GENERAL INFORMATION

GENERAL NOTES

- ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR CONSTRUCTION
 JUNE 2008, OR LATEST.
- 2. 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
- 3. 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 OF THE TRAFFIC ENGINEERING REPRESENTATIVE AND THE CONSTRUCTION INSPECTOR, THE BARRICADES AND SIGNS DO NOT 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.
- 5. 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.
- 7. 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.
- 9. 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)
COSA DRAINAGE
COSA SIGNAL OPERATIONS

3-2010 4-6538 / 357-5741 17-8048 7-7720 / 207-7765

COSA DRAINAGE
COSA SIGNAL OPERATIONS
TEXAS STATE WIDE ONE CALL LOCATOR
CITY PUBLIC SERVICE ENERGY - TIME WARNER - AT&T - MCI

- D. 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 AND 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.
- 11. 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.
- 12. THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIAL IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN DEVELOPMENT PERMIT.
- 13. THE CONTRACTOR SHALL MAINTAIN ALL ADJOINING STREETS AND TRAVELED ROUTES FREE FROM SPILLED AND / OR TRACKED CONSTRUCTION MATERIALS AND / OR DEBRIS.
- 4. 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 WORK 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.
- 15. 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 OF 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.
- 16. 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.
- 17. 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 CONTRACTOR 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.

TREE 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
- 3. 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.
- 4. ROOTS WILL BE CUT WITH A ROCK SAW OR BY HAND, NOT BY AN EXCAVATOR OR OTHER ROAD CONSTRUCTION EQUIPMENT.
- 5. ALL CURB AND SIDEWALK WORK SHALL USE ALTERNATIVE CONSTRUCTION METHODS TO MINIMIZE EXTENSIVE ROOT DAMAGE TO TREES (REFER TO DETAILS).
- EXPOSED ROOTS SHALL BE COVERED AT THE END OF THE DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH, OR WET BURLAP.
- 7. 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.
- 8. 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.
- 9. NO WIRES, NAILS OR OTHER MATERIAL MAY BE ATTACHED TO PROTECTED TREES.
- 10. 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.
- 12. 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).
- 13. 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.
- 14. ANY TREE REMOVAL SHALL BE APPROVED BY THE CITY ARBORIST. (207-0278).

SO THAT ALTERNATE PLANS MAY BE MADE BY THE RESIDENTS.

- TREES WHICH ARE DAMAGED OR LOST DUE TO THE CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE
- 16. 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.

ACCESSIBILITY REQUIREMENTS

1. 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

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 2B

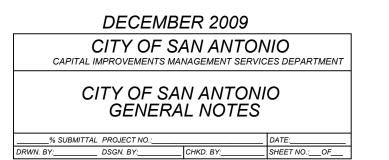
BEXAR COUNTY, TEXAS STREET, DRAINAGE, WATER, SANITARY SEWER, AND UTILITY IMPROVEMENTS



LOCATION MAP

N.T.S.

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



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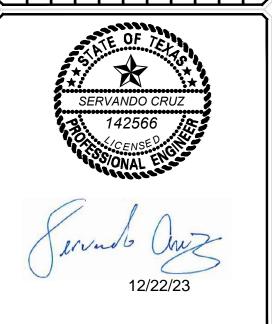
DESCRIPTION	SHEET
DESCRIPTION	NO.
COVER SHEET	0.0
OVERALL UTILITY PLAN	1.0
OVERALL UTILITY PLAN	1.1
MASTER DRAINAGE PLAN	2.0
OVERALL GRADING PLAN	3.0
OVERALL GRADING PLAN	3.1
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| SHEET | NO. | FOR STATE SPECIFIC DIRECT PHONE NUMBERS SURFACE ANYWHERE IN ANY STATE | SURFACE | SURFAC



PRELIMINARY

FOR
ROSE VALLEY
PHASE 2B
PLAT# 22-11800749

SAN ANTONIO BEXAR COUNTY TEXAS

ColliersEngineering & Design

3421 Paesanos
Parkway
San Antonio, TX 78231

Phone: 210.979.8444

COLLIERS ENGINEERING & DESIGN, IN
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

SAN ANTONIO (KFW)

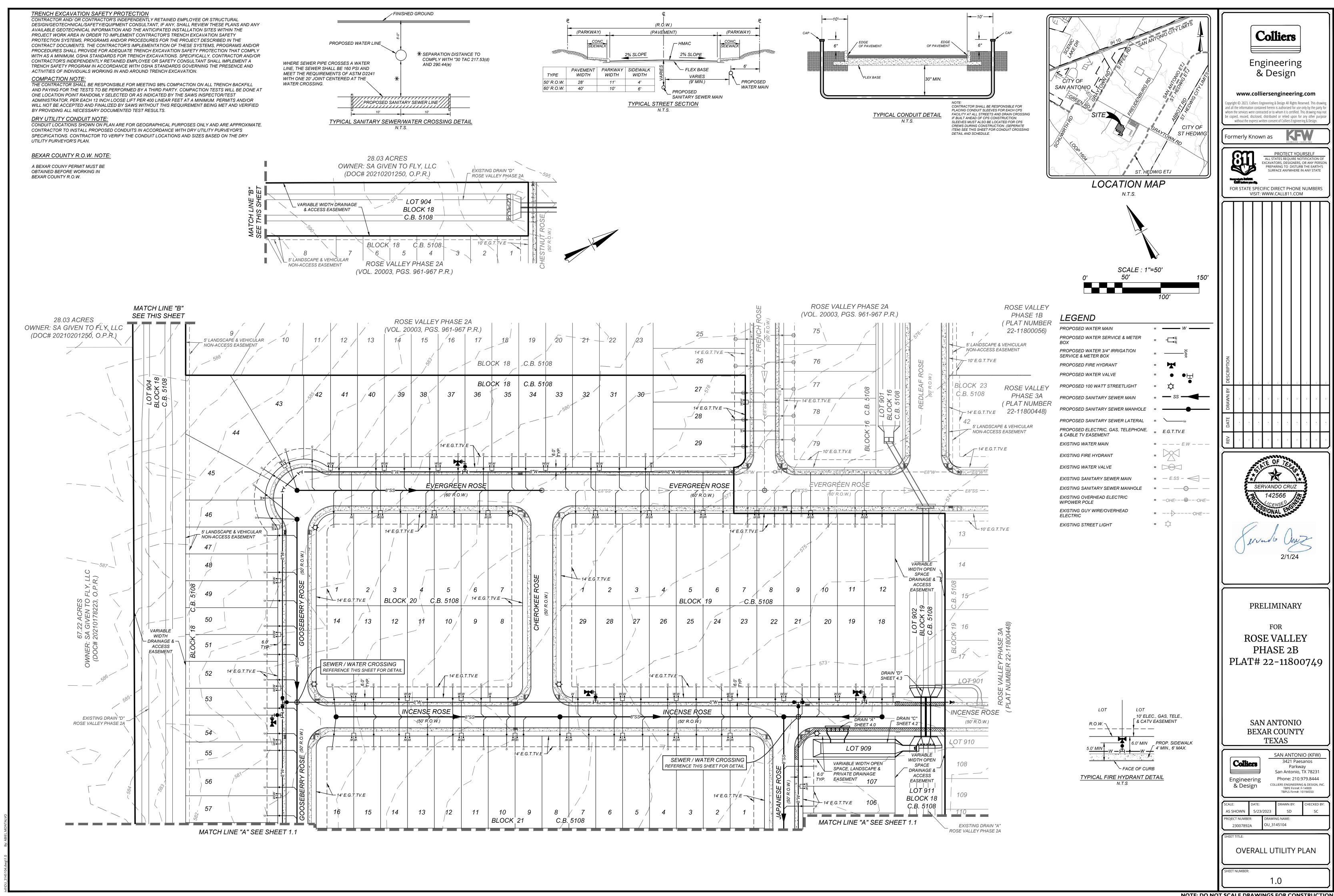
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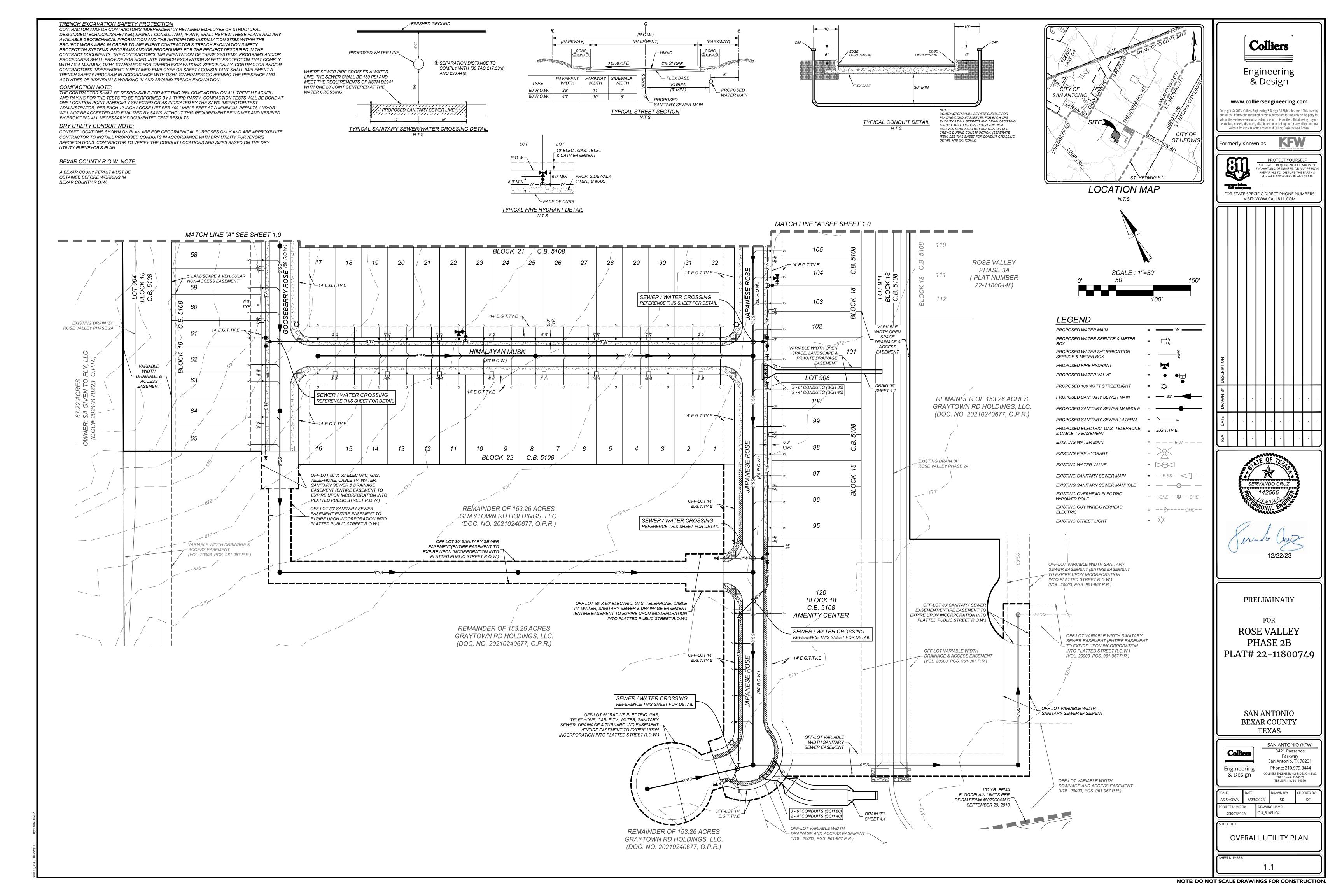
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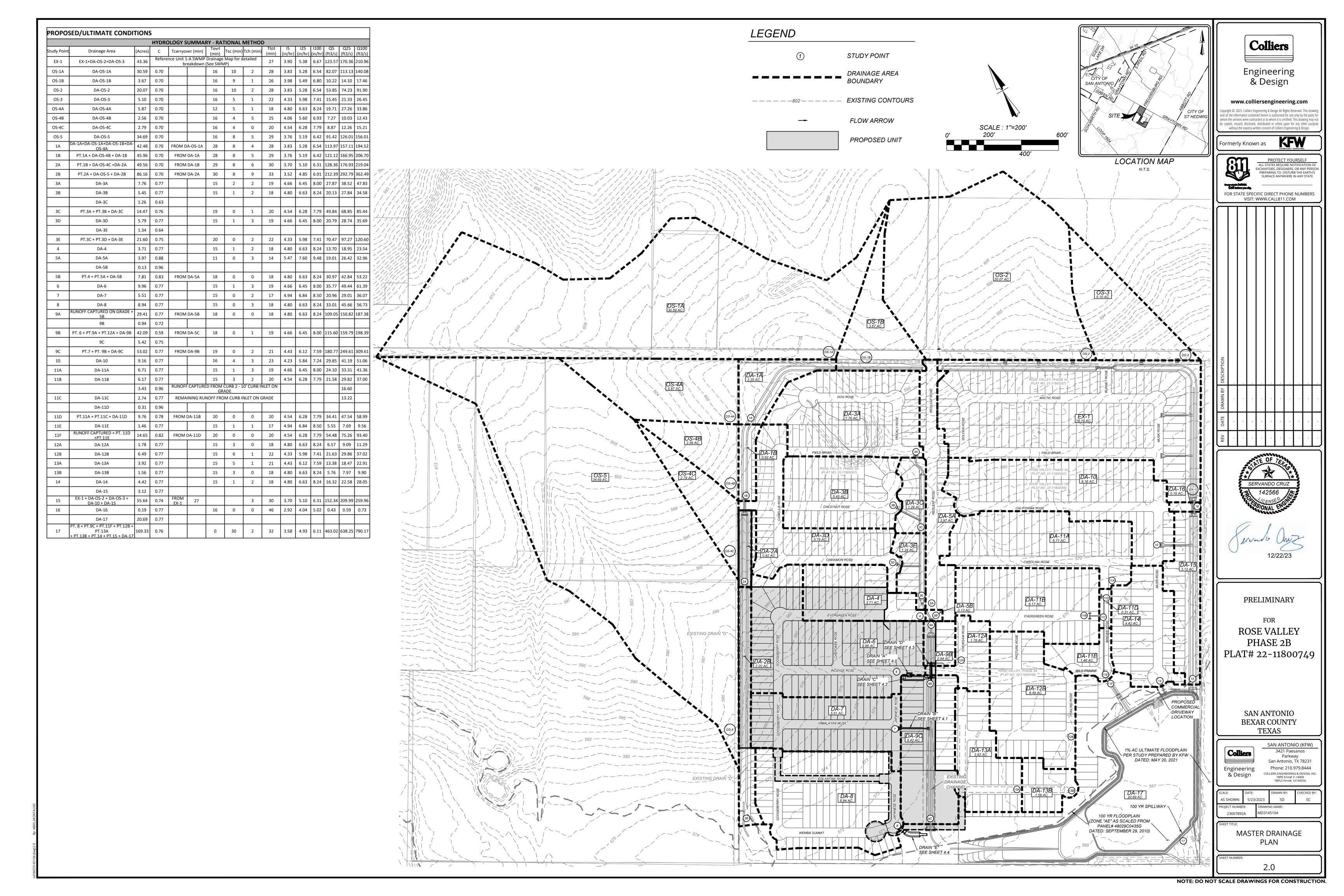
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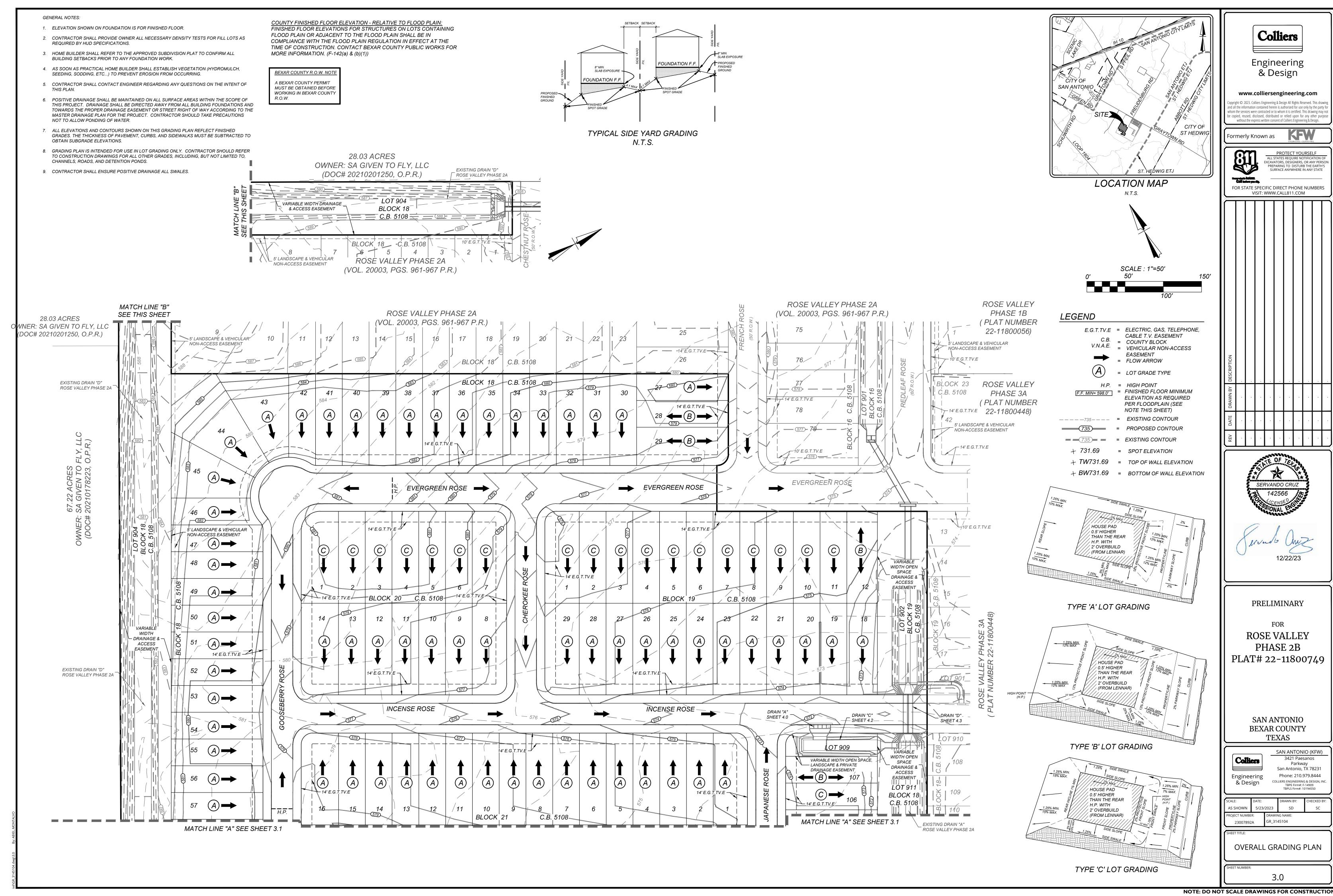
COVER SHEET

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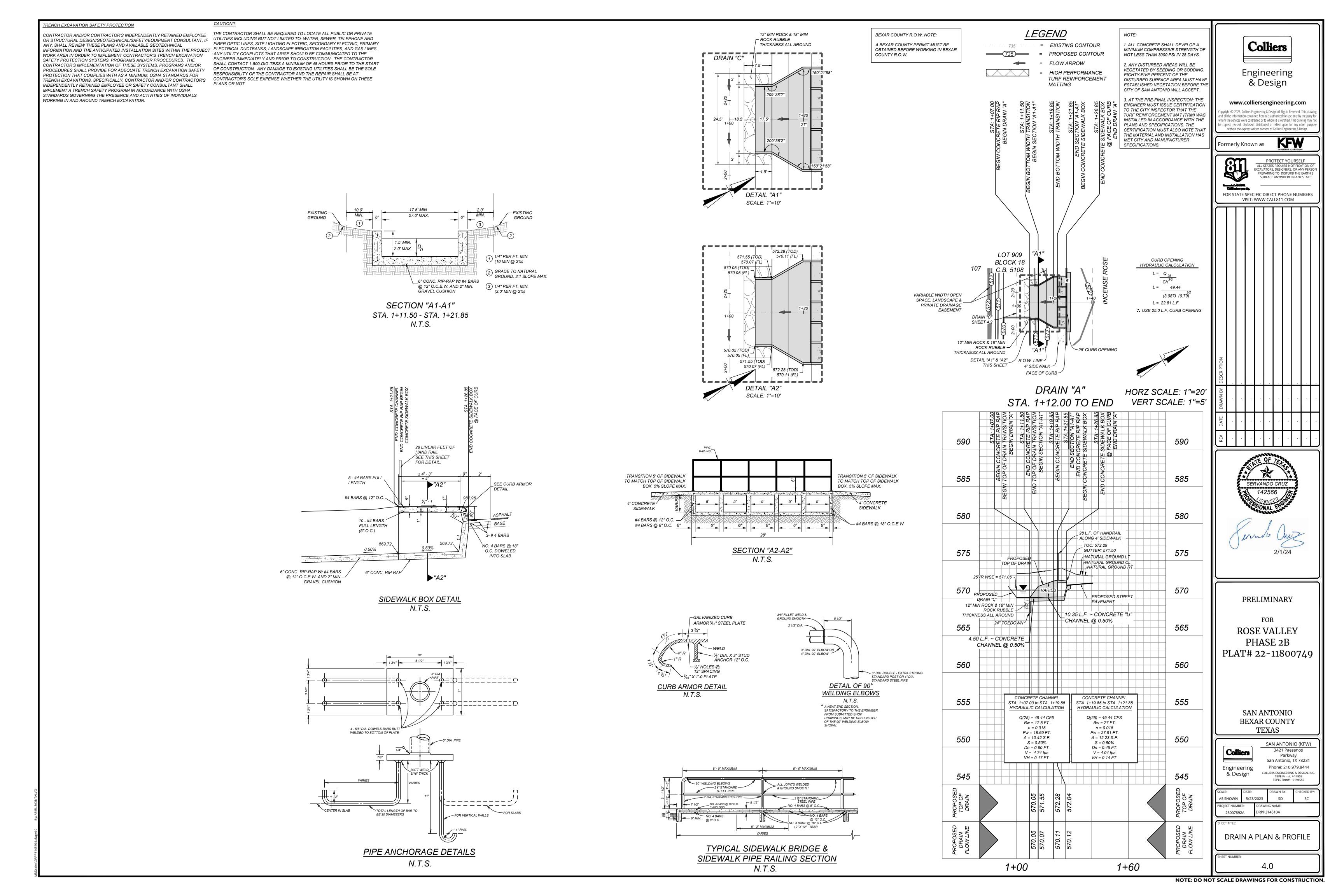


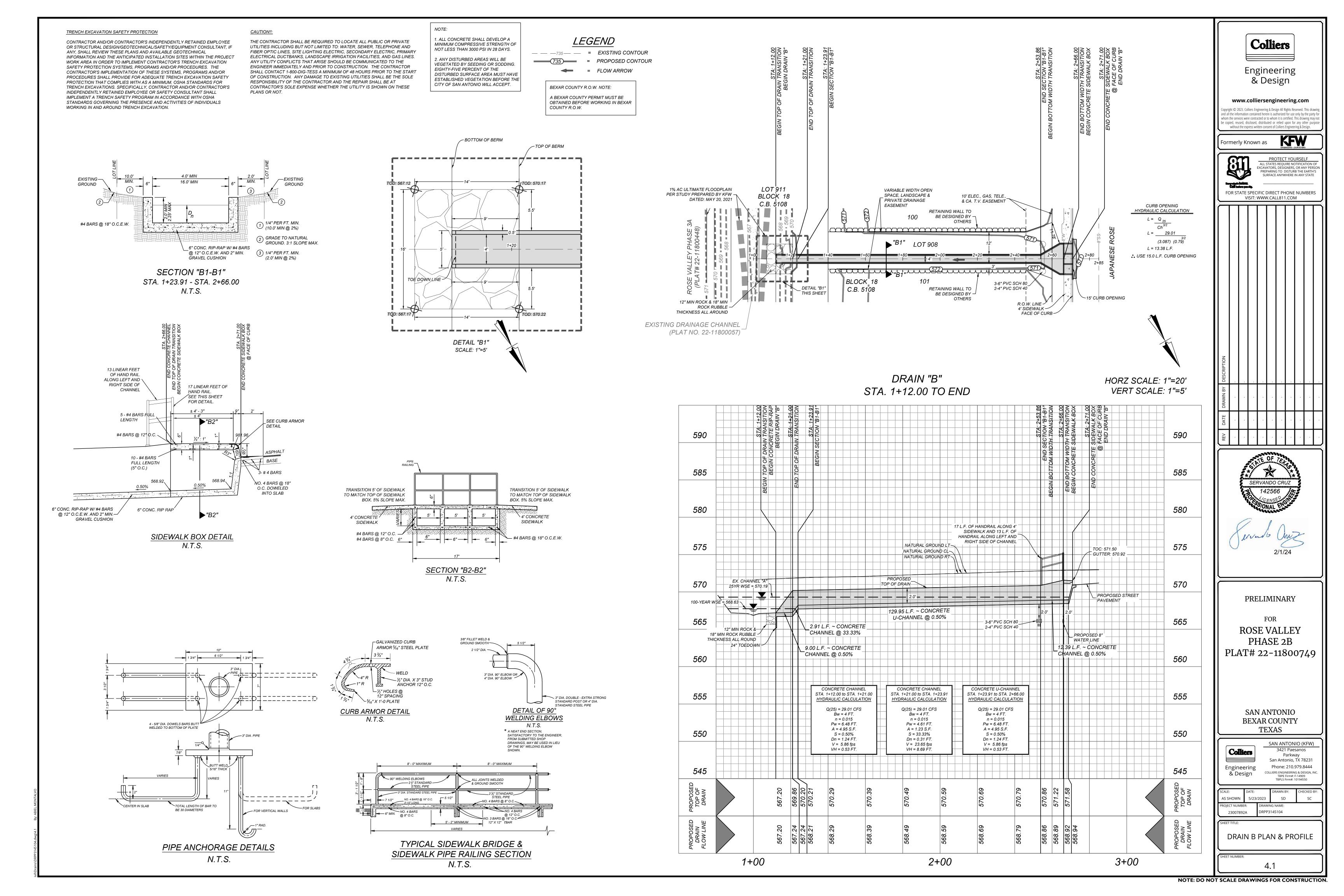






GENERAL NOTES: COUNTY FINISHED FLOOR ELEVATION - RELATIVE TO FLOOD PLAIN: 1. ELEVATION SHOWN ON FOUNDATION IS FOR FINISHED FLOOR. FINISHED FLOOR ELEVATIONS FOR STRUCTURES ON LOTS CONTAINING **Colliers** FLOOD PLAIN OR ADJACENT TO THE FLOOD PLAIN SHALL BE IN 2. CONTRACTOR SHALL PROVIDE OWNER ALL NECESSARY DENSITY TESTS FOR FILL LOTS AS COMPLIANCE WITH THE FLOOD PLAIN REGULATION IN EFFECT AT THE REQUIRED BY HUD SPECIFICATIONS. TIME OF CONSTRUCTION. CONTACT BEXAR COUNTY PUBLIC WORKS FOR 1.25% MIN 12% MAX 3. HOME BUILDER SHALL REFER TO THE APPROVED SUBDIVISION PLAT TO CONFIRM ALL MORE INFORMATION. (F-142(a) & (b)(1)) BUILDING SETBACKS PRIOR TO ANY FOUNDATION WORK. Engineering 4. AS SOON AS PRACTICAL HOME BUILDER SHALL ESTABLISH VEGETATION (HYDROMULCH, HOUSE PAD BEXAR COUNTY R.O.W. NOTE & Design HOUSE PAD **HOUSE PAD** SEEDING, SODDING, ETC...) TO PREVENT EROSION FROM OCCURRING. 0.5' HIGHER 0.5' HIGHER 0.5' HIGHER THAN THE REAR A BEXAR COUNTY PERMIT THAN THE REAR THAN THE REAR 5. CONTRACTOR SHALL CONTACT ENGINEER REGARDING ANY QUESTIONS ON THE INTENT OF H.P. WITH SAN ANTONIO MUST BE OBTAINED BEFORE H.P. WITH HP WITH 2' OVERBUILD WORKING IN BEXAR COUNTY , 2' OVERBUILD 2' OVERBUILD www.colliersengineering.com (FROM LENNAR) (FROM LENNAR) (FROM LENNAR) 6. POSITIVE DRAINAGE SHALL BE MAINTAINED ON ALL SURFACE AREAS WITHIN THE SCOPE OF pyright © 2023. Colliers Engineering & Design All Rights Reserved. This draw THIS PROJECT. DRAINAGE SHALL BE DIRECTED AWAY FROM ALL BUILDING FOUNDATIONS AND TOWARDS THE PROPER DRAINAGE EASEMENT OR STREET RIGHT OF WAY ACCORDING TO THE hom the services were contracted or to whom it is certified. This drawing may MASTER DRAINAGE PLAN FOR THE PROJECT. CONTRACTOR SHOULD TAKE PRECAUTIONS e copied, reused, disclosed, distributed or relied upon for any other purp NOT TO ALLOW PONDING OF WATER. without the express written consent of Colliers Engineering & Design. CITY OF 7. ALL ELEVATIONS AND CONTOURS SHOWN ON THIS GRADING PLAN REFLECT FINISHED ST HEDWIC GRADES. THE THICKNESS OF PAVEMENT, CURBS, AND SIDEWALKS MUST BE SUBTRACTED TO Formerly Known as OBTAIN SUBGRADE ELEVATIONS. 8. GRADING PLAN IS INTENDED FOR USE IN LOT GRADING ONLY. CONTRACTOR SHOULD REFER TO CONSTRUCTION DRAWINGS FOR ALL OTHER GRADES, INCLUDING, BUT NOT LIMITED TO, TYPE 'C' LOT GRADING TYPE 'A' LOT GRADING TYPE 'B' LOT GRADING ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON CHANNELS, ROADS, AND DETENTION PONDS. PREPARING TO DISTURB THE EARTH! SURFACE ANYWHERE IN ANY STATE 9. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE ALL SWALES. FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM MATCH LINE "A" SEE SHEET 3.0 MATCH LINE "A" SEE SHEET 3.0 32 ROSE VALLEY 5" LANDSCAPÈ & VEHICULAR PHASE 3A NON-ACCESS EASEMENT (PLAT NUMBER \bigcirc A |A|22-11800448) "VARIABLE WIDTH OPEN SPACE LEGEND DRAINAGE & ACCESS EASEMENT (577) 576 $(A) \longrightarrow$ E.G.T.TV.E = ELECTRIC, GAS, TELEPHONE, CABLE T.V. EASEMENT 14' E.G.T.TV.E SPACE, LANDSCAPE & = COUNTY BLOCK V.N.A.E. PRIVATE DRAINAGE = VEHICULAR NON-ACCESS **EASEMENT** = FLOW ARROW WIDTH - DRAINAGE & -= LOT GRADE TYPE **ACCESS** (577) 576 EASEMENT H.P. = HIGH POINTF.F. MIN= 598.0' = FINISHED FLOOR MINIMUM ELEVATION AS REQUIRED PER FLOODPLAIN (SEE REMAINDER OF 153.26 ACRES NOTE THIS SHEET) GRAYTOWN RD HOLDINGS, LLC. ----735---- = EXISTING CONTOUR (DOC. NO. 20210240677, O.P.R.) = PROPOSED CONTOUR = 735 = = EXISTING CONTOUR 10 15 14 = SPOT ELEVATION BLOCK 22 C.B. 5108 EXISTING DRAIN "A" + TW731.69 = TOP OF WALL ELEVATION→ BW731.69 = BOTTOM OF WALL ELEVATION OFF-LOT 50' X 50' ELECTRIC, GAS, TELEPHONE, CABLE TV, WATER, — — — — — = RETAINING WALL SERVANDO CRUZ SANITARY SEWER & DRAINAGE (RETAINING WALL EASEMENT (ENTIRE EASEMENT TO EXPIRE UPON INCORPORATION INTO TO BE DESIGNED PLATTED PUBLIC STREET R.O.W.) OFF-LOT 14' BY OTHERS) EXISTING DRAIN "D" E.G.T.TV.E REMAINDER OF 153.26 ACRES ROSE VALLEY PHASE 2A OFF-LOT 30' SANITARY SEWER EASEMENT(ENTIRE EASEMENT TO GRAYTOWN RD HOLDINGS, LLC. EXPIRE UPON INCORPORATION INTO (DOC. NO. 20210240677, O.P.R.) PLATTED PUBLIC STREET R.O.W.) OFF-LOT 30' SANITARY SEWER VARIABLE WIDTH DRAINAGÉ & EASEMENT(ENTIRE EASEMENT TO - ACCESS EASEMENT EXPIRE UPON INCORPORATION INTO (VOL. 20003, PGS. 961-967 P.R.) PLATTED PUBLIC STREET R.O.W.) OFF-LOT VARIABLE WIDTH SANITARY I SEWER EASEMENT (ENTIRE EASEMENT TO EXPIRE UPON INCORPORATION `INTO PLATTED STREET R.O.W.) (VOL. 20003, PGS. 961-967 P.R.) **PRELIMINARY** BLOCK 18 OFF-LOT 50' X 50' ELECTRIC, GAS, TELEPHONE, CABLE OFF-LOT 30' SANITARY SEWER C.B. 5108 TV, WATER, SANITARY SEWER & DRAINAGE EASEMENT EASEMENT(ENTIRE EASEMENT T (ENTIRE EASEMENT TO EXPIRE UPON INCORPORATION -AMENITY CENTER EXPIRE UPON INCORPORATION INTO INTO PLATTED PUBLIC STREET R.O.W.) PLATTED PUBLIC STREET R.O.W.) REMAINDER OF 153.26 ACRES **ROSE VALLEY** GRAYTOWN RD HOLDINGS, LLC. OFF-LOT VARIABLE WIDTH SANITARY SEWER EASEMENT (ENTIRE EASEMENT PHASE 2B (DOC. NO. 20210240677, O.P.R.) TO EXPIRE UPON INCORPORATION INTO PLATTED STREET R.O.W.) OFF-LOT VARIABLE WIDTH PLAT# 22-11800749 - DRAINAGE & ACCESS EASEMENT (VOL. 20003, PGS. 961-967 P.R.) E.G.T.TV.E (VOL. 20003, PGS. 961-967 P.R.) OFF-LOT VARIABLE WIDTH OFF-LOT 55' RADIUS ELECTRIC, GAS, SAN ANTONIO SANITARY SEWER EASEMENT TELEPHONE, CABLE TV, WATER, SANITARY SEWER, DRAINAGE & TURNAROUND EASEMENT -(ENTIRE EASEMENT TO EXPIRE UPON **BEXAR COUNTY** FOUNDATION F.F. **TEXAS** INCORPORATION INTO PLATTED STREET R.O.W.) OFF-LOT VARIABLE WIDTH SANITARY -SAN ANTONIO (KFW) FOUNDATION F.F SEWER EASEMENT 3421 Paesanos Colliers Parkway San Antonio, TX 78231 DRAIN "E" Phone: 210.979.8444 Engineering SHEET 4.4 COLLIERS ENGINEERING & DESIGN, IN & Design TBPE Firm#: F-14909 TBPLS Firm#: 10194550 OFF-LOT VARIABLE WIDTH DRAINAGE AND ACCESS EASEMENT 100 YR. FEMA FLOODPLAIN LIMITS PER TYPICAL SIDE YARD GRADING DFIRM FIRM# 48029C0435G AS SHOWN N.T.S. SEPTEMBER 29, 2010 OFF-LOT 14' OFF-LOT VARIABLE WIDTH DRAINAGE AND ACCESS EASEMENT GR_3145104 23007892A REMAINDER OF 153.26 ACRES ROSE VALLEY PHASE 2A OVERALL GRADING PLAN GRAYTOWN RD HOLDINGS, LLC. (VOL. 20003, PGS. 961-967 P.R.) (DOC. NO. 20210240677, O.P.R.)



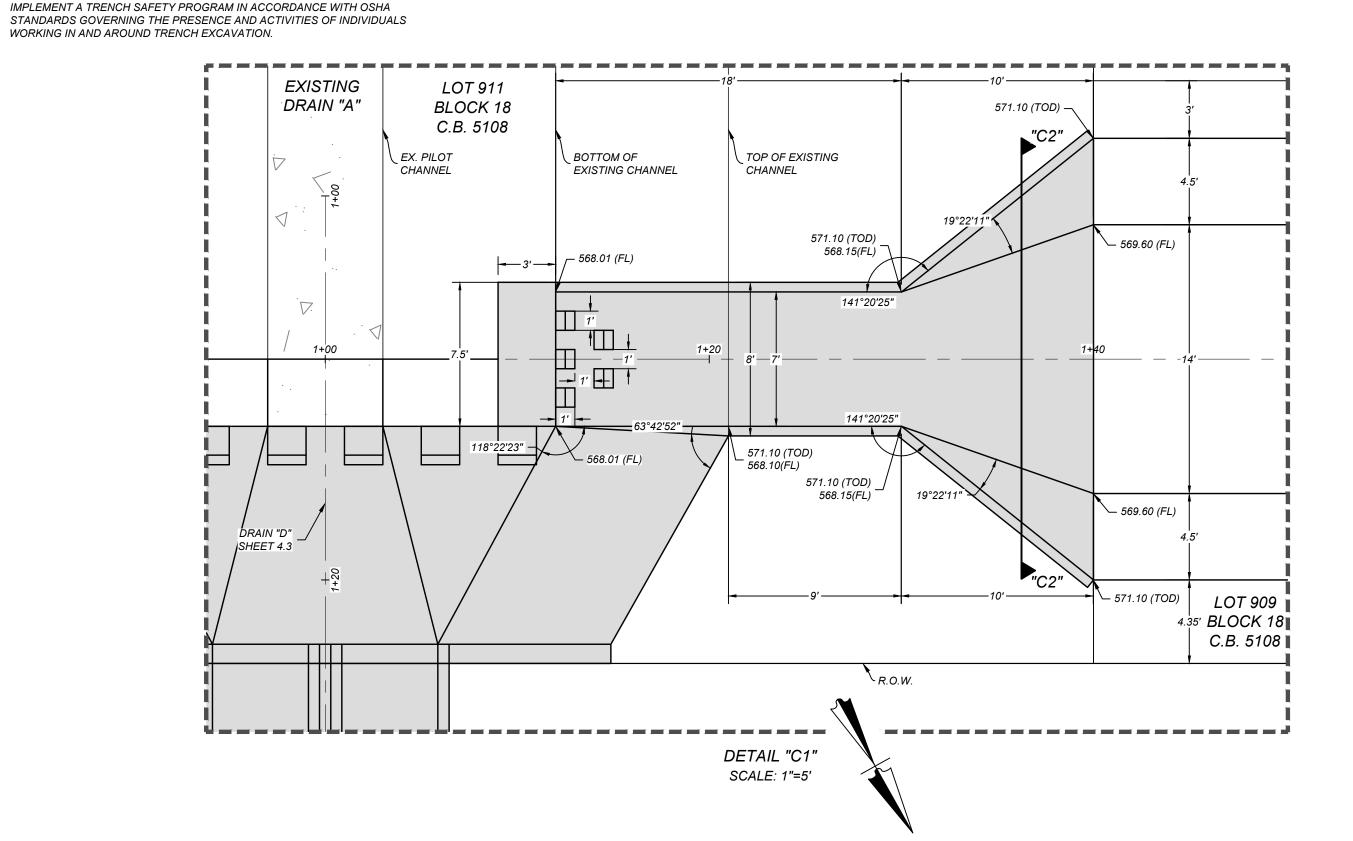


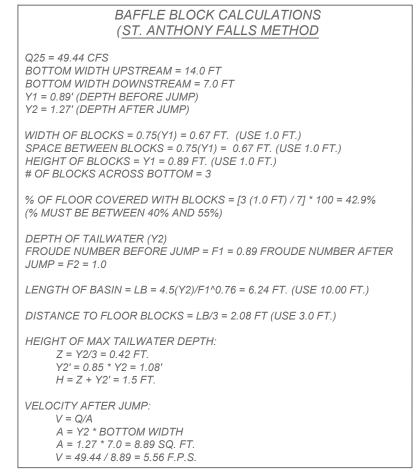
TRENCH EXCAVATION SAFETY PROTECTION

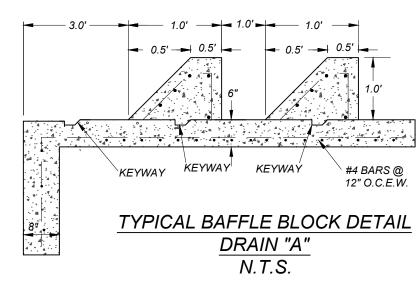
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S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

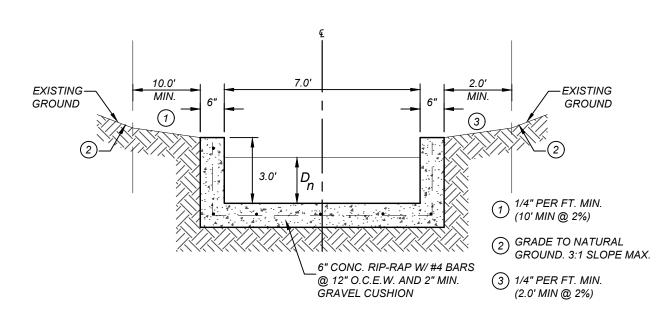
CAUTION!!:

THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES. AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE

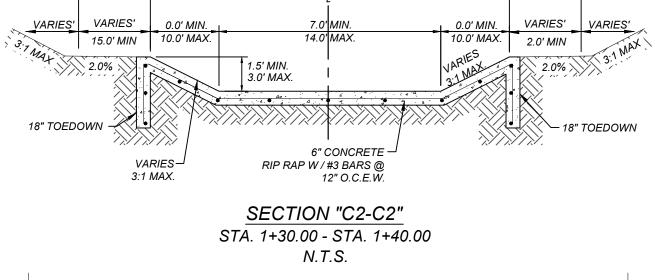


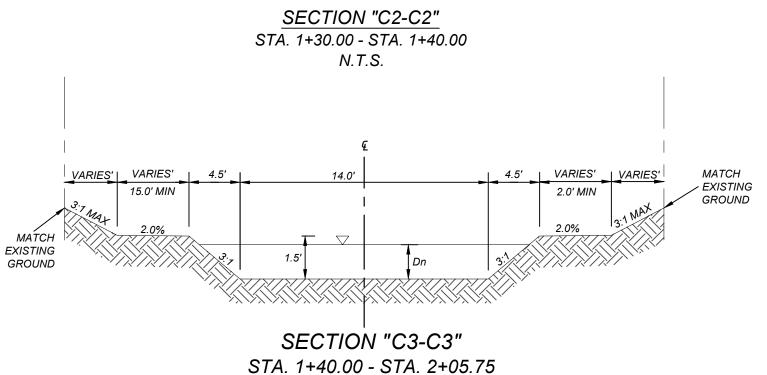






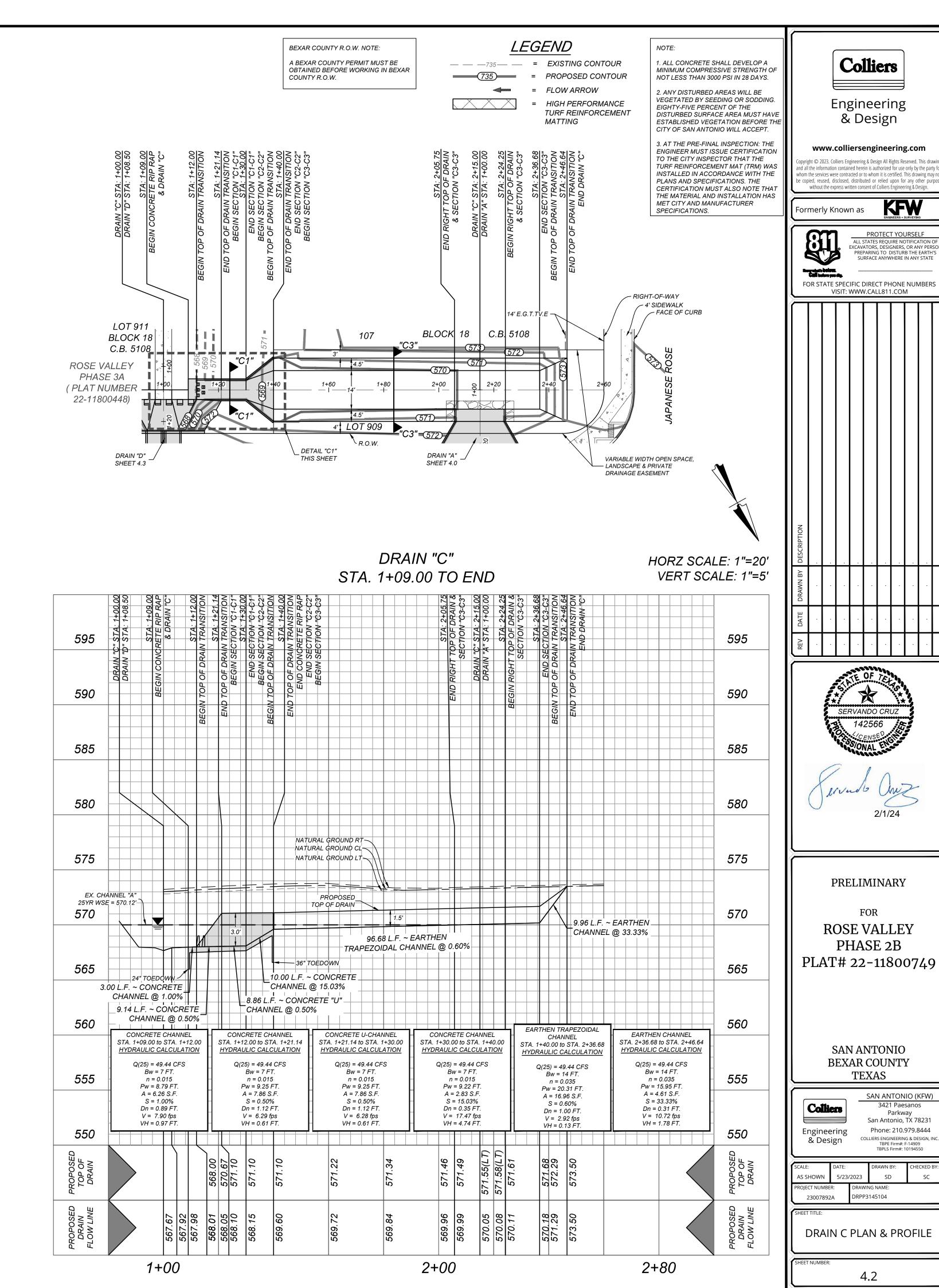
SECTION "C1-C1" STA. 1+21.14 - STA. 1+30.00 N.T.S.





