

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED
U.S. HIGHWAY
FEDERAL AID PROJECT NO. J2-9849(004)
BRIDGE & APPROACHES
U.S. HIGHWAY 81

KINGFISHER COUNTY

CONTROL SECTION NO. 81-37-04
STATE JOB NO. 29849(04)

BRIDGE "A" LOCATION NO. 3704-0543EX
BRIDGE "B" LOCATION NO. 3704-0543WX
EXISTING NBIS NO. 16159
EXISTING NBIS NO. 16167

INDEX OF SHEETS
SEE SHEET NO. 2

STANDARDS
SEE SHEET NO. 2

FOR SURVEY CONTROL DATA,
SEE SURVEY DATA SHEETS.

DESIGN DATA

ADT 2015 = 7,200
ADT 2035 = 10,100
K (DHV/ADT) = 10%
D = 55%
T (% AADT) = 18%
T (% DHV) = 16%
T₉₀(% ADT) = 13%
V = 65MPH

20 YR FLEX ESALS = 8.6 M

SCALES



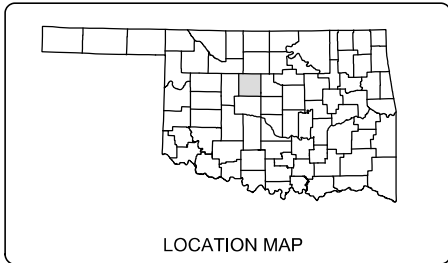
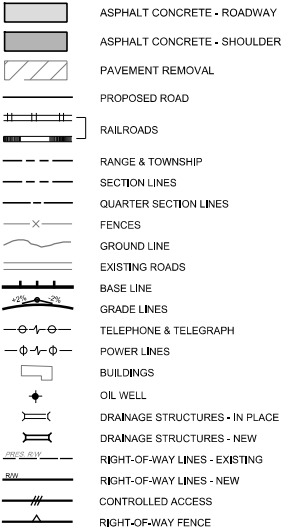
PLAN 1" = 50'

PROFILE HOR. 1" = 50'

VER. 1" = 5'

LAYOUT MAP 1" = 5280'

CONVENTIONAL SYMBOLS



BRIDGE "A"
BEGIN STA. 129+96.10
END STA. 135+08.68
C/L STA. 132+52.00
LENGTH = 512.58'

BRIDGE "B"
BEGIN STA. 129+25.93
END STA. 133+98.51
C/L STA. 131+62.00
LENGTH = 472.58'

STA. 121+00.00
BEGIN PROJECT
CONTROL SUB-SECTION
NO. 17.40

STA. 102+14.28
BEGIN INCIDENTAL
CONST.

STA. 157+05.16
END INCIDENTAL
CONST.
STA. 148+00.00
END PROJECT

**FINAL FIELD
MEETING**
10-21-2018

THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

PROJECT LENGTH BASED ON C.R.L. STATIONING

ROADWAY LENGTH _____ 2207.42 FT.
BRIDGE LENGTH _____ 492.58 FT.
PROJECT LENGTH _____ 2700.00 FT.

0.418 MI.
0.093 MI.
0.511 MI.

MacArthur
Associated Consultants
25 N.W. 146th Street - Edmond, OK 73013 - 405.848.2471
C.O.A. No. 699 Renewal Date: 06-30-19



KENNETH R. GILLESPIE, P.E. OKLA. REG. NO. 20104
ROADWAY

DATE

MacArthur
Associated Consultants
25 N.W. 146th Street - Edmond, OK 73013 - 405.848.2471
C.O.A. No. 699 Renewal Date: 06-30-19



GREGORY LYNN FITTER, P.E. OKLA. REG. NO. 15070
BRIDGE "A" AND BRIDGE "B"

DATE

OKLAHOMA
DEPARTMENT OF TRANSPORTATION

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

DATE APPROVED

DATE APPROVED

BY

BY

CHIEF ENGINEER

DIVISION ADMINISTRATOR

SWO 4987(1)

PROJECT NO. 29849(04)

SHEET NO. 0001

2009 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION - ENGLISH GOVERN, APPROVED BY
THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, JANUARY 04, 2010.

PRINT DATE: 10/22/2018 T:\1403\Drawings\1403-Index.dgn

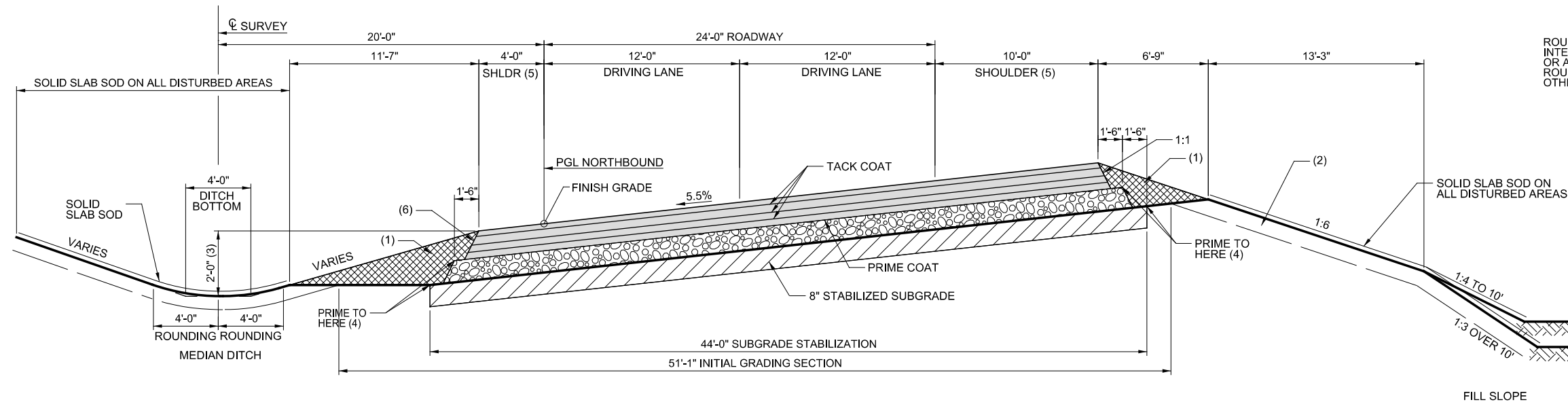
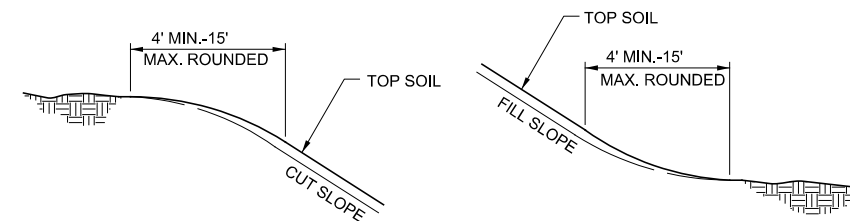
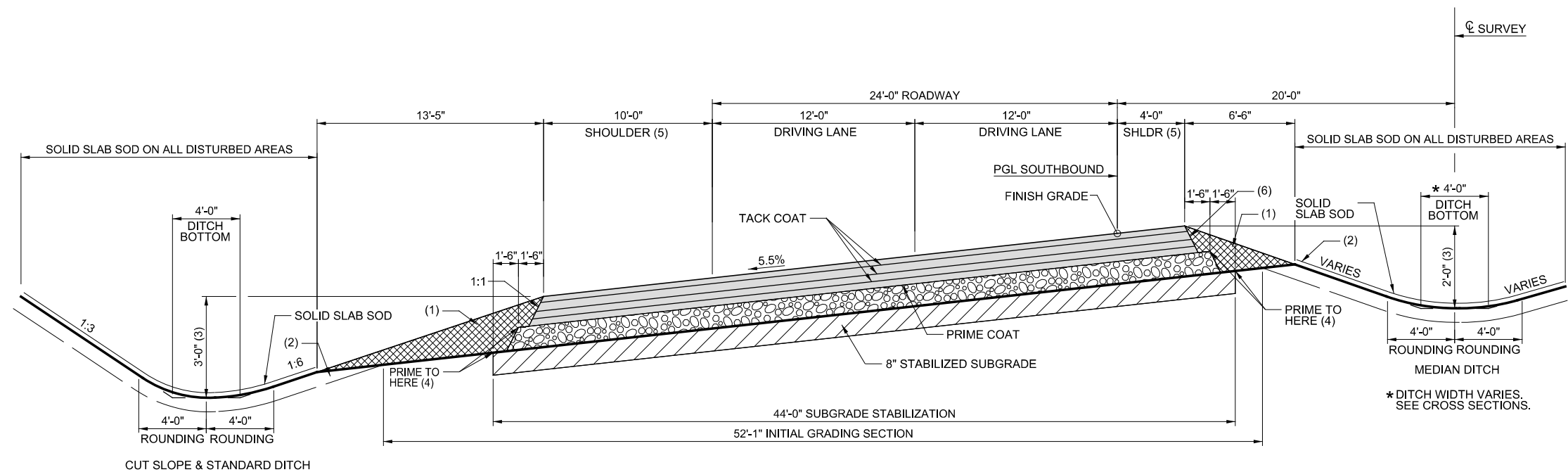
INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
0001	TITLE SHEET
0002	INDEX OF SHEETS
0003-0004	TYPICAL SECTIONS (1-2)
AB01	GENERAL NOTES (BRIDGE)
AB02	UNION PACIFIC RAILROAD COMPANY NOTES
AB03	SUMMARY OF PAY QUANTITIES (BRIDGE)
AB04	HORIZONTAL CLEARANCE PERPENDICULAR TO RAILROAD
AR01	SUMMARY OF PAY QUANTITIES (ROADWAY)
AR02	SUMMARY SHEET
AT01	TRAFFIC CONTROL PAY QUANTITIES
B001-B002	GENERAL PLAN AND ELEVATION - BRIDGE "A" (1-2)
B003-B006	FOUNDATION BORING LOG SHEET (1-4)
B007	SUBSTRUCTURE LAYOUT AND SUMMARY OF QUANTITIES - BRIDGE "A"
B008	SUBSTRUCTURE LAYOUT - BRIDGE "A" (CONTINUED)
B009	SUBSTRUCTURE EXCAVATION AND PIPE UNDERDRAIN ASSEMBLY DETAILS
B010	ABUTMENT NO.1 - BRIDGE "A"
B011	ABUTMENT NO.1 DETAILS - BRIDGE "A"
B012	ABUTMENT NO.1 WINGWALL DETAILS - BRIDGE "A"
B013	ABUTMENT NO.2 - BRIDGE "A"
B014	ABUTMENT NO.2 DETAILS - BRIDGE "A"
B015	ABUTMENT NO.2 WINGWALL DETAILS - BRIDGE "A"
B016	PIER NO.1 - BRIDGE "A"
B017	PIER NO.2 - BRIDGE "A"
B018	PIER DETAILS - BRIDGE "A" AND BRIDGE "B"
B019	TYPICAL CROSS SECTION AND LONGITUDINAL SECTION - BRIDGE "A"
B020	SLAB REINFORCING PLAN - BRIDGE "A"
B021	SLAB DETAILS - BRIDGE "A"
B022	FRAMING PLAN - BRIDGE "A"
B023	PLATE GIRDER DETAILS - BRIDGE "A"
B024	BOLTED SPLICE DETAILS - BRIDGE "A"
B025-B026	CROSS FRAME DETAILS - BRIDGE "A" (1-2)
B027	BEARING DETAILS - BRIDGE "A" AND "B"
B028	APPROACH SLAB NO.1 - BRIDGE "A"
B029	APPROACH SLAB NO.2 - BRIDGE "A"
B030	APPROACH SLAB DETAILS - BRIDGE "A"
B031-B032	GENERAL PLAN AND ELEVATION - BRIDGE "B" (1-2)
B033	SUBSTRUCTURE LAYOUT AND SUMMARY OF QUANTITIES - BRIDGE "B"
B034	SUBSTRUCTURE LAYOUT - BRIDGE "B" (CONTINUED)
B035	ABUTMENT NO.1 - BRIDGE "B"
B036	ABUTMENT NO.1 DETAILS - BRIDGE "B"
B037	ABUTMENT NO.1 WINGWALL DETAILS - BRIDGE "B"
B038	ABUTMENT NO.2 BRIDGE SEAT - BRIDGE "B"
B039	ABUTMENT NO.2 RETAINING WALL - BRIDGE "B"
B040	ABUTMENT NO.2 DETAILS - BRIDGE "B"
B041	ABUTMENT NO.2 WINGWALL DETAILS - BRIDGE "B"
B042	PIER NO.1 - BRIDGE "B"
B043	PIER NO.2 - BRIDGE "B"
B044	TYPICAL CROSS SECTION AND LONGITUDINAL SECTION - BRIDGE "B"
B045	SLAB REINFORCING PLAN - BRIDGE "B"
B046	SLAB DETAILS - BRIDGE "B"
B047	FRAMING PLAN - BRIDGE "B"
B048	PLATE GIRDER DETAILS - BRIDGE "B"
B049	APPROACH SLAB NO.1 - BRIDGE "B"
B050	APPROACH SLAB NO.2 - BRIDGE "B"
B051	SLOPE WALL PLAN AT SOUTH ABUTMENTS - BRIDGES "A" AND "B"
B052	SLOPE WALL PLAN AT NORTH ABUTMENTS - BRIDGES "A" AND "B"
B053	SLOPE WALL DETAILS
B054	SAFETY FENCE ON PARAPET - BRIDGES "A" AND "B"
B055	SAFETY FENCE DETAILS - BRIDGES "A" AND "B"
B056	BRIDGE DECK FORMWORK BRACING
B057	DRAINS AT END OF BRIDGE
E001	STORM WATER MANAGEMENT PLAN
E002	EROSION CONTROL PLAN (1-2)
R001-R005	PLAN AND PROFILE (1-5)
R006-R007	TYPICAL GRADING ALONG RAILROAD (1-2)
R008-R012	CONSTRUCTION SEQUENCING (1-5)
S001-S013	SURVEY DATA SHEETS (1-13)
T001	TYPICAL ADVANCE WARNING SIGNS PHASE 1
T002-T003	TRAFFIC CONTOL PHASE 1 (1-2)
T004	TYPICAL ADVANCE WARNING SIGNS PHASE 2
T005-T006	TRAFFIC CONTOL PHASE 2 (1-2)
T007	TYPICAL ADVANCE WARNING SIGNS PHASE 3
T008-T009	TRAFFIC CONTOL PHASE 3 (1-2)
X001-X027	CROSS SECTIONS (1-27)

STANDARDS

THE FOLLOWING STANDARDS WILL BE REQUIRED FOR THIS PROJECT:

ROADWAY	TRAFFIC	BRIDGE
SSS-1-1	TCS1-1-01	FSHP-42-2-00E
TSC1-3-2	TCS2-1-00	EJ-SK-04E
TSC2-3-2	TCS3-1-01	EJ-DTL-02E
ASCD-5-2	TCS4-1-01	HP1-2-01E
PCES-4-1	TCS5-1-00	
SMD-3-1	TCS6-1-02	
SPI-4-1	TCS7-1-02	
SPB-1-4	TCS8-1-00	
FHTCP-3-1	TCS9-1-01	
PDT-1-3	TCS10-1-00	
THRI-1-02	TCS11-1-01	
SKT-1-00	TCS14-1-00	
GA31-1-00	TCS16-1-00	
GHW1-1-00	TCS19-1-01	
GHW2-1-00	TCS20-1-00	
RS1-2-00	TCS24-1-02	
	TCS25-1-00	

US-81 over UP Railroad			KINGFISHER COUNTY	
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN	NDA		INDEX OF SHEETS	
CHECKED	SP			
APPROVED				
SQUAD	MacArthur			
STATE JOB NO. 29849(04)			SHEET NO. 0002	



- (1) BACKFILL NOTE:
TO BE BACKFILLED AND COMPACTED AS PART OF THE FINISHING OPERATIONS. COST TO BE INCLUDED IN OTHER ITEMS OF WORK.
- (2) TOPSOIL NOTE:
THE CONTRACTOR SHALL STRIP ALL OF THE AVAILABLE TOPSOIL, STOCKPILE IT, AND PLACE IT BACK ON THE SECTION IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATION. RESERVED TOPSOIL SHALL BE SPREAD APPROX. 5" THICK FIRST ON THE COMPLETED SLOPES OF THE CUT SECTIONS AND THE REMAINDER ON COMPLETED FILL SLOPES OR OTHER PRIORITY AREAS LOCATED BY THE ENGINEER. ALL ADDITIONAL COSTS ASSOCIATED WITH OPERATION SHALL BE INCLUDED IN THE PAY ITEM FOR TYPE A-SALVAGED TOPSOIL, LUMP SUM.

THE GRADING LINE AS SHOWN ON THE TYPICAL AND CROSS SECTIONS IS TO THE TOP OF THE TOPSOIL. EARTHWORK QUANTITIES WERE NOT ADJUSTED FOR SALVAGE AND THE TOPSOIL QUANTITY IS INCLUDED IN THE MASS DIAGRAM.
- (3) DISTANCES ARE MEASURED VERTICALLY FROM THE EDGE OF THE FINISHED SHOULDER.
- (4) PRIME COAT AT A RATE OF 0.35 GAL/SY OVER SUBGRADE UPON COMPLETION OF MODIFICATION.
- (5) VARIES AT GUARDRAIL WIDENING LOCATIONS.
- (6) APPLY SAFETY EDGE. SEE STANDARD.

PAVEMENT REQUIREMENT		
PAVT. STRUCTURE	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 76-28 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 76-28 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
BASE COURSE	2" SUPERPAVE TYPE S3 (PG 64-22 OK)	2" SUPERPAVE TYPE S3 (PG 64-22 OK)
	2" SUPERPAVE TYPE S3 (PG 64-22 OK)	2" SUPERPAVE TYPE S3 (PG 64-22 OK)
	8" AGGREGATE BASE TYPE A	TBSC Type E

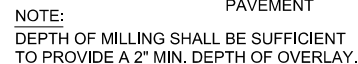
STA. 128+00.00 TO 148+00.00

US-81 over UP Railroad			KINGFISHER COUNTY
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	NDA		
CHECKED	SP		
APPROVED			
SQUAD	MacArthur		
			TYPICAL SECTIONS (1)
			STATE JOB NO. 29849(04) SHEET NO. 0003



ALONG CRL US-81
STA. 102+13.41 TO STA. 106+75.16
STA. 152+83.09 TO STA. 157+60.76

- THE GRADING LINE AS SHOWN ON THE TYPICAL AND CROSS SECTIONS IS TO THE TOP OF THE TOPSOIL. EARTHWORK QUANTITIES WERE NOT ADJUSTED FOR SALVAGE AND THE TOPSOIL QUANTITY IS INCLUDED IN THE MASS DIAGRAM.



The diagram illustrates the cross-section of a guardrail widening. Key dimensions and components include:

- SHOULDER:** 4' OR 10'
- GUARDRAIL:** 4" S4 (PG 64-22 OK)
- PRIME COAT:** Indicated on the top surface of the widening.
- SLOPE:** 1:2.5
- SOLID SLAB SOD AT ALL DISTURBED AREAS:** Indicated at the base of the widening.
- GUARDRAIL WIDENING:** The main title of the diagram.
- N.T.S.:** Not To Scale.



US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP				
APPROVED					
SQUAD	MacArthur				
			TYPICAL SECTIONS (2)		
			STATE JOB NO. 29849(04) SHEET NO. 0004		

REVISIONS		
REV. NO.	DESCRIPTION	DATE

GENERAL NOTES (BRIDGE)

SPECIFICATIONS

COMPLY WITH THE REQUIREMENTS OF THE 2009 OKLAHOMA STANDARD SPECIFICATION FOR HIGHWAY CONSTRUCTION, EXCEPT AS MODIFIED BY THE PLANS AND SPECIAL PROVISIONS.

SUPERSTRUCTURE CHAMFER REQUIREMENT

ALL EXPOSED EDGES SHALL HAVE A ¼" CHAMFER UNLESS OTHERWISE SHOWN OR NOTED. ALL CHAMFER STRIPS SHALL BE SIZED LUMBER.

PIER AND ABUTMENT CHAMFER REQUIREMENT

ALL EXPOSED CONCRETE EDGES (EXCLUDING PEDESTAL EDGES WHICH SHALL HAVE ¾" CHAMFER) SHALL HAVE 1½" CHAMFER UNLESS OTHERWISE NOTED. ALL CHAMFER STRIPS SHALL BE SIZED LUMBER.

CONCRETE PLACEMENT

ALL CONCRETE SHALL BE PLACED IN THE DRY.

CONCRETE

CONCRETE FOR ABUTMENT SEATS, WING WALLS, AND PIERS SHALL BE CLASS A, Fc = 3,000 PSI MINIMUM STRENGTH AT 28 DAYS.

CONCRETE FOR SUPERSTRUCTURE, APPROACH SLABS, AND PARAPET SHALL BE CLASS AA, Fc = 4,000 PSI MINIMUM STRENGTH AT 28 DAYS.

WHEN VIBRATING CONCRETE CONTAINING EPOXY COATED REINFORCING STEEL, THE VIBRATOR SHALL BE EQUIPPED WITH A SHEATH DESIGNED TO PREVENT DAMAGE TO THE EPOXY COATING.

REINFORCING STEEL

UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS, ALL REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615), GRADE 60.

STRUCTURAL STEEL

PROVIDE STRUCTURAL STEEL FOR PLATE GIRDERS, ALL STIFFENER PLATES, AND ALL FIELD SPLICE CONNECTION PLATES IN ACCORDANCE WITH AASHTO M270 (ASTM A709), GRADE 50WT2 (WEATHERING STEEL, NON FRACTURE CRITICAL CHARPY V-NOTCH TESTED FOR ZONE 2). USE SHEAR CONNECTORS CONFORMING TO AASHTO M169 (ASTM A108), GRADE 1015, 1018 OR 1020. USE BOLTS CONFORMING TO AASHTO M164 (ASTM A325). PROVIDE ALL BOLTS, NUTS, WASHERS AND WELDING WITH WEATHERING CHARACTERISTICS. CAMBER GIRDERS TO ACCOUNT FOR DEAD LOAD DEFLECTION AND VERTICAL CURVE. NON-DESTRUCTIVE TESTING WILL BE REQUIRED AS APPROPRIATE.

PROVIDE STRUCTURAL STEEL FOR DIAPHRAGM SHAPES AND PLATES IN ACCORDANCE WITH AASHTO M270 (ASTM A709), GRADE 50W (WEATHERING STEEL, CHARPY V-NOTCH TESTING NOT REQUIRED). USE BOLTS CONFORMING TO AASHTO M164 (ASTM A325). PROVIDE ALL BOLTS, NUTS, WASHERS AND WELDING WITH WEATHERING CHARACTERISTICS.

PROVIDE STRUCTURAL STEEL FOR ANCHOR PLATES AND BUILT UP CONTACT ANGLES IN ACCORDANCE WITH ASTM A240 (AUSTENITIC STAINLESS STEEL, TYPE 316, CHARPY V-NOTCH TESTING NOT REQUIRED). FOR ANCHOR BOLTS, PROVIDE CONTINUOUSLY THREADED BARS IN ACCORDANCE WITH ASTM A320, CLASS 2, GRADE B8M (AUSTENITIC STAINLESS STEEL, TYPE 316, CHARPY V-NOTCH TESTING NOT REQUIRED). USE AUSTENITIC STAINLESS STEEL NUTS AND WASHERS CONFORMING TO ASTM A194, GRADE 8M AND ASTM A320, RESPECTIVELY. PERFORM ALL WELDING CONSISTENT WITH PROCEDURES FOR STAINLESS STEEL.

GIRDERS, DIAPHRAGMS, AND CONNECTIONS SHALL BE FABRICATED FOR TOTAL DEAD LOAD FIT.

ALL BOLTED CONNECTIONS SHALL BE 7⁄8" DIA. HIGH STRENGTH BOLTS (A325) WITH DIRECT TENSION INDICATORS AS SPECIFIED IN SECTION 506 OF THE STANDARD SPECIFICATIONS. THE "CALIBRATED WRENCH" MEHTOD SHALL NOT BE USED. ALL BOLT HOLES SHALL BE 1⁄16" DIA.

PENETRATING WATER REPELLENT SURFACE TREATMENT

APPLY WATER REPELLENT TREATMENT TO THE BRIDGE IN A MANNER CONSISTENT WITH THE DETAILS SHOWN IN THE PLANS.

DECK SLAB

IN THE EVENT OF AN EMERGENCY, POURING OF THE DECK SLAB MAY BE HALTED WITH A CONSTRUCTION JOINT MADE PERPENDICULAR TO THE DIRECTION OF TRAFFIC AS DIRECTED BY THE ENGINEER. LONGITUDINAL REINFORCING SHALL BE CONTINUOUS THROUGH ALL CONSTRUCTION JOINTS. NO HEAVY EQUIPMENT WILL BE PERMITTED ON THE FINISHED DECK SLAB WITHIN FIVE FEET OF ANY CONSTRUCTION JOINT UNTIL THE DECK SLAB IS IN PLACE ON BOTH SIDES OF THE RESPECTIVE JOINT. ALL CONSTRUCTION JOINTS WITHIN THE DECK SLAB SHALL BE SEALED USING HIGH MOLECULAR WEIGHT METHACRYLATE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. DO NOT SAW-CUT GROOVE WITHIN SIX INCHES OF ANY CONSTRUCTION JOINT.

STAY-IN-PLACE FORMS

STAY-IN-PLACE STEEL DECK FORMS MAY BE USED IF THE MINIMUM DECK SLAB THICKNESS OF 8" IS OBTAINED BY MEASURING FROM THE TOP OF THE DECK SLAB TO THE TOP PORTION OF THE STEEL CORRUGATION. ADDITIONAL CONCRETE WEIGHT OF THE DECK SLAB SHALL NOT BE PERMITTED. THE TOTAL ADDITIONAL WEIGHT OF THE DECK FORM AND FILLER SHALL NOT EXCEED 5 PSF. NO WELDING TO THE TOP FLANGE OR STUDS WILL BE ALLOWED. FOR ACCEPTABLE CONNECTION DETAIL SEE SHEET NO. B025. PREFORMED STYROFOAM OR ANY OTHER FILLER MATERIAL MUST BE BONDED TO THE STEEL STAY-IN-PLACE FORMS. STAY-IN-PLACE PRE-STRESSED CONCRETE DECK FORMS MAY BE USED IF THE FOLLOWING CONDITIONS ARE MET:

1. SHOP DRAWINGS AND STRUCTURAL CALCULATIONS FOR THE FORMS ARE SUBMITTED TO THE BRIDGE ENGINEER FOR APPROVAL.
2. A NEW STRUCTURAL DESIGN, STRUCTURAL CALCULATIONS, AND A NEW REINFORCING SCHEDULE FOR THE DECK SLAB IS SUBMITTED TO THE BRIDGE ENGINEER FOR APPROVAL.
3. ALL SHOP DRAWINGS, NEW DECK SLAB REINFORCING SCHEDULES, AND ALL STRUCTURAL DESIGNS AND CALCULATIONS SHALL BE PREPARED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF OKLAHOMA.

ALL COST ASSOCIATED WITH THE USE OF STAY-IN-PLACE FORMS INCLUDING THE COST OF PROFESSIONAL SERVICES, MATERIALS, LABOR, EQUIPMENT, AND INCIDENTALS SHALL BE AT THE CONTRACTOR'S EXPENSE. SEE SECTION 502 OF THE STANDARD SPECIFICATIONS FOR MORE INFORMATION.

APPROACH SLABS

CLASS AA CONCRETE SHALL BE USED IN APPROACH SLABS. THE QUANTITY GIVEN IS BASED ON THE ACTUAL SQUARE YARDS OF THE APPROACH SLABS. ALL COSTS OF CONCRETE, REINFORCING STEEL, JOINT SEALANT, EXCAVATION, LABOR, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SPECIFIED SHALL BE INCLUDED IN THE PRICE BID PER SQUARE YARD OF "APPROACH SLAB."

DRIVEN PILES

- (A) DRIVING EQUIPMENT: USE A PILE DRIVING HAMMER OF THE SIZE AND TYPE CAPABLE OF CONSISTENTLY DELIVERING THE EFFECTIVE ENERGY SUFFICIENT TO DRIVE THE PILES TO THE REQUIRED TIP ELEVATION AND TO ACHIEVE THE FACTORED PILE CAPACITY WITHOUT EXCEEDING THE LIMITATIONS SET ON THE ALLOWABLE DRIVING STRESSES IN ACCORDANCE WITH SECTION 514.03A(2).

- (B) MATERIAL: ALL DRIVEN PILES SHALL BE AASHTO M2770 GRADE 50.

ABUTMENT PILING CAPACITY

THE FACTORED PILE REACTIONS FOR EACH HP 12X53 PILE FOR BRIDGE "A" AND "B" ARE AS FOLLOWS:

BRIDGE "A":
ABUTMENT NO. 1 = 95 TONS/PILE
ABUTMENT NO. 2 = 110 TONS/PILE

BRIDGE "B":
ABUTMENT NO. 1 = 95 TONS/PILE
ABUTMENT NO. 2 = 110 TONS/PILE

DRIVE EACH PILE UNTIL THE AXIAL LOAD RESISTANCE FOR THE PILE EXCEEDS THE FACTORED PILE REACTION.

THE FOLLOWING FORMULA (GATES EQUATION) SHALL BE USED TO DETERMINE THE AXIAL LOAD RESISTANCE OF THE DRIVEN FOUNDATION PILES:

AXIAL LOAD RESISTANCE = $\phi [(0.875 \sqrt{E} \log_{10}(10N)) - 50]$ (TONS)

WHERE:
 ϕ = RESISTANCE FACTOR OF 0.4

E = ENERGY PRODUCED BY THE HAMMER PER BLOW IN FOOT-POUNDS. FOR GRAVITY AND SINGLE ACTING DIESEL HAMMERS, THE VALUE IS BASED ON THE ACTUAL RAM STROKE OBSERVED IN THE FIELD AND MEASURED IN FEET MULTIPLIED BY THE RAM WEIGHT IN POUNDS.

N = AVERAGE NUMBER OF HAMMER BLOWS PER INCH OF PILE PENETRATION FOR THE LAST 10 TO 20 BLOWS DELIVERED TO THE PILE HEAD.

THE ABOVE FORMULA IS ONLY APPLICABLE WHEN:

THE PILE DRIVING HAMMER HAS A FREEFALL (GRAVITY AND SINGLE ACTING HAMMERS ONLY).
THE HEAD OF THE PILE IS NOT BROOMED, CRUSHED OR OTHERWISE DAMAGED.
THE PENETRATION IS QUICK AND UNIFORM.
THERE IS NO APPRECIABLE REBOUND OF HAMMER, AND A FOLLOWER IS NOT USED.

THE NUMBER OF BLOWS PER INCH OF PILE PENETRATION MAY BE MEASURED EITHER DURING INITIAL DRIVING OR BY RE-DRIVING WITH A WARM HAMMER OPERATED AT FULL ENERGY AFTER A PILE SET PERIOD, AS DETERMINED BY THE ENGINEER

STAINLESS STEEL FIXED BEARING ASSEMBLIES

PROVIDE AND INSTALL FIXED BEARING ASSEMBLIES OF THE SIZE, SHAPE, AND LOCATION AS DETAILED IN THE PLANS. THERE IS AN ESTIMATED TOTAL OF 2,200 LBS FOR EACH BRIDGE OF STAINLESS STEEL FOR THE FIXED BEARING ASSEMBLIES. INCLUDE ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING THE FIXED ELASTOMERIC PADS, ANCHOR PLATES, CONTACT PLATES, AND ANCHOR BOLTS, NUTS, AND WASHERS, INCLUDING ALL MATERIAL, LABOR, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SHOWN IN THE PLANS, IN THE PRICE BID PER EACH OF "STAINLESS STEEL FIXED BEARING ASSEMBLY."

STAINLESS STEEL EXPANSION BEARING ASSEMBLIES

PROVIDE AND INSTALL EXPANSION BEARING ASSEMBLIES OF THE SIZE, SHAPE, AND LOCATION AS DETAILED IN THE PLANS. THERE IS AN ESTIMATED TOTAL OF 5,440 LBS FOR EACH BRIDGE OF STAINLESS STEEL FOR THE EXPANSION BEARING ASSEMBLIES. INCLUDE ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING THE EXPANSION ELASTOMERIC PADS, ANCHOR PLATES, CONTACT PLATES, AND ANCHOR BOLTS, NUTS, AND WASHERS, INCLUDING ALL MATERIAL, LABOR, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SHOWN IN THE PLANS, IN THE PRICE BID PER EACH OF "STAINLESS STEEL EXPANSION BEARING ASSEMBLY."

PRELIMINARY PLANS

THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

US 81 OVER UNION PACIFIC RAILROAD KINGFISHER COUNTY

DESIGN	GLF		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN	JLF		GENERAL NOTES (BRIDGE)	
CHECKED	GLF			
APPROVED				
SQUAD	MacArthur			
			STATE JOB NO. 29849(04)	SHEET NO. AB01

REVISIONS		
REV. NO.	DESCRIPTION	DATE

NOTIFICATION OF WORK:

THE CONTRACTOR IS REQUIRED TO GIVE THE UNION PACIFIC RAILROAD COMPANY AT LEAST 10 WORKING DAYS ADVANCE NOTICE, IN WRITING, BEFORE ANY WORK IS STARTED ON THE SITE. TO AVOID HAZARDS, THE UNION PACIFIC RAILROAD COMPANY MAY HAVE A REPRESENTATIVE PRESENT, IF DEEMED NECESSARY, FOR THE PURPOSE OF INSPECTION AND THE ISSUANCE OF ANY APPROPRIATE INSTRUCTIONS FOR RAILROAD OPERATIONS DURING THE US-81 BRIDGE REPLACEMENT OVER THE UNION PACIFIC RAILROAD IN KINGFISHER COUNTY. (AARDOT 595 413M, MILEPOST 373.73)

THE CONTRACTOR SHALL NOTIFY:

MR. HANS WAMMEL
MANAGER OF TRACK MAINTENANCE
UNION PACIFIC RAILROAD COMPANY
220 S. MILES
EL RENO, OK 73036
PHONE: 405-274-4426

MR. CLAY A. MCMANAMAN
MANAGER INDUSTRY & PUBLIC PROJECTS
UNION PACIFIC RAILROAD COMPANY
P.O. BOX 1337
EL RENO, OKLAHOMA 73036
PHONE: 501-373-2927
CAMCMANA@UP.COM

FLAGGING AND INSURANCE:

FLAGGING AND INSURANCE SHALL BE PROVIDED AS SPECIFIED IN SECTION 107 OF THE STANDARD SPECIFICATIONS AND IN THE SPECIAL PROVISIONS FOR RAILROAD FLAGGING (SEE PROPOSAL FOR SPECIAL PROVISIONS) AND WHAT IS STATED IN THE UNION PACIFIC RAILROAD COMPANY'S RIGHT OF ENTRY AGREEMENT. UNION PACIFIC RAILROAD COMPANY, AT THEIR DISCRETION, SHALL PROVIDE FLAGGING FOR THE RAILROAD DURING CONSTRUCTION OPERATIONS.

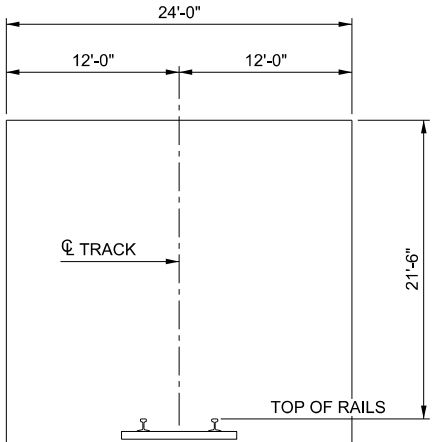
THE CONTRACTOR IS REQUIRED TO REIMBURSE UNION PACIFIC RAILROAD COMPANY FOR FLAGGING SERVICES PROVIDED.

THE CONTRACTOR SHALL ALSO FURNISH SATISFACTORY EVIDENCE TO THE STATE OF OKLAHOMA THAT THEY HAVE PROVIDED INSURANCE OF THE KINDS AND AMOUNTS AS SPECIFIED IN THE SPECIAL PROVISIONS FOR RAILROAD INSURANCE AND IN THE UNION PACIFIC COMPANY'S RIGHT OF ENTRY AGREEMENT.

THE CONTRACTOR WILL BE REQUIRED TO ENTER INTO A RIGHT OF ENTRY AGREEMENT WITH THE UNION PACIFIC RAILROAD COMPANY BEFORE THEY WILL BE ALLOWED ON THE RAILROAD'S RIGHT-OF-WAY.

PRE-WORK MEETING:

PRIOR TO WORKING ON THE UNION PACIFIC RAILROAD COMPANY'S RIGHT-OF-WAY OR IN THE VICINITY OF THEIR TRACKS, YOU MUST CONTACT THE LOCAL MANAGER OF TRACK MAINTENANCE FOR THE UNION PACIFIC RAILROAD COMPANY TO COORDINATE YOUR WORK. IT IS VITAL THAT YOU HAVE CONTACT WITH THE UNION PACIFIC RAILROAD COMPANY MANAGER OF TRACK MAINTENANCE PRIOR TO GETTING ON THE RAILROAD'S PROPERTY.



UPRR FALSEWORK CLEARANCE DIAGRAM

CLEARANCE OF FALSEWORK REQUIRED BY R. R. FOR OPERATION DURING CONSTRUCTION. HORIZONTAL DIMENSIONS SHOWN ARE MEASURED AT RIGHT ANGLES TO CL OF R. R. TRACK. VERTICAL DIMENSION SHOWN IS PERPENDICULAR TO PLANE OF TOP OF RAILS.

COORDINATION WITH RAILROAD:

THE CONTRACTOR SHALL CONDUCT CONSTRUCTION OPERATIONS IN A MANNER WHICH WILL NOT DELAY OR INTERFERE WITH TRAIN OPERATIONS. CONSTRUCTION ACTIVITY WITHIN 25 (TWENTY-FIVE) FEET OF ACTIVE TRACKS WILL REQUIRE A FLAGMAN TO BE PROVIDED BY THE UNION PACIFIC RAILROAD COMPANY AT THE CONTRACTOR'S EXPENSE.

THE CONTRACTOR SHALL GIVE WRITTEN NOTICE TO THE UNION PACIFIC RAILROAD COMPANY MANAGER OF TRACK MAINTENANCE, A MINIMUM OF 30 (THIRTY) CALENDAR DAYS IN ADVANCE OF WHEN FLAGGING IS REQUIRED.

SPECIAL PERMISSION MUST BE OBTAINED FROM THE UNION PACIFIC RAILROAD COMPANY BEFORE MOVING ANY EQUIPMENT OR OTHER OBJECT WHICH COULD MAKE THE TRACK IMPASSABLE IF IT FELL WITHIN THE AREA SHOWN ON THE CONSTRUCTION CLEARANCE DIAGRAM.

RAILROAD FLAGGERS, PROTECTIVE SERVICES, AND PROTECTIVE DEVICES WILL BE REQUIRED, BUT NOT LIMITED TO, EVENTS WHEN:

- THE CONTRACTOR WORK ACTIVITIES ARE WITHIN 25 (TWENTY-FIVE) FEET OF THE TRACK, MEASURED FROM THE TRACK CENTERLINE.
- ACTIVITIES ARE OVER OR UNDER THE TRACK.
- CRANES OR SIMILAR EQUIPMENT WILL NOT BE POSITIONED WHERE THEY COULD FOUL THE TRACK IF THEY TIPPED OVER OR EXPERIENCED SOME OTHER CATASTROPHIC EVENT.
- IN THE OPINION OF THE UNION PACIFIC RAILROAD COMPANY REPRESENTATIVE:
 - IT IS NECESSARY TO SAFEGUARD THE UNION PACIFIC RAILROAD COMPANY PROPERTY, EMPLOYEES, TRAINS, ENGINES, AND FACILITIES.
 - WHEN ANY EXCAVATION IS PERFORMED BELOW THE BOTTOM OF THE ELEVATIONS AND TRACK OR OTHER UNION PACIFIC RAILROAD COMPANY FACILITIES MAY BE SUBJECT TO MOVEMENT OR SETTLEMENT.
 - WHEN WORK IN ANY WAY INTERFERES WITH SAFE OPERATION OF TRAINS AND TIMETABLE SPEEDS.
 - WHEN ANY HAZARD IS PRESENTED TO RAILROAD TRACK, SIGNALS, COMMUNICATIONS, ELECTRICAL, OR OTHER FACILITIES EITHER DUE TO PERSON, MATERIAL, EQUIPMENT, OR BLASTING IN THE AREA.

PROTECTION OF RAILROAD UNDER BRIDGE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE RAILROAD TRACK BED DURING ALL CONSTRUCTION OPERATIONS. PRIOR TO ANY WORK BEING STARTED, A PROPOSED METHOD OF PREVENTING DEBRIS FROM FALLING ON THE RAILROAD TRACK BED SHALL BE SUBMITTED TO THE RAILROAD REPRESENTATIVE FOR HIS APPROVAL.

THE CONTRACTOR SHALL NOT BE PERMITTED TO LEAVE ANY WORKER SCAFFOLDING IN PLACE IN WORKING POSITION. AT THE END OF EACH WORKDAY, THE SCAFFOLDING SHALL BE REMOVED AND SET A SAFE DISTANCE FROM ANY OPERATING RAILROAD LINE. SCAFFOLDING SHALL AT ALL TIMES MAINTAIN THE MINIMUM CLEARANCE AS SHOWN ON THE "FALSEWORK DIAGRAM" ON THIS SHEET.

DEMOLITION OF STRUCTURES OVER RAILROAD:

ALL DEMOLITION PLANS FOR REMOVAL OF STRUCTURES OVER RAILROAD LINES SHALL BE REVIEWED AND APPROVED BY THE UNION PACIFIC RAILROAD COMPANY BEFORE ANY REMOVAL MAY BEGIN.

DEMOLITION OF STRUCTURES WILL BE PERFORMED IN ACCORDANCE WITH THE RAILROAD'S "INSTRUCTIONS FOR PREPARATION OF DEMOLITION PLANS FOR STRUCTURES OVER THE UNION PACIFIC RAILROAD."

UNION PACIFIC RAILROAD COMPANY STANDARD REQUIREMENTS:

- 1) THE ELEVATION OF THE EXISTING TOP-OF-RAIL SHALL BE VERIFIED BEFORE BEGINNING CONSTRUCTION. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE RAILROAD PRIOR TO CONSTRUCTION.
- 2) ALL SHORING SYSTEMS THAT IMPACT THE RAILROAD'S OPERATIONS AND/OR SUPPORTS THE RAILROAD'S EMBANKMENT SHALL BE DESIGNED AND CONSTRUCTED PER CURRENT RAILROAD GUIDELINES FOR TEMPORARY SHORING.
- 3) ALL DEMOLITIONS WITHIN THE RAILROAD'S RIGHT-OF-WAY AND/OR DEMOLITION THAT MAY IMPACT THE RAILROAD'S TRACKS OR OPERATIONS SHALL BE IN COMPLIANCE WITH THE RAILROAD'S DEMOLITION GUIDELINES.
- 4) ERECTION OVER THE RAILROAD'S RIGHT-OF-WAY SHALL BE DESIGNED TO CAUSE NO INTERRUPTION TO THE RAILROAD'S OPERATION, ENABLING THE TRACK(S) TO REMAIN OPEN TO TRAFFIC PER THE RAILROAD'S REQUIREMENTS.
- 5) RAILROAD REQUIREMENTS DO NOT ALLOW WORK WITHIN 50 FEET OF TRACK CENTERLINE WHEN A TRAIN PASSES THE WORK SITE AND ALL PERSONNEL MUST CLEAR THE AREA WITHIN 25 FEET OF THE TRACK CENTERLINE AND SECURE ALL EQUIPMENT.
- 6) ALL PERMANENT CLEARANCES SHALL BE VERIFIED BEFORE PROJECT CLOSING.
- 7) FALSEWORK CLEARANCES SHALL COMPLY WITH MINIMUM CONSTRUCTION CLEARANCES.

EROSION CONTROL AND DRAINAGE:

THE CONTRACTOR MUST SUBMIT A PROPOSED METHOD OF EROSION AND SEDIMENT CONTROL AND HAVE THE METHOD APPROVED BY THE RAILROAD. THE CONTRACTOR WILL INSTALL, MAINTAIN, AND REMOVE ALL EROSION CONTROL MEASURES DEEMED NECESSARY WITHIN THE RAILROAD RIGHT OF WAY.

THE PROPOSED GRADE SEPARATION PROJECT SHALL NOT INCREASE THE QUANTITY AND/OR CHARACTERISTICS OF THE FLOW IN THE RAILROAD'S DITCHES AND/OR DRAINAGE STRUCTURES. THE CONTRACTOR WILL MAINTAIN THE RAILROAD DRAINAGE AT ALL TIMES WHEN WORKING WITHIN THE RAILROAD RIGHT OF WAY.

RAIL TRAFFIC:

THE UNION PACIFIC RAILROAD COMPANY HAS 12 TRAINS PER DAY AT 49 MPH, ON THE ENID SUBDIVISION. RAIL TRAFFIC IS FOR INFORMATION PURPOSES ONLY. ACTUAL RAIL TRAFFIC MAY VARY.

BRIDGE DECK DRAINAGE:

ALL F-SHAPED PARAPETS ON THE BRIDGES AND APPROACH SLABS ARE TO BE CONSTRUCTED WITHOUT DRAIN OPENINGS. BRIDGE DECK DRAINAGE IS TO BE CARRIED ON THE BRIDGE AND APPROACH SLABS TO ROADWAY DRAINAGE SYSTEM.

PRELIMINARY PLANS

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

US 81 OVER UNION PACIFIC RAILROAD KINGFISHER COUNTY

DESIGN	GLF		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN	JLF		UNION PACIFIC RAILROAD NOTES	
CHECKED	GLF			
APPROVED				
SQUAD	MacArthur			
			STATE JOB NO. <u>29849(04)</u>	SHEET NO. <u>AB02</u>

PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-pay-quantities.dgn

REVISIONS		
REV. NO.	DESCRIPTION	DATE

0200 BRIDGE "A"		PAY QUANTITIES - BRIDGE "A"			
ITEM NO.		DESCRIPTION	NOTES	UNIT	QUANTITY
501(B)	1307	SUBSTRUCTURE EXCAVATION COMMON	(BR-1)	CY	347.00
501(G)	6309	CLSM BACKFILL	(BR-1)	CY	370.00
504(A)	1304	APPROACH SLAB	(BR-1, BR-2)	SY	486.00
504(B)	1305	SAW-CUT GROOVING	(BR-1)	SY	2,581.70
504(C)	6250	SEALED EXPANSION JOINT	(BR-1)	LF	114.40
504(E)	6190	42" F-SHAPED PARAPET	(BR-1)	LF	1,223.30
506(A)	1322	STRUCTURAL STEEL	(BR-1)	LB	1,079,120.00
507(A)	6170	STAINLESS STEEL FIXED BEARING ASSEMBLY	(BR-1, BR-3)	EA	5.00
507(B)	6174	STAINLESS STEEL EXPANSION BEARING ASSEMBLY	(BR-1, BR-4)	EA	15.00
509(A)	1326	CLASS AA CONCRETE	(BR-1)	CY	539.80
509(B)	1328	CLASS A CONCRETE	(BR-1)	CY	425.60
510(C)	6138	SLOPE WALL (5")	(BR-1)	SY	0.00
511(A)	1332	REINFORCING STEEL	(BR-1)	LB	2,420.00
511(B)	6010	EPOXY COATED REINFORCING STEEL	(BR-1)	LB	234,760.00
514(A)	6011	PILES, FURNISHED (HP 12X53)		LF	1,232.00
514(B)	6294	PILES, DRIVEN (HP 12X53)		LF	1,232.00
514(L)	6220	PILE SPLICE, H-PILE (NON-BIDDABLE)	(BR-5)	EA	1.00
515(A)	6013	WATER REPELLENT (VISUALLY INSPECTED)	(BR-1)	SY	1,851.00
516(A)	6098	DRILLED SHAFTS, 72" DIAMETER	(BR-6)	LF	99.00
516(C)	6200	CROSSHOLE SONIC LOGGING	(BR-6)	EA	2.00
523(A)	6550	SEALER CRACK PREPARATION	(BR-1)	LF	112.40
523(B)	6560	SEALER RESIN	(BR-1, BR-7)	GAL	1.50
613(H)	6204	6" PERFORATED PIPE UNDERDRAIN ROUND	(BR-1, BR-8)	LF	177.00
613(I)	6207	6" NON-PERF.PIPE UNDERDRAIN RND.	(BR-9)	LF	100.00
619(D)	1397	REMOVAL OF EXISTING BRIDGE STRUCTURE	(BR-10)	LSUM	1.00
624(E)	4294	FENCE-STYLE CLF (8' HIGH, CLASS A)	(BR-1)	LF	359.60

PAY QUANTITY NOTES

- (BR-1)

PAYMENT FOR THESE ITEMS WILL BE BASED ON PLAN QUANTITY. SEE THE 2009 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (PLAN QUANTITIES 109.01(B)).
- (BR-2)

THE APPROACH SLABS CONTAIN AN ESTIMATED TOTAL OF 175.80 CY OF CLASS AA CONCRETE AND 32,990 LBS OF EPOXY COATED REINFORCING STEEL FOR BRIDGE "A" AND AN ESTIMATED TOTAL OF 245.20 CY OF CLASS AA CONCRETE AND 47,620 LBS OF EPOXY COATED REINFORCING STEEL FOR BRIDGE "B." THE DEPARTMENT INCLUDES THE COST OF CONCRETE, REINFORCING STEEL (INCLUDING FS2 BARS), BACKER ROD, POLYSTYRENE, AND RAPID CURE JOINT SEALANT IN THE CONTRACT UNIT PRICE PER SQUARE YARD OF APPROACH SLAB.
- (BR-3)

THE FIXED BEARING ASSEMBLIES CONTAIN AN ESTIMATED TOTAL OF 2,200 LBS OF STAINLESS STEEL FOR EACH BRIDGE. THE DEPARTMENT INCLUDES THE COSTS OF ELASTOMERIC PADS, ANCHOR PLATES, BUILT-UP CONTACT ANGLES, AND ANCHOR BOLTS, NUTS AND WASHERS IN THE CONTRACT UNIT PRICE PER EACH OF STAINLESS STEEL FIXED BEARING ASSEMBLY.
- (BR-4)

THE EXPANSION BEARING ASSEMBLIES CONTAIN AN ESTIMATED TOTAL OF 5,440 LBS OF STAINLESS STEEL FOR EACH BRIDGE. THE DEPARTMENT INCLUDES THE COSTS OF ELASTOMERIC PADS, ANCHOR PLATES, BUILT-UP CONTACT ANGLES, AND ANCHOR BOLTS, NUTS AND WASHERS IN THE CONTRACT UNIT PRICE PER EACH OF STAINLESS STEEL EXPANSION BEARING ASSEMBLY.
- (BR-5)

THIS IS A NON-BIDDABLE PAY ITEM. PRICE FOR THIS ITEM SHALL BE ESTABLISHED IN THE PROPOSAL IN ACCORDANCE WITH SECTION 514.06 OF THE STANDARD SPECIFICATIONS.
- (BR-6)

REFER ODOT SPECIAL PROVISION 516-3 OF THE ODOT STANDARD SPECIFICATIONS.
- (BR-7)

QUANTITY SHOWN FOR SEALER RESIN IS ESTIMATED AT 0.011 GALLON PER FOOT OF CONSTRUCTION JOINT.

