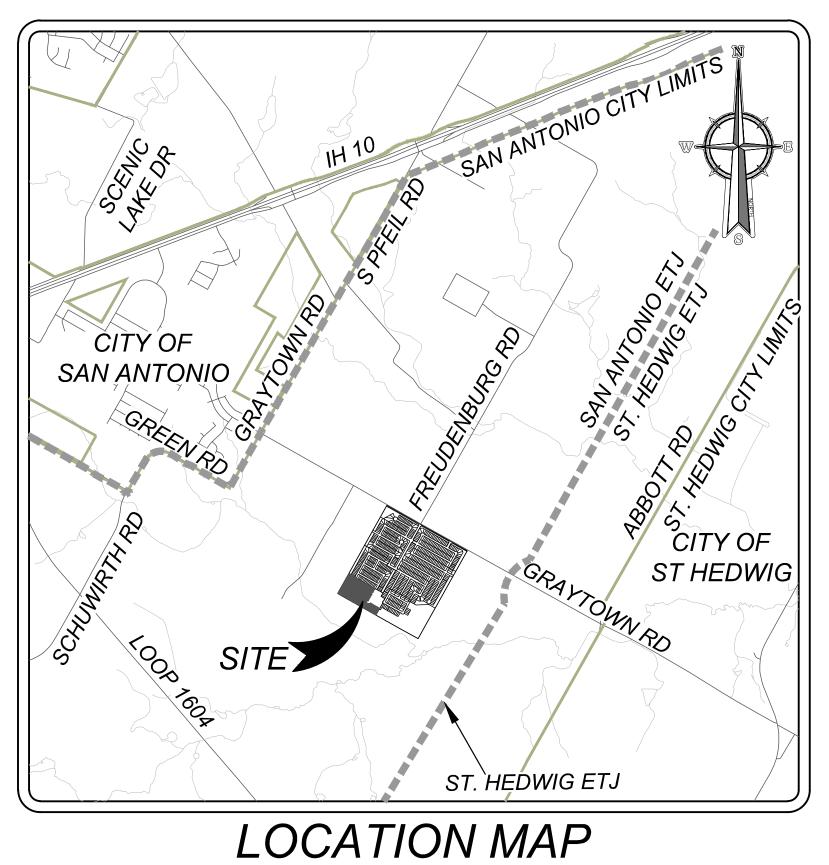
<u>SENERAL NOTES</u>

- ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR CONSTRUCTION JUNE 2008, OR LATEST
- NO EXTRA PAYMENT SHALL BE ALLOWED FOR WORK CALLED FOR ON THE PLANS, BUT NOT INCLUDED IN THE BID PROPOSAL. THIS INCIDENTAL WORK WILL BE REQUIRED AND SHALL BE INCLUDED IN THE PAY ITEM TO WHICH IT RELATES
- THE CONTRACTOR SHALL PROVIDE ACCESS FOR THE DELIVERY OF MAIL BY THE U.S. POSTAL SERVICE. 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION ANY DAMAGE DONE TO EXISTING FENCES, CONCRETE ISLANDS, STREET PAVING, CURBS, SHRUBS, BUSHES OR DRIVEWAYS. (NO SEPARATE PAY
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO SEE THAT ALL SIGNS AND BARRICADES ARE PROPERLY INSTALLED AND MAINTAINED. ALL LOCATIONS AND DISTANCES WILL BE DECIDED UPON IN THE FIELD BY THE CONTRACTOR, USING THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". THE CITY'S CONSTRUCTION INSPECTOR AND TRAFFIC ENGINEERING REPRESENTATIVE WILL ONLY BE RESPONSIBLE TO INSPECT BARRICADES AND SIGNS. IF, IN THE OPINION C THE TRAFFIC ENGINEERING REPRESENTATIVE AND THE CONSTRUCTION INSPECTOR. THE BARRICADES AND SIGNS DO NO CONFORM TO ESTABLISHED STANDARDS OR ARE INCORRECTLY PLACED OR ARE INSUFFICIENT IN QUANTITY TO PROTECT THE GENERAL PUBLIC, THE CONSTRUCTION INSPECTOR SHALL HAVE THE OPTION TO STOP OPERATIONS UNTIL SUCH TIME AS THE CONDITIONS ARE CORRECTED.
- IF THE NEED ARISES, ADDITIONAL BARRICADES AND DIRECTIONAL DEVICES MAY BE ORDERED BY THE TRAFFIC ENGINEERING REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
- DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.171 C.P.S. MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.
- CONTRACTOR SHALL NOTIFY THE CITY INSPECTOR TWENTY FOUR (24) HOURS PRIOR TO BACKFILL OF ANY UTILITY TRENCHES TO SCHEDULE FOR DENSITY TEST AS REQUIRED.
- CONTRACTOR SHALL PRESERVE ALL CONSTRUCTION STAKES, MARKS, ETC. IF ANY ARE DESTROYED OR REMOVED BY THE CONTRACTOR OR HIS EMPLOYEES. THEY SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION TO DETERMINE THE LOCATION OF EXISTING UTILITIES. CONTRACTOR SHALL NOTIFY THE FOLLOWING AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO EXCAVATION OPERATION:
  - SAN ANTONIO WATER SYSTEM (SAWS) BEXAR METROPOLITAN WATER DISTRICT (BEXAR MET) 354-6538 / 357-5741 COSA DRAINAGE 207-8048 COSA SIGNAL OPERATIONS TEXAS STATE WIDE ONE CALL LOCATOR
  - 207-7720 / 207-7765 1-800-344-8377 CITY PUBLIC SERVICE ENERGY - TIME WARNER - AT&T - MCI
- THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM AVAILABLE RECORDS AND ARE NOT GUARANTEED, BUT SHALL BE INVESTIGATED AND VERIFIED BY THE CONTRACTOR BEFORE STARTING WORK. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE TO AND FOR THE MAINTENANCE AN PROTECTION OF THE EXISTING UTILITIES EVEN IF THEY ARE NOT SHOWN ON THE PLANS. LOCATION AND DEPTH OF EXISTING UTILITIES SHOWN HERE ARE APPROXIMATE ONLY. ACTUAL LOCATIONS AND DEPTHS MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION AND HE SHALL BE RESPONSIBLE FOR PROTECTION OF SAME DURING CONSTRUCTION
- ALL WASTE MATERIAL SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE HIS SOLE RESPONSIBILITY TO DISPOSE OF THIS MATERIAL OFF THE LIMITS OF THE PROJECT. NO WASTE MATE- RIAL SHALL BE PLACED IN EXISTING LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS OF EXISTING ARTIFICIAL OR NATURAL DRAINAGE.
- THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIAL IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN DEVELOPMENT PERMIT
- THE CONTRACTOR SHALL MAINTAIN ALL ADJOINING STREETS AND TRAVELED ROUTES FREE FROM SPILLED AND / OR TRACKED CONSTRUCTION MATERIALS AND / OR DEBRIS.
- IF THE CONTRACTOR ENCOUNTERS ANY ARCHAEOLOGICAL DEPOSITS DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR MUST STOP EXCAVATION IMMEDIATELY, CONTACT THE CITY INSPECTOR, AND CALL THE CITY HISTORIC PRESERVATION OFFICE AT 207-7306 OR 207-3327 FOR AN ARCHAEOLOGICAL INVESTIGATION. THE CONTRACTOR CANNOT BEGIN EXCAVATION AGAIN WITHOUT WRITTEN PERMISSION FROM THE CITY. IF MORE THAN THREE (3) DAYS ARE REQUIRED FOR INVESTIGATION (NOT INCLUDING HOLIDAY AND WEEKENDS) AND IF THE CONTRACTOR IS UNABLE TO WORI IN OTHER AREAS. THEN THE CONTRACTOR WILL BE ALLOWED TO NEGOTIATE FOR ADDITIONAL CONSTRUCTION TIME UPON WRITTEN REQUEST WITHIN TEN (10) DAYS AFTER THE FIRST NOTICE TO THE CITY OF ARCHAEOLOGICAL INVESTIGATION FOR EACH EVENT. IF THE TIME REQUIRED FOR INVESTIGATION IS LESS THAN OR EQUAL TO THREE (3) DAYS FOR EACH EVENT. CONTRACT DURATION WILL NOT BE EXTENDED.
- IF SUSPECTED CONTAMINATION IS ENCOUNTERED DURING CONSTRUCTION OPERATIONS, C.O.S.A. SHALL BE NOTIFIED IMMEDIATELY WHEN CONTAMINATED SOILS AND / OR GROUNDWATER ARE ENCOUNTERED AT LOCATIONS NOT IDENTIFIED IN THE PLANS. THE NOTIFICATION SHOULD INCLUDE THE STATION NUMBER. TYPE OF CONTAMINATED MEDIA, EVIDENCE C CONTAMINATION AND MEASURES TAKEN TO CONTAIN THE CONTAMINATED MEDIA AND PREVENT PUBLIC ACCESS. THE CONTAMINATED SOIL AND / OR GROUNDWATER SHALL NOT BE REMOVED FROM THE LOCATION WITHOUT PRIOR C.O.S.A. APPROVAL. THE CONTRACTOR MUST STOP THE EXCAVATION IMMEDIATELY AND CONTACT THE C.O.S.A. INSPECTOR. THE CONTRACTOR CANNOT BEGIN EXCAVATION ACTIVITIES WITHOUT WRITTEN PERMISSION FROM THE CITY.
- CONTRACTOR IS TO INCLUDE A MAILBOX POST BLOCKOUT FOR VACANT LOTS AND ALL RESIDENCES WHICH DO NOT HAVE MAILBOXES AT THE CURB. BLOCKOUTS ARE PROVIDED FOR FUTURE USE BY THE POST OFFICE.
- CONTRACTOR SHALL NOT REMOVE OR ADJUST ANY VIA FACILITIES. THE CONTRACTOR MUST CONTACT VIA FOURTEEN DAYS PRIOR, FOR THE REMOVAL OF BENCHES, STOP POLES OR ANY OTHER VIA FACILITIES THAT MAY BE PRESENT. PLEASE PROVIDE THIRTY DAYS PRIOR NOTICE FOR SHELTER REMOVAL (TELEPHONE NOS: (210) 362-2155 OR (210) 362-2096). THE CONTRACT- OR WILL BE LIABLE FOR ANY DAMAGES TO VIA FACILITIES NOT REMOVED BY VIA. THE CON-TRACTOR IS REQUIRED TO REPLACE ALL FLATWORK REMOVED OR DAMAGED IN THE COURSE OF EXECUTING THE CONTRACT UNLESS OTHERWISE NOTED BY VIA. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING VIA FACILITIES IF ADJACENT TO WORK AREA.
- REE PROTECTION AND PRESERVATION GENERAL NOTES
- NO UTILITY OR STREET EXCAVATION WORK SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND TREATMENT MEASURES HAVE NOT BEEN COMPLETED AND APPROVED.
- TREE PROTECTION FENCING SHALL BE REQUIRED. TREE PROTECTION FENCING SHALL BE INSTALLED. MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING SITE CONSTRUCTION. DURING CONSTRUCTION ACTIVITY, AT LEAST A SIX-INCH LAYER OF COARSE MULCH SHALL BE PLACED AND MAINTAINED OVER THE ROOT PROTECTION ZONE (NO SEPARATE PAY
- THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN ONE INCH IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN THE VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR FOR GUIDANCE
- ROOTS WILL BE CUT WITH A ROCK SAW OR BY HAND, NOT BY AN EXCAVATOR OR OTHER ROAD CONSTRUCTION EQUIPMENT. ALL CURB AND SIDEWALK WORK SHALL USE ALTERNATIVE CONSTRUCTION METHODS TO MINIMIZE EXTENSIVE ROOT
- DAMAGE TO TREES (REEER TO DETAILS).
- EXPOSED ROOTS SHALL BE COVERED AT THE END OF THE DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH OR WET BURLAP.
- NO EQUIPMENT. VEHICLES OR MATERIALS SHALL OPERATE OR BE STORED WITHIN THE ROOT PROTECTION ZONE OF ANY TREE NEAR THE PROJECT. ROOT PROTECTION ZONE IS 1 FOOT OF RADIUS PER INCH OF TREE'S DIAMETER. A 10-INCH DIAMETER TREE WOULD HAVE A 10 FOOT RADIUS ROOT PROTECTION ZONE AROUND THE TREE. ROOTS OR BRANCHES IN CONFLICT WITH THE CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. OAK WOUNDS SHALL BE PAINTED OVER WITHIN 30 MINUTES TO PREVENT OAK WILT.
- SAPLINGS, SHRUBS OR BUSHES TO BE CLEARED FROM THE PROTECTED ROOT ZONE AREA OF A LARGE TREE SHALL BE REMOVED BY HAND AS DESIGNATED BY THE INSPECTOR
- NO WIRES, NAILS OR OTHER MATERIAL MAY BE ATTACHED TO PROTECTED TREES.
- TREES, TREE LIMBS, BUSHES AND SHRUBS LOCATED IN THE CITY STREET OR ALLEY RIGHT-OF-WAY OR PERMANENT EASEMENTS WHICH INTERFERE WITH PROPOSED CONSTRUCTION ACTIVITIES SHALL BE PROPERLY PRUNED FOLLOWING THE ANSI A-300 STANDARDS FOR PRUNING. ALL TREE PRUNING SHALL BE COMPLETED BY A CITY OF SAN ANTONIO TREE MAINTENANCE LICENSED CONTRACTOR (ARTICLE 21-171, CITY CODE) ONLY AFTER APPROVAL FROM THE CAPITAL PROJECTS MANAGEMENT THROUGH THE INSPECTOR.
- NO EXCESSIVE TREE TRIMMING WILL BE PERMITTED.
- ALL DEBRIS GENERATED BY THE PRUNING AND TRIMMING OF THE TREES AND / OR BUSHES SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF PROPERLY (NO SEPARATE PAY ITEM) TREES MUST BE MAINTAINED IN GOOD HEALTH THROUGHOUT THE CONSTRUCTION PROCESS. MAINTENANCE MAY INCLUDE
- BUT NOT LIMITED TO: WATERING THE ROOT PROTECTION ZONE, WASHING FOLIAGE, FERTILIZATION, PRUNING, ADDITIONAL MULCH APPLICATIONS AND OTHER MAINTENANCE AS NEEDED ON THE PROJECT.
- ANY TREE REMOVAL SHALL BE APPROVED BY THE CITY ARBORIST. (207-0278).
- TREES WHICH ARE DAMAGED OR LOST DUE TO THE CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED TO THE CITY'S SATISFACTION.
- TREE PLANTING FOR MITIGATION OR ENHANCEMENT: ALL PLANTED TREES SHALL BE MAINTAINED IN A HEALTHY CONDITION AT ALL TIMES. THIS INCLUDES IRRIGATION, FERTILIZING, PRUNING AND OTHER MAINTENANCE AS NEEDED ON THE PROJECT. TREES THAT DIE WITHIN TWELVE (12) MONTHS SHALL BE REPLACED WITH A TREE OF EQUAL SIZE AND SPECIES

CCESSIBILITY REQUIREMENTS

- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN VEHICULAR AND PEDESTRIAN ACCESS AT ALL TIMES TO LOCAL RESIDENCES AND BUSINESSES.
- WHEN THE WORK REQUIRES THE EXCAVATION OF THE STREET AND THE REMOVAL OF THE EXISTING DRIVEWAY APPROACHES AND SIDEWALKS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY ALL-WEATHER ACCESS TO THE BUSINESSES AND RESIDENCES. THE TEMPORARY DRIVEWAY APPROACHES SHALL BE CONSTRUCTED WITH FLEXIBLE BASE OR GRAVEL MATERIAL AT NO SEPARATE COST TO THE CITY.
- PRIOR TO INITIATING THE CONSTRUCTION OF NEW DRIVEWAY APPROACHES, THE CONTRACTOR SHALL GIVE ADVANCE WARNING IN PERSON, OR IN WRITING, OF AT LEAST 48 HOURS TO EACH RESIDENCE THAT WILL BE IMMEDIATELY AFFECTED SO THAT ALTERNATE PLANS MAY BE MADE BY THE RESIDENTS.
- FOR BUSINESSES WITH MORE THAN ONE DRIVEWAY, AT LEAST ONE DRIVEWAY SHALL REMAIN OPEN WHILE THE OTHER NEW DRIVEWAY APPROACHES ARE CONSTRUCTED. FOR BUSINESSES WITH ONLY ONE DRIVEWAY, THE NEW DRIVEWAY APPROACH SHALL BE CONSTRUCTED IN HALF WIDTHS, UNLESS A TEMPORARY ASPHALT DRIVEWAY IS FIRST INSTALLED AT NO SEPARATE COST TO THE CITY.

# ROSE VALLEY PHASE 4 BEXAR COUNTY, TEXAS STREET, DRAINAGE, WATER, SANITARY SEWER, AND UTILITY IMPROVEMENTS



N.T.S.

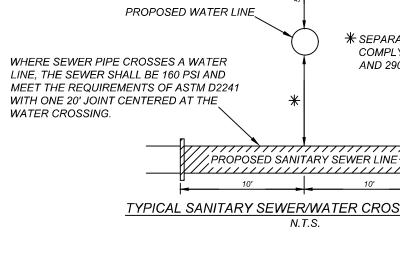
OWNER/DEVELOPER: LENNAR HOMES 100 NE LOOP 410, SUITE 1155 SAN ANTONIO, TEXAS 78216 PHONE: (210) 403-6282

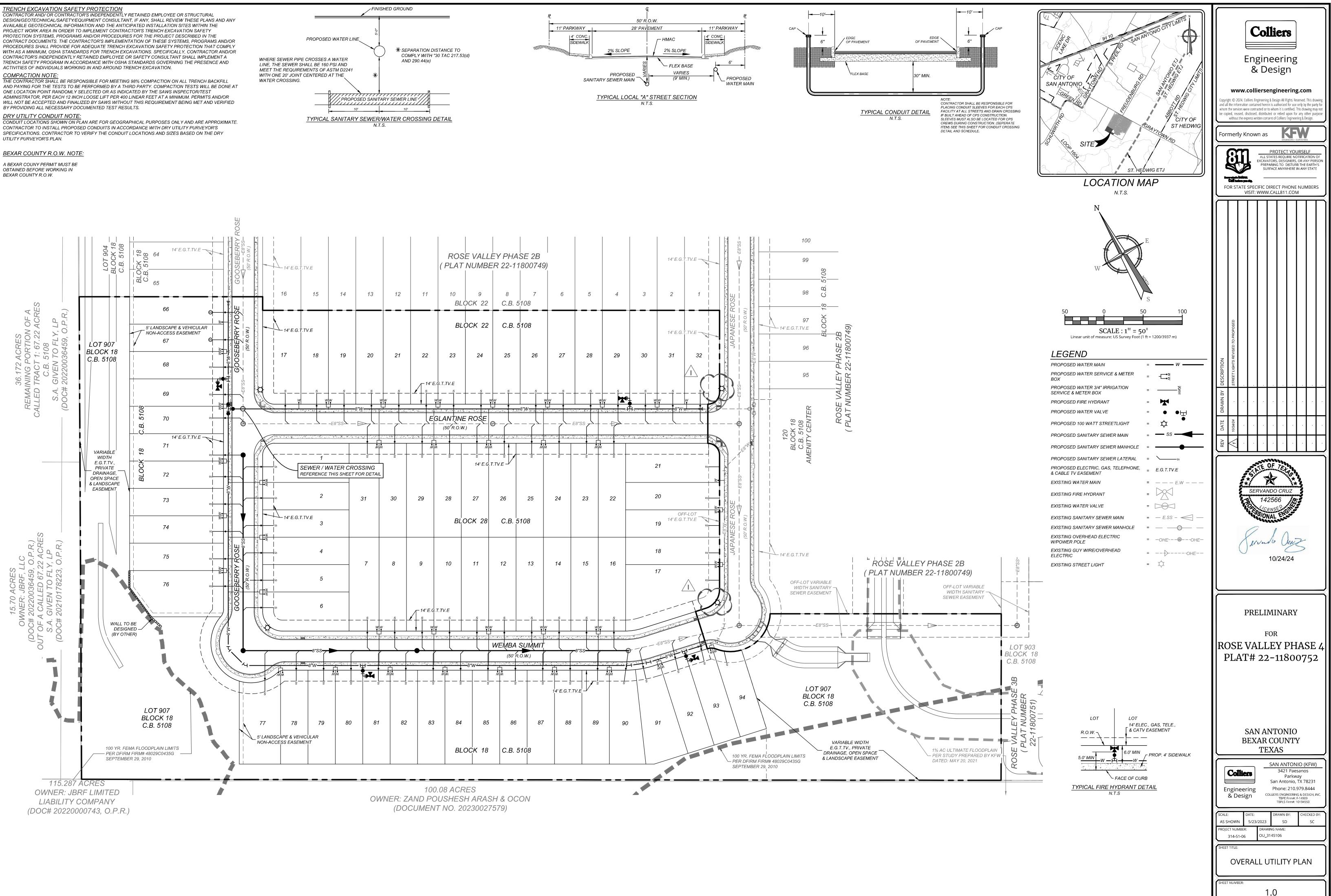
| DECEMBER 2009                                       |           |           |               |  |  |  |  |
|---|-----------|-----------|---------------|--|--|--|--|
| CITY OF SAN ANTONIO                                 |           |           |               |  |  |  |  |
| CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT |           |           |               |  |  |  |  |
| CITY OF SAN ANTONIO<br>GENERAL NOTES                |           |           |               |  |  |  |  |
| % SUBMITTAL_PROJECT NO.:DATE:                       |           |           |               |  |  |  |  |
| DRWN BY   | DSGN. BY: | CHKD. BY: | SHEET NO.: OF |  |  |  |  |

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|--|--------------|---|
|  |              | Formerly Known as   |
| INDEX  |              | PROTECT YOURSELF<br>ALL STATES REQUIRE NOTIFICATION OF<br>EXCAVATORS, DESIGNERS, OR ANY PERSON  |
| DESCRIPTION  | SHEET<br>NO. | PREPARING TO DISTURB THE EARTH'S<br>SURFACE ANYWHERE IN ANY STATE   |
| COVER SHEET  | 0.0          | FOR STATE SPECIFIC DIRECT PHONE NUMBERS<br>VISIT: WWW.CALL811.COM   |
| OVERALL UTILITY PLAN   | 1.0          |   |
| MASTER DRAINAGE PLAN<br>OVERALL GRADING PLAN                       | 2.0<br>3.0   |   |
| GOOSEBERRY ROSE PLAN & PROFILE                                     | 5.0          |   |
| WEMBA SUMMIT & JAPANESE ROSE PLAN & PROFILE                        | 5.1          |   |
| EGLANTINE ROSE PLAN & PROFILE<br>STREET DETAIL SHEET               | 5.2          |   |
| WHEELCHAIR RAMP DETAIL SHEET                                       | 5.4          |   |
| MISCELLANEOUS DETAIL SHEET   | 5.5          |   |
| MISCELLANEOUS DETAIL SHEET<br>TRAFFIC SIGNAGE & SIDEWALK PLAN      | 5.6<br>5.7   |   |
| TRAFFIC SIGNAGE NOTES & DETAIL SHEET                               | 5.8          |   |
| TRAFFIC SIGNAGE NOTES & DETAIL SHEET                               | 5.9<br>6.0   | DESCRIPTION   |
| SANITARY SEWER NOTES   | 6.1          | BY DESC   |
| OVERALL SANITARY SEWER PLAN  | 6.2          | DRAWN B   |
| SEWER LINE E PLAN & PROFILE<br>SEWER EX. LINE B PLAN & PROFILE     | 6.3          |   |
| SEWER EX. LINE D PLAN & PROFILE                                    | 6.5          |   |
| SANITARY SEWER DETAILS (1 OF 2)<br>SANITARY SEWER DETAILS (2 OF 2) | 6.6          | Alleseerer  |
| WATER COVER SHEET  | 6.7          |   |
| OVERALL WATER PLAN   | 7.1          | SERVANDO CRUZ   |
| WATER DETAIL SHEET   | 7.2          | CENSED<br>SONAL ENGLISH   |
| WATER DETAIL SHEET   | 7.4          | - Theorem   |
| STORMWATER POLLUTION PREVENTION PLAN                               | 8.0          | Cervado anz   |
| STORMWATER POLLUTION PREVENTION DETAILS                            | 8.1          | 8/2/24  |
|  |              |   |
|  |              | PRELIMINARY   |
|  |              | FOR   |
|  |              | ROSE VALLEY PHASE 4<br>PLAT# 22-11800752  |
|  |              |   |
|  |              |   |
|  |              |   |
|  |              | SAN ANTONIO<br>BEXAR COUNTY   |
|  |              | TEXAS   |
|  |              | SAN ANTONIO (KFW)           3421 Paesanos           Parkway   |
|  |              | San Antonio, TX 78231<br>Engineering<br>& Design<br>San Antonio, TX 78231<br>Phone: 210.979.8444<br>COLLIERS ENGINEERING & DESIGN, INC.<br>TBPE Firm#: F-14909<br>TBPLS Firm#: 10194550   |
|  |              | SCALE:       DATE:       DRAWN BY:       CHECKED BY:         AS SHOWN       5/23/2023       SD       SC         PROJECT NUMBER:       DRAWING NAME:       314-51-06       CV_3145106         SHEET TITLE:       SHEET TITLE:       SHEET TITLE:       SHEET TITLE:  |
|  |              | COVER SHEET   |
|  |              | SHEET NUMBER:<br>0.0  |
|  | NOTE: DO NO  | T SCALE DRAWINGS FOR CONSTRUCTION   |

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

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 TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTRATOR. PER EACH 12 INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. PERMITS AND/OR WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

