

CITY OF BOERNE

GENERAL CONSTRUCTION NOTES

REV. 03/26/2021

- GENERAL NOTES

 1. CONSTRUCTION OF ALL FACILITIES TO BE DEE
- 1. CONSTRUCTION OF ALL FACILITIES TO BE DEDICATED TO THE PUBLIC SHALL BE PERFORMED PER THE REQUIREMENTS OF THE CITY OF BOERNE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION.
- 2. ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE INFRASTRUCTURE DRAWINGS REMAINS WITH THE ENGINEER OF RECORDS. IN APPROVING THESE INFRASTRUCTURE DRAWINGS, THE CITY OF BOERNE MUST RELY UPON THE ADEQUACY OF THE WORK OF THE ENGINEER OF RECORD.
- 3. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE CITY OF BOERNE DEVELOPMENT SERVICES TO SCHEDULE A PRE-CONSTRUCTION MEETING.
- 4. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS PRIOR TO CONSTRUCTION.
- 5. THE CONTRACTOR SHALL NOTIFY CITY OF BOERNE DEVELOPMENT SERVICES AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION AT (830) 248-1538.
- 6. THE CONTRACTOR IS REQUIRED TO SCHEDULE ALL NECESSARY INSPECTIONS AT LEAST 24 HOURS IN ADVANCE.
- 7. THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE AT ALL TIMES THE APPROVED INFRASTRUCTURE DRAWINGS, INCLUDING ALL APPROVED REVISIONS; THE CITY OF BOERNE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION; ALL NECESSARY PERMITS; NOTICE OF INTENT; EROSION CONTROL PLANS; AND SWPPP. IT IS ENCOURAGED TO KEEP AN EXTRA COPY OF APPROVED SUBMITTALS ON-SITE.
- 8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL PUBLIC UTILITIES DURING CONSTRUCTION OF THE PROJECT.
- 9. THE CONTRACTOR SHALL DETERMINE THE DEPTH AND LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATING, TRENCHING, OR DRILLING AND SHALL BE REQUIRED TO TAKE ANY PRECAUTIONARY MEASURES TO PROTECT ALL LINES SHOWN AND/OR ANY OTHER UNDERGROUND UTILITIES NOT OF RECORD OR NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL PUBLIC AGENCIES AND FRANCHISE UTILITIES 48 HOURS PRIOR TO CONSTRUCTION (TEXAS811 1-800-344-8377). THE CONTRACTOR MAY BE REQUIRED TO EXPOSE THESE FACILITIES AT THEIR OWN COST.
- 10. THE CONTRACTOR MUST CONTACT CITY OF BOERNE DEVELOPMENT SERVICES IMMEDIATELY IF ANY DAMAGE TO EXISTING UTILITIES OCCURS. ANY DAMAGE TO UTILITIES RESULTING FROM CONTRACTOR'S OPERATIONS SHALL BE RESTORED AT THEIR EXPENSE.
- 11. THE CONTRACTOR SHALL IMMEDIATELY REPAIR OR REPLACE ANY PHYSICAL DAMAGE TO PRIVATE PROPERTY, INCLUDING, BUT NOT LIMITED TO FENCES, WALLS, PAVEMENT, GRASS, TREES, AND LAWN SPRINKLER AND IRRIGATION SYSTEM AT THEIR OWN COST.
- 12. ANY DISCREPANCIES ON THE INFRASTRUCTURE DRAWINGS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER AND CITY OF BOERNE DEVELOPMENT SERVICES BEFORE COMMENCING WORK. NO FIELD CHANGES OR DEVIATIONS FROM THE INFRASTRUCTURE DRAWINGS ARE PERMITTED WITHOUT WRITTEN APPROVAL FROM THE CITY.
- 13. STORMWATER MANAGEMENT FACILITIES SHALL BE PROVIDED PRIOR TO SITE CONSTRUCTION OR CLEARING AND BE MAINTAINED DURING THE PROGRESS OF CONSTRUCTION.
- 14. THE CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY. ALL WORK REQUIRED SHALL BE CONDUCTED IN CONFORMANCE WITH CURRENT SAFETY CODES AND STANDARDS WITH JURISDICTION OVER THIS PROJECT
- 15. THE CONTRACTOR SHALL PROVIDE THE CITY ACCESS TO CITY PROPERTY, EASEMENTS, UTILITIES, AND FACILITIES AT ALL TIMES DURING CONSTRUCTION.
- 16. THE CONTRACTOR IS RESPONSIBLE FOR REQUIRED CONSTRUCTION SURVEYING AND STAKING AND SHALL NOTIFY THE CITY OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH ANY WORK.
- 17. THE CONTRACTOR SHALL VERIFY BENCHMARKS AND DATUMS PRIOR TO COMMENCING CONSTRUCTION OR STAKING OF IMPROVEMENTS.
- 18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL SURVEY MARKERS INCLUDING IRON RODS, PROPERTY CORNERS, OR SURVEY MONUMENTS WITHIN THE LIMITS OF THE CONSTRUCTION SITE AND OUTSIDE THE RIGHT-OF-WAY DURING CONSTRUCTION. ANY SURVEY MARKERS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR AT THEIR OWN COST.
- 19. ALL CONCRETE SHALL BE PLANT MIXED MEETING CITY SPECIFICATIONS WITH A MINIMUM OF 4,000 PSI AT 28 DAYS COMPRESSIVE STRENGTH UNLESS OTHERWISE SPECIFIED.
- 20. 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 THESE 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.
- 21. CONTRACTOR SHALL FURNISH A SET OF "AS-BUILT" DRAWINGS TO THE CITY OF BOERNE DEVELOPMENT SERVICES AT THE TIME OF FINAL INSPECTION. CONTRACTOR SHALL GIVE CITY AT LEAST TWO WORKING DAYS NOTICE PRIOR TO FINAL INSPECTION.

GEOTECHNICAL TESTING

- 1. ALL COMPACTION, CONCRETE, AND OTHER REQUIRED TEST RESULTS SHALL BE SENT TO THE DESIGN ENGINEER AND CITY DIRECTLY FROM THE TESTING AGENCY.
- 2. UPON COMPLETION OF CONSTRUCTION, A COPY OF ALL TESTING REPORTS SHALL BE COMPILED AND FORWARDED TO THE CITY OF BOERNE DEVELOPMENT SERVICES DEPARTMENT PRIOR TO FINAL ACCEPTANCE.
- 3. IT IS THE RESPONSIBILITY OF THE DEVELOPER, CONTRACTOR, SUBCONTRACTORS, BUILDERS, GEOTECHNICAL ENGINEER, AND DESIGN ENGINEER TO IMMEDIATELY NOTIFY THE CITY AND DESIGN ENGINEER IF THE PRESENCE OF GROUNDWATER WITHIN THE SITE IS EVIDENT. UPON NOTIFICATION, THE DESIGN ENGINEER SHALL RESPOND WITH PLAN REVISIONS FOR THE MITIGATION OF THE GROUNDWATER ISSUE. ALL CONSTRUCTION ACTIVITY IMPACTED BY THE DISCOVERY OF GROUNDWATER SHALL BE SUSPENDED UNTIL THE CITY APPROVES THE GROUNDWATER MITIGATION PLAN IN WRITING.

TRAFFIC CONTROL

- 1. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL TEMPORARY AND PERMANENT TRAFFIC CONTROL IN ACCORDANCE WITH THE MINIMUM REQUIREMENTS OF THE LATEST REVISION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) AND TXDOT BARRICADE AND CONSTRUCTION STANDARDS.
- 2. CONTRACTOR SHALL NOT IMPEDE TRAFFIC ON EXISTING STREETS, DRIVEWAYS, OR FIRE LANES OPEN TO THE PUBLIC.
- 3. CONTRACTOR TO PROVIDE TRAFFIC CONTROL PLAN TO CITY AT LEAST 3 BUSINESS DAYS IN ADVANCE OF COMPLETING WORK IN A CITY RIGHT-OF-WAY.
- 4. ALL TEMPORARY SIGNS, BARRICADES, WARNING LIGHTS AND OTHER MISCELLANEOUS TRAFFIC CONTROL MEASURES SHALL BE REMOVED AND ORIGINAL TRAFFIC CONTROL MEASURES REPLACED AT THE END OF THE CONTRACTOR'S CONSTRUCTION OPERATION.

EROSION CONTROL NOTES

- 1. ALL EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO SITE DISTURBANCE AND SHALL REMAIN IN PLACE UNTIL FINAL GRADING AND PAVING IS COMPLETE AND VEGETATION IS ESTABLISHED WITH 85% COVERAGE ACHIEVED.
- 2. CONTRACTOR IS RESPONSIBLE FOR PROPER MAINTENANCE OF THE REQUIRED EROSION CONTROL DEVICES THROUGHOUT THE ENTIRE CONSTRUCTION PROCESS. EROSION CONTROLS SHALL BE REPAIRED OR REPLACED AS INSPECTION DEEMS NECESSARY, OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE. ACCUMULATED SILT IN ANY EROSION CONTROL DEVICE SHALL BE REMOVED AND SHALL BE DISTRIBUTED ON-SITE IN A MANNER NOT CONTRIBUTING TO ADDITIONAL SILTATION.
- 3. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT EROSION CONTROL MEASURES AND STORMWATER CONTROL IS SUFFICIENT TO MITIGATE OFF-SITE IMPACTS ARE IN PLACE AT ALL STAGES OF CONSTRUCTION.
- 4. THE CITY INSPECTOR HAS THE AUTHORITY TO HAVE THE CONTRACTOR MODIFY THE EROSION CONTROLS AT THE DEVELOPER'S EXPENSE. THE DEVELOPER SHALL BE NOTIFIED OF THESE MODIFICATIONS PRIOR TO COMMENCEMENT OF THE MODIFICATIONS.
- 5. CONSTRUCTION OPERATIONS SHALL BE MANAGED SO THAT AS MUCH OF THE SITE AS POSSIBLE IS LEFT COVERED WITH TOPSOIL AND VEGETATION.
- 6. CONTRACTOR TO REMOVE GRASS AND STRIP TOPSOIL TO DEPTHS ENCOUNTERED AND STOCKPILE TOPSOIL TO BE DISTRIBUTED DURING FINAL GRADING OF THE DISTURBED AREAS.
- 7. CONTRACTOR SHALL CONSTRUCT A STABILIZED CONSTRUCTION ENTRANCE AT ALL PRIMARY POINTS OF ACCESS. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL CONSTRUCTION TRAFFIC UTILIZES THE STABILIZED CONSTRUCTION ENTRANCES AT ALL TIMES FOR INGRESS/EGRESS TO THE SITE.
- 8. CONTRACTOR IS RESPONSIBLE FOR KEEPING STREETS AND DRIVEWAYS ADJACENT TO THE PROJECT FREE FROM MUD AND DEBRIS AT ALL TIMES. CONTRACTOR SHALL CLEAN AND REMOVE ALL LOOSE MATERIAL RESULTING FROM CONSTRUCTION OPERATIONS.
- 9. THE CONTRACTOR SHALL TAKE ALL AVAILABLE PRECAUTIONS TO CONTROL DUST.
- 10. AS INLETS ARE COMPLETED, TEMPORARY SEDIMENT BARRIERS SHALL BE INSTALLED. PRIOR TO FINAL ACCEPTANCE BY THE CITY OF BOERNE, ALL TEMPORARY INLET BARRIERS SHALL BE REMOVED AND REPLACED WITH CONTROLS TO PREVENT SEDIMENT FROM ENTERING THE STREET ROW.

11. THE CONTRACTOR IS REQUIRED TO INSPECT THE CONTROLS AND FENCES AT WEEKLY INTERVALS AND AFTER SIGNIFICANT RAINFALL EVENTS TO ENSURE THAT THEY ARE FUNCTIONING PROPERLY. THE PERSON(S) RESPONSIBLE FOR MAINTENANCE OF CONTROLS AND FENCES SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES SIX (6) INCHES.

- 12. DISTURBED PORTIONS OF THE SITE MUST BE STABILIZED. STABILIZATION PRACTICES MUST BE INITIATED WITHIN 14 DAYS IN PORTIONS OF THE SITE WHERE CONSTRUCTION HAS BEEN EITHER TEMPORARILY OR PERMANENTLY CEASED, UNLESS EXCEPTED WITHIN THE TPDES PERMIT.
- 13. CONTRACTOR SHALL INSPECT DISTURBED AREAS, MATERIAL STORAGE AREAS EXPOSED TO PRECIPITATION, STRUCTURAL CONTROL MEASURES, AND VEHICLE ENTRY AND EXIT AREAS AT LEAST ONCE EVERY 14 CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT OF 0.5 INCHES OR GREATER.
- 14. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED BY THE CONTRACTOR AT FINAL ACCEPTANCE OF THE PROJECT BY THE CITY OF BOERNE.

GRADING NOTES

- 1. CONTRACTOR IS REQUIRED TO OBTAIN AN APPROVED GRADING PERMIT FROM THE CITY, IF APPLICABLE.
- CONTRACTOR TO ENSURE POSITIVE DRAINAGE AT ALL TIMES DURING CONSTRUCTION.
 CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES WHICH ARE TO REMAIN IN PLACE AND UNDISTURBED DURING CONSTRUCTION.
- 4. CONTRACTOR SHALL NOT PLACE ANY FILL OR WASTE MATERIAL IN THE 100-YEAR FLOODPLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOODPLAIN DEVELOPMENT PERMIT.

PAVING NOTES

- 1. ALL CONSTRUCTION AND TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF BOERNE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION.
- 2. SUBMITTALS FOR LIME, BASE, PRIME COAT, TACK COAT, AND ASPHALT, AS APPLICABLE, SHALL BE APPROVED PRIOR TO INSTALLATION. INSTALLATION PRIOR TO SUBMITTAL APPROVAL MY REQUIRE REMOVAL/REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
- 3. NO EARTHWORK, LIME APPLICATION, OR OTHER PREPARATION OF THE SUBGRADE FOR PAVING OF STREETS SHALL BE INITIATED WITHOUT AUTHORIZATION FROM THE CITY OF BOERNE DEVELOPMENT SERVICES. THE CITY WILL AUTHORIZE THE SUBGRADE WORK IN PREPARATION FOR THE PAVING AFTER UTILITY TRENCH BACKFILL TESTING IS COMPLETE AND VERIFIED TO MEET CITY REQUIREMENTS.
- 4. THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING ALL STREETS, CROSSWALKS, SIDEWALKS, DRIVEWAYS, AND ANY OTHER SURFACE RELATED TO AN "ACCESSIBLE ROUTE" PER THE TEXAS ACCESSIBILITY STANDARDS (TAS), LATEST EDITION. THE CONTRACTOR SHALL REMOVE AND REPLACE ANY CONSTRUCTED OR INSTALLED ITEMS NOT MEETING THE CURRENT TAS REQUIREMENTS AT THEIR OWN COST.
- 5. EMBANKMENT/FILL MATERIAL UNDER PROPOSED STREETS MUST BE FREE OF LARGE STONES (4" WHEN BACKFILL IS 12" OR GREAT IN DEPTH OR 2.5" WHEN FILL IS LESS THAN 12" IN DEPTH), HAVE A PLASTICITY INDEX (PI) LESS THAN 20 PER ASTM D4318, AND BE COMPACTED TO 95%.

 6. UTILITIES MUST BE MAINTAINED TO PROPER LINE AND GRADE DURING CONSTRUCTION OF THE
- PAVING FOR THIS PROJECT.

 7. FLEXIBLE BASE UNDER ROADWAYS REQUIRES 100% COMPACTION AND MUST EXTEND AT LEAST 18
- INCHES BEHIND THE BACK OF CURB.

 8. TESTING OF MATERIALS REQUIRED FOR THE CONSTRUCTION OF PAVING IMPROVEMENTS SHALL BE PERFORMED BY A GEOTECHNICAL TESTING COMPANY AND PROVIDE OPPORTUNITY TO BE WITNESSED BY A CITY INSPECTOR. ALL TESTING MUST BE SCHEDULED WITH THE CITY OF BOERNE DEVELOPMENT SERVICES DEPARTMENT.

UTILITIES

GENERAL

- ALL CONSTRUCTION, TESTING, CLEANING, AND DISINFECTION SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF BOERNE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION.
- 2. CONTRACTOR SHALL NOT OPERATE AN EXISTING VALVES. THE CITY MUST BE PRESENT DURING ANY WORK COMPLETED ON EXISTING CITY UTILITIES. THE CONTRACTOR IS NOT PERMITTED TO COMPLETE GAS WORK ON EXISTING CITY GAS MAINS AT ANY TIME.
- 3. THE CONTRACTOR MUST COORDINATE ALL UTILITY TIE-INS WITH THE CITY. NO TIE-INS SHALL BE MADE TO THE EXISTING UTILITY SYSTEM UNTIL ALL TEST RESULTS HAVE BEEN PROVIDED TO THE CITY AND ARE VERIFIED.
- 4. UNLESS THE DEVELOPER HAS RECEIVED PRIOR WRITTEN PERMISSION TO THE CONTRARY FROM THE CITY MANAGER, ALL UTILITIES, INCLUDING BUT NOT LIMITED TO WATER, RECLAIMED WATER, SEWER, GAS, AND ELECTRIC UTILITIES MUST BE INSTALLED PRIOR TO THE PAVING OF A STREET OR ALLEY OR PORTION THEREOF.
- 5. PRIOR TO RECEIVING BULK WATER, THE CONTRACTOR MUST APPLY FOR A BULK WATER METER. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING A CITY APPROVED BACKFLOW DEVICE.
- 6. ALL MANHOLES IN STREETS, VALVES, AND BLOW-OFFS SHALL HAVE CONCRETE ENCASEMENTS.
- 7. ONE DENSITY TEST PER 8-INCH LIFT IS REQUIRED EVERY 500 FEET FOR TRENCHES UP TO 12 FEET IN DEPTH AND EVERY 300 FEET FOR TRENCHES 12 FEET AND DEEPER. DENSITY TESTING MUST BE COMPLETED FOR EACH LIFT. POTHOLING AND STAIR STEPPING IS NOT PERMITTED.
- 8. ALL VALVE BOXES, METER BOXES, FIRE HYDRANTS, MANHOLES, ETC. ARE REQUIRED TO BE ADJUSTED AS REQUIRED TO MATCH FINAL GRADES.
- 9. THE CONTRACTOR IS RESPONSIBLE FOR STAKING UTILITIES PRIOR TO THE FINAL INSPECTION TO VERIFY LOCATION, FINISH GRADE, AND DEPTH.

 WATER
- 10. WHERE THE MINIMUM NINE FEET SEPARATION BETWEEN WATER AND SANITARY SEWER LINES CANNOT BE MAINTAINED, THE CONTRACTOR MUST MEET THE REQUIREMENTS OF 30 TAC 217.53(D)
- AND 30 TAC 290.44(E).

 11. ALL WATER LINES SHALL BE INSTALLED BETWEEN FOUR AND SIX FEET OR AS SHOWN ON THE APPROVED INFRASTRUCTURE DRAWINGS.
- 12. ALL WATER MAINS SHALL BE HYDROSTATICALLY TESTED BY THE CONTRACTOR PER CITY REQUIREMENTS.
- 13. FINAL CONNECTION TO THE EXISTING WATER MAIN SHALL NOT BE MADE UNTIL THE WATER MAIN HAS BEEN PRESSURE TESTED, CHLORINATED, AND THE CITY OF BOERNE RELEASED THE MAIN FOR TIE-IN AND USE.
- 14. TRACER WIRE LOCATE BOX SHALL BE INSTALLED PER CITY REQUIREMENTS AT ALL WATER VALVES INCLUDING FIRE HYDRANT VALVES AND BLOWOFFS. FOR GROUPING OF VALVES AT ONE GENERAL LOCATION, ONE LOCATE BOX MAY BE USED.
- 15. NO VALVES, HYDRANTS, BLOWOFFS, ETC., SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
- 16. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING NO SANITARY SEWER OVERFLOWS (SSOS) OCCUR AS A RESULT OF WORK. CONTRACTOR SHALL CONTACT THE CITY IMMEDIATELY UPON FINDING A SSO.
- 17. ALL PVC SEWER PIPE WITH OVER 14 FEET OF COVER SHALL BE EXTRA STRENGTH, SDR 26 MINIMUM PIPE STIFFNESS OF 115 PSI FROM MANHOLE TO MANHOLE.
- 18. ALL SANITARY SEWER MANHOLES REQUIRE CHIMNEY SEALS AND INTERIOR/EXTERIOR COATINGS PER CITY REQUIREMENTS.
- 19. AFTER COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL CLEAN THE SEWER MAINS AND SERVICE LINES AND TESTING WILL BE DONE BY TV CAMERA AND OBSERVED BY THE CITY OF BOERNE INSPECTOR, WASTEWATER ENGINEERING PERSONNEL, AND CONTRACTOR AS THE CAMERA IS RUN. ANY ABNORMALITIES, SUCH AS BROKEN PIPE OR MISALIGNED JOINTS, MUST BE REPLACED BY THE CONTRACTOR AT THEIR OWN EXPENSE.
- 20. 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 PER CITY REQUIREMENTS.
- 21. NO TESTING WILL BE PERFORMED PRIOR TO 30 DAYS FROM COMPLETE INSTALLATION OF THE SANITARY SEWER LINES. THE FOLLOWING SEQUENCE WILL BE STRICTLY ADHERED TO: (1) MANDREL TEST: (2) AIR TEST: (3) TELEVISING.

TREES

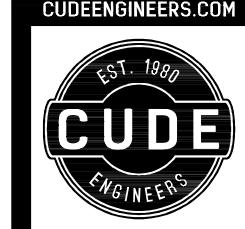
- 1. A TREE REMOVAL PERMIT IS REQUIRED PRIOR TO REMOVAL OF ANY TREE WITHIN THE CITY LIMITS
- 2. ALL TREES NOT AUTHORIZED TO BE REMOVED MUST BE PROTECTED TO PREVENT DAMAGE AROUND THE ROOT PROTECTION ZONE.

REVEGETATION

- 1. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED SMOOTH. THE CONTRACTOR MUST LOOSEN THE SURFACE OF THE SOIL TO A DEPTH OF 2 INCHES AND REMOVE ALL STONES AND DEBRIS OVER 2 INCHES IN ANY DIMENSION. THE AREA SHALL BE REVEGETATED AND MAINTAINED UNTIL SOIL IS STABILIZED IN ALL AREAS. ANY AREA DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE PROJECT SHALL BE CORRECTED BY THE CONTRACTOR.
- 2. THE CONTRACTOR MUST CONSTRUCT AND MAINTAIN A PERMANENT STABLE PROTECTIVE COVER (GRASS) FOR EROSION AND SEDIMENT CONTROL ON ALL LAND SURFACES EXPOSED OR DISTURBED BY CONSTRUCTION OF THE PERMITTED PROJECT. THE PROTECTIVE COVER MUST BE INSTALLED WITHIN 14 DAYS AFTER FINAL GRADING OF THE AFFECTED LAND SURFACE. A PERMANENT STABLE COVER MUST BE ESTABLISHED WITHIN 60 DAYS OF ITS INSTALLATION.
- 3. 85% OF DISTURBED AREAS MUST HAVE VEGETATION ESTABLISHED PRIOR TO ACCEPTANCE BY THE CITY OF BOERNE.
- 4. DISTURBED AREAS THAT ARE SEEDED OR SODDED SHALL BE CHECKED PERIODICALLY TO SEE THAT GRASS COVERAGE IS PROPERLY MAINTAINED. DISTURBED AREAS SHALL BE WATERED, FERTILIZED, AND RE-SEEDED OR RE-SODDED IF NECESSARY.

RECORD DRAWINGS

- 1. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE THE DESIGN ENGINEER A COPY OF AS-BUILT PLANS IDENTIFYING ALL DEVIATIONS OR VARIATIONS FROM THE ORIGINAL PLANS.
- 2. THE DESIGN ENGINEER SHALL PROVIDE TO THE CITY OF BOERNE THE "PLAN OF RECORD", SIGNED AND SEALED BY THE DESIGN ENGINEER.
- 3. THE "PLAN OF RECORD" MUST INCLUDE PRINT LINE DATA FOR ALL GAS MAINS AND SERVICE LINES.



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

RAL CONSTRUCTION NO

REGENT

DATE 08/15/2023

PROJECT NO.

02133.210

CHECKED BY

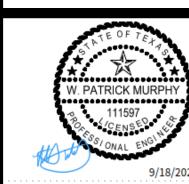
WPM

DRAWN BY RM/MW/MS

REVISIONS

1. 07/31/2024 - UPDATE TO CURRENT COB NOTE

2. 3. 4. 5. 6. 7.

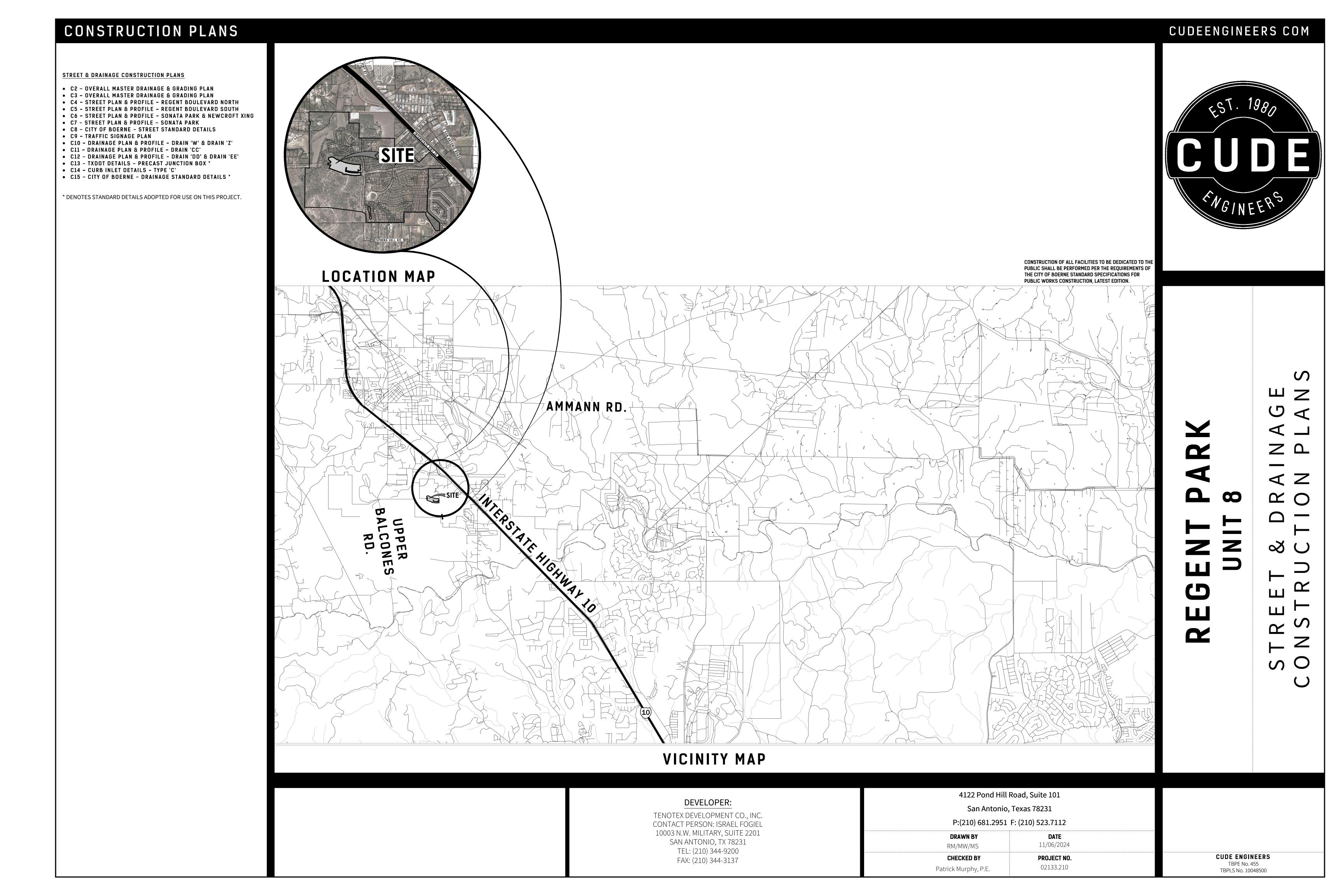


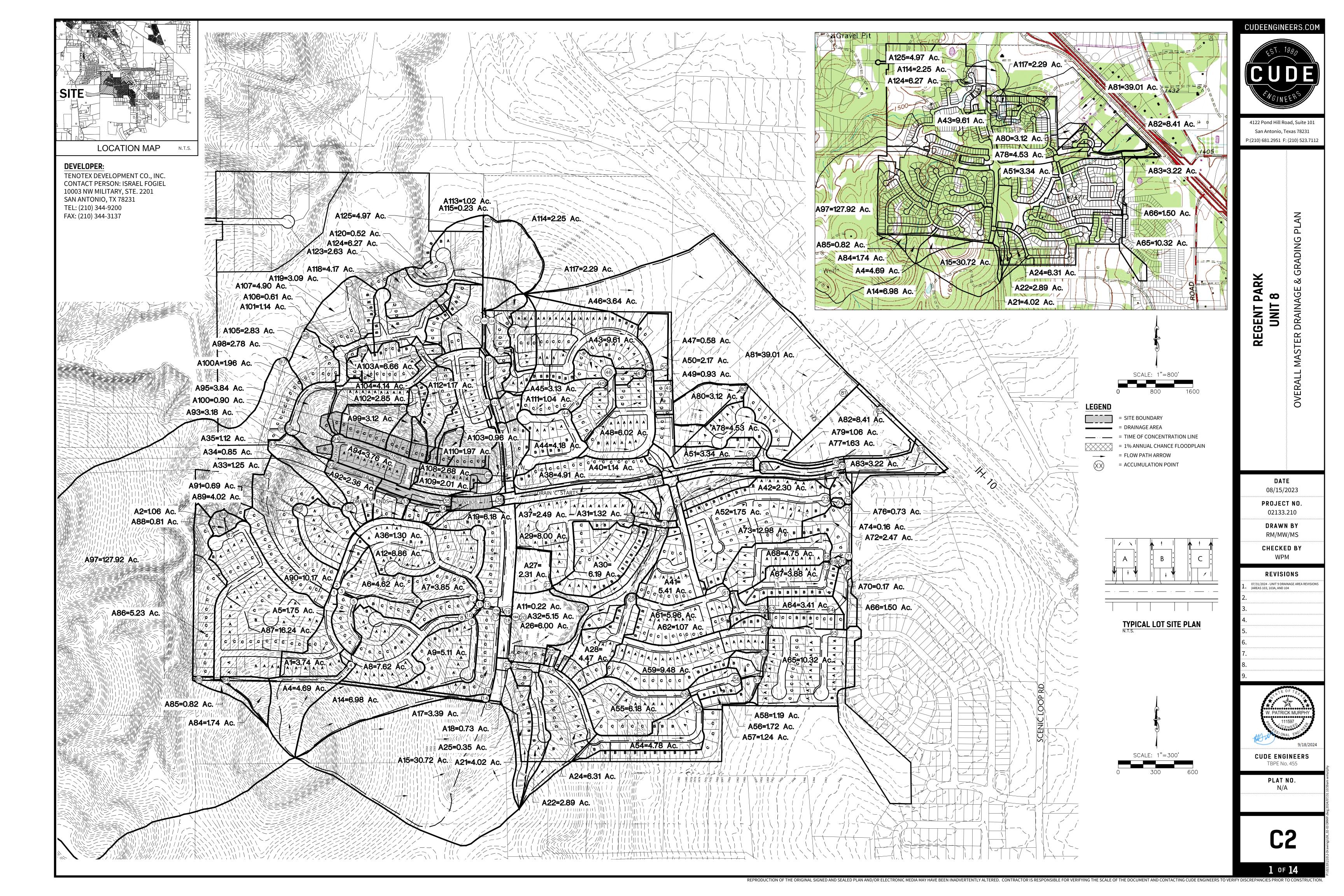
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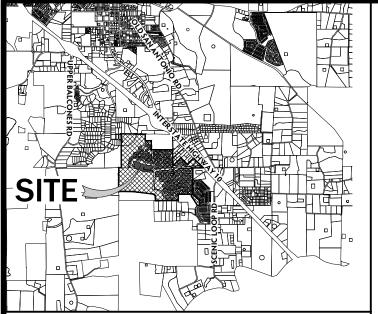
> PLAT NO. N/A

1 OF 1

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







LOCATION MAP

DEVELOPER:

TENOTEX DEVELOPMENT CO., INC. CONTACT PERSON: ISRAEL FÓGIEL 10003 NW MILITARY, STE. 2201 SAN ANTONIO, TX 78231 TEL: (210) 344-9200 FAX: (210) 344-3137