0201 BRIDGE "B"		PAY QUANTITIES - BRIDGE "B"			
ITEM NO.		DESCRIPTION	NOTES	UNIT	QUANTITY
501(B)	1307	SUBSTRUCTURE EXCAVATION COMMON	(BR-1)	CY	426.00
501(G)	6309	CLSM BACKFILL	(BR-1)	CY	435.00
504(A)	1304	APPROACH SLAB	(BR-1, BR-2)	SY	679.20
504(B)	1305	SAW-CUT GROOVING	(BR-1)	SY	2,638.80
504(C)	6250	SEALED EXPANSION JOINT	(BR-1)	LF	114.40
504(E)	6190	42" F-SHAPED PARAPET	(BR-1)	LF	1,250.30
506(A)	1322	STRUCTURAL STEEL	(BR-1)	LB	992,800.00
507(A)	6170	STAINLESS STEEL FIXED BEARING ASSEMBLY	(BR-1, BR-3)	EA	5.00
507(B)	6174	STAINLESS STEEL EXPANSION BEARING ASSEMBLY	(BR-1, BR-4)	EA	15.00
509(A)	1326	CLASS AA CONCRETE	(BR-1)	CY	510.40
509(B)	1328	CLASS A CONCRETE	(BR-1)	CY	486.60
510(C)	6138	SLOPE WALL (5")	(BR-1)	SY	4,630.00
511(A)	1332	REINFORCING STEEL	(BR-1)	LB	2,540.00
511(B)	6010	EPOXY COATED REINFORCING STEEL	(BR-1)	LB	231,160.00
514(A)	6011	PILES, FURNISHED (HP 12X53)		LF	1,305.00
514(B)	6294	PILES, DRIVEN (HP 12X53)		LF	1,305.00
514(L)	6220	PILE SPLICE, H-PILE (NON-BIDDABLE)	(BR-5)	EA	1.00
515(A)	6013	WATER REPELLENT (VISUALLY INSPECTED)	(BR-1)	SY	1,881.00
516(A)	6098	DRILLED SHAFTS, 72" DIAMETER	(BR-6)	LF	96.00
516(C)	6200	CROSSHOLE SONIC LOGGING	(BR-6)	EA	2.00
523(A)	6550	SEALER CRACK PREPARATION	(BR-1)	LF	112.40
523(B)	6560	SEALER RESIN	(BR-1, BR-7)	GAL	1.50
613(H)	6204	6" PERFORATED PIPE UNDERDRAIN ROUND	(BR-1, BR-8)	LF	777.00
613(I)	6207	6" NON-PERF.PIPE UNDERDRAIN RND.	(BR-9)	LF	180.00
619(D)	1397	REMOVAL OF EXISTING BRIDGE STRUCTURE	(BR-10)	LSUM	1.00
624(E)	4294	FENCE-STYLE CLF (8' HIGH, CLASS A)	(BR-1)	LF	333.60

- (BR-8)

ITEM INCLUDES PIPE UNDERDRAIN COVER MATERIAL IN THE QUANTITY OF X CY FOR ABUTMENTS. ALL COST OF PIPE UNDERDRAIN COVER MATERIAL, BOTH FINE AND COARSE, AND EQUIPMENT AND LABOR REQUIRED FOR INSTALLATION SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF 6" PERFORATED PIPE UNDERDRAIN ROUND. INSTALLATION SHALL BE AS SHOWN ON THE PLANS AND ON STANDARD PUD-3.
- (BR-9)

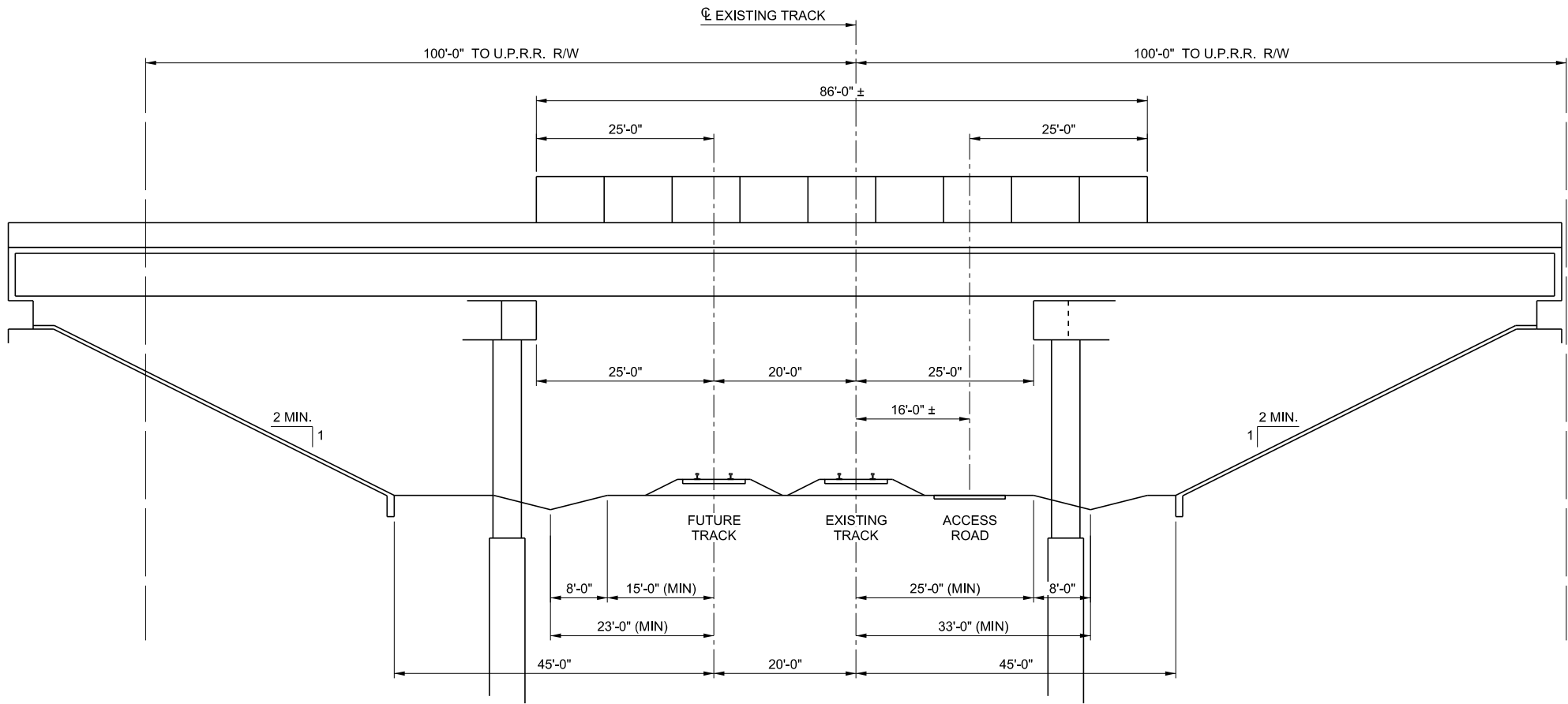
ITEM INCLUDES TRENCH EXCAVATION IN THE QUANTITY OF X CY FOR ABUTMENTS. ITEM ALSO INCLUDES STANDARD BEDDING MATERIAL IN THE QUANTITY OF X CY FOR ABUTMENTS. ALL COSTS OF TRENCH EXCAVATION, STANDARD BEDDING MATERIAL, AND EQUIPMENT AND LABOR REQUIRED FOR INSTALLATION SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF 6" NON-PERF.PIPE UNDERDRAIN RND. INSTALLATION SHALL BE AS SHOWN ON THE PLANS AND ON STANDARD PUD-3.
- (BR-10)

ITEM REMOVAL OF EXISTING BRIDGE STRUCTURE CONSISTS OF THE REMOVAL AND DISPOSAL OF THE SUPERSTRUCTURE (6 - STEEL BEAM SPANS WITH 30 FT CLEAR ROADWAY) AND SUBSTRUCTURE IN ACCORDANCE WITH SECTION 619.04.B.(2).

PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

US 81 OVER UNION PACIFIC RAILROAD			KINGFISHER COUNTY			
DESIGN	GLF		OKLAHOMA DEPARTMENT OF TRANSPORTATION			
DRAWN	JLF					
CHECKED	GLF		PAY QUANTITIES (BRIDGE)			
APPROVED						
SQUAD	MacArthur					
			STATE JOB NO. 29849(04)		SHEET NO. AB03	

REVISIONS		
REV. NO.	DESCRIPTION	DATE



SECTION PERPENDICULAR TO RAILROAD
LOOKING NORTH

FOR INFORMATION ONLY

THIS SHEET IS INCLUDED FOR INFORMATIONAL PURPOSES TO SHOW THE HORIZONTAL GEOMETRY PERPENDICULAR TO THE RAILROAD. REFER TO "BNSF RAILWAY - UNION PACIFIC RAILROAD: GUIDELINES FOR RAILROAD GRADE SEPARATION PROJECTS" JANUARY 2007.

PRELIMINARY PLANS

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

US 81 OVER UNION PACIFIC RAILROAD KINGFISHER COUNTY

DESIGN	GLF	
DRAWN	JLF	
CHECKED	GLF	
APPROVED		
SQUAD	MacArthur	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

MINIMUM HORIZONTAL CLEARANCE
PERPENDICULAR TO RAILROAD

STATE JOB NO. 29849(04) SHEET NO. AB04

PRINT DATE: 10/22/2018 T:\1403Drawings\Roadway\1403-Sum-Rd-01.dgn

ROADWAY PAY QUANTITY NOTES

- (R-1)

PAYMENT FOR THIS ITEM WILL BE BASED ON PLAN QUANTITY ONLY. SEE SECTION 109.01(B) OF THE STANDARD SPECIFICATIONS.
- (R-4)

INCLUDES 500 CU. YDS. FOR DRIVEWAYS, RETURNS, DIKES, AND MISCELLANEOUS EARTHWORK .
- (R-5)

AN ESTIMATED QUANTITY OF 1,663 C.Y. TOPSOIL TO BE RESERVED FOR REPLACEMENT OF APPROXIMATELY 5" ON COMPLETED FORESLOPES, DITCHES, AND BACKSLOPES. THIS QUANTITY IS INCLUDED IN THE EARTHWORK BALANCE. ANY ADDITIONAL EXCAVATION REQUIRED IN CUT SECTIONS TO ALLOW FOR PLACEMENT OF TOPSOIL TO FINAL GRADE, SHALL BE INCLUDED IN THE PRICE BID.
- (R-7)

FOR SOLID SLAB SODDING PRICE BID TO INCLUDE COST OF 10-20-10 FERTILIZER, ESTIMATED AT 200 POUNDS PER 1,000 SQ. YDS. OF SODDING.

FOR TYPE A SALVAGED TOPSOIL PRICE BID TO INCLUDE COST OF 0-46-0 FERTILIZER, ESTIMATED AT 150 POUNDS PER ACRE.
- (R-8)

PRICE BID TO INCLUDE COST OF WATERING ESTIMATED AT 80 GALLONS PER SQUARE YARD OF SODDING. THE CONTRACTOR SHALL PROVIDE SUFFICIENT WATER FOR ADEQUATE GRASS GROWTH AS APPROVED BY THE ENGINEER.
- (R-11)

THE QUANTITY ESTIMATED FOR TEMPORARY EROSION AND SEDIMENT CONTROL IS 2.5 ACRES.
- (R-16)

QUANTITY BASED ON TWO APPLICATIONS.
- (R-28)

PRIME COAT SHALL BE APPLIED AT AN ESTIMATED RATE OF 0.35 GAL. PER SQ. YD. WHEN APPLIED TO SUBGRADE, AND 0.25 GAL. PER SQ. YD. WHEN APPLIED TO AGGREGATE BASE. THE ACTUAL CUTBACK PRIME COAT REQUIRED FOR PLACEMENT OPERATIONS WILL BE DETERMINED BY THE CONTRACTOR, AND SHALL CONSIDER THE RESIDUE FROM DISTILLATION PERCENTAGE SHOWN IN SECTION 708.03 OF THE STANDARD SPECIFICATIONS.
- (R-32)

ESTIMATED AT 112 LBS. PER SQ. YD. PER 1" THICK.
- (R-48)

INCLUDES REMOVAL OF ALL EXISTING ROADWAY DRAINAGE STRUCTURES, HEADWALLS (UNLESS OTHERWISE SPECIFIED), INLETS, FENCES, AND OTHER STRUCTURES WITHIN THE RIGHT OF WAY.
- (R-49)

TO BECOME THE PROPERTY OF AND BE DISPOSED OF BY THE CONTRACTOR IN A MANNER APPROVED BY THE ENGINEER.
- (R-50)

MATERIALS REMOVED SHALL NOT BE MEASURED FOR PAYMENT UNDER SECTION 202.06 UNCLASSIFIED EXCAVATION.
- (R-52)

INCLUDES 2% FOR GROUND MEASUREMENT.
- (R-53)

ALL GATES AND GATE END POSTS FOR STRANDED WIRE FENCE (SWF) SHALL BE CONSTRUCTED AT THE SAME WIDTH AS THE EXISTING, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- (1)

NO STUMPS OR OTHER DEBRIS SHALL BE BURIED OR DISPOSED OF ON THE RIGHT-OF-WAY UNLESS APPROVED BY THE ENGINEER. RIGHT-OF-WAY TO BE CLEARED FROM RIGHT-OF-WAY LINE TO RIGHT-OF-WAY LINE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- (2)

ESTIMATED QUANTITY TO BE USED IN A MANNER AND LOCATION AS DETERMINED BY THE ENGINEER.
- (3)

TO INCLUDE COST OF SAWING PAVEMENT.
- (4)

REMOVE SILT FROM EROSION CONTROL DEVICES WHEN THE SILT REACHES HALF THE HEIGHT OF THE DEVICE.
- (5)

TACK COAT ESTIMATED AT 0.075 GAL. PER SQ. YD.
- (6)

REMOVE ASPHALT WITH MILLING MACHINE. MILLINGS SHALL BECOME PROPERTY OF ODOT AND BE HAULED AND STOCKPILED WITHIN 8 MILES OF PROJECT LIMITS.
- (7)

QUANTITY INCLUDES 20 CU. YDS. TO BE USED AS DIRECTED BY THE ENGINEER.
- (8)

TO BE PLACED ON PRESENT RIGHT-OF-WAY AND BECOME PROPERTY OF BLAINE COUNTY.
- (9)

STOPSOFT SYSTEM GET SHALL NOT USED.
- (10)

INCLUDES AN ESTIMATED 200 TONS TO BE USED AS DIRECTED BY THE ENGINEER.
- (11)

VEGETATIVE MULCH SHALL BE WHEAT HAY ONLY.

"LAT/LON OCC FACILITY NO./CASE NO. FACILITY
35.9296, -97.9179 37-01865/064-0997 ODOT

PETROLEUM CONTAMINATION MAY EXIST AT OR NEAR THE REFERENCED LEAKING UNDERGROUND STORAGE TANK (LUST) SITE. BASED ON THE AVAILABLE INFORMATION, CONTAMINATION IS NOT EXPECTED TO AFFECT CONSTRUCTION ACTIVITIES, BUT IS STILL POSSIBLE. IN THE EVENT CONTAMINATED SOIL OR GROUNDWATER IS ENCOUNTERED, THE CONTRACTOR SHALL ADHERE TO ODOT'S HAZARDOUS MATERIALS SPECIFICATION 107.15 AND NOTIFY THE RESIDENT ENGINEER, WHO MAY THEN CONTACT THE ENVIRONMENTAL PROGRAMS DIVISION AT (405) 521-3050 FOR ASSISTANCE."

2984904 KINGFISHER CO.

CLIFF SWALLOWS AND BARN SWALLOWS ARE SMALL COLONIAL NESTING BIRDS PROTECTED BY THE FEDERAL MIGRATORY BIRD TREATY ACT. THESE SPECIES COMMONLY USE BRIDGES AND CULVERTS FOR NESTING. THE NESTING SEASON FOR THE SWALLOWS RUNS FROM APRIL 1 TO AUGUST 31. SWALLOW USE OF BRIDGE NBI NO'S. 16159 AND 16167 AND AN RCP AT STA. 108+50 HAS BEEN OBSERVED DURING THE INITIAL SURVEYS CONDUCTED AS PART OF THE BIOLOGICAL STUDIES IN 2014. ANY ACTIVITIES WHICH WOULD DESTROY ACTIVE NESTS OR HARM EGGS OR BIRDS WOULD VIOLATE THE MIGRATORY BIRD TREATY ACT. THE RESIDENT ENGINEER WILL EVALUATE THE CONTRACTOR'S PROPOSED WORK METHODS AND CONCLUDE WHETHER THE PROPOSED WORK WOULD HARM THE NESTING BIRDS BEFORE WORK NEAR THE STRUCTURE IS AUTHORIZED. IF THE PROPOSED WORK WILL HARM THE NESTING BIRDS, THE BRIDGE MAY BE NETTED PRIOR TO APRIL 1 OR THE WORK DELAYED UNTIL THE NESTING SEASON IS COMPLETE. METHODS OTHER THAN NETTING MUST BE PREAPPROVED BY THE ODOT BIOLOGIST.

ROADWAY 0100				JP# 27950(07)
ITEM NO.	DESCRIPTION		Notes	UNIT QUANTITY
201(A)	0102	CLEARING AND GRUBBING	-1	LSUM 1.00
202(A)	0183	UNCLASSIFIED EXCAVATION	(R-1)	CY 48,181.00
202(D)	0184	UNCLASSIFIED BORROW	(R-4)	CY 1,391.00
205(A)	4229	TYPE A-SALVAGED TOPSOIL	(R-5,7)	LSUM 1.00
221(C)	2801	TEMPORARY SILT FENCE	(2,4)	LF 4,870.00
221(H)	0450	TEMPORARY INLET SEDIMENT FILTER	(2,4)	LF 4.00
230(A)	2806	SOLID SLAB SODDING	(R-7,8)	SY 36,822.00
233(A)	2817	VEGETATIVE MULCHING	(R-11)(11)	AC 7.61
241	2832	MOWING	(R-16)	AC 30.44
307(K)	4300	STABILIZED SUBGRADE		SY 24,698.00
402(E)	0225	TRAFFIC BOUND SURFACE COURSE TYPE E	(10)	TON 2,832.00
407(B)	0250	TACK COAT	(5)	GAL 4,373.00
408	5774	PRIME COAT	(R-28)	GAL 17,041.00
411(B)	5940	SUPERPAVE, TYPE S3(PG 76-28 OK)	(R-32)	TON 1,912.00
411(B)	5945	SUPERPAVE, TYPE S3(PG 64-22 OK)	(R-32)	TON 6,361.00
411(C)	5955	SUPERPAVE, TYPE S4(PG 76-28 OK)	(R-32)	TON 1,253.00
411(C)	5960	SUPERPAVE, TYPE S4(PG 64-22 OK)	(R-32)	TON 1,395.00
413(B)	4863	RUMBLE STRIP-METHOD HMA-CYC		LF 4,165.00
601(B)	0536	TYPE I-A PLAIN RIPRAP	(2)	TON 500.00
601(C)	0538	TYPE I-A FILTER BLANKET	(2)	TON 100.00
611(G)	6002	INLET (SMD-TYPE 2)		EA 3.00
613 (A)	0492	24" R.C. PIPE CLASS III		LF 109.00
613 (A)	0494	36" R.C. PIPE CLASS III		LF 55.00
613 (B)	4527	21" X 15" CORR. GALV. STEEL PIPE ARCH		LF 980.00
613 (L)	5730	24" PREFEAB. CULVERT END SEC., ROUND		EA 3.00
613 (L)	5734	36" PREFEAB. CULVERT END SEC., ROUND		EA 2.00
619(A)	0920	REMOVAL OF STRUCTURES & OBSTRUCTIONS	(R-48,49)	LSUM 1.00
619(B)	4728	REMOVAL OF ASPHALT PAVEMENT	(R-50)(3,6)	SY 21,527.00
619(B)	4780	REMOVAL OF GUARDRAIL	(R-50)(8)	LF 3,045.00
623(A)	0932	BEAM GUARDRAIL W-BEAM SINGLE		LF 787.50
623(G)	8590	GUARDRAIL END TREATMENT (31")	(9)	EA 4.00
623(I)	8700	GUARDRAIL BRIDGE CONN-THRE BEAM (31")		EA 6.00
623(F)	8300	GUARDRAIL TRAIL END TURNDOWN (31")		EA 2.00

BRIDGE A 0200				JP# 27950(07)
ITEM NO.	DESCRIPTION		UNIT	QUANTITY
	SPAN BRIDGE		SF	21,083.35
619(D)	1397	REMOVAL OF EXISTING BRIDGE STRUCTURE	LSUM	1.00

BRIDGE B 0201				JP# 27950(07)
ITEM NO.	DESCRIPTION		UNIT	QUANTITY
501(A)	0313	STRUCTURAL EXCAVATION UNCLASSIFIED	CY	364.00
509(A)	0319	CLASS AA CONCRETE	CY	831.00
511(A)	0332	REINFORCING STEEL	LBS	148,384.00
619(D)	1397	REMOVAL OF EXISTING BRIDGE STRUCTURE	LSUM	1.00

TRAFFIC CONTROL 0300				JP# 27950(07)
ITEM NO.	DESCRIPTION		UNIT	QUANTITY
880(J)	8905	CONTRUCTION TRAFFIC CONTROL	LSUM	1.00

CONSTRUCTION 0640				JP# 27950(07)
ITEM NO.	DESCRIPTION		UNIT	QUANTITY
220	2800	SW/PPP DOCUMENTATION AND MANAGEMENT	LSUM	1.00
640(A)	1426	FIELD OFFICE	EA	1.00
641	1552	MOBILIZATION	LSUM	1.00
643	0087	(SP)CONTRACTORS QUALITY CONTROL	LSUM	1.00

STAKING 0600				JP# 27950(07)
ITEM NO.	DESCRIPTION		UNIT	QUANTITY
642(B)	0096	CONSTRUCTION STAKING LEVEL II	LSUM	1.00

US-81 over UP Railroad			KINGFISHER COUNTY	
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN	NDA			
CHECKED	SP			
APPROVED				
SQUAD	MacArthur		SUMMARY OF PAY QUANTITIES (ROADWAY)	
STATE JOB NO. 29849(04)			SHEET NO. AR01	

PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-Sum-Rd-02.dgn

SUMMARY OF SURFACING QUANTITIES															
Plan Sht. No.	Location	Location Station to Station		Stabilized Subgrade	Tack Coat	Prime Coat	Superpave Type S3 (PG 76-28 OK)	Superpave Type S3 (PG 64-22 OK)	Superpave Type S4 (PG 76-28 OK)	Superpave Type S4 (PG 64-22 OK)	Aggregate Base Type A	TBSC Type E	Cold Milling	Rumble Strip-Method HMA-CYC	Sawing Pavement
				307(K)	407(B)	408	411(B)	411(B)	411(C)	411(C)	303(A)	402 €	412	413(B)	*
				SY	GAL	GAL	TON	TON	TON	TON	CY	TON	SY	LF	LF
R001	Mainline	121+00.00	- 125+00.00	3911.1	775.5	2644.4	367.2	1009.8	240.6	141.1	487.5	544.0		800.0	
R002	Mainline	125+00.00	- 139+00.00	7650.8	1261.2	5173.0	718.3	1975.4	470.7	276.0	953.7	1064.2		1564.9	
R003	Mainline	78+80.83	- 81+00.00	8800.0	1745.0	5950.0	826.2	2272.1	541.4	317.4	1096.9	1224.0		1800.0	
R004	Mainline	81+00.00	- 91+00.00	2272.7	309.9	1536.7	0.0	578.5	0.0	231.4	0.0	0.0		0.0	
R005	Mainline	91+00.00	- 94+50.00	2063.5	281.4	1395.2	0.0	525.3	0.0	210.1	0.0	0.0		0.0	
TOTAL				24,698.1	4,373.0	16,699.3	1,911.7	6,361.2	1,252.8	1,176.0	2,538.1	2,832.2	0.0	4,164.9	0.0

* Quantity included for information only , cost to be included in other items of work.

SUMMARY OF GUARDRAIL											
Plan Sht. No.	Location Station to Station				Prime Coat	Superpave Type S4 (PG 64-22 OK)	Beam Guardrail W-Beam Single	Guardrail End Treatment (31")	Guardrail Bridge Conn- Thrie Beam (31")	Guardrail Trail End Turndown (31")	Guardrail Delineators (Type 2, Code 1)
					408	411(B)	623(A)	623(G)	623(I)	623(F)	853
					GAL	TON	LF	EA	EA	EA	EA
R001	123+97.00	-	125+00.00	NB	RT	30.2	19.3	50.0	1.0		1.0
R002	125+00.00	-	128+58.79	NB	RT	69.6	44.5	337.5		1.0	7.0
R002	126+89.14	-	128+58.07	NB	LT	29.9	19.1	100.0	1.0		2.0
R002	134+76.03	-	136+76.30	NB	RT	63.6	40.7	125.0		1.0	3.0
R002	128+41.75	-	129+57.97	SB	LT	33.9	21.7	50.0		1.0	1.0
R002	135+78.20	-	137+07.25	SB	LT	55.6	35.6	50.0	1.0		1.0
R002	135+77.43	-	137+26.75	SB	RT	59.3	38.0	75.0	1.0	1.0	2.0
				TOTAL		342.0	218.9	787.5	4.0	6.0	17.0

SUMMARY OF EARTHWORK						
Plan Sht. No.	Location Station to Station			Unclassified Excavation	Fill + 15%	Unclassified Borrow
				202(A)		202(D)
				CY	CY	CY
R001	121+00.00	-	125+00.00	976.6	1,723.3	746.7
R002	125+00.00	-	139+00.00	42,714.2	31,855.2	-10,859.0
R003	139+00.00	-	148+00.00	4,490.4	15,993.5	11,503.1
TOTAL				48,181.2	49,572.0	1,390.8

SUMMARY OF EROSION CONTROL											
Plan Sht. No.	Location Station to Station			Type A Salvaged Topsoil	Temporary Silt Fence	Temporary Inlet Sediment Filter	Solid Slab Sodding	Vegetative Mulching	Mowing	Fertilizing (10-20-10) **	Watering **
				205(A)	221(C)	221(H)	230(A)	233(A)	241		
				CY*	LF	EA	SY	AC	AC	TON	K-Gal
T002	121+00.00	-	139+00.00	5,069	4547.0	3.0	36,498	7.54	30.20	3.6	2,919.8
T003	139+00.00	-	148+00.00	45	323.0	1.0	324	0.07	0.30	0.0	25.9
	TOTAL			5,114.0	4,870.0	4.0	36,822.0	7.61	30.50	3.6	2,945.7

* Estimated quantity to be paid as lump sum.

** Quantity provided for information only, cost to be included in other items of work.

SUMMARY OF REMOVAL				
Plan Sht. No.	Location Station to Station		Asphalt Pavement	Guardrail
			619(B)	619(B)
			SY	LF
R001	121+00.00	- 125+00.00	3,378	495
R002	125+00.00	- 139+00.00	6,608	2,550
R003	139+00.00	- 148+00.00	7,600	
R004	102+14.28	- 106+79.16	2,066	
R005	152+83.09	- 157+05.16	1,876	
	TOTAL		21,527	3,045

NOTE: This is a partial list of removal items. There could be other items not identified in the survey and/or the table that will require removal.

US-81 over UP Railroad			KINGFISHER COUNTY	
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN	NDA			
CHECKED	SP			
APPROVED				
SQUAD	MacArthur		SUMMARY SHEET	
			STATE JOB NO. 29849(04) SHEET NO. AR02	

10/19/18 G:\01Projects\T-2586 US 81 Bridge over IPRR, Kingfisher, Co., OK\CAD\AT001-2984904.dgn

REVISONS		
NO.	DESCRIPTION	DATE

GENERAL CONSTRUCTION NOTES

THE CONTRACTOR SHALL PROVIDE A PERSON TO BE ON 24 HOUR CALL AS NEEDED AND DETERMINED BY THE ENGINEER. THIS PERSON SHALL HOLD A CURRENT CERTIFICATION FROM THE AMERICAN TRAFFIC SAFETY SERVICE ASSOCIATION (ATSSA) OR THE OKLAHOMA TRAFFIC ENGINEERING ASSOCIATION (OTEA) AS A TRAFFIC CONTROL TECHNICIAN OR TRAFFIC CONTROL SUPERVISOR.

ANY SIGNS AND/OR DELINEATORS WHICH ARE TO BE REMOVED DURING THIS PROJECT WILL BE STORED IN A PROTECTED AREA DESIGNATED BY THE RESIDENT ENGINEER UNTIL SUCH A TIME THAT THEY ARE TO BE RESET BY THE CONTRACTOR. COST OF THIS WORK TO BE INCLUDED IN OTHER ITEMS OF WORK.

EXISTING ROADWAY SHALL REMAIN OPEN DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER BARRICADES, LIGHTS, AND SIGNING WITHIN THE LIMITS OF CONSTRUCTION. ALL CONSTRUCTION SIGNING WILL BE IMPLEMENTED ACCORDING TO CONSTRUCTION PLANS. CONSTRUCTION TRAFFIC CONTROL WILL BE INSTALLED IN A MANNER APPROVED BY THE ENGINEER, IN ACCORDANCE WITH CHAPTER VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, (CURRENT EDITION), AND COMPLIANT WITH APPLICABLE O.D.O.T. STANDARD DRAWINGS.

THIS PROJECT SHALL BE CONSTRUCTED WITHOUT CLOSING TRAFFIC ON CROSS STREETS. A MINIMUM OF ONE LANE IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE HE MAY INFLICT TO THE EXISTING UNDERGROUND UTILITIES WITHIN THE PROJECT AREA AS A RESULT OF HIS DIGGING, TRENCHING, BORING, ETC.... PRIOR TO DIGGING NEAR THE UTILITIES, THE CONTRACTOR SHALL CALL FOR A LIST OF ALL UNDERGROUND FACILITIES REGISTERED IN THE AREA OF CONSTRUCTION LISTED WITH THE FOLLOWING AGENCIES:
THE "OKIE" NOTIFICATION CENTER 811 OR (405)522-6543 OR WWW.CALLOKIE.COM OR THE LOCAL COUNTY CLERK'S OFFICE.

PAY QUANTITY NOTES

(TC-1)	THE CONTRACTOR SHALL FURNISH AND INSTALL SUCH LIGHTS, SIGNS, BARRICADES, AND PROVIDE FLAGGERS NECESSARY FOR THE CONTROL, SAFETY, AND MAINTENANCE OF TRAFFIC WHEN INSTALLING, RELOCATING OR DELIVERING PORTABLE LONGITUDINAL BARRIER.
(TC-2)	QUANTITY INCLUDES SUFFICIENT LENGTH OF PORTABLE LONGITUDINAL BARRIER TO PROVIDE FOR THE LONGEST SECTION SHOWN ON THE PLANS. THIS SAME BARRIER WILL BE USED ON OTHER DETOUR PHASES.
(TC-19)	THIS ITEM INCLUDES AN ESTIMATED 4,000 L.F. (4" WIDE) WHITE AND 13,120 L.F. (4" WIDE) YELLOW STRIPE. THE CONTRACTOR SHALL PROVIDE AND INSTALL AN O.D.O.T. APPROVED REMOVABLE PAVEMENT MARKING TAPE. COST FOR REMOVAL OF THIS TAPE SHALL BE INCLUDED IN THE PRICE BID FOR THIS ITEM. NON-REMOVABLE MARKING TAPE (FOIL BACK) SHALL NOT BE CONSIDERED AN APPROVED EQUAL FOR THIS ITEM.
(TC-22)	AMOUNT SHOWN IS AN APPROXIMATION AND THE ACTUAL AMOUNT OF REMOVAL, IF NECESSARY, SHALL BE DETERMINED BY THE ENGINEER. PRICE BID FOR PAVEMENT MARKING REMOVAL SHALL INCLUDE THE COST OF REMOVING STRIPE, ARROWS, WORDS AND SYMBOLS, AS SHOWN IN THE PLANS. THESE ITEMS MAY CONSIST OF PLASTIC, PAINT OR NON-REMOVABLE MARKING TAPE.
(TC-26)	ALL CONSTRUCTION TRAFFIC CONTROL WILL BE IMPLEMENTED ACCORDING TO CONSTRUCTION PLANS, AND INSTALLED IN A MANNER APPROVED BY THE ENGINEER, IN ACCORDANCE WITH CHAPTER VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, (CURRENT EDITION), AND COMPLIANT WITH APPLICABLE O.D.O.T. STANDARD DRAWINGS. PRICE BID FOR THIS ITEM SHALL BE PAYMENT IN FULL FOR THE INSTALLATION, MAINTENANCE AND SUBSEQUENT REMOVAL OF ALL NECESSARY CONSTRUCTION TRAFFIC CONTROL DEVICES REQUIRED FOR COMPLETION OF THE PROJECT.
ALL SIGNS AND BARRICADES WHICH ARE SHOWN WITH TYPE 'A' LIGHTS IN THE STANDARD DRAWINGS SHALL HAVE THE CORRESPONDING LIGHT ATTACHED DURING NON-DAYLIGHT HOURS.	
(TC-28)	INCLUDED IN THIS ITEM ARE ALL S.C.S. (SPECIAL CONSTRUCTION SIGNING) SIGNS WHICH ARE BETWEEN 0.00 S.F. AND 6.25 S.F. ALSO INCLUDED IN THIS ITEM SHALL BE THE COST OF INSTALLATION, MAINTENANCE, AND REMOVAL OF THESE SIGNS.
(TC-29)	INCLUDED IN THIS ITEM ARE ALL S.C.S. (SPECIAL CONSTRUCTION SIGNING) SIGNS WHICH ARE BETWEEN 6.26 S.F. AND 15.99 S.F. ALSO INCLUDED IN THIS ITEM SHALL BE THE COST OF INSTALLATION, MAINTENANCE, AND REMOVAL OF THESE SIGNS.
(TC-30)	INCLUDED IN THIS ITEM ARE ALL S.C.S. (SPECIAL CONSTRUCTION SIGNING) SIGNS WHICH ARE BETWEEN 16.00 S.F. AND 32.99 S.F. ALSO INCLUDED IN THIS ITEM SHALL BE THE COST OF INSTALLATION, MAINTENANCE, AND REMOVAL OF THESE SIGNS.
(TC-33)	ALL CONSTRUCTION WORK ZONE SIGNS SHALL HAVE FLUORESCENT SHEETING. THE FLUORESCENT SHEETING SHALL MEET THE REQUIREMENTS OF ASTM D4956 (LATEST REVISION).
THE MANUFACTURER SHALL FURNISH A TYPE 'D' CERTIFICATION IN ACCORDANCE WITH O.D.O.T. STANDARD SPECIFICATIONS (CURRENT EDITION) SUBSECTION 106.04. THE CERTIFICATION SHALL INCLUDE TEST RESULTS ON MATERIAL SUBMITTED FOR APPROVAL.	

(TC-39)	THE CONTRACTOR SHALL PROVIDE A PERSON, 24 HOURS A DAY, SEVEN DAYS A WEEK, AT THE CONSTRUCTION SITE TO MAINTAIN AND KEEP ALL TRAFFIC CONTROL DEVICES IN POSITION ANYTIME TRAFFIC IS DIRECTED AWAY FROM THE NORMAL TRAFFIC LANES OR ANYTIME THE ENGINEER DEEMS IT NECESSARY. THIS PERSON SHALL HOLD A CURRENT CERTIFICATION FROM THE AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) OR THE OKLAHOMA TRAFFIC ENGINEERING ASSOCIATION (OTEA) AS A TRAFFIC CONTROL TECHNICIAN OR TRAFFIC CONTROL SUPERVISOR.
(TC-52)	ANY USED PORTABLE CHANGEABLE MESSAGE SIGNS TO BE PLACED ON THIS PROJECT SHALL BE SUBJECT TO INSPECTION AND APPROVAL, BY THE OKLAHOMA DEPARTMENT OF TRANSPORTATION, TO ASSURE THAT THEY ARE IN GOOD WORKING CONDITION, PRIOR TO PLACEMENT ON THE PROJECT.
(TC-61)	ANY DAMAGE TO A FINISHED OR EXISTING SURFACE RESULTING FROM THE CONTRACTORS NEGLIGENCE IN THE REMOVAL OF CONSTRUCTION ZONE PAVEMENT MARKERS OR CHANNELIZING DEVICES AND THE BITUMINOUS ADHESIVE USED IN THEIR INSTALLATION, SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE AND TO THE SATISFACTION OF THE ENGINEER.
(TC-70)	THIS ITEM IS AN ESTIMATED QUANTITY TO BE USED AS DEEMED NECESSARY BY THE ENGINEER.
(TC-73)	QUANTITY SHOWN INCLUDES 10,000 EA. (WHITE) AND 10,000 EA. (YELLOW) CONSTRUCTION ZONE PAVEMENT MARKERS (FLEX TABS). THESE CONSTRUCTION ZONE PAVEMENT MARKERS SHALL BE EITHER "DAVIDSON PLASTICS: MODEL TOM", OR AN APPROVED EQUAL. PRICE BID FOR THIS ITEM SHALL INCLUDE THE INITIAL PLACEMENT, SUBSEQUENT REPLACEMENT, AND REMOVAL. THE CONSTRUCTION ZONE PAVEMENT MARKERS (FLEX TABS) SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND AS SHOWN ON STANDARD DRAWING TCS21-1-(LATEST REVISION).

(TC-75)	TEMPORARY PAVEMENT MARKINGS SHALL BE IN PLACE THE SAME DAY THAT EXISTING PAVEMENT MARKINGS ARE REMOVED FROM ANY ROADWAY OPEN TO TRAFFIC. ALSO, ALL TEMPORARY PAVEMENT MARKINGS SHALL BE REMOVED PRIOR TO THE INSTALLATION OF FINAL STRIPING.
---------	--

(TC-85)	THESE SIGNS MUST BE ON THE OKLAHOMA DEPARTMENT OF TRANSPORTATION LIST OF APPROVED CHANGEABLE MESSAGE SIGNS. FOR A LIST OF THE APPROVED SIGNS GO TO THE OKLAHOMA DEPARTMENT OF TRANSPORTATION WEBSITE AT: http://www.okladot.state.ok.us/traffic/qpl/index.php .
---------	---

(1)	390 TOTAL CONSTRUCTION CALENDAR DAYS WERE USED TO COMPUTE THE SIGN DAY PAY ITEMS. THE TOTAL CALENDAR DAYS ARE BROKEN DOWN BY PHASE TO CALCULATE THE SIGN DAY PAY ITEMS PER PHASE AS SHOWN BELOW. THE AMOUNT OF CALENDAR DAYS USED TO COMPUTE THE SIGN DAY PAY ITEMS IS AN ESTIMATED QUANTITY ONLY, BASED ON THE CURRENT O.D.O.T. STANDARDS AND SUGGESTED CONSTRUCTION SEQUENCE FOR THIS PROJECT. THESE ESTIMATED SIGN DAY QUANTITIES MAY CHANGE AS THE PROJECT'S CONSTRUCTION TRAFFIC CONTROL IS MODIFIED DURING CONSTRUCTION. THE CALENDAR DAYS PER PHASE ON THIS PROJECT ARE AS FOLLOWS. 30 PHASE 1 CONSTRUCTION CALENDAR DAYS 180 PHASE 2 CONSTRUCTION CALENDAR DAYS 180 PHASE 3 CONSTRUCTION CALENDAR DAYS
-----	---

(2)	WARNING LIGHTS TYPE "C" ARE NOT REQUIRED ON THIS PROJECT.
(3)	THIS QUANTITY PROVIDES FOR TWO (2) MESSAGE BOARDS FOR THE DURATION OF THE PROJECT TO BE USED AT THE DISCRETION OF THE ENGINEER.

PAY QUANTITIES

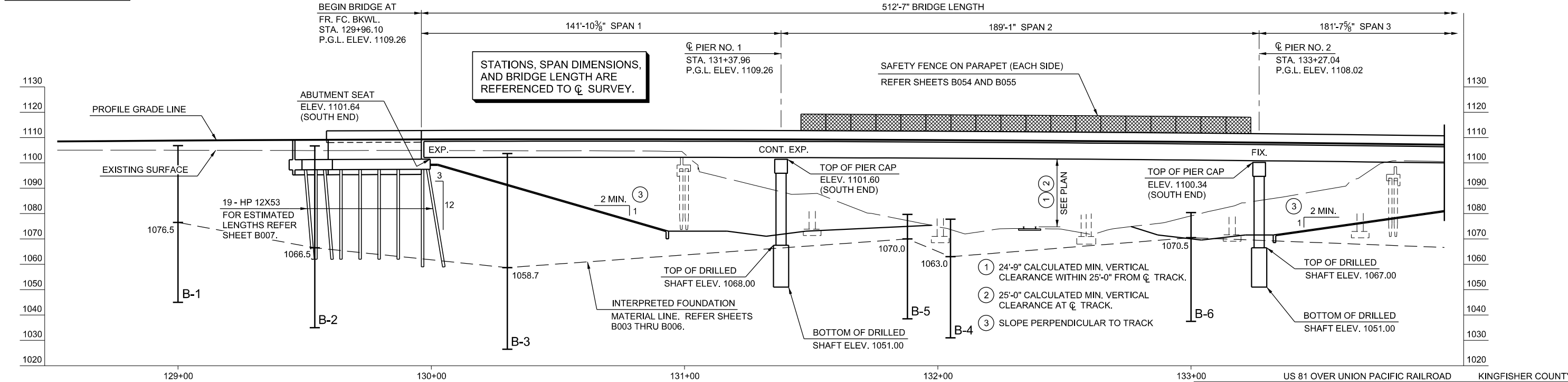
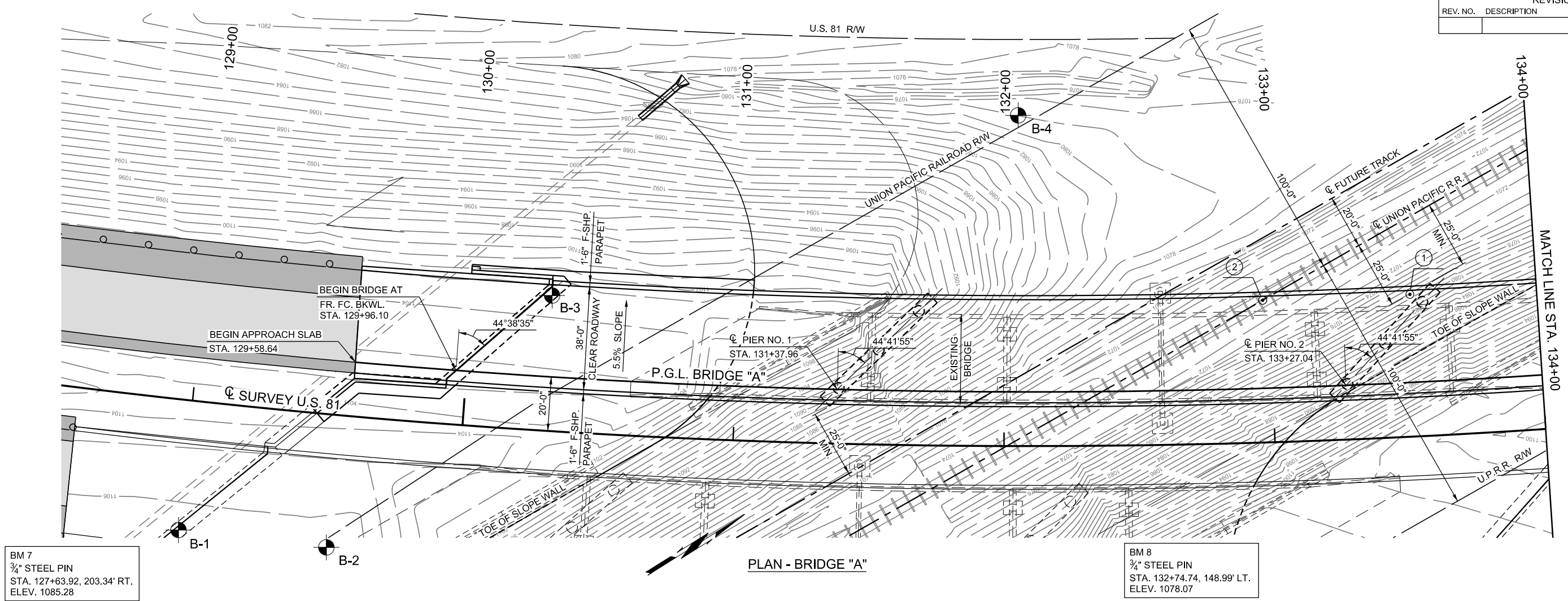
0300 TRAFFIC CONTROL			
ITEM	DESCRIPTION	UNIT	TOTAL
857(C) 8851	REMOVABLE PAVEMENT MARKING TAPE (4" WIDE) (TC-19,70,75)	LF	17,120
857(E) 8887	(PL) CONSTRUCTION ZONE PAVEMENT MARKERS (FLEX TAB) TYPE 2-1 (TC-61,70,73,75)	EA	20,000
857(F) 8006	PAVEMENT MARKING REMOVAL (TRAFFIC STRIPE) (TC-22,70)	LF	5,000
877(B) 8484	DELIVER PORTABLE LONGITUDINAL BARRIER (TC-12)	LF	5,500
877(C) 8486	RELOCATION OF PORTABLE LONGITUDINAL BARRIER (TC-12)	LF	5,500
880(A) 8812	ARROW DISPLAY (TYPE C) (1)	SD	780
880(B) 8818	CONSTRUCTION SIGNS 0 TO 6.25 SF (TC-26,28,33)(1)	SD	15,600
880(B) 8821	CONSTRUCTION SIGNS 6.26 TO 15.99 SF (TC-26,29,33)(1)	SD	10,920
880(B) 8824	CONSTRUCTION SIGNS 16.0 SF TO 32.99 SF (TC-26,30,33)(1)	SD	10,380
880(C) 8842	CONSTRUCTION BARRICADES (TYPE III) (TC-26)(1)	SD	5,760
880(C) 8848	WING BARRICADES (TC-26)(1)	SD	1,560
880(E) 8860	WARNING LIGHTS (TYPE A) (TC-26)(1)	SD	21,900
880(F) 8878	DRUMS (TC-26)(1,2)	SD	27,540
880(G) 8890	CHANNELIZER CONES (TC-26)(1)	SD	19,920
880(K) 8908	SURVEILLANCE TRAFFIC CONTROL (TC-39)(1)	SD	390
882(A) 8306	PORT. CHANGEABLE MESSAGE SIGN (TC-52,70,85)(1,3)	SD	780

Design	RWR	10/19/18
Drawn	CCC	10/19/18
		

TRAFFIC CONTROL PAY QUANTITIES AND NOTES

State Job No. 29849(04) Sheet No. AT001

REVISIONS		
REV. NO.	DESCRIPTION	DATE

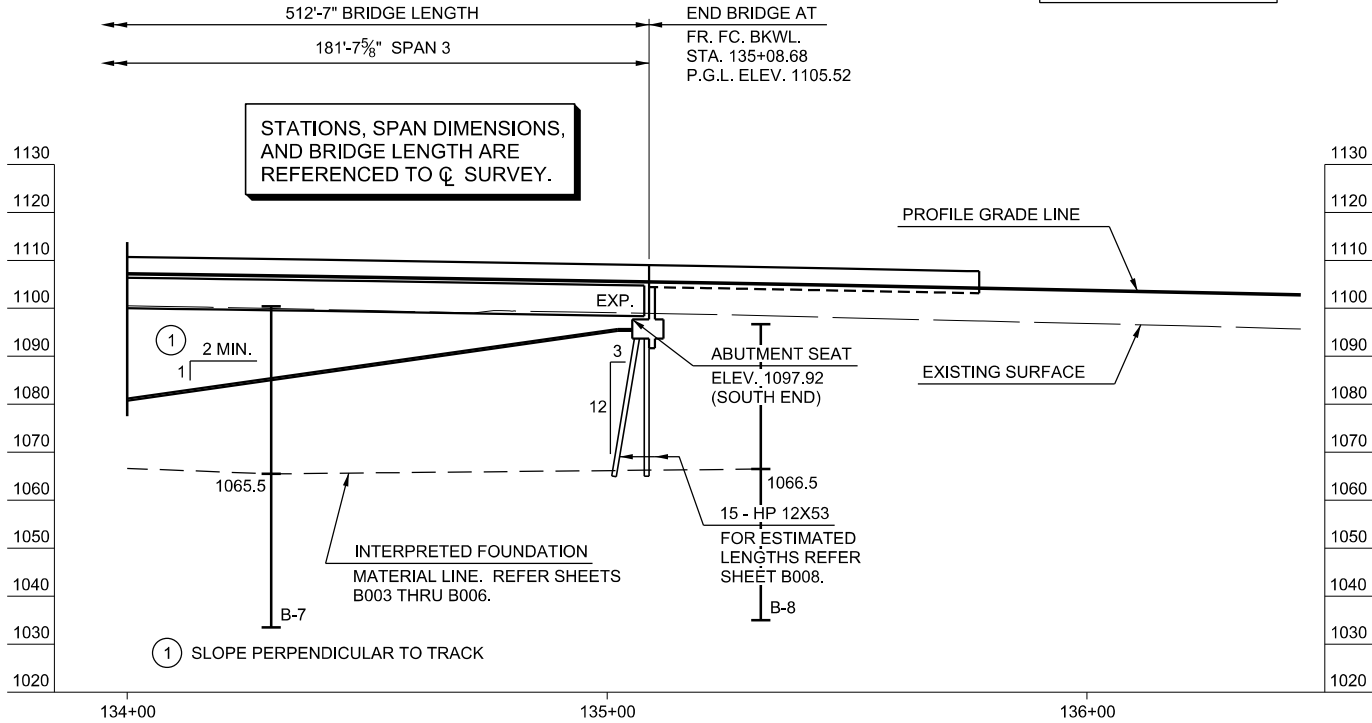
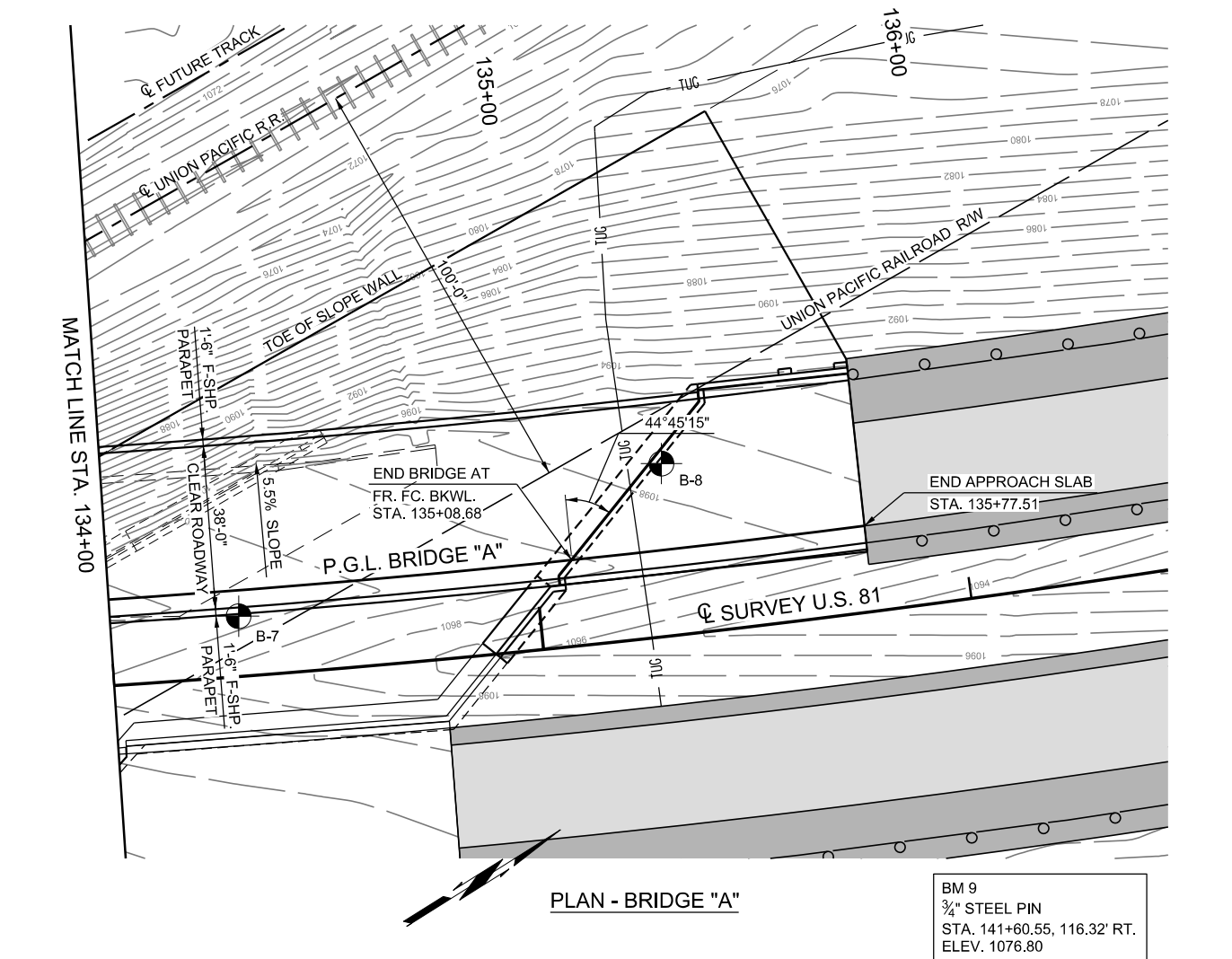


PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

DESIGN	GLF
DRAWN	JLF
CHECKED	GLF
APPROVED	
SQUAD	MacArthur

OKLAHOMA DEPARTMENT OF TRANSPORTATION	
GENERAL PLAN AND ELEVATION - BRIDGE "A"	
Q STATION 132+52; SKEW 45° L.F.	
142' - 189' - 182' PLATE GIRDER SPANS	
38' CLEAR ROADWAY WITH F-SHAPED PARAPET	
STATE JOB NO. 29849(04)	SHEET NO. B001

PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-A-gns2.dgn



DESIGN DATA

SPECIFICATION

AASHTO LRFD BRIDGE DESIGN SPECIFICATION, CUSTOMARY U.S. UNITS, SEVENTH EDITION.

