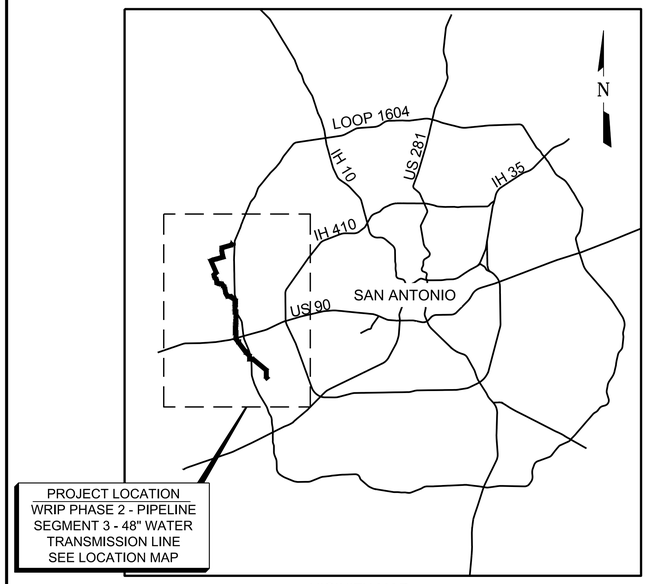
# SAN ANTONIO WATER SYSTEM

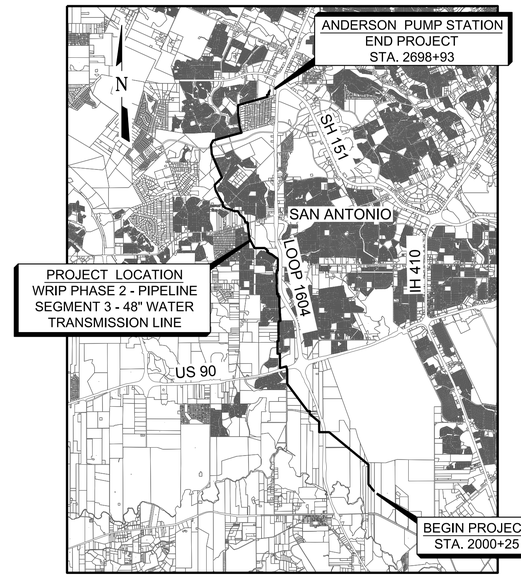
# WATER RESOURCES INTEGRATION PROGRAM, PHASE 2 - PIPELINE SEGMENT 3




VICINITY MAP
N.T.S.

SOLICITATION: CO-00336

SAWS JOB NO. 20-8610 (WATER)




LOCATION MAP
N.T.S.

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144
7/20/20


FREESE AND NICHOLS

9601 McAllister Freeway, Suite 1008
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FNI PROJECT NO. SWB09391
JULY 2020
BID DOCUMENTS

THIS PROJECT INCLUDES VARIANCES FROM TCEQ RULES AND REGULATIONS

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 – PIPELINE SEGMENT 3


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CP5000 CONTROL POINT AND BENCHMARK

PIPELINE MARKER

GUARD POST

CATHODIC PROTECTION TEST STATION

CATHODIC PROTECTION RECTIFIER

SF SILT FENCE

ROCK FILTER DAM

POTENTIAL STAGING AREA

WOODEN FENCE

# STANDARD ABBREVIATIONS

| | |
|---|---|
| AC | ASBESTOS CONCRETE |
| AH | AHEAD |
| AMSL | ABOVE MEAN SEA LEVEL |
| ASPH | ASPHALT |
| B-B | BACK TO BACK |
| BC | BACK OF CURB |
| BK | BACK |
| BOP | BOTTOM OF PIPE |
| BSL | BUILDING SETBACK LINE |
| CI | CAST IRON |
| CL | CENTERLINE |
| CONC | CONCRETE |
| CP | CONTROL PANEL |
| CSC | CONCRETE STEEL CYLINDER PIPE |
| CORP | CORPORATION |
| CMP | CORRUGATED METAL PIPE |
| CPL | COUPLING |
| DWG | DRAWING |
| DI | DUCTILE IRON |
| E | EAST |
| ELEV / EL | ELEVATION |
| EX / EXIST | EXISTING |
| EW | EACH WAY |
| EWEF | EACH WAY EACH FACE |
| FC | FACE OF CURB |
| FO | FIBER OPTIC |
| FH | FIRE HYDRANT |
| FL | FLOWLINE |
| FND | FOUND |
| GA | GAUGE |
| GI | GALVANIZED IRON |
| GPS | GLOBAL POSITION STATION |
| GRND | GROUND |
| HORZ | HORIZONTAL |
| HMAC | HOT MIX ASPHALTIC CONCRETE |
| HRS | HOURS |
| IAW | IN ACCORDANCE WITH |
| I.D. | INNER DIAMETER |
| IP | IRON PIN |
| LF | LINEAR FEET |
| LT | LEFT |
| L | LENGTH |
| LP | LIGHT POLE |
| MH | MANHOLE |
| MAX | MAXIMUM |
| MJ | MECHANICAL JOINT |
| MIN | MINIMUM |
| N | NORTH |
| NE | NORTHEAST |
| NW | NORTHWEST |
| NA | NOT APPLICABLE |
| NSPI | NO SEPARATE PAY ITEM |
| NTS | NOT TO SCALE |
| OC | ON CENTER |
| OD | OUTER DIAMETER |
| OHE | OVERHEAD ELECTRIC |
| OHT | OVERHEAD TELEPHONE |
| PVMT | PAVEMENT |
| +/- | PLUS OR MINUS |
| PC | POINT OF CURVATURE |
| PE | PLAIN END |
| PI | POINT OF INTERSECTION |
| PT | POINT OF TANGENCY |
| PVC | POLYVINYL CHLORIDE PIPE |
| PSI | POUNDS PER SQUARE INCH |
| PP | POWER POLE |
| PVI | POINT OF VERTICAL INTERSECTION |
| PCCP | PRESTRESSED CONCRETE CYLINDER PIPE |
| PL | PROPERTY LINE |
| R | RADIUS |
| RR | RAILROAD |
| RCP | REINFORCED CONCRETE PIPE |
| REQ'D | REQUIRED |
| RT | RIGHT |
| ROW | RIGHT OF WAY |
| RWL | RECYCLE WATER LINE |
| S | SLOPE |
| SF | SILT FENCE |
| SS | SANITARY SEWER |
| SE | SOUTHEAST |
| SW | SOUTHWEST |
| STA | STATION |
| STD | STANDARD |
| ST | STORM SEWER |
| T | TANGENT |
| T/P | TOP OF PIPE |
| T/G | TOP OF GROUND |
| TEL | TELEPHONE |
| TBM | TEMPORARY BENCH MARK |
| THD | THREADED |
| TYP | TYPICAL |
| UG | UNDERGROUND |
| UN | UNLESS NOTED |
| UNK | UNKNOWN |
| VERT | VERTICAL |
| VPI | VERTICAL POINT OF INFLECTION |
| VPC | VERTICAL POINT OF CURVATURE |
| VPT | VERTICAL POINT OF TANGENCY |
| WWF | WELDED WIRE FABRIC |
| TS | TEST STATION |

# LEGEND (EXISTING ITEMS)

BENCHMARK

SIGN

TREE

POWER POLE

POWER POLE/TRANS.

ELECTRIC MANHOLE

ELECTRIC METER

TRANSFORMER BOX ( ON GROUND )

TELEPHONE MANHOLE

COMMUNICATION MANHOLE

TELEPHONE PEDESTAL

CABLE T.V. PEDESTAL

LIGHT POLE

LIGHT

100 YEAR FLOODPLAIN

GUY WIRE

UTILITY BOX

GAS VALVE

GAS METER

WATER VALVE

WATER METER

FIRE HYDRANT

SPRINKLER CONTROL VALVE

SPRINKLER HEADS

SANITARY SEWER MANHOLE

STORM DRAIN MANHOLE

EARTH OR GRADE (SECTION OR PROFILE)

ASPHALT PAVEMENT (SECTION OR PROFILE)

BARBED WIRE FENCE W/ GATE

NET WIRE FENCE

EXIST. TREE CANOPY

LOC LIMITS OF CONSTRUCTION

PROPERTY LINE

EASEMENT LINE

OHE OVERHEAD ELECTRIC

UGE UNDERGROUND ELECTRIC

OHT OVERHEAD TELEPHONE

UGT UNDERGROUND TELEPHONE

UGC UNDERGROUND CABLE

FO FIBER OPTIC

G GAS

W WATERLINE

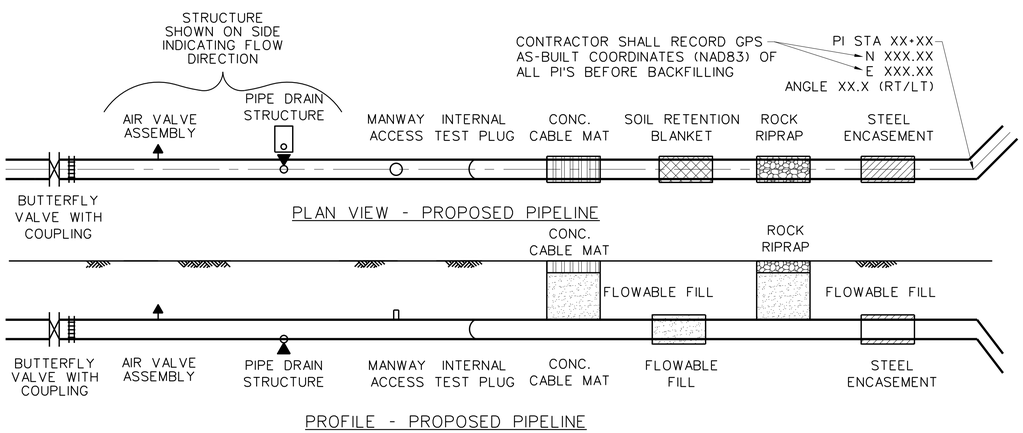
18" RCP STORM SEWER

8" SS SANITARY SEWER LINE

STREAM/WATER

HERITAGE TREE

# LEGEND (PROPOSED ITEMS)




Freese And Nichols, Inc.
Job No.
SWB09391

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS 07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: N.T.S.


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SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3

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## GENERAL CONSTRUCTION

1. CONTRACTOR SHALL ABIDE BY ALL APPLICABLE GOVERNMENTAL AND REGULATORY STANDARDS AND REQUIREMENTS AND OBTAIN ALL NECESSARY PERMITS AND APPROVALS FOR CONSTRUCTION OF THE PIPELINE FACILITIES SHOWN IN THE PLANS AND CONTRACT DOCUMENTS.

2. THE CONTRACTOR SHALL EXCAVATE THE TOP 12 INCHES OF TOPSOIL AND STOCKPILE IT SEPARATELY FROM THE GENERAL EXCAVATION. A SUITABLE VOLUME OF TOPSOIL SHALL BE EXCAVATED TO PLACE A MINIMUM OF 12 INCHES OF TOPSOIL OVER ALL EXCAVATED OR BACKFILLED AREAS. TOPSOILING IS NOT REQUIRED WHERE PAVEMENT, CONCRETE CAP, RIPRAP OR OTHER FACILITIES ARE REQUIRED AT THE SURFACE. IN CULTIVATED AREAS THE CONTRACTOR SHALL EXCAVATE THE TOP 24 INCHES OF TOPSOIL AND STOCKPILE SEPARATELY AND A MINIMUM OF 24 INCHES OF SUITABLE TOP SOIL SHALL BE PLACED OVER THE DISTURBED AREA. RESTORE GROUND TO ORIGINAL GRADE AND PREVENT PONDING OF STORM WATER RUNOFF ON ALL GROUND DISTURBED BY CONSTRUCTION ACTIVITIES.

3. CONSTRUCTION SURVEYING IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR INCLUDING BUT NOT LIMITED TO LIMITS OF PERMANENT EASEMENT AND TEMPORARY EASEMENTS, PIPE ALIGNMENT, APPURTENANCE LOCATION AND ROAD CROSSINGS. THE CONTRACTOR SHALL VERIFY ALL CONTROL BENCHMARKS AND MONUMENTATION PRIOR TO BEGINNING CONSTRUCTION.

4. EROSION CONTROL MUST BE IN PLACE BEFORE CLEARING AND GRUBBING. PIPE STRINGING SHALL BE NO MORE THAN ONE MONTH PRIOR TO PIPE LAYING. BACKFILL, CLEAN-UP, AND SURFACE RESTORATION SHALL BE COMPLETED NO MORE THAN ONE MONTH AFTER PIPE LAYING. THE SITE SHALL BE KEPT CLEAN OF TRASH AT ALL TIMES. FAILURE TO COMPLY WITH THESE REQUIREMENTS MAY RESULT IN WITHHOLDING SOME OR ALL PAYMENT TO THE CONTRACTOR.

5. CONTRACTOR SHALL INSTALL ALL PIPE ON GRADUAL VERTICAL CURVATURES, EXCEPT AS SHOWN ON PLANS TO PRECLUDE THE NECESSITY OF USING FITTINGS FOR VERTICAL BENDS. HOWEVER, PIPE JOINTS AND FITTINGS SHALL NOT BE DEFLECTED MORE THAN 75% OF THE MANUFACTURER'S ALLOWABLE DEFLECTION PER JOINT.

6. CONTRACTOR SHALL BE REQUIRED TO INSTALL TEMPORARY TEST PLUGS FOR HYDROSTATIC TESTING AS NECESSARY. NO SEPARATE PAY ITEM.

7. ALL ABOVE GROUND METAL SHALL BE PAINTED OR COATED ACCORDING TO THE SPECIFICATIONS. CONTRACTOR SHALL COORDINATE THE COLORS WITH SAWS.

8. VARIOUS LOCATIONS OF THE WORK ARE SUBJECT TO FLOODING OR STANDING WATER DURING WET WEATHER PERIODS. CONTRACTOR SHALL PLAN THIS WORK FOR DRY WEATHER PERIODS OR PROVIDE DEWATERING AND OTHER WET WEATHER PROVISIONS AS INCIDENTAL WORK.

9. CONTRACTOR SHALL COORDINATE HIS PROPOSED CONSTRUCTION WITH OTHER CONTRACTORS IN THE EVENT THE OTHER CONTRACTORS ARE DOING WORK IN THE SAME AREA SIMULTANEOUSLY WITH HIS PROJECT. THIS INCLUDES, BUT IS NOT LIMITED TO, ALL CONNECTION POINTS OR OTHER SPECIAL ITEMS AS REQUIRED FOR TESTING.

10. CONTRACTOR SHALL DISPOSE OF ALL EXCESS MATERIAL, CONSTRUCTION, RUBBLE, AND TRASH. ALL TRASH SHALL BE PICKED-UP AND REMOVED AT THE END OF EACH DAY. THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN DEVELOPMENT PERMIT AS REQUIRED FROM THE U.S. CORPS OF ENGINEERS.

11. NO BURNING OR BLASTING IS ALLOWED.

12. ALL GATES SHALL BE KEPT CLOSED OR A GUARD SHALL BE PROVIDED TO CONTROL ACCESS TO THE RIGHT OF WAY AND KEEP LIVESTOCK WITHIN PASTURES. GATES SHALL BE LOCKED AT NIGHT.

13. ACCESS FOR LANDOWNER VEHICLES AT EXISTING ROADS SHALL BE PROVIDED AT ALL TIMES. CROSSINGS SHALL BE INSTALLED ALONG OPEN TRENCHES AT A MAXIMUM SPACING OF 500 FEET TO PERMIT VEHICLE AND LIVESTOCK ACCESS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO LIVESTOCK.

14. CONTRACTOR SHALL REMOVE FENCES AND GATES AS REQUIRED FOR CONSTRUCTION AND REPLACE AFTER PIPELINE HAS BEEN INSTALLED. ALL FENCING INCLUDING BARBED WIRE, WROUGHT IRON, ORNAMENTAL, CHAIN AND LINK FENCES SHALL BE REPLACED OR RECONSTRUCTED WITH NEW MATERIALS AND SHALL MATCH EXISTING FENCING UNLESS OTHERWISE NOTED IN THE PLANS OR EASEMENTS. GATES SHALL BE FIELD LOCATED WITH A SAWS INSPECTOR. ADDITIONAL FENCING REMOVAL AND REPLACEMENT WITHIN THE EASEMENTS MAY BE REQUIRED DURING CONSTRUCTION FOR CONTRACTOR'S ACTIVITIES WHICH ARE NOT INCLUDED IN THE BID QUANTITIES, AND SHALL BE DONE AT NO ADDITIONAL COST TO OWNER.

15. PERMANENT GATES SHALL BE INSTALLED AT ALL FENCE CROSSINGS. TEMPORARY GATE MAY BE USED DURING CONSTRUCTION. TYPE 1 GATE SHALL BE USED EVERYWHERE ELSE.

16. CONTRACTOR SHALL INSTALL PIPELINE MARKER POSTS AT ALL PROPERTY LINES, ROAD CROSSINGS, WATERWAY CROSSINGS, AND HORIZONTAL PI'S AS SHOWN ON PLANS.

17. REMOVE ROCK FROM THE DISTURBED AREAS SUCH THAT IT IS LEFT WITH NO MORE QUANTITY OR SIZE OF ROCK THAN THE ADJACENT LAND.

18. THE PERMANENT EASEMENTS ARE SHOWN ON THE DRAWINGS. THE CONTRACTOR MAY ACQUIRE ADDITIONAL TEMPORARY CONSTRUCTION OR ACCESS EASEMENTS AT HIS OWN COST, IF HE SO CHOOSES. IF THE CONTRACTOR ACQUIRES ADDITIONAL TEMPORARY EASEMENTS, HE SHALL PROVIDE COPIES OF THE WRITTEN AGREEMENT TO SAWS. THE CONTRACTOR SHALL BE COMPLETELY RESPONSIBLE FOR ANY DAMAGES AS A RESULT OF USE OF EASEMENTS.

19. ALL WORK IN THE COUNTY RIGHT OF WAYS SHALL PROCEED DURING WORKING HOURS AGREED UPON BY COUNTY INSPECTORS.

20. CONTRACTOR SHALL MAINTAIN AT LEAST ONE LANE OF TRAFFIC ON ALL COUNTY ROADS AT ALL TIMES, AND CONSTRUCT TEMPORARY BYPASS IF NECESSARY.

21. CONTRACTOR SHALL PROVIDE APPROPRIATE SIGNAGE, BARRICADES, FLAGMEN, ETC. REQUIRED TO MAINTAIN SAFE TRAFFIC FLOW AT ALL TIMES. ALL TRAFFIC CONTROL MEASURES SHALL BE IN ACCORDANCE WITH TxDOT'S MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO SAWS AND THE RIGHT-OF-WAY OWNER FOR THE ROADWAY FOR APPROVAL NO LESS THAN 14 DAYS IN ADVANCE OF THE PROPOSED ROADWAY CLOSURE. ANY COMMENTS RECEIVED ON THE PLAN BY SAWS OR RIGHT-OF-WAY OWNER SHALL BE INCORPORATED INTO THE PLAN. THE PLAN SHALL BE PREPARED SPECIFICALLY FOR THIS PROJECT AND SHALL BE SEALED AND SIGNED BY AN ENGINEER LICENSED IN THE STATE OF TEXAS. NO SEPARATE PAY ITEM.

22. CONTRACTOR SHALL NOTIFY ALL CIVIC AUTHORITIES, EMERGENCY UNITS AND SCHOOL DISTRICTS OPERATING WITHIN THE AREA OF THE PROPOSED WORK OF LINE CLOSURES, ROAD CONSTRUCTION AND INSTALLATION SCHEDULES.

23. LOCATIONS OF CORROSION MONITORING AND CATHODIC PROTECTION FACILITIES SHALL BE AS SHOWN IN THE SCHEDULE IN THE DETAIL SHEETS.

24. THE CONTRACTOR MAY NOT USE PRIVATELY OWNED ROADS, UNLESS HE OBTAINS WRITTEN PERMISSION FROM THE LANDOWNERS. CONTRACTOR SHALL REPAIR ANY DAMAGE TO PRIVATE ROADS. THE CONTRACTOR SHALL RESTORE TEMPORARY ROADS AND CONSTRUCTION WORK AREAS TO PRE-CONSTRUCTION CONDITIONS. NO SEPARATE PAY ITEM.

25. CONTRACTOR SHALL NOTIFY ALL PROPERTY OWNERS AT LEAST 2 WEEKS PRIOR TO PERFORMING ANY WORK ON THEIR PROPERTY. CONTRACTOR SHALL ALSO DISTRIBUTE A LETTER TO ALL AFFECTED PROPERTY OWNERS THAT INCLUDES NAMES AND TELEPHONE NUMBERS OF CONTRACTOR'S CONTACTS, A DESCRIPTION OF WORK TO BE DONE, AND THE TIME FRAME FOR DOING THE WORK. A DRAFT COPY OF THE NOTICE LETTERS SHALL BE SUBMITTED AND APPROVED IN ADVANCE BY SAWS.

26. CONTRACTOR SHALL NOTIFY TEXAS ONE CALL SYSTEM BY CALLING TEXAS 811 AT (800)344-8377 TWO (2) WORKING DAYS PRIOR TO ANY CONSTRUCTION.

27. CONTRACTOR SHALL NOTIFY THE FOLLOWING AT LEAST TWO (2) WORKING DAYS PRIOR TO ANY CONSTRUCTION:

| | | | |
|---|---|---|---|
| SAWS CONSTRUCTION INSPECTION | | | 1-210-233-3500 |
| TXDOT | (CONTACT): | MELANIE MCBRIDE | 1-210-615-6430 |
| | | JASON LAMBERT | 1-210-615-6005 |
| BEXAR COUNTY (PUBLIC WORKS) | (CONTACT): | TIFFANY SIMPLER | 1-210-335-6944 |
| | | ERIN LOWE | 1-210-335-6663 |
| | | TERRENCE JACKSON | 1-210-335-3048 |
| | | ROBERT BRACH | 1-210-335-1243 |
| CITY OF SAN ANTONIO | (CONTACT): | THOMAS RIVERA | 1-210-409-4538 |
| | | SHELLY GARZA | 1-210-207-5751 |
| | | JEREMY GEORGE | 1-210-207-7788 |
| TEXAS 811 | | | 1-800-344-8377 |

28. IF EXISTING FIBER OPTIC CONDUIT SYSTEMS ARE LOCATED DURING EXCAVATION, A FIBER-OPTIC REPRESENTATIVE IS REQUIRED TO BE ON SITE, THE CONTRACTOR MUST PROVIDE SUPPORT AND/OR PROTECTION FOR THE CONDUIT AT ALL TIMES DURING BACKFILLING, WHICH IS SUITABLE TO THE FIBER-OPTIC REPRESENTATIVE. THE FIBER-OPTIC REPRESENTATIVE MAY PLACE UNDERGROUND MARKING DEVICES AS REQUIRED. REPAIR OF ANY DAMAGES TO THE CONDUIT SYSTEM AND ASSOCIATED FACILITIES SHALL BE MADE BY THE FIBER-OPTIC COMPANY PERSONNEL; AND THE CONTRACTOR SHALL REIMBURSE THEM FOR ALL COSTS OF SUCH REPAIRS, IF REQUIRED. THE CONTRACTOR SHALL CONTACT THE FIBER-OPTIC COMPANY AT LEAST TWO (2 WORKING DAYS) PRIOR TO THE START OF EXCAVATION. LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE ONLY AND NOT GUARANTEED TO BE ACCURATE.

| | | | |
|---|---|---|---|
| VERIZON | | | 1-800-624-9675 |
| AT&T | | | 1-800-252-1133 |
| LEVEL 3 | | | 1-210-445-6658 |
| TIME WARNER | | | 1-210-352-4600 |
| ZAYO | | | 1-313-629-9239 |

29. CONTRACTOR SHALL NOTIFY THE APPROPRIATE CONTACTS LISTED BELOW AT LEAST TWO (2) WORKING DAYS BUT NOT MORE THAN FOURTEEN (14) CALENDAR DAYS PRIOR TO CROSSING ANY MARKED OR SHOWN UTILITIES.

| | | | |
|---|---|---|---|
| ENTERPRISE PRODUCTS | (CONTACT): | GARY STUMP | 1-210-260-4609 |
| MIN. TIME TO CONTACT: 48 HOURS | | FRANKIE WILLIAMS | 1-281-887-3346 |
| CITY PUBLIC SERVICE (CPS) | (CONTACT): | MIKE DENNING | 1-210-353-2822 |
| MIN. TIME TO CONTACT: 2 WEEKS | | BILL FEY | 1-210-353-4267 |
| GREY FOREST UTILITIES | (CONTACT): | CODY ERFURTH | 1-210-260-4609 |
| MIN. TIME TO CONTACT: 1-2 WEEKS | | NICK DE LA ROSA | 1-210-695-5983 |
| WEST TEXAS GAS | (CONTACT): | RUFINO VEGA | 1-830-317-0414 |
| MIN. TIME TO CONTACT: 48 HOURS | | | |

30. THE LOCATIONS AND DEPTHS OF EXISTING UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY ACTUAL LOCATIONS AND DEPTHS OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES PRIOR TO THE MAKE AND LAY OF THE PROPOSED 48 INCH DIA. WATER MAIN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES WHETHER SHOWN ON THE PLANS OR NOT, AND TO PROTECT ALL UTILITIES DURING CONSTRUCTION. NO SEPARATE PAY ITEMS.

31. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SERVICE LINES CROSSED OR EXPOSED BY HIS CONSTRUCTION OPERATIONS. WHERE EXISTING SERVICE LINES ARE CUT, BROKEN OR DAMAGED THE CONTRACTOR SHALL IMMEDIATELY REPLACE THE SERVICE LINES WITH LIKE OR BETTER MATERIALS. NO SEPARATE PAY ITEM.

32. CONTRACTOR SHALL PROTECT ALL UNDERGROUND IRRIGATION SYSTEMS ENCOUNTERED WITHIN THE CONSTRUCTION AREA WHETHER SHOWN ON THE PLANS OR NOT. ALL DAMAGE SHALL BE REPAIRED BY IRRIGATOR LICENSED IN THE STATE OF TEXAS. NO SEPARATE PAY ITEM.

33. CONTRACTOR, AT HIS DISCRETION AND EXPENSE, MAY TUNNEL UNDER EXISTING UTILITIES OR ROADWAYS OTHER THAN THOSE CROSSINGS SPECIFICALLY SHOWN ON THE DRAWINGS. NO SEPARATE PAY ITEM, WITH ENGINEER'S APPROVAL.

34. WHEN NEW WATERLINE CONSTRUCTION CROSSES UNDER EXISTING PIPELINES, CONTRACTOR SHALL BACKFILL EXISTING PIPELINE WITH GRANULAR EMBEDMENT FROM TOP OF PIPE ZONE OF NEW WATERLINE TO ONE FOOT ABOVE EXISTING PIPELINE.

35. CONTRACTOR IS RESPONSIBLE FOR LOCATING AND REPAIRING ANY UTILITIES DAMAGED DURING CONSTRUCTION. NO SEPARATE PAY ITEM.

36. NO MATERIAL OR EQUIPMENT SHALL BE STORED OVER ANY EXISTING UTILITY FOR ANY LENGTH OF TIME.

37. DUE TO FEDERAL REGULATION TITLE 49, PART 192.181, UTILITY COMPANIES MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT THE WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.

38. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL OVERHEAD AND UNDERGROUND ELECTRIC UTILITIES WITHIN OR ADJACENT TO WORK AREAS.

39. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAEFTY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK ZONE IN ORDER TO DEVELOP THE CONTRACTOR'S PLANS TO IMPLEMENT THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S PLANS SHALL PROVIDE FOR ADEQUATE TRENCH SAFETY SYSTEMS THAT COMPLY WITH, AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS AND THE PROTECTION OF ADJACENT STRUCTURES AND FACILITIES. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL DEVELOP AND IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION. CONTRACTOR IS RESPONSIBLE FOR A TRENCH SAFETY PLAN PREPARED BY A PROFESSIONAL ENGINEER FOR THIS PROJECT. THIS TRENCH SAFETY PLAN SHALL BE SUBMITTED AND APPROVED BY SAWS PRIOR TO ANY WORK ACTIVITIES.

40. CONTRACTOR SHALL INCORPORATE THE USE OF A TRENCH BOX OR OTHER ACCEPTABLE SAFETY SYSTEM IN ANY TRENCH THAT EXCEEDS FIVE (5) FEET IN DEPTH. THE CONTRACTOR SHALL PROTECT ALL OPEN EXCAVATION AND EQUIPMENT FROM CHILDREN, PEDESTRIANS, AND VEHICLES IN THE AREA BY PROVIDING, INSTALLING AND MAINTAINING FENCING, BARRICADES, OR OTHER PROTECTIVE SYSTEMS. NO OPEN TRENCHES ALLOWED OVERNIGHT.

41. CONTRACTOR SHALL PROTECT OR REMOVE AND REPLACE ROAD SIGNS AND OTHER SIGNS. ANY DAMAGE TO SIGNS SHALL BE REPAIRED TO ORIGINAL OR BETTER CONDITION BY THE CONTRACTOR. NO SEPARATE PAY ITEM.

42. CONTRACTOR SHALL DOCUMENT AND PROVIDE TO SAWS UPON REQUEST ANY VERBAL OR WRITTEN AGREEMENTS WITH PROPERTY OWNERS.

43. WHEN THE PLANS OR EASEMENTS INDICATE THE DEMOLITION OR REMOVAL OF AN EXISTING STRUCTURE OR FACILITY BY THE CONTRACTOR, THE CONTRACTOR SHALL PROVIDE AT LEAST 30 DAYS NOTICE TO THE PROPERTY OWNER AND SAWS OF THE PENDING REMOVAL.

44. WHERE IT IS NECESSARY FOR LANDOWNERS TO MOVE TRAILERS, SHEDS, OR OTHER FACILITIES OR IMPROVEMENTS, THE CONTRACTOR SHALL NOTIFY THE PROPERTY OWNER AND SAWS NO LESS THAN 30 DAYS PRIOR TO THE NEED FOR MOVING THE FACILITIES OR IMPROVEMENTS.

45. CONTRACTOR SHALL FLAG THE EASEMENT AND SHALL STAY WITHIN THE FLAGGED AREA.

46. CONTRACTOR SHALL MAINTAIN ACCESS FOR ALL PROPERTY OWNERS AT ALL TIMES DURING CONSTRUCTION.

47. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER SHOULD TOPOGRAPHIC INFORMATION DEPICTED ON THESE PLANS BE INACCURATE BY MORE THAN 12 INCHES. IN ALL CASES, CONTRACTOR SHALL MAINTAIN A MINIMUM OF 5' OF COVER TO TOP OF PIPE.

48. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SAFE ACCESS FOR THE DELIVERY OF MAIL BY THE U.S. POSTAL SERVICE. NO SEPARATE PAY ITEM.

49. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SAFE ACCESS TO RESIDENCES AND BUSINESSES. NO SEPARATE PAY ITEM.

50. WHEREVER POWER POLES ARE WITHIN 5' OF THE PROPOSED WATER LINE OR OTHERWISE NOTED ON THE PLANS, THE CONTRACTOR SHALL PROVIDE PROPER SHORING AND OTHER SUITABLE SUPPORT DURING CONSTRUCTION OF THE WATER LINES. THE UTILITY COMPANY MAINTENANCE DEPARTMENT MUST APPROVE SHORING PRIOR TO INSTILLATION. NO SEPARATE PAY ITEM.

51. ALL WORK NECESSARY TO COMPLETE THIS PROJECT SHALL BE COVERED IN THE ITEMS ON THE BID SHEET. IF SPECIFIC WORK IS NOT SHOWN ON THE BID SHEET, IT SHALL BE CONSIDERED INCIDENTAL TO THIS PROJECT WORK INSTALLATION.

52. ALL STEEL WATER TRANSMISSION PIPE SHALL BE FULLY WELDED IN ACCORDANCE WITH REQUIREMENTS PER THE SPECIFICATIONS.

53. CONTRACTOR TO FURNISH AND INSTALL TEMPORARY CHAINLINK CONSTRUCTION FENCE AROUND WORK ZONES. CHAINLINK FENCE MUST BE 6' HIGH AND TEMPORARILY SECURED INTO THE GROUND EVERY 20'.

54. CONTRACTOR SHALL INSTALL GEOTECHNICAL INSTRUMENTATION ON STRUCTURES, UTILITIES AND IMPROVEMENTS AT RISK OF IMPACT FROM EXCAVATIONS WITHIN 50 FEET OF TUNNELS AND SHAFTS IN ACCORDANCE WITH SPECIFICATION SECTION 02041 GEOTECHNICAL INSTRUMENTATION.

55. CONTRACTOR SHALL PROVIDE SAWS WITH THE GPS COORDINATES OF ALL VALVES AND APPURTENANCES (ABOVE AND BELOW GRADE) AND TEST STATIONS.

## ENVIRONMENTAL

1. THE CONTRACTOR SHALL CONTROL EROSION AND SEDIMENTATION PER THE APPLICABLE LAWS AND REGULATIONS.

2. NO TREES MAY BE REMOVED OUTSIDE THE 80' PIPELINE EASEMENT, AS APPROVED BY THE CITY ARBORIST ON THE APPROVED PROJECT DRAWINGS.

3. STAGING, PARKING, AND MATERIAL STORAGE AREAS AND PROJECT LIMITS OF CLEARANCE MUST BE DISCUSSED AND APPROVED WITH THE CoSA INSPECTOR PRIOR TO CONSTRUCTION. ALL OFFSITE STAGING, STORAGE, PROJECT TRAILERS, EMPLOYEE PARKING, ETC. ARE REQUIRED TO OBTAIN AND COMPLY WITH A TEMPORARY USES CERTIFICATE OF OCCUPANCY.

4. CONSTRUCTION ACTIVITIES, EXCLUDING STAGING, WILL BE LIMITED TO 30' TO EITHER SIDE OF THE PIPE, A 60' CLEARING WIDTH TOTAL. ALL NON-HERITAGE TREES WITHIN THE 60' CLEARING WIDTH MAY BE REMOVED, UNLESS OTHERWISE INDICATED IN THE PLANS.

5. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS. THE FIELD INSPECTOR WILL VERIFY THE TREES TO BE PROTECTED.

6. THE CONTRACTOR MAY USE EXISTING CLEARINGS WITHIN THE LIMITS OF CANOPY PRESERVATION INDICATED ON THE PROJECT DRAWINGS FOR STAGING PURPOSES. STAGING AREAS MUST BE OUTSIDE ANY ROOT PROTECTION ZONES. POTENTIAL STAGING AREAS REQUIRING CANOPY REMOVAL WITHIN THE LIMITS OF CANOPY PRESERVATION AREAS ARE INDICATED IN THE PLANS, BUT MUST BE APPROVED BY HE CoSA INSPECTOR PRIOR TO CONSTRUCTION. ADJUSTMENTS TO THE SIZE AND LOCATION OF THE POTENTIAL STAGING AREAS IDENTIFIED ON THE PLANS, MUST BE APPROVED BY CoSA INSPECTOR AND THE ENGINEER BEFORE ANY CANOPY REMOVAL TAKES PLACE.

7. THE CONTRACTOR IS REQUIRED TO RE-SEED DISTURBED AREAS WITHIN THE 60' CLEARING WIDTH INDICATED ON THE PLANS. WITH NATIVE VEGETATION SEED EXCEPT IN AREAS OF FARM CROPS WHERE THEY ARE TO DISC THE TOPSOIL WITH NO REVEGETATION. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL DAMAGES TO PROPERTY OUTSIDE OF THE 60' CLEARING WIDTH, INCLUDING REVEGETATION COST.

8. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION THAN AT THE START OF CONSTRUCTION INCLUDING ALL REMOVED OR DAMAGED FENCES, IMPROVEMENTS, LANDSCAPING, ETC. NO SEPARATE PAY ITEM.

9. CONTRACTOR TO ESTABLISH SILT FENCING AND/OR ROCK BERM IN ALL AREAS TO BE IMPACTED BY CONSTRUCTION AND MAINTAIN UNTIL SUITABLE GROUND COVER/VEGETATION IS ACCEPTED.

10. IF A THREATENED OR ENDANGERED PLANT OR ANIMAL SPECIES IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL STOP WORK IMMEDIATELY AND NOTIFY SAWS.

11. DISPOSAL AREAS, STOCKPILES, AND HAUL ROADS SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE AND CONTROL THE AMOUNT OF SEDIMENT WHICH MAY ENTER RECEIVING WATERS. DISPOSAL AREAS SHALL NOT BE LOCATED ON ANY WETLANDS, WATER BODY, OR STREAM BED. THE CONTRACTOR SHALL LOCATE AND CONSTRUCT CONSTRUCTION STAGING AREAS AND VEHICLE MAINTENANCE AND PARKING AREAS IN A MANNER TO MINIMIZE POLLUTANT RUNOFF.

12. THE CONTRACTOR SHALL CLEAR ALL WATER WAYS AS SOON AS PRACTICABLE OF ALL TEMPORARY EMBANKMENT, TEMPORARY BRIDGES, MATTING, FALSEWORK, PILING, DEBRIS, AND OBSTRUCTIONS PLACED DURING CONSTRUCTION OPERATIONS WHICH ARE NOT PART OF THE FINISHED WORK.

13. CONTRACTOR SHALL PROVIDE A STORM WATER POLLUTION PREVENTION PLAN PRIOR TO CONSTRUCTION AND PROVIDE ALL APPURTENANCES TO COMPLY WITH THE LATEST TCEQ STORM WATER POLLUTION PREVENTION REGULATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR FILING A NOTICE OF INTENT (NOI) AT THE START OF CONSTRUCTION WITH THE TCEQ AND A NOTICE OF TERMINATION (NOT) AT THE END, ALSO WITH THE TCEQ.

14. CONTRACTOR IS RESPONSIBLE FOR KEEPING ROADWAYS AND SIDEWALKS ADJACENT TO THE PROJECT FREE OF MUD, TRASH, AND CONSTRUCTION DEBRIS. NO SEPARATE PAY ITEM.

15. TRIMMING OF TREES SHALL BE IN ACCORDANCE WITH THE DETAILS PROVIDED IN THE PLANS AND ACCOMPLISHED USING A SAW OR PRUNING SHEARS. ALL CUT LIMBS OVER 1 INCH IN DIAMETER SHALL BE PAINTED WITH TREE WOUND PAINT IMMEDIATELY AFTER TREE TRIMMING.

16. ALL NEW TREES SHALL BE PLANTED BY A NURSERYMAN LICENSED IN THE STATE OF TEXAS. DOCUMENTATION OF TYPE, SIZE, AND LOCATION STATION SHALL BE PROVIDED TO SAWS WITH RECORD DRAWINGS AND PRIOR TO FINAL PAYMENT. SEE TREE PROTECTION DETAIL SHEET DT15 FOR PLANTING DETAIL.

17. TREE PLANTING AND MAINTENANCE: ALL PRESERVED AND PLANTED TREES SHALL BE MAINTAINED IN A HEALTHY CONDITION AT ALL TIMES. THIS INCLUDES IRRIGATING, FERTILIZING, PRUNING, AND OTHER MAINTENANCE AS NEEDED. TREES THAT DIE WITHIN TWELVE MONTHS SHALL BE REPLACED WITH A TREE OF COMPARABLE SIZE AND SPECIES.

18. SILT FENCING WILL BE UTILIZED TO DELINEATE THE LIMITS OF CONSTRUCTION.

19. THE CONTRACTOR SHALL RE-SEED DISTURBED AREAS WITH SLOPES LESS THAN 3:1 BY SEED DRILLING. WHERE SLOPES ARE GREATER THAN 3:1 HYDROMULCHING SHALL BE USED. 85% ESTABLISHMENT OF NATIVE SEED IS REQUIRED FOR ACCEPTANCE.

## BEXAR COUNTY GENERAL CONSTRUCTION NOTES

1. CONTRACTOR IS TO MAINTAIN UNRESTRICTED DRAINAGE OF THE PROJECT SITE AND ADJACENT AREAS DURING CONSTRUCTION.
2. NO WASTE MATERIAL SHALL BE PLACED IN EXISTING LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS OF THE EXISTING NATURAL DRAINAGE OR PLACED WITHIN THE LIMITS OF THE EXISTING FLOOD PLAIN.
3. CONSTRUCTION MATERIALS SHALL NOT BE STORED IN EXISTING LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS OF THE EXISTING NATURAL DRAINAGE OR PLACED WITHIN THE LIMITS OF THE EXISTING FLOOD PLAIN.
4. CONTRACTOR TO RESTORE TEMPORARY CONSTRUCTION ACCESS ROAD AND ALL DISTURBED AREA TO EXISTING CONDITIONS BENEATH MILITARY DRIVE BRIDGE PER BEXAR COUNTY ROW STANDARDS.

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Freese And Nichols, Inc.
Job No.
SWB09391

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

STATE OF TEXAS · ROBERT N. JENKINS · 103589 · LICENSED · PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: N.T.S.

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone - (210) 298-2900
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SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3

GENERAL NOTES I

Sheet G3

## SAWS GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE SAN ANTONIO WATER SYSTEM (SAWS) AND COMPLY WITH THE PLANS, SPECIFICATIONS, GENERAL CONDITIONS AND WITH THE FOLLOWING AS APPLICABLE:

   A. CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM", TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30 PART 1 CHAPTER 217 AND "PUBLIC DRINKING WATER", TAC TITLE 30 PART 1 CHAPTER 290.
   B. CURRENT TXDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE."
   C. CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION."
   D. CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR CONSTRUCTION."
   E. CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL" (UECM).

2. THE CONTRACTOR SHALL OBTAIN SAWS STANDARD DETAILS FROM SAWS WEBSITE, HTTPS://APPS.SAWS.ORG/BUSINESS_CENTER/SPECS/CONSTSPECS/CONSTSPECS_2020/INDEX.CFM AND HTTPS://APPS.SAWS.ORG/BUSINESS_CENTER/SPECS/MATSPECS/

3. THE CONTRACTOR IS TO NOTIFY AND MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT 210-233-3500, AND PROVIDE NOTIFICATION PROCEDURES THE CONTRACTOR WILL USE TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS 2 WEEKS PRIOR TO EXCAVATION.

4. LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR AT LEAST 1 WEEK PRIOR TO CONSTRUCTION. 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 SAWS.

5. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 1-2 WEEKS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT. PLEASE ALLOW UP TO 7 BUSINESS DAYS FOR LOCATES REQUESTING PIPE LOCATION MARKERS ON SAWS FACILITIES. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIED FOR VERIFICATION PURPOSES:

   SAN ANTONIO WATER SYSTEM
   SAWS UTILITY LOCATES: HTTP://WWW.SAWS.ORG/SERVICE/LOCATES
   COSA DRAINAGE 1-210-206-8433
   COSA TRAFFIC SIGNAL OPERATIONS 1-210-207-7720
   TEXAS STATE WIDE ONE CALL LOCATOR 1-800-344-8377 OR 811

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES TO ITS ORIGINAL OR BETTER CONDITION AS A RESULT OF DAMAGES DONE BY THE PROJECT'S CONSTRUCTION.

7. ALL WORK DONE IN TEXAS HIGHWAY DEPARTMENT AND BEXAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT.

8. THE CONTRACTOR SHALL COMPLY WITH CITY OF SAN ANTONIO OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.

9. THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN PERMIT.

10. ANY WORK COMPLETED WITHOUT PRIOR WRITTEN AUTHORIZATION WHICH IS NOT INCLUDED IN THESE PLANS AND SPECIFICATIONS WILL NOT BE COMPENSATED BY THE SAN ANTONIO WATER SYSTEM.

11. HOLIDAY WORK: CONTRACTORS WILL NOT BE ALLOWED TO PERFORM SAWS WORK ON SAWS RECOGNIZED HOLIDAYS EXCEPT DURING EMERGENCIES. REQUESTS SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG.
    WEEKEND WORK: CONTRACTORS ARE REQUIRED TO NOTIFY SAWS INSPECTION CONSTRUCTION DEPARTMENT 48 HOURS IN ADVANCE TO REQUEST WEEKEND WORK. REQUESTS SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG.
    ANY AND ALL SAWS UTILITY WORK INSTALLED WITHOUT HOLIDAY/WEEKEND APPROVAL WILL NOT BE ALLOWED.

12. PRE CON SITE VIDEO: BEFORE THE START OF ANY CONSTRUCTION, THE SITE MUST BE VIDEO RECORDED BY THE CONTRACTOR WITH ONE COPY SUBMITTED TO SAWS INSPECTIONS. A PRE-SITE VIDEO WILL PROVIDE ACCURATE DOCUMENTATION OF THE EXISTING CONDITIONS (NSPI).

13. POWER POLE BRACING: CONTRACTORS SHOULD BE ADVISED THAT THERE ARE EXISTING OVERHEAD UTILITY POLES ALONG THE PROJECT CORRIDOR. CONTRACTORS SHOULD FURTHER BE ADVISED THAT IF THE DISTANCE FROM THE OUTSIDE FACE OF A UTILITY TRENCH TO THE FACE OF A UTILITY POLE IS LESS THAN 5 FEET, SAID UTILITY POLE IS SUBJECT TO BRACING, BASED ON A DETERMINATION MADE BY THE UTILITY POLE OWNER. IT IS ADVISABLE FOR THE CONTRACTOR TO REVIEW THE CONSTRUCTION DOCUMENTS, AND VISIT THE CONSTRUCTION SITE TO DETERMINE POTENTIAL IMPACTS.

14. CONSTRUCTION SEQUENCING: IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO SCHEDULE SEQUENCING FOR REMOVAL AND INSTALLATION OF EXISTING AND PROPOSED SAWS UTILITIES IN CONJUNCTION WITH GENERAL PROJECT CONSTRUCTION. SEQUENCE OF CONSTRUCTION ACTIVITIES SHALL BE CONSIDERED IN ORDER TO MINIMIZE THE EXTENT AND DURATION OF DISTURBANCES.

15. PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS INSPECTION AND/OR SAWS PRODUCTION GROUPS AT LEAST ONE WEEK OR MORE IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS; THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY. SAWS PRODUCTION CONTROL CENTER 210-233-2016.

16. ASBESTOS CEMENT (AC) PIPE, ALSO KNOWN AS TRANSITE PIPE WHICH IS KNOWN TO CONTAIN ASBESTOS-CONTAINING MATERIAL (ACM), MAY BE LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF THE PIPE OCCURS, PAYMENT FOR SUCH WORK IS TO BE MADE UNDER ITEM NO. 3000, "HANDLING ASBESTOS CEMENT PIPE".

17. VALVE REMOVAL: WHERE THE CONTRACTOR IS TO ABANDON A WATER MAIN, THE CONTROL VALVE LOCATED ON THE ABANDONING BRANCH WILL BE REMOVED AND REPLACED WITH A CAP/PLUG. (NSPI)

18. 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.

19. 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 ITEM).

20. CONTRACTOR SHALL NOTIFY THE SAWS INSPECTOR FORTY-EIGHT (48) HOURS PRIOR TO BACKFILL OF ANY UTILITY TRENCHES TO SCHEDULE FOR DENSITY TESTS AS REQUIRED.

21. 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.

22. 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 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.

23. 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 MATERIAL SHALL BE PLACED IN EXISTING LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS OF EXISTING ARTIFICIAL OR NATURAL DRAINAGE.

24. THE CONTRACTOR SHALL MAINTAIN ALL ADJOINING STREETS AND TRAVELED ROUTES FREE FROM SPILLAGE AND/OR TRACKED CONSTRUCTION MATERIALS AND/OR DEBRIS.

## COSA GENERAL NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR CONSTRUCTION JUNE 2008, OR LATEST.

2. THE CONTRACTOR SHALL PROVIDE ACCESS FOR THE DELIVERY OF MAIL BY THE U.S. POSTAL SERVICE.

3. 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 ROW OWNER'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.

4. IF THE NEED ARISES, ADDITIONAL BARRICADES AND DIRECTIONAL DEVICES MAY BE ORDERED BY THE TRAFFIC ENGINEERING REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.

5. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN ALL REQUIRED STORM WATER PERMITS, FEES, AND APPROVALS. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PERMITS REQUIRED FOR CONSTRUCTION IN DRAINAGE EASEMENTS, RIGHTS-OF-WAY, AND FLOODPLAINS.

6. THE CONTRACTOR SHALL NOTIFY STORM WATER ENGINEERING AT LEAST 24 HOURS PRIOR TO THE INSTALLATION OF ANY DRAINAGE FACILITY WITHIN A DRAINAGE EASEMENT OR STREET RIGHT-OF-WAY NOT INDICATED ON THE CONSTRUCTION PLANS.

7. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING DRAINAGE FACILITIES FROM DAMAGE. ANY DAMAGE TO EXISTING DRAINAGE SYSTEMS, WHETHER OR NOT SHOWN ON PLANS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AT HIS EXPENSE. THE CONTRACTOR SHALL NOTIFY STORM WATER ENGINEERING AT 210-206-8433 AS SOON AS CONFLICTS WITH UTILITIES ARE ENCOUNTERED OR ANY DRAINAGE SYSTEM IS DAMAGED DURING CONSTRUCTION.

8. CONSTRUCTION SPOILS WILL NOT BE ALLOWED TO BE DEPOSITED ANYWHERE WITHIN A DRAINAGE EASEMENT, RIGHT-OF-WAY, OR FLOODPLAIN WITHIN THE LIMITS OF THE PROJECT AND SHALL BE DISPOSED OFFSITE IN COMPLIANCE WITH CURRENT APPLICABLE REGULATIONS.

9. NO STRUCTURE, FENCES, WALLS, LANDSCAPING, OR OTHER OBSTRUCTIONS THAT IMPEDE DRAINAGE SHALL BE PLACED WITHIN THE LIMITS OF THE DRAINAGE EASEMENTS SHOWN ON THE CONSTRUCTION DOCUMENTS.

10. UPON COMPLETION OF TRENCHING, THE AREA WILL BE BACKFILLED AND COMPACTED TO ITS ORIGINAL CONDITION. TRENCHES/BORE PITS TO BE OPEN AND UNATTENDED LONGER THAN 24 HOURS SHALL BE PROTECTED TO WITHSTAND ALL HYDRODYNAMIC AND HYDROSTATIC FORCES AND PREVENT DOWNSTREAM IMPACTS. TRENCHES/BORE PITS TO BE OPEN LONGER THAN 30 DAYS AFTER STARTING EXCAVATION SHALL BE BACKFILLED WITH A SEMI-PERMANENT REPAIR BACKFILL.

11. IMPROVED SECTIONS OF EARTHEN CHANNELS AND/OR WATERWAYS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT THE CHANNEL FOR MAINTENANCE.

12. THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIAL IN THE 100-YEAR FLOODPLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOODPLAIN DEVELOPMENT PERMIT.

14. 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 210-207-7306 OR 210-207-3327 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 (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 SHALL NOT REMOVE OR ADJUST AND 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 CONTRACTOR 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.

17. CONTRACTOR SHALL NOTIFY THE CITY OF SAN ANTONIO DEPARTMENT OF TRANSPORTATION & CAPITAL IMPROVEMENTS RIGHT-OF-WAY MANAGEMENT OFFICE AT (210-207-5751) 48 HOURS BEFORE STARTING WORK ON THIS PROJECT.

## TXDOT NOTES

1. WITHIN TXDOT ROW, THE CONTRACTOR SHALL ADHERE TO THE TXDOT UTILITY PERMIT AND SPECIAL PROVISION.

2. NO BLASTING IS ALLOWED WITHIN TXDOT ROW.

3. THE CONTRACTOR IS PROHIBITED FROM PLACING FILL WITHIN THE TXDOT ROW.

4. BENCHING OF TRENCHES WITHIN TXDOT ROW IS PROHIBITED.

5. UNLESS SHOWN OTHERWISE IN PLANS, ANY DAMAGE TO EXISTING IMPROVEMENTS WITHIN TXDOT R.O.W. CAUSED BY THE CONTRACTOR SHALL BE REPLACED TO ORIGINAL CONDITION OR BETTER (AT NO ADDITIONAL COST TO SAWS OR TXDOT) PER TXDOT SPECIFICATIONS.

6. CONTRACTOR TO APPLY FOR TEMPORARY DRIVEWAY ACCESS PERMITS 60 DAYS PRIOR TO CONSTRUCTION.

## CPS ENERGY NOTES

1. CALL CPS LOCATOR AT 1-210-353-2970 AND EMAIL TRANSMISSIONENGINEERING1@CPSENERGY.COM 48 HOURS BEFORE BEGINNING ANY WORK OR EXCAVATION IN CPS ROW OR NEAR CPS LINES AND FACILITIES.

2. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, CPS ENERGY MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND CPS VALVES THAT ARE IN THE PROJECT AREA.

3. OVERHEAD LINES EXIST IN THE WORK AREAS. THESE LINES MAY NOT HAVE BEEN MARKED ON THE DRAWINGS SINCE THEY ARE CLEARLY VISIBLE. THE CONTRACTOR SHALL LOCATE THEM PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH AND SAFETY CODE, FORBIDS ALL ACTIVITIES IN WHICH PERSONS OR THINGS MAY COME WITHIN TEN (10) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES. CONTRACTOR SHALL MAINTAIN A MINIMUM CLEARANCE OF 3' RADIUS FROM NEUTRAL AND 10' RADIUS FROM PRIMARY BETWEEN PROPOSED TRAFFIC SIGNAL EQUIPMENT, INCLUDING SPAN WIRE, AND EXISTING OVERHEAD ELECTRICAL LINES.

4. THE CONTRACTOR IS LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS CARRIES BOTH CRIMINAL AND CIVIL LIABILITY.

5. CONTRACTOR SHALL NOT BEGIN WORK OR ACTIVITY UNTIL THE CONTRACTOR HAS NEGOTIATED A SATISFACTORY MUTUAL ARRANGEMENT WITH CPS ENERGY TO PROVIDE TEMPORARY DE-ENERGIZATION AND GROUNDING, TEMPORARY RELOCATION OR RAISING OF THE LINE, OR TEMPORARY MECHANICAL BARRIERS TO SEPARATE AND PREVENT CONTACT BETWEEN THE LINE AND THE MATERIAL OR EQUIPMENT OR THE PERSON PERFORMING THE WORK, ACTIVITY OR FUNCTION.

6. CONTRACTOR SHALL PAY CPS ENERGY THE ACTUAL EXPENSE INCURRED BY THE OPERATOR IN PROVIDING THE CLEARANCE PRESCRIBED IN THE AGREEMENT. CPS ENERGY MAY REQUIRE PAYMENT IN ADVANCE AND IS NOT REQUIRED TO PROVIDE THE CLEARANCE UNTIL THE CONTRACTOR MAKES THE PAYMENT.

7. CONTRACTOR SHALL CONTACT AND COORDINATE WITH CPS ENERGY REPRESENTATIVE FOR POLES TO BE BRACED AND LINES TO BE DE-ENERGIZED AND/OR MOVED. CONTRACTOR IS RESPONSIBLE TO CPS ENERGY FOR ANY COSTS ASSOCIATED WITH BRACING OF POWER POLES OR DE-ENERGIZING AND/OR MOVING ANY CONFLICTING OVERHEAD POWER LINES.

8. WHEN EXCAVATING WITHIN TWENTY FOUR INCHES (24") OF THE INDICATED LOCATION OF CPS ENERGY FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.

9. WHEN CPS ENERGY FACILITIES ARE EXPOSED, CONTRACTOR SHALL PROVIDE SUFFICIENT SUPPORT TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.

10. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

11. CONTRACTOR IS RESPONSIBLE TO APPLY AND OBTAIN POWER AT RECTIFIER LOCATIONS IDENTIFIED ON DRAWINGS. CONTRACTOR TO APPLY FOR CPS POWER AT RECTIFIER LOCATIONS 120 DAYS PRIOR TO COMPLETION OF RECTIFIER INSTALLATION.

12. NEW WATER PIPELINE CONSTRUCTION IS TO OCCUR WITHIN CPS ROW AND IN CLOSE PROXIMITY TO TRANSMISSION POWER LINES WITHIN THE PROJECT AREA. IN THESE AREAS, THE CONTRACTOR IS DIRECTED TO CONTAIN ALL CONSTRUCTION ACTIVITIES TO REMAIN 30-FEET OR MORE FROM TRANSMISSION TOWERS/POLES. CONTRACTOR MAY USE THE EXISTING CPS ENERGY DISTRIBUTION AND TRANSMISSION LINE EASEMENTS FOR ACCESS, FOR VEHICLE PARKING AND FOR TEMPORARY LAY DOWN OF CONSTRUCTION MATERIALS. CONSTRUCTION MATERIALS THAT ARE LAID DOWN TEMPORARILY MAY NOT REMAIN IN THE EASEMENT FOR LONGER THAN 48 HOURS, WITHOUT PERMISSION FROM CPS ENERGY. STOCKPILING OF DIRT, STACKING OF CONSTRUCTION MATERIALS, OR CREATION OF ANY MEANS FOR PERSONNEL OR EQUIPMENT TO BE CLOSER TO LIVE POWER LINES IS STRICTLY FORBIDDEN. CONTRACTOR SHALL TAKE ALL MEANS NECESSARY TO CONSTRUCT NEW WATER PIPELINE IN PROXIMITY TO POWER LINES SAFELY, AND IN ACCORDANCE WITH CURRENT OSHA GUIDELINES. CONTRACTOR SHALL BE PREPARED TO RELOCATE ANY AND ALL TEMPORARILY STORED MATERIALS WITHIN CPS ROW AT ANY TIME UPON REQUEST BY CPS.

13. CONTRACTOR SHALL MAINTAIN ACCESSIBILITY TO AND THROUGHOUT THE CPS EASEMENT 24 HOURS A DAY/SEVEN (7)DAYS A WEEK FOR TRANSMISSION MAINTENANCE.

14. CONTRACTOR SHALL RESTORE CPS ENERGY EASEMENT AREA TO EXISTING CONDITIONS OR BETTER AFTER CONSTRUCTION IN THE AREA HAS BEEN COMPLETED. CPS ENERGY REQUIREMENTS DO NOT SUPERSEDE ENVIRONMENTAL REQUIREMENTS OF LOCAL, STATE OR FEDERAL AGENCIES THAT MAY ALSO APPLY.

## ENTERPRISE PRODUCTS LLC NOTES

1. WARNING! ENTERPRISE GAS LINES IN THE PROJECT AREA ARE HIGH PRESSURE PIPELINES. EXCAVATION AND/OR CONSTRUCTION IS PROHIBITED WITHOUT PRIOR WRITTEN PERMISSION FROM ENTERPRISE PRODUCTS OPERATIONS LLC.

2. CONTRACTOR SHALL INSTALL WARNING TAPE IN ACCORDANCE WITH THE AMERICAN PUBLIC WORKS ASSOCIATION (APWA) UNIFORM COLOR CODE ABOVE THE WATER LINE 12" BELOW THE GROUND. THE TAPE SHALL EXTEND AT LEAST TWENTY FEET (20') IN EACH DIRECTION MEASURED FROM THE CROSSING POINT.

3. CONTRACTOR SHALL NOTIFY ENTERPRISE A MINIMUM OF 72 BUSINESS HOURS PRIOR TO CROSSING GAS LINE WITH HEAVY CONSTRUCTION EQUIPMENT. AIR BRIDGE MATTING MUST BE INSTALLED TO SUPPORT ALL HEAVY CONSTRUCTION EQUIPMENT.

4. CONTRACTOR SHALL NOTIFY ENTERPRISE A MINIMUM OF 48 HOURS PRIOR TO BEGINNING EXCAVATION.

5. CONTRACTOR SHALL UTILIZE NON-MECHANIZED EXCAVATION PROCEDURES WHEN EXCAVATING WITHIN THIRTY INCHES (30") OF THE INDICATED ENTERPRISE FACILITIES.

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

TEXAS ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: N.T.S.

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-9900
Fax (210) 298-9901

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3

GENERAL NOTES II

Sheet G4

ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]
Date: Jul 19, 2020 - 11:10pm User: 07155 File: N:\Standard\WR-SAWS-GN-NOTES02.dwg

| | | | | SHEET NUMBER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| LINE NO. | ITEM NO. | ITEM DESCRIPTION | UNITS | W1 | W2 | W3 | W4 | W5 | W6 | W7 | W8 | W9 | W10 | W11 | W12 | W13 | W14 | W15 | W16 | W17 | W18 | W19 | W20 | W21 | W22 | W23 | W24 | W25 | W26 | W27 | W28 | W29 | W30 | W31 | W32 | W33 | W34 | W35 | W36 | W37 | W38 | W39 | TOTALS |
| | | **SEGMENT 3 WATER PIPELINE ITEMS** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | 202 | Prime Coat | GAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 24 | | | | | | | | | **60** |
| 33 | 203 | Tack Coat | GAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 12 | | | | | | | | | **30** |
| 34 | 205.2 | Hot Mix Asphaltic Pavement Type B - 12" Thick | SY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 122 | | | | | | | | | **301** |
| 35 | 205.3 | Hot Mix Asphaltic Pavement Type C - 3" Thick | SY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 122 | | | | | | | | | **301** |
| 36 | 299 | Flowable Fill | CY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 94 | | | | | | | | **681** |
| 37 | 410 | Gravel Subgrade Filler and Filter Fabric | CY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **1,200** |
| 38 | 503.5 | Roadway Repair (Crushed Stone) | SY | | | | | | 104 | 94 | 98 | 204 | 93 | | 338 | 400 | | | | | | | | | | | | | | | | 133 | | | | | 91 | | | | | 61 | | **4,840** |
| 39 | 508 | Relocating Wire Fence | LF | 95 | | | 253 | 84 | 154 | 82 | 89 | 218 | 78 | | | 144 | | 277 | | 267 | | 117 | | 228 | 800 | 323 | | 132 | 20 | 750 | 644 | 128 | | 64 | 128 | | | | | | 60 | | **7,316** |
| 40 | 520A | Revegetation | LF | 775 | 900 | 900 | 875 | 925 | 875 | 925 | 875 | 925 | 875 | 925 | 875 | 551 | 875 | 925 | 950 | 781 | 775 | 925 | 950 | 850 | 800 | 900 | 1000 | 471 | 800 | 750 | 750 | 800 | 781 | 900 | 1000 | 1000 | 715 | 950 | 904 | 800 | 1000 | 812 | **66,756** |
| 41 | 544 | Soil Retention Blanket | SY | | | | | | 114 | 251 | 194 | | 260 | | | | | | | 210 | | | 162 | | | 360 | | | 121 | 8 | 51 | 888 | | 605 | 119 | 96 | | 204 | 479 | | | 354 | **12,427** |
| 42 | 550 | Trench Excavation Safety Protection | LF | 775 | 900 | 900 | 875 | 925 | 875 | 925 | 875 | 925 | 875 | 925 | 875 | 551 | 875 | 925 | 950 | 781 | 775 | 925 | 950 | 850 | 800 | 900 | 1000 | 471 | 800 | 750 | 750 | 800 | 781 | 900 | 1000 | 1000 | 715 | 950 | 904 | 800 | 1000 | 812 | **66,756** |
| 43 | 804C | Trench Dam | EA | | | | | | | | | | 1 | | 1 | | 1 | 1 | 1 | | | | | 2 | | 1 | 1 | | | | | 1 | 1 | 3 | 1 | 2 | 1 | | | | | | **24** |
| 44 | 840A | 48" Water Tie-In Connection | EA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **1** |
| 45 | 841A | Hydrostatic Testing Operations | LF | 775 | 900 | 900 | 875 | 925 | 875 | 925 | 875 | 925 | 875 | 925 | 875 | 925 | 875 | 925 | 950 | 950 | 775 | 925 | 950 | 850 | 800 | 900 | 1000 | 900 | 800 | 750 | 750 | 800 | 900 | 900 | 1000 | 1000 | 715 | 950 | 1000 | 800 | 1000 | 900 | **69,881** |
| 46 | 844 | Temporary Blow-off Assemblies | EA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **1** |
| 47 | 844 | 12" Pipe Drain Assembly & Structure | EA | 1 | | | | | | | 1 | | 1 | | | 1 | | | 1 | 2 | | 1 | 1 | | | | | 1 | | | | 1 | | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | **35** |
| 48 | 844 | Install Type 1 Gate | EA | 1 | | | 1 | 1 | 2 | 1 | 1 | 2 | 1 | | | 2 | | 2 | | 3 | | 1 | | 1 | | 1 | | 2 | 1 | | | 2 | | 1 | 2 | | | | | | 1 | | **49** |
| 49 | 845 | Pipeline Markers | EA | 1 | | | | 1 | 2 | | 1 | 2 | | | 1 | 2 | | 1 | 1 | 3 | 1 | | | | | | | 2 | | 1 | | 2 | 2 | 2 | 4 | 2 | 5 | | 3 | | 4 | 2 | **81** |
| 50 | 845 | Temporary Chain Link Construction Fencing | LF | 1550 | 1800 | 1800 | 1750 | 1850 | 1750 | 1850 | 1750 | 1850 | 1750 | 1850 | 1750 | 1850 | 1750 | 1850 | 1900 | 1900 | 1550 | 1850 | 1900 | 1700 | 1600 | 1800 | 2000 | 1800 | 1600 | 1500 | 1500 | 1600 | 1800 | 1800 | 2000 | 2000 | 1430 | 1900 | 2000 | 1600 | 2000 | 1800 | **139,762** |
| 51 | 845 | Chain Link Security Fencing | LF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **80** |
| 52 | 847A | Disinfection | LF | 775 | 900 | 900 | 875 | 925 | 875 | 925 | 875 | 925 | 875 | 925 | 875 | 925 | 875 | 925 | 950 | 950 | 775 | 925 | 950 | 850 | 800 | 900 | 1000 | 900 | 800 | 750 | 750 | 800 | 900 | 900 | 1000 | 1000 | 715 | 950 | 1000 | 800 | 1000 | 900 | **69,881** |
| 53 | 02271 | Rock Rip Rap | SY | | | | | | | 200 | 504 | | | 51 | | | | | | | | | 365 | | | | | | 155 | 88 | | | | | | 196 | | 185 | | | | | **1,846** |
| 54 | 02273 | Concrete Cable Mat | SY | | | | | | | | | | 210 | | | | | | | 44 | | 289 | | | | | | | | | | | | 143 | | | | | | | | | **2,881** |
| 55 | 02400 | Steel Casing Pipe By Open Cut - (66") | LF | | | | | | | | | | | | | 91 | | | | 138 | | | | | | | | | | | | | | | | | | | | | | | **229** |
| 56 | 02400 | Jacking, Boring or Tunneling - (66") Inclusive of Casing | LF | | | | | | | | | | | | | 374 | | | | 169 | | | | | | | | 429 | | | | | 119 | | | | | | 96 | | | 88 | **3,125** |
| 57 | 02400 | Removal of Obstructions from Tunnels | EA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **4** |
| 58 | 02571 | Internal Test Bulkhead Assembly (48" Diameter) | EA | | | 1 | | | | | | | | | 1 | | | | 1 | | 1 | 2 | | | | | | | | | | | | | | | | | 1 | | | | **9** |
| 59 | 02571 | 48" Steel Water Main (Open Cut, Welded) 300 PSI | LF | 775 | 900 | 500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **2,175** |
| 60 | 02571 | 48" Steel Water Main (Open Cut, Welded) 250 PSI | LF | | | 400 | 875 | 925 | 875 | 925 | 875 | 925 | 875 | 925 | 775 | | | | 350 | 643 | 410 | 430 | | | | | | | | | | | | | | | | | | | | | **10,208** |
| 61 | 02571 | 48" Steel Water Main (Open Cut, Welded) 200 PSI | LF | | | | | | | | | | | | 100 | 460 | 875 | 925 | 600 | | 365 | 495 | 950 | 850 | 800 | 900 | 1000 | 471 | 800 | 750 | 750 | 800 | 781 | 900 | 1000 | 1000 | 715 | 950 | 904 | 800 | 1000 | 812 | **54,144** |
| 62 | 02571 | 48" Steel Water Main (Carrier Pipe, Welded) 250 PSI | LF | | | | | | | | | | | | | | | | | 307 | | | | | | | | | | | | | | | | | | | | | | | **307** |
| 63 | 02571 | 48" Steel Water Main (Carrier Pipe, Welded) 200 PSI | LF | | | | | | | | | | | | | 465 | | | | | | | | | | | | 429 | | | | | 119 | | | | | | 96 | | | 88 | **3,047** |
| 64 | 13110 | Rectifier Installation w/ Electrical Enclosure | EA | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | **2** |
| 65 | 13110 | Cathodic Protection Test Station | EA | 2 | 1 | 1 | | 2 | 1 | 2 | 1 | 2 | 3 | 1 | 1 | 5 | | 1 | 2 | 4 | 1 | 2 | 2 | | 1 | 2 | 1 | 4 | 1 | 1 | | 2 | 5 | 1 | 2 | 2 | 4 | 1 | 5 | 1 | 4 | 4 | **165** |
| 66 | 15103 | 48" Butterfly Valve - 250 PSI | EA | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | **1** |
| 67 | 15103 | 48" Butterfly Valve - 200 PSI | EA | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | 1 | | | | | | | | | | 1 | **5** |
| 68 | 15103 | 24" Butterfly Valve - 200 PSI | EA | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | **1** |
| 69 | 15117 | 6" Combination Air Valve & Assembly - 250 PSI | EA | | | | | 1 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **3** |
| 70 | 15117 | 6" Combination Air Valve & Assembly - 200 PSI | EA | | | | | | | | | | | | | 2 | | 1 | 1 | | 1 | | | 1 | | 1 | | 1 | | 1 | | 1 | 1 | | 1 | 1 | | 1 | | 1 | 1 | **37** |
| | | **GENERAL ITEMS** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 71 | 101.2 | Tree Protection | LS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **1** |
| 72 | 530.1 | Barricades, Signs and Traffic Handling | LS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **1** |
| 73 | 540A | Temporary Erosion Sedimentation and Water Pollution Prevention and Control | LS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **1** |
| 74 | SC1 | Cathodic Allowance for CPS Energy | LS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **1** |
| 75 | SC2 | Allowance for Power Pole Bracing or Relocation | EA | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | 2 | | | | | 1 | **8** |
| 76 | 100.2 | Intermediate Demobilization and Remobilization (Open Cut) | EA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **2** |
| 77 | 100.3 | Intermediate Demobilization and Remobilization (Trenchless) | EA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **2** |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 78 | 100.1 | Mobilization (Max 8% Line Nos. 32-73) | LS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **1** |
| 79 | 101.1 | Preparing Right-Of-Way (Max 4% of Line Nos. 32-73) | LS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **1** |

| No. | Date | Revisions | App. |
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Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: N.T.S.

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Fax (210) 298-9901

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3

SUMMARY OF QUANTITIES 1 of 2

Sheet G5

ACAD CIVIL 3D 2011 User: DDH [SWB09391][SASRV2]

| LINE NO. | ITEM NO. | ITEM DESCRIPTION | UNITS | SHEET NUMBER W40 | W41 | W42 | W43 | W44 | W45 | W46 | W47 | W48 | W49 | W50 | W51 | W52 | W53 | W54 | W55 | W56 | W57 | W58 | W59 | W60 | W61 | W62 | W63 | W64 | W65 | W66 | W67 | W68 | W69 | W70 | W71 | W72 | W73 | W74 | W75 | W76 | W77 | W78 | W79 | TOTALS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **SEGMENT 3 WATER PIPELINE ITEMS** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | 202 | Prime Coat | GAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 36 | | | | | | | | **60** |
| 33 | 203 | Tack Coat | GAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 18 | | | | | | | | **30** |
| 34 | 205.2 | Hot Mix Asphaltic Pavement Type B - 12" Thick | SY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 179 | | | | | | | | **301** |
| 35 | 205.3 | Hot Mix Asphaltic Pavement Type C - 3" Thick | SY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 179 | | | | | | | | **301** |
| 36 | 299 | Flowable Fill | CY | | | | | | | | | | | | 235 | 52 | | | | | | | | | | | | 102 | 119 | | | | | | | | | | | | 79 | | **681** |
| 37 | 410 | Gravel Subgrade Filler and Filter Fabric | CY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **1,200** |
| 38 | 503.5 | Roadway Repair (Crushed Stone) | SY | | | | | | | | | | | | | | 199 | | 149 | 2706 | 170 | | | | | | | | | | | | | | | | | | | | | | | **4,840** |
| 39 | 508 | Relocating Wire Fence | LF | | | 64 | | 417 | | 167 | 64 | 64 | | 545 | | | 170 | | 141 | | | | | | | | | 70 | | 140 | | | | 142 | | 131 | | | | 66 | | | | **7,316** |
| 40 | 520A | Revegetation | LF | 804 | 731 | 769 | 768 | 850 | 898 | 900 | 900 | 900 | 950 | 900 | 750 | 628 | 900 | 950 | 800 | 733 | 855 | 950 | 856 | 800 | 699 | 835 | 793 | 843 | 900 | 754 | 1000 | 950 | 1000 | 917 | 1025 | 950 | 800 | 700 | 800 | 900 | 840 | 950 | 143 | **66,756** |
| 41 | 544 | Soil Retention Blanket | SY | | | | | 310 | 2689 | 128 | 349 | | | | | 805 | | 438 | 222 | | 140 | 358 | | | | | | 339 | 395 | | | | | | | 854 | 57 | | | | | 867 | | **12,427** |
| 42 | 550 | Trench Excavation Safety Protection | LF | 804 | 731 | 769 | 768 | 850 | 898 | 900 | 900 | 900 | 950 | 900 | 750 | 628 | 900 | 950 | 800 | 733 | 855 | 950 | 856 | 800 | 699 | 835 | 793 | 843 | 900 | 754 | 1000 | 950 | 1000 | 917 | 1025 | 950 | 800 | 700 | 800 | 900 | 840 | 950 | 143 | **66,756** |
| 43 | 804C | Trench Dam | EA | | | | | 1 | | | | | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | 1 | | | | | 1 | | | **24** |
| 44 | 840A | 48" Water Tie-In Connection | EA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | **1** |
| 45 | 841A | Hydrostatic Testing Operations | LF | 900 | 731 | 900 | 1000 | 850 | 898 | 900 | 900 | 900 | 950 | 900 | 900 | 938 | 900 | 950 | 800 | 900 | 1000 | 950 | 856 | 800 | 800 | 900 | 900 | 900 | 900 | 900 | 1000 | 950 | 1000 | 1000 | 1025 | 950 | 800 | 700 | 800 | 900 | 900 | 950 | 143 | **69,881** |
| 46 | 844 | Temporary Blow-off Assemblies | EA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | **1** |
| 47 | 844 | 12" Pipe Drain Assembly & Structure | EA | | 1 | | | 1 | | 1 | | | | | | 2 | | 1 | 1 | | 1 | | 1 | 1 | | 1 | | 1 | 1 | 1 | | | | | | 1 | 1 | | | | 1 | | | **35** |
| 48 | 844 | Install Type 1 Gate | EA | | | 1 | | 1 | | 1 | 1 | 1 | | 2 | | | 2 | | 2 | | | | | | | | | 1 | | 2 | | | | 3 | | 2 | | | | 1 | | | **49** |
| 49 | 845 | Pipeline Markers | EA | 2 | | 1 | 2 | 1 | | 1 | | 1 | | 2 | | 2 | 2 | 1 | 3 | | 2 | | | 2 | | 1 | | 1 | | 3 | | 1 | | | 1 | 2 | 1 | | | 2 | 1 | | 1 | **81** |
| 50 | 845 | Temporary Chain Link Construction Fencing | LF | 1800 | 1462 | 1800 | 2000 | 1700 | 1796 | 1800 | 1800 | 1800 | 1900 | 1800 | 1800 | 1876 | 1800 | 1900 | 1600 | 1800 | 2000 | 1900 | 1712 | 1600 | 1600 | 1800 | 1800 | 1800 | 1800 | 1800 | 2000 | 1900 | 2000 | 2000 | 2050 | 1900 | 1600 | 1400 | 1600 | 1800 | 1800 | 1900 | 286 | **139,762** |
| 51 | 845 | Chain Link Security Fencing | LF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 80 | **80** |
| 52 | 847A | Disinfection | LF | 900 | 731 | 900 | 1000 | 850 | 898 | 900 | 900 | 900 | 950 | 900 | 900 | 938 | 900 | 950 | 800 | 900 | 1000 | 950 | 856 | 800 | 800 | 900 | 900 | 900 | 900 | 900 | 1000 | 950 | 1000 | 1000 | 1025 | 950 | 800 | 700 | 800 | 900 | 900 | 950 | 143 | **69,881** |
| 53 | 02271 | Rock Rip Rap | SY | | | | | | | | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | 42 | | | | | | | **1,846** |
| 54 | 02273 | Concrete Cable Mat | SY | | | | | 260 | | | | | | | | 331 | | 530 | 80 | | 289 | 315 | 125 | | | | | | | | | | | | | 265 | | | | | | | | **2,881** |
| 55 | 02400 | Steel Casing Pipe By Open Cut - (66") | LF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **229** |
| 56 | 02400 | Jacking, Boring or Tunneling - (66") Inclusive of Casing | LF | 96 | | 131 | 232 | | | | | | | | 150 | 310 | | | | 167 | 145 | | | | 101 | 65 | 107 | 57 | | 146 | | | | 83 | | | | | | 60 | | | **3,125** |
| 57 | 02400 | Removal of Obstructions from Tunnels | EA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **4** |
| 58 | 02571 | Internal Test Bulkhead Assembly (48" Diameter) | EA | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | 1 | **9** |
| 59 | 02571 | 48" Steel Water Main (Open Cut, Welded) 300 PSI | LF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **2,175** |
| 60 | 02571 | 48" Steel Water Main (Open Cut, Welded) 250 PSI | LF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **10,208** |
| 61 | 02571 | 48" Steel Water Main (Open Cut, Welded) 200 PSI | LF | 804 | 731 | 769 | 768 | 850 | 898 | 900 | 900 | 900 | 950 | 900 | 750 | 628 | 900 | 950 | 800 | 733 | 855 | 950 | 856 | 800 | 699 | 835 | 793 | 843 | 900 | 754 | 1000 | 950 | 1000 | 917 | 1025 | 950 | 800 | 700 | 800 | 900 | 840 | 950 | 143 | **54,144** |
| 62 | 02571 | 48" Steel Water Main (Carrier Pipe, Welded) 250 PSI | LF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **307** |
| 63 | 02571 | 48" Steel Water Main (Carrier Pipe, Welded) 200 PSI | LF | 96 | | 131 | 232 | | | | | | | | 150 | 310 | | | | 167 | 145 | | | | 101 | 65 | 107 | 57 | | 146 | | | | 83 | | | | | | 60 | | | **3,047** |
| 64 | 13110 | Rectifier Installation w/ Electrical Enclosure | EA | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | **2** |
| 65 | 13110 | Cathodic Protection Test Station | EA | 3 | 1 | 3 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 2 | | 10 | 1 | 2 | 3 | 3 | 5 | 1 | 2 | 1 | 6 | 5 | 5 | 6 | 1 | 6 | | | 1 | 5 | | 1 | 1 | | | 3 | 2 | 1 | **165** |
| 66 | 15103 | 48" Butterfly Valve - 250 PSI | EA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **1** |
| 67 | 15103 | 48" Butterfly Valve - 200 PSI | EA | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | **5** |
| 68 | 15103 | 24" Butterfly Valve - 200 PSI | EA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **1** |
| 69 | 15117 | 6" Combination Air Valve & Assembly - 250 PSI | EA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **3** |
| 70 | 15117 | 6" Combination Air Valve & Assembly - 200 PSI | EA | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | | | 1 | 1 | 1 | | 1 | 1 | | 1 | | 1 | 1 | | 1 | | | 1 | 1 | | | 1 | | | 1 | 1 | | **37** |
| | | **GENERAL ITEMS** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 71 | 101.2 | Tree Protection | LS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **1** |
| 72 | 530.1 | Barricades, Signs and Traffic Handling | LS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **1** |
| 73 | 540A | Temporary Erosion Sedimentation and Water Pollution Prevention and Control | LS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **1** |
| 74 | SC1 | Cathodic Allowance for CPS Energy | LS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **1** |
| 75 | SC2 | Allowance for Power Pole Bracing or Relocation | EA | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | **8** |
| 76 | 100.2 | Intermediate Demobilization and Remobilization (Open Cut) | EA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **2** |
| 77 | 100.3 | Intermediate Demobilization and Remobilization (Trenchless) | EA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **2** |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 78 | 100.1 | Mobilization (Max 8% Line Nos. 32-73) | LS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **1** |
| 79 | 101.1 | Preparing Right-Of-Way (Max 4% of Line Nos. 32-73) | LS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **1** |

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Texas Registered Engineering Firm F-2144
Freese and Nichols, Inc.

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: N.T.S.

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
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Fax (210) 298-9801

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3

SUMMARY OF QUANTITIES 2 OF 2

Sheet G6

ACAD CIVIL 3D 2011 User: DDH [SWB09391][SASRV2]

Date: Jul 19, 2020 – 11:10pm User: 07155 File: N:\Standard\G5 SUMMARY OF QUANTITIES.dwg

| PROJECT CONTROL POINTS | | | | | | | |
|---|---|---|---|---|---|---|---|
| POINT | NORTHING | EASTING | STATION | OFFSET | SIDE | ELEVATION | DESCRIPTION |
| ASR 118 | 13688024.07 | 2061113.83 | 2232+18.46 | 127.10 | LT | 731.52 | CONTROL POINT |
| ASR 119 | 13689655.81 | 2061084.33 | 2245+06.60 | 121.49 | LT | 761.94 | CONTROL POINT |
| 5000 | 13672951.19 | 2072788.21 | 2012+26.24 | 25.44 | LT | 614.22 | CONTROL POINT |
| 5001 | 13674249.45 | 2072787.77 | 2025+24.50 | 25.71 | LT | 624.79 | CONTROL POINT |
| 5002 | 13675541.11 | 2072854.01 | 2038+16.15 | 40.71 | RT | 651.09 | CONTROL POINT |
| 5003 | 13676442.53 | 2071661.72 | 2052+73.40 | 28.06 | LT | 642.66 | CONTROL POINT |
| 5004 | 13677397.30 | 2070505.27 | 2067+73.06 | 28.02 | LT | 624.76 | CONTROL POINT |
| 5005 | 13678352.28 | 2069348.22 | 2082+73.31 | 28.20 | LT | 631.99 | CONTROL POINT |
| 5006 | 13679306.98 | 2068191.40 | 2097+73.20 | 28.45 | LT | 676.37 | CONTROL POINT |
| 5007 | 13679758.99 | 2066334.40 | 2118+12.30 | 20.32 | LT | 719.95 | CONTROL POINT |
| 5008 | 13679827.27 | 2067678.94 | 2104+99.63 | 46.53 | RT | 702.31 | CONTROL POINT |
| 5009 | 13681166.72 | 2066385.35 | 2131+76.40 | 34.09 | RT | 754.07 | CONTROL POINT |
| 5010 | 13682146.33 | 2065096.73 | 2147+52.71 | 29.50 | LT | 692.51 | CONTROL POINT |
| 5011 | 13682487.43 | 2064843.90 | 2154+08.51 | 20.80 | LT | 686.73 | CONTROL POINT |
| 5012 | 13683689.46 | 2063945.05 | 2168+81.11 | 28.67 | LT | 696.46 | CONTROL POINT |
| 5013 | 13684890.76 | 2063047.90 | 2183+80.44 | 28.38 | LT | 731.05 | CONTROL POINT |
| 5014 | 13686091.90 | 2062134.96 | 2198+89.10 | 40.85 | LT | 801.42 | CONTROL POINT |
| 5015 | 13687600.36 | 2062136.38 | 2213+71.81 | 26.61 | LT | 768.84 | CONTROL POINT |
| 5016 | 13691686.46 | 2061065.80 | 2270+78.55 | 44.83 | RT | 784.26 | CONTROL POINT |
| 5017 | 13693144.42 | 2061054.20 | 2284+46.99 | 45.67 | RT | 791.57 | CONTROL POINT |
| 5018 | 13694379.11 | 2061321.72 | 2298+75.29 | 43.16 | RT | 813.89 | CONTROL POINT |
| 5019 | 13695913.11 | 2061233.35 | 2314+19.48 | 47.04 | RT | 834.75 | CONTROL POINT |
| 5020 | 13697632.43 | 2061162.06 | 2331+44.42 | 30.27 | RT | 836.00 | CONTROL POINT |
| 5021 | 13722648.04 | 2055787.46 | 2672+17.10 | 37.89 | RT | 916.32 | CONTROL POINT |
| 5022 | 13723048.89 | 2057203.35 | 2686+88.69 | 39.56 | RT | 966.22 | CONTROL POINT |
| 5023 | 13721095.78 | 2055812.78 | 2655+84.01 | 41.45 | RT | 902.17 | CONTROL POINT |
| 5024 | 13719042.21 | 2056204.68 | 2635+49.07 | 35.52 | RT | 906.49 | CONTROL POINT |
| 5025 | 13717995.50 | 2052476.38 | 2596+76.63 | 45.43 | RT | 915.26 | CONTROL POINT |
| 5026 | 13718479.10 | 2054223.82 | 2614+89.75 | 47.52 | RT | 957.48 | CONTROL POINT |
| 5027 | 13716292.06 | 2052313.63 | 2578+27.48 | 47.47 | RT | 885.61 | CONTROL POINT |
| 5028 | 13714898.68 | 2052909.57 | 2562+95.98 | 47.04 | RT | 902.74 | CONTROL POINT |
| 5029 | 13713141.34 | 2053648.57 | 2544+39.77 | 45.34 | RT | 852.24 | CONTROL POINT |
| 5030 | 13712196.87 | 2052706.08 | 2531+05.49 | 43.44 | RT | 826.35 | CONTROL POINT |
| 5031 | 13710828.39 | 2053165.69 | 2515+81.65 | 42.25 | RT | 815.46 | CONTROL POINT |
| 5032 | 13709444.64 | 2053765.70 | 2500+58.83 | 48.48 | RT | 808.02 | CONTROL POINT |
| 5033 | 13699088.59 | 2060806.42 | 2349+29.17 | 30.94 | RT | 844.22 | CONTROL POINT |
| 5034 | 13700604.46 | 2060834.97 | 2364+65.89 | 46.97 | RT | 843.52 | CONTROL POINT |
| 5035 | 13702451.87 | 2060972.16 | 2384+93.73 | 47.02 | RT | 774.06 | CONTROL POINT |
| 5036 | 13703446.30 | 2059608.43 | 2401+79.34 | 51.87 | RT | 786.22 | CONTROL POINT |
| 5037 | 13703970.01 | 2057935.12 | 2422+15.35 | 47.17 | RT | 818.68 | CONTROL POINT |
| 5038 | 13705153.98 | 2057265.45 | 2436+52.89 | 47.01 | RT | 790.62 | CONTROL POINT |
| 5039 | 13706655.13 | 2057063.64 | 2451+85.71 | 42.05 | RT | 785.04 | CONTROL POINT |
| 5040 | 13707984.12 | 2056390.01 | 2468+24.09 | 40.09 | RT | 796.22 | CONTROL POINT |
| 5041 | 13708846.67 | 2055156.22 | 2484+55.11 | 47.34 | RT | 805.48 | CONTROL POINT |
| 5042 | 13723470.16 | 2058653.74 | 2701+98.97 | 37.66 | RT | 954.45 | CONTROL POINT |

NOTE:
1. CONTROL POINTS SHOWN ON PROJECT LAYOUT SHEETS PL1 THROUGH PL8.

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

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SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: N.T.S.

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone - (210) 298-3900
Fax - (210) 298-3901

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3

PROJECT CONTROL POINTS

Sheet G7

ACAD CIVIL 3D 2011 User: DDH [SWB09391][SASRV2]
Date: Jul 19, 2020 - 11:10pm User: 07155 File: N:\Standard\WR-SAWS-GN-CONTROL.dwg




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GRAPHIC SCALE

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: AS SHOWN

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

2,175 LF (300 PSI) HYDROSTATIC TEST PRESSURE = ELEV. 1,185'
8,375 LF (250 PSI) HYDROSTATIC TEST PRESSURE = ELEV. 1,176'
3,425 LF (200 PSI) HYDROSTATIC TEST PRESSURE = ELEV. 1,261'
430 LF (250 PSI) HYDROSTATIC TEST PRESSURE = ELEV. 1,272'
850 LF (200 PSI) HYDROSTATIC TEST PRESSURE = ELEV. 1,272'
1,710 LF (250 PSI) HYDROSTATIC TEST PRESSURE = ELEV. 1,239'
52,903 LF (200 PSI) HYDROSTATIC TEST PRESSURE = ELEV. 1,407'

STA. 2000+25 BEGIN SEGMENT 3
STA. 2022+00
STA. 2105+75
STA. 2140+00
STA. 2157+10
STA. 2165+60
STA. 2169+90
STA. 2698+93 END SEGMENT 3

STA. 2000+45 DRAIN STRUCTURE
STA. 2040+69 AIR VALVE ASSEMBLY
STA. 2066+15 DRAIN STRUCTURE
STA. 2078+63 AIR VALVE ASSEMBLY
STA. 2080+65 DRAIN STRUCTURE
STA. 2083+60 AIR VALVE ASSEMBLY
STA. 2108+79 AIR VALVE ASSEMBLY
STA. 2108+99 AIR VALVE ASSEMBLY
STA. 2114+03 DRAIN STRUCTURE
STA. 2126+27 AIR VALVE ASSEMBLY
STA. 2134+02 DRAIN STRUCTURE
STA. 2137+35 AIR VALVE ASSEMBLY
STA. 2151+54 DRAIN STRUCTURE
STA. 2152+80 DRAIN STRUCTURE
STA. 2159+67 AIR VALVE ASSEMBLY
STA. 2167+58 DRAIN STRUCTURE
STA. 2174+88 AIR VALVE ASSEMBLY
STA. 2178+99 DRAIN STRUCTURE
STA. 2204+10 AIR VALVE ASSEMBLY
STA. 2216+69 AIR VALVE ASSEMBLY
STA. 2230+95 DRAIN STRUCTURE
STA. 2234+00 AIR VALVE ASSEMBLY
STA. 2248+71 DRAIN STRUCTURE
STA. 2248+51 AIR VALVE ASSEMBLY
STA. 2255+82 AIR VALVE ASSEMBLY
STA. 2265+25 DRAIN STRUCTURE
STA. 2278+60 AIR VALVE ASSEMBLY
STA. 2285+12 DRAIN STRUCTURE
STA. 2289+89 AIR VALVE ASSEMBLY
STA. 2294+49 DRAIN STRUCTURE
STA. 2299+47 AIR VALVE ASSEMBLY
STA. 2302+16 DRAIN STRUCTURE
STA. 2313+80 AIR VALVE ASSEMBLY
STA. 2315+44 DRAIN STRUCTURE
STA. 2328+55 AIR VALVE ASSEMBLY
STA. 2332+15 DRAIN STRUCTURE
STA. 2340+24 DRAIN STRUCTURE
STA. 2338+67 AIR VALVE ASSEMBLY
STA. 2350+51 AIR VALVE ASSEMBLY
STA. 2360+99 DRAIN STRUCTURE
STA. 2365+06 AIR VALVE ASSEMBLY
STA. 2386+14 DRAIN STRUCTURE
STA. 2387+14 AIR VALVE ASSEMBLY
STA. 2400+29 AIR VALVE ASSEMBLY
STA. 2403+50 DRAIN STRUCTURE
STA. 2422+29 AIR VALVE ASSEMBLY
STA. 2442+26 AIR VALVE ASSEMBLY
STA. 2455+69 DRAIN STRUCTURE
STA. 2459+88 DRAIN STRUCTURE
STA. 2474+25 AIR VALVE ASSEMBLY
STA. 2476+57 DRAIN STRUCTURE
STA. 2486+53 AIR VALVE ASSEMBLY
STA. 2488+06 DRAIN STRUCTURE
STA. 2498+77 AIR VALVE ASSEMBLY
STA. 2506+57 DRAIN STRUCTURE
STA. 2509+47 AIR VALVE ASSEMBLY
STA. 2519+02 DRAIN STRUCTURE
STA. 2526+51 AIR VALVE ASSEMBLY
STA. 2527+10 DRAIN STRUCTURE
STA. 2536+22 AIR VALVE ASSEMBLY
STA. 2543+92 DRAIN STRUCTURE
STA. 2559+67 AIR VALVE ASSEMBLY
STA. 2567+19 DRAIN STRUCTURE
STA. 2569+66 AIR VALVE ASSEMBLY
STA. 2574+50 DRAIN STRUCTURE
STA. 2585+47 AIR VALVE ASSEMBLY
STA. 2585+67 DRAIN STRUCTURE
STA. 2610+17 AIR VALVE ASSEMBLY
STA. 2626+99 AIR VALVE ASSEMBLY
STA. 2643+82 DRAIN STRUCTURE
STA. 2649+75 AIR VALVE ASSEMBLY
STA. 2686+05 AIR VALVE ASSEMBLY
STA. 2693+79 DRAIN STRUCTURE
STA. 2697+26 AIR VALVE ASSEMBLY

PROP. 48" DIA. STEEL
WATER TRANSMISSION MAIN (200 PSI)

(300 PSI) (250 PSI) (200 PSI) (250 PSI) (250 PSI) (200 PSI)

0 2500 5000
HORIZONTAL
0 50 100
VERTICAL

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3

OVERALL PROFILE OF PRESSURE CLASS AND TEST PRESSURE

Sheet OA1

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48" WRIP SEGMENT 2C
(SEE SEGMENT 2C PLANS)

STA. 2000+25
BEGIN SEGMENT 3

APPROX. LIMITS OF 100 YEAR FLOOD ZONE

48" WRIP ALIGNMENT
(SEGMENT IIIA)

MATCHLINE STA. 2091+50

SHEET W1
SHEET W2
SHEET W3
SHEET W4
SHEET W5
SHEET W6
SHEET W7
SHEET W8
SHEET W9
SHEET W10
SHEET W11

2000+00
2010+00
2020+00
2030+00
2040+00
2050+00
2060+00
2070+00
2080+00
2090+00

CP5000
CP5001
CP5002
CP5003
CP5004
CP5005

P10-268
P10-269
P10-270
P10-271
P10-272
P10-273
P10-274

0 300' 600'
HORIZONTAL

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Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by:
Checked by: DDH/CJG
Scale: DTB
1"=300'

FREESE NICHOLS
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San Antonio, Texas 78216
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SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PROJECT LAYOUT 1
STA. 2000+00 TO STA. 2091+50

Sheet PL1

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Sheet PL2

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PROJECT LAYOUT 2

STA. 2091+50 TO STA. 2183+00

SAN ANTONIO WATER SYSTEM

FREESE AND NICHOLS
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1"=300'

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Texas Registered Engineering Firm F-2144

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Freese And Nichols, Inc.
Job No.
SWB09391

CAGNON ROAD
ALAMO CANYON
WEST U.S. HWY. 90
SPURS RANCH RD.
RANGE BOSS
LOOP 1604
MATCHLINE STA. 2183+00
MATCHLINE STA. 2274+50
APPROX. LIMITS OF 100 YEAR FLOOD ZONE
APPROX. LIMITS OF 100 YEAR FLOOD ZONE
ASR118
ASR119
CP5013
CP5014
CP5016
2190+00
2200+00
2210+00
2220+00
2230+00
2240+00
2250+00
2260+00
2270+00
SHEET W21
SHEET W22
SHEET W23
SHEET W24
SHEET W25
SHEET W26
SHEET W27
SHEET W28
SHEET W29
SHEET W30
SHEET W31
SHEET W32
P10-280
P10-284A
P10-284B
P10-309
P10-310
P10-311
P10-330
STA. 2248+51 1-48" BUTTERFLY VALVE
0 300' 600'
HORIZONTAL
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103589
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PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
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SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PROJECT LAYOUT 3
STA. 2183+00 TO STA. 2274+50

Sheet PL3

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N

0 300' 600'
HORIZONTAL

APPROX. LIMITS OF 100 YEAR FLOOD ZONE

MATCHLINE STA. 2274+50

MATCHLINE STA. 2366+00

P10-312 P10-313 P10-314 P10-315 P10-316 P10-317 P10-335 P10-322 P10-321 P10-324 P10-325 P10-318 P10-319 P10-320 P10-323

SHEET W32 SHEET W33 SHEET W34 SHEET W35 SHEET W36 SHEET W37 SHEET W38 SHEET W39 SHEET W40 SHEET W41 SHEET W42

2280+00 2290+00 2300+00 2310+00 2320+00 2330+00 2340+00 2350+00 2360+00

CP5017 CP5018 CP5019 CP5020 CP5033 CP5034

MARBACH ROAD

CAGNON ROAD

SPURS RANCH ROAD

STA. 2342+00
1-48" BUTTERFLY VALVE

EMORY PEAK

DODGE CITY TRAIL

LOOP 1604

LOOP 1604

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07/20/20

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SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PROJECT LAYOUT 4
STA. 2274+50 TO STA. 2366+00

Sheet PL4

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SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PROJECT LAYOUT 5
STA. 2366+00 TO STA. 2457+50

Sheet PL5

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SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PROJECT LAYOUT 6
STA. 2457+50 TO STA. 2549+00

Sheet PL6

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N

0 300' 600'
HORIZONTAL

MATCHLINE STA. 2546+50

MATCHLINE STA. 2638+00

P10-298

P10-300

P10-300A

P10-303

P10-331

SHEET W62

SHEET W63

SHEET W64

SHEET W65

SHEET W66

SHEET W67

SHEET W68

SHEET W69

SHEET W70

SHEET W71

2550+00

2560+00

2570+00

2580+00

2590+00

2600+00

2610+00

2620+00

2630+00

CP5024

CP5025

CP5026

CP5027

CP5028

WESTCREEK OAKS

BUCKNER PASS

UPTON PARK

48" WRIP ALIGNMENT
(SEGMENT IIIB)

STA. 2585+57
1-48" BUTTERFLY VALVE

WISEMAN BLVD.

ALAMO PKWY

CARSON COVE

COLLIN COVE

COTTONWOOD WAY

LIMESTONE TRAIL

WILLACY TRAIL

APPROX. LIMITS OF 100
YEAR FLOOD ZONE

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SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PROJECT LAYOUT 7
STA. 2549+00 TO STA. 2640+50

Sheet PL7

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ALAMO PKWY

APPROX. LIMITS OF 100 YEAR FLOOD ZONE

LONESTAR PARKWAY

EL BOSQUE

CAMP REAL LN.

LA GRANJA

P10-306

P10-307

P10-308

P10-305

P10-304

P10-303

SHEET W71

SHEET W72

SHEET W73

SHEET W74

SHEET W75

SHEET W76

SHEET W77

SHEET W78

SHEET W79

2640+00

2650+00

2660+00

2670+00

2680+00

2690+00

2700+00

2710+00

CP5021

CP5022

CP5023

CP5042

MATCHLINE STA. 2638+00

SHIMMERING DAWN ST.

ENCHANTED SUNSET ST.

STA. 2698+93
END SEGMENT 3, TIE-IN TO
WRIP ANDERSON PUMP STATION IMPROVEMENTS PIPELINE

SAWS ANDERSON PUMP STATION

LOOP 1604

WISEMAN BL VD.

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N

0 300' 600'

HORIZONTAL

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103589
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07/20/20

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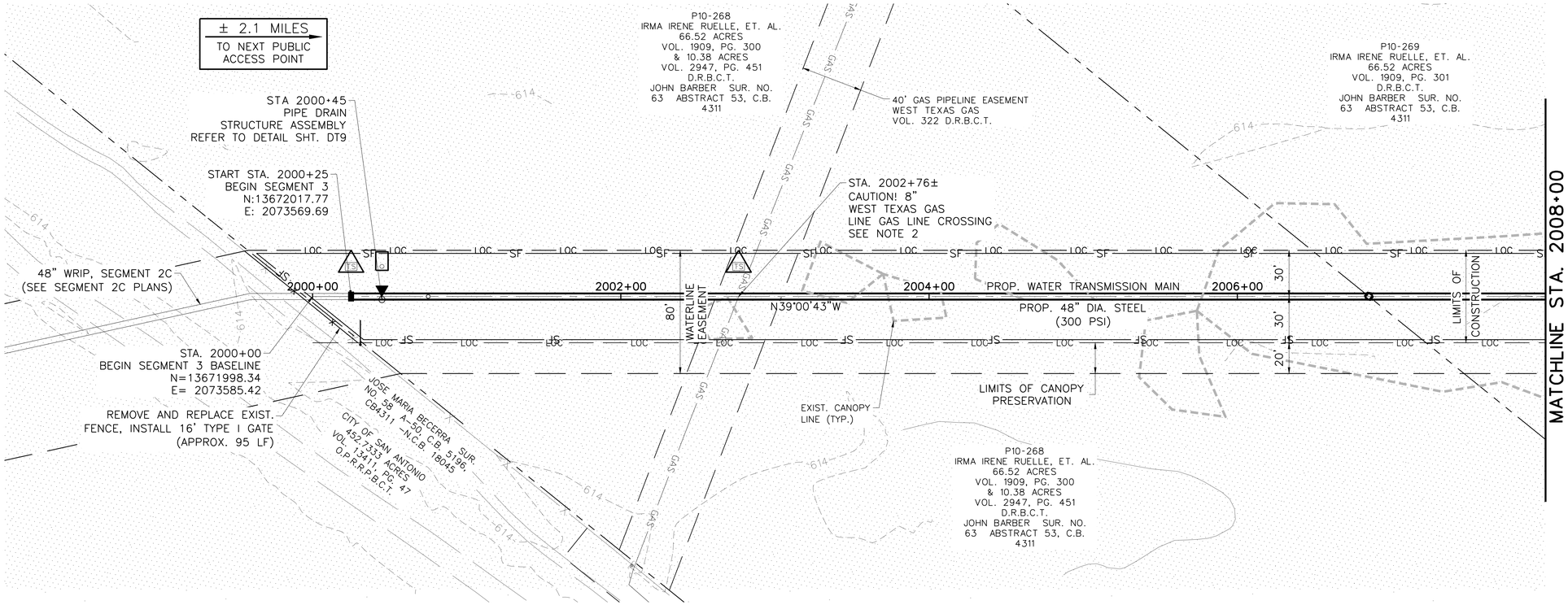
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PROJECT LAYOUT 8
STA. 2640+50 TO STA. 2723+53

Sheet PL8

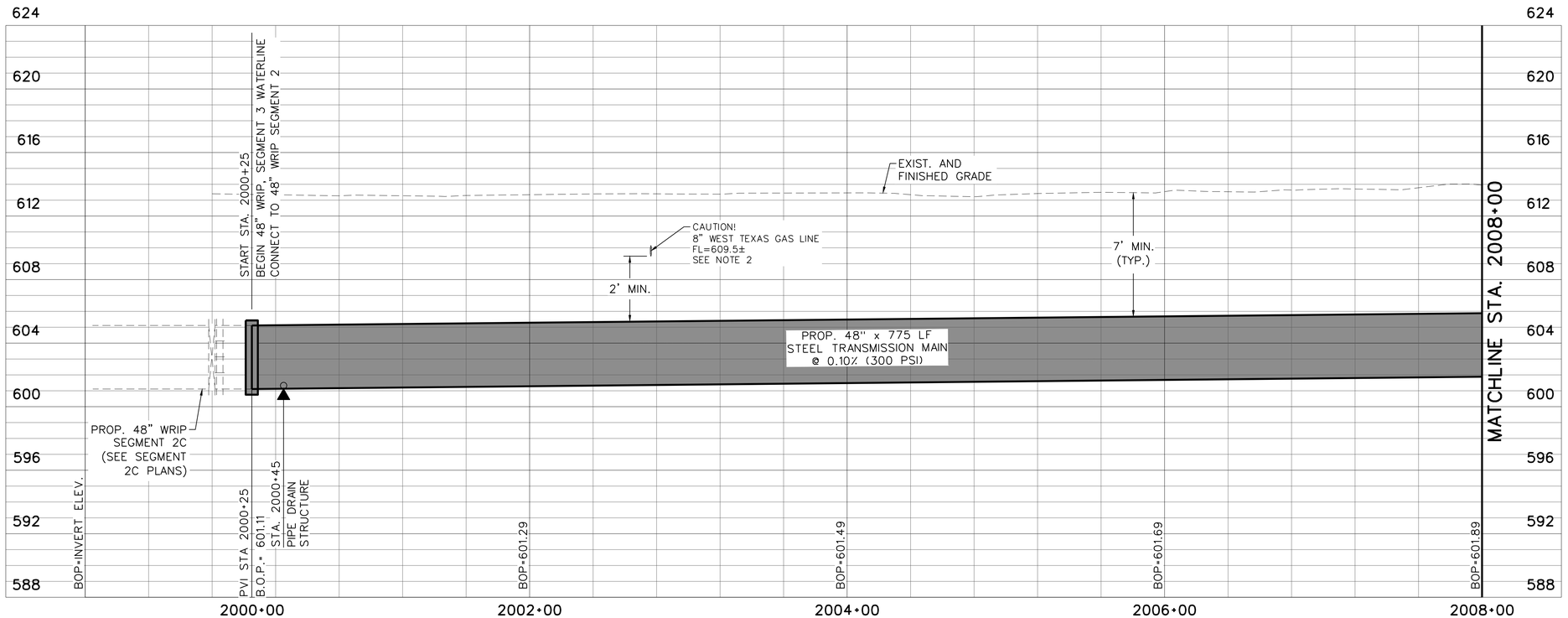
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NOTES:

1. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.
2. CONTRACTOR SHALL NOTIFY WEST TEXAS GAS 48 HOURS PRIOR TO CROSSING GAS LINE. SEE SHEET G3 FOR CONTACT INFORMATION.




