

SHT NO.	DWG NO.	DESCRIPTION
---------	---------	-------------

GENERAL

B - THIRD RIVER CROSSING AND JUNCTION STRUCTURES (OPTION A)

C - DIVERSION FACILITIES (ADDITIVE ALTERNATE NO. 1)

B - THIRD RIVER CROSSING AND JUNCTION STRUCTURES (OPTION B)

	STRUCTURAL
60	BS6 EAST BANK JUNCTION STRUCTURE - PLANS
61	BS7 EAST BANK JUNCTION STRUCTURE - SECTIONS AND DETAILS
62	BS8 EAST BANK JUNCTION STRUCTURE - SECTIONS AND DETAILS
63	BS9 WEST BANK JUNCTION STRUCTURE - PLANS
64	BS10 WEST BANK JUNCTION STRUCTURE - SECTIONS AND DETAILS
65	BS11 MISCELLANEOUS DETAILS

1. SEE SPECIFICATION SECTION 01 29 00 - CONTRACT ITEMS FOR ADDITIONAL REQUIREMENTS.
2. ALL ESTIMATED QUANTITIES SHOWN ARE APPROXIMATE AND ARE TO BE USED ONLY (A) AS A BASIS FOR ESTIMATING THE PROBABLE COST OF THE WORK, AND (B) FOR THE PURPOSE OF COMPUTING THE BIDS SUBMITTED FOR THE WORK. THE ACTUAL AMOUNT OF WORK DONE AND MATERIALS FURNISHED UNDER UNIT PRICE ITEMS MAY DIFFER FROM THE ESTIMATED QUANTITIES. THE BASIS OF PAYMENT FOR WORK AND MATERIALS WILL BE THE ACTUAL AMOUNT OF WORK DONE AND MATERIALS FURNISHED. CONTRACTOR AGREES THAT IT WILL MAKE NO CLAIM FOR DAMAGES, ANTICIPATED PROFITS, OR OTHERWISE ON ACCOUNT OF ANY DIFFERENCE BETWEEN THE AMOUNTS OF WORK ACTUALLY PERFORMED AND MATERIALS ACTUALLY FURNISHED AND THE ESTIMATED AMOUNTS THEREOF.
3. QUANTITIES PROVIDED ARE ESTIMATED AND NOT FINAL QUANTITIES. WORK UNDER THESE PAY ITEMS ARE NOT TO COMMENCE UNTIL DIRECTED TO DO SO IN WRITING BY THE OWNER.

635

— R/W — RIGHT-OF-WAY
— PL — PROPERTY LINE
— X — FENCE
— OE — OVERHEAD ELECTRIC
— SF — SILT FENCING

12"SS ○ SANITARY SEWER LESS THAN 15" OR EQUAL TO 24"
12"SD ○ STORM SEWER LESS THAN 15" OR EQUAL TO 24"
12"W WATER MAIN LESS THAN 15" OR EQUAL TO 24"
4"G GAS MAIN
T UNDERGROUND TELEPHONE CABLE
54"SS ○ SANITARY SEWER LARGER THAN 24"
48"SD ○ STORM SEWER LARGER THAN 24"
48"W WATER MAIN LARGER THAN 24"

----- EXCAVATION SUPPORT SYSTEM (LIMITS OF EXCAVATION)
--- --- LIMITS OF CONSTRUCTION
- - - - - FUTURE BUILDING

□ INLET
WM WATER METER
WV WATER VALVE
FH
○ HYDRANT
○ AERATOR
● PP POWER POLE
○ BH BORE HOLE
● BENCHMARK
× 685.8 SPOT ELEVATION
▨ DENOTES DEMOLITION
○ MOVEMENT MONITOR

A circular professional engineer seal for the State of Oklahoma. The outer ring contains the text "LICENSED PROFESSIONAL ENGINEER" at the top and "OKLAHOMA" at the bottom. The inner circle contains the text "ANA C. STAGG" and "20972".

	GENERAL INDEX, ABBREVIATIONS AND SITE LEGEND			
	PROJECT NO. 2015-17, C2			
	SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES			
	CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT			
	PLANS AND ESTIMATES PREPARED BY: GRIESLEY and HANSEN 321 S BOSTON AVE., SUITE 300 TULSA, OKLAHOMA 74103			

REVISION	BY	DATE	PLAN SCALE:	DRAWN	RKY	8/2020	APPROVED:
			NOT TO SCALE	DESIGNED	TCG	8/2020	
				SURVEY			
			PROFILE SCALE	PROJ. MGR.			
			HORIZONTAL:	LEAD ENGR.			
				FIELD MGR.			
			VERTICAL:	RECOMMENDED			
				DESIGN MANAGER			CITY ENGINEER _____
			FILE: 0141ERAG01	DRAWING:	AG1		DATE: OCTOBER 2020
			ATLAS PAGE NO:				SHEET 1 OF 65



\\GH-DATA01\CLIENT\0141E - SSWWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERAG02 - 2020\10\08 1:02 PM KETENBRINK, BUTCH

GENERAL NOTES:

1. MAKE AN ON-SITE INSPECTION OF THE FACILITY AND RELATED CONDITIONS PRIOR TO BIDDING THIS CONTRACT.
2. A DISTINCTION BETWEEN NEW AND EXISTING MATERIALS, EQUIPMENT AND STRUCTURES HAS BEEN MADE ON THE DRAWINGS BY LINE WEIGHT. HEAVY REPRESENTS NEW, LIGHT REPRESENTS EXISTING.
3. TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING STRUCTURES, UTILITIES AND EQUIPMENT, AND TO MAINTAIN UNINTERRUPTED PLANT OPERATION. PROVIDE ALL TEMPORARY SUPPORTS, BRACES SHEETING AND SHORING AS NECESSARY TO PROTECT AND MAINTAIN ALL STRUCTURES, PIPING, EQUIPMENT AND APPURTENANCES. ANY DAMAGE RESULTING FROM THE ACTIONS, OR LACK OF ACTIONS BY THE CONTRACTOR SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT HIS EXPENSE.
4. AN ASTERISK (*) AT NEW CONSTRUCTION DENOTES LOCATIONS, ELEVATIONS, DIMENSIONS AND OTHER INFORMATION DEPENDENT ON THE CONTRACTOR'S SUBMITTALS. DEVELOP AND SHOW THE INFORMATION MARKED WITH AN ASTERISK (*) ON SUBMITTALS, DEVELOP AND PROVIDE SUCH INFORMATION FOR ALL ASTERISKS (*) WITHIN OR INTERFACING WITH ANY SUBMITTALS AND BETWEEN SUBMITTALS. THIS REQUIREMENT ALSO EXTENDS TO CONDITIONS OR SITUATIONS WHERE A LOCATION, DIMENSION, ELEVATION OR OTHER ITEM IS INDICATED TO BE DETERMINED AFTER FINAL SELECTION OF EQUIPMENT AND/OR APPURTENANCES. ALL INFORMATION FOR ASTERISK (*) AND EQUIPMENT/-APPURTENANCES SITUATIONS DESCRIBED HEREIN ARE THE RESPONSIBILITY OF THE CONTRACTOR TO DEVELOP AND ASSURE COMPATIBLE INTERFACING FOR A COMPLETE, COORDINATED AND TROUBLE-FREE OPERATING INSTALLATION. ALL REQUIREMENTS HEREIN SHALL BE BASED ON FINAL PROCESSING AND/OR REVIEW OF THE CONTRACTOR'S SUBMITTALS OR SELECTIONS.
5. LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING PIPING, EQUIPMENT, STRUCTURES AND OTHER EXISTING WORK ARE BASED ON INFORMATION FURNISHED BY THE CITY EXISTING RECORD DRAWINGS AND CONTRACT DOCUMENTS AND IN SOME INSTANCES FIELD MEASUREMENTS BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. LOCATIONS, ELEVATIONS AND DIMENSIONS OF NEW WORK CONNECTING OR ADJACENT TO OR INTERFACING WITH EXISTING WORK HAVE BEEN DEVELOPED AND ARRANGED BASED ON THE FOREGOING INFORMATION AND FIELD MEASUREMENTS. THE CONTRACTOR IS RESPONSIBLE TO FIELD CHECK AND MEASURE LOCATIONS, ELEVATIONS AND DIMENSIONS AND TO FIT AND OTHERWISE INSTALL THE NEW WORK TO ACTUAL EXISTING LOCATIONS, ELEVATIONS AND DIMENSIONS FOR A COMPLETE AND TROUBLE-FREE OPERATING FACILITY.
6. MAKE ALL MEASUREMENTS NECESSARY TO LOCATE, FABRICATE, ERECT, CONSTRUCT AND OTHERWISE INSTALL ALL NEW WORK IN EXISTING AND NEW LOCATIONS AND RELOCATE AND REWORK EXISTING WORK ALL TO THE ARRANGEMENTS, GUIDANCE AND INSTRUCTIONS SHOWN AND REQUIRED FOR A COMPLETE TROUBLE-FREE OPERATING INSTALLATION.
7. FABRICATE, ERECT, CONSTRUCT AND OTHERWISE INSTALL ALL NEW WORK CONNECTING TO EXISTING WORK, AND MAKE ALL NECESSARY RELOCATIONS TO THE ARRANGEMENTS AND GENERAL DESIGN SHOWN. MAKE ANY ADJUSTMENTS IN FABRICATION, ERECTION, CONSTRUCTION AND INSTALLATION NECESSARY TO FIT NEW WORK AND RELOCATIONS TO EXISTING CONDITIONS TO CONFORM TO THE ARRANGEMENTS AND GENERAL DESIGN SHOWN. ADJUSTMENTS PROPOSED OR CONTEMPLATED SHALL CONFORM TO REQUIREMENTS AND STANDARDS OF THE CONTRACT DOCUMENTS.
8. MAKE RELOCATIONS SHOWN TO MATCH THE MATERIAL AND QUALITY OF THE FACILITY, CONSTRUCTION OR WORK TO BE RELOCATED. RELOCATIONS SHOWN ARE TO BE ARRANGED AS REQUIRED TO PRODUCE PERFORMANCE, UTILITY AND ACCESS EQUAL TO THE EXISTING WORK.
9. INCORPORATE ALL INFORMATION AND WORK REQUIRED UNDER THESE GENERAL NOTES FOR THESE WORKING DRAWINGS. ALL SUCH INFORMATION AND WORK SHALL BE SO INCORPORATED PRIOR TO THE TIME WORKING DRAWINGS ARE SUBMITTED.
10. THE REQUIRED WORK WILL TAKE PLACE WITHIN AN OPERATING SEWAGE TREATMENT FACILITY, AND THE WORK WILL REQUIRE MODIFICATION AND REHABILITATION OF EXISTING EQUIPMENT, PIPING AND STRUCTURES. EXISTING EQUIPMENT, PIPING AND STRUCTURES WILL BE IN SERVICE UNTIL THEY ARE TAKEN OUT OF SERVICE EITHER PERMANENTLY OR TEMPORARILY AS REQUIRED FOR THE CONTRACTOR'S WORK. PROVIDE LABOR AND MATERIALS TO CLEAN AND OTHERWISE PREPARE WORK AREAS AS REQUIRED.
11. COORDINATE WORK WITH WASTEWATER TREATMENT PERSONNEL IN ORDER TO MAINTAIN THE FACILITIES IN CONTINUOUS OPERATION. CERTAIN FACILITIES MAY BE TAKEN OUT OF SERVICE TEMPORARILY ONLY WITH PRIOR APPROVAL OF THE ENGINEER.
12. NOTIFY ENGINEER A MINIMUM OF 72 HOURS IN ADVANCE IF THE CONTRACTOR REQUIRES OPERATION OF ANY VALVES, PUMPS, OR OTHER EQUIPMENT TO FACILITATE CONSTRUCTION ACTIVITIES.
13. PROVIDE WRITTEN NOTICE TO THE ENGINEER OF ANY WORK REQUIRING CHANGES IN OPERATING PROCEDURES OR REMOVAL OF EQUIPMENT OR STRUCTURES FROM SERVICE A MINIMUM OF 30 DAYS IN ADVANCE TO THE REQUIRED DATE.
14. LIMIT OPERATIONS GENERALLY TO THE AREA AROUND THE FACILITIES IN THIS CONTRACT. ACCESS OF WORK REQUIRED IN OTHER AREAS OF THE SITE SHALL BE ARRANGED AND COORDINATED WITH THE ENGINEER. ALL EMPLOYEES OF THE CONTRACTOR AND HIS/HER SUBCONTRACTORS SHALL BE REQUIRED TO OBTAIN CITY OF TULSA ID BADGE. EACH EMPLOYEE SHALL SUBMIT A COMPLETED CITY OF TULSA ACCESS CARD/IDENTIFICATION CARD/DRIVER'S LICENSE AND KEY REQUEST FORM TO CITY OF TULSA PUBLIC FACILITIES SECURITY. EACH EMPLOYEE SHALL SUBMIT COMPLETED APPLICATION FOR CITY OF TULSA SECURITY BACKGROUND AND PRESCREEN INVESTIGATION FORM. SEE APPENDIX A IN SPECIFICATIONS FOR BLANK FORMS.
15. ALL SHOP AND WORKING DRAWING SUBMITTALS SHALL BE PREPARED BY THE CONTRACTOR TO INCORPORATE ALL REQUIREMENTS AND RESPONSIBILITIES OF THESE GENERAL NOTES.
16. PROVIDE ALL SUPPORT OR ANCILLARY ITEMS AND WORK FOR ITEMS SUBMITTED AS EQUIVALENT TO SPECIFIED ITEMS THAT ARE REQUIRED TO PROVIDE THE SAME FUNCTIONAL, OPERATIONAL AND CONTROL CAPABILITIES, NEEDS AND REQUIREMENTS SHOWN AND SPECIFIED FOR THE SPECIFIED ITEM. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE TO SUBMIT ALL SUPPORT AND ANCILLARY ITEMS AND WORK WITH HIS SUBMITTAL OF THE PROPOSED EQUIVALENT ITEM AND TO SHOW THAT THE PROPOSED EQUIVALENT ITEM HAS BEEN PROPERLY COORDINATED, INTERFACED AND OTHERWISE INCORPORATED INTO THE WORK. PROVIDE ALL SUCH SUPPORT OR ANCILLARY ITEMS AND WORK WHETHER THE NEED FOR THEM HAS BEEN DETERMINED BEFORE, DURING OR AFTER APPROVAL OR ACCEPTANCE OF THE EQUIVALENT ITEM.
17. IF THERE IS DISAGREEMENT IN WORK SHOWN BETWEEN THE DRAWINGS AND PROJECT MANUAL PROVIDE THE MINIMUM WORK NEEDED TO SATISFY FUNCTIONAL, CONTROL AND INTERFACING REQUIREMENTS AND PROVIDE A TROUBLE-FREE OPERATING INSTALLATION.
18. IN COMPLYING WITH ALL RESPONSIBILITIES AND REQUIREMENTS UNDER THESE GENERAL NOTES PROVIDE ALL DESIGNS, LABOR, EQUIPMENT AND SERVICES NEEDED FOR SUCH COMPLIANCE.
19. NEW WORK INCLUDES ALL WORK SHOWN AS SUCH IN ANY MANNER ON THE PLANS, SPECIFIED AND OTHERWISE INDICATED IN THE CONTRACT DOCUMENTS.
20. EXISTING WORK SHALL BE REMOVED TO THE EXTENT SHOWN AND SPECIFIED AND AS NEEDED TO BE COMPATIBLE AND ACCOMMODATE NEW WORK OR REPLACEMENT WORK.

21. EXISTING FACILITIES OR WORK TO BE USED, IMPACTED OR OTHERWISE AFFECTED BY THE CONTRACTOR SHALL BE INSPECTED PRIOR TO STARTING WORK. REPAIR, MODIFY, UPGRADE, PROTECT, SUPPLEMENT OR SUPPORT EXISTING FACILITIES OR WORK TO OBTAIN THE DEGREE OF SERVICE REQUIRED BY THE CONTRACTOR TO PERFORM NEW WORK. RETURN EXISTING FACILITIES OR WORK TO ITS FUNCTIONAL EQUIVALENCY FOUND PRIOR TO THE START OF THE WORK TO THE SATISFACTION OF THE ENGINEER.
22. PAINT EXISTING FACILITIES AND WORK IF EXISTING PAINT OR COATINGS ARE DAMAGED BY THE OPERATIONS. ALL EXISTING WORK INCORPORATED WITHIN OR AS PART OF NEW WORK SHALL BE PAINTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
23. PRIOR TO REMOVING ANY EXISTING PIPING, EQUIPMENT, STRUCTURES, CONDUITS, BUILDINGS, CONTROLS, INSTRUMENTATION, FACILITIES OR WORK FROM SERVICE OR OPERATION BY THE CITY, DEMONSTRATE THAT ALL NEW ITEMS AND WORK ARE AVAILABLE FOR CONSTRUCTION AND INSTALLATION. ONCE EXISTING ITEMS ARE REMOVED FROM SERVICE, WORK DILIGENTLY AND CONTINUOUSLY IN ACCORDANCE WITH APPROVED CONSTRUCTION SCHEDULE TO MINIMIZE THE TIME PERIOD THAT ANY EXISTING ITEM IS OUT OF SERVICE. EXISTING ITEMS SHALL BE RETURNED TO SERVICE AS QUICKLY AS POSSIBLE WITH OUT-OF-SERVICE PERIODS KEPT TO A MINIMUM.
24. ACCESS TO SOME AREAS OF WORK MAY BE LIMITED AND MAY NOT BE EASILY ACCESSIBLE BY SOME TYPES OF CONSTRUCTION EQUIPMENT FROM EXISTING PLANT ROADS. INSPECT THE SITE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND PROVIDE ANY AND ALL EQUIPMENT REQUIRED TO PERFORM THE WORK. SUBMIT STRUCTURAL LOAD CALCULATIONS AND WORKING DRAWINGS PREPARED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF OKLAHOMA FOR PRIOR APPROVAL SHOWING ALL CONSTRUCTION LOADS ON EXISTING STRUCTURES AND FACILITIES AND DEMONSTRATE TO THE SATISFACTION OF THE ENGINEER THAT THE CAPACITY OF EXISTING STRUCTURES AND FACILITIES WILL NOT BE EXCEEDED BY ANY LOAD DEVELOPED DURING CONSTRUCTION.
25. ALL COSTS ASSOCIATED WITH COMPLIANCE WITH THESE GENERAL NOTES SHALL BE INCLUDED IN THE VARIOUS CONTRACT ITEMS, AND NO SEPARATE PAYMENT WILL BE MADE THEREFORE.
26. LOCATIONS AND ELEVATIONS SHOWN FOR EXISTING UTILITIES ARE APPROXIMATE. HAVE ALL UTILITIES LOCATED PRIOR TO BEGINNING WORK. CONTRACTOR IS TO VERIFY LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES AFFECTING THE WORK PRIOR TO CONSTRUCTION.
27. CONTRACTOR SHALL NOT STORE EQUIPMENT OR MATERIALS WITHIN THE FLOODPLAIN.

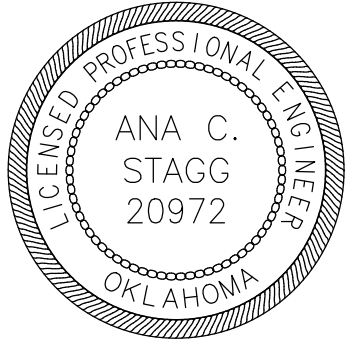
GENERAL MECHANICAL NOTES:

1. PIPE FITTINGS, FLANGES, HARNESSSED SLEEVE TYPE COUPLINGS, AND LOCATIONS AND ELEVATIONS OF PIPING ARE SHOWN TO GENERALLY DESCRIBE THE WORK AND DO NOT PURPORT TO BE COMPLETE FINAL CONSTRUCTION DETAILS. SHOP DRAWINGS SHALL BE PREPARED AND SUBMITTED FOR ACCEPTANCE AS SPECIFIED.
2. HARNESSSED SLEEVE TYPE COUPLINGS AND FLANGES ON PIPING SYSTEMS SHALL BE PROVIDED WHERE SHOWN AND AT OTHER LOCATIONS AS REQUIRED AND APPROVED TO FACILITATE THE FUTURE DISMANTLING OR REMOVAL OF PIPING SEGMENTS WITHOUT DISTURBING ADJACENT AND RELATED PIPING.
3. CONTRACT DRAWINGS DO NOT SHOW ALL PIPE SUPPORTS. PROVIDE PIPE SUPPORTS IN ACCORDANCE WITH SPECIFICATION SECTION 15109 AND THE CONTRACT DRAWINGS.
4. PIPE SUPPORTS SHALL BE PROVIDED ON EACH SIDE OF ALL HARNESSSED COUPLINGS SYMMETRICALLY LOCATED WITHIN TWO FEET OF THE END OF THE COUPLING.
5. IF ANY EXISTING PIPES, FITTINGS, VALVES, OR RELATED APPURTENANCES ARE TEMPORARILY REMOVED THEY SHALL BE REPLACE WITH THE SAME IN KIND, WITH NEW MATERIAL (OR EXISTING MATERIAL WHERE SHOWN) AND NO SEPARATE PAYMENT WILL BE MADE THEREFORE, UNLESS OTHERWISE NOTED OR SPECIFIED.
6. ALL ANCHOR BOLTS, NUTS, WASHERS, AND EXPANSION ANCHORS, OUTSIDE EXPOSED TO THE WEATHER, AND PARTIALLY OR TOTALLY SUBMERGED SHALL BE OF TYPE 304 STAINLESS STEEL.
7. WALL AND FLOOR SLEEVES SHALL BE LARGE ENOUGH TO ACCOMMODATE FLANGES IF NECESSARY OR REQUIRED.
8. ALL SHOP AND WORKING DRAWING SUBMITTALS SHALL BE PREPARED TO INCORPORATE ALL REQUIREMENTS AND RESPONSIBILITIES OF THESE MECHANICAL NOTES.
9. IN COMPLYING WITH ALL RESPONSIBILITIES AND REQUIREMENTS UNDER THESE MECHANICAL NOTES, PROVIDE ALL DESIGNS, LABOR, EQUIPMENT AND SERVICES NEEDED FOR SUCH COMPLIANCE.
10. ALL COSTS ASSOCIATED WITH COMPLIANCE WITH THESE GENERAL MECHANICAL NOTES SHALL BE INCLUDED IN THE VARIOUS CONTRACT ITEMS, AND NO SEPARATE PAYMENT WILL BE MADE THEREFORE.
11. DIAGRAMMED PIPELINES

VARIOUS PIPELINES ARE SHOWN ON THE CONTRACT DRAWINGS IN DIAGRAM FORM. WHERE SUCH PIPELINES ARE SHOWN ONLY IN DIAGRAM, ARRANGE THE PIPELINES CLEAR OF OTHER PIPELINES, EQUIPMENT, AND WALKING AREAS, AND SO THAT THEY ARE ACCESSIBLE FOR MAINTENANCE. SUCH PIPELINES ARE TO BE FITTED AND INSTALLED IN A NEAT AND WORKMANLIKE MANNER IN ACCORDANCE WITH THE SPECIFICATIONS MANUFACTURER'S RECOMMENDATIONS, APPROVED SHOP DRAWINGS AND AS SPECIFIED IN DIVISION 1. AND ADEQUATE NUMBER OF UNIONS ARE TO BE PROVIDED IN MAIN PIPE AND BRANCH PIPE RUNS TO FACILITATE DISMANTLING AND REMOVAL OF PIPELINE SECTIONS WITHOUT DISTURBING BRANCHES OR CONNECTING PIPELINES. THE FINAL LOCATION OF HOSE VALVES, PIPE DRAINS, VALVES, AND OTHER SUCH APPURTENANCES INCLUDED AS A PART OF DIAGRAMMED PIPELINES ARE TO BE AS SHOWN ON APPROVED SHOP DRAWINGS OR AS APPROVED IN THE FIELD BY THE ENGINEER. THE COST OF FURNISHING, FABRICATING, LOCATING, ERECTING AND OTHERWISE COMPLETELY AND PROPERLY INSTALLING ALL DIAGRAMMED PIPELINES IS TO BE INCLUDED IN THE LUMP SUM CONTRACT ITEM NO. 1, AND NO SEPARATE PAYMENT WILL BE MADE THEREFORE.

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

1. PROVIDE EROSION AND SEDIMENT CONTROL MEASURES AS NECESSARY TO PRECLUDE THE TRANSPORT OF WATERBORNE SEDIMENTS RESULTING FROM CONSTRUCTION ACTIVITIES FROM ENTERING ONTO ADJACENT PROPERTIES OR STATE WATERS.
2. THESE DRAWINGS DO NOT CONSTITUTE AN EROSION CONTROL PLAN. PROVIDE AN EROSION CONTROL PLAN IN ACCORDANCE WITH EACH AUTHORITY HAVING JURISDICTION AND THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY.
3. UNLESS OTHERWISE INDICATED, CONSTRUCT AND MAINTAIN VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY.
4. NOTIFY THE PLAN APPROVING AUTHORITY ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.
5. PLACE EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO OR AS THE FIRST STEP IN CLEARING.
6. MAINTAIN A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN ON THE SITE AT ALL TIMES.
7. PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF SITE BORROW OR WASTE AREAS), SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE APPROVING AUTHORITY.
8. PROVIDE ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENT AS DETERMINED BY THE PLAN APPROVING AUTHORITY.
9. DRAIN DISTURBED AREAS TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
10. DURING DEWATERING OPERATIONS, PUMP WATER INTO AN APPROVED FILTERING DEVICE.
11. INSPECT EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT. PERFORM IMMEDIATELY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES.
12. PROVIDE TEMPORARY AND PERMANENT EROSION CONTROL STRUCTURES AND METHODS IN ACCORDANCE WITH THE ODEQ EROSION CONTROL GUIDELINES AND LOCAL ORDINANCES.
13. CONTINUOUSLY MAINTAIN EROSION CONTROL STRUCTURES SHOWN OR AS REQUIRED DURING CONSTRUCTION THROUGHOUT THE PERIOD IN WHICH AREAS ARE DENUDED. EQUIP AREAS SHOWN TO BE SURFACED WITH STONE BASE INSTALLED AT THE EARLIEST POSSIBLE DATE AFTER ESTABLISHING GRADE. NO AREA IS TO REMAIN DENUDED FOR MORE THAN SEVEN CALENDAR DAYS WHEN CONSTRUCTION IS NOT IN PROGRESS.
14. INCLUDE ALL COSTS ASSOCIATED WITH COMPLIANCE WITH THESE EROSION AND SEDIMENT CONTROL NOTES IN THE VARIOUS CONTRACT ITEMS. NO SEPARATE PAYMENT WILL BE MADE THEREFORE.



REVISION		BY	DATE	PLAN SCALE:	DRAWN	RKY	8/2020	APPROVED:
				NOT TO SCALE	DESIGNED	TCG	8/2020	
					SURVEY			
				PROFILE SCALE	PROJ. MGR.			
				HORIZONTAL:	LEAD ENGR.			
				VERTICAL:	FIELD MGR.			
					RECOMMENDED			
					DESIGN MANAGER			
								CITY ENGINEER
				FILE: 0141ERAG02	DRAWING:	AG2	DATE: OCTOBER 2020	
				ATLAS PAGE NO:				SHEET 2 OF 65

\\GH-DATA01\CLIENT\0141E -- SSWWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERAG3 2020/10/08 1:02 PM KETENBRINK, BUTCH

STORMWATER MANAGEMENT PLAN

SITE DESCRIPTION

PROJECT LIMITS:

INFLUENT LIFT STATION LOCATED AT THE SOUTHSIDE WASTEWATER TREATMENT PLANT (SSWWTP) ,
ARKANSAS RIVER, CHERRY CREEK LIFT STATION, EAST 53RD STREET AND RIVERSIDE DRIVE

PROJECT DESCRIPTION:

MODIFICATION OF JUNCTION BOX 782, NEW EAST BANK JUNCTION STRUCTURE, NEW WEST
BANK JUNCTION STRUCTURE, NEW 42-INCH RIVER CROSSING, NEW 42-INCH SANITARY
SEWER LINE, REPLACEMENT OF EXISTING 24-INCH SANITARY SEWER LINE WITH 36-INCH
SANITARY SEWER LINE, NEW DIVERSION VALVE, VALVE VAULT, AND HEADWALL
CONNECTION AT FLOW EQUALIZATION BASIN NO. 1.

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:

PRIOR TO INITIATING SOIL DISTURBING, THE CONTRACTOR WILL INSTALL ALL PERIMETER
TEMPORARY SEDIMENT CONTROLS SPECIFIED. STRIP AREAS, STOCKPILE AND STABILIZE
TOPSOIL. CLEAR AND GRUB ONLY IN NECESSARY AREAS, PRESERVING AS MUCH NATIVE
VEGETATION AS POSSIBLE. INSTALL, MAINTAIN AND/OR MOVE TEMPORARY SEDIMENT ITEMS
WITH CONSTRUCTION OPERATIONS AS PRACTICAL. IF DIRECTED BY THE ENGINEER, PLANT
TEMPORARY SEEDING. REPLACE SALVAGED TOPSOIL AND DEVICES WHEN AN ACCEPTABLE
VEGETATIVE COVER (AT LEAST 70%) HAS BEEN ATTAINED. AS SITE CONDITIONS WARRANT,
THE CONTRACTOR MAY CHOOSE TO MODIFY THE TYPE OR ARRANGEMENT OF SPECIFIED
PRACTICES TO IMPROVE THEIR EFFECTIVENESS AS APPROVED BY THE ENGINEER. THE
CONTRACTOR WILL MAINTAIN A LOG OF MAJOR SOIL DISTURBANCE ACTIVITIES, AND ALSO
THE DATES OF INSTALLATION OF EROSION CONTROL MEASURES.

	SSWWTP / 53RD AND RIVERSIDE	CHERRY CREEK LIFT STATION
SOIL TYPE:	CLAY, LOAM, BED ROCK	CLAY
AREA TO BE DISTURBED:	< 13 ACRES	< 0.01
OFFSITE AREA TO BE DISTURBED: (FOR CONTRACTOR USE)		
LATITUDE & LONGITUDE: (OF CENTER OF PROJECT)	36°05'07.00"N 95°59'30.00"W	36°05'07.00"N 95°59'06.00"W
NAME OF RECEIVING WATERS :	ARKANSAS RIVER	CHERRY CREEK
SENSITIVE WATERSHEDS:	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
303(d) IMPAIRED WATERS:	<input checked="" type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

NOTE:
THIS SHEET SHOULD BE USED IN CONJUNCTION WITH A DRAINAGE MAP THAT ILLUSTRATES
THE DRAINAGE PATTERNS/PATHWAYS AND RECEIVING WATERS FOR THIS PROJECT. THIS
SHEET SHOULD ALSO BE USED WITH THE EROSION PAY ITEMS & NOTES.

EROSION AND SEDIMENT CONTROL

SOIL STABILIZATION PRACTICES:

- _____ TEMPORARY SEEDING
- ☒ PERMANENT SODDING, SPRIGGING OR SEEDING
- _____ VEGETATIVE MULCHING
- _____ SOIL RETENTION BLANKET
- ☒ PRESERVATION OF EXISTING VEGETATION

NOTE: TEMPORARY EROSION CONTROL METHODS MUST BE USED ON ALL DISTURBED
AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR OVER 14 DAYS. METHODS
USED WILL BE AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER.

STRUCTURAL PRACTICES

- ☒ STABILIZED CONSTRUCTION EXIT
- ☒ TEMPORARY SILT FENCE
- _____ TEMPORARY SILT DIKES
- _____ TEMPORARY FIBER LOG
- _____ DIVERSION, INTERCEPTOR OR PERIMETER DIKES DIVERSION, INTERCEPTOR OR PERIMETER
- _____ SWALES ROCK FILTER DAMS
- _____ TEMPORARY SLOPE DRAIN
- _____ PAVED DITCH W/ DITCH LINER PROTECTION TEMPORARY DIVERSION CHANNELS
- _____ TEMPORARY SEDIMENT BASINS
- _____ TEMPORARY SEDIMENT TRAPS
- _____ TEMPORARY SEDIMENT FILTERS
- _____ TEMPORARY SEDIMENT REMOVAL
- _____ RIP RAP
- ☒ INLET SEDIMENT FILTER
- _____ TEMPORARY BRUSH SEDIMENT BARRIERS SANDBAG BERMS
- _____ TEMPORARY STREAM CROSSINGS

OFFSITE VEHICLE TRACKING:

- ☒ HAUL ROADS DAMPENED FOR DUST CONTROL
- ☒ LOADED HAUL. TRUCKS TO BE COVERED WITH TARPULIN
- ☒ EXCESS DIRT ON ROAD REMOVED DAILY

NOTES:

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:

MAINTENANCE AND INSPECTION:

ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER FROM THE BEGINNING OF CONSTRUCTION UNTIL AN
ACCEPTABLE VEGETATIVE COVER IS ESTABLISHED. INSPECTION BY THE CONTRACTOR AND ANY NECESSARY REPAIRS SHALL BE PERFORMED
ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCH AS RECORDED BY A
NON-FREEZING RAIN GAUGE TO BE LOCATED ON SITE. POTENTIALLY ERODIBLE AREAS, DRAINAGEWAYS, MATERIAL STORAGE, STRUCTURAL
DEVICES, CONSTRUCTION ENTRANCES AND EXITS ALONG WITH EROSION AND SEDIMENT CONTROL LOCATIONS ARE EXAMPLES OF SITES
THAT NEED TO BE INSPECTED.

WASTE MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF CONSTRUCTION WASTE MATERIAL IS REQUIRED BY THE CONTRACTOR. MATERIALS INCLUDE
STOCKPILES, SURPLUS, DEBRIS AND ALL OTHER BY-PRODUCTS FROM THE CONSTRUCTION PROCESS. PRACTICES INCLUDE DISPOSAL,
PROPER MATERIALS HANDLING, SPILL PREVENTION AND CLEANUP MEASURES. CONTROLS AND PRACTICES SHALL EITHER REQUIREMENTS OF
ALL FEDERAL, STATE AND LOCAL AGENCIES.

HAZARDOUS MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF HAZARDOUS WASTE MATERIALS IS REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR
FOLLOWING MANUFACTURER'S RECOMMENDATIONS, STATE AND HAZARDOUS MATERIALS: FEDERAL REGULATIONS TO ENSURE CORRECT
HANDLING, DISPOSAL, SPILL PREVENTION AND CLEANUP MEASURES. EXAMPLES INCLUDE BUT ARE NOT LIMITED TO: PAINTS, ACIDS, CLEANING
SOLVENTS, CHEMICAL ADDITIVES, CONCRETE CURING COMPOUNDS AND CONTAMINATED SOILS.

GENERAL NOTES:

A STORM WATER POLLUTION PREVENTION PLAN SWPPP IS REQUIRED TO COMPLY WITH THE OKLAHOMA POLLUTION DISCHARGE ELIMINATION
SYSTEM (OPDES REGULATIONS. THIS PLAN IS INITIATED DURING THE DESIGN PHASE, CONFIRMED IN THE PRE-WORK MEETINGS AND
AVAILABLE ON THE JOB SITE ALONG WITH COPIES OF THE NOTICE OF INTENT (NOI) FORM AND PERMIT CERTIFICATES THAT HAVE BEEN FILED
WITH THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ). THE PLAN MUST BE KEPT CURRENT WITH UP-TO-DATE
AMENDMENTS DURING THE PROGRESSION OF THE PROJECT. ALL CONTRACTOR OFF-SITE OPERATIONS ASSOCIATED WITH THE PROJECT
MUST BE DOCUMENTED IN THE SWPPP, I.E., BORROW PITS, WORK ROADS, DISPOSAL SITES, ASPHALT /CONCRETE PLANTS, ETC. THE BASIC
GOAL OF STORM WATER MANAGEMENT IS TO IMPROVE WATER QUALITY BY REDUCING POLLUTANTS IN STORM WATER DISCHARGES. RUNOFF
FROM CONSTRUCTION SITES HAS A POTENTIAL FOR POLLUTION DUE TO EXPOSED SOILS AND THE PRESENCE OF HAZARDOUS MATERIALS
USED IN THE CONSTRUCTION PROCESS. THE PREVENTION OF SOIL EROSION. CONTAINMENT OF HAZARDOUS MATERIALS AND/OR THE
INTERCEPTION OF THESE POLLUTANTS BEFORE LEAVING THE CONSTRUCTION SITE ARE THE BEST PRACTICES FOR CONTROLLING STORM
WATER POLLUTION.

THE FOLLOWING SECTIONS OF THE 2009 ODOT STANDARD SPECIFICATIONS SHOULD BE NOTED:

103.05 BONDING REQUIREMENTS

104.10 FINAL CLEANING UP

104.12 CONTRACTOR'S RESPONSIBILITY FOR WORK

104.13 ENVIRONMENTAL PROTECTION

107.01 LAWS, RULES AND REGULATIONS TO BE OBSERVED

107.20 STORM WATER MANAGEMENT

220 MANAGEMENT OF EROSION, SEDIMENTATION AND STORM WATER

POLLUTION PREVENTION AND CONTROL

221 TEMPORARY SEDIMENT CONTROL

IN ADDITION:

ODEQ GENERAL PERMIT (OKR10) FOR STORM WATER

DISCHARGES FROM CONSTRUCTION ACTIVITIES

WITHIN THE STATE OF OKLAHOMA.' ODEQ, WATER
QUALITY DIVISION, SEPTEMBER 13, 2017.



REVISION				BY	DATE	PLAN SCALE:	DRAWN	RKY	8/2020	APPROVED:	
					NOT TO SCALE	DESIGNED	TCG	8/2020			
						SURVEY					
					PROFILE SCALE	PROJ. MGR.					
					HORIZONTAL:	LEAD ENGR.					
					VERTICAL:	FIELD MGR.					
						RECOMMENDED					
						DESIGN MANAGER					
										CITY ENGINEER	
						FILE: 0141ERAG3	DRAWING:	AG3	DATE: OCTOBER 2020		
						ATLAS PAGE NO:	SHEET 3 OF 65				

CONTROL POINTS

NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
CONTROL POINT # 104	401231.9747	2564014.6437	631.98	1/2" REBAR SET W/CAP
CONTROL POINT # 105	401049.6240	2562086.0062	631.99	CHISELED 'X' SET
CONTROL POINT # 106	401239.7708	2563875.3817	626.48	CHISELED 'X' SET
CONTROL POINT # 107	401377.0226	2563891.5252	629.40	CHISELED 'X' SET
CONTROL POINT # 114	400913.1873	2561877.3116	631.78	PK NAIL SET
CONTROL POINT # 118	401208.9738	2561696.8365	631.80	PK NAIL SET
CONTROL POINT # 10460	401114.4609	2562098.4634	632.32	60D NAIL SET
CONTROL POINT # 10461	400944.3285	2562103.1373	631.75	60D NAIL SET

NOTES:

1. ELEVATIONS BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88 GEOID 12B).
2. BEARINGS AND COORDINATES ARE BASED ON THE OKLAHOMA STATE PLANE COORDINATE SYSTEM, NORTH ZONE (3501), NORTH AMERICAN DATUM 1983 (NAD83, 2011).

SITE SURVEY

SCALE: 1"=80'

SURVEYOR NOTES

1. ABSTRACT OF TITLE OR ATTORNEY'S TITLE OPINION NOT AVAILABLE TO SURVEYOR AT DATE OF SURVEY.
2. THIS FIRM WAS NOT CONTRACTED TO RESEARCH EASEMENTS OR ENCUMBRANCES OF RECORD. NO ATTEMPT TO RESEARCH THE COUNTY RECORDS OR OTHER RECORD OFFICES WAS PERFORMED BY THIS FIRM. THEREFORE EASEMENTS MAY AFFECT THE SUBJECT TRACT THAT ARE NOT REFLECTED BY THIS PLAT.
3. ALL UNDERGROUND UTILITIES MAY NOT BE SHOWN. (CALL "OKIE" BEFORE DIGGING)
4. THE HORIZONTAL AND VERTICAL DATUMS FOR THIS SURVEY ARE BASED ON THE OKLAHOMA STATE PLANE COORDINATE SYSTEM OK NORTH 3501 (2011) AND NAVD88 (GEOID 12B). THE SURVEYING METHODS USED ARE CELLULAR NETWORK SOLUTION AND AVERAGED RTK GPS OBSERVATIONS ON THE SOURCE BENCHMARK OF ADS 58.

SURVEYOR'S CERTIFICATE

I, AARON BURNS, OF MESHEK & ASSOCIATES, LLC, A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF OKLAHOMA, DO HEREBY CERTIFY THAT THIS HORIZONTAL/VERTICAL CONTROL WAS COMPLETED UNDER MY DIRECT AND RESPONSIBLE CHARGE FROM AN ACTUAL GROUND SURVEY MADE UNDER MY SUPERVISION AND MEETS THE OKLAHOMA MINIMUM STANDARDS FOR THE PRACTICE OF LAND SURVEYING AS ADOPTED BY THE OKLAHOMA STATE BOARD OF LICENSURE FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS."

I FURTHER CERTIFY, THE TOPOGRAPHICAL INFORMATION HEREON REPRESENTS A SURVEY PERFORMED UNDER MY DIRECT SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF OUR KNOWLEDGE.

DATE: 4/10/2020

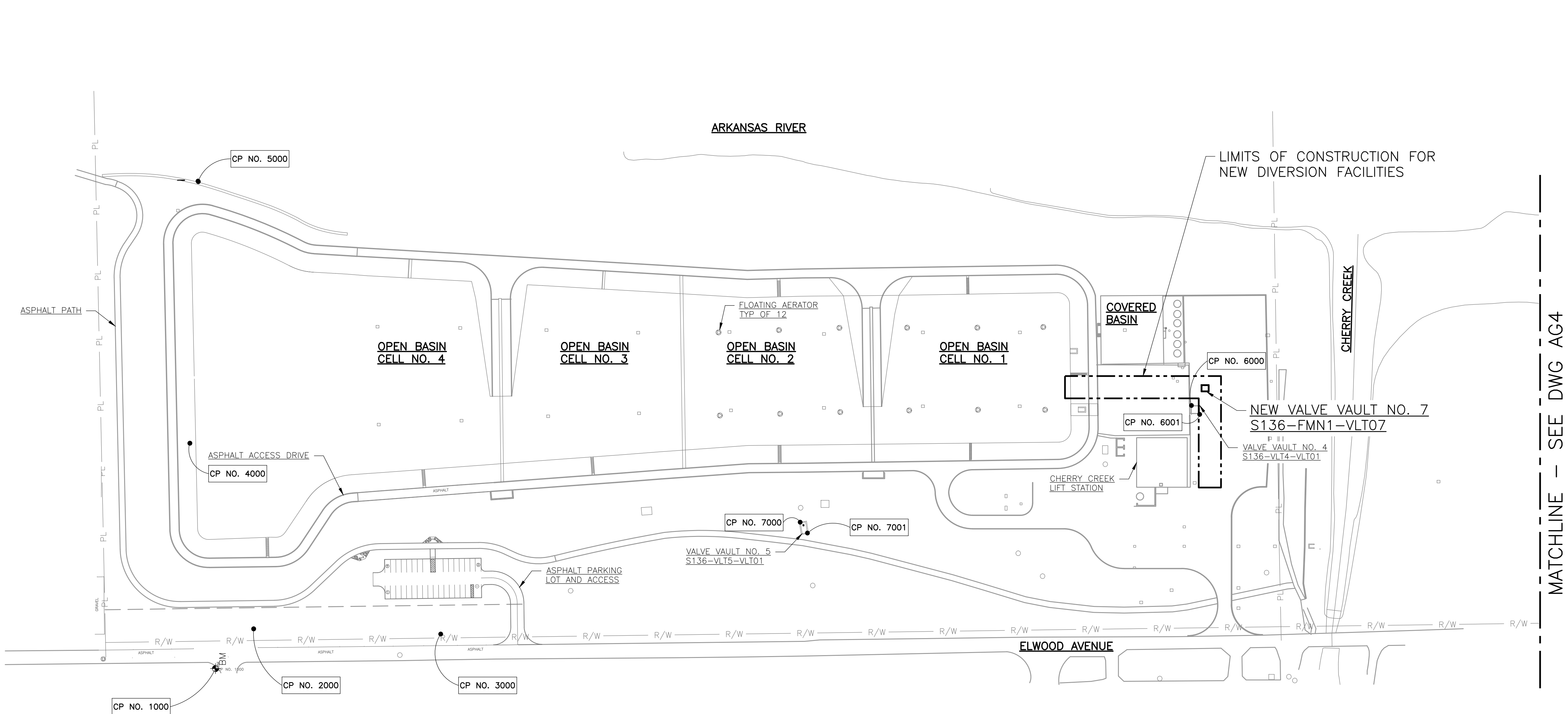
AARON BURNS
REGISTERED PROFESSIONAL LAND SURVEYOR
OKLAHOMA L.S. 1923

CERTIFICATE OF AUTHORIZATION NO. 1487
EXPIRES JUNE 30, 2021



REVISION		BY	DATE	TULSA OPERATIONS 7/1/15				APPROVED:
				PLAN SCALE:	DRAWN	RKY	8/2020	
				1" = 80'	DESIGNED	TCG	8/2020	
					SURVEY			
				PROFILE SCALE	PROJ. MGR.			
				HORIZONTAL:	LEAD ENGR.			
					FIELD MGR.			
				VERTICAL:	RECOMMENDED			
					DESIGN MANAGER		CITY ENGINEER	
				FILE: 0141ERAG4	DRAWING:	AG4	DATE: OCTOBER 2020	
ATLAS PAGE NO:				SHEET 4 OF 65				

\\GH-DATA01\CLIENT\0141E - SSWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERAG05 2020/10/08 1:03 PM KETENBRINK, BUTCH



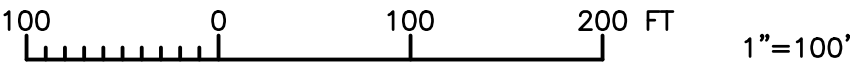
OVERALL SITE PLAN NORTH
SCALE: 1"=100'

CONTROL POINTS

NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
CONTROL POINT NO. 1000	405936.55	2561176.81	626.86	CHISELED SQUARE
CONTROL POINT NO. 2000	405870.91	2561243.47	626.92	IRON PIN
CONTROL POINT NO. 3000	405554.65	2561236.51	626.90	IRON PIN
CONTROL POINT NO. 4000	405978.23	2561555.74	625.94	IRON PIN
CONTROL POINT NO. 5000	405964.01	2561995.70	629.84	IRON PIN
CONTROL POINT NO. 6000	404293.80	2561621.36	633.25	CHISELED SQUARE ON TOP SLAB (VALVE VAULT NO. 4)
CONTROL POINT NO. 6001	404279.80	2561608.36	633.25	CHISELED SQUARE ON TOP SLAB (VALVE VAULT NO. 4)
CONTROL POINT NO. 7000	404951.97	2561424.94	626.33	CHISELED SQUARE ON TOP SLAB (VALVE VAULT NO. 5)
CONTROL POINT NO. 7001	404938.69	2561407.13	626.33	CHISELED SQUARE ON TOP SLAB (VALVE VAULT NO. 5)

NOTES:

1. ELEVATIONS BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD 88).
2. BEARINGS AND COORDINATES ARE BASED ON THE OKLAHOMA STATE PLANE COORDINATE SYSTEM, NORTH ZONE, NORTH AMERICAN DATUM 1983 (NAD83).



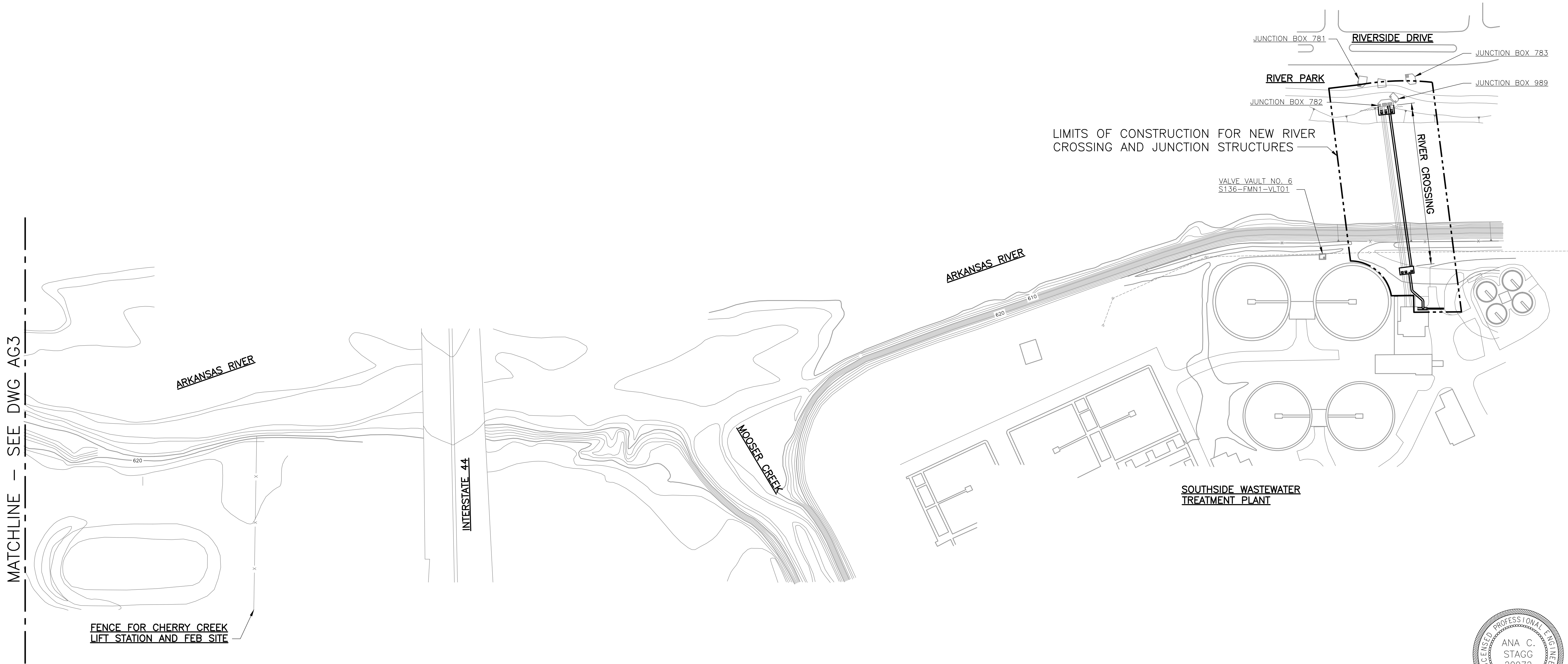
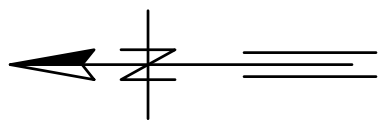
REVISION				BY	DATE	PLAN SCALE:				DRAWN				RKY				APPROVED:			
						1"=20'				DESIGNED	TCG	8/2020									
						SURVEY															
						PROFILE SCALE				PROJ. MGR.											
						HORIZONTAL:				LEAD ENGR.											
						VERTICAL:				FIELD MGR.											
										RECOMMENDED											
										DESIGN MANAGER											
																		CITY ENGINEER			
										FILE: 0141ERAG05				DRAWING: AGS				DATE: OCTOBER 2020			
										ATLAS PAGE NO:								SHEET 5 OF 65			

GENERAL	
OVERALL SITE PLAN NORTH	
PROJECT NO. 2015-17, C2	
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES	
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT	

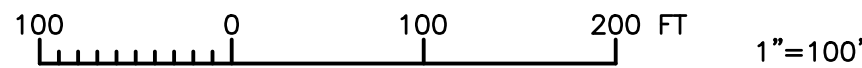
PLANS AND ESTIMATES PREPARED BY:		GREGORY AND HANSEN 321 S BOSTON AVE, SUITE 300 TULSA, OKLAHOMA 74103	
DESIGNED		TCG	8/2020
SURVEY			
PROJ. MGR.			
LEAD ENGR.			
FIELD MGR.			
RECOMMENDED			
DESIGN MANAGER			
FILE: 0141ERAG05		DRAWING: AGS	DATE: OCTOBER 2020
ATLAS PAGE NO:			SHEET 5 OF 65


\\BH-DATA01\CLIENT\0141E - SSWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERAG06 2020\10\08 1:03 PM KETENBRINK, BUTCH

MATCHLINE - SEE DWG AG3

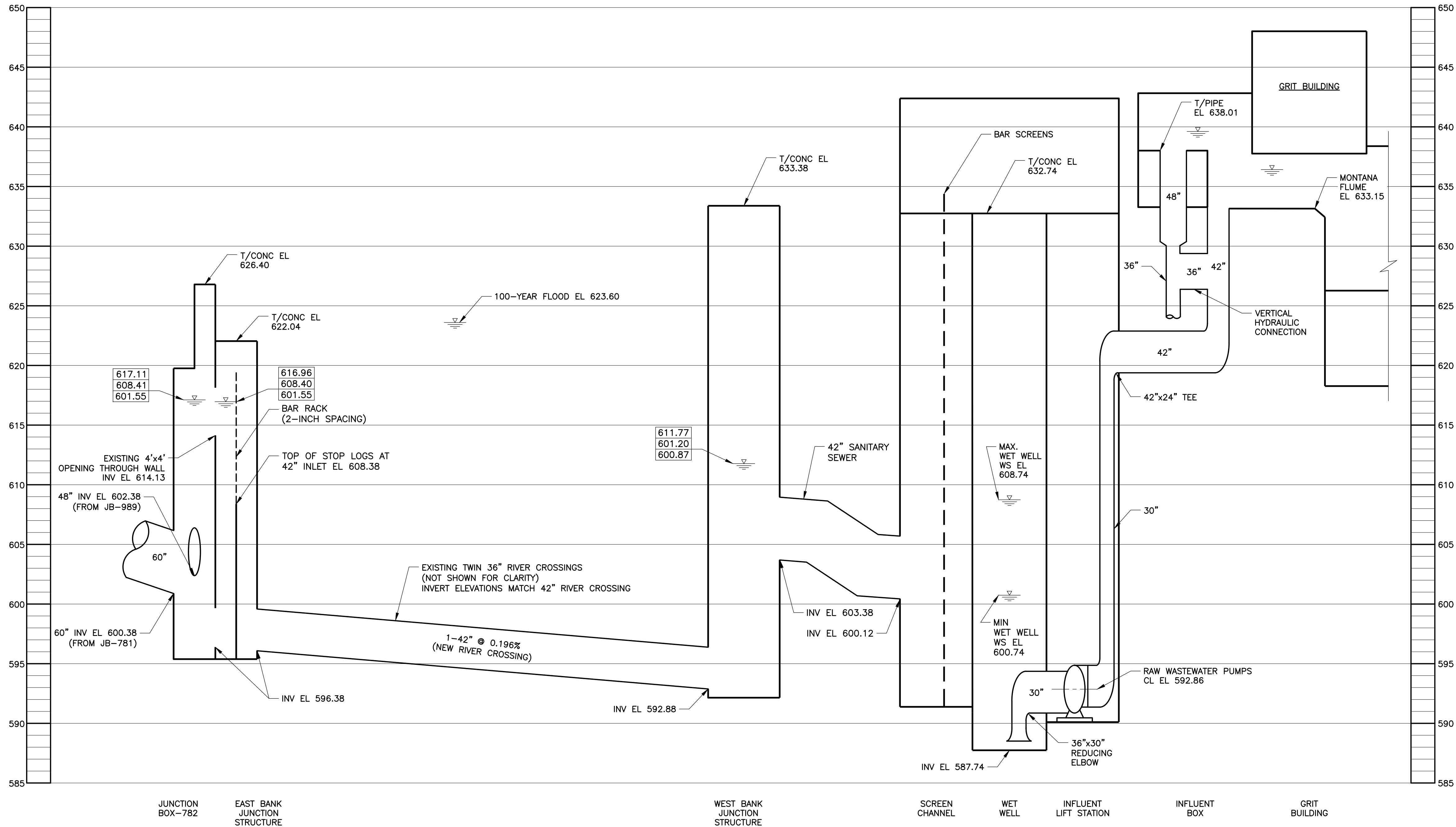


OVERALL SITE PLAN SOUTH
SCALE: 1"=100'



GENERAL OVERALL SITE PLAN SOUTH									
PROJECT NO. 2015-17, C2									
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES									
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT									
PLANS AND ESTIMATES PREPARED BY:				 321 S BOSTON AVE, SUITE 300 TULSA, OKLAHOMA 74103					
REVISION	BY	DATE	PLAN SCALE:	DRAWN	RKY	8/2020	APPROVED:		
			1"=100'	DESIGNED	TCG	8/2020			
			SURVEY						
			PROFILE SCALE	PROJ. MGR.					
			HORIZONTAL:	LEAD ENGR.					
			VERTICAL:	FIELD MGR.			CITY ENGINEER		
				RECOMMENDED					
				DESIGN MANAGER					
FILE: 0141ERAG06				DRAWING:	AG6	DATE:	OCTOBER 2020		
ATLAS PAGE NO:							SHEET 6 OF 65		

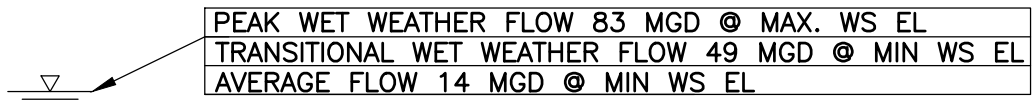
\\GH-DATA01\CLIENT\0141E - SSWWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERAG07 2020/10/08 2:55 PM KETENBRINK, BUTCH



HYDRAULIC PROFILE – THROUGH NEW 42” RIVER CROSSING
OPEN-CUT (OPTION A)

SCALE: H = NTS, V = 1”=5’

LEGEND:



NOTES:

- ELEVATIONS BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88).
- SEE DRAWING BC8 (SHEET 27) FOR PLAN & PROFILE OF RIVER CROSSING.



GENERAL – THIRD RIVER CROSSING
HYDRAULIC PROFILE – OPEN CUT

PROJECT NO. 2015–17, C2

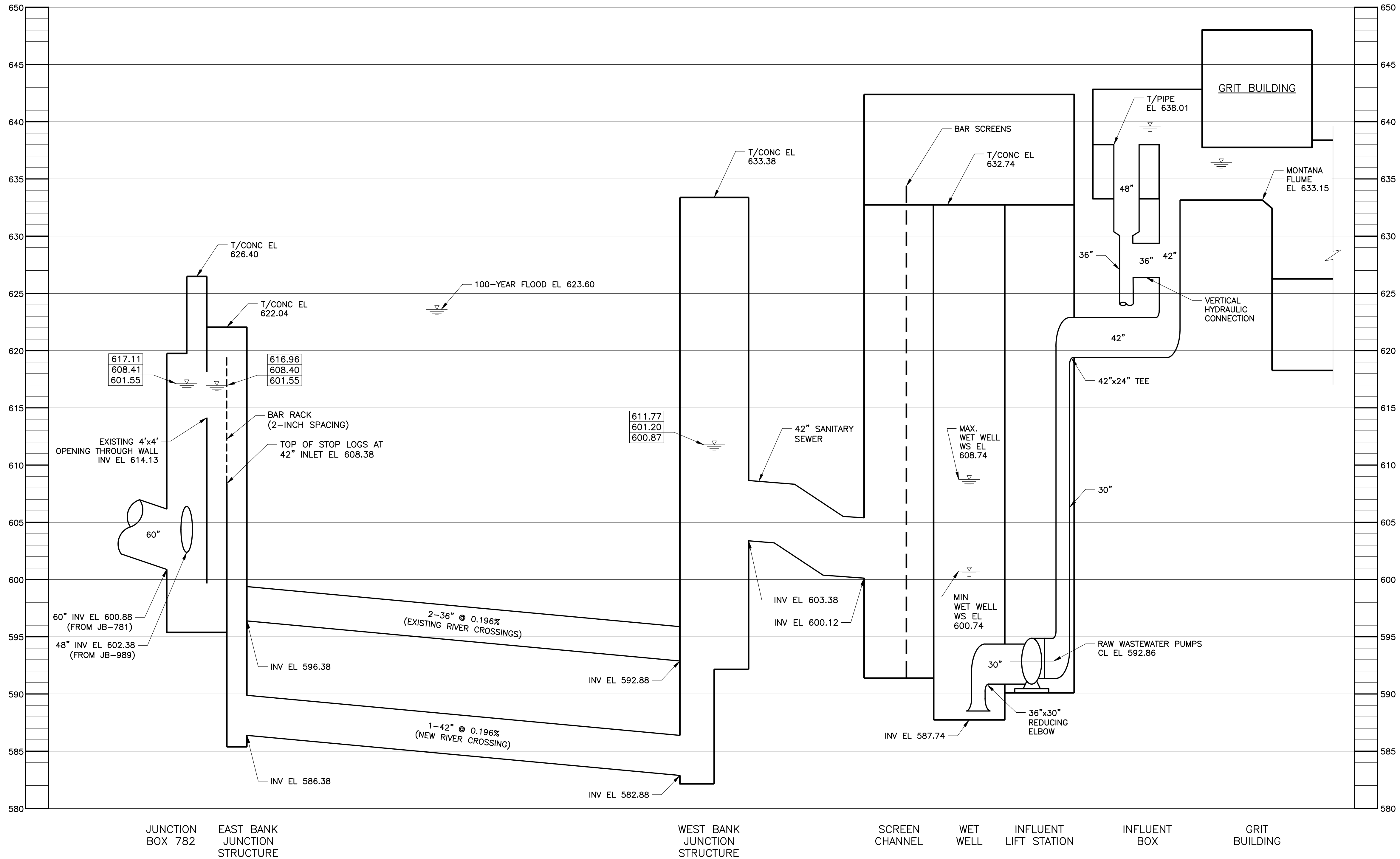
SOUTHSIDE WASTEWATER TREATMENT PLANT
PEAK FLOW OPTIMIZATION: THIRD RIVER
CROSSING AND DIVERSION FACILITIES

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY: **GREELEY AND HANSEN**
321 S BOSTON AVE, SUITE 300
TULSA, OKLAHOMA 74103

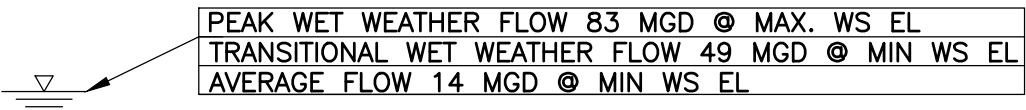
REVISION	BY	DATE	PLAN SCALE:	DRAWN	RKY	8/2020	APPROVED:
			NOT TO SCALE	DESIGNED	TCG	8/2020	
			SURVEY				
			PROFILE SCALE	PROJ. MGR.			
			HORIZONTAL:	LEAD ENGR.			
			VERTICAL:	FIELD MGR.			
				RECOMMENDED			
				DESIGN MANAGER			CITY ENGINEER
			FILE: 0141ERAG07	DRAWING:	AG7	DATE:	OCTOBER 2020
			ATLAS PAGE NO:			SHEET	7 OF 65

\\GH-DATA01\CLIENT\0141E - SSWWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERAG08 2020/10/08 2:48 PM KETENBRINK, BUTCH



HYDRAULIC PROFILE – THROUGH NEW 42” RIVER CROSSING
MICROTUNNELING (OPTION B)
SCALE: H = NTS, V = 1”=5’


LEGEND:



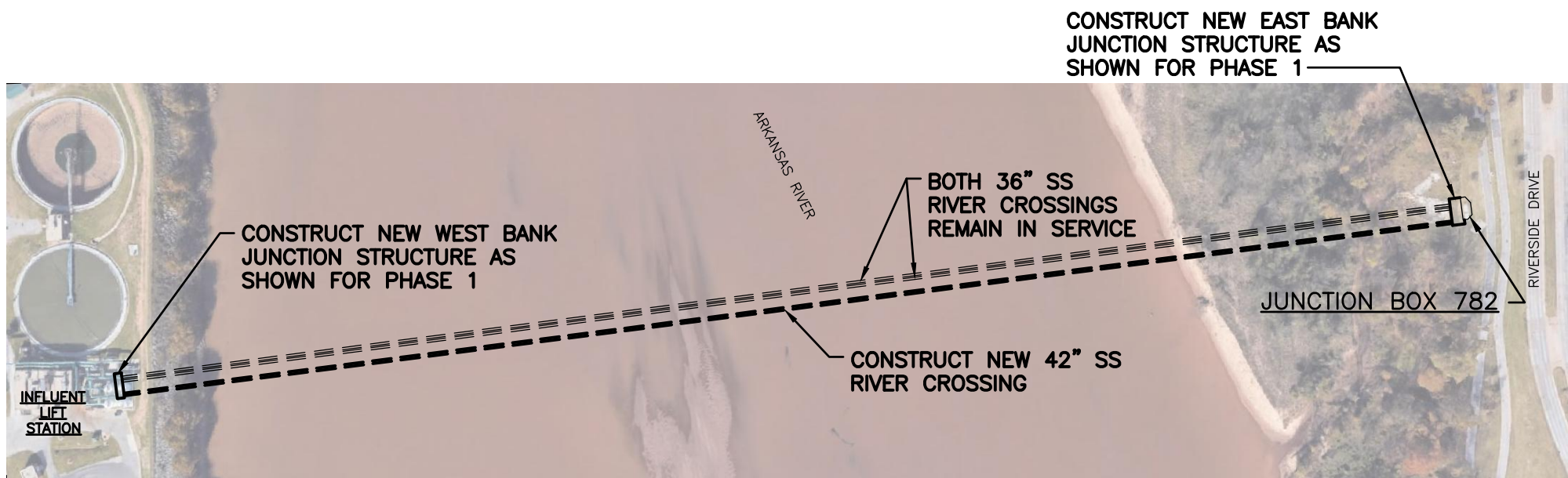
NOTES:

- ELEVATIONS BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88).
- SEE DRAWING BC14 (SHEET 51) FOR PLAN & PROFILE OF RIVER CROSSING.

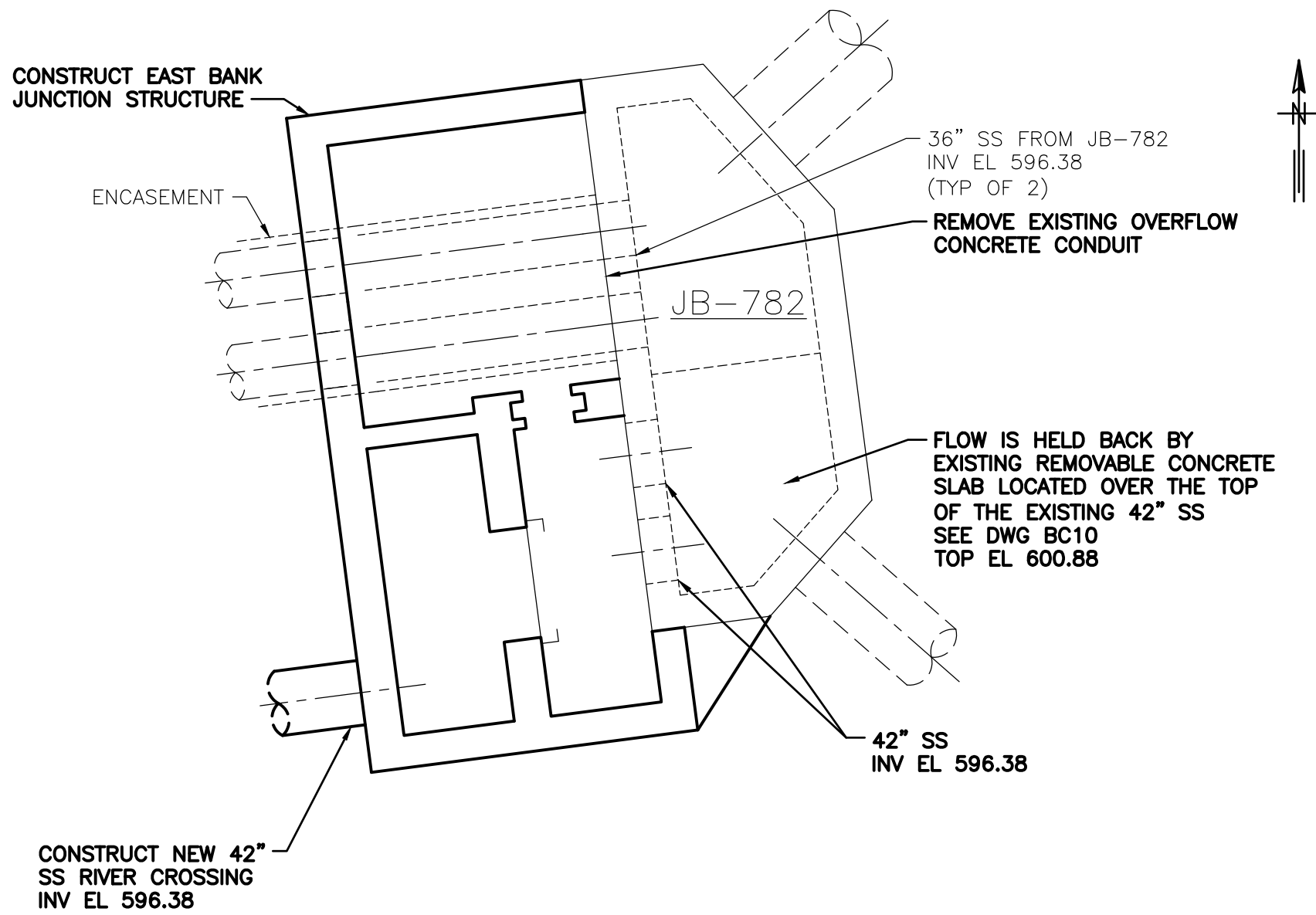


GENERAL – THIRD RIVER CROSSING HYDRAULIC PROFILE – MICROTUNNELING				
PROJECT NO. 2015–17, C2				
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES				
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT				
PLANS AND ESTIMATES PREPARED BY:  GREELEY AND HANSEN 321 S BOSTON AVE, SUITE 300 TULSA, OKLAHOMA 74103				
PLAN SCALE:	DRAWN	RKY	8/2020	APPROVED: <

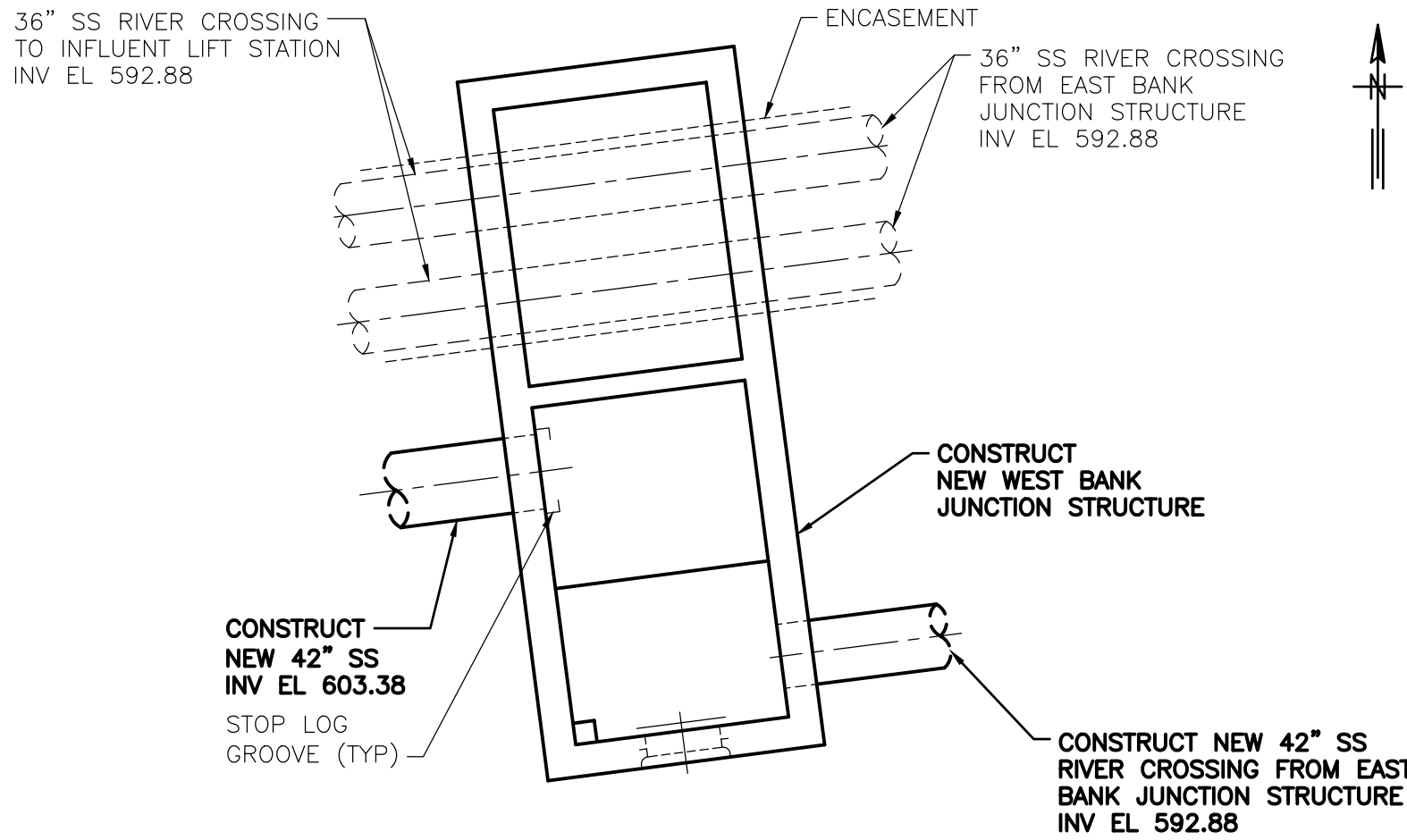
\\GH-DATA01\CLIENT\0141E - SSWWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERAG09 2020/10/08 1:04 PM KETENBRINK, BUTCH



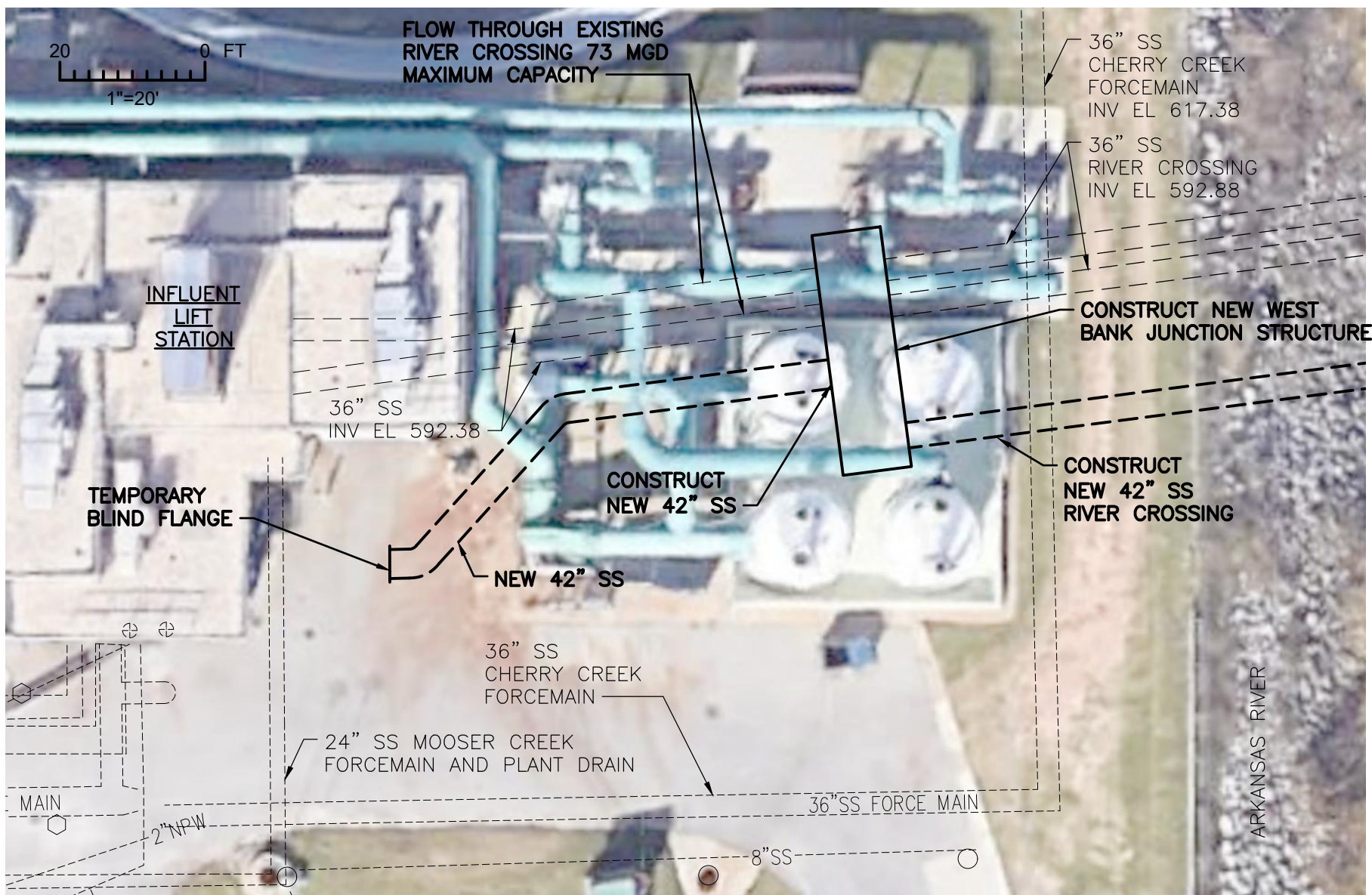
SEQUENCE OF CONSTRUCTION - PHASE 1
OVERALL SITE PLAN
SCALE: 1" = 200'



SEQUENCE OF CONSTRUCTION - PHASE 1
NEW EAST BANK JUNCTION STRUCTURE - SECTIONAL PLAN
SCALE: 1/8" = 1'-0"



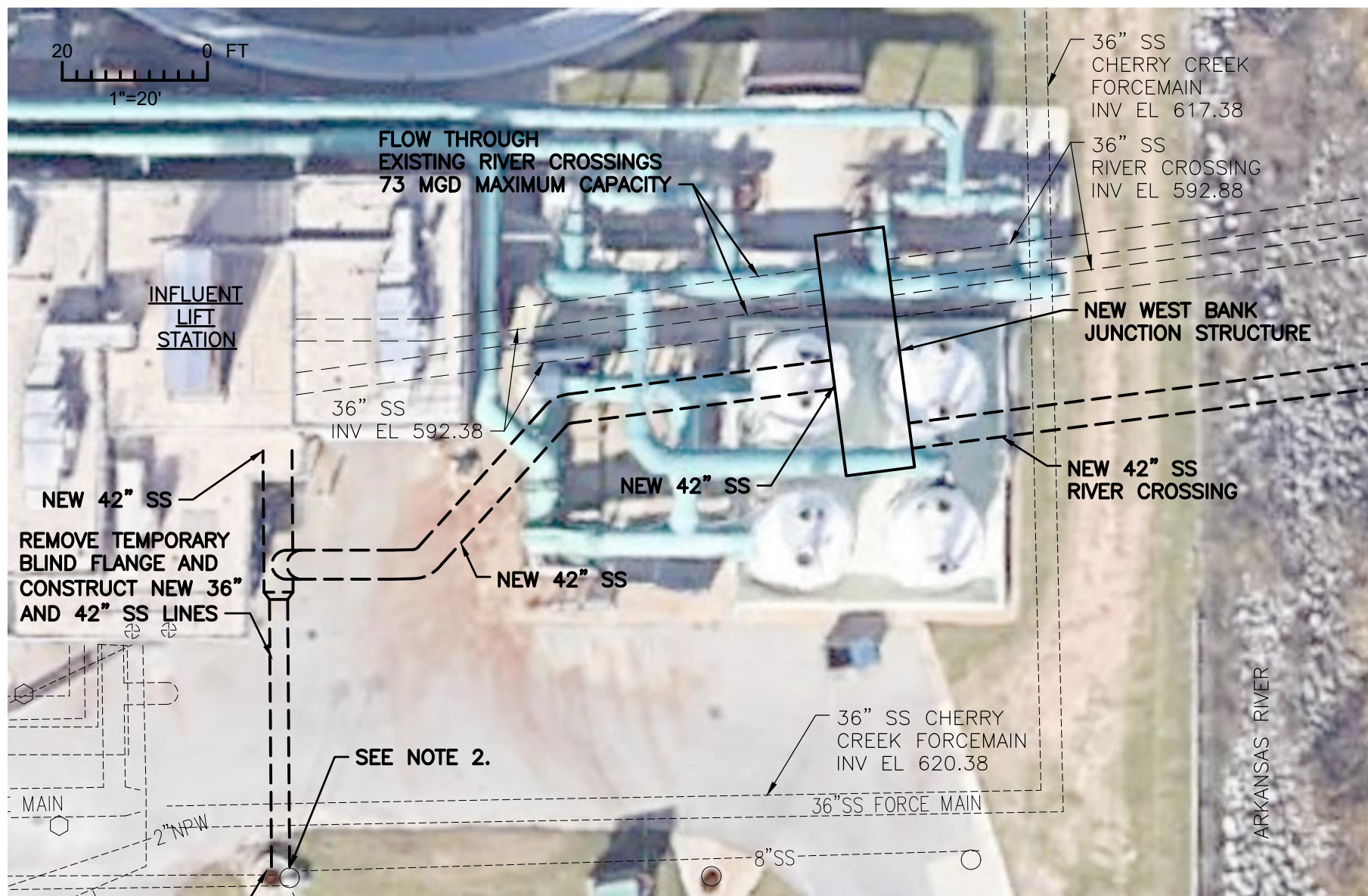
SEQUENCE OF CONSTRUCTION - PHASE 1
NEW WEST BANK JUNCTION STRUCTURE - SECTIONAL PLAN
SCALE: 1/8" = 1'-0"



SEQUENCE OF CONSTRUCTION - PHASE 1
NEW WEST BANK JUNCTION STRUCTURE - SITE PLAN
SCALE: 1" = 20'

PHASE 1 NOTES:

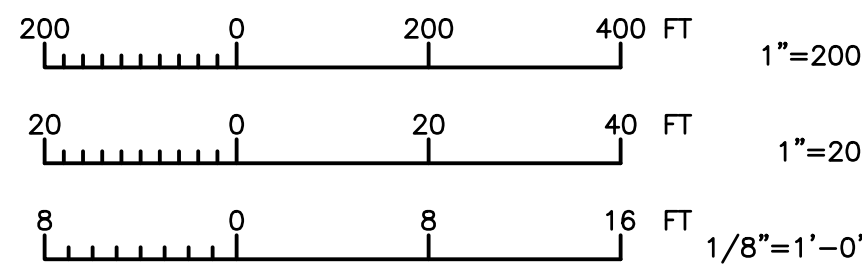
1. THE INFLUENT LIFT STATION WET WELL SHALL BE OPERATED AT 10 FEET. CONTRACTOR SHALL COORDINATE OPERATION OF THE INFLUENT LIFT STATION WITH PLANT STAFF.



SEQUENCE OF CONSTRUCTION - PHASE 2
NEW WEST BANK JUNCTION STRUCTURE - SITE PLAN
SCALE: 1" = 20'

PHASE 2 NOTES:

1. THE INFLUENT LIFT STATION WET WELL SHALL BE OPERATED AT 10 FEET. CONTRACTOR SHALL COORDINATE OPERATION OF THE INFLUENT LIFT STATION WITH PLANT STAFF.
2. WHEN MODIFYING THE EXISTING MH, THE CITY WILL DIVERT MOOSER CREEK FLOW TO CHERRY CREEK LIFT STATION AND A MAXIMUM INCOMING PLANT DRAIN FLOW OF 2 MGD MUST BE TEMPORARILY DIVERTED DOWNSTREAM TO THE PRIMARY DISTRIBUTION WELL. CONTRACTOR TO TEMPORARILY PLUG ALL INCOMING PIPE PENETRATIONS AND PROVIDE TEMPORARY PUMPING FACILITIES FROM UPSTREAM MANHOLES (TOTAL OF 3 NOT SHOWN) TO THE PRIMARY DISTRIBUTION WELL WHICH IS ALL WITHIN A 150 FOOT RADIUS OF EACH OTHER.



NOTES:

1. EXISTING ODOR CONTROL FACILITIES SHOWN EAST OF INFLUENT LIFT STATION WILL BE REMOVED BY OTHERS PRIOR TO START OF THIS PROJECT.
2. SEE SPECIFICATION SECTION 01 11 00 FOR CONSTRUCTION CONSTRAINTS.