LOADING

HL-93 OR OKLAHOMA OVERLOAD TRUCK
HL-93 INVENTORY RATING FACTOR X.XX
HL-93 OPERATING RATING FACTOR X.XX

DESIGN DEAD LOAD INCLUDES AN ALLOWANCE OF 20 PSF FOR A FUTURE WEARING SURFACE.

UNIT STRESSES

CLASS A CONCRETE F'C = 3,000 PSI
CLASS AA CONCRETE F'C = 4,000 PSI
REINFORCING STEEL (GR. 60) FY = 60,000 PSI
STRUCTURAL STEEL (GR. 50W) FY = 50,000 PSI
STAINLESS STEEL A240 (TYPE 316) FY = 30,000 PSI

FOUNDATION DATA

ABUTMENTS

FACTORED PILE REACTION
ABUTMENT NO. 1 95 T/PILE
ABUTMENT NO. 2 110 T/PILE

ALL ABUTMENT PILING SHALL BE DRIVEN THROUGH THE COMPACTED FILL. PILING SHALL BE DRIVEN TO POINT BEARING ON SOLID FOUNDATION MATERIAL AT THE APPROXIMATE ELEVATION SHOWN ON THE PLANS. IF THE AXIAL LOAD RESISTANCE IS NOT OBTAINED AT THIS ELEVATION, DRIVING SHALL CONTINUE UNTIL THE AXIAL LOAD RESISTANCE IS OBTAINED. THE LENGTH OF STEEL PILING SHOWN ON THE PLANS IS FOR ESTIMATING PURPOSES ONLY.

PIER NO. 1 (60" DIAMETER DRILLED SHAFTS)

FACTORED REACTION 665.0 T/SHAFT
UNIT BEARING RESISTANCE 30.1 T/SF
BEARING RESISTANCE FACTOR 0.7
FACTORED BEARING RESISTANCE 413.2 T/SHAFT
NOMINAL UNIT FRICTION RESISTANCE 6.4 T/SF
FRICTION RESISTANCE FACTOR 0.45
FACTORED FRICTION RESISTANCE 384.5 T/SHAFT
DEPTH OF ROCK NEGLECTED FOR FRICTION 4.0 FT
MINIMUM EMBEDMENT INTO ROCK 12.5 FT
TOTAL FACTORED RESISTANCE 798 T/SHAFT

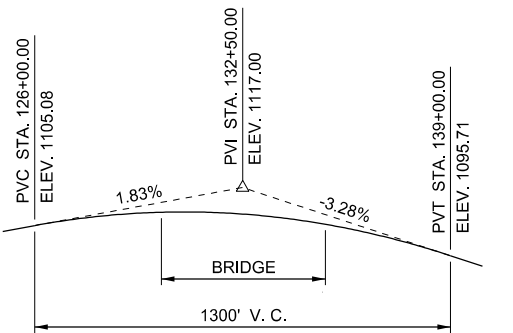
PIER NO. 2 (60" DIAMETER DRILLED SHAFTS)

FACTORED REACTION 753.0 T/SHAFT
UNIT BEARING RESISTANCE 30.1 T/SF
BEARING RESISTANCE FACTOR 0.7
FACTORED BEARING RESISTANCE 413.2 T/SHAFT
NOMINAL UNIT FRICTION RESISTANCE 6.4 T/SF
FRICTION RESISTANCE FACTOR 0.45
FACTORED FRICTION RESISTANCE 384.5 T/SHAFT
DEPTH OF ROCK NEGLECTED FOR FRICTION 4.0 FT
MINIMUM EMBEDMENT INTO ROCK 12.5 FT
TOTAL FACTORED RESISTANCE 798 T/SHAFT

REVISIONS		
REV. NO.	DESCRIPTION	DATE

INDEX OF SHEETS - BRIDGE "A"

AB01	GENERAL NOTES (BRIDGE)
AB02	UNION PACIFIC RAILROAD NOTES
AB03	PAY QUANTITIES (BRIDGE)
AB04	MINIMUM HORIZONTAL CLEARANCE PERPENDICULAR TO RAILROAD
B001	GENERAL PLAN AND ELEVATION - BRIDGE "A"
B002	GENERAL PLAN AND ELEVATION - BRIDGE "A"
B003	FOUNDATION BORING LOG SHEET (1 OF 4)
B004	FOUNDATION BORING LOG SHEET (2 OF 4)
B005	FOUNDATION BORING LOG SHEET (3 OF 4)
B006	FOUNDATION BORING LOG SHEET (4 OF 4)
B007	SUBSTRUCTURE LAYOUT AND SUMMARY OF QUANTITIES - BRIDGE "A" (1 OF 2)
B008	SUBSTRUCTURE LAYOUT - BRIDGE "A" (2 OF 2)
B009	SUBSTRUCTURE EXCAVATION AND PIPE UNDERDRAIN ASSEMBLY DETAILS - BRIDGE "A" AND "B"
B010	ABUTMENT NO. 1 - BRIDGE "A"
B011	ABUTMENT NO. 1 DETAILS - BRIDGE "A"
B012	ABUTMENT NO. 1 WING WALL DETAILS - BRIDGE "A"
B013	ABUTMENT NO. 2 - BRIDGE "A"
B014	ABUTMENT NO. 2 DETAILS - BRIDGE "A"
B015	ABUTMENT NO. 2 WING WALL DETAILS - BRIDGE "A"
B016	PIER NO. 1 - BRIDGE "A"
B017	PIER NO. 2 - BRIDGE "A"
B018	PIER DETAILS - BRIDGE "A" AND "B"
B019	TYPICAL CROSS SECTION AND LONGITUDINAL SECTION - BRIDGE "A"
B020	SLAB REINFORCING PLAN - BRIDGE "A"
B021	SLAB DETAILS - BRIDGE "A"
B022	FRAMING PLAN - BRIDGE "A"
B023	PLATE GIRDER DETAILS - BRIDGE "A"
B024	PLATE GIRDER DETAILS - BRIDGE "A" AND "B"
B025	PLATE GIRDER AND CROSS FRAME DETAILS - BRIDGE "A" AND "B"
B026	CROSS FRAME DETAILS - BRIDGE "A" AND "B"
B027	BEARING DETAILS - BRIDGE "A" AND "B"
B028	APPROACH SLAB NO. 1 - BRIDGE "A"
B029	APPROACH SLAB NO. 2 - BRIDGE "A"
B030	APPROACH SLAB DETAILS - BRIDGE "A" AND "B"
B051	SLOPE WALL PLAN AT SOUTH ABUTMENTS - BRIDGE "A" AND "B"
B052	SLOPE WALL PLAN AT NORTH ABUTMENTS - BRIDGE "A" AND "B"
B053	SLOPE WALL DETAILS - BRIDGE "A" AND "B"
B054	SAFETY FENCE ON PARAPET - BRIDGE "A" AND "B"
B055	SAFETY FENCE DETAILS - BRIDGE "A" AND "B"
B056	BRIDGE DECK FORMWORK BRACING
B057	DRAINS AT END OF BRIDGE



PRELIMINARY PLANS

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

DESIGN	GLF	
DRAWN	JLF	
CHECKED	GLF	
APPROVED		
SQUAD	MacArthur	

US 81 OVER UNION PACIFIC RAILROAD KINGFISHER COUNTY	
OKLAHOMA DEPARTMENT OF TRANSPORTATION	
GENERAL PLAN AND ELEVATION - BRIDGE "A"	
CL. STATION 132+52; SKEW 45° L.F.	
142' - 189' - 182' PLATE GIRDER SPANS	
38' CLEAR ROADWAY WITH F-SHAPED PARAPET	
STATE JOB NO. 29849(04)	SHEET NO. B002

REVISIONS		
REV. NO.	DESCRIPTION	DATE

Boring No. B-1
STATION 129+00 48' R
(4/4/2017)

Boring No. B-2
STATION 129+54 49' R
(4/5/2017)

LEGEND

DCD = DIAMOND CORE DRILLING, ASTM D2113-83
SPT = STANDARD PENETRATION TEST, ASTM D1586
SS = SPLIT SPOON SAMPLER
N = NUMBER OF BLOWS PER 12 INCHES
MC = MOISTURE CONTENT
LL = LIQUID LIMIT (NV=NO VALUE)
PI = PLASTICITY INDEX (NP=NO PLASTICITY)
#200 = PERCENT PASSING #200 SIEVE
UCS = UNCONFINED COMPRESSIVE STRENGTH
TCP = TEXAS CONE PENETROMETER
WCI = WET CAVE IN
▽ = WATER LEVEL WHILE DRILLING OR SAMPLING
▼ = WATER LEVEL AFTER DRILLING
▽ = WATER LEVEL 24 HOURS AFTER DRILLING
⊠ = TOP OF ROCK

NOTE: WATER LEVEL ELEVATIONS SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHOUT THE YEAR.

NOTE: "SS" DENOTES STANDARD PENETRATION TEST, AASHTO D1586-84. "TCP" DENOTES TEXAS CONE PENETRATION TEST.

* NOTE: TOP OF ROCK LINE SHOWN FOR ESTIMATING PURPOSES ONLY.

** NOTE: WATER LEVEL ELEVATION SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHOUT THE YEAR.

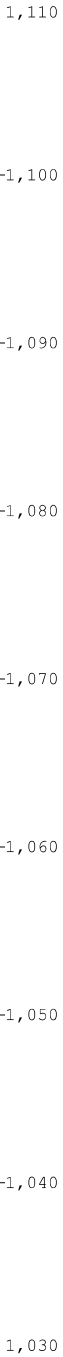
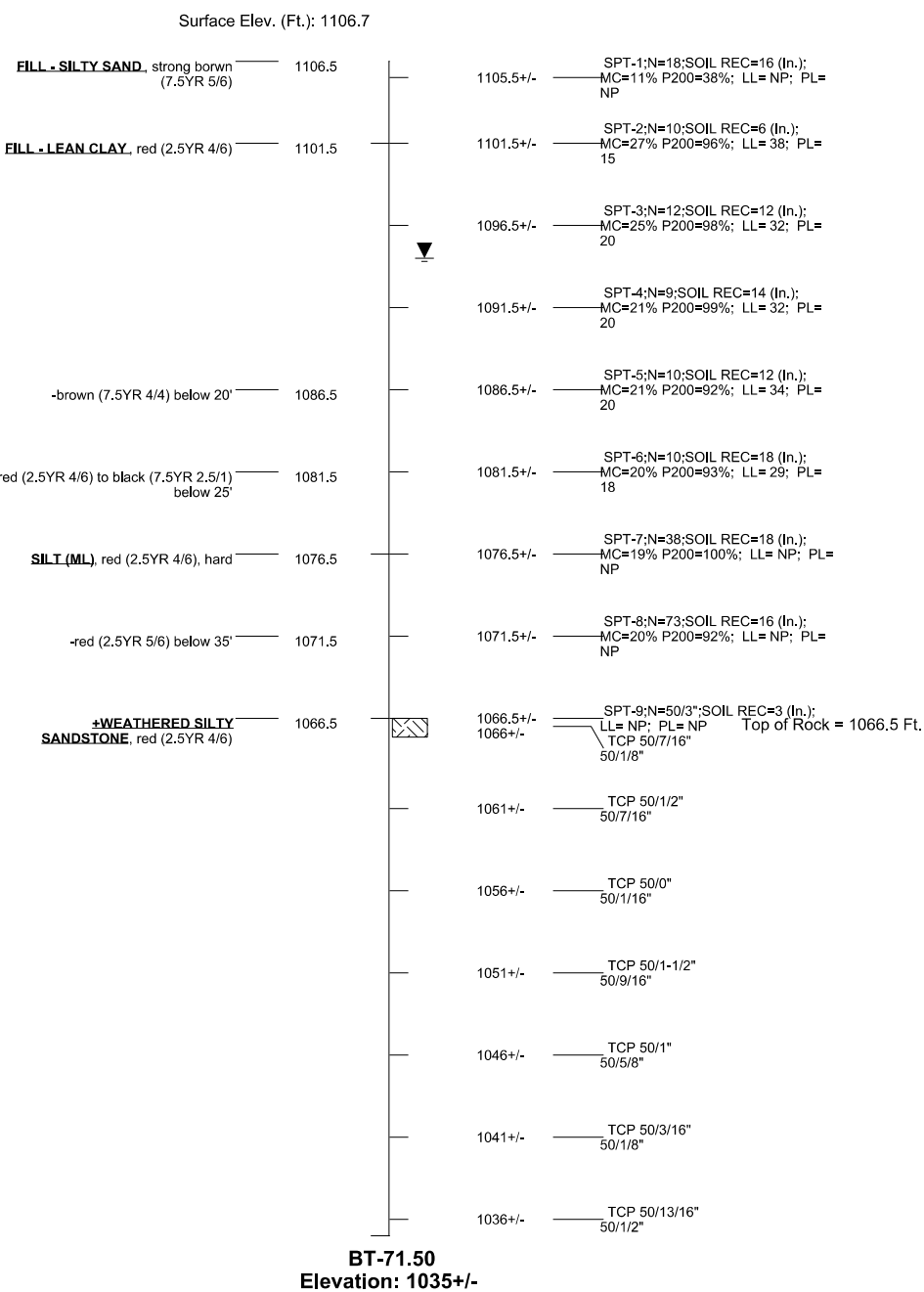
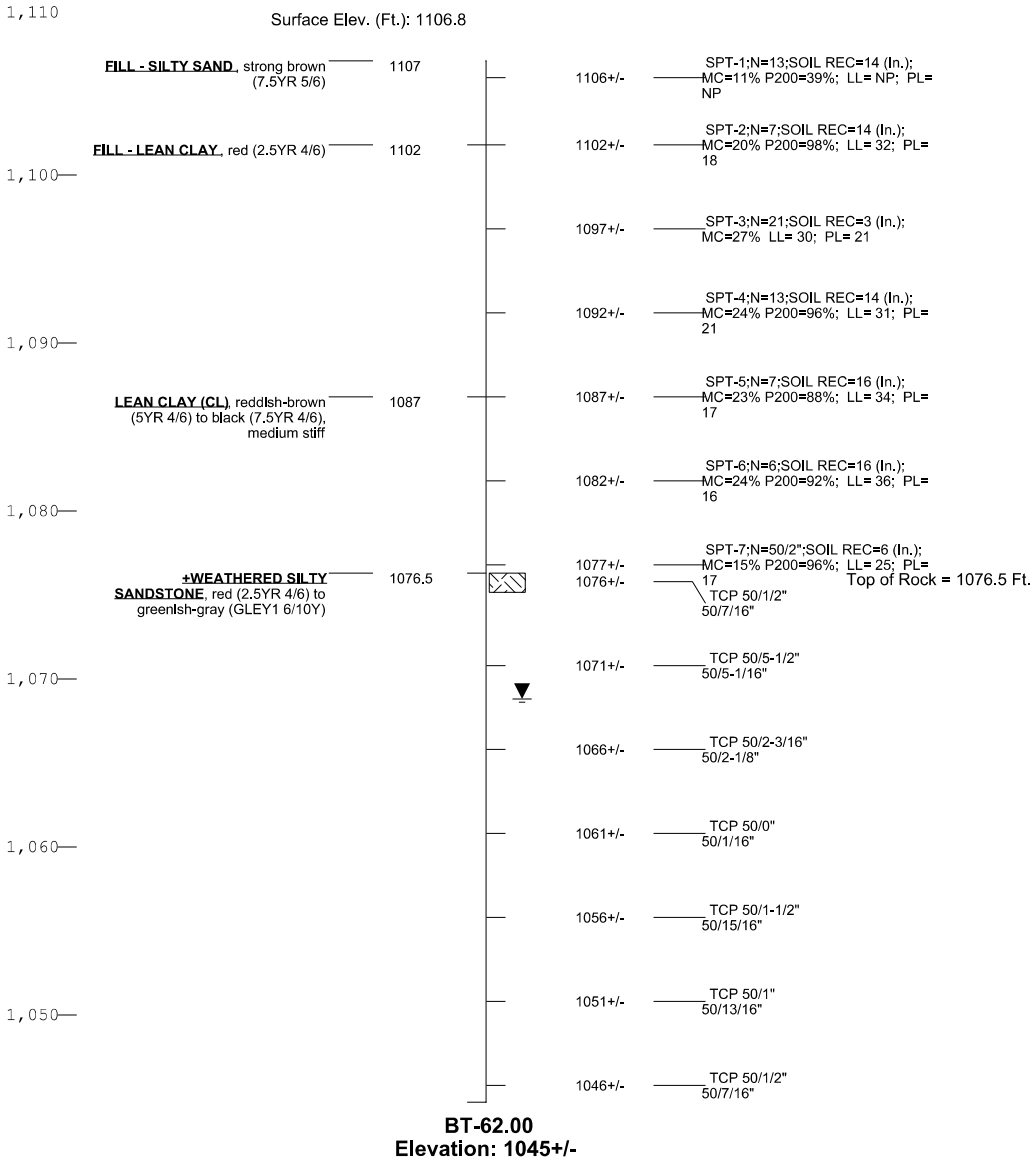
*** NOTE: ROCK CLASSIFICATION IS BASED ON DRILLING CHARACTERISTICS AND VISUAL OBSERVATION OF ROCK CORE SAMPLES. PETROGRAPHIC ANALYSIS OF THIN SECTIONS OF THE ROCK CORE SAMPLES MAY REVEAL OTHER TYPES.

SITE GEOLOGY

The geology of this site consists of alluvium deposits underlain by the Cedar Hills Unit of Permian age. The Cedar Hills Unit is made up of predominately reddish-brown silty, blocky shale and some massive, orange, silty sandstone and siltstone bed. The units has a maximum thickness of an estimated 190 to 200 feet in Kingfisher County and thins to the north and south.

GEOTECHNICAL REPORT

ALL GEOTECHNICAL INFORMATION CONTAINED ON THIS SHEET IS COVERED BY THE ENGINEERING SEAL AFFIXED TO AN ORIGINAL GEOTECHNICAL ENGINEERING REPORT THAT HAS BEEN STAMPED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN OKLAHOMA. TO OBTAIN A COPY OF THE COMPLETE REPORT, CONTACT THE ODOT OFFICE ENGINEER AT (405) 521-2625. THE CONTRACTOR SHOULD BE FULLY AWARE OF THE SITE CONDITIONS PRIOR TO BEGINNING WORK. ANY ADDITIONAL GEOTECHNICAL INFORMATION WHICH MAY BE DESIRED IS THE RESPONSIBILITY OF THE CONTRACTOR.



PRELIMINARY PLANS

THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

DESIGN		
DRAWN		
CHECKED		
APPROVED		
SQUAD	MacArthur	

US 81 OVER UNION PACIFIC RAILROAD KINGFISHER COUNTY

OKLAHOMA DEPARTMENT OF TRANSPORTATION

FOUNDATION BORING LOG SHEET (1 OF 4)

STATE JOB NO. 29849(04)

SHEET NO. B003

PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-foundation2.dgn

REVISIONS		
REV. NO.	DESCRIPTION	DATE

Boring No. B-3

STATION 130+30 50' L
(4/6/2017)

1,110

Surface Elev. (Ft.): 1103.7

FILL - SILTY SAND, strong brown
(7.5YR 5/6)

1,100

FILL - LEAN CLAY, brown (7.5YR 4/4)

-red (2.5YR 4/6) below 10'

1,090

-with sand, medium stiff below 15'

LEAN CLAY (CL), brown (7.5YR 4/4),
very stiff

1,080

-stiff below 25'

+HIGHLY WEATHERED SILTY
SANDSTONE, red (2.5YR 4/6)

1,070

1,060

+WEATHERED SILTY
SANDSTONE, red (2.5YR 4/6)

1,050

1,040

1,030

1,020

BT-77.00
Elevation: 1026.5+/-

1102.5+/-	SPT-1:N=16;SOIL REC=12 (In.); MC=16% P200=59%; LL= NP; PL= NP
1098.5+/-	SPT-2:N=11;SOIL REC=18 (In.); MC=22% P200=96%; LL= 37; PL= 16
1093.5+/-	SPT-3:N=11;SOIL REC=6 (In.); MC=23% P200=99%; LL= 33; PL= 22
1088.5+/-	SPT-4:N=7;SOIL REC=12 (In.); MC=24% P200=72%; LL= 33; PL= 22
1083.5+/-	SPT-5:N=23;SOIL REC=14 (In.); MC=19% P200=95%; LL= 34; PL= 17
1078.5+/-	SPT-6:N=10;SOIL REC=16 (In.); MC=22% P200=94%; LL= 36; PL= 17
1073.5+/- 1072.5+/-	SPT-7:N=50/5";SOIL REC=11 (In.); MC=23% P200=98%; LL= NP; PL= NP TCP 50/5-5/8" Top of Rock = 1073 Ft. 50/4-3/16"
1067.5+/-	TCP 50/1-1/4" 50/1-3/16"
1062.5+/-	TCP 40/6"
1058.5+/- 1057.5+/-	SPT-8:N=50/2";SOIL REC=1 (In.); LL= 34; PL= 23 TCP 50/1/2" 50/3/16"
1052.5+/-	TCP 50/3/16" 50/1/4"
1047.5+/-	TCP 50/1/8" 50/1/16"
1042.5+/-	TCP 50/2" 50/15/16"
1037.5+/-	TCP 50/1" 50/13/16"
1032.5+/-	TCP 50/1-5/16" 50/1-1/8"
1027.5+/-	TCP 50/0" 50/3/16"

Boring No. B-5

STATION 131+99 56' R
(7/20/2017)

Surface Elev. (Ft.): 1079.7

SANDY LEAN CLAY (CL), brown
(7.5YR 5/3), stiff

LEAN CLAY (CL), brown (7.5YR 4/4),
very stiff

+WEATHERED SANDSTONE
yellowish-red (5YR 5/6)

+WEATHERED SHALE, red (2.5YR 4/6)

BT-41.00
Elevation: 1038.5+/-

1079.5+/-	SPT-1:N=11;SOIL REC=8 (In.); MC=10%
1074.5+/-	SPT-2:N=16;SOIL REC=12 (In.); MC=16%
1071+/- 1069.5+/-	SPT-3:N=50/5";SOIL REC=12 (In.); MC=18% TCP 50/1-3/4" Top of Rock = 1070 Ft. 50/13/16"
1064.5+/-	TCP 50/9/16" 50/1/8"
1059.5+/-	TCP 50/1-1/4" 50/13/16"
1054.5+/-	TCP 50/1/8" 50/0"
1049.5+/-	TCP 50/3" 50/1-1/8"
1044.5+/-	TCP 50/1/16" 50/0"
1039.5+/-	TCP 50/13/16" 50/1/4"

LEGEND

DCD = DIAMOND CORE DRILLING, ASTM D2113-83
SPT = STANDARD PENETRATION TEST, ASTM D1586
SS = SPLIT SPOON SAMPLER
N = NUMBER OF BLOWS PER 12 INCHES
MC = MOISTURE CONTENT
LL = LIQUID LIMIT (NV=NO VALUE)
PI = PLASTICITY INDEX (NP=NO PLASTICITY)
#200 = PERCENT PASSING #200 SIEVE
UCS = UNCONFINED COMPRESSIVE STRENGTH
TCP = TEXAS CONE PENETROMETER
WCI = WET CAVE IN
▽ = WATER LEVEL WHILE DRILLING OR SAMPLING
▼ = WATER LEVEL AFTER DRILLING
▽ = WATER LEVEL 24 HOURS AFTER DRILLING
⊠ = TOP OF ROCK

NOTE: WATER LEVEL ELEVATIONS SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHOUT THE YEAR.

NOTE: "SS" DENOTES STANDARD PENETRATION TEST, AASHTO D1586-84. "TCP" DENOTES TEXAS CONE PENETRATION TEST.

* NOTE: TOP OF ROCK LINE SHOWN FOR ESTIMATING PURPOSES ONLY.

** NOTE: WATER LEVEL ELEVATION SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHOUT THE YEAR.

*** NOTE: ROCK CLASSIFICATION IS BASED ON DRILLING CHARACTERISTICS AND VISUAL OBSERVATION OF ROCK CORE SAMPLES. PETROGRAPHIC ANALYSIS OF THIN SECTIONS OF THE ROCK CORE SAMPLES MAY REVEAL OTHER TYPES.

SITE GEOLOGY

The geology of this site consists of alluvium deposits underlain by the Cedar Hills Unit of Permian age. The Cedar Hills Unit is made up of predominately reddish-brown silty, blocky shale and some massive, orange, silty sandstone and siltstone bed. The units has a maximum thickness of an estimated 190 to 200 feet in Kingfisher County and thins to the north and south.

GEOTECHNICAL REPORT

ALL GEOTECHNICAL INFORMATION CONTAINED ON THIS SHEET IS COVERED BY THE ENGINEERING SEAL AFFIXED TO AN ORIGINAL GEOTECHNICAL ENGINEERING REPORT THAT HAS BEEN STAMPED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN OKLAHOMA. TO OBTAIN A COPY OF THE COMPLETE REPORT, CONTACT THE ODOT OFFICE ENGINEER AT (405) 521-2625. THE CONTRACTOR SHOULD BE FULLY AWARE OF THE SITE CONDITIONS PRIOR TO BEGINNING WORK. ANY ADDITIONAL GEOTECHNICAL INFORMATION WHICH MAY BE DESIRED IS THE RESPONSIBILITY OF THE CONTRACTOR.

PRELIMINARY PLANS

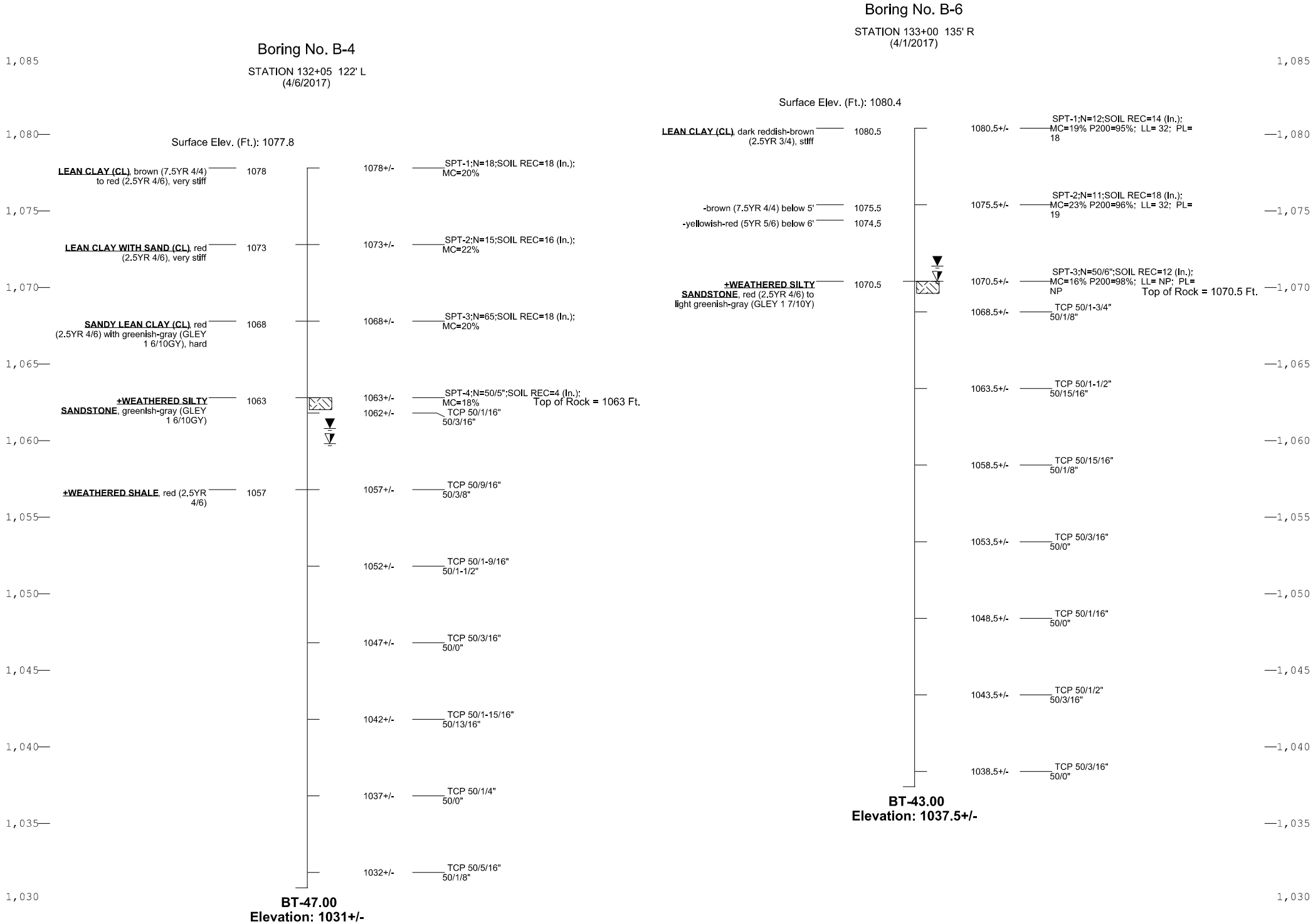
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

US 81 OVER UNION PACIFIC RAILROAD KINGFISHER COUNTY

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN			FOUNDATION BORING LOG SHEET (2 OF 4)	
CHECKED				
APPROVED				
SQUAD	MacArthur		STATE JOB NO. 29849(04)	SHEET NO. B004

PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-foundation3.dgn

REVISIONS		
REV. NO.	DESCRIPTION	DATE



REVISIONS		
REV. NO.	DESCRIPTION	DATE

LEGEND

DCD = DIAMOND CORE DRILLING, ASTM D2113-83
SPT = STANDARD PENETRATION TEST, ASTM D1586
SS = SPLIT SPOON SAMPLER
N = NUMBER OF BLOWS PER 12 INCHES
MC = MOISTURE CONTENT
LL = LIQUID LIMIT (NV=NO VALUE)
PI = PLASTICITY INDEX (NP=NO PLASTICITY)
#200 = PERCENT PASSING #200 SIEVE
UCS = UNCONFINED COMPRESSIVE STRENGTH
TCP = TEXAS CONE PENETROMETER
WCI = WET CAVE IN
▽ = WATER LEVEL WHILE DRILLING OR SAMPLING
▼ = WATER LEVEL AFTER DRILLING
▽ = WATER LEVEL 24 HOURS AFTER DRILLING
☒ = TOP OF ROCK

NOTE: WATER LEVEL ELEVATIONS SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHOUT THE YEAR.

NOTE: "SS" DENOTES STANDARD PENETRATION TEST, AASHTO D1586-84. "TCP" DENOTES TEXAS CONE PENETRATION TEST.

* NOTE: TOP OF ROCK LINE SHOWN FOR ESTIMATING PURPOSES ONLY.

** NOTE: WATER LEVEL ELEVATION SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHOUT THE YEAR.

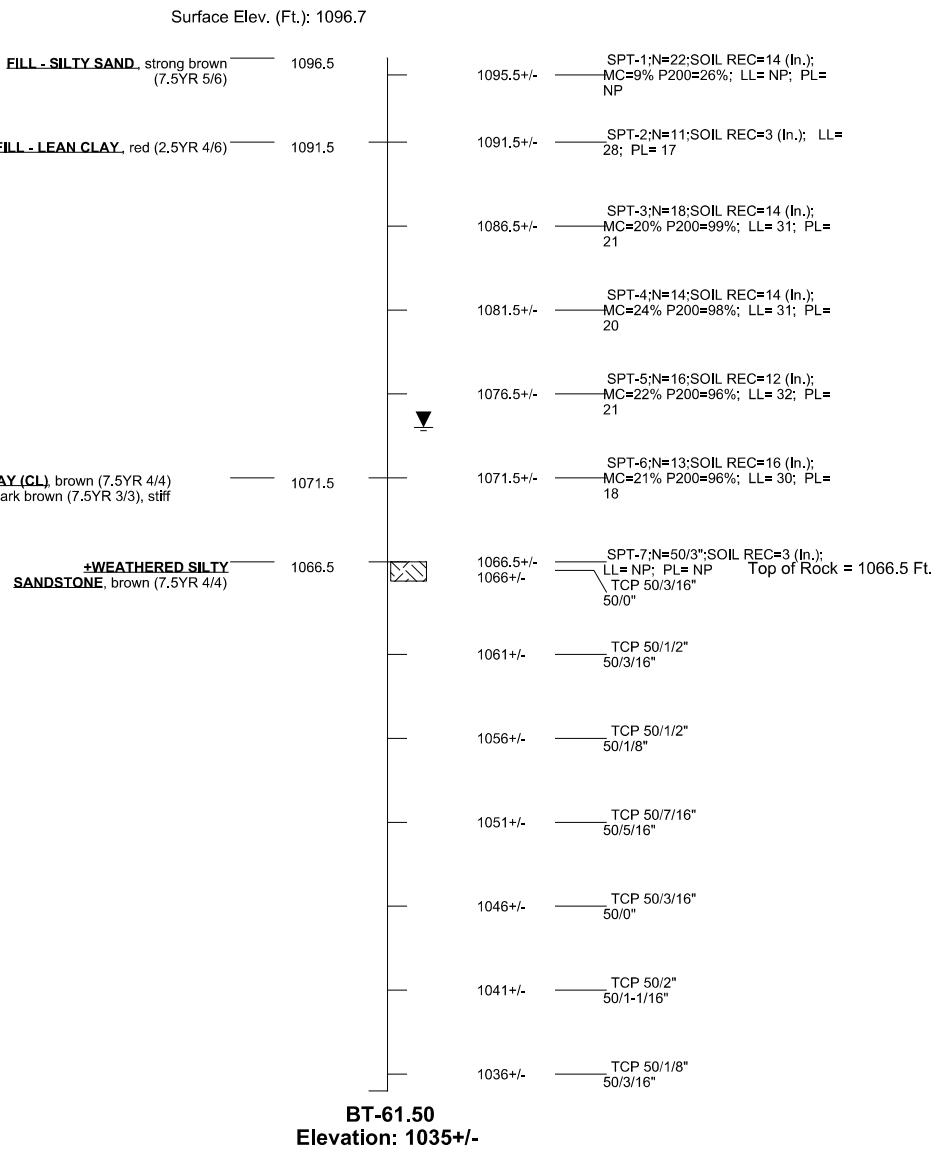
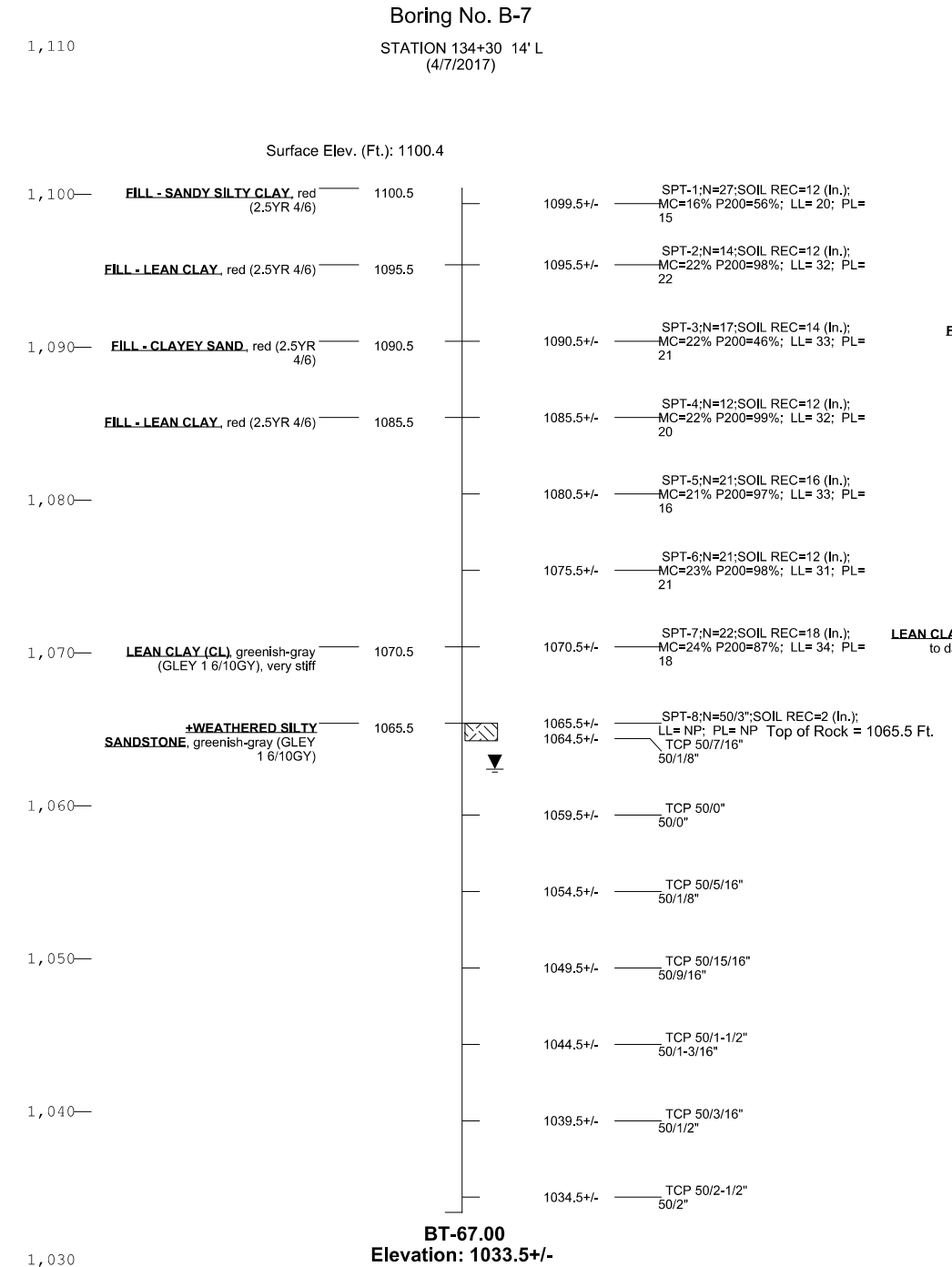
*** NOTE: ROCK CLASSIFICATION IS BASED ON DRILLING CHARACTERISTICS AND VISUAL OBSERVATION OF ROCK CORE SAMPLES. PETROGRAPHIC ANALYSIS OF THIN SECTIONS OF THE ROCK CORE SAMPLES MAY REVEAL OTHER TYPES.

SITE GEOLOGY

The geology of this site consists of alluvium deposits underlain by the Cedar Hills Unit of Permian age. The Cedar Hills Unit is made up of predominately reddish-brown silty, blocky shale and some massive, orange, silty sandstone and siltstone bed. The units has a maximum thickness of an estimated 190 to 200 feet in Kingfisher County and thins to the north and south.

GEOTECHNICAL REPORT

ALL GEOTECHNICAL INFORMATION CONTAINED ON THIS SHEET IS COVERED BY THE ENGINEERING SEAL AFFIXED TO AN ORIGINAL GEOTECHNICAL ENGINEERING REPORT THAT HAS BEEN STAMPED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN OKLAHOMA. TO OBTAIN A COPY OF THE COMPLETE REPORT, CONTACT THE ODOT OFFICE ENGINEER AT (405) 521-2625. THE CONTRACTOR SHOULD BE FULLY AWARE OF THE SITE CONDITIONS PRIOR TO BEGINNING WORK. ANY ADDITIONAL GEOTECHNICAL INFORMATION WHICH MAY BE DESIRED IS THE RESPONSIBILITY OF THE CONTRACTOR.