Freese And Nichols, Inc.
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ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS 07/20/20

Date: 07/19/2020
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Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

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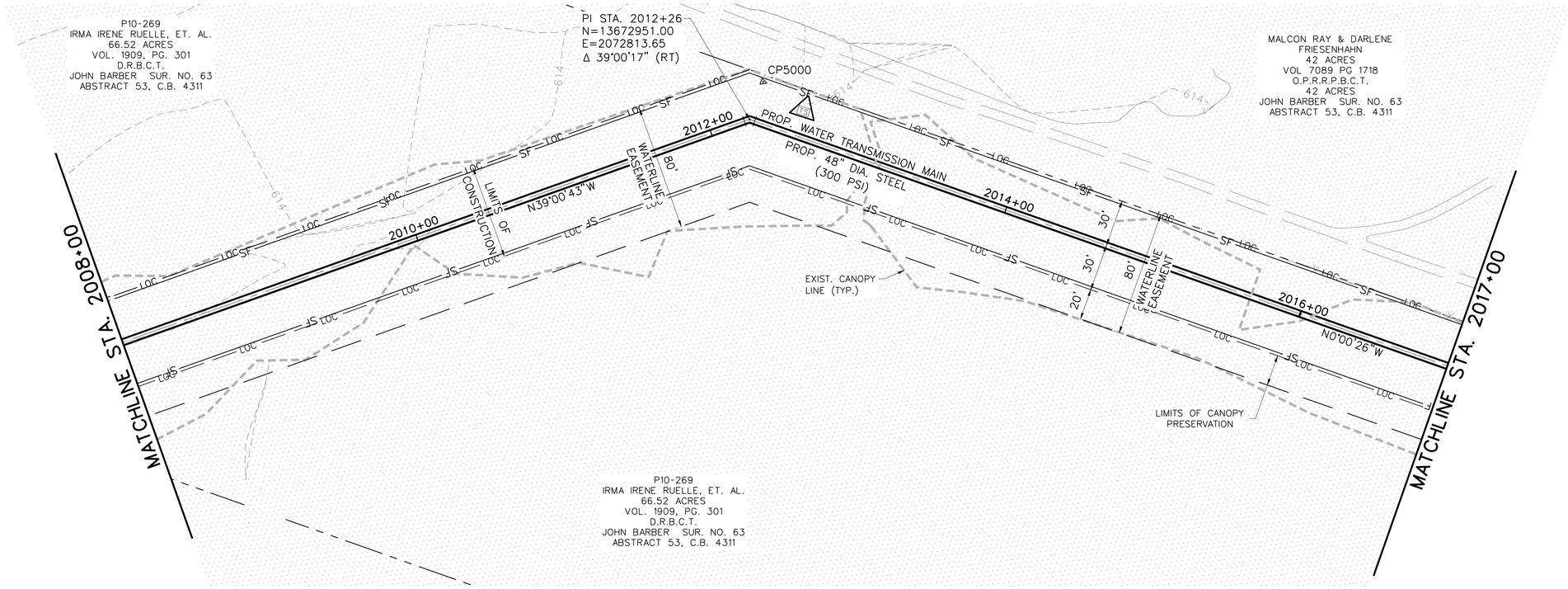
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2000+00 TO STA. 2008+00

Sheet W1

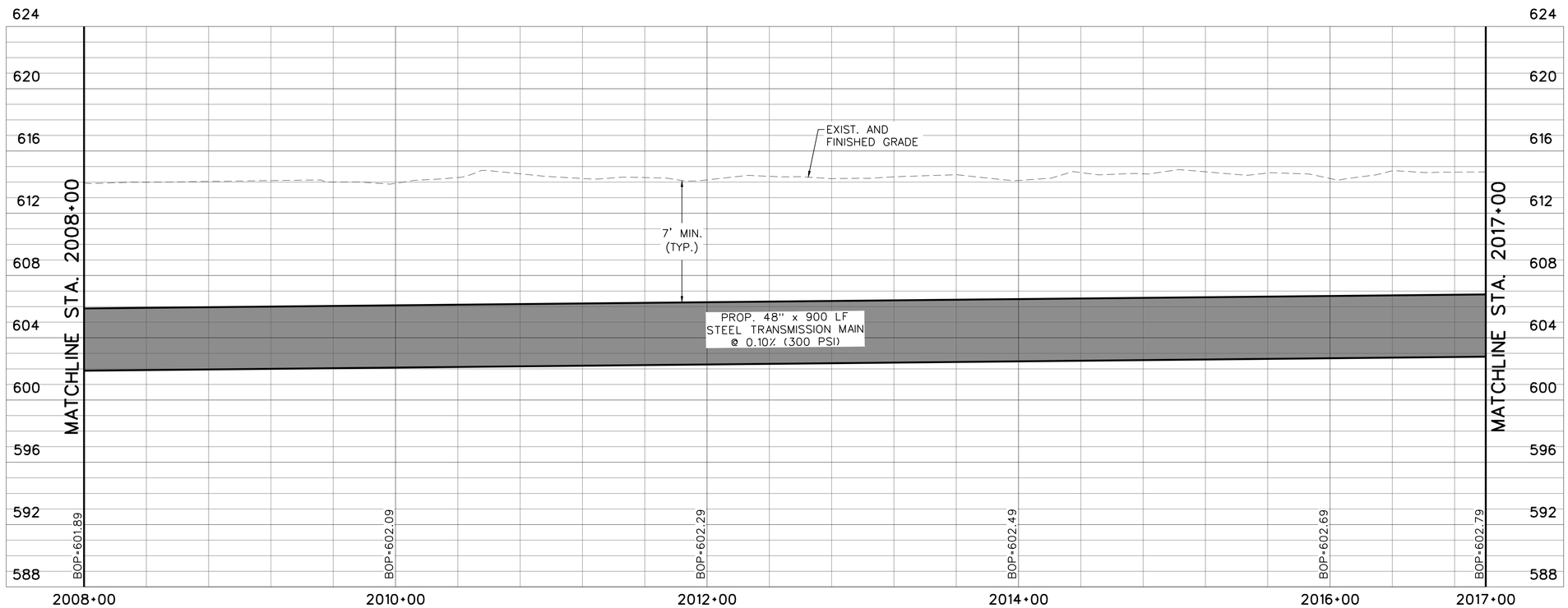
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NOTES:

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STATE OF TEXAS
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103589
LICENSED
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07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

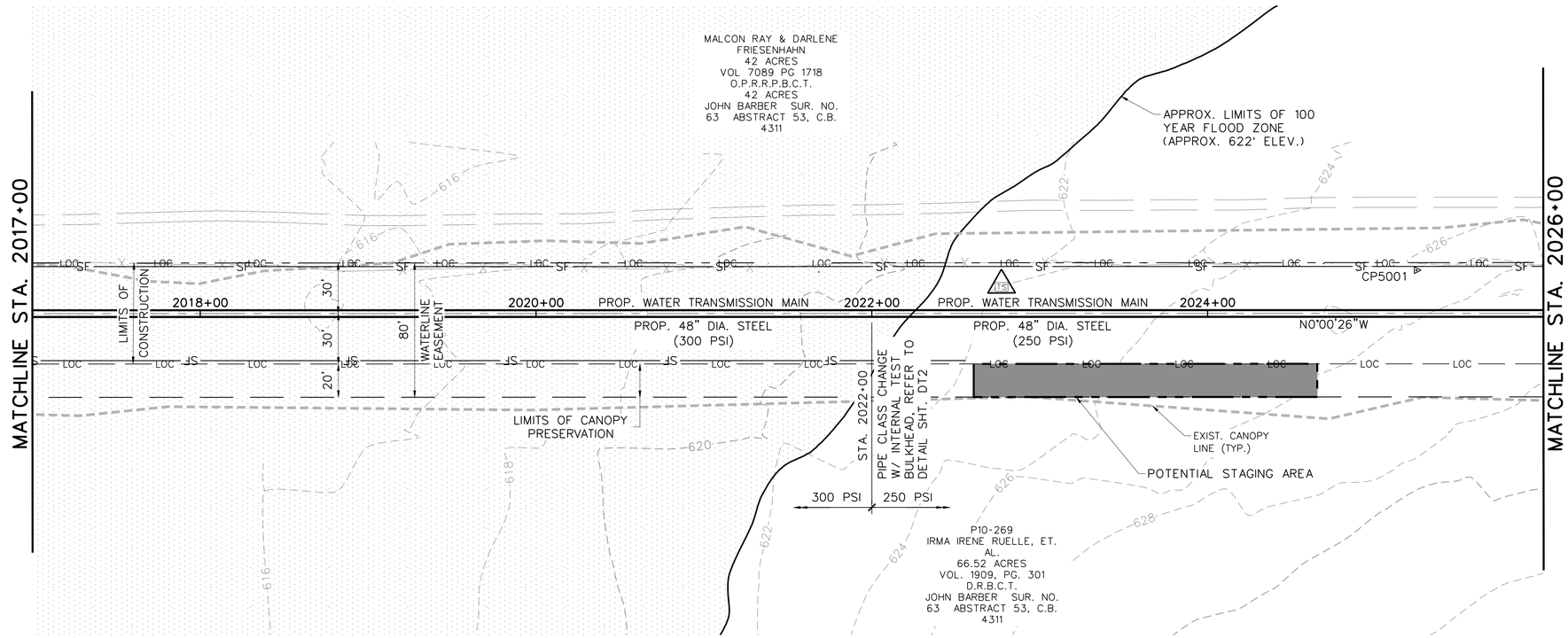
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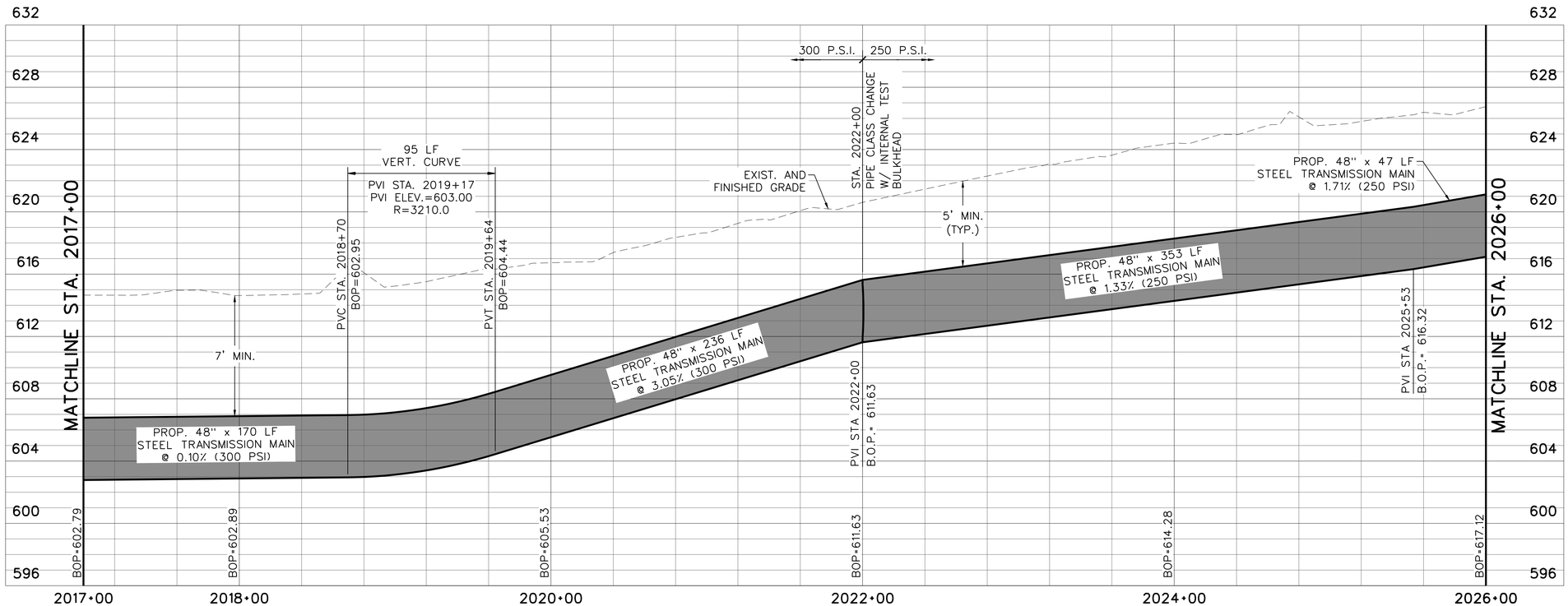
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2008+00 TO STA. 2017+00

Sheet W2

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NOTES:

1. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
2. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.

N

0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

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07/20/20

Date: 07/19/2020
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Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

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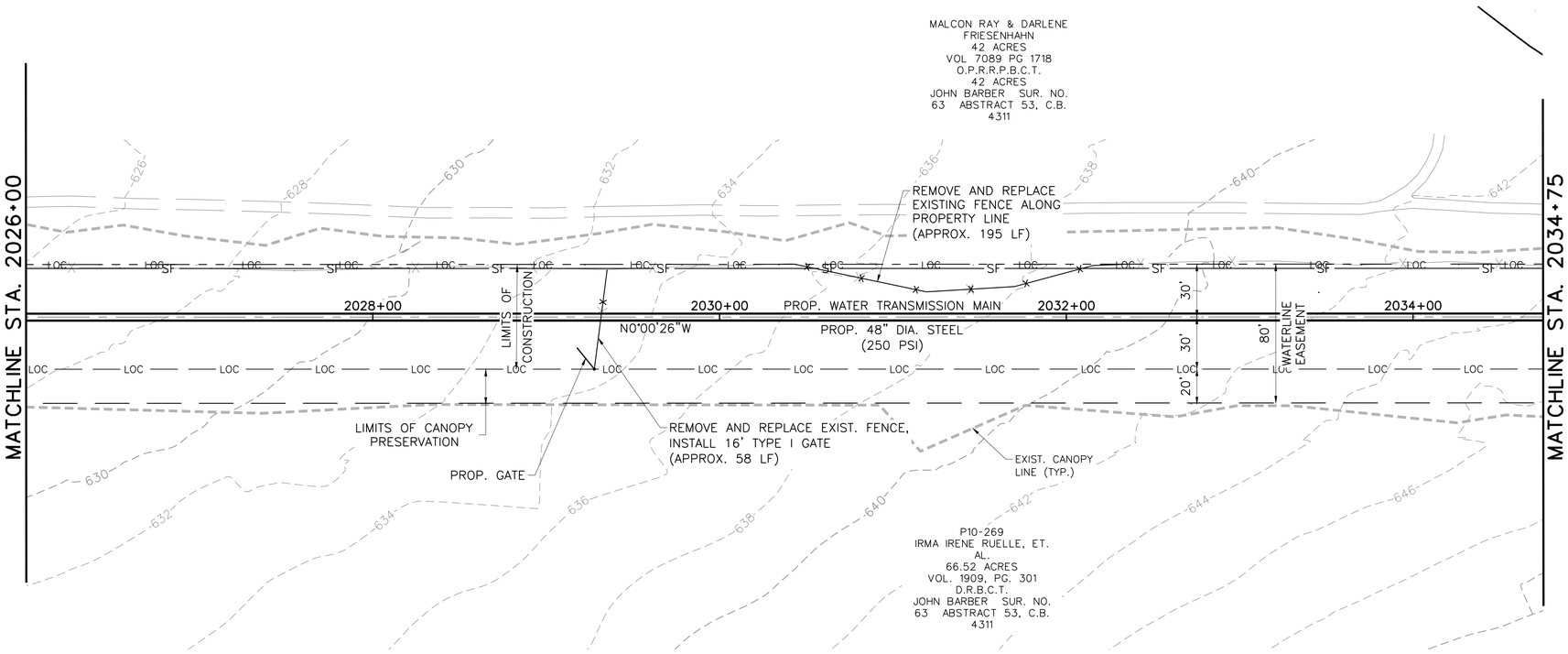
SAN ANTONIO WATER SYSTEM

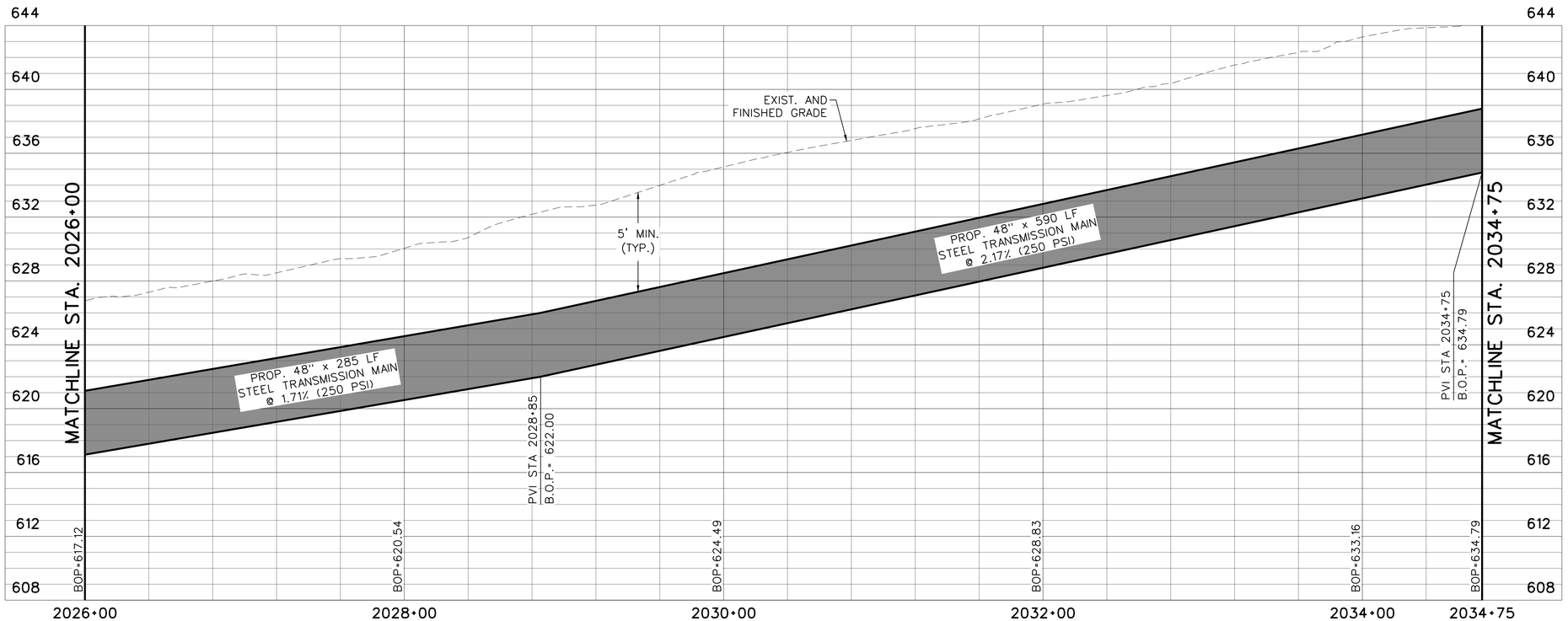
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2017+00 TO STA. 2026+00

Sheet W3

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NOTES:

1. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.

N

0 40' 80'
HORIZONTAL

0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
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| | | | |

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PROFESSIONAL ENGINEER
07/20/20

Freese And Nichols, Inc.
Job No.
SWB09391

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

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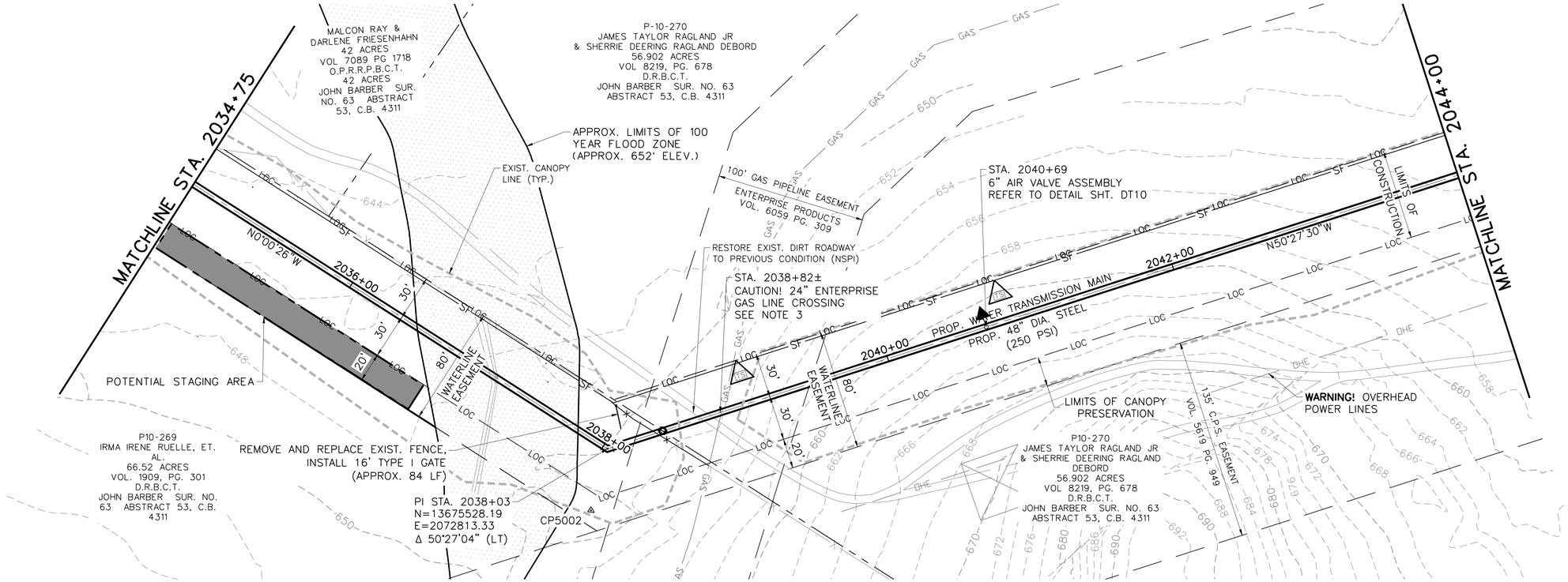
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2026+00 TO STA. 2034+75

Sheet W4

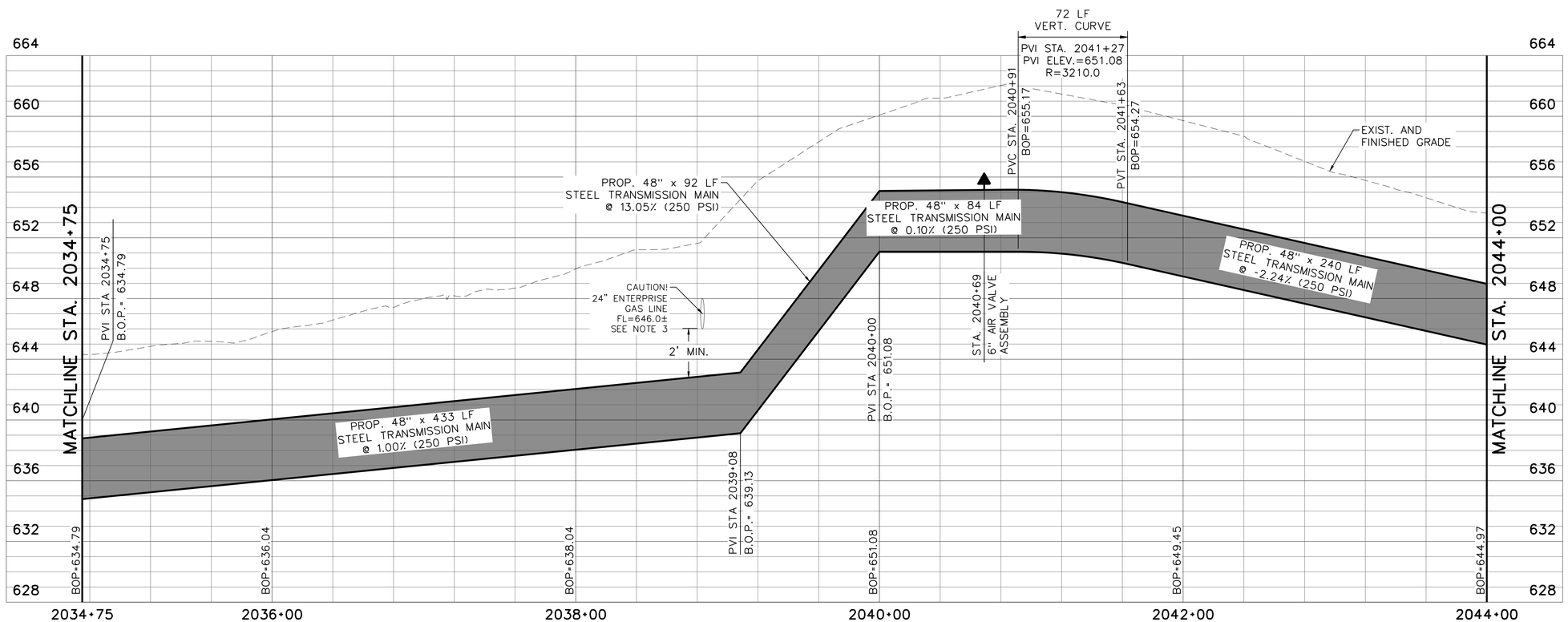
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Date: Jul 19, 2020 - 11:43pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL01.dwg




NOTES:

1. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.
2. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
3. CONTRACTOR SHALL NOTIFY ENTERPRISE 48 HOURS PRIOR TO CROSSING GAS LINE. SEE SHEET G3 FOR CONTACT INFORMATION.




Freese And Nichols, Inc.
Job No.
SWB09391

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

TEXAS ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

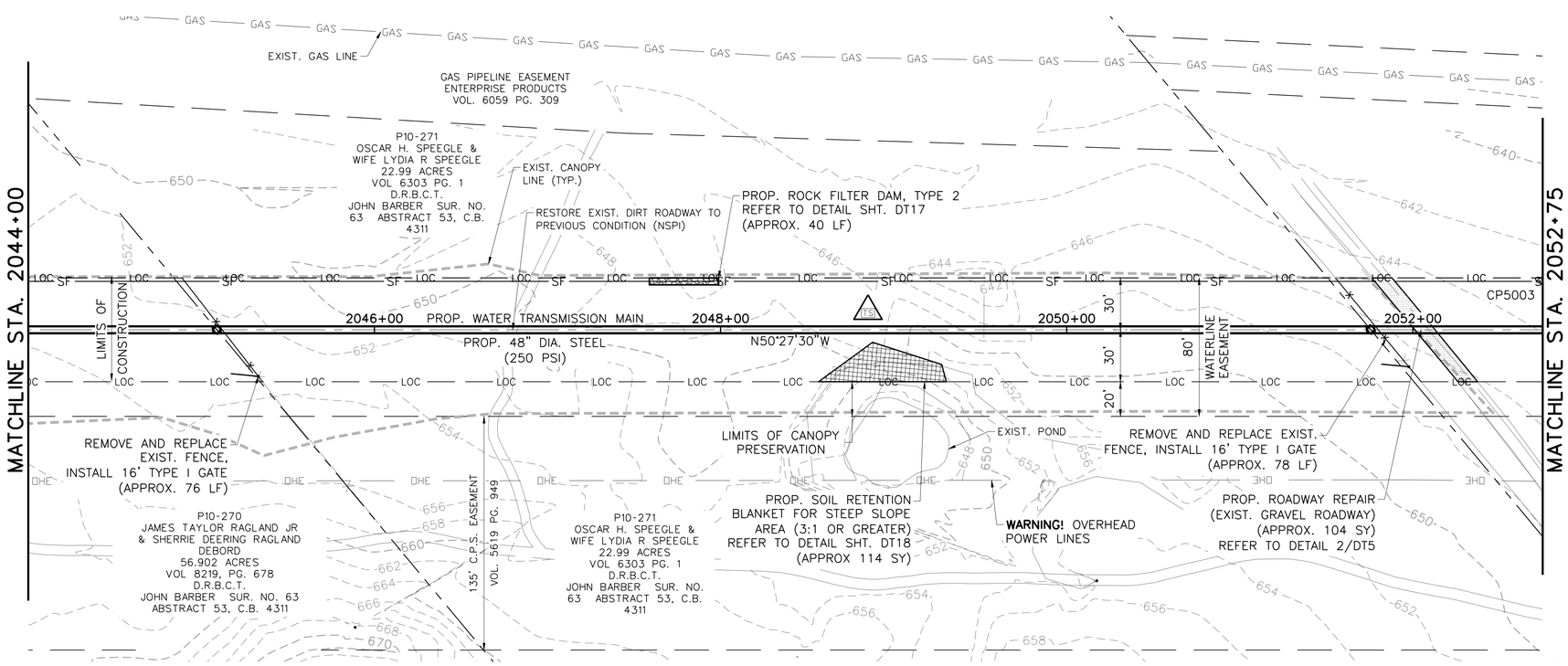
SAN ANTONIO WATER SYSTEM

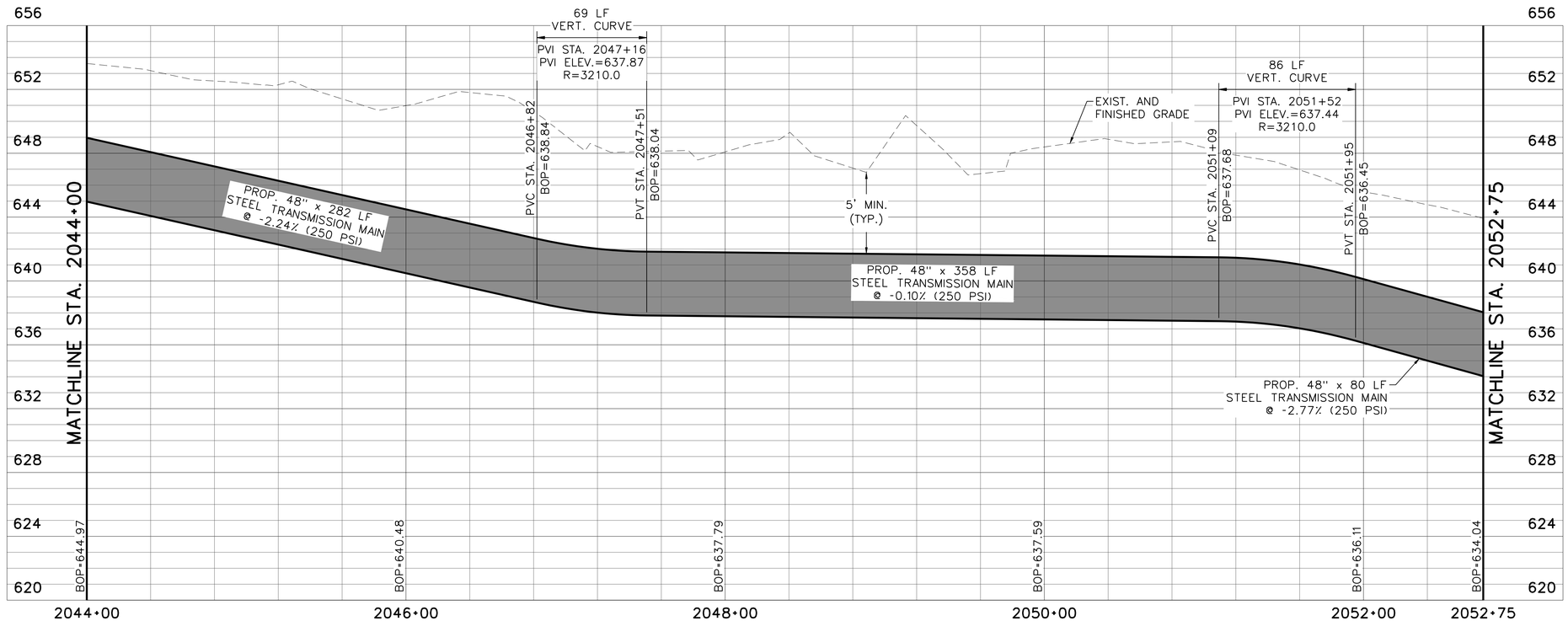
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2034+75 TO STA. 2044+00

Sheet W5

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]

Date: Jul 19, 2020 – 11:44pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL01.dwg




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
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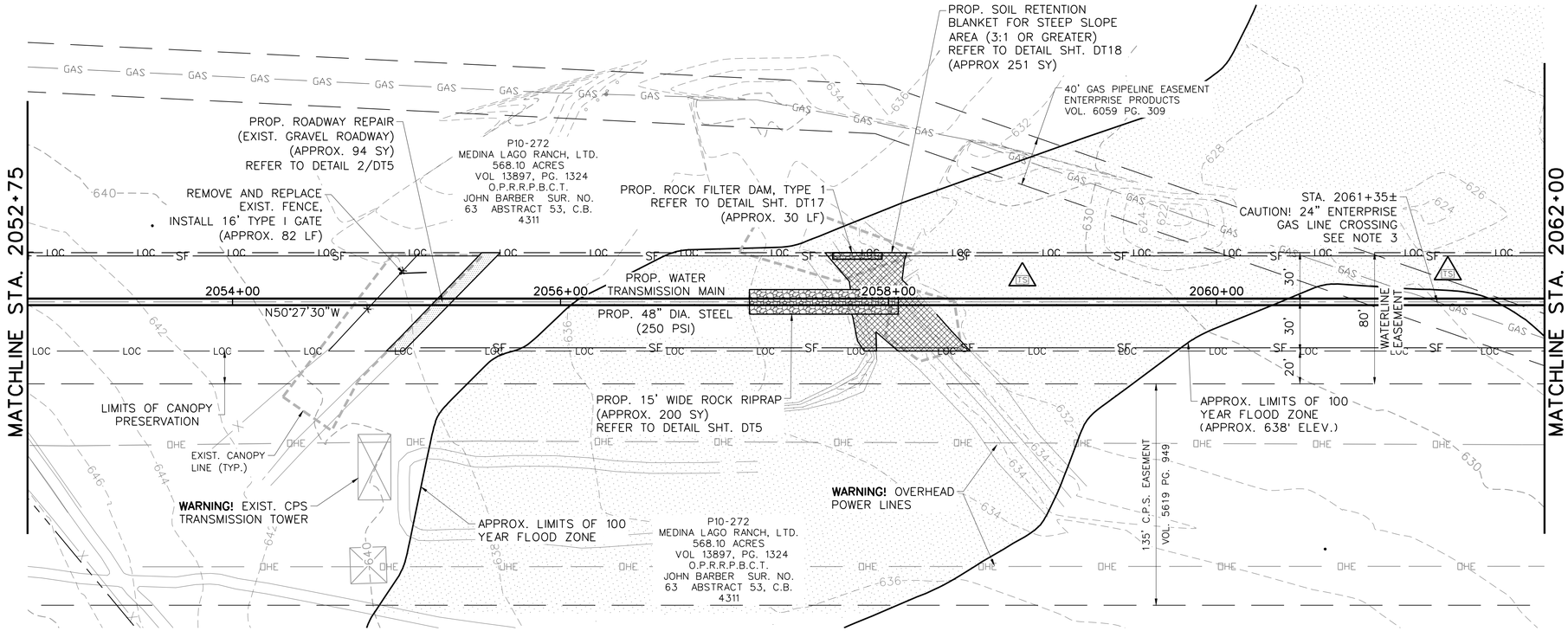
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2044+00 TO STA. 2052+75

Sheet W6

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]

Date: Jul 19, 2020 - 11:45pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL01.dwg



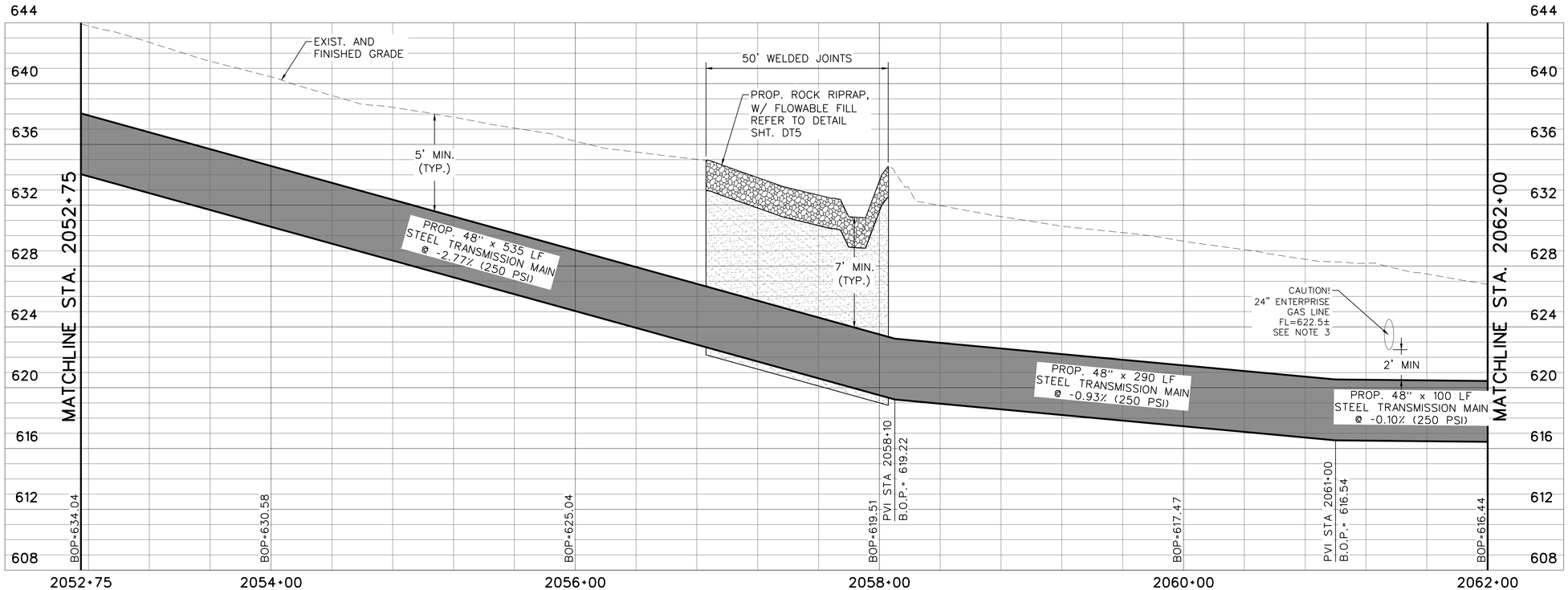

N

0 40' 80'
HORIZONTAL

0 2 4 8
VERTICAL

NOTES:

1. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.
2. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
3. CONTRACTOR SHALL NOTIFY ENTERPRISE 48 HOURS PRIOR TO CROSSING GAS LINE. SEE SHEET G3 FOR CONTACT INFORMATION.




Freese And Nichols, Inc.
Job No.
SWB09391

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'


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San Antonio, Texas 78216
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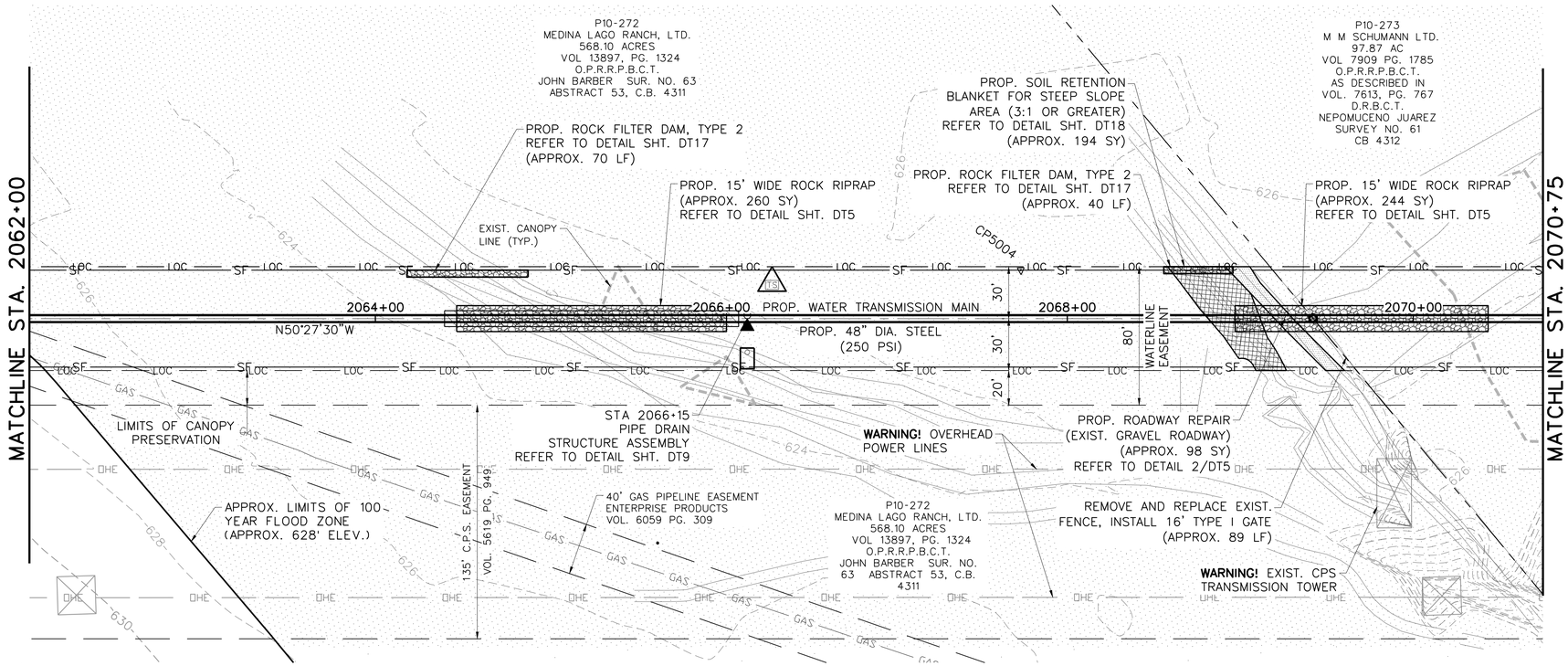

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2052+75 TO STA. 2062+00

Sheet W7

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]

Date: Jul 19, 2020 - 11:46pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL01.dwg



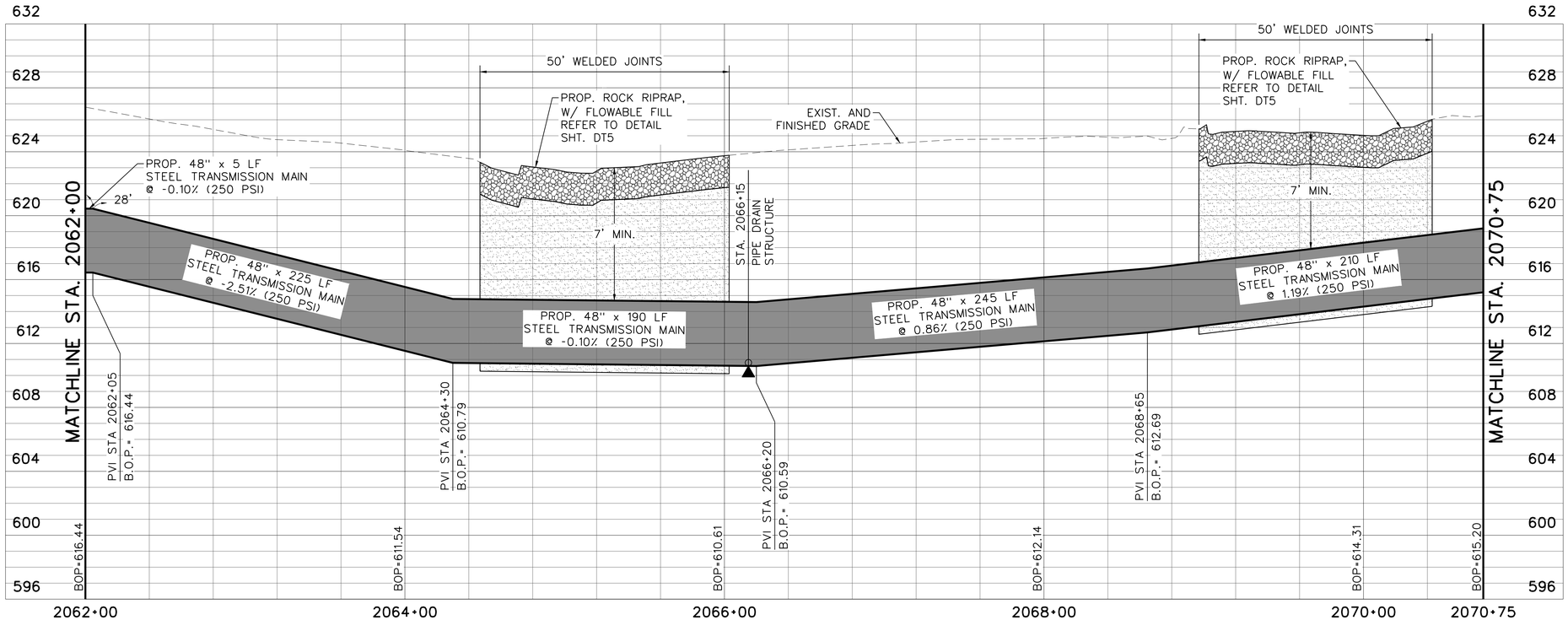

N

0 40' 80'
HORIZONTAL

0 2 4 8
VERTICAL

NOTES:

1. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

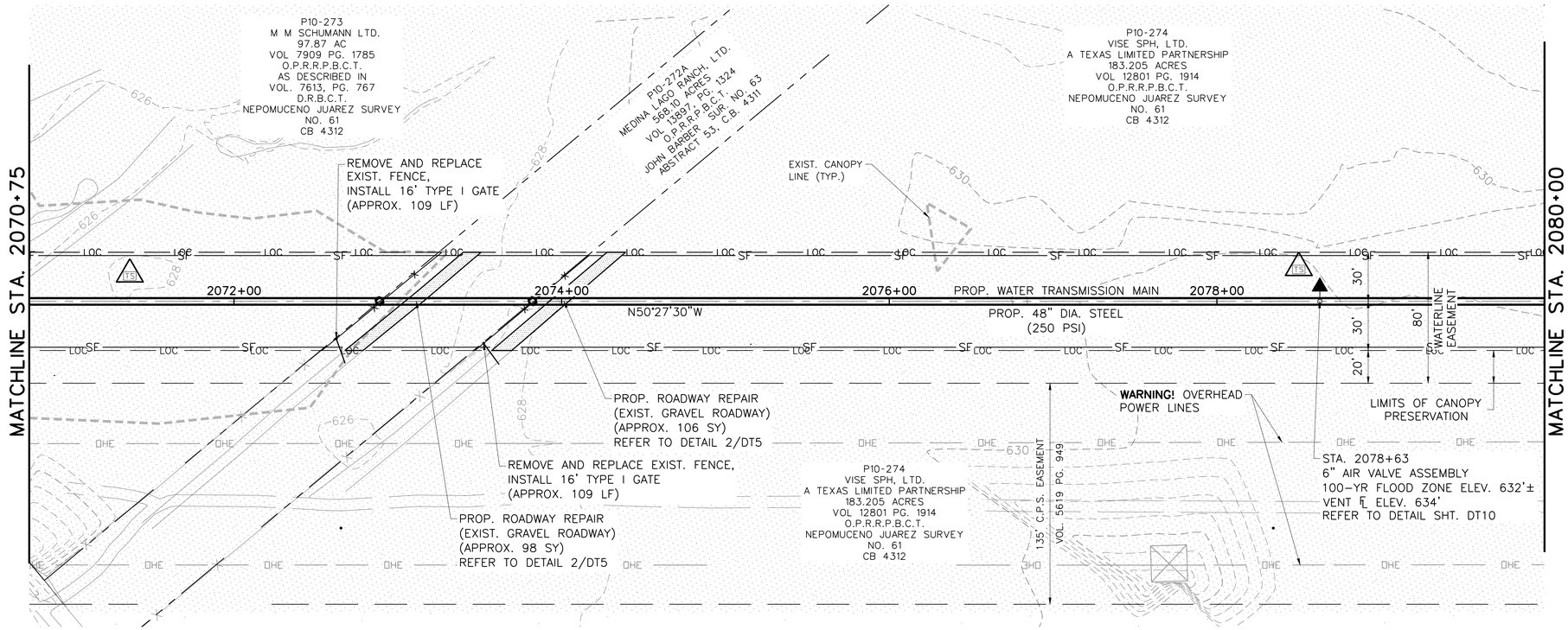

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9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901


SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2062+00 TO STA. 2070+75

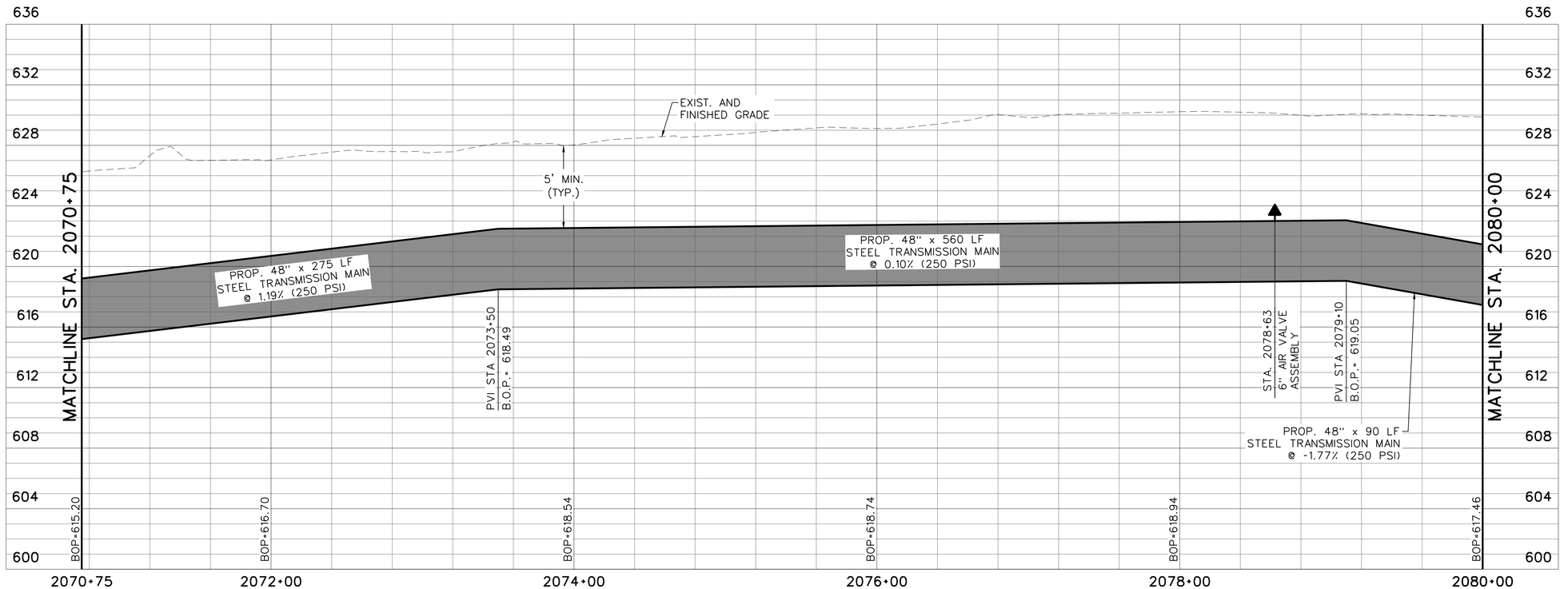
Sheet W8


ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]
Date: Jul 19, 2020 - 11:47pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL01.dwg




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N

0 40' 80'
HORIZONTAL

0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
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Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
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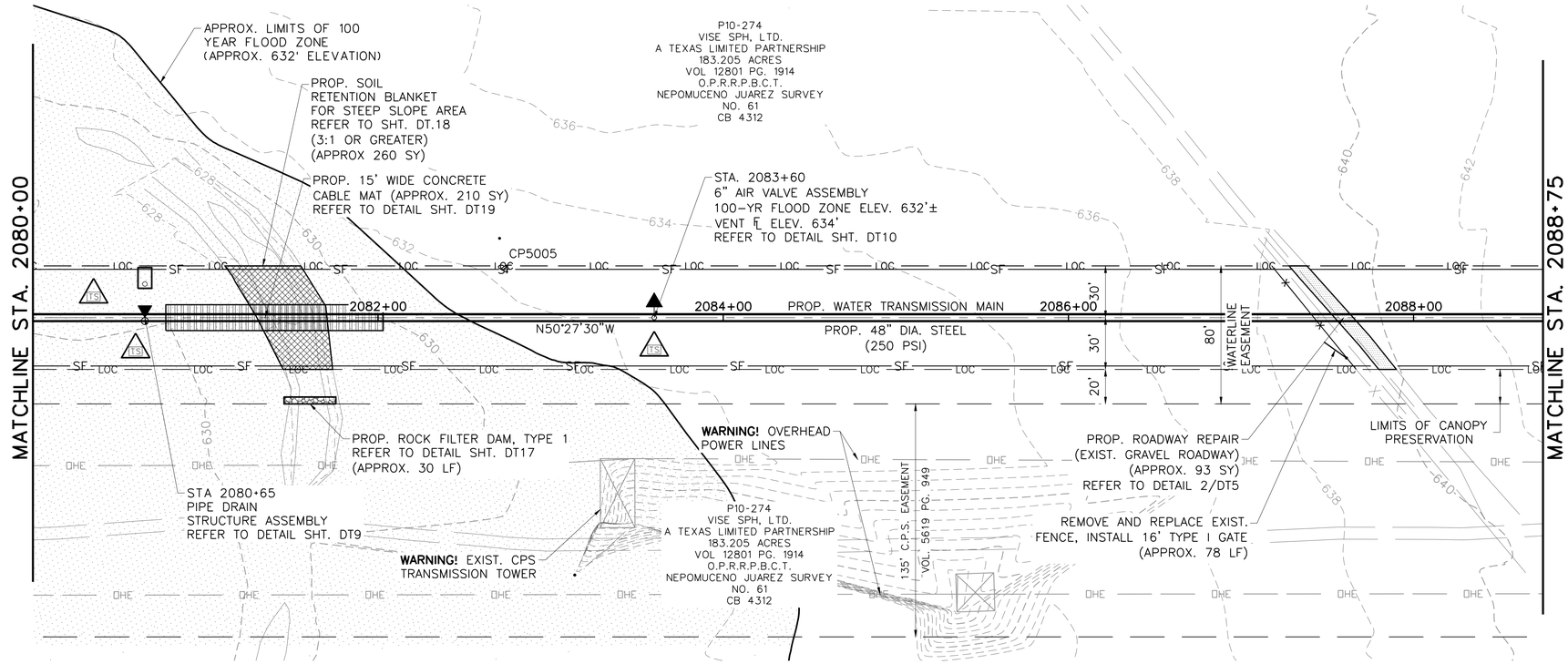
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2070+75 TO STA. 2080+00

Sheet W9

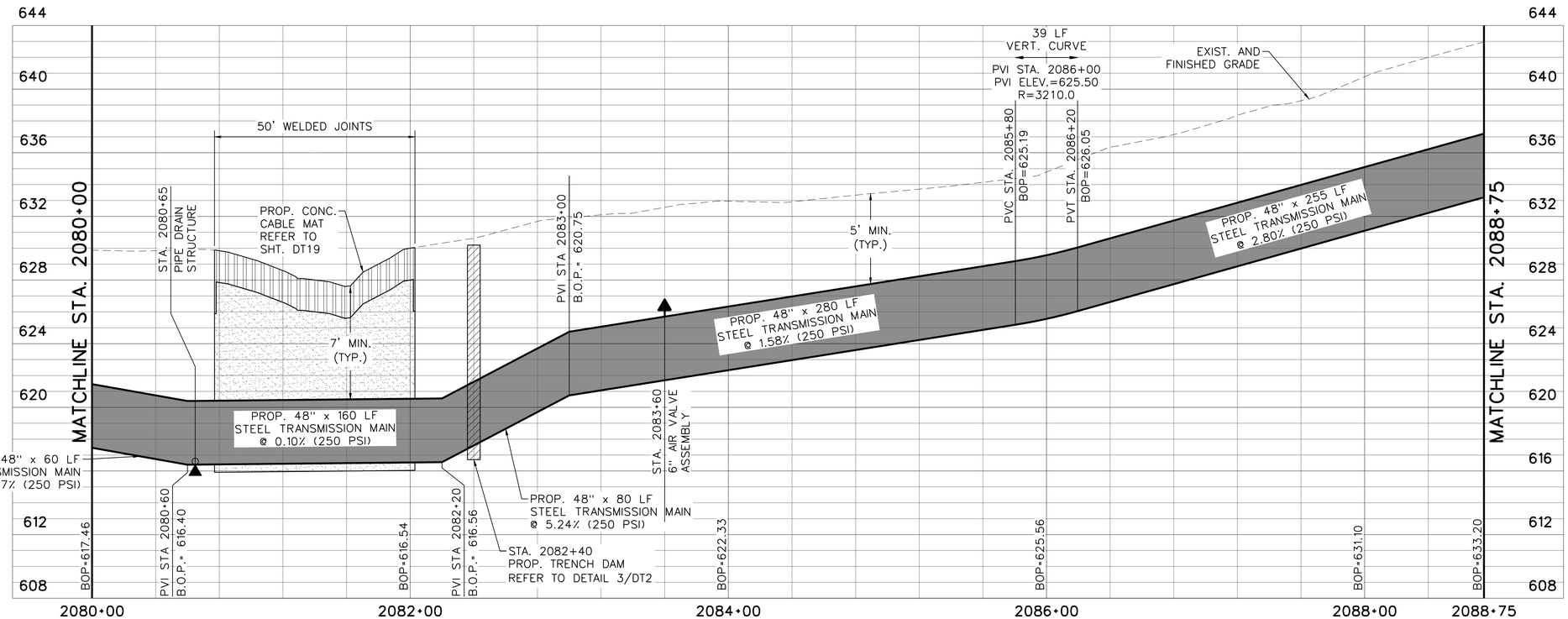
ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]

Date: Jul 19, 2020 - 11:48pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL01.dwg




NOTES:

1. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.
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Freese And Nichols, Inc.
Job No.
SWB09391

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'


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9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
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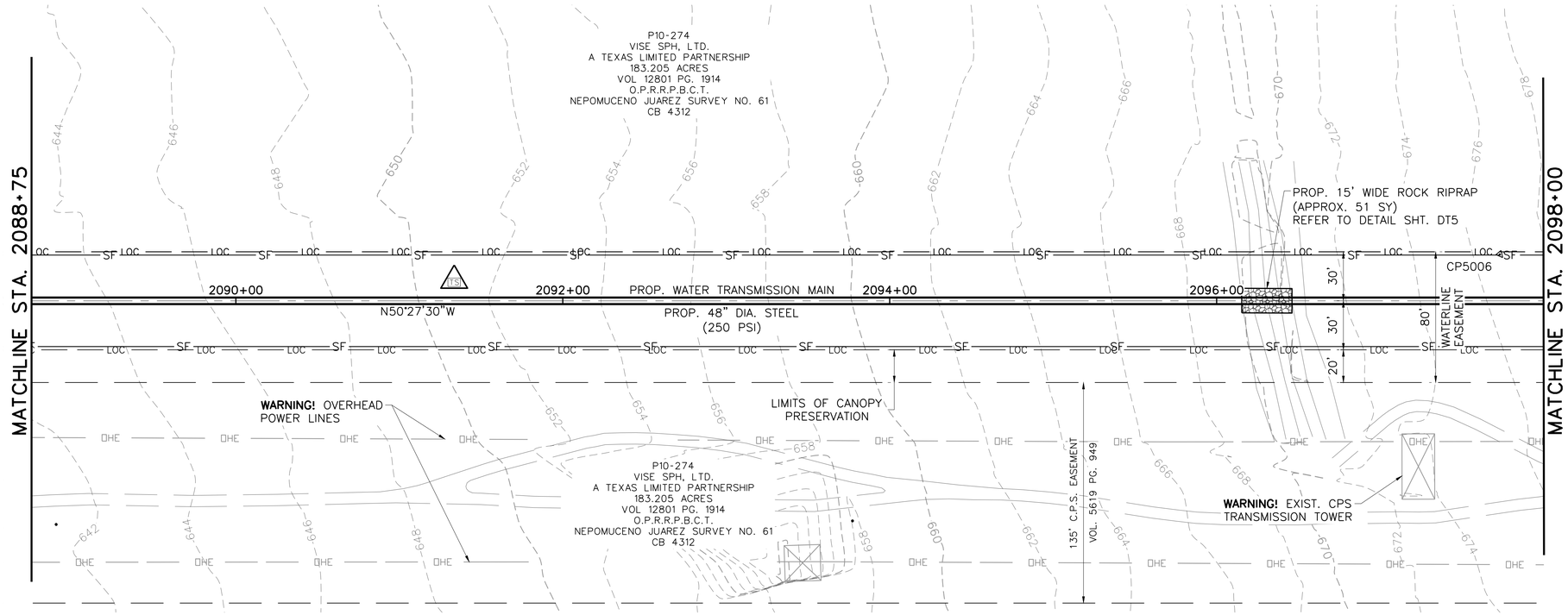

SAN ANTONIO WATER SYSTEM

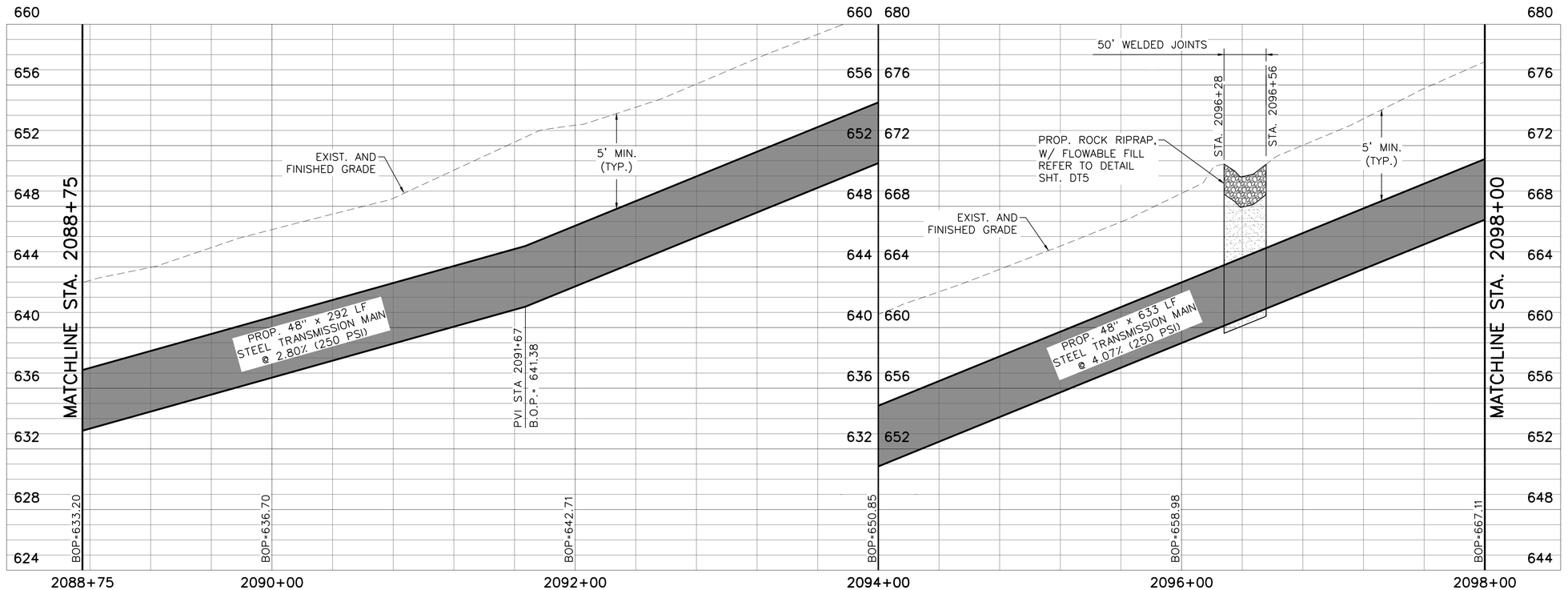
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2080+00 TO STA. 2088+75

Sheet W10

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]

Date: Jul 19, 2020 - 11:49pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL01.dwg




Freese And Nichols, Inc.
Job No.
SWB09391

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-3900
Fax (210) 298-3901

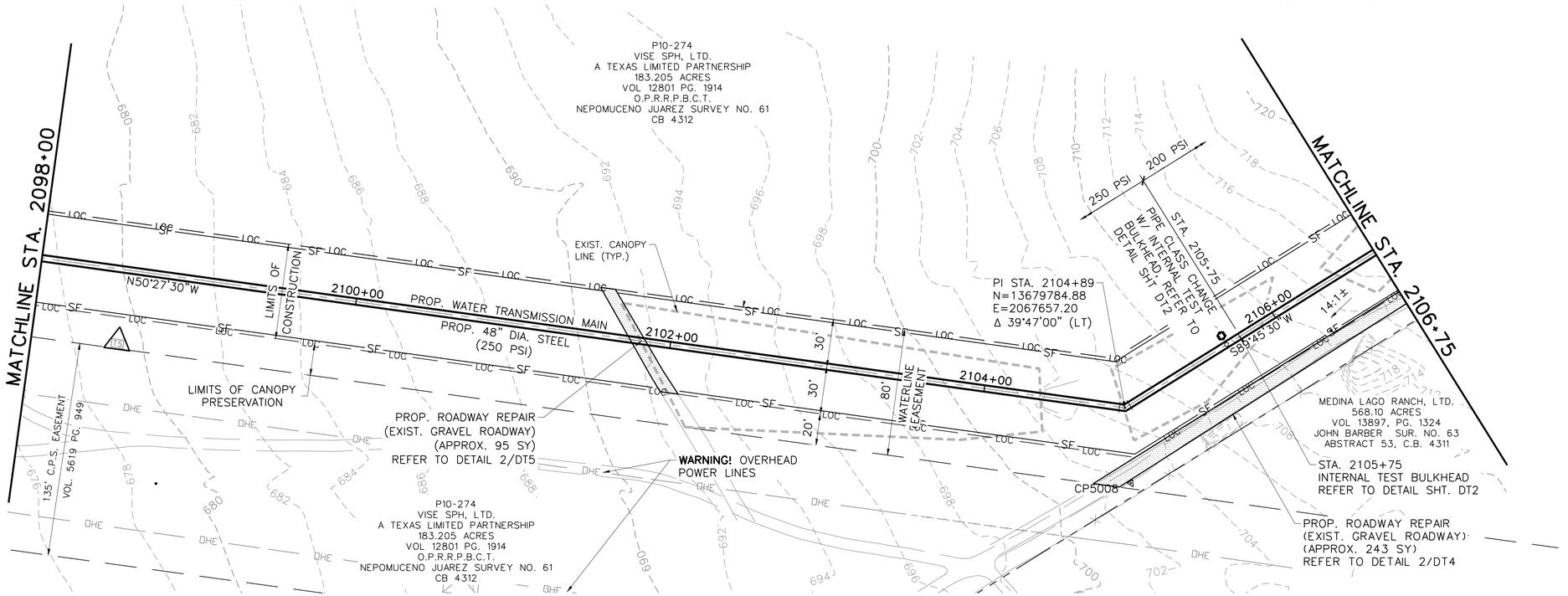
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2088+75 TO STA. 2098+00

Sheet W11

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]

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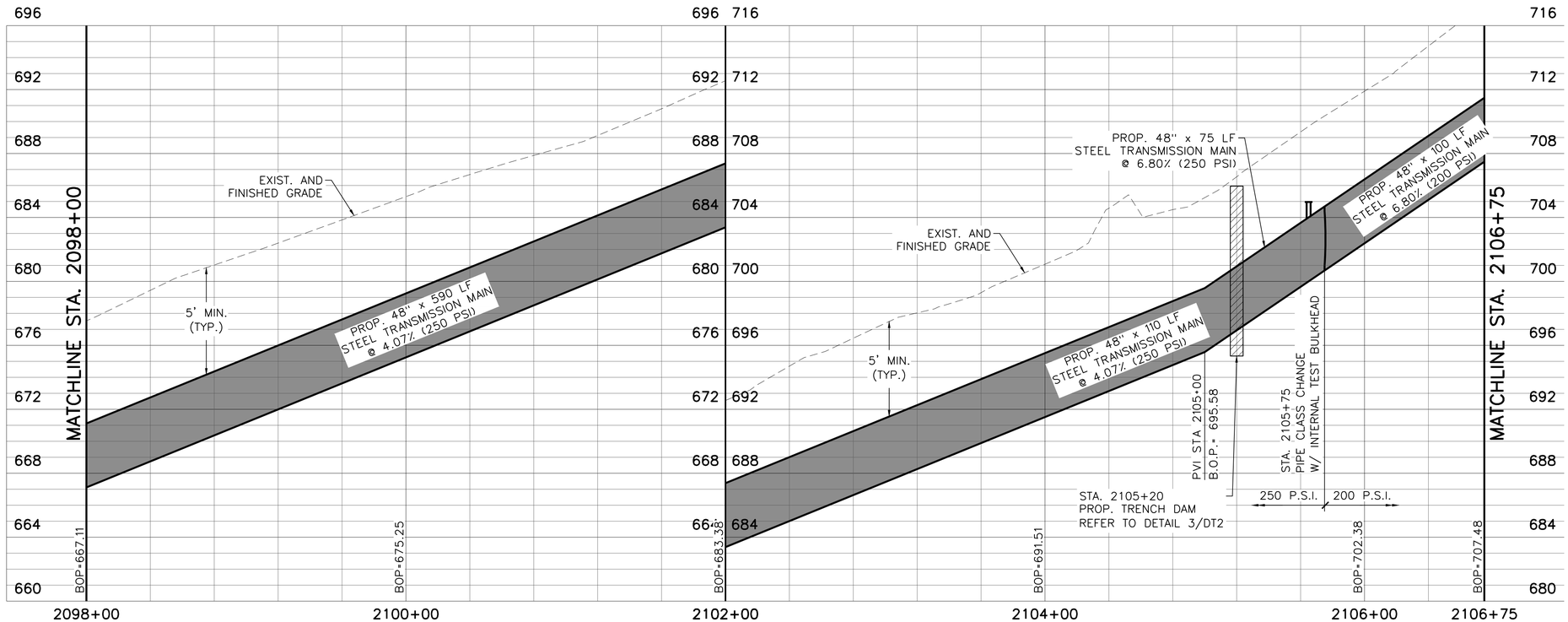

N

0 40' 80'
HORIZONTAL

0 2 4 8
VERTICAL

NOTES:

1. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

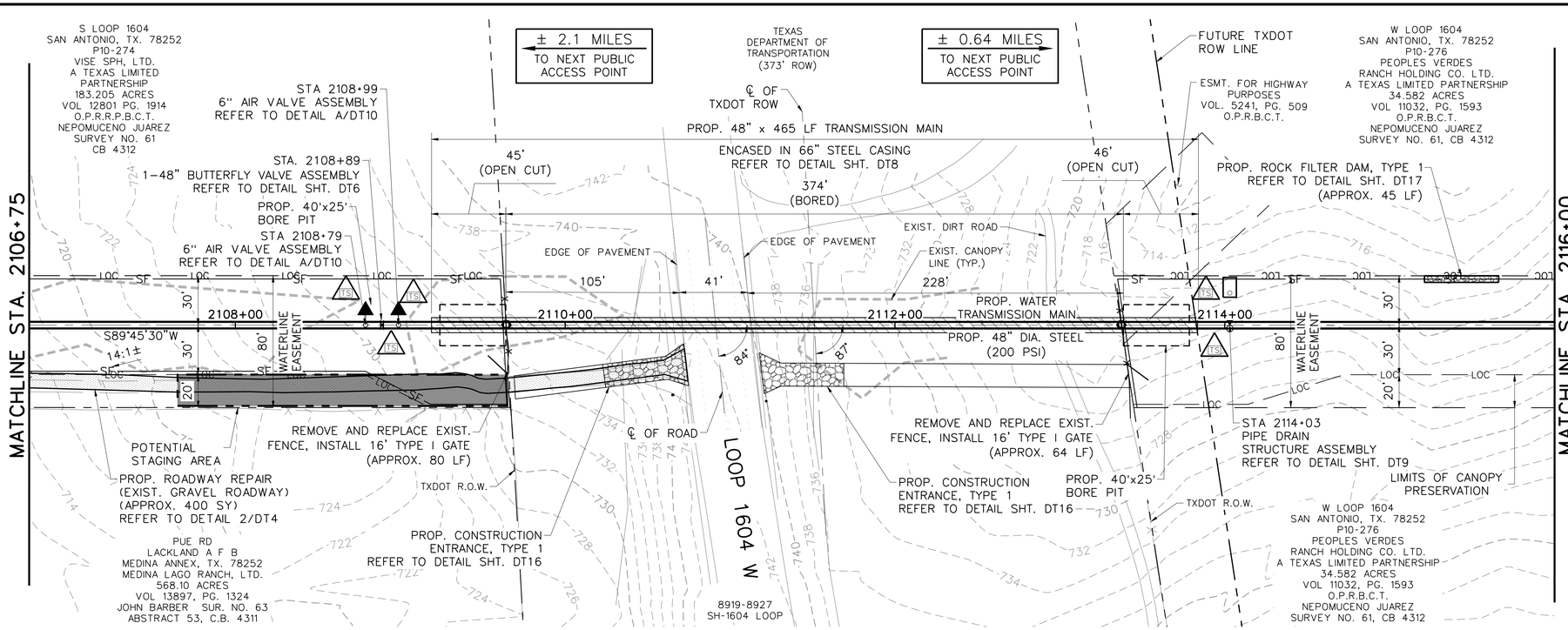
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-3900
Fax (210) 298-3001

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2098+00 TO STA. 2106+75

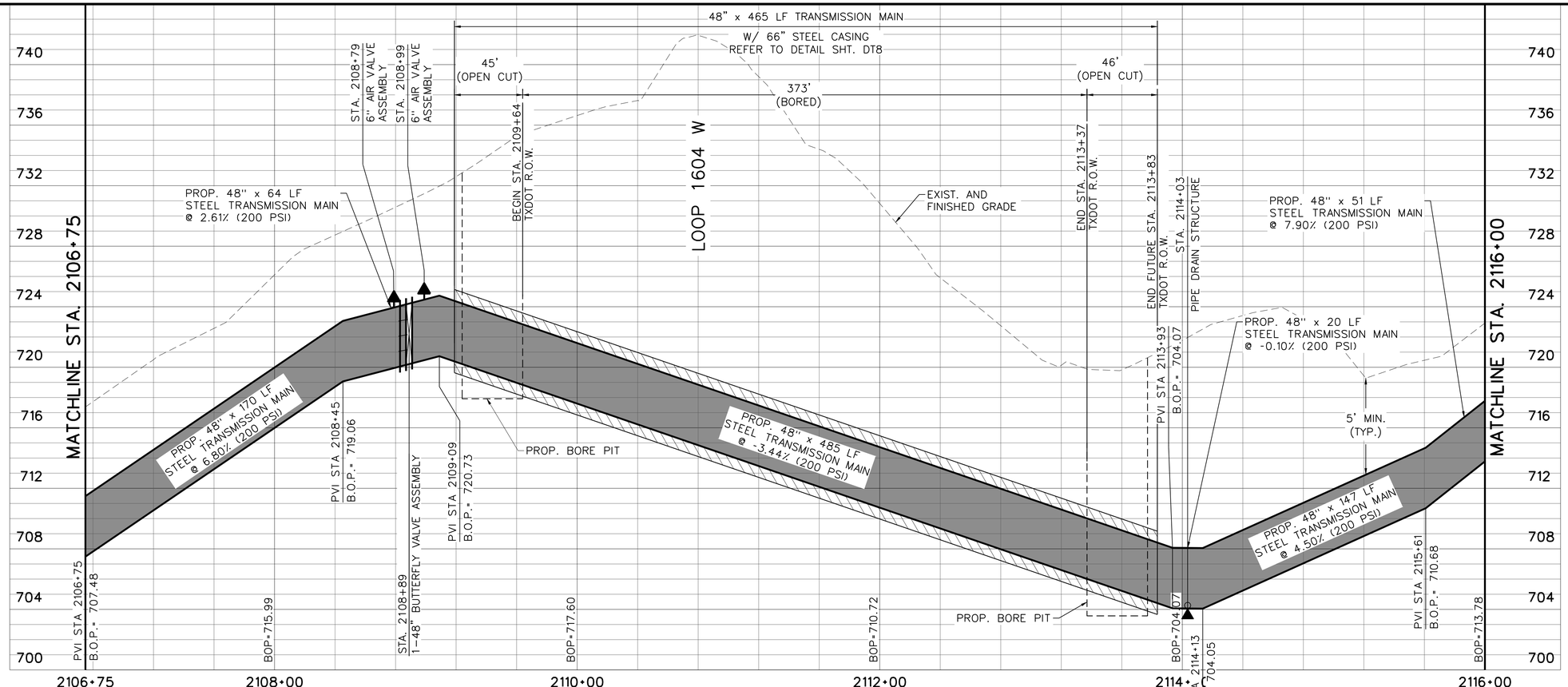
Sheet W12

ACAD CIVIL 3D 2011 User: DDH [SWB09391][SASRV2]
Date: Jul 19, 2020 - 11:51pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL01.dwg




NOTES:

1. CONTRACTOR TO VERIFY GROUND PROFILE ELEVATION AND ENSURE MINIMUM 60" OF COVER OVER CASING PIPE.
2. CONTRACTOR SHALL NOTIFY TXDOT PRIOR TO STARTING WORK. SEE SHEET G-3 FOR CONTACT INFORMATION.
3. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN TXDOT ROW.
4. CONTRACTOR TO PROVIDE PROVISIONS TO PROTECT BORE PITS AND EQUIPMENT FROM ADVERSE EFFECTS OF STORM WATER RUNOFF.
5. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.




Freese And Nichols, Inc.
Job No.
SWB09391

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

STATE OF TEXAS ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

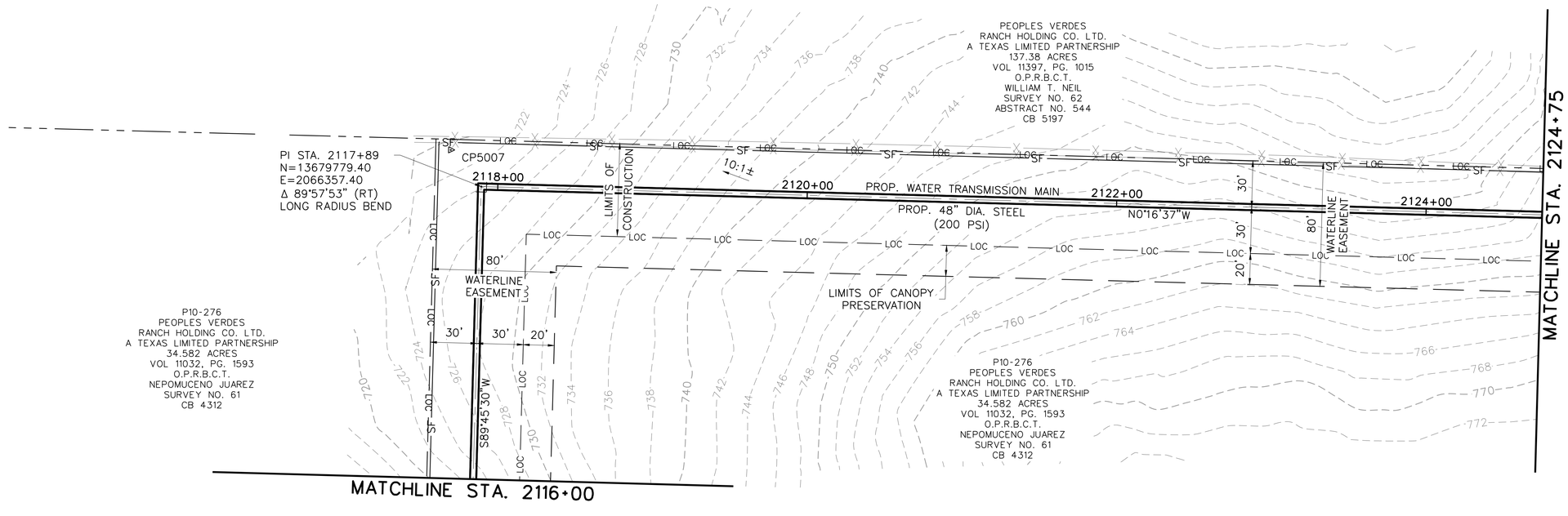
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone - (210) 298-3900
Fax - (210) 298-3901

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2106+75 TO STA. 2116+00

Sheet W13

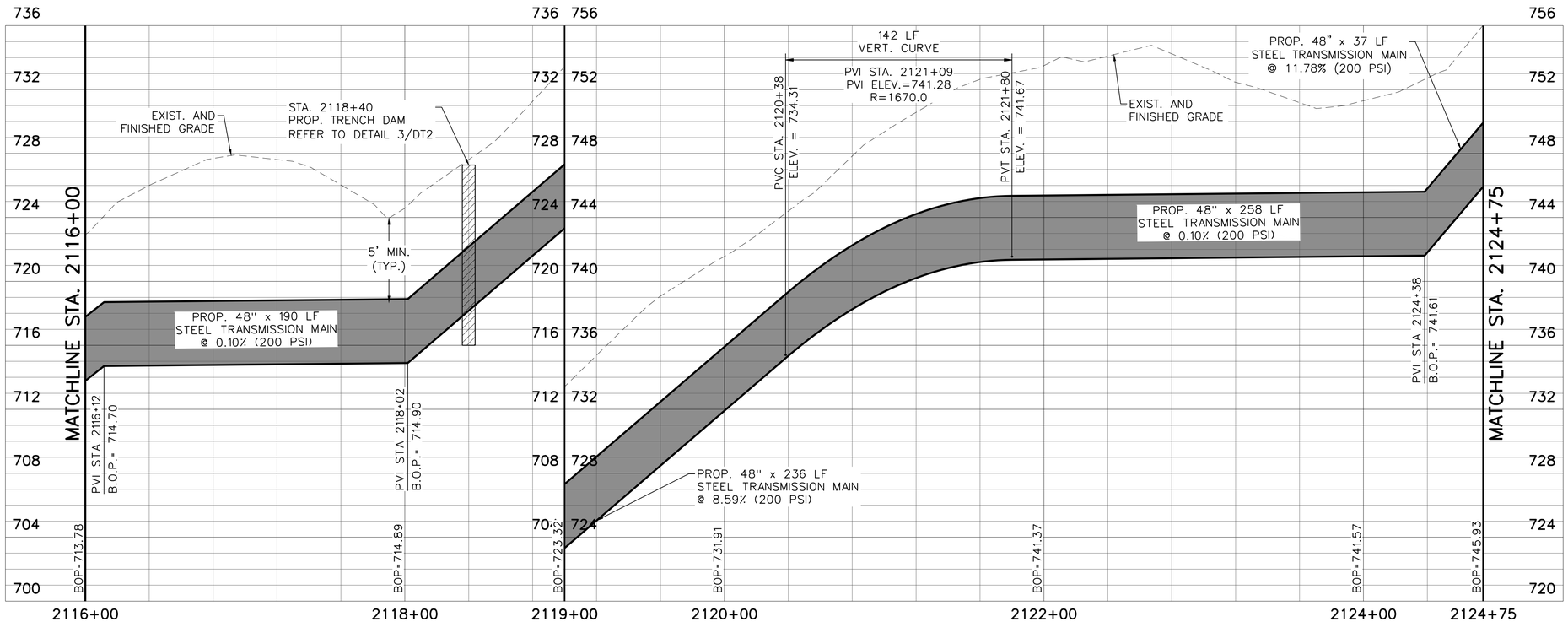
ACAD CIVIL 3D 2011 User: DDH [SWB09391][SASRV2]
Date: Jul 19, 2020 - 11:52pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL01.dwg




0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

NOTES:

1. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.




| No. | Date | Revisions | App. |
|---|---|---|---|
| | Texas Registered Engineering Firm F-2144 Freese and Nichols, Inc. | | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
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Scale:
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VERTICAL SCALE: 1"=4'

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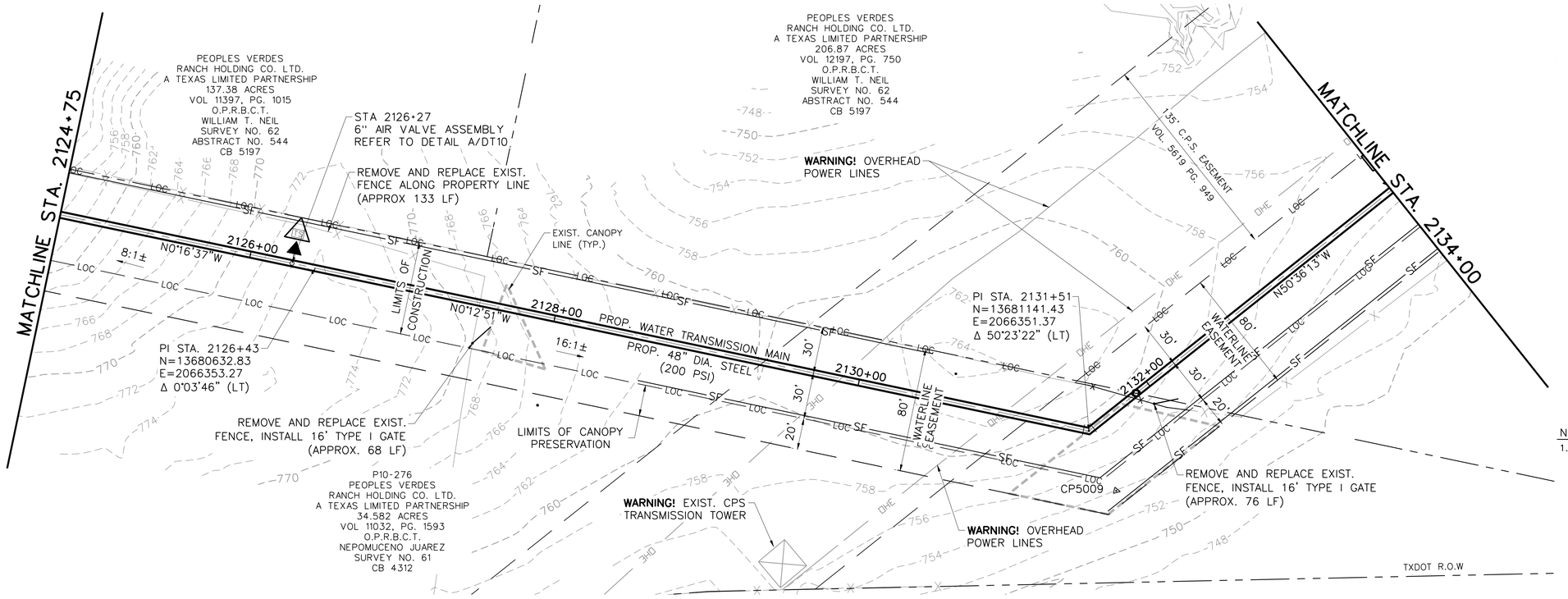
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2116+00 TO STA. 2124+75

Sheet W14

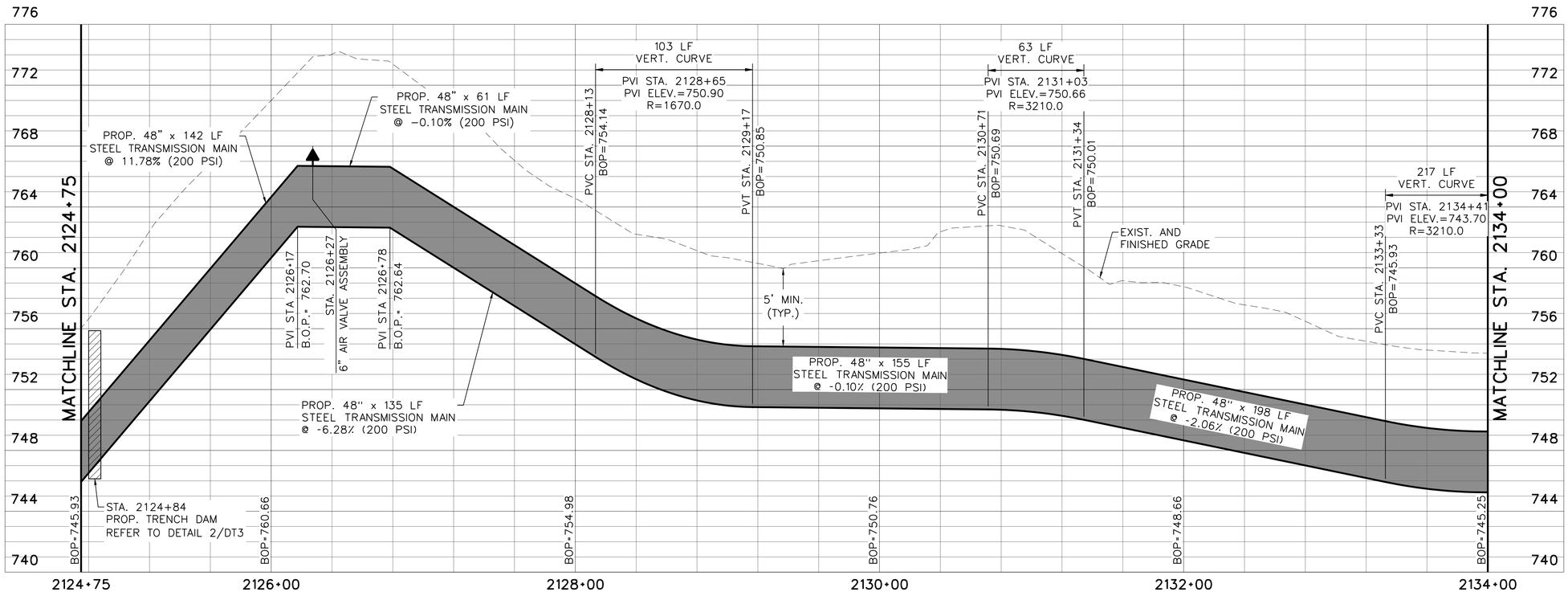
ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]

Date: Jul 19, 2020 - 11:52pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL01.dwg




NOTES:

1. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.




Freese And Nichols, Inc.
Job No.
SWB09391

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
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Scale: HORIZONTAL SCALE: 1"=40'
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San Antonio, Texas 78216
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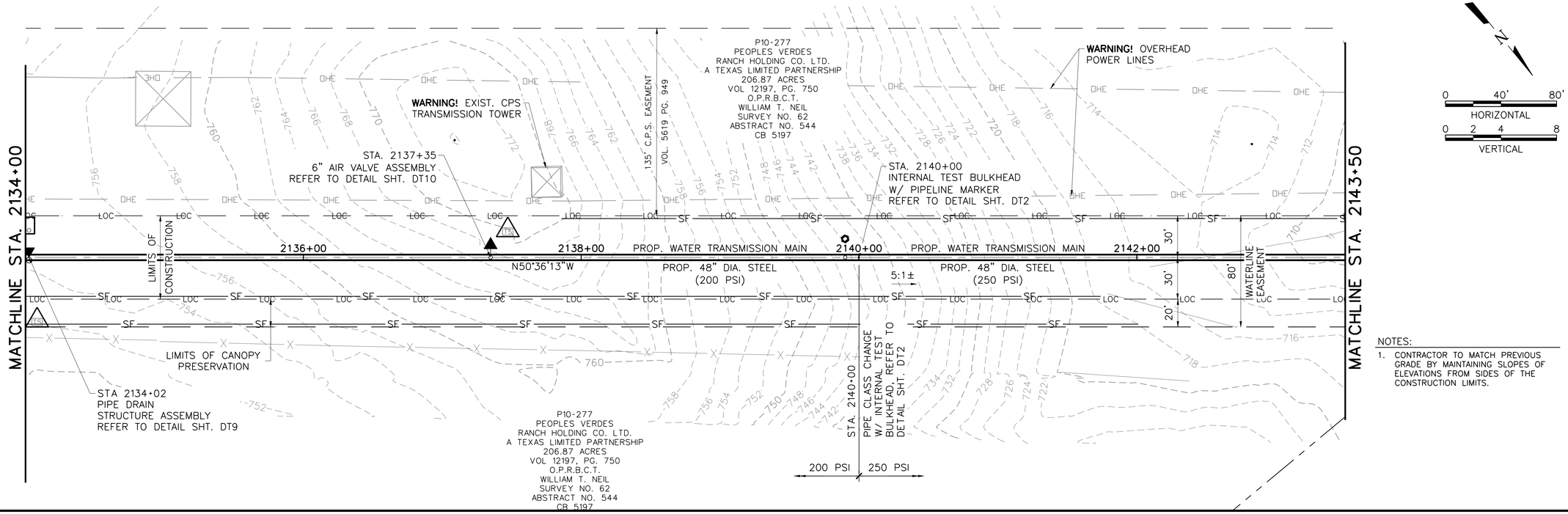
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2124+75 TO STA. 2134+00

Sheet W15

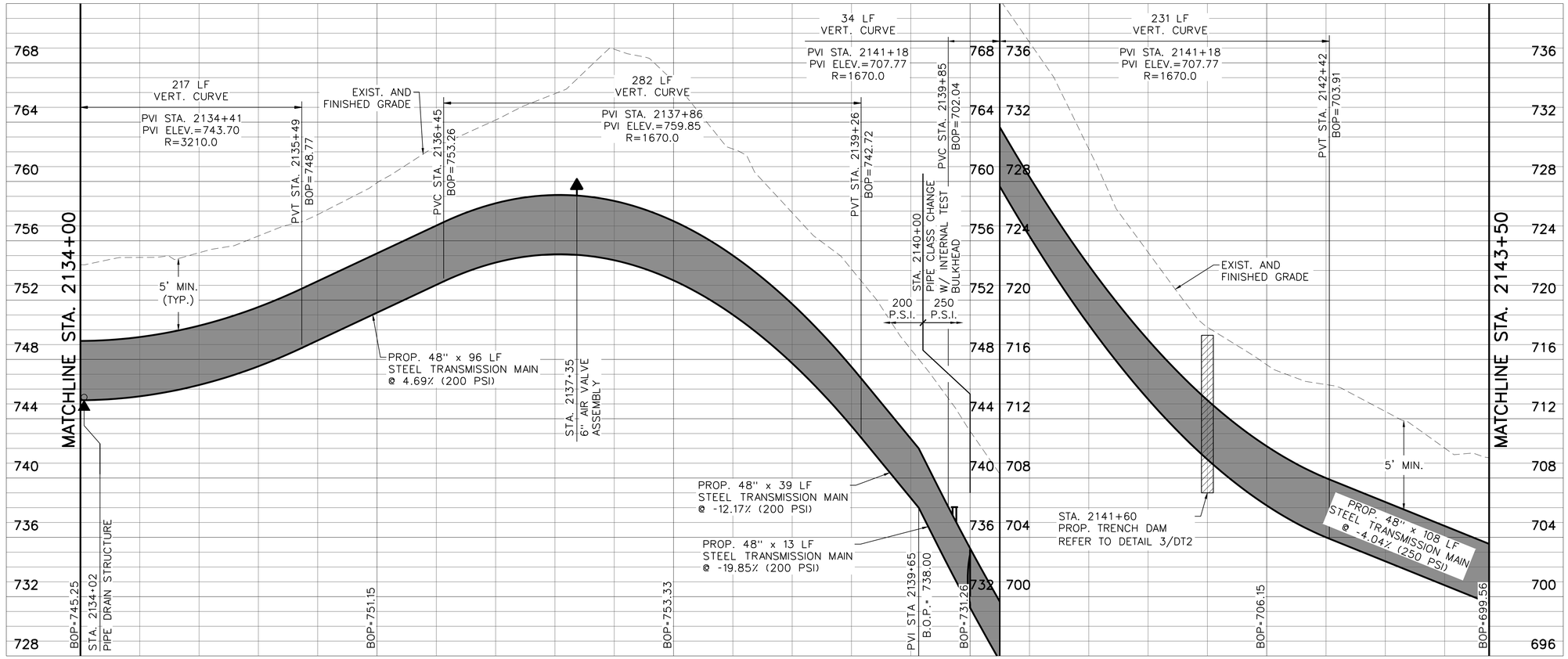
ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]

Date: Jul 19, 2020 - 11:53pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL01.dwg




NOTES:

1. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.




| App. | No. | Date | Revisions |
|---|---|---|---|

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-5900
Fax (210) 298-5901

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2134+00 TO STA. 2143+50

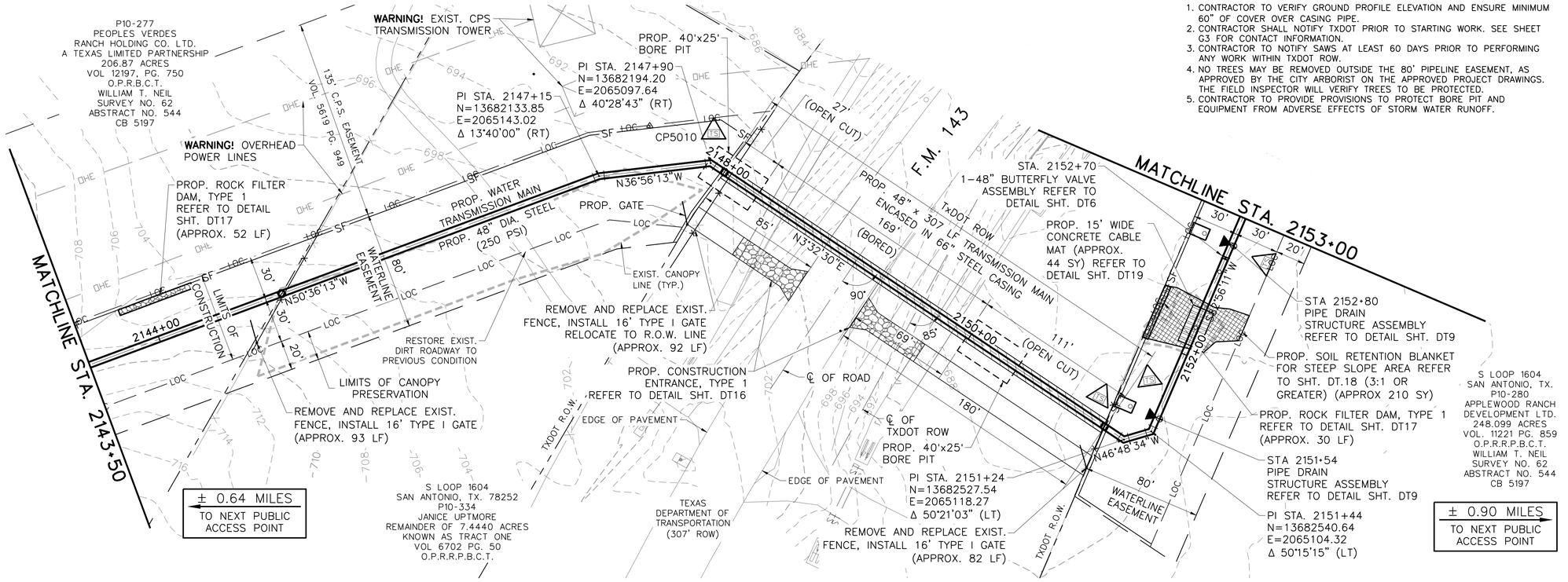
Sheet W16

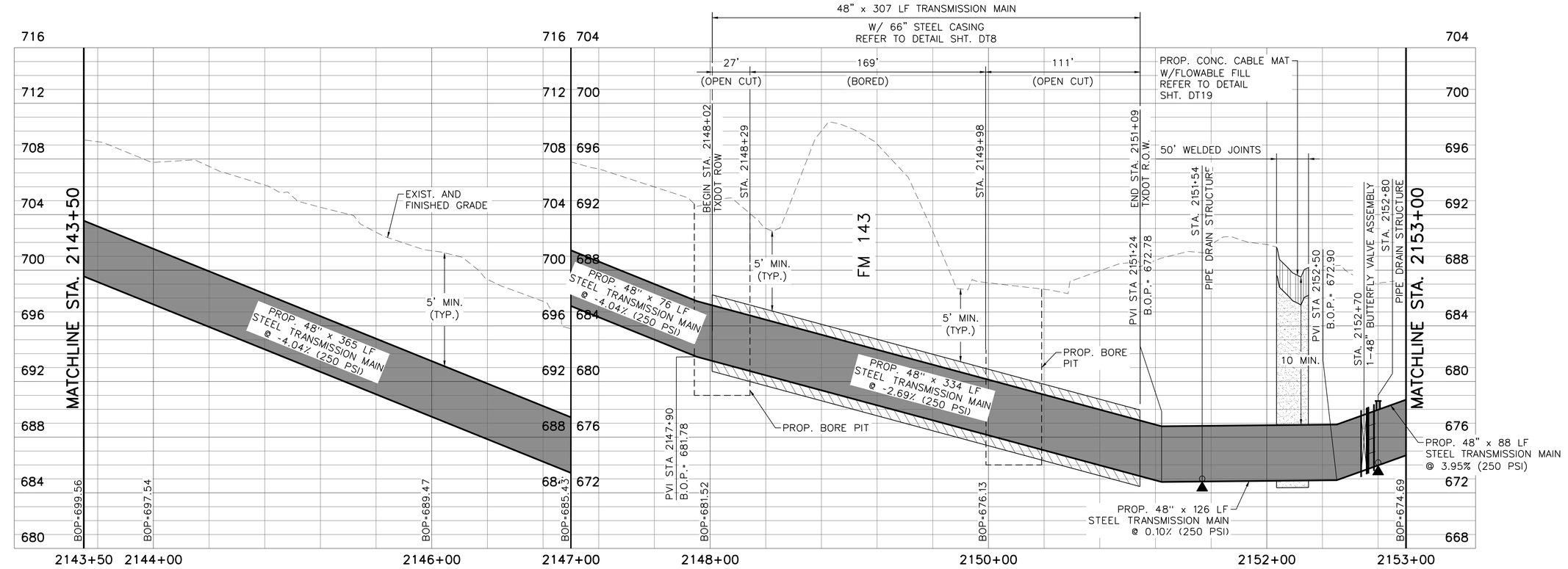
ACAD CIVIL 3D 2011 User: DDH [SWB09391][SASRV2]

Date: Jul 19, 2020 – 11:54pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL01.dwg

NOTES:

1. CONTRACTOR TO VERIFY GROUND PROFILE ELEVATION AND ENSURE MINIMUM 60" OF COVER OVER CASING PIPE.
2. CONTRACTOR SHALL NOTIFY TXDOT PRIOR TO STARTING WORK. SEE SHEET G3 FOR CONTACT INFORMATION.
3. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN TXDOT ROW.
4. NO TREES MAY BE REMOVED OUTSIDE THE 80' PIPELINE EASEMENT, AS APPROVED BY THE CITY ARBORIST ON THE APPROVED PROJECT DRAWINGS. THE FIELD INSPECTOR WILL VERIFY TREES TO BE PROTECTED.
5. CONTRACTOR TO PROVIDE PROVISIONS TO PROTECT BORE PIT AND EQUIPMENT FROM ADVERSE EFFECTS OF STORM WATER RUNOFF.