GENERAL - THIRD RIVER CROSSING SEQUENCING
OF CONSTRUCTION - PHASES 1 AND 2

PROJECT NO. 2015-17, C2

SOUTHSIDE WASTEWATER TREATMENT PLANT
PEAK FLOW OPTIMIZATION: THIRD RIVER
CROSSING AND DIVERSION FACILITIES

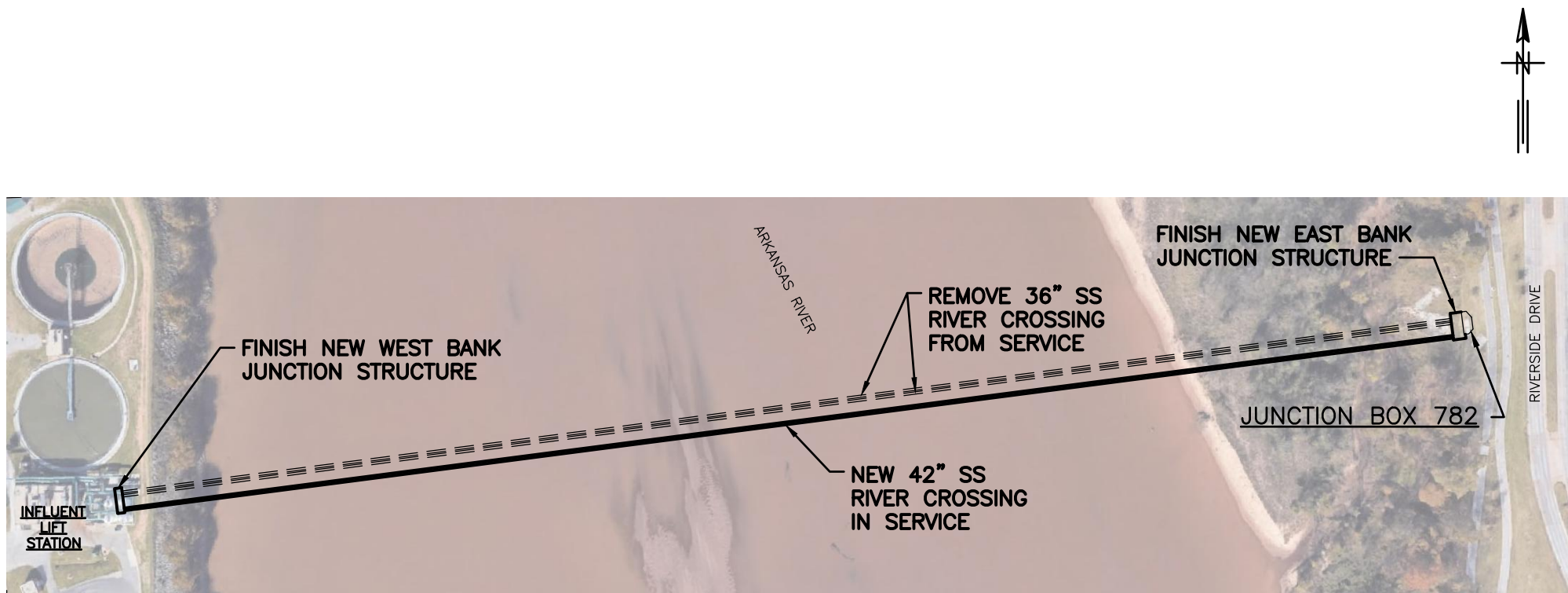
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:

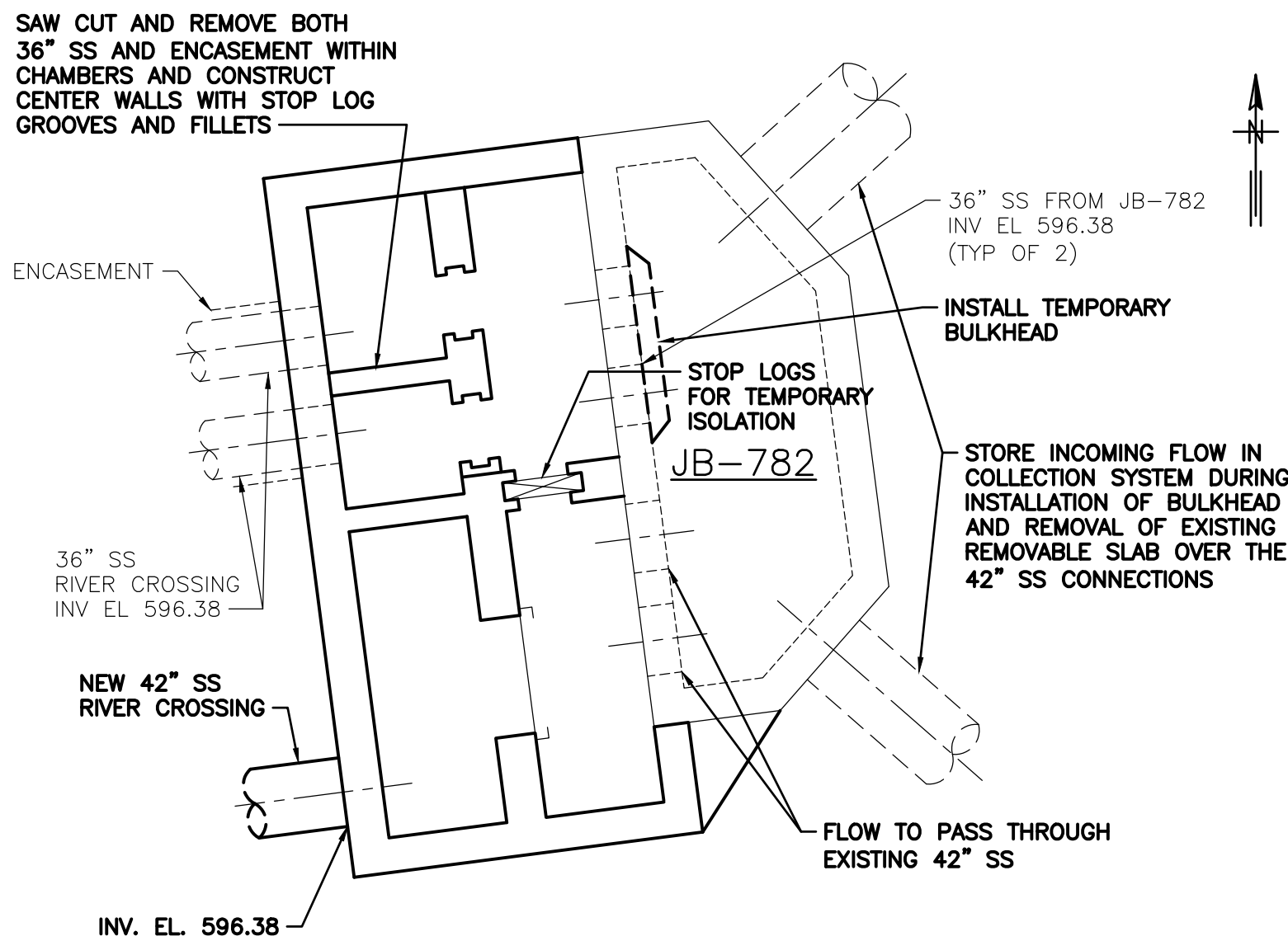
Greeley and Hansen
321 S BOSTON AVE, SUITE 300
TULSA, OKLAHOMA 74103

REVISION	BY	DATE	PLAN SCALE:	DRAWN	RKY	8/2020	APPROVED:
			AS SHOWN	DESIGNED	TCG	8/2020	
				SURVEY			
			PROFILE SCALE	PROJ. MGR.			
			HORIZONTAL:	LEAD ENGR.			
			VERTICAL:	FIELD MGR.			
				RECOMMENDED			
				DESIGN MANAGER			CITY ENGINEER
			FILE: 0141ERAG09	DRAWING: AG9	DATE:	OCTOBER 2020	
			ATLAS PAGE NO:		SHEET	9 OF 65	

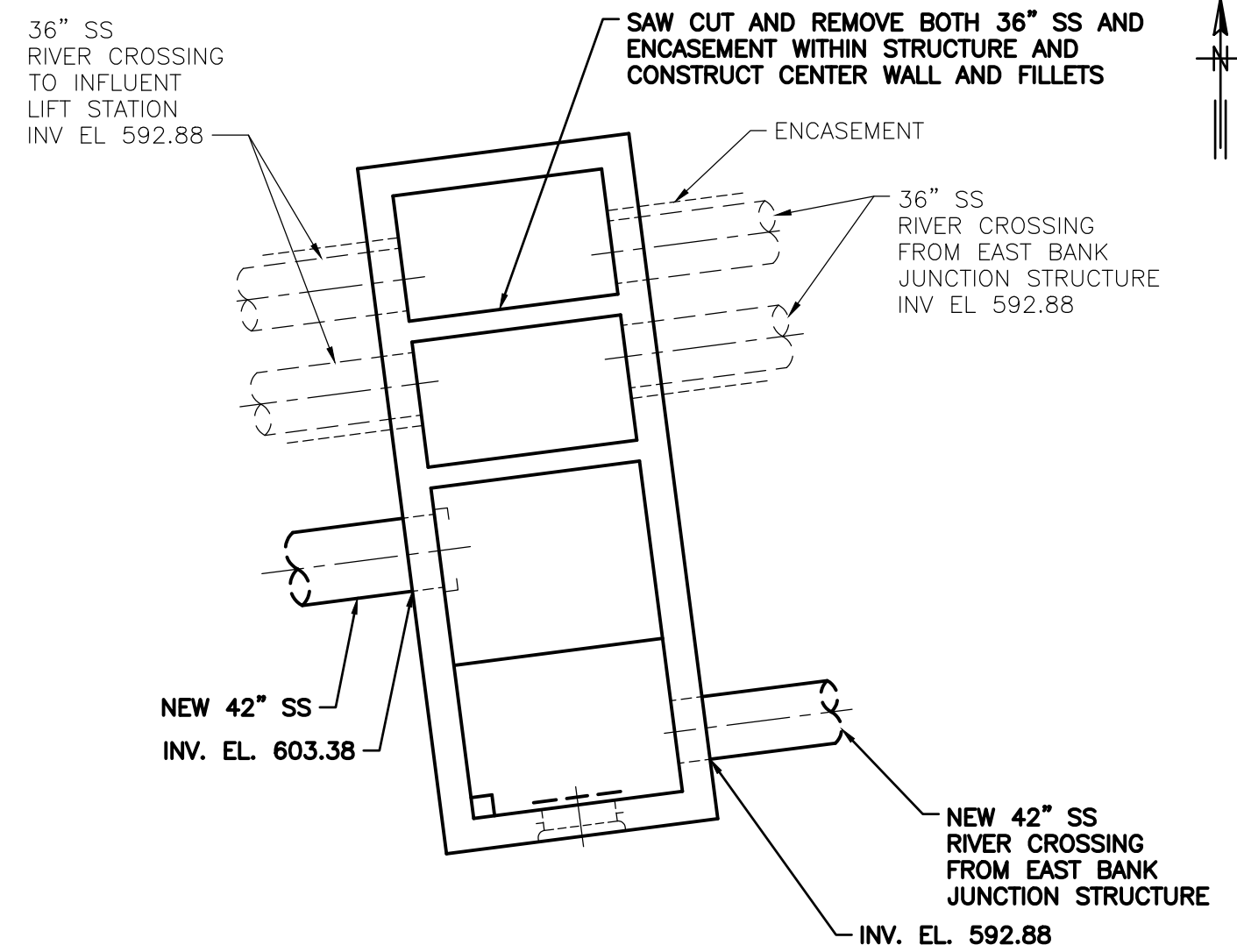
\\GH-DATA01\CLIENT\0141E - SSWWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERAG10 2020/10/08 1:04 PM KETENBRINK, BUTCH



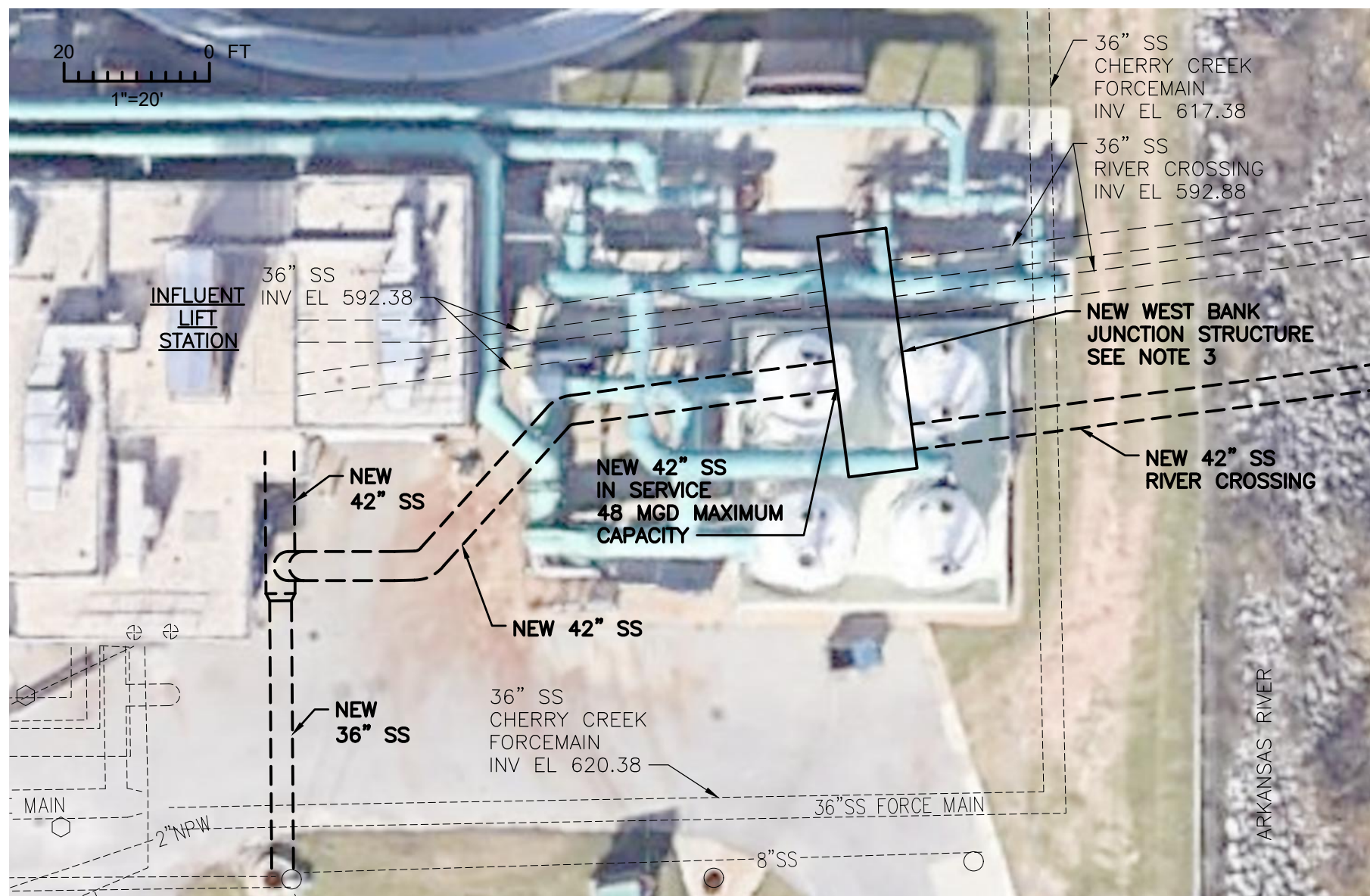
SEQUENCE OF CONSTRUCTION - PHASE 3
OVERALL SITE PLAN
SCALE: 1" = 200'



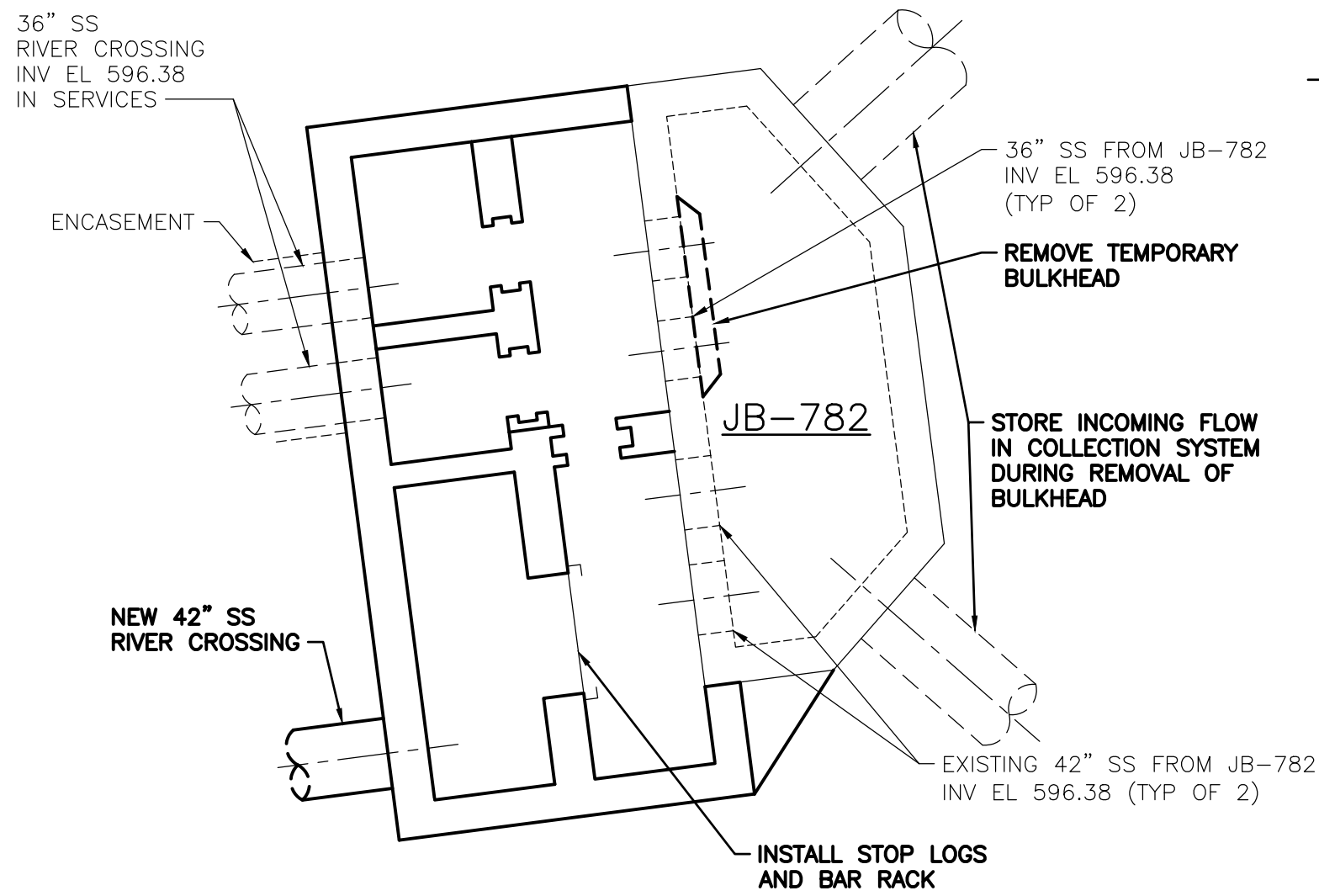
SEQUENCE OF CONSTRUCTION - PHASE 3
NEW EAST BANK JUNCTION STRUCTURE - SECTIONAL PLAN
SCALE: 1/8" = 1'-0"



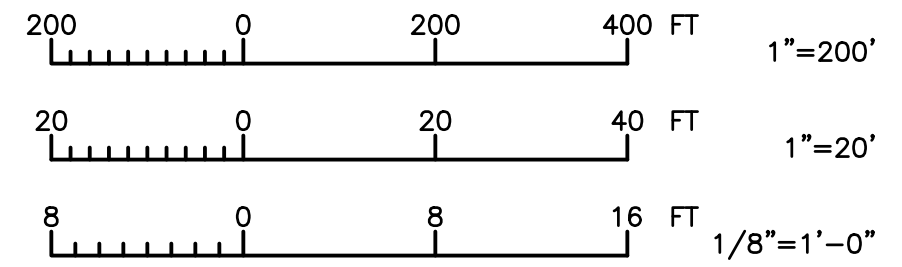
SEQUENCE OF CONSTRUCTION - PHASE 3
NEW WEST BANK JUNCTION STRUCTURE - SECTIONAL PLAN
SCALE: 1/8" = 1'-0"



SEQUENCE OF CONSTRUCTION - PHASE 3
NEW WEST BANK JUNCTION STRUCTURE - SITE PLAN
SCALE: 1" = 20'



SEQUENCE OF CONSTRUCTION - PHASE 4
NEW EAST BANK JUNCTION STRUCTURE - SECTIONAL PLAN
SCALE: 1/8" = 1'-0"



NOTES:

1. EXISTING ODOR CONTROL FACILITIES SHOWN EAST OF INFLUENT LIFT STATION WILL BE REMOVED BY OTHERS PRIOR TO START OF THIS PROJECT.
2. AFTER COMPLETION OF PHASE 4 CONSTRUCT FILLETS IN JB-782 WHILE STOPPING DISCHARGE FROM 42" SS INTO JB-782.
3. SEE SPECIFICATION SECTION 01 11 00 FOR CONSTRUCTION CONSTRAINTS.



GENERAL - THIRD RIVER CROSSING SEQUENCING
OF CONSTRUCTION - PHASES 3 AND 4

PROJECT NO. 2015-17, C2
SOUTHSIDE WASTEWATER TREATMENT PLANT
PEAK FLOW OPTIMIZATION: THIRD RIVER
CROSSING AND DIVERSION FACILITIES

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY: **GREELEY AND HANSEN**
321 S BOSTON AVE, SUITE 300
TULSA, OKLAHOMA 74103

REVISION	BY	DATE	PLAN SCALE:	DRAWN	RKY	8/2020	APPROVED:
			AS SHOWN	DESIGNED	TCG	8/2020	
			SURVEY				
			PROFILE SCALE	PROJ. MGR.			
			HORIZONTAL:	LEAD ENGR.			
			VERTICAL:	FIELD MGR.			
				RECOMMENDED			
				DESIGN MANAGER			CITY ENGINEER
			FILE: 0141ERAG10	DRAWING: AG10	DATE:	OCTOBER 2020	
			ATLAS PAGE NO:		SHEET	10 OF 65	

PHASE 3 NOTES:

1. THE INFLUENT LIFT STATION WET WELL SHALL BE OPERATED AT 10 FEET. CONTRACTOR SHALL COORDINATE OPERATION OF THE INFLUENT LIFT STATION WITH PLANT STAFF.
2. USE EXISTING GATES IN INFLUENT LIFT STATION TO ISOLATE EXISTING 36" SS LINES.
3. ABANDON WORK INSIDE THE NEW WEST BANK JUNCTION STRUCTURE IF THE WATER SURFACE ELEVATION AT JB-782 EXCEEDS EL. 608.00.

DESIGN PARAMETERS

1.

BUILDING CODE

2015 IBC

LOCAL AMENDMENTS

NONE

RISK CATEGORY

III

2.

LIVE LOADS

A. FLOORS

150 PSF

B. PRECAST REMOVABLE SLAB

HS 20.44

C. STAIRS

100 PSF

3.

ROOF SNOW LOAD

A. GROUND SNOW LOAD, Pg

10 PSF

B. FLAT ROOF SNOW LOAD, Pf

11 PSF

C. SNOW EXPOSURE CATEGORY, Ce

1.0

D. SNOW LOAD IMPORTANCE FACTOR, I

1.1

E. THERMAL FACTOR, Ct

1.0

4.

WIND DESIGN DATA

A. BASIC WIND SPEED (3 SECOND GUST), V_{ULT}

120 MPH

B. BASIC WIND SPEED (3 SECOND GUST), V_{ASD}

93 MPH

C. WIND EXPOSURE CATEGORY

C

5.

EARTHQUAKE DESIGN CRITERIA

A. SEISMIC IMPORTANCE FACTOR, I_e

1.25

B. MAPPED SPECTRAL RESPONSE ACCELERATION, S_s

13.3%

C. MAPPED SPECTRAL RESPONSE ACCELERATION, S₁

6.9%

D. SITE CLASS

D

E. SPECTRAL RESPONSE COEFFICIENT, S_{ds}

0.142

F. SPECTRAL RESPONSE COEFFICIENT, S_{d1}

0.110

G. SEISMIC DESIGN CATEGORY

B

6.

LATERAL EARTH PRESSURE

A. NON-SATURATED

70 PSF/FT

B. SATURATED

100 PSF/FT

C. SURCHARGE

125 PSF

GENERAL

1

STRUCTURAL ELEMENTS ARE NON-SELF SUPPORTING AND REQUIRE INTERACTION WITH OTHER ELEMENTS FOR STABILITY AND RESISTANCE TO LATERAL FORCES. FRAMING AND WALLS SHALL BE TEMPORARILY BRACED BY THE CONTRACTOR UNTIL PERMANENT BRACING, FLOOR AND ROOF DECKS, AND WALLS HAVE BEEN INSTALLED AND CONNECTIONS BETWEEN THESE ELEMENTS HAVE BEEN MADE.

2

THE SPECIFICATIONS AND STRUCTURAL DRAWINGS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE THE METHOD OF CONSTRUCTION, UNLESS NOTED OTHERWISE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND OPERATION OF CONSTRUCTION AND SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO.

3

THE SIZE AND LOCATION OF EQUIPMENT PADS AND PENETRATIONS THROUGH THE STRUCTURE FOR MECHANICAL, ELECTRICAL, AND PLUMBING WORK SHALL BE VERIFIED BY THE CONTRACTOR. PENETRATIONS SHALL BE SUBJECT TO APPROVAL BY THE STRUCTURAL ENGINEER. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR OPENING LOCATIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS.

4

USE ONLY DIMENSIONS INDICATED ON THE DRAWINGS. DO NOT SCALE DRAWINGS OR USE ANY DIMENSIONS TAKEN FROM ELECTRONIC DRAWING FILES.

5

ASSUME EQUAL SPACING IF NOT INDICATED ON DRAWINGS.

6

THE SPECIFICATIONS ARE AN INTEGRAL PART OF THE CONTRACT DOCUMENTS AND SHALL BE USED IN CONJUNCTION WITH THE STRUCTURAL DRAWINGS. WHERE REQUIREMENTS INDICATED ON THE STRUCTURAL DRAWINGS DIFFER FROM THE SPECIFICATIONS, NOTIFY THE STRUCTURAL ENGINEER.

7

ARCHITECTURAL, MECHANICAL AND ELECTRICAL COMPONENTS AND SYSTEMS SHALL BE DESIGNED AND CONSTRUCTED TO RESIST SEISMIC FORCES AS DETERMINED IN CHAPTER 13 OF ASCE 7.

FOUNDATIONS

1

FOUNDATION DESIGNS, SUBGRADE PREPARATION NOTES, AND STRUCTURAL EARTH MOVING SPECIFICATION ARE BASED ON THE RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT NUMBER 04195009, BY: TERRACON CONSULTANTS, INC.DATED: FEBRUARY 28, 2020.

2

FOOTING DESIGNS ARE BASED ON A MAXIMUM NET ALLOWABLE SOIL BEARING PRESSURE OF 8000 PSF. THE FOUNDATIONS SHALL BEAR ON A MODERATELY HARD SHALE OR CEMENTED SANDSTONE BEDROCK. FOUNDATION BEARING SOILS SHALL BE TESTED AND APPROVED BY THE ONSITE GEOTECHNICAL REPRESENTATIVE PRIOR TO PLACEMENT OF FOUNDATIONS. THE ONSITE GEOTECHNICAL REPRESENTATIVE SHALL MONITOR SITE GRADING, EXCAVATION OF MATERIAL BELOW FOUNDATION AND SLAB BEARING, ENGINEERED FILL PLACEMENT, APPROVE FILL MATERIAL, VERIFY COMPACTION OF SUBGRADE AND FILL MATERIALS, AND EVALUATE THE FOUNDATION AND SLAB BEARING MATERIAL PRIOR TO THE PLACEMENT OF FOUNDATION REINFORCEMENT AND CONCRETE.

3

CONTRACTOR AND TESTING LABORATORY REPRESENTATIVE SHALL READ THE GEOTECHNICAL REPORT AND BECOME THOROUGHLY FAMILIAR WITH SITE AND SUBGRADE INFORMATION GIVEN THEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING EXACT QUANTITIES OF CUT AND FILL FOR ESTIMATING AND CONSTRUCTION. SUBGRADE SHALL BE PREPARED AS NOTED IN THE STRUCTURAL EARTH MOVING SPECIFICATION.

4

A QUALIFIED AND REGISTERED GEOTECHNICAL ENGINEER, LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED AND WORKING FOR THE TESTING LABORATORY, SHALL DETERMINE CONFORMANCE OF THE FOUNDATION BEARING STRATA WITH THE FOUNDATION DESIGN CRITERIA ABOVE, AND ALL OTHER CONTRACT DOCUMENTS. TESTING LABORATORY SHALL NOTIFY CONTRACTOR, ARCHITECT AND CONSULTING ENGINEER OF ANY CONDITIONS NOT IN ACCORDANCE WITH FOUNDATION DESIGN CRITERIA OR CONTRACT DOCUMENTS.

5

USE ONLY STRUCTURAL FILL MATERIAL AS NOTED IN THE STRUCTURAL EARTH MOVING SPECIFICATION FOR FILL BELOW BUILDING AND FIVE FEET BEYOND THE EDGES OF THE BUILDING.

6

EXTERIOR FOOTINGS SHALL BEAR AT OR BELOW MINIMUM BEARING DEPTH. MINIMUM BEARING DEPTH IS 24 INCHES BELOW ADJACENT FINISHED GRADE. THICKENED SLAB EDGE FOR STOOPS, CANOPIES, ETC. SHALL EXTEND 24 INCHES BELOW GRADE UNLESS NOTED OTHERWISE.

7

FOUNDATION WALLS SHALL HAVE ADEQUATE TEMPORARY BRACING INSTALLED BY THE CONTRACTOR BEFORE BACKFILL IS PLACED AGAINST THEM. TEMPORARY BRACING SHALL NOT BE REMOVED UNTIL WALL IS PERMANENTLY BRACED.

8

FOOTINGS SHALL BE POURED AGAINST UNDISTURBED SOIL, UNLESS NOTED OTHERWISE.

2015 IBC

NONE

III

150 PSF

HS 20.44

100 PSF

10 PSF

11 PSF

1.0

1.1

1.0

120 MPH

93 MPH

C

1.25

13.3%

6.9%

D

0.142

0.110

B

70 PSF/FT

100 PSF/FT

125 PSF

CONCRETE

1

MINIMUM COMPRESSIVE STRENGTH (f'c) AT THE END OF 28 DAYS SHALL BE AS FOLLOWS:

A. ALL STRUCTURAL CONCRETE

4500 PSI

MINIMUM MODULUS OF RUPTURE (fr) AT THE END OF 28 DAYS FOR 6" SLAB-ON-GRADE SHALL BE 550PSI.

REFER TO SPECIFICATIONS FOR MAXIMUM WATER/CEMENT RATIOS, MINIMUM CEMENT CONTENTS AND OTHER MIX DESIGN REQUIREMENTS. CONCRETE SHALL BE NORMAL WEIGHT (145 PCF), UNLESS NOTED OTHERWISE.

2

EXTERIOR CONCRETE AND CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL BE AIR-ENTRAINED. REFER TO SPECIFICATIONS FOR AIR CONTENT.

3

MATERIALS OR ADMIXTURES SHALL NOT CONTAIN ANY CALCIUM CHLORIDE.

4

REINFORCING STEEL SHALL MEET THE FOLLOWING:

A. DEFORMED BARS

ASTM A615, GRADE 60

B. WELDABLE DEFORMED BARS

ASTM A706, GRADE 60

C. WELDED WIRE FABRIC

ASTM A185

D. STEEL FIBERS

ASTM A820

5

WHERE DOWELS ARE INDICATED BUT NOT SIZED, PROVIDE DOWELS THAT MATCH SIZE AND LOCATION OF MAIN REINFORCING STEEL AND LAP SPLICE WITH THE MAIN REINFORCING STEEL. REINFORCING BARS SHALL BE SPLICED AS NOTED IN THE REINFORCING LAP SCHEDULE.

6

REFER TO ACI 318 LATEST EDITION FOR CONCRETE COVER, ACI 315 LATEST EDITION FOR DETAILING PRACTICES AND FABRICATION, AND ACI 301 LATEST EDITION FOR STANDARD PRACTICE FOR MIXING AND PLACING CONCRETE.

7

"C.J." INDICATES SAW CUT CONTRACTION JOINT OR DOWELED CONSTRUCTION JOINT IN SLAB-ON-GRADE. REFERENCE SPECIFICATIONS FOR ACCEPTED SAW CUT METHODS. SLAB POURS SHALL BE SEPARATED BY A DOWELED CONSTRUCTION JOINT. CONTRACTION/CONSTRUCTION JOINTS SHALL BE LOCATED AS SHOWN ON PLANS OR AS DIRECTED BY THE STRUCTURAL ENGINEER.

8

PROVIDE CORNER BARS THAT MATCH AND LAP CONTINUOUS REINFORCEMENT SIZE AND QUANTITY AT INTERSECTIONS AND CORNERS OF WALLS AND FOUNDATIONS.

9

PROVIDE #3 Z-BAR SPACERS AT 24 INCHES ON CENTER EACH WAY FOR CONCRETE WALLS HAVING REINFORCING STEEL IN BOTH FACES.

10

ANCHORS INSTALLED IN HARDENED CONCRETE SHALL ONLY BE USED WHERE SPECIFIED ON THE CONTRACT DRAWING. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER-OF-RECORD PRIOR TO INSTALLING POST-INSTALLED ANCHORS IN PLACE OF MISSING OR MISPLACED CAST-IN-PLACE ANCHORS. CARE SHALL BE TAKEN IN PLACING POST-INSTALLED ANCHORS TO AVOID CONFLICTS WITH EXISTING REINFORCING. HOLES SHALL BE DRILLED, DRY AND CLEANED AND ANCHORS INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED WRITTEN INSTRUCTIONS AND APPLICABLE ESR REPORT. REFERENCE DETAILS FOR ANCHOR SIZE AND EMBEDMENT. SUBSTITUTION REQUESTS FOR PRODUCTS OTHER THAN THOSE SPECIFIED ON THE CONTRACT DRAWINGS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER-OF-RECORD ALONG WITH CALCULATIONS THAT ARE SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION AND LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED. THE CALCULATIONS SHALL DEMONSTRATE THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERTINENT EQUIVALENT PERFORMANCE VALUES (MINIMUM) OF THE SPECIFIED PRODUCT USING THE APPROPRIATE DESIGN PROCEDURE AND/OR STANDARD(S) AS REQUIRED BY THE BUILDING CODE. ALLOWABLE SUBSTITUTIONS FOR POST-INSTALLED ANCHORS IN CONCRETE ARE:

A. HILTI HIT RE 500-SD EPOXY ADHESIVE (ICC-ES ESR-2322).

B. HILTI HIT HY 150 MAX-SD ADHESIVE (ICC-ES ESR-3013).

C. HILTI KWIK BOLT TZ EXPANSION ANCHOR (ICC-ES ESR-1917).

D. SIMPSON STRONG-TIE SET-XP EPOXY ADHESIVE (ICC-ES ESR-2508).

E. SIMPSON STRONG-TIE AT-XP ADHESIVE (IAPMO US ER-263).

F. SIMPSON STRONG-TIE STRONG BOLT WEDGE ANCHOR (ICC-ES ESR-1771) - INTERIOR APPLICATIONS ONLY.

G. SIMPSON STRONG-TIE STRONG BOLT 2 WEDGE ANCHOR (ICC-ES ESR-3037) - EXTERIOR APPLICATIONS.

STRUCTURAL STEEL

1

STRUCTURAL STEEL SHALL MEET THE FOLLOWING MINIMUM YIELD STRESS (Fy):

YIELD

ASTM SPECIFICATION

A

W, WT SHAPES:

50 KSI

A992

B

BARs, PLATES, CHANNELS, ANGLES:

36 KSI

A36

C

SQUARE, RECTANGULAR HSS:

46 KSI

A500, GRADE B

D

ROUND HSS:

42 KSI

A500, GRADE B

E

STRUCTURAL STEEL PIPE:

36 KSI

A53, GRADE B

F

ANCHOR RODS:

36 KSI

F1554

G

ALL-THREAD RODS:

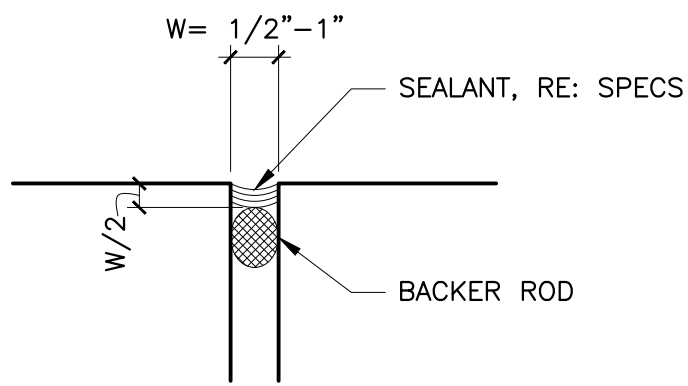
36 KSI

A36

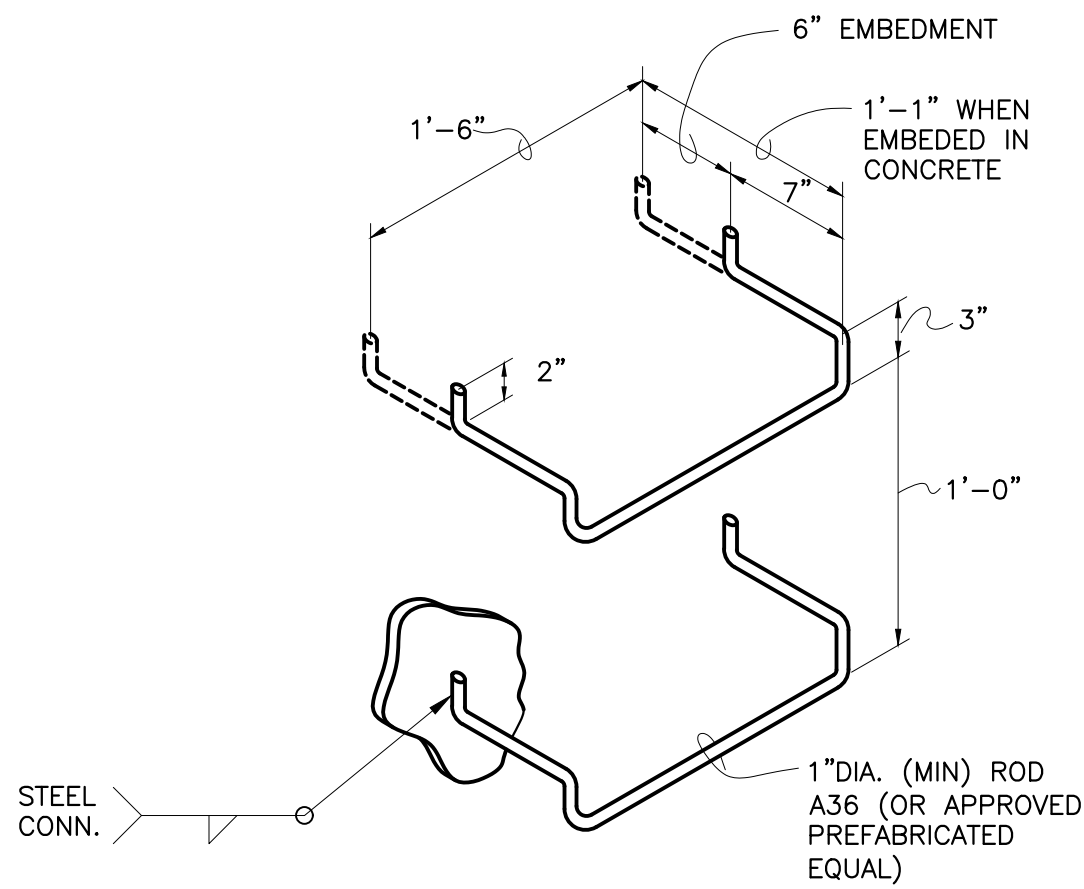
H

HEADED STUD ANCHORS:

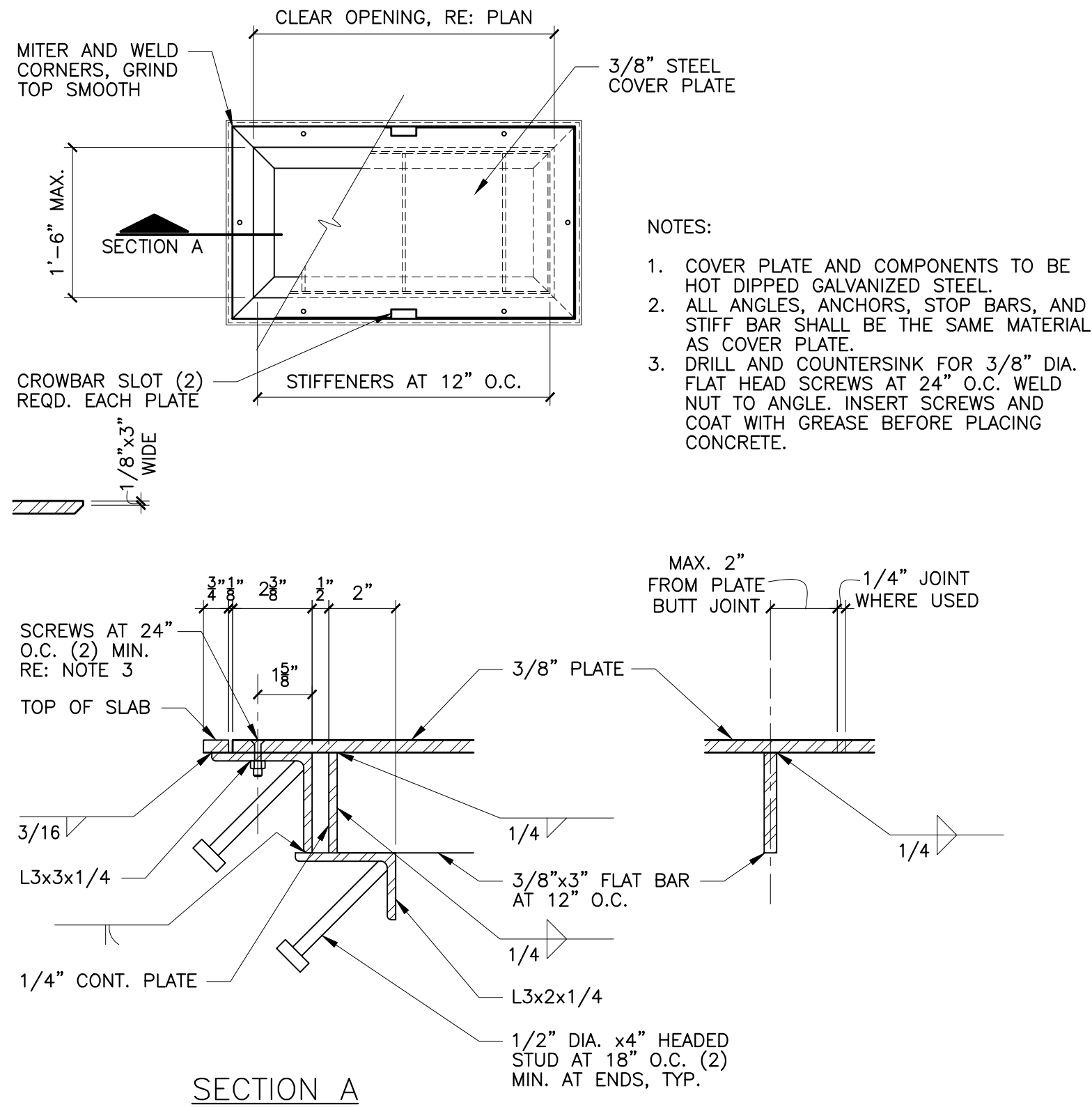
65 KSI T



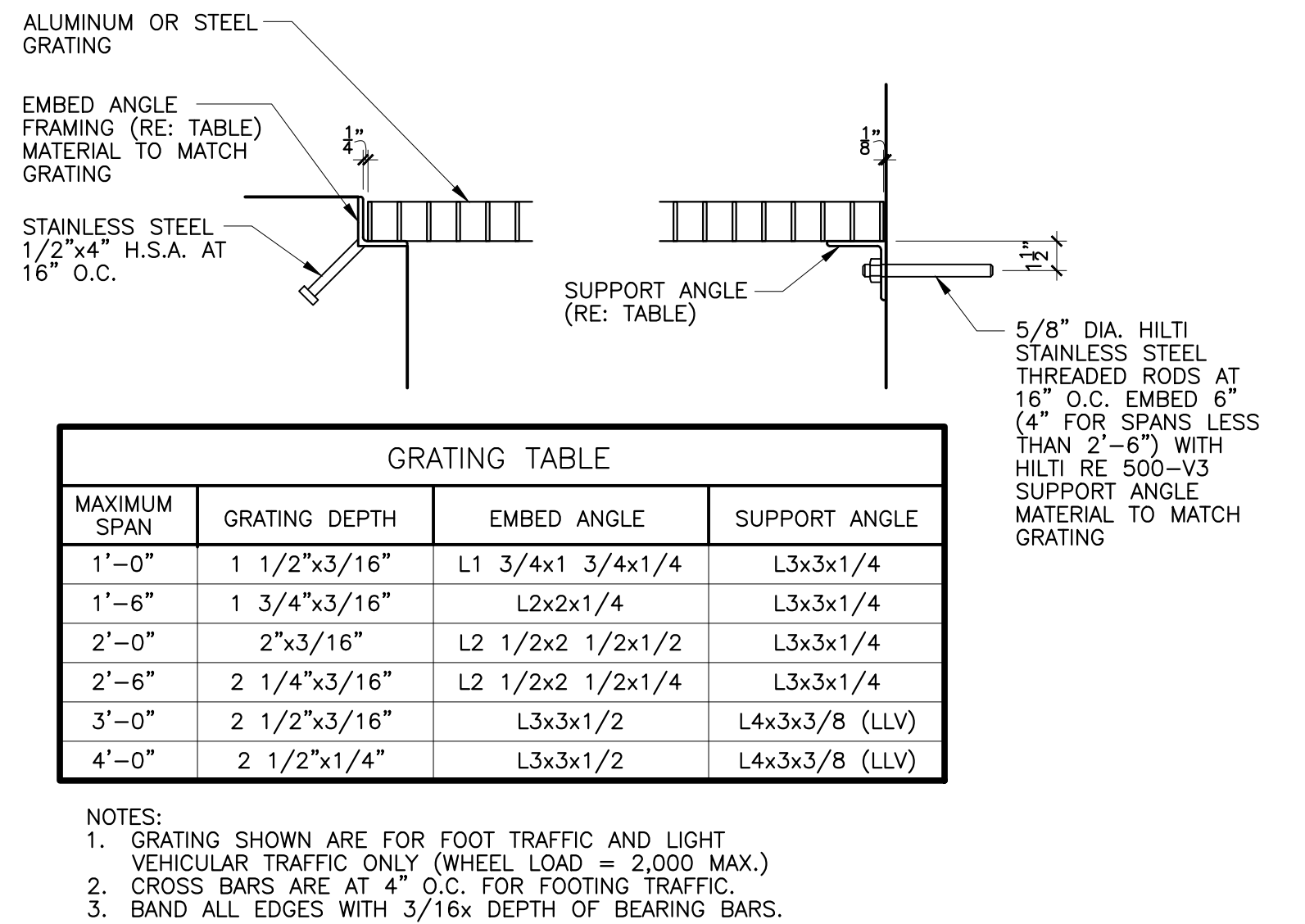
6 SEALANT DETAIL
3" = 1'-0"



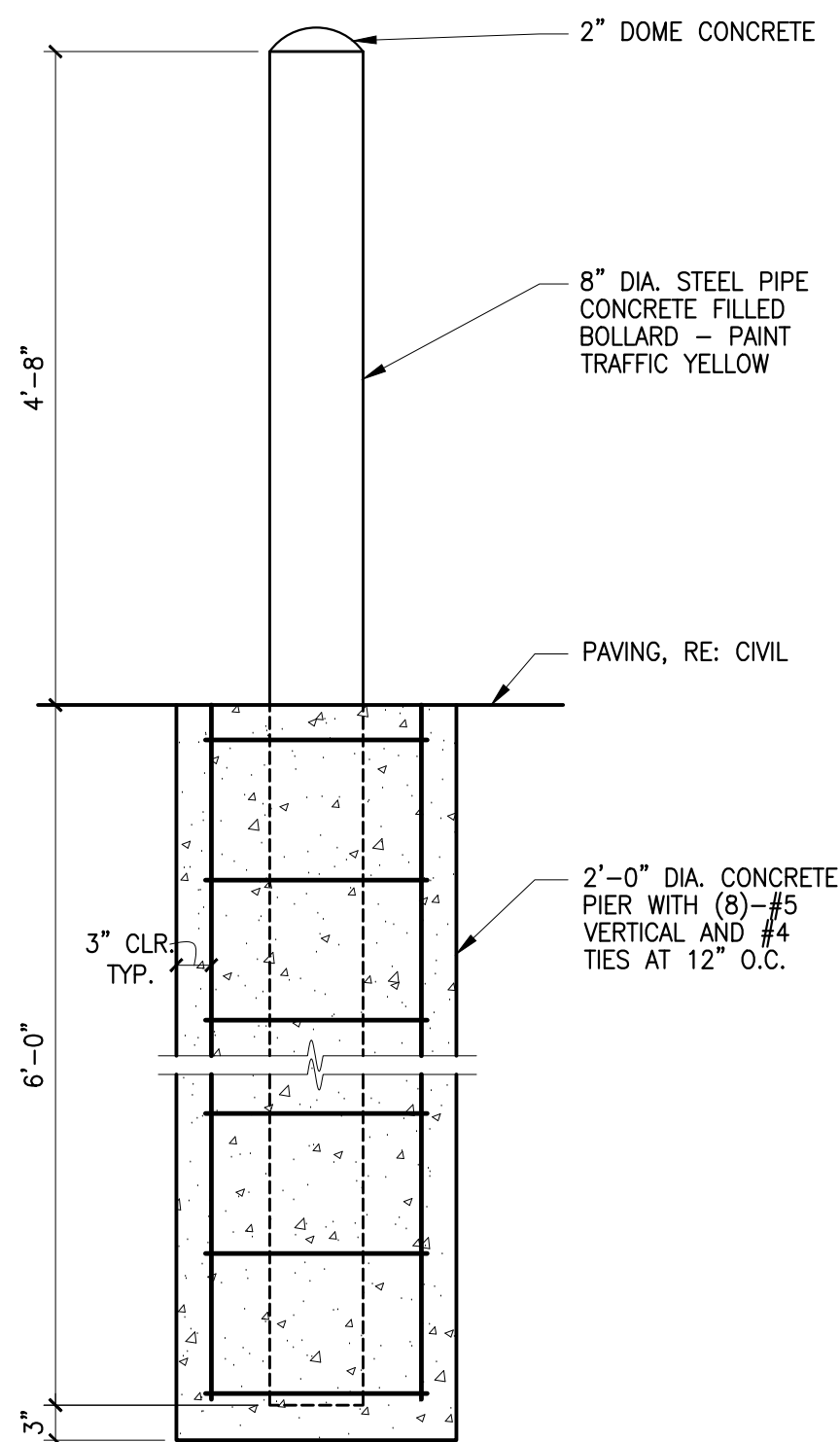
5 INDIVIDUAL LADDER RUNG DETAIL
1 1/2" = 1'-0"



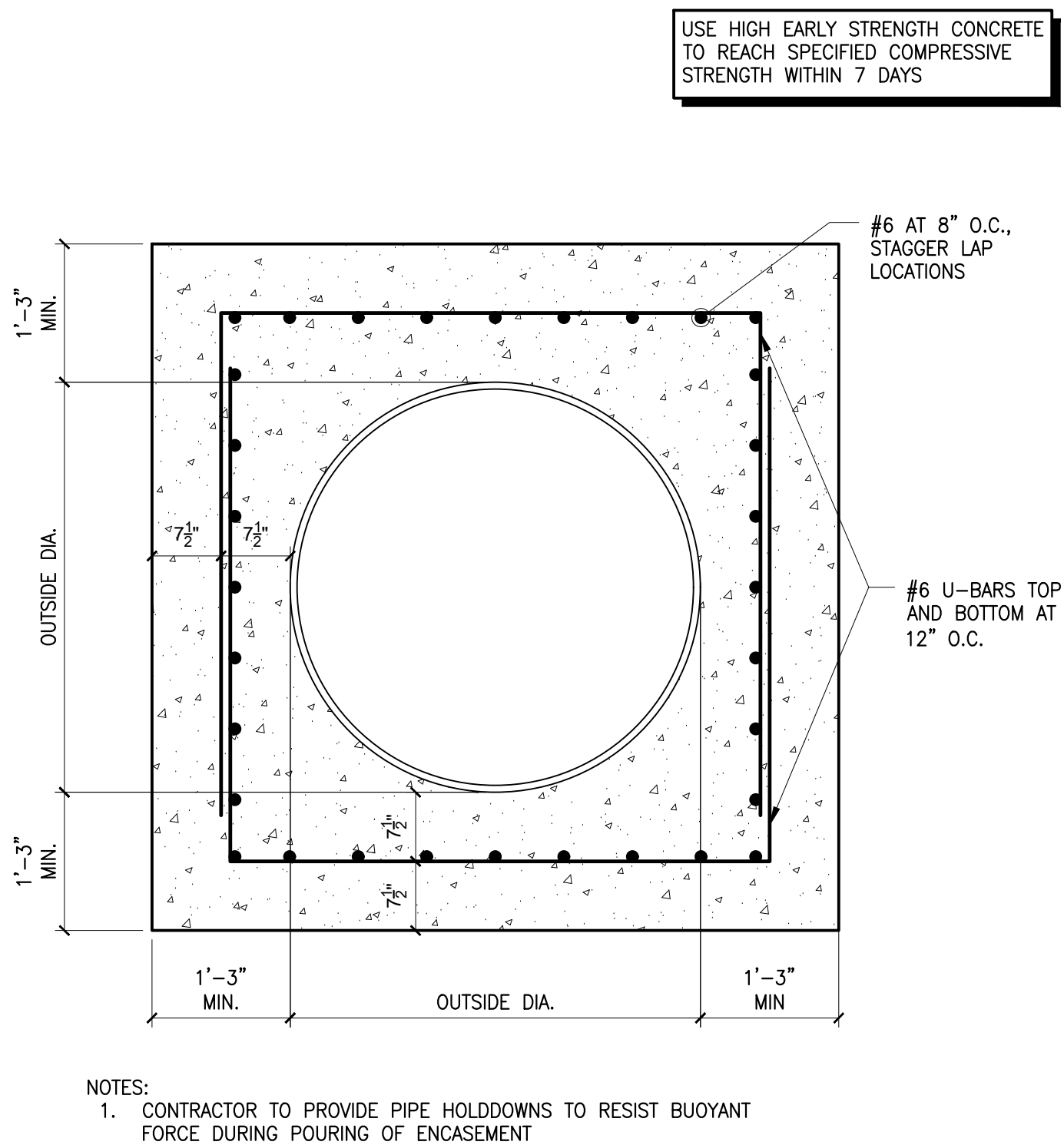
4 STEEL COVER PLATE DETAILS
3" = 1'-0"



3 GRATING ANGLE FRAMING DETAIL
1 1/2" = 1'-0"



2 BOLLARD DETAIL
3/4" = 1'-0"



1 PIPE ENCASEMENT DETAIL AT RIVER CROSSING
N.T.S.



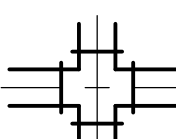
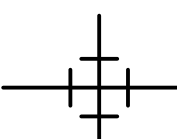
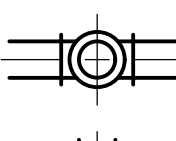
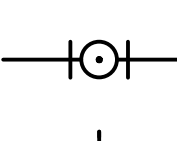
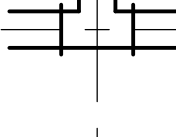
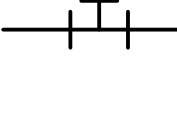
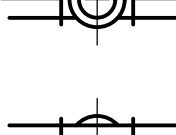
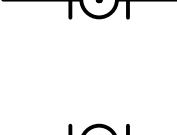
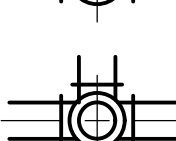
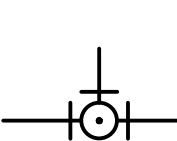
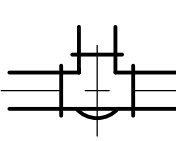
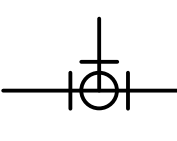
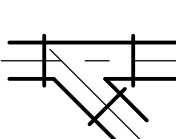
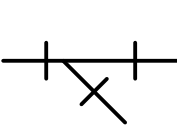
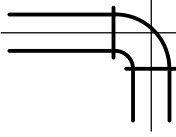
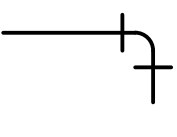
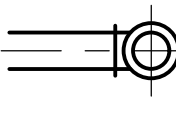
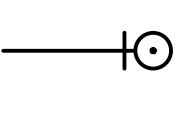
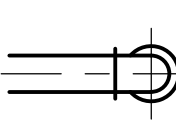
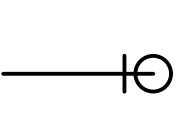
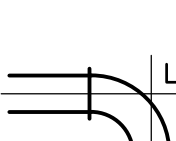
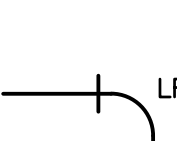
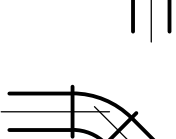
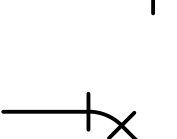
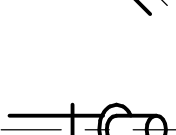
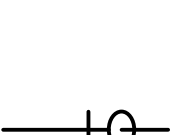



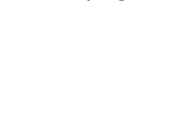
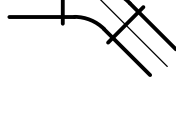
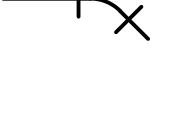
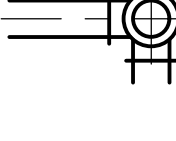
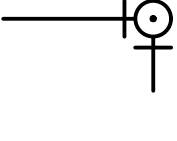
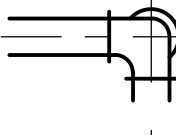
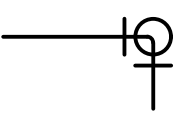
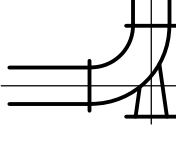
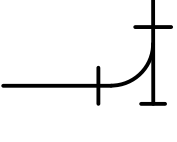
OKCA #1460
Exp. Date: 06/30/21

STRUCTURAL TYPICAL DETAILS									
PROJECT NO. 2015-17, C1									
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES									
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT									
PLANS AND ESTIMATES PREPARED BY:									
wallace				Wallace Engineering Structural Consultants, Inc. 200 East Mathew Brody Street Tulsa, Oklahoma 74103					
REVISION	BY	DATE	PLAN SCALE:	DRAWN	LA	08/20	APPROVED:		
			NOT TO SCALE	DESIGNED	KR	08/20			
				SURVEY					
			PROFILE SCALE	PROJ. MGR.					
			HORIZONTAL:	LEAD ENGR.					
			VERTICAL:	FIELD MGR.					
				RECOMMENDED					
				DESIGN MANAGER					
			FILE: AS-3.DWG	DRAWING: AS3			OCTOBER 2020		
			ATLAS PAGE NO:				SHEET 13 OF 65		

VALVE SYMBOLS			
DESCRIPTION	SCHEMATIC	THREE LINE	SINGLE LINE
GATE			
BUTTERFLY			
PLUG			
CHECK (SWING)			
CONE			
BALL			
DIAPHRAGM			
GLOBE			
ANGLE			
THREE WAY			
FOUR WAY			
FLAP			
PRESSURE RELIEF			
AUTO AIR AND VACUUM RELEASE			
AUTO AIR RELEASE			
AUTO VACUUM RELEASE			
PRESSURE REDUCING			
HOSE			
STOP AND DRAIN			

VALVE OPERATORS




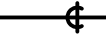
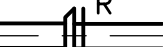
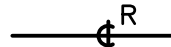

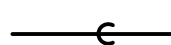
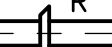
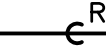



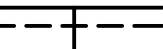
	NONE	MANUAL	M	MOTOR (ELECTRIC)
* PLACE KEY FOR	C	CHAINWHEEL	P	PNEUMATIC CYLINDER
OPERATOR IN	D	DIAPHRAGM	S	SOLENOID
PLACE OF *	F	FLOAT	A	AIR MOTOR
	G	GEAR	N	NUT
	H	HYDRAULIC CYLINDER		

PIPE FITTINGS			
DESCRIPTION	SCHEMATIC	THREE LINE	SINGLE LINE
CROSS	NA		
CROSS	NA		
TEE	NA		
TEE	NA		
TEE	NA		
SIDE OUTLET TEE	NA		
SIDE OUTLET TEE	NA		
LATERAL	NA		
90° ELBOW	NA		
90° ELBOW	NA		
90° ELBOW	NA		
90° ELBOW (LONG RADIUS)	NA		
45° ELBOW	NA		
45° ELBOW	NA		
45° ELBOW	NA		
45° ELBOW (LONG RADIUS)	NA		
SIDE OUTLET ELBOW	NA		
SIDE OUTLET ELBOW	NA		
BASE ELBOW	NA		

NOTES:


1. THIS IS A GENERAL LEGEND PROVIDED TO FACILITATE USE OF THE DRAWINGS. REFER TO THE DRAWINGS AND SPECIFICATIONS FOR ITEMS REQUIRED.
2. VALVES AND PIPE FITTINGS ARE SHOWN WITH FLANGED JOINTS. ITEMS ARE AVAILABLE WITH VARIOUS JOINTS AND ARE SHOWN AS REQUIRED.
3. NA MEANS NOT APPLICABLE.

PIPE FITTINGS			
DESCRIPTION	SCHEMATIC	THREE LINE	SINGLE LINE
UNION (SCREWED)			
REDUCER			
REDUCER - ECCENTRIC (OFFSET VIEW)	NA		
BLIND FLANGE			
SLEEVE TYPE COUPLING			
SLEEVE TYPE COUPLING (HARNESSED)			
GROOVED TYPE COUPLING			
EXPANSION JOINT RUBBER BELLOWS TYPE			
EXPANSION JOINT METAL BELLOWS TYPE			
VENTURI METER			
METER			
STRAINER			
DUPLEX STRAINER			
LUBE OIL FILTER		NA	
MOISTURE SEPARATOR		NA	
SCALE TRAP		NA	
FLAME TRAP			
VENT			
THERMOSTAT (TEMPERATURE REGULATOR)			
PRESSURE GAUGE			
THERMOMETER			
WATER LEVEL ALARM			
DIFFERENTIAL PRESSURE GAUGE			

PIPE JOINTS			
DESCRIPTION	SCHEMATIC	THREE LINE	SINGLE LINE
FLANGE	NA		
MECHANICAL JOINT	NA		
MECHANICAL JOINT (RESTRAINED)	NA		
PUSH ON OR BELL AND SPIGOT	NA		
PUSH ON OR BELL AND SPIGOT (RESTRAINED)	NA		
WELDED	NA		NA
SCREWED	NA		
JOINT IN CONCRETE PIPE	NA		NA

WALL FITTINGS			
DESCRIPTION	SCHEMATIC	THREE LINE	SINGLE LINE
WALL SLEEVE (CAULKED)	NA		
WALL SLEEVE (ANNULAR TYPE SEAL)	NA		
WALL SLEEVE (MECHANICAL JOINT)	NA		
FLANGE AND FLANGE WALL PIPE WITH INTERMEDIATE COLLAR (F x F x F)	NA		
BELL AND BELL WALL PIPE WITH INTERMEDIATE COLLAR (B x F x B)	NA		
MECHANICAL JOINT AND MECHANICAL JOINT WALL PIPE WITH INTERMEDIATE COLLAR (MJ x F x MJ)	NA		
BELL AND FLANGE WALL PIPE WITH INTERMEDIATE COLLAR (B x F x F)	NA		
MECHANICAL JOINT AND FLANGE WALL PIPE WITH INTERMEDIATE COLLAR (MJ x F x F)	NA		
STEEL WALL RING FOR MECHANICAL JOINT AND CONCRETE PIPE (RUBBER AND STEEL)	NA		NA



GENERAL PIPING SYMBOLS									
PROJECT NO. 2015-17, C2									
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES									
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT									
PLANS AND ESTIMATES PREPARED BY:					 GREELEY AND HANSEN 321 S BOSTON AVE, SUITE 300 TULSA, OKLAHOMA 74103				
PLAN SCALE:		DRAWN		RKY		3/2020		APPROVED:	
NOT TO SCALE		DESIGNED		TCG		3/2020			
		SURVEY							
PROFILE SCALE		PROJ. MGR.							
HORIZONTAL:		LEAD ENGR.							
VERTICAL:		FIELD MGR.							
		RECOMMENDED							
		DESIGN MANAGER						CITY ENGINEER	
FILE: 0141ERAM01				DRAWING:		AM1		DATE: OCTOBER 2020	
ATLAS PAGE NO:								SHEET 14 OF 65	

REVISION	BY	DATE	PLAN SCALE:	DRAWN	RKY	3/2020	APPROVED:
			NOT TO SCALE	DESIGNED	TCG	3/2020	
				SURVEY			
			PROFILE SCALE	PROJ. MGR.			
			HORIZONTAL:	LEAD ENGR.			
				FIELD MGR.			
			VERTICAL:	RECOMMENDED			
				DESIGN MANAGER			
							CITY ENGINEER
			FILE: 0141ERAM01	DRAWING:	AM1	DATE: OCTOBER 2020	
			ATLAS PAGE NO:				SHEET 14 OF 65

SYMBOL	DESCRIPTION
	WALL OR CEILING MOUNTED INCANDESCENT OR HID LIGHTING FIXTURE UPPER LETTER DENOTES FIXTURE TYPE NUMBER DENOTES CIRCUIT NUMBER AND LETTER DENOTES SWITCH CONTROLLING FIXTURE
	EMERGENCY LIGHTING FIXTURE
	WALL OR CEILING MOUNTED EXIT OR DIRECTIONAL SIGN (SHADED SIDE DENOTES ILLUMINATED FACE ARROW INDICATES DIRECTION)
	POLE MOUNTED LIGHTING FIXTURE
	FLOODLIGHT
	LED STRIP LIGHTING FIXTURE
	LED LIGHTING FIXTURE
	EMERGENCY LED LIGHTING FIXTURE
	REMOTE TEST PUSHBUTTON AND "ON" INDICATING LIGHT FOR BATTERY EQUIPPED LIGHTING FIXTURES
	EMERGENCY BATTERY PACK WITH TWO LIGHTING HEADS
	EMERGENCY BATTERY PACK - REMOTE HEAD
	PHOTOELECTRIC CELL
	SINGLE RECEPTACLE 2 POLE, 3 WIRE, 120 VOLT, 20A, OR AS NOTED
	DUPLEX RECEPTACLE 2 POLE, 3 WIRE, 120 VOLT, 20A, OR AS NOTED
	DUPLEX RECEPTACLE 2 POLE, 3 WIRE, 208 VOLT, 20A, OR AS NOTED
	FLOOR OUTLET BOX WITH DUPLEX RECEPTACLE 2 POLE, 3 WIRE, 120 VOLT, 20A, OR AS NOTED
	SINGLE RECEPTACLE - SINGLE PHASE (RATING AS NOTED)
	SINGLE RECEPTACLE - THREE PHASE (RATING AS NOTED)
	CLOCK WITH RECEPTACLE
	SINGLE POLE SWITCH UNLESS NOTED OTHERWISE 2P - TWO POLE MS - MOTOR STARTING 3 - THREE WAY PL - WITH PILOT LIGHT 4 - FOUR WAY T - THERMAL OVERLOAD D - DOOR SWITCH TS - TIME SWITCH M - MOMENTARY CONTACT
	INTERCOM TELEPHONE OUTLET
	INTERCOM TELEPHONE FLOOR OUTLET
	PUBLIC TELEPHONE OUTLET
	PUBLIC TELEPHONE FLOOR OUTLET
	SPEAKER
	BI-DIRECTIONAL SPEAKER
	INTERCOMMUNICATION SPEAKER
	INTERCOMMUNICATION SPEAKER VOLUME CONTROL
	CLOSED CIRCUIT TELEVISION CAMERA
	ALARM HORN
	ALARM BELL
	FIRE ALARM CONTROL PANEL
	FIRE ALARM ANNUNCIATOR PANEL
	MANUAL PULL STATION
	SMOKE DETECTOR
	HEAT DETECTOR
	PHOTOELECTRIC BEAM SMOKE DETECTOR TRANSMITTER
	PHOTOELECTRIC BEAM SMOKE DETECTOR RECEIVER
	AUDIBLE/VISUAL INDICATING DEVICE WITH HORN
	AUDIBLE/VISUAL INDICATING DEVICE WITH BELL
	VISUAL INDICATING DEVICE
	SPRINKLER SYSTEM FLOW SWITCH
	SPRINKLER SYSTEM TAMPER SWITCH
	MAGNETIC DOOR SWITCH
	PASSIVE INFRARED MOTION DETECTOR
	INFRARED BEAM MOTION DETECTION TRANSMITTER
	INFRARED BEAM MOTION DETECTION RECEIVER

ONE LINE AND SCHEMATIC DIAGRAM SYMBOLS

SYMBOL	DESCRIPTION
	OPERATING COIL (C-CONTACTOR, F-FAST, F-FORWARD, H-HIGH, L-LOW, M-MOTOR STARTER, R-REVERSE, S-SLOW)
	RELAY COIL (AR-AUXILIARY RELAY, CR-CONTROL RELAY, LOR-LOCKOUT RELAY, TR-TIME DELAY RELAY WHERE 'XX' DENOTES RELAY FUNCTION OR NUMBER)
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
	OVERLOAD RELAY CONTACT
	NORMALLY OPEN (SHOWN) OR NORMALLY CLOSED RESET TIMER CONTACT (X-X-O - DENOTES TIMER SEQUENCE FOR RESET-TIMING-TIMED OUT PERIODS. X INDICATES CONTACT CLOSED)
	NORMALLY OPEN CONTACT WITH TIME DELAY CLOSING (ON DELAY)
	NORMALLY CLOSED CONTACT WITH TIME DELAY CLOSING (OFF DELAY)
	NORMALLY CLOSED CONTACT WITH TIME DELAY OPENING (ON DELAY)
	NORMALLY OPEN CONTACT WITH TIME DELAY OPENING (OFF DELAY)
	LS LIMIT SWITCH
	F FLOAT SWITCH
	P OR V PRESSURE OR VACUUM SWITCH
	FL FLOW SWITCH
	T TEMPERATURE SWITCH
	TO TORQUE SWITCH
	LOR LATCHING RELAY WITH CLEARING CONTACTS
	SELECTOR SWITCH
	NORMALLY OPEN PUSHBUTTON
	NORMALLY CLOSED PUSHBUTTON
	PUSHBUTTON STATION (ONE, TWO OR THREE UNIT)
	INDICATING LIGHT (A-AMBER, B-BLUE, G-GREEN, R-RED, W-WHITE)
	THERMAL OVERLOAD ELEMENT (OL)
	ON-OFF SWITCH
	RESISTOR
	FUSE
	BATTERY
	HEATING ELEMENT
	MAINTAINED CONTACT PUSHBUTTON WITH MUSHROOM HEAD OPERATOR
	SELECTOR SWITCH X INDICATES CONTACT CLOSED IN CORRESPONDING SWITCH POSITION
	CURRENT SENSOR TRIP SWITCH

ABBREVIATIONS

A — AMPS
ACM — ASBESTOS CONTAINING MATERIAL
AFF — ABOVE FINISHED FLOOR
ATC — AUTOMATIC TRANSFER CONTROLLER
ATS — AUTOMATIC TRANSFER SWITCH
BCP — BREAKER CONTROL PANEL
BKR — BREAKER
BLDG — BUILDING
BOD — BOTTOM OF DUCT
CL — CENTERLINE
CKT — CIRCUIT
CS — CONTROL SWITCH
CT — CURRENT TRANSFORMER
DIA — DIAMETER
DP — DISTRIBUTION PANELBOARD
DPCS — DISTRIBUTED PROCESS
CONTROL SYSTEM
ECC — EXTERNAL CONTROL CABINET
EMH — ELECTRICAL MANHOLE
FO — FIBER OPTIC
GFCI — GROUND FAULT CIRCUIT INTERRUPTER
GND — GROUND
GRS — GALVANIZED RIGID STEEL
IPL — INDIANAPOLIS POWER AND LIGHT COMPANY
JB — JUNCTION BOX
KVA — KILO—VOLT—AMPERE
LBP — LEAD BASED PAINT
LCS — LOCAL CONTROL STATION
LCP — LIGHTING CONTROL PANEL
L/L — LEAD/LAG
LP — LIGHTING PANELBOARD
LOR — LOCAL OFF REMOTE
LT — LIGHTING TRANSFORMER
MCC — MOTOR CONTROL CENTER
MH — MOUNTING HEIGHT
MIN — MINIMUM
MM — MULTIMODE
O/O — ON/OFF
PB — PULL BOX
PLC — PROGRAMMABLE LOGIC CONTROLLER
PT — POTENTIAL TRANSFORMER
PVC — POLYVINYL CHLORIDE
RECEPT — RECEPTACLE
RTU — RESET
RTU — REMOTE TERMINAL UNIT
RVSS — REDUCED VOLTAGE SOLID
STATE STARTER
SCCR — SHORT CIRCUIT CURRENT RATING
SP — SPARE
TB — TERMINAL BOX
TCM — TRIP COIL MONITOR
TCP — TEMPERATURE CONTROL PANEL
TTC — TELEPHONE TERMINAL CABINET
TWSH — TWISTED SHIELDED
TYP — TYPICAL
V — VOLTS
WP — WEATHERPROOF
XP — EXPLOSION—PROOF



PROJECT NO. 2015-17, C2

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

GREELEY AND HANSEN
321 S BOSTON AVE, SUITE 300
TULSA, OKLAHOMA 74103

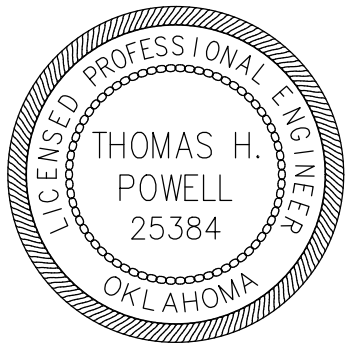
REVISION	BY	DATE	PLAN SCALE:	DRAWN	RMM	8/2020	APPROVED:
			NOT TO SCALE	DESIGNED	MM	8/2020	
				SURVEY			
			PROFILE SCALE	PROJ. MGR.			
			HORIZONTAL:	LEAD ENGR.			
				FIELD MGR.			
			VERTICAL:	RECOMMENDED			
				DESIGN MANAGER			
							CITY ENGINEER
			FILE: 0141ERA001	DRAWING:	AE1	DATE:	OCTOBER 2020
			ATLAS PAGE NO:			SHEET	15 OF 65

\\BH-DATA01\CLIENT\0141E -- SSWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERAEO2 2020/10/08 1:05 PM KETENBRINK, BUTCH

CABLE CONDUIT SCHEDULE -- DIVERSION FACILITIES					
CONDUIT		CONDUCTOR			
NAME	SIZE	QUANTITY AND SIZE	FROM	TO	REMARKS
LF-1	2"	3#12, 1#12G	S136-VLT4-KGV-01	S136-VLT7-PGV-01 CONTROL PANEL	
LF-1A	3/4"	3#12, 1#12G	S136-VLT7-PGV-01 CONTROL PANEL	S136-VLT7-PGV-01	VIA DISCONNECT SWITCH
LF-2	2"	3#12, 1#12G	S136-VLT4-SPCP	S136-VLT7-SUP01/SUP02 CONTROL PANEL	
C1	2"	12#14, 1#12G	S136-VLT7-PGV-01 CONTROL PANEL	PLC-F	COMBINE C1, C2, N1
C2	2"	4#14, 1#12G	S136-VLT7-SUP01/SUP02 CONTROL PANEL	PLC-F	COMBINE C1, C2, N1
N1	2"	2-2/C #16 TWSH	S136-VLT7-PGV-01 CONTROL PANEL	PLC-F	COMBINE C1, C2, N1

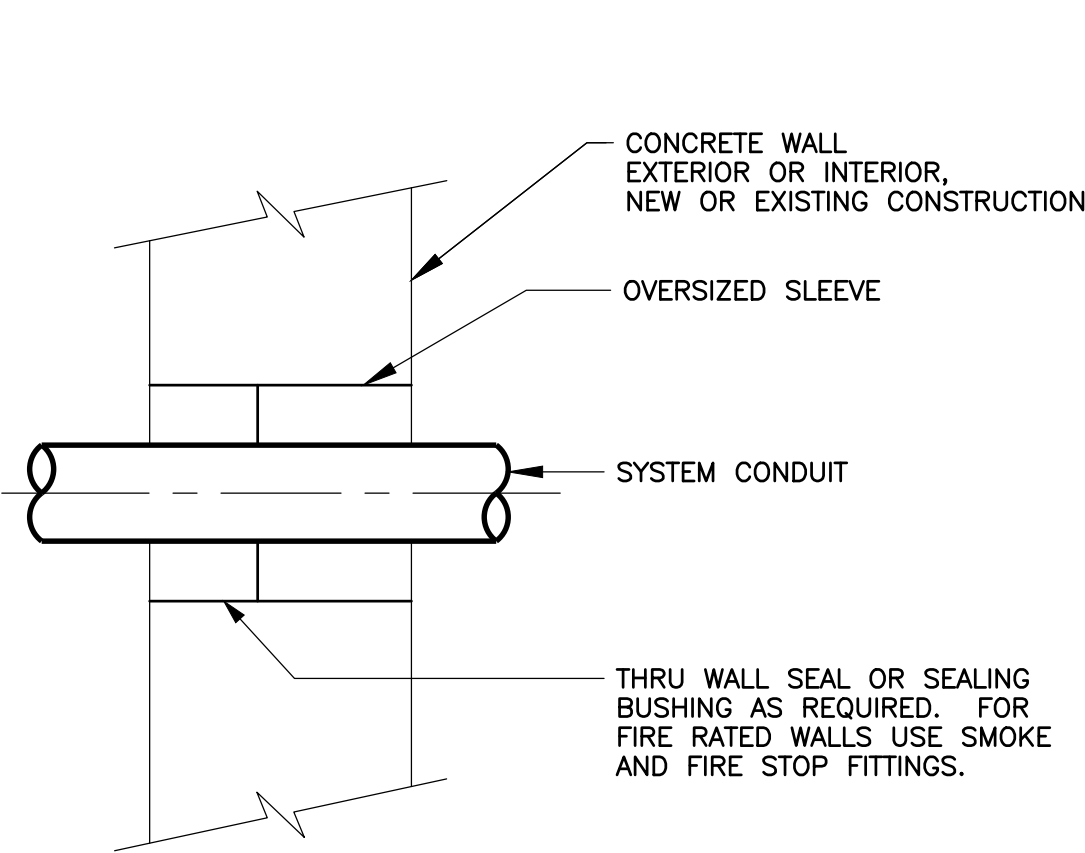
NOTE:

1. EXTEND WIRING THROUGH EXISTING CONDUIT TO PLC F FROM VAULT 4 FOR C1, C2 AND N1.

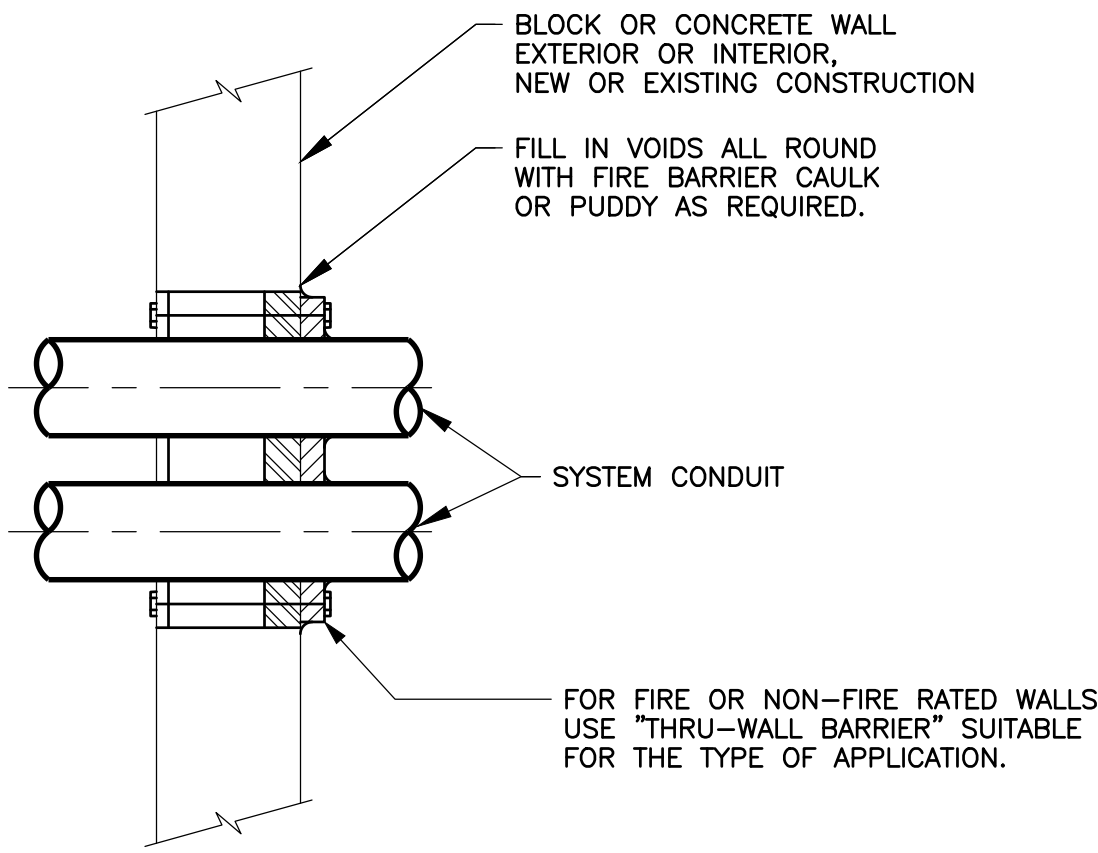


	REVISION	BY	DATE	PLAN SCALE:	DRAWN	RMM	8/2020	APPROVED:
				NOT TO SCALE	DESIGNED	MM	8/2020	
					SURVEY			
				PROFILE SCALE	PROJ. MGR.			
				HORIZONTAL:	LEAD ENGR.			
					FIELD MGR.			
				VERTICAL:	RECOMMENDED			
					DESIGN MANAGER			
					CITY ENGINEER			
				FILE: 0141ERAEO2	DRAWING:	AE2	DATE: OCTOBER 2020	
				ATLAS PAGE NO:	SHEET 16 OF 65			

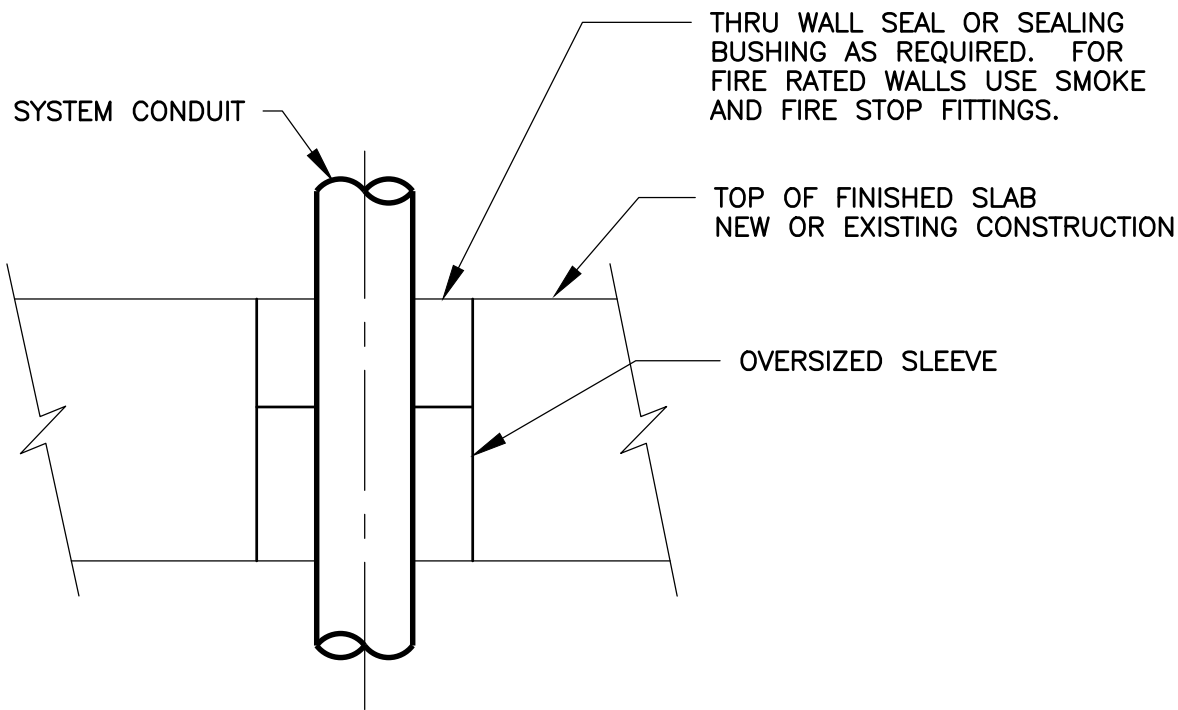
\\GH-DATA01\CLIENT\0141E - SSWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERA03 2020/10/08 1:05 PM KETENBRINK, BUTCH