STA. 2+24.25 - STA. 2+36.68

N.T.S.



NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

SAN ANTONIO (KFW)

3421 Paesanos

Parkwav

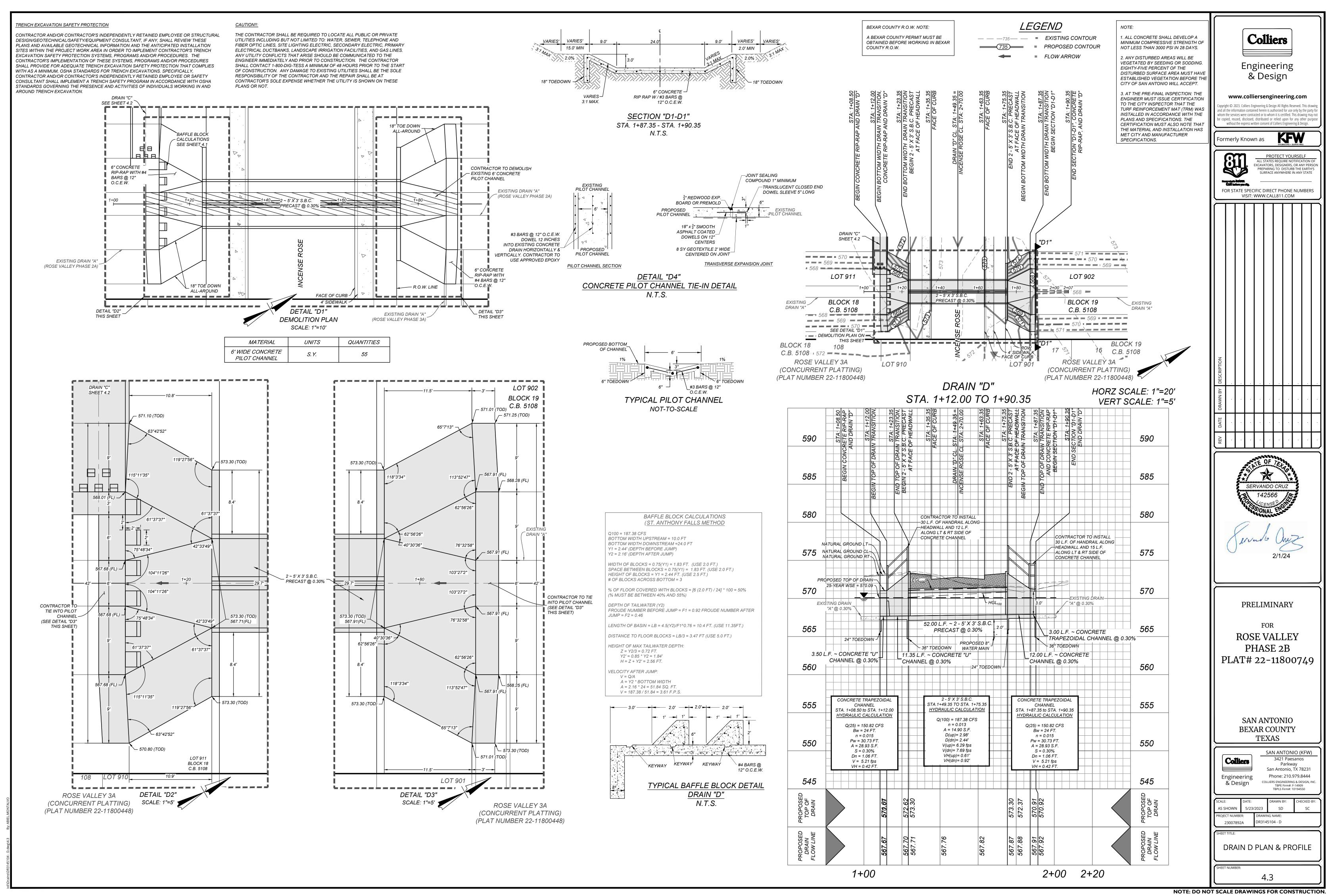
San Antonio, TX 78231

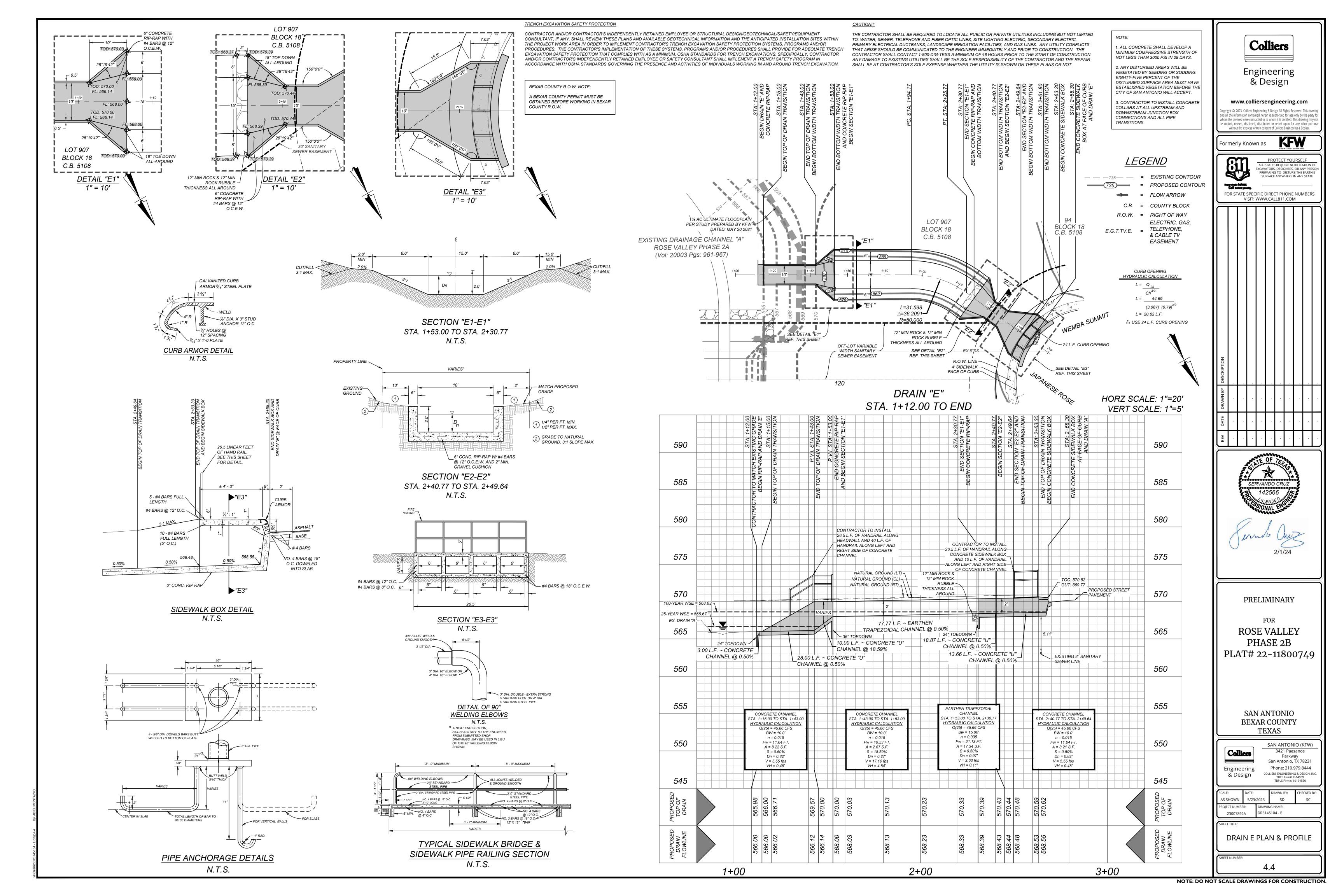
Phone: 210.979.8444

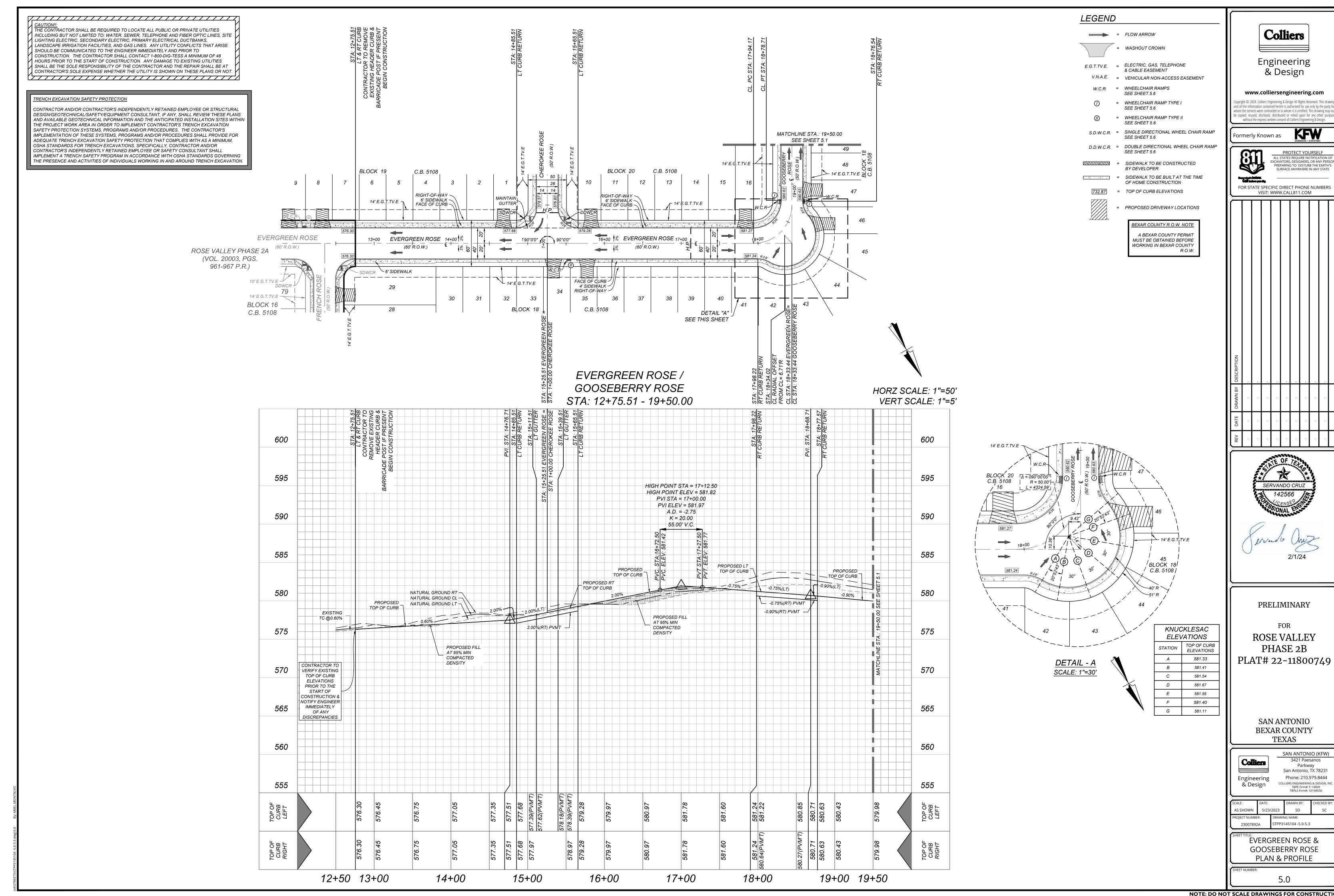
TBPE Firm#: F-14909 TBPLS Firm#: 10194550

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RPP3145104



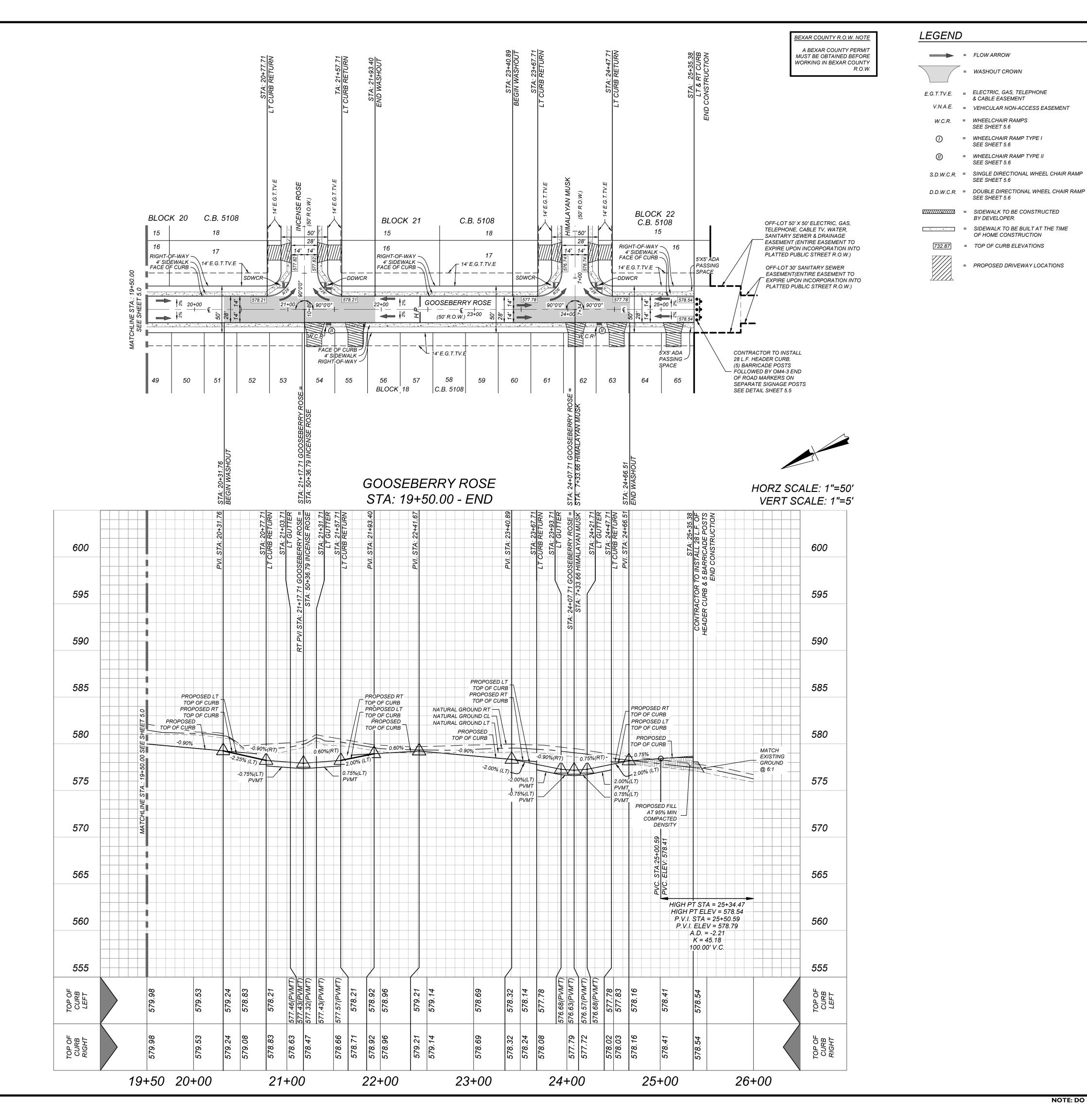




CAUTION!!: THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

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 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.



Colliers = FLOW ARROW

= WASHOUT CROWN

SEE SHEET 5.6

BY DEVELOPER.

OF HOME CONSTRUCTION

= PROPOSED DRIVEWAY LOCATIONS

W.C.R. = WHEELCHAIR RAMPS

& CABLE EASEMENT

= WHEELCHAIR RAMP TYPE I

= WHEELCHAIR RAMP TYPE II

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SURFACE ANYWHERE IN ANY STATE

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PRELIMINARY

FOR **ROSE VALLEY** PHASE 2B PLAT# 22-11800749

> SAN ANTONIO **BEXAR COUNTY TEXAS**

> > SAN ANTONIO (KFW)

Parkwav

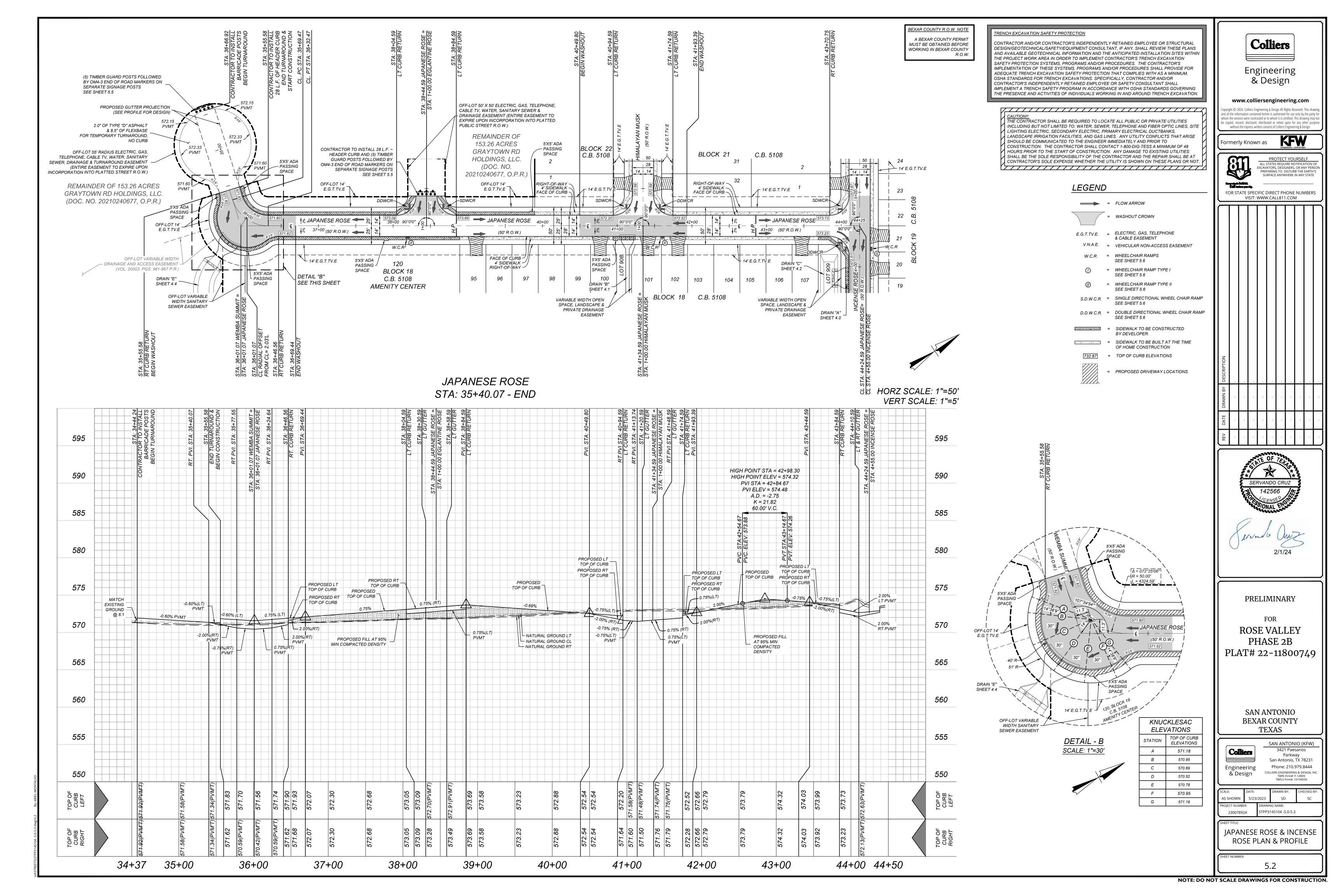
San Antonio, TX 78231

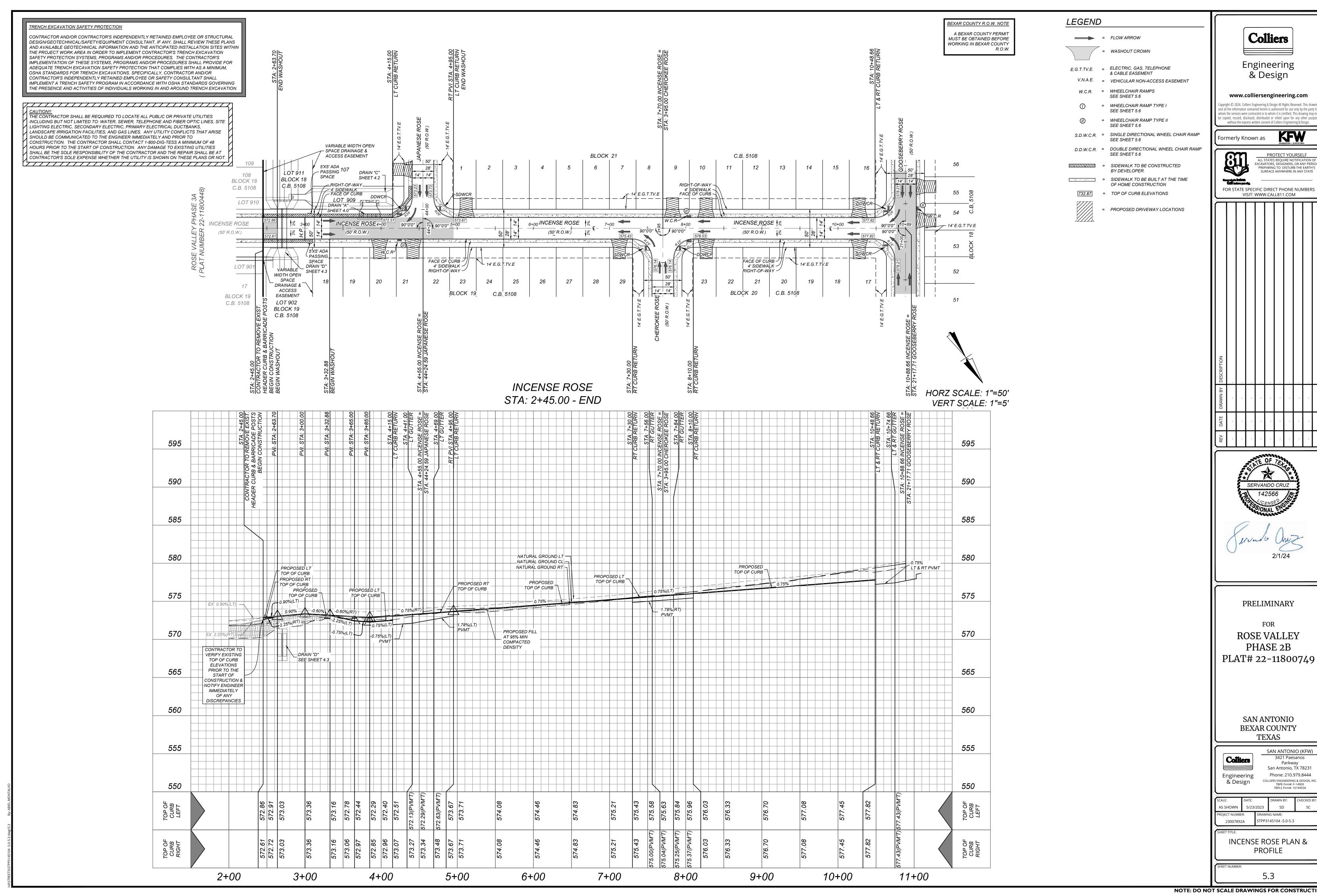
& Design

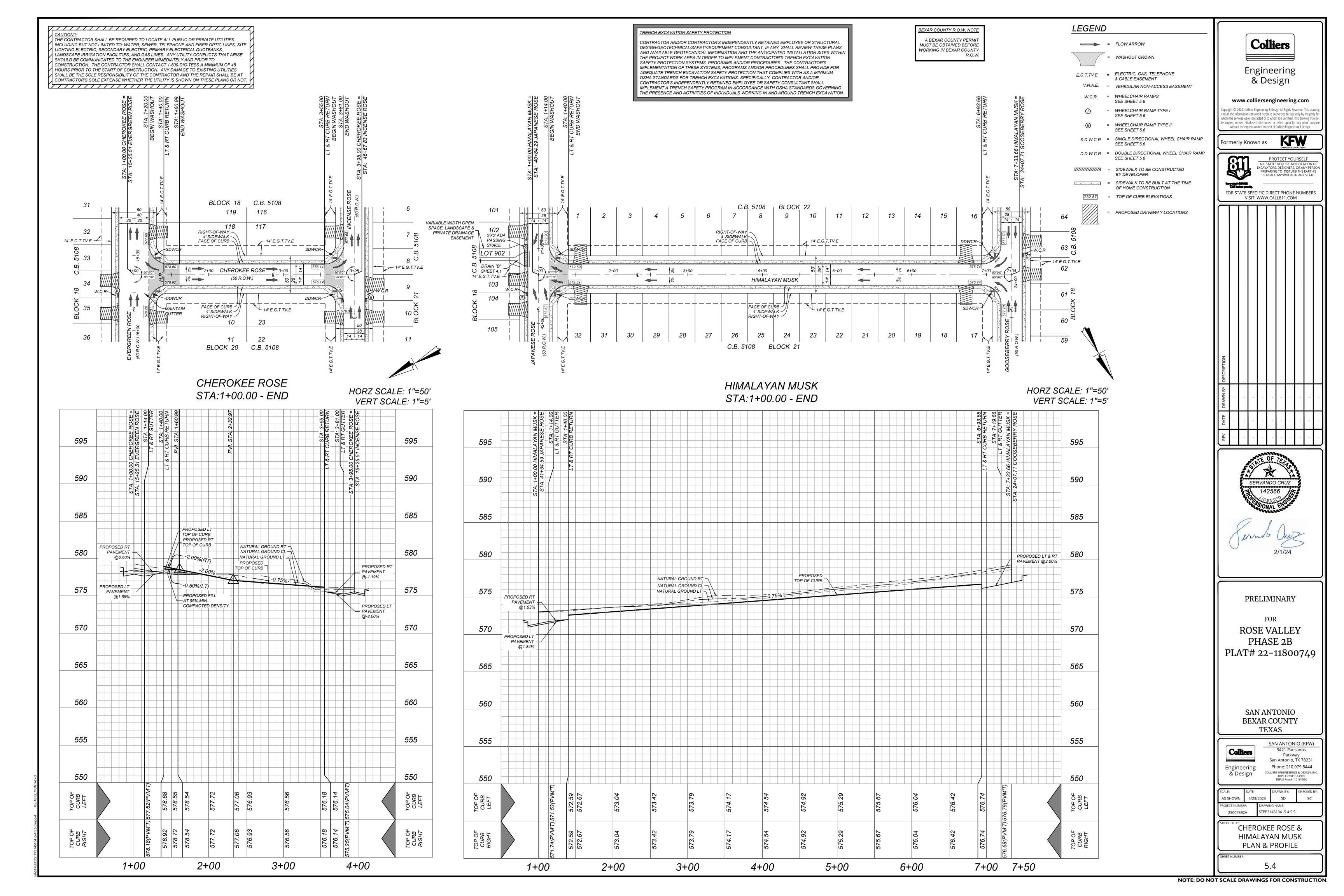
COLLIERS ENGINEERING & DESIGN, INC. TBPE Firm#: F-14909 TBPLS Firm#: 10194550

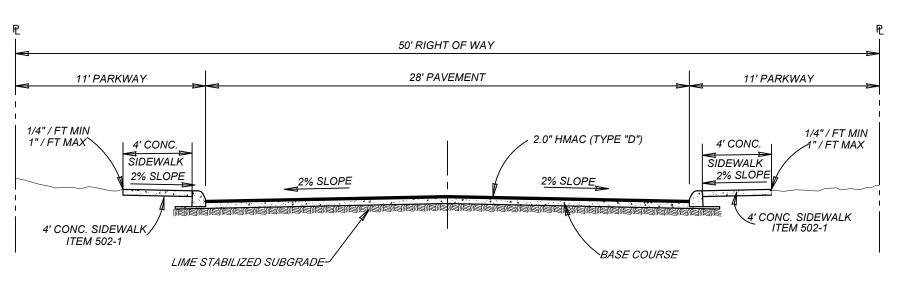
AS SHOWN TPP3145104 -5.0-5.3 23007892A

> **GOOSEBERRY ROSE** PLAN & PROFILE



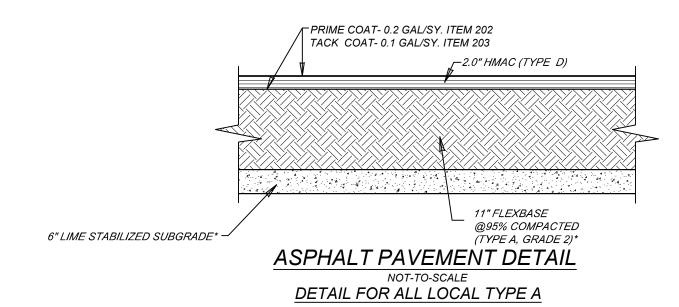






TYPICAL LOCAL "A" STREET SECTION

NOT TO SCALE GOOSEBERRY ROSE: STA: 18+33.44 - 25+35.38 JAPANESE ROSE: STA: 39+94.24 - 44+13.86 INCENSE ROSE: STA: 44+13.86 - 50+36.79 HIMALAYAN MUSK: STA. 1+00.00 - 7+33.66 CHEROKEE ROSE: STA. 1+00.00 - 3+95.00



FLEXIBLE PAVEMENT SYSTEM (DARK BROWN CLAY SUBGRADE)

Pavement Section 2.0" HMAC (TYPE "D")

11" FLEXBASE COURSE (TYPE "A" GRADE 2) 6.0" LIME STABILIZED SUBGRADE (33 LBS/SY) Total: 19"

Structural No: 2.90 C.B.R = 2.0

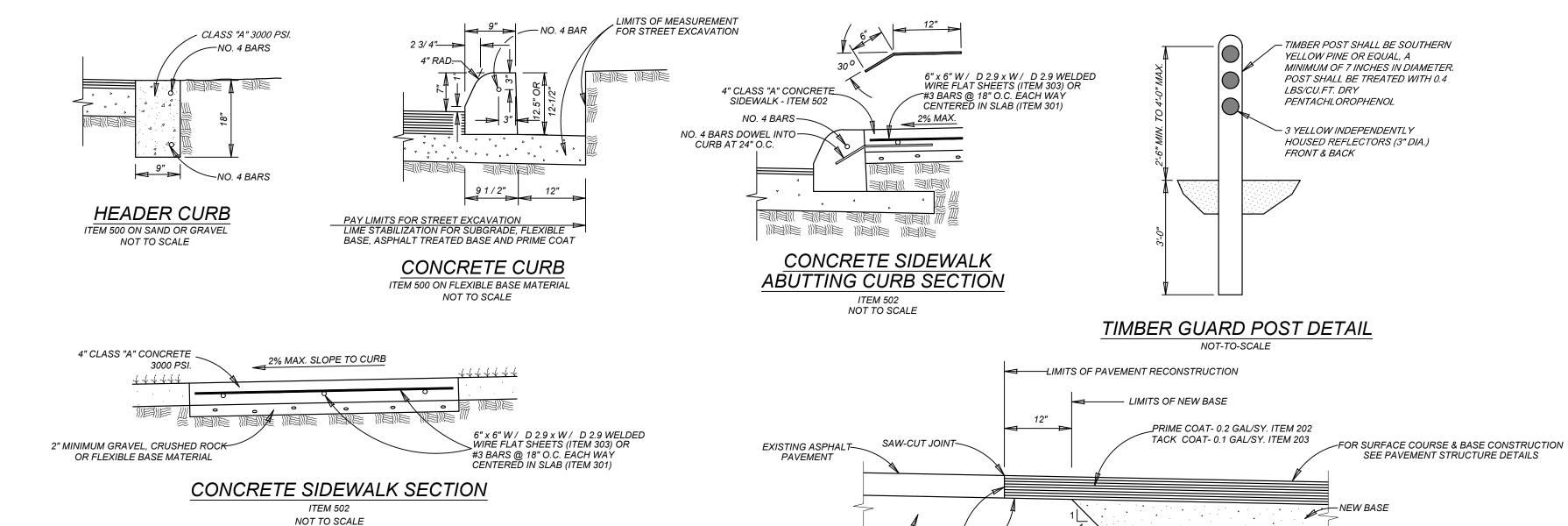
InTEC PROJECT NO. S211189-1-P JUNE 21, 2021

1. PAVEMENT DESIGN THICKNESS BASED ON GEOTECHNICAL REPORT BY INTEC REPORT NO. S211189-1-P DATED JUNE 21, 2021

2. REFERENCE PROJECT GEOTECHNICAL REPORT AND PROJECT SPECIFICATION FOR ADDITIONAL REQUIREMENTS AND ALTERNATE PAVEMENT SECTIONS.

3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING MATERIAL TESTING. TESTING TO

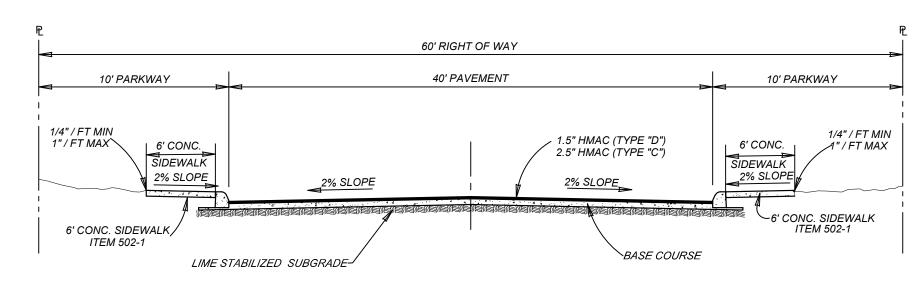
4. THERE SHALL BE NO SUBSTITUTION OF LIME.



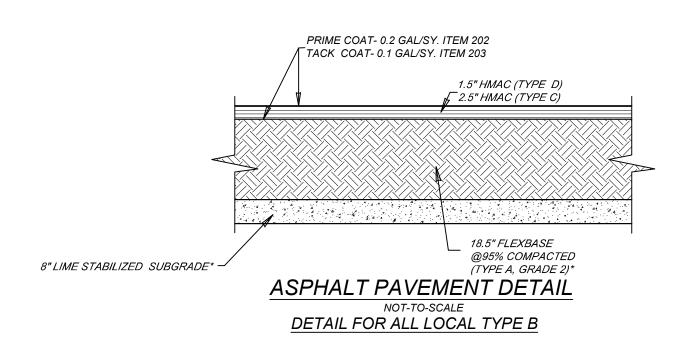
EXISTING BASE-

TACK COAT (ITEM 203)

NEW SUBGRADE



TYPICAL LOCAL "B" STREET SECTION NOT TO SCALE EVERGREEN ROSE: STA. 12+75.51 - 18+33.44



FLEXIBLE PAVEMENT SYSTEM (DARK BROWN CLAY SUBGRADE)

Pavement Section 1.5" HMAC (TYPE "D") 2.5" HMAC (TYPE "C") 18.5" FLEXBASE COURSE (TYPE "A" GRADE 2) 8.0" LIME STABILIZED SUBGRADE (44 LBS/SY) Total: 30.5 " Structural No: 4.99 C.B.R = 2.0

InTEC PROJECT NO. S211189-1-P JUNE 21, 2021

1. PAVEMENT DESIGN THICKNESS BASED ON GEOTECHNICAL REPORT BY INTEC REPORT NO. S211189-1-P DATED JUNE 21, 2021

3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING MATERIAL TESTING. TESTING TO

2. REFERENCE PROJECT GEOTECHNICAL REPORT AND PROJECT SPECIFICATION FOR ADDITIONAL REQUIREMENTS AND ALTERNATE PAVEMENT SECTIONS.

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.

• INPUT PARAMETERS USED IN PAVEMENT SECTION CALCULATIONS ARE SHOWN IN TABLE NO. 6. PLEASE CALL US TO PROVIDE PAVEMENT RECOMMENDATIONS, IF NEEDED, FOR DIFFERENT INPUT VALUES. IF REPETITIVE TRUCK OR HEAVY TRUCK TRAFFIC IS ANTICIPATED, PLEASE CONTACT US FOR REVISED PAVEMENT RECOMMENDATIONS. PAVEMENT SECTION RECOMMENDATIONS ARE BASED ON A SUBGRADE CBR VALUE OF 2.0. THE PAVEMENT RECOMMENDATIONS ARE NOT BASED ON THE SRHINK / SWELL CHARACTERISTICS OF THE UNDERLYING SOILS. THE PAVEMENT CAN EXPERIENCE CRACKING AND DEFORMATION DUE TO SHRINKAGE AND SWELLING CHARACTERISTICS OF THE SOILS AS DESCRIBED IN THE VERTICAL MOVEMENTS SECTION OF THIS REPORT. USE OF GEOGRID HELPS REDUCE THE SHRINK / SWELL RELATED CRACKING. IF WATER IS ALLOWED TO GET UNDERNEATH THE ASPHALT OR IF MOISTURE CONTENT OF THE BASE OR SUBGRADE SOIL CHANGES SIGNIFICANTLY, THEN PAVEMENT DISTRESS WILL OCCUR. MOISTURE PENETRATION UNDERNEATH THE ASPHALT PAVEMENT SURFACE MAY BE

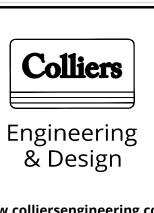
REDUCED BY INSTALLING A VERTICAL MOISTURE BARRIER, SUCH AS

DEEPER CURBS; CURBS EXTENDING A MINIMUM OF 6 INCHES INTO

SUBGRADE.

ONE LAYER OF GEOGRID, TENSAR TRIAX TX5, INSTALLED ON TOP OF COMPACTED (MOISTURE CONDITIONED OR STABILIZED) SUBGRADE AS PER MANUFACTURER'S GUIDELINES.