Freese And Nichols, Inc.
Job No.
SWB09391

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

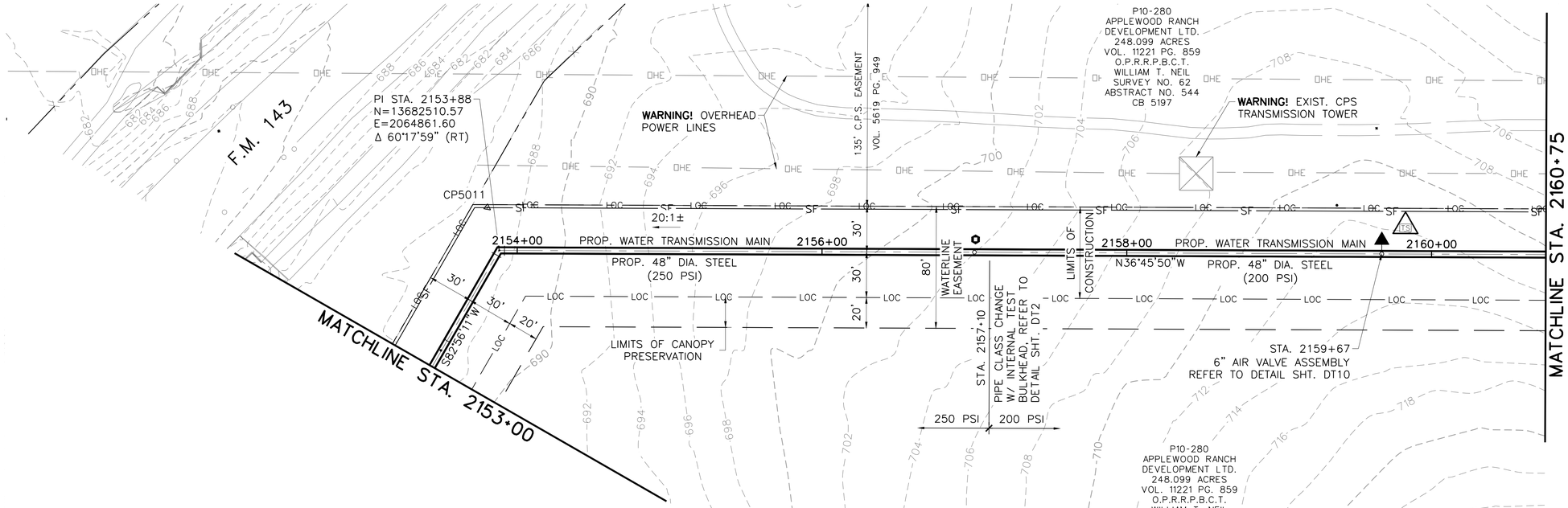

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901


SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2143+50 TO STA. 2153+00

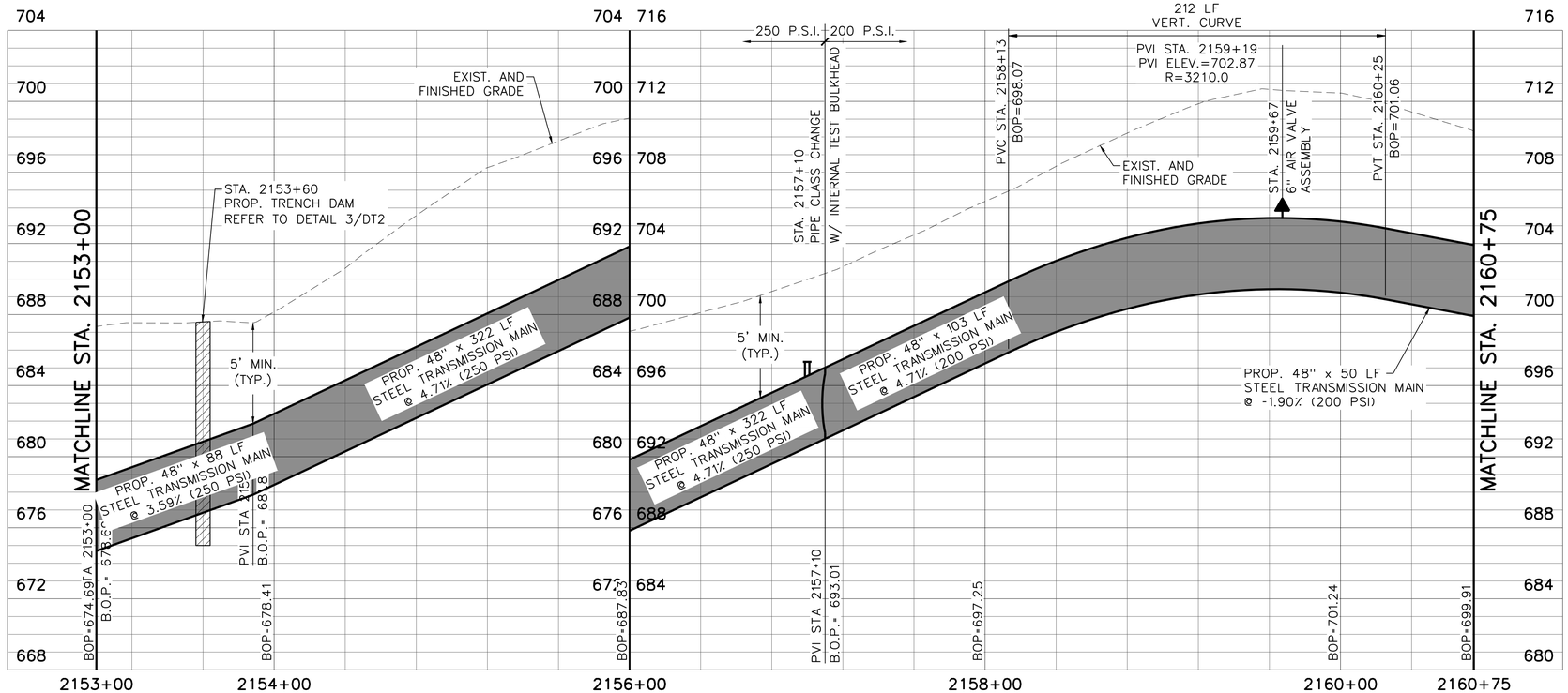
Sheet W17


ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]
Date: Jul 19, 2020 - 11:56pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL01.dwg




NOTES:

1. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.




Freese And Nichols, Inc.
Job No.
SWB09391

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-5900
Fax (210) 298-5901

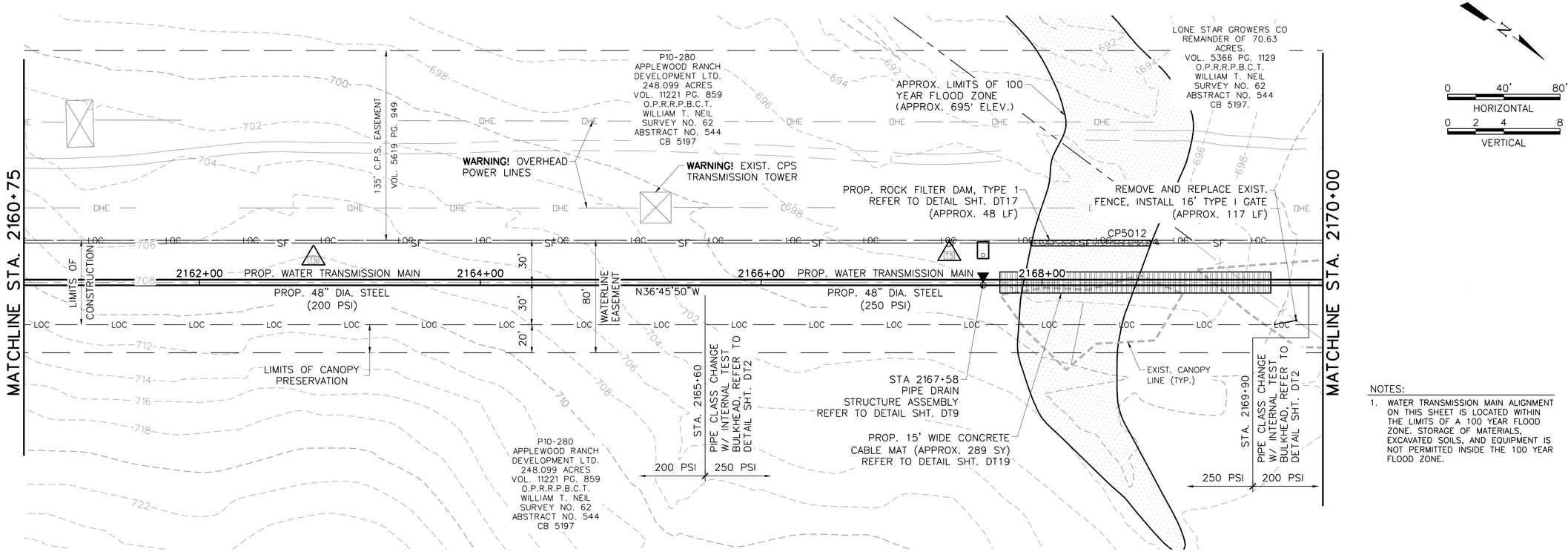
SAN ANTONIO
WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2153+00 TO STA. 2160+75

Sheet W18

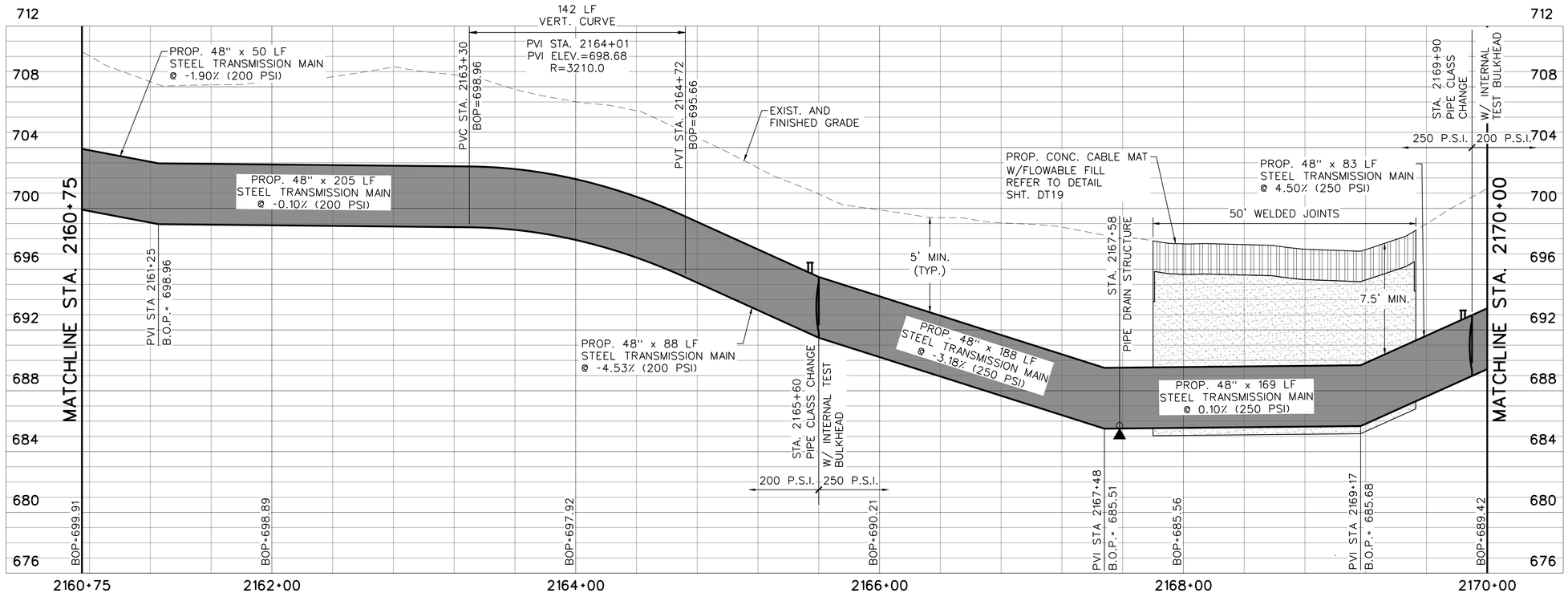
ACAD CIVIL 3D 2011 User: DDH [SWB09391][SASRV2]

Date: Jul 19, 2020 - 11:57pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL01.dwg




NOTES:

1. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc. Job No.
SWB09391

STATE OF TEXAS ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER 07/20/20

0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

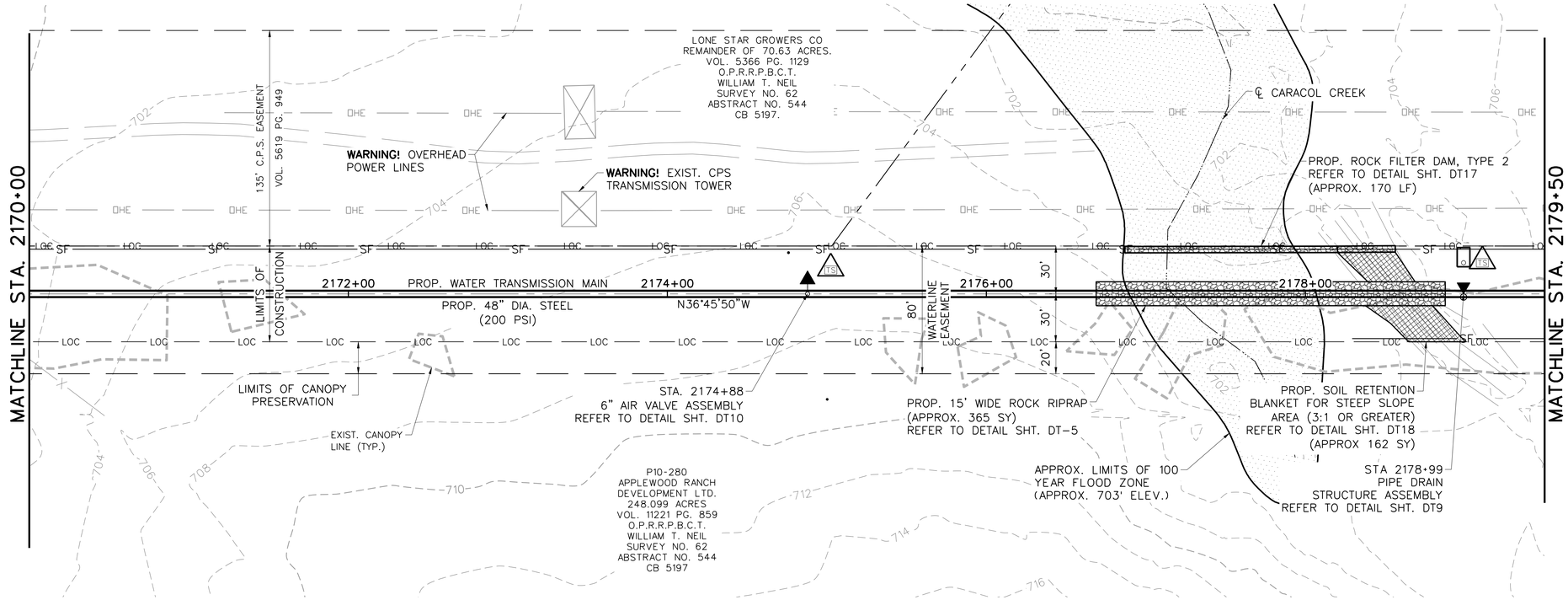
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-9900
Fax (210) 298-9901

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2160+75 TO STA. 2170+00

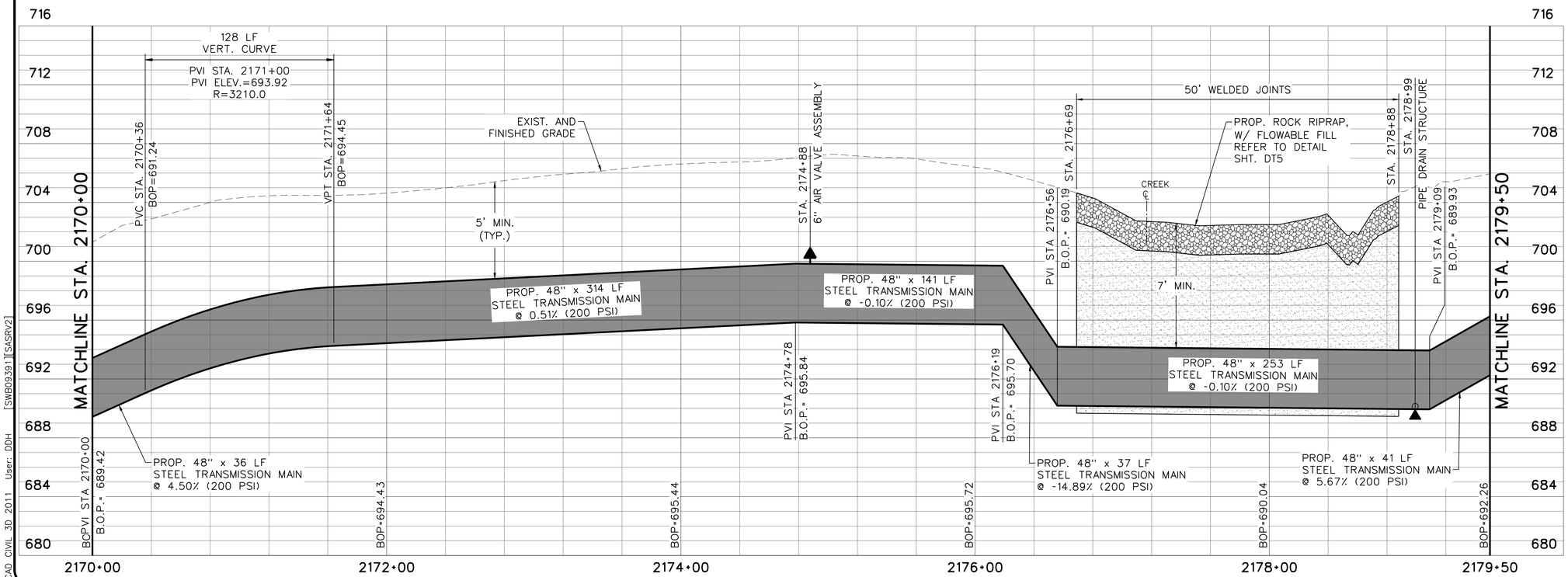
Sheet W19

ACAD CIVIL 3D 2011 User: DDH [SWB09391][SASRV2]
Date: Jul 19, 2020 - 11:58pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL01.dwg




NOTES:

1. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

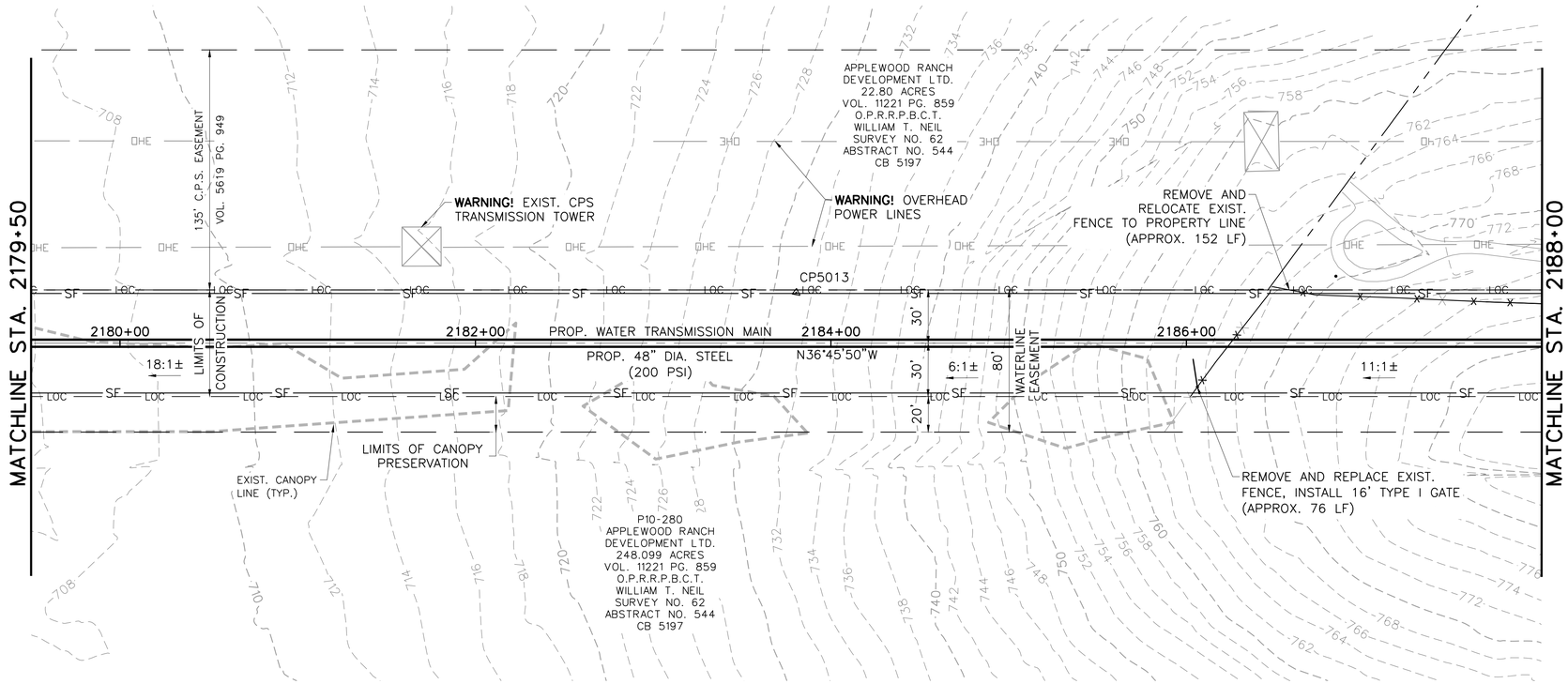
SAN ANTONIO WATER SYSTEM

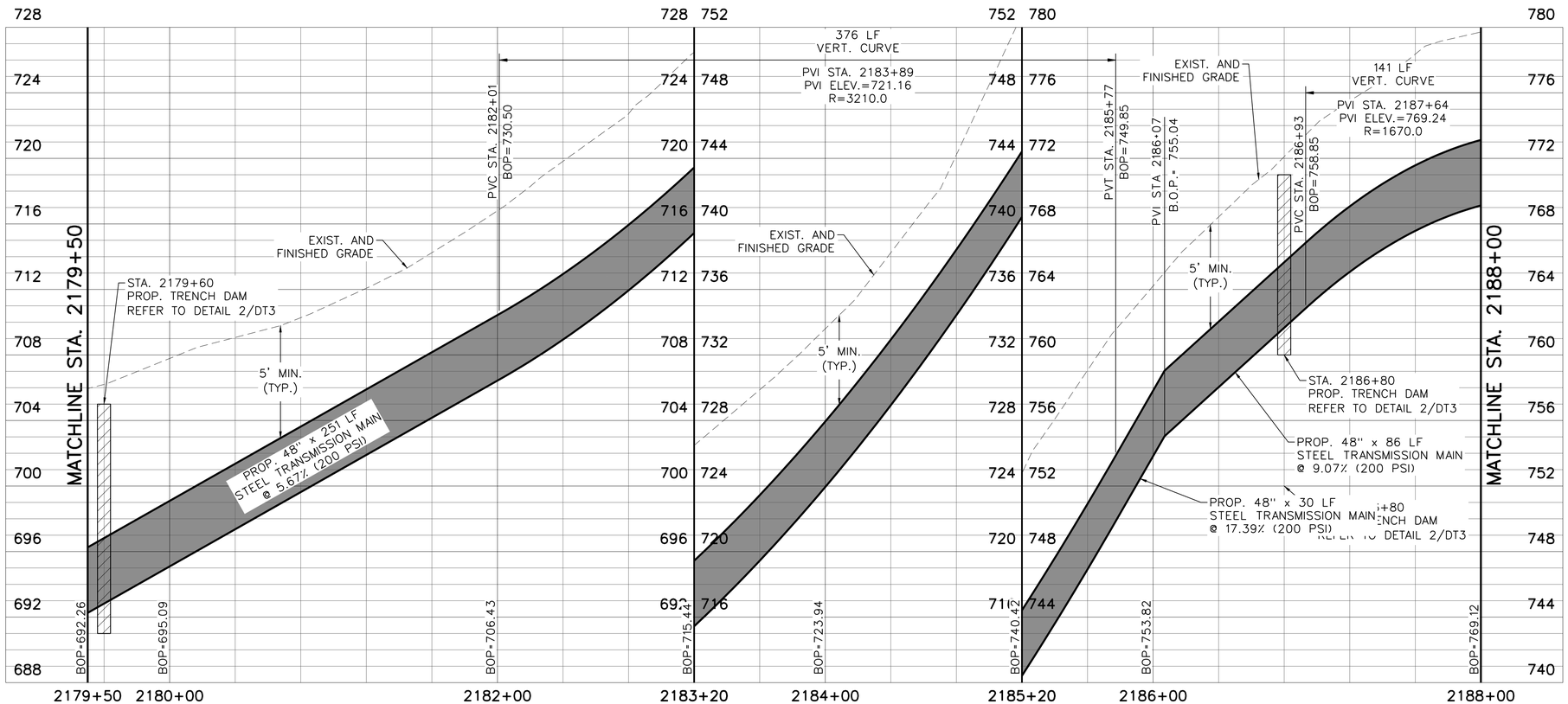
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2170+00 TO STA. 2179+50

Sheet W20

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]

Date: Jul 19, 2020 - 11:58pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL01.dwg




NOTES:

1. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
2. CONTRACTOR SHALL REPAIR ABANDONED ROAD AS NEEDED FOR CONSTRUCTION AND INSPECTION ACTIVITIES. NO SEPARATE PAY.
3. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.

0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER
07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

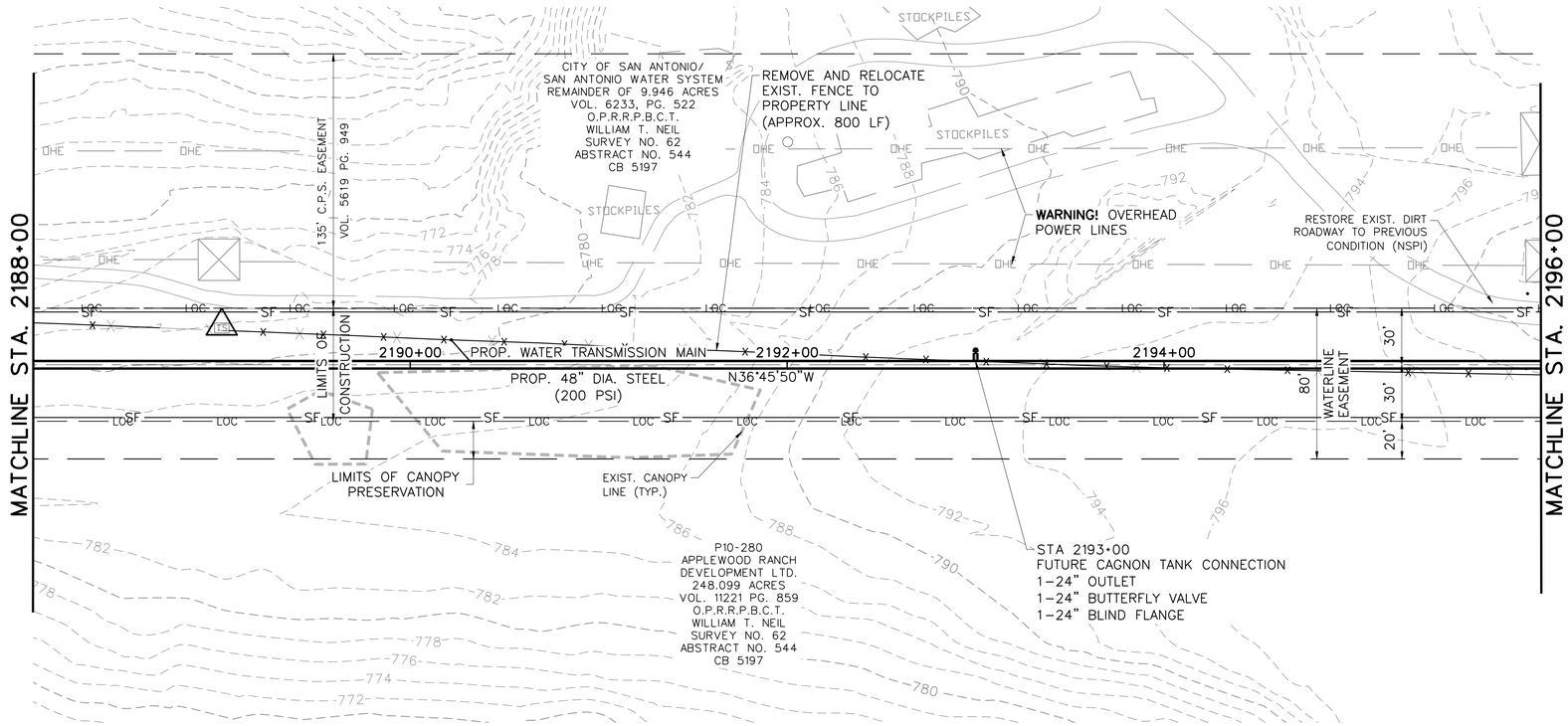
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-3900
Fax (210) 298-3901

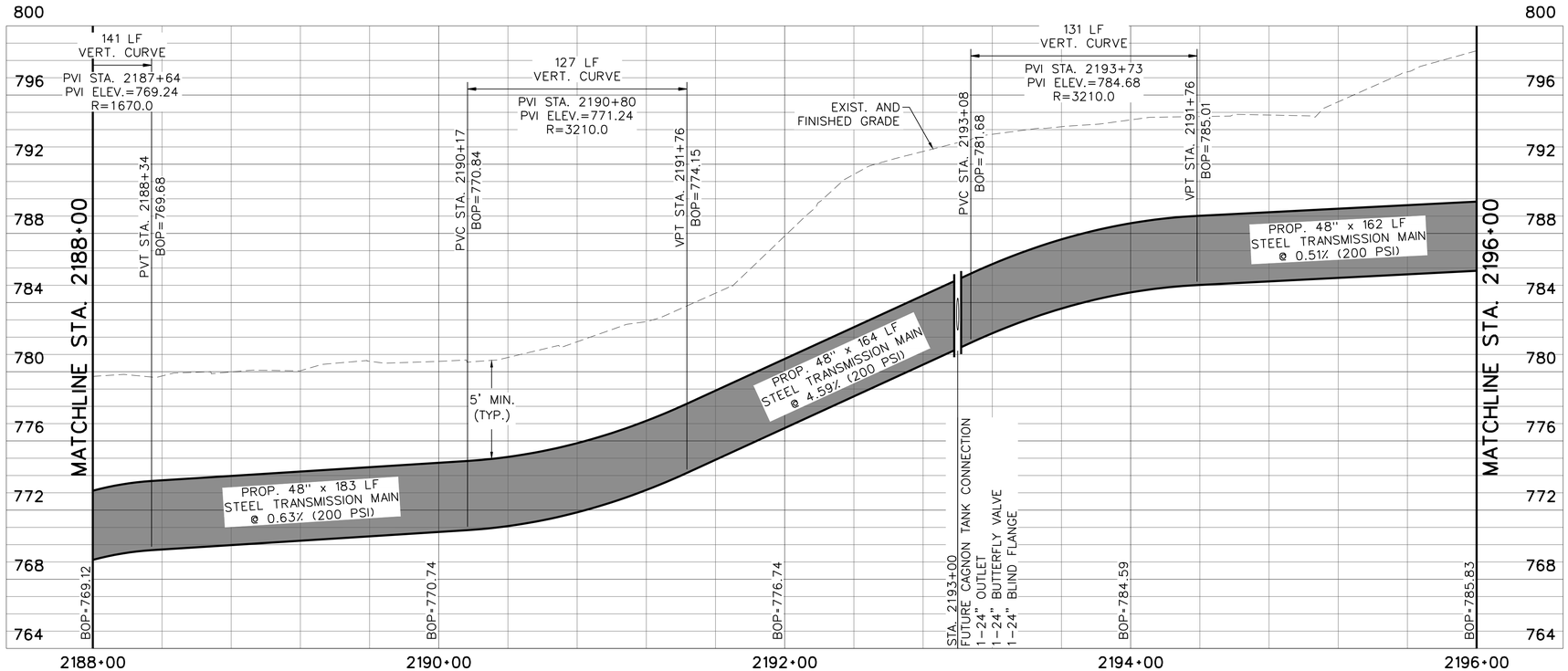
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2179+50 TO STA. 2188+00

Sheet W21

ACAD CIVIL 3D 2011 User: DDH [SWB09391][SASRV2]
Date: Jul 20, 2020 - 12:03am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL02.dwg




0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

NOTES:
1. CONTRACTOR SHALL REPAIR ABANDONED ROAD AS NEEDED FOR CONSTRUCTION AND INSPECTION ACTIVITIES. (NPSI)

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

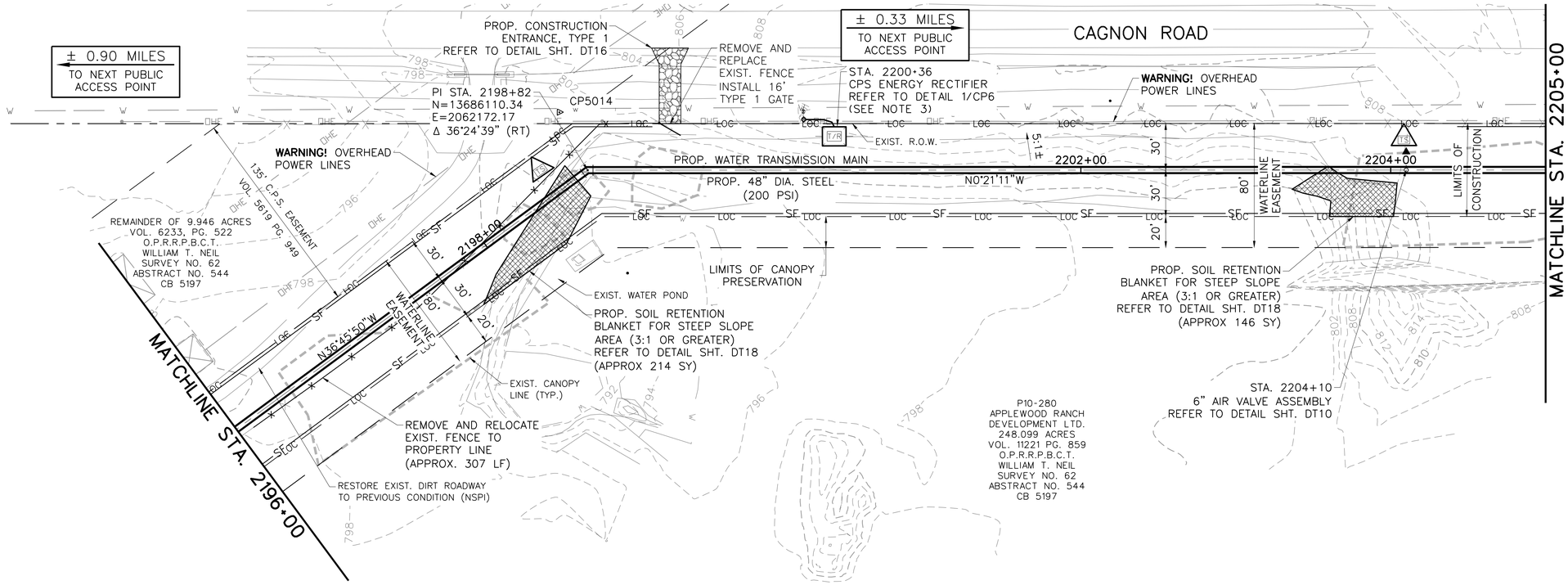
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2188+00 TO STA. 2196+00

Sheet W22

ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]
Date: Jul 20, 2020 - 12:04am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL02.dwg



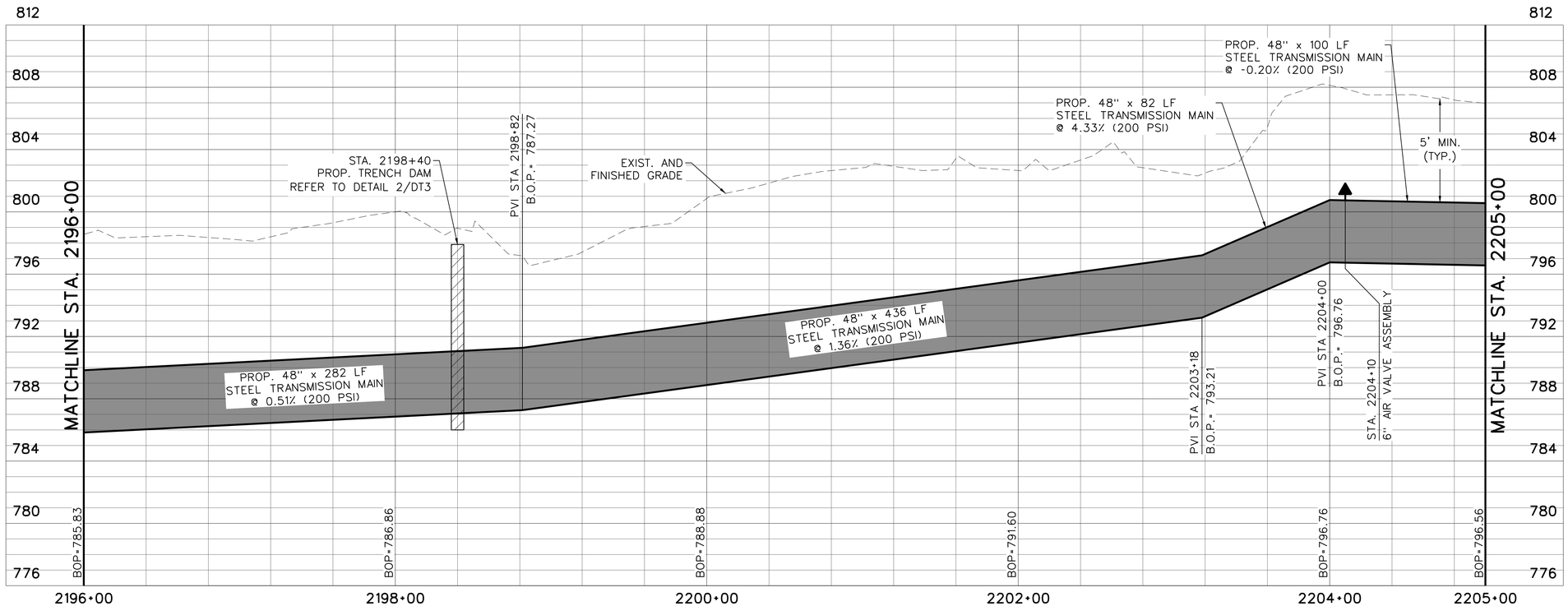

N

0 40' 80'
HORIZONTAL

0 2 4 8
VERTICAL

NOTES:

1. CONTRACTOR SHALL REPAIR ABANDONED ROAD AS NEEDED FOR CONSTRUCTION AND INSPECTION ACTIVITIES. (NSPI)
2. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.
3. CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH CPS AND PAYING FOR POWER SUPPLY CONNECTION TO RECTIFIER STATION.
4. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN THE BEXAR COUNTY ROW.




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-2900
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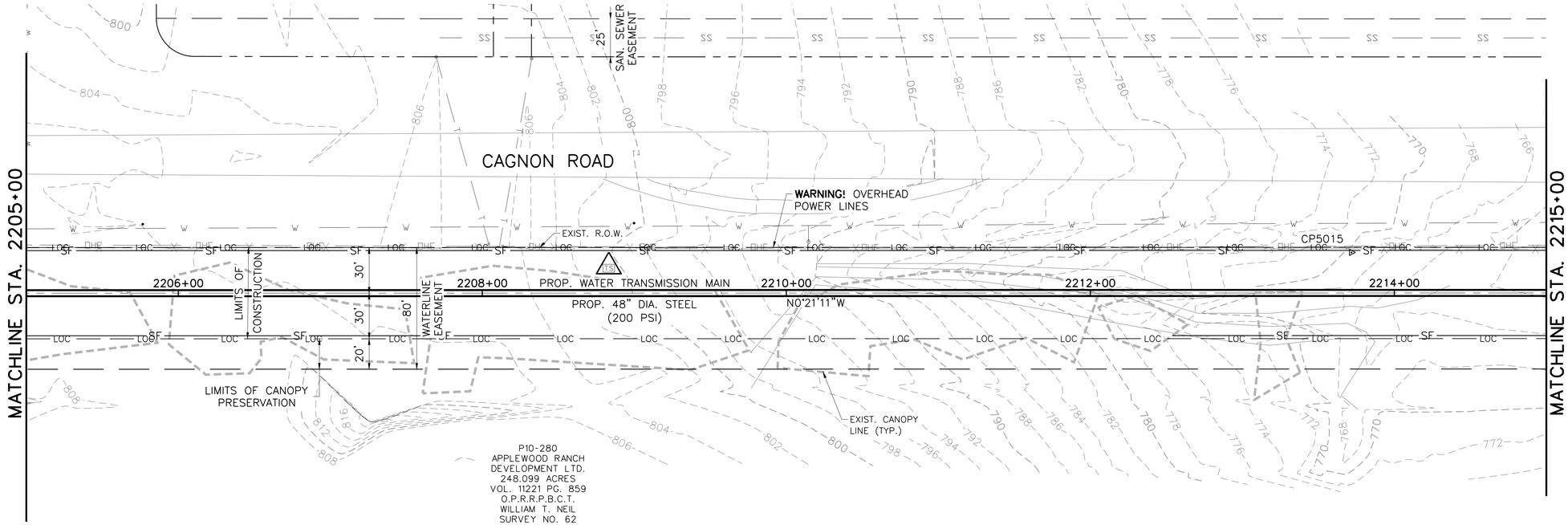
SAN ANTONIO WATER SYSTEM

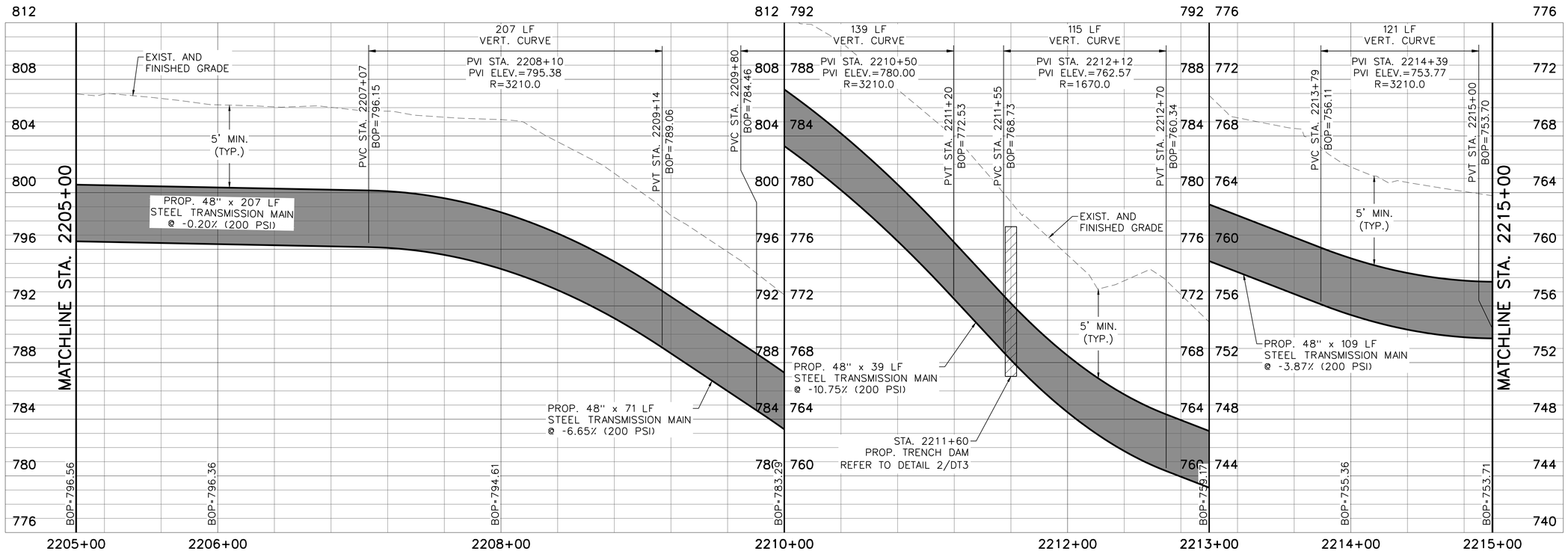
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2196+00 TO STA. 2205+00

Sheet W23

ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]

Date: Jul 20, 2020 – 12:05am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL02.dwg




N

0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

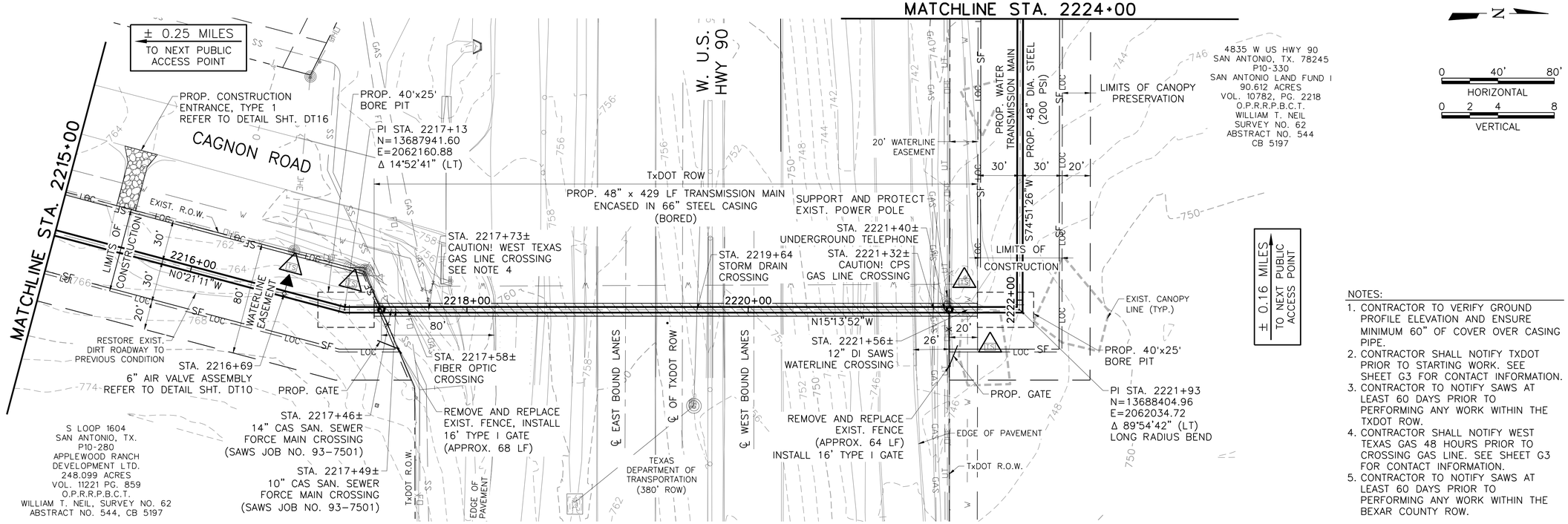
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-3900
Fax (210) 298-3901

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2205+00 TO STA. 2215+00

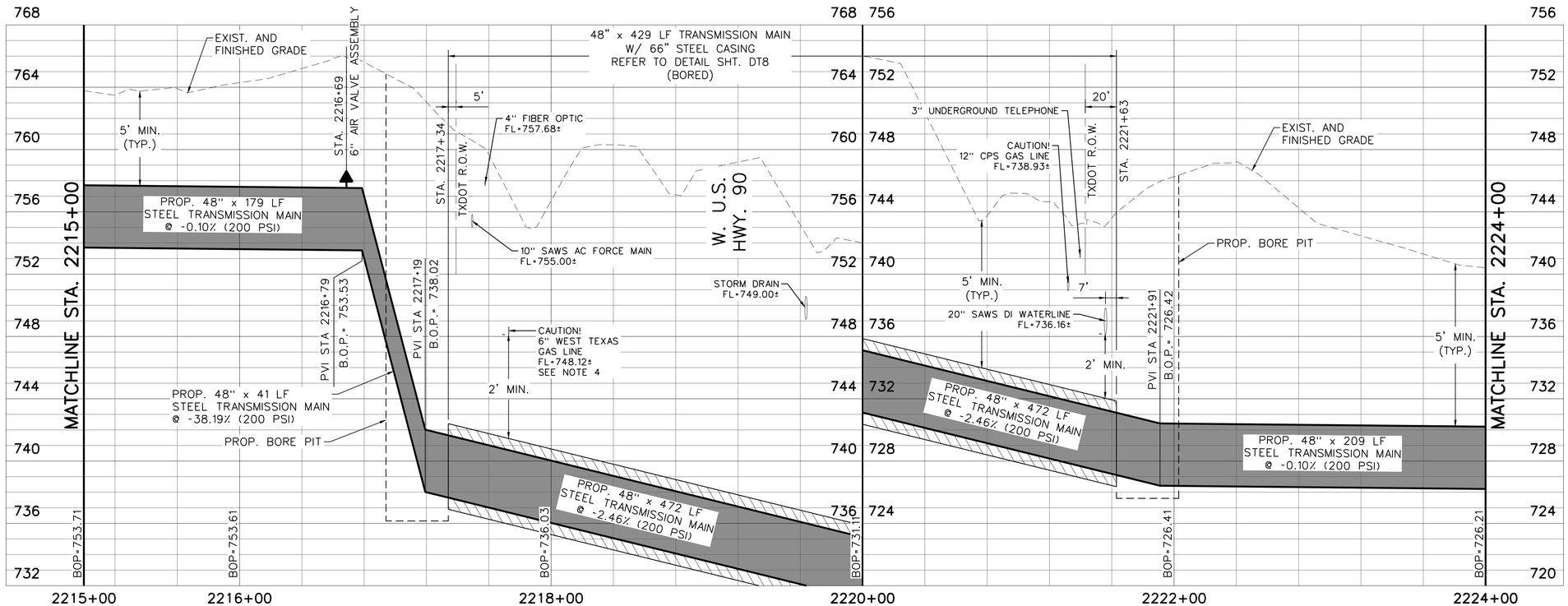
Sheet W24

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]
Date: Jul 20, 2020 - 12:06am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL02.dwg




NOTES:

1. CONTRACTOR TO VERIFY GROUND PROFILE ELEVATION AND ENSURE MINIMUM 60" OF COVER OVER CASING PIPE.
2. CONTRACTOR SHALL NOTIFY TXDOT PRIOR TO STARTING WORK. SEE SHEET G3 FOR CONTACT INFORMATION.
3. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN THE TXDOT ROW.
4. CONTRACTOR SHALL NOTIFY WEST TEXAS GAS 48 HOURS PRIOR TO CROSSING GAS LINE. SEE SHEET G3 FOR CONTACT INFORMATION.
5. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN THE BEXAR COUNTY ROW.




Freese And Nichols, Inc.
Job No.
SWB09391

| No. | Date | Revisions | App. |
|---|---|---|---|
| | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | | |

ROBERT N. JENKINS JR. 103589 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS 07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

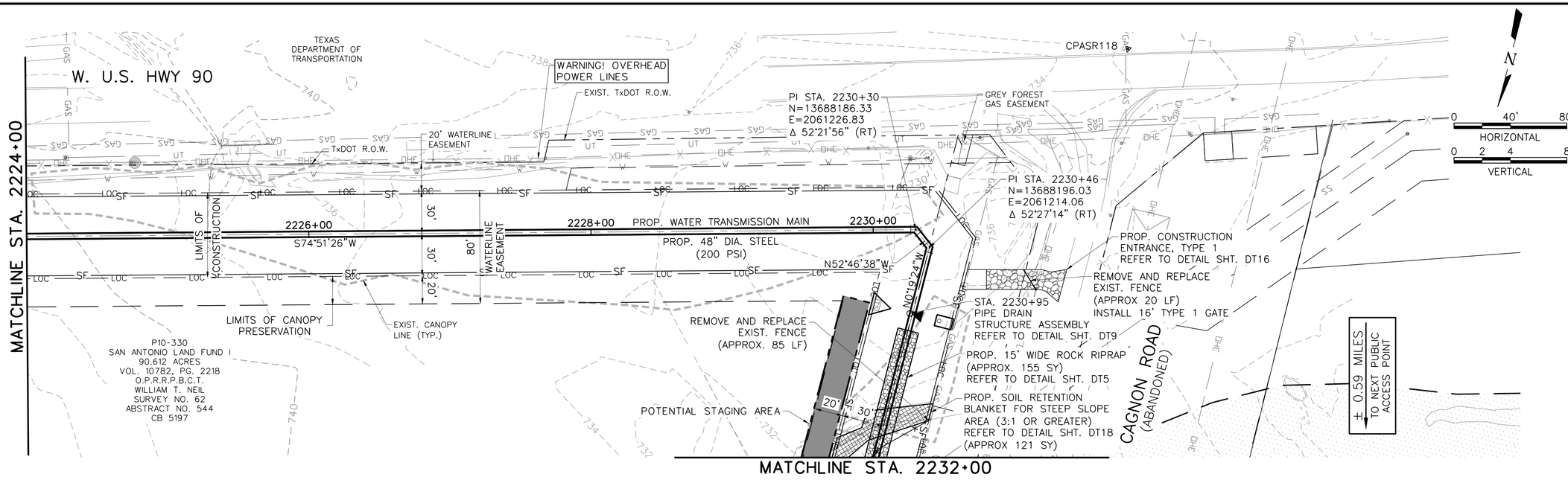
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2215+00 TO STA. 2224+00

Sheet W25

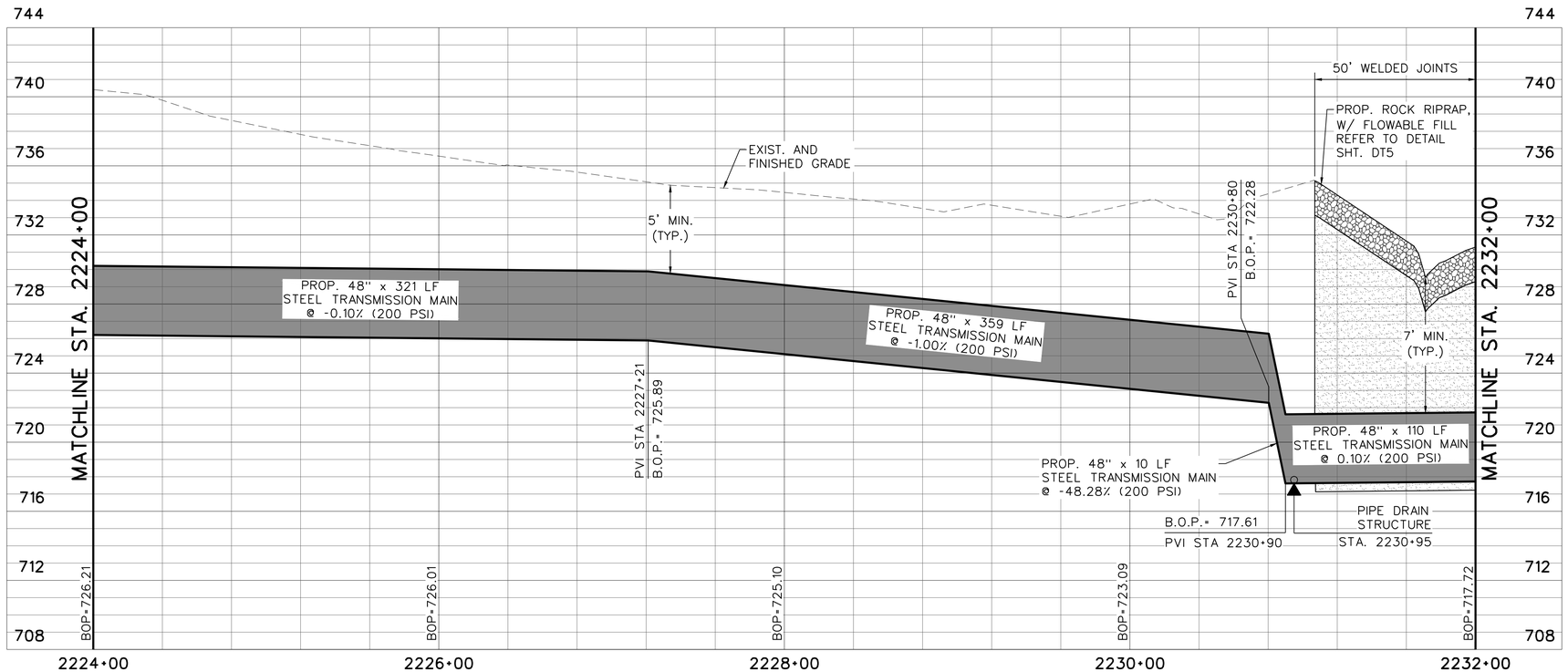
ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]

Date: Jul 20, 2020 - 12:08am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL02.dwg




NOTES:

1. CONTRACTOR SHALL REPAIR ABANDONED ROAD AS NEEDED FOR CONSTRUCTION AND INSPECTION ACTIVITIES. (NSPI)
2. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN THE BEXAR COUNTY ROW.




Freese And Nichols, Inc.
Job No.
SWB09391

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

STATE OF TEXAS ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER 07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

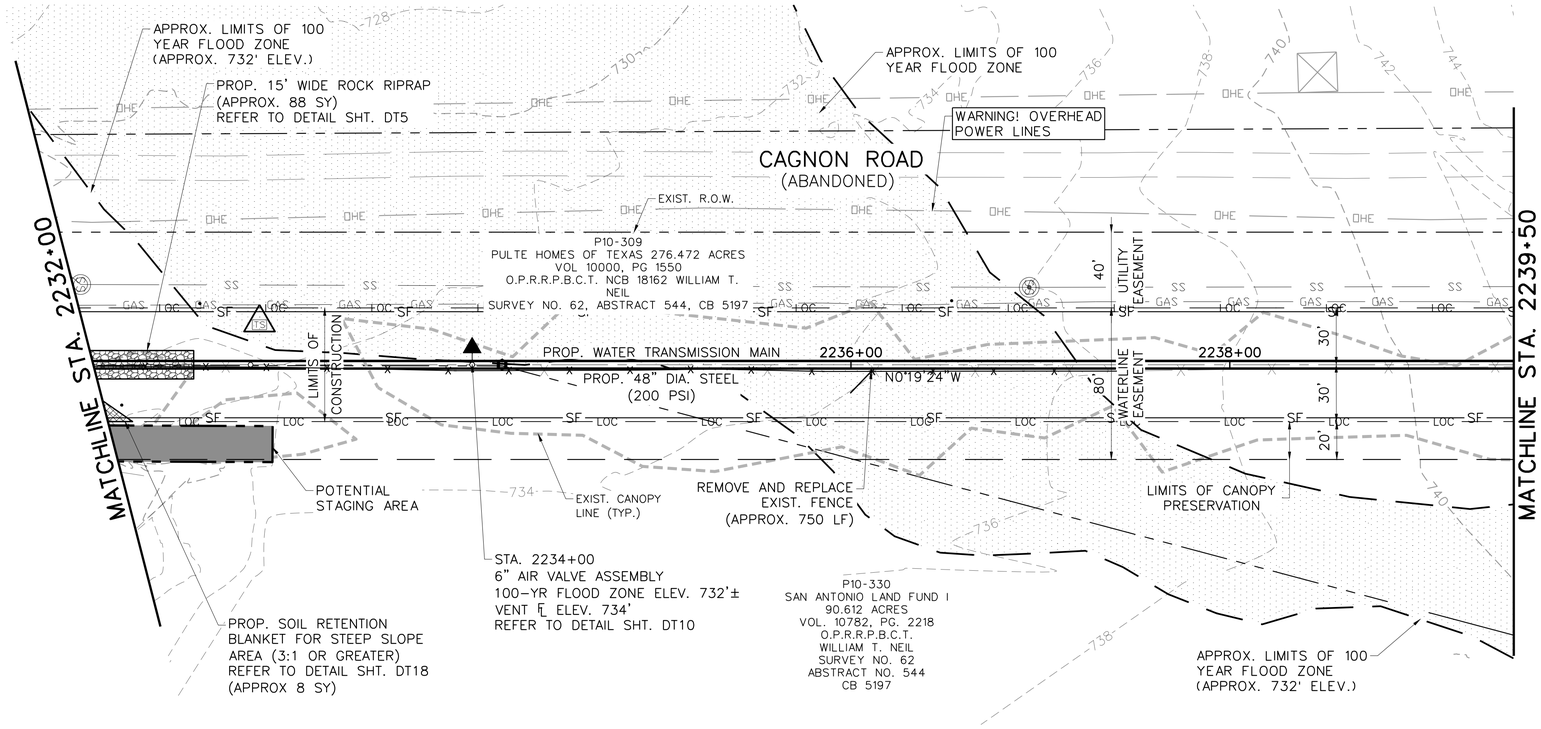
SAN ANTONIO WATER SYSTEM

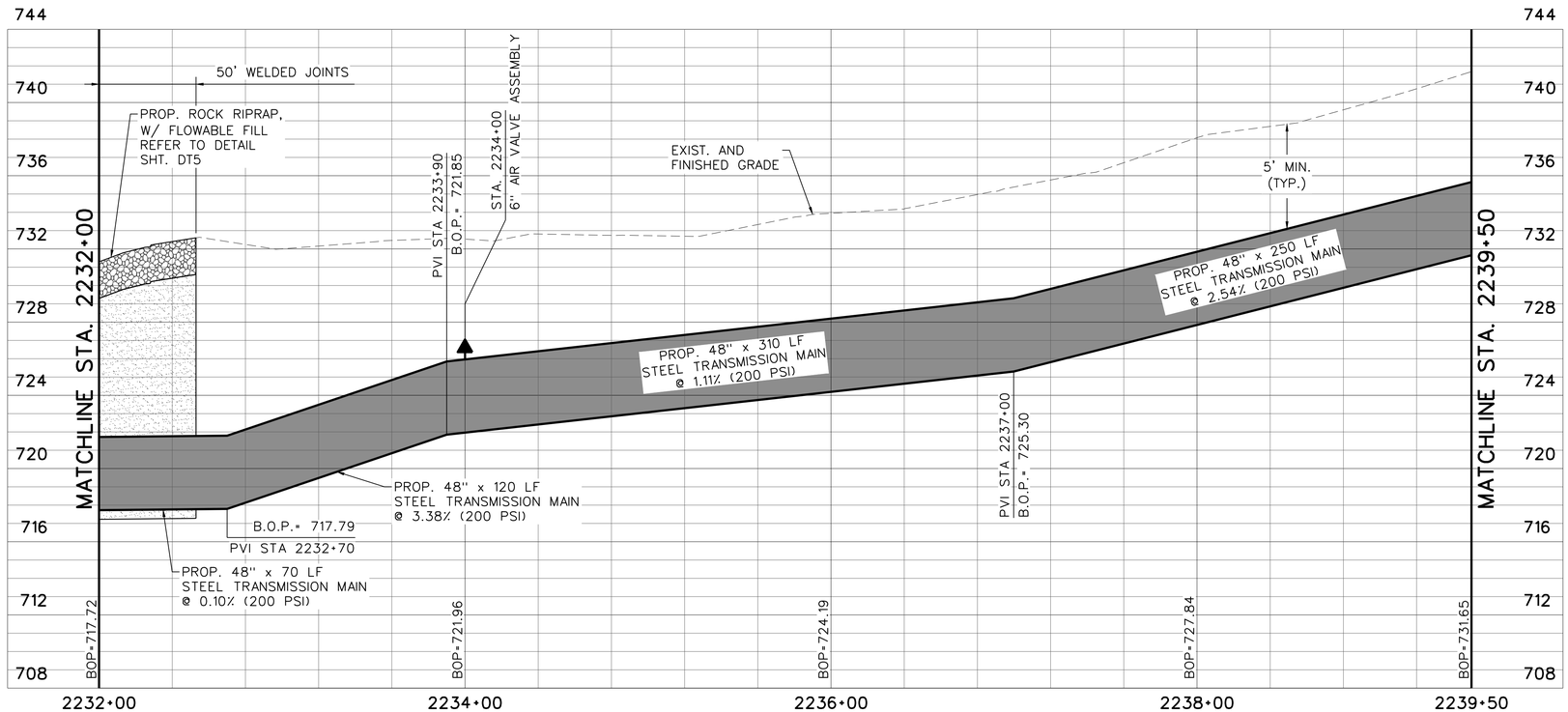
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2224+00 TO STA. 2232+00

Sheet W26

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]

Date: Jul 20, 2020 – 12:09am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL02.dwg




NOTES:

1. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE.

N

0 40' 80'
HORIZONTAL

0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8991

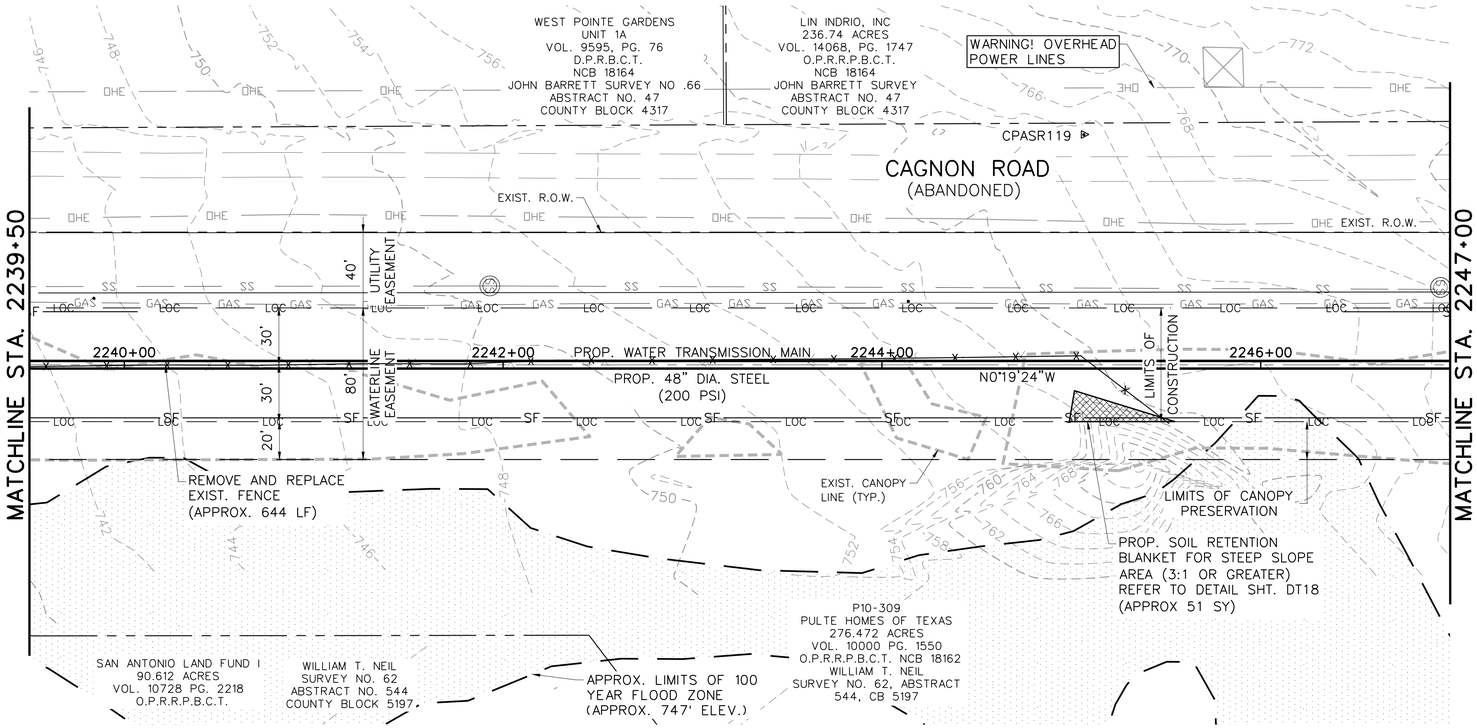
SAN ANTONIO WATER SYSTEM

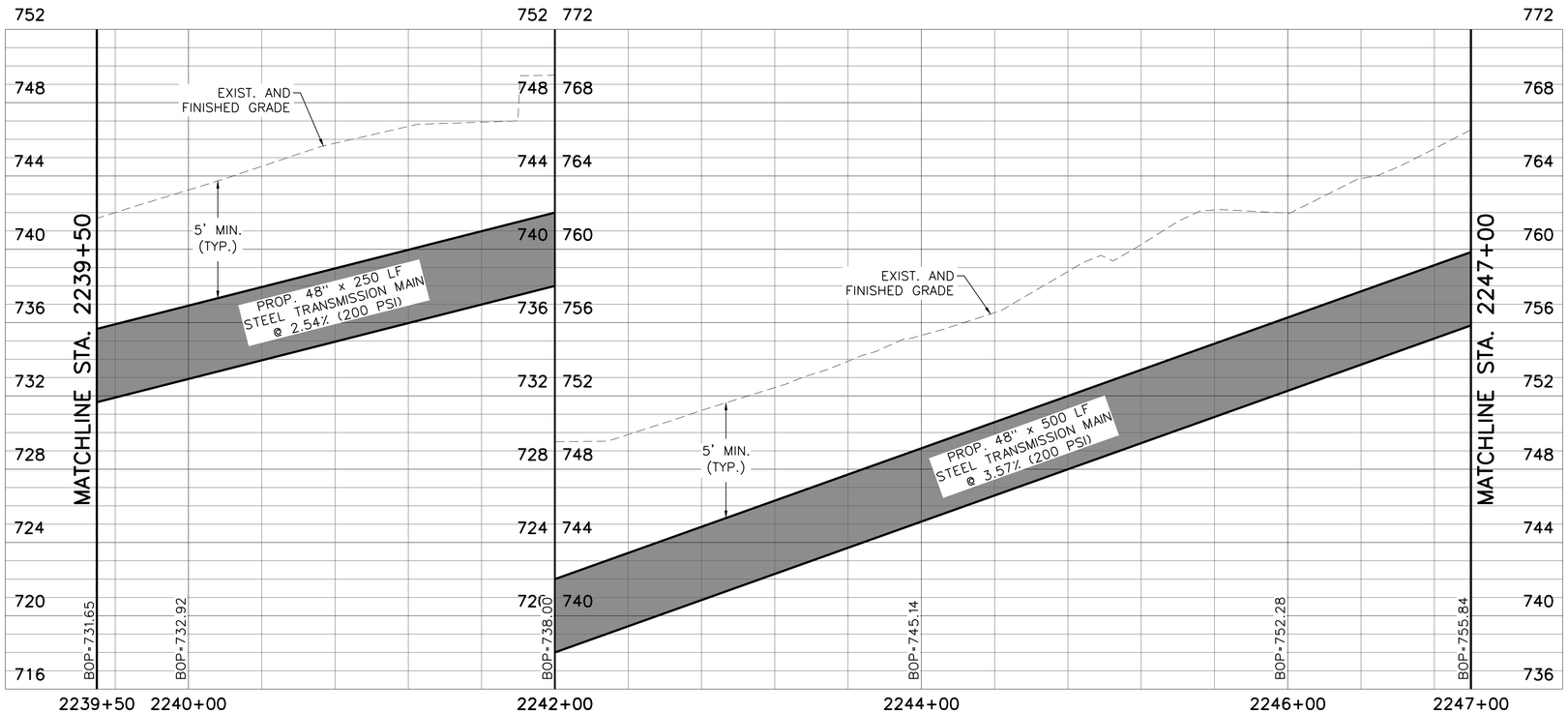
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2232+00 TO STA. 2239+50

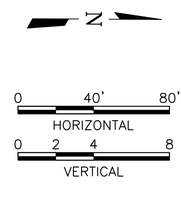
Sheet W27

ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]

Date: Jul 20, 2020 - 12:10am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL02.dwg




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

NOTES:
1. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE.
2. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.

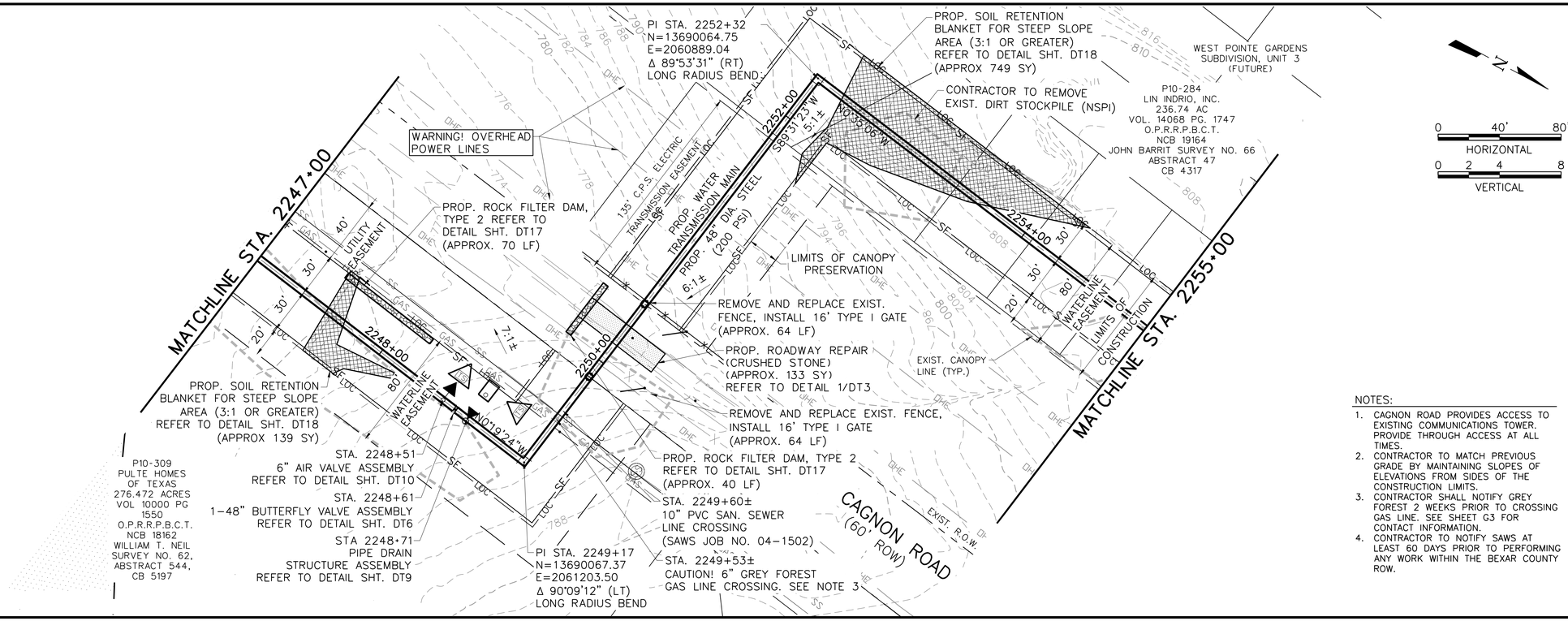
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-3900
Fax (210) 298-3901

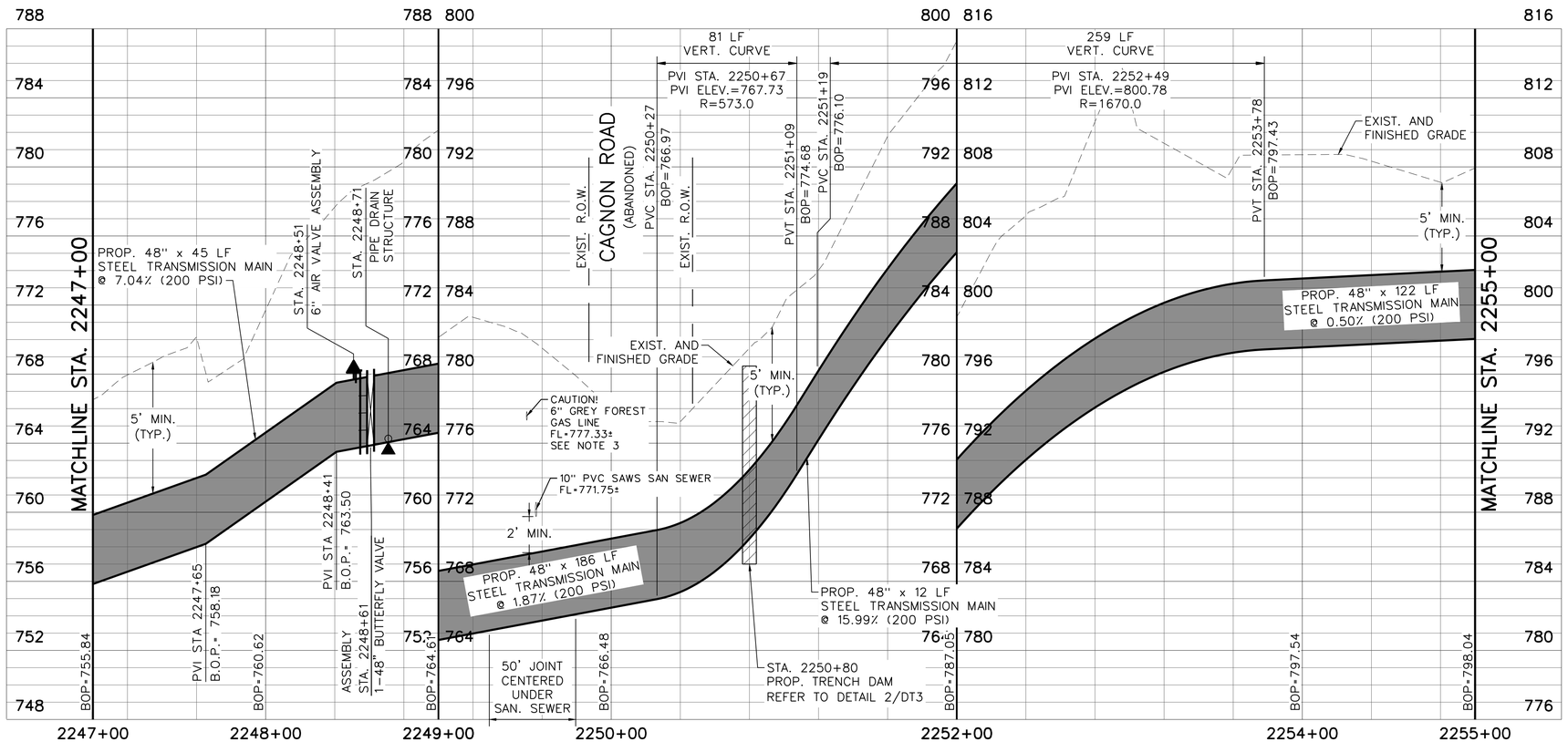
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2239+50 TO STA. 2247+00

Sheet W28

ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]
Date: Jul 20, 2020 - 12:12am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL02.dwg




NOTES:

1. CAGNON ROAD PROVIDES ACCESS TO EXISTING COMMUNICATIONS TOWER. PROVIDE THROUGH ACCESS AT ALL TIMES.
2. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.
3. CONTRACTOR SHALL NOTIFY GREY FOREST 2 WEEKS PRIOR TO CROSSING GAS LINE. SEE SHEET G3 FOR CONTACT INFORMATION.
4. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN THE BEXAR COUNTY ROW.

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

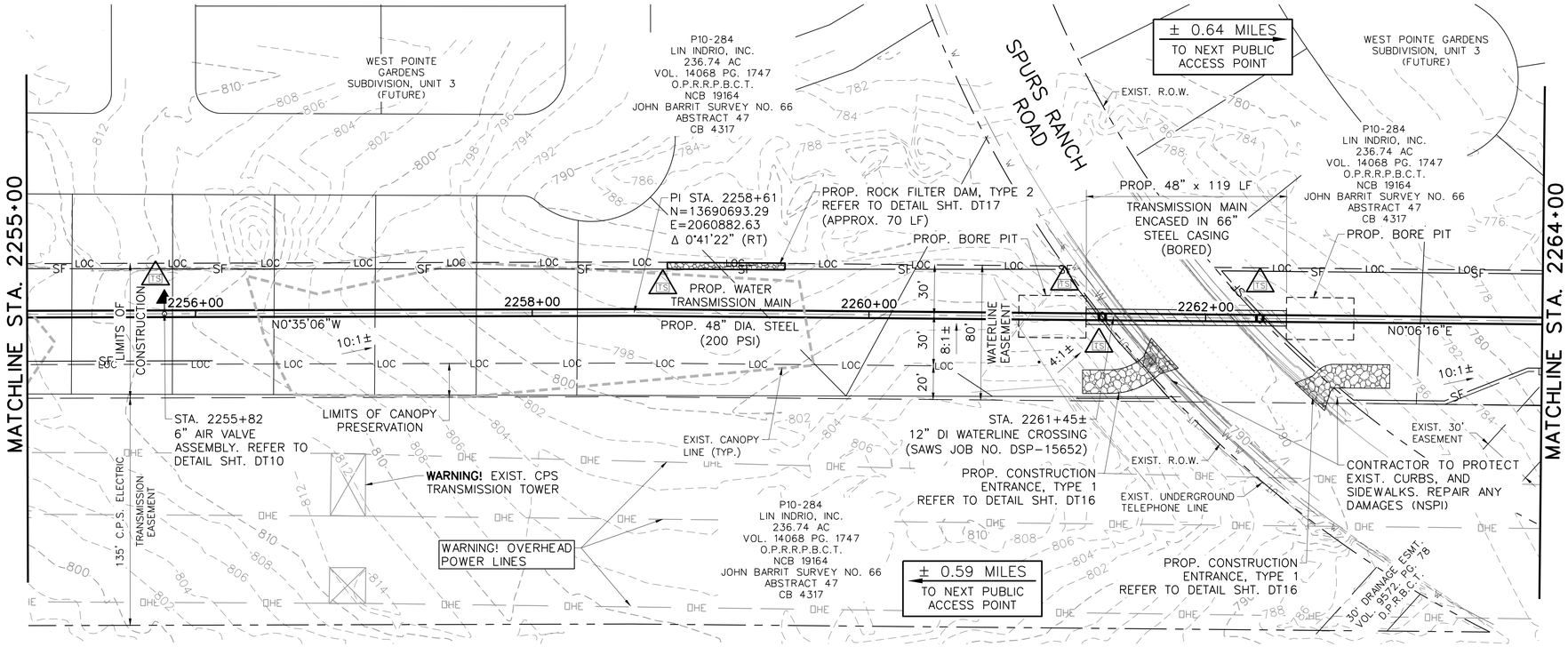
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

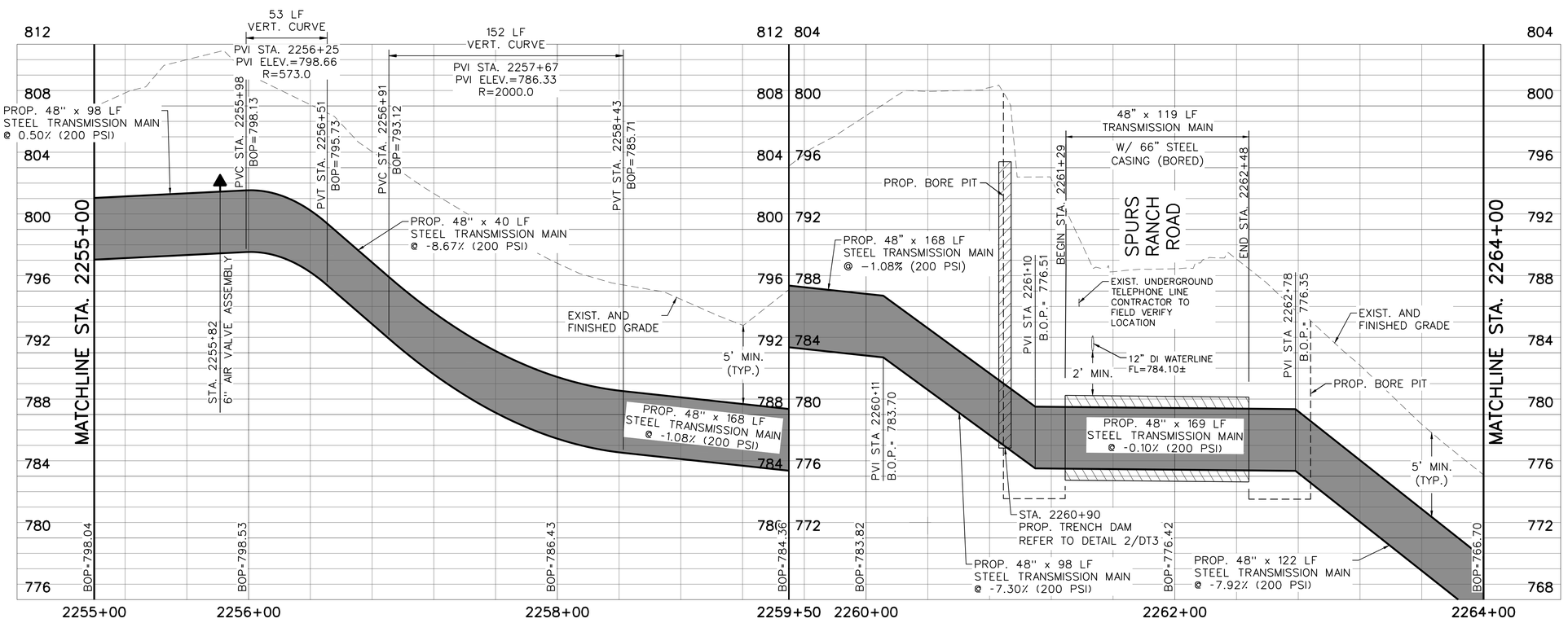
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2247+00 TO STA. 2255+00

Sheet W29

ACAD CIVIL 3D 2011 User: DDH [SWB09391][SASRV2]
Date: Jul 20, 2020 - 12:13am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL02.dwg




NOTES:

1. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.
2. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN THE BEXAR COUNTY ROW.

N

0 40' 80'
HORIZONTAL

0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

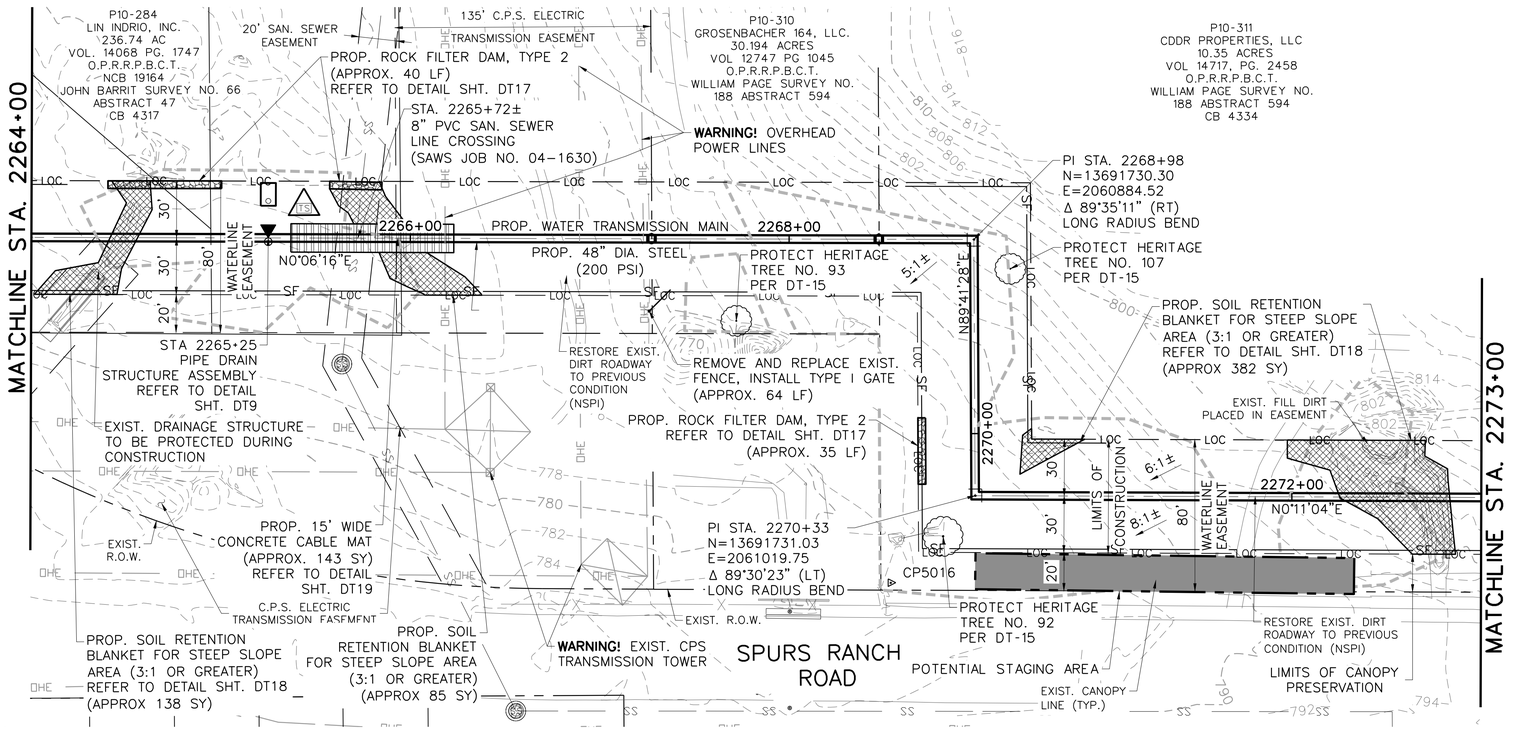
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2255+00 TO STA. 2264+00

Sheet W30

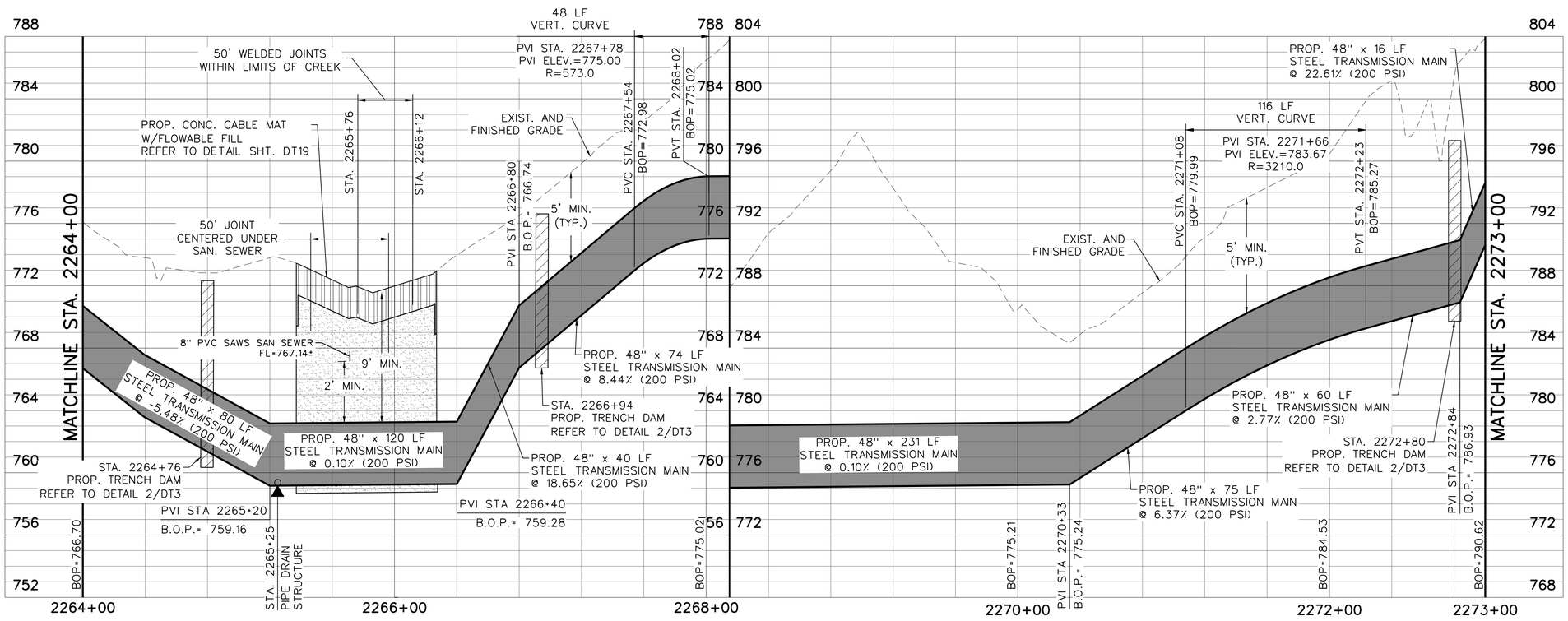
ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]

Date: Jul 20, 2020 - 12:14am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL02.dwg




NOTES:

1. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
2. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.
3. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

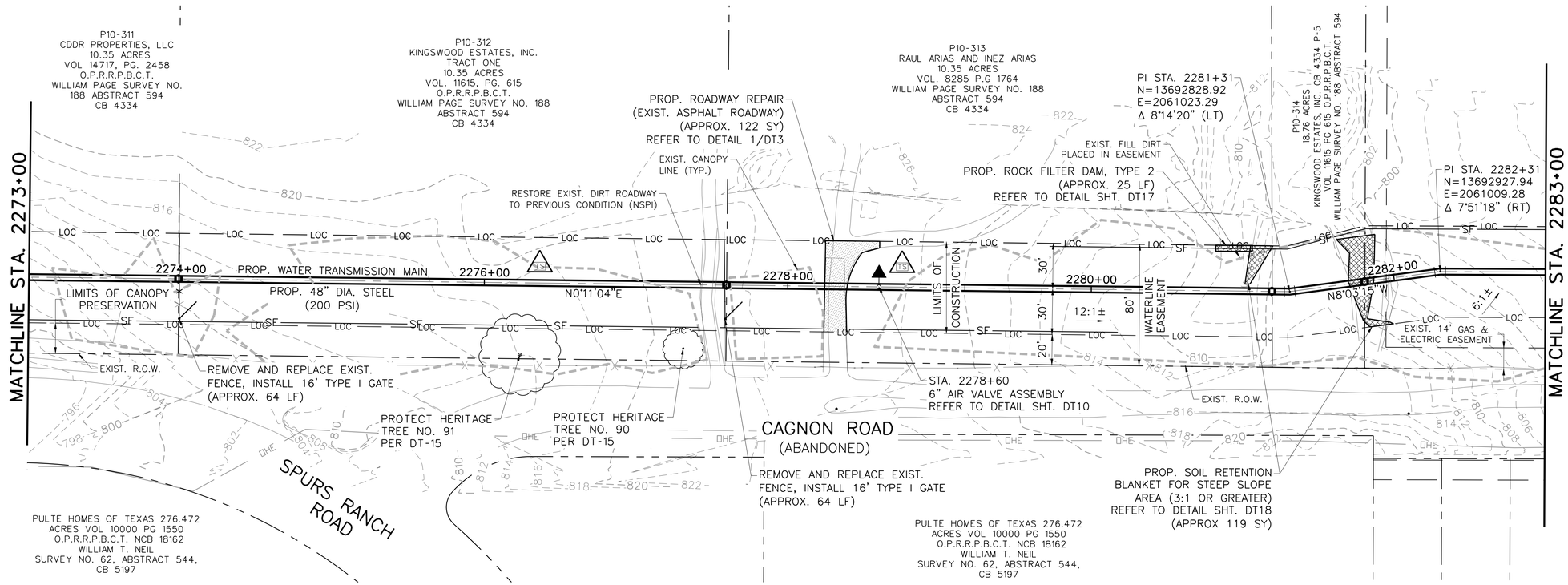
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-3900
Fax (210) 298-3901

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2264+00 TO STA. 2273+00

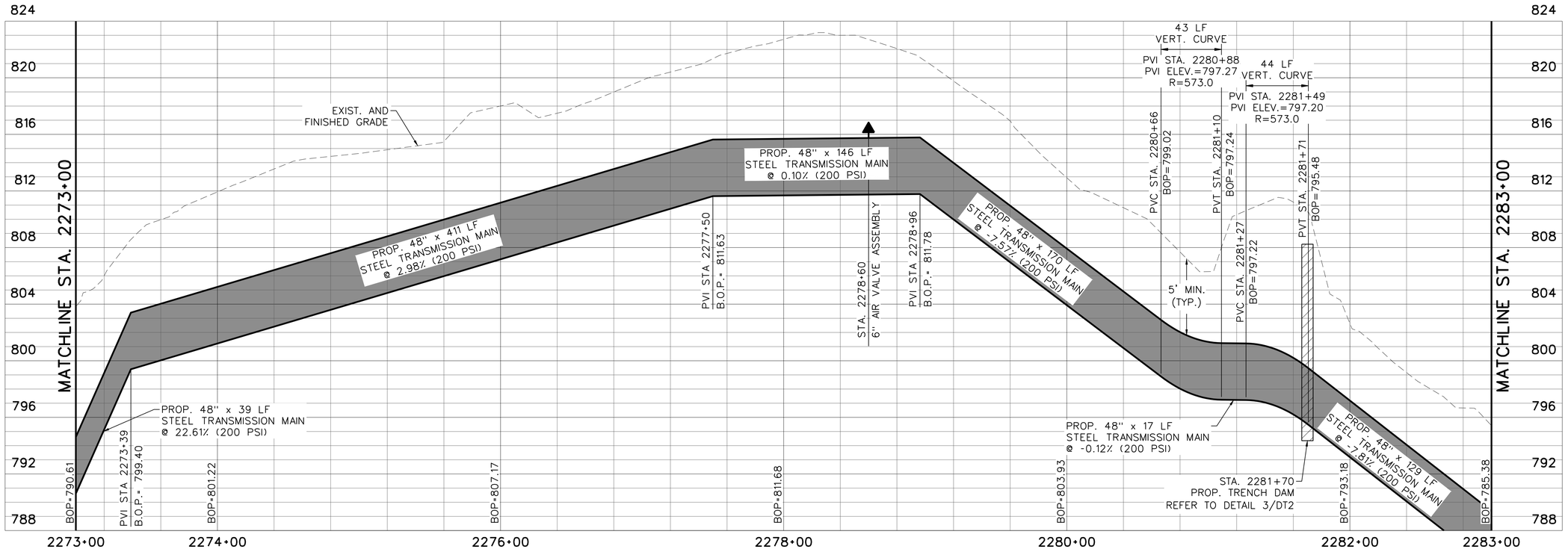
Sheet W31

ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]
Date: Jul 20, 2020 - 12:15am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL02.dwg




NOTES:

1. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
2. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.
3. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.




N

0 40' 80'
HORIZONTAL

0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

ROBERT N. JENKINS JR. 103589 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

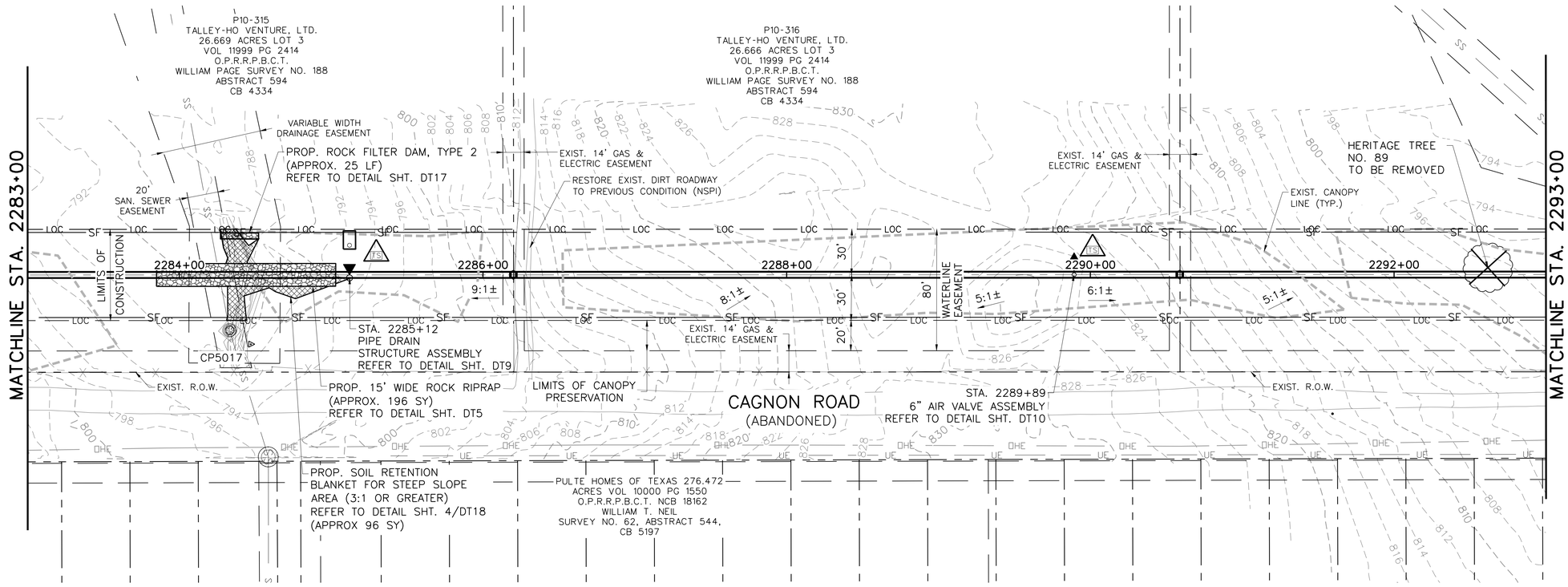
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2273+00 TO STA. 2283+00

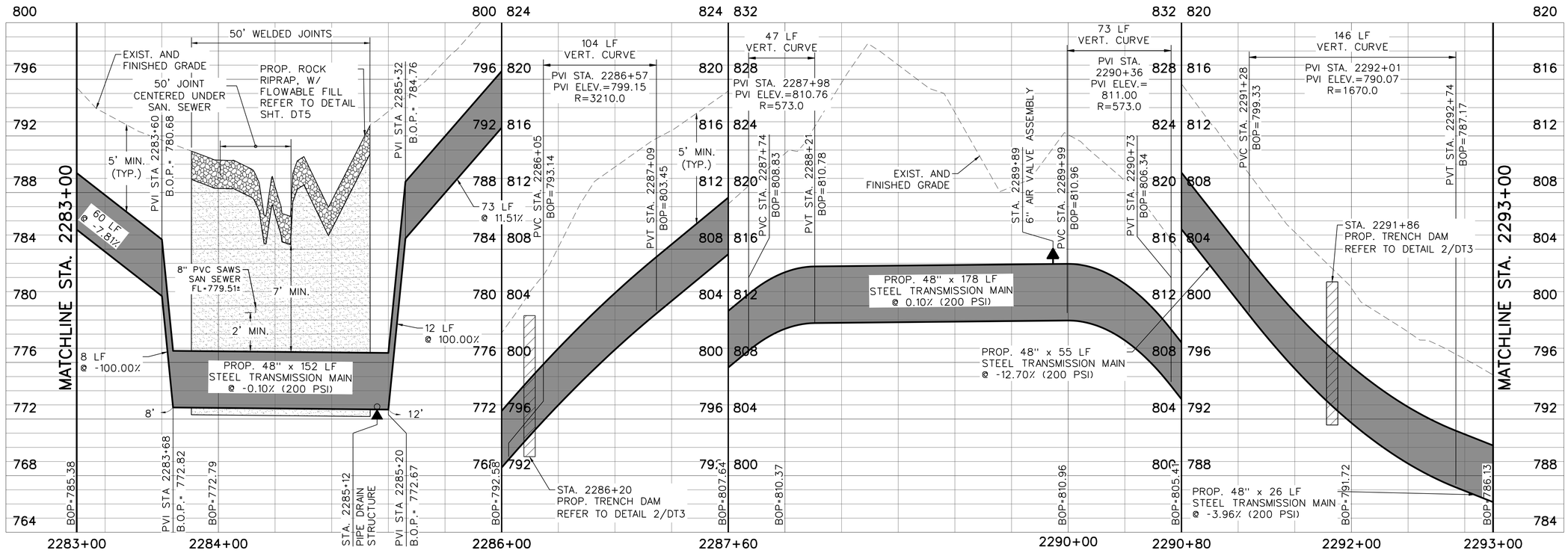
Sheet W32

ACAD CIVIL 3D 2011 User: DDH [SWB09391][SASRV2]
Date: Jul 20, 2020 - 12:16am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL02.dwg




NOTES:

1. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
2. CONTRACTOR SHALL REPAIR ABANDONED ROAD AS NEEDED FOR CONSTRUCTION AND INSPECTION ACTIVITIES, (NSPI)
3. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.
4. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL I FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.