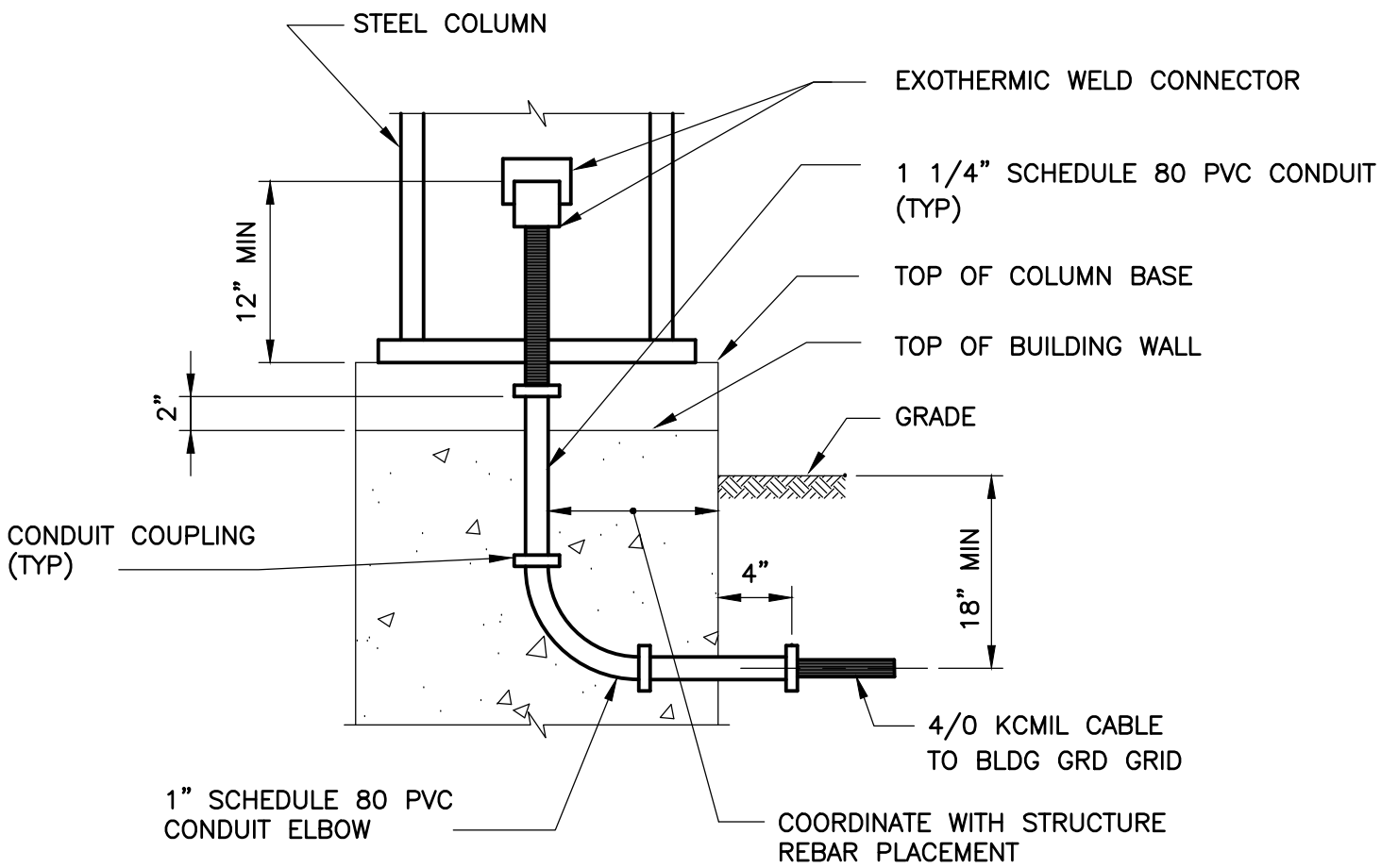
TYPICAL CONDUIT THRU CONCRETE WALL
NOT TO SCALE



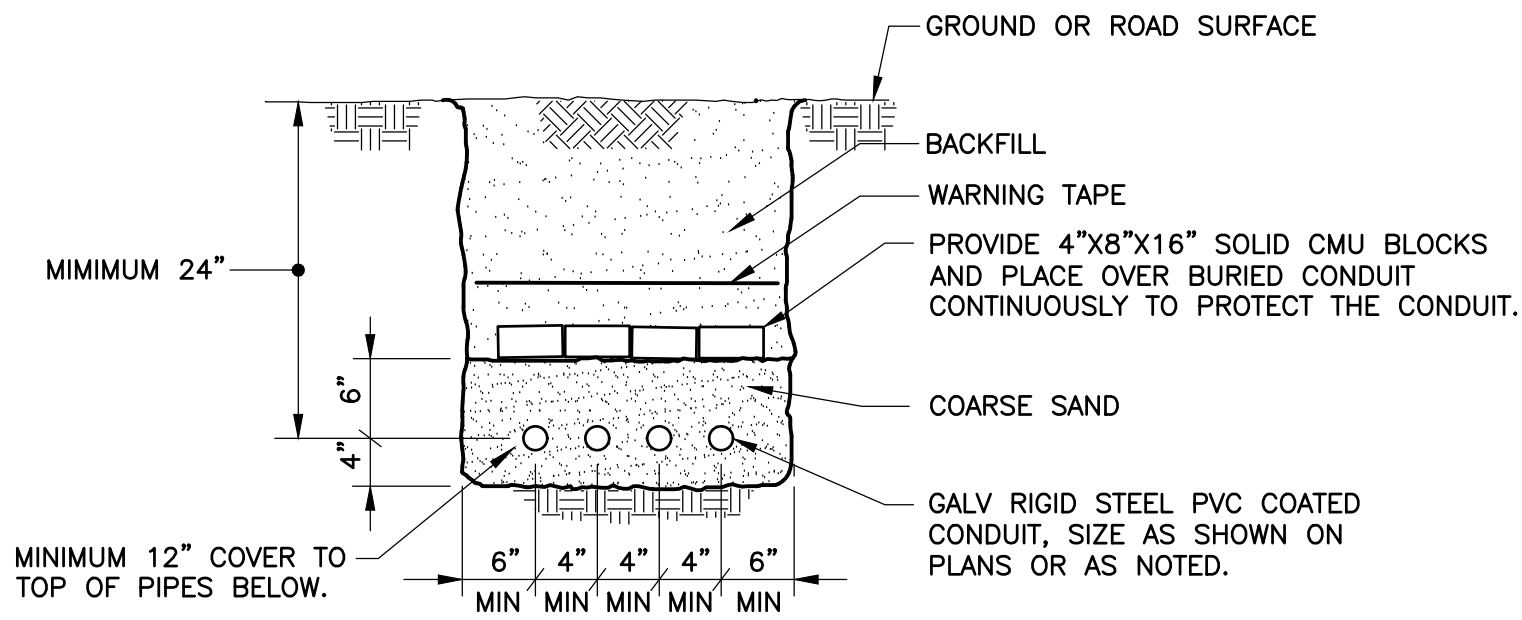
TYPICAL THRU WALL CONDUIT BANK
NOT TO SCALE



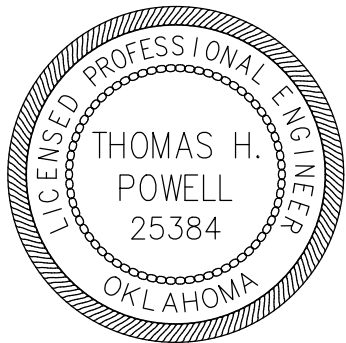
TYPICAL CONDUIT THRU CONCRETE FLOOR
NOT TO SCALE



TYPICAL GROUND CONNECTION AT BUILDING COLUMNS
NOT TO SCALE



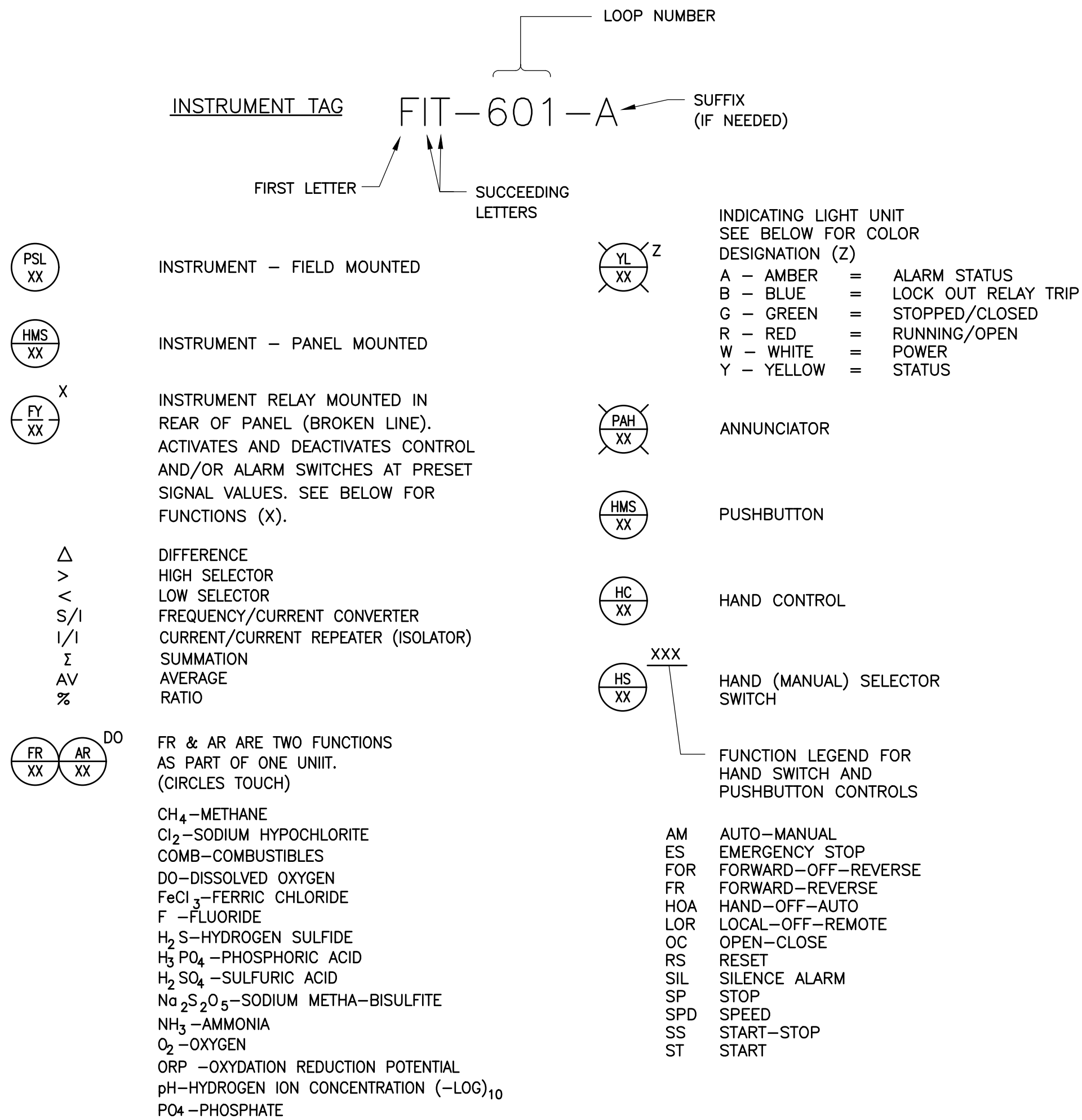
TYPICAL CONDUIT BANK DIRECT BURIED SECTION
NOT TO SCALE



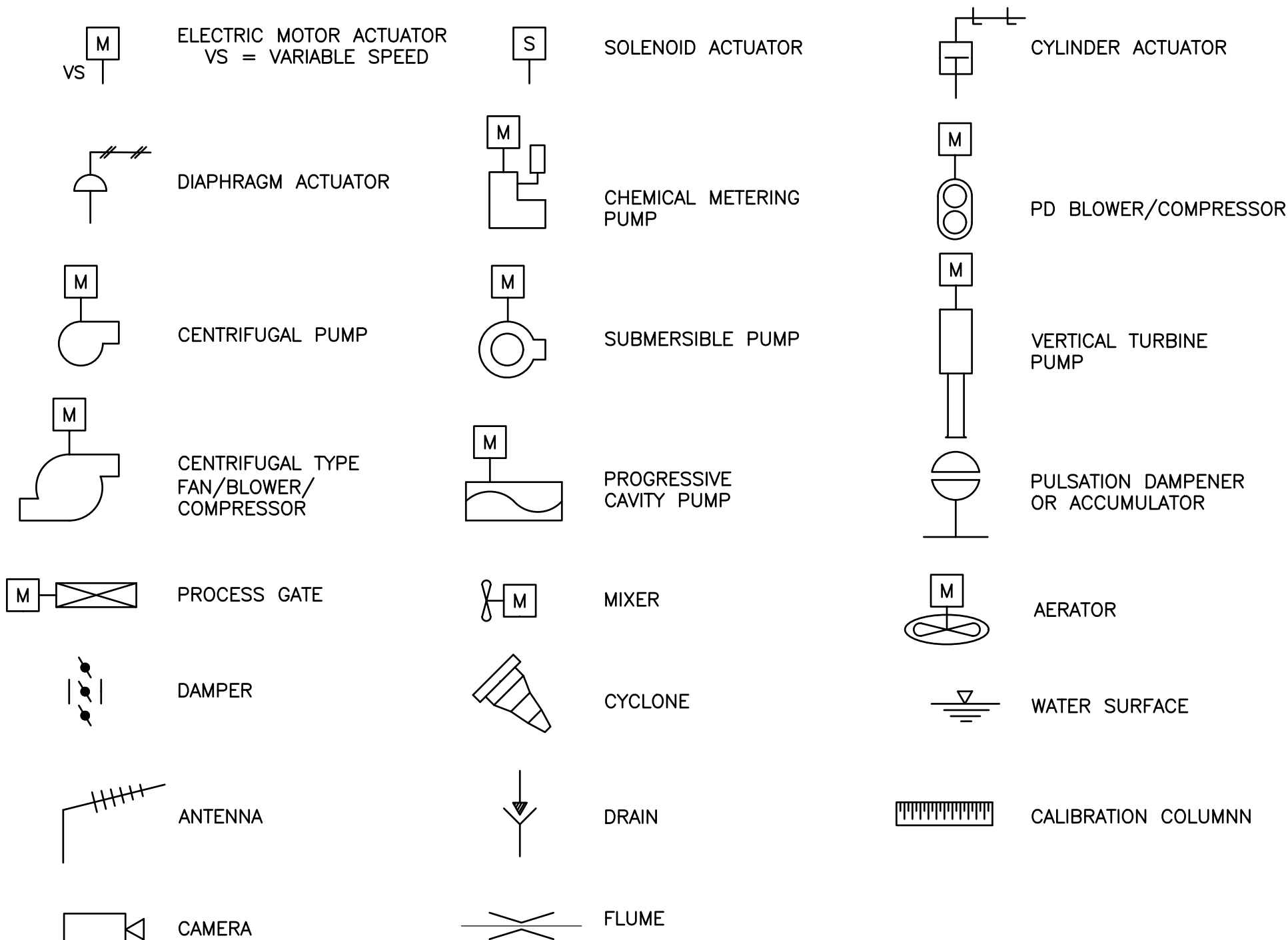
ELECTRICAL TYPICAL DETAILS									
PROJECT NO. 2015-17, C2									
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES									
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT									
PLANS AND ESTIMATES PREPARED BY: GREELEY AND HANSEN 321 S BOSTON AVE, SUITE 300 TULSA, OKLAHOMA 74103									
REVISION	BY	DATE	PLAN SCALE:	DRAWN	RMM	8/2020	APPROVED:		
			NOT TO SCALE	DESIGNED	MM	8/2020			
				SURVEY					
			PROFILE SCALE	PROJ. MGR.					
			HORIZONTAL:	LEAD ENGR.					
			VERTICAL:	FIELD MGR.			CITY ENGINEER		
				RECOMMENDED					
				DESIGN MANAGER					
			FILE: 0141ERA03.DWG	DRAWING: AE3			DATE: OCTOBER 2020		
			ATLAS PAGE NO:				SHEET 17 OF 65		

\\GH-DATA01\CLIENT\0141E - SSWTTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERAN01 2020/10/08 1:06 PM KETENBRINK, BUTCH

INSTRUMENT TAGGING AND LABELING



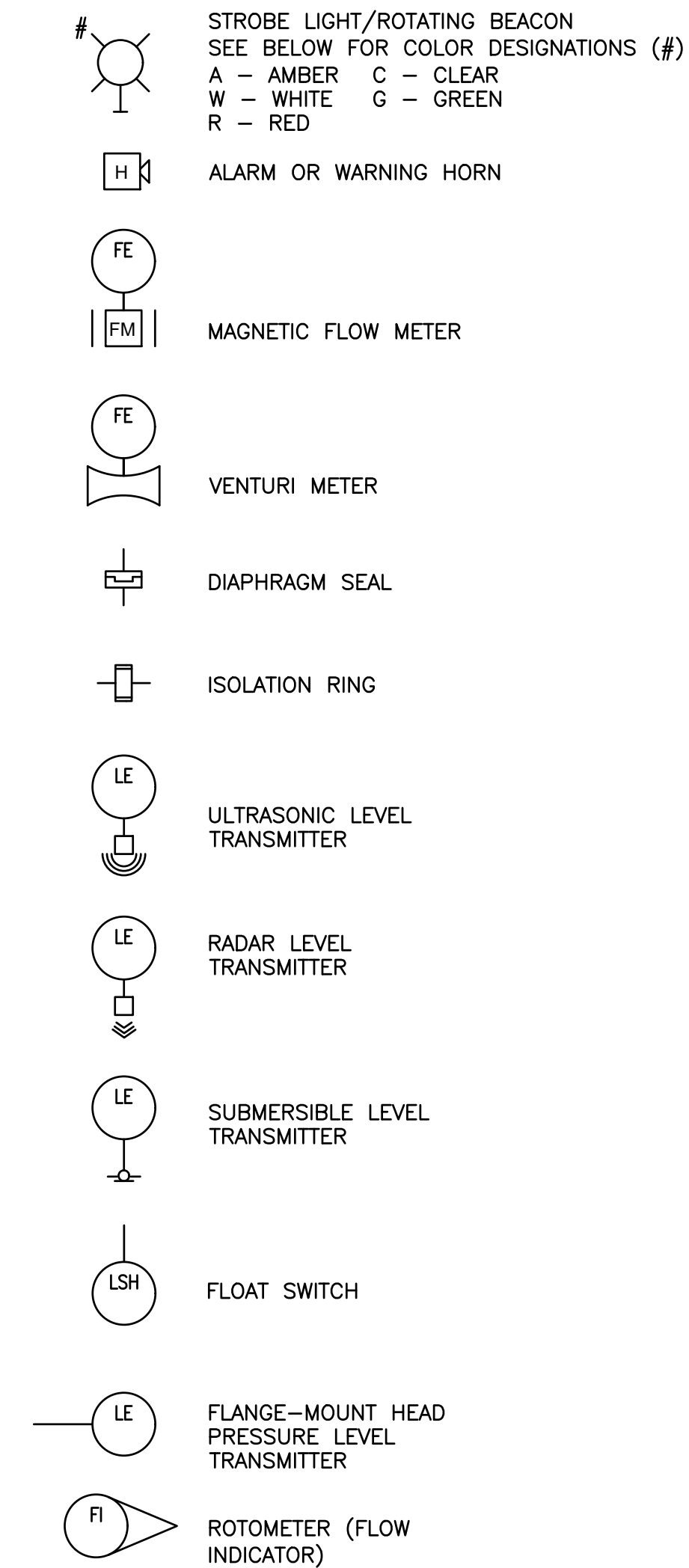
PROCESS AND EQUIPMENT



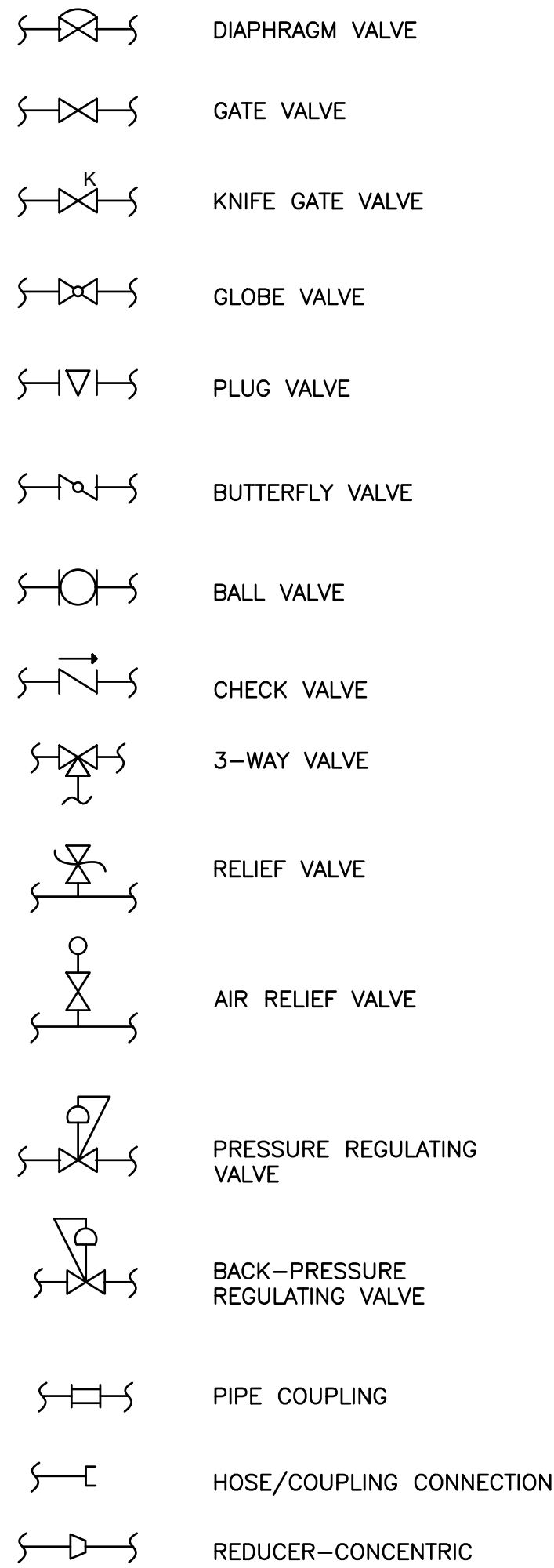
INSTRUMENT IDENTIFICATION LEGEND

FIRST LETTER		SUCCEEDING LETTERS		
MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A ANALYSIS, ANALYZER		ALARM		
B BURNER FLAME			CLOSE, STOP, DECREASE	OFF
C CONDUCTIVITY (ELECTRICAL)	COMPUTER		CONTROL	CLOSE
D DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL		OPEN, START, INCREASE	DEVIATION
E VOLTAGE (EMF)		SENSOR, ELEMENT		
F FLOW, FLOW RATE	RATIO (FRACTION)		FORWARD	FAIL
G GAUGING (DIMENSIONAL)		GLASS, GAUGE, GATE		
H HAND (MANUALLY INITIATED)				HIGH
I CURRENT (ELECTRICAL)		INDICATE, INDICATING, INDICATOR		
J POWER		SCAN		
K TIME OR TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L LEVEL		LIGHT (PILOT)		LOW
M MOISTURE OR HUMIDITY	MANUAL	MOMENTARY	MOTOR	MIDDLE, INTERMEDIATE
N INTRUSION				ON, OPERATE, RUNNING
O		ORIFICE (RESTRICTION)		OPEN
P PRESSURE OR VACUUM		POINT (TEST CONNECTION)	PUMP	
Q QUANTITY	INTEGRATE OR TOTALIZE	INTEGRATE OR TOTALIZE		
R RADIOACTIVITY		RECORD OR PRINT	REVERSE SWITCH	RUN STOP
S SPEED, FREQUENCY, MOTION	SAFETY			
T TEMPERATURE			TRANSMIT, TRANSMITTER	
U MULTIVARIABLE		MULTIFUNCTION		MULTIFUNCTION
V VIBRATION			VALVE, DAMPER OR LOUVER	
W WEIGHT, FORCE, TORQUE		WELL, PROBE		
X UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y EVENT STATUS	Y AXIS		RELAY OR COMPUTE	
Z POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED, FINAL CONTROL ELEMENT	

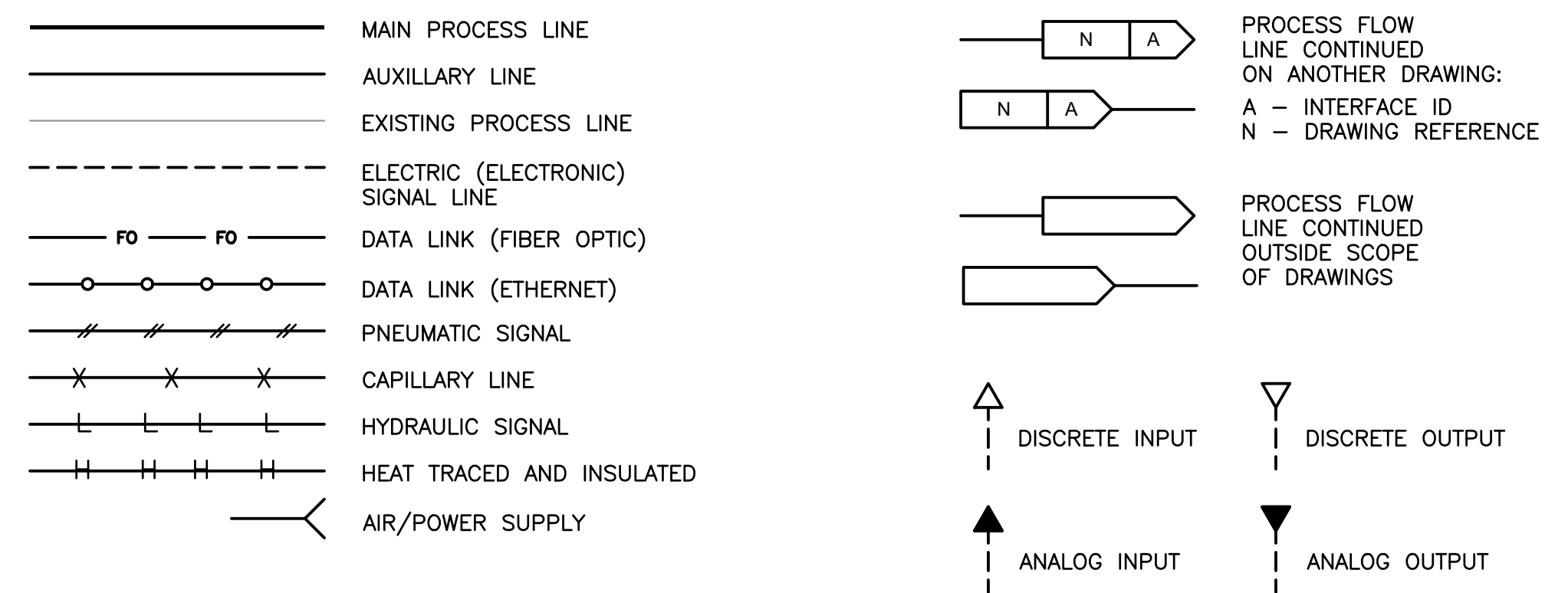
MISC INSTRUMENT SYMBOLS



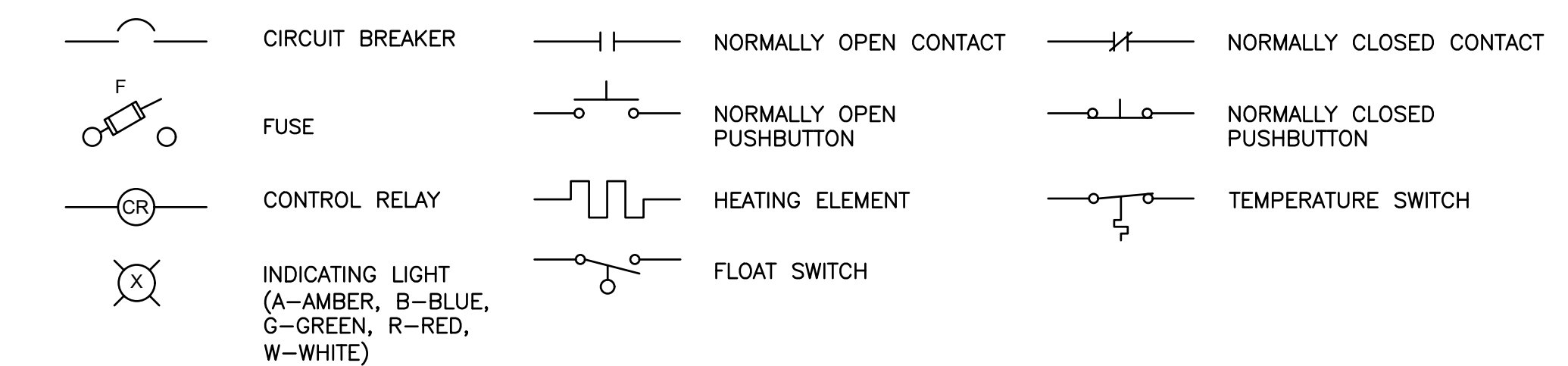
VALVE SYMBOLS



LINE SYMBOLS

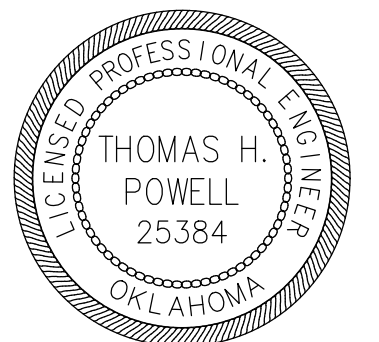


SCHEMATIC SYMBOLS



ABBREVIATIONS

ATS	AUTOMATIC TRANSFER SWITCH	VAC	VOLTS, AC
DIP	DUCTILE IRON PIPE	VDC	VOLTS, DC
DISCH	DISCHARGE	VFD	VARIABLE FREQUENCY DRIVE
FEB	FLOW EQUALIZATION BASIN	VLT	VAULT
FOPP	FIBER OPTIC PATCH PANEL	VLV	VALVE
FRP	FIBER REINFORCED PLASTIC	VS	VARIABLE SPEED
GND	GROUND		
HMI	HUMAN-MACHINE INTERFACE		
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING		
LCP	LOCAL CONTROL PANEL		
LCS	LOCAL CONTROL STATION		
LFT	LIFT STATION		
MCC	MOTOR CONTROL CENTER		
MMS	MICRO-PROCESSOR METERING SYSTEM (POWER MONITORING)		
MOV	MOTOR-OPERATED VALVE		
NPT	NATIONAL PIPE THREAD		
OIT	OPERATOR INTERFACE TERMINAL		
PC	PRIMARY CLARIFIER		
PLC	PROGRAMMABLE LOGIC CONTROLLER		
PMP	PUMP		
PRV	PRESSURE REGULATING VALVE		
PS	POWER SUPPLY		
PSRV	PRESSURE SUSTAINING/REDUCING VALVE		
PSV	PRESSURE SUSTAINING VALVE		
P&ID	PIPING/PROCESS & INSTRUMENTATION DIAGRAM		
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION		
SLG	SLIDE GATE		
SOV	SOLENOID-OPERATED VALVE		
SS	STAINLESS STEEL		
TCP	TEMPERATURE CONTROL PANEL		
TYP	TYPICAL		
UPS	UNINTERRUPTIBLE POWER SUPPLY		



GENERAL SYMBOLS LIST, ABBREVIATIONS AND LEGEND

PROJECT NO. 2015-17, C2

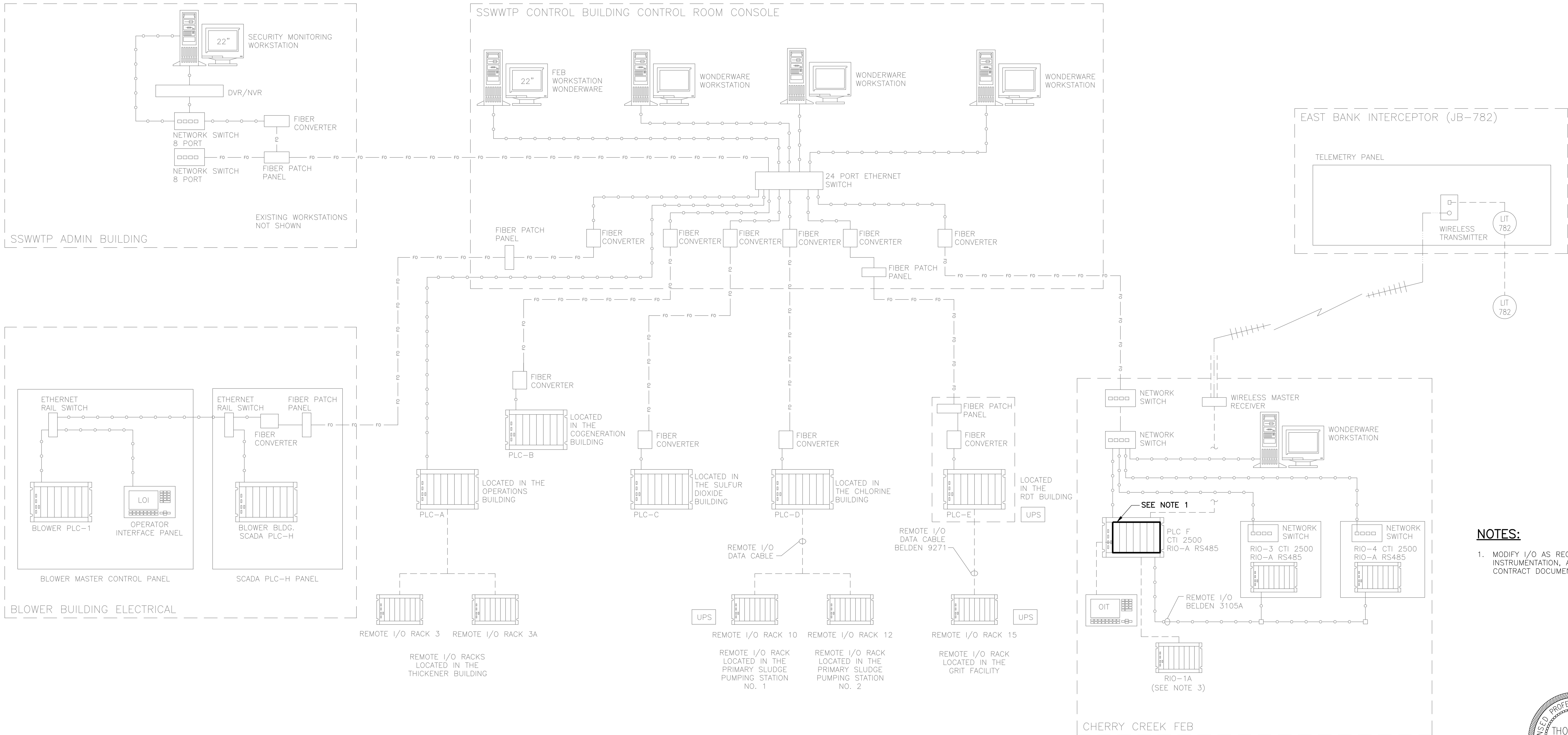
SOUTHSIDE WASTEWATER TREATMENT PLANT
PEAK FLOW OPTIMIZATION: THIRD RIVER
CROSSING AND DIVERSION FACILITIES

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY: **GREELEY AND HANSEN**
321 S BOSTON AVE, SUITE 300
TULSA, OKLAHOMA 74103

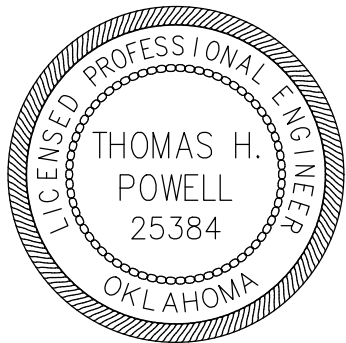
REVISION	BY	DATE	PLAN SCALE:	DRAWN	RKV	8/2020	APPROVED:
			AS SHOWN	DESIGNED	THP	8/2020	
			SURVEY				
			PROFILE SCALE	PROJ. MGR.			
			HORIZONTAL:	LEAD ENGR.			
			VERTICAL:	FIELD MGR.			
				RECOMMENDED			
				DESIGN MANAGER			CITY ENGINEER
			FILE: 0141ERAN01	DRAWING: AN1			DATE: OCTOBER 2020
			ATLAS PAGE NO:				SHEET 18 OF 65

\\GH-DATA01\CLIENT\0141E - SSWWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERAN02 2020/10/08 1:06 PM KETENBRINK, BUTCH



NOTES:

1. MODIFY I/O AS REQUIRED TO PROVIDE EQUIPMENT, INSTRUMENTATION, AND CONTROLS INTEGRATION PER CONTRACT DOCUMENTS.



CONTROL NETWORK ARCHITECTURE DIAGRAM – SOUTHSIDE WWTP AND DIVERSION FACILITIES

LEGEND:

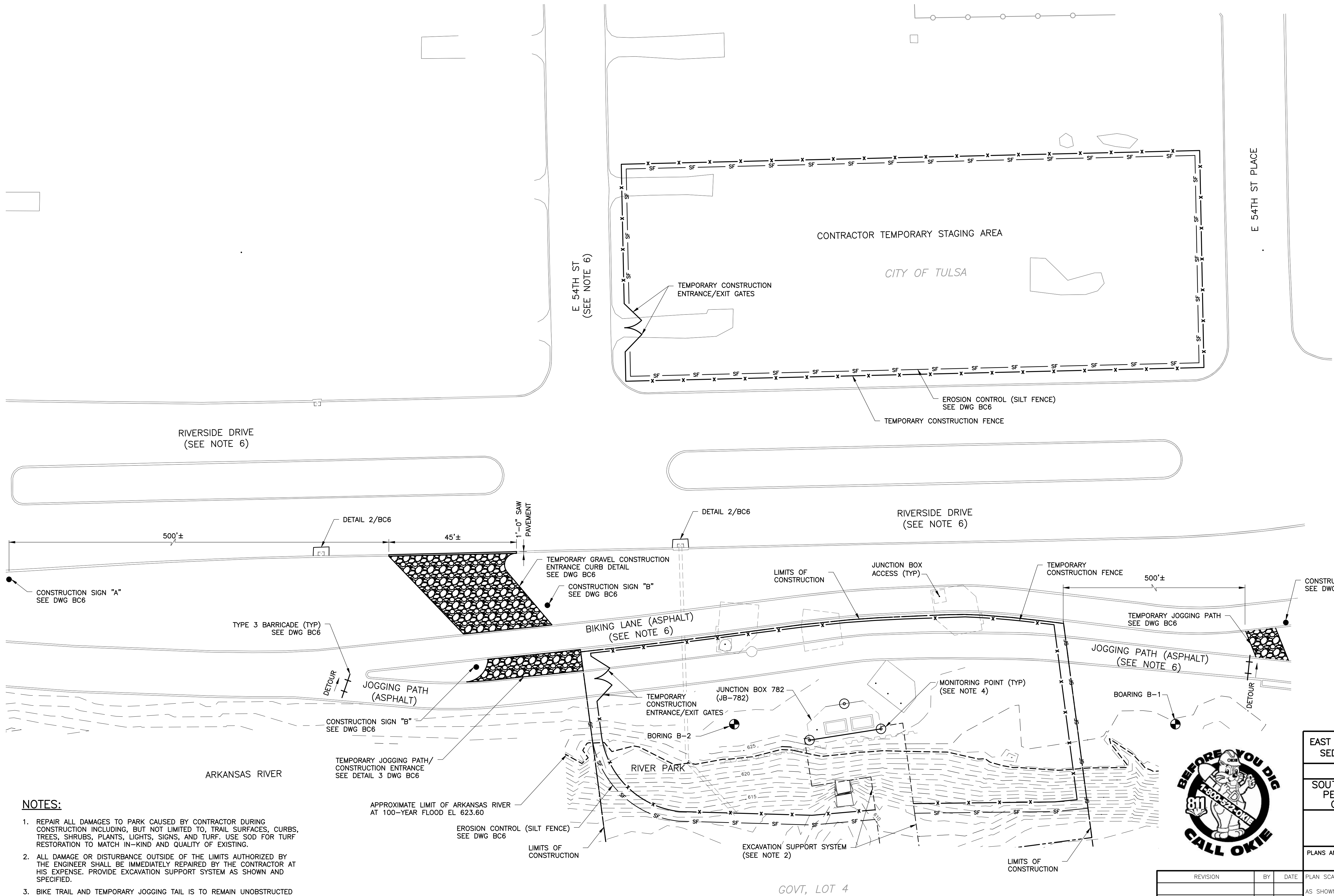
	FIBER OPTIC CABLE
	FIBER OPTIC CABLE, EXISTING
	COPPER CABLE (CAT6)
	COPPER CABLE (CAT6), EXISTING
	SERIAL CABLE
	SERIAL CABLE, EXISTING
	COAXIAL CABLE
	COAXIAL CABLE, EXISTING



REVISION	BY	DATE	PLAN SCALE:	DRAWN	RKV	8/2020	APPROVED:
			AS SHOWN	DESIGNED	THP	8/2020	
				SURVEY			
			PROFILE SCALE	PROJ. MGR.			
			HORIZONTAL:	LEAD ENGR.			
			VERTICAL:	FIELD MGR.			
				RECOMMENDED			
				DESIGN MANAGER			CITY ENGINEER
			FILE: 0141ERAN02	DRAWING: AN2	DATE:	OCTOBER 2020	
			ATLAS PAGE NO:		SHEET	19	OF 65

CONTROL NETWORK ARCHITECTURE DIAGRAM	
PROJECT NO. 2015-17, C2	
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES	
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT	
PLANS AND ESTIMATES PREPARED BY: GREELEY AND HANSEN 321 S BOSTON AVE, SUITE 300 TULSA, OKLAHOMA 74103	

\\GH-DATA01\CLIENT\0141E - SSWWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERBC01 2020/10/08 1:46 PM KETENBRINK, BUTCH



NOTES:

1. REPAIR ALL DAMAGES TO PARK CAUSED BY CONTRACTOR DURING CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, TRAIL SURFACES, CURBS, TREES, SHRUBS, PLANTS, LIGHTS, SIGNS, AND TURF. USE SOD FOR TURF RESTORATION TO MATCH IN-KIND AND QUALITY OF EXISTING.
2. ALL DAMAGE OR DISTURBANCE OUTSIDE OF THE LIMITS AUTHORIZED BY THE ENGINEER SHALL BE IMMEDIATELY REPAIRED BY THE CONTRACTOR AT HIS EXPENSE. PROVIDE EXCAVATION SUPPORT SYSTEM AS SHOWN AND SPECIFIED.
3. BIKE TRAIL AND TEMPORARY JOGGING TAIL IS TO REMAIN UNOBSTRUCTED AT ALL TIMES.
4. MEASURE HORIZONTAL AND VERTICAL MOVEMENT OF MONITORING POINTS PER CONTRACT SPECIFICATIONS.
5. FOR ENGINEERING GEOTECHNICAL BORING INFORMATION REFERENCE CONTRACT SPECIFICATION.
6. FLAGGERS FOR DIRECTING TRAFFIC ARE REQUIRED WHEN CONSTRUCTION EQUIPMENT CROSSES OVER EAST 54TH STREET, RIVERSIDE DRIVE, BIKE LANE OR JOGGING PATH.

EXISTING SITE PLAN

SCALE: 1"=20'

20 0 20 40 FT 1"=20'



EAST BANK JUNCTION STRUCTURE - EROSION & SEDIMENT CNTRL & MAINT OF TRAFFIC PLAN

PROJECT NO. 2015-17, C2

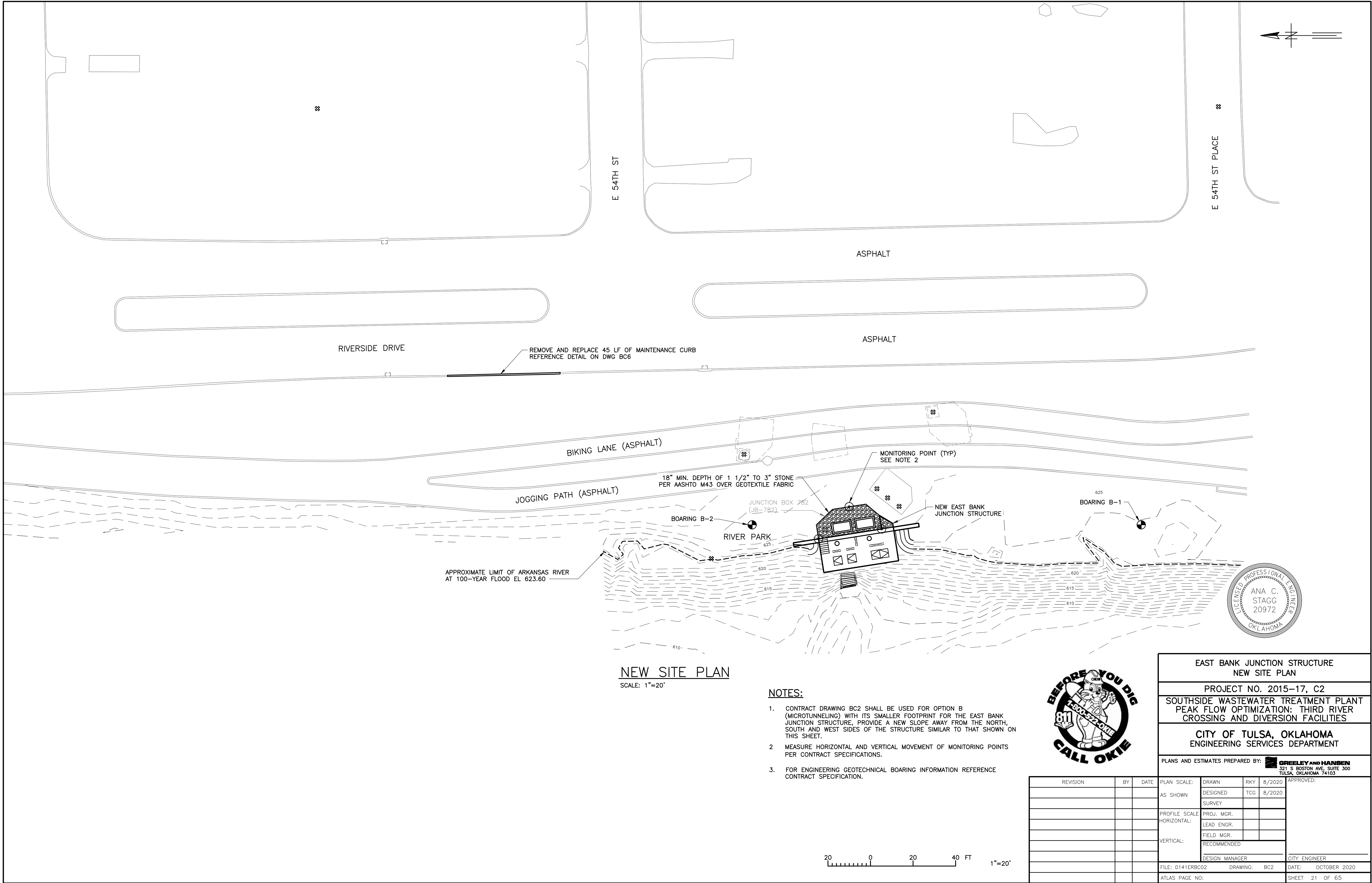
SOUTHSIDE WASTEWATER TREATMENT PLANT
PEAK FLOW OPTIMIZATION: THIRD RIVER
CROSSING AND DIVERSION FACILITIES

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

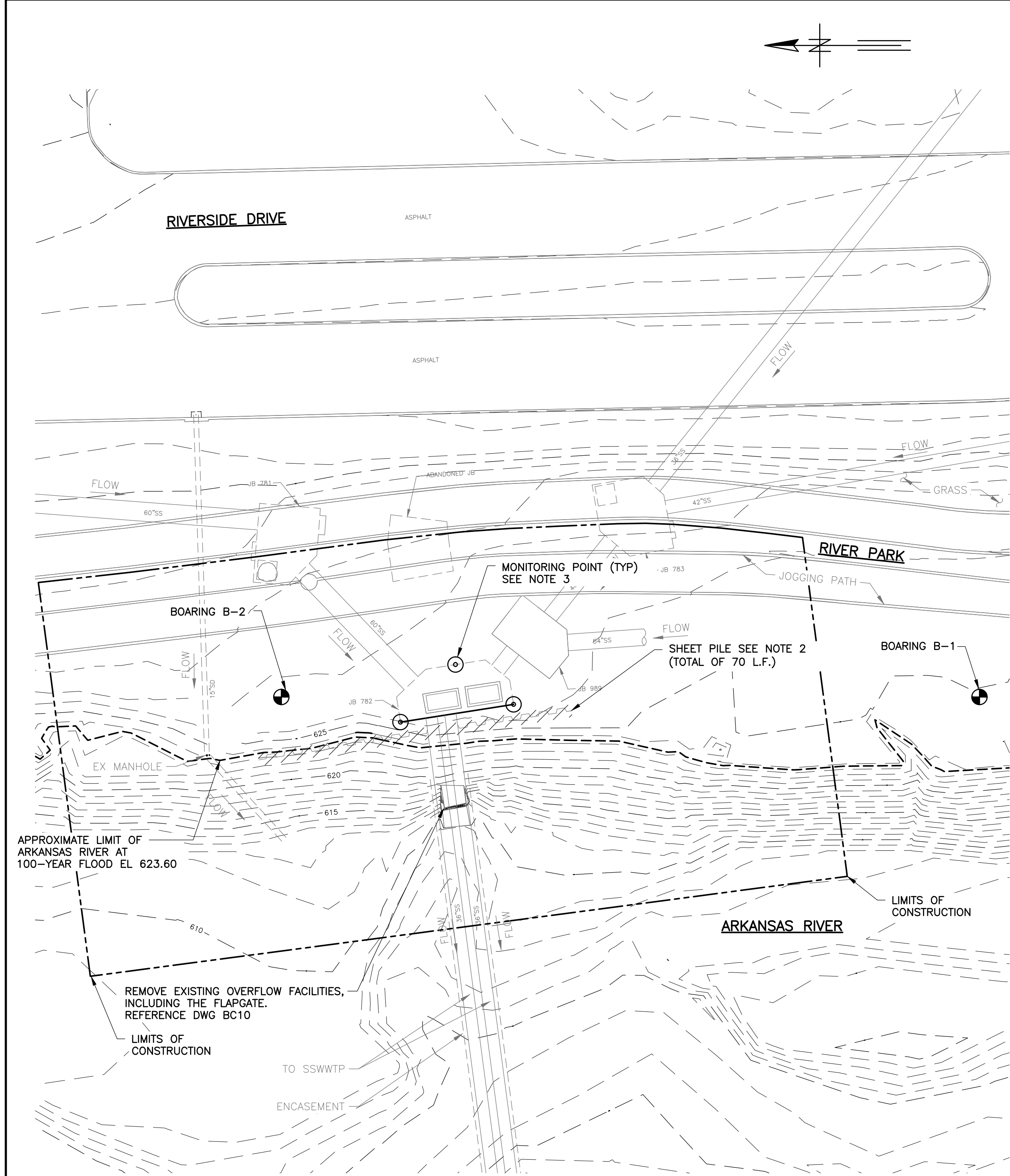
PLANS AND ESTIMATES PREPARED BY: **GREELEY AND HANSEN**
321 S BOSTON AVE, SUITE 300
TULSA, OKLAHOMA 74103

REVISION	BY	DATE	PLAN SCALE:	DRAWN	RKY	8/2020	APPROVED:
			AS SHOWN	DESIGNED	TCG	8/2020	
			SURVEY				
			PROFILE SCALE	PROJ. MGR.			
			HORIZONTAL:	LEAD ENGR.			
			VERTICAL:	FIELD MGR.			
				RECOMMENDED			
				DESIGN MANAGER			CITY ENGINEER
			FILE: 0141ERBC01	DRAWING: BC1			DATE: OCTOBER 2020
			ATLAS PAGE NO:				SHEET 20 OF 65

\\GH-DATA01\CLIENT\0141E - SSWWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERBC02 2020\10\08 1:07 PM KETENBRINK, BUTCH

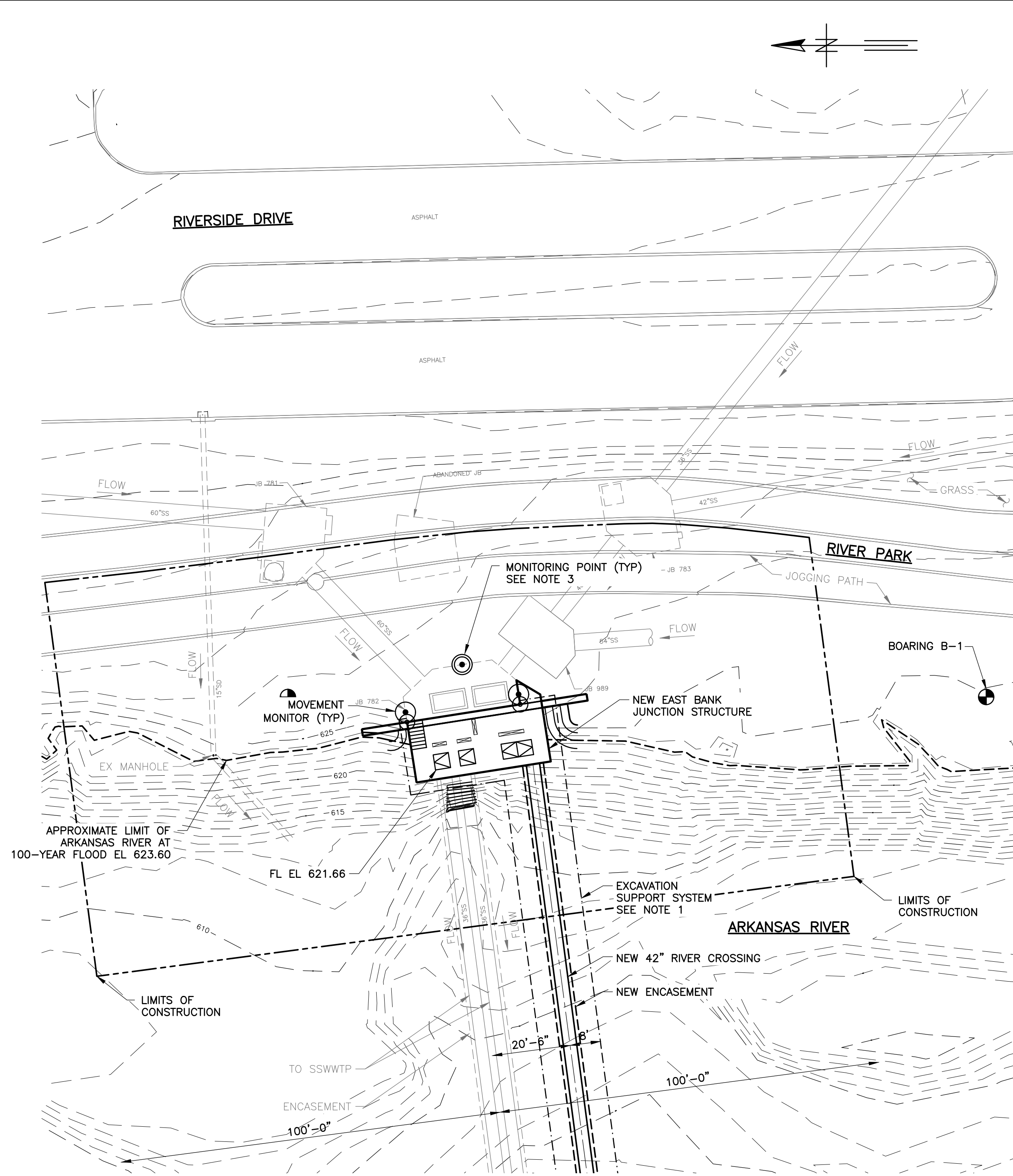


\\GH-DATA01\CLIENT\0141E - SSWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERBC03 2020/10/08 1:08 PM KETENBRINK, BUTCH



EXISTING YARD PIPING PLAN

SCALE: 1"=20'



NEW YARD PIPING PLAN

SCALE: 1"=20'

NOTES:

1. DESIGN AND PROVIDE EXCAVATION SUPPORT SYSTEMS AS SHOWN AND SPECIFIED. REFERENCE THE CONTRACT SPECIFICATION SECTION 31 41 00 - SHORING SHEETING AND BRACING.
2. REMOVE EXISTING SHEET PILES AS SHOWN.
3. MEASURE HORIZONTAL AND VERTICAL MOVEMENT OF MONITORING POINTS PER CONTRACT SPECIFICATIONS.
4. FOR ENGINEERING GEOTECHNICAL BORING INFORMATION REFERENCE CONTRACT SPECIFICATION.



EAST BANK JUNCTION STRUCTURE
EXISTING AND NEW YARD PIPING PLAN

PROJECT NO. 2015-17, C2

SOUTHSIDE WASTEWATER TREATMENT PLANT
PEAK FLOW OPTIMIZATION: THIRD RIVER
CROSSING AND DIVERSION FACILITIES

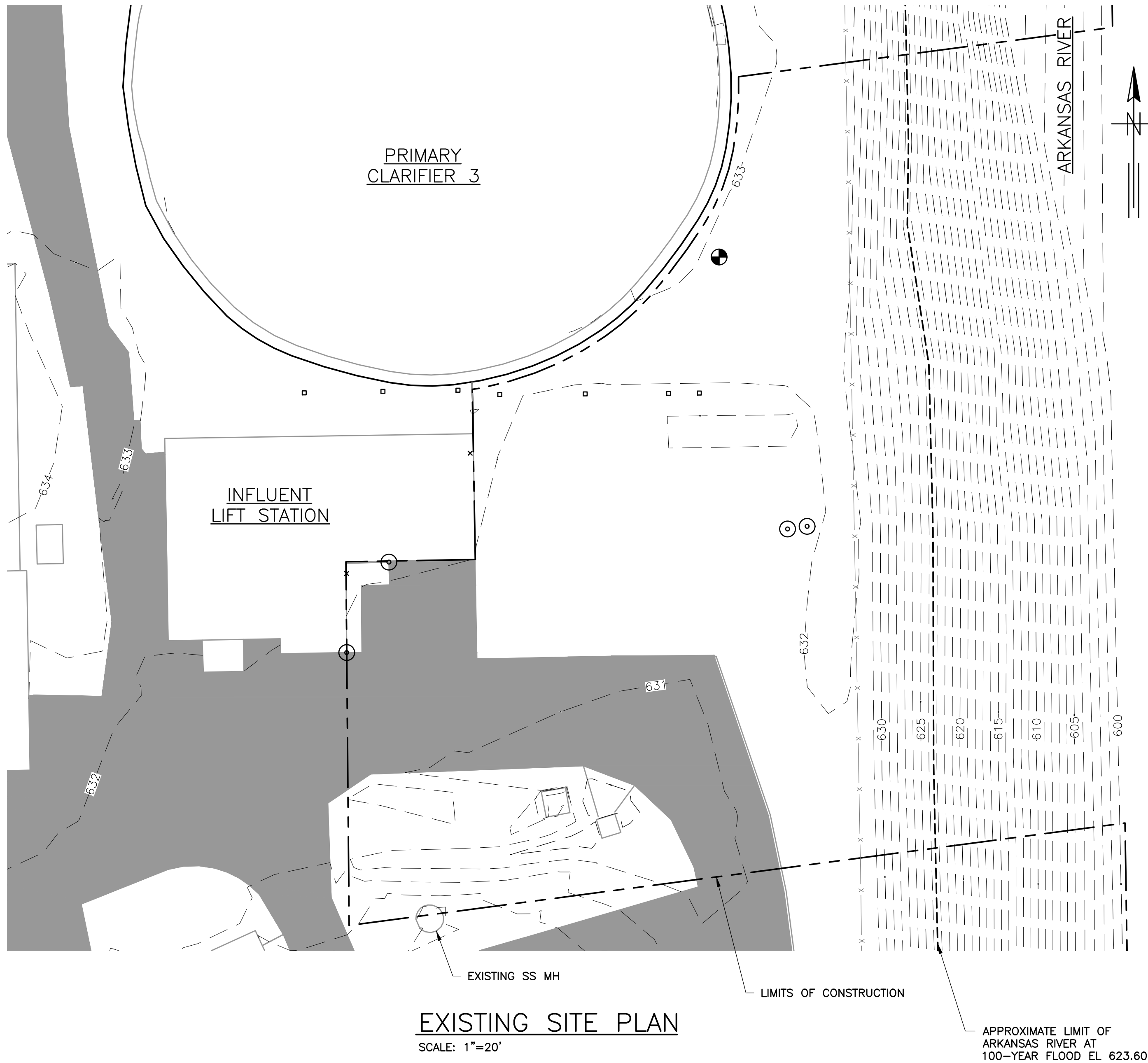
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY: **GREELEY AND HANSEN**
321 S BOSTON AVE, SUITE 300
TULSA, OKLAHOMA 74103

REVISION	BY	DATE	PLAN SCALE:	DRAWN	RKY	8/2020	APPROVED:
			1"=20'	DESIGNED	TCG	8/2020	
				SURVEY			
			PROFILE SCALE	PROJ. MGR.			
			HORIZONTAL:	LEAD ENGR.			
			VERTICAL:	FIELD MGR.			
				RECOMMENDED			
				DESIGN MANAGER			CITY ENGINEER
			FILE: 0141ERBC03	DRAWING: BC3			DATE: OCTOBER 2020
			ATLAS PAGE NO:				SHEET 22 OF 65

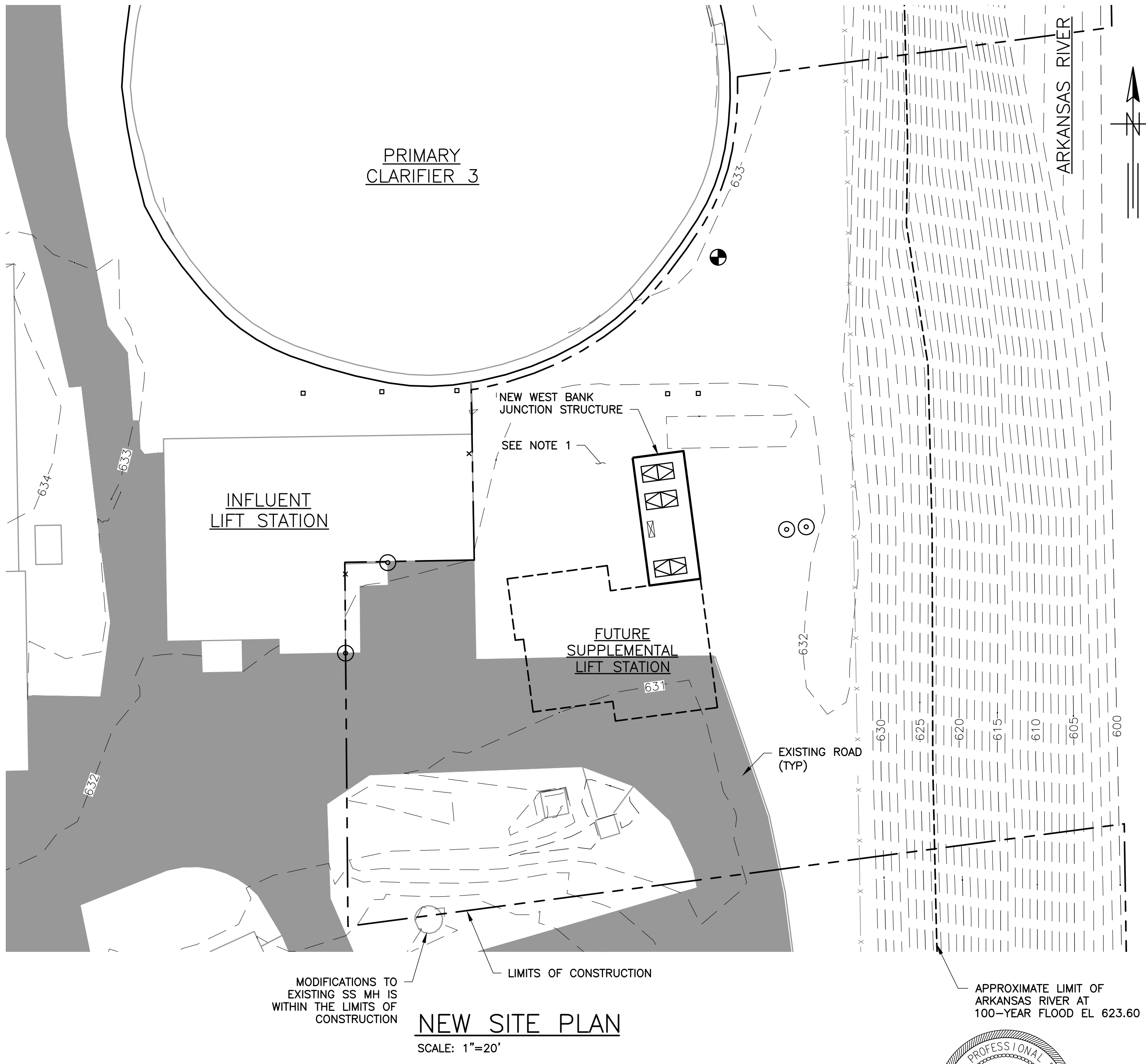
20 0 20 40 FT 1"=20'

\\GH-DATA01\CLIENT\0141E - SSWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERBC04 2020/10/08 1:08 PM KETENBRINK, BUTCH

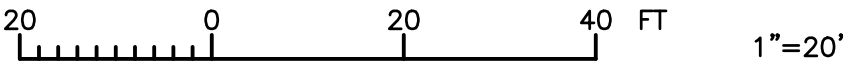


NOTES:

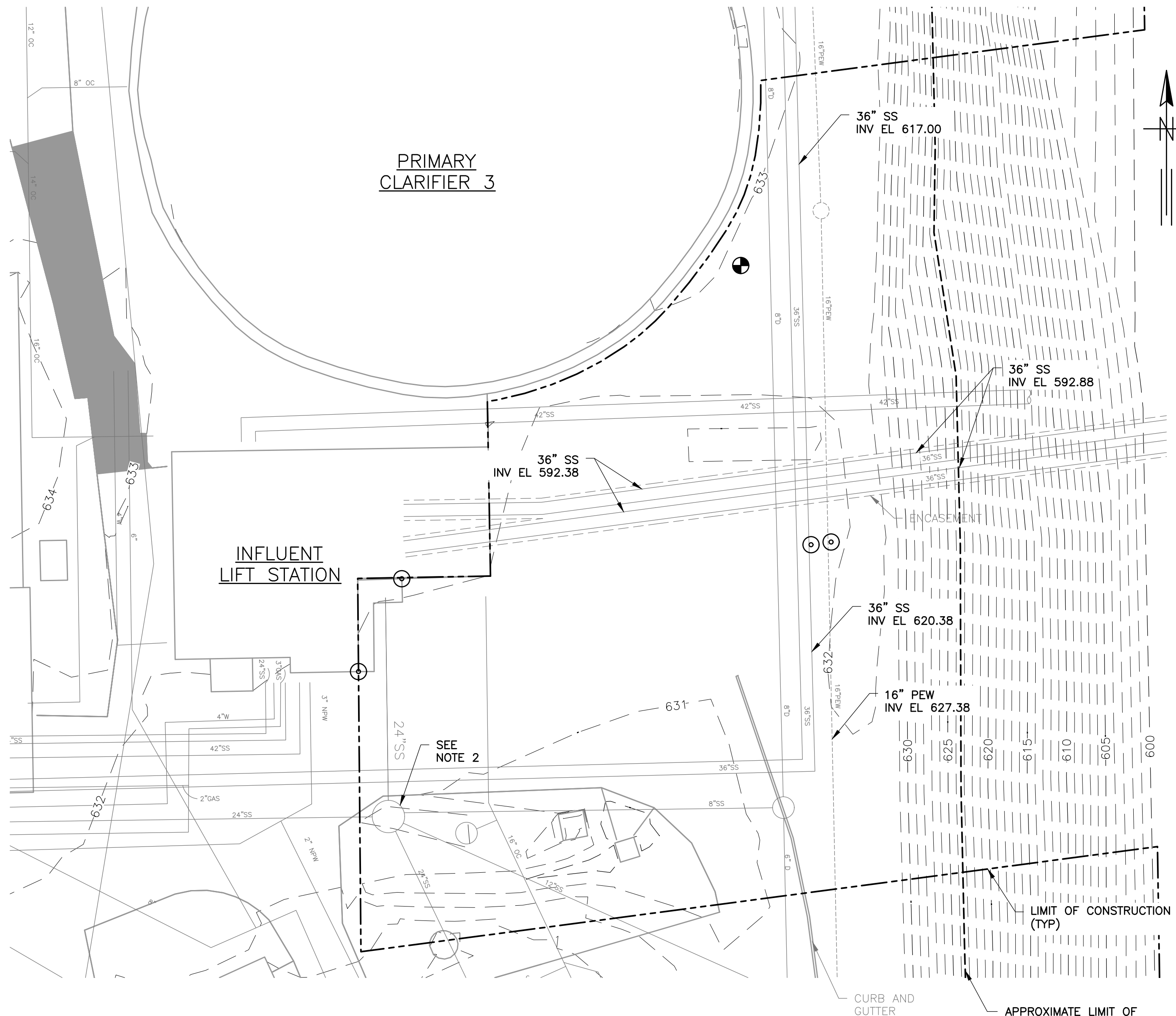
1. REGRADE ALL DISTURBED AREAS TO MATCH EXISTING.
2. CONTRACT DRAWING BC4 SHALL BE USED FOR OPTION B (MICROTUNNELING) NEW SITE PLAN.



WEST BANK JUNCTION STRUCTURE EXISTING AND NEW SITE PLAN									
PROJECT NO. 2015-17, C2									
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES									
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT									
PLANS AND ESTIMATES PREPARED BY:				GREELEY AND HANSEN 321 S BOSTON AVE., SUITE 300 TULSA, OKLAHOMA 74103					
REVISION	BY	DATE	PLAN SCALE:	DRAWN	RKY	8/2020	APPROVED:		
			1" = 20'	DESIGNED	TCG	8/2020			
				SURVEY					
			PROFILE SCALE	PROJ. MGR.					
			HORIZONTAL:	LEAD ENGR.					
			VERTICAL:	FIELD MGR.			RECOMMENDED		
				DESIGN MANAGER			CITY ENGINEER		
			FILE: 0141ERBC04	DRAWING:	BC4	DATE:	OCTOBER 2020		
			ATLAS PAGE NO:				SHEET 23 OF 65		



\\GH-DATA01\CLIENT\0141E - SSWWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERBC05 2020/10/08 1:08 PM KETENBRINK, BUTCH

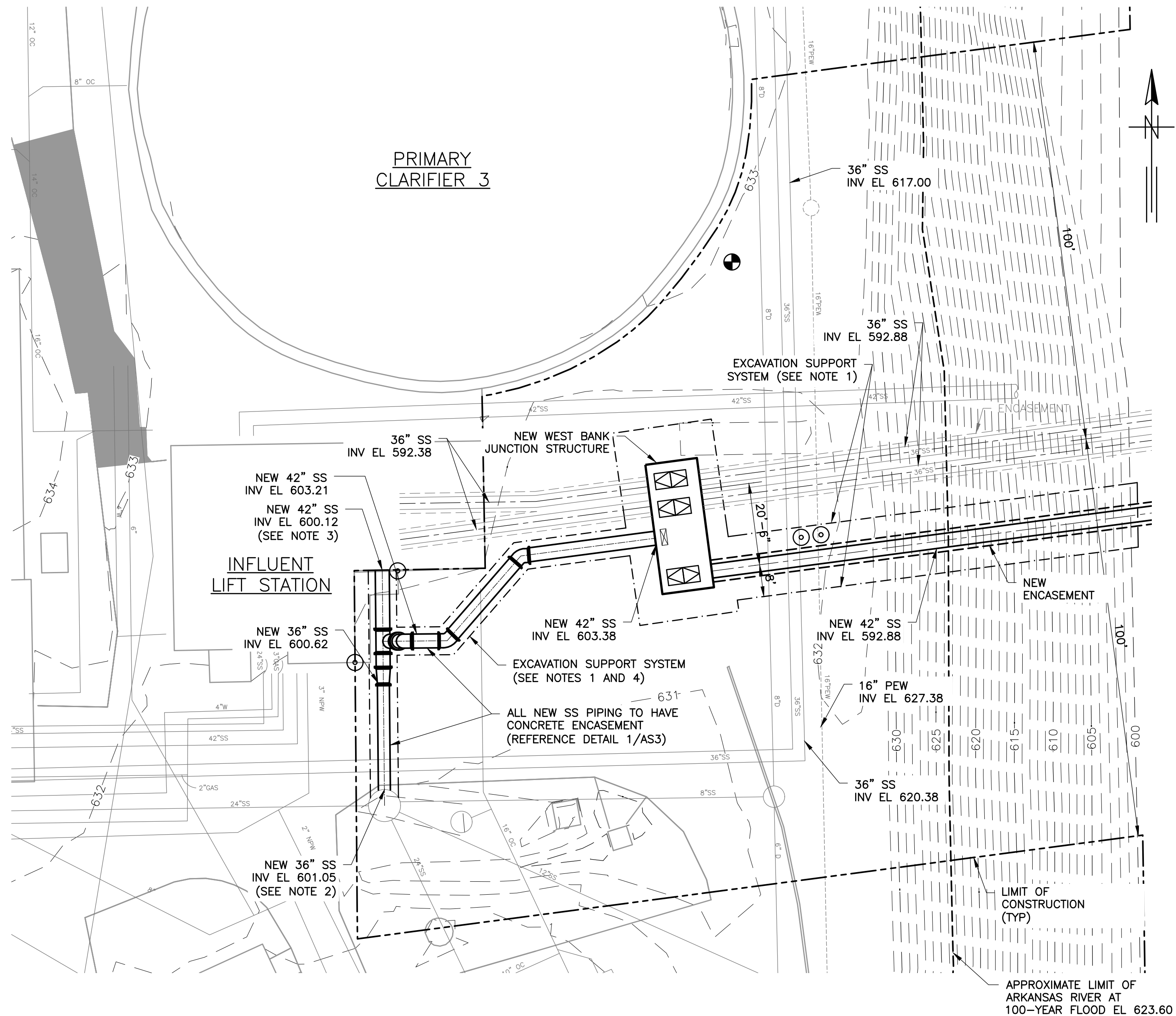


EXISTING YARD PIPING PLAN

SCALE: 1"=20'

NOTES:

1. PROVIDE EXCAVATION SUPPORT SYSTEMS AS SHOWN AND SPECIFIED. FIELD VERIFY CENTERLINE OF EXISTING 36" SS ENCASEMENT AND EXISTING 24" SS PRIOR TO INSTALLING EXCAVATION SUPPORT SYSTEMS.
2. EXISTING MANHOLE RECEIVES FLOWS FROM THE MOOSER CREEK FORCEMAIN AND PLANT DRAIN. SEE DWG AC9 REGARDING CONSTRUCTION SEQUENCING. PROTECT THE EXISTING MANHOLE LID AND FRAME WHEN REMOVED TO ACCESS THE EXISTING 24" SS LINE. REMOVE THE EXISTING 24" SS LINE AND INSTALL A NEW 36" FLANGED FIBERGLASS STUB CONNECTION WITHIN THE EXISTING MANHOLE. GLASS-IN THE STUB AS NECESSARY AND PATCH THE ANNULAR SPACE AROUND THE STUB OUT WITH NON-SHRINK GROUT. RESTORE THE MANHOLE'S EXISTING CORROSION PROTECTION PROVIDED BY THE EXISTING FIBERGLASS LINER.
3. CONNECT TO NEW TRENCH MJ-F-PE WALL CASTING IN EXISTING INFLUENT LIFT STATION WALL.
4. SEE TRENCH DETAIL 1/BC7.



NEW YARD PIPING PLAN

SCALE: 1"=20'



WEST BANK JUNCTION STRUCTURE
EXISTING AND NEW YARD PIPING PLAN

PROJECT NO. 2015-17, C2

SOUTHSIDE WASTEWATER TREATMENT PLANT
PEAK FLOW OPTIMIZATION: THIRD RIVER
CROSSING AND DIVERSION FACILITIES

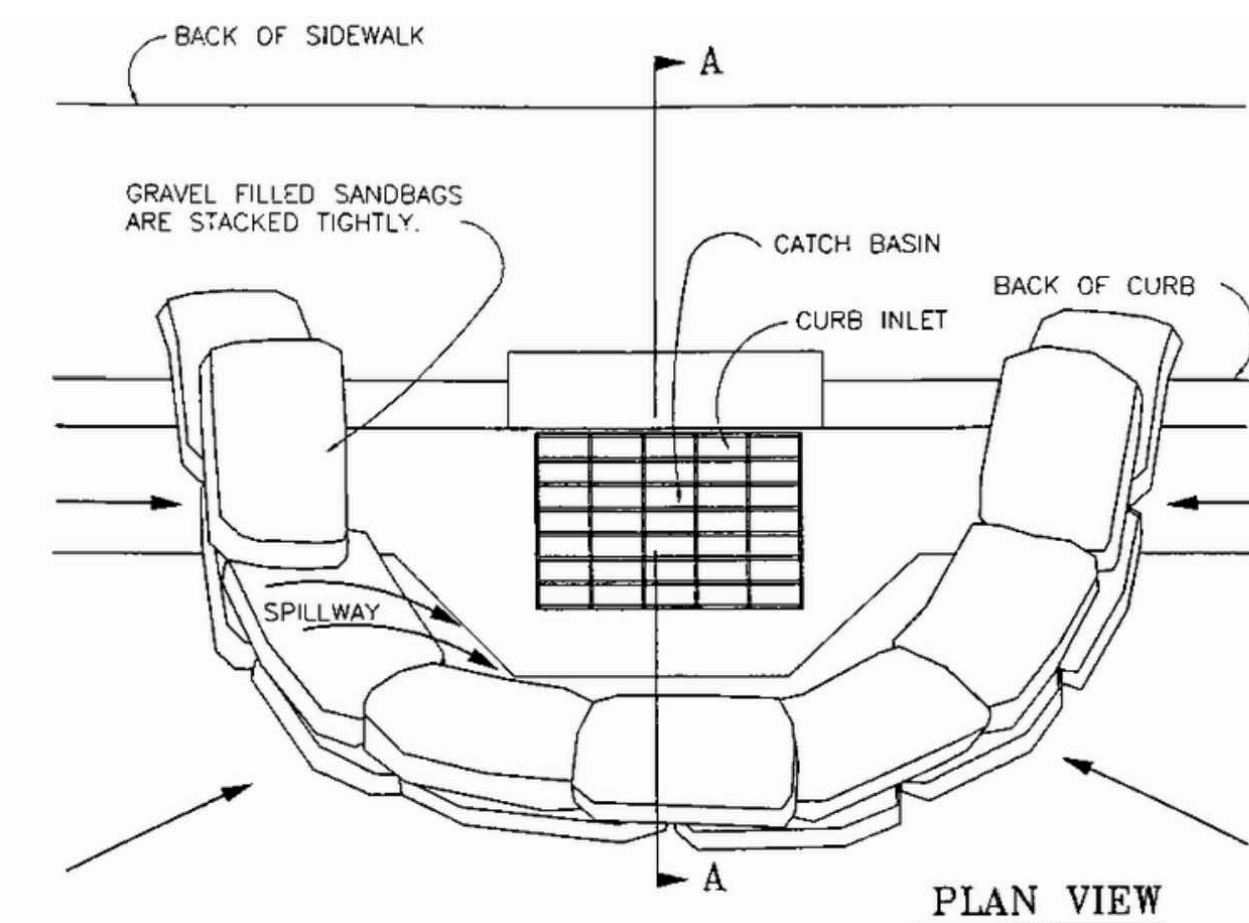
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY: **GREELEY AND HANSEN**
321 S BOSTON AVE, SUITE 300
TULSA, OKLAHOMA 74103

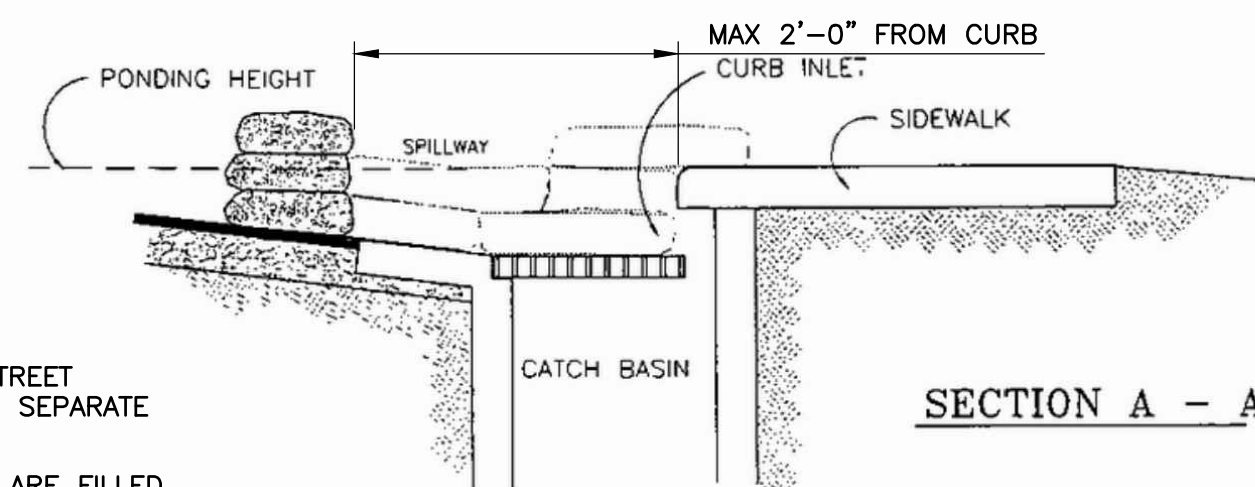
REVISION	BY	DATE	PLAN SCALE:	DRAWN	RKY	8/2020	APPROVED:
			1" = 20'	DESIGNED	TCG	8/2020	
				SURVEY			
			PROFILE SCALE	PROJ. MGR.			
			HORIZONTAL:	LEAD ENGR.			
			VERTICAL:	FIELD MGR.			
				RECOMMENDED			
				DESIGN MANAGER			CITY ENGINEER
			FILE: 0141ERBC05	DRAWING: BCS			DATE: OCTOBER 2020
			ATLAS PAGE NO:				SHEET 24 OF 65

20 0 20 40 FT 1"=20'

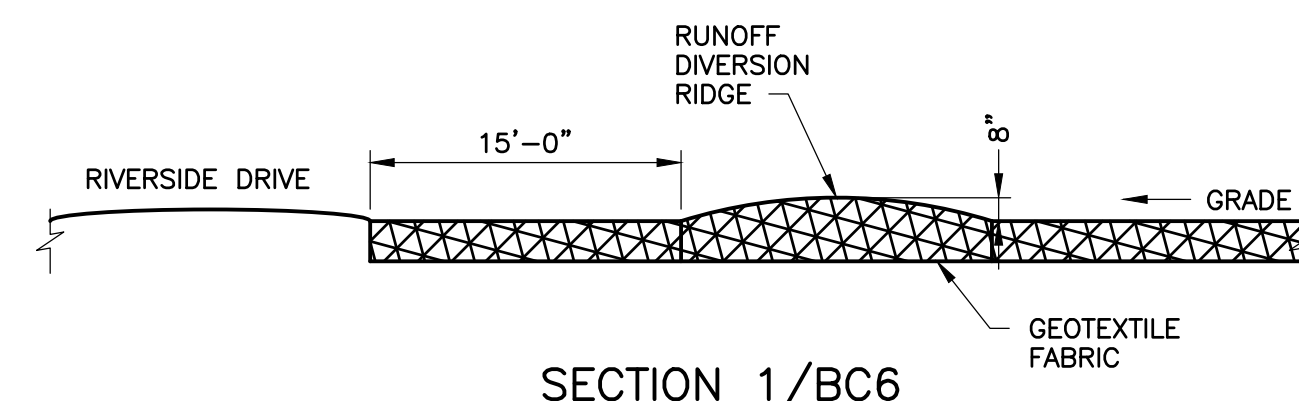
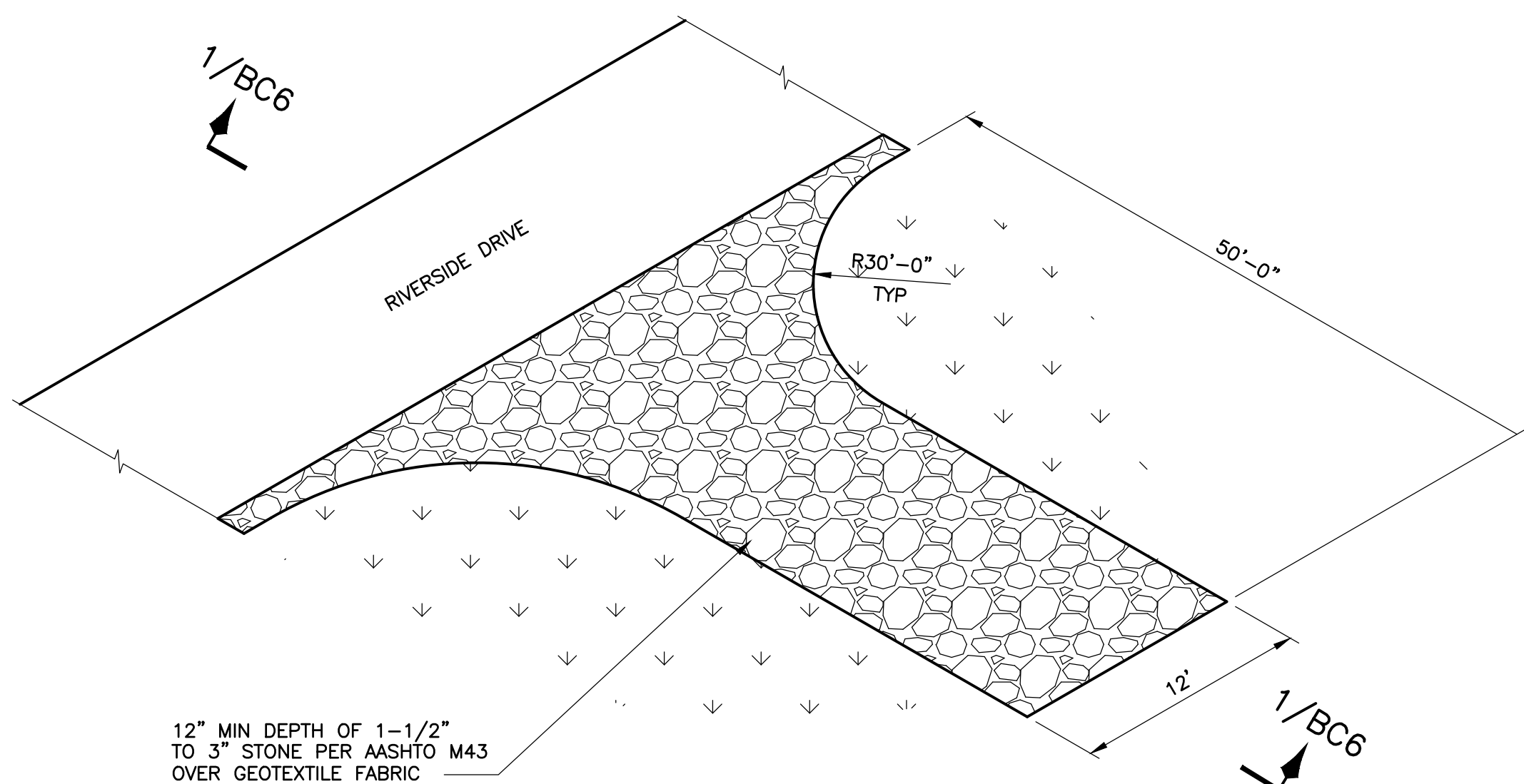
SCALE: NOT TO SCALE



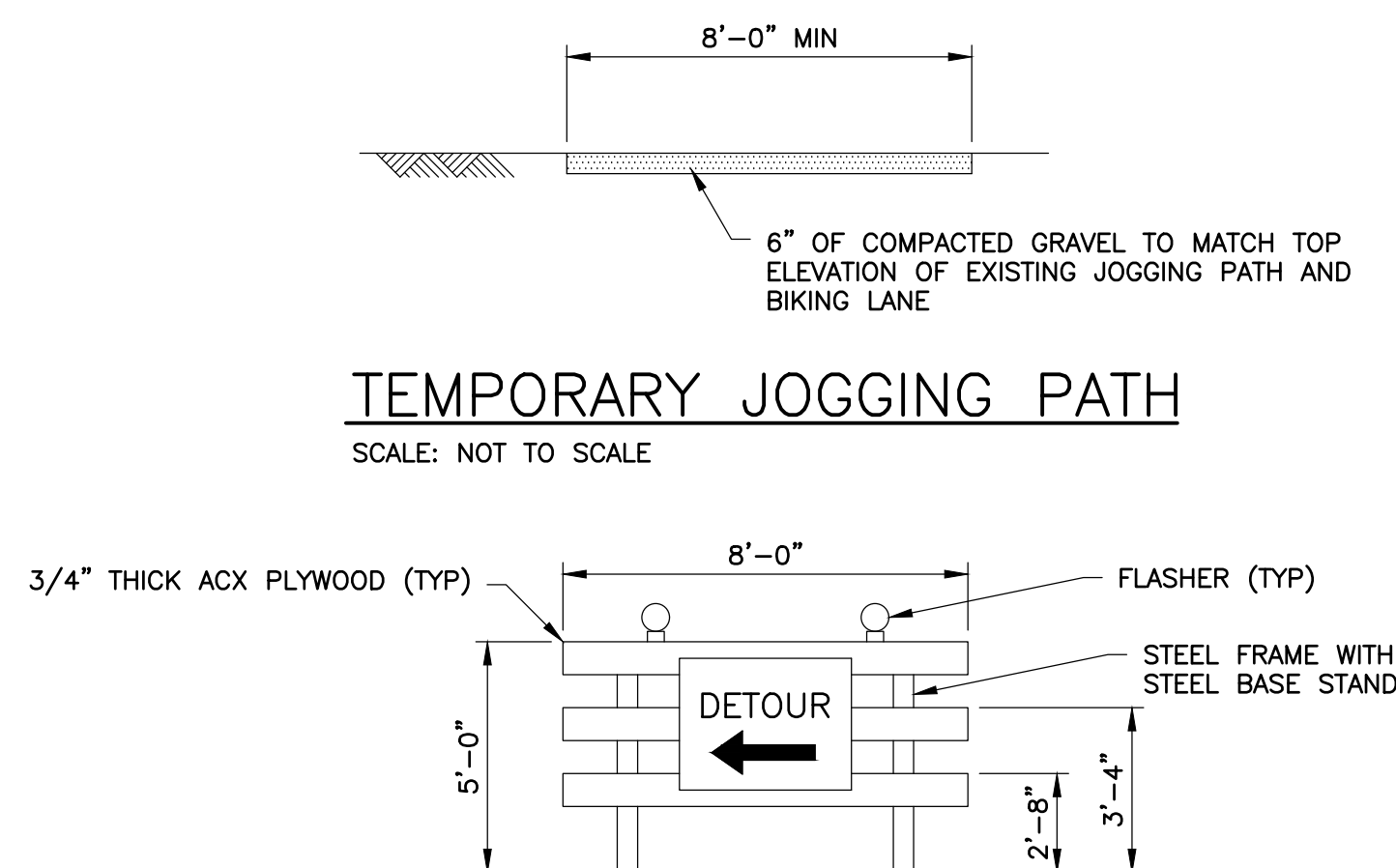
1. PLACE CURB TYPE SEDIMENT BARRIERS ON GENTLY SLOPING STREET SEGMENTS, WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.
2. SANDBAGS, OF EITHER BURLAP OR WOVEN GEOTEXTILE FABRIC, ARE FILLED WITH GRAVEL, LAYERED, AND PACKED TIGHTLY.
3. LEAVE ONE SANDBAG GAP IN THE TOP ROW TO PROVIDE A SPILLWAY FOR OVERFLOW.
4. INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT. SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.