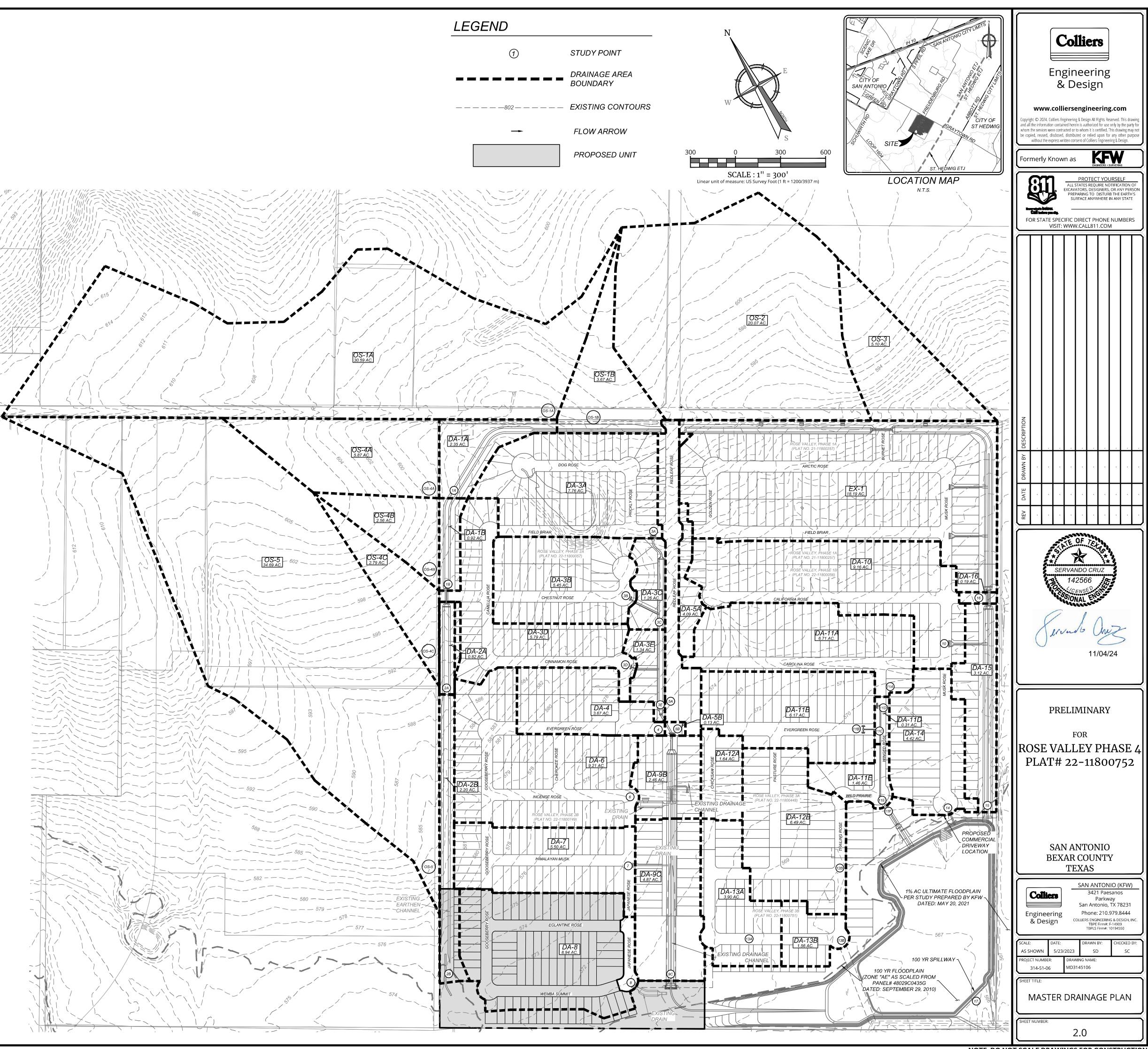




NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

| ROPOS      | SED/ULTIM   | ATE C        | CONDI        | TIONS   |         |                      |  |                    |               |                   |              |       |         |             |         |
|------------|---|--------------|--------------|---|---------|----------------------|--|--------------------|---------------|-------------------|--------------|-------|---------|-------------|---------|
|            |   |              |              | HYDROL  | .OGY SI | JMMAF                | RY - RAT                                     |                    | <b>NETHOD</b> | )                 |              |       |         |             |         |
|            |   |              |              |   |         | Tovrl                | <u> </u>                                     |                    | Ttot          | 15                | 125          | 1100  | Q5      | Q25         | Q10     |
| udy Point  | Drainage Area   | (Acres)      | С            | Tcarryov                                      |         | (min)                |  | Tch (min)          | (min)         |                   |              |       | (ft3/s) |             | (ft3    |
| EX-1       | EX-1+DA-OS-2+<br>DA-OS-3                                | 43.36        | Refere       | nce Unit 1-<br>bre                            |         | Drainage<br>(See SWN |  | letailed           | 27            | 3.90              | 5.38         | 6.67  | 123.57  | 170.36      | 210     |
| OS-1A      | DA-OS-1A  | 30.59        | 0.70         |   |         | 17                   | 10   | 2                  | 29            | 3.76              | 5.19         | 6.42  | 80.62   | 111.12      | 137     |
| OS-1B      | DA-OS-1B  | 3.67         | 0.70         |   |         | 17                   | 9  | 1                  | 27            | 3.90              | 5.38         | 6.66  | 10.03   | 13.83       | 17.     |
| OS-2       | DA-OS-2   | 20.07        | 0.70         |   |         | 17                   | 10   | 2                  | 29            | 3.76              | 5.19         | 6.42  | 52.89   | 72.91       | 90      |
| OS-3       | DA-OS-3   | 5.10         | 0.70         |   |         | 17                   | 5  | 1                  | 23            | 4.23              | 5.84         | 7.24  | 15.11   | 20.85       | 25      |
| OS-4A      | DA-OS-4A  | 5.87         | 0.70         |   |         | 13                   | 5  | 1                  | 19            | 4.66              | 6.45         | 8.00  | 19.16   | 26.49       | 32      |
| OS-4B      | DA-OS-4B  | 2.56         | 0.70         |   |         | 17                   | 4  | 5                  | 26            | 3.98              | 5.49         | 6.80  | 7.13    | 9.83        | 12      |
| OS-4C      | DA-OS-4C  | 2.79         | 0.70         |   |         | 17                   | 4  | 0                  | 21            | 4.43              | 6.12         | 7.59  | 8.66    | 11.95       | 14      |
| OS-5       | DA-OS-5   | 34.69        | 0.70         |   |         | 17                   | 8  | 5                  | 30            | 3.70              | 5.10         | 6.31  | 89.85   | 123.84      | 153     |
| 1A         | DA-1A+DA-OS-1<br>A+DA-OS-1B+D<br>A-OS-4A                | 42.48        | 0.70         | FROM DA                                       | A-OS-1A | 29                   | 8  | 4                  | 29            | 3.76              | 5.19         | 6.42  | 111.95  | 154.31      | 19:     |
| 1B         | PT.1A +<br>DA-OS-4B +<br>DA-1B                          | 45.96        | 0.70         | FROM [  | DA-1A   | 29                   | 8  | 5                  | 30            | 3.70              | 5.10         | 6.31  | 119.04  | 164.08      | 203     |
| 2A         | PT.1B +<br>DA-OS-4C<br>+DA-2A                           | 49.56        | 0.70         | FROM I  | DA-1B   | 30                   | 8  | 6                  | 31            | 3.64              | 5.01         | 6.21  | 126.21  | 173.97      | 215     |
| 2B         | PT.2A +<br>DA-OS-5 +                                    | 86.16        | 0.70         | FROM [  | DA-2A   | 31                   | 8  | 9                  | 34            | 3.47              | 4.78         | 5.92  | 209.07  | 288.24      | 356     |
| 3A         | DA-2B<br>DA-3A  | 7.76         | 0.77         | <del> </del>                                  |         | 15                   | 2  | 2                  | 19            | 4.66              | 6.45         | 8.00  | 27.87   | 38.52       | 47      |
| 3B         | DA-3A<br>DA-3B  | 5.45         | 0.77         | <u>                                      </u> |         | 15                   |  | 2                  | 19            | 4.80              | 6.63         | 8.24  | 20.13   | 27.84       | 34      |
| 50         | DA-3D   | 1.26         | 0.63         |   |         |                      | <u>⊢                                    </u> | -                  | 10            | 7.00              | <u> </u>     | 0.24  | 20.10   | 27.04       |         |
| 3C         | DA-3C<br>PT.3A + PT.3B +<br>DA-3C                       | 14.47        | 0.76         |   |         | 19                   | 0  | 1                  | 20            | 4.54              | 6.28         | 7.79  | 49.84   | 68.85       | 85      |
| 3D         | DA-3D<br>DA-3E  | 5.79<br>1.34 | 0.77<br>0.64 |   |         | 15                   | 1  | 3                  | 19            | 4.66              | 6.45         | 8.00  | 20.79   | 28.74       | 35      |
| 3E         | PT.3C + PT.3D +   | 21.60        | 0.75         |   |         | 20                   | 0  | 2                  | 22            | 4.33              | 5.98         | 7.41  | 70.47   | 97.27       | 12      |
| 4          | DA-3E<br>DA-4   | 3.71         | 0.77         |   |         | 15                   | 1  | 2                  | 18            | 4.80              | 6.63         | 8.24  | 13.70   | 18.95       | 23      |
| 5A         | DA-5A   | 3.97         | 0.88         |   |         | 11                   | 0  | 3                  | 14            | 5.47              | 7.60         | 9.48  | 19.01   | 26.42       | 32      |
|            | DA-5B   | 0.13         | 0.96         |   |         |                      |  |                    |               |                   |              |       |         |             |         |
| <b>F D</b> | PT.4 + PT.5A +  |              |              | FROM  |         | 10                   |  |                    | 10            | 4.00              | 6.62         | 0.74  | 20.07   | 12.04       |         |
| 5B         | DA-5B   | 7.81         | 0.83         | FRONT   | JA-5A   | 18                   | 0  | 0                  | 18            | 4.80              | 6.63         | 8.24  | 30.97   | 42.84       | 53      |
| 6          | DA-6  | 9.96         | 0.77         |   |         | 15                   | 1  | 3                  | 19            | 4.66              | 6.45         | 8.00  | 35.77   | 49.44       | 61      |
| 7          | DA-7  | 5.51         | 0.77         |   |         | 15                   | 0  | 2                  | 17            | 4.94              | 6.84         | 8.50  | 20.96   | 29.01       | 36      |
| 8          | DA-8  | 8.94         | 0.77         |   |         | 15                   | 0  | 3                  | 18            | 4.80              | 6.63         |       | 33.01   |             |         |
| 9A         | RUNOFF<br>CAPTURED ON<br>GRADE + 5B                     | 29.41        | 0.77         | FROM I  | DA-5B   | 18                   | 0  | 0                  | 18            | 4.80              | 6.63         |       | 109.05  |             |         |
|            | 9B  | 0.94         | 0.72         |   |         |                      |  |                    |               |                   |              |       |         |             |         |
| 9B         | PT. 6 + PT.9A +<br>PT.12A + DA-9B                       | 42.09        | 0.59         | FROM I  | DA-5C   | 18                   | 0  | 1                  | 19            | 4.66              | 6.45         | 8.00  | 115.60  | 159.79      | 19      |
|            | 9C  | 5.42         | 0.75         |   |         |                      |  |                    |               |                   |              |       |         |             |         |
| 9C         | PT.7 + PT. 9B +   | 53.02        | 0.77         | FROM  | DA-9B   | 19                   | 0  | 2                  | 21            | 4.43              | 6.12         | 7.59  | 180.77  | 249.61      | 30      |
|            | DA-9C   |              | 0.77         |   |         | 17                   | -  |                    |               |                   |              |       |         |             | 49      |
| 10<br>11A  | DA-10<br>DA-11A   | 9.16<br>6.71 | 0.77         |   |         | 17<br>15             | 4  | 3                  | 24<br>19      | 4.14              | 5.72<br>6.45 | 7.08  | 29.22   | 40.31 33.31 | 49      |
| 11A<br>11B | DA-11A<br>DA-11B  | 6.17         | 0.77         | ╂───┤   |         | 15                   | 3  | 2                  | 20            | 4.66              | 6.45         | 8.00  | 24.10   | 29.82       | 4.      |
| מדד        | <u>04-110</u>   |              |              |   |         |                      |  | L ∠<br>.0' CURB II |               | <del>- 1.54</del> | 0.20         | 1.19  | 0,.17   |             | <u></u> |
|            |   | 3.43         | 0.96         |   |         |                      | ADE  |                    |               |                   |              |       |         | 16.60       | 1       |
| 11C        | DA-11C  | 2.74         | 0.77         | REMAI   | NING RU | NOFF FRO             | M CURB I                                     | NLET ON G          | GRADE         |                   |              |       |         | 13.22       | 1       |
|            | DA-11D  | 0.31         | 0.96         |   |         |                      |  |                    |               |                   |              |       |         |             |         |
| IID        | PT.11A + PT.11C<br>+ DA-11D                             | 9.76         | 0.78         | FROM D  | 0A-11B  | 20                   | 0  | 0                  | 20            | 4.54              | 6.28         | 7.79  | 34.41   | 47.54       | 58      |
| 11E        | DA-11E<br>RUNOFF  | 1.46         | 0.77         |   |         | 15                   | 1  | 1                  | 17            | 4.94              | 6.84         | 8.50  | 5.55    | 7.69        | 9       |
|            | CAPTURED + PT.<br>11D +PT.11E                           | 14.65        | 0.82         | FROM D  | 0A-11D  | 20                   | 0  | 0                  | 20            | 4.54              | 6.28         | 7.79  | 54.48   | 75.26       | 93      |
| 12A        | DA-12A  | 1.78         | 0.77         |   |         | 15                   | 3  | 0                  | 18            | 4.80              | 6.63         | 8.24  | 6.57    | 9.09        | 11      |
| 12B        | DA-12B  | 6.49         | 0.77         |   |         | 15                   | 6  | 1                  | 22            | 4.33              | 5.98         | 7.41  | 21.63   | 29.86       | 37      |
| 13A        | DA-13A  | 3.92         | 0.77         |   |         | 15                   | 5  | 1                  | 21            | 4.43              | 6.12         | 7.59  | 13.38   | 18.47       | 22      |
| 13B        | DA-13B  | 1.56         | 0.77         |   |         | 15                   | 3  | 0                  | 18            | 4.80              | 6.63         | 8.24  | 5.76    | 7.97        | 9.      |
| 14         | DA-14   | 4.42         | 0.77         |   |         | 15                   | 1  | 2                  | 18            | 4.80              | 6.63         | 8.24  | 16.32   | 22.58       | 28      |
| 15         | DA-15<br>EX-1 + DA-OS-2                                 | 3.12         | 0.77         | FROM  | 27      |                      |  |                    | 20            | 2 70              | Г 10         | C 24  | 221.20  | 204.00      |         |
| 15         | + DA-OS-3 +<br>DA-10 + DA-15                            | 80.81        | 0.74         | EX-1  | 27      |                      |  | 3                  | 30            | 3.70              | 5.10         |       | 221.26  |             |         |
| 16         | DA-16   | 0.19         | 0.77         | $\square$                                     |         | 17                   | 0  | 0                  | 47            | 2.88              | 3.99         | 4.96  | 0.42    | 0.58        | 0       |
|            | DA-17<br>PT. 8 + PT.9C +<br>PT.11F + PT.12B<br>+ PT.13A |              | 0.77         |   |         |                      | 20   | 2                  | 27            | 2 5 0             | 4.02         | 6 1 1 | 520.07  | 720 12      | 00      |
| 17         | + PT.13B +<br>PT.14 + PT.15 +<br>DA-17                  | 194.50       | 0.76         |   |         | 0                    | 30   | 2                  | 32            | 3.58              | 4.93         | 6.11  | 529.67  | 730.13      | 90      |

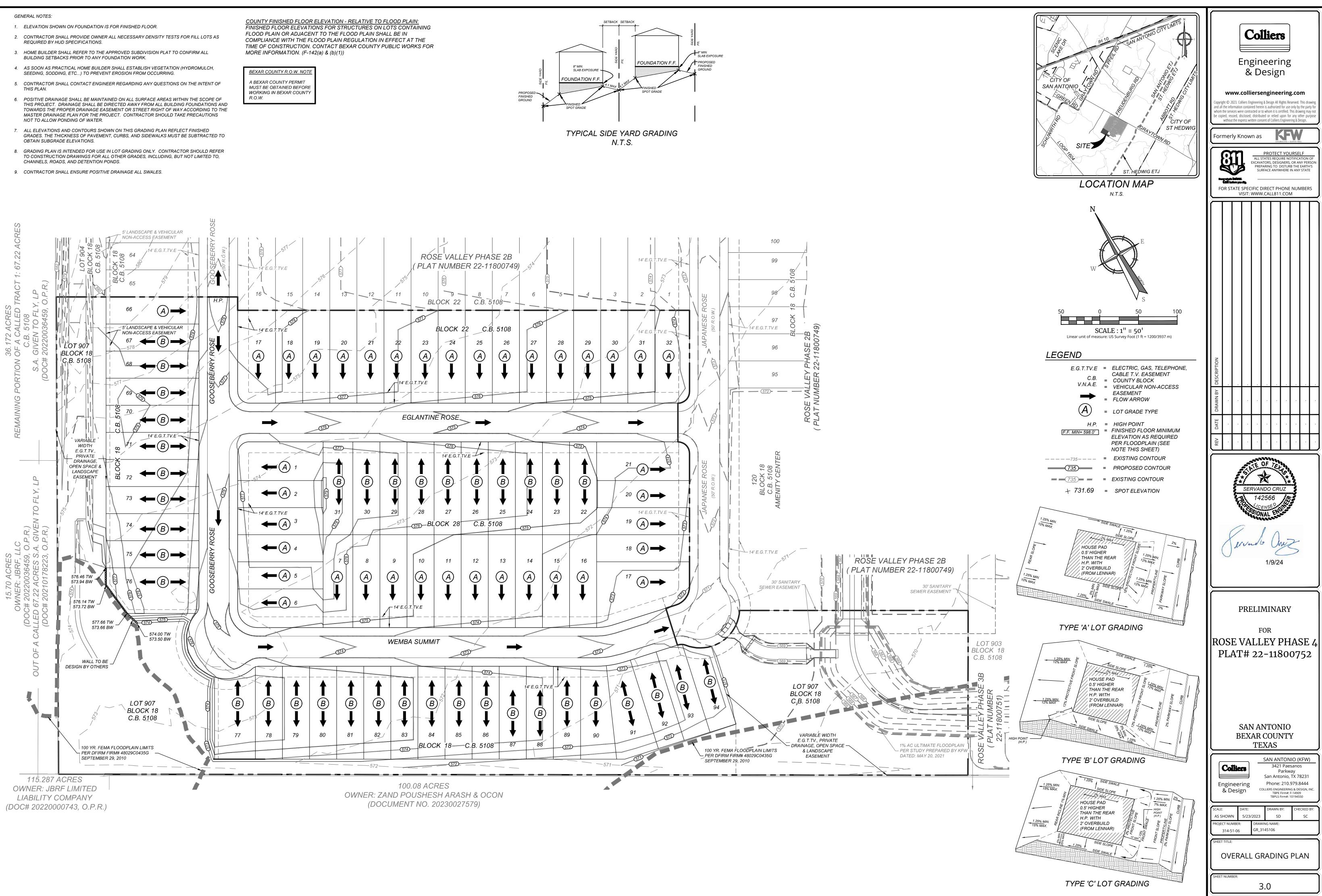


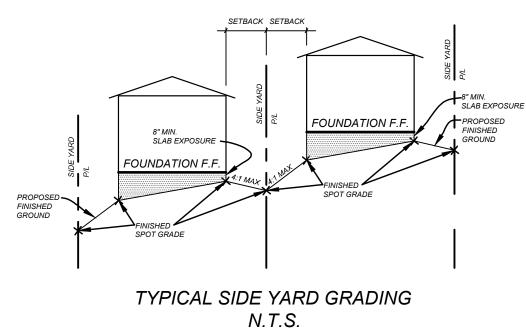


NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

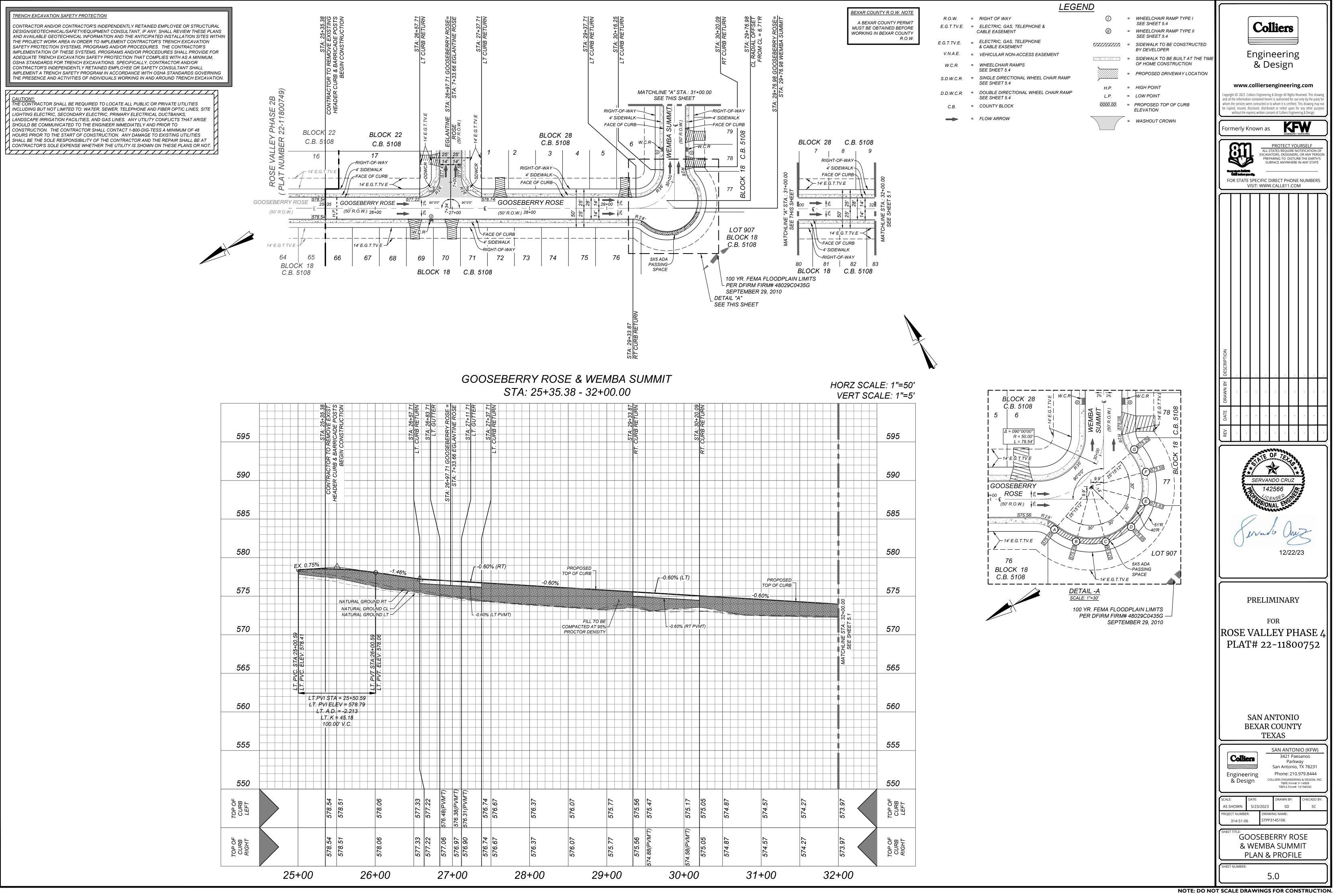
- REQUIRED BY HUD SPECIFICATIONS.

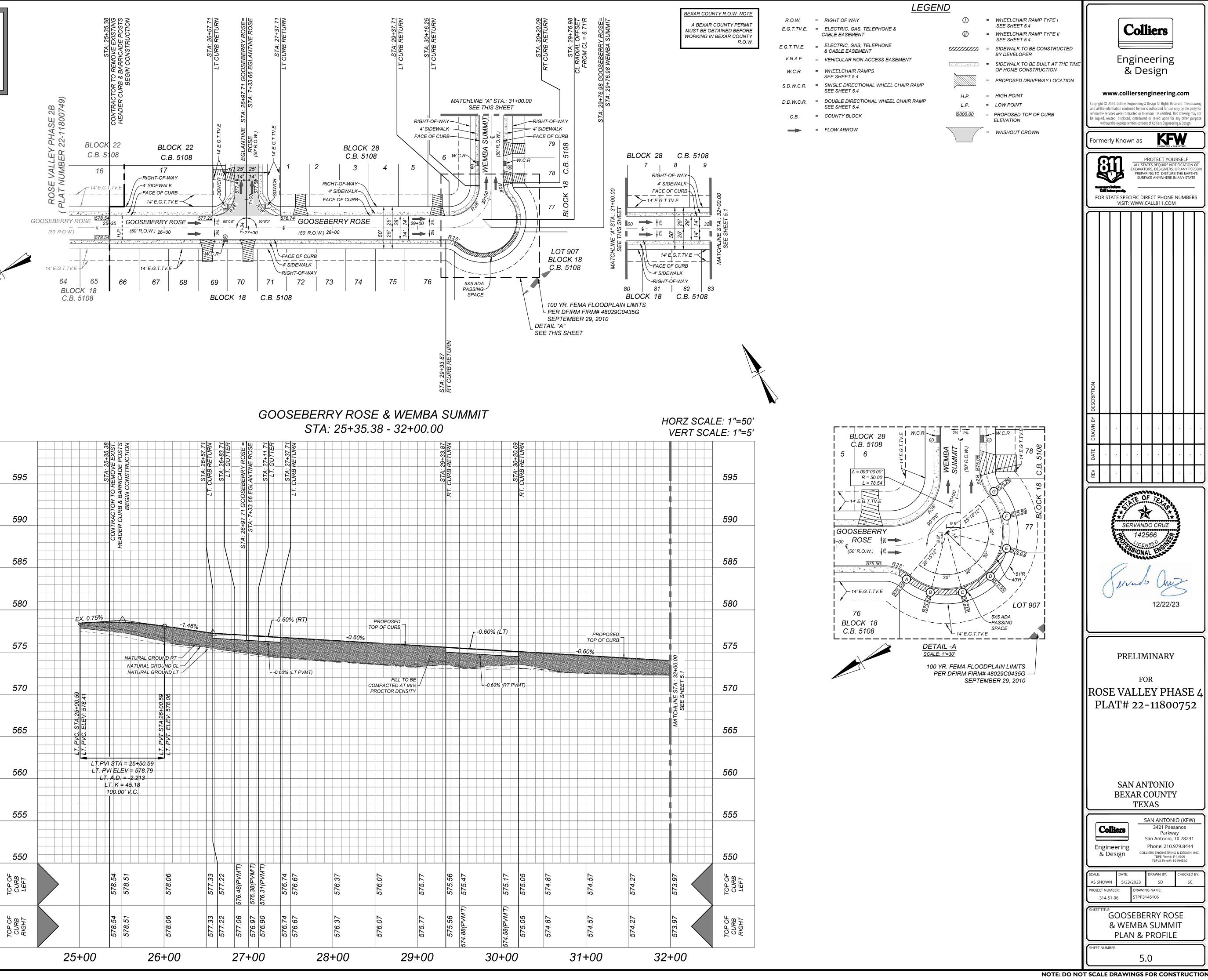
- MASTER DRAINAGE PLAN FOR THE PROJECT. CONTRACTOR SHOULD TAKE PRECAUTIONS



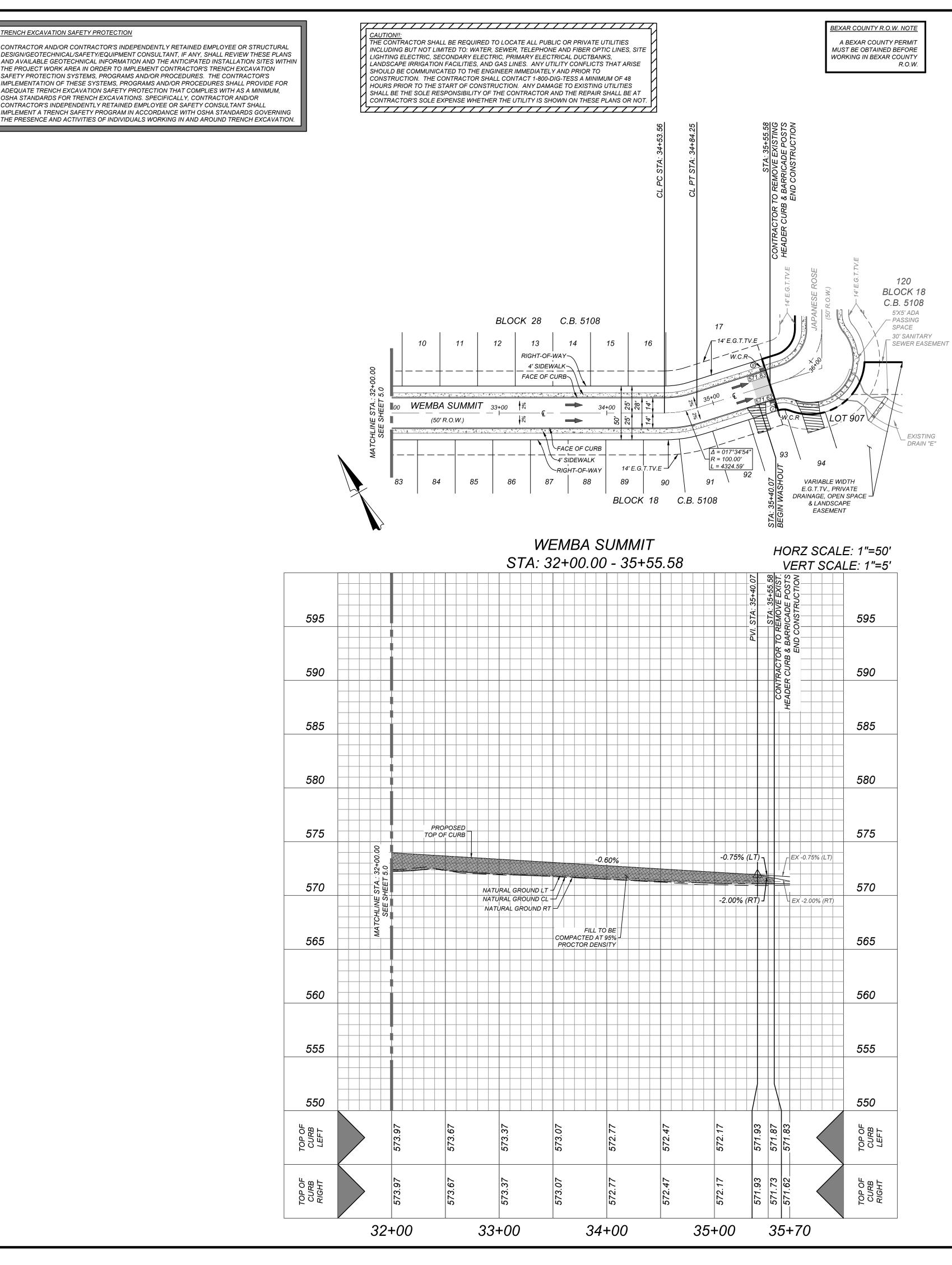


NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.





