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CITY OF KYLE

SCHLEMMER AND PORTER STREET WASTEWATER LINE IMPROVEMENT PROJECT PHASE II

PROJECT INFORMATION:

<p>OWNER: LEON BARBA, PE CITY ENGINEER CITY OF KYLE CITY HALL 100 W. CENTER ST KYLE, TX 78640</p>	<p>CONTACT: STUART COWELL, P.E. LJA ENGINEERING, INC 2700 La FRONTERA, SUITE 150 ROUND ROCK, TX 78681</p>
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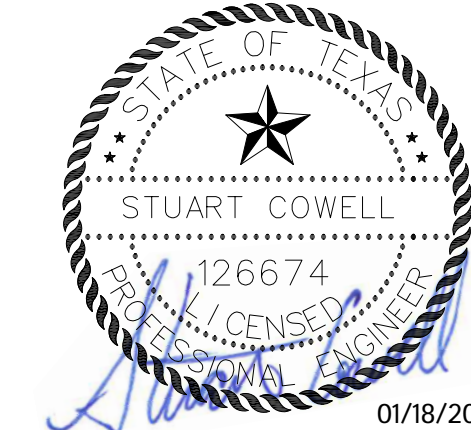
SUBMITTAL PREPARED BY:

LJA Engineering, Inc.
FRN - F-1386

2700 La FRONTERA, STE 150
ROUND ROCK, TEXAS 78681
(512) 439-4700
TBPE FIRM REGISTRATION: F-1386

CONTACT:
STUART COWELL, P.E.
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(512) 439-4700

SUBMITTED FOR APPROVAL BY:



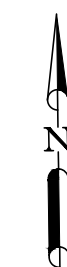
ENGINEER OF RECORD _____ DATE _____

APPROVED FOR CONSTRUCTION BY:

LEON BARBA, PE _____ DATE _____

PROJECT LENGTH

648 LF OF 8" WASTEWATER LINE "A"
854 LF OF 12" WASTEWATER LINE "B"
1,502 LF TOTAL



LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.



Know what's below.
Call before you dig.

CITY OF KYLE GENERAL CONSTRUCTION NOTES:
REVISED FEBRUARY 12, 2019

- ALL CONSTRUCTION IS TO BE IN ACCORDANCE WITH THE FOLLOWING REGULATIONS AND SPECIFICATIONS. THE FIRST LISTED WILL HAVE PRIORITY OVER THOSE LISTED BELOW:
PERMITS ISSUED FOR PROJECT BY ANY REGULATORY AGENCIES.
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY REGULATIONS.
CITY OF KYLE CONSTRUCTION STANDARDS.
PLANS FOR THIS PROJECT.
- PRIOR TO THE BEGINNING OF CONSTRUCTION, THE DEVELOPER SHALL ARRANGE A PRE-CONSTRUCTION CONFERENCE. PRE-CONSTRUCTION SHALL BE SCHEDULED WITH THE PW OFFICE, 512-262-3024 AND HELD AT THE PW FACILITY LOCATED AT 520 E RRR150, KYLE, TEXAS. REPRESENTATIVES FROM THE FOLLOWING ORGANIZATIONS SHALL BE INVITED:
CITY OF KYLE STAFF INCLUDING THE DIRECTOR OF PUBLIC WORKS, CITY ENGINEER AND THE PUBLIC WORKS INSPECTOR.
CONTRACTOR.
DESIGN ENGINEER.
ELECTRIC, GAS, PHONE AND CABLE UTILITY REPRESENTATIVES, IF APPROPRIATE.
- PRIOR TO THE BEGINNING OF CONSTRUCTION, ALL PLAN REVIEW AND CONSTRUCTION INSPECTION FEES SHALL BE PAID TO THE CITY OF KYLE AND THE FOLLOWING PERMITS SHALL BE IN PLACE, IF NECESSARY:
TEXAS DEPARTMENT OF TRANSPORTATION, ENTRY ONTO A HIGHWAY.
U.S. CORPS OF ENGINEERS, SECTION 404, FOR CONSTRUCTION IN FLOOD PLAIN.
COMPLIANCE WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM (TPDES) CONSTRUCTION GENERAL PERMIT (TXR150000).
TEXAS DEPARTMENT OF LICENSING AND REGULATION FOR ACCESSIBILITY.
TCEQ FOR SIGNIFICANT WATER AND WASTEWATER FACILITIES, INCLUDING LIFT STATIONS.
- BENCHMARKS FOR THIS PROJECT ARE DESCRIBED AS FOLLOWS:
- THE STREET PAVEMENT THICKNESS IS BASED ON A REPORT BY _____ DATED _____, 20__ WHICH RECOMMENDS THE FOLLOWING STREET SECTIONS.

STREET CLASSIFICATION	STREET WIDTH	LIME STABILIZATION OF SUBGRADE	BASE THICKNESS	HOT MIX ASPHALT
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

- ANY EXISTING PAVEMENT, CURBS, AND/OR SIDEWALKS DAMAGED OR REMOVED SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE BEFORE ACCEPTANCE OF THE SUBDIVISION.
- THE CONTRACTOR SHALL GIVE THE CITY OF KYLE (PHONE NO. 512-262-3024), 48 HOURS NOTICE PRIOR TO CONNECTING TO ANY EXISTING CITY UTILITY LINE.
- SIDEWALKS FRONTING PUBLIC RIGHT-OF-WAY LAND OR INCLUDING ALL SIDEWALK RAMPS REQUIRED BY CITY ORDINANCE SHOWN ON THESE PLANS SHALL BE CONSTRUCTED WITH THIS PROJECT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR WARNING AND SAFETY SIGNS, BARRICADES AND TRAFFIC CONTROL DURING CONSTRUCTION. ALL ROAD SIGNAGE SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE CITY OF KYLE FOR THE USE OF ALL WATER FOR CONSTRUCTION.
- ALL FILL OR CUT ON LOTS WHICH IS GREATER THAN TWELVE (12) INCHES SHALL BE SHOWN ON THE PLANS AND SHALL CONFORM TO THE FOLLOWING:
FILL MATERIAL SHALL NOT CONTAIN ANY ROCKS HAVING A MAXIMUM DIMENSION GREATER THAN SIX (6) INCHES.
FILL MATERIAL SHALL HAVE AT LEAST FIFTY PERCENT (50%) PASSING THE NO. 4 SIEVE.
FILL MATERIAL SHALL BE REASONABLY FREE OF ROOTS, TRASH, CONCRETE RUBBLE AND OTHER ORGANIC MATERIAL.
COMPACTION SHALL BE TO NINETY-FIVE PERCENT (95%) OF MAXIMUM LABORATORY DENSITY DETERMINED IN ACCORDANCE WITH THE ASTM D 698. THE MATERIAL SHALL BE WITHIN THREE (3) PERCENTAGE POINTS OF OPTIMUM MOISTURE CONTENT DURING COMPACTION.

PLACEMENT SHALL BE IN LIFTS NOT EXCEEDING EIGHT (8) INCHES AFTER COMPACTION. EACH COMPACTED LIFT SHOULD BE INSPECTED AND/OR TESTED FOR DENSITY COMPLIANCE BY A GEOTECHNICAL ENGINEER PRIOR TO PLACING THE NEXT LIFT. THE FILL AREA SHOULD EXTEND AT LEAST 24 INCHES (36 INCHES ON FILLS OVER SIX (6) FEET IN HEIGHT) BEYOND THE BACK OF CURB OR FOUNDATION LINE BEFORE SLOPING DOWNWARD ON NOT MORE THAN THREE (3) TO ONE (1) SLOPE TO NATURAL SOIL. BACKSLOPES SHALL BE WELL COMPACTED. MAXIMUM FILL HEIGHTS SHOULD NOT EXCEED TEN (10) FEET WITHOUT ENGINEERING CONSULTATION.
- CONTRACTOR SHALL GIVE CITY INSPECTOR 36 HOURS NOTICE OF THE NEED FOR MATERIALS TESTING. ALL TESTING WILL BE ARRANGED AND PAID FOR BY THE CONTRACTOR. THE CITY SHALL RECEIVE A COPY OF TEST RESULTS.
- CONTRACTOR OR THE DESIGN ENGINEER SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION STAKING AND CUT SHEETS FOR PIPE LINES LAID ON GRADE AND ROAD CONSTRUCTION. CUT SHEETS SHALL BE DELIVERED TO THE CITY INSPECTOR 36 HOURS PRIOR TO CONSTRUCTION.
- IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, ALL TRENCHES OVER 5 FEET IN DEPTH IN EITHER HARD OR SOFT AND UNSTABLE SOIL SHALL BE SLOPED, SHORED, SHEETED, BRACED OR OTHERWISE SUPPORTED. FURTHERMORE, ALL TRENCHES LESS THAN 5 FEET IN DEPTH SHALL ALSO BE EFFECTIVELY PROTECTED WHEN HAZARDOUS GROUND MOVEMENT MAY BE EXPECTED. TRENCH SAFETY SYSTEMS TO BE UTILIZED FOR THIS PROJECT SHALL BE PROVIDED BY THE CONTRACTOR.

IN ACCORDANCE WITH THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, WHEN EMPLOYEES ARE REQUIRED TO BE IN TRENCHES 4 FEET DEEP OR MORE, ADEQUATE MEANS OF EXIT, SUCH AS A LADDER OR STEPS, MUST BE PROVIDED AND LOCATED SO AS TO REQUIRE NO MORE THAN 25 FEET OF LATERAL TRAVEL.
- NO TREES OVER 6 INCHES IN DIAMETER SHALL BE REMOVED UNLESS DESIGNATED TO BE REMOVED ON THE APPROVED PLANS. ALL TREE LIMBS REMOVED OR TRIMMED SHALL BE VERTICALLY CUT AND DRESSED.
- ALL CONSTRUCTION ACTIVITIES SHALL BE CONFINED TO PROPERTY OWNED BY THE DEVELOPER OR PUBLIC RIGHT-OF-WAY AND EASEMENT UNLESS WRITTEN PERMISSION IS OBTAINED BY THE CONTRACTOR FROM THE PROPERTY OWNER AFFECTED.
- THE CITY OF KYLE DOES NOT ALLOW ANY BLASTING WITHIN THE CITY LIMITS.

TYPICAL SEQUENCE OF CONSTRUCTION

- HOLD PRE-CONSTRUCTION CONFERENCE.
- NO CLEARING OR ROUGH GRADING MAY BE DONE UNTIL THE APPROVED EROSION AND SEDIMENTATION CONTROLS ARE IN PLACE.

- INSTALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS AND STABILIZATION CONSTRUCTION ENTRANCE, IF REQUIRED, IN THE APPROVED PLANS.
- ROUGH GRADE STREETS.
- INSTALL ALL UTILITIES IN RIGHTS-OF-WAY.
- RE-GRADE AND COMPACT SUBGRADE. MEET WITH CITY INSPECTOR AND/DESIGN ENGINEER TO DETERMINE AREAS OF DIFFERING STREET SECTION THICKNESS OR SUBGRADE PREPARATION IF CALLED FOR IN THE GEOTECHNICAL REPORT.
- INSURE ALL UNDERGROUND UTILITY CROSSINGS ARE IN PLACE INCLUDING SLEEVES FOR DRY UTILITIES AND INSTALL FIRST COURSE OF BASE.
- INSTALL CURBS, RIP-RAP AND MISCELLANEOUS CONCRETE.
- INSTALL SECOND COURSE OF BASE.
- LAY ASPHALT.
- FINAL GRADE ANY DITCHES AND PARKWAYS.
- REVEGETATE ALL DISTURBED AREAS. DISPOSE OF SPOIL IN AN APPROVED MANNER.
- SCHEDULE A FINAL INSPECTION WITH CITY.
- AFTER ACCEPTANCE OF CONSTRUCTION, TEMPORARY EROSION CONTROLS MAY BE REMOVED.

MINIMUM CRITERIA FOR ACCEPTANCE

- ALL CONSTRUCTION IS COMPLETE INCLUDING DRY UTILITIES AND RESTORATION TO THE CRITERIA.
- ALL CITY OF KYLE FEES PAID AND MAINTENANCE BOND POSTED.
- ALL RECORDS OF CONSTRUCTION TESTING AND RECORD DRAWINGS SHOWING ANY CHANGES DURING CONSTRUCTION PROVIDED TO THE CITY OF KYLE.
- ALL STREET LIGHTING, SIGNS AND PAVEMENT MARKINGS SHALL BE IN PLACE.

WATER AND WASTEWATER NOTES

- PIPE MATERIAL FOR WATER MAINS SHALL BE PVC (AWWA C-900, DR-14) OR DUCTILE IRON (AWWA C-151, CLASS 350).
- PIPE MATERIAL FOR GRAVITY SEWER SHALL BE SDR-26 PVC IF LOCATED GREATER THAN 9 FEET FROM A WATERLINE, OTHERWISE SHALL BE PRESSURE RATED PIPE.
- BEDDING FOR FLEXIBLE GRAVITY PIPE (I.E. SDR-26 PVC) SHALL CONFORM TO ASTM 2321 CLASS 1 MATERIAL, I.E., 3/4" - 1" CLEAN ANGULAR CRUSHED ROCK.
- CITY INSPECTOR SHALL OBSERVE ALL TAPS TO CITY UTILITY LINES AND PRIOR TO ANY UTILITY RELOCATION.
- CONTRACTOR SHALL DISINFECT AND PRESSURE TEST ALL WATER LINES AND PERFORM LEAK AND DEFLECTION TESTS ON GRAVITY WASTEWATER LINES AT HIS EXPENSE.
- THE CITY INSPECTOR SHALL BE NOTIFIED 36 HOURS PRIOR TO ALL UTILITY LINE TESTING. CONTRACTOR, WITH CITY STAFF PRESENT, IS RESPONSIBLE FOR SAMPLING. CITY STAFF WILL TRANSPORT BACTERIOLOGICAL TEST SAMPLES TO THE STATE DEPARTMENT OF HEALTH. ALL TEST RESULTS, WHETHER PASSING OR FAILING, SHALL BE PROVIDED TO THE CONTRACTOR. MANDREL DEFLECTION TESTING SHALL NOT BE CONDUCTED UNTIL THE PIPES HAVE BEEN BACKFILLED FOR 30 DAYS.
- FIRE HYDRANTS SHALL BE MUELLER SUPER CENTURION OR APPROVED EQUAL.
- THE CONTRACTOR SHALL SUBMIT TO THE DESIGN ENGINEER, DESCRIPTIVE INFORMATION FOR MATERIALS TO BE USED ON THE PROJECT FOR REVIEW. A COPY OF THE ACCEPTED MATERIAL SHALL ALSO BE PROVIDED TO THE CITY OF KYLE TEN DAYS PRIOR TO THE INSTALLATION OF UTILITIES.
- PRESSURE TAPS SHALL BE IN ACCORDANCE WITH THE CITY OF KYLE. THE CONTRACTOR SHALL DO ALL EXCAVATION ETC., AND SHALL FURNISH, INSTALL AND AIR TEST THE SLEEVE AND VALVE. A CITY OF KYLE INSPECTOR MUST BE PRESENT WHEN TAP IS MADE. "SIZE ON SIZE" TAPS WILL NOT BE PERMITTED WITHOUT PRIOR APPROVAL OF THE DIRECTOR OF PUBLIC WORKS. CONCRETE BLOCKING SHALL BE PLACED BEHIND AND UNDER ALL TAP SLEEVES TWENTY-FOUR (24) HOURS PRIOR TO MAKING THE WET TAP.
- ONE CALL NOTE - CONTRACTOR MUST CALL CITY OF KYLE (512-262-3024) FOR LOCATION OF CITY UTILITIES.
- 200 PSI, BLACK, POLYETHYLENE TUBING SHALL BE USED ON WATER SERVICES.
- ALL MANHOLES SHALL BE INTERNALLY COATED TO CITY OF AUSTIN SPECIFICATIONS, INCLUDING THE TIE-IN MANHOLE, UNLESS WAIVED BY THE DIRECTOR OF PUBLIC WORKS.
- ALL PUBLIC MANHOLE COVERS WITHIN THE CITY LIMITS OF KYLE SHALL HAVE THE CITY OF KYLE LOGO.

FIRE PREVENTION NOTES

- THE CONTRACTOR SHALL PROVIDE COMPACTED FLEXIBLE BASE PAVEMENT PRIOR TO CONSTRUCTION OF COMBUSTIBLE MATERIALS AS AN "ALL WEATHER DRIVING SURFACE."
- HYDRANTS MUST BE INSTALLED WITH THE CENTER OF THE 4 1/2 INCH OPENING AT LEAST EIGHTEEN (18) INCHES ABOVE FINISHED GRADE. THE 4 1/2 INCH OPENING MUST FACE THE DRIVEWAY OR STREET WITH 3' - 6" SETBACK FROM CURBLINE(S). NO OBSERVATION IS ALLOWED WITHIN THREE (3) FEET OF ANY HYDRANT AND THE 4 1/2 INCH OPENING MUST BE TOTALLY UNOBSTRUCTED FROM THE STREET (USE NST THREADS).
- DESIGNATE NO PARKING - FIRE LANE WITH CURB PAINTED RED AND WHITE STENCIL IN "FIRE ZONE / TOW AWAY ZONE" IN LETTERING 3 INCHES IN HEIGHT IN PROXIMITY TO COMMERCIAL, INDUSTRIAL AND PUBLIC STRUCTURES.

EROSION AND SEDIMENTATION CONTROL

- AFTER THE PRECONSTRUCTION MEETING IS HELD, THE CONTRACTOR SHALL INSTALL EROSION/SEDIMENTATION CONTROLS AND FENCING FOR AREAS OUTSIDE OF THE CONSTRUCTION AREA PRIOR TO ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR EXCAVATION).
- THE CONTRACTOR IS REQUIRED TO INSPECT THE CONTROLS AND FENCES AT WEEKLY INTERVALS, AND AFTER SIGNIFICANT RAINFALL EVENTS TO ENSURE THAT THEY ARE FUNCTIONING PROPERLY. THE PERSON(S) RESPONSIBLE FOR MAINTENANCE OF CONTROLS AND FENCES SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES SIX (6) INCHES.
- PRIOR TO FINAL ACCEPTANCE BY THE CITY, HAUL ROADS AND WATERWAY CROSSINGS CONSTRUCTED FOR TEMPORARY CONTRACTOR ACCESS MUST BE REMOVED, ACCUMULATED SEDIMENT REMOVED FROM THE WATERWAY AND THE AREA RESTORED TO THE ORIGINAL GRADE AND REVEGETATED. ALL LAND CLEARING DEBRIS SHALL BE DISPOSED OF IN APPROVED SPOIL DISPOSAL SITES.
- FIELD REVISIONS TO THE EROSION AND SEDIMENTATION CONTROL PLAN MAY BE REQUIRED BY THE CITY INSPECTOR DURING THE COURSE OF CONSTRUCTION TO CORRECT CONTROL INADEQUACIES.
- PERMANENT EROSION CONTROL: ALL DISTURBED AREAS SHALL BE RESTORED AS NOTED BELOW:
A. A MINIMUM OF FOUR (4) INCHES OF TOPSOIL SHALL BE PLACED IN ALL DRAINAGE CHANNELS (EXCEPT ROCK), AND BETWEEN THE CURB AND RIGHT-OF-WAY.

- TRASH, WOOD, BRUSH, STUMPS, ROCKS OVER 1 1/2 INCHES IN SIZE AND OTHER OBJECTIONABLE MATERIAL ENCOUNTERED SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER OR INSPECTOR PRIOR TO BEGINNING OF WORK REQUIRED BY THIS ITEM. GRASS AND OTHER HERBACEOUS PLANT MATERIALS MAY REMAIN. LARGE CLUMPS SHALL BE BROKEN UP.
- THE SEEDING FOR PERMANENT EROSION CONTROL SHALL BE APPLIED OVER AREAS DISTURBED BY CONSTRUCTION AS FOLLOWS:

BROADCAST SEEDING:

- FROM OCTOBER TO FEBRUARY, SEEDING SHALL BE WITH ONE (1) POUND PER 1,000 SQUARE FEET OF UNHULLED BERMUDA OR THREE (3) POUNDS PER 1,000 SQUARE FEET OF WINTER RYE.
- FROM MARCH TO SEPTEMBER, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF ONE (1) POUND PER 1,000 SQUARE FEET.

FERTILIZER, IF USED, SHALL BE SLOW RELEASE GRANULAR OR PALETTE TYPE, AND SHALL HAVE AN ANALYSIS OF 15-15-15, AND SHALL BE APPLIED AT THE RATE OF ONE (1) POUND PER 1,000 SQUARE FEET, ONCE AT THE TIME OF PLANTING, AND AGAIN ONCE DURING THE TIME OF ESTABLISHMENT.

MULCH TYPE USED SHALL BE STRAW OR HAY APPLIED AT A RATE OF 45 POUNDS PER 1,000 SQUARE FEET.

HYDRAULIC SEEDING:

- FROM OCTOBER TO FEBRUARY, SEEDING SHALL BE WITH ONE (1) POUND PER 1,000 SQUARE FEET OF UNHULLED BERMUDA, OR THREE (3) POUNDS PER 1,000 SQUARE FEET OF WINTER RYE.
- FROM MARCH TO SEPTEMBER, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF ONE (1) POUND PER 1,000 SQUARE FEET.

FERTILIZER, IF USED, SHALL BE A WATER SOLUBLE FERTILIZER WITH AN ANALYSIS OF 15-15-15 AT A RATE OF 1.5 POUNDS PER 1,000 SQUARE FEET.

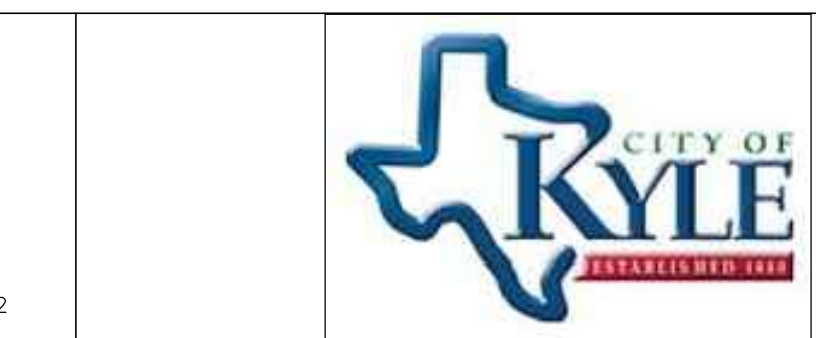
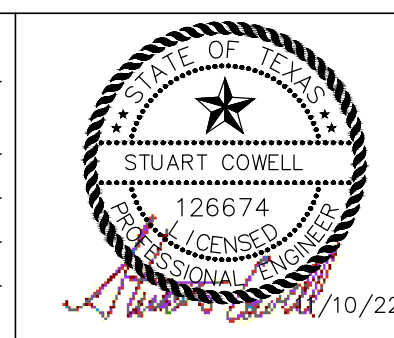
MULCH TYPE SHALL BE HAY, STRAW OR MULCH APPLIED AT A RATE OF 45 POUNDS PER 1,000 SQUARE FEET, WITH A SOIL TACKIFIER AT A RATE OF 1.4 POUNDS PER 1,000 SQUARE FEET.