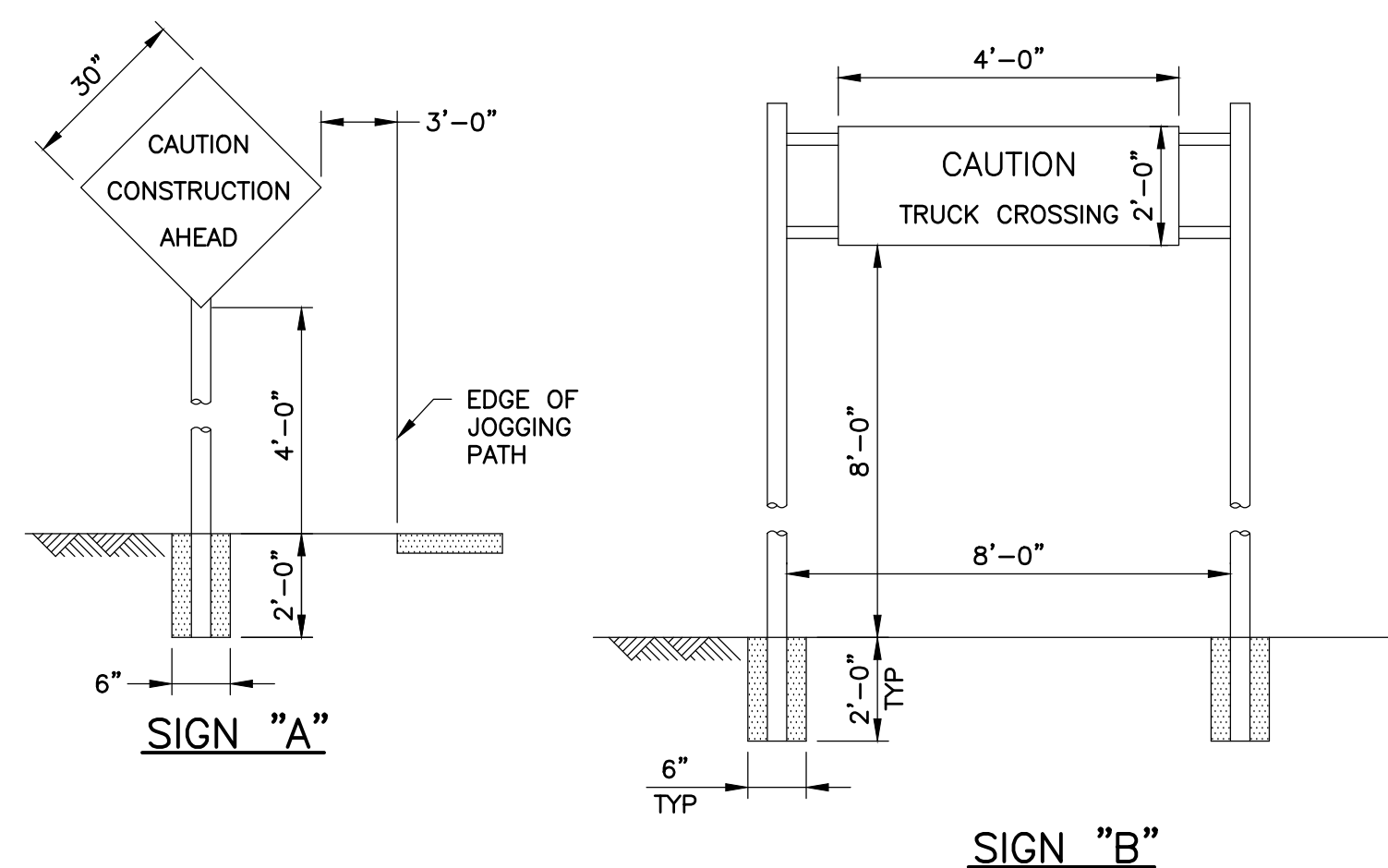
SCALE: NOT TO SCALE



SCALE: NOT TO SCALE

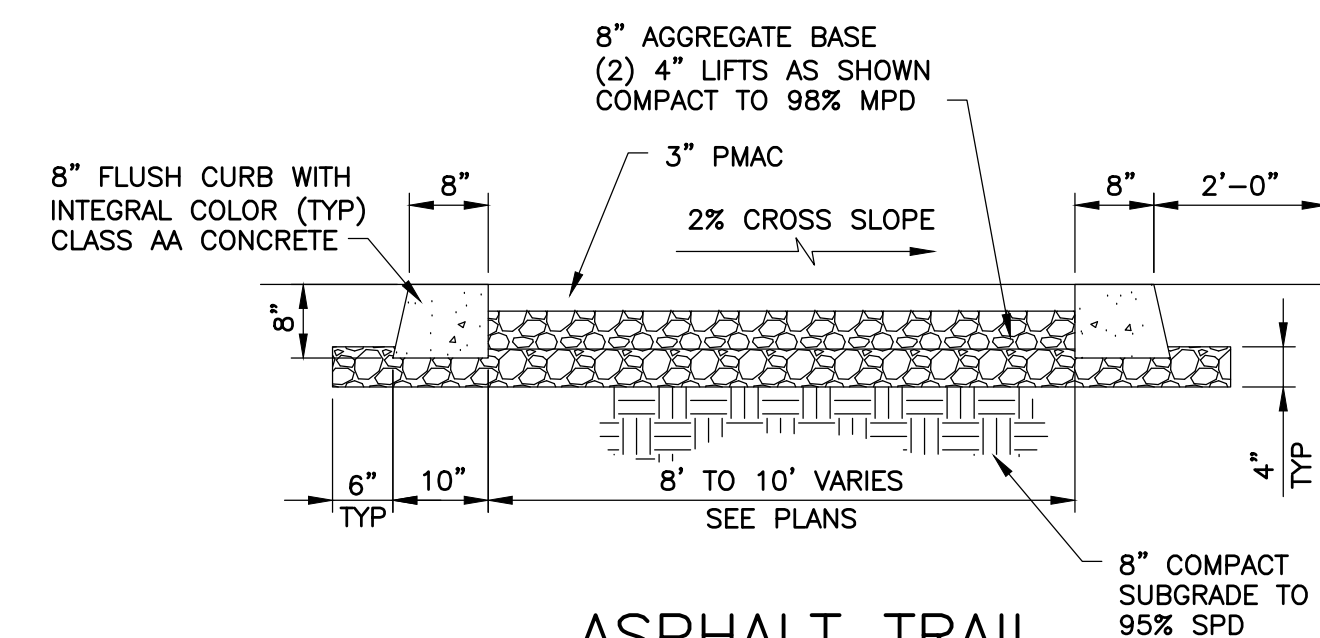


SCALE: NOT TO SCALE

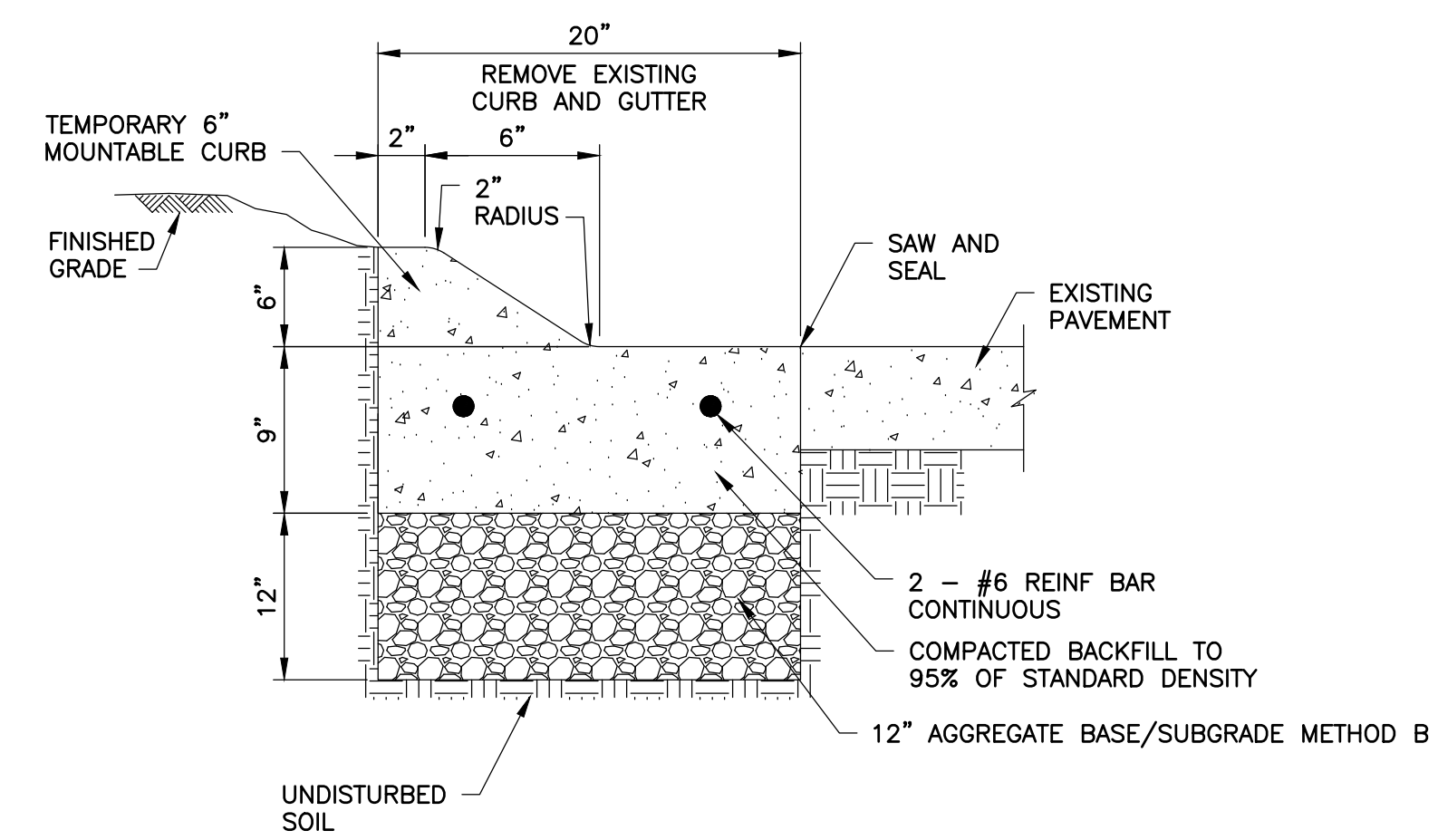


SCALE: NOT TO SCALE

1. MOUNT SIGNS ON 2" DIAMETER STEEL POSTS SET IN CONCRETE.
2. PROVIDE REFLECTIVE SIGNS.



SCALE: NOT TO SCALE



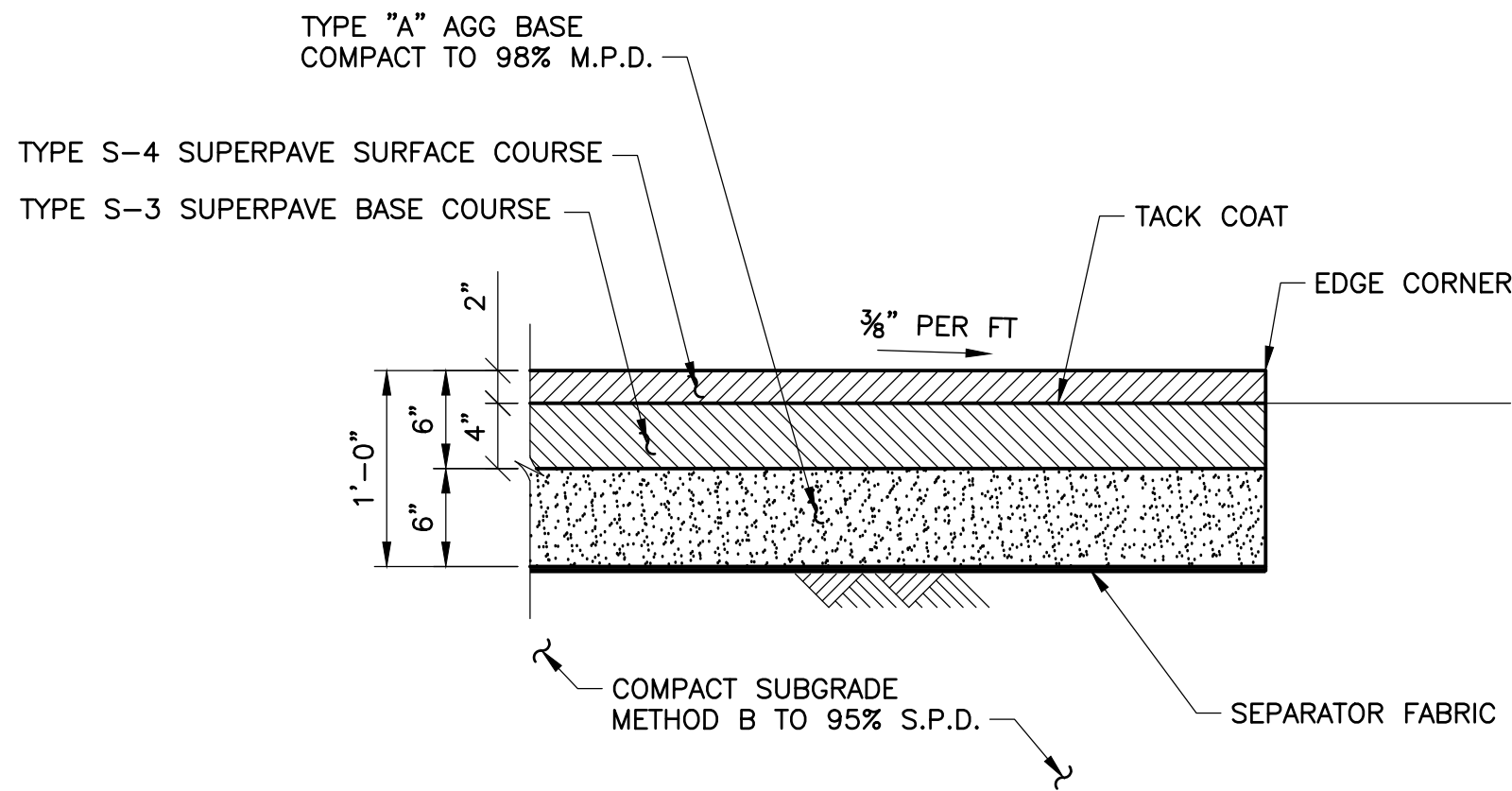
SCALE: NOT TO SCALE

1. SAW AND REMOVE 40 LINEAR FEET OF EXISTING CURB AND GUTTER. REPLACE WITH 40 LINEAR FEET OF NEW 6" MOUNTABLE CURB. TRANSITION FROM EXISTING TO NEW MOUNTABLE CURB IN 5 FEET AT EACH END OF NEW MOUNTABLE CURB. REPLACE MOUNTABLE CURB BACK TO ORIGINAL CURB WHEN CONSTRUCTION IS FINISHED.

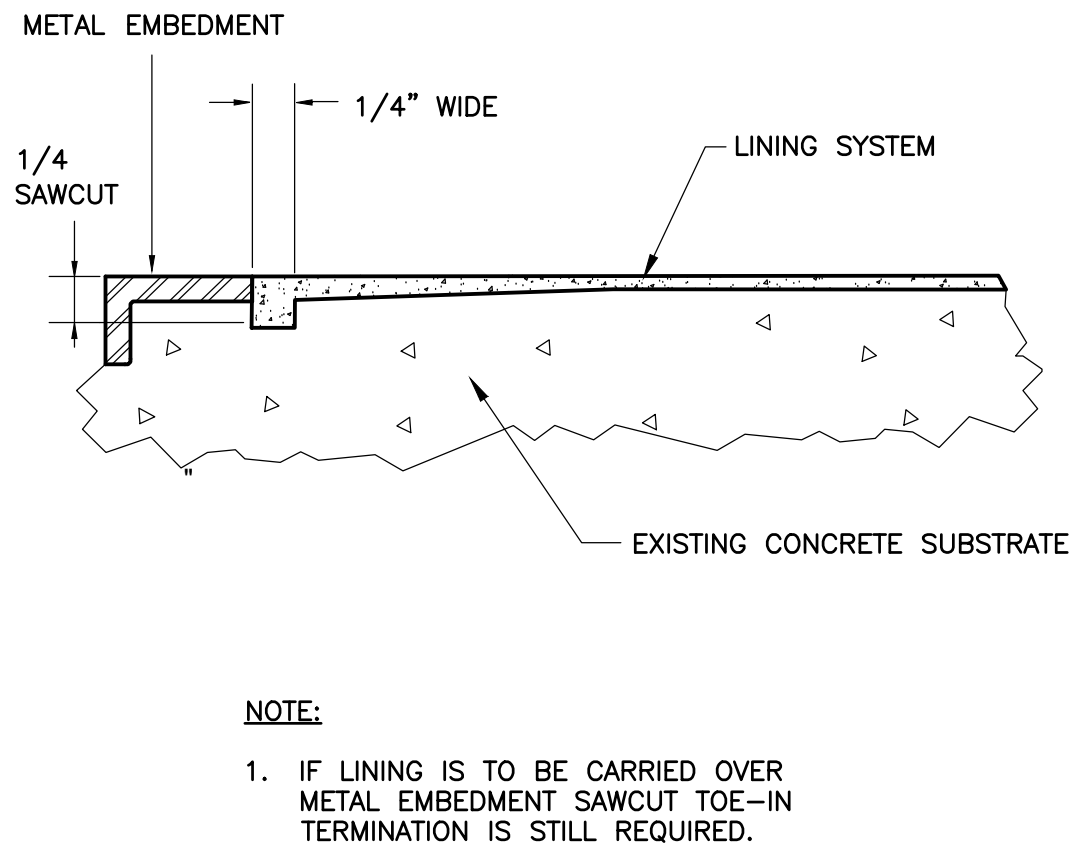


REVISION			BY	DATE	PLAN SCALE:	DRAWN	RKY	8/2020	TULSA, OKLAHOMA 74103 APPROVED:
					AS SHOWN	DESIGNED	TCG	8/2020	
						SURVEY			
					PROFILE SCALE	PROJ. MGR.			
					HORIZONTAL:	LEAD ENGR.			
					VERTICAL:	FIELD MGR.			
						RECOMMENDED			
						DESIGN MANAGER			
						CITY ENGINEER			
					FILE: 0141ERB006	DRAWING:	BC6	DATE: OCTOBER 2020	
					ATLAS PAGE NO:	SHEET 25 OF 65			

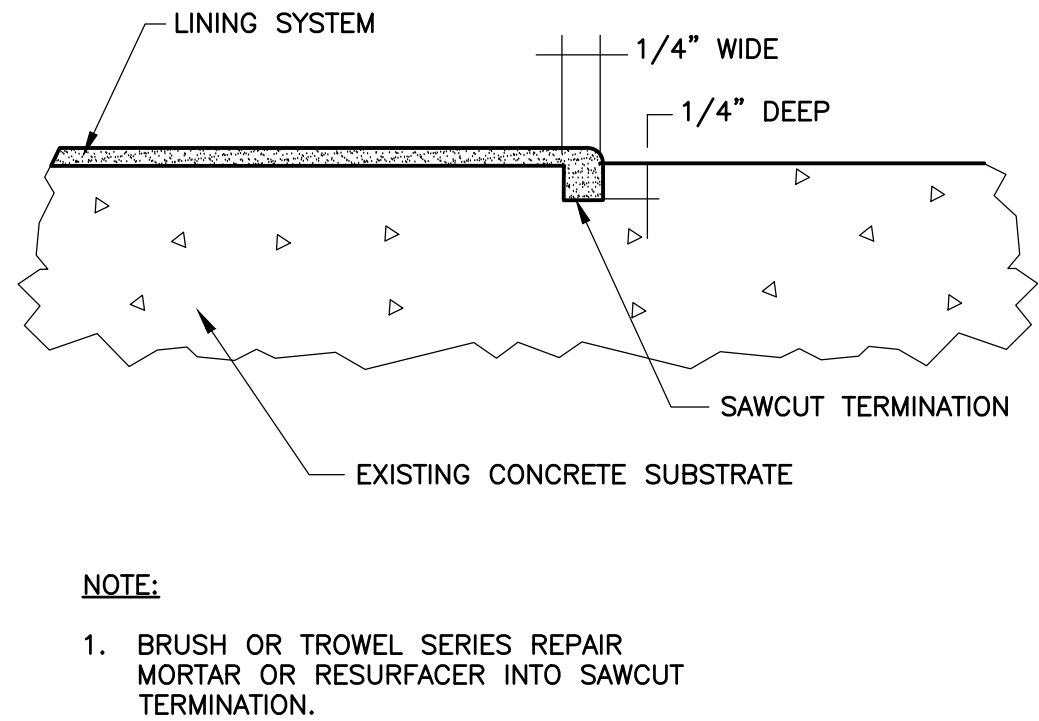
\\GH-DATA01\CLIENT\0141E - SSWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERBC07 2020/10/09 10:59 AM KETENBRINK, BUTCH



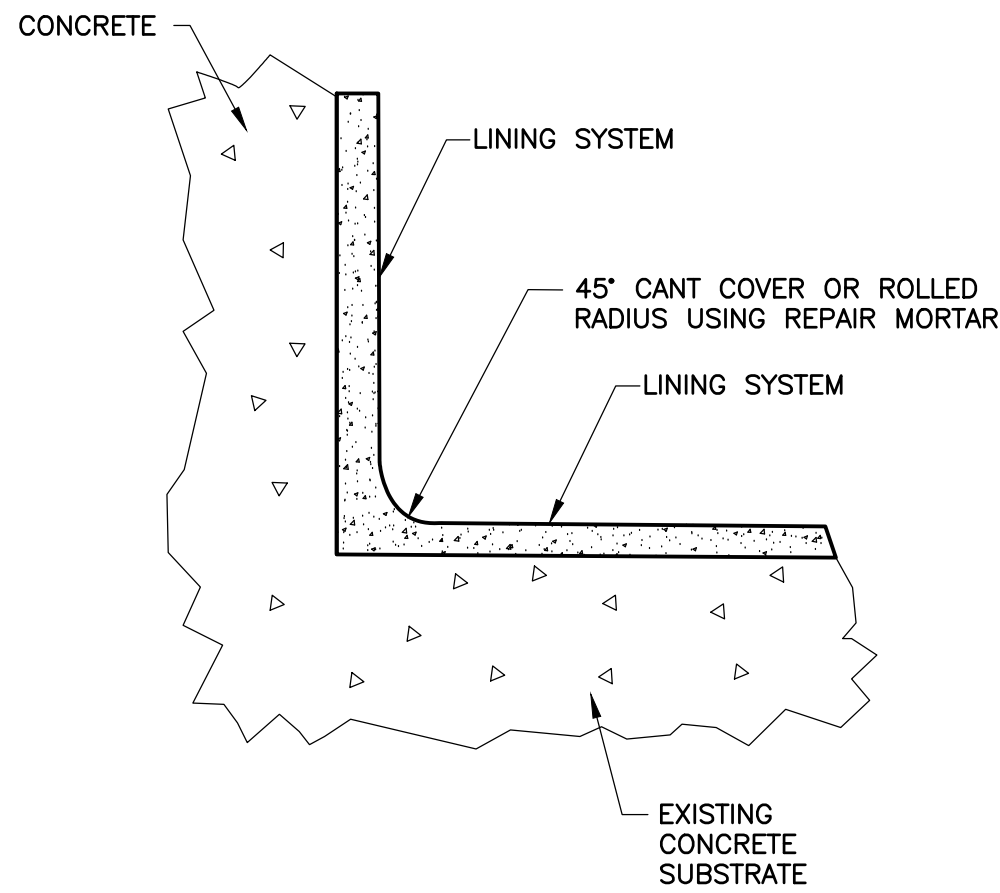
DETAIL 2/BC7 – PAVEMENT DETAILS
SCALE: NOT TO SCALE



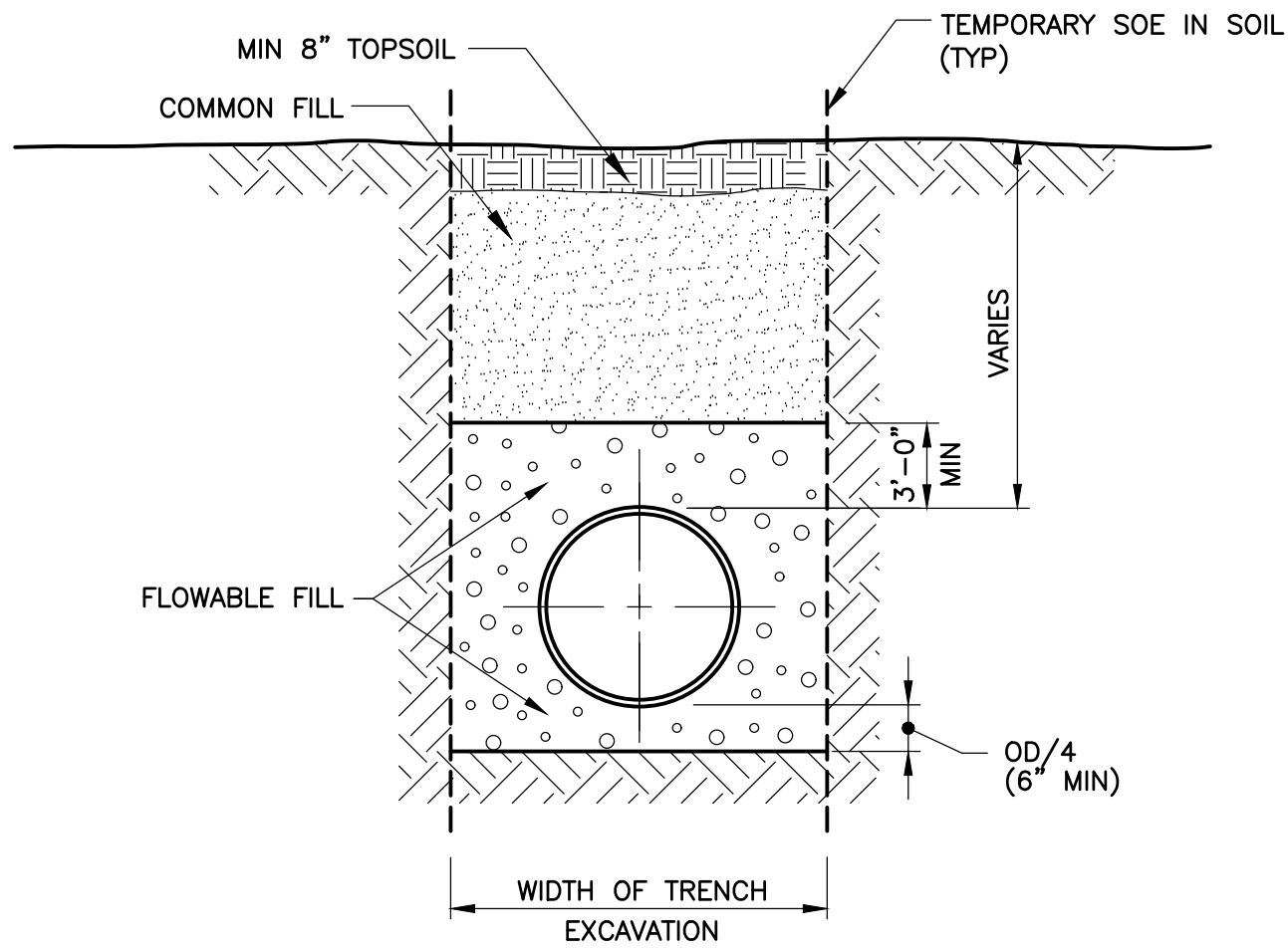
TERMINATION DETAIL
FOR EMBEDDED METALS
SCALE: NOT TO SCALE



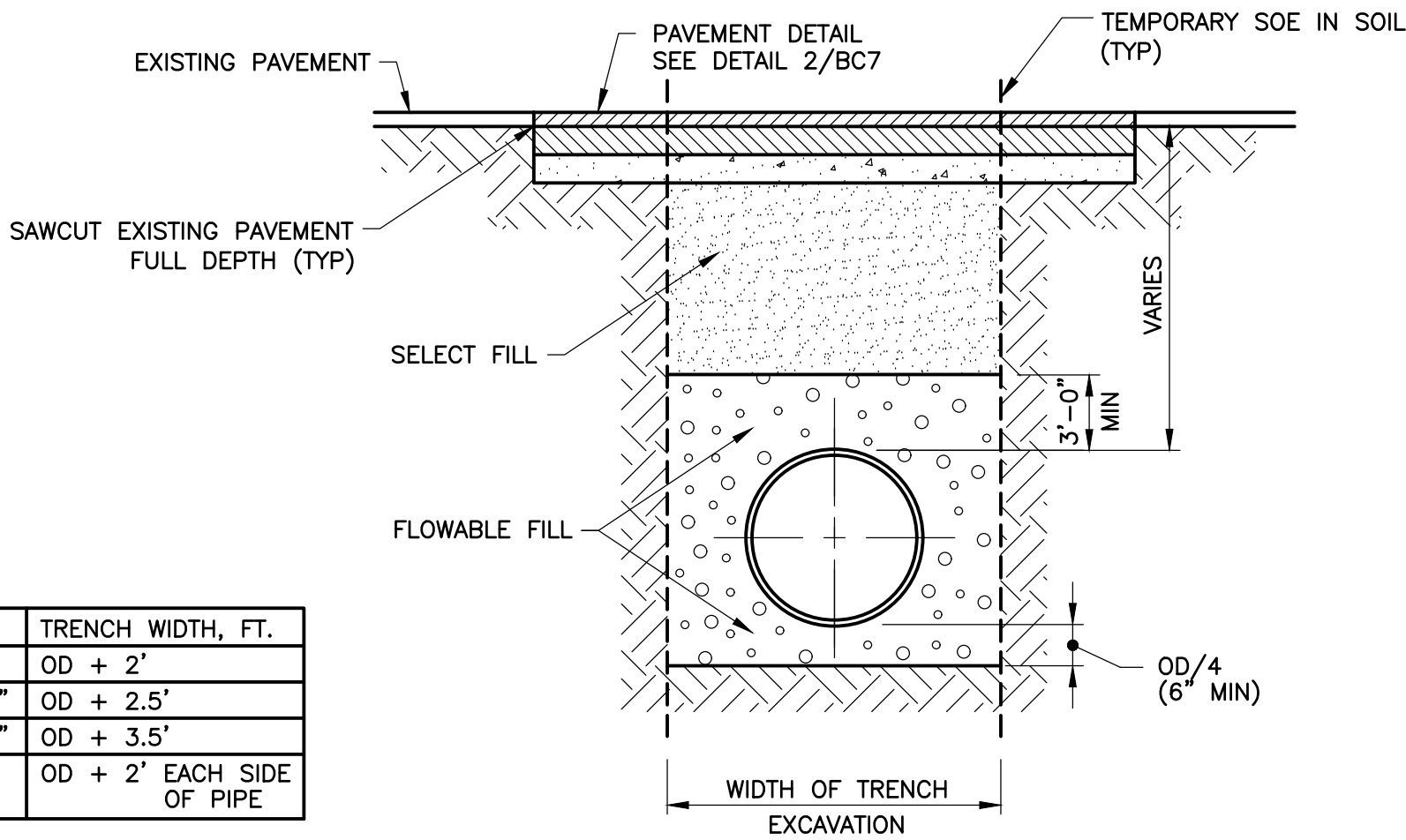
LEADING EDGE
TERMINATION DETAIL
SCALE: NOT TO SCALE



WALL TO TOP
SLAB TRANSITION
SCALE: NOT TO SCALE



TRENCH DETAIL UNIMPROVED AREAS
SCALE: NOT TO SCALE



TRENCH DETAIL UNDER IMPROVED AREAS
SCALE: NOT TO SCALE

- NOTES:
1. PLACE ALL FLOWABLE FILL TO UNDISTURBED EARTH AT BOTTOM OF THE TRENCH.
 2. SEE SPECIFICATION 31 23 23 FOR MATERIAL REQUIREMENTS, PLACEMENT OF PIPE BEDDING AND TRENCH BACKFILL.

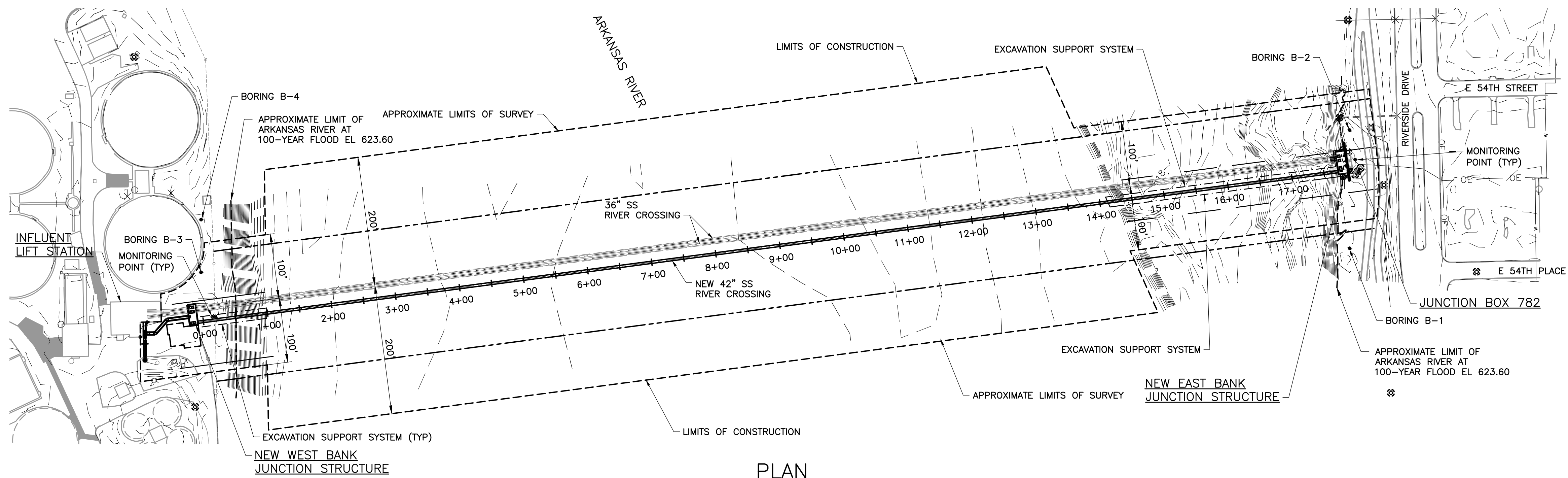
DETAIL 1/BC7 – TRENCH DETAIL

- NOTES:
1. APPLY REPAIR MORTAR OR EPOXY RESURFACER.
 2. FILL CHASE WITH EPOXY FILLER AND INSTALL BASECOAT AT 8–10 MILS. EMBED FABRIC REINFORCEMENT INTO WET BASECOAT.
 3. INSTALL SATURATION COAT 8–10 MILS. TAPE OFF TO MASK.
 4. INSTALL EPOXY LINING.

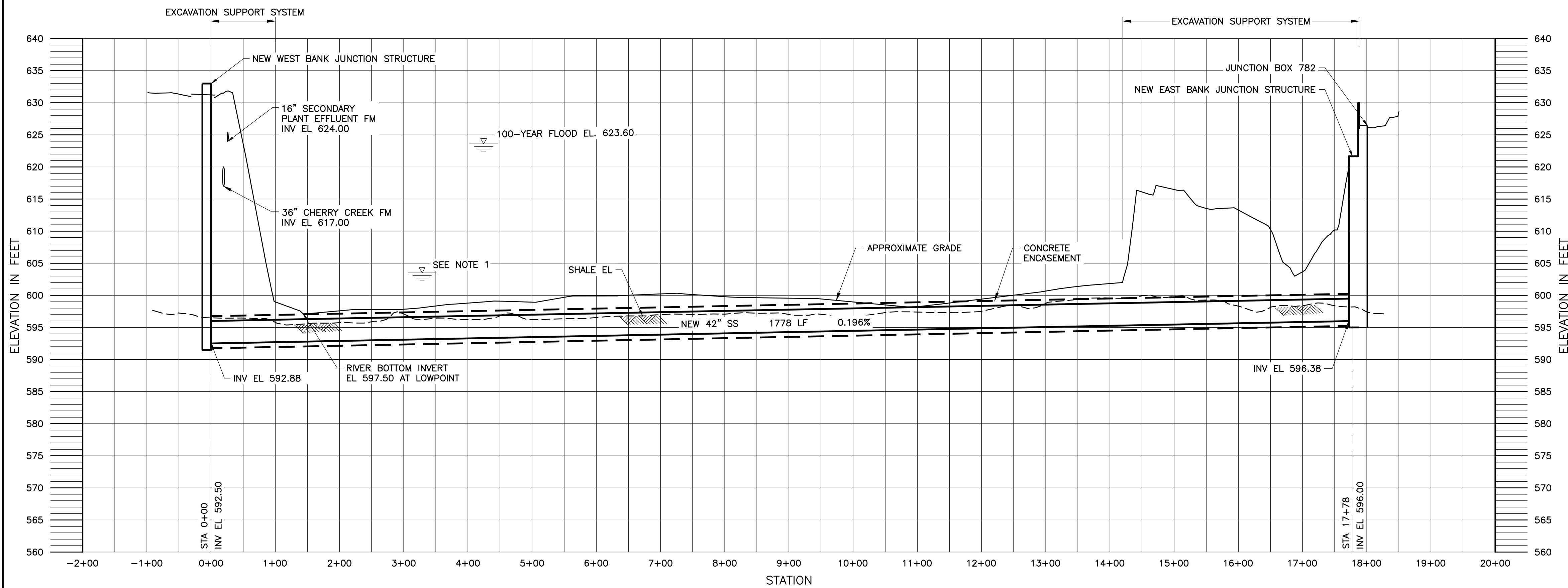


MISCELLANEOUS DETAILS									
PROJECT NO. 2015–17, C2									
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES									
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT									
PLANS AND ESTIMATES PREPARED BY: GREELEY AND HANSEN 321 S BOSTON AVE, SUITE 300 TULSA, OKLAHOMA 74103									
REVISION	BY	DATE	PLAN SCALE:	DRAWN	RKY	8/2020	APPROVED:		
			NOT TO SCALE	DESIGNED	TCG	8/2020			
				SURVEY					
			PROFILE SCALE	PROJ. MGR.					
			HORIZONTAL:	LEAD ENGR.					
			VERTICAL:	FIELD MGR.			RECOMMENDED		
				DESIGN MANAGER					
			FILE: 0141ERBC07	DRAWING:	BC7	DATE:	OCTOBER 2020		
			ATLAS PAGE NO:				SHEET 26 OF 65		

\\GH-DATA01\CLIENT\0141E - SSWWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERBC08 - 2020\10\08 1:09 PM KETENBRINK, BUTCH



PLAN



PROFILE

NOTES:

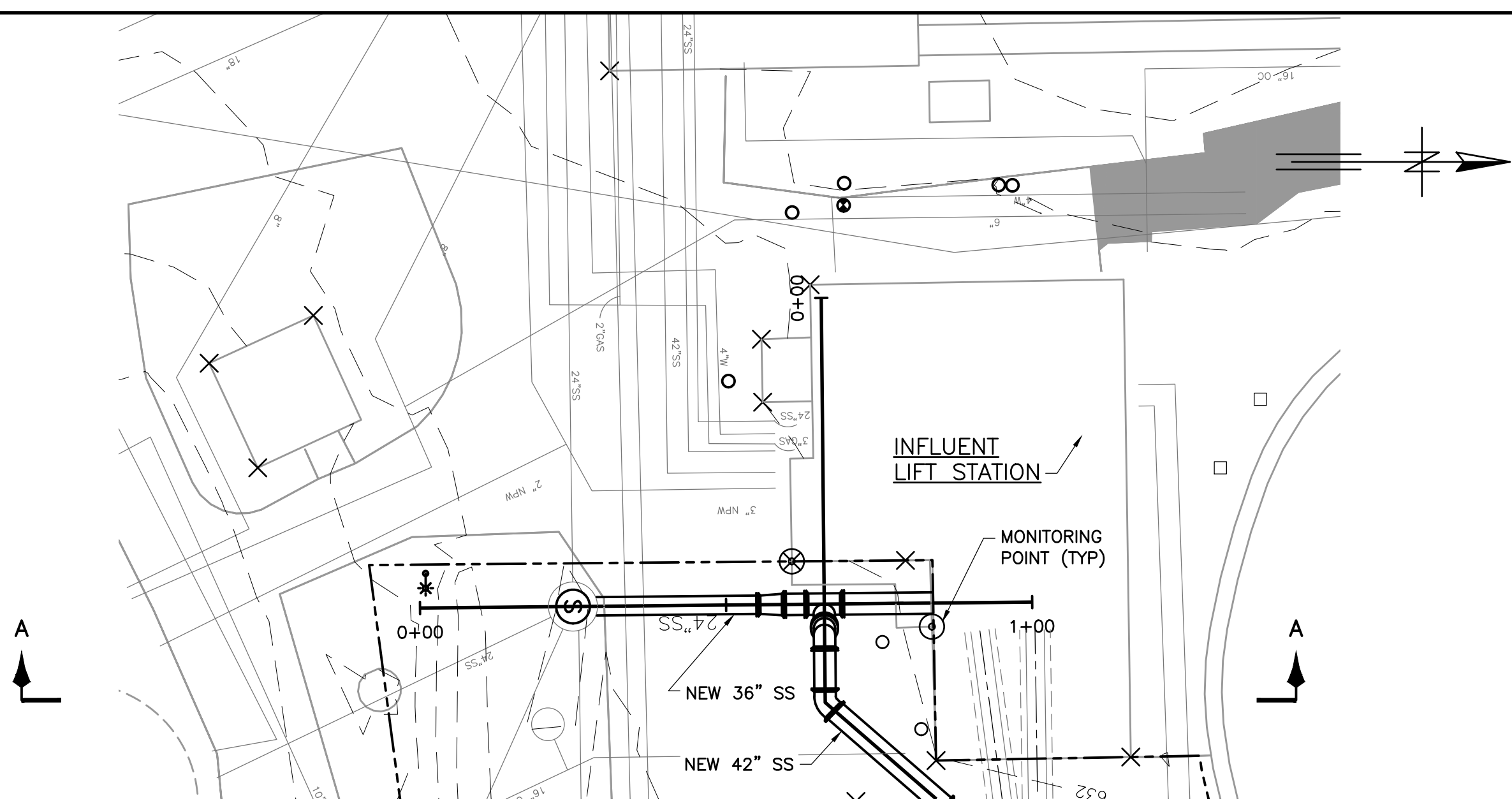
1. WHEN THE RIVER WATER SURFACE ELEVATION WITHIN THE LIMITS OF CONSTRUCTION IS ABOVE ELEVATION 603.50, THE RIVER CROSSING WORK LOCATED BETWEEN THE EXCAVATION SUPPORT SYSTEMS FOR THE EAST BANK JUNCTION STRUCTURE AND WEST BANK JUNCTION STRUCTURE MAY BE SUSPENDED, ONCE PROPER PROTOCOLS HAVE BEEN TAKEN BASED ON THE PROJECTS COORDINATION PLAN WHICH CAN BE FOUND IN SPECIFICATION SECTION 01 11 00. SUCH DAYS WILL BE CONSIDERED A HIGH RIVER DAY AND, IF SUFFICIENT IN NUMBER, BE ELIGIBLE FOR A CHANGE IN CONTRACT TIME AS SPECIFIED.



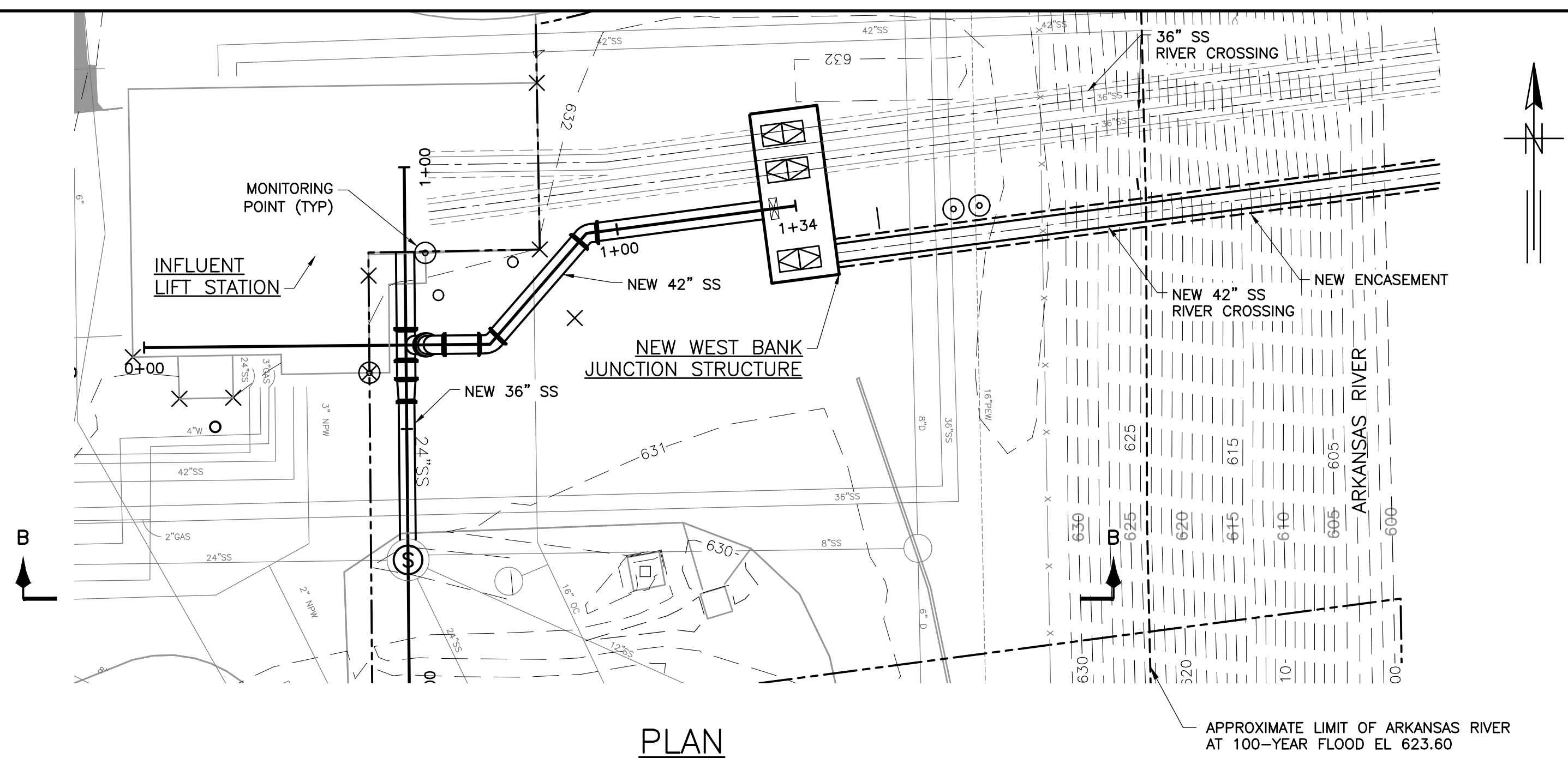
THIRD RIVER CROSSING RIVER CROSSING PLAN AND PROFILE	
PROJECT NO. 2015-17, C2	
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES	
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT	
PLANS AND ESTIMATES PREPARED BY: GRIELEY AND HANSEN 321 S BOSTON AVE, SUITE 300 TULSA, OKLAHOMA 74103	

REVISION	BY	DATE	PLAN SCALE:	DRAWN	RKY	8/2020	APPROVED:
			1"=100'	DESIGNED	TCG	8/2020	
			SURVEY				
			PROFILE SCALE	PROJ. MGR.			
			HORIZONTAL:	LEAD ENGR.			
			1"=100'	FIELD MGR.			
			VERTICAL:	RECOMMENDED			
			1"=10'	DESIGN MANAGER			CITY ENGINEER
			FILE: 0141ERBC08	DRAWING:	BC8	DATE:	OCTOBER 2020
			ATLAS PAGE NO:			SHEET	27 OF 65

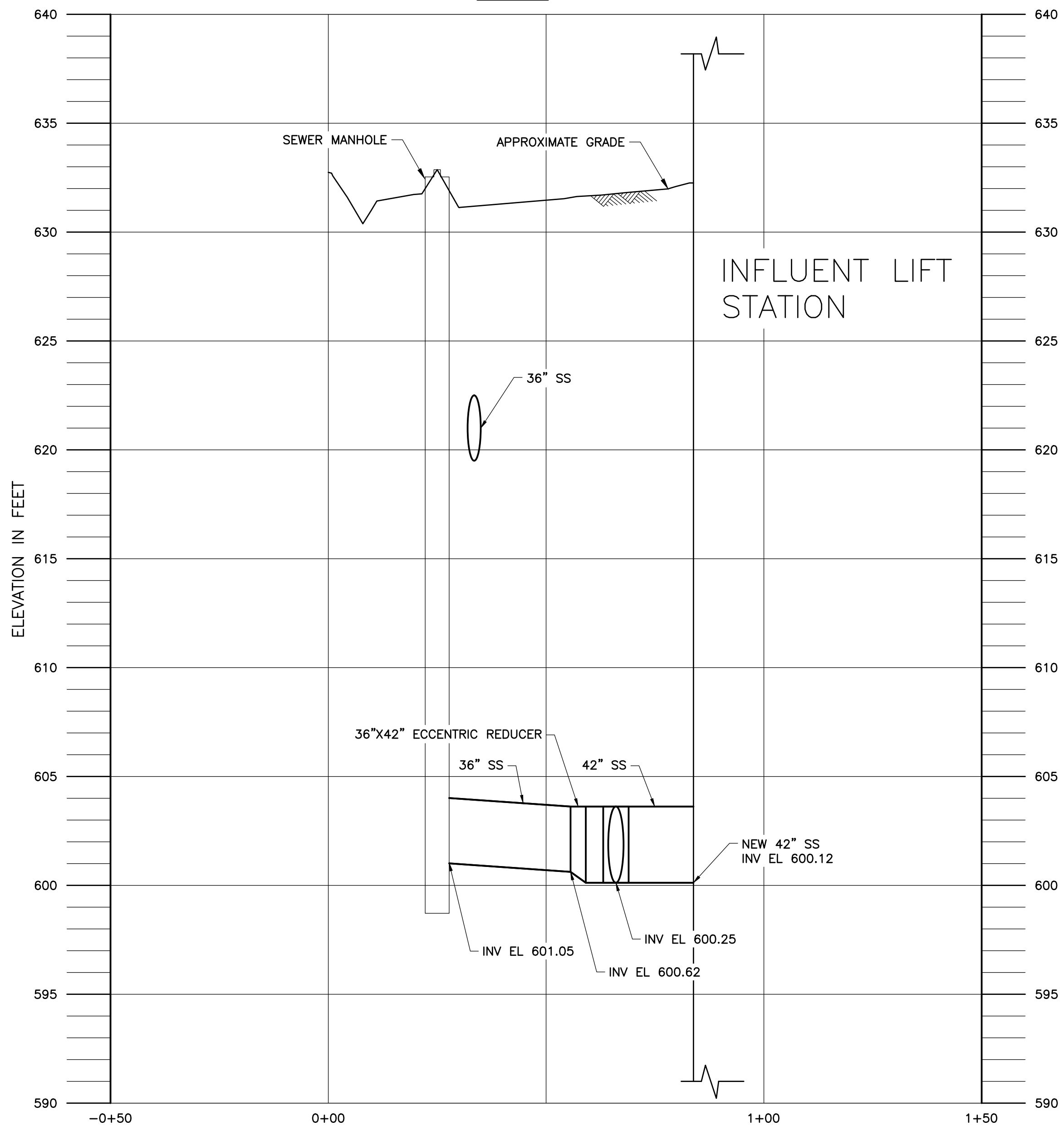
\\GH-DATA01\CLIENT\0141E - SSWWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\WATER CROSSING\0141ERBC09 - 2020\10\09 2:29 PM KETENBRINK, BUTCH



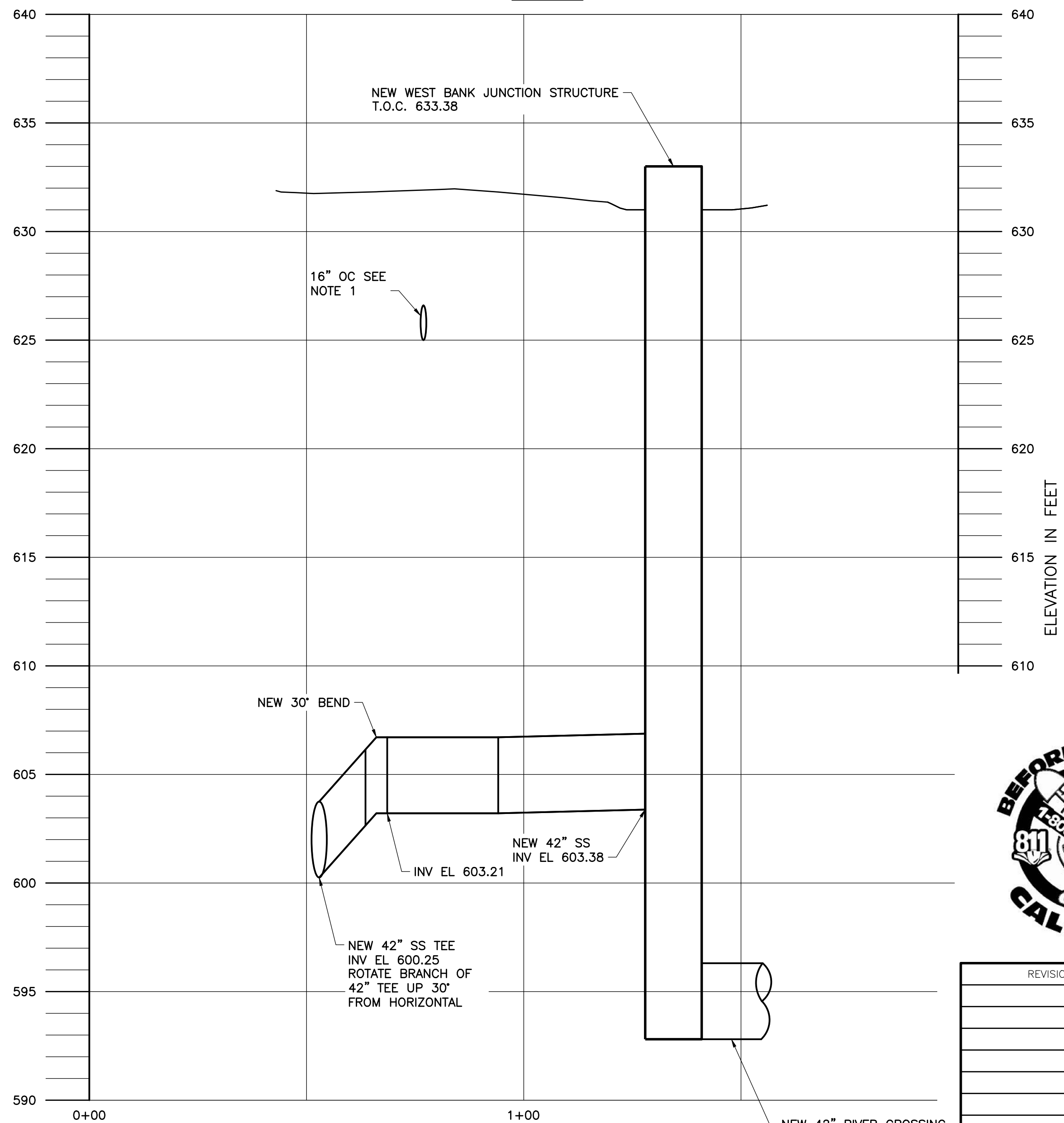
PLAN



PLAN



PROFILE SECTION A



PROFILE SECTION B

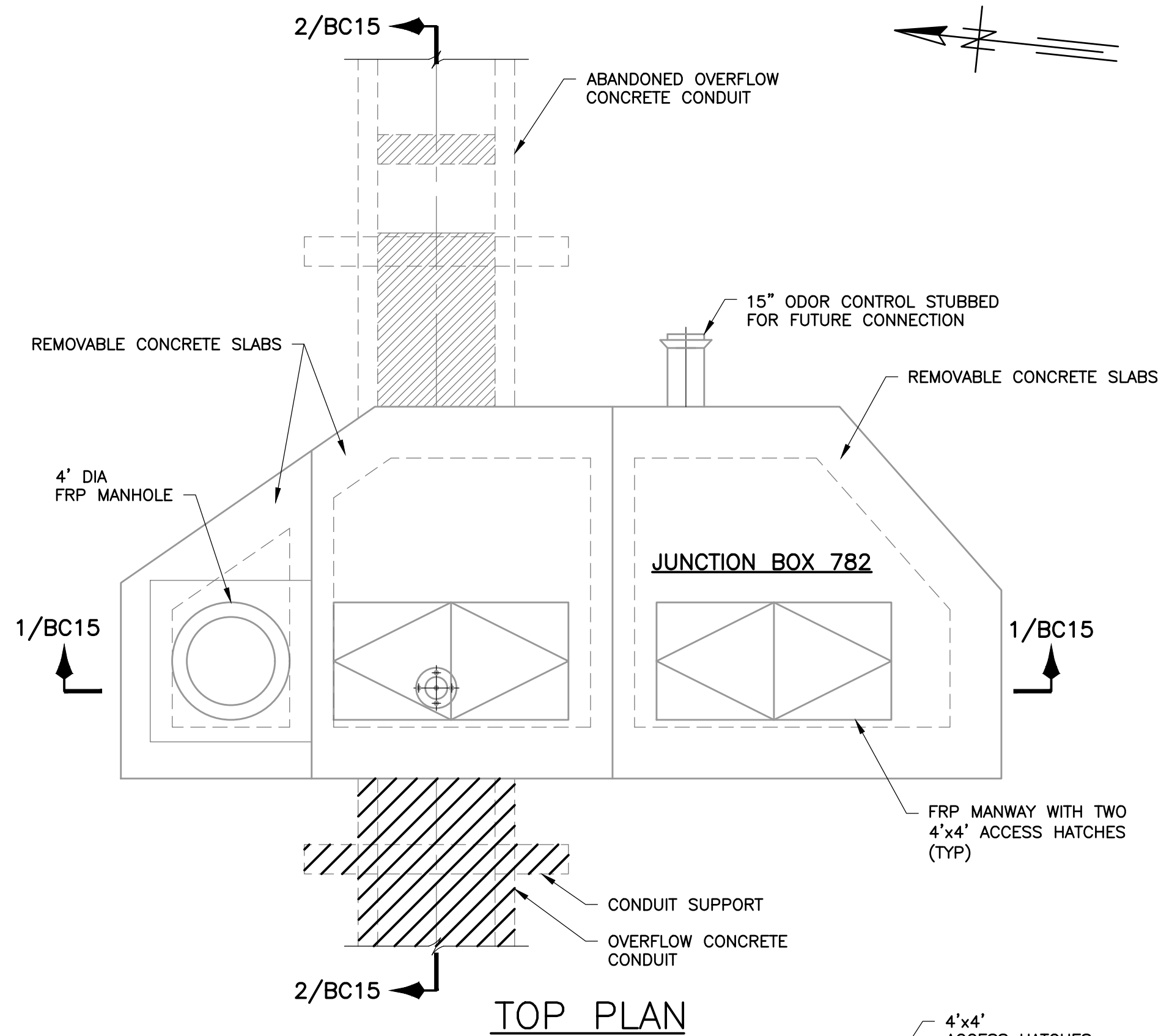
NOTES:

- ELEVATION OF EXISTING 16" OC LINE IS NOT KNOWN.

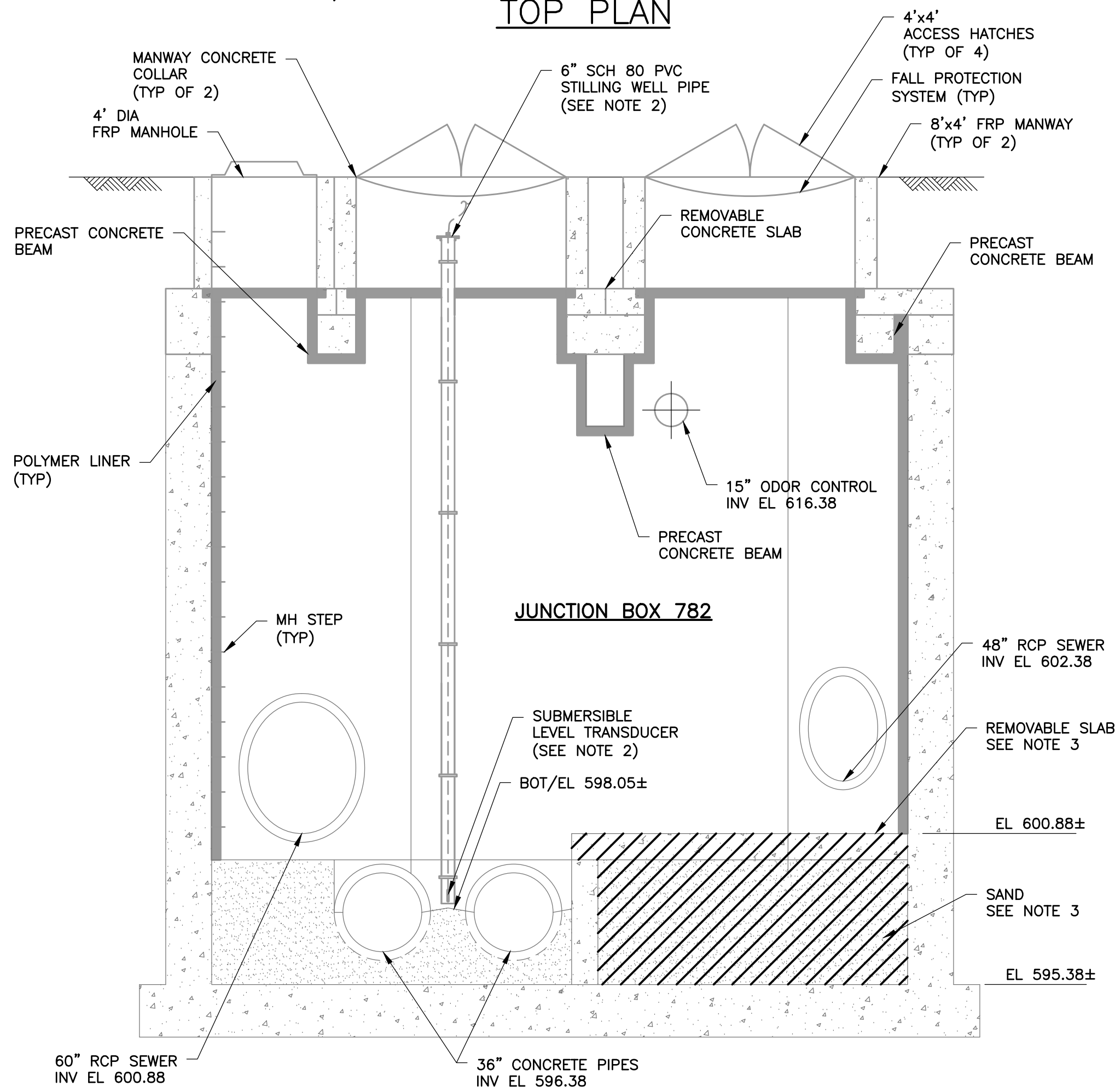


THIRD RIVER CROSSING YARD PIPING PLAN AND PROFILE									
PROJECT NO. 2015-17, C2									
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES									
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT									
PLANS AND ESTIMATES PREPARED BY:				GREGORY AND HANSEN 321 S BOSTON AVE, SUITE 300 TULSA, OKLAHOMA 74103					
REVISION				PLAN SCALE:		DRAWN		RKY	
				1"=100'		DESIGNED		TCG	
						SURVEY		8/2020	
				PROFILE SCALE		PROJ. MGR.			
				HORIZONTAL:		LEAD ENGR.			
				1"=20'		FIELD MGR.			
				VERTICAL:		RECOMMENDED			
				1"=5'		DESIGN MANAGER		CITY ENGINEER	
				FILE: 0141ERBC09		DRAWING: BC9		DATE: OCTOBER 2020	
				ATLAS PAGE NO:				SHEET 28 OF 65	

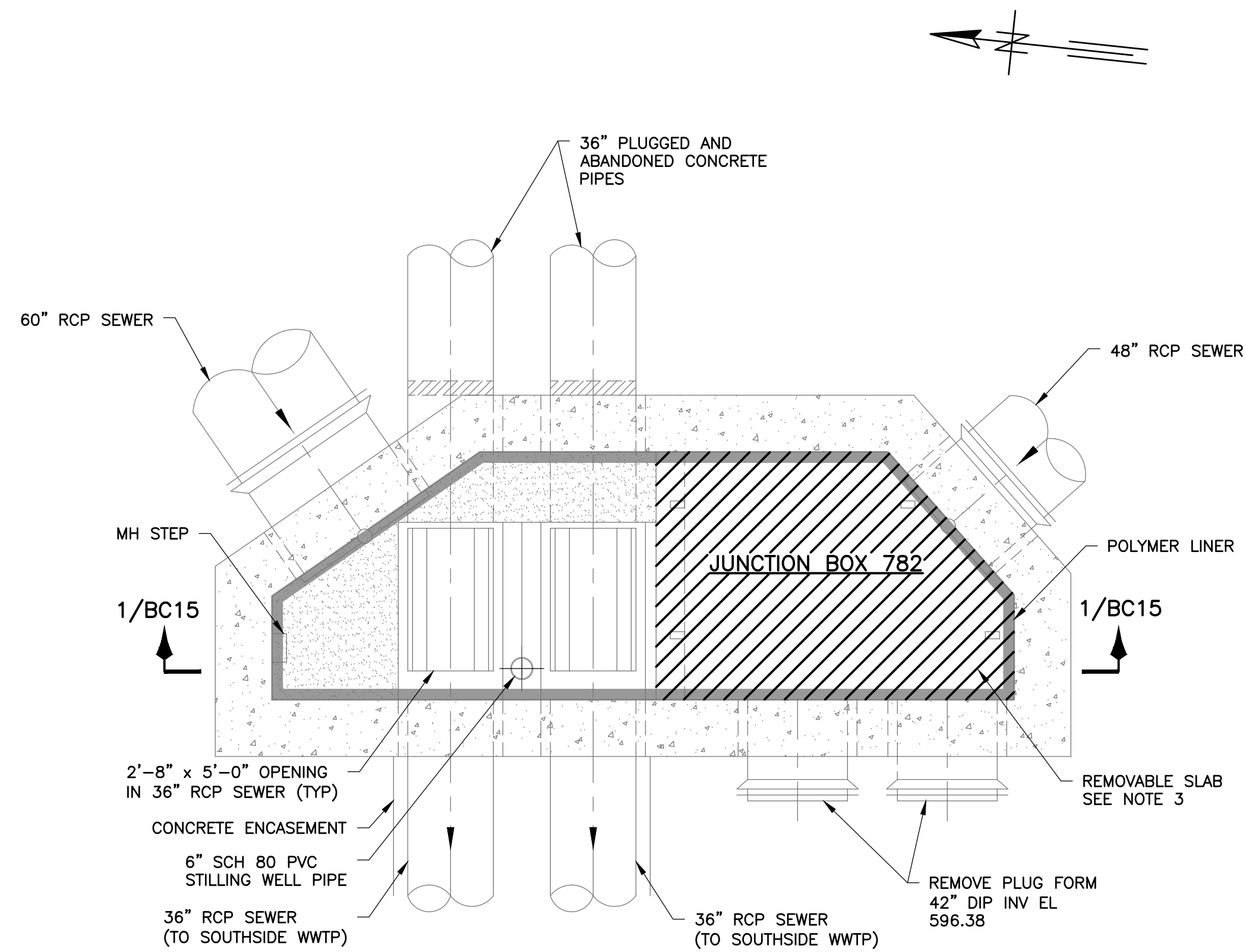
\\GH-DATA01\CLIENT\0141E - SSWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERBC10 - 2020\10\09 9:36 AM KETENBRINK, BUTCH



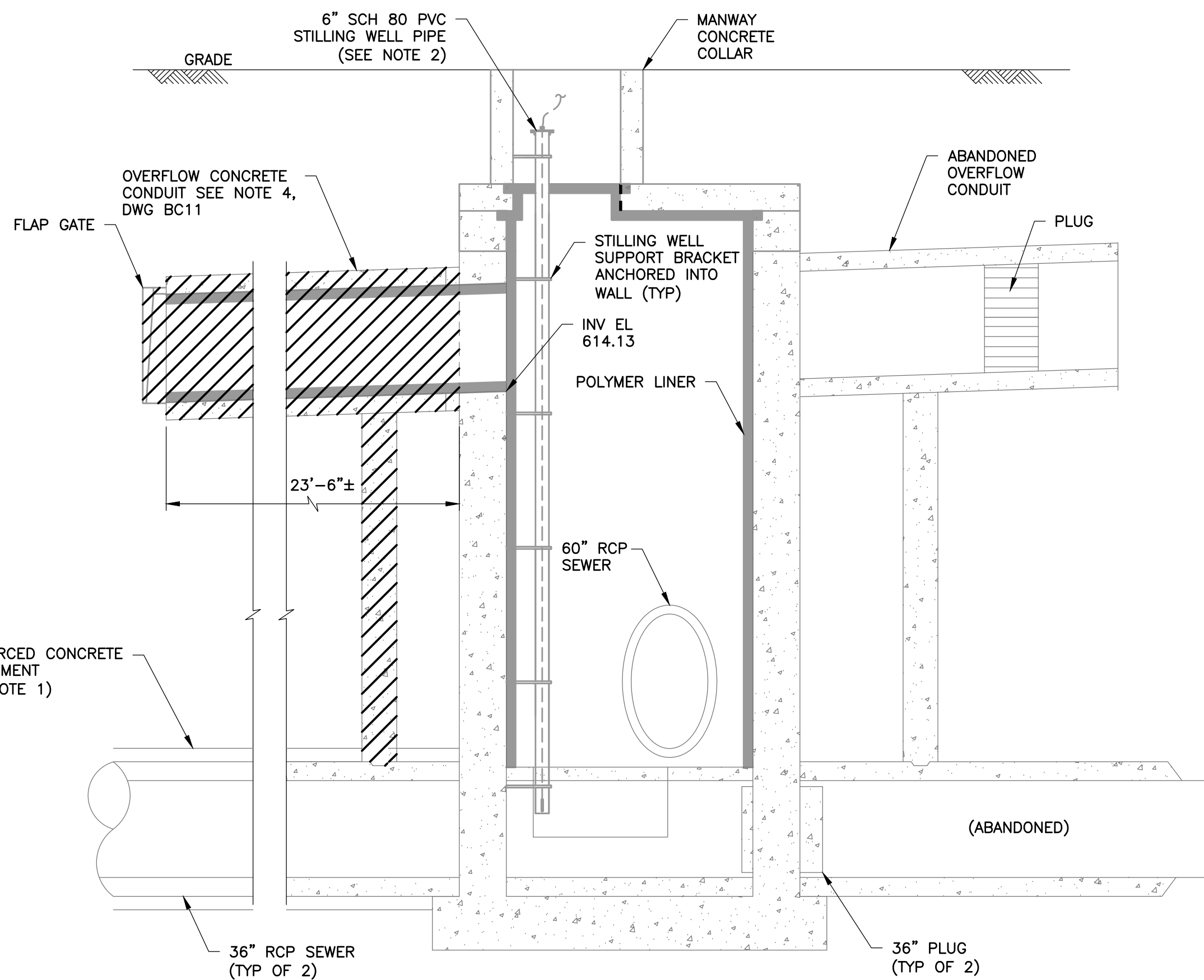
TOP PLAN



SECTION 1/BC15



PARTIAL PLAN FL EL 602.00



SECTION 2/BC15

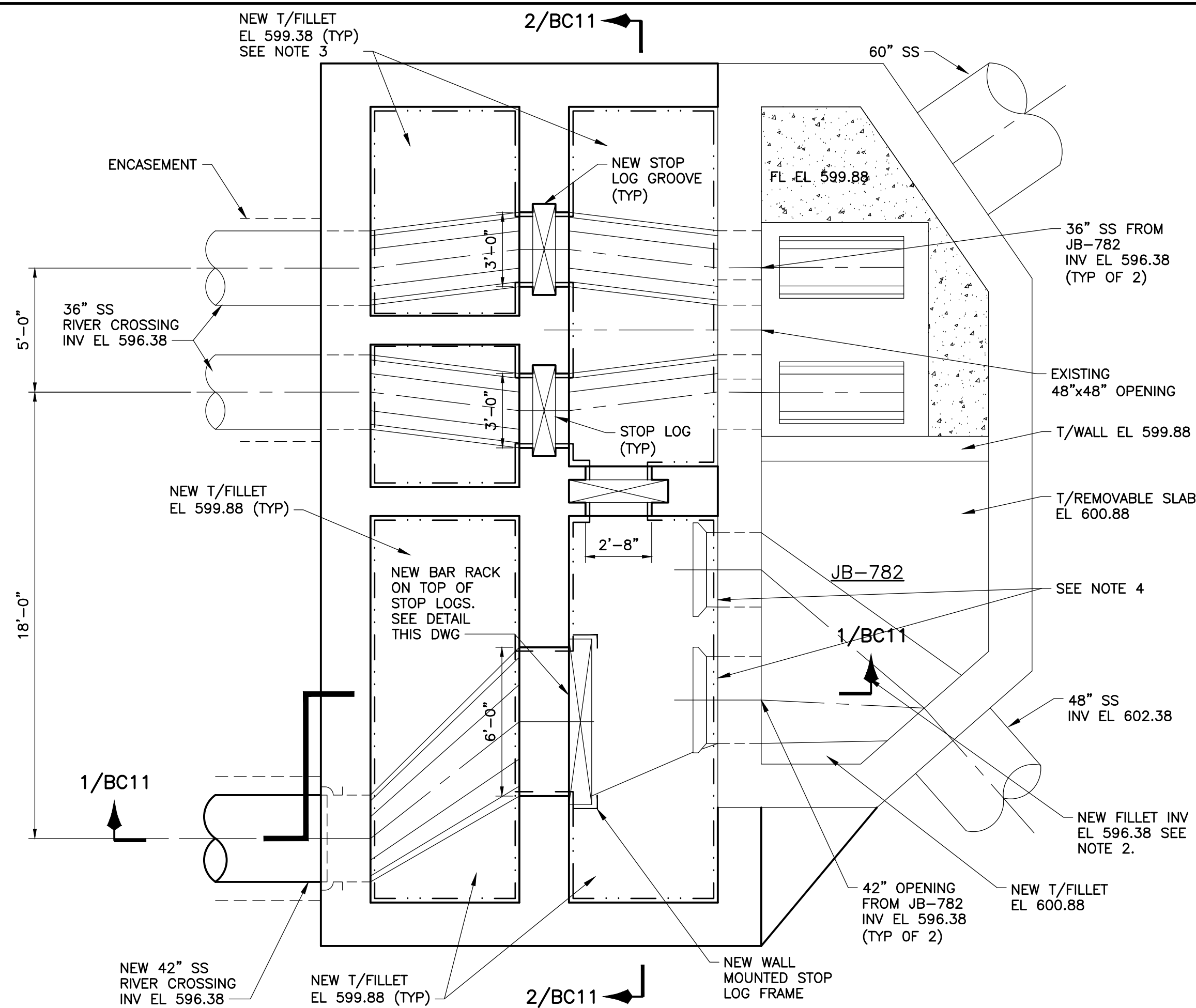
NOTES:

1. PROTECT THE EXISTING 36" RCP SEWER ENCASEMENT DURING REMOVAL OF EXISTING OVERFLOW CONDUIT SUPPORT
2. MAINTAIN LEVEL TRANSDUCER AND WIRELESS TRANSMITTER IN CONTINUOUS OPERATION DURING DEMOLITION AND CONSTRUCTION.
3. REMOVE AND REPLACE REMOVABLE SLAB AND SAND FOR CONSTRUCTION OF THE NEW 42" SS LINE. CONTRACTOR TO PREVENT DAMAGE TO EXISTING POLYMER LINER WHEN REMOVING AND INSTALLING THE EXISTING REMOVABLE PLANKS. CONTRACTOR TO PROVIDE PHOTOS TO THE OWNER OF INSIDE JB-782 TO CONFIRM PRE AND POST CONSTRUCTION CONDITIONS OF THE LINER WITHIN THE ENTIRE STRUCTURE.
4. CONTRACT DRAWING BC10 SHALL BE USED FOR OPTION B.