| | ro . | | <u> </u> | Sheet Flow | Tc Compuat | ions | | | <u> </u> | Shallow Cor | nc. Tc Compua | tions | | | nnel Flov mputatio | ons | E | | rerall | 5 |
|--------------------|------------------------|-------------------------|----------------|-------------------------------|-------------------------------|----------------------------|--------------------------|-------------------------|----------------|-------------------------------|-------------------------------|----------------------------|--------------------------|----------------------------|-----------------------|--------------------------|-----------------------------------|------------------------------|-----------------------------------|------------------------------|
| Drainage Point | Drainage Area (Ac.) | Length | Paved (Y or N) | Upstream Elev. | Downstream Elev | Slope | Time of Concentration | Length | Paved (Y or N) | Upstream Elev. | Downstream Elev | Slope | Time of Concentration | Length | Velocity (fps) | Time of Concentration | Time of Concentration (min) | Lag Time (0.6 x Tc) (min) | Time of Concentration (hrs) | Lag Time (0.6 x Tc) (hrs) |
| 1 2 3 | 3.74 1.06 0.00 | 186.0 125.0 186.0 | Z Z | 1626.90 1577.98 1626.90 | 1617.10 1576.10 1617.10 | 5.27% 1.50% 5.27% | 14 15 14 | 0.0 0.0 0.0 | Z Z | 1250.40 1255.20 1250.40 | 1223.20 1235.40 1223.20 | | 0 0 | 969.0 395.0 969.0 | 6 6 | 2.69 1.10 2.69 | 16.69 16.10 16.69 | 9.66 10.02 | 0.278 0.268 0.278 | 0.167 0.161 0.167 |
| 4 5 | 4.69 1.75 | 300.0 300.0 | N N | 1680.00 | 1661.10 | 6.30% | 16 | 387.1 387.1 | N | 1661.10 1661.10 | 1626.70 1626.70 | 8.89% 8.89% | 1.3 | 627.0 | 6 | 1.74 | 19.08 | 11.45 | 0.318 | 0.191 |
| 6 7 8 | 4.62 3.85 7.62 | 300.0 300.0 300.0 | N N | 1680.00 1680.00 1582.18 | 1661.10 1661.10 1564.04 | 6.30% 6.30% 6.05% | 16 16 | 387.1 387.1 107.6 | N N | 1661.10 1661.10 1564.04 | 1626.70 1626.70 1556.00 | 8.89% 8.89% 7.47% | 1.3 1.3 | 1744.0 2190.0 592.0 | 6 6 | 4.84 6.08 1.64 | 22.18 23.42 18.05 | 13.31 14.05 10.83 | 0.370 0.390 0.301 | 0.222 0.234 0.181 |
| 9 | 5.11 | 300.0 300.0 | N N | 1565.80 1582.18 | 1543.80 1564.04 | 7.33% 6.05% | 16 16 | 56.2 107.6 | N N | 1543.80 1564.04 | 1539.10 1556.00 | 8.36% 7.47% | 0.2 | 590.0 592.0 | 6 | 1.64 | 17.84 18.05 | 10.70 10.83 | 0.297 0.301 | 0.178 0.181 |
| 11 12 13 | 0.22 8.86 0.00 | 300.0 300.0 300.0 | N N | 1582.18 1577.00 1680.00 | 1564.04 1568.40 1661.10 | 6.05% 2.87% 6.30% | 16 18 16 | 107.6 212.6 387.1 | N N N | 1564.04 1568.40 1661.10 | 1556.00 1552.10 1626.70 | 7.47% 7.67% 8.89% | 0.4 0.8 1.3 | 746.0 612.0 2275.0 | 6 6 | 2.07 1.70 6.32 | 18.48 20.49 23.66 | 11.09 12.29 14.20 | 0.308 0.342 0.394 | 0.185 0.205 0.237 |
| 14 15 16 | 6.98 30.72 0.00 | 300.0 300.0 300.0 | N N | 1680.00 1680.00 | 1651.90 1655.20 | 9.37% 8.27% 8.27% | 15 15 15 | 550.0 550.0 | N N N | 1651.90 1655.20 | 1591.60 1585.00 | 10.96% 12.76% 12.76% | 1.7 1.6 | 796.0 1530.0 1530.0 | 6 6 | 2.21 4.25 4.25 | 18.93 20.83 20.83 | 11.36 12.50 12.50 | 0.316 0.347 0.347 | 0.189 0.208 0.208 |
| 17 17A | 3.39 | 300.0 300.0 300.0 | N N | 1680.00 1680.00 1680.00 | 1655.20 1655.20 1661.10 | 8.27% 8.27% 6.30% | 15 15 | 550.0 550.0 387.1 | N N | 1655.20 1655.20 1661.10 | 1585.00 1585.00 1626.70 | 12.76% 12.76% 8.89% | 1.6 | 2268.0 2397.0 | 6 | 6.30 | 22.88 | 13.73 14.40 | 0.347 | 0.229 |
| 18 19 19A | 0.73 6.18 0.00 | 12.0 300.0 300.0 | N N N | 1504.70 1555.96 1555.96 | 1504.46 1537.69 1537.69 | 2.00% 6.09% 6.09% | 13 16 | 0.0 347.4 347.4 | N N N | 1661.10 1537.69 1537.69 | 1626.70 1509.10 1509.10 | 8.23% 8.23% | 1.2 1.2 | 347.0 905.0 905.0 | 6 6 | 0.96 2.51 2.51 | 13.96 19.75 | 8.38 11.85 11.85 | 0.233 0.329 0.329 | 0.140 0.198 0.198 |
| 20 21 | 0.00 4.02 | 300.0 | N N | 1680.00 1573.00 | 1661.10 1560.00 | 6.30% | 16 | 387.1 550.0 | N N | 1661.10 1560.00 | 1626.70 1523.60 | 8.89% | 1.3 | 2515.0 394.0 | 6 | 6.99 | 24.33 | 14.60 | 0.405 | 0.243 |
| 22 23 24 | 2.89 0.00 6.31 | 300.0 300.0 300.0 | N N | 1573.00 1573.00 1573.00 | 1558.90 1560.00 1558.10 | 4.70% 4.33% 4.97% | 17 18 17 | 280.1 550.0 537.7 | N N | 1558.90 1560.00 1558.10 | 1546.40 1523.60 1527.30 | 4.46% 6.62% 5.73% | 1.4 2.2 2.3 | 796.0 394.0 682.0 | 6 6 | 1.09 1.89 | 20.57 21.28 21.20 | 12.34 12.77 12.72 | 0.343 0.355 0.353 | 0.206 0.213 0.212 |
| 25 26 | 0.35 6.00 | 300.0 300.0 | N N | 1573.00 1680.00 | 1558.10 1661.10 | 4.97% 6.30% | 17 | 537.7 387.1 | N N | 1558.10 1661.10 | 1527.30 1626.70 | 5.73% 8.89% | 1.3 | 915.0 3149.0 | 6 | 2.54 8.75 | 21.85 | 13.11 | 0.364 | 0.219 |
| 27 28 29 | 2.31 4.47 8.00 | 267.6 300.0 300.0 | N N | 1502.90 1501.70 1502.40 | 1485.90 1487.90 1484.10 | 6.35% 4.60% 6.10% | 15 17 16 | 94.3 112.2 | N N | 1.00 1487.90 1484.10 | 0.00 1483.70 1478.20 | 0.00% 4.45% 5.26% | 0 0.5 0.5 | 290.0 505.0 702.0 | 6 6 | 0.81 1.40 1.95 | 15.81 18.86 18.45 | 9.48 11.32 11.07 | 0.263 0.314 0.308 | 0.158 0.189 0.185 |
| 30 31 32 | 6.19 1.32 5.15 | 300.0 300.0 300.0 | N N | 1480.90 1502.40 1680.00 | 1470.90 1484.10 1661.10 | 3.33% 6.10% 6.30% | 18 16 | 309.8 112.2 387.1 | N N N | 1470.90 1484.10 1661.10 | 1462.60 1478.20 1626.70 | 2.68% 5.26% 8.89% | 2 0.5 1.3 | 84.0 997.0 4086.0 | 6 6 | 0.23 2.77 11.35 | 20.19 19.27 28.69 | 12.12 11.56 17.21 | 0.337 0.321 0.478 | 0.202 0.193 0.287 |
| 33 34 | 1.25 | 270.2 230.1 | N N | 1572.34 1566.90 | 1558.34 1555.63 | 5.18% | 16 15 | 307.1 | N N | 1001.10 | 1020.70 | 0.00% | 0 | 200.0 | 6 | 0.56 0.65 | 16.56 15.65 | 9.93 9.39 | 0.276 | 0.166 0.157 |
| 35 36 37 | 1.12 1.30 2.49 | 270.2 270.2 270.2 | N N | 1572.34 1572.34 1572.34 | 1558.34 1558.34 1558.34 | 5.18% 5.18% 5.18% | 16 16 | | N N | | | 0.00% 0.00% 0.00% | 0 0 | 576.0 985.0 2276.0 | 6 6 | 1.60 2.74 6.32 | 17.60 18.74 22.32 | 10.56 11.24 13.39 | 0.293 0.312 0.372 | 0.176 0.187 0.223 |
| 38 | 4.91 | 186.7 | N N | 1498.02 1572.34 | 1489.23 1558.34 | 4.71% | 14 | 0.0 | N N | 1.00 | 0.00 | 0.00% | 0 | 870.0 2276.0 | 6 | 2.42 | 16.42 | 9.85 | 0.274 | 0.164 |
| 40 41 42 | 1.14 5.41 2.30 | 300.0 273.7 300.0 | N N N | 1680.00 1469.80 1680.00 | 1661.10 1461.60 1661.10 | 6.30% 3.00% 6.30% | 16 18 16 | 387.1 0.0 387.1 | N N N | 1661.10 1.00 1661.10 | 1626.70 0.00 1626.70 | 8.89% 0.00% 8.89% | 1.3 0 1.3 | 4249.0 750.0 4793.0 | 6 6 | 11.80 2.08 13.31 | 29.14 20.08 30.65 | 17.49 12.05 18.39 | 0.486 0.335 0.511 | 0.291 0.201 0.307 |
| 43 44 | 9.61 4.18 | 251.0 227.3 | N N | 1501.40 1504.50 | 1493.60 1501.10 | 3.11% 1.50% | 17 19 | 0.0 | N N | 1.00 | 0.00 | 0.00% | 0 | 1198.0 569.0 | 6 | 3.33 1.58 | 20.33 | 12.20 12.35 | 0.339 | 0.203 0.206 |
| 45 46 47 | 3.13 3.64 0.58 | 227.3 294.9 227.3 | N N N | 1504.50 1500.96 1504.50 | 1501.10 1485.06 1501.10 | 1.50% 5.39% 1.50% | 19 16 19 | 0.0 | N N | 1.00 1.00 1.00 | 0.00 0.00 0.00 | 0.00% 0.00% 0.00% | 0 0 | 985.0 340.0 1331.0 | 6 6 | 2.74 0.94 3.70 | 21.74 16.94 22.70 | 13.04 10.17 13.62 | 0.362 0.282 0.378 | 0.217 0.169 0.227 |
| 48 | 6.02 0.93 | 288.9 149.0 | N N | 1501.00 1472.10 | 1484.80 1467.70 | 5.61% 2.95% | 16 | 0.0 | N N | 1.00 | 0.00 | 0.00% | 0 | 676.0 240.0 | 6 | 1.88 0.67 | 17.88 | 10.73 8.80 | 0.298 | 0.179 |
| 50 51 52 | 2.17 3.34 1.75 | 227.3 150.8 195.2 | N N N | 1504.50 1472.10 1474.00 | 1501.10 1467.80 1468.40 | 1.50% 2.85% 2.87% | 19 14 16 | 0.0 | N N | 1.00 1.00 1.00 | 0.00 0.00 0.00 | 0.00% 0.00% 0.00% | 0 0 | 1512.0 1021.0 731.0 | 6 6 | 2.84 2.03 | 16.84 18.03 | 13.92 10.10 10.82 | 0.387 0.281 0.301 | 0.232 0.168 0.180 |
| 53 54 55 | 0.00 4.78 6.18 | 300.0 300.0 300.0 | Z Z | 1680.00 1490.60 1517.80 | 1661.10 1480.70 1497.40 | 6.30% 3.30% 6.80% | 16 18 16 | 387.1 129.8 100.4 | N N | 1661.10 1480.70 1497.40 | 1626.70 1477.20 1491.10 | 8.89% 2.70% 6.27% | 1.3 0.8 0.4 | 5036.0 93.0 527.0 | 6 6 | 13.99 0.26 1.46 | 31.33 19.08 17.87 | 18.80 11.45 10.72 | 0.522 0.318 0.298 | 0.313 0.191 0.179 |
| 56 57 | 1.72 | 300.0 300.0 | N N | 1517.80 1517.80 1490.60 | 1497.40 1497.40 1480.70 | 6.80% | 16 | 100.4 | N N | 1497.40 1497.40 1480.70 | 1491.10 1491.10 1477.20 | 6.27% | 0.4 | 956.0 687.0 | 6 | 2.66 | 19.07 | 11.44 12.44 | 0.318 0.345 | 0.177 0.191 0.207 |
| 58 59 60 | 9.48 0.00 | 300.0 300.0 300.0 | N N N | 1490.60 1493.90 1490.60 | 1480.70 1481.40 1480.70 | 3.30% 4.17% 3.30% | 18 18 18 | 129.8 36.2 129.8 | N N N | 1480.70 1481.40 1480.70 | 1477.20 1480.50 1477.20 | 2.70% 2.49% 2.70% | 0.8 0.2 0.8 | 909.0 1187.0 1093.0 | 6 6 | 2.53 3.30 3.04 | 21.35 21.54 21.86 | 12.81 12.92 13.11 | 0.356 0.359 0.364 | 0.213 0.215 0.219 |
| 61 62 | 5.96 1.07 | 297.4 297.4 | N N | 1477.60 1477.60 | 1469.10 1469.10 | 2.86% | 18 | 0.0 | N N | 1.00 | 0.00 | 0.00% | 0 | 614.0 | 6 | 1.71 | 19.71 20.83 | 11.82 | 0.328 0.347 | 0.197 0.208 |
| 63 64 65 | 0.00 3.41 10.32 | 300.0 300.0 300.0 | N N N | 1490.60 1490.60 1458.19 | 1480.70 1480.70 1450.88 | 3.30% 3.30% 2.44% | 18 18 19 | 129.8 129.8 108.4 | N N N | 1480.70 1480.70 1450.88 | 1477.20 1477.20 1448.87 | 2.70% 2.70% 1.85% | 0.8 | 1241.0 1808.0 600.0 | 6 6 | 3.45 5.02 1.67 | 22.27 23.84 21.49 | 13.36 14.31 12.89 | 0.371 0.397 0.358 | 0.223 0.238 0.215 |
| 66 67 | 1.50 3.88 | 300.0 150.4 | N N | 1490.60 1457.70 | 1480.70 1454.90 | 3.30% 1.86% | 18 | 129.8 | N | 1480.70 | 0.00 | 2.70% 0.00% | 0.8 | 2204.0 783.0 | 6 | 6.12 2.18 | 24.94 17.18 | 14.97 | 0.416 | 0.249 |
| 68 69 70 | 4.75 0.00 0.17 | 232.6 232.6 232.6 | N N N | 1457.00 1457.00 1457.00 | 1454.40 1454.40 1454.40 | 1.50% 1.50% 1.50% | 20 20 20 | 0.0 | N N | 1.00 1.00 1.00 | 0.00 0.00 0.00 | 0.00% 0.00% 0.00% | 0 0 | 889.0 889.0 1038.0 | 6 6 | 2.47 2.47 2.88 | 22.47 22.47 22.88 | 13.48 13.48 13.73 | 0.374 0.374 0.381 | 0.225 0.225 0.229 |
| 71 72 73 | 0.00 2.47 12.98 | 300.0 300.0 300.0 | N N | 1490.60 1490.60 1459.50 | 1480.70 1480.70 1452.40 | 3.30% 3.30% 2.37% | 18 18 19 | 129.8 129.8 33.1 | N N N | 1480.70 1480.70 1452.40 | 1477.20 1477.20 1451.80 | 2.70% 2.70% 1.81% | 0.8 0.8 0.3 | 2204.0 2609.0 1361.0 | 6 6 | 6.12 7.25 3.78 | 24.94 26.07 23.03 | 14.97 15.64 13.82 | 0.416 0.434 0.384 | 0.249 0.261 0.230 |
| 74 75 | 0.16 0.00 | 300.0 300.0 | N N | 1459.50 1490.60 | 1452.40 1480.70 | 2.37% | 19 | 33.1 33.1 129.8 | N N | 1452.40 1480.70 | 1451.80 1477.20 | 1.81% | 0.3 | 1513.0 2609.0 | 6 | 4.20 7.25 | 23.45 | 14.07 15.64 | 0.391 | 0.235 0.261 |
| 76 77 78 | 0.73 1.63 4.53 | 300.0 94.8 300.0 | N N | 1490.60 1434.10 1466.50 | 1480.70 1432.20 1453.10 | 3.30% 2.00% 4.47% | 18 13 18 | 129.8 0.0 52.7 | N N | 1480.70 1.00 1453.10 | 0.00 1451.70 | 2.70% 0.00% 2.66% | 0.8 | 2878.0 171.0 835.0 | 6 6 | 7.99 0.48 2.32 | 26.81 13.48 20.65 | 16.09 8.09 12.39 | 0.447 0.225 0.344 | 0.268 0.135 0.206 |
| 79 80 | 1.06 | 300.0 | N | 1680.00 1466.20 | 1661.10 1453.00 | 6.30% | 16 | 387.1 330.5 | N | 1661.10 1453.00 | 1626.70 1444.10 | 8.89% | 1.3 | 5725.0 | 6 | 15.90 | 33.24 | 19.95 | 0.554 | 0.332 |
| 81 82 83 | 39.01 8.41 3.22 | 300.0 300.0 182.4 | N N N | 1507.00 1680.00 1434.10 | 1501.90 1661.10 1425.80 | 1.70% 6.30% 4.55% | 16 14 | 550.0 387.1 0.0 | N N N | 1501.90 1661.10 | 1472.60 1626.70 0.00 | 5.33% 8.89% 0.00% | 2.5 1.3 | 2435.0 6314.0 585.0 | 6 6 | 6.76 17.54 1.63 | 29.21 34.88 15.63 | 17.53 20.93 9.38 | 0.487 0.581 0.260 | 0.292 0.349 0.156 |
| 84 85 | 1.74 0.82 | 300.0 | N N | 1667.40 1667.40 | 1626.10 1626.10 | 13.77% | 13 | 227.3 | N N | 1626.10 1626.10 | 1600.16 1600.16 | 11.41% | 0.7 | 229.0 | 6 | 0.00 | 13.69 | 8.21 8.60 | 0.228 | 0.137 |
| 86 87 88 | 5.23 16.24 0.81 | 300.0 300.0 300.0 | N N | 1563.30 1606.30 1606.30 | 1540.70 1590.40 1590.40 | 7.53% 5.30% 5.30% | 15 17 17 | 72.7 335.4 335.4 | N N N | 1540.70 1590.40 1590.40 | 1509.60 1569.70 1569.70 | 42.78% 6.17% 6.17% | 0.1 1.4 1.4 | 869.0 1075.0 | 6 6 | 0.00 2.41 2.99 | 15.11 20.80 21.38 | 9.07 12.48 12.83 | 0.252 0.347 0.356 | 0.151 0.208 0.214 |
| 89 90 91 | 4.02 10.17 0.69 | 300.0 300.0 100.7 | Z Z | 1573.10 1577.20 1572.60 | 1561.50 1565.20 1570.20 | 3.87% 4.00% 2.38% | 18 18 12 | 216.4 469.7 | N N N | 1561.50 1565.20 | 1550.90 1543.80 | 4.90% 4.56% 0.00% | 1 2.3 0 | 97.0 538.0 135.0 | 6 6 | 0.27 1.49 0.38 | 19.27 21.75 12.38 | 11.56 13.05 7.43 | 0.321 0.363 0.206 | 0.193 0.218 0.124 |
| 92 93 | 2.36 3.18 | 292.5 292.5 | N N | 1572.50 1572.50 | 1558.00 1558.00 | 4.96% 4.96% | 17 | | N N | | | 0.00% | 0 | 445.0 1030.0 | 6 | 1.24 2.86 | 18.24 19.86 | 10.94 11.92 | 0.304 0.331 | 0.182 0.199 |
| 94 95 96 | 3.76 3.84 0.00 | 182.8 244.8 182.8 | N N | 1552.90 1521.38 1552.90 | 1541.90 1490.64 1541.90 | 6.02% 12.56% 6.02% | 13 13 13 | | N N N | | | 0.00% 0.00% 0.00% | 0 0 | 488.0 573.9 840.1 | 6 6 | 1.36 1.59 2.33 | 14.36 14.59 15.33 | 8.61 8.76 9.20 | 0.239 0.243 0.256 | 0.144 0.146 0.153 |
| 97 98 | 127.92 2.78 | 0.0 | N | 1531.60 1531.60 | 1503.30 1502.34 | #DIV/0! #DIV/0! | 0 | | N | 1502.34 | 1488.68 | 0.00% | 0 | | 6 | 0.00 | | | | |
| 99 100 100A | 3.12 0.90 1.96 | 258.7 250.2 258.7 | N N N | 1534.13 1538.00 1534.13 | 1499.65 1490.00 1499.65 | 13.33% 19.18% 13.33% | 13 12 13 | | N | 1504.10 | 1481.50 | 0.00% 0.00% 0.00% | 0 | 474.9 148.7 714.1 | 6 6 | 1.32 0.41 1.98 | 14.32 12.41 14.98 | 8.59 7.45 8.99 | 0.239 0.207 0.250 | 0.143 0.124 0.150 |
| 101 102 103 | 1.14 2.85 0.96 | 93.5 137.1 262.3 | N N | 1475.60 1470.50 1537.44 | 1470.00 1465.30 1488.13 | 5.99% 3.79% 18.80% | 10 13 12 | | N N N | 1504.10 | 1481.50 | 0.00% 0.00% 0.00% | 0 0 | 140.0 276.0 152.7 | 6 6 | 0.39 0.77 0.42 | 10.39 13.77 12.42 | 6.23 8.26 7.45 | 0.173 0.229 0.207 | 0.104 0.138 0.124 |
| 103A 104 | 6.66 4.14 | 195.7 195.7 | N N N | 1478.80 1478.80 | 1470.30 1470.30 | 4.34% 4.34% | 15 15 | | N N | ,507.10 | , ro1.3U | 0.00% | 0 0 | 677.0 849.0 | 6 6 | 1.88 | 12.42 16.88 17.36 | 7.45 10.13 10.42 | 0.207 0.281 0.289 | 0.124 0.169 0.174 |
| 105 105A 106 | 2.83 4.14 0.61 | 158.3 195.7 106.4 | Z Z Z | 1473.80 1478.80 1483.80 | 1467.60 1470.30 1479.60 | 3.92% 4.34% 3.95% | 14 15 11 | | N N N | | | 0.00% 0.00% 0.00% | 0 0 | 363.0 849.0 234.0 | 6 6 | 1.01 2.36 0.65 | 15.01 17.36 11.65 | 9.01 10.42 6.99 | 0.250 0.289 0.194 | 0.150 0.174 0.117 |
| 106A 106B | 0.00 | 106.4 195.7 | N N | 1483.80 1478.80 | 1479.60 1470.30 | 3.95% 4.34% | 11 | | N N | | | 0.00% | 0 | 234.0 1506.5 | 6 | 0.65 4.18 | 11.65 19.18 | 6.99 11.51 | 0.194 0.320 | 0.117 0.192 |
| 107 108 109 | 4.90 2.68 2.01 | 195.7 300.0 300.0 | N N N | 1478.80 1544.20 1544.20 | 1470.30 1528.60 1528.60 | 4.34% 5.20% 5.20% | 15 17 17 | 5.3 | N N N | 1528.60 1528.60 | 1528.50 1528.50 | 0.00% 1.89% 1.89% | 0 0 | 1976.0 153.0 726.0 | 6 6 | 5.49 0.43 2.02 | 20.49 17.47 19.06 | 12.29 10.48 11.43 | 0.341 0.291 0.318 | 0.205 0.175 0.191 |
| 110 111 | 1.97 1.04 | 300.0 300.0 | N N | 1542.00 1544.20 | 1516.70 1528.60 | 8.43% 5.20% | 15 17 | 129.4 5.3 | N N | 1516.70 1528.60 | 1508.50 1528.50 | 6.34% 1.89% | 0.5 | 704.0 923.0 | 6 | 1.96 2.56 | 17.49 19.60 | 10.49 11.76 | 0.291 0.327 | 0.175 0.196 |
| 112 113 114 | 1.17 1.02 2.25 | 300.0 169.5 216.5 | N N | 1544.20 1502.00 1478.10 | 1528.60 1492.60 1469.30 | 5.20% 5.55% 4.06% | 17 13 16 | 5.3 | N N | 1528.60 | 1528.50 | 1.89% 0.00% 0.00% | 0 0 | 1258.0 322.0 52.0 | 6 6 | 0.89 0.14 | 20.53 13.89 16.14 | 12.32 8.34 9.69 | 0.342 0.232 0.269 | 0.205 0.139 0.161 |
| 115 116 | 0.23 0.00 | 1.0 216.5 | N N | 1430.50 1478.10 | 1430.40 1469.30 | 10.00% 4.06% | 10 16 | | N N | | | 0.00% | 0 | 277.3 52.0 | 6 | 0.77 0.14 | 10.77 16.14 | 6.46 9.69 | 0.180 0.269 | 0.108 0.161 |
| 117 | 2.29 4.17 | 268.5 300.0 | N | 1502.05 1544.20 | 1488.75 1528.60 | 4.95% 5.20% | 16 17 | 5.3 | N | 1528.60 | 1528.50 | 0.00% 1.89% | 0 | 215.0 1706.0 | 6 | 0.60 4.74 | 16.60 21.78 | 9.96 13.07 | 0.277 | 0.166 0.218 |

RATIONAL METHOD HYDROLOGY

| PT. # | AREA (Ac.) 3.74 | AREA OF ACCUMULATION (Ac.) | TOTAL ACRES | C 0.57 | CCf (25) 0.63 | CCf (100) 0.71 | Tc 16.69 | 15 5.10 | I10 6.63 | 125 7.91 | I100 8.99 | Q5 10.87 | Q10 14.13 | Q25 18.55 | Q100 23.96 |
|--------------------|---------------------------|-----------------------------------------------|-------------------------|----------------------|----------------------|-----------------------|-------------------------|----------------------|----------------------|-----------------------|-----------------------|--------------------------|--------------------------|--------------------------|---------------------------|
| 2 | 1.06 | =A2 =A1:A3 | 1.06 4.80 | 0.57 0.57 | 0.63 | 0.71 | 16.10 16.69 | 5.18 5.10 | 6.84 | 8.17 7.91 | 9.13 8.99 | 3.13 13.95 | 4.13 18.14 | 5.43 23.81 | 6.90 30.75 |
| 4 5 | 4.69 1.75 | =A4 =A4+A5 | 4.69 6.44 | 0.44 0.47 | 0.48 0.52 | 0.55 0.59 | 19.08 20.63 | 4.80 4.62 | 5.76 5.36 | 6.88 6.40 | 8.41 8.09 | 9.82 14.06 | 11.79 16.31 | 15.49 21.42 | 21.51 30.77 |
| 7 | 4.62 3.85 | =A1:A6 =A1:A7 | 15.86 | 0.54 | 0.59 | 0.67 | 22.18 | 4.47 | 5.20 | 6.20 | 7.83 | 38.05 46.61 | 44.26 54.09 | 58.05 71.03 | 83.31 101.96 |
| 9 | 7.62 5.11 | =A8 =A9 | 7.62 5.11 | 0.57 | 0.63 | 0.71 | 18.05 17.84 | 4.93 4.96 | 6.14 | 7.32 7.41 | 8.66 8.71 | 21.41 14.45 | 26.67 18.09 | 23.74 | 47.02 31.71 |
| 10 11 12 | 0.00 0.22 8.86 | =A8:A10 =A8:A11 =A12 | 12.73 12.95 8.86 | 0.57 0.57 0.57 | 0.63 0.63 | 0.71 0.71 0.71 | 18.05 18.48 20.49 | 4.93 4.87 4.63 | 5.98 5.38 | 7.32 7.14 6.42 | 8.66 8.56 8.11 | 35.77 35.95 23.38 | 44.55 44.14 27.17 | 58.43 57.97 35.66 | 78.55 78.98 51.20 |
| 13 | 0.00 | =A1:A13 =A14 | 41.52 | 0.56 | 0.62 | 0.70 | 23.66 | 4.34 | 5.04 | 6.01 | 7.59 8.45 | 100.91 | 117.19 | 153.71 | 220.60 |
| 15 16 | 30.72 0.00 | =A15 =A14:A16 | 30.72 37.70 | 0.41 | 0.45 0.46 | 0.51 0.52 | 20.83 | 4.60 4.60 | 5.34 5.34 | 6.37 | 8.05 8.05 | 57.98 71.74 | 67.31 83.29 | 88.32 109.28 | 126.83 156.94 |
| 17 17A | 3.39 0.00 | =A14:A17 =A1:A17A | 41.09 82.61 | 0.43 0.49 | 0.47 0.54 | 0.53 0.62 | 22.88 24.00 | 4.41 4.30 | 5.12 5.00 | 6.11 5.97 | 7.71 7.53 | 77.32 175.20 | 89.77 203.72 | 117.84 267.56 | 168.98 383.50 |
| 18 | 0.73 6.18 | =A18 =A19 | 0.73 6.18 | 0.57 | 0.63 | 0.71 | 13.96 19.75 | 5.54 4.71 | 7.28 5.52 | 9.16 | 9.81 8.25 | 2.31 16.59 | 3.03 19.44 | 4.19 25.54 | 5.10 36.33 |
| 19A 20 21 | 0.00 0.00 4.02 | =A18+A19+A19A =A1:A20 =A21 | 6.91 89.52 4.02 | 0.57 0.50 0.51 | 0.63 0.55 0.57 | 0.71 0.62 0.64 | 19.75 24.33 21.28 | 4.71 4.27 4.56 | 5.52 4.97 5.29 | 6.59 5.93 6.32 | 7.48 7.98 | 18.55 190.78 9.44 | 21.74 222.06 10.95 | 28.55 291.44 14.38 | 40.62 417.75 20.64 |
| 22 | 2.89 | =A22 =A21:A23 | 2.89 | 0.55 | 0.61 | 0.69 | 20.57 | 4.63 | 5.37 | 6.41 | 8.10 7.98 | 7.36 16.69 | 8.54 19.36 | 11.21 | 16.10 |
| 24 25 | 6.31 0.35 | =A24 =A24+A25 | 6.31 6.66 | 0.54 0.54 | 0.60 | 0.68 0.68 | 21.20 21.85 | 4.57 4.51 | 5.30 5.23 | 6.33 6.24 | 7.99 7.88 | 15.60 16.30 | 18.10 18.90 | 23.77 24.80 | 34.10 35.60 |
| 26 27 | 6.00 2.31 | =A1:A26 =A27 | 109.09 | 0.51 | 0.56 0.65 | 0.64 | 26.09 15.81 | 4.11 5.22 | 4.78 6.95 | 5.70 8.29 | 7.19 9.21 | 227.99 7.11 | 265.16 9.47 | 347.81 12.43 | 498.56 15.69 |
| 28 | 8.00 | =A28 =A29 | 8.00 | 0.59 | 0.65 | 0.74 | 18.86 | 4.83 | 5.84 | 7.15 | 8.47 8.57 | 12.74 23.03 | 15.40 28.27 | 37.12 | 27.92 50.56 |
| 30 31 32 | 6.19 1.32 5.15 | =A30 =A29+A31 =A1:A28+A30+A32 | 9.32 | 0.59 | 0.65 0.65 | 0.74 | 20.19 19.27 | 4.66 4.77 | 5.41 5.69 | 6.46 | 8.16 8.37 | 17.02 26.23 | 19.76 31.29 | 25.95 41.13 | 37.25 57.53 |
| 33 34 | 1.25 0.85 | =A33 =A34 | 1.25 0.85 | 0.57 0.57 | 0.63 | 0.71 | 16.56 15.65 | 5.12 5.24 | 6.68 7.00 | 7.97 8.36 | 9.02 9.24 | 3.65 2.54 | 4.76 3.39 | 6.25 4.46 | 8.03 5.60 |
| 35 36 | 1.12 1.30 | =A33+A35 =A33:A36 | 2.37 4.52 | 0.58 0.58 | 0.64 0.64 | 0.73 0.73 | 17.60 18.74 | 4.99 4.84 | 6.30 5.89 | 7.52 7.03 | 8.77 8.50 | 6.86 12.69 | 8.66 15.44 | 11.37 20.27 | 15.07 27.85 |
| 37 38 | 2.49 4.91 | =A33:A37 =A38 | 7.01 4.91 | 0.58 0.58 | 0.64 | 0.73 0.73 | 22.32 16.42 | 4.46 5.14 | 5.18 6.73 | 6.18 8.03 | 7.81 9.06 | 18.13 14.64 | 21.06 19.17 | 27.64 25.15 | 39.69 32.25 |
| 39 40 41 | 0.00 1.14 5.41 | =A33:A39 =A1:A40 =A41 | 11.92 | 0.58 0.53 0.58 | 0.64 9.59 0.64 | 0.73 9.66 0.73 | 22.32 29.14 20.08 | 4.46 3.92 4.67 | 5.18 4.15 5.42 | 6.18 5.31 6.47 | 7.81 6.69 8.18 | 30.83 301.83 14.77 | 35.81 351.61 17.14 | 47.00 161.52 22.51 | 67.49 659.76 32.34 |
| 41 42 43 | 2.30 9.61 | =A41 =A1:A42 =A43 | 5.41 157.38 9.61 | 0.58 | 0.64 0.50 0.65 | 0.73 0.66 0.74 | 20.08 | 4.67 3.71 4.65 | 5.42 4.32 5.39 | 6.47 5.16 6.44 | 8.18 6.19 8.14 | 14.77 310.23 26.37 | 17.14 361.21 30.56 | 22.51 174.63 40.17 | 32.34 678.37 57.69 |
| 44 45 | 4.18 | =A44 =A44+A45 | 4.18 7.31 | 0.59 | 0.65 | 0.74 | 20.58 | 4.63 4.52 | 5.37 5.24 | 6.41 | 8.09 7.90 | 11.42 | 13.24 22.60 | 17.39 29.70 | 24.94 42.59 |
| 46 47 | 3.64 0.58 | =A46 =A44:A47 | 3.64 11.53 | 0.59 | 0.65 0.65 | 0.74 0.74 | 16.94 22.70 | 5.07 4.43 | 6.54 5.14 | 7.80 6.13 | 8.93 7.74 | 10.89 30.14 | 14.05 34.97 | 18.43 45.87 | 23.97 65.82 |
| 48 | 6.02 0.93 | =A48 =A49 | 6.02 0.93 | 0.59 | 0.65 | 0.74 | 17.88 14.67 | 4.95 5.39 | 6.20 7.25 | 7.40 8.81 | 9.53 | 17.58 2.96 | 3.98 | 28.91 5.32 | 38.63 6.54 |
| 50 51 52 | 2.17 3.34 1.75 | =A43:A48+A50 =A51 =A52 | 29.33 3.34 1.75 | 0.59 0.59 0.59 | 0.65 0.65 | 0.74 0.74 0.74 | 23.20 16.84 18.03 | 4.38 5.08 4.93 | 5.09 6.58 6.14 | 7.85 7.33 | 7.66 8.96 8.67 | 75.79 10.01 5.09 | 88.08 12.97 6.34 | 115.54 17.02 8.33 | 165.69 22.07 11.19 |
| 53 | 0.00 | =A52 =A1:A42+A51:A53 =A54 | 1.75 | 0.59 | 0.63 | 0.74 0.67 0.71 | 31.33 19.08 | 3.60 4.80 | 6.14 1.29 5.76 | 5.11 6.88 | 6.13 8.41 | 317.35 13.08 | 372.29 15.69 | 107.00 | 697.58 28.64 |
| 55 56 | 6.18 | =A55 =A55:A56 | 6.18 7.90 | 0.57 0.57 | 0.63 | 0.71 | 17.87 19.07 | 4.95 4.80 | 6.20 5.77 | 7.40 6.88 | 8.70 8.42 | 17.44 21.61 | 21.84 25.98 | 28.67 34.08 | 38.31 47.39 |
| 57 58 | 1.24 1.19 | =A54+A57 =A54:A58 | 6.02 15.11 | 0.57 0.57 | 0.63 0.63 | 0.71 0.71 | 20.73 21.35 | 4.61 4.55 | 5.35 5.29 | 6.39 | 8.07 7.97 | 15.82 39.19 | 18.36 45.56 | 24.12 59.78 | 34.61 85.80 |
| 59 60 | 9.48 | =(CAP)A54 =A54:A58+(CAP)A59+A60 | 7.20 22.31 | 0.59 | 0.65 0.64 | 0.74 | 21.54 21.86 | 4.54 4.51 | 5.27 5.23 | 6.28 | 7.94 7.88 | 19.29 58.09 | 22.40 67.37 | 29.36 88.42 | 42.18 126.88 |
| 61 62 63 | 5.96 1.07 0.00 | =A61 =A61+A62 =A54:A58+(CAP)A59+A60:A63 | 5.96 7.03 29.34 | 0.59 0.59 0.58 | 0.65 0.65 0.64 | 0.74 0.74 0.73 | 19.71 20.83 22.27 | 4.72 4.60 4.47 | 5.54 5.34 5.19 | 6.61 6.37 6.19 | 8.26 8.05 7.82 | 16.60 19.08 76.10 | 19.48 22.15 88.36 | 25.57 29.06 115.92 | 36.31 41.74 166.42 |
| 64 | 3.41 | =A54:A58+(CAP)A59+A60:A64 =(CO)A59+A65 | 32.75 12.60 | 0.58 | 0.64 | 0.73 | 23.84 | 4.32 | 5.02 | 5.99 | 7.56 7.94 | 82.21 33.74 | 95.53 39.17 | 125.39 | 179.83 |
| 66 67 | 1.50 3.88 | =A54:A66 =A67 | 46.85 3.88 | 0.58 | 0.64 | 0.73 0.74 | 24.94 17.18 | 4.22 5.04 | 4.90 6.45 | 5.85 7.70 | 7.37 8.87 | 115.34 11.54 | 133.93 14.77 | 175.88 19.39 | 251.80 25.38 |
| 68 69 | 4.75 0.00 | =A68 =A67:A69 | 4.75 8.63 | 0.59 0.59 | 0.65 0.65 | 0.74 0.74 | 22.47 22.47 | 4.45 4.45 | 5.17 5.17 | 6.16 6.16 | 7.78 7.78 | 12.47 22.66 | 14.49 26.32 | 18.99 34.50 | 27.25 49.52 |
| 70 71 | 0.17 | =A67:A70 =A54:A71 | 8.80 55.65 | 0.59 | 0.65 | 0.74 | 22.88 | 4.41 | 5.12 4.90 | 5.85 | 7.71 | 22.90 137.24 | 26.58 159.36 | 34.90 209.28 | 50.04 299.61 |
| 72 73 74 | 2.47 12.98 0.16 | =A54:A72 =A73 =A73:A74 | 58.12 12.98 13.14 | 0.58 0.59 0.59 | 0.64 0.65 0.65 | 0.73 0.74 0.74 | 26.07 23.03 23.45 | 4.11 4.40 4.36 | 5.11 5.06 | 5.70 6.09 6.04 | 7.19 7.69 7.62 | 139.67 33.70 33.80 | 39.13 39.23 | 213.07 51.30 51.51 | 73.61 73.84 |
| 75 76 | 0.00 | =A54:A75 =A54:A76 | 71.26 | 0.59 | 0.64 | 0.73 | 26.07 26.81 | 4.11 | 4.78 4.70 | 5.70 | 7.19 7.07 | 171.54 170.34 | 199.50 198.17 | 261.69 | 375.11 372.63 |
| 77 78 | 1.63 4.53 | =A77 =A78 | 1.63 4.53 | 0.59 | 0.65 0.65 | 0.74 0.74 | 13.48 20.65 | 5.64 4.62 | 7.30 5.36 | 9.41 6.40 | 10.01 | 5.42 12.35 | 7.02 14.33 | 9.95 18.82 | 12.03 26.99 |
| 79 80 | 1.06 3.12 | =A1:A42+A51:A79 =A80 | 3.12 | 0.59 | 0.65 | 0.74 | 20.08 | 3.59 4.67 | 4.18 5.42 | 6.47 | 6.27 8.18 | 8.60 | 9.98 | 730.84 13.10 | 18.82 |
| 81 | 39.01 8.41 | =A80:A81 =A1:A82 | 42.13 | 0.61 0.57 | 0.67 | 0.76 9.71 | 29.21 31.88 | 3.81 | 4.44 | 5.30 | 6.67 | 97.91 612.51 | 719.71 | 149.83 992.66 | 214.27 |
| 83 84 85 | 3.22 1.74 0.82 | =A83 =A84 =A84+A85 | 3.22 1.74 2.56 | 0.59 0.44 0.44 | 0.65 0.48 0.48 | 0.74 0.55 0.55 | 15.63 13.69 14.33 | 5.24 5.59 5.46 | 7.01 7.29 7.27 | 9.30 8.98 | 9.25 9.92 9.67 | 9.95 4.28 6.15 | 13.32 5.58 8.19 | 7.83 11.13 | 9.49 13.62 |
| 86 87 | 5.23 16.24 | =A86 =A87 | 5.23 16.24 | 0.57 | 0.63 | 0.71 0.71 | 15.11 | 5.31 | 7.20 5.34 | 8.59 6.38 | 9.37 8.06 | 15.83 42.58 | 21.46 | 28.17 | 34.92 93.26 |
| 88 89 | 0.81 4.02 | =A87:A88 =A89 | 17.05 4.02 | 0.57 0.57 | 0.63 | 0.71 0.71 | 21.38 19.27 | 4.55 4.77 | 5.28 5.69 | 6.30 6.80 | 7.96 8.37 | 44.22 10.93 | 51.31 13.04 | 67.35 17.14 | 96.70 23.97 |
| 90 91 | 0.69 | =A89+A90 =A91 | 0.69 | 0.57 | 0.63 | 0.71 | 21.75 12.38 | 4.52 5.87 | 5.24 7.35 | 6.26 9.96 | 7.90 10.45 | 36.56 2.31 | 42.38 | 55.70 4.31 | 79.87 5.14 |
| 92 93 94 | 2.36 3.18 3.76 | =A92 =A91:A93 =A94 | 2.36 6.23 3.76 | 0.57 0.57 0.59 | 0.63 0.63 0.65 | 0.71 0.71 0.74 | 18.24 19.86 14.36 | 4.91 4.70 5.45 | 6.07 5.48 7.27 | 7.24 6.54 8.96 | 8.62 8.22 9.66 | 6.60 16.69 12.09 | 8.17 19.46 16.13 | 10.71 25.55 21.86 | 14.49 36.49 26.79 |
| 95 96 | 3.84 | =A95 =A94:A96 | 3.84 7.60 | 0.59 | 0.65 | 0.74 | 14.59 | 5.41 5.28 | 7.26 7.12 | 8.85 8.50 | 9.56 9.32 | 12.26 | 16.45 | 22.06 | 27.07 52.24 |
| 97 98 | 127.92 2.78 | =A97 =A98 | 127.92 2.78 | | | | | | | | | | | | |
| 99 100 | 3.12 0.90 | =A99 =A100 | 3.12 0.90 | 0.59 | 0.65 | 0.74 | 14.32 12.41 | 5.46 5.86 | 7.27 7.34 | 8.98 9.95 | 9.67 | 10.05 3.11 | 13.38 3.90 | 18.18 5.81 | 22.25 6.93 |
| 100A 101 102 | 1.96 1.14 2.85 | =A99:A100A =A101 =A102 | 5.98 1.14 2.85 | 0.59 0.59 0.59 | 0.65 0.65 | 0.74 0.74 0.74 | 14.98 10.39 13.77 | 5.32 6.28 5.58 | 7.24 7.42 7.29 | 8.65 10.96 9.26 | 9.41 11.24 9.89 | 18.77 4.22 9.38 | 25.54 4.99 12.26 | 33.57 8.11 17.13 | 9.45 20.79 |
| 102 103 103A | 0.96 | =A102 =A103 =A103+A103A | 0.96 7.62 | 0.59 | 0.65 0.65 | 0.74 0.74 0.74 | 13.77 12.42 16.88 | 5.86 5.08 | 7.29 7.34 6.56 | 9.26 9.94 7.83 | 9.89 10.43 8.95 | 3.32 22.84 | 4.16 29.49 | 6.19 | 7.38 50.30 |
| 104 105 | 4.14 | =A99:A100A+A103:A104 =A105 | 17.74 | 0.59 | 0.65 | 0.74 | 17.36 15.01 | 5.02 | 6.39 | 7.62 8.64 | 8.83 9.40 | 52.54 | 66.88 | 87.73 15.87 | 115.53 19.62 |
| 105A 106 | 0.00 | =A99:A100A+A103:A105A =A106 | 20.57 0.61 | 0.59 | 0.65 | 0.74 | 17.36 11.65 | 5.02 6.02 | 6.39 7.37 | 7.62 10.33 | 8.83 10.74 | 60.92 2.17 | 77.55 2.65 | 101.73 | 133.95 4.83 |
| 106A 106B | 0.00 | =A101+A106 =A99:A106B -A100A-A107 | 1.75 25.17 | 0.59 | 0.65 | 0.74 0.74 | 11.65 19.18 | 6.02 4.78 | 7.37 5.73 | 10.33 6.83 | 8.39 8.11 | 6.22 70.98 | 7.61 85.09 | 11.73 111.57 | 13.86 155.74 |
| 107 108 109 | 2.68 2.01 | =A100A:A107 =A108 =A108:A109 | 26.95 2.68 4.69 | 0.59 0.59 0.59 | 0.65 0.65 | 0.74 0.74 0.74 | 20.49 17.47 19.06 | 4.63 5.00 4.80 | 5.38 6.35 5.77 | 7.58 6.89 | 8.11 8.80 8.42 | 73.62 7.91 13.28 | 85.54 10.04 15.97 | 112.29 13.18 20.97 | 161.19 17.39 29.12 |
| 110 | 1.97 | =A108:A109 =A110 =A108:A109+A111 | 1.97 | 0.59 | 0.65 0.65 | 0.74 0.74 0.74 | 17.49 19.60 | 5.00 4.73 | 6.34 5.57 | 7.57 6.65 | 8.42 8.80 8.29 | 5.81 15.99 | 7.37 18.83 | 9.68 24.73 | 12.79 35.03 |
| 112 | 1.17 | =A108:A112 =A113 | 8.87 1.02 | 0.59 | 0.65 | 0.74 | 20.53 | 4.63 5.55 | 5.37 7.28 | 6.41 | 8.10 9.84 | 24.23 | 28.10 | 36.90 6.09 | 52.99 7.40 |
| 114 115 | 2.25 0.23 | =A114 =A115 | 2.25 0.23 | 0.55 0.55 | 0.61 | 0.69 | 16.14 10.77 | 5.17 6.20 | 6.83 7.41 | 8.15 10.77 | 9.12 11.09 | 6.40 0.78 | 8.45 0.94 | 11.09 | 14.11 |
| 116 117 | 0.00 | =A113:A116 =A117 | 3.50 2.29 | 0.55 | 0.61 | 0.69 | 16.14 16.60 | 5.17 5.12 | 6.83 | 8.15 7.95 | 9.12 9.01 | 9.95 6.80 | 13.15 8.85 | 17.26 11.62 | 21.95 14.96 |
| 118 | 3.09 | =A108:A118 =A119 | 18.83 3.09 | 0.58 | 0.64 | 0.73 | 21.78 15.85 | 4.51 5.21 | 5.24 6.93 | 6.25 8.27 | 7.90 9.19 | 49.26 9.50 | 57.23 12.63 | 75.08 16.58 | 107.85 20.94 |
| 120 121 | 0.52 0.00 0.00 | =A120 =A119:A121 =A108:A122 | 0.52 3.61 22.44 | 0.59 0.59 0.58 | 0.65 0.65 | 0.74 0.74 | 14.16 15.85 | 5.49 5.21 4.46 | 7.27 6.93 | 9.06 8.27 | 9.74 9.19 7.81 | 1.68 11.10 | 2.23 14.76 | 3.06 19.38 88.48 | 3.74 24.47 127.06 |
| 122 123 124 | 0.00 2.63 6.27 | =A108:A122 =A108:A123 =A124 | 22.44 25.07 6.27 | 0.58 0.59 0.67 | 0.64 0.65 0.74 | 0.73 0.74 0.84 | 22.31 23.40 15.27 | 4.46 4.36 5.29 | 5.18 5.07 7.14 | 6.18 6.05 8.52 | 7.81 7.63 9.33 | 58.05 64.49 22.22 | 74.99 29.99 | 98.44 98.37 | 127.06 141.07 48.99 |
| 147 | U.2/ | =A124 =A125 | 4.97 | 0.67 | 0.74 | 0.84 | 20.18 | 4.66 | 5.41 | 6.46 | 9.33 8.16 | 10.19 | 11.83 | 15.54 | 22.31 |

SCS METHOD HYDROLOGY

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

| SCS | Culver | t Hydro | logy W | ith Det | ention | | | | | |
|---------------|-----------|-----------------|---------|----------|----------|----------|------|--|--|--|
| HEC RAS - ID | Point # | SCS Flows (CFS) | | | | | | | | |
| TIEC KAS - ID | 1 Oille # | Q (2yr) | Q (5yr) | Q (10yr) | Q (25yr) | Q (50yr) | Q (1 | | | |
| XS 4680 | 32 | 141.12 | 217.07 | 259.40 | 307.05 | 352.43 | 37 | | | |
| XS 4545 | 35 | 136.47 | 213.37 | 255.02 | 303.17 | 347.49 | 37 | | | |
| XS 3996 | 37 | 128.09 | 208.44 | 251.38 | 298.66 | 342.69 | 36 | | | |
| XS 3745 | 48 | 127.52 | 208.17 | 251.03 | 298.45 | 342.54 | 36 | | | |
| XS 3027 | 74 | 332.58 | 542.43 | 659.92 | 802.28 | 934.57 | 10 | | | |
| XS 2454 | 77 | 475.51 | 762.64 | 933.73 | 1122.00 | 1343.05 | 14 | | | |