Freese And Nichols, Inc.
Job No.
SWB09391

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

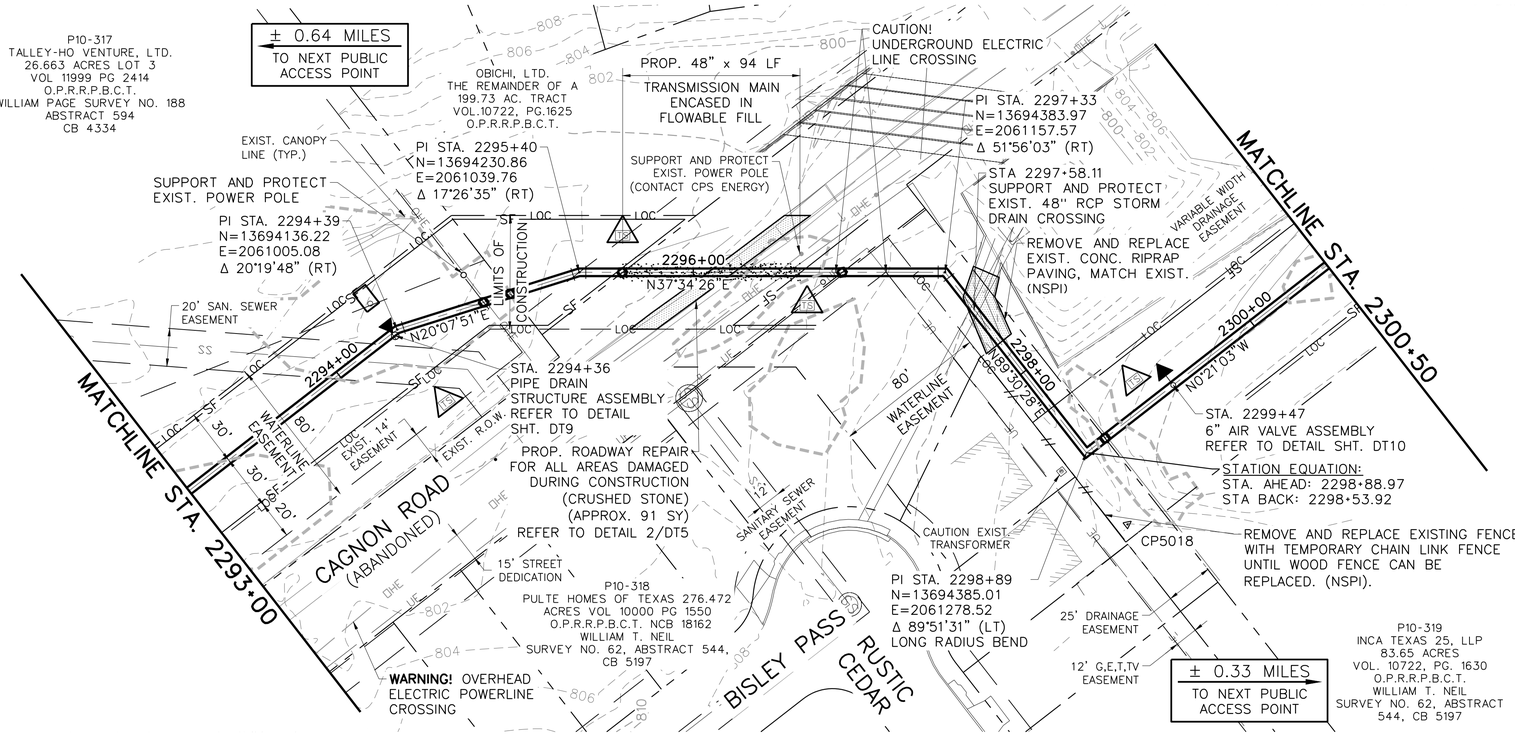

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-2900
Fax (210) 298-2901


SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2283+00 TO STA. 2293+00

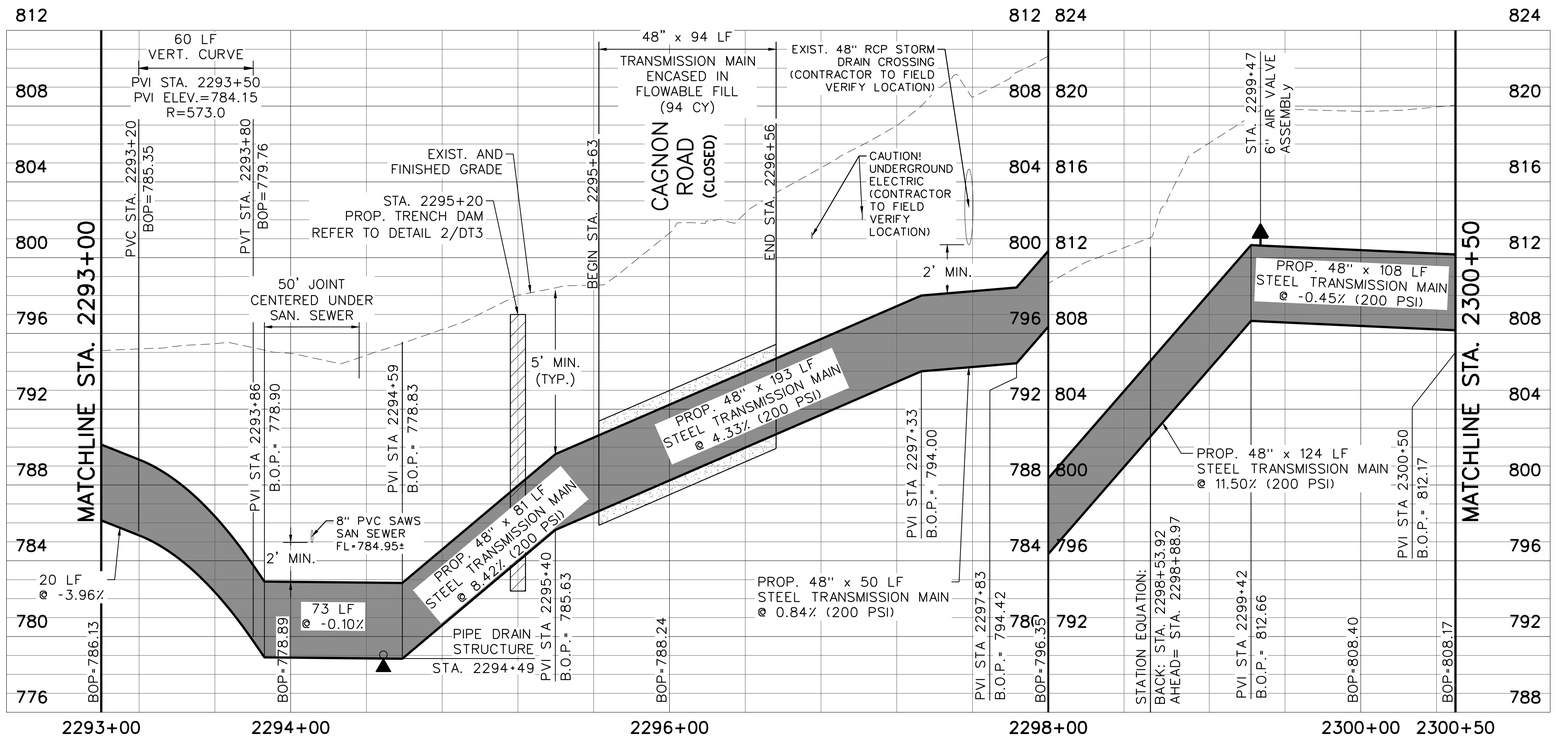
Sheet W33


ACAD CIVIL 3D 2011 User: DDH [SWB09391][SASRV2]
Date: Jul 20, 2020 - 12:17am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL02.dwg




NOTES:

1. CONTRACTOR SHALL REPAIR ABANDONED ROAD AS NEEDED FOR CONSTRUCTION AND INSPECTION ACTIVITIES. (NSPI)
2. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.
3. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN THE BEXAR COUNTY ROW.
4. WORK BETWEEN STA 2297+10 AND STA 2298+89 SHALL NOT BE PERFORMED UNTIL AFTER 600 DAYS AFTER NTP, UNLESS SAWS PROVIDES AUTHORIZATION IN WRITING.




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

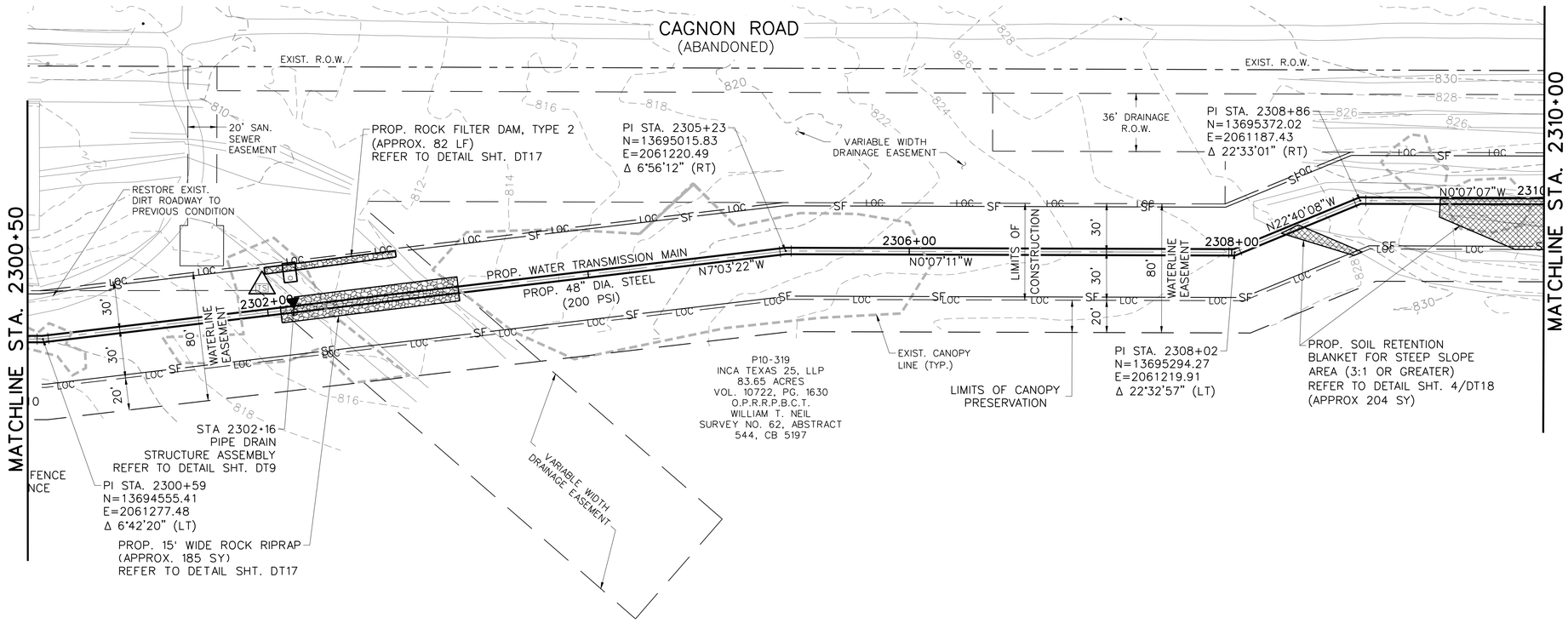
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

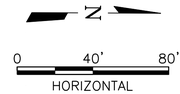
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2293+00 TO STA. 2300+50

Sheet W34

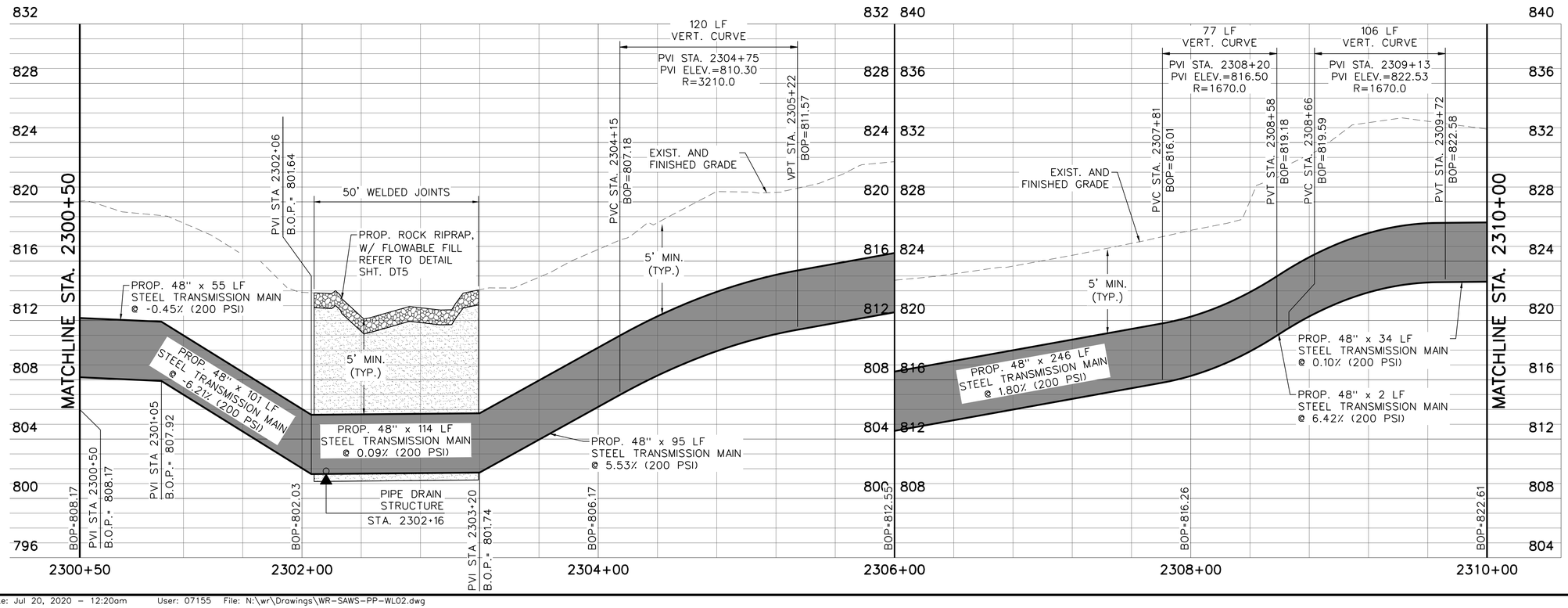
ACAD CIVIL 3D 2011 User: DDH [SWB09391][SASRV2]
Date: Jul 20, 2020 - 12:19am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL02.dwg




NOTES:

1. CONTRACTOR SHALL REPAIR ABANDONED ROAD AS NEEDED FOR CONSTRUCTION AND INSPECTION ACTIVITIES. (NSPI)




Freese And Nichols, Inc.
Job No.
SWB09391

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

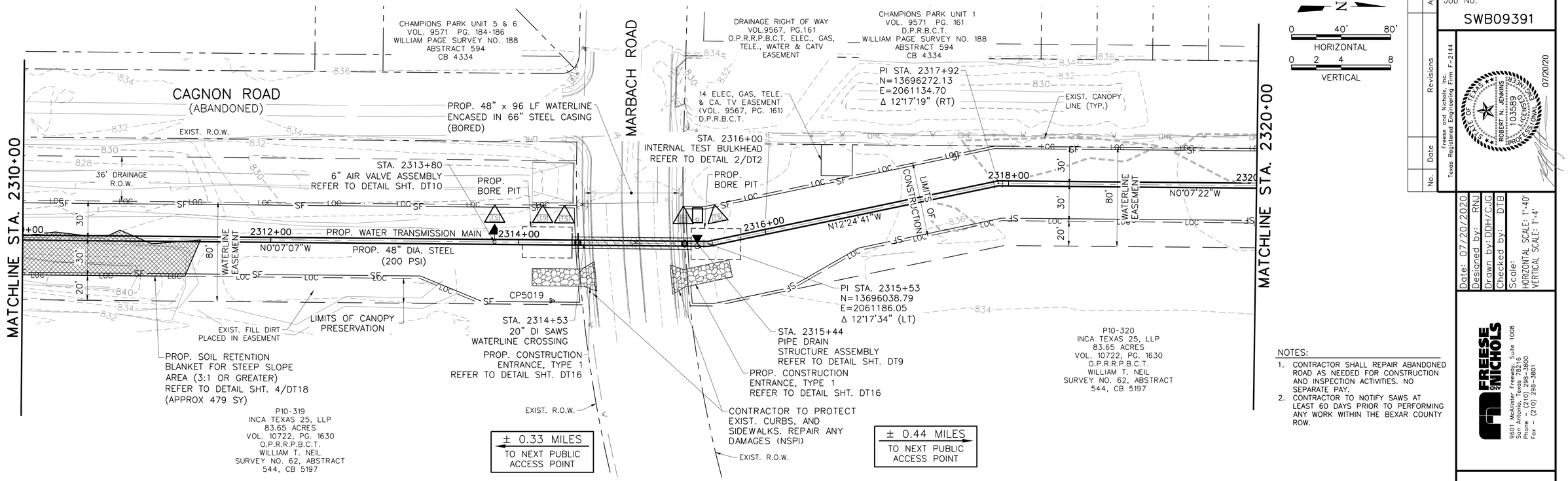
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-3900
Fax (210) 298-3901

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2300+50 TO STA. 2310+00

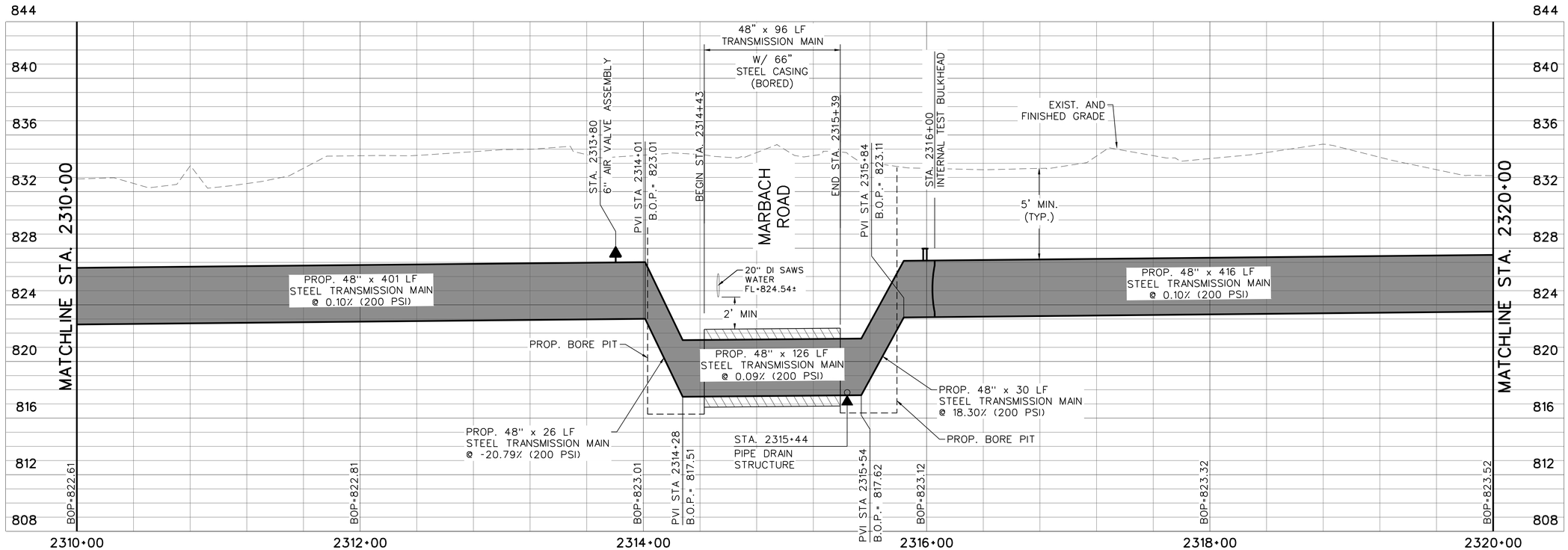
Sheet W35

ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]
Date: Jul 20, 2020 - 12:20am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL02.dwg




NOTES:

1. CONTRACTOR SHALL REPAIR ABANDONED ROAD AS NEEDED FOR CONSTRUCTION AND INSPECTION ACTIVITIES. NO SEPARATE PAY.
2. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN THE BEXAR COUNTY ROW.




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

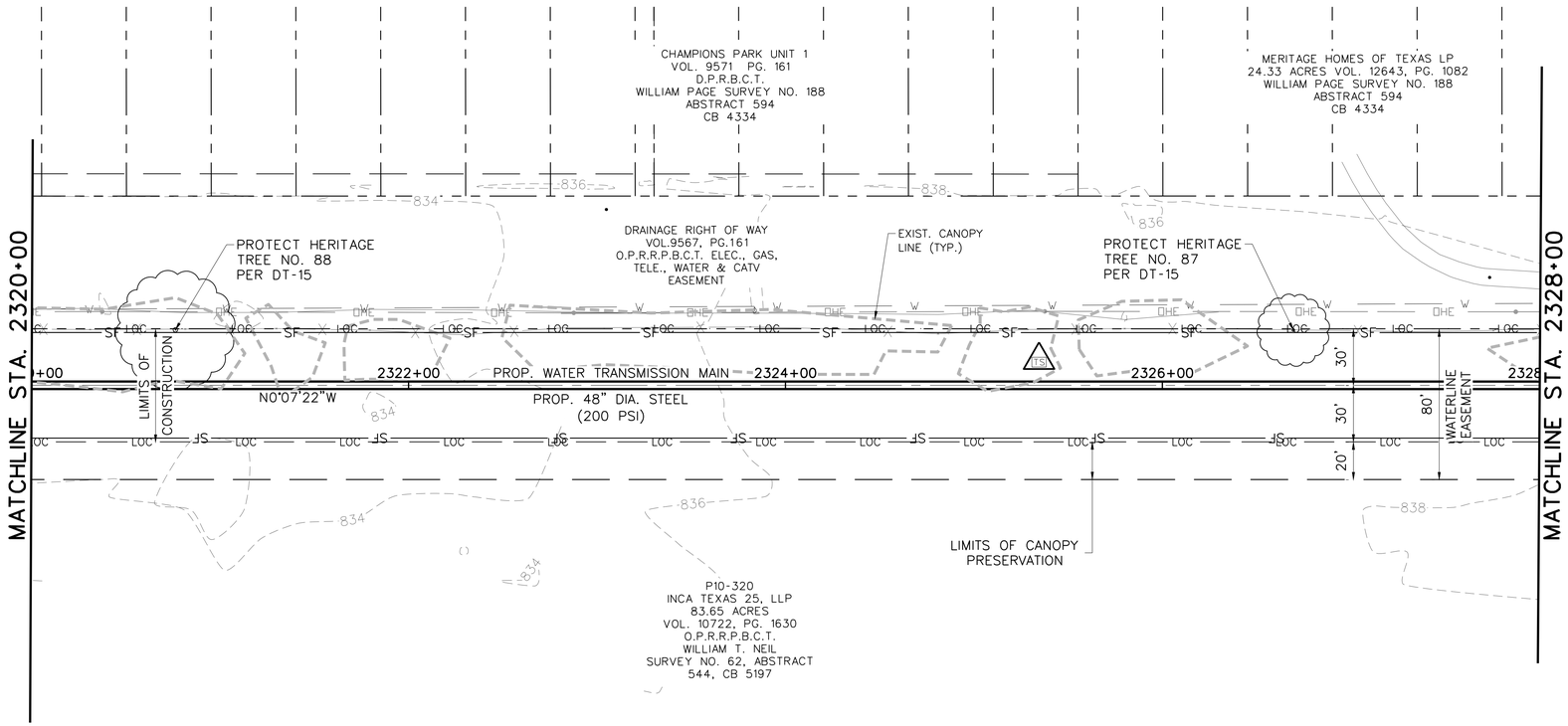
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-2800
Fax (210) 298-2801

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2310+00 TO STA. 2320+00

Sheet W36

ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]
Date: Jul 20, 2020 - 12:20am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL02.dwg



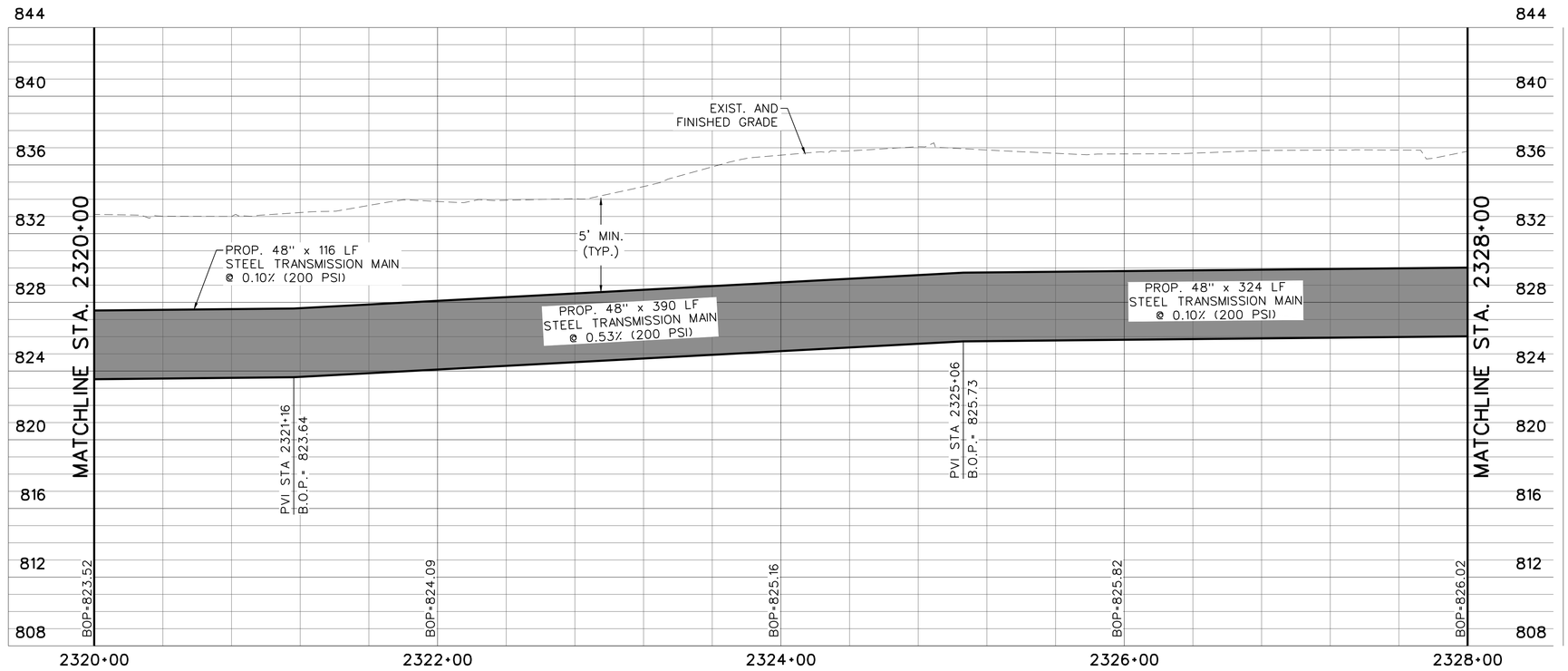

N

0 40' 80'
HORIZONTAL

0 2 4 8
VERTICAL

NOTES:

1. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
2. CONTRACTOR SHALL REPAIR ABANDONED ROAD AS NEEDED FOR CONSTRUCTION AND INSPECTION ACTIVITIES. NO SEPARATE PAY.
3. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

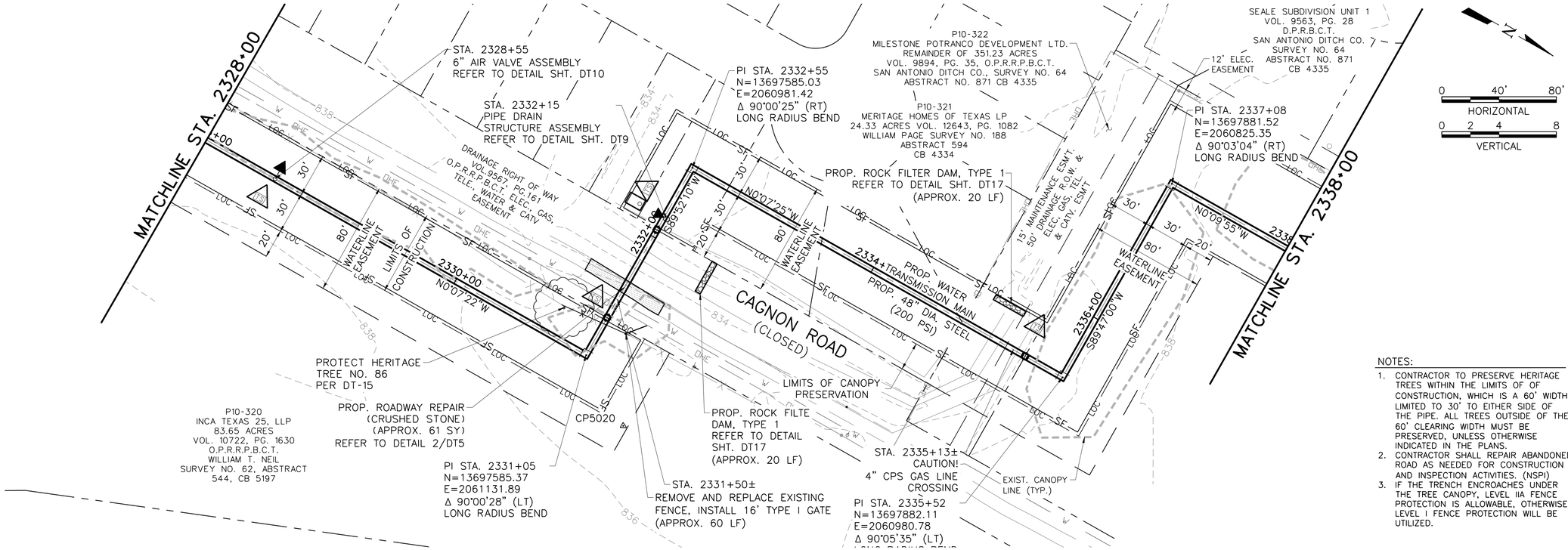
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-3900
Fax (210) 298-3901

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2320+00 TO STA. 2328+00

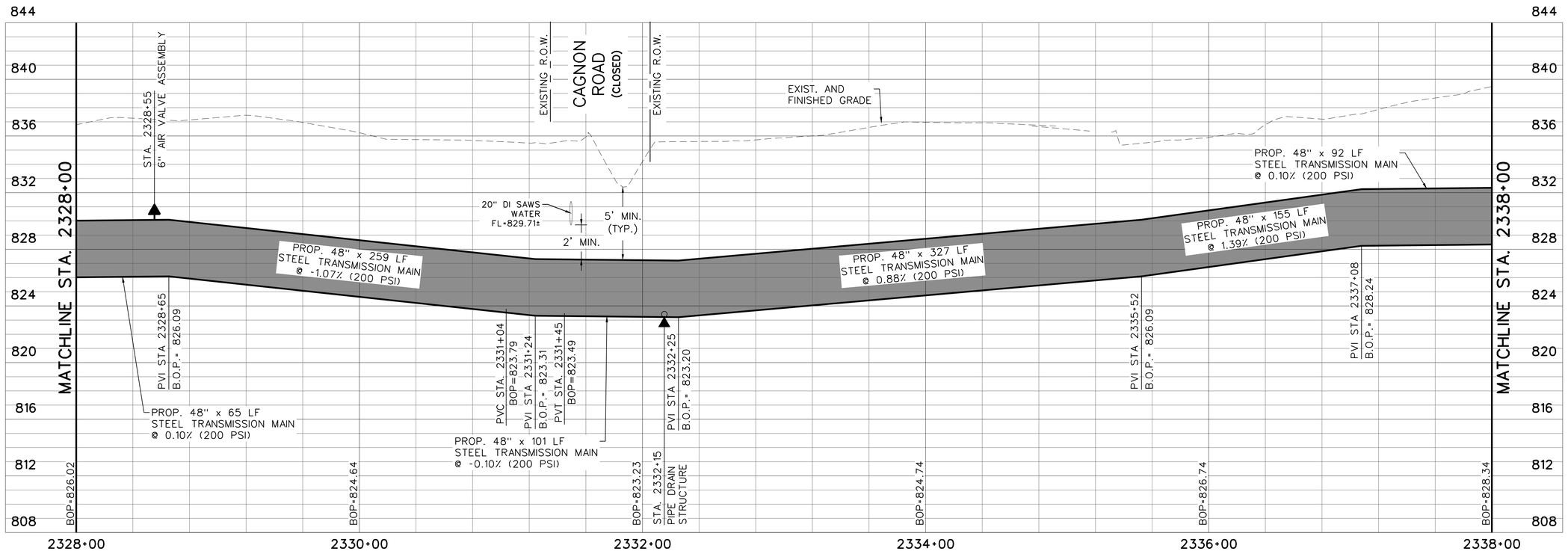
Sheet W37

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]
Date: Jul 20, 2020 - 12:21am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL02.dwg




NOTES:

1. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
2. CONTRACTOR SHALL REPAIR ABANDONED ROAD AS NEEDED FOR CONSTRUCTION AND INSPECTION ACTIVITIES. (NSPI)
3. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.




Freese And Nichols, Inc.
Job No.
SWB09391

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

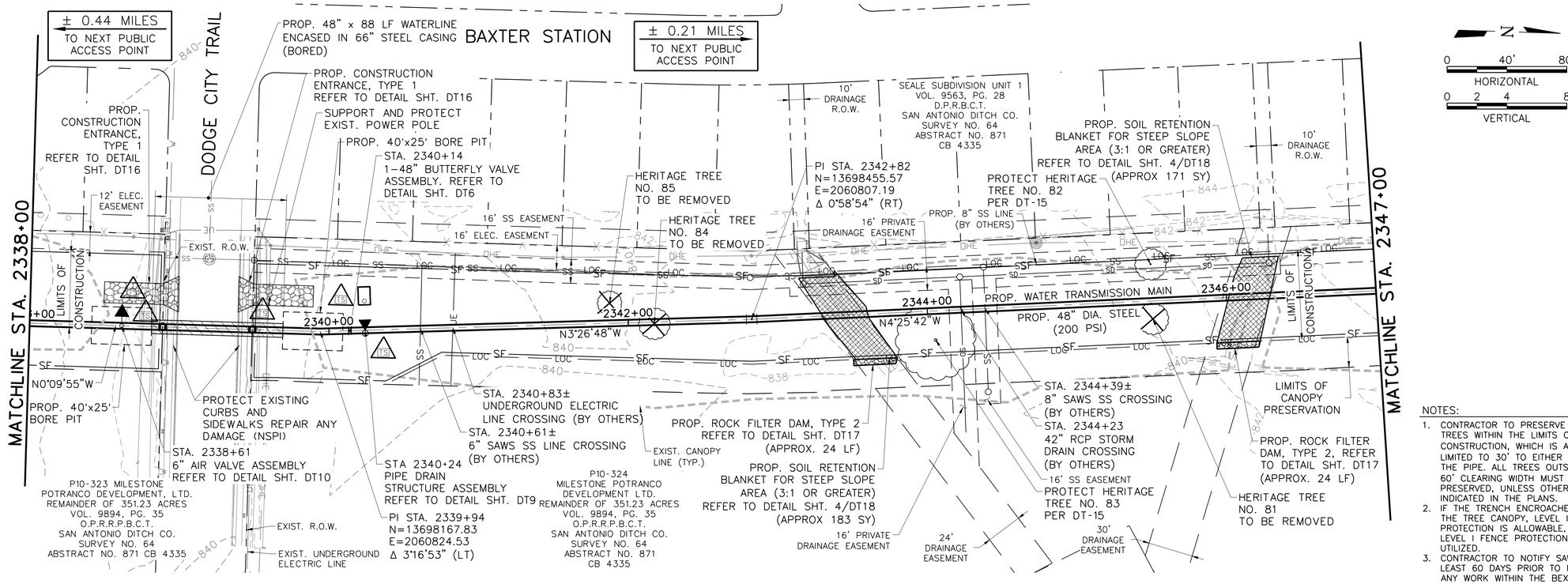

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901


SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2328+00 TO STA. 2338+00

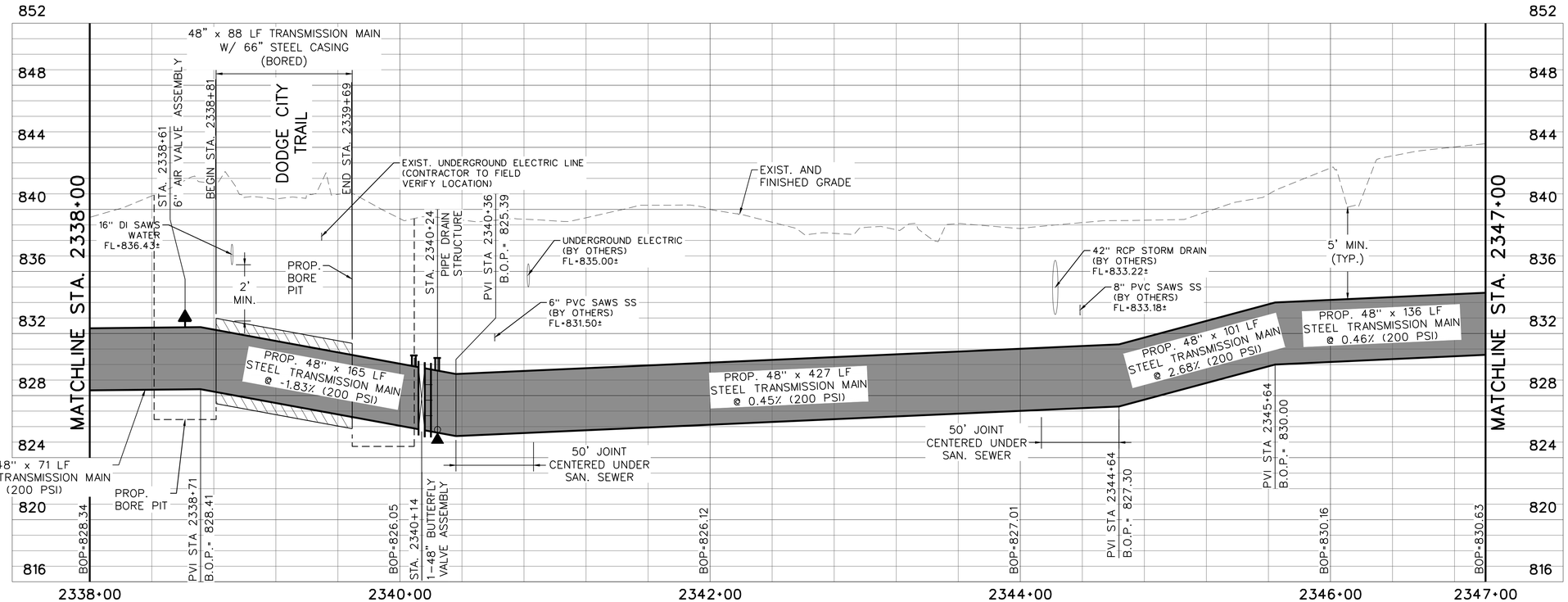
Sheet W38


ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]
Date: Jul 20, 2020 – 12:22am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL02.dwg




NOTES:

1. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
2. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.
3. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN THE BEXAR COUNTY ROW.




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS 07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-2800
Fax (210) 298-3001

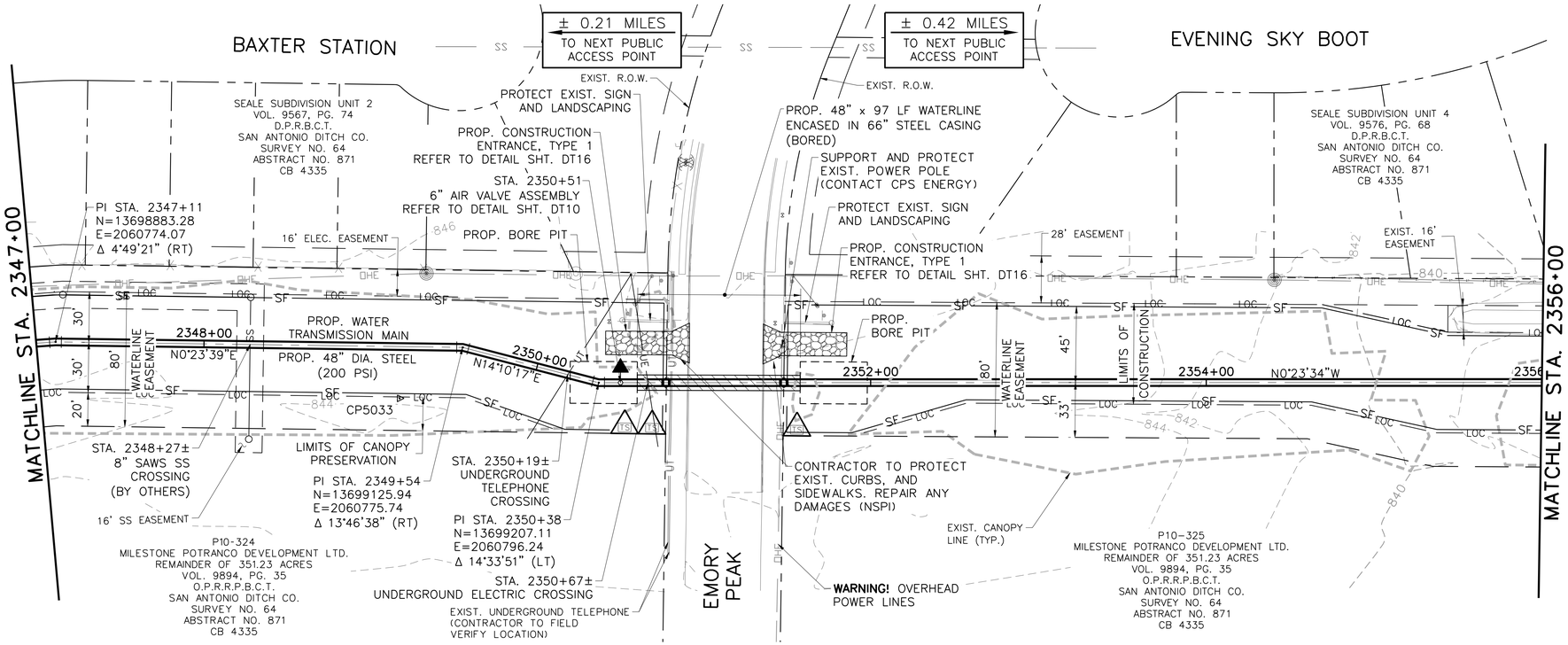
SAN ANTONIO WATER SYSTEM

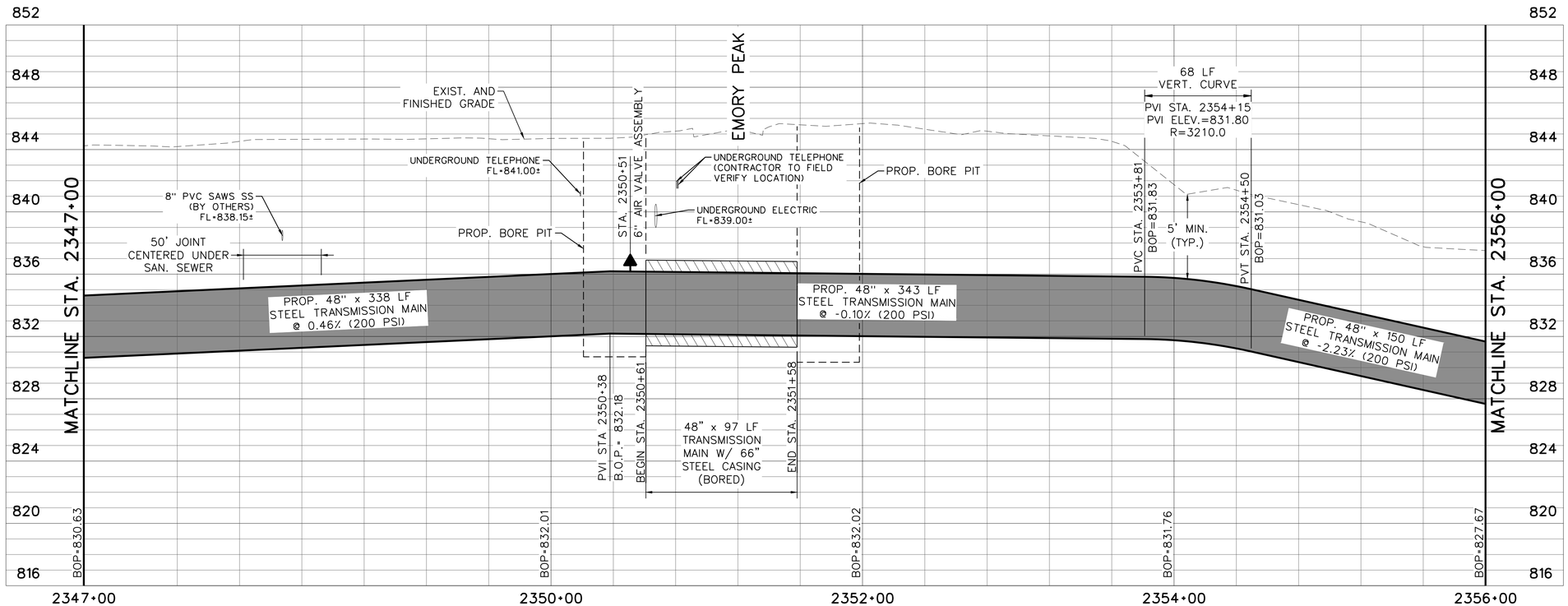
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2338+00 TO STA. 2347+00

Sheet W39

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]

Date: Jul 20, 2020 - 12:23am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL02.dwg




NOTES:

1. EXISTING IRRIGATION SYSTEM SHALL BE KEPT IN OPERATION ON ADJACENT PROPERTY DURING CONSTRUCTION. IRRIGATION SYSTEM SHALL BE REINSTALLED WITHIN IMPACTED AREA BY LICENSED IRRIGATOR AFTER CONSTRUCTION. (NSPI)
2. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN THE BEXAR COUNTY ROW.

N

0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER
07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

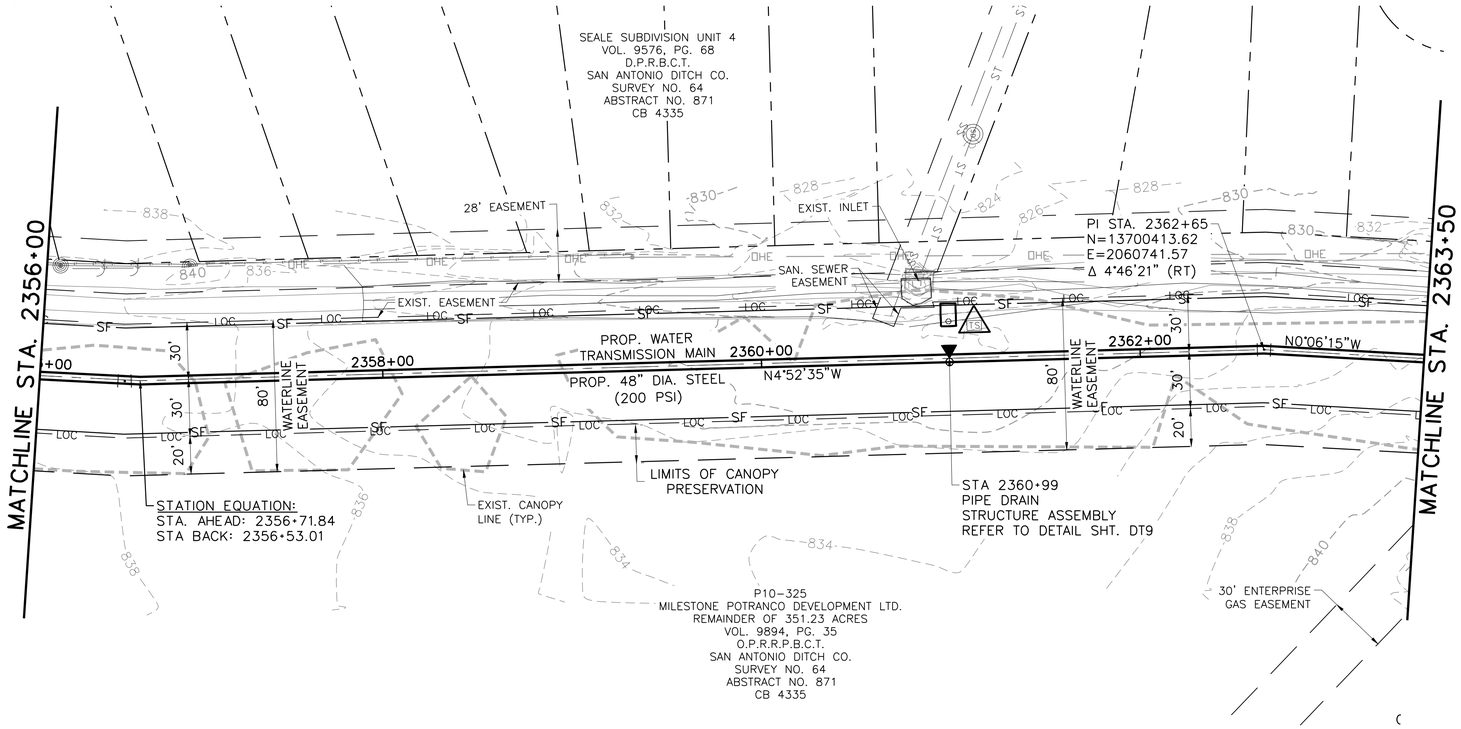
SAN ANTONIO WATER SYSTEM

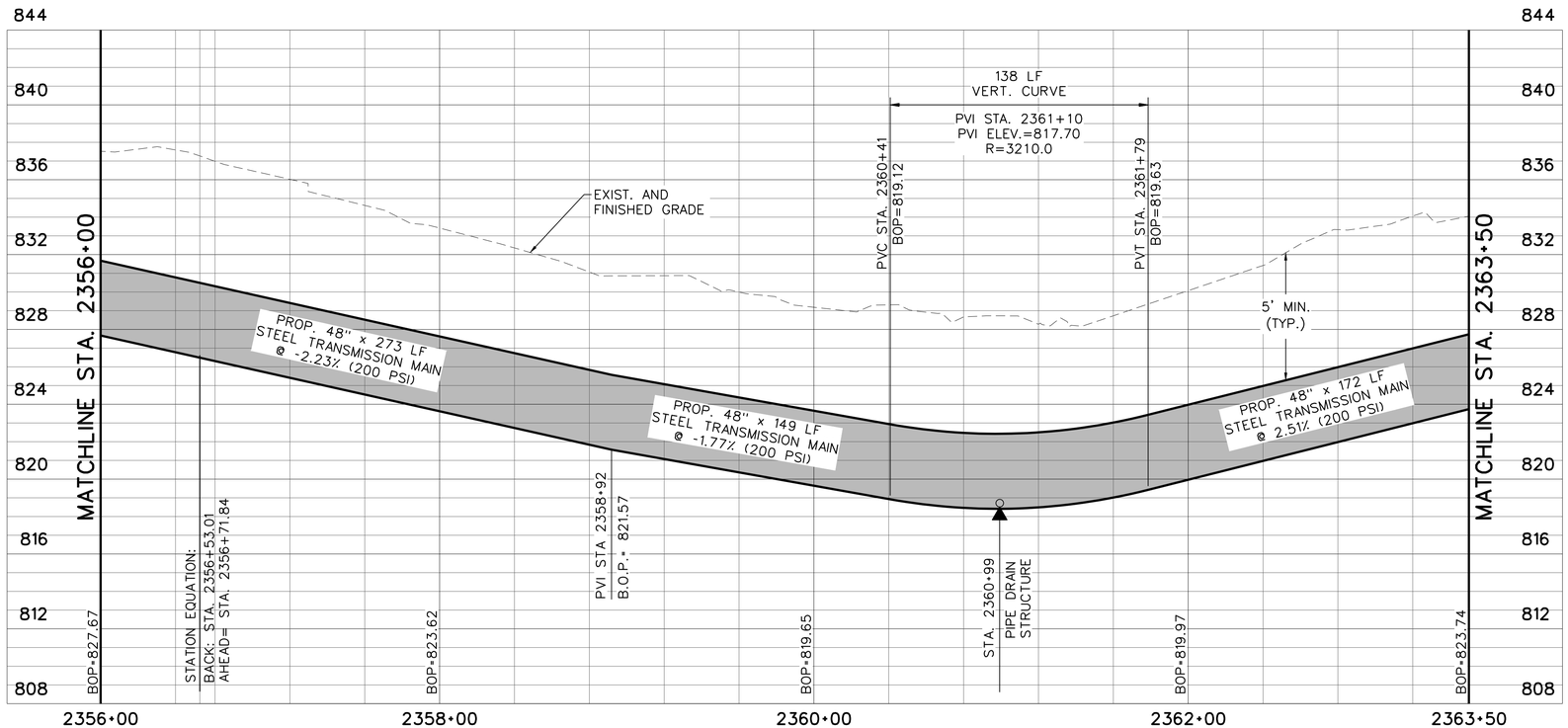
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2347+00 TO STA. 2356+00

Sheet W40

ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]

Date: Jul 20, 2020 – 12:24am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL02.dwg




N

0 40' 80'
HORIZONTAL

0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-3900
Fax (210) 298-3901

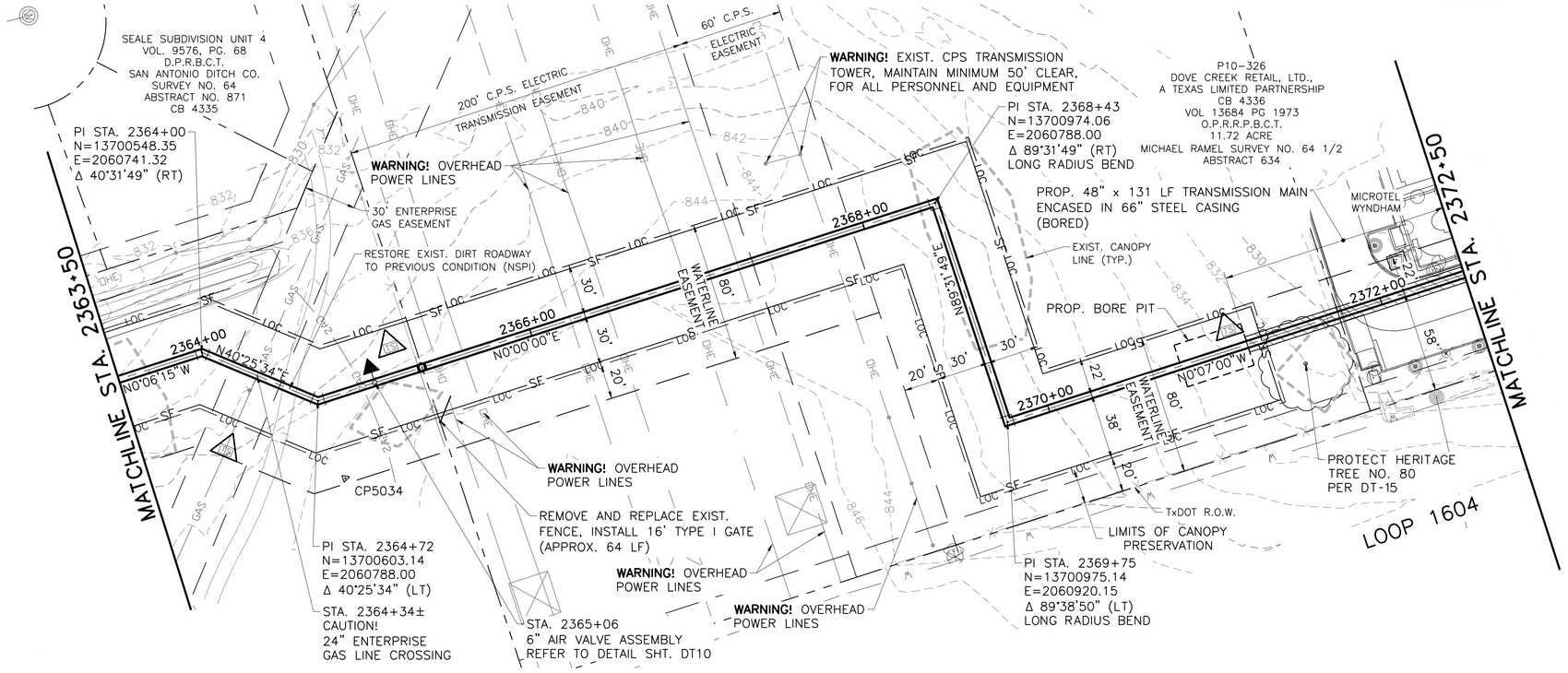
SAN ANTONIO WATER SYSTEM

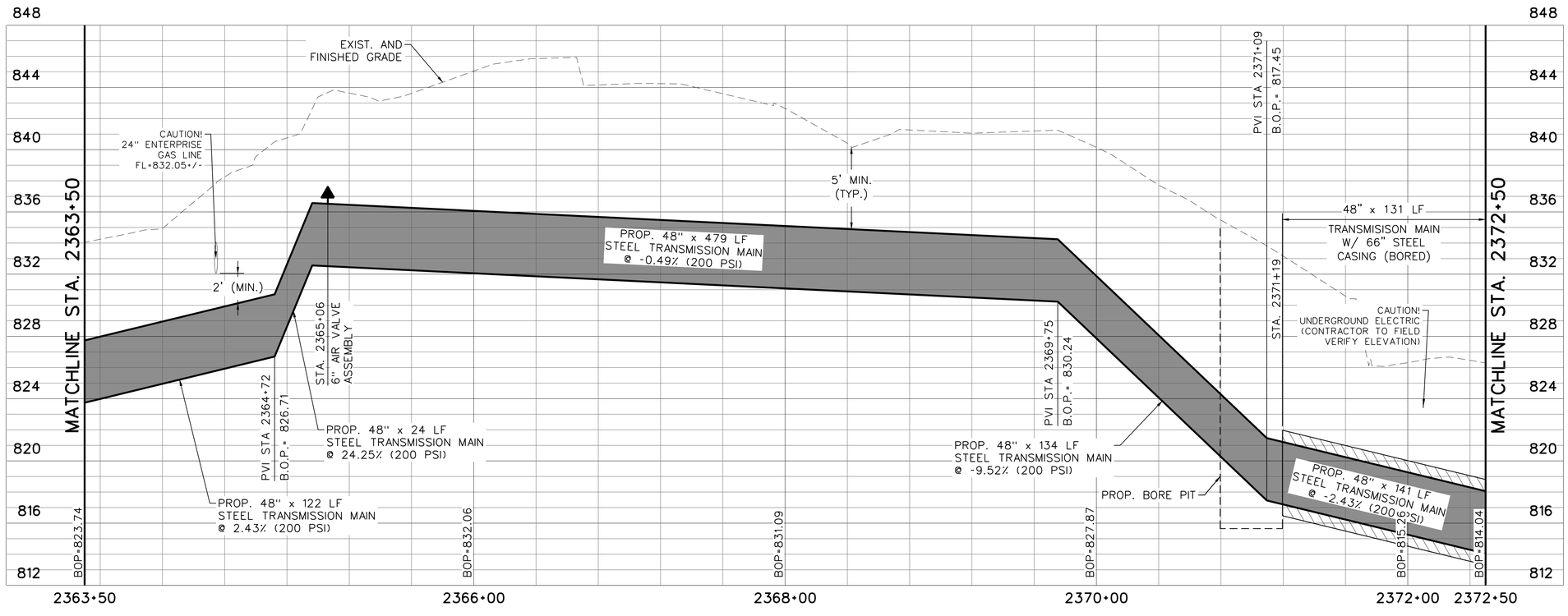
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2356+00 TO STA. 2363+50

Sheet W41

ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]

Date: Jul 19, 2020 - 7:38pm User: DDH File: N:\wr\Drawings\WR-SAWS-PP-WL03.dwg




NOTES:

1. CONTRACTOR SHALL NOTIFY ENTERPRISE 48 HOURS PRIOR TO CROSSING GAS LINE. SEE SHEET G3 FOR CONTACT INFORMATION.
2. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.

0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

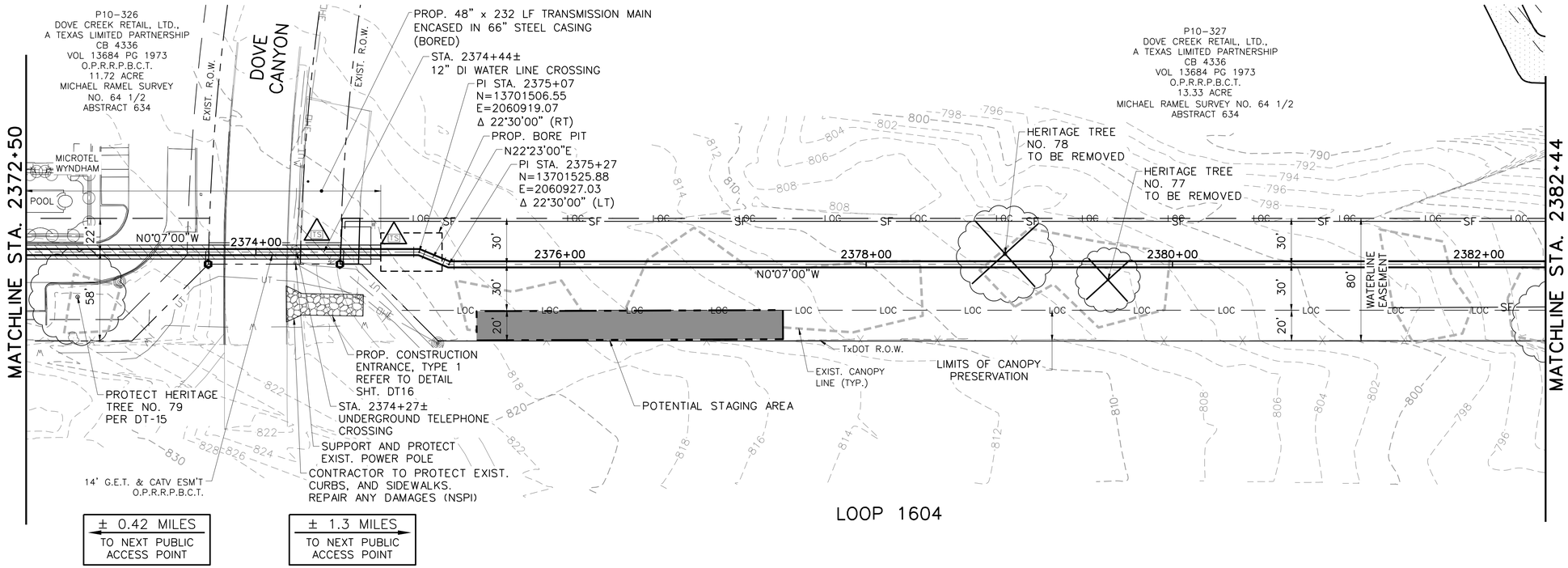
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2363+50 TO STA. 2372+50

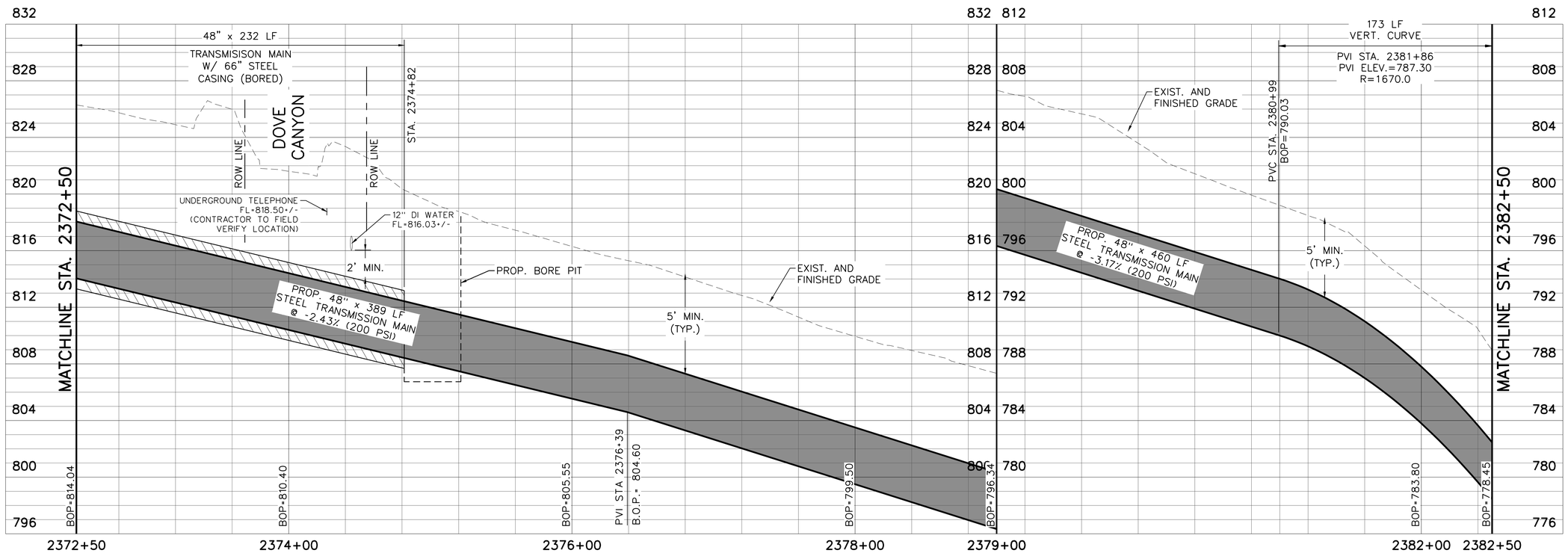
Sheet W42

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]
Date: Jul 19, 2020 - 5:35pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL03.dwg




NOTES:

1. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
2. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.
3. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN THE BEXAR COUNTY ROW.




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
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VERTICAL SCALE: 1"=4'

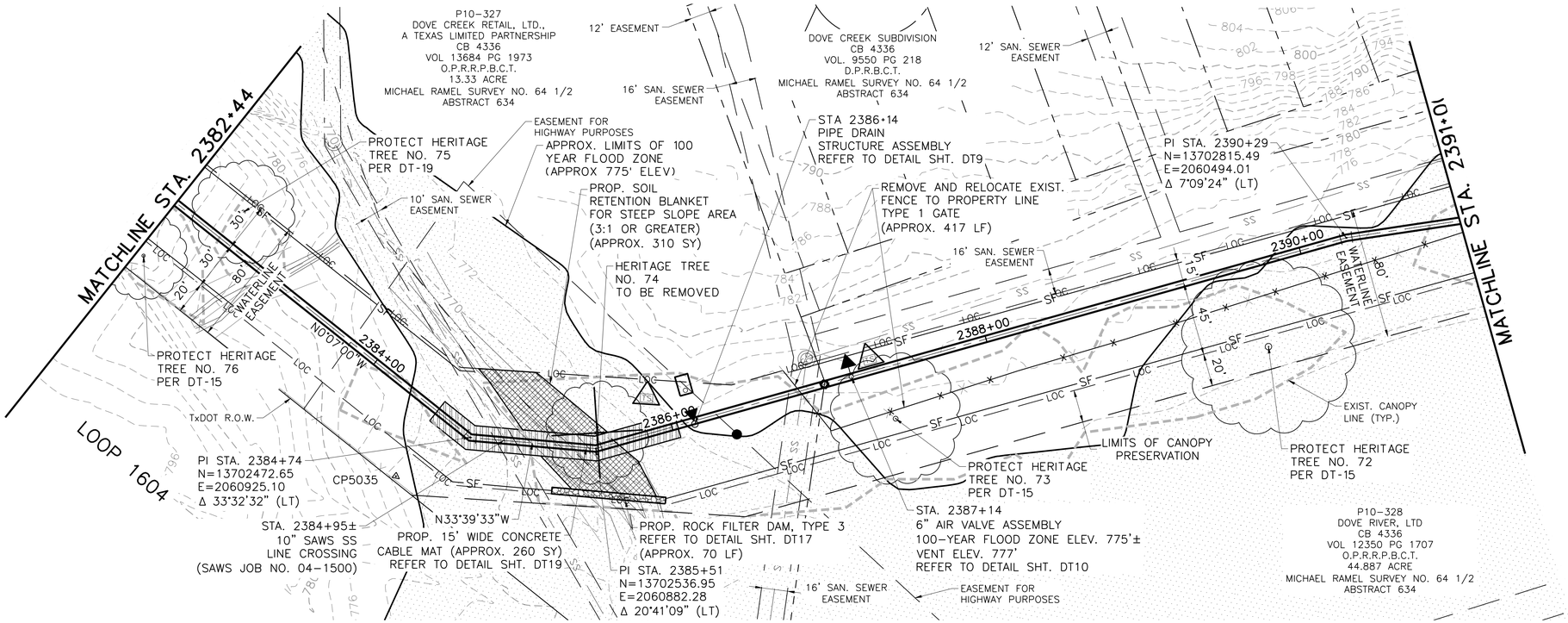

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-3900
Fax (210) 298-3001


SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2372+50 TO STA. 2382+50

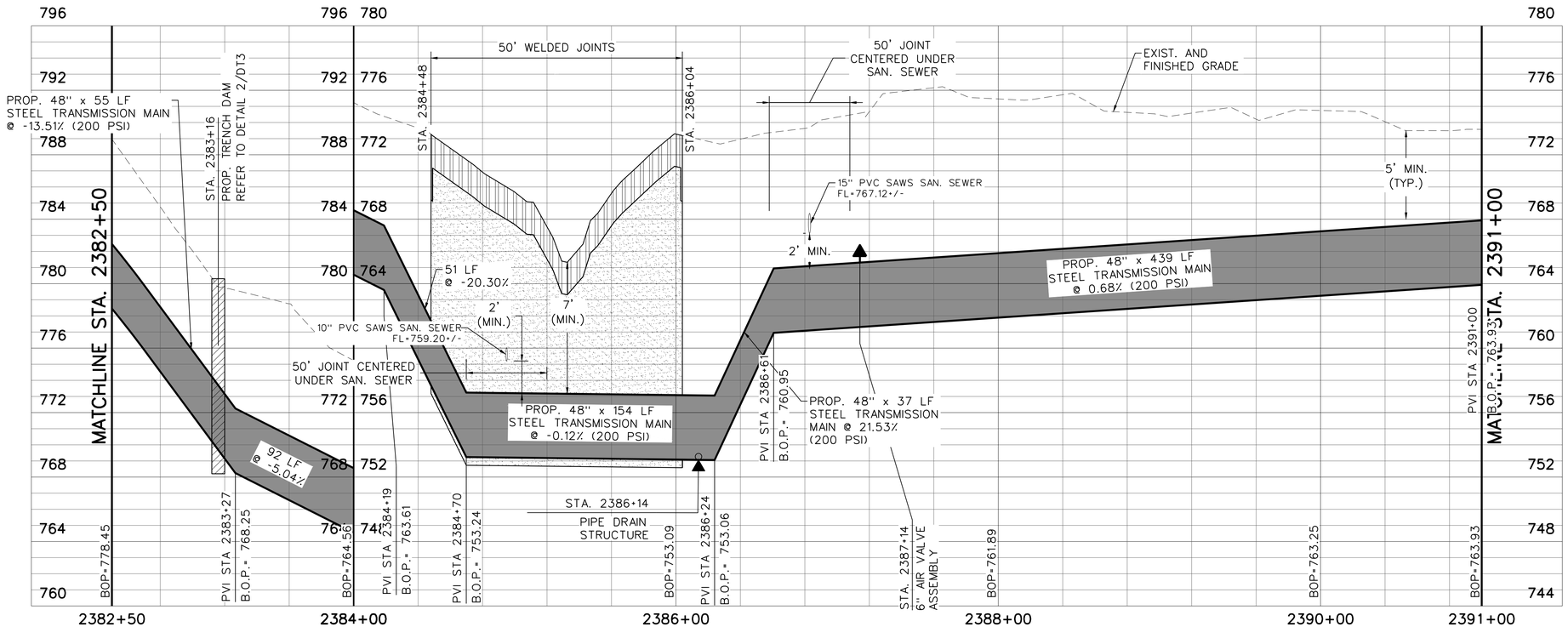
Sheet W43


ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]
Date: Jul 20, 2020 - 1:27am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL03.dwg




NOTES:

1. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.
2. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
3. IF THE TREE CANOPY ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS 07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-9900
Fax (210) 298-9901

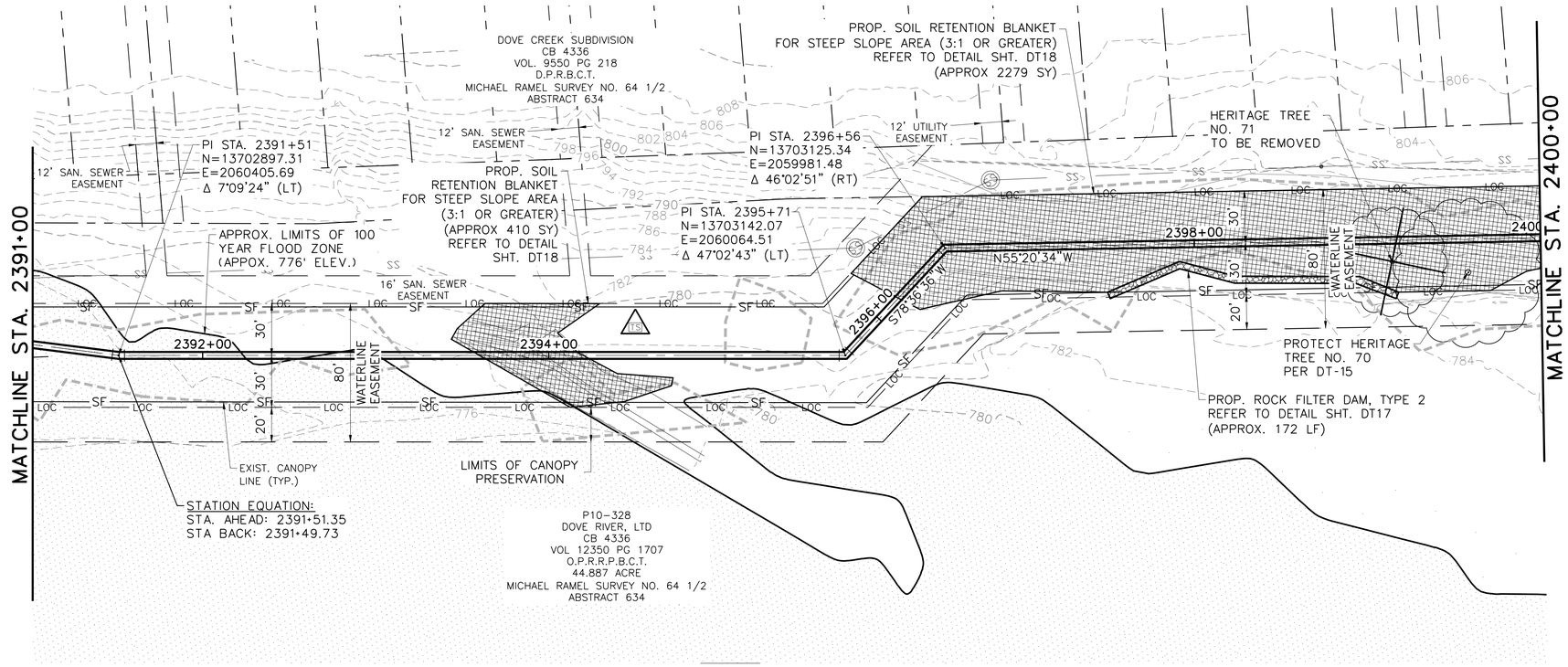
SAN ANTONIO WATER SYSTEM

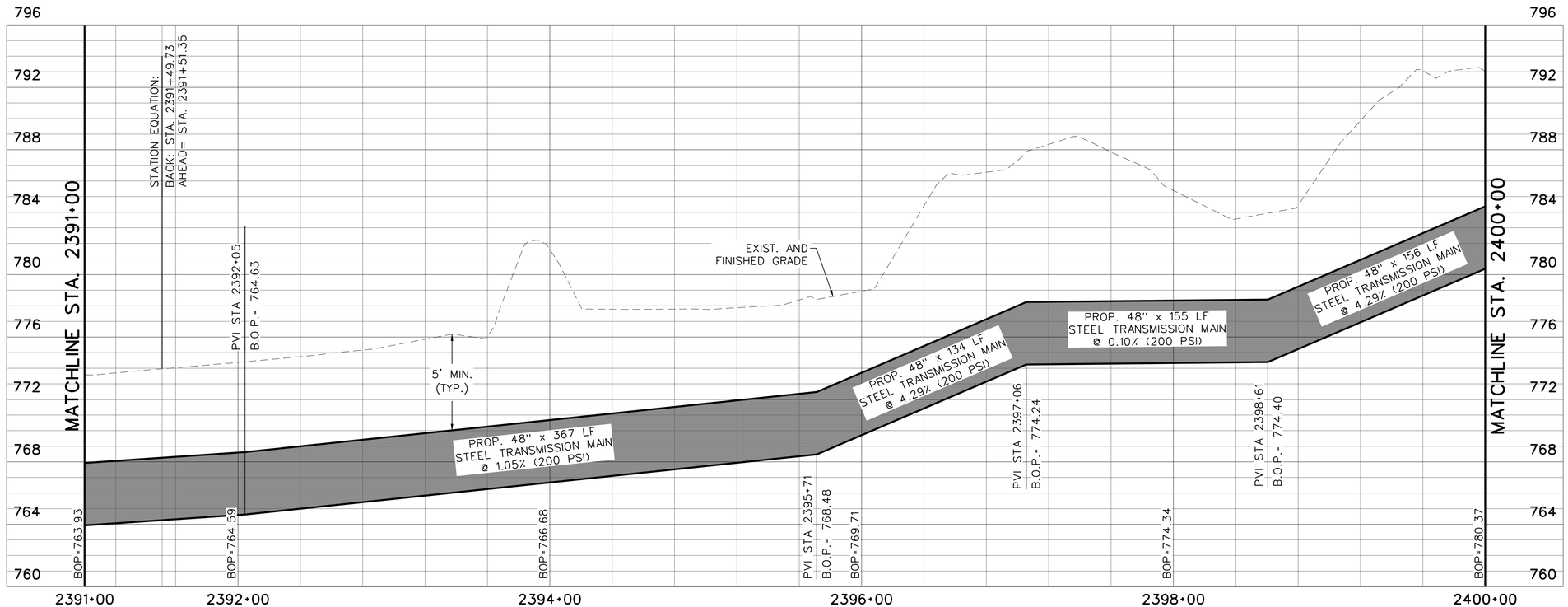
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2382+50 TO STA. 2391+00

Sheet W44

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]

Date: Jul 19, 2020 - 5:38pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL03.dwg




NOTES:

1. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.
2. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
3. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.
4. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.

0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

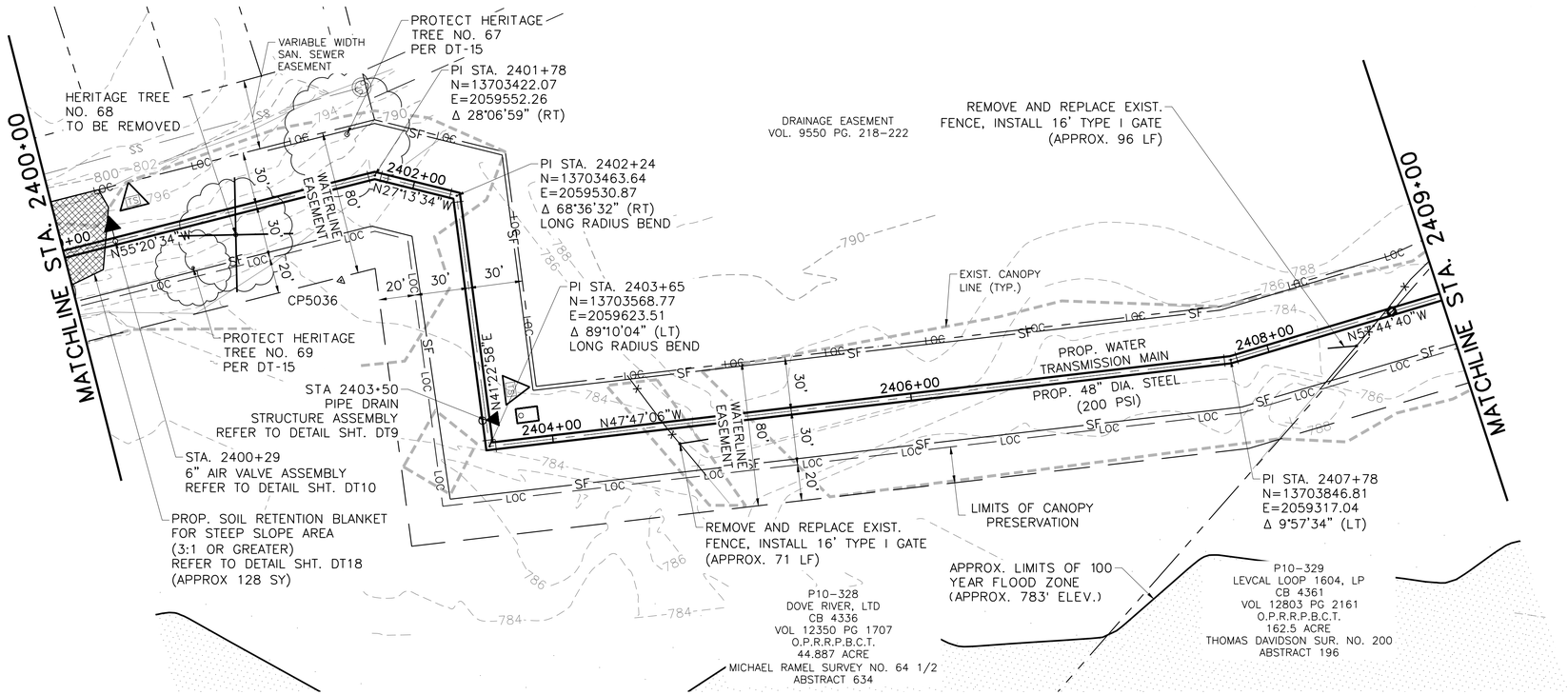
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2391+00 TO STA. 2400+00

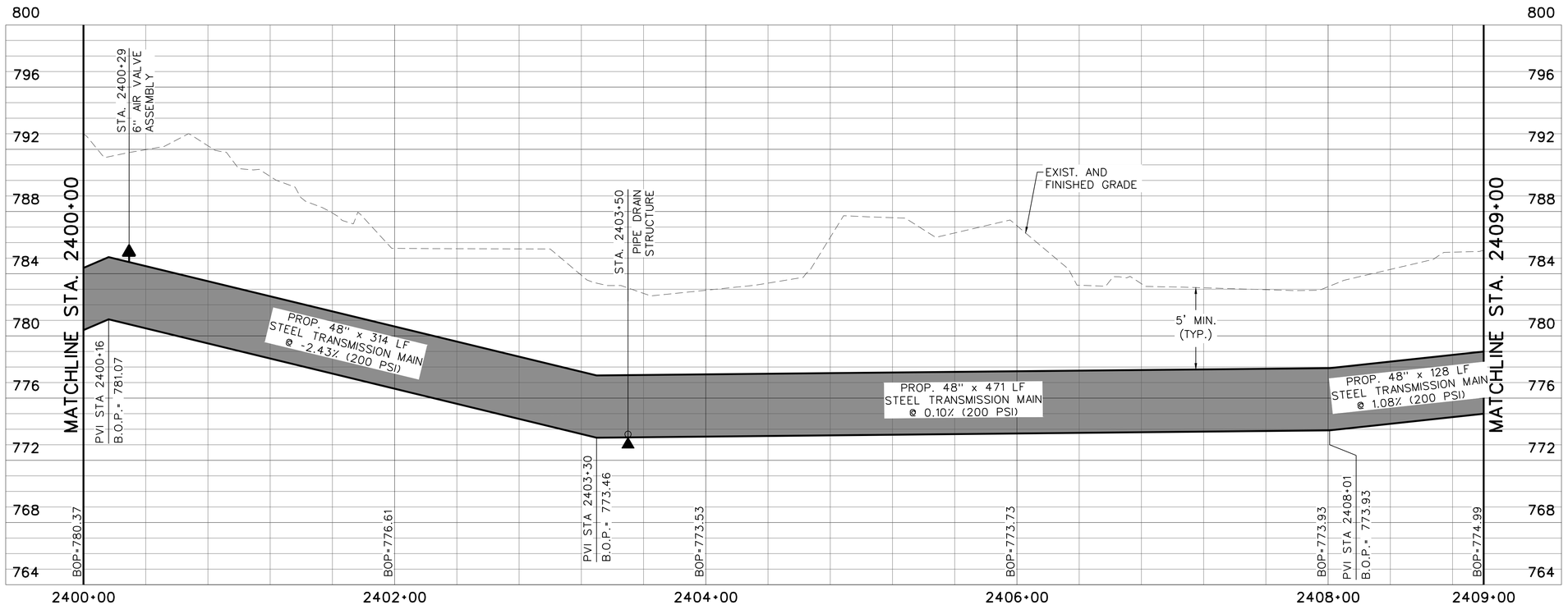
Sheet W45

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NOTES:

1. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
2. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

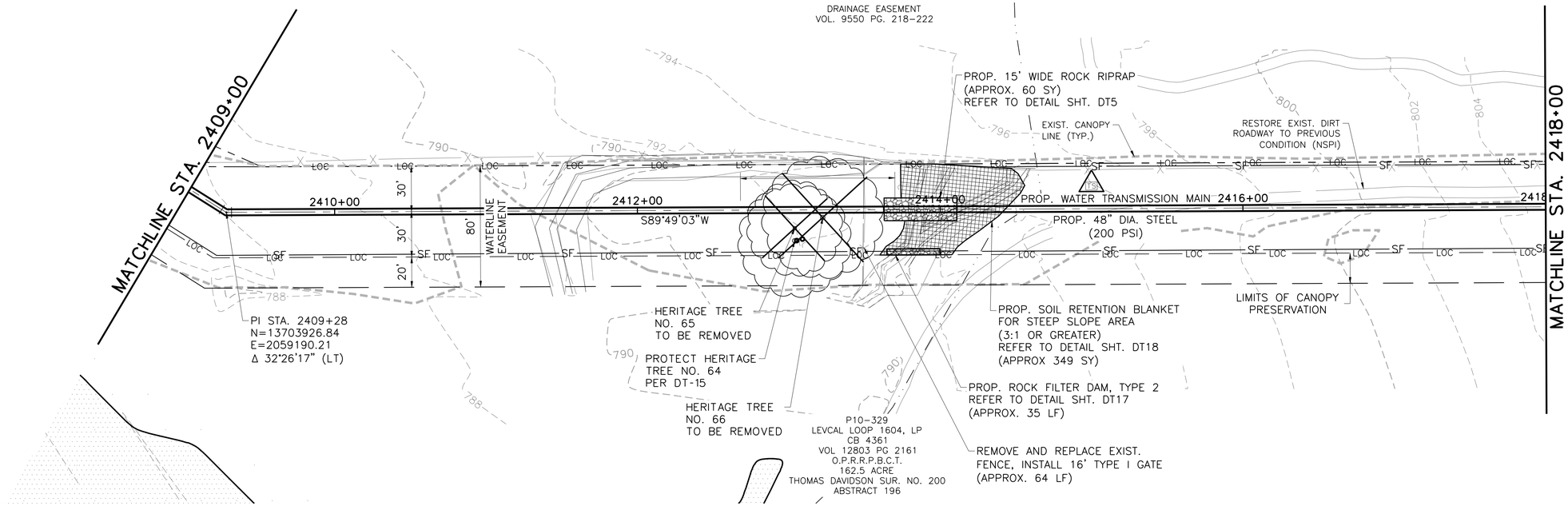
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-2800
Fax (210) 298-2801

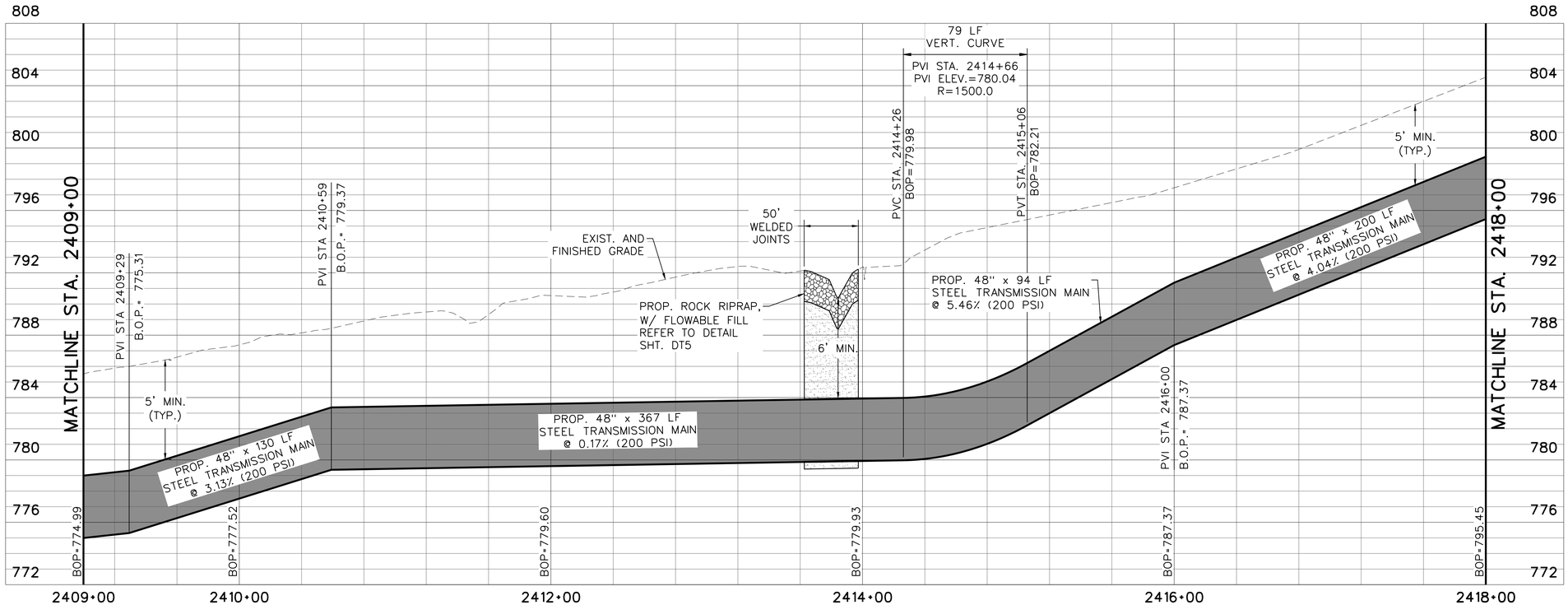
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2400+00 TO STA. 2409+00

Sheet W46

ACAD CIVIL 3D 2011 User: DDH [SWB09391][SASRV2]
Date: Jul 19, 2020 – 5:41pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL03.dwg




NOTES:

1. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
2. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.

N

0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-2800
Fax (210) 298-2801

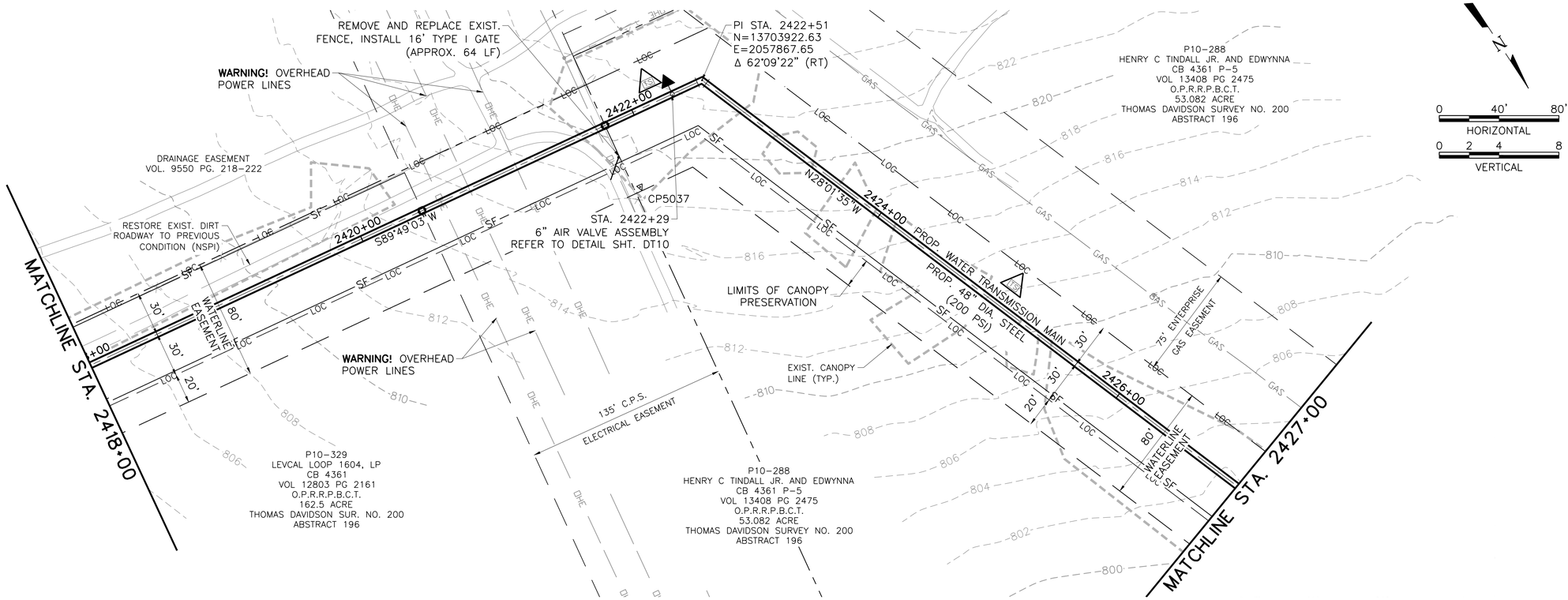
SAN ANTONIO WATER SYSTEM

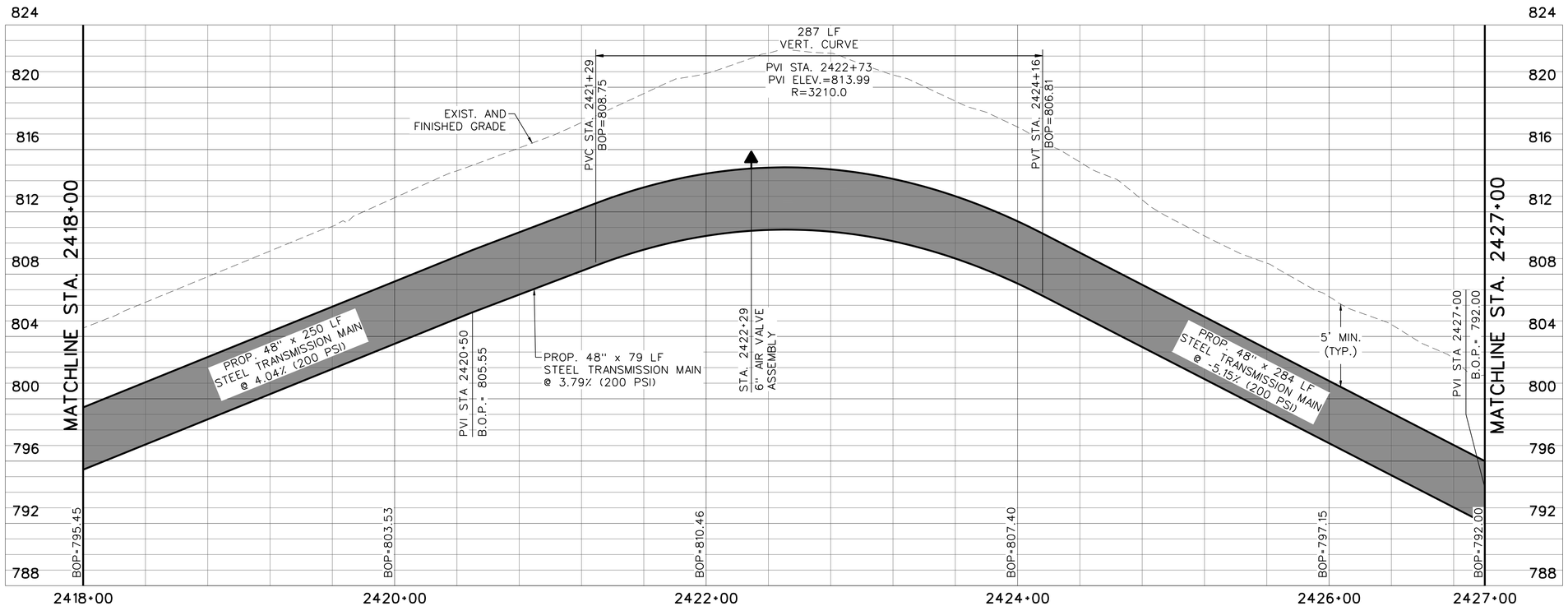
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2409+00 TO STA. 2418+00

Sheet W47

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]

Date: Jul 19, 2020 - 5:43pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL03.dwg




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-3900
Fax (210) 298-3901

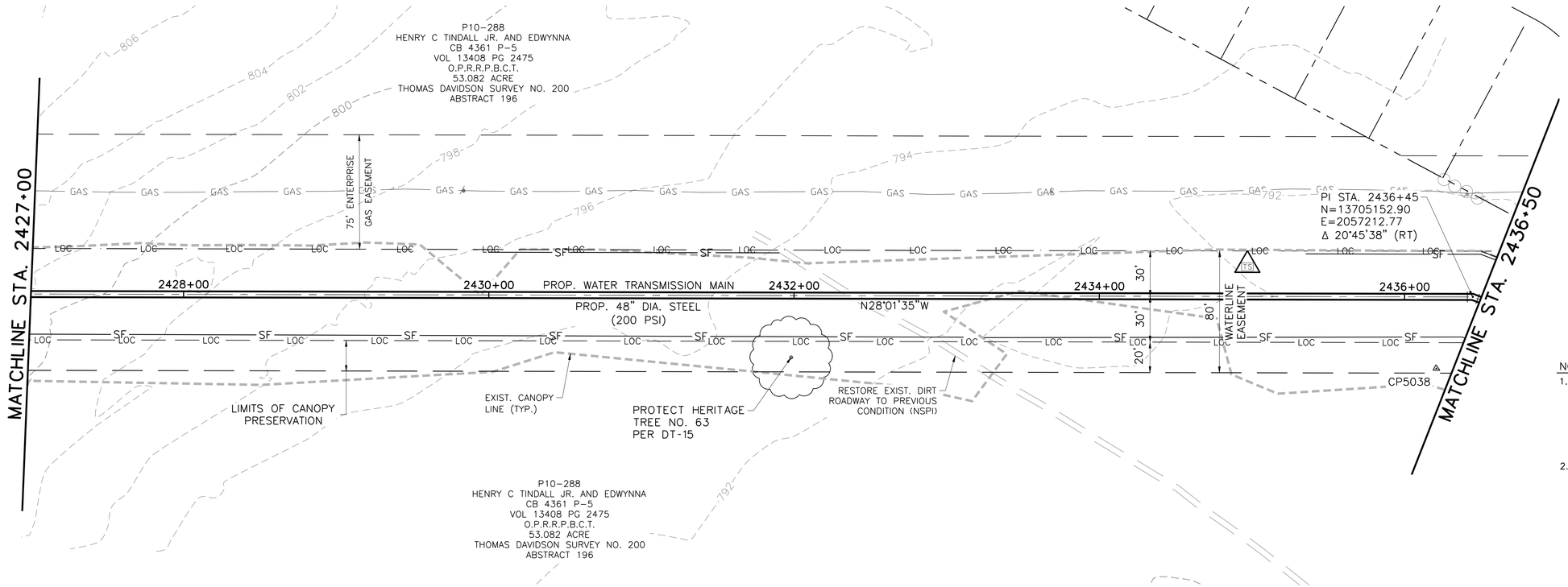
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2418+00 TO STA. 2427+00

Sheet W48

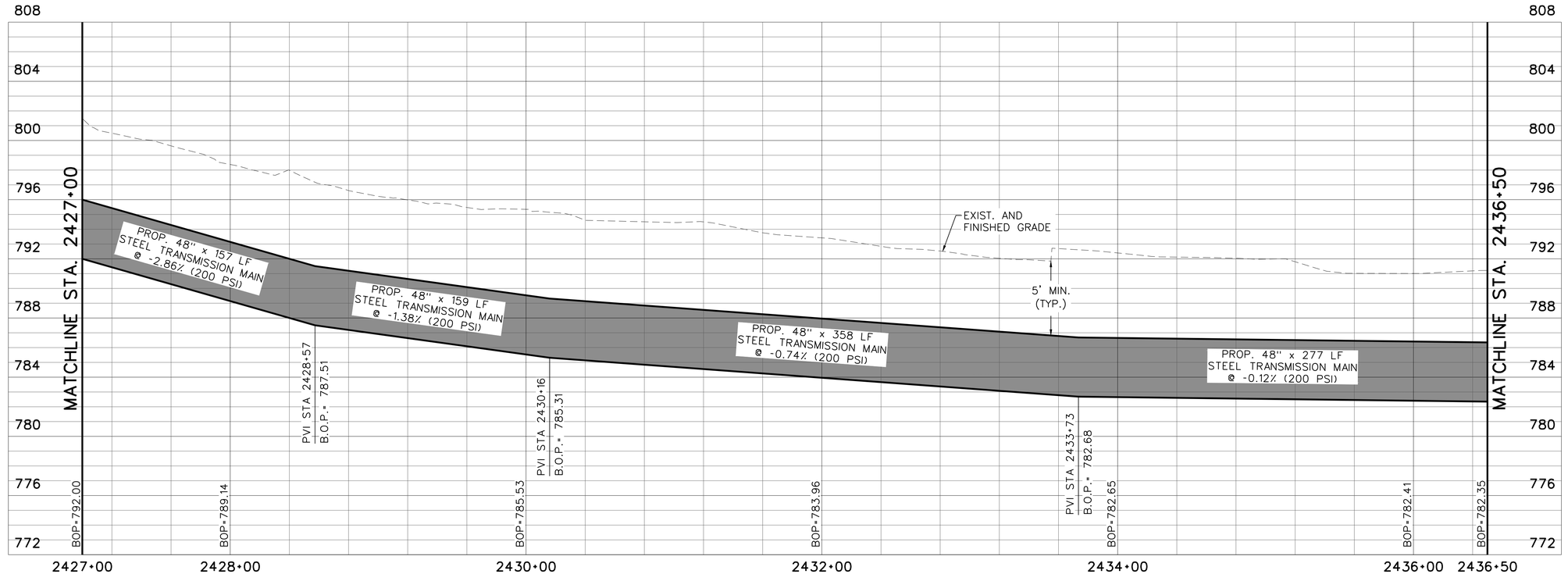
ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]

Date: Jul 19, 2020 - 5:45pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL03.dwg




NOTES:

1. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
2. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

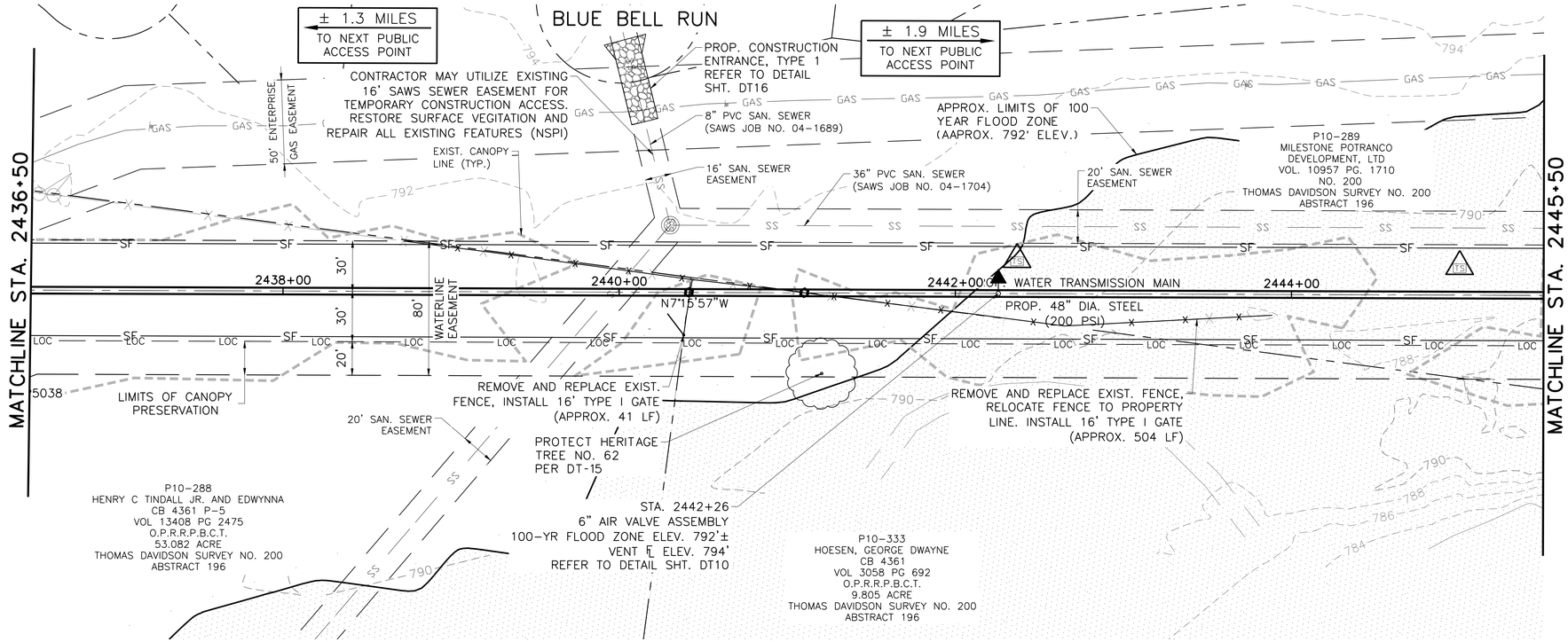

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-9900
Fax (210) 298-9901

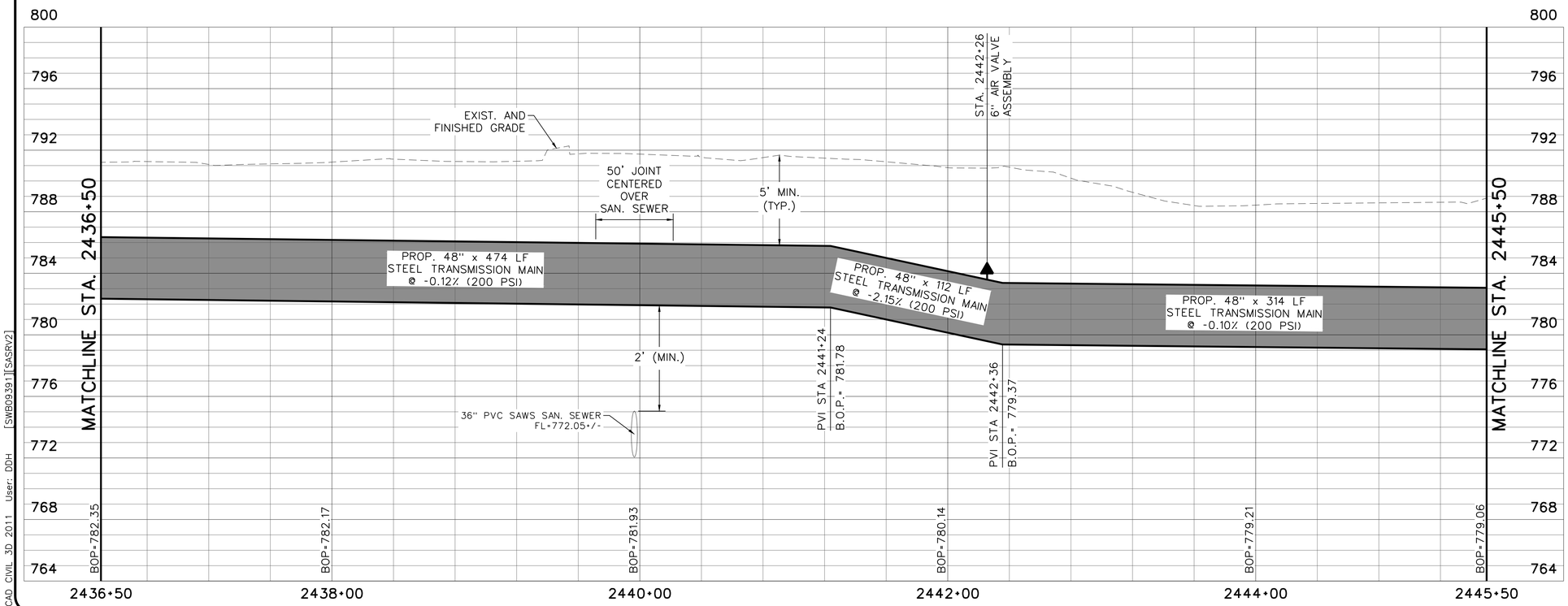

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2427+00 TO STA. 2436+50

Sheet W49


ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]
Date: Jul 19, 2020 - 5:46pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL03.dwg




NOTES:

1. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.
2. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
3. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.
4. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN THE BEXAR COUNTY ROW.