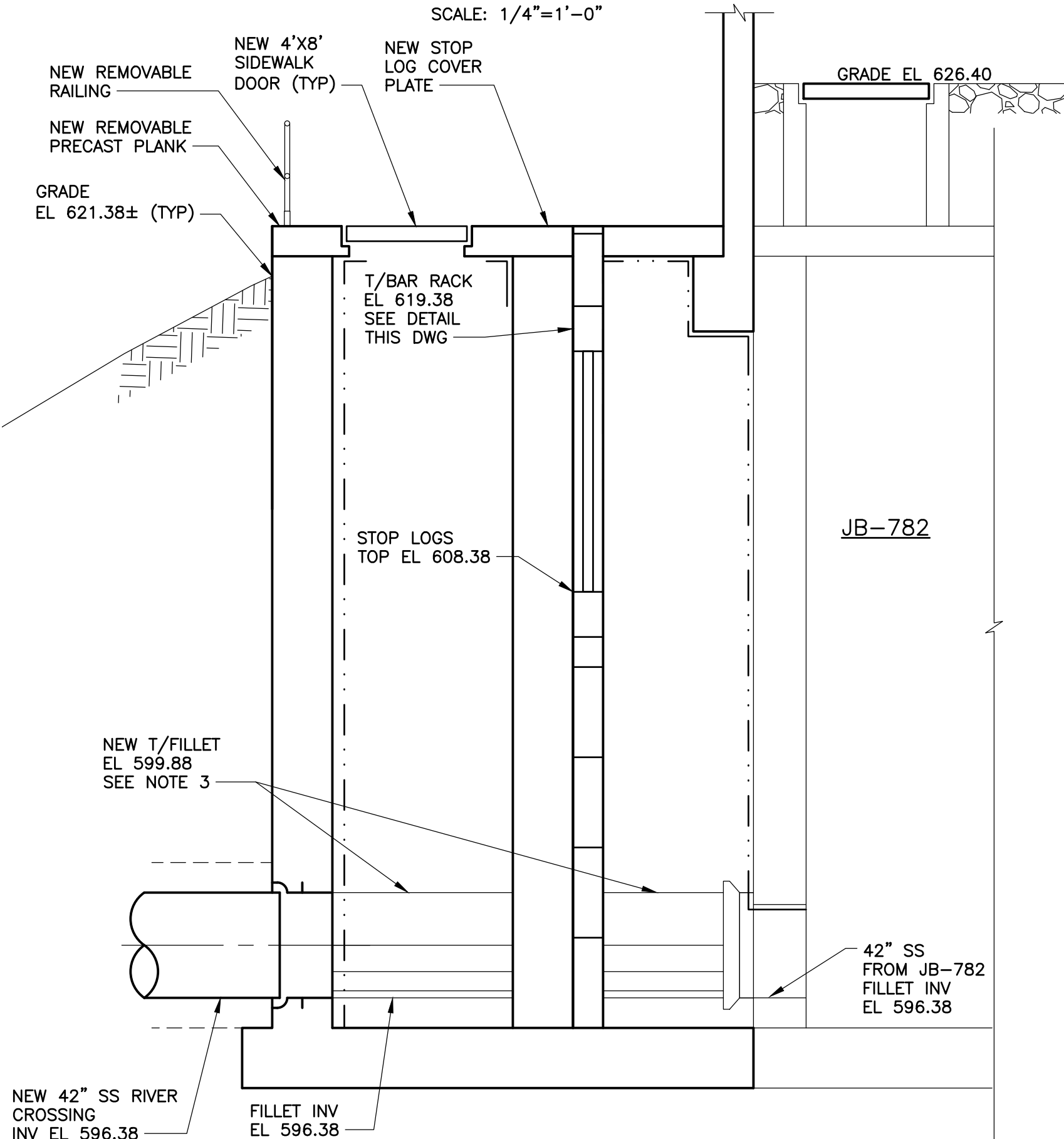


JB-782 - DEMOLITION PLANS AND SECTIONS									
PROJECT NO. 2015-17, C2									
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES									
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT									
PLANS AND ESTIMATES PREPARED BY:				GREGORY AND HANSEN 321 S BOSTON AVE, SUITE 300 TULSA, OKLAHOMA 74103					
REVISION				PLAN SCALE:		DRAWN	RKY	8/2020	APPROVED:
				NO SCALE		DESIGNED	TCG	8/2020	
						SURVEY			
				PROFILE SCALE		PROJ. MGR.			
				HORIZONTAL:		LEAD ENGR.			
				VERTICAL:		FIELD MGR.			
						RECOMMENDED			CITY ENGINEER
						DESIGN MANAGER			
				FILE: 0141ERBC10		DRAWING:	BC10	DATE: OCTOBER 2020	
				ATLAS PAGE NO:					SHEET 29 OF 65

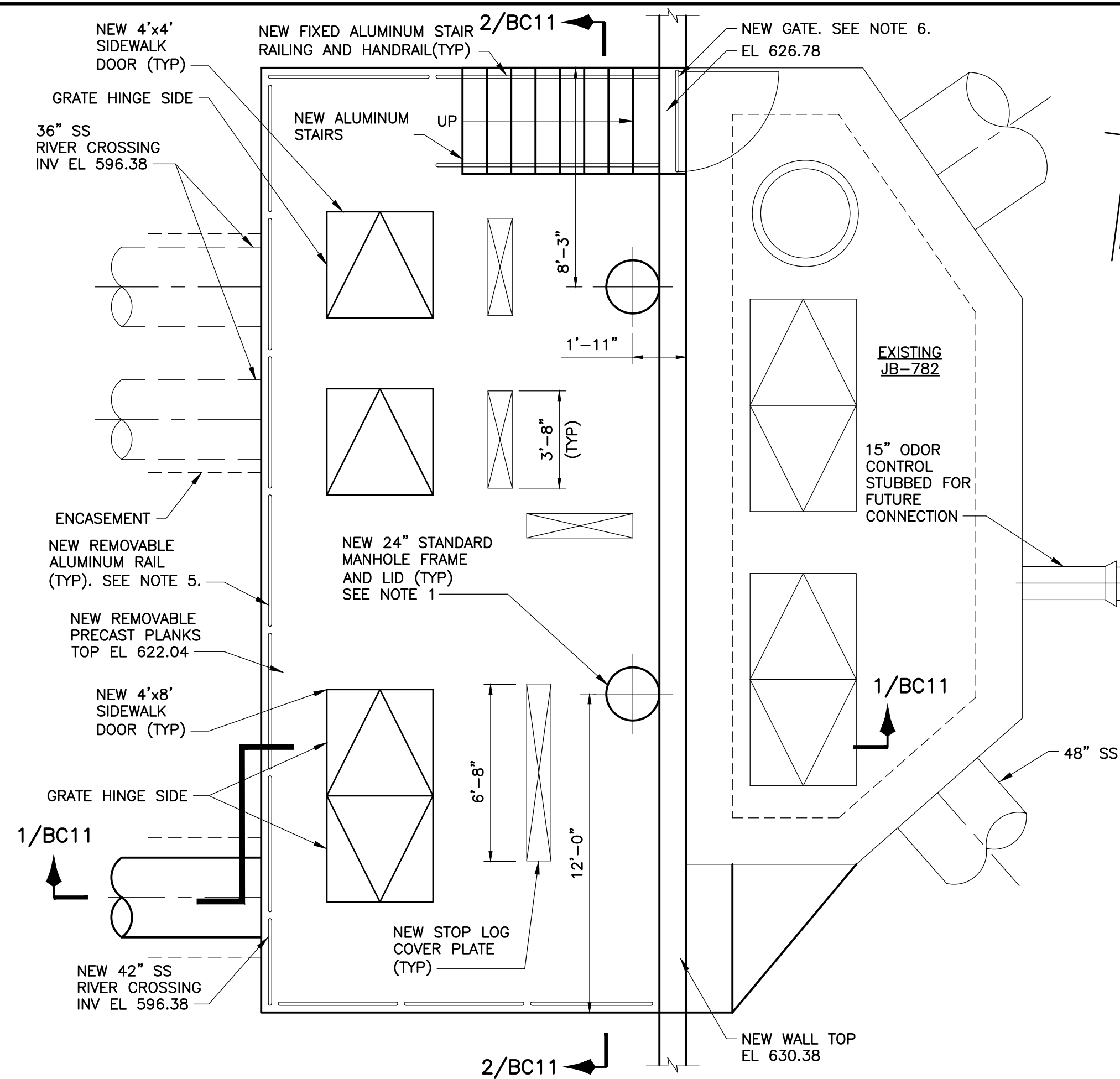
\\SH-DATA01\CLIENT\0141E - SSWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERBC11 2020/10/08 1:10 PM KETENBRINK, BUTCH



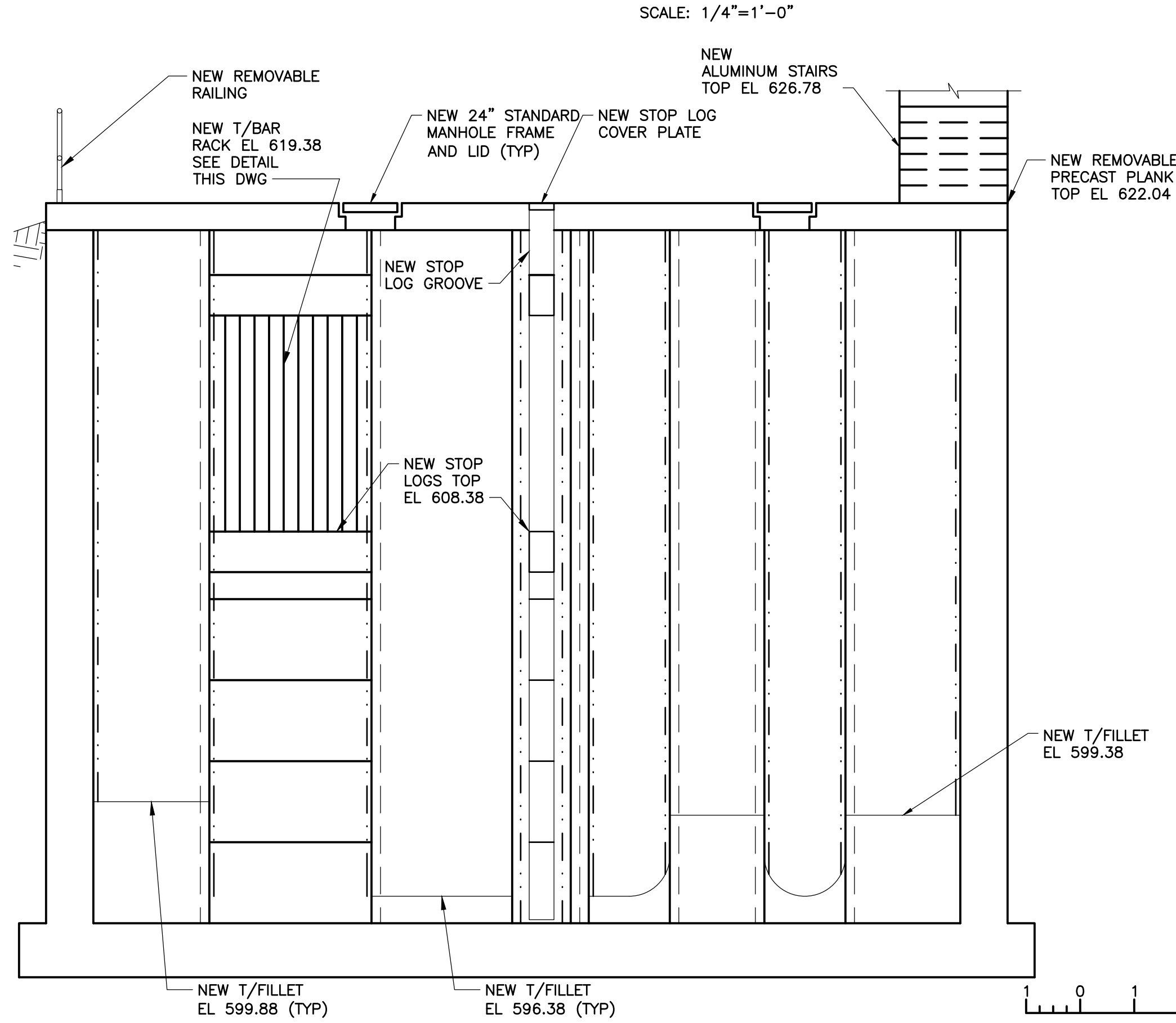
PLAN @ EL 616.00
SCALE: 1/4"=1'-0"



SECTION 1/BC11 @ EL 616.00
SCALE: 1/4"=1'-0"



PLAN @ EL 630.00
SCALE: 1/4"=1'-0"



SECTION 2/BC11 @ EL 630.00
SCALE: 1/4"=1'-0"

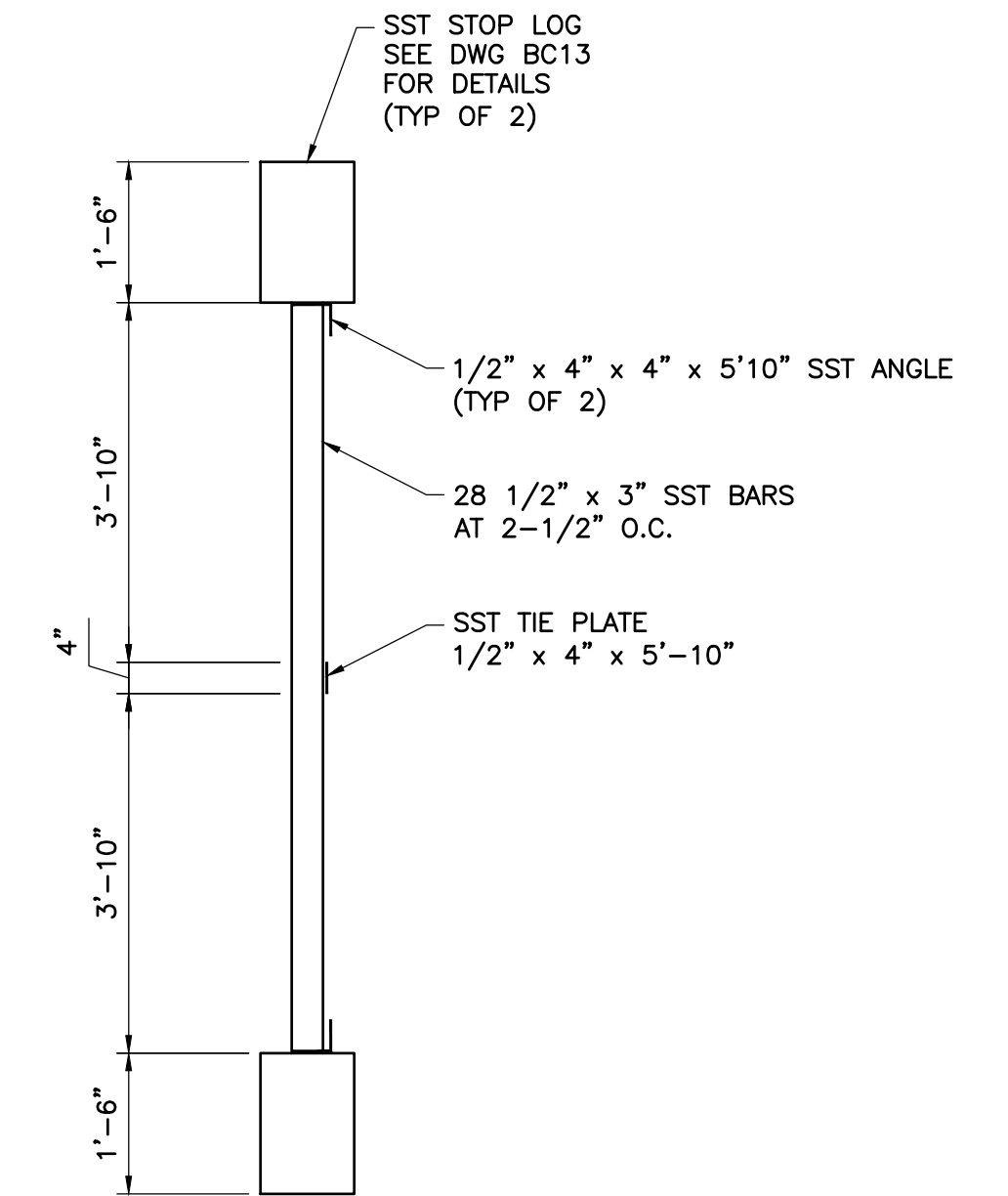
NOTES:

1. PROVIDE MANHOLE FRAME AND LID IN ACCORDANCE WITH CITY OF TULSA STANDARD DETAIL 353.
2. SEE DWG BC10 REGARDING REMOVAL OF EXISTING REMOVABLE SLAB AT FL EL 600.88 AND SANDFILL.
3. SAWCUT AND REMOVE EXISTING PIPE ENCASUREMENT LOCATED WITHIN NEW STRUCTURE.
4. PROVIDE BLIND FLANGE ON EXISTING 42" STUB OUT OPENINGS. PLACE BACK SAND AND REMOVABLE SLABS.
5. REMOVABLE RAILING. DIVIDE ALONG CONCRETE PANEL SECTIONS AND INTO MAXIMUM 6'-0" SECTIONS. SEE DRAWING BC13 FOR RAILING DETAILS.
6. ALUMINUM SWING GATE WITH MESH OR PICKET INFILL AND PADLOCK. SIZE GATE SO BOTTOM OF GATE IS 6" MAX ABOVE WALKWAY AND OF A WIDTH TO FILL WALL OPENING. ALIGN TOP OF GATE WITH TOP OF WALL.

LEGEND:

--- INDICATES CHEMICAL RESISTANT COATING:
FULL HEIGHT OF ALL CONCRETE WALLS AND THE UNDERSIDE
OF THE TOP CONCRETE SLAB.

BAR RACK DETAIL
SCALE: 1/2"=1'-0"



EAST BANK JUNCTION STRUCTURE
OPEN-CUT PLANS AND SECTIONS

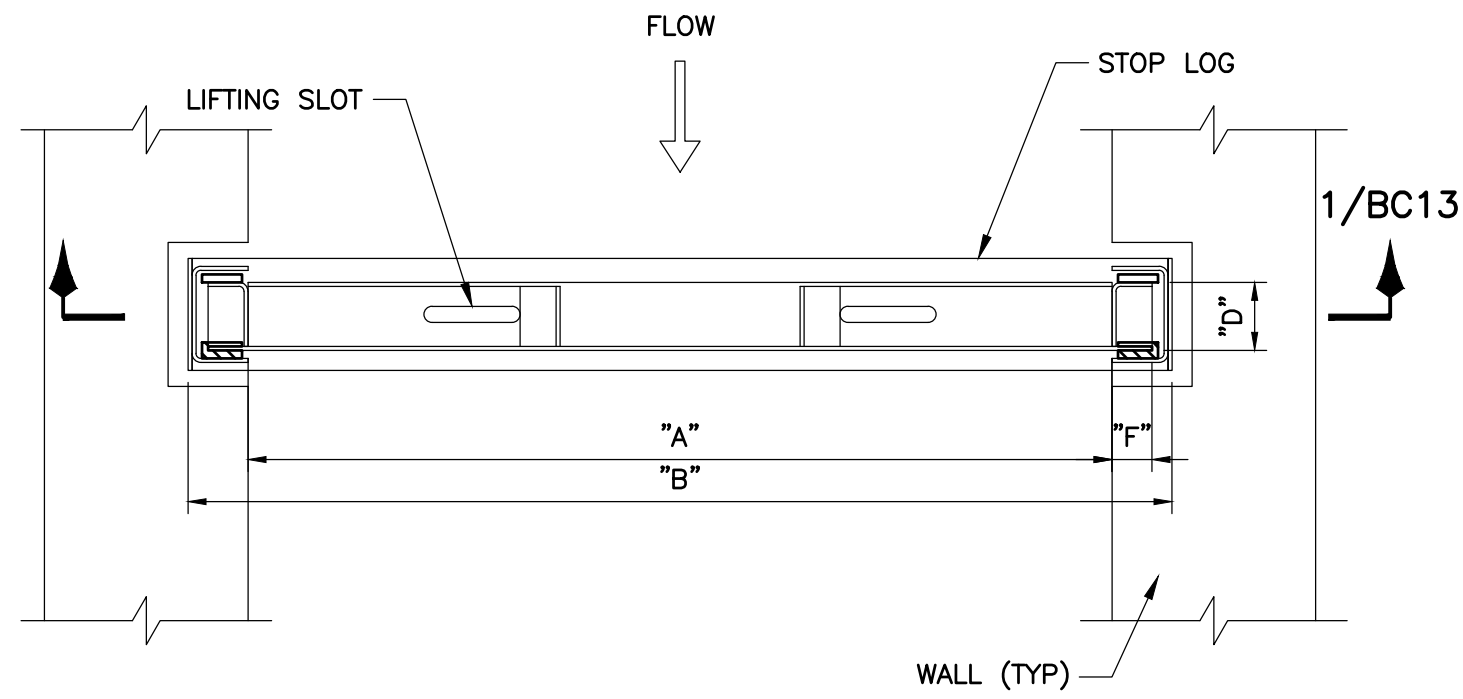
PROJECT NO. 2015-17, C2
SOUTHSIDE WASTEWATER TREATMENT PLANT
PEAK FLOW OPTIMIZATION: THIRD RIVER
CROSSING AND DIVERSION FACILITIES

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

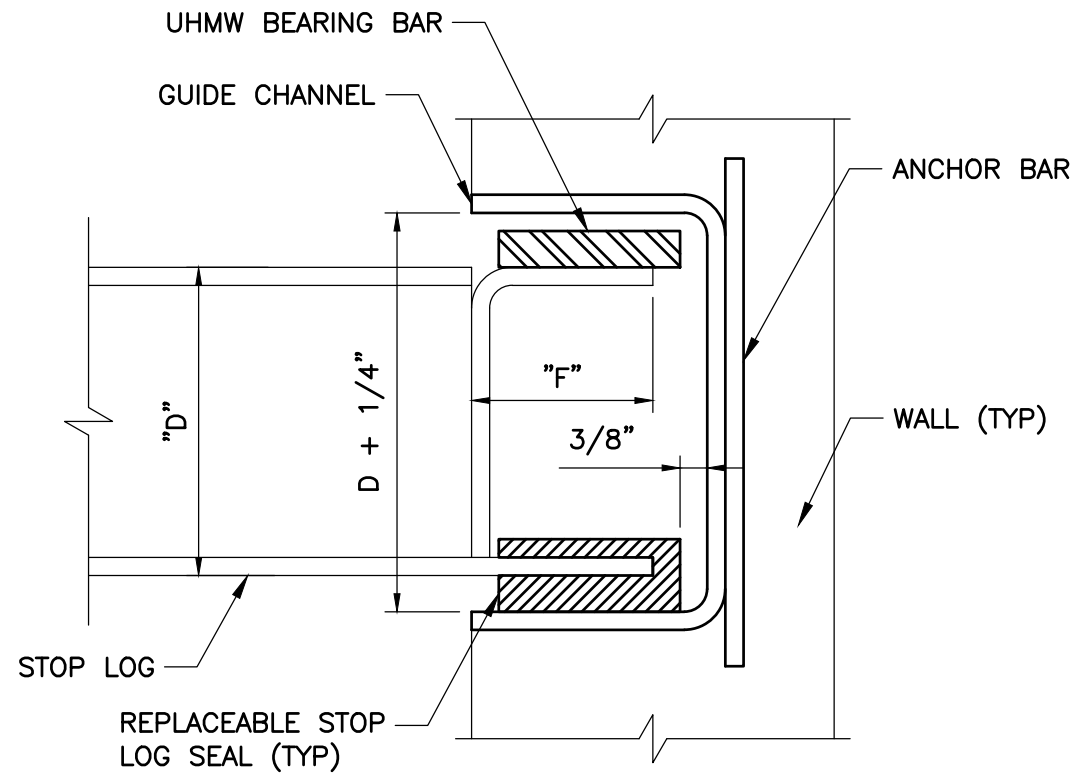
PLANS AND ESTIMATES PREPARED BY: **GREELEY AND HANSEN**
321 S BOSTON AVE, SUITE 300
TULSA, OKLAHOMA 74103

REVISION	BY	DATE	PLAN SCALE:	DRAWN	RKY	8/2020	APPROVED:
			AS SHOWN	DESIGNED	TCG	8/2020	
				SURVEY			
			PROFILE SCALE	PROJ. MGR.			
			HORIZONTAL:	LEAD ENGR.			
				FIELD MGR.			
			VERTICAL:	RECOMMENDED			
				DESIGN MANAGER			CITY ENGINEER
			FILE: 0141ERBC11	DRAWING: BC11	DATE:	OCTOBER 2020	
			ATLAS PAGE NO:				SHEET 30 OF 65

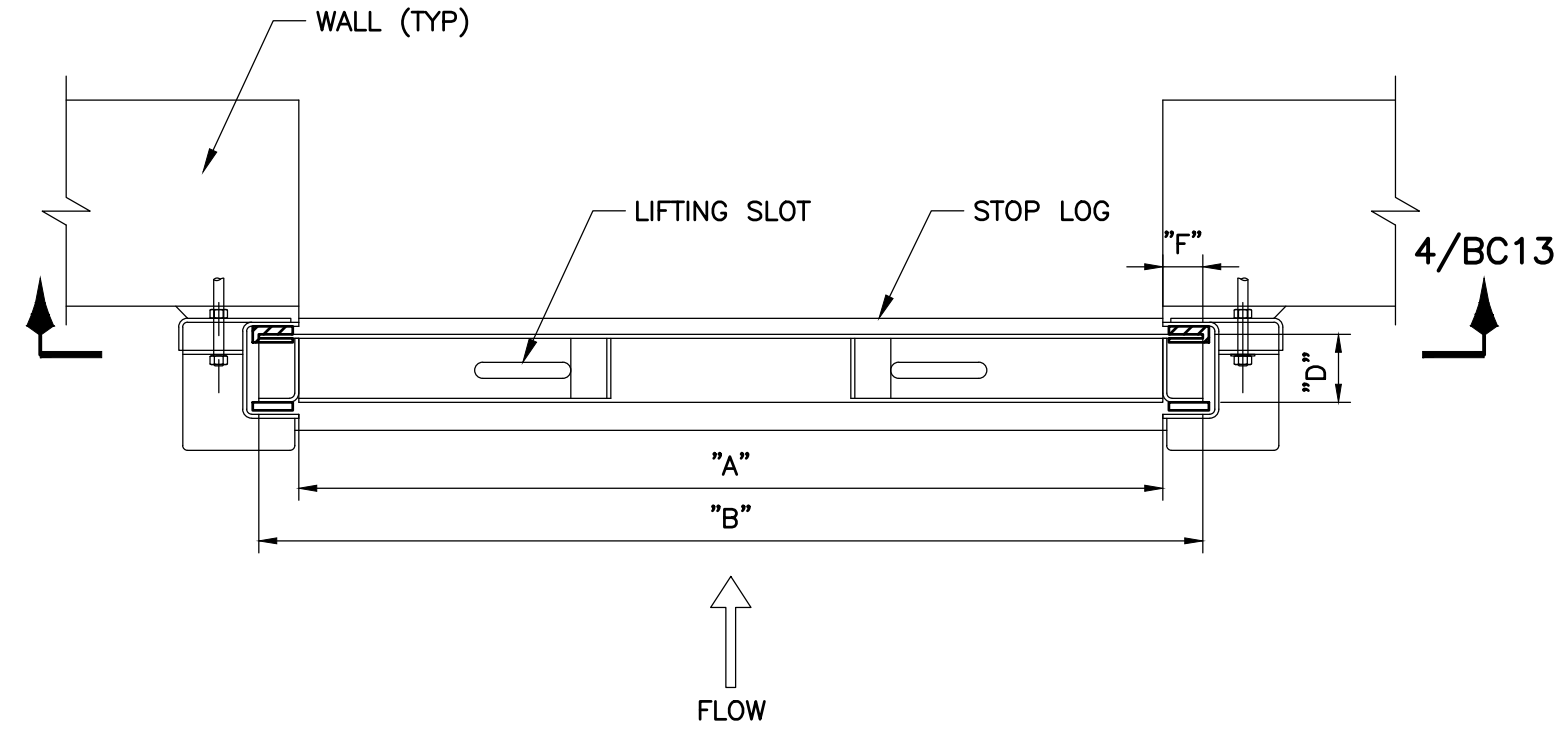
\\G:\DATA\01\CLIENT\0141E - SSWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERBC13 2020\10\09 11:05 AM KETENBRINK, BUTCH



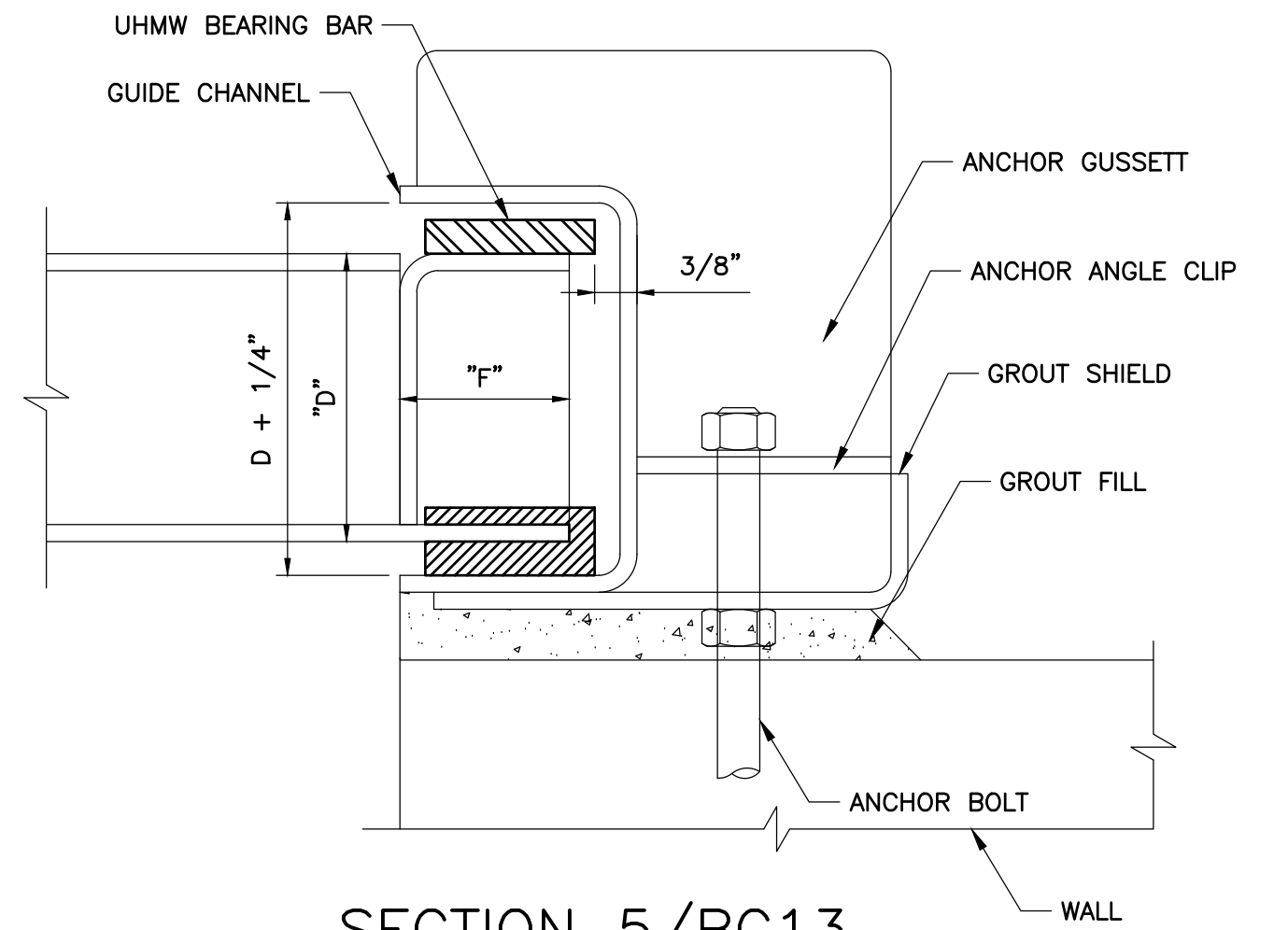
EMBEDDED FRAME PLAN
SCALE: N.T.S.



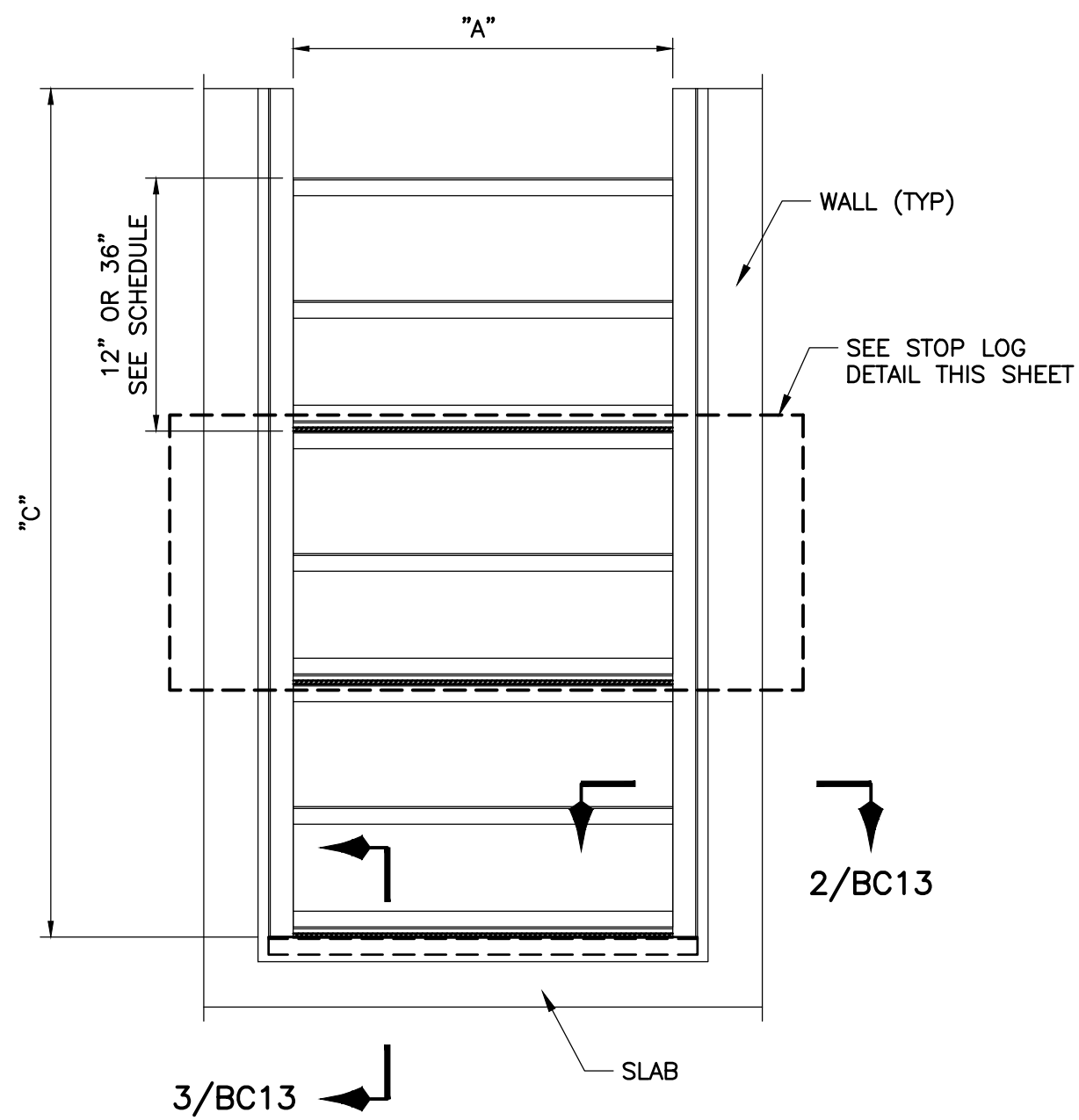
SECTION 2/BC13
SCALE: N.T.S.



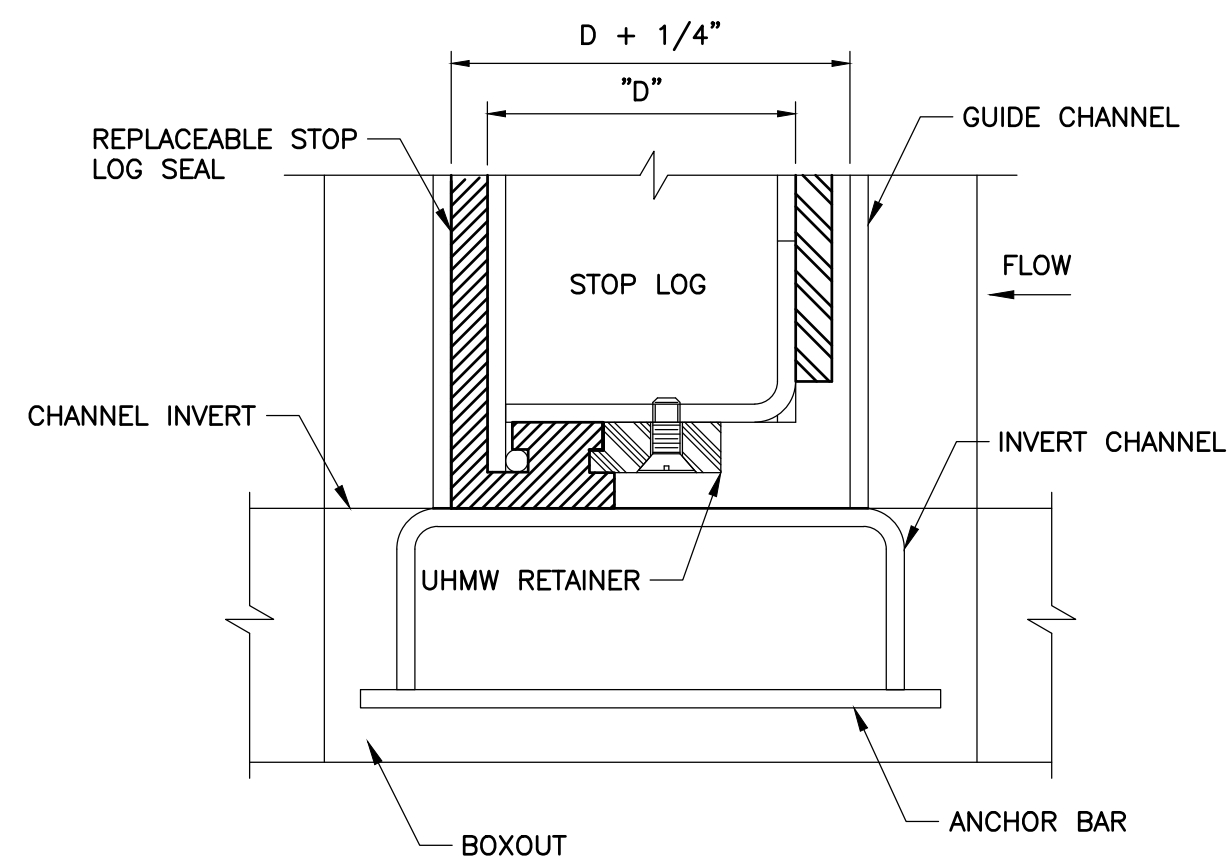
WALL MOUNTED FRAME PLAN
SCALE: N.T.S.



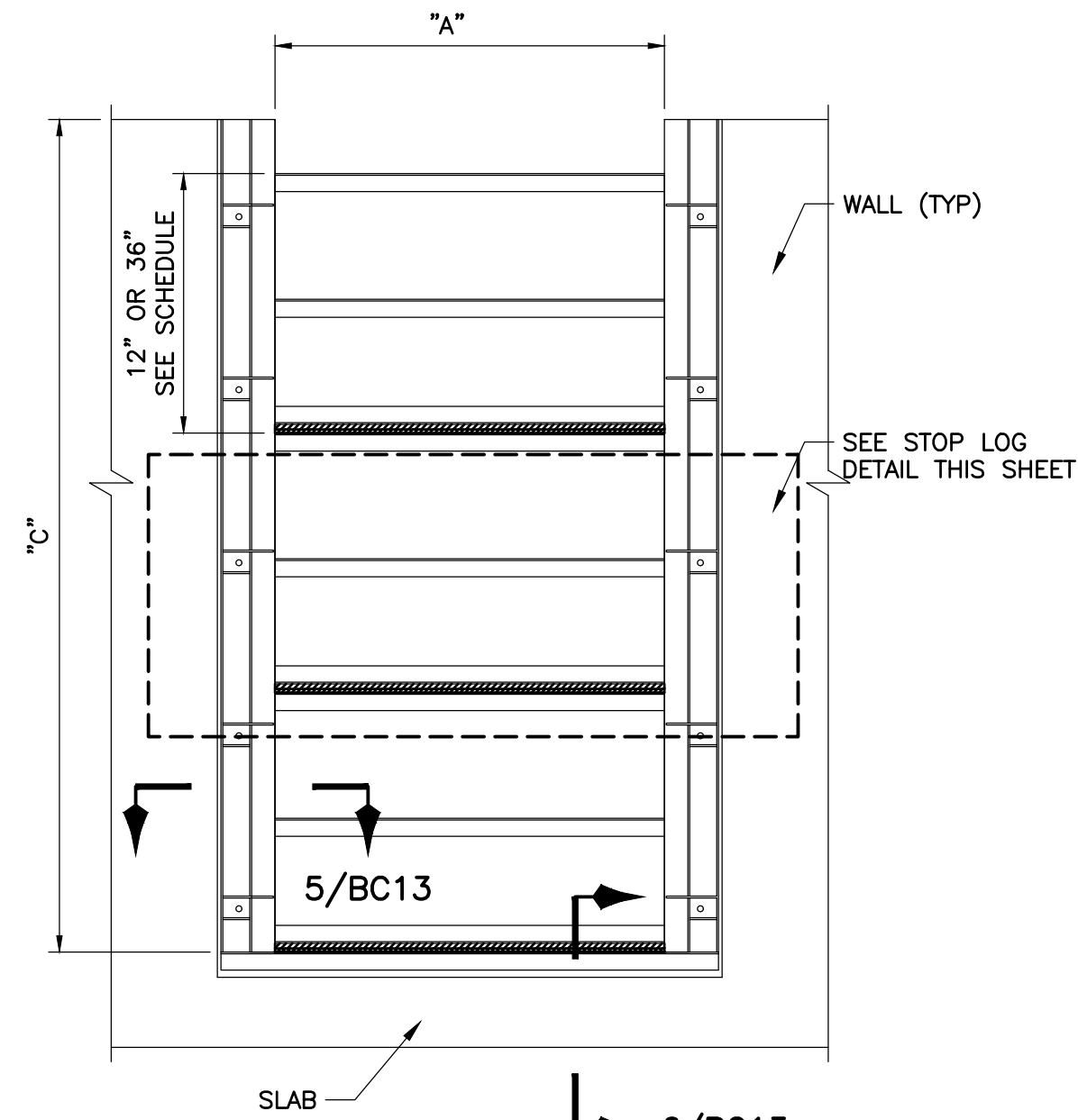
SECTION 5/BC13
SCALE: N.T.S.



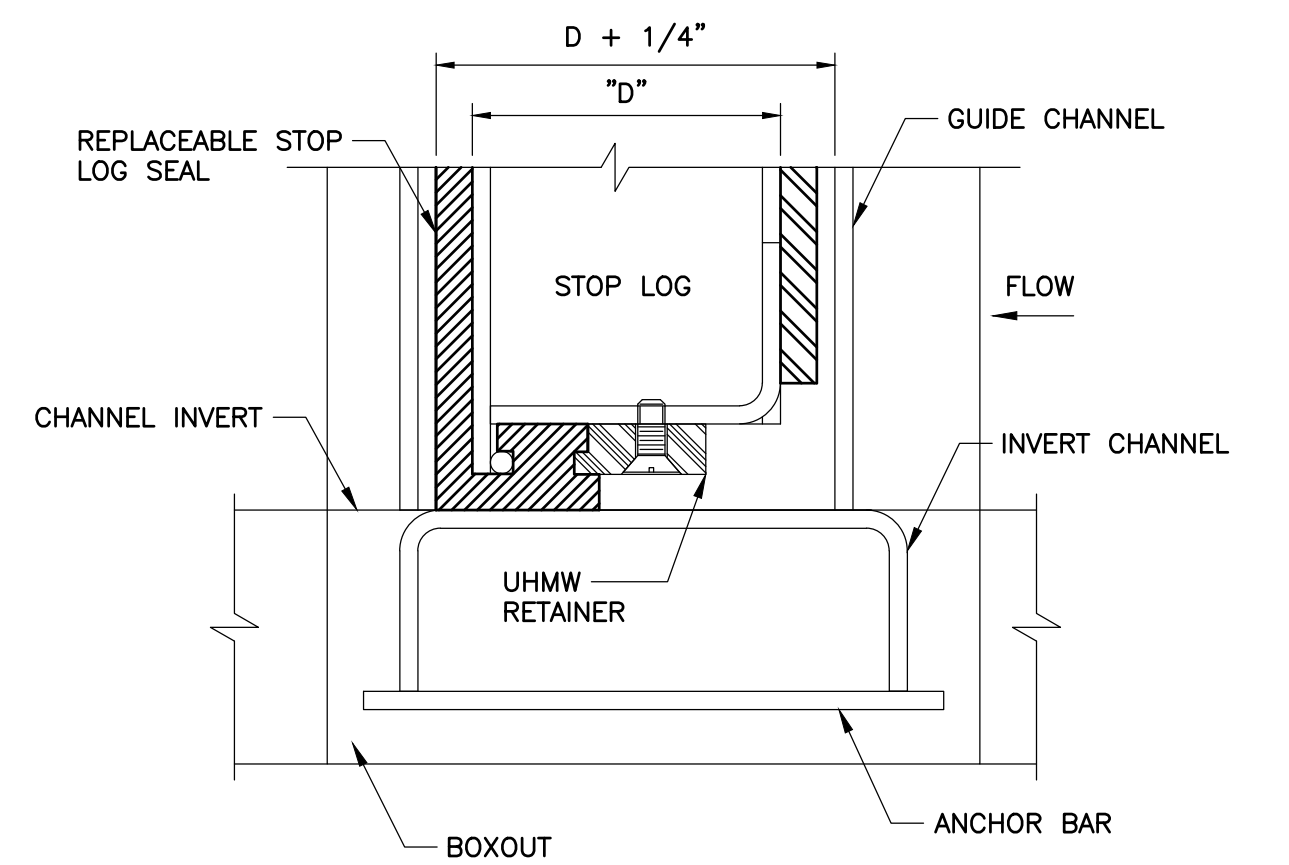
SECTION 1/BC13
SCALE: N.T.S.



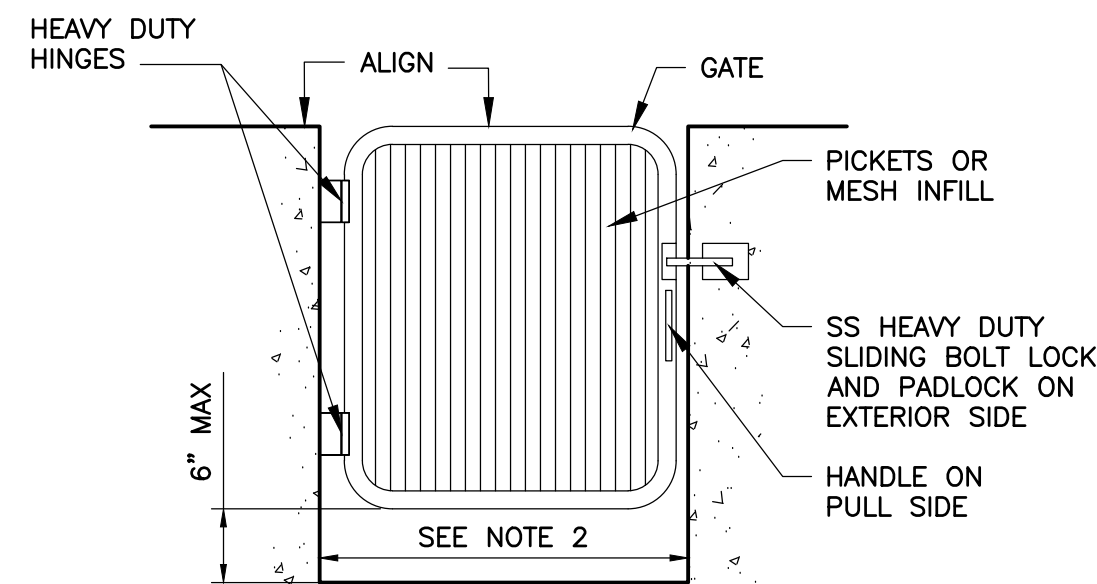
SECTION 3/BC13
SCALE: N.T.S.



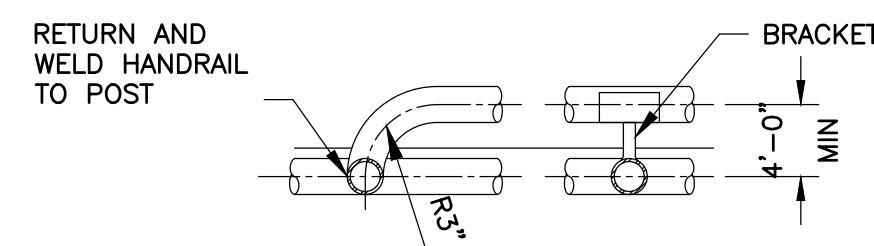
SECTION 4/BC13
SCALE: N.T.S.



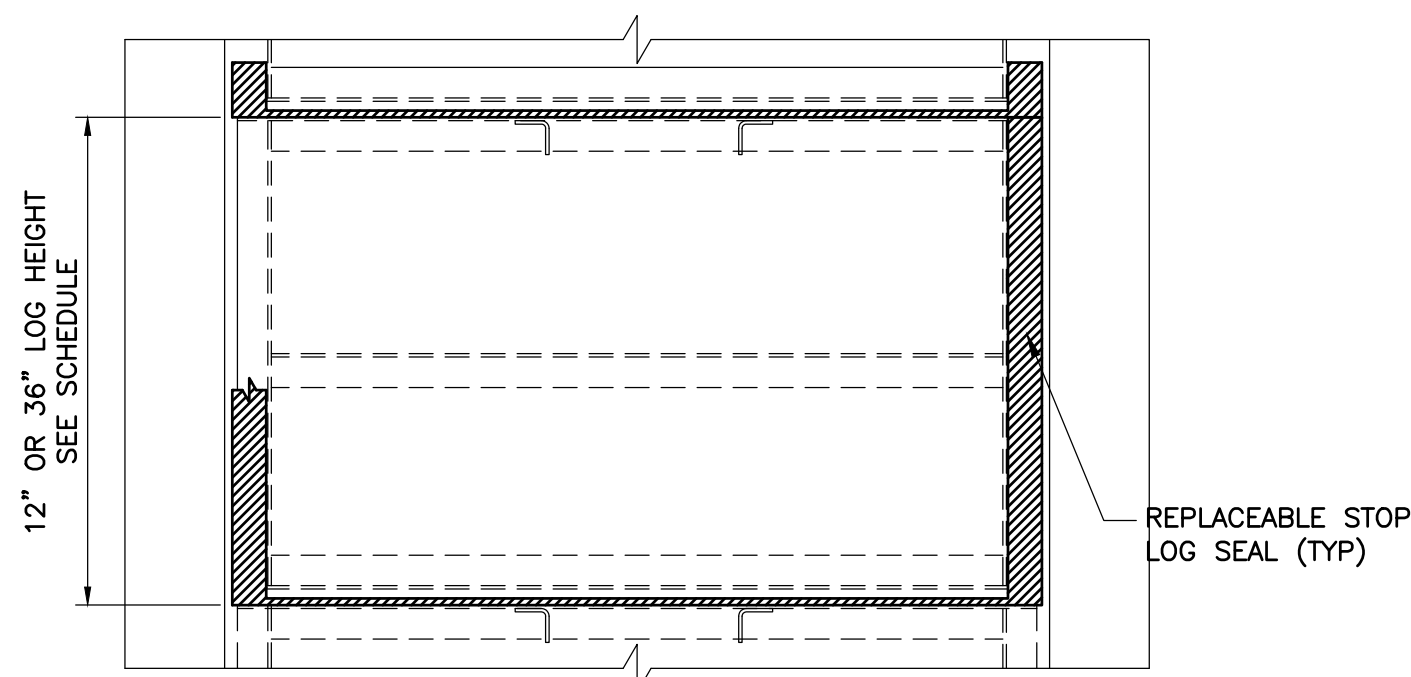
SECTION 6/BC13
SCALE: N.T.S.



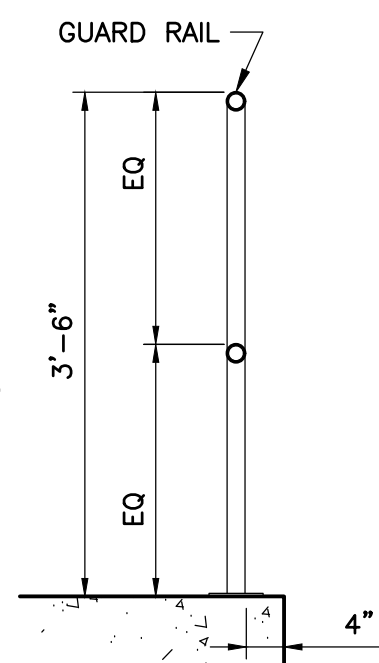
GATE DETAIL
SCALE: N.T.S.



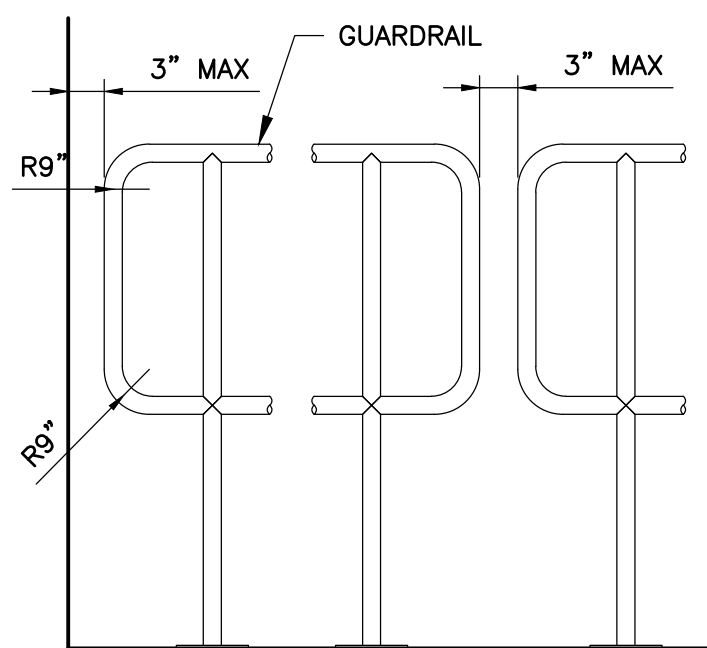
HANDRAIL RETURN DETAIL
SCALE: 1 1/2"=1'-0"



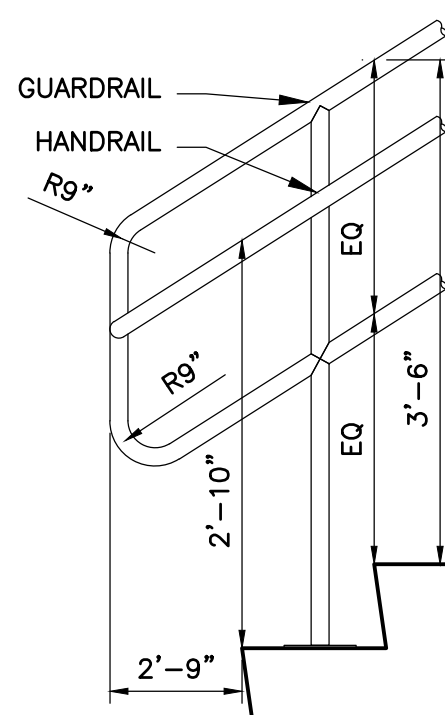
STOP LOG DETAIL
SCALE: N.T.S.



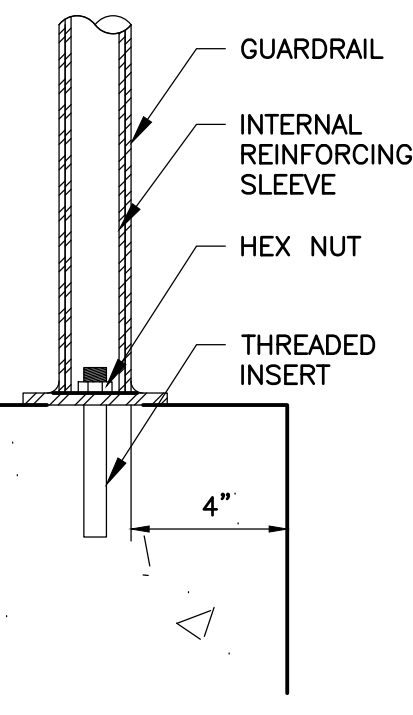
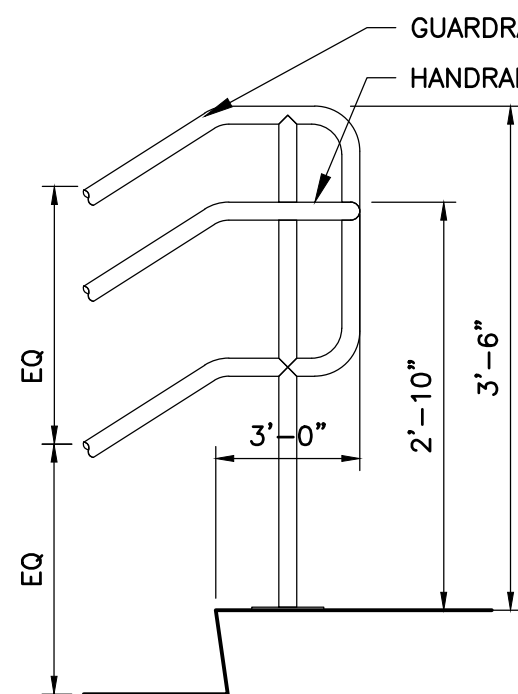
TYPICAL RAIL SECTION
SCALE: 3/4"=1'-0"



RETURN RAIL END
SCALE: 3/4"=1'-0"



TYPICAL STAIR RAILING DETAILS
SCALE: 3/4"=1'-0"



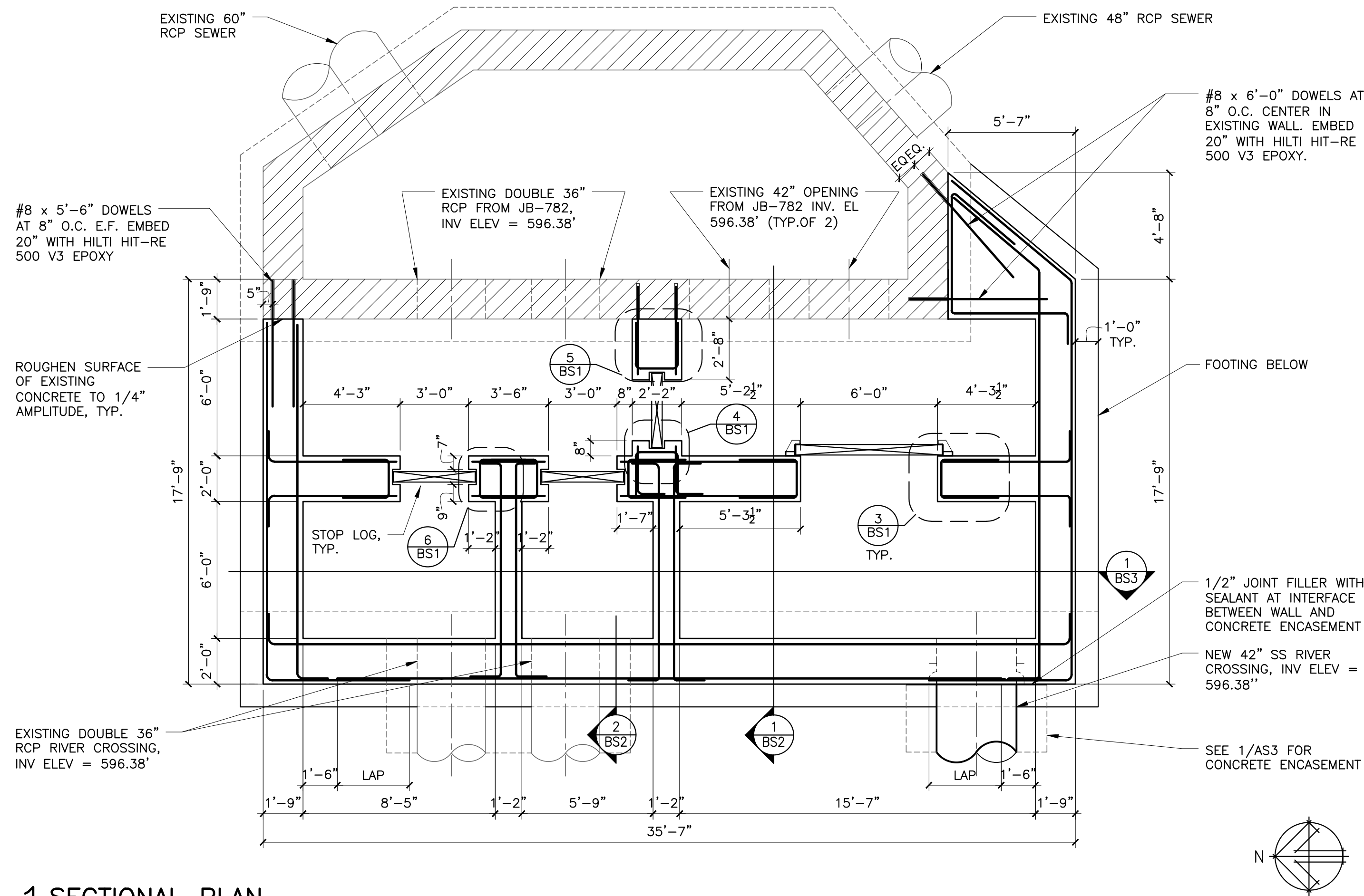
REMOVABLE RAIL BASE
SCALE: 3"=1'-0"

NOTES:

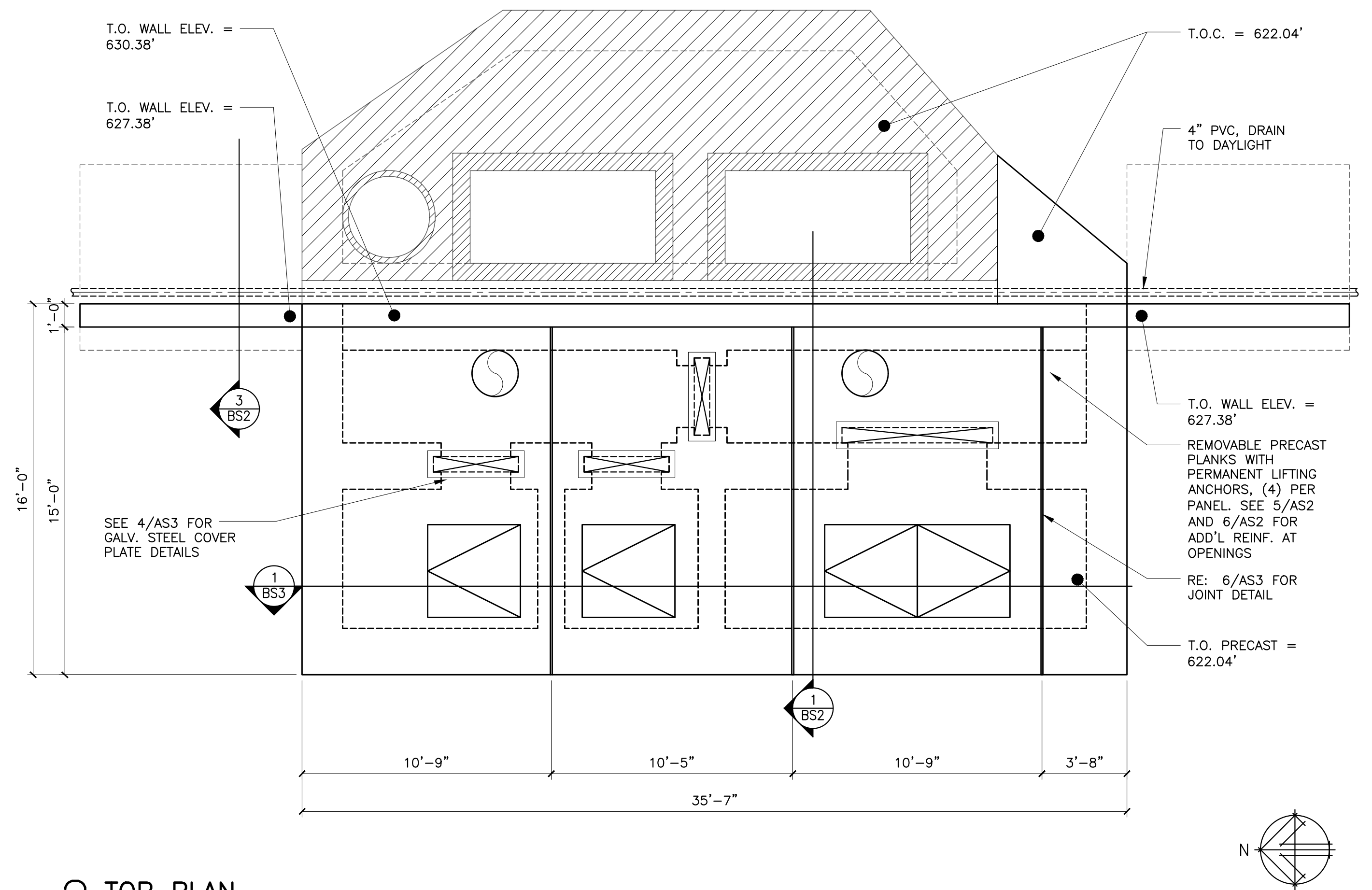
1. SEE STOP LOG SCHEDULE IN SPECIFICATION SECTION 40-05-32 FOR ADDITIONAL DETAILS.
2. ALUMINUM SWING GATE WITH MESH OR PICKET INFILL AND PADLOCK. SIZE GATE SO BOTTOM OF GATE IS 6" MAX ABOVE WALKWAY AND OF A WIDTH TO FILL WALL OPENING. ALIGN TOP OF GATE WITH TOP OF WALL.

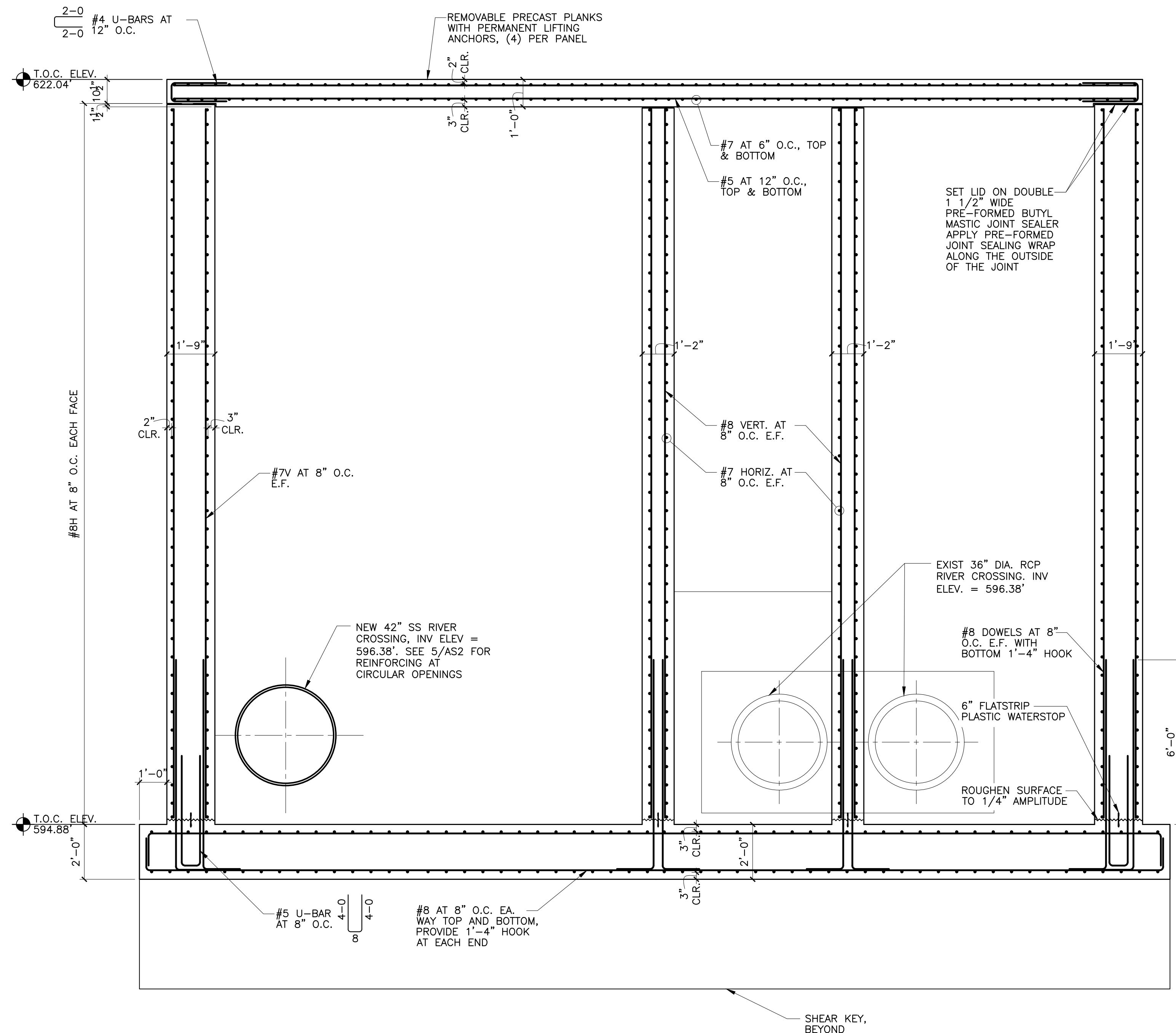


STOP LOG DETAILS									
PROJECT NO. 2015-17, C2									
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES									
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT									
PLANS AND ESTIMATES PREPARED BY: GREELEY AND HANSEN 321 S BOSTON AVE, SUITE 300 TULSA, OKLAHOMA 74103									
REVISION		BY		DATE		PLAN SCALE:		DRAWN	
						1/4"=1'-0"		DESIGNED	
								SURVEY	
						PROFILE SCALE		PROJ. MGR.	
						HORIZONTAL:		LEAD ENGR.	
						VERTICAL:		FIELD MGR.	
								RECOMMENDED	
								DESIGN MANAGER	
								CITY ENGINEER	
						FILE: 0141ERBC13.DWG		DRAWING: BC13	
						ATLAS PAGE NO:		DATE: OCTOBER 2020	
								SHEET 32 OF 65	



1 SECTIONAL PLAN
1/4" = 1'-0"





OKCA #1460
Exp. Date: 06/30/21



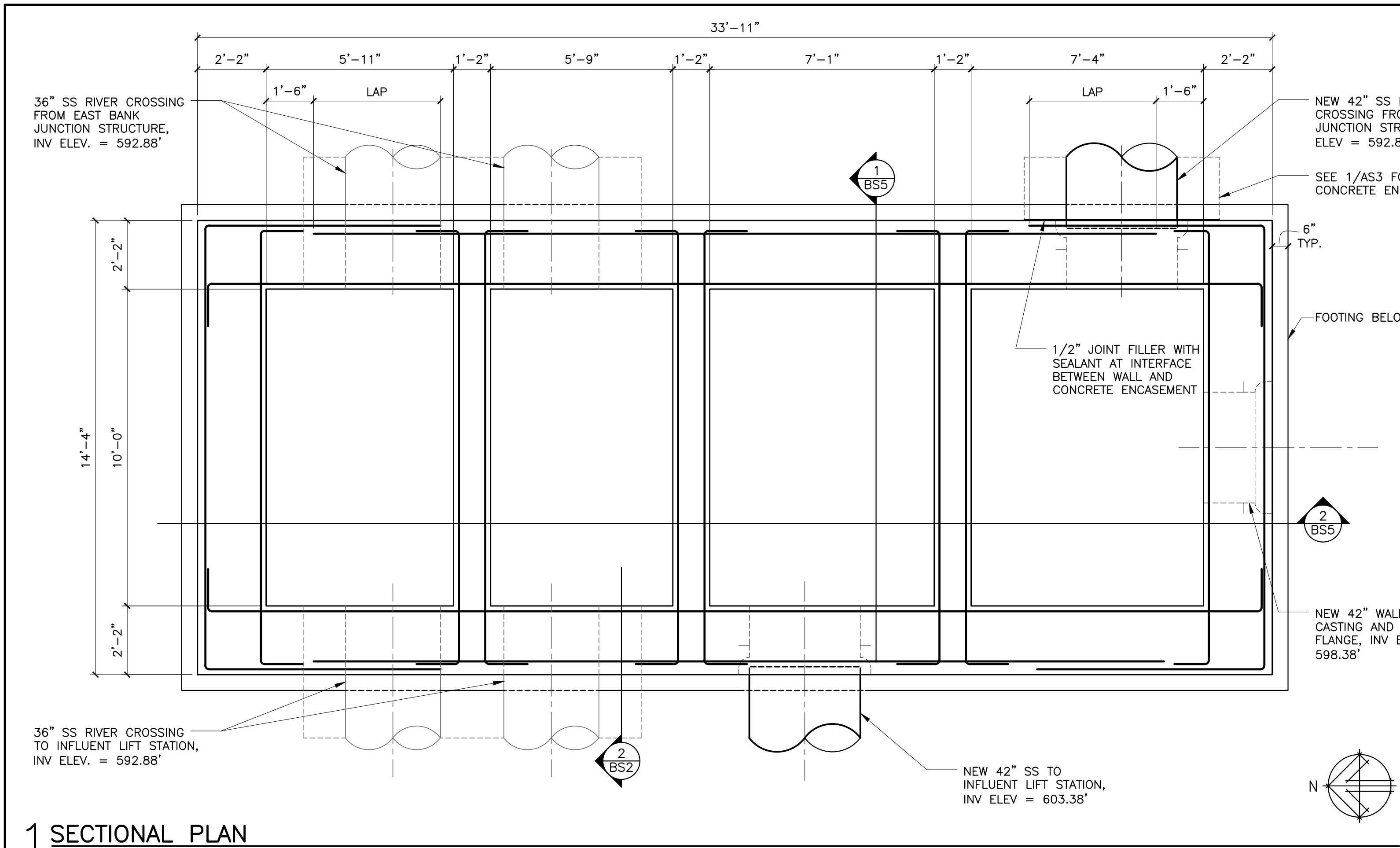
STRUCTURAL – EAST BANK JUNCTION STRUCTURE
SECTIONS AND DETAILS

PROJECT NO. 2015-17, C1
SOUTHSIDE WASTEWATER TREATMENT PLANT
PEAK FLOW OPTIMIZATION: THIRD RIVER
CROSSING AND DIVERSION FACILITIES

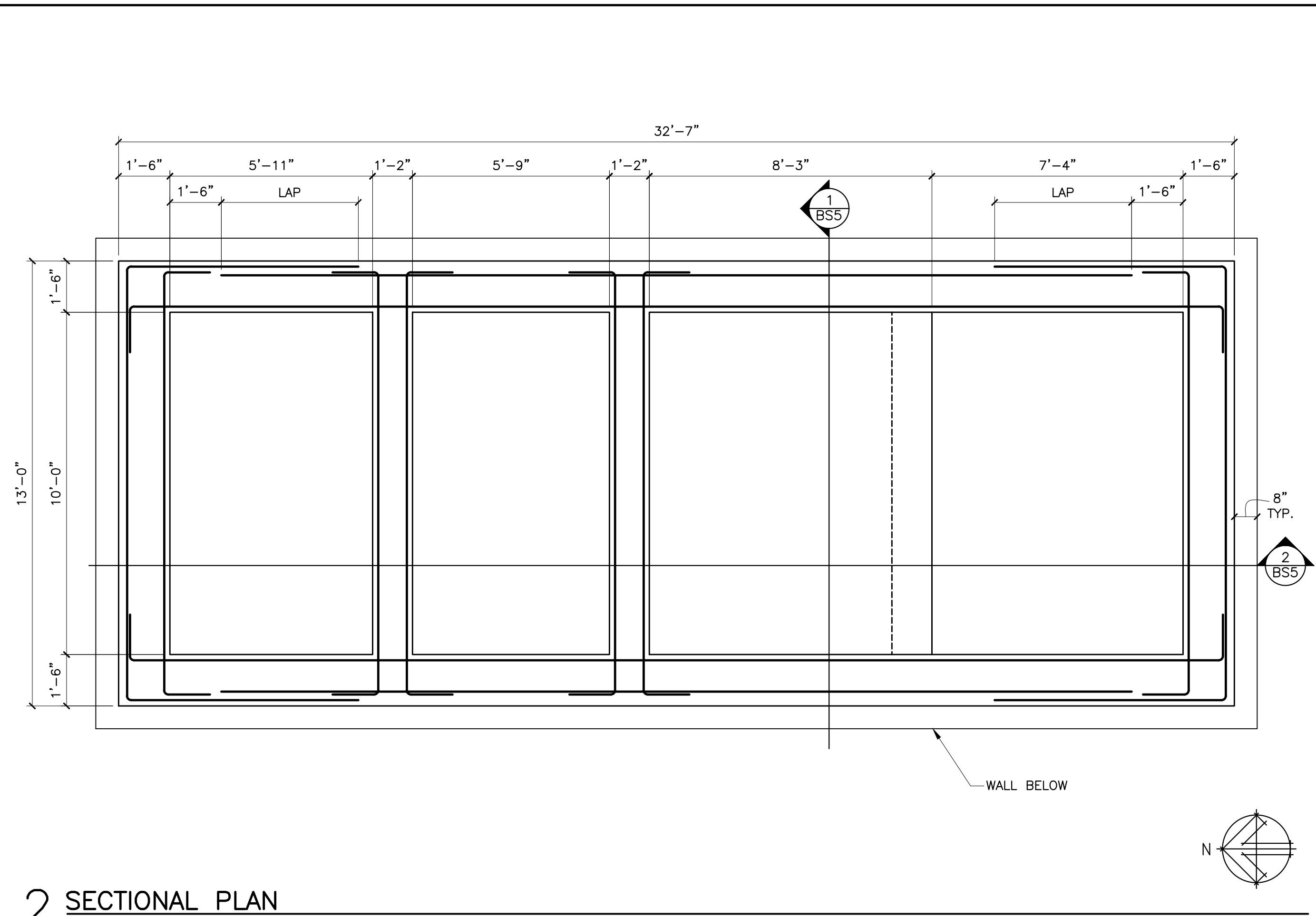
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
wallace Wallace Engineering
Structural Consultants, Inc.
200 East Mathew, Brody Street
Tulsa, Oklahoma 74103

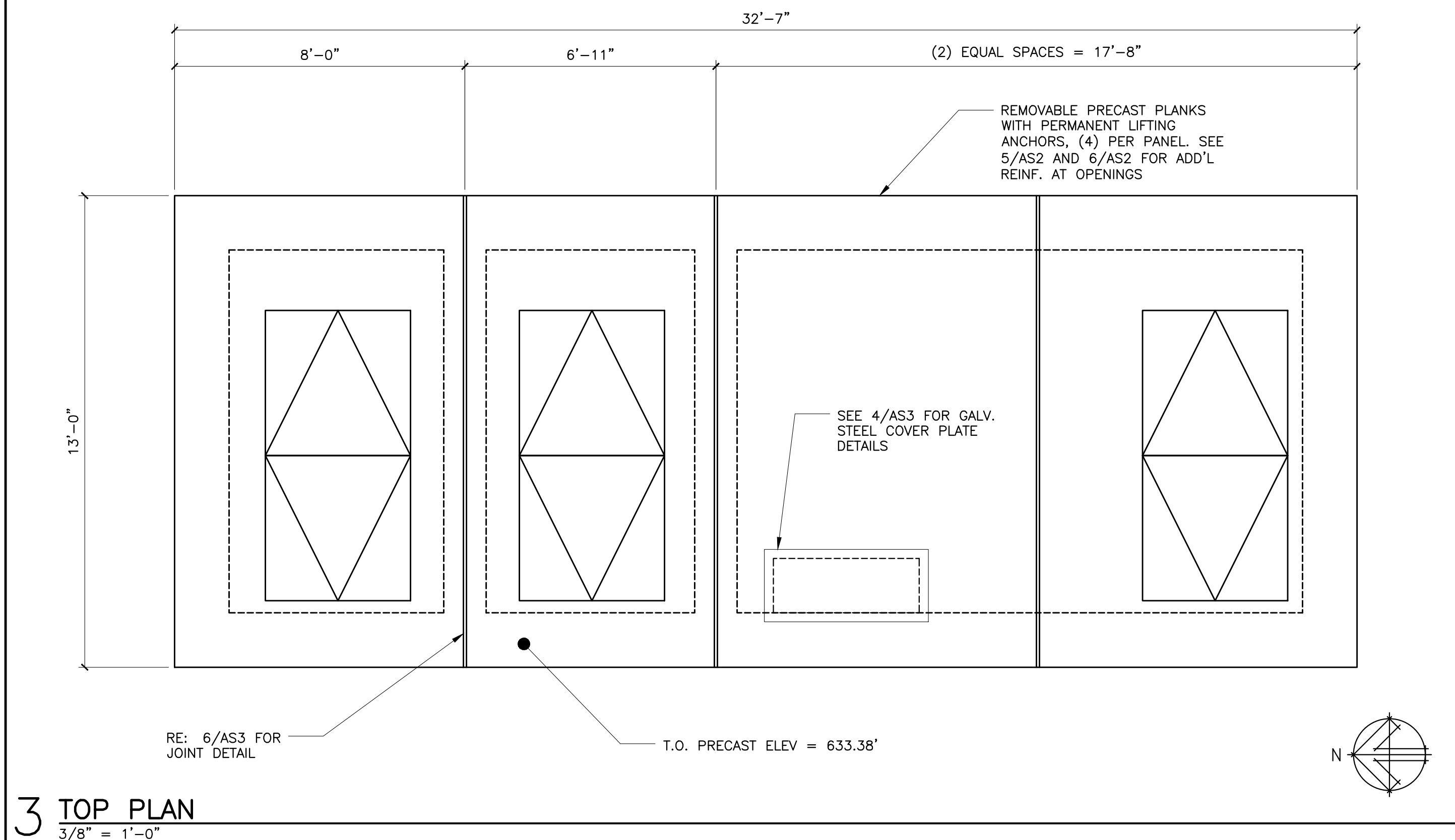
REVISION	BY	DATE	PLAN SCALE:	DRAWN	LA	08/20	APPROVED:
			NOT TO SCALE	DESIGNED	KR	08/20	
				SURVEY			
			PROFILE SCALE	PROJ. MGR.			
			HORIZONTAL:	LEAD ENGR.			
			VERTICAL:	FIELD MGR.			
				RECOMMENDED			
				DESIGN MANAGER			CITY ENGINEER
			FILE: BS-3.DWG	DRAWING: BS3			OCTOBER 2020
			ATLAS PAGE NO:				SHEET 35 OF 65



1 SECTIONAL PLAN
3/8" = 1'-0"



2 SECTIONAL PLAN
3/8" = 1'-0"



3 TOP PLAN
3/8" = 1'-0"

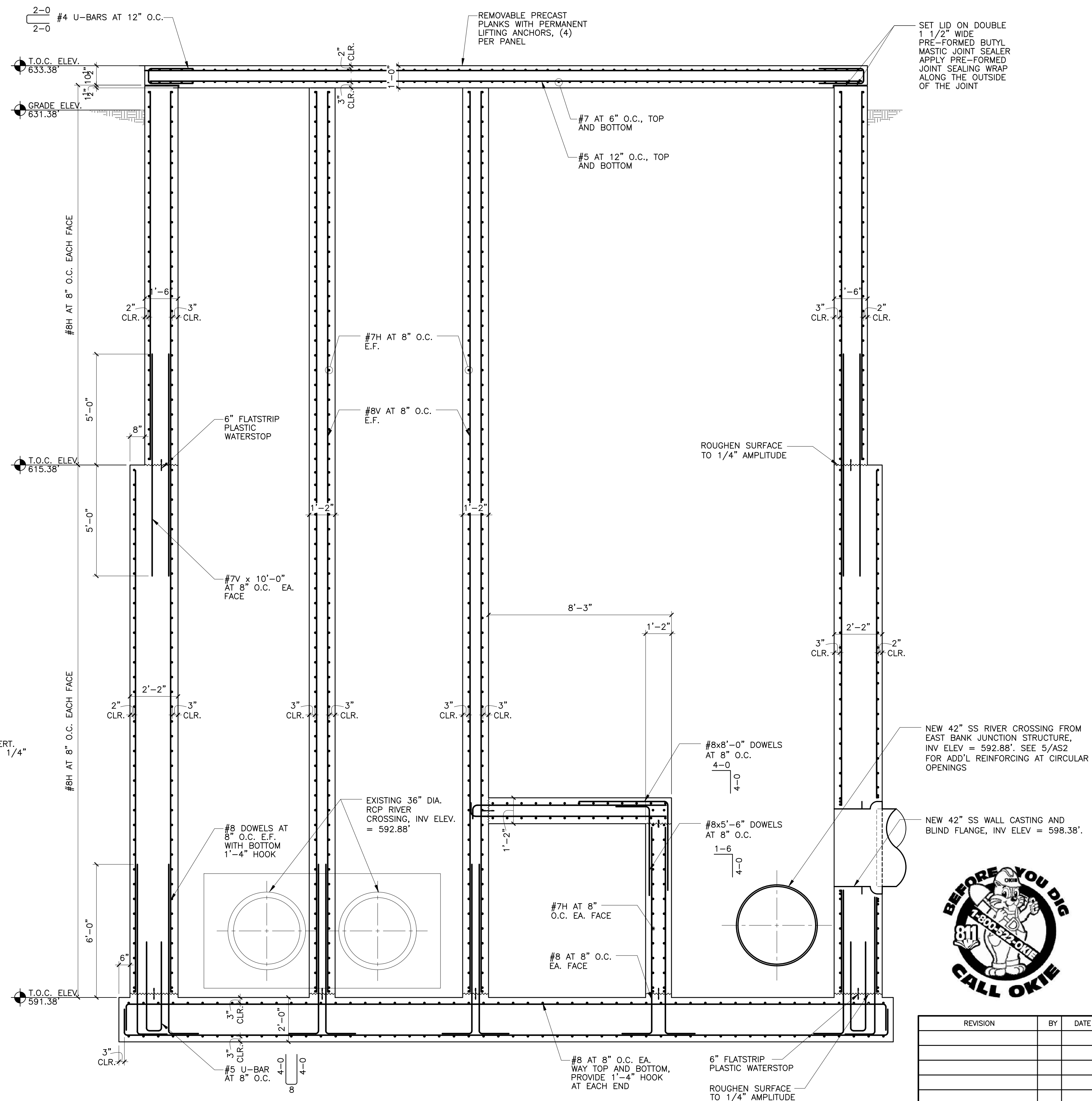
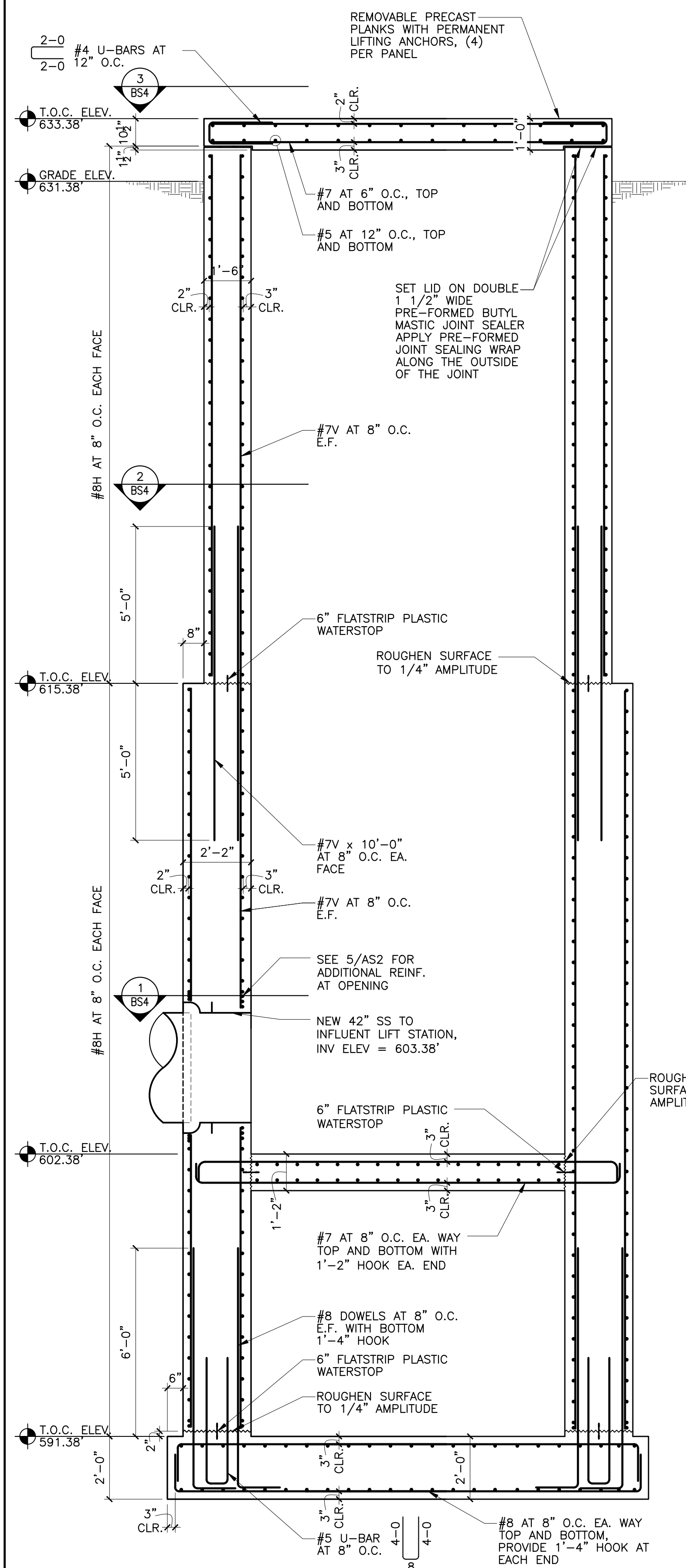
- NOTES:**
1. JUNCTION STRUCTURE MUST BE CONSTRUCTED WITH THE EXISTING DOUBLE 36" RCP IN SERVICE PER THE CONSTRAINTS SPECIFIED.
 2. PLANS FOR BYPASSING FLOW DURING CONSTRUCTION MUST BE APPROVED BY THE ENGINEER.
 3. SAWCUT EXISTING SEWER AT INSIDE FACE OF STRUCTURAL WALL. REPAIR DAMAGED CONCRETE AS REQUIRED.
 4. CONTRACTOR TO COORDINATE CONSTRUCTION SEQUENCE.
 5. ALL INTERIOR WALL SURFACES AND UNDER TOP SLAB SHALL HAVE CHEMICAL RESISTANT EPOXY COATING SYSTEM APPLIED PER SPECIFICATIONS.
 6. BACKFILL SHALL NOT BE PLACED AGAINST WALLS UNTIL ALL CONCRETE HAS REACHED IT'S DESIGN STRENGTH.
 7. FOR ADDITIONAL REINFORCEMENT AROUND PIPE PENETRATIONS, SEE DETAILS 5 AND 6 ON SHEET AS2.
 8. ALL CONSTRUCTION JOINTS MUST BE APPROVED BY THE ENGINEER. CONTRACTOR SHALL SUBMIT ALL PROPOSED CONSTRUCTION JOINT LOCATIONS TO THE ENGINEER FOR APPROVAL.