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GRADING PLAN REGENT PARK UNIT 8 OVERALL MASTER DRAINAGE

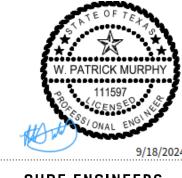
> DATE 08/15/2023

> PROJECT NO. 02133.210 DRAWN BY RM/MW/MS

CHECKED BY

REVISIONS

07/31/2024 - UNIT 9 DRAINAGE AREA REVISIONS (AREAS 103, 103A, AND 104



CUDE ENGINEERS TBPE No. 455

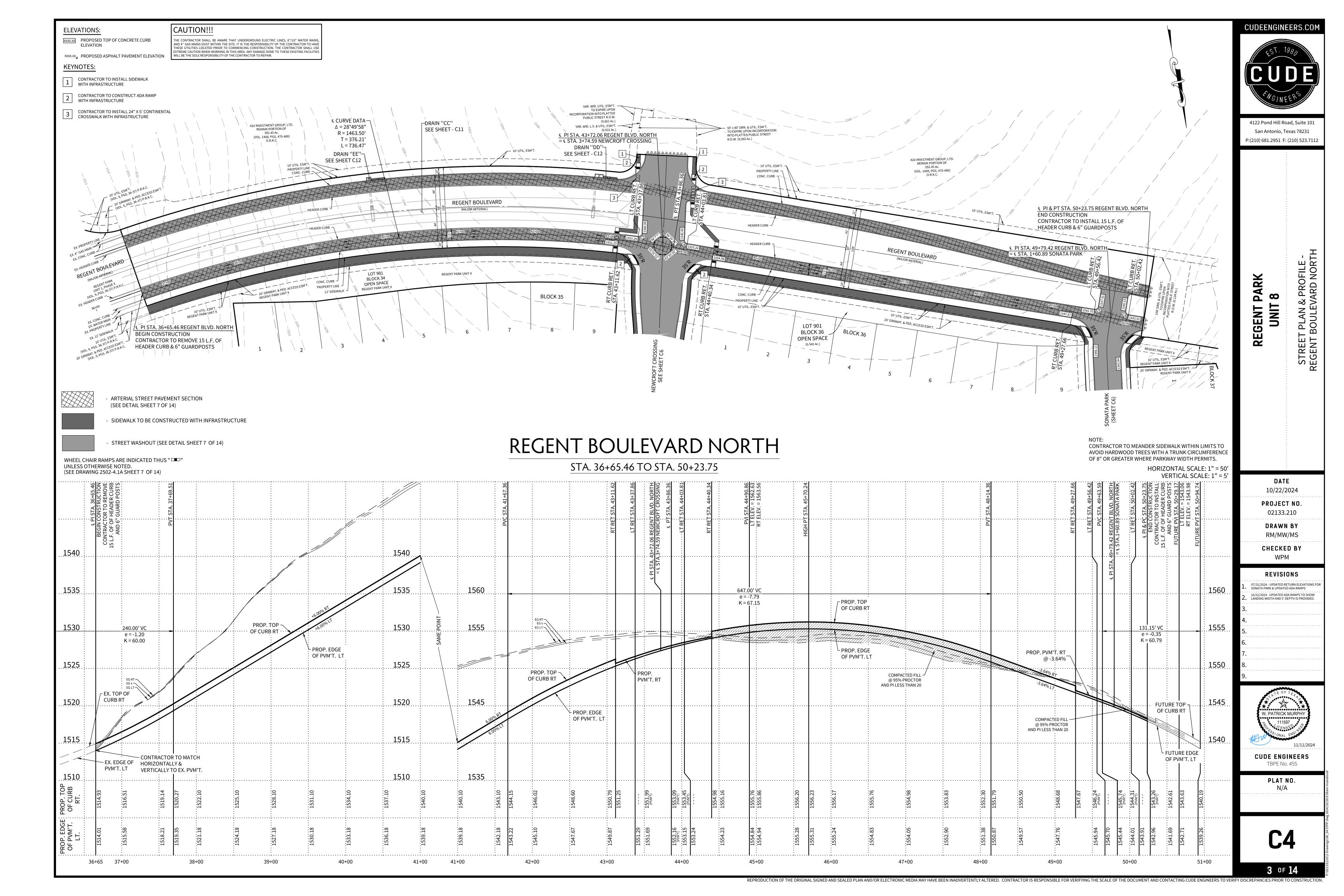
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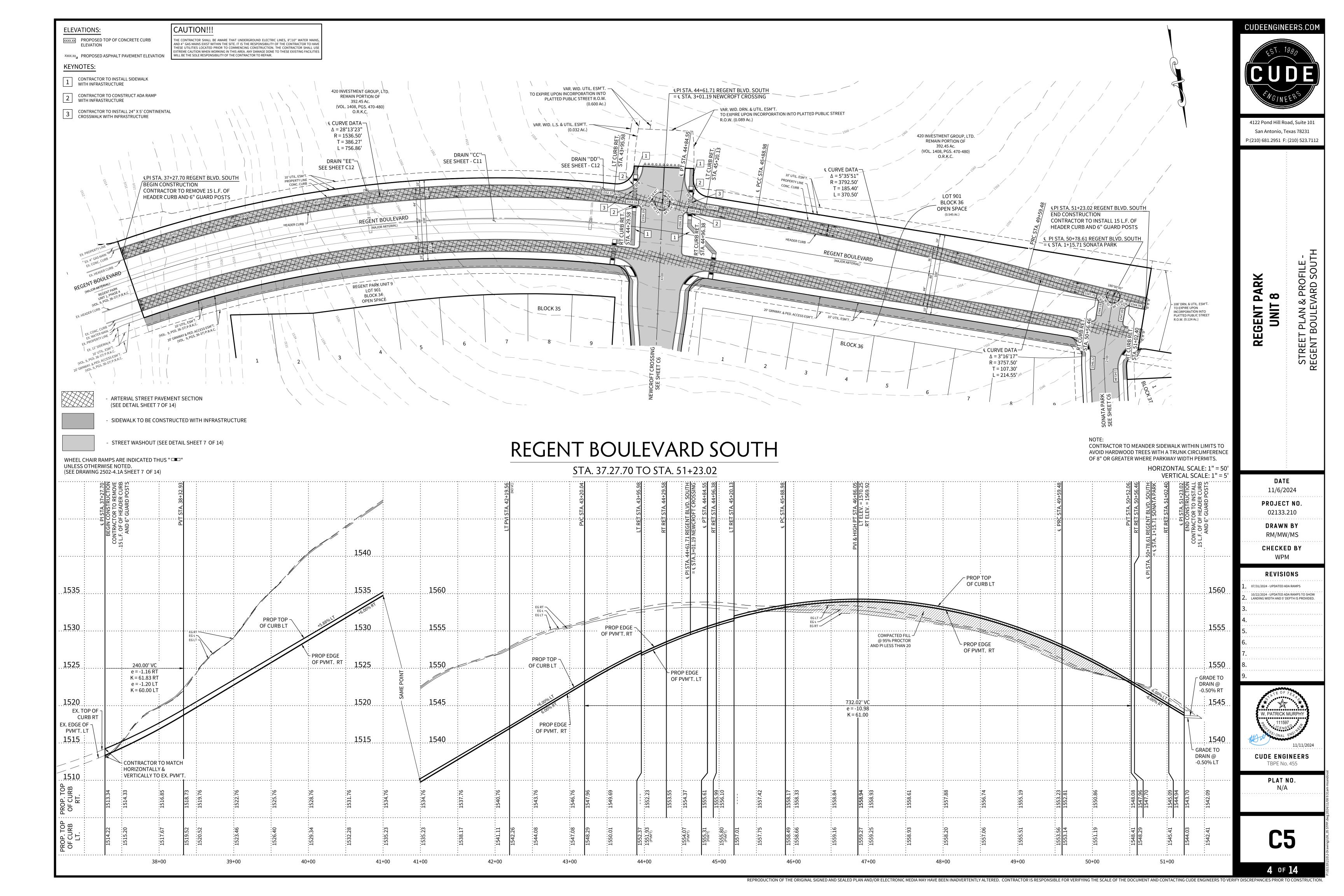
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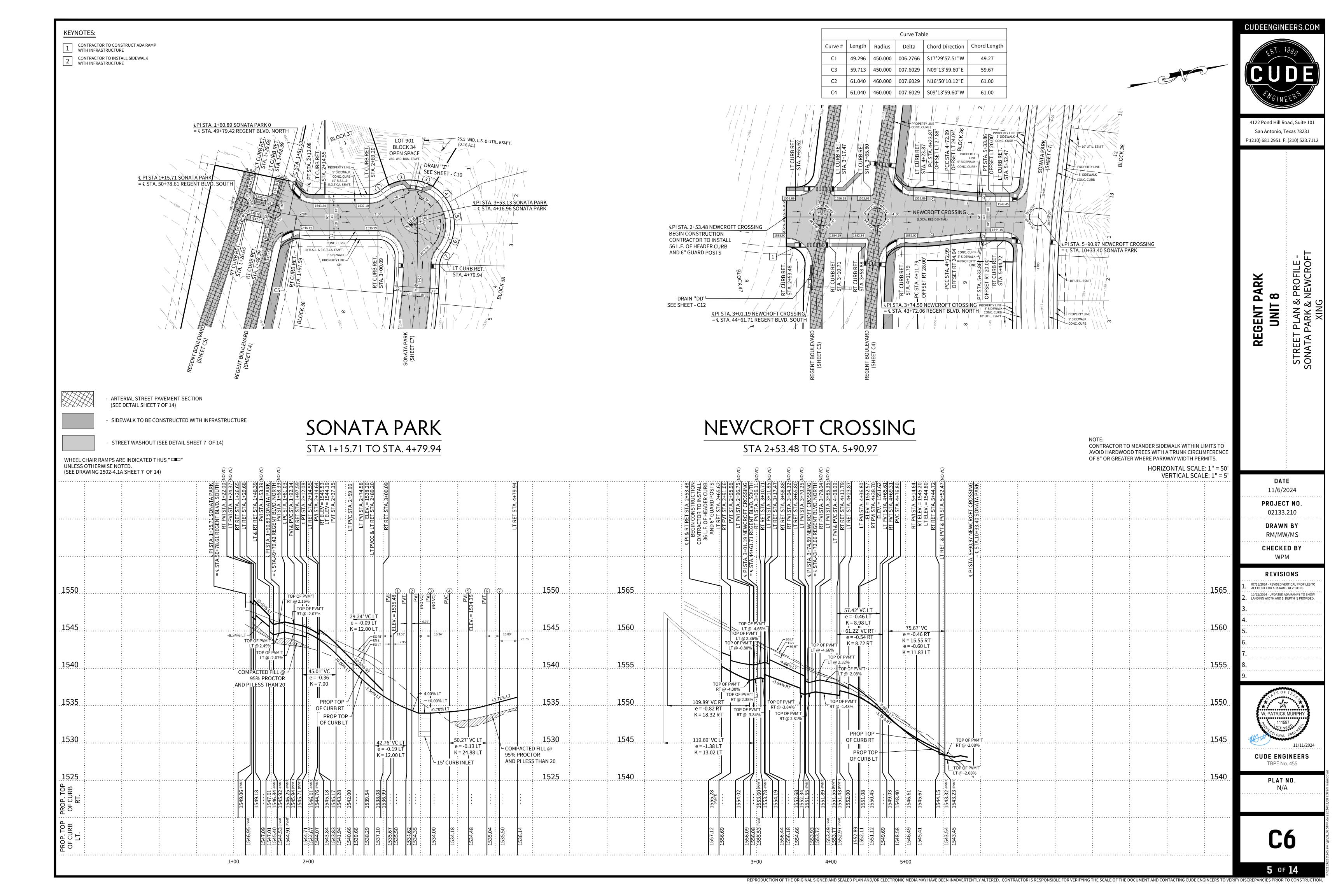
2 of 14

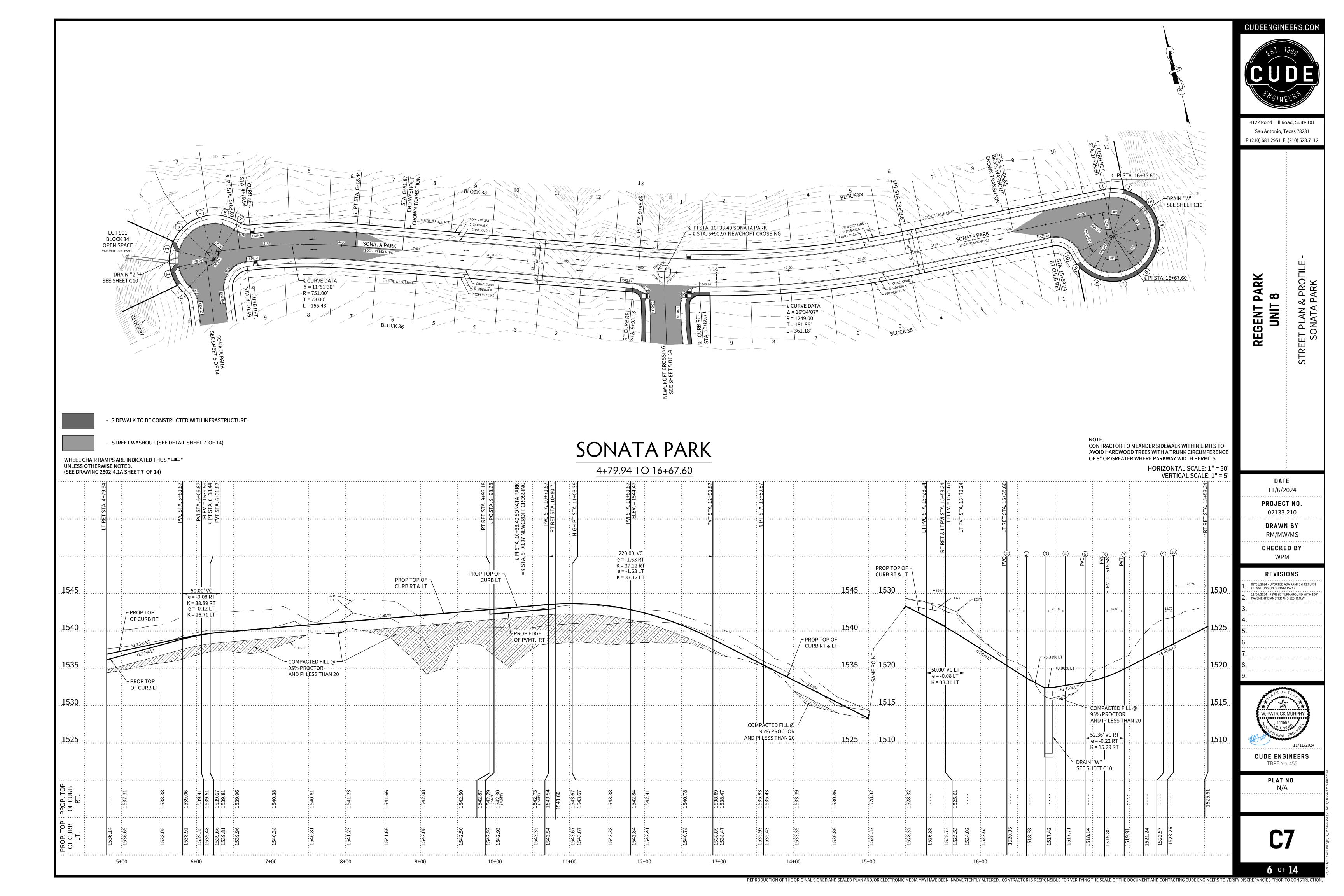
* - DENOTES DRAINAGE AREA ANALYZED USING THE SCS HYDROLOGY METHOD DUE TO DRAINAGE AREA SIZE AND DETENTION CONSIDERATIONS. ALL HYDRAULIC CALCULATIONS FOR DRAINAGE STRUCTURES ASSOCIATED WITH THESE DRAINAGE AREAS SHOULD BE DERIVED FROM

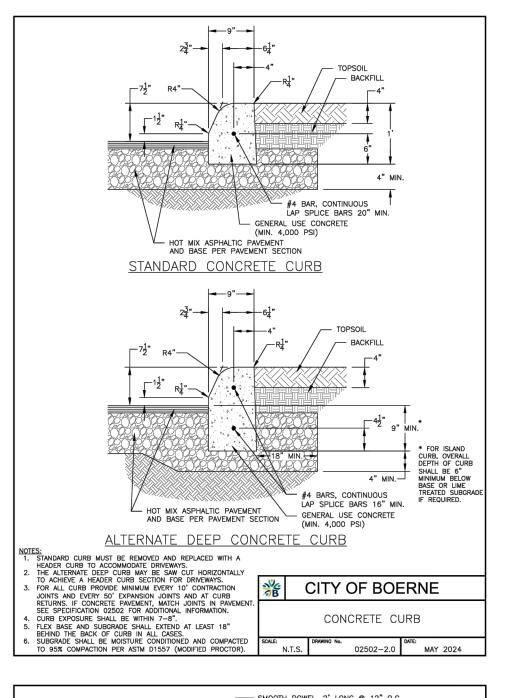
THE SCS METHOD HYDROLOGY CHART FOUND BELOW.

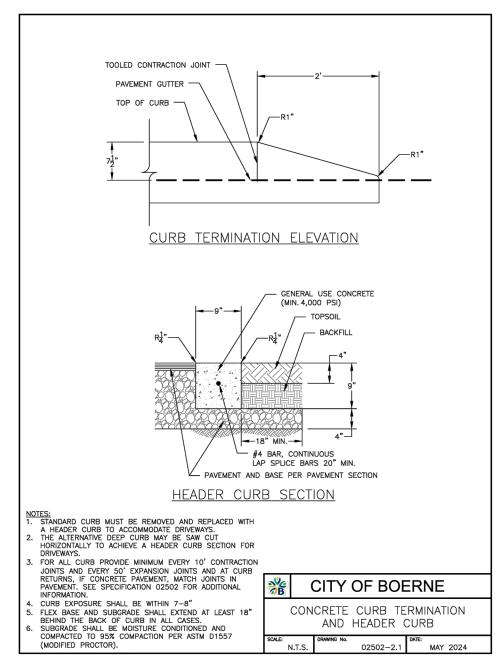


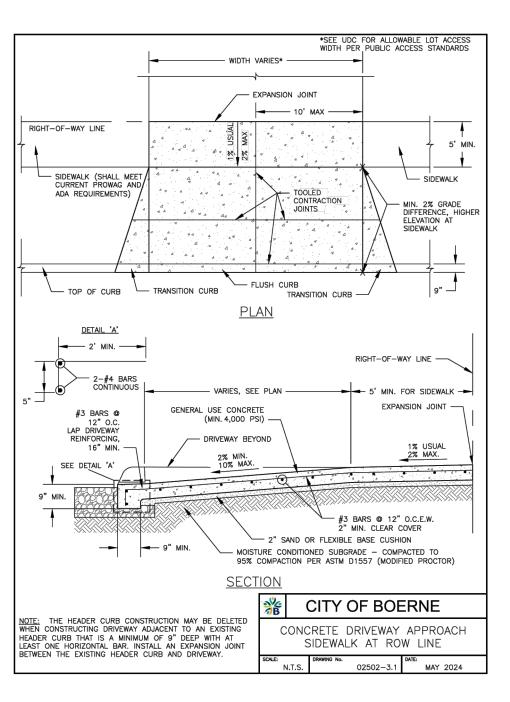


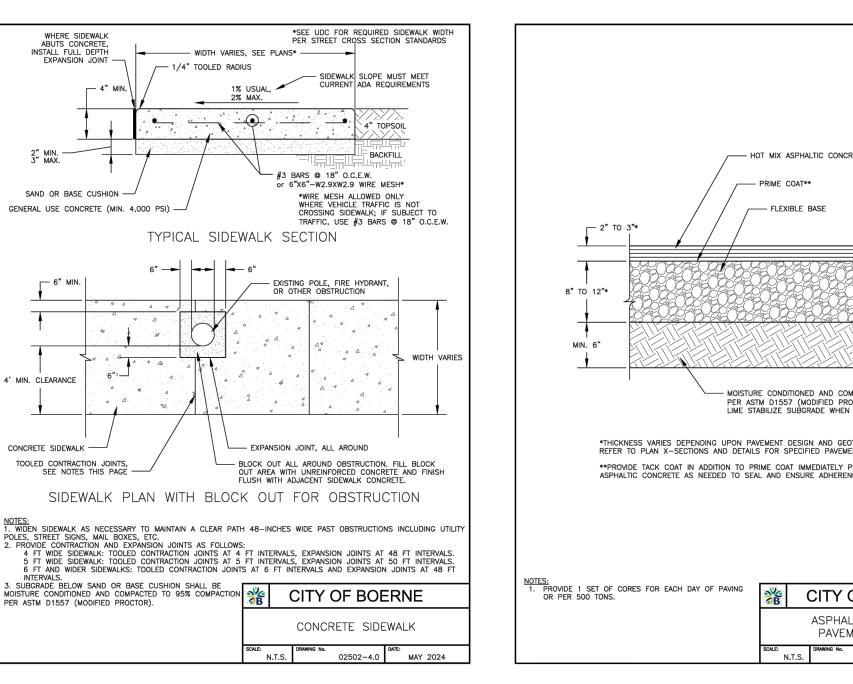


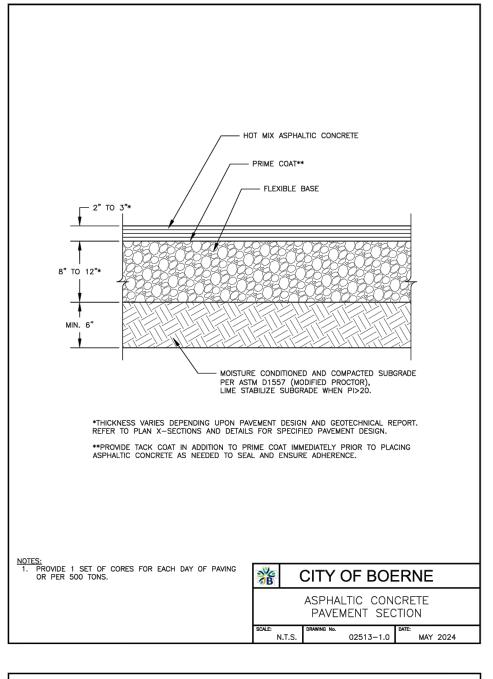


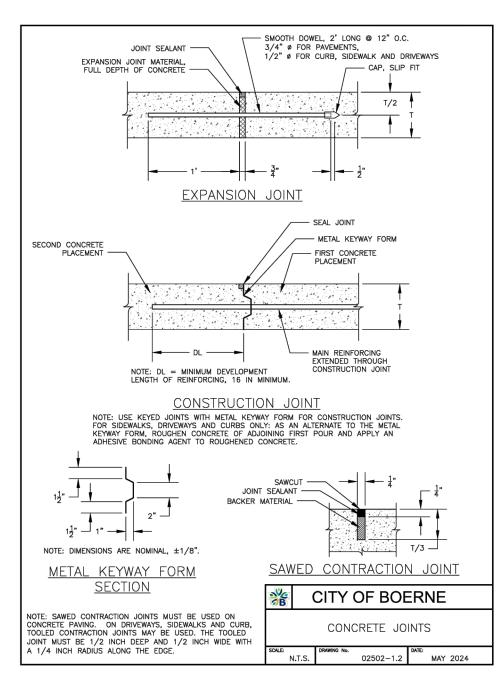


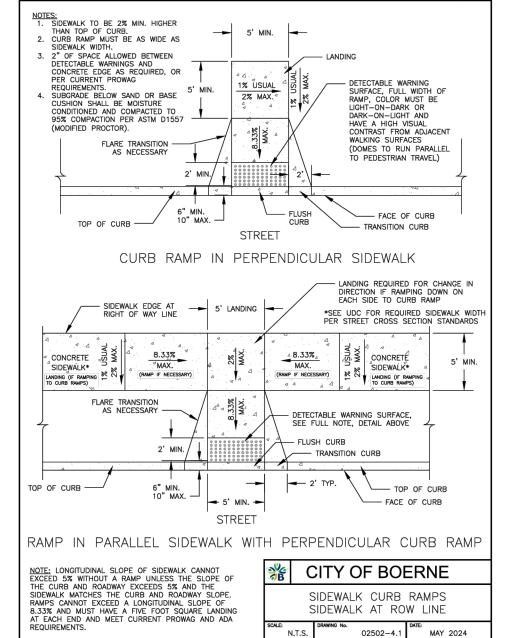


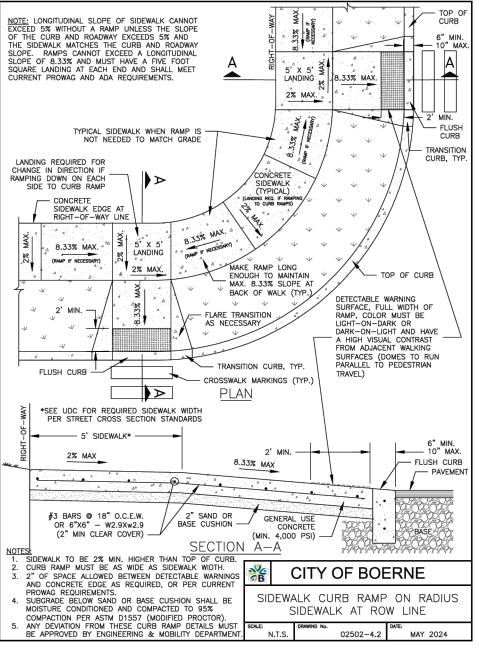


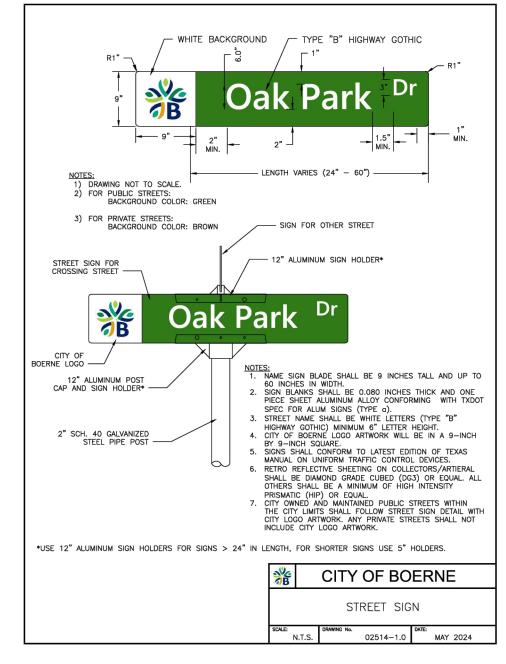


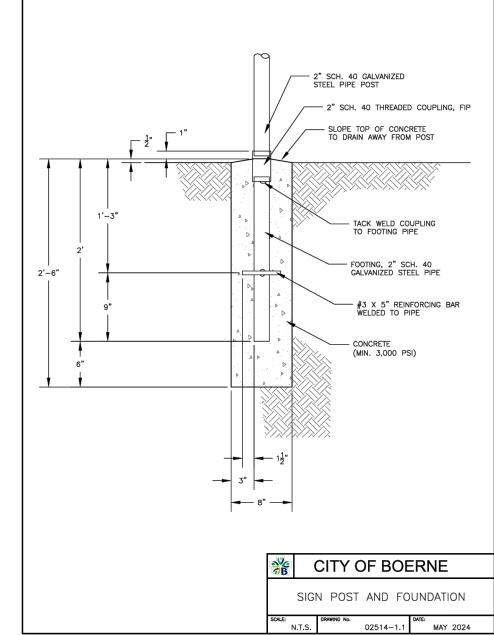


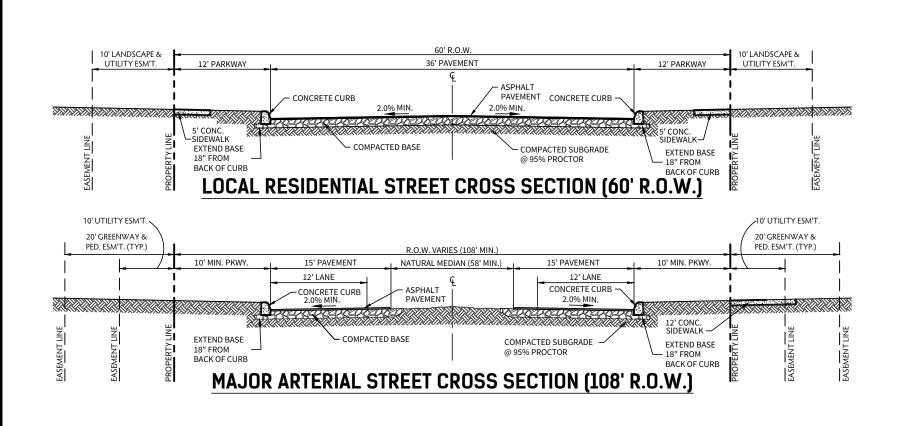


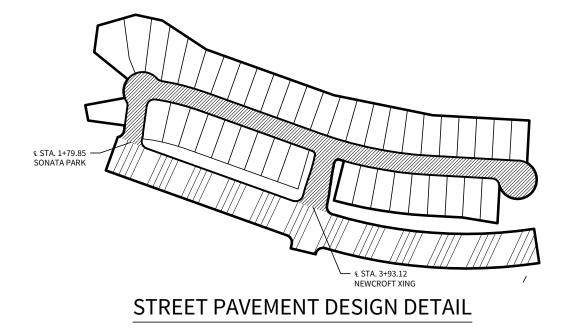




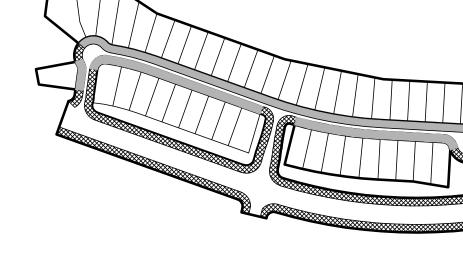








MAJOR ARTERIAL



CONC. CURB DESIGN DETAIL

| DEEP CURB | |
|---------------|--|
| STANDARD CURB | |

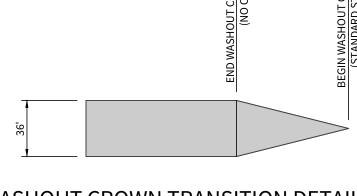
| STREET TYPE | HMAC TYPE "D" | FLEX BASE (TY A GR 2) | LIME TREATED SUBGRADE (27 LB/SY) | BASE UNDER CURB | STRUCTURAL NUMBER |
|-------------------------------|------------------|--------------------------|-------------------------------------|--------------------|----------------------|
| LOCAL RESIDENTIAL (LIMESTONE) | 2" | 8.5" | | 6" | 2.07 |
| MAJOR ARTERIAL | 3" | 17" | | 15.5" | 3.70 |

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

STREET PAVEMENT DESIGN OPTIONS

1. SUBGRADE – GEOTECH ENGINEER WILL BE PRESENT TO DETERMINE IF NATIVE LIMESTONE/ROCK SUBGRADE IS SUFFICIENT TO REPLACE LIME TREATMENT. IF LIME TREATMENT IS REPLACED BY NATIVE MARL/ROCK, CITY OF BOERNE 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. (REF. INTEC TESTING REPORT #S131434)

2. FILL MATERIAL - CONTRACTOR SHALL OVER-EXCAVATE STREET SUBGRADE AREAS CONTAINING SOILS HAVING A PLASTICITY INDEX GREATER THAN 20 AND REPLACE 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.



| PAVEMENT DESIGN THICKNESS BASED ON GEOTECHNICAL REPORT (REF. INTEC TESTING REPORT #S131434 - | |
|----------------------------------------------------------------------------------------------|--|

REPORT AND PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND ALTERNATE PAVEMENT SECTIONS. ANY AREAS OF CLAY ENCOUNTERED DURING CONSTRUCTION SHALL BE REMOVED DOWN TO THE WEATHERED/FRIABLE MARLSTONE/LIMESTONE AND PROPERLY BACKFILLED WITH MARLSTONE/LIMESTONE

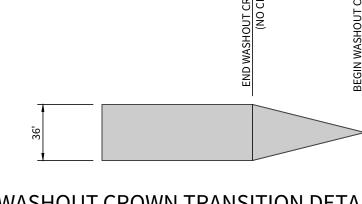
THAT RECOMMENDATIONS ARE FOLLOWED. THE ACTUAL SUBGRADE CONDITION AT A PARTICULAR LOCATION WILL NEED TO BE EVALUATED DURING CONSTRUCTION ONCE THE SUBGRADE IS CUT/FILLED TO THE PROPER GRADE.

- MILLINGS HAVING A CBR VALUE EQUAL OR EXCEEDING 6. 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
- 4. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING MATERIAL TESTING. TESTING TO BE PAID BY OWNER.
- 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.
- DATED MAY 22, 2014). SEE TABLE FOR STRUCTURAL NUMBER CALCULATION. REFERENCE PROJECT GEOTECHNICAL 6. IF ALTERNATE PAVEMENT SECTION CHOSEN, CITY OF BOERNE SHALL BE PROVIDED WITH REVISED CONSTRUCTION

PLANS INDICATING SELECTED PAVEMENT DESIGN PRIOR TO CONSTRUCTION.

- 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.
- 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.

DETAILS ON THIS DRAWING ARE NOT TO SCALE



WASHOUT CROWN TRANSITION DETAIL

V. PATRICK MURPH

CUDE ENGINEERS TBPE No. 455

PLAT NO.

N/A

CUDEENGINEERS.COM

4122 Pond Hill Road, Suite 101

San Antonio, Texas 78231

DETAIL

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BOERNE

OF

DATE

08/15/2023

PROJECT NO.

02133.210

DRAWN BY

RM/MW/MS

CHECKED BY

WPM

REVISIONS 07/31/2024 - LABEL FLEX BASE EXTENTS, UPDAT

2024 CITY OF BOERNE DETAILS

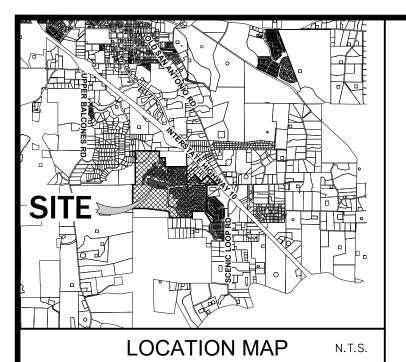
PARK

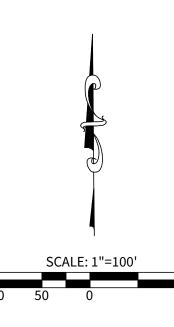
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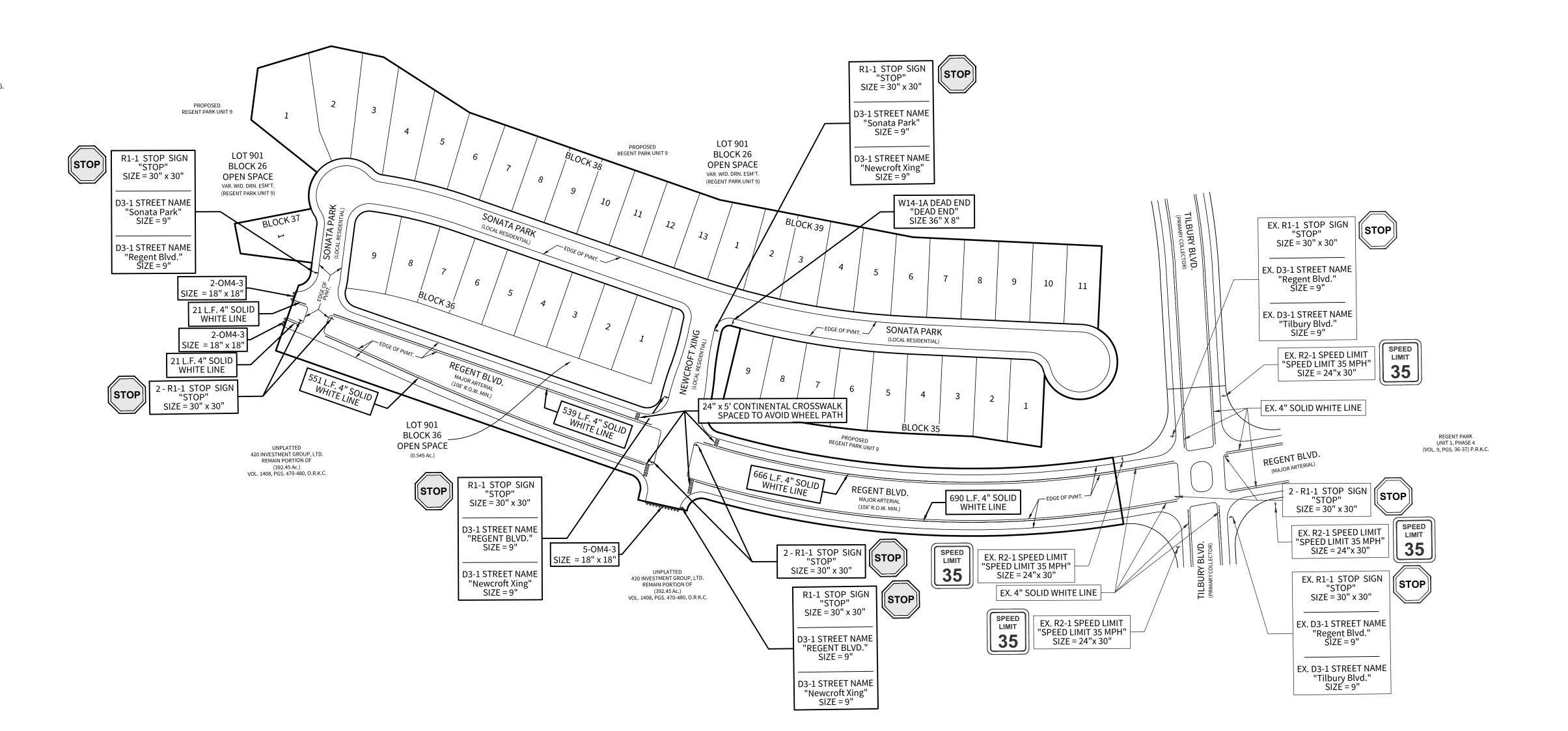
REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.

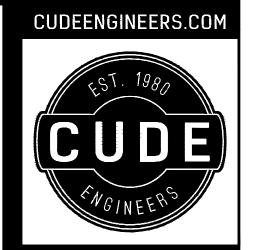
DEVELOPER:

TENOTEX DEVELOPMENT CO., INC. CONTACT PERSON: ISRAEL FOGIEL 10003 NW MILITARY, STE. 2201 SAN ANTONIO, TX 78231 TEL: (210) 344-9200 FAX: (210) 344-3137

NOTE

- CONTRACTOR TO COORDINATE SIGN PLACEMENT WITH
 SIDEWALK/ADA RAMP CONSTRUCTION TO AVOID ANY POSSIBLE
- 2. ALL PAVEMENT MARKINGS SHALL BE HOT-APPLIED THERMOPLASTIC PAVEMENT MARKINGS PER TXDOT ITEM NO. 666.





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REGENT PARK UNIT 8

DATE 08/15/2023

PROJECT NO.