<u>SUBGRADE VERIFICATION:</u>
AT THE TIME OF CONSTRUCTION, THE FINAL PAVEMENT SUBGRADE SHOULD BE OBSERVED AND DELINEATED / VERIFIED BY A REPRESENTATIVE OF



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ROSE VALLEY PHASE 2B PLAT# 22-11800749

> SAN ANTONIO **BEXAR COUNTY TEXAS**

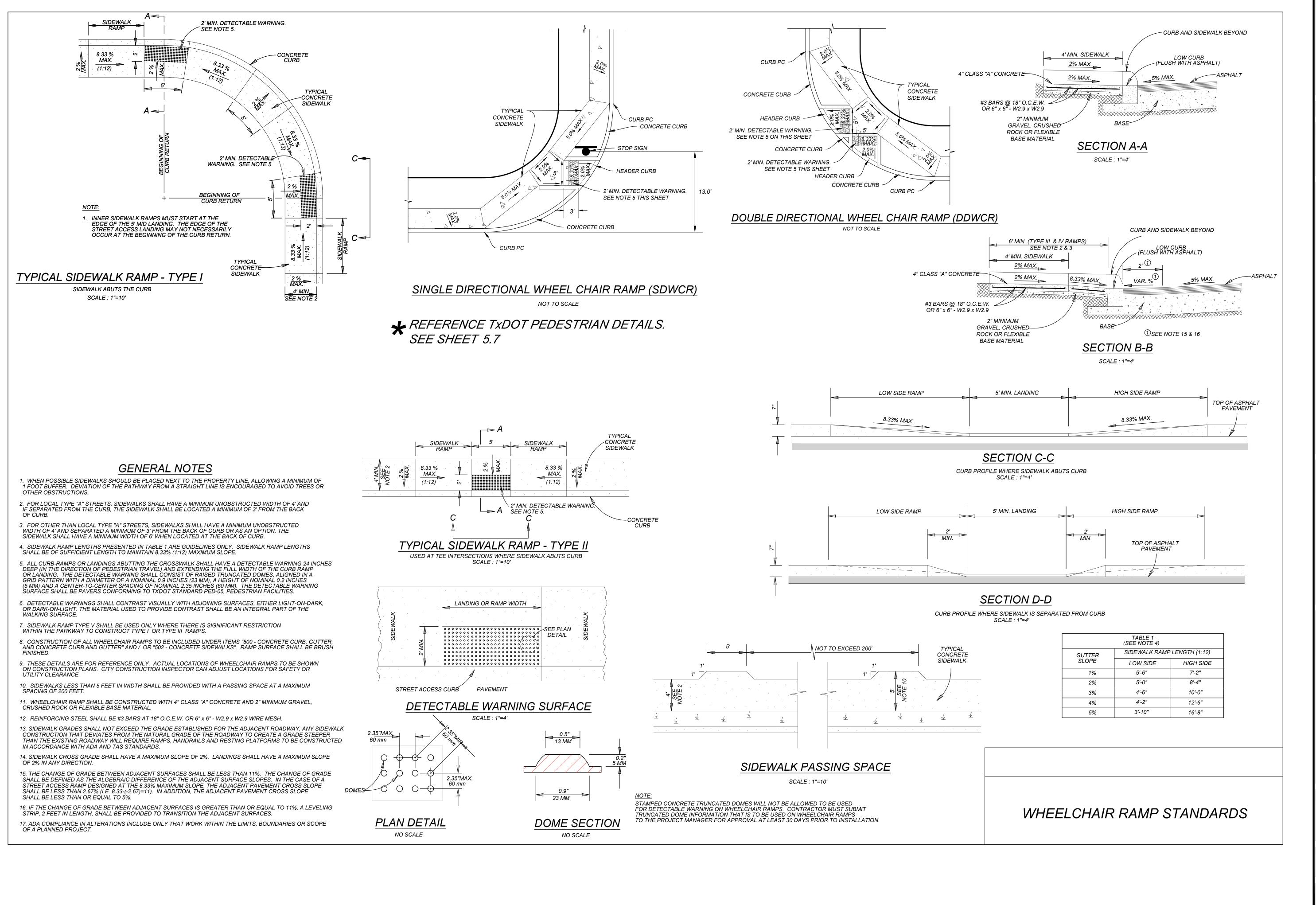
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STREET DETAIL SHEET



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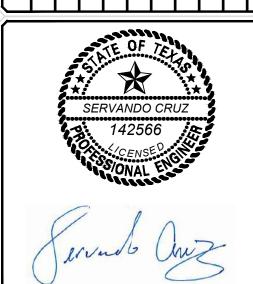
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ROSE VALLEY PHASE 2B PLAT# 22-11800749

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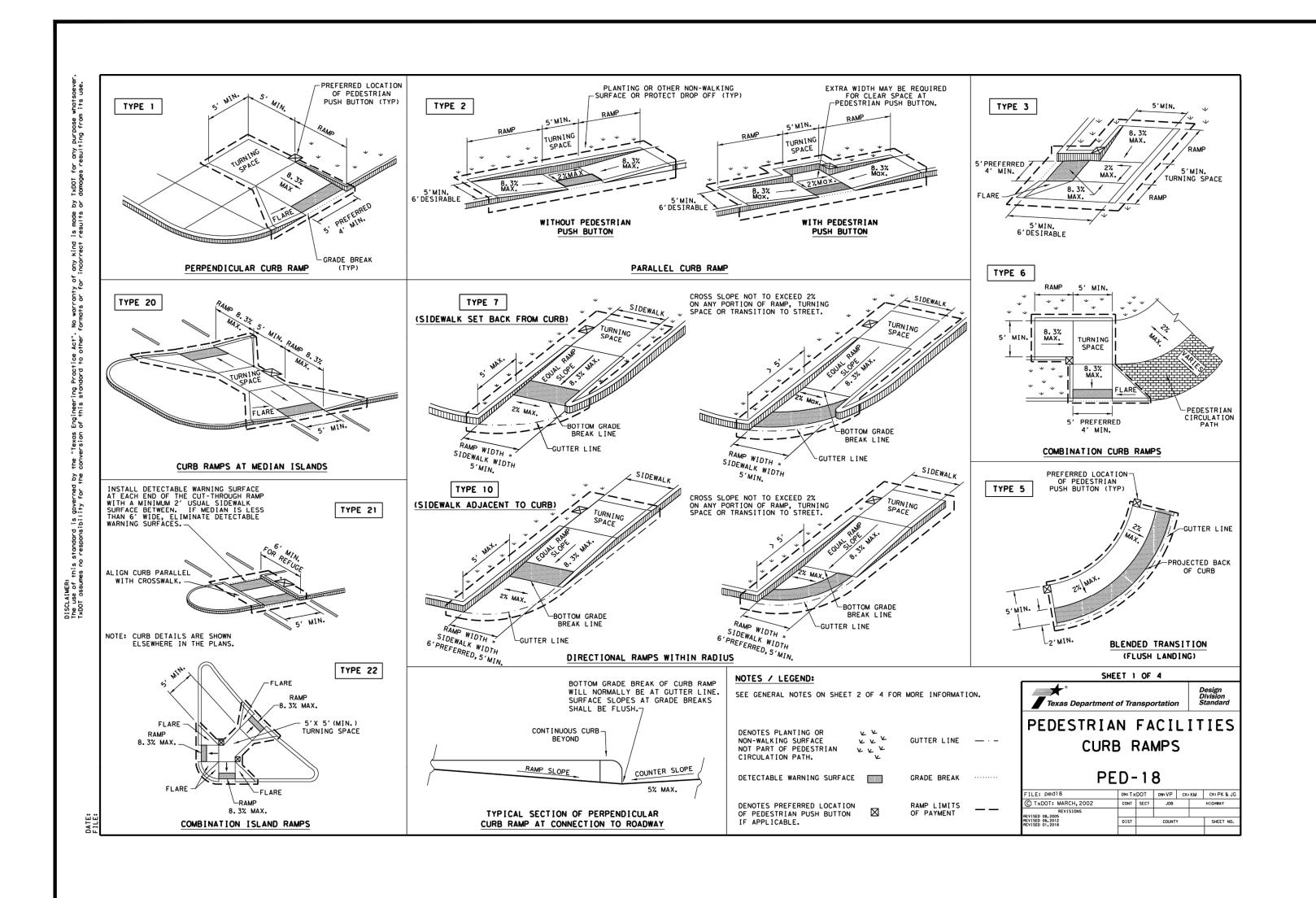
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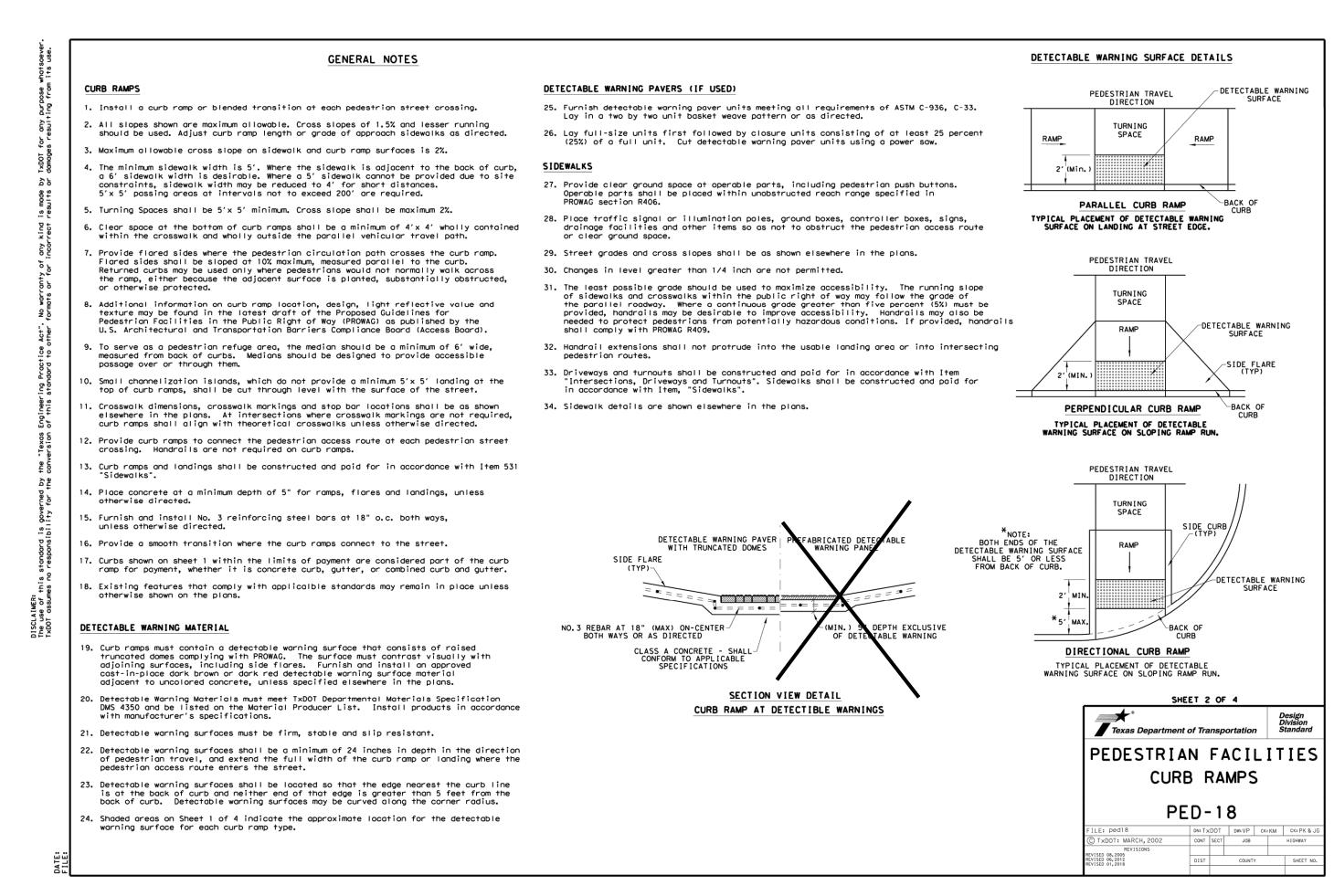
SAN ANTONIO (KFW)

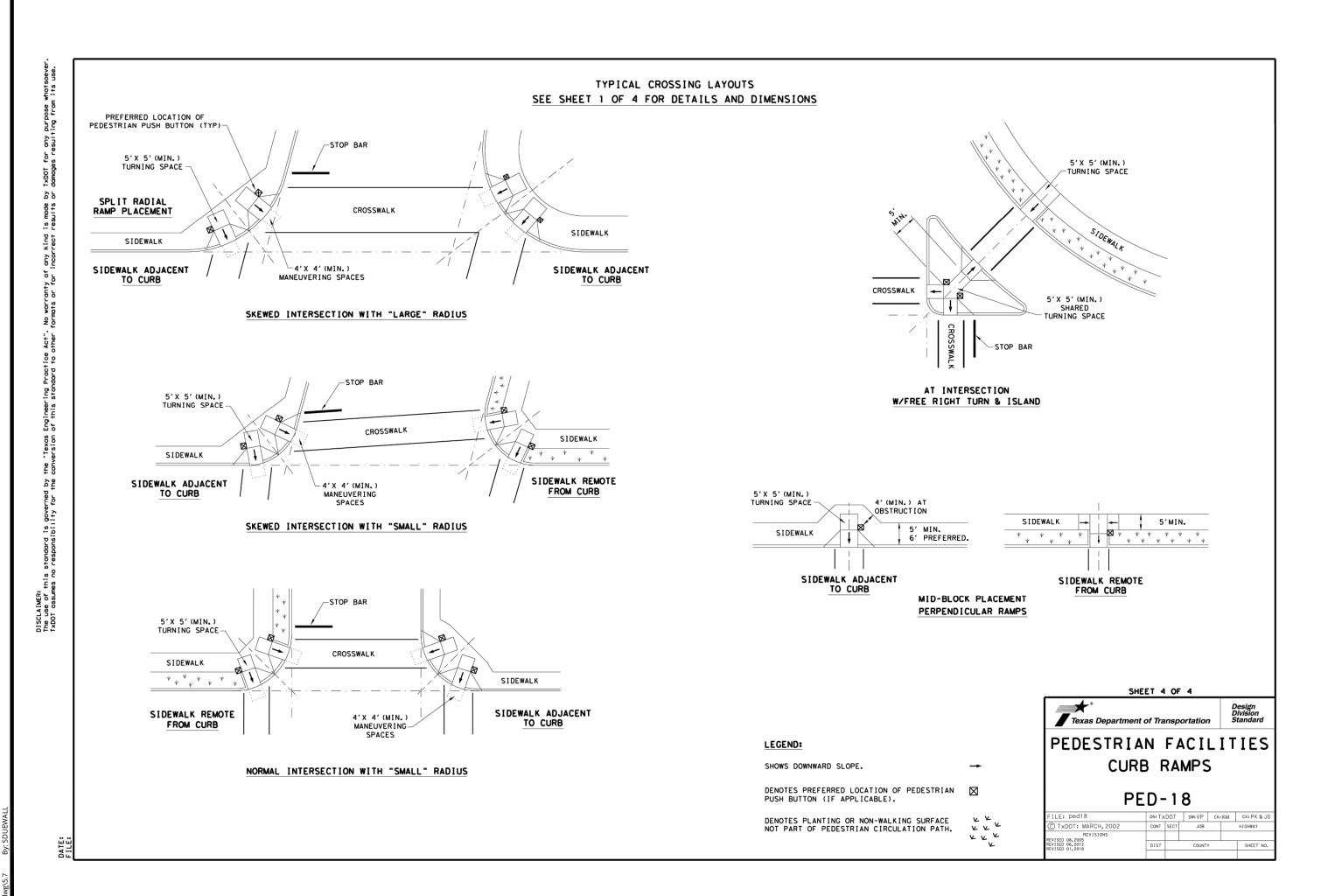
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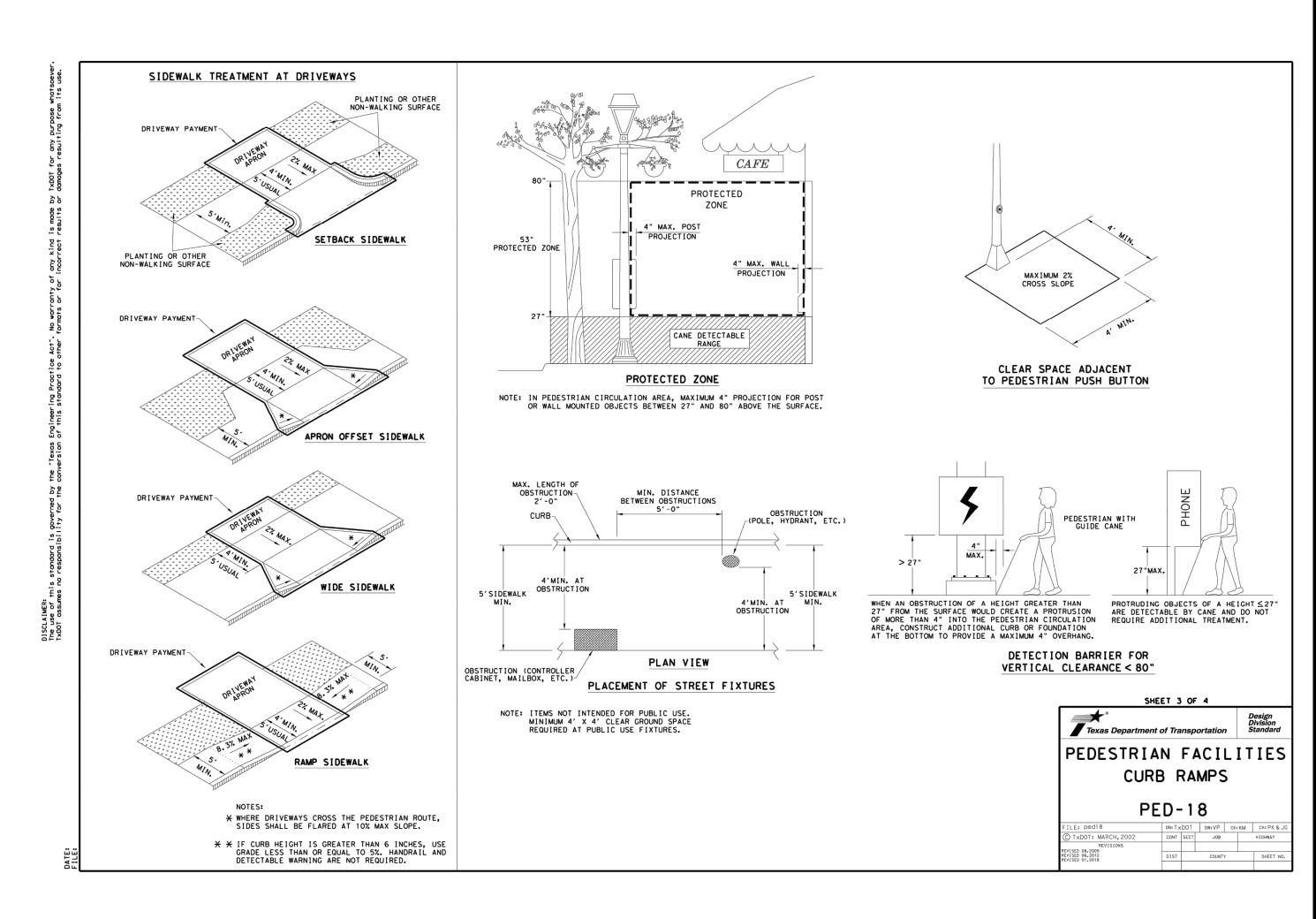
WHEELCHAIR RAMP DETAIL

SHEET











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FOR **ROSE VALLEY** PHASE 2B PLAT# 22-11800749

> SAN ANTONIO **BEXAR COUNTY TEXAS**

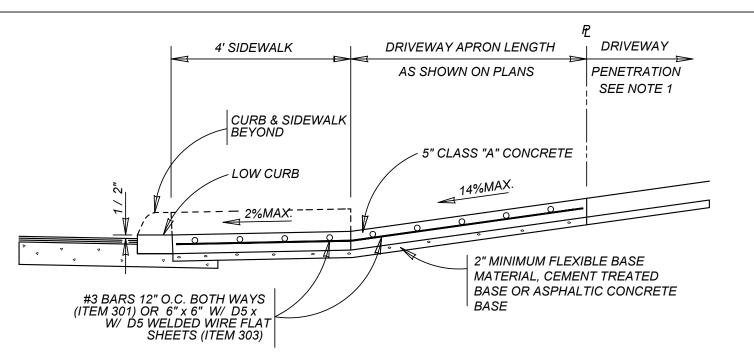
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Parkway San Antonio, TX 78231 Phone: 210.979.8444 COLLIERS ENGINEERING & DESIGN, IN & Design TBPE Firm#: F-14909 TBPLS Firm#: 10194550

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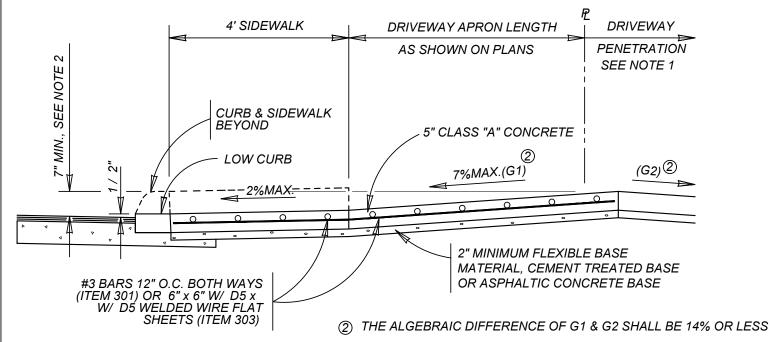
MISCELLANEOUS DETAIL

SHEET



TYPICAL RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB ITEM 503.1



TYPICAL RESIDENTIAL DRIVEWAY SECTION

WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS ABUTTING CURB ITEM 503.1

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

TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB

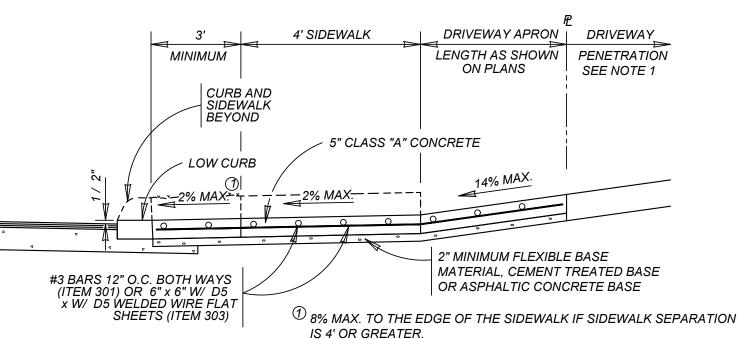
ITEM 503.2

CONCRETE DRIVEWAY NOTES

- 1. DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE. THIS PORTION OF THE DRIVEWAY SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS AS MAY APPLY: A.) CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503.1 OR 503.2.
- B.) ASPHALTIC CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503.4 AND SHALL INCLUDE A MINIMUM OF 1" ASPHALT TYPE 'D' & 6" FLEXIBLE BASE
- C.) GRAVEL DRIVEWAY PAID FOR UNDER ITEM NO. 503.5 AND SHALL INCLUDE A MINIMUM OF 6" FLEXIBLE BASE
- 2. 7" MINIMUM HEIGHT WILL NOT NECESSARILY OCCUR AT THE PROPERTY LINE. IT MAY OCCUR WITHIN THE RIGHT OF WAY OR WITHIN THE DRIVEWAY PENETRATION ON PRIVATE PROPERTY.
- 3. THE PROPOSED DRIVEWAY SHOULD MATCH THE EXISTING WIDTH AT THE PROPERTY LINE BUT UNLESS AUTHORIZED BY THE CITY TRAFFIC ENGINEER, THE WIDTH SHALL BE WITHIN THE FOLLOWING VALUES:

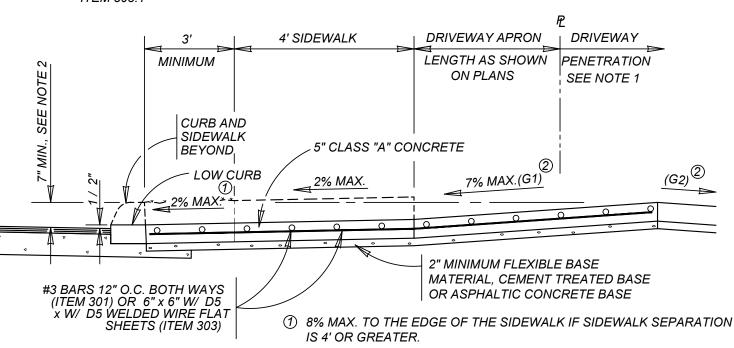
TYPE	мінімим	MAXIMUM
RESIDENTIAL	10'	20'
COMMERCIAL - ONE WAY	12'	20'
COMMERCIAL - TWO WAY	24'	30'

- 4. FOR LOCAL TYPE "A" STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 3' FROM THE BACK OF CURB.
- 5. FOR OTHER THAN LOCAL TYPE "A" STREETS, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND SEPARATED A MINIMUM OF 3' FROM THE BACK OF CURB OR, AS AN OPTION, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 6' WHEN LOCATED AT THE BACK OF CURB.
- 6. DUMMY JOINTS PARALLEL TO THE CURB SHALL BE PLACED WHERE THE SIDEWALK MEETS THE DRIVEWAY. DUMMY JOINTS PERPENDICULAR TO THE CURB, AND WITHIN THE BOUNDARIES OF THE PARALLEL DUMMY JOINTS, SHALL BE PLACED AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK.
- 7. A MINIMUM OF TWO ROUND AND SMOOTH DOWEL BARS 3 /8" IN DIAMETER AND 18" IN LENGTH SHALL BE SPACED 18" APART AT EACH EXPANSION JOINT. 8. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE. WHERE SIDEWALKS CROSS DRIVEWAYS,
- SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.
- 9. SIDEWALK RAMP SURFACE SHALL BE BRUSH FINISHED.



TYPICAL RESIDENTIAL DRIVEWAY SECTION

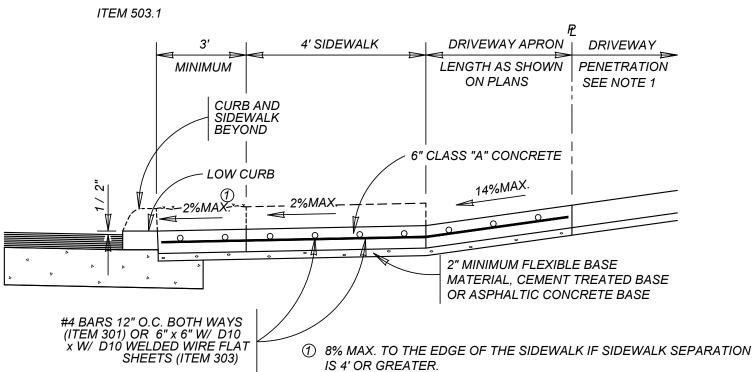
WITH SIDEWALK SEPARATED FROM CURB ITEM 503.1



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

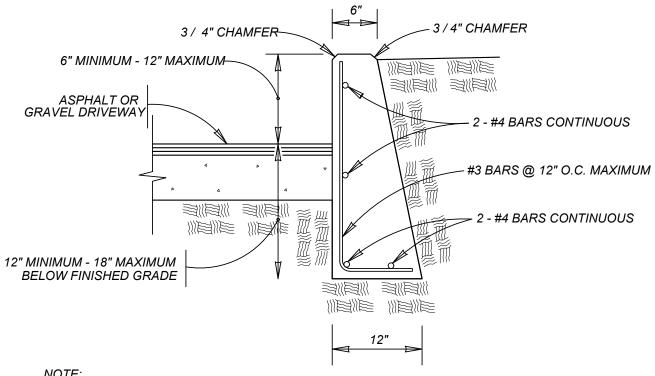
TYPICAL RESIDENTIAL DRIVEWAY SECTION

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



TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK SEPARATED FROM CURB ITEM 503.2

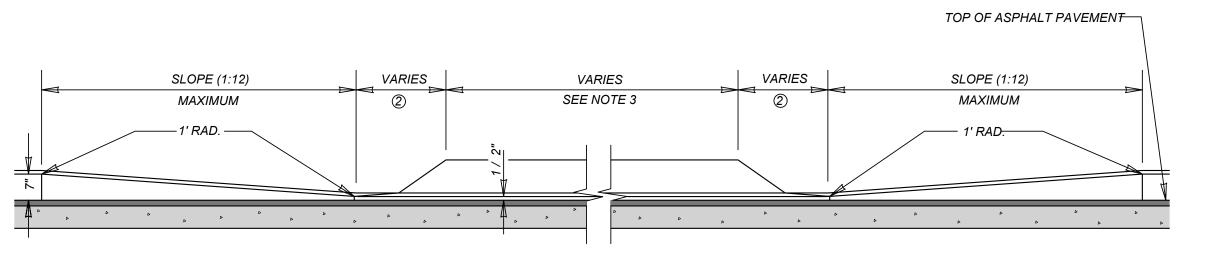


1. COST OF REINFORCEMENT TO BE INCLUDED IN UNIT COST OF ITEM 307.1.

2. CONCRETE RETAINING WALL COMBINATION TYPE SHALL BE USED FOR CONCRETE DRIVEWAYS.

DRIVEWAY - CONCRETE RETAINING WALL

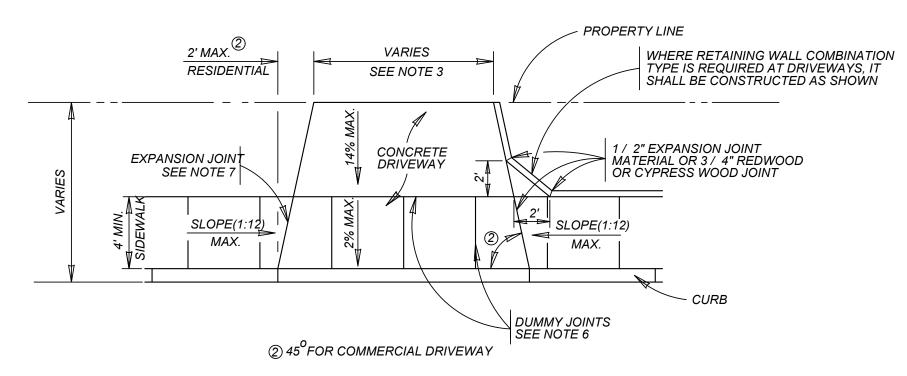
ON COMPACTED SUBGRADE ITEM 307.1



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

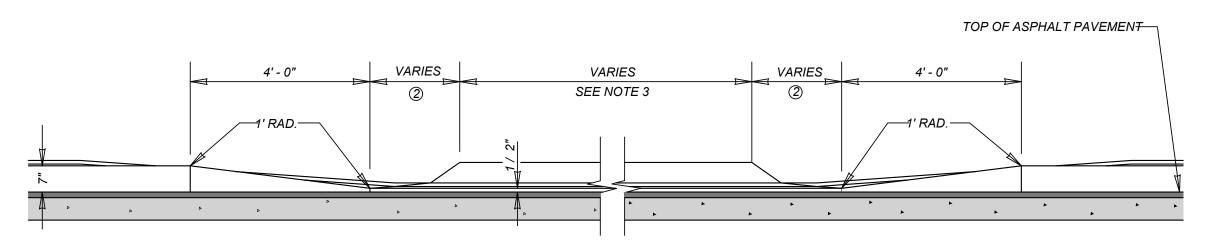
CURB PROFILE AT DRIVEWAY

WITH SIDEWALK ABUTTING CURB



TYPICAL DRIVEWAY PLAN VIEW

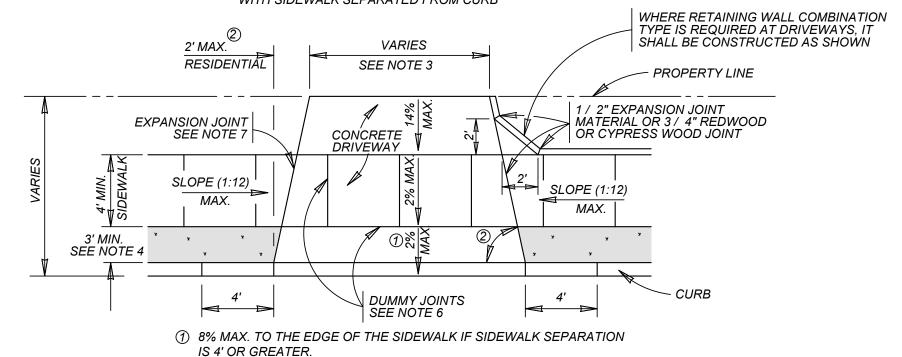
WITH SIDEWALK ABUTTING CURB



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

CURB PROFILE AT DRIVEWAY

WITH SIDEWALK SEPARATED FROM CURB



2 45 FOR COMMERCIAL DRIVEWAY

TYPICAL DRIVEWAY PLAN VIEW

WITH SIDEWALK SEPARATED FROM CURB

MAY 2009

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

CONCRETE DRIVEWAY STANDARDS

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

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Engineering & Design

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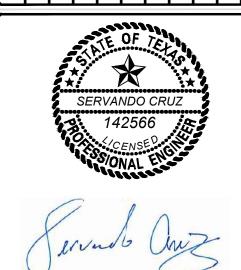
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12/22/23

PRELIMINARY

ROSE VALLEY PHASE 2B PLAT# 22-11800749

> SAN ANTONIO **BEXAR COUNTY TEXAS**

SAN ANTONIO (KFW) 3421 Paesanos **Colliers** San Antonio, TX 78231 Phone: 210.979.8444 Engineering OLLIERS ENGINEERING & DESIGN, IN & Design TBPE Firm#: F-14909

TBPLS Firm#: 1019455 AS SHOWN SD TDT_3145104

MISCELLANEOUS DETAIL

SHEET

23007892A

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 WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION. NOTES: 1) WITHIN THE CITY'S EXTRATERRITORIAL JURISDICTION, STREET NAME SIGNS SHALL BE INSTALLED AT ALL INTERSECTIONS WITHIN AND ABUTTING THE SUBDIVISION. SUCH SIGNS SHALL BE MANUFACTURED AND INSTALLED BY THE SUBDIVIDER IN ACCORDANCE TO SPECIFICATIONS OF, AND SUBJECT TO PLAN REVIEWS AND INSPECTIONS BY THE COUNTY DEPARTMENT OF PUBLIC WORKS. 2) REGULATORY AND WARNING TRAFFIC SIGNS SHALL BE INSTALLED WITHIN AND ABUTTING THE SUBDIVISION IN ACCORDANCE WITH THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD),"

AS REQUIRED BY THE CITY'S DEVELOPMENT SERVICES DEPARTMENT OR COUNTY'S DEPARTMENT OF PUBLIC WORKS. SUCH SIGNS SHALL BE

MANUFACTURED AND INSTALLED BY THE SUBDIVIDER IN ACCORDANCE

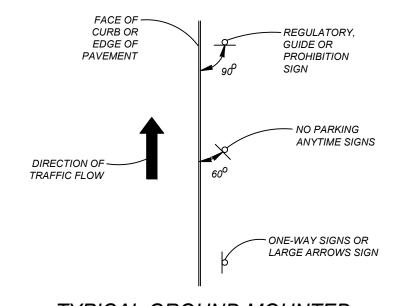
REGULATORY SIGNS SHALL NOT BE ACCEPTED BY THE CITY UNTIL THE

INSPECTIONS BY THE CITY'S DEVELOPMENT SERVICES DEPARTMENT OR COUNTY'S DEPARTMENT OF PUBLIC WORKS. WARNING AND

TO SPECIFICATIONS OF, AND SUBJECT TO PLAN REVIEWS AND

STREET HAS BEEN ACCEPTED FOR MAINTENANCE BY THE CITY.

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



HWY B, C, OR D

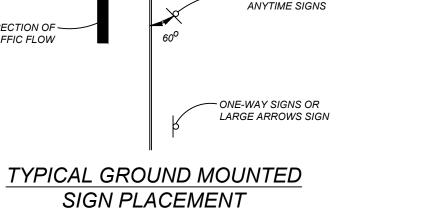
└─ 5 / 32" WHITE BORDER

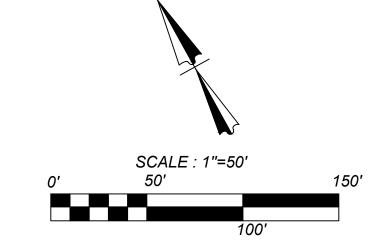
WHITE LETTERS,

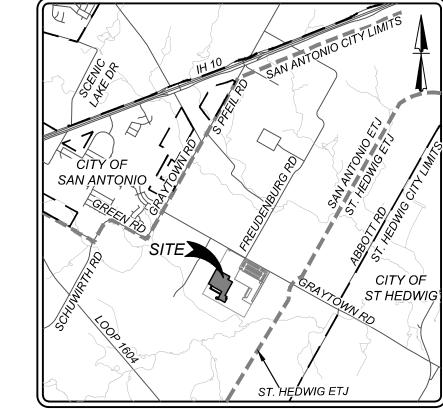
FONT STYLE

HWY D - FONT STYLE

FOR BLOCK NUMBERS →

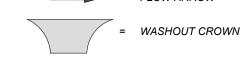






LOCATION MAP N.T.S.

LEGEND = FLOW ARROW



E.G.T.TV.E. = ELECTRIC, GAS, TELEPHONE & CABLE EASEMENT V.N.A.E. = VEHICULAR NON-ACCESS EASEMENT W.C.R. = WHEELCHAIR RAMPS SEE SHEET 5.6

= WHEELCHAIR RAMP TYPE I SEE SHEET 5.6

= WHEELCHAIR RAMP TYPE II SEE SHEET 5.6

S.D.W.C.R. = SINGLE DIRECTIONAL WHEEL CHAIR RAMP SEE SHEET 5.6

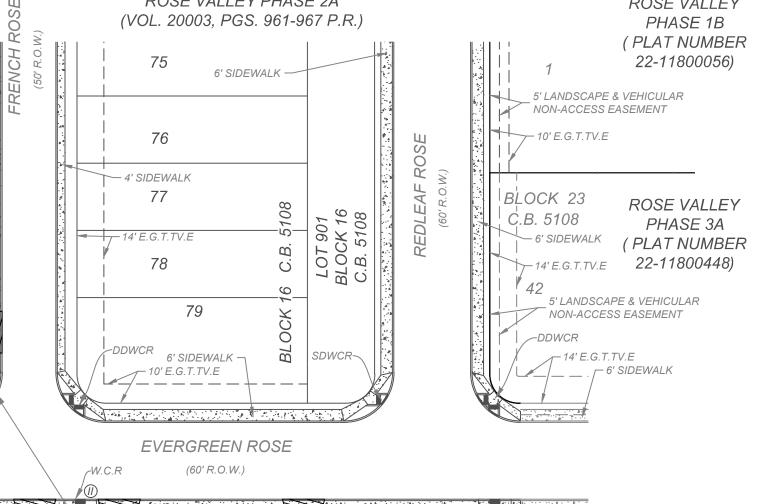
D.D.W.C.R. = DOUBLE DIRECTIONAL WHEEL CHAIR RAMP SEE SHEET 5.6

THE SIDEWALK TO BE CONSTRUCTED BY DEVELOPER.

SIDEWALK TO BE BUILT AT THE TIME

OF HOME CONSTRUCTION

732.87 = TOP OF CURB ELEVATIONS = PROPOSED DRIVEWAY LOCATIONS





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FOR **ROSE VALLEY** PHASE 2B PLAT# 22-11800749

> SAN ANTONIO **BEXAR COUNTY TEXAS**

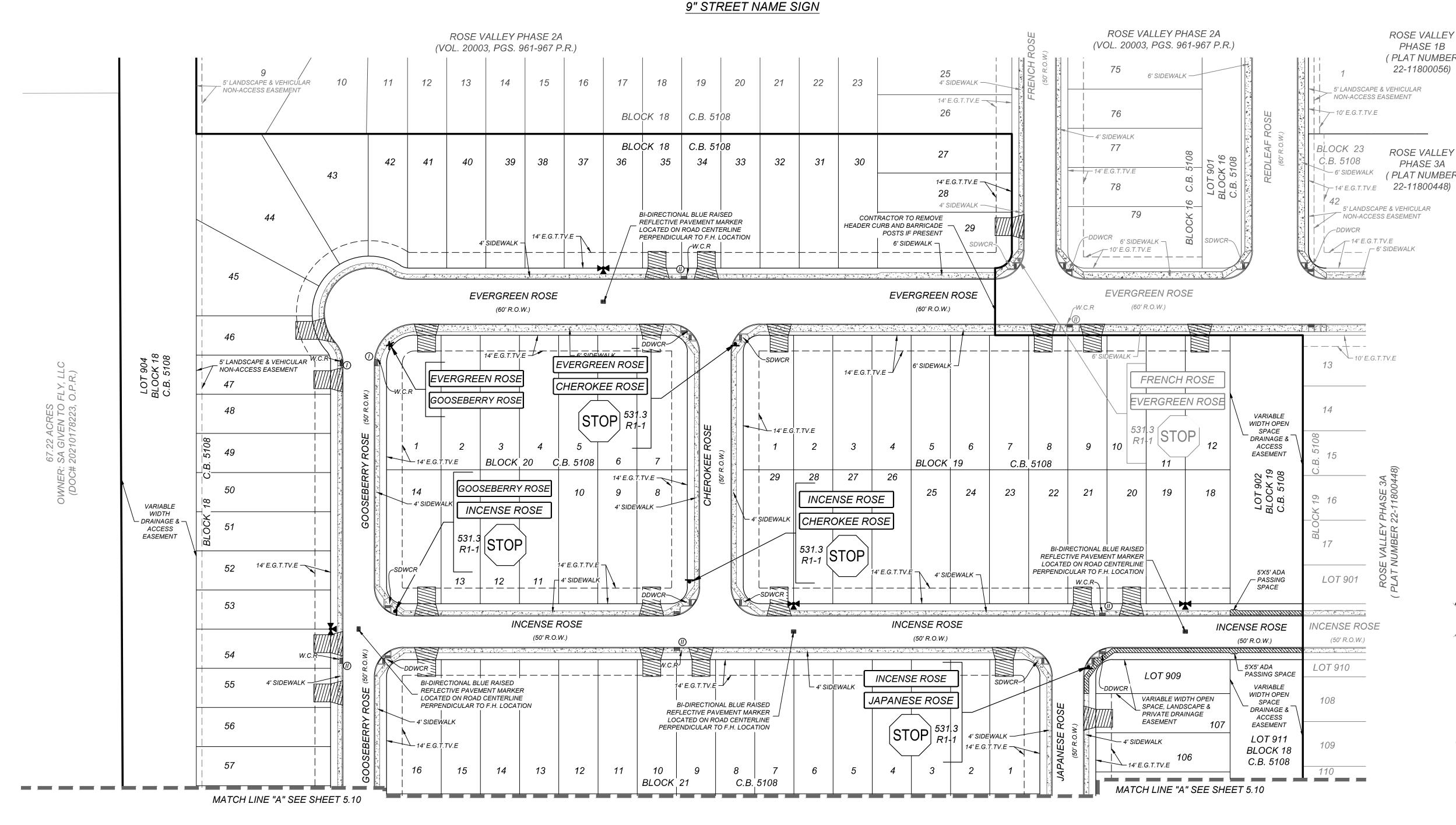
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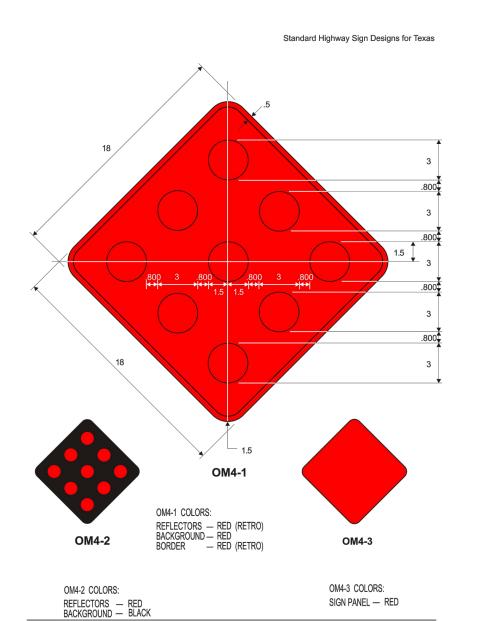
3421 Paesanos Parkway San Antonio, TX 78231 Phone: 210.979.8444 COLLIERS ENGINEERING & DESIGN, INC TBPE Firm#: F-14909 TBPLS Firm#: 10194550

SAN ANTONIO (KFW)

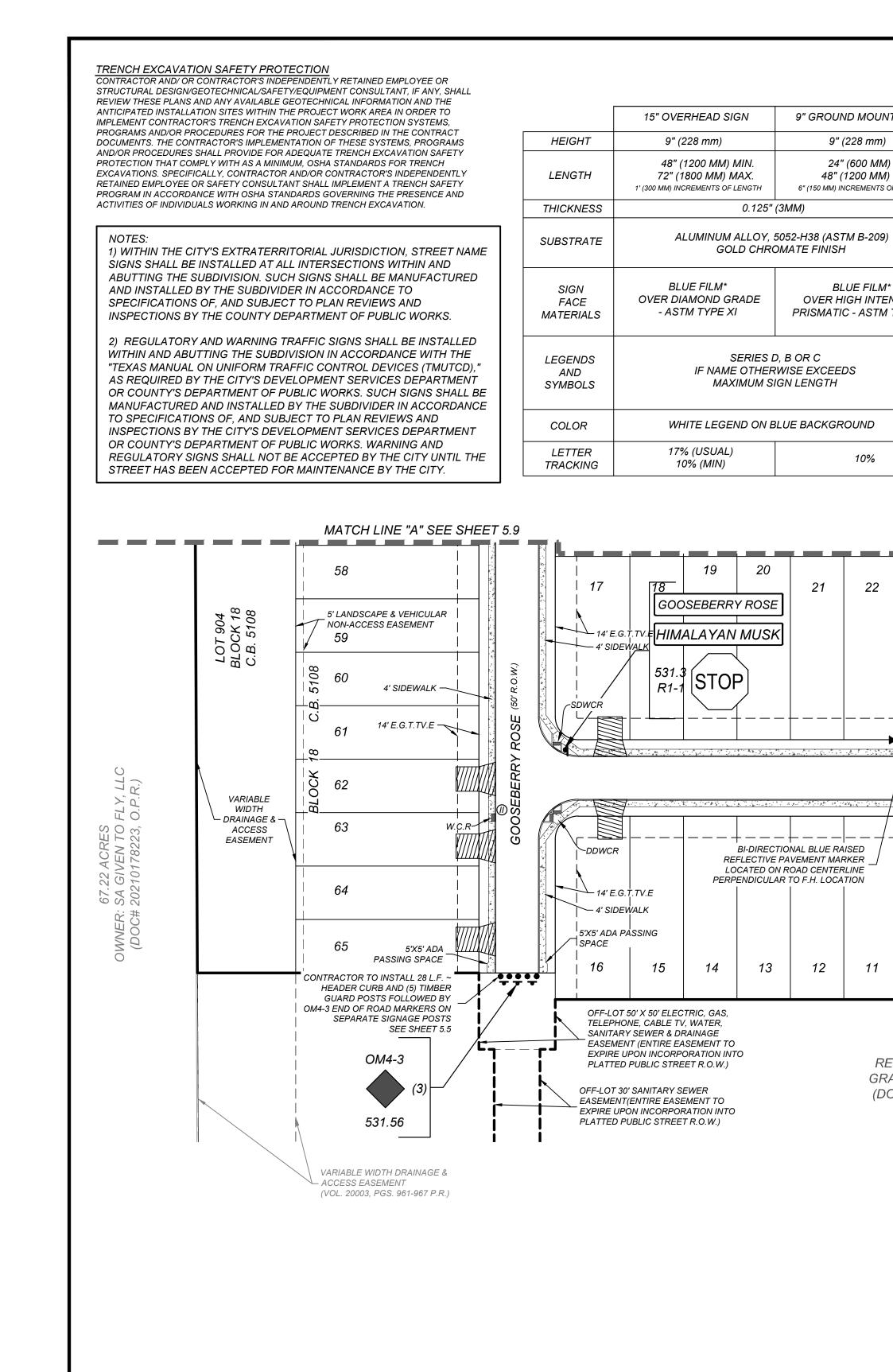
AS SHOWN 23007892A ΓS_3145104

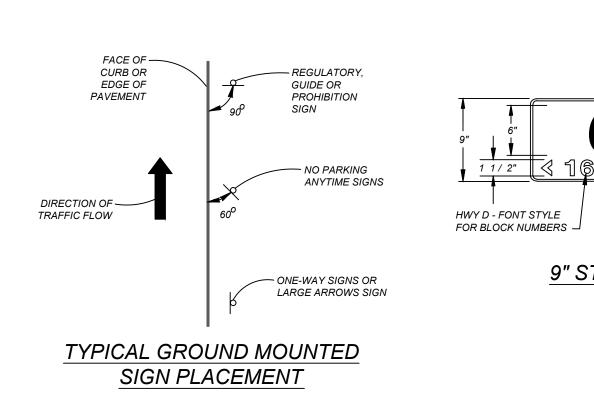
TRAFFIC SIGNAGE & SIDEWALK PLAN





2012 Edition - Revision 3





31

BI-DIRECTIONAL BLUE RAISED

REFLECTIVE PAVEMENT MARKER

LOCATED ON ROAD CENTERLINE PERPENDICULAR TO F.H. LOCATION

STOP | STOP | SIDEWALK -

5'X5' ADA PASSING

OFF-LOT 14'

JAPANESE ROSE

HIMALAYAN MUSK

OFF-LOT 50' X 50' ELECTRIC, GAS, TELEPHONE, CABLE

(ENTIRE EASEMENT TO EXPIRE UPON INCORPORATION

INTO PLATTED PUBLIC STREET R.O.W.)

CONTRACTOR TO INSTALL 28 L.F. ~ HEADER

MARKERS ON SEPARATE SIGNAGE POSTS

CONTRACTOR TO INSTALL 28 L.F. ~ HEADER CURB

CURB AND (5) TIMBER GUARD POSTS

FOLLOWED BY OM4-3 END OF ROAD -

5'X5' ADA PASSING

SEE SHEET 5.5

REMAINDER OF 153.26 ACRES

GRAYTOWN RD HOLDINGS, LLC.

(DOC. NO. 20210240677, O.P.R.)

OFF-LOT 14' E.G.T.TV.E

4' SIDEWALK -

5'X5' ADA

└ *PASSING*

SPACE

TV. WATER, SANITARY SEWER & DRAINAGE EASEMENT

OFF-LOT 30' SANITARY SEWER EASEMENT(ENTIRE EASEMENT TO EXPIRE UPON INCORPORATION INTO

PLATTED PUBLIC STREET R.O.W.)

OFF-LOT 55' RADIUS ELECTRIC, GAS,

(ENTIRE EASEMENT TO EXPIRE UPON

SEE SHEET 5.5

TELEPHONE, CABLE TV, WATER, SANITARY

SEWER, DRAINAGE & TURNAROUND EASEMENT

INCORPORATION INTO PLATTED STREET R.O.W.)

CONTRACTOR TO INSTALL (5) TIMBER GUARD POSTS FOLLOWED BY OM4-3 END OF ROAD MARKERS ON SEPARATE SIGNAGE POSTS

OM4-3

531.56

32

14' E.G. T.TV.E

4' SIDĖWALK –

9" GROUND MOUNT SIGNS

9" (228 mm)

24" (600 MM) MIN.

48" (1200 MM) MAX.

6" (150 MM) INCREMENTS OF LENGTH

BLUE FILM*

OVER HIGH INTENSITY

PRISMATIC - ASTM TYPE IV

10%

14' E.G.T.TV.E.

HIMALAYAN MUSK

└ 4' SIDEWALK

C.B. 5108

(50' R.O.W.)

BLOCK 22

REMAINDER OF 153.26 ACRES

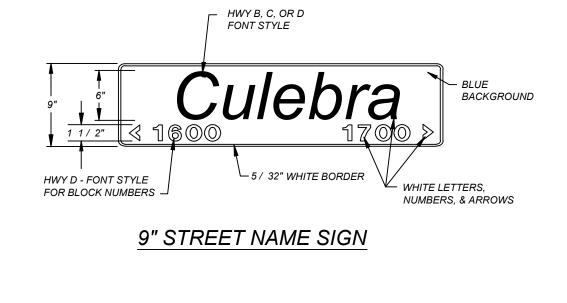
GRAYTOWN RD HOLDINGS, LLC.