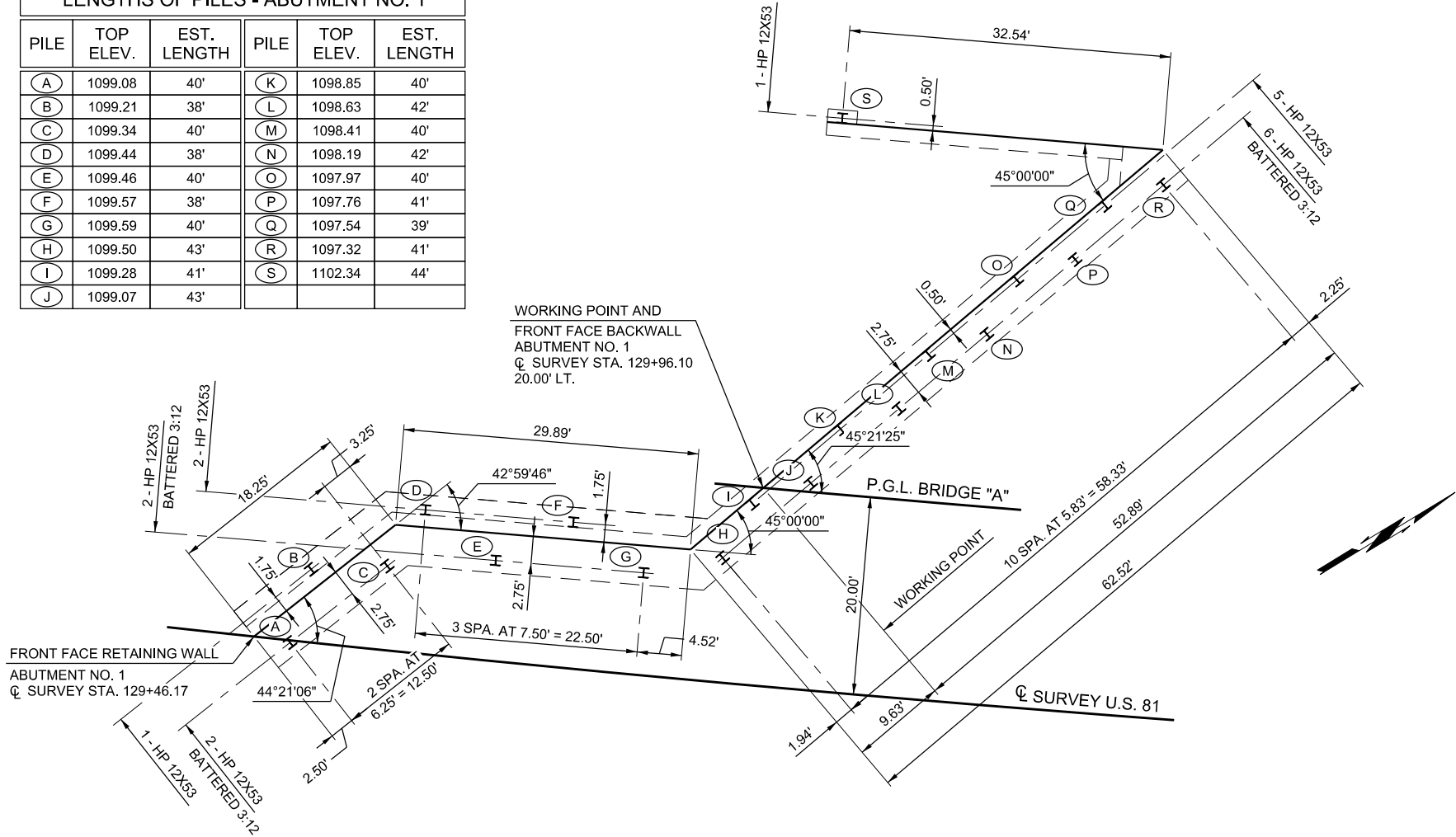
PRELIMINARY PLANS

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION									
DRAWN			FOUNDATION BORING LOG SHEET (4 OF 4)									
CHECKED												
APPROVED												
SQUAD	MacArthur		STATE JOB NO. <u>29849(04)</u> SHEET NO. <u>B006</u>									

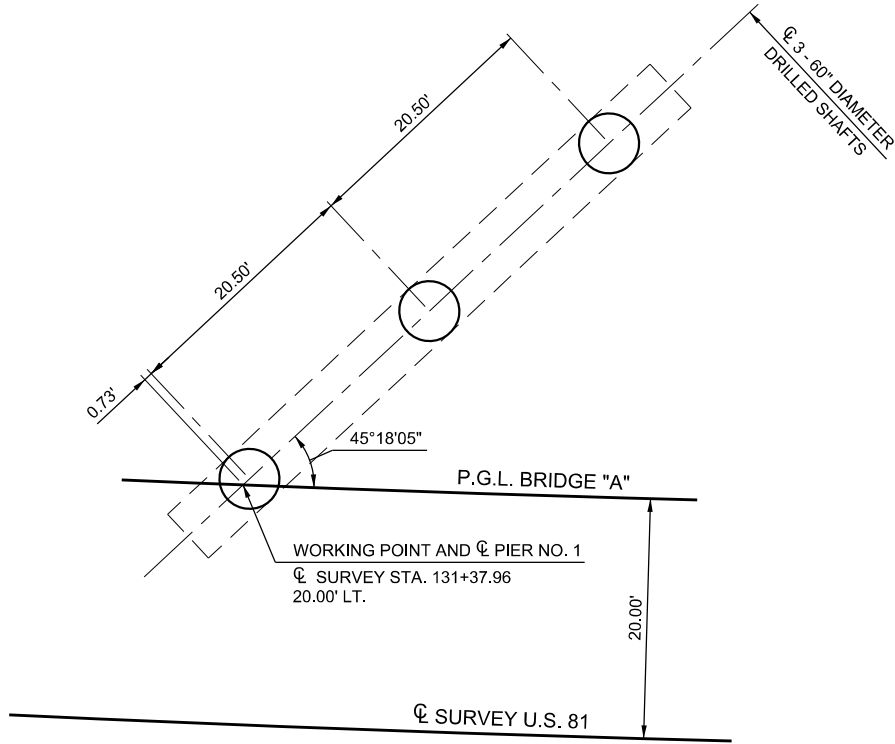
REVISIONS		
REV. NO.	DESCRIPTION	DATE

TOP ELEVATIONS AND ESTIMATED LENGTHS OF PILES - ABUTMENT NO. 1					
PILE	TOP ELEV.	EST. LENGTH	PILE	TOP ELEV.	EST. LENGTH
(A)	1099.08	40'	(K)	1098.85	40'
(B)	1099.21	38'	(L)	1098.63	42'
(C)	1099.34	40'	(M)	1098.41	40'
(D)	1099.44	38'	(N)	1098.19	42'
(E)	1099.46	40'	(O)	1097.97	40'
(F)	1099.57	38'	(P)	1097.76	41'
(G)	1099.59	40'	(Q)	1097.54	39'
(H)	1099.50	43'	(R)	1097.32	41'
(I)	1099.28	41'	(S)	1102.34	44'
(J)	1099.07	43'			



ABUTMENT NO. 1

SUBSTRUCTURE LAYOUT - BRIDGE "A"



PIER NO. 1

SUMMARY OF QUANTITIES - BRIDGE "A"							
DESCRIPTION	UNIT	ABUTMENTS	PIERS	SUPERSTR.	APP. SLABS	SLOPE WALL	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	347.00	-	-	-	-	347.00
CLSM BACKFILL	CY	370.00	-	-	-	-	370.00
APPROACH SLAB	SY	-	-	-	486.80	-	486.80
SAW-CUT GROOVING	SY	-	-	2,136.10	445.60	-	2,581.70
SEALED EXPANSION JOINT	LF	-	-	114.40	-	-	114.40
42" F-SHAPED PARAPET	LF	-	-	1,012.00	211.30	-	1,223.30
STRUCTURAL STEEL	LB	-	-	1,079,120.00	-	-	1,079,120.00
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA	-	-	5.00	-	-	5.00
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA	-	-	15.00	-	-	15.00
CLASS AA CONCRETE	CY	-	-	539.80	-	-	539.80
CLASS A CONCRETE	CY	242.70	182.90	-	-	-	425.60
SLOPE WALL (5")	SY	-	-	-	-	-	-
REINFORCING STEEL	LB	-	2,420.00	-	-	-	2,420.00
EPOXY COATED REINFORCING STEEL	LB	27,370.00	37,130.00	170,260.00	-	-	234,760.00
PILES, FURNISHED (HP 12X43)	LF	1,232.00	-	-	-	-	1,232.00
PILES, DRIVEN (HP 12X53)	LF	1,232.00	-	-	-	-	1,232.00

SUMMARY OF QUANTITIES - BRIDGE "A" (CONTINUED)							
DESCRIPTION	UNIT	ABUTMENTS	PIERS	SUPERSTR.	APP. SLABS	SLOPE WALL	TOTAL
PILE SPLICE, H-PILE (NON-BIDDABLE)	EA	-	-	-	-	-	1.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	290.00	206.00	1,252.00	103.00	-	1,851.00
DRILLED SHAFTS 60" DIAMETER	LF	-	99.00	-	-	-	99.00
CROSSHOLE SONIC LOGGING	EA	-	2.00	-	-	-	2.00
SEALER CRACK PREPARATION	LF	-	-	112.40	-	-	112.40
SEALER RESIN	GAL	-	-	1.50	-	-	1.50
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	177.00	-	-	-	-	177.00
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	100.00	-	-	-	-	100.00
REMOVAL OF EXISTING BRIDGE STRUCTURE	LSUM	-	-	-	-	-	1.00

PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

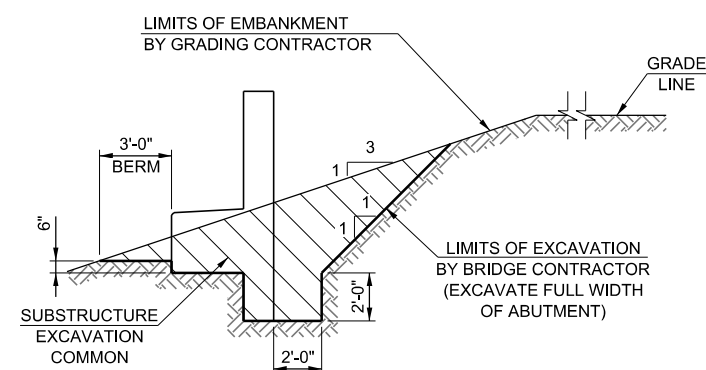
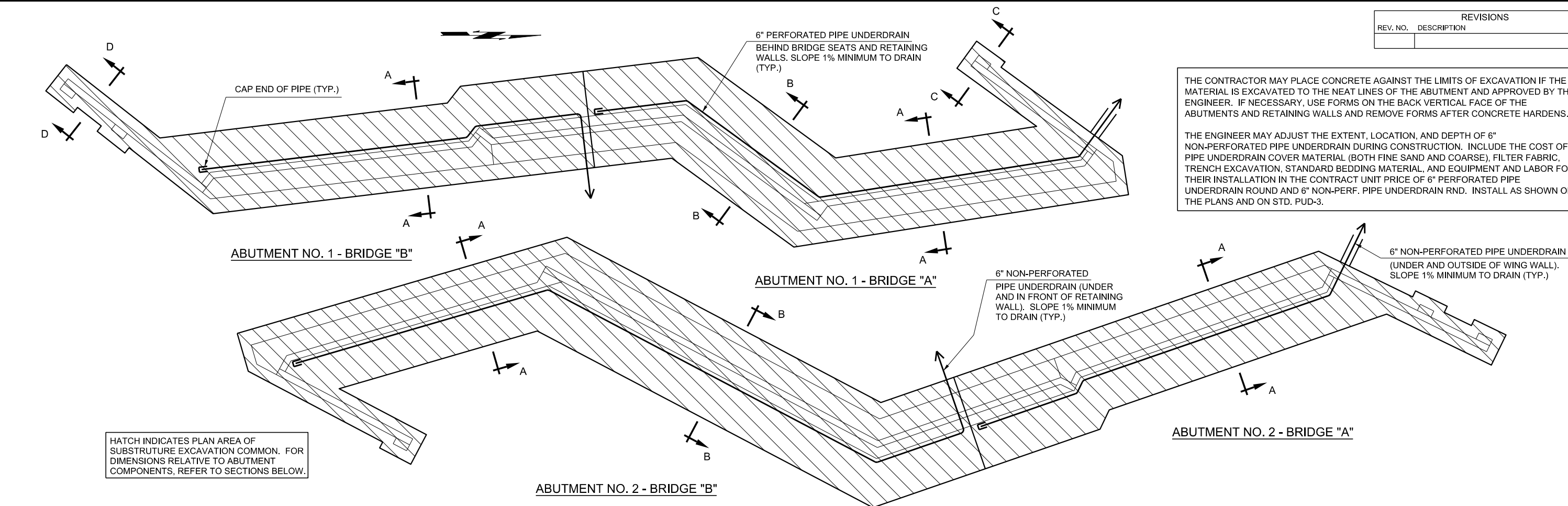
DESIGN	GLF
DRAWN	JLF
CHECKED	GLF
APPROVED	
SQUAD	MacArthur

US 81 OVER UNION PACIFIC RAILROAD		KINGFISHER COUNTY	
OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SUBSTRUCTURE LAYOUT AND SUMMARY OF QUANTITIES - BRIDGE "A"			
(1 OF 2)			
STATE JOB NO. 29849(04)		SHEET NO. B007	

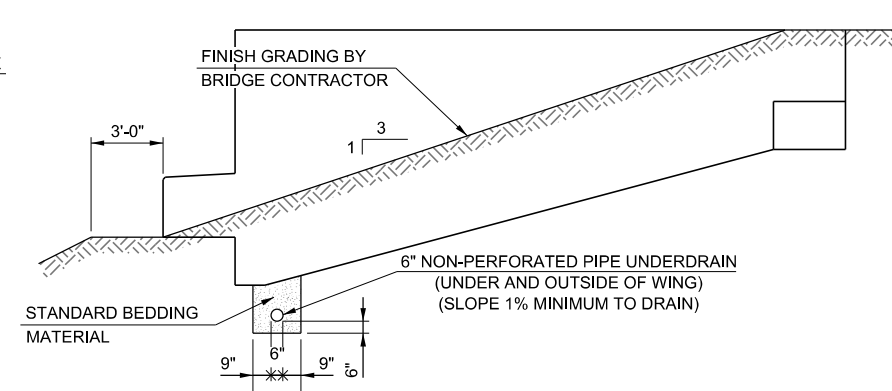
REVISIONS		
REV. NO.	DESCRIPTION	DATE

THE CONTRACTOR MAY PLACE CONCRETE AGAINST THE LIMITS OF EXCAVATION IF THE MATERIAL IS EXCAVATED TO THE NEAT LINES OF THE ABUTMENT AND APPROVED BY THE ENGINEER. IF NECESSARY, USE FORMS ON THE BACK VERTICAL FACE OF THE ABUTMENTS AND RETAINING WALLS AND REMOVE FORMS AFTER CONCRETE HARDENS.

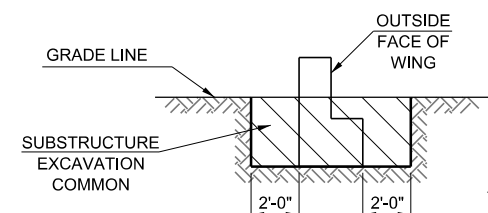
THE ENGINEER MAY ADJUST THE EXTENT, LOCATION, AND DEPTH OF 6" NON-PERFORATED PIPE UNDERDRAIN DURING CONSTRUCTION. INCLUDE THE COST OF PIPE UNDERDRAIN COVER MATERIAL (BOTH FINE SAND AND COARSE), FILTER FABRIC, TRENCH EXCAVATION, STANDARD BEDDING MATERIAL, AND EQUIPMENT AND LABOR FOR THEIR INSTALLATION IN THE CONTRACT UNIT PRICE OF 6" PERFORATED PIPE UNDERDRAIN ROUND AND 6" NON-PERF. PIPE UNDERDRAIN RND. INSTALL AS SHOWN ON THE PLANS AND ON STD. PUD-3.



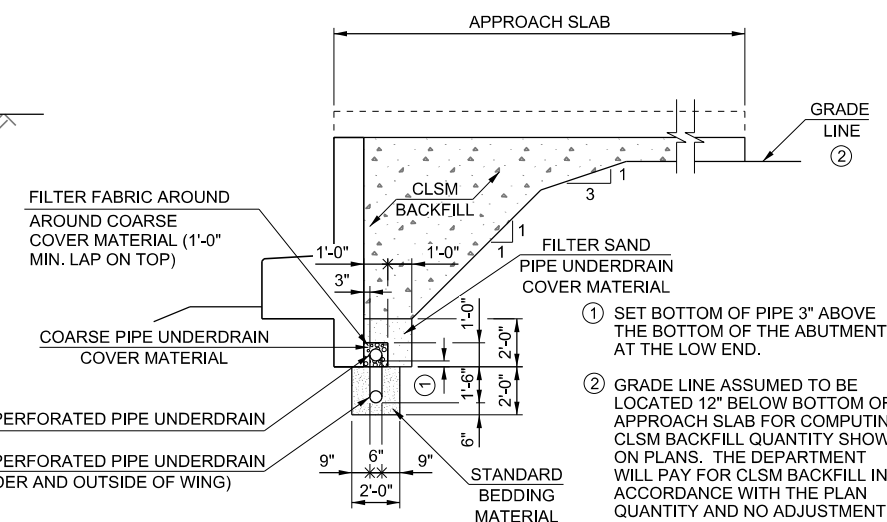
SECTION A-A: SUBSTRUCTURE EXCAVATION
COMMON AT ABUTMENT SEATS



BACKFILL OUTSIDE OF WING WALL

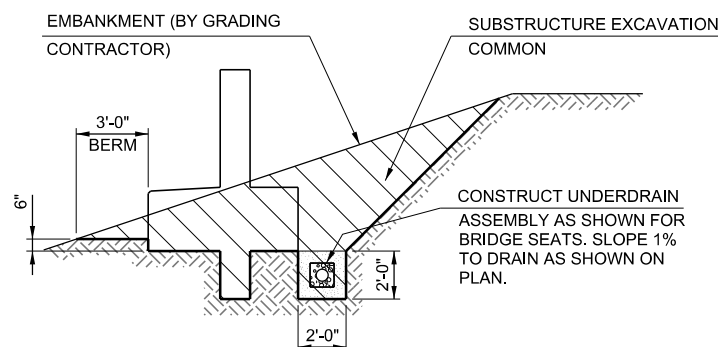


SECTION C-C

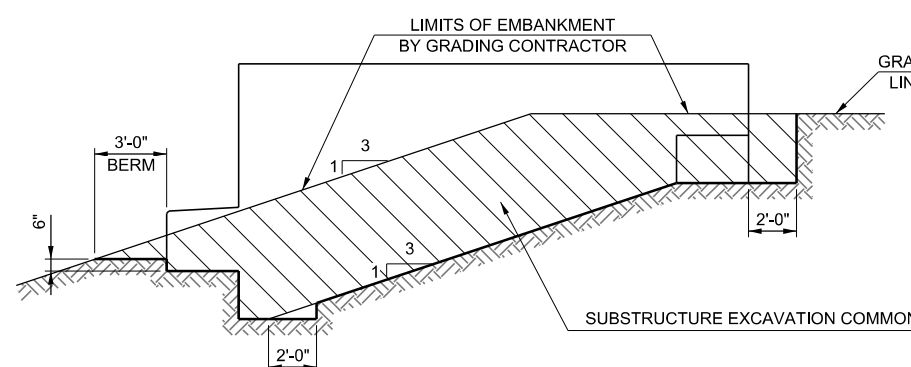


PIPE UNDERDRAIN ASSEMBLY AT BRIDGE SEATS;
BACKFILL AT BRIDGE SEATS AND RETAINING WALLS

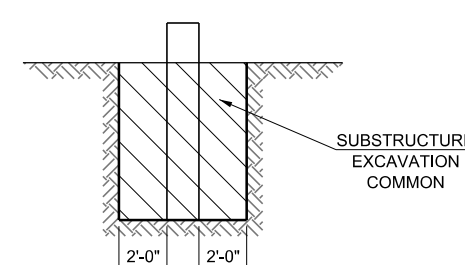
DO NOT PLACE CLSM BACKFILL UNTIL SUPERSTRUCTURE IS IN PLACE AND THE ABUTMENT WING CONCRETE HAS ATTAINED A STRENGTH OF 3000 P.S.I. PLACE CLSM BACKFILL IN LIFTS NOT EXCEEDING 4'-0" IN DEPTH. SUBSEQUENT LIFTS SHALL NOT BE PLACED UNTIL PRIOR LIFT HAS ATTAINED A STRENGTH OF 100 P.S.I.



SECTION B-B: SUBSTRUCTURE EXCAVATION COMMON
AND PIPE UNDERDRAIN AT RETAINING WALLS



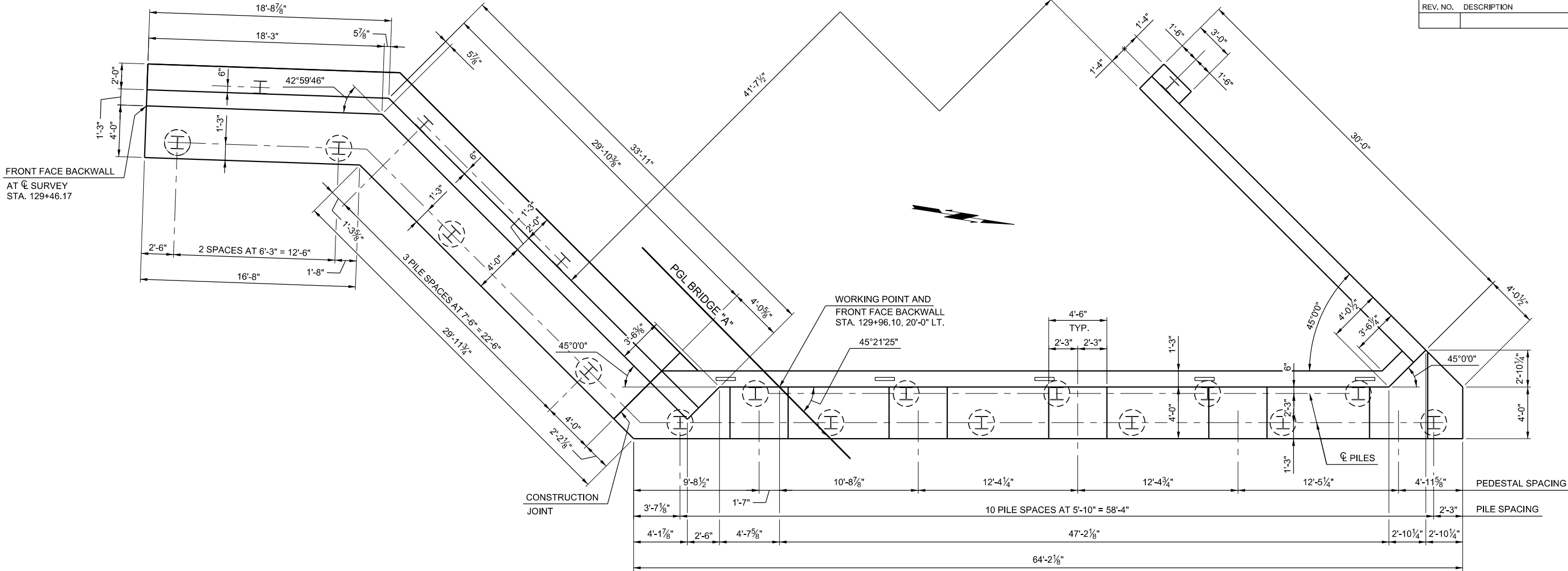
SUBSTRUCTURE EXCAVATION
COMMON AT WING WALL



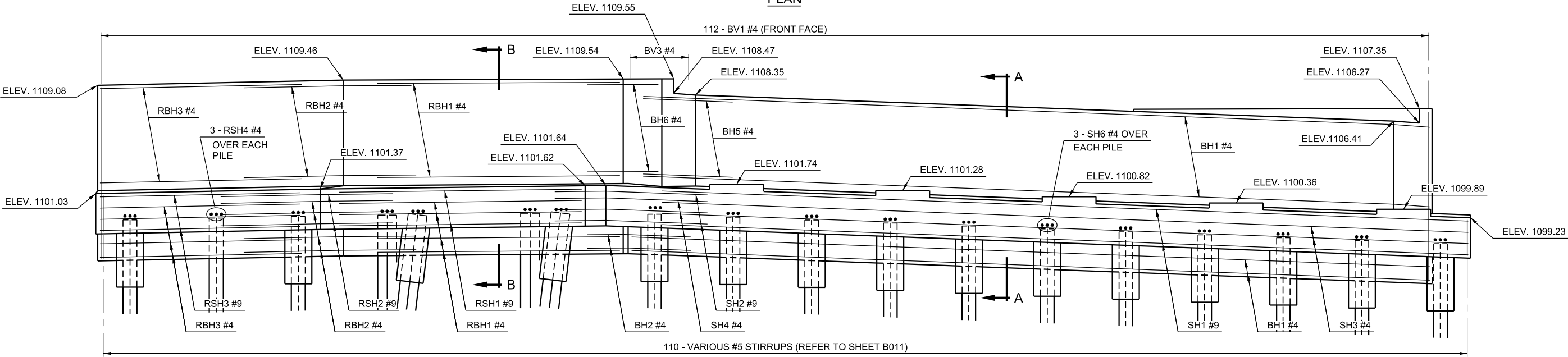
SECTION D-D

DESIGN GLF			OKLAHOMA DEPARTMENT OF TRANSPORTATION SUBSTRUCTURE EXCAVATION AND PIPE UNDERDRAIN ASSEMBLY DETAILS - BRIDGE "A" AND "B" STATE JOB NO. 29849(04) SHEET NO. 8009
DRAWN JLF			
CHECKED GLF			
APPROVED			
SQUAD MacArthur			

REVISIONS		
REV. NO.	DESCRIPTION	DATE



PLAN



ELEVATION

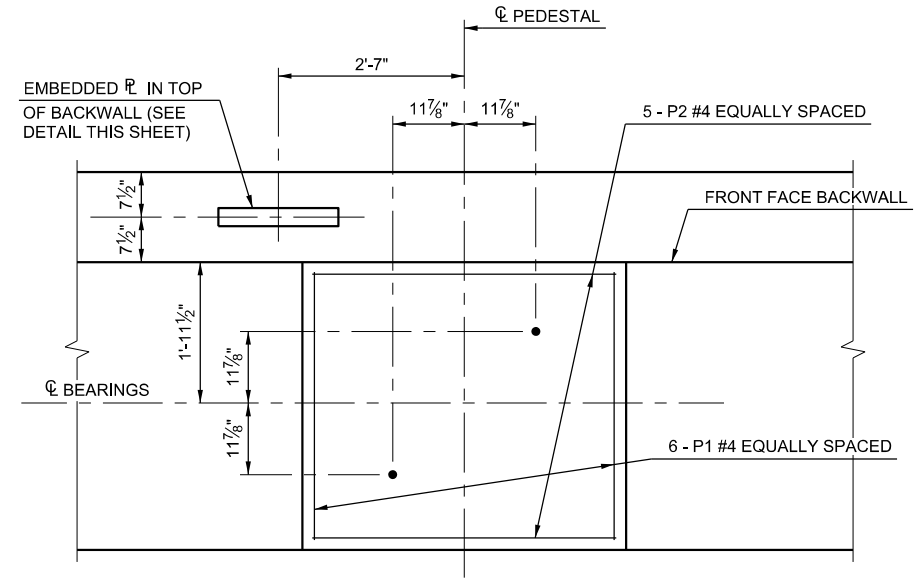
REBAR IS SHOWN IN FRONT FACES ONLY.
REFER TO SHEET B011 FOR ADDITIONAL
REBAR PLACEMENT DETAILS

PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

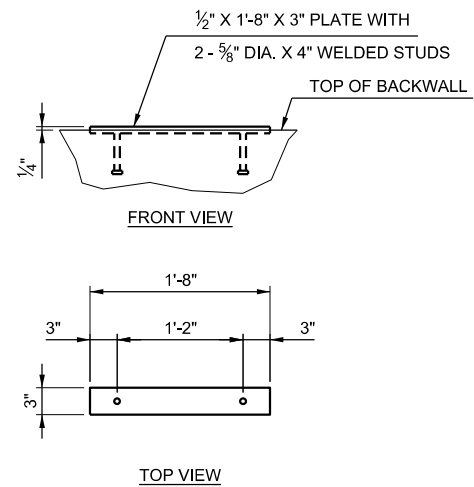
DESIGN	GLF
DRAWN	JLF
CHECKED	GLF
APPROVED	
SQUAD	MacArthur

US 81 OVER UNION PACIFIC RAILROAD	KINGFISHER COUNTY
OKLAHOMA DEPARTMENT OF TRANSPORTATION	
ABUTMENT NO. 1 - BRIDGE "A"	
STATE JOB NO. 29849(04)	SHEET NO. B010

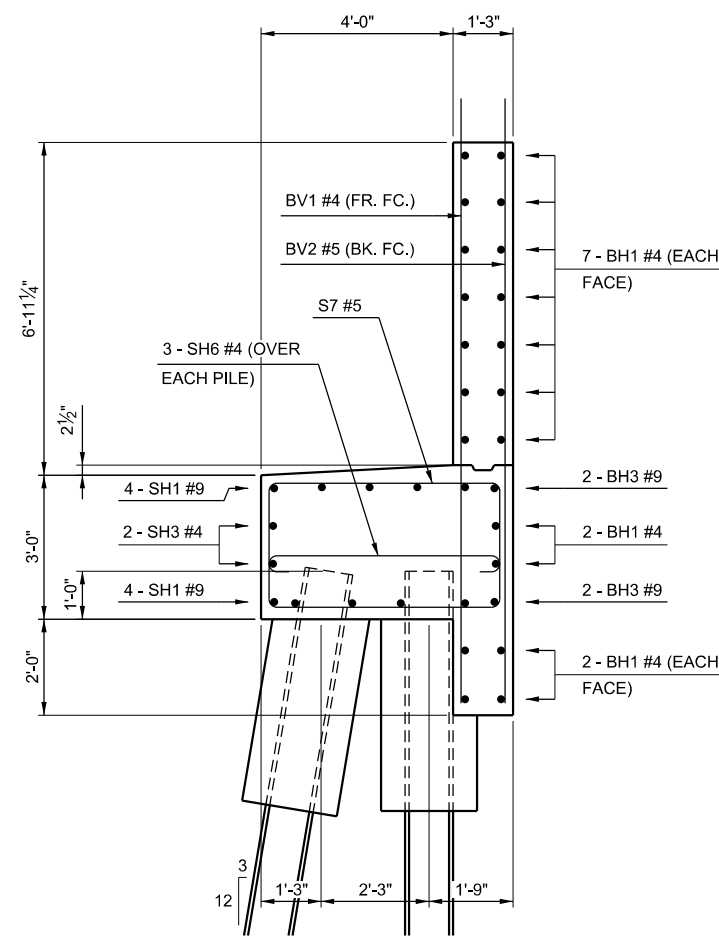
REVISIONS		
REV. NO.	DESCRIPTION	DATE



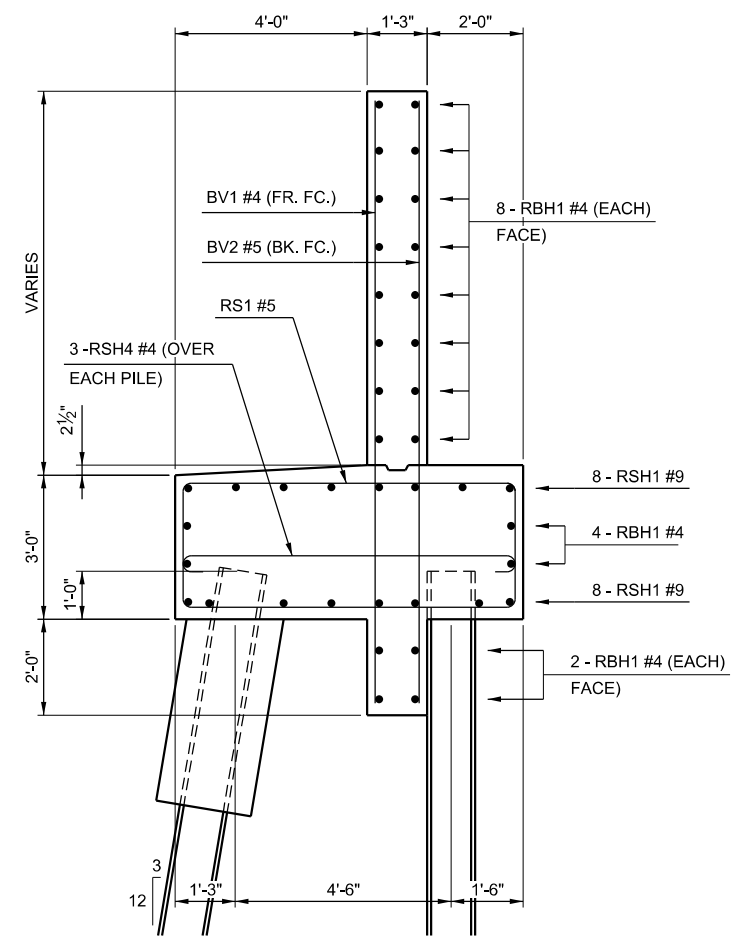
ANCHOR BOLT, EMBEDDED PLATE, AND
PEDESTAL REINFORCING LAYOUT



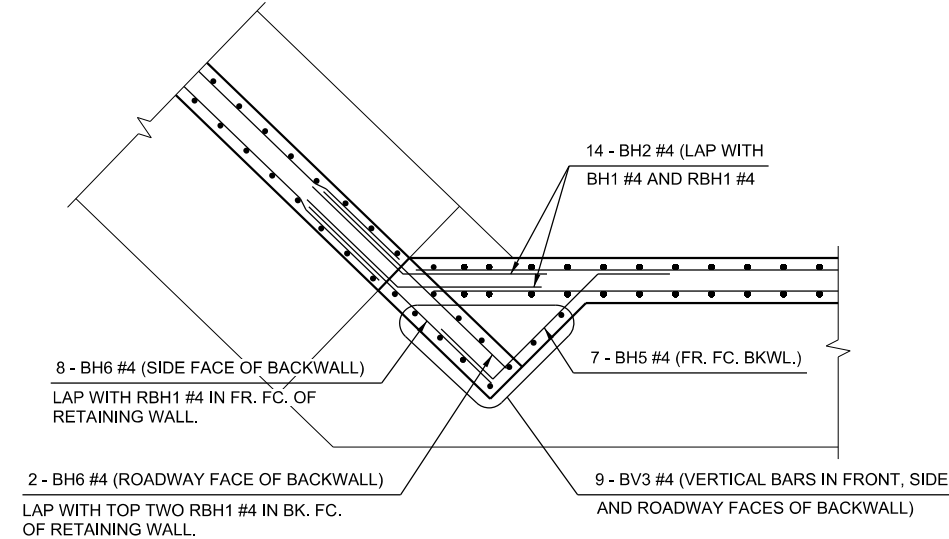
EMBEDDED PLATE DETAIL



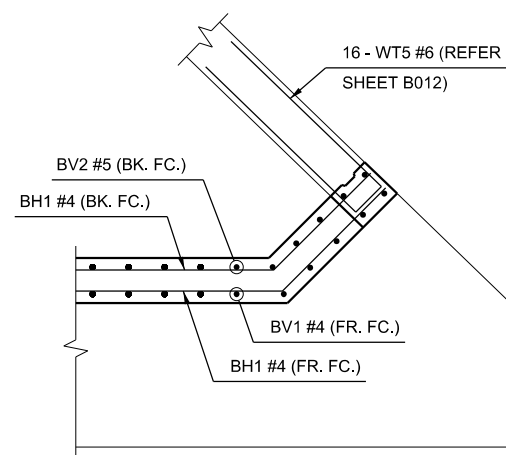
SECTION A-A
TYPICAL SECTION THRU BRIDGE SEAT



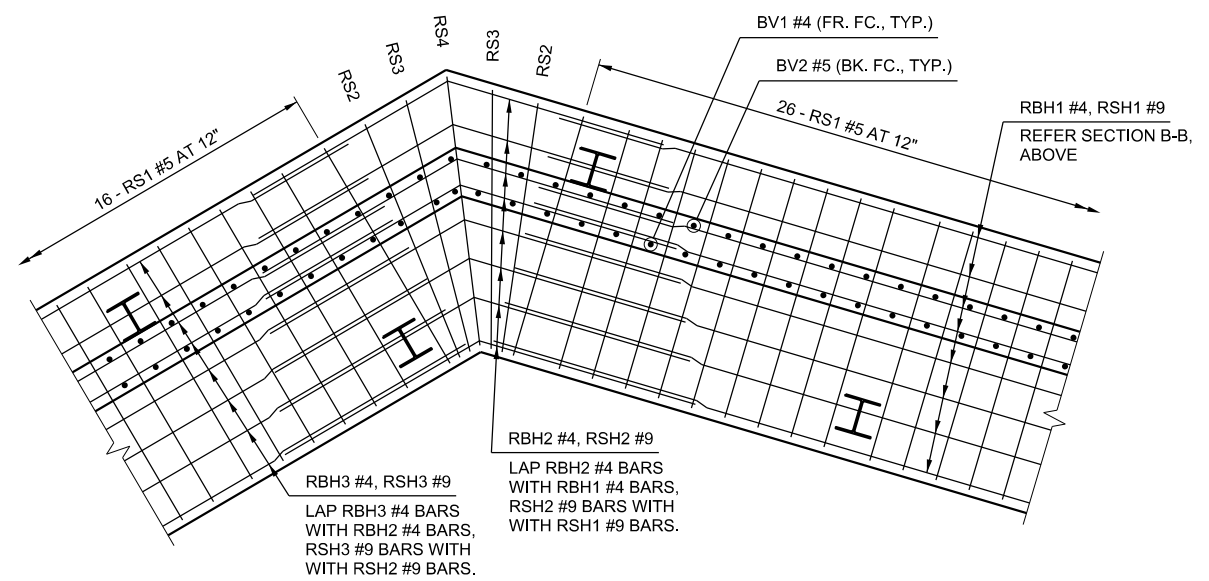
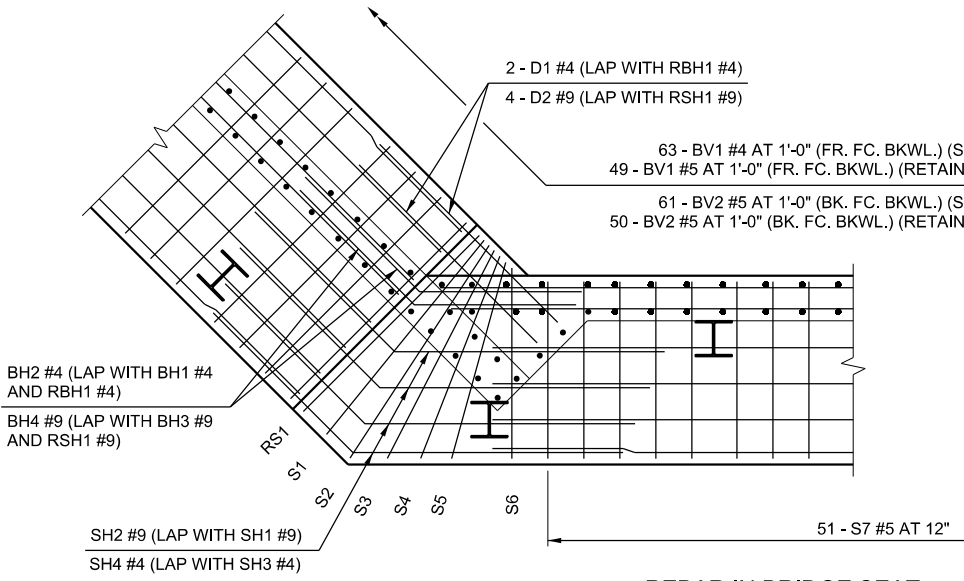
SECTION B-B
TYPICAL SECTION THRU RETAINING WALL



REBAR IN BACKWALL



REBAR IN BRIDGE SEAT



REBAR AT CORNER OF RETAINING WALL

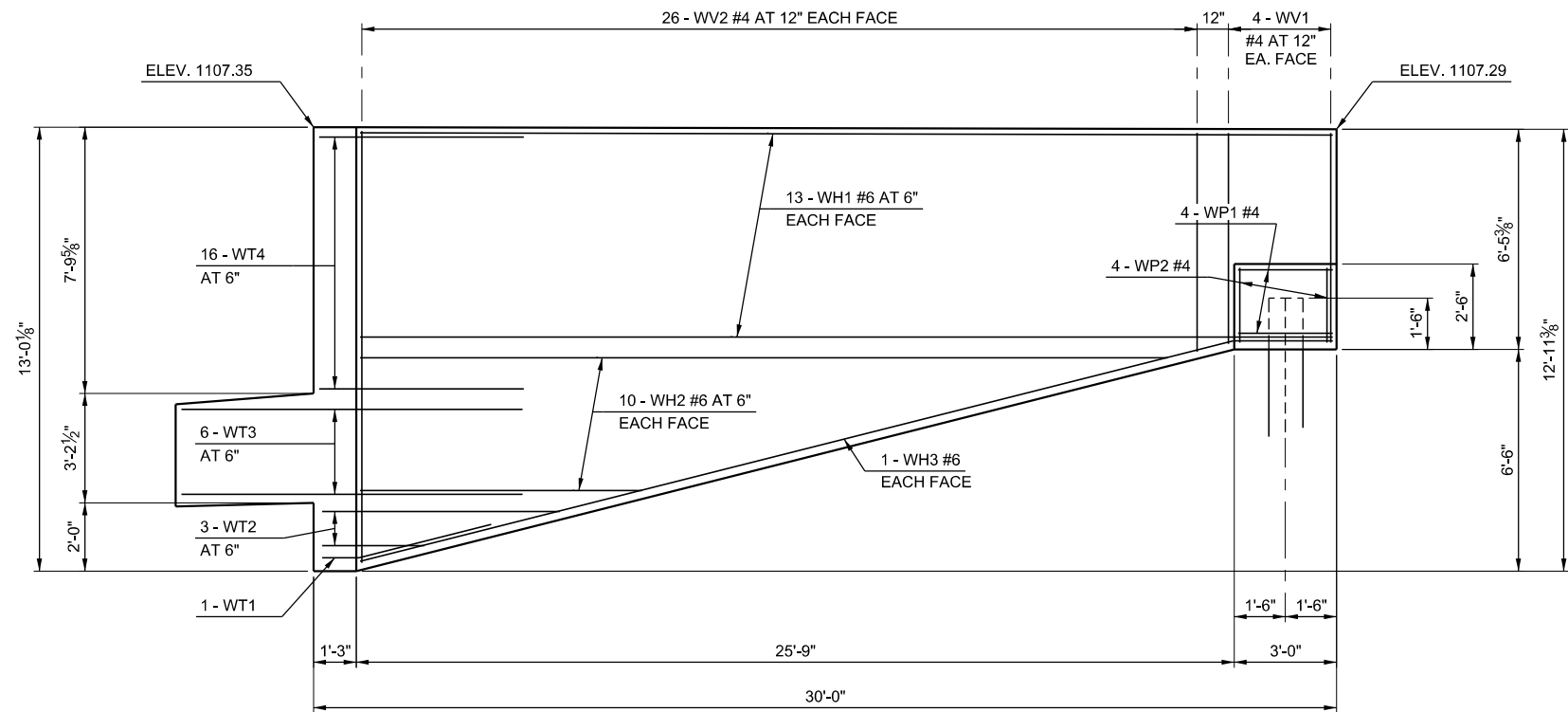
PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

DESIGN	GLF
DRAWN	JLF
CHECKED	GLF
APPROVED	
SQUAD	MacArthur

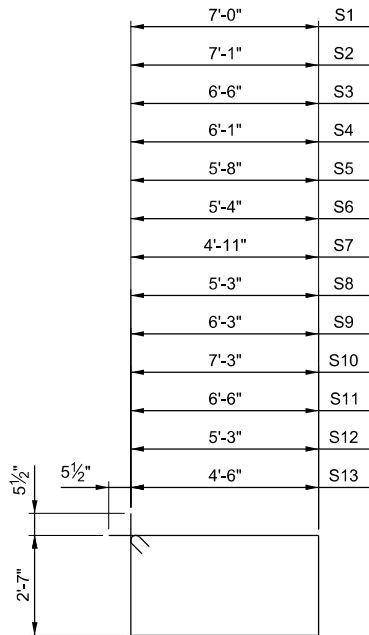
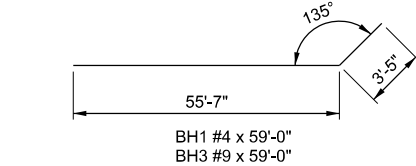
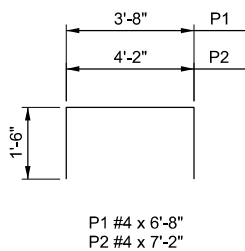
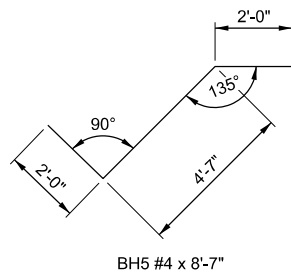
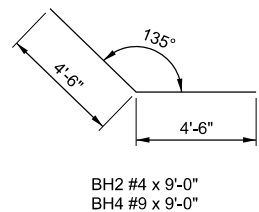
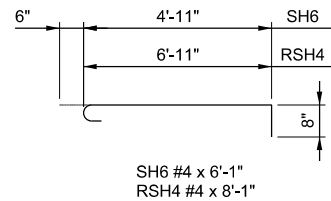
US 81 OVER UNION PACIFIC RAILROAD		KINGFISHER COUNTY
OKLAHOMA DEPARTMENT OF TRANSPORTATION		
ABUTMENT NO. 1 DETAILS - BRIDGE "A"		
STATE JOB NO. 29849(04)		SHEET NO. B011

PRINT DATE: 10/22/2018 T:\403Drawings\Bridges\1403-bridge-A-abutment1-details.dgn

PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-A-abutment1-wing.dgn



WING WALL ELEVATION



S1 #5 X 20'-1"

S2 #5 X 20'-3"

S3 #5 X 19'-1"

S4 #5 X 18'-3"

S5 #5 X 17'-5"

S6 #5 X 16'-9"

S7 #5 X 15'-11"

S8 #5 X 16'-7"

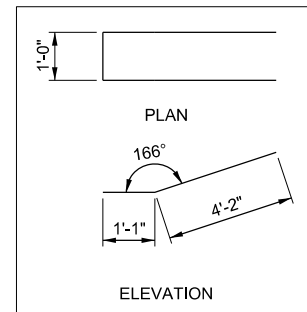
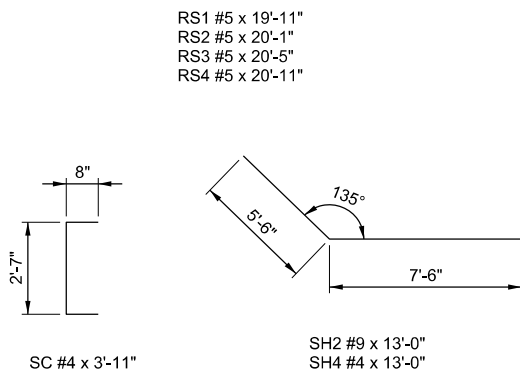
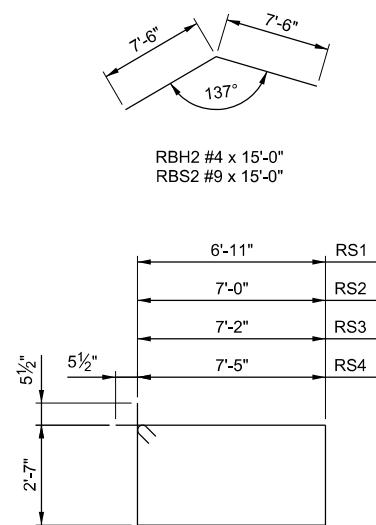
S9 #5 X 18'-7"

S10 #5 X 20'-7"

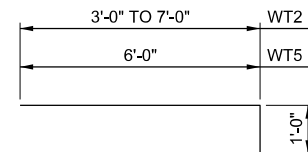
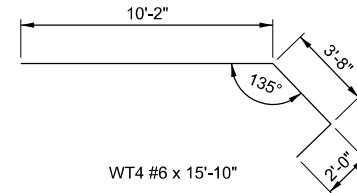
S11 #5 X 19'-1"

S12 #5 X 16'-7"

S13 #5 X 15'-1"

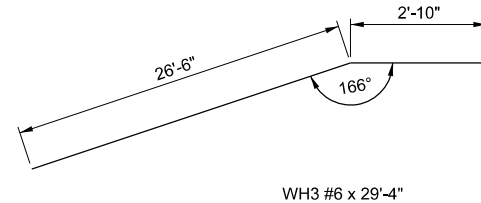
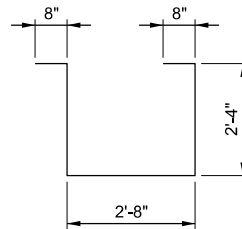


WT1 #6 x 11'-6"



WT2 #6 x 11'-0" AVG.