- THE PLANTED AREA SHALL BE IRRIGATED OR SPRINKLED IN A MANNER THAT WILL NOT ERODE THE TOPSOIL, BUT WILL SUFFICIENTLY SOAK TO A DEPTH OF SIX (6) INCHES. THE IRRIGATION SHALL OCCUR AT 10-DAY INTERVALS DURING THE FIRST TWO (2) MONTHS. RAINFALL OCCURRENCES OF 1/2 INCH OR MORE SHALL POSTPONE THE WATERING SCHEDULE FOR TEN (10) DAYS.
- RESTORATION SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1 INCH HIGH WITH 85% COVERAGE, PROVIDED NO BARE SPOTS LARGER THAN 20 SQUARE FEET EXIST.
- A SOIL RETENTION BLANKET SHALL BE PLACED ON ALL SLOPES EQUAL TO OR GREATER THAN 3:1. ALL SOIL RETENTION BLANKETS MUST BE LISTED ON THE TXDOT APPROVED PRODUCTS LIST OR APPROVED BY THE CITY.

CITY OF KYLE:
DIRECTOR OF PUBLIC WORKS: HARPER WILDER (512) 262-3024 EXT. 4002
CITY ENGINEER: LEON BARBA, P.E. (512) 262-3958

ABBREVIATIONS				
@	AT	I.D.	INSIDE DIAMETER	RCP
APPROX.	APPROXIMATE	INST.	INSTALL	REINFORCED CONCRETE PIPE
BLDG.	BUILDING	JT.	JOINT	RD.
BL	BUILDING LINE	L.F.	LINEAR FEET	REIN.
BM	BENCH MARK	LT.	LEFT	REINFORCEMENT
CF	CUBIC FEET	LEN.	LENGTH	S
CI	CAST IRON	M.H.	MANHOLE	S.S.
C.I.P.	CAST IN PLACE	M.J.	MECHANICAL JOINT	STAINLESS STEEL
CMP	CORRUGATED METAL PIPE	MIN.	MINIMUM	WW
CONC	CONCRETE	MISC.	MISCELLANEOUS	WASTEWATER
CONST	CONSTRUCT	N	NORTH	SCH.
CONT	CONTINUOUS	N.T.S.	NOT TO SCALE	SCHEDULE
CU	CUBIC	N/A	NOT APPLICABLE	SPEC'S
CULV.	CULVERT	NO.	NUMBER	SPECIFICATIONS
Δ	DEFLECTION ANGLE	O.C.E.W.	OFF CENTER EACH WAY	SQ.
DI	DUCTILE IRON	O.D.	OUTSIDE DIAMETER	ST.
DIA	DIAMETER	P.C.	POINT OF CURVATURE	STREET
DTB	DITCH BOTTOM	P.R.	PRESSURE RATED	STA.
DTT	DITCH TOP	P.T.	POINT OF TANGENCY	STANDARD
DG	DOWN GUY	PL	PIPELINE	STD.
EA	EACH	P/L	PROPERTY LINE	STL.
ELEC.	ELECTRIC	PP	UTILITY POLE	STEEL
ELEV.	ELEVATION	PROP.	PROPOSED	T.O.B.
ENC.	ENCASEMENT	PSI	POUNDS PER SQUARE INCH	T.O.P.
EXIST.	EXISTING	PVC	POLYVINYL CHLORIDE	TEL.
EXP.	EXPOSED	PVMT.	PAVEMENT	TELEPHONE
FEN.	FENCE	RJ	RESTRAINED JOINT	TELECOMMUNICATION
FH	FIRE HYDRANT	R.O.W.	RIGHT OF WAY	VERT.
FL	FLOWLINE			VERTICAL
FT.	FEET (FOOT)			W
GAL.	GALLON			WEST
GALV.	GALVANIZED			W/
HMAC	HOT MIX ASPHALTIC CONCRETE			WITHOUT
				W/O
				W.L.
				WATERLINE
				WM
				WATER METER
				WT.
				WATERTIGHT
				WV
				WATER VALVE
HORZ.	HORIZONTAL			

REVISIONS			
NO.	DESCRIPTION	BY	DATE



SCHLEMMER & PORTER ST
WASTEWATER IMPROVEMENTS

LJA Engineering, Inc.
2700 LA FRONTERA BLVD. Phone 512.767.7300
SUITE 150 Fax 512.439.4716
ROUND ROCK, TEXAS 78735 FRN-F-1386

GENERAL NOTES
&
ABBREVIATIONS

JOB NUMBER: 2173-2201
SCALE:
HORIZONTAL: N/A
VERTICAL: N/A
SHEET NO. 2
OF 21 SHEETS

11/10/2022 11:10/2022 I:\2173\2201 Schlemmer_Ph2\CADD\SHEETS\S&P_Ph2_GENERAL_NOTES.dwg kroese

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY ORGANIZED SEWAGE COLLECTION SYSTEM GENERAL CONSTRUCTION NOTES:

1. THIS ORGANIZED SEWAGE COLLECTION SYSTEM (SCS) MUST BE CONSTRUCTED IN ACCORDANCE WITH 30 TEXAS ADMINISTRATIVE CODE (TAC) §213.5(C), THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S (TCEQ) EDWARDS AQUIFER RULES AND ANY LOCAL GOVERNMENT STANDARD SPECIFICATIONS.
2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROPOSED REGULATED PROJECT MUST BE PROVIDED WITH COPIES OF THE SCS PLAN AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS MUST BE REQUIRED TO KEEP ON-SITE COPIES OF THE PLAN AND THE APPROVAL LETTER.
3. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE PRESIDING TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY REGULATED ACTIVITIES. THIS NOTICE MUST INCLUDE:
 - THE NAME OF THE APPROVED PROJECT;
 - THE ACTIVITY START DATE; AND
 - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
4. ANY MODIFICATION TO THE ACTIVITIES DESCRIBED IN THE REFERENCED SCS APPLICATION FOLLOWING THE DATE OF APPROVAL MAY REQUIRE THE SUBMITTAL OF AN SCS APPLICATION TO MODIFY THIS APPROVAL, INCLUDING THE PAYMENT OF APPROPRIATE FEES AND ALL INFORMATION NECESSARY FOR ITS REVIEW AND APPROVAL.
5. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
6. IF ANY SENSITIVE FEATURES ARE DISCOVERED DURING THE WASTEWATER LINE TRENCHING ACTIVITIES, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPLICANT MUST IMMEDIATELY NOTIFY THE APPROPRIATE REGIONAL OFFICE OF THE TCEQ OF THE FEATURE DISCOVERED. A GEOLOGIST'S ASSESSMENT OF THE LOCATION AND EXTENT OF THE FEATURE DISCOVERED MUST BE REPORTED TO THAT REGIONAL OFFICE IN WRITING AND THE APPLICANT MUST SUBMIT A PLAN FOR ENSURING THE STRUCTURAL INTEGRITY OF THE SEWER LINE OR FOR MODIFYING THE PROPOSED COLLECTION SYSTEM ALIGNMENT AROUND THE FEATURE. THE REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MAY NOT PROCEED UNTIL THE EXECUTIVE DIRECTOR HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT THE SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM ANY POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY WHILE MAINTAINING THE STRUCTURAL INTEGRITY OF THE LINE.
7. SEWER LINES LOCATED WITHIN OR CROSSING THE 5-YEAR FLOODPLAIN OF A DRAINAGE WAY WILL BE PROTECTED FROM INUNDATION AND STREAM VELOCITIES WHICH COULD CAUSE EROSION AND SCOURING OF BACKFILL. THE TRENCH MUST BE CAPPED WITH CONCRETE TO PREVENT SCOURING OF BACKFILL, OR THE SEWER LINES MUST BE ENCASED IN CONCRETE. ALL CONCRETE SHALL HAVE A MINIMUM THICKNESS OF 6 INCHES.
8. BLASTING PROCEDURES FOR PROTECTION OF EXISTING SEWER LINES AND OTHER UTILITIES WILL BE IN ACCORDANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION CRITERIA. SAND IS NOT ALLOWED AS BEDDING OR BACKFILL IN TRENCHES THAT HAVE BEEN BLASTED. IF ANY EXISTING SEWER LINES ARE DAMAGED, THE LINES MUST BE REPAIRED AND RETESTED.
9. ALL MANHOLES CONSTRUCTED OR REHABILITATED ON THIS PROJECT MUST HAVE WATERTIGHT SIZE ON SIZE RESILIENT CONNECTORS ALLOWING FOR DIFFERENTIAL SETTLEMENT. IF MANHOLES ARE CONSTRUCTED WITHIN THE 100-YEAR FLOODPLAIN, THE COVER MUST HAVE A GASKET AND BE BOLTED TO THE RING. WHERE GASKETED MANHOLE COVERS ARE REQUIRED FOR MORE THAN THREE MANHOLES IN SEQUENCE OR FOR MORE THAN 1500 FEET, ALTERNATE MEANS OF VENTING WILL BE PROVIDED. BRICKS ARE NOT AN ACCEPTABLE CONSTRUCTION MATERIAL FOR ANY PORTION OF THE MANHOLE.

THE DIAMETER OF THE MANHOLES MUST BE A MINIMUM OF FOUR FEET AND THE MANHOLE FOR ENTRY MUST HAVE A MINIMUM CLEAR OPENING DIAMETER OF 30 INCHES. THESE DIMENSIONS AND OTHER DETAILS SHOWING COMPLIANCE WITH THE COMMISSION'S RULES CONCERNING MANHOLES AND SEWER LINE/MANHOLE INVERTS DESCRIBED IN 30 TAC §217.55 ARE INCLUDED ON PLAN SHEET 260.

IT IS SUGGESTED THAT ENTRANCE INTO MANHOLES IN EXCESS OF FOUR FEET DEEP BE ACCOMPLISHED BY MEANS OF A PORTABLE LADDER. THE INCLUSION OF STEPS IN A MANHOLE IS PROHIBITED.
10. WHERE WATER LINES AND NEW SEWER LINE ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC §217.53(D) (PIPE DESIGN) AND 30 TAC §290.44(E) (WATER DISTRIBUTION).
11. WHERE SEWERS LINES DEVIATE FROM STRAIGHT ALIGNMENT AND UNIFORM GRADE ALL CURVATURE OF SEWER PIPE MUST BE ACHIEVED BY THE FOLLOWING PROCEDURE WHICH IS RECOMMENDED BY THE PIPE MANUFACTURER: N/A.

IF PIPE FLEXURE IS PROPOSED, THE FOLLOWING METHOD OF PREVENTING DEFLECTION OF THE JOINT MUST BE USED: N/A.

SPECIFIC CARE MUST BE TAKEN TO ENSURE THAT THE JOINT IS PLACED IN THE CENTER OF THE TRENCH AND PROPERLY BEDDED IN ACCORDANCE WITH 30 TAC §217.54.
12. NEW SEWAGE COLLECTION SYSTEM LINES MUST BE CONSTRUCTED WITH STUB OUTS FOR THE CONNECTION OF ANTICIPATED EXTENSIONS. THE LOCATION OF SUCH STUB OUTS MUST BE MARKED ON THE GROUND SUCH THAT THEIR LOCATION CAN BE EASILY DETERMINED AT THE TIME OF CONNECTION OF THE EXTENSIONS. SUCH STUB OUTS MUST BE MANUFACTURED WYES OR TEES THAT ARE COMPATIBLE IN SIZE AND MATERIAL WITH BOTH THE SEWER LINE AND THE EXTENSION. AT THE TIME OF ORIGINAL CONSTRUCTION, NEW STUB-OUTS MUST BE CONSTRUCTED SUFFICIENTLY TO EXTEND BEYOND THE END OF THE STREET PAVEMENT. ALL STUB-OUTS MUST BE SEALED WITH A MANUFACTURED CAP TO PREVENT LEAKAGE. EXTENSIONS THAT WERE NOT ANTICIPATED AT THE TIME OF ORIGINAL CONSTRUCTION OR THAT ARE TO BE CONNECTED TO AN EXISTING SEWER LINE NOT FURNISHED WITH STUB OUTS MUST BE CONNECTED USING A MANUFACTURED SADDLE AND IN ACCORDANCE WITH ACCEPTED PLUMBING TECHNIQUES.

IF NO STUB-OUT IS PRESENT AN ALTERNATE METHOD OF JOINING LATERALS IS SHOWN IN THE DETAIL ON PLAN SHEET 263 OF 264. (FOR POTENTIAL FUTURE LATERALS).

THE PRIVATE SERVICE LATERAL STUB-OUTS MUST BE INSTALLED AS SHOWN ON THE PLAN AND PROFILE SHEETS ON PLAN SHEET 263 AND MARKED AFTER BACKFILLING AS SHOWN IN THE DETAIL ON PLAN SHEET 263 OF 264.
13. TRENCHING, BEDDING AND BACKFILL MUST CONFORM WITH 30 TAC §217.54. THE BEDDING AND BACKFILL FOR FLEXIBLE PIPE MUST COMPLY WITH THE STANDARDS OF ASTM D-2321, CLASSES IA, IB, II OR III. RIGID PIPE BEDDING MUST COMPLY WITH THE REQUIREMENTS OF ASTM C 12 (ANSI A 106.2) CLASSES A, B OR C.
14. SEWER LINES MUST BE TESTED FROM MANHOLE TO MANHOLE. WHEN A NEW SEWER LINE IS CONNECTED TO AN EXISTING STUB OR CLEAN-OUT, IT MUST BE TESTED FROM EXISTING MANHOLE TO NEW MANHOLE. IF A STUB OR CLEAN-OUT IS USED AT THE END OF THE PROPOSED SEWER LINE, NO PRIVATE SERVICE ATTACHMENTS MAY BE CONNECTED BETWEEN THE LAST MANHOLE AND THE CLEAN-OUT UNLESS IT CAN BE CERTIFIED AS CONFORMING WITH THE PROVISIONS OF 30 TAC §213.5(C)(3)(E).
15. ALL SEWER LINES MUST BE TESTED IN ACCORDANCE WITH 30 TAC §217.57. THE ENGINEER MUST RETAIN COPIES OF ALL TEST RESULTS WHICH MUST BE MADE AVAILABLE TO THE EXECUTIVE DIRECTOR UPON REQUEST. THE ENGINEER MUST CERTIFY IN WRITING THAT ALL WASTEWATER LINES HAVE PASSED ALL REQUIRED TESTING TO THE APPROPRIATE REGIONAL OFFICE WITHIN 30 DAYS OF TEST COMPLETION AND PRIOR TO USE OF THE NEW COLLECTION SYSTEM. TESTING METHOD WILL BE:
 - a. FOR A COLLECTION SYSTEM PIPE THAT WILL TRANSPORT WASTEWATER BY GRAVITY FLOW, THE DESIGN MUST SPECIFY AN INFILTRATION AND EXFILTRATION TEST OR A LOW-PRESSURE AIR TEST. A TEST MUST CONFORM TO THE FOLLOWING REQUIREMENTS:
 - (1) LOW PRESSURE AIR TEST.
 - (A) A LOW PRESSURE AIR TEST MUST FOLLOW THE PROCEDURES DESCRIBED IN AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) C-828, ASTM C-924, OR ASTM F-1417 OR OTHER PROCEDURE APPROVED BY THE EXECUTIVE DIRECTOR, EXCEPT AS TO TESTING TIMES AS REQUIRED IN TABLE C.3 IN SUBPARAGRAPH (C) OF THIS PARAGRAPH OR EQUATION C.3 IN SUBPARAGRAPH (B) (II) OF THIS PARAGRAPH.

- (B) FOR SECTIONS OF COLLECTION SYSTEM PIPE LESS THAN 36 INCH AVERAGE INSIDE DIAMETER, THE FOLLOWING PROCEDURE MUST APPLY, UNLESS A PIPE IS TO BE TESTED AS REQUIRED BY PARAGRAPH (2) OF THIS SUBSECTION.
 - (i) A PIPE MUST BE PRESSURIZED TO 3.5 POUNDS PER SQUARE INCH (PSI) GREATER THAN THE PRESSURE EXERTED BY GROUNDWATER ABOVE THE PIPE.
 - (ii) ONCE THE PRESSURE IS STABILIZED, THE MINIMUM TIME ALLOWABLE FOR THE PRESSURE TO DROP FROM 3.5 PSI GAUGE TO 2.5 PSI GAUGE IS COMPUTED FROM THE FOLLOWING EQUATION:
- EQUATION C.3
- $$T = \frac{0.085xDxK}{Q}$$
- WHERE:
- T = TIME FOR PRESSURE TO DROP 1.0 POUND PER SQUARE INCH GAUGE IN SECONDS
 K = 0.000419 X D X L, BUT NOT LESS THAN 1.0
 D = AVERAGE INSIDE PIPE DIAMETER IN INCHES
 L = LENGTH OF LINE OF SAME SIZE BEING TESTED, IN FEET
 Q = RATE OF LOSS, 0.0015 CUBIC FEET PER MINUTE PER SQUARE FOOT INTERNAL SURFACE
- (C) SINCE A K VALUE OF LESS THAN 1.0 MAY NOT BE USED, THE MINIMUM TESTING TIME FOR EACH PIPE DIAMETER IS SHOWN IN THE FOLLOWING TABLE C.3:

Pipe Diameter (inches)	Minimum Time (seconds)	Maximum Length for Minimum Time (feet)	Time for Longer Length (seconds/foot)
6	340	398	0.855
8	454	298	1.520
10	567	239	2.374
12	680	199	3.419
15	850	159	5.342
18	1020	133	7.693
21	1190	114	10.471
24	1360	100	13.676
27	1530	88	17.309
30	1700	80	21.369
33	1870	72	25.856

- (D) AN OWNER MAY STOP A TEST IF NO PRESSURE LOSS HAS OCCURRED DURING THE FIRST 25% OF THE CALCULATED TESTING TIME.
 - (E) IF ANY PRESSURE LOSS OR LEAKAGE HAS OCCURRED DURING THE FIRST 25% OF A TESTING PERIOD, THEN THE TEST MUST CONTINUE FOR THE ENTIRE TEST DURATION AS OUTLINED ABOVE OR UNTIL FAILURE.
 - (F) WASTEWATER COLLECTION SYSTEM PIPES WITH A 27 INCH OR LARGER AVERAGE INSIDE DIAMETER MAY BE AIR TESTED AT EACH JOINT INSTEAD OF FOLLOWING THE PROCEDURE OUTLINED IN THIS SECTION.
 - (G) A TESTING PROCEDURE FOR PIPE WITH AN INSIDE DIAMETER GREATER THAN 33 INCHES MUST BE APPROVED BY THE EXECUTIVE DIRECTOR.
- (2) INFILTRATION/EXFILTRATION TEST.
- (A) THE TOTAL EXFILTRATION, AS DETERMINED BY A HYDROSTATIC HEAD TEST, MUST NOT EXCEED 50 GALLONS PER INCH OF DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF 2.0 FEET ABOVE THE CROWN OF A PIPE AT AN UPSTREAM MANHOLE.
 - (B) AN OWNER SHALL USE AN INFILTRATION TEST IN LIEU OF AN EXFILTRATION TEST WHEN PIPES ARE INSTALLED BELOW THE GROUNDWATER LEVEL.
 - (C) THE TOTAL EXFILTRATION, AS DETERMINED BY A HYDROSTATIC HEAD TEST, MUST NOT EXCEED 50 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF TWO FEET ABOVE THE CROWN OF A PIPE AT AN UPSTREAM MANHOLE, OR AT LEAST TWO FEET ABOVE EXISTING GROUNDWATER LEVEL, WHICHEVER IS GREATER.
 - (D) FOR CONSTRUCTION WITHIN A 25-YEAR FLOOD PLAIN, THE INFILTRATION OR EXFILTRATION MUST NOT EXCEED 10 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT THE SAME MINIMUM TEST HEAD AS IN SUBPARAGRAPH (C) OF THIS PARAGRAPH.
 - (E) IF THE QUANTITY OF INFILTRATION OR EXFILTRATION EXCEEDS THE MAXIMUM QUANTITY SPECIFIED, AN OWNER SHALL UNDERTAKE REMEDIAL ACTION IN ORDER TO REDUCE THE INFILTRATION OR EXFILTRATION TO AN AMOUNT WITHIN THE LIMITS SPECIFIED. AN OWNER SHALL RETEST A PIPE FOLLOWING A REMEDIATION ACTION.
- (b) IF A GRAVITY COLLECTION PIPE IS COMPOSED OF FLEXIBLE PIPE, DEFLECTION TESTING IS ALSO REQUIRED. THE FOLLOWING PROCEDURES MUST BE FOLLOWED:
- (1) FOR A COLLECTION PIPE WITH INSIDE DIAMETER LESS THAN 27 INCHES, DEFLECTION MEASUREMENT REQUIRES A RIGID MANDREL.
 - (A) MANDREL SIZING.
 - (i) A RIGID MANDREL MUST HAVE AN OUTSIDE DIAMETER (OD) NOT LESS THAN 95% OF THE BASE INSIDE DIAMETER (ID) OR AVERAGE ID OF A PIPE, AS SPECIFIED IN THE APPROPRIATE STANDARD BY THE ASTM, AMERICAN WATER WORKS ASSOCIATION, UNI-BELL, OR AMERICAN NATIONAL STANDARDS INSTITUTE, OR ANY RELATED APPENDIX.
 - (ii) IF A MANDREL SIZING DIAMETER IS NOT SPECIFIED IN THE APPROPRIATE STANDARD, THE MANDREL MUST HAVE AN OD EQUAL TO 95% OF THE ID OF A PIPE. IN THIS CASE, THE ID OF THE PIPE, FOR THE PURPOSE OF DETERMINING THE OD OF THE MANDREL, MUST EQUAL BE THE AVERAGE OUTSIDE DIAMETER MINUS TWO MINIMUM WALL THICKNESSES FOR OD CONTROLLED PIPE AND THE AVERAGE INSIDE DIAMETER FOR ID CONTROLLED PIPE.
 - (iii) ALL DIMENSIONS MUST MEET THE APPROPRIATE STANDARD.
 - (B) MANDREL DESIGN.
 - (i) A RIGID MANDREL MUST BE CONSTRUCTED OF A METAL OR A RIGID PLASTIC MATERIAL THAT CAN WITHSTAND 200 PSI WITHOUT BEING DEFORMED.
 - (ii) A MANDREL MUST HAVE NINE OR MORE ODD NUMBER OF RUNNERS OR LEGS.
 - (iii) A BARREL SECTION LENGTH MUST EQUAL AT LEAST 75% OF THE INSIDE DIAMETER OF A PIPE.
 - (iv) EACH SIZE MANDREL MUST USE A SEPARATE PROVING RING.
 - (C) METHOD OPTIONS.
 - (i) AN ADJUSTABLE OR FLEXIBLE MANDREL IS PROHIBITED.
 - (ii) A TEST MAY NOT USE TELEVISION INSPECTION AS A SUBSTITUTE FOR A DEFLECTION TEST.