(DOC. NO. 20210240677, O.P.R.)

14' E.G.T.TV.E —

12

┌ 4' SİDEWALK



MATCH LINE "A" SEE SHEET 5.9

105

103

102

VARIABLE WIDTH OPEN

SPACE, LANDSCAPE & PRIVATE DRAINAGE

LOT 908

100

5'X5' ADA PASSING

└─ 14' E.G.T.TV.E

- 4' SIDEWALK

5'X5' ADA PASSING

____14' E.G.T.TV.E

4' SIDEWALK

5'X5' ADA PASSING

OFF-LOT 14'

OFF-LOT VARIABLE WIDTH

- DRAINAGE AND ACCESS EASEMENT -

(VOL. 20003, PGS. 961-967 P.R.)

E.G.T.TV.E

BLOCK 18 C.B. 5108

AMENITY CENTER

OFF-LOT VARIABLE

SEWER EASEMENT

└ WIDTH SANITARY

EASEMENT

14' E.G.T.TV.E

— 4' SIDEWALK

110

111

112

ROSE VALLEY

PHASE 3A

(PLAT NUMBER

22-11800448)

REMAINDER OF 153.26 ACRES

GRAYTOWN RD HOLDINGS, LLC.

(DOC. NO. 20210240677, O.P.R.)

OFF-LOT VARIABLE WIDTH

OFF-LOT VARIABLE WIDTH

- DRAINAGE & ACCESS EASEMENT

(VOL. 20003, PGS. 961-967 P.R.)

- DRAINAGE & ACCESS EASEMENT

(VOL. 20003, PGS. 961-967 P.R.)

BLOCK 18

C.B. 5108

LOT 911

BLOCK 18

C.B. 5108

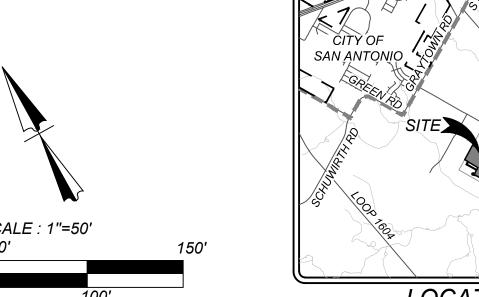
VARIABLE

WIDTH OPEN SPACE

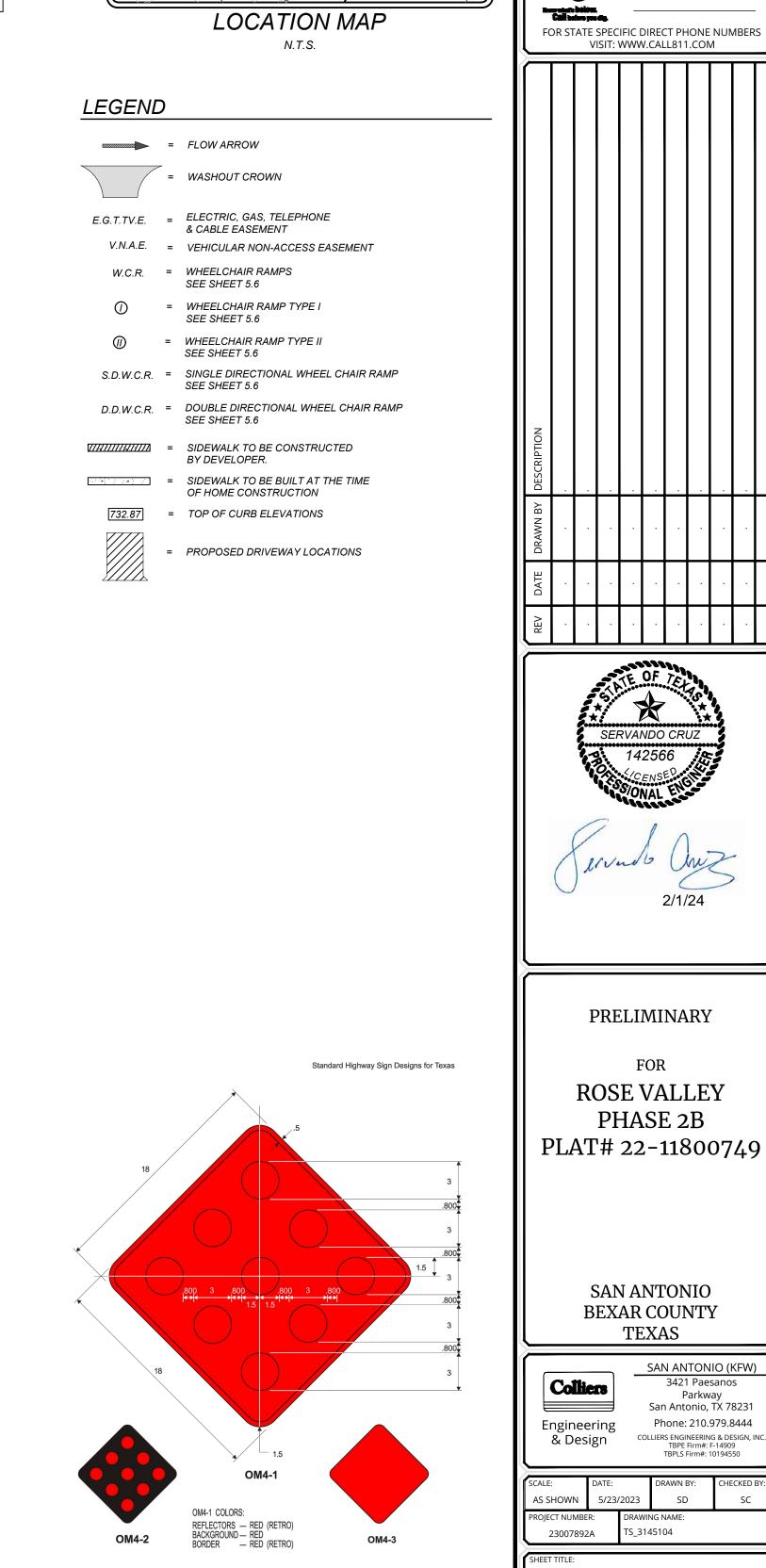
DRAINAGE &

ACCESS

EASEMENT







SERVANDO CRUZ

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FOR **ROSE VALLEY** PHASE 2B PLAT# 22-11800749

> SAN ANTONIO **BEXAR COUNTY TEXAS**

Colliers Engineering & Design

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SAN ANTONIO (KFW)

AS SHOWN AWING NAME: ΓS_3145104 23007892A

TRAFFIC SIGNAGE &

SIDEWALK PLAN

OM4-3 COLORS:

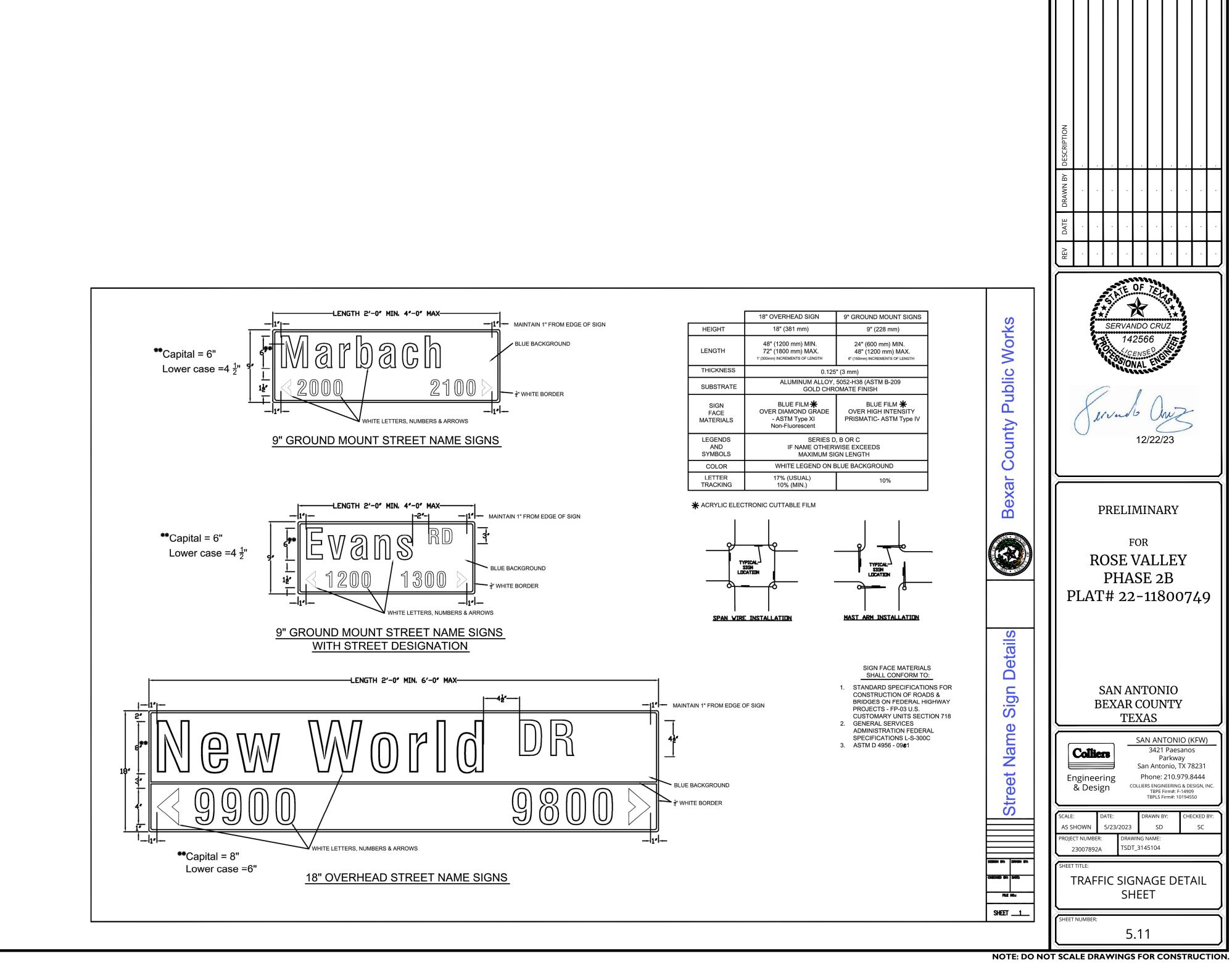
SIGN PANEL — RED

June 2020

OM4-2 COLORS:

2012 Edition - Revision 3

REFLECTORS — RED BACKGROUND — BLACK





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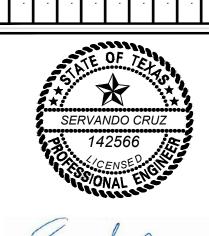
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FOR **ROSE VALLEY** PHASE 2B PLAT# 22-11800749

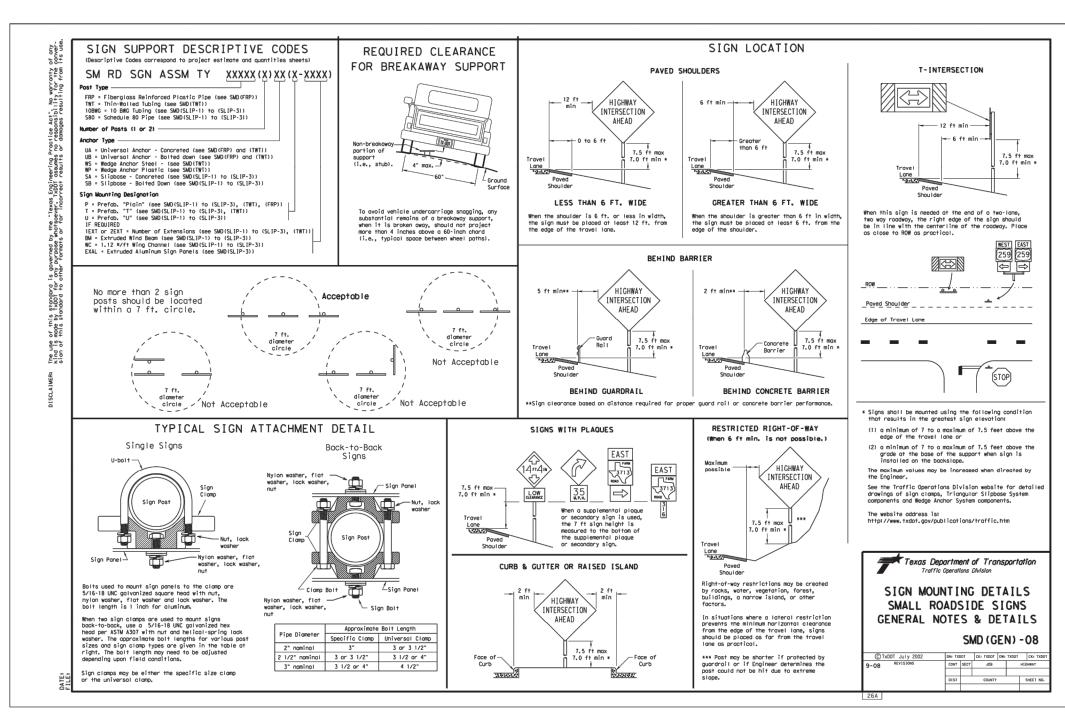
> SAN ANTONIO BEXAR COUNTY **TEXAS**

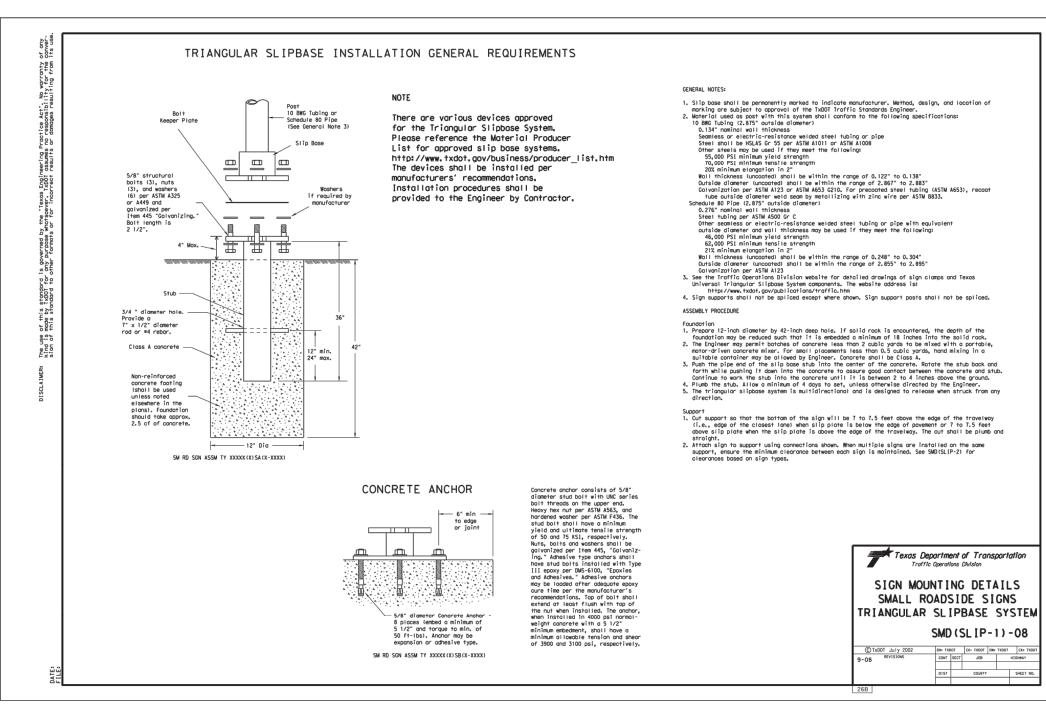
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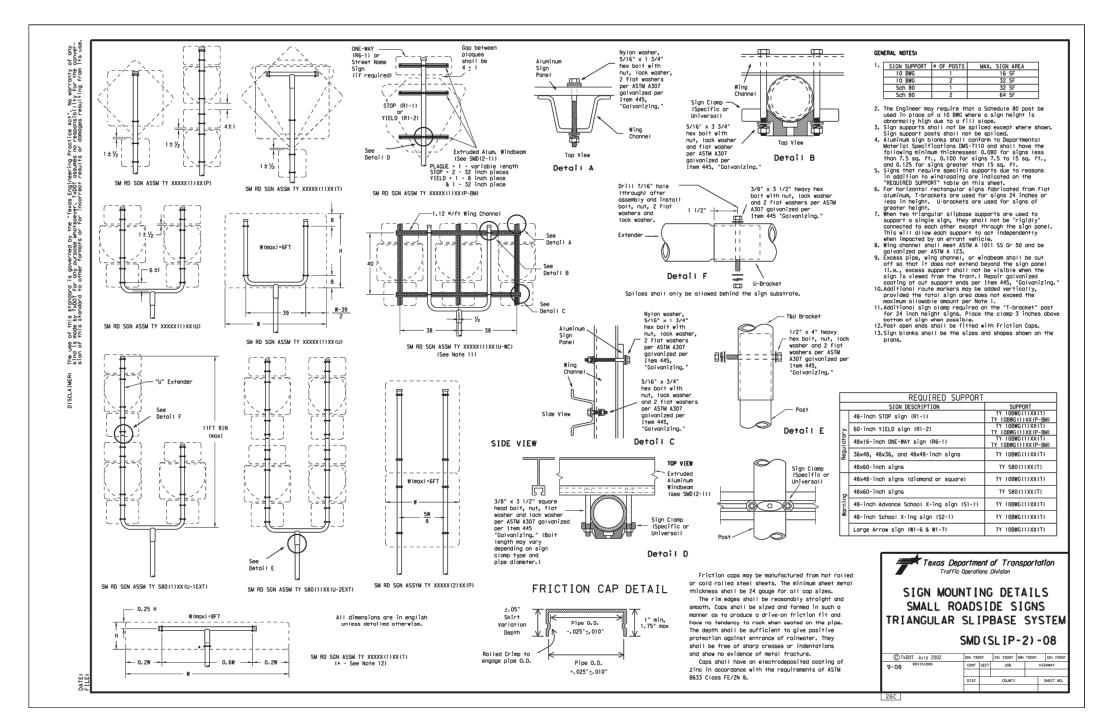
SD

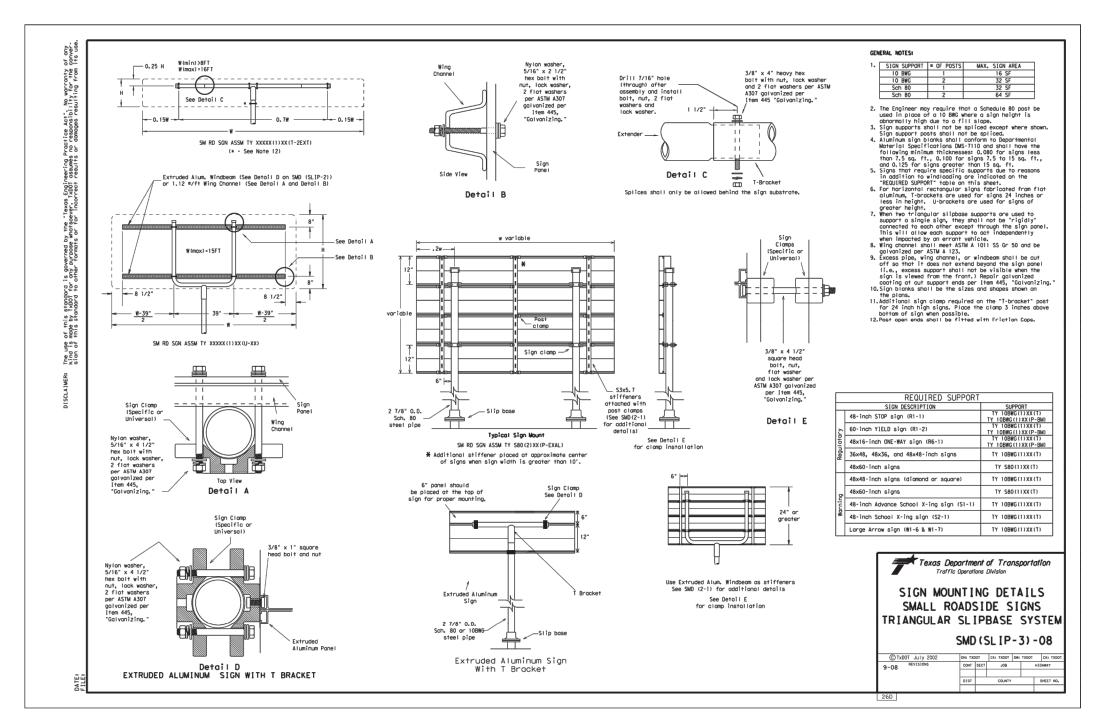
TSDT_3145104

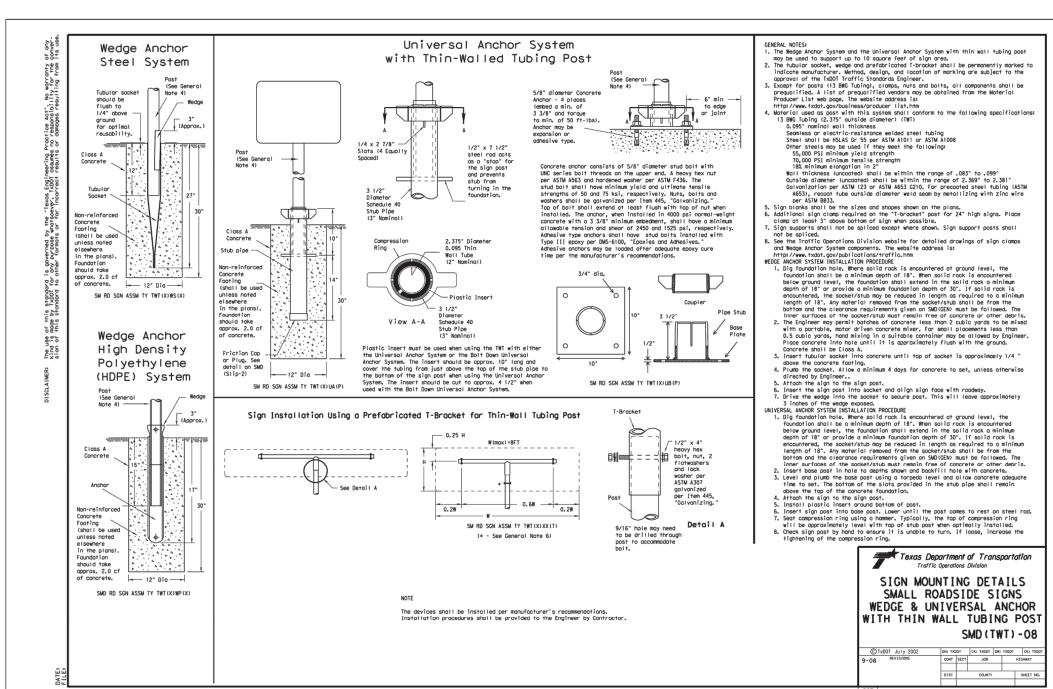
5.11

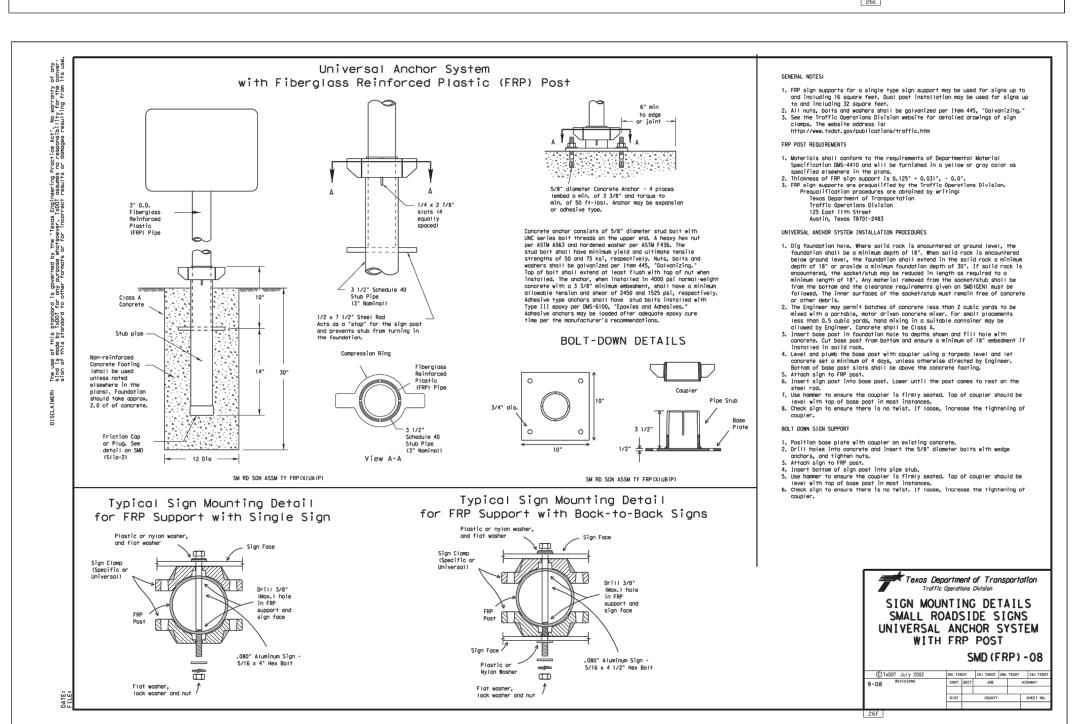














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PRELIMINARY

12/22/23

FOR
ROSE VALLEY
PHASE 2B
PLAT# 22-11800749

SAN ANTONIO BEXAR COUNTY TEXAS

CollicrsEngineering & Design

SAN ANTONIO (KFW)

3421 Paesanos
Parkway
San Antonio, TX 78231
Phone: 210.979.8444

COLLIERS ENGINEERING & DESIGN, INC
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

CALE: DATE: DRAWN BY:
AS SHOWN 5/23/2023 SD
ROJECT NUMBER: DRAWING NAME:

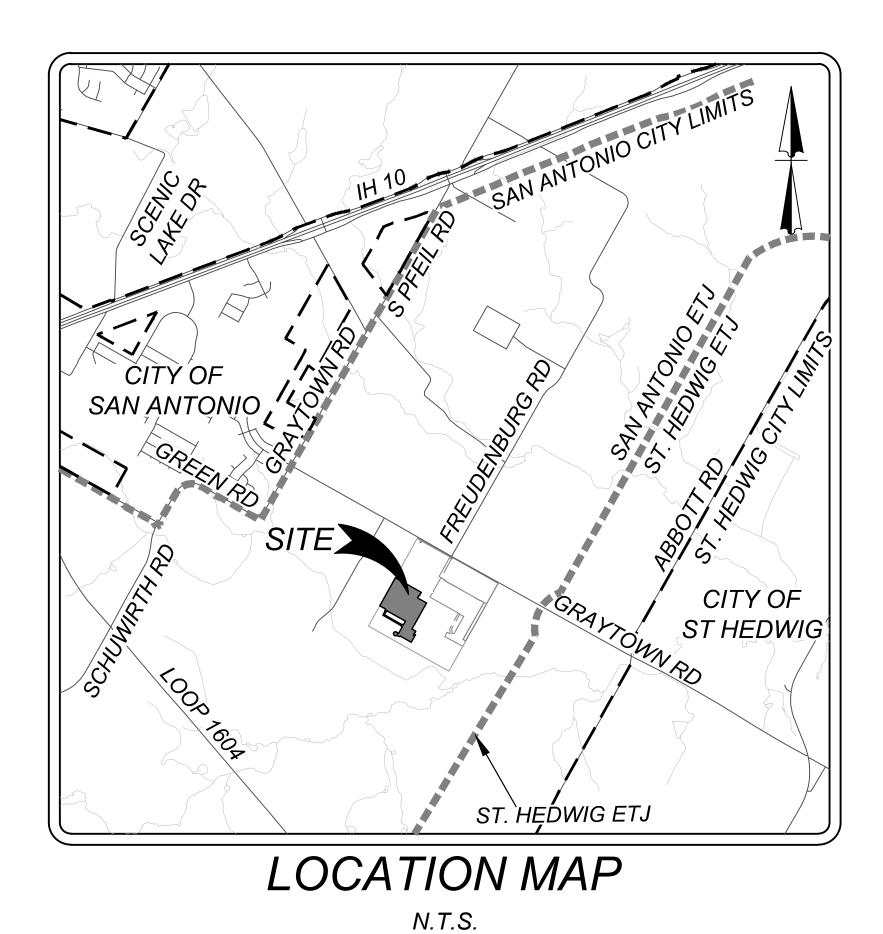
23007892A TSDT_3145104
HEET TITLE:
TRAFFIC SIGNAGE NOTES &

DETAILS SHEET

5.12

ROSE VALLEY PHASE 2B

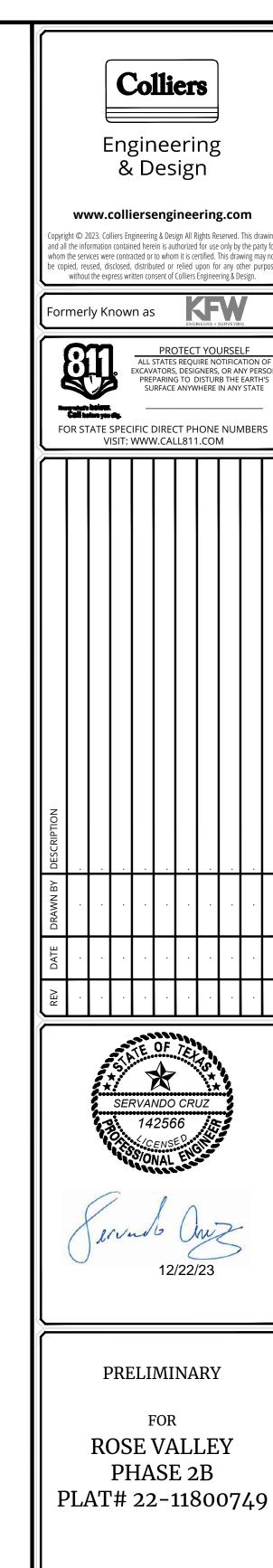
BEXAR COUNTY, TEXAS SANITARY SEWER IMPROVEMENTS



INDEX

DESCRIPTION	SHEET NO.
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SEWER LINE B PLAN & PROFILE	6.5
SEWER LINE B PLAN & PROFILE	6.6
SEWER LINE C PLAN & PROFILE	6.7
SEWER LINE D PLAN & PROFILE	6.8
SEWER LINE D PLAN & PROFILE	6.9
EXISTING SEWER LINE B & LINE E PLAN & PROFILE	6.10
SANITARY SEWER DETAILS	6.11

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



SAN ANTONIO BEXAR COUNTY TEXAS

SANITARY SEWER

COVER SHEET

SAN ANTONIO (KFW)

San Antonio, TX 78231 Phone: 210.979.8444

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 AND CONTRACTED 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 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 10. WHERE WATER LINES AND NEW SEWER LINES ARE INSTALLED 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 FIGHT (48) HOURS PRIOR TO ANY EXCAVATION CONTRACTOR SHALL ALSO PROVIDE PROCEDURES THAT WILL BE LISED TO NOTIFY AFFECTED RESIDENTS AND OR PROPERTY OWNERS 48 HOURS PRIOR TO ANY EXCAVATION OR CONSTRUCTION. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD BEFORE ANY EXCAVATION OR 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 FMAILED 48 HOURS IN ADVANCE TO <u>UTILITIESDEVELOPMENT@SARIVERAUTHORITY.ORG.</u>
- 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 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.

THE FOLLOWING CONTACT INFORMATION IS SUPPLIED FOR VERIFICATION PURPOSES:

- EAST CENTRAL SPECIAL UTILITY DISTRICT CITY OF SAN ANTONIO DRAINAGE 210-207-5048 CITY PUBLIC SERVICE (CPS) 210-973-3500 CITY OF CONVERSE (PUBLIC WORKS) 210-659-9513 210-352-4872 TIME WARNER VALERO ENERGY CO. 210-349-7555 RIVER AUTHORITY INSPECTIONS 800-344-8377 SAN ANTONIO WATER SYSTEM (SAWS) 210-233-3500
- 9. CERTAIN PORTIONS OF THE PROJECT MAY PARALLEL AND/OR CROSS EXISTING UTILITIES, AND CONTRACTOR IS REQUIRED T PROTECT THESE UTILITIES. ADDITIONAL SUPPORTIVE SHORING MAY BE REQUIRED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT HIS WORKERS, EXISTING UTILITIES, AND FINISHED WORK THROUGHOUT THE PROJECT. CONTRACTOR WILL B RESPONSIBLE FOR ANY DAMAGES AND REPAIRS WILL BE AT CONTRACTORS EXPENSE.
- WITH A SEPARATION DISTANCE LESS THAN 9 FEET (I.E. WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES OR WATER LINES NEXT TO MANHOLES). TH 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. THI CONTRACTOR MUST PROTECT AND WORK AROUND VALVES THAT ARE IN THE PROJECT AREAS.
- 12. AN APPROPRIATELY 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 THE VICINITY OF CPS OVERHEAD LINES. CONTRACTOR SHALL MAINTAIN CPS RECOMMENDED CLEARANCE REQUIREMENTS.
- 13. ALL WORK IN THE TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) RIGHT-OF-WAY SHALL PROCEED DURING WORKING HOURS AGREED UPON BY RIVER AUTHORITY AND TXDOT
- 14. BEFORE THE START OF ANY CONSTRUCTION, THE PROJECT SITE MUST BE VIDEO RECORDED BY THE CONTRACTOR WITH ONE COPY SUBMITTED TO RIVER AUTHORITY. THE PRE-CON SITE VIDEO WILL PROVIDE ACCURATE DOCUMENTATION OF EXISTING
- EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES TO ORIGINAL OR BETTER CONDITION AS A RESULT OF DAMAGE DONE DURING THE PROJECT CONSTRUCTION. 16. ANY AND ALL FENCING, INCLUDING ELECTRIC FENCE, WHETHER OR NOT IDENTIFIED ON THE PLANS, MUST BE MAINTAINED

TO THE CONTRACTOR MUST BE REPLACED TO EQUAL OR

AT ALL TIMES. ANY AND ALL DAMAGES DIRECTLY ATTRIBUTED

15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING

- BETTER CONDITIONS AT THE CONTRACTOR'S EXPENSE AND AS APPROVED BY THE RIVER AUTHORITY INSPECTOR. GAPS IN THE FENCING MUST BE PROVIDED AT ALL LOCATIONS WHERE THE SEWER LINE FASEMENT CROSSES FENCING FENCING REQUIRED TO MAINTAIN LIVESTOCK MUST BE MAINTAINED AT ALL TIMES.
- 17. CONTRACTOR MUST AVOID DAMAGE TO ADJACENT LAND OUTSIDE THE IDENTIFIED CONSTRUCTION LIMITS. ANY CLAIMS DIRECTLY ATTRIBUTED TO THE CONTRACTOR RESULTING FROM HIS 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
- 19. CONTRACTOR MUST COMPLY WITH TEXAS GOVERNMENT CODE SECTION 2166.303 UNIFORM TRENCH SAFETY CONDITIONS.
- 20. CONTRACTOR SHALL BACKFILL ALL OPEN TRENCHES AT THE FND OF THE DAY. CONTRACTOR SHALL NOT INSTALL MORE PIPE THAN CAN BE COVERED. NO OPEN TRENCHES WILL BE PERMITTED OVERNIGHT. ALL ENDS OF OPEN PIPE SHALL BE
- 21. NO TREES SHALL BE REMOVED AS PART OF THIS PROJECT UNLESS OTHERWISE SPECIFIED IN THE PLANS.
- 22. 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 AT NO ADDITIONAL COST TO RIVER AUTHORITY. THE CONTRACTOR ASSUMES ALL RISK FOR UNFINISHED WORK. NO EQUIPMENT OR MATERIALS SHALL BE STOCKPILED IN THE 100-YEAR FLOODPLAIN.
- 23. NO WASTE MATERIAL SHALL BE PLACED IN EXISTING DRAINAGE LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS, NATURAL DRAINAGE, OR PLACED WITHIN THE LIMITS OF EXISTING
- 24. IF A THREATENED OR ENDANGERED PLANT OR ANIMAL SPECIES AND/OR CULTURAL/ARCHAFOLOGICAL RESOURCES ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL STOP WORK IMMEDIATELY AND NOTIFY THE APPROPRIATE

SEWER NOTES:

RIVER AUTHORIT
100 E. GUENTHER STREET
SAN ANTONIN TREASE SERVE

- 25. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT NO 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 AN SSO OCCUR, THE CONTRACTOR SHALL:
- 25.1. IDENTIFY THE SOURCE OF THE SSO AND ATTEMPT TO ELIMINATE ANY ADDITIONAL SPILLAGE. 25.2. NOTIFY RIVER AUTHORITY CONSTRUCTION INSPECTIONS DIVISION AT 210-302-4216 OR 210-219-0130.
- 25.3. ATTEMPT TO FLIMINATE THE SOURCE OF THE SSO. 25.4. CONTAIN SEWAGE FROM THE SSO TO PREVENT CONTAMINATION OF WATERWAYS.
- 25.5. CLEAN UP THE SPILL SITE AND REMOVE CONTAMINATED MATERIALS. 25.6. DISINFECT THE AREA OF THE SPILL WITH A MIXTURE OF HTH CHLORINE AND WATER.
- 25.7. CLEAN THE AFFECTED SEWER LINE AND REMOVE ANY DEBRIS 25.8. IDENTIFY AND TRAIN PERSONNEL RESPONSIBLE FOR SPILLAGE PREVENTION AND CONTROL. 25.9. NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THIS WORK, ALL WORK SHALL BE DONE ACCORDING TO GUIDELINES SET BY THE TCEQ AND RIVER AUTHORITY.
- 26. TIE-INS OR SHUTDOWNS OF EXISTING FORCE MAINS OF ANY SIZE MUST BE COORDINATED WITH THE RIVER AUTHORITY INSPECTOR AT LEAST ONE WEEK IN ADVANCE OF THE SHUTDOWN. CONTRACTOR SHALL PROVIDE A SEQUENCE OF WORK AS RELATED TO TIE-INS AT NO ADDITIONAL COST TO RIVER AUTHORITY OR THE PROJECT.
- 27. ELEVATIONS OF THE TOP OF MANHOLES AND INVERTS ARE FOR REFERENCE ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ALLOWANCES AND ADJUSTMENTS FOR THE TOPS OF MANHOLES AND INVERTS TO MATCH THE FINISHED GRADE OF THE PROJECT IMPROVEMENTS (NSPI).
- 28. THE CONTRACTOR SHALL PROVIDE BYPASS PUMPING OF SEWAGE AROUND EACH SEGMENT OF PIPE TO BE REPLACED. CONTRACTOR SHALL HAVE STANDRY PUMPS AVAILABLE TO BYPASS FLOW IN CASE PRIMARY PLIMP 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; SPECIFICATIONS FOR THE PUMPING EQUIPMENT; AND TYPE, SIZE CAPACITY AND NUMBER OF PUMPS REQUIRED TO HANDLE THE PEAK WET WEATHER FLOW.
- 29. 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 THE CONTRACTOR, IT SHALL BE REPLACED AS 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. CONTRACTOR SHALL RESEAL ALL LEAKS AT CONTRACTOR EXPENSE.
- 30. CONTRACTOR TO ENSURE ALL PLUGS USED TO PLUG SEWER LINES WHILE TESTING THE PROJECT (SUCH AS AIR PLUGS, SCREW TYPE PLUGS, ETC.) ARE LABELED, MARKED OR TAGGED. THE CONTRACTOR SHALL RECORD HOW MANY PLUGS ARE BEING USED, AS WELL AS THE LOCATION AND IDENTIFICATION OF EACH PLUG. CONTRACTOR WILL REPORT TO PROJECT INSPECTOR OF ANY LOST OR UNRESTRAINED PLUGS.

84. ALL INTERCEPTORS SHALL BE WATER TESTED OUT AT JOB SITE

- 31. CONTRACTOR WILL BE HELD LIABLE FOR ANY DAMAGE TO SEWER COLLECTION SYSTEM, STOPPAGES, OVER-FLOWS, OR BACKUPS
- INTO HOMES CAUSED BY LOST OR RUNAWAY SEWER PLUGS. 32. CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY DAMAGE TO WASTEWATER TREATMENT EQUIPMENT CAUSED BY LOST OF
- 33. RIVER AUTHORITY IS NOT RESPONSIBLE FOR ANY ABNORMALITIES ON STUB OUT, INVERT, GRADE OR SLOPE FOR ANY EXISTING MANHOLE TIE-IN OR SERVICE LATERAL
- MANHOLE NOTES: 34. THERE SHALL BE 400 FEET MAXIMUM SPACE BETWEEN MANHOLES TO PROVIDE ACCESS FOR CLEANING. A 16-FOOT WIDE GATE WITH A LOCK SHALL ALSO BE SUPPLIED AND INSTALLED BY THE

CONTRACTOR FOR ACCESSING THE SANITARY SEWER LINE IN

RUNAWAY SEWER PLUGS. CONTRACTOR WILL BE HELD LIABLE

35. ALL MANHOLES SHALL BE CONSTRUCTED SO THAT THE TOP OF THE RING IS AT LEAST FOUR (4) INCHES ABOVE THE FINISHED GRADE OF THE SURROUNDING GROUND IN UNPAVED AREAS. IN PAVED AREAS, THE MANHOLE RING SHALL BE FLUSH WITH THE

EASEMENTS.

- 36. EVERY THIRD MANHOLE COVER WILL HAVE A 1"HOLE FOR A VENT. VENTING SHALL COMPLY WITH TAC 217.55.
- 37. EACH MANHOLE SHALL HAVE TWO LOCKS INSTALLED TO PREVENT REMOVAL. 38. ALL MANHOLES SHALL HAVE A 30"OPENING, WATERTIGHT RINGS AND COVERS, WITH THE RIVER AUTHORITY LOGO AND I/I
- 39. NEW MANHOLE PROTECTIVE COATING LINER MUST BE APPLIED TO ALL MANHOLES. APPLICATION PROCEDURES SHALL BE IN
- ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION AND PER THE FOLLOWING SPECIFICATIONS:
- 39.1. CONTRACTOR WILL BE RESPONSIBLE FOR MANHOLE SAFETY AND CONFINED SPACE ENTRY SET BY OCCUPATIONAL SAFETY AND HEALTH STANDARDS, 29 CFR 1910.146 APP. E. 39.2. THE CONTRACTOR SHALL NOTIFY THE RIVER AUTHORITY

RECOMMENDATIONS AND COATED WITH A RIVER AUTHORITY

- UTILITIES INSPECTIONS DEPARTMENT A MINIMUM OF 48 HOURS IN ADVANCE OF THE START OF ANY FIELD SURFACE PREPARATION WORK FOR MANHOLES. 39.3. ALL NEW MANHOLES AND THE EXISTING MANHOLE THAT THE PROPOSED SEWER LINE WILL TIE-IN TO SHALL HAVE THE INTERIOR WALL PREPPED AS PER MANUFACTURER'S
- APPROVED PRODUCT 39.4. FOR ALL MANHOLES, APPLY THE CEMENTITIOUS COATING FIRST, FOLLOWED BY THE EPOXY COATING. LAFARGE SEWPERCOAT 200 HR PRODUCT IS THE ONLY APPROVED PRODUCT WHICH COMBINES THE CEMENTITIOUS AND EPOXY COATINGS, UNLESS OTHERWISE LISTED IN THE APPROVED
- 39.5. CEMENTITIOUS COATING WITH REQUIRED ONE-INCH-THICK APPLICATION: SEE RIVER AUTHORITY APPROVED PRODUCT 39.6. EPOXY COATING: WITH SPECIFIED THICKNESS APPLICATION: SEE RIVER AUTHORITY APPROVED PRODUCT SHEET
- 39.7. SPRAY WALL POLYURETHANE SYSTEM REQUIRED THICKNESS 39.8. CONTRACTOR SHALL SUBMIT WARRANTY LETTER ON MANHOLE PROTECTIVE COATING FOR 10 YEARS AFTER FINAL
- ACCEPTANCE OF PROTECTIVE COATINGS. 40. ANY CONNECTIONS TO EXISTING MANHOLES WILL REQUIRE A CRADLE TO SUPPORT THE INCOMING PIPE. A RUBBER GASKET WILL ALSO BE REQUIRED (CENTERED AT MANHOLE WALL) WITH

GROUTING AT INTERIOR AND EXTERIOR PENETRATIONS.