WT5 #6 x 13'-0"



REVISIONS		
REV. NO.	DESCRIPTION	DATE

ABUTMENT NO. 1 BAR LIST - BRIDGE "A"

EPOXY COATED REINFORCING BARS					
MARK	NO.	SIZE	FORM	LENGTH	REMARKS
BH1	20	#4	BNT	59'-0"	
BH2	20	#4	BNT	9'-0"	
BH3	4	#9	BNT	59'-0"	
BH4	4	#9	BNT	9'-0"	
BH5	7	#4	BNT	8'-7"	
BH6	11	#4	STR	8'-0"	
BV1	112	#4	STR	12'-8"	
BV2	111	#5	STR	12'-8"	
BV3	9	#4	STR	10'-8"	
D1	2	#4	STR	7'-0"	
D2	4	#9	STR	7'-0"	
P1	30	#4	BNT	6'-8"	
P2	25	#4	BNT	7'-2"	
RBH1	24	#4	STR	26'-0"	
RBH2	24	#4	BNT	15'-0"	
RBH3	24	#4	STR	15'-0"	
RSH1	16	#9	STR	26'-0"	
RSH2	16	#9	BNT	15'-0"	
RSH3	16	#9	STR	15'-0"	
RSH4	21	#4	BNT	8'-1"	
RS1	42	#5	BNT	19'-11"	
RS2	2	#5	BNT	20'-1"	
RS3	2	#5	BNT	20'-5"	
RS4	1	#5	BNT	20'-11"	
S1	1	#5	BNT	20'-1"	
S2	1	#5	BNT	20'-3"	
S3	1	#5	BNT	19'-1"	
S4	1	#5	BNT	18'-3"	
S5	1	#5	BNT	17'-5"	

ABUTMENT NO. 1 BAR LIST - CONTINUED

EPOXY COATED REINFORCING BARS					
MARK	NO.	SIZE	FORM	LENGTH	REMARKS
S6	1	#5	BNT	16'-9"	
S7	51	#5	BNT	15'-11"	
S8	1	#5	BNT	16'-7"	
S9	1	#5	BNT	18'-7"	
S10	1	#5	BNT	20'-7"	
S11	1	#5	BNT	19'-1"	
S12	1	#5	BNT	16'-7"	
S13	1	#5	BNT	15'-1"	
SC	3	#4	BNT	3'-11"	
SH1	8	#9	STR	60'-0"	
SH2	8	#9	BNT	13'-0"	
SH3	2	#4	STR	60'-0"	
SH4	2	#4	BNT	13'-0"	
SH5	4	#9	STR	9'-0"	
SH6	33	#4	BNT	6'-1"	
WT1	1	#6	BNT	11'-6"	
WT2	3	#6	BNT	11'-0" AVG	7'-0" TO 15'-0"
WT3	6	#6	STR	8'-6"	
WT4	6	#6	BNT	15'-10"	
WT5	16	#6	BNT	13'-0"	
WH1	26	#6	STR	28'-5"	
WH2	20	#6	STR	15'-6" AVG	7'-5" TO 23'-7"
WH3	2	#6	BNT	29'-4"	
WV1	8	#4	STR	6'-0"	
WV2	52	#4	STR	9'-5" AVG	6'-3" TO 12'-7"
WP1	4	#4	BNT	8'-8"	
WP2	4	#4	STR	2'-1"	

① 2 SETS OF 10 ② 2 SETS OF 26

PRELIMINARY PLANS

THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

US 81 OVER UNION PACIFIC RAILROAD KINGFISHER COUNTY

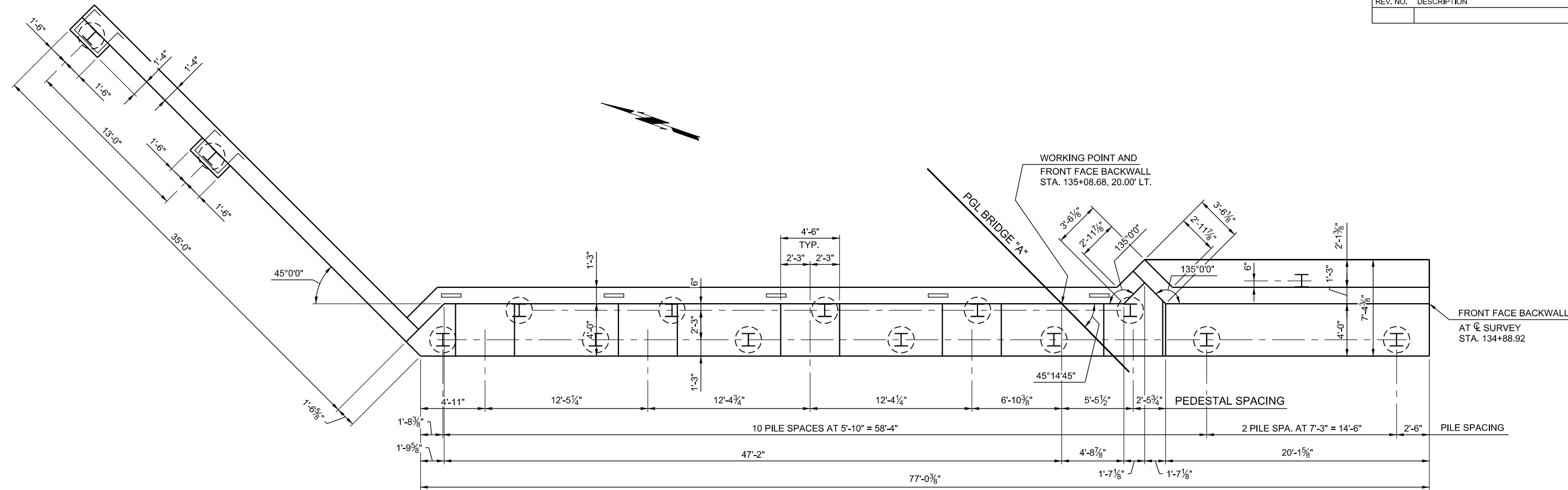
DESIGN	GLF
DRAWN	JLF
CHECKED	GLF
APPROVED	
SQUAD	MacArthur

OKLAHOMA DEPARTMENT OF TRANSPORTATION

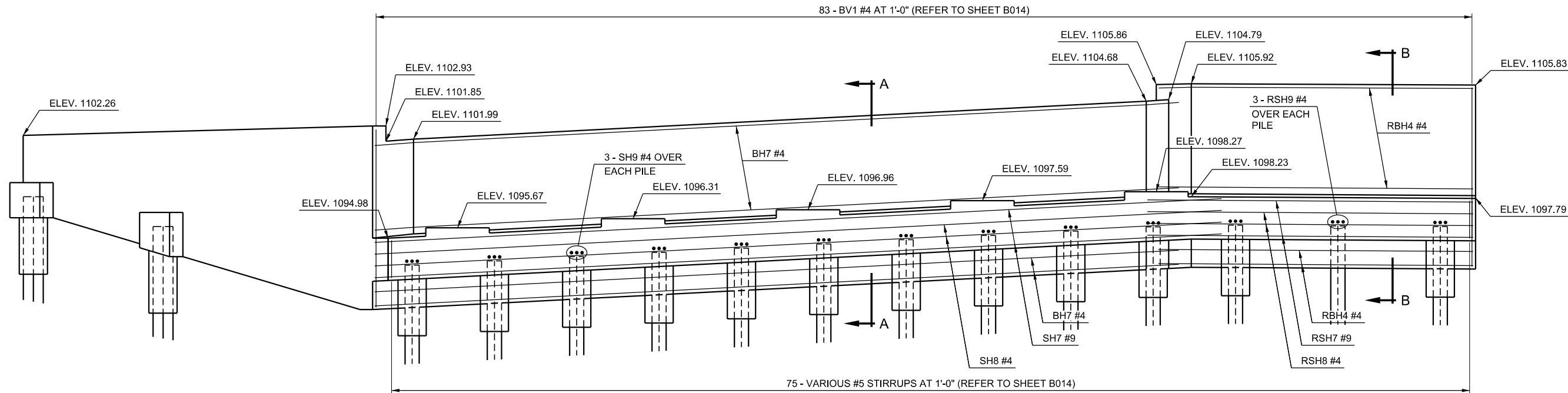
ABUTMENT NO. 1 WING WALL DETAILS -
BRIDGE "A"

STATE JOB NO. 29849(04) SHEET NO. B012

REVISIONS		
REV. NO.	DESCRIPTION	DATE



PLAN



ELEVATION

REBAR IS SHOWN IN FRONT FACES ONLY.
REFER TO SHEET B014 FOR ADDITIONAL
REBAR PLACEMENT DETAILS

PRELIMINARY PLANS

THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

DESIGN	GLF
DRAWN	JLF
CHECKED	GLF
APPROVED	
SQUAD	MacArthur

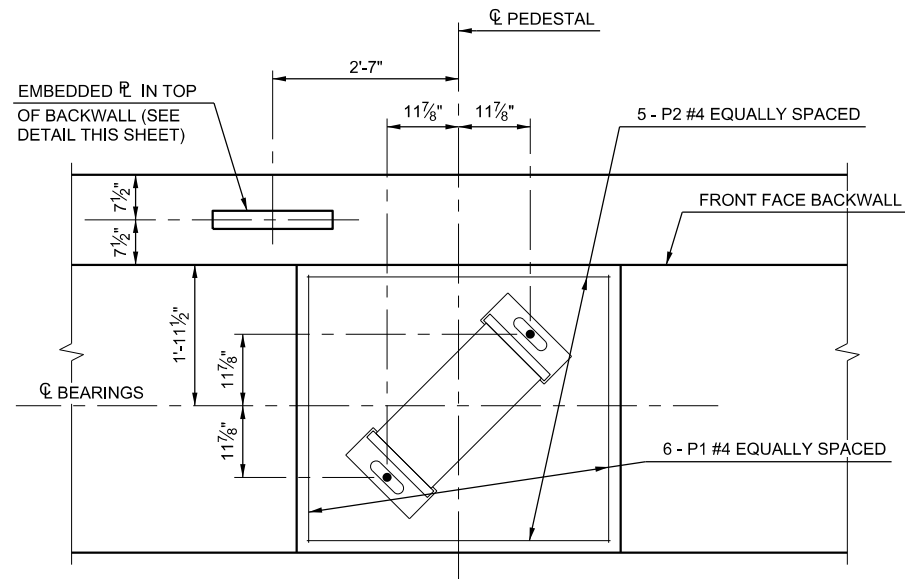
US 81 OVER UNION PACIFIC RAILROAD KINGFISHER COUNTY

OKLAHOMA DEPARTMENT OF TRANSPORTATION

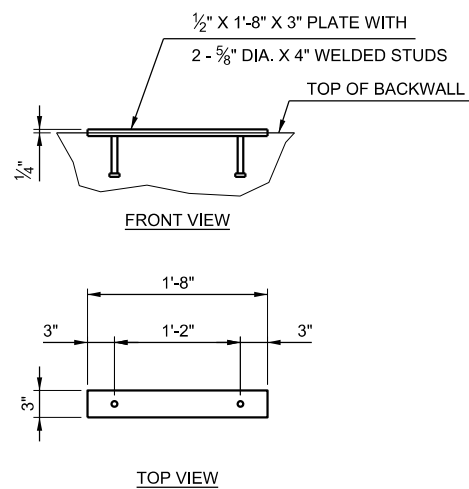
ABUTMENT NO. 2 - BRIDGE "A"

STATE JOB NO. 29849(04) SHEET NO. B013

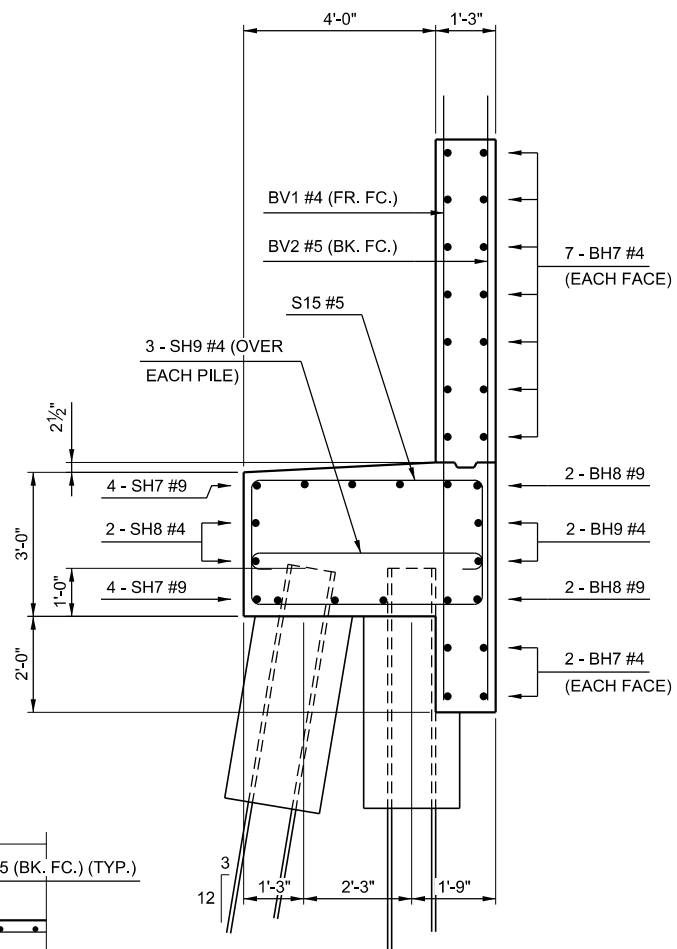
PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-abutment2-details.dgn



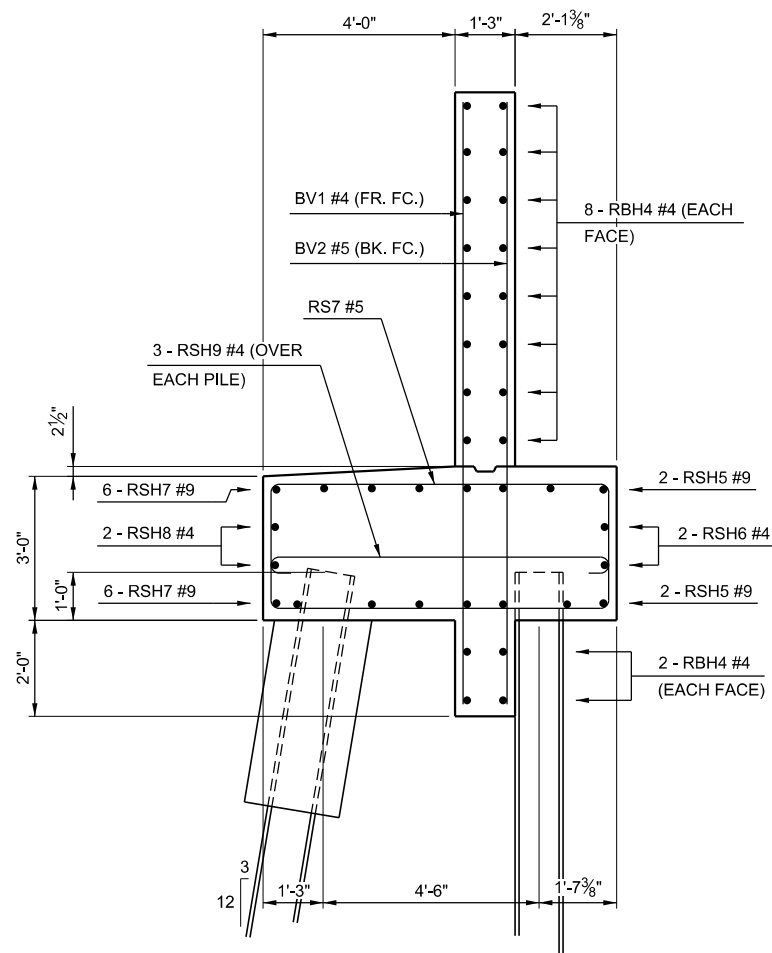
ANCHOR BOLT, EMBEDDED PLATE, AND
PEDESTAL REINFORCING LAYOUT



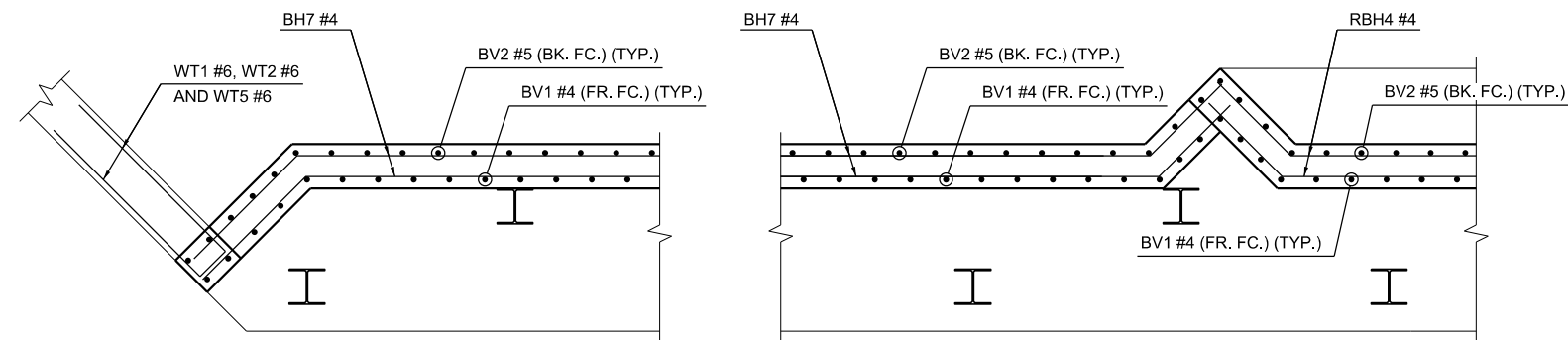
EMBEDDED PLATE DETAIL



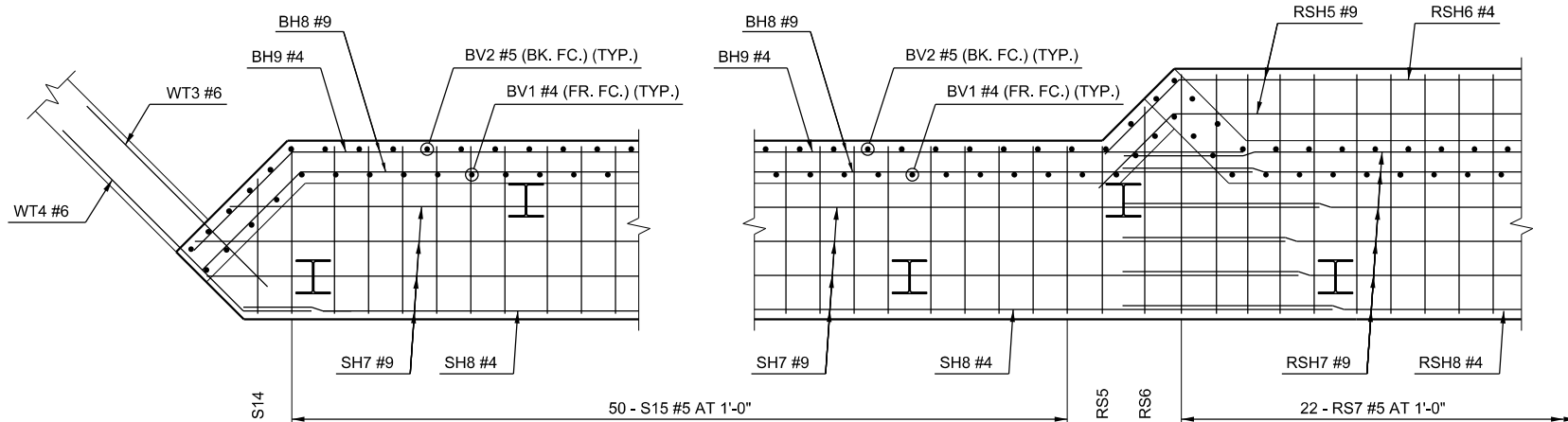
SECTION A-A



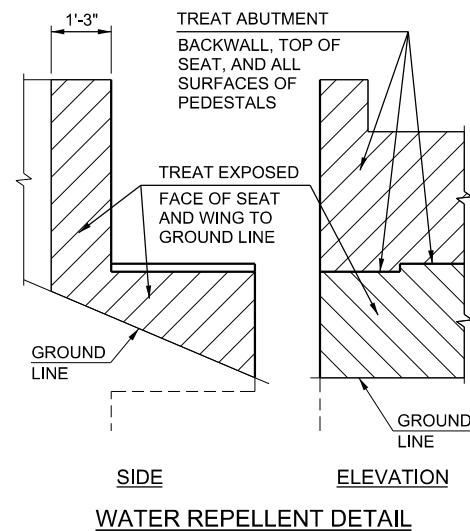
SECTION B-B



BACK WALL AND CURTAIN WALL REBAR DETAIL



SEAT REBAR DETAIL

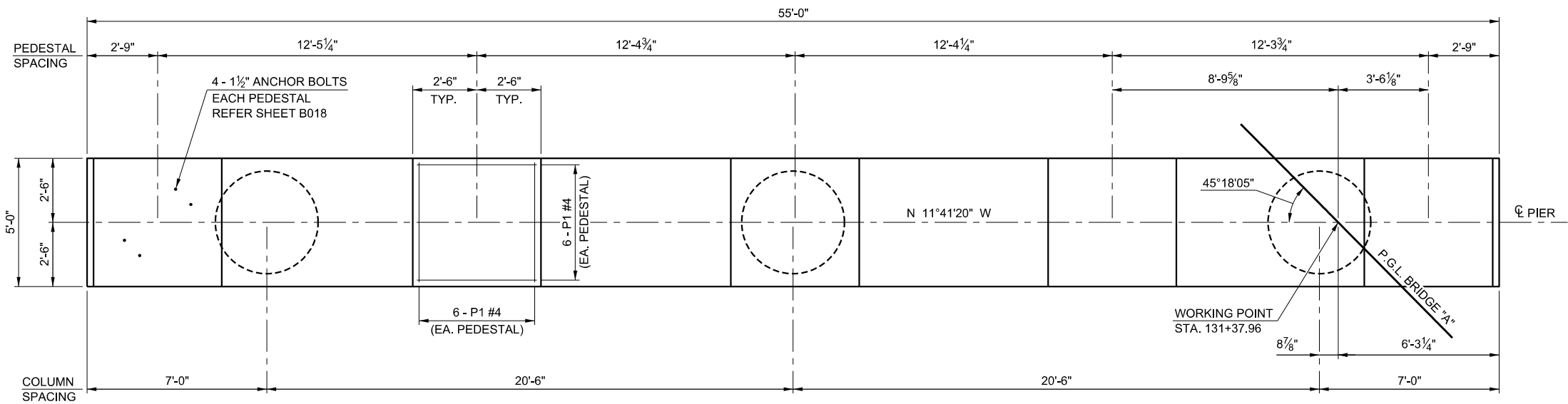


PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

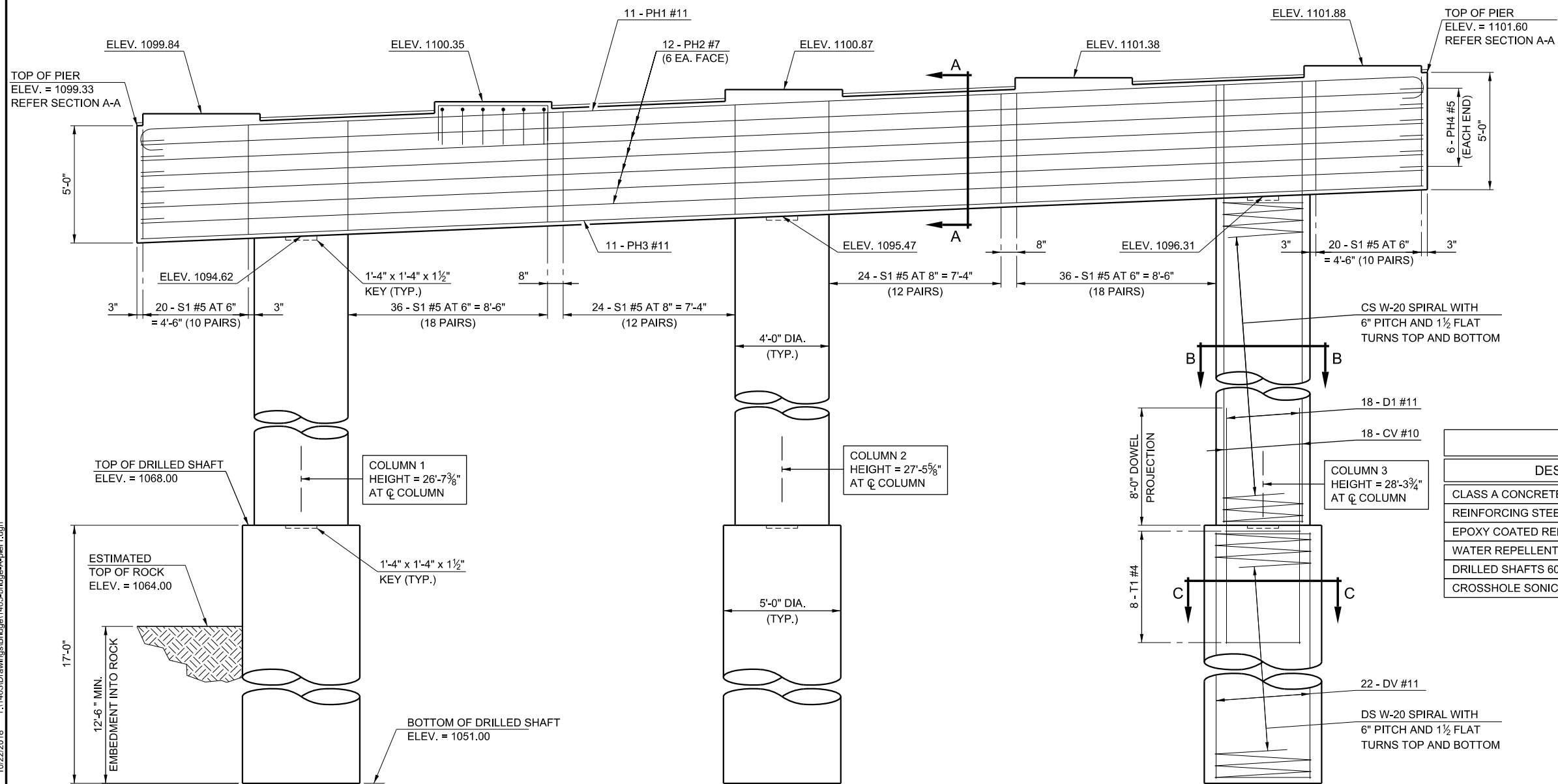
DESIGN	GLF
DRAWN	JLF
CHECKED	GLF
APPROVED	
SQUAD	MacArthur

US 81 OVER UNION PACIFIC RAILROAD	KINGFISHER COUNTY
OKLAHOMA DEPARTMENT OF TRANSPORTATION	
ABUTMENT NO. 2 DETAILS - BRIDGE "A"	
STATE JOB NO. 29849(04)	SHEET NO. B014

PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-A-plant.dgn



PLAN



ELEVATION

REVISIONS		
REV. NO.	DESCRIPTION	DATE

PIER NO. 1 BAR LIST						
MARK		NO.	SIZE	FORM	LENGTH	REMARKS
PLAIN REINFORCING BARS						
[1]	CS1	1	W-20	BNT.	578'-11"	COLUMN 1
[1]	CS2	1	W-20	BNT.	596'-11"	COLUMN 2
[1]	CS3	1	W-20	BNT.	614'-7"	COLUMN 3
[2]	D1	54	#11	STR.	15'-0"	
[1] [2]	DS	3	W-20	BNT.	452'-9"	
[2]	DV	66	#11	STR.	16'-6"	
	T1	24	#4	BNT.	13'-6"	

EPOXY COATED REINFORCING BARS					
CV1	18	#10	STR.	31'-3"	COLUMN 1
CV2	18	#10	STR.	32'-1"	COLUMN 2
CV3	18	#10	STR.	32'-11"	COLUMN 3
P1	60	#4	BNT.	7'-8"	
PH1	11	#11	BNT.	57'-10"	
PH2	12	#7	STR.	54'-8"	
PH3	11	#11	STR.	54'-8"	
PH4	12	#4	BNT.	6'-7"	
S1	160	#5	BNT.	17'-3"	

[1] LENGTH SHOWN DOES NOT ACCOUNT FOR SPLICES. CONTRACTOR MAY ADD SPLICES AS NECESSARY BUT PAYMENT WILL NOT BE MADE FOR EXTRA LENGTH REQUIRED FOR SPLICES. ADD 3'-8" TO SPIRAL LENGTH FOR EACH SPLICE.

[2] REINFORCING INCLUDED IN PRICE BID PER LF OF DRILLED SHAFT. PROJECTION LENGTH OF D1 BARS SHALL NOT BE CONSIDERED ADDITIONAL PAY LENGTH FOR DRILLED SHAFT.

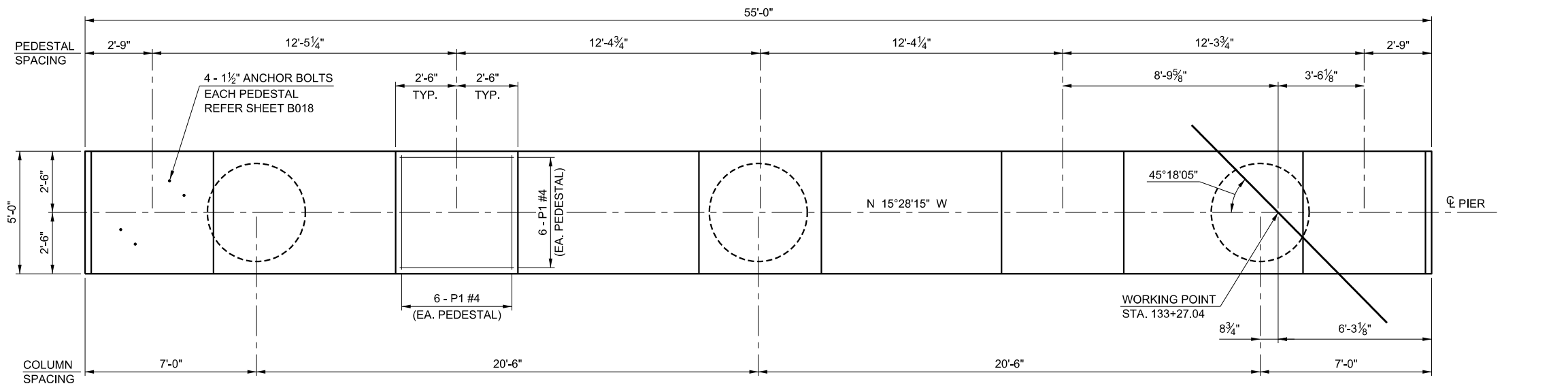
PIER QUANTITIES - BRIDGE "A"				
DESCRIPTION	UNIT	PIER NO. 1	PIER NO. 2	TOTAL
CLASS A CONCRETE	CY	91.70	91.20	182.90
REINFORCING STEEL	LB	1,220.00	1,200.00	2,420.00
EPOXY COATED REINFORCING STEEL	LB	18,610.00	18,520.00	37,130.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	103.00	103.00	206.00
DRILLED SHAFTS 60" DIAMETER	LF	51.00	48.00	99.00
CROSSHOLE SONIC LOGGING	EA			2.00

PRELIMINARY PLANS

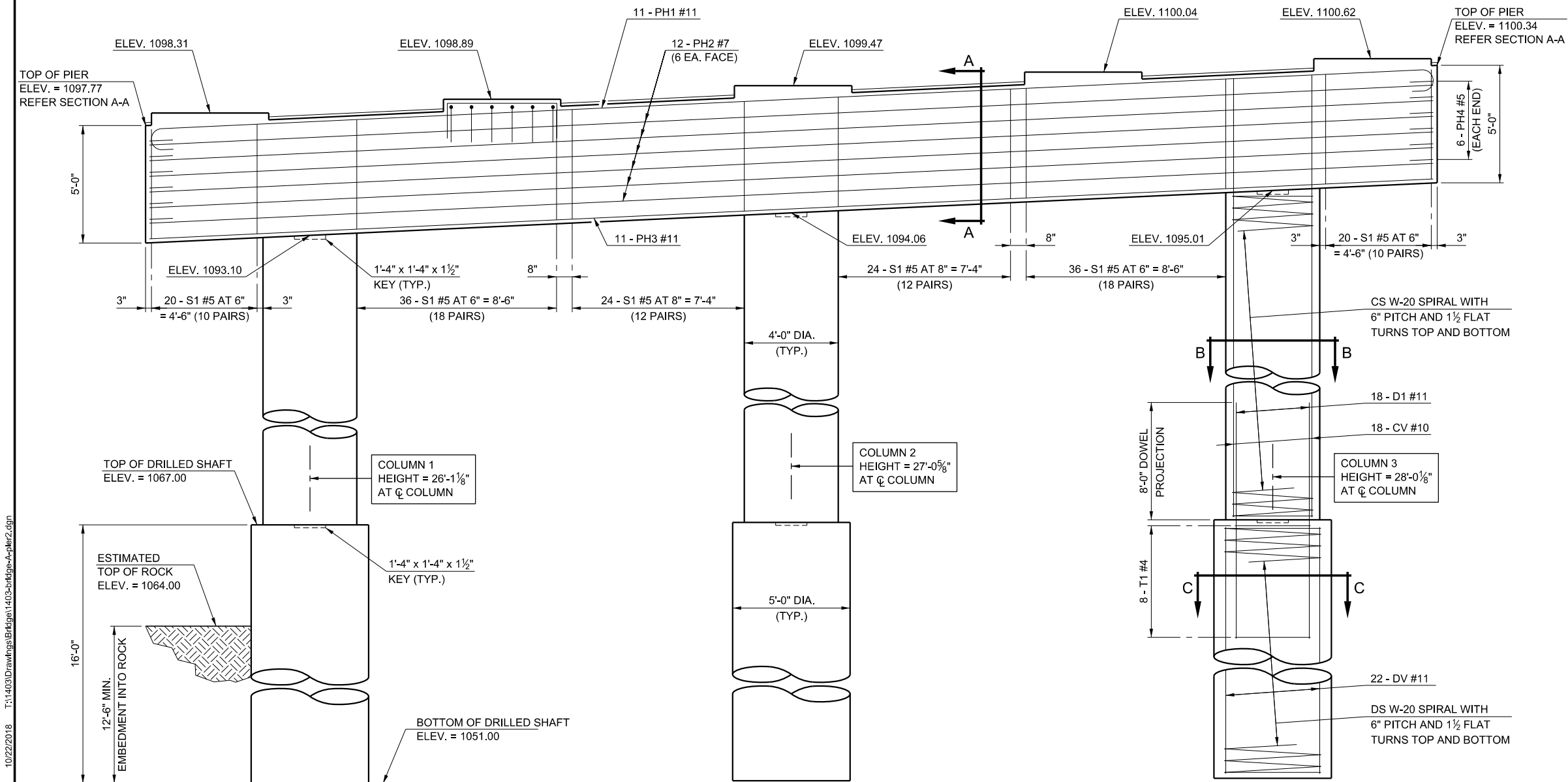
THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

DESIGN	GLF		US 81 OVER UNION PACIFIC RAILROAD	KINGFISHER COUNTY
DRAWN	JLF		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
CHECKED	GLF		PIER NO. 1 - BRIDGE "A"	
APPROVED				
SQUAD	MacArthur			
			STATE JOB NO. 29849(04)	SHEET NO. B016

PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-A-pier2.dgn



PLAN



ELEVATION

REVISIONS		
REV. NO.	DESCRIPTION	DATE

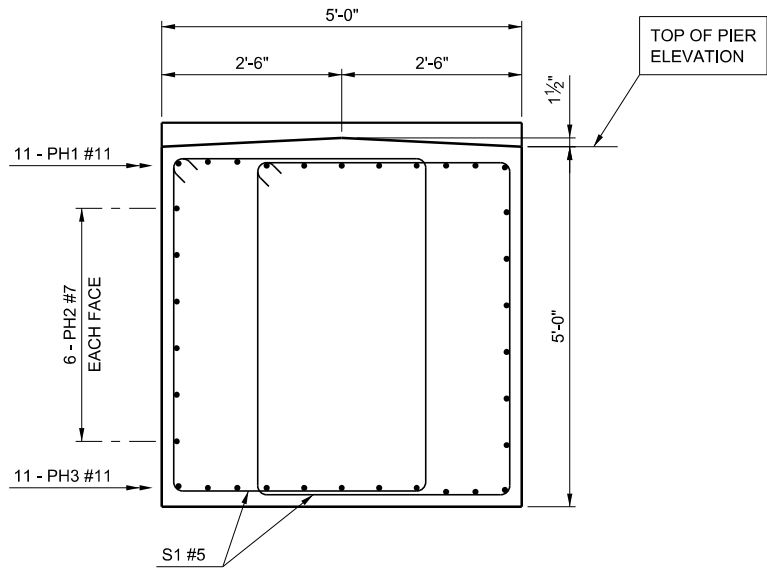
PIER NO. 2 BAR LIST					
MARK	NO.	SIZE	FORM	LENGTH	REMARKS
PLAIN REINFORCING BARS					
[1]	CS1	1	W-20	BNT.	568'-0" COLUMN 1
[1]	CS2	1	W-20	BNT.	588'-2" COLUMN 2
[1]	CS3	1	W-20	BNT.	608'-3" COLUMN 3
[2]	D1	54	#11	STR.	15'-0"
[1] [2]	DS	3	W-20	BNT.	427'-7"
[2]	DV	66	#11	STR.	15'-6"
[2]	T1	24	#4	BNT.	13'-6"
EPOXY COATED REINFORCING BARS					
CV1	18	#10	STR.	30'-9"	COLUMN 1
CV2	18	#10	STR.	31'-8"	COLUMN 2
CV3	18	#10	STR.	32'-8"	COLUMN 3
P1	60	#4	BNT.	7'-8"	
PH1	11	#11	BNT.	57'-10"	
PH2	12	#7	STR.	54'-8"	
PH3	11	#11	STR.	54'-8"	
PH4	12	#4	BNT.	6'-7"	
S1	160	#5	BNT.	17'-3"	

- [1] LENGTH SHOWN DOES NOT ACCOUNT FOR SPLICES. CONTRACTOR MAY ADD SPLICES AS NECESSARY BUT PAYMENT WILL NOT BE MADE FOR EXTRA LENGTH REQUIRED FOR SPLICES. ADD 3'-8" TO SPIRAL LENGTH OR EACH SPLICE.
- [2] REINFORCING INCLUDED IN PRICE BID PER LF OF DRILLED SHAFT. PROJECTION LENGTH OF D1 BARS SHALL NOT BE CONSIDERED ADDITIONAL PAY LENGTH FOR DRILLED SHAFT.

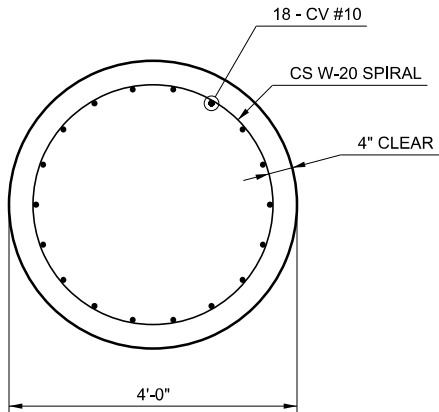
PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

DESIGN	GLF		US 81 OVER UNION PACIFIC RAILROAD	KINGFISHER COUNTY
DRAWN	JLF		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
CHECKED	GLF		PIER NO. 2 - BRIDGE "A"	
APPROVED			STATE JOB NO. 29849(04)	
SQUAD	MacArthur		SHEET NO. B017	

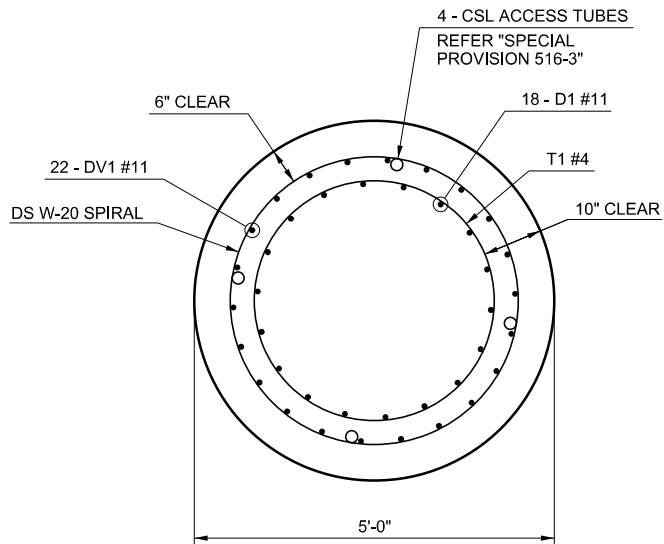
REVISIONS		
REV. NO.	DESCRIPTION	DATE



SECTION A-A



SECTION B-B



SECTION C-C

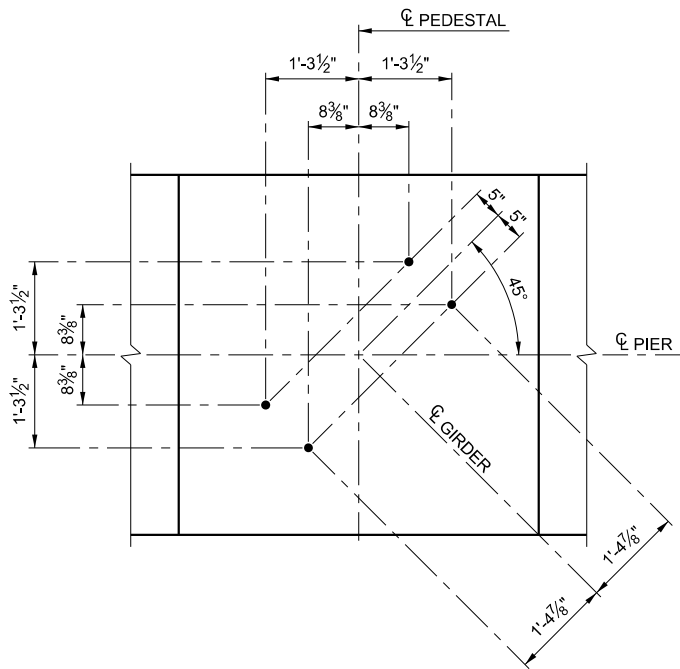
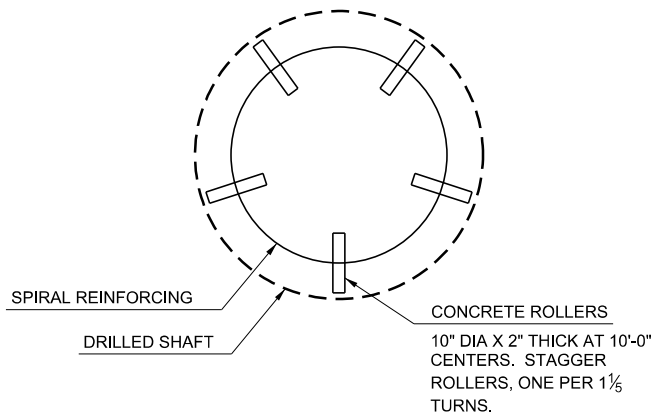
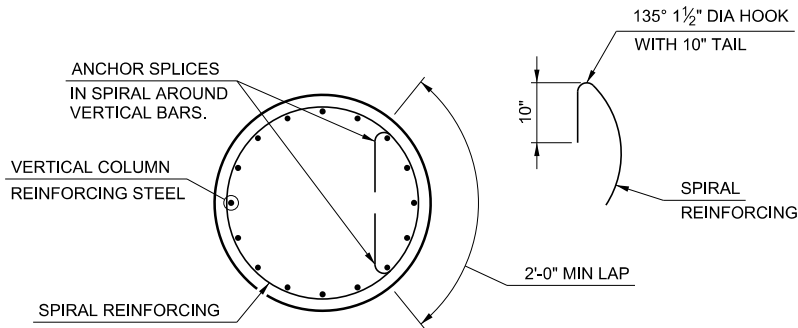


PLATE GIRDER
ANCHOR BOLT LAYOUT

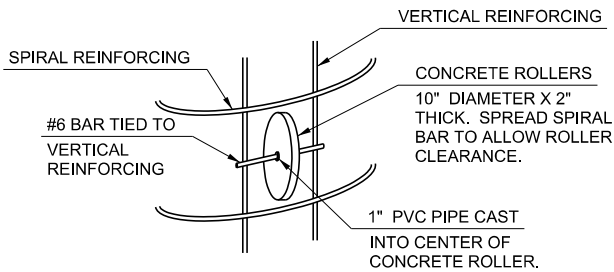


DETAIL OF ROLLER PLACEMENT
IN DRILLED SHAFT



SPIRAL REINFORCING SPLICE DETAIL

NOTE: SPIRAL BARS SHALL CONFORM TO AASHTO M32. SPIRAL BAR LENGTH DOES NOT INCLUDE LAP. IF LAP IS REQUIRED, THE LENGTH OF THE LAP SHALL BE AS SHOWN.



DETAIL OF ROLLER INSTALLATION

NOTE: CONCRETE USED IN THE CONCRETE ROLLERS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI. SLAB BOLSTERS, HIGH CHAIRS, AND PLASTIC ROLLERS SHALL NOT BE SUBSTITUTED FOR THE CONCRETE ROLLERS.

PRELIMINARY PLANS

THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

US 81 OVER UNION PACIFIC RAILROAD KINGFISHER COUNTY

OKLAHOMA DEPARTMENT OF TRANSPORTATION

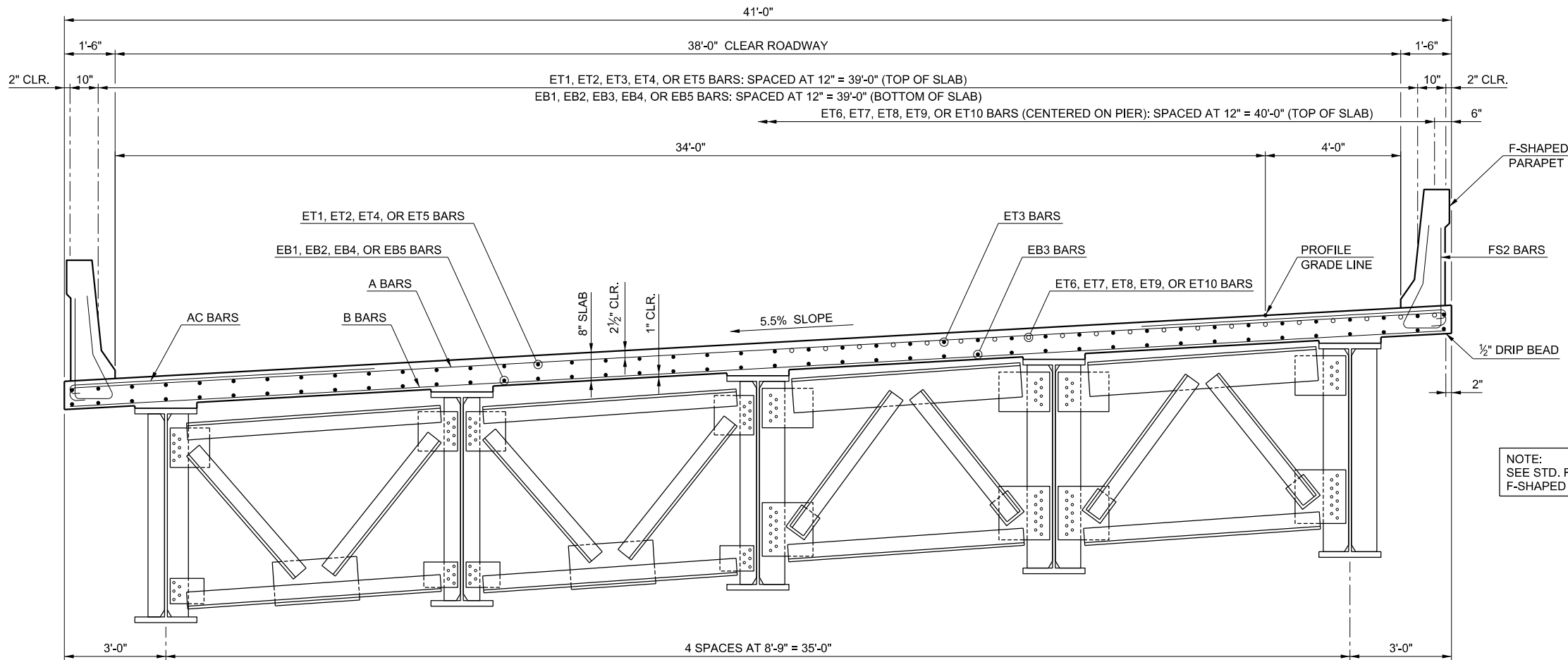
PIER DETAILS - BRIDGE "A" AND "B"

STATE JOB NO. 29849(04)

SHEET NO. B018

DESIGN	GLF
DRAWN	JLF
CHECKED	GLF
APPROVED	
SQUAD	MacArthur

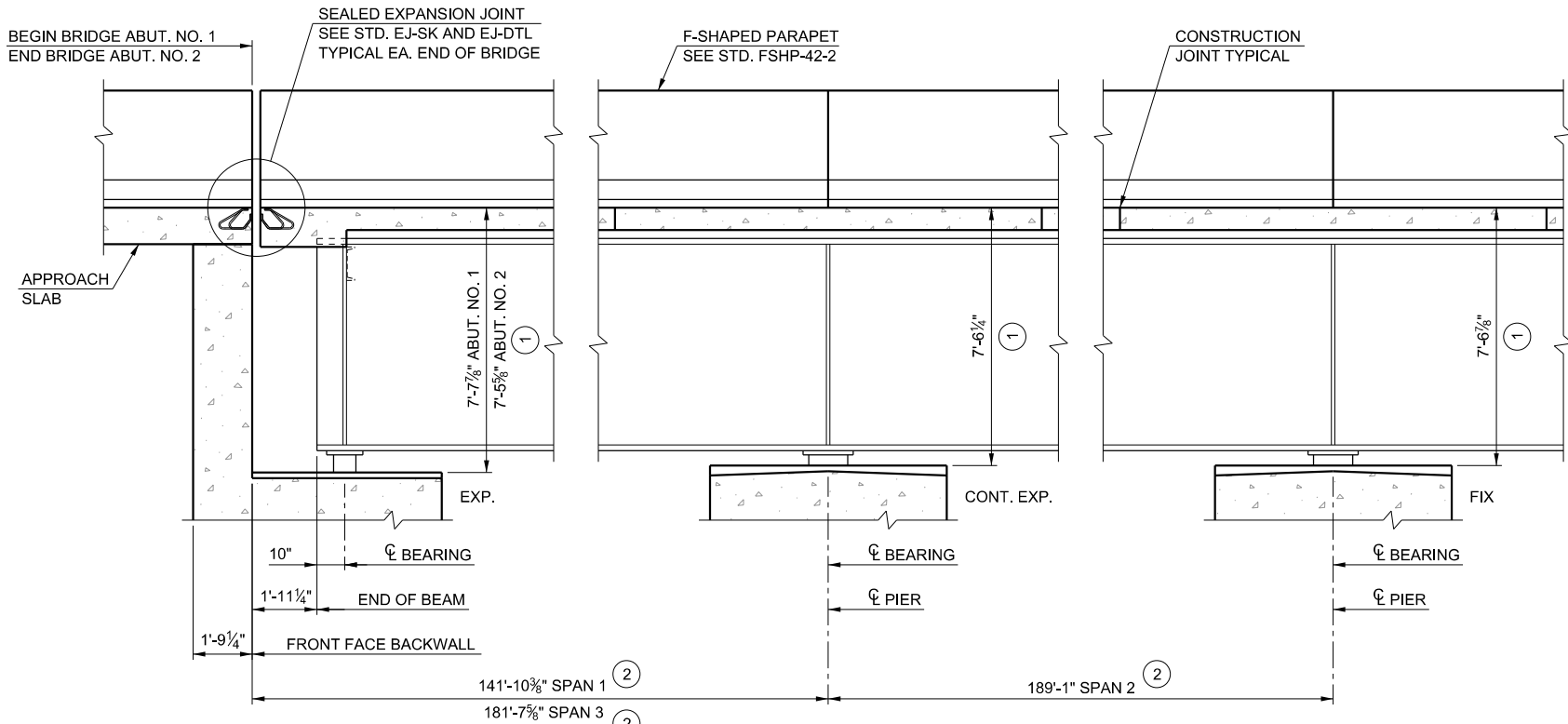
PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-A-typical-sections.dgn



HALF SECTION AT MIDSPAN

HALF SECTION AT PIER

TYPICAL CROSS SECTION

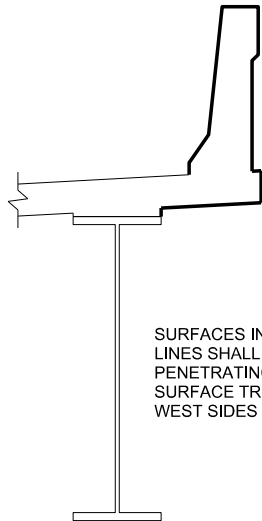


LONGITUDINAL SECTION

REVISIONS		
REV. NO.	DESCRIPTION	DATE

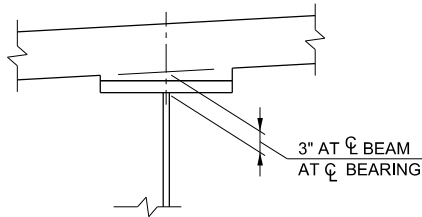
SUPERSTRUCTURE QUANTITIES - BRIDGE "A"		
DESCRIPTION	UNIT	TOTAL
SAW-CUT GROOVING	SY	2,136.10
SEALED EXPANSION JOINT	LF	114.40
42" F-SHAPED PARAPET	LF	1,012.00
STRUCTURAL STEEL	LB	1,079,120.00
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA	5.00
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA	15.00
CLASS AA CONCRETE	CY	539.80
EPOXY COATED REINFORCING STEEL	LB	170,260.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	1,252.00
SEALER CRACK PREPARATION	LF	112.40
SEALER RESIN	GAL	1.50

NOTE:
SEE STD. FSHP-42-2 FOR 42"
F-SHAPED PARAPET DETAIL.