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

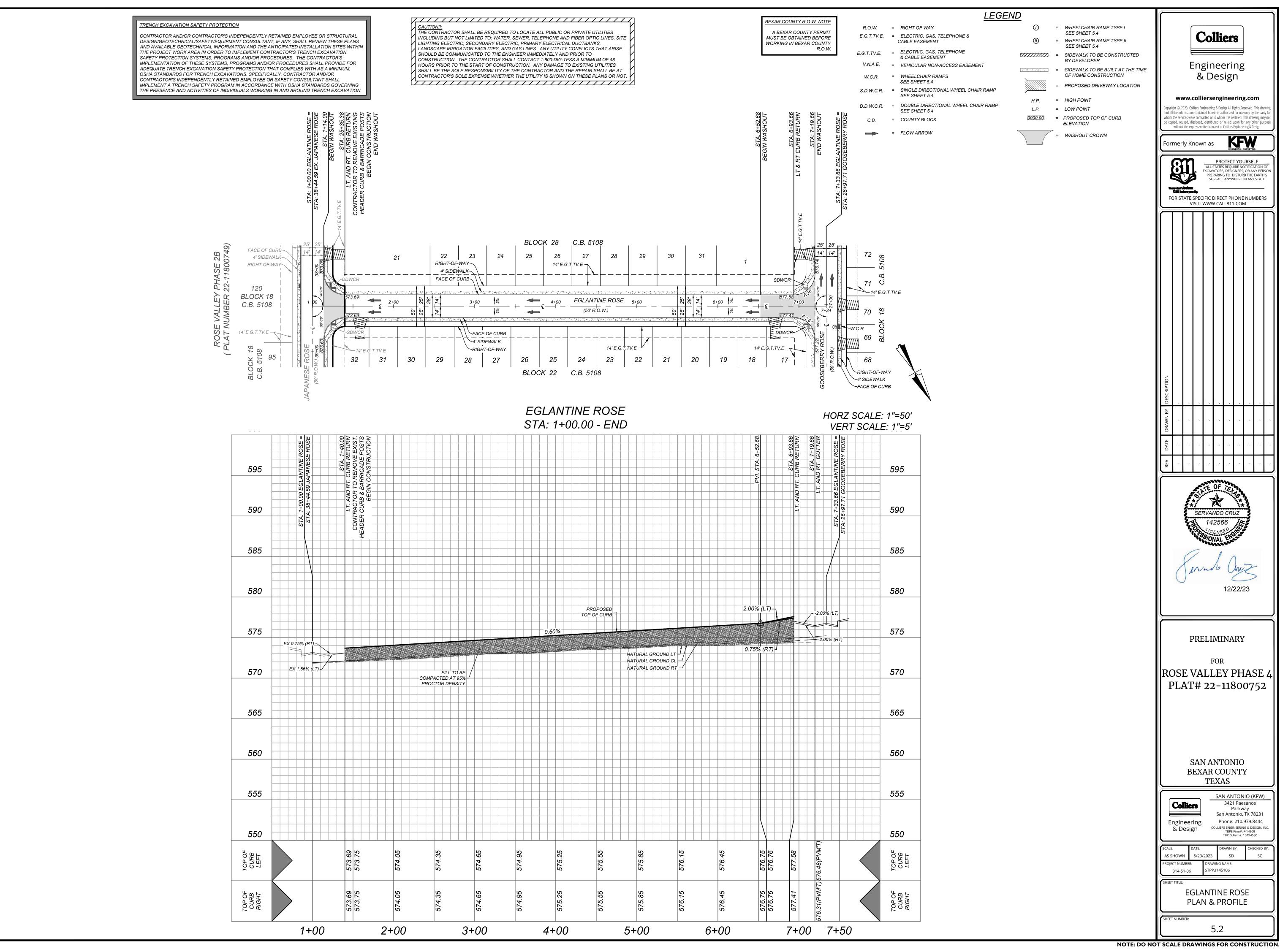


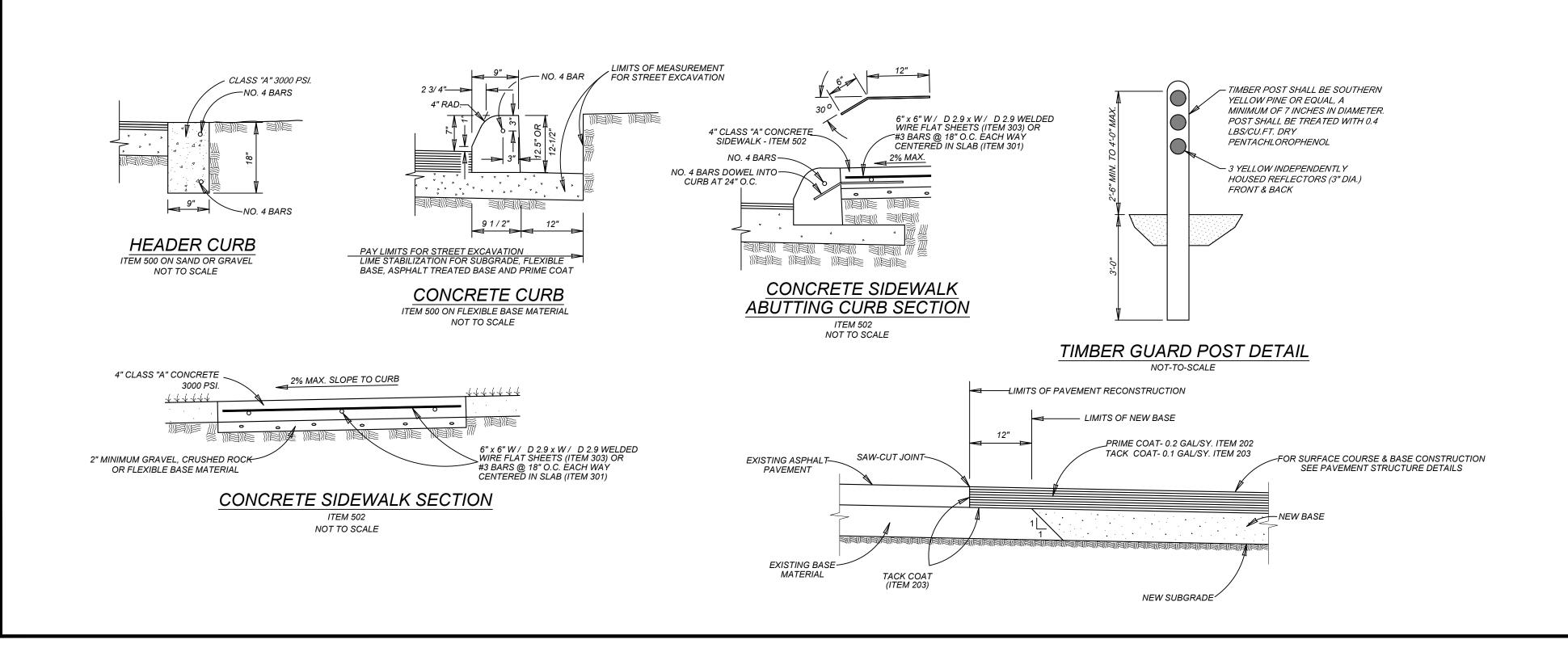
|             |   | <u>LEGEN</u>   | D                                       |   |   |   |
|-------------|---|--|---|---|---|---|
| R.O.W.      | = | RIGHT OF WAY   | $\bigcirc$                              | = | WHEELCHAIR RAMP TYPE I<br>SEE SHEET 5.4         |   |
| E.G.T.TV.E. |   | ELECTRIC, GAS, TELEPHONE &<br>CABLE EASEMENT         | ())                                     | = | WHEELCHAIR RAMP TYPE II<br>SEE SHEET 5.4        | Colliers  |
| E.G.T.TV.E. | = | ELECTRIC, GAS, TELEPHONE<br>& CABLE EASEMENT         | []]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]] | = | SIDEWALK TO BE CONSTRUCTED<br>BY DEVELOPER      |   |
| V.N.A.E.    | = | VEHICULAR NON-ACCESS EASEMENT                        |   | = | SIDEWALK TO BE BUILT AT THE TIME                | Engineering   |
| W.C.R.      | = | WHEELCHAIR RAMPS<br>SEE SHEET 5.4                    | 7111111                                 | = | OF HOME CONSTRUCTION PROPOSED DRIVEWAY LOCATION | & Design  |
| S.D.W.C.R.  | = | SINGLE DIRECTIONAL WHEEL CHAIR RAMP<br>SEE SHEET 5.4 |   | - | PROPOSED DRIVEWAT LOCATION                      |   |
|             | _ | DOUBLE DIRECTIONAL WHEEL CHAIR RAMP                  | H.P.                                    | = | HIGH POINT                                      | www.colliersengineering.com   |
| D.D.W.C.R.  | - | SEE SHEET 5.4  | L.P.                                    | = | LOW POINT                                       | Copyright © 2023. Colliers Engineering & Design All Rights Reserved. This drawing<br>and all the information contained herein is authorized for use only by the party for   |
| С.В.        | = | COUNTY BLOCK   | 0000.00                                 | = | PROPOSED TOP OF CURB<br>ELEVATION               | whom the services were contracted or to whom it is certified. This drawing may not<br>be copied, reused, disclosed, distributed or relied upon for any other purpose<br>without the express written consent of Colliers Engineering & Design. |
|             | = | FLOW ARROW   |   | = | WASHOUT CROWN                                   |   |
|             |   |  |   |   |   | Formerly Known as   |
|             |   |  |   |   |   |   |
|             |   |  |   |   |   | PROTECT YOURSELF           ALL STATES REQUIRE NOTIFICATION OF           EXCAVATORS, DESIGNERS, OR ANY PERSON           PREPARING TO DISTURB THE EARTH'S           SURFACE ANYWHERE IN ANY STATE   |

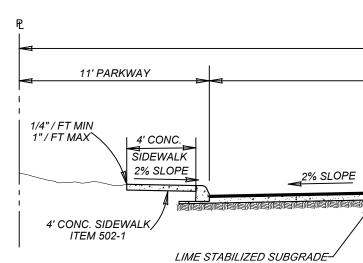
|             | / DESCRIPTION  |     |   |                                       |                       |                        |            |           |          |     |      |
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|             |  | (   | The second se | S S S S S S S S S S S S S S S S S S S |                       | 256<br>ENST<br>VAL     |            |           | 23       | ~ > |      |
|             | RCF  |     | E V<br>AT   | PRE<br>VA<br>'#                       | ILI<br>22<br>JA<br>AR | FOR<br>LE<br>2-1<br>NT | Y I<br>118 | 910<br>90 | (A<br>07 |     | -    |
|             | ColliersSAN ANTONIO (KFW)Barkway3421 Paesanos<br>ParkwayEngineering<br>& DesignSan Antonio, TX 78231<br>Phone: 210.979.8444<br>Colliers Engineering & Design, INC.<br>TBPL Firm#: 10194550 |     |   |                                       |                       |                        |            |           |          |     |      |
|             | PROJE  | HOW | N<br>MBER:  |                                       |                       | DF<br>VING N<br>23145  |            |           | CHE      | SC  | BY:  |
|             | SHEET  |     | W<br>&_<br>P  | 'EN<br>JAP<br>LAI                     | AN                    | IES                    | ΕF         | 209       | SE       |     |      |
|             | SHEET  | NUM | BER:  |                                       | [                     | 5.1                    |            |           |          |     |      |
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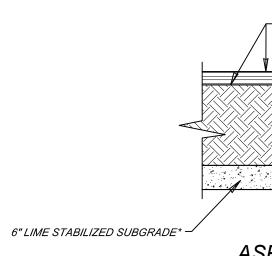
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| FLEXIBLE PAVEME     |
|---------------------|
| Pavement Section    |
| 2.0" HMAC (TYPE     |
| 11" FLEXBASE CC     |
| 6.0" LIME STABILI   |
| Total: 19"          |
| Structural No: 2.90 |
| <i>C.B.R</i> = 2.0  |
|                     |

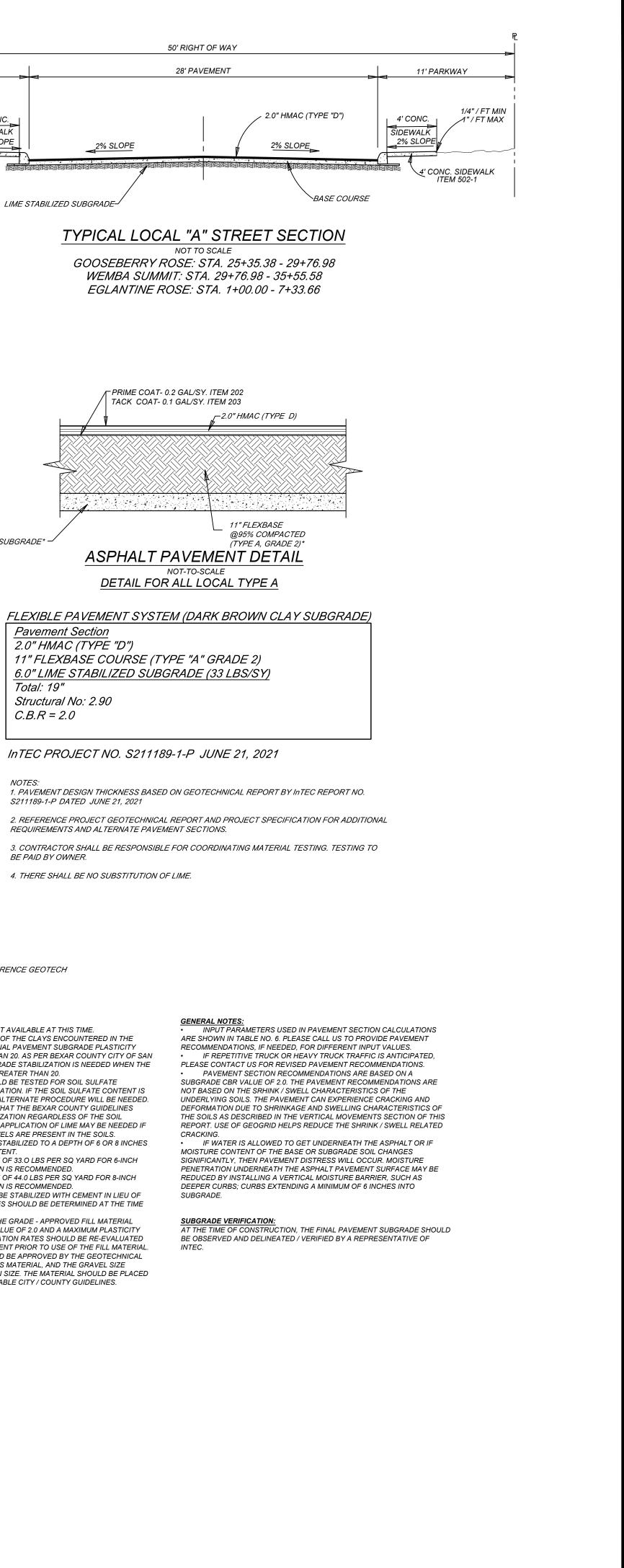
NOTES: S211189-1-P DATED JUNE 21, 2021

BE PAID BY OWNER.

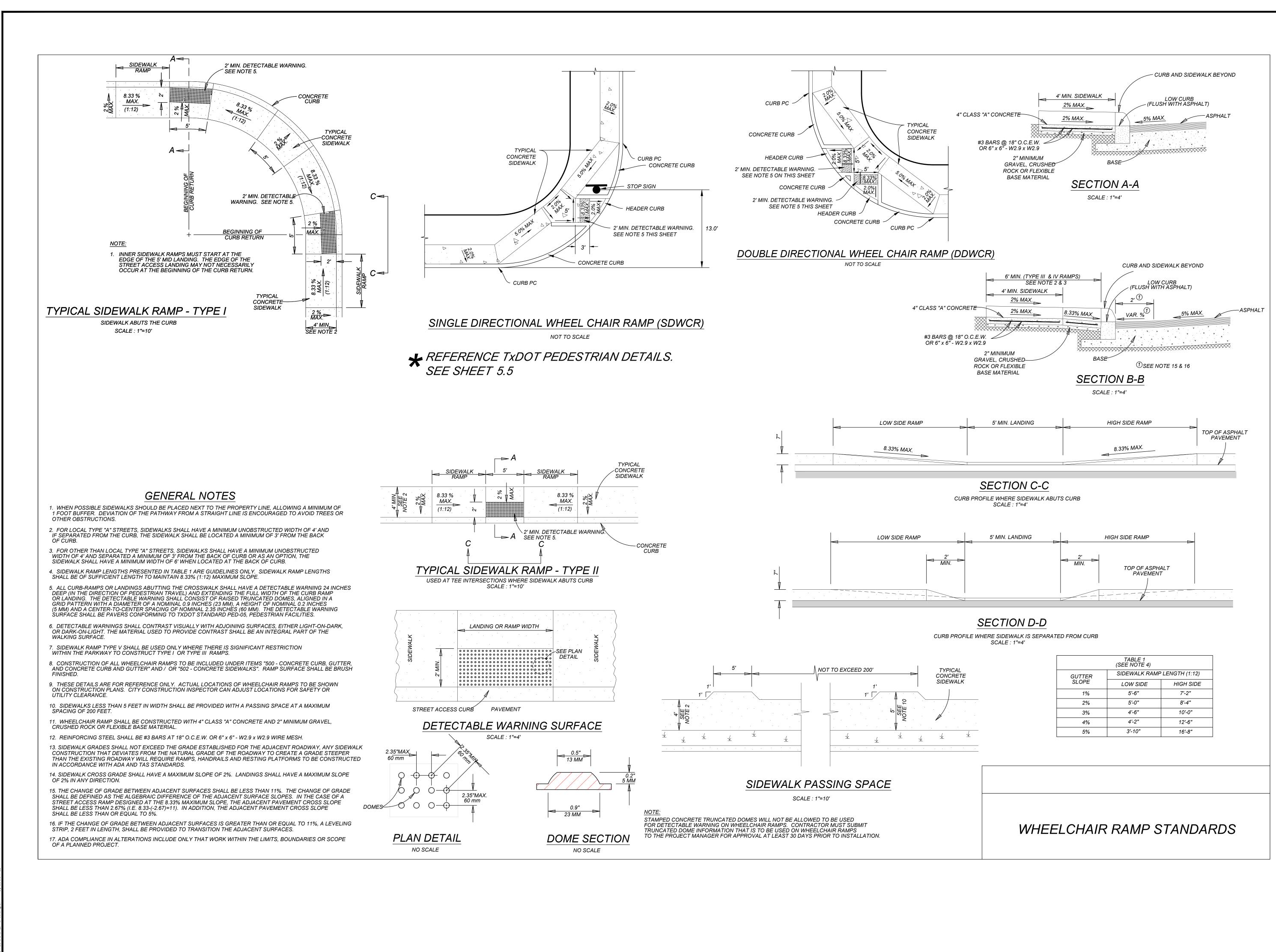
4. THERE SHALL BE NO SUBSTITUTION OF LIME.

\*NOTE: CONTRACTOR TO REFERENCE GEOTECH REPORT PREPARED BY INTEC PROJECT NO. S211189-1-P DATED JUNE 21, 2021

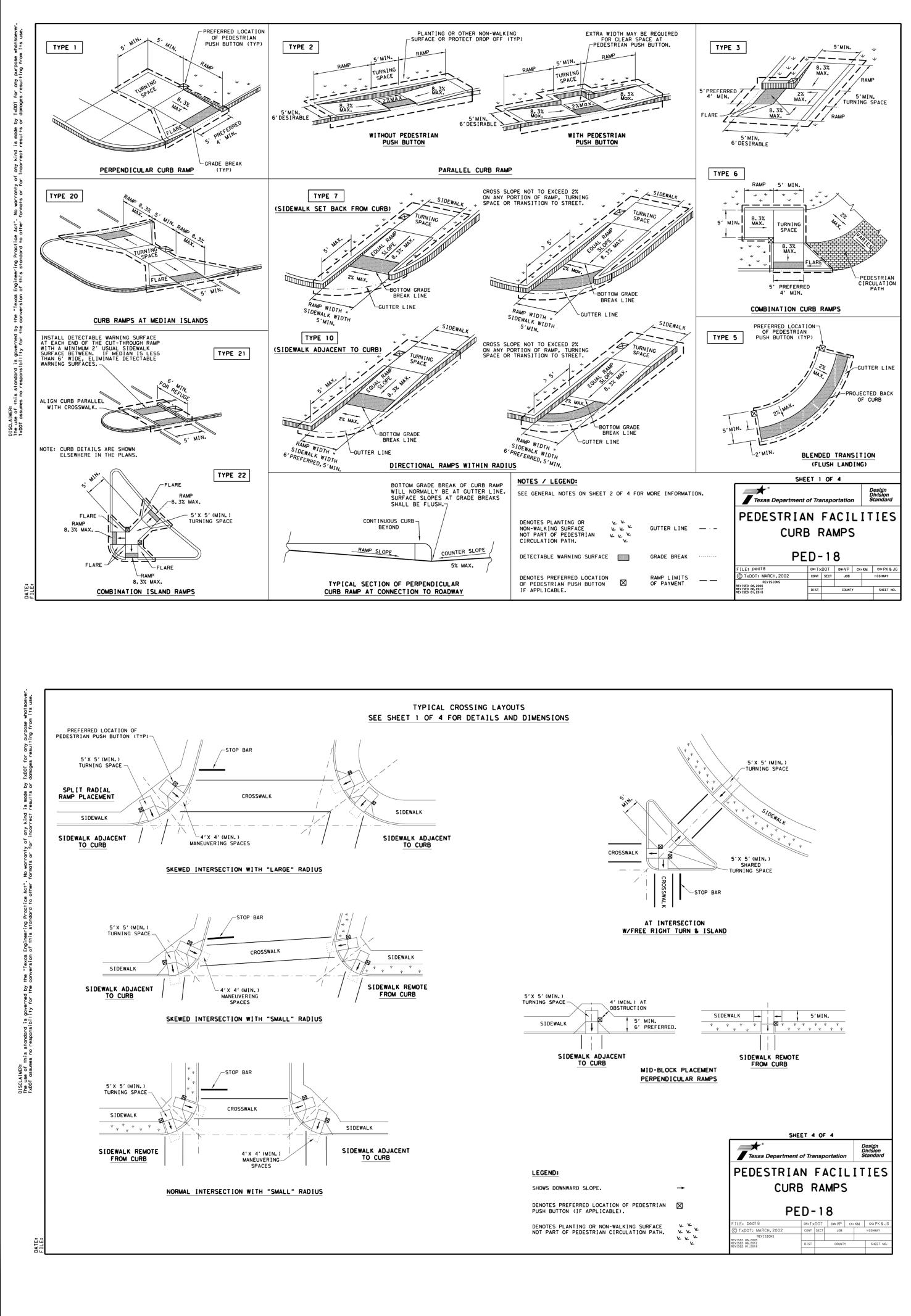
SUBGRADE NOTES: • CUT AND FILL DATA ARE NOT AVAILABLE AT THIS TIME. BASED ON THE THICKNESS OF THE CLAYS ENCOUNTERED IN THE BORINGS, WE ANTICIPATE THE FINAL PAVEMENT SUBGRADE PLASTICITY INDEX VALUE TO BE GREATER THAN 20. AS PER BEXAR COUNTY CITY OF SAN ANTONIO REQUIREMENTS, SUBGRADE STABILIZATION IS NEEDED WHEN THE PLASTICITY INDEX VALUES ARE GREATER THAN 20. •• THE SUBGRADE SOILS SHOULD BE TESTED FOR SOIL SULFATE CONTENT PRIOR TO STABILIZATION. IF THE SOIL SULFATE CONTENT IS HIGHER THAN 3000 PPM, AN ALTERNATE PROCEDURE WILL BE NEEDED. IT IS OUR UNDERSTANDING THAT THE BEXAR COUNTY GUIDELINES REQUIRE SUBGRADE STABILIZATION REGARDLESS OF THE SOIL SULFATE CONTENT. DOUBLE APPLICATION OF LIME MAY BE NEEDED IF HIGH SULFATE CONTENT LEVELS ARE PRESENT IN THE SOILS. •• THE SUBGRADE SHOULD BE STABILIZED TO A DEPTH OF 6 OR 8 INCHES USING 8 PERCENT LIME CONTENT. ••• LIME APPLICATION RATE OF 33.0 LBS PER SQ YARD FOR 6-INCH DEPTH OF STABILIZATION IS RECOMMENDED. ••• LIME APPLICATION RATE OF 44.0 LBS PER SQ YARD FOR 8-INCH DEPTH OF STABILIZATION IS RECOMMENDED. • THE SUBGRADE MAY ALSO BE STABILIZED WITH CEMENT IN LIEU OF LIME. CEMENT APPLICATION RATES SHOULD BE DETERMINED AT THE TIME OF CONSTRUCTION. IF FILL IS USED TO RAISE THE GRADE - APPROVED FILL MATERIAL
 SHOULD HAVE A MINIMUM CBR VALUE OF 2.0 AND A MAXIMUM PLASTICITY INDEX VALUE OF 70. LIME APPLICATION RATES SHOULD BE RE-EVALUATED AND TESTED FOR SULFATE CONTENT PRIOR TO USE OF THE FILL MATERIAL. • THE FILL MATERIAL SHOULD BE APPROVED BY THE GEOTECHNICAL ENGINEER, FREE OF DELETERIOUS MATERIAL, AND THE GRAVEL SIZE SHOULD NOT EXCEED 3 INCHES IN SIZE. THE MATERIAL SHOULD BE PLACED AND COMPACTED AS PER APPLICABLE CITY / COUNTY GUIDELINES.

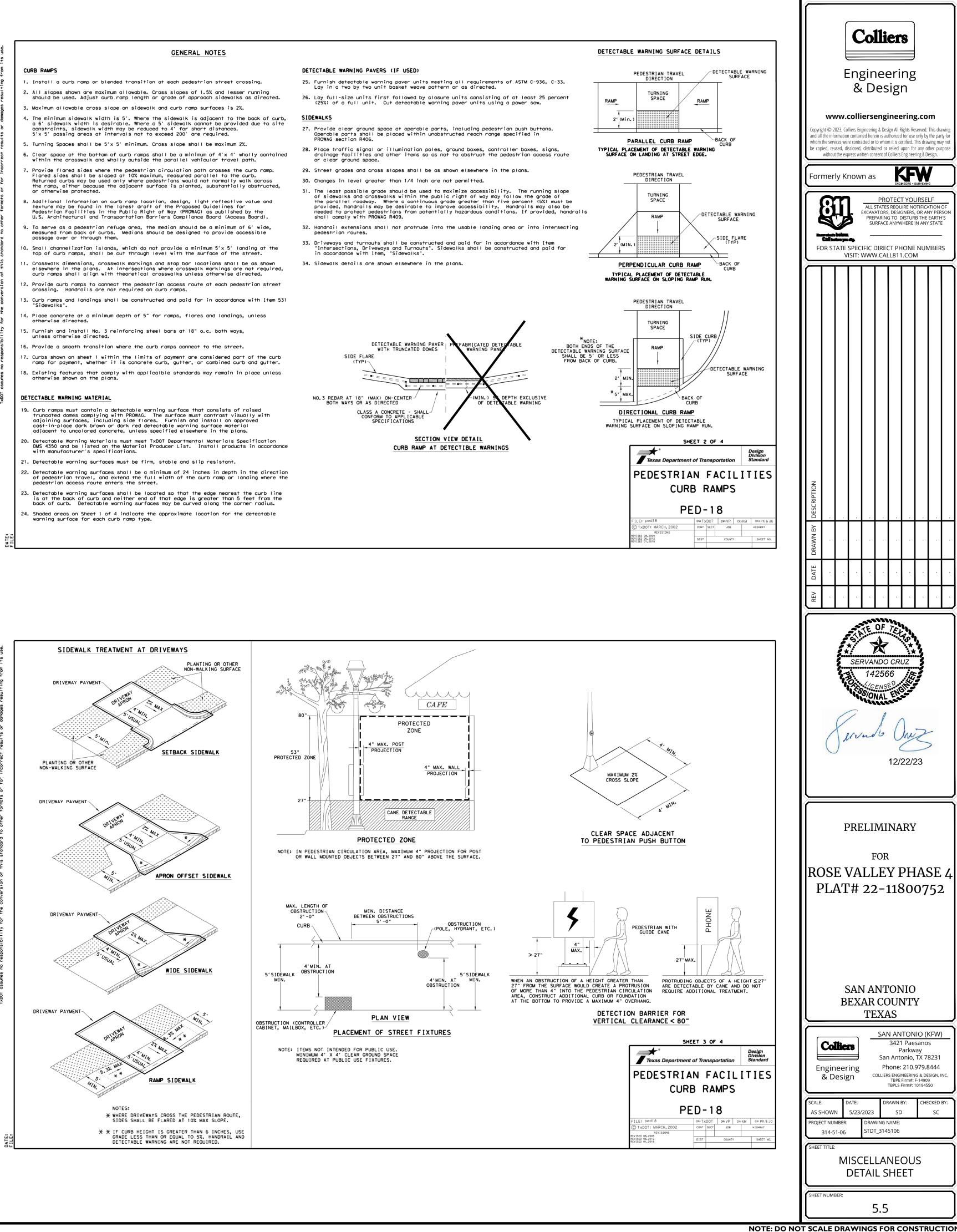


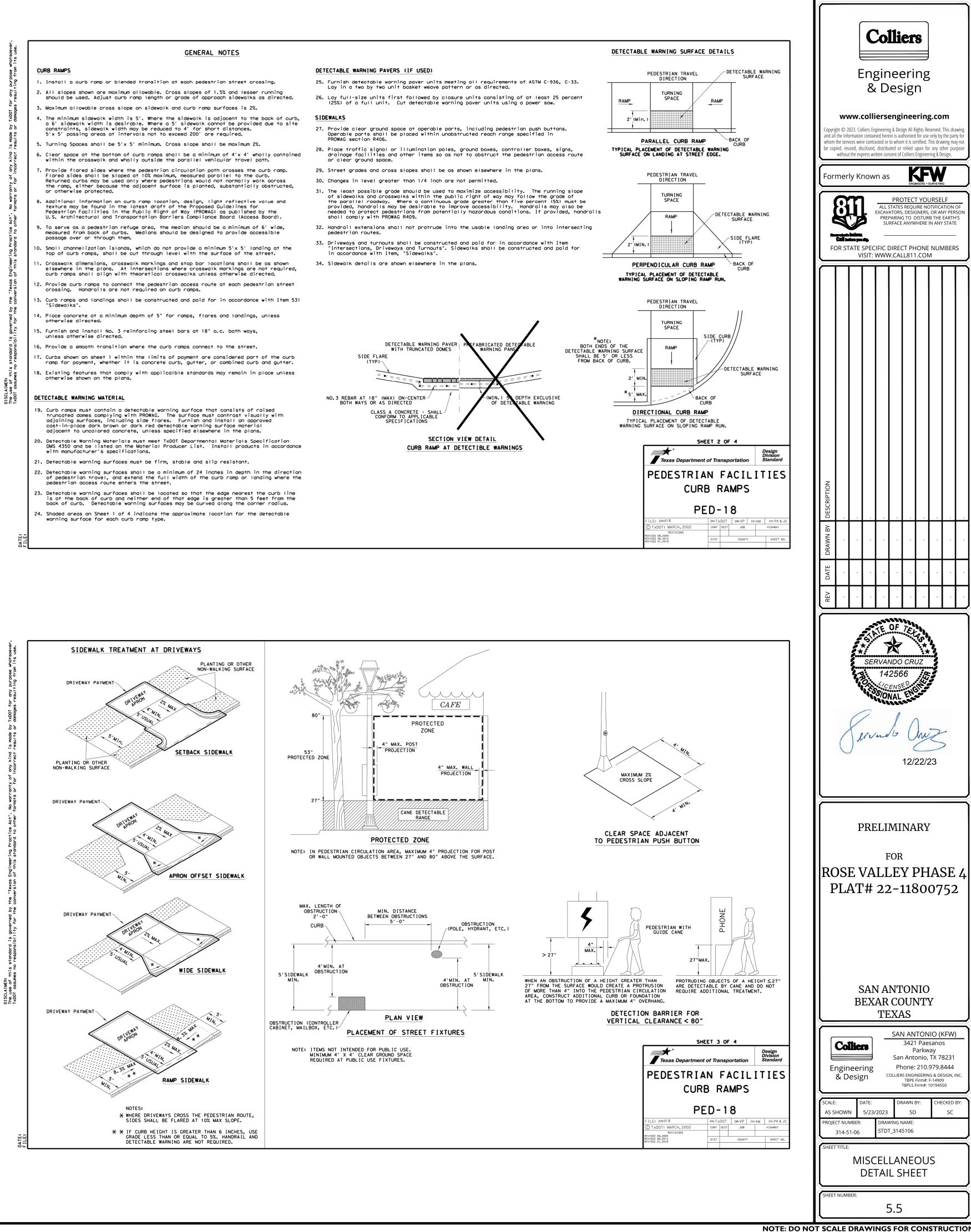
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| Engineering<br>& Design  |  |  |  |  |  |  |  |  |
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| EV       Date       Drawn BY       Description         ·       ·       ·       ·   |  |  |  |  |  |  |  |  |
| REV  |  |  |  |  |  |  |  |  |
| SERVANDO CRUZ<br>142566<br>CENSE<br>ONAL FUE<br>ONAL FUE<br>12/22/23   |  |  |  |  |  |  |  |  |
| Lervado Auz<br>12/22/23  |  |  |  |  |  |  |  |  |
| RELIMINARY<br>FOR<br>ROSE VALLEY PHASE 4<br>PLAT# 22-11800752  |  |  |  |  |  |  |  |  |
| PRELIMINARY<br>FOR<br>ROSE VALLEY PHASE 4<br>PLAT# 22-11800752<br>SAN ANTONIO<br>BEXAR COUNTY<br>TEXAS   |  |  |  |  |  |  |  |  |
| PRELIMINARY<br>FOR<br>ROSE VALLEY PHASE 4<br>PLAT# 22-11800752<br>SAN ANTONIO<br>BEXAR COUNTY  |  |  |  |  |  |  |  |  |
| PRELIMINARY<br>FOR<br>ROSE VALLEY PHASE 4<br>PLAT# 22-11800752<br>SAN ANTONIO<br>BEXAR COUNTY<br>TEXAS<br>SAN ANTONIO (KFW)<br>3421 Paesanos<br>Parkway<br>San Antonio, TX 78231<br>Phone: 210.979.8444<br>COLLEGE ENGINEERING & DESIGN, INC.<br>TBPE Firm#: 10194550  |  |  |  |  |  |  |  |  |
| PRELIMINARY<br>FOR<br>ROSE VALLEY PHASE 4<br>PLAT# 22-11800752<br>SAN ANTONIO<br>BEXAR COUNTY<br>TEXAS<br>SAN ANTONIO (KFW)<br>3421 Paesanos<br>Parkway<br>San Antonio, TX 78231<br>Phone: 210.979.8444<br>COLLERS ENGINEERING & DESIGN, INC.<br>TBPE Firm#: 10194550<br>SCALE:<br>A DESIGN<br>SCALE:<br>SSHOWN 5/23/2023 SD<br>SCALE:<br>A SHOWN 5/23/2023 SD<br>SCALE:<br>A SHOW |  |  |  |  |  |  |  |  |
| PRELIMINARY<br>FOR<br>ROSE VALLEY PHASE 4<br>PLAT# 22-11800752<br>SAN ANTONIO<br>BEXAR COUNTY<br>TEXAS<br>SAN ANTONIO (KFW)<br>3421 Paesanos<br>Parkway<br>San Antonio, TX 78231<br>Phone: 210.979.8444<br>COLLEGE EMOINTERING & DESIGN, INC.<br>TBPLS FIRM#: F14909<br>TBPLS FIRM#: F14909<br>TBPLS FIRM#: CHECKED BY:<br>5/23/2023 SD C  |  |  |  |  |  |  |  |  |