- 41. 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
- 42. IF ANY EXISTING MANHOLES CONNECTED WITH THIS PROJECT ARE FOUND TO HAVE INFILTRATION, THE MANHOLES SHALL BE SEALED AND TESTED AT CONTRACTORS EXPENSE.
- 43. MANHOLES WITH STUB-OUTS 8-INCH OR LARGER MUST BE LOCATED AT THE END OF ALL SEWER LINES THAT MAY BE EXTENDED IN THE FUTURE. STUB-OUTS SHALL BE PLUGGED.
- 44. MANHOLE COVER INSERTS ARE SHOWN IN RIVER AUTHORITY APPROVED PRODUCT SHEET. INSERTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING THE NECESSARY FIELD MEASUREMENTS FOR THE MANUFACTURER PRIOR TO PRODUCTION.
- 45. BEFORE BACK FILLING/COMPACTION/CONCRETE ENCASEMENT, ALL MANHOLE JOINT SECTION RISERS, CONE SECTIONS AND GRADE RING SHALL BE WRAPPED WITH INFI-SHIELD GATOR WRAP SEALING SYSTEMS, BUTYL ADHESIVE SEALANT WITH A MINIMUM THICKNESS OF 30 MILS. JOINT SEALANT MUST MEET ASTM C923. MASTIC MUST MEETS ASTM C 990 OR BE APPROVED BY THE RIVER AUTHORITY ENGINEER.
- 46. IF CONCRETE THROAT RINGS ARE TO BE INSTALLED THEY MUST BE USED IN CONJUNCTION WITH A UV STABILIZED POLYETHYLENE LINER AND I/I BARRIER. I/I BARRIER MUST MEET THE FOLLOWING ASTM STANDARDS: ASTM D-790/1505 DENSITY OF POLYETHYLENE MATERIALS, ASTM D-1238 MELT FLOW INDEX, ASTM 638 TENSILE STRENGTH@ YIELD (50 mm/mm), ASTM 790 FLEXURAL MODULUS, ASTM 648 HEAT DEFLECTION TEMPERATURE @IGEPAL, ASTM 1693 EsCR,100% IGEPAL /10% IGEPAL.
- 47. A MINIMUM OF TWO AND A MAXIMUM OF FOUR THROAT RINGS WILL BE USED AT EACH MANHOLE FOR ADJUSTMENT.
- 48. DROP MANHOLES SHALL BE REQUIRED WHEN THE INFLOW ELEVATION IS MORE THAN 24 INCHES ABOVE THE OUTFLOW ELEVATION. DROP SHALL BE LOCATED OUTSIDE THE MANHOLE WITH THE FLOWLINE ELEVATION LOCATED BETWEEN THE CENTER
- MANHOLF RING. AND 28 INCHES AROUND THE GATOR WRAP SEALING SYSTEM. CONCRETE ENCASEMENT SHALL BE CIRCULAR, FORMED LEVEL, AND HAVE A SMOOTH OR BROOM FINISH. SEE SPECIFICATIONS. 50. SEWER PIPE CONNECTIONS TO PRECAST MANHOLES SHALL BE

49. THERE SHALL BE CONCRETE ENCASEMENT 18 INCHES AROUND

LIST. SEWER PIPE CONNECTIONS TO MONOLITHIC MANHOLES WILL BE AS SHOWN ON THE STANDARD DETAIL SHEET. ANY CHANGES IN THESE METHODS MUST BE APPROVED BY RIVER AUTHORITY 51. ALL PIPE TRENCHING, BEDDING AND BACKFILL SHALL BE DONE IN ACCORDANCE WITH APPROPRIATE ASTM/ANSI SPECIFICATIONS

APPROVED BY RIVER AUTHORITY. REFER TO APPROVED PRODUCT

- [REFERENCE 30 TAC 217.54: ASTM C-12 (ANSI A106.2) OR ASTM D-2321 (ANSI K65.171)]. ALL COMPACTION SHALL BE TO 98% DENSITY. THERE SHALL BE ONE RANDOM DENSITY TEST PER LIFT FOR EVERY 400 FEET. ALL TESTING SHALL BE IN COMPLIANCE WITH CURRENT TXDOT SPECIFICATIONS. 52. A SAND MIGRATION PREVENTION COLLAR SHALL BE INSTALLED
- WHEN TRANSITIONING FROM SELECT INITIAL BACKFILL 7 OPTIONAL SELECT INITIAL BACKFILL. A 2-FOOT LONG CLASS B CONCRETE ENCASEMENT BETWEEN THE TWO SHALL BE PROVIDED FOR THE ENTIRE HEIGHT OF THE INITIAL BACKFILL EVERY 180 FEET ALONG PIPE AND 20 FEET FROM WALL OF MANHOLE IN EACH DIRECTION.

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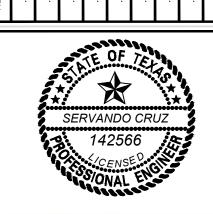
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SANITARY SEWER NOTES

6.

53. 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:

- 54. THE TYPE AND DESCRIPTION OF THE PIPE CONDUIT IS SHOWN ON THE PLANS. REFER TO RIVER AUTHORITY SPECIFICATIONS FOR MATERIALS, STIFFNESS, AND TYPE.
- 55. THE USE OF ASBESTOS CEMENT PIPE WILL BE PROHIBITED UNDER THIS CONTRACT.
- 56. 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.
- 57. SEE SPECIFICATIONS FOR PVC SEWER PIPE WITH OVER 14 FEET OF COVER.
- 58. ALL SEWER PIPES SHALL HAVE COMPRESSION OR MECHANICAL
- 59. SAND MIGRATION PREVENTION COLLAR WHEN CHANGING THE INITIAL BACKFILL FROM SELECT INITIAL BACKFILL TO OPTIONAL SELECT INITIAL BACKFILL. A TWO (2) FOOT LONG CLASS B CONCRETE ENCASEMENT OR FIRMLY COMPACTED, CONSOLIDATED CLAY ENCASEMENT BETWEEN THE TWO SHALL BE PROVIDED FOR THE ENTIRE HEIGHT OF THE INITIAL BACKFILL EVERY 180 FFET ALONG PIPE AND 20 FEET FROM WALL OF MANHOLE IN EACH DIRECTION.

SEWER LINE LOCATION:

60. SEWER LINES SHALL BE SIZED AND EXTENDED THROUGH THE LIMITS OF A DEVELOPMENT TO SERVE ADJACENT PROPERTY WITH MANHOLE AND STUB-OUT AT END OF SEWER LINE.

- 61. IN PHASED CONSTRUCTION OF THOROUGHFARES, THE SEWER LINE SHALL BE EXTENDED THE ENTIRE LENGTH OF PROPOSED
- 62. ALL SANITARY SEWER LINES SHALL BE LOCATED A MINIMUM OF FIVE (5) FEET FROM ANY TREE. 63. SIZES AND GRADES FOR SANITARY SEWER SHALL BE AS
- REQUIRED BY THE RIVER AUTHORITY ENGINEER AND CONSIDERATION SHALL BE GIVEN AS TO POSSIBLE EXTENSIONS. FOR FUTURE DEVELOPMENT, NO SANITARY SEWERS, OTHER THAN LATERALS AND FORCE MAINS, SHALL BE LESS THAN EIGHT (8) INCH IN DIAMETER.

SEWER SERVICE LATERALS

- 64. WHEN SEWER LATERALS ARE TO BE CONNECTED TO EXISTING SEWER MAINS AND NO STUB-OUT HAS BEEN EARLIER PROVIDED, THE CONNECTION MUST BE CONDUCTED PER THE RIVER AUTHORITY STANDARD DETAILS AND APPROVED PRODUCT
- 65. REFER TO THE RIVER AUTHORITY APPROVED PRODUCTS LIST FOR ACCEPTABLE FITTINGS AND CONNECTIONS.
- 66. 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 AT (6 x 6) CAPPED AND SEALED. ATTACH SEWER BURIAL TAPE TO THE END OF ALL SEWER LATERALS AND BRING UP TO THE GROUND LEVEL FOR MARKER (GREEN). (SEE HOUSE LATERALS DETAILS).

- DESIGNATED AS FOLLOWS UNLESS OTHERWISE DIRECTED BY THE RIVER AUTHORITY ENGINEER:
- 68 IN GENERAL FOR SINGLE FAMILY DWELLING THE LATERAL SIZE SHALL BE A SIX (6) INCH MINIMUM. HOUSE LATERALS SHALL BE INSTALLED SO THAT CLEANOUTS SHALL HAVE A TWO (2) FOOT SEPARATION FROM DRIVEWAYS, AND SHALL HAVE A NINE (9) FOOT SEPARATION FROM THE WATER SERVICE. THE SERVICE SHALL THEN BE EXTENDED AT A FORTY-FIVE (45) DEGREE ANGLE TO FOUR (4) FEET ABOVE THE FINISHED GRADE AND CAPPED. USE SEWER BURIAL TAPE TO MARK ALL SEWER SERVICE LATERALS.
- 69. MULTIPLE UNITS, APARTMENTS, LOCAL RETAIL AND COMMERCIAL SIX (6) INCH MINIMUM, MANUFACTURING AND INDUSTRIAL -EIGHT (8) INCH MINIMUM, OR LARGER AS REQUIRED.

TRAPS AND INTERCEPTORS (FOG - TECQ) 70. UNIFORM PLUMBING CODE, CITY OF SAN ANTONIO BUILDING INSPECTIONS DEPARTMENT. ALL COMMERCIAL BUILINGS WILL

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

SAND INTERCEPTORS

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

GALLONS CAPACITY. AUTOMATIC CAR WASHES

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

NEUTRALIZING DEVICES

74. IN NO CASE SHALL CORROSIVE LIQUIDS, SPENT ACIDS, OR OTHER HARMFUL CHEMICALS WHICH MIGHT DESTROY OR INJURE A DRAIN, SEWER, SOIL, OR WASTE PIPE, OR WHICH MIGHT CREATE NOXIOUS OR TOXIC FUMES, DISCHARGE INTO THE SANITARY SEWER SYSTEM WITHOUT BEING THOROUGHLY NEUTRALIZED BY PASSING THROUGH A PROPERLY CONSTRUCTED AND ACCEPTABLE NEUTRALIZING DEVICE. SUCH DEVICE SHALL BE PROVIDED WITH A SUFFICIENT INTAKE OF NEUTRALIZING MEDIUM, CONSISTING OF LIMESTONE OR MARBLE CHIPS, SO AS TO MAKE ITS CONTENTS NON-INJURIOUS BEFORE BEING DISCHARGED INTO THE SANITARY SEWER SYSTEM.

- 75. PUBLIC AND PRIVATE LAUNDROMATS AND COMMERCIAL LAUNDRIES SHALL INSTALL A LINT TRAP EQUIPPED WITH A CONVENIENTLY LOCATED AND EASILY REMOVABLE WIRE BASKET OR OTHER SIMILAR DEVICE THAT WILL PREVENT THE STRINGS, RAGS. BUTTONS, OR OTHER PROHIBITED MATERIAL FROM ENTERING THE SANITARY SEWER SYSTEM. THE BASKET OR OTHER SIMILAR DEVICE SHALL PREVENT PASSAGE TO THE SANITARY SEWER SYSTEM OF SOLIDS GREATER THAN 1/2"INCH IN DIAMETER. THE LINT TRAP SIZE SHALL BE BASED ON THE TOTAL G.P.M. OF ALL FIXTURES, APPLIANCES AND APPURTENANCES DRAINING TO IT IN LIEU OF A LINT TRAP, A LINT INTERCEPTOR MAY BE INSTALLED. THE INTERCEPTOR SHALL BE SIZED AND DESIGNED BY A TEXAS REGISTERED ENGINEER WITH HIS SEAL AND SIGNATURE ON THE DRAWINGS.
- SILVER RECOVERY UNITS 76. SILVER RECOVERY UNITS SHALL BE INSTALLED IN WASTE LINE(S) LEADING FROM X- RAY PROCESSING, PHOTOGRAPHIC PROCESSING, AND /OR ANY PROCEDURES IN ESTABLISHMENT SUCH AS MEDICAL LABS, DENTAL LABS, PHOTO FINISHERS PRINTERS, GRAPHIC ARTS PRODUCTION FACILITIES, HOSPITA

FACILITIES, VETERINARY HOSPITALS, OR OTHER ESTABLISHMENTS

- WHERE SILVER MAY BE INTRODUCED INTO THE SANITARY SEWER SYSTEM. SOLIDS INTERCEPTORS
- 77. SOLIDS INTERCEPTORS SHALL BE INSTALLED WHEN PRE-TREATMENT OF WASTE STREAMS IS NECESSARY TO PREVENT SOLIDS GREATER THAN 1/2" IN DIAMETER, WHICH MAY CAUSE LINE STOPPAGE FROM ENTERING THE SANITARY SEWER

INTERCEPTORS

- 78. INTERCEPTORS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DESIGN APPROVED BY THE SAN ANTONIO RIVER AUTHORITY CONSISTING OF A MINIMUM OF TWO COMPARTMENTS WITH FITTINGS DESIGNED FOR GREASE RETENTION AND PROVIDE FOR A MINIMUM OF TWELVE (12) MINUTES RETENTION.
- 79. THERE SHALL BE AN ADEQUATE NUMBER OF MANHOLES TO PROVIDE ACCESS FOR CLEANING ALL AREAS OF AN INTERCEPTOR, ONE MANHOLE PER TRAP COMPARTMENT MANHOLE COVERS SHALL BE GAS TIGHT IN CONSTRUCTION HAVING A MINIMUM OPENING DIMENSION OF 20 INCH INCHES (0.5 M).
- 80. IN AREAS WHERE TRAFFIC MAY EXIST THE INTERCEPTOR SHALL BE DESIGNED TO HAVE ADEQUATE REINFORCEMENT AND COVER.
- 81. ALL INTERCEPTORS SHALL HAVE THE SIZE OF THE INTERCEPTOR (IN GALLON PER MINUTE OR GALLON CAPACITY) PERMANENTLY AFFIXED TO THE DEVICE.

82. ALL CONCRETE UTILIZED IN THE CONSTRUCTION OF

83. AN EFFLUENT SAMPLING WELL ON ALL INTERCEPTORS SHALL BE REQUIRED. THE SAMPLE WELL SHALL HAVE A RISER A MINIMUM OF 6" INCHES IN DIAMETER AND SHALL BE INSTALLED AFTER THE CONFLUENCE OF ALL WASTE STREAMS FROM THE FACILITY AND PRIOR TO DISCHARGING INTO SANITARY SEWER

COLLECTION SYSTEM. THE WELL SHALL BE PERPENDICULAR TO

THE EFFLUENT LATERAL TO ALLOW VISUAL OBSERVATION OF

THE FLOW STREAM AND PROVIDE FOR SAMPLING OF

INTERCEPTOR SHALL HAVE A MINIMUM STRENGTH OF 3000 PSI.

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

- 84.1. MANHOLES WILL BE REQUIRED ON SIX (6) INCH AND LARGER LATERALS WHERE THEY CONNECT TO THE MAIN. 84.2. LATERALS WILL NOT BE ATTACHED TO SEWER MAINS THAT ARE DEEPER THAN TWELVE (12) FEET 84.3. FITTINGS ARE NOT PERMITTED ON LATERALS BETWEEN THE
- WYF AND THE PROPERTY LINE 84.4. DEEP CUT OR DROP CONNECTIONS SHALL NOT BE 84.5. A MINIMUM OF ONE (1) LATERAL PER BUILDING SHALL BE REQUIRED. ALSO, A MINIMUM OF ONE (1) LATERAL PER RESIDENTIAL LOT SHALL BE REQUIRED. DUPLEXES SHALL
- HAVE TWO (2) LATERALS THAT SHALL BE INDEPENDENTLY ATTACHED TO THE MAIN. 84.6. ALL SEWER LATERAL CROSSING WATER MAINS OR WATER SERVICE LINES SHALL CONFORM TO THE SAME REQUIREMENTS OF TAC CHAPTER 217.53, LATEST REVISION, SDR 26 150 PSI, OR DUCT IRON PIPE, CONCRETE
- 85. WHERE REQUIRED CONCRETE ENCASEMENT SHALL BE PLACED FOR FULL WIDTH OF THE TRENCH TO A PLAIN SIX (6) INCHES ABOVE THE TOP OF THE PIPE WITH PAY UNITS AS SHOWN ON
- THE STANDARD DETAIL SHEET. 86. A MINIMUM OF FOUR (4) FEET OF COVER IS TO BE MAINTAINED OVER THE SANITARY SEWER MAIN AND LATERALS AT GRADE, OTHERWISE CONCRETE ENCASEMENT IS REQUIRED.
- 87. WHERE POROUS MATERIAL INCLUDING "SUBGRADE FILLER" IS USED FOR BACKFLL IN THE BEDDING AND INITIAL BACKFILL ZONES, REFER TO SPECIFICATIONS SEC. 33-05-05 FOR SPACING OF SEEPAGE RETAINERS. RETAINERS SHALL CONSIS OF CLASS "D" CONCRETE ENCASEMENT OR FIRMLY COMPACTED. CONSOLIDATED CLAY ENCASEMENT, THE RETAINERS SHALL EXTEND FROM THE BOTTOM OF THE TRENCH TO THE TOP OF THE GRANULAR MATERIAL FOR THE ENTIRE TRENCH WIDTH. ENCASEMENT SHALL BE 24 INCHES LONG. NO EXTRA PAY
- BLASTING
- 88. BLASTING SHALL NOT BE ACCEPTABLE.
- TESTING 89. TESTING SHALL NOT BE CONDUCTED UNTIL ALL OTHER UTILITIES WITHIN THE VICINITY OF THE SANTIARY SEWER ARE FULLY

THE FOLLOWING SEQUENCE WILL BE STRICTLY ADHERED TO:

A. PULL MANDREL AFTER 30 DAYS OF INSTALLATION B. PERFORM AIR TEST C. PULL WIPER (AFTER STREET HAS BEEN ASPHALTED), AS **APPLICABLE**

D. VACUUM TEST ALL MANHOLES WITHIN THE PROJECT

- E. CCTV- ALL OF THE NEW LINES AND PAN/TILT ALL SERVICE LATERALS TO 6"X6" CLEAN OUT. CONTRACTOR SHALL FLOOD ALL LINES BEFORE CCTV. AT END OF PROJECT, CONTRACTOR SHALL SUBMIT FIELD COPY PLAN AND PROFILES SHOWING AS-BUILT WORK, CCTV DVD, AND COMPACTION DENSITY REPORTS FOR MAIN SEWER LINES AND ALL SERVICE LATERALS. CONTRACTOR SHALL ALSO ISSU
- WARRANTY LETTERS FOR MATERIAL AND WORKMANSHIP FOR 12 MONTHS AFTER FINAL ACCEPTANCE. 90. ALL SEWER LINES MUST BE TESTED IN ACCORDANCE WITH THE
- FOLLOWING: A. 217.57; DEFLECTION TEST FOR FLEXIBLE AND SEMI-RIGID PIPE CONDUCTED AFTER FINAL BACKFILL HAS BEEN IN PLACED AT
- B. 217.57, OR RIVER AUTHORITY SPECIFICATIONS INFILTRATION AND OR EXFILTRATION AND OR LOW-PRESSURE AIR TEST. C. 217.58 OR RIVER AUTHORITY SPECIFICATIONS: ALL MANHOLES
- AND WET WELLS MUST BE TESTED SEPARATELY AND INDEPENDENTLY OF THE COLLECTION LINES. D. IN THE EVENT THAT TESTING REQUIREMENTS CONFLICT, THE LATEST TCEQ DESIGN CRITERIA SHALL BE USED.
- 91. SEWER LINES SHALL BE TESTED FROM MANHOLE TO MANHOLE. 92. SANITARY SEWER CONNECTIONS MADE DIRECTLY TO EXISTING MANHOLES WHICH REQUIRE PENETRATION INTO THE MANHOLE WILL BE CORE DRILLED. ANY DAMAGE TO EXISTING MANHOLE WILL BE REPLACED AT CONTRACTOR'S EXPENSE AND WILL REQUIRE SUCCESSFUL TESTING OF THE EXISTING MANHOLE IN ACCORDANCE WITH THE RIVER AUTHORITY SPECIFICATIONS. THEY MUST HAVE A PROTECTIVE COATING SPECIFIED IN THE RIVER AUTHORITY APPROVED PRODUCTS LIST, COATING WILL BE MINIMUM OF 200 MILS THICKNESS DEPENDING ON EXISTING CONDITIONS, TO PREVENT INFRASTRUCTURE INFILTRATION,

FOLLOW MANUFACTURER'S RECOMMENDATION ON PROTECTIVE

93. AFTER CONSTRUCTION, TESTING WILL BE DONE BY PAN/TILT TV CAMERA BY THE CONTRACTOR AND OBSERVED BY THE INSPECTOR. WASTEWATER ENGINEERING PERSONNEL AND CONTRACTOR AS CAMERA IS RUN THROUGH THE LINES. PAN/TILT ALL 6" SERVICE LATERALS TO 6"X6" STUB-OUT. VIDEOS MUST INCLUDE SUBDIVISION NAME MANHOLE NUMBER SERVICE LATERAL STATION NUMBER, FLOW DIRECTION, LOCATION ANY ABNORMALITIES. SUCH AS BROKEN PIPE OR MISALIGNED, JOINT, GRAVEL, DIRT, MUST BE CLEANED OUT, REPLACE AT CONTRACTOR'S FXPENSE. NEW SEWER SYSTEM WILL BE FLOODED WITH H20 BEFORE BEING TV. ALL SEWER LINES MUST BE PRESSURE CLEANED TO INCLUDE SERVICE LATERALS 6"INCH TO STUB-OUT. ALL VIDEOS SHALL BE SUBMITTED IN DVD FORMAT WITH WRITTEN REPORTS.

94. A COPY OF ALL TESTING REPORTS INCLUDING BACKFILL COMPACTION TESTS SHALL BE FORWARDED TO THE RIVER

95. DENSITY TEST WILL BE REQUIRED ON ALL SANITARY SEWER TRENCHES INCLUDING SERVICE LATERALS. SERVICE LATERALS TO BE CHOSEN RANDOMLY BY FIELD INSPECTOR. DENSITIES ON SERVICE LATERAL SHALL NOT EXCEED 25% OF TOTAL NUMBER

EXCAVATION

- 96. 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 THA 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
- 97. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL WASTE MATERIALS UPON PROJECT COMPLETION. THE CONTRACTOR SHALL NOT STOCKPILE ANY WASTE MATERIAL IN THE 100 YEAR FLOODPLAIN.

AROUND TRENCH EXCAVATION.

A PF

SHEET

4 OF 5

2 OF 5

N I C

SAN RIVER

BEXAR COUNTY TEXAS		
	SAN ANTONIO (KFW)	
Colliers	3421 Paesanos Parkway	

3421 Paesanos San Antonio, TX 78231 Phone: 210.979.8444 COLLIERS ENGINEERING & DESIGN, IN TBPE Firm#: F-14909 TBPLS Firm#: 10194550

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 WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF

MANHOLE NOTE: ALL MANHOLES MUST BE WATERTIGHT, WITH WATERTIGHT RINGS AND COVERS. EVERY 3RD MANHOLE IN SEQUENCE MUST BE VENTED PER S.A.R.A DETAIL SHEET

INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

<u>CAUTION!!:</u>
THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR

PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS,

LANDSCAPE IRRIGATION FACILITIES. AND GAS LINES. ANY UTILITY

- CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO
- EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

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.

SEE THIS SHEET FOR BENCHMARK INFORMATION.

PIPE TYPE DESIGNATIONS ARE SDR 26. SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.

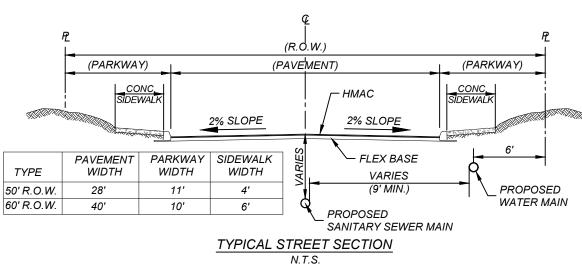
5. ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING AND COVER. NO 6" CLEANOUTS SHALL BE LOCATED UNDER DRIVEWAYS OR SIDEWALKS.

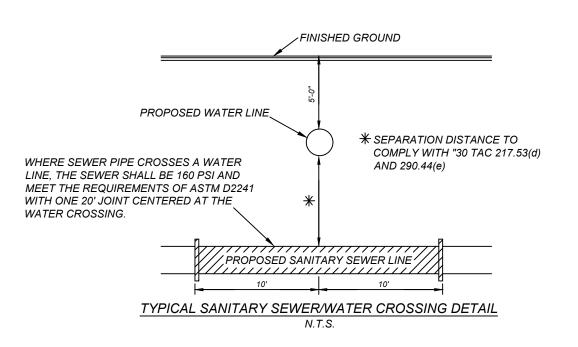
LATERAL CONNECTIONS MADE TO EXISTING INFRASTRUCTURE WILL NEED TO BE COMPLETED USING AN INSERTA TEE OR APPROVED EQUAL.

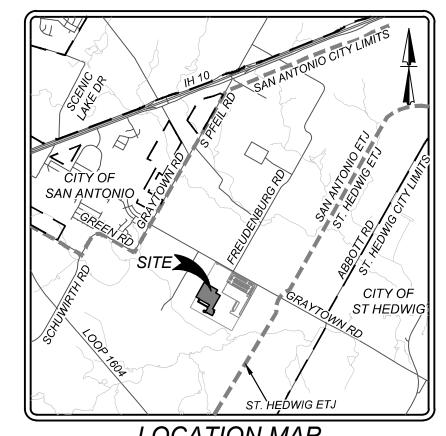
8. MANHOLES WILL NEED TO BE RESEALED WITH SARA APPROVED SEALING. IF SEAL COATING IS BROKEN, CONTRACTOR WILL HAVE MANHOLE RECOATED. RESEAL ALL LEAKS AT CONTRACTOR EXPENSE.

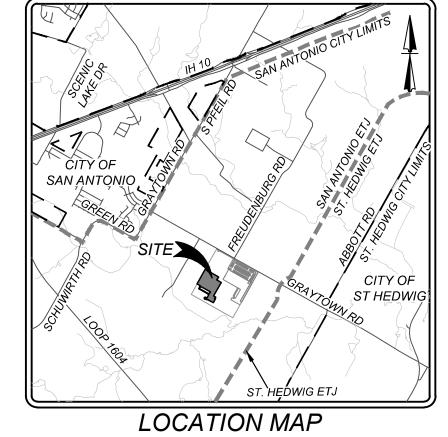
WASTEWATER PIPING (INCLUDING MAINS, SERVICES, AND LATERALS) SHALL BE SLEEVED WITH STEEL CASING WITH SARA APPROVED CASING WHEN LOCATED UNDER BOX CULVERTS OR MULTIPLE BARREL STORM SEWER CROSSINGS REGARDLESS OF SIZE AND SINGLE BARRELS 30" OR LARGER.

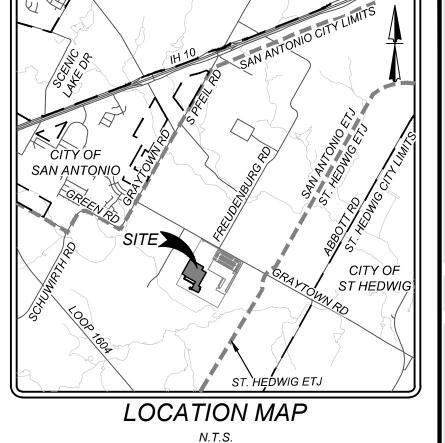
<u>SEWER LATERAL NOTE:</u> SANITARY SEWER LATERALS MUST ALL BE CLASS 160 SDR 26. NOTE: CONTRACTOR TO RUN LEVEL LOOP THROUGH BM'S PROVIDED TO CONFIRM BEFORE CONSTRUCTION. CONTACT ENGINEER/SURVEYOR IMMEDIATELY IF ELEVATIONS DO NOT MATCH THOSE SHOWN.

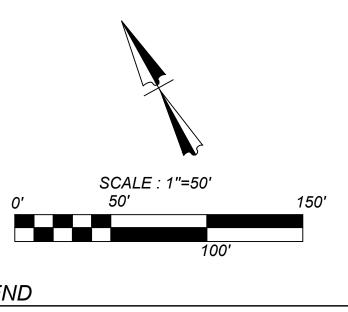


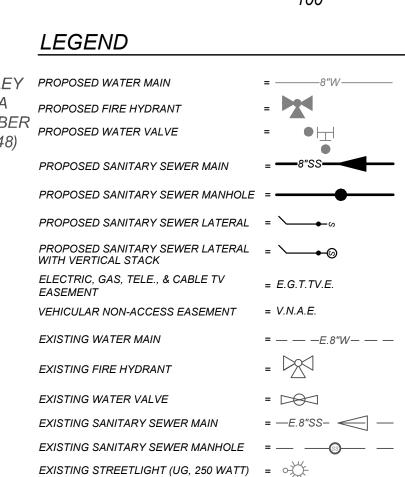


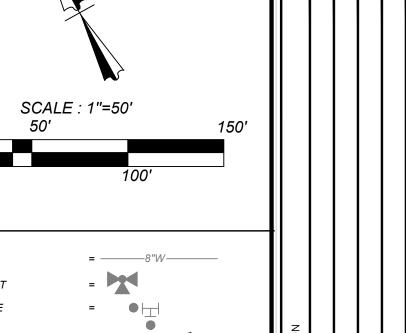


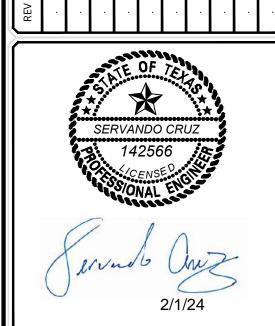












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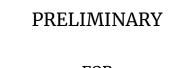
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ROSE VALLEY PHASE 2B PLAT# 22-11800749

> SAN ANTONIO **BEXAR COUNTY TEXAS**



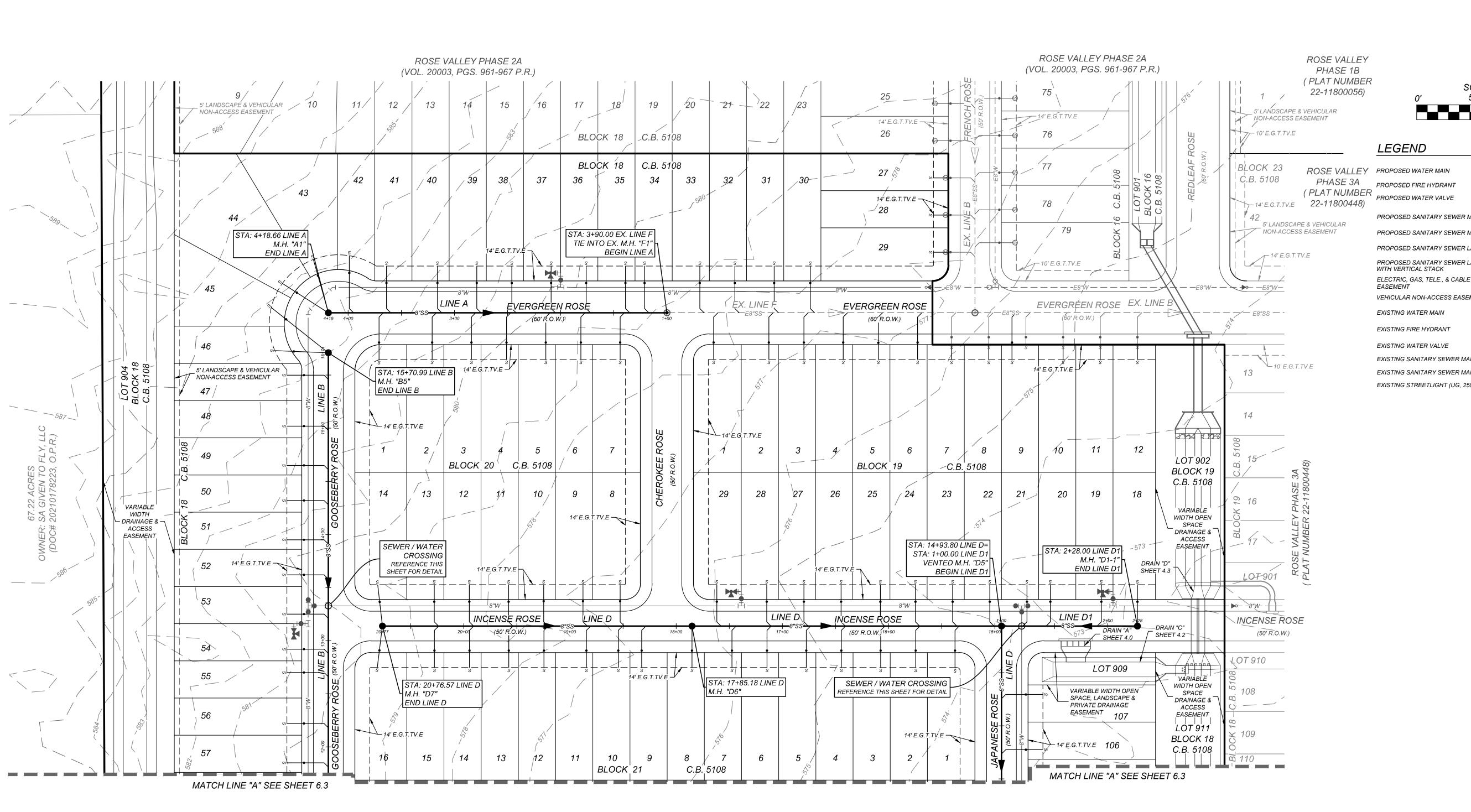
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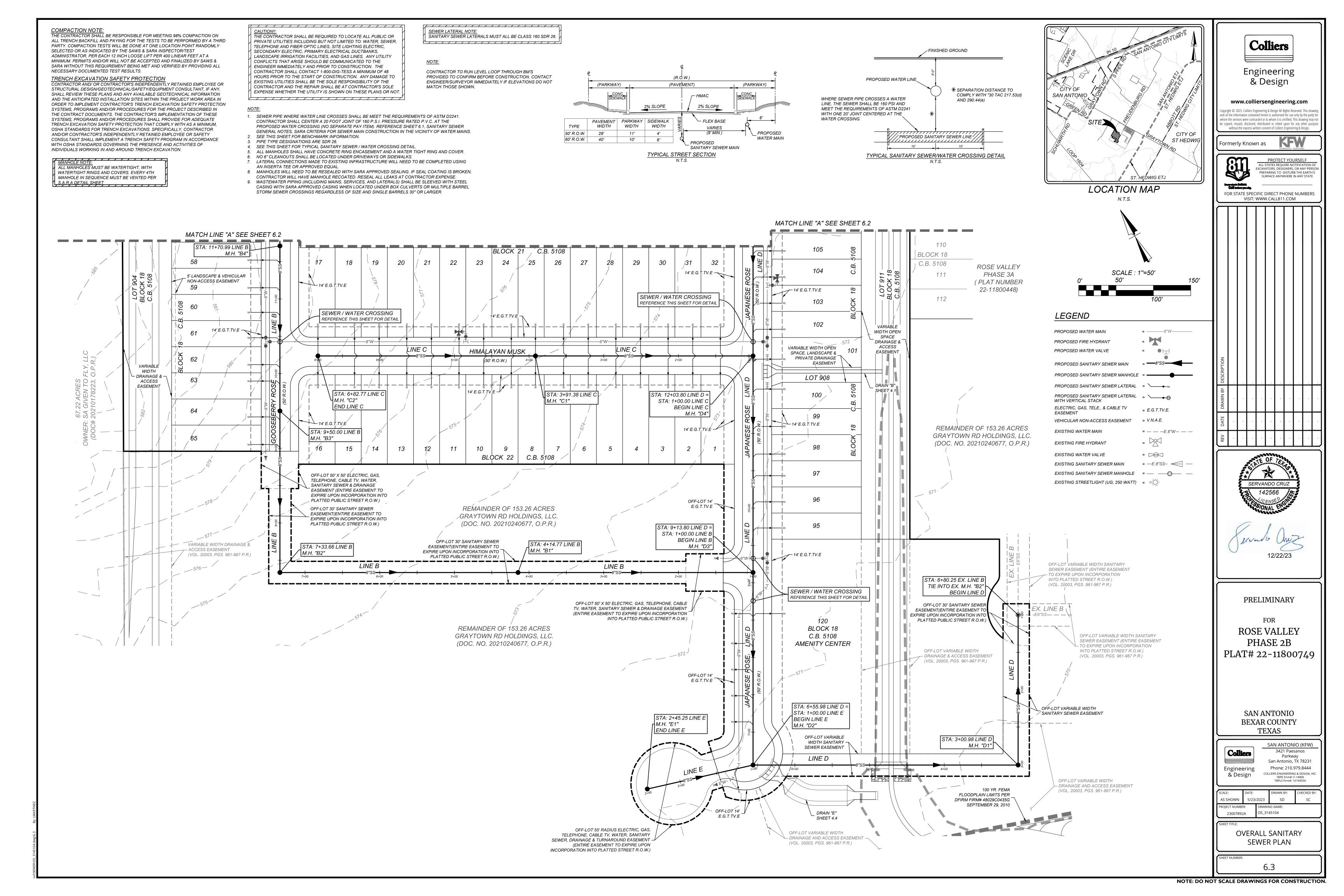
SAN ANTONIO (KFW)

AS SHOWN DS_3145104 23007892A

OVERALL SANITARY SEWER PLAN

6.2





<u> RENCH EXCAVATION SAFETY PROTECTION</u> FINISHED GROUND 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, PROPOSED WATER LINE PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS * SEPARATION DISTANCE TO AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY Engineering COMPLY WITH "30 TAC 217.53(d) PROTECTION THAT COMPLY WITH AS A MINIMUM. OSHA STANDARDS FOR TRENCH WHERE SEWER PIPE CROSSES A WATER EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY AND 290.44(e) & Design LINE, THE SEWER SHALL BE 160 PSI AND RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY MEET THE REQUIREMENTS OF ASTM D2241 PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND WITH ONE 20' JOINT CENTERED AT THE ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION. WATER CROSSING. www.colliersengineering.com CAUTION!!: THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR //PROPOSED SANITARY SEWER LINE ppyright © 2024. Colliers Engineering & Design All Rights Reserved. This drawin nd all the information contained herein is authorized for use only by the party f PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, hom the services were contracted or to whom it is certified. This drawing may TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, ne copied, reused, disclosed, distributed or relied upon for any other purpo without the express written consent of Colliers Engineering & Design. SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, TYPICAL SANITARY SEWER/WATER CROSSING DETAIL LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE N.T.S. ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE Formerly Known as CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF
EXCAVATORS, DESIGNERS, OR ANY PERSO
PREPARING TO DISTURB THE EARTH'S
SURFACE ANYWHERE IN ANY STATE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT. SEWER PIPE WHERE WATER LINE CROSSES SHALL BE MEET THE REQUIREMENTS OF FOR STATE SPECIFIC DIRECT PHONE NUMBERS ASTM D2241. CONTRACTOR SHALL CENTER A 20 FOOT JOINT OF 160 P.S.I. PRESSURE VISIT: WWW.CALL811.COM 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. SEE THIS SHEET FOR BENCHMARK INFORMATION. PIPE TYPE DESIGNATIONS ARE SDR 26. SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL. BLOCK 19 C.B. 5108 14' E.G.T.TV.E ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING 14' E.G.T.ŤV.E **14** / NO 6" CLEANOUTS SHALL BE LOCATED UNDER DRIVEWAYS OR SIDEWALKS. LATERAL CONNECTIONS MADE TO EXISTING INFRASTRUCTURE WILL NEED TO BE COMPLETED USING AN INSERTA TEE OR APPROVED EQUAL. MANHOLES WILL NEED TO BE RESEALED WITH SARA APPROVED SEALING. IF SEAL COATING IS BROKEN, CONTRACTOR WILL HAVE MANHOLE RECOATED. RESEAL ALL LEAKS AT CONTRACTOR EXPENSE. WASTEWATER PIPING (INCLUDING MAINS, SERVICES, AND LATERALS) SHALL BE SLEEVED WITH STEEL CASING WITH SARA APPROVED CASING WHEN LOCATED UNDER BOX CULVERTS OR MULTIPLE BARREL STORM SEWER CROSSINGS REGARDLESS OF SIZE AND SINGLE BARRELS 30" OR LARGER. WATER/SEWER CROSSING NOTE: EVERGREEN ROSE (60' R.O. VI ALL WATER/SEWER CROSSINGS SHALL COMPLY WITH SAWS VÉRGREEN ROSE 2+00 EVERGREEN ROSE SPECIFICATION ITEM 812 SANITARY SEWER/WATER DETAIL. Z + - - - - 3+00 2+00 (60' R.O.W.) MANHOLE NOTE: 90°0'0" ALL MANHOLES MUST BE WATERTIGHT, WITH WATERTIGHT RINGS AND COVERS. EVERY 3RD MANHOLE IN SEQUENCE MUST BE VENTED PER S.A.R.A DETAIL SHEET 14' E.G.T.TV.E 🚽 36 STA:7+76 6" LAT 6 53 L.F. 6" LAT 14' E.G.T.TV.E 35 BLOCK 18 C.B. 5108 EXISTING LINE "F" LINE "A" HORZ SCALE: 1"=50' HORZ SCALE: 1"=50' STA: 1+00.00 - END STA: 1+00.00 - END VERT SCALE: 1"=5' VERT SCALE: 1"=5" 590 585 585 585 CONTRACTOR TO RE-CONSTRUCT MANHOLE EXISTING GROUND-PROPOSED TOP TO SARA SPECS. TYPICAL **PRELIMINARY** ALL EXISTING MANHOLES OF PAVEMENT CONTRACTOR TO ADJUST BEING MODIFIED PROPOSED TOP FTOP OF MANHOLE TO OF PAVEMENT MATCH PROPOSED GRADE CONTRACTOR TO ADJUST 580 580 580 TOP OF MANHOLE TO-MATCH PROPOSED GRADE **ROSE VALLEY** EXISTING GROUND-PHASE 2B CONTRACTOR TO RE-CONSTRUCT MANHOLE PLAT# 22-11800749 TO SARA SPECS. TYPICAL 575 575 – LOT 43 & 44, BLOCK 18 <u>–</u> 575 ALL EXISTING MANHOLES 6" LAT INV. = 574.04 BEING MODIFIED 318.66 L.F.~8" PVC Pipe SAN. SWR. PIPE @ 0.60% 570 570 570 570 SAN ANTONIO EX. LINE F INV. (OUT) = 569.33 **BEXAR COUNTY TEXAS** 565 565 -INV. (IN) = 566.43 SAN ANTONIO (KFW) - INV. (OÚT) = 566.33 3421 Paesanos Colliers San Antonio, TX 78231 Phone: 210.979.8444 560 560 560 Engineering COLLIERS ENGINEERING & DESIGN, IN & Design TBPE Firm#: F-14909 TBPLS Firm#: 10194550 AS SHOWN 555 555 555 SPP3145104 23007892A SEWER LINE A PLAN & PROFILE 1+00 *4+00 4+50* 1+00 4+00 2+00 3+00 2+00 3+00

RENCH 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 WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

CAUTION!!: THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

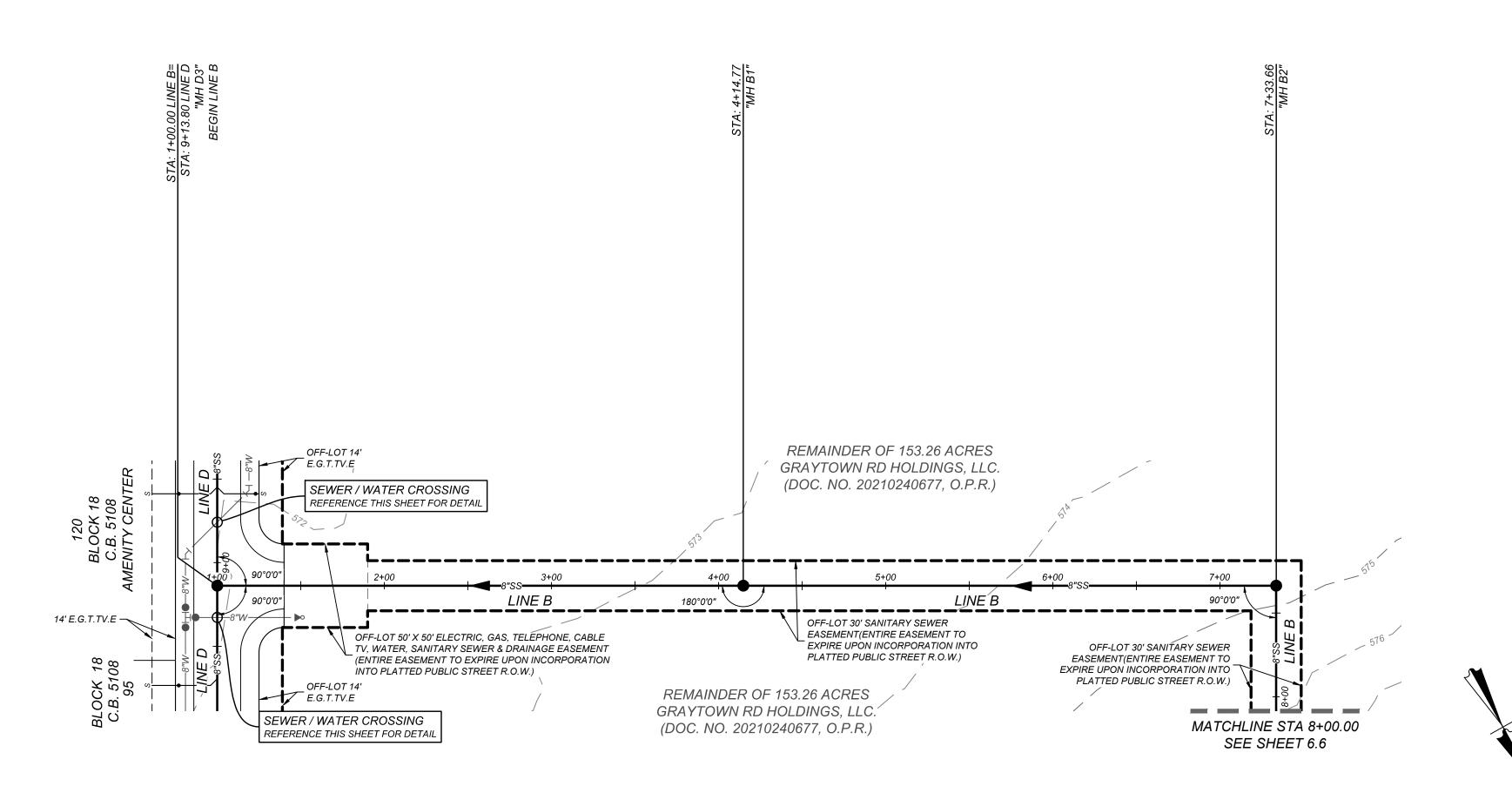
SEWER PIPE WHERE WATER LINE CROSSES SHALL BE MEET THE REQUIREMENTS OF ASTM D2241. CONTRACTOR SHALL CENTER A 20 FOOT JOINT OF 160 P.S.I. PRESSURE RATED P.V.C. AT THE PROPOSED WATER CROSSING (NO SEPARATE PAY ITEM). REFERENCE SHEET 6.1, SANITARY SEWER GENERAL NOTES, SARA CRITERIA FOR SEWER MAIN CONSTRUCTION IN THE VICINITY OF WATER MAINS. SEE THIS SHEET FOR BENCHMARK INFORMATION. PIPE TYPE DESIGNATIONS ARE SDR 26.

- SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL. ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING
- NO 6" CLEANOUTS SHALL BE LOCATED UNDER DRIVEWAYS OR SIDEWALKS. LATERAL CONNECTIONS MADE TO EXISTING INFRASTRUCTURE WILL NEED TO BE
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WATER/SEWER CROSSING NOTE:

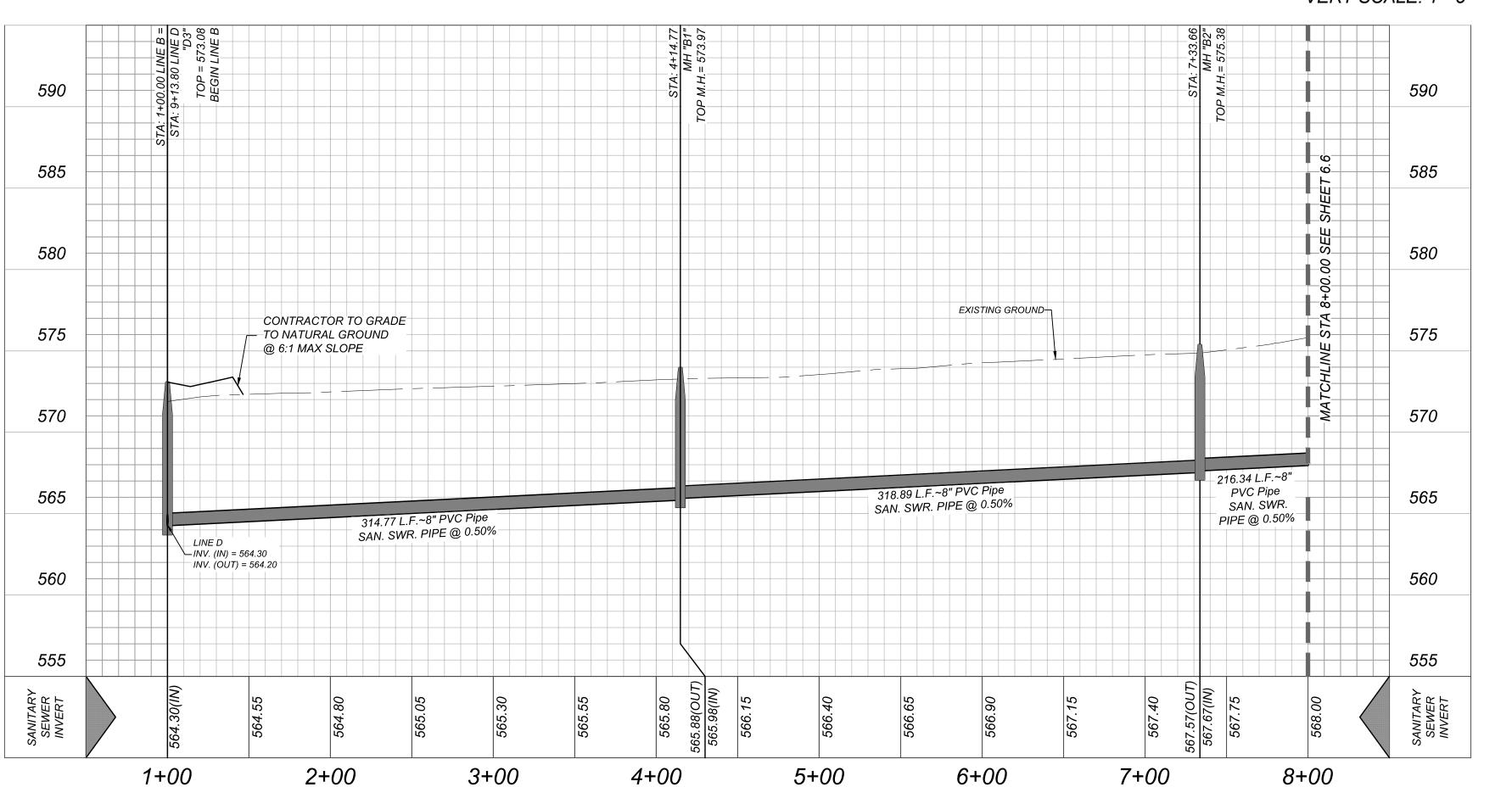
ALL WATER/SEWER CROSSINGS SHALL COMPLY WITH SAWS SPECIFICATION ITEM 812 SANITARY SEWER/WATER DETAIL.

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



LINE "B" STA: 1+00.00 - 8+00.00

HORZ SCALE: 1"=50' VERT SCALE: 1"=5'





FINISHED GROUND

///PROPOSED SANITARY SEWER LINE/

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

* SEPARATION DISTANCE TO

AND 290.44(e)

COMPLY WITH "30 TAC 217.53(d)

PROPOSED WATER LINE

WHERE SEWER PIPE CROSSES A WATER

LINE, THE SEWER SHALL BE 160 PSI AND

WITH ONE 20' JOINT CENTERED AT THE

WATER CROSSING.

MEET THE REQUIREMENTS OF ASTM D2241

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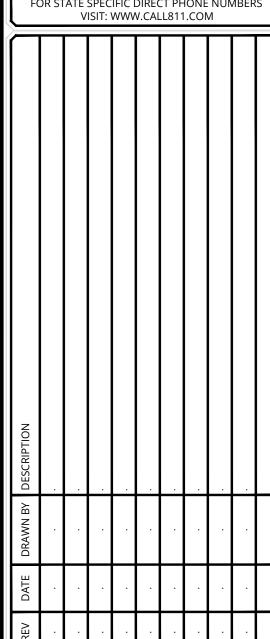
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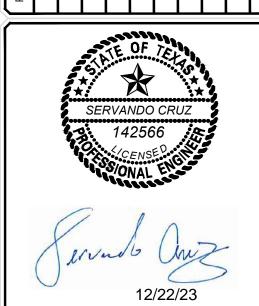
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PRELIMINARY

ROSE VALLEY PHASE 2B PLAT# 22-11800749

> SAN ANTONIO **BEXAR COUNTY TEXAS**

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AS SHOWN 23007892A

> SEWER LINE B PLAN & PROFILE

6.5

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
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PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND
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CAUTIONIII

CAUTION!!:
THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

NOTE:

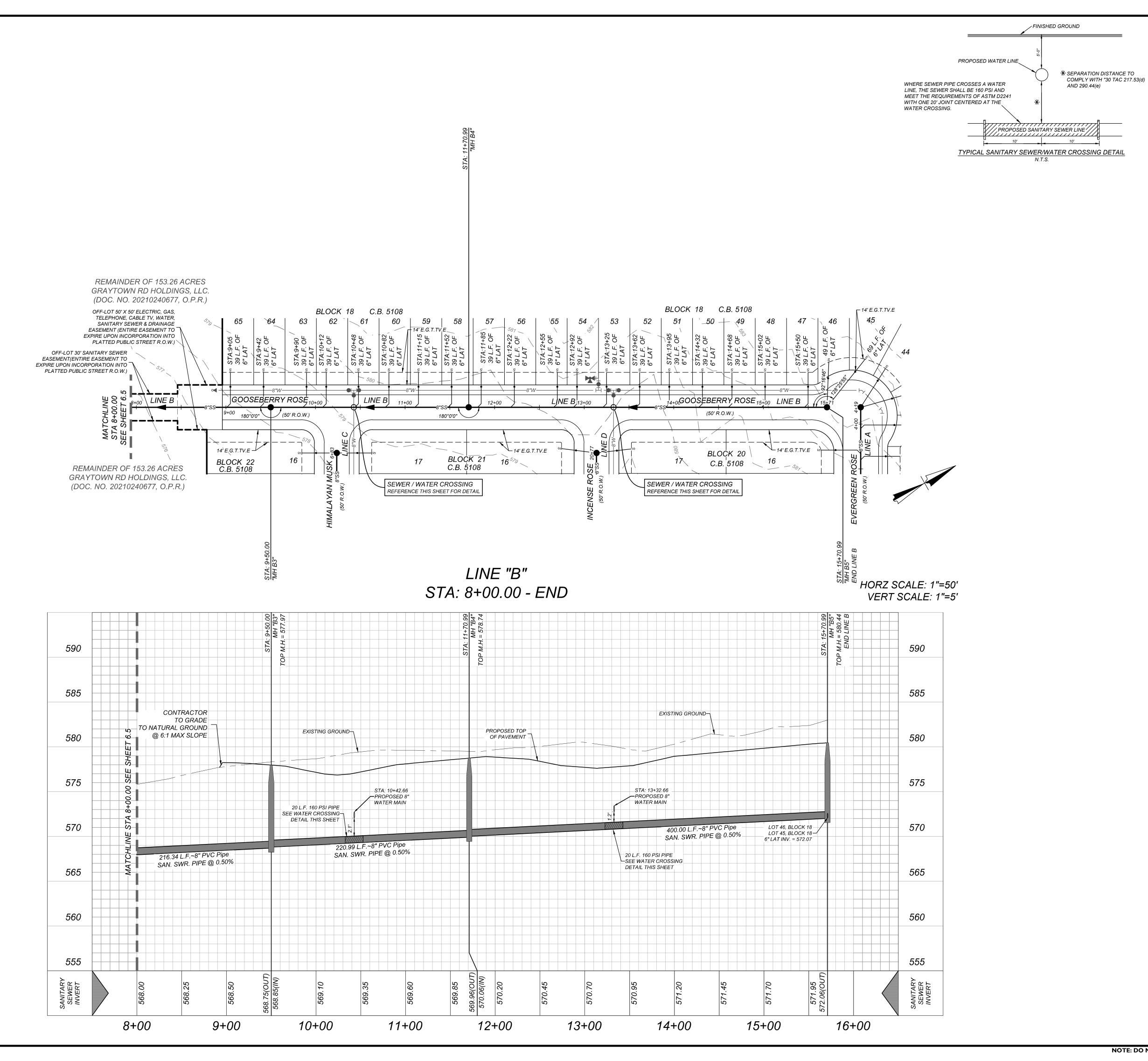
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 SEE THIS SHEET FOR BENCHMARK INFORMATION.
- PIPE TYPE DESIGNATIONS ARE SDR 26.
 SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.
 ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING
- 6. NO 6" CLEANOUTS SHALL BE LOCATED UNDER DRIVEWAYS OR SIDEWALKS.
 7. LATERAL CONNECTIONS MADE TO EXISTING INFRASTRUCTURE WILL NEED TO BE
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 MANHOLES WILL NEED TO BE RESEALED WITH SARA APPROVED SEALING. IF SEAL COATING IS BROKEN, CONTRACTOR WILL HAVE MANHOLE RECOATED. RESEAL ALL
- LEAKS AT CONTRACTOR EXPENSE.

 9. WASTEWATER PIPING (INCLUDING MAINS, SERVICES, AND LATERALS) SHALL BE SLEEVED WITH STEEL CASING WITH SARA APPROVED CASING WHEN LOCATED UNDER BOX CULVERTS OR MULTIPLE BARREL STORM SEWER CROSSINGS REGARDLESS OF SIZE AND SINGLE BARRELS 30" OR LARGER.

WATER/SEWER CROSSING NOTE:

ALL WATER/SEWER CROSSINGS SHALL COMPLY WITH SAWS SPECIFICATION ITEM 812 SANITARY SEWER/WATER DETAIL.

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





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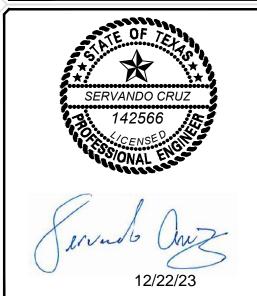
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PRELIMINARY

FOR
ROSE VALLEY
PHASE 2B
PLAT# 22-11800749

SAN ANTONIO BEXAR COUNTY TEXAS

Collices

Engineering
& Design

San Antonio, TX 78231

Fing Phone: 210.979.8444

COLLIERS ENGINEERING & DESIGN, IN TBPE Firm#: F-14909
TBPLS Firm#: 10194550

SAN ANTONIO (KFW) 3421 Paesanos

 SCALE:
 DATE:
 DRAWN BY:
 CHECKED B

 AS SHOWN
 5/23/2023
 SD
 SC

 PROJECT NUMBER:
 DRAWING NAME:

 23007892A
 SSPP3145104

SEWER LINE B PLAN & PROFILE

6.6

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 WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

CAUTION!!: THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC. PRIMARY ELECTRICAL DUCTBANKS. LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

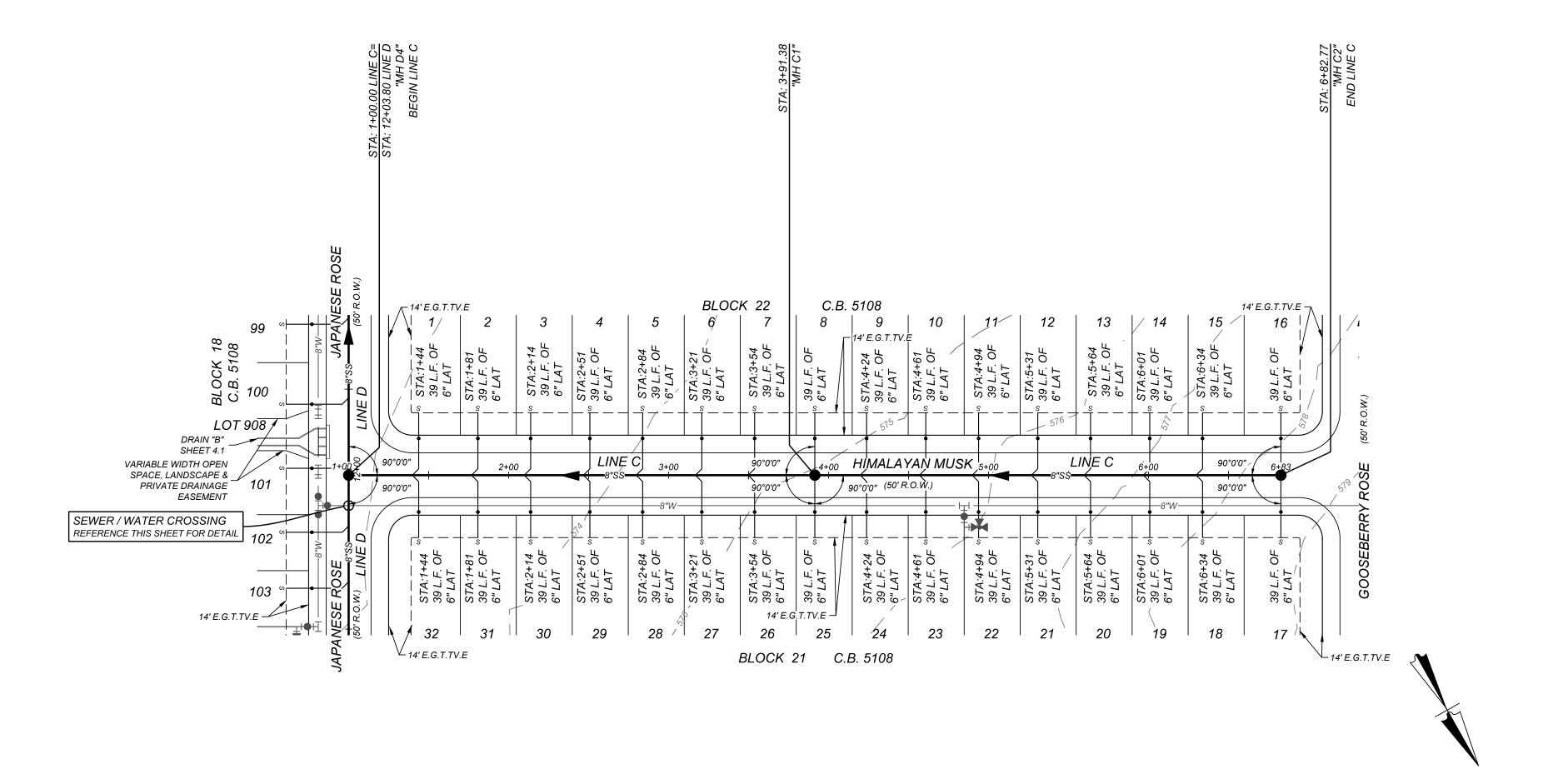
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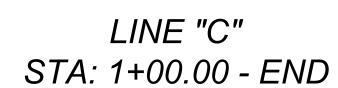
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WATER/SEWER CROSSING NOTE:

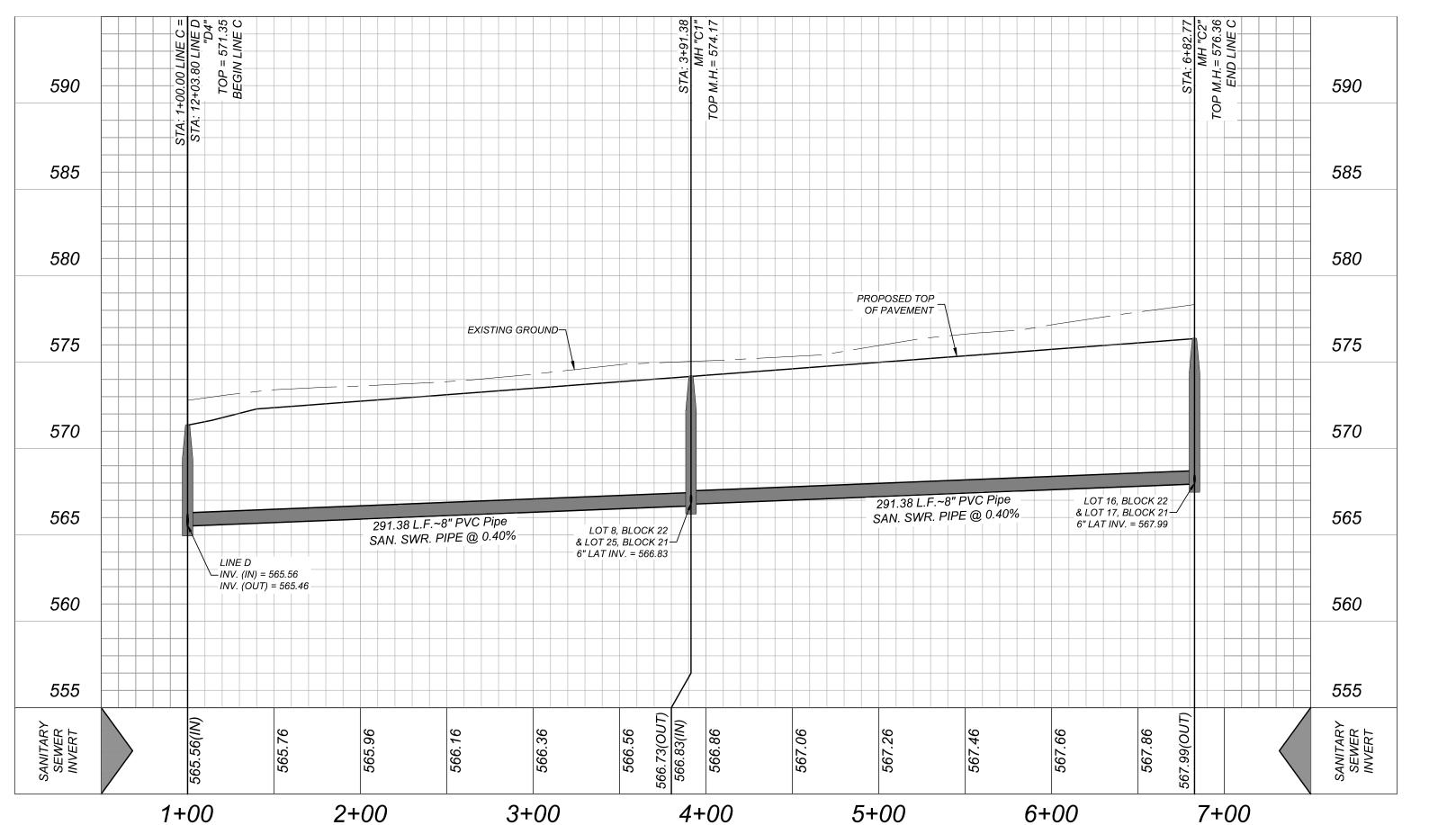
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MANHOLE NOTE:
ALL MANHOLES MUST BE WATERTIGHT, WITH WATERTIGHT RINGS AND COVERS. EVERY 4TH MANHOLE IN SEQUENCE MUST BE VENTED PER S.A.R.A DETAIL SHEET











FINISHED GROUND

///PROPOSED SANITARY SEWER LINE/

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

* SEPARATION DISTANCE TO

AND 290.44(e)

COMPLY WITH "30 TAC 217.53(d)

PROPOSED WATER LINE

WHERE SEWER PIPE CROSSES A WATER

LINE, THE SEWER SHALL BE 160 PSI AND

WITH ONE 20' JOINT CENTERED AT THE

WATER CROSSING.

MEET THE REQUIREMENTS OF ASTM D2241

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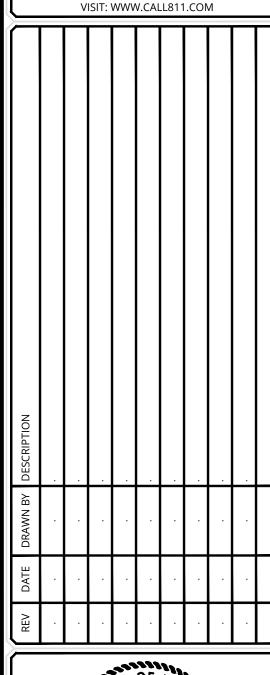
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ROSE VALLEY PHASE 2B PLAT# 22-11800749

> SAN ANTONIO **BEXAR COUNTY TEXAS**

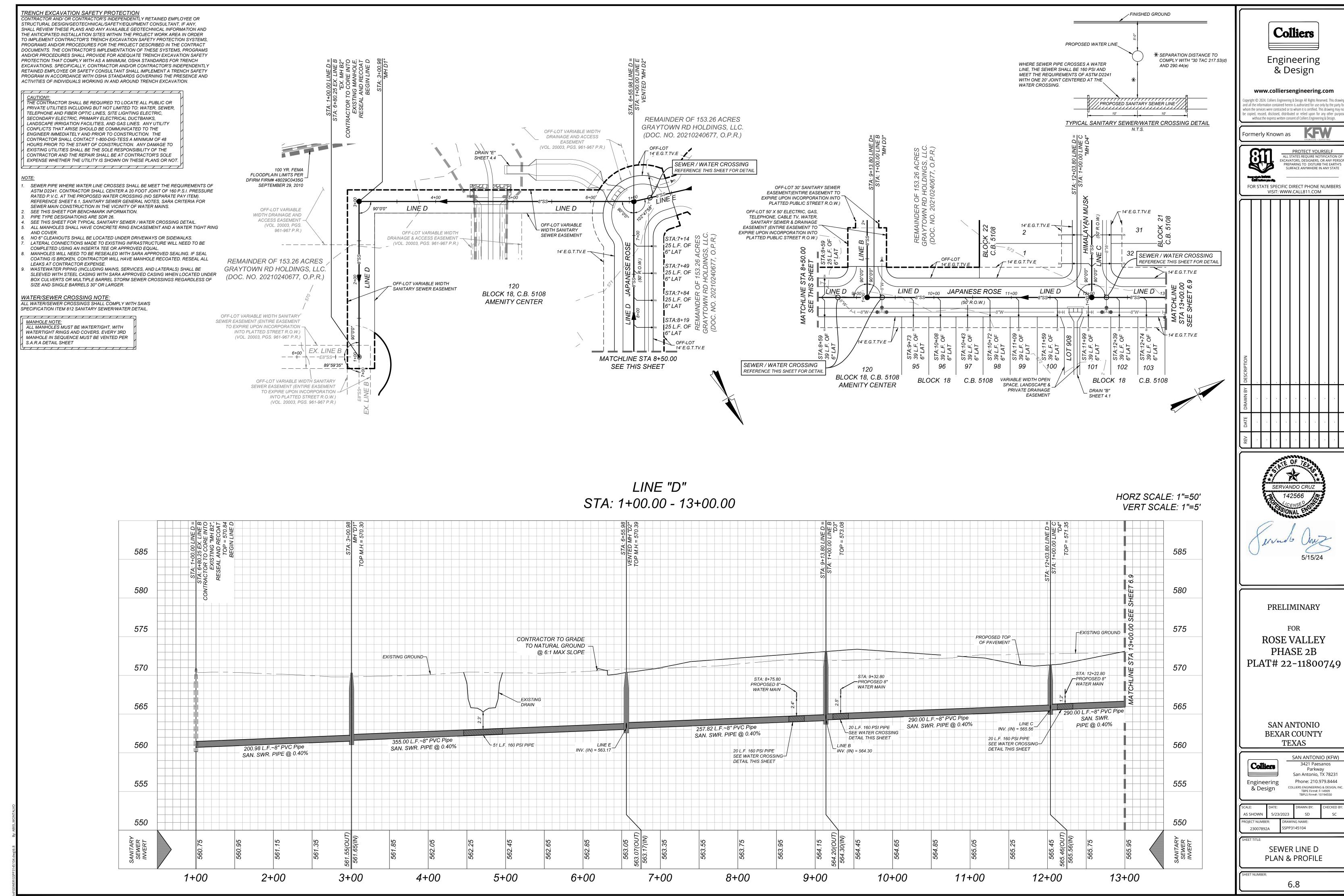
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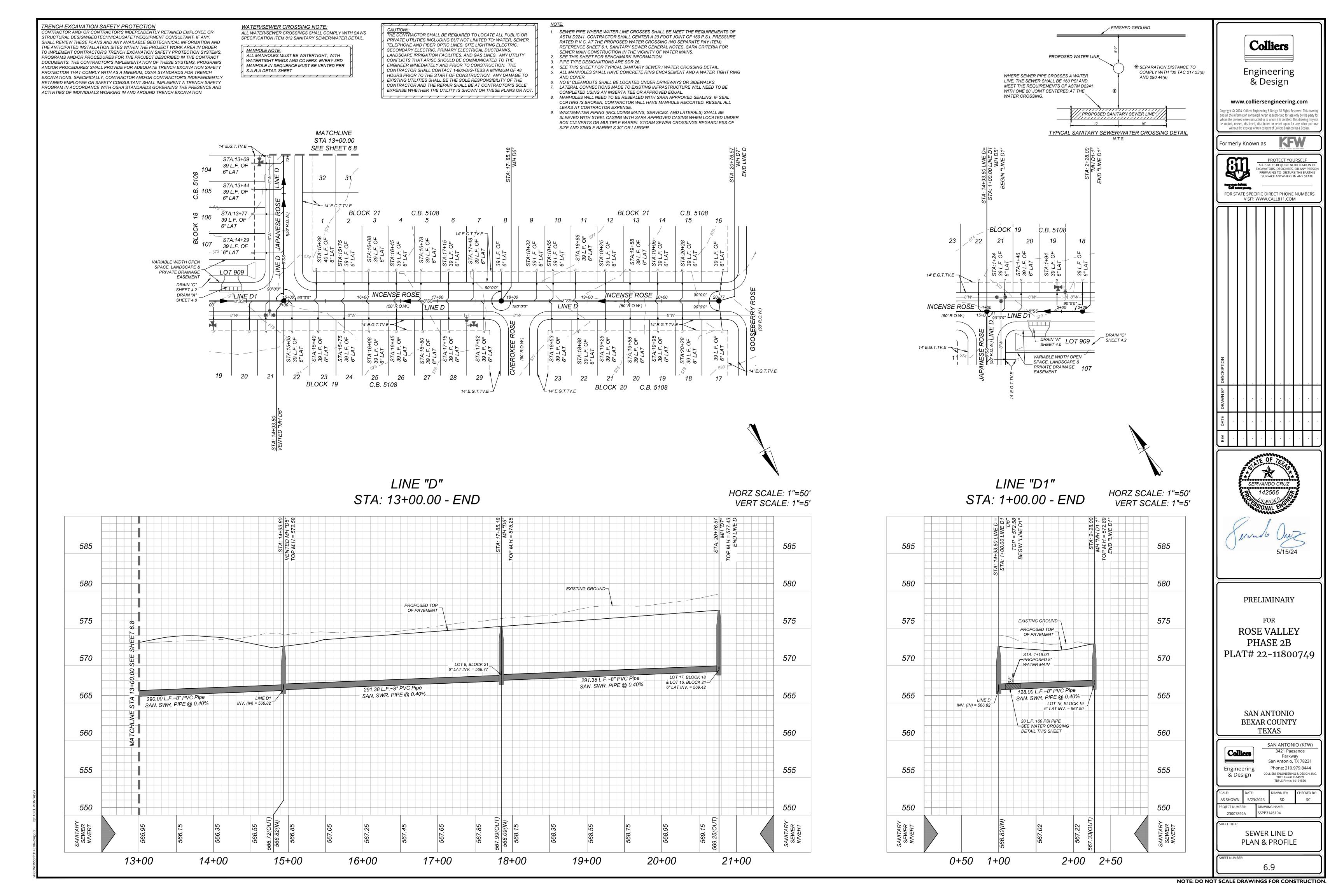
3421 Paesanos San Antonio, TX 78231 Phone: 210.979.8444 COLLIERS ENGINEERING & DESIGN, INC TBPE Firm#: F-14909 TBPLS Firm#: 10194550

SAN ANTONIO (KFW)

SEWER LINE C PLAN & PROFILE

6.7





<u>RENCH EXCAVATION SAFETY PROTECTION</u> 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 WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

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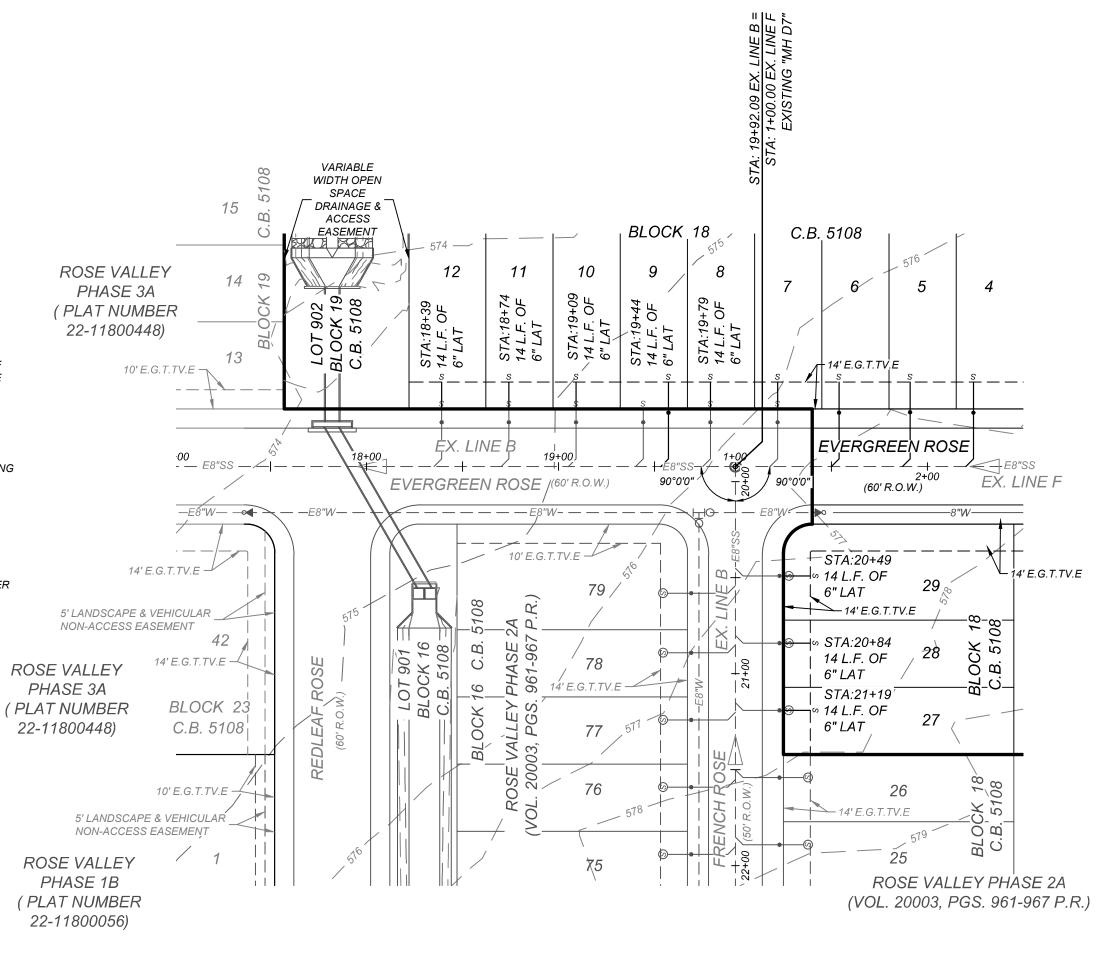
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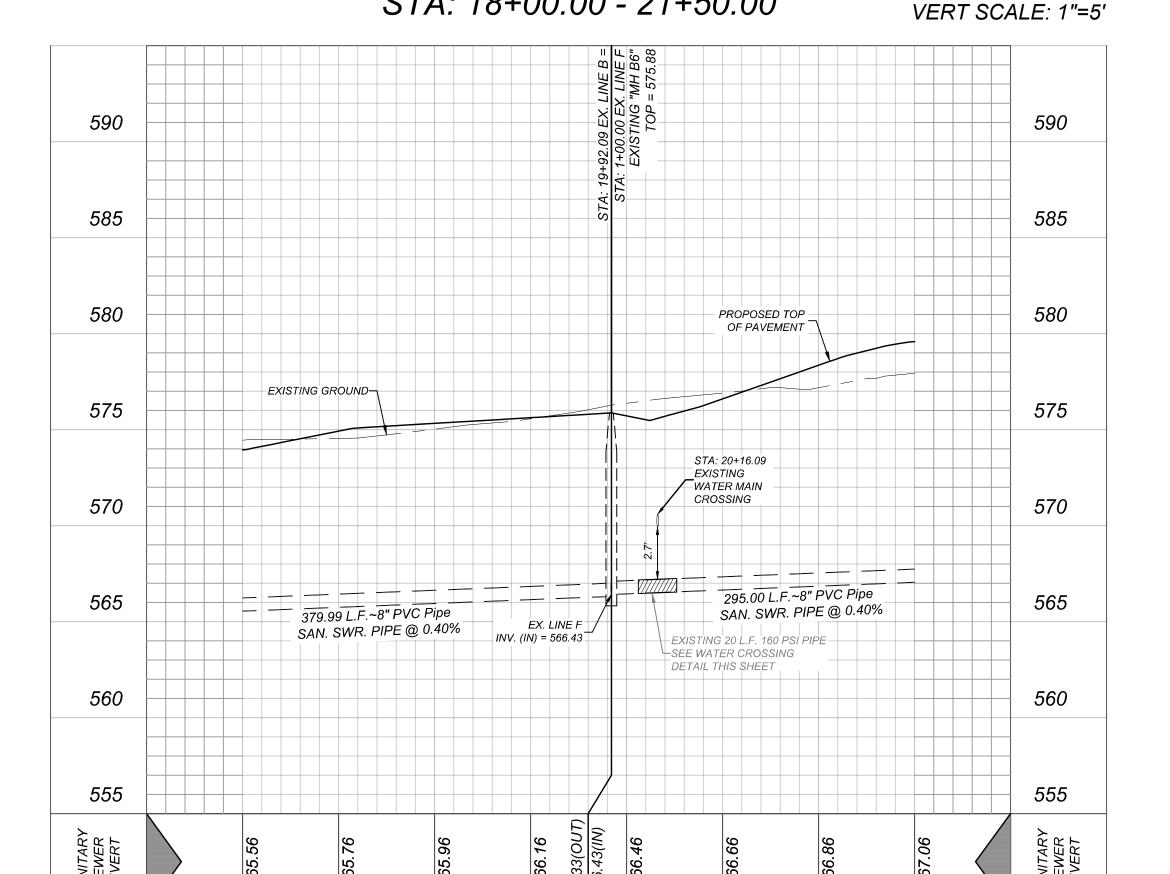
MANHOLE NOTE: ALL MANHOLES MUST BE WATERTIGHT, WITH WATERTIGHT RINGS AND COVERS. EVERY 3RD MANHOLE IN SEQUENCE MUST BE VENTED PER S.A.R.A DETAIL SHEET



EXISTING LINE "B" STA: 18+00.00 - 21+50.00

HORZ SCALE: 1"=50'

21+00 21+50



20+00

18+00

19+00

LINE "E"

REMAINDER OF 153.26 ACRES

GRAYTOWN RD HOLDINGS, LLC.

(DOC. NO. 20210240677, O.P.R.)

OFF-LOT 14'

SEWER / WATER CROSSING

REFERENCE THIS SHEET FOR DETAIL

REMAINDER OF 153.26 ACRES

GRAYTOWN RD HOLDINGS, LLC.

(DOC. NO. 20210240677, O.P.R.)

OFF-LOT VARIABLE WIDTH

DRAIN "E"

SHEET 4.4

14' E.G.T.TV.E -

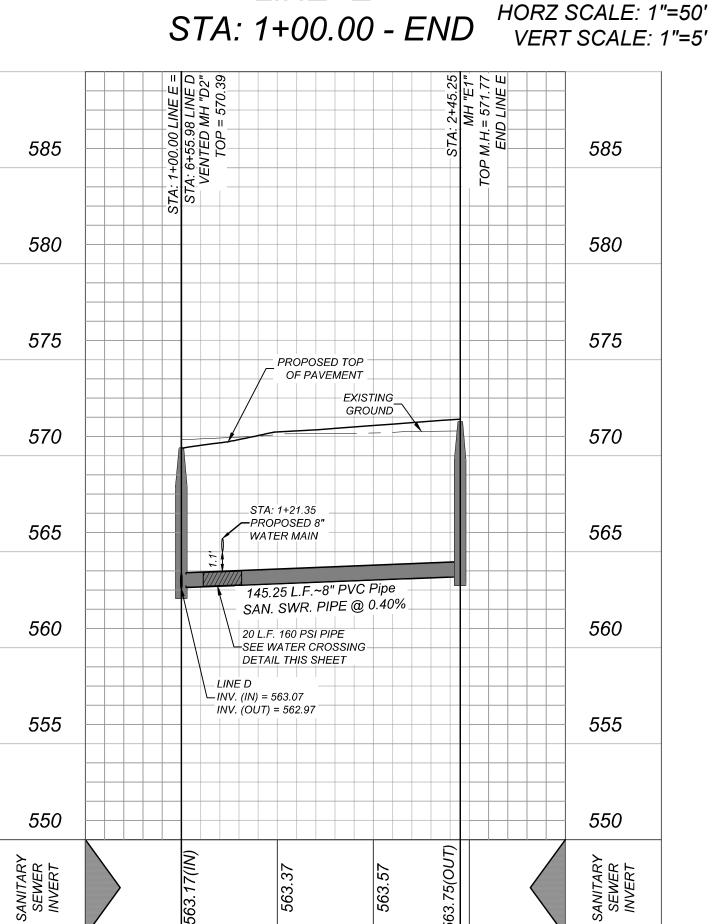
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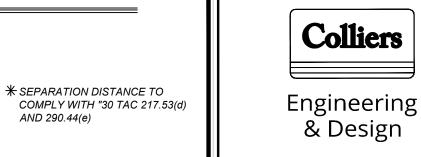
(VOL. 20003, PGS. 961-967 P.R.)

DRAINAGE AND ACCESS EASEMENT



2+00 2+50

1+00



FINISHED GROUND

///PROPOSED SANITARY SEWER LINE

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

AND 290.44(e)

PROPOSED WATER LINE

OFF-LOT 55' RADIUS ELECTRIC, GAS, TELEPHONE, CABLE TV, WATER, SANITARY

(ENTIRE EASEMENT TO EXPIRE UPON

SEWER, DRAINAGE & TURNAROUND EASEMENT

INCORPORATION INTO PLATTED STREET R.O.W.)

WHERE SEWER PIPE CROSSES A WATER

LINE, THE SEWER SHALL BE 160 PSI AND

WITH ONE 20' JOINT CENTERED AT THE

WATER CROSSING.