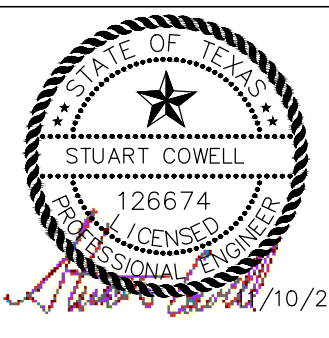
- (iii) IF REQUESTED, THE EXECUTIVE DIRECTOR MAY APPROVE THE USE OF A DEFLECTOMETER OR A MANDREL WITH REMOVABLE LEGS OR RUNNERS ON A CASE-BY-CASE BASIS.
 - (2) FOR A GRAVITY COLLECTION SYSTEM PIPE WITH AN INSIDE DIAMETER 27 INCHES AND GREATER, OTHER TEST METHODS MAYBE USED TO DETERMINE VERTICAL DEFLECTION.
 - (3) A DEFLECTION TEST METHOD MUST BE ACCURATE TO WITHIN PLUS OR MINUS 0.2% DEFLECTION.
 - (4) AN OWNER SHALL NOT CONDUCT A DEFLECTION TEST UNTIL AT LEAST 30 DAYS AFTER THE FINAL BACKFILL.
 - (5) GRAVITY COLLECTION SYSTEM PIPE DEFLECTION MUST NOT EXCEED FIVE PERCENT (5%).
 - (6) IF A PIPE SECTION FAILS A DEFLECTION TEST, AN OWNER SHALL CORRECT THE PROBLEM AND CONDUCT A SECOND TEST AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS.
16. ALL MANHOLES MUST BE TESTED TO MEET OR EXCEED THE REQUIREMENTS OF 30 TAC §217.58.
- a. ALL MANHOLES MUST PASS A LEAKAGE TEST.
 - b. AN OWNER SHALL TEST EACH MANHOLE (AFTER ASSEMBLY AND BACKFILLING) FOR LEAKAGE, SEPARATE AND INDEPENDENT OF THE COLLECTION SYSTEM PIPES, BY HYDROSTATIC EXFILTRATION TESTING, VACUUM TESTING, OR OTHER METHOD APPROVED BY THE EXECUTIVE DIRECTOR.
 - (1) HYDROSTATIC TESTING.
 - (A) THE MAXIMUM LEAKAGE FOR HYDROSTATIC TESTING OR ANY ALTERNATIVE TEST METHODS IS 0.025 GALLONS PER FOOT DIAMETER PER FOOT OF MANHOLE DEPTH PER HOUR.
 - (B) TO PERFORM A HYDROSTATIC EXFILTRATION TEST, AN OWNER SHALL SEAL ALL WASTEWATER PIPES COMING INTO A MANHOLE WITH AN INTERNAL PIPE PLUG, FILL THE MANHOLE WITH WATER, AND MAINTAIN THE TEST FOR AT LEAST ONE HOUR.
 - (C) A TEST FOR CONCRETE MANHOLES MAY USE A 24-HOUR WETTING PERIOD BEFORE TESTING TO ALLOW SATURATION OF THE CONCRETE.
 - (2) VACUUM TESTING.
 - (A) TO PERFORM A VACUUM TEST, AN OWNER SHALL PLUG ALL LIFT HOLES AND EXTERIOR JOINTS WITH A NON-SHRINK GROUT AND PLUG ALL PIPES ENTERING A MANHOLE.
 - (B) NO GROUT MUST BE PLACED IN HORIZONTAL JOINTS BEFORE TESTING.
 - (C) STUB-OUTS, MANHOLE BOOTS, AND PIPE PLUGS MUST BE SECURED TO PREVENT MOVEMENT WHILE A VACUUM IS DRAWN.
 - (D) AN OWNER SHALL USE A MINIMUM 60 INCH/LB TORQUE WRENCH TO TIGHTEN THE EXTERNAL CLAMPS THAT SECURE A TEST COVER TO THE TOP OF A MANHOLE.
 - (E) A TEST HEAD MUST BE PLACED AT THE INSIDE OF THE TOP OF A CONE SECTION, AND THE SEAL INFLATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
 - (F) THERE MUST BE A VACUUM OF 10 INCHES OF MERCURY INSIDE A MANHOLE TO PERFORM A VALID TEST.
 - (G) A TEST DOES NOT BEGIN UNTIL AFTER THE VACUUM PUMP IS OFF.
 - (H) A MANHOLE PASSES THE TEST IF AFTER 2.0 MINUTES AND WITH ALL VALVES CLOSED, THE VACUUM IS AT LEAST 9.0 INCHES OF MERCURY.
17. ALL PRIVATE SERVICE LATERALS MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH 30 TAC §213.5(C)(3)(I). AFTER INSTALLATION OF AND, PRIOR TO COVERING AND CONNECTING A PRIVATE SERVICE LATERAL TO AN EXISTING ORGANIZED SEWAGE COLLECTION SYSTEM, A TEXAS LICENSED PROFESSIONAL ENGINEER, TEXAS REGISTERED SANITARIAN, OR APPROPRIATE CITY INSPECTOR MUST VISUALLY INSPECT THE PRIVATE SERVICE LATERAL AND THE CONNECTION TO THE SEWAGE COLLECTION SYSTEM, AND CERTIFY THAT IT IS CONSTRUCTED IN CONFORMITY WITH THE APPLICABLE PROVISIONS OF THIS SECTION. THE OWNER OF THE COLLECTION SYSTEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS AND FORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON REQUEST. CONNECTIONS MAY ONLY BE MADE TO AN APPROVED SEWAGE COLLECTION SYSTEM.

AUSTIN REGIONAL OFFICE
 12100 PARK 35 CIRCLE, BUILDING A
 AUSTIN, TEXAS 78753-1808
 PHONE (512) 339-2929
 FAX (512) 339-3795

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 10/26/2022

DESIGNED BY: KR
 DRAWN BY: KR
 CHECKED BY: SC
 APPROVED BY: SC



SCHLEMMER & PORTER ST
 WASTEWATER IMPROVEMENTS

LJA Engineering, Inc.
 2700 LA FRONTERA BLVD. Phone 512.767.7300
 SUITE 150 Fax 512.439.4716
 ROUND ROCK, TEXAS 78735 FRN-F-1386

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.



TCEQ NOTES

JOB NUMBER: 2173-2201
 SCALE:
 HORIZONTAL: N/A
 VERTICAL: N/A
 SHEET NO. 3
 OF 21 SHEETS

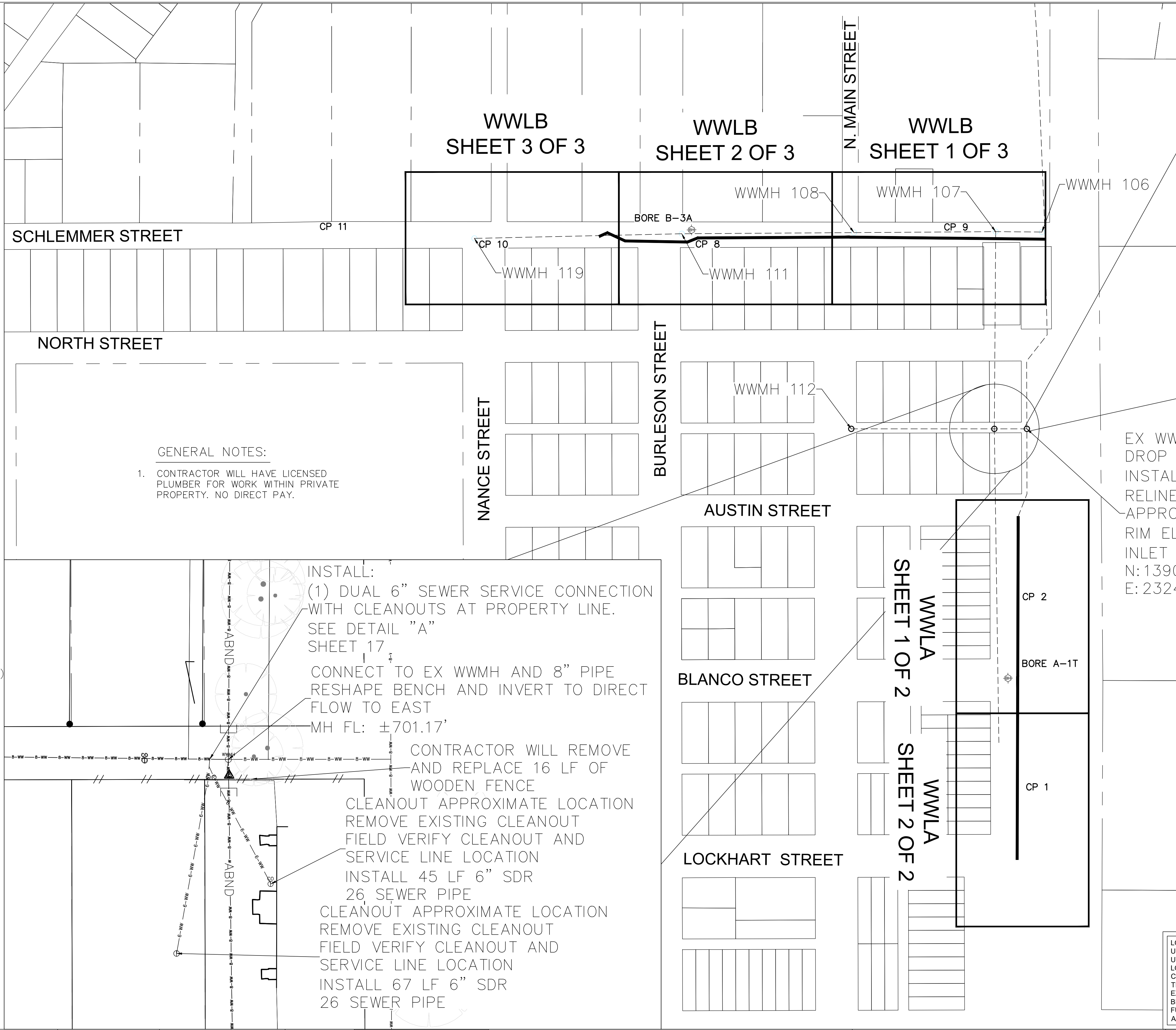
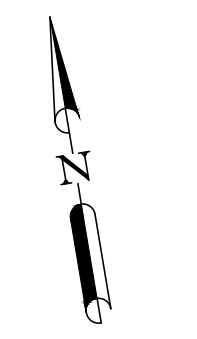
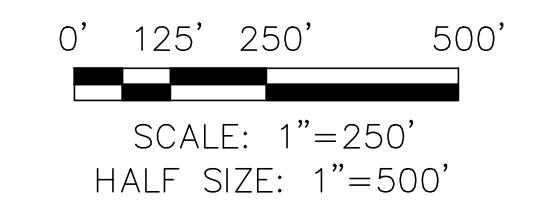
EXISTING SYMBOLOGY LEGEND

- EXIST FIRE HYDRANT
- EXIST WATER VALVE
- EXIST WATER METER
- EXIST WATERLINE AIR VENT
- EXIST AIR RELEASE VALVE
- EXIST CLEANOUT
- EXIST WASTEWATER MANHOLE
- EXIST STORM DRAIN MANHOLE
- EXIST GAS METER
- EXIST GAS VALVE
- EXIST TELECOM PEDESTAL
- EXIST TELCO JUNCTION BOX
- EXIST ELECTRIC JUNCTION BOX
- EXIST ELECTRIC PULL BOX
- EXIST ROAD SIGN
- EXIST UTILITY POLE WITH RISER
- EXIST UTILITY POLE
- EXIST UTILITY POLE GUY ANCHOR

- EXIST ROADWAY
- EXIST EASEMENT
- EXIST FENCE LINE
- EXIST OH ELECTRIC
- EXIST OH TELECOM
- EXIST UG TELECOM
- EXIST UG ELECTRIC
- EXIST GAS LINE
- EXIST WATER LINE
- EXIST WASTEWATER LINE
- EXIST STORM DRAIN LINE
- BORE B-#A GEOTECH BORE(ARIAS & ASSOCIATES)
- BORE B-#T GEOTECH BORE(TERRACON)

PROPOSED SYMBOLOGY LEGEND

- EXISTING STEEL ENCASUREMENT
- PROP WASTEWATER MANHOLE
- PROP WASTEWATER FLOW DIRECTION
- ROW
- ABANDON WWL



GENERAL NOTES:

1. CONTRACTOR WILL HAVE LICENSED PLUMBER FOR WORK WITHIN PRIVATE PROPERTY. NO DIRECT PAY.

INSTALL:
 (1) DUAL 6" SEWER SERVICE CONNECTION WITH CLEANOUTS AT PROPERTY LINE. SEE DETAIL "A" SHEET 17
 CONNECT TO EX WWMH AND 8" PIPE RESHAPE BENCH AND INVERT TO DIRECT FLOW TO EAST
 MH FL: ±701.17'

CONTRACTOR WILL REMOVE AND REPLACE 16 LF OF WOODEN FENCE
 CLEANOUT APPROXIMATE LOCATION REMOVE EXISTING CLEANOUT FIELD VERIFY CLEANOUT AND SERVICE LINE LOCATION
 INSTALL 45 LF 6" SDR 26 SEWER PIPE

CLEANOUT APPROXIMATE LOCATION REMOVE EXISTING CLEANOUT FIELD VERIFY CLEANOUT AND SERVICE LINE LOCATION
 INSTALL 67 LF 6" SDR 26 SEWER PIPE



EX WWMH 105 DROP CONNECTION IMPROVEMENT
 INSTALL 8" INTERNAL DROP, RELINER/DURAN OR APPROVED EQUAL
 RIM ELEV. : 705.92'
 INLET ELEV.(W): 701.4'
 N: 13909799.8727
 E: 2324768.0110

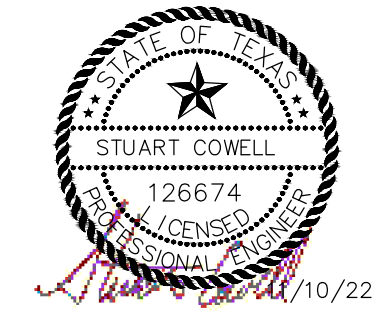
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REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 10/26/2022

DESIGNED BY: KR
 DRAWN BY: KR
 CHECKED BY: SC
 APPROVED BY: SC



SCHLEMMER & PORTER ST WASTEWATER IMPROVEMENTS

LJA Engineering, Inc.
 2700 LA FRONTERA BLVD.
 SUITE 150
 ROUND ROCK, TEXAS 78735
 Phone 512.767.7300
 Fax 512.439.4716
 FRN-F-1386

PROJECT LAYOUT

JOB NUMBER: 2173-2201
 SCALE: HORIZONTAL: 1"=250' VERTICAL: N/A
 SHEET NO. 4 OF 21 SHEETS

11/10/2022 11:10/2022 l: 2173\2201 Schlemmer PH2\CADD\SHEETS\S&P_PH2_GENERAL NOTES.dwg kroese

SUMMARY OF WASTEWATER UTILITY ITEMS

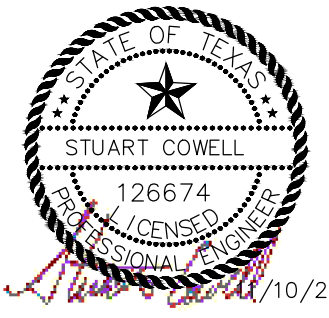
SPEC SECTION		TxDOT 247 WW-01	340S-B WW-02	TxDOT 360 WW-02	506S M 48 WW-03	506S D 60 WW-04	506S M1 48 WW-05	506S EDM 60 WW-06	506S EDM 48 WW-07	506S AB WW-08	506S-PWW WW-09	506S ID WW-10	509S WW-11	510-AWW8 Dia WW-12	510-AWW 12 Dia WW-13	510-AWWRJ: 12 Dia WW-14	510-BWW6 Dia WW-15
W/P&P SHEET NO	LOCATION	GRAVEL REPAIR (6" TX247 TYPE A GRADE Z)	SAWCUT/REMOVE/REPLACE EXIST ASPHALT PAVING & BASE (2" TX340 TYPE D)	SAWCUT/REMOVE/REPLACE EXIST CONCRETE PAVEMENT (6" TX360 CL P)	STD PRECAST MANH W PRECAST BS, 48" DIA	STD PRECAST DROP MANH INCL DROP ASSEMBLY ON PRECAST BS, 60" DIA	STD PRECAST MANH W CIP BS, 48" DIA	EXTRA DEPTH OF MANHOLE (OVER 8' DEPTH), 60-IN DIA	EXTRA DEPTH OF MANHOLE (OVER 8' DEPTH), 48-IN DIA	ABANDON EXISTING MANHOLES	SEWER PLUG (ALL SIZES)	INSTALLATION OF DROP CONNECTION FOR EX WMMH 105	TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS (ALL DEPTHS)	PIPE, 8 IN DIA PVC SDR26 D3034 (ALL DEPTHS), INCLUDING EXCAVATION AND BACKFILL	PIPE, 12 IN DIA PVC SDR26 D3034 (ALL DEPTHS), INCLUDING EXCAVATION AND BACKFILL	RESTRAINED PIPE, 12 IN DIA PVC SDR26 D3034 (THROUGH CASING)	SHORT SIDE SEWER SERVICE RECONNECTIONS
UNIT		SY	SY	SY	EA	EA	EA	VF	VF	EA	EA	EA	LF	LF	LF	LF	EA
WASTEWATER LINE																	
4	PROJECT LAYOUT																
6	ABANDONMENT & BYPASS									4	2	1	112				
7	EROSION CONTROL																
8	EROSION CONTROL																
9	EROSION CONTROL																
11	STREET RESTORATION	114	112														
12	STREET RESTORATION		887	31													
13	STREET RESTORATION		84														
ABANDONMENT TOTALS		114	1083	31						4	2	1	112				
WASTEWATER LINE A																	
14	BEGIN TO STA 14+00				1				1.7				400	400			
15	STA 14+00 TO END				1						2		248	248			1
WASTEWATER LINE A TOTALS					2				1.7		2		648	648			1
WASTEWATER LINE B																	
16	BEGIN TO STA 14+00				1				2.5		1		511		393		6
17	STA 14+00 TO STA 18+00				3				18.7				312		283	117	5
18	STA 18+00 TO END					1	1	7	1		2		61		61		1
WASTEWATER LINE B TOTALS					4	1	1	6.9	21.9		3		884		737	117	12
PROJECT TOTALS		114	1083	31	6	1	1	6.9	23.6	4	7	1	1644	648	737	117	13

SUMMARY OF WASTEWATER UTILITY ITEMS

SPEC SECTION		510-DSWW WW-16	510-BWW6 Dia WW-17	510-VVV WW-18	510-ABWW WW-19	510S CN WW-20	510-ELWW WW-21	510-BWW6 Dia WW-22	604S-D WW-23	642S WW-24	700S-TM WW-25	702S-D WW-26	803S-MO WW-27	2726 WW-28	2960 WW-29
W/P&P SHEET NO	LOCATION	SHORT SIDE DUAL SEWER SERVICE RECONNECTIONS	LONG SIDE SEWER SERVICE RECONNECTIONS	SEWER MAIN POST-CONSTRUCTION TV INSPECTION	ABANDON WML (8")	CONNECT TO EXISTING WASTEWATER MANHOLE	EXTRA LENGTH OF SEWER SERVICE (6 in)	LONG SIDE DUAL SEWER SERVICE RECONNECTIONS	TOPSOIL, BROADCAST SEEDING, AND VEGETATIVE WATERING	SILT FENCE (INSTALL, MAINTAIN AND REMOVE)	MOBILIZATION, BONDS & INSURANCE	REMOVE AND REPLACE FENCE (WOOD)	BARRICADES, SIGNS, AND TRAFFIC HANDLING	ABANDON LIFT STATION	BYPASS PUMPING
UNIT		EA	EA	LF	LF	EA	LF	EA	SY	LF	LS	LF	MO	LS	CD
WASTEWATER LINE															
4	PROJECT LAYOUT	1				1	112					16			
6	ABANDONMENT & BYPASS				1777										16
7	EROSION CONTROL								999	696					
8	EROSION CONTROL								335						
9	EROSION CONTROL								41						
11	STREET RESTORATION														
12	STREET RESTORATION														
13	STREET RESTORATION														
ABANDONMENT TOTALS		1			1777	1	112		1375	696		16			16
WASTEWATER LINE A															
14	BEGIN TO STA 14+00		4	400											
15	STA 14+00 TO END		1	248										1	
WASTEWATER LINE A TOTALS			5	648										1	
WASTEWATER LINE B															
16	BEGIN TO STA 14+00		4	393			154								
17	STA 14+00 TO STA 18+00		2	400				1							
18	STA 18+00 TO END		1	61											
WASTEWATER LINE B TOTALS			7	854			154	1							
PROJECT TOTALS		1	12	1502	1777	1	266	1	1375	696	1	16	4	1	16

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 10/26/2022
 DESIGNED BY: KR
 DRAWN BY: KR
 CHECKED BY: SC
 APPROVED BY: SC



SCHLEMMER & PORTER ST
 WASTEWATER IMPROVEMENTS

LJA Engineering, Inc.
 2700 LA FRONTERA BLVD.
 SUITE 150
 ROUND ROCK, TEXAS 78735
 Phone 512.767.7300
 Fax 512.439.4716
 FRN-F-1386

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

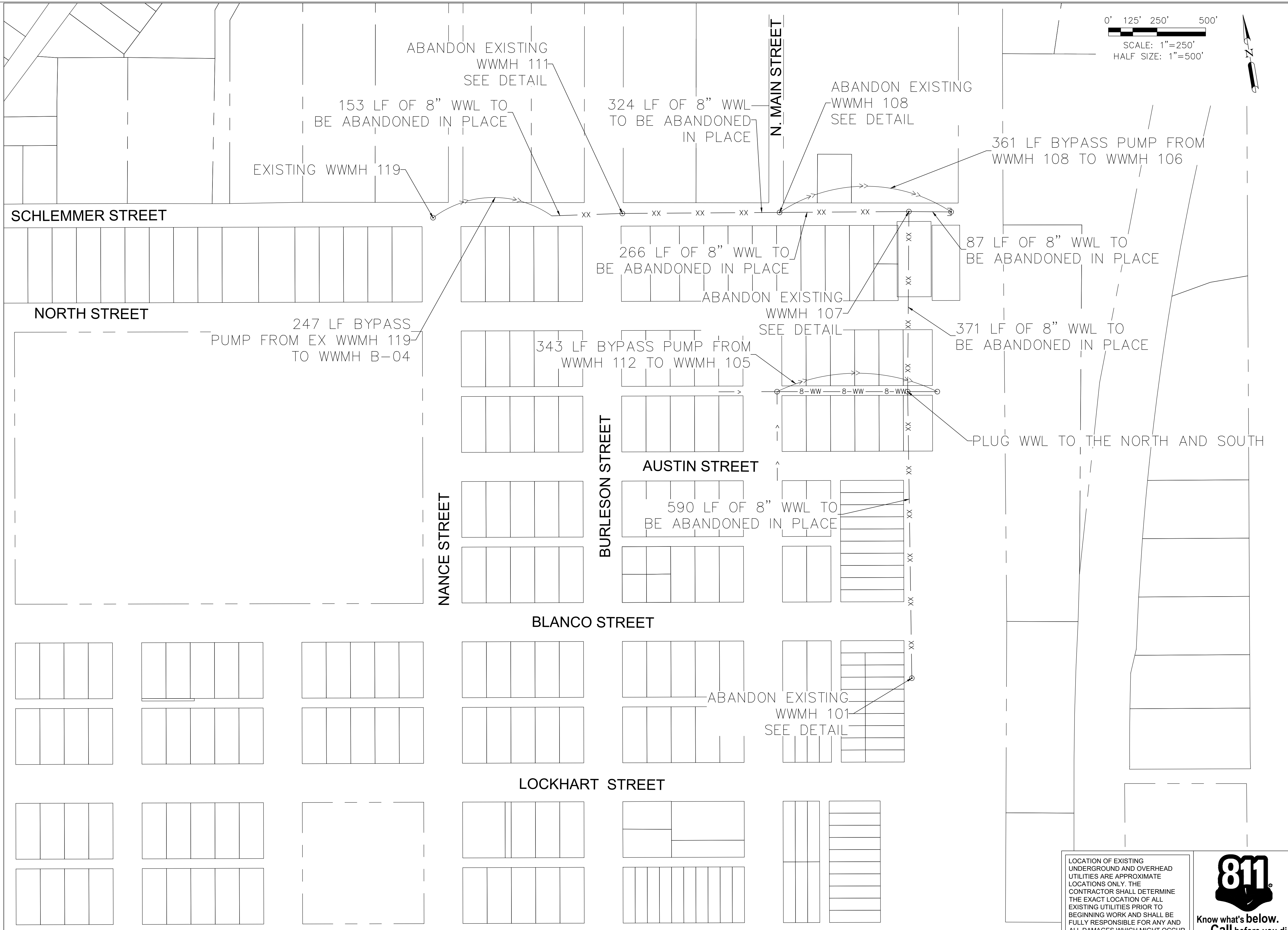
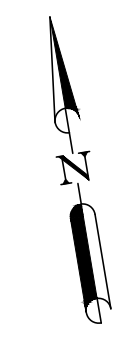