02133.210

DRAWN BY RM/MW/MS

CHECKED BY WPM

REVISIONS

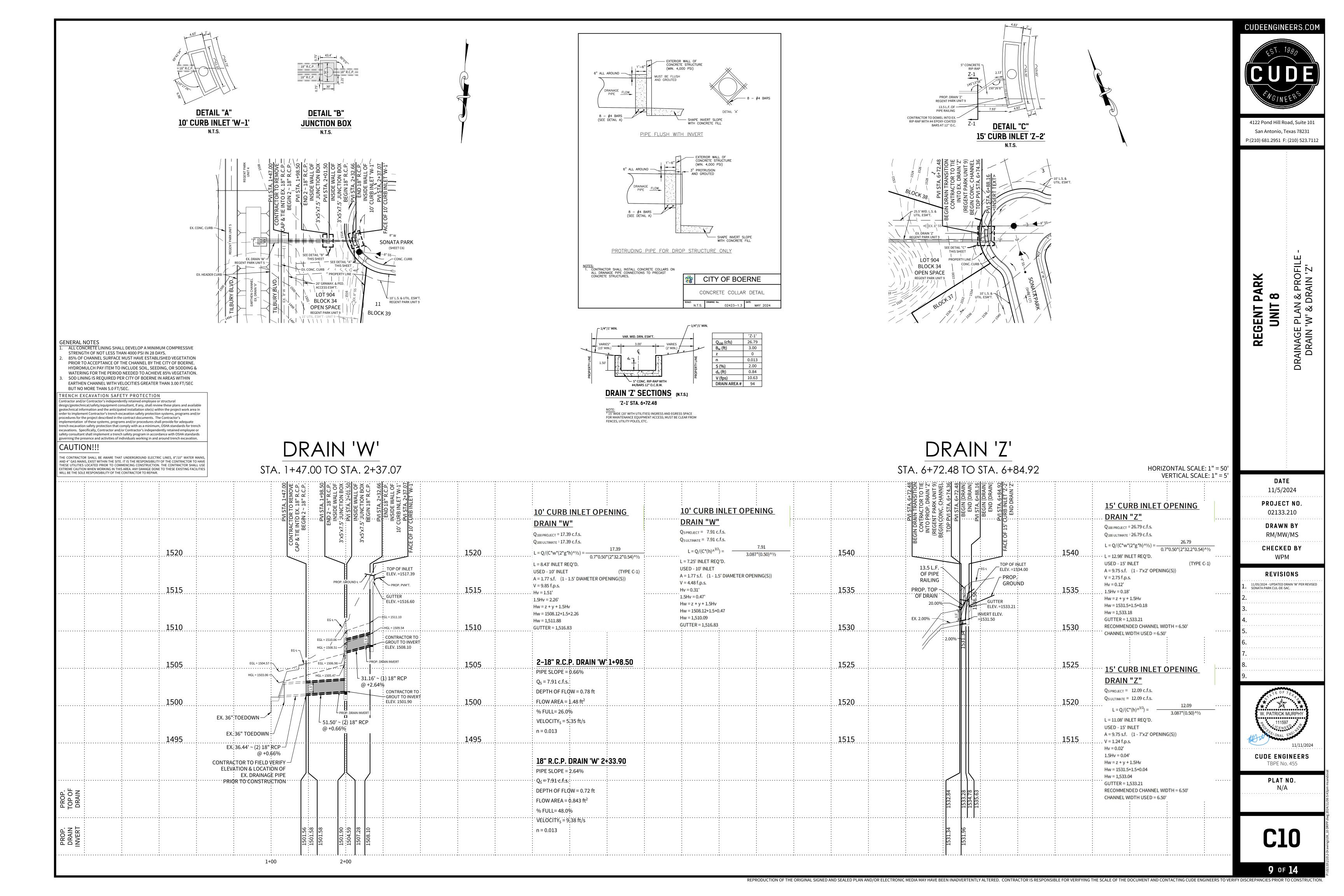
07/31/2024 - UPDATE CROSSWALK STRIPING

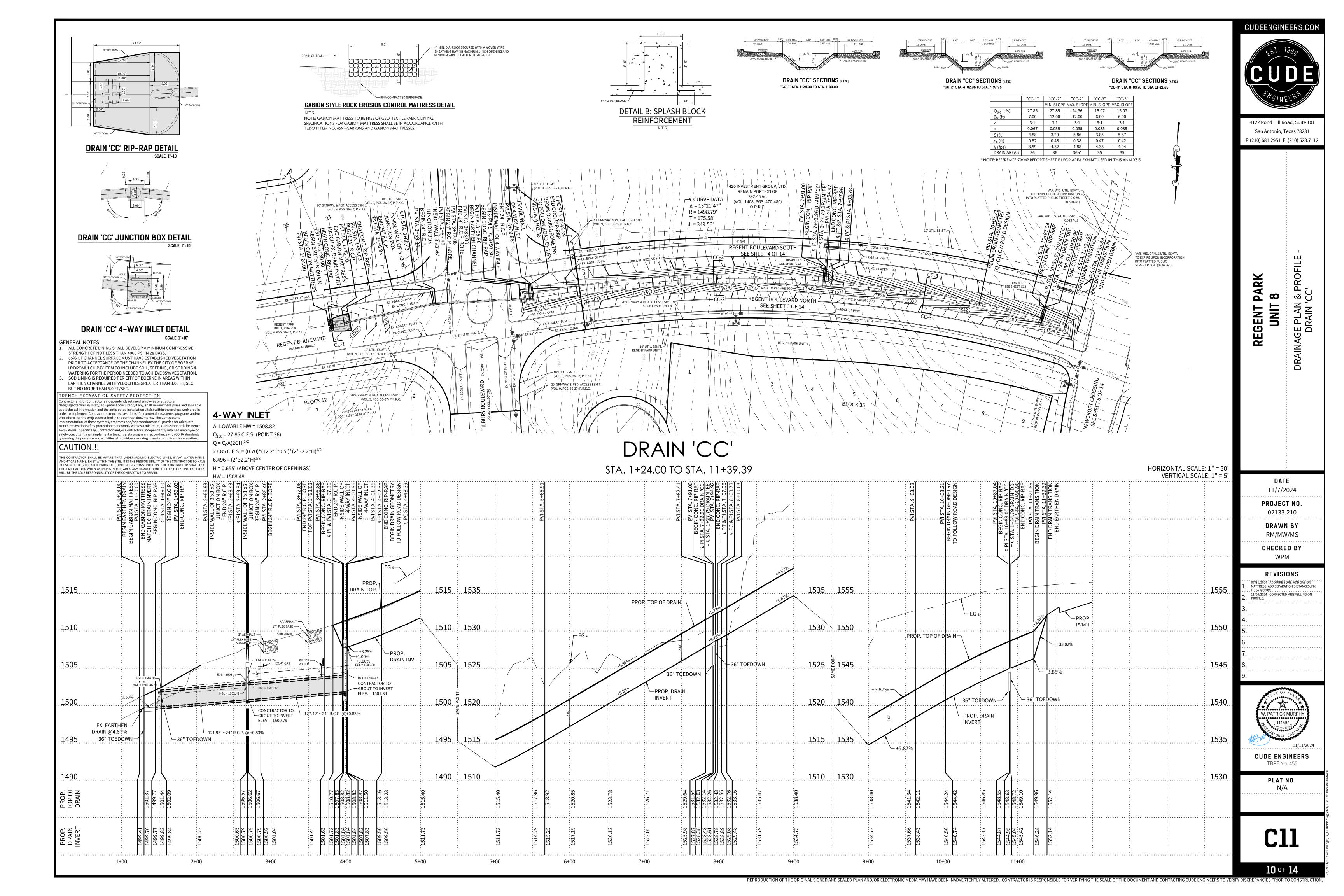
W. PATRICK MURPHY

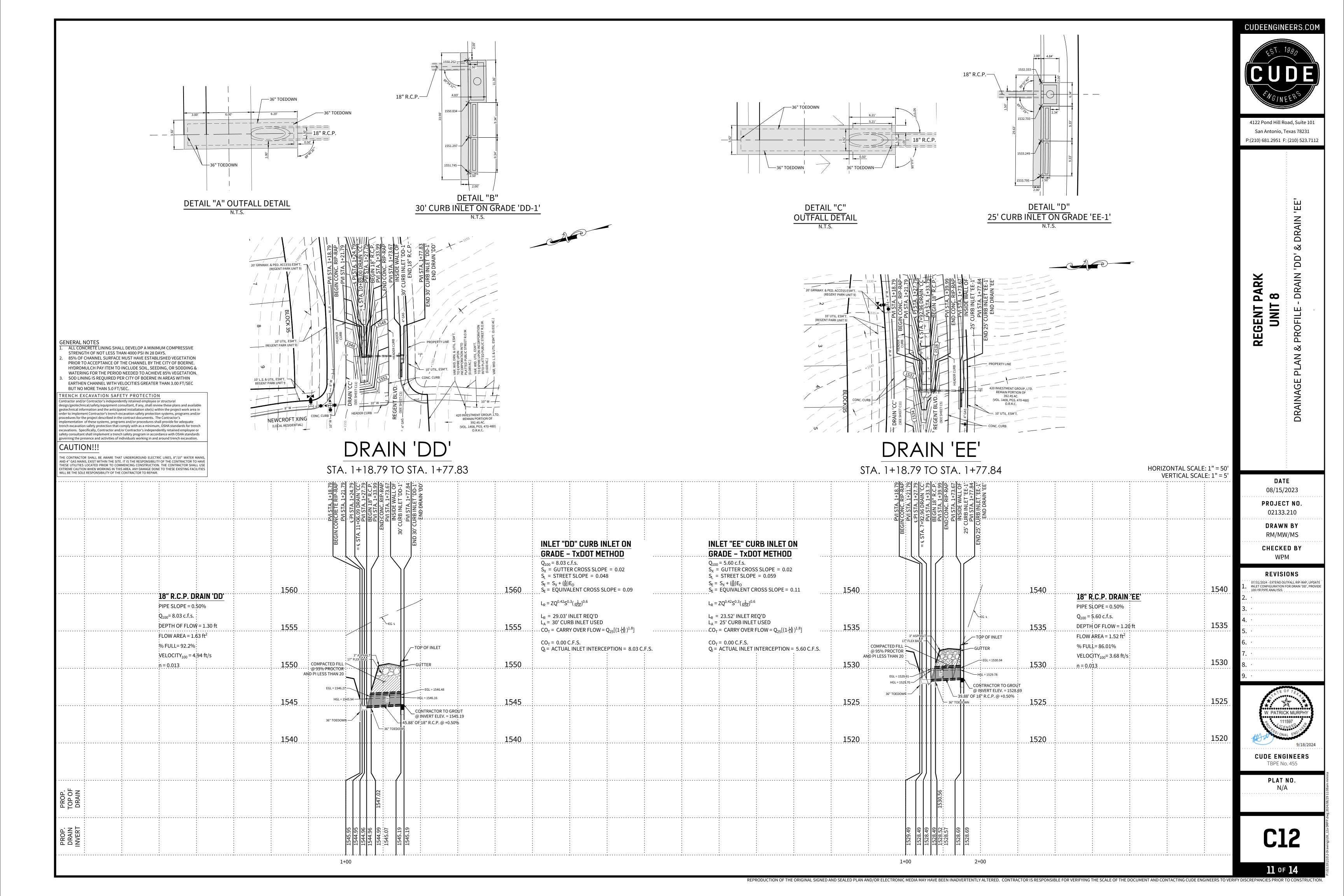
CUDE ENGINEERS
TBPE No. 455

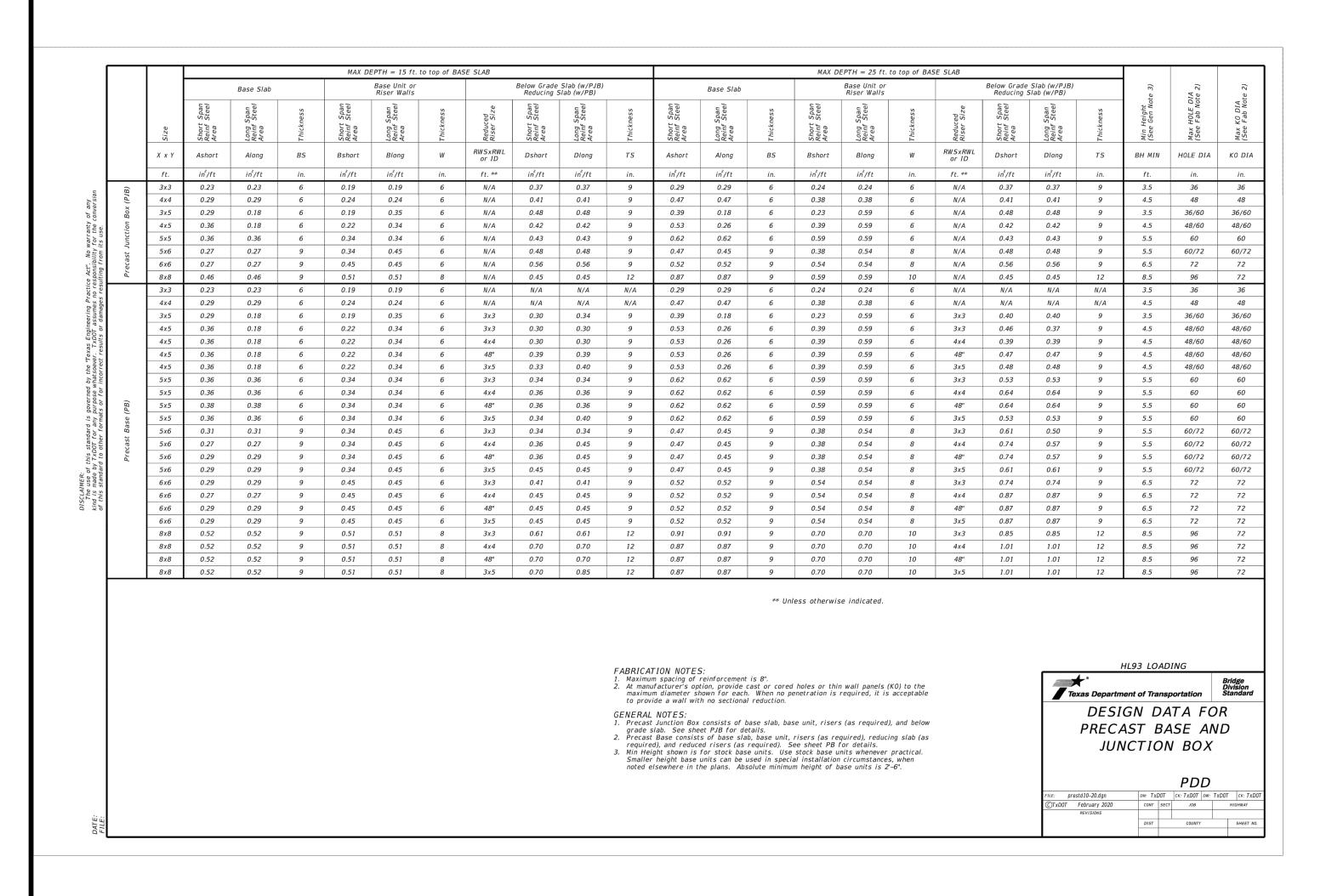
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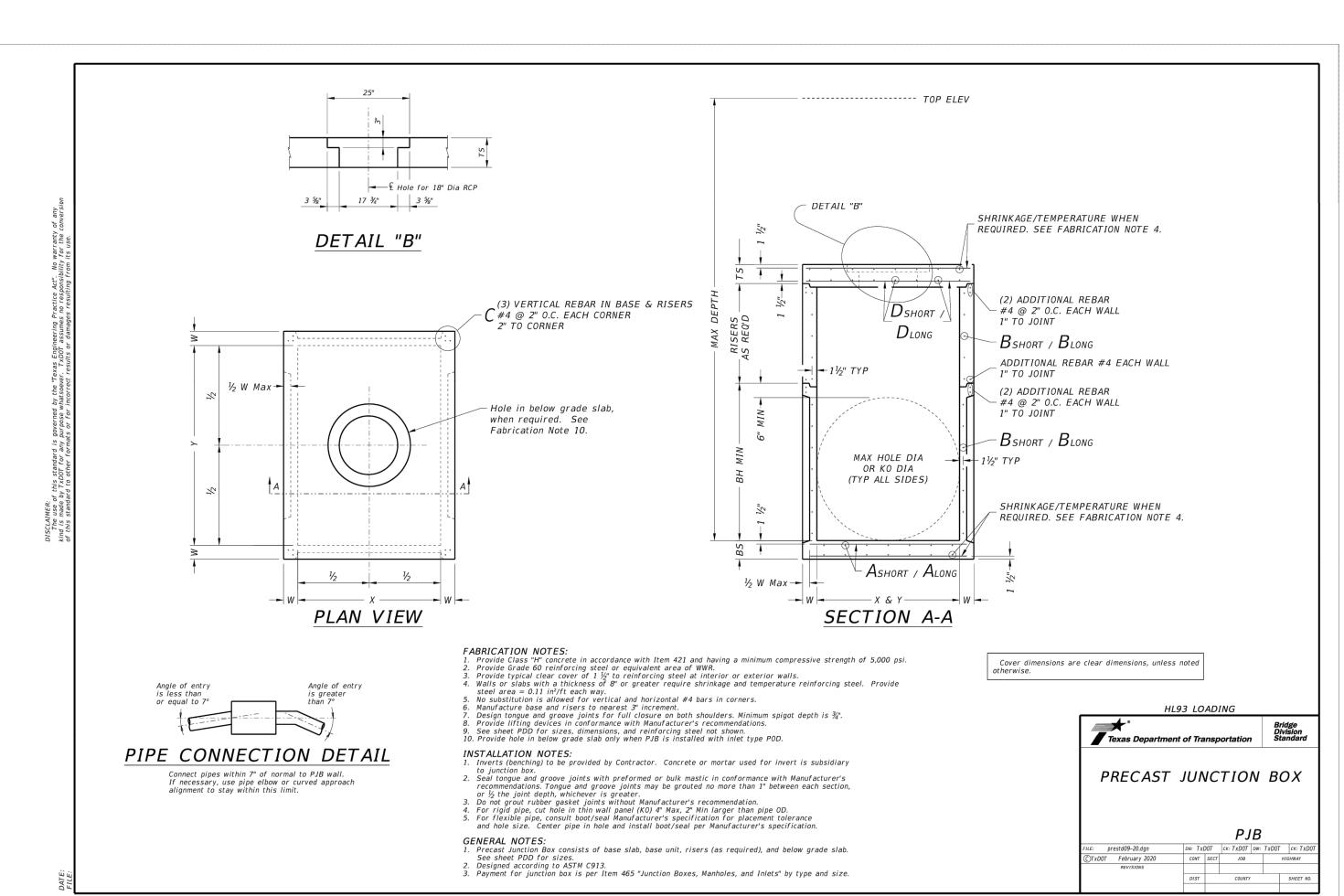
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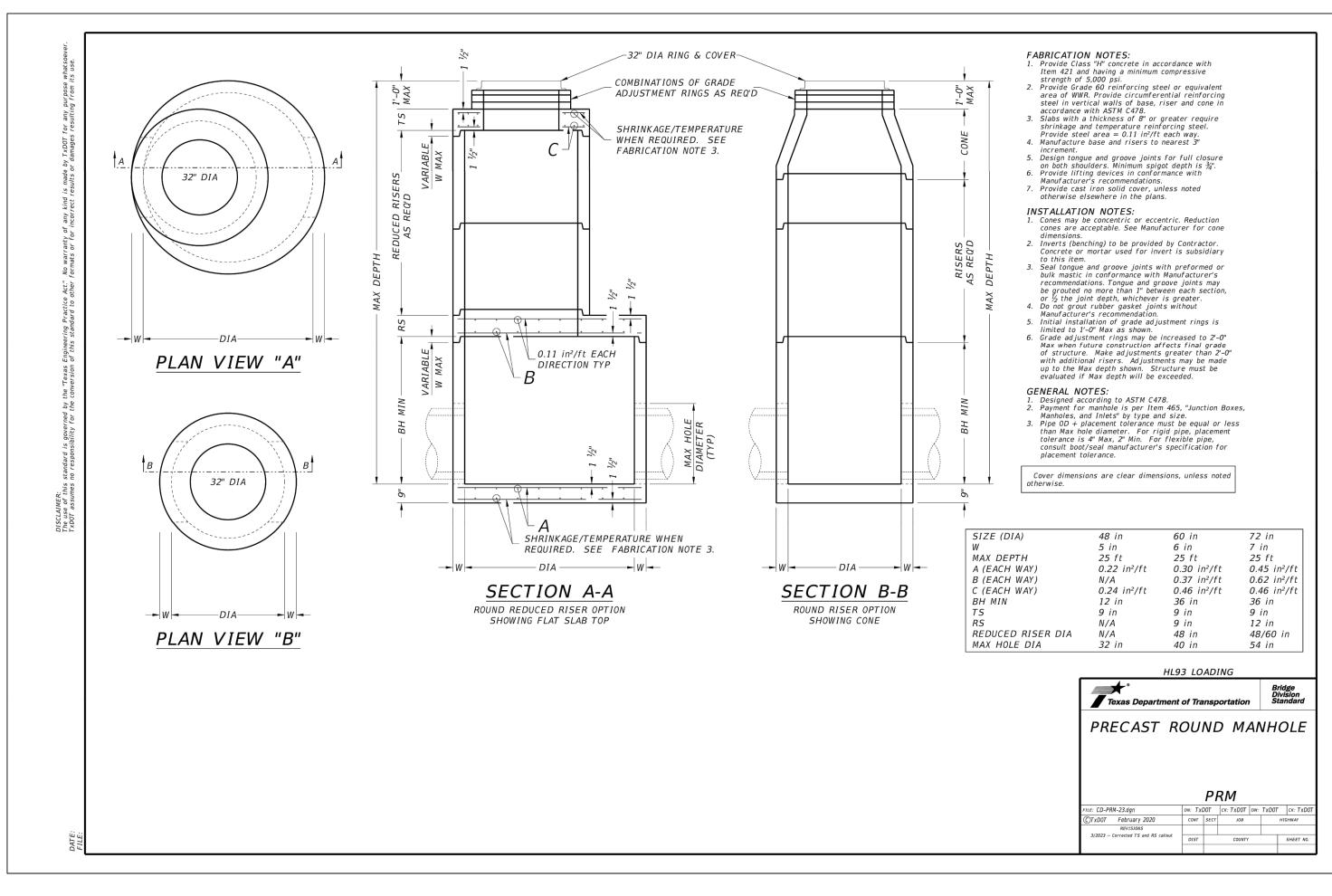












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GENT PARK UNIT 8

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DATE 08/15/2023 PROJECT NO.

> DRAWN BY RM/MW/MS

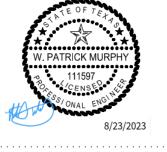
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02133.210

REVISIONS

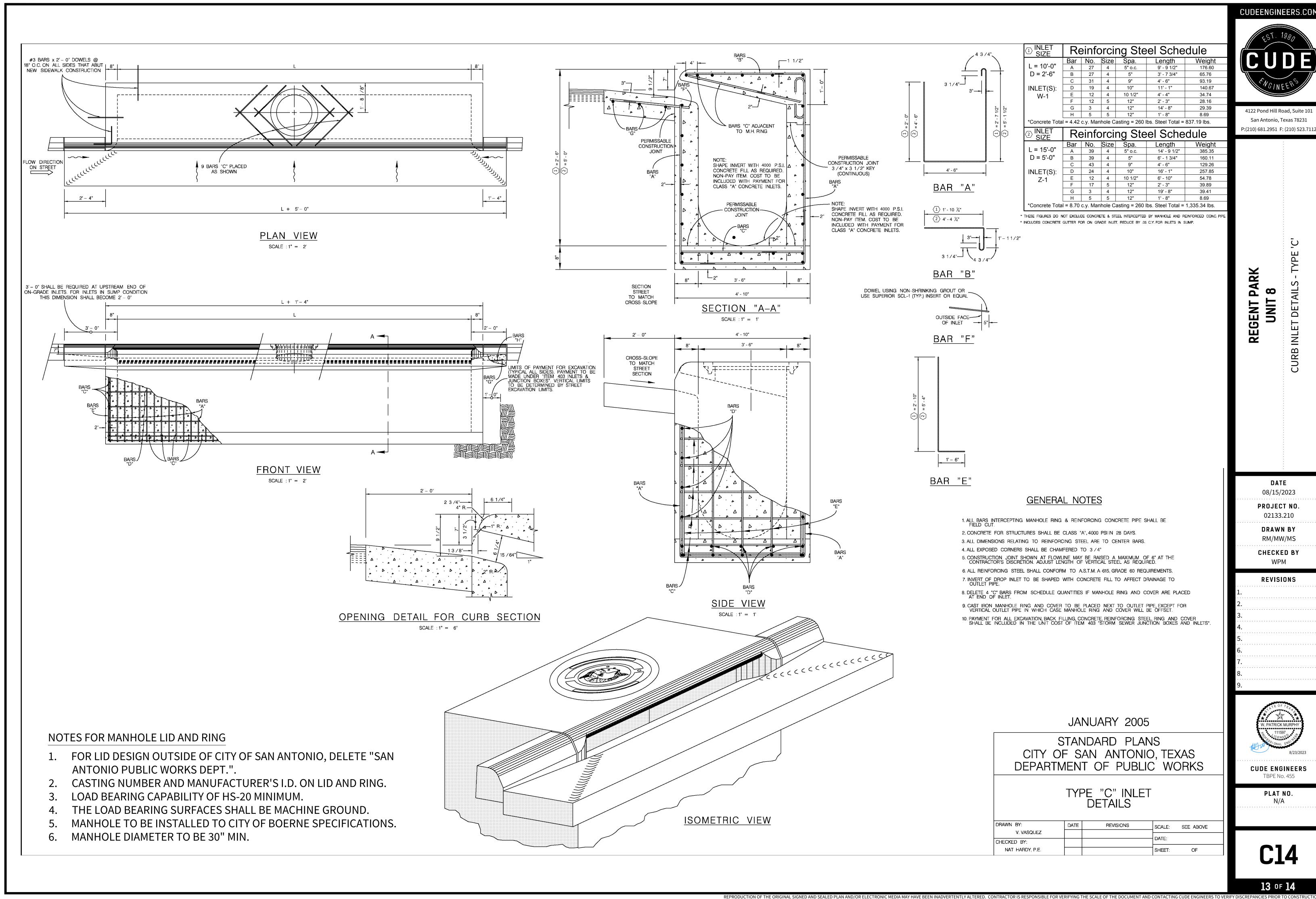
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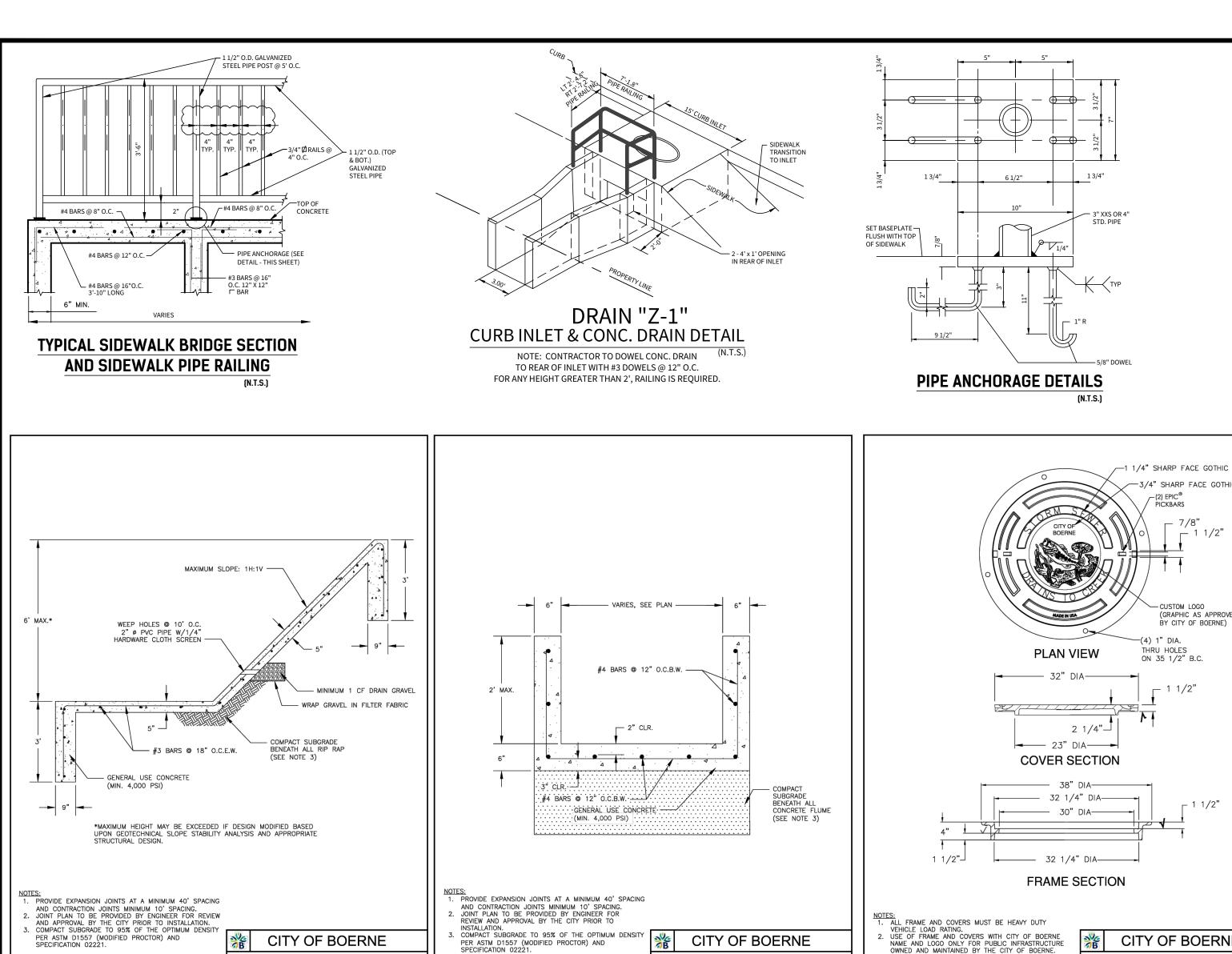
CUDE ENGINEERS
TBPE No. 455

PLAT NO. N/A

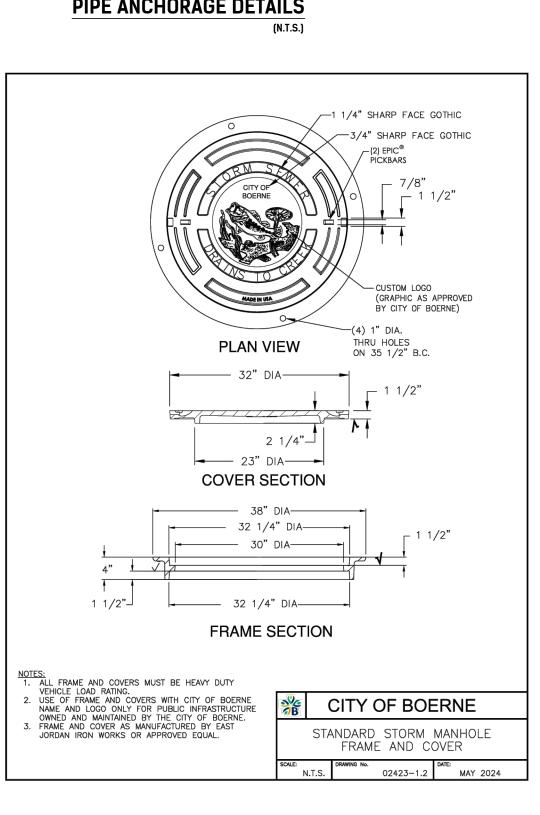
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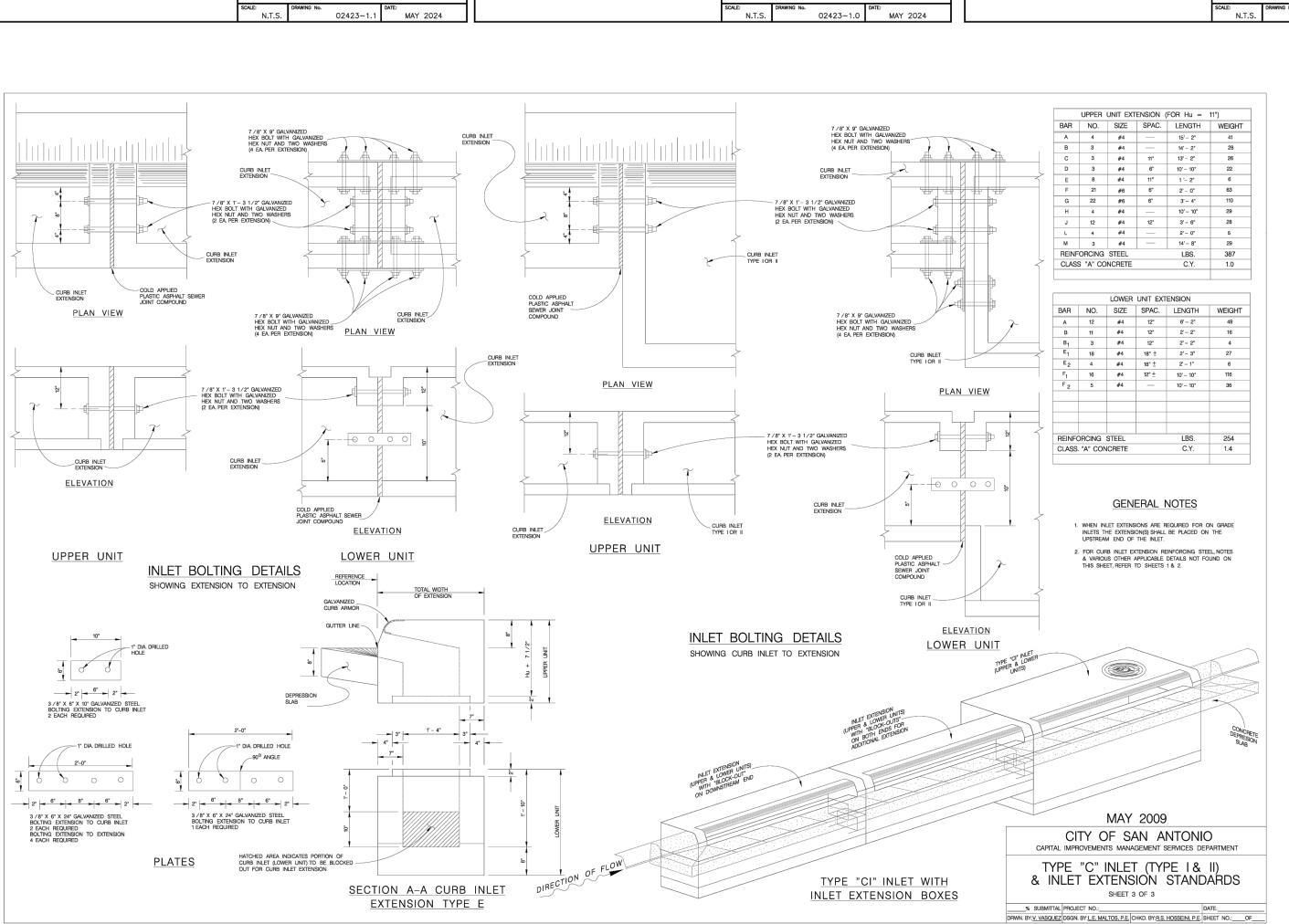


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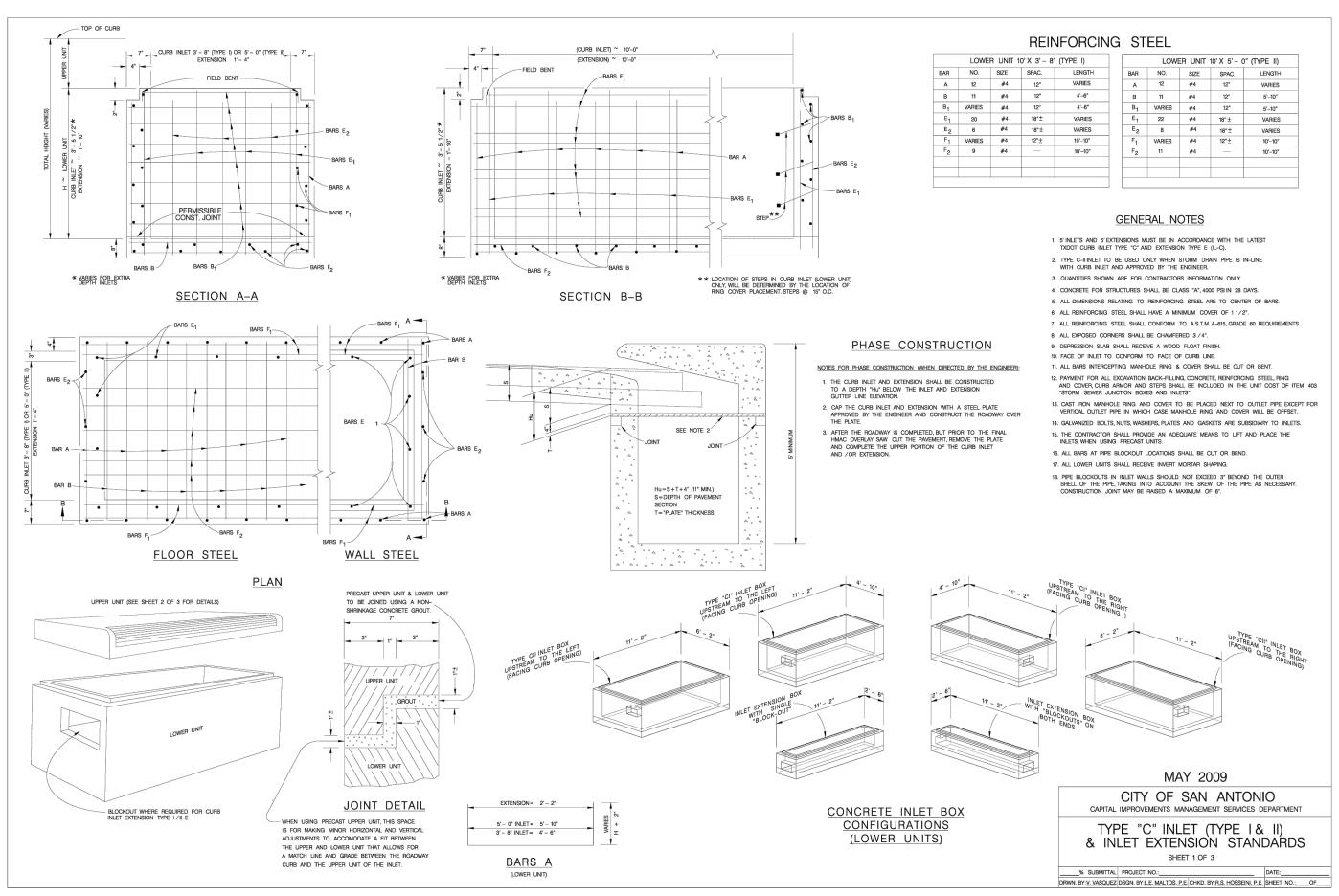
CONCRETE FLUME

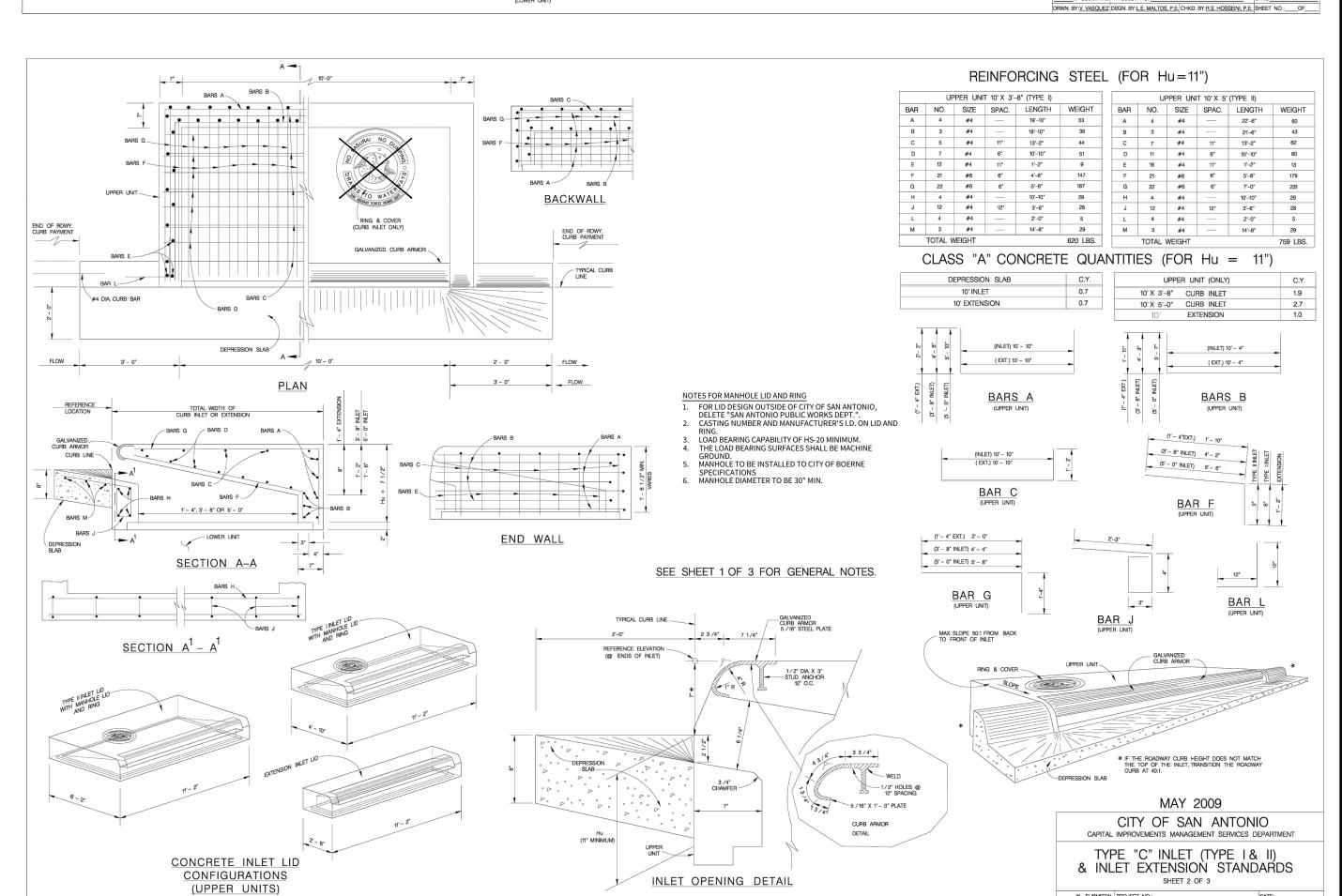




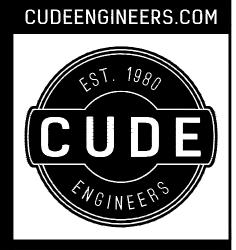
CONCRETE RIP-RAP

TYPICAL SECTION





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



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ANDARD ST **PARK** BOERNE - DRAINAGE DETAILS GENT Ш

OF

DATE 10/24/2024

PROJECT NO. 02133.210

DRAWN BY RM/MW/MS CHECKED BY

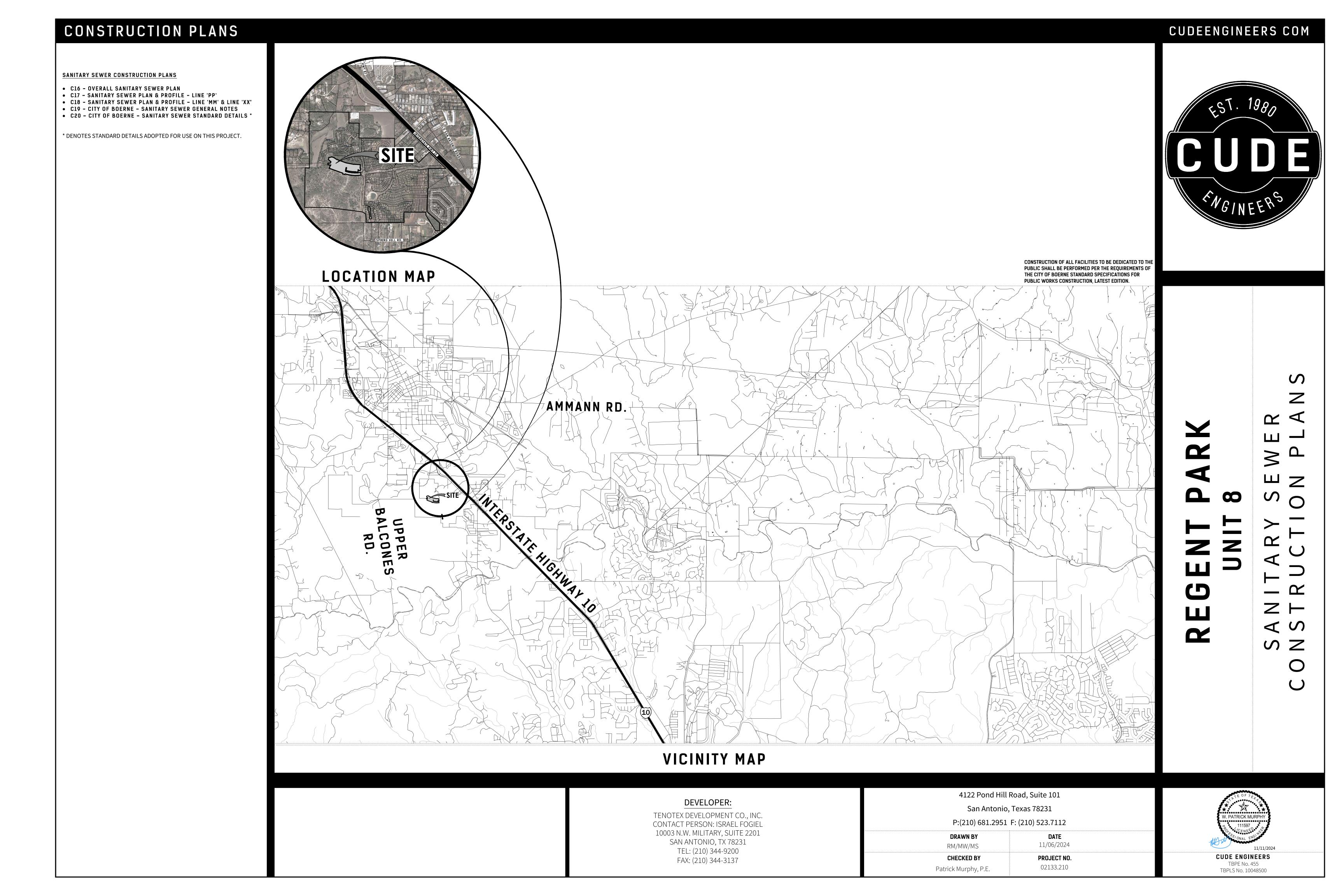
REVISIONS 07/31/2024 - UPDATED 2024 CITY OF BOERNE 10/24/2024 - INCLUDED FRAME AND COVER DETA

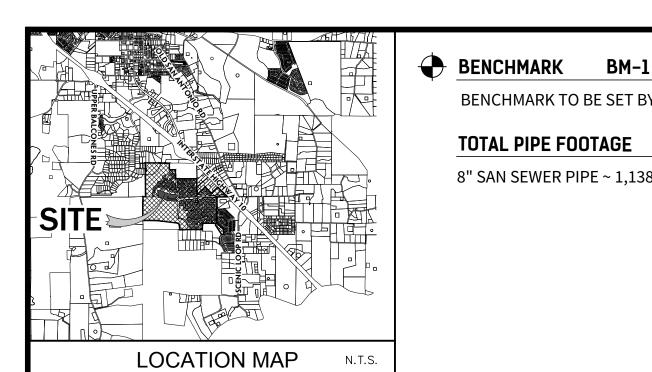
WPM



CUDE ENGINEERS TBPE No. 455

> PLAT NO. N/A





BENCHMARK TO BE SET BY ENGINEER PRIOR TO CONSTRUCTION.