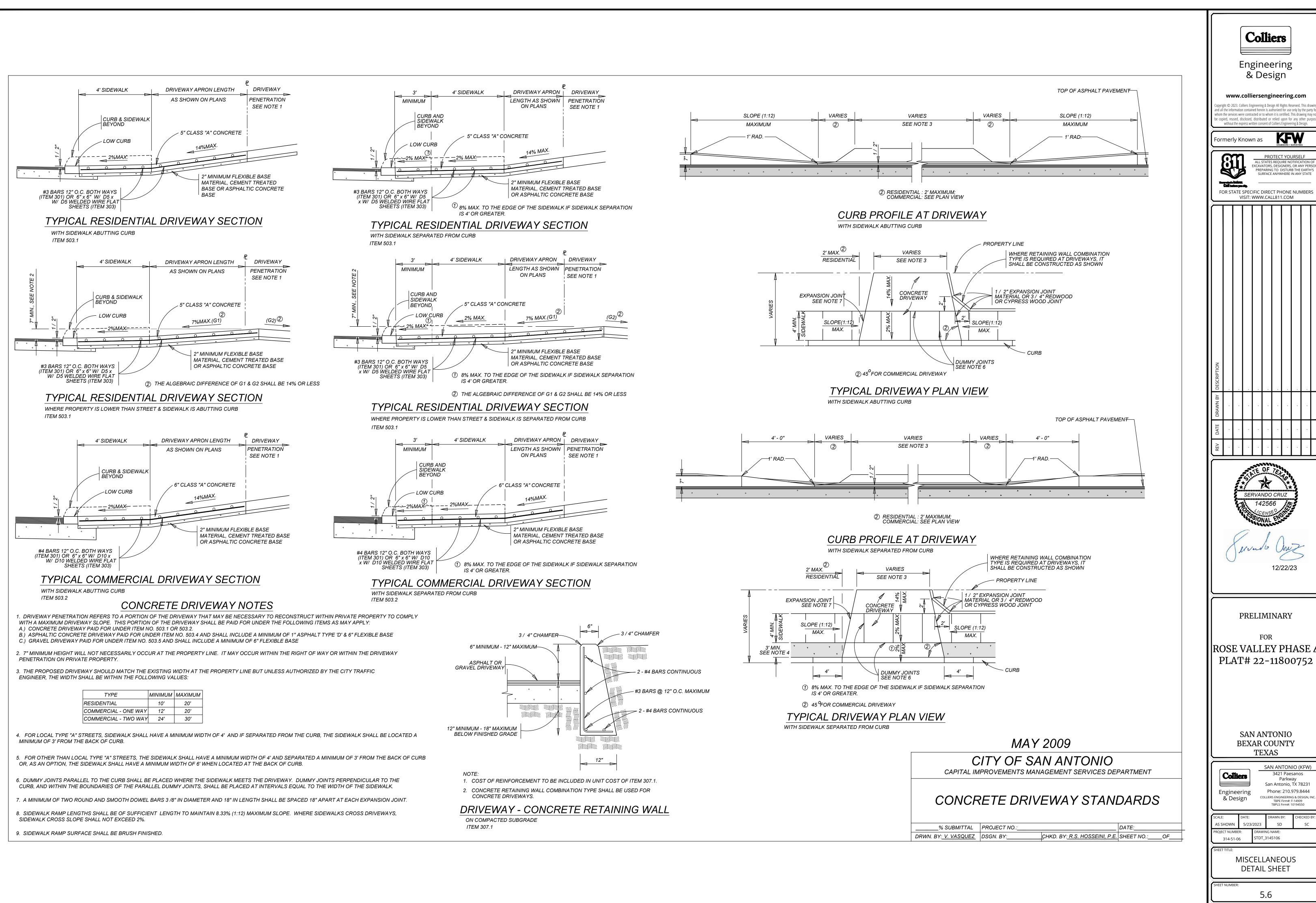


| <b>Colliers</b><br>Engineering<br>& Design  |      |                    |                |           |                       |   |   |       |    |     |
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| DESCRIPTION   |      |                    |                |           |                       |   |   |       |    |     |
| DRAWN BY DES  |      |                    |                |           |                       |   |   |       |    |     |
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| SERVANDO CRUZ<br>142566<br>CENSED<br>ONAL ENGL<br>SOMAL |      |                    |                |           |                       |   |   |       |    |     |
| PRELIMINARY<br>FOR<br>ROSE VALLEY PHASE 4<br>PLAT# 22-11800752  |      |                    |                |           |                       |   |   | - 1 H |    |     |
| SAN ANTONIO<br>BEXAR COUNTY<br>TEXAS  |      |                    |                |           |                       |   |   |       |    |     |
| ColliersEngineering<br>& Design& DesignSAN ANTONIO (KFW)3421 Paesanos<br>Parkway<br>San Antonio, TX 78231<br>Phone: 210.979.8444<br>COLLIERS ENGINEERING & DESIGN, INC.<br>TBPL Firm#: 10194550   |      |                    |                |           |                       |   |   |       |    |     |
| PROJE   | HOWI | N<br>MBER:<br>1-06 | DATE:<br>5/23/ |           | DF<br>VING N<br>T_314 |   |   | CHE   | SC | BY: |
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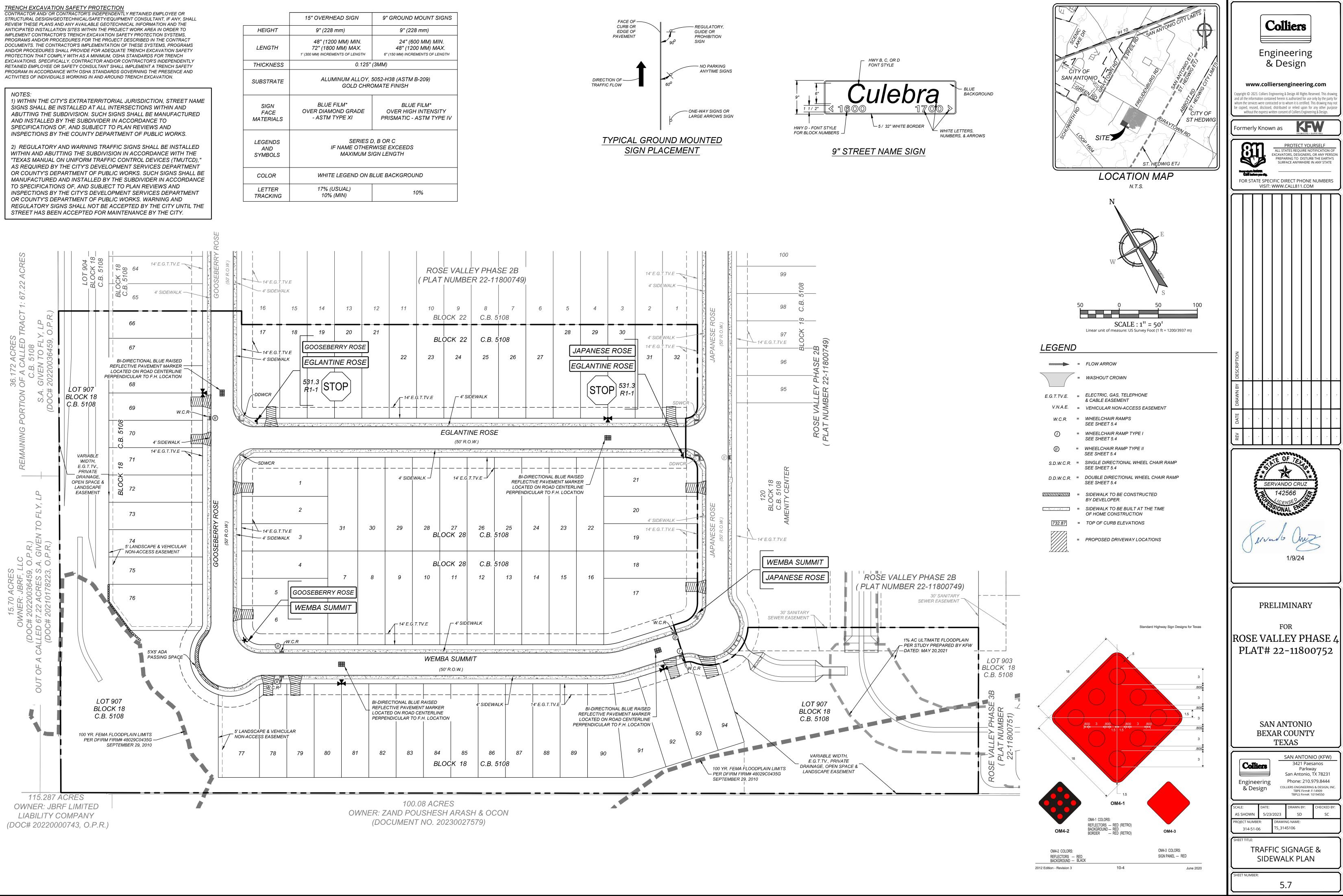


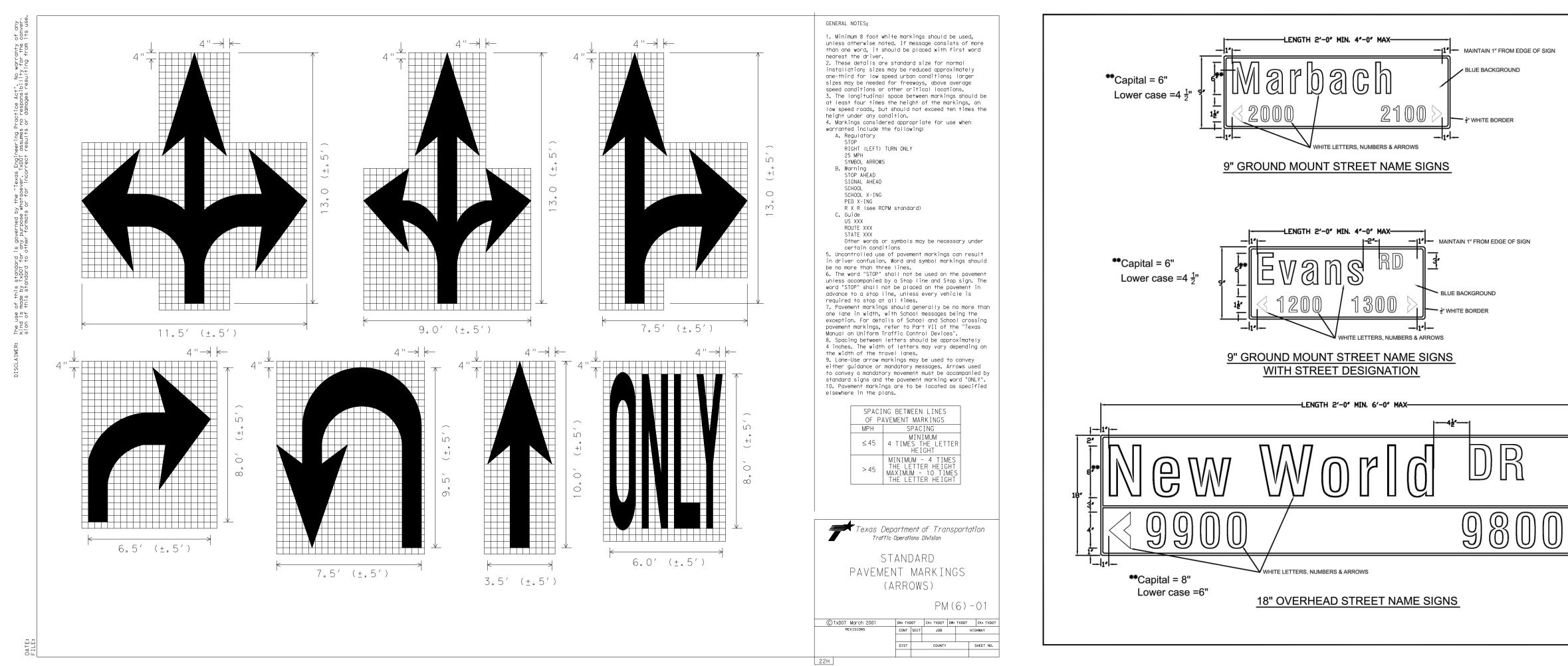


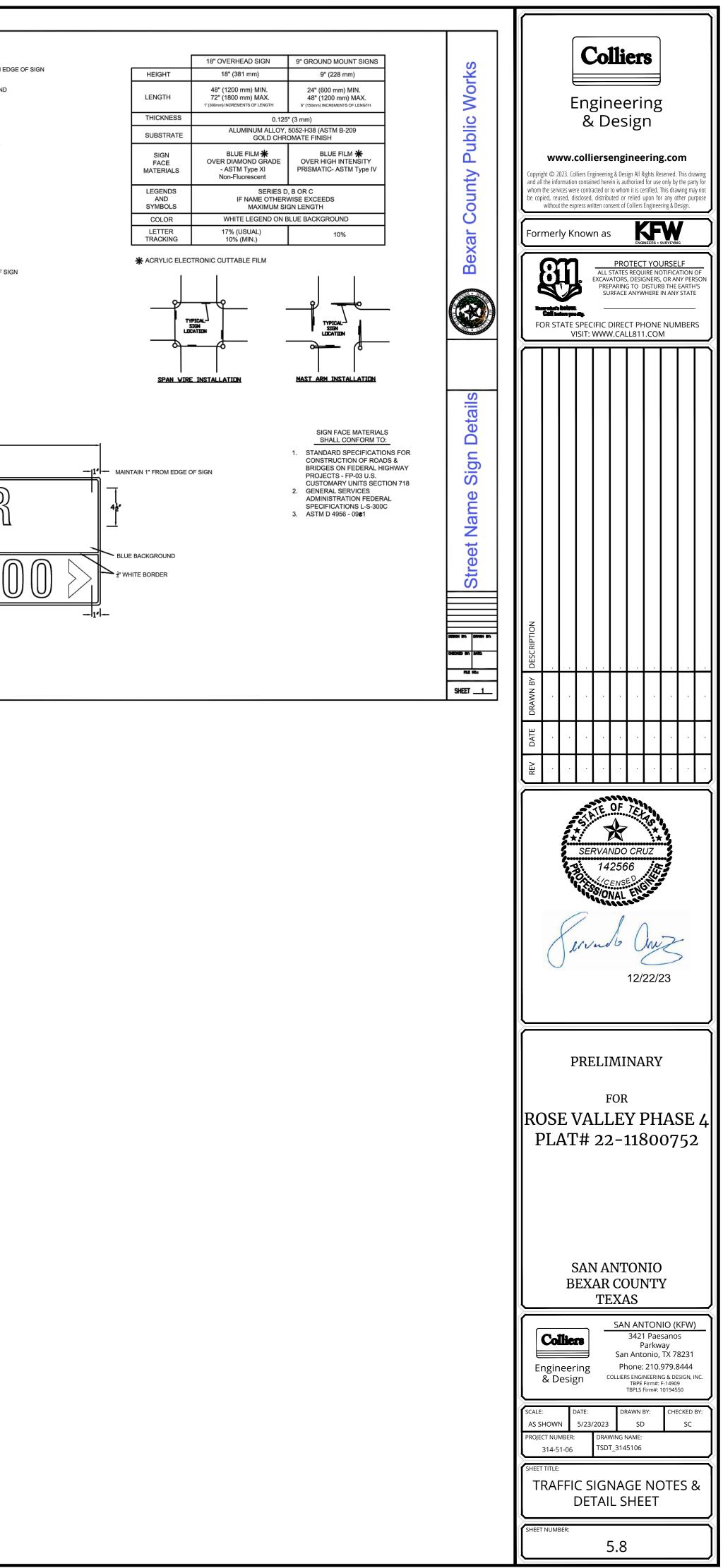




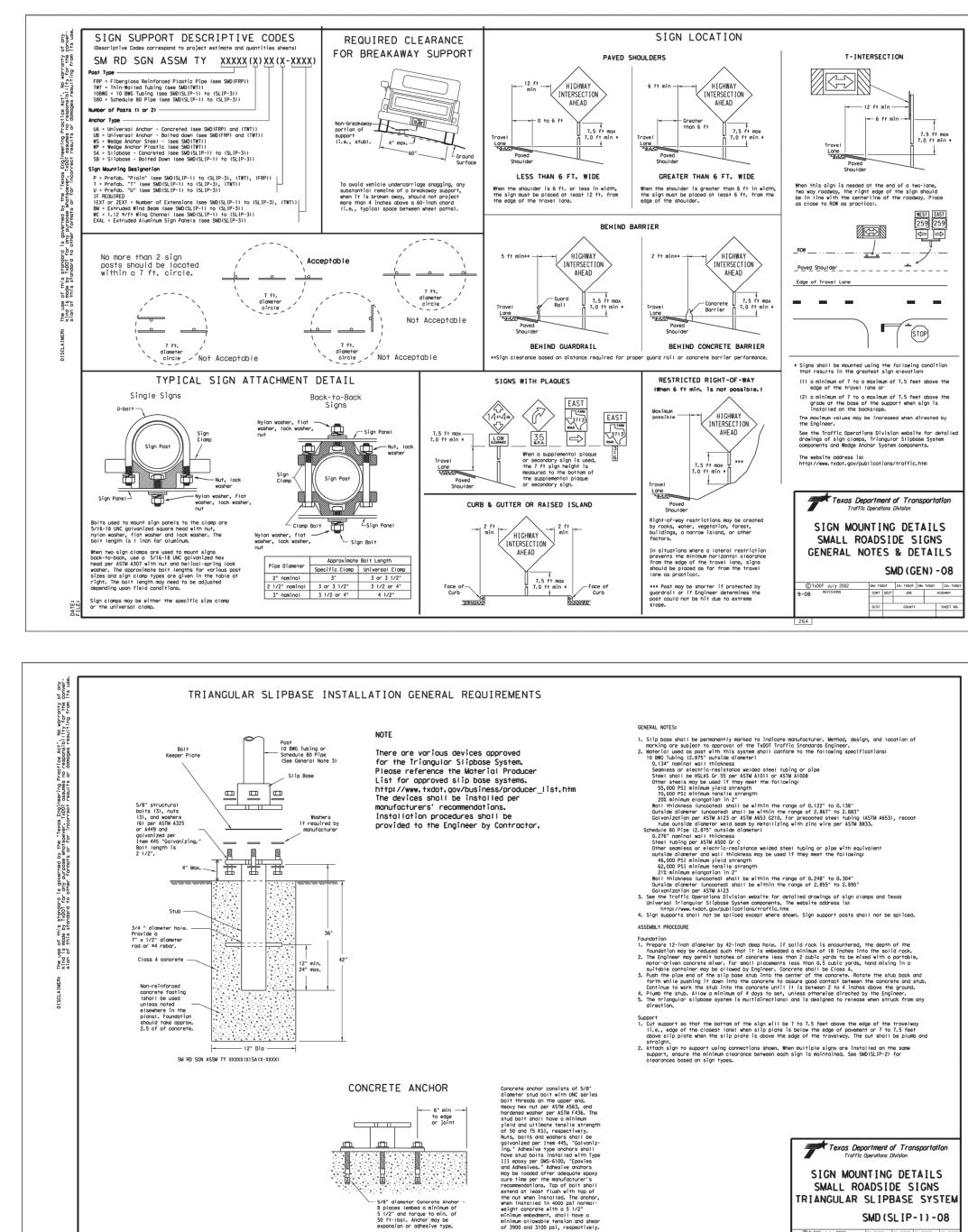
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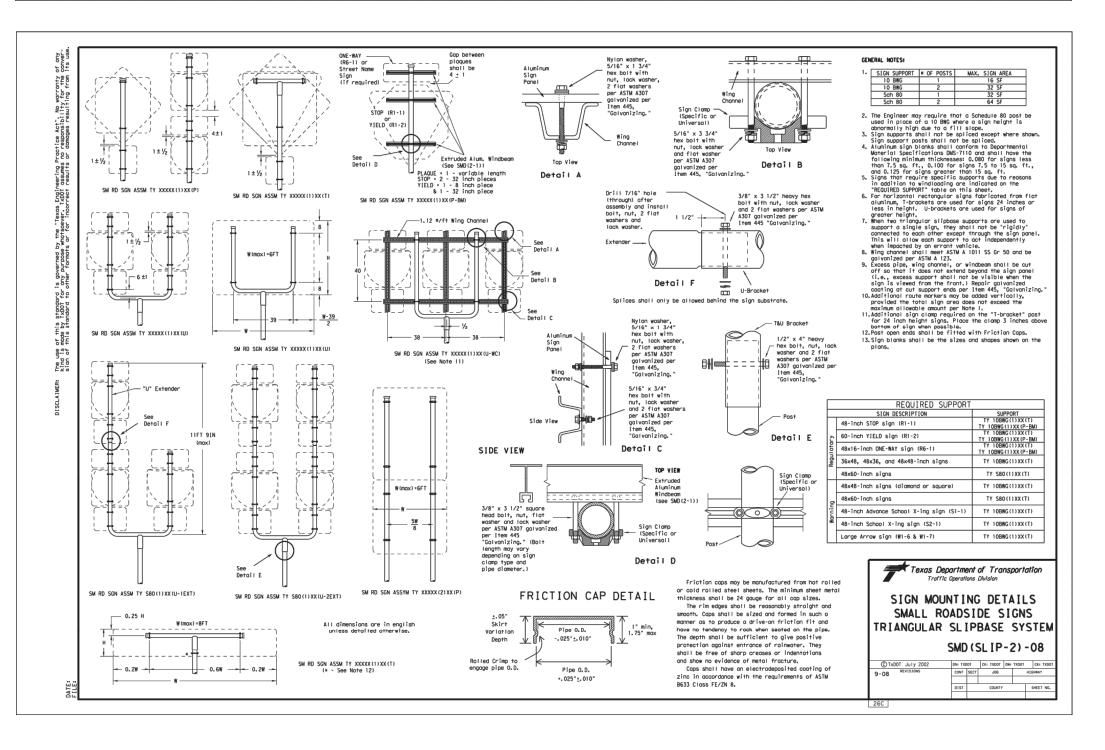






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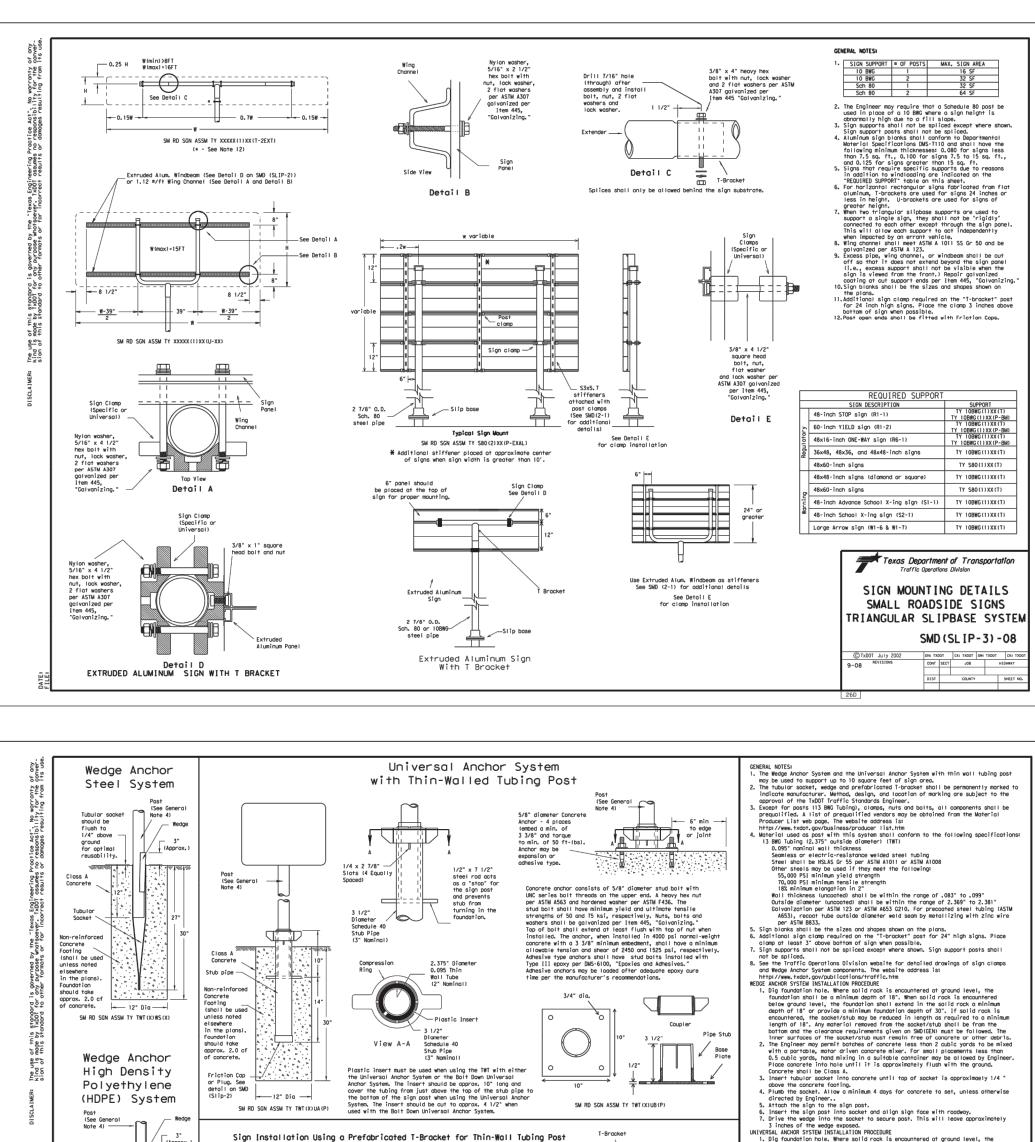




minimum allowable tension and shea of 3900 and 3100 psi, respectively

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

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| C TxDOT July 2002                   | DN: TXE | от   | CK: TXDOT | DW: TXDOT | CK: TXDOT |
| 9-08 REVISIONS                      | CONT    | SECT | JOB       |           | HIGHWAY   |
|                                     | DIST    |      | COUNTY    |           | SHEET NO. |
| 268                                 |         |      |           |           |           |



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

Post

9/16" hole may need to be drilled through post to accommodate bolt.