QUANTITY

JOB NUMBER: 2173-2201
 SCALE:
 HORIZONTAL: N/A
 VERTICAL: N/A
 SHEET NO. 5
 OF 21 SHEETS

11/10/2022
 11/10/2022
 I:\2173\2201 Schlemmer PH2\CADD\SHEETS\S&P_PH2_GENERAL NOTES.dwg kroese

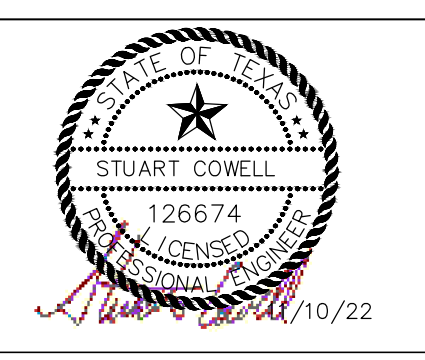
0' 125' 250' 500'
 SCALE: 1"=250'
 HALF SIZE: 1"=500'



11/10/2022 11/10/2022 i:\2173\2201 Schlemmer PH2\CADD\SHEETS\S&P_PH2_GENERAL NOTES.dwg krose

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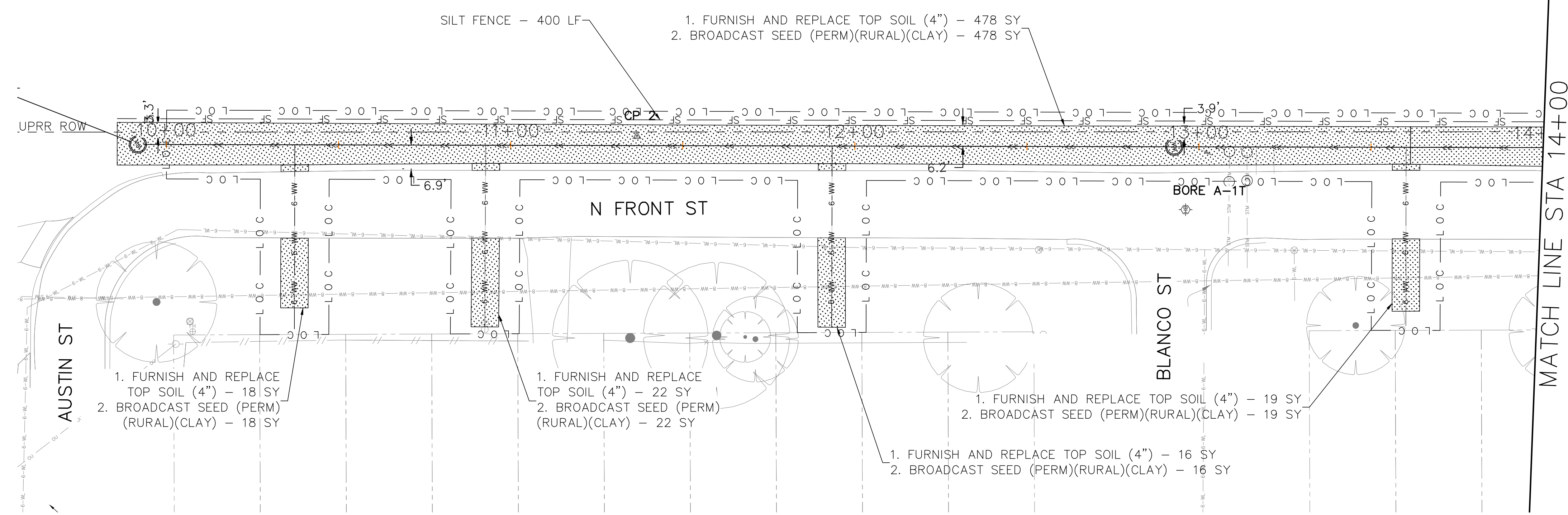
ABANDONMENT
 &
 BYPASS PUMPING LAYOUT

JOB NUMBER: 2173-2201
 SCALE: HORIZONTAL: 1"=250' VERTICAL: N/A
 SHEET NO. 6
 OF 21 SHEETS

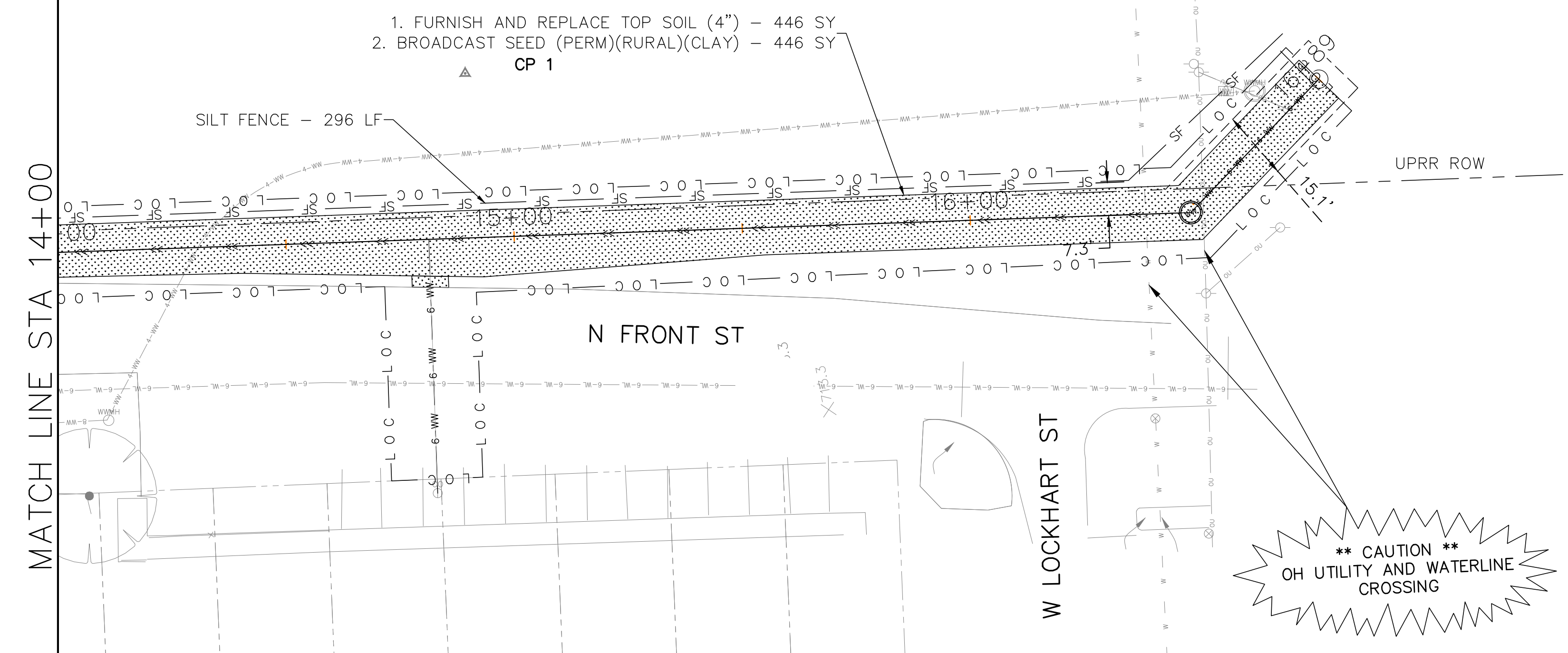
20 10 0 20 40
HORIZONTAL SCALE : 1" = 20'

HALF SIZE HORIZONTAL SCALE: 1" = 40'

- — — — — EXISTING ROADWAY
- - - - - EXIST R.O.W.
- LOC - LOC - LOC - LIMITS OF CONSTRUCTION
- SF - SF - SF - SILT FENCE
- ▲ CONTROL POINT
- [Hatched Box] SEEDING/HYDROMULCH
- TREE
- ⊕ B-XA GEOTECHNICAL BORE (ARIAS)
- ⊕ B-XT GEOTECHNICAL BORE (TERRACON)



**** CAUTION ****
OH ELECTRIC LINES
IN CONSTRUCTION AREA



- NOTES:**
- CONTRACTOR WILL MINIMIZE AND CONTROL DUST WITHIN CONSTRUCTION AREA.
 - CONTRACTOR WILL TRIM CANOPY AS NEEDED ALONG N FRONT ST FOR OPERATION OF EQUIPMENT AND WILL BE SUBSIDIARY TO PROJECT. NO DIRECT PAY.

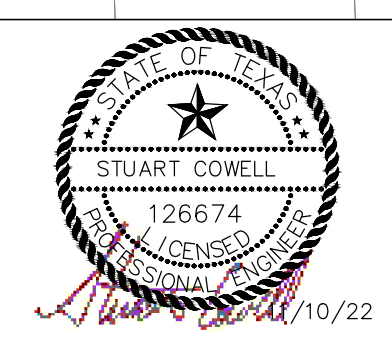
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FRN-F-1386

EROSION AND
SEDIMENTATION CONTROL
WASTEWATER LINE "A"

JOB NUMBER: 2173-2201
SCALE:
HORIZONTAL: 1"=20'
VERTICAL: N/A
SHEET NO. 7
OF 21 SHEETS

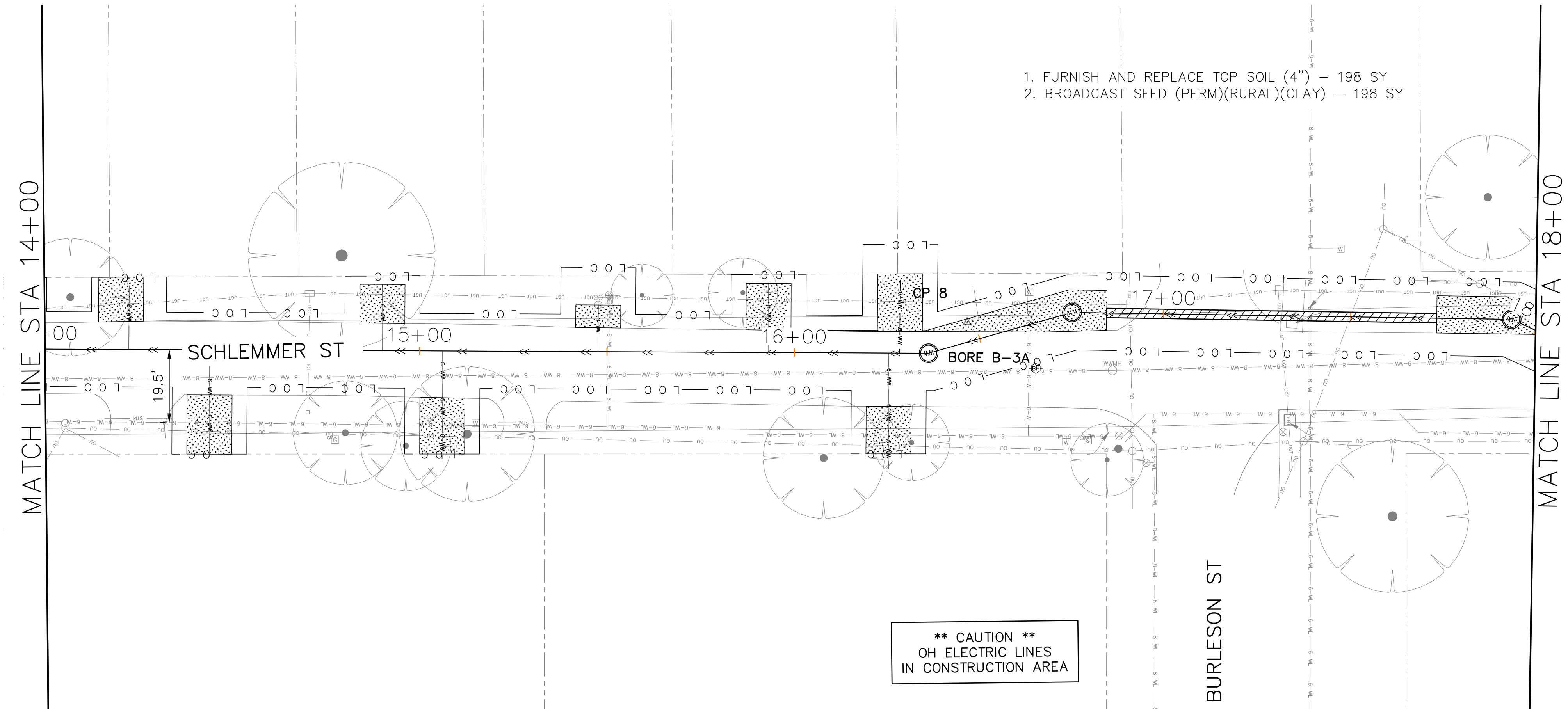
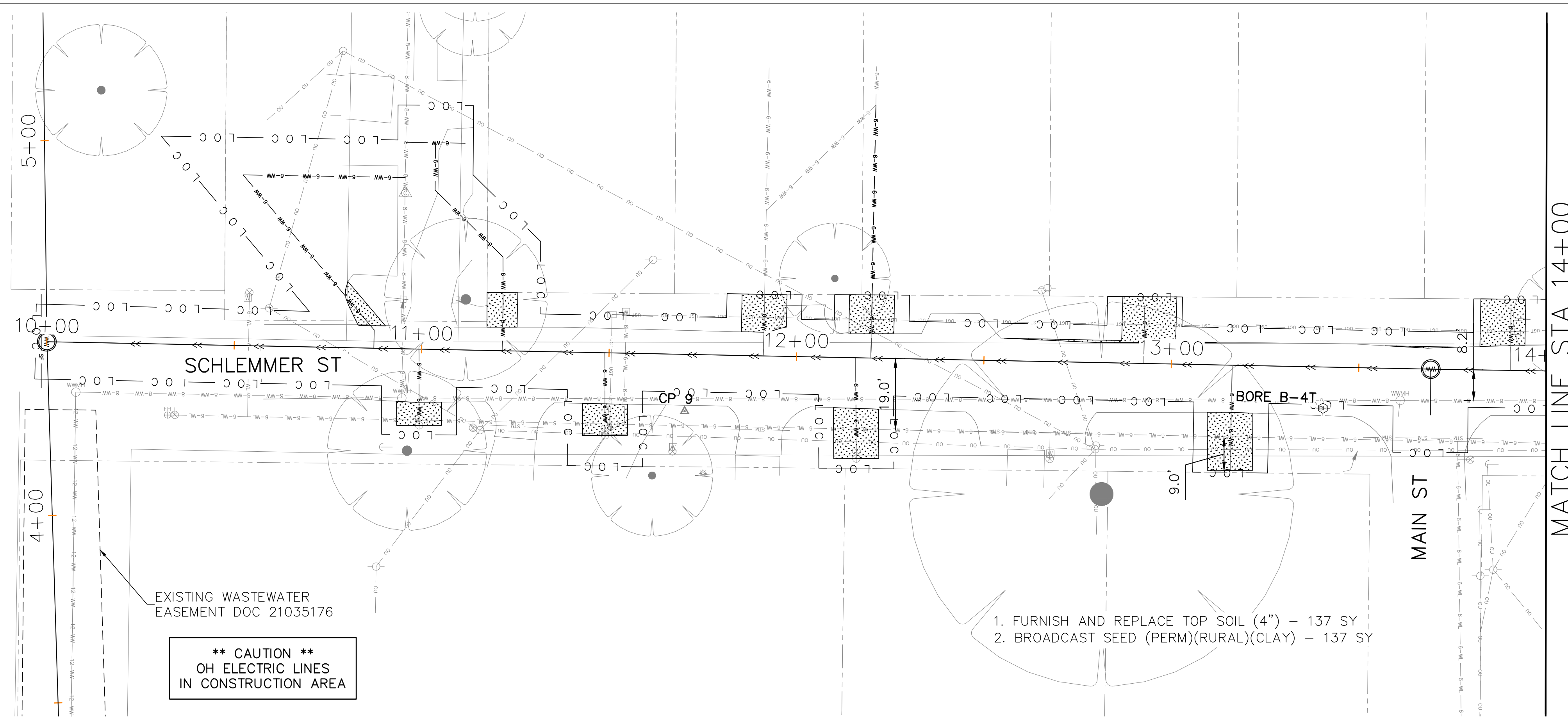
11/10/2022 11/10/2022 I:\2173\2201 Schlemmer PH2\CADD\SHEETS\S&P_PH2_EROSION CONTROL.dwg kroese



HORIZONTAL SCALE : 1" = 20'

HALF SIZE HORIZONTAL SCALE: 1" = 40'

- — — — — EXISTING ROADWAY
- - - - - EXIST R.O.W.
- - - - - LIMITS OF CONSTRUCTION
- - - - - SILT FENCE
- ▲ CONTROL POINT
- SEEDING/HYDROMULCH
- TREE
- ⊕ B-XA GEOTECHNICAL BORE (ARIAS)
- ⊕ B-XT GEOTECHNICAL BORE (TERRACON)



- NOTES:
- CONTRACTOR WILL MINIMIZE AND CONTROL DUST WITHIN CONSTRUCTION AREA.
 - CONTRACTOR WILL TRIM CANOPY AS NEEDED ALONG SCHLEMMER ST FOR OPERATION OF EQUIPMENT AND WILL BE SUBSIDIARY TO PROJECT. NO DIRECT PAY.

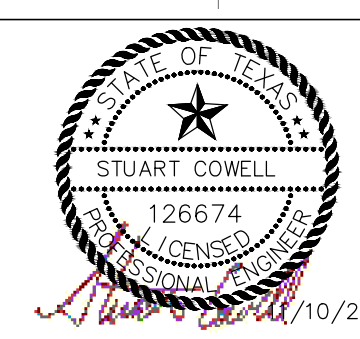
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DATE: 10/26/2022

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Fax 512.439.4716
FRN-F-1386

EROSION AND SEDIMENTATION CONTROL
WASTEWATER LINE "B"
BEGIN TO STA 18+00

JOB NUMBER: 2173-2201
SCALE: HORIZONTAL: 1"=20' VERTICAL: N/A
SHEET NO. 8
OF 21 SHEETS

11/10/2022 11:10/2022 I:\2173\2201 Schlemmer PH2\CADD\SHEETS\S&P_P12_EROSION CONTROL.dwg krose

20 10 0 20 40

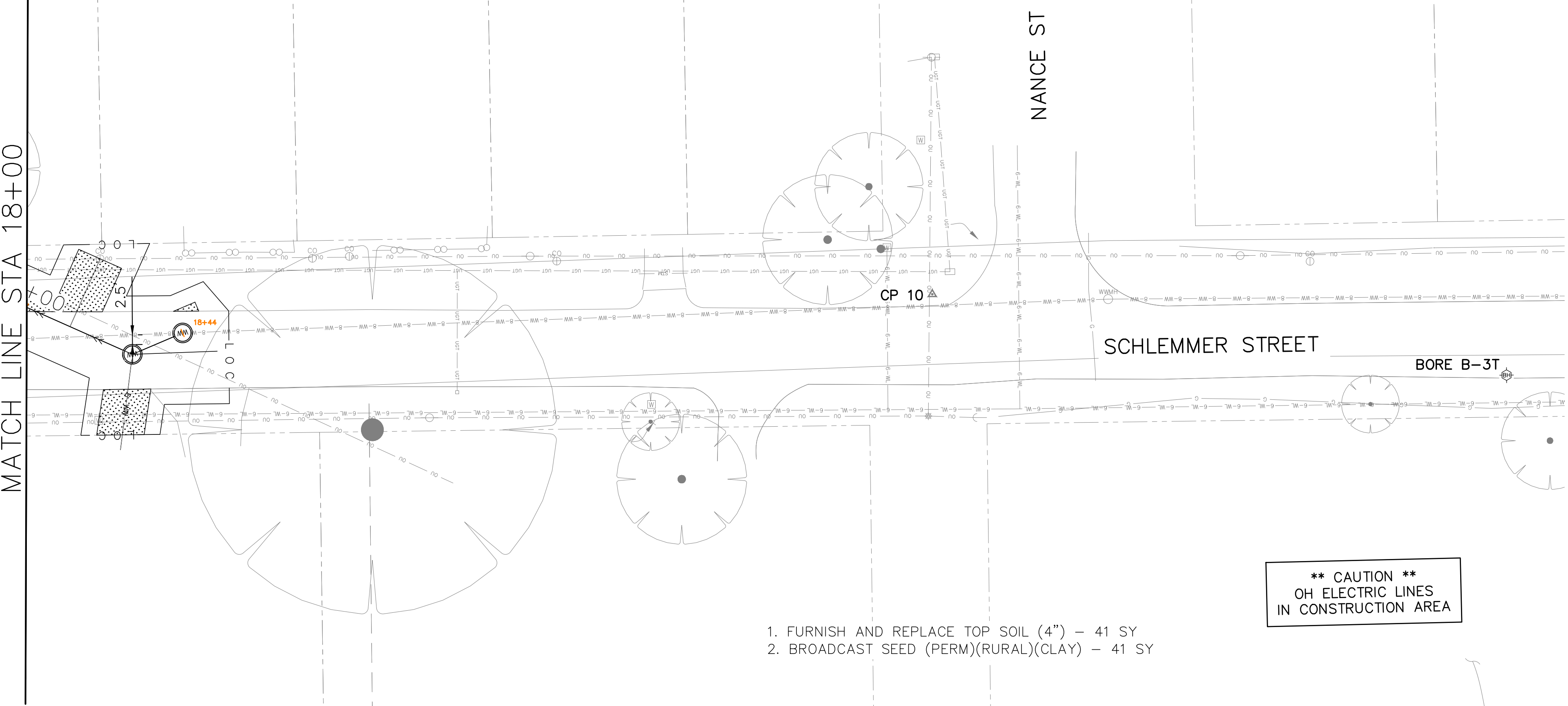
HORIZONTAL SCALE : 1" = 20'



HALF SIZE HORIZONTAL SCALE: 1" = 40'

- — — — — EXISTING ROADWAY
- - - - - EXIST R.O.W.
- LOC - LOC - LOC - LIMITS OF CONSTRUCTION
- SF - SF - SF - SILT FENCE
- ▲ CONTROL POINT
- SEEDING/HYDROMULCH
- TREE
- B-XA GEOTECHNICAL BORE (ARIAS)
- B-XT GEOTECHNICAL BORE (TERRACON)

MATCH LINE STA 18+00



1. FURNISH AND REPLACE TOP SOIL (4") - 41 SY
2. BROADCAST SEED (PERM)(RURAL)(CLAY) - 41 SY

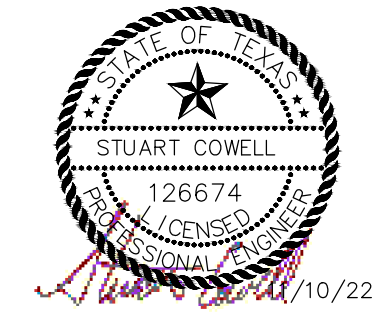
**** CAUTION ****
 OH ELECTRIC LINES
 IN CONSTRUCTION AREA

- NOTES:**
1. CONTRACTOR WILL MINIMIZE AND CONTROL DUST WITHIN CONSTRUCTION AREA.
 2. CONTRACTOR WILL TRIM CANOPY AS NEEDED ALONG SCHLEMMER ST FOR OPERATION OF EQUIPMENT AND WILL BE SUBSIDIARY TO PROJECT. NO DIRECT PAY.