SURFACES INDICATED WITH HEAVY LINES SHALL BE TREATED WITH A PENETRATING WATER REPELLENT SURFACE TREATMENT (EAST AND WEST SIDES OF BRIDGE).

WATER REPELLENT PLACEMENT DETAIL



BEAM HAUNCH DETAIL

NOTE:
PLAN QUANTITY FOR CLASS "AA" CONCRETE INCLUDES 22.60 CY FOR HAUNCHES OVER THE BEAMS. THE HAUNCH HEIGHT WILL BE SET AFTER ERECTION OF BEAMS TO PROVIDE FOR DEAD LOAD DEFLECTION AND GRADE ADJUSTMENTS, BUT THE PAY QUANTITY WILL BE AS SHOWN ABOVE.

PRELIMINARY PLANS

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

EXPANSION DEVICE SETTING ABUTMENT NO. 1	
EXP. JOINT OPENING	TEMPERATURE °F
1 1/4"	101
1 3/8"	94
1 1/2"	87
1 5/8"	81
1 3/4"	74
1 7/8"	67
2"	60
2 1/8"	47
2 1/4"	35
2 3/8"	39
2 1/2"	33
2 5/8"	26

EXPANSION DEVICE SETTING ABUTMENT NO. 2	
EXP. JOINT OPENING	TEMPERATURE °F
1 1/2"	110
1 5/8"	98
1 3/4"	85
1 7/8"	73
2"	60
2 1/8"	47
2 1/4"	35
2 3/8"	22

- ① MEASURED FROM TOP OF SLAB TO BOTTOM OF BEARING ASSEMBLY AT CL BEAM AT CL BEARING.
- ② SPAN DIMENSIONS ARE REFERENCED TO CL SURVEY.

DESIGN	GLF
DRAWN	JLF
CHECKED	GLF
APPROVED	
SQUAD	MacArthur

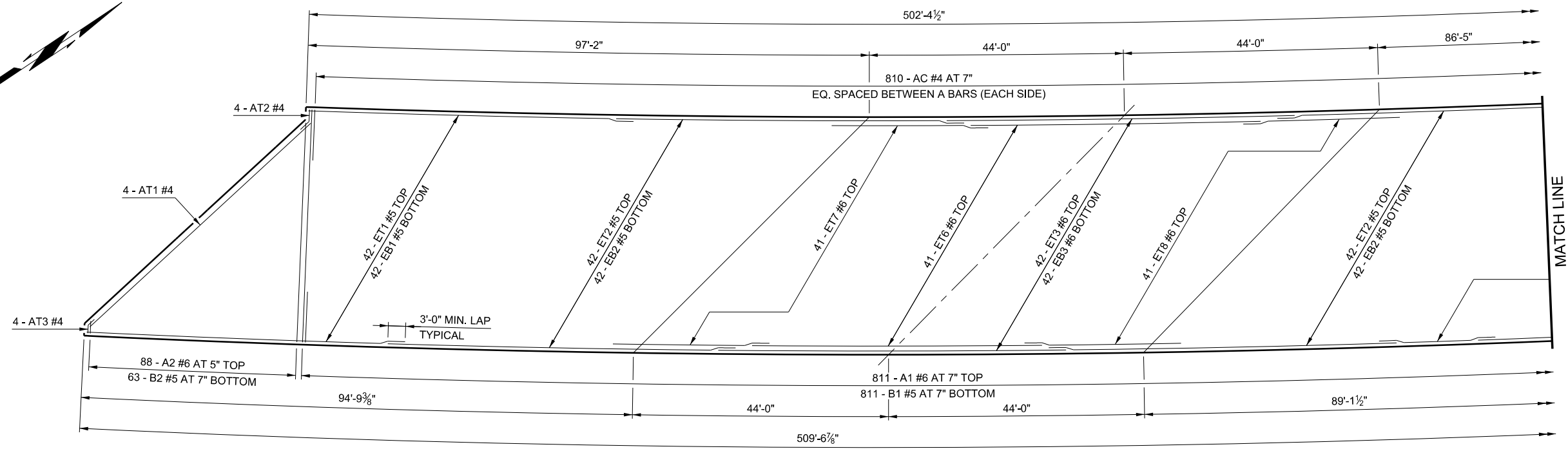
US 81 OVER UNION PACIFIC RAILROAD KINGFISHER COUNTY

OKLAHOMA DEPARTMENT OF TRANSPORTATION

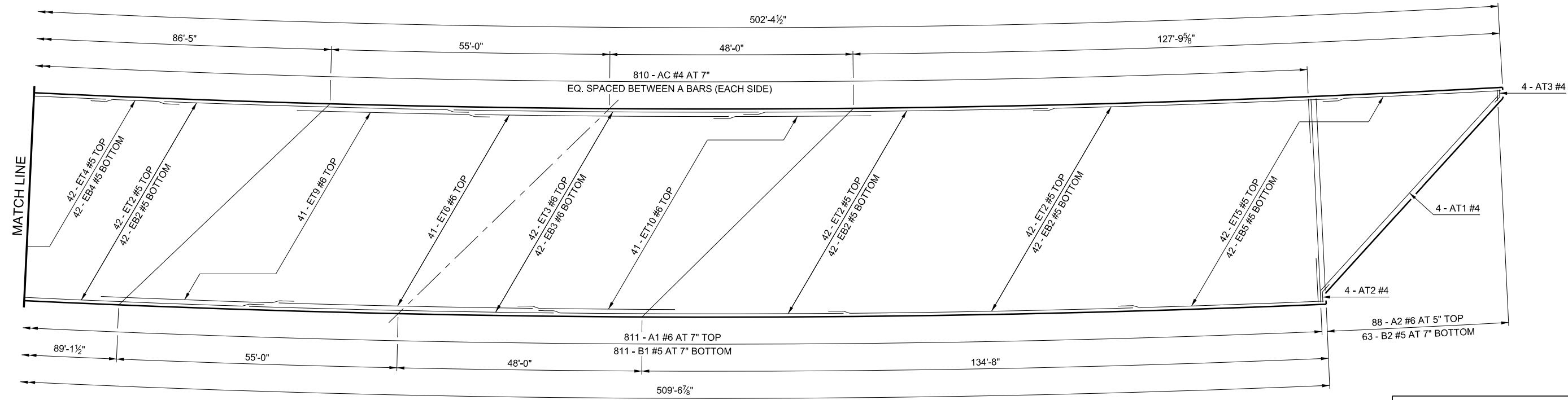
TYPICAL CROSS SECTION AND LONGITUDINAL SECTION - BRIDGE "A"

STATE JOB NO. 29849(04) SHEET NO. B019

REVISIONS		
REV. NO.	DESCRIPTION	DATE



BEGIN BRIDGE TO MID-SPAN 2



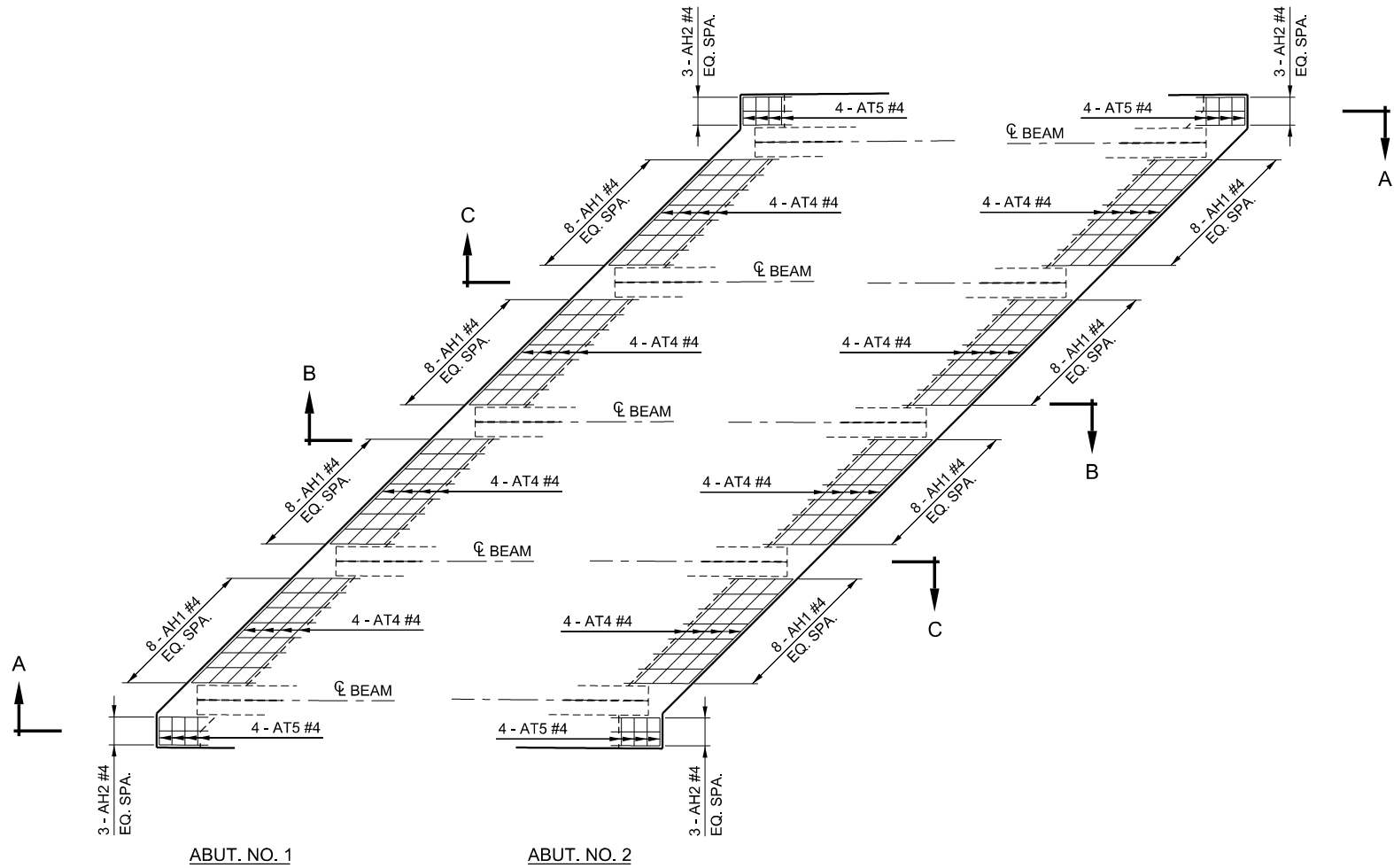
MID-SPAN 2 TO END BRIDGE

PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

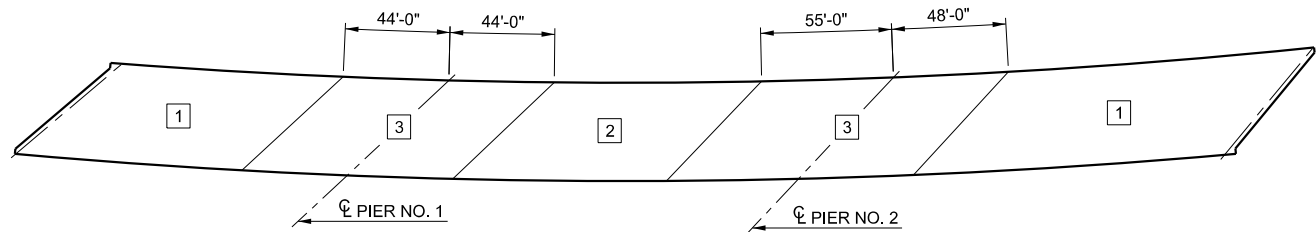
PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-A-slab-reinforcing.dgn

			US 81 OVER UNION PACIFIC RAILROAD			KINGFISHER COUNTY		
DESIGN	GLF		OKLAHOMA DEPARTMENT OF TRANSPORTATION					
DRAWN	EMW		SLAB REINFORCING PLAN - BRIDGE "A"					
CHECKED	X							
APPROVED								
SQUAD	MacArthur		STATE JOB NO. 29849(04)			SHEET NO. B020		

PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-A-slab-details.dgn



SLAB REINFORCING AT END DIAPHRAGMS

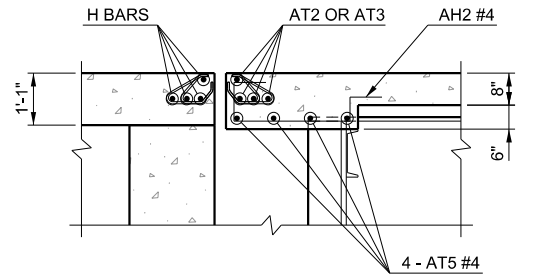


BRIDGE "A" DECK SLAB POURING SEQUENCE

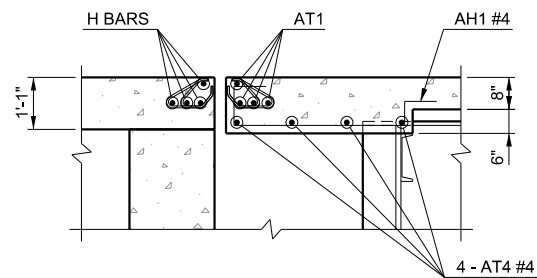
DECK SLAB POURING SEQUENCE

THE POURING SEQUENCE SHALL BE IN THE NUMERICAL SEQUENCE INDICATED. ALL POURS WITH THE SAME NUMBER MAY BE POURED IN ANY SEQUENCE, BUT ALL POURS WITH THE SAME NUMBER SHALL BE COMPLETED BEFORE BEGINNING WITH THE NEXT POUR NUMBER. THERE SHALL BE A LAPSE OF AT LEAST 48 HOURS BETWEEN POURS.

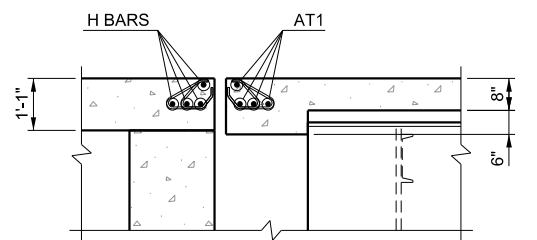
CONSTRUCTION JOINTS AT THE CLOSURE POURS IN THE DECK SLAB SHALL NOT BE KEYED. IN THE EVENT OF AN EMERGENCY, POURING OF DECK SLAB MAY BE HALTED WITH A CONSTRUCTION JOINT MADE PERPENDICULAR TO THE DIRECTION OF TRAFFIC AS DIRECTED BY THE ENGINEER. PRIMARY LONGITUDINAL REINFORCING SHALL BE CONTINUOUS THRU ALL CONSTRUCTION JOINTS. NO HEAVY EQUIPMENT WILL BE PERMITTED ON THE FINISHED DECK WITHIN 5' OF ANY CONSTRUCTION JOINT UNTIL THE DECK SLAB IS IN PLACE ON BOTH SIDES OF THE RESPECTIVE JOINT. ALL CONSTRUCTION JOINTS SHALL BE PREPARED AND SEALED USING HIGH MOLECULAR WEIGHT METHACRYLATE IN ACCORDANCE WITH SECTION 523 OF THE STANDARD SPECIFICATIONS. DO NOT SAW-CUT GROOVE WITHIN 6" OF ANY CONSTRUCTION JOINT.



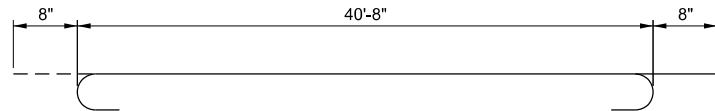
SECTION A



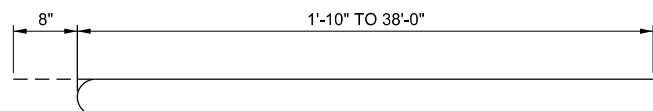
SECTION B



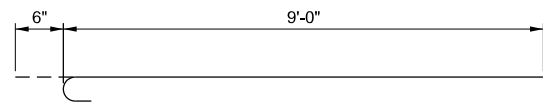
SECTION C



A1 #6 x 42'-0"

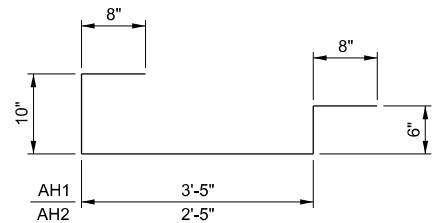


A2 #6 x 20'-7" AVG.

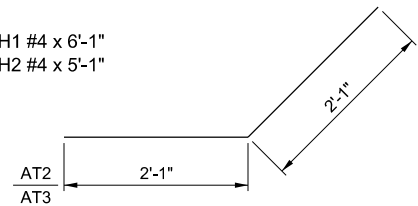


AC #4 x 9'-6"

SLAB BAR LIST - BRIDGE "A"					
MARK	NO.	SIZE	FORM	LENGTH	REMARKS
EPOXY COATED REINFORCING BARS					
A1	811	#6	BNT.	42'-0"	
A2	176	#6	BNT.	20'-7" AVG.	2'-6" TO 38'-8"
AC	1620	#4	BNT.	9'-6"	
AH1	64	#4	BNT.	6'-1"	
AH2	12	#4	BNT.	5'-1"	
AT1	8	#4	STR.	51'-10"	
AT2	8	#4	BNT.	4'-2"	
AT3	8	#4	BNT.	3'-10"	
AT4	32	#4	STR.	9'-3"	
AT5	16	#4	STR.	1'-9"	
B1	811	#5	STR.	40'-8"	
B2	126	#5	STR.	19'-11" AVG.	1'-10" TO 38'-0"
EB1	42	#5	STR.	56'-10"	
EB2	210	#5	STR.	60'-0"	
EB3	84	#6	STR.	60'-0"	
EB4	42	#5	STR.	20'-1"	
EB5	42	#5	STR.	41'-4"	
ET1	42	#5	STR.	56'-10"	
ET2	210	#5	STR.	60'-0"	
ET3	84	#6	STR.	60'-0"	
ET4	42	#5	STR.	20'-1"	
ET5	42	#5	STR.	41'-4"	
ET6	82	#6	STR.	50'-0"	
ET7	41	#6	STR.	27'-0"	
ET8	41	#6	STR.	27'-0"	
ET9	41	#6	STR.	38'-0"	
ET10	41	#6	STR.	31'-0"	



AH1 #4 x 6'-1"
AH2 #4 x 5'-1"



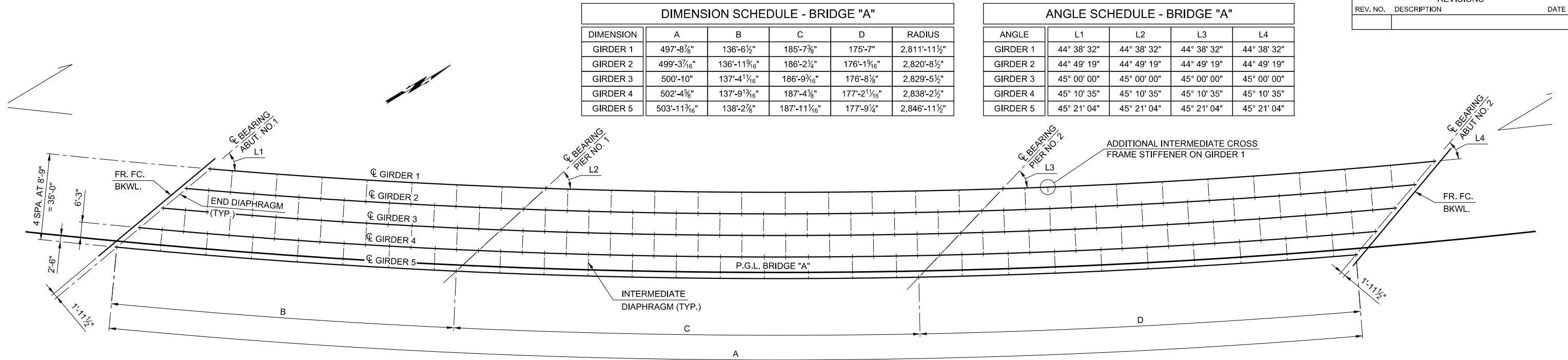
AT2 #4 x 4'-2"
AT3 #4 x 3'-10"

PRELIMINARY PLANS

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

DESIGN	GLF		US 81 OVER UNION PACIFIC RAILROAD	KINGFISHER COUNTY
DRAWN	EMW		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
CHECKED	X		SLAB DETAILS - BRIDGE "A"	
APPROVED			STATE JOB NO. 29849(04) SHEET NO. B021	
SQUAD	MacArthur			

PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-A-framing.dgn



DIMENSION SCHEDULE - BRIDGE "A"

DIMENSION	A	B	C	D	RADIUS
GIRDER 1	497'-8 ⁷ / ₁₆ "	136'-6 ¹ / ₂ "	185'-7 ³ / ₈ "	175'-7"	2,811'-11 ¹ / ₂ "
GIRDER 2	499'-3 ³ / ₁₆ "	136'-11 ¹ / ₁₆ "	186'-2 ¹ / ₄ "	176'-1 ¹ / ₁₆ "	2,820'-8 ¹ / ₂ "
GIRDER 3	500'-10"	137'-4 ¹ / ₁₆ "	186'-9 ⁹ / ₁₆ "	176'-8 ¹ / ₁₆ "	2,829'-5 ¹ / ₂ "
GIRDER 4	502'-4 ⁵ / ₈ "	137'-9 ¹³ / ₁₆ "	187'-4 ¹ / ₈ "	177'-2 ¹ / ₁₆ "	2,838'-2 ¹ / ₂ "
GIRDER 5	503'-11 ¹ / ₁₆ "	138'-2 ¹ / ₈ "	187'-11 ¹ / ₁₆ "	177'-9 ¹ / ₄ "	2,846'-11 ¹ / ₂ "

ANGLE SCHEDULE - BRIDGE "A"

ANGLE	L1	L2	L3	L4
GIRDER 1	44° 38' 32"	44° 38' 32"	44° 38' 32"	44° 38' 32"
GIRDER 2	44° 49' 19"	44° 49' 19"	44° 49' 19"	44° 49' 19"
GIRDER 3	45° 00' 00"	45° 00' 00"	45° 00' 00"	45° 00' 00"
GIRDER 4	45° 10' 35"	45° 10' 35"	45° 10' 35"	45° 10' 35"
GIRDER 5	45° 21' 04"	45° 21' 04"	45° 21' 04"	45° 21' 04"

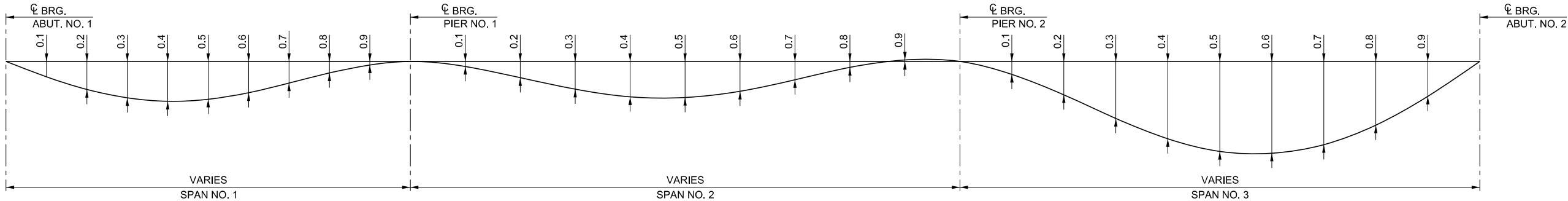
REVISIONS		
REV. NO.	DESCRIPTION	DATE

FRAMING PLAN - BRIDGE "A"

DEAD LOAD DEFLECTION SCHEDULE

LOAD	CL BRG. ABUT. NO. 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL BRG. PIER NO. 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL BRG. PIER NO. 2	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL BRG. ABUT. NO. 2
A	0.00"	0.16"	0.30"	0.38"	0.41"	0.38"	0.31"	0.20"	0.10"	0.02"	0.00"	0.08"	0.24"	0.39"	0.48"	0.48"	0.39"	0.24"	0.08"	-0.02"	0.00"	0.17"	0.44"	0.74"	1.01"	1.18"	1.20"	1.09"	0.83"	0.45"	0.00"
B	0.00"	0.52"	0.95"	1.23"	1.35"	1.28"	1.06"	0.73"	0.39"	0.12"	0.00"	0.17"	0.55"	0.94"	1.20"	1.22"	1.01"	0.62"	0.20"	-0.05"	0.00"	0.44"	1.13"	1.93"	2.62"	3.05"	3.11"	2.82"	2.16"	1.18"	0.00"

- A GIRDERS, CROSS-FRAMES, AND STIFFENERS
B DECK SLAB, HAUNCH, AND PARAPET
(FUTURE WEARING SURFACE IS NOT INCLUDED)



DEAD LOAD DEFLECTION DIAGRAM

SPAN NO. 1 - THEORETICAL HAUNCH ELEVATIONS

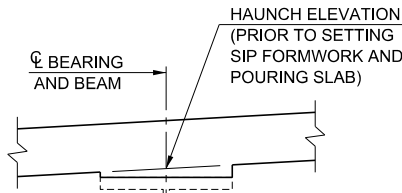
	CL BRG. ABUT. NO. 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL BRG. PIER NO. 1
GIRDER 1	1106.89	1107.37	1107.77	1108.01	1108.09	1108.00	1107.76	1107.43	1107.09	1106.83	1106.69
GIRDER 2	1107.36	1107.87	1108.29	1108.55	1108.65	1108.57	1108.33	1107.99	1107.64	1107.36	1107.21
GIRDER 3	1107.82	1108.37	1108.81	1109.10	1109.21	1109.14	1108.90	1108.56	1108.18	1107.89	1107.72
GIRDER 4	1108.28	1108.85	1109.33	1109.65	1109.77	1109.70	1109.47	1109.12	1108.73	1108.41	1108.23
GIRDER 5	1108.74	1109.35	1109.85	1110.20	1110.35	1110.30	1110.06	1109.70	1109.29	1108.94	1108.74

SPAN NO. 3 - THEORETICAL HAUNCH ELEVATIONS

	CL BRG. PIER NO. 2	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL BRG. ABUT. NO. 2
GIRDER 1	1105.21	1105.49	1106.00	1106.56	1106.97	1107.09	1106.85	1106.23	1105.26	1103.98	1102.51
GIRDER 2	1105.79	1106.05	1106.53	1107.10	1107.53	1107.67	1107.45	1106.86	1105.90	1104.62	1103.15
GIRDER 3	1106.37	1106.61	1107.09	1107.65	1108.10	1108.26	1108.07	1107.49	1106.55	1105.27	1103.80
GIRDER 4	1106.95	1107.17	1107.63	1108.21	1108.68	1108.88	1108.70	1108.14	1107.21	1105.93	1104.43
GIRDER 5	1107.52	1107.71	1108.17	1108.75	1109.27	1109.51	1109.37	1108.84	1107.91	1106.60	1105.07

SPAN NO. 2 - THEORETICAL HAUNCH ELEVATIONS

	CL BRG. PIER NO. 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL BRG. PIER NO. 2
GIRDER 1	1106.69	1106.81	1107.08	1107.32	1107.40	1107.22	1106.81	1106.24	1105.68	1105.30	1105.21
GIRDER 2	1107.21	1107.32	1107.61	1107.88	1107.98	1107.85	1107.46	1106.90	1106.33	1105.92	1105.79
GIRDER 3	1107.72	1107.83	1108.12	1108.41	1108.56	1108.45	1108.10	1107.55	1106.96	1106.53	1106.37
GIRDER 4	1108.23	1108.33	1108.63	1108.94	1109.12	1109.04	1108.72	1108.18	1107.59	1107.13	1106.95
GIRDER 5	1108.74	1108.81	1109.10	1109.45	1109.66	1109.63	1109.33	1108.80	1108.19	1107.72	1107.52



BEAM HAUNCH ELEVATION DETAIL

HAUNCH ELEVATIONS ARE BASED ON DEAD LOAD DEFLECTIONS DESCRIBED IN NOTES A AND B ON THE DEAD LOAD DEFLECTION SCHEDULE ON THIS SHEET. PRIOR TO SETTING FINAL HAUNCH ELEVATIONS, CONTRACTOR SHALL SUBMIT TOP OF GIRDER ELEVATIONS TO THE ENGINEER AT LOCATIONS SHOWN (10TH POINTS) ALONG CENTERLINE OF BEAM. THE DEPARTMENT WILL APPROVE OR REVISE HAUNCH ELEVATIONS SHOWN IN THE PLANS. ANY ADJUSTMENTS TO QUANTITIES BASED ON REVISED HAUNCH HEIGHTS SHALL BE PROVIDED AT NO COST TO THE DEPARTMENT.

PRELIMINARY PLANS

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

DESIGN	GLF
DRAWN	JLF
CHECKED	GLF
APPROVED	
SQUAD	MacArthur

US 81 OVER UNION PACIFIC RAILROAD KINGFISHER COUNTY

OKLAHOMA DEPARTMENT OF TRANSPORTATION

FRAMING PLAN - BRIDGE "A"

STATE JOB NO. 29849(04) SHEET NO. B022

PRINT DATE: 10/22/2018 T:\403Drawings\Bridges\1403-bridge-A-girder.dgn

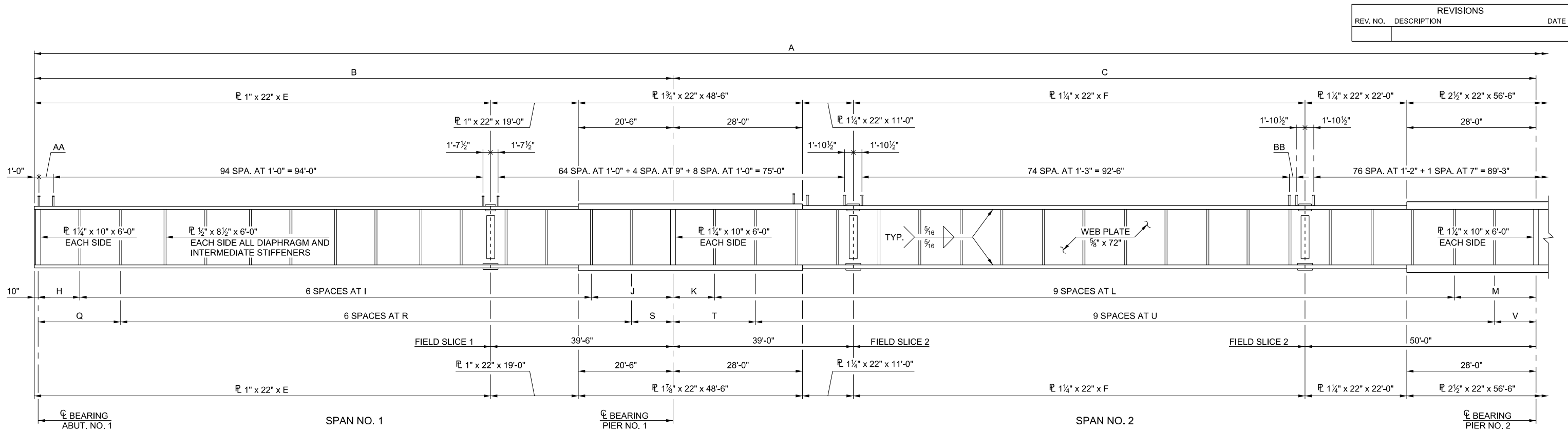


PLATE GIRDER ELEVATION

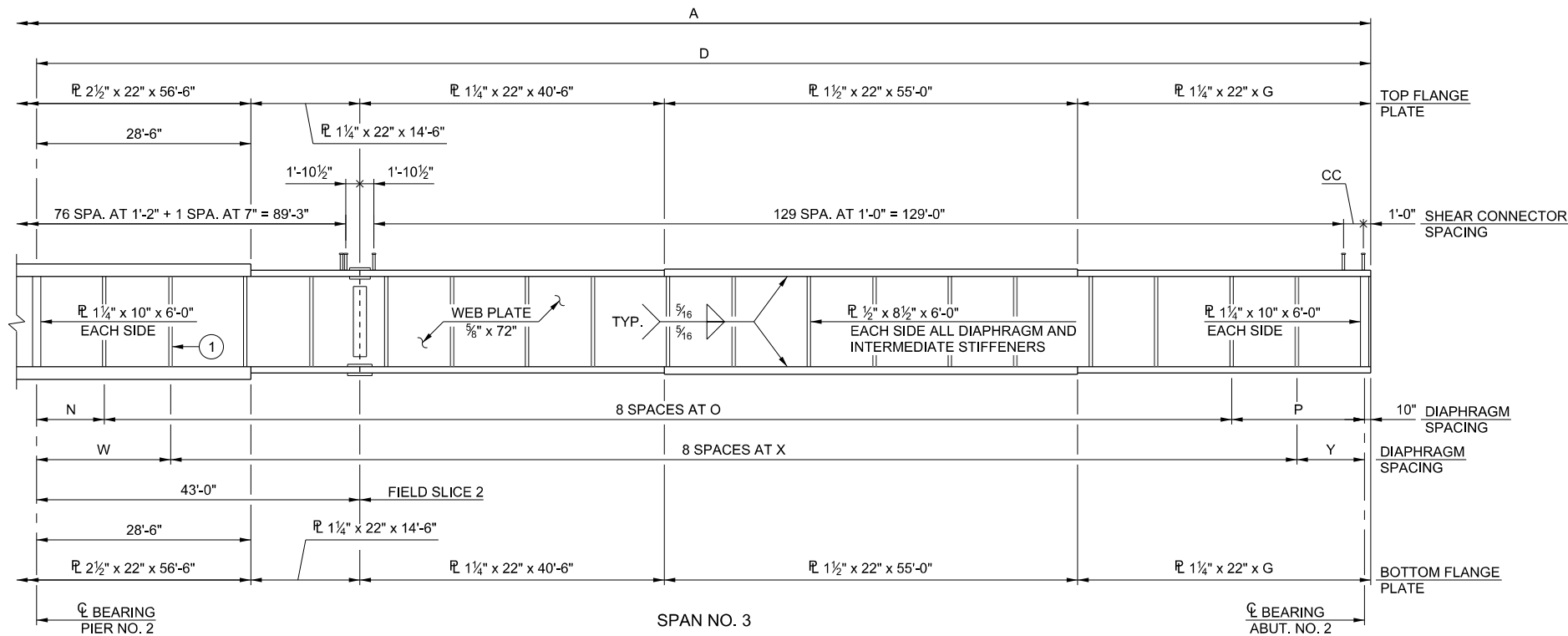


PLATE GIRDER ELEVATION

① ADDITIONAL INTERMEDIATE CROSS FRAME STIFFENER ON INSIDE FACE OF GIRDER 1 AS SHOWN.

SHEAR CONNECTOR SPACING SCHEDULE - BRIDGE "A"			
DIMENSION	AA	BB	CC
GIRDER 1	3 SPA. AT 9" = 2'-3"	1 SPA. AT 4 ⁵ / ₁₆ " = 4 ⁵ / ₁₆ "	2 SPA. AT 9 ¹ / ₄ " = 1'-6 ¹ / ₂ "
GIRDER 2	3 SPA. AT 10 ¹ / ₁₆ " = 2'-8 ¹ / ₁₆ "	1 SPA. AT 11 ¹ / ₄ " = 11 ¹ / ₄ "	3 SPA. AT 8 ³ / ₁₆ " = 2'-1 ¹ / ₁₆ "
GIRDER 3	4 SPA. AT 9 ⁵ / ₁₆ " = 3'-1 ³ / ₁₆ "	2 SPA. AT 9 ¹ / ₈ " = 1'-6 ³ / ₁₆ "	3 SPA. AT 10 ⁵ / ₁₆ " = 2'-7 ⁵ / ₁₆ "
GIRDER 4	4 SPA. AT 10 ⁵ / ₁₆ " = 3'-6 ⁵ / ₁₆ "	2 SPA. AT 1'-0 ⁵ / ₁₆ " = 2'-1 ⁵ / ₁₆ "	4 SPA. AT 9 ⁵ / ₁₆ " = 3'-2 ³ / ₁₆ "
GIRDER 5	4 SPA. @ 11 ¹ / ₈ " = 3'-11 ¹ / ₈ "	3 SPA. AT 10 ¹ / ₁₆ " = 2'-8 ¹ / ₁₆ "	4 SPA. AT 11 ³ / ₁₆ " = 3'-8 ³ / ₁₆ "

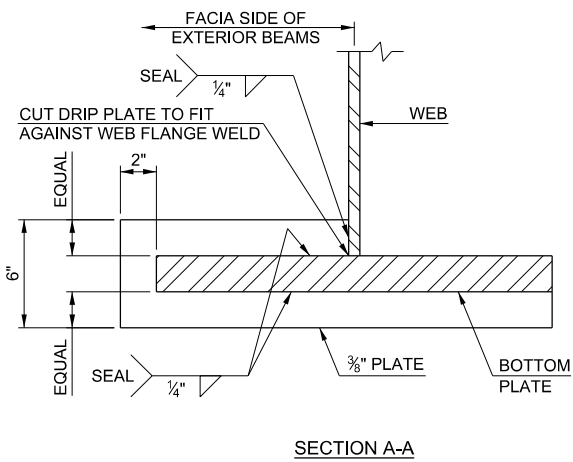
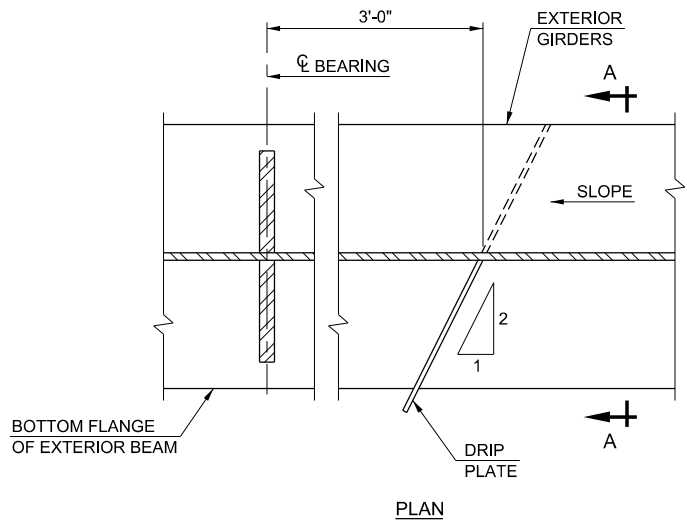
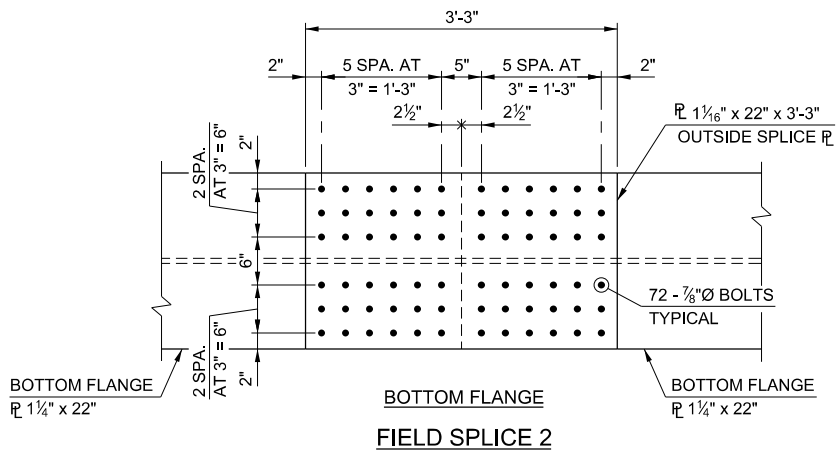
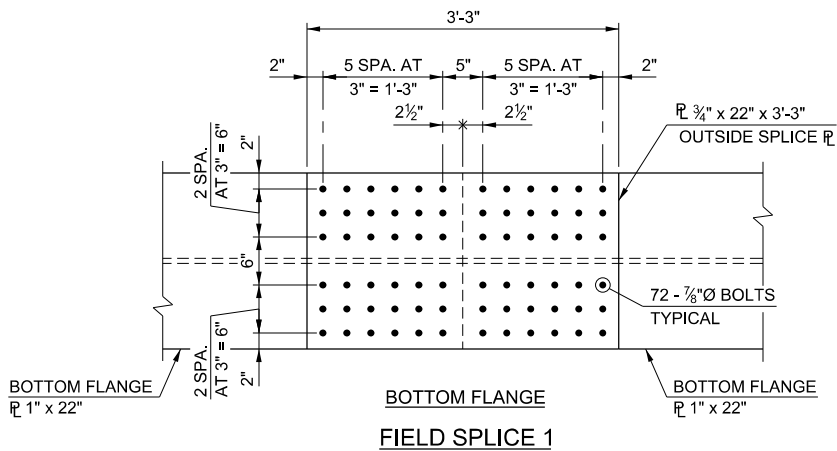
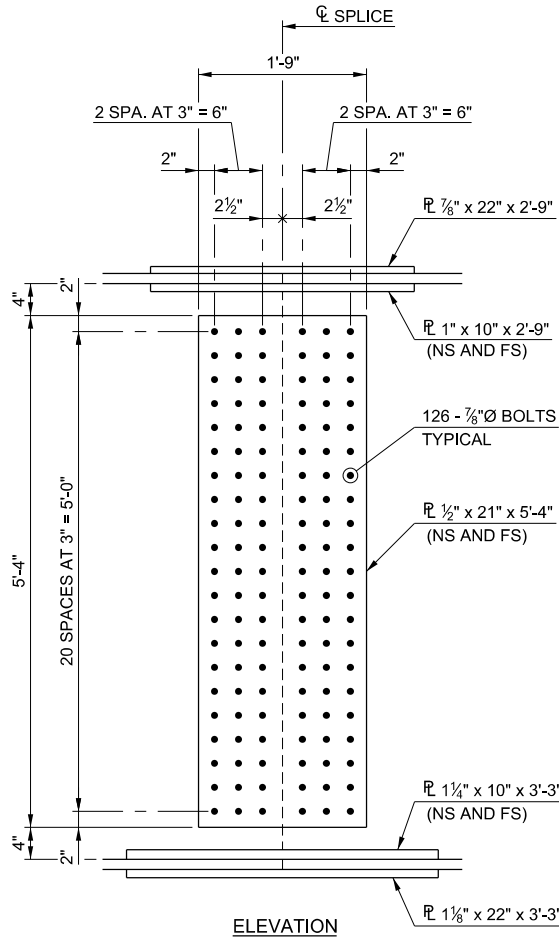
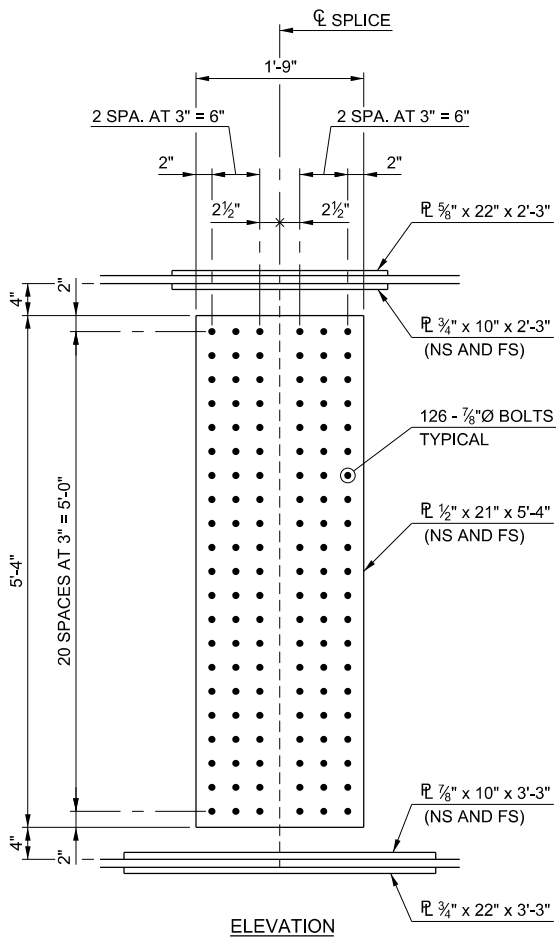
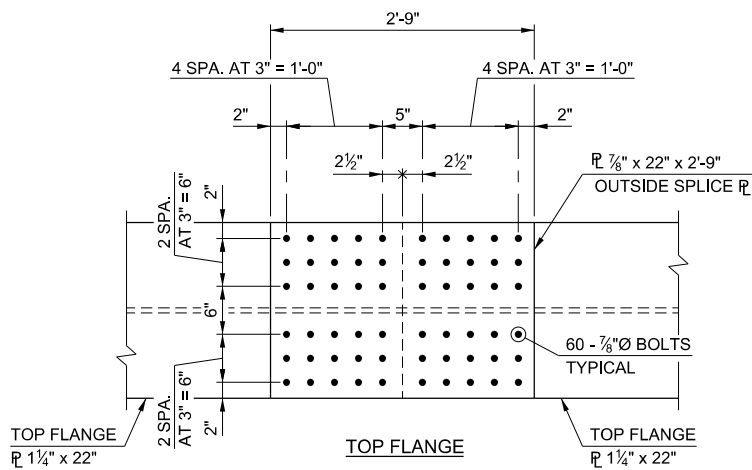
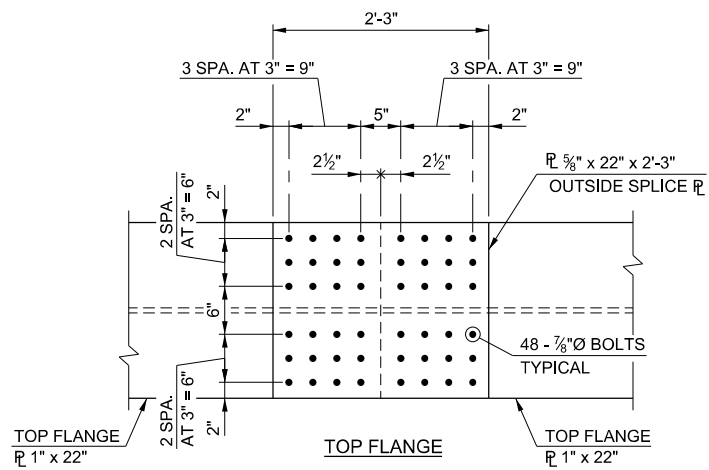
PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

DIMENSION SCHEDULE - BRIDGE "A"					
DIMENSION	GIRDER 1	GIRDER 2	GIRDER 3	GIRDER 4	GIRDER 5
A	499'-4 ⁷ / ₈ "	500'-11 ¹ / ₁₆ "	502'-6 ¹ / ₁₆ "	504'-0 ⁵ / ₁₆ "	505'-7 ³ / ₁₆ "
B	137'-4 ¹ / ₂ "	137'-9 ⁹ / ₁₆ "	138'-2 ¹ / ₁₆ "	138'-7 ¹³ / ₁₆ "	139'-0 ⁷ / ₈ "
C	185'-7 ³ / ₈ "	186'-2 ¹ / ₄ "	186'-9 ⁹ / ₁₆ "	187'-4 ¹ / ₈ "	187'-11 ¹ / ₁₆ "
D	176'-5"	176'-11 ¹ / ₁₆ "	177'-6 ¹ / ₈ "	178'-0 ¹ / ₁₆ "	178'-7 ¹ / ₄ "
E	97'-10 ¹ / ₂ "	98'-3 ³ / ₁₆ "	98'-8 ¹ / ₁₆ "	99'-1 ¹ / ₁₆ "	99'-6 ⁷ / ₈ "
F	96'-7 ³ / ₈ "	97'-2 ¹ / ₄ "	97'-9 ³ / ₁₆ "	98'-4 ¹ / ₈ "	98'-11 ¹ / ₁₆ "
G	37'-11"	38'-5 ³ / ₁₆ "	39'-0 ¹ / ₈ "	39'-6 ¹ / ₁₆ "	40'-1 ¹ / ₄ "
H	9'-0"	9'-0"	9'-0"	9'-0"	-
I	18'-3 ¹ / ₂ "	18'-4 ¹ / ₁₆ "	18'-5 ⁷ / ₁₆ "	18'-6 ³ / ₁₆ "	-
J	17'-9 ¹ / ₂ "	17'-8 ³ / ₁₆ "	17'-8 ³ / ₁₆ "	17'-7 ³ / ₁₆ "	-
K	9'-0"	9'-0"	9'-0"	9'-0"	-
L	17'-7 ³ / ₄ "	17'-8 ³ / ₁₆ "	17'-9 ¹ / ₁₆ "	17'-10 ⁵ / ₁₆ "	-
M	17'-9 ¹ / ₂ "	17'-8 ³ / ₁₆ "	17'-8 ³ / ₁₆ "	17'-7 ³ / ₁₆ "	-
N	9'-0"	9'-0"	9'-0"	9'-0"	-
O	18'-7 ³ / ₁₆ "	18'-8 ¹ / ₈ "	18'-9"	18'-9 ⁷ / ₈ "	-
P	17'-9 ¹ / ₂ "	17'-8 ¹ / ₁₆ "	17'-8 ³ / ₁₆ "	17'-7 ³ / ₁₆ "	-
Q	-	17'-10 ¹ / ₂ "	17'-9 ¹ / ₁₆ "	17'-9 ³ / ₁₆ "	17'-8 ¹ / ₂ "
R	-	18'-4 ³ / ₁₆ "	18'-5 ¹ / ₈ "	18'-6 ¹ / ₁₆ "	18'-7 ¹ / ₁₆ "
S	-	9'-0"	9'-0"	9'-0"	9'-0"
T	-	17'-10 ¹ / ₂ "	17'-9 ¹ / ₁₆ "	17'-9 ³ / ₁₆ "	17'-8 ¹ / ₂ "
U	-	17'-8 ¹ / ₁₆ "	17'-9 ¹ / ₄ "	17'-10 ¹ / ₈ "	17'-10 ¹ / ₁₆ "
V	-	9'-0"	9'-0"	9'-0"	9'-0"
W	-	17'-10 ¹ / ₂ "	17'-9 ¹ / ₁₆ "	17'-9 ³ / ₁₆ "	17'-8 ¹ / ₂ "
X	-	18'-7 ¹ / ₈ "	18'-8 ³ / ₁₆ "	18'-9 ¹ / ₁₆ "	18'-10 ¹ / ₁₆ "
Y	-	9'-0"	9'-0"	9'-0"	9'-0"

NOTE:
DIAPHRAGM AND INTERMEDIATE STIFFENERS SHALL BE PLACED ONE EACH FACE OF
THE WEB FOR INTERIOR GIRDERS. EXTERIOR GIRDERS SHALL HAVE DIAPHRAGM
AND INTERMEDIATE STIFFENERS AT THE INTERIOR WEB FACE ONLY.