J

T-Bracket  $\geq$ 

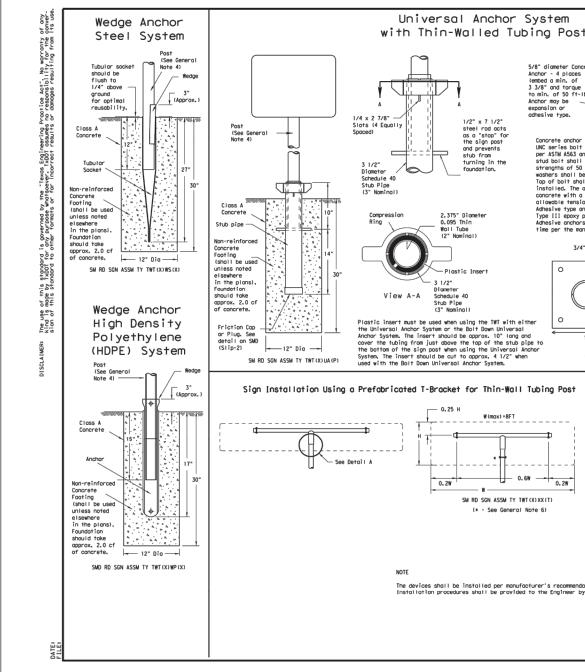
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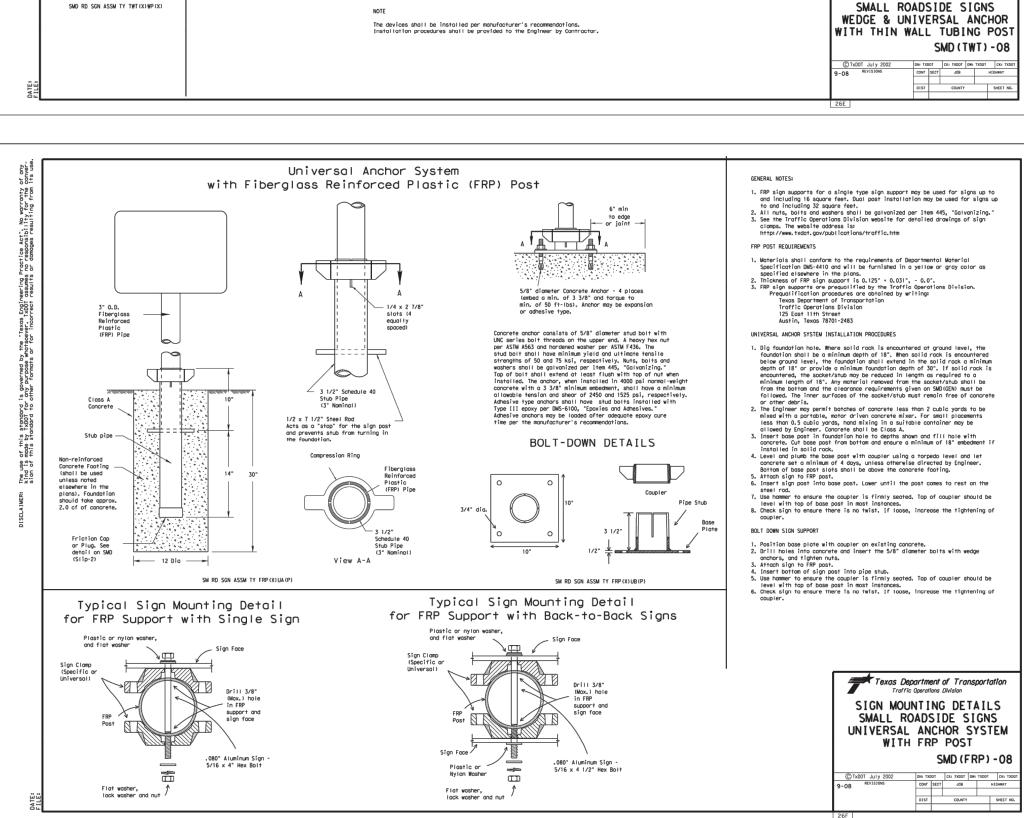
3 Inches of the wedge exposed. UNIVERSAL AUKON SYSTEM INSALLATION PROCEDURE 1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18°. When solid rock a minimum depth of 18° or provide a minimum donundation depth of 30°. If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18°. A provider information of the solid rock of minimum length of 18°. A provider from the socket/stub shall be from the bottom and the clearance requirements given an SMD GEN must be followed. The inner surfaces of the socket/stub shaw and bockfill hole with concrete, 3. Level and plumb the base post using a torpedo level and allow concrete adequate time to set. The bottom of the slots provided in the stub pipe shall remain above the top of the concrete foundation.

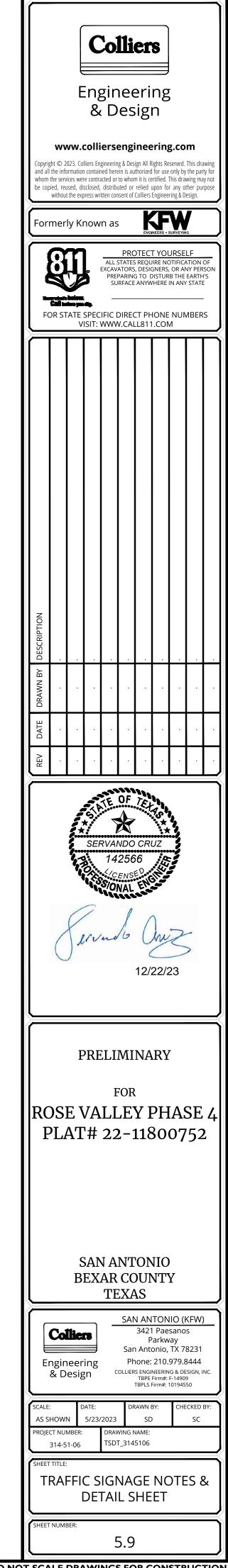
Time to set, the bottom or the stors provided in the stud pipe shall remain above the top of the concrete foundation. 4. Attach the sign top to the sign post. 5. Instail picatic insert around bottom of post. 6. Insert sign post into base post. Lower until the post comes to rest on steel rod. 7. Sect compression ring using a hommer. Typically, the top of compression ring will be opproximately level with top of stud post when optimally installed. 8. Check sign post by hand to ensure it is unable to turn. If loose, increase the tightening of the compression ring.

Texas Department of Transportation Traffic Operations Division

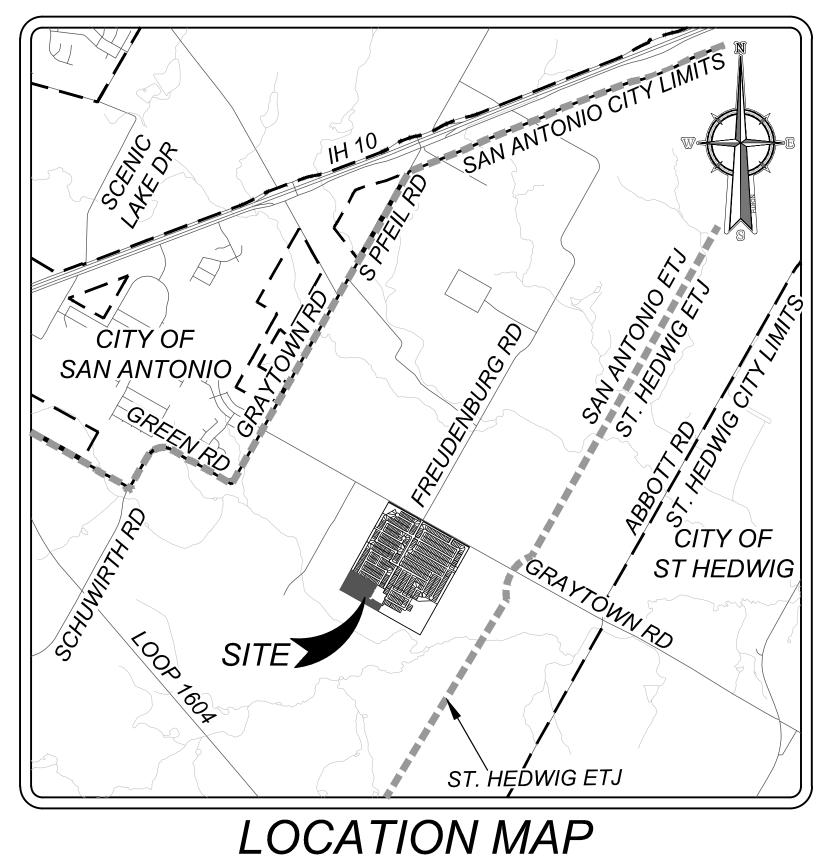
SIGN MOUNTING DETAILS







# ROSE VALLEY PHASE 4 BEXAR COUNTY, TEXAS SANITARY SEWER IMPROVEMENTS



N.T.S.

OWNER/DEVELOPER: LENNAR HOMES 100 NE LOOP 410, SUITE 1155 SAN ANTONIO, TEXAS 78216 PHONE: (210) 403-6200

## INDEX

| DESCRIPTION                     | SHEET NO. |
|---------------------------------|-----------|
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| SANITARY SEWER DETAILS (2 OF 2) | 6.7       |

| <b>Colliers</b><br>Engineering<br>& Design  |  |  |  |  |  |  |  |  |
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| SERVANDO CRUZ<br>142566<br>CENSED<br>ONAL ENGL<br>SONAL ENGL<br>SOL   |  |  |  |  |  |  |  |  |
| PRELIMINARY<br>FOR<br>ROSE VALLEY PHASE 4<br>PLAT# 22-11800752  |  |  |  |  |  |  |  |  |
| SAN ANTONIO<br>BEXAR COUNTY<br>TEXAS  |  |  |  |  |  |  |  |  |
| ColliersEngineering<br>& Design& DesignSAN ANTONIO (KFW)3421 Paesanos<br>Parkway<br>San Antonio, TX 78231<br>Phone: 210.979.8444<br>COLLIERS ENGINEERING & DESIGN, INC.<br>TBPLS Firm#: 10194550  |  |  |  |  |  |  |  |  |
| SCALE:       DATE:       DRAWN BY:       CHECKED BY:         AS SHOWN       5/23/2023       SD       SC         PROJECT NUMBER:       DRAWING NAME:       314-51-06       CV_SS3145106  |  |  |  |  |  |  |  |  |
| SHEET TITLE:<br>SANITARY SEWER<br>COVER SHEET   |  |  |  |  |  |  |  |  |
| SHEET NUMBER:<br>6.0  |  |  |  |  |  |  |  |  |

GENERAL NOTES:

- 1. SAN ANTONIO RIVER AUTHORITY (RIVER AUTHORITY) STANDARD SPECIFICATIONS AND STANDARD DETAILS ARE PROVIDED FOR DESIGN AND CONSTRUCTION OF SEWER COLLECTION SYSTEMS MANAGED BY THE RIVER AUTHORITY.
- 2. AT ANY TIME, THESE STANDARD SPECIFICATIONS AND DETAILS MAY BE ALTERED OR SUPERSEDED BY THE GENERAL CONDITIONS SUPPLEMENTAL CONDITIONS, PLANS OR PROJECT SPECIFICATIONS WITHIN THE CONTRACT DOCUMENT PER DIRECTION FROM THE RIVER 16. ANY AND ALL FENCING, INCLUDING ELECTRIC FENCE, WHETHER OR AUTHORITY.
- 3. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY RIVER AUTHORITY AND COMPLY WITH THE CONTRACT DOCUMENTS AND THE FOLLOWING AS APPLICABLE:
- 3.1. CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) 'DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM", TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30, PART 1, CHAPTER 217.
- 3.2. CURRENT TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE".
- 3.3. CURRENT RIVER AUTHORITY "STANDARD SPECIFICATIONS FOR SANITARY SEWER CONSTRUCTION".
- 3.4. CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION". CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL".
- 4. THE CONTRACTOR IS TO NOTIFY AND MAKE ARRANGEMENTS WITH THE RIVER AUTHORITY INSPECTIONS DIVISION AT (210) 302-4200 FORTY EIGHT (48) HOURS PRIOR TO ANY EXCAVATION. CONTRACTOR SHALL ALSO PROVIDE PROCEDURES THAT WILL BE USED TO NOTIFY AFFECTED RESIDENTS AND/OR PROPERTY OWNERS 48 HOURS PRIOR TO ANY EXCAVATION OR CONSTRUCTION. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD BEFORE START OF PROJECT.
- 5. WORK SHALL NOT BE PERFORMED ON SATURDAYS, SUNDAYS, FEDERAL HOLIDAYS, RIVER AUTHORITY HOLIDAYS, BEFORE 7:30 AM OR AFTER 4:30 PM, UNLESS PRIOR APPROVAL IS GRANTED BY THE RIVER AUTHORITY ENGINEER. REQUEST TO PERFORM WORK DURING THESE TIMES MUST BE EMAILED 48 HOURS IN ADVANCE TO UTILITIESDEVELOPMENT@SARIVERAUTHORITY.ORG.
- 6. NO EXTRA PAYMENT SHALL BE ALLOWED FOR WORK CALLED FOR IN THE PLANS BUT NOT INCLUDED IN THE BID SCHEDULE. THIS INCIDENTAL WORK WILL BE REQUIRED AND SHALL BE INCLUDED UNDER THE PAY ITEM WHICH IT RELATES TO.
- 7. WORK COMPLETED BY CONTRACTOR WHICH HAS NOT RECEIVED A WORK ORDER OR THE CONSENT OF RIVER AUTHORITY WILL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE EXPENSE OF THE CONTRACTOR.
- 8. LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR AT LEAST 48 HOURS PRIOR TO CONSTRUCTION REGARDLESS OF ILLUSTRATION ON THE PLANS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION AND TO PROTECT THEM DURING CONSTRUCTION AT NO COST TO RIVER AUTHORITY. CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGES TO EXISTING UTILITIES AND REPAIRS WILL BE AT CONTRACTOR'S EXPENSE.
- 9. CERTAIN PORTIONS OF THE PROJECT MAY PARALLEL AND/OR CROSS EXISTING UTILITIES, AND CONTRACTOR IS REQUIRED TO SEWER NOTES: PROTECT THESE UTILITIES. ADDITIONAL SUPPORTIVE SHORING MAY PROTECT ALL PERSONNEL ON SITE, EXISTING UTILITIES, AND FINISHED WORK THROUGHOUT THE PROJECT. CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGES, AND REPAIRS WILL BE AT CONTRACTOR'S FULL EXPENSE.
- 10. WHERE WATER LINES AND NEW SEWER LINES ARE INSTALLED WITH A SEPARATION DISTANCE LESS THAN 9 FEET (I.E. WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING 26.2. NOTIFY RIVER AUTHORITY CONSTRUCTION INSPECTIONS DIVISION WASTEWATER LINES OR WATER LINES NEXT TO MANHOLES), THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC 217 AND 30 TAC 290.
- 11. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.161, CPS MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND VALVES THAT ARE IN THE PROJECT AREAS.
- 12. A SAFE OVERHEAD CLEARANCE MUST BE MAINTAINED BETWEEN ALL OVERHEAD EQUIPMENT AND PERSONNEL. THE CONTRACTOR SHALL NOTIFY CPS AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION IN 26.8. NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THE VICINITY OF CPS OVERHEAD LINES. CONTRACTOR SHALL MAINTAIN CPS RECOMMENDED CLEARANCE REQUIREMENTS.
- 13. ALL WORK IN THE TEXAS DEPARTMENT OF TRANSPORTATION 27. THE CONTRACTOR SHALL PROVIDE BYPASS PUMPING OF SEWAGE (TXDOT) RIGHT-OF-WAY SHALL PROCEED DURING WORKING HOURS AGREED UPON BY RIVER AUTHORITY AND TXDOT INSPECTORS.

14. BEFORE THE START OF ANY CONSTRUCTION, CONTRACTOR SHALL

FULLY DOCUMENT THE SITE WITH PHOTOS AND DIGITAL VIDEO WITH ONE COPY SUBMITTED TO RIVER AUTHORITY PRIOR TO STARTING WORK. THE PRE-CON SITE VIDEO SHALL PROVIDE ACCURATE DOCUMENTATION OF EXISTING CONDITIONS.

- 15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES TO ORIGINAL OR BETTER CONDITION AS A RESULT OF DAMAGE DONE DURING THE PROJECT CONSTRUCTION.
- NOT IDENTIFIED ON THE PLANS, MUST BE MAINTAINED AT ALL TIMES. ANY AND ALL DAMAGES DIRECTLY ATTRIBUTED TO THE CONTRACTOR MUST BE REPLACED TO EQUAL OR BETTER CONDITIONS AT THE CONTRACTOR'S EXPENSE AND AS APPROVED BY THE RIVER AUTHORITY INSPECTOR. GATES, OR GAPS IN THE FENCING IF APPROVED, MUST BE PROVIDED AT ALL LOCATIONS WHERE THE SEWER LINE EASEMENT CROSSES FENCING. FENCING REQUIRED TO MAINTAIN LIVESTOCK MUST BE MAINTAINED AT ALL TIMES. ALL GATES SHALL BE APPROVED PRIOR TO INSTALLATION.
- 17. CONTRACTOR MUST AVOID DAMAGE TO ADJACENT LAND OUTSIDE THE IDENTIFIED CONSTRUCTION LIMITS OR EASEMENTS. ANY CLAIMS DIRECTLY ATTRIBUTED TO THE CONTRACTOR RESULTING FROM STRAYING BEYOND THE CONSTRUCTION LIMITS MUST BE SETTLED BY THE CONTRACTOR TO THE SATISFACTION OF RIVER AUTHORITY AND THE APPROPRIATE LANDOWNER.
- 18. CONTRACTOR MUST MAINTAIN ACCESS FOR PRIVATE INDIVIDUALS AND BUSINESSES AT ALL TIMES. IF NORMAL ACCESS IS DAMAGED DURING CONSTRUCTION, THE CONTRACTOR MUST REPLACE THE ACCESS TO EQUAL OR BETTER CONDITION AT THE CONTRACTOR'S EXPENSE AND AS APPROVED BY RIVER AUTHORITY.
- 19. CONTRACTOR MUST COMPLY WITH TEXAS GOVERNMENT CODE SECTION 2166.303 UNIFORM TRENCH SAFETY CONDITIONS.
- 20. CONTRACTOR SHALL NOT BACKFILL ANY TRENCHES UNTIL INSPECTION CAN BE CONDUCTED BY THE RIVER AUTHORITY. NO OPEN TRENCHES SHALL BE PERMITTED OVERNIGHT. ALL ENDS OF OPEN PIPE SHALL BE PLUGGED OVERNIGHT.
- 21. CONTRACTOR SHALL HAVE THE LATEST APPROVED COPY OF PLANS AND SPECIFICATIONS ON SITE AT ALL TIMES FOR REFERENCE.
- 22. NO TREES SHALL BE REMOVED AS PART OF THIS PROJECT UNLESS MANHOLE NOTES: OTHERWISE SPECIFIED IN THE PLANS.
- 23. FOR PORTIONS OF THE CONSTRUCTION THAT ARE WITHIN THE LIMITS OF THE 100-YEAR FLOODPLAIN, THE CONTRACTOR IS REQUIRED TO KEEP THE CHANNEL CLEAR OF POTENTIAL OBSTRUCTIONS TO FLOOD FLOWS. POTENTIAL OBSTRUCTIONS INCLUDE HEAVY CONSTRUCTION EQUIPMENT, TEMPORARY ROADS ACROSS CHANNEL, EXCAVATED MATERIAL, STOCKPILED DEBRIS, AND ALL OTHER ITEMS DEEMED UNACCEPTABLE BY RIVER AUTHORITY. UNDER THREATENING WEATHER CONDITIONS AND WHERE FLOODING IS LIKELY, OBSTRUCTIONS SHALL BE IMMEDIATELY REMOVED BY THE CONTRACTOR ASSUMES ALL RISK FOR UNFINISHED WORK. NO EQUIPMENT OR MATERIALS SHALL BE STOCKPILED IN THE 100-YEAR FLOODPLAIN OVERNIGHT.
- 24. NO WASTE MATERIAL SHALL BE PLACED IN EXISTING DRAINAGE AREAS THAT WILL BLOCK OR ALTER FLOW LIMITS OR NATURAL DRAINAGE.
- 25. IF A THREATENED OR ENDANGERED PLANT OR ANIMAL SPECIES ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL STOP WORK IMMEDIATELY AND NOTIFY THE APPROPRIATE PERSONNEL.

- SANITARY SEWER OVERFLOW (SSO) OCCURS AS A RESULT OF THE WORK. ALL PERSONNEL RESPONSIBLE FOR SSO PREVENTION AND CONTROL SHALL BE TRAINED ON THE PROPER RESPONSE. SHOULD <u>SEWER SERVICE LATERALS</u>: AN SSO OCCUR, THE CONTRACTOR SHALL:
- 26.1. IDENTIFY THE SOURCE OF THE SSO AND ATTEMPT TO ELIMINATE
- ANY ADDITIONAL SPILLAGE. AT (210) 302-4200 AND ATTEMPT TO ELIMINATE THE SOURCE OF THE SSO.
- 26.3. CONTAIN SEWAGE FROM THE SSO TO PREVENT CONTAMINATION OF WATERWAYS.
- MATERIALS. 26.5. DISINFECT THE AREA OF THE SPILL THE PROPER MIXTURE OF
- HTH CHLORINE AND WATER. 26.6. CLEAN THE AFFECTED SEWER LINE AND REMOVE ANY DEBRIS.
- 26.7. IDENTIFY AND TRAIN PERSONNEL RESPONSIBLE FOR SPILLAGE PREVENTION AND CONTROL
- GUIDELINES SET BY THE TCEQ AND RIVER AUTHORITY.

26.4. CLEAN UP THE SPILL AREA AND REMOVE CONTAMINATED

THIS WORK. ALL WORK SHALL BE DONE ACCORDING TO

AROUND EACH SEGMENT OF PIPE TO BE REPLACED. CONTRACTOR SHALL HAVE STANDBY PUMPS AVAILABLE TO BYPASS FLOW IN 42. THE TYPE AND DESCRIPTION OF THE PIPE IS SHOWN ON THE CASE PRIMARY PUMP FAILS. THE CONTRACTOR SHALL PROVIDE A SEQUENCE OF BYPASS PUMPING FOR REVIEW AND APPROVAL BY RIVER AUTHORITY. THE CONTRACTOR SHALL ALSO PROVIDE A DETAILED SKETCH SHOWING THE LOCATION OF BYPASS PUMPING; 43. SIZES AND GRADES FOR SANITARY SEWER SHALL BE AS REQUIRED SPECIFICATIONS FOR THE PUMPING EQUIPMENT; AND TYPE, SIZE, CAPACITY AND NUMBER OF PUMPS REQUIRED TO HANDLE THE PEAK WET WEATHER FLOW.

- 28. CONTRACTOR WILL MAINTAIN SERVICE TO ALL EXISTING SANITARY SEWERS AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR WILL CLEAN ALL DEBRIS, GRAVEL, DIRT, ETC. OUT OF MANHOLES AND FIX ANY STOPPAGES CAUSED BY DEBRIS DURING CONSTRUCTION AT CONTRACTOR'S EXPENSE. ANY DAMAGE TO EXISTING MANHOLES OR SEWER MAIN WILL BE CORRECTED AT CONTRACTOR'S EXPENSE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PREVENT DAMAGE TO EXISTING OR NEW RINGS, COVERS, OR CONES FROM EQUIPMENT AND MATERIALS USED OR TAKEN THROUGH THE WORK AREA. IF AN EXISTING OR NEW MANHOLE COVER, RING, OR CONE IS DAMAGED BY THE CONTRACTOR, IT SHALL BE REPLACED AS 47. A COPY OF ALL TESTING REPORTS, INCLUDING BACKFILL DIRECTED BY THE RIVER AUTHORITY INSPECTOR. MANHOLES WILL NEED TO BE RESEALED WITH RIVER AUTHORITY APPROVED SEALANT. IF SEAL COATING IS COMPROMISED, CONTRACTOR WILL HAVE MANHOLE RECOATED AND RESEAL ALL LEAKS AT CONTRACTOR EXPENSE.
- 29. CONTRACTOR TO ENSURE ALL PLUGS USED TO PLUG SEWER LINES WHILE TESTING THE PROJECT ARE LABELED, MARKED OR TAGGED. THE CONTRACTOR SHALL RECORD HOW MANY PLUGS ARE BEING USED, AS WELL AS THE LOCATION AND IDENTIFICATION OF EACH EXCAVATION: PLUG. CONTRACTOR WILL REPORT TO PROJECT INSPECTOR OF ANY LOST OR UNRESTRAINED PLUGS. CONTRACTOR SHALL ONLY BE ALLOWED TO USE SCREW TYPE PLUG ON PROJECT.
- 30. CONTRACTOR WILL BE HELD LIABLE FOR ANY DAMAGE TO SEWER COLLECTION SYSTEM, WASTEWATER TREATMENT EQUIPMENT, STOPPAGES, OVER-FLOWS, OR BACKUPS INTO HOMES CAUSED BY LOST OR RUNAWAY SEWER PLUGS.
- 31. RIVER AUTHORITY IS NOT RESPONSIBLE FOR ANY ABNORMALITIES ON STUB OUT, INVERT, GRADE OR SLOPE FOR ANY EXISTING MANHOLE TIE-IN OR SERVICE LATERALS. CONTRACTOR SHALL BE RESPONSIBLE FOR RE-CONSTRUCTION, IF NECESSARY.

- 32. ALL MANHOLES SHALL BE CONSTRUCTED PER LATEST DETAILED DRAWINGS AND SPECIFICATIONS, UNLESS AN EXCEPTION IS NOTED.
- 33. PENETRATION INTO THE MANHOLE WILL BE CORE DRILLED. ANY DAMAGE TO EXISTING MANHOLE WILL BE REPAIRED AT CONTRACTOR'S EXPENSE. IF EXISTING SEWER MANHOLE SEAL COATING IS COMPROMISED, ALL OF THE MANHOLE WILL BE RESEALED AND RECOATED PER CURRENT SPECIFICATIONS AND APPROVED PRODUCT LIST.
- CONTRACTOR AT NO ADDITIONAL COST TO RIVER AUTHORITY. THE 34. IF ANY EXISTING MANHOLES CONNECTED WITH THIS PROJECT ARE FOUND TO HAVE INFILTRATION, THE MANHOLES SHALL BE SEALED AND TESTED AT CONTRACTORS EXPENSE.
  - 35. UPON REQUEST FROM THE RIVER AUTHORITY, CONTRACTOR SHALL PROVIDE SAMPLE VERIFYING PROPER INSTALLATION OF FLOWABLE BACKFILL, INCLUDING, BUT NOT LIMITED TO CORE SAMPLES.

SANITARY SEWER PIPING:

- AND/OR CULTURAL/ARCHAEOLOGICAL RESOURCES ARE 36. THE TYPE AND DESCRIPTION OF THE PIPE IS SHOWN ON THE PLANS. REFER TO RIVER AUTHORITY SPECIFICATIONS AND APPROVED PRODUCT LIST FOR MATERIALS, STIFFNESS, AND TYPE.
  - 37. SIZES AND GRADES FOR SANITARY SEWER SHALL BE AS REQUIRED BY THE RIVER AUTHORITY ENGINEER.
- BE REQUIRED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO 26. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT NO 38. NO SANITARY SEWERS, OTHER THAN LATERALS AND FORCE MAINS, SHALL BE LESS THAN EIGHT (8) INCH IN DIAMETER.

- 39. WHEN SEWER LATERALS ARE TO BE CONNECTED TO EXISTING SEWER MAINS AND NO STUB-OUT HAS BEEN PROVIDED, THE CONNECTION MUST BE CONDUCTED PER THE LATEST RIVER AUTHORITY STANDARD DETAILS AND APPROVED PRODUCT LIST. REFER TO THE RIVER AUTHORITY APPROVED PRODUCTS LIST FOR ACCEPTABLE FITTINGS AND CONNECTIONS.
- 40. ALL RESIDENTIAL SERVICE LATERALS SHALL BE SDR 26 PVC WITH RATING OF 115 PSI OR 160 PSI, DETERMINED BY RIVER AUTHORITY SPECIFICATION. LINE SHALL BE EXTENDED TO THE PROPERTY LINE AND CAPPED AND SEALED. ATTACH SEWER BURIAL TAPE TO THE END OF ALL SEWER LATERALS AND BRING UP TO THE GROUND LEVEL FOR MARKER (GREEN). (SEE HOUSE LATERALS DETAILS).
- 41. UPON REQUEST FROM THE SAN ANTONIO RIVER AUTHORITY, CONTRACTOR SHALL PROVIDE SAMPLE VERIFYING PROPER INSTALLATION OF FLOWABLE BACKFILL, INCLUDING, BUT NOT LIMITED TO CORE SAMPLES. SANITARY SEWER PIPING:

- BY THE RIVER AUTHORITY ENGINEER.

SANITARY SEWER TESTING:

- TO RIVER AUTHORITY INSPECTOR.
- IMMEDIATELY.

- WORK.
- FIELD UTILITY MARKINGS.

PLANS. REFER TO LATEST RIVER AUTHORITY SPECIFICATIONS AND APPROVED PRODUCT LIST FOR MATERIALS, STIFFNESS, AND TYPE.