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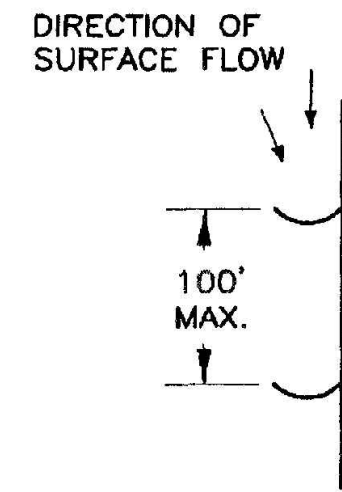
EROSION AND
 SEDIMENTATION CONTROL
 WASTEWATER LINE "B"
 STA 18+00 TO END

JOB NUMBER:
 2173-2001
 SCALE:
 HORIZONTAL: 1"=20'
 VERTICAL: N/A
 SHEET NO.
 9
 OF 21 SHEETS

11/10/2022
 I:\2173\2201 Schlemmer PH2\CADD\SHEETS\S&P_P12_EROSION CONTROL.dwg krcose

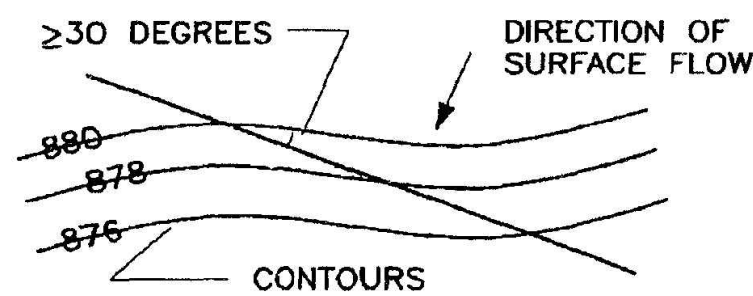
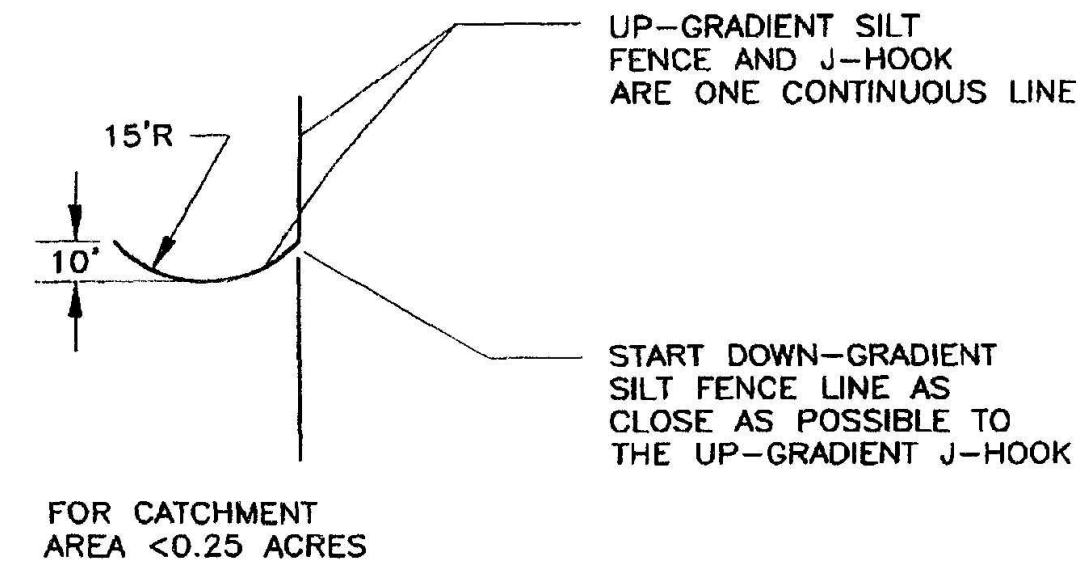
SILT FENCE & J-HOOK DETAIL
PLAN VIEW

I. SPACING REQUIREMENTS

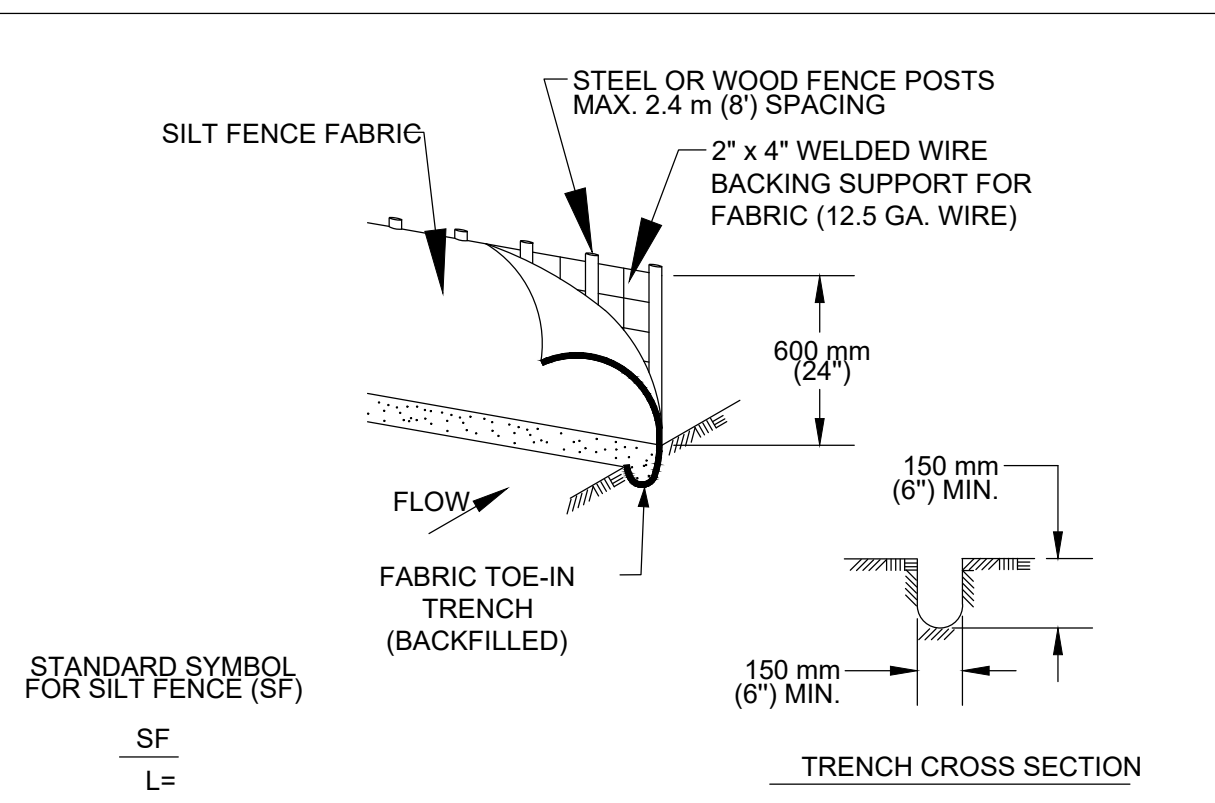


NOTE: SPACING DISTANCES WILL VARY, BUT ARE NOT TO EXCEED 100 FEET.

II. SIZING REQUIREMENTS:



NOTE: J-HOOKS SHALL ALSO BE USED WHEN THE SILT FENCE IS INSTALLED AT AN ANGLE OF 30 DEGREES OR GREATER FROM PARALLEL TO THE CONTOURS.



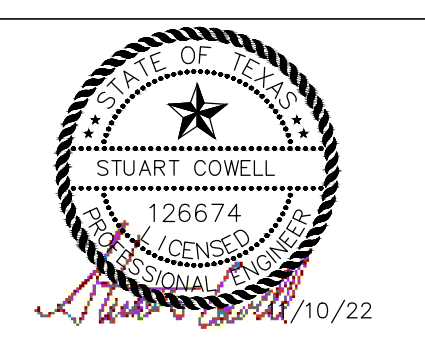
1. STEEL OR WOOD POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 300 mm (12 INCHES). IF WOOD POSTS CANNOT ACHIEVE 300 mm (12 inches) DEPTH, USE STEEL POSTS.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.
3. THE TRENCH MUST BE A MINIMUM OF 150 mm (6 inches) DEEP AND 150 mm (6 inches) WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE FABRIC SHOULD BE SECURELY FASTENED TO EACH STEEL OR WOOD SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL OR WOOD FENCE POST.
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6 inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		SILT FENCE	
RECORD COPY SIGNED BY MORGAN BYARS	09/01/2011 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 642S-1

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SUITE 150
ROUND ROCK, TEXAS 78735
Phone 512.767.7300
Fax 512.439.4716
FRN-F-1386

EROSION AND
SEDIMENTATION CONTROL
DETAILS

JOB NUMBER:
2173-2201
SCALE:
HORIZONTAL: N/A
VERTICAL: N/A
SHEET NO.
10
OF 21 SHEETS

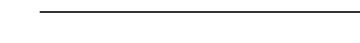

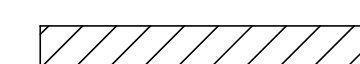
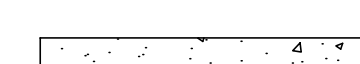
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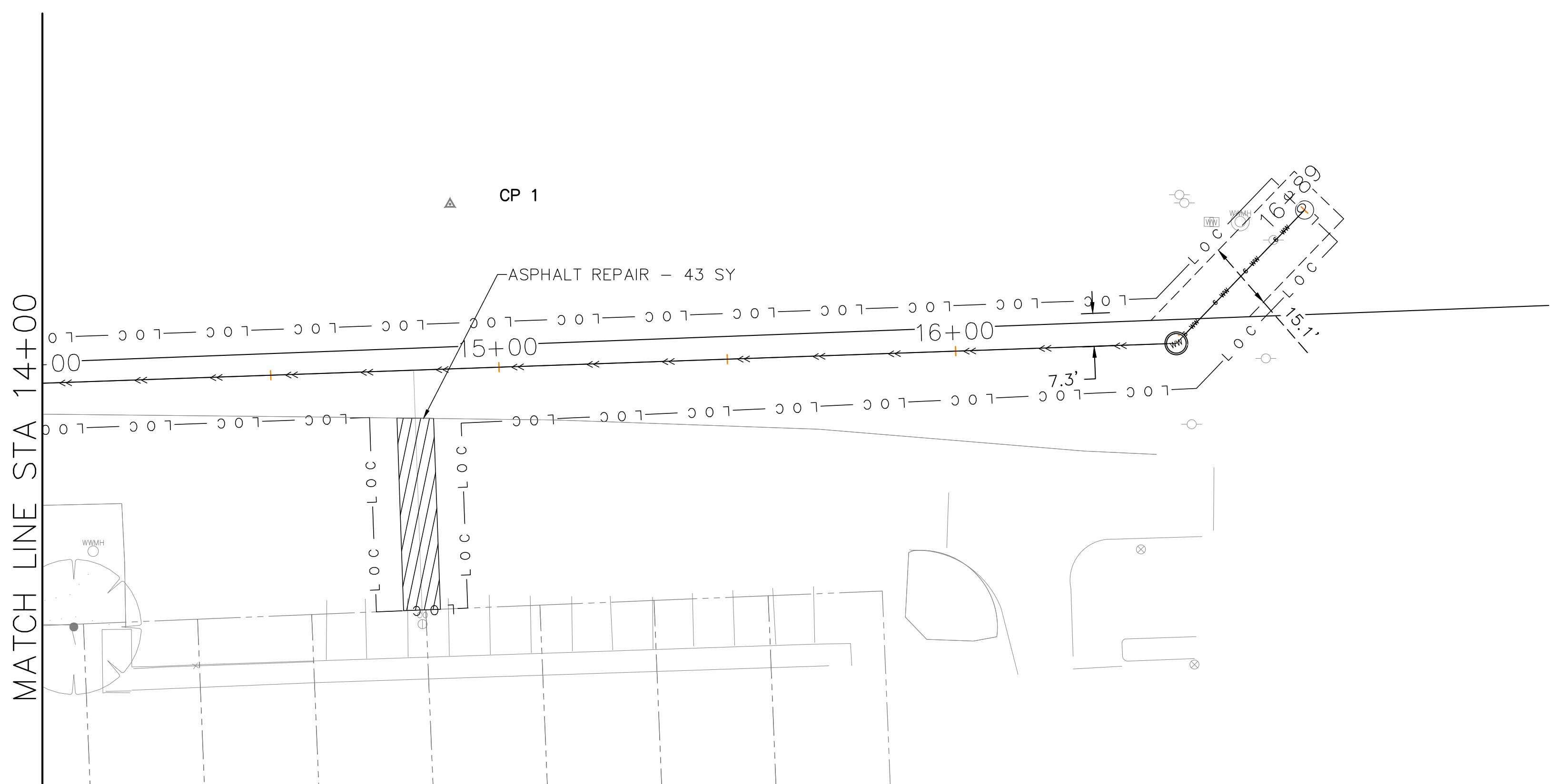
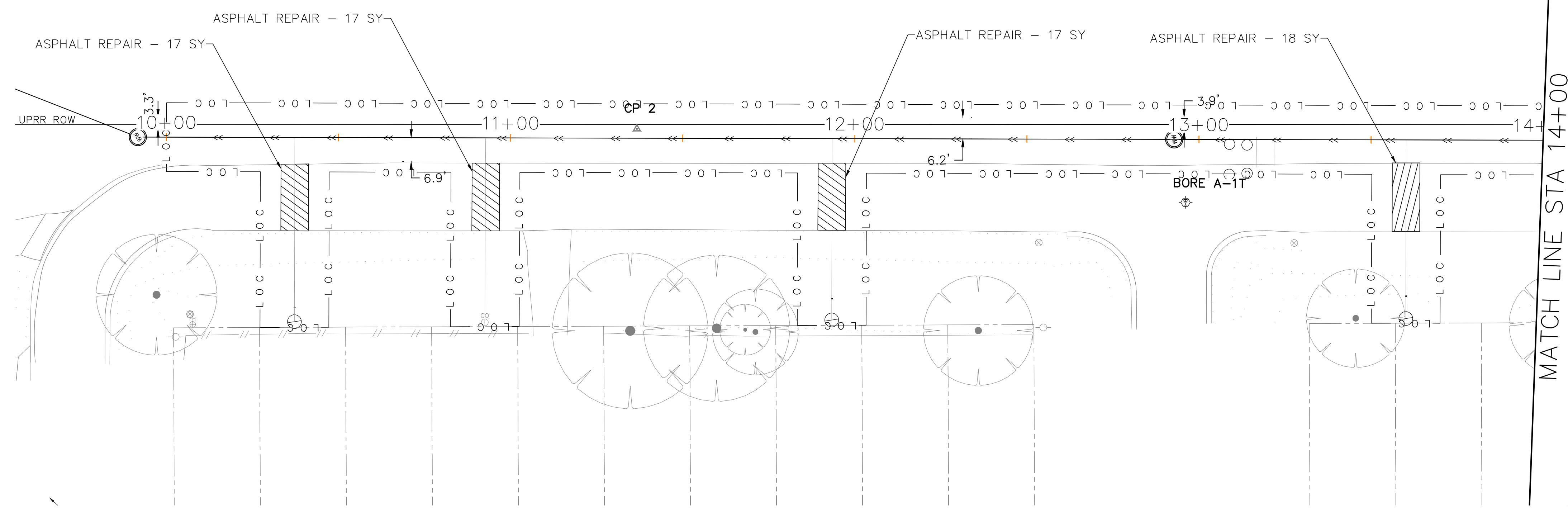
20 10 0 20 40

HORIZONTAL SCALE : 1" = 20'



HALF SIZE HORIZONTAL SCALE: 1" = 40'

-  EXISTING ROADWAY
EXIST R.O.W.
-  GRAVEL REPAIR (6" TX 247
TY A GR2)
-  ASPHALT REPAIR (2" HMAC TX
340 TY D)
-  CONCRETE REPAIR (6" TX 360
CL P)



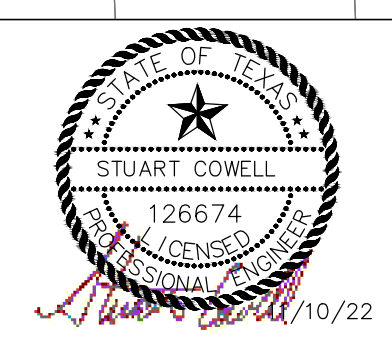
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SURFACE RESTORATION
WASTEWATER LINE "A"

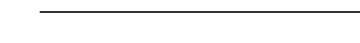

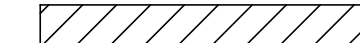
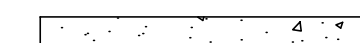
JOB NUMBER: 2173-2201
SCALE:
HORIZONTAL: 1"=20'
VERTICAL: N/A
SHEET NO. 11
OF 21 SHEETS

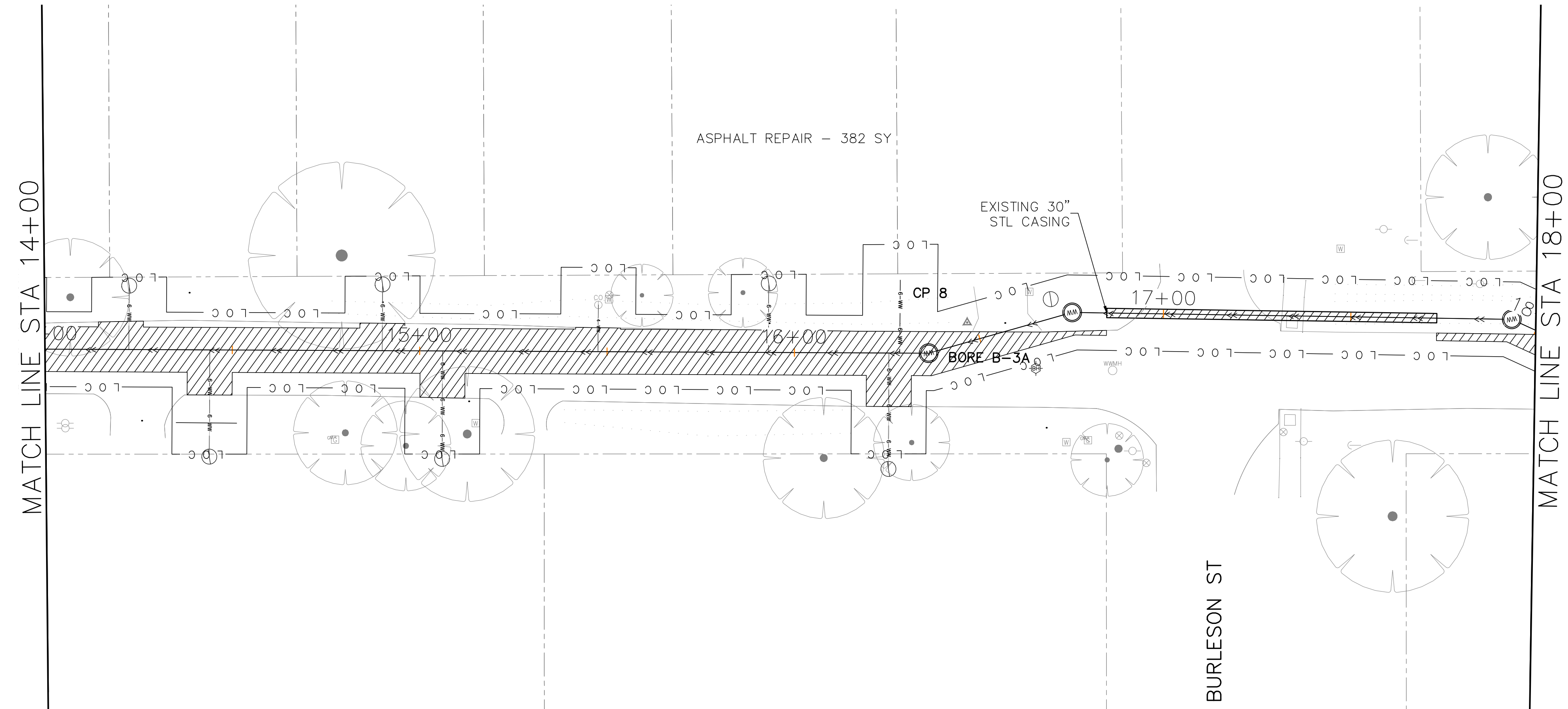
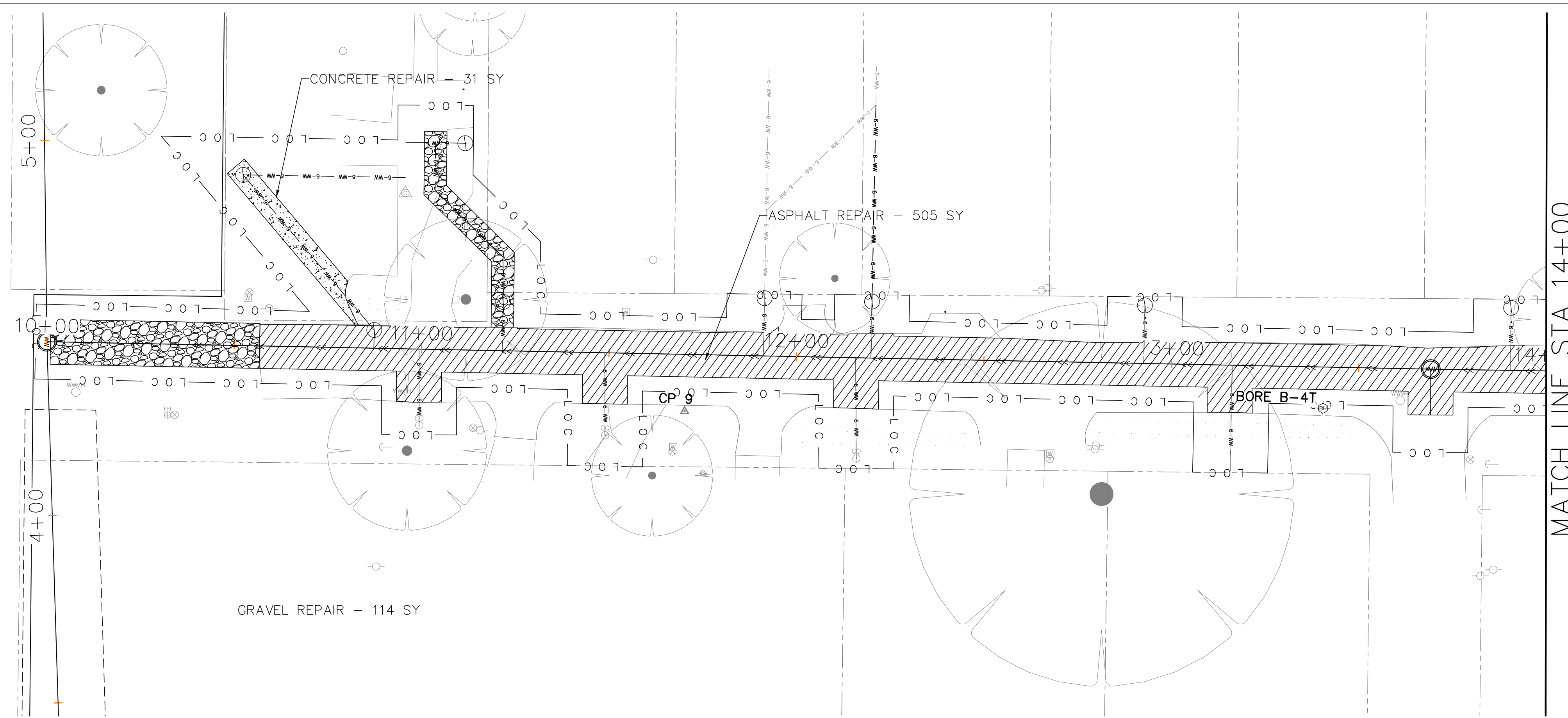
11/10/2022 11/10/2022 i:\2173\2201 Schlemmer PH2\CADD\SHEETS\S&P_P12_RESTORATION.dwg kroese