OKCA #1460
Exp. Date: 06/30/21



STRUCTURAL – WEST BANK JUNCTION STRUCTURE PLANS									
PROJECT NO. 2015-17, C1									
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES									
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT									
PLANS AND ESTIMATES PREPARED BY: <i>wallace</i> Wallace Engineering Structural Consultants, Inc. 200 East Mathew Brody Street Tulsa, Oklahoma 74103									
REVISION		BY	DATE	PLAN SCALE:	DRAWN	LA	08/20	APPROVED:	
				NOT TO SCALE	DESIGNED	KR	08/20		
					SURVEY				
				PROFILE SCALE	PROJ. MGR.			CITY ENGINEER	
				HORIZONTAL:	LEAD ENGR.				
				VERTICAL:	FIELD MGR.				
					RECOMMENDED				
					DESIGN MANAGER				
				FILE: BS-4.DWG	DRAWING: BS4			OCTOBER 2020	
				ATLAS PAGE NO:				SHEET 36 OF 65	



OKCA #1460
Exp. Date: 06/30/21

STRUCTURAL – WEST BANK JUNCTION STRUCTURE SECTIONS AND DETAILS

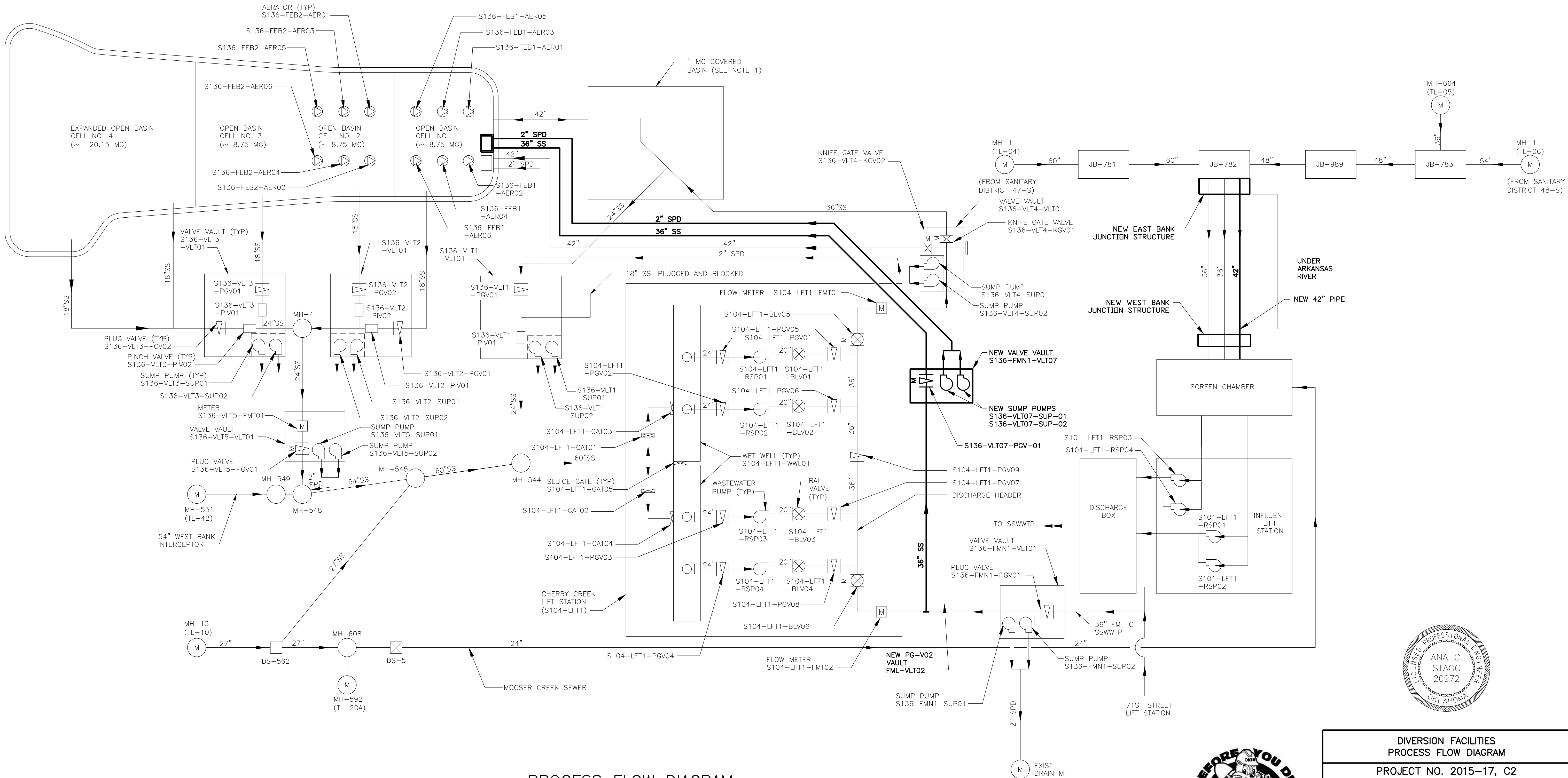
PROJECT NO. 2015-17, C1

**SOUTHSIDE WASTEWATER TREATMENT PLANT
PEAK FLOW OPTIMIZATION: THIRD RIVER
CROSSING AND DIVERSION FACILITIES**

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY: *wallace*  Wallace Engineering
Structural Consultants, Inc.
200 East Mathew Brady Street
Tulsa, Oklahoma 74103

REVISION			BY	DATE	PLAN SCALE:	DRAWN	LA	08/20	APPROVED:
					NOT TO SCALE	DESIGNED	KR	08/20	
						SURVEY			
					PROFILE SCALE	PROJ. MGR.			
					HORIZONTAL:	LEAD ENGR.			
						FIELD MGR.			
					VERTICAL:	RECOMMENDED			
						DESIGN MANAGER			
								CITY ENGINEER	
					FILE: BS-5.DWG	DRAWING: BS5			OCTOBER 2020
					ATLAS PAGE NO:				SHEET 37 OF 65



PROCESS FLOW DIAGRAM

SCALE: NOT TO SCALE

NOTE:

- 1 MG COVERED BASIN FILLS THROUGH EXISTING 42" AS OPEN BASIN CELL NO. 1. WATER SURFACE ELEVATION EXCEEDS ELEVATION 636.00.
- ALL WORK ASSOCIATED WITH DIVERSION FACILITIES ARE INCLUDED IN ADDITIVE ALTERNATE BID ITEM NO. 1.



DIVERSION FACILITIES PROCESS FLOW DIAGRAM

PROJECT NO. 2015-17, C2

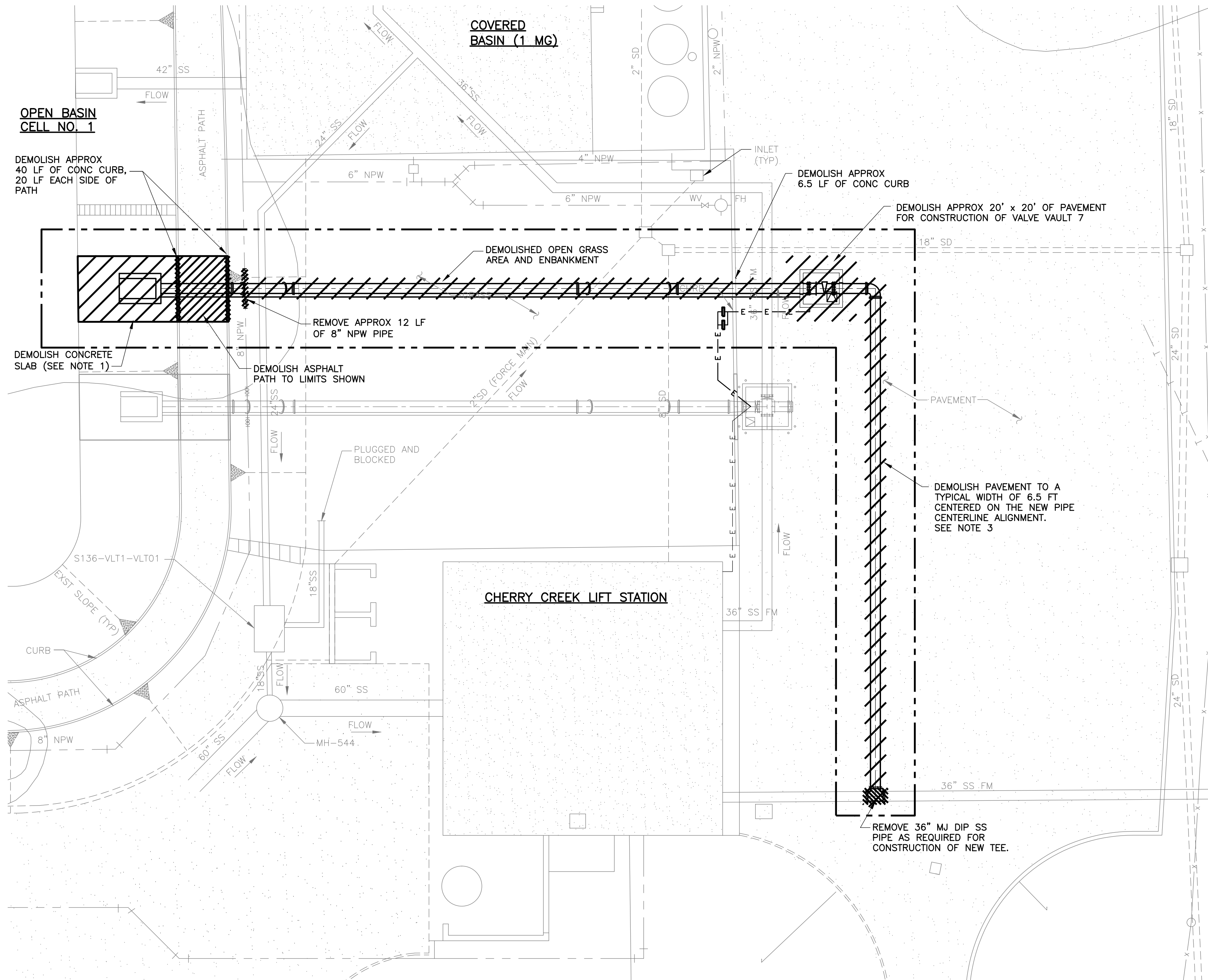
SOUTHSIDE WASTEWATER TREATMENT PLANT
PEAK FLOW OPTIMIZATION: THIRD RIVER
CROSSING AND DIVERSION FACILITIES

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

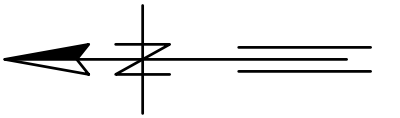
PLANS AND ESTIMATES PREPARED BY: **GREELEY AND HANSEN**
321 S BOSTON AVE, SUITE 300
TULSA, OKLAHOMA 74103

REVISION	BY	DATE	PLAN SCALE:	DRAWN	RKY	8/2020	APPROVED:
			1"=20'	DESIGNED	TCG	8/2020	
			SURVEY				
			PROFILE SCALE	PROJ. MGR.			
			HORIZONTAL:	LEAD ENGR.			
			VERTICAL:	FIELD MGR.			
				RECOMMENDED			
				DESIGN MANAGER			CITY ENGINEER
			FILE: 0141ERCC01	DRAWING: CC1			DATE: OCTOBER 2020
			ATLAS PAGE NO:				SHEET 38 OF 65

\\GH-DATA01\CLIENT\0141E - SSWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERCC02 2020\10\08 1:12 PM KETENBRINK, BUTCH




DEMOLITION PLAN
SCALE: 1"=20'

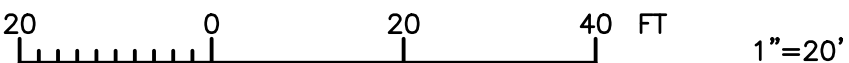


NOTES:

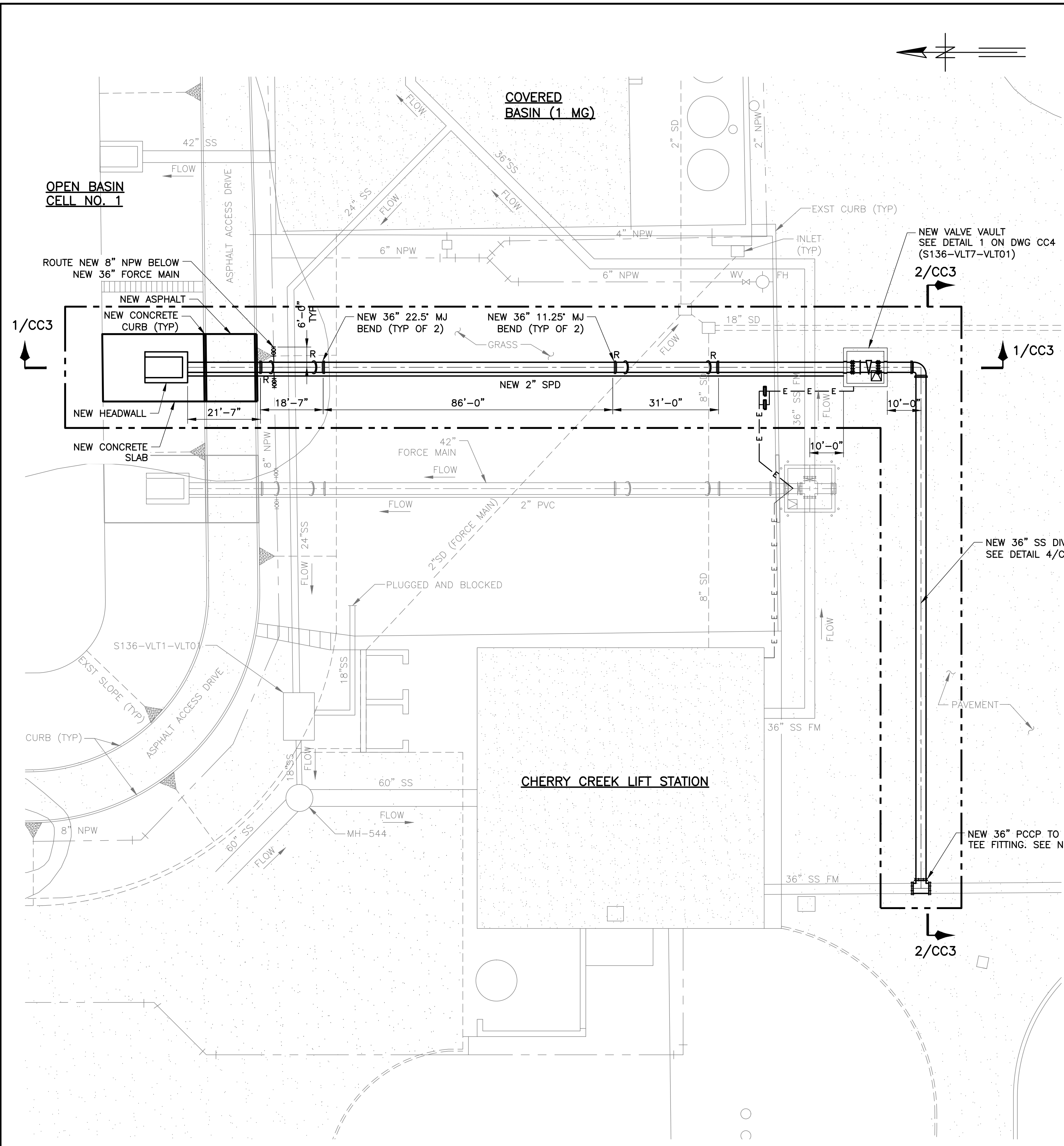
1. REMOVE AND REPLACE CONCRETE SLAB TO THE NEAREST CONSTRUCTION JOINT.
2. PROTECT ALL EXISTING PROCESS PIPES AND UTILITIES DURING CONSTRUCTION.
3. REMOVE AND REPLACE PAVEMENT PER DETAILS 1/CC5 AND 2/CC5 ON DRAWING CC5.
4. ALL WORK ASSOCIATED WITH DIVERSION FACILITIES ARE INCLUDED IN ADDITIVE ALTERNATE BID ITEM NO. 1.



DIVERSION FACILITIES DEMOLITION PLAN									
PROJECT NO. 2015-17, C2									
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES									
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT									
PLANS AND ESTIMATES PREPARED BY:				 321 S BOSTON AVE, SUITE 300 TULSA, OKLAHOMA 74103					
REVISION				PLAN SCALE:	DRAWN	RKY	8/2020	APPROVED:	
				1"=20'	DESIGNED	TCG	8/2020		
					SURVEY				
				PROFILE SCALE	PROJ. MGR.				
				HORIZONTAL:	LEAD ENGR.				
					FIELD MGR.			CITY ENGINEER	
				VERTICAL:	RECOMMENDED				
					DESIGN MANAGER				
				FILE: 0141ERCC02	DRAWING: CC2	DATE:	OCTOBER 2020		
				ATLAS PAGE NO:		SHEET	39 OF 65		



\\SH-DATA01\CLIENT\0141E - SSWWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERC03 2020\10\09 10:41 AM KETENBRINK, BUTCH



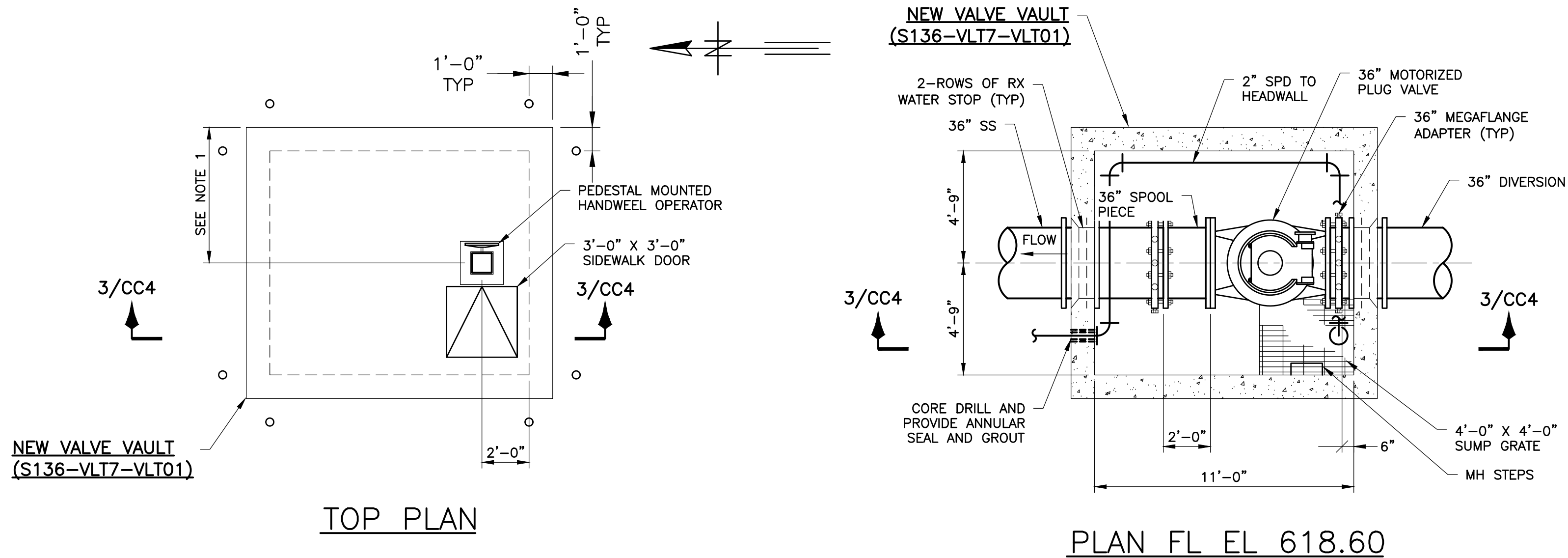
EXISTING AND NEW YARD PIPING PLAN
SCALE: 1" = 20'

- NOTES:
- CONTRACTOR TO PROVIDE A NEW 36" PCPP TO DI TEE FITTING WITH A FLANGE CONNECTION ON THE BRANCH END OF FITTING. THE SPECIFIED FITTING SHALL MEET AWWA C301. SUBMIT SHOP DRAWINGS AND DESIGN CALCULATIONS FOR APPROVAL BY ENGINEER.
 - ALL WORK ASSOCIATED WITH DIVERSION FACILITIES ARE INCLUDED IN ADDITIVE ALTERNATE BID ITEM NO. 1.



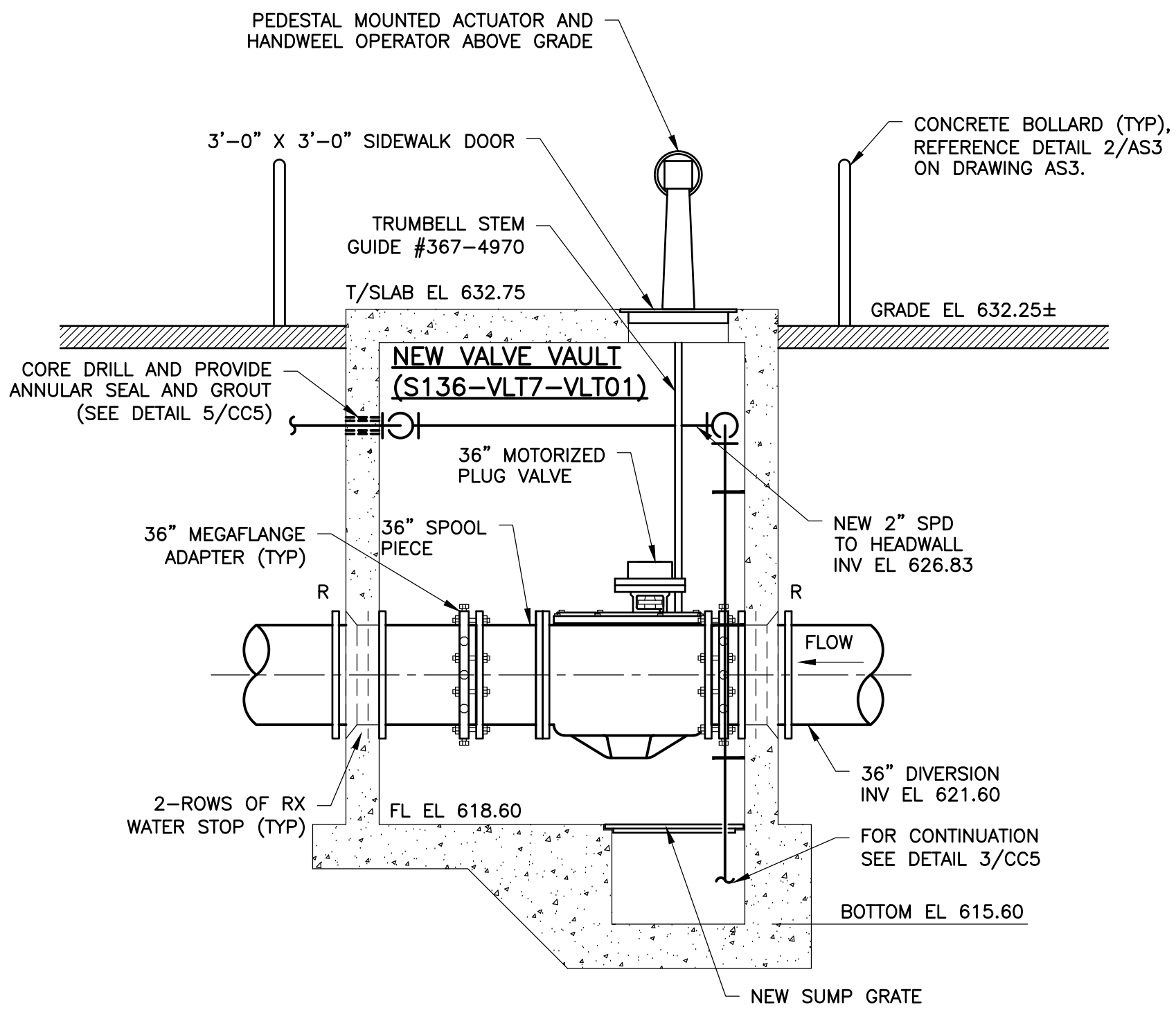
REVISION		BY	DATE	PLAN SCALE:	DRAWN	RKY	8/2020	APPROVED:
				1"=20'	DESIGNED	TCG	8/2020	
					SURVEY			
				PROFILE SCALE	PROJ. MGR.			
				HORIZONTAL:	LEAD ENGR.			
				VERTICAL:	FIELD MGR.			
					RECOMMENDED			
					DESIGN MANAGER			
				FILE: 0141ERC03	DRAWING: CC3		DATE: OCTOBER 2020	
				ATLAS PAGE NO:	SHEET 40 OF 65			

\\BH-DATA01\CLIENT\0141E - SSWWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERCC04 - 2020\10\09 10:25 AM KETENBRINK, BUTCH



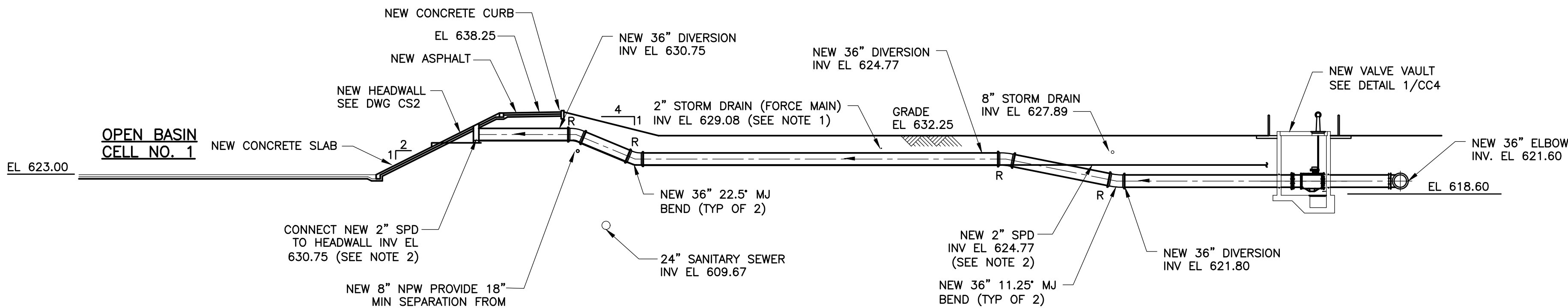
NOTES:

- COORDINATE LOCATION OF VALVE STEM PENETRATION WITH APPROVED VALVE SUBMITTAL.
- FIELD VERIFY EXISTING 8" DRAIN PIPE MATERIAL AND PROVIDE ALL NECESSARY FITTINGS AND APPURTENANCES FOR NEW 2" SPD CONNECTION.



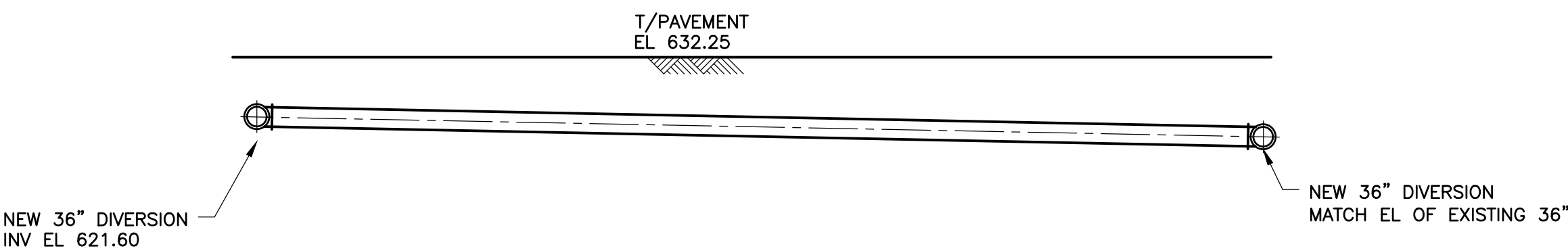
DETAIL 1/CC4 - S136-VLT7-VLT01

SCALE: 1-4" = 1'-0"



SECTION 1/CC3

SCALE: 1" = 20'

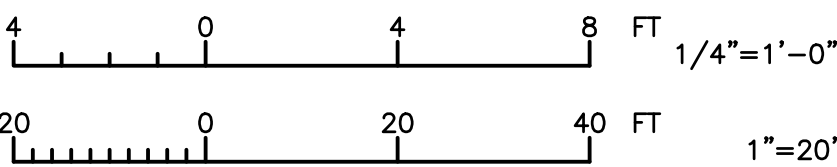


SECTION 2/CC3

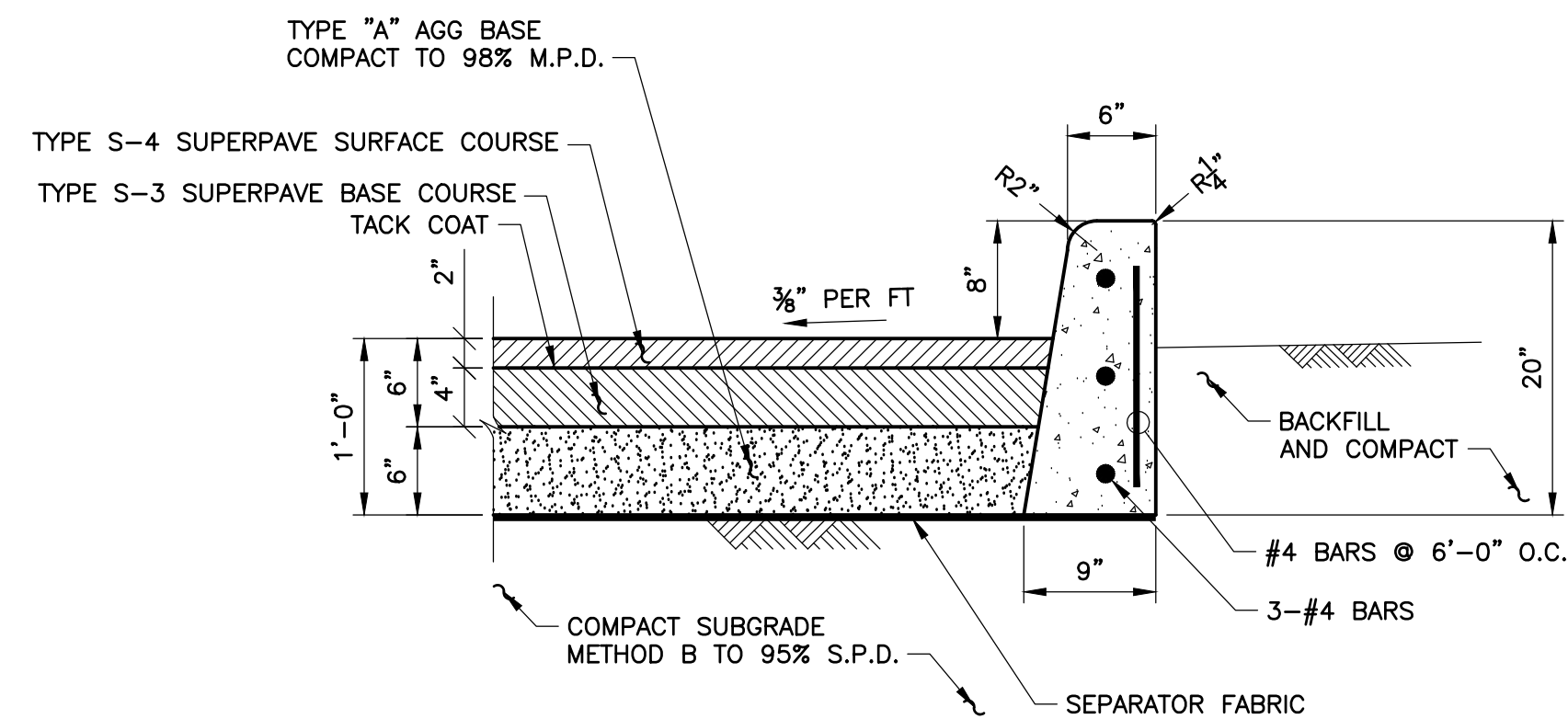
SCALE: 1" = 20'

NOTE:

- INVERT ELEVATION IS ESTIMATED. IF 2" STORM DRAIN (FORCE MAIN) IS IN CONFLICT WITH NEW 36" DIVERSION, REROUTE 2" SD BELOW 36" DIVERSION APPROXIMATELY 15 FEET EACH SIDE OF THE 36" DIVERSION CENTERLINE.
- PLACE 2" SPD IN SAME TRENCH AS NEW FORCE MAIN AND MAINTAIN MINIMUM 36" COVER.
- ALL WORK ASSOCIATED WITH DIVERSION FACILITIES ARE INCLUDED IN ADDITIVE ALTERNATE BID ITEM NO. 1.

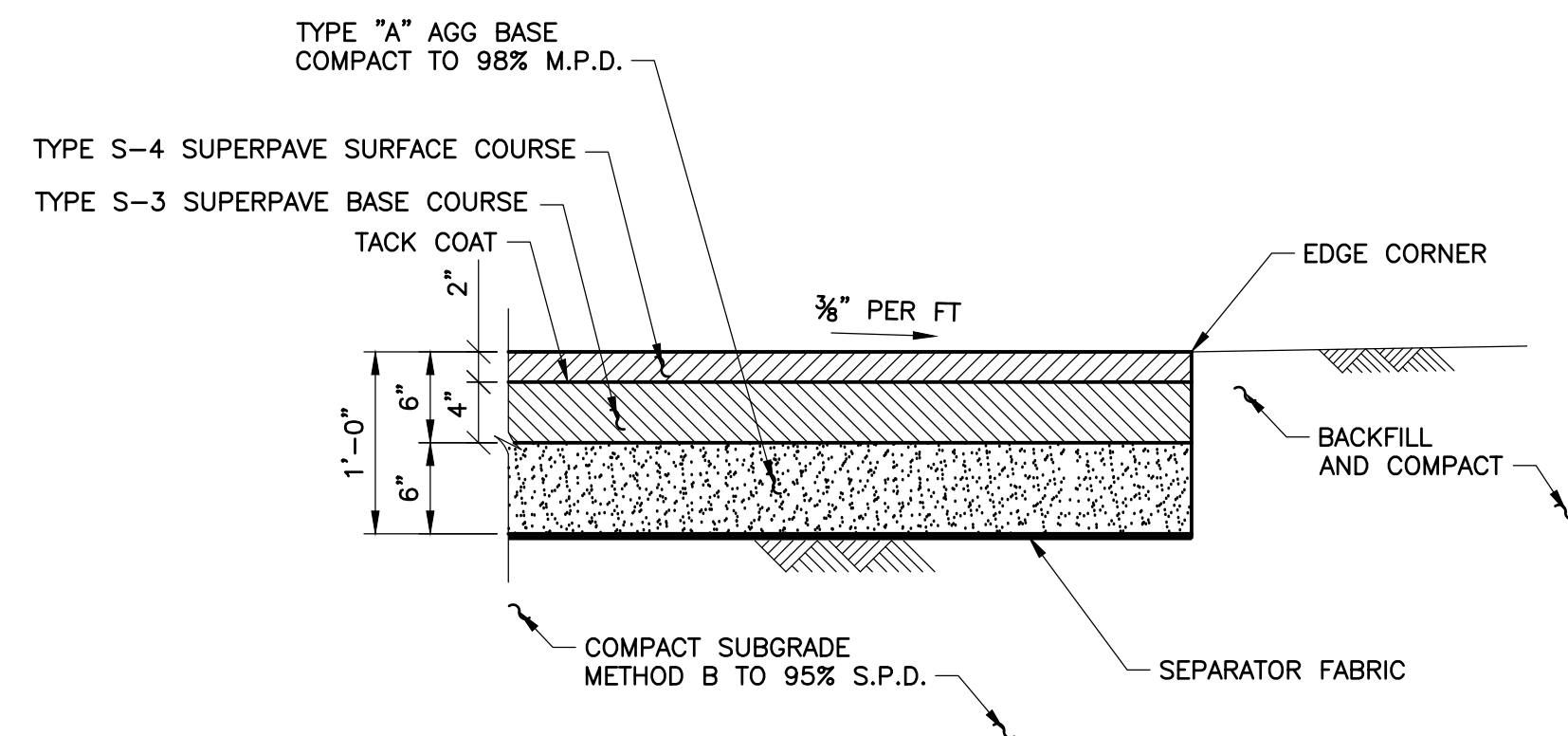


DIVERSION FACILITIES VALVE VAULT PLANS AND SECTIONS									
PROJECT NO. 2015-17, C2									
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES									
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT									
PLANS AND ESTIMATES PREPARED BY: GREELEY AND HANSEN 321 S BOSTON AVE, SUITE 300 TULSA, OKLAHOMA 74103									
REVISION		BY	DATE	PLAN SCALE:	DRAWN	RKY	8/2020	APPROVED:	
				AS SHOWN	DESIGNED	TCG	8/2020		
				SURVEY					
				PROFILE SCALE	PROJ. MGR.				
				HORIZONTAL:	LEAD ENGR.				
				VERTICAL:	FIELD MGR.				
					RECOMMENDED				
					DESIGN MANAGER				
								CITY ENGINEER	
				FILE: 0141ERCC04	DRAWING: CC4			DATE: OCTOBER 2020	
				ATLAS PAGE NO:				SHEET 41 OF 65	



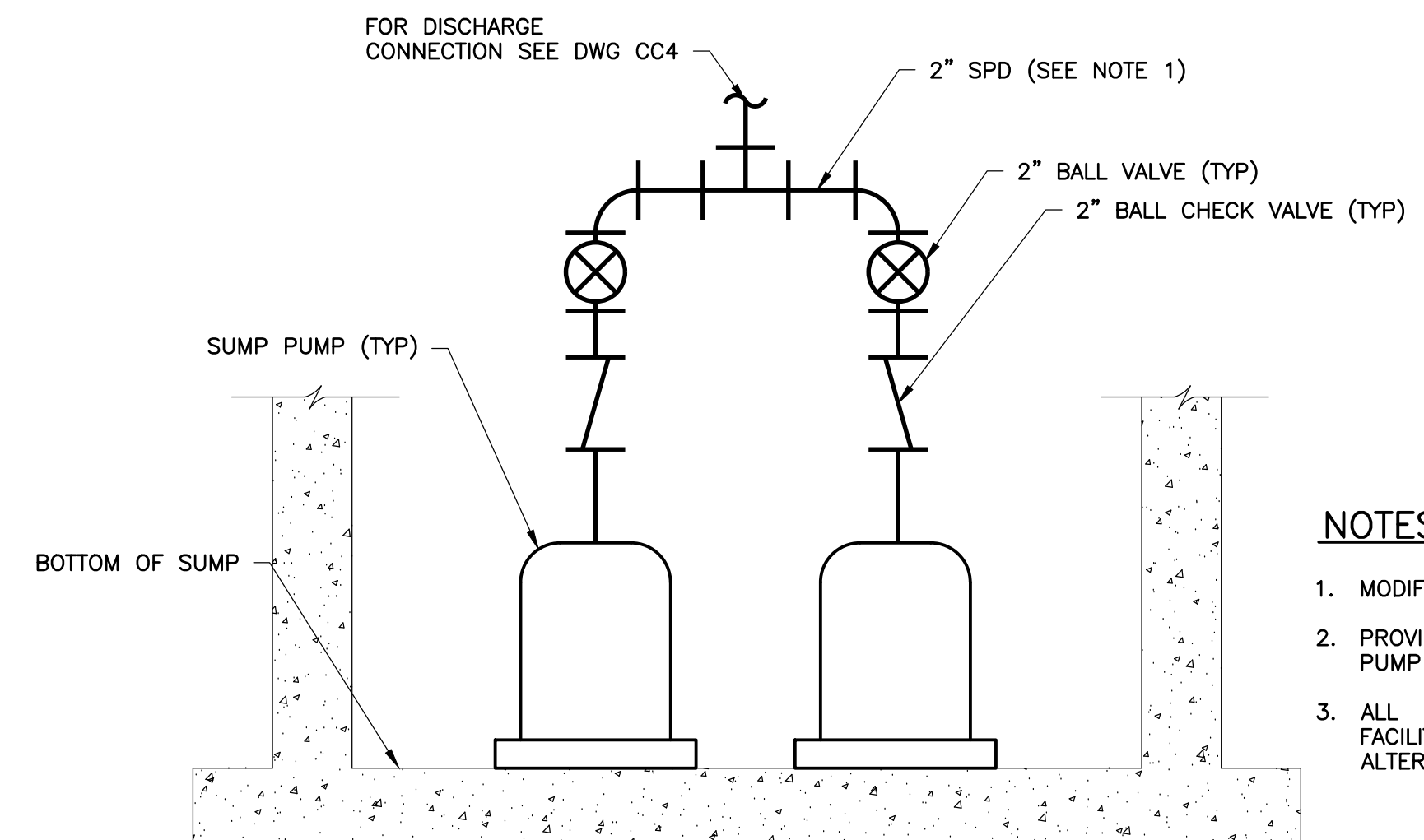
DETAIL 1/CC5 – TYPICAL PAVING
SECTION W/CONCRETE CURB

SCALE: NOT TO SCALE



DETAIL 2/CC5 - TYPICAL PAVING SECTION W/O CURB

SCALE: NOT TO SCALE

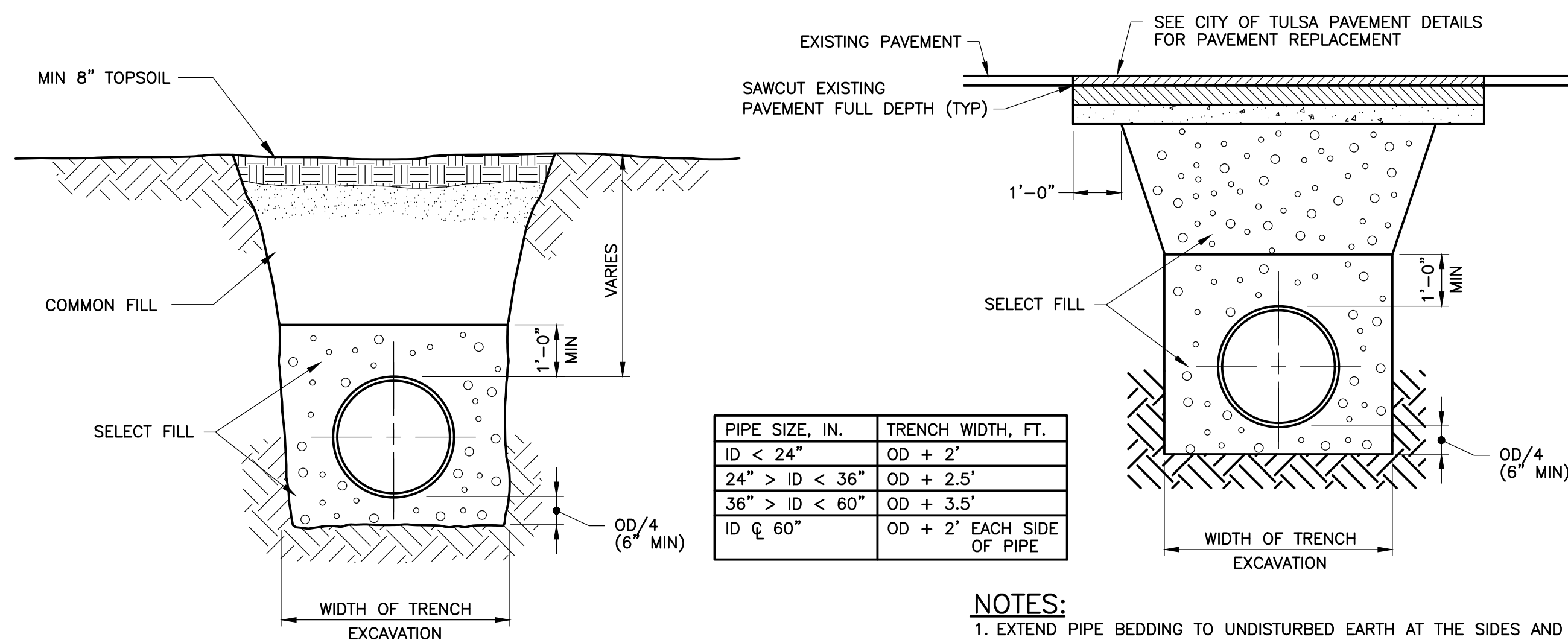


TYPICAL DETAIL 3/CC5
DUPLEX SUMP PUMP PIPING DIAGRAM

SCALE: NOT TO SCALE

NOTES:

1. MODIFY PIPING TO FIT FIELD CONDITIONS.
2. PROVIDE TRUE UNION VALVES ON SUMP PUMP DISCHARGE PIPING.
3. ALL WORK ASSOCIATED WITH DIVERSION FACILITIES ARE INCLUDED IN ADDITIVE ALTERNATE BID ITEM NO. 1.

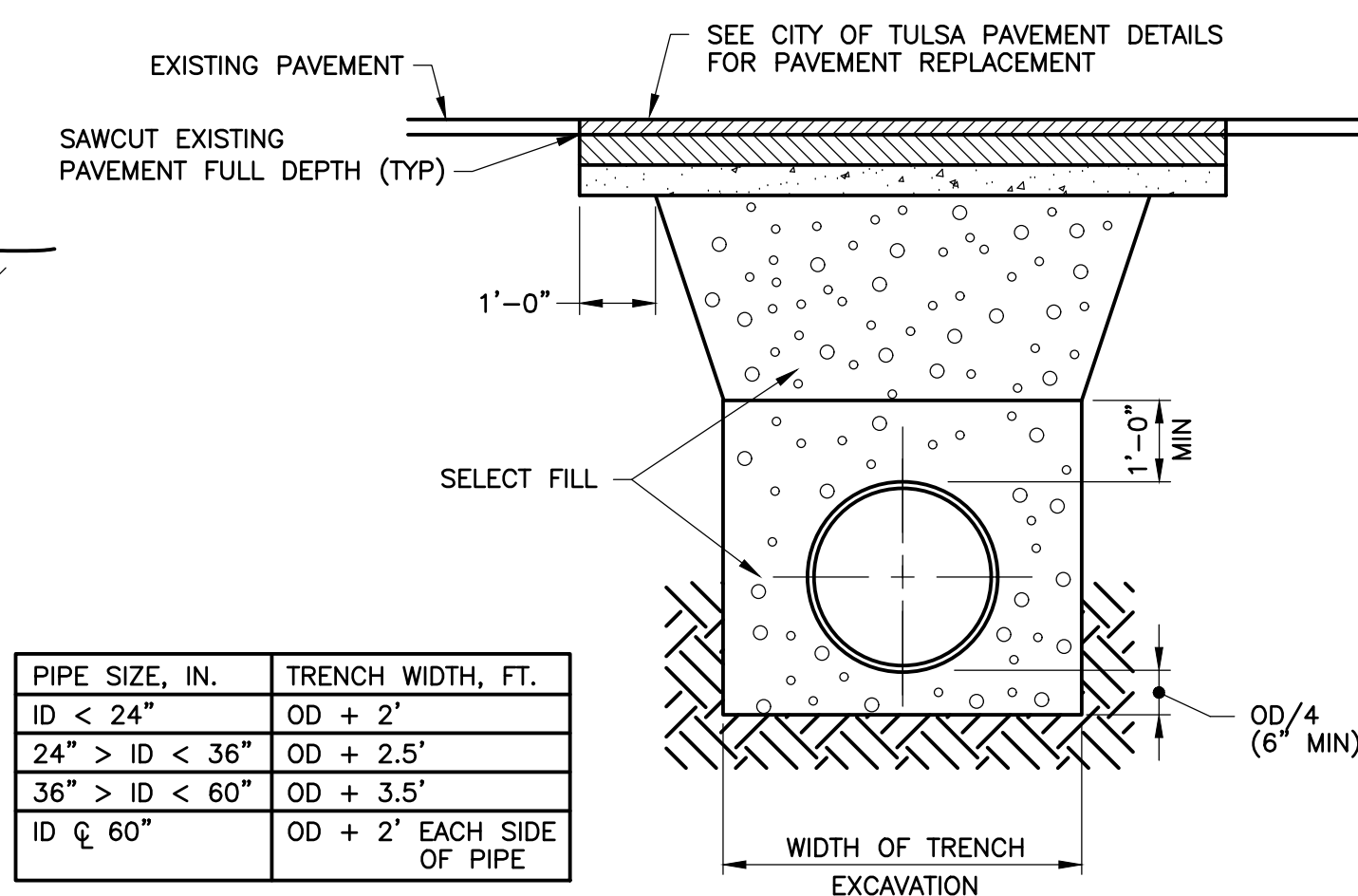


NOTES:

1. EXTEND PIPE BEDDING TO UNDISTURBED EARTH AT THE SIDES AND BOTTOM OF THE TRENCH.
2. SEE SPECIFICATION 31 23 23 FOR MATERIAL REQUIREMENTS, PLACEMENT AND COMPACTION OF PIPE BEDDING AND TRENCH BACKFILL.
3. TRENCH OUTLINES DO NOT INDICATE ACTUAL TRENCH EXCAVATION SHAPE OF SOIL CONDITIONS. EMBEDMENT MATERIAL SHALL EXTEND THE FULL WIDTH OF THE ACTUAL TRENCH EXCAVATION.

TRENCH DETAIL UNIMPROVED AREAS

SCALE: NOT TO SCALE

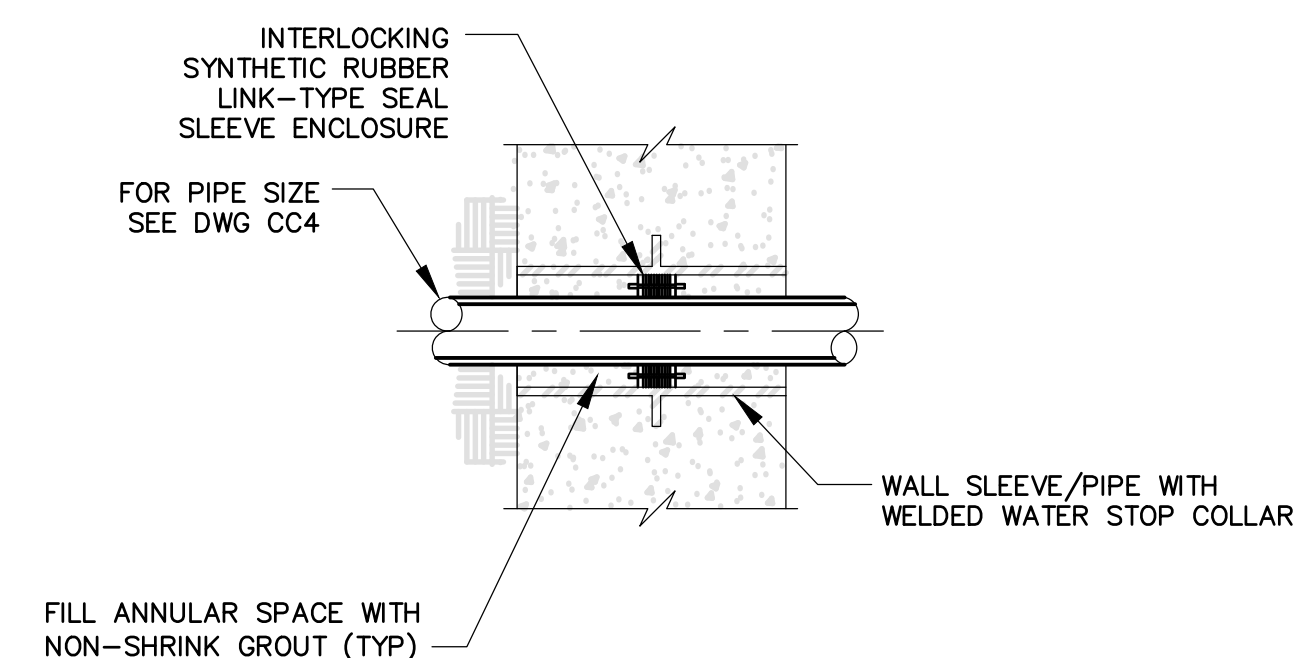


NOTES:

1. EXTEND PIPE BEDDING TO UNDISTURBED EARTH AT THE SIDES AND BOTTOM OF THE TRENCH.
2. SEE SPECIFICATION 31 23 23 FOR MATERIAL REQUIREMENTS, PLACEMENT AND COMPACTION OF PIPE BEDDING AND TRENCH BACKFILL.
3. TRENCH BACKFILL WITHIN A HORIZONTAL DISTANCE OF 5 FEET AND BENEATH ALL ROADWAYS, DRIVEWAYS, PARKING AREAS AND HIGHWAY SHOULDERS SHALL BE FULL DEPTH ODOT TYPE A CRUSHED STONE.
4. TRENCH OUTLINES DO NOT INDICATE ACTUAL TRENCH EXCAVATION SHAPE OF SOIL CONDITIONS. EMBEDMENT MATERIAL SHALL EXTEND THE FULL WIDTH OF THE ACTUAL TRENCH EXCAVATION.

TRENCH DETAIL UNDER IMPROVED AREAS

SCALE: NOT TO SCALE



TYPICAL DETAIL 5/CC5
PIPE SLEEVE THRU WALL

NOT TO SCALE



DIVERSION FACILITIES DETAILS

PROJECT NO. 2015-17, C2

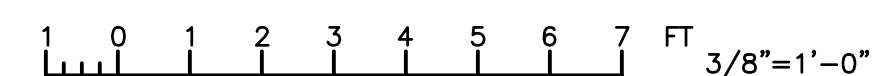
SOUTHSIDE WASTEWATER TREATMENT PLANT
PEAK FLOW OPTIMIZATION: THIRD RIVER
CROSSING AND DIVERSION FACILITIES

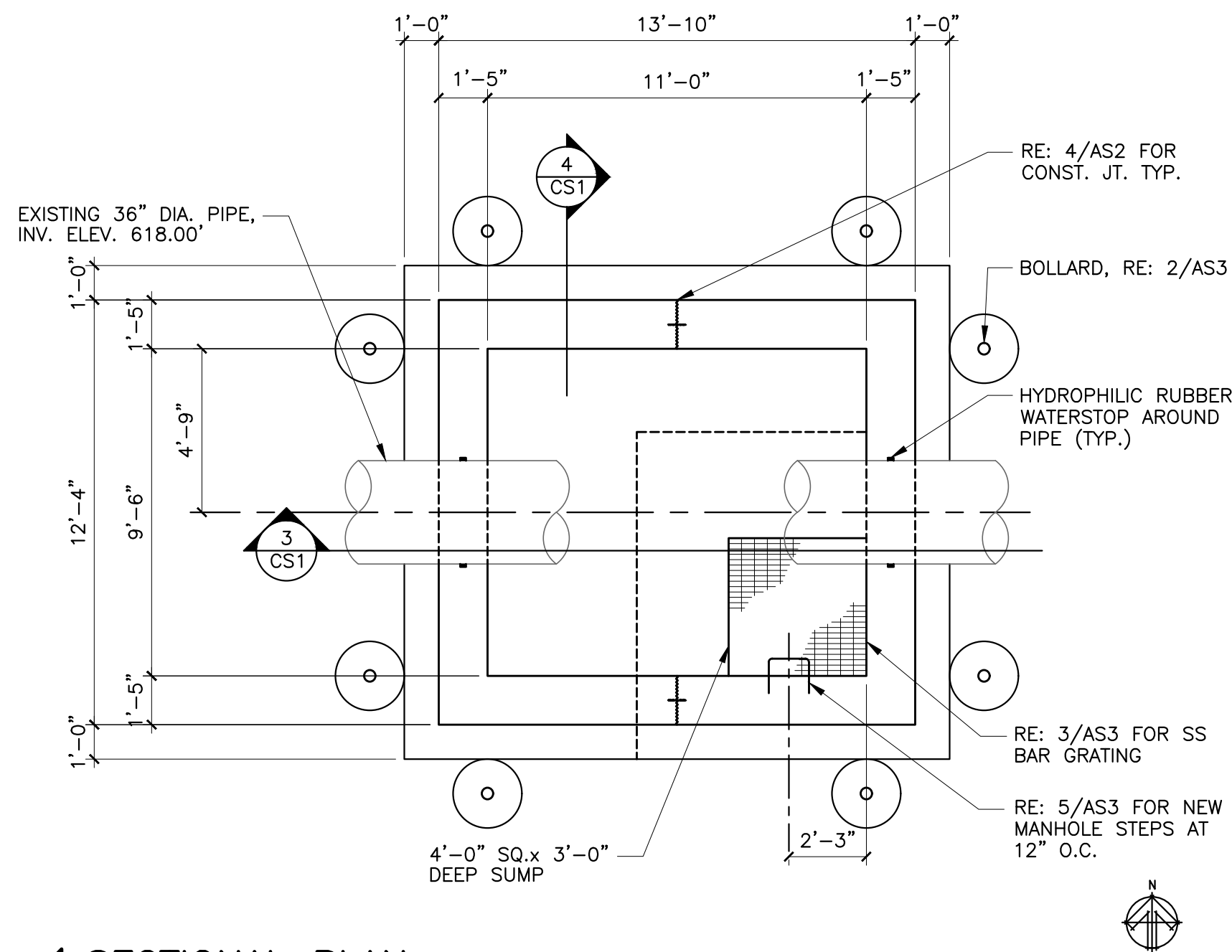
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:

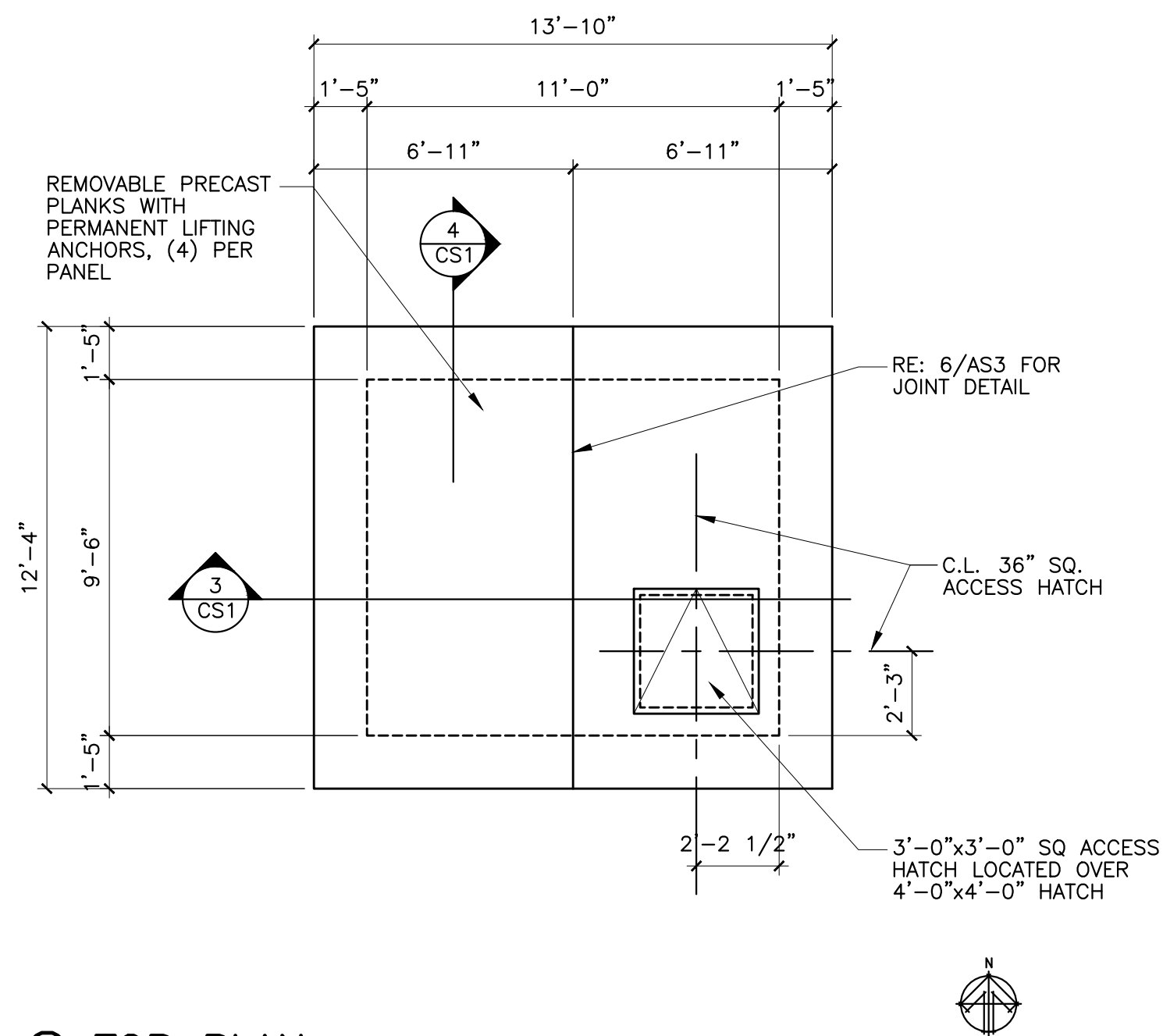
GREELEY AND HANSEN
321 S BOSTON AVE, SUITE 300
TULSA, OKLAHOMA 74103

TULSA, OKLAHOMA 74103							
REVISION	BY	DATE	PLAN SCALE:	DRAWN	RKY	8/2020	APPROVED:
			AS SHOWN	DESIGNED	TCG	8/2020	
				SURVEY			
			PROFILE SCALE	PROJ. MGR.			
			HORIZONTAL:	LEAD ENGR.			
				FIELD MGR.			
			VERTICAL:	RECOMMENDED			
				DESIGN MANAGER			
							CITY ENGINEER
			FILE: 0141ERC005	DRAWING: CC5	DATE: OCTOBER 2020		
			ATLAS PAGE NO:	SHEET 42 OF 65			

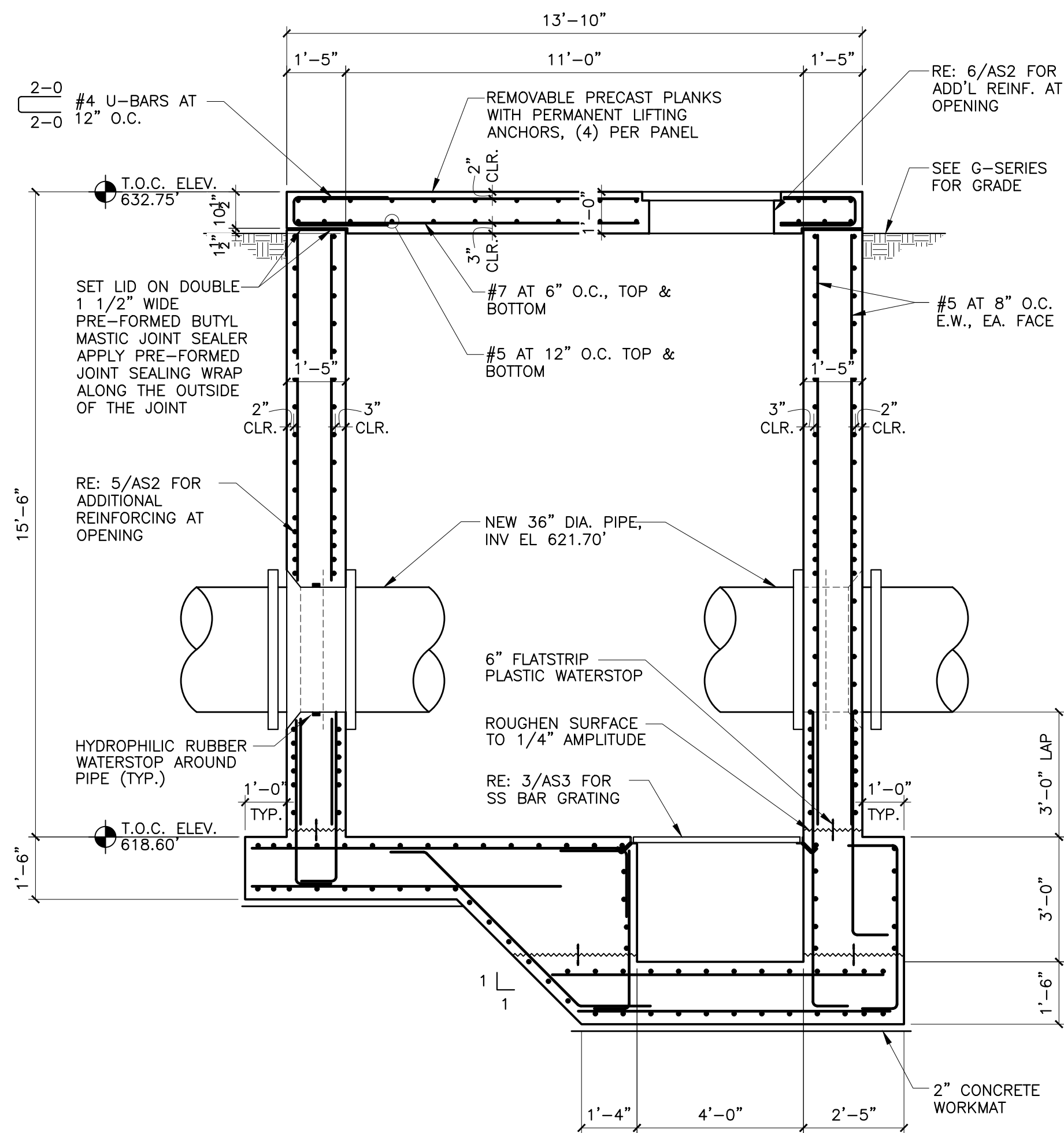




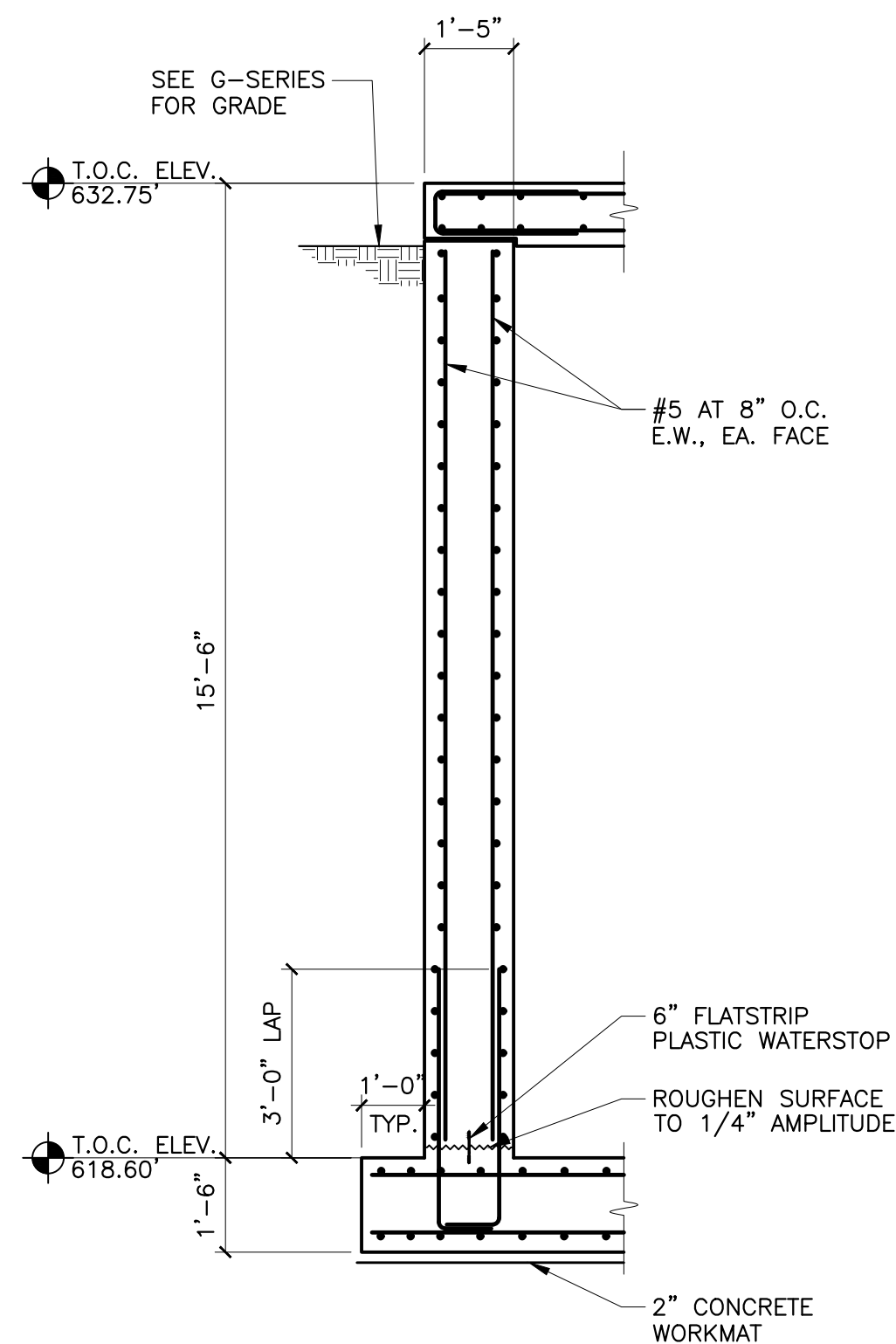
1 SECTIONAL PLAN
1/4" = 1'-0"



2 TOP PLAN
1/4" = 1'-0"



3 SECTION
3/8" = 1'-0"



4 SECTION
3/8" = 1'-0"

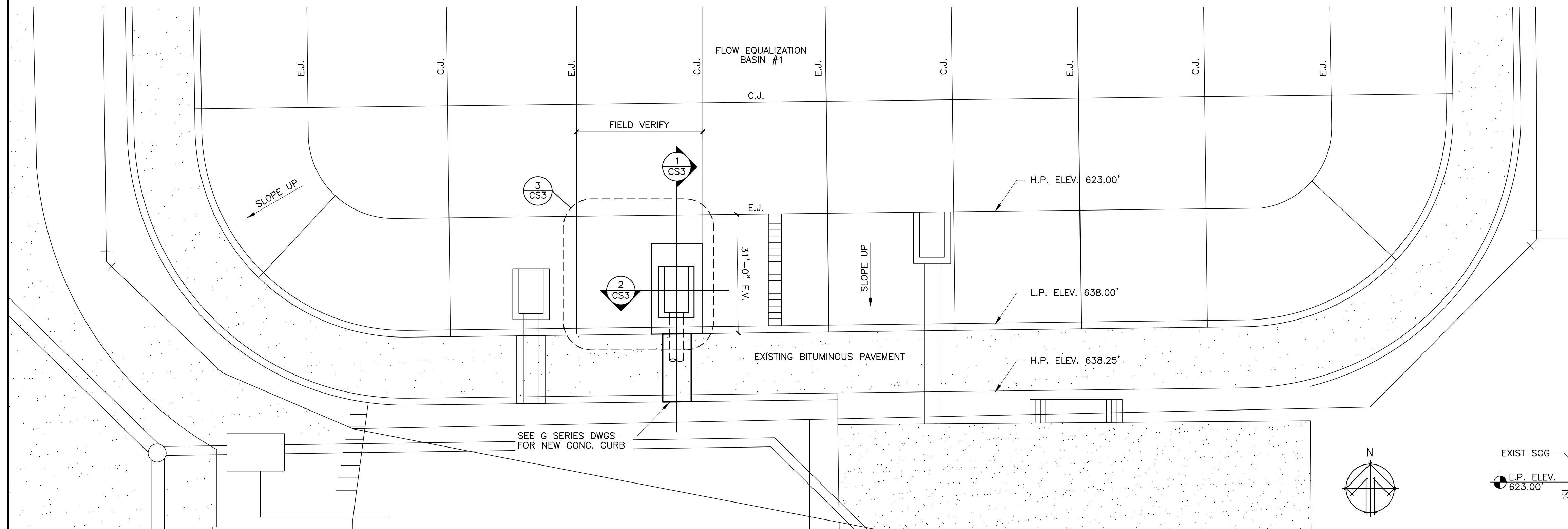
ALL WORK ASSOCIATED WITH DIVERSION FACILITIES ARE INCLUDED IN ADDITIVE ALTERNATE BID ITEM NO. 1.



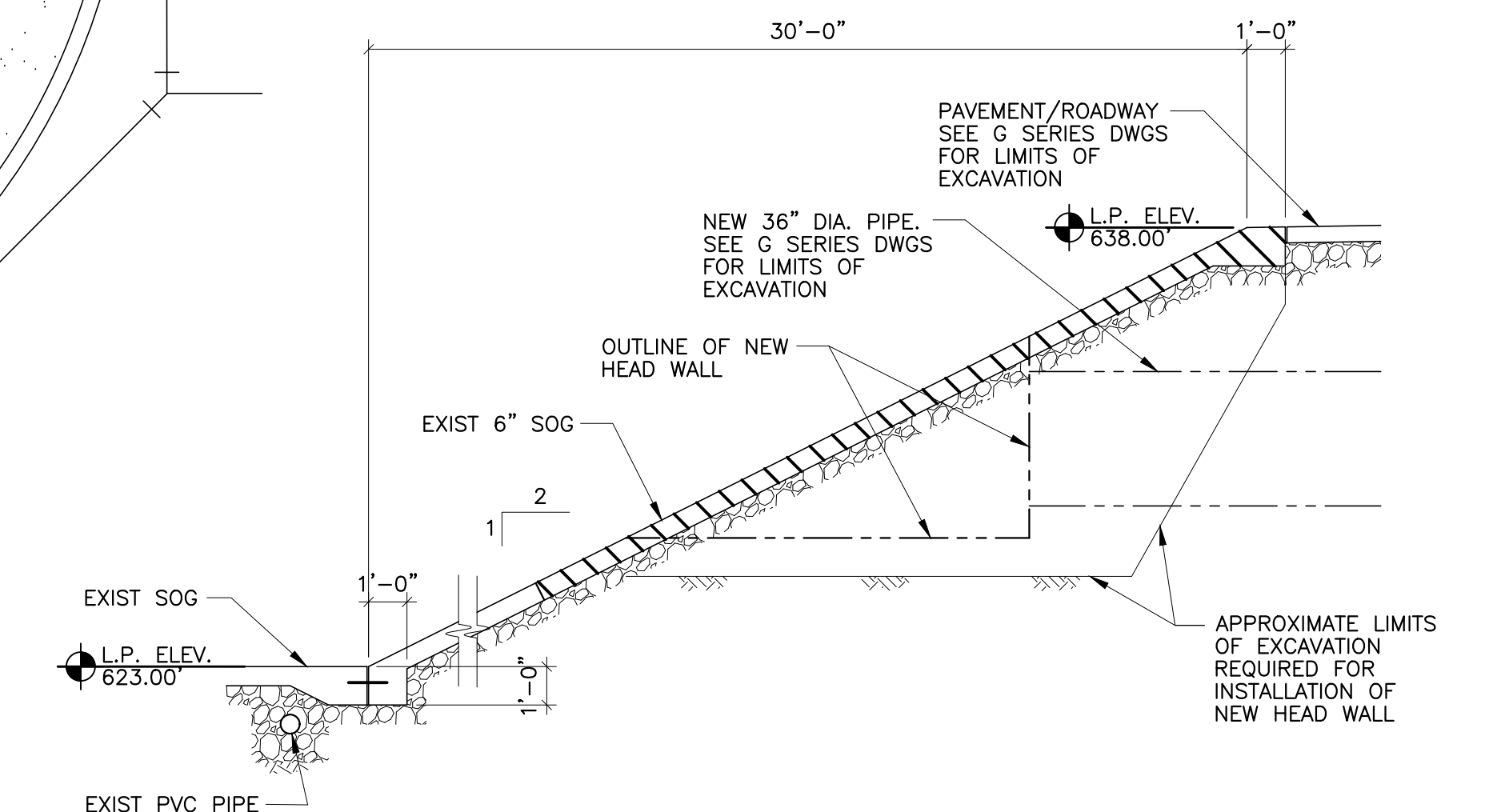
OKCA #1460
Exp. Date: 06/30/21



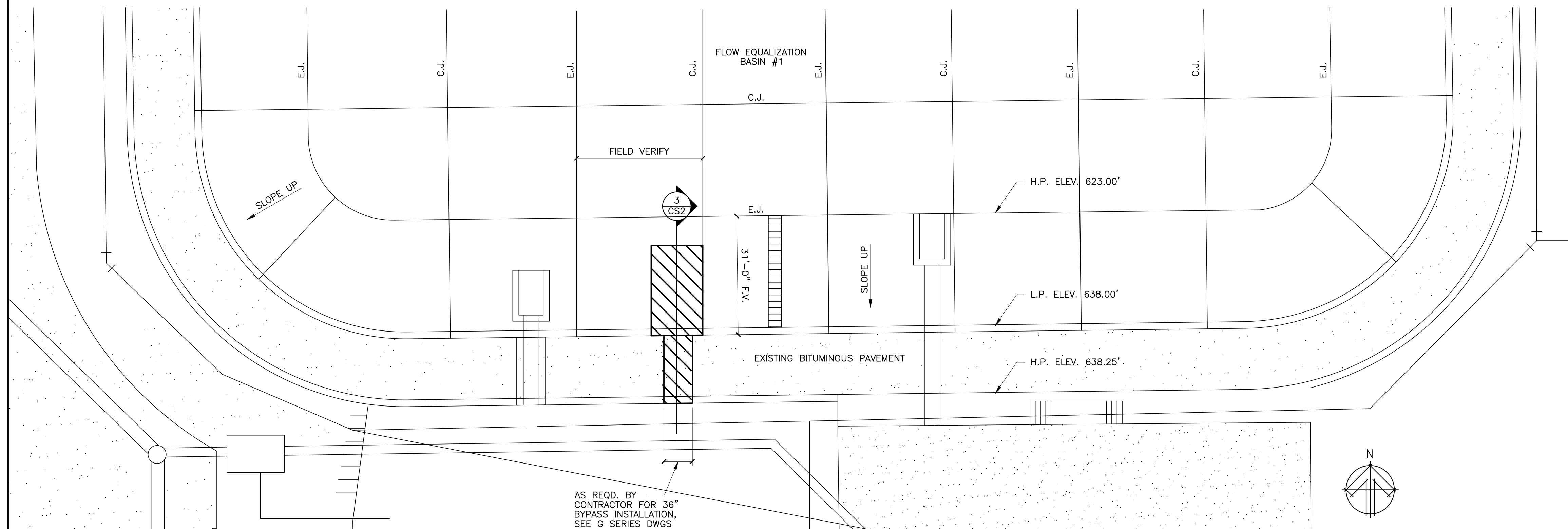
STRUCTURAL - NEW VALVE VAULT PLANS AND SECTIONS									
PROJECT NO. 2015-17, C1									
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES									
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT									
PLANS AND ESTIMATES PREPARED BY: <i>wallace</i> Wallace Engineering Structural Consultants, Inc. 200 East Mathew Brody Street Tulsa, Oklahoma 74103									
REVISION	BY	DATE	PLAN SCALE:	DRAWN	LA	08/20	APPROVED:		
			NOT TO SCALE	DESIGNED	KR	08/20			
				SURVEY					
			PROFILE SCALE	PROJ. MGR.					
			HORIZONTAL:	LEAD ENGR.					
			VERTICAL:	FIELD MGR.					
				RECOMMENDED					
				DESIGN MANAGER			CITY ENGINEER		
			FILE: CS-1.DWG	DRAWING: CS1			OCTOBER 2020		
			ATLAS PAGE NO:				SHEET 43 OF 65		



1 FLOW EQUALIZATION BASIN #1- NEW CONSTRUCTION PLAN
1/16" = 1'-0"



3 SECTION AT EXISTING
1/4" = 1'-0"



2 FLOW EQUALIZATION BASIN #1- DEMOLITION PLAN
1/16" = 1'-0"

LEGEND:

DENOTES AREAS OF DEMOLITION, SEE G SERIES DRAWINGS

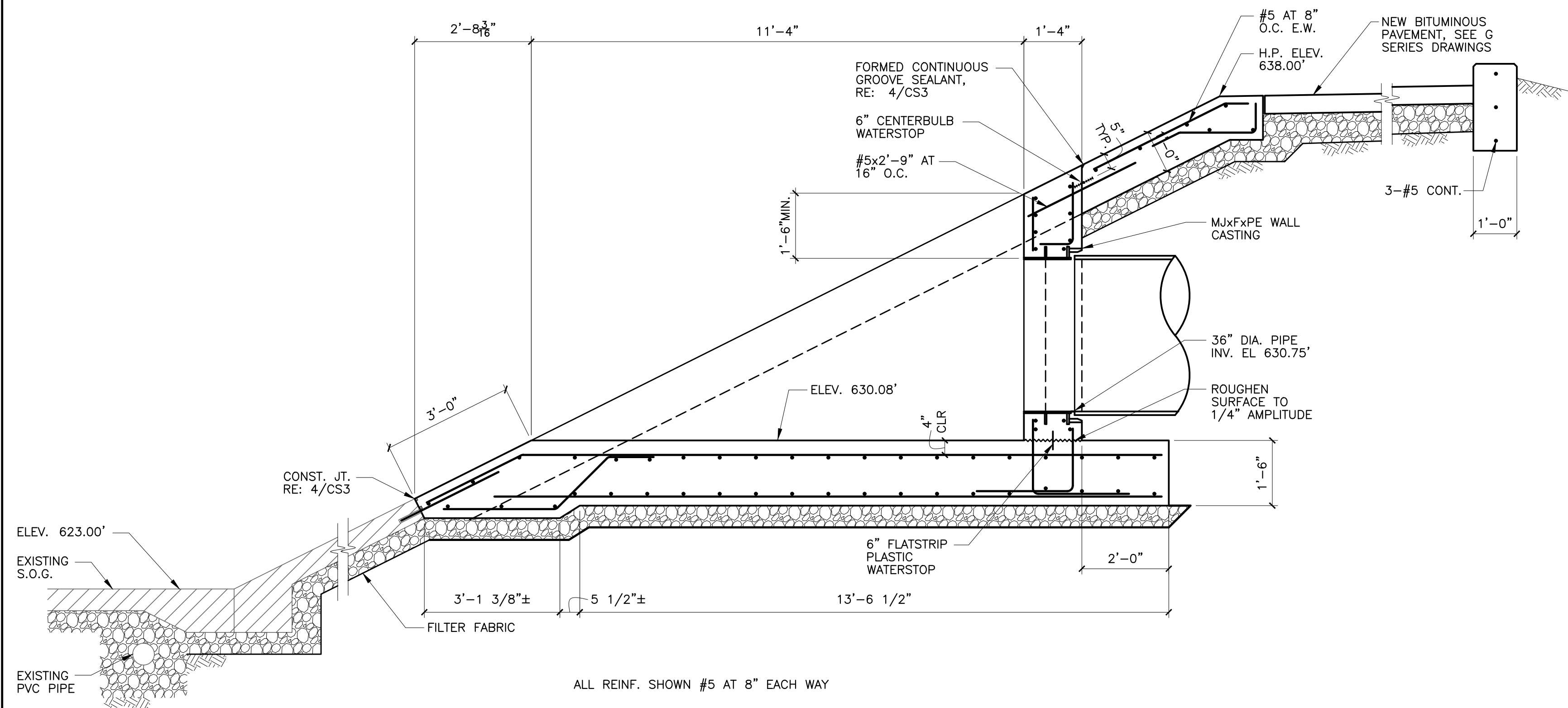
ALL WORK ASSOCIATED WITH DIVERSION FACILITIES ARE INCLUDED IN ADDITIVE ALTERNATE BID ITEM NO. 1.