DESIGN	GLF		US 81 OVER UNION PACIFIC RAILROAD	KINGFISHER COUNTY
DRAWN	EMW		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
CHECKED	X		PLATE GIRDER DETAILS - BRIDGE "A"	
APPROVED			STATE JOB NO. 29849(04)	
SQUAD	MacArthur		SHEET NO. B023	

REVISIONS		
REV. NO.	DESCRIPTION	DATE



**TYPICAL DRIP PLATE DETAILS
FOR EXTERIOR GIRDERS**

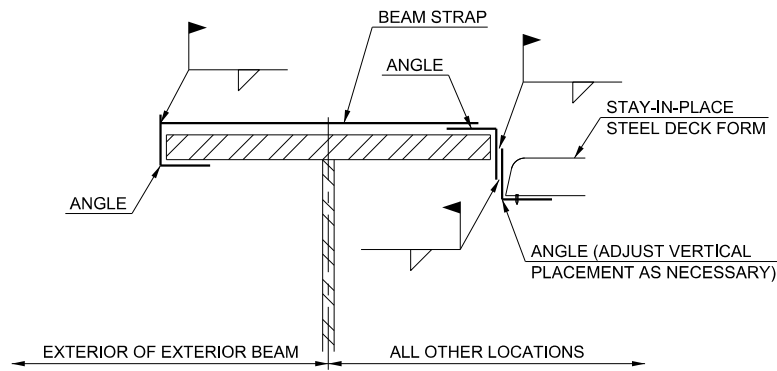
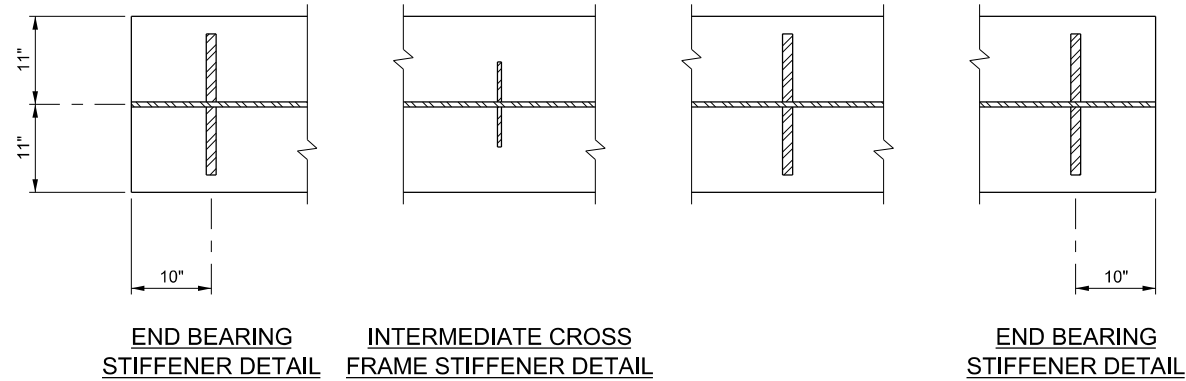
NOTE:
DRIP PLATES SHALL BE PLACED ON THE OUTSIDE OF THE
EXTERIOR GIRDERS ON THE UP GRADE SIDE OF ABUTMENTS
AND EACH PIER.

ALL COST OF DRIP PLATE, WELD, AND LABOR NEEDED FOR
INSTALLATION SHALL BE INCLUDED IN THE UNIT PRICE BID
PER POUND FOR "STRUCTURAL STEEL."

PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

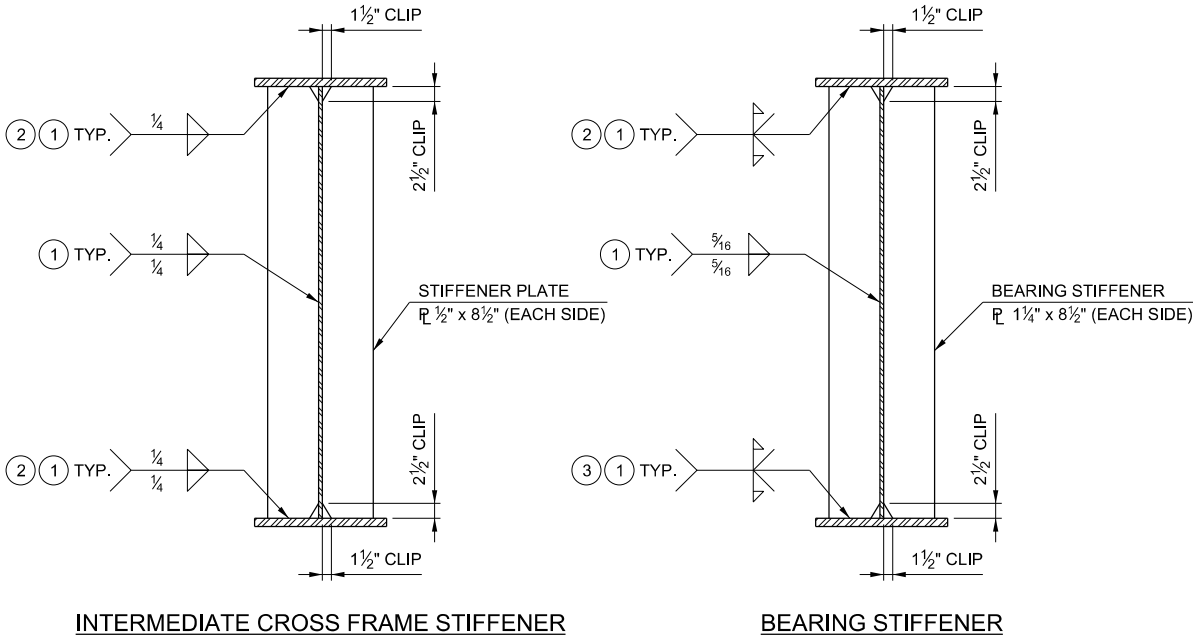
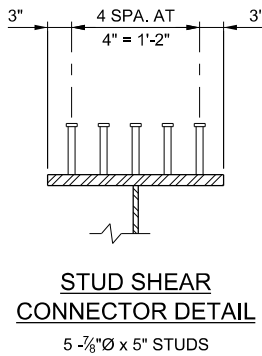
US 81 OVER UNION PACIFIC RAILROAD			KINGFISHER COUNTY		
DESIGN	GLF		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	EMW		PLATE GIRDER DETAILS - BRIDGE "A" AND "B"		
CHECKED	X				
APPROVED					
SQUAD	MacArthur		STATE JOB NO. 29849(04)		SHEET NO. B024

REVISIONS		
REV. NO.	DESCRIPTION	DATE



**STAY-IN-PLACE STEEL DECK FORM
FLANGE CONNECTION DETAIL**

DO NOT WELD TO THE TOP FLANGE OR STUDS.
REPORT ANY ARC STRIKE, WELD SPLATTER OR
WELDING ON TOP FLANGE TO BRIDGE ENGINEER
IMMEDIATELY.

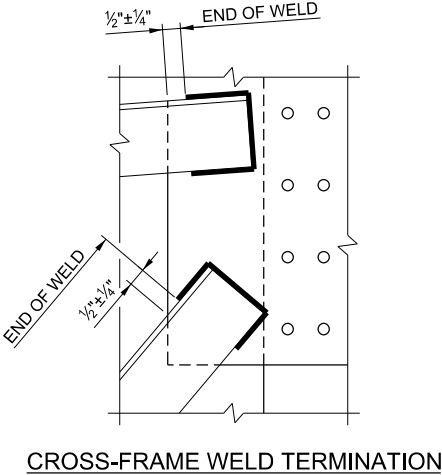
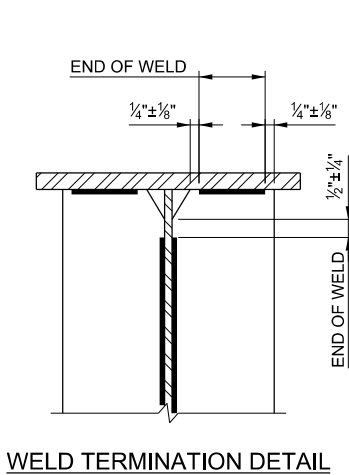


INTERMEDIATE CROSS FRAME STIFFENER

BEARING STIFFENER

- ① SEE WELD TERMINATION DETAILS.
- ② TIGHT FIT.
- ③ MILL TO BEAR.

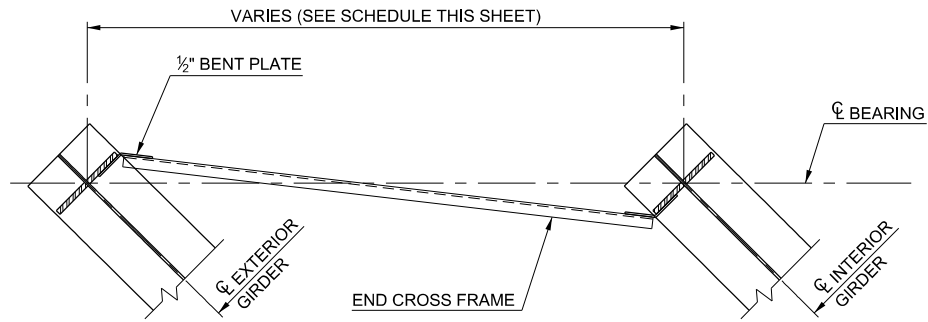
PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.



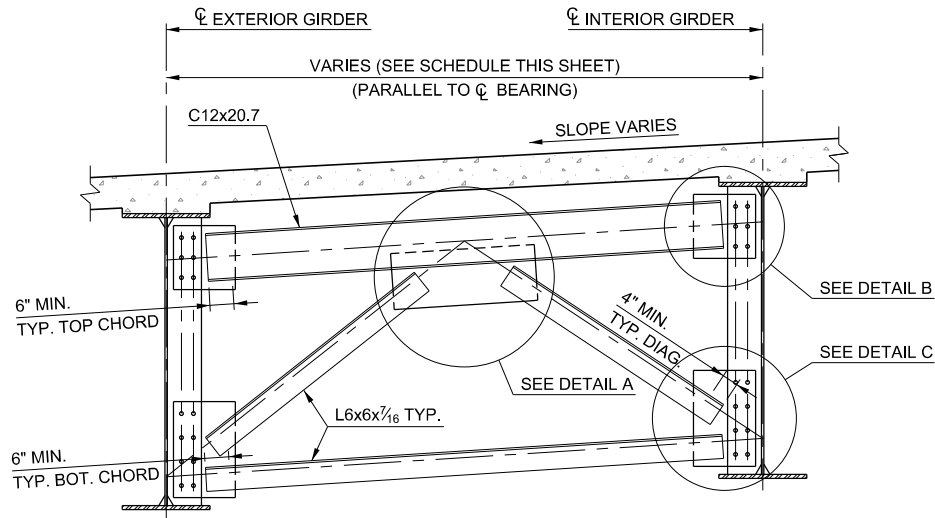
US 81 OVER UNION PACIFIC RAILROAD KINGFISHER COUNTY

DESIGN	GLF	OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN	EMW	PLATE GIRDER AND CROSS FRAME DETAILS - BRIDGE "A" AND "B"	
CHECKED	X	STATE JOB NO. 29849(04)	
APPROVED		SHEET NO. B025	
SQUAD	MacArthur		

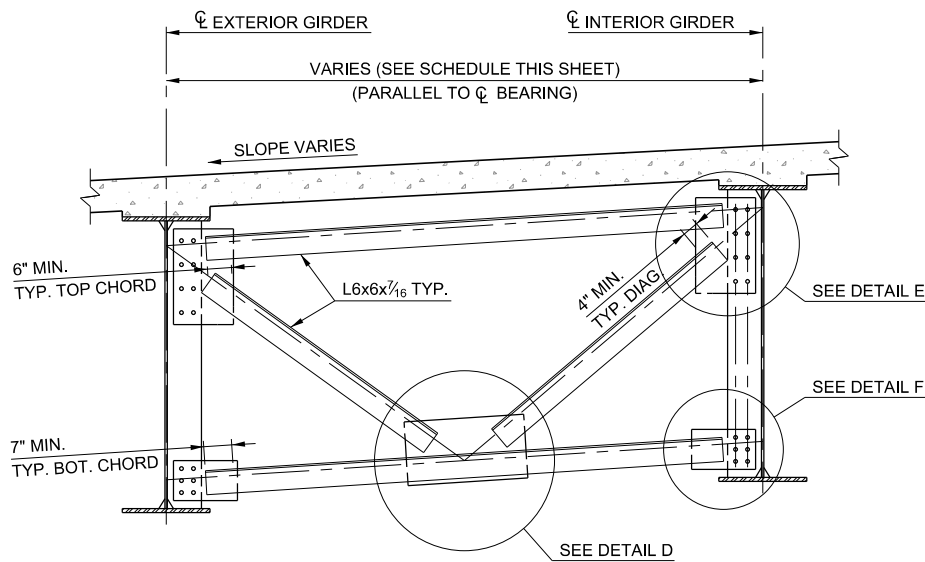
PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-A-super3.dgn



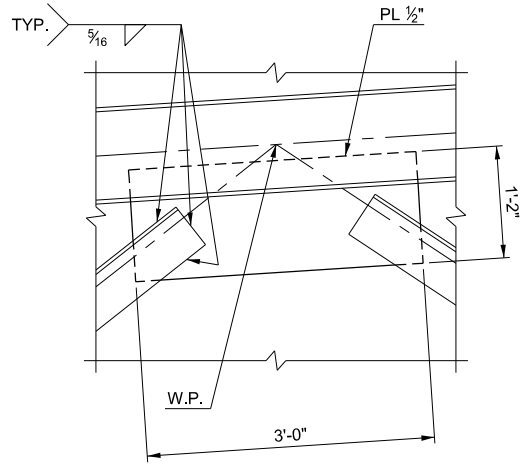
END CROSS FRAME PLAN



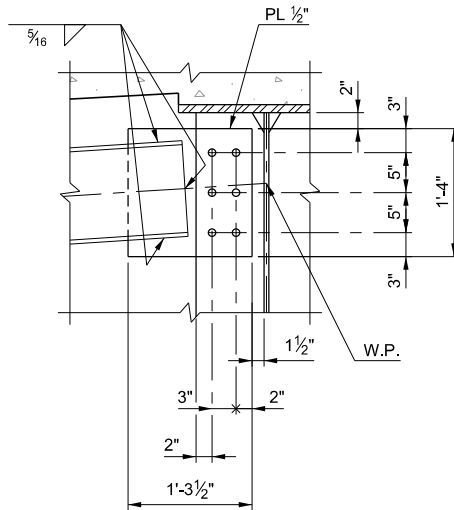
END CROSS FRAME DETAIL AT ABUTMENTS



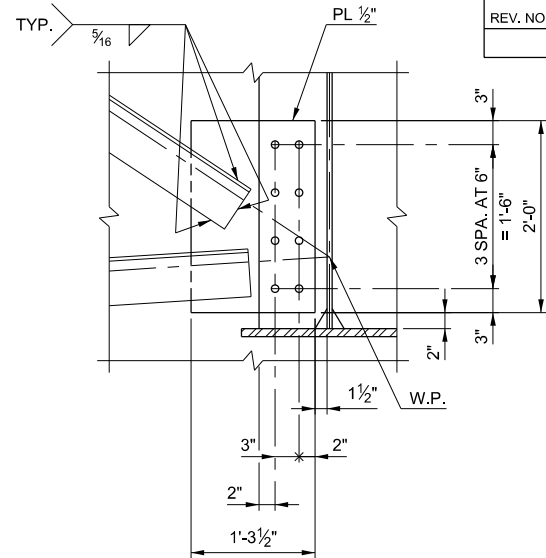
END CROSS FRAME DETAIL AT PIERS



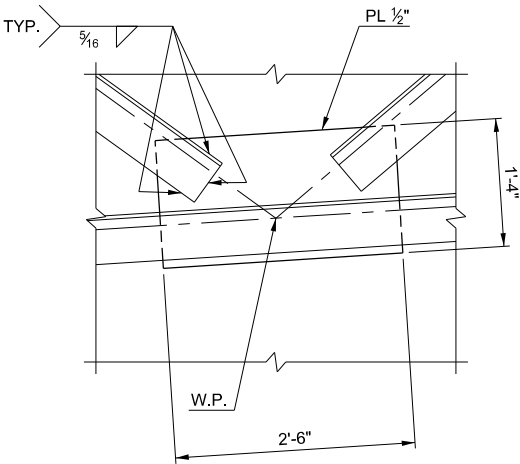
DETAIL A



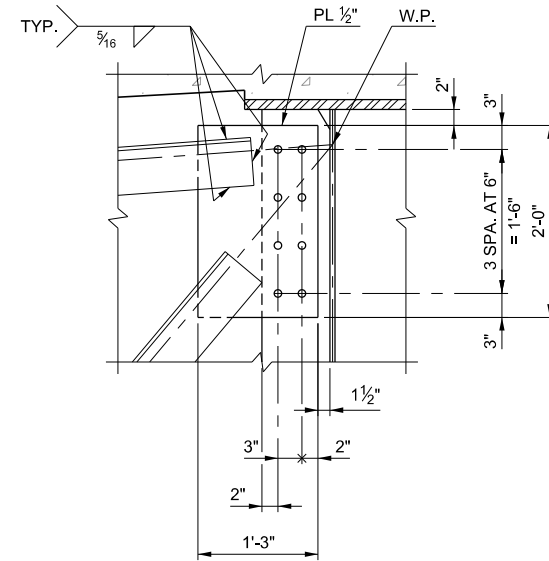
DETAIL B



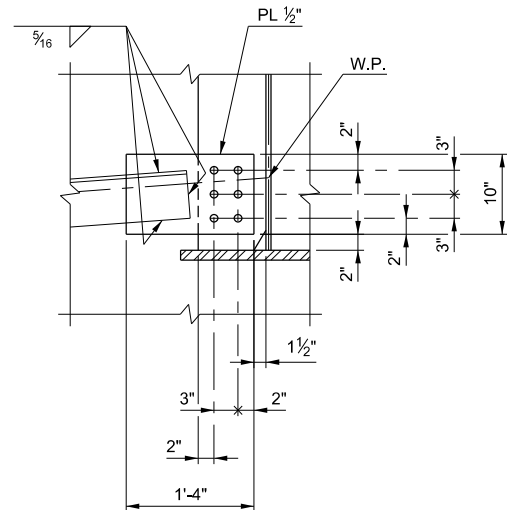
DETAIL C



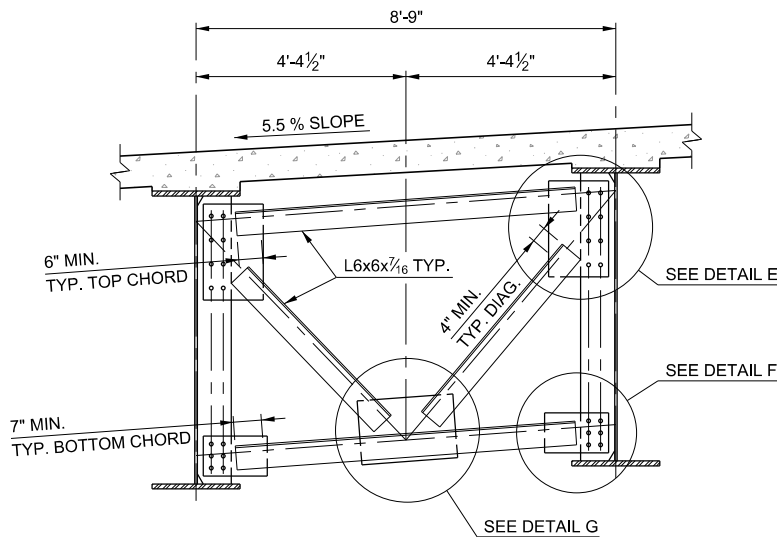
DETAIL D



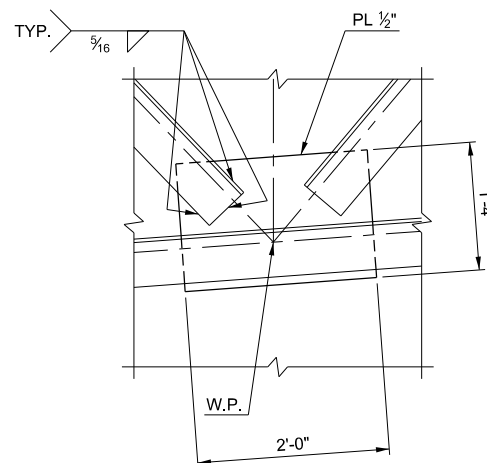
DETAIL E



DETAIL F



INTERMEDIATE CROSS FRAME



DETAIL G

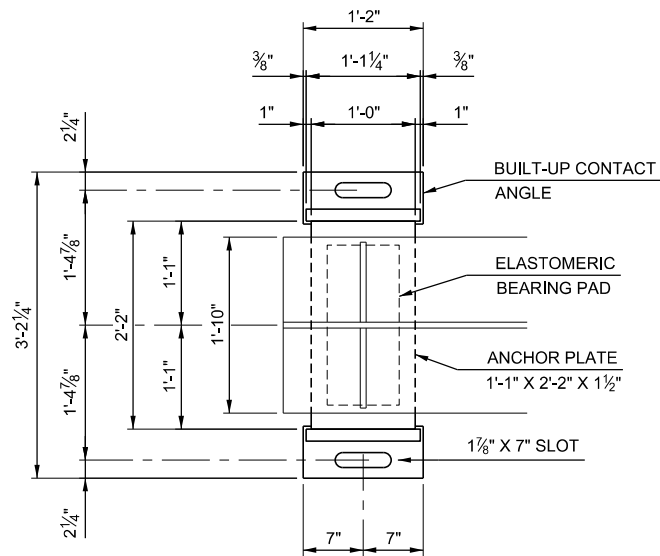
REVISIONS		
REV. NO.	DESCRIPTION	DATE

PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

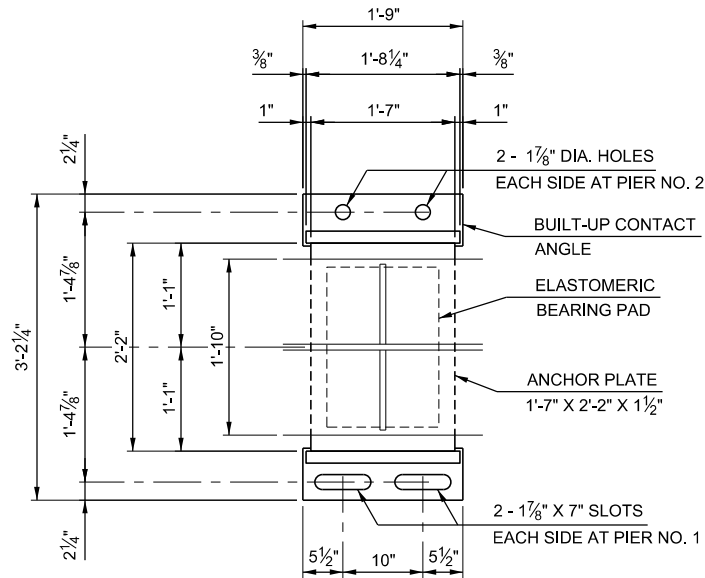
DIMENSION SCHEDULE		
LOCATION		DIMENSION
BRIDGE "A"	BETWEEN GIRDER 1 AND 2	12'-5 1/4"
	BETWEEN GIRDER 2 AND 3	12'-4 3/4"
	BETWEEN GIRDER 3 AND 4	12'-4 1/4"
	BETWEEN GIRDER 4 AND 5	12'-3 3/8"
BRIDGE "B"	BETWEEN GIRDER 6 AND 7	12'-5 1/8"
	BETWEEN GIRDER 7 AND 8	12'-4 3/4"
	BETWEEN GIRDER 8 AND 9	12'-4 1/4"
	BETWEEN GIRDER 9 AND 10	12'-3 3/8"

US 81 OVER UNION PACIFIC RAILROAD			KINGFISHER COUNTY		
DESIGN	GLF		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	EMW				
CHECKED	X		CROSS FRAME DETAILS - BRIDGE "A" AND "B"		
APPROVED					
SQUAD	MacArthur		STATE JOB NO. 29849(04)		SHEET NO. B026

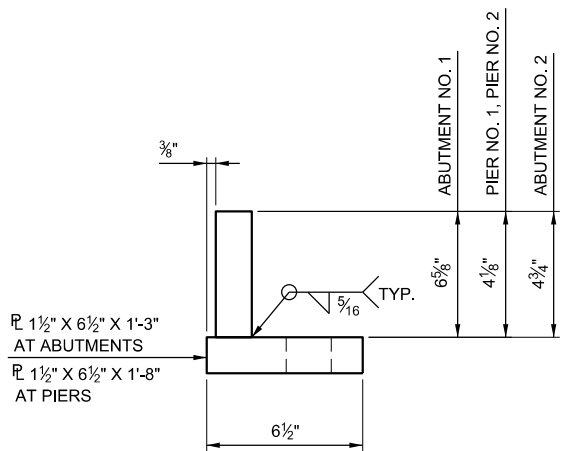
REVISIONS		
REV. NO.	DESCRIPTION	DATE



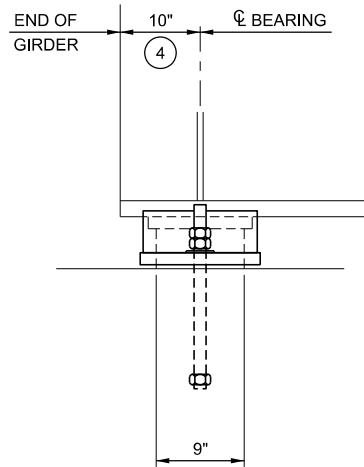
- ① ABUTMENT NO. 1
60 DUROMETER HARDNESS
9" X 6 3/8" X 1'-10"
NINE (9) - 1/2" INNER LAYERS
TWO (2) - 5/16" COVER LAYERS
TEN (10) - 8 3/4" X 1/8" X 1'-9 3/4" LAMINATE PLATES
- ② ABUTMENT NO. 2
60 DUROMETER HARDNESS
9" X 4 1/2" X 1'-10"
SIX (6) - 1/2" INNER LAYERS
TWO (2) - 5/16" COVER LAYERS
SEVEN (7) - 8 3/4" X 1/8" X 1'-9 3/4" LAMINATE PLATES



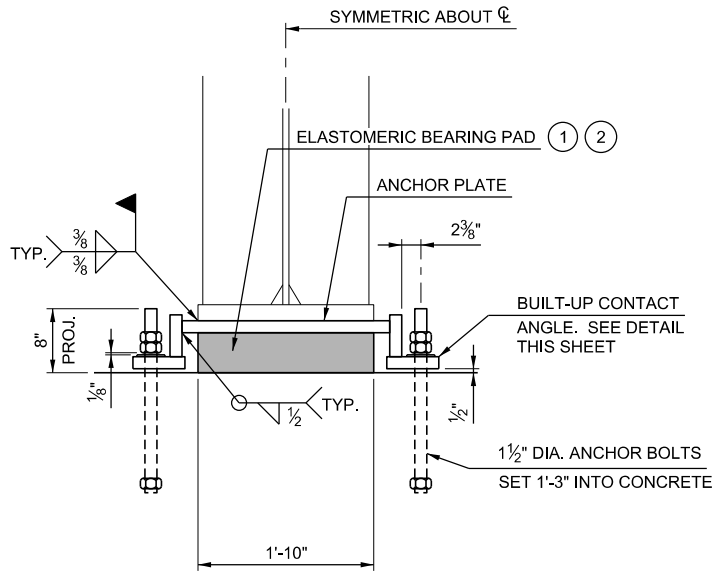
- ③ PIER NO. 1 AND PIER NO. 2
60 DUROMETER HARDNESS
1'-4" X 3 3/8" X 1'-10"
FIVE (5) - 1/2" INNER LAYERS
TWO (2) - 5/16" COVER LAYERS
SIX (6) - 1'-3 3/4" X 1/8" X 1'-9 3/4" LAMINATE PLATES



BUILT-UP CONTACT
ANGLE DETAIL

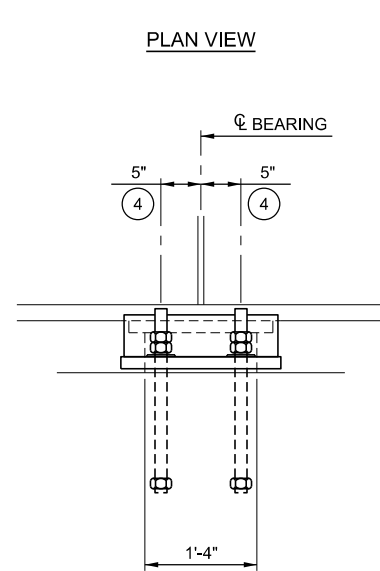


SIDE VIEW

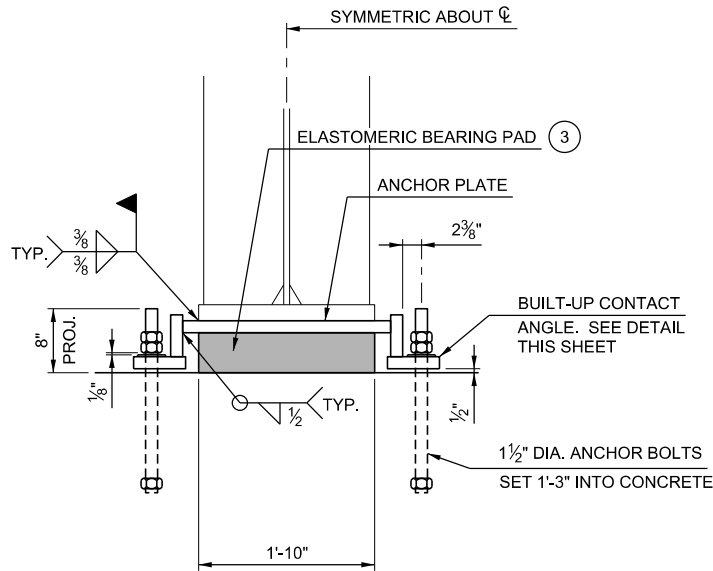


END VIEW

EXP. BEARING ASSEMBLY AT ABUTMENT NO. 1
EXP. BEARING ASSEMBLY AT ABUTMENT NO. 2

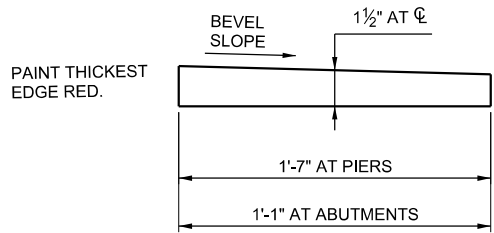


SIDE VIEW



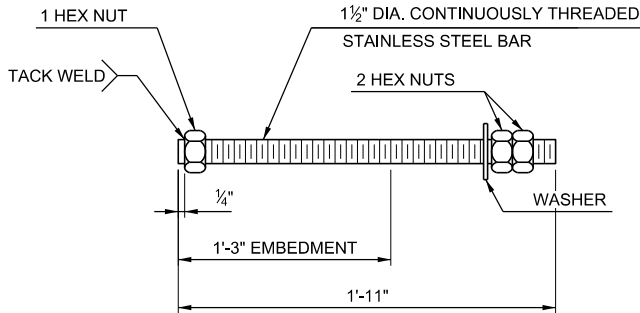
END VIEW

CONT. EXP. BEARING ASSEMBLY AT PIER NO. 1
FIX. BEARING ASSEMBLY AT PIER NO. 2



BEVELED ANCHOR PLATE DETAIL

BEVEL SLOPE SCHEDULE		
LOCATION	BRIDGE "A"	BRIDGE "B"
ABUTMENT NO. 1	0.0%	0.0%
PIER NO. 1	0.0%	0.0%
PIER NO. 2	1.0%	1.0%
ABUTMENT NO. 2	1.0%	1.0%



ANCHOR BOLT DETAIL

BEARING ASSEMBLY NOTES:

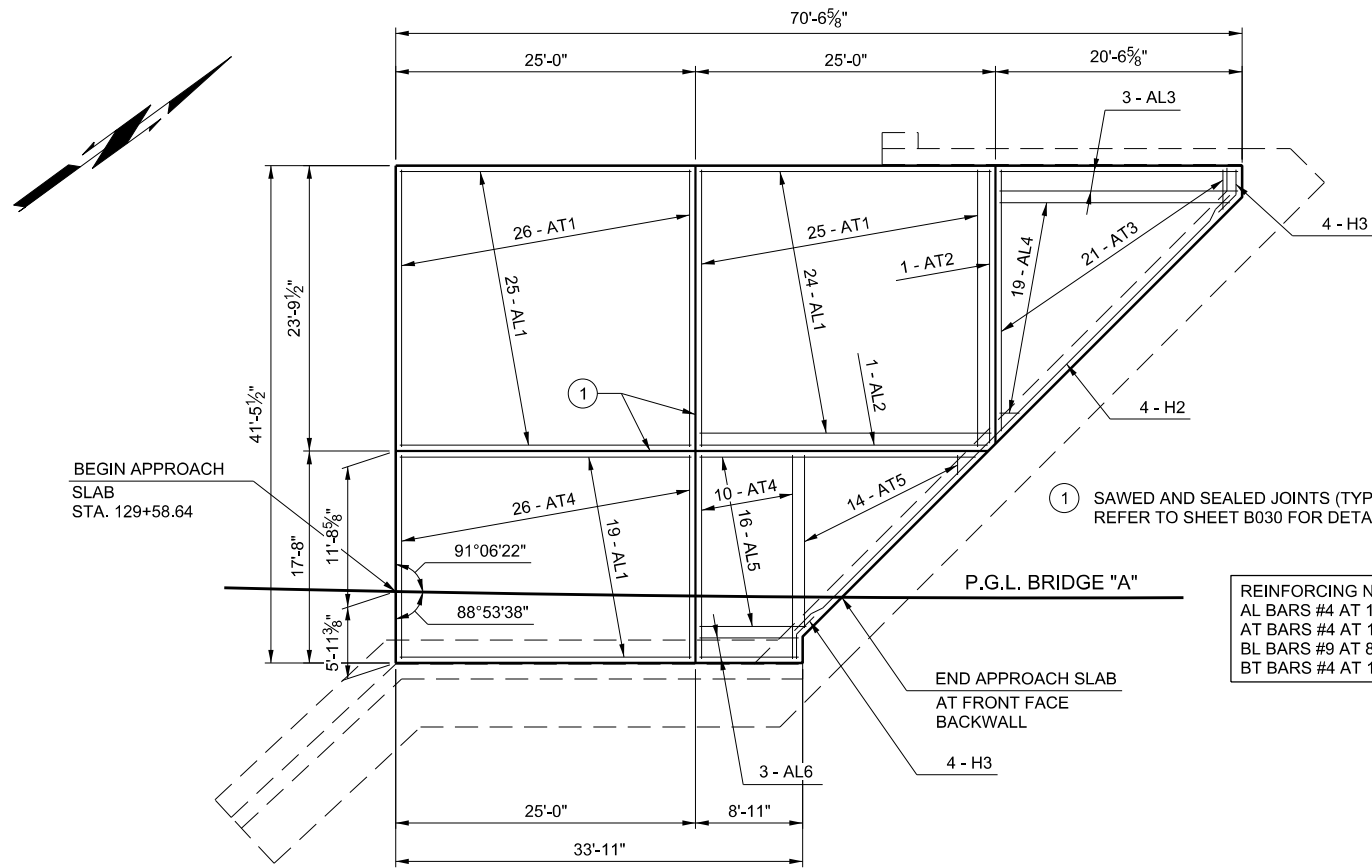
PROVIDE STRUCTURAL STEEL FOR ANCHOR PLATES AND CONTACT PLATES IN ACCORDANCE WITH ASTM A240 (AUSTENITIC STAINLESS STEEL, TYPE 316, CHARPY V-NOTCH TESTING NOT REQUIRED). FOR ANCHOR BOLTS, PROVIDE CONTINUOUSLY THREADED BARS IN ACCORDANCE WITH ASTM A320, CLASS 2, GRADE B8M (AUSTENITIC STAINLESS STEEL, TYPE 316, CHARPY V-NOTCH TESTING NOT REQUIRED). USE AUSTENITIC STAINLESS STEEL NUTS AND WASHERS CONFORMING TO ASTM A194, GRADE 8M AND ASTM A320, RESPECTIVELY. PERFORM ALL WELDING CONSISTENT WITH PROCEDURES FOR STAINLESS STEEL.

PRELIMINARY PLANS

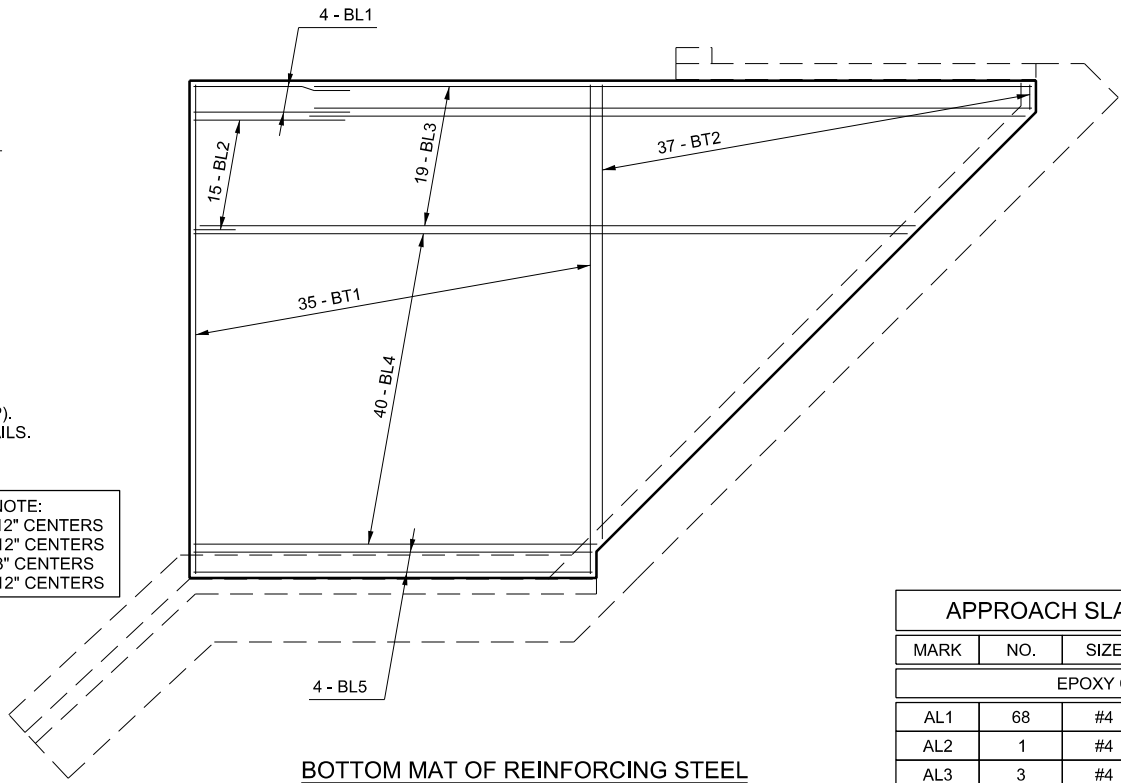
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

DESIGN	GLF		US 81 OVER UNION PACIFIC RAILROAD	KINGFISHER COUNTY
DRAWN	JLF		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
CHECKED	GLF		BEARING DETAILS - BRIDGE "A" AND "B"	
APPROVED				
SQUAD	MacArthur		STATE JOB NO. 29849(04)	SHEET NO. B027

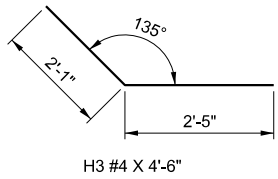
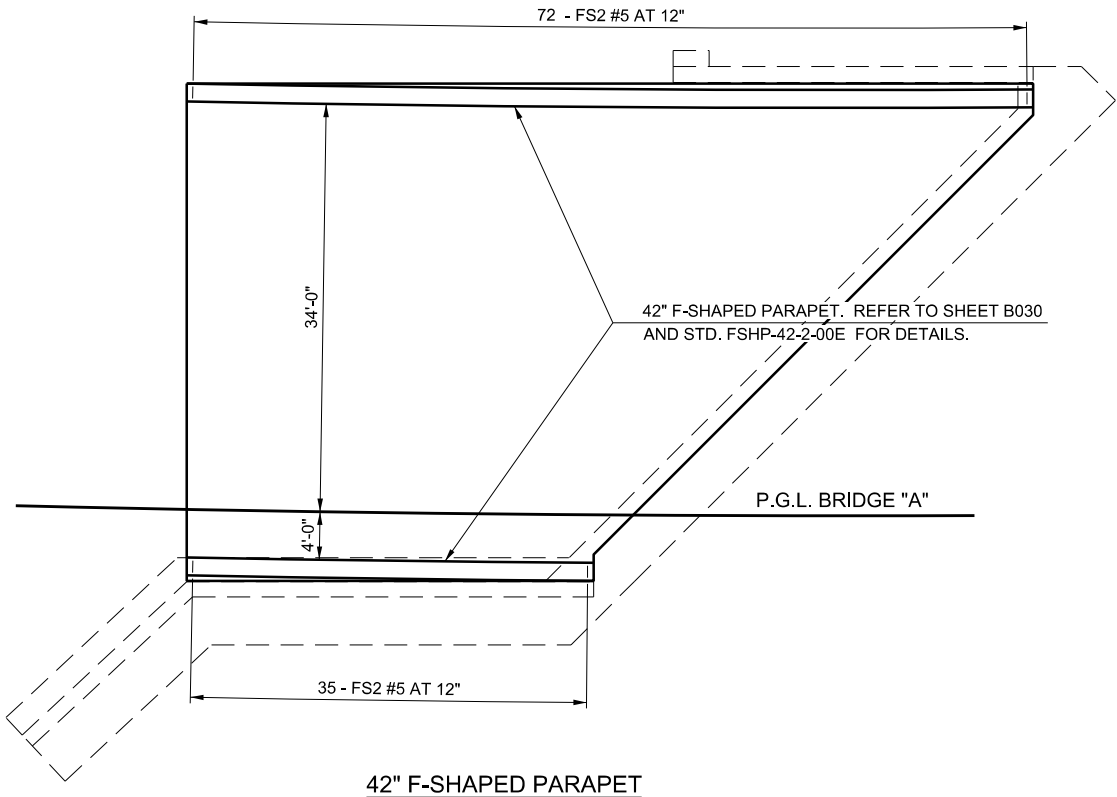
REVISIONS		
REV. NO.	DESCRIPTION	DATE



REINFORCING NOTE:
AL BARS #4 AT 12" CENTERS
AT BARS #4 AT 12" CENTERS
BL BARS #9 AT 8" CENTERS
BT BARS #4 AT 12" CENTERS



APPROACH SLAB NO. 1 BAR LIST - BRIDGE "A"					
MARK	NO.	SIZE	FORM	LENGTH	REMARKS
EPOXY COATED REINFORCING BARS					
AL1	68	#4	STR.	24'-8"	
AL2	1	#4	STR.	24'-2"	
AL3	3	#4	STR.	20'-2"	
AL4	19	#4	STR.	10'-10" AVG.	2'-0" TO 19'-8"
AL5	16	#4	STR.	16'-7" AVG.	9'-4" TO 23'-10"
AL6	3	#4	STR.	8'-7"	
AT1	51	#4	STR.	23'-6"	
AT2	1	#4	STR.	22'-11"	
AT3	21	#4	STR.	13'-0" AVG.	3'-4" TO 22'-8"
AT4	36	#4	STR.	17'-4"	
AT5	14	#4	STR.	8'-2" AVG.	2'-0" TO 14'-4"
BL1	4	#9	STR.	13'-3"	
BL2	15	#9	STR.	8'-4" AVG.	3'-8" TO 13'-0"
BL3	19	#9	STR.	60'-0"	
BL4	40	#9	STR.	47'-1" AVG.	34'-2" TO 60'-0"
BL5	4	#9	STR.	33'-7"	
BT1	35	#4	STR.	41'-2"	
BT2	37	#4	STR.	20'-3" AVG.	2'-5" TO 38'-1"
FS2	107	#5	BNT.	7'-4"	
H2	4	#4	STR.	51'-10"	
H3	8	#4	BNT.	4'-6"	



APPROACH SLAB QUANTITIES - BRIDGE "A"				
DESCRIPTION	UNIT	APP. SLAB NO. 1	APP. SLAB NO. 2	TOTAL
APPROACH SLAB	SY	241.50	245.30	486.80
SAW-CUT GROOVING	SY	220.30	225.30	445.60
42" F-SHAPED PARAPET	LF	104.50	106.80	211.30
WATER REPELLENT (VISUALLY INSPECTED)	SY	51.00	52.00	103.00