HORIZONTAL SCALE : 1" = 20'

HALF SIZE HORIZONTAL SCALE: 1" = 40'

-  EXISTING ROADWAY
EXIST R.O.W.
-  GRAVEL REPAIR (6" TX 247
TY A GR2)
-  ASPHALT REPAIR (2" HMAC TX
340 TY D)
-  CONCRETE REPAIR (6" TX 360
CL P)



MATCH LINE STA 14+00

MATCH LINE STA 18+00

BURLESON ST

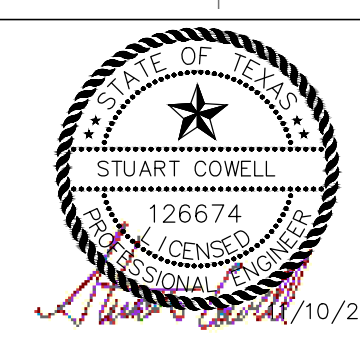
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 FRN-F-1386

SURFACE RESTORATION
WASTEWATER LINE "B"
BEGIN TO STA 18+00

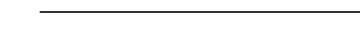

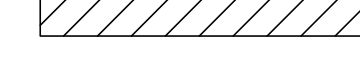
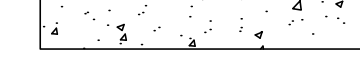
JOB NUMBER: 2173-2201
 SCALE:
 HORIZONTAL: 1"=20'
 VERTICAL: N/A
 SHEET NO. 12
 OF 21 SHEETS

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20 10 0 20 40

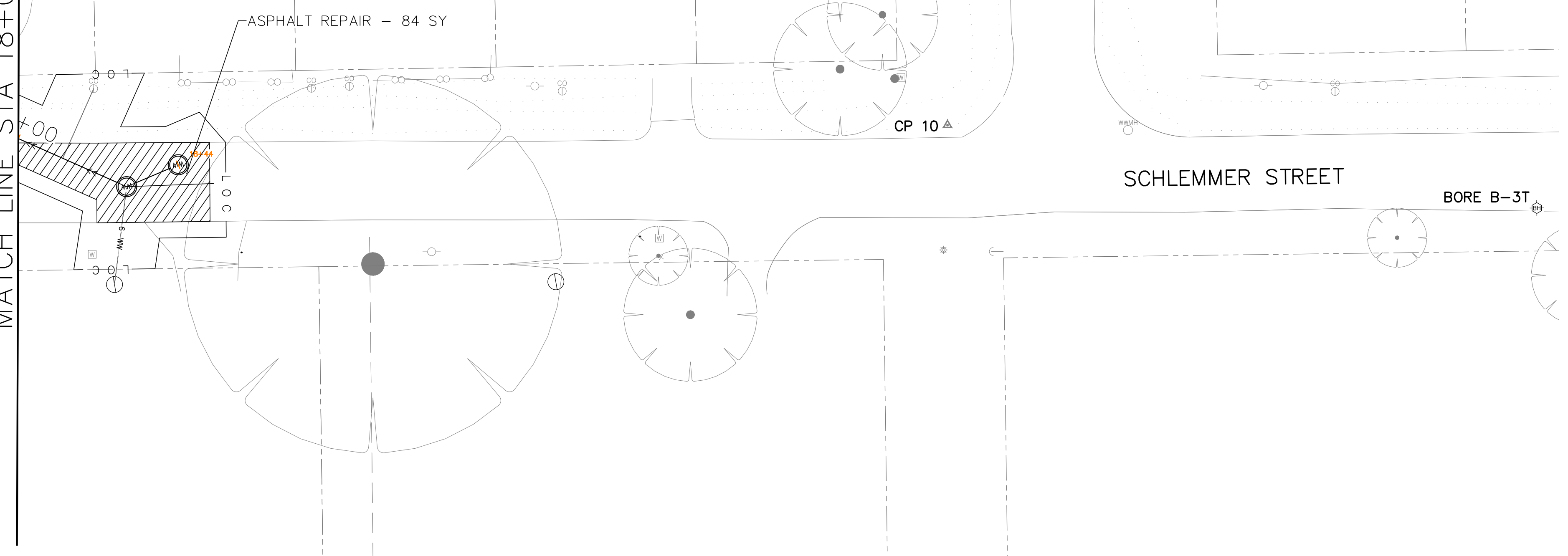
HORIZONTAL SCALE : 1" = 20'

HALF SIZE HORIZONTAL SCALE: 1" = 40'

-  EXISTING ROADWAY
EXIST R.O.W.
-  GRAVEL REPAIR (6" TX 247
TY A GR2)
-  ASPHALT REPAIR (2" HMAC TX
340 TY D)
-  CONCRETE REPAIR (6" TX 360
CL P)



MATCH LINE STA 18+00

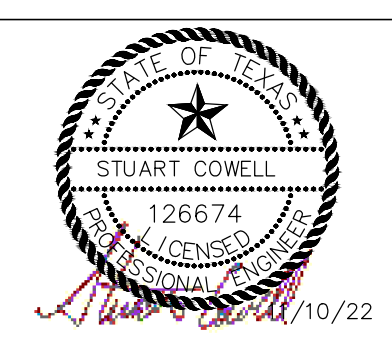


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REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 10/26/2022
 DESIGNED BY: KR
 DRAWN BY: KR
 CHECKED BY: SC
 APPROVED BY: SC



SCHLEMMER & PORTER ST
WASTEWATER IMPROVEMENTS

LJA Engineering, Inc.

2700 LA FRONTERA BLVD.
SUITE 150
ROUND ROCK, TEXAS 78735



Phone 512.767.7300
Fax 512.439.4716
FRN-F-1386

SURFACE RESTORATION
WASTEWATER LINE "B"
STA 18+00 TO END

JOB NUMBER:
2173-2201
SCALE:
HORIZONTAL: 1"=20'
VERTICAL: N/A
SHEET NO.
13
OF 21 SHEETS

11/10/2022 11:10/2022 i:\2173\2201 Schlemmer PH2\CADD\SHEETS\S&P_P12_RESTORATION.dwg kroese

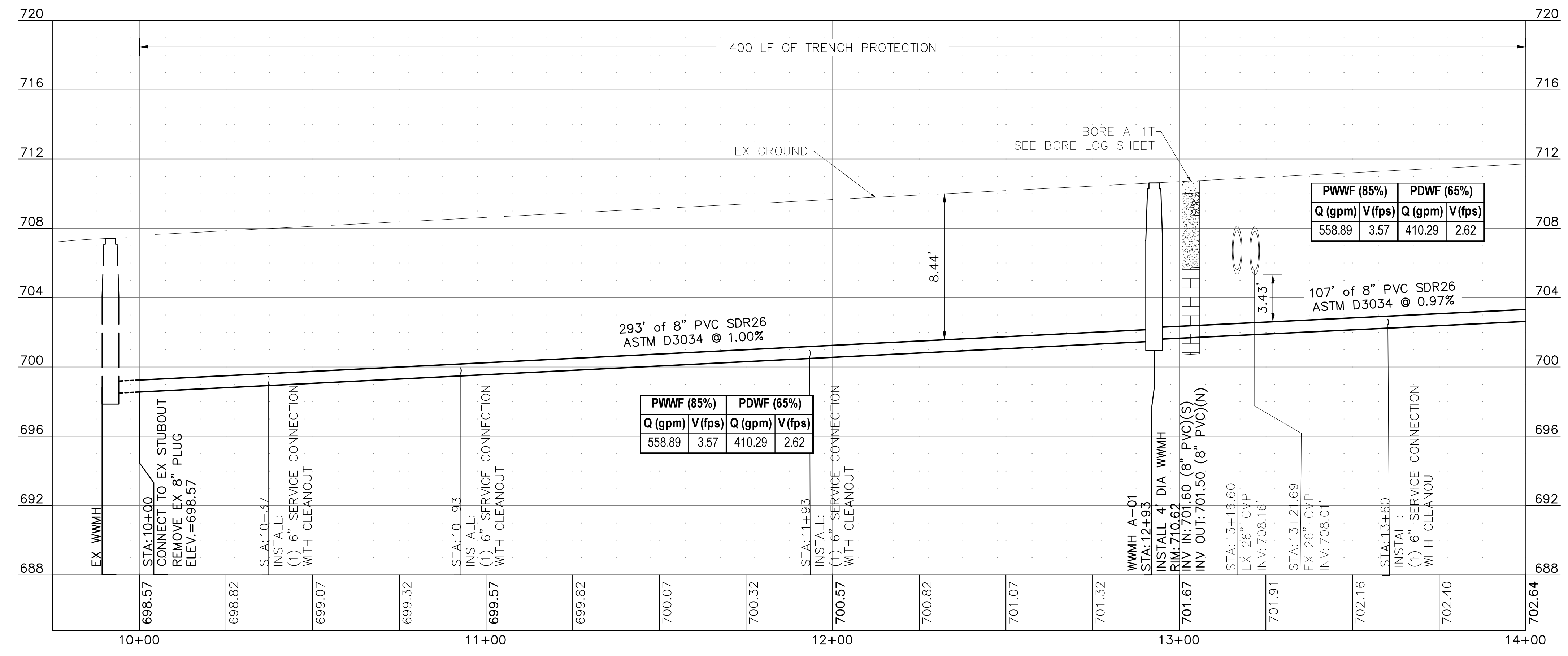
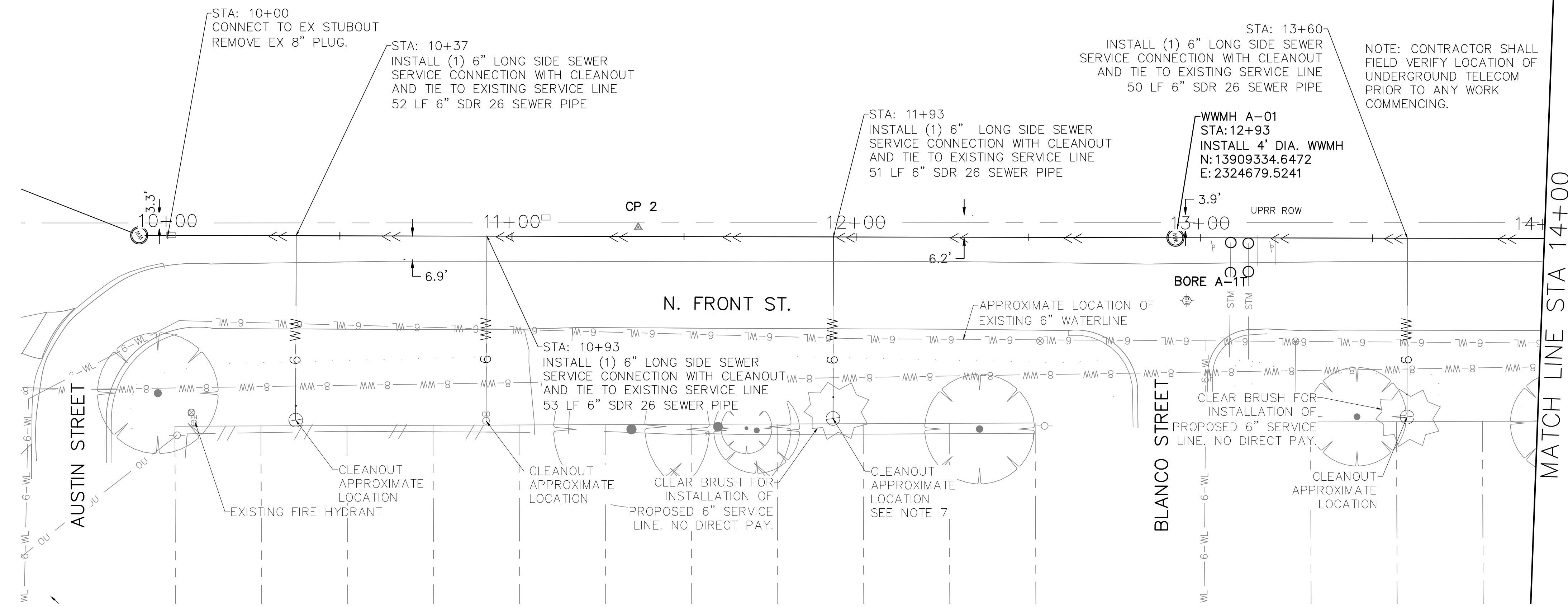


HORIZONTAL SCALE : 1" = 20'
VERTICAL SCALE : 1" = 4'

HALF SIZE HORIZONTAL SCALE: 1" = 40'
HALF SIZE VERTICAL SCALE : 1" = 8'

GENERAL NOTES:

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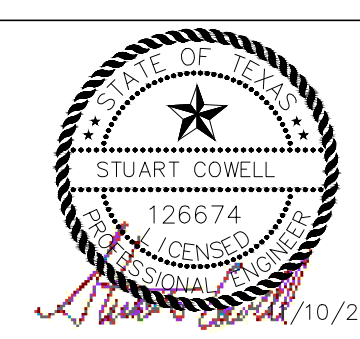
- ASHPHALT
- FILL - CLAYEY SAND WITH GRAVEL
- CLAYEY SAND WITH GRAVEL
- LIMESTONE

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SCHLEMMER & PORTER ST WASTEWATER IMPROVEMENTS

LJA Engineering, Inc.
 2700 LA FRONTERA BLVD.
 SUITE 150
 ROUND ROCK, TEXAS 78735

LJA
 Phone 512.767.7300
 Fax 512.439.4716
 FRN-F-1386

PLAN AND PROFILE
 WASTEWATER LINE "A"
 BEGIN TO STA 14+00

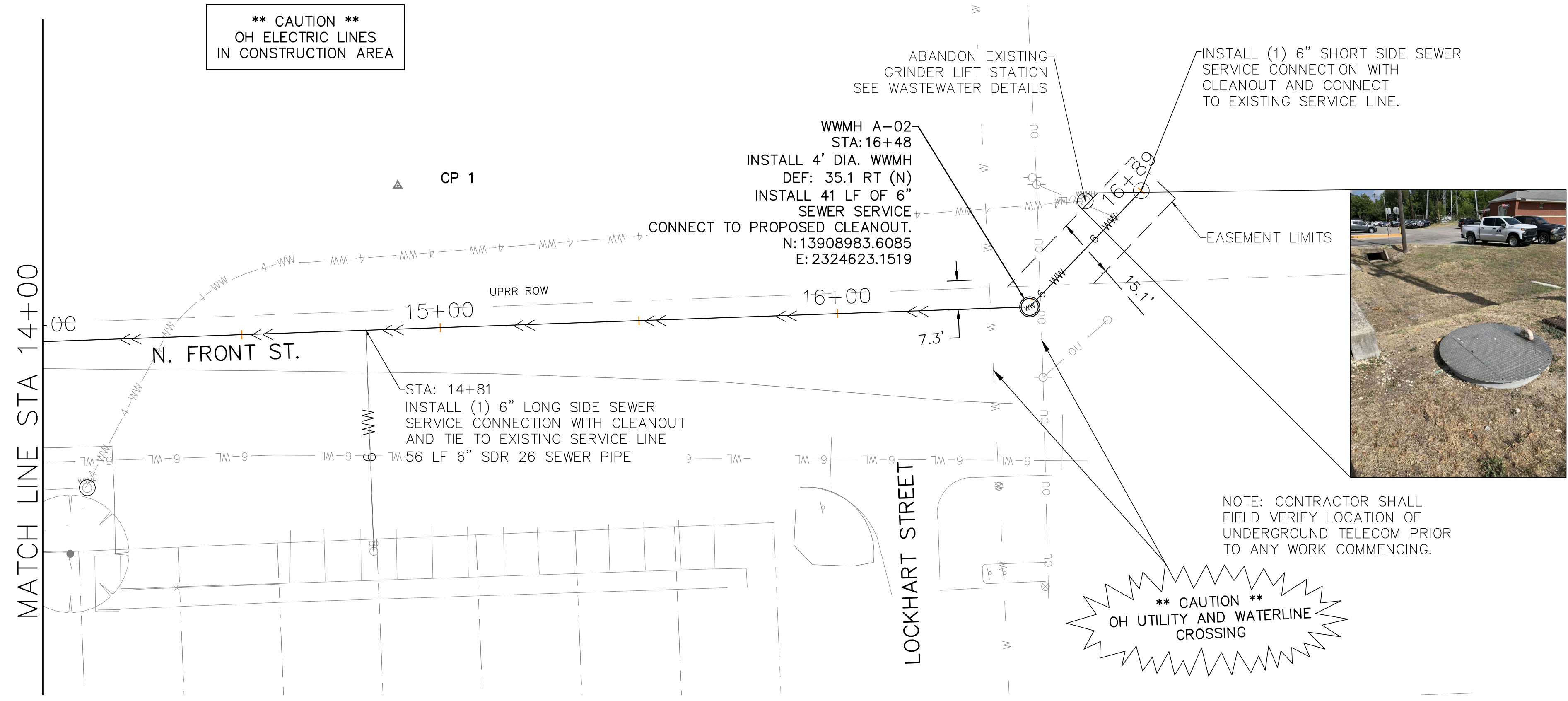
JOB NUMBER: 2173-2201
 SCALE: HORIZONTAL: 1"=20' VERTICAL: 1"=4'
 SHEET NO. 14 OF 21 SHEETS

11/10/2022 11/10/2022 I:\2173\2201 Schlemmer PH2\CADD\SHEETS\S&P_PH2_PLAN & PROFILE_post_survey_issue.dwg kroese

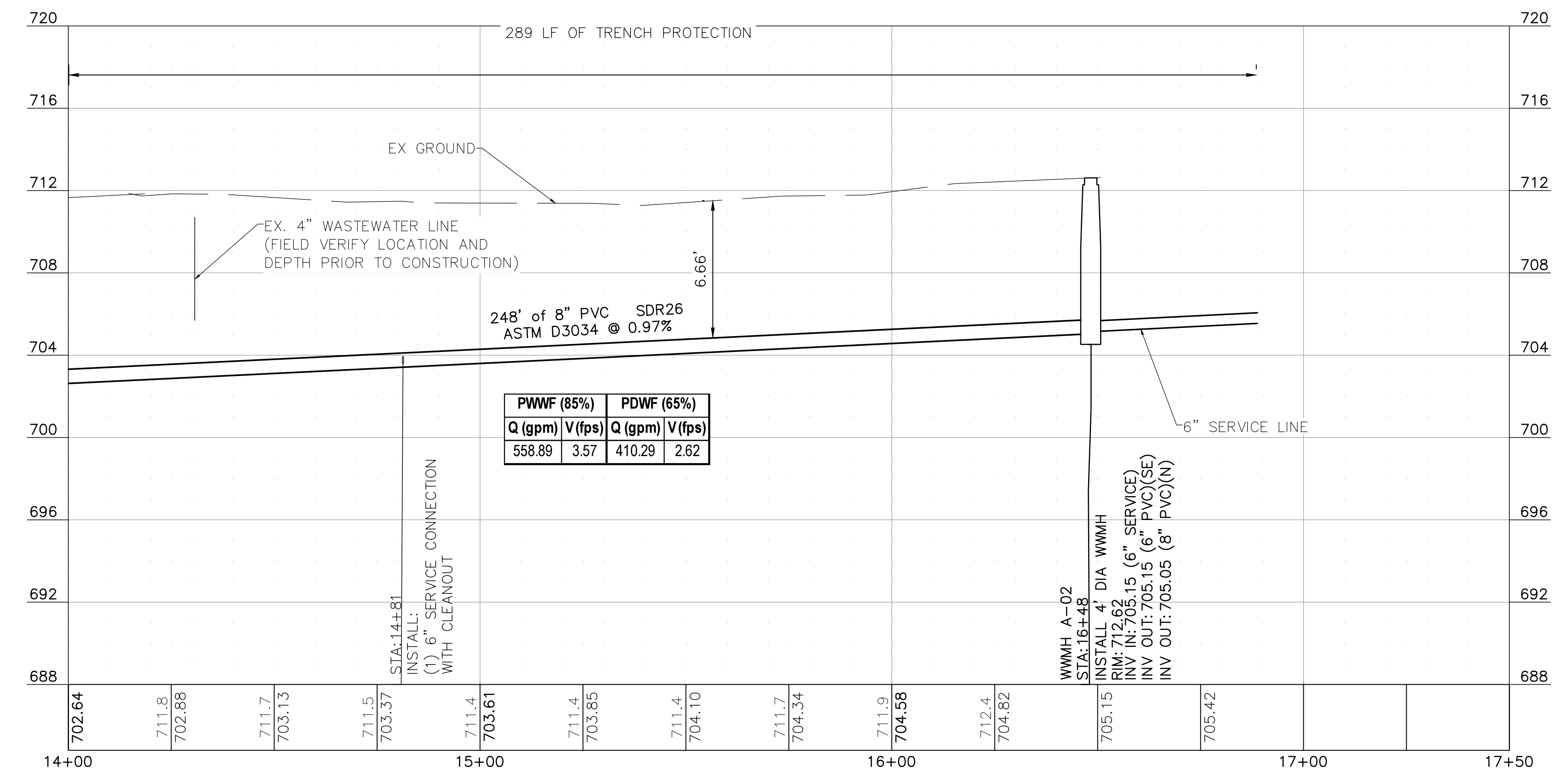


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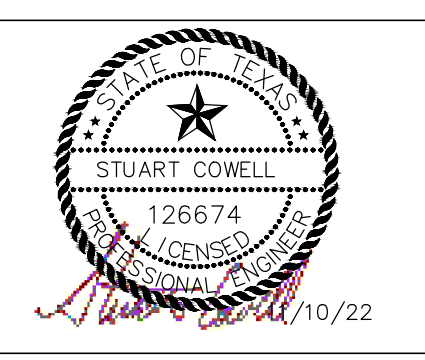
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ROUND ROCK, TEXAS 78735