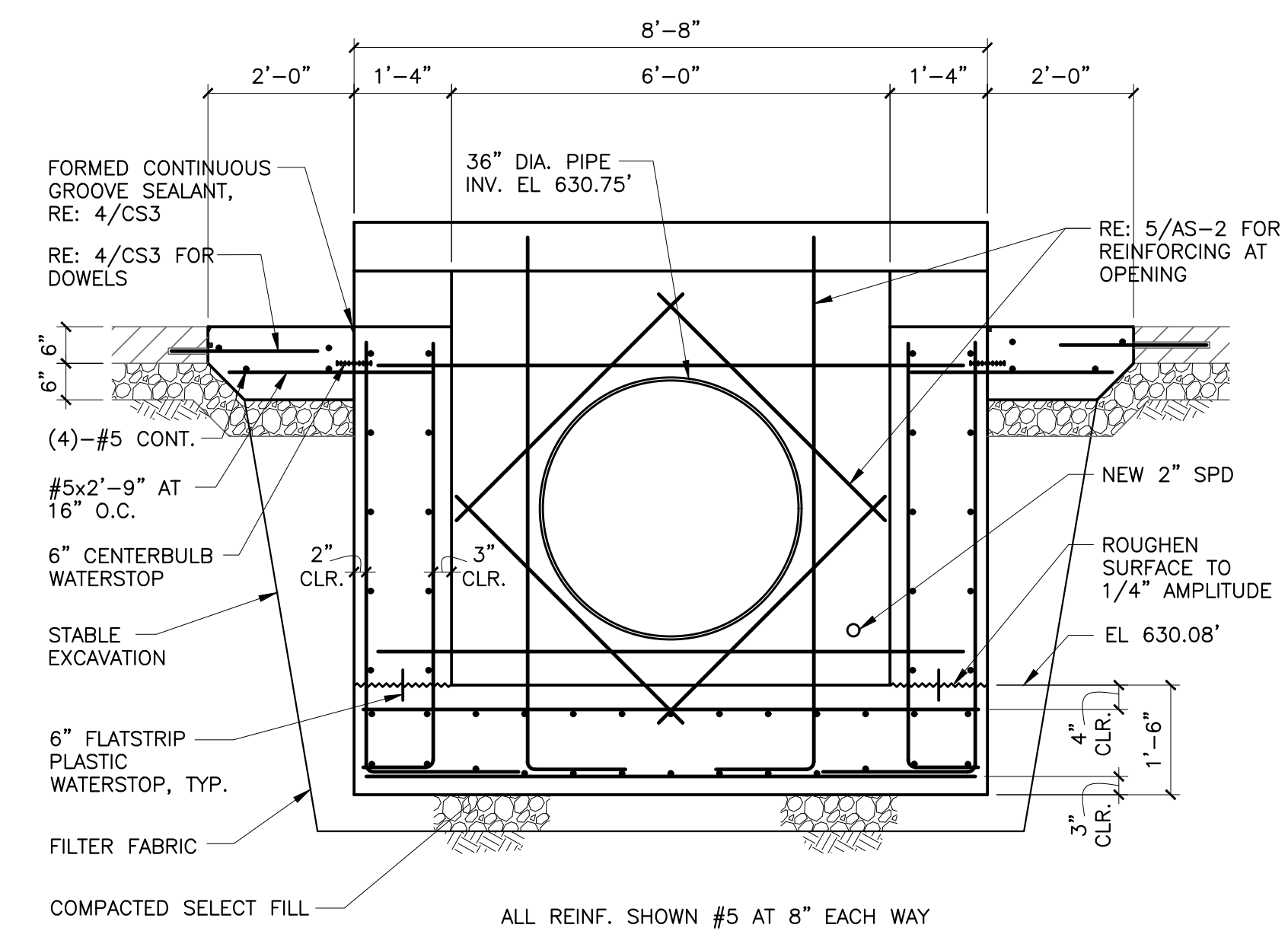
OKCA #1460
Exp. Date: 06/30/21



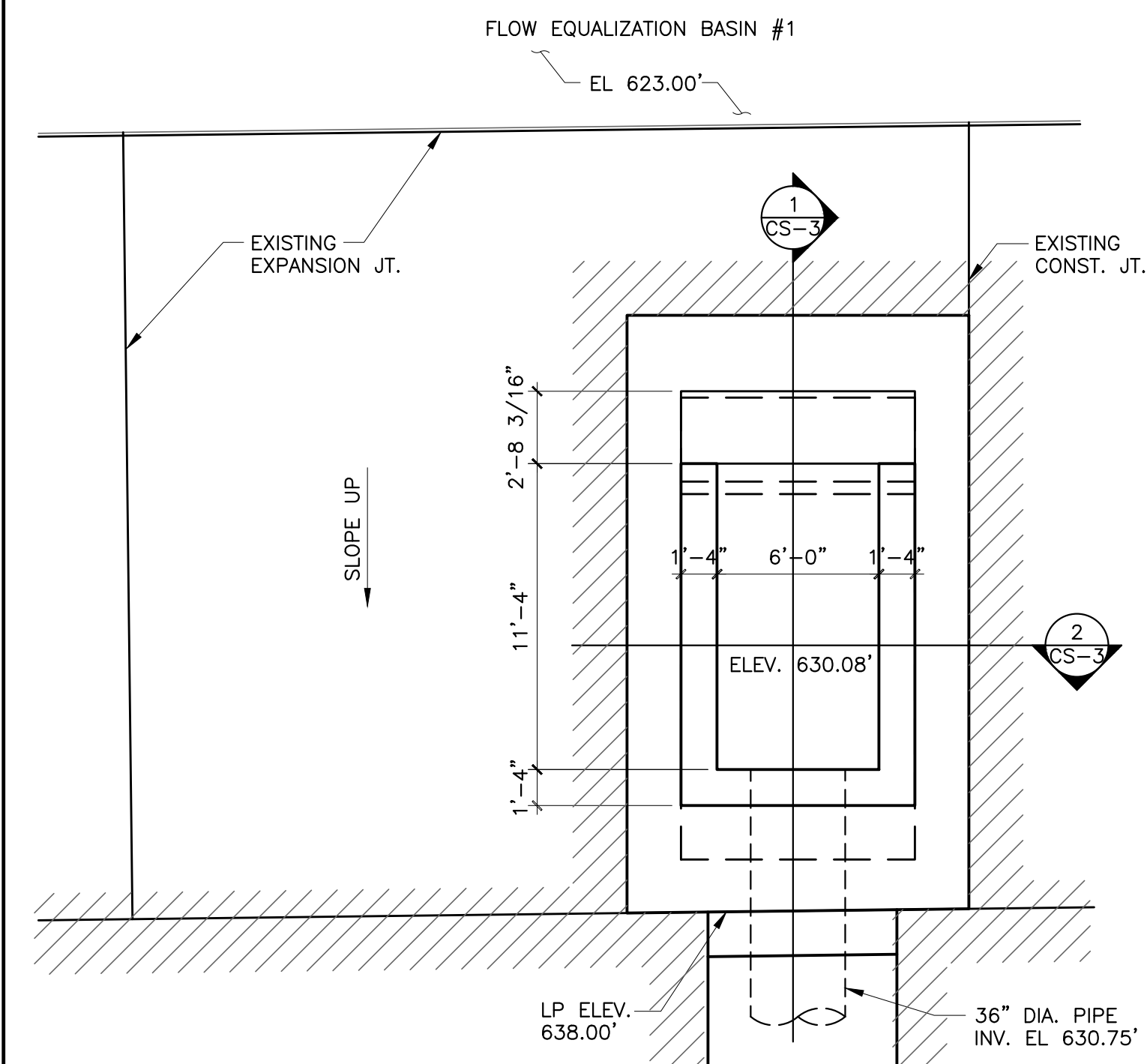
STRUCTURAL NEW HEADWALL PLANS AND SECTIONS									
PROJECT NO. 2015-17, C1									
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES									
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT									
PLANS AND ESTIMATES PREPARED BY: <i>wallace</i> Wallace Engineering Structural Consultants, Inc. 200 East Mathew Brody Street Tulsa, Oklahoma 74103									
REVISION	BY	DATE	PLAN SCALE:	DRAWN	LA	08/20	APPROVED:		
			NOT TO SCALE	DESIGNED	KR	08/20			
				SURVEY					
			PROFILE SCALE	PROJ. MGR.					
			HORIZONTAL:	LEAD ENGR.			CITY ENGINEER		
				FIELD MGR.					
			VERTICAL:	RECOMMENDED					
				DESIGN MANAGER					
			FILE: CS-2.DWG	DRAWING: CS2			OCTOBER 2020		
			ATLAS PAGE NO:				SHEET 44 OF 65		



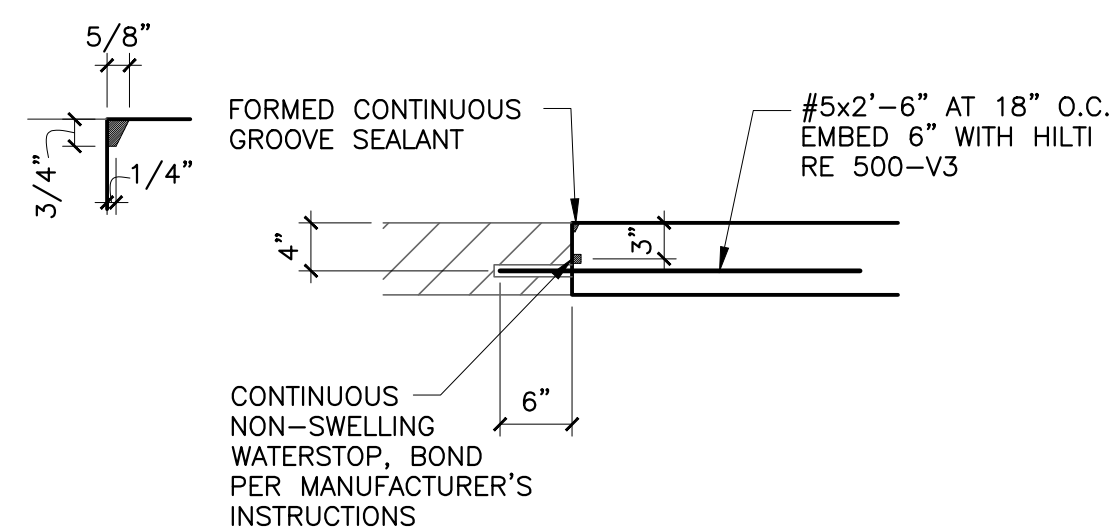
1 SECTION
1/2" = 1'-0"



2 SECTION
1/2" = 1'-0"



3 PLAN
3/16" = 1'-0"



4 SECTION
3/4" = 1'-0"

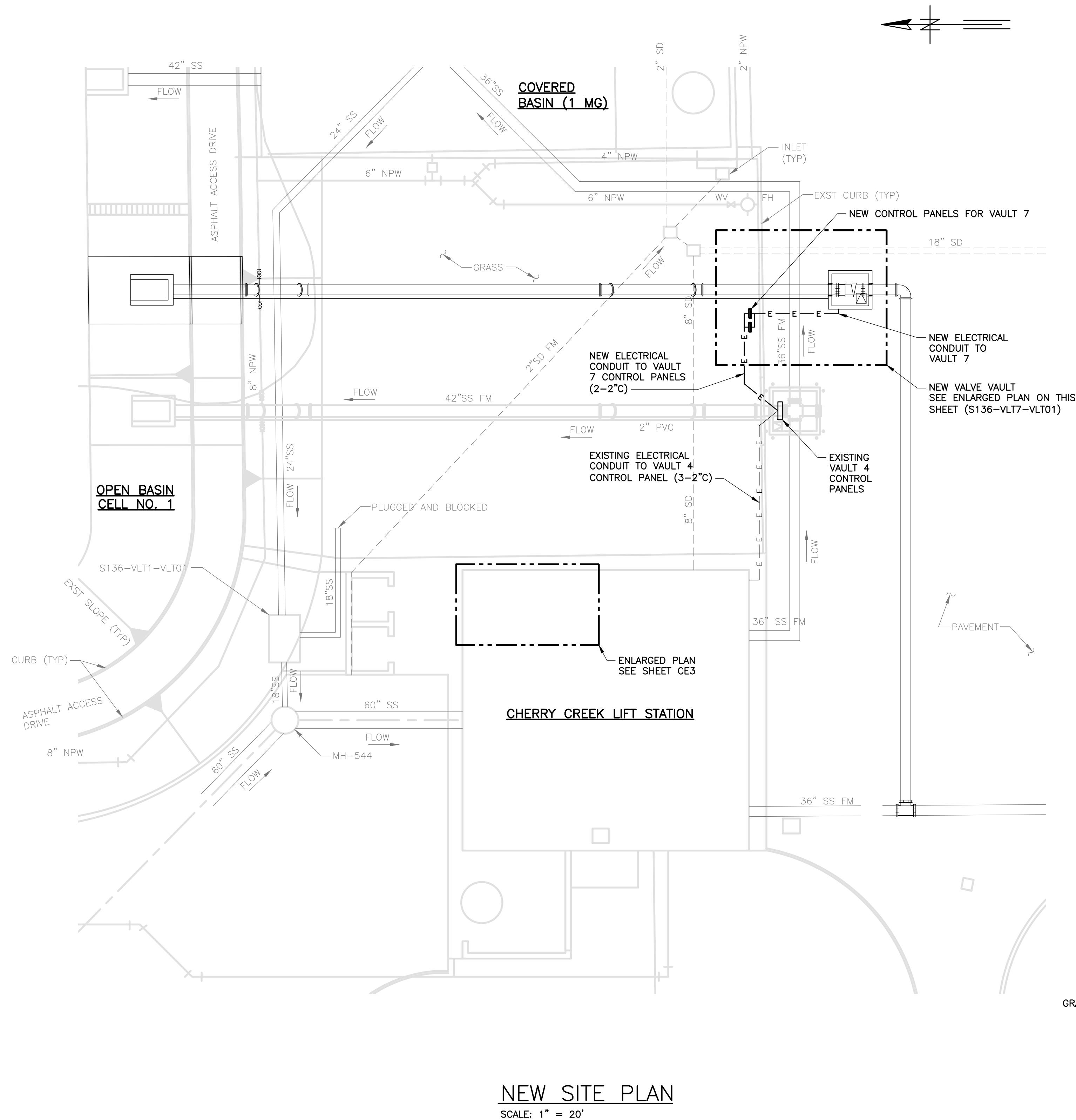
ALL WORK ASSOCIATED WITH DIVERSION FACILITIES ARE INCLUDED IN ADDITIVE ALTERNATE BID ITEM NO. 1.



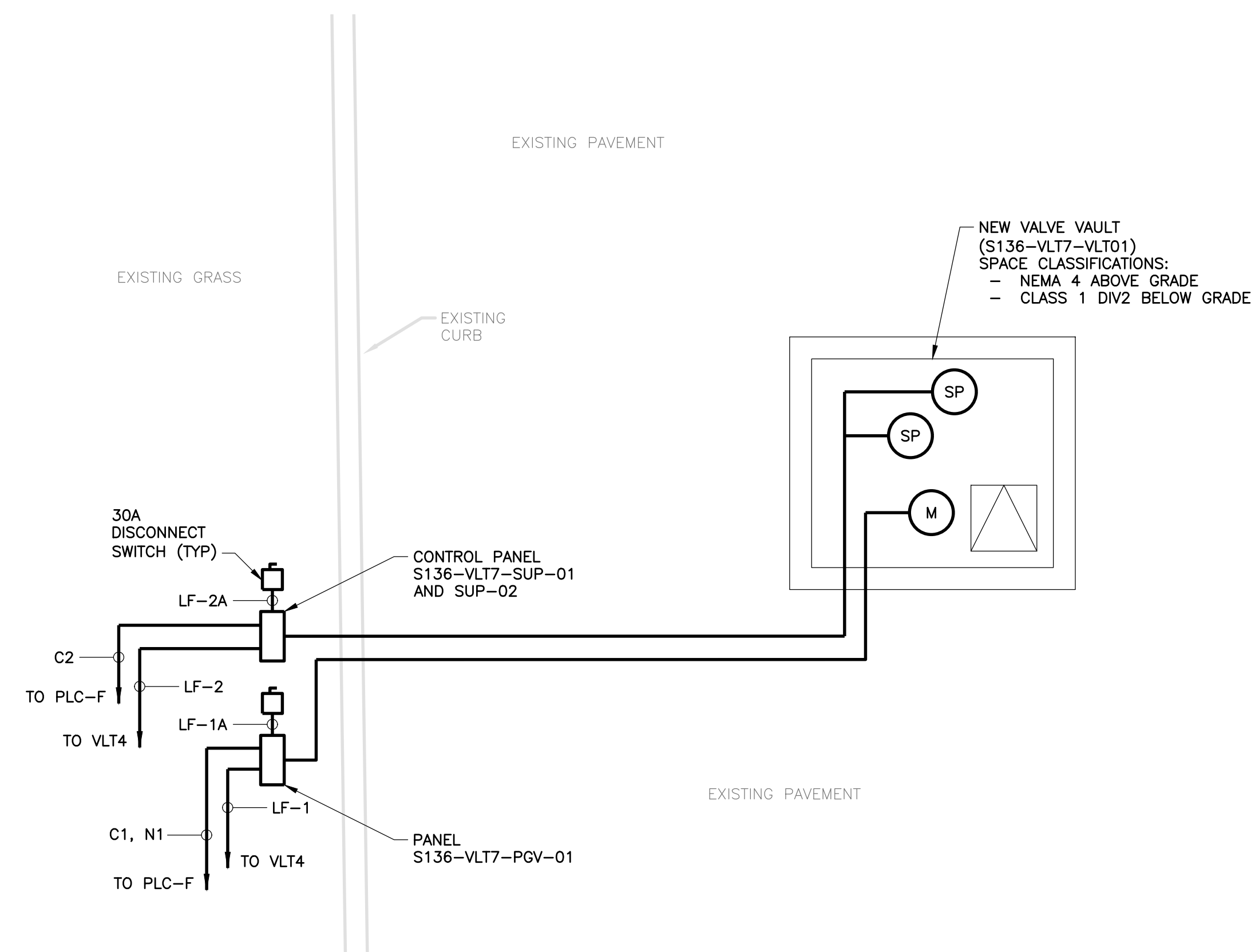
OKCA #1460
Exp. Date: 06/30/21



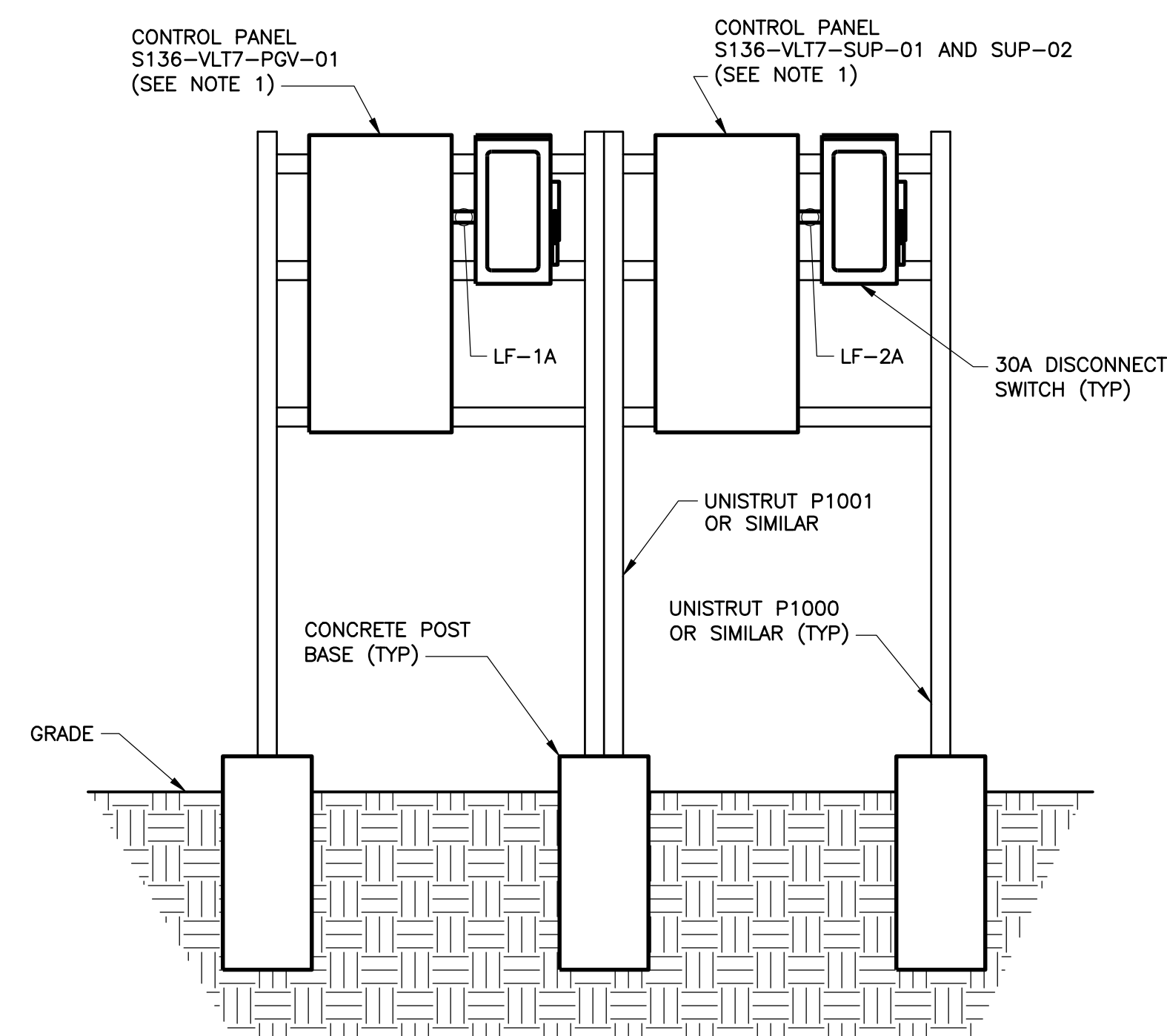
STRUCTURAL NEW HEAD WALL PLAN AND SECTIONS									
PROJECT NO. 2015-17, C1									
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES									
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT									
PLANS AND ESTIMATES PREPARED BY:									
wallace				Wallace Engineering Structural Consultants, Inc. 200 East Mathew Brody Street Tulsa, Oklahoma 74103					
REVISION	BY	DATE	PLAN SCALE:	DRAWN	LA	08/20	APPROVED:		
			NOT TO SCALE	DESIGNED	KR	08/20			
				SURVEY					
			PROFILE SCALE	PROJ. MGR.					
			HORIZONTAL:	LEAD ENGR.					
			VERTICAL:	FIELD MGR.					
				RECOMMENDED					
				DESIGN MANAGER					
			FILE: CS-3.DWG	DRAWING: CS3			OCTOBER 2020		
			ATLAS PAGE NO:				SHEET 45 OF 65		



NEW SITE PLAN
SCALE: 1" = 20'

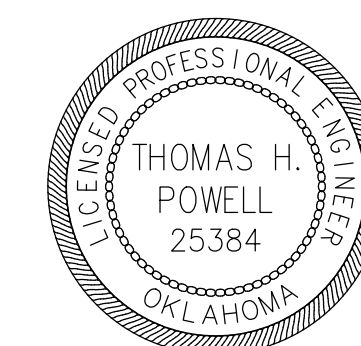


ENLARGED VALVE VAULT 7 (VLT7) PLAN
SCALE: 1" = 5'



VALVE VAULT 7 CONTROL PANEL ELEVATION
(SEE NOTE 2)

- NOTES:**
1. MOUNT TOP OF CABINET NO HIGHER THAN 60" ABOVE GRADE.
 2. INSTALLATION SECTION SHOWN FOR INTENT ONLY.
 3. COMBINE CONDUITS C1, C2, N1 AND LF1, LF2 TO VLT4
 4. ALL WORK ASSOCIATED WITH DIVERSION FACILITIES ARE INCLUDED IN ADDITIVE ALTERNATE BID ITEM NO. 1.




DIVERSION FACILITIES ELECTRICAL SITE PLAN

PROJECT NO. 2015-17, C2

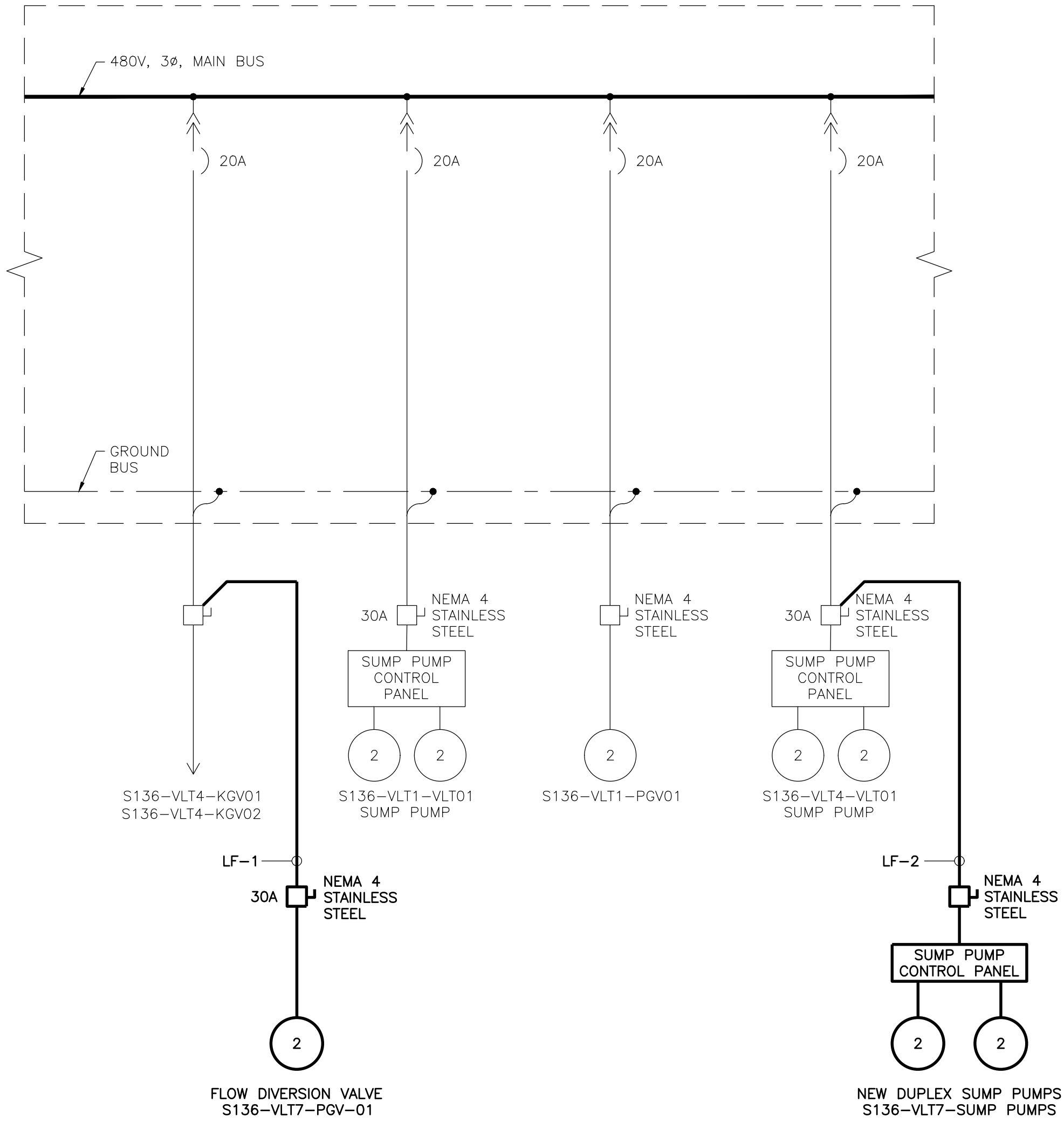
SOUTHSIDE WASTEWATER TREATMENT PLANT
PEAK FLOW OPTIMIZATION: THIRD RIVER
CROSSING AND DIVERSION FACILITIES

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:  **GREELEY AND HANSEN**
321 S BOSTON AVE, SUITE 300
TULSA, OKLAHOMA 74103

TULSA, OKLAHOMA 74103								
REVISION		BY	DATE	PLAN SCALE:	DRAWN	RMM	8/2020	APPROVED:
				AS SHOWN	DESIGNED	MM	8/2020	
					SURVEY			
				PROFILE SCALE	PROJ. MGR.			
				HORIZONTAL:	LEAD ENGR.			
					FIELD MGR.			
				VERTICAL:	RECOMMENDED			
					DESIGN MANAGER			
						CITY ENGINEER		
				FILE: 0141ERC01	DRAWING:	CE1	DATE:	OCTOBER 2020
				ATLAS PAGE NO:			SHEET	46 OF 65

\\BH-DATA01\CLIENT\0141E - SSWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERCE02 - 2020\10\08 1:15 PM KETENBRINK, BUTCH

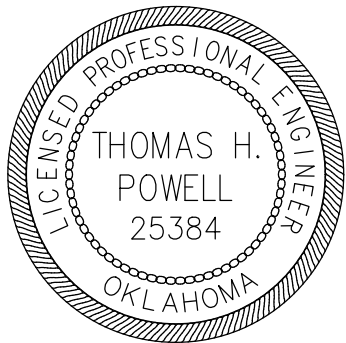


S104-LFT-MCC-01
PARTIAL ONE LINE DIAGRAM

1A	2A	3A	4A	5A	6A	7A	8A	9A	10A	11A	12A
1B	2B	3B	4B					9B	10B	11B	12B
	2C	3C					8B	9C	10C		12C
1C	2D	3E						9D			12D
		3D	4C					9E	10D	11C	
1D	2E	3F	4D				8C	9F			12E
								9G			
	2F						8D	9H	10E	11D	12F
	2G								10F		
									10G		

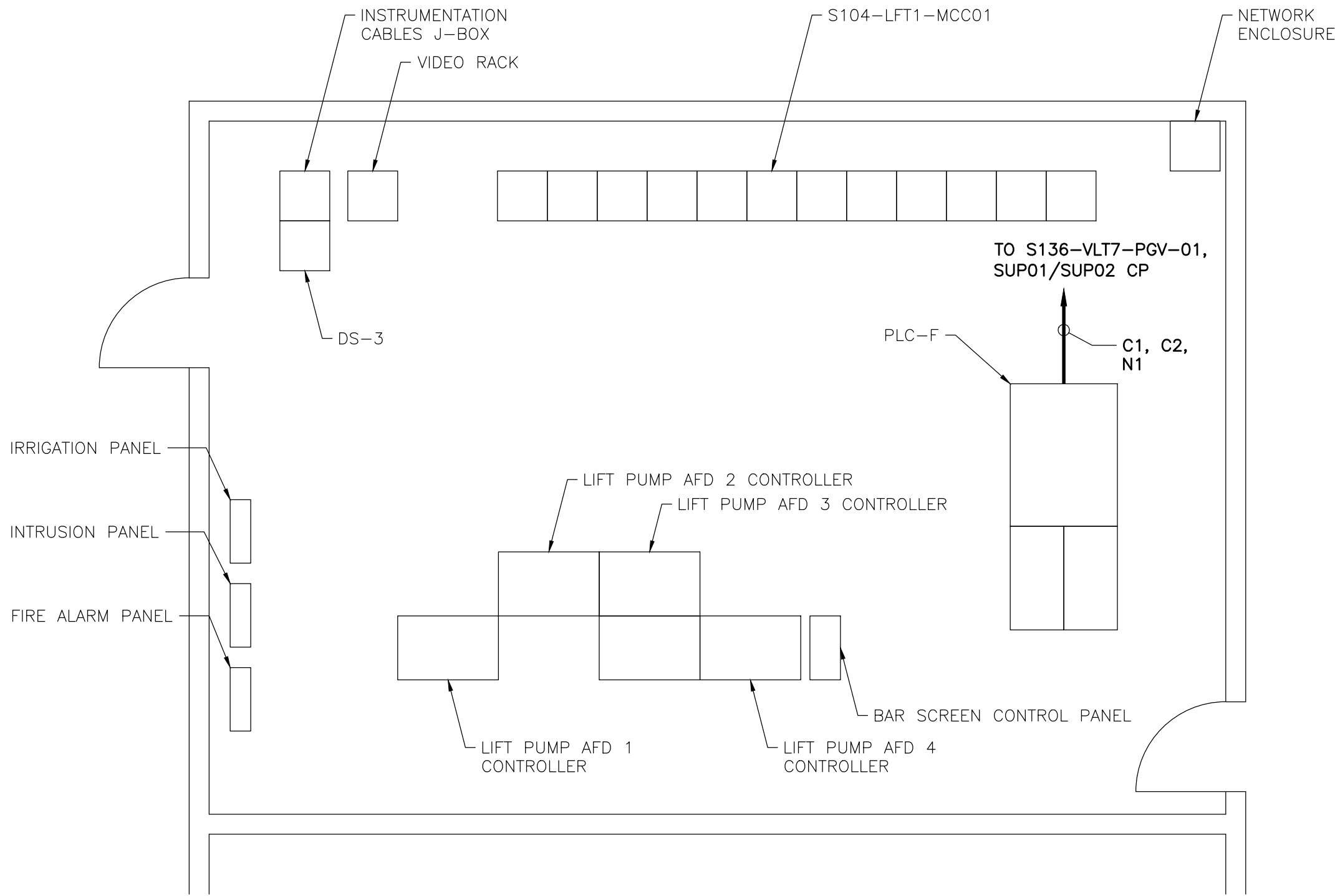
S104-LFT-MCC-01
ELEVATION

- NOTES:
1. PROVIDE NEW CIRCUIT BREAKER IN AVAILABLE SPACE. CONFIRM AVAILABLE CAPACITY IN FIELD.
 2. CABLES PROVIDED BY VENDOR. INSTALL PER MANUFACTURER'S INSTRUCTIONS.
 3. ALL WORK ASSOCIATED WITH DIVERSION FACILITIES ARE INCLUDED IN ADDITIVE ALTERNATE BID ITEM NO. 1.



DIVERSION FACILITIES ONE LINE DIAGRAM											
PROJECT NO. 2015-17, C2											
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES											
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT											
PLANS AND ESTIMATES PREPARED BY: GREELEY AND HANSEN 321 S BOSTON AVE, SUITE 300 TULSA, OKLAHOMA 74103											
REVISION			BY	DATE	PLAN SCALE:	DRAWN	RMM	8/2020	APPROVED:		
					NOT TO SCALE	DESIGNED	MM	8/2020			
					SURVEY						
					PROFILE SCALE	PROJ. MGR.					
					HORIZONTAL:	LEAD ENGR.					
					VERTICAL:	FIELD MGR.			CITY ENGINEER		
						RECOMMENDED					
						DESIGN MANAGER					
					FILE: 0141ERCE02	DRAWING:	CE2	DATE:	OCTOBER 2020		
					ATLAS PAGE NO:				SHEET 47 OF 65		

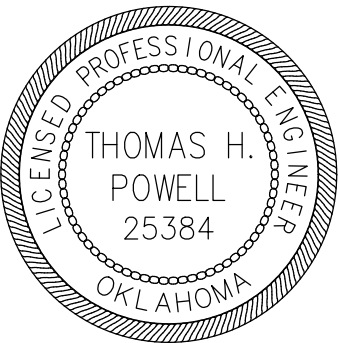
\\BH-DATA01\CLIENT\0141E - SSWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERCE03 - 2020\10\08 1:15 PM KETENBRINK, BUTCH



CHERRY CREEK LIFT STATION CONTROL ROOM ENLARGED POWER PLAN
SCALE: 1/4"=1'-0"

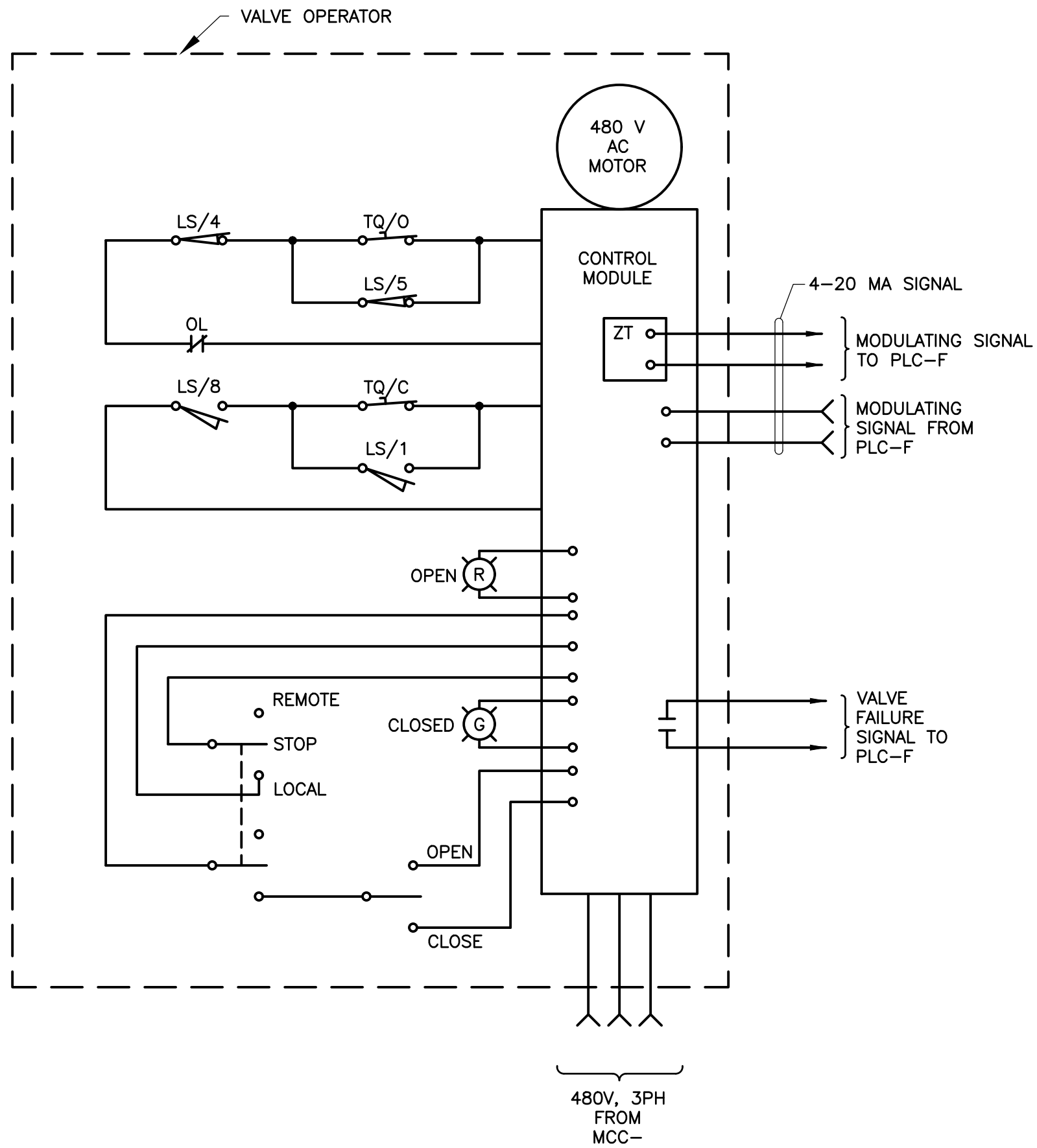
NOTE:

1. ALL WORK ASSOCIATED WITH DIVERSION FACILITIES ARE INCLUDED IN ADDITIVE ALTERNATE BID ITEM NO. 1.



















































REVISION			BY	DATE	PLAN SCALE:	DRAWN	RMM	8/2020	APPROVED:
					NOT TO SCALE	DESIGNED	MM	8/2020	
						SURVEY			
					PROFILE SCALE	PROJ. MGR.			
					HORIZONTAL:	LEAD ENGR.			
					VERTICAL:	FIELD MGR.			
						RECOMMENDED			
						DESIGN MANAGER			
						CITY ENGINEER			
					FILE: 0141ERCE03	DRAWING:	CE3	DATE:	OCTOBER 2020
					ATLAS PAGE NO:			SHEET	48 OF 65

\\BH-DATA01\CLIENT\0141E - SSWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERCE04 - 2020\10\08 1:15 PM KETENBRINK, BUTCH



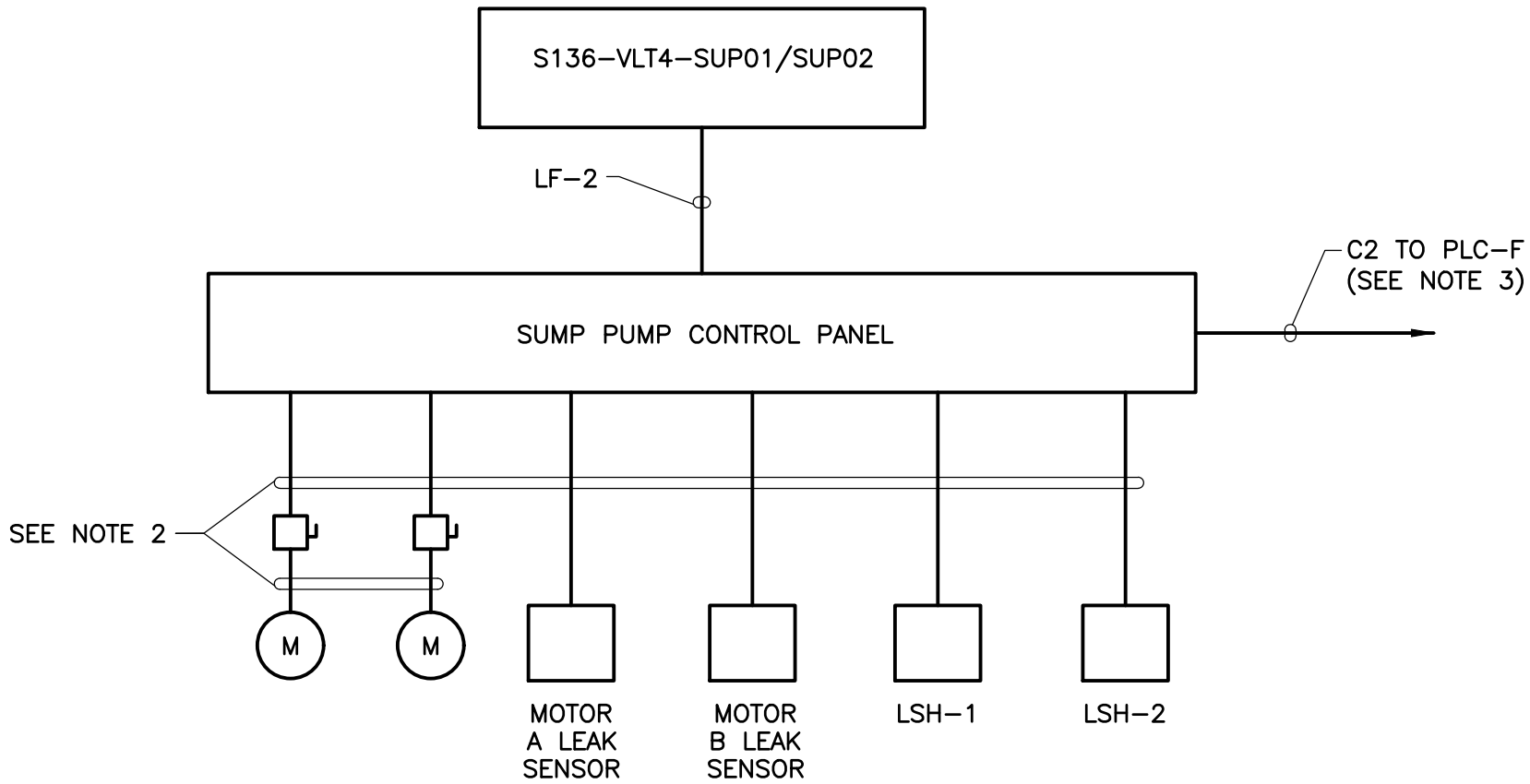
NEW FLOW DIVERSION VALVE S136-VLT7-PGV-01
(SEE NOTE 1)

TYPICAL LIMIT SWITCH CONTACT DEVELOPMENT FOR MOTORIZED VALVE OPERATORS					
ROTOR NO.	CONTACT NO.	OPERATOR POSITION			CONTACT FUNCTION
		FULL OPEN	INTER- MEDIATE	FULL CLOSED	
1	1				BYPASS CKT
	2				AUXILIARY
	3				INDICATOR LIGHT
	4				FORWARD (OPEN) LIMIT
2	5				BYPASS CKT
	6				AUXILIARY
	7				INDICATOR LIGHT
	8				REVERSE (CLOSED) LIMIT
3	9				AUXILIARY
	10				AUXILIARY
	11				AUXILIARY
	12				AUXILIARY
4	13				AUXILIARY
	14				AUXILIARY
	15				AUXILIARY
	16				AUXILIARY

TQ/C - CLOSING TORQUE SWITCH
TQ/O - OPENING TORQUE SWITCH
— INDICATES CONTACT CLOSED
— INDICATES CONTACT OPEN

SEE SCHEMATIC DIAGRAMS FOR FUNCTION
OF THE "AUXILIARY" LIMIT SWITCH CONTACTS

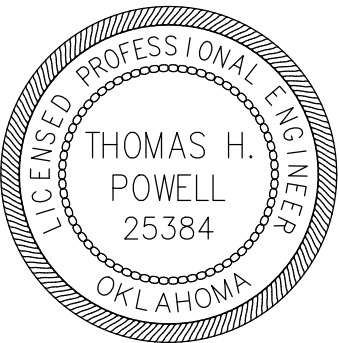
NEW FLOW DIVERSION VALVE S136-VLT7-PGV-01



SUMP PUMP CABLE BLOCK DIAGRAM
(TYPICAL FOR S136-VLT7-SUP-01 AND -SUP-02)

NOTES:

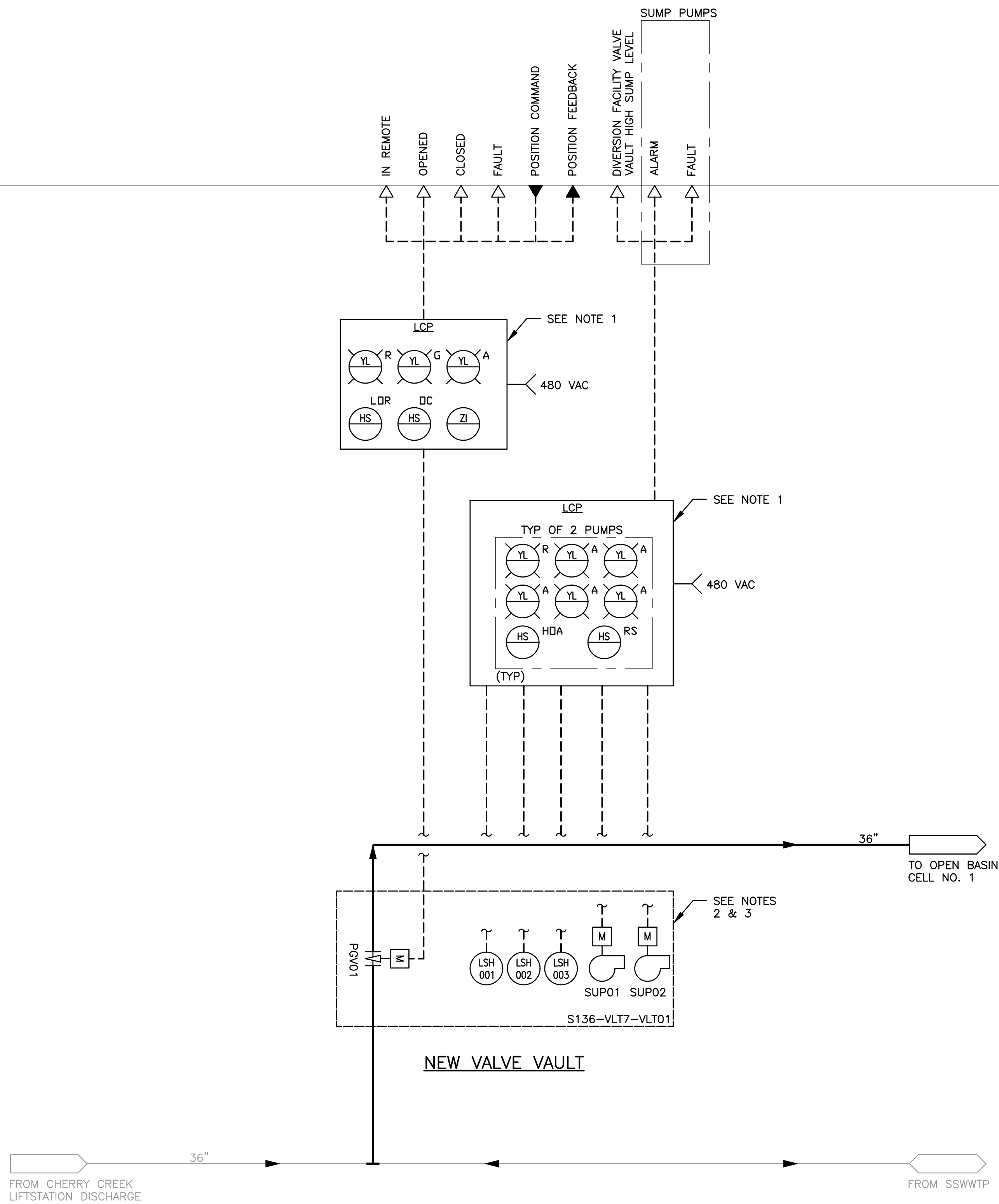
1. SCHEMATIC IS SHOWN TO PROVIDE OPERATIONAL INTENT ONLY.
2. CABLES PROVIDED BY VENDOR. INSTALL PER MANUFACTURER'S INSTRUCTIONS.
3. ALARM, FAULT.
4. ALL WORK ASSOCIATED WITH DIVERSION FACILITIES ARE INCLUDED IN ADDITIVE ALTERNATE BID ITEM NO. 1.



REVISION			BY	DATE	PLAN SCALE:	DRAWN	RMM	8/2020	APPROVED:
					NOT TO SCALE	DESIGNED	MM	8/2020	
					SURVEY				
					PROFILE SCALE HORIZONTAL:	PROJ. MGR.			
					LEAD ENGR.				
					FIELD MGR.				CITY ENGINEER
					RECOMMENDED				
					DESIGN MANAGER				
					FILE: 0141ERCE04	DRAWING:	CE4	DATE:	OCTOBER 2020
					ATLAS PAGE NO:			SHEET	49 OF 65

\\GH-DATA01\CLIENT\0141E - SSWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERCN01 - 2020\10\08 1:16 PM KETENBRINK, BUTCH

EXISTING PLC-F



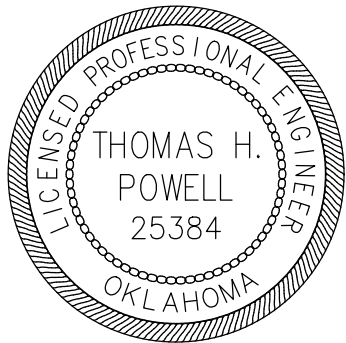
DIVERSION FACILITIES NEW VALVE VAULT
SCALE: NOT TO SCALE


LEGEND:

- MAIN PROCESS LINE
- AUXILLARY LINE
- EXISTING PROCESS LINE

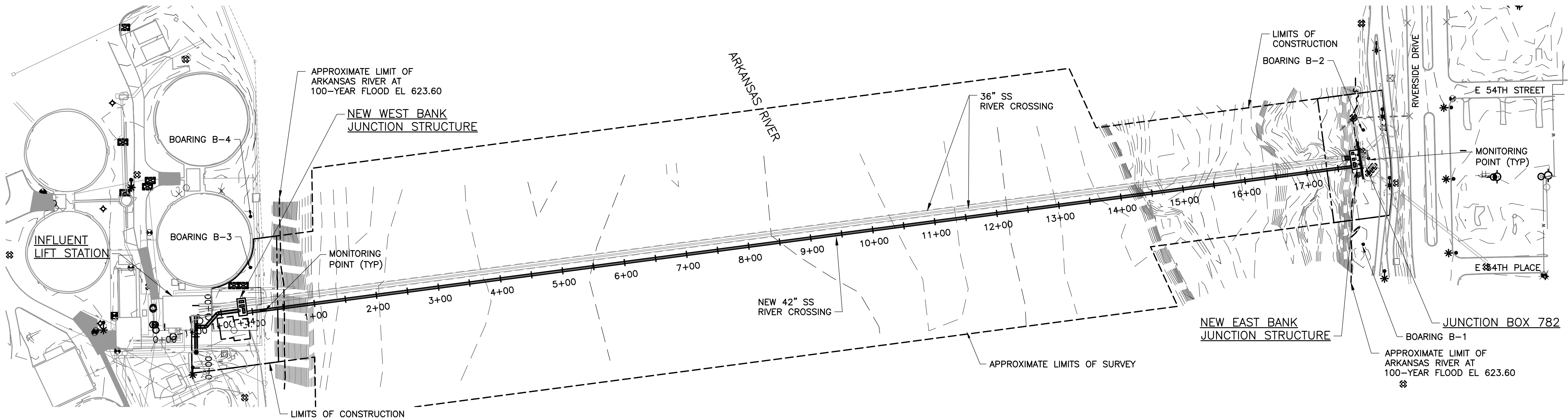
NOTES:

- REFERENCE ELECTRICAL DRAWINGS FOR PANEL DETAILS.
- EQUIPMENT TAG NUMBERS ARE PREFACED BY S136-VLT7-.
- DEVICE AND INSTRUMENTS TO BE RATED PER AREA CLASSIFICATIONS ARE DEFINED IN SPECIFICATION 26 05 00 - BASIC ELECTRICAL MATERIAL AND METHODS.
- ALL WORK ASSOCIATED WITH DIVERSION FACILITIES ARE INCLUDED IN ADDITIVE ALTERNATE BID ITEM NO. 1.

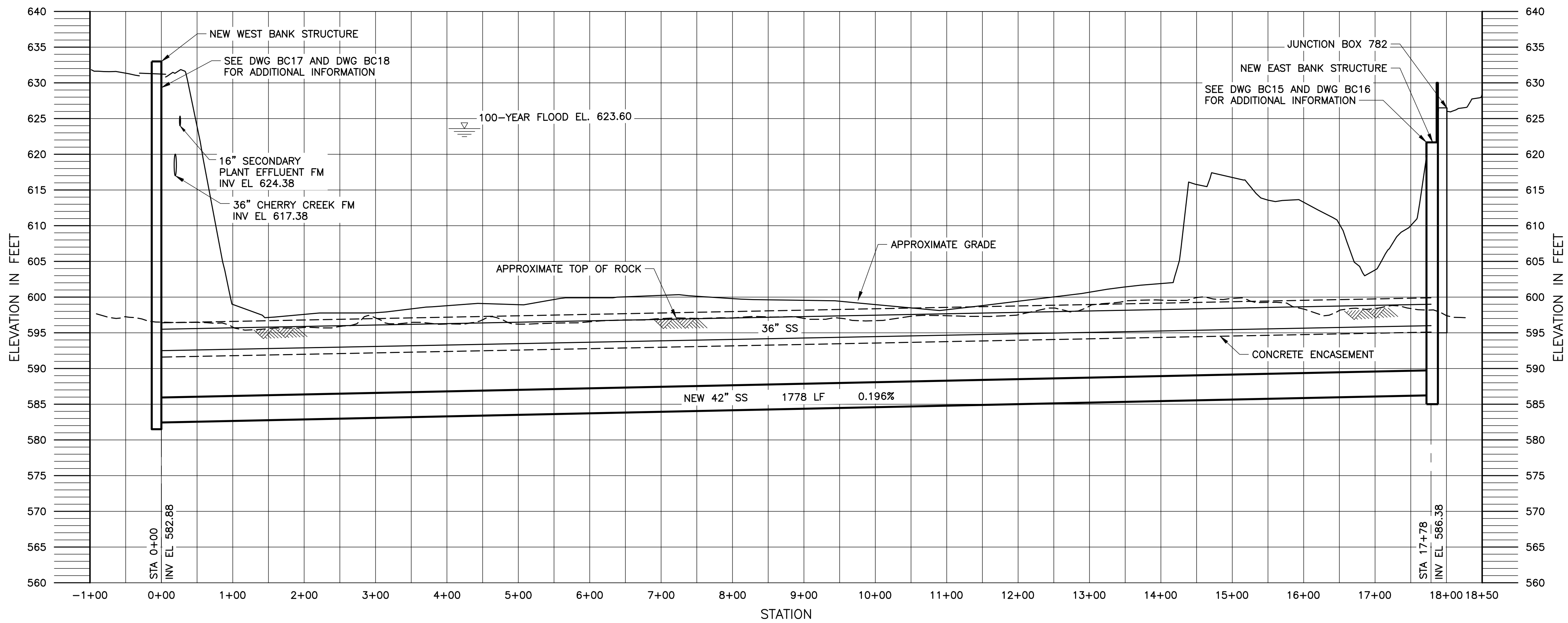


NEW VALVE VAULT P&ID						
PROJECT NO. 2015-17, C2						
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES						
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT						
PLANS AND ESTIMATES PREPARED BY:				 GREELEY AND HANSEN 321 S BOSTON AVE, SUITE 300 TULSA, OKLAHOMA 74103		
PLAN SCALE:	DRAWN	RKV	8/2020	APPROVED:		
AS SHOWN	DESIGNED	THP	8/2020			
	SURVEY					
PROFILE SCALE HORIZONTAL:	PROJ. MGR.					
	LEAD ENGR.					
VERTICAL:	FIELD MGR.					
	RECOMMENDED					
	DESIGN MANAGER					
FILE: 0141ERCN01				DRAWING: CN1		DATE: OCTOBER 2020
ATLAS PAGE NO:				SHEET 50 OF 65		

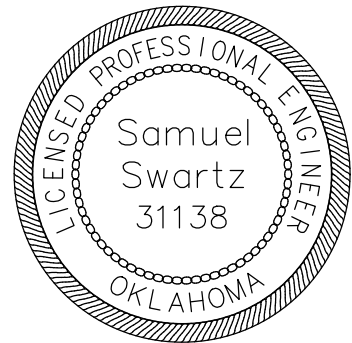
\\GH-DATA01\CLIENT\0141E - SSWWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERBC14 2020/10/08 1:16 PM KETENBRINK, BUTCH



PLAN

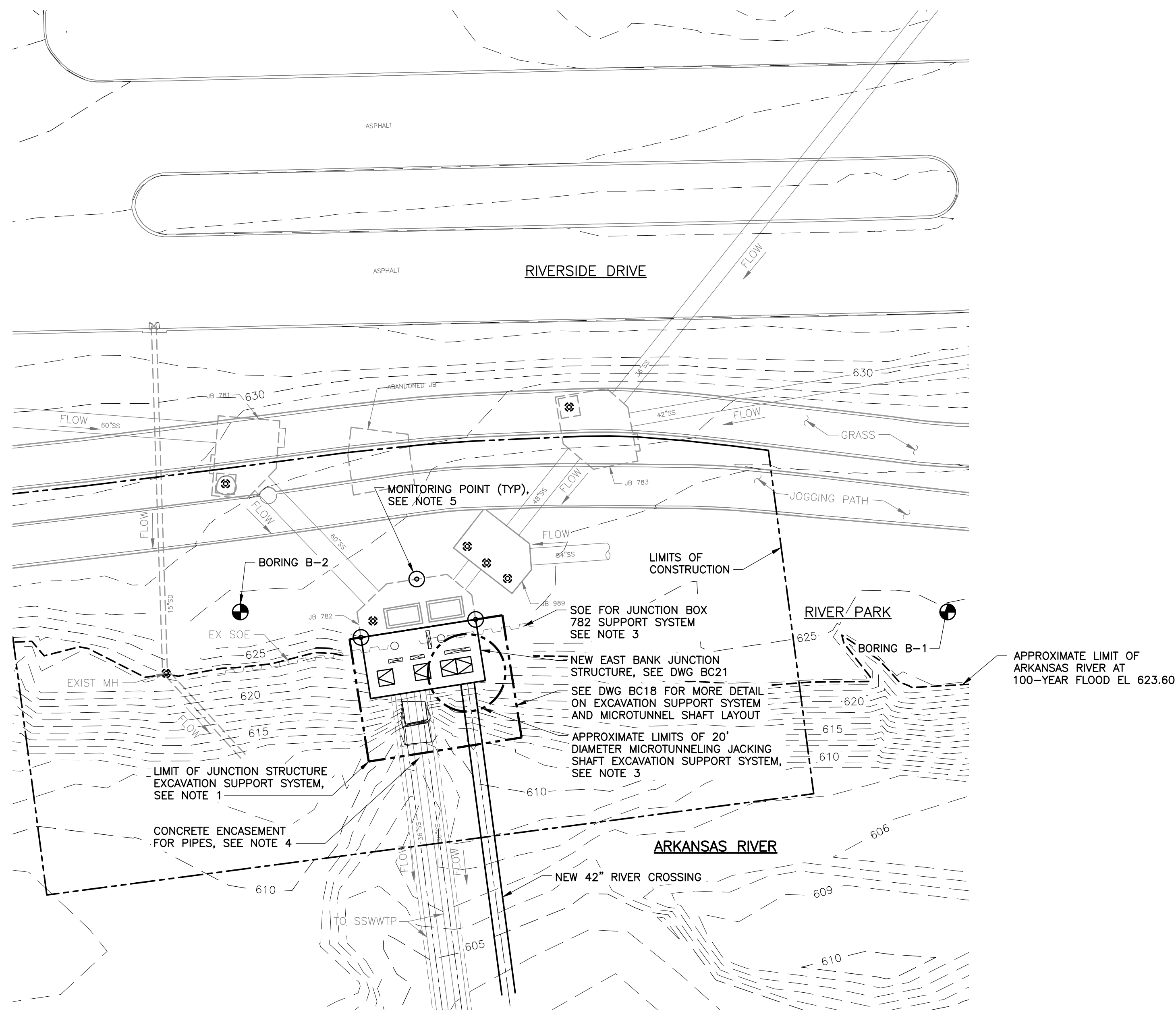


PROFILE



THIRD RIVER CROSSING MICROTUNNELING PLAN AND PROFILE									
PROJECT NO. 2015-17, C2									
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES									
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT									
PLANS AND ESTIMATES PREPARED BY: JACOBS <small>200 SOUTH WACKER DRIVE, SUITE 3100 CHICAGO, ILLINOIS 60606-4003</small>									
REVISION		BY	DATE	PLAN SCALE:	DRAWN	RKY	8/2020	APPROVED:	
				1" = 100'	DESIGNED	TCG	8/2020		
				SURVEY					
				PROFILE SCALE	PROJ. MGR.				
				HORIZONTAL:	LEAD ENGR.			CITY ENGINEER	
				1"=100'	FIELD MGR.				
				VERTICAL:	RECOMMENDED				
				1"=10'	DESIGN MANAGER				
				FILE: 0141ERBC14	DRAWING: BC14	DATE: OCTOBER 2020			
				ATLAS PAGE NO:		SHEET 51 OF 65			

\\GH-DATA01\CLIENT\0141E - SSWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERBC15 2020/10/08 1:17 PM KETENBRINK, BUTCH

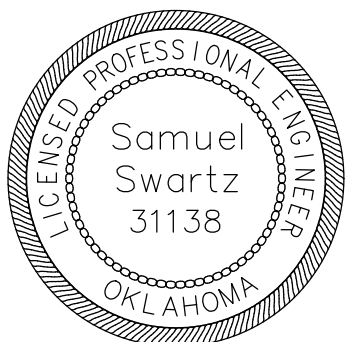



JACKING PIT PLAN

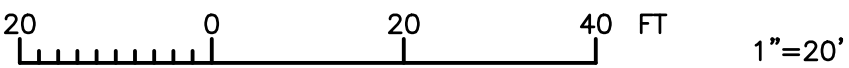
SCALE: 1"=20'

NOTES:

1. DESIGN EXCAVATION SUPPORT SYSTEMS PER REQUIREMENTS SHOWN ON THE DRAWINGS AND SPECIFICATION SECTION 31 41 00. CONTRACTOR HAS THE OPTION TO CONSTRUCT THE MICROTUNNEL SHAFT SEPARATE FROM THE SOE FOR THE JUNCTION STRUCTURE EXPANSION, OR CONSTRUCT ONE COMBINED SHAFT WITH THE SOE EXTENDED THROUGH THE SHAFT BOTTOM FOR THE DEEPER MICROTUNNEL ALIGNMENT. COORDINATE DESIGN OF EXCAVATION SUPPORT SYSTEM WITH EXISTING JUNCTION BOX 782 PERMANENT STRUCTURE. DESIGN EXCAVATION SUPPORT SYSTEM TO PROVIDE STABILITY FOR EXISTING JUNCTION BOX 782 THROUGHOUT CONSTRUCTION.
2. PROVIDE A MINIMUM OF 3 FEET BETWEEN THE OUTSIDE LIMITS OF THE FINISHED STRUCTURES AND THE INSIDE FACE OF THE JUNCTION STRUCTURE EXCAVATION SUPPORT SYSTEM, OR AS DETERMINED BY CONTRACTOR'S MEANS AND METHODS.
3. PROVIDE A MINIMUM OFFSET OF 1 FEET BETWEEN THE MICROTUNNELING SHAFT EXCAVATION SUPPORT SYSTEM AND THE INSIDE FACE OF THE JUNCTION STRUCTURE EXCAVATION SUPPORT SYSTEM, OR AS DETERMINED BY CONTRACTOR'S MEANS AND METHODS. CONTRACTOR TO VERIFY LOCATION OF EXISTING JUNCTION STRUCTURE REMNANT SOE, AND REMOVE AS NECESSARY TO INSTALL EXCAVATION SUPPORT SYSTEM.
4. DESIGN AND CONSTRUCT THE JUNCTION STRUCTURE EXCAVATION SUPPORT SYSTEM TO ACCOMMODATE THE EXISTING ENCASEMENT FOR THE 36" SS PIPES INCLUDING LIMITING INFLOWS PER CONTRACT SPECIFICATIONS.
5. MEASURE HORIZONTAL AND VERTICAL MOVEMENT OF MONITORING POINTS PER CONTRACT SPECIFICATIONS.



THIRD RIVER CROSSING MICROTUNNELING JACKING PIT PLAN			
PROJECT NO. 2015-17, C2			
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES			
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT			
PLANS AND ESTIMATES PREPARED BY:  JACOBS <small>ASSOCIATES CHICAGO, ILLINOIS 60606-4003</small>			
REVISION	PLAN SCALE:	DRAWN	APPROVED:
	1" = 20'	DESIGNED	
		SURVEY	
	PROFILE SCALE	PROJ. MGR.	
	HORIZONTAL:	LEAD ENGR.	
	VERTICAL:	FIELD MGR.	CITY ENGINEER
		RECOMMENDED	
		DESIGN MANAGER	
	FILE: 0141ERBC15	DRAWING: BC15	DATE: OCTOBER 2020
	ATLAS PAGE NO:		SHEET 52 OF 65



The diagram illustrates a cross-section of a foundation wall and a reaction wall. The foundation wall on the left is shown with a vertical profile. The soil above the wall is labeled "SILTY SANDY CLAY". The rock below the wall is labeled "SHALE BEDROCK". The wall is shown with a "SOE IN SOIL" (Shoring Out Edge in Soil) and a "SOE IN ROCK" (Shoring Out Edge in Rock). The wall is shown with a "ROCK CONTACT IN BORING B-2 AT APPROXIMATE EL 598.0 FEET" and an "APPROXIMATE TOP OF ROCK". The wall is shown with "36\" pipes encased in concrete, see note 4". The reaction wall on the right is shown with a vertical profile. The soil above the wall is labeled "SILTY SANDY CLAY". The rock below the wall is labeled "SHALE BEDROCK". The wall is shown with a "SOE IN ROCK" (Shoring Out Edge in Rock). The wall is shown with a "ROCK CONTACT IN BORING B-1 AT APPROXIMATE EL 598.5 FEET". The wall is shown with a "REACTION WALL". The diagram includes dimensions: "~25'-0\" BORING B-2", "40'-0\" NOMINAL, SEE NOTE 1", and "~45'-0\" BORING B-1". The diagram also includes a "GRADE" line and a "GEOTECH BORING (TYP), SEE NOTE 5".

30'-0" NOMINAL, SEE NOTE 1

GRADE

EXISTING SOE FOR EXISTING JUNCTION STRUCTURE
VERIFY LOCATION

SOE TO BE REMOVED
SEE NOTE 3

JUNCTION STRUCTURE
SEE NOTE 2

3'

SOE IN SOIL

APPROXIMATE TOP OF ROCK

36" PIPES ENCASED IN CONCRETE

SOE IN ROCK

EXIT SEAL AS NEEDED

REACTION WALL

2' MIN.

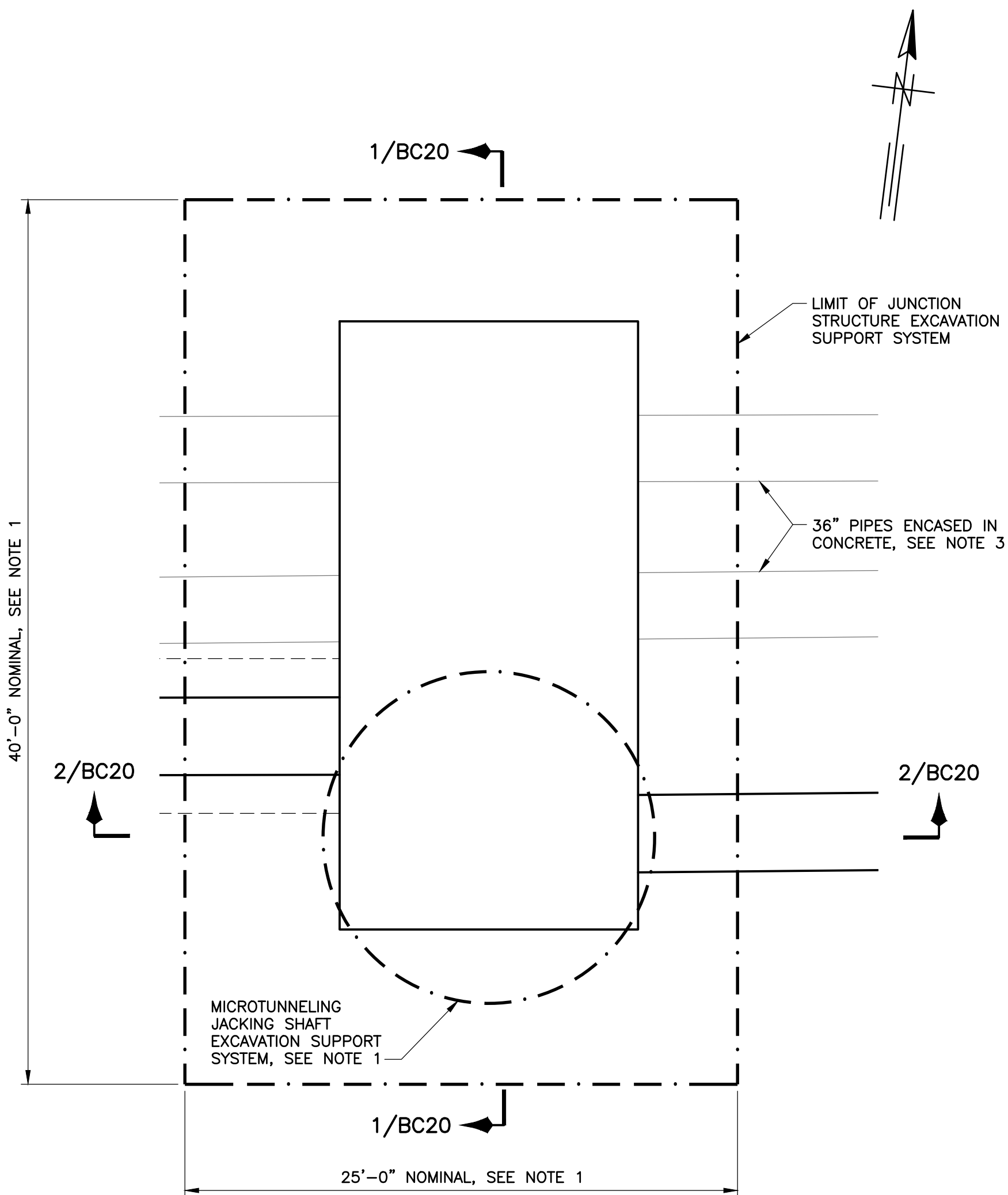
This diagram shows a cross-section of a shaft and its connection to an existing junction structure. The shaft has a nominal diameter of 30 feet. It passes through the ground (grade) and is encased in soil. Below the ground, it passes through rock. The shaft is supported by a reaction wall at the bottom. The junction structure is located to the right of the shaft. The shaft is encased in concrete, and the concrete is encased in rock. The shaft is supported by a reaction wall at the bottom. The shaft is supported by a reaction wall at the bottom. The shaft is supported by a reaction wall at the bottom.



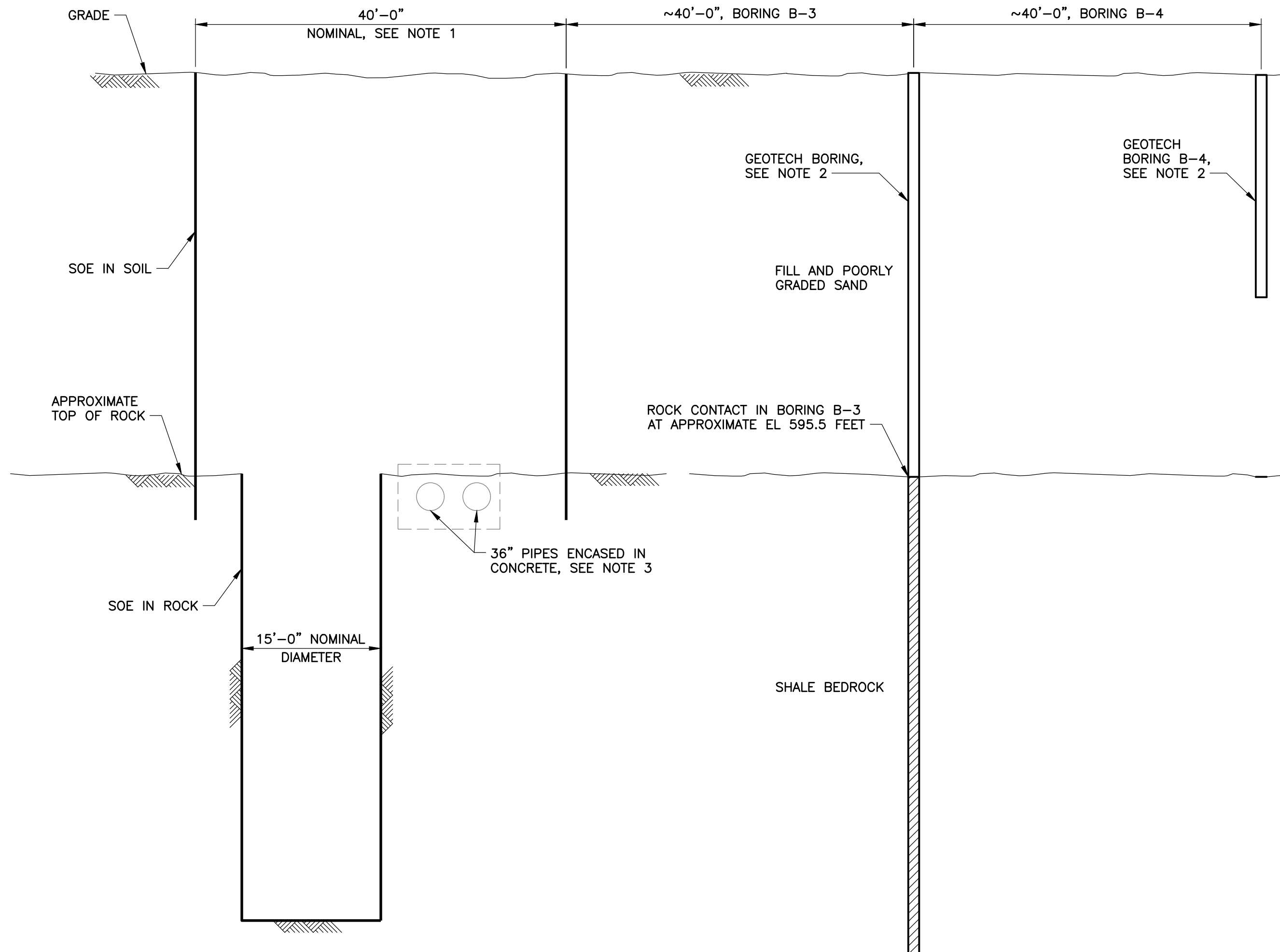
REVISION			BY	DATE	PLAN SCALE:		DRAWN	RKY	8/2020	APPROVED:	
AS SHOWN							DESIGNED	TCG	8/2020		
							SURVEY				
					PROFILE SCALE		PROJ. MGR.				
					HORIZONTAL:		LEAD ENGR.				
					VERTICAL:		FIELD MGR.				
					RECOMMENDED						
					DESIGN MANAGER				CITY ENGINEER		
					FILE: 0141ERBC16		DRAWING: BC16		DATE: OCTOBER 2020		
					ATLAS PAGE NO:		SHEET 53 OF 65				



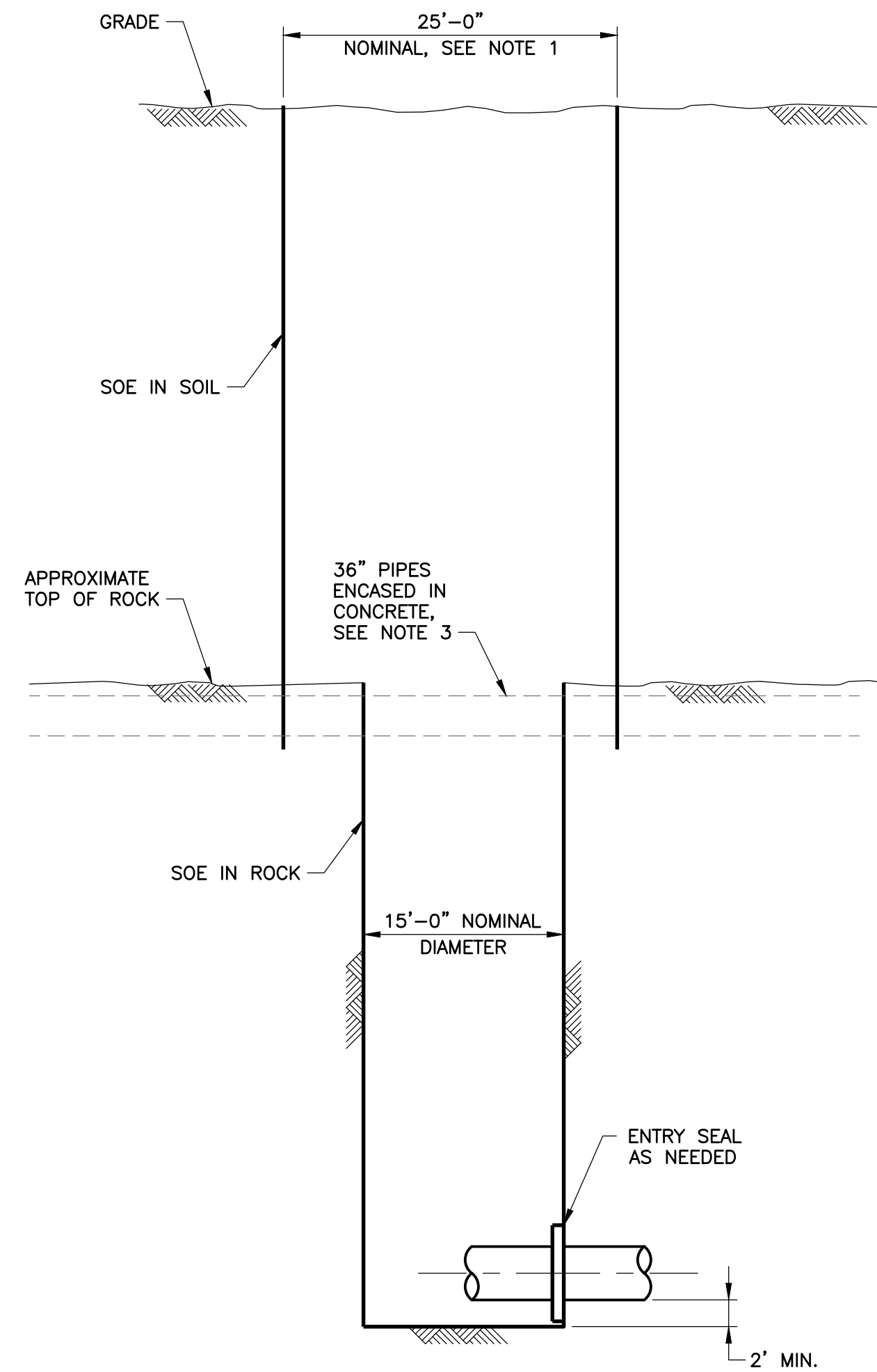
\\GH-DATA01\CLIENT\0141E - SSWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERBC18 2020/10/08 1:18 PM KETENBRINK, BUTCH



JUNCTION STRUCTURE AND
MICROTUNNEL RECEIVING SHAFT PLAN
SCALE: 1"=5'



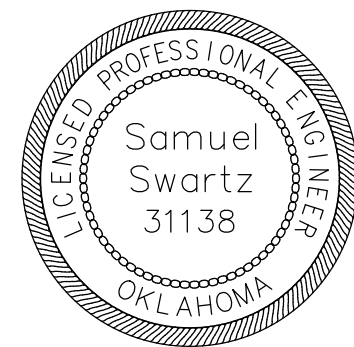
SECTION 1/BC20
SCALE: NOT TO SCALE



SECTION 2/BC20
SCALE: NOT TO SCALE

NOTES:

1. CONTRACTOR TO SELECT DIMENSIONS TO PROVIDE CLEARANCES TO ALLOW CONSTRUCTION OF PERMANENT STRUCTURES, AND TO ACCOMMODATE DEEPER SHAFT FOR MICROTUNNELING.
2. INFORMATION SHOWN ON GEOTECH BORINGS IS APPROXIMATE ONLY, REFER TO GEOTECHNICAL BASELINE REPORT FOR ANTICIPATED GEOTECHNICAL CONDITIONS. BORING B-4 WAS TERMINATED AT A DEPTH OF APPROXIMATELY 18.5 FEET DUE TO ENCOUNTERING AN OBSTRUCTION.
3. DESIGN AND CONSTRUCT THE JUNCTION STRUCTURE EXCAVATION SUPPORT SYSTEM TO ACCOMMODATE THE EXISTING ENCASEMENT FOR THE 36" SS PIPES INCLUDING LIMITING INFLOWS PER CONTRACT SPECIFICATIONS.