44. NO SANITARY SEWERS, OTHER THAN LATERALS AND FORCE MAINS, SHALL BE LESS THAN EIGHT (8) INCH IN DIAMETER.

45. TESTING SHALL NOT BE CONDUCTED UNTIL ALL OTHER UTILITIES WITHIN THE VICINITY OF SANITARY SEWER ARE FULLY INSTALLED.

46. TESTING SHALL BE CONDUCTED PER LATEST RIVER AUTHORITY SPECIFICATIONS AND SHALL NOT BEGIN WITHOUT 48 HOURS NOTICE

COMPACTION, SHALL BE FORWARDED TO THE RIVER AUTHORITY

48. DENSITY TESTING WILL BE REQUIRED ON ALL SANITARY SEWER TRENCHES INCLUDING SERVICE LATERALS. TESTING FOR SERVICE LATERALS TO BE IDENTIFIED BY RIVER AUTHORITY INSPECTOR AT RANDOM. DENSITY TESTING FOR SERVICE LATERALS SHALL NOT EXCEED 25% OF TOTAL NUMBER OF LATERALS.

49. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/ EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTORS TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIALLY, CONTRACTOR AND/OR CONTRACTORS 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.

50. IF A SAFETY VIOLATION IS NOTED BY A RIVER AUTHORITY INSPECTOR, THE RIVER AUTHORITY RESERVES THE RIGHT TO STOP

51. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL WASTE MATERIALS UPON PROJECT COMPLETION.

52. CONTRACTOR IS RESPONSIBLE FOR UPDATING AND MAINTAINING ALL

| S A N A N T O N I O<br>RIVER AUTHORITY<br>100 E. GUENTHER STREET<br>SAN ANTONIO, TEXAS 78283 | <section-header><section-header><section-header><section-header><section-header><section-header><text><text><text><text><text><text><text></text></text></text></text></text></text></text></section-header></section-header></section-header></section-header></section-header></section-header>   |  |  |  |  |  |  |
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| S REVISED<br>3/31/2024 No. No.   | PRELIMINARY<br>FOR<br>ROSE VALLEY PHASE 4<br>PLAT# 22-11800752<br>SAN ANTONIO<br>BEXAR COUNTY   |  |  |  |  |  |  |
| CENERAL NOTES<br>SHEET<br>1 OF 1   | SAN ANTONIO (KFW)         SAN ANTONIO (KFW)         3421 Paesanos         Parkway         San Antonio, TX 78231         Phone: 210.979.8444         Colliers         & Design         SCALE:         DATE:         DATE:         DATE:         DATE:         DATE:         SCALE:         DATE:         STATA NOTIO         SCALE:         DATE:         SD         SC         PROJECT NUMBER:         314-51-06         SHEET TITLE:         SANNITARY SEWER NOTES         SHEET NUMBER:         SHEET NUMBER:         SHEET NUMBER:   |  |  |  |  |  |  |

## COMPACTION NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS & SARA INSPECTOR/TEST ADMINISTRATOR, PER EACH 12 INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. PERMITS AND/OR WILL NOT BE ACCEPTED AND FINALIZED BY SAWS & SARA 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 ANY AVAILABLE GEOTECHNICAL INFORMATION

AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM. OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE

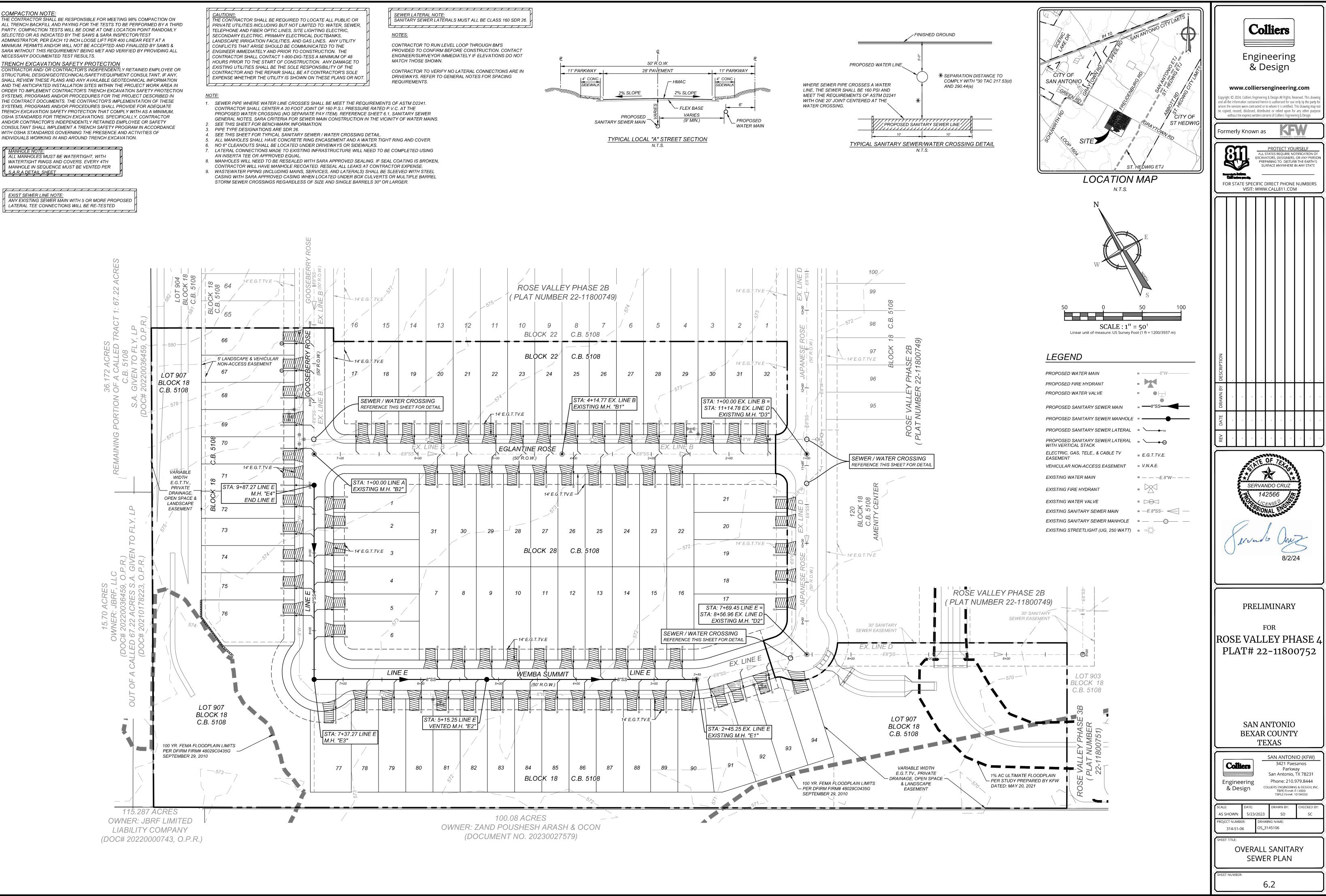
### MANHOLE NOTE: ALL MANHOLES MUST BE WATERTIGHT, WITH WATERTIGHT RINGS AND COVERS. EVERY 4TH MANHOLE IN SEQUENCE MUST BE VENTED PER L.S.A.R.A DETAIL SHEET

EXIST SEWER LINE NOTE: ANY EXISTING SEWER MAIN WITH 5 OR MORE PROPOSED LATERAL TEE CONNECTIONS WILL BE RE-TESTED

<u>NOTES:</u>

REQUIREMENTS.

- CONTRACTOR SHALL CENTER A 20 FOOT JOINT OF 160 P.S.I. PRESSURE RATED P.V.C. AT THE SEE THIS SHEET FOR BENCHMARK INFORMATION.
- SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.
- NO 6" CLEANOUTS SHALL BE LOCATED UNDER DRIVEWAYS OR SIDEWALKS. AN INSERTA TEE OR APPROVED EQUAL.



NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION

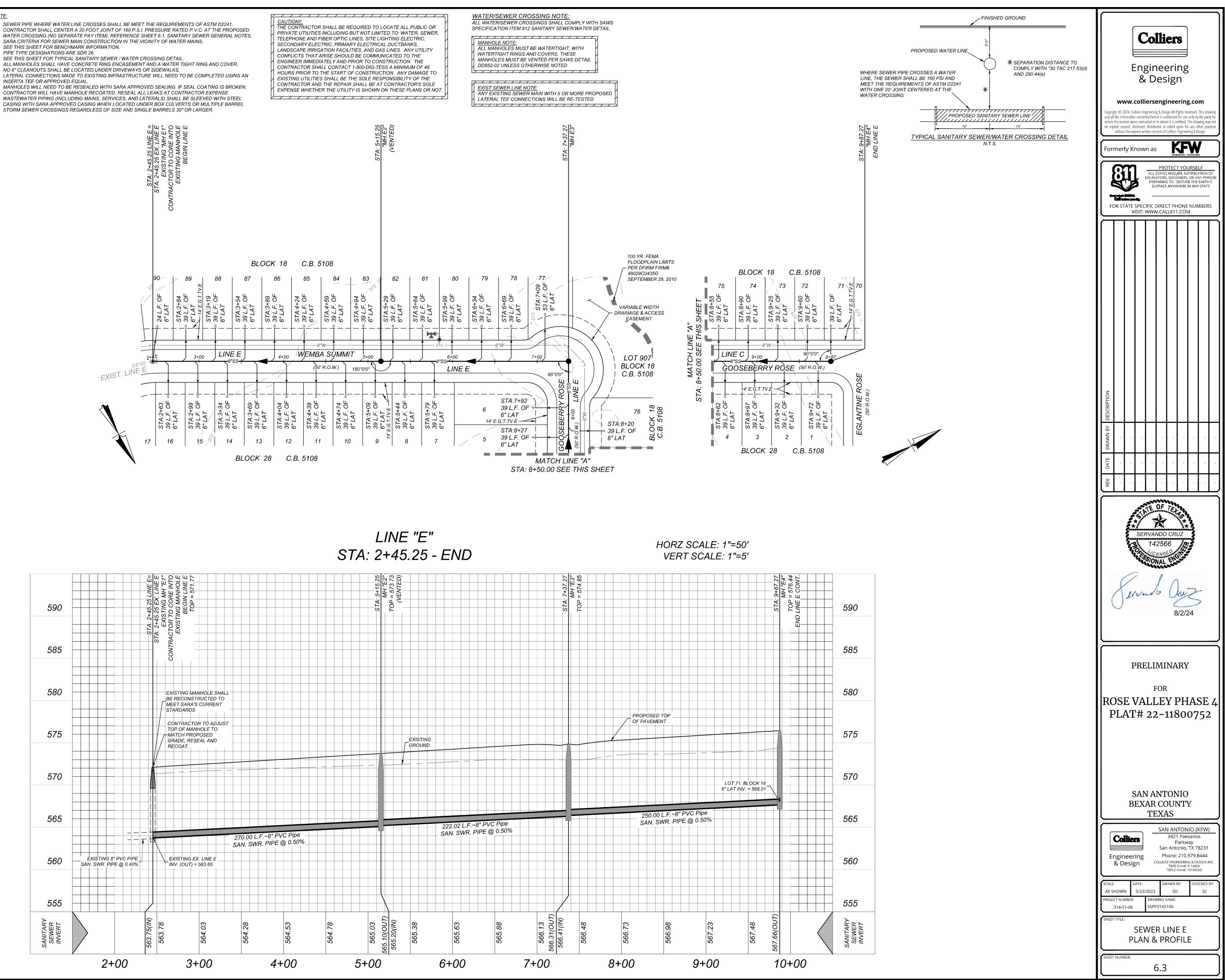
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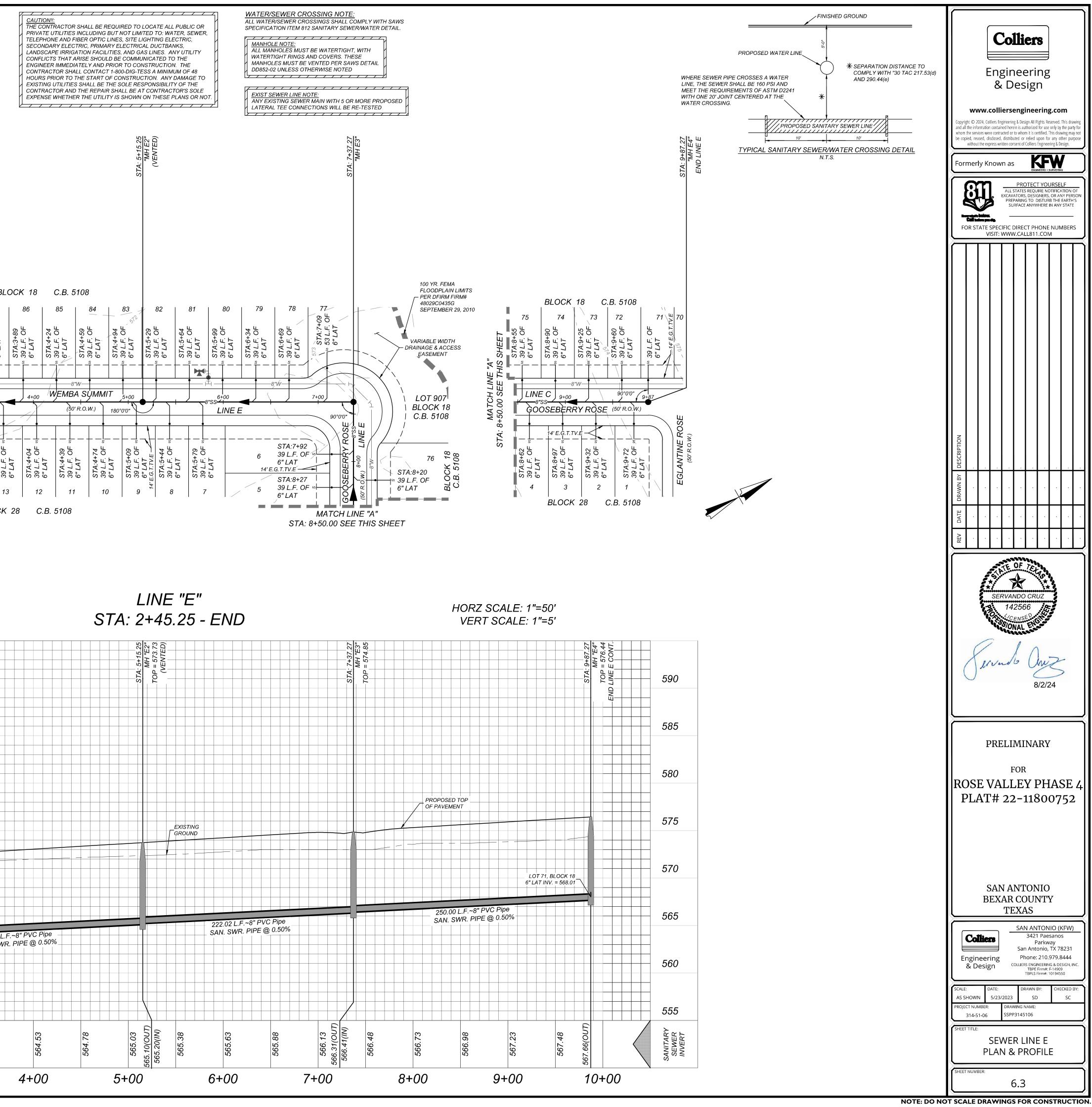
ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

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- 1. SEWER PIPE WHERE WATER LINE CROSSES SHALL BE MEET THE REQUIREMENTS OF ASTM D2241. CONTRACTOR SHALL CENTER A 20 FOOT JOINT OF 160 P.S.I. PRESSURE RATED P.V.C. AT THE PROPOSED WATER CROSSING (NO SEPARATE PAY ITEM). REFERENCE SHEET 6.1, SANITARY SEWER GENERAL NOTES, SARA CRITERIA FOR SEWER MAIN CONSTRUCTION IN THE VICINITY OF WATER MAINS.
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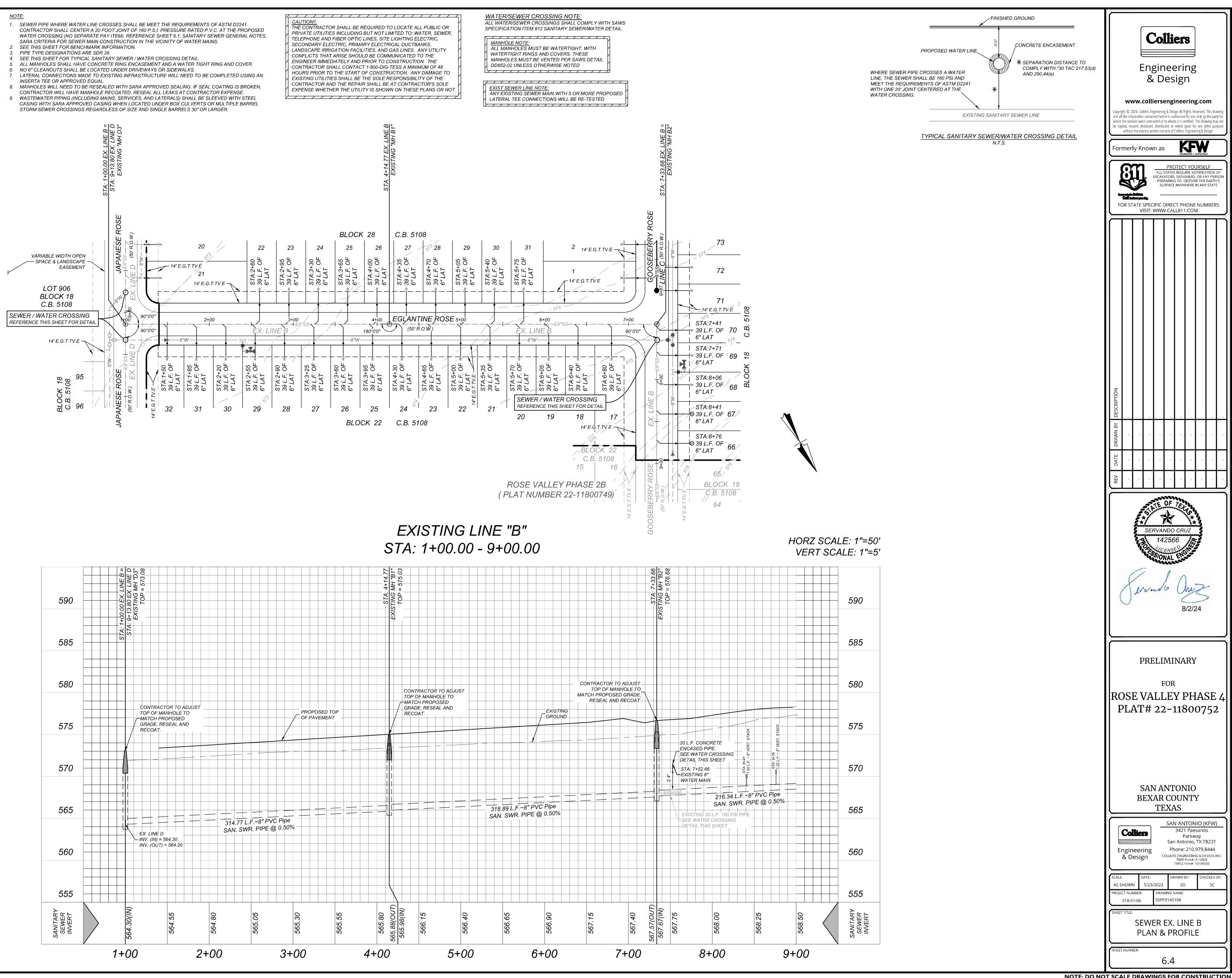
|                             | 2+00 | 3+00   |
|-----------------------------|------|--|
| SANITARY<br>SEWER<br>INVERT |      | 563.75(IN)<br>563.78<br>564.03<br>564.28   |
| 555                         |      |  |
| 560                         |      | EXISTING EX. LINE E<br>INV. (OUT) = 563.65   |
| 565                         |      |  |
| 570                         |      | GRADE, RESEAL AND<br>RECOAT.   |
| 575                         |      | BE RECONSTRUCTED TO<br>MEET SARA'S CURRENT<br>STARDARDS<br>CONTRACTOR TO ADJUST<br>TOP OF MANHOLE TO<br>MATCH PROPOSED   |
| 580                         |      |  |
| 585                         |      | EXIS<br>STA: 2-45<br>STA: 2-45<br>EXIS<br>EXIS<br>EXISTI   |
| 590                         |      | STA: 2+45.25 LINE E=         STA: 2+45.25 EX. LINE E         STA: 2+45.25 EX. LINE E         EXISTING MH "E1"         EXISTING MANHOLE         BEGIN LINE E         TOP = 571.77 |