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Fax 512.439.4716
FRN-F-1386

PLAN AND PROFILE
WASTEWATER LINE "A"
STA 14+00 TO END

JOB NUMBER: 2173-2201
SCALE:
HORIZONTAL: 1"=20'
VERTICAL: 1"=4'
SHEET NO.
15
OF 21 SHEETS

11/10/2022 11:10/2022 i:\2173\2201 Schlemmer PH2\CADD\SHEETS\S&P_PH2_PLAN & PROFILE_post_survey_issue.dwg krose

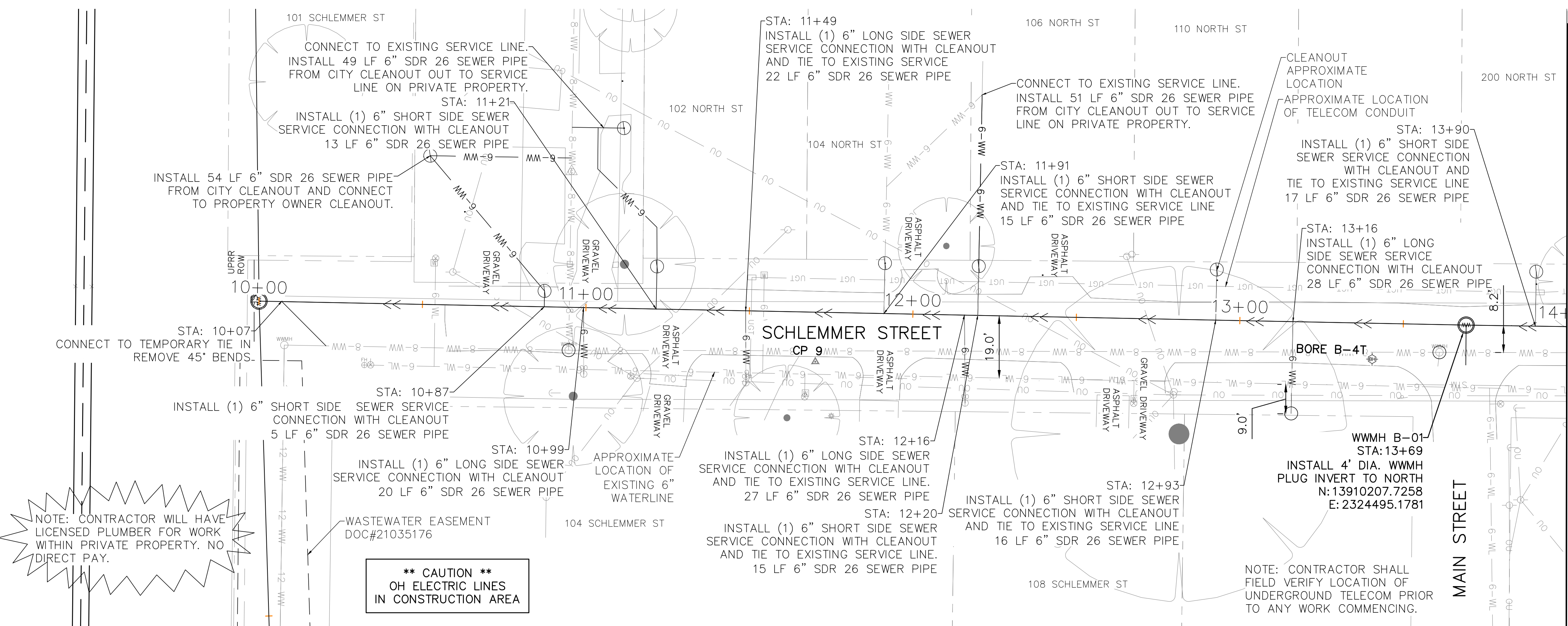


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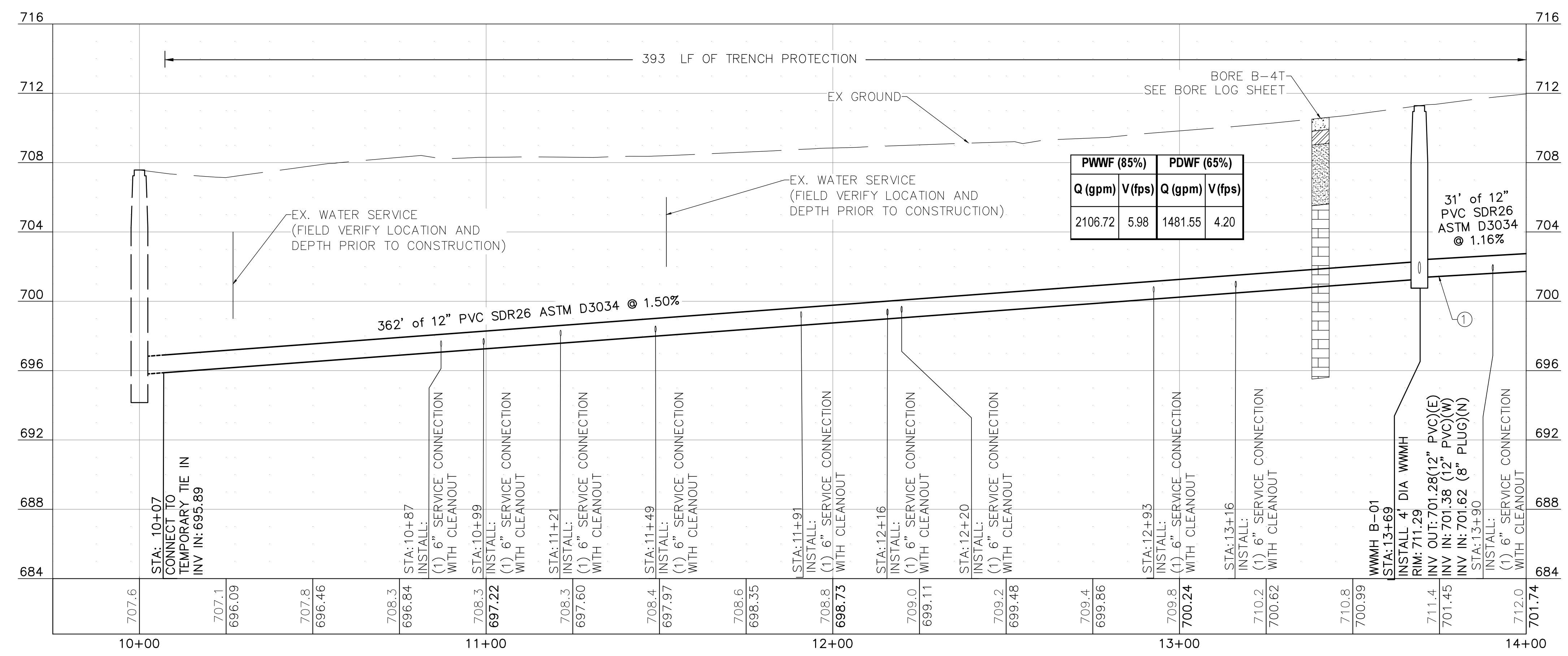
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**** CAUTION ****
OH ELECTRIC LINES
IN CONSTRUCTION AREA

NOTE: CONTRACTOR SHALL FIELD VERIFY LOCATION OF UNDERGROUND TELECOM PRIOR TO ANY WORK COMMENCING.



PWWF (85%)		PDWF (65%)	
Q (gpm)	V (fps)	Q (gpm)	V (fps)
2106.72	5.98	1481.55	4.20

①

PWWF (85%)		PDWF (65%)	
Q (gpm)	V (fps)	Q (gpm)	V (fps)
1852.64	5.26	1302.87	3.70

- ASHPHALT
- FAT CLAY
- CLAYEY SAND WITH GRAVEL
- LIMESTONE

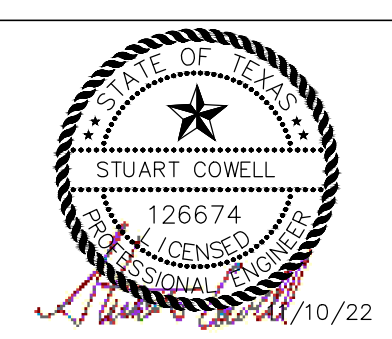
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ROUND ROCK, TEXAS 78735

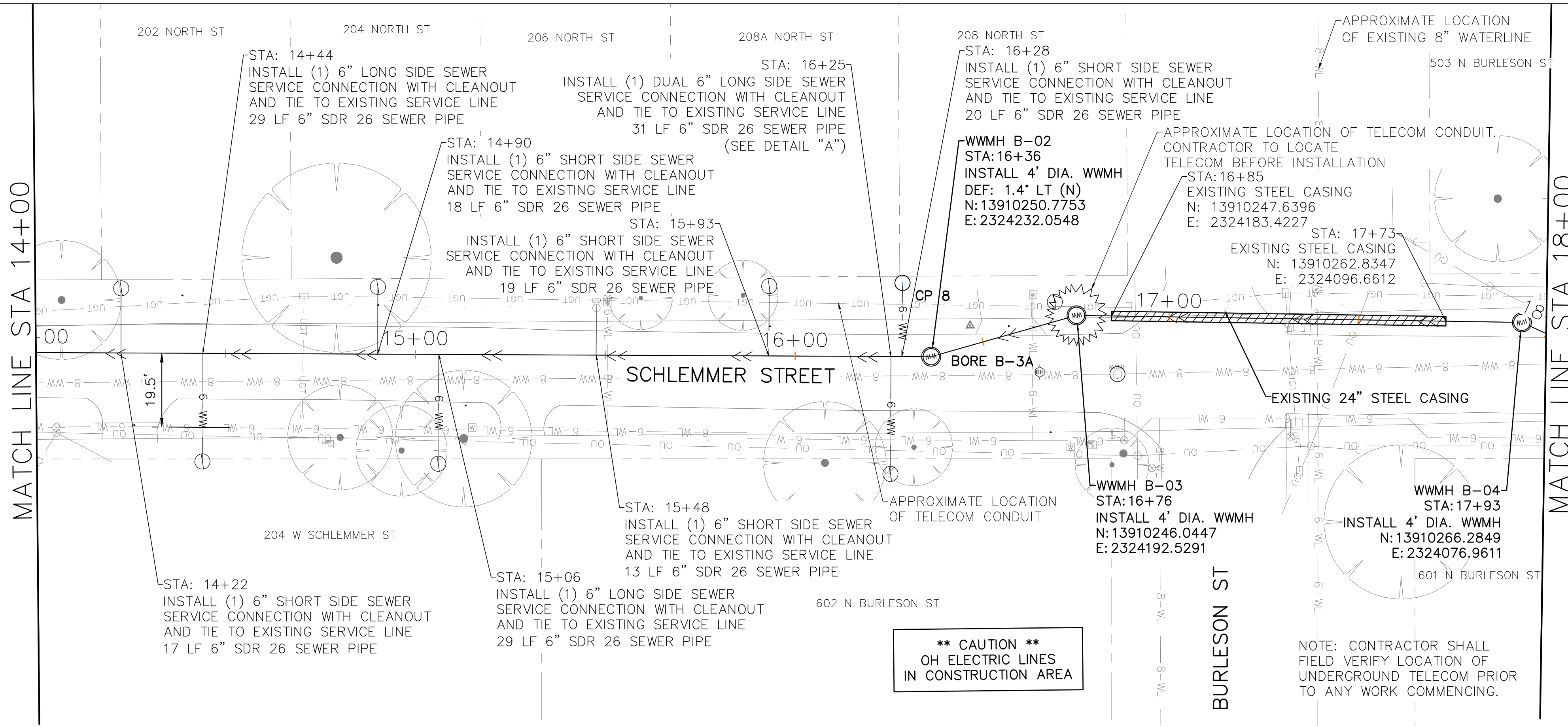
LJA
Phone 512.767.7300
Fax 512.439.4716
FRN-F-1386

PLAN AND PROFILE
WASTEWATER LINE "B"
BEGIN TO STA 14+00

JOB NUMBER:
2173-2201
SCALE:
HORIZONTAL: 1"=20'
VERTICAL: 1"=4'
SHEET NO.
16
OF 21 SHEETS

11/10/2022 11:10/2022 I:\2173\2201 Schlemmer PH2\CADD\SHEETS\S&P_PH2_PLAN & PROFILE_post_survey_issue.dwg kroese

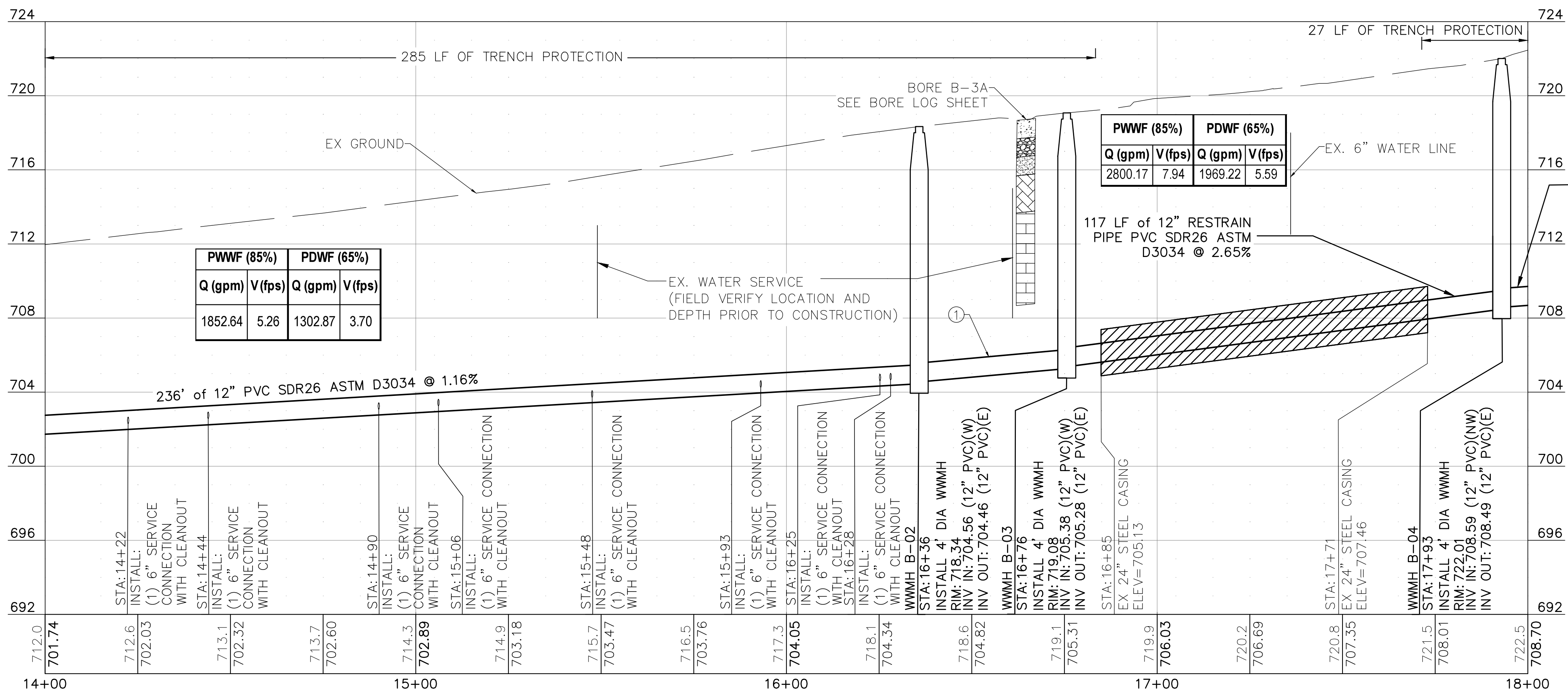
MATCH LINE STA 14+00



MATCH LINE STA 18+00



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PWWF (85%)		PDWF (65%)	
Q (gpm)	V (fps)	Q (gpm)	V (fps)
1852.64	5.26	1302.87	3.70

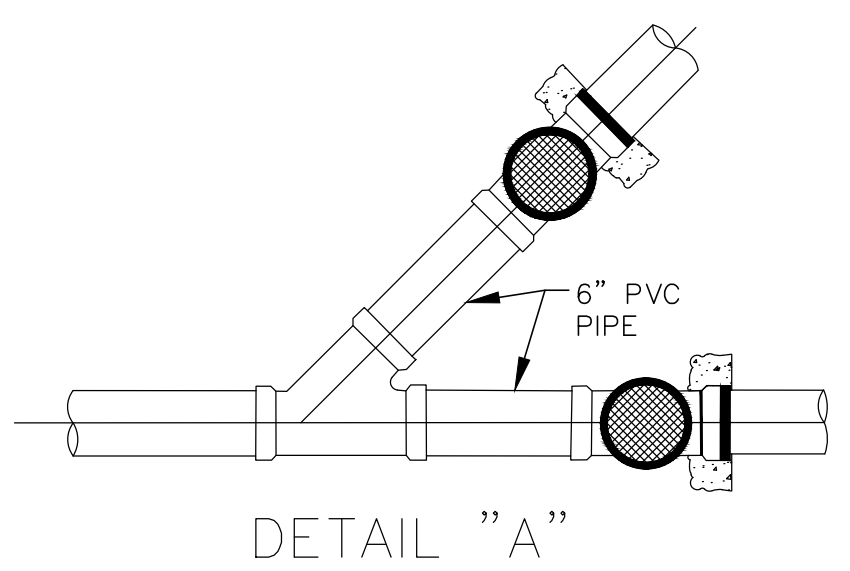
PWWF (85%)		PDWF (65%)	
Q (gpm)	V (fps)	Q (gpm)	V (fps)
2800.17	7.94	1969.22	5.59

PWWF (85%)		PDWF (65%)	
Q (gpm)	V (fps)	Q (gpm)	V (fps)
2106.72	5.98	1481.55	4.20

① 40' of 12" PVC SDR26 ASTM D3034 @ 1.81%

PWWF (85%)		PDWF (65%)	
Q (gpm)	V (fps)	Q (gpm)	V (fps)
2314.20	6.57	1627.46	4.62

- ASHPHALT
- CLAYEY GRAVEL WITH SAND
- CLAYEY SAND WITH GRAVEL
- WEATHERED LIMESTONE
- LIMESTONE



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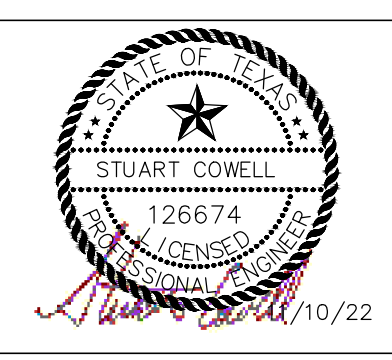


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 2700 LA FRONTERA BLVD.
 SUITE 150
 ROUND ROCK, TEXAS 78735
 Phone 512.767.3300
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 FRN-F-1386

PLAN AND PROFILE
 WASTEWATER LINE "B"
 STA 14+00 TO STA 18+00

JOB NUMBER: 2173-2201
 SCALE: HORIZONTAL: 1"=20' VERTICAL: 1"=4'
 SHEET NO. 17 OF 21 SHEETS

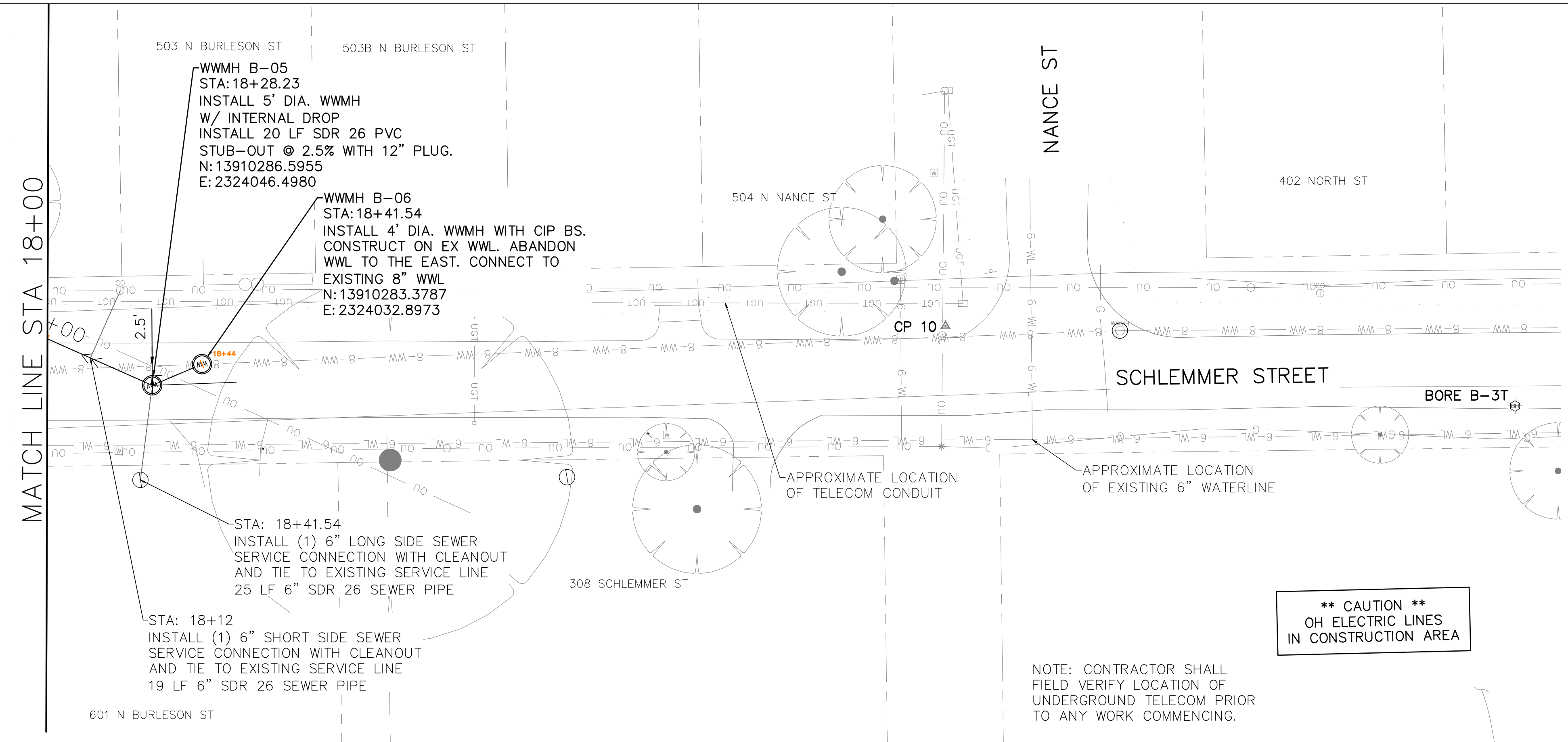


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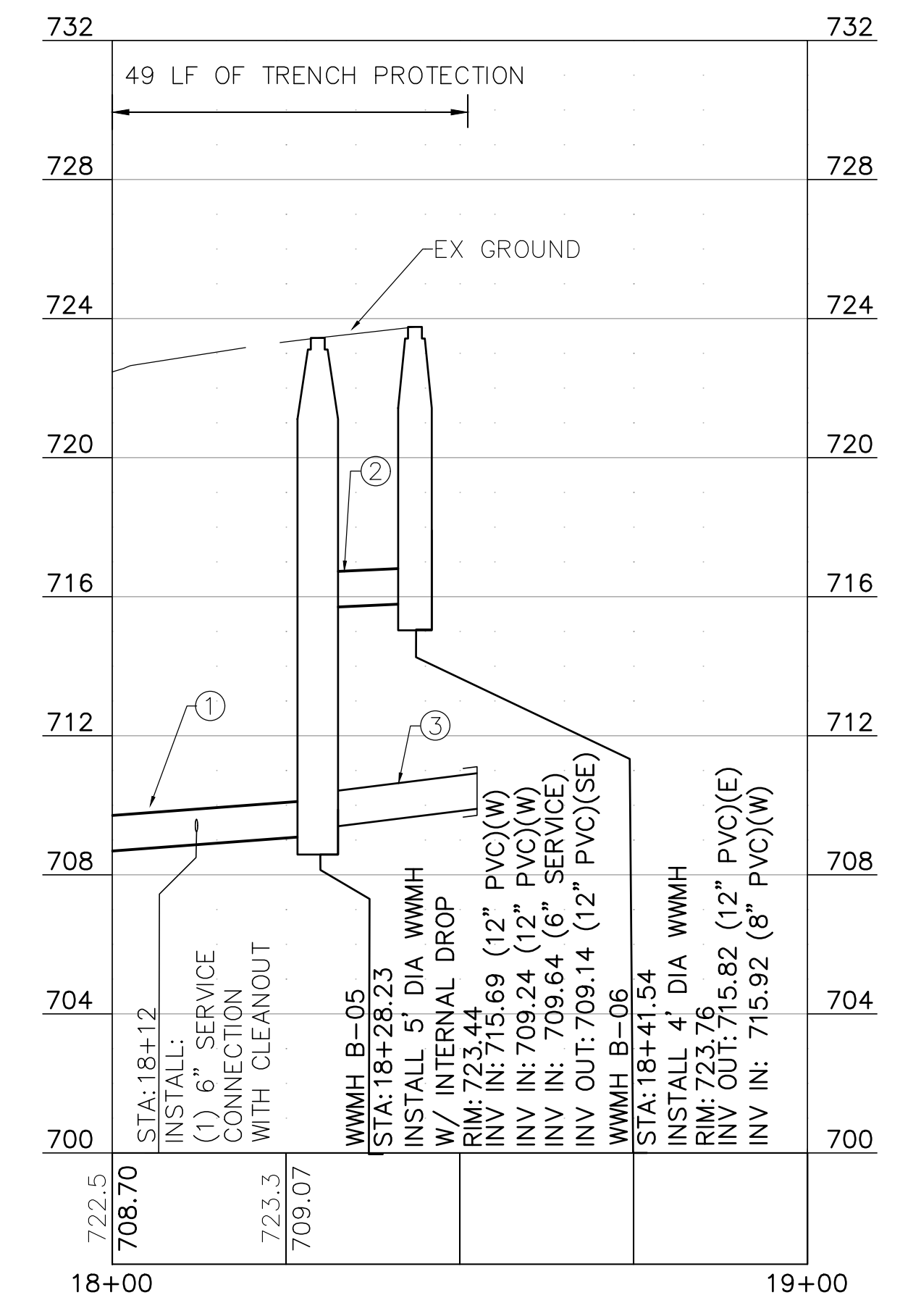
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OH ELECTRIC LINES
IN CONSTRUCTION AREA