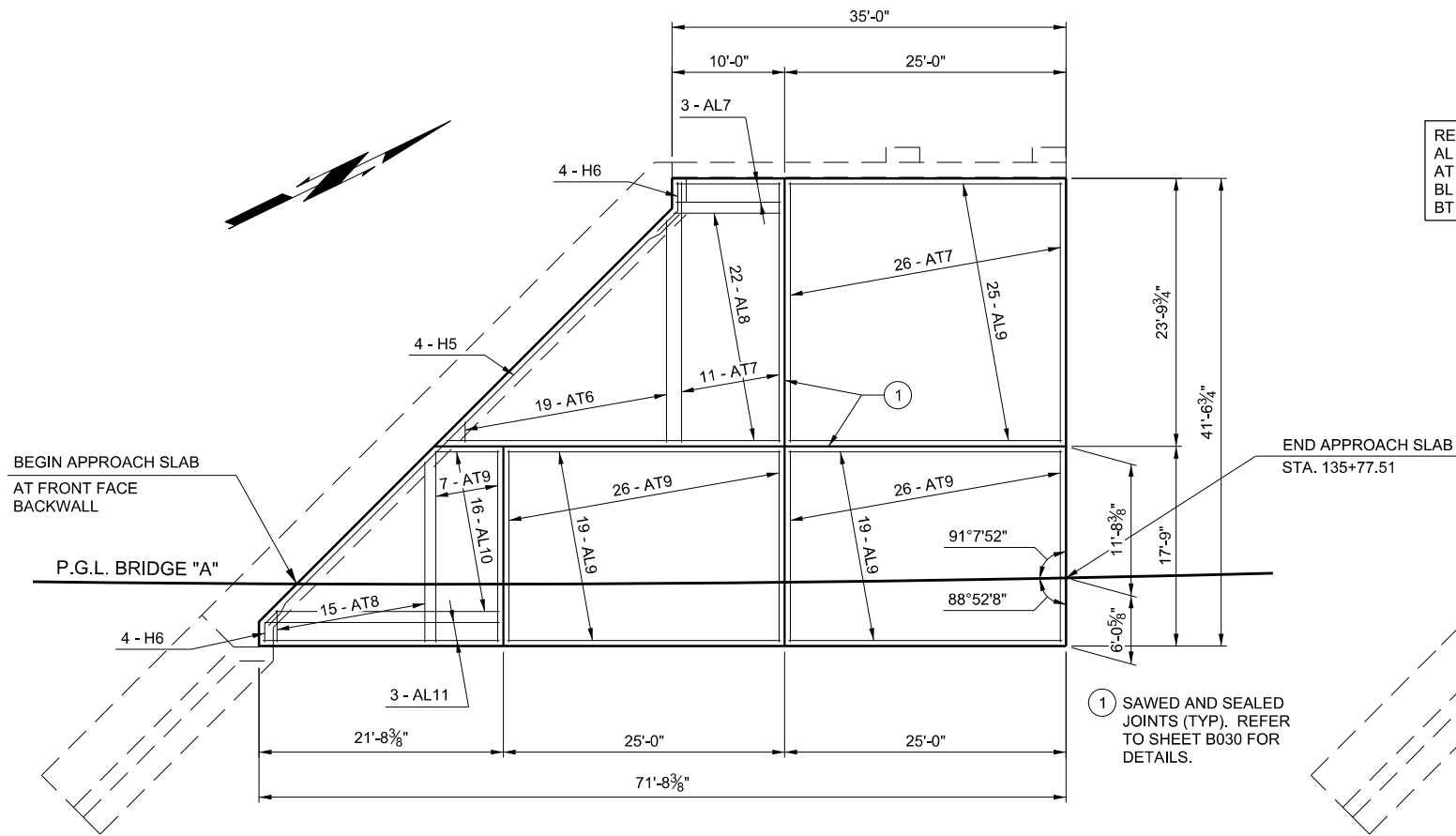
PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

DESIGN	GLF
DRAWN	JLF
CHECKED	GLF
APPROVED	
SQUAD	MacArthur

US 81 OVER UNION PACIFIC RAILROAD		KINGFISHER COUNTY	
OKLAHOMA DEPARTMENT OF TRANSPORTATION			
APPROACH SLAB NO. 1 - BRIDGE "A"			
STATE JOB NO. 29849(04)		SHEET NO. B028	

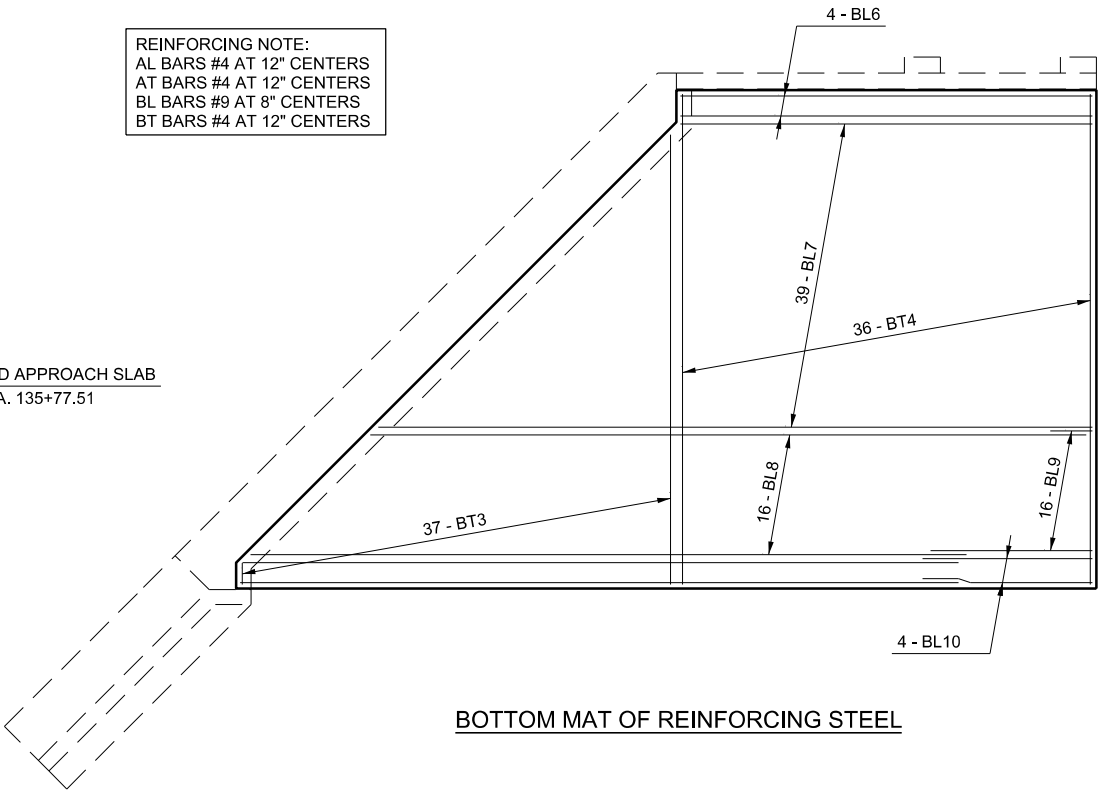
PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-a-approach1.dgn

REVISIONS		
REV. NO.	DESCRIPTION	DATE

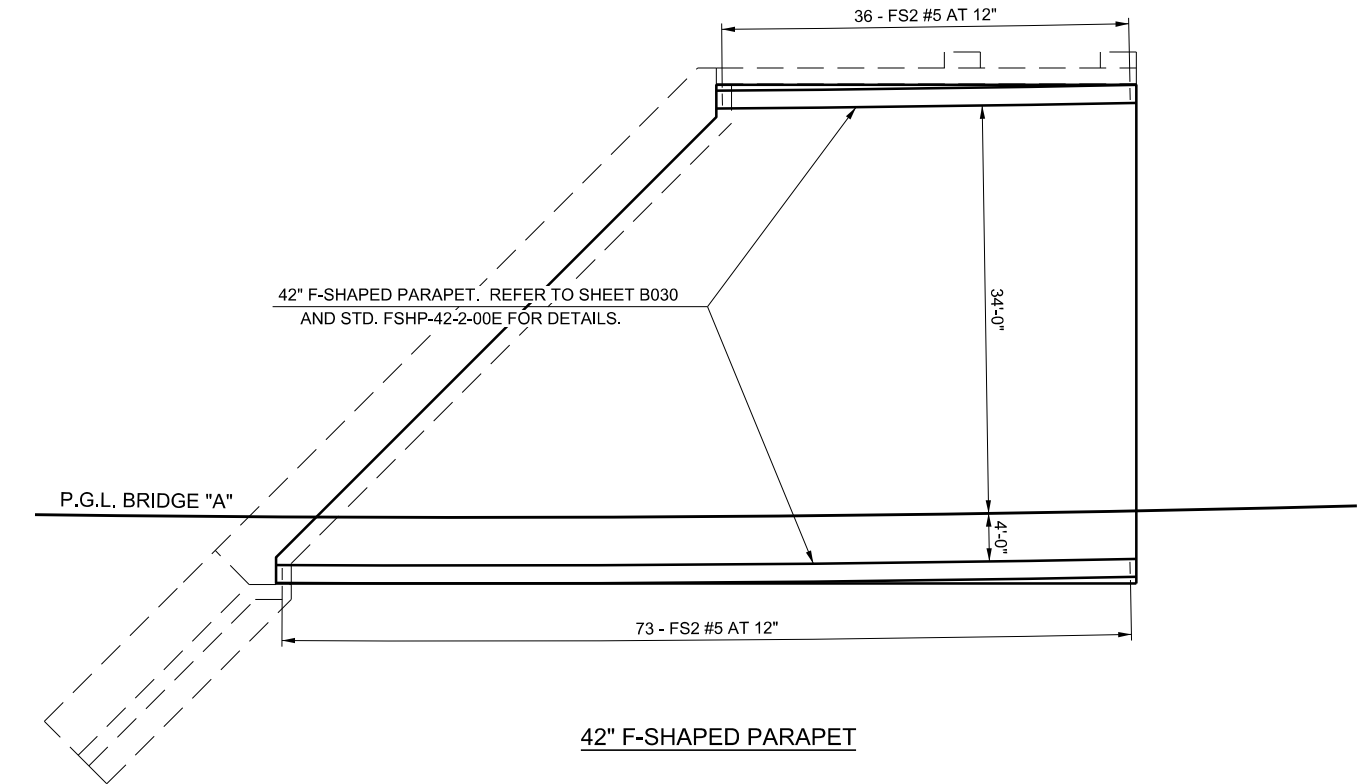


SAWED AND SEALED JOINTS AND TOP MAT OF REINFORCING STEEL

REINFORCING NOTE:
AL BARS #4 AT 12" CENTERS
AT BARS #4 AT 12" CENTERS
BL BARS #9 AT 8" CENTERS
BT BARS #4 AT 12" CENTERS



BOTTOM MAT OF REINFORCING STEEL



42" F-SHAPED PARAPET

APPROACH SLAB NO. 2 BAR LIST - BRIDGE "A"					
MARK	NO.	SIZE	FORM	LENGTH	REMARKS
EPOXY COATED REINFORCING BARS					
AL7	3	#4	STR.	9'-8"	
AL8	22	#4	STR.	20'-3" AVG.	10'-0" TO 30'-6"
AL9	63	#4	STR.	24'-8"	
AL10	16	#4	STR.	13'-2" AVG.	5'-11" TO 20'-5"
AL11	3	#4	STR.	21'-4"	
AT6	19	#4	STR.	10'-11" AVG.	2'-0" TO 19'-10"
AT7	37	#4	STR.	23'-6"	
AT8	15	#4	STR.	9'-9" AVG.	2'-11" TO 16'-7"
AT9	59	#4	STR.	17'-5"	
BL6	4	#9	STR.	34'-8"	
BL7	39	#9	STR.	47'-4" AVG.	34'-8" TO 60'-0"
BL8	16	#9	STR.	60'-0"	
BL9	16	#9	STR.	8'-8" AVG.	3'-8" TO 13'-8"
BL10	4	#9	STR.	14'-4"	
BT3	37	#4	STR.	19'-9" AVG.	1'-11" TO 37'-7"
BT4	36	#4	STR.	41'-3"	
FS2	109	#5	BNT	7'-4"	
H5	4	#4	STR.	51'-11"	
H6	8	#4	BNT.	4'-6"	

PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

US 81 OVER UNION PACIFIC RAILROAD KINGFISHER COUNTY

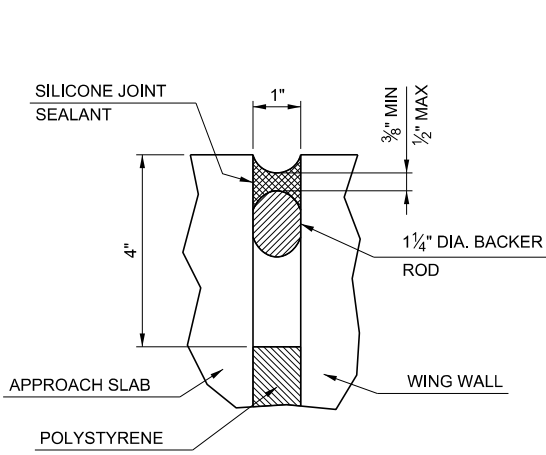
DESIGN	GLF
DRAWN	JLF
CHECKED	GLF
APPROVED	
SQUAD	MacArthur

OKLAHOMA DEPARTMENT OF TRANSPORTATION

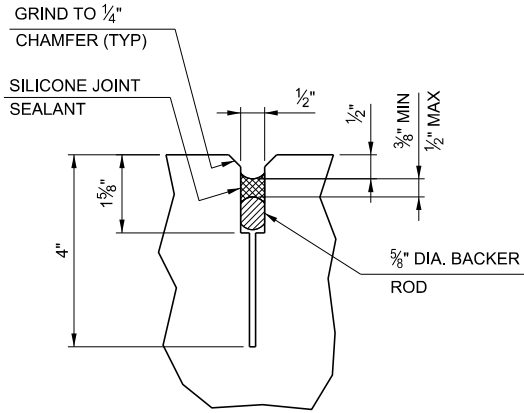
APPROACH SLAB NO. 2 - BRIDGE "A"

STATE JOB NO. 29849(04) SHEET NO. B029

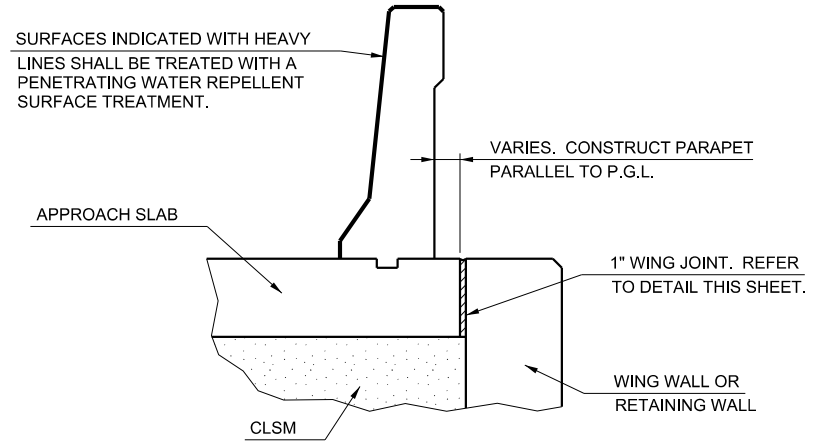
REVISIONS		
REV. NO.	DESCRIPTION	DATE



WING JOINT

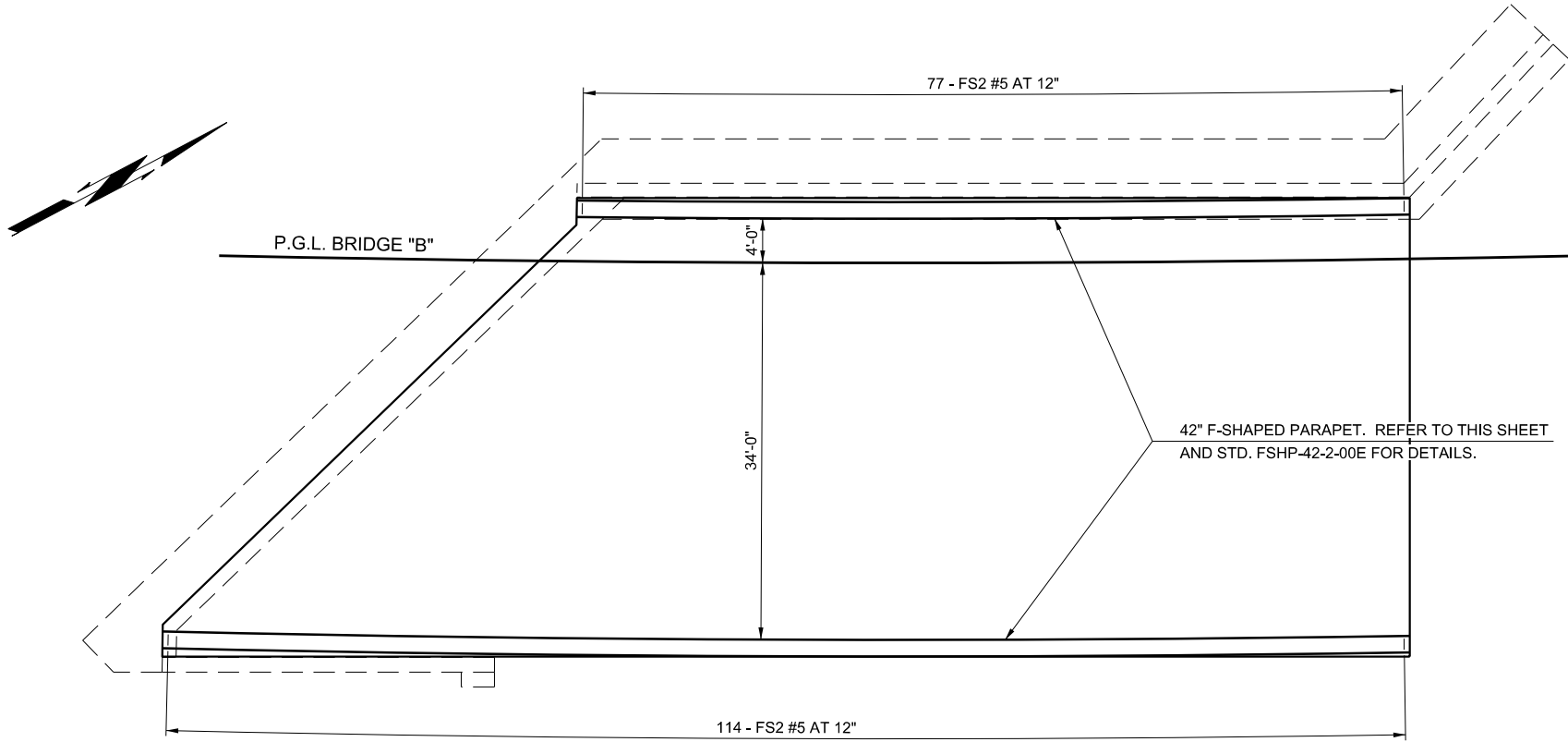


SAWED AND SEALED JOINT

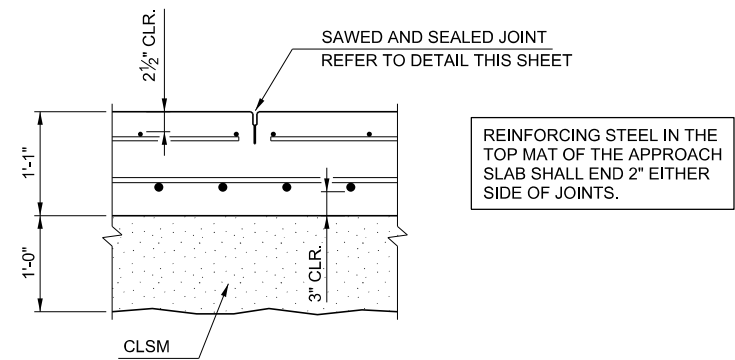


APPROACH SLAB AND PARAPET AT ABUTMENT WING WALL AND WATER REPELLENT PLACEMENT

REFER TO STD. FSHP-42-2-00E FOR ADDITIONAL INFORMATION.



42" F-SHAPED PARAPET ON APPROACH SLAB NO. 2 - BRIDGE "B"



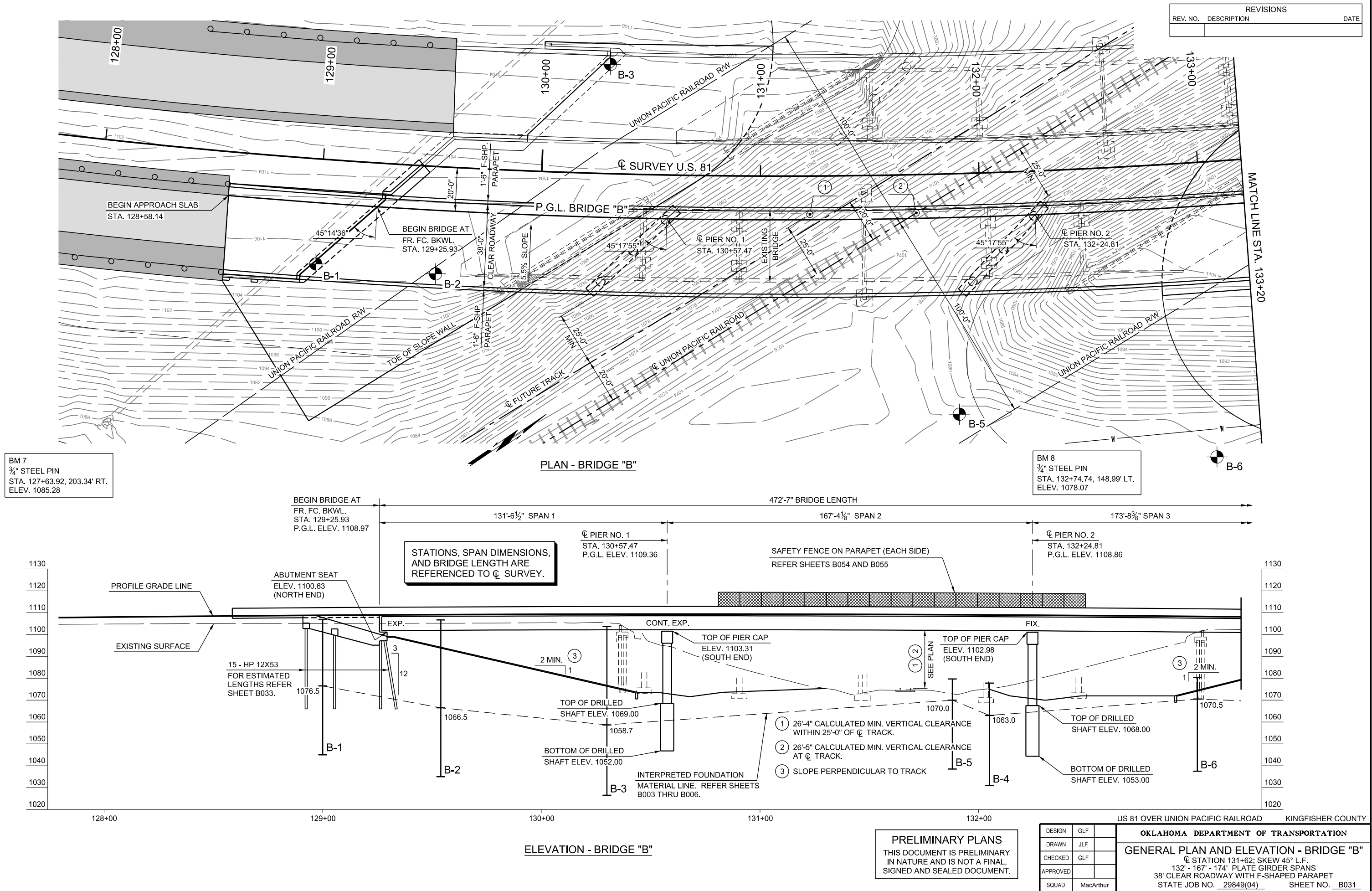
SECTION THRU APPROACH SLAB AND CLSM

PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

DESIGN		GLF		US 81 OVER UNION PACIFIC RAILROAD		KINGFISHER COUNTY
DRAWN		JLF		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
CHECKED		GLF		APPROACH SLAB DETAILS - BRIDGE "A" AND "B"		
APPROVED						
SQUAD		MacArthur		STATE JOB NO. 29849(04)		SHEET NO. B030

PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-AB-approach-details.dgn

PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-B-gp1.dgn



BM 7
3/4" STEEL PIN
STA. 127+63.92, 203.34' RT.
ELEV. 1085.28

BM 8
3/4" STEEL PIN
STA. 132+74.74, 148.99' LT.
ELEV. 1078.07

STATIONS, SPAN DIMENSIONS,
AND BRIDGE LENGTH ARE
REFERENCED TO CL SURVEY.

- 26'-4" CALCULATED MIN. VERTICAL CLEARANCE
WITHIN 25'-0" OF CL TRACK.
- 26'-5" CALCULATED MIN. VERTICAL CLEARANCE
AT CL TRACK.
- SLOPE PERPENDICULAR TO TRACK

[illegible]

DESIGN DATA

SPECIFICATION

AASHTO LRFD BRIDGE DESIGN SPECIFICATION,
CUSTOMARY U.S. UNITS, SEVENTH EDITION.

LOADING

HL-93 OR OKLAHOMA OVERLOAD TRUCK	
HL-93 INVENTORY RATING FACTOR	X.XX
HL-93 OPERATING RATING FACTOR	X.XX

DESIGN DEAD LOAD INCLUDES AN ALLOWANCE OF 20 PSF FOR A FUTURE WEARING SURFACE.

UNIT STRESSES

CLASS A CONCRETE	F'C = 3,000 PSI
CLASS AA CONCRETE	F'C = 4,000 PSI
REINFORCING STEEL (GR. 60)	FY = 60,000 PS
STRUCTURAL STEEL (GR. 50W)	FY = 50,000 PS
STAINLESS STEEL A240 (TYPE 316)	FY = 30,000 PS

FOUNDATION DATA

ABUTMENTS

FACTORED PILE REACTION		
ABUTMENT NO. 1	95	T
ABUTMENT NO. 2	110	T

ALL ABUTMENT PILING SHALL BE DRIVEN THROUGH THE COMPACTED FILL. PILING SHALL BE DRIVEN TO POINT BEARING ON SOLID FOUNDATION MATERIAL AT THE APPROXIMATE ELEVATION SHOWN ON THE PLANS. IF THE AXIAL LOAD RESISTANCE IS NOT OBTAINED AT THIS ELEVATION, DRIVING SHALL CONTINUE UNTIL THE AXIAL LOAD RESISTANCE IS OBTAINED. THE LENGTH OF STEEL PILING SHOWN ON THE PLANS IS FOR ESTIMATING PURPOSES ONLY.

PIER NO. 1 (60" DIAMETER DRILLED SHAFTS)

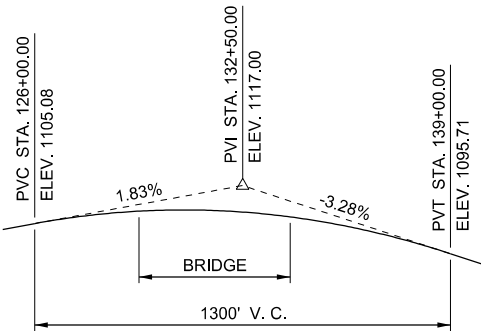
FACTORED REACTION	628.0	T/SHAFT
UNIT BEARING RESISTANCE	30.1	T/SF
BEARING RESISTANCE FACTOR	0.7	
FACTORED BEARING RESISTANCE	413.2	T/SHAFT
NOMINAL UNIT FRICTION RESISTANCE	6.4	T/SF
FRICTION RESISTANCE FACTOR	0.45	
FACTORED FRICTION RESISTANCE	384.5	T/SHAFT
DEPTH OF ROCK NEGLECTED FOR FRICTION	4.0	FT
MINIMUM EMBEDMENT INTO ROCK	12.5	FT
TOTAL FACTORED RESISTANCE	798	T/SHAFT

PIER NO. 2 (60" DIAMETER DRILLED SHAFTS)

FACTORED REACTION	733.0	T/SHAFT
UNIT BEARING RESISTANCE	30.1	T/SF
BEARING RESISTANCE FACTOR	0.7	
FACTORED BEARING RESISTANCE	413.2	T/SHAFT
NOMINAL UNIT FRICTION RESISTANCE	6.4	T/SF
FRICTION RESISTANCE FACTOR	0.45	
FACTORED FRICTION RESISTANCE	384.5	T/SHAFT
DEPTH OF ROCK NEGLECTED FOR FRICTION	4.0	FT
MINIMUM EMBEDMENT INTO ROCK	12.5	FT
TOTAL FACTORED RESISTANCE	798	T/SHAFT

INDEX OF SHEETS - BRIDGE "B"

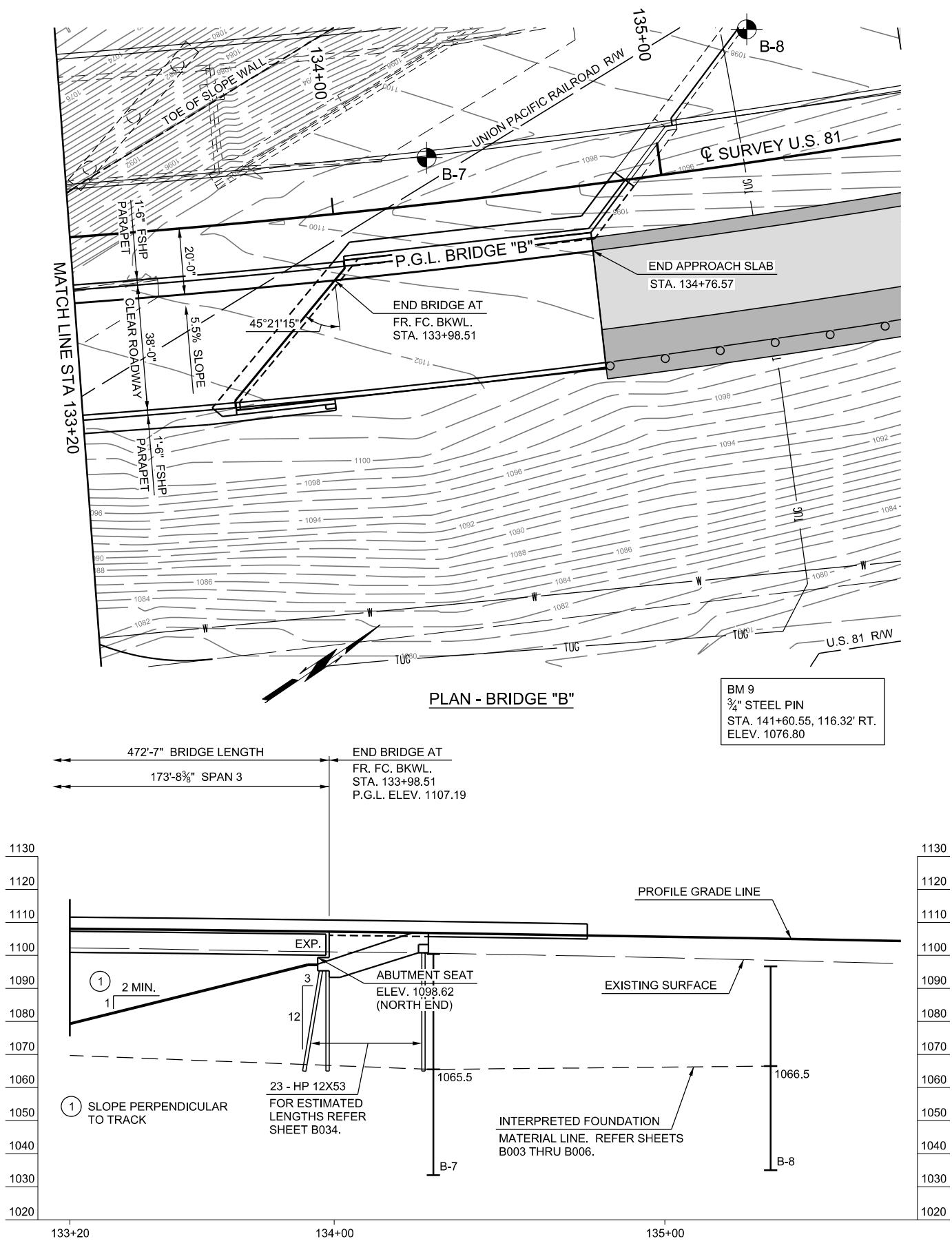
AB01 GENERAL NOTES (BRIDGE)
AB02 UNION PACIFIC RAILROAD NOTES
AB03 PAY QUANTITIES (BRIDGE)
AB04 MINIMUM HORIZONTAL CLEARANCE
PERPENDICULAR TO RAILROAD
B003 FOUNDATION BORING LOG SHEET (1 OF 4)
B004 FOUNDATION BORING LOG SHEET (2 OF 4)
B005 FOUNDATION BORING LOG SHEET (3 OF 4)
B006 FOUNDATION BORING LOG SHEET (4 OF 4)
B009 SUBSTRUCTURE EXCAVATION AND PIPE UNDERDRAIN
ASSEMBLY DETAILS - BRIDGE "A" AND "B"
B018 PIER DETAILS - BRIDGE "A" AND "B"
B024 PLATE GIRDER DETAILS - BRIDGE "A" AND "B"
B025 PLATE GIRDER AND CROSS FRAME DETAILS -
BRIDGE "A" AND "B"
B026 CROSS FRAME DETAILS - BRIDGE "A" AND "B"
B027 BEARING DETAILS - BRIDGE "A" AND "B"
B030 APPROACH SLAB DETAILS - BRIDGE "A" AND "B"
B031 GENERAL PLAN AND ELEVATION - BRIDGE "B"
B032 GENERAL PLAN AND ELEVATION - BRIDGE "B"
B033 SUBSTRUCTURE LAYOUT AND SUMMARY OF
QUANTITIES - BRIDGE "B" (1 OF 2)
B034 SUBSTRUCTURE LAYOUT - BRIDGE "B" (2 OF 2)
B035 ABUTMENT NO. 1 - BRIDGE "B"
B036 ABUTMENT NO. 1 DETAILS - BRIDGE "B"
B037 ABUTMENT NO. 1 WING WALL DETAILS - BRIDGE "B"
B038 ABUTMENT NO. 2 BRIDGE SEAT - BRIDGE "B"
B039 ABUTMENT NO. 2 RETAINING WALL - BRIDGE "B"
B040 ABUTMENT NO. 2 DETAILS - BRIDGE "B"
B041 ABUTMENT NO. 2 WING WALL DETAILS - BRIDGE "B"
B042 PIER NO. 1 - BRIDGE "B"
B043 PIER NO. 2 - BRIDGE "B"
B044 TYPICAL CROSS SECTION AND LONGITUDINAL
SECTION - BRIDGE "B"
B045 SLAB REINFORCING PLAN - BRIDGE "B"
B046 SLAB DETAILS - BRIDGE "B"
B047 FRAMING PLAN - BRIDGE "B"
B048 PLATE GIRDER DETAILS - BRIDGE "B"
B049 APPROACH SLAB NO. 1 - BRIDGE "B"
B050 APPROACH SLAB NO. 2 - BRIDGE "B"
B051 SLOPE WALL PLAN AT SOUTH ABUTMENTS -
BRIDGE "A" AND "B"
B052 SLOPE WALL PLAN AT NORTH ABUTMENTS -
BRIDGE "A" AND "B"
B053 SLOPE WALL DETAILS - BRIDGE "A" AND "B"
B054 SAFETY FENCE ON PARAPET - BRIDGE "A" AND "B"
B055 SAFETY FENCE DETAILS - BRIDGE "A" AND "B"
B056 BRIDGE DECK FORMWORK BRACING
B057 DRAINS AT END OF BRIDGE



VERTICAL CURVE DATA

PRELIMINARY PLANS

THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.



ELEVATION - BRIDGE "B"

DESIGN	GLF	
DRAWN	JLF	
CHECKED	GLF	
APPROVED		
SQUAD	MacArthur	

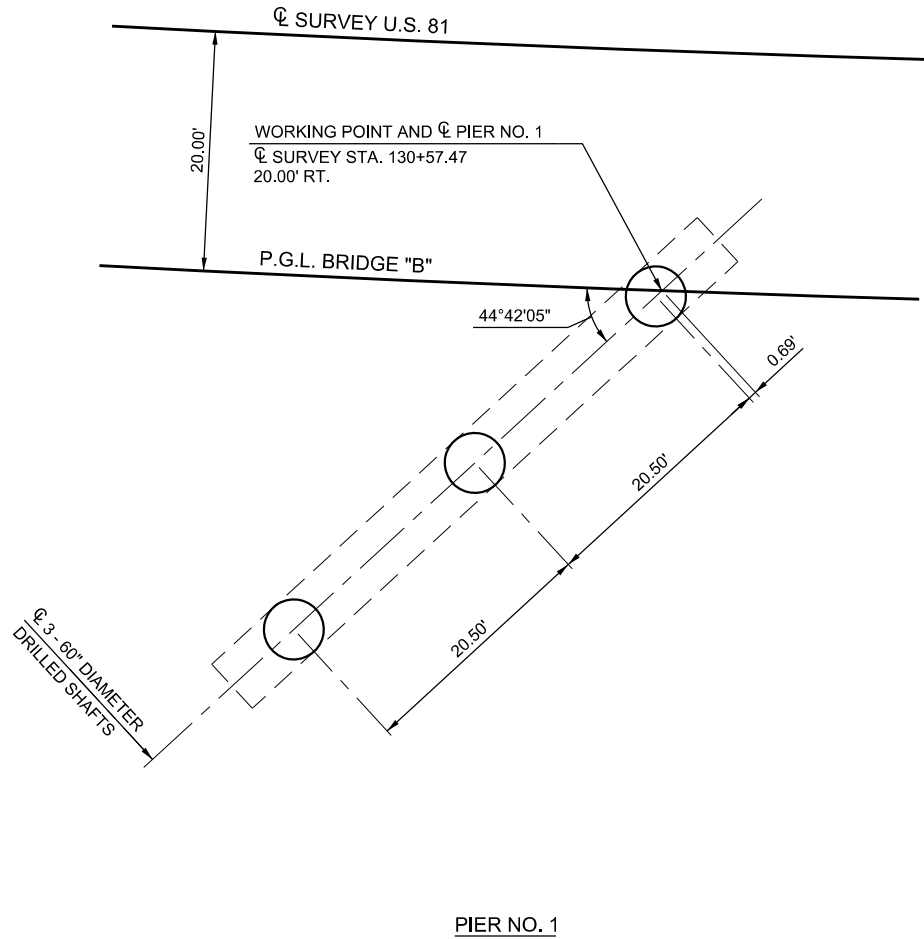
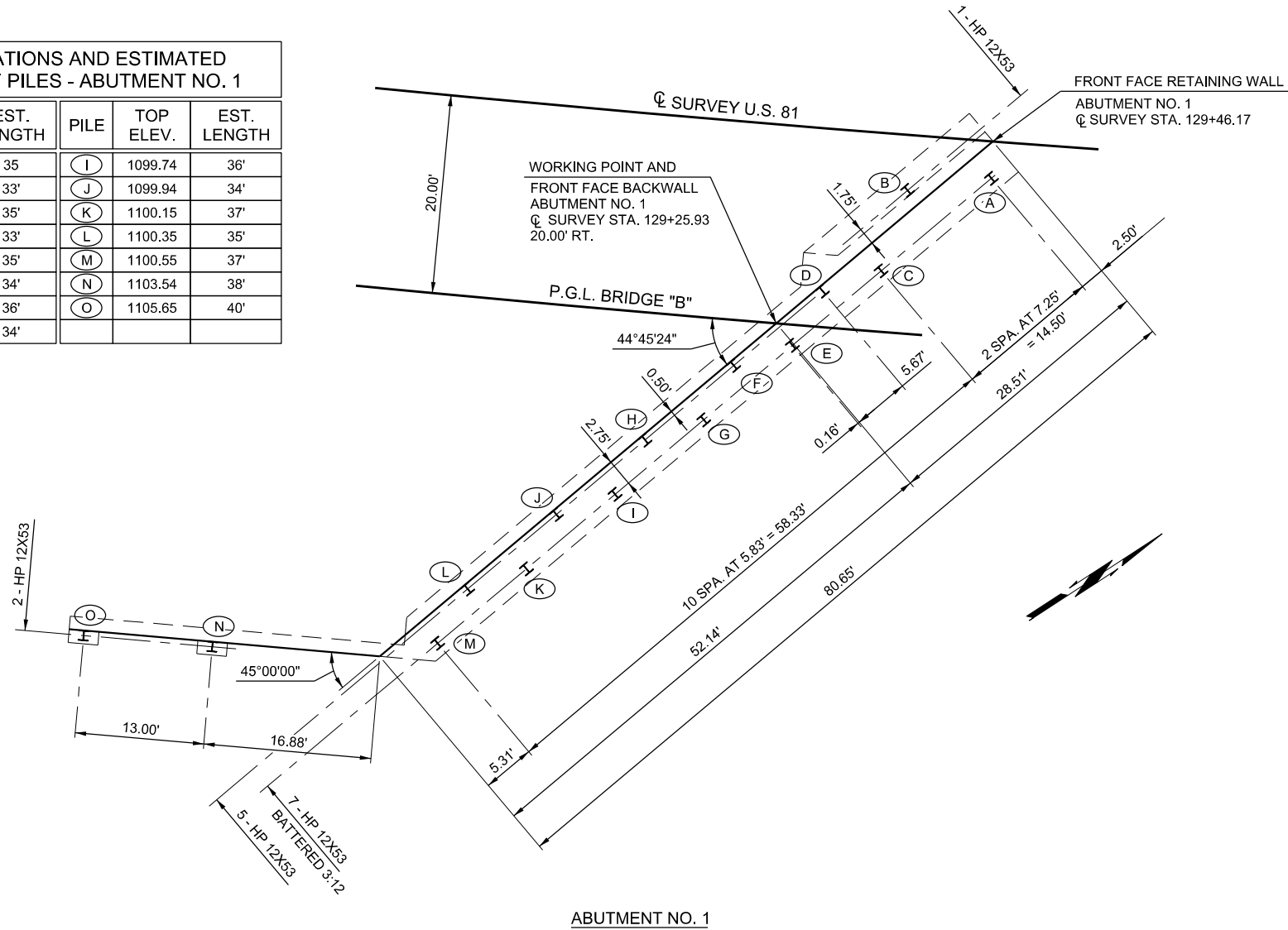
US 81 OVER UNION PACIFIC RAILROAD KINGFISHER COUNTY

OKLAHOMA DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION - BRIDGE "B"
 @ STATION 131+62; SKEW 45° L.F.
 132' - 167' - 174' PLATE GIRDER SPANS
 38' CLEAR ROADWAY WITH F-SHAPED PARAPET
 STATE JOB NO. 29849(04) SHEET NO. B032

REVISIONS		
REV. NO.	DESCRIPTION	DATE

TOP ELEVATIONS AND ESTIMATED LENGTHS OF PILES - ABUTMENT NO. 1					
PILE	TOP ELEV.	EST. LENGTH	PILE	TOP ELEV.	EST. LENGTH
(A)	1098.98	35'	(I)	1099.74	36'
(B)	1098.84	33'	(J)	1099.94	34'
(C)	1098.69	35'	(K)	1100.15	37'
(D)	1098.73	33'	(L)	1100.35	35'
(E)	1098.93	35'	(M)	1100.55	37'
(F)	1099.14	34'	(N)	1103.54	38'
(G)	1099.34	36'	(O)	1105.65	40'
(H)	1099.54	34'			



SUBSTRUCTURE LAYOUT - BRIDGE "B"

SUMMARY OF QUANTITIES - BRIDGE "B"							
DESCRIPTION	UNIT	ABUTMENTS	PIERS	SUPERSTR.	APP. SLABS	SLOPE WALL	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	426.00	-	-	-	-	426.00
CLSM BACKFILL	CY	435.00	-	-	-	-	435.00
APPROACH SLAB	SY	-	-	-	679.20	-	679.20
SAW-CUT GROOVING	SY	-	-	2,017.50	621.30	-	2,638.80
SEALED EXPANSION JOINT	LF	-	-	114.40	-	-	114.40
42" F-SHAPED PARAPET	LF	-	-	955.80	294.50	-	1,250.30
STRUCTURAL STEEL	LB	-	-	992,800.00	-	-	992,800.00
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA	-	-	5.00	-	-	5.00
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA	-	-	15.00	-	-	15.00
CLASS AA CONCRETE	CY	-	-	510.40	-	-	510.40
CLASS A CONCRETE	CY	299.60	186.40	-	-	-	486.00
SLOPE WALL (5")	SY	-	-	-	-	4,630.00	4,630.00
REINFORCING STEEL	LB	-	2,540.00	-	-	-	2,540.00
EPOXY COATED REINFORCING STEEL	LB	32,160.00	37,730.00	161,270.00	-	-	231,160.00
PILES, FURNISHED (HP 12X43)	LF	1,305.00	-	-	-	-	1,305.00
PILES, DRIVEN (HP 12X53)	LF	1,305.00	-	-	-	-	1,305.00

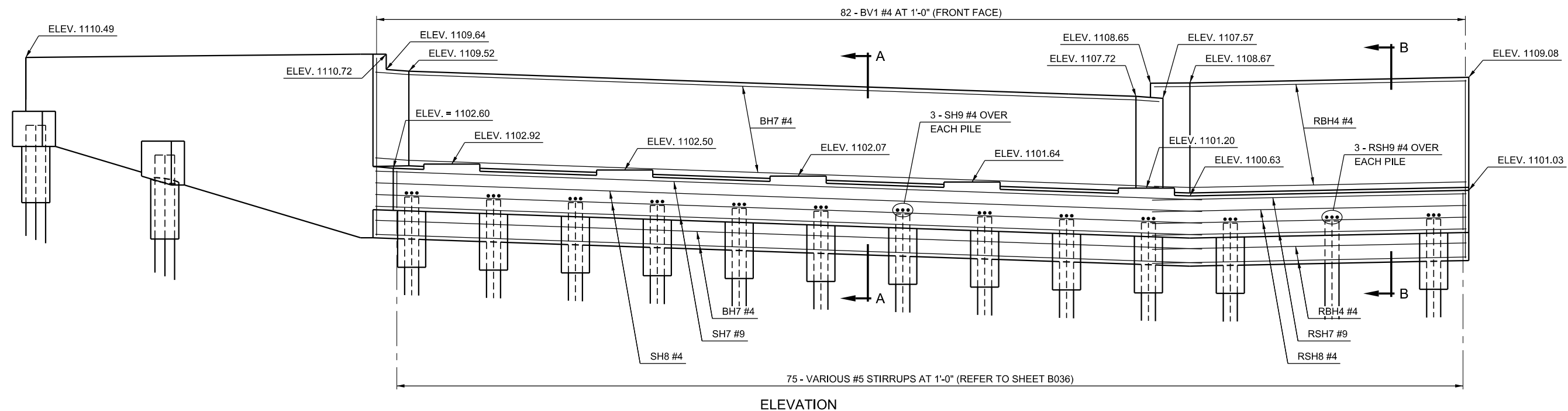
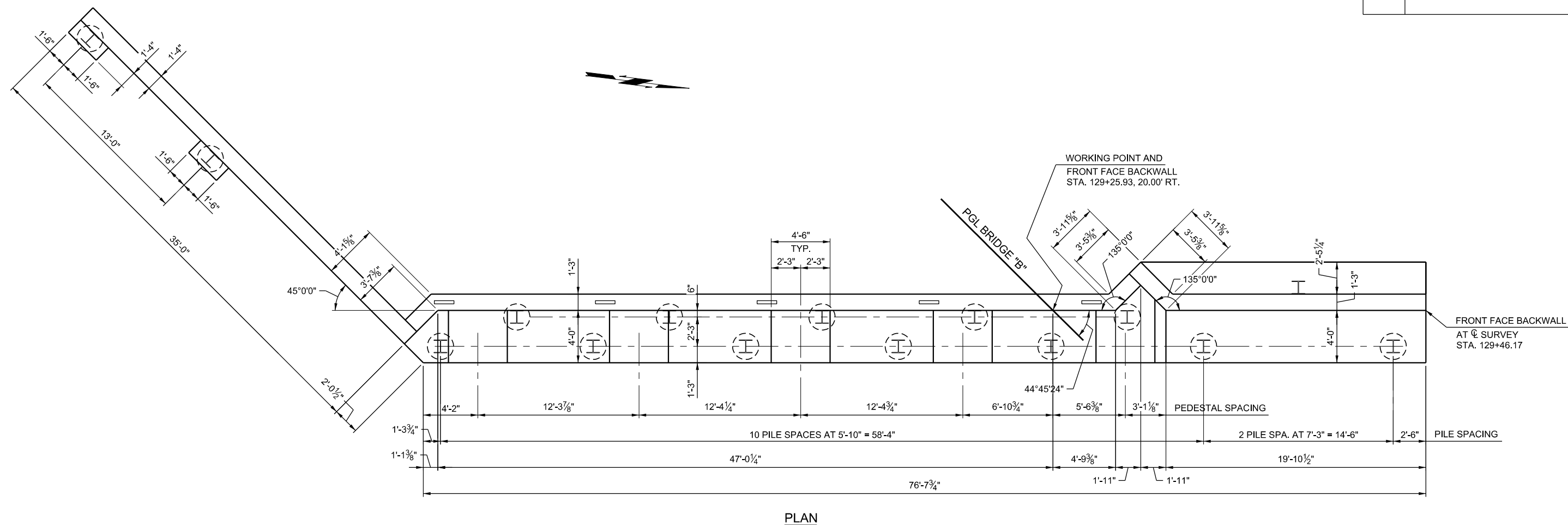
SUMMARY OF QUANTITIES - BRIDGE "B" (CONTINUED)							
DESCRIPTION	UNIT	ABUTMENTS	PIERS	SUPERSTR.	APP. SLABS	SLOPE WALL	TOTAL
PILE SPLICE, H-PILE (NON-BIDDABLE)	EA	-	-	-	-	-	1.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	349.00	206.00	1,182.00	144.00	-	1,881.00
DRILLED SHAFTS 60" DIAMETER	LF	-	96.00	-	-	-	96.00
CROSSHOLE SONIC LOGGING	EA	-	2.00	-	-	-	2.00
SEALER CRACK PREPARATION	LF	-	-	112.40	-	-	112.40
SEALER RESIN	GAL	-	-	1.50	-	-	1.50
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	177.00	-	-	-	600.00	777.00
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	100.00	-	-	-	80.00	180.00
REMOVAL OF EXISTING BRIDGE STRUCTURE	LSUM	-	-	-	-	-	1.00

PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

DESIGN	GLF	
DRAWN	JLF	
CHECKED	GLF	
APPROVED		
SQUAD	MacArthur	

US 81 OVER UNION PACIFIC RAILROAD		KINGFISHER COUNTY	
OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SUBSTRUCTURE LAYOUT AND SUMMARY OF QUANTITIES - BRIDGE "B" (1 OF 2)			
STATE JOB NO. 29849(04)		SHEET NO. B033	

REVISIONS		
REV. NO.	DESCRIPTION	DATE