MEET THE REQUIREMENTS OF ASTM D2241

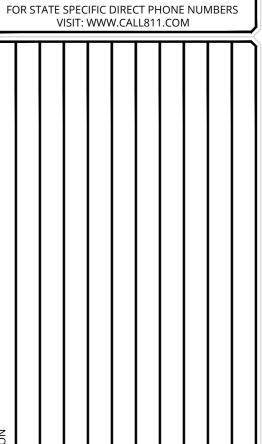
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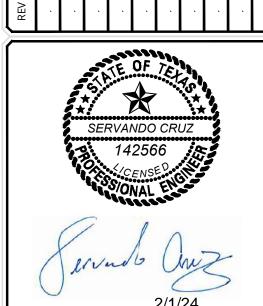
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> SAN ANTONIO **BEXAR COUNTY TEXAS**

Colliers Engineering & Design

3421 Paesanos San Antonio, TX 78231 Phone: 210.979.8444 COLLIERS ENGINEERING & DESIGN, IN TBPE Firm#: F-14909 TBPLS Firm#: 10194550

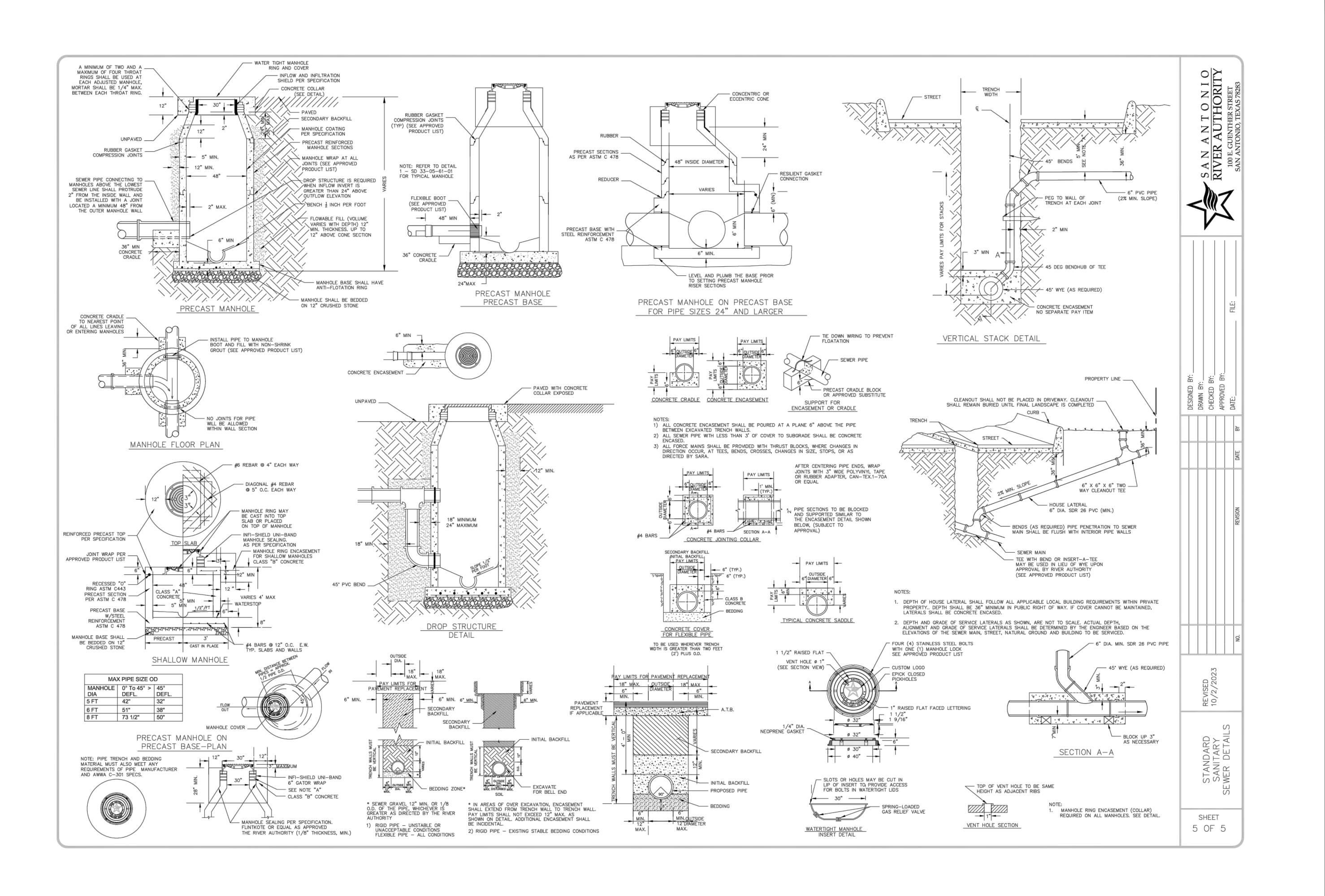
SAN ANTONIO (KFW)

AS SHOWN

SPP3145104 **EXISTING SEWER LINE B &**

LINE E PLAN & PROFILE

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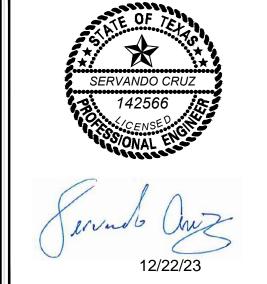
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PRELIMINARY

FOR ROSE VALLEY PHASE 2B PLAT# 22-11800749

> SAN ANTONIO BEXAR COUNTY TEXAS

Colliers

Engineering
& Design

3421 Paesanos
Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, IN
TBPE Firm#: F-14909
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SAN ANTONIO (KFW)

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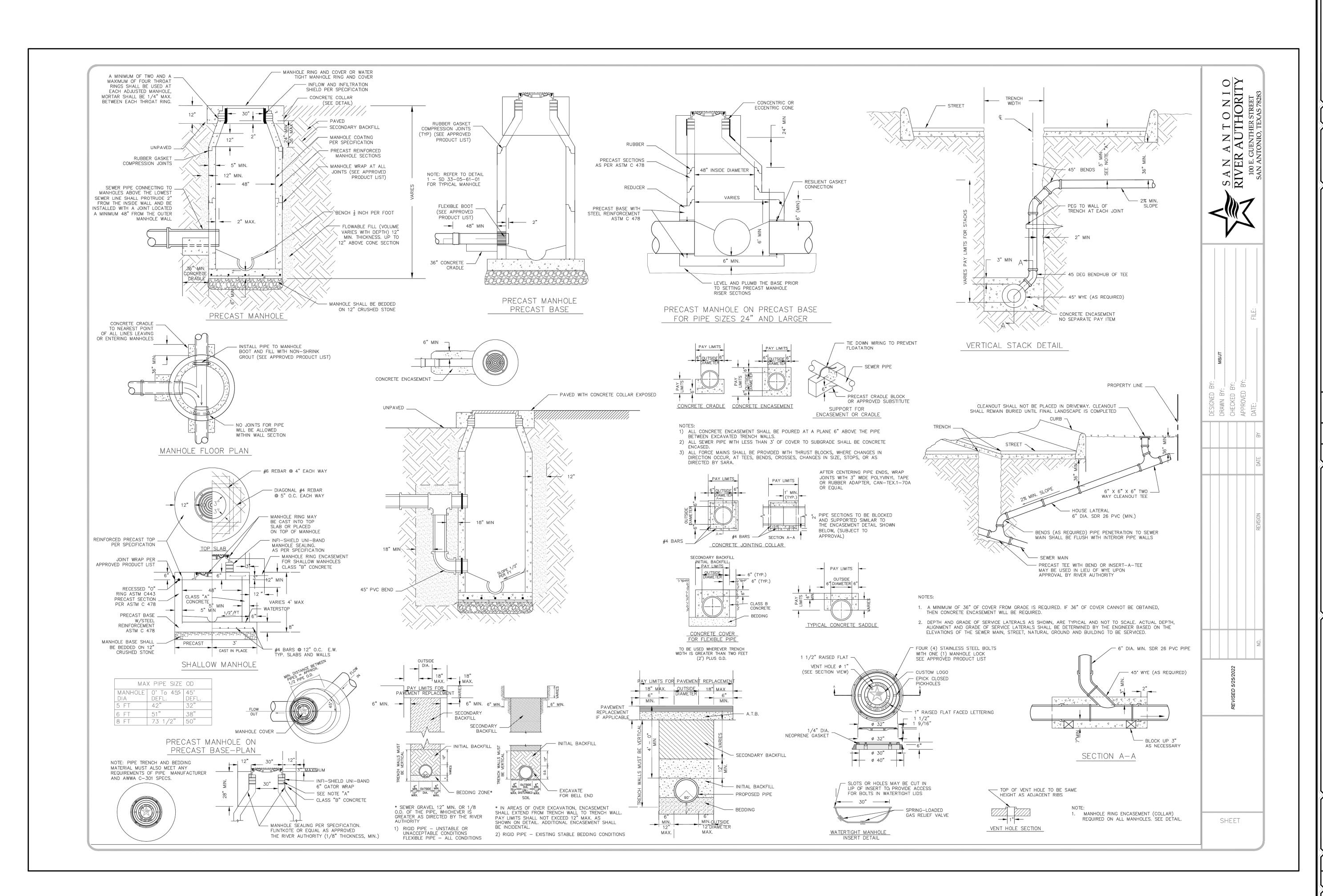
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 DRAWING NAME:
 23007892A
 SSDT3145104

HEET TITLE:

SANITARY SEWER DETAILS

ET NUMBER: 6.11



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Colliers Engineering & Design

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SAN ANTONIO (KFW)

TBPLS Firm#: 10194550 SD

AS SHOWN AWING NAME: SSDT3145104 23007892A

SANITARY SEWER DETAILS

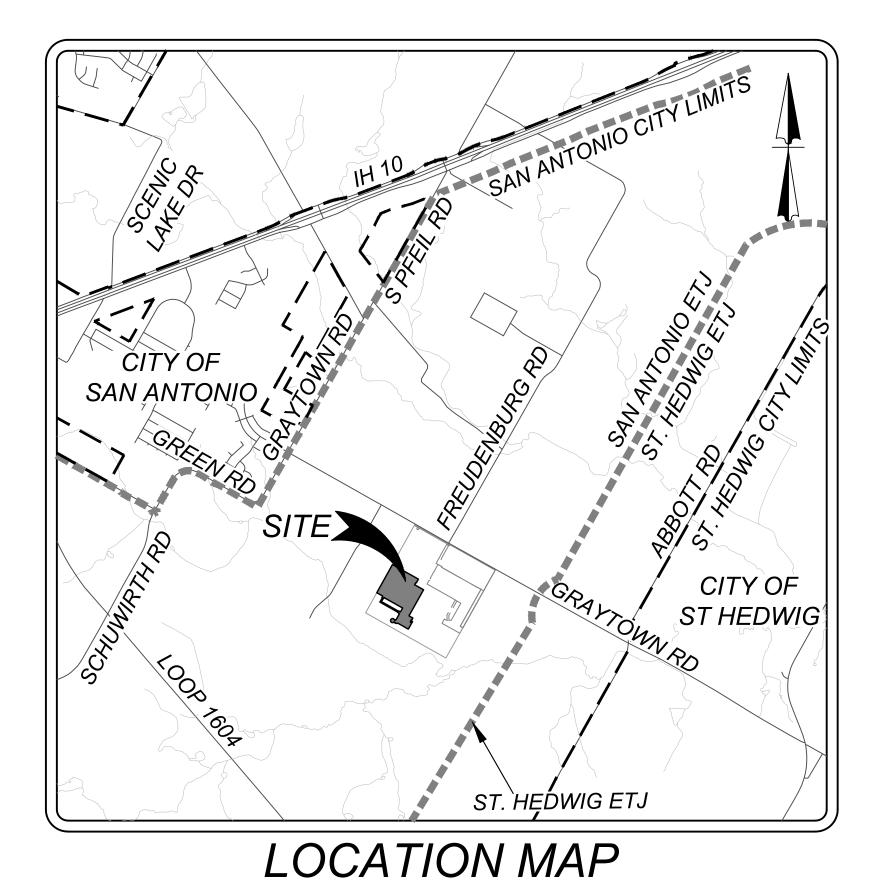
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GENERAL NOTES

- 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.
- 3. ALL EXCAVATION SHALL BE UNCLASSIFIED REGARDLESS OF MATERIAL 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
- 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.
- 10. CONTRACTOR SHALL DISINFECT ALL NEW WATER MAINS BEFORE TYING INTO 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 PROPOSED WATER MAIN. DEFLECTION SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURER'S RECOMMENDATIONS. FITTINGS ARE NOT PERMISSIBLE, UNLESS OTHERWISE SHOWN ON THE PLANS. NO SEPARATE PAY ITEM.

ROSE VALLEY PHASE 2B

BEXAR COUNTY, TEXAS WATER IMPROVEMENTS



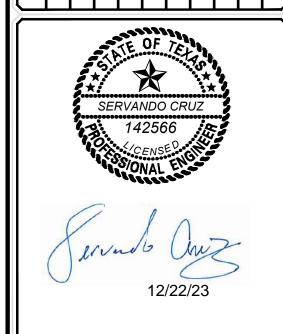
N.T.S.

Sheet Title	Sheet Number
WATER COVER SHEET	7.0
OVERALL WATER PLAN	7.1
OVERALL WATER PLAN	7.2
WATER DETAIL SHEET	7.3
WATER DETAIL SHEET	7.4
WATER DETAIL SHEET	7.5

Sheet List Table

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





PRELIMINARY

FOR
ROSE VALLEY
PHASE 2B
PLAT# 22-11800749

SAN ANTONIO BEXAR COUNTY TEXAS

Colliers
Engineering & Design

SAN ANTONIO (KFW)

3421 Paesanos
Parkway
San Antonio, TX 78231
Phone: 210.979.8444

COLLIERS ENGINEERING & DESIGN, IN
TBPE Firm#: 11194550

 SCALE:
 DATE:
 DRAWN BY:
 CHECKED II

 AS SHOWN
 5/23/2023
 SD
 SC

 PROJECT NUMBER:
 DRAWING NAME:

 23007892A
 CV_3145104

WATER COVER SHEET

T TITLE:

SHEET NUMBER:

TRENCH EXCAVATION SAFETY PROTECTIOI 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

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.

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

<u>JOINT RESTRAINT NOTE</u> CONTRACTOR SHALL INSTALL RETAINER GLANDS AT ALL FITTINGS AND PROVIDE JOINT RESTRAINING HARNESS OR 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 AND RETAINER GLANDS SHALL BE CALCULATED BY SAWS APPROVED PROGRAMS. THERE WILL BE NO SEPARATE PAY ITEM FOR RETAINER GLANDS AND OTHER JOINT RESTRAINING HARNESS AND GASKETS, BUT SHALL BE SUBSIDIARY

TO THE UNIT COST PER LINEAL FOOT OF PIPE INSTALLED.

NON-ACCESS EASEMENT

CAUTION!!: THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

ROSE VALLEY PHASE 2A

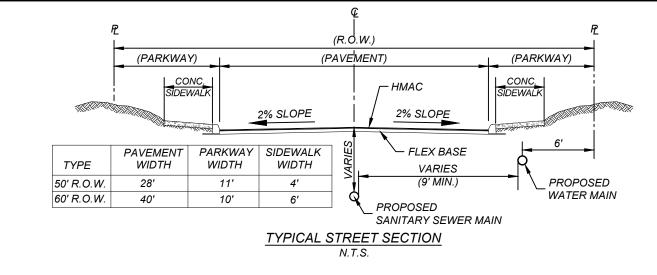
(VOL. 20003, PGS. 961-967 P.R.)

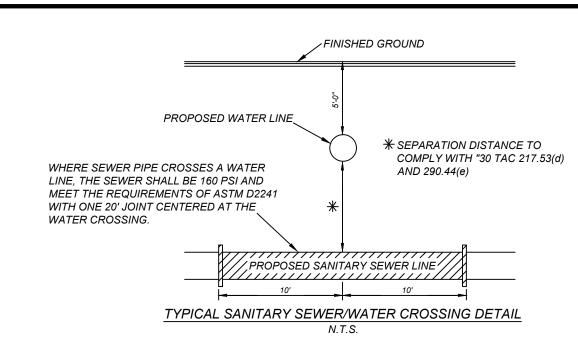
BLOCK 18

_C.B. 5108

12

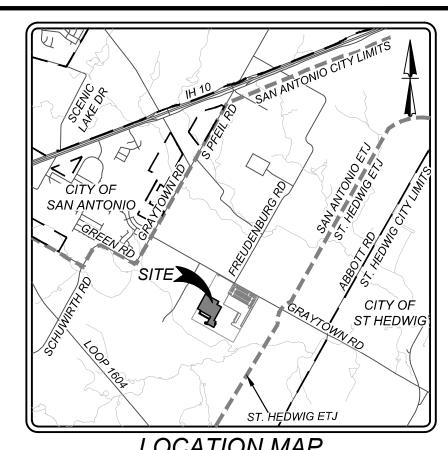
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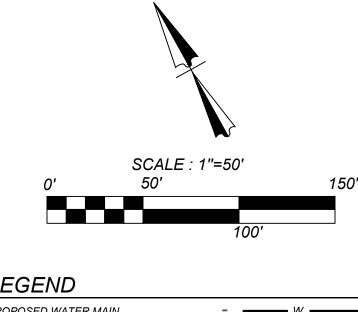


ROSE VALLEY PHASE 2A

(VOL. 20003, PGS. 961-967 P.R.)







ROSE VALLEY

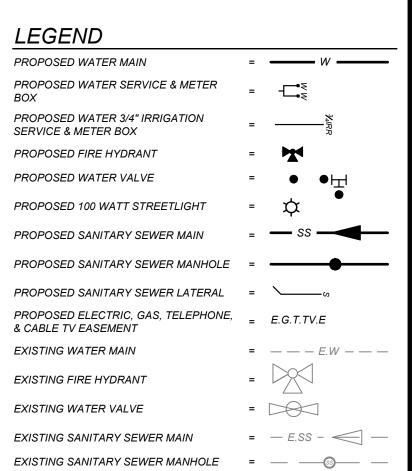
PHASE 1B

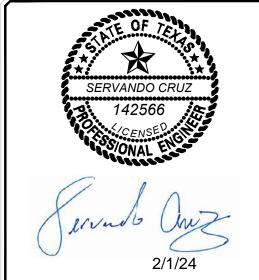
(PLAT NUMBER 22-11800056)

5' LAŃDSCAPE & VEHICULAR

NON-ACCESS EASEMENT

7 10' E.G.T.TV.E





Colliers

Engineering

& Design

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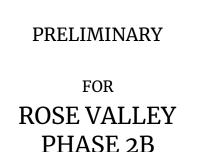
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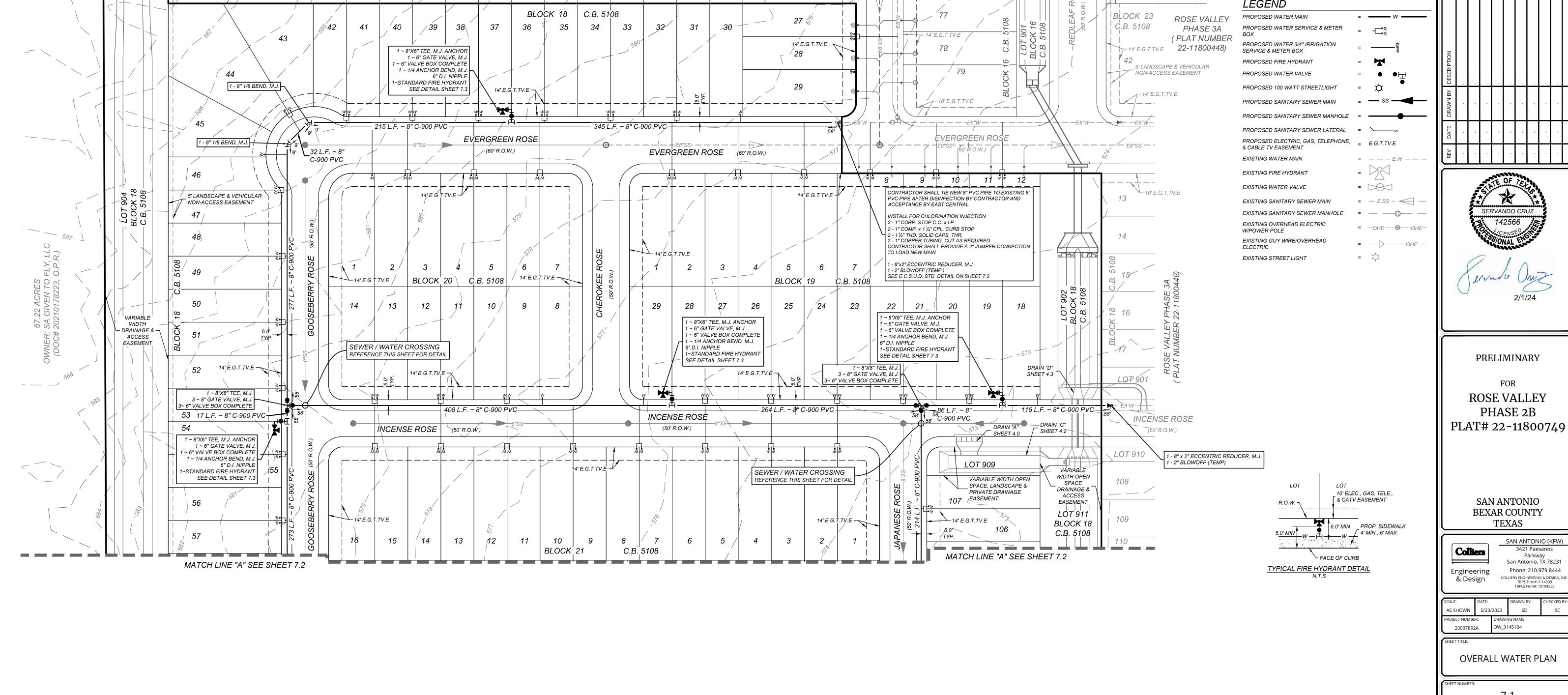
Formerly Known as



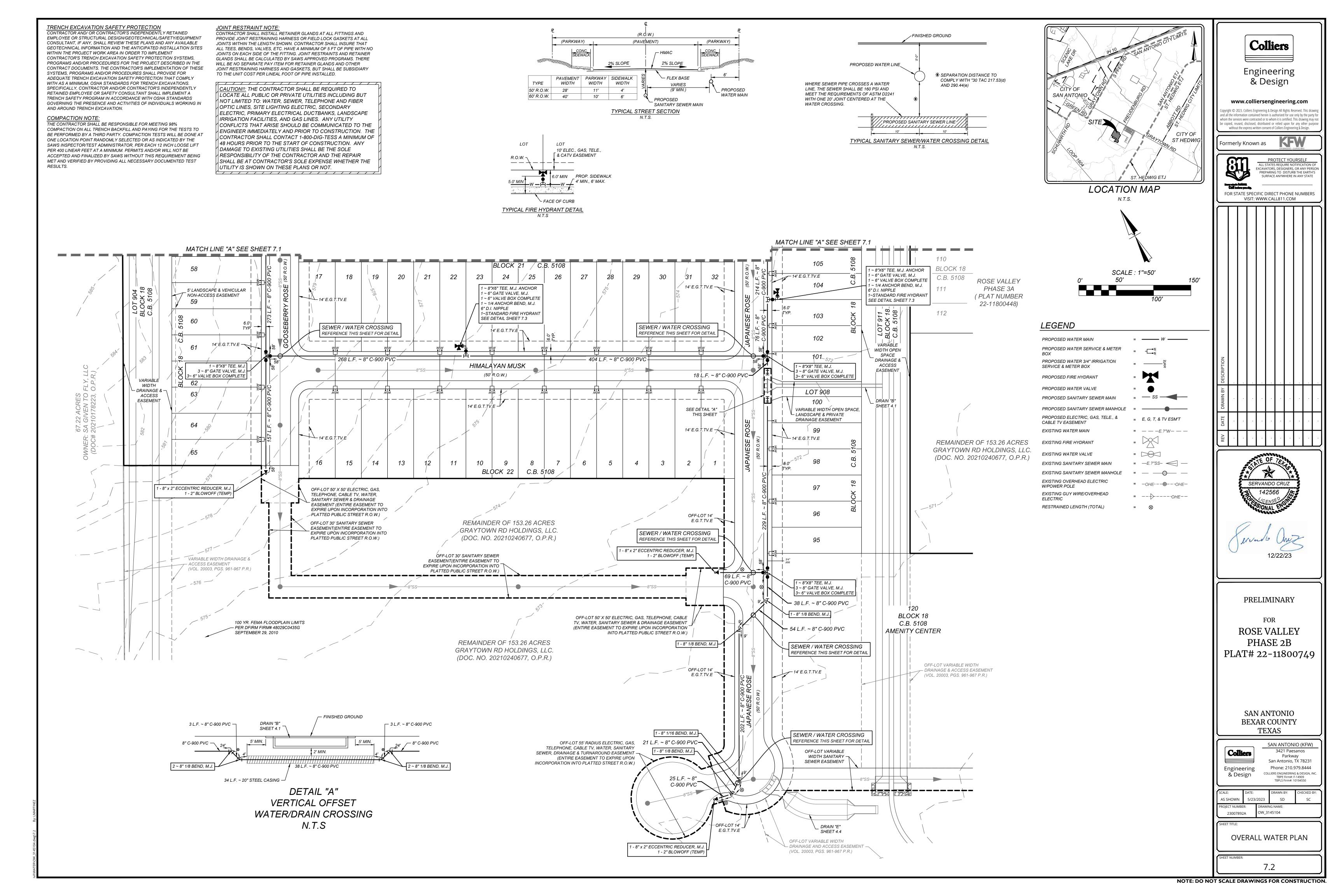
SAN ANTONIO **BEXAR COUNTY**

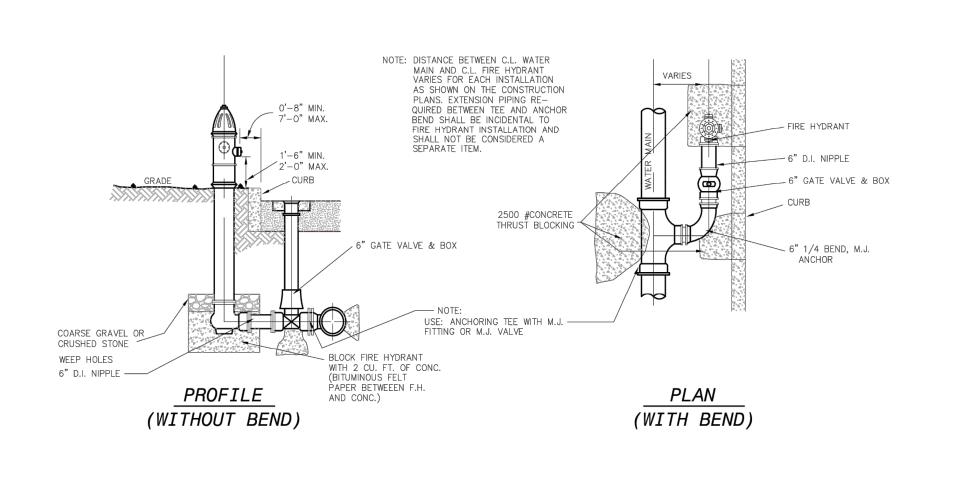
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CALE:	DATE:		DRAWN BY:	CHECKED BY:
AS SHOWN	5/23/2023		SD	SC
ROJECT NUMBE	ER: DRAWIN		NG NAME:	
23007892	2A OW_31		45104	

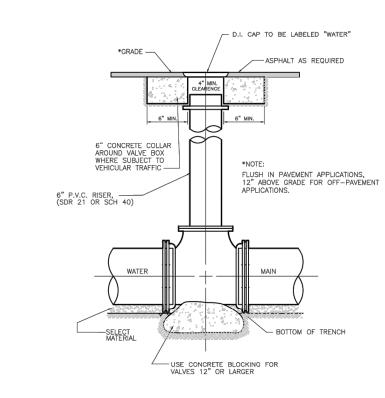
OVERALL WATER PLAN



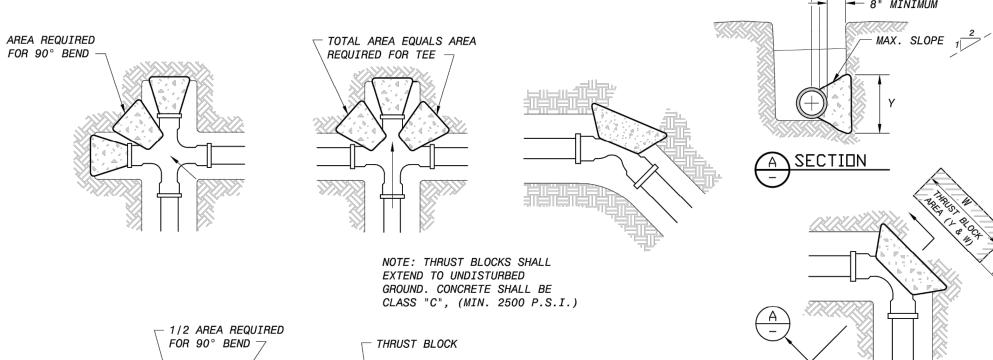
14' E.G.T.TV.E -

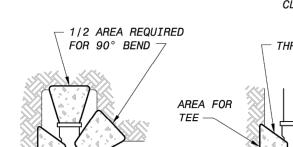


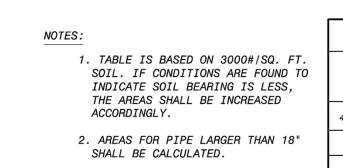




GATE VALVE W/ VALVE BOX

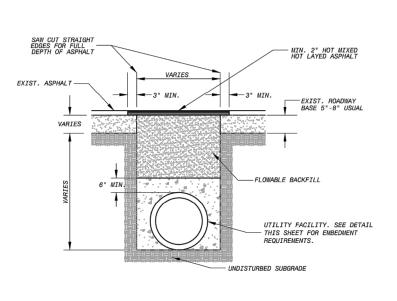


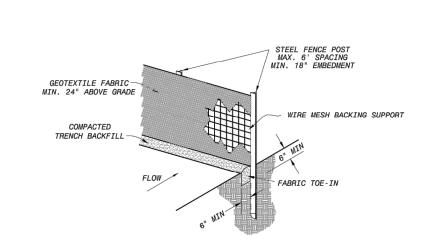


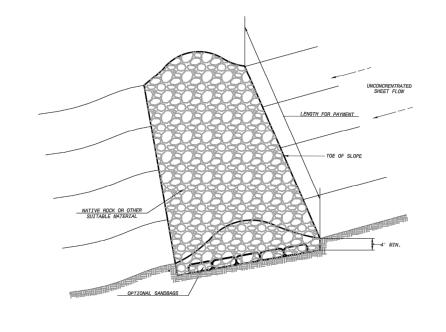


MINIMUM THRUST BLOCK AREA REQUIRED (Y AND W)		
2725	WATER PIPE	
PIPE SIZE	TEE, DEAD END 90° BEND	45° AND 22 1/2° BENDS
4" & LESS	3 SQ. FEET	3 SQ. FEET
6"	4 SQ. FEET	3 SQ. FEET
8"	6 SQ. FEET	3 SQ. FEET
10"	9 SQ. FEET	5 SQ. FEET
12"	13 SQ. FEET	7 SQ. FEET
16"	23 SQ. FEET	12 SQ. FEET
18"	29 SQ. FEET	15 SQ. FEET

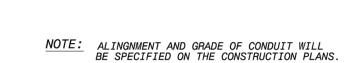




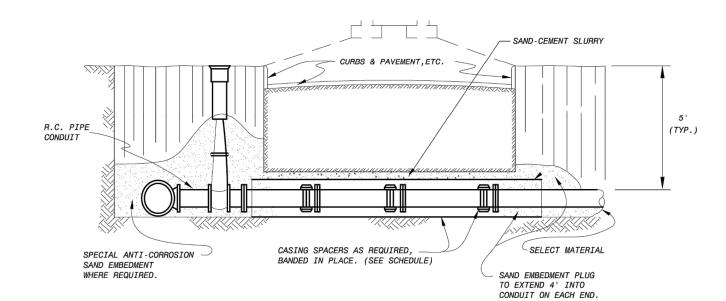


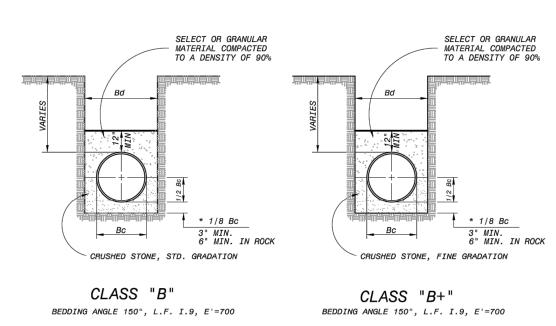


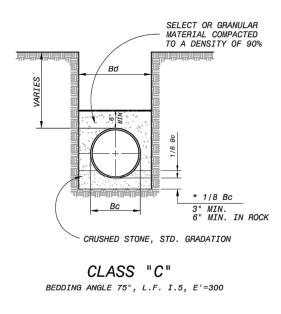
TEMPORARY ROCK BERM N.T.S.

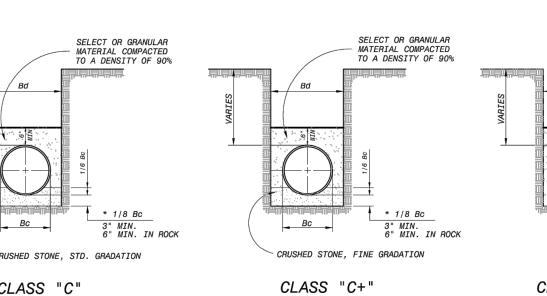


THRUST BLOCK DETAILS N.T.S.









BEDDING ANGLE 75°, L.F. I.5, E'=300

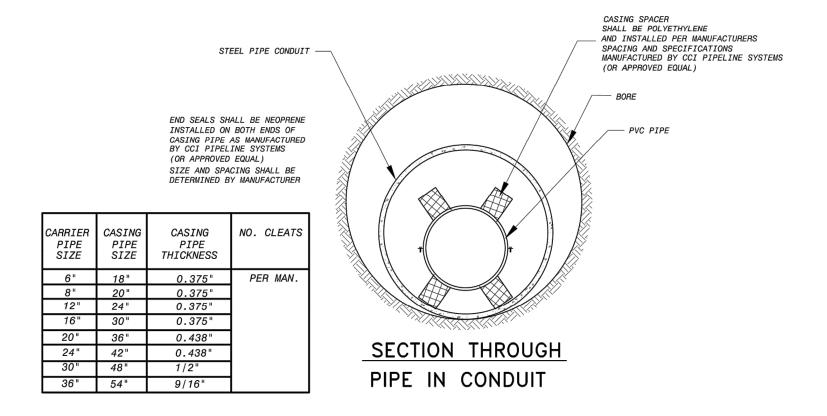
ILAR ETED 90%	SELECT OR GRANULAR MATERIAL COMPACTED TO A DENSITY OF 90%
- I ROCK	* 1/8 Bc 3" MIN.
	CLASS "D+" BEDDING ANGLE 30°, L.F. I.3, E'=200

EMBEDMENT FOR	WATER	CONDU	ITS			
		IN EARTH			IN ROCK	
TYPE OF PIPE	0'-8'	8'-16'	>16'	0'-8'	8'-16'	>16
ALL PVC WATER PIPE	C+	B+	B+	C+	B+	B+
16" AND SMALLER DUCTILE IRON WATER PIPE	D+	С	В	С	С	В
18" AND LARGER DUCTILE IRON WATER PIPE	В	В	В	В	В	В

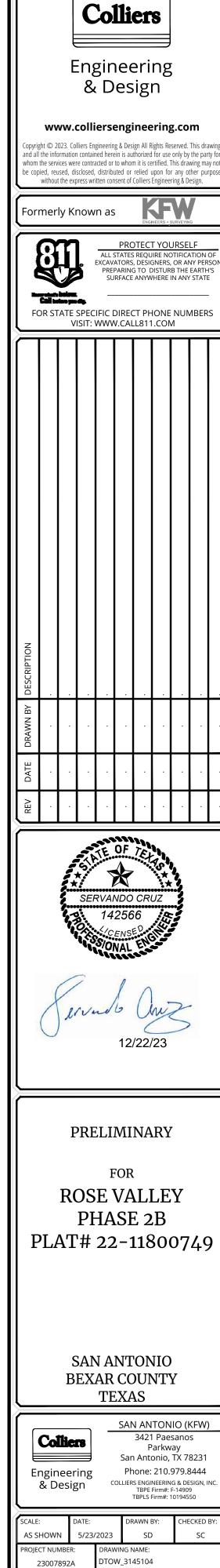
EMBEDMENT DETAILS N.T.S.

BACKFILL AND PATCH PAVEMENT N.T.S. TEMPORARY SILT FENCE N.T.S.

EMBEDMENT DIMENSIONS				
PIPE DIAMETER (INCHES)	KIND OF PIPE	EXTERNAL DIAMETER BC (INCHES)	TRENCH WIDTH Bd (INCHES)	
6"	PVC	6.90	24	
6"	DI	6.90	24	
		1		
8"	PVC	9.05	25	
8"	DI	9.05	25	
10"	PVC	11.10	27	
10"	DI	11.10	27	
12"	PVC	13.20	29	
12"	DI	13.20	29	
16"	DI	17.40	33	
401	0.7	10.50	0.0	
18"	DI	19.50	36	
20"	DI	21.60	38	



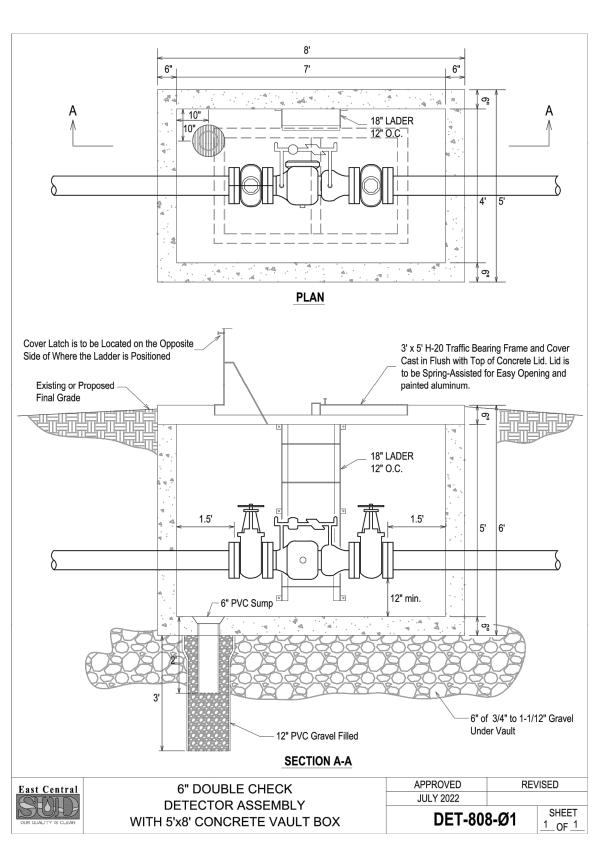
INSTALLATION OF PIPE IN CONDUIT N.T.S.

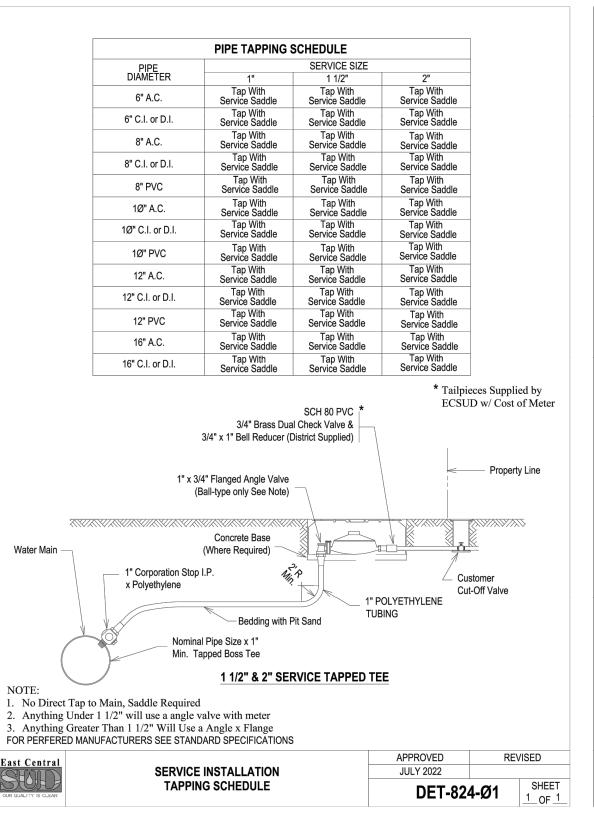


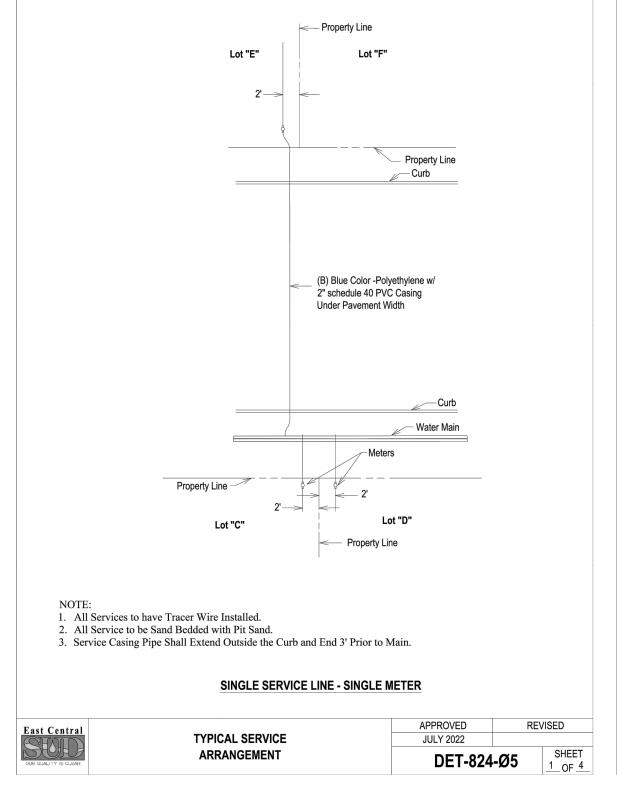
NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

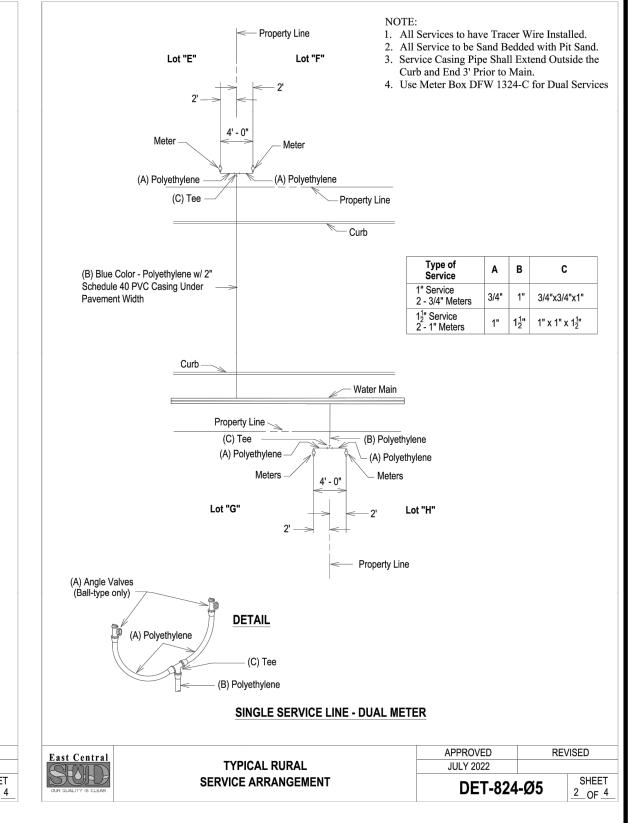
WATER DETAIL SHEET

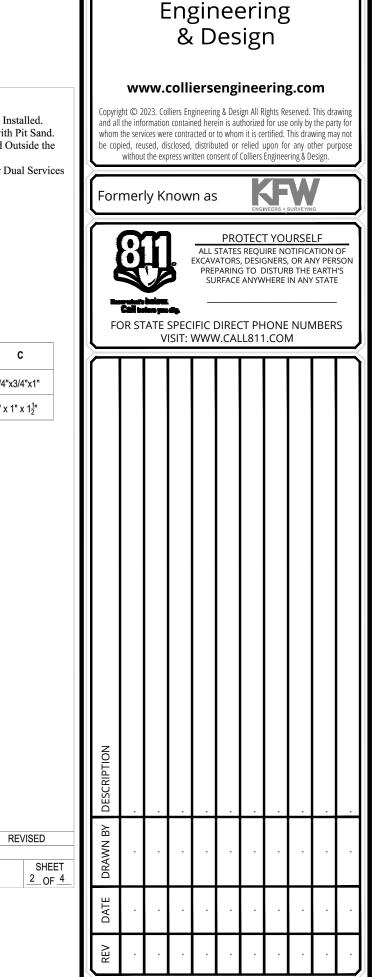




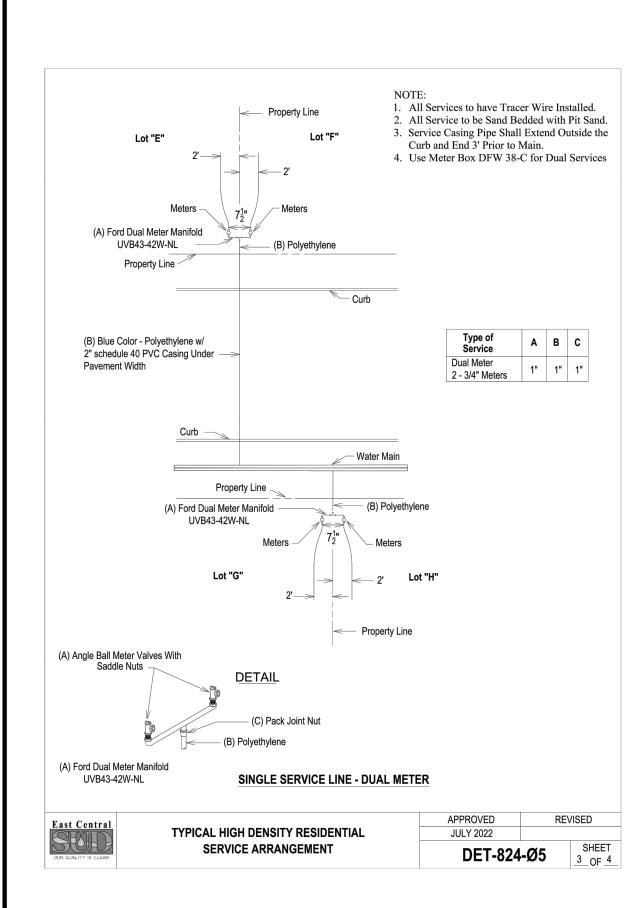


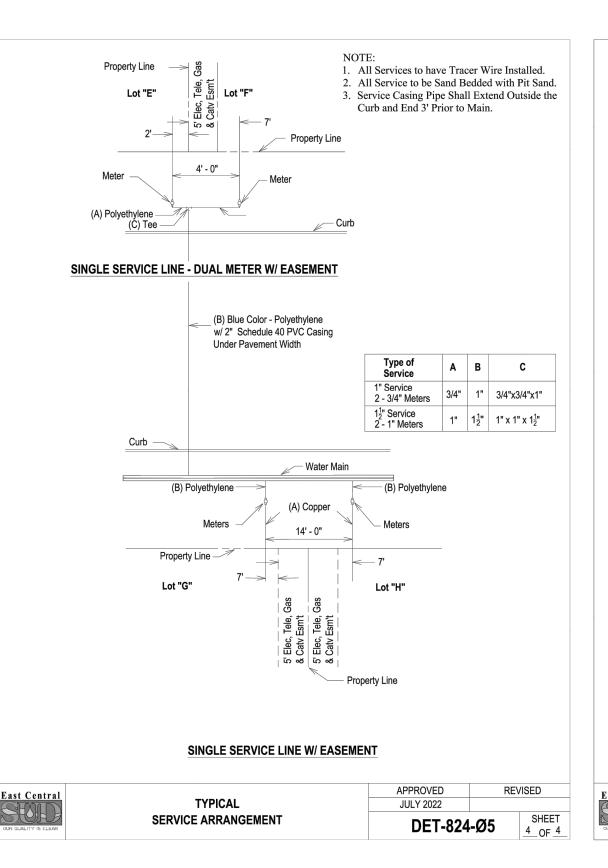


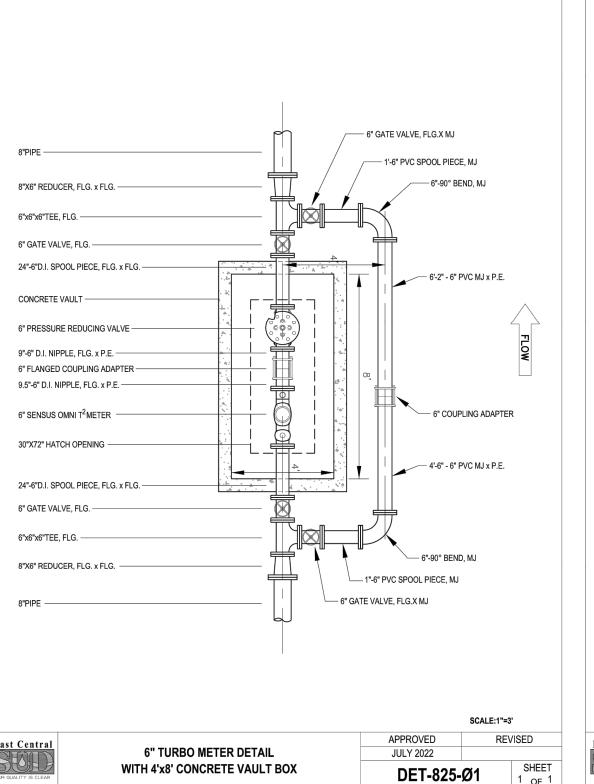


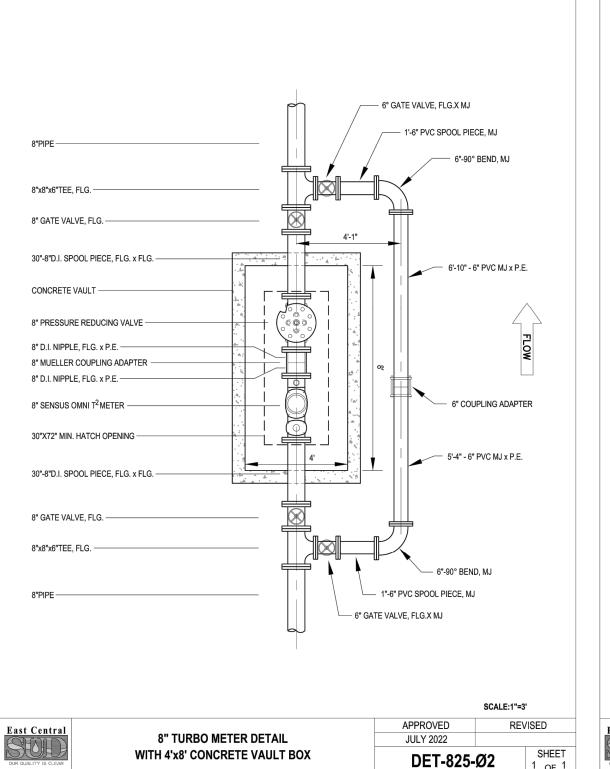


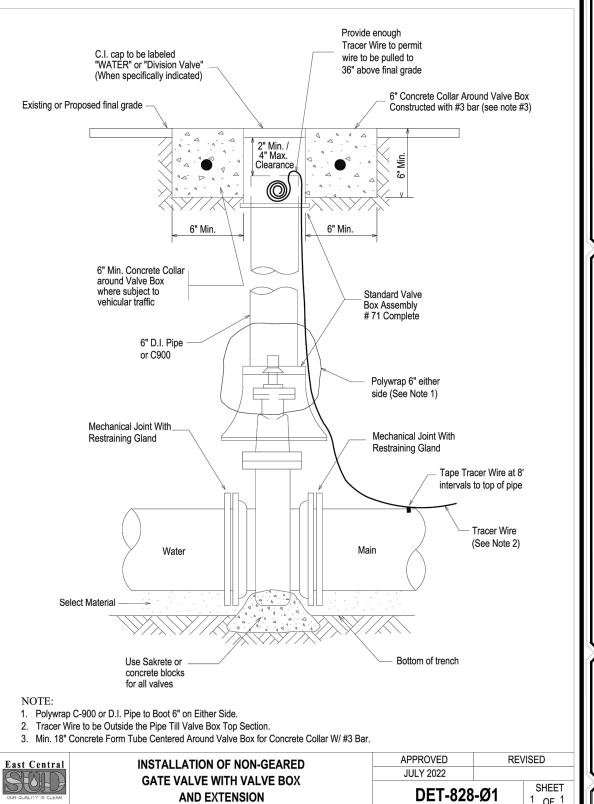
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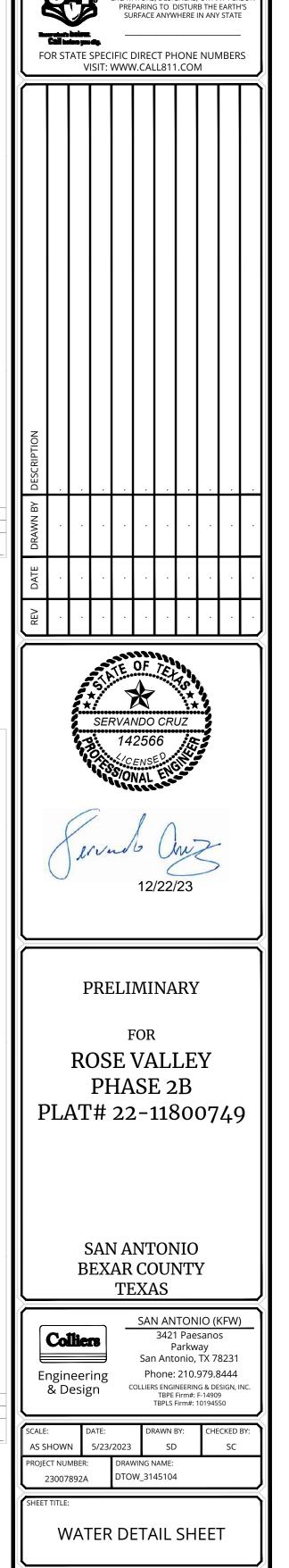