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① 28' of 12" PVC SDR26
ASTM D3034 @ 1.50%

PWWF (85%)		PDWF (65%)	
Q (gpm)	V (fps)	Q (gpm)	V (fps)
2106.72	5.98	1481.55	4.20

② 13' of 12" PVC SDR26
ASTM D3034 @ 0.95%

PWWF (85%)		PDWF (65%)	
Q (gpm)	V (fps)	Q (gpm)	V (fps)
1676.58	4.76	1179.05	3.34

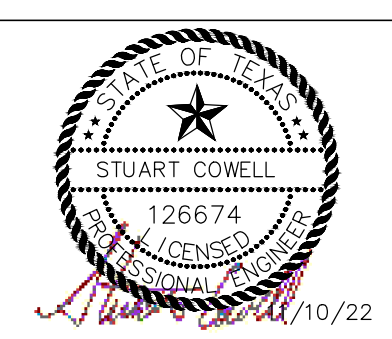
③ 20' of 12" PVC SDR26
ASTM D3034 (STUBOUT)
@ 2.5%

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PLAN AND PROFILE
WASTEWATER LINE "B"
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BORING LOG NO. A-1 Page 1 of 1

PROJECT: City of Kyle - Schlemmer & Porter WL Phase II
CLIENT: LJA Engineering Inc Round Rock, TX
SITE: Front St and N St Kyle, TX

LOCATION: See Exploration Plan
 Latitude: 29.9903° Longitude: -97.8749°
 Approximate Surface Elev.: 710.0 (FL) +/-

DEPTH (ft)	WATER LEVEL OBSERVATIONS	DEPTH (ft)	FIELD TEST RESULTS	RECOVERY (%)	STRENGTH TEST	ATTENBERG LIMITS	PERCENT FINES
0.7		7.10-12	7-10-12 N=22			7.5	33-18-15
1.5		13-15-50.4"	13-15-50.4"			9.1	
5.0		45-50.3"	45-50.3"				
10.0							

Soil Descriptions:
 0.7' ASPHALT - ~2" of Asphalt over 6" of Base
 1.5' FILL - CLAYEY SAND WITH GRAVEL (SC), dark brown to brown to light brown, medium dense
 CLAYEY SAND WITH GRAVEL (SC), light tan to pale brown, very dense, with limestone fragments
 Limestone (AUSTIN GROUP), light tan to pale brown, moderately fractured

Water Level Observations:
 No free water observed

Notes:
 See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (if any).
 See Supporting Information for explanation of symbols and abbreviations.
 Elevations were interpolated from a topographic site plan.

Water Level Observations:
 No free water observed

Terracon
 5307 Industrial Oaks Blvd Ste 160 Austin, TX
 Boring Started: 08-22-2022 Boring Completed: 08-22-2022
 Drill Rig: CME 45 Driller: Austin Geo-Logic
 Project No.: 98229508

BORING LOG NO. B-3 Page 1 of 1

PROJECT: City of Kyle - Schlemmer & Porter WL Phase II
CLIENT: LJA Engineering Inc Round Rock, TX
SITE: Front St and N St Kyle, TX

LOCATION: See Exploration Plan
 Latitude: 29.9931° Longitude: -97.8779°
 Approximate Surface Elev.: 720.0 (FL) +/-

DEPTH (ft)	WATER LEVEL OBSERVATIONS	DEPTH (ft)	FIELD TEST RESULTS	RECOVERY (%)	STRENGTH TEST	ATTENBERG LIMITS	PERCENT FINES
0.5		30-17-50.1"	30-17-50.1"				
1.5		22-25-30 N=55	22-25-30 N=55			3.7	42-16-26
4.5		50.3"	50.3"			4.3	
7.5		50.3"	50.3"				
10.0		50.2"	50.2"			6.0	
15.0		50.1"	50.1"				

Soil Descriptions:
 0.5' ASPHALT - ~4" of Asphalt over 6" of Base
 1.5' FAT CLAY WITH GRAVEL (CH), dark brown, hard
 CLAYEY SAND WITH GRAVEL (SC), tan to light tan, very dense, with limestone fragments
 Limestone (AUSTIN GROUP), light tan to pale brown
 Limestone (AUSTIN GROUP), gray to light gray

Water Level Observations:
 No free water observed

Notes:
 See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (if any).
 See Supporting Information for explanation of symbols and abbreviations.
 Elevations were obtained via Google Earth Imagery.

Water Level Observations:
 No free water observed

Terracon
 5307 Industrial Oaks Blvd Ste 160 Austin, TX
 Boring Started: 08-16-2022 Boring Completed: 08-16-2022
 Drill Rig: Mobile B-03 Driller: Austin Geo-Logic
 Project No.: 98229508

BORING LOG NO. B-4 Page 1 of 1

PROJECT: City of Kyle - Schlemmer & Porter WL Phase II
CLIENT: LJA Engineering Inc Round Rock, TX
SITE: Front St and N St Kyle, TX

LOCATION: See Exploration Plan
 Latitude: 29.9927° Longitude: -97.8753°
 Approximate Surface Elev.: 710.0 (FL) +/-

DEPTH (ft)	WATER LEVEL OBSERVATIONS	DEPTH (ft)	FIELD TEST RESULTS	RECOVERY (%)	STRENGTH TEST	ATTENBERG LIMITS	PERCENT FINES
0.7		7-15-22 N=37	7-15-22 N=37			27.5	
1.5		29-35-33 N=68	29-35-33 N=68			6.7	29-17-12
5.0		50.4"	50.4"				
8.0		50.3"	50.3"			6.8	
10.0		50.2"	50.2"				
15.0		50.1"	50.1"			6.2	

Soil Descriptions:
 0.7' ASPHALT - ~1 1/2" of Asphalt over 6" of Base
 1.5' FAT CLAY (CH), dark brown, hard
 CLAYEY SAND WITH GRAVEL (SC), tan to light tan, very dense, with limestone fragments
 Limestone (AUSTIN GROUP), light tan to pale brown
 Limestone (AUSTIN GROUP), gray to light gray

Water Level Observations:
 No free water observed

Notes:
 See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (if any).
 See Supporting Information for explanation of symbols and abbreviations.
 Elevations were interpolated from a topographic site plan.

Water Level Observations:
 No free water observed

Terracon
 5307 Industrial Oaks Blvd Ste 160 Austin, TX
 Boring Started: 08-16-2022 Boring Completed: 08-16-2022
 Drill Rig: Mobile B-03 Driller: Austin Geo-Logic
 Project No.: 98229508

Boring Log No. B-3A

Project: North Burleson Street From W. Center to Market Place Avenue Kyle, Texas
Coordinates: N29°59'34.28" W97°52'34.73"
Location: See Boring Location Plan
Backfill: Cuttings

Soil Description	Depth (ft)	SN	WC	PL	LL	PI	N	-200	DD	Uc	REC	RQD
1" Asphalt over 8" BASE	0-1	GB										
(FILL) CLAYEY GRAVEL with Sand (GC), medium dense, dark brown and tan	1-1.5	SS	7	17	37	20	28	29				
(CIVILS) CLAYEY SAND with Gravel (SC), very dense, light tan and gray	1.5-2.5	SS	11	18	37	19	50.3"	34				
Weathered LIMESTONE, light tan and gray	2.5-5.0	SS	6				50.3"					
(AUSTIN) LIMESTONE, tan, moderately hard with clay partings, weathered layers and discontinuities.	5.0-7.0								147	178		64
-light gray from 7 to 8 ft	7.0-8.0								143	111		
	8.0-10.0	RC										

Groundwater Data:
 During drilling: Not encountered

Field Drilling Data:
 Coordinates: Hand-held GPS Unit
 Logged By: W. Perry
 Driller: Austin Geo-Logic
 Equipment: Truck-mounted drill rig

Nomenclature Used on Boring Log
 Grab Sample (GB) Split Spoon (SS)
 Rock Core (RC)
 W/C = Water Content (%) -200 = % Passing #200 Sieve
 PL = Plastic Limit DD = Dry Density (pcf)
 LL = Liquid Limit Uc = Compressive Strength (tsf)
 PI = Plasticity Index RQD = Rock Quality Designation
 N = SPT Blow Count REC = % Recovery

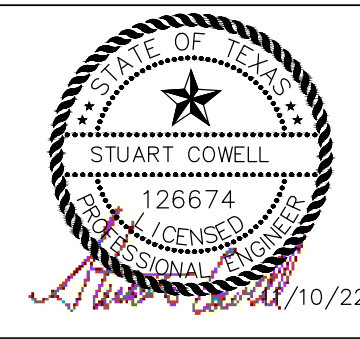
Arias & Associates, Inc. Job No.: 2013-756

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 10/26/2022

DESIGNED BY: KR
 DRAWN BY: KR
 CHECKED BY: SC
 APPROVED BY: SC

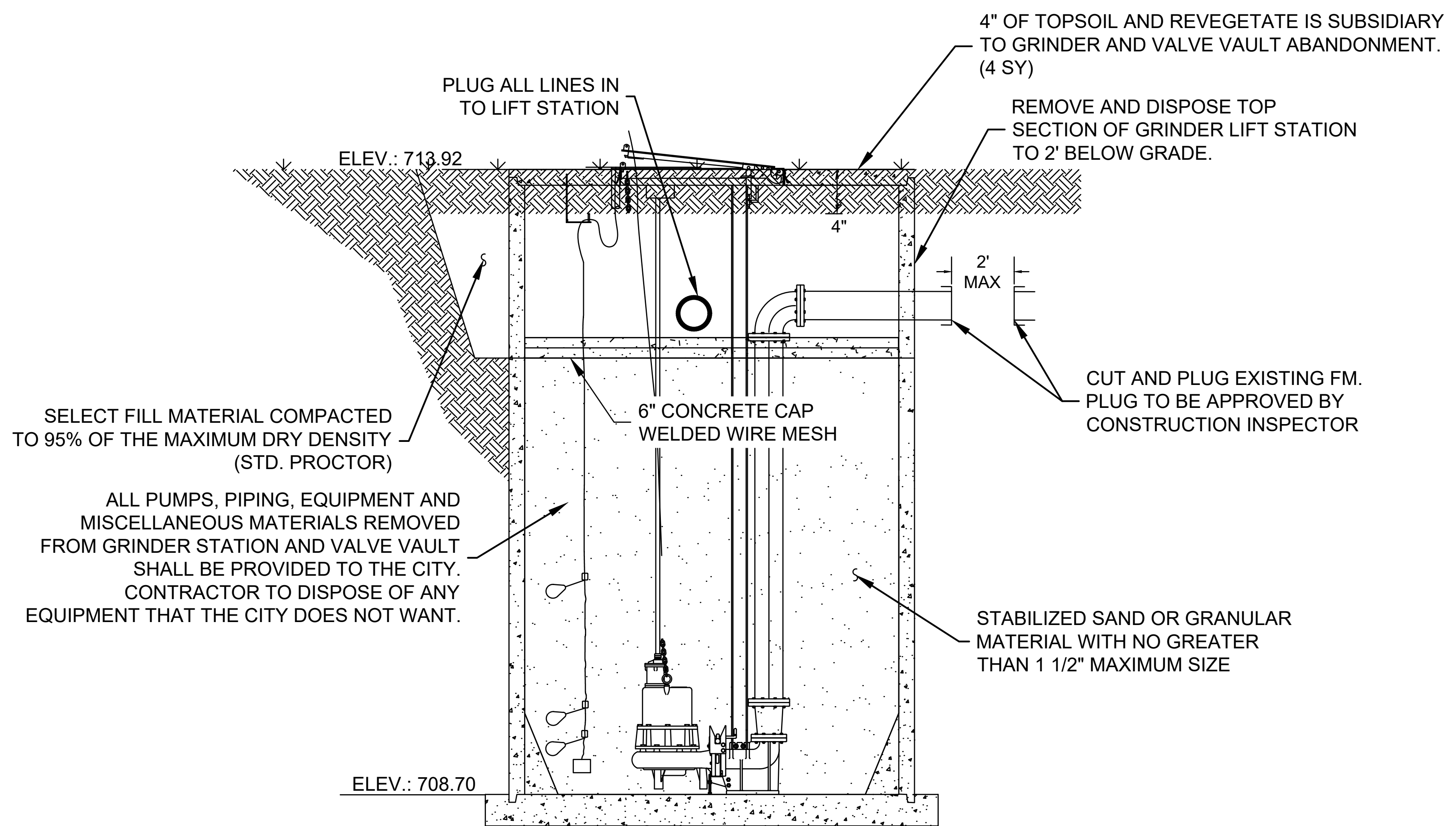


SCHLEMMER & PORTER ST
 WASTEWATER IMPROVEMENTS

LJA Engineering, Inc.
 2700 LA FRONTERA BLVD. Phone 512.767.7300
 SUITE 150 Fax 512.439.4716
 ROUND ROCK, TEXAS 78735 FRN-F-1386

GEOTECH
 BORE LOG

JOB NUMBER: 2173-2201
 SCALE: HORIZONTAL: N/A VERTICAL: N/A
 SHEET NO. 19 OF 21 SHEETS

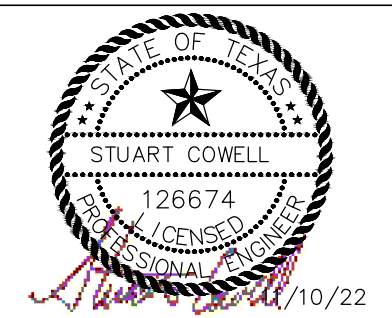


ABANDON GRINDER LIFT STATION
N.T.S.

11/10/2022
11/10/2022
I: \\2173\2201_Schlemmer_Ph2\CADD\SHEETS\S&P_Ph2_DETAILS.dwg krose

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 10/26/2022
DESIGNED BY: KR
DRAWN BY: KR
CHECKED BY: SC
APPROVED BY: SC



SCHLEMMER & PORTER ST
WASTEWATER IMPROVEMENTS

LJA Engineering, Inc.
2700 LA FRONTERA BLVD.
SUITE 150
ROUND ROCK, TEXAS 78735
Phone 512.767.7300
Fax 512.439.4716
FRN-F-1386

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.



WASTEWATER DETAILS 01

JOB NUMBER: 2173-2201
SCALE:
HORIZONTAL: N/A
VERTICAL: N/A
SHEET NO.
20
OF 21 SHEETS



CITY OF KYLE
ENGINEERING DEPARTMENT
100 W CENTER STREET
KYLE, TX 78640
PH (512) 262-3665

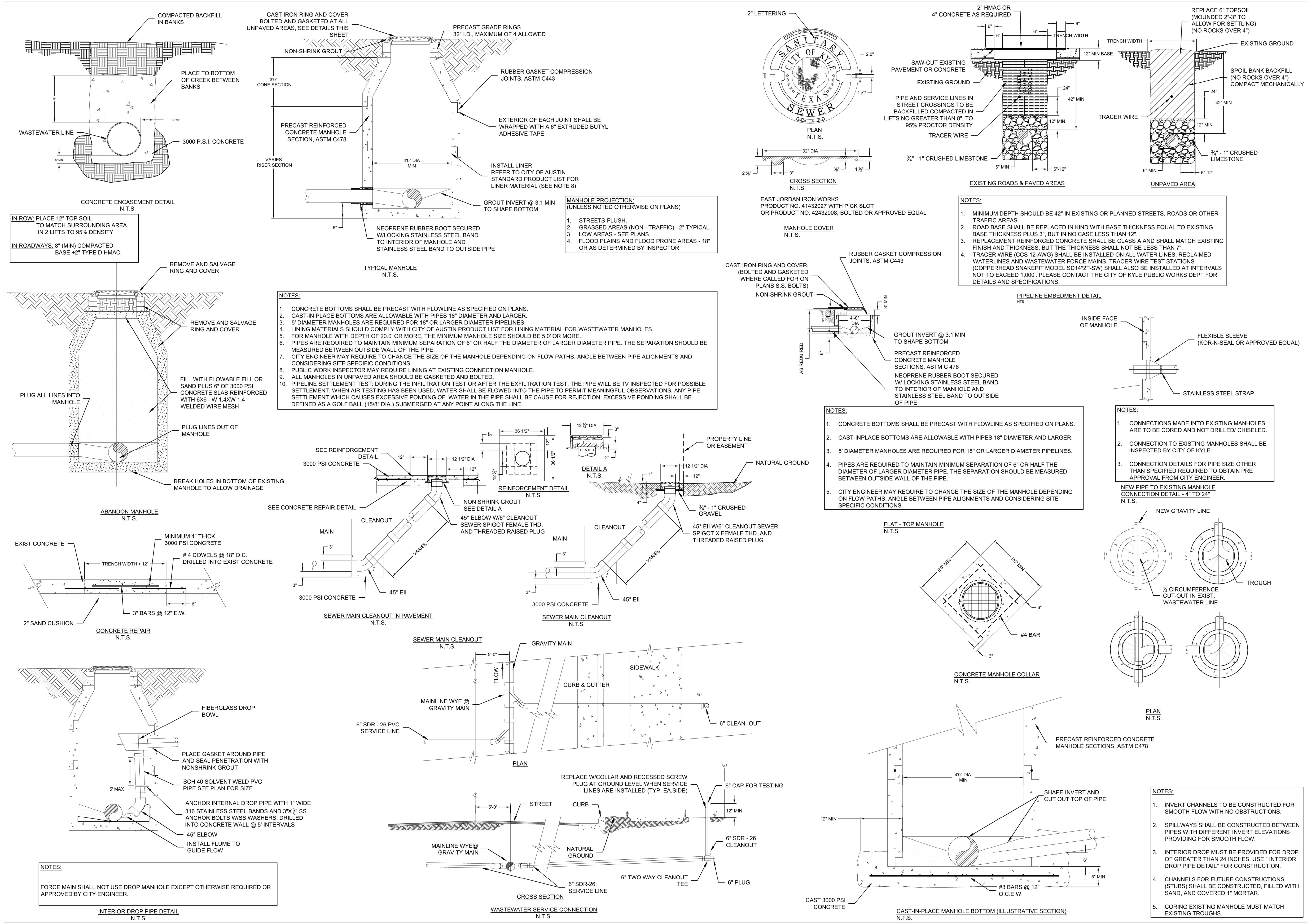
STANDARD WASTEWATER DETAILS

CITY OF KYLE
ENGINEERING DEPARTMENT
100 W CENTER STREET
KYLE, TX 78640
PH (512) 262 1010

DATE	ISSUE/REVISION
04/15/2016	1ST ISSUE
FEB /2018	2ND ISSUE
SEPT /2018	3RD ISSUE
OCT/2021	7TH ISSUE

PROJECT NO.	XXXXX
DATE	AUGUST, 2020
DRAWN BY	KG
CHECKED BY	LB
SHEET DESCRIPTION	CITY OF KYLE STANDARD WASTEWATER DETAILS
SHEET NUMBER	

DT - 2

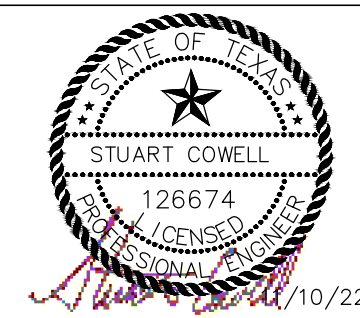


11/10/2022 11:10/2022 I:\2173\2201 Schlemmer_Ph2\CADD\Sheets\S&P_Ph2_Details.dwg kroese

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 10/26/2022

DESIGNED BY: KR
DRAWN BY: KR
CHECKED BY: SC
APPROVED BY: SC



SCHLEMMER & PORTER ST
WASTEWATER IMPROVEMENTS

LJA Engineering, Inc.
2700 LA FRONTERA BLVD.
SUITE 150
ROUND ROCK, TEXAS 78735
Phone 512.767.7300
Fax 512.439.4716
FRN-F-1386

WASTEWATER DETAILS 02

JOB NUMBER: 2173-2201
SCALE: HORIZONTAL: N/A
VERTICAL: N/A
SHEET NO. 21
OF 21 SHEETS