0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

ROBERT N. JENKINS JR. 103589 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

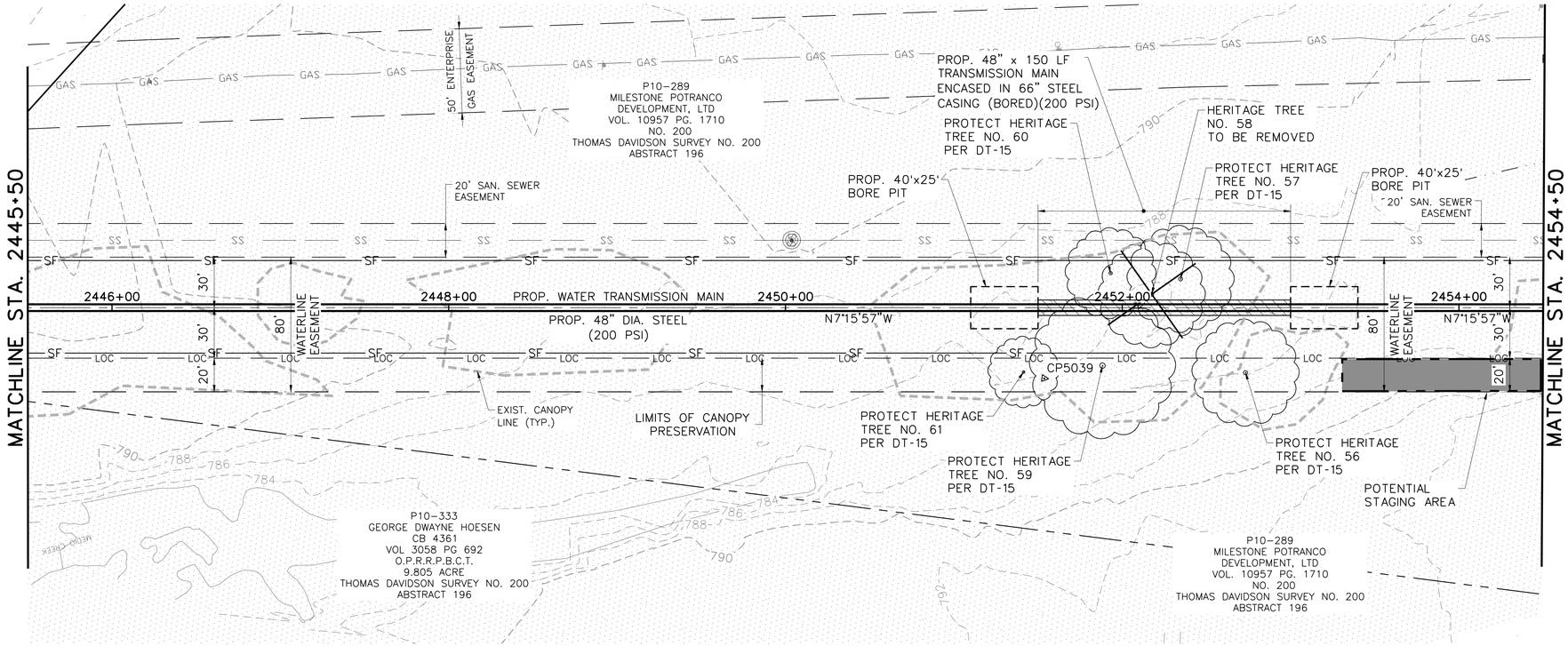
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

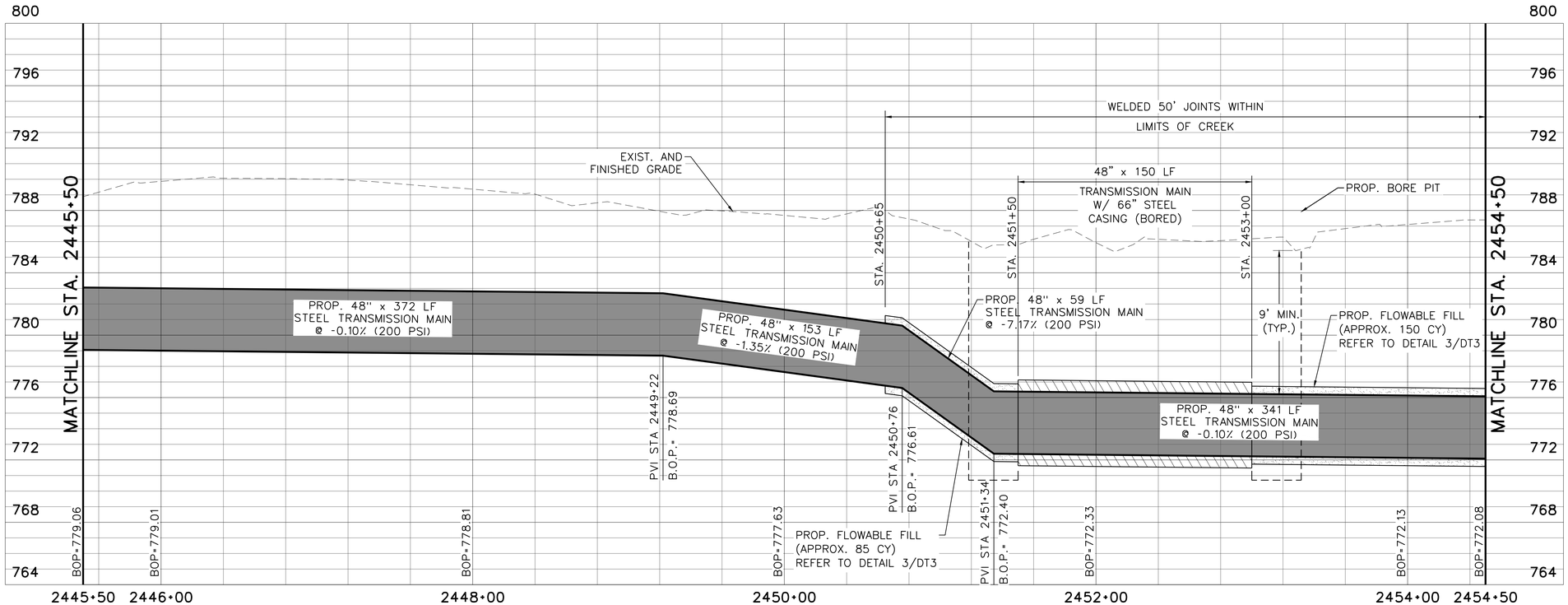
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2436+50 TO STA. 2445+50

Sheet W50

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]
Date: Jul 19, 2020 - 5:48pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL03.dwg




NOTES:

1. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.
2. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
3. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.

0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

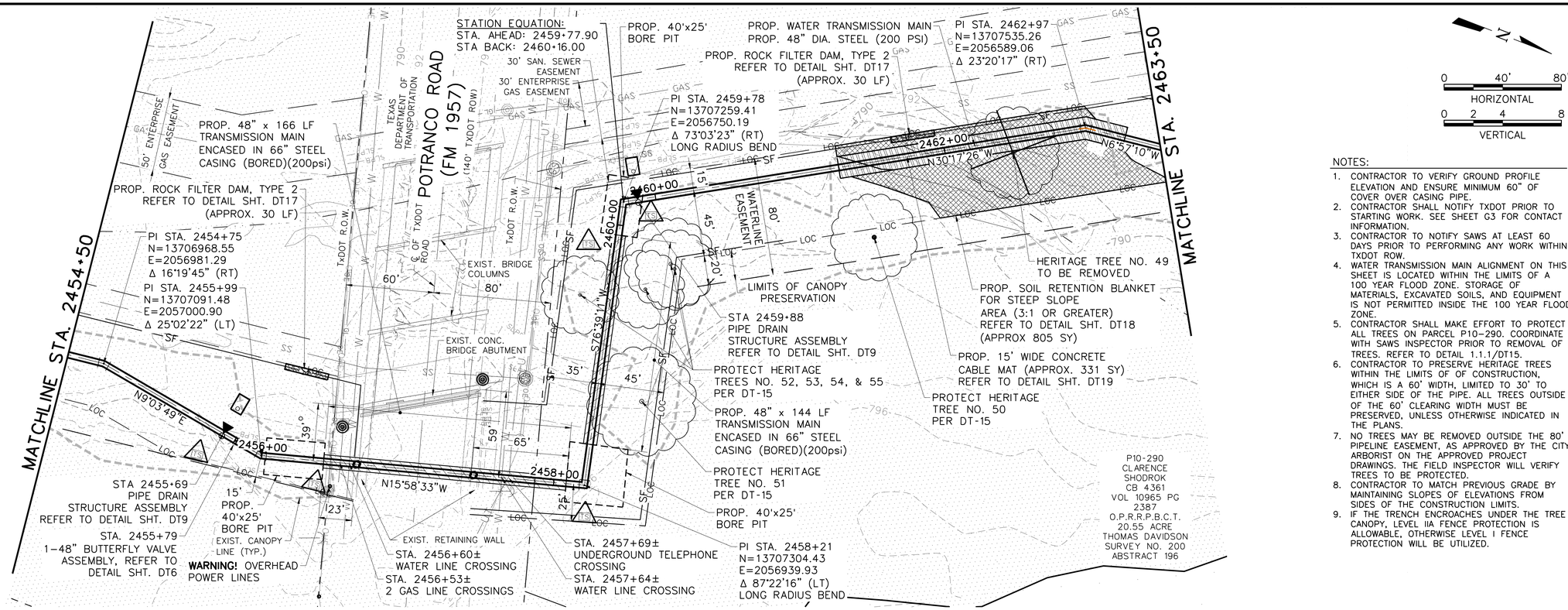
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2445+50 TO STA. 2454+50

Sheet W51

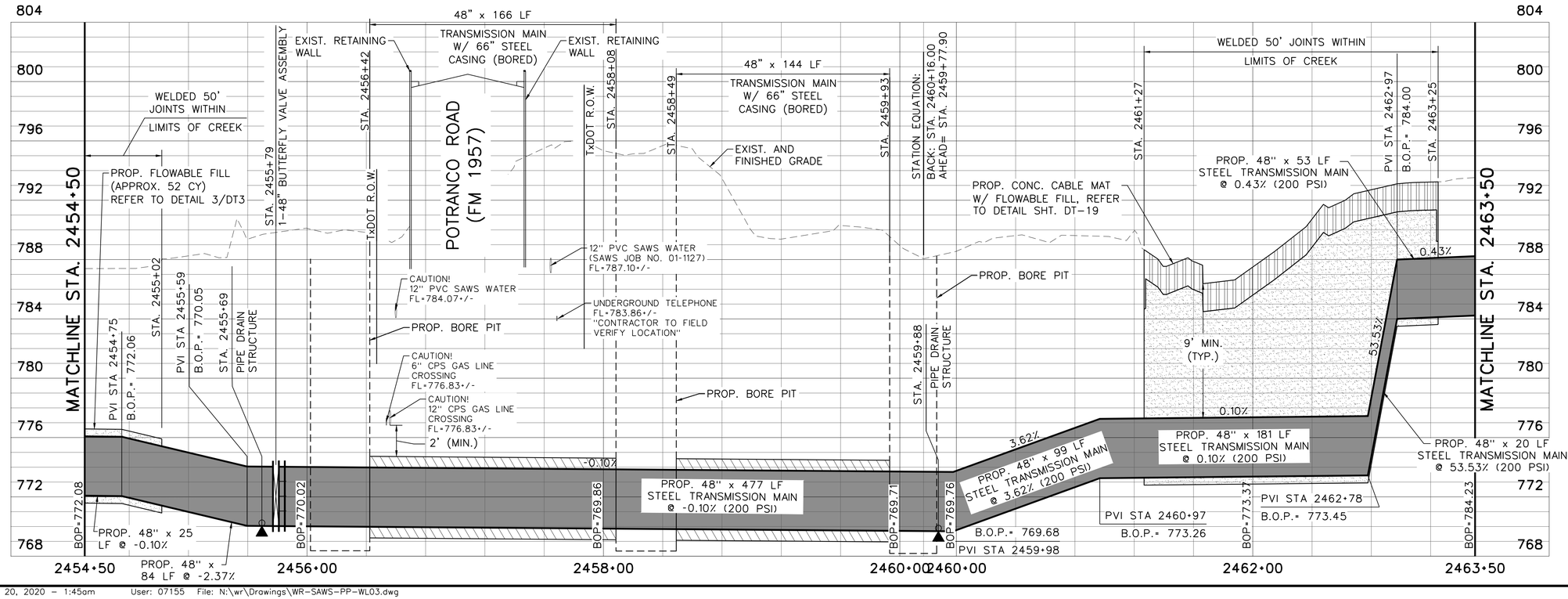
ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]

Date: Jul 19, 2020 - 5:50pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL03.dwg




NOTES:

1. CONTRACTOR TO VERIFY GROUND PROFILE ELEVATION AND ENSURE MINIMUM 60" OF COVER OVER CASING PIPE.
2. CONTRACTOR SHALL NOTIFY TXDOT PRIOR TO STARTING WORK. SEE SHEET G3 FOR CONTACT INFORMATION.
3. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN TXDOT ROW.
4. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.
5. CONTRACTOR SHALL MAKE EFFORT TO PROTECT ALL TREES ON PARCEL P10-290. COORDINATE WITH SAWS INSPECTOR PRIOR TO REMOVAL OF TREES. REFER TO DETAIL 1.1.1/DT15.
6. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
7. NO TREES MAY BE REMOVED OUTSIDE THE 80' PIPELINE EASEMENT, AS APPROVED BY THE CITY ARBORIST ON THE APPROVED PROJECT DRAWINGS. THE FIELD INSPECTOR WILL VERIFY TREES TO BE PROTECTED.
8. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.
9. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

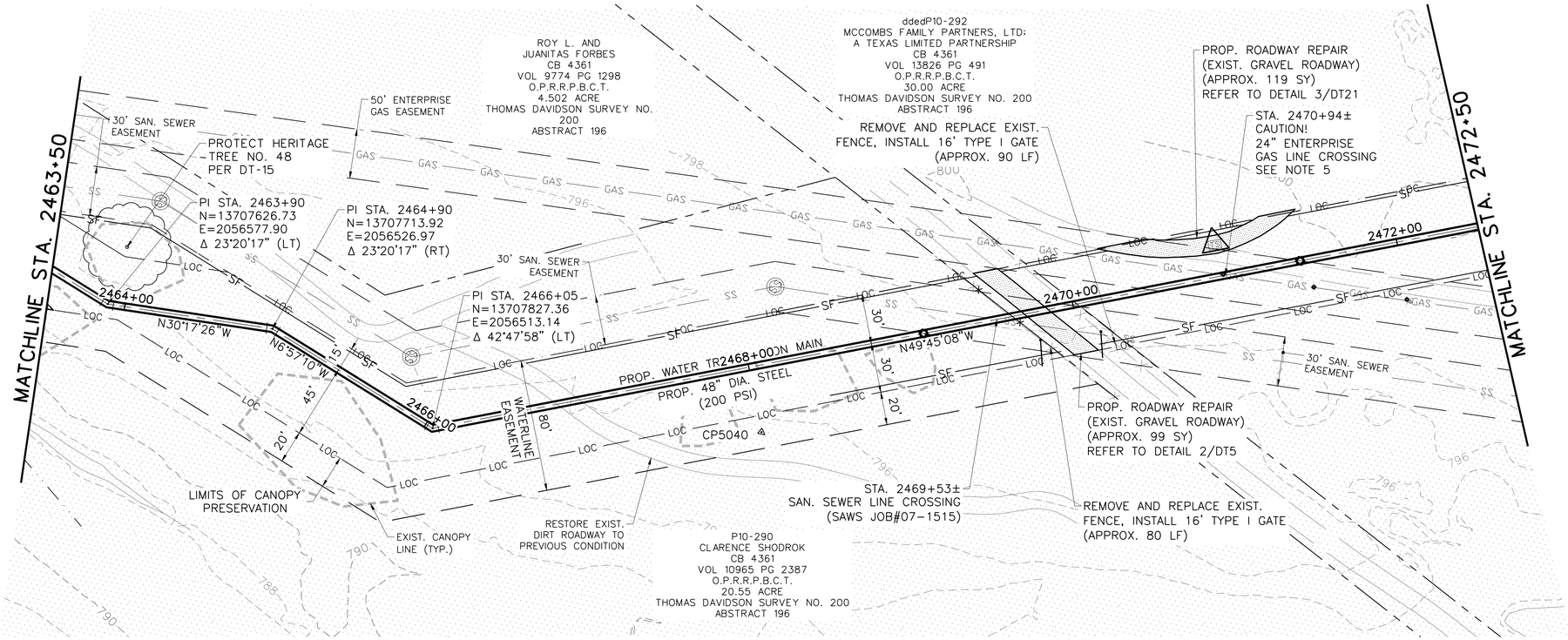
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-9600
Fax (210) 298-9601

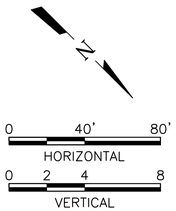
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2454+50 TO STA. 2463+50

Sheet W52

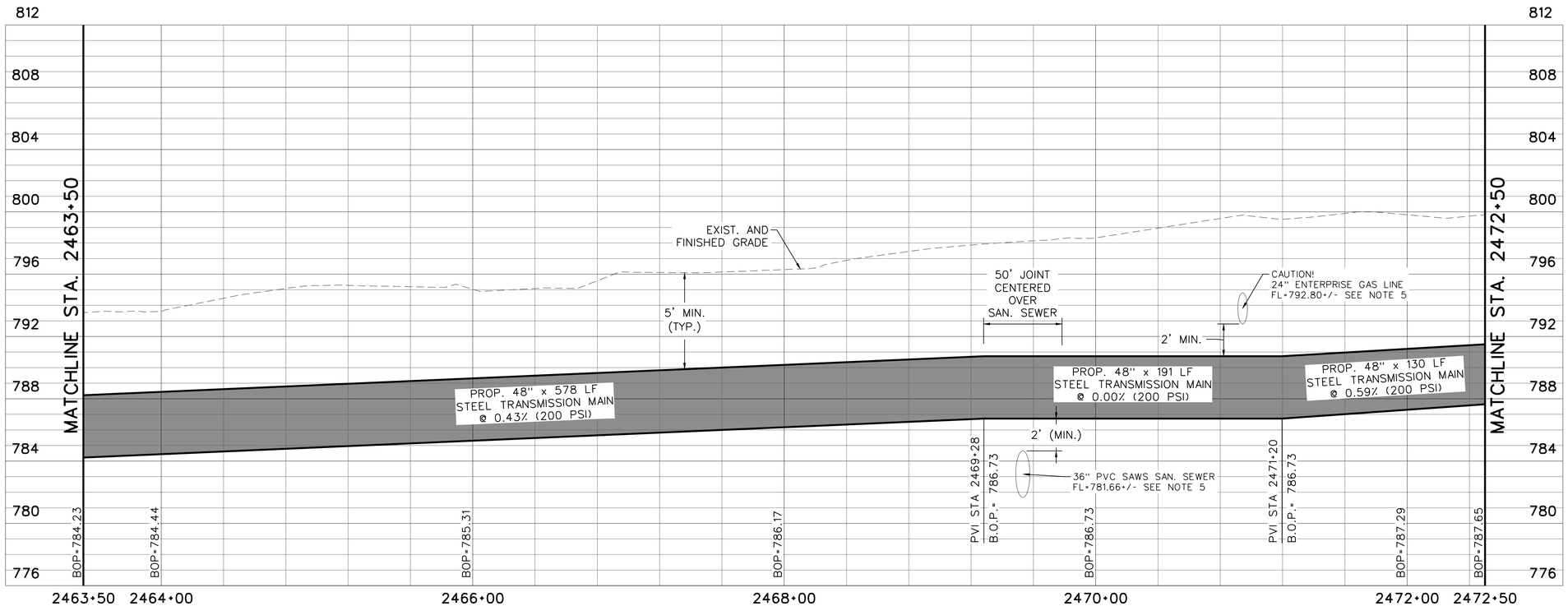
ACAD CIVIL 3D 2011 User: DDH [SWB09391T(SASRV2]
Date: Jul 20, 2020 - 1:45am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL03.dwg




NOTES:

1. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.
2. CONTRACTOR SHALL MAKE EFFORT TO PROTECT ALL TREES ON PARCEL P10-290. COORDINATE WITH SAWS INSPECTOR PRIOR TO REMOVAL OF TREES.
3. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
4. CONTRACTOR SHALL NOTIFY ENTERPRISE 48 HOURS PRIOR TO CROSSING GAS LINE. SEE SHEET G3 FOR CONTACT INFORMATION.
5. CONTRACTOR TO USE EXTREME CAUTION WHEN EXCAVATING NEAR EXISTING 36" SS AND 24" GAS AND PROVIDE ADEQUATE SUPORT DURING TO EXISTING PIPELINES. CONTRACTOR TO FIELD VERIFY ELEVATIONS OF EXISTING LINES PRIOR TO CONSTRUCTION TO CONFIRM MINIMUM 2' CLEARANCE FROM PROPOSED 48" WATER MAIN.
6. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'


FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

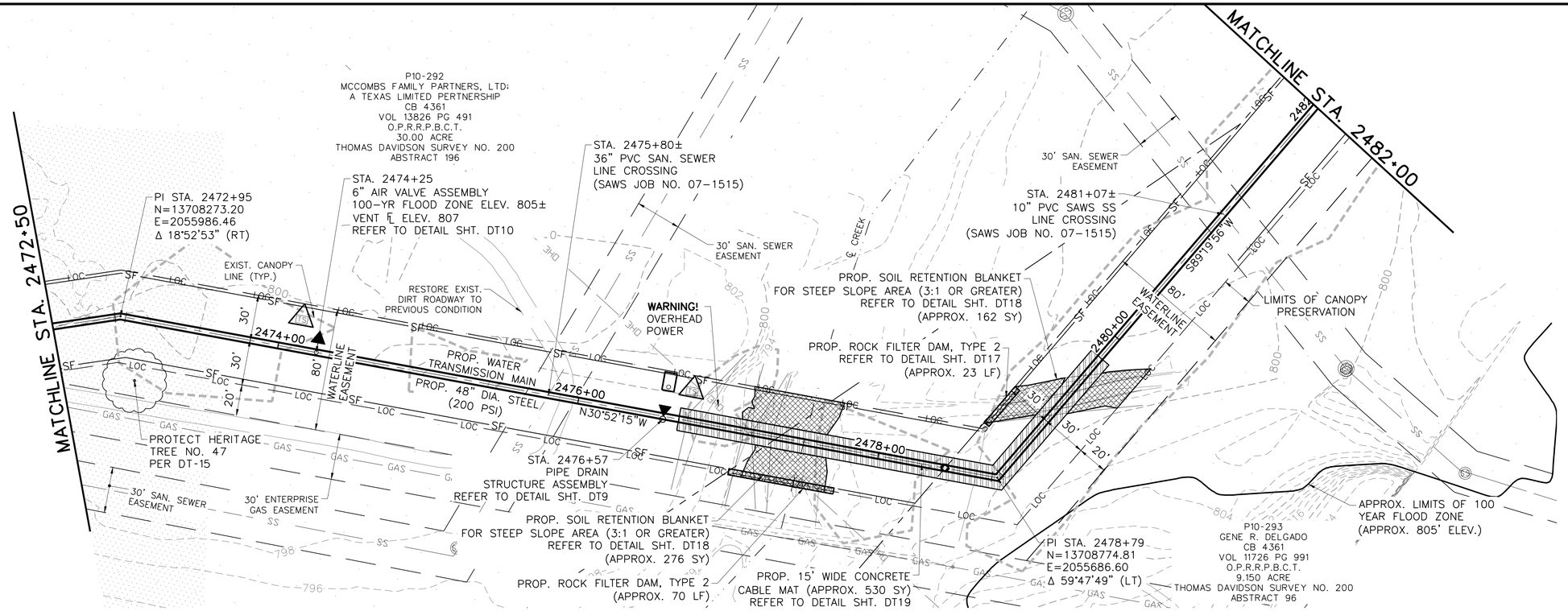

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2463+50 TO STA. 2472+50

Sheet W53

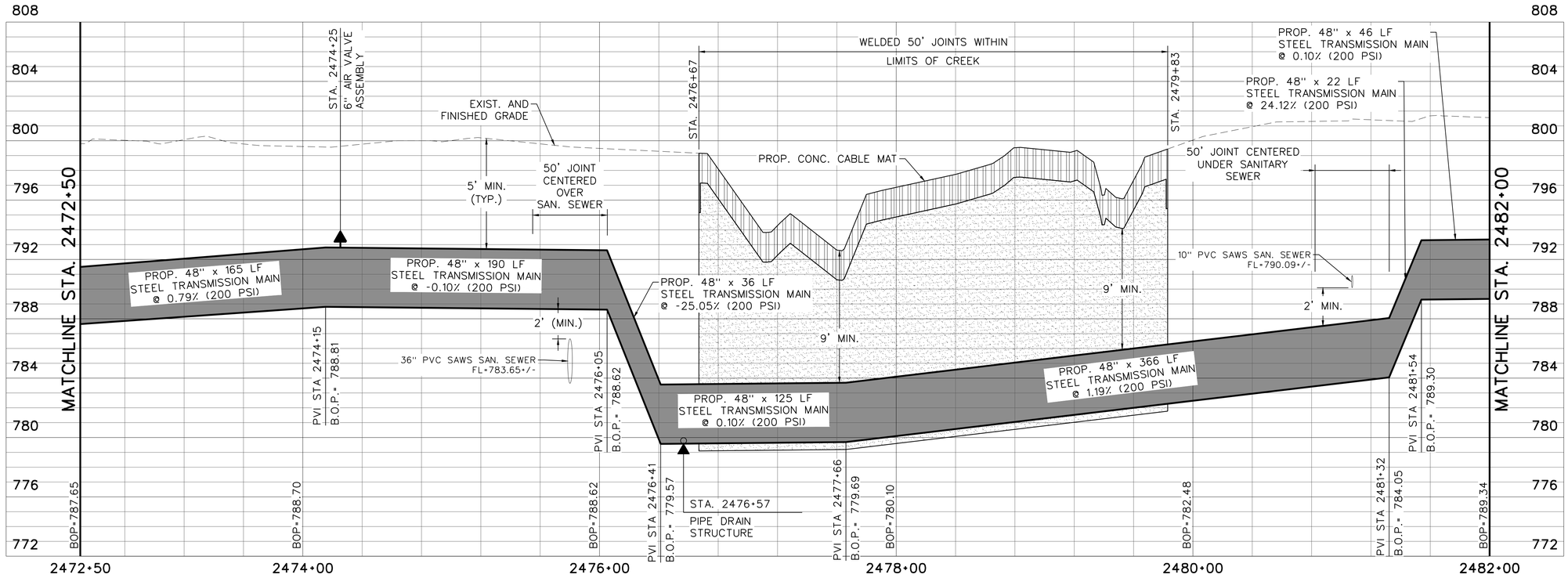
ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]

Date: Jul 19, 2020 - 5:52pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL03.dwg




NOTES:

1. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.
2. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
3. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS 07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

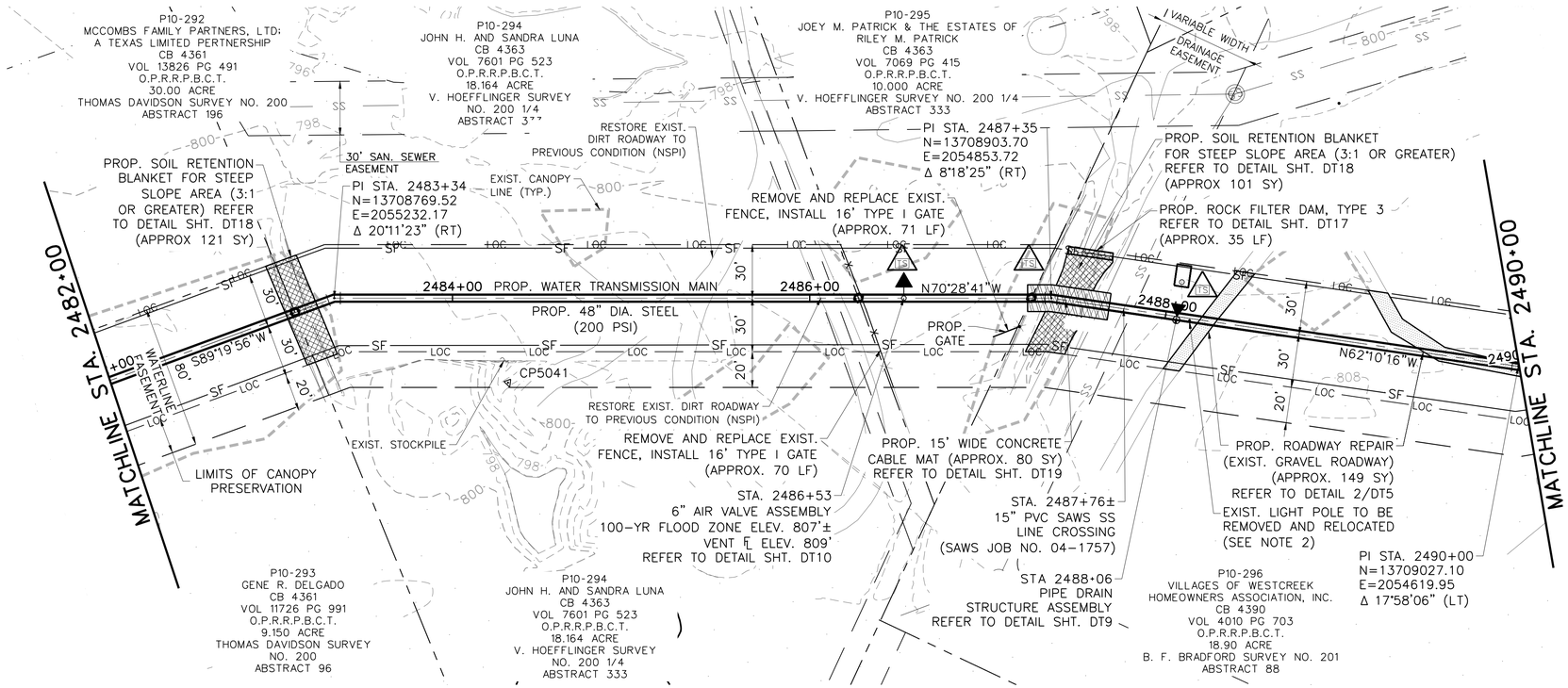
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

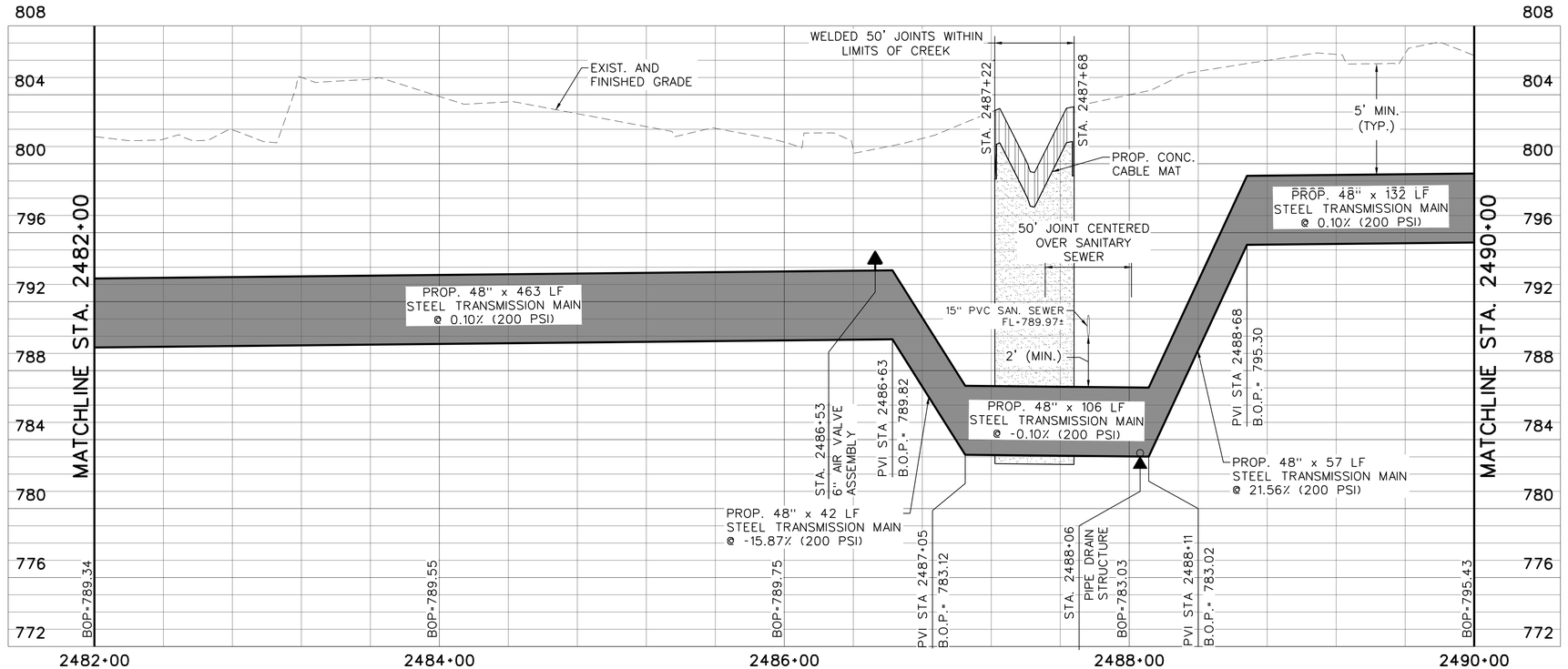
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2472+50 TO STA. 2482+00

Sheet W54

ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]
Date: Jul 19, 2020 - 5:54pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL03.dwg




NOTES:

1. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.
2. COORDINATE WITH LAND OWNER FOR (NSPI) RELOCATION OF EXISTING LIGHT POLE.

N

0 40' 80'
HORIZONTAL

0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

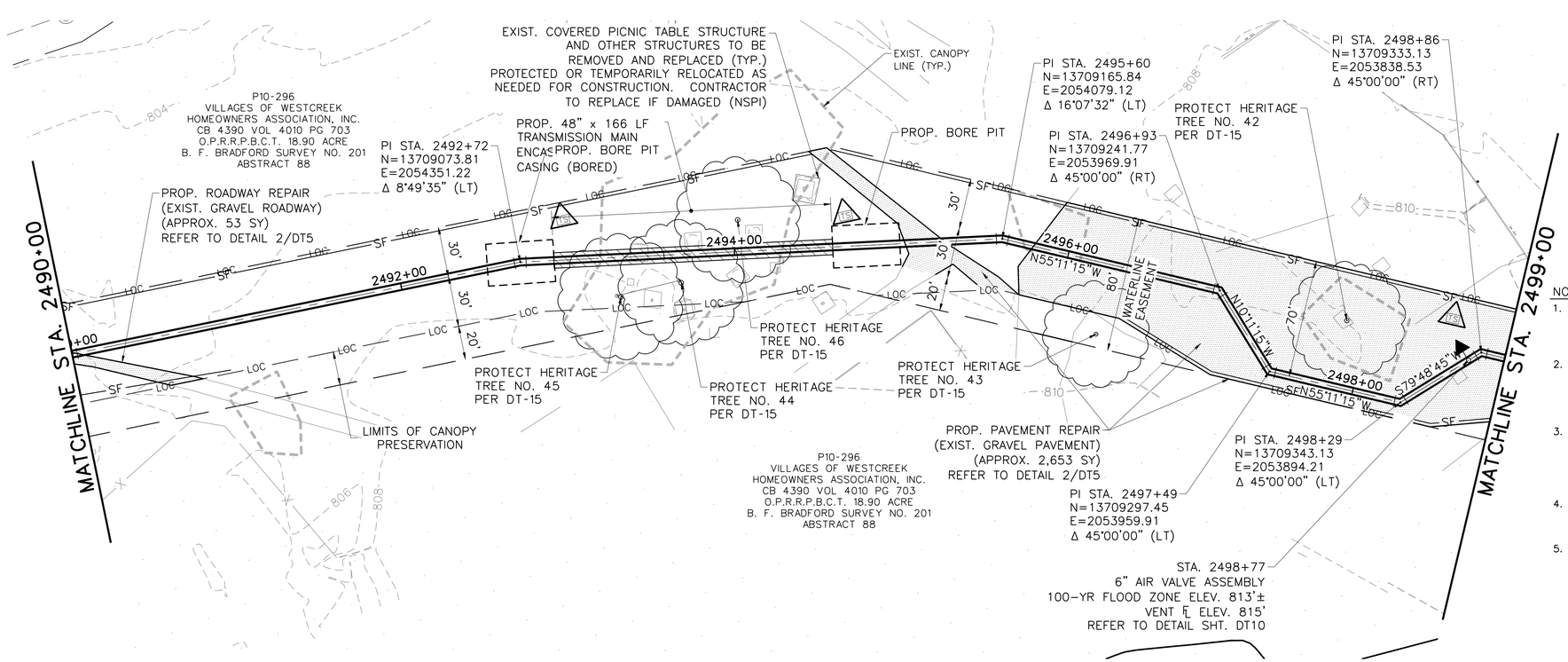
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-3900
Fax (210) 298-3901

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2482+00 TO STA. 2490+00

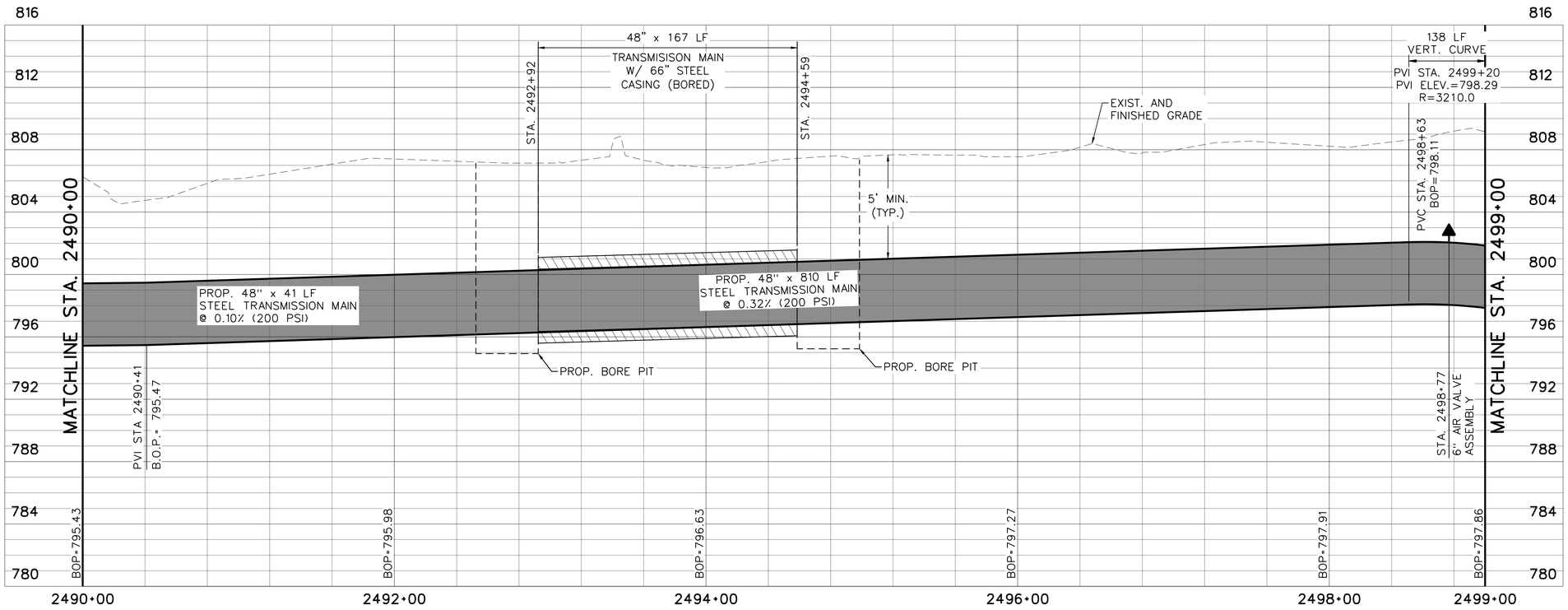
Sheet W55

ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]
Date: Jul 19, 2020 - 5:56pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL03.dwg




NOTES:

1. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.
2. CONTRACTOR TO TEMPORARILY RELOCATE EXISTING PICNIC TABLES, BBQ PITS, AND ITEMS AS NEEDED FOR CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING RELOCATED ITEMS TO ORIGINAL CONDITION OR BETTER AFTER CONSTRUCTION IS COMPLETED.
3. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
4. NO TREES MAY BE REMOVED OUTSIDE THE 80' PIPELINE EASEMENT, AS APPROVED BY THE CITY ARBORIST ON THE APPROVED PROJECT DRAWINGS. THE FIELD INSPECTOR WILL VERIFY TREES TO BE PROTECTED.
5. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.




Freese And Nichols, Inc.
Job No.
SWB09391

| No. | Date | Revisions | App. |
|---|---|---|---|
| | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | | |

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

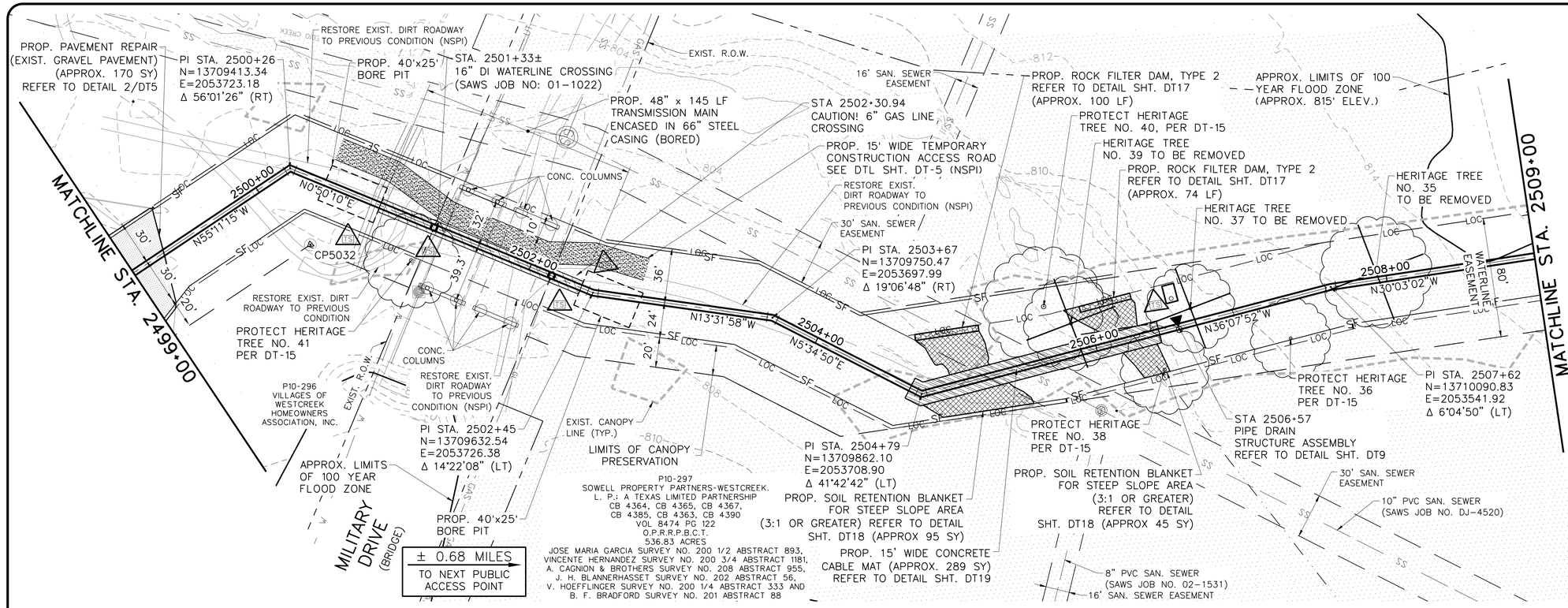
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2490+00 TO STA. 2499+00

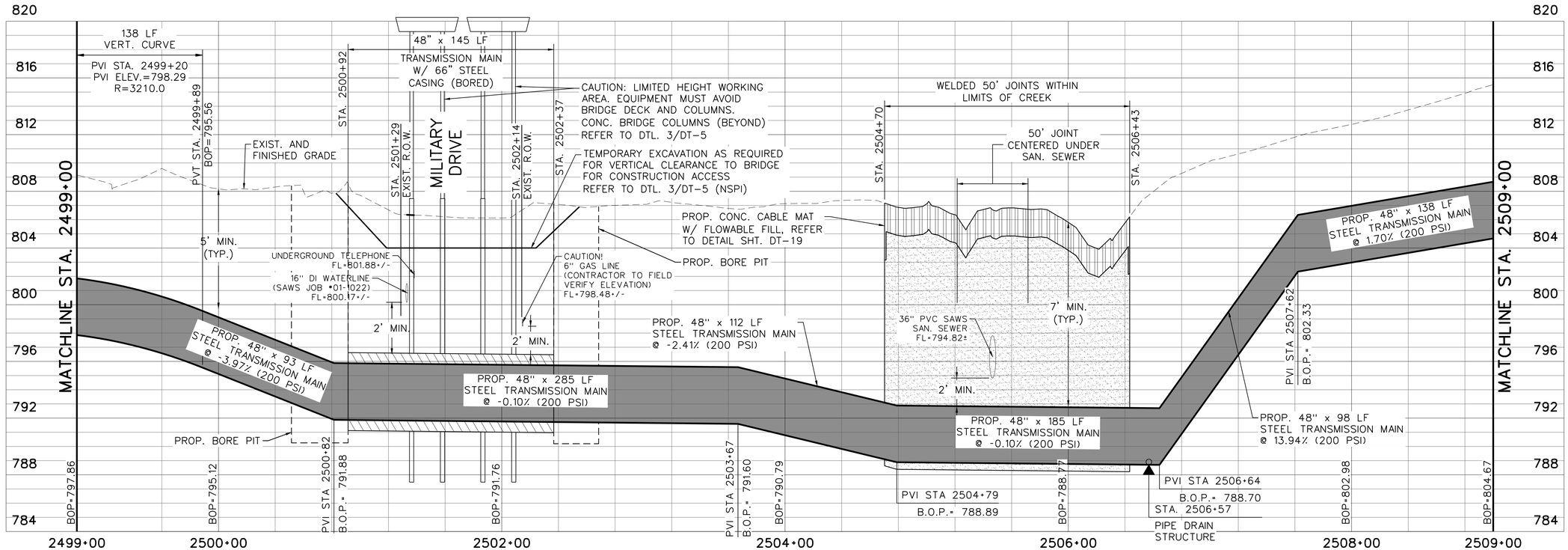
Sheet W56

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]
Date: Jul 19, 2020 - 5:58pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL03.dwg




NOTES:

1. CONTRACTOR TO VERIFY GROUND PROFILE ELEVATION AND ENSURE MINIMUM 60" OF COVER OVER CASING PIPE.
2. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN THE BEXAR COUNTY ROW.
3. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.
4. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
5. NO TREES MAY BE REMOVED OUTSIDE THE 80' PIPELINE EASEMENT, AS APPROVED BY THE CITY ARBORIST ON THE APPROVED PROJECT DRAWINGS. THE FIELD INSPECTOR WILL VERIFY TREES TO BE PROTECTED.
6. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.
7. CONTRACTOR TO RESTORE TEMPORARY CONSTRUCTION ACCESS ROAD AND ALL DISTURBED AREA TO EXISTING CONDITIONS BENEATH MILITARY DRIVE BRIDGE PER BEXAR COUNTY ROW STANDARDS.




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

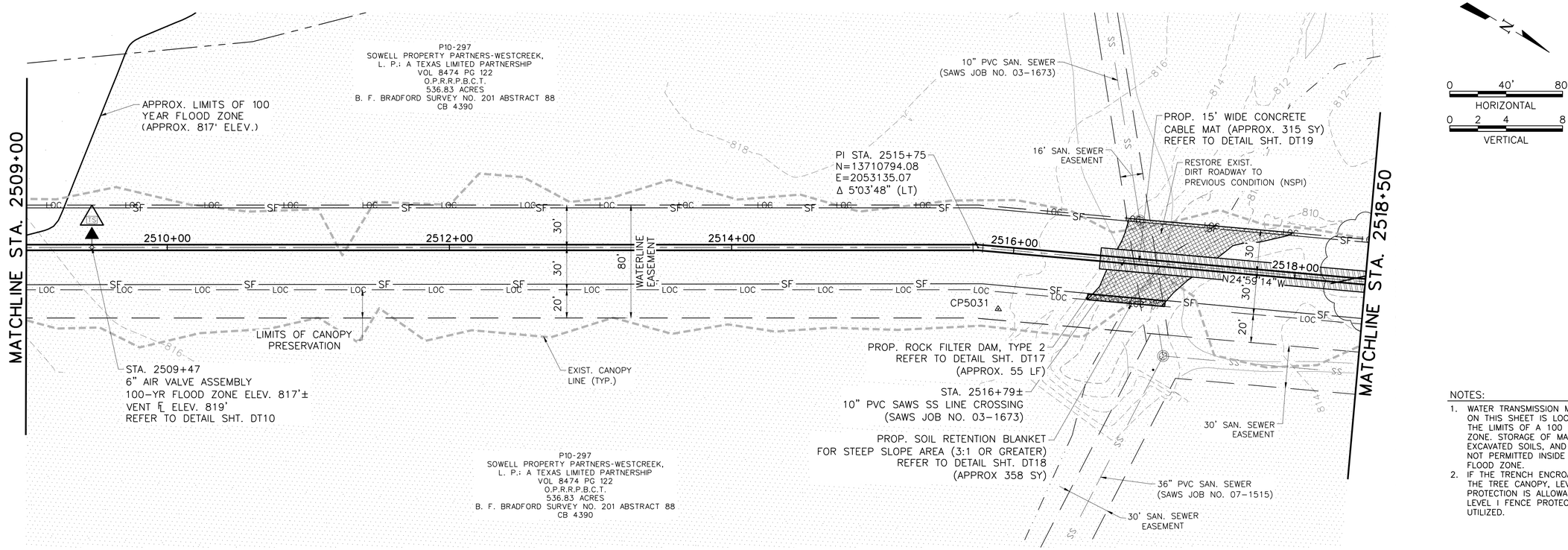
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-3900
Fax (210) 298-3001

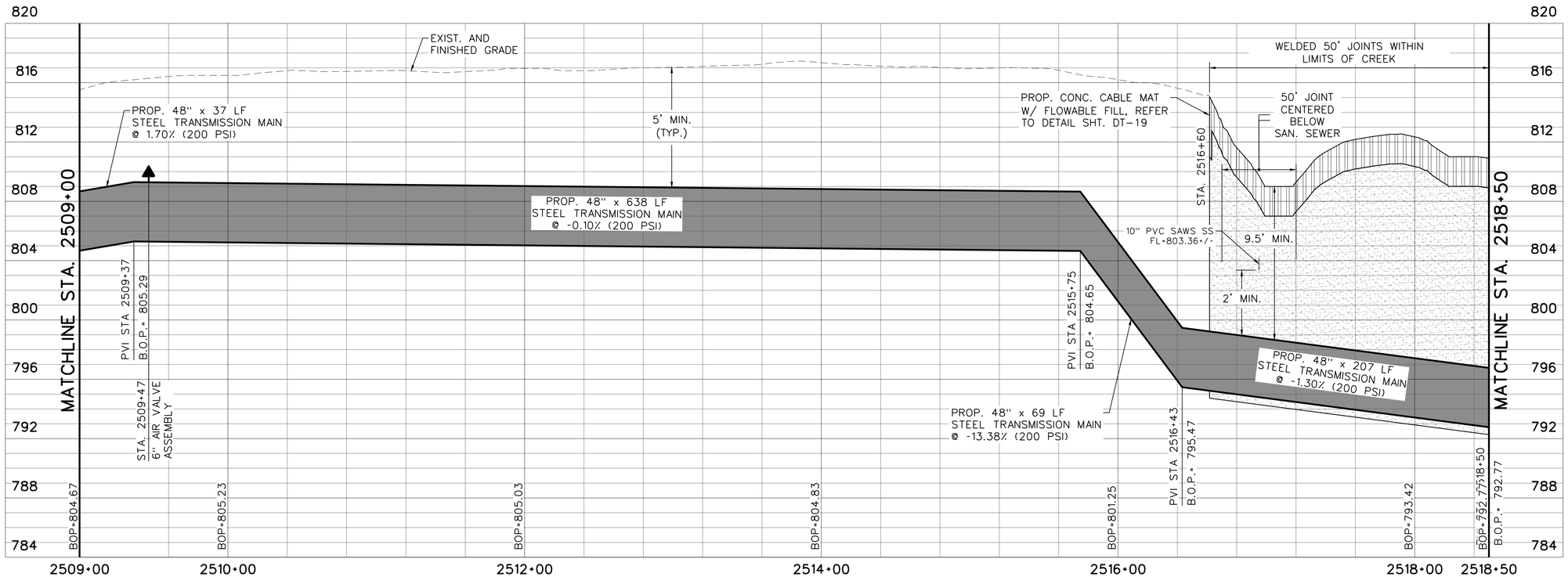
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2499+00 TO STA. 2509+00

Sheet W57

ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]
Date: Jul 19, 2020 - 5:59pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL03.dwg




NOTES:

1. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.
2. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.

0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

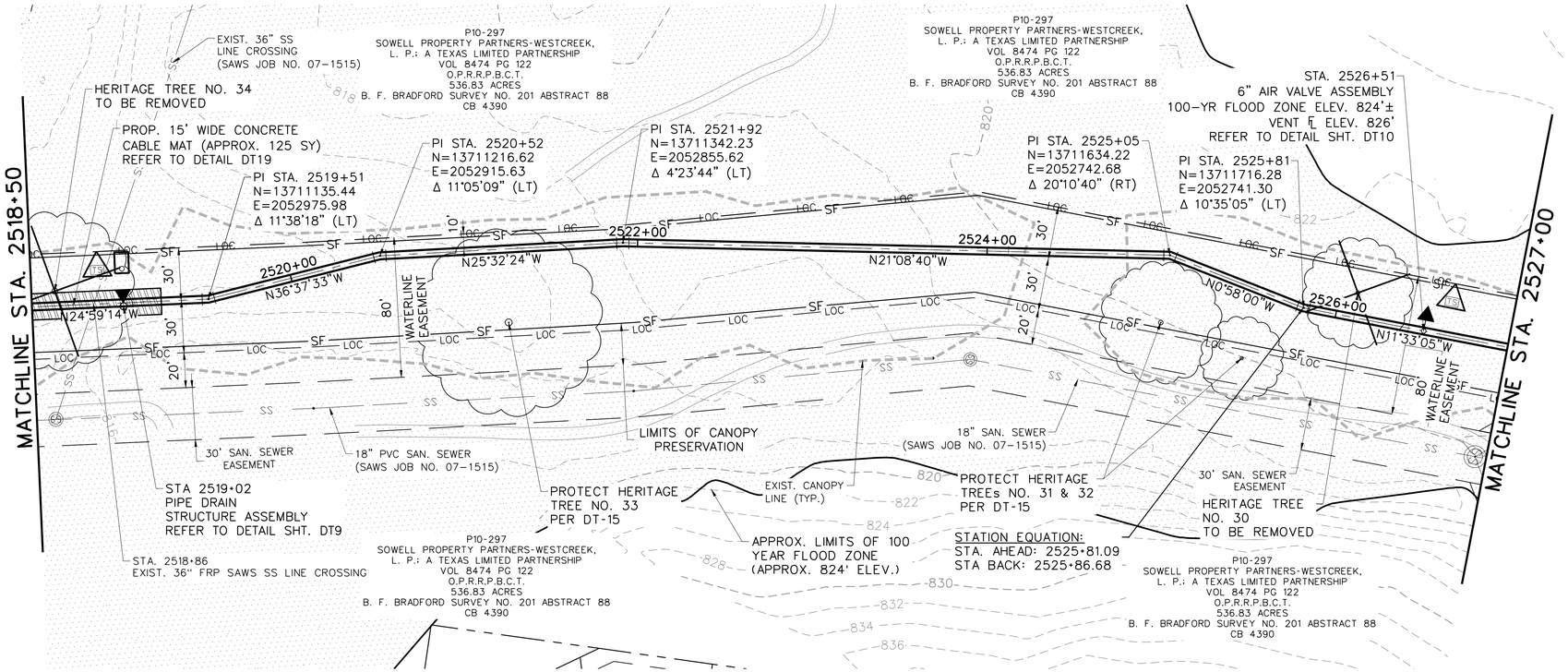
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-5900
Fax (210) 298-5901

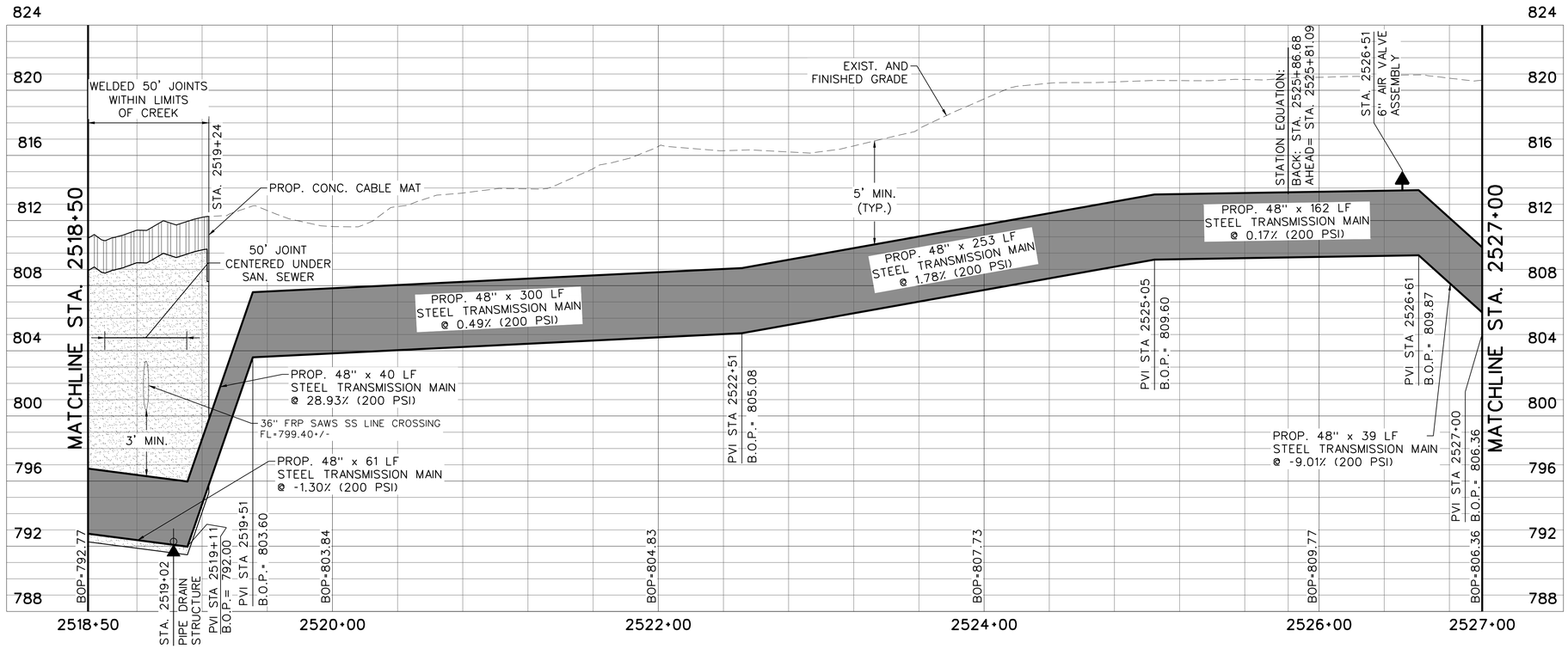
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2509+00 TO STA. 2518+50

Sheet W58

ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]
Date: Jul 19, 2020 - 6:01pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL03.dwg




NOTES:

1. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.
2. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
3. NO TREES MAY BE REMOVED OUTSIDE THE 80' PIPELINE EASEMENT, AS APPROVED BY THE CITY ARBORIST ON THE APPROVED PROJECT DRAWINGS. THE FIELD INSPECTOR WILL VERIFY TREES TO BE PROTECTED.
4. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.

N

0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Freese And Nichols, Inc.
Job No.
SWB09391

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

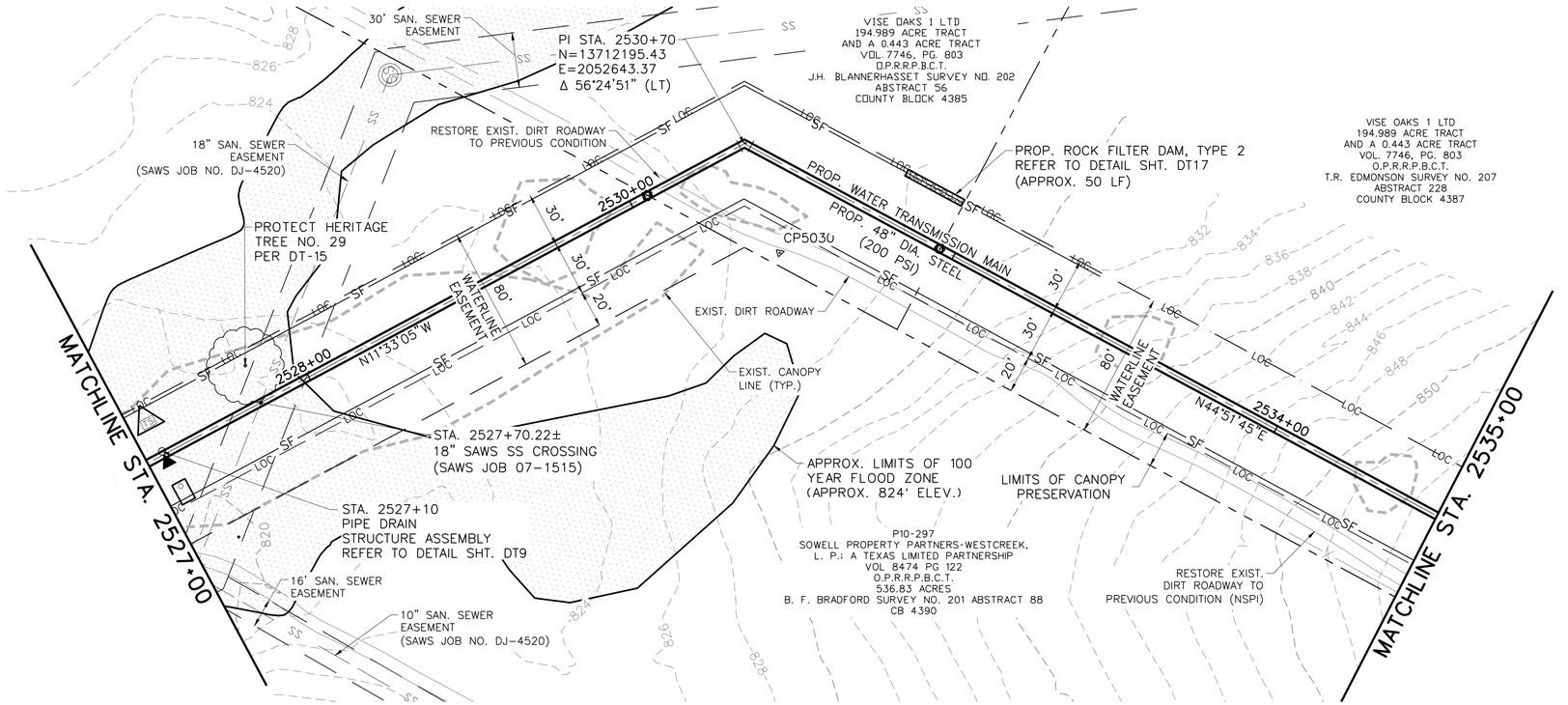
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-9900
Fax (210) 298-9901

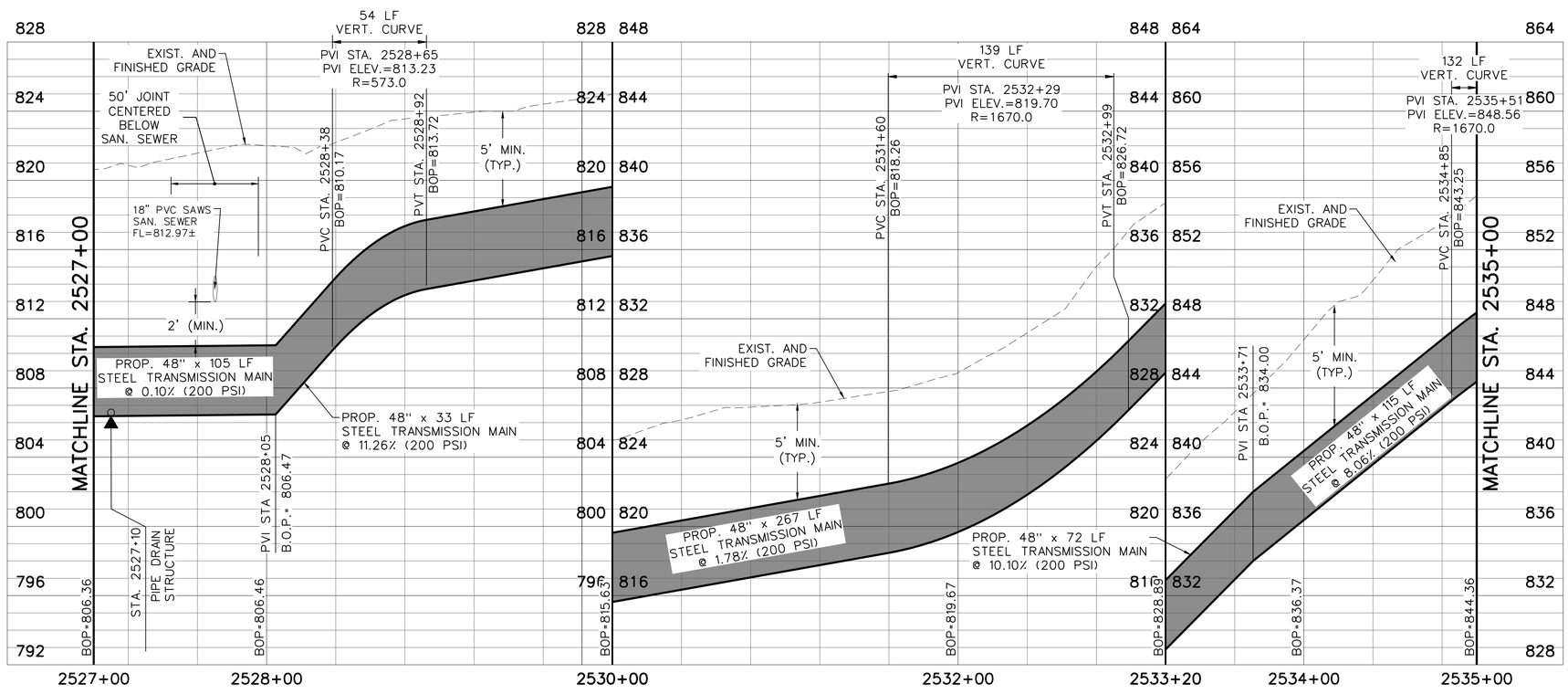
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2518+50 TO STA. 2527+00

Sheet W59

ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]
Date: Jul 20, 2020 - 1:47am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL03.dwg




NOTES:

1. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.
2. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
3. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.
4. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.

0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

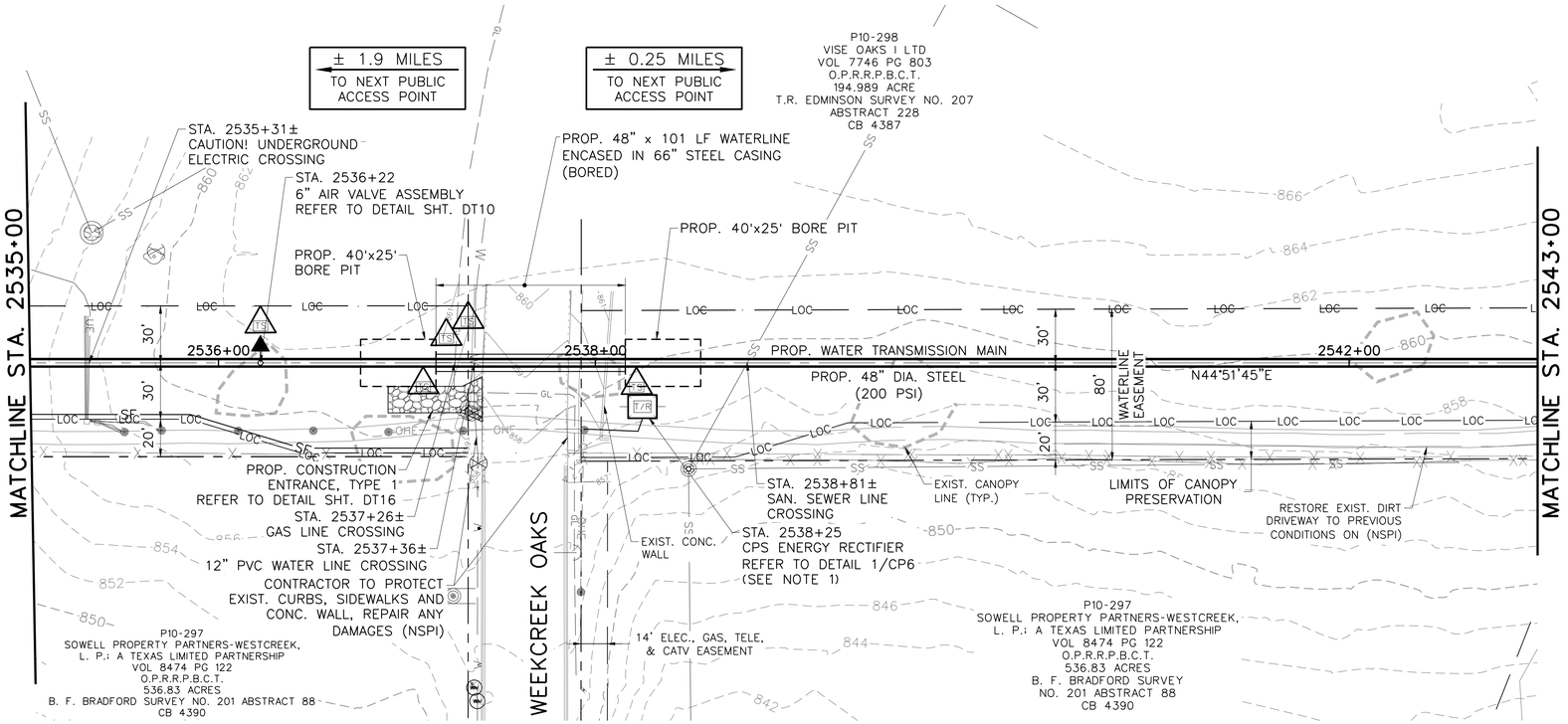
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-9900
Fax (210) 298-9901

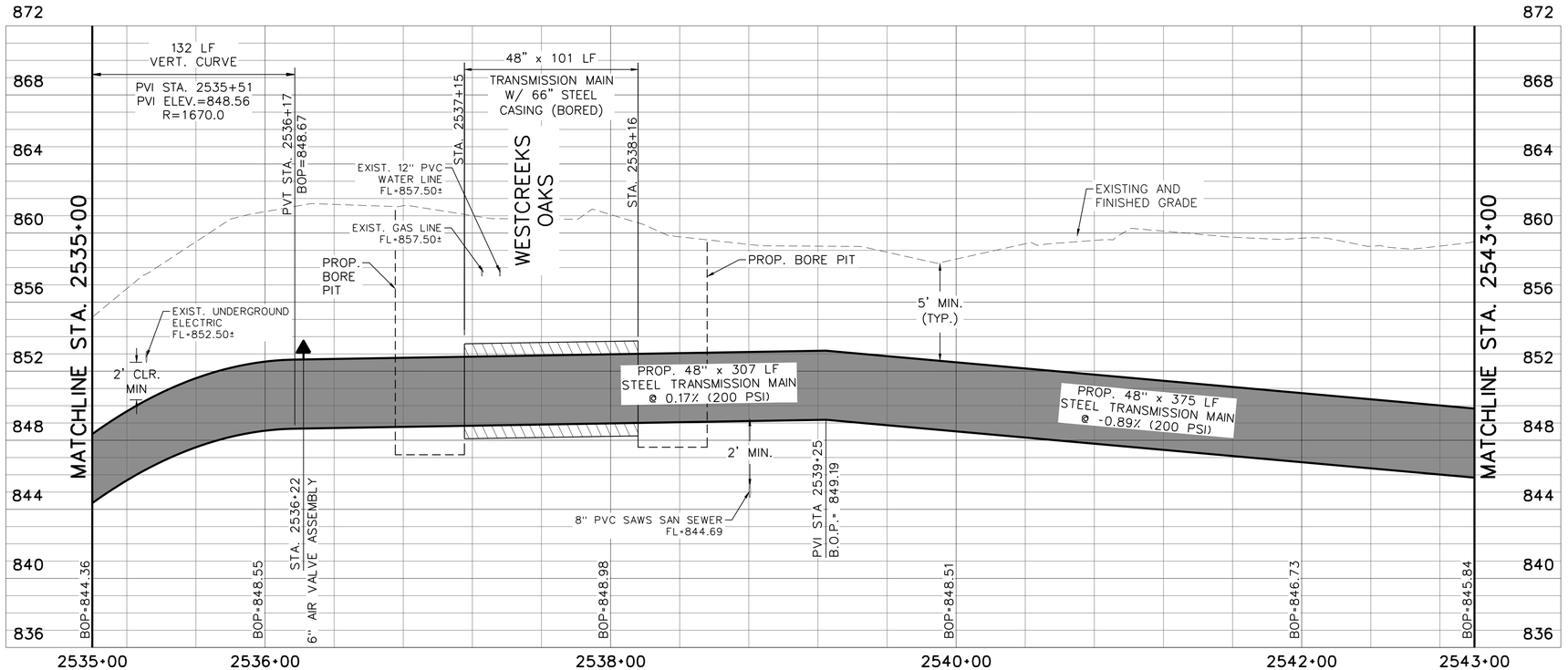
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2527+00 TO STA. 2535+00

Sheet W60

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]
Date: Jul 19, 2020 - 6:05pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL03.dwg




0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

NOTES:
1. CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH CPS AND PAYING FOR POWER SUPPLY CONNECTION TO RECTIFIER STATION.
2. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN THE BEXAR COUNTY ROW.

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc. Job No. SWB09391

STATE OF TEXAS ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER 07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

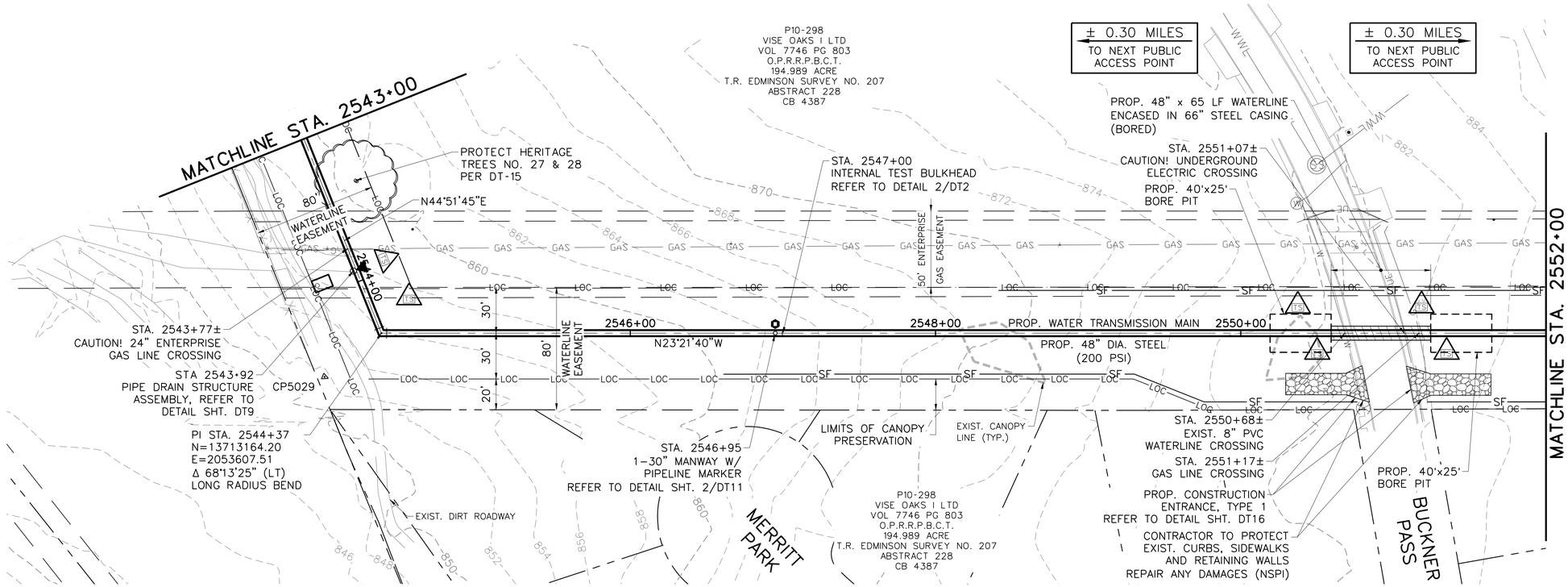
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2535+00 TO STA. 2543+00

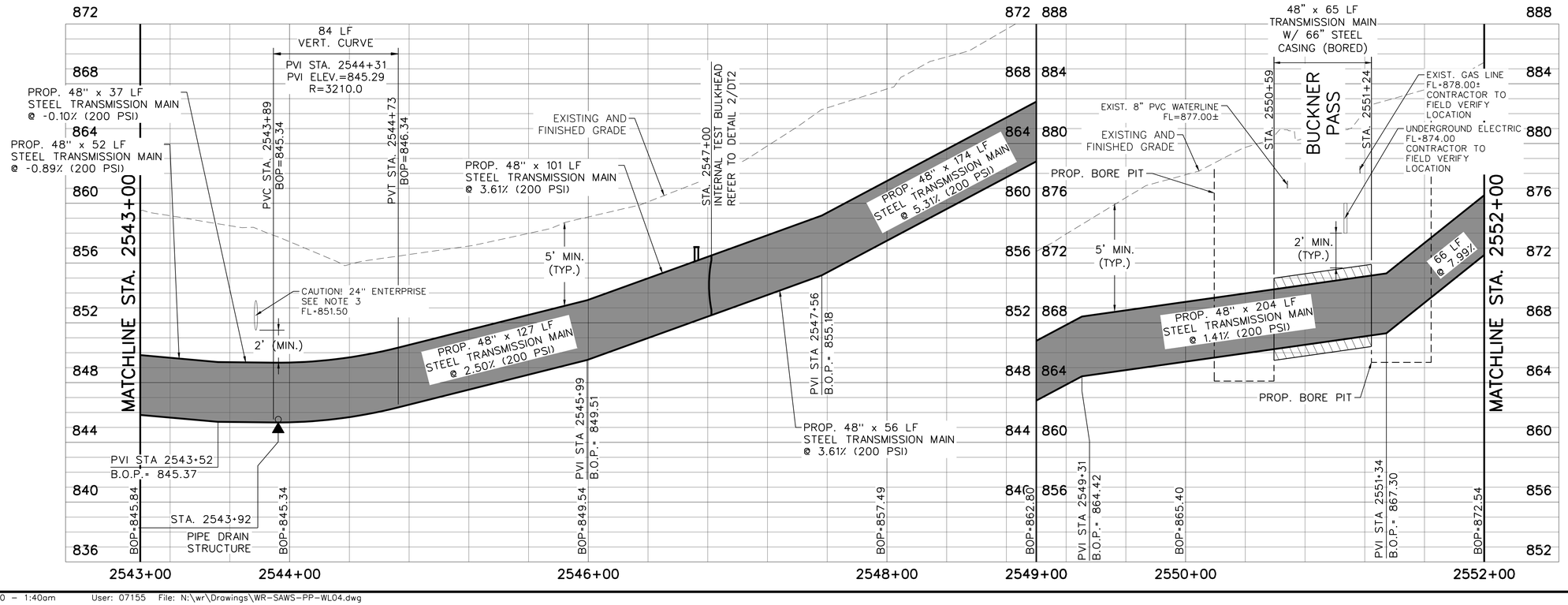
Sheet W61

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]
Date: Jul 19, 2020 - 6:08pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL04.dwg




NOTES:

1. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
2. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.
3. CONTRACTOR SHALL NOTIFY ENTERPRISE 48 HOURS PRIOR TO CROSSING GAS LINE. SEE SHEET G3 FOR CONTACT INFORMATION.
4. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.
5. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN THE BEXAR COUNTY ROW.




0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

Freese And Nichols, Inc.
Job No.
SWB09391

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

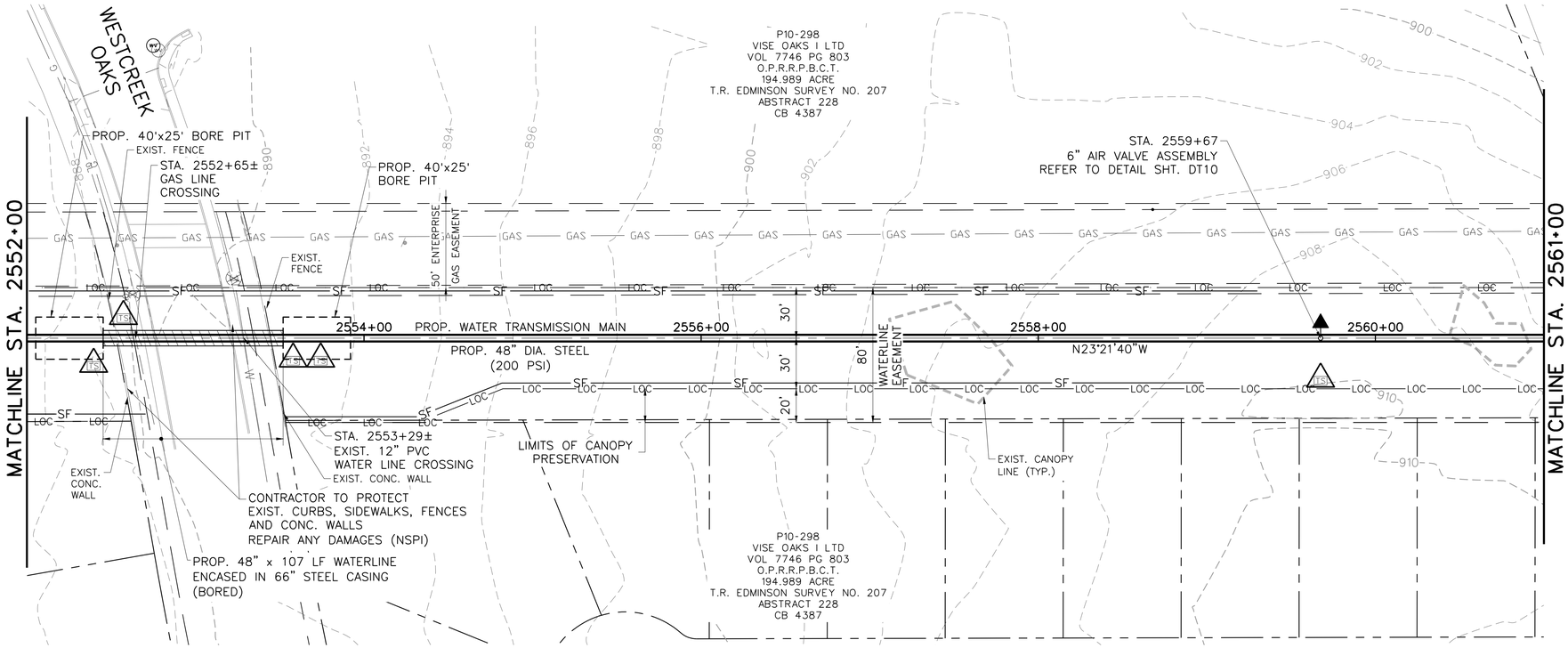

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-2800
Fax (210) 298-2801


SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2543+00 TO STA. 2552+00

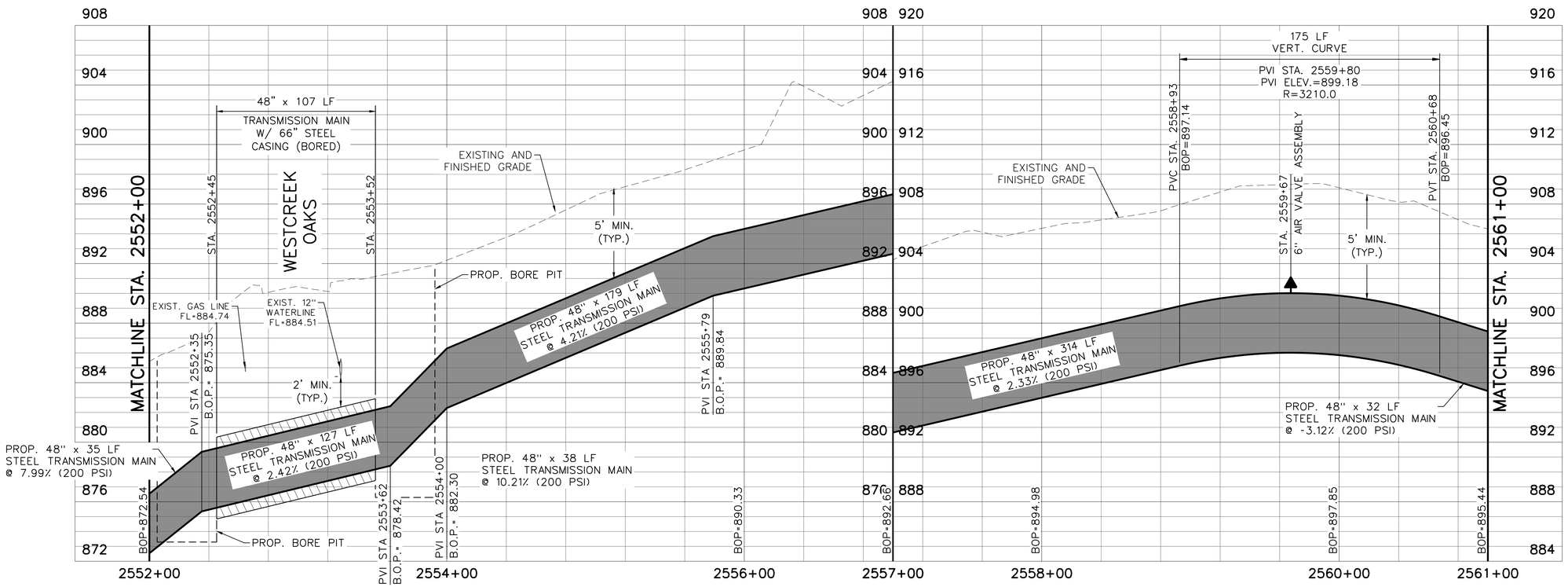
Sheet W62


ACAD CIVIL 3D 2011 User: DDH [SWB09391][SASRV2]
Date: Jul 20, 2020 - 1:40am User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL04.dwg




NOTES:

1. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN THE BEXAR COUNTY ROW.




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

TEXAS REGISTERED ENGINEER ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER 07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-3900
Fax (210) 298-3901

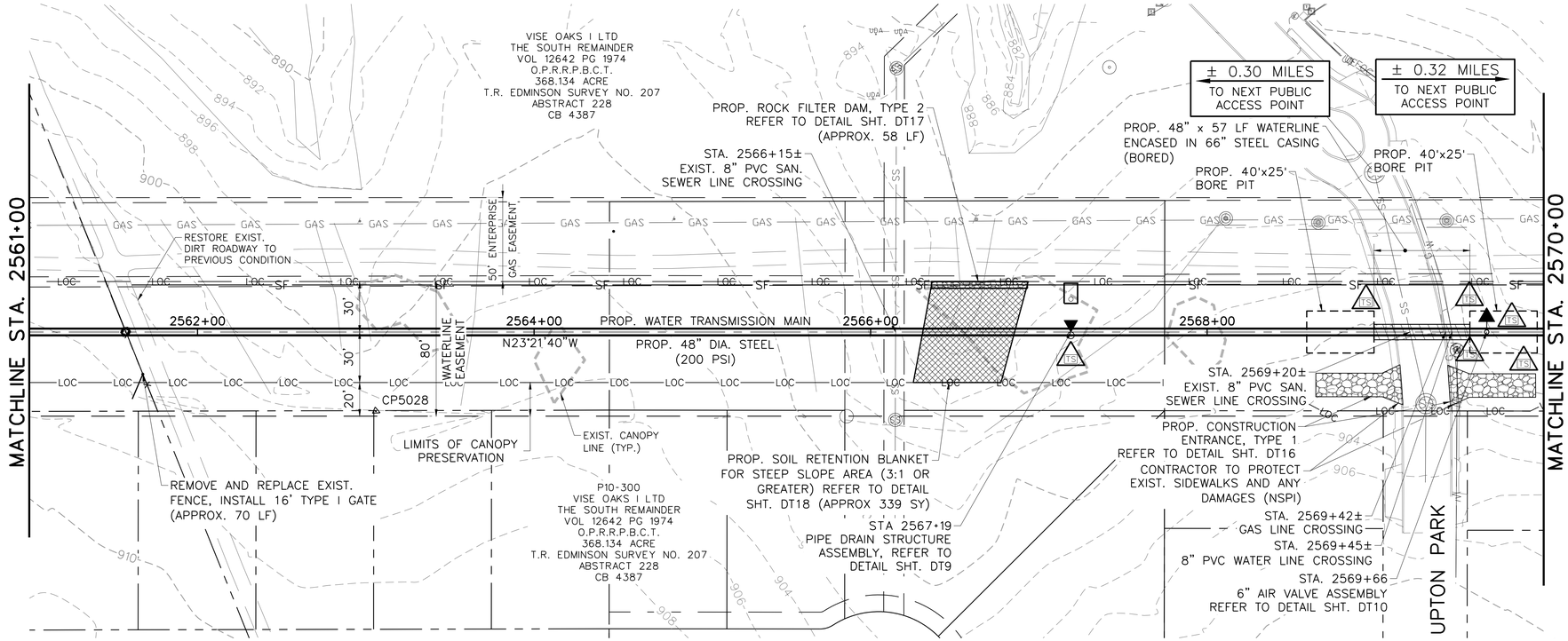
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2552+00 TO STA. 2561+00

Sheet W63

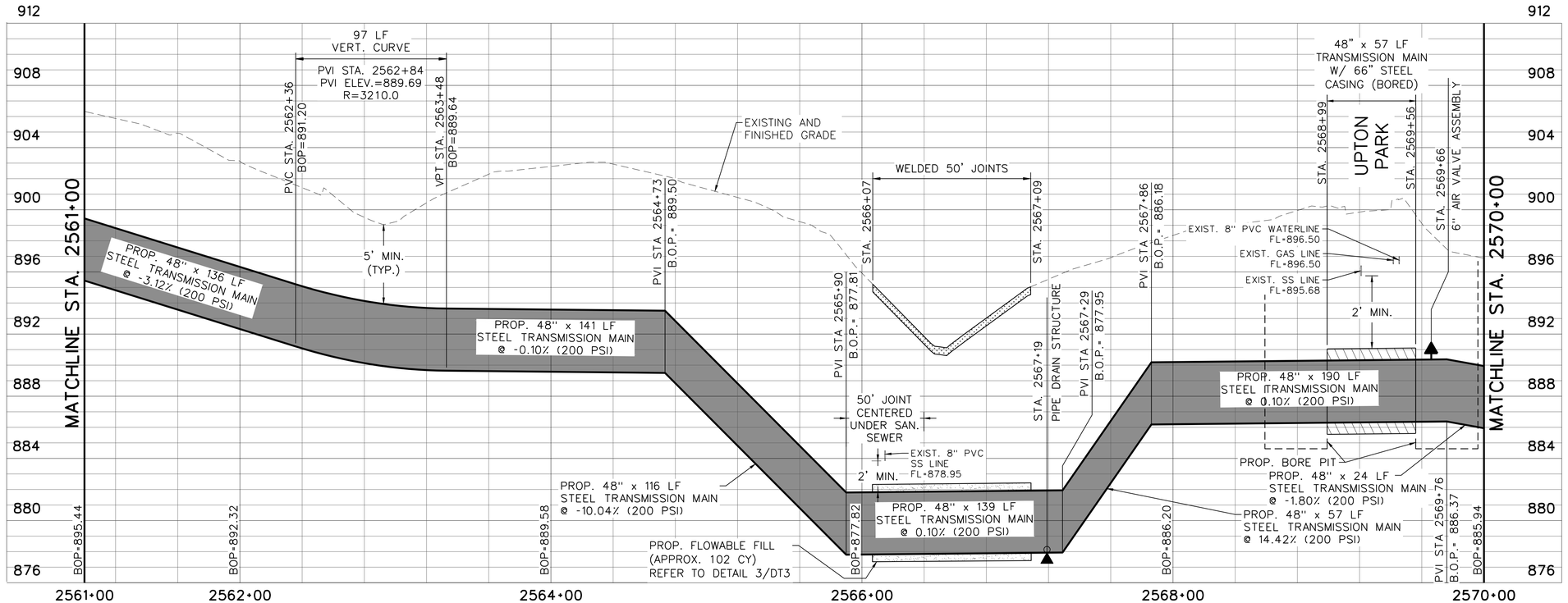
ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]

Date: Jul 19, 2020 - 6:10pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL04.dwg




NOTES:

1. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN THE BEXAR COUNTY ROW.




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

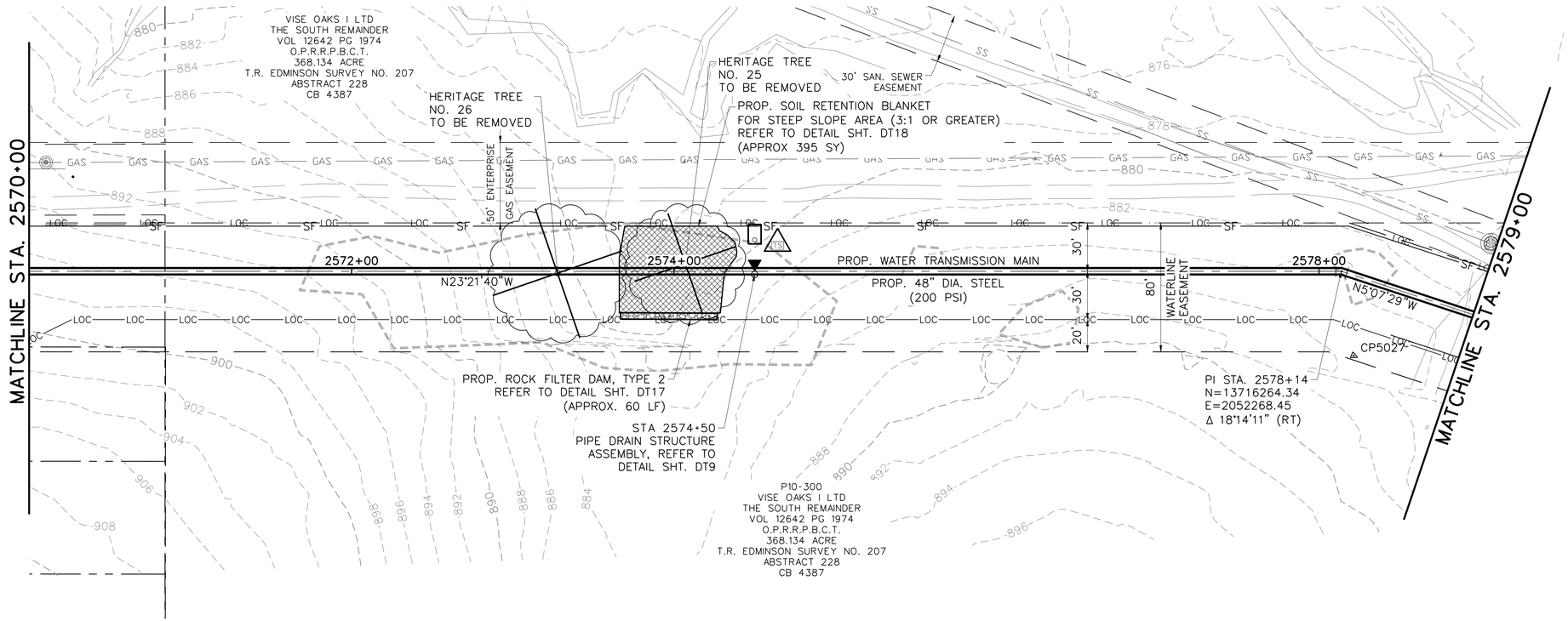
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

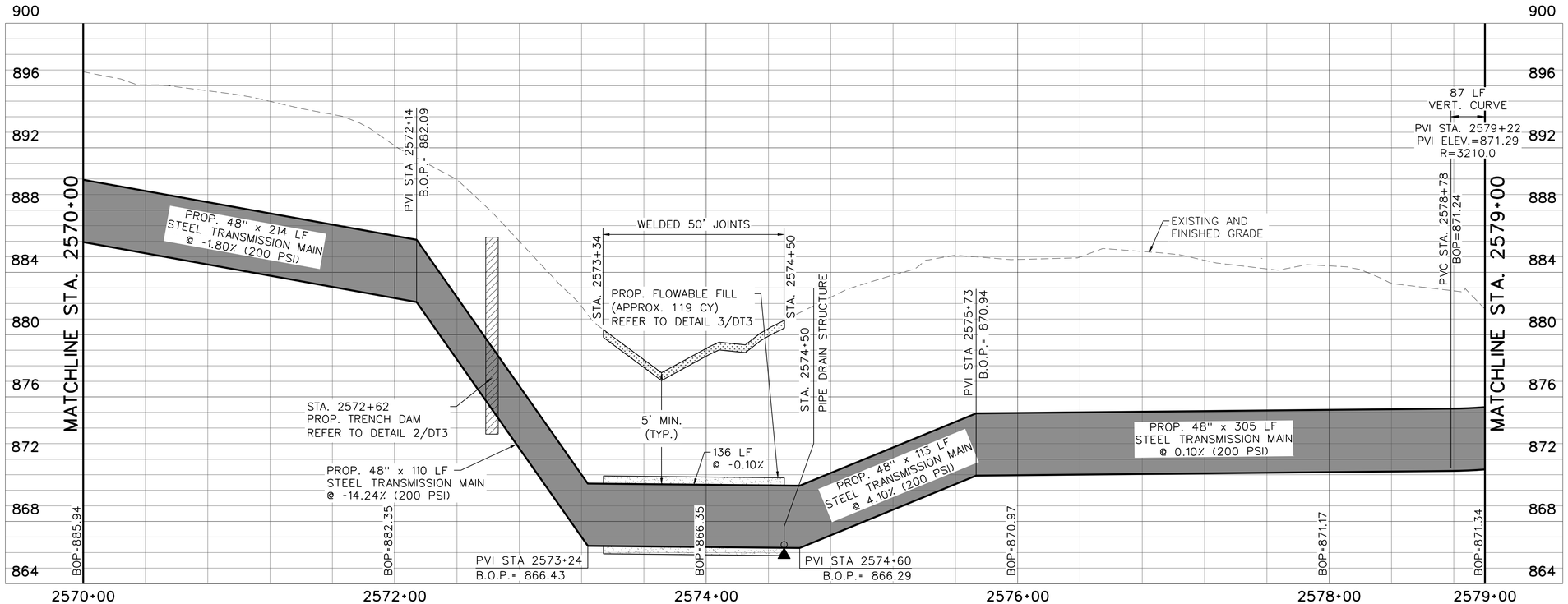
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2561+00 TO STA. 2570+00

Sheet W64

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]
Date: Jul 19, 2020 - 6:11pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL04.dwg




0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

NOTES:

1. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
2. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.
3. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

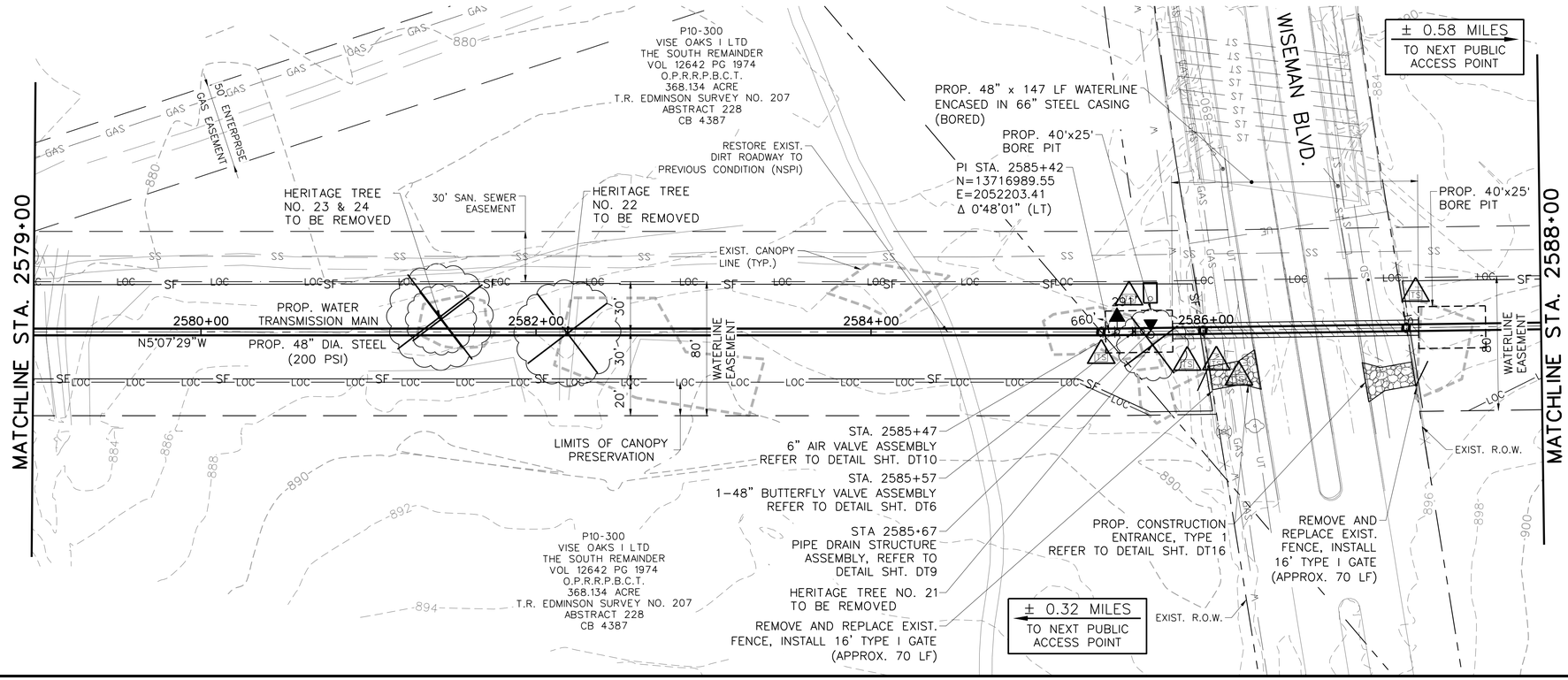
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-2800
Fax (210) 298-2801

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2570+00 TO STA. 2579+00

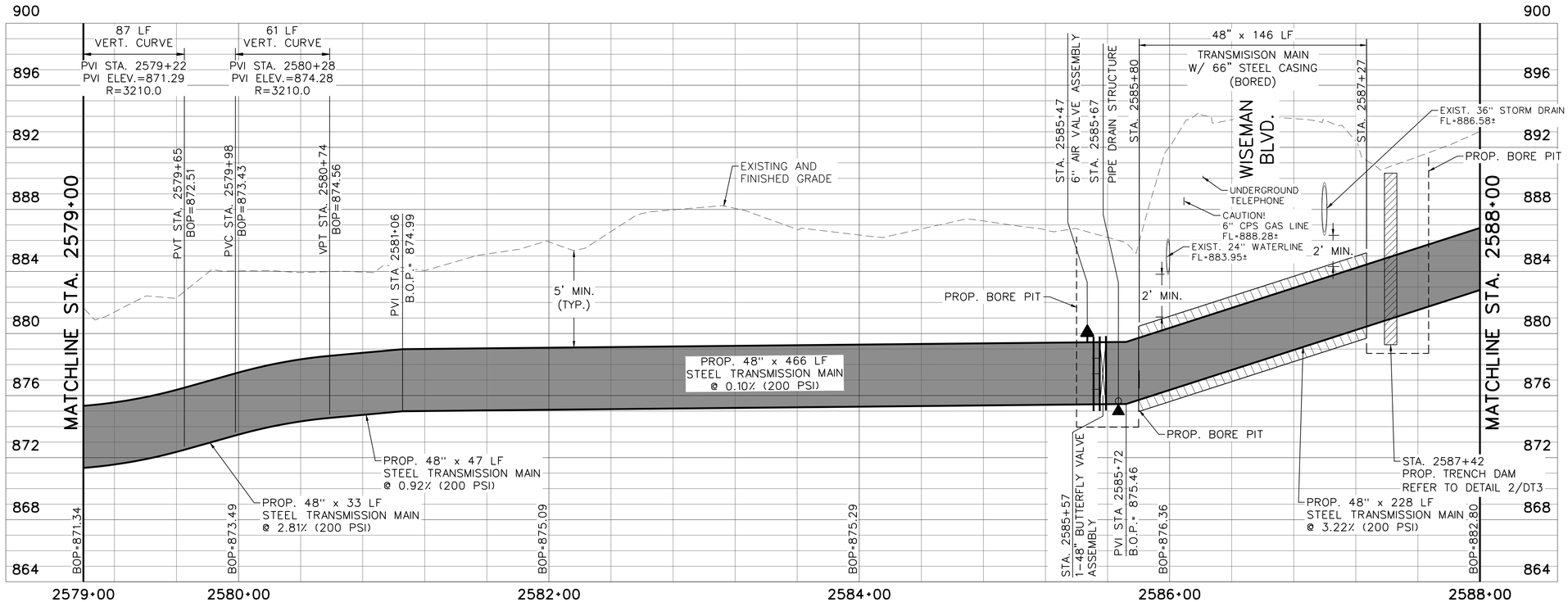
Sheet W65

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]
Date: Jul 19, 2020 - 6:12pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL04.dwg




NOTES:

1. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
2. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.
3. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN THE BEXAR COUNTY ROW.