TOTAL PIPE FOOTAGE

——— EX.8"SS —————

8" SAN SEWER PIPE ~ 1,138.88 L.F.

DEVELOPER:

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LEGEND

EXISTING SANITARY SEWER PROPOSED SANITARY SEWER DIRECTION OF FLOW

SANITARY SEWER MANHOLE

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TEST WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE CITY OF BOERNE INSPECTOR/TEST ADMINISTER, PER EACH 8-INCH LOOSE LIFT PER 500 LINEAR FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY CITY OF BOERNE WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

TRENCH EXCAVATION SAFETY PROTECTION Contractor and/or Contractor's independently retained employee or structural design/geotechnical/safety/equipment consultant, if any, shall review these plans and available geotechnical information and the anticipated installation site(s) within the project work area in order to implement Contractor's trench excavation safety described in the contract documents. The Contractor's implementatio 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.

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.

FOR PAVEMENT DESIGN SECTION SEE GEOTECHNICAL ENGINEERING REPORT

MANHOLE OPENING INCREASED TO 30" AS PER TAC CHAPTER 217.55

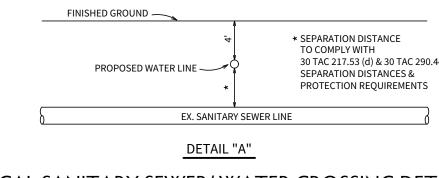
ALL SEWER PIPE LATERALS SHALL BE SDR26 (CLASSS 160) PVC PIPE

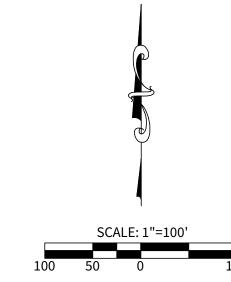
CONTRACTOR TO TAP EXISTING MAIN TO PROVIDE SERVICE TO LOTS 1 & 2,

BLOCK 38.

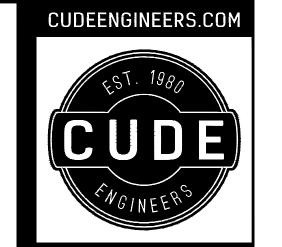
FINISHED GROUND * SEPARATION DISTANCE TO COMPLY WITH 30 TAC 217.53 (d) & 30 TAC 290.44 (e) PROPOSED WATER LINE -SEPARATION DISTANCES & PROTECTION REQUIREMENTS EX. SANITARY SEWER LINE

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL





STA. 4+85.37 LINE 'PP' PROP. DROP MH 'PP-2' STA. 4+99.15 LINE 'PP' BLOCK 34 CONTRACTOR TO REMOVE 8" PLUG REGENT PARK UNIT 9 OPEN SPACE & TIE PROP. 8" SAN. SEW. INTO VAR. WID. DRN. ESM'T. EX. 8" SAN. SEW. @ INVERT = 1526.30 CONTRACTOR TO VERIFY TIE-IN ELEVATION PROPOSED REGENT PARK UNIT 9 STA 11+49.79 LINE 'PP' & NOTIFY ENGINEER OF ANY DISCREPANCY. CONTRACTOR TO **INSTALL 6" CLEANOUT** STA. 8+50.37 LINE 'PP' STA. 1+19.39 LINE 'XX' STA 15+81.74 LINE 'MM' MH 'PP-3' (VENTED) **CONTRACTOR TO REMOVE 8" PLUG** CONTRACTOR TO & TIE PROP. 8" SAN. SEW. INTO **INSTALL 6" CLEANOUT** (SHEET 3 OF 5) EX. 8" SAN. SEW. @ INVERT = 1526.80 15' UTIL. ESM'T. 35.59' ~ 8" (SDR-26) @ +4.04% CONTRACTOR TO VERIFY TIE-IN ELEVATION BLOCK 37 PROPOSED REGENT PARK UNIT 9 & NOTIFY ENGINEER OF ANY DISCREPANCY. STA. 15+16.01 LINE 'MM' MH 'MM-5' (VENTED) 10' L.S. & UTIL. ESM'T. -10' UTIL. ESM'T. 🗸 PROPOSED REGENT PARK UNIT 9 – 15' UTIL. ESM'T. (PROPOSED REGENT PARK UNIT 4) 20' GRNWAY. & PED. ACCESS ESM'T. STA 1+63.73 LINE 'XX' PROPOSED REGENT PARK UNIT 9 108' DRN. & UTIL. ESM'T. → CONTRACTOR TO TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (0.124 Ac.) INSTALL 6" CLEANQUT REGENT PARK UNIT 4 STA. 11+21.01 LINE 'MM' CONTRACTOR TO REMOVE 8" PLUG 10' L.S. & UTIL. ESM'T. & TIE PROP. 8" SAN. SEW. INTO EX. 8" SAN. SEW. @ INVERT = 1510.11 20' GRNWAY. & PED. ACCESS ESM'T. (VOL. 9. PGS. 36-37) P.R.K.C. 10' UTIL. ESM'T. CONTRACTOR TO VERIFY TIE-IN ELEVATION BLOCK 35 & NOTIFY ENGINEER OF ANY DISCREPANCY. (VOL. 9, PGS. 36-37) P.R.K.C. 10' UTIL. ESM'T. 10' UTIL. ESM'T. — PROPOSED REGENT PARK UNIT 9 420 INVESTMENT GROUP, LTD. REMAIN PORTION OF (392.45 Ac.) REGENT BLVD. LOT 901 VOL. 1408, PGS. 470-480, O.R.K.C. BLOCK 36 REGENT BLVD. 20' GRNWAY. & PED. ACCESS ESM'T. PROPOSED REGENT PARK UNIT 9 OPEN SPACE PROPOSED REGENT PARK UNIT 9 (0.545 Ac.) MAJOR ARTERIAL (108' R.O.W. MIN.) VAR. WID. UTIL. ESM'T. 7 10' UTIL. ESM'T. -20' GRNWAY. & PED. ACCESS ESM'T. VAR. WID. L.S. & UTIL. ESM'T. (VOL. 9, PGS. 36-37) P.R.K.C. (0.031 Ac.) 420 INVESTMENT GROUP, LTD. 10' UTIL, ESM'T. -VAR. WID. UTIL. ESM'T. (VOL. 9, PGS. 36-37) P.R.K.C. TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET R.O.W. (392.45 Ac.) VOL. 1408, PGS. 470-480, O.R.K.C.



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REGENT PARK UNIT 8

DATE 11/6/2024 PROJECT NO.

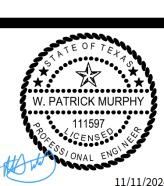
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02133.210

CHECKED BY WPM

REVISIONS 07/31/2024 - REVISE CROSSING DETAIL, UPDATE

UI) 1/2024 - REVISE CROSSING DETAIL, OPDATE LINE 'PP' AND 'XX' START STATIONS TO ACCOUNT FOR UNIT 9 MANHOLE DROPS 11/06/2024 - UPDATE LINE 'PP' AND 'XX' START STATIONS TO ACCOUNT FOR UNIT 9 MANHOLE

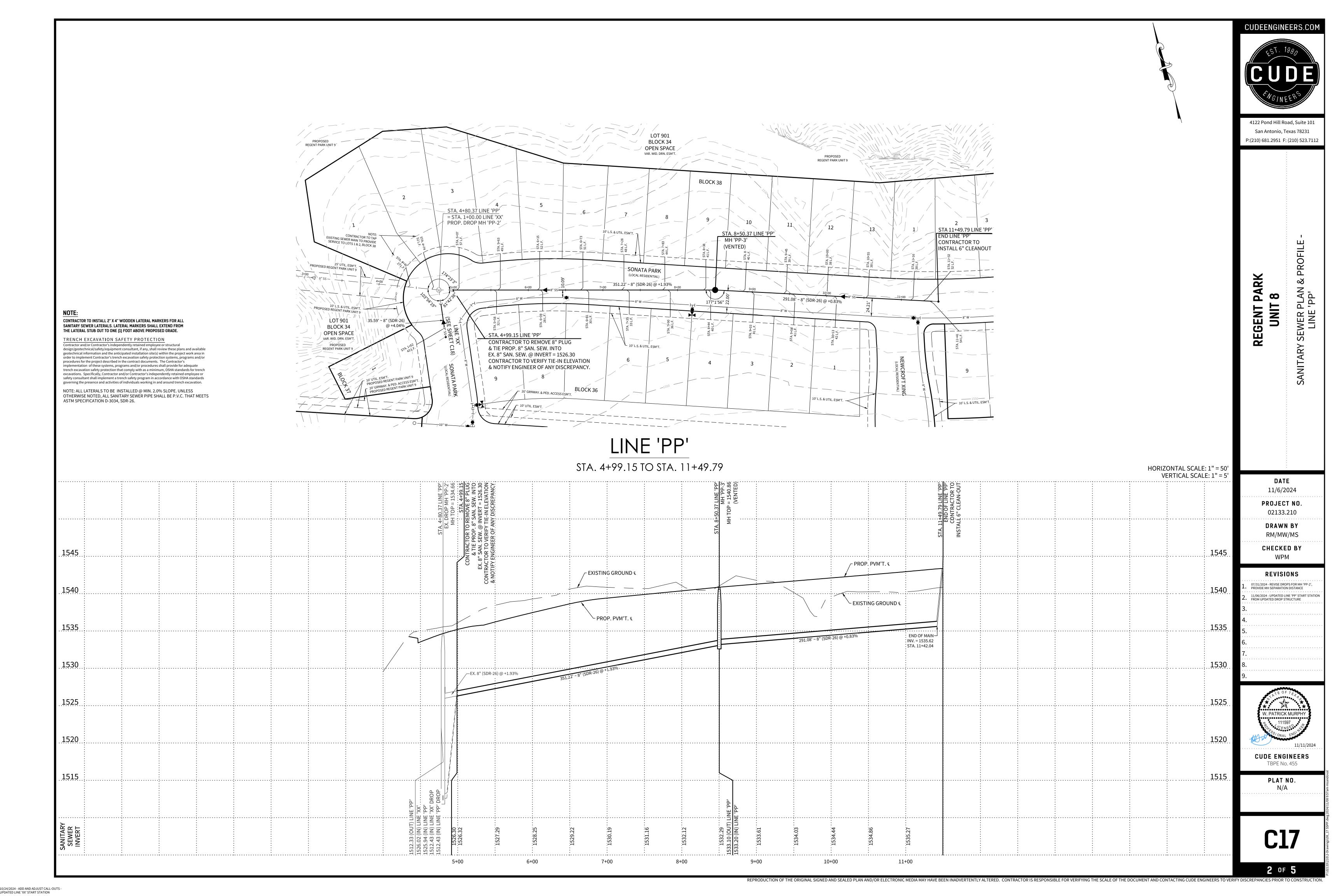


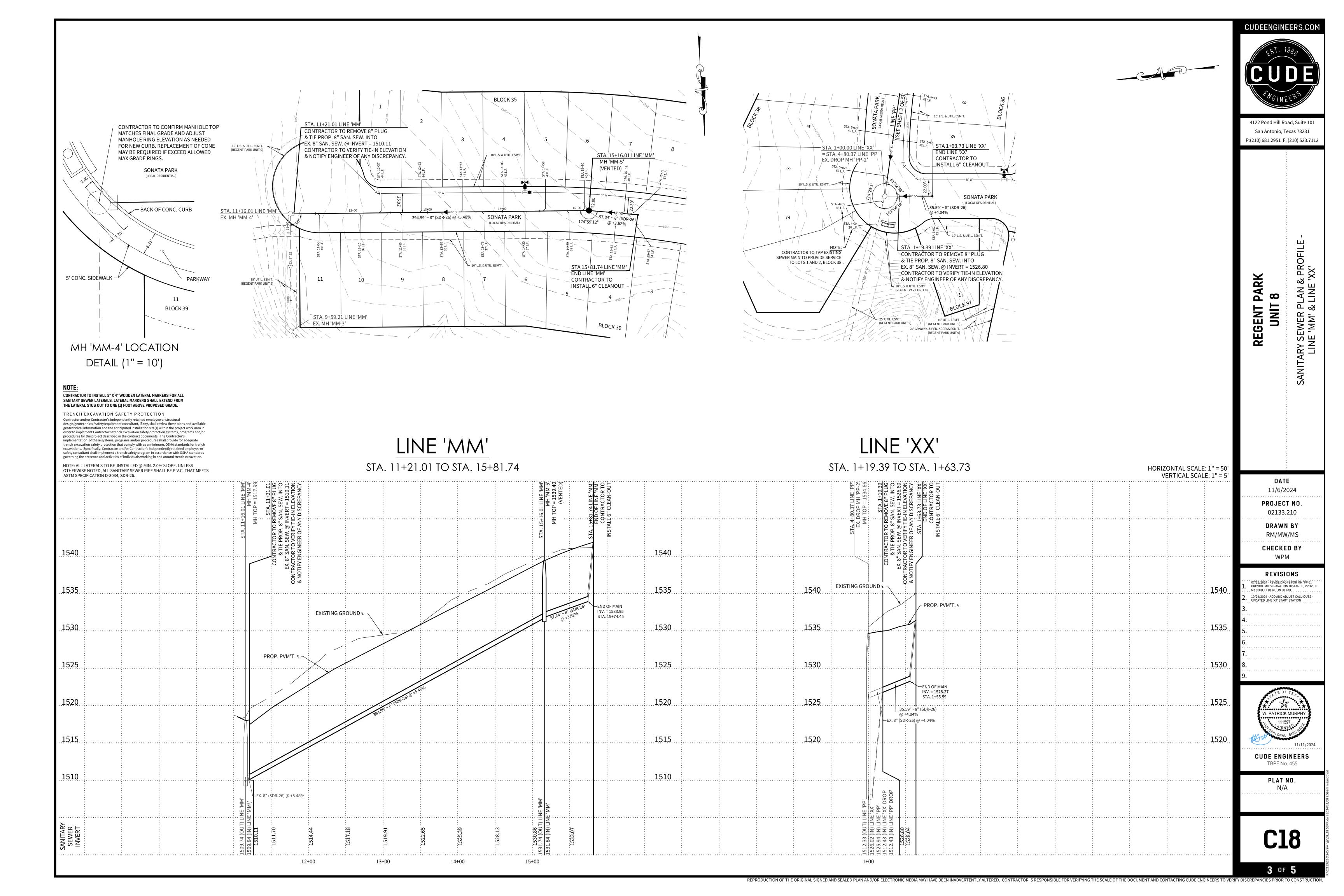
CUDE ENGINEERS TBPE No. 455

PLAT NO. N/A

1 of 5

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





CRITERIA FOR SEWER MAIN CONSTRUCTION IN THE **VICINITY OF WATER MAINS**

- I. WHERE A SEWER MAIN CROSSES OVER A WATER MAIN AND THE SEPARATION DISTANCE IS LESS THAN NINE (9) FEET, ALL PORTIONS OF THE SEWER MAIN WITHIN NINE (9) FEET OF THE WATER LINE SHALL BE CONSTRUCTED USING 150 PSI PRESSURE RATED PIPE AT LEAST EIGHTEEN (18) FEET IN LENGTH MAY BE CENTERED ON THE WATER MAIN IN LIEU OF PIPE CONNECTION REQUIREMENTS (NO SEPARATE PAY
- II. WHERE SEMI-RIGID OR RIGID SEWER MAIN CROSSES UNDER A WATER MAIN AND THE SEPARATION DISTANCE IS LESS THAN NINE FEET BUT GREATER THAN TWO FEET, THE INITIAL BACKFILL SHALL BE CEMENT STABILIZED SAND (TWO OR MORE BAGS OF CEMENT PER CUBIC YARD OF SAND) FOR ALL SECTIONS OF THE SEWER WITHIN NINE FEET OF THE WATER MAIN.
- III. WHERE A SEWER MAIN CROSSES UNDER A WATER MAIN AND THE SEPARATION DISTANCE IS LESS THAN TWO FEET, THE SEWER MAIN SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON, OR PVC WITH A MINIMUM PRESSURE RATING OF 150 PSI WITHIN NINE FEET OF THE WATER MAIN, SHALL BE PLACED NO CLOSER THAN SIX (6") INCHES BETWEEN OUTER DIAMETERS, AND SHALL BE JOINED WITH PRESSURE RING GASKET CONNECTIONS OR CORROSION PROTECTED MECHANICAL COUPLING DEVISES OR A CAST IRON OR DUCTILE IRON MATERIAL. A SECTION OF PSI PRESSURE RATE PIPE OF A LENGTH GREATER THAN EIGHTEEN (18) FEET MAY BE CENTERED ON THE WATER MAIN IN LIEU OF PIPE CONNECTION REQUIREMENTS (NO SEPARATE PAY ITEM).
- IV. WHERE A SEWER MAIN PARALLELS A WATER MAIN AND THE SEPARATION DISTANCE IS LESS THAN NINE FEET, THE SEWER MAIN SHALL BE BELOW THE WATER MAIN, SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON OR PVC WITH A MINIMUM PRESSURE RATING OF 150 PSI FOR BOTH PIPE AND JOINTS FOR A DISTANCE OF NINE FEET BEYOND THE POINT OF CONFLICT, SHALL MAINTAIN A MINIMUM SEPARATION DISTANCE BETWEEN OUTER DIAMETERS OF TWO FEET VERTICALLY AND FOUR FEET HORIZONTALLY, AND SHALL BE JOINED WITH PRESSURE RING GASKET CONNECTIONS OR CORROSION PROTECTED MECHANICAL COUPLING DEVICES OF A CAST IRON OF DUCTILE IRON MATERIALS.
- V. SANITARY SEWER MANHOLES SHALL NOT BE INSTALLED ANY CLOSER THAN NINE FEET TO WATER MAINS.
- VI. PLAN AND PROFILE MUST SHOW TYPE OF CROSSING AND MATERIAL TO USE.

NON-EDWARDS AQUIFER RECHARGE ZONE SANITARY SEWER SYSTEM GENERAL NOTES

- 1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS PROJECT SHALL BE APPROVED BY THE CITY OF BOERNE AND COMPLY WITH: A. CURRENT "CITY OF BOERNE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (AUGUST, 2015)
- B. TEXAS NATURAL RESOURCE CONSERVATION COMMISSION'S DESIGN CRITERIA FOR SEWERAGE SYSTEMS [30 TAC 217]
- 2. THE CONTRACTOR IS TO NOTIFY AND MAKE ARRANGEMENTS WITH THE CITY OF BOERNE PUBLIC WORKS DEPARTMENT AT 1-830-248-8511, 48 HOURS PRIOR TO EXCAVATION.
- 3. CONTRACTOR TO CONTACT 1-800-344-8377, 48 HOURS PRIOR TO COMMENCING WORK FOR MARKING UNDERGROUND UTILITIES.
- 4. THE CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING SANITARY SEWERS AT ALL TIMES DURING CONSTRUCTION.
- 5. ALL WORK IN TEXAS DEPARTMENT OF TRANSPORTATION AND KENDALL COUNTY 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 CITY OF BOERNE PUBLIC WORKS DEPARTMENT AND SHALL BE DONE IN ACCORDANCE WITH CITY OF BOERNE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
- 7. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, THE CITY OF BOERNE MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND GAS VALVES THAT ARE IN THE PROJECT AREAS.
- 8. NO TESTING WILL BE PERFORMED PRIOR TO 30 DAYS FROM COMPLETE INSTALLATION OF THE SANITARY SEWER LINES.
- THE FOLLOWING SEQUENCE WILL BE STRICTLY ADHERED TO:
- 1. PULL MANDREL.
- 2. PERFORM AIR TEST.
- 3. PULL WIPER (AFTER STREET HAS BEEN ASPHALTED IN NEW SUBDIVISIONS).

MANHOLES:

- 9. ALL MANHOLES SHALL BE CONSTRUCTED SO THAT TOP OF THE RING IS AT LEAST FOUR (4) INCHES ABOVE THE FINISHED GRADE OF THE SURROUNDING GROUND EXCEPT WHEN LOCATED IN TXDOT R.O.W. IN TXDOT ROW AREAS, THE MANHOLE RING SHALL BE FLUSH WITH NATURAL GROUND.
- 10. ALL MANHOLES IN THE STREET AND 100 YEAR FLOODPLAIN AREAS SHALL HAVE WATERTIGHT RINGS AND COVERS IN ACCORDANCE WITH THE MOST CURRENT CITY OF BOERNE STANDARD SPECIFICATIONS FOR CONSTRUCTION.
- 11. ON ANY MANHOLES TO BE ABANDONED, THE RINGS AND COVER SHALL BE SALVAGED IN ACCORDANCE WITH THE MOST CURRENT CITY OF BOERNE STANDARD SPECIFICATIONS FOR CONSTRUCTION: PREPARATION OF RIGHT-OF-WAY. THE HOLE SHOULD BE BACKFILL TO THE SATISFACTION OF THE INSPECTOR. ALL PUBLIC MANHOLES WILL BE VACUUM TESTED AS PER 02515 3.2.

- 12. THE KIND AND DESCRIPTION OF THE PIPE CONDUIT IS SHOWN ON THE PLANS, (IF PVC, "SOR" AND ASTW/ANSI DESIGNATIONS, CLASS).
- 13. 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.
- 14. ALL PVC SEWER PIPE WITH OVER 14 FEET OF COVER SHALL BE EXTRA STRENGTH, SDR 26 MINIMUM PIPE STIFFNESS OF 115 PSI.
- 15. ALL SEWER PIPES SHALL BE GOVERNED BY THE CITY OF BOERNE STANDARD SPECIFICATIONS FOR CONSTRUCTION (AUGUST, 2015).
- 16. SEWER PIPE CONNECTIONS TO PRE-CAST MANHOLES WILL BE COMPRESSION JOINTS AS APPROVED BY CITY OF BOERNE, MECHANICAL JOINT "BOOT TYPE" CONNECTIONS ALONE WILL NOT BE ALLOWED. "BOOT TYPE" JOINTS MAY BE USED IN CONJUNCTION WITH COMPRESSION JOINTS AS APPROVED BY CITY OF BOERNE. SEWER PIPE CONNECTIONS TO MONOLITHIC MANHOLES SHALL BE REVIEWED AND APPROVED BY CITY OF BOERNE. CITY OF BOERNE MUST APPROVE ANY CHANGES FROM THESE
- 17. ALL PIPE TRENCHING, BEDDING AND BACKFILL SHALL BE DONE IN ACCORDANCE WITH APPROPRIATE ASTM/ANSI SPECIFICATIONS (REFERENCE 30 TAC 217.54; ASTM C12, (ANSI A106.2) OR ASTM D-2321 (ANSI K65.171).
- 18. 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 CITY OF BOERNE STANDARD SPECIFICATIONS FOR CONSTRUCTION.
- 19. ALL RESIDENTIAL SEWER SERVICE LATERALS SHALL BE EXTENDED TO AT LEAST THE PROPERTY LINE, CAPPED AND SEALED.
- 20. WHERE REQUIRED, CONCRETE ENCASEMENT SHALL BE PLACED FOR FULL WIDTH OF THE TRENCH TO A PLANE 8" ABOVE THE TOP OF THE PIPE, WITH PAY LIMITS AS SHOWN ON THE STANDARD DETAIL SHEET.
- 21. A MINIMUM OF 3 FEET OF COVER IS TO BE MAINTAINED OVER THE SANITARY SEWER MAIN AND LATERALS AT SUBGRADE, OTHERWISE CONCRETE ENCASEMENT WILL BE REQUIRED.

BLASTING:

22. NO BLASTING WILL BE ALLOWED.

TESTING:

23. ALL SEWER LINES MUST BE TESTED IN ACCORDANCE WITH THE FOLLOWING:

- A. 30 TAC 217.54 (b)(1) OR THE CITY OF BOERNE STANDARD SPECIFICATIONS FOR CONSTRUCTION 3.09 & 3.10 OF SECTION 025.30: DEFLECTION TEST FOR FLEXIBLE AND SEMI-RIGID PIPE CONDUCTED AFTER FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS.
- 30 TAC 217.57 (a)(1) & 217.57 (a)(2) OR THE CITY OF BOERNE STANDARD SPECIFICATIONS INFILTRATION AND/OR EXFILTRATION AND/OR LOW-PRESSURE AIR TEST. 30 TAC 217.58 OR THE CITY OF BOERNE STANDARD SPECIFICATIONS. ALL MANHOLES AND WET

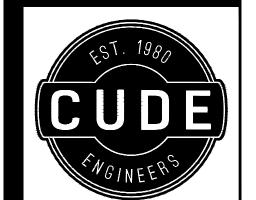
WELLS MUST BE TESTED SEPARATELY AND INDEPENDENTLY OF THE COLLECTION LINES.

- 24. SEWER LINES SHALL BE TESTED FROM MANHOLE TO MANHOLE.
- 25. SANITARY SEWER MAIN CONNECTIONS MADE DIRECTLY TO EXISTING MANHOLES WILL REQUIRE SUCCESSFUL TESTING OF THE MANHOLE IN ACCORDANCE WITH THE CITY OF BOERNE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
- 26. AFTER CONSTRUCTION, TESTING WILL BE DONE BY TV CAMERA BY THE CITY OF BOERNE AND OBSERVED BY INSPECTOR, WASTEWATER ENGINEERING PERSONNEL, AND CONTRACTOR AS CAMERA IS RUN THROUGH THE LINES. ANY ABNORMALITIES, SUCH AS BROKEN PIPE OR MISALIGNED JOINTS, MUST BE REPLACED BY THE CONTRACTOR AT HIS EXPENSE.
- 27. A COPY OF ALL TESTING REPORTS SHALL BE FORWARDED TO THE CITY OF BOERNE PUBLIC WORKS
- 28. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EOUIPMENT 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 THESE 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.
- 29. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL WASTE MATERIALS UPON PROJECT COMPLETION. THE CONTRACTOR SHALL NOT PERMANENTLY PLACE ANY WASTE MATERIALS IN THE 100-YER FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN DEVELOPMENT PERMIT. WASTE MATERIALS SHALL BE REMOVED FROM TXDOT ROW DAILY.
- 30. WATER JETTING THE BACKFILL WILL NOT BE PERMITTED. SANITARY SEWER TRENCHES SUBJECT TO TRAFFIC SHALL CONFORM TO THE CITY OF BOERNE STANDARD SPECIFICATIONS FOR CONSTRUCTION.
- 31. WHERE THE MINIMUM 9-FOOT SEPARATION DISTANCE BETWEEN SEWER LINE AND WATER LINE/MAINS CANNOT BE MAINTAINED, THE INSTALLATION OF SEWER LINES SHALL BE IN STRICT ACCORDANCE WITH TEXAS NATURAL RESOURCE CONSERVATION COMMISSION'S RULES (30 TAC 217.53 (d) & 30 TAC 290.44 (e)).
- 32. THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AND 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 NOTES ON THE PROJECTS PLAN AND PROFILE SHEETS.
- 33. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED BY THE CONTRACTOR AFTER FINAL ACCEPTANCE OF THE PROJECT BY THE CITY OF BOERNE PUBLIC WORKS AND TXDOT.
- 34. NO EXTRA PAYMENT SHALL BE ALLOWED FOR WORK CALLED FOR ON PLANS BUT NOT INCLUDED ON THE BID SCHEDULE. THIS INCIDENTAL WORK WILL BE REQUIRED AND SHALL BE INCLUDED UNDER THE PAY ITEM TO WHICH IT RELATES.
- 35. THE DEVELOPER DEDICATES THE SANITARY SEWER MAINS UPON COMPLETION BY THE DEVELOPER AND ACCEPTANCE BY THE CITY OF BOERNE. THE CITY OF BOERNE WILL OWN AND MAINTAIN SAID WORK COMPLETED BY THE CONTRACTOR, WHICH HAS NOT RECEIVED A WORK ORDER OR THE CONSENT OF THE CITY OF BOERNE CONSTRUCTION INSPECTION DIVISION WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.
- 36. OWNER PAYS DIRECTLY FOR ALL INITIAL (PASSING) DENSITY TESTS

SEWER GENERAL NOTES

- 1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN STRICT CONFORMANCE WITH CITY OF BOERNE REQUIREMENTS. SEE GENERAL NOTE NO. 1 ON SHEET C1.
- 2. ALL PIPE TRENCHING, BEDDING AND BACKFILL SHALL BE DONE IN ACCORDANCE WITH SPECIFICATIONS SECTION 30 TAC 217.54.
- 3. MANHOLE RINGS AND COVERS SHALL BE NEENAH FOUNDRY, DEETER FOUNDRY, ALAMO IRON WORKS, EAST JORDAN IRON WORKS, OR EQUAL. WHEN WATER TIGHT MANHOLE RINGS AND COVERS ARE SPECIFIED, THEY SHALL PROVIDE A-77 O.R. WATER TIGHT OR EQUAL AND MEET THE REQUIREMENTS OF SECTION 02515 1.2 OR THE CITY OF BOERNE STANDARD SPECIFICATIONS.
- 4. ALL MANHOLES SHALL BE PRECAST, INCLUDING BASES, "CHARLOTTES CONCRETE" OR APPROVED EQUAL WITH GASKETS ACCORDING TO ASTM C891.
- 5. MATERIAL FOR SANITARY SEWER PIPE MUST BE THE SAME FROM MANHOLE TO MANHOLE. CHANGES IN TYPE OF PIPE MAY BE MADE ONLY AT MANHOLES OR SPECIAL STRUCTURES, EXCEPT AS DIRECTED BY THE ENGINEER AND WHERE APPLICABLE APPROVED BY THE DIRECTOR OF PUBLIC WORKS.
- 6. ALL SEWER PIPE WITH LESS THAN THREE FEET (3) OF COVER SHALL BE CONCRETE ENCASED.
- 7. CONES, RISERS AND BASE MUST CONFORM TO ASTM C-478.
- 8. JOINTS BETWEEN MANHOLE SECTIONS MUST HAVE RUBBER GASKETS PER ASTM C-443.
- 9. SEWER PIPE WHERE WATER LINE CROSSES SHALL BE 150 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT WATER MAIN.
- 10. SEE SHEET 1 OF 5 FOR BENCHMARK INFORMATION.
- 11. PIPE TYPE DESIGNATIONS ARE SDR 26 AND SHALL BE FROM THE FOLLOWING MANUFACTURERS OR APPROVED EQUALS: J-M MANUFACTURING, CERTAINTEED CORPORATION, NORTH AMERICAN PIPE CORPORATION, I PEX INC., DIAMOND PLASTIC CORPORATION, FREEDOM PLASTICS, NATURAL PIPE AND PLASTICS, OR NORTHERN PIPE PRODUCTS. GASKET JOINTS AND ELECTROMETRIC SEALS SHALL CONFORM TO ASTM D3034 AND ASTM F477, RESPECTIVELY.
- 12. CONTRACTOR TO NOTIFY TXDOT INSPECTOR FOR THIS AREA 48 HOURS PRIOR TO STARTING CONSTRUCTION. (TXDOT BOERNE MAINTENANCE OFFICE 830-816-2430).
- 13. USE BEDDING AND INITIAL BACKFILL MATERIALS AS APPROVED BY THE CITY OF BOERNE AND CONFORM TO ASTM C33 GRADING AS SHOWN IN SECTION 02221 2.1C OF THE CITY OF BOERNE STANDARD SPECIFICATIONS.
- 14. COMPACT SECONDARY BACKFILL TO 98% MAX DRY DENSITY. CONTRACTOR TO PERFORM DENSITY TESTING AT INTERVALS OF 500' PER 6" LIFT OF SECONDARY BACKFILL FOR UTILITIES IN TXDOT ROW (TXDOT REQUIREMENT) AND PER 8" LIFT OF SECONDARY BACKFILL FOR UTILITIES IN ALL OTHER AREAS (CITY OF BOERNE REQUIREMENT). REPORTS TO BE PROVIDED TO CITY OF BOERNE PUBLIC WORKS DEPARTMENT. REPORTS OF TEST RESULTS TO BE PROVIDED TO TXDOT FOR WORK WITHIN TXDOT
- 15. CONTRACTOR TO CONTACT 1-800-344-8377 48 HOURS PRIOR TO COMMENCING WORK FOR MARKING UNDERGROUND CONDUITS.

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



CUDEENGINEERS.COI

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10/24/2024 PROJECT NO.

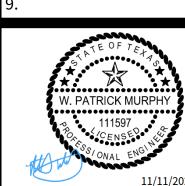
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REVISIONS

07/31/2024 - REVISED SEWER GENERAL NOTE N

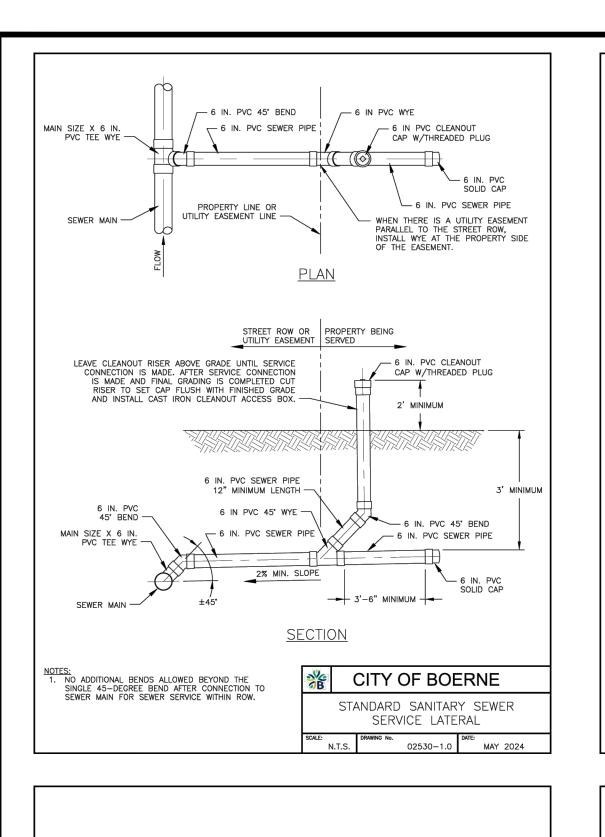
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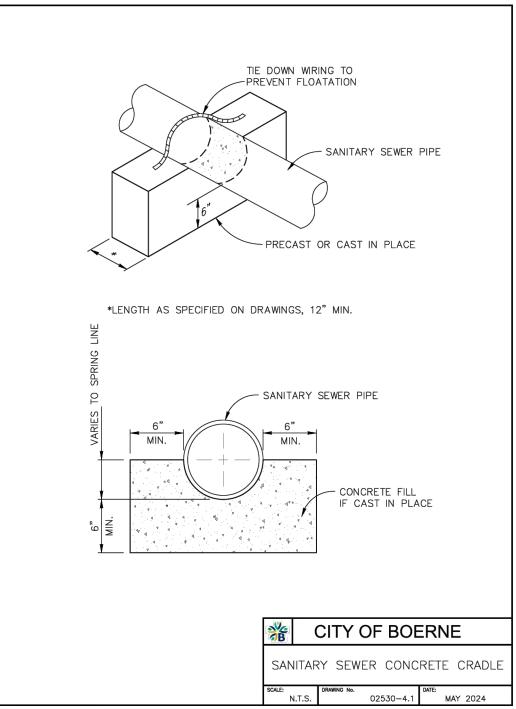


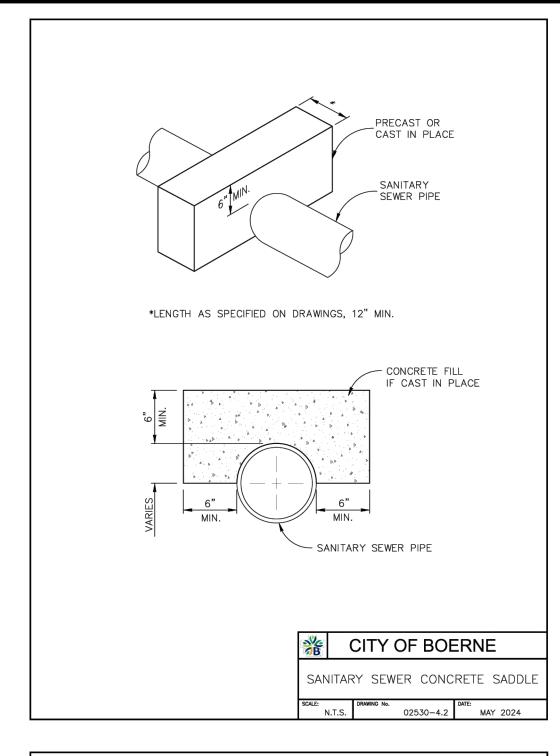
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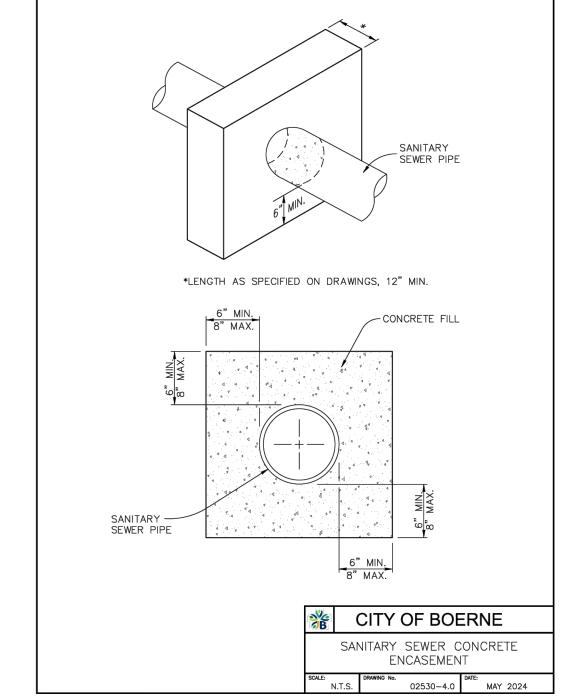
PLAT NO.

4 of 5









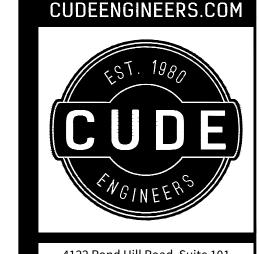
DETECTABLE WARNING TAPE, 12" BELOW FINISHED GRADE IN UNPAVED AREAS,

UTILITY PIPE ---

NOTES:

1. TYPICAL BEDDING PER APPLICABLE UTILITY
BACKFILL STANDARD SPECIFICATIONS.

2. SECONDARY BACKFILL TO BE COMPACTED IN LIFTS
PER ASTM D1557 (MODIFIED PROCTOR) AND
SPECIFICATION 02221.



FOR VENTED MANHOLE RING AND COVER REQUIREMENTS SEE SPECIFICATION

02530 2.7J.

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DETAIL

'ANDARD REGENT PARK UNIT 8

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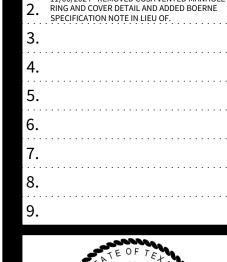
DATE 10/30/2024 PROJECT NO. 02133.210

> DRAWN BY RM/MW/MS

CHECKED BY WPM

REVISIONS

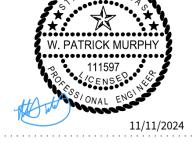
07/31/2024 - UPDATED 2024 DETAILS



(4) 5/8-11 NC HEX SS CAP SCREWS & NARROW ZINC PLT. WASHERS & RUBBER WASHERS

_ 2 7/16"

PICKBAR DETAIL



CUDE ENGINEERS TBPE No. 455

PLAT NO. N/A

5 of 5

GENERAL USE CONCRETE (MIN. 4,000 PSI) W/4~#3 BARS, E.W. — 3/4" 1/2" 13/16" 1/2" NEOPRENE GASKET CAST IRON CLEANOUT BOOT -6" PVC CLEANOUT CAP WITH THREADED PLUG — 33 3/4" DIA ----——— 40 1/4" DIA ——— **BOLT HOLE SECTION** FRAME SECTION 6" SANITARY SEWER PIPE -NOTES:

1. ALL FRAME AND COVERS MUST BE HEAVY DUTY VEHICLE LOAD RATING.

2. IF WATERTIGHT MANHOLE IS USED, COVER MUST BE VENTED PER THE TCEQ REQUIREMENTS.

2. USE OF FRAME AND COVERS WITH CITY OF BOERNE NAME AND LOGO ONLY FOR PUBLIC INFRASTRUCTURE OWNED AND MAINTAINED BY THE CITY OF BOERNE.