WEST BANK JUNCTION STRUCTURE AND MICRO-TUNNEL RECEIVING SHAFT PLAN AND SECTIONS

PROJECT NO. 2015-17, C2

SOUTHSIDE WASTEWATER TREATMENT PLANT
PEAK FLOW OPTIMIZATION: THIRD RIVER
CROSSING AND DIVERSION FACILITIES

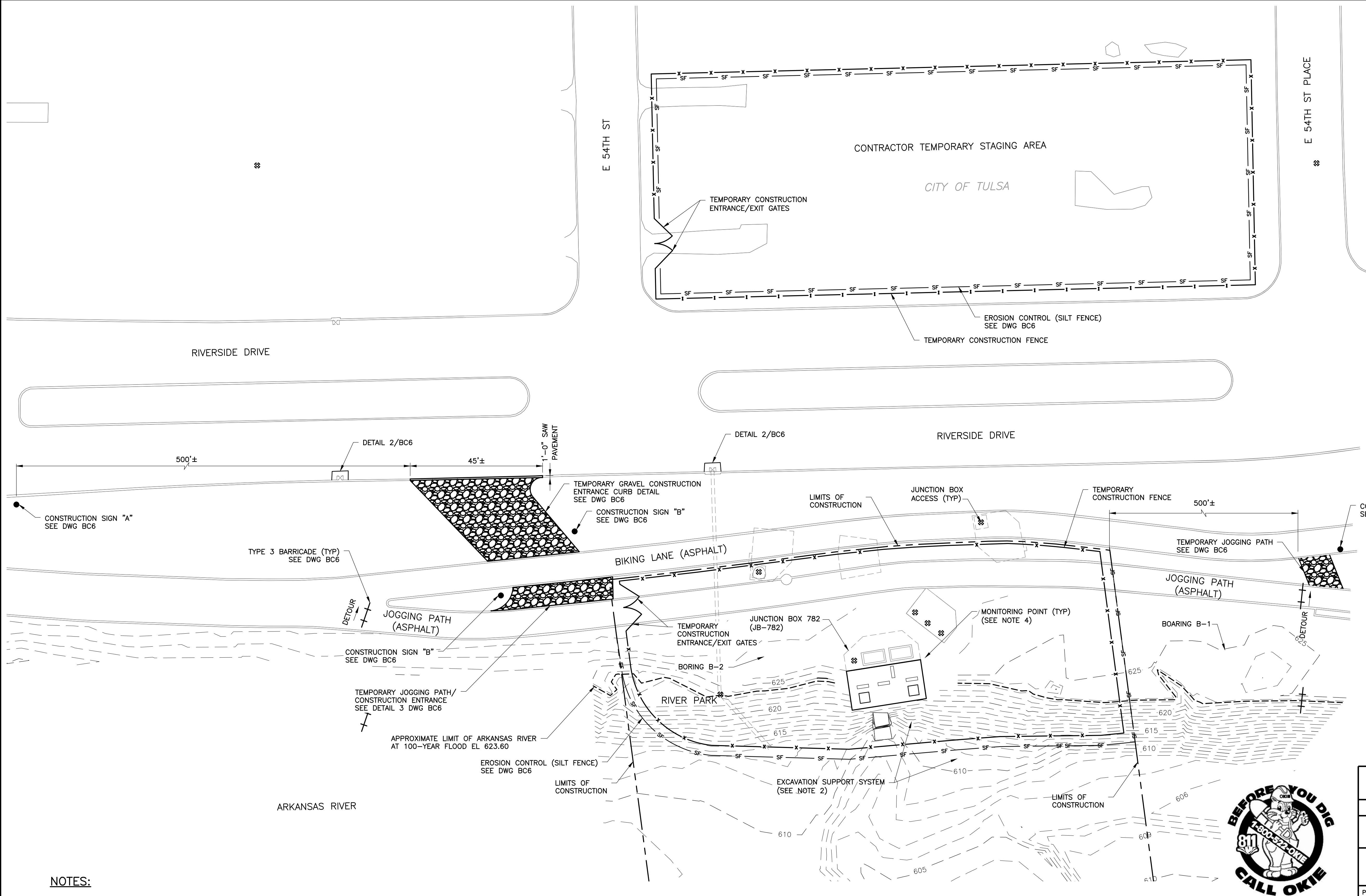
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY: **JACOBS**
200 SOUTH WACKER DRIVE, SUITE 3100
CHICAGO, ILLINOIS 60606-4003

REVISION	BY	DATE	PLAN SCALE:	DRAWN	RKY	DATE	APPROVED:
			AS SHOWN	DESIGNED	TCG	8/2020	
			SURVEY				
			PROFILE SCALE	PROJ. MGR.			
			HORIZONTAL:	LEAD ENGR.			
			VERTICAL:	FIELD MGR.			
				RECOMMENDED			
				DESIGN MANAGER			CITY ENGINEER
			FILE: 0141ERBC18	DRAWING: BC18		DATE: OCTOBER 2020	
			ATLAS PAGE NO:			SHEET 55 OF 65	

5 0 5 10 FT 1"=5'

\\GH-DATA01\CLIENT\0141E - SSWWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERBC19 2020/10/08 1:19 PM KETENBRINK, BUTCH

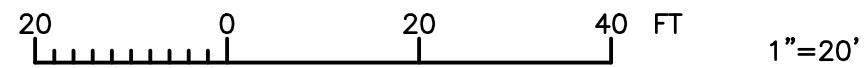


NOTES:

1. REPAIR ALL DAMAGES TO PARK CAUSED BY CONTRACTOR DURING CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, TRAIL SURFACES, CURBS, TREES, SHRUBS, PLANTS, LIGHTS, SIGNS, AND TURF TO A CONDITION EQUAL TO OR BETTER THAN THE EXISTING IMPROVEMENT..USE SOD FOR TURF RESTORATION TO MATCH IN-KIND AND QUALITY OF EXISTING.
2. ALL DAMAGE OR DISTURBANCE OUTSIDE OF THE LIMITS AUTHORIZED BY THE ENGINEER SHALL BE IMMEDIATELY REPAIRED BY THE CONTRACTOR AT HIS EXPENSE. PROVIDE EXCAVATION SUPPORT SYSTEM AS SHOWN AND SPECIFIED.
3. BIKE TRAIL AND TEMPORARY JOGGING TAIL IS TO REMAIN UNOBSTRUCTED AT ALL TIMES.

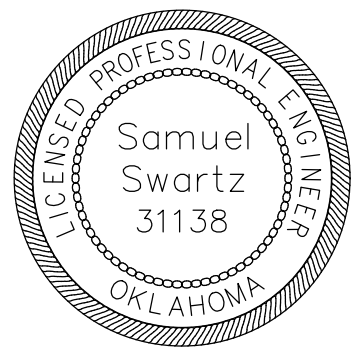
STAGING AREA EAST BANK PLAN

SCALE: 1"=20'



NOTES:

1. SEE NOTE 1 DRAWING BC2 FOR GRADE.



THIRD RIVER CROSSING
MICROTUNNELING STAGING AREA EAST BANK

PROJECT NO. 2015-17, C2

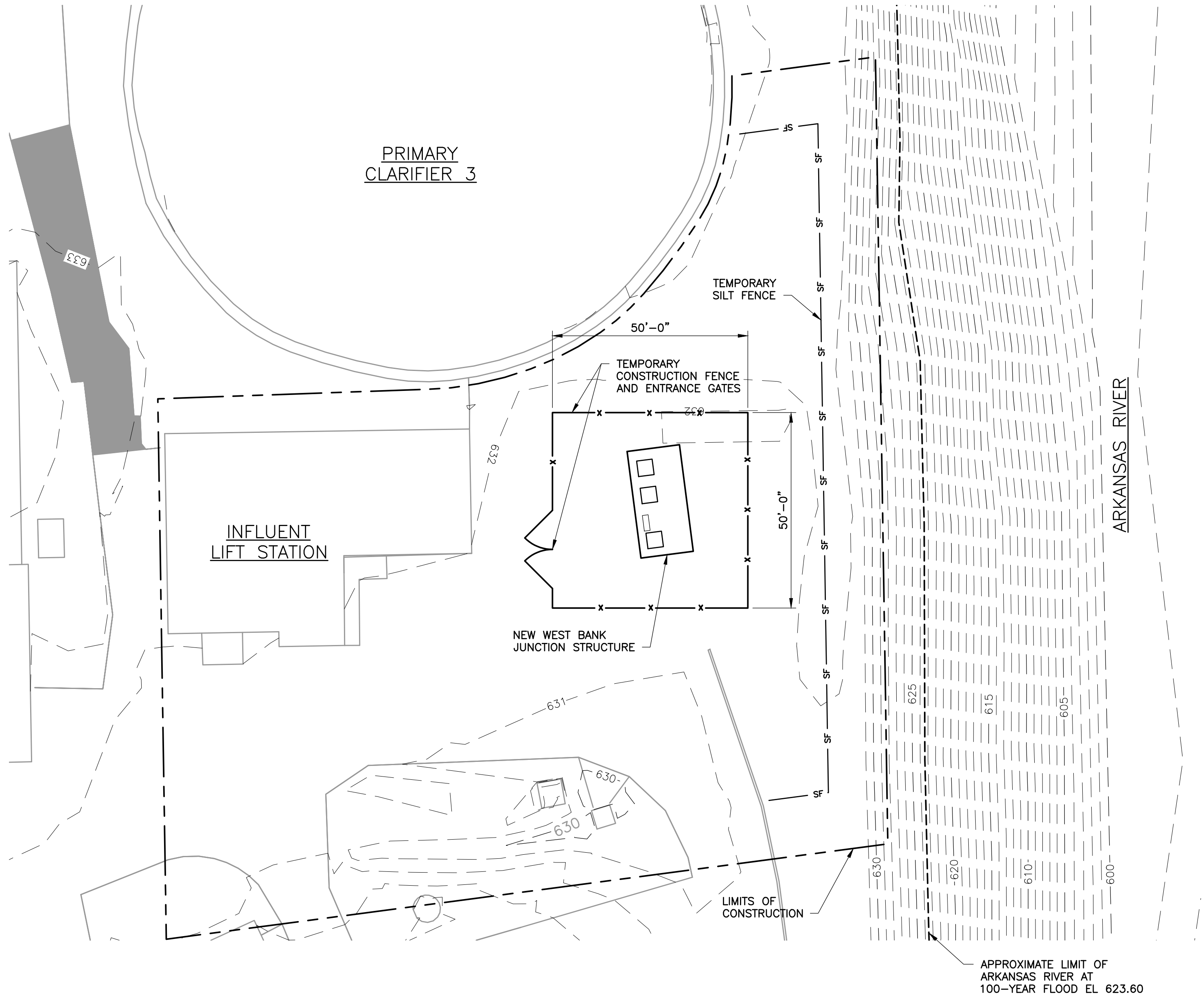
SOUTHSIDE WASTEWATER TREATMENT PLANT
PEAK FLOW OPTIMIZATION: THIRD RIVER
CROSSING AND DIVERSION FACILITIES

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

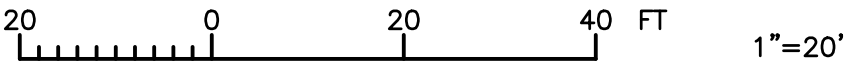
PLANS AND ESTIMATES PREPARED BY: **JACOBS**
200 SOUTH WACKER DRIVE, SUITE 3100
CHICAGO, ILLINOIS 60606-4003


REVISION	BY	DATE	PLAN SCALE:	DRAWN	RKY	8/2020	APPROVED:
			1" = 20'	DESIGNED	TCG	8/2020	
				SURVEY			
			PROFILE SCALE	PROJ. MGR.			
			HORIZONTAL:	LEAD ENGR.			
				FIELD MGR.			
			VERTICAL:	RECOMMENDED			
				DESIGN MANAGER			CITY ENGINEER
			FILE: 0141ERBC19	DRAWING: BC19			DATE: OCTOBER 2020
			ATLAS PAGE NO:				SHEET 56 OF 65

\\SH-DATA01\CLIENT\0141E - SSWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERBC20 2020\10\08 1:19 PM KETENBRINK, BUTCH

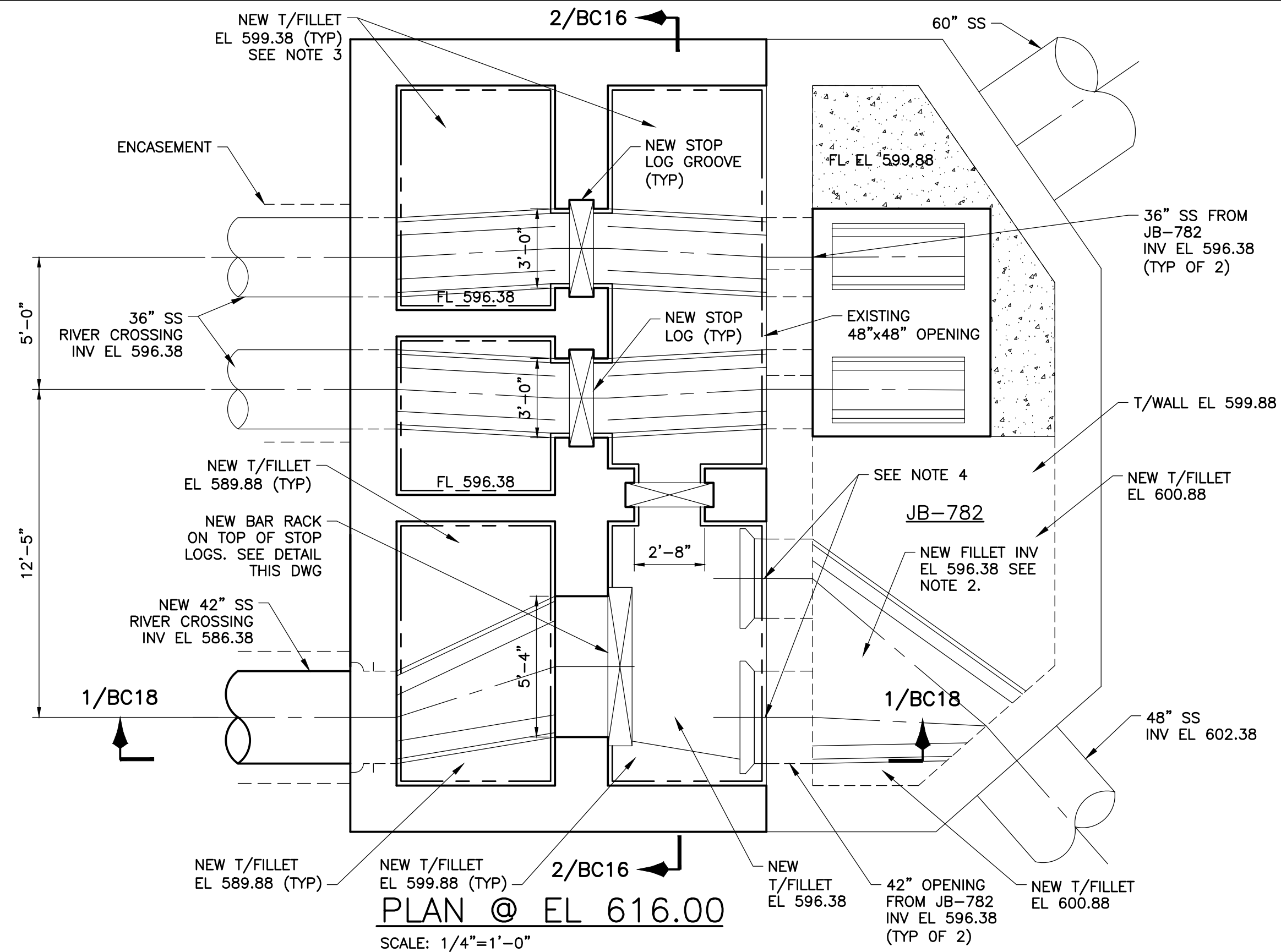


STAGING AREA WEST BANK PLAN
SCALE: 1"=20'

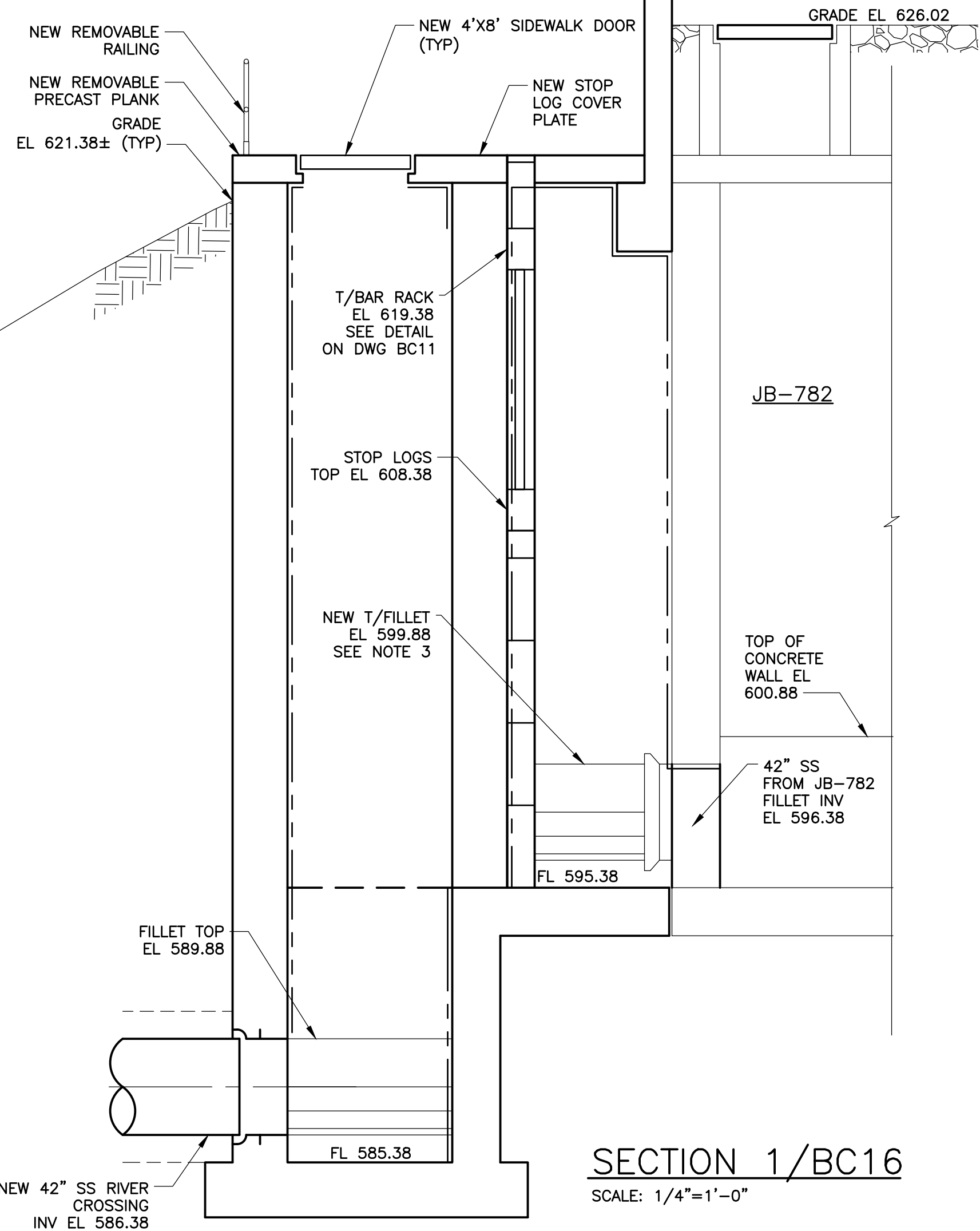


THIRD RIVER CROSSING MICROTUNNELING STAGING AREA WEST BANK				PROJECT NO. 2015-17, C2			
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES				CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT			
PLANS AND ESTIMATES PREPARED BY:				APPROVED:			
REVISION	BY	DATE	PLAN SCALE:	DRAWN	RKY	8/2020	<div> 200 SOUTH WACKER DRIVE, SUITE 3100 CHICAGO, ILLINOIS 60606-4003</div>
			1" = 20'	DESIGNED	TCG	8/2020	
			SURVEY				
			PROFILE SCALE	PROJ. MGR.			
			HORIZONTAL:	LEAD ENGR.			
			VERTICAL:	FIELD MGR.			
				RECOMMENDED			
				DESIGN MANAGER			CITY ENGINEER
			FILE: 0141ERBC20	DRAWING: BC20	DATE:	OCTOBER 2020	
			ATLAS PAGE NO:		SHEET	57 OF 65	

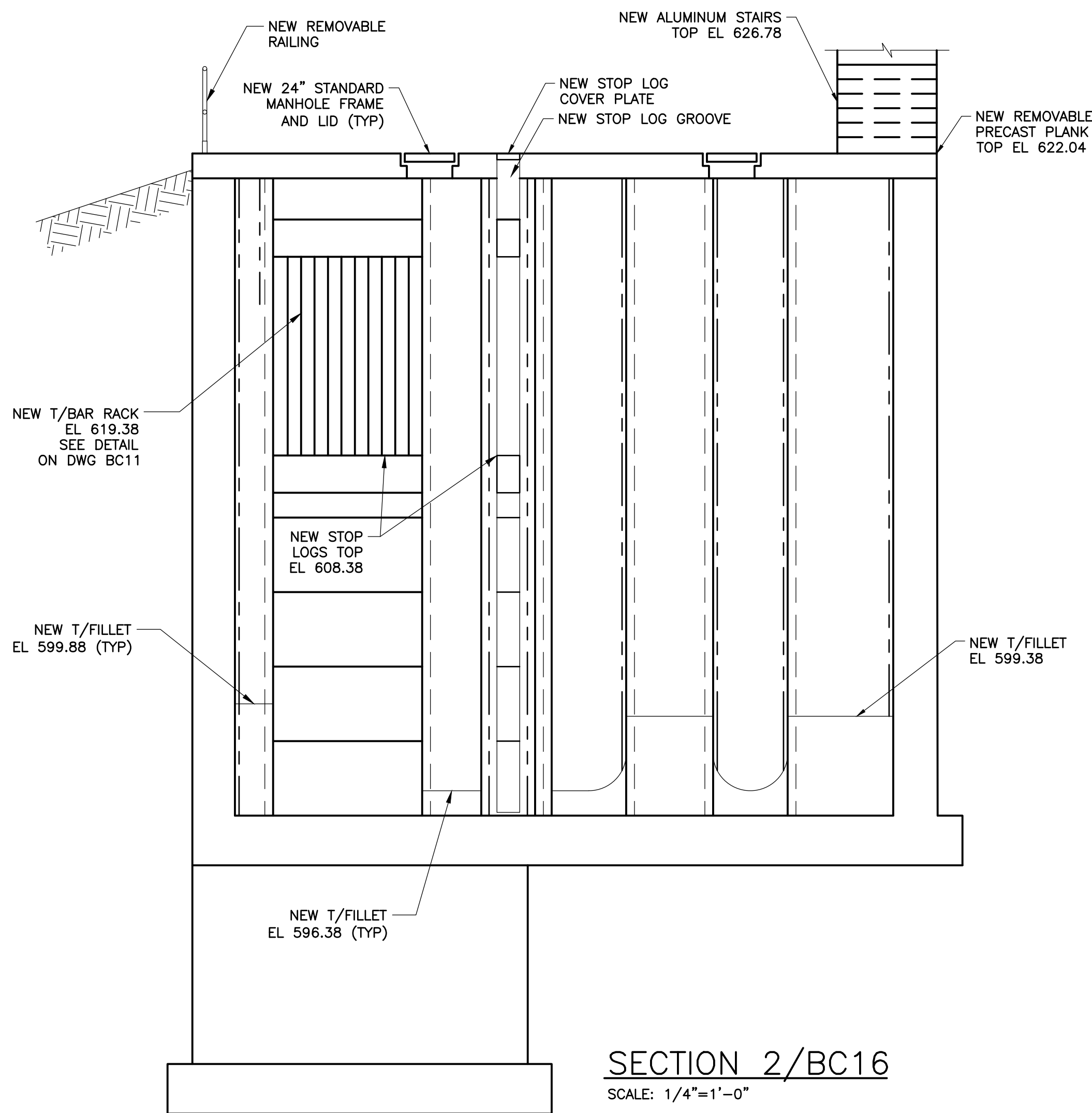
\\GH-DATA01\CLIENT\0141E - SSWWTP FLOW OPTIMIZATION\21 CADD\21.05 WORKING DWGS\RIVER CROSSING\0141ERBC21 2020/10/09 10:02 AM KETENBRINK, BUTCH



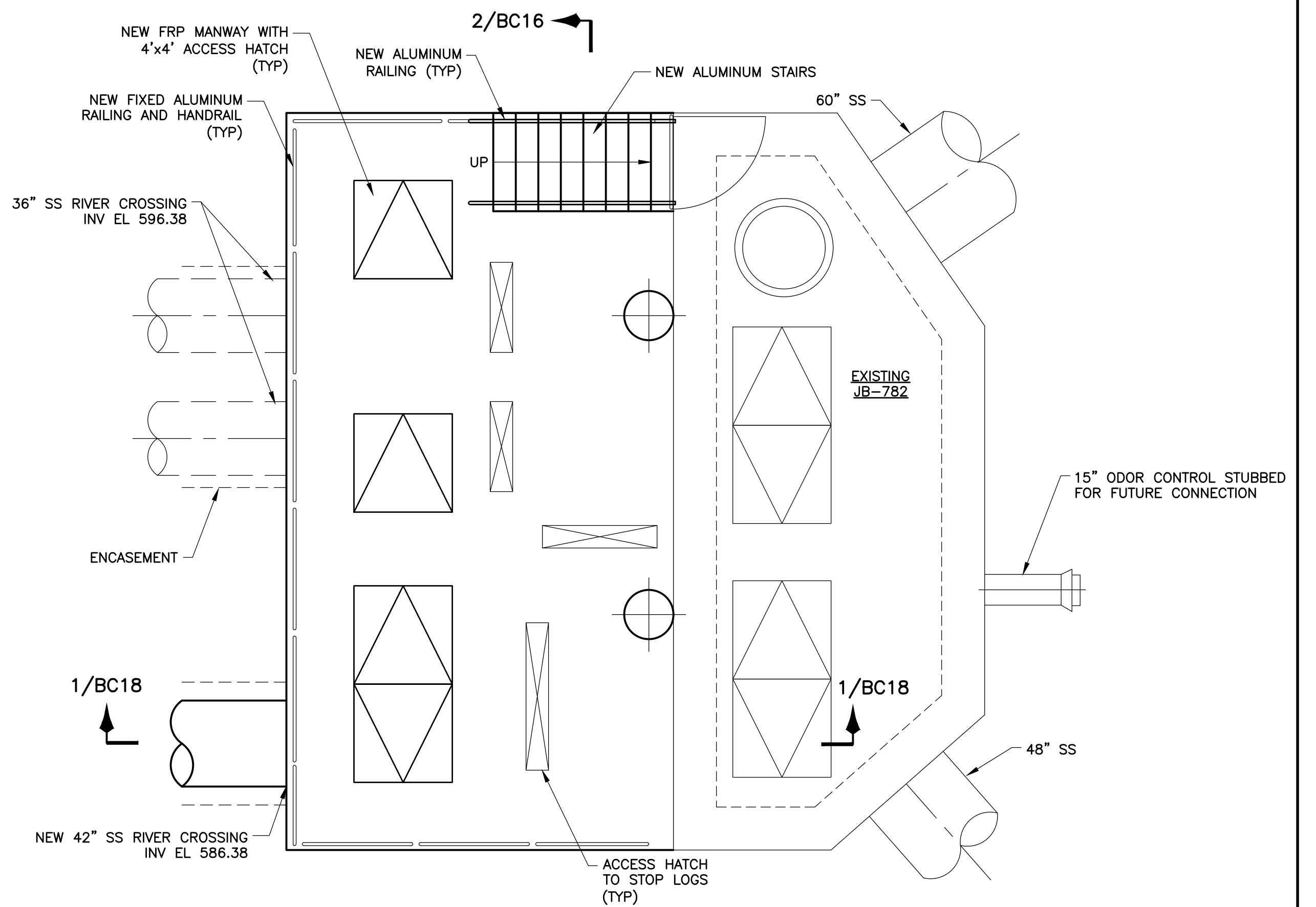
PLAN @ EL 616.00
SCALE: 1/4"=1'-0"



SECTION 1/BC16
SCALE: 1/4"=1'-0"



SECTION 2/BC16
SCALE: 1/4"=1'-0"



PLAN @ EL 630.00
SCALE: 1/4"=1'-0"

NOTES:

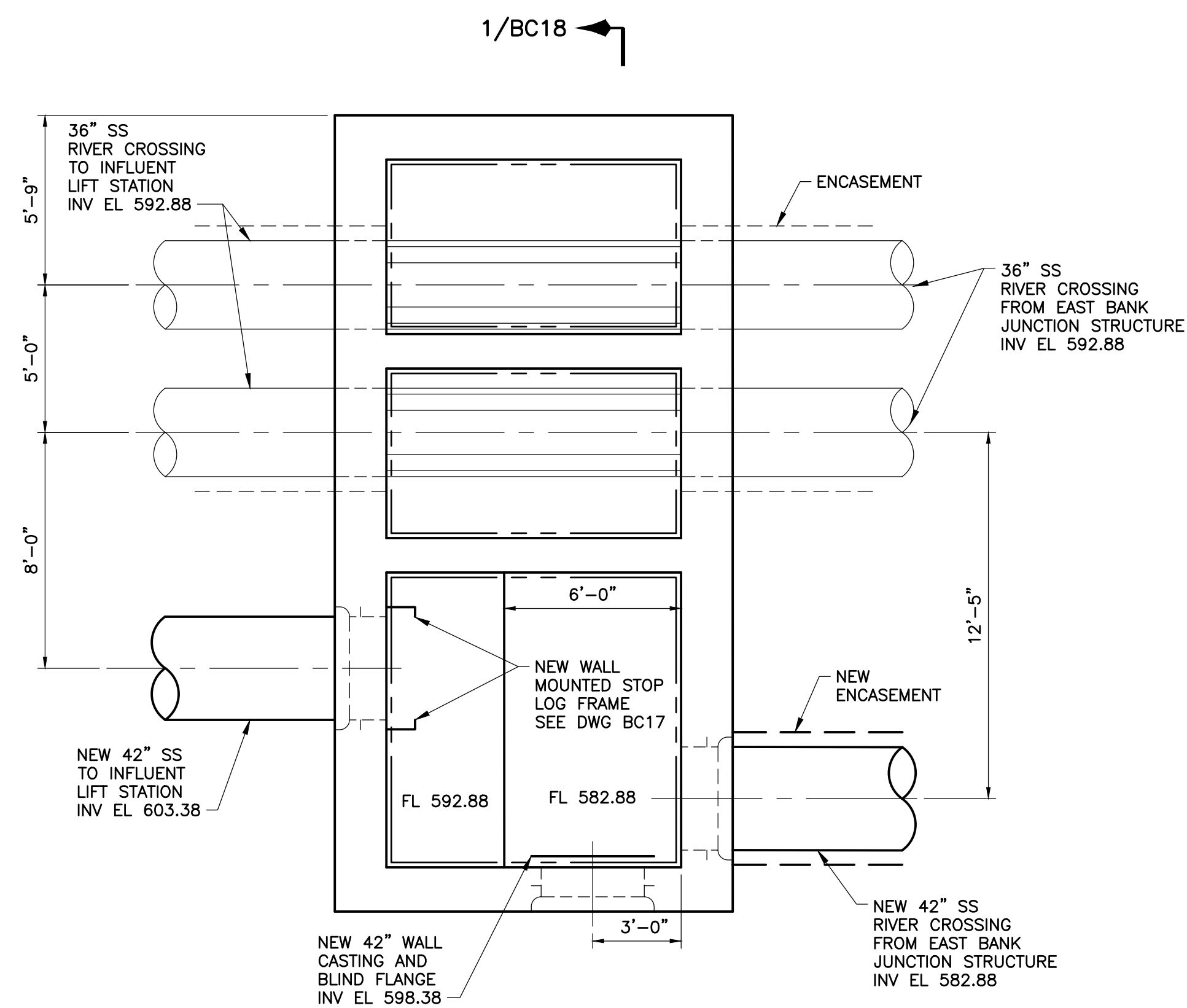
1. PROVIDE MANHOLE FRAME AND LID IN ACCORDANCE WITH CITY OF TULSA STANDARD DETAIL 353.
2. SEE DWG AG7 REGARDING REMOVAL OF EXISTING REMOVABLE SLAB AT FL EL 600.88 AND SANDFILL.
3. SAWCUT AND REMOVE EXISTING PIPE ENCASEMENT LOCATED WITHIN NEW STRUCTURE.
4. PROVIDE BLIND FLANGE ON EXISTING 42" STUB OUT OPENINGS. PLACE BACK SAND AND REMOVABLE SLABS.
5. REMOVABLE RAILING. DIVIDE ALONG CONCRETE PANEL SECTIONS AND INTO MAXIMUM 6'-0" SECTIONS. SEE DRAWING BC13 FOR RAILING DETAILS.
6. ALUMINUM SWING GATE WITH MESH OR PICKET INFILL AND PADLOCK. SIZE GATE SO BOTTOM OF GATE IS 6" MAX ABOVE WALKWAY AND OF A WIDTH TO FILL WALL OPENING. ALIGN TOP OF GATE WITH TOP OF WALL.

LEGEND:

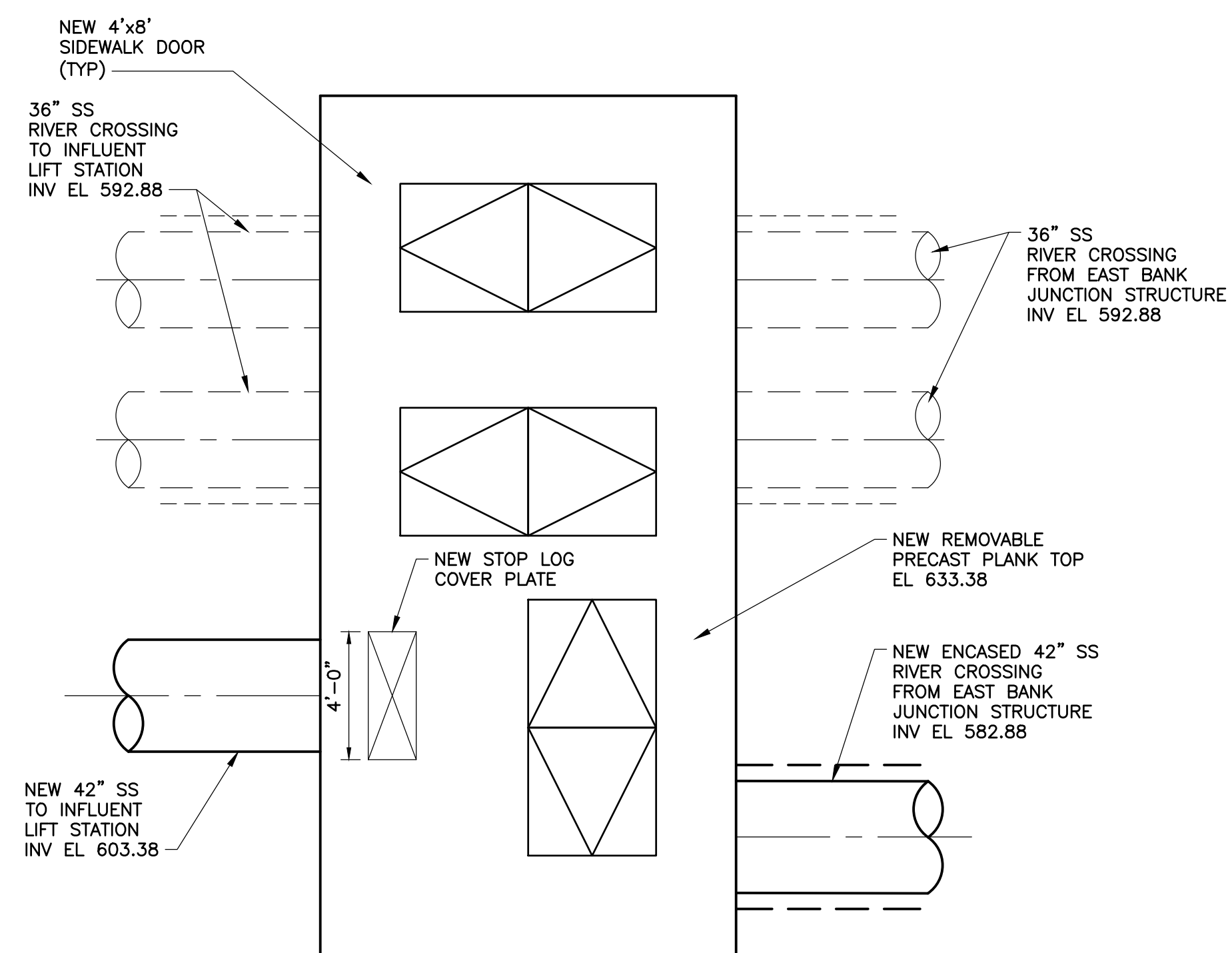
--- INDICATES CHEMICAL RESISTANT COATING:
FULL HEIGHT OF ALL CONCRETE WALLS AND THE UNDERSIDE
OF THE TOP CONCRETE SLAB.



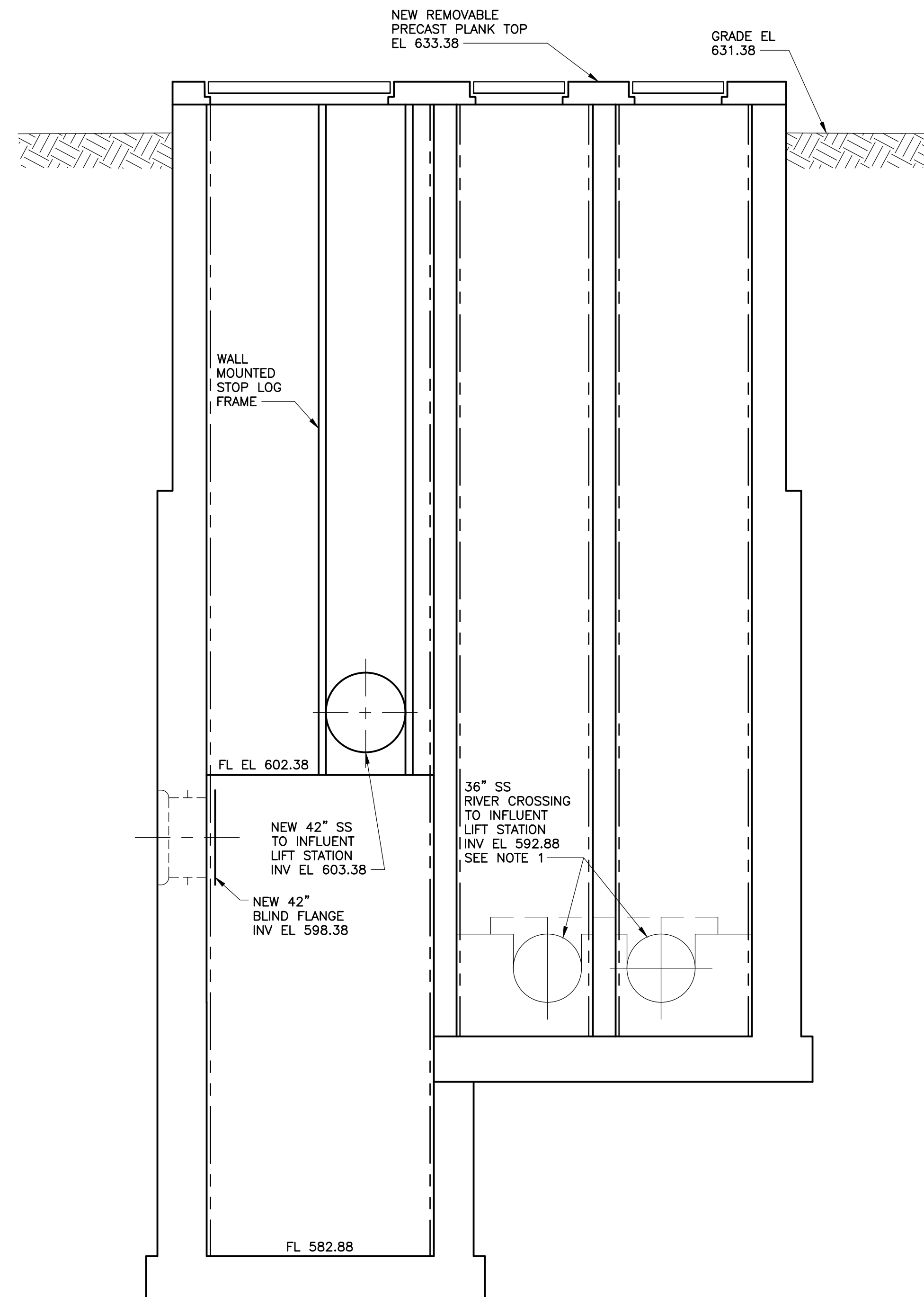
EAST BANK JUNCTION STRUCTURE MICROTUNNELING PLANS AND SECTIONS				
PROJECT NO. 2015-17, C2				
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES				
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT				
PLANS AND ESTIMATES PREPARED BY: GREELEY AND HANSEN 321 S BOSTON AVE, SUITE 300 TULSA, OKLAHOMA 74103				
REVISION	BY	DATE	PLAN SCALE:	DRAWN
			1/4"=1'-0"	DESIGNED
			SURVEY	TCG
			PROFILE SCALE	OR
HORIZONTAL:			PROJ. MGR.	8/2020
			LEAD ENGR.	8/2020
			FIELD MGR.	
			RECOMMENDED	
VERTICAL:			DESIGN MANAGER	CITY ENGINEER
			FILE: 0141ERBC21	DATE: OCTOBER 2020
			DRAWING: BC21	
			ATLAS PAGE NO:	SHEET 58 OF 65



PLAN @ EL 616.00
SCALE: 1/4"=1'-0"



PLAN @ EL 634.00
SCALE: 1/4"=1'-0"



SECTION 1/BC18
SCALE: 1/4"=1'-0"

NOTES:

1. SAWCUT AND REMOVE EXISTING PIPE AND ENCASEMENT LOCATED WITHIN NEW STRUCTURE. SEE DWG AG7 FOR PHASING.

LEGEND:


— — — — INDICATES CHEMICAL RESISTANT COATING:
FULL HEIGHT OF ALL CONCRETE WALLS AND THE UNDERSIDE
OF THE TOP CONCRETE SLAB.

WEST BANK JUNCTION STRUCTURE
MICROTUNNELING PLANS AND SECTION

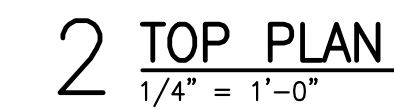
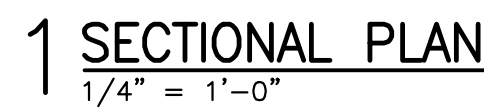
PROJECT NO. 2015-17, C2

SOUTHSIDE WASTEWATER TREATMENT PLANT
PEAK FLOW OPTIMIZATION: THIRD RIVER
CROSSING AND DIVERSION FACILITIES

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:  **GREELEY AND HANSEN**
321 S BOSTON AVE, SUITE 300
TULSA, OKLAHOMA 74103

			TULSA, OKLAHOMA 74103			
REVISION	BY	DATE	PLAN SCALE:	DRAWN	MJR	8/2020
			1/4"=1'-0"	DESIGNED	TCG	8/2020
				SURVEY		
			PROFILE SCALE	PROJ. MGR.		
			HORIZONTAL:	LEAD ENGR.		
			VERTICAL:	FIELD MGR.		
				RECOMMENDED		
				DESIGN MANAGER		
						CITY ENGINEER
			FILE: 0141ERBC22	DRAWING: BC22		DATE: OCTOBER 2020
			ATLAS PAGE NO:			SHEET 59 OF 65

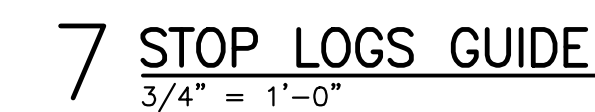


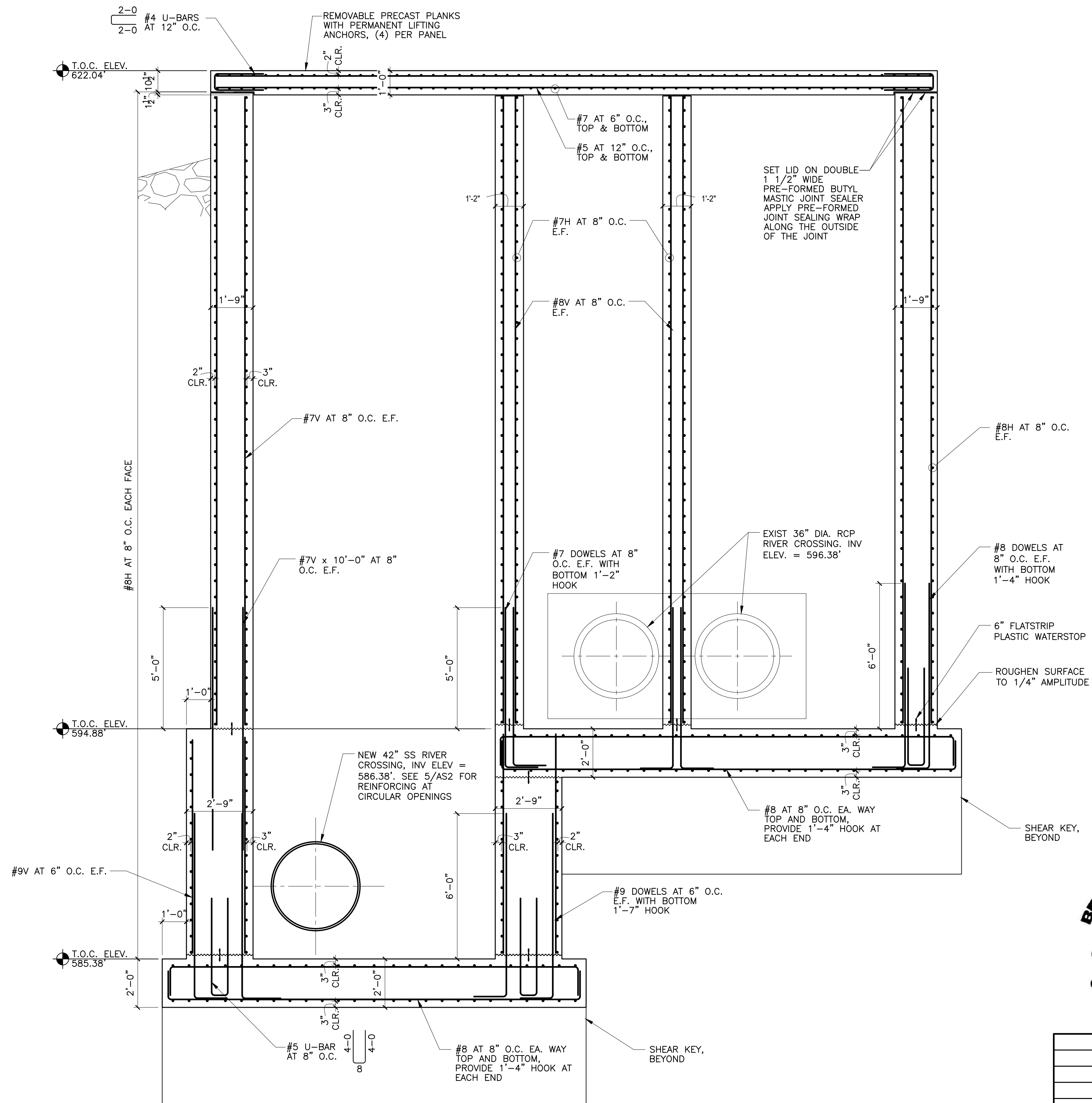
- NOTE:**
DURING EXCAVATION AND CONSTRUCTION OF THE JUNCTION BOX EXPANSION, THE EXISTING STRUCTURE WILL REQUIRE TEMPORARY BRACING UNTIL ALL CONSTRUCTION IS COMPLETE AND THE BACKFILL IS IN PLACE.



OKCA #1460
Exp. Date: 06/30/21

PLAN SCALE:		DRAWN	LA	08/20	APPROVED:
1/4"=1'-0"		DESIGNED	KR	08/20	
		SURVEY			
PROFILE SCALE		PROJ. MGR.			
HORIZONTAL:		LEAD ENGR.			
VERTICAL:		FIELD MGR.			CITY ENGINEER
		RECOMMENDED			
		DESIGN MANAGER			
FILE: BS-6.DWG		DRAWING: BS6			OCTOBER 2020
ATLAS PAGE NO:		SHEET 60 OF 65			





1 SECTION
3/8" = 1'-0"



OKCA #1460
Exp. Date: 06/30/21



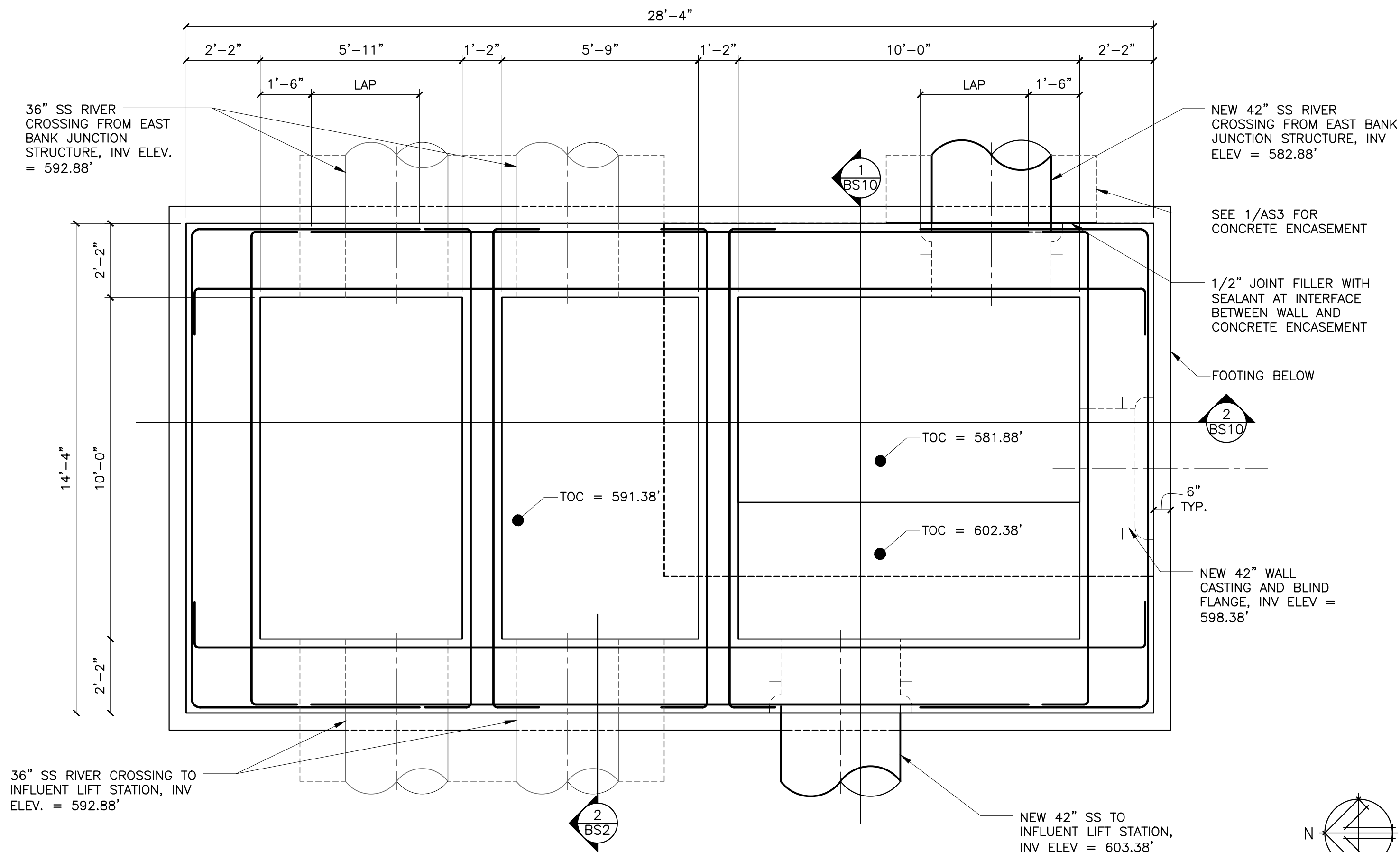
STRUCTURAL - EAST BANK JUNCTION STRUCTURE
SECTIONS AND DETAILS

PROJECT NO. 2015-17, C1
SOUTHSIDE WASTEWATER TREATMENT PLANT
PEAK FLOW OPTIMIZATION: THIRD RIVER
CROSSING AND DIVERSION FACILITIES

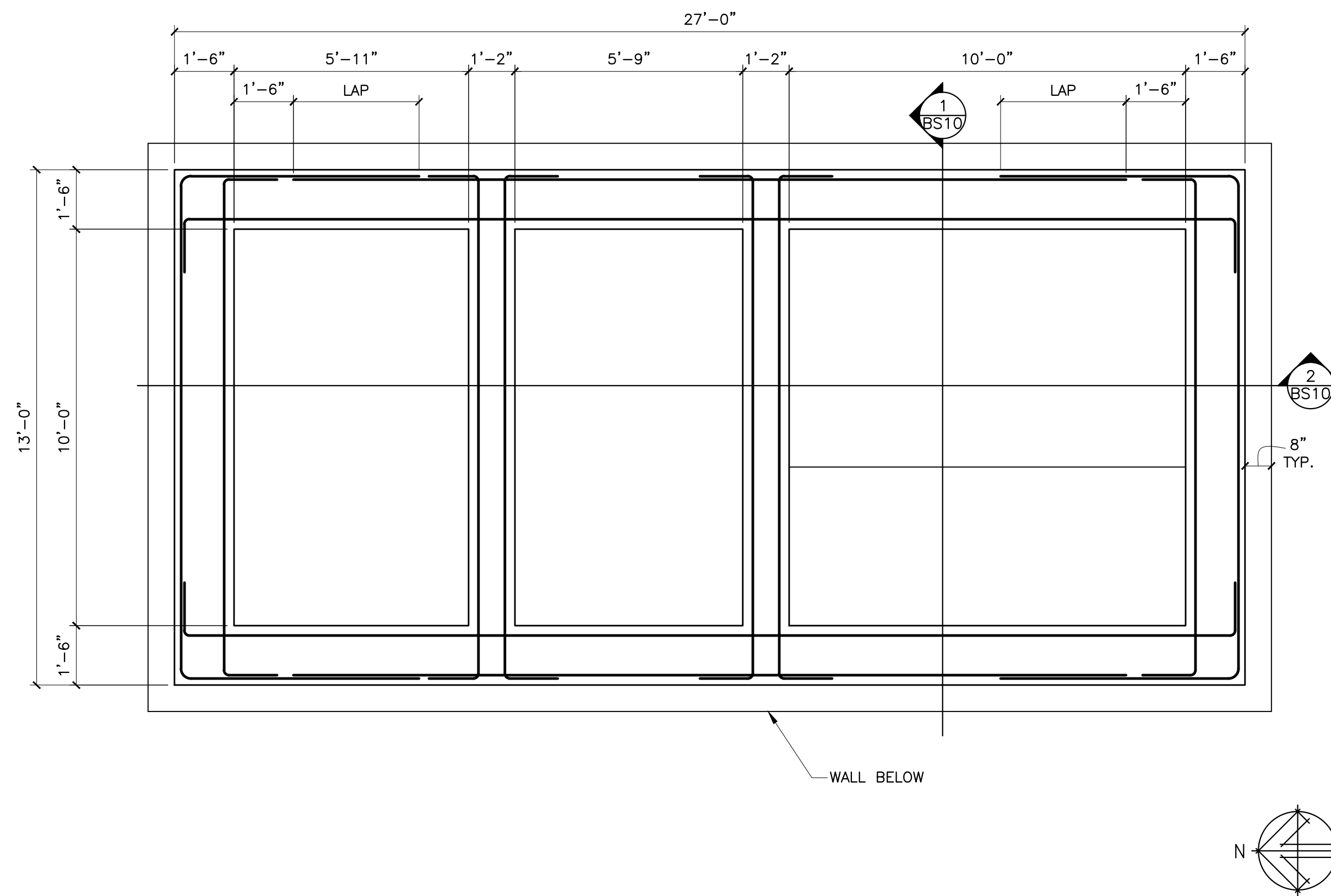
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
wallace Wallace Engineering
Structural Consultants, Inc.
200 East Mathew Brody Street
Tulsa, Oklahoma 74103

REVISION	BY	DATE	PLAN SCALE:	DRAWN	LA	08/20	APPROVED:
			NOT TO SCALE	DESIGNED	KR	08/20	
				SURVEY			
			PROFILE SCALE	PROJ. MGR.			
			HORIZONTAL:	LEAD ENGR.			
			VERTICAL:	FIELD MGR.			
				RECOMMENDED			
				DESIGN MANAGER			CITY ENGINEER
			FILE: BS-8.DWG	DRAWING: BS8			OCTOBER 2020
			ATLAS PAGE NO:				SHEET 62 OF 65

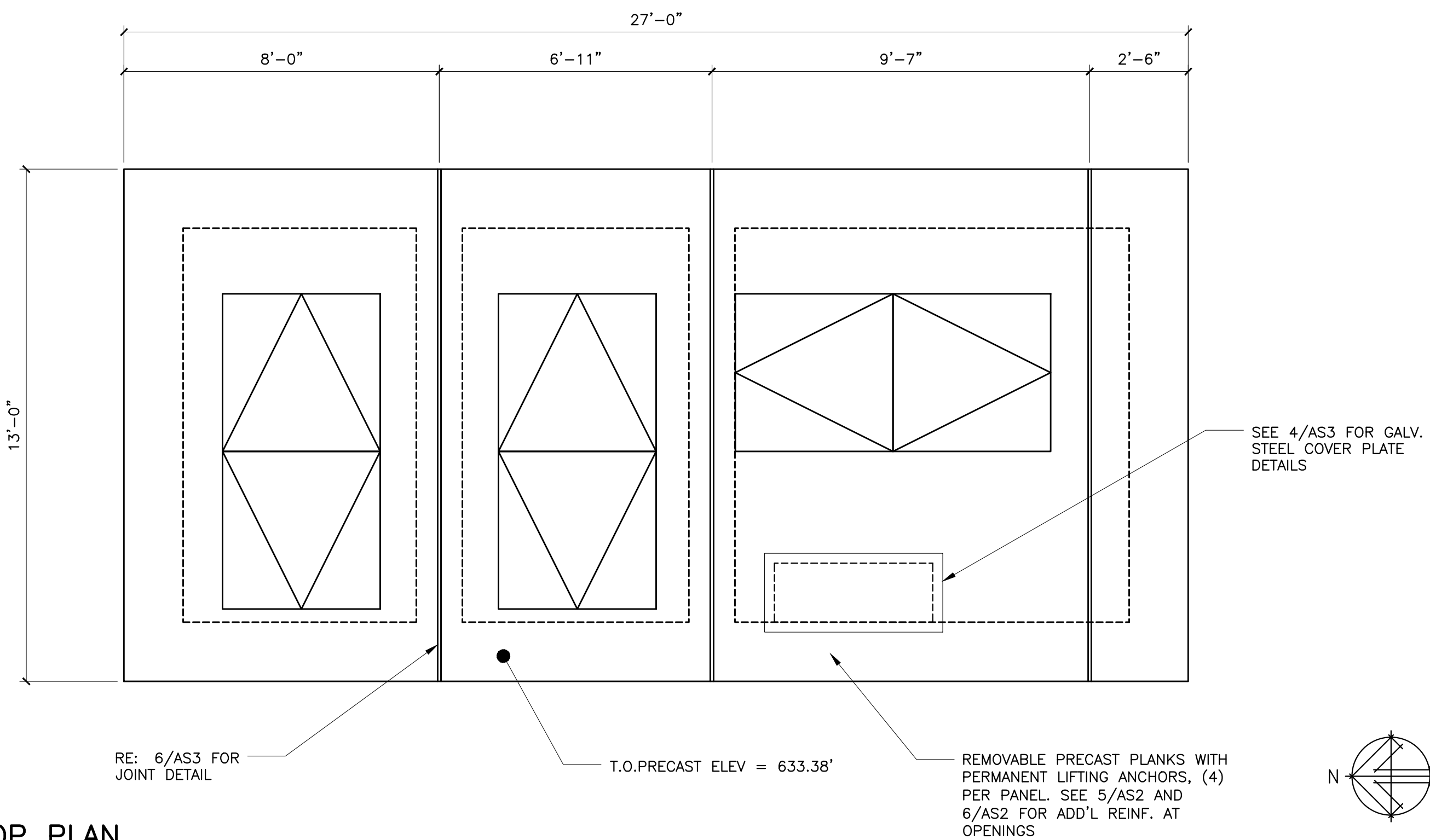


1 SECTIONAL PLAN
3/8" = 1'-0"



2 SECTIONAL PLAN
3/8" = 1'-0"

- NOTES:
1. JUNCTION STRUCTURE MUST BE CONSTRUCTED WITH THE EXISTING DOUBLE 36" RCP IN SERVICE PER THE CONSTRAINTS SPECIFIED.
 2. PLANS FOR BYPASSING FLOW DURING CONSTRUCTION MUST BE APPROVED BY THE ENGINEER.
 3. SAWCUT EXISTING SEWER AT INSIDE FACE OF STRUCTURAL WALL. REPAIR DAMAGED CONCRETE AS REQUIRED.
 4. CONTRACTOR TO COORDINATE CONSTRUCTION SEQUENCE.
 5. ALL INTERIOR WALL SURFACES AND UNDER TOP SLAB SHALL HAVE CHEMICAL RESISTANT EPOXY COATING SYSTEM APPLIED PER SPECIFICATIONS.
 6. BACKFILL SHALL NOT BE PLACED AGAINST WALLS UNTIL ALL CONCRETE HAS REACHED IT'S DESIGN STRENGTH.
 7. FOR ADDITIONAL REINFORCEMENT AROUND PIPE PENETRATIONS, SEE DETAILS 5 AND 6 ON SHEET AS2.
 8. ALL CONSTRUCTION JOINTS MUST BE APPROVED BY THE ENGINEER. CONTRACTOR SHALL SUBMIT ALL PROPOSED CONSTRUCTION JOINT LOCATIONS TO THE ENGINEER FOR APPROVAL.



3 TOP PLAN
3/8" = 1'-0"



OKCA #1460
Exp. Date: 06/30/21



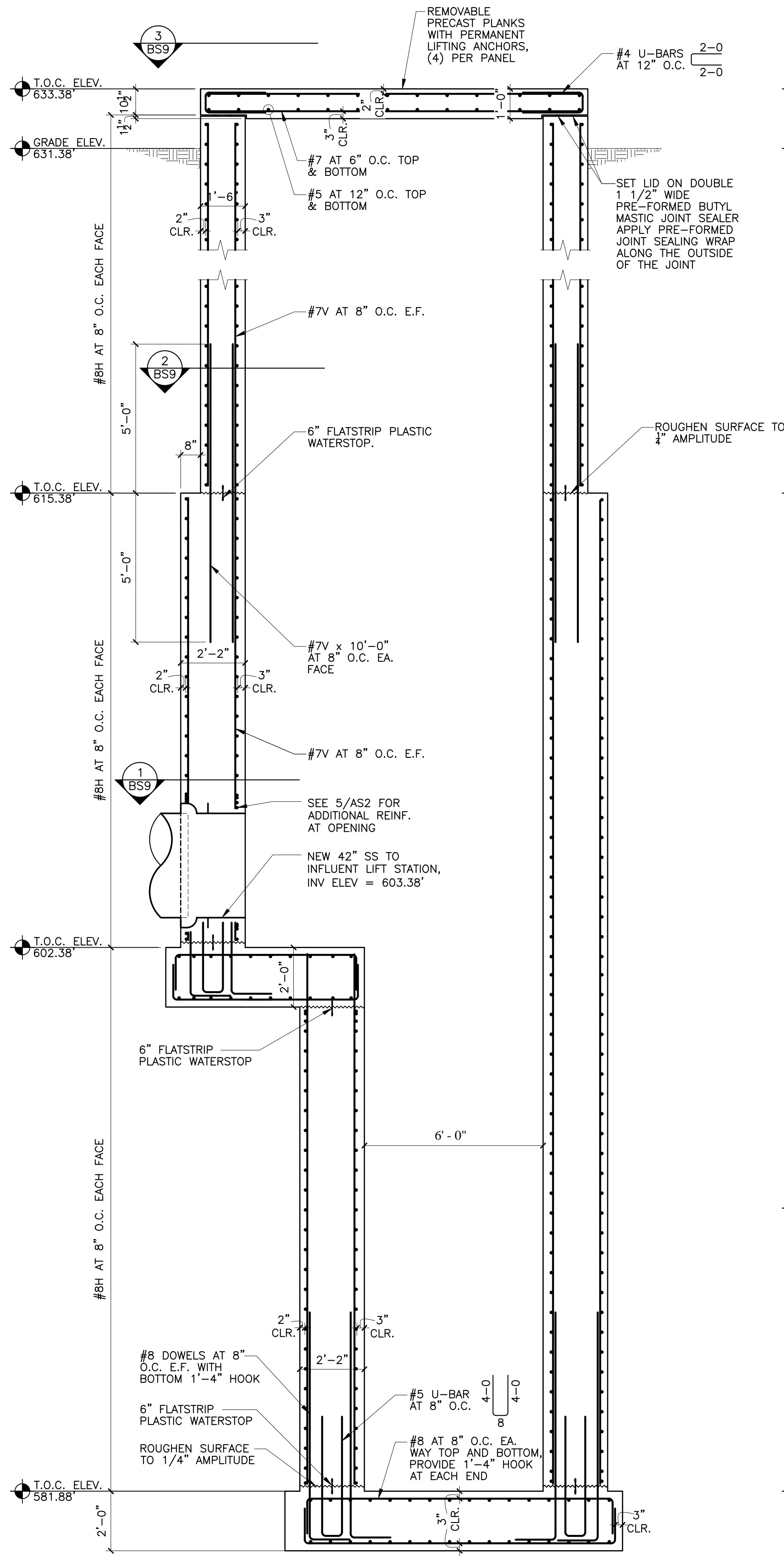
STRUCTURAL – WEST BANK JUNCTION STRUCTURE PLANS

PROJECT NO. 2015-17, C1
SOUTHSIDE WASTEWATER TREATMENT PLANT
PEAK FLOW OPTIMIZATION: THIRD RIVER
CROSSING AND DIVERSION FACILITIES

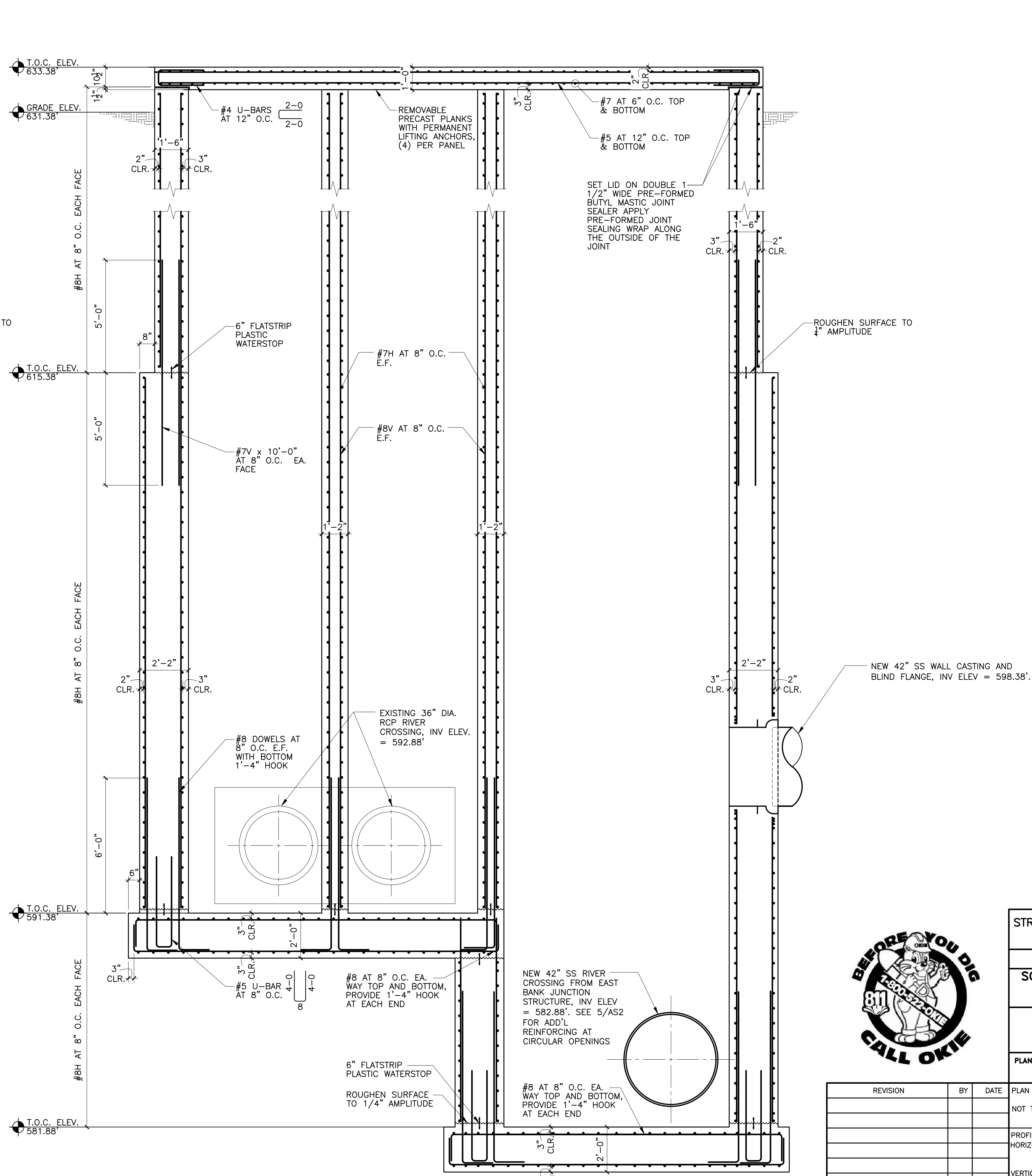
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY: *wallace* Wallace Engineering Structural Consultants, Inc.
Tulsa, Oklahoma 74103

REVISION	BY	DATE	PLAN SCALE:	DRAWN	LA	08/20	APPROVED:
			NOT TO SCALE	DESIGNED	KR	08/20	
				SURVEY			
			PROFILE SCALE	PROJ. MGR.			
			HORIZONTAL:	LEAD ENGR.			
			VERTICAL:	FIELD MGR.			
				RECOMMENDED			
				DESIGN MANAGER			
			FILE: BS-9.DWG	DRAWING: BS9			OCTOBER 2020
			ATLAS PAGE NO:				SHEET 63 OF 65



1 SECTION
3/8" = 1'-0"



2 SECTION
3/8" = 1'-0"



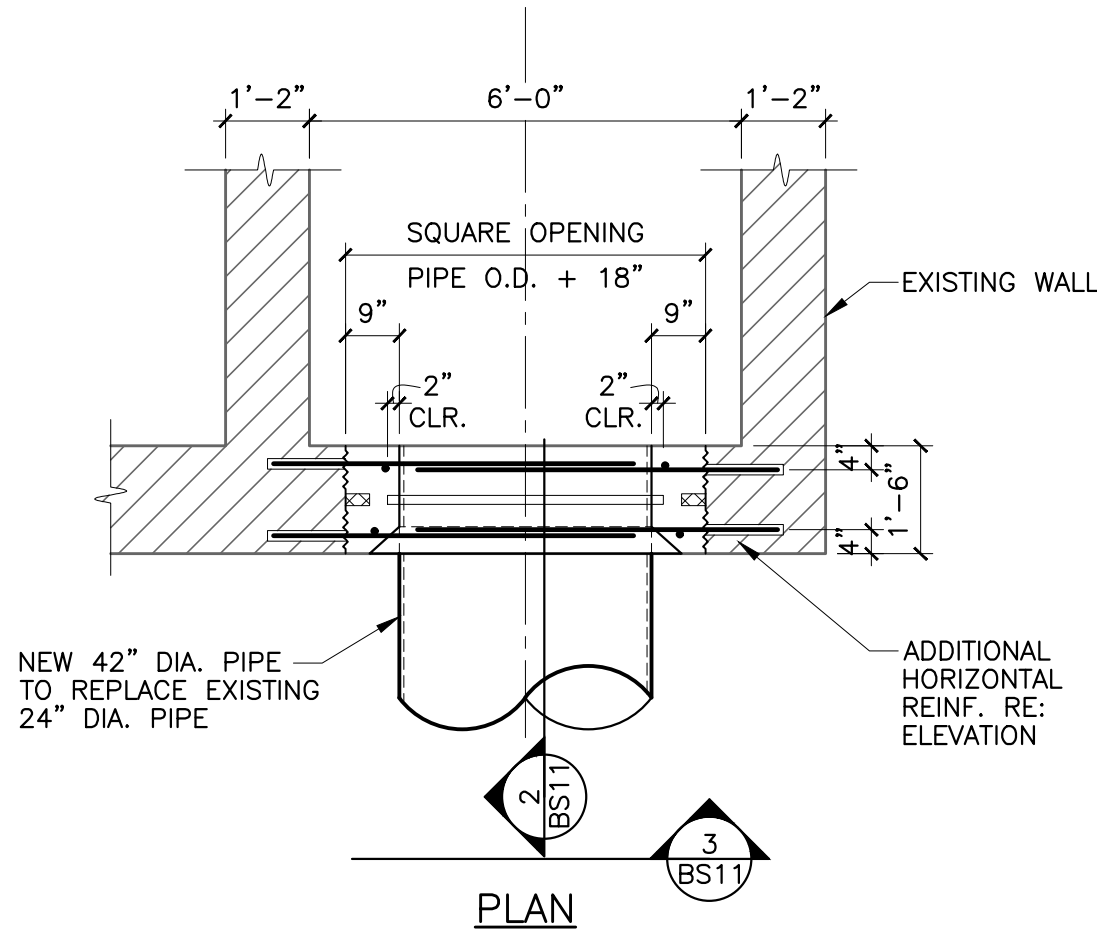
OKCA #1460
Exp. Date: 06/30/21



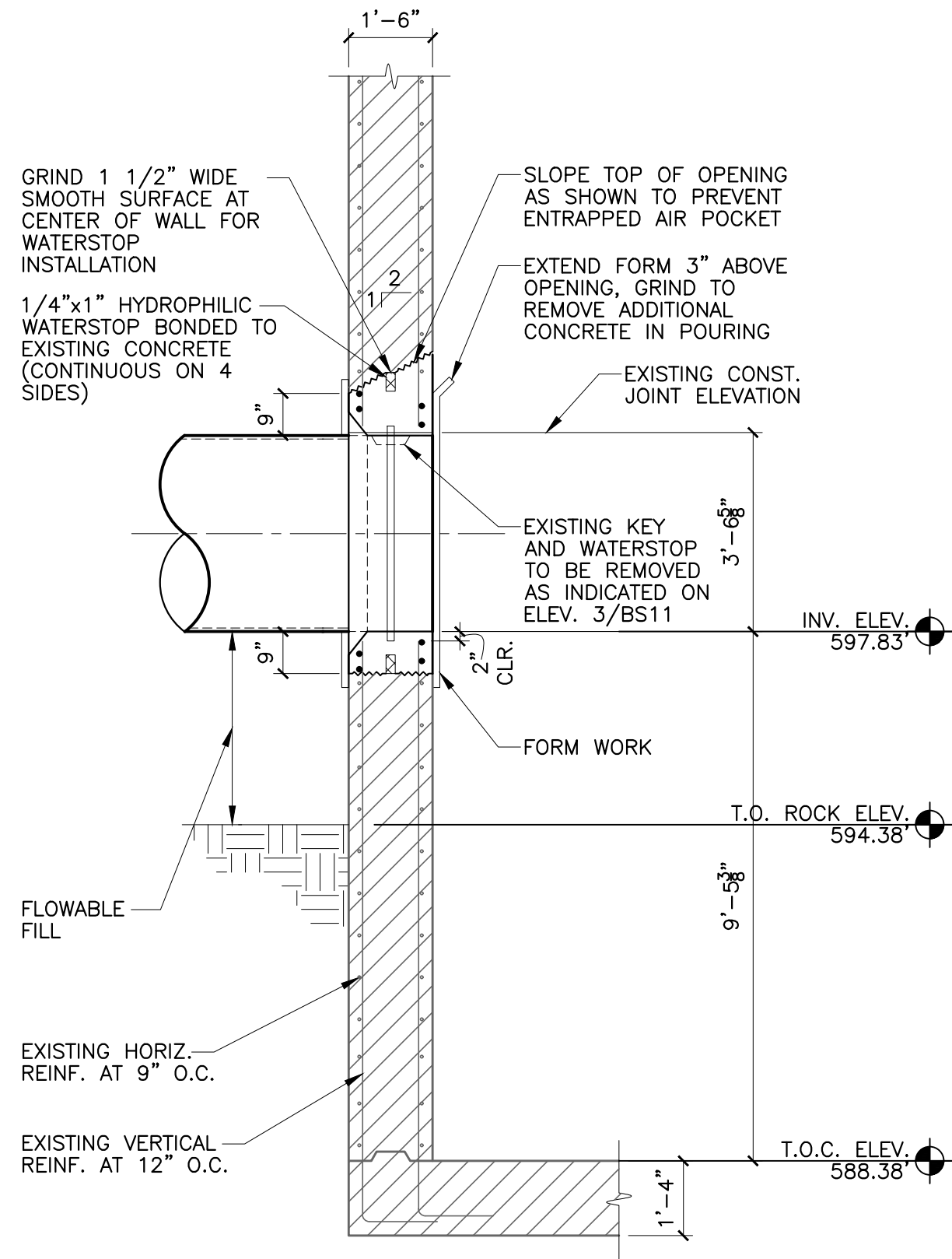
STRUCTURAL - WEST BANK JUNCTION STRUCTURE SECTIONS AND DETAILS									
PROJECT NO. 2015-17, C1									
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES									
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT									
PLANS AND ESTIMATES PREPARED BY: <i>wallace</i> Wallace Engineering Structural Consultants, Inc. 200 East Mathew Brody Street Tulsa, Oklahoma 74103									
REVISION	BY	DATE	PLAN SCALE:	DRAWN	LA	08/20	APPROVED:		
			NOT TO SCALE	DESIGNED	KR	08/20			
				SURVEY					
			PROFILE SCALE	PROJ. MGR.					
			HORIZONTAL:	LEAD ENGR.					
			VERTICAL:	FIELD MGR.					
				RECOMMENDED			CITY ENGINEER		
				DESIGN MANAGER					
			FILE: BS-10.DWG	DRAWING: BS10			OCTOBER 2020		
			ATLAS PAGE NO:				SHEET 64 OF 65		

NOTES:

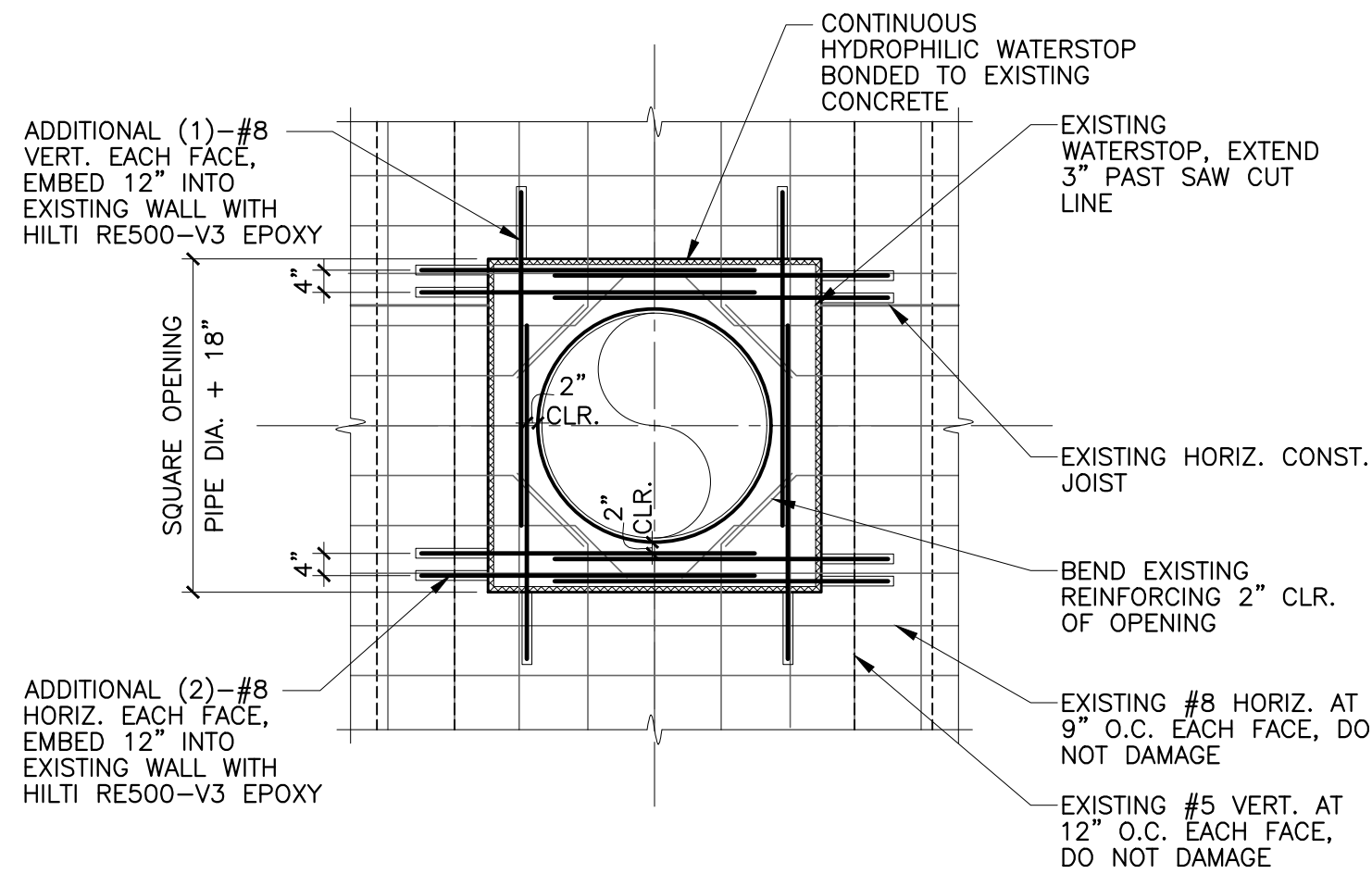
1. SAW-CUT 1-INCH DEEP x PIPE OD + 18" SQUARE SCORE LINE ON EACH FACE OF WALL. VERIFY DEPTH OF CUT TO CLEAR REINFORCING. INCREASE HEIGHT AS NOTED AT TOP ON WATERSIDE FACE FOR POURING.
2. CHIP TO REMOVE THE CONCRETE WITHIN THE SCORE LINE, WHILE PRESERVING THE EXISTING WALL REINFORCING.
3. CUT EXISTING REINFORCING AT CENTER OF OPENING ELEVATION AND BEND TO CLEAR PIPE.
4. GRIND 1 1/2" WIDE x CONT SMOOTH SURFACE ALL AROUND THE OPENING AT CENTER OF WALL. CLEAN SURFACES AND BOND CONTINUOUS HYDROPHILIC WATERSTOP IN PLACE.
5. INSTALL WALL PIPE. COAT CONCRETE ENCASED PORTION OF PIPE WITH SPECIFIED COATING SYSTEM.
6. INSTALL ADDITIONAL REINFORCING EACH FACE, EACH SIDE, ABOVE AND BELOW PIPE. UNLESS NOTED OTHERWISE, HORIZONTAL REINFORCING TO HAVE COMBINED AREA EQUAL TO AREA OF HORIZONTAL REINFORCING CUT. UNLESS NOTED OTHERWISE, VERTICAL REINFORCING TO HAVE COMBINED AREA EQUAL TO AREA OF VERTICAL REINFORCING CUT.
7. SOAK CONCRETE SURFACES AND WITHIN 15-MINUTES CAST CONCRETE CLOSURE. CONCRETE CLOSURE MUST BE CAST BEFORE HYDROPHILIC WATERSTOP EXPANDS. FORM GROOVE ON ALL SIDES OF OPENING EXCEPT AT TOP ON THE POUR SIDE.



1 NEW PIPE PENETRATION AT EXISTING WALL
3/8" = 1'-0"



2 SECTION
3/8" = 1'-0"



3 ELEVATION
3/8" = 1'-0"



OKCA #1460
Exp. Date: 06/30/21



STRUCTURAL MISCELLANEOUS DETAILS									
PROJECT NO. 2015-17, C1									
SOUTHSIDE WASTEWATER TREATMENT PLANT PEAK FLOW OPTIMIZATION: THIRD RIVER CROSSING AND DIVERSION FACILITIES									
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT									
PLANS AND ESTIMATES PREPARED BY: <i>wallace</i> Wallace Engineering Structural Consultants, Inc. 200 East Mathew Brody Street Tulsa, Oklahoma 74103									
REVISION				PLAN SCALE:		LA		APPROVED:	
BY				DATE		KR		08/20	
				NOT TO SCALE		DESIGNED		08/20	
						SURVEY			
				PROFILE SCALE		PROJ. MGR.			
				HORIZONTAL:		LEAD ENGR.			
				VERTICAL:		FIELD MGR.			
						RECOMMENDED			
						DESIGN MANAGER		CITY ENGINEER	
				FILE: BS-11.DWG		DRAWING: BS11		OCTOBER 2020	
				ATLAS PAGE NO:				SHEET 65 OF 65	