Freese And Nichols, Inc.
Job No.
SWB09391

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

ROBERT N. JENKINS JR. 103589 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

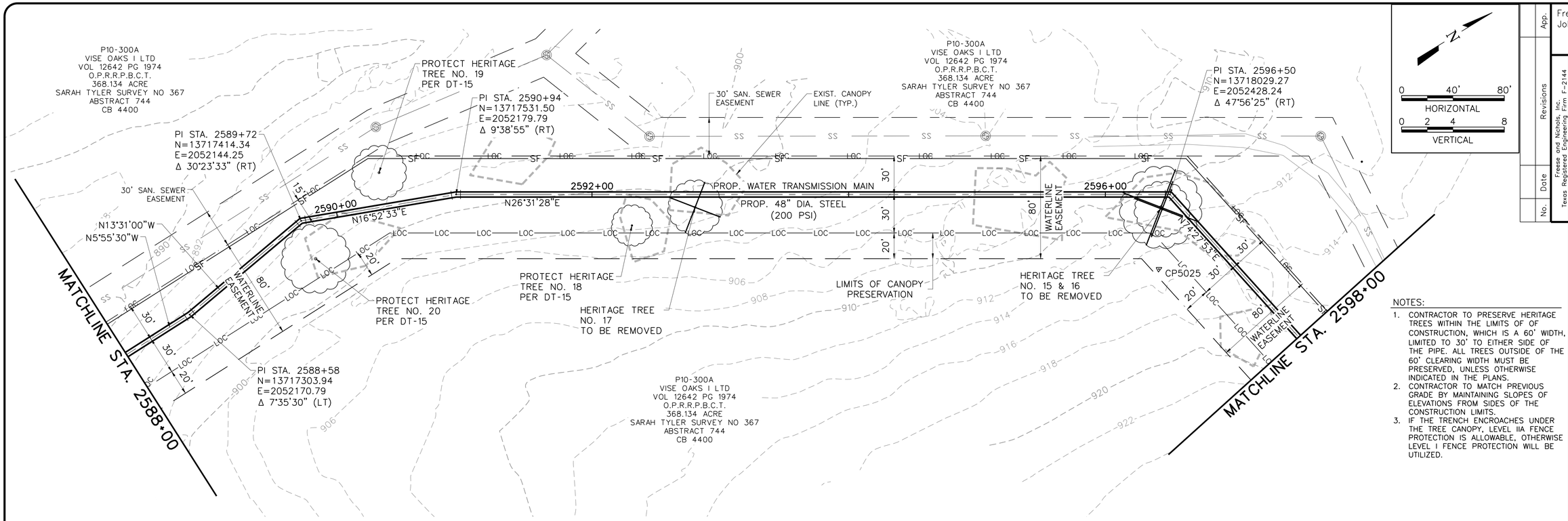
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2579+00 TO STA. 2588+00

Sheet W66

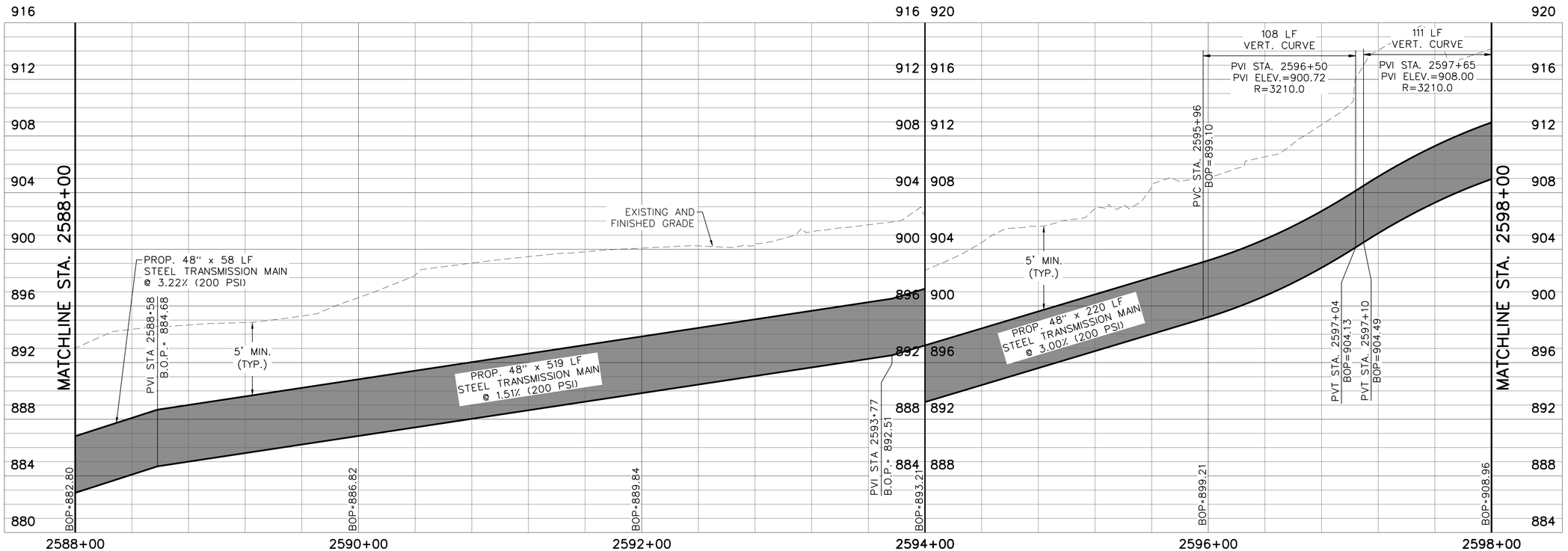
ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]

Date: Jul 19, 2020 - 6:12pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL04.dwg




NOTES:

1. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
2. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.
3. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.




Freese And Nichols, Inc.
Job No.
SWB09391

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

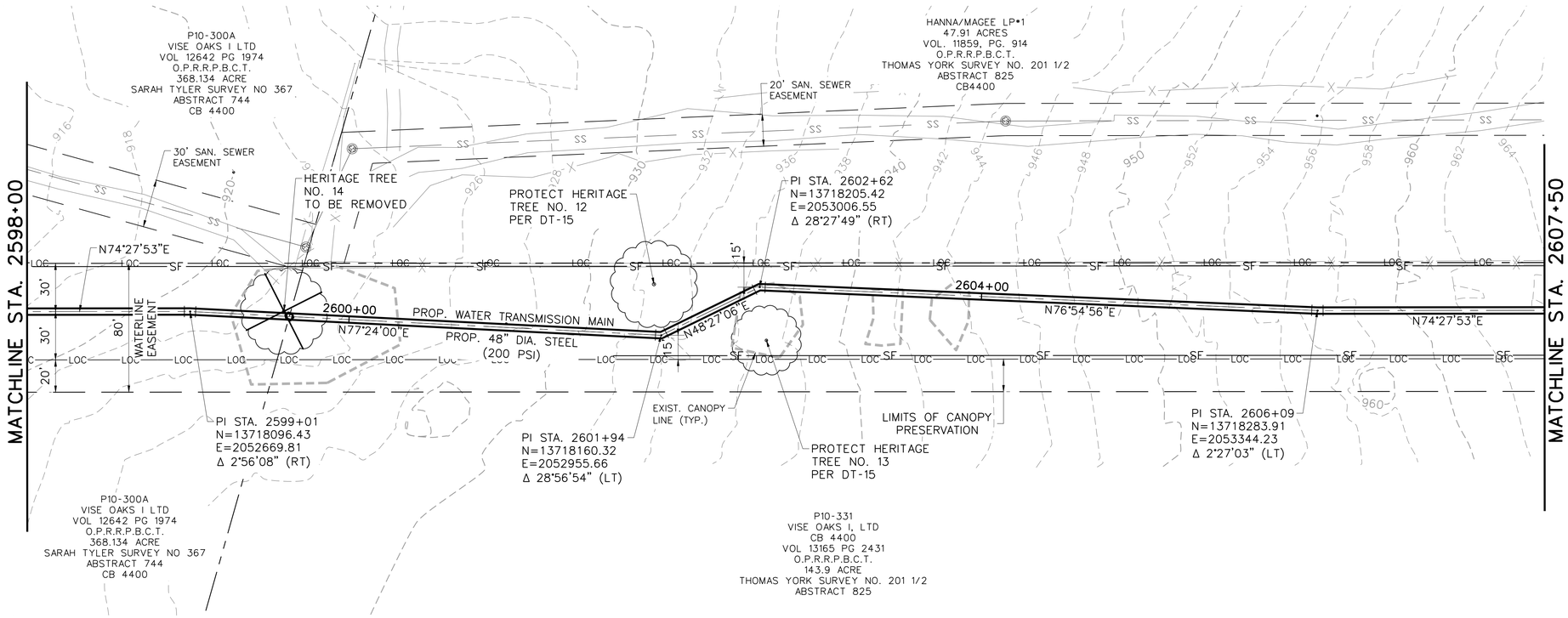
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2588+00 TO STA. 2598+00

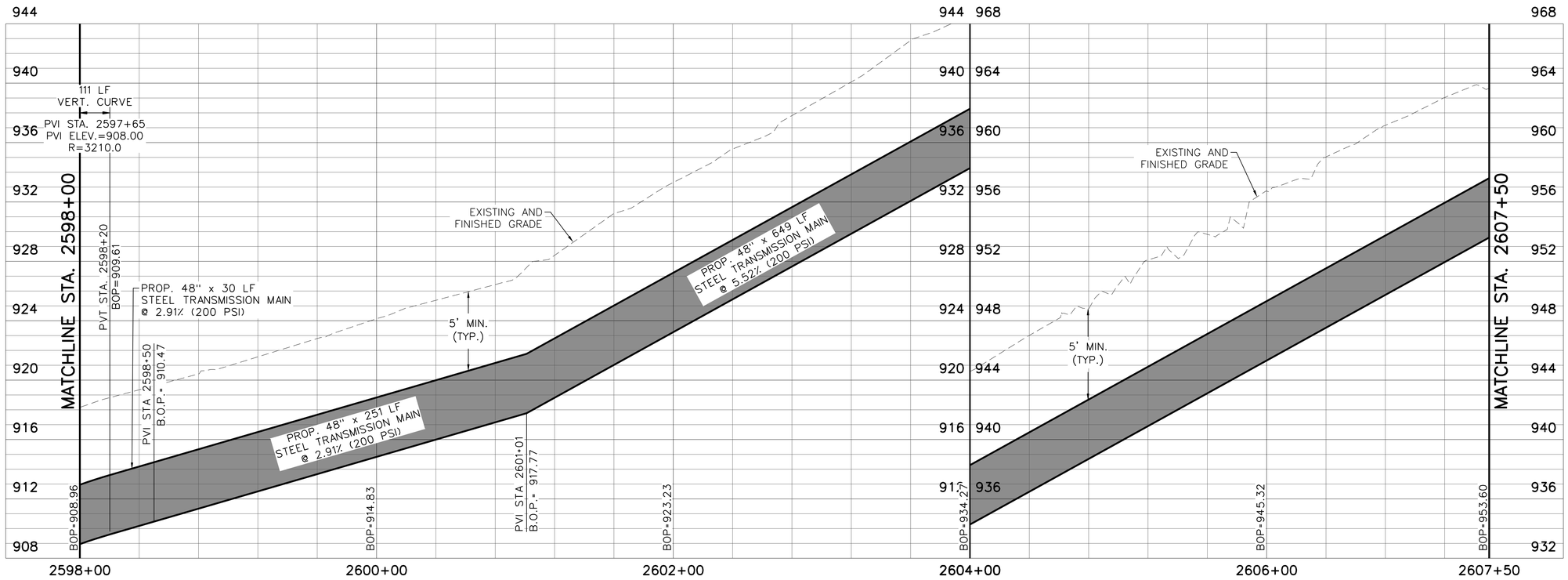
Sheet W67

ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]
Date: Jul 19, 2020 - 6:13pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL04.dwg




NOTES:

1. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
2. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.
3. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.




Freese And Nichols, Inc.
Job No.
SWB09391

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

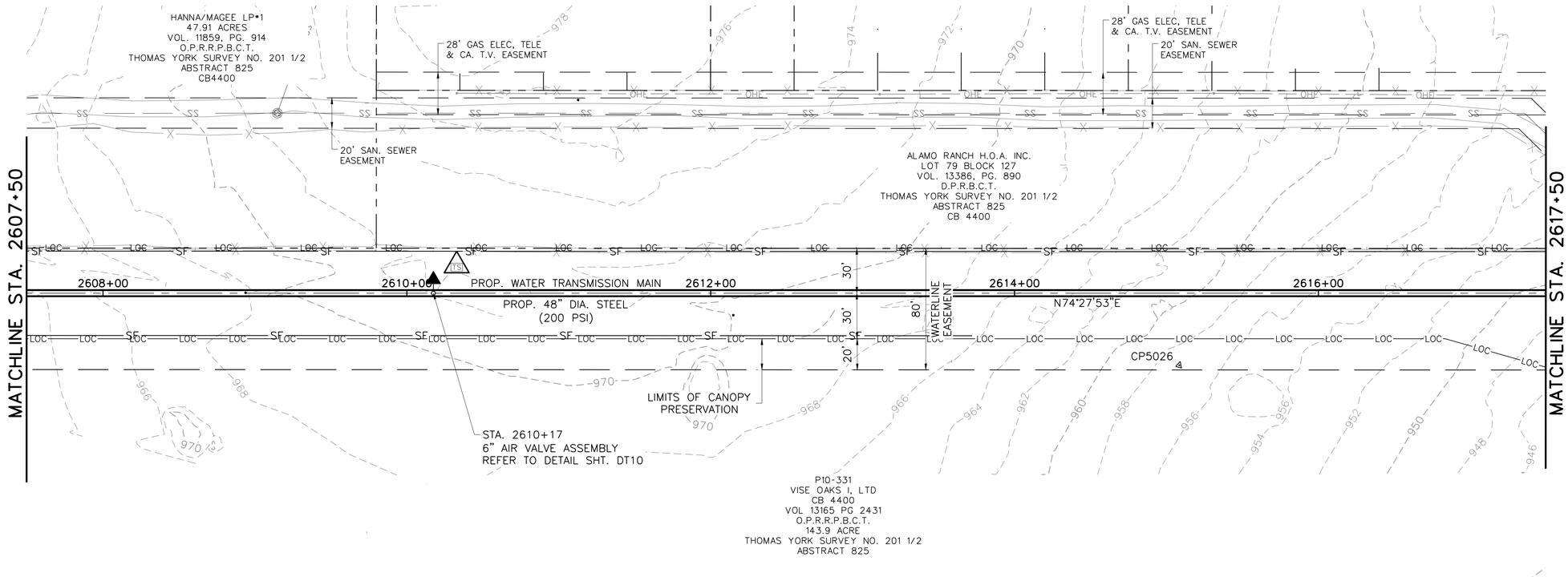
SAN ANTONIO WATER SYSTEM

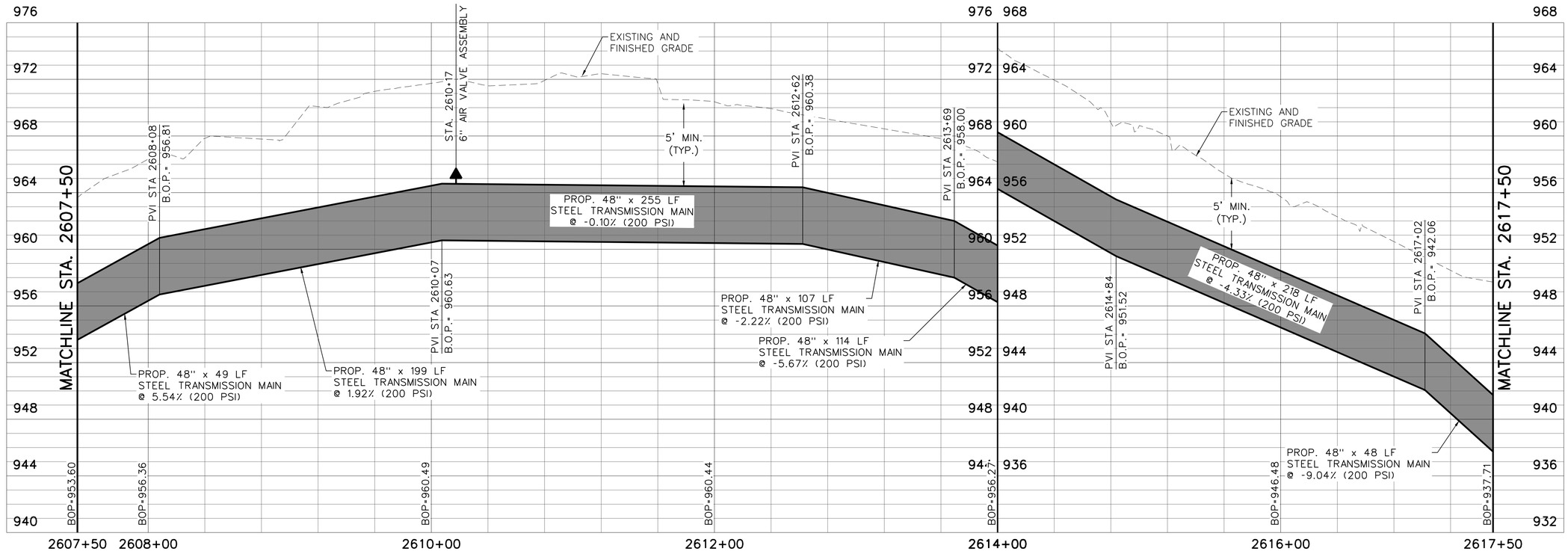
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2598+00 TO STA. 2607+50

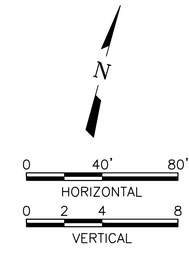
Sheet W68

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]

Date: Jul 19, 2020 - 6:14pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL04.dwg




NOTES:

1. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS 07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-3900
Fax (210) 298-3901

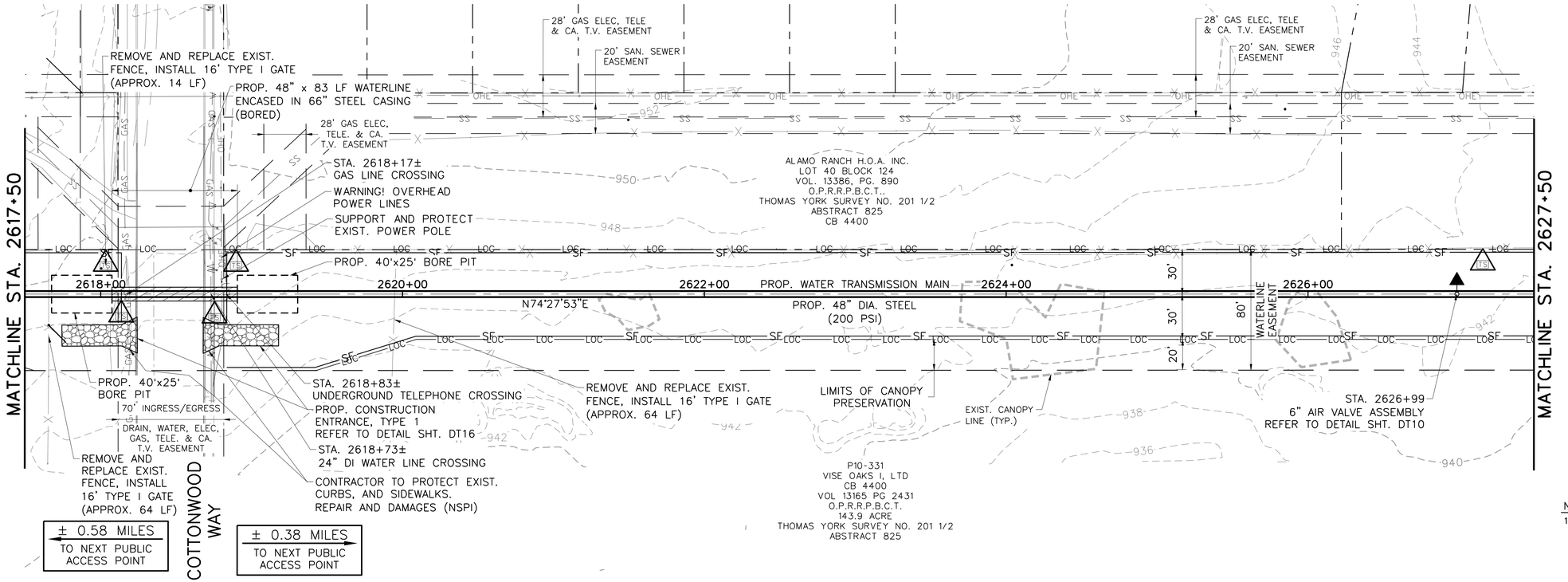
SAN ANTONIO WATER SYSTEM

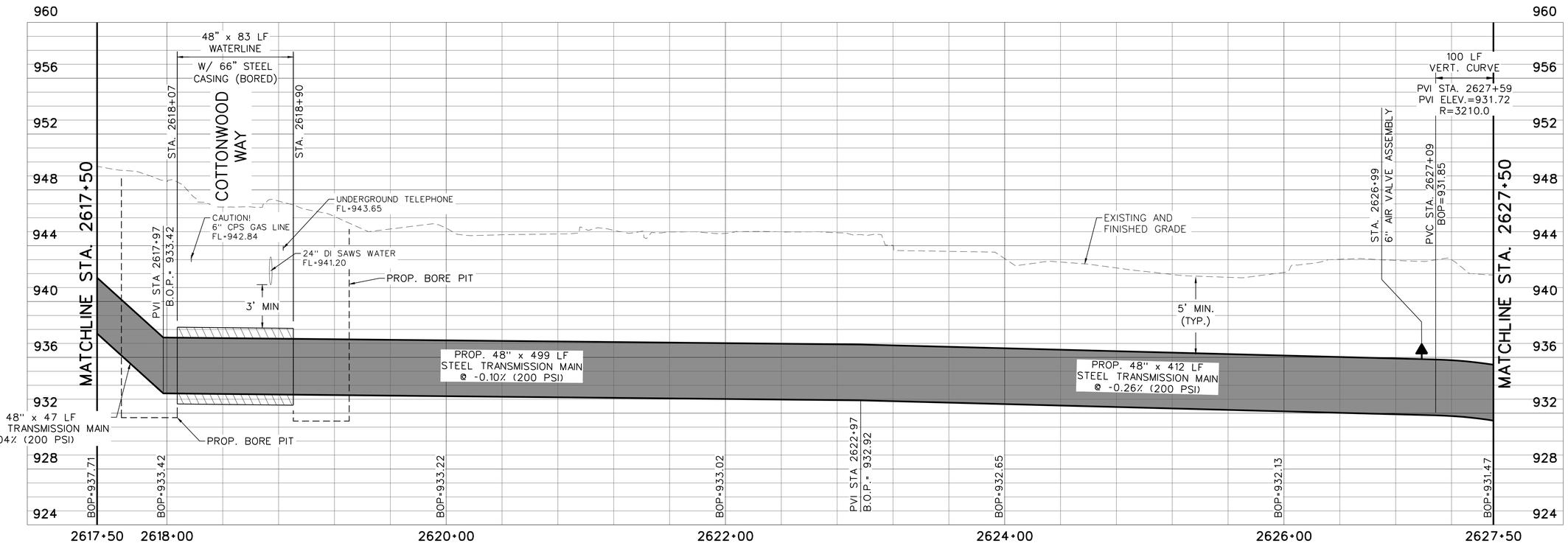
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2607+50 TO STA. 2617+50

Sheet W69

ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]

Date: Jul 19, 2020 – 6:15pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL04.dwg




NOTES:

1. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN THE BEXAR COUNTY ROW.

N

0 40' 80'
HORIZONTAL

0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER 07/20/20

Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-9600
Fax (210) 298-9601

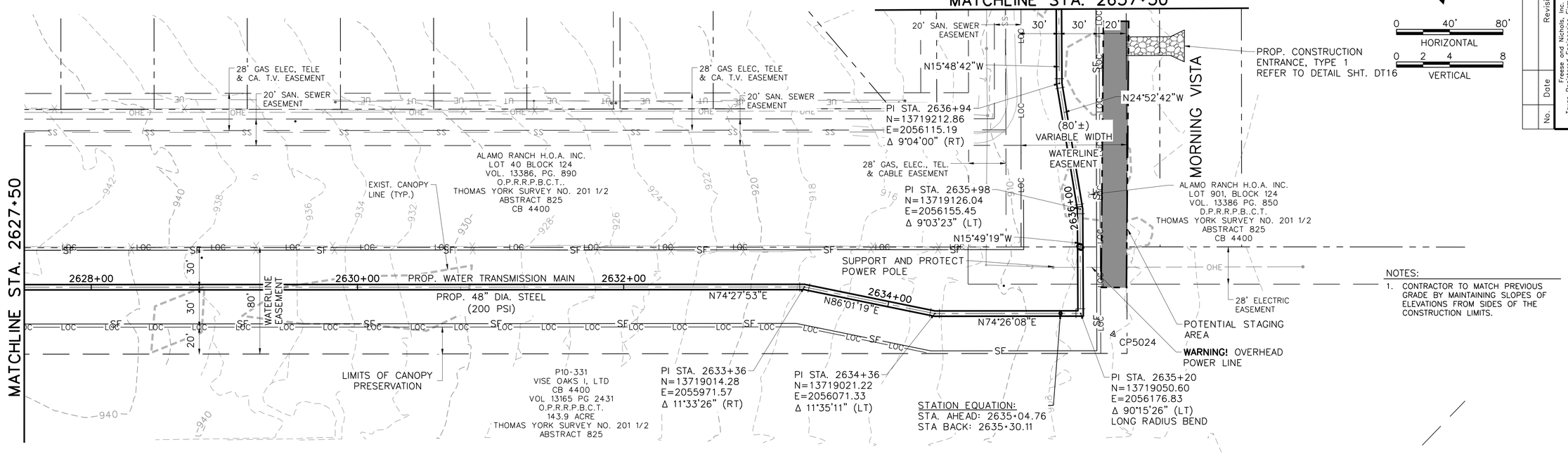
SAN ANTONIO WATER SYSTEM

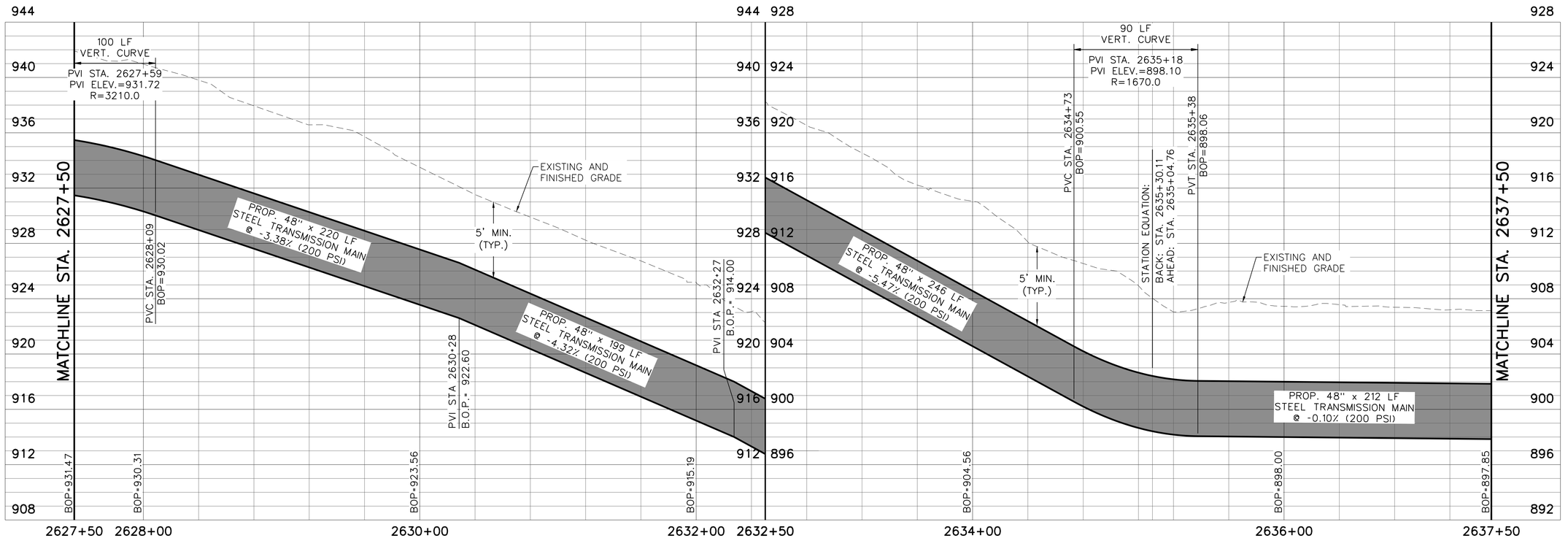
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2617+50 TO STA. 2627+50

Sheet W70

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]

Date: Jul 20, 2020 - 1:39pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL04.dwg




Freese And Nichols, Inc.
Job No.
SWB09391

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

ROBERT N. JENKINS JR. 103589 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

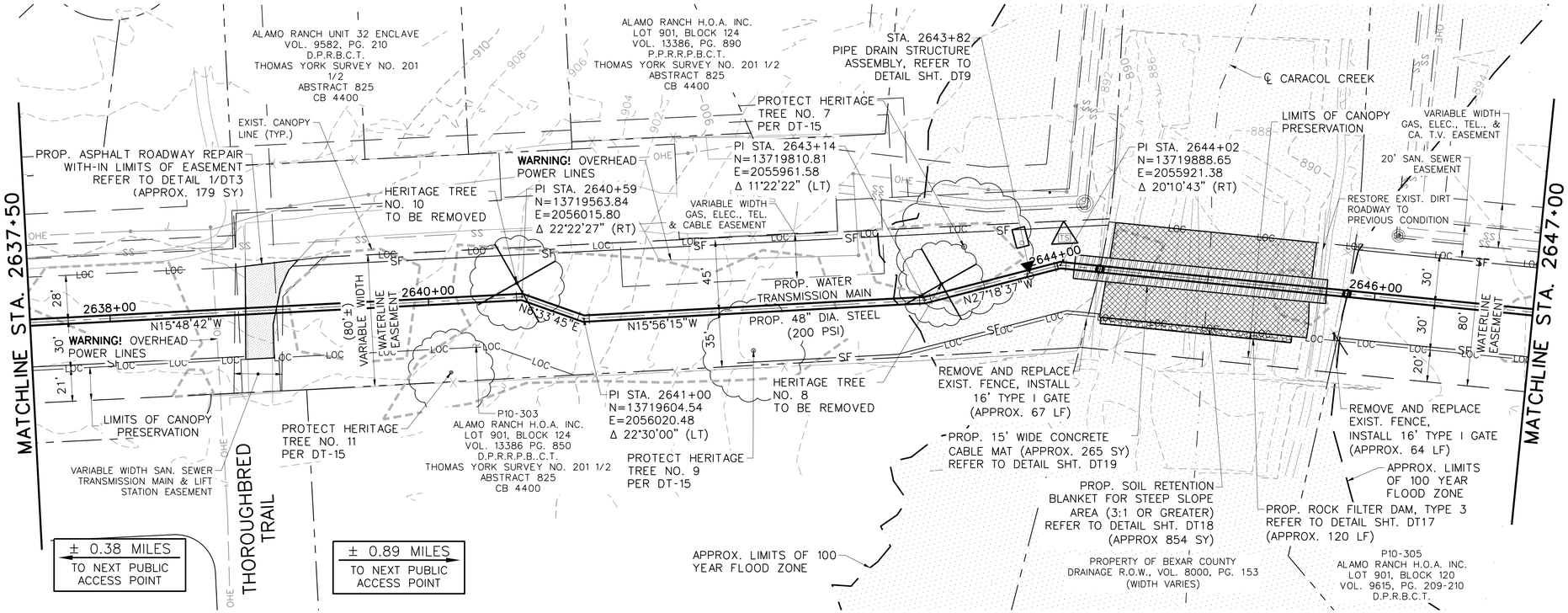
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2627+50 TO STA. 2637+50

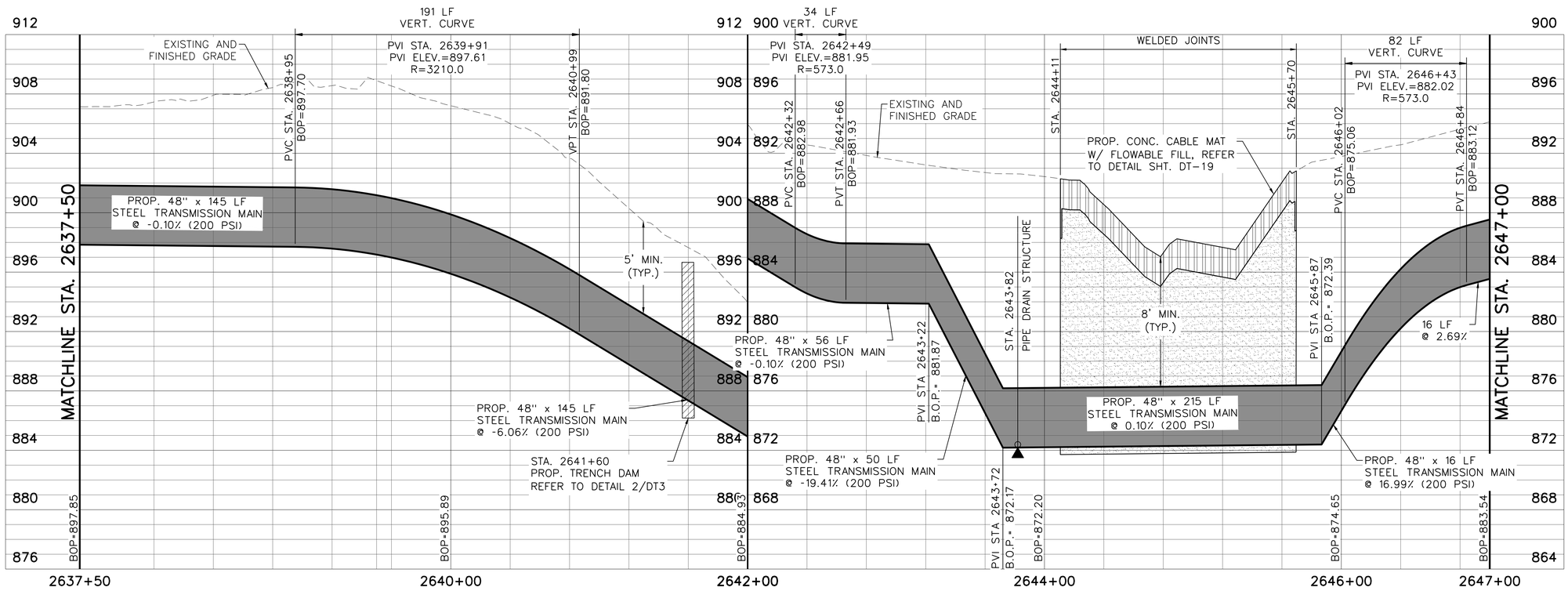
Sheet W71

ACAD CIVIL 3D 2011 User: DDH [SWB09391][SASRV2]
Date: Jul 19, 2020 - 6:17pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL04.dwg




NOTES:

1. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
2. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.
3. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

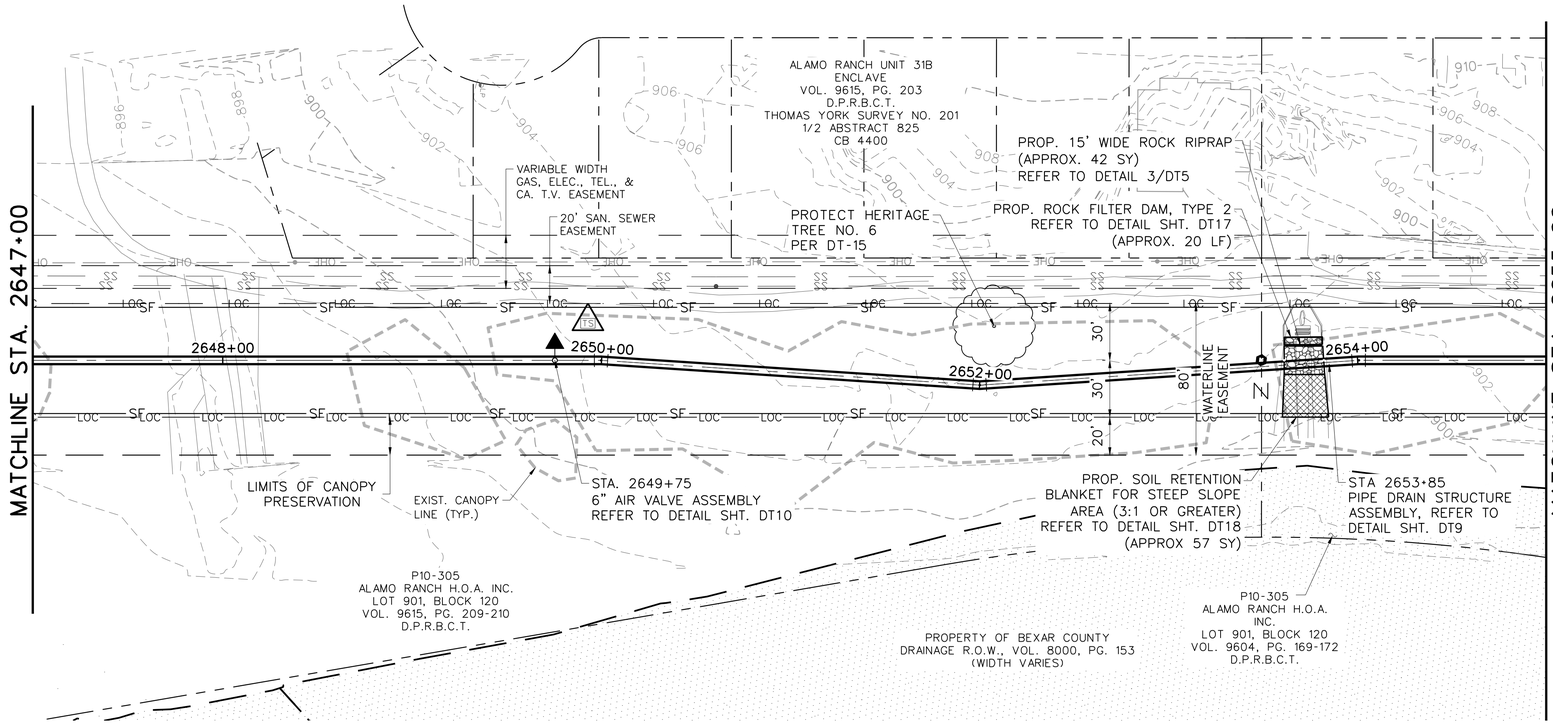
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

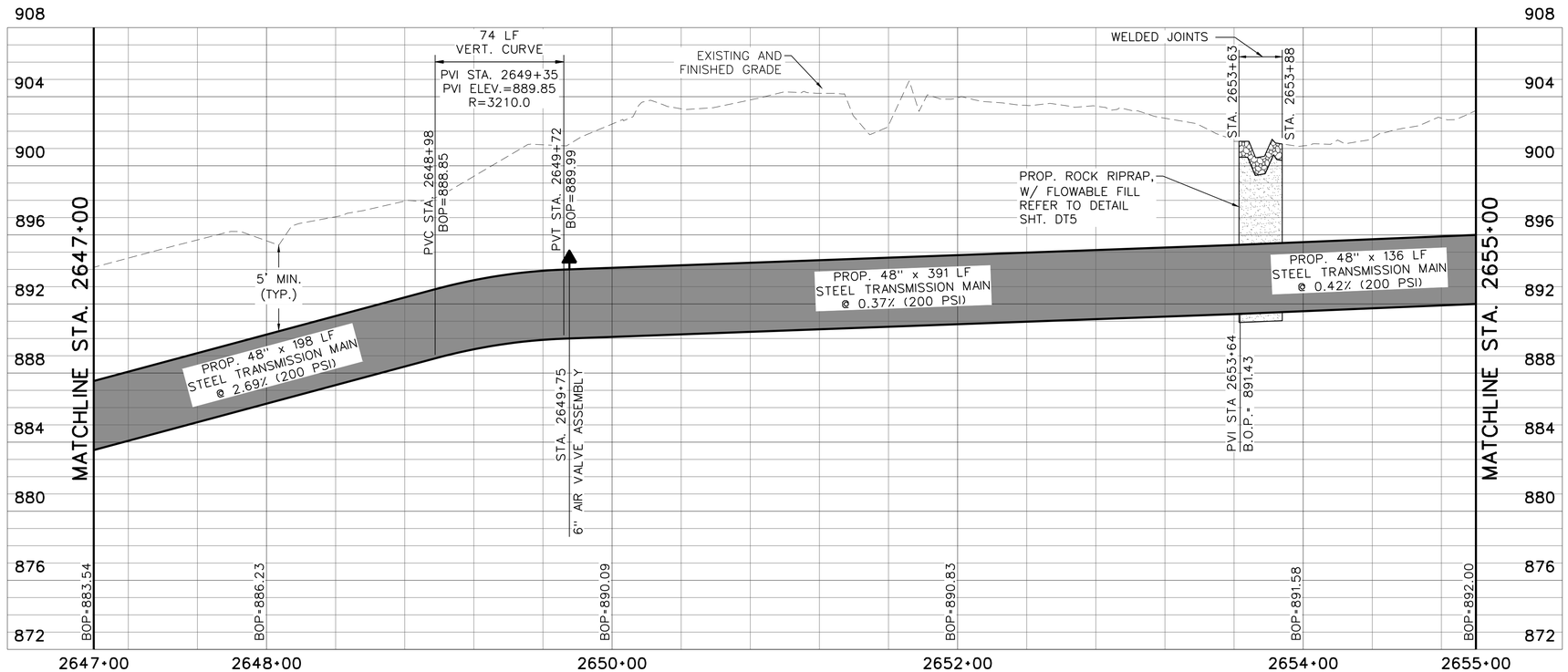
SAN ANTONIO WATER SYSTEM

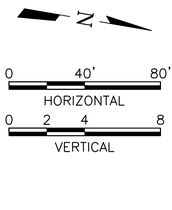
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2637+50 TO STA. 2647+00

Sheet W72

ACAD CIVIL 3D 2011 User: DDH [SWB09391][SASRV2]
Date: Jul 19, 2020 - 6:17pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL04.dwg




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

Freese And Nichols, Inc.
Job No.
SWB09391

0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

NOTES:

1. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.
2. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
3. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.

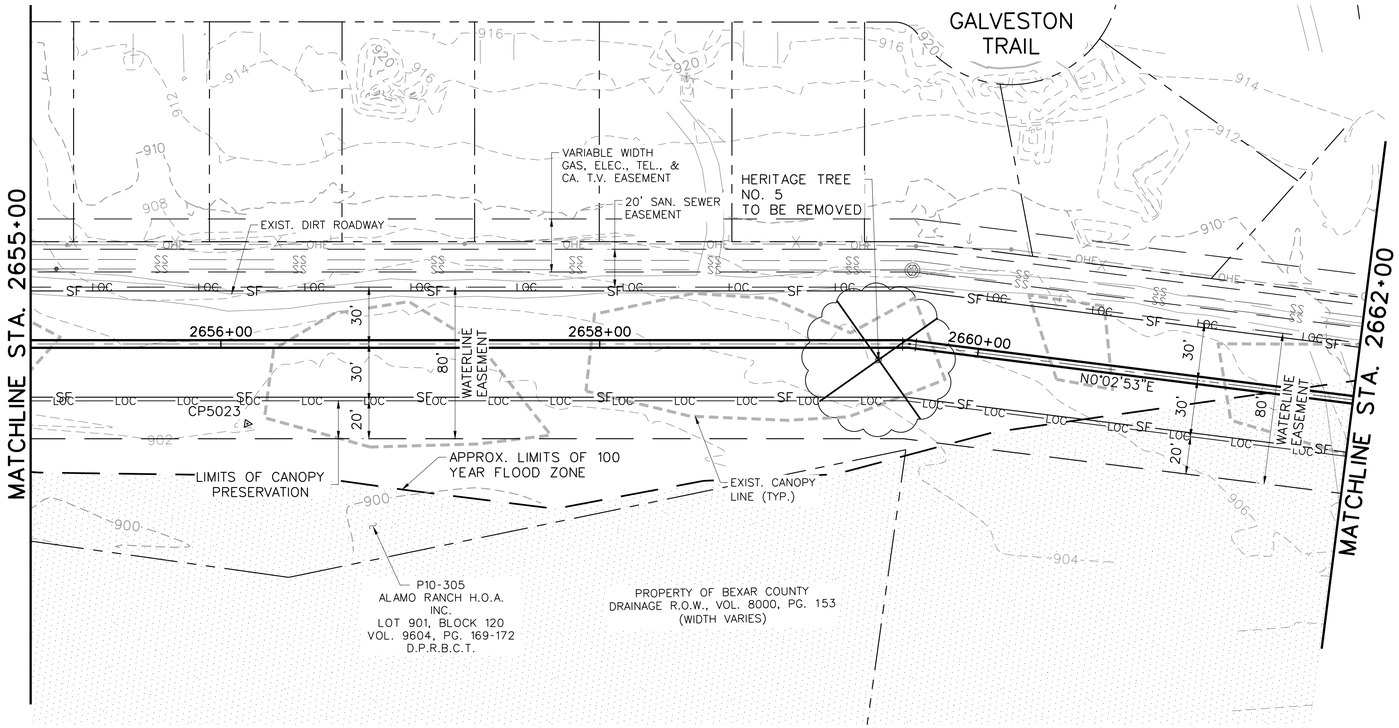
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

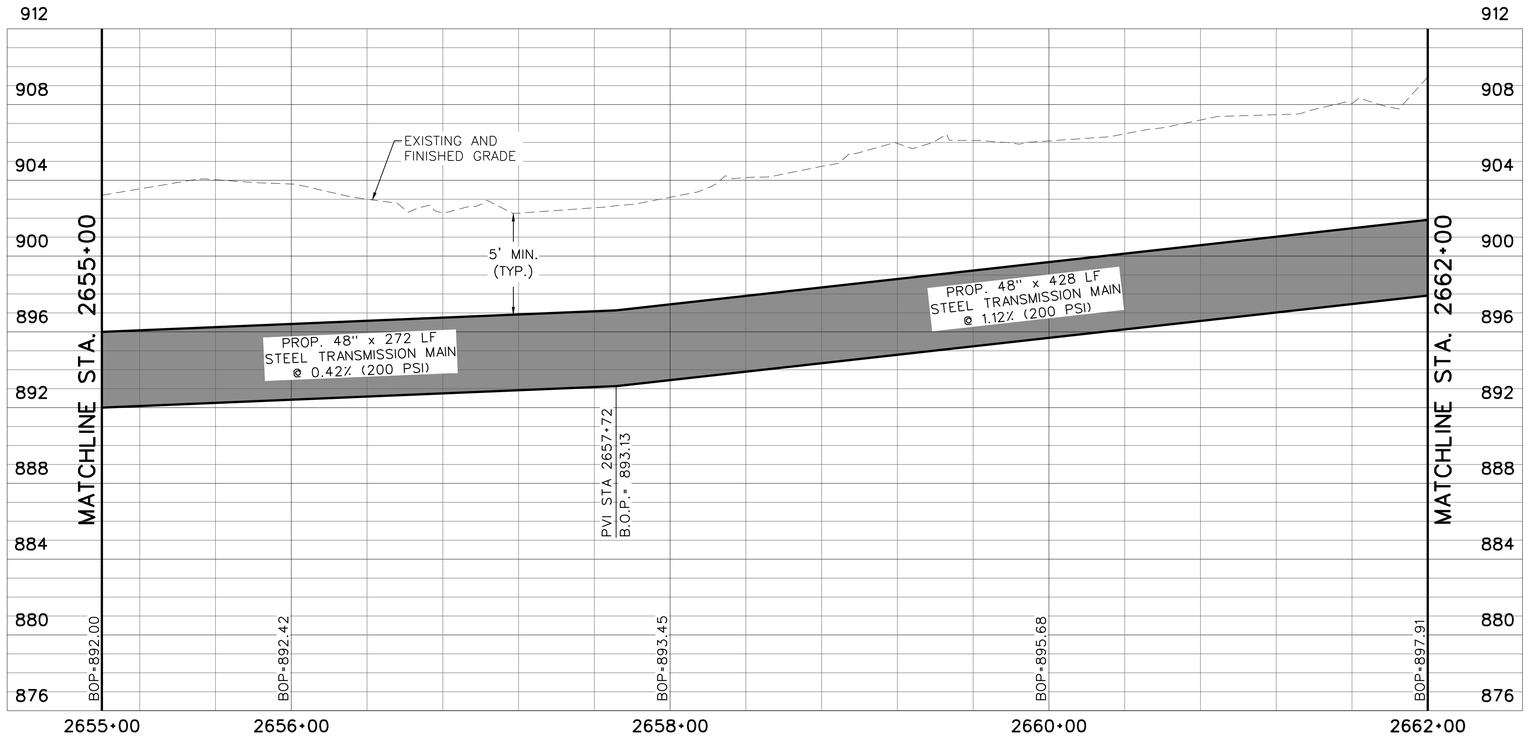
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2647+00 TO STA. 2655+00

Sheet W73

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]
Date: Jul 19, 2020 - 6:18pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL04.dwg




NOTES:

1. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
2. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.
3. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE. OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.

0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

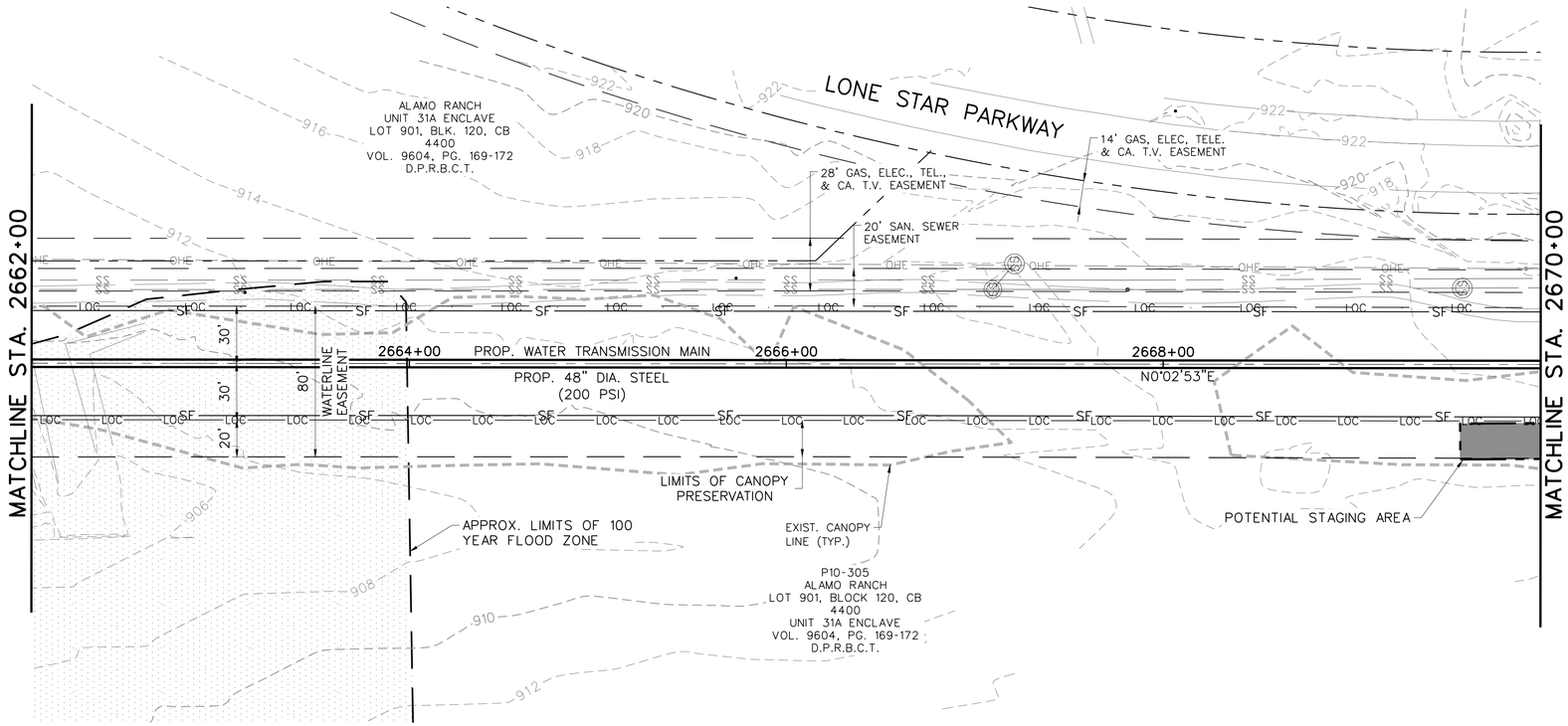
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-3900
Fax (210) 298-3901

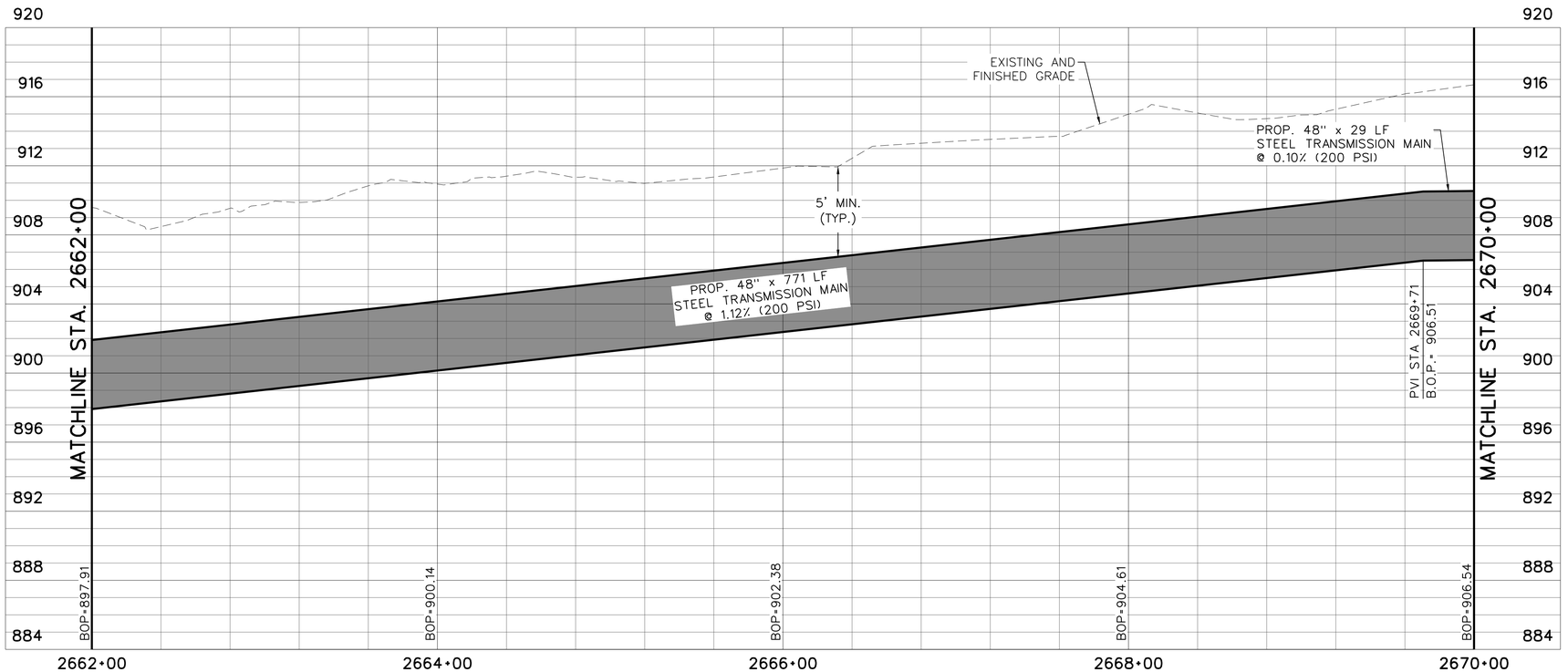
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2655+00 TO STA. 2662+00

Sheet W74

ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]
Date: Jul 19, 2020 - 6:19pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL04.dwg




NOTES:

1. WATER TRANSMISSION MAIN ALIGNMENT ON THIS SHEET IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD ZONE. STORAGE OF MATERIALS, EXCAVATED SOILS, AND EQUIPMENT IS NOT PERMITTED INSIDE THE 100 YEAR FLOOD ZONE.
2. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.

N

0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-3900
Fax (210) 298-3901

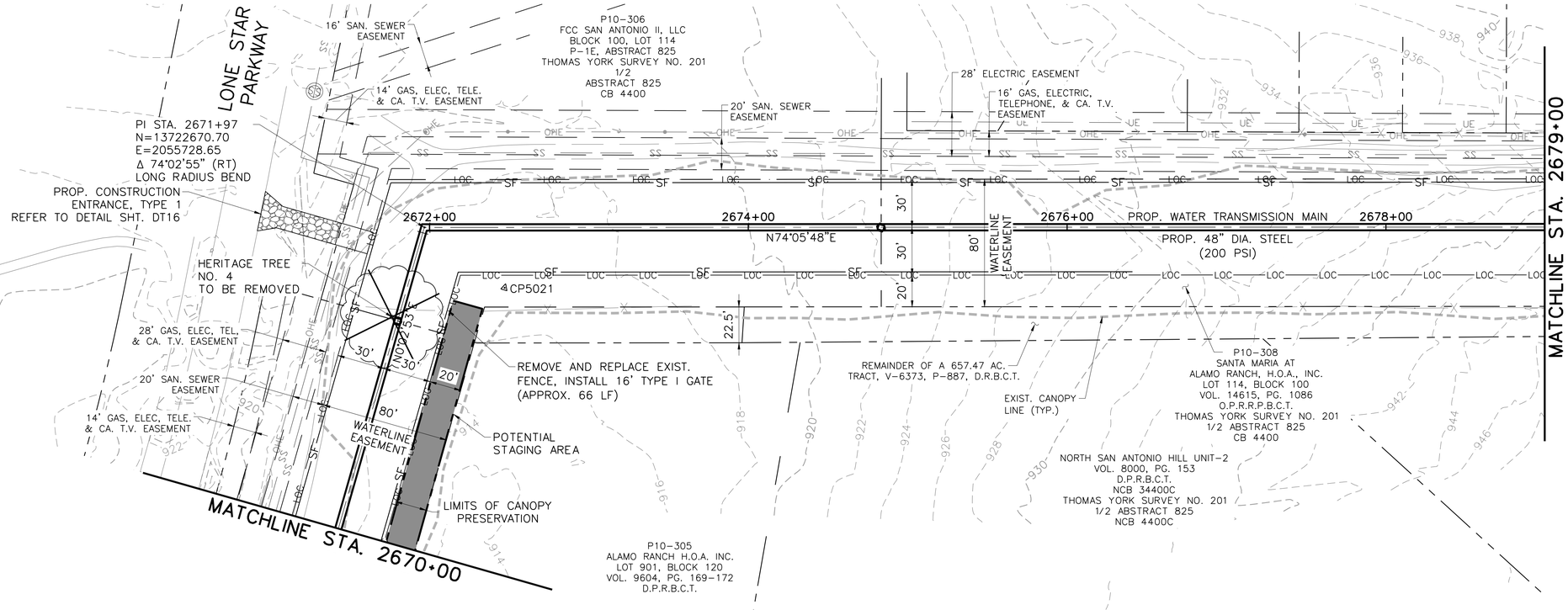
SAN ANTONIO WATER SYSTEM

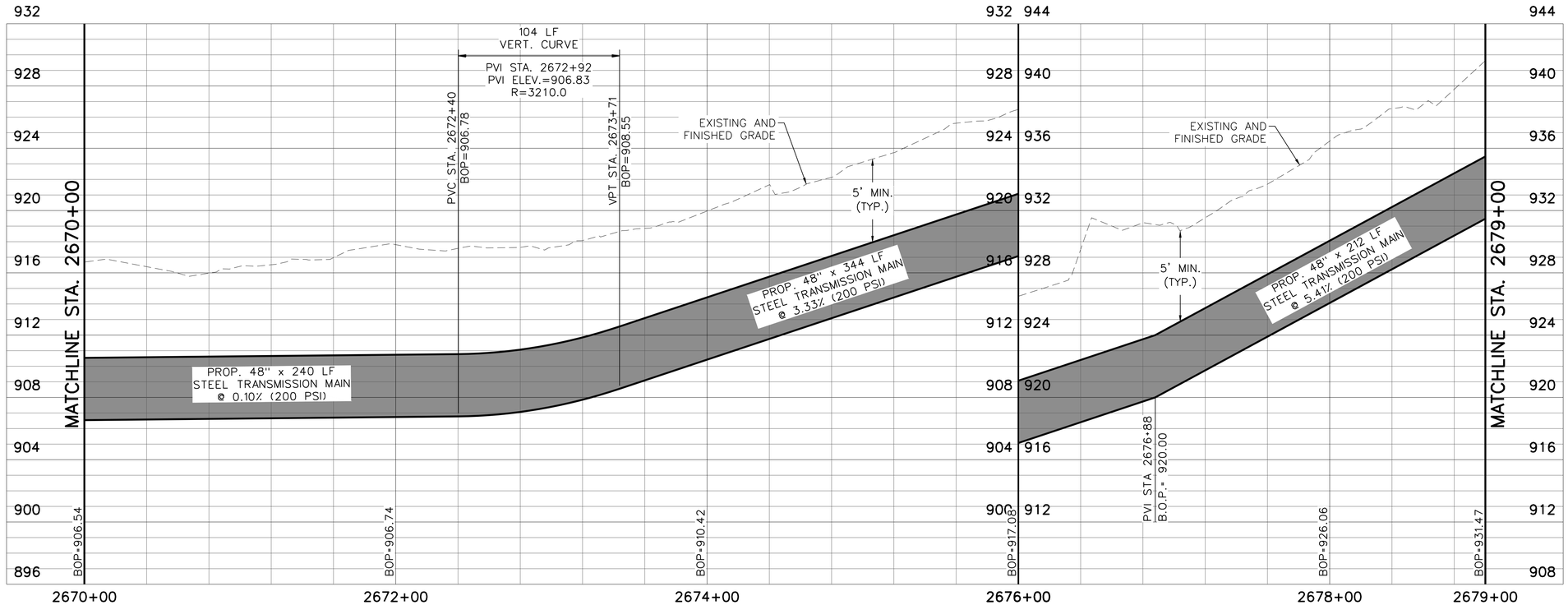
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2662+00 TO STA. 2670+00

Sheet W75

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]

Date: Jul 19, 2020 – 6:20pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL04.dwg




NOTES:

1. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
2. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.

0 40' 80'
HORIZONTAL
0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Freese And Nichols, Inc.
Job No.
SWB09391

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale:
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
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Fax (210) 298-8901

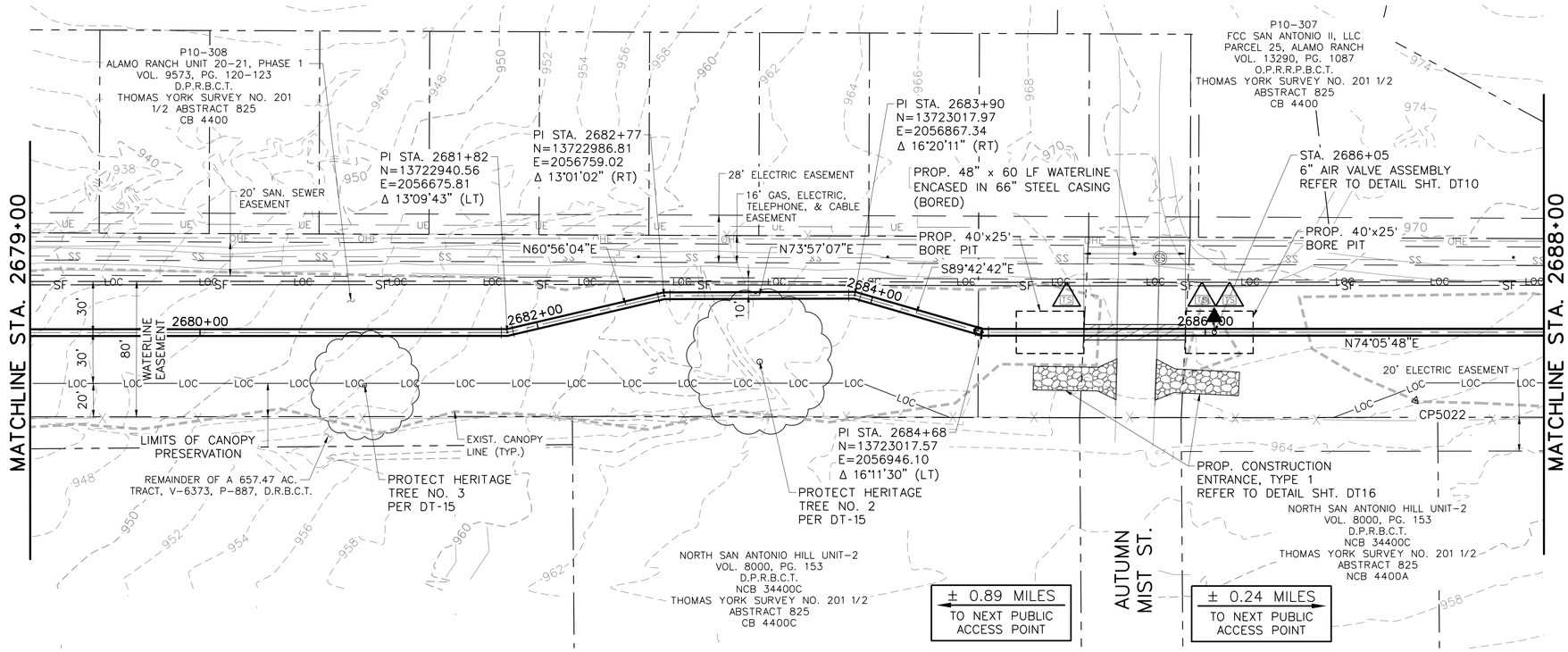
SAN ANTONIO WATER SYSTEM

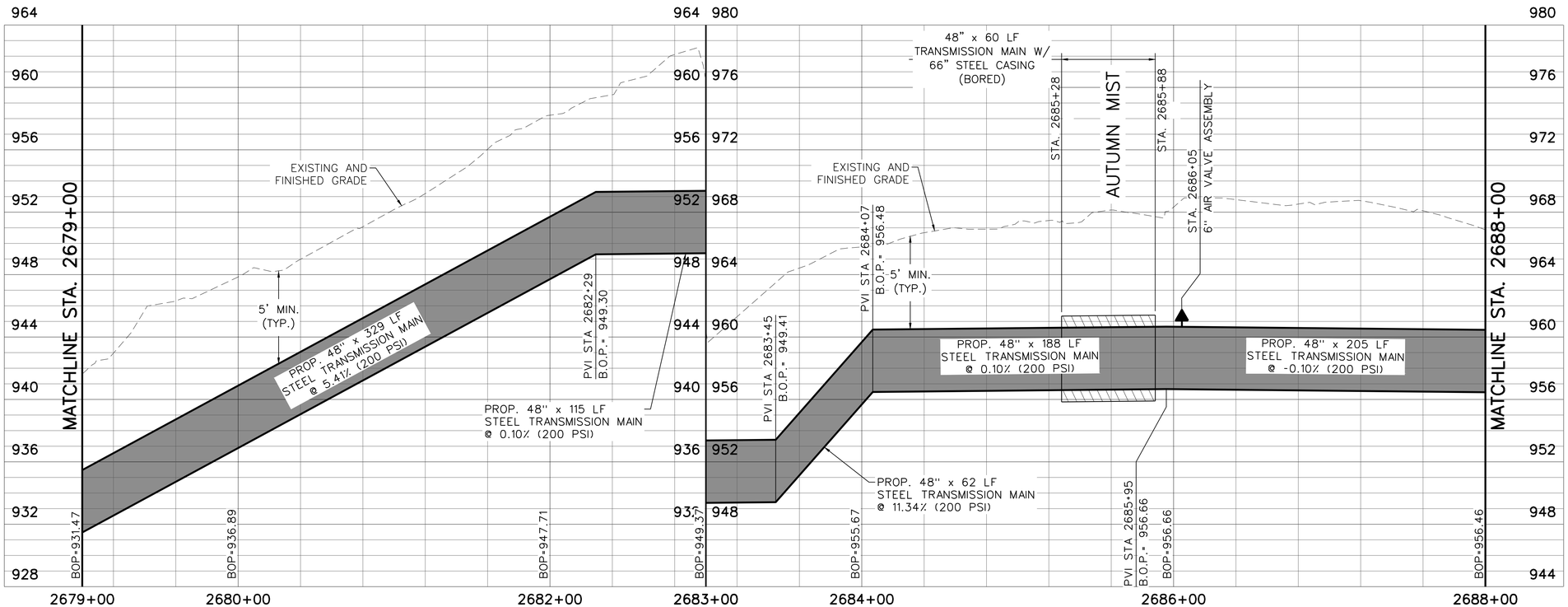
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2670+00 TO STA. 2679+00

Sheet W76

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]

Date: Jul 19, 2020 - 6:21pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL04.dwg




NOTES:

1. CONTRACTOR TO PRESERVE HERITAGE TREES WITHIN THE LIMITS OF OF CONSTRUCTION, WHICH IS A 60' WIDTH, LIMITED TO 30' TO EITHER SIDE OF THE PIPE. ALL TREES OUTSIDE OF THE 60' CLEARING WIDTH MUST BE PRESERVED, UNLESS OTHERWISE INDICATED IN THE PLANS.
2. CONTRACTOR TO MATCH PREVIOUS GRADE BY MAINTAINING SLOPES OF ELEVATIONS FROM SIDES OF THE CONSTRUCTION LIMITS.
3. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.
4. CONTRACTOR TO NOTIFY SAWS AT LEAST 60 DAYS PRIOR TO PERFORMING ANY WORK WITHIN THE BEXAR COUNTY ROW.

N

0 40' 80'
HORIZONTAL

0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

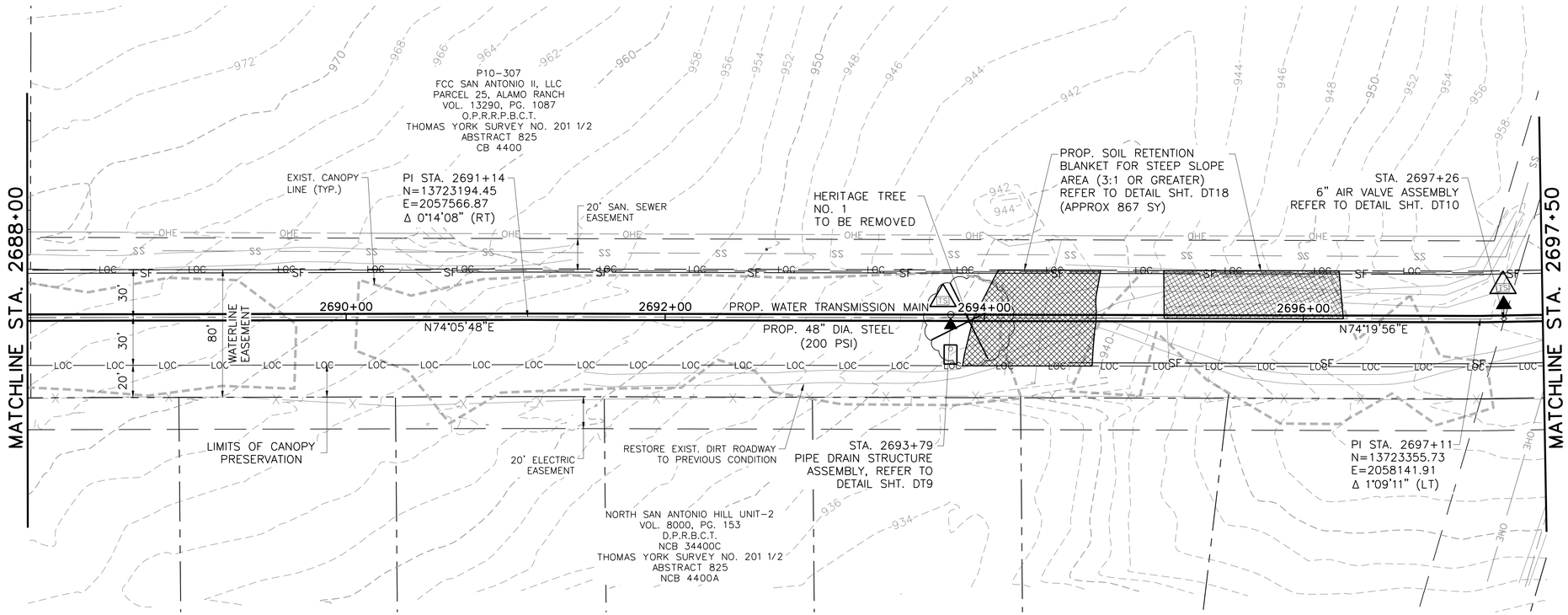
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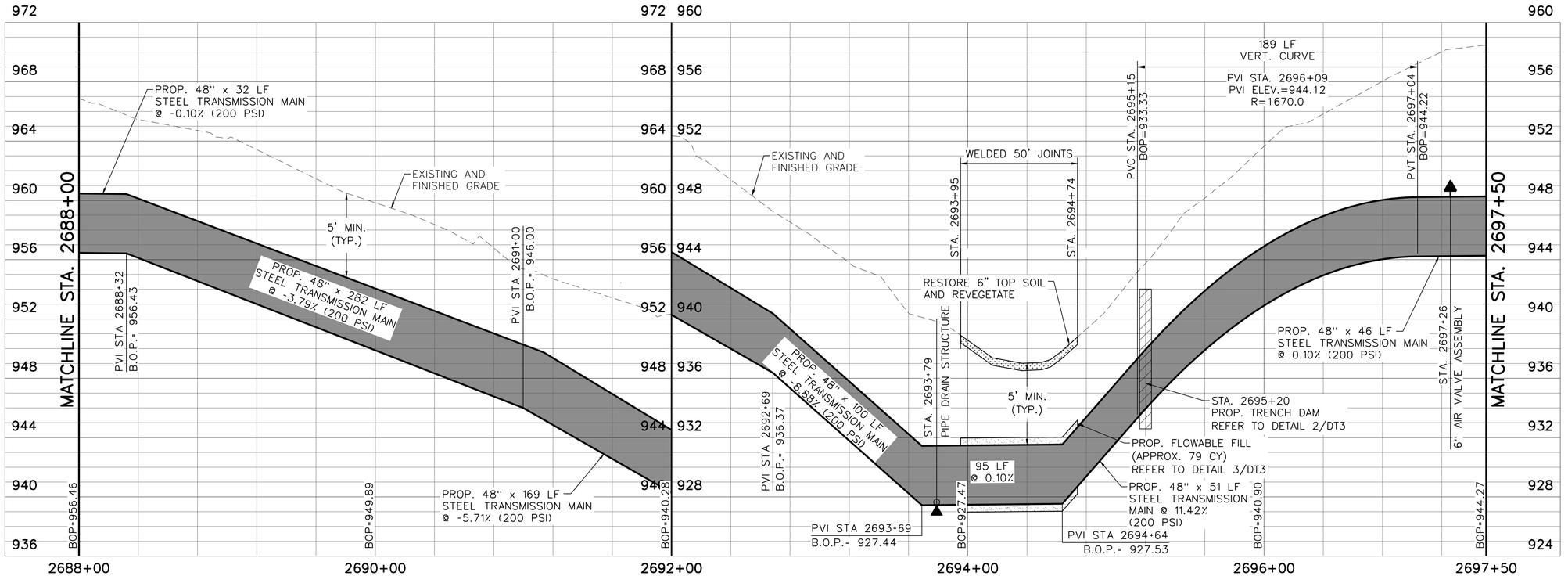
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2679+00 TO STA. 2688+00

Sheet W77

ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]
Date: Jul 19, 2020 - 6:22pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL04.dwg




NOTES:

1. IF THE TRENCH ENCROACHES UNDER THE TREE CANOPY, LEVEL IIA FENCE PROTECTION IS ALLOWABLE, OTHERWISE LEVEL I FENCE PROTECTION WILL BE UTILIZED.

N

0 40' 80'
HORIZONTAL

0 2 4 8
VERTICAL

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

ROBERT N. JENKINS
103589
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PROFESSIONAL ENGINEER
STATE OF TEXAS
07/20/20

Freese And Nichols, Inc.
Job No.
SWB09391

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

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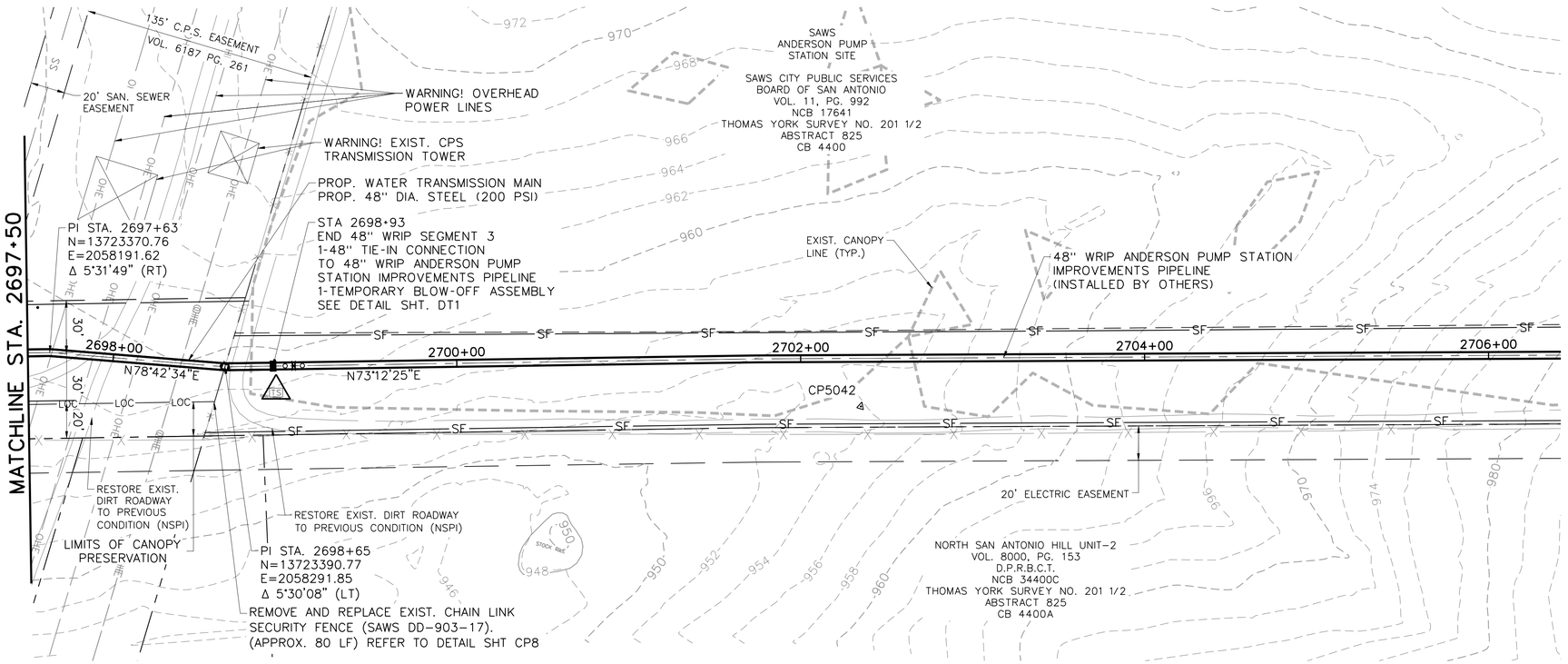
SAN ANTONIO WATER SYSTEM

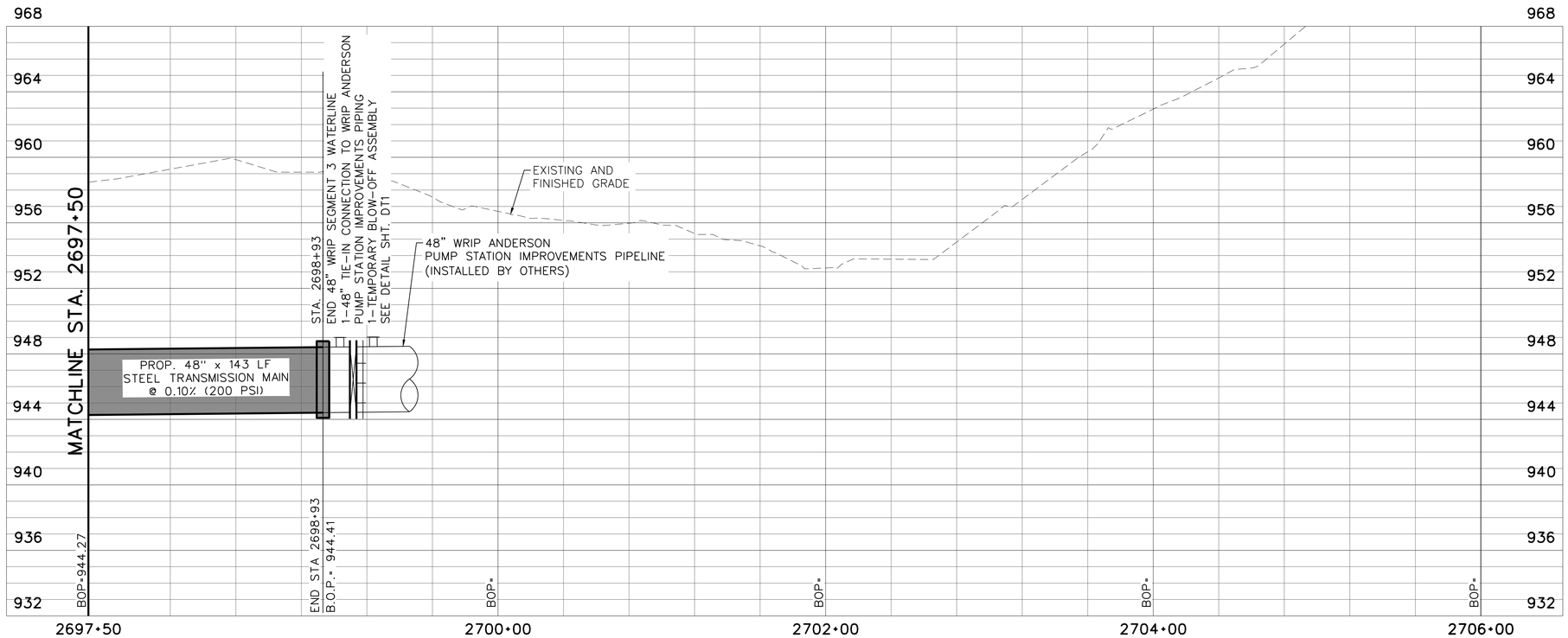
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2688+00 TO STA. 2697+50

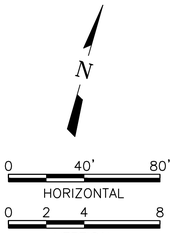
Sheet W78

ACAD CIVIL 3D 2011 User: DDH [SWB09391[SASRV2]

Date: Jul 19, 2020 - 6:23pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL04.dwg




NOTES:

1. CONNECTION TO ANDERSON PUMP STATION MUST BE COORDINATED WITH SAWS AND ANDERSON PUMP STATION CONTRACTOR. SEE DETAIL 2/DT-1 FOR DETAILS ON CONNECTION AND SPECIFICATIONS FOR FURTHER DETAILS ON COORDINATION.

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

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Scale:
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VERTICAL SCALE: 1"=4'

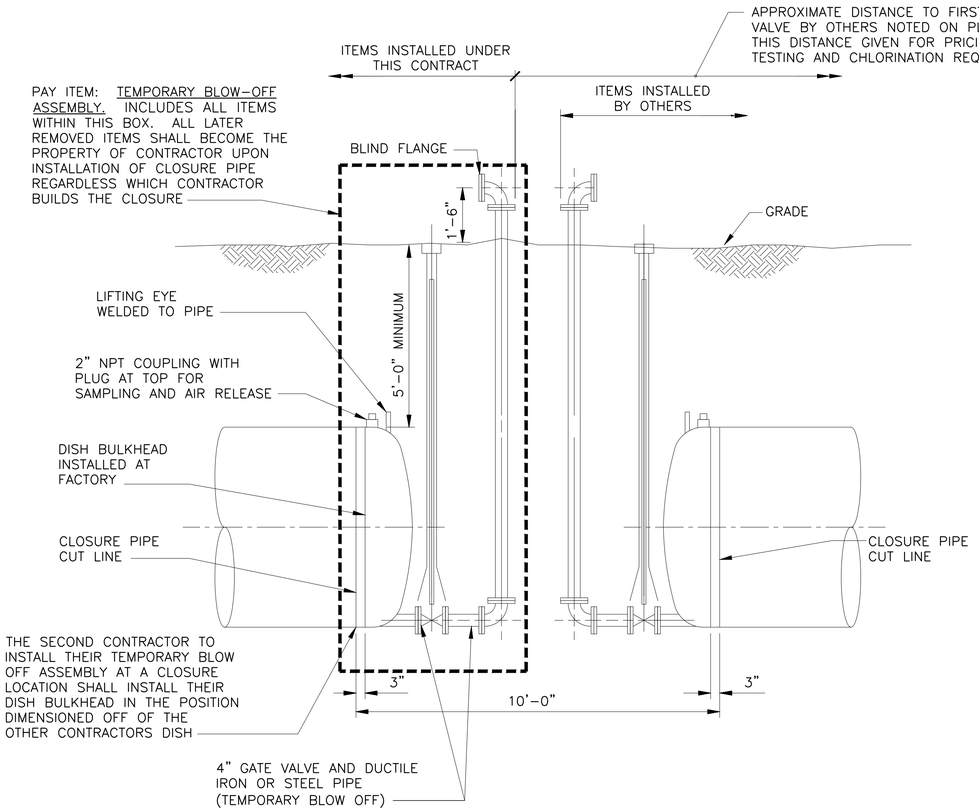
FREESE NICHOLS
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San Antonio, Texas 78216
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SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
PLAN & PROFILE
STA. 2697+50 TO STA. 2706+50

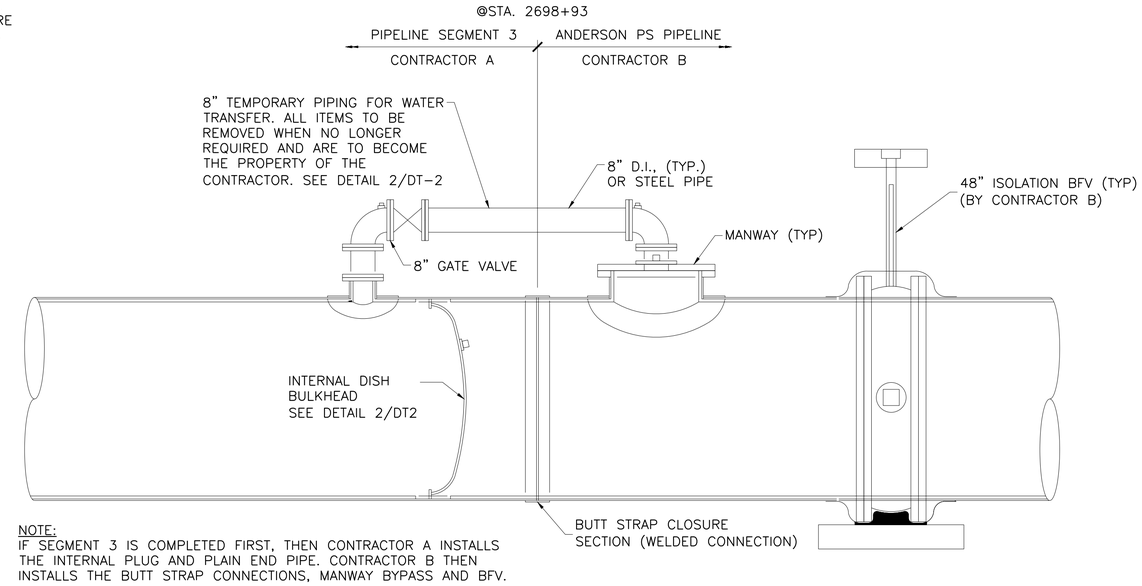
Sheet W79

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]
Date: Jul 19, 2020 - 6:24pm User: 07155 File: N:\wr\Drawings\WR-SAWS-PP-WL04.dwg




1 TEMPORARY BLOW OFF ASSEMBLY

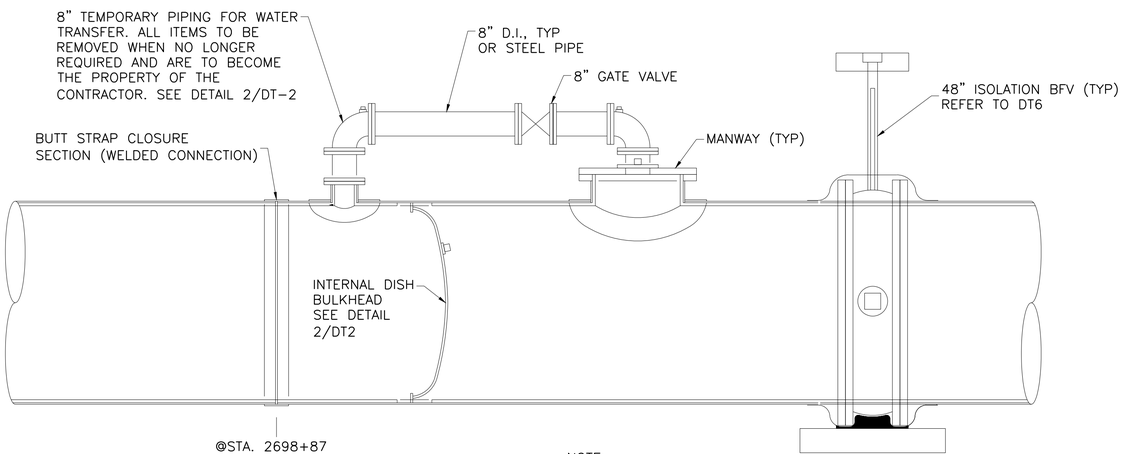
NOT TO SCALE




NOTE:
IF SEGMENT 3 IS COMPLETED FIRST, THEN CONTRACTOR A INSTALLS THE INTERNAL PLUG AND PLAIN END PIPE. CONTRACTOR B THEN INSTALLS THE BUTT STRAP CONNECTIONS, MANWAY BYPASS AND BFV.

2 CONNECTION DETAIL I

NOT TO SCALE




NOTE:
IF ANDERSON PS IS COMPLETED FIRST, THEN CONTRACTOR B INSTALLS THE INTERNAL TEST PLUG, PLAIN END PIPE AND BFV. CONTRACTOR A THEN INSTALLS THE BUTT STRAP CONNECTION AND MANWAY BYPASS. CONTRACTOR A MUST POTHOLE PIPE TO VERIFY INVERT ELEVATIONS PRIOR TO ATTEMPTING TO MAKE THE TIE-IN. SHOULD THERE BE A DIFFERENCE IN ELEVATIONS, CONTRACTOR SHALL ADJUST PIPE INVERT AS NECESSARY TO MAKE THE TIE-IN. (NSPI)

3 CONNECTION DETAIL II

NOT TO SCALE

CONNECTION DETAIL I & II NOTES:

1. PIPE JOINTS SHALL BE RESTRAINED IN BOTH DIRECTIONS FOR THE DEAD END THRUSTS.
2. TEST BULKHEADS WILL BE REQUIRED AT EACH END OF THE PROJECT AND AT EACH CHANGE IN PRESSURE CLASS. OTHER HYDROSTATIC TESTING WILL BE ALLOWED TO UTILIZE CLOSED 48-INCH BUTTERFLY VALVES.
3. TEST BULKHEADS REQUIRED BY THE CONTRACTOR BEYOND THE NUMBER SHOWN ON PLANS WILL NOT BE PAID FOR SEPARATELY.
4. LOCATIONS OF ADDITIONAL BULKHEADS WILL BE DETERMINED BY THE CONTRACTOR. ADDITIONAL PIPE RESTRAINT TO ACCOMMODATE TESTING IF ANY SHALL BE PLANNED IN ADVANCE AND BE AT THE CONTRACTOR'S EXPENSE.

PIPELINE CLOSURE TESTING AND CHLORINATION REQUIREMENTS (CONNECTION DETAIL II):
CONTRACTOR A / CONTRACT A = CONTRACTOR TO PROVIDE TIE IN.
CONTRACTOR B / CONTRACT B = CONTRACTOR WITH DIRECTION FROM SAWS TO PROVIDE PIPELINE TEST BULKHEAD .

1. PROVIDE TEST BULKHEAD ASSEMBLY WITH FLANGE TYPE JOINT AND SPOOL PIECE WHERE INSULATED FLANGE IS SPECIFIED.
2. CONTRACTOR B: INSTALL TEST BULKHEAD ASSEMBLY AND COMPLETE INSTALLATION OF FLANGE AND SPOOL PIECE.
3. CONTRACTOR B: INSTALL TEMPORARY BULKHEAD AT END OF SPOOL PIECE AND BACKFILL.
4. CONTRACTOR B: TEST AND CONFIRM ELECTRICAL ISOLATION HAS BEEN ACHIEVED PRIOR TO CONNECTING WITH BUTT STRAP JOINT.
5. CONTRACTOR B: COMPLETE ATTACHMENT TO BULKHEAD ASSEMBLY.
6. CONTRACTOR A AND B: PRESSURE TEST PIPELINES AGAINST END OF TEST BULKHEAD TO SPECIFIED PRESSURES AND WITNESS EACH HYDROSTATIC TEST ON EACH SIDE OF THE TEST BULKHEAD AFTER CONNECTING TO THE BULKHEAD.
7. CONTRACTOR B: SWEEP AND THOROUGHLY CLEAN ALL IMPACTED WORK AREAS INSIDE THE PIPE AND THEN SWAB OR SPRAY ALL PIPE SURFACES TO AT LEAST 10 FT BEYOND IMPACTED WORK AREA ON BOTH SIDES OF THE TEST BULKHEAD WITH 1% HYPOCHLORITE SOLUTION. SAWS INSPECTOR SHALL WITNESS AND INSPECT AND MUST APPROVE FINAL CLOSURE.
7. AFTER SUCCESSFUL COMPLETION OF HYDROSTATIC TESTING, DRAIN WATER FROM EACH SIDE. REMOVE TEMPORARY PIPING AND DISH BULKHEAD AND APPLY MORTAR TO INTERIOR SURFACES PER SPECIFICATIONS.
8. ACTIVITIES RELATED TO THE PROGRAM DISINFECTION WILL BE COMPLETED IN ACCORDANCE WITH THE SPECIFICATIONS.
9. CONTRACTOR B WILL BE PAID FOR ONE TIE IN. EACH CONTRACTOR SHALL INCLUDE ALL COSTS NOT IN OTHER PAY ITEMS INCLUDING ALL TESTING, CLEANING, AND ALL OTHER REQUIRED EFFORT AND COSTS.
CONTRACTOR A: WILL BE PAID FOR ONE INTERNAL TEST BULKHEAD ASSEMBLY.

PIPELINE CLOSURE TESTING AND CHLORINATION REQUIREMENTS (CONNECTION DETAIL I):

CONTRACTOR A / CONTRACT A = CONTRACTOR WITH DIRECTION FROM SAWS TO PROVIDE PIPELINE TEST BULKHEAD .
CONTRACTOR B / CONTRACT B = CONTRACTOR TO PROVIDE TIE IN.

1. CONTRACTOR A: PROVIDE TEST BULKHEAD ASSEMBLY WITH FLANGE TYPE JOINT AND SPOOL PIECE WHERE INSULATED FLANGE IS SPECIFIED AND TO FACILITATE WELDED CONNECTOR FOR CONTRACTOR B.
2. CONTRACTOR A: INSTALL TEST BULKHEAD ASSEMBLY. CONTRACTOR B SHALL WITNESS OR COMPLETE INSTALLATION OF FLANGE AND SPOOL PIECE.
3. CONTRACTOR A: INSTALL TEMPORARY BULKHEAD AT END OF SPOOL PIECE AND BACKFILL UNLESS OTHER ARRANGEMENTS ARE MADE WITH CONTRACTOR B.
4. CONTRACTOR A AND CONTRACTOR B: TEST AND CONFIRM ELECTRICAL ISOLATION HAS BEEN ACHIEVED PRIOR TO CONTRACTOR B CONNECTING WITH BUTT STRAP JOINT.
5. CONTRACTOR B: COMPLETE ATTACHMENT TO BULKHEAD ASSEMBLY.
6. CONTRACTOR A AND CONTRACTOR B: PRESSURE TEST PIPELINES AGAINST END OF TEST BULKHEAD TO SPECIFIED PRESSURES CONTRACTOR A AND CONTRACTOR B SHALL WITNESS EACH OTHER'S HYDROSTATIC TEST ON EACH SIDE OF THE TEST BULKHEAD AFTER CONNECTING TO THE BULKHEAD. CONTRACTOR A AND B WILL BE FULLY RESPONSIBLE FOR ANY ISSUES ASSOCIATED WITH HIS RESPECTIVE SIDE OF THE TEST BULKHEAD.
7. AFTER CONTRACTOR A & CONTRACTOR B HAVE BOTH PASSED HYDROSTATIC TESTING, CONTRACTORS SHALL DRAIN WATER FROM EACH SIDE. CONTRACTOR B SHALL REMOVE TEMPORARY PIPING AND DISH BULKHEAD AND APPLY MORTAR TO INTERIOR SURFACES PER SPECIFICATIONS.
8. CONTRACTOR B: SWEEP AND THOROUGHLY CLEAN ALL IMPACTED WORK AREAS INSIDE THE PIPE AND THEN SWAB OR SPRAY ALL PIPE SURFACES TO AT LEAST 10 FT BEYOND IMPACTED WORK AREA ON BOTH SIDES OF THE TEST BULKHEAD WITH 1% HYPOCHLORITE SOLUTION. SAWS INSPECTOR SHALL WITNESS AND INSPECT AND MUST APPROVE FINAL CLOSURE.
9. ACTIVITIES RELATED TO THE PROGRAM DISINFECTION WILL BE COMPLETED IN ACCORDANCE WITH THE SPECIFICATIONS.
10. CONTRACTOR A: WILL BE PAID FOR ONE INTERNAL TEST BULKHEAD ASSEMBLY. CONTRACTOR B WILL BE PAID FOR ONE TIE IN. EACH CONTRACTOR SHALL INCLUDE ALL COSTS NOT IN OTHER PAY ITEMS INCLUDING ALL TESTING, CLEANING, AND ALL OTHER REQUIRED EFFORT AND COSTS.

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER 07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: N.T.S.

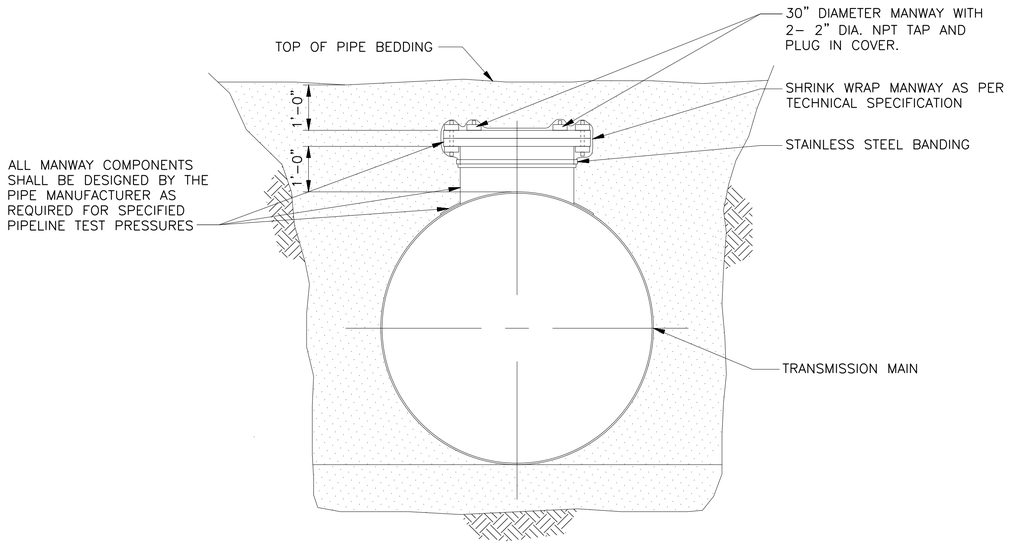
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
BLOW OFF AND CONNECTION DETAILS

Sheet DT1

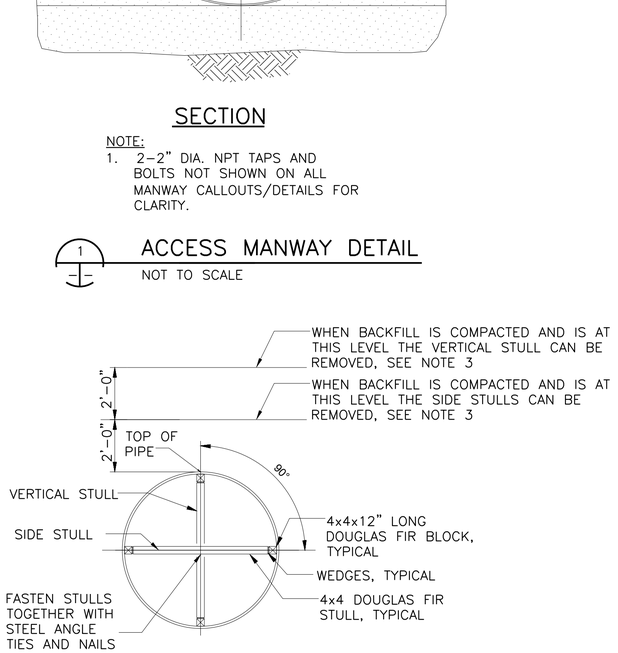
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Date: Jul 19, 2020 - 11:25pm User: 07155 File: N:\wr\Drawings\WR-SAWS-DT-WL014.dwg




## SECTION

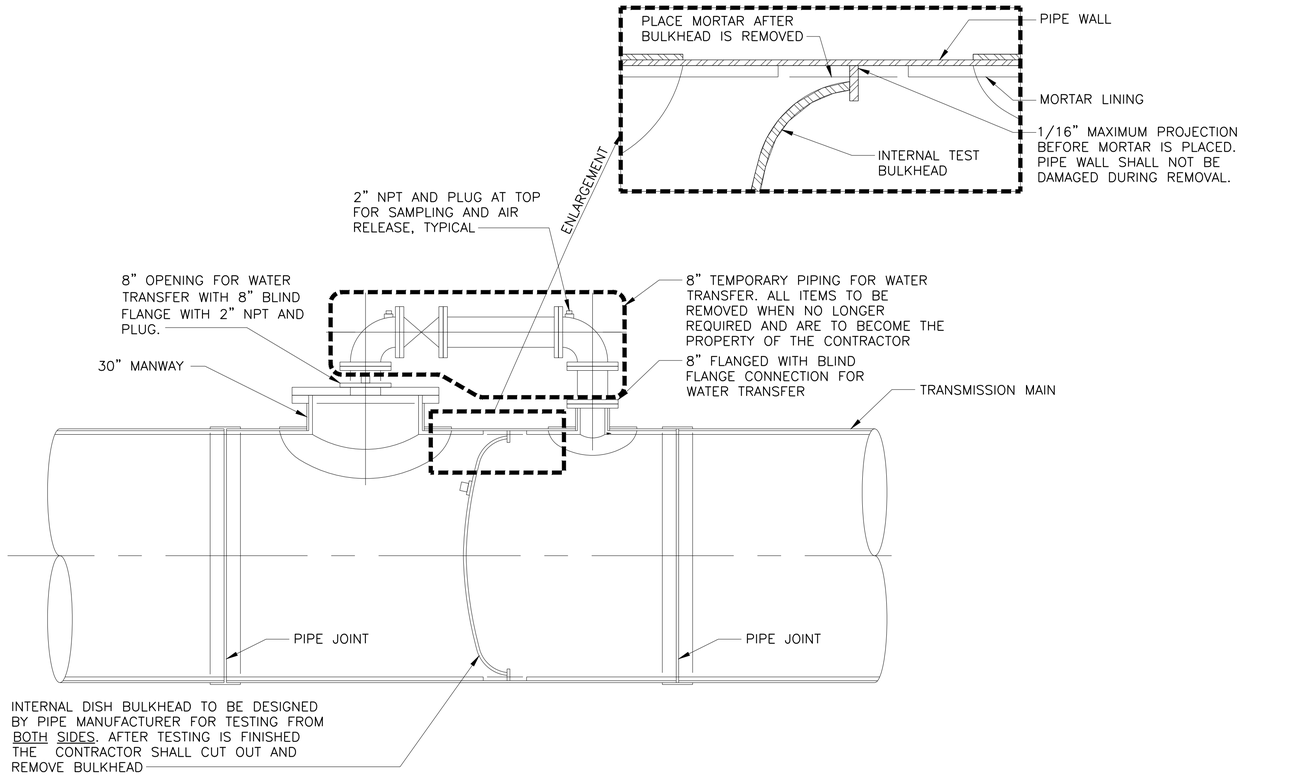
NOTE:
1. 2-2" DIA. NPT TAPS AND BOLTS NOT SHOWN ON ALL MANWAY CALLOUTS/DETAILS FOR CLARITY.