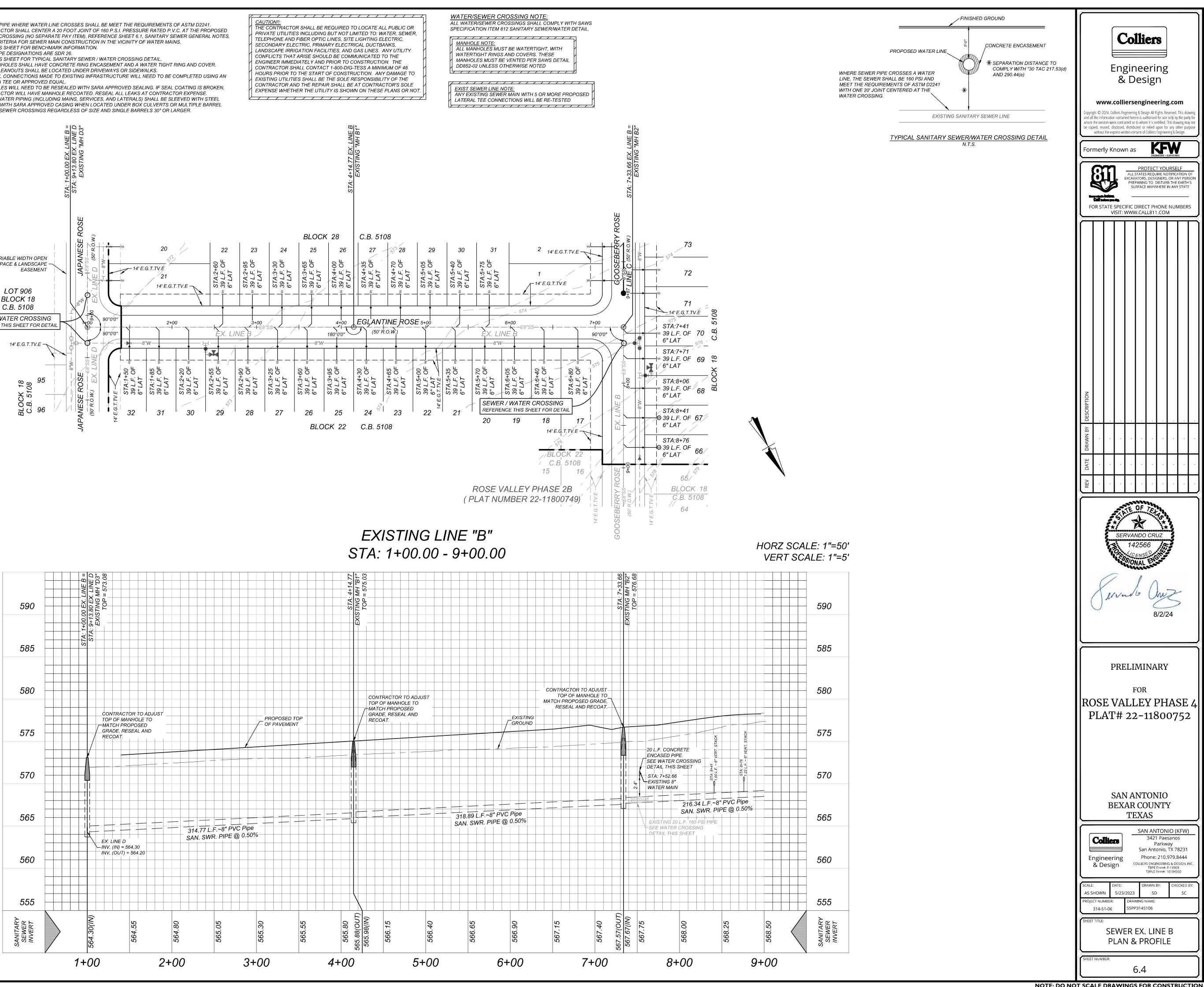


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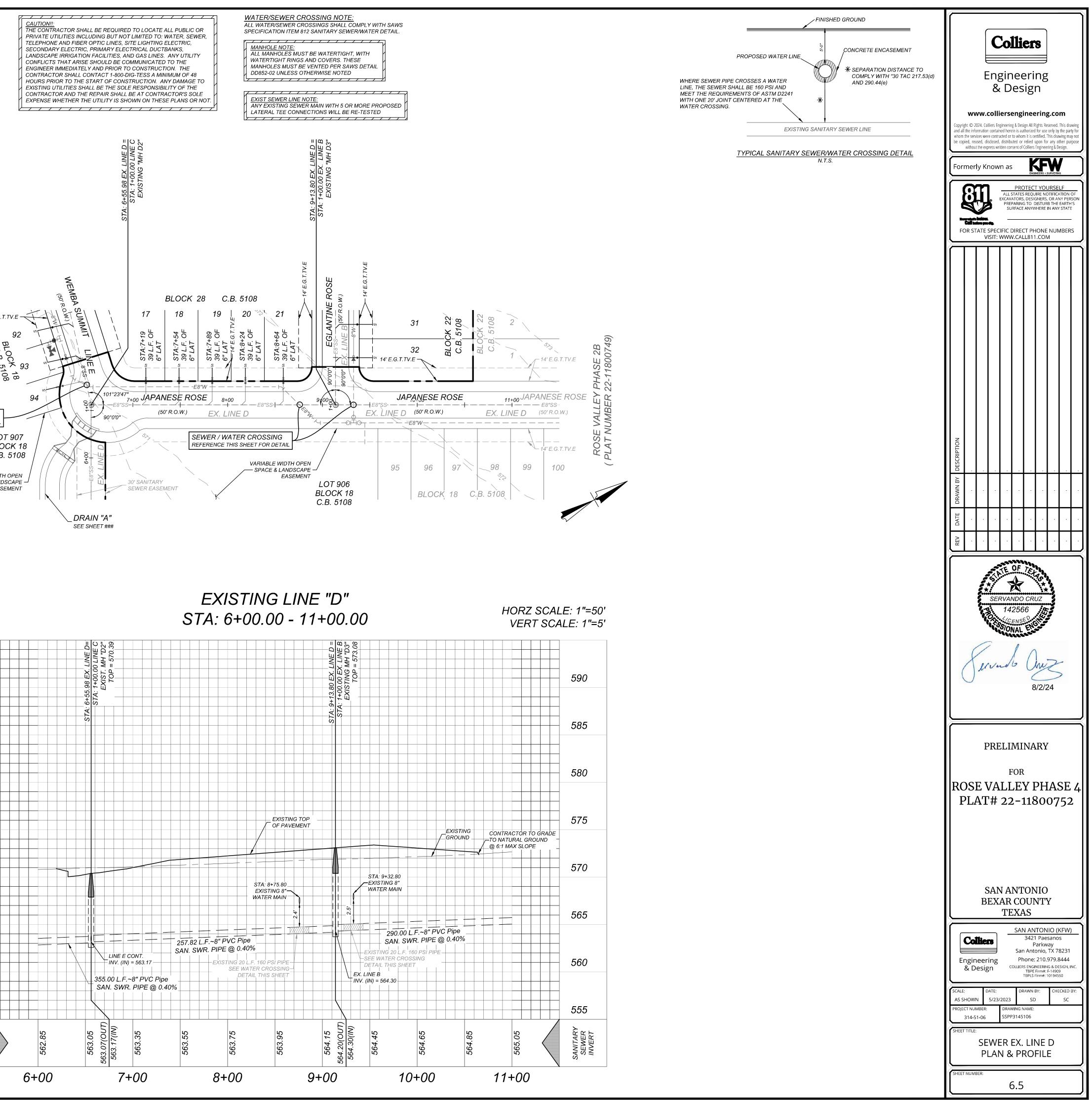
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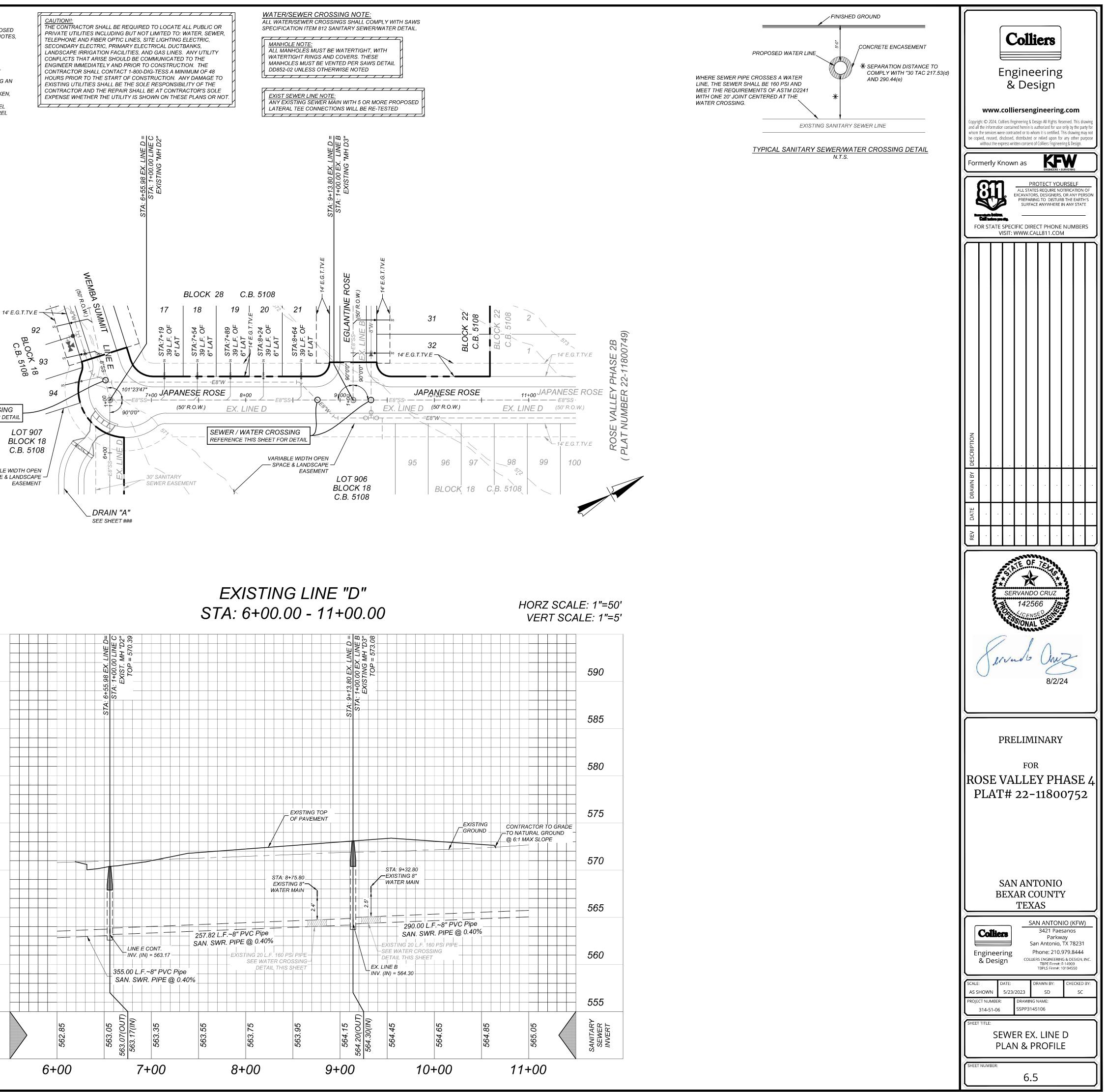
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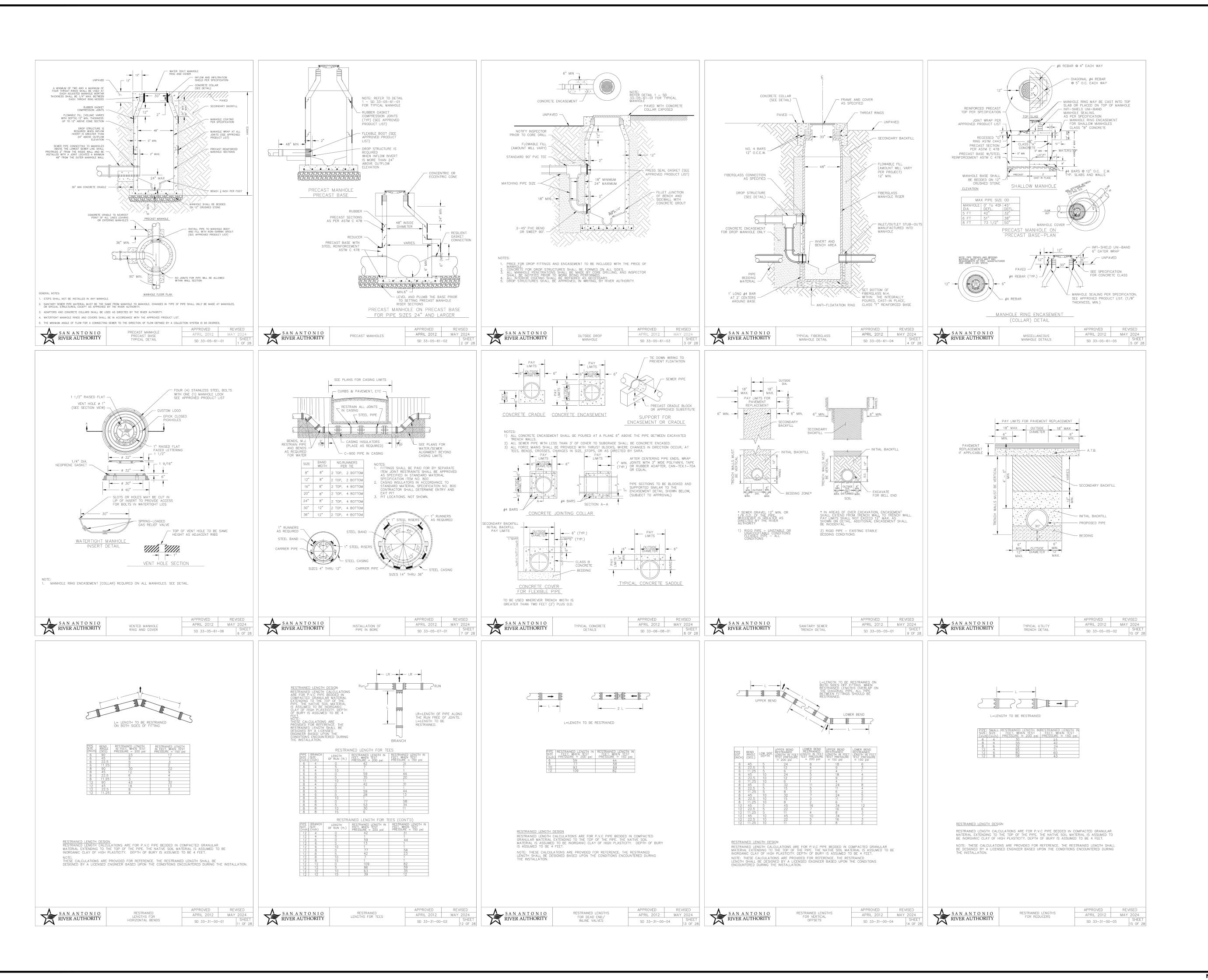
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SEWER / WATER CROSSING REFERENCE THIS SHEET FOR DETAIL

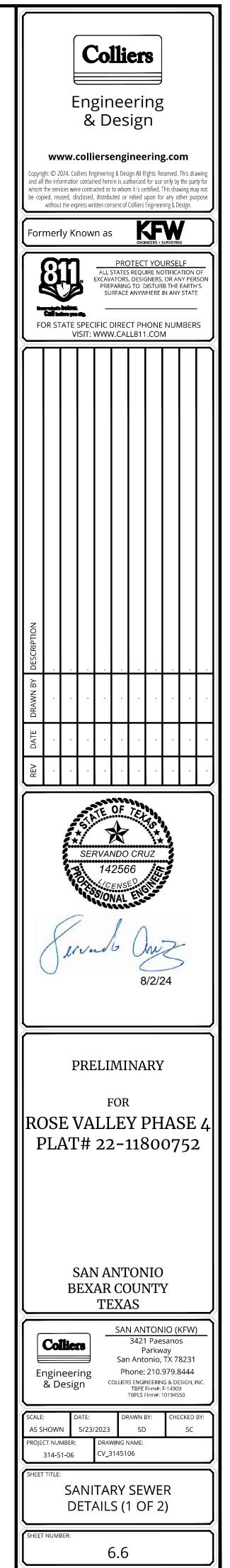
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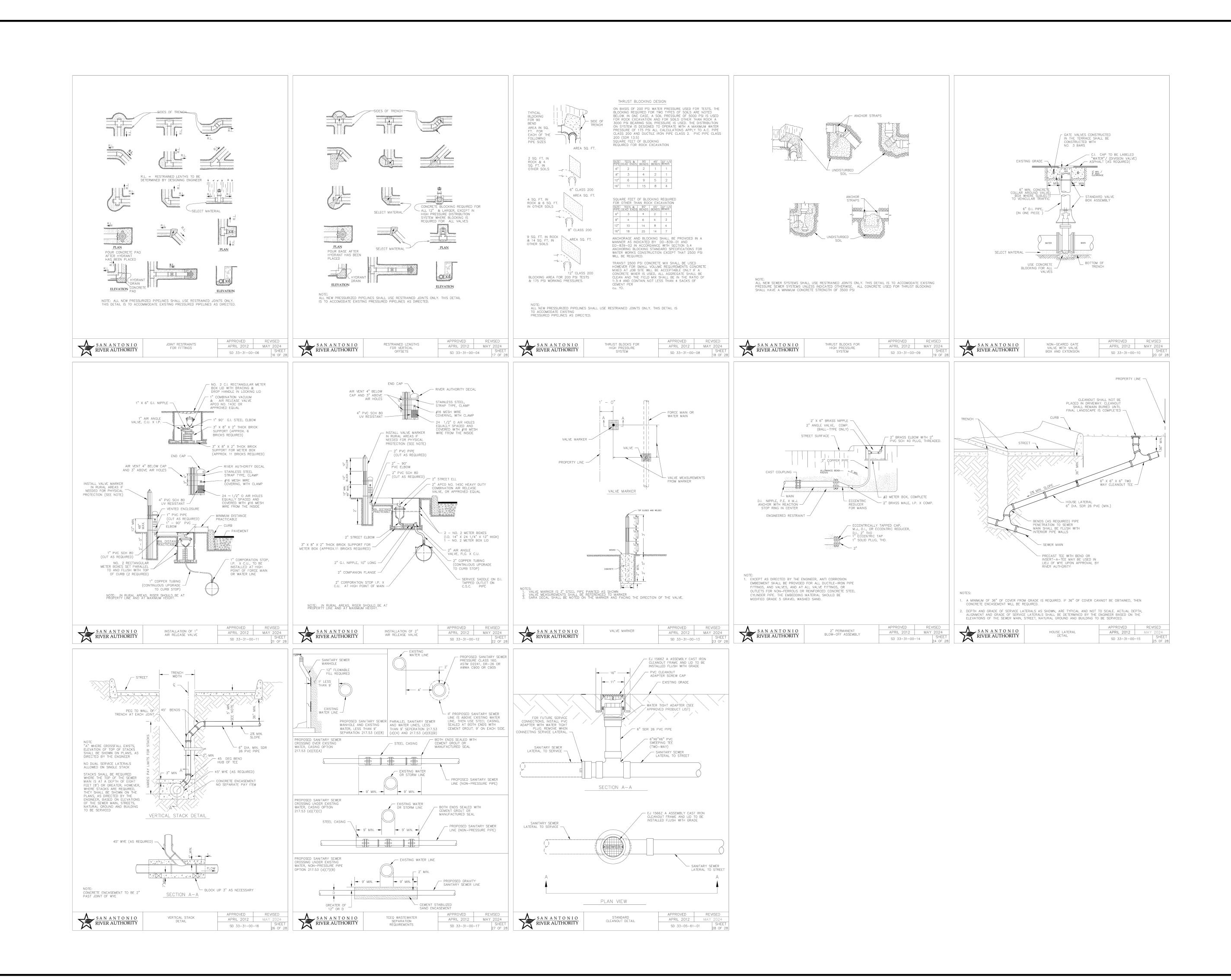






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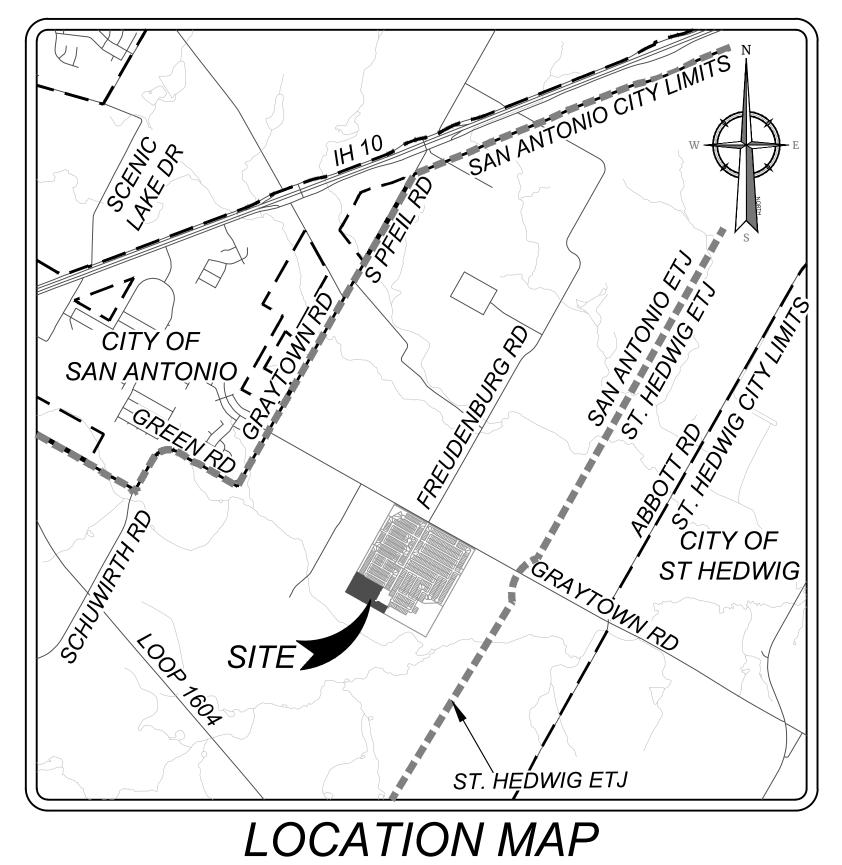
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|                               | PRELIMINARY<br>FOR<br>ROSE VALLEY PHASE 4<br>PLAT# 22-11800752   |                             |           |    |                     |                                       |   |   |                                   | •   |
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| AS<br>PRC                     | SCALE:     DATE:     DRAWN BY:     CHECKED BY:       AS SHOWN     5/23/2023     SD     SC       PROJECT NUMBER:     DRAWING NAME:     314-51-06     CV_3145106   |                             |           |    |                     |                                       |   |   |                                   | BY: |
| SHE                           | SHEET TITLE:<br>SANITARY SEWER<br>DETAILS (2 OF 2)   |                             |           |    |                     |                                       |   |   |                                   | 1   |
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## GENERAL NOTES

- 1. ALL VALVES SHALL REMAIN CLOSED UNTIL MAINS HAVE BEEN DISINFECTED, FLUSHED, AND RELEASED FOR PUBLIC USE BY THE ENGINEER.
- 2. EXISTING UTILITIES SHOWN ARE TAKEN FROM VARIOUS UTILITY COMPANY RECORDS. CONTRACTORS SHALL VERIFY THE EXACT LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES, WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO BEGINNING CONSTRUCTION. CONTRACTORS SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING UTILITIES AND DRAINAGE STRUCTURES DURING CONSTRUCTION.
- ALL EXCAVATION SHALL BE UNCLASSIFIED REGARDLESS OF MATERIAL 3. ENCOUNTERED.
- 4. BIDDERS ARE NOTIFIED TO MAKE SUBSURFACE INVESTIGATIONS AS THEY DEEM NECESSARY. NO ADDITIONAL PAYMENT WILL BE MADE FOR WATER, SAND, GRAVEL OR OTHER UNSTABLE CONDITIONS ENCOUNTERED IN EXCAVATIONS.
- 5. DETOUR OF TRAFFIC AROUND WORK ACTIVITIES, MAINTENANCE OF TRAFFIC CONTROL SIGNS, AND FLAGMEN ARE THE CONTRACTOR'S RESPONSIBILITY. NO SEPARATE PAYMENT WILL BE MADE.
- 6. THE CONTRACTOR SHALL PROTECT ALL OPEN EXCAVATIONS AND EQUIPMENT FROM CHILDREN, PEDESTRIANS, AND VEHICLES IN THE AREA.
- 7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION OF ALL FENCES IN THE WORK AREA TO THEIR ORIGINAL CONDITION PRIOR TO COMPLETION OF THE CONTRACT. THIS SHALL APPLY TO ALL FENCES IN THE WORK AREA WHETHER THEY ARE SHOWN ON THE PLANS OR NOT.
- 8. CONTRACTOR SHALL PRESERVE ALL CONSTRUCTION STAKES, MARKS, ETC. ANY CONSTRUCTION STAKES, MARKS, ETC., DESTROYED OR REMOVED BY THE CONTRACTOR OR HIS EMPLOYEES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- 9. THE CONTRACTOR SHALL CONFER WITH EACH INDIVIDUAL PROPERTY OWNER AS TO THE LOCATION OF EACH INDIVIDUAL METER BOX.
- CONTRACTOR SHALL DISINFECT ALL NEW WATER MAINS BEFORE TYING INTO 10. EXISTING WATER MAINS.
- 11. ALL VALVES SHALL BE PERMANENTLY MARKED BY THE USE OF A VALVE MARKER. NO SEPARATE PAY ITEM.
- 12. 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 SITES(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
- 13. CONTRACTOR SHALL MAINTAIN FENCING FOR THE CONTAINMENT OF LIVESTOCK DURING CONSTRUCTION. ALL FENCES REMOVED FOR CONSTRUCTION SHALL BE REPLACED. ALL REQUIRED FENCING SHALL BE INCIDENTAL TO CONSTRUCTION AND NOT A SEPARATE PAY ITEM.
- 14. ALL DRIVEWAYS, INCLUDING DRAIN PIPES, CULVERTS AND HEADWALLS, DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR TO EQUAL OR BETTER THAN PRECONSTRUCTION CONDITION. ASPHALT DRIVES ARE NOT ALLOWED TO BE CUT WITHOUT OWNERS PERMISSION. INSTALLATION OF WATER MAINS CROSSING CONCRETE DRIVES WILL BE BORED. ALL DRAIN PIPE, CULVERT AND HEADWALL REPAIR SHALL BE INCIDENTAL TO CONSTRUCTION AND NOT A SEPARATE PAY ITEM. DRIVEWAY PAVEMENT REPAIR SHALL BE PAID FOR AS PER ITEM NO. 02950, "CUTTING AND PATCHING ASPHALT PAVEMENT, ASPHALT DRIVES, CONCRETE DRIVES, OR GRAVEL ROADS AND DRIVES". PAYMENT FOR BORES UNDER CONCRETE DRIVES DRIVES SHALL BE PAID FOR AS PER ITEM 02445 "BORING AND CASING PIPE UNDER HIGHWAYS, RAILROADS, OR OTHER AREAS".
- 15. LOCATIONS OF COMBINATION AIR VALVES WHERE SHOWN ON PLANS ARE APPROXIMATE. FINAL LOCATIONS TO BE ADJUSTED IN FIELD AT TIME OF CONSTRUCTION AT THE DIRECTION OF THE ENGINEER.
- 16. ALL WORK SHALL BE SCHEDULED TO TAKE PLACE ON MONDAY THROUGH FRIDAY, DURING NORMAL WORK HOURS. CONTRACTOR SHALL NOTIFY ECSUD 48 HOURS PRIOR TO SERVICE SHUT OFF AFFECTING CUSTOMERS. SERVICE SHALL NOT BE SHUT OFF FOR MORE THAN EIGHT (8) HOURS AT A TIME.
- 17. THE CONTRACTOR SHALL IMMEDIATELY REPAIR OR REPLACE ANY PHYSICAL DAMAGE TO PROPERTY, INCLUDING, BUT NOT LIMITED TO, FENCES, PAVEMENT, DRIVEWAYS, LAWNS, CULVERTS, AND TREES, AT NO COST TO THE OWNER.
- 18. THE CONTRACTOR SHALL PROVIDE EROSION CONTROL AT ALL CULVERT, STREAM AND DRAINAGE SWALE CROSSINGS. EROSION CONTROL MEASURES SHALL INCLUDE AS A MINIMUM SILT FENCES. SILT FENCES SHALL BE INSTALLED PRIOR TO DISTURBANCE OF THE WORK AREAS AND SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION OF THE DISTURBED AREAS UPSTREAM. EROSION CONTROL SHALL BE COORDINATED WITH THE ENGINEER.
- 19. THE CONTRACTOR SHALL REMOVE AND REPLACE ANY MAILBOXES. TRAFFIC OR ROAD SIGNS ENCOUNTERED. NO SEPARATE PAY ITEM.
- 20. CONTRACTOR SHALL SUBMIT TO ENGINEER PROPOSED CONSTRUCTION SEQUENCE PRIOR TO BEGINNING CONSTRUCTION.
- 21. ALL FITTINGS ARE TO BE DUCTILE IRON, MECHANICAL JOINT TYPE, UNLESS OTHERWISE NOTED ON PLANS.
- 22. ALL THRUST BLOCKS SHALL BE INSPECTED BY OWNER AND/OR ENGINEER PRIOR TO BACKFILLING.
- 23. ALL EXISTING VALVES SHOWN ON PLANS TO BE ABANDONED, SHALL HAVE BOXES REMOVED AND SHALL BE BACKFILLED ACCORDING TO SPECIFICATIONS. NO SEPARATE PAY ITEM.
- 24. CONTRACTOR SHALL CONTAIN ALL CONSTRUCTION AND STAGING WITHIN EXISTING UTILITY EASEMENTS, UNLESS OTHER ARRANGEMENTS ARE MADE WITH OWNER AND/OR TxDOT.
- 25. WHERE THE NEW WATER MAIN SHOWN ON THE PLANS REQUIRES CROSSING AN EXISTING WATER MAIN OR OTHER UTILITY. THE CONTRACTOR SHALL VERTICALLY DEFLECT THE PRO-POSED WATER MAIN. DEFLECTION SHALL BE IN ACCORDANCE WITH THE PIPE MANU-FACTURER'S RECOMMENDATIONS. FITTINGS ARE NOT PERMISSIBLE, UNLESS OTHERWISE SHOWN ON THE PLANS. NO SEPARATE PAY ITEM.

# ROSE VALLEY PHASE 4 BEXAR COUNTY, TEXAS WATER IMPROVEMENTS



N.T.S.

OWNER/DEVELOPER: LENNAR HOMES 100 NE LOOP 410, SUITE 1155 SAN ANTONIO, TEXAS 78216 PHONE: (210) 403-6200

## INDEX

| SHEET NO. |
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| 7.1       |
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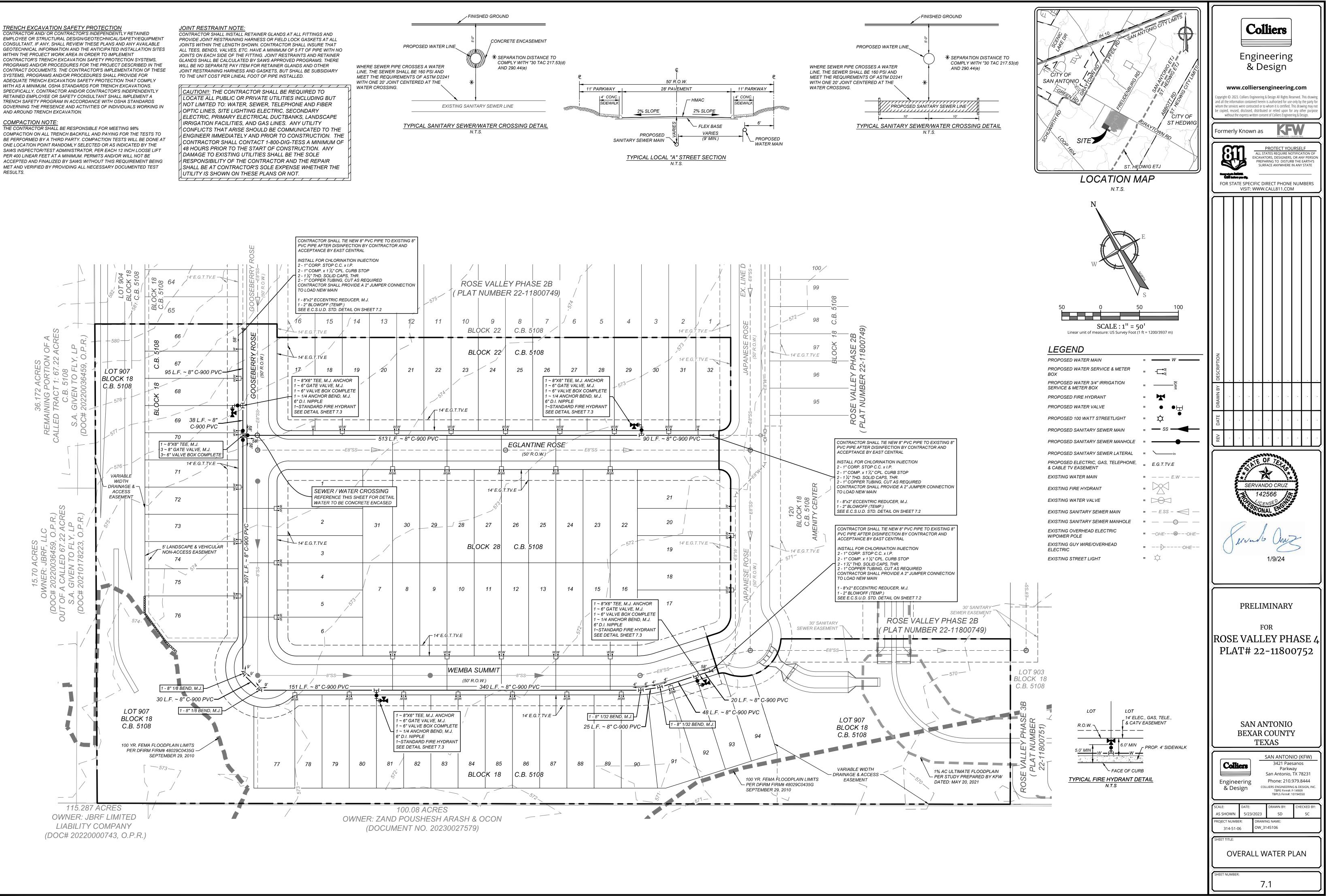
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EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS,

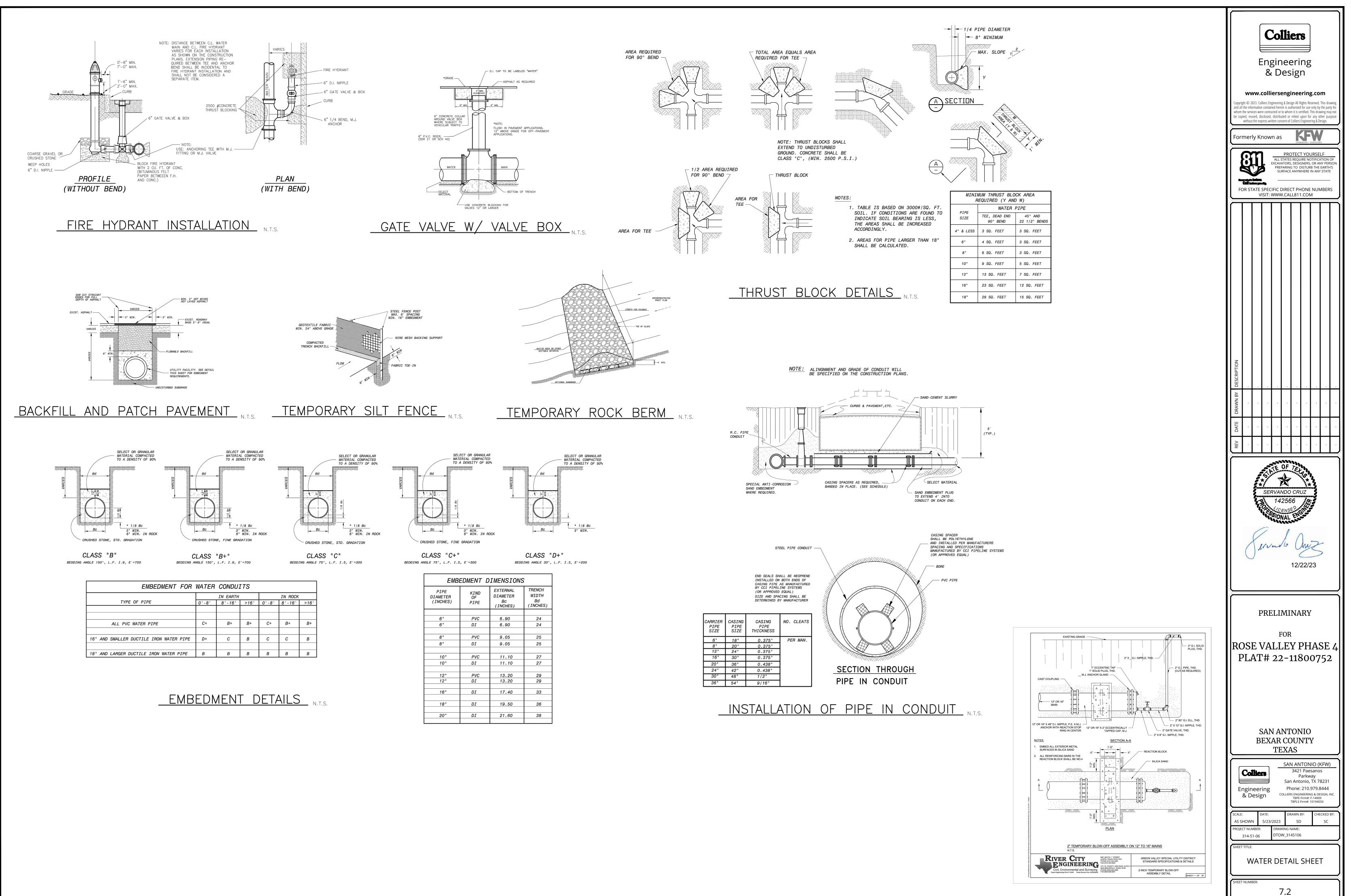
CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE 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.

