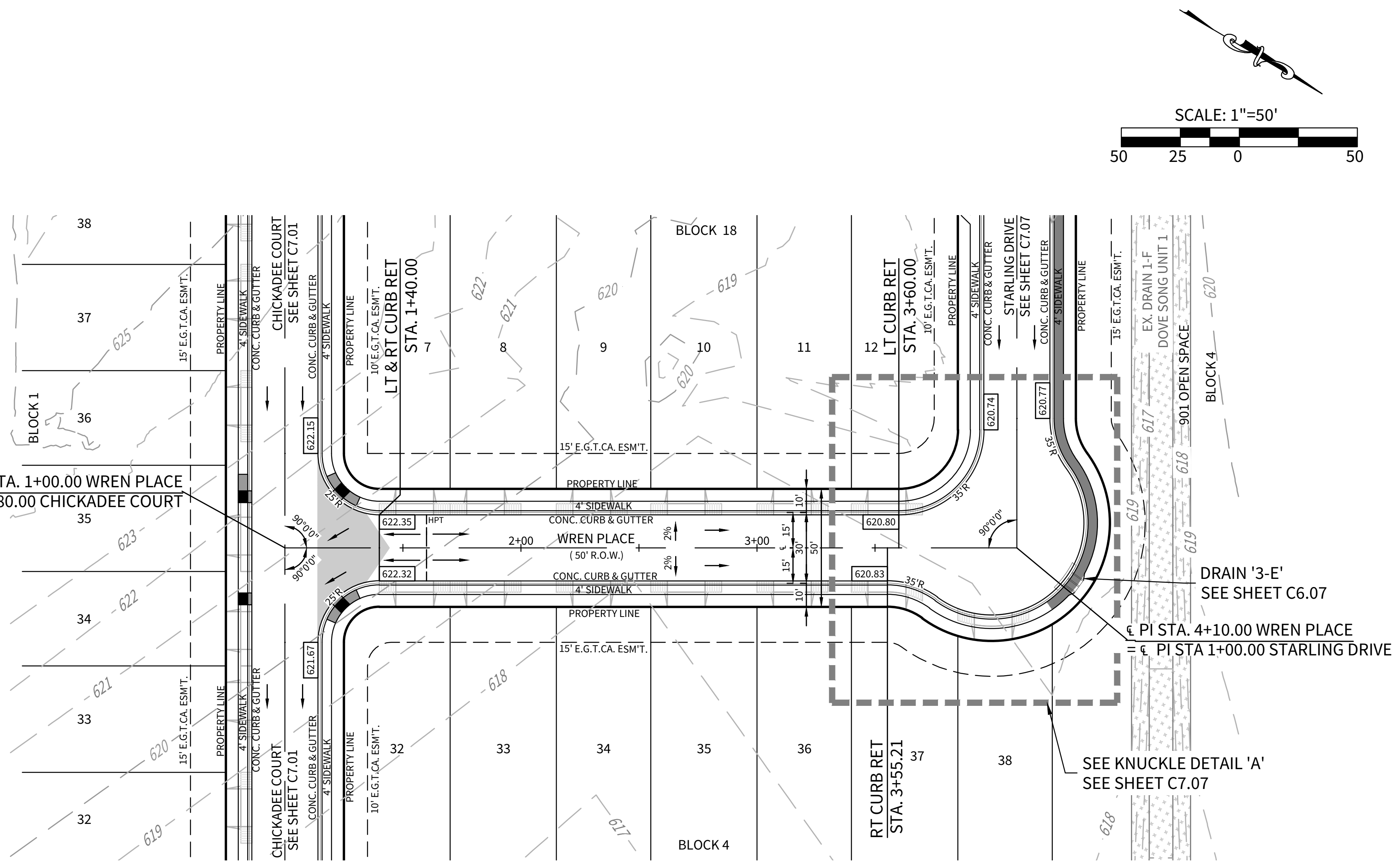
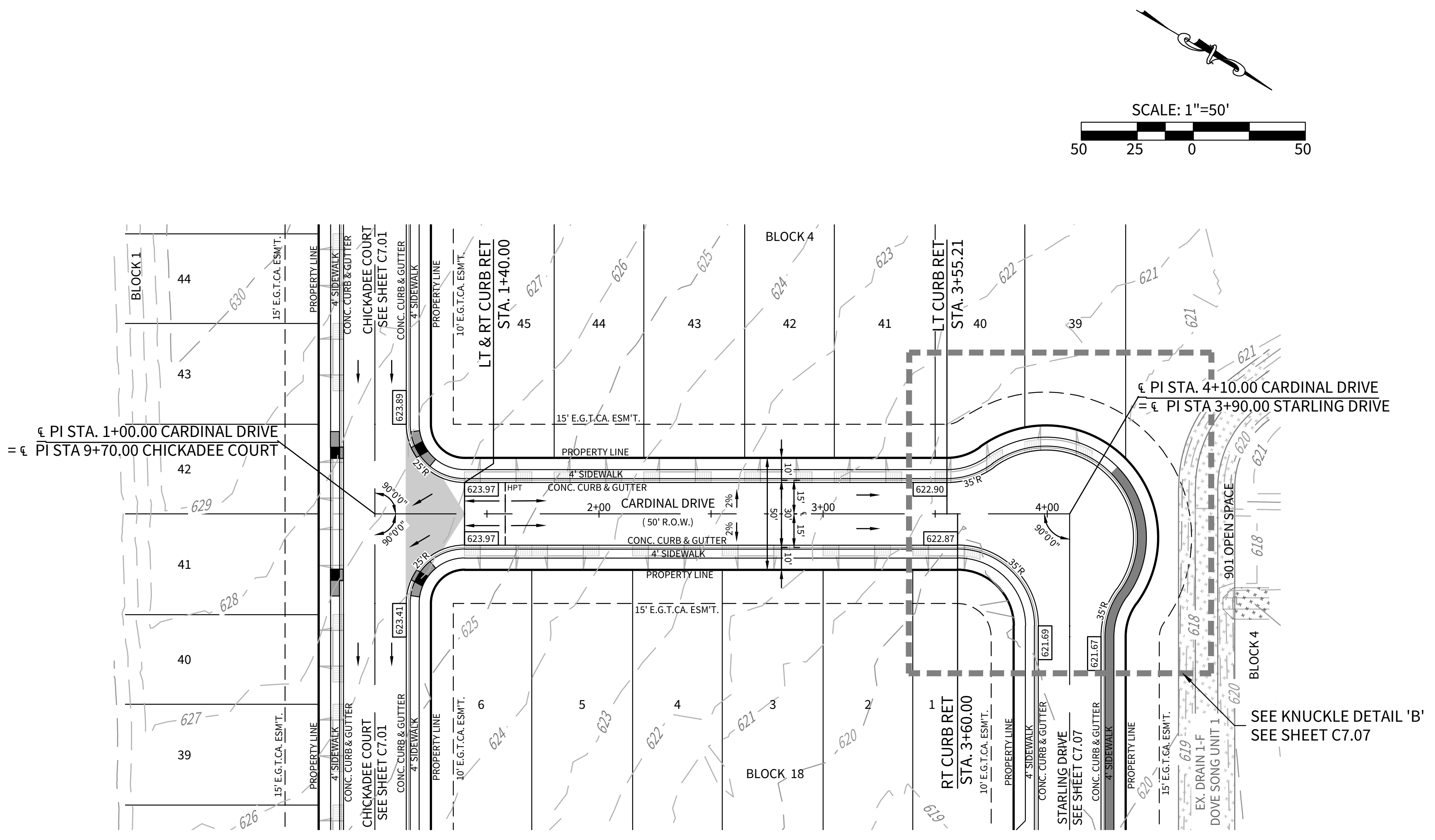




LEGEND

— · —	PAVEMENT GUTTER LINE
▭	DRIVEWAY TO BE BUILT WITH HOMEBUILDING
░	STREET WASHOUT – SEE DETAIL SHEET C7.D1
▓	SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE
■	ADA SIDEWALK CURB RAMP – SEE DETAIL SHEET C7.D2

ONLY ADA RAMPS WITH A 900 SERIES OPEN SPACE
WILL BE BUILT WITH INFRASTRUCTURE

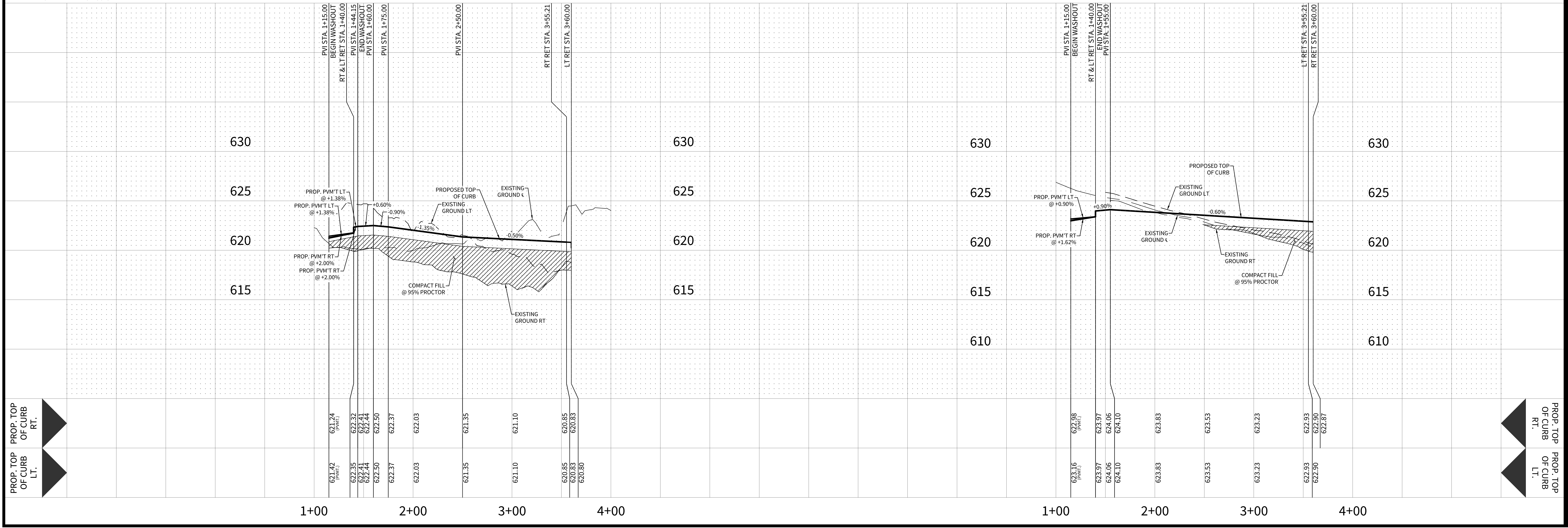
WREN PLACE

STA. 1+00.00 TO STA. END

CARDINAL DRIVE

STA. 1+00.00 TO STA. END

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



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DOVE SONG SUBDIVISION
UNIT 3

STREET PLAN & PROFILE - WREN PLACE & CARDINAL DRIVE

DATE
06/28/2024

PROJECT NO.
03608.004

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ANDREW R. LOWRY
123410
07/03/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

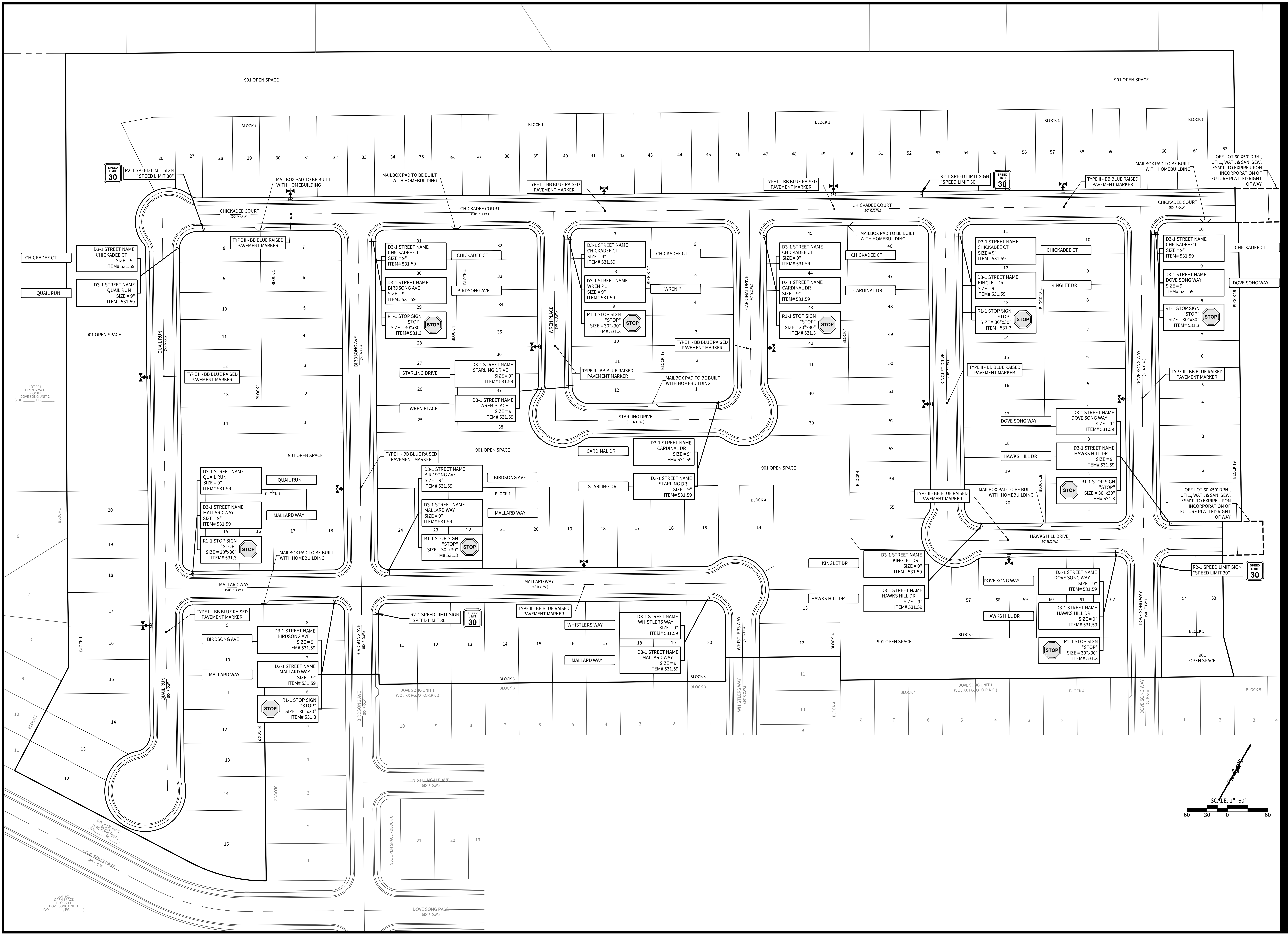
C7.08

CUDE
EST. 1980
ENGINEERS

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

DOVE SONG SUBDIVISION UNIT 3

TRAFFIC SIGNAGE PLAN


901 OPEN SPACE
BLOCK 1
CHICKADEE COURT (50' R.O.W.)
R2-1 SPEED LIMIT SIGN "SPEED LIMIT 30"
SPEED LIMIT 30
MAILBOX PAD TO BE BUILT WITH HOMEBUILDING
TYPE II - BB BLUE RAISED PAVEMENT MARKER
OFF-LOT 60'X50' DRN., UTIL., WAT., & SAN. SEW. ESM'T. TO EXPIRE UPON INCORPORATION OF FUTURE PLATTED RIGHT OF WAY
CHICKADEE CT
QUAIL RUN
D3-1 STREET NAME CHICKADEE CT SIZE = 9" ITEM# 531.59
D3-1 STREET NAME QUAIL RUN SIZE = 9" ITEM# 531.59
D3-1 STREET NAME BIRDSONG AVE SIZE = 9" ITEM# 531.59
D3-1 STREET NAME WREN PL SIZE = 9" ITEM# 531.59
D3-1 STREET NAME CARDINAL DR SIZE = 9" ITEM# 531.59
D3-1 STREET NAME KINGLET DR SIZE = 9" ITEM# 531.59
D3-1 STREET NAME DOVE SONG WAY SIZE = 9" ITEM# 531.59
D3-1 STREET NAME STARLING DRIVE SIZE = 9" ITEM# 531.59
D3-1 STREET NAME WREN PLACE SIZE = 9" ITEM# 531.59
D3-1 STREET NAME HAWKS HILL DR SIZE = 9" ITEM# 531.59
D3-1 STREET NAME MALLARD WAY SIZE = 9" ITEM# 531.59
D3-1 STREET NAME STARLING DR SIZE = 9" ITEM# 531.59
D3-1 STREET NAME WHISTLERS WAY SIZE = 9" ITEM# 531.59
R1-1 STOP SIGN "STOP" SIZE = 30"x30" ITEM# 531.3
STOP
BIRDSONG AVE
WREN PL
CARDINAL DR
KINGLET DR
DOVE SONG WAY
STARLING DRIVE
WREN PLACE
STARLING DR
MALLARD WAY
HAWKS HILL DR
WHISTLERS WAY
QUAIL RUN (50' R.O.W.)
BIRDSONG AVE (50' R.O.W.)
WREN PLACE (50' R.O.W.)
CARDINAL DRIVE (50' R.O.W.)
KINGLET DRIVE (50' R.O.W.)
DOVE SONG WAY (50' R.O.W.)
STARLING DRIVE (50' R.O.W.)
HAWKS HILL DRIVE (50' R.O.W.)
MALLARD WAY (50' R.O.W.)
WHISTLERS WAY (50' R.O.W.)
NIGHTINGALE AVE (60' R.O.W.)
DOVE SONG PASS (60' R.O.W.)
BLOCK 1
BLOCK 2
BLOCK 3
BLOCK 4
BLOCK 5
BLOCK 6
BLOCK 17
BLOCK 18
BLOCK 19
901 OPEN SPACE - BLOCK 6
LOT 901 OPEN SPACE BLOCK 1 DOVE SONG UNIT 1 (VOL.____, PG.____)
901 OPEN SPACE BLOCK 11 DOVE SONG UNIT 1 (VOL.____, PG.____)
DOVE SONG UNIT 1 (VOL.XX PG.XX, O.R.K.C.)
901 OPEN SPACE
SCALE: 1"=60'
60 30 0 60

DATE
06/28/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG/KM

CHECKED BY
AM/AL

REVISIONS

DATE

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ANDREW R. LOWRY
123410

07/03/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

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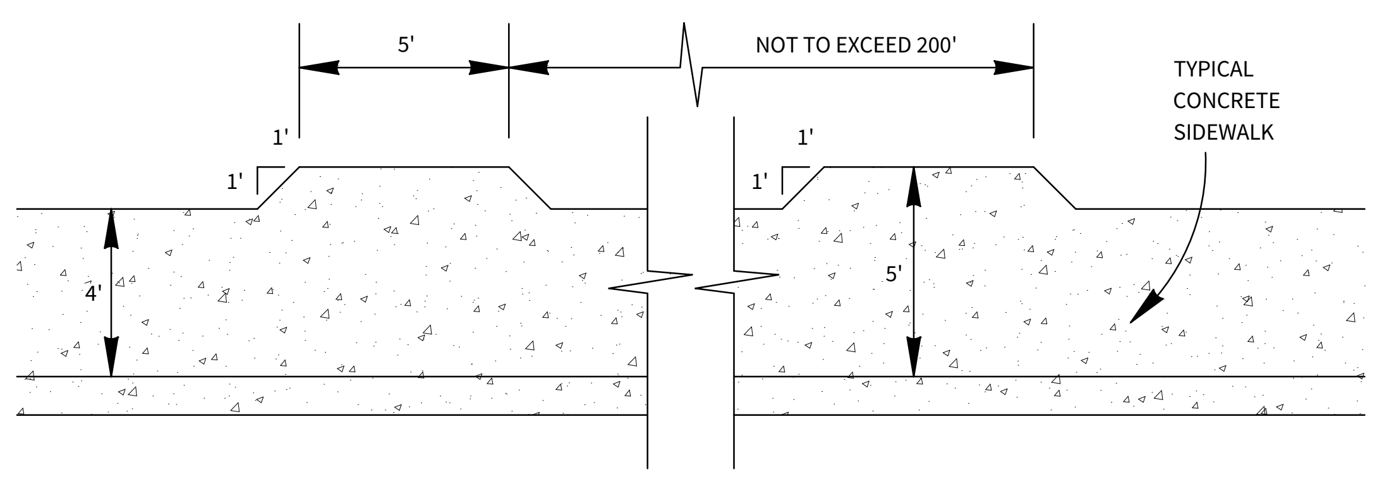
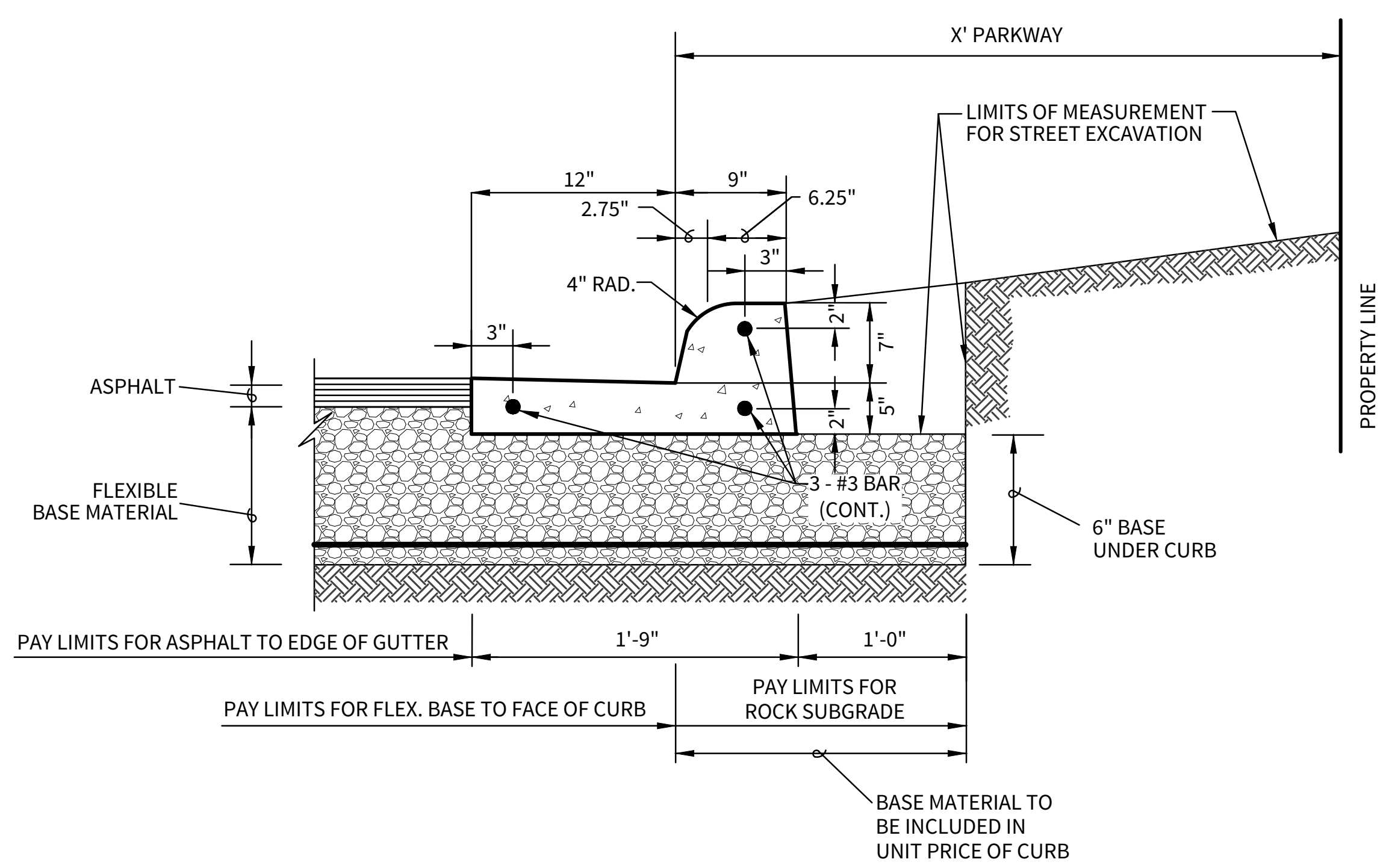
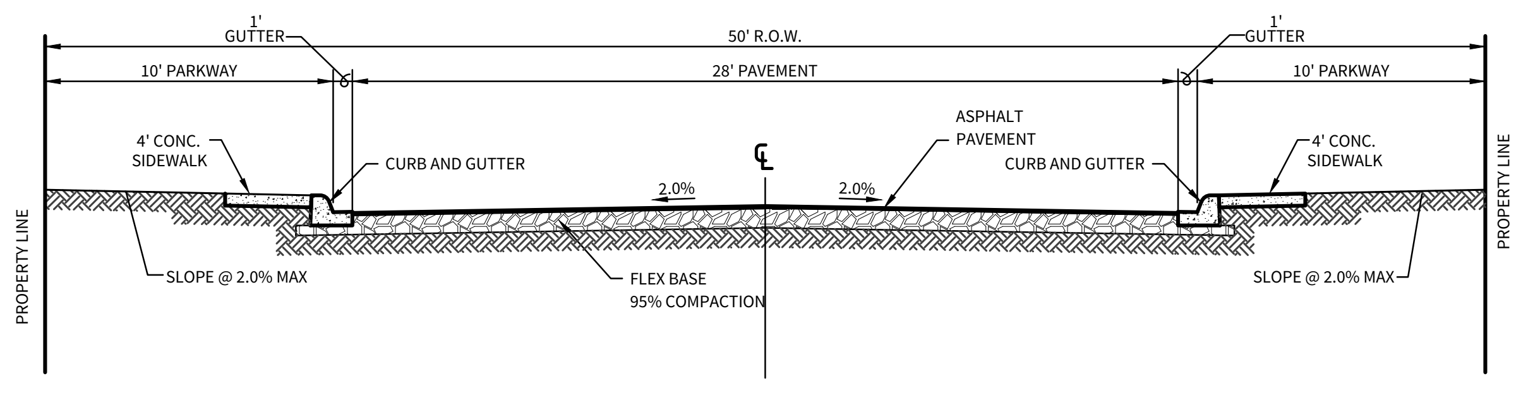


SIDEWALK PASSING SPACE

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

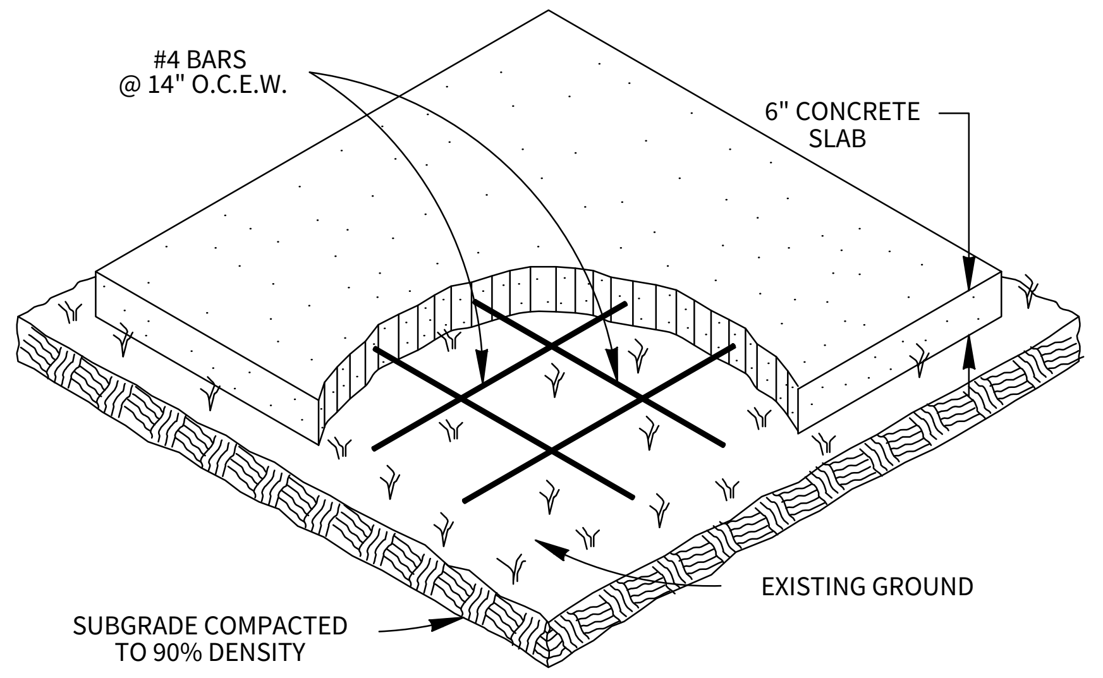

X' PARKWAY
LIMITS OF MEASUREMENT FOR STREET EXCAVATION
12"
9"
2.75"
6.25"
3"
4" RAD.
3"
2"
7"
2"
5"
ASPHALT
FLEXIBLE BASE MATERIAL
#3 BAR (CONT.)
6" BASE UNDER CURB
PROPERTY LINE
PAY LIMITS FOR ASPHALT TO EDGE OF GUTTER
1'-9"
1'-0"
PAY LIMITS FOR FLEX. BASE TO FACE OF CURB
PAY LIMITS FOR ROCK SUBGRADE
BASE MATERIAL TO BE INCLUDED IN UNIT PRICE OF CURB

STREET CURB & GUTTER DETAIL



LOCAL 'A' STREET CROSS-SECTION (50' R.O.W.)

N.T.S.

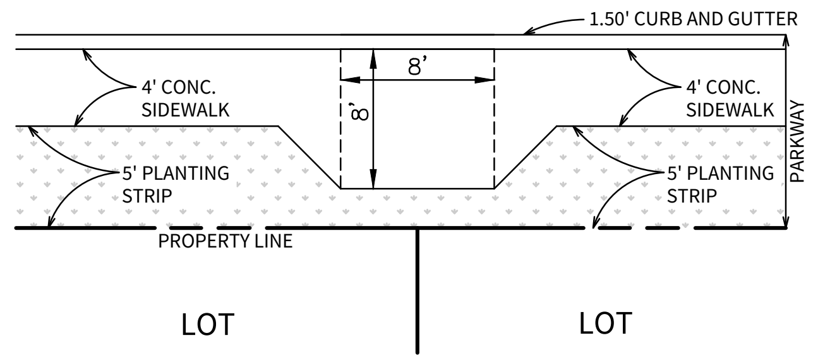


MAIL BOX PAD NOTE:

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.

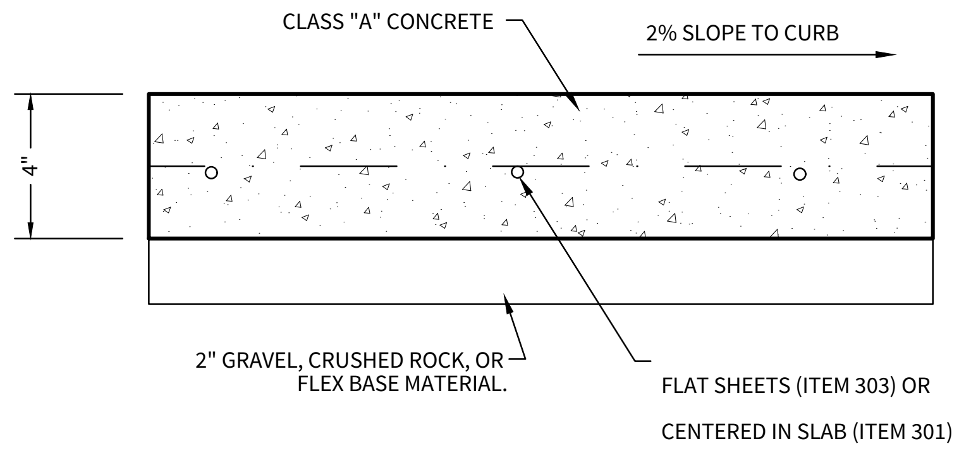
COMMUNITY MAIL BOX SLAB

ITEM 513.2

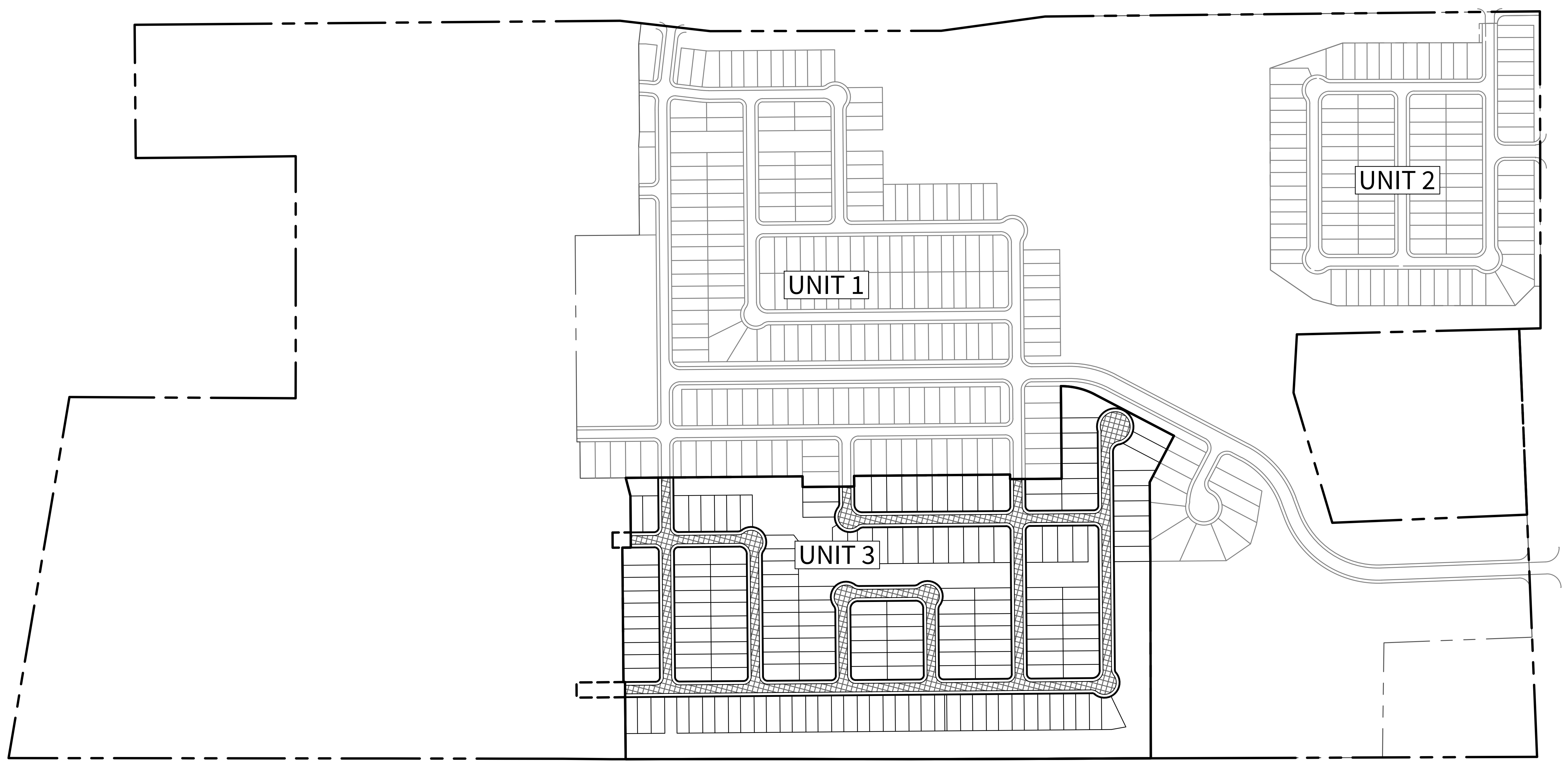


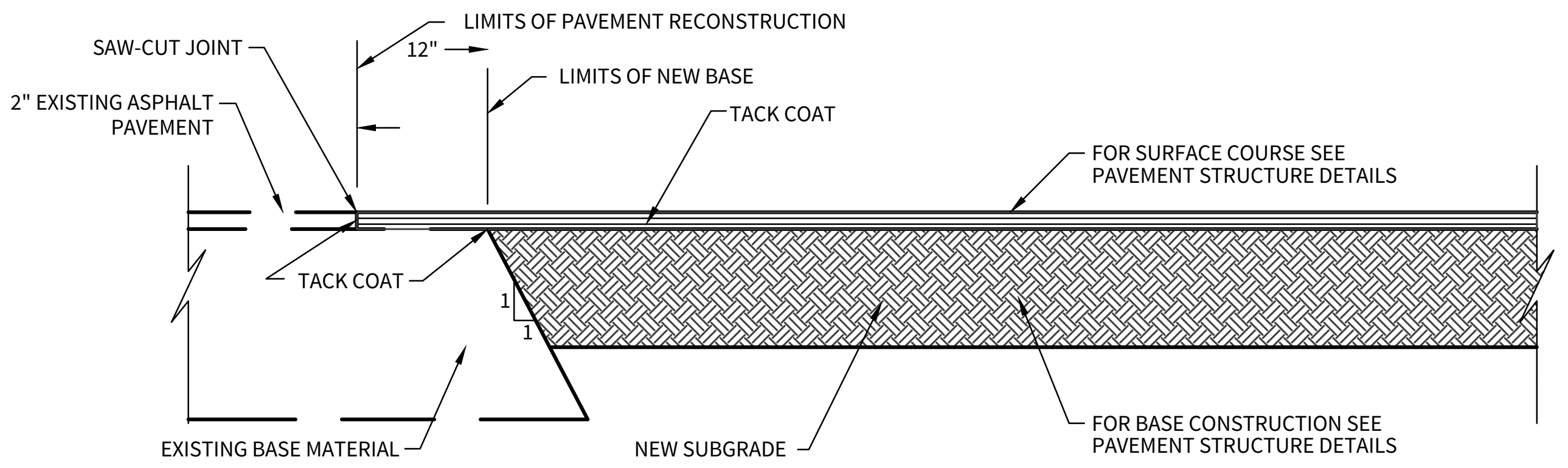
MAILBOX PAD DETAIL

N.T.S.


CLASS "A" CONCRETE
2% SLOPE TO CURB
4"
2" GRAVEL, CRUSHED ROCK, OR FLEX BASE MATERIAL.
FLAT SHEETS (ITEM 303) OR CENTERED IN SLAB (ITEM 301)

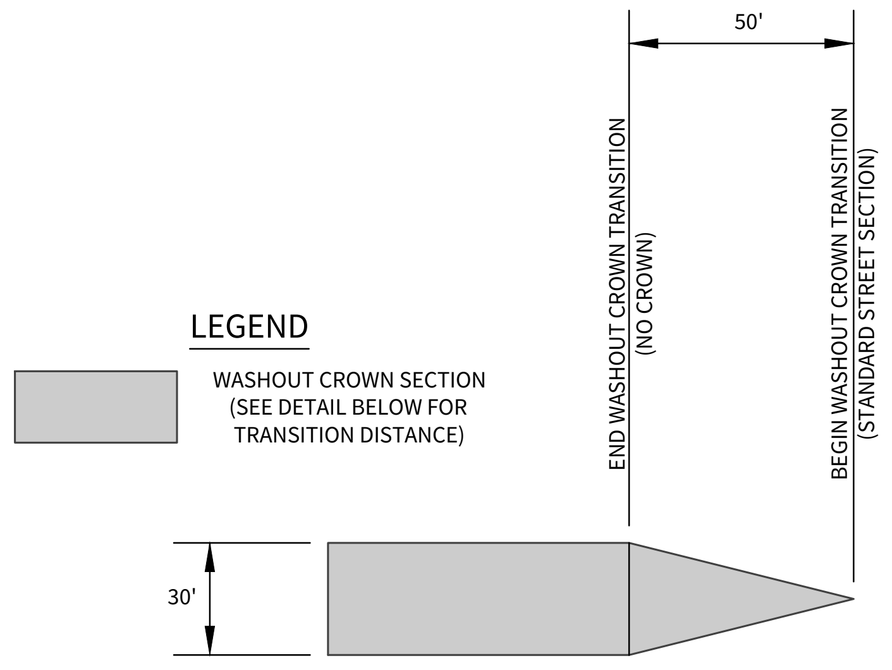
CONCRETE SIDEWALK



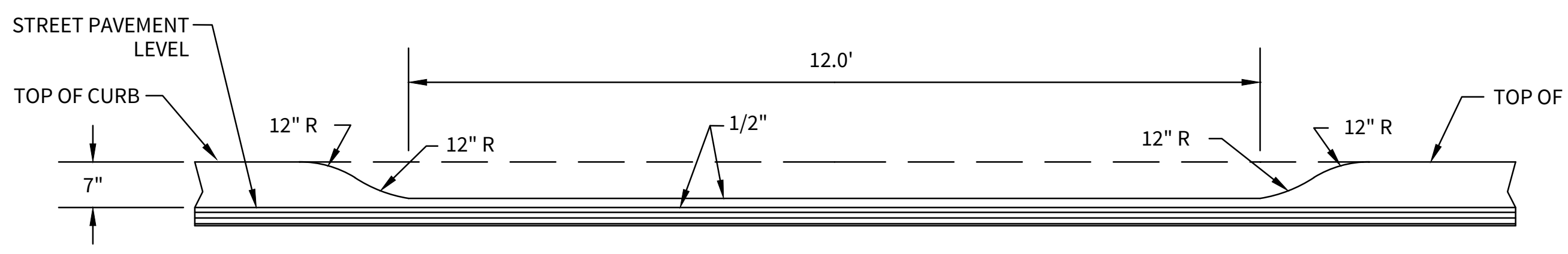

SAW-CUT JOINT
LIMITS OF PAVEMENT RECONSTRUCTION
12"
LIMITS OF NEW BASE
2" EXISTING ASPHALT PAVEMENT
TACK COAT
FOR SURFACE COURSE SEE PAVEMENT STRUCTURE DETAILS
TACK COAT
1
1
FOR BASE CONSTRUCTION SEE PAVEMENT STRUCTURE DETAILS
EXISTING BASE MATERIAL
NEW SUBGRADE

PAVEMENT JUNCTION DETAILS

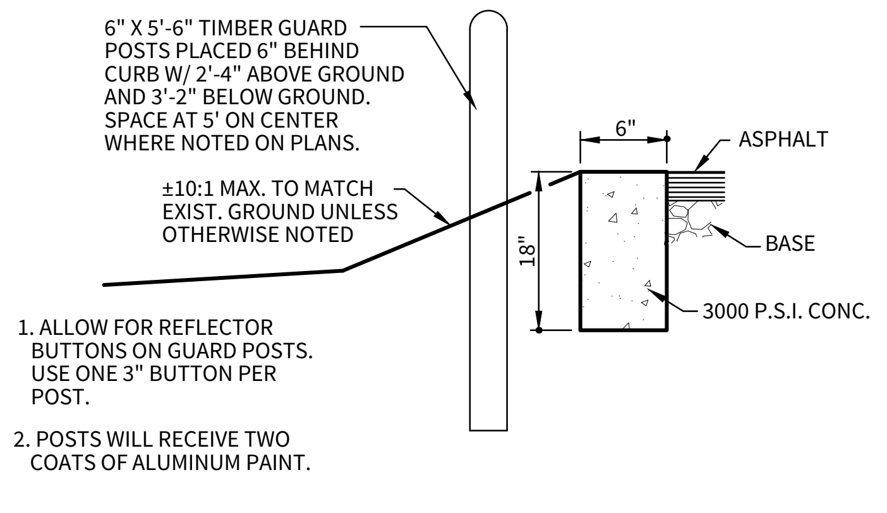
N.T.S.


50'
END WASHOUT CROWN TRANSITION (NO CROWN)
BEGIN WASHOUT CROWN TRANSITION (STANDARD STREET SECTION)
LEGEND
WASHOUT CROWN SECTION (SEE DETAIL BELOW FOR TRANSITION DISTANCE)
30'

WASHOUT CROWN TRANSITION DETAIL



TYPICAL DRIVEWAY CUT SECTION


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
6"
ASPHALT
18"
BASE
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 & BOLLARD DETAIL

NOTES:

1. PAVEMENT DESIGN THICKNESS BASED ON GEOTECHNICAL REPORT. SEE TABLE FOR STRUCTURAL NUMBER CALCULATION. REFERENCE PROJECT GEOTECHNICAL REPORT AND PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND ALTERNATE PAVEMENT SECTIONS. (SEE GEOTECH REPORT BY INTEC, PROJECT NO. S211353-P, DATED 10/25/21)
2. ANY AREAS OF CLAY ENCOUNTERED DURING CONSTRUCTION SHALL BE REMOVED DOWN TO THE WEATHERED/FRIABLE MARLSTONE/LIMESTONE AND PROPERLY BACKFILLED WITH MARLSTONE/LIMESTONE MILLINGS HAVING A CBR VALUE DETERMINED BY THE GEOTECHNICAL ENGINEER.
3. A GEOTECHNICAL ENGINEERING REPRESENTATIVE SHALL BE RETAINED TO: (1) OBSERVE THE SITE PREPARATION AND SUBGRADE OPERATIONS. (2) EVALUATE THE ACTUAL SUBGRADE MATERIAL CLASSIFICATION; AND (3) VERIFY THAT RECOMMENDATIONS ARE FOLLOWED. THE ACTUAL SUBGRADE CONDITION AT A PARTICULAR LOCATION WILL NEED TO BE EVALUATED DURING CONSTRUCTION ONCE THE SUBGRADE IS CUT/FILLED TO THE PROPER GRADE.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING MATERIAL TESTING. TESTING TO BE PAID BY OWNER.
5. CONTRACTOR MAY LEAVE VERTICAL CUT BANKS AT R.O.W. LINE AND MEDIANS PROVIDED PROJECT GEOTECHNICAL ENGINEER DETERMINES ROCK IS COMPETENT TO STAND ON ITS OWN.
6. IF ALTERNATE PAVEMENT SECTION CHOSEN, CITY OF MARION SHALL BE PROVIDED WITH REVISED CONSTRUCTION PLANS INDICATING SELECTED PAVEMENT DESIGN PRIOR TO CONSTRUCTION.
7. PAVEMENT SECTIONS ARE SUBJECT TO CHANGE DUE TO RETESTING OF SOIL AFTER STREET EXCAVATION HAS BEEN DONE TO TOP OF CURB.
8. CONTRACTOR SHALL CONTACT ENGINEER 48 HRS IN ADVANCE FOR FIELD OBSERVATION DURING STREET CONSTRUCTION. CONTRACTOR WILL BE REQUIRED TO CONTACT ENGINEER FOR INSPECTION OF THE SUBGRADE, BASE, ASPHALT, AND CURB.
9. GENERAL FILL MATERIALS SHOULD CONSIST OF ONSITE SOILS OR CLEAN IMPORTED FILL SOILS WITH EQUAL OR BETTER CBR CHARACTERISTICS TO THE ONSITE SOILS. GENERAL FILL MATERIAL SHOULD BE CLEAN AND FREE OF ANY VEGETATION ROOTS, ORGANIC MATERIALS, TRASH OR GARBAGE, CONSTRUCTION DEBRIS, OR OTHER DELETERIOUS MATERIALS AND SHOULD CONTAIN NO LARGER THAT THREE (3) INCHES IN MAXIMUM DIMENSION.

PAVEMENT DESIGN SCHEMATIC

NOTE:
1. REFERENCE GEOTECHNICAL REPORT (S211353-P) FOR BORING INFORMATION AND CBR LOCATIONS

LEGEND:

▨ TYPICAL "RESIDENTIAL LOCAL 'A' STREET" - 1

STREET TYPE	HMAC TYPE "D"	HMAC TYPE "B"	FLEX BASE (TY A GR 2)	LIME TREATED SUBGRADE (42 LB/SY)	BASE UNDER CURB	STRUCTURAL NUMBER
RESIDENTIAL LOCAL 'A' STREET - 1	3.0"	-	15.0"	8.0"	6.0"	4.06

STREET PAVEMENT DESIGN OPTIONS

1. SUBGRADE - GEOTECH ENGINEER WILL BE PRESENT TO DETERMINE IF NATIVE MARL/ROCK SUBGRADE IS SUFFICIENT FOR PAVEMENT SECTION LISTED ABOVE.
2. CONTRACTOR SHALL APPLY CLAY SUBGRADE PAVEMENT SECTION (SEE GEOTECH REPORT BY INTEC, PROJECT NO. S211353-P, DATED 10/25/21) IF GEOTECH ENGINEER DETERMINES NATIVE MARL/ROCK IS NOT SUFFICIENT. IF LIME TREATMENT IS REPLACED BY NATIVE MARL/ROCK, CITY OF MARION PUBLIC WORKS WILL BE INFORMED OF ALL CHANGES. REVISIONS WILL BE SUBMITTED INDICATING WHERE LIME TREATMENT WAS USED, ALONG WITH STATIONING. CONTRACTOR TO REVIEW GEOTECH RECOMMENDATIONS PRIOR TO FINAL SUBGRADE PREPARATION.
3. FILL MATERIAL - CONTRACTOR SHALL OVER-EXCAVATE STREET SUBGRADE AREAS CONTAINING SOILS HAVING A PLASTICITY INDEX GREATER THAN 20 AND REPLACE A MINIMUM OF 8" OF SUBGRADE WITH ON-SITE LIMESTONE MILLINGS THAT HAVE A PLASTICITY INDEX OF LESS THAN 20 OR USE FILL MATERIAL FROM AREAS OF SIMILAR SUBGRADE MATERIAL FOR ROADWAY EMBANKMENTS. GEOTECHNICAL ENGINEER WILL BE PRESENT AT THE TIME OF SUBGRADE PREPARATION TO DETERMINE THE EXTENTS OF APPLICABLE PAVEMENT SECTIONS BASED ON FINAL SUBGRADE.

DETAILS ON THIS DRAWING ARE NOT TO SCALE

CUDEENGINEERS.COM

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

DOVE SONG SUBDIVISION
UNIT 3

CITY OF MARION STANDARD STREET DETAILS

DATE
06/19/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG

CHECKED BY
XV/AL

#	DATE	REVISIONS
1.		
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9.		

ANDREW R. LOWRY
123410
07/03/2024

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C7.D1

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P:\03608\004\2-DWG\4-Plans\C7.D1 CITY OF MARION STANDARD STREET DETAILS.dwg 2024/06/19 6:06pm jguerrero

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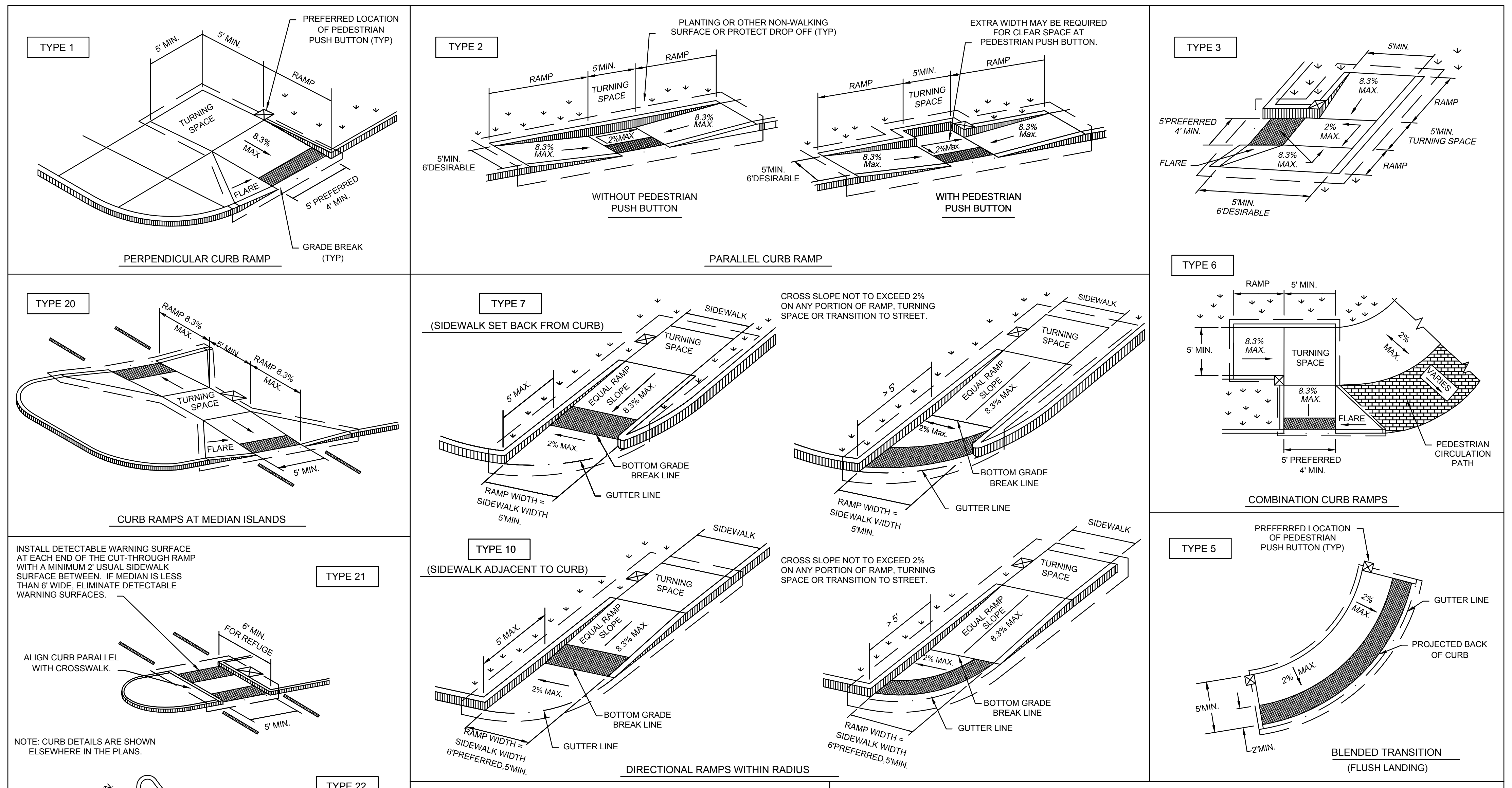

TYPE 1
PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON (TYP)
5' MIN.
RAMP
TURNING SPACE
8.3% MAX
FLARE
5' PREFERRED 4' MIN.
GRADE BREAK (TYP)
TYPE 2
PLANTING OR OTHER NON-WALKING SURFACE OR PROTECT DROP OFF (TYP)
EXTRA WIDTH MAY BE REQUIRED FOR CLEAR SPACE AT PEDESTRIAN PUSH BUTTON.
5'MIN. 6'DESIRABLE
WITHOUT PEDESTRIAN PUSH BUTTON
WITH PEDESTRIAN PUSH BUTTON
TYPE 3
5'PREFERRED 4' MIN.
2% MAX
5'MIN. TURNING SPACE
TYPE 6
TYPE 20
TYPE 7
(SIDEWALK SET BACK FROM CURB)
CROSS SLOPE NOT TO EXCEED 2% ON ANY PORTION OF RAMP, TURNING SPACE OR TRANSITION TO STREET.
SIDEWALK
EQUAL RAMP SLOPE 8.3% MAX
BOTTOM GRADE BREAK LINE
GUTTER LINE
RAMP WIDTH = SIDEWALK WIDTH 5'MIN.
5' PREFERRED 4' MIN.
PEDESTRIAN CIRCULATION PATH
INSTALL DETECTABLE WARNING SURFACE AT EACH END OF THE CUT-THROUGH RAMP WITH A MINIMUM 2' USUAL SIDEWALK SURFACE BETWEEN. IF MEDIAN IS LESS THAN 6' WIDE, ELIMINATE DETECTABLE WARNING SURFACES.
TYPE 21
6' MIN. FOR REFUGE
ALIGN CURB PARALLEL WITH CROSSWALK
NOTE: CURB DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.
TYPE 10
(SIDEWALK ADJACENT TO CURB)
TYPE 5
PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON (TYP)
PROJECTED BACK OF CURB
TYPE 22
5'X 5'(MIN.) TURNING SPACE
RAMP 8.3% MAX.
FLARE

PERPENDICULAR CURB RAMP

PARALLEL CURB RAMP

COMBINATION CURB RAMPS

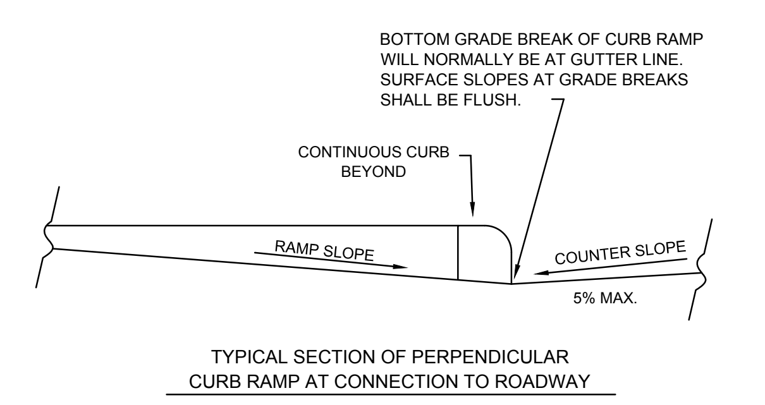
CURB RAMPS AT MEDIAN ISLANDS

DIRECTIONAL RAMPS WITHIN RADIUS

BLENDED TRANSITION

(FLUSH LANDING)

COMBINATION ISLAND RAMPS


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

TYPICAL SECTION OF PERPENDICULAR CURB RAMP AT CONNECTION TO ROADWAY

NOTES / LEGEND:

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

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

SHEET 1 OF 4

Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS
PED-18

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

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DATE:
FILE:

GENERAL NOTES

CURB RAMPS

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

DETECTABLE WARNING MATERIAL

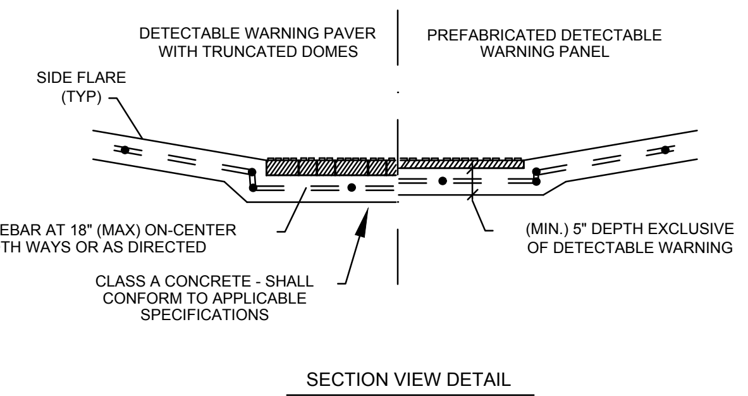
19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material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

DETECTABLE WARNING PAVERS (IF USED)

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

SIDEWALKS

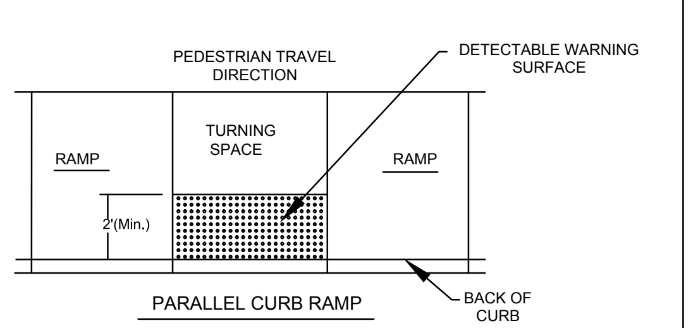
27. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within unobstructed reach range specified in PROWAG section R406.
28. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items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


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

SECTION VIEW DETAIL

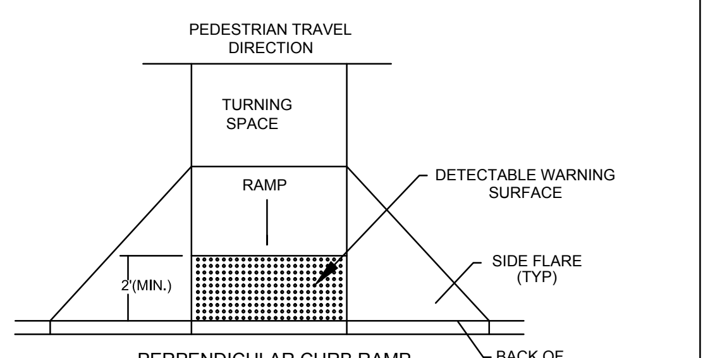
CURB RAMP AT DETECTIBLE WARNINGS

DETECTABLE WARNING SURFACE DETAILS



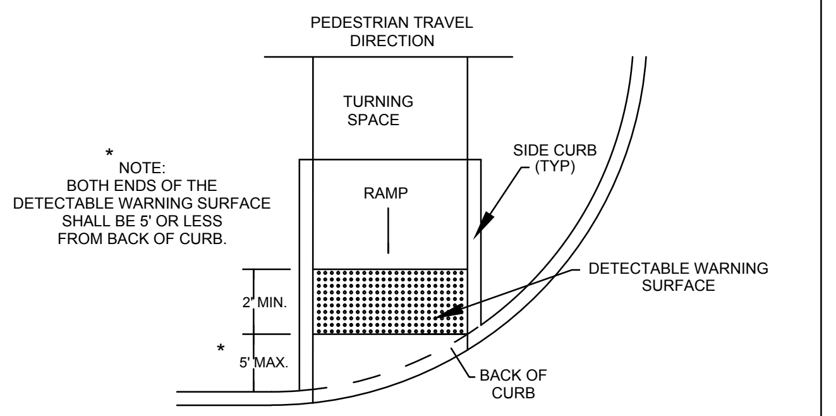
PARALLEL CURB RAMP

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



PERPENDICULAR CURB RAMP

TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.


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

DIRECTIONAL CURB RAMP

TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.

SHEET 2 OF 4

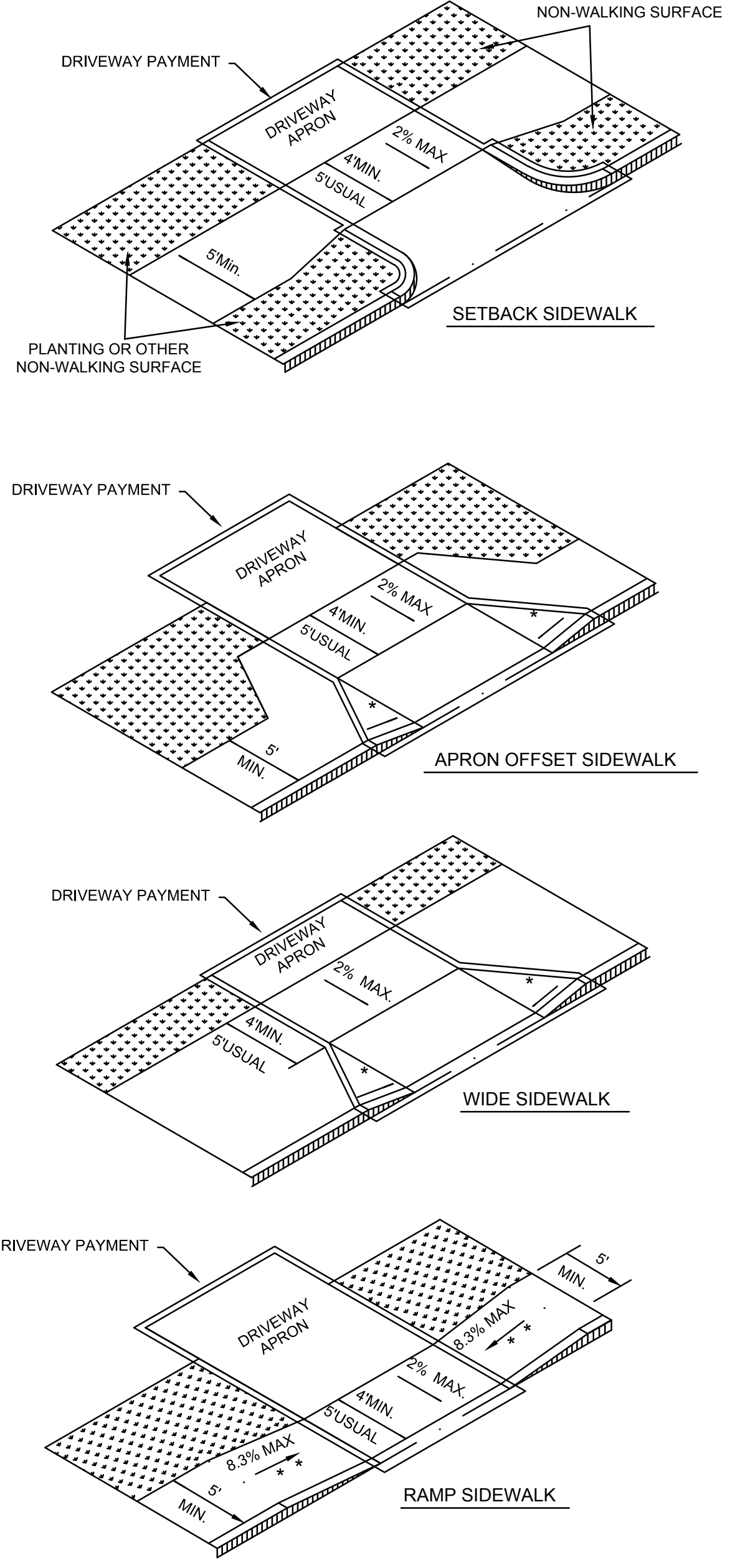
Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS
PED-18

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

SIDEWALK TREATMENT AT DRIVEWAYS


PLANTING OR OTHER NON-WALKING SURFACE
DRIVEWAY PAYMENT
DRIVEWAY APRON
2% MAX
4'MIN.
5'MIN.
5'USUAL
PLANTING OR OTHER NON-WALKING SURFACE
8.3% MAX

SETBACK SIDEWALK

APRON OFFSET SIDEWALK

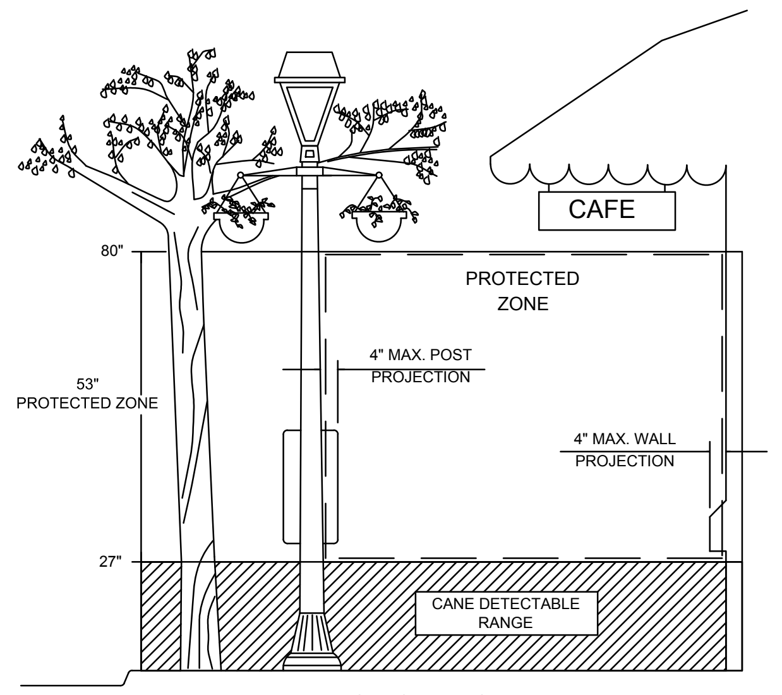
WIDE SIDEWALK

RAMP SIDEWALK

NOTES:

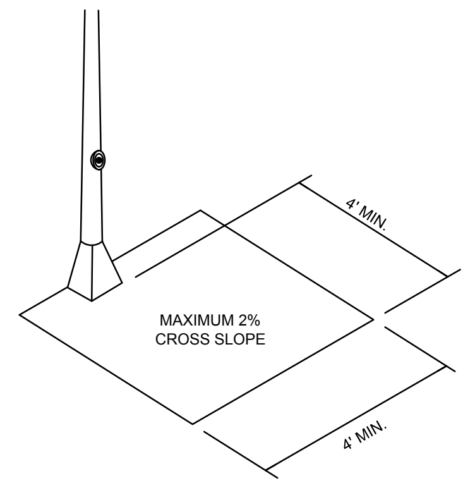
* WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.

* * IF CURB HEIGHT IS GREATER THAN 6 INCHES, USE GRADE LESS THAN OR EQUAL TO 5%. HANDRAIL AND DETECTABLE WARNING ARE NOT REQUIRED.

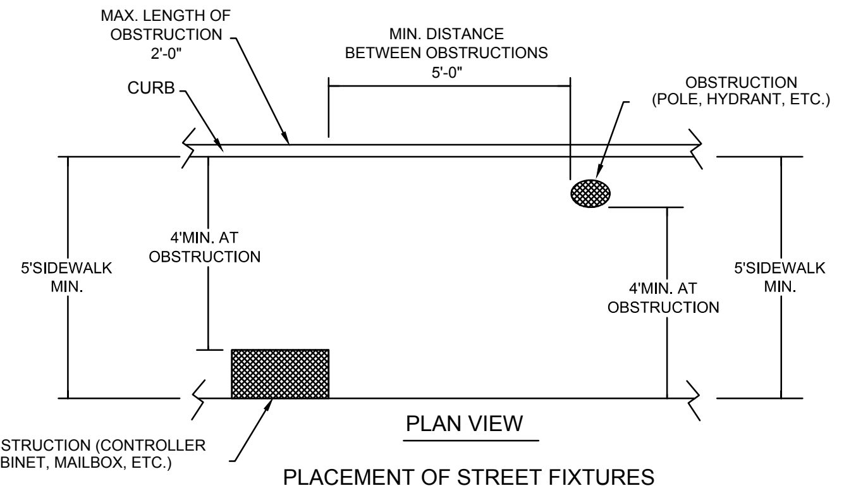


PROTECTED ZONE

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



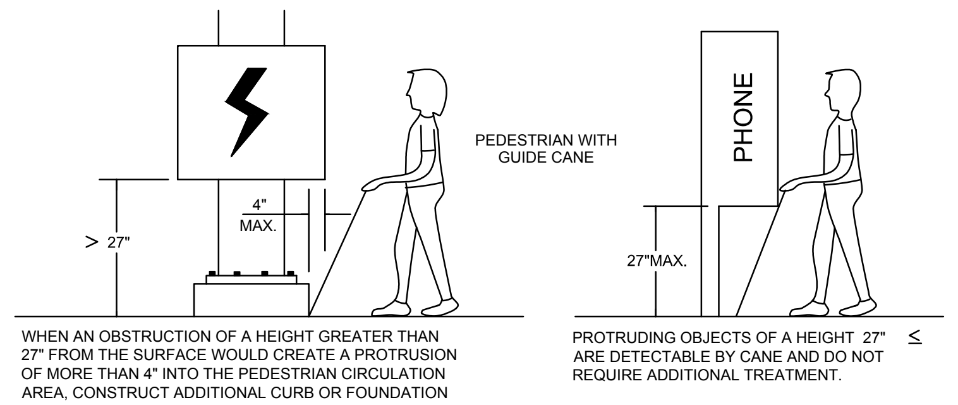
CLEAR SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON


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

PLAN VIEW

PLACEMENT OF STREET FIXTURES

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



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

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

DETECTION BARRIER FOR VERTICAL CLEARANCE ~~<~~80"

SHEET 3 OF 4

Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS
PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
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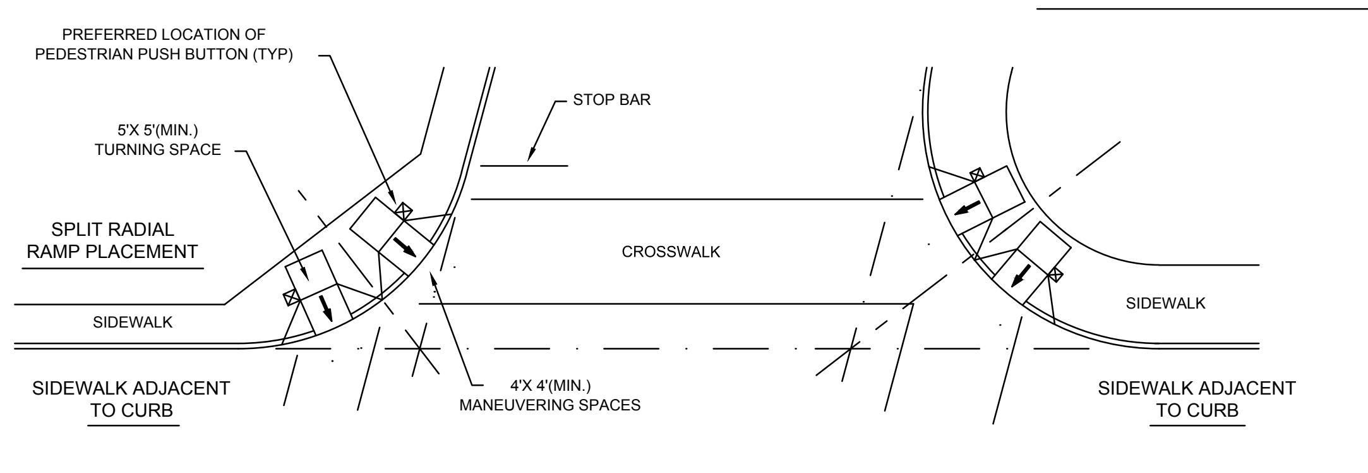
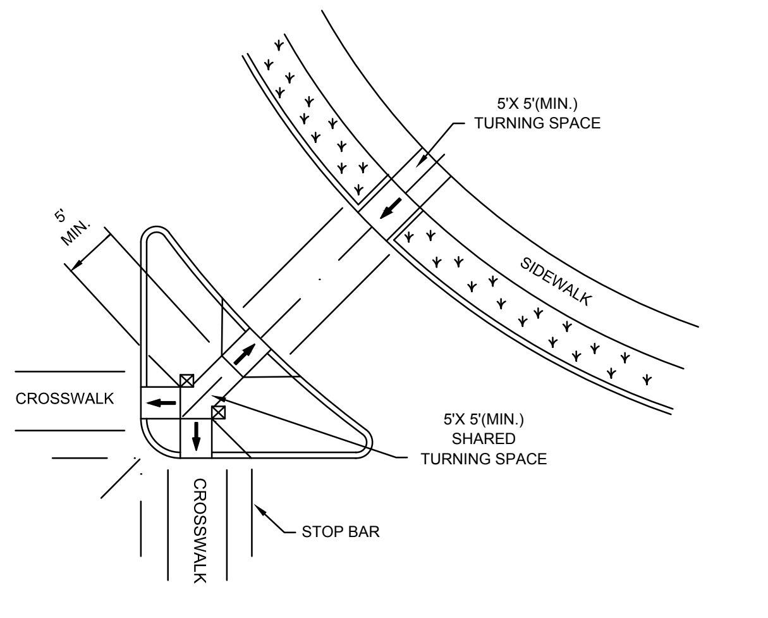
TYPICAL CROSSING LAYOUTS

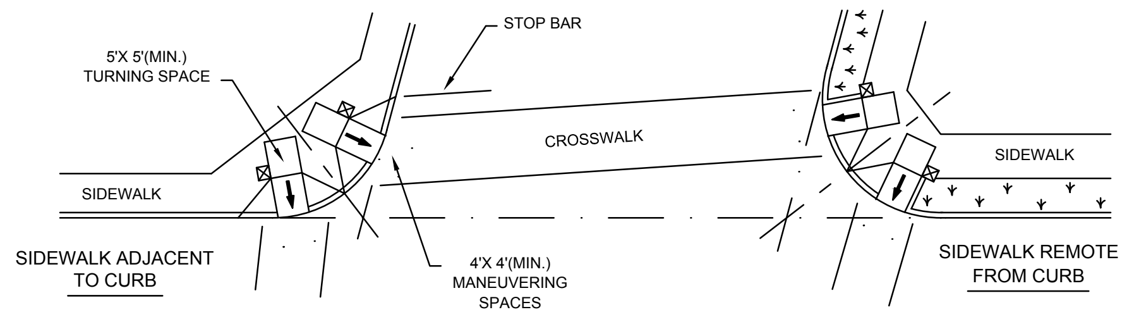
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS


PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON (TYP)
STOP BAR
5'X 5'(MIN.) TURNING SPACE
SPLIT RADIAL RAMP PLACEMENT
CROSSWALK
SIDEWALK
4'X 4'(MIN.) MANEUVERING SPACES
SIDEWALK ADJACENT TO CURB

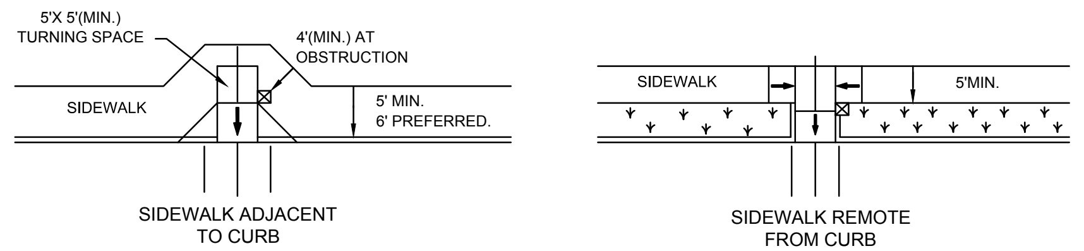
SKEWED INTERSECTION WITH "LARGE" RADIUS



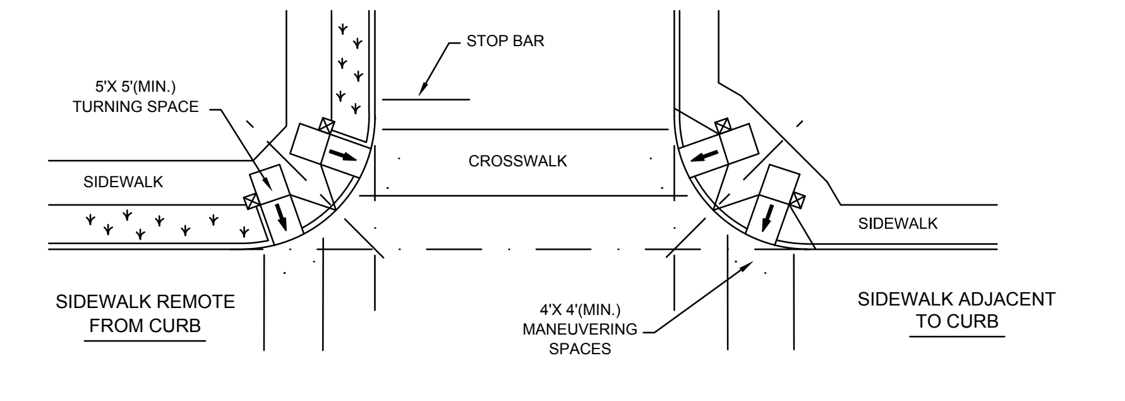
AT INTERSECTION W/FREE RIGHT TURN & ISLAND


5'X 5'(MIN.) TURNING SPACE
STOP BAR
CROSSWALK
SIDEWALK
4'X 4'(MIN.) MANEUVERING SPACES
SIDEWALK ADJACENT TO CURB
SIDEWALK REMOTE FROM CURB

SKEWED INTERSECTION WITH "SMALL" RADIUS


5'X 5'(MIN.) TURNING SPACE
4'(MIN.) AT OBSTRUCTION
SIDEWALK
5' MIN. 6' PREFERRED.
5'MIN.
SIDEWALK ADJACENT TO CURB
SIDEWALK REMOTE FROM CURB

MID-BLOCK PLACEMENT PERPENDICULAR RAMPS


STOP BAR
5'X 5'(MIN.) TURNING SPACE
CROSSWALK
SIDEWALK
SIDEWALK REMOTE FROM CURB
4'X 4'(MIN.) MANEUVERING SPACES
SIDEWALK ADJACENT TO CURB

NORMAL INTERSECTION WITH "SMALL" RADIUS

LEGEND:

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

SHEET 4 OF 4

Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS
PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
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REVISIONS REVISED 08,2005 REVISED 06,2012 REVISED 01,2018	DIST	COUNTY		SHEET NO.