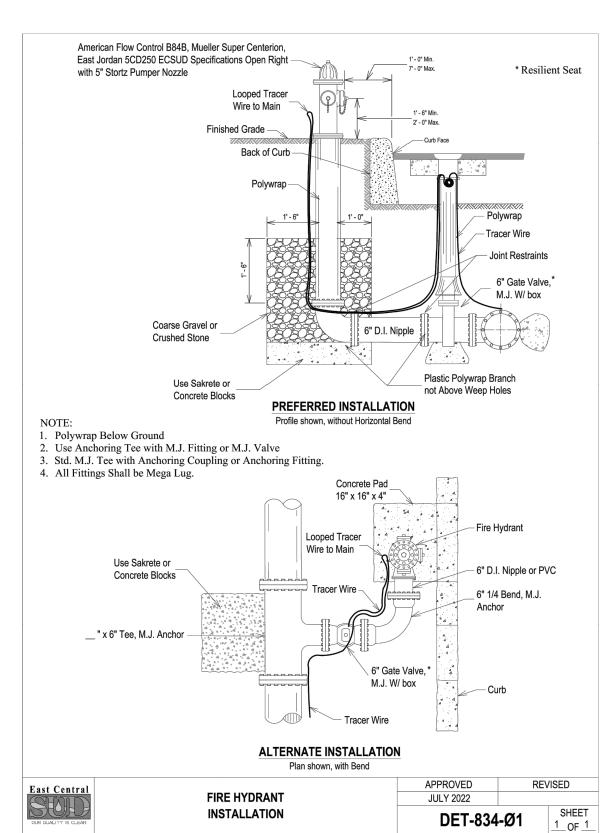


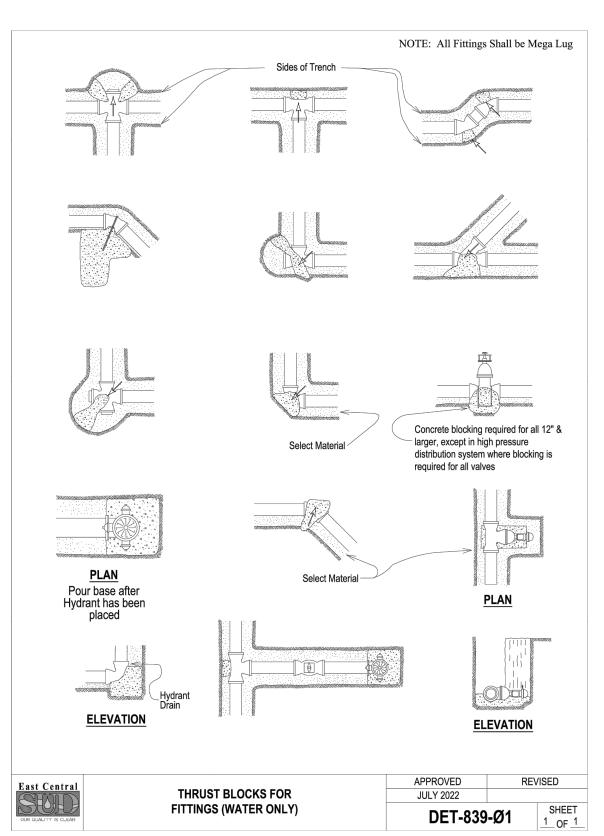


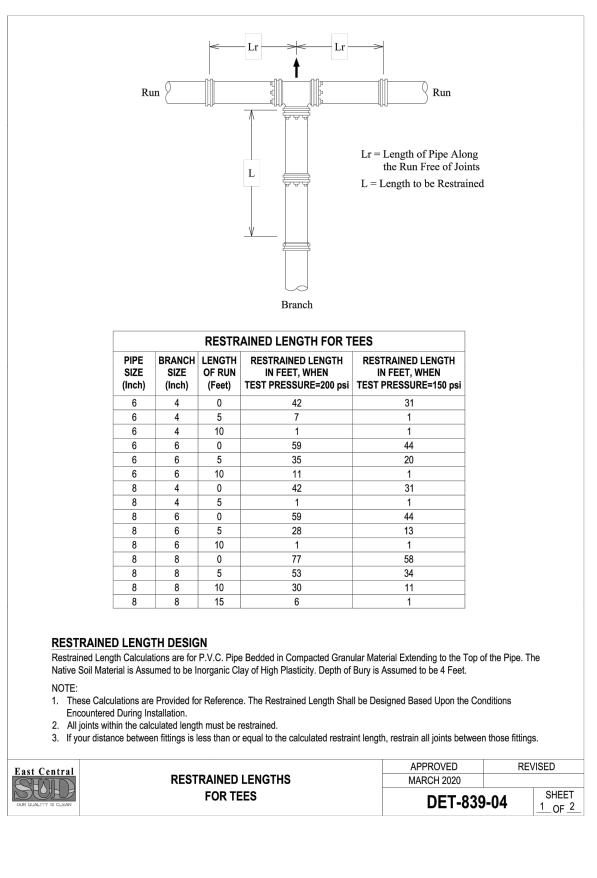


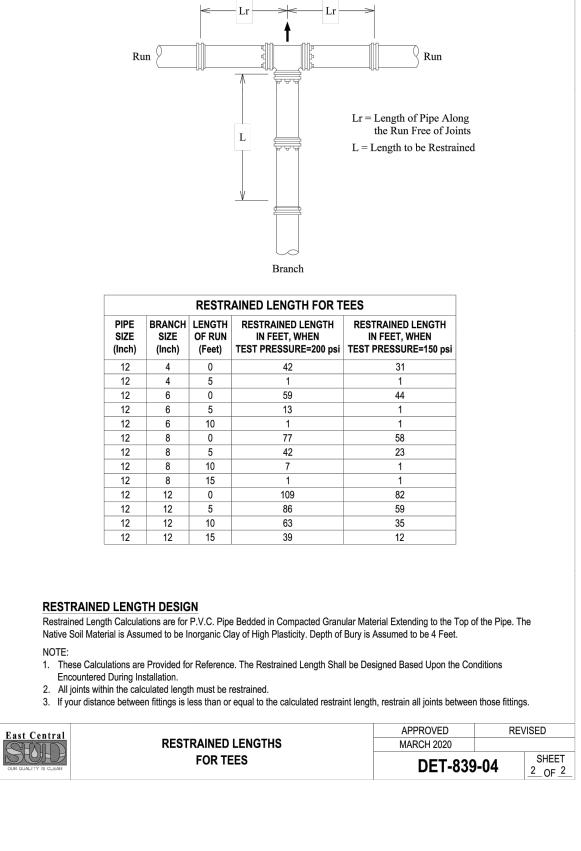
AND EXTENSION

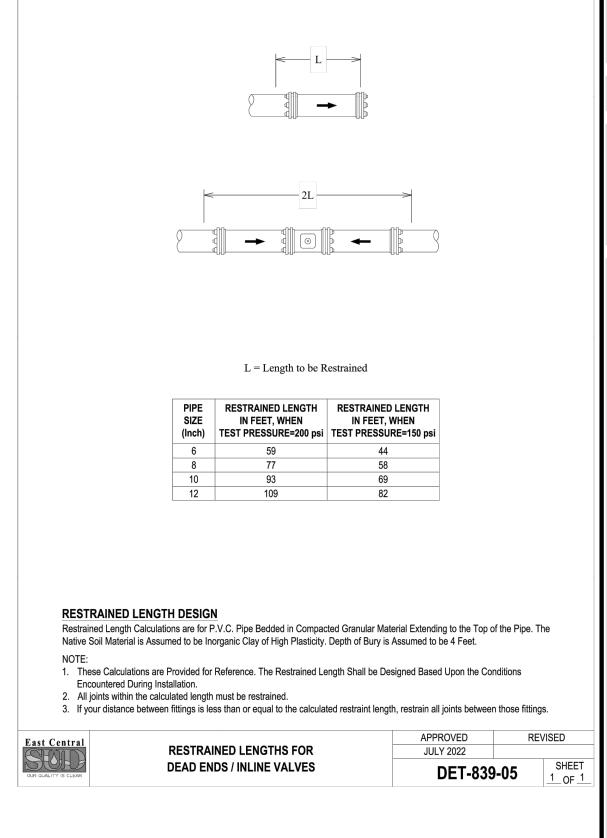








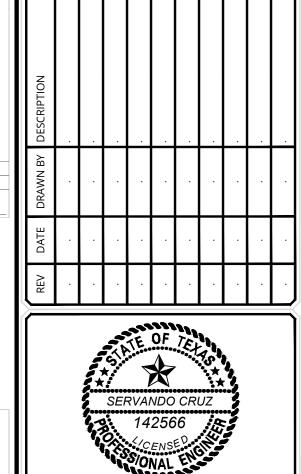




2" Curb Angle Valve

Ground Line

(Ball-type only) B11-777



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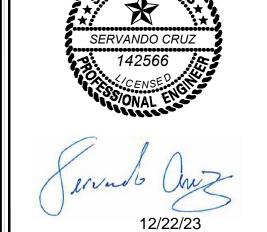
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Formerly Known as



#2 Meter Box, Complete

6" Valve Box & Lid only

2" PVC SCH 40 Plug, The

2" G.I. Coupling, Thd. (2" Min. and 7" Max. from surface)

Concrete Support

2" G.I. Pipe, Thd.

2" x 12" G.I. Nipple, Thd.

- 2" 90° G.I. Ell, Thd.

JULY 2022

DET-844-02

PRELIMINARY

FOR **ROSE VALLEY** PHASE 2B PLAT# 22-11800749

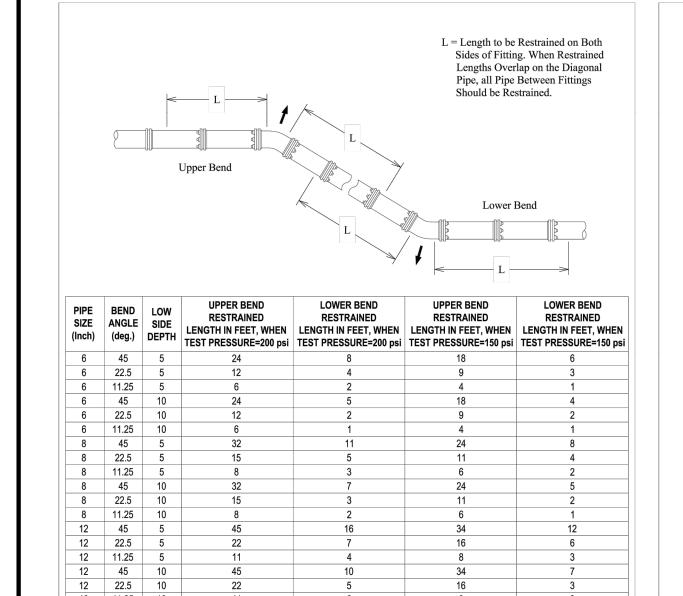
> SAN ANTONIO BEXAR COUNTY **TEXAS**

Colliers Engineering & Design

SAN ANTONIO (KFW) 3421 Paesanos Parkway San Antonio, TX 78231 Phone: 210.979.8444 COLLIERS ENGINEERING & DESIGN, IN TBPE Firm#: F-14909 TBPLS Firm#: 10194550

TOW_3145104 23007892A

WATER DETAIL SHEET





1. These Calculations are Provided for Reference. The Restrained Length Shall be Designed Based Upon the Conditions Encountered During Installation. 2. All joints within the calculated length must be restrained.

3. If your distance between fittings is less than or equal to the calculated restraint length, restrain all joints between those fittings.

,	· ·	•	·	
East Central		APPROVED	RE'	VISED
	RESTRAINED LENGTHS	JULY 2022		
OUR QUALITY IS CLEAR	VERTICAL OFFSETS	DET-839-06		SHEE 1_OF

Native Soil Material is Assumed to be Inorganic Clay of High Plasticity. Depth of Bury is Assumed to be 4 Feet.

STOLD OUR QUALITY IS CLEAR	FOR REDUCERS	DET-839-07	
	RESTRAINED LENGTHS	JULY 2022	
East Central		APPROVED	REVISE

1. These Calculations are Provided for Reference. The Restrained Length Shall be Designed Based Upon the Conditions

Restrained Length Calculations are for P.V.C. Pipe Bedded in Compacted Granular Material Extending to the Top of the Pipe. The

Native Soil Material is Assumed to be Inorganic Clay of High Plasticity. Depth of Bury is Assumed to be 4 Feet.

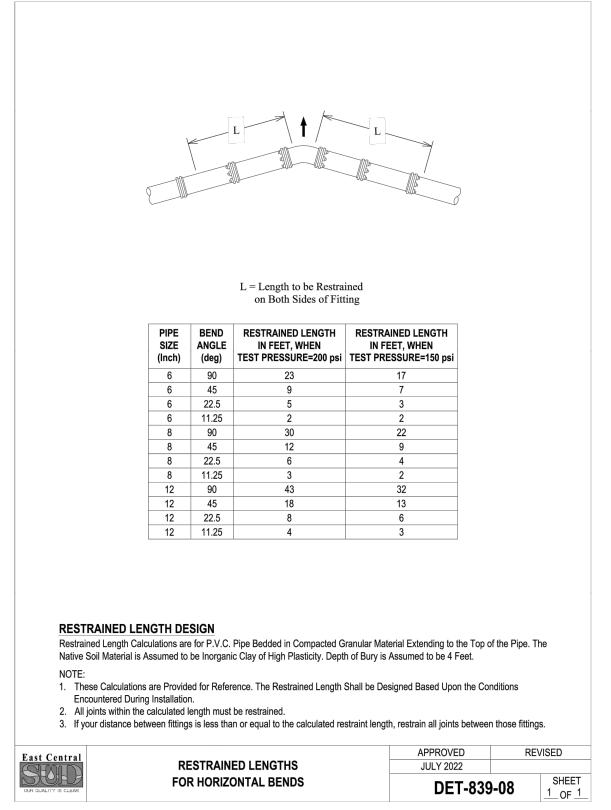
L = Length to be Restrained

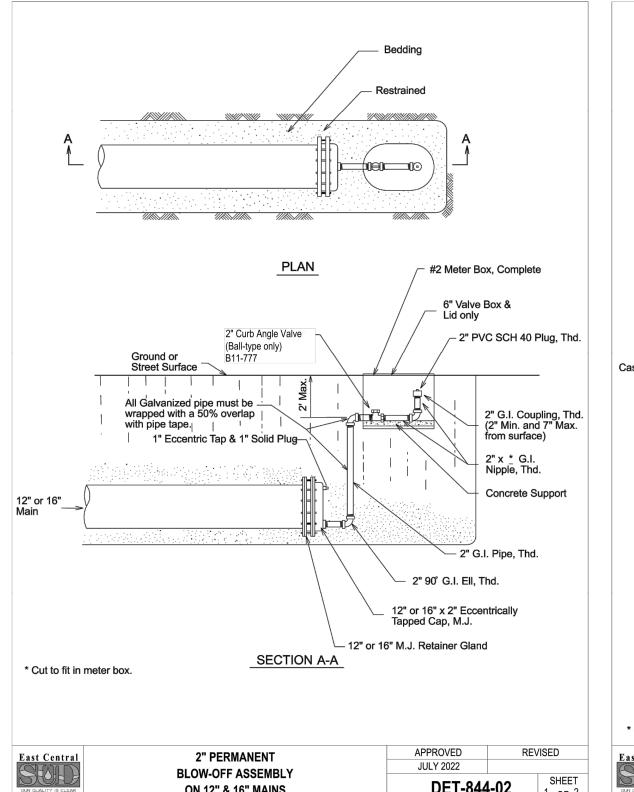
PIPE SMALL RESTRAINED LENGTH RESTRAINED LENGTH

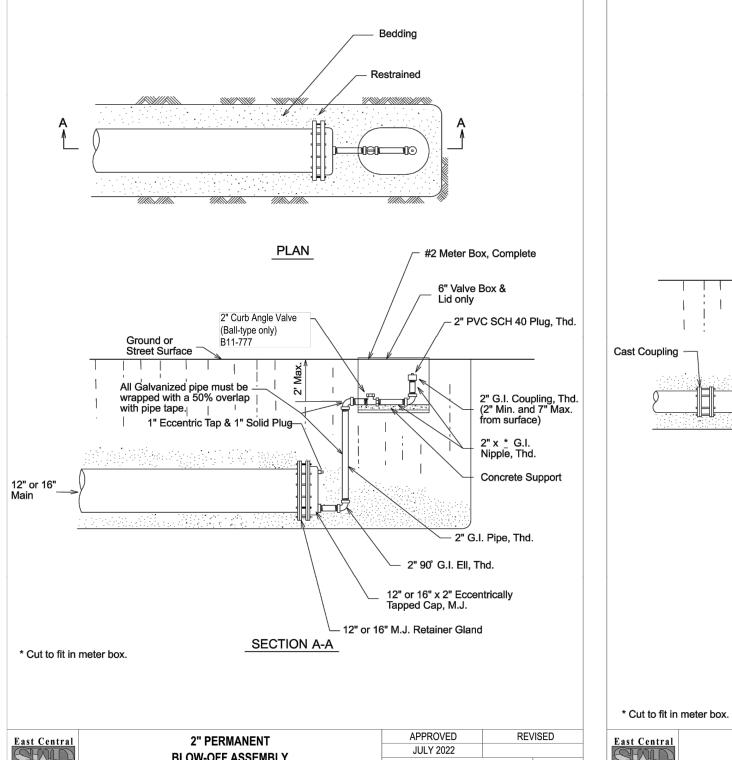
TEST PRESSURE=200 psi | TEST PRESSURE=150 ps

IN FEET, WHEN

IN FEET, WHEN

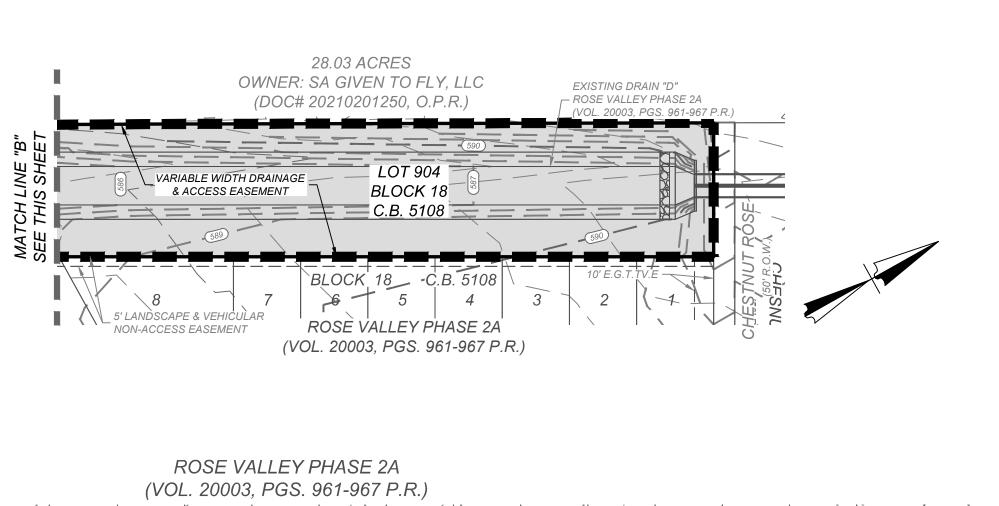


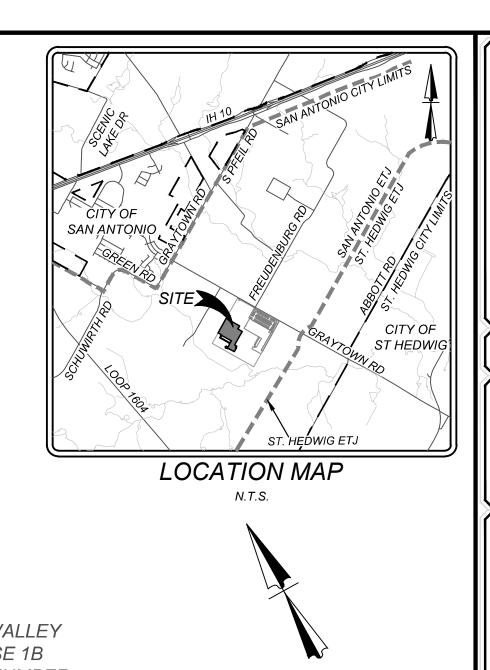


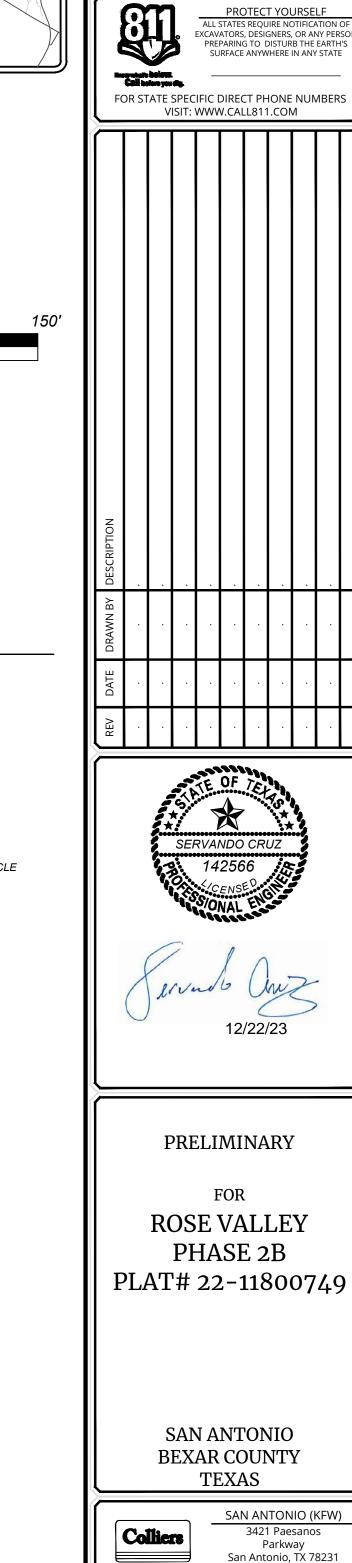


				* Cut to fit in meter bo	ox.
East Central OUR QUALITY IS CLEAR	2" PERMANENT BLOW-OFF ASSEMBLY ON 12" & 16" MAINS	APPROVED JULY 2022 DET-844	REVISED SHEET 1 OF 2	East Central OUR GLALITY IS CLEAR	2" PERMANENT BLOW-OFF ASSEMBLY ON 6" & 8" MAINS

RENCH 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 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. CONDUIT LOCATIONS SHOWN ON PLAN ARE FOR GEOGRAPHICAL PURPOSES ONLY AND ARE APPROXIMATE. 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 UTILITY PURVEYOR'S PLAN. BEXAR COUNTY R.O.W. NOTE: A BEXAR COUNY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY R.O.W. MATCH LINE "B" SEE THIS SHEET 28.03 ACRES OWNER: SA GIVEN TO FLY, LLC (DOC# 20210201250, O.P.R.)







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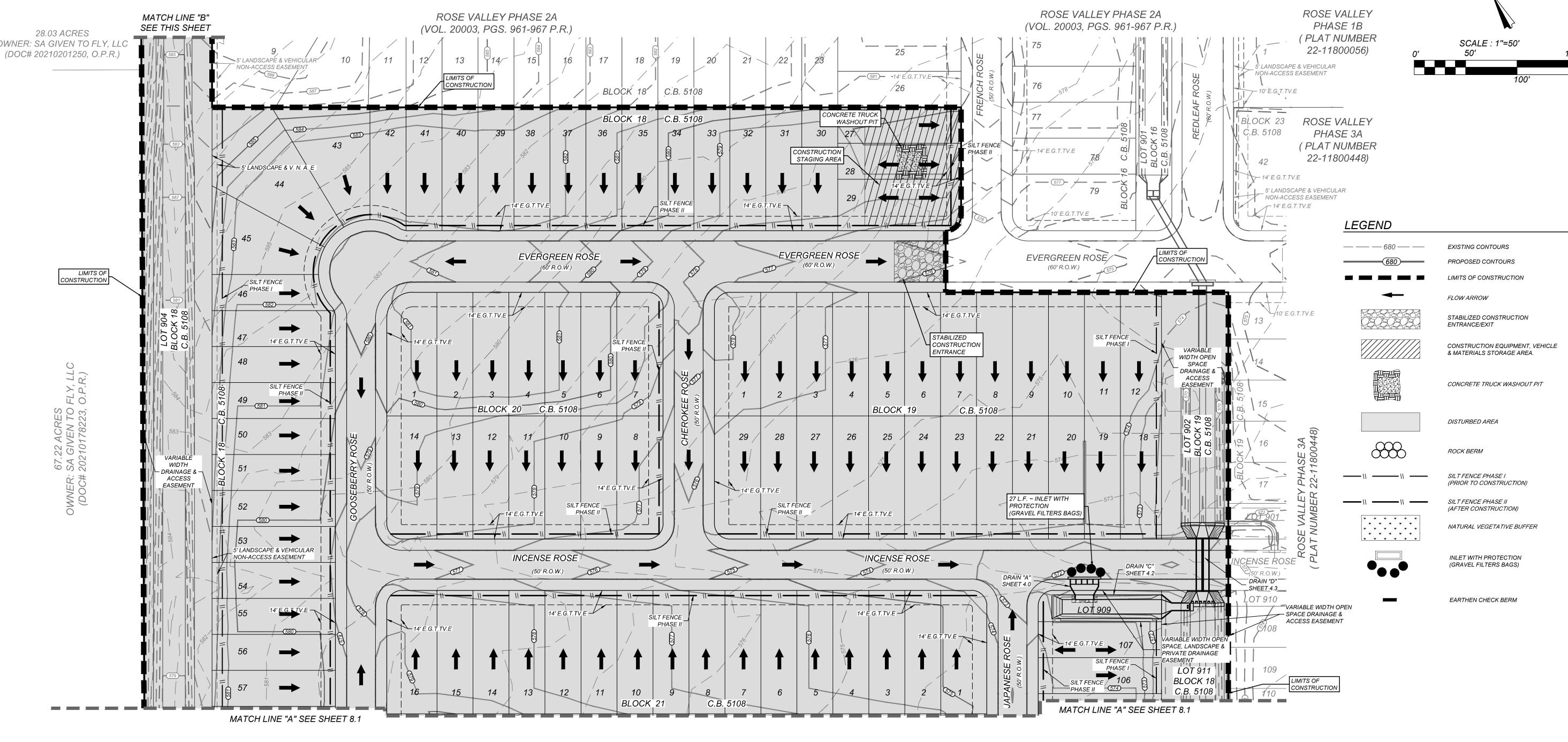
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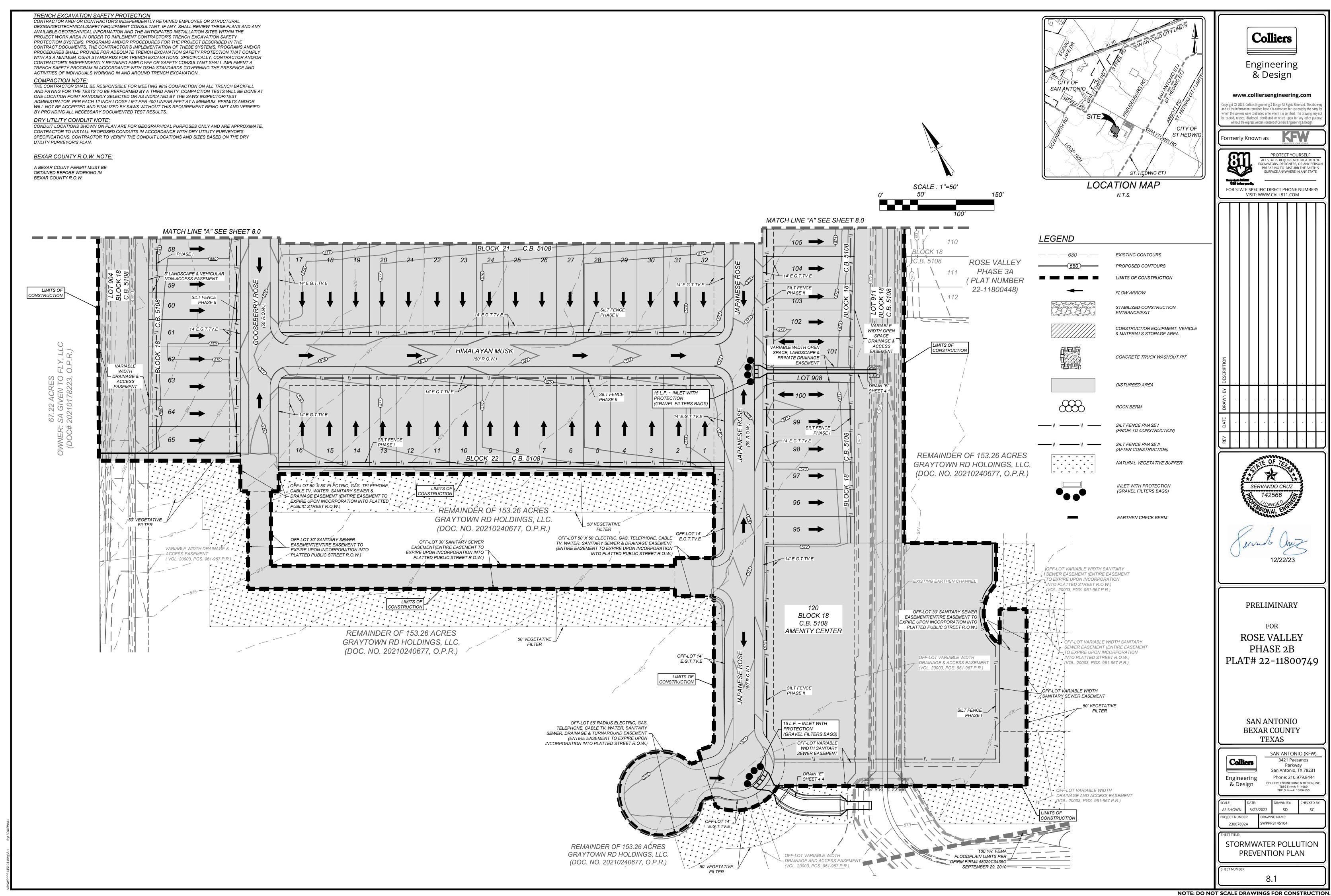
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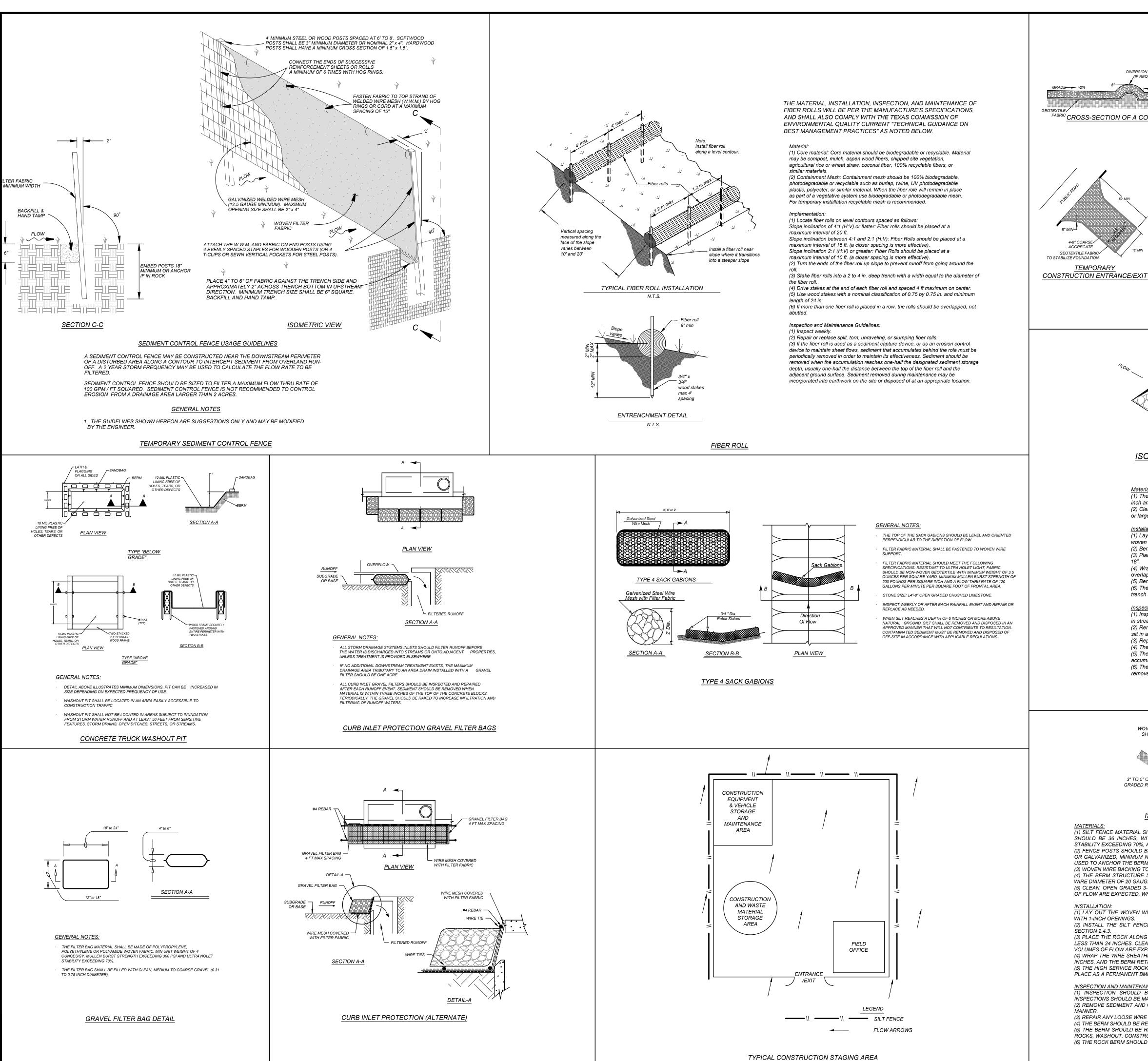
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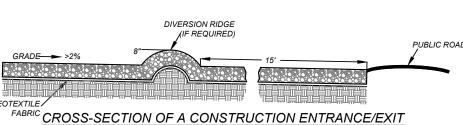
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STORMWATER POLLUTION PREVENTION PLAN

8.0



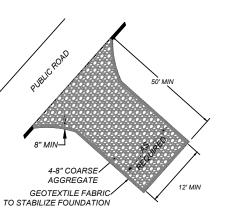




Materials:

(1) The aggregate should consist of 4 to 8 inch washed stone over a stable foundation as specified in the plan. (2) The aggregate should be placed with a minimum thickness of 8 inches. (3) The geotextile fabric should be designed specifically for use as a soil filtration media with an approximate weight of 6 oz/yd2, a mullen burst rating of 140 lb/in2, and an equivalent opening size greater than a number

(4) If a washing facility is required, a level area with a minimum of 4 inch diameter washed stone or commercial rack should be included in the plans. Divert wastewater to a sediment trap or basin.



Installation: (North Carolina, 1993) (1) Avoid curves on public roads and steep slopes. Remove vegetation and other objectionable material from the foundation area. Grade crown foundation for positive drainage. (2) The minimum width of the entrance/exit should be 12 feet or the full width of exit roadway, whichever is greater.

(3) The construction entrance should be at least 50 feet long. (4) If the slope toward the road exceeds 2%, construct a ridge, 6 to 8 inches high with 3:1 (H:V) side slopes, across the foundation approximately 15 feet from the entrance to divert runoff away from the public road. (5) Place geotextile fabric and grade foundation to improve stability, especially where wet conditions are anticipated. (6) Place stone to dimensions and grade shown on plans. Leave surface smooth and slope for drainage. (7) Divert all surface runoff and drainage from the stone pad to a sediment trap or basin. (8) Install pipe under pad as needed to maintain proper public road drainage.

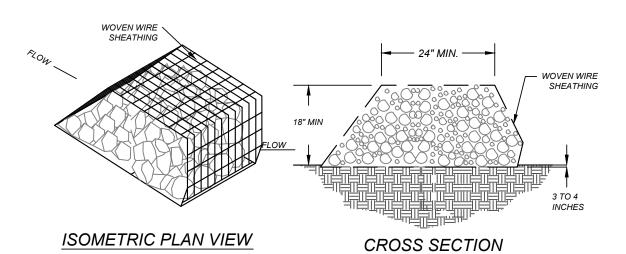
1) The entrance should be maintained in a condition, which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair andlor cleanout of any measures used to trap sediment.

(3) When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way. (4) When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.

(2) All sediment spilled, dropped, washed or tracked onto public rights-of-way should be removed immediately by contractor.

(5) All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.

STABILIZED CONSTRUCTION ENTRANCE / EXIT



(1) The berm structure should be. secured with a woven wire sheathing having maximum opening of 1 inch and a minimum wire diameter of 20 gauge galvanized and should be secured with shoat rings. (2) Clean, open graded 3- to 5-inch diameter rock should be used, except in areas where high velocities or large volumes of flow are expected, where 5- to 8-inch diameter rocks may be used.

USED TO ANCHOR THE BERM.

(1) Lay out the woven wire sheathing perpendicular to the flow line. The sheathing should be 20 gauge woven wire mesh with 1 inch openings (2) Berm should have a top width of 2 feet minimum with side slopes being 2:1 (H:V) or flatter.

(3) Place the rock along the sheathing as shown in the diagram Figure 1-28), to a height not less than (4) Wrap the wire sheathing around the rock and secure with tie wire so that the ends of the sheathing overlap at least 2 inches, airl the berm retains its shape when walked upon

(5) Berm should be built along the contour at zero percent grade or as near as possible. (6) The ends of the berm should be tied into existing upslope grade and the berm should be buried in a trench approximately 3 to 4 inches deep to prevent failure of the control.

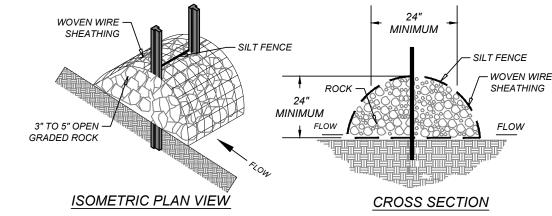
Inspection and Maintenance Guidelines 1) Inspection should be made weekly by the responsible party. For installations

in streambeds, additional daily inspections should be made (2) Remove sediment and other debris when buildup reaches 6 inches and dispose of the accumulated silt in an approved manner that will not cause any additional siltation. (3) Repair any loose wire sheathing.

(4) The berm should be reshaped as needed during inspection. (5) The berm should be replaced when the structure ceases to function as intended due to silt

accumulation among the rocks, washout, construction traffic damage, etc. (6) The rock berm should be left in place until all upstream areas are stabilized and accumulated silt

ROCK BERM



(1) SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC WIDTH SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/IN2, ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NO. 30. (2) FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR YBAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM NOMINAL WEIGHT 1.25 LB/FL2, AND BRINDELL HARDNESS EXCEEDING 140. REBAR (EITHER #5 OR #6) MAY ALSO BE

(3) WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12 GAUGE MINIMUM. (4) THE BERM STRUCTURE SHOULD BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM OPENING OF 1 INCH. AND A MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED AND SHOULD BE SECURED WITH SHOAT RINGS. (5) CLEAN, OPEN GRADED 3- TO 5-INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5- TO 8-INCH DIAMETER ROCKS MAY BE USED.

INSTALLATION:
(1) LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE. THE SHEATHING SHOULD BE 20 GAUGE WOVEN WIRE MESH WITH 1-INCH OPENINGS. (2) INSTALL THE SILT FENCE ALONG THE CENTER OF THE PROPOSED BERM PLACEMENT, AS WITH A NORMAL SILT FENCE DESCRIBED IN SECTION 2.4.3. (3) PLACE THE ROCK ALONG THE SHEATHING ON BOTH SIDES OF THE SILT FENCE AS SHOWN IN THE DIAGRAM (FIGURE 1-29), TO A HEIGHT NOT LESS THAN 24 INCHES. CLEAN, OPEN GRADED 3- 5" DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE

VOLUMES OF FLOW ARE EXPECTED, WHERE 5- TO 8-INCH DIAMETER ROCK MAY BE USED. (4) WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON. (5) THE HIGH SERVICE ROCK BERM SHOULD BE REMOVED WHEN THE SITE IS REVEGETATED OR OTHERWISE STABILIZED OR IT MAY REMAIN IN PLACE AS A PERMANENT BMP IF DRAINAGE IS ADEQUATE.

INSPECTION AND MAINTENANCE GUIDELINES:
(1) INSPECTION SHOULD BE MADE WEEKLY BY THE RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE ON ROCK BERM. (2) REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT OF IN AN APPROVED (3) REPAIR ANY LOOSE WIRE SHEATHING.

(4) THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION. (5) THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC. (6) THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

HIGH SERVICE ROCK BERM



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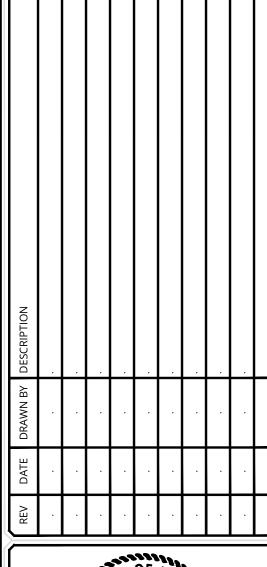
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12/22/23

PRELIMINARY

ROSE VALLEY PHASE 2B PLAT# 22-11800749

> SAN ANTONIO **BEXAR COUNTY** TEXAS

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SWPPP-DT3145104 23007892A

STORMWATER POLLUTION PREVENTION DETAILS