3. FRAME AND COVER AS MANUFACTURED BY EAST JORDAN IRON WORKS OR APPROVED EQUAL. BOOT FOR 45° ANGLE CLEANOUT RISER CITY OF BOERNE CITY OF BOERNE RESSURE TIGHT SANITARY MANHOLI FRAME AND COVER CAST IRON CLEANOUT BOOT N.T.S. 02530-2.3B MAY 2024 02530-3.1 MAY 2024

(GRAPHIC AS APPROVED BY CITY OF BOERNE)

(4 PLCS.) ON Ø 29-13/16" B.C.

(4 PLCS.) ¬

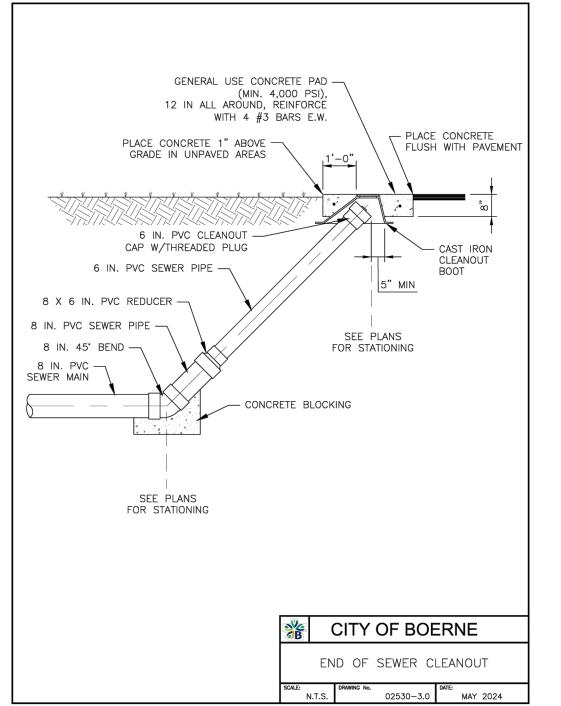
− 7/8"

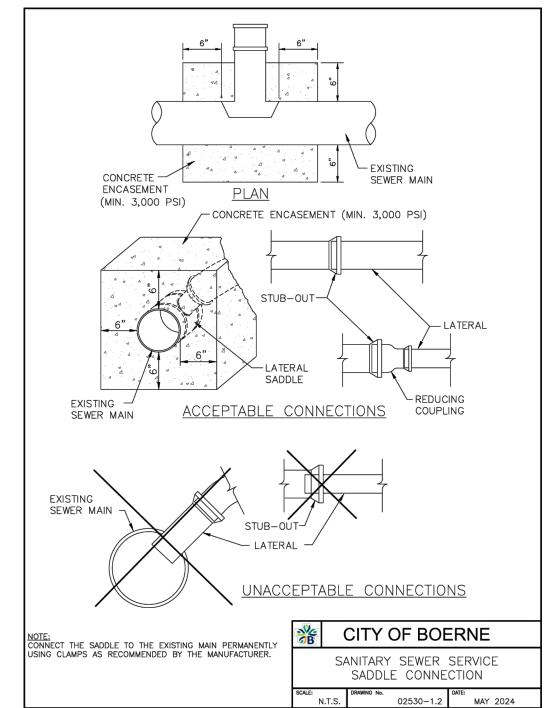
CROSS SECTION

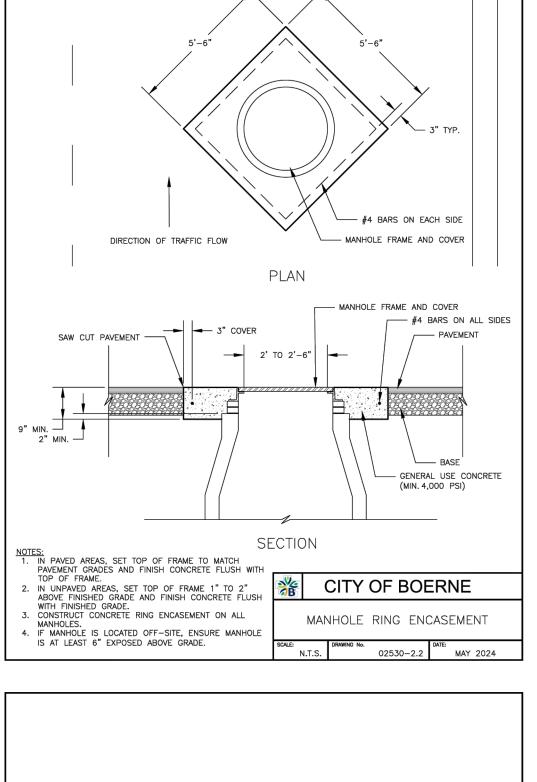
→ 32 1/4" DIA →

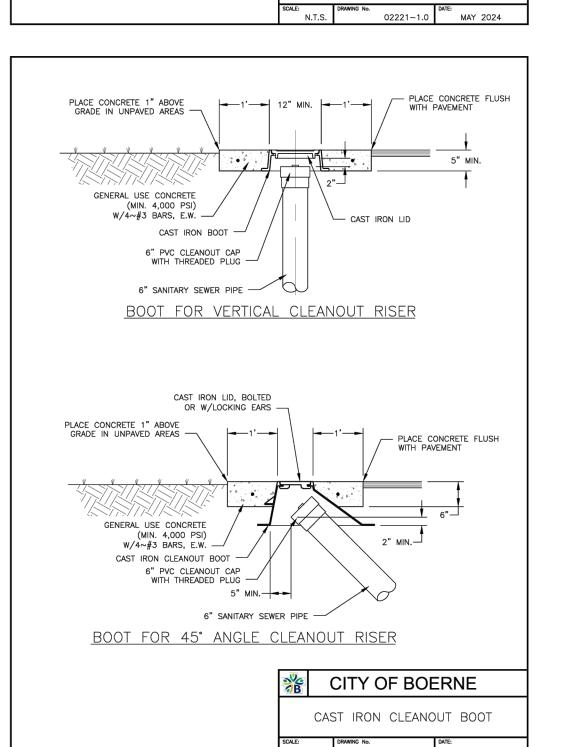
PLAN VIEW

_ 5/8"







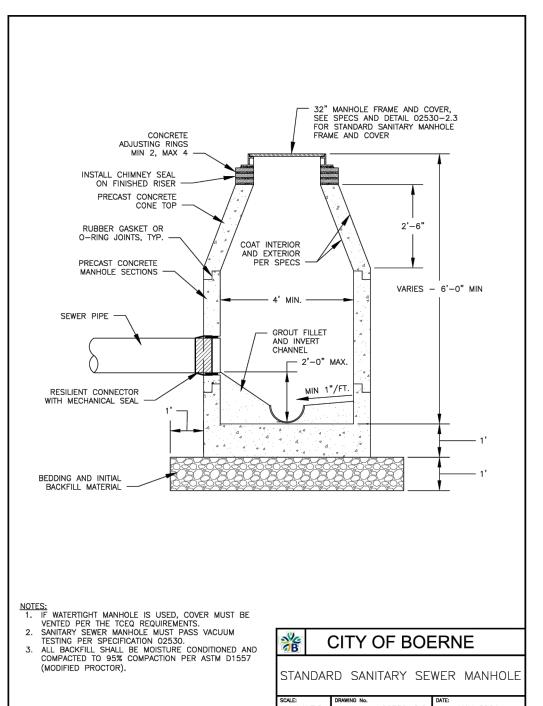


TRENCH WALLS
 MUST BE VERTICAL
 ALONG INITIAL
 BACKFILL

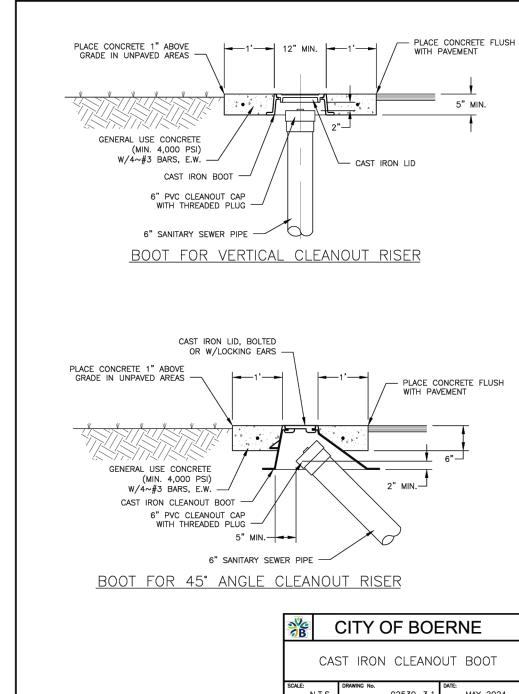
FOR NON-FERROUS

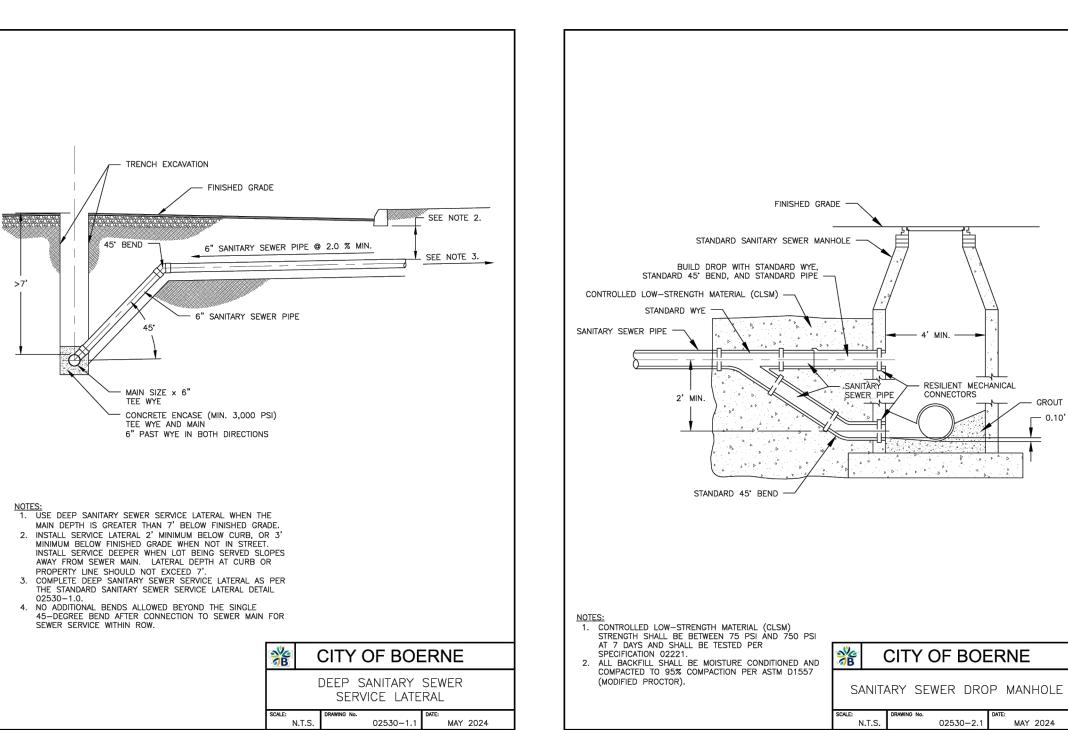
CITY OF BOERNE

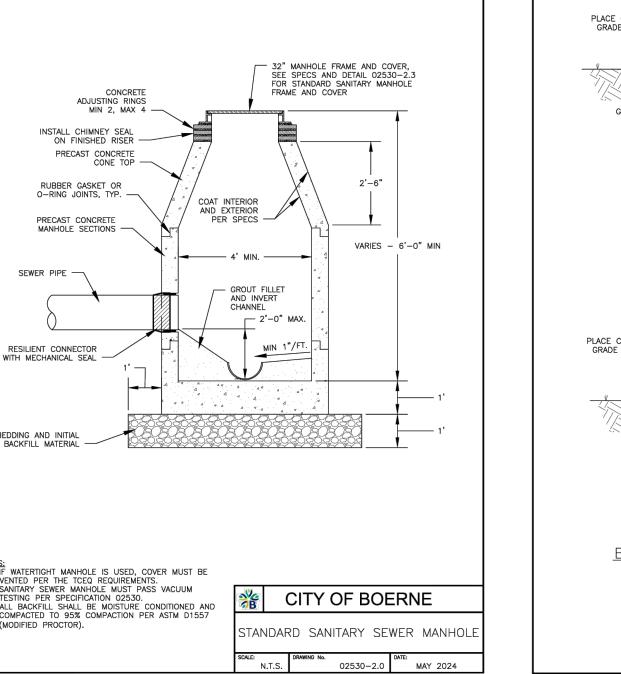
UTILITY PIPE TRENCH

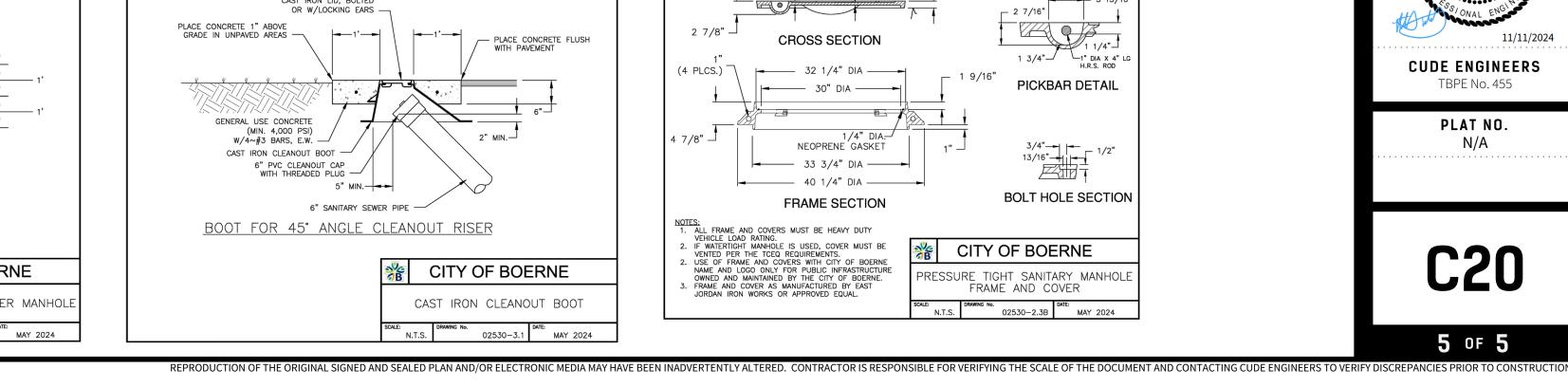


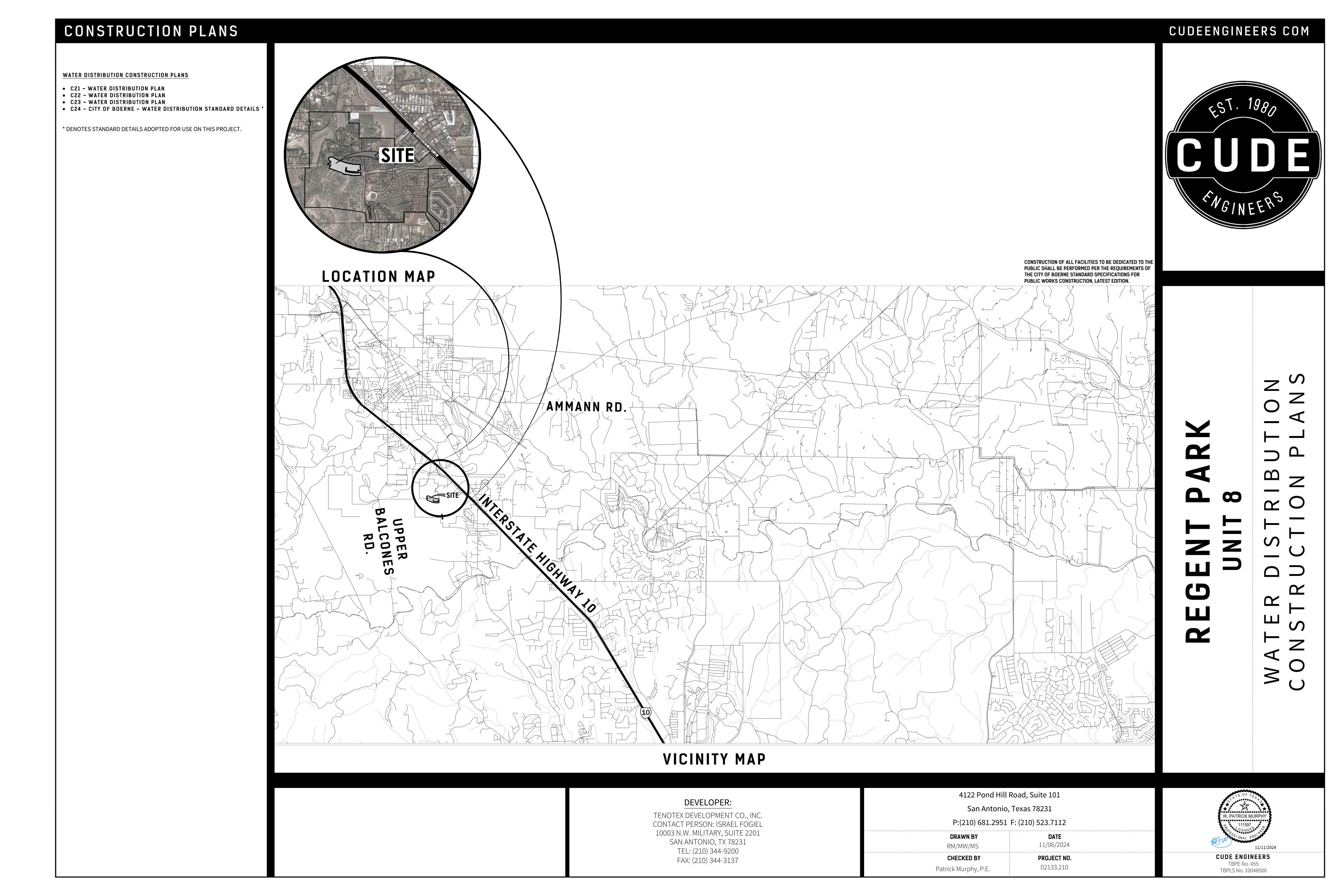
__ 0.10'

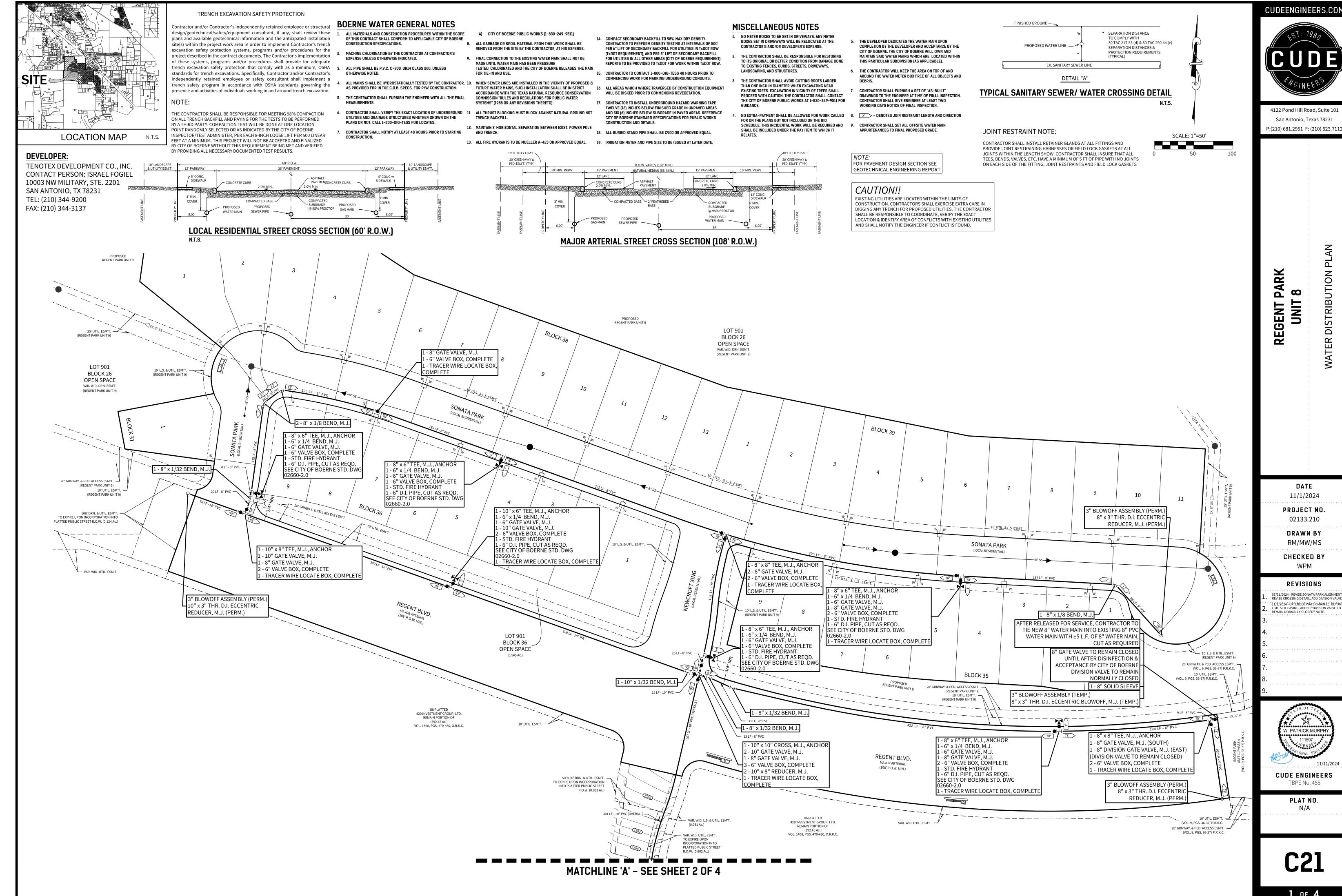






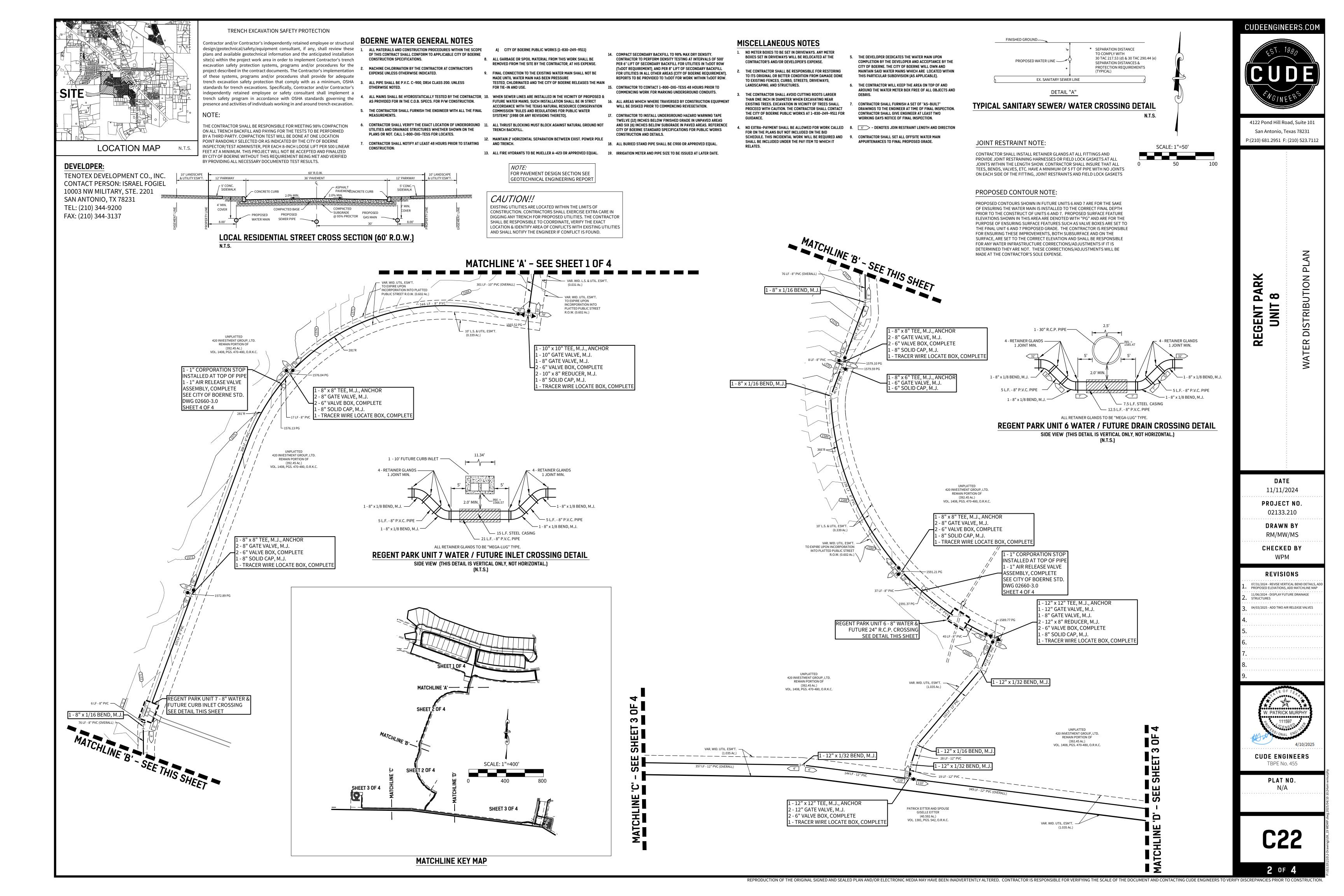


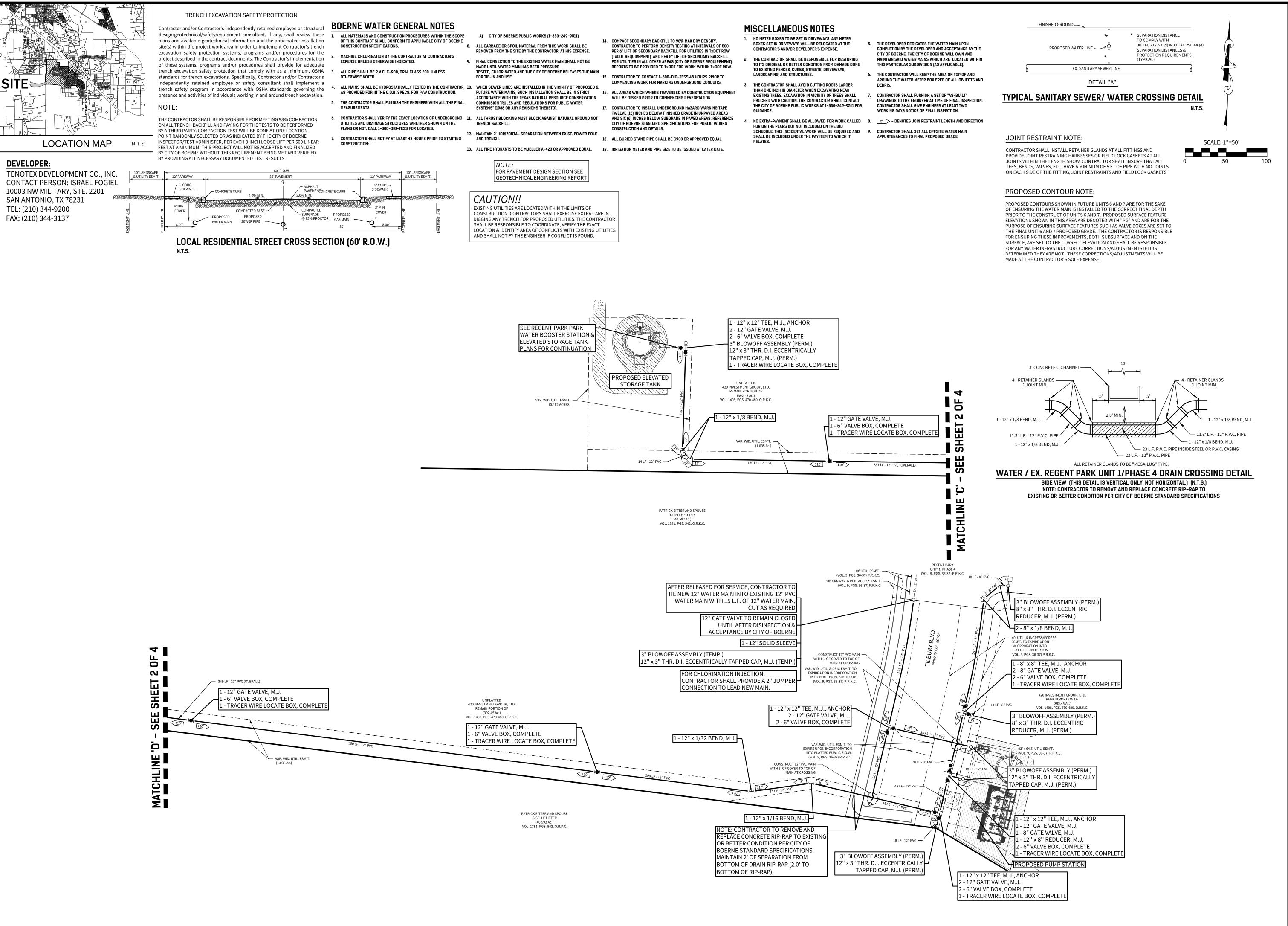


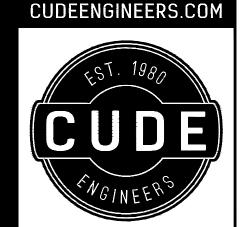


1 OF 4

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







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WATER

REGENT PARK

DATE 11/8/2024 PROJECT NO.

02133.210 DRAWN BY

RM/MW/MS

CHECKED BY WPM

REVISIONS

07/31/2024 - REVISE STUB-OUTS, ADD TEMPOR 11/1/2024 - ADDED TEE TOWARDS PUMP STATIO AND STUB-OUT BEFORE CONCRETE DRAIN W/BLOW-OFF

V. PATRICK MURPI

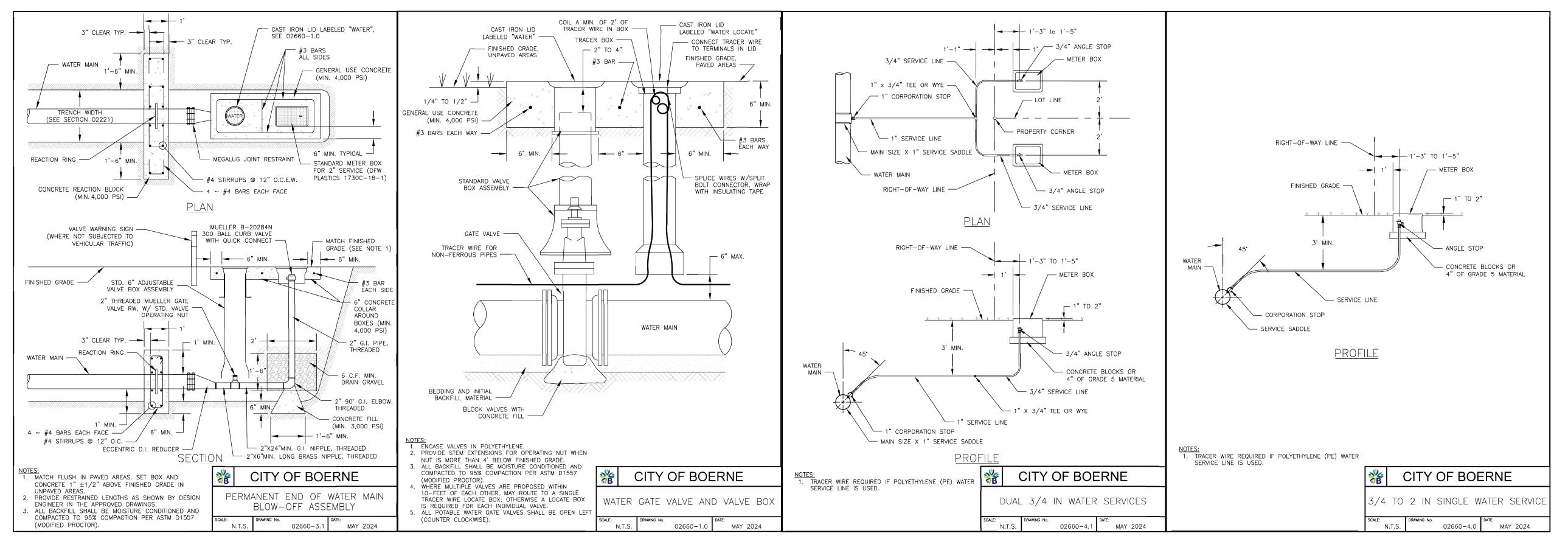
CUDE ENGINEERS

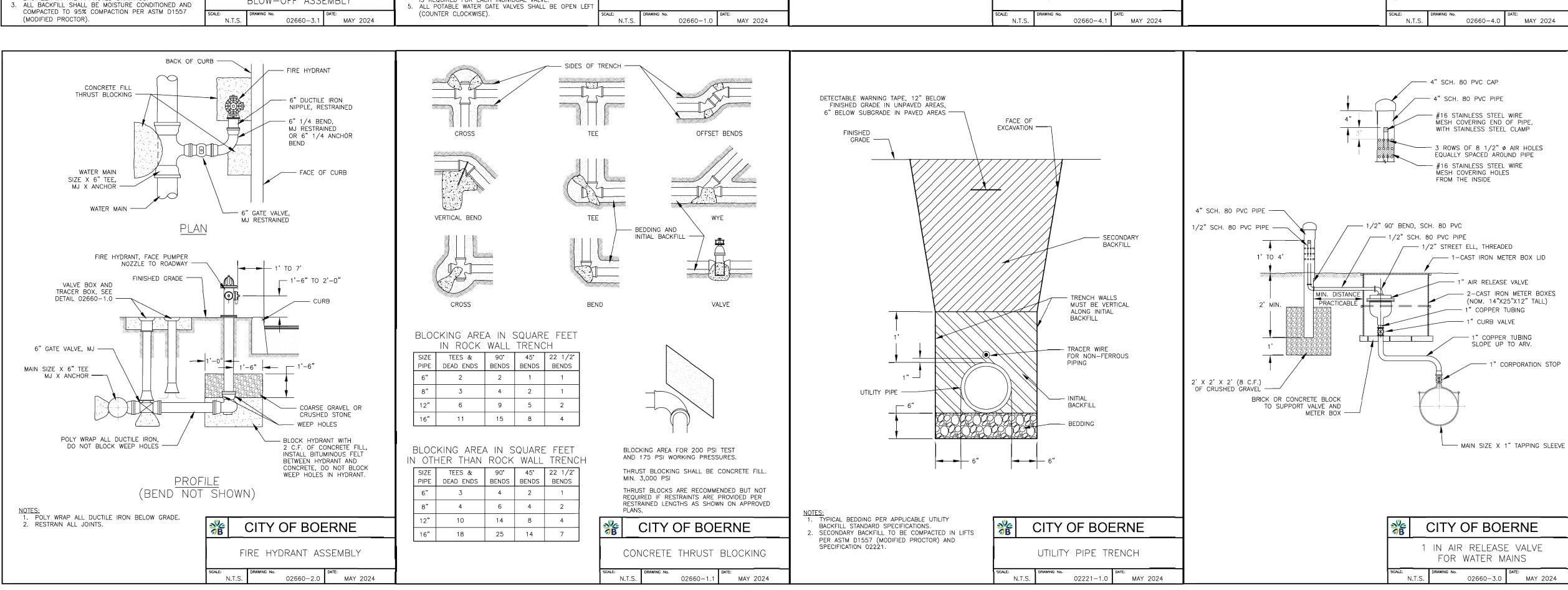
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PLAT NO. N/A

3 OF 4

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





MISCELLANEOUS NOTES

- 1. NO METER BOXES TO BE SET IN DRIVEWAYS. ANY METER BOXES SET IN DRIVEWAYS WILL BE RELOCATED AT THE CONTRACTOR'S AND/OR DEVELOPER'S EXPENSE.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION FROM DAMAGE DONE TO EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, LANDSCAPING, AND STRUCTURES.
- 3. THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN ONE INCH IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY OF BOERNE PUBLIC WORKS AT 1-830-249-9511 FOR GUIDANCE.
- 4. NO EXTRA-PAYMENT SHALL BE ALLOWED FOR WORK CALLED FOR ON THE PLANS BUT NOT INCLUDED ON THE BID SCHEDULE. THIS INCIDENTAL WORK WILL BE REQUIRED AND SHALL BE INCLUDED UNDER THE PAY ITEM TO WHICH IT RELATES.
- 5. THE DEVELOPER DEDICATES THE WATER MAIN UPON COMPLETION BY THE DEVELOPER AND ACCEPTANCE BY THE CITY OF BOERNE. THE CITY OF BOERNE WILL OWN AND MAINTAIN SAID WATER MAINS WHICH ARE LOCATED WITHIN

- THIS PARTICULAR SUBDIVISION (AS APPLICABLE).
- 6. THE CONTRACTOR WILL KEEP THE AREA ON TOP OF AND AROUND THE WATER METER BOX FREE OF ALL OBJECTS AND
- CONTRACTOR SHALL FURNISH A SET OF "AS-BUILT" DRAWINGS TO THE ENGINEER AT TIME OF FINAL INSPECTION. CONTRACTOR SHALL GIVE ENGINEER AT LEAST TWO WORKING DAYS NOTICE OF FINAL INSPECTION.
- X' DENOTES JOIN RESTRAINT LENGTH AND DIRECTION.
- CONTRACTOR SHALL INSTALL RETAINER GLANDS AT ALL FIELD LOCK GASKETS AT ALL JOINTS WITHIN THE LENGTH SHOWN. CONTRACTOR SHALL INSURE THAT ALL TEES, BENDS, VALVES, ETC. HAVE A MINIMUM OF 5 FT OF PIPE WITH NO JOINTS ON EACH SIDE OF THE FITTING, JOINT RESTRAINTS
- 10. REFERENCE STREET DETAIL SHEET AND GEOTECHNICAL ENGINEERING REPORT FOR PAVEMENT DESIGN INFORMATION.

BOERNE WATER GENERAL NOTES

THE SCOPE OF THIS CONTRACT SHALL CONFORM TO APPLICABLE CITY OF BOERNE CONSTRUCTION

SPECIFICATIONS.

- CONTRACTOR'S EXPENSE UNLESS OTHERWISE INDICATED.
- 3. ALL PIPE SHALL BE P.V.C. C-900, DR14 CLASS 200, UNLESS
- CONTRACTOR, AS PROVIDED FOR IN THE C.O.B. SPECS. FOR P/W CONSTRUCTION.
- ALL THE FINAL MEASUREMENTS.
- 6. CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. CALL
- 7. CONTRACTOR SHALL NOTIFY AT LEAST 48 HOURS PRIOR TO STARTING CONSTRUCTION:
- A) CITY OF BOERNE PUBLIC WORKS (1-830-249-9511)

- 1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN 8. ALL GARBAGE OR SPOIL MATERIAL FROM THIS WORK SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR, AT HIS EXPENSE.
- 9. FINAL CONNECTION TO THE EXISTING WATER MAIN SHALL 2. MACHINE CHLORINATION BY THE CITY OF BOERNE AT NOT BE MADE UNTIL WATER MAIN HAS BEEN PRESSURE TESTED, CHLORINATED AND THE CITY OF BOERNE
- OTHERWISE NOTED.
- WHEN SEWER LINES ARE INSTALLED IN THE VICINITY OF PROPOSED & FUTURE WATER MAINS, SUCH INSTALLATION 4. ALL MAINS SHALL BE HYDROSTATICALLY TESTED BY THE SHALL BE IN STRICT ACCORDANCE WITH THE TEXAS NATURAL RESOURCE CONSERVATION COMMISSION "RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS" (1988 OR
- 5. THE CONTRACTOR SHALL FURNISH THE ENGINEER WITH 11. ALL THRUST BLOCKING MUST BLOCK AGAINST NATURAL
 - GROUND NOT TRENCH BACKFILL. MAINTAIN 2' HORIZONTAL SEPARATION BETWEEN EXISTING POWER POLES AND TRENCH.
- 1-800-DIG-TESS FOR LOCATES. 13. ALL FIRE HYDRANTS TO BE MUELLER A-423 OR APPROVED
 - 14. COMPACT SECONDARY BACKFILL TO 98% MAX DRY DENSITY. CONTRACTOR TO PERFORM DENSITY TESTING AT INTERVALS OF 500' PER 6" LIFT OF SECONDARY BACKFILL

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

FOR UTILITIES IN TXDOT ROW (TXDOT REQUIREMENT), AND PER 8" LIFT OF SECONDARY BACKFILL FOR UTILITIES IN ALL

RELEASES THE MAIN FOR TIE-IN AND USE.

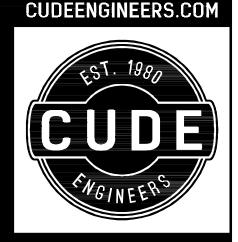
ANY REVISIONS THERETO).