1 ACCESS MANWAY DETAIL
NOT TO SCALE




NOTES:
1. STULLING SHALL BE INSTALLED AS SPECIFIED IN THE SPECIFICATIONS OR AT 2'-0" MAXIMUM FROM THE END OF PIPE JOINT AND AT A MAXIMUM SPACING OF 15'-0" THROUGHOUT THE LENGTH OF PIPE JOINT.
2. STULLING SHALL BE INSTALLED AT PIPE FACTORY PRIOR TO SHIPPING AND SHALL NOT BE REMOVED UNTIL COMPACTED BACKFILL IS INSTALLED AS PER THIS DETAIL.
3. COMPACTED BACKFILL DEPTHS MAY VARY IF THE TYPE OF COMPACTION EQUIPMENT CAUSES PIPE DEFLECTION BEYOND ALLOWABLE LIMITS. CONTRACTOR SHALL MONITOR AND CONTROL DEFLECTION.
4. NUMBER OF STULL POINTS SHOWN ARE FOR 48" DIAMETER PIPING. REQUIRED NUMBER OF STULLS POINTS SHALL BE AS PER THE SPECIFICATIONS, AND AS REQUIRED BY THE PIPE MANUFACTURE.

3 CROSS-SECTION PIPE STULLING DETAIL
NOT TO SCALE




NOTE:
1. PIPE JOINTS SHALL BE RESTRAINED IN BOTH DIRECTIONS FOR DEAD END THRUSTS.

2 INTERNAL TEST BULKHEAD & MANWAY
NOT TO SCALE

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

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07/20/20

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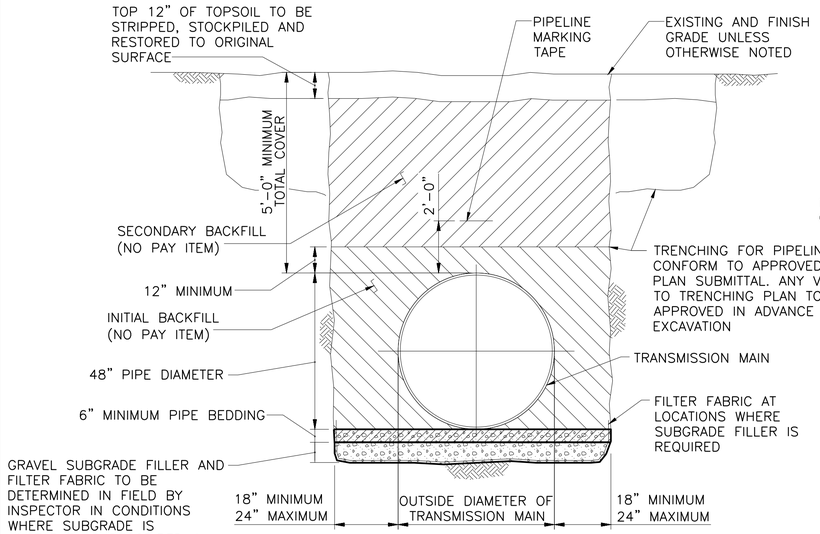
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San Antonio, Texas 78216
Phone (210) 298-3900
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SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
MANWAY AND BULKHEAD DETAILS

Sheet DT2

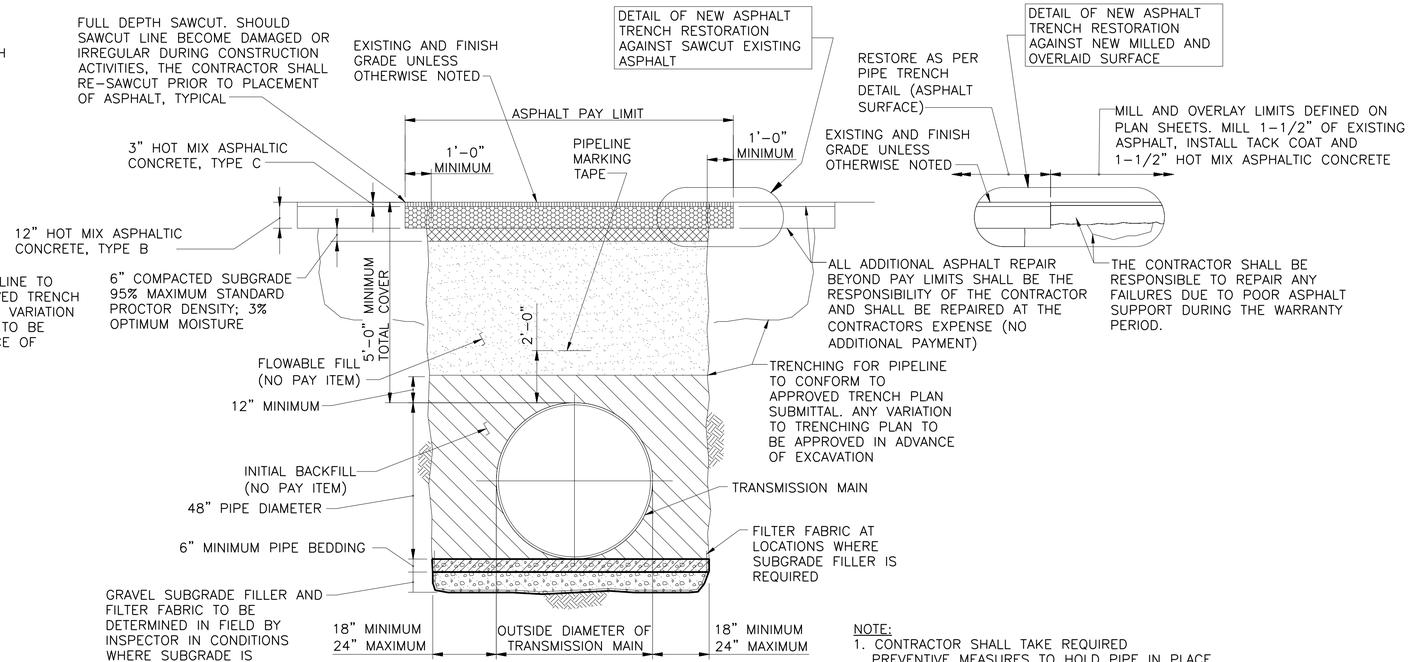
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Date: Jul 19, 2020 - 11:25pm User: 07155 File: N:\wr\Drawings\WR-SAWS-DT-WL02a.dwg




CROSS-SECTION

## TYPE A–TYPICAL PIPE TRENCH (SOIL SURFACE)

SCALE: NOT TO SCALE




CROSS-SECTION

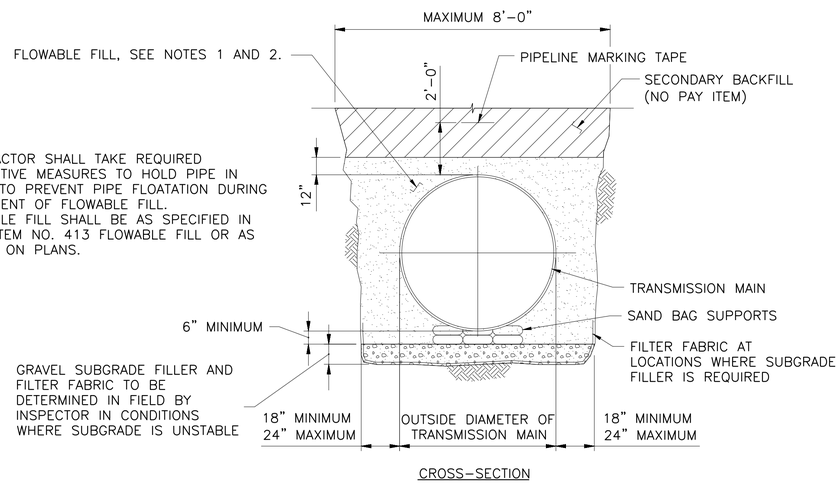
## TYPE B–TYPICAL PIPE TRENCH (ASPHALT SURFACE)

SCALE: NOT TO SCALE

NOTE:
1. CONTRACTOR SHALL TAKE REQUIRED PREVENTIVE MEASURES TO HOLD PIPE IN PLACE TO PREVENT PIPE FLOATATION DURING PLACEMENT OF CONTROLLED LOW STRENGTH MATERIAL (CLSM).

## 1 PIPE TRENCH DETAILS

NOT TO SCALE

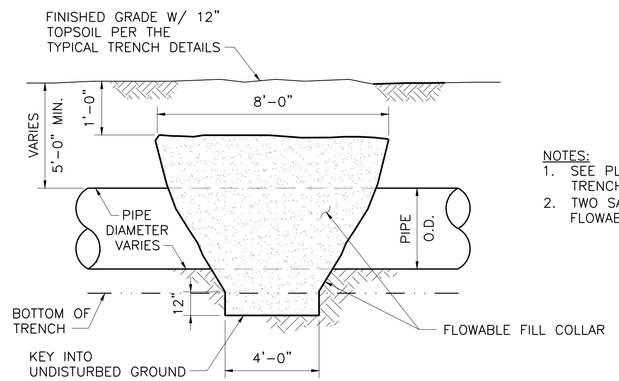



CROSS-SECTION

NOTES:
1. CONTRACTOR SHALL TAKE REQUIRED PREVENTIVE MEASURES TO HOLD PIPE IN PLACE TO PREVENT PIPE FLOATATION DURING PLACEMENT OF FLOWABLE FILL.
2. FLOWABLE FILL SHALL BE AS SPECIFIED IN COSA ITEM NO. 413 FLOWABLE FILL OR AS SHOWN ON PLANS.

## 2 FLOWABLE FILL PIPE ENCASEMENT

NOT TO SCALE




NOTES:
1. SEE PLAN & PROFILE SHEETS FOR LOCATION OF TRENCH DAMS.
2. TWO SACK (PER CUBIC YARD) FIELD-MIXED FLOWABLE FILL BACKFILL MAY BE USED.

## 3 TRENCH DAM DETAIL

NOT TO SCALE

| No. | Date | Revisions | App. |
|---|---|---|---|
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STATE OF TEXAS ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER 07/20/20

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Checked by: DTB
Scale: N.T.S.

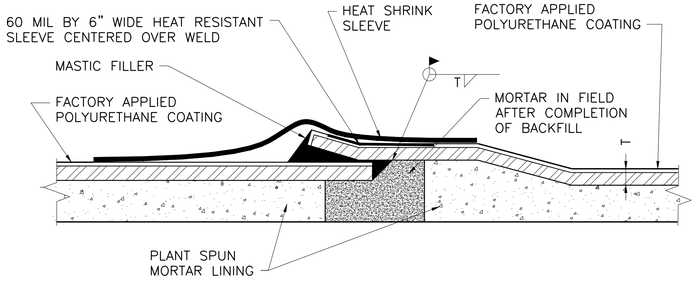
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SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
TRENCH DETAILS

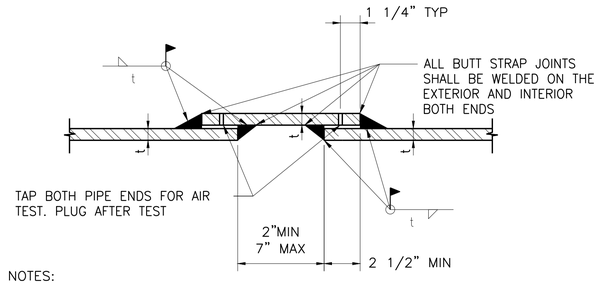
Sheet DT3

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Date: Jul 19, 2020 – 11:25pm User: 07155 File: N:\wr\Drawings\WR-SAWS-DT-WL03a.dwg




1 — WELDED JOINT DETAIL POLYURETHANE COATED STEEL PIPE

NOT TO SCALE

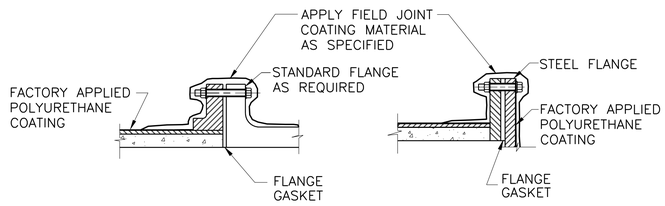



NOTES:

1. BUTT STRAPS TO BE FURNISHED IN TWO PIECES AND SHIPPED LOOSE FOR FIELD WELDING. BUTT STRAPS TO INCLUDE TABS TO ACCEPT ALL–THREAD FOR BOLTED CONNECTION TO FACILITATE FIELD LINE–UP AND WELDING.
2. 12" MAXIMUM LENGTH OF TYPICAL BUTT STRAP FOR FIELD CLOSING SECTION (SEE SPECIFICATIONS).
3. SEE JOINT DETAILS FOR TYPICAL LAP WELD ON POLYURETHANE COATED STEEL PIPE AND FOR ADDITIONAL INFORMATION ON COATINGS, LININGS AND OTHER REQUIREMENTS.
4. "t" INDICATES THE THICKNESS OF THE STEEL PIPE AT THE SECTION WHERE USED.

2 — JOINT DETAIL WELDED BUTT STRAP

NOT TO SCALE




NOTE:

1. INCLUDE INSULATED FLANGE GASKET, 2 INSULATING WASHERS, 2 STEEL WASHERS, AND INSULATED BOLT SLEEVES PER THE SPECIFICATIONS AT LOCATIONS INDICATED ON THE PLANS.

3 — FLANGED CONNECTIONS FOR STEEL PIPE

NOT TO SCALE

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

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Job No.
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STATE OF TEXAS — ROBERT N. JENKINS — 103589 — LICENSED PROFESSIONAL ENGINEER — 07/20/20

Date: 07/19/2020
Designed by: CAK
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Scale: AS SHOWN

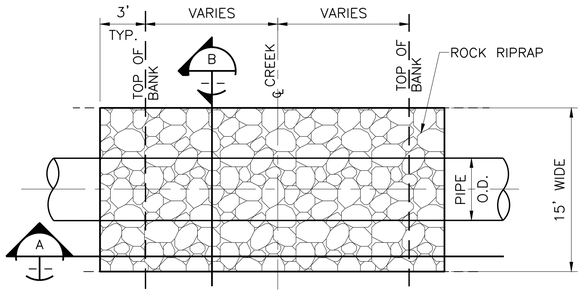
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SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
STEEL PIPE DETAILS

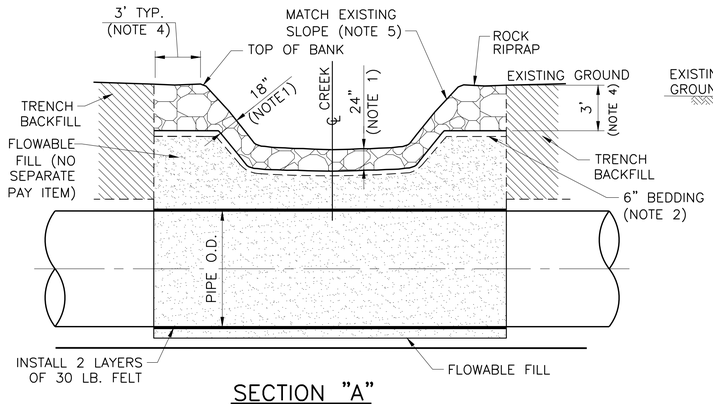
Sheet DT4

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]
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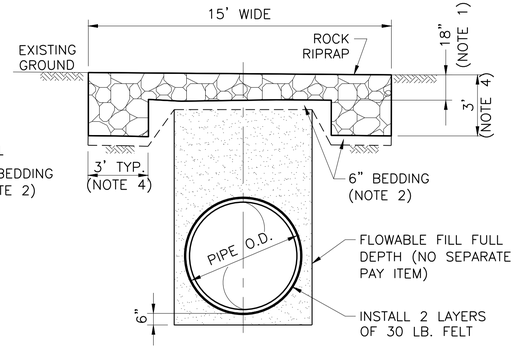

PLAN

SCALE: NOT TO SCALE




SECTION "A"

SCALE: NOT TO SCALE




SECTION "B"

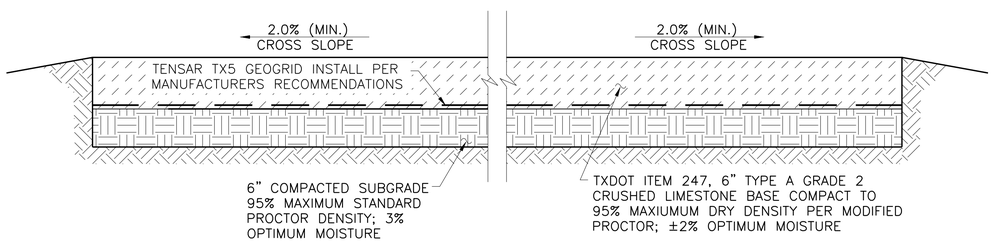
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NOTES:

1. ROCK RIPRAP SHALL BE INSTALLED AT A MINIMUM THICKNESS OF 18" ON SLOPE AND 24" ON BOTTOM. THICKNESS AND STONE SIZE/GRADE VARIES PER CREEK CROSSING. STANDARD GRADATIONS ARE IN SECTION 02271, ROCK RIPRAP AND BEDDING MATERIAL.
2. BEDDING SHALL BE INSTALLED AT A MINIMUM THICKNESS OF 6". GEOTEXTILE FABRIC MAY BE USED IN PLACE OF BEDDING WITH ENGINEER APPROVAL.
3. THE ROCK RIPRAP SHALL BE CONSTRUCTED WITHIN THE LIMITS OF THE PERMANENT EASEMENT AND AS SHOWN ON THE PLANS.
4. THE ROCK RIPRAP SHALL BE CONTINUOUS, EXTENDING DOWN BOTH BANKS OF THE CREEK TO THE CENTER OF THE CREEK. A TOE WILL BE CONSTRUCTED ALONG THE SIDES OF THE RIPRAP. THE RIPRAP TOE WILL HAVE A MINIMUM DEPTH AND WIDTH OF 2 TIMES THE MINIMUM THICKNESS OF THE ROCK RIPRAP SPECIFIED. THE RIPRAP SHALL EXTEND 3 FEET FROM THE TOP OF BANK. THE FINISHED SURFACE OF THE RIPRAP SHALL NOT EXTEND ABOVE PRE CONSTRUCTION GRADE.
5. RIPRAP SHALL BE PLACED ON THE NATURAL SLOPE.
6. INSTALL FLOWABLE FILL BACKFILL IN MAXIMUM 12" LIFTS (NO SEPARATE PAY ITEM).

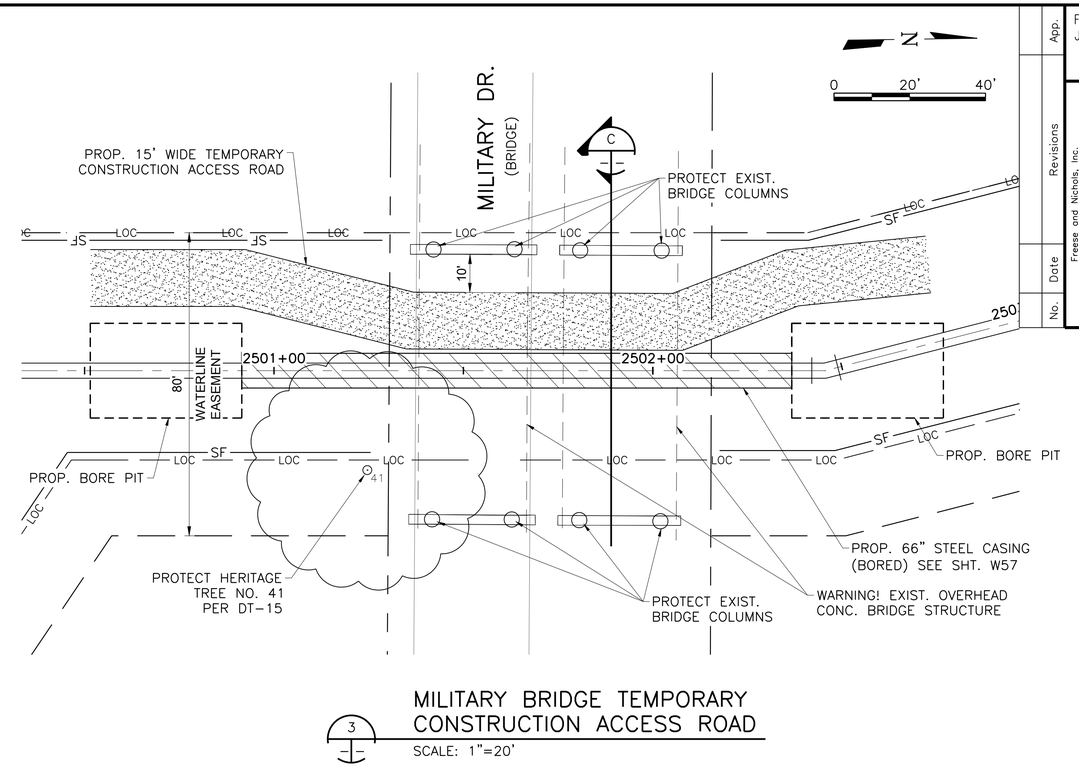
1 CREEK CROSSING DETAILS

SCALE: NOT TO SCALE




2 TYPICAL SECTION
CRUSHED LIMESTONE PAVEMENT

NOT TO SCALE

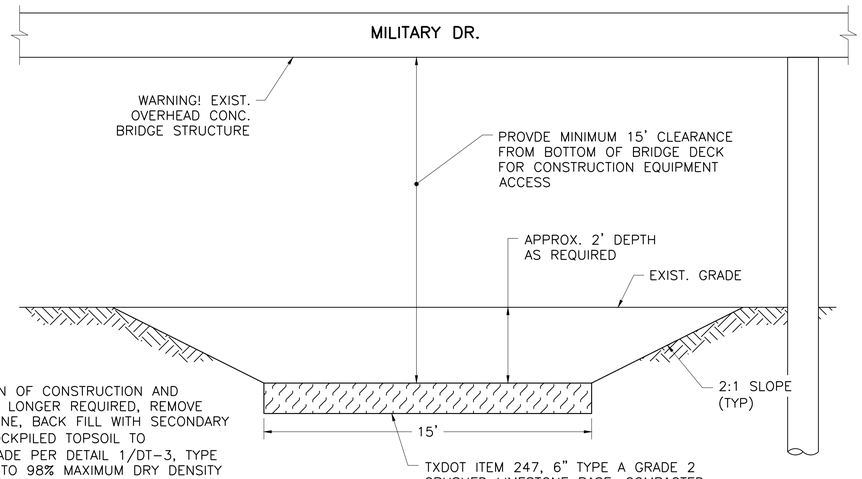



3 MILITARY BRIDGE TEMPORARY CONSTRUCTION ACCESS ROAD

SCALE: 1"=20'

NOTE:

1. AFTER COMPLETION OF CONSTRUCTION AND ACCESS ROAD NO LONGER REQUIRED, REMOVE CRUSHED LIMESTONE, BACK FILL WITH SECONDARY BACKFILL 12" STOCKPILED TOPSOIL TO PRE-EXISTING GRADE PER DETAIL 1/DT-3, TYPE 1, AND COMPACT TO 98% MAXIMUM DRY DENSITY PER SPECIFICATION SS 804C.
2. RESTORE GRASS SEEDING PER THE SPECIFICATIONS.
3. 3. CONTRACTOR IS RESPONSIBLE FOR DEWATERING OF GROUND AND SURFACE WATER TO MAINTAIN TEMPORARY CONSTRUCTION ACCESS ROAD (NSPI).




C TEMPORARY CONSTRUCTION ACCESS ROAD TYPICAL SECTION

SCALE: NOT TO SCALE

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|---|---|---|---|
| | | | |

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ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

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SWB09391

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Designed by: RNJ
Drawn by: DDH/CJC
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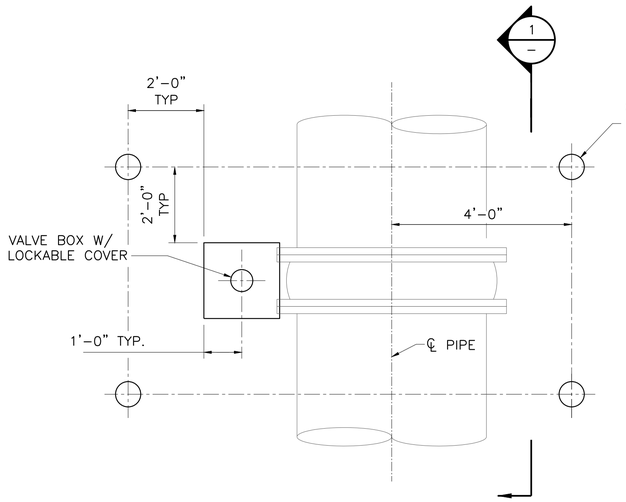
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SAN ANTONIO WATER SYSTEM

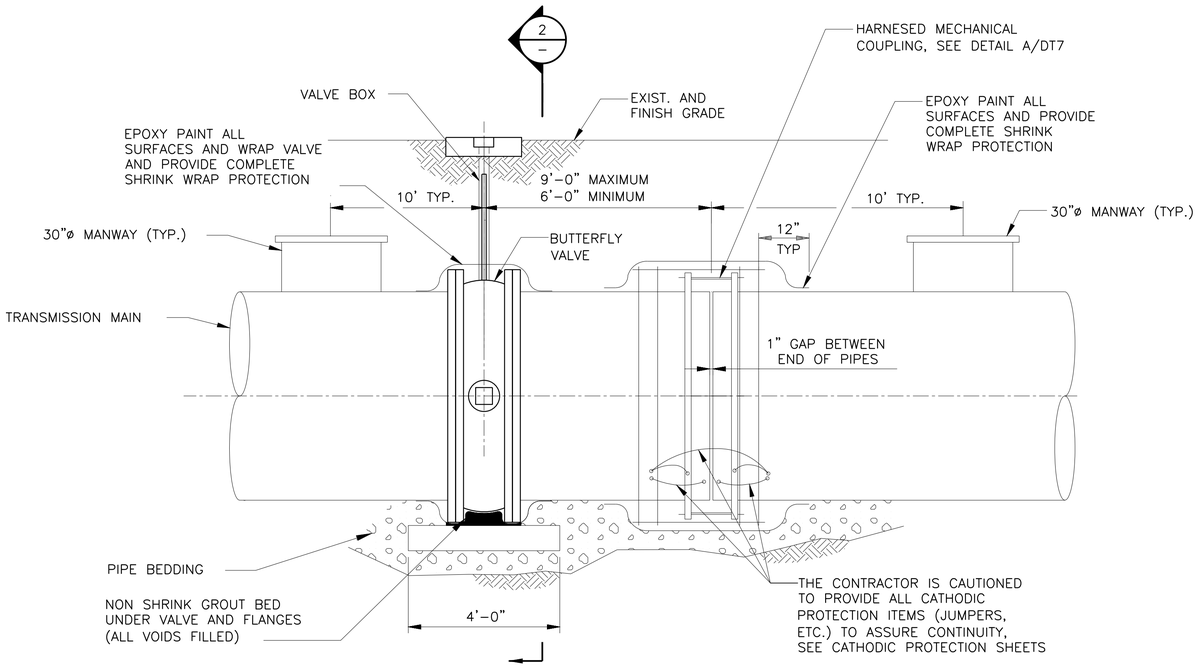
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
CREEK CROSSING & PAVEMENT REPAIR DETAILS

Sheet DT5

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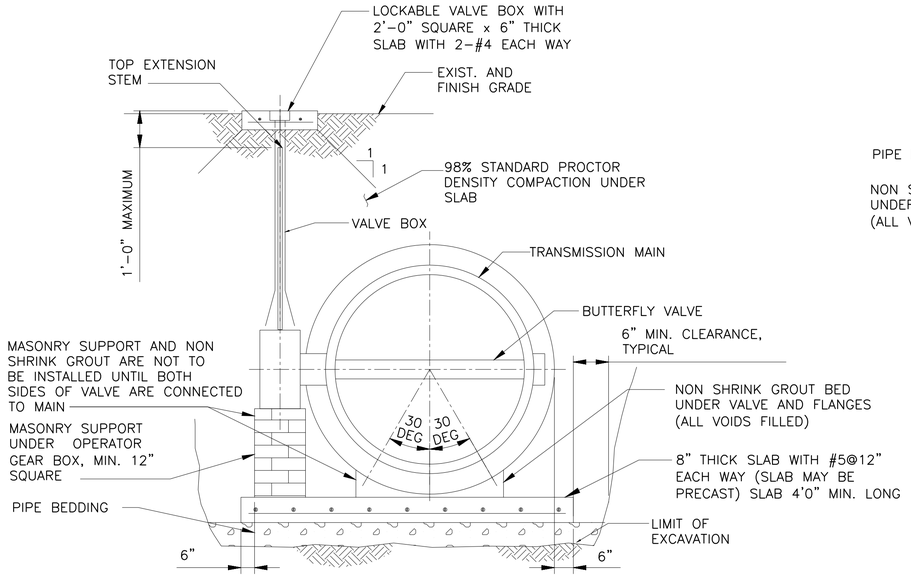



PLAN




SECTION 1

1/2" = 1'-0"




SECTION 1

1/2" = 1'-0"

NOTES:

1. A MANWAY SHALL BE PROVIDED ON BOTH SIDES OF THE ISOLATION VALVE/HARNESSED MECHANICAL COUPLING ASSEMBLY. EACH MANWAY SHALL BE INSTALLED WITHIN 20' TO 25' OF THE VALVE/HARNESSED MECHANICAL COUPLING ASSEMBLY OR ISOLATION VALVE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI UNLESS OTHERWISE INDICATED.
3. MINIMUM CLEARANCE FOR REINFORCING SHALL BE 2".
4. FOR LOCATIONS WHERE PIPE PRESSURE CLASS IN GREATER THAN 250 PSI, HARNESS MECHANICAL COUPLINGS SHALL BE REPLACED WITH WELDED BUTT STRAPS.
5. BFV DISK MUST BE UNOBSTRUCTED WHEN OPEN.
6. INSTALL LOCK AS DETERMINED BY SAWS FIELD STAFF.

1 BUTTERFLY VALVE DETAIL

1/2" = 1'-0"

| No. | Date | Revisions | App. |
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07/20/20

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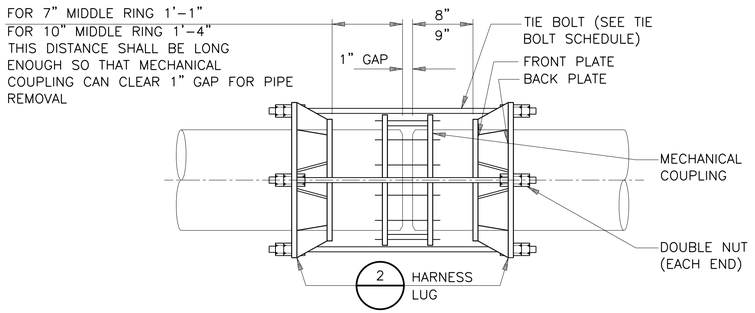
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SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
BUTTERFLY VALVE DETAILS

Sheet DT6

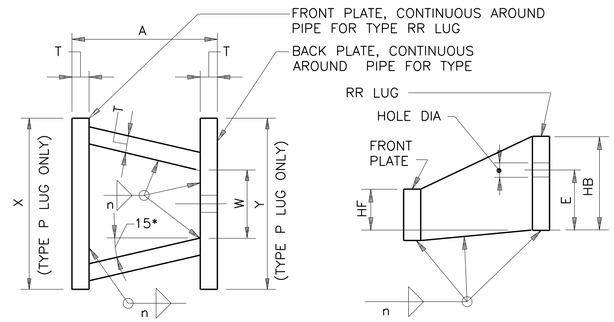
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| STEEL PIPE TIE BOLT SCHEDULE FOR HARNESSED JOINTS | | | | | |
|---|---|---|---|---|---|
| NOMINAL PIPE SIZE (IN) | PRESSURE (PSI) (NOTE 1) | LUG TYPE | TIE BOLT DIA. (in.) | NO. BOLTS (NOTE 3) | NOTES: |
| 48 | 50 | RR | 1 | 4 | 1. PRESSURE SHALL BE THE PRESSURE AT WHICH THE PIPE IS HYDROSTATICALLY TESTED. |
| | 100 | RR | 1 3/8 | 4 | 2. NUMBER OF TIE BOLTS IS BASED ON AN ALLOWABLE STRESS ON NET TENSION AREA OF 40,000 PSI. |
| | 150 | RR | 1 5/8 | 4 | |
| | 200 | RR | 1 5/8 | 6 | 3. UNLESS OTHERWISE INDICATED, TIE BOLTS SHALL BE SPACED UNIFORMLY AROUND THE PIPE, BEGINNING WITH THE FIRST TWO AT THE HORIZONTAL CL OF THE PIPE, SUBJECT TO THE APPROVAL OF THE ENGINEER. |
| | 250 | RR | 1 3/4 | 6 | |
| | >250 | SEE | NOTE 6 | | 4. IN BURIED LOCATIONS THE CONTRACTOR IS CAUTIONED TO PROVIDE ALL CATHODIC PROTECTION ITEMS (JUMPERS, ETC) TO ASSURE CONTINUITY, SEE CATHODIC PROTECTION SHEETS. |
| | | | | | 5. IN BURIED LOCATIONS EPOXY PAINT ALL SURFACES AND PROVIDE COMPLETE SHRINK WRAP PROTECTION. EXTEND HEAT SHRINK 12" BEYOND THE EDGES OF BOLTS OR APPURTENANCES BEING PROTECTED. |
| | | | | | 6. FOR LOCATIONS WHERE PIPE PRESSURE CLASS IN GREATER THAN 250 PSI, HARNESS MECHANICAL COUPLINGS SHALL BE REPLACED WITH WELDED BUTT STRAPS. |

1 STEEL PIPE HARNESSED MECHANICAL COUPLING WITH TYPE RR LUGS

NOT TO SCALE




PLAN ELEVATION

NOTES:

1. n = PIPE WALL THICKNESS
2. FOR HARNESS LUG TYPE RR, THE GUSSET PLATES BETWEEN THE FRONT PLATE AND THE BACK PLATE MAY BE PERPENDICULAR TO THE FRONT AND BACK PLATES WITH A MINIMUM CLEAR DISTANCE BETWEEN EACH PAIR OF GUSSET PLATES OF DIMENSION W. DIMENSION W SHALL BE INCREASED IF REQUIRED TO FACILITATE ROTATION OF THE TIE BOLT NUT.

| DIMENSIONS IN INCHES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| TIE BOLT DIA | T | A | Y | W | X | HB | E | HF | HOLE DIA |
| 1 | 1/2 | 5 3/4 | RING | 1 3/4 | RING | 4 1/2 | 3 1/4 | 2 | 1 1/8 |
| 1 3/8 | 5/8 | 8 3/4 | RING | 2 1/8 | RING | 5 3/8 | 3 3/4 | 2 1/2 | 1 1/2 |
| 1 5/8 | 3/4 | 10 3/4 | RING | 2 3/8 | RING | 5 5/8 | 3 7/8 | 2 1/2 | 1 3/4 |
| 1 3/4 | 7/8 | 12 | RING | 2 1/2 | RING | 5 7/8 | 4 | 2 1/2 | 1 7/8 |

2 STEEL PIPE HARNESS LUG DETAIL

NOT TO SCALE

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

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07/20/20

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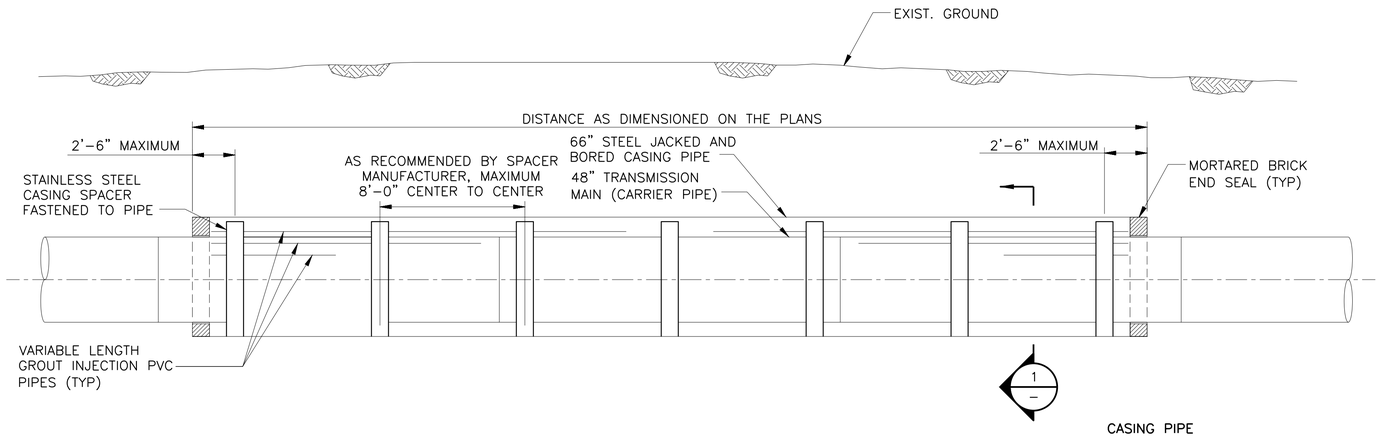
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SAN ANTONIO WATER SYSTEM

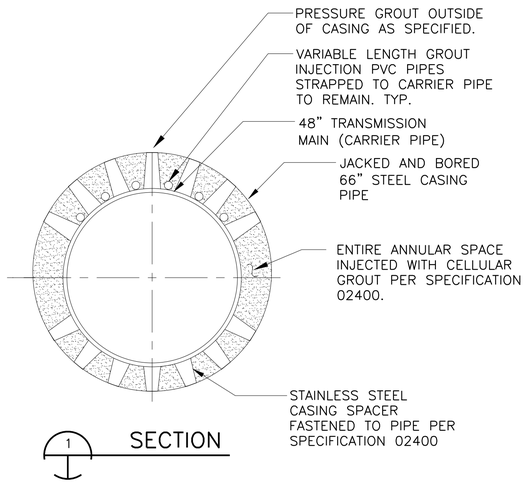
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
STEEL PIPE HARNESS DETAILS

Sheet DT7

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ELEVATION




NOTES:

1. CASING PIPE SHALL BE NEW STEEL PIPE MANUFACTURED IN ACCORDANCE WITH AWWA STANDARD C200, LATEST EDITION. WALL THICKNESS SHALL BE A MINIMUM OF 0.75 INCHES. CASING PIPE FOR 48" CARRIER PIPE SHALL BE 66" DIAMETER.
2. ALL JOINTS WITHIN THE CASING ARE TO BE RESTRAINED WITH WELDED JOINTS PER THE SPECIFICATIONS.
3. THE CONTRACTOR MAY USE CENTER RESTRAINED CASING SPACERS IN LIEU OF 11/2" EXTRA MECHANICALLY IMPACTED MORTAR COATING CASING SPACERS, IF USED, SHALL BE EQUAL TO THOSE MANUFACTURED BY PIPELINE SEAL AND INSULATOR.
4. PIPE LENGTHS WITHIN THE CASING SHALL NOT BE GREATER THAN 20'-0".INSIDE AND OUTSIDE CASING SHALL BE COATED WITH BITUMINOUS COATING.
5. ALL PIPE FITTING, VALVES AND APPURTENANCES SHALL MATCH OR EXCEED CLASS RATING AS SHOWN ON THE PLANS.
6. ALL CARRIER PIPE JOINTS WITHIN CASING SHALL BE FULLY WELDED PER THE SPECIFICATIONS.
7. MAXIMUM DEFLECTION ALLOWED FOR JACKED CASING SHALL BE 2 PERCENT.
8. GRIND WELDS ON INTERIOR OF CASING FLUSH WITH CASING FROM INVERT TO SPRING LINE OF CASING.
9. CASING PIPE SHALL BE 35,000 PSI MINIMUM YIELD.
10. CONTRACTOR SHALL INSTALL GEOTECHNICAL INSTRUMENTATION ON STRUCTURES, UTILITIES AND IMPROVEMENTS AT RISK OF IMPACT FROM EXCAVATIONS WITHIN 50 FEET OF TUNNELS AND SHAFTS IN ACCORDANCE WITH SPECIFICATION SECTION 02401 GEOTECHNICAL INSTRUMENTATION.

1 JACK AND BORE WITH CASING DETAIL

NOT TO SCALE

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|---|---|---|---|
| | | | |

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07/20/20

Date: 07/19/2020
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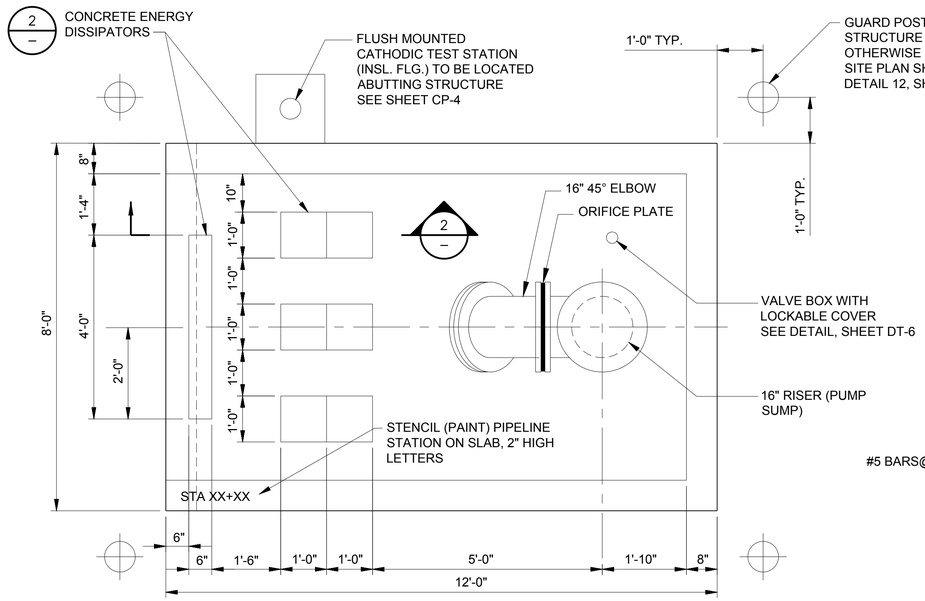
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3

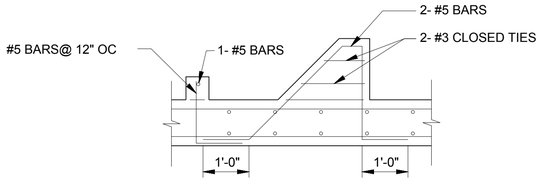
JACK & BORE WITH CASING DETAILS

Sheet DT8

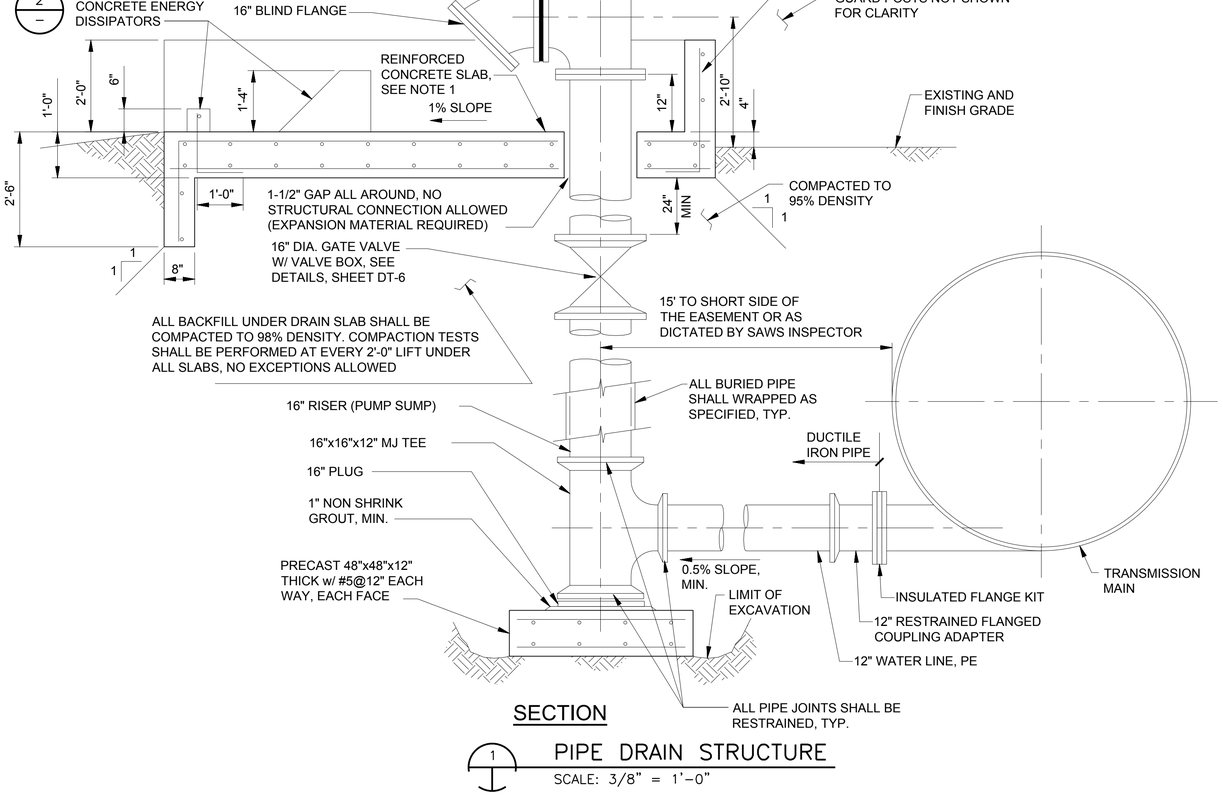
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## SLAB PLAN



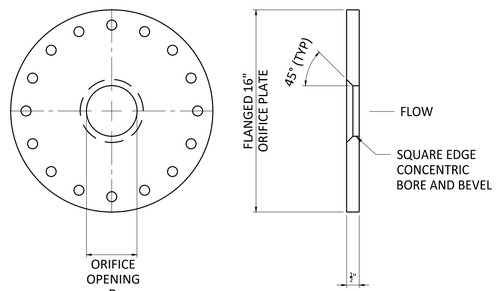

2 ENERGY DISSIPATOR REINFORCING




## SECTION

1 PIPE DRAIN STRUCTURE
SCALE: 3/8" = 1'-0"

| ORIFICE PLATE SCHEDULE | | |
|---|---|---|
| NO. | STATION | ORIFICE DIAMETER (INCHES) |
| 1A | 2000+45 | 10.00 |
| 1 | 2066+15 | 10.50 |
| 2 | 2080+65 | 12.50 |
| 3 | 2114+03 | 9.00 |
| 4 | 2134+02 | 12.50 |
| 5 | 2151+54 | 8.25 |
| 6 | 2152+80 | 11.00 |
| 7 | 2167+58 | 12.50 |
| 8 | 2178+99 | 7.75 |
| 9 | 2230+95 | 10.25 |
| 10 | 2248+71 | 10.25 |
| 11 | 2265+25 | 9.25 |
| 12 | 2285+12 | 10.00 |
| 13 | 2294+49 | 10.50 |
| 14 | 2302+16 | 11.75 |
| 15 | 2315+44 | 13.00 |
| 16 | 2332+15 | 13.00 |
| 17 | 2340+24 | 13.00 |
| 18 | 2360+99 | 12.50 |
| 19 | 2386+14 | 8.25 |
| 20 | 2403+50 | 10.25 |
| 21 | 2455+69 | 12.50 |
| 22 | 2459+88 | 12.25 |
| 23 | 2476+47 | 12.50 |
| 24 | 2488+06 | 12.50 |
| 25 | 2506+57 | 12.50 |
| 26 | 2519+02 | 12.50 |
| 27 | 2527+10 | 9.75 |
| 28 | 2543+92 | 9.25 |
| 29 | 2567+19 | 12.00 |
| 30 | 2574+50 | 12.50 |
| 31 | 2585+67 | 8.25 |
| 32 | 2643+82 | 9.00 |
| 33 | 2693+73 | 10.75 |




3 ORIFICE PLATE
NOT TO SCALE

NOTE:
1. ALL REINFORCING SHALL BE #5@12" O.C.E.W. UNLESS OTHERWISE NOTED.
2. ALL PIPING SHALL BE RESTRAINED.
3. ALL EXPOSED PIPING SHALL BE PAINTED ALUMINUM COLOR. VALVE OPEN-CLOSED INDICATOR ON GATE VALVE SHALL BE PAINTED BRIGHT RED.
4. CONCRETE PIPE ENCASEMENT PAYMENT INCLUDED WITH CHAMBER PRICE, NOT PAID SEPARATELY.
5. CONTRACTOR SHALL REFER TO THE CATHODIC SPECIFICATION FOR PROTECTION OF DISSIMILAR METALS.
6. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI UNLESS OTHERWISE NOTED.
7. MINIMUM CLEARANCE FOR REINFORCING SHALL BE 2".
8. CONTRACTOR SHALL VERIFY INTERNAL AND EXTERNAL VALVE ITEMS SHALL NOT CLASH WITH ANY ADJACENT ITEMS AND SHALL HAVE THE ABILITY TO BE OPERATED WITHOUT OBSTRUCTION.
9. GUARD POSTS SHALL NOT BE INSTALLED IN DRAINAGE CHANNELS.
10. INSTALL ORIFICE PLATE BETWEEN 16" TEE FLANGE AND 16" 45° ELBOW WITH WATERTIGHT GASKETS ON EACH SIDE OR ORIFICE PLATE.
11. ORIFICE PLATE SHALL BE 316 STAINLESS STEEL.
12. OVERALL DIAMETER OF ORIFICE PLATE AND FLANGE DRILLING TO MATCH PIPE ADJACENT TO IT.
13. DUCTILE IRON PIPE SHALL BE PROVIDED IN ACCORDANCE WITH SAWS STANDARD SPECIFICATION NO. 814, DUCTILE IRON PIPE.
14. ALL PIPING AND APPURTENANCES SHALL BE PRESSURE RATED TO MATCH THE ASSOCIATED PRESSURE RATING OF THE TRANSMISSION PIPELINE AT EACH LOCATION.

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|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391




Date: 07/20/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: N.T.S.

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
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Fax (210) 298-8901

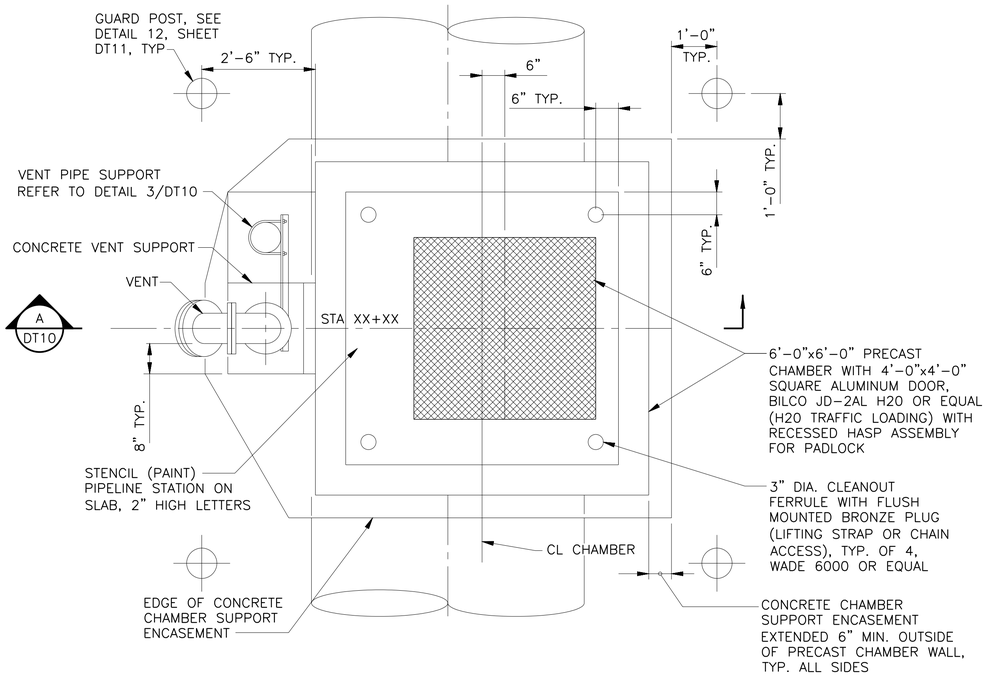
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3

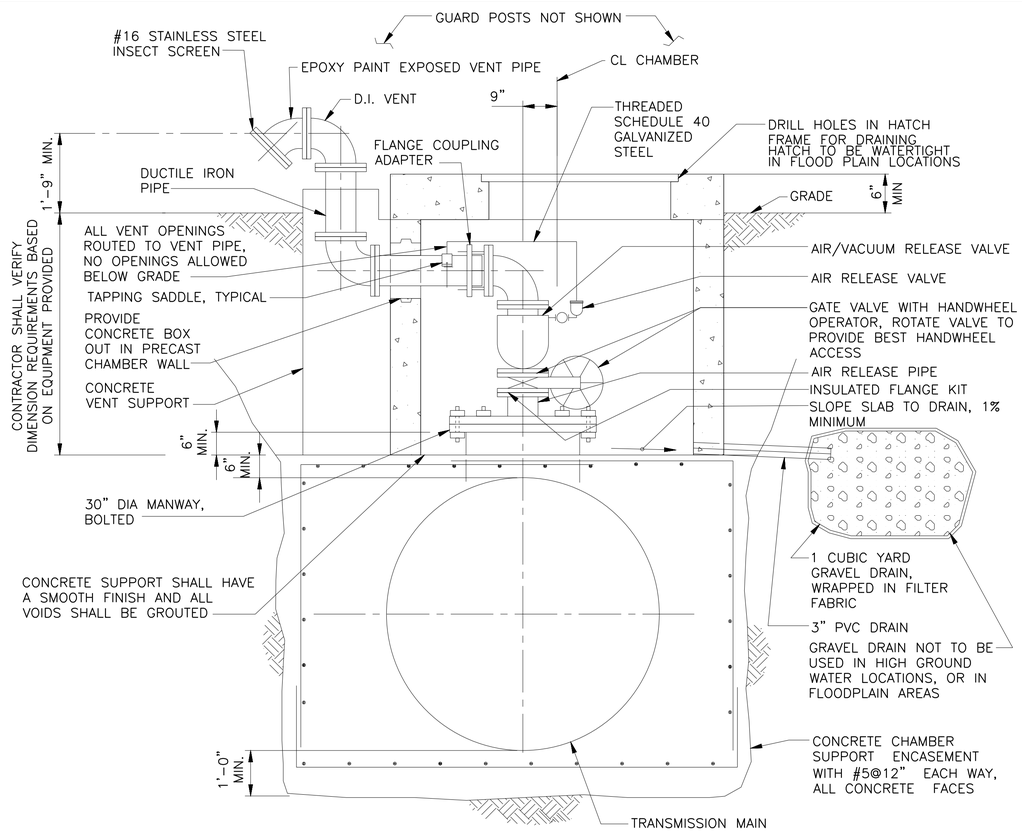
PIPE DRAIN STRUCTURE, TYPE 1 DETAILS

Sheet DT9

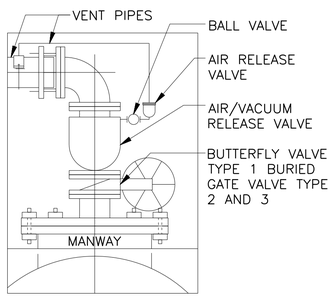
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Date: Jul 20, 2020 - 1:15am User: 07155 File: N:\wr\Drawings\WR-SAWS-DT-WL09a.dwg




1 AIR VALVE ASSEMBLY PLAN VIEW
N.T.S.

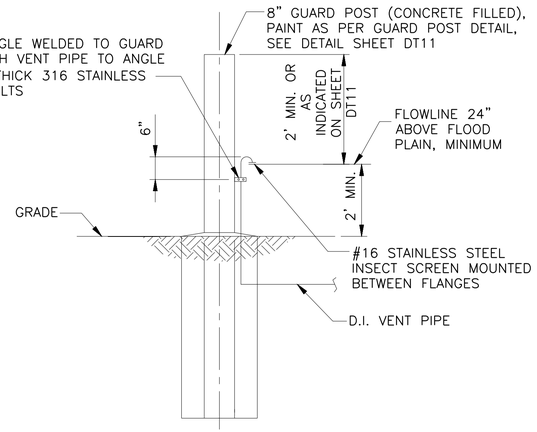



A N.T.S.
AIR VALVE ASSEMBLY SECTION
N.T.S.




AIR/VACUUM RELEASE CHAMBER

2 AIR VALVE ASSEMBLY
N.T.S.




3 VENT PIPE SUPPORT
N.T.S.

**NOTES:**

1. ALL PIPING SHALL BE RESTRAINED.
2. ALL EXPOSED PIPING SHALL BE PAINTED ALUMINUM COLOR. VALVE OPEN-CLOSED INDICATOR ON BUTTERFLY VALVE SHALL BE PAINTED BRIGHT RED.
3. CONCRETE PIPE ENCASEMENT PAYMENT INCLUDED WITH CHAMBER PRICE, NOT PAID SEPARATELY.
4. CONTRACTOR SHALL REFER TO THE CATHODIC SPECIFICATION FOR PROTECTION OF DISSIMILAR METALS.
5. THE DIAMETER OF THE ISOLATION GATE VALVES SHALL MATCH THE DIAMETER OF THE VENT PIPE.
6. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI UNLESS OTHERWISE NOTED.
7. MINIMUM CLEARANCE FOR REINFORCING SHALL BE 2".
8. ALL VENTS SHALL BE MOUNTED SO THE FLOW LINE OF THE VENT IS AT LEAST 24" ABOVE THE 100-YEAR FLOOD PLAIN. REFER TO PLANS FOR ELEVATION.

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|---|---|---|---|
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STATE OF TEXAS ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER 07/20/20

Date: 07/19/2020
Designed by: RNJ
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FREESE NICHOLS
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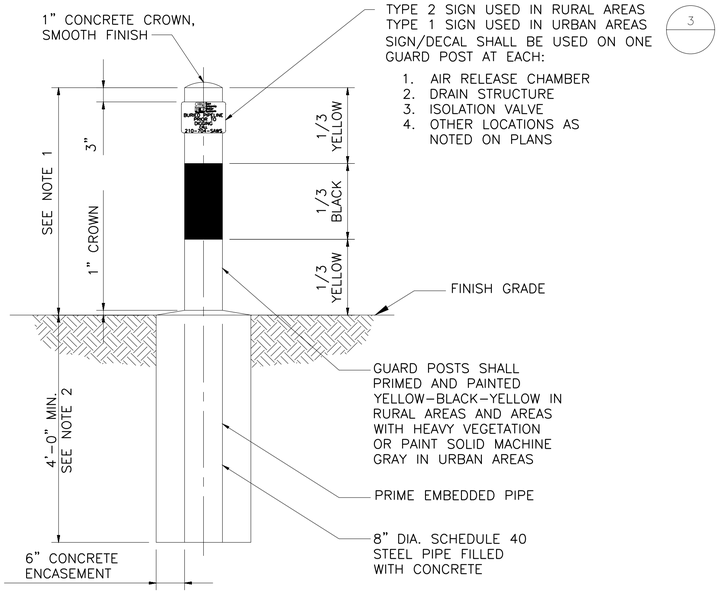
SAN ANTONIO WATER SYSTEM

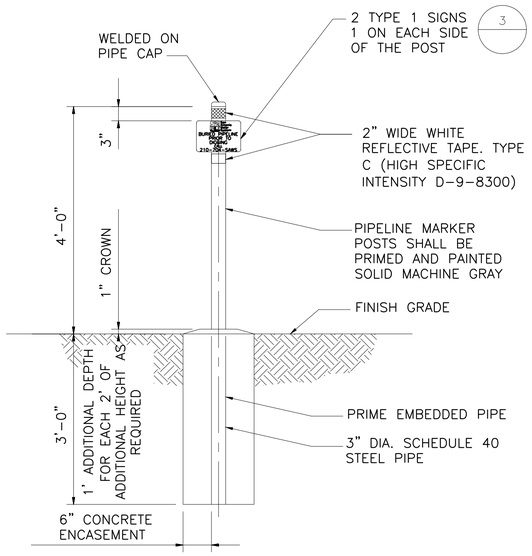
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3

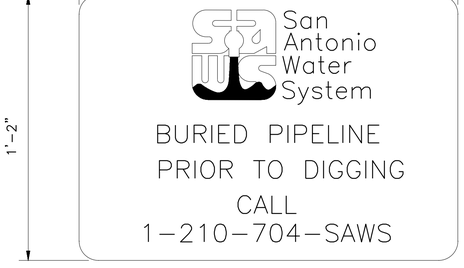
AIR VALVE ASSEMBLY TYPE 1 DETAILS

Sheet DT10

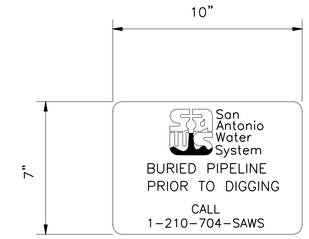
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Date: Jul 19, 2020 - 11:30pm User: 07155 File: N:\wr\Drawings\WR-SAWS-DT-WL09.dwg




TYPE 2 SIGN




TYPE 1 SIGN AND DECAL

## NOTES

1. GUARD POST HEIGHT 4'-0" ABOVE GRADE FOR ISOLATION VALVES AND 6'-0" ABOVE GRADE FOR ALL OTHER LOCATIONS UNLESS NOTED OTHERWISE ON THE PLAN AND PROFILE SHEET.
2. 1'-0" ADDITIONAL DEPTH FOR EACH 2'-0" OF ADDITIONAL HEIGHT (OVER 4'-0") AS REQUIRED.
3. GUARD POSTS TO BE USED IN LOCATIONS AS DETAILED ON STRUCTURE SHEETS AND AT ANY OTHER LOCATIONS NOTED ON THE PLANS.
4. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI UNLESS OTHERWISE INDICATED.

1 GUARD POST
SCALE: 3/4" = 1'-0"

## NOTES:

1. PIPELINE MARKERS SHALL BE INSTALLED WHERE THE PIPE CROSSES PROPERTY LINES AND EASEMENTS, AND AT EACH SIDE OF WHERE THE PIPE CROSSES ROADWAYS AND RAILROADS, MANWAYS, AND AT ANY OTHER LOCATIONS INDICATED ON THE PLANS.

2 PIPE MARKER
SCALE: 3/4" = 1'-0"

## NOTES:

1. SIGNS AND DECALS SHALL BE WHITE BACKGROUND WITH DARK BLUE LETTERING. FINISH SHALL BE DESIGNED FOR LONG TERM OUTDOOR USE AND SHALL BE UV RESISTANT AND WATER DAMAGE RESISTANT.
2. SIGNS SHALL BE FABRICATED FROM 14 GAUGE ALUMINUM. PREDRILL SIGNS FOR MOUNTING BOLTS.
3. BLUE LETTERING SHALL BE 2 MIL CAST VINYL BY ARKON OR EQUAL.
4. SIGNS SHALL BE MOUNTED TO MARKER POSTS WITH 2-3/8" DIA. THROUGH-BOLTS AND TAMPER-PROOF NUTS. SIGNS SHALL BE MOUNTED TO GUARD POSTS WITH STAINLESS STEEL BANDING.

3 SIGN/DECAL
SCALE: 3" = 1'-0"

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Freese And Nichols, Inc. Job No.
SWB09391

ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJG
Checked by: DTB
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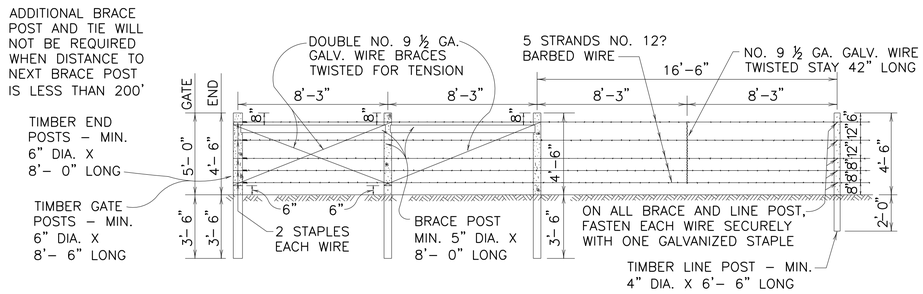
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3

**GUARD POST, PIPELINE MARKER AND SIGNAGE DETAILS**

Sheet DT11

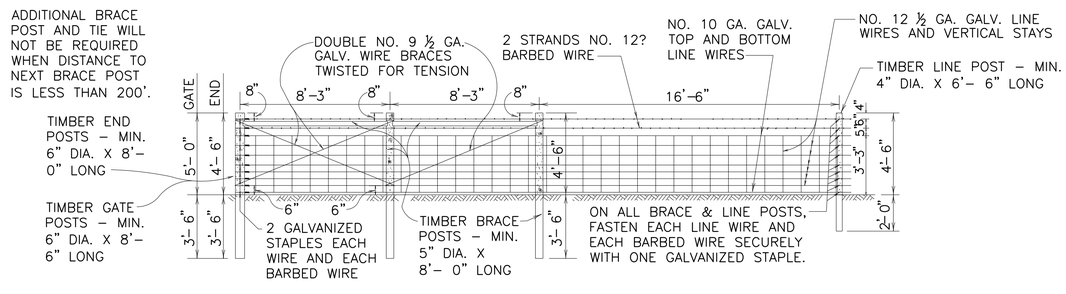
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## SECTION GALVANIZED BARBED WIRE FENCE WITH WOOD POSTS

BRACING DETAIL USED AT ENDS AND GATES

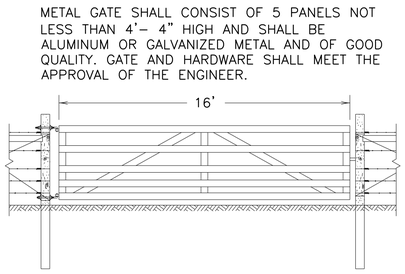
## TYPE "A" FENCE



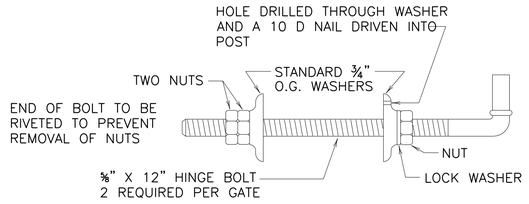

## SECTION GALVANIZED WOVEN WIRE FENCE WITH WOOD POSTS

BRACING DETAIL USED AT ENDS AND GATES

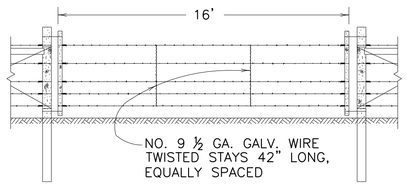
## TYPE "B" FENCE




## DETAIL TYPE 1 GATE



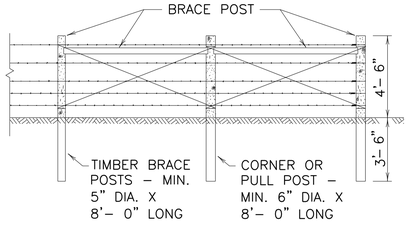

## DETAIL OF GATE HINGE BOLT ASSEMBLY



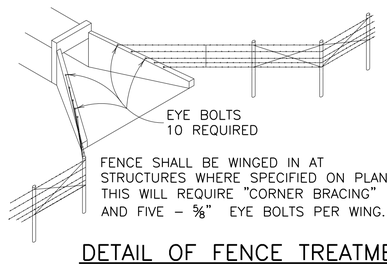

## TEMPORARY CONSTRUCTION GATE

## TABLE OF EQUIVALENT SIZES FOR OPTIONAL SHAPE

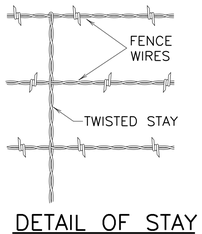
| MINIMUM DIAMETER OF ROUND POST (INCHES) | MINIMUM EQUIVALENT DIMENSION FOR EACH SIDE OF SQUARE POST (INCHES) |
|---|---|
| 4 | 3 ? |
| 5 | 4 ? |
| 6 | 5 ? |



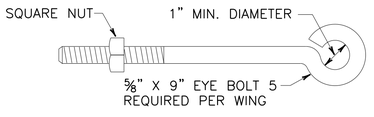

## CORNER OR PULL POST ASSEMBLY



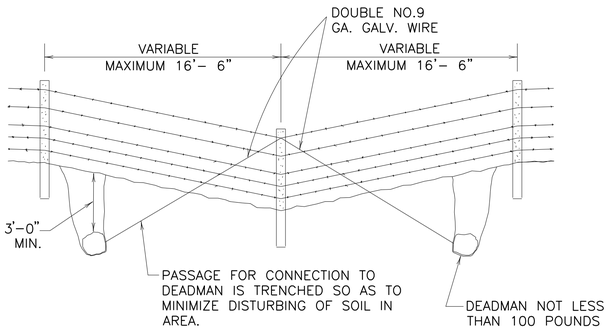

## DETAIL OF FENCE TREATMENT AT STRUCTURES




## DETAIL OF STAY

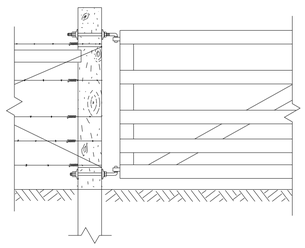



## DETAIL OF EYE BOLT




## DETAIL OF FENCE SAG

(SINGLE LINE CONNECTION)



## DETAIL SHOWING INSTALLATION OF HINGES OF TYPE 1 & 2 GATE

**NOTES:**

1. ANY HIGH POINT WHICH INTERFERES WITH THE PLACING OF WIRE MESH SHALL BE EXCAVATED TO PROVIDE 2" CLEARANCE.
2. LATCHES FOR TYPE 1 GATES SHALL BE GOOD COMMERCIAL QUALITY AND DESIGN LATCHES OF THE SPRING, FORK OR CHAIN TYPE. ALL LATCHES SHALL BE SUITABLE FOR THE GATE AND SHALL BE APPROVED APPROVED BY THE ENGINEER.
3. CONCRETE SHALL BE OF THE DESIGN AND CONSISTENCY APPROVED BY THE ENGINEER AND SHALL CONTAIN NOT LESS THAN 4 SACKS OF CEMENT PER YARD.
4. IF ROCK IS ENCOUNTERED AT A DEPTH LESS THAN THE EMBEDDED DEPTH REQUIRED, A 15" OR LARGER DIAMETER HOLE SHALL BE DRILLED FOR THE POST AND THE POST SHALL BE SET IN CONCRETE. IF ROCK IS ENCOUNTERED AT A DEPTH OF 1'–6" OR MORE BELOW THE GROUND SURFACE, THE HOLE SHALL BE DRILLED TO THE REQUIRED DEPTH. IF ROCK IS ENCOUNTERED AT A DEPTH LESS THAN 1'– 6" BELOW THE GROUND SURFACE, THE HOLES SHALL BE DRILLED A MINIMUM OF 2'–0" INTO THE ROCK OR TO THE DEPTH WHICHEVER IS THE LESSER DEPTH.
5. THE LOCATION OF GATES AND CORNER POSTS WILL BE AS INDICATED ELSEWHERE ON THESE PLANS.
6. SQUARE POSTS MAY BE USED IN LIEU OF ROUND POSTS PROVIDED MINIMUM EQUIVALENT SIZE REQUIREMENTS AS TABULATED HEREON ARE MET.

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|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER 07/20/20

Date: 07/19/2020
Designed by: RNJ
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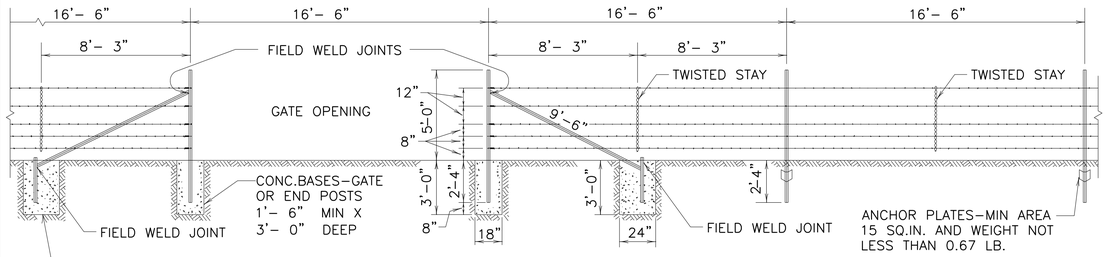
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SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
WIRE FENCE WITH TIMBER POSTS DETAILS

Sheet DT12

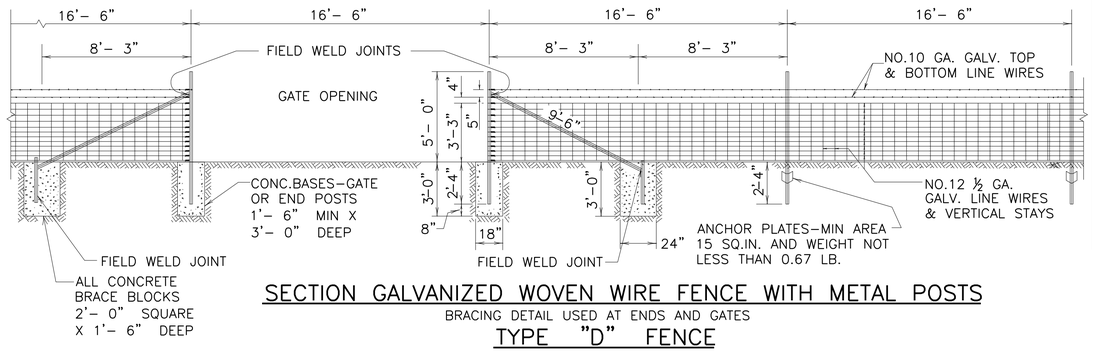
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Date: Jul 19, 2020 – 11:31pm User: 07155 File: N:\wr\Drawings\WR-SAWS-DT-WL011.dwg




## SECTION GALVANIZED BARBED WIRE FENCE WITH METAL POSTS

BRACING DETAIL USED AT ENDS AND GATES

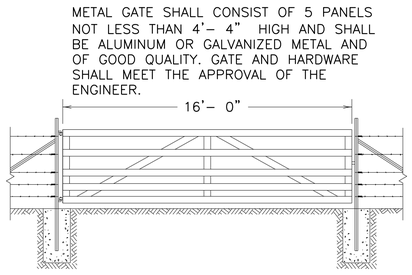
## TYPE "C" FENCE



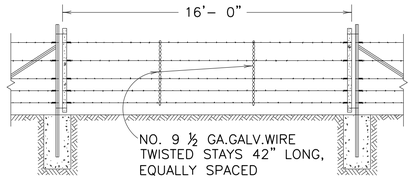

## SECTION GALVANIZED WOVEN WIRE FENCE WITH METAL POSTS

BRACING DETAIL USED AT ENDS AND GATES

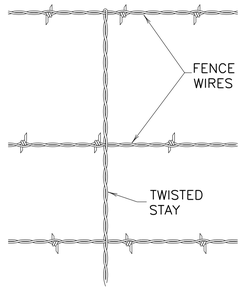
## TYPE "D" FENCE



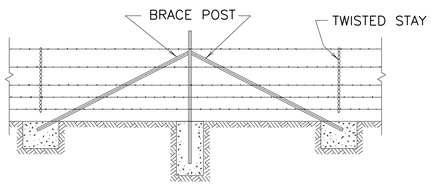

## DETAIL TYPE 1 GATE



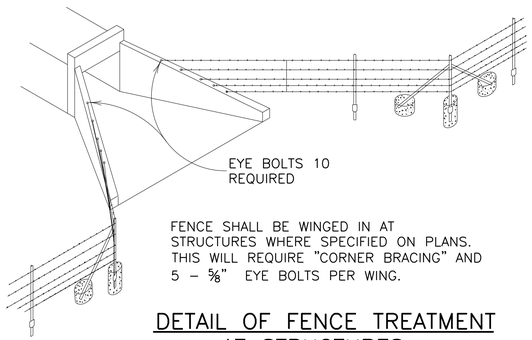

## TEMPORARY CONSTRUCTION GATE



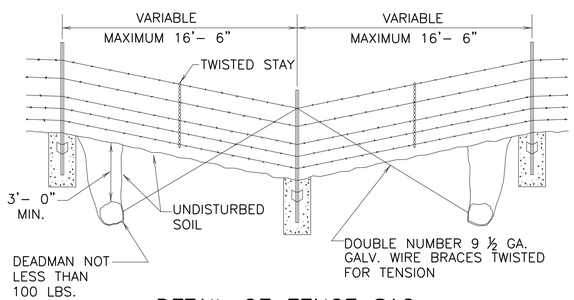

## DETAIL OF STAY



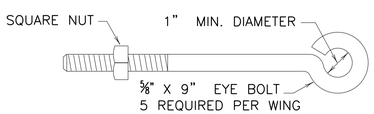

## CORNER OR PULL POST ASSEMBLY




## DETAIL OF FENCE TREATMENT AT STRUCTURES




## DETAIL OF FENCE SAG




## DETAIL OF EYE BOLT

14

## WIRE FENCE WITH STEEL POSTS DETAILS

SCALE: NOT TO SCALE

**NOTES:**

1. ANY HIGH POINT WHICH INTERFERES WITH THE PLACING OF WIRE MESH SHALL BE EXCAVATED TO PROVIDE A 2 INCH CLEARANCE.
2. LATCHES FOR TYPE 1 GATES SHALL BE GOOD COMMERCIAL QUALITY AND DESIGN LATCH OF THE SPRING FORK OR CHAIN TYPE. ALL LATCHES SHALL BE SUITABLE TO THE GATE AND SHALL BE APPROVED BY THE ENGINEER.
3. CONCRETE SHALL BE OF THE DESIGN AND CONSISTENCY APPROVED BY THE ENGINEER AND SHALL CONTAIN NOT LESS THAN 4 SACKS OF CEMENT PER CUBIC YARD.
4. ANCHOR PLATES SHALL BE OF A DESIGN AND THICKNESS SUFFICIENT TO PREVENT TURNING OF THE POST IN FIRM SOIL.
5. METAL END CORNER AND PULL POST SHALL BE 2–3/8" SCHEDULE 80 PIPE.
6. FASTENERS FOR SECURING BARBED WIRE OR WIRE MESH TO METAL POSTS SHALL BE A MINIMUM OF 11 GAUGE GALVANIZED STEEL WIRE. TUBULAR POSTS SHALL BE FITTED WITH WATER TIGHT MALLEABLE IRON CAPS.
7. METAL LINE POSTS SHALL BE NOT LESS THAN 6'– 6 IN LENGTH AND SHALL WEIGH NOT LESS THAN (1.33 LBS./LIN.FT.).
8. THE LOCATION OF GATES AND CORNER POSTS WILL BE AS INDICATED ELSEWHERE IN THESE PLANS.

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER 07/20/20

Date: 07/19/2020
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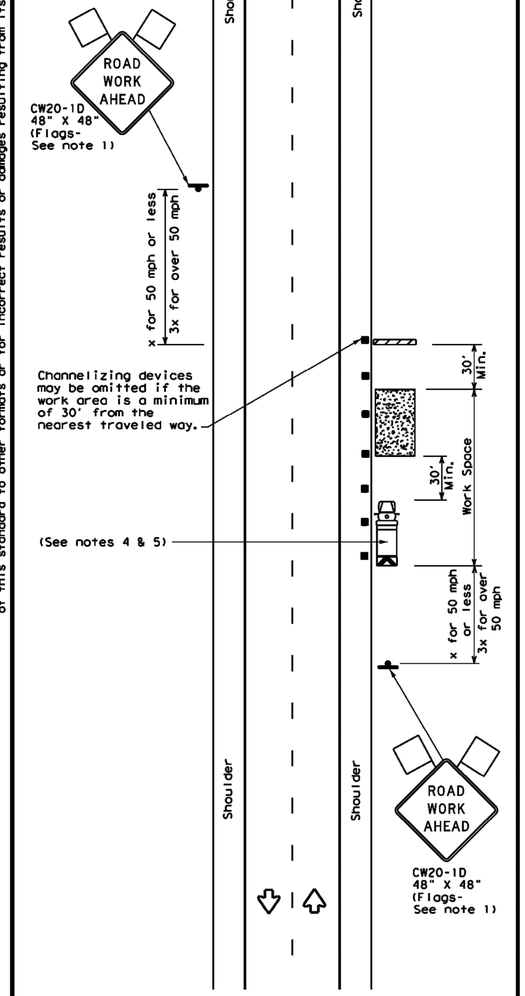
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
WIRE FENCE WITH STEEL POSTS DETAILS

Sheet DT13

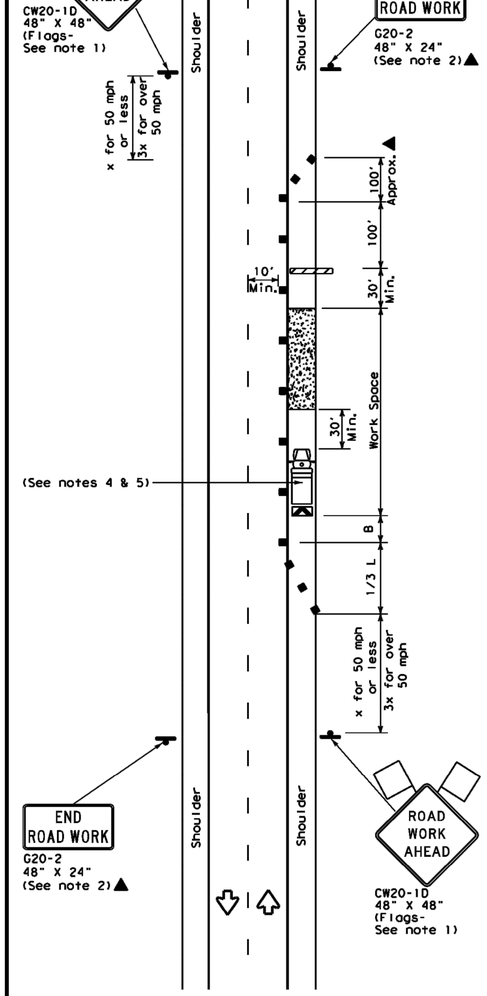
ACAD CIVIL 3D 2011 User: DDH [SWB09391][SASRV2]
Date: Jul 19, 2020 – 11:31pm User: 07155 File: N:\wr\Drawings\WR-SAWS-DT-WL012.dwg

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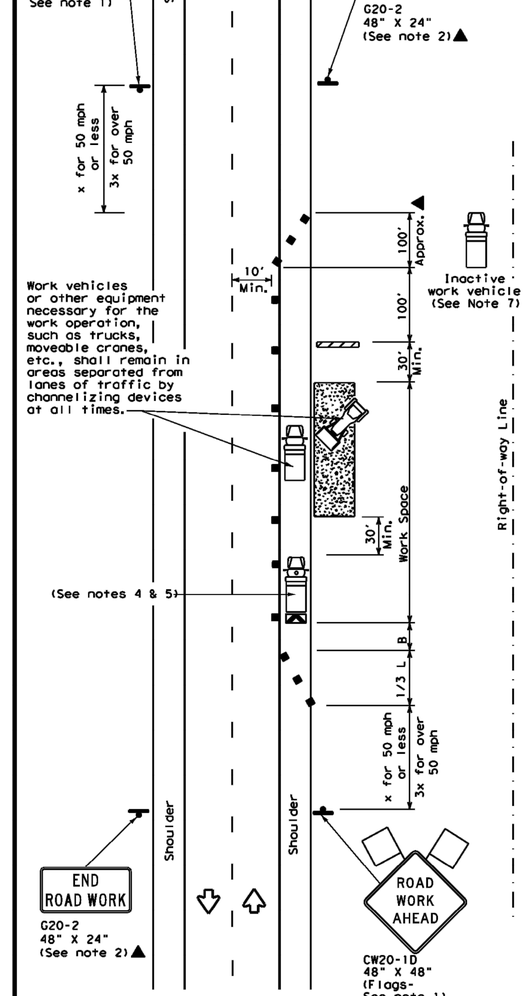

TCP (2-1a)

**WORK SPACE NEAR SHOULDER**
Conventional Roads




TCP (2-1b)

**WORK SPACE ON SHOULDER**
Conventional Roads




TCP (2-1c)

**WORK VEHICLES ON SHOULDER**
Conventional Roads

DATE:
FILE:

| LEGEND | | | |
|---|---|---|---|
| | Type 3 Barricade | | Channelizing Devices |
| | Heavy Work Vehicle | | Truck Mounted Attenuator (TMA) |
| | Trailer Mounted Flashing Arrow Board | M | Portable Changeable Message Sign (PCMS) |
| | Sign | | Traffic Flow |
| | Flag | | Flagger |

| Posted Speed * | Formula | Minimum Desirable Taper Lengths ** 10' Offset | 11' Offset | 12' Offset | Suggested Maximum Spacing of Channelizing Devices: On a Taper | On a Tangent | Minimum Sign Spacing "X" Distance | Suggested Longitudinal Buffer Space "B" |
|---|---|---|---|---|---|---|---|---|
| 30 | $L=\frac{WS^2}{60}$ | 150' | 165' | 180' | 30' | 60' | 120' | 90' |
| 35 | | 205' | 225' | 245' | 35' | 70' | 160' | 120' |
| 40 | | 265' | 295' | 320' | 40' | 80' | 240' | 155' |
| 45 | L=WS | 450' | 495' | 540' | 45' | 90' | 320' | 195' |
| 50 | | 500' | 550' | 600' | 50' | 100' | 400' | 240' |
| 55 | | 550' | 605' | 660' | 55' | 110' | 500' | 295' |
| 60 | | 600' | 660' | 720' | 60' | 120' | 600' | 350' |
| 65 | | 650' | 715' | 780' | 65' | 130' | 700' | 410' |
| 70 | | 700' | 770' | 840' | 70' | 140' | 800' | 475' |
| 75 | | 750' | 825' | 900' | 75' | 150' | 900' | 540' |

* Conventional Roads Only
** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

| TYPICAL USAGE | | | | |
|---|---|---|---|---|
| MOBILE | SHORT DURATION | SHORT TERM STATIONARY | INTERMEDIATE TERM STATIONARY | LONG TERM STATIONARY |
| | ✓ | ✓ | ✓ | ✓ |

## GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated in the plans, or for routine maintenance work, when approved by the Engineer.
3. Stockpiled material should be placed a minimum of 30 feet from nearest traveled way.
4. Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but rood or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
6. See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
7. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
8. CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

Texas Department of Transportation — Traffic Operations Division Standard

# TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

## TCP(2-1)-18

| FILE: tcp2-1-18.dgn | DN: | CK: | DW: | CK: |
|---|---|---|---|---|
| © TxDOT December 1985 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS 2-94 4-98 8-95 2-12 1-97 2-18 | DIST | COUNTY | | SHEET NO. |

161

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS 07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: N.T.S.

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
TRAFFIC CONTROL DETAILS

Sheet DT14

ACAD CIVIL 3D 2011 User: DDH [SWB09391][SASRV2]

Date: Jul 19, 2020 - 11:32pm User: 07155 File: N:\wr\Drawings\WR-SAWS-DT-WL014a.dwg

# SITE DESCRIPTION

PROJECT NAME AND LOCATION: Water Resources Integration Program Phase 2 - Pipeline Segment 3

The site is approximately aligned with Texas State Highway Loop 1604 in the City of San Antonio, Bexar County, Texas.

CONTACT AND PHONE NO.: San Antonio Water System (SAWS)

2800 U.S. Highway 281 North, P.O. Box 2449

San Antonio, Texas 78298-2449

210-704-7297

PROJECT DESCRIPTION: A 48-inch waterline will be constructed within the City of San Antonio.

MAJOR SOIL DISTURBING ACTIVITIES: A trench will be excavated for the installation of the subsurface infrastructure, the waterline will be installed, the trench will be filled, previously paved surfaces will be repaved, and previously unpaved areas will be revegetated.

TOTAL PROJECT AREA (ACRES): The amount of area involved in the project is projected to be approximately 130 acres.

TOTAL AREA TO BE DISTURBED: The amount of area involved in the project is projected to be approximately 130 acres.

It is anticipated that existing roads will be used for construction access.

WEIGHTED RUNOFF COEFFICIENT: (AFTER CONSTRUCTION) Unknown - Not Required as Part of the TCEQ General Permit.

EXISTING CONDITION OF SOIL, VEGETATIVE COVER AND % OF VEGETATIVE COVER: Unknown - Not Required as Part of the TCEQ General Permit.

DESCRIPTION OF WATER DISCHARGED NOT ASSOCIATED WITH CONSTRUCTION:

No data area available describing the quality of storm water discharges from the site.

NAME OF RECEIVING WATERS:

Caracol Creek, which eventually drains into Medio Creek, Medina river, and finally the Upper San Antonio River is the receiving water for storm water from this project.

IDENTIFY STORMWATER DISCHARGE POINTS:

Storm water from this project construction are discharges into the storm sewer system of the City of San Antonio.

A DESCRIPTION AND TIME FRAME FOR INSTALLATION OF STABILIZATION PRACTICES IN CONJUNCTION WITH CONSTRUCTION:

Best Management Practices (BMPs) will be installed prior to the start of construction and will be inspected and maintained.

The BMPs will remain in place until final stabilization has been achieved.

# EROSION AND SEDIMENTATION CONTROLS

## SOIL STABILIZATION PRACTICES:

- ___ HYDROMULCHING
- ___ TEMPORARY SEEDING
- X PERMANENT PLANTING, SODDING OR SEEDING
- ___ MULCHING
- X SOIL RETENTION BLANKET
- ___ BUFFER ZONES
- ___ PRESERVATION OF NATURAL RESOURSES
- X CABLE MAT

## OTHER:

DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITY HAS CEASED TEMPORARILY OR PERMANENTLY, SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITIES ARE SCHEDULED TO RESUME AND DONE WITHIN 21 DAYS.

## STRUCTURAL PRACTICES:

- X SILT FENCES
- ___ HAY BALES
- ___ GRAVEL FILTRATION BAGS
- X ROCK BERMS
- ___ DIVERSION, INTERCEPTOR OR PERIMETER DIKES
- ___ DIVERSION, INTERCEPTOR OR PERIMETER SWALES
- ___ DIVERSION, DIKE AND SWALE COMBINATIONS
- ___ PAVED FLUMES
- X ROCK BEDDING AT CONSTRUCTION EXIT (STABILIZED ENTRANCE)
- ___ TIMBER MATTING AT CONSTRUCTION EXIT (STABILIZED ENTRANCE)
- ___ CHANNEL LINERS
- ___ SEDIMENT TRAPS
- ___ SEDIMENT BASINS
- ___ STORM INLET SEDIMENT TRAP
- ___ STONE OUTLET SEDIMENT STRUCTURES
- ___ CURBS AND GUTTERS
- ___ STORM SEWERS
- ___ VELOCITY CONTROL STRUCTURES
- ___ GEOTEXTILES

OTHER: N/A

NARRATIVE – SEQUENCE OF CONSTRUCTION (STORMWATER MANAGEMENT) ACTIVITIES:

THE ORDER OF ACTIVITIES WILL BE AS FOLLOWS:

Mobilize, install sediment and erosion control measures, excavate trench for installation of subsurface infrastructure, prepare infastructure bedding material, install subsurface infasturcture, fill trench, repave paved surfaces and revegate unpaved areas, achieve site stabilization and remove sediment and erosion control measures.

A DESCRIPTION OF MAINTENANCE PROCEDURES FOR CONTROL MEASURES USED:

All disturbed areas and BMPs will be inspected at least every fourteen (14) calendar days and within 24 hours after a rainfall event of 0.5 inch or greater OR every seven (7) days on the same day of the week each week. BMPs needing maintenance will be repaired or replaced as necessary.

STORMWATER MANAGEMENT: Sediment control practices will be used to remove eroded soils from storm water runoff. The TCEQ General Permit states that sites with a drainage area of ten acres or more are required to have a sedimentation basin for a common drainage location; however, due to the linear nature of this project it is not feasible to construct a sedimentation basin for a common drainage location. Equivalent control measures will be provided until final stabilization is achieved.

A DESCRIPTION OF PERMANENT STORM WATER MANAGEMENT CONTROLS: Sediment control practices will be provided until final stabilization is achieved. Since storm water from the construction area discharges into the storm sewer system of the City of San Antonio, a signed copy of the NIO will be submitted to the City of San Antonio prior to the commencement of construction activities. In addition, a copy of the signed NOI and a signed construction site notice will be posted at the project site at all times.

## OTHER EROSION AND SEDIMENTATION CONTROLS

MAINTENANCE:

ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER. IF A REPAIR IS NECESSARY, IT WILL BE DONE AT THE EARLIEST DATE POSSIBLE, BUT NO LATER THAN 7 CALENDAR DAYS AFTER THE SURROUNDING EXPOSED GROUND HAS DRIED SUFFICIENTLY TO PREVENT FURTHER DAMAGE FROM HEAVY EQUIPMENT. THE AREAS ADJACENT TO CREEKS AND DRAINAGEWAYS SHALL HAVE PRIORITY, FOLLOWED BY DEVICES PROTECTING STORM SEWER INLETS.

INSPECTION:

AN INSPECTION WILL BE PERFORMED BY THE CONTRACTOR EVERY 14 DAYS AS WELL AS AFTER EVERY 1/2" OR MORE OF RAIN (RECORDED ON A NON-FREEZING RAIN GAUGE TO BE LOCATED AT THE PROJECT SITE). AN INSPECTION AND MAINTENANCE REPORT WILL BE MADE PER INSPECTION. BASED ON THE INSPECTION RESULTS, THE CONTROLS SHALL BE CORRECTED BEFORE THE NEXT SCHEDULED INSPECTION.

WASTE MATERIALS:

ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL MEET ALL STATE AND LOCAL CITY SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED AS NECESSARY OR AS REQUIRED BY LOCAL REGULATION AND THE TRASH WILL BE HAULED TO A LOCAL DUMP. NO CONSTRUCTION MATERIALS WILL BE BURIED ON SITE.

HAZARDOUS WASTE (INCLUDING SPILL REPORTING):

AT A MINIMUM, ANY PRODUCTS IN THE FOLLOWING CATEGORIES ARE CONSIDERED TO BE HAZARDOUS: PAINTS, ACIDS FOR CLEANING MASONRY SURFACES, GASOLINE, MOTOR OIL, CLEANING SOLVENTS, ASPHALT PRODUCTS, CHEMICAL ADDITIVES FOR SOIL STABILIZATION OR CONCRETE CURING COMPOUNDS AND ADDITIVES. IN THE EVENT OF A SPILL WHICH MAY BE HAZARDOUS AND MEETS REPORTING REQUIREMENTS, THE NATIONAL RESPONSE CENTER SHOULD BE CONTACTED AT 800-424-8802, AND ANY REQUIRED CHANGES MADE TO THE SWPPP. IN THE EVENT OF A LIFE THREATENING SPILL THE SAN ANTONIO FIRE DEPARTMENT SHOULD BE NOTIFIED AS WELL AS THE APPROPRIATE CITY INSPECTORS.

SANITARY WASTE Sanitary waste will be collected and disposed of offsite in an appropriate manner.

OFFSITE EXCAVATION SOURCE LOCATION N/A

OFFSITE FILL SOURCE LOCATION N/A

OFFSITE VEHICLE TRACKING A stabilized construction entrance will be utilitized.

- ___ HAUL ROADS DAMPENED FOR DUST CONTROL.
- ___ LOADED HAUL TRUCKS TO BE COVERED WITH TARPAULIN
- ___ EXCESS DIRT ON ROAD TO BE REMOVED DAILY
- X STABILIZED CONSTRUCTION ENTRANCE.

OTHER:

CERTIFICATION THAT SITE DISTURBANCE AND / OR DISCHARGES WILL NOT EFFECT LISTED ENDANGERED SPECIES AND THEIR HABITAT.
WHAT METHOD IS USED TO SATISFY THE ENDANGERED SPECIES REQUIREMENTS? A database search, field visit, and consultations with the Texas Parks and Wildlife Department (TPWD) and the U.S. Fish and Wildlife Service (USFWS) have been conducted for this project.

REMARKS:

DISPOSAL AREAS, STOCKPILES AND HAUL ROADS SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE AND CONTROL THE AMOUNT OF SEDIMENT THAT ENTERS RECEIVING WATERS. DISPOSAL AREAS SHALL NOT BE LOCATED IN ANY WETLAND, BODY OF WATER, STREAMBED OR FLOODPLAIN. CONSTRUCTION STAGING AREAS AND VEHICLE MAINTENANCE AREAS SHALL BE CONSTRUCTED BY THE CONTRACTOR IN A MANNER TO MINIMIZE THE RUNOFF OF POLLUTANTS. ALL WATERWAYS SHALL BE CLEARED AS SOON AS POSSIBLE OF TEMPORARY EMBANKMENT, TEMPORARY BRIDGES, MATTING, FALSEWORK, PILING, DEBRIS OR OTHER OBSTRUCTION PLACED DURING CONSTRUCTION OPERATIONS THAT ARE NOT PART OF THE FINISHED WORK.

JANUARY 2005

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

STORM WATER POLLUTION PREVENTION PLAN (SWP3) NARRATIVE

| ___% SUBMITTAL | PROJECT NO.: | DATE: |
|---|---|---|
| DRWN. BY: V. VASQUEZ | DSGN. BY: | CHKD. BY: |

SHEET NO.: ___ OF ___

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: PNG
Drawn by: DDH
Checked by: PNG
Scale: AS SHOWN

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Fax (210) 298-8901

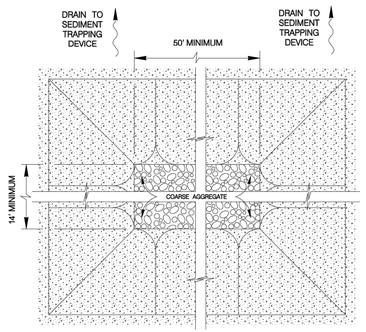
SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
STORM WATER POLLUTION PREVENTION PLAN (SWP3) NARRATIVE

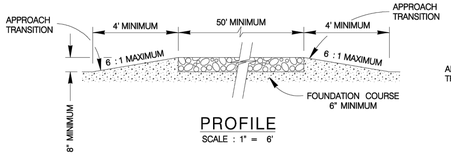
Sheet DT15

ACAD CIVIL 3D 2011 User: DDH [SWB09391][SASRV2]

Date: Jul 19, 2020 – 11:32pm User: 07155 File: \\pzroot.freese.com\PanzuraFs\cad\S\SWB09391\Standard\G6 STORM WATER POLLUTION PREVENTION PLAN (SW3P) NARRATIVE.dwg




PLAN
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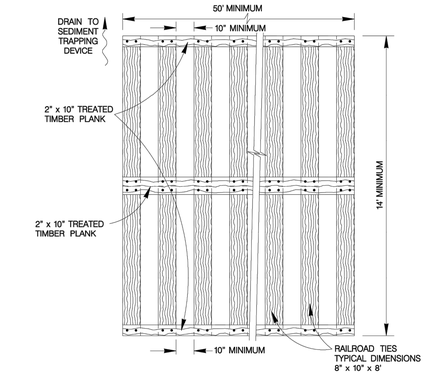



PROFILE
SCALE : 1" = 6'

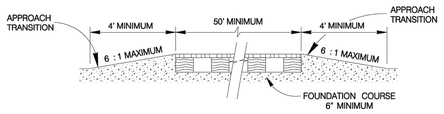
GENERAL NOTES

1. THE LENGTH OF THE TYPE 1 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, BUT NOT LESS THAN 50'.
2. THE COARSE AGGREGATE SHOULD BE OPEN GRADED WITH A SIZE OF 4" TO 8".
3. THE APPROACH TRANSITIONS SHOULD BE NO STEEPER THAN 6 :1 AND CONSTRUCTED AS DIRECTED BY THE ENGINEER.
4. THE CONSTRUCTION EXIT FOUNDATION COURSE SHALL BE FLEXIBLE BASE, BITUMINOUS CONCRETE, PORTLAND CEMENT CONCRETE OR OTHER MATERIAL AS APPROVED BY THE ENGINEER.
5. THE CONSTRUCTION EXIT SHALL BE GRADED TO ALLOW DRAINAGE TO A SEDIMENT TRAPPING DEVICE.
6. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

## CONSTRUCTION EXIT – TYPE 1




PLAN
SCALE : 1" = 6'

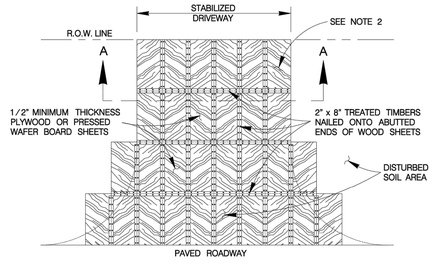



PROFILE
SCALE : 1" = 6'

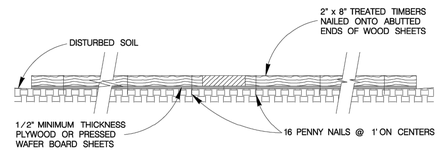
GENERAL NOTES

1. THE LENGTH OF THE TYPE 2 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, BUT NOT LESS THAN 50'.
2. THE TREATED TIMBER PLANKS SHALL BE ATTACHED TO THE RAILROAD TIES WITH 1/2" x 6" MIN. LAG BOLTS. OTHER FASTENERS MAY BE USED AS APPROVED BY THE ENGINEER.
3. THE TREATED TIMBER PLANKS SHALL BE #2 GRADE MIN., AND SHOULD BE FREE FROM LARGE AND LOOSE KNOTS.
4. THE APPROACH TRANSITIONS SHOULD BE NO STEEPER THAN 6 :1 AND CONSTRUCTED AS DIRECTED BY THE ENGINEER.
5. THE CONSTRUCTION EXIT FOUNDATION COURSE SHALL BE FLEXIBLE BASE, BITUMINOUS CONCRETE, PORTLAND CEMENT CONCRETE OR OTHER MATERIAL AS APPROVED BY THE ENGINEER.
6. THE CONSTRUCTION EXIT SHOULD BE GRADED TO ALLOW DRAINAGE TO A SEDIMENT TRAPPING DEVICE.
7. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

## CONSTRUCTION EXIT – TYPE 2




PLAN
SCALE : 1" = 20'

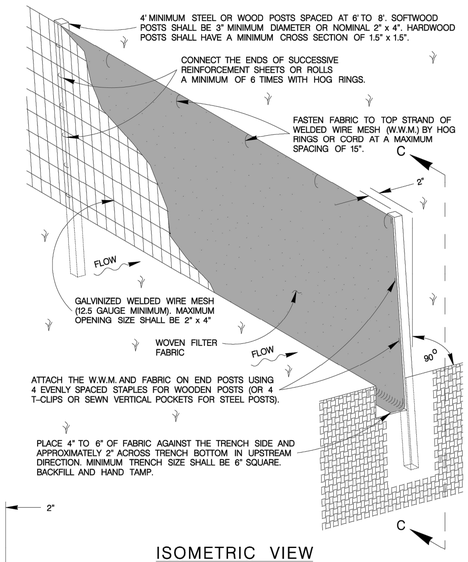



SECTION A–A
SCALE : 1" = 2'

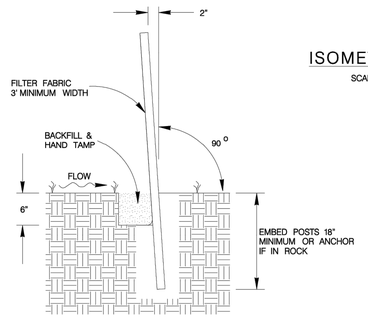
GENERAL NOTES

1. THE LENGTH OF THE TYPE 3 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
2. THE TYPE 3 CONSTRUCTION EXIT MAY BE CONSTRUCTED FROM OPEN GRADED CRUSHED STONE WITH A SIZE OF 2 TO 4 INCHES SPREAD A MINIMUM OF 4 INCHES THICK TO THE LIMITS SHOWN ON THE PLANS.
3. THE TREATED TIMBER PLANKS SHALL BE #2 GRADE MIN., AND SHOULD BE FREE FROM LARGE AND LOOSE KNOTS.
4. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

## CONSTRUCTION EXIT – TYPE 3




ISOMETRIC VIEW
SCALE : 1" = 2'




SECTION C–C
SCALE : 1" = 2'

SEDIMENT CONTROL FENCE USAGE GUIDELINES

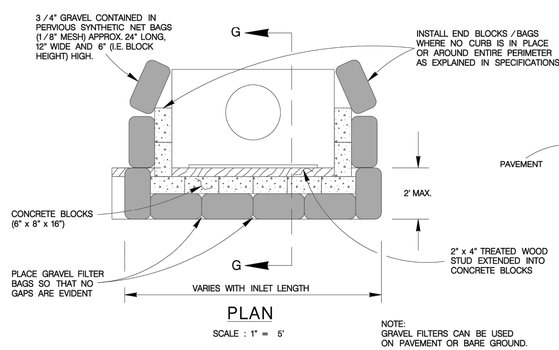
A SEDIMENT CONTROL FENCE MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUN-OFF. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED.