## COMPACTION NOTE:

COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTRATOR, PER EACH 12 INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. PERMITS AND/OR WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING

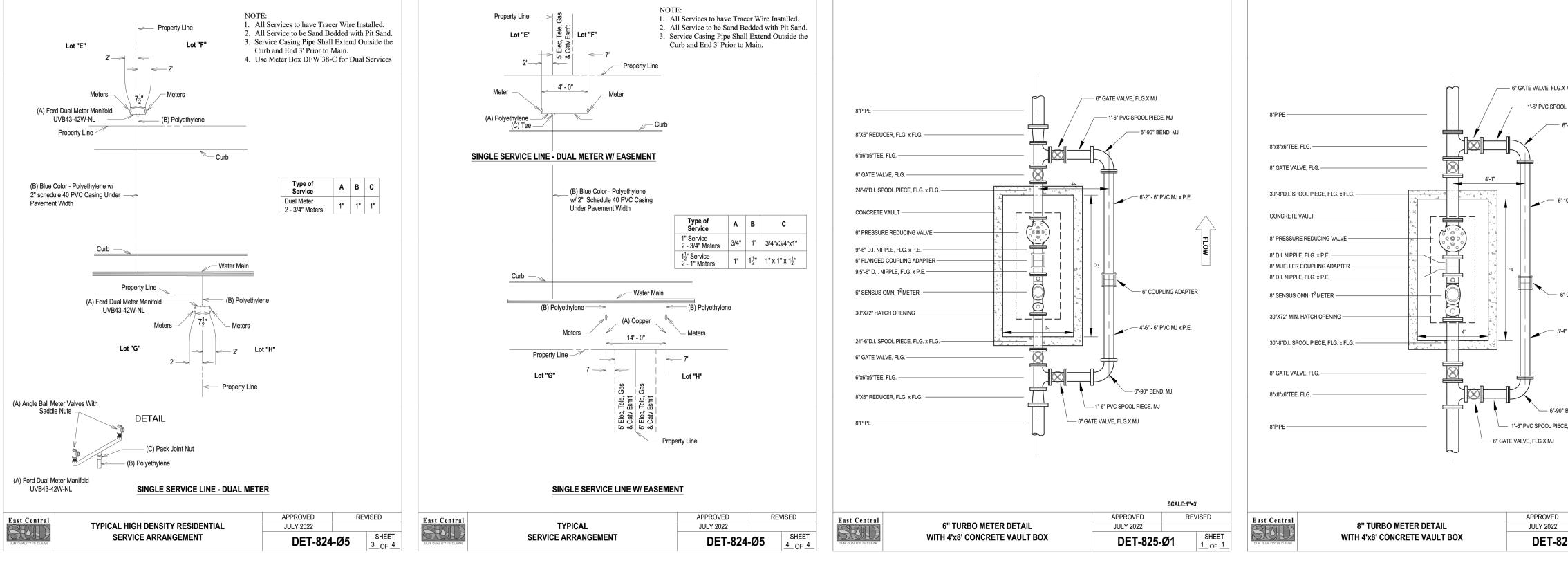


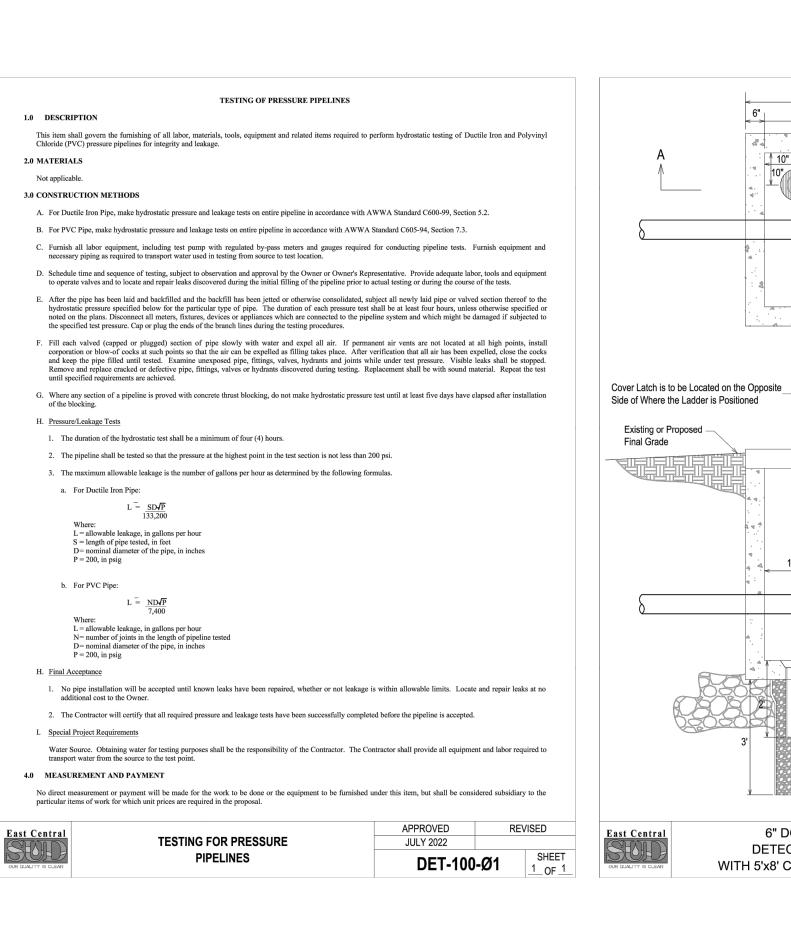
NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

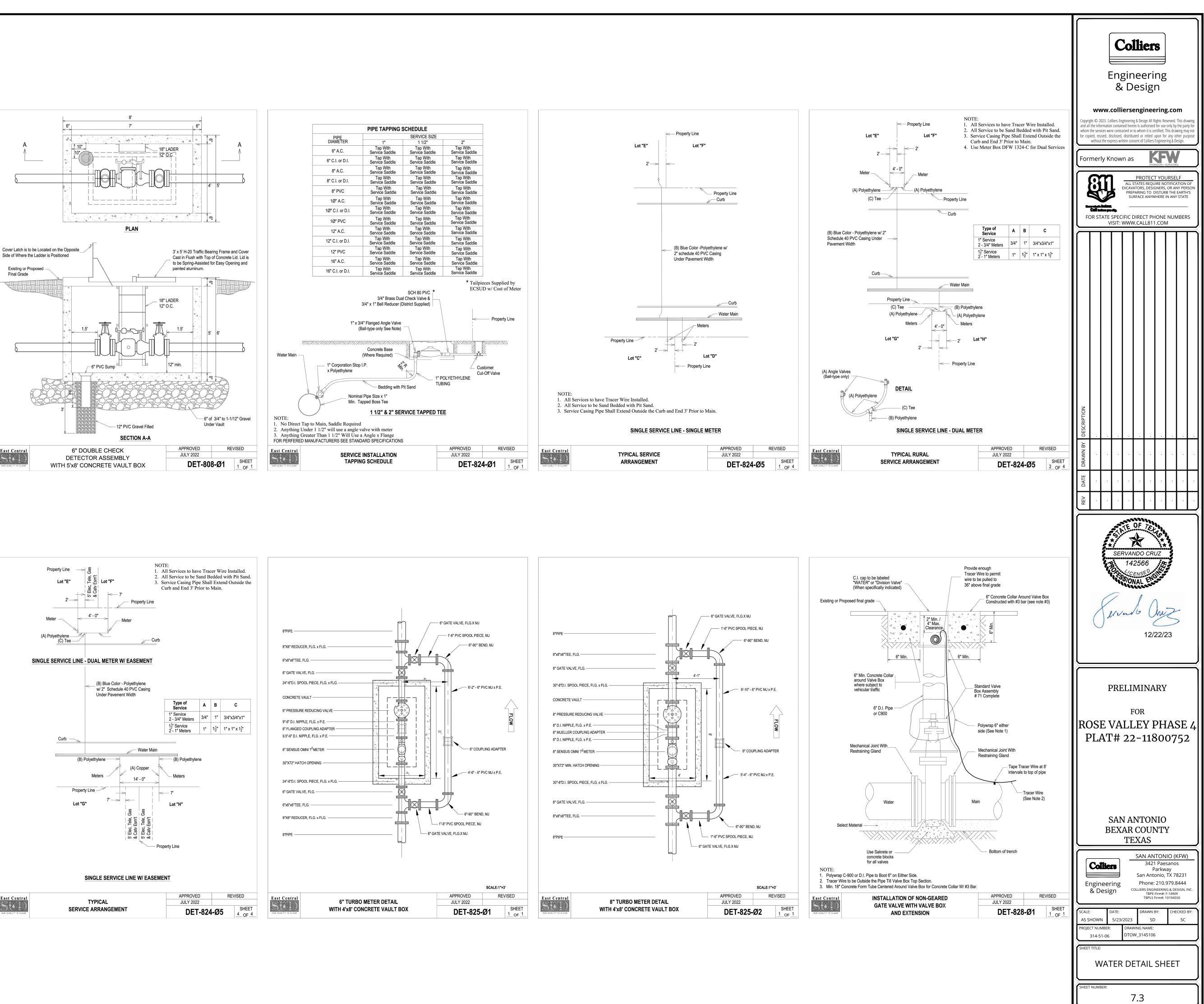


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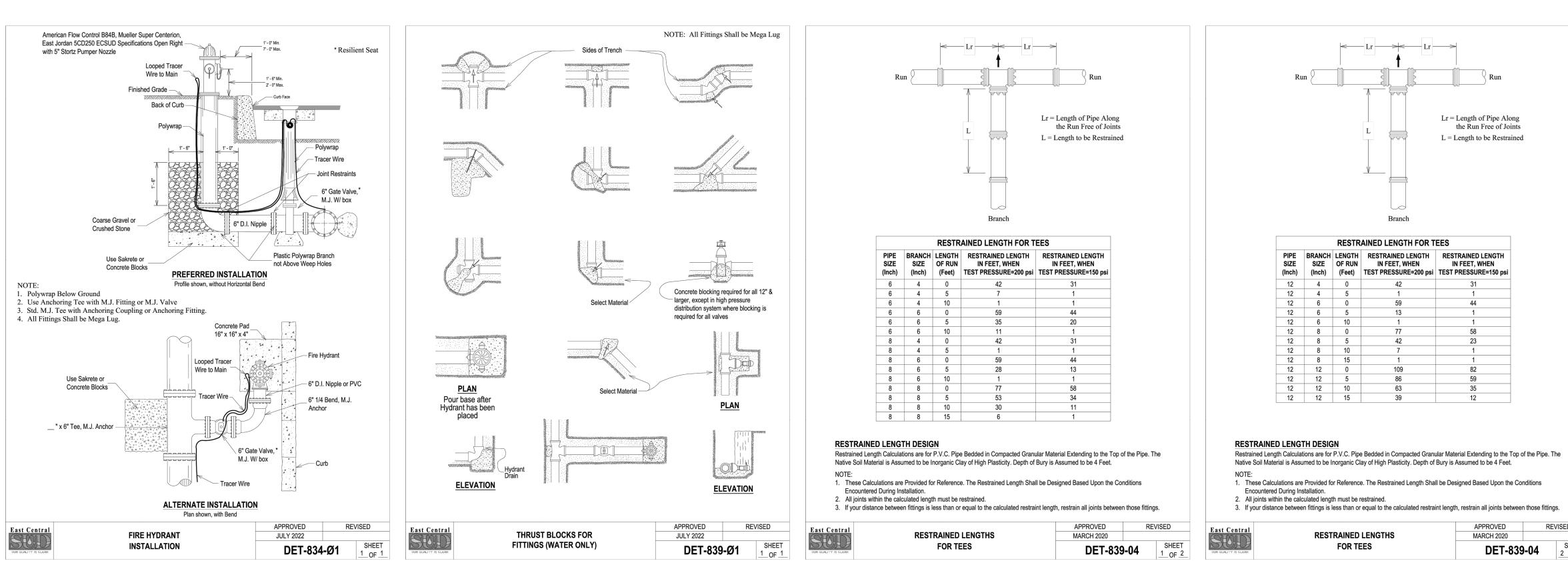
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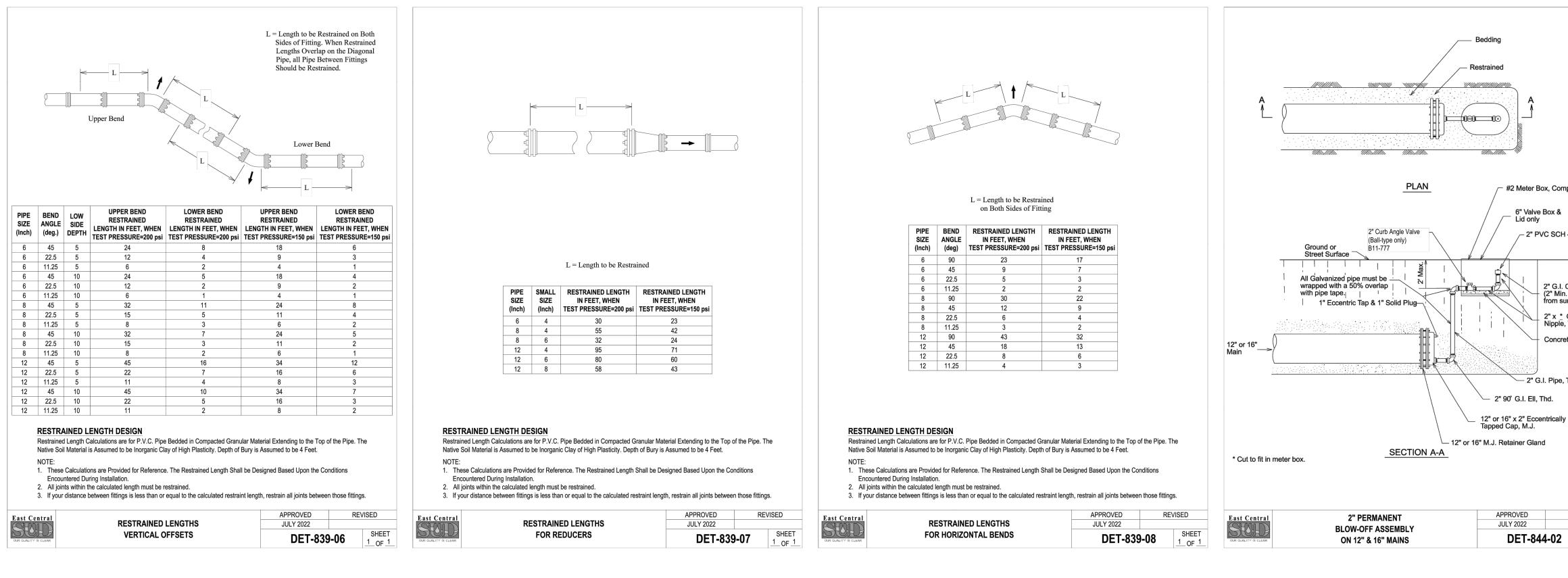




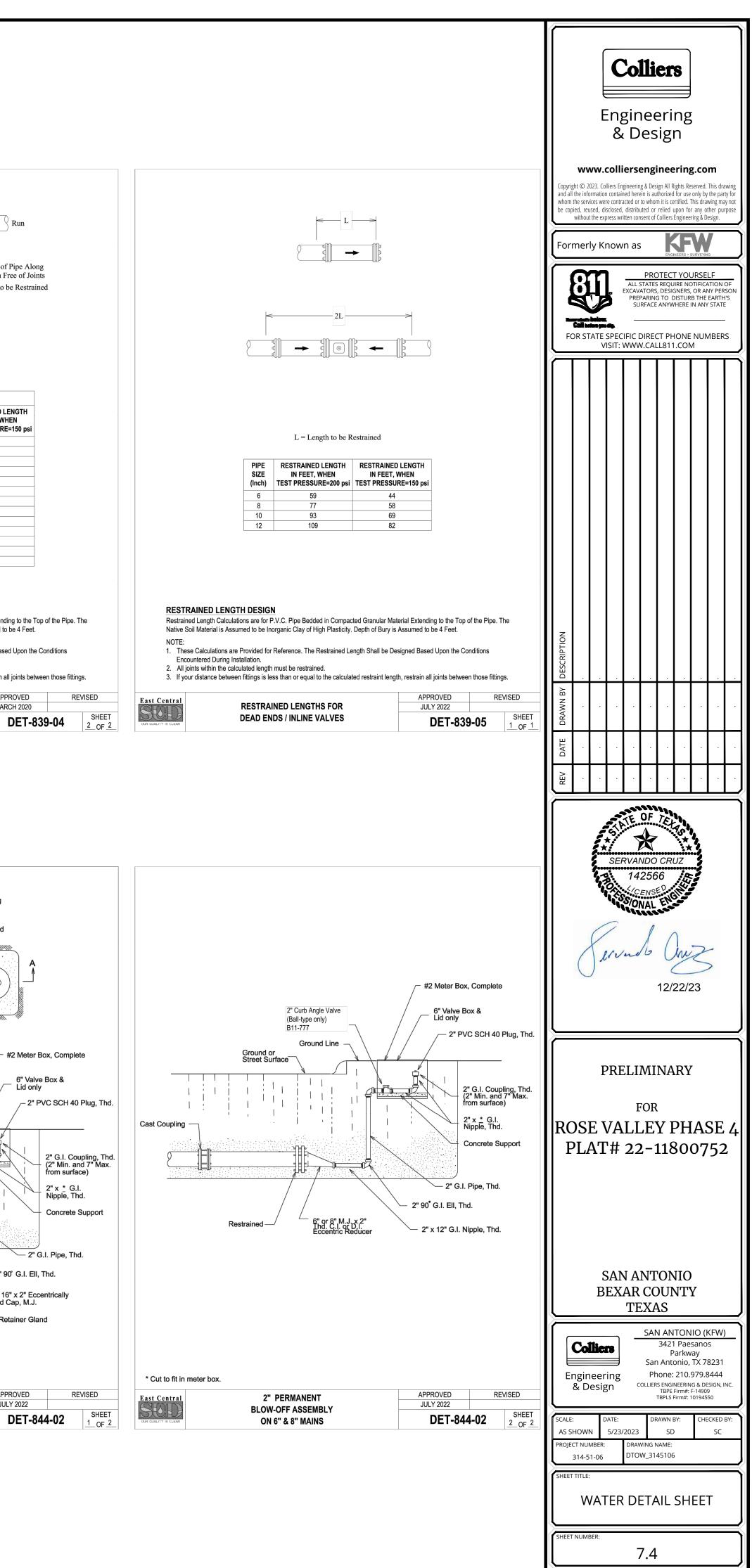


NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.





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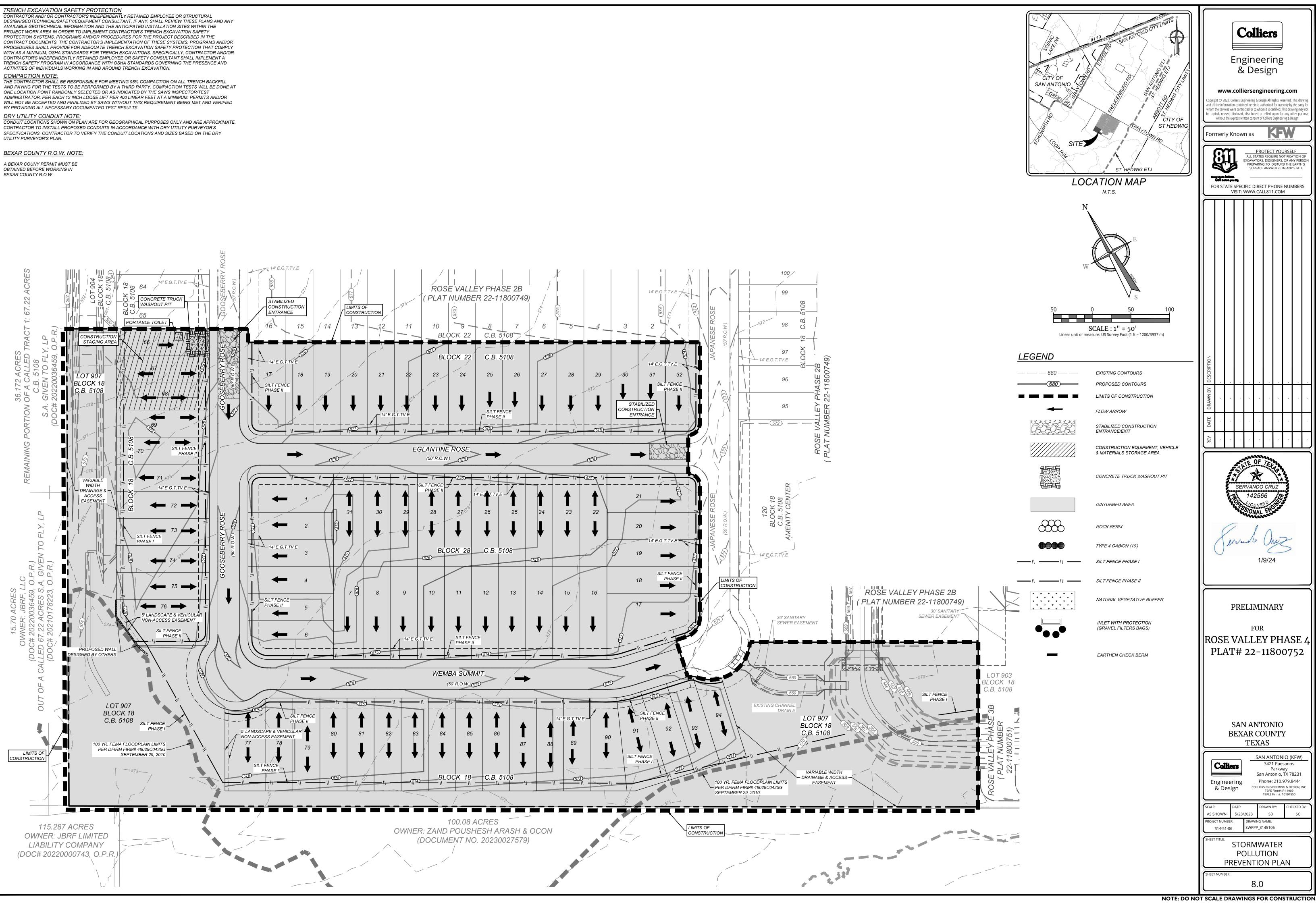


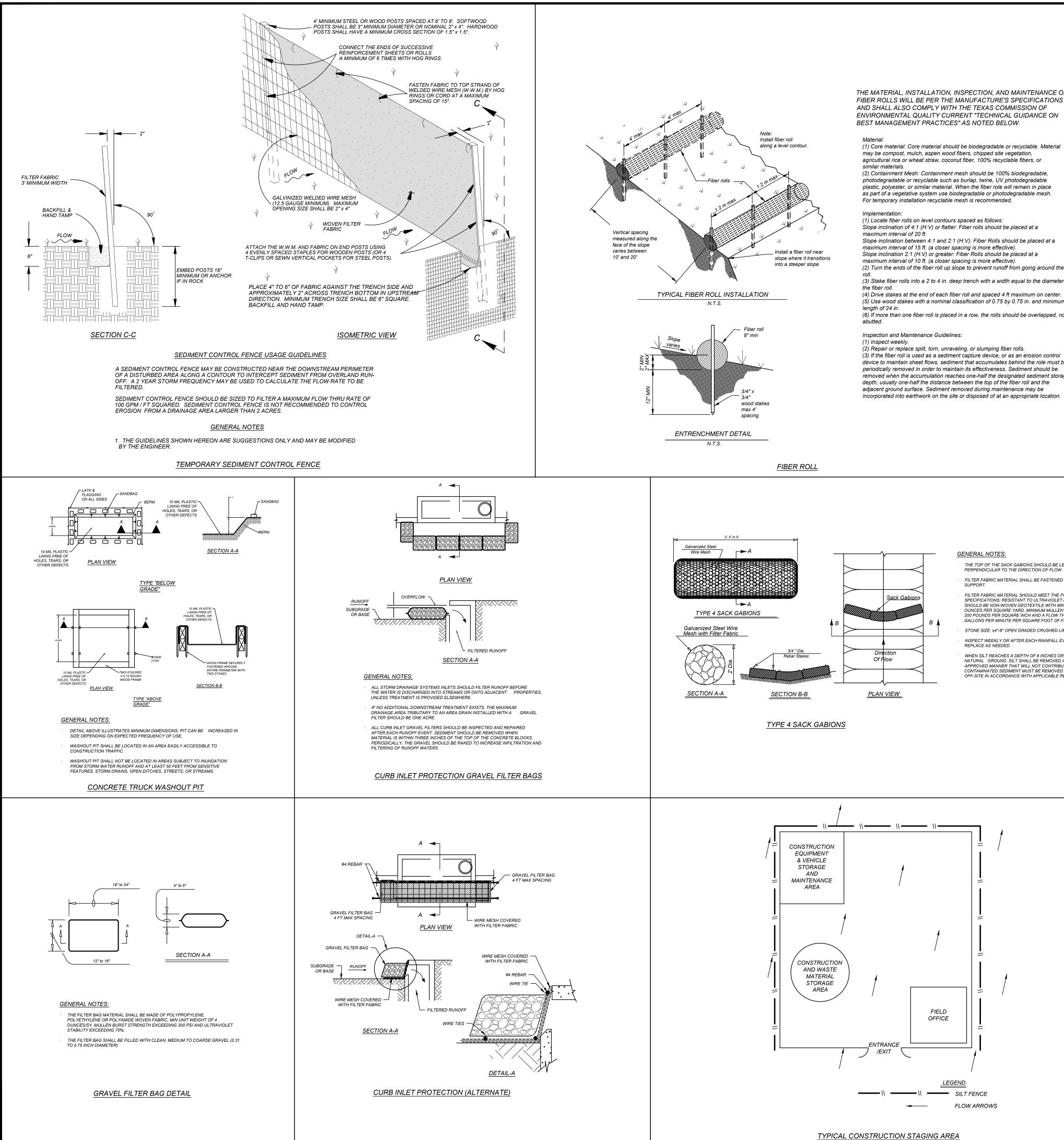
NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

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

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTRATOR, PER EACH 12 INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. PERMITS AND/OR WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

CONTRACTOR TO INSTALL PROPOSED CONDUITS IN ACCORDANCE WITH DRY UTILITY PURVEYOR'S SPECIFICATIONS. CONTRACTOR TO VERIFY THE CONDUIT LOCATIONS AND SIZES BASED ON THE DRY





THE MATERIAL, INSTALLATION, INSPECTION, AND MAINTENANCE OF FIBER ROLLS WILL BE PER THE MANUFACTURE'S SPECIFICATIONS AND SHALL ALSO COMPLY WITH THE TEXAS COMMISSION OF ENVIRONMENTAL QUALITY CURRENT "TECHNICAL GUIDANCE ON BEST MANAGEMENT PRACTICES" AS NOTED BELOW.

may be compost, mulch, aspen wood fibers, chipped site vegetation, agricultural rice or wheat straw, coconut fiber, 100% recyclable fibers, or

(2) Containment Mesh: Containment mesh should be 100% biodegradable, photodegradable or recyclable such as burlap, twine, UV photodegradable plastic, polyester, or similar material. When the fiber role will remain in place as part of a vegetative system use biodegradable or photodegradable mesh. For temporary installation recyclable mesh is recommended.

## (1) Locate fiber rolls on level contours spaced as follows:

Slope inclination between 4:1 and 2:1 (H:V): Fiber Rolls should be placed at a maximum interval of 15 ft. (a closer spacing is more effective). Slope inclination 2:1 (H:V) or greater: Fiber Rolls should be placed at a maximum interval of 10 ft. (a closer spacing is more effective).

(2) Turn the ends of the fiber roll up slope to prevent runoff from going around the (3) Stake fiber rolls into a 2 to 4 in. deep trench with a width equal to the diameter of

(4) Drive stakes at the end of each fiber roll and spaced 4 ft maximum on center. (5) Use wood stakes with a nominal classification of 0.75 by 0.75 in. and minimum

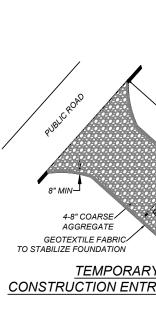
(6) If more than one fiber roll is placed in a row, the rolls should be overlapped, not

### Inspection and Maintenance Guidelines:

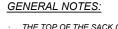
(2) Repair or replace split, torn, unraveling, or slumping fiber rolls. (3) If the fiber roll is used as a sediment capture device, or as an erosion control device to maintain sheet flows, sediment that accumulates behind the role must be periodically removed in order to maintain its effectiveness. Sediment should be removed when the accumulation reaches one-half the designated sediment storage depth, usually one-half the distance between the top of the fiber roll and the adjacent ground surface. Sediment removed during maintenance may be

FIFI D OFFICE SILT FENCE FLOW ARROWS

TYPICAL CONSTRUCTION STAGING AREA



SEOTEXTILE.



- THE TOP OF THE SACK GABIONS SHOULD BE LEVEL AND ORIENTED PERPENDICULAR TO THE DIRECTION OF FLOW. FILTER FABRIC MATERIAL SHALL BE FASTENED TO WOVEN WIRE
- FILTER FABRIC MATERIAL SHOULD MEET THE FOLLOWING SPECIFICATIONS: RESISTANT TO ULTRAVIOLET LIGHT, FABRIC VEN GEOTEXTILE WITH MINIMUM WEIGHT OF DUNCES PER SQUARE YARD. MINIMUM MULLEN BURST STRENGTH OF POUNDS PER SQUARE INCH AND A FLOW THRU RATE OF 120 GALLONS PER MINUTE PER SQUARE FOOT OF FRONTAL AREA.
- STONE SIZE: ±4"-8" OPEN GRADED CRUSHED LIMESTONE. NSPECT WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACE AS NEEDED.
- WHEN SILT REACHES A DEPTH OF 6 INCHES OR MORE ABOVE NATURAL GROUND, SILT SHALL BE REMOVED AND DISPOSED IN AN APPROVED MANNER THAT WILL NOT CONTRIBUTE TO RESILTATION. CONTAMINATED SEDIMENT MUST BE REMOVED AND DISPOSED OF FF-SITE IN ACCORDANCE WITH APPLICABLE REGULATIONS.

USED TO ANCHOR THE BERM.

WITH 1-INCH OPENINGS SECTION 2.4.3.

MANNER.