OTHER AREAS (CITY OF BOERNE REQUIREMENT). REPORTS TO BE PROVIDED TO TXDOT FOR WORK WITHIN TXDOT ROW. 15. CONTRACTOR TO CONTACT 1-800-DIG-TESS 48 HOURS

UNDERGROUND CONDUITS. 16. ALL AREAS WHICH WHERE TRAVERSED BY CONSTRUCTION

PRIOR TO COMMENCING WORK FOR MARKING

- EQUIPMENT WILL BE DISKED PRIOR TO COMMENCING
- 17. CONTRACTOR TO INSTALL UNDERGROUND HAZARD WARNING TAPE TWELVE (12) INCHES BELOW FINISHED GRADE IN UNPAVED AREAS AND SIX (6) INCHES BELOW SUBGRADE IN PAVED AREAS. REFERENCE CITY OF BOERNE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND DETAILS.
- 18. ALL BURIED STAND PIPE SHALL BE C900 OR APPROVED
- 19. IRRIGATION METER AND PIPE SIZE TO BE ISSUED AT LATER



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

STANDARD TION

RIBU ST BOERNE

PARK

REGENT

DATE 8/20/2024

PROJECT NO. 02133.210

DRAWN BY RM/MW/MS

CHECKED BY WPM

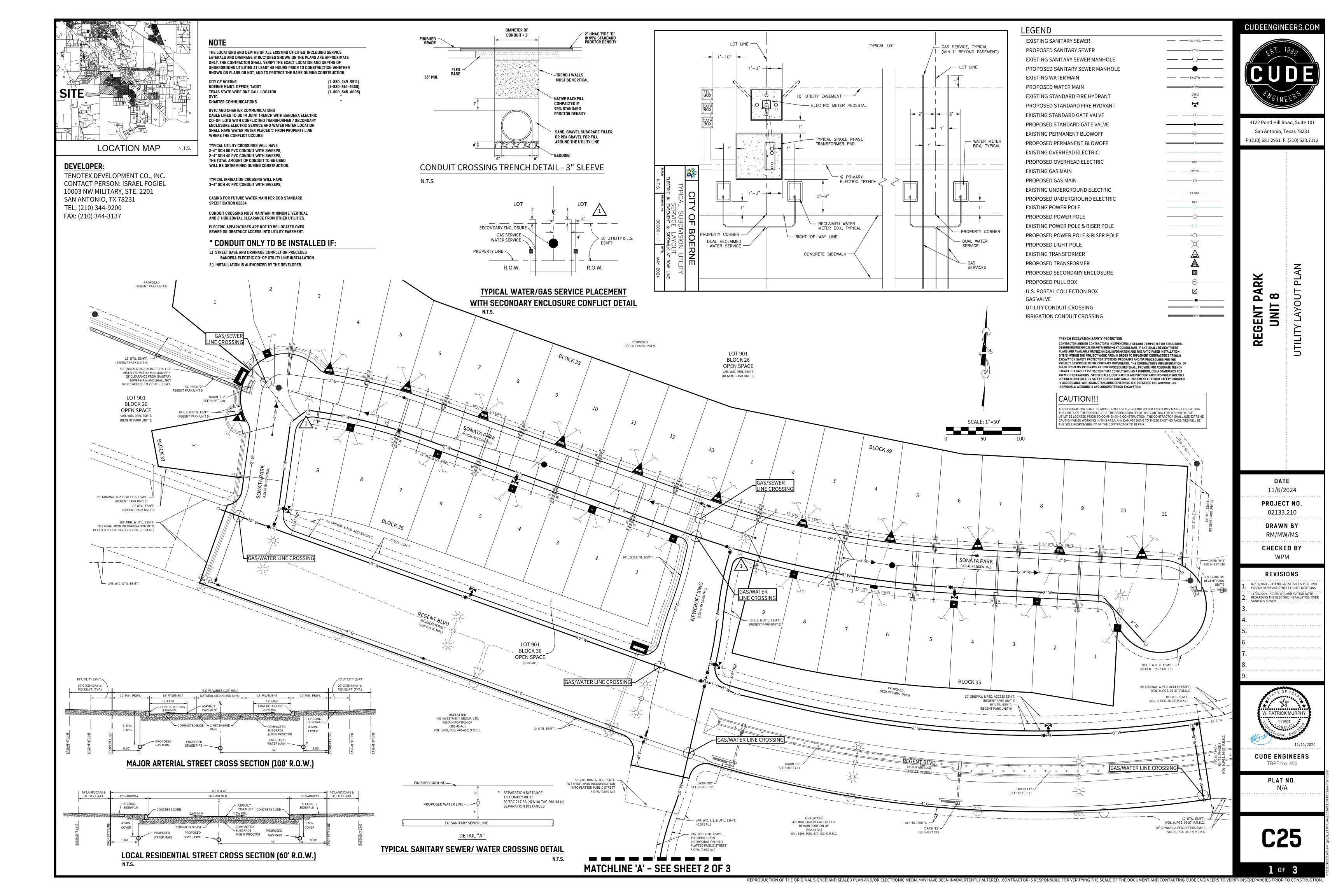
REVISIONS 07/31/2024 - UPDATED 2024 DETAILS 04/03/2025 - ADD AIR RELEASE VALVE DETAIL

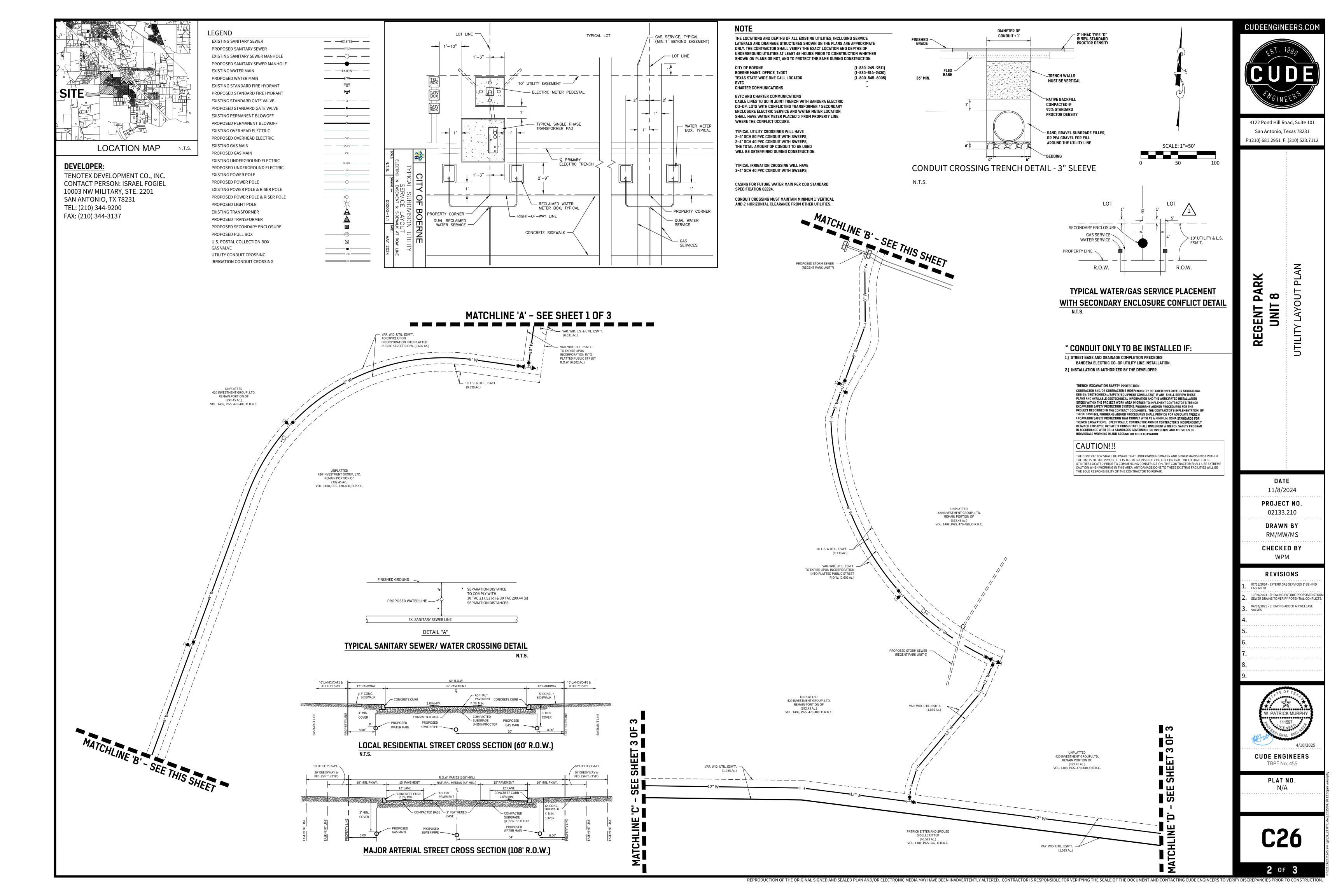


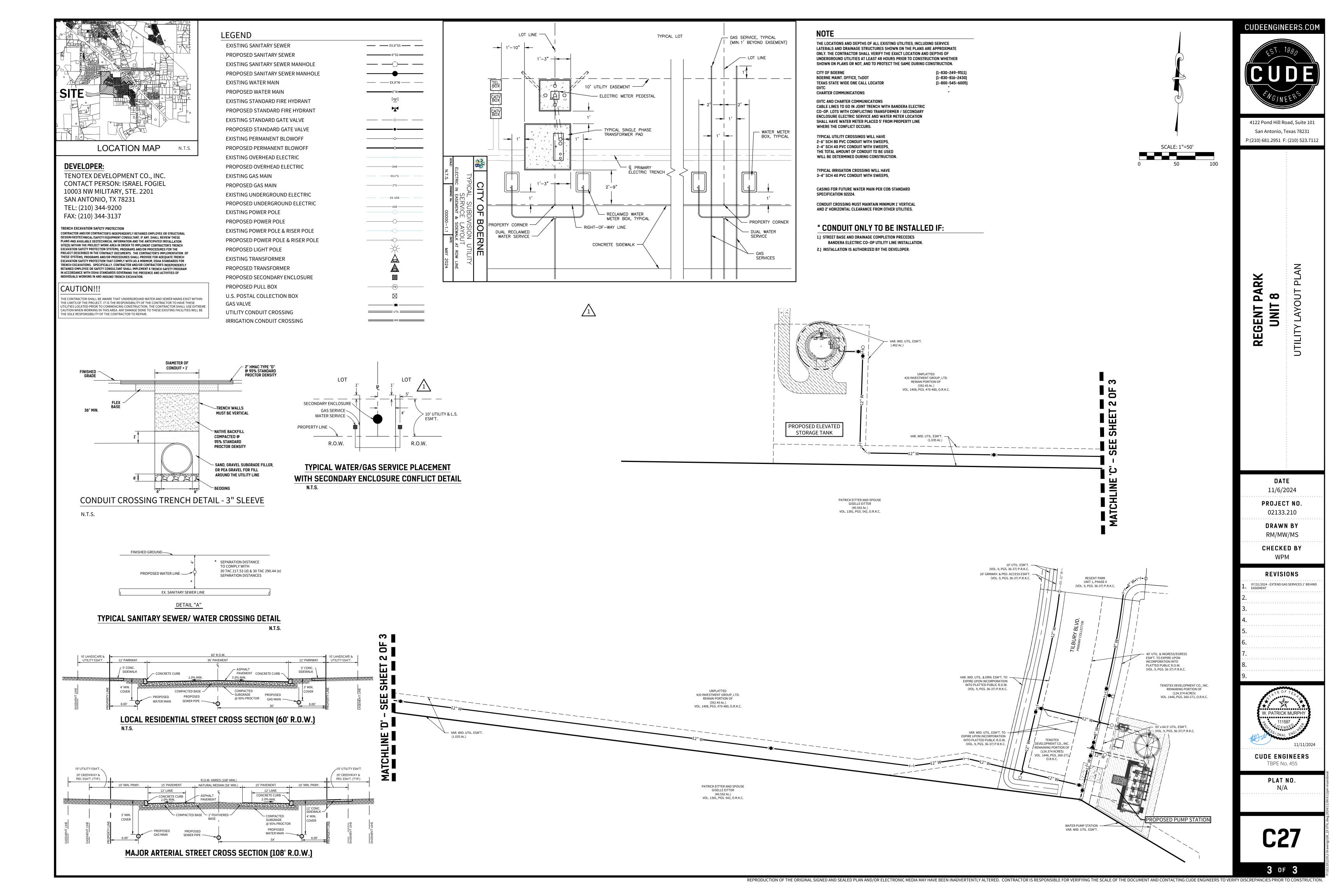
CUDE ENGINEERS

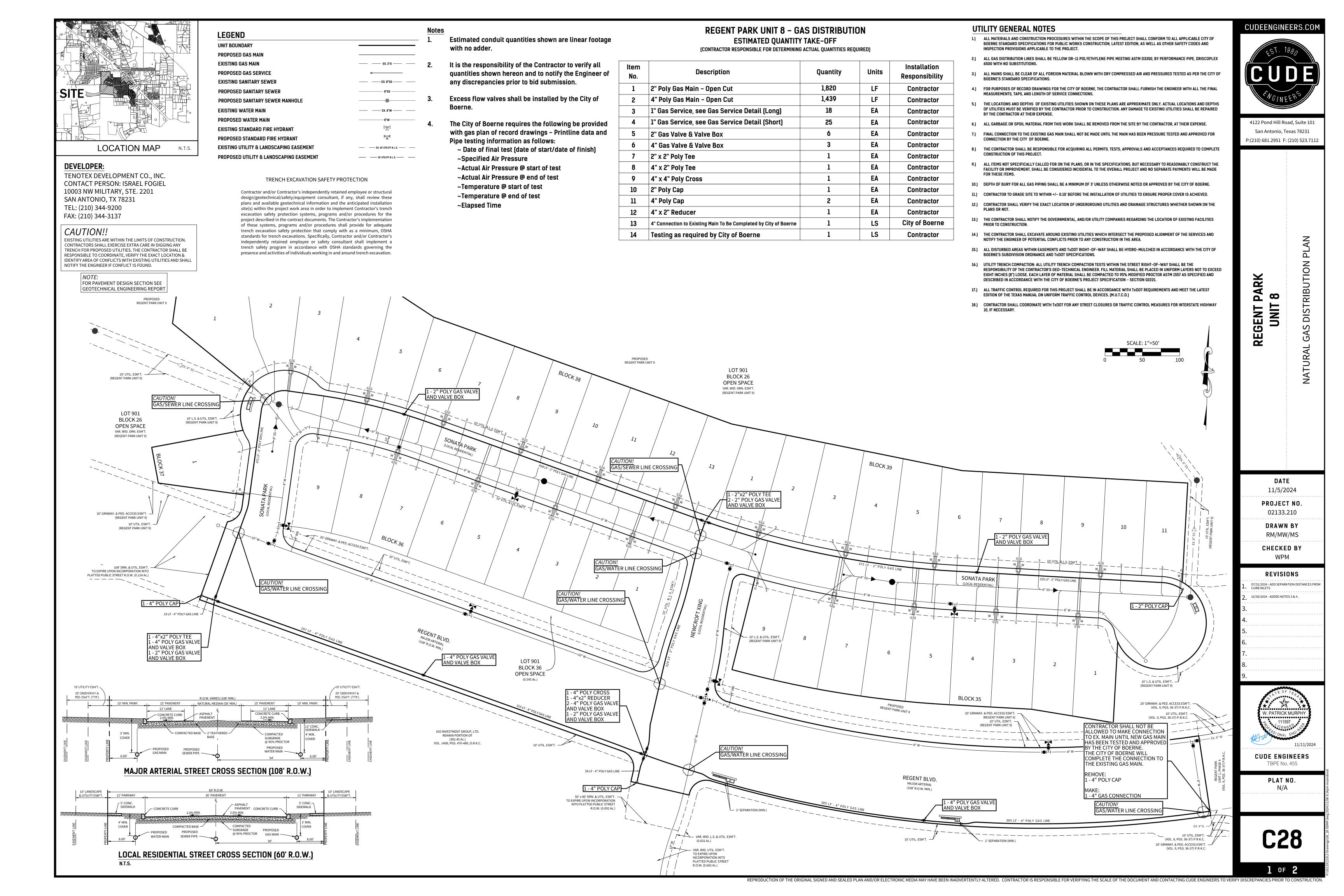
TBPE No. 455

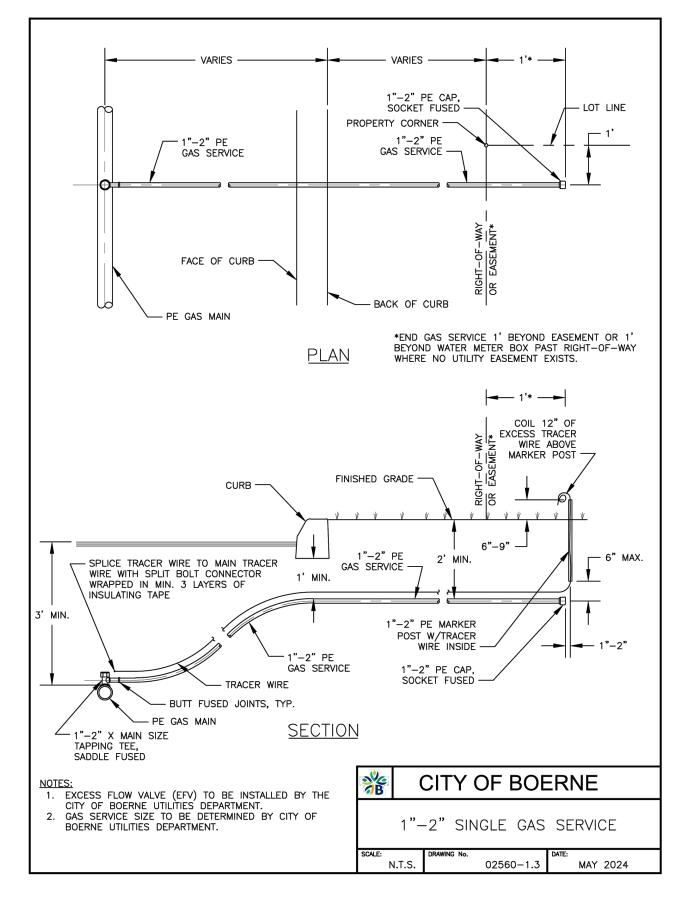
PLAT NO. N/A

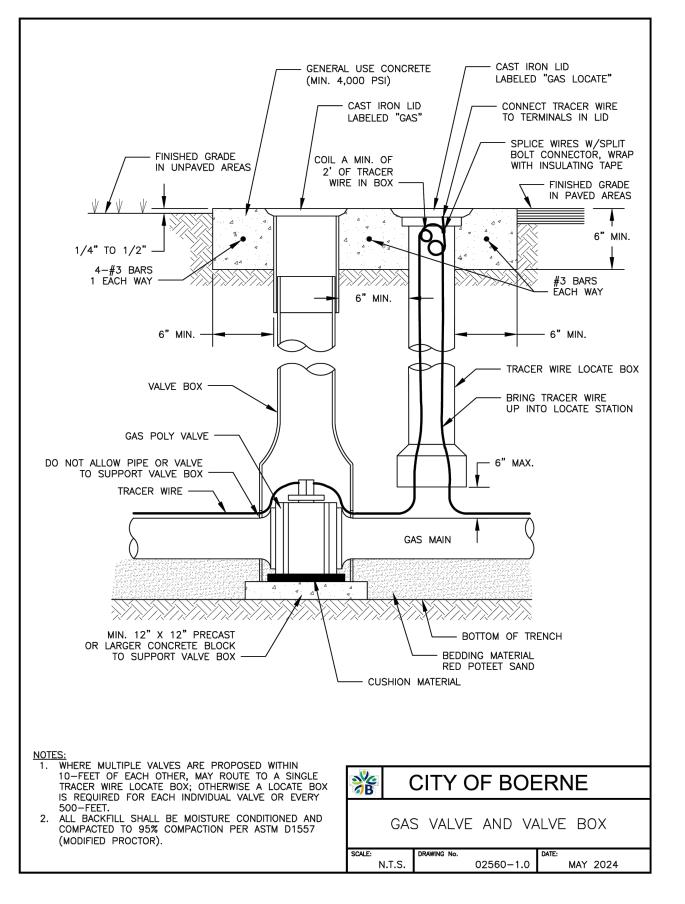


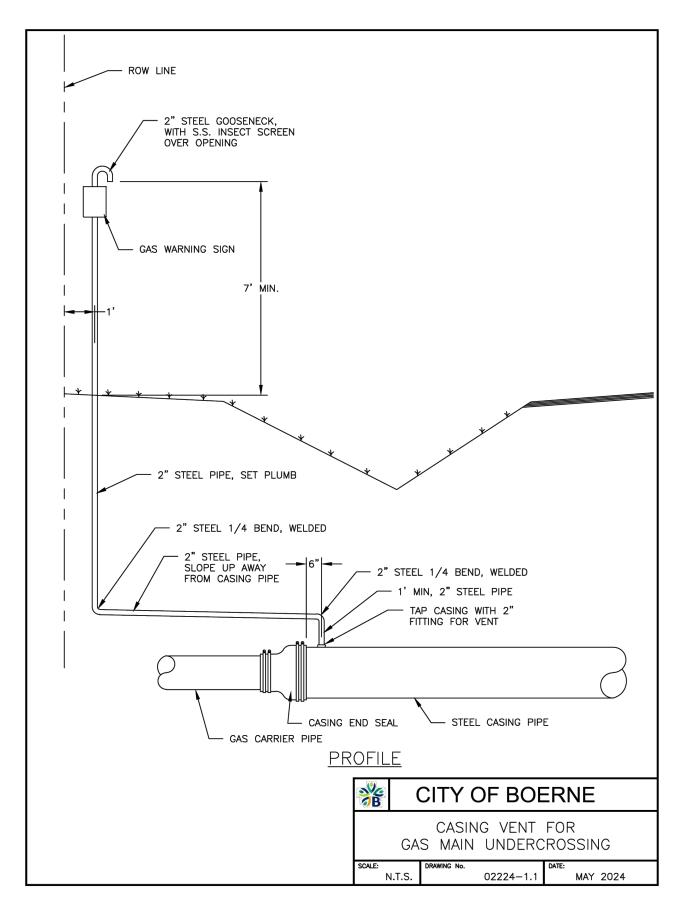




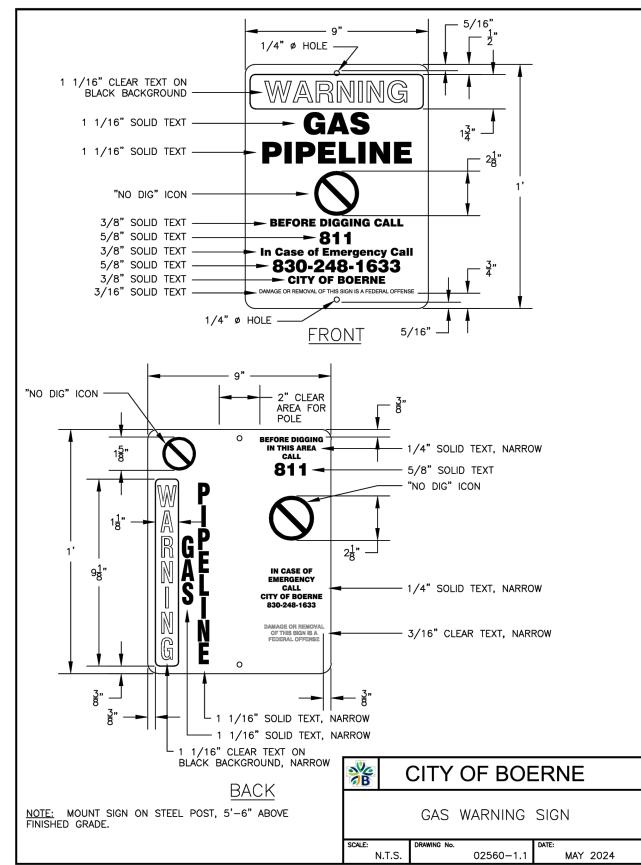


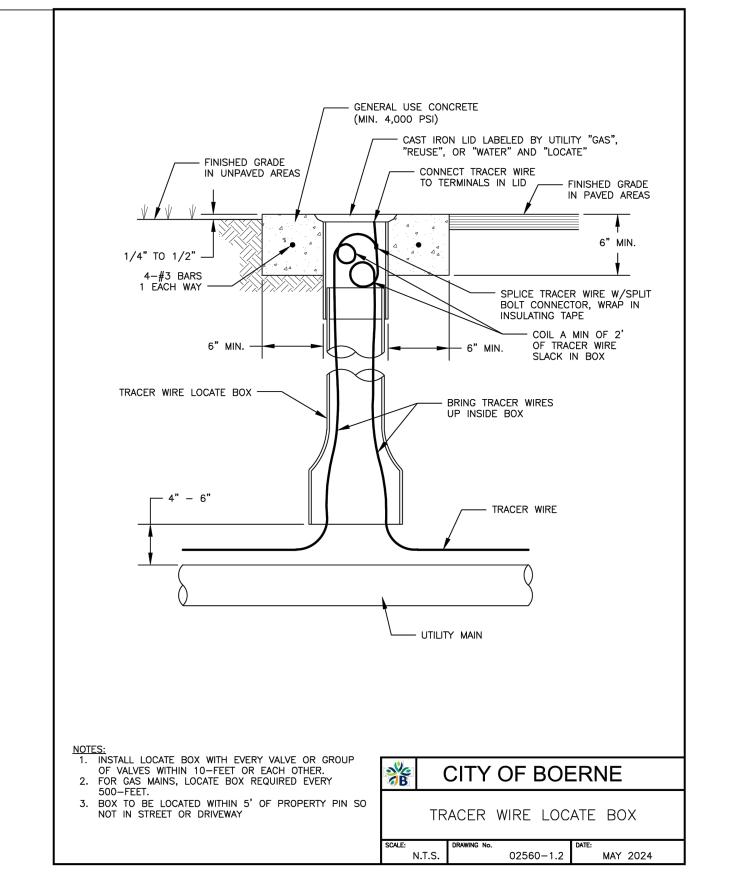


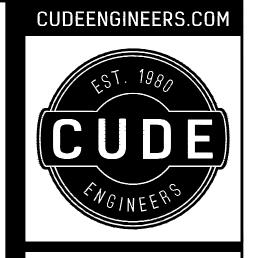




REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.







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AL GAS DISTRIBUTION DETAILS

UNIT 8
UNIT 8
STANDARD DETAILS

DATE 08/15/2023 PROJECT NO. 02133.210

DRAWN BY RM/MW/MS

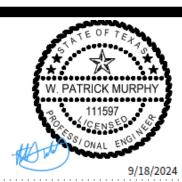
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WPM

REVISIONS

07/31/2024 - UPDATED 2024 DETAILS

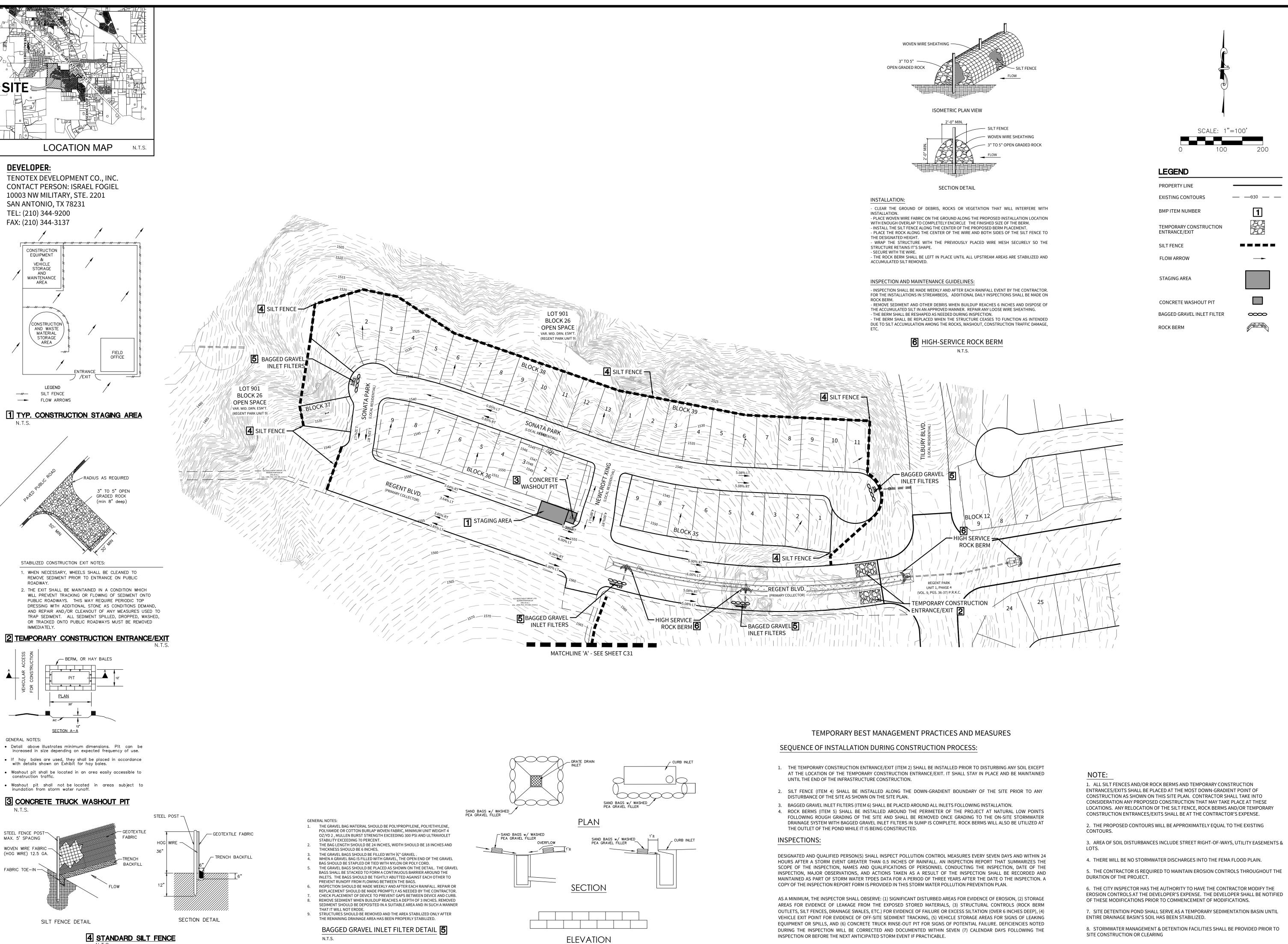
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CUDE ENGINEERS
TBPE No. 455

PLAT NO. N/A

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REVENTION

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PARK UNIT REGENT

> DATE 10/30/2024

02133.210 DRAWN BY

PROJECT NO.

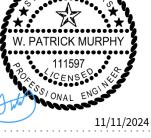
RM/MW/MS

CHECKED BY

REVISIONS

07/31/2024 - ADDED ADDITIONAL BMP's

10/30/2024 - ADDED ADDITIONAL BMP's DOWNSTREAM OF PIPE DISCHARGE POINTS.



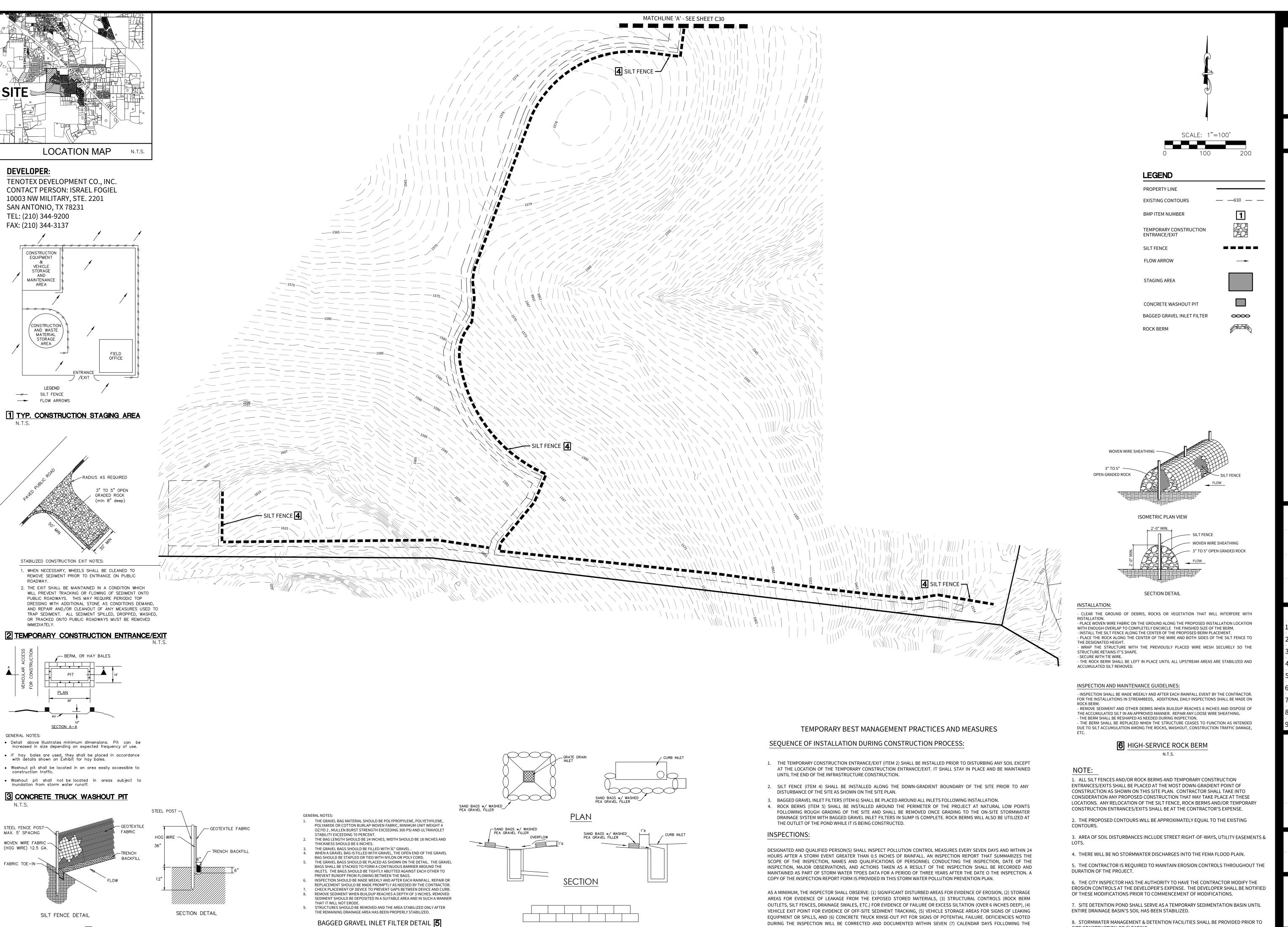
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PLAT NO.

N/A

1 of 2

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



ELEVATION

4 STANDARD SILT FENCE

N.T.S.

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REVENTION ARK REGENT

> DATE 08/15/2023

PROJECT NO. 02133.210 DRAWN BY

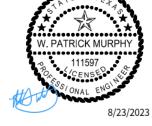
RM/MW/MS

CHECKED BY WPM

REVISIONS

SITE CONSTRUCTION OR CLEARING

INSPECTION OR BEFORE THE NEXT ANTICIPATED STORM EVENT IF PRACTICABLE.



CUDE ENGINEERS

TBPE No. 455

PLAT NO. N/A

2 OF 2 REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION

BANDERA ELECTRIC COOPERATIVE, INC. REGENT PARK UNIT 8 DEVELOPMENT





GENERAL DRAWINGS

PROJECT COVER SHEET AND DRAWING LIST UNDERGROUND ELECTRICAL LAYOUT

CONDUIT CONFIGURATION DETAILS

THREE PHASE SECTIONALIZING CABINET DETAILS (TYPE 1) THREE PHASE SECTIONALIZING CABINET DETAILS (TYPE 2)

SINGLE PHASE TRANSFORMER DETAILS

SECONDARY PEDESTAL DETAILS

THREE PHASE RISER DETAILS

TYPICAL EQUIPMENT ORIENTATION AND SINGLE PHASE RISER DETAILS

THIS DRAWING IS CERTIFIED TO BE CORRECT FOR THE NEW FACILITIES SHOWN ONLY. INFORMATION CONCERNING EXISTING FACILITIES ROVIDED BY OTHERS HAS NOT BEEN VERIFIED.

REVISION

BY CHK APPD NO DATE

ISSUED: 08-30-23 FOR CONSTRUCTION

REVISION

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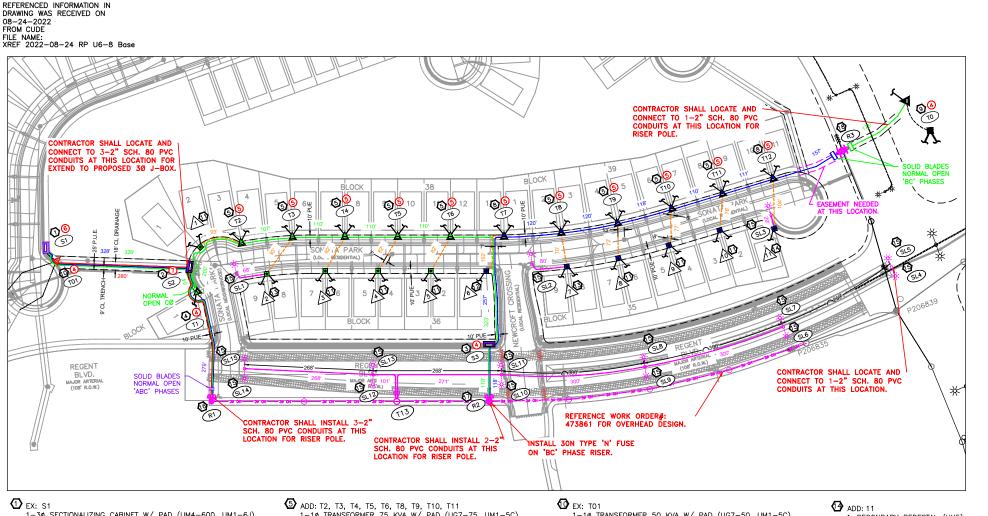
| | DATE | BY | WWW.SF-TEXAS.COM | |
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| RWN | 02-09-21 | GLS | THE TENTO COM | SCHNEID |
| CHK | 08-30-23 | СТН | TEXAS REGISTRATION | E M G M E E M |
| PPD | 08-30-23 | СТН | NUMBER F-1594 | |

BANDERA ELECTRIC COOPERATIVE REGENT PARK UNIT 8 DEVELOPMENT

PROJECT COVER SHEET AND DRAWING LIST

SCALE FOR 34 x 22 DWG N.T.S.

SYSTEM VOLTAGE: 7.2/12.47 kV



1-3ø SECTIONALIZING CABINET W/ PAD (UM4-600, UM1-6J) 3-4 POINT JUNCTIONS (UM6-22)
4-L.B. ELBOWS (1/0) (UM6-1/0)
2-L.A. ELBOWS (UM6-34)
6-INSULATED CAPS (UM6-10) 1—FAULT INDICATOR (UM6-4) 6-2" 90" SWEEPS SCH 80 PVC (UM50-SW-2) 1-3ø GROUNDING ASSEMBLY (UM48-2) 2-L.B. ELBOWS (1/0) (UM6-1/0) 2-FAULT INDICATORS (UM6-4)

2-L.A. ELBOWS (UM6-34) ② ADD: S2 1-30 SECTIONALIZING CABINET W/ PAD (UM4-600, UM1-6J) 3-4 POINT JUNCTIONS (UM6-21) 5-INSULATED CAPS (UM6-10) 4-FAULT INDICATORS (UM6-4) 7-2" 90" SWEEPS SCH 80 PVC (UM50-SW-2) 1-3¢ GROUNDING ASSEMBLY (UM48-2)

ADD: S3
1-39 SECTIONALIZING CABINET W/ PAD (UM4-200, UM1-2J) 3-3 POINT JUNCTIONS (UM6-21) 4-L.B. ELBOWS (1/0) (UM6-1/0) 5-INSULATED CAPS (UM6-10) 2-FAULT INDICATORS (UM6-4)

4-2" 90' SWEEPS SCH 80 PVC (UM50-SW-2) 1-3ø GROUNDING ASSEMBLY (UM48-2)

4/0) ADD: T1
1-10 TRANSFORMER 37.5 KVA W/ PAD (UG7-37.5, UM1-5C)

REVISION

2-L.B. ELBOWS (1/0) (UM6-1/0) 1-L.A. ELBOW (1/0) (UM6-34) 1-PARKING STANK (UM6-37) 1-FAULT INDICATOR (UM6-4) 2-2" 90" SWEEPS SCH 80 PVC (UM50-SW-2)

1-3" 90" SWEEPS SCH 80 PVC (UM50-SW-3) 1-1ø GROUNDING ASSEMBLY (UM48-1)

THIS DRAWING IS CERTIFIED TO BE CORRECT FOR THE NEW FACILITIES SHOWN ONLY. INFORMATION CONCERNING EXISTING FACILITIES PROVIDED BY OTHERS HAS NOT BEEN VERIFIED.