SEDIMENT CONTROL FENCE SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 100 GPM /FT SQUARED. SEDIMENT CONTROL FENCE IS NOT RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE AREA LARGER THAN 2 ACRES.

GENERAL NOTES

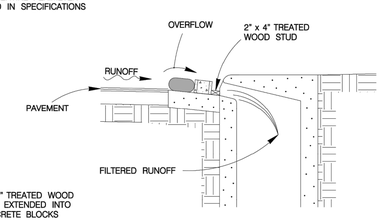
1. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

## TEMPORARY SEDIMENT CONTROL FENCE

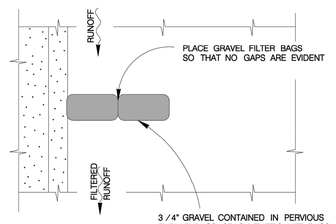



PLAN
SCALE : 1" = 5'

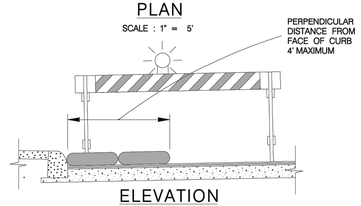
NOTE:
GRAVEL FILTERS CAN BE USED ON PAVEMENT OR BARE GROUND.




SECTION G–G
SCALE : 1" = 5'




PLAN
SCALE : 1" = 5'




ELEVATION
SCALE : 1" = 5'

NOTE:
STRADDLE GRAVEL FILTER BAGS WITH TYPE 1 BARRICADES MOUNTED WITH TYPE "A" FLASHING WARNING LIGHT. SEE BARRICADE CONSTRUCTION SIGN DETAILS. PLACE FLASHING LIGHTS AWAY FROM GUTTER, FLUSH WITH OUTSIDE EDGE OF BAG CONFIGURATION.

## GRAVEL FILTER BAGS

## CURB INLET GRAVEL FILTER

JANUARY 2005

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

# TEMPORARY EROSION, SEDIMENT & WATER POLLUTION CONTROL MEASURES STANDARDS 1

| % SUBMITTAL | PROJECT NO.: | DATE: |
|---|---|---|
| DRWN. BY: V. VASQUEZ | DSGN. BY: | CHKD. BY: | SHEET NO.: OF |

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS — ROBERT N. JENKINS — 103589 — LICENSED — PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: PNG
Drawn by: DDH
Checked by: PNG
Scale: AS SHOWN

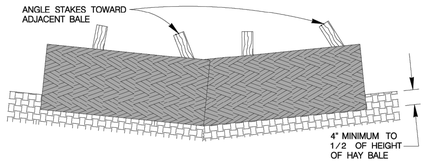
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-9600
Fax (210) 298-9601

SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
TEMPORARY EROSION, SEDIMENT, & WATER POLLUTION CONTROL MEASURES STANDARDS 1

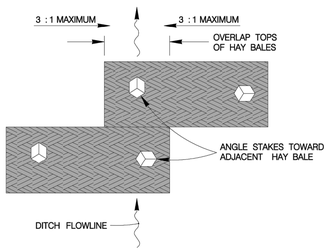
Sheet DT16

ACAD CIVIL 3D 2011 User: DDH [SWB09391][SASRV2]
Date: Jul 19, 2020 – 11:32pm User: 07155 File: N:\wr\Drawings\WR-SAWS-DT-SWP3016.dwg



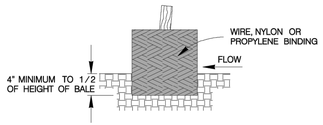

PROFILE VIEW

SCALE : 1" = 2'



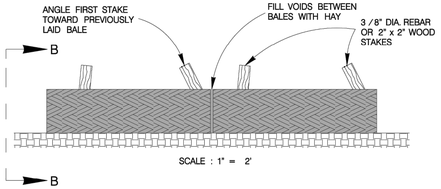

PLAN VIEW

SCALE : 1" = 2'




SECTION B-B

SCALE : 1" = 2'




SCALE : 1" = 2'

## BALED HAY USAGE GUIDELINES

A BAILED HAY INSTALLATION MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUNOFF. A TWO YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED. THE INSTALLATION SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 5 GPM /FT SQUARED OF CROSS SECTIONAL AREA. BALED HAY MAY BE USED AT THE FOLLOWING LOCATIONS:

1. WHERE THE RUNOFF APPROACHING THE BALED HAY FLOWS OVER DISTURBED SOIL FOR LESS THAN 100'. IF THE SLOPE OF THE DISTURBED SOIL EXCEEDS 10 %, THE LENGTH OF SLOPE UPSTREAM OF THE BAILED HAY SHOULD BE LESS THAN 50'.
2. WHERE THE INSTALLATION WILL BE REQUIRED FOR LESS THAN 3 MONTHS.
3. WHERE THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 1/2 ACRE.

FOR BALED HAY INSTALLATIONS IN SMALL DITCHES, THE FOLLOWING ADDITIONAL CONDITIONAL CONSIDERATIONS APPLY:

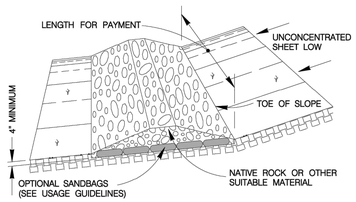
1. THE DITCH SIDESLOPES SHOULD BE GRADED AS FLAT AS POSSIBLE TO MAXIMIZE THE DRAINAGE FLOW RATE THRU THE HAY.
2. THE DITCH SHOULD BE GRADED LARGE ENOUGH TO CONTAIN THE OVERLAPPING DRAINAGE WHEN SEDIMENT HAS FILLED TO THE TOP OF THE BAILED HAY.

BALES SHOULD BE REPLACED USUALLY EVERY 2 MONTHS OR MORE OFTEN DURING WET WEATHER WHEN LOSS OF STRUCTURAL INTERGRITY IS ACCELERATED.

## GENERAL NOTES

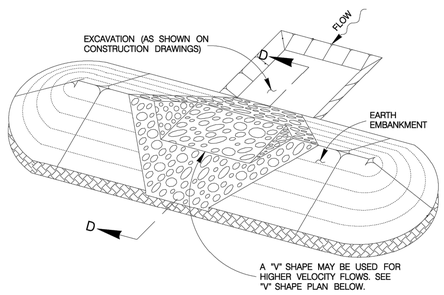
1. HAY BALES SHALL BE A MINIMUM OF 30" IN LENGTH AND WEIGH A MINIMUM OF 50 LBS.
2. HAY BALES SHALL BE BOUND BY EITHER WIRE OR NYLON OR POLYPROPYLENE STRING. THE BALES SHALL BE COMPOSED ENTIRELY OF VEGETABLE MATTER.
3. HAY BALES SHALL BE EMBEDDED IN THE SOIL A MININMUM OF 4" AND, WHERE POSSIBLE, ONE-HALF THE HEIGHT OF THE BALE.
4. HAY BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES. THE BALES SHALL BE PLACED WITH BINDINGS PARALLEL TO THE GROUND.
5. HAY BALES SHALL BE SECURELY ANCHORED IN PLACE WITH 3 /8" DIA. REBAR OR 2" x 2" WOOD STAKES DRIVEN THROUGH THE BALES. THE FIRST STAKE SHALL BE ANGLED TOWARDS THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER.
6. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

BALED HAY FOR EROSION CONTROL



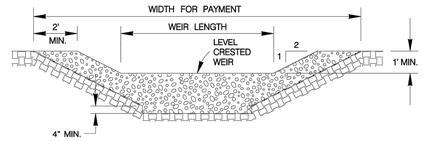

TYPE 1 FILTER DAM AT TOE OF SLOPE

SCALE : 1" = 10'



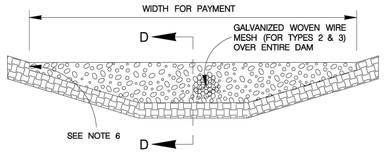

TYPE 1 & 2 FILTER DAM AT SEDIMENT TRAP

SCALE : 1" = 10'



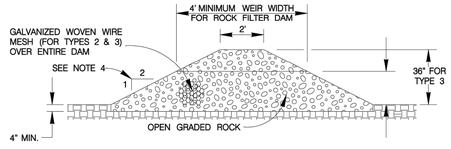

PROFILE OF TYPE 1 & 2 FILTER DAM AT SEDIMENT TRAP

SCALE : 1" = 6'



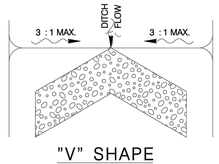

TYPE 1, 2 & 3 FILTER DAM AT CHANNEL SECTIONS

SCALE : 1" = 6'



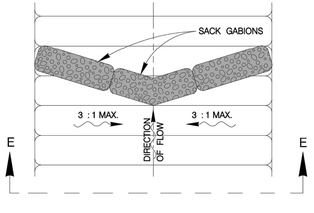

SECTION D-D

SCALE : 1" = 6'



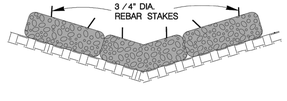

"V" SHAPE PLAN VIEW

NOT TO SCALE




PLAN VIEW

SCALE : 1" = 10'




SECTION E-E

SCALE : 1" = 10'




TYPE 4 SACK GABION DETAIL

SCALE : 1" = 6'




SECTION F-F

SCALE : 1" = 6'

TYPE 4 FILTER DAM AT DITCHES & SMALLER CHANNELS PLAN VIEW

ROCK FILTER DAMS

## ROCK FILTER DAM USAGE GUIDELINES

ROCK FILTER DAMS SHOULD BE CONSTRUCTED DOWNSTREAM FROM DISTURBED AREAS TO INTERCEPT SEDIMENT FROM OVERLOAD RUNOFF AND /OR CONCENTRATED FLOW. THE DAMS SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 60 GPM /FT SQUARED OF CROSS SECTIONAL AREA.. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE.

TYPE 1 (18" HIGH WITH NO WIRE MESH) :

TYPE 1 MAY BE USED AT THE TOE OF SLOPES, AROUND INLETS, IN SMALL DITCHES AND AT DIKE OR SWALE OUTLETS. THIS TYPE OF DAM IS RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE AREA OF 5 ACRES OR LESS. TYPE 1 MAY NOT BE USED IN CONCENTRATED HIGH VELOCITY FLOWS (APPROXIMATELY 8 FT./SEC. OR MORE) IN WHICH AGGREGATE WASH OUT MAY OCCUR. SANDBAGS MAY BE USED AT THE EMBEDDED FOUNDATION (4" DEEP MIN.) FOR BETTER FILTERING EFFICIENCY OF LOW FLOWS IF CALLED FOR ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

TYPE 2 (18" HIGH WITH WIRE MESH) :

TYPE 2 MAY BE USED IN DITCHES AND AT DIKE OR SWALE OUTLETS.

TYPE 3 (36" HIGH WITH WIRE MESH) :

TYPE 3 MAY BE USED IN STREAM FLOW AND SHOULD BE SECURED TO THE STREAM BED.

TYPE 4 (SACK GABIONS) :

TYPE 4 MAY BE USED IN DITCHES AND SMALLER CHANNELS TO FORM AN EROSION CONTROL DAM.

## GENERAL NOTES

1. IF SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER, FILTER DAMS SHOULD BE PLACED NEAR THE TOE OF SLOPES WHERE EROSION IS ANTICIPATED, UPSTREAM AND / OR DOWNSTREAM AT DRAINAGE STRUCTURES, AND IN ROADWAY DITCHES AND CHANNELS TO COLLECT SEDIMENT.
2. MATERIALS (AGGREGATE, WIRE MESH, SANDBAGS, ETC.) SHALL BE AS INDICATED BY THE SPECIFICATION FOR ROCK FILTER DAMS FOR EROSION AND SEDIMENTATION CONTROL.
3. THE ROCK FILTER DAM DIMENSIONS SHALL BE AS INDICATED ON THE STORM WATER POLLUTION PREVENTION PLANS.
4. SIDE SLOPES SHOULD BE 2 :1 OR FLATTER. DAMS WITHIN THE SAFETY ZONE SHALL HAVE SIDE SLOPES OF 6 :1 OR FLATTER.
5. MAINTAIN A MINIMUM OF 1' BETWEEN TOP OF ROCK FILTER DAM WEIR AND TOP OF EMBANKMENT FOR FILTER DAMS AT SEDIMENT TRAPS.
6. FILTER DAMS SHOULD BE EMBEDDED A MINIMUM OF 4" INTO THE EXISTING GROUND.
7. THE SEDIMENT TRAP FOR PONDING OF SEDIMENT LADEN RUNOFF SHALL BE OF THE DIMENSIONS SHOWN ON THE PLANS.
8. ROCK FILTER DAM TYPES 2 & 3 SHALL BE SECURED WITH 20 GAUGE GALVANIZED WOVEN WIRE MESH WITH 1" DIAMETER HEXAGONAL OPENINGS. THE AGGREGATE SHALL BE PLACED ON THE MESH TO THE HEIGHT AND SLOPES SPECIFIED. THE MESH SHALL BE FOLDED AT THE UPSTREAM SIDE OVER THE AGGREGATE AND TIGHTLY SECURED TO ITSELF ON THE DOWNSTREAM SIDE USING WIRE TIES OR HOG RINGS. IN STREAM USE, THE MESH SHOULD BE SECURED OR STAKED TO THE STREAM BED PRIOR TO AGGREGATE PLACEMENT.
9. SACK GABIONS SHOULD BE STAKED DOWN WITH 3 /4" DIA. REBAR STAKES.
10. FLOW OUTLET SHOULD BE ONTO A STABILIZED AREA (VEGETATION, ROCK, ETC.).
11. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

JANUARY 2005

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TEMPORARY EROSION, SEDIMENT & WATER POLLUTION CONTROL MEASURES STANDARDS 2

| | | | |
|---|---|---|---|
| _____% SUBMITTAL | PROJECT NO.:_____ | | DATE:_____ |
| DRWN. BY: V. VASQUEZ | DSGN. BY:_____ | CHKD. BY:_____ | SHEET NO.:___OF___ |

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER 07/20/20

Date: 07/19/2020
Designed by: PNG
Drawn by: DDH
Checked by: PNG
Scale: AS SHOWN

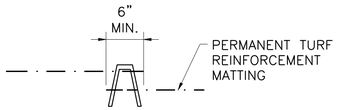
FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-8900
Fax (210) 298-8901

SAN ANTONIO WATER SYSTEM

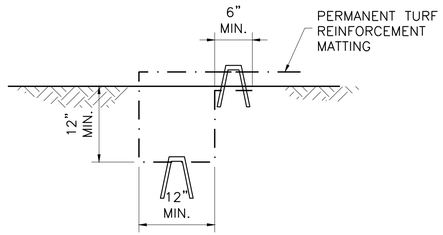
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
TEMPORARY EROSION, SEDIMENT, & WATER POLLUTION CONTROL MEASURES STANDARDS 2

Sheet DT17

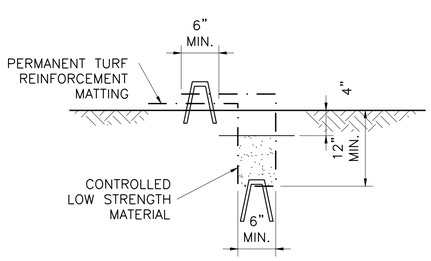
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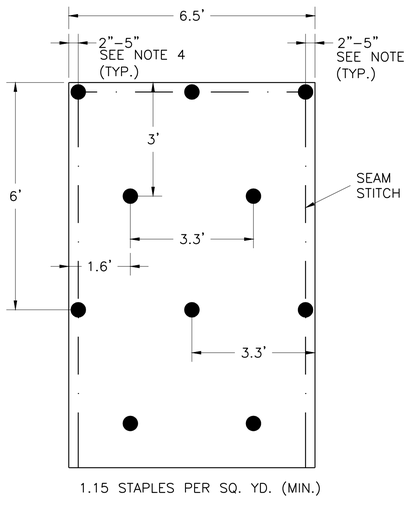

A OVERLAP DETAIL
NOT TO SCALE




B UPSTREAM ANCHOR TRENCH DETAIL
NOT TO SCALE




C DOWNSTREAM ANCHOR TRENCH DETAIL
NOT TO SCALE




1.15 STAPLES PER SQ. YD. (MIN.)

D ANCHOR PATTERN
NOT TO SCALE

**NOTES:**

1. PREPARE SOIL BEFORE INSTALLING ROLLED PERMANENT TURF REINFORCEMENT MATTING (PTRM), INCLUDING ANY NECESSARY APPLICATION, FERTILIZER, AND SEED. ALSO REMOVE ALL ROCKS, CLODS, VEGETATION OR OTHER OBSTRUCTIONS SO THAT THE INSTALLED PTRM WILL HAVE DIRECT CONTACT WITH SOIL SURFACE.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE PTRM IN AN ANCHOR TRENCH. ANCHOR THE PTRM WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING PTRM OVER SEED AND COMPACTED SOIL. SECURE PTRM's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE PTRM.
3. ROLL THE PTRM's (A.) DOWN THE SLOPE. PTRM WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL PTRM MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE ANCHOR PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE ANCHOR PATTERN.
4. THE EDGES OF PARALLEL PTRM MUST BE STAPLED WITH APPROXIMATELY 2" – 5" OVERLAP DEPENDING ON PTRM TYPE. THE HIGHER ELEVATION PTRM SHOULD BE PLACED OVER THE LOWER PTRM. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE PTRM.
5. CONSECUTIVE PTRM SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE PTRM WIDTH.
6. COVER PTRM WITH TOPSOIL AND SOD/OVERSEED FOR EROSION CONTROL WITH 1"–3" OF DEPTH.
7. KEEP TRAFFIC TO A MINIMUM AFTER PLACEMENT OF PTRMS.
8. CONTRACTOR SHALL FOLLOW ALL MANUFACTURER INSTALLATION RECOMMENDATIONS.

1 EROSION CONTROL BLANKET FOR STEEP SLOPE AREAS (3:1 OR GREATER)
NOT TO SCALE

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

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Texas Registered Engineering Firm F-2144

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: CAK
Drawn by: DDH
Checked by: CAK
Scale: AS SHOWN

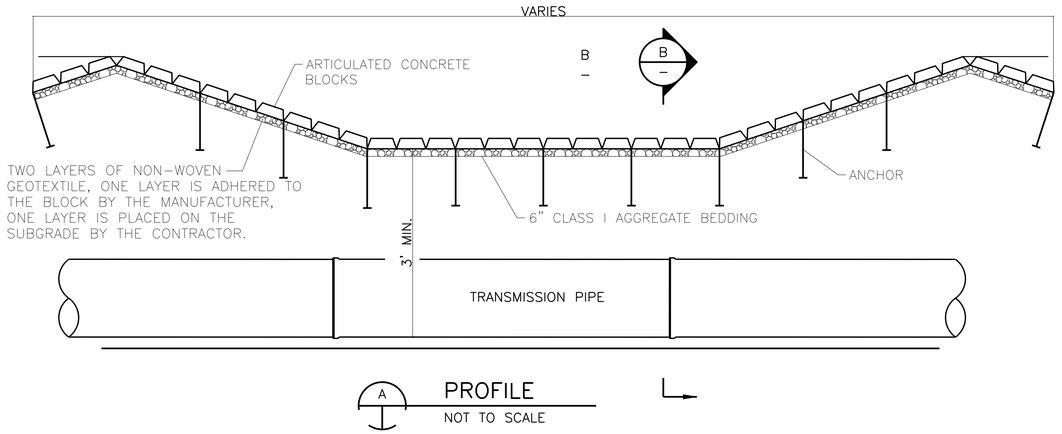
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9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-3900
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SAN ANTONIO WATER SYSTEM

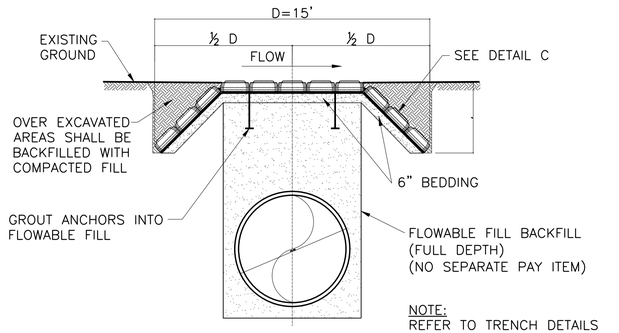
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
EROSION CONTROL BLANKET DETAILS

Sheet DT18

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A PROFILE
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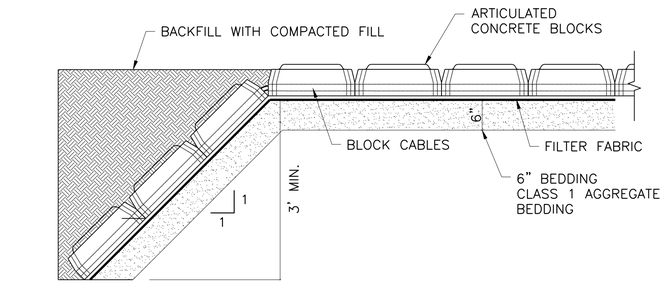



NOTE:
REFER TO TRENCH DETAILS FOR ADDITIONAL INFORMATION

B SECTION
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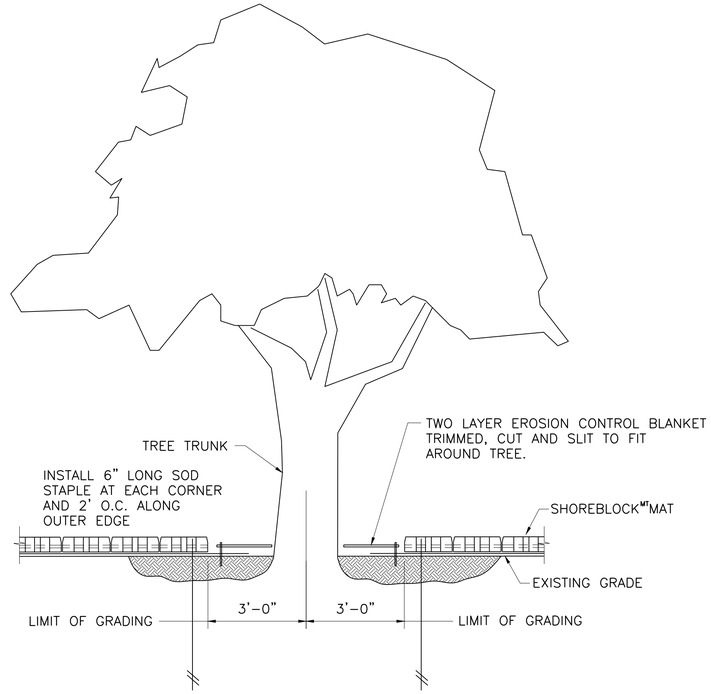
NOTES:

1. GEOTEXTILE SHALL BE PLACED WITH A 12" SHINGLED OVERLAP.
2. TOE IN 1 BLOCK ALONG THE UPSTREAM END AND BACKFILL WITH COMPACTED EARTH.
3. TOE IN 3 BLOCKS ALONG SIDE SLOPES AND BACKFILL WITH COMPACTED EARTH.
4. PLACE ANCHORS AND CLAMPS AS RECOMMENDED BY THE MANUFACTURER OR AS SPECIFIED.
5. TROWEL A GROUT PATCH OVER ALL ANCHOR HOLES IN THE GEOTEXTILE.
6. GEOTEXTILE SHALL BE NON-WOVEN.
7. ALL CABLE MATS SHALL HAVE 6 INCHES OF COMPACTED CLASS I AGGREGATE BEDDING UNDER MAT.
8. ANCHOR SHALL HAVE A MINIMUM LENGTH OF 4 FEET.
9. FILL GAPS BETWEEN BLOCKS WITH CRUSHED STONE ON DRIVING SURFACES. USE TOP SOIL AND GRASS SEED ON OTHER SLOPES.




C TIE DOWN DETAIL – ARTICULATED CONCRETE BLOCK AT CONNECTION WITH NATURAL GROUND
NOT TO SCALE

1 CONCRETE CABLE MAT DETAILS
NOT TO SCALE




**NOTES:**

1. CLEARING AND GRUBBING WITHIN THE DRIPLINE OF TREES TO BE PRESERVED. SHALL BE LIMITED TO SURFACE CLEARING AND GRUBBING TO A MAXIMUM DEPTH OF 2 INCHES USING HAND TOOLS.
2. EROSION CONTROL BLANKET MAY BE PLACED ON UNDISTURBED SOIL WITH MAXIMUM OF 1 1/2" MOWED PLANT STUBBLE.
3. EXTENT OF ROOT PROTECTION ZONE DEPENDENT ON CITY STANDARD LEVELS. SEE SHEET DT15 FOR ROOT PROTECTION ZONE LEVELS.

2 ROOT ZONE PROTECTION
NOT TO SCALE

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED
PROFESSIONAL ENGINEER
07/20/20

Freese And Nichols, Inc.
Job No.
SWB09391

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJC
Checked by: DTB
Scale: N.T.S.

FREESE NICHOLS
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216
Phone (210) 298-3900
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SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
CONCRETE CABLE MAT DETAILS

Sheet DT19

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Date: Jul 19, 2020 – 11:34pm User: 07155 File: N:\wr\Drawings\WR-SAWS-DT-CCMAT019.dwg

## CATHODIC PROTECTION TEST STATION SCHEDULE

| TEST STATION NO. | SEGMENT | STATION NO. | TYPE | TEST STATION TYPE | STRUCTURE | DETAIL |
|---|---|---|---|---|---|---|
| 1 | 2C | 699+96 | 4 WIRE | INSULATED JOINT TEST STATION (MONOLITHIC) | BEGIN SEGMENT 2C - MONOLITHIC JOINT | 1/CP2, 2/CP2, 3/CP2, 5/CP2, 3/CP3, 2/CP4 |
| 2 | 2C | 700+10 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 2 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 3 | 2C | 712+53 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 4 | 2C | 724+96 | 4 WIRE | CASING TEST STATION | EAST END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 5 | 2C | 726+58 | 4 WIRE | CASING TEST STATION | WEST END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 6 | 2C | 735+92 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 2 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 7 | 2C | 745+23 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 8 | 2C | 754+55 | 4 WIRE | CASING TEST STATION | EAST END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 9 | 2C | 755+46 | 4 WIRE | CASING TEST STATION | WEST END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 10 | 2C | 765+73 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 11 | 2C | 776+00 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 2 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 12 | 2C | 784+90 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 13 | 2C | 793+80 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 2 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 14 | 2C | 805+83 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 15 | 2C | 817+86 | 4 WIRE | INSULATED JOINT TEST STATION | FLUSH ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 16 | 2C | 818+22 | 4 WIRE | CASING TEST STATION | EAST END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 17 | 2C | 819+22 | 4 WIRE | CASING TEST STATION | EAST END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 18 | 2C | 826+37 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 2 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 19 | 3 | 2000+45 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 20 | 3 | 2002+76 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 8" GAS LINE | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 21 | 3 | 2012+58 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 22 | 3 | 2022+76 | 4 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 23 | 3 | 2039+00 | 4 WIRE | FOREIGN PIPELINE TEST STATION | 24" GAS LINE | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 24 | 3 | 2040+69 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 25 | 3 | 2048+85 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 26 | 3 | 2058+82 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 27 | 3 | 2061+41 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 24" GAS LINE | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 28 | 3 | 2066+15 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 29 | 3 | 2071+35 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 30 | 3 | 2078+63 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 31 | 3 | 2080+36 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 32 | 3 | 2080+60 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 33 | 3 | 2083+60 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 34 | 3 | 2091+35 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 35 | 3 | 2098+55 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP5 |
| 36 | 3 | 2108+79 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 37 | 3 | 2108+99 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 38 | 3 | 2109+19 | 4 WIRE | CASING TEST STATION | EAST END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 39 | 3 | 2113+83 | 4 WIRE | CASING TEST STATION | WEST END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 40 | 3 | 2114+03 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 41 | 3 | 2126+27 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 42 | 3 | 2137+35 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 43 | 3 | 2148+02 | 4 WIRE | CASING TEST STATION | EAST END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 44 | 3 | 2151+09 | 4 WIRE | CASING TEST STATION | WEST END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 45 | 3 | 2151+54 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 46 | 3 | 2152+80 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 47 | 3 | 2159+67 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 48 | 3 | 2162+80 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 49 | 3 | 2167+58 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 50 | 3 | 2174+88 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 51 | 3 | 2178+99 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 52 | 3 | 2189+00 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 53 | 3 | 2198+56 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 54 | 3 | 2204+10 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 55 | 3 | 2208+84 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 56 | 3 | 2216+69 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 57 | 3 | 2217+31 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 6" GAS LINE (AT 2217+70) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 58 | 3 | 2217+34 | 4 WIRE | CASING TEST STATION | EAST END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 59 | 3 | 2221+63 | 4 WIRE | CASING TEST STATION | WEST END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 60 | 3 | 2221+66 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 12" GAS LINE (AT 2221+32) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 61 | 3 | 2221+69 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 20" WATER LINE (AT 2221+55) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 62 | 3 | 2230+95 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 63 | 3 | 2234+00 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 64 | 3 | 2248+51 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 65 | 3 | 2248+71 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 66 | 3 | 2249+53 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 6" GAS LINE | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 67 | 3 | 2255+82 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 68 | 3 | 2259+77 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 69 | 3 | 2261+26 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 16" WATER LINE (AT 2261+45) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 70 | 3 | 2261+29 | 4 WIRE | CASING TEST STATION | SOUTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 71 | 3 | 2262+48 | 4 WIRE | CASING TEST STATION | NORTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 72 | 3 | 2265+25 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 73 | 3 | 2276+35 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 74 | 3 | 2278+60 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |

## CATHODIC PROTECTION TEST STATION SCHEDULE

| TEST STATION NO. | SEGMENT | STATION NO. | TYPE | TEST STATION TYPE | STRUCTURE | DETAIL |
|---|---|---|---|---|---|---|
| 75 | 3 | 2285+12 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 76 | 3 | 2289+89 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 77 | 3 | 2294+36 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 78 | 3 | 2299+47 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 79 | 3 | 2302+16 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 80 | 3 | 2313+80 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 81 | 3 | 2314+40 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 20" WATER LINE (AT 2314+53) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 82 | 3 | 2314+43 | 4 WIRE | CASING TEST STATION | SOUTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 83 | 3 | 2315+39 | 4 WIRE | CASING TEST STATION | NORTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 84 | 3 | 2315+44 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 85 | 3 | 2325+35 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 86 | 3 | 2328+55 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 87 | 3 | 2331+49 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 20" WATER LINE | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 88 | 3 | 2332+15 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 89 | 3 | 2338+78 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 16" WATER LINE (AT 2339+09) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 90 | 3 | 2338+81 | 4 WIRE | CASING TEST STATION | SOUTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 91 | 3 | 2339+70 | 4 WIRE | CASING TEST STATION | NORTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 92 | 3 | 2340+04 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 93 | 3 | 2340+24 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 94 | 3 | 2350+52 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 95 | 3 | 2350+71 | 4 WIRE | CASING TEST STATION | SOUTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 96 | 3 | 2351+58 | 4 WIRE | CASING TEST STATION | NORTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 97 | 3 | 2360+99 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 98 | 3 | 2364+34 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 24" GAS LINE | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 99 | 3 | 2365+06 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 100 | 3 | 2371+27 | 4 WIRE | CASING TEST STATION | SOUTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 101 | 3 | 2374+89 | 4 WIRE | CASING TEST STATION | NORTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 102 | 3 | 2374+92 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 24" WATER LINE (AT 2374+30) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 103 | 3 | 2385+67 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 104 | 3 | 2387+57 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 105 | 3 | 2394+50 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 106 | 3 | 2400+29 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 107 | 3 | 2403+50 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 108 | 3 | 2415+00 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 109 | 3 | 2422+29 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 110 | 3 | 2425+00 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 111 | 3 | 2435+00 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 112 | 3 | 2442+26 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 113 | 3 | 2445+00 | 2 WIRE | MONITORING TEST STATION | MONITOR | 1/CP2, 2/CP2, 3/CP2, 1/CP3, 1/CP4 |
| 114 | 3 | 2455+69 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 115 | 3 | 2456+33 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 6" GAS LINE (AT 2456+53) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 116 | 3 | 2456+36 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 12" GAS LINE (AT 2456+53) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 117 | 3 | 2456+39 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 12" WATER LINE (AT 2456+60) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 118 | 3 | 2456+42 | 4 WIRE | CASING TEST STATION | SOUTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 119 | 3 | 2458+08 | 4 WIRE | CASING TEST STATION | NORTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 120 | 3 | 2458+11 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 12" WATER LINE (AT 2457+64) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 121 | 3 | 2458+49 | 4 WIRE | CASING TEST STATION | SOUTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 122 | 3 | 2459+93 | 4 WIRE | CASING TEST STATION | NORTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 123 | 3 | 2459+88 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 124 | 3 | 2470+94 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 24" GAS LINE (AT 2470+94) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 125 | 3 | 2474+25 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 126 | 3 | 2476+57 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 127 | 3 | 2486+53 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 128 | 3 | 2488+06 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 129 | 3 | 2492+92 | 4 WIRE | CASING TEST STATION | SOUTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 130 | 3 | 2494+59 | 4 WIRE | CASING TEST STATION | NORTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 131 | 3 | 2498+77 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 132 | 3 | 2501+26 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 16" WATER LINE (AT 2501+33) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 133 | 3 | 2501+29 | 4 WIRE | CASING TEST STATION | SOUTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 134 | 3 | 2502+37 | 4 WIRE | CASING TEST STATION | NORTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 135 | 3 | 2502+40 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 6" GAS LINE (AT 2502+23) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 136 | 3 | 2506+57 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 137 | 3 | 2509+47 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 138 | 3 | 2519+02 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 139 | 3 | 2526+51 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 140 | 3 | 2527+10 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 141 | 3 | 2536+22 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 142 | 3 | 2537+09 | 7 WIRE | FOREIGN PIPELINE TEST STATION | GAS LINE | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 143 | 3 | 2537+12 | 7 WIRE | FOREIGN PIPELINE TEST STATION | WATER LINE | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 144 | 3 | 2537+15 | 4 WIRE | CASING TEST STATION | SOUTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 145 | 3 | 2538+16 | 4 WIRE | CASING TEST STATION | NORTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 146 | 3 | 2538+19 | 7 WIRE | FOREIGN PIPELINE TEST STATION | GAS LINE | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 147 | 3 | 2543+77 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 24" GAS LINE | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 148 | 3 | 2543+92 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 149 | 3 | 2550+56 | 7 WIRE | FOREIGN PIPELINE TEST STATION | WATER LINE (AT 2550+68) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 150 | 3 | 2550+59 | 4 WIRE | CASING TEST STATION | SOUTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |

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| | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
CHRISTOPHER L. SHELDON
112184
LICENSED PROFESSIONAL ENGINEER

JULY 17, 2020

V&A Consulting Engineers, Inc.
Texas Registered Engineering Firm F-9154

Date: 7/17/2020
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Drawn by: ACR
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SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION
PROJECT (WRIP) - PHASE 2
PIPELINE SEGMENT 2C AND 3

BID DOCUMENTS

Sheet CP-1

| CATHODIC PROTECTION TEST STATION SCHEDULE | | | | | | |
|---|---|---|---|---|---|---|
| TEST STATION NO. | SEGMENT | STATION NO. | TYPE | TEST STATION TYPE | STRUCTURE | DETAIL |
| 151 | 3 | 2551+24 | 4 WIRE | CASING TEST STATION | NORTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 152 | 3 | 2551+27 | 7 WIRE | FOREIGN PIPELINE TEST STATION | GAS LINE (AT 2551+17) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 153 | 3 | 2552+42 | 7 WIRE | FOREIGN PIPELINE TEST STATION | GAS LINE (AT 2552+60) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 154 | 3 | 2552+45 | 4 WIRE | CASING TEST STATION | SOUTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 155 | 3 | 2553+52 | 4 WIRE | CASING TEST STATION | NORTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 156 | 3 | 2553+55 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 12" WATER LINE (AT 2553+33) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 157 | 3 | 2559+67 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 158 | 3 | 2567+19 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 159 | 3 | 2568+99 | 4 WIRE | CASING TEST STATION | SOUTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 160 | 3 | 2569+56 | 4 WIRE | CASING TEST STATION | NORTH END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 161 | 3 | 2569+59 | 7 WIRE | FOREIGN PIPELINE TEST STATION | GAS LINE (AT 2569+42) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 162 | 3 | 2569+61 | 7 WIRE | FOREIGN PIPELINE TEST STATION | WATER LINE (AT 2569+45) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 163 | 3 | 2569+66 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 164 | 3 | 2574+50 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 165 | 3 | 2585+47 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 166 | 3 | 2585+67 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 167 | 3 | 2585+77 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 24" WATER LINE | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 168 | 3 | 2585+80 | 4 WIRE | CASING TEST STATION | EAST END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 169 | 3 | 2587+27 | 4 WIRE | CASING TEST STATION | WEST END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 170 | 3 | 2587+30 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 6" GAS LINE (AT 2586+10) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 171 | 3 | 2610+17 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 172 | 3 | 2618+04 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 6" GAS LINE (AT 2618+09) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 173 | 3 | 2618+07 | 4 WIRE | CASING TEST STATION | EAST END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 174 | 3 | 2618+91 | 4 WIRE | CASING TEST STATION | WEST END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 175 | 3 | 2618+94 | 7 WIRE | FOREIGN PIPELINE TEST STATION | 24" WATER LINE (AT 2618+66) | 2/CP2, 3/CP2, 3/CP3, 4/CP3, 5/CP3, 3/CP4 |
| 176 | 3 | 2626+99 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 177 | 3 | 2643+82 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 178 | 3 | 2649+75 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 179 | 3 | 2685+28 | 4 WIRE | CASING TEST STATION | EAST END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 180 | 3 | 2685+88 | 4 WIRE | CASING TEST STATION | WEST END CASING | 1/CP2, 2/CP2, 3/CP2, 2/CP3, 4/CP4 |
| 181 | 3 | 2686+05 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 182 | 3 | 2693+79 | 4 WIRE | INSULATED JOINT TEST STATION | PIPE DRAIN STRUCTURE | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3/CP3, 2/CP4 |
| 183 | 3 | 2697+26 | 4 WIRE | INSULATED JOINT TEST STATION | AIR VALVE ASSEMBLY TYPE 1 | 1/CP2, 2/CP2, 3/CP2, 4/CP2, 3CP3, 2CP4 |
| 184 | 3 | 2698+93 | 4 WIRE | INSULATED JOINT TEST STATION (MONOLITHIC END JOINT) | END SEGMENT 3 - MONOLITHIC JOINT | 1/CP2, 2/CP2, 3/CP2, 5/CP2, 3/CP3, 2/CP4 |

| RECTIFIER SCHEDULE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| PIPE MATERIAL | RECTIFIER NO. | STATION NO. | SIZE | | ANODES | | ANODE WELL DEPTH (FEET) | STRUCTURE | DETAIL |
| | | | VOLTS | AMPS | NO. | TYPE | | | |
| DIELECTRICALLY COATED STEEL PIPE | 1 | 2200+36 | 25 | 20 | 12 | HIGH SILICONE CAST IRON (3884) | 214 | 48" WATER LINE | 2/CP2, 3/CP2, A/CP5, 1/CP6, 2/CP6, 1/CP7, 2/CP7, 3/CP7, 4/CP7 |
| DIELECTRICALLY COATED STEEL PIPE | 2 | 2538+25 | 15 | 10 | 12 | HIGH SILICONE CAST IRON (2684) | 214 | 48" WATER LINE | 2/CP2, 3/CP2, A/CP5, 1/CP6, 2/CP6, 1/CP7, 2/CP7, 3/CP7, 4/CP7 |

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| | | | |

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

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SWB09391

STATE OF TEXAS
CHRISTOPHER L. SHELDON
112184
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JULY 17, 2020

V&A Consulting Engineers, Inc.
Texas Registered Engineering Firm F-9154

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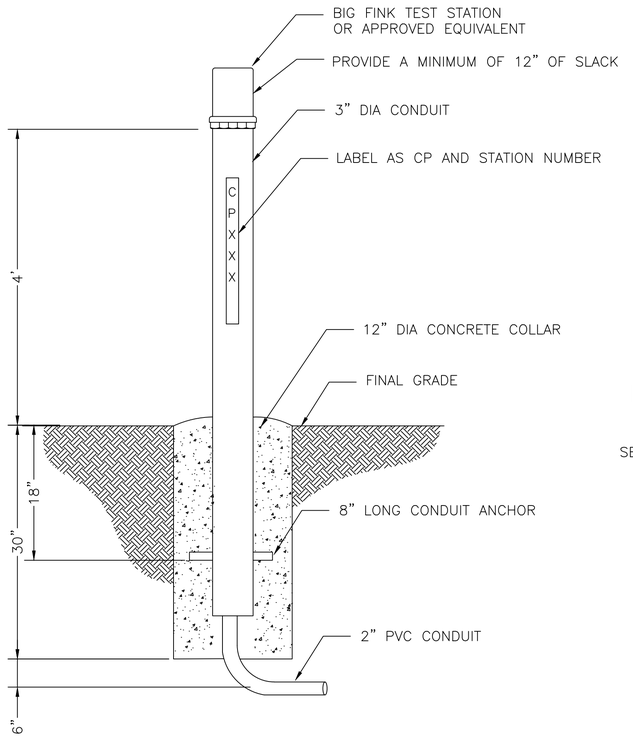
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SAN ANTONIO WATER SYSTEM

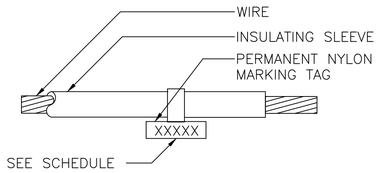
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION
PROJECT (WRIP) – PHASE 2
PIPELINE SEGMENT 2C AND 3

BID DOCUMENTS

Sheet CP-2

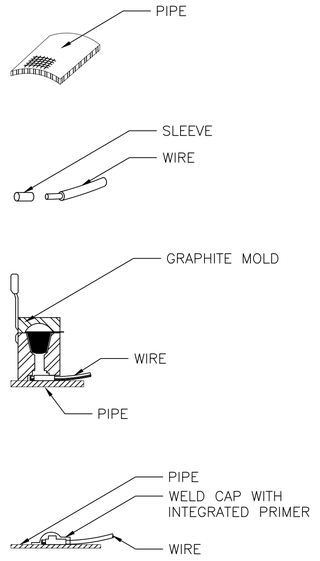



POST-MOUNTED TEST STATION DETAIL
NTS
1



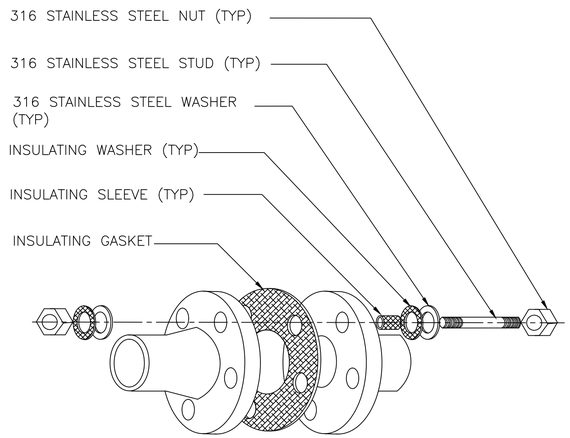

| STRUCTURE | LABEL |
|---|---|
| 48" TRANSMISSION LINE | 48 TL |
| IJ PROTECTED SIDE WATER LINE | XX" PRO IJ WL |
| IJ UNPROTECTED SIDE WATER LINE | XX" UNPRO IJ WL |
| FOREIGN PIPELINE | FPL |
| REFERENCE CELL | REF |
| ANODE | ANODE |
| CASING | CASING |

WIRE IDENTIFIER DETAIL
NTS
2

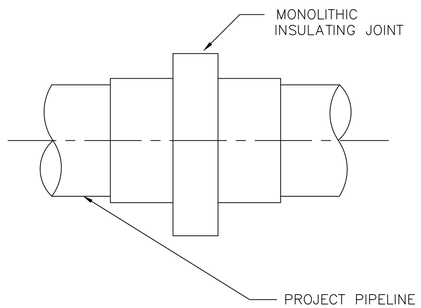



1. ALL WELDS SHALL BE 6" APART AT MINIMUM.
2. GRIND PIPE TO BARE METAL AND CLEAN SURFACE. GROUND AREA SHALL BE LARGE ENOUGH FOR EXOTHERMIC WELD AND SMALL ENOUGH TO BE COMPLETELY COVERED BY WELD CAP.
3. STRIP INSULATION FROM WIRE AND ATTACH SLEEVE.
4. HOLD MOLD FIRMLY WITH OPENING AWAY FROM OPERATOR. IGNITE WITH CONTROL UNIT. REMOVE SLAG FROM CONNECTION WITH CHIPPING HAMMER. TEST WELD WITH 22 OZ HAMMER.
5. COVER CONNECTION WITH WELD CAP WITH INTEGRATED PRIMER. REPAIR ALL DAMAGE TO COATING AND LINING IN ACCORDANCE WITH COATING AND LINING MFG RECOMMENDATIONS.

EXOTHERMIC WELD DETAIL FOR DUCTILE IRON AND STEEL PIPE
NTS
3




DIELECTRIC INSULATING FLANGE KIT DETAIL
NTS
4




MONOLITHIC INSULATING JOINT DETAIL
NTS
5

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Texas Registered Engineering Firm F-2144<br>Freese and Nichols, Inc. | |

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Job No.
SWB09391

STATE OF TEXAS
CHRISTOPHER L. SHELDON
112184
LICENSED
PROFESSIONAL ENGINEER

JULY 17, 2020

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Texas Registered Engineering Firm
F-9154

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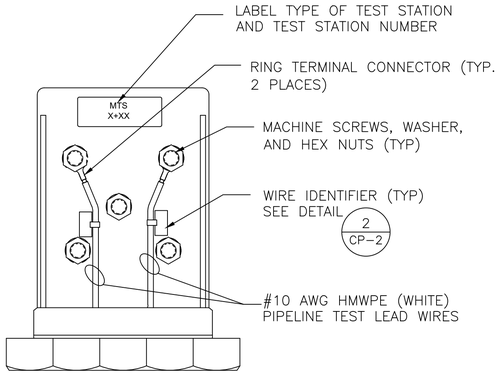
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SAN ANTONIO WATER SYSTEM

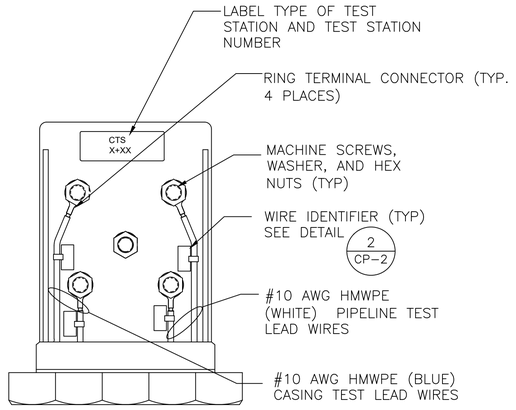
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PROJECT (WRIP) - PHASE 2
PIPELINE SEGMENT 2C AND 3

BID DOCUMENTS

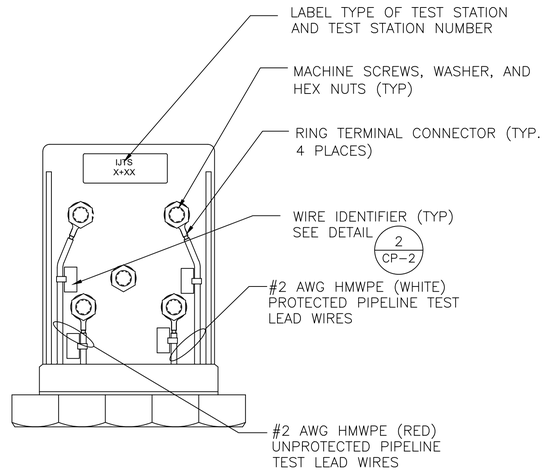
Sheet CP-3



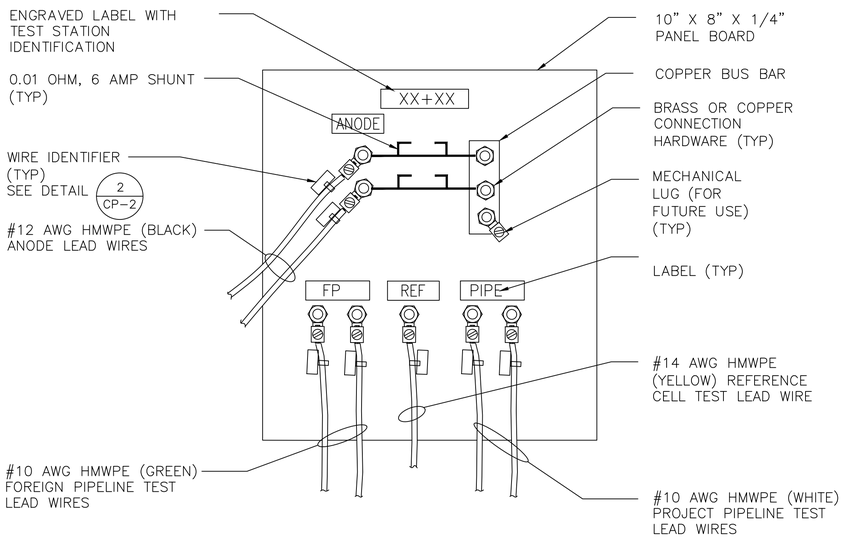

MONITORING TEST BOARD (MTS) DETAIL
NTS
1 –



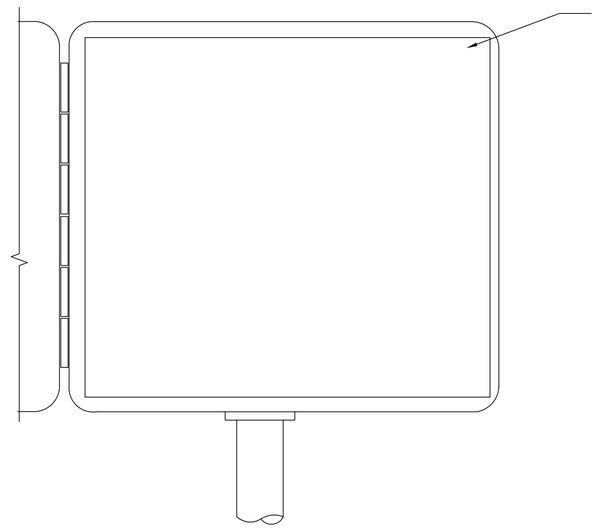

CASING TEST BOARD (CTS) DETAIL
NTS
2 –




INSULATING JOINT TEST BOARD (IJTS) DETAIL
NTS
3 –




FOREIGN PIPELINE TEST BOARD (FPTS) DETAIL
NTS
4 –




FOREIGN PIPELINE POST-MOUNTED TEST BOX DETAIL
NTS
4 –

| No. | Date | Revisions | App. |
|---|---|---|---|
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Freese and Nichols, Inc.
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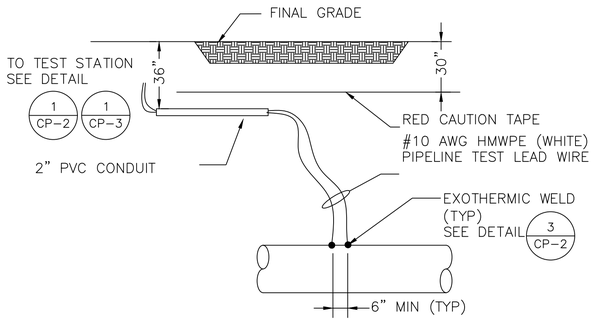
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SAN ANTONIO WATER SYSTEM

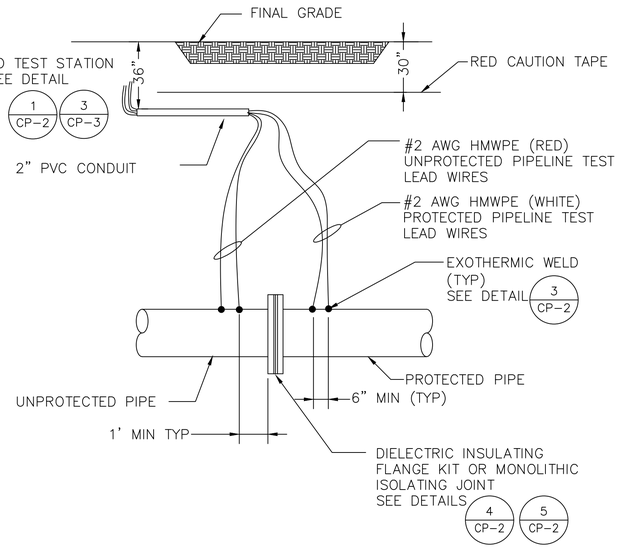
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROJECT (WRIP) - PHASE 2
PIPELINE SEGMENT 2C AND 3

BID DOCUMENTS

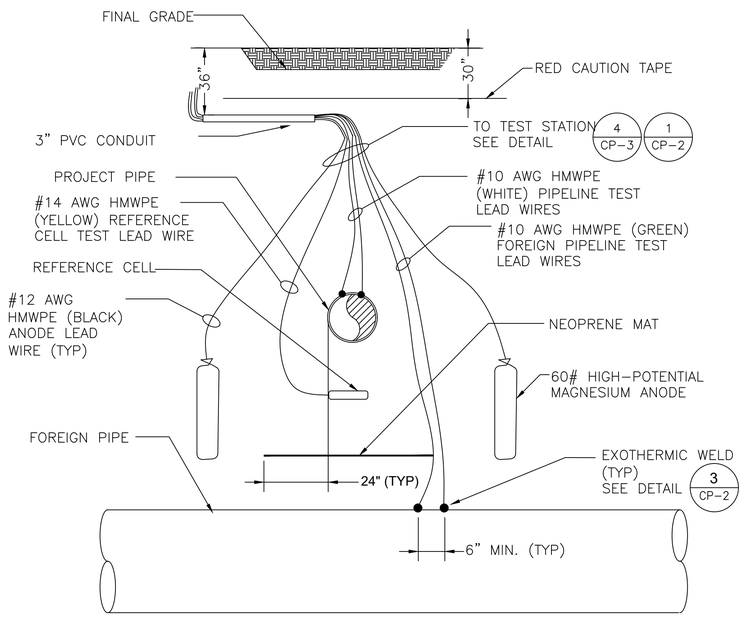
Sheet CP-4



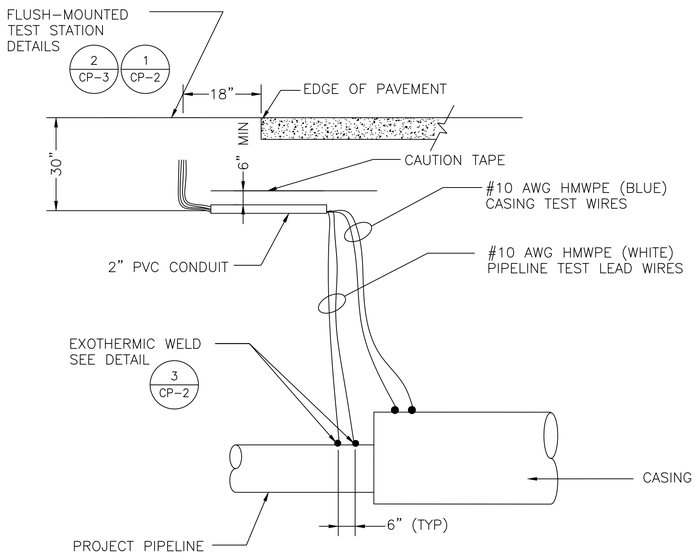

MONITORING TEST STATION (MTS) DETAIL
NTS — 1 / –



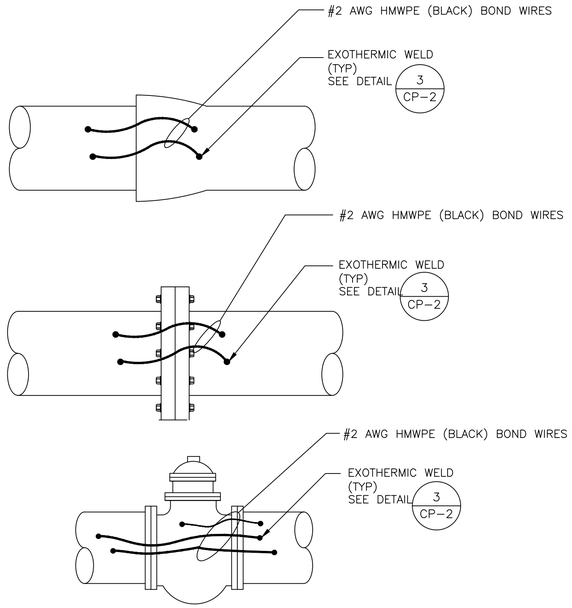

INSULATING JOINT TEST STATION (IJTS) DETAIL
NTS — 2 / –



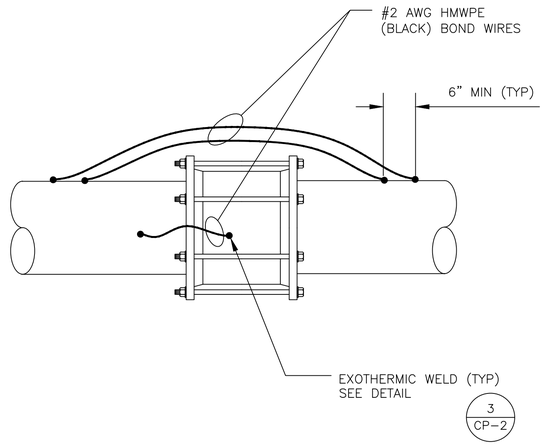

FOREIGN PIPELINE TEST STATION (FPTS) DETAIL
NTS — 3 / –




CASING TEST STATION (CTS) DETAIL
NTS — 4 / –




NON-ISOLATED PIPE JOINT BONDING DETAIL
NTS — 5 / –




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144

Freese And Nichols, Inc. Job No. SWB09391

STATE OF TEXAS — CHRISTOPHER L. SHELDON — 112184 — LICENSED PROFESSIONAL ENGINEER

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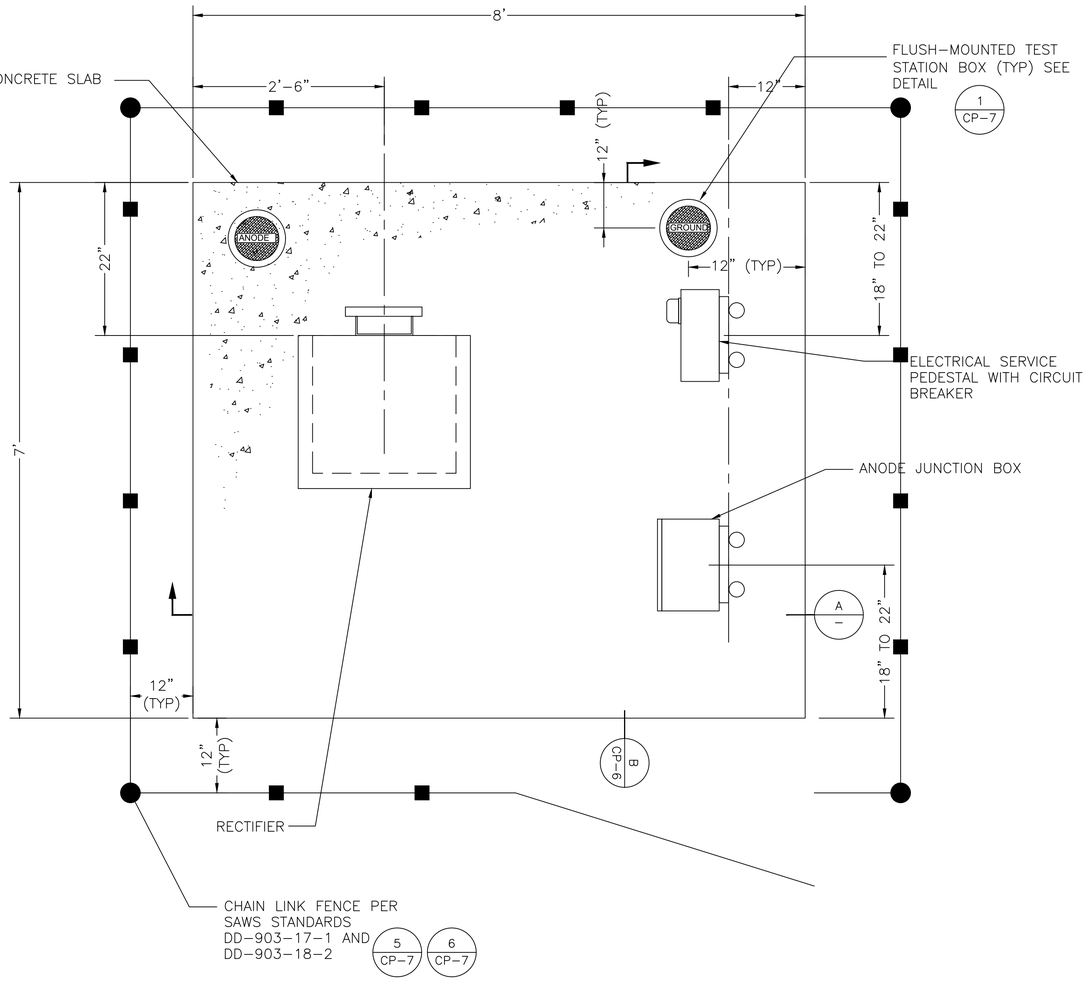
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SAN ANTONIO WATER SYSTEM

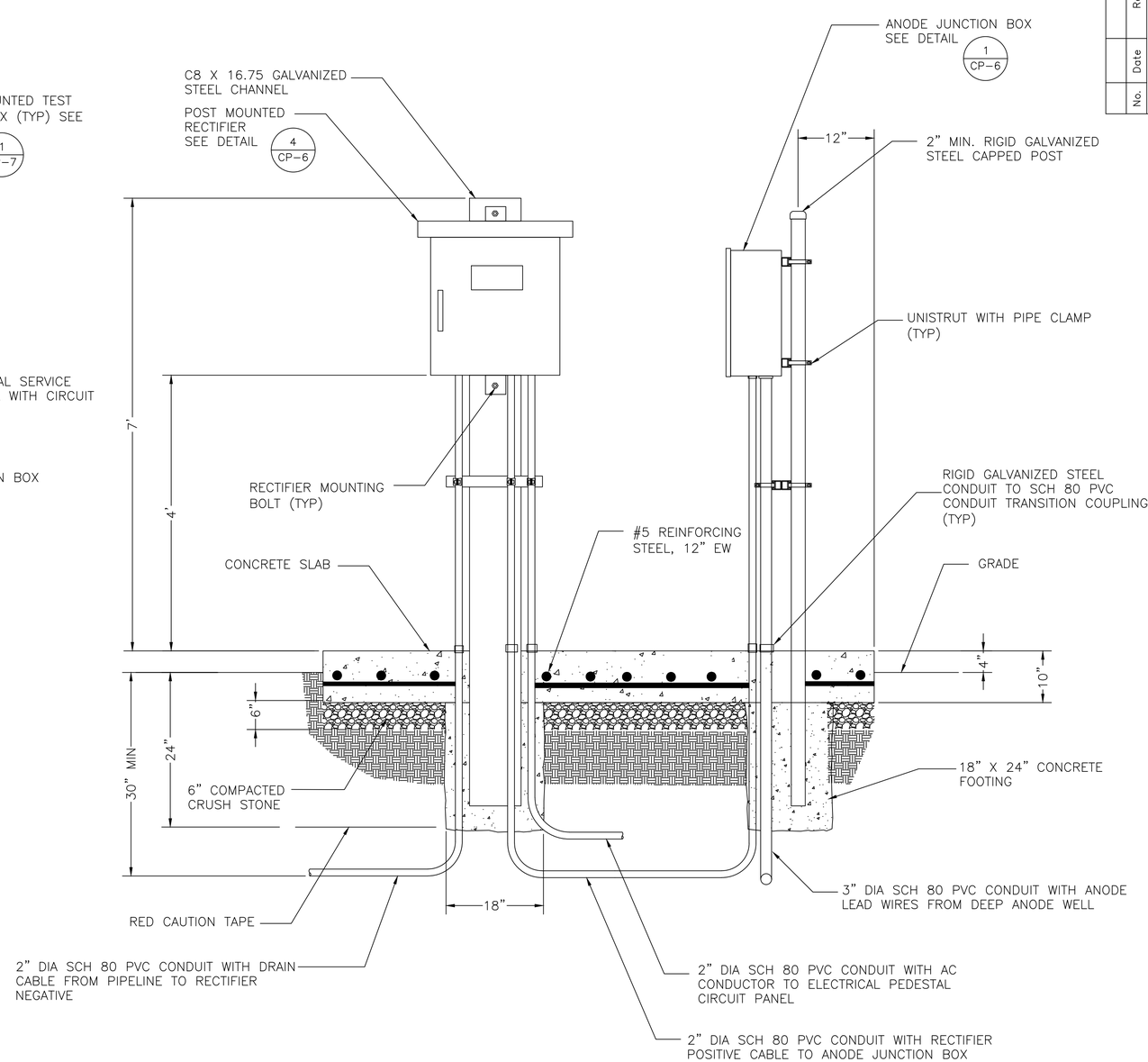
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROJECT (WRIP) - PHASE 2
PIPELINE SEGMENT 2C AND 3

BID DOCUMENTS

Sheet CP-5




POST-MOUNTED RECTIFIER INSTALLATION
PLAN VIEW
NTS




POST-MOUNTED RECTIFIER INSTALLATION
SECTION
NTS
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| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS
CHRISTOPHER L. SHELDON
112184
LICENSED PROFESSIONAL ENGINEER

JULY 17, 2020

V&A Consulting Engineers, Inc.
Texas Registered Engineering Firm F-9154

Date: 7/17/2020
Designed by: CS
Drawn by: ACR
Checked by: CS
Scale: NTS

V&A
15720 Park Row, Suite 500
Houston, TX 77084
Ph: (713) 568-9000 Fax: (713) 568-9008
Firm No. F-9154
Project No. 164148

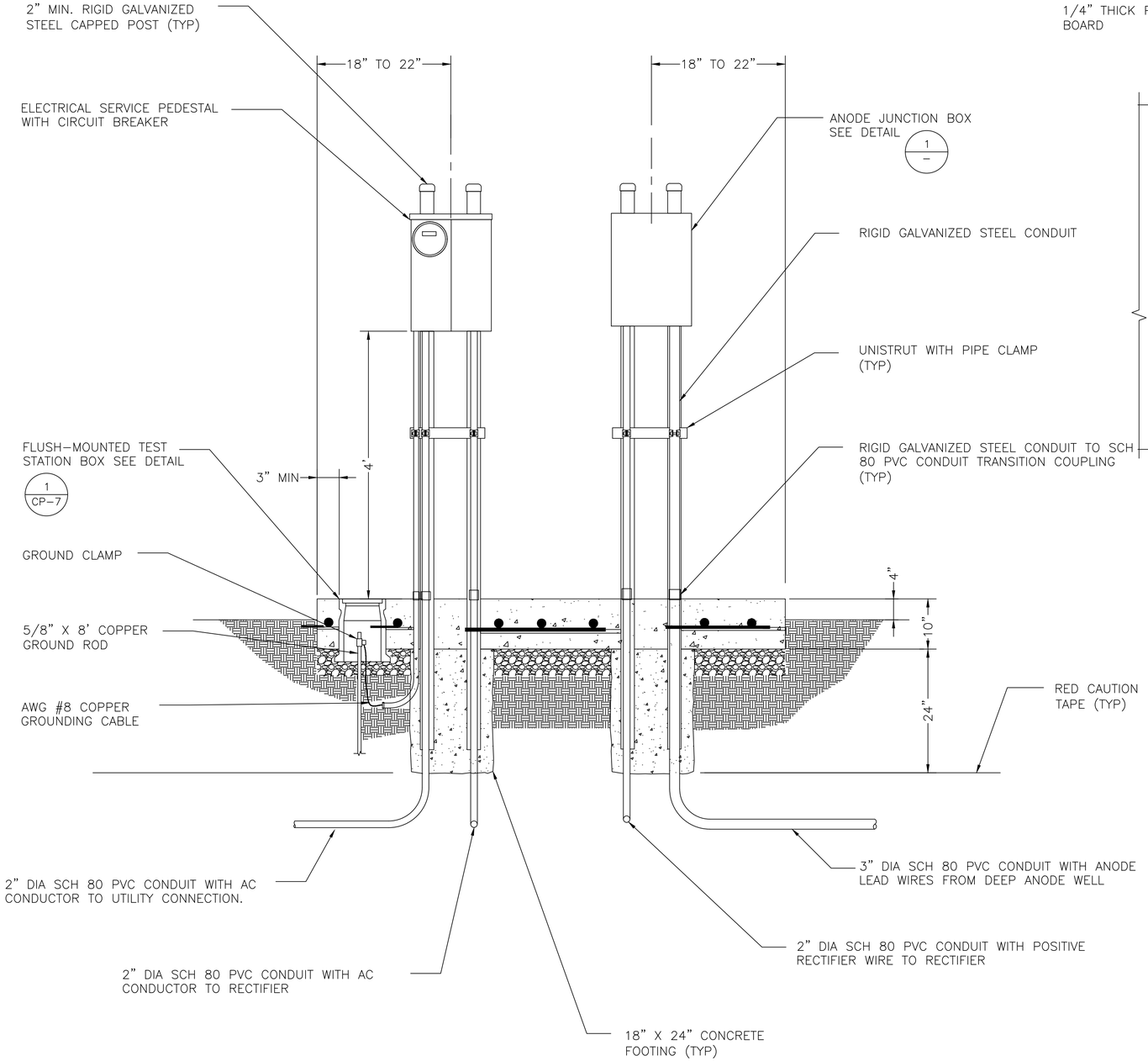
FREESE NICHOLS
4040 Broadway Street, Suite 600
San Antonio, Texas 78209-6350
Phone - (210) 298-3800
Fax - (210) 298-3801

SAN ANTONIO WATER SYSTEM

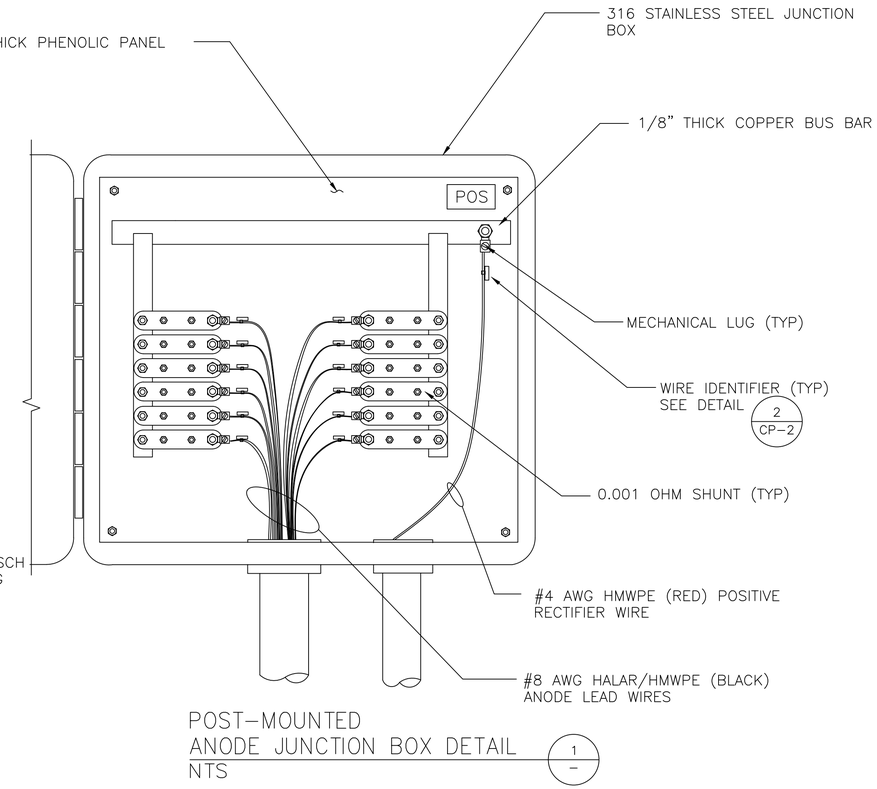
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WATER RESOURCES INTEGRATION PROJECT (WRIP) - PHASE 2
PIPELINE SEGMENT 2C AND 3

BID DOCUMENTS

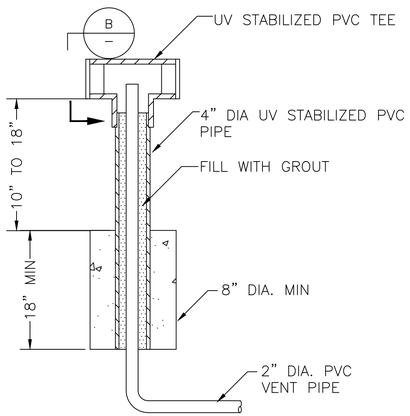
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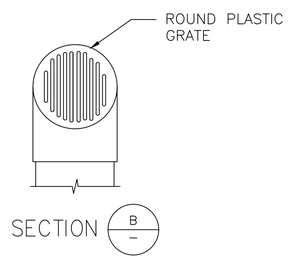

ELECTRICAL SERVICE PEDESTAL AND ANODE JUNCTION BOX INSTALLATION SECTION
NTS B/CP-6




POST-MOUNTED ANODE JUNCTION BOX DETAIL
NTS 1/–




DEEP WELL ANODE VENT PIPE HOUSING DETAIL
NTS 2/–




| No. | Date | Revisions | App. |
|---|---|---|---|
| | | | |

Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144

Freese And Nichols, Inc. Job No. SWB09391

STATE OF TEXAS — CHRISTOPHER L. SHELDON — 112184 — LICENSED PROFESSIONAL ENGINEER

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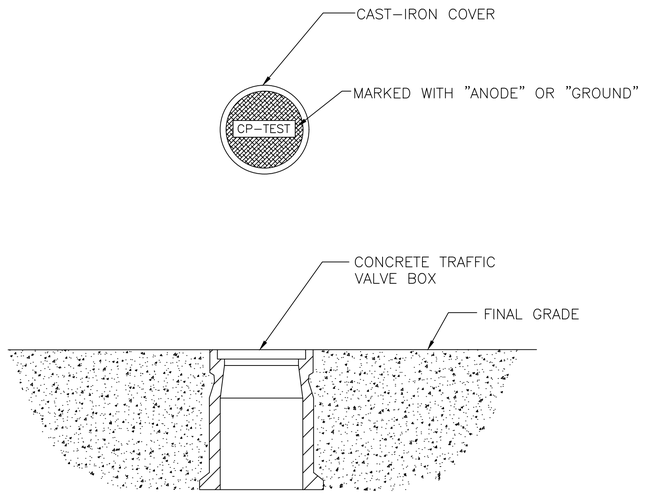
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SAN ANTONIO WATER SYSTEM

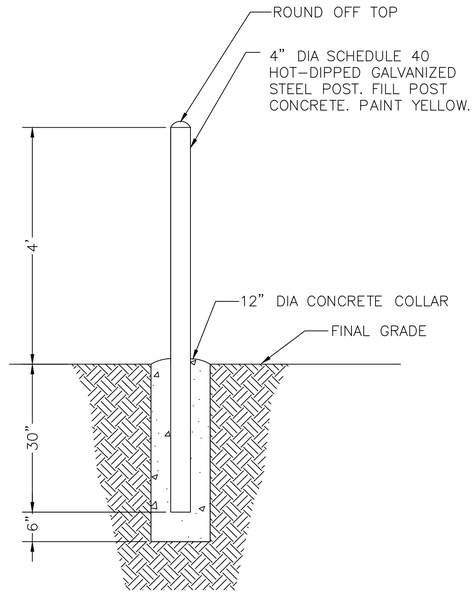
SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROJECT (WRIP) - PHASE 2
PIPELINE SEGMENT 2C AND 3

BID DOCUMENTS

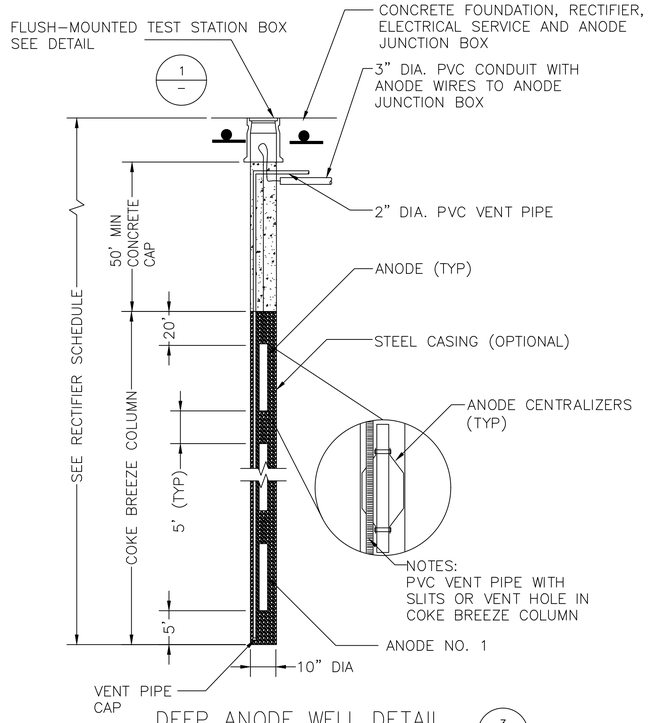
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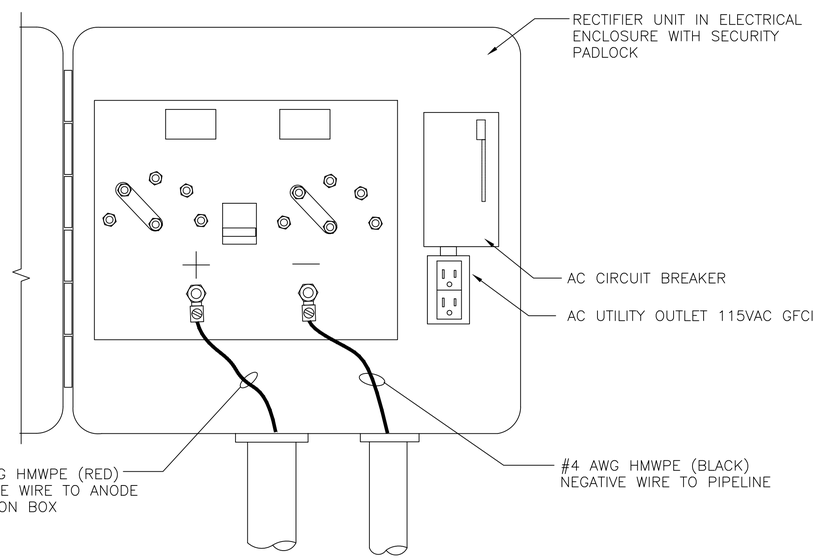

FLUSH-MOUNTED TEST STATION BOX DETAIL
NTS
1 / –



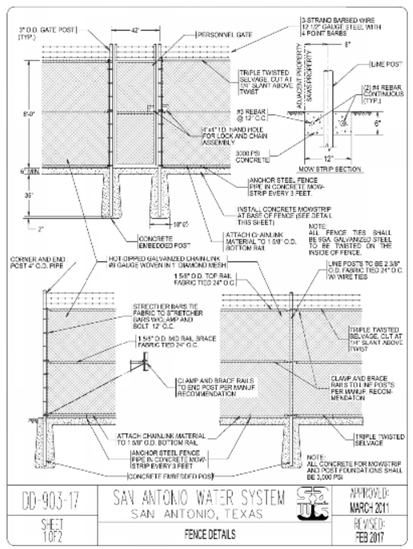

BOLLARD
NTS
2 / –



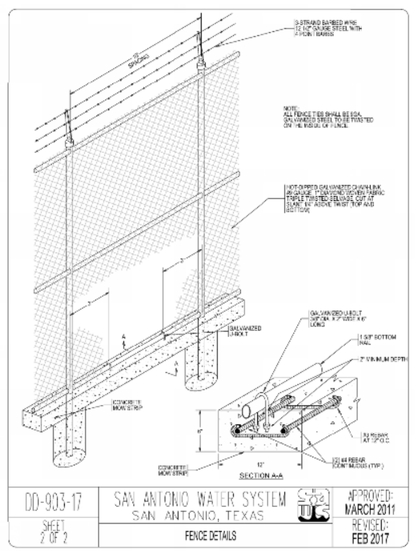

DEEP ANODE WELL DETAIL
NTS
3 / –




POST-MOUNTED RECTIFIER BOX DETAIL
NTS
4 / –




FENCE DETAILS PER SAWS STANDARDS-1
NTS
5 / –




FENCE DETAILS PER SAWS STANDARDS-2
NTS
6 / –

| No. | Date | Revisions | App. |
|---|---|---|---|
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Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144

Freese And Nichols, Inc. Job No. SWB09391

STATE OF TEXAS · CHRISTOPHER L. SHELDON · 112184 · LICENSED PROFESSIONAL ENGINEER

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SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROJECT (WRIP) - PHASE 2
PIPELINE SEGMENT 2C AND 3

BID DOCUMENTS

Sheet CP-8

| Point No. | Station | Northing | Easting | Tree Species | Trunk Dia. (in.) | Canopy Dia. (ft) | Within 100-yr Floodplain | Within 30-ft of 100-yr Floodplain | Within Steep-Sloped Areas | Preserved |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2693+92.55 | 13723267 | 2057834 | OAK | 31 | 55 | | | | |
| 2 | 2683+38.48 | 13722965 | 2056824 | OAK | 30 | 80 | | | | Yes |
| 3 | 2681+04.96 | 13722887 | 2056603 | OAK | 25 | 60 | | | | Yes |
| 4 | 2671+44.79 | 13722611 | 2055725 | OAK | 24 | 60 | | | | |
| 5 | 2659+54.82 | 13721422 | 2055738 | OAK | 34 | 75 | | | | |
| 6 | 2652+15.69 | 13720686 | 2055803 | OAK | 26 | 40 | | | | Yes |
| 7 | 2643 + 54.78 | 13719827 | 2055924 | OAK | 32 | 80 | Yes | | | Yes |
| 8 | 2643 + 35.10 | 13719818 | 2055949 | OAK | 28 | 50 | Yes | | | |
| 9 | 2642 + 13.49 | 13719713 | 2056016 | OAK | 41 | 60 | | | | Yes |
| 10 | 2640 + 64.43 | 13719559 | 2056008 | OAK | 28 | 55 | | | | |
| 11 | 2640 + 20.40 | 13719531 | 2056072 | OAK | 36 | 50 | | | | Yes |
| 12 | 2601 + 96.25 | 13718190 | 2052943 | OAK | 42 | 50 | | | | Yes |
| 13 | 2602 + 66.03 | 13718175 | 2053019 | OAK | 28 | 40 | | | | Yes |
| 14 | 2599 + 66.54 | 13718112 | 2052726 | OAK | 26 | 50 | | | | |
| 15 | 2596 + 51.26 | 13718019 | 2052436 | OAK | 40 | 40 | | | | |
| 16 | 2596 + 50.26 | 13718018 | 2052434 | OAK | 32 | 60 | | | | |
| 17 | 2592 + 87.39 | 13717694 | 2052272 | OAK | 27 | 40 | | | | |
| 18 | 2592 + 38.17 | 13717643 | 2052263 | OAK | 30 | 30 | | | | Yes |
| 19 | 2590 + 41.14 | 13717485 | 2052138 | OAK | 37 | 40 | | | | Yes |
| 20 | 2589 + 72.54 | 13717411 | 2052176 | OAK | 29 | 50 | | | | |
| 21 | 2585 + 76.14 | 13717016 | 2052209 | OAK | 32 | 40 | | | | |
| 22 | 2582 + 26.92 | 13716668 | 2052233 | OAK | 31 | 60 | | | | |
| 23 | 2581 + 51.42 | 13716592 | 2052232 | OAK | 24 | 40 | | | | |
| 24 | 2581 + 50.82 | 13716591 | 2052230 | OAK | 26 | 60 | | | | |
| 25 | 2574 + 15.15 | 13715889 | 2052426 | OAK | 38 | 70 | | | | |
| 26 | 2573 + 35.89 | 13715819 | 2052462 | OAK | 32 | 80 | | | | |
| 27 | 2543 + 46.78 | 13713110 | 2053523 | OAK | 28 | 50 | | | | Yes |
| 28 | 2543 + 46.03 | 13713109 | 2053522 | OAK | 28 | 50 | | | | Yes |
| 29 | 2527 + 80.41 | 13711899 | 2052682 | OAK | 29 | 40 | Yes | | | Yes |
| 30 | 2526 + 18.24 | 13711742 | 2052721 | OAK | 27 | 60 | Yes | | | |
| 31 | 2525 + 60.05 | 13711695 | 2052781 | OAK | 30 | 45 | Yes | | | Yes |
| 32 | 2525 + 10.73 | 13711644 | 2052780 | OAK | 33 | 65 | Yes | | | Yes |
| 33 | 2521 + 29.01 | 13711299 | 2052923 | OAK | 47 | 100 | Yes | | | Yes |
| 34 | 2518 + 70.66 | 13711053 | 2053005 | OAK | 38 | 85 | Yes | | | |
| 35 | 2508 + 00.62 | 13710115 | 2053522 | OAK | 31 | 70 | Yes | | | |
| 36 | 2507 + 37.51 | 13710079 | 2053584 | OAK | 24 | 50 | Yes | | | Yes |
| 37 | 2506 + 74.12 | 13710009 | 2053590 | OAK | 25 | 55 | Yes | | | |
| 38 | 2506 + 50.96 | 13710008 | 2053634 | OAK | 24 | 55 | Yes | | Yes | Yes |
| 39 | 2505 + 93.46 | 13709938 | 2053628 | OAK | 24 | 60 | Yes | | | Yes |
| 40 | 2505 + 77.08 | 13709917 | 2053625 | OAK | 36 | 75 | Yes | | | Yes |
| 41 | 2501 + 43.39 | 13709511 | 2053751 | OAK | 33 | 60 | Yes | | | Yes |
| 42 | 2498 + 18.87 | 13709286 | 2053906 | OAK | 29 | 65 | Yes | | | |
| 43 | 2496 + 75.47 | 13709239 | 2054048 | OAK | 36 | 60 | Yes | | | Yes |
| 44 | 2494 + 05.83 | 13709120 | 2054267 | OAK | 30 | 70 | Yes | | | Yes |
| 45 | 2493 + 69.02 | 13709115 | 2054303 | OAK | 31 | 70 | Yes | | | Yes |
| 46 | 2494 + 46.24 | 13709098 | 2054222 | OAK | 31 | 70 | Yes | | | |
| 47 | 2473 + 53.64 | 13708308 | 2056012 | MES | 28 | 40 | Yes | | | Yes |
| 48 | 2464 + 23.40 | 13707614 | 2056543 | OAK | 30 | 50 | Yes | | | |
| 49 | 2462 + 87.89 | 13707495 | 2056623 | OAK | 39 | 60 | Yes | | | |
| 50 | 2461 + 85.21 | 13707428 | 2056711 | OAK | 26 | 55 | Yes | | | Yes |
| 51 | 2458 + 72.22 | 13707320 | 2056872 | OAK | 48 | 70 | Yes | | Yes | Yes |
| 52 | 2460 + 47.33 | 13707309 | 2056780 | OAK | 29 | 50 | Yes | | | Yes |
| 53 | 2460 + 45.19 | 13707305 | 2056778 | OAK | 34 | 60 | Yes | | | Yes |
| 54 | 2459 + 48.29 | 13707295 | 2056800 | OAK | 25 | 50 | Yes | | | Yes |
| 55 | 2459 + 38.36 | 13707255 | 2056820 | OAK | 36 | 50 | Yes | | | |
| 56 | 2453 + 14.76 | 13706773 | 2057045 | ELM | 39 | 60 | Yes | | | Yes |
| 57 | 2452 + 76.19 | 13706728 | 2056995 | OAK | 24 | 60 | Yes | | | Yes |
| 58 | 2452 + 59.04 | 13706712 | 2057006 | OAK | 35 | 60 | Yes | | | |
| 59 | 2452 + 29.80 | 13706688 | 2057052 | OAK | 44 | 80 | Yes | | | Yes |
| 60 | 2452 + 34.61 | 13706686 | 2056997 | OAK | 28 | 50 | Yes | | | Yes |
| 61 | 2451 + 82.93 | 13706642 | 2057061 | OAK | 24 | 40 | Yes | | | Yes |
| 62 | 2441 + 62.15 | 13705631 | 2057200 | MES | 24 | 40 | | Yes | | Yes |
| 63 | 2432 + 39.71 | 13704778 | 2057458 | MES | 25 | 50 | | | | Yes |
| 64 | 2413 + 45.27 | 13703946 | 2058815 | OAK | 30 | 70 | | | | Yes |
| 65 | 2413 + 45.44 | 13703938 | 2058815 | OAK | 33 | 60 | | | | |
| 66 | 2413 + 63.89 | 13703931 | 2058796 | OAK | 40 | 75 | | | | |
| 67 | 2402 + 10.01 | 13703395 | 2059545 | OAK | 35 | 65 | | | | Yes |
| 68 | 2401 + 36.53 | 13703386 | 2059628 | OAK | 27 | 60 | | | | Yes |
| 69 | 2401 + 09.08 | 13703380 | 2059657 | OAK | 24 | 40 | | | | Yes |
| 70 | 2399 + 99.38 | 13703313 | 2059744 | OAK | 36 | 80 | | | | Yes |
| 71 | 2399 + 55.53 | 13703282 | 2059776 | OAK | 28 | 60 | | | | Yes |
| 72 | 2390 + 09.53 | 13702820 | 2060576 | OAK | 50 | 100 | Yes | | | Yes |
| 73 | 2387 + 77.51 | 13702669 | 2060753 | OAK | 24 | 75 | | Yes | | |
| 74 | 2385 + 95.62 | 13702532 | 2060874 | OAK | 30 | 60 | Yes | | | |
| 75 | 2383 + 27.24 | 13702278 | 2060904 | OAK | 30 | 60 | | | | |
| 76 | 2382 + 96.06 | 13702247 | 2060963 | OAK | 24 | 50 | | | | Yes |
| 77 | 2380 + 05.80 | 13701956 | 2060936 | OAK | 24 | 40 | | | | |
| 78 | 2379 + 38.57 | 13701889 | 2060919 | OAK | 30 | 60 | | | | |
| 79 | 2372 + 91.54 | 13701284 | 2060949 | OAK | 52 | 60 | | | | Yes |
| 80 | 2371 + 55.82 | 13701148 | 2060941 | OAK | 24 | 50 | | | | |
| 81 | 2345 + 69.94 | 13698723 | 2060798 | PER | 10.5 | 20 | | | | Yes |
| 82 | 2345 + 70.05 | 13698721 | 2060762 | PER | 14.3 | 20 | | | | |
| 83 | 2344 + 24.39 | 13698579 | 2060817 | MES | 24 | 50 | | | | Yes |
| 84 | 2342 + 37.27 | 13698391 | 2060812 | PER | 13 | 20 | | | | Yes |
| 85 | 2342 + 06.99 | 13698360 | 2060799 | PER | 16 | 15 | | | | |
| 88 | 2320 + 76.28 | 13696557 | 2061105 | OAK | 25 | 60 | | | | Yes |
| 89 | 2292 + 61.81 | 13693959 | 2061001 | PER | 18.5 | 30 | | | | |
| 90 | 2277 + 31.56 | 13692430 | 2061064 | PER | 16 | 25 | | | | Yes |
| 91 | 2276 + 24.00 | 13692322 | 2061069 | PER | 16 | 50 | | | | Yes |
| 92 | 2268 + 81.64 | 13691714 | 2061041 | PER | 14 | 20 | | | | Yes |
| 107 | 2269 + 13.09 | 13691750 | 2060900 | CON | 12 | 15 | | | Yes | Yes |
| 93 | 2267 + 72.20 | 13691605 | 2060928 | PER | 12 | 15 | | | | Yes |


Freese And Nichols, Inc.
Job No. SWB09391

No. | Date | Revisions | App.

Texas Registered Engineering Firm F-2144
Freese and Nichols, Inc.

STATE OF TEXAS
ROBERT N. JENKINS
103589
LICENSED PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: RNJ
Drawn by: DDH/CJG
Checked by: DTB
Scale: AS SHOWN

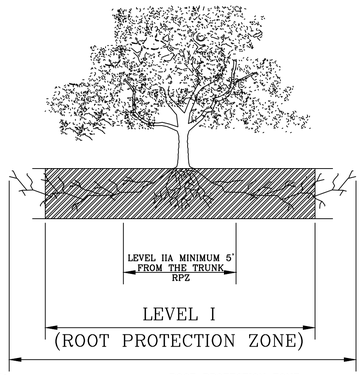
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San Antonio, Texas 78216
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Fax - (210) 298-3801


SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
HERITAGE TREE TABLES AND CALCULATIONS

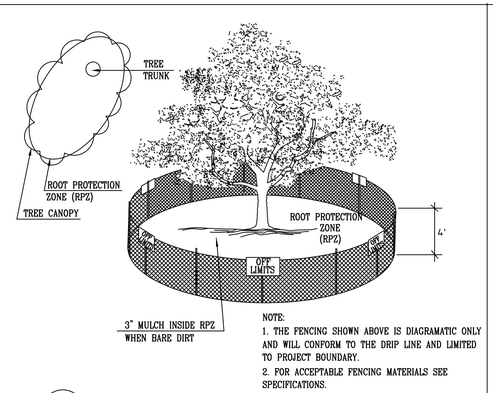
Sheet T1


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Date: Jul 19, 2020 - 11:34pm User: 07155 File: N:\wr\Tree Protection\WR-SAWS-DT-TABLE01.dwg



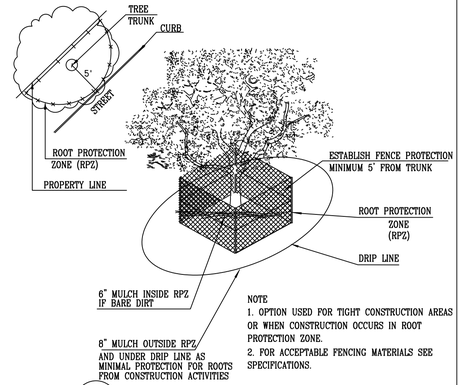

1.1.1 ELEVATION
N. T. S.

ROOT PROTECTION ZONE–THE ROOT PROTECTION ZONE IS A CIRCULAR AREA AROUND A TREE THAT IS BASED ON THE DIAMETER OF THE TREE. EACH 1 INCH DIAMETER OF THE TREE EQUALS 1 FOOT RADIUS FOR ROOT PROTECTION ZONE.




NOTE:
1. THE FENCING SHOWN ABOVE IS DIAGRAMATIC ONLY AND WILL CONFORM TO THE DRIP LINE AND LIMITED TO PROJECT BOUNDARY.
2. FOR ACCEPTABLE FENCING MATERIALS SEE SPECIFICATIONS.

1.1.2 LEVEL I & FENCE PROTECTION
N. T. S.




NOTE
1. OPTION USED FOR TIGHT CONSTRUCTION AREAS OR WHEN CONSTRUCTION OCCURS IN ROOT PROTECTION ZONE.
2. FOR ACCEPTABLE FENCING MATERIALS SEE SPECIFICATIONS.

1.1.3 LEVEL II A FENCE PROTECTION
N. T. S.

GENERAL NOTES

1. ALL THE TREES WITH A DIAMETER GREATER THAN 3 INCHES AFFECTED BY CONSTRUCTION SHALL HAVE THE LIMBS AND ROOTS TRIMMED AND PRUNED ACCORDING TO ITEM No. 802. TREE PRUNING, SOIL AMENDING AND FERTILIZATION, UNLESS SPECIFIED TREES SHALL RECEIVE LEVEL 2 PROTECTION AS PER ITEM No. 802. TREES TO RECEIVE LEVEL 1 PROTECTION AS PER ITEM No. 802 ARE SHOWN ON TREE PROTECTION TABLE ON THIS SHEET.

2. ALL TREES SHALL REMAIN UNLESS NOTED ON THE PLANS.

3. NO SITE PREPARATION WORK SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND TREATMENT MEASURES HAVE NOT BEEN COMPLETED AND APPROVED.

4. TREE PROTECTION FENCING SHALL BE REQUIRED. TREE PROTECTION FENCING SHALL BE INSTALLED, MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING SITE CONSTRUCTION.

5. THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN THREE INCHES IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN THE VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR.

6. THE ROOT PROTECTION ZONE IS THAT AREA SURROUNDING A TREE, AS MEASURED BY A RADIUS FROM THE TREE TRUNK, IN WHICH NO EQUIPMENT, VEHICLES OR MATERIALS MAY OPERATE OR BE STORED. THE REQUIRED RADIUS LENGTH IS 1 FOOT PER DIAMETER INCH OF THE TREE. FOR EXAMPLE, A 10-INCH DIAMETER TREE WOULD HAVE A 5-FOOT RADIUS ROOT PROTECTION ZONE AROUND THE TREE. ROOTS OR BRANCHES THAT ARE IN CONFLICT WITH THE CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. LIVE OAK WOUNDS SHALL BE PAINTED OVER, WITHIN 20 MINUTES TO PREVENT OAK WILT.

7. ACCESS TO FENCED AREAS WILL BE PERMITTED ONLY WITH THE APPROVAL OF THE ENGINEER OR CITY INSPECTOR.

8. GRADING, IF REQUIRED, SHALL BE LIMITED TO A 3 INCH CUT OR FILL WITHIN THE FENCED ROOT ZONE AREAS.

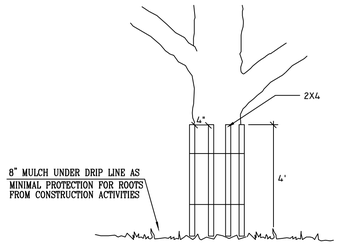
9. TREES, SHRUBS OR BUSHES TO BE CLEARED FROM PROTECTED ROOT ZONE AREAS SHALL BE REMOVED BY HAND AS DIRECTED BY THE PROJECT MANAGER OR CITY INSPECTOR.

10. TREES DAMAGED OR LOST DUE TO CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED TO THE ENGINEER'S SATISFACTION.

11. EXPOSED ROOTS SHALL BE COVERED AT THE END OF EACH DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH OR WET BURLAP.

12. ANY TREE REMOVAL SHALL BE APPROVED BY THE CITY ARBORIST PRIOR TO ITS REMOVAL.

1.3 GENERAL NOTES

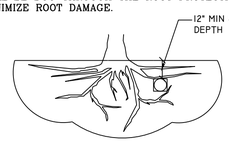



NOTE
WRAP TREE TRUNK WITH 2"X4" STUDS AND ROPE OR BAND IN PLACE AS NEEDED TO PROTECT TREES IN WORK AREAS.

1.1.4 LEVEL II B FENCE PROTECTION
N. T. S.

TREES THAT ARE MARKED TO BE PRESERVED ON A SITE PLAN AND FOR WHICH UTILITIES MUST PASS TROUGH THEIR ROOT PROTECTION ZONES MAY REQUIRE TUNNELING AS OPPOSED TO OPEN TRENCHES. THE DECISION TO TUNNEL WILL BE DETERMINED ON A CASE BY CASE BASIS BY THE ENGINEER.

TUNNELS SHALL BE DUG THROUGH THE ROOT PROTECTION ZONE IN ORDER TO MINIMIZE ROOT DAMAGE.

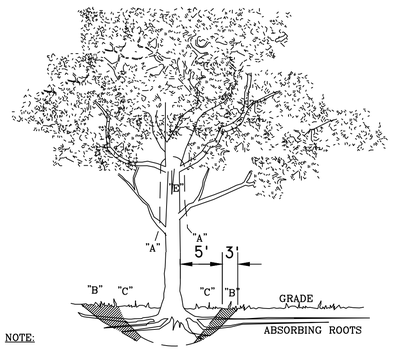



TUNNEL TO MINIMIZE ROOT DAMAGE (TOP) AS OPPOSED TO SURFACE-DUG TRENCHES IN ROOT PROTECTION ZONE WHEN THE 5' MINIMUM DISTANCE FROM TRUNK CAN NOT BE ACHIEVED.



OPEN TRENCHING MAY BE USED IF EXPOSED TREE ROOTS DO NOT EXCEED 3" OR ROOTS CAN BE BENT BACK.

1.2 BORING THRU TREE ROOT ZONE
N. T. S.




NOTE:

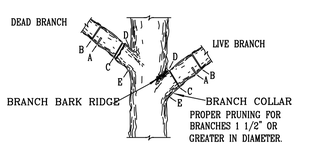
A" REMOVE BULKY TREE PARTS "SHRED" AND/OR HAUL SEPARATELY.

"B" BEGIN EXCAVATION APPROX. 8' FROM THE TRUNK – CUT THRU ANCHOR ROOTS AT AN ANGLE – 3' TO 4' DEEP

"C" USING TREE TRUNK AS A LEVER PUSH AT POINT "E" TO REMOVE TREE BOLE AND LARGE FEEDER ROOTS (4" TO 10" IN DIAM.)

"D" BACKFILL HOLE AND CLEAN UP.

1.3 TREE REMOVAL DIAGRAM
N. T. S.




NOTE: DO NOT CUT FROM D to E.

A. FIRST CUT – TO PREVENT THE BARK FROM BEING PEELED WHEN THE BRANCH FALLS.
B. SECOND CUT – TO REDUCE THE WEIGHT OF BRANCH.
C. FINAL CUT – ALLOW FOR HEALING COLLAR BUT NO STUBS
D. BRANCH RIDGES – INDENT PROPERLY BRANCH RIDGES WHICH ARE SITE FOR DECAY.

FOR OAKS ONLY: PAINT ALL WOUNDS OR CUTS WITH PRUNING PAINT WITHIN 20 MIN TO PREVENT THE SPREAD OF OAK WILT.

1.4 BRANCH PRUNING DETAIL
N. T. S.

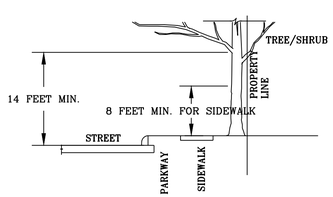
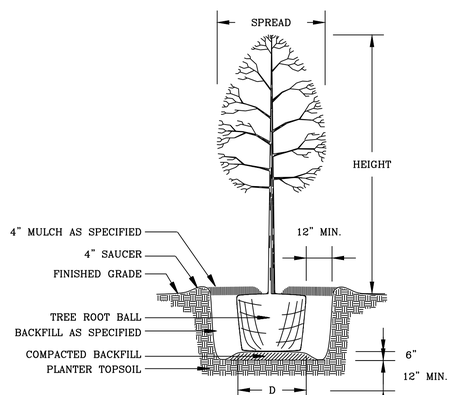



FIGURE No.2:

A MINIMUM BRANCH CLEARANCE OF 14 FEET ABOVE STREET ELEVATION MUST BE MAINTAINED FROM THE PROPERTY LINE TO THE CURB LINE AS PRESCRIBED BY PROJECT MANAGER.

1.5 BRANCH CLEARANCE DETAIL
N. T. S.




1.6 NEW TREE PLANTING DETAIL
N. T. S.

PREPARED BY: FERNANDEZ FRAZER WHITE & ASSOC. INC. & C. F. ZAVALA GROUP

CITY OF SAN ANTONIO

DEPARTMENT OF PUBLIC WORKS

CITY OF SAN ANTONIO
TREE PROTECTION DETAILS

TREE PRESERVATION

| | | | | | | |
|---|---|---|---|---|---|---|
| DESIGNED: | FED. RD. DIV. NO. | STATE | | | | SHT. NO. |
| CHECKED: | | TEXAS | | | | 1 OF 4 |
| DRAWN: | STATE DIST. NO. | COUNTY | CONTROL NO. | SECT. NO. | JOB NO. | HIGHWAY NO. |
| CHECKED: | | BEXAR | | | | |

| No. | Date | Revisions | App. |
|---|---|---|---|
| | | Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 | |

Freese And Nichols, Inc.
Job No.
SWB09391

STATE OF TEXAS ROBERT N. JENKINS 103589 LICENSED PROFESSIONAL ENGINEER
07/20/20

Date: 07/19/2020
Designed by: PNG
Drawn by: DDH
Checked by: PNG
Scale: AS SHOWN

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9601 McAllister Freeway, Suite 1008
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SAN ANTONIO WATER SYSTEM

SAWS JOB NO. 20-8610 (WATER)
WATER RESOURCES INTEGRATION PROGRAM
PHASE 2 - PIPELINE SEGMENT 3
TREE PROTECTION DETAILS I

Sheet T2

ACAD CIVIL 3D 2011 User: DDH [SWB09391T[SASRV2]

Date: Jul 19, 2020 – 11:35pm User: 07155 File: N:\wr\Drawings\WR-SAWS-DT-TREE015.dwg