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

DOVE SONG SUBDIVISION UNIT 3

TXDOT DETAILS - PEDESTRIAN FACILITIES - PED-18

DATE
06/19/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG

CHECKED BY
XV/AL

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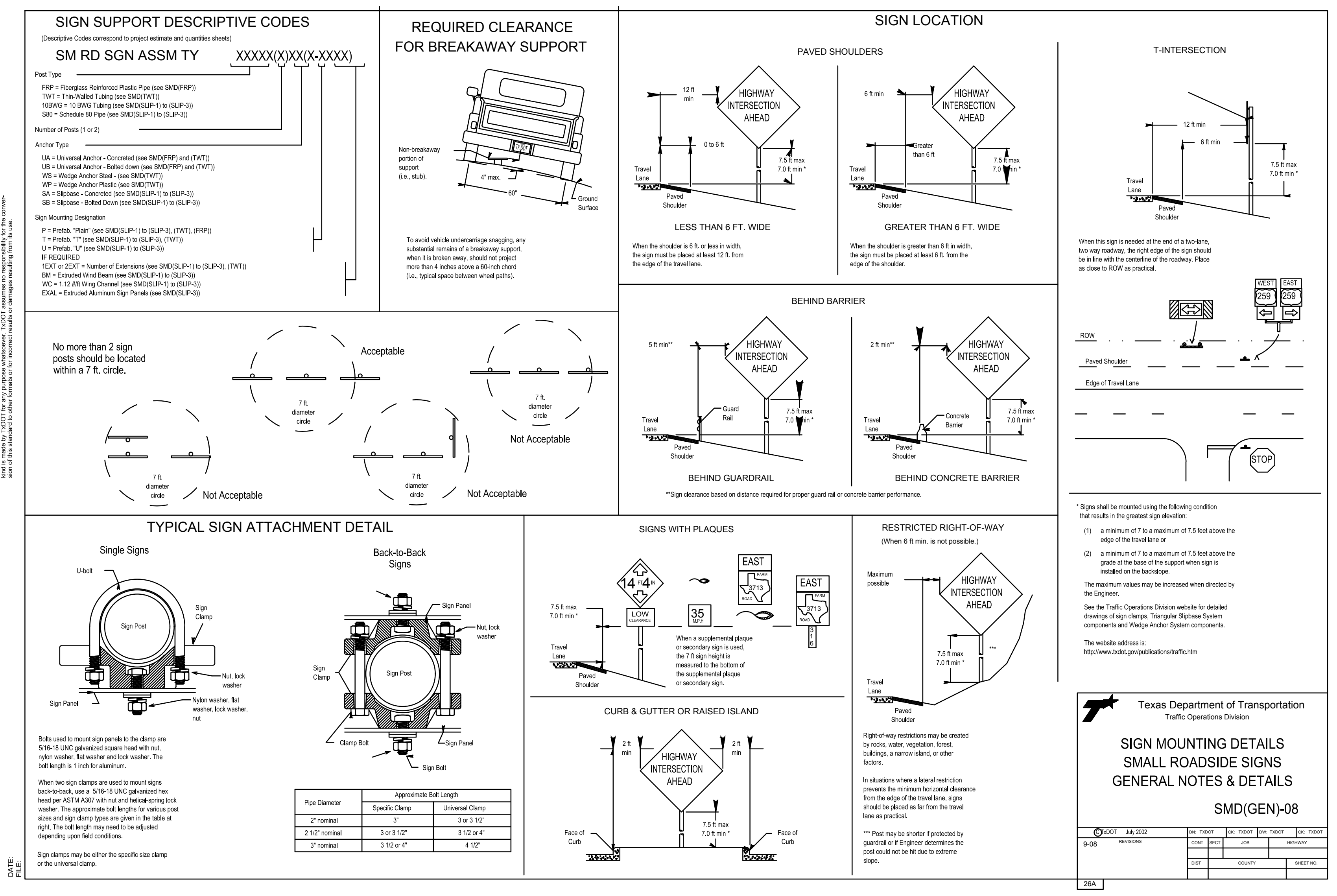
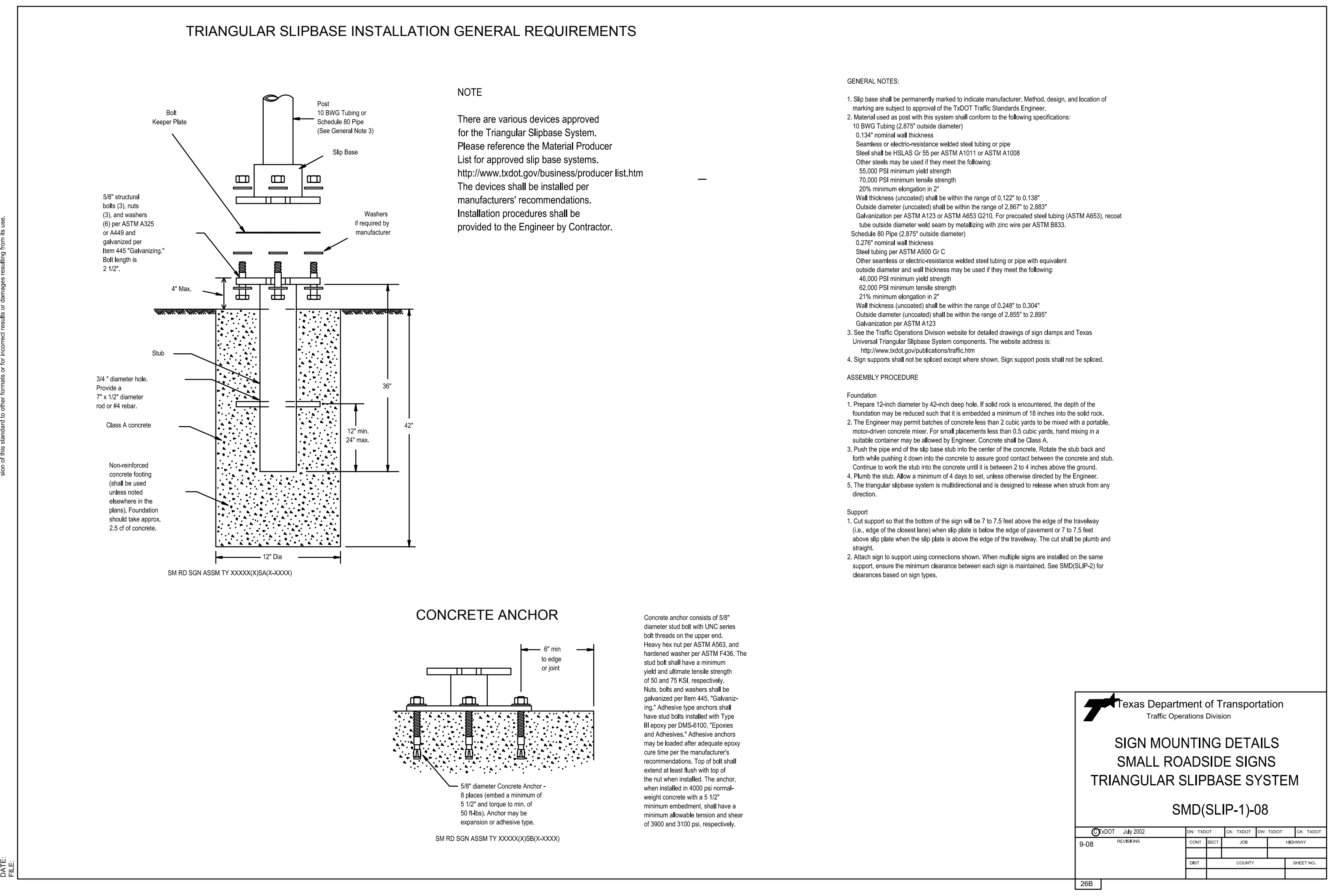
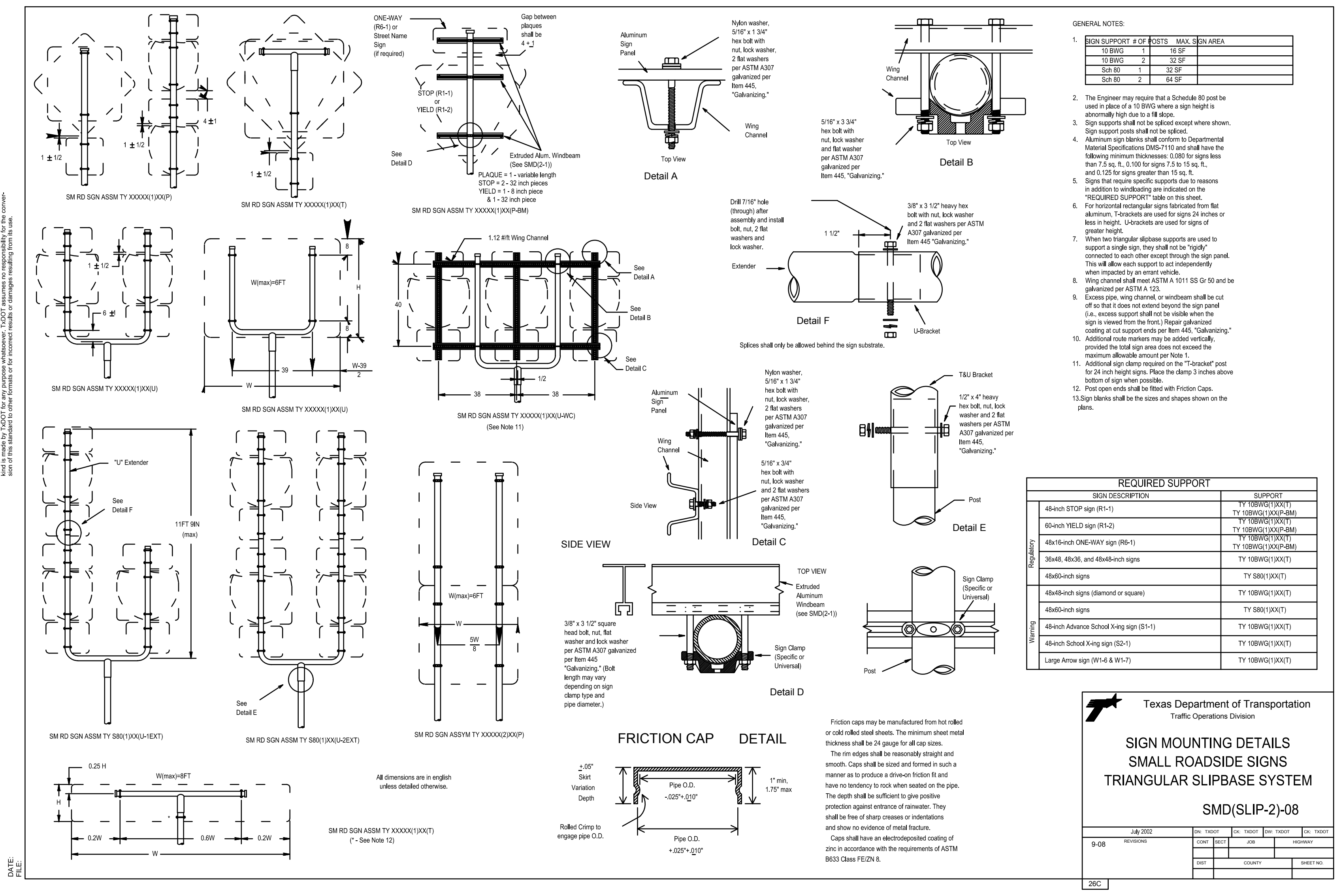
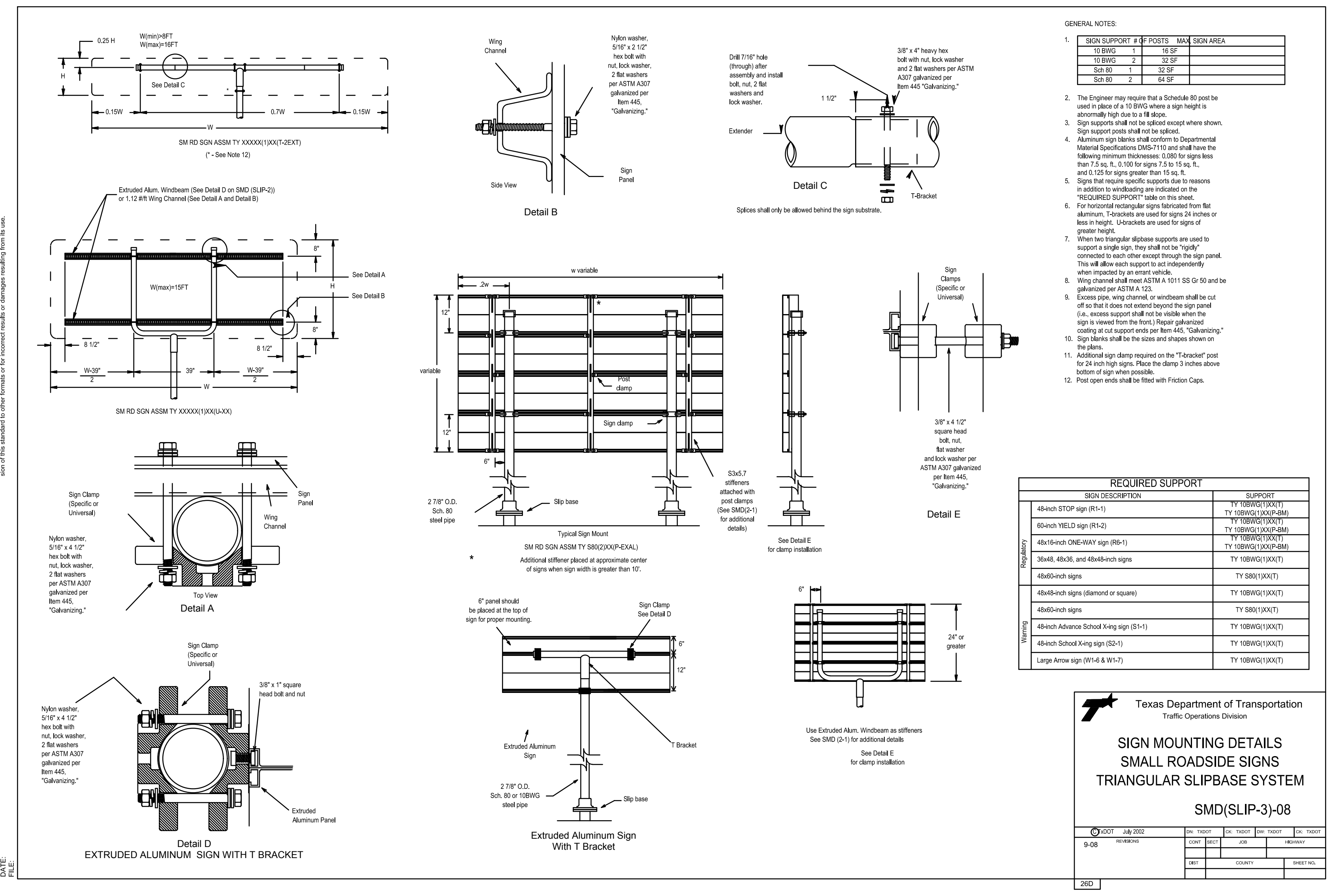
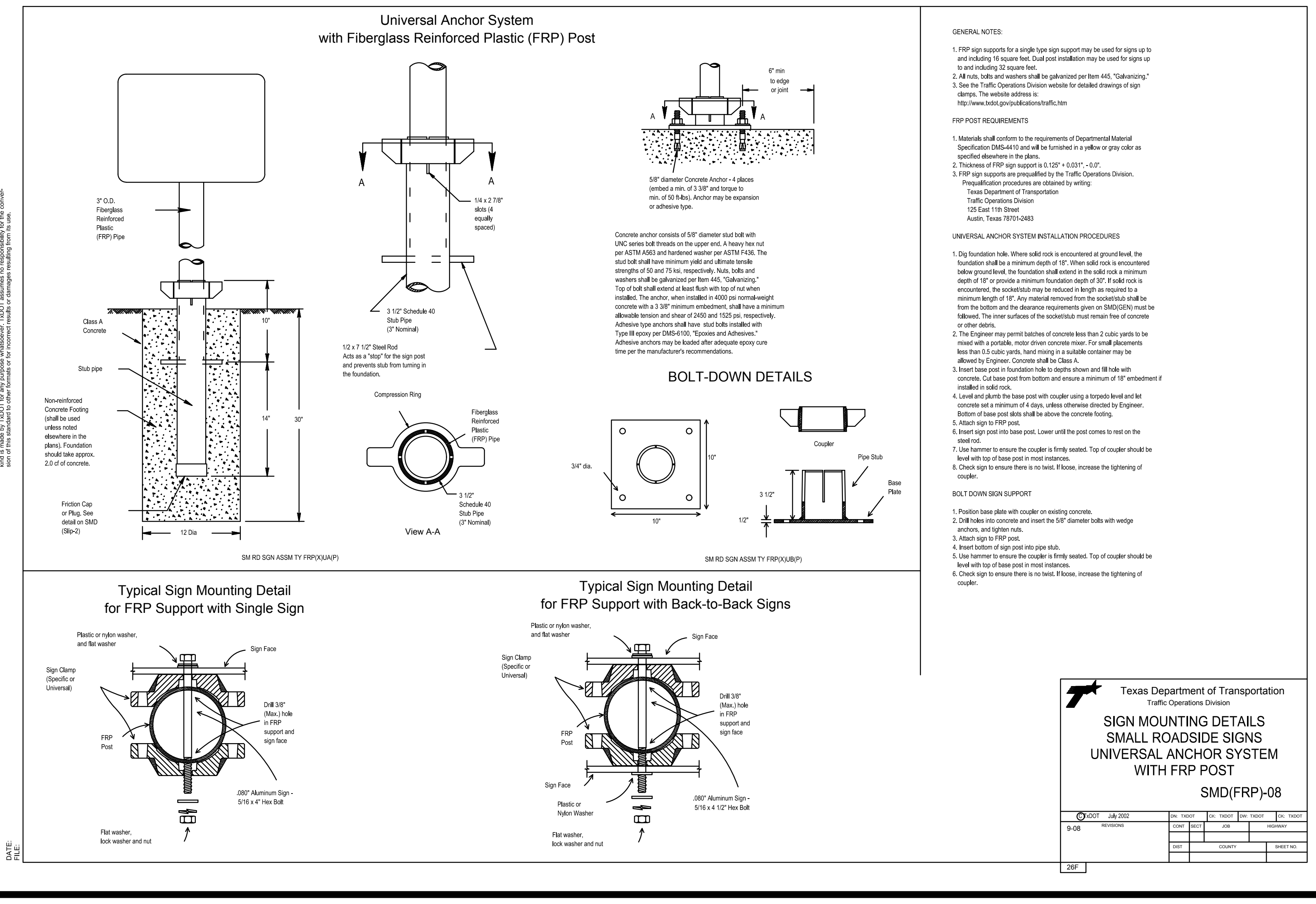
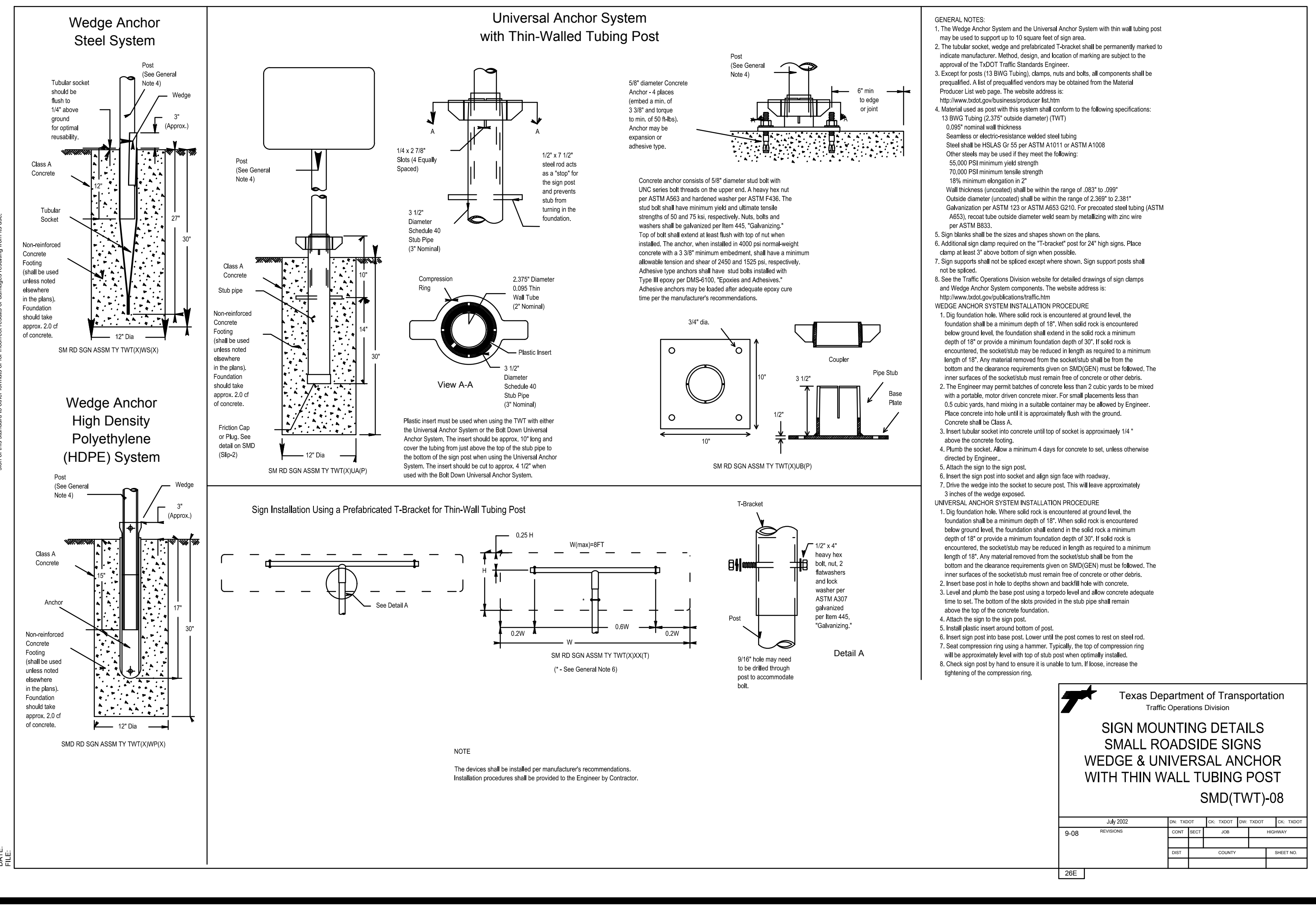

SIGN SUPPORT DESCRIPTIVE CODES
SM RD SGN ASSM TY XXXXX(X)XX(X-XXXX)
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT
SIGN LOCATION
PAVED SHOULDERS
T-INTERSECTION
LESS THAN 6 FT. WIDE
GREATER THAN 6 FT. WIDE
BEHIND BARRIER
BEHIND GUARDRAIL
BEHIND CONCRETE BARRIER
HIGHWAY INTERSECTION AHEAD
Acceptable
Not Acceptable
No more than 2 sign posts should be located within a 7 ft. circle.
TYPICAL SIGN ATTACHMENT DETAIL
Single Signs
Back-to-Back Signs
SIGNS WITH PLAQUES
RESTRICTED RIGHT-OF-WAY
CURB & GUTTER OR RAISED ISLAND
Texas Department of Transportation
Traffic Operations Division
SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
GENERAL NOTES & DETAILS
SMD(GEN)-08


TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS
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
GENERAL NOTES
ASSEMBLY PROCEDURE
Texas Department of Transportation
Traffic Operations Division
SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM
SMD(SLIP-1)-08




Detail A
Detail B
Detail C
Detail D
Detail E
EXTRUDED ALUMINUM SIGN WITH T BRACKET
Extruded Aluminum Sign With T Bracket
GENERAL NOTES
REQUIRED SUPPORT
Texas Department of Transportation
Traffic Operations Division
SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM
SMD(SLIP-3)-08


Universal Anchor System with Fiberglass Reinforced Plastic (FRP) Post
BOLT-DOWN DETAILS
View A-A
Typical Sign Mounting Detail for FRP Support with Single Sign
Typical Sign Mounting Detail for FRP Support with Back-to-Back Signs
GENERAL NOTES
Texas Department of Transportation
Traffic Operations Division
SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
UNIVERSAL ANCHOR SYSTEM WITH FRP POST
SMD(FRP)-08


Wedge Anchor Steel System
Universal Anchor System with Thin-Walled Tubing Post
Wedge Anchor High Density Polyethylene (HDPE) System
Sign Installation Using a Prefabricated T-Bracket for Thin-Wall Tubing Post
View A-A
Detail A
GENERAL NOTES
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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UNIT 3

TXDOT DETAILS - SIGN MOUNTING DETAILS

DATE
06/19/2024

PROJECT NO.
03608.004

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JG/SG

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XV/AL

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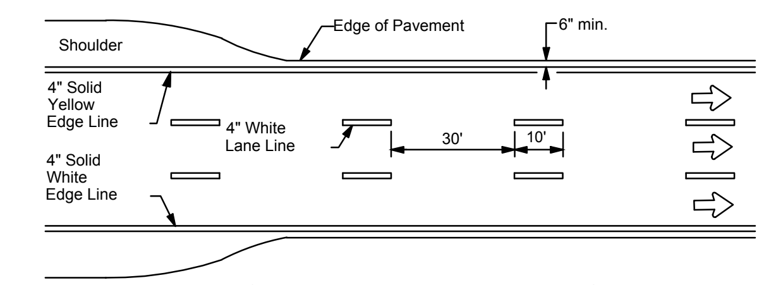
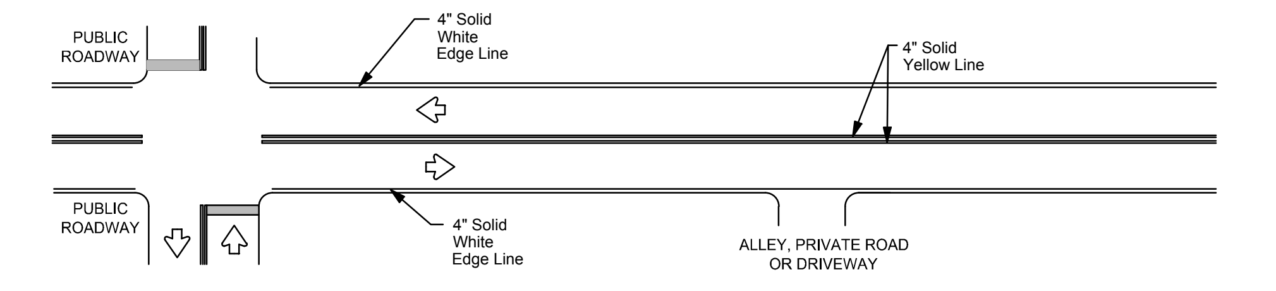


EDGE LINE AND LANE LINES
ONE-WAY ROADWAY
WITH OR WITHOUT SHOULDERS



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

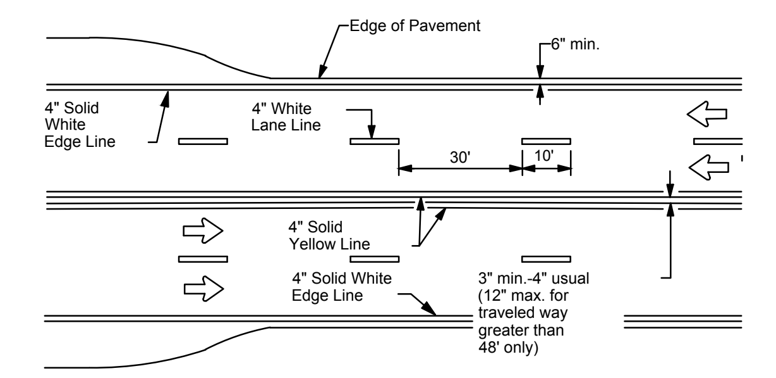
GENERAL NOTES

1. Edgeline striping shall be as shown in the plans or as directed by the Engineer. The edgeline should not be placed less less than 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edgelines are not required in curb and gutter sections of roadways.

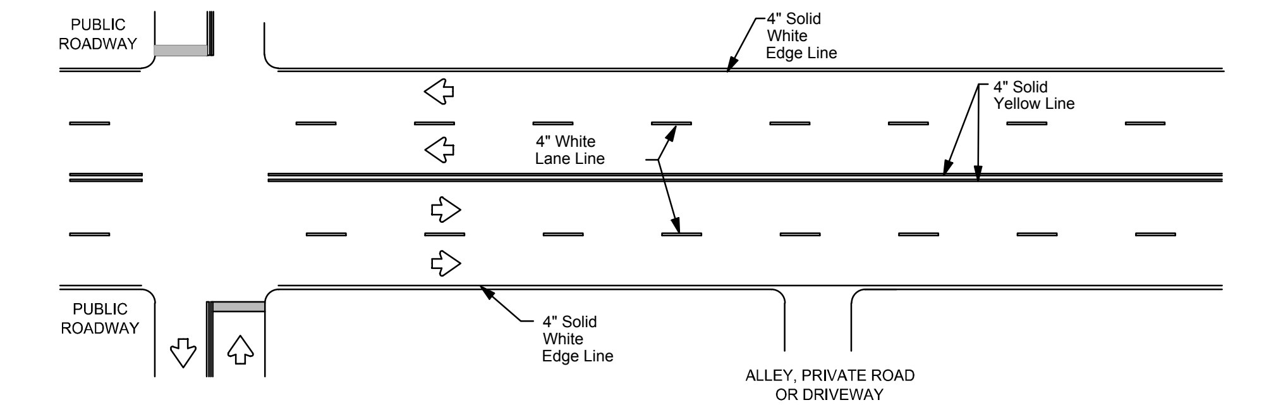
2. The traveled way includes only that portion of the roadway used for vehicular travel. It does not include the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the inside of edgeline to the inside of edgeline of a two lane roadway.

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

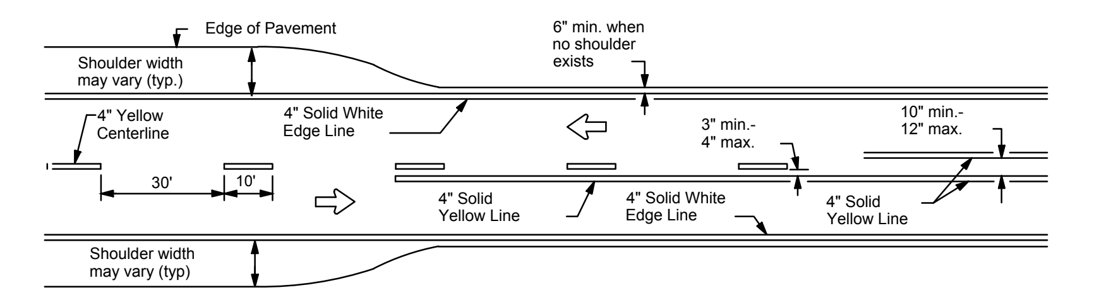
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



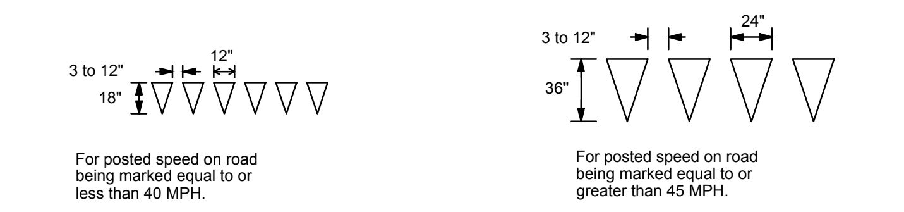
CENTERLINE AND LANE LINES
FOUR LANE TWO-WAY ROADWAY
WITH OR WITHOUT SHOULDERS



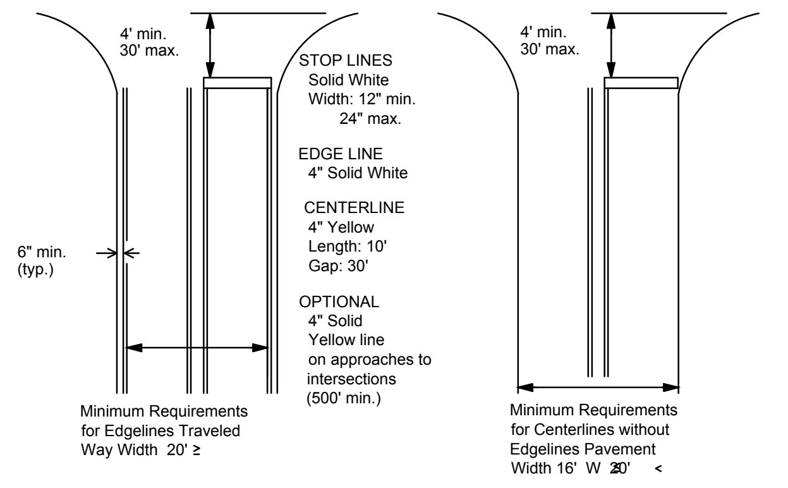
TYPICAL MULTI-LANE, TWO-WAY PAVEMENT
MARKINGS THROUGH INTERSECTIONS



TWO LANE TWO-WAY ROADWAY
WITH OR WITHOUT SHOULDERS

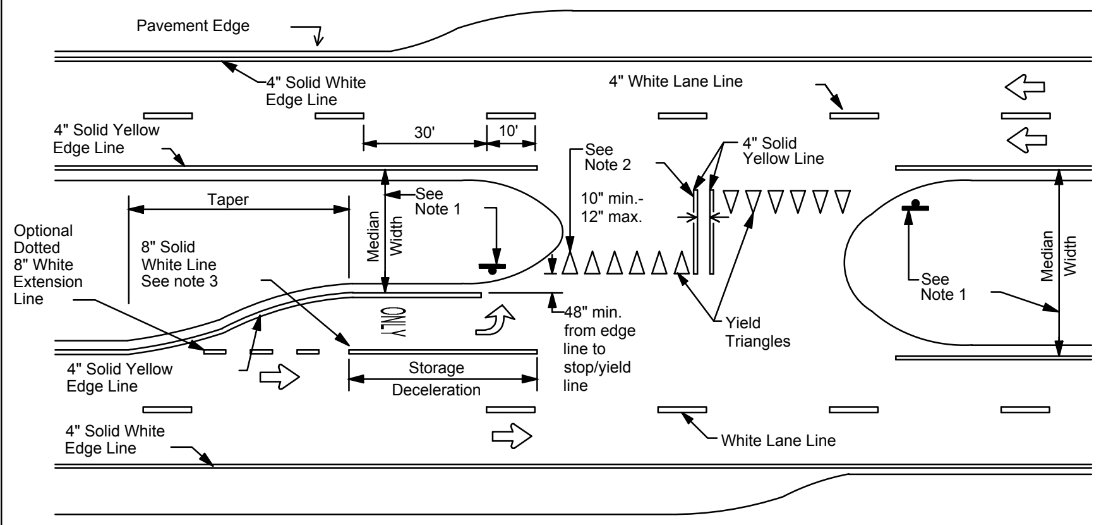

3 to 12"
12"
18"
For posted speed on road being marked equal to or less than 40 MPH.
3 to 12"
24"
36"
For posted speed on road being marked equal to or greater than 45 MPH.

YIELD LINES


4' min. 30' max.
STOP LINES Solid White Width: 12" min. 24" max.
EDGE LINE 4" Solid White
CENTERLINE 4" Yellow Length: 10' Gap: 30'
OPTIONAL 4" Solid Yellow line on approaches to intersections (500' min.)
6" min. (typ.)
4' min. 30' max.
Minimum Requirements for Edgelines Traveled Way Width 20' ≥
Minimum Requirements for Centerlines without Edgelines Pavement Width 16' W 20' <

GUIDE FOR PLACEMENT OF STOP LINES,
EDGE LINE & CENTERLINE

Based on Traveled Way and Pavement Widths
for Undivided Highways



FOUR LANE DIVIDED ROADWAY CROSSOVERS

NOTES

1. Where divided highways are separated by median widths at the median opening itself of 30 feet or more, median openings shall be signed as two separate intersections. Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling width to determine if signs are required. Yield signs are the typical intersection control. Stop signs are optional as determined by the Engineer.

2. Install median striping (double yellow centerlines and stop bars/yield triangles) when a 50' or greater median centerline can be placed. Stop bars shall only be used with stop signs. Yield traingles shall only be used with yield signs.

3. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.

Texas Department of Transportation

Traffic Safety Division Standard

TYPICAL STANDARD
PAVEMENT MARKINGS

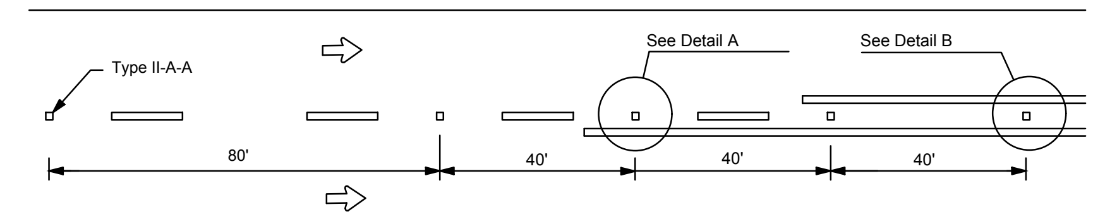
PM(1)-20

FILE: pm1-20.dgn	DN:	CK:	DW:	CK:
© TxDOT November 1978	CONT	SECT	JOB	HIGHWAY
REVISIONS 8-95 3-03 5-00 2-12 8-00 6-20	DIST	COUNTY		SHEET NO.

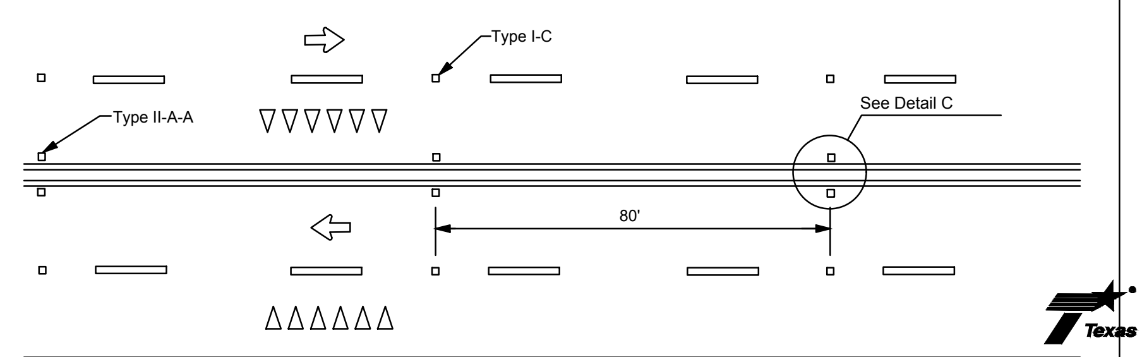
22A

DATE:
FILE:

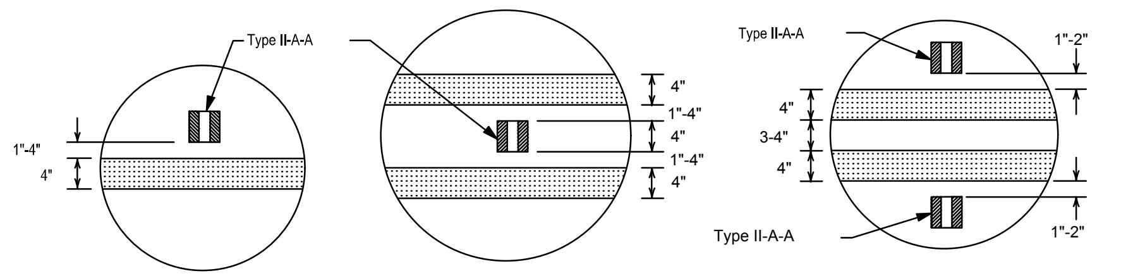
REFLECTIVE RAISED PAVEMENT MARKERS
FOR VEHICLE POSITIONING GUIDANCE



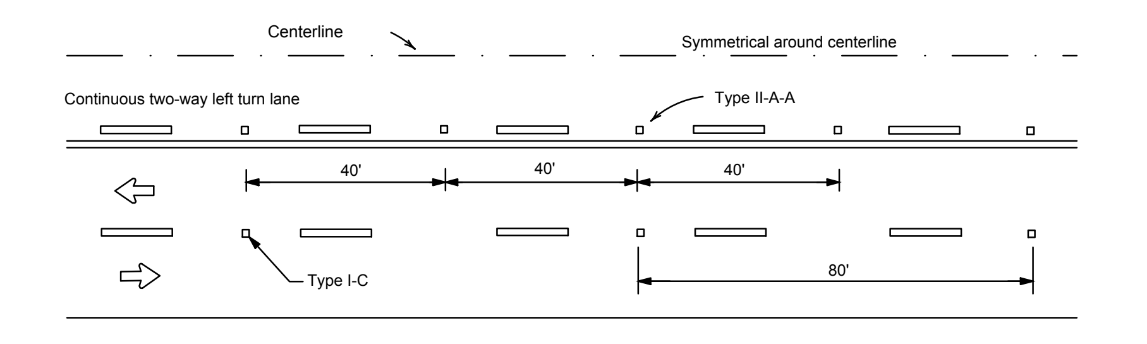
CENTERLINE FOR ALL TWO LANE ROADWAYS



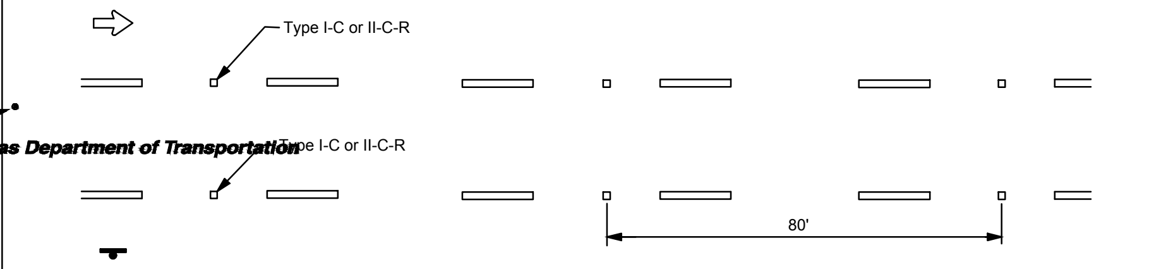
CENTERLINE & LANE LINES
FOR FOUR LANE TWO-WAY HIGHWAYS



DETAIL "A" DETAIL "B" DETAIL "C"


Centerline
Symmetrical around centerline
Continuous two-way left turn lane
Type II-A-A
40'
40'
40'
Type I-C
80'

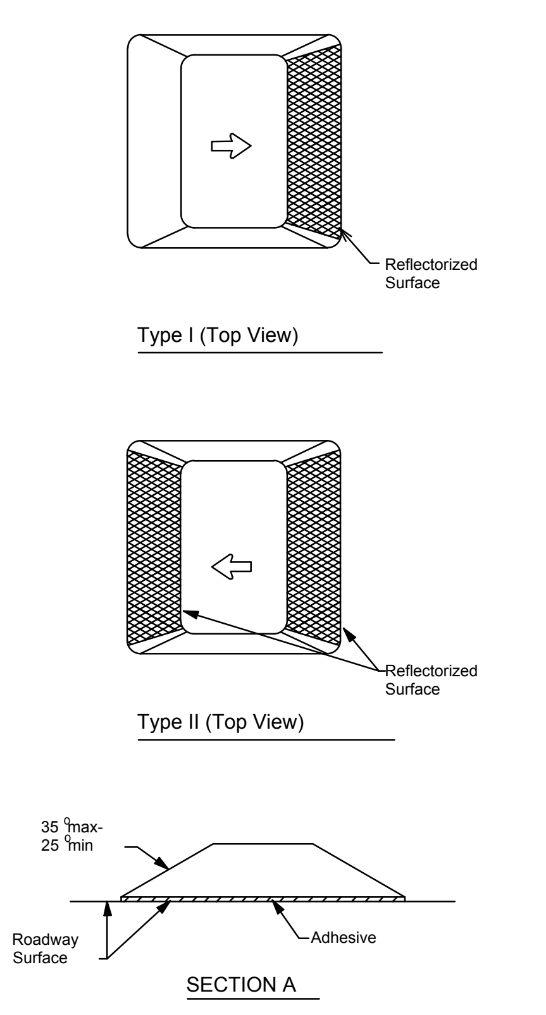
CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



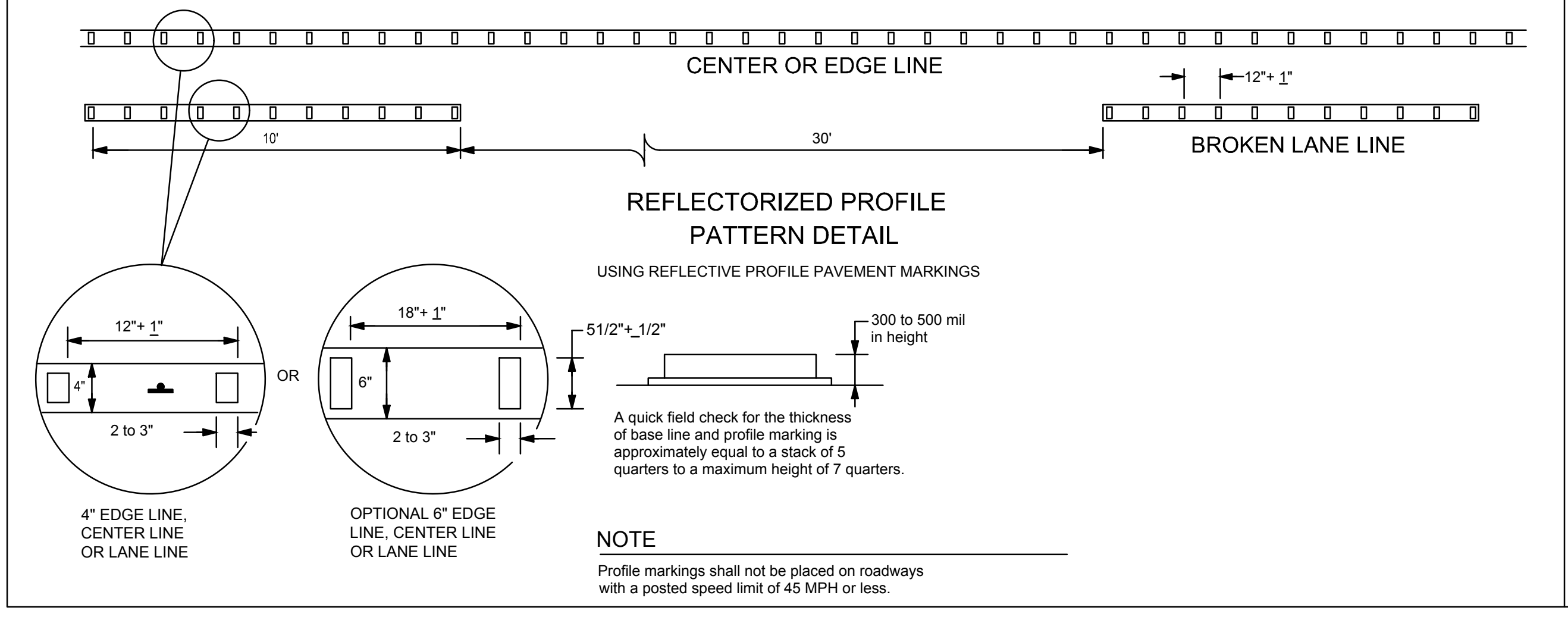
LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.

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



RAISED PAVEMENT MARKERS


CENTER OR EDGE LINE
12"± 1"
10'
30'
BROKEN LANE LINE
12"± 1"
4"
2 to 3"
OR
18"± 1"
6"
2 to 3"
51/2"± 1/2"
300 to 500 mil in height
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.
4" EDGE LINE, CENTER LINE OR LANE LINE
OPTIONAL 6" EDGE LINE, CENTER LINE OR LANE LINE

REFLECTORIZED PROFILE
PATTERN DETAIL

USING REFLECTIVE PROFILE PAVEMENT MARKINGS

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.

Texas Department of Transportation

Traffic Safety Division Standard

POSITION GUIDANCE USING
RAISED MARKERS
RELECTORIZED PROFILE
MARKINGS
PM(2)-20

FILE: pm2-20.dgn	DN:	CK:	DW:	CK:
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REVISIONS 4-92 2-10 5-00 2-12 8-00 6-20	DIST	COUNTY		SHEET NO.

22B

DATE:
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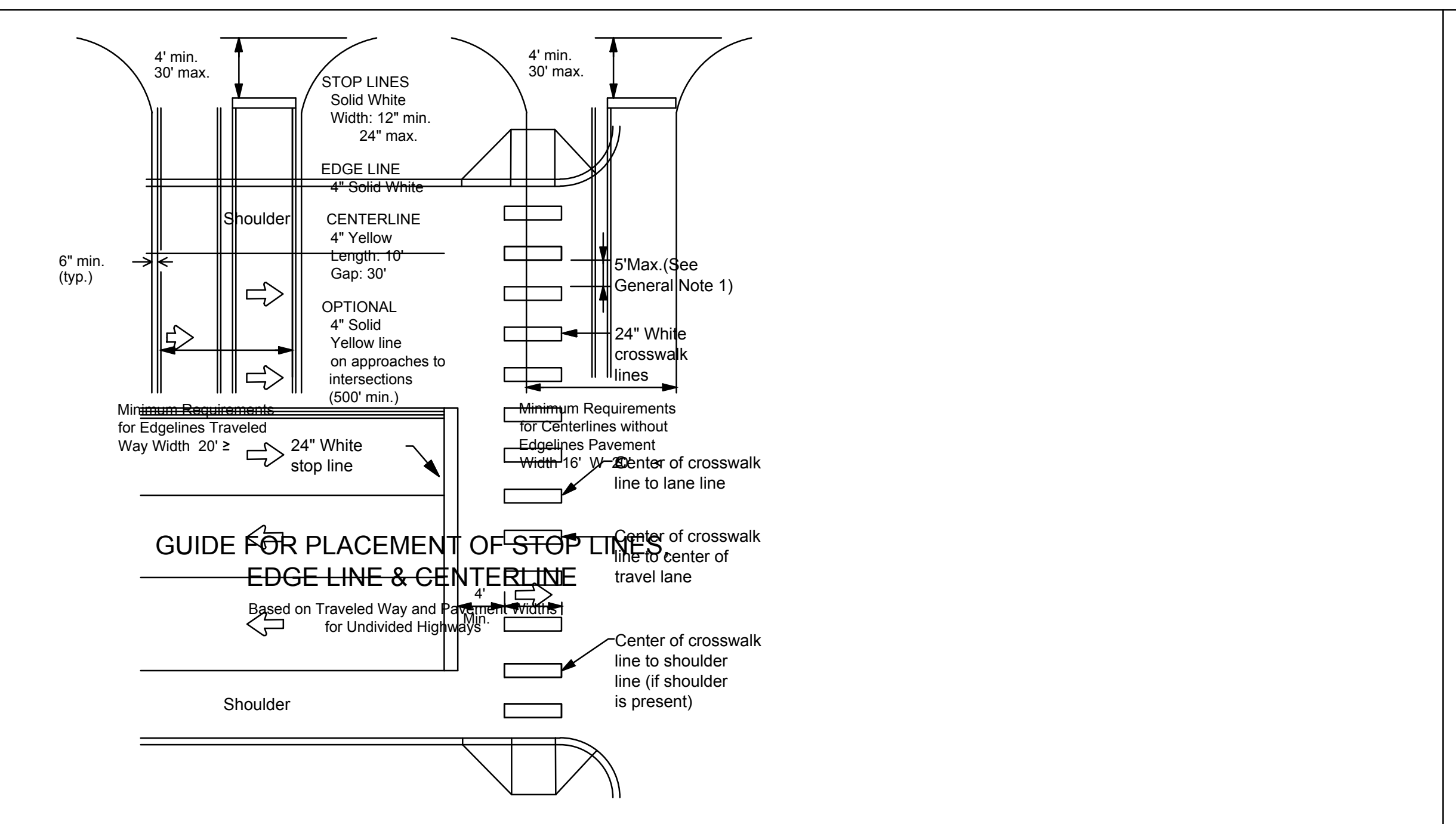
4' min. 30' max.
STOP LINES Solid White Width: 12" min. 24" max.
EDGE LINE 4" Solid White
CENTERLINE 4" Yellow Length: 10' Gap: 30'
OPTIONAL 4" Solid Yellow line on approaches to intersections (500' min.)
6" min. (typ.)
Shoulder
4' min. 30' max.
5'Max.(See General Note 1)
24" White crosswalk lines
Minimum Requirements for Edgelines Traveled Way Width 20' ≥
24" White stop line
Minimum Requirements for Centerlines without Edgelines Pavement Width 16' W 20'
Center of crosswalk line to lane line
Center of crosswalk line to center of travel lane
Center of crosswalk line to shoulder line (if shoulder is present)
GUIDE FOR PLACEMENT OF STOP LINES, EDGE LINE & CENTERLINE
Based on Traveled Way and Pavement Widths for Undivided Highways
Shoulder

HIGH-VISIBILITY LONGITUDINAL CROSSWALK
AT CONTROLLED APPROACH

GENERAL NOTES

1. Longitudinal crosswalk lines should not be placed in the wheel path of vehicles. Center the crosswalk lines on travel lanes, lane lines, and shoulder lines (if present).

2. A minimum 6" clear distance shall be provided to the curb face. If the last crosswalk line falls into this distance it must be omitted.

3. For divided roadways, adjustments in spacing of the crosswalk lines should be made in the median so that the crosswalk lines are maintained in their proper location across the travel portion of the roadway.

4. At skewed crosswalks, the crosswalk lines are to remain parallel to the lane lines.

5. Each crosswalk shall be a minimum of 6' wide.

6. The High-Visibility Longitudinal Crosswalk is the preferred crosswalk pattern on State Highways. Other crosswalk patterns as shown in the "Texas Manual on Uniform Traffic Control Devices" may be used. All crosswalk designs and dimension shall comply with the "Texas Manual on Uniform Traffic Control Devices."

7. Final placement of Stop Bar and Crosswalk shall be approved by the Engineer in the field.

MATERIAL SPECIFICATIONS	
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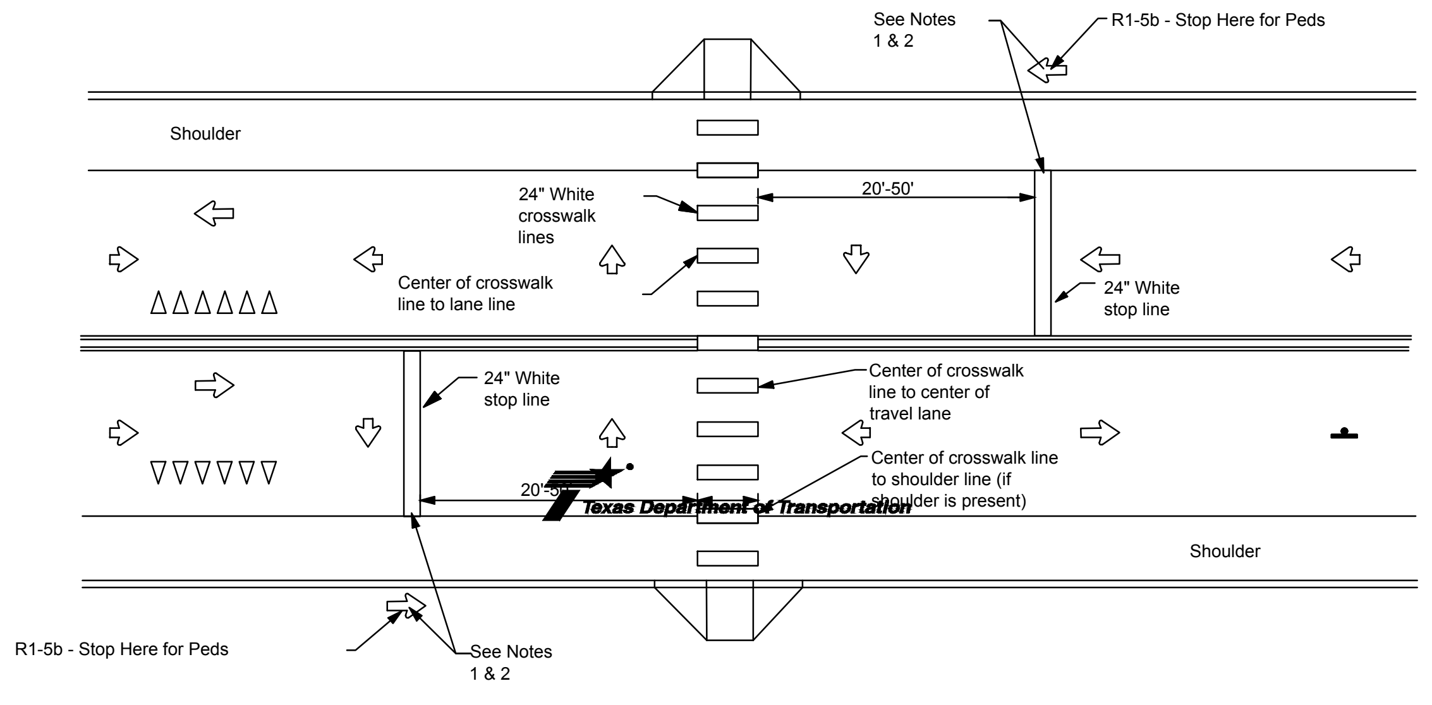
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240


See Notes 1 & 2
R1-5b - Stop Here for Peds
Shoulder
24" White crosswalk lines
20'-50'
Center of crosswalk line to lane line
24" White stop line
24" White stop line
Center of crosswalk line to center of travel lane
Center of crosswalk line to shoulder line (if shoulder is present)
20'-50'
Shoulder
R1-5b - Stop Here for Peds
See Notes 1 & 2

UNSIGNALIZED MID BLOCK HIGH-VISIBILITY
LONGITUDINAL CROSSWALK

NOTES:

1. Use stop bars with "Stop Here for Pedestrians" signs at unsignalized mid block cross walks.

2. Use stop bars with "Stop Here on Red" signs at mid block crosswalks controlled by traffic signals or pedestrian hybrid beacons.

Texas Department of Transportation

Traffic Safety Division Standard

CROSSWALK
PAVEMENT MARKINGS

PM(4)-22

FILE: pm4-22.dgn	DN:	CK:	DW:	CK:
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REVISIONS 3-22	DIST	COUNTY		SHEET NO.

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

DOVE SONG SUBDIVISION
UNIT 3

TXDOT DETAILS - PAVEMENT MARKINGS & GUARD RAILS

DATE
06/27/2024

PROJECT NO.
03608.004

DRAWN BY
JG/SG

CHECKED BY
XV/AL

#	DATE	REVISIONS
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