NO DATE

20BEC3208

ADD: T2, T3, T4, T5, T6, T8, T9, T10, T11
1-10 TRANSFORMER 75 KVA W/ PAD (UG7-75, UM1-5C) 2-L.B. ELBOWS (1/0) (UM6-1/0) 1-FAULT INDICATOR (UM6-4)

2-2" 90' SWEEPS SCH 80 PVC (UM50-SW-2) 3-3" 90' SWEEPS SCH 80 PVC (UM50-SW-3) 1-1¢ GROUNDING ASSEMBLY (UM48-1)

⑤ EX: TO

BY CHK APPD NO DATE

1-FAULT INDICATOR (UM6-4)

ADD: 1-L.B. ELBOW (1/0) (UM6-1/0)

1-L.A. ELBOW (1/0) (UM6-34)

2-2" 90" SWEEPS SCH 80 PVC (UM50-SW-2)

2-3" 90" SWEEPS SCH 80 PVC (UM50-SW-3)

1-1¢ GROUNDING ASSEMBLY (UM48-1)

1-10 TRANSFORMER 50 KVA W/ PAD (UG7-50, UM1-5C) 2-L.B. ELBOWS (1/0) (UM6-1/0) 1-FAULT INDICATOR (UM6-4) 2-2" 90" SWEEPS SCH 80 PVC (UM50-SW-2) 3-3" 90' SWEEPS SCH 80 PVC (UM50-SW-3) 1-1¢ GROUNDING ASSEMBLY (UM48-1)

(1) ADD: 1, 3, 4, 5, 8, 9, 10 -SECONDARY PEDESTAL (UK5) 3-SECONDARY CONNECTOR BLOCKS (ILI1) 3-3" 90' SWEEPS SCH 80 PVC (UM50-SW-3) 1-1ø TRANSFORMER 75 KVA W/ PAD (UG7-75, UM1-5C)
1-L.B. ELBOW (1/0) (UM6-1/0)
1-L.A. ELBOW (1/0) (UM6-34)

② ADD: 6 1-SECONDARY PEDESTAL (UK5) 3-SECONDARY CONNECTOR BLOCKS (UJ1) 2-3" 90" SWEEPS SCH 80 PVC (UM50-SW-3)

1-1ø GROUNDING ASSEMBLY (UM48-1)

1-L.B. ELBOW (1/0) (UM6-1/0) 1-FAULT INDICATOR (UM6-4)

1-L.A. ELBOW (UM6-34)

(1) ADD: 2, 7 1-SECONDARY PEDESTAL (UK5) 3-SECONDARY CONNECTOR BLOCKS (UJ1) 1-2" 90' SWEEP SCH 80 PVC (UM50-SW-2-24") 3-3" 90° SWEEPS SCH 80 PVC (UM50-SW-3)

EX: T01
1-10 TRANSFORMER 50 KVA W/ PAD (UG7-50, UM1-5C) 1-SECONDARY PEDESTAL (UK5) 1-L.B. ELBOW (1/0) (UM6-1/0) 1-L.A. ELBOW (UM6-34) 3-SECONDARY CONNECTOR BLOCKS (UJ1) 1-2" 90' SWEEP SCH 80 PVC (UM50-SW-2-24") 2-3" 90' SWEEPS SCH 80 PVC (UM50-SW-3) 2-2" 90° SWEEPS SCH 80 PVC (UM50-SW-2) 2-3" 90° SWEEPS SCH 80 PVC (UM50-SW-3)

ADD: SL1-SL15
1-2" 90' SWEEP SCH 80 PVC (UM50-SW-2-24")
1-ST. LT. STANDARD 1-ST. LT. LAMP 1-ST. LT. BALLAST

€ ADD: R1 3-SOLID BLADE DISCONNECT SWITCHES

ADD: R2 2-UA1 2-FUSES ('B' AND 'C' PHASE RISERS)

ADD: R3
2-UA1
2-SOLID BLADE DISCONNECT SWITCHES
"D' AND 'C' PHASE RISERS)

ADD: T13 1-UM5 2" 1-25kV TRANSFORMER

GENERAL NOTES:

- ALL SECONDARY CONDUIT SHALL BE SCHEDULE 80 3" PVC.
- ALL PRIMARY CONDUIT SHALL BE SCHEDULE 80 2" PVC.
- CONSTRUCTION SHALL TAG AND CODE CABLE IN THE FIELD TO IDENTIFY PHASES.
- CONTRACTOR TO STUB UP SPARE TEL. AND CATV NEXT TO METER PEDS AS REQUIRED BY RESPECTIVE UTILITIES.
- ALL PRIMARY CABLE SHALL BE #1/0 AL, 25 kV OR EQUAL.
- ALL PAD-MOUNTED ENCLOSURES INCLUDING TRANSFORMERS, SHALL BE GROUNDED IN SUCH A MANNER THAT TWO SEPARATE CONNECTIONS EXIST BETWEEN THE ENCLOSURE AND THE GROUND ROD(S). IF METER PEDESTALS, TRANSFORMERS, AND SECTIONALIZING BOXES ARE WITHIN 10 FEET OF EACH OTHER A #2 CU. SOLID BARE WIRE SHALL TIE ALL GROUND RODS TOGETHER.
- SECTIONALIZING BOXES, TRANSFORMERS, EASEMENTS, CABLE, AND WIRE ARE NOT SHOWN TO SCALE IN THIS
- EASEMENTS TO BE DEDICATED BY DEVELOPER TO COVER ALL ELECTRIC FACILITIES
- ALL ELECTRIC STREET CROSSINGS AND SERVICE EXTENSION TRENCHES TO INCLUDE TEL. & CATV.
- IF ANY ELECTRIC FACILITIES ARE SUSCEPTIBLE TO DAMAGE FROM VEHICULAR TRAFFIC, BOLLARDS SHALL BE PLACED AROUND THE EQUIPMENT TO PREVENT DAMAGE.
- 11. FOR ANY PAD LOCATED IN DRAINAGE EASEMENT OR EROSION PRONE AREAS, CONTRACTOR SHALL BUILD UP PAD SITE AND REINFORCE WITH CONCRETE TO PREVENT EROSION.
- 12. TRANSFORMER AND SECONDARY SERVICE SIZE EVALUATION SHOULD BE PERFORMED AT THE TIME OF EACH
- 13. 3" SECONDARY CONDUIT STUBBED OUT OF SECONDARY EQUIPMENT, TOWARDS THE LOTS, SHALL BE 5' INTO EACH INDIVIDUAL LOT, CAPPED, AND MARKED AT GRADE LEVEL FOR FUTURE SERVICE.
- CONTRACTOR NOT TO EXCEED 360 DEGREES IN BENDS PER CONDUIT SEGMENT. 15. ELECTRICAL FACILITIES SHALL BE INSTALLED A MINIMUM OF 4 FEET FROM FIRE HYDRANTS

LABELS FXISTING POLE & RISER (R#) RISER POLE NO. EXISTING POLE, NEW RISER NEW POLE & RISER (P#) POLE NO. EXISTING POLE NEW POLE S# SECTIONALIZING BOX NO. EXISTING ANCHOR T# TRANSFORMER NO. MEW SECTIONALIZING BOX 1ø TRANSFORMER (120/240V ♠ SECONDARY PEDESTAL NO. (KVA SIZE PER DRAWING) STREETLIGHT NO. SECONDARY PEDESTAL 🔆 STREET LIGHT X NUMBER OF CONDUITS EXITING VACUUM FAULT INTERRUPTER

LEGEND A PHASE PRIMARY: 1/0 AL W/ FULL CONCENTRIC JACKETED NEUTRAL, 25 kV, XLPE, 260 MIL INSUL. IN 2" MIN. PVC SCH. 80, ELECT. CONDUIT

- 3¢ CONDUIT POINT TO POINT DISTANCE - 1¢, PHASE A CONDUIT POINT TO POINT DISTANCE - 1¢, PHASE B CONDUIT POINT TO POINT DISTANCE - 1¢, PHASE C CONDUIT POINT TO POINT DISTANCE

______ EXISTING 30 OVERHEAD LINE EXISTING 1¢ OVERHEAD LINE

350 MCM AL, 600V, TRIPLEX IN 3" MIN. PVC SCH 80, ELECT. CONDUIT STREET LIGHT CABLE, 600V, #10 COPPER (2EA.),

INSTALLED IN 2" PVC SCH 80 ELECT. CONDUIT OR AS SPECIFIED ---- VACANT (EMPTY) 3" CONDUIT OR AS SPECIFIED

--- ELECTRICAL UTILITY EASEMENT

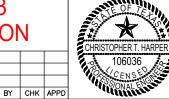
UNDERGROUND ELECTRICAL

LAYOUT

SCALE FOR 34 x 22 DWG 1:100 DRAWING NO.

ISSUED: 08-30-23 FOR CONSTRUCTION

REVISION



DATE BY DRWN 02-09-21 GLS CHK 08-30-23 CTH TEXAS REGISTRATION APPD 08-30-23 CTH



BANDERA ELECTRIC COOPERATIVE **REGENT PARK UNIT 8 DEVELOPMENT**

FINAL BACKFILL ZONE MIN. TRENCH WIDTHS UNLESS OTHERWISE SPECIFIED, <u>CLEAN NATIVE MATERIAL</u> MAYBE UTILIZED FOR BACKFILL IN THIS ZONE. BASED ON PRIMARY 8"-(1) CONDUIT 12"-(2) CONDUITS 16"-(3) CONDUITS 24"-(4) CONDUITS ZONE 2 COMMUNICATION CONDUIT ZONE (IF APPLICABLE/BY OTHERS) THIS TRENCH ZONE IS RESERVED FOR COMMUNICATION CONDUITS AND LOW VOLTAGE APPLICATIONS THAT WILL NOT OWNED BY THE UTILITY. UNLESS OTHERWISE SPECIFED BY THE OTHERS, CLEAN NATIVE MATERIAL MAYBE UTILIZED FOR BACKFILL IN THIS ZONE. ZONE 1 24" T.O.P. ADDITIONAL WARNING TAPE (IF APPLICABLE, BY OTHERS) 36" T.O.P. (ZONE 3) 4" MIN ZONE 2 NON-UTILITY COMMUNICATION CONDUITS (IF APPLICABLE, BY OTHERS) SECONDARY CONDUIT ZONE (IF APPLICABLE) 6" RED PLASTIC WARNING TAPE (PLACED LOW VOLTAGE CABLE INCLUDING SECONDARY AND 8"-12" ABOVE HIGHEST UTILITY CONDUIT.) UTILIZED FOR BACKFILL MATERIAL IN THIS ZONE. 4" MIN ZONF 3 3" SECONDARY SERVICE CONDUIT (IF APPLICABLE)

ZONE 1

EMBEDMENT/BACKFILL MATERIAL

CLEAN NATIVE MATERIAL — SHALL CONSIST OF ON—SITE TRENCH EXCAVATIONS SO LONG AS IT IS FREE FROM ROCKS OR CLAY CLODS OVER 3" AVG. DIAMETER, TRASH AND ANY ORGANIC MATERIAL. NATIVE MATERIAL SHALL BE COMPACTED TO 92% STANDARD PROCTOR, WHEN TESTED IN ACCORDANCE WITH ASTM 698. NOTE THAT THE UTILITY STILL RESERVES THE RIGHT TO REQUIRE SAND BEDDING AT THEIR DISCRETION.

(48" T.O.P.)

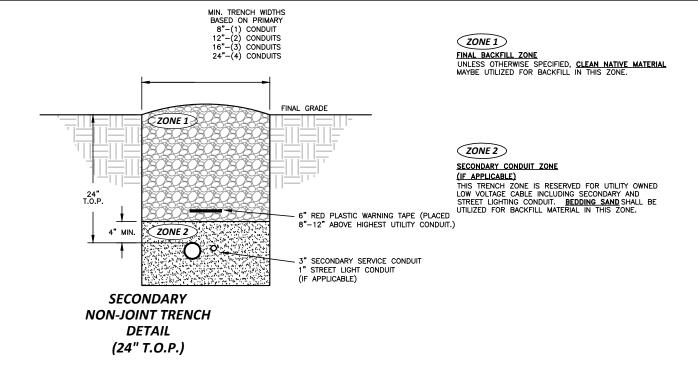
- WHEN REQUIRED BY UTILITY, BACKFILL SHALL CONSIST OF CLEAN PIT RUN SAND OR ROCK FINES GRADED AS SPECIFIED BELOW.(SUBMITTAL REQUIRED) COMPACTION TESTING WILL NOT BE REQUIRED FOR THIS MATERIAL, ALTHOUGH COMPACTION EFFORT MUST BE APPLIED. THIS CAN BE BY HAND OR MECHANICAL COMPACTION METHODS.

| SIEVE NO. | % BY WEIGHT PASSING |
|-----------|---------------------|
| 4 | 100 |
| 40 | 60-100 |
| 100 | 30-70 |
| 200 | 0-8 |

<u>LIMESTONE BASE</u> — SHALL BE TX DOT TYPE A GRADE 1 OR 2 LIMESTONE BASE MATERIAL AND SHALL BE COMPACTED TO 95% MODIFIED PROCTOR WHEN TESTED IN ACCORDANCE WITH

GENERAL NOTES

- ALL UTILITY CONDUITS SHALL BE SCHEDULE 40 PVC.
- TO DETERMINE THE NUMBER AND AMOUNT OF CONDUITS FOR ZONES 3 AND 4 REFER TO THE APPROVED "FOR CONSTRUCTION" DRAWINGS.
- THIS DRAWING IS A JOINT UTILITY TRENCH SECTION. ANY UNUSED UTILITY ZONES SHALL BE BACKFILLED AND COMPACTED WITH NATIVE MATERIAL, UNLESS OTHERWISE SPECIFIED.
- WHERE TRENCH IS LOCATED BELOW A ROADWAY, ALL ZONES SPECIFYING NATIVE MATERIAL SHALL BE SUBSTITUTED WITH LIMESTONE BASE.
- WHERE TRENCH CROSSES EITHER ABOVE ANOTHER UTILITY OR DRAINAGE LINE, CONTRACTOR SHALL INSTALL A MIN. 4" THICK 3,000 PSI CONCRETE CAP WITH RED DYE POWDER COATING ABOVE THE HIGHEST ELECTRIC UTILITY CONDUIT EXTENDING 5' IN EITHER DIRECTION OF THE CROSSING
- IT IS THE RESPONSIBILITY OF THE PROPERTY OWNER AND/OR CONTRACTOR TO COORDINATE WITH THE APPROPRIATE UTILITY FOR SIZE AND NUMBER OF COMMUNICATIONS CONDUITS.
- A MIN. OF 12" AND 24" VERTICAL SEPARATION SHALL BE MAINTAINED BETWEEN NON-UTILITY LINES AND UTILITY OWNED SECONDARY AND PRIMARY CONDUITS, RESPECTIVELY.
- AS DETERMINED BY UTILITY, THERE ARE INSTANCES WHERE CONCRETE ENCASEMENT (4" MIN. SURROUNDING ALL PIPES) OR CONCRETE CAPPING (6" MIN. COVER) OF ELECTRICAL CONDUIT WILL BE REQUIRED. CONCRETE SHALL HAVE A MIN. STRENGTH OF 3,000 PSI WITH RED DYE POWDER. THE RED DYE CAN EITHER BE MIXED INTEGRAL OR APPLIED TO TOP OF WET CONCRETE AT THE TIME OF PLACEMENT.

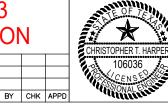


THIS DRAWING IS CERTIFIED TO BE CORRECT FOR THE NEW FACILITIES SHOWN ONLY. INFORMATION CONCERNING EXISTING FACILITIES PROVIDED BY OTHERS HAS NOT BEEN VERIFIED.

REVISION

ISSUED: 08-30-23 FOR CONSTRUCTION

REVISION



| | DATE | BY | WWW.SE-TEXAS.COM |
|------|----------|-----|--------------------|
| DRWN | 02-09-21 | GLS | |
| CHK | 08-30-23 | CTH | TEXAS REGISTRATION |
| APPD | 08-30-23 | CTH | NUMBER F-1594 |



SECONDARY

JOINT-TRENCH DETAIL

(36" T.O.P.)

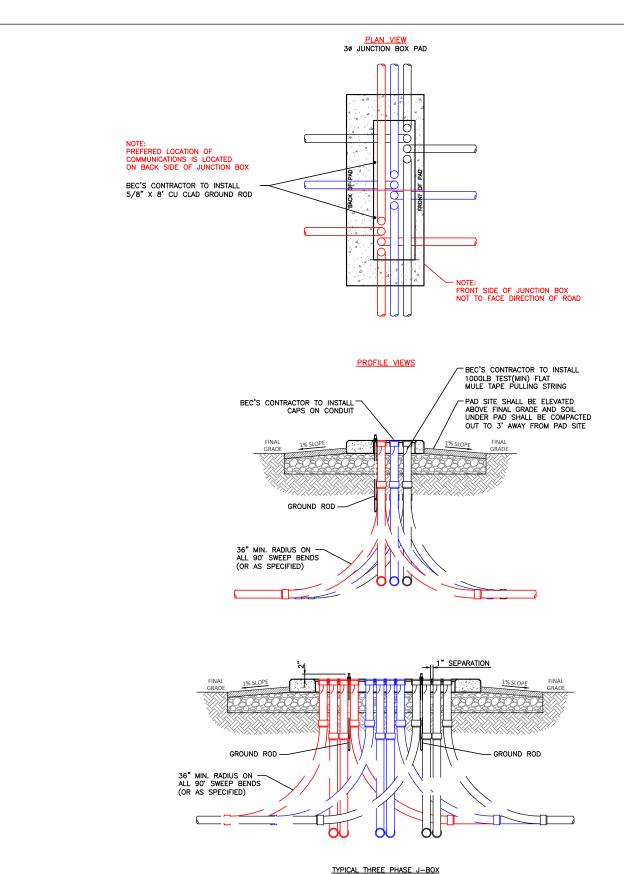
BANDERA ELECTRIC COOPERATIVE REGENT PARK UNIT 8 DEVELOPMENT

SCALE FOR 34 x 22 DWG TRENCH N.T.S. **DETAILS**

20BEC3208

SYSTEM VOLTAGE: 7.2/12.47 kV

BY CHK APPD NO DATE



REVISION

DATE BY DRWN 02-09-21 GLS CHK 08-30-23 CTH TEXAS REGISTRATION NUMBER F-1594 APPD 08-30-23 CTH

SCHREIDER BANDERA ELECTRIC COOPERATIVE

REGENT PARK UNIT 8 DEVELOPMENT

TYPICAL THREE PHASE J-BOX

CONDUIT CONFIGURATION(NINE PRIMARY STUB-UPS)

PLAN VIEW
30 JUNCTION BOX PAD

PROFILE VIEWS

BEC'S CONTRACTOR TO INSTALL CAPS ON CONDUIT

GROUND ROD

36" MIN. RADIUS ON — ALL 90° SWEEP BENDS (OR AS SPECIFIED)

GROUND ROD

36" MIN. RADIUS ON — ALL 90" SWEEP BENDS (OR AS SPECIFIED)

FRONT SIDE OF JUNCTION BOX NOT TO FACE DIRECTION OF ROAD

BEC'S CONTRACTOR TO INSTALL 1000LB TEST(MIN) FLAT MULE TAPE PULLING STRING

PAD SITE SHALL BE ELEVATED
ABOVE FINAL GRADE AND SOIL
UNDER PAD SHALL BE COMPACTED
OUT TO 3' AWAY FROM PAD SITE

NOTE:
PREFERED LOCATION OF
COMMUNICATIONS IS LOCATED
ON BACK SIDE OF JUNCTION BOX

BEC'S CONTRACTOR TO INSTALL 5/8" X 8' CU CLAD GROUND ROD

CONDUIT **CONFIGURATION DETAILS** SCALE FOR 34 x 22 DWG N.T.S. DRAWING NO.

ISSUED: 08-30-23 FOR CONSTRUCTION

CONDUIT CONFIGURATION(TWELVE PRIMARY STUB-UPS)

BY CHK APPD NO DATE

THIS DRAWING IS CERTIFIED TO BE CORRECT FOR THE NEW FACILITIES SHOWN ONLY.
INFORMATION CONCERNING EXISTING FACILITIES

NO

20BEC3208

PROVIDED BY OTHERS HAS NOT BEEN VERIFIED.

REVISION

BY CHK APPD

1" SEPARATION

SECTION A-A

CONDUIT ENTRANCE

MIN. 8" LIMESTONE BASE

CONCRETE NOTES:

1% SLOPE

TOP SOIL

FINAL GRADE

- 1. FOUNDATIONS MAY BE PRECAST OR CAST—IN—PLACE. ALL FOUNDATIONS SHALL MEET THE MINIMUM CONSTRUCTION REQUIREMENTS LISTED BELOW. PRECAST FOUNDATIONS SHALL BE "BLOCK CONCRETE COMPANY NO.BCC56305JBS" OR PREAPPROVED FOUAL.
- 2. FOUNDATION SHALL NOT BE LESS THAN 5" IN THICKNESS.
 3. CONCRETE SHALL HAVE A MIN. 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI WHEN TESTED IN ACCORDANCE WITH ASTM
- 4. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
 5. STEEL REINFORCING SHALL BE A #4 REBAR AT 6" O.C.E.W. ENDING 2" FROM OUTSIDE EDGE AND CONDUIT OPENING.

GENERAL NOTES:

- DIMENSIONS SHOWN HERE ARE FOR A 3—PHASE TYPE 1 SECTIONALIZING CABINET.
 FOUNDATION ASSEMBLIES INCLUDE PAD PREPARATION, BACKFILL, LIMESTONE BASE, COMPACTION, FOUNDATION, DRAINAGE AND TOP SOIL WHEN REQUIRED.
 BACKFILL OF TRENCHING BELOW PROPOSED PAD SHALL BE IN ACCORDANCE WITH TRENCH DETAILS, UNLESS OTHERWISE SPECIFIED.
- A TOP OF PAD SHALL BE A MIN. OF 3" ABOVE FINAL GRADE AND BEC'S CONTRACTOR SHALL ENSURE A MIN. OF 1% SLOPE AWAY FROM PAD IN ALL DIRECTIONS.

 5. LIMESTONE BASE SHALL BE TX—DOT TYPE A GRADE 1 OR 2 LIMESTONE BASE MATERIAL AND SHALL BE COMPACTED TO
- INDUSTRY STANDARDS
- 6. INSTALL GROUND ROD AT CONDUIT ENTRANCE.
- 7. EQUIPMENT SHALL BE SECURED TO PAD IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

BY CHK APPD NO DATE

3Ø SECTIONALIZING CABINET FOUNDATION (TYPE 1/UM1-2J)

THIS DRAWING IS CERTIFIED TO BE CORRECT FOR THE NEW FACILITIES SHOWN ONLY. INFORMATION CONCERNING EXISTING FACILITIES PROVIDED BY OTHERS HAS NOT BEEN VERIFIED.

REVISION

ISSUED: 08-30-23 FOR CONSTRUCTION

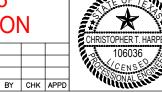
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3" MIN

1% SLOPE

TOP SOIL

FINAL GRADE



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BANDERA ELECTRIC COOPERATIVE

THREE PHASE SECTIONALIZING **CABINET DETAILS**

SCALE FOR 34 x 22 DWG N.T.S. DRAWING NO.

SECTIONALIZING CABINETS Trinetics Description Unit D W Н Catalog No. 3Ø Sectionalizing Cabinet (Type 1) UM33-T1 48 22 30 CC348-22TH 66 22 30 3Ø Sectionalizing Cabinet (Type 2) UM33-T2 CC366-22TH

1% SLOPE

GENERAL NOTES:

THE CONCENTRIC NEUTRAL OF — PRIMARY CABLE SHALL BE TWISTED TOGETHER AND COMPRESSION

CONNECTED TO GROUNDING 1% SLOPE

- NOMENCLATURE FOR 3-PHASE SECTIONALIZING CABINETS IS UM33-T1 FOR "TYPE 1" AND UM33-T2 FOR "TYPE 2".
- NOMENCLATURE FOR 3-PHASE SECTIONALIZING CABINETS IS UM33-11 FOR TYPE 1 AND UM33-12 FOR TYPE 2.
 SECTIONALIZING CABINETS SHALL BE 12-GAUGE METAL, TOP HINGED , POWDER COATED AND BE LOCKABLE WITH
 PENTA-HEAD LATCH.

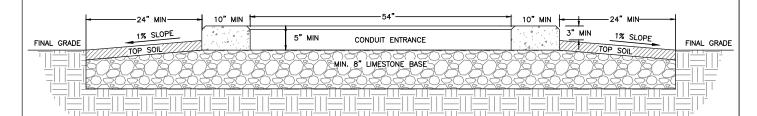
 CABINETS SHALL ALSO BE RATED FOR A MIN. OF 25 KV AND 600 A EQUIPMENT.
 THIS UNIT SHALL INCLUDE THE DELIVERY, INSTALLATION, MOUNTING, COMPLETE AND IN-PLACE.
 FOUNDATION, BACKFILL AND DRAINAGE SHALL BE IN ACCORDANCE WITH 3% SECTIONALIZING CABINET FOUNDATION DETAIL.
 INSTALL GROUND ROD WITH THIS PIECE OF EQUIPMENT AS PER THE FOUNDATION DRAININGS.

- EQUIPMENT SHALL BE SECURED TO PAD IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

3Ø SECTIONALIZING CABINET (TYPE 1) (UM4-200)

NO 20BEC3208

SYSTEM VOLTAGE: 7.2/12.47 kV



SECTION A-A

PLAN VIEW

CONCRETE NOTES:

- 1. FOUNDATIONS MAY BE PRECAST OR CAST-IN-PLACE. ALL FOUNDATIONS SHALL MEET THE MINIMUM CONSTRUCTION REQUIREMENTS LISTED BELOW. PRECAST FOUNDATIONS SHALL BE "BLOCK CONCRETE COMPANY NO.BCC74305JBS" OR PREAPPROVED EQUAL.
- 2. FOUNDATION SHALL NOT BE LESS THAN 5" IN THICKNESS.
 3. CONCRETE SHALL HAVE A MIN. 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI WHEN TESTED IN ACCORDANCE WITH
- 4. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
 5. STEEL REINFORCING SHALL BE A #4 REBAR AT 6" O.C.E.W. ENDING 2" FROM OUTSIDE EDGE AND CONDUIT OPENING.

GENERAL NOTES:

1. DIMENSIONS SHOWN HERE ARE FOR A 3-PHASE TYPE 2 SECTIONALIZING CABINET.

BY CHK APPD NO DATE

- 2. FOUNDATION ASSEMBLIES INCLUDE PAD PREPARATION, BACKFILL, LIMESTONE BASE, COMPACTION, FOUNDATION, DRAINAGE AND TOP SOIL WHEN REQUIRED.

 3. BACKFILL OF TRENCHING BELOW PROPOSED PAD SHALL BE IN ACCORDANCE WITH TRENCH DETAILS, UNLESS OTHERWISE
- SPECIFIED.

 4. TOP OF PAD SHALL BE A MIN. OF 3" ABOVE FINAL GRADE AND BEC'S CONTRACTOR SHALL ENSURE A MIN. OF 1% SLOPE AWAY FROM PAD IN ALL DIRECTIONS.

 5. LIMESTONE BASE SHALL BE TX—DOT TYPE A GRADE 1 OR 2 LIMESTONE BASE MATERIAL AND SHALL BE COMPACTED TO INDUSTRY STANDARDS.

 6. INSTALL GROUND ROD AT CONDUIT ENTRANCE.

- 7. EQUIPMENT SHALL BE SECURED TO PAD IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

3Ø SECTIONALIZING CABINET FOUNDATION (TYPE 2/UM1-6J)

THIS DRAWING IS CERTIFIED TO BE CORRECT FOR THE NEW FACILITIES SHOWN ONLY. INFORMATION CONCERNING EXISTING FACILITIES PROVIDED BY OTHERS HAS NOT BEEN VERIFIED.

REVISION

ISSUED: 08-30-23 FOR CONSTRUCTION

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BANDERA ELECTRIC COOPERATIVE **REGENT PARK UNIT 8 DEVELOPMENT**

THREE PHASE SECTIONALIZING **CABINET DETAILS** (TYPE 2)

SCALE FOR 34 x 22 DWG N.T.S. DRAWING NO.

Trinetics Description W D Catalog No. 3Ø Sectionalizing Cabinet (Type 1) UM33-T1 48 22 30 CC348-22TH 3Ø Sectionalizing Cabinet (Type 2) UM33-T2 66 22 30 CC366-22TH

Of

1% SLOPE

FINAL GRADE

GENERAL NOTES:

THE CONCENTRIC NEUTRAL OF

PRIMARY CABLE SHALL BE TWISTED TOGETHER AND COMPRESSION CONNECTED TO GROUNDING

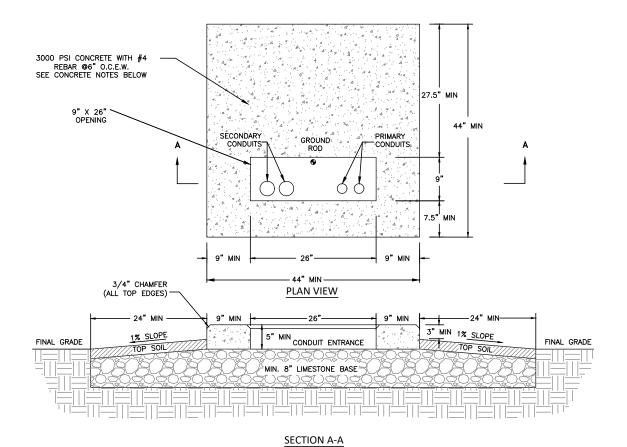
1% SLOPE

SECTIONALIZING CABINETS

- NOMENCLATURE FOR 3-PHASE SECTIONALIZING CABINETS IS UM33-T1 FOR "TYPE 1" AND UM33-T2 FOR "TYPE 2". SECTIONALIZING CABINETS SHALL BE 12-GAUGE METAL, TOP HINGED, POWDER COATED AND BE LOCKABLE WITH

- SECTIONALIZING CABINETS SHALL BE 12-GAUGE METAL, TOP HINGED, POWDER COATED AND BE LOCKABLE WITH
 PENTA-HEAD LATCH.
 CABINETS SHALL ALSO BE RATED FOR A MIN. OF 25 KV AND 600 A EQUIPMENT.
 THIS UNIT SHALL INCLUDE THE DELIVERY, INSTALLATION, MOUNTING, COMPLETE AND IN-PLACE.
 FOUNDATION, BACKFILL AND DRAINAGE SHALL BE IN ACCORDANCE WITH 30 SECTIONALIZING CABINET FOUNDATION DETAIL.
 INSTALL GROUND ROD WITH THIS PIECE OF EQUIPMENT AS PER THE FOUNDATION DRAWINGS.
 EQUIPMENT SHALL BE SECURED TO PAD IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

3Ø SECTIONALIZING CABINET (TYPE 2/UM4-600)



1Ø TRANSFORMER PAD **FOUNDATION** (25-100 kVA)

CONCRETE NOTES

- FOUNDATIONS MAY BE PRECAST OR CAST-IN-PLACE. ALL FOUNDATIONS SHALL MEET THE MINIMUM CONSTRUCTION REQUIREMENTS LISTED BELOW. PRECAST FOUNDATIONS SHALL BE "BLOCK CONCRETE COMPANY NO.BCC44445TP" OR PREAPPROVED EQUAL.
- 2. FOUNDATION SHALL NOT BE LESS THAN 5" IN THICKNESS.
 3. CONCRETE SHALL HAVE A MIN. 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI WHEN TESTED IN ACCORDANCE WITH ASTM C39.
- REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
- 5. STEEL REINFORCING SHALL BE A #4 REBAR AT 6" O.C.E.W. ENDING 2" FROM OUTSIDE EDGE AND CONDUIT OPENING.

GENERAL NOTES

- DIMENSIONS SHOWN HERE ARE FOR A 1-PHASE PAD MOUNT TRANSFORMER, 100 kVA OR SMALLER.
- FOUNDATION ASSEMBLIES INCLUDE PAD PREPARATION, BACKFILL, LIMESTONE BASE, COMPACTION, FOUNDATION, DRAINAGE AND TOP SOIL WHEN REQUIRED.
- BACKFILL OF TRENCHING BELOW PROPOSED PAD SHALL BE IN ACCORDANCE WITH TRENCH DETAILS, UNLESS OTHERWISE SPECIFIED. TOP OF PAD SHALL BE A MIN. OF 3" ABOVE FINAL GRADE AND BEC'S CONTRACTOR SHALL ENSURE
- A MIN. OF 1% SLOPE AWAY FROM PAD IN ALL DIRECTIONS. LIMESTONE BASE - SHALL BE TX-DOT TYPE A GRADE 1 OR 2 LIMESTONE BASE MATERIAL AND
- SHALL BE COMPACTED TO INDUSTRY STANDARDS.
 INSTALL GROUND ROD AT CONDUIT ENTRANCE.

BY CHK APPD NO DATE

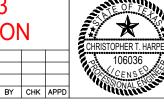
EQUIPMENT SHALL BE SECURED TO PAD IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

THIS DRAWING IS CERTIFIED TO BE CORRECT FOR THE NEW FACILITIES SHOWN ONLY. INFORMATION CONCERNING EXISTING FACILITIES PROVIDED BY OTHERS HAS NOT BEEN VERIFIED.

REVISION

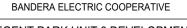
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SINGLE PHASE TRANSFORMER **DETAILS**

SCALE FOR 34 x 22 DWG N.T.S. DRAWING NO.

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| THE CONCENTRIC NEUTRAL OF PRIMARY CABLE SHALL BE TWISTED TOGETHER AND COMPRESSION CONNECTED TO GROUNDING | HIA WIS AND | |
|----------------------------------------------------------------------------------------------------------|-------------------------------------------------|----------------------|
| FINAL GRADE 1% SLOPE | Space convoir | 1% SLOPE FINAL GRADE |

| 1 Ø PAD MOUNT TRANSFORMERS | | | | |
|--------------------------------------|----------|--|--|--|
| Description | Unit | | | |
| 25kVA-1Ø Pad Mount XFMR (120/240V) | UG7-25 | | | |
| 37.5kVA-1Ø Pad Mount XFMR (120/240V) | UG7-37.5 | | | |
| 50kVA-1Ø Pad Mount XFMR (120/240V) | UG7-50 | | | |
| 75kVA-1Ø Pad Mount XFMR (120/240V) | UG7-75 | | | |
| 100kVA-1Ø Pad Mount XFMR (120/240V) | UG7-100 | | | |
| 167kVA-1Ø Pad Mount XFMR (120/240V) | UG7-167 | | | |
| 200kVA-1Ø Pad Mount XFMR (120/240V) | UG7-200 | | | |

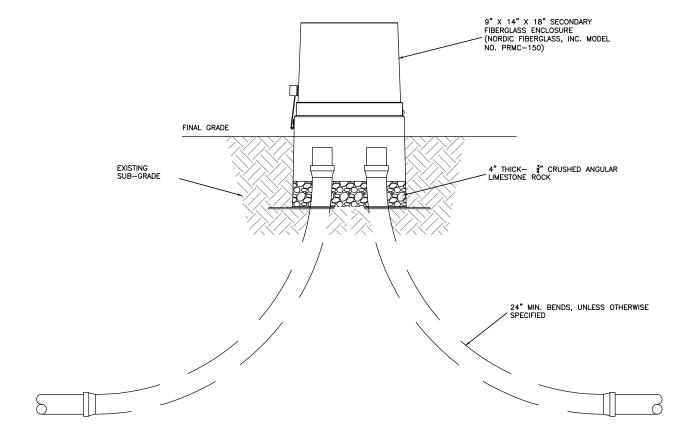
GENERAL NOTES

1. NOMENCLATURE FOR 1-PHASE TRANSFORMERS IS AS FOLLOWS:

EXAMPLE - "UG7-100"

- "U" OR "V" DESIGNATES 7.2/12.5KV OR 14.4/24.9KV, RESPECTIVELY.
- "G7" DESIGNATES 1-PHASE PAD MOUNT TRANSFORMER.
- "-100-" REPRESENTS THE THE KVA RATING OF THE TRANSFORMER.
- 2. TRANSFORMER ASSEMBLIES INCLUDE SECONDARY BUSHINGS, SEC. SPADES, LOAD BREAK ELBOWS,
- INSULATING CAPS, INSULATED STANDOFF BRACKETS, DELIVERY, SET, COMPLETE AND IN-PLACE FOUNDATION, BACKFILL AND DRAINAGE SHALL BE IN ACCORDANCE WITH 10 TRANSFORMER FOUNDATION DETAIL.
- INSTALL GROUND ROD AT CONDUIT ENTRANCE.
- 5. EQUIPMENT SHALL BE SECURED TO PAD IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

1Ø PADMOUNT TRANSFORMERS (25-250kVA)



GENERAL NOTES

- 1. BEC'S CONTRACTOR SHALL ENSURE POSITIVE 1% MIN. DRAINAGE AWAY FROM THIS PEDESTAL IN ALL DIRECTIONS.
 2. EQUIPMENT SHALL BE ANCHORED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

SECONDARY PEDESTAL (ABOVE GROUND)

| ITEM | EST QTY | UNIT | |
|------|------------|------|----------------------------------------------|
| 1 | 1 | EA | SECONDARY PEDESTAL (ABOVE GROUND) |
| 2 | 3 | EA | CONNECTOR FLOOD SEAL #12-350 MCM (4-POSITION |
| | | | |
| | | | |

THIS DRAWING IS CERTIFIED TO BE CORRECT FOR THE NEW FACILITIES SHOWN ONLY. INFORMATION CONCERNING EXISTING FACILITIES PROVIDED BY OTHERS HAS NOT BEEN VERIFIED.

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ISSUED: 08-30-23 FOR CONSTRUCTION

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BANDERA ELECTRIC COOPERATIVE REGENT PARK UNIT 8 DEVELOPMENT

SECONDARY PEDESTAL DETAIL

SCALE FOR 34 x 22 DWG N.T.S. DRAWING NO.

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SYSTEM VOLTAGE: 7.2/12.47 kV

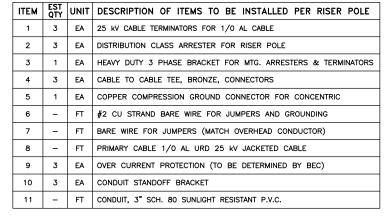
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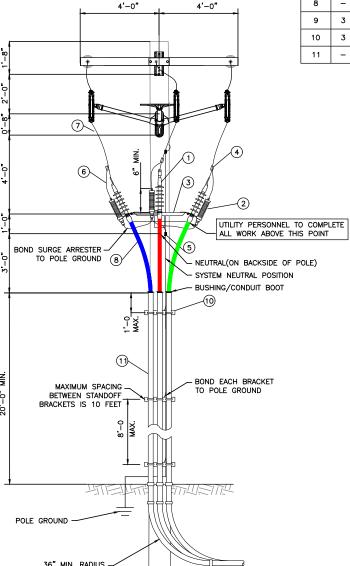
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URD THREE PHASE RISER



TYPICAL 3 PHASE RISER

BY CHK APPD NO DATE

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| N G | REGENT PARK UNIT 8 DEVELOPMENT |

THREE PHASE RISER DETAILS

24.9/14.4 kV PRIMARY, 3-PHASE HOOK SWITCH RISER POLE

UC6

y Screw Lag 1/2" x 4 1/2" sk 3 Hook Switch, 600 Amp, 27kV n 1 Bolt, Double Arming, 3/4" x Req Length Uae 3 Riser Class Arrester

UTILITY PERSONNEL TO COMPLETE ALL WORK ABOVE THIS POINT

-BOND EACH BRACKET eq TO POLE GROUND

aw1 9 Washer, Double Coil Spring 5/8" aw2 1 Washer, Double Coil Spring 3/4"

c1,d1,aw

n,d2,ek2-

BOND SURGE ARRESTER TO POLE GROUND

SYSTEM NEUTRAL POSITION

CONDUIT SIZE AS REQ-

SPARE CONDUIT

AS REQ CONDUIT CAP-

> GROUNDING FLECTRODE

> > 36" MIN. RADIUS-ON ALL BENDS

ITEM QTY. DESCRIPTION

SCALE FOR 34 x 22 DWG N.T.S. DRAWING NO.

ROTATE EQUIPMENT BRACKET APPROXIMATELY 45° TO CLEAR CENTER

PHASE JUMPER TO POLE AS REQUIRED

TO BE RELOCATED

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36" MIN. RADIUS ON ALL BENDS

ISSUED: 08-30-23

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GENERAL NOTES:

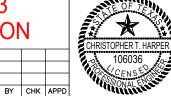
- / TRANSFORMER SHALL HAVE A #2 BARE COPPER WIRE TYING THAT PIECE OF EQUIPMENT'S GROUND ROD TO THE JUNCTION BOX / TRANSFORMER'S GROUND ROD AND EFFECTIVELY BONDING THE TWO CABINETS.
- 3. PREFERRED LOCATION OF COMMUNICATIONS IS ON BACK SIDE OF EQUIPMENT PAD.

THIS DRAWING IS CERTIFIED TO BE CORRECT FOR THE NEW FACILITIES SHOWN ONLY. INFORMATION CONCERNING EXISTING FACILITIES PROVIDED BY OTHERS HAS NOT BEEN VERIFIED.

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BANDERA ELECTRIC COOPERATIVE

TYPICAL EQUIPMENT ORIENTATION AND SINGLE PHASE RISER DETAILS

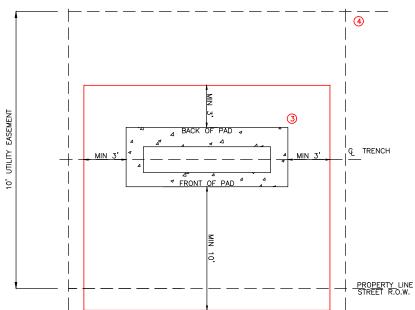
SCALE FOR 34 x 22 DWG N.T.S.

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REGENT PARK UNIT 8 DEVELOPMENT

PLAN VIEW



TYPICAL UTILITY ASSIGNMENT **EQUIPMENT ORIENTATION/ SAFE ZONE DETAIL**

BY CHK APPD NO DATE

- 1. BEC'S CONTRACTOR SHALL MAINTAIN A 3 FOOT MINIMUM SAFE ZONE AROUND THE EQUIPMENT PAD AND A 10 FOOT MINIMUM SAFE ZONE ACROSS FRONT OF THE EQUIPMENT PAD, CLEAR OF ANY PEDESTALS OR EQUIPMENT BY OTHERS (NO COMMUNICATION PEDESTALS).
- 2. ANY PIECE OF EQUIPMENT WITHIN 10' OF A JUNCTION BOX
- 4. DETAIL IS TO BE USED FOR FUSES, VACUUM FAULT INTERRUPTERS, AND JUNCTION BOXES

8 2 EA CABLE TO CABLE TEE, BRONZE, CONNECTORS
9 VARIES EA CONDUIT STANDOFF BRACKETS
10 - FT CONDUIT, 2" SCH. 80 SUNLIGHT RESISTANT P.V.C. * REFER TO DWG. FOR CABLE SIZE ** REFER TO DWG. FOR CONDUIT SIZE APPLICANT SHALL NOT INSTALL SWEEPS AT THE RISER POLE UNTIL RISERS HAVE BEEN PLACED ON THE POLE. UTILITY WILL ASSIST WITH THE INSTALLATION OF RISERS ON POLE.

ITEM COTY UNIT DESCRIPTION OF ITEMS TO BE INSTALLED PER RISER POLE

1 1 EA OVERHEAD PRIMARY HOT LINE TAP CLAMP (ALUMINUM) FT BARE WIRE FOR JUMPERS (MATCH OVERHEAD CONDUCTOR

6 1 EA SINGLE PHASE BRACKET COMBINATION FOR MOUNTING ARRESTER & TERMINATOR
7 - FT PRIMARY CABLE URD 25 kV JACKETED CABLE *

3 1 EA FUSED CUTOUT (TO BE SIZED BY UTILITY)

5 1 EA DISTRIBUTION CLASS ARRESTER FOR RISER POLE

4 1 EA 25 kV CABLE TERMINATORS

TYPICAL 1 PHASE RISER

SCH. 40 SUNLIGHT RESISTANT P.V.C. CONDUIT TO BE INSTALLED (REFER TO DWG. FOR CONDUIT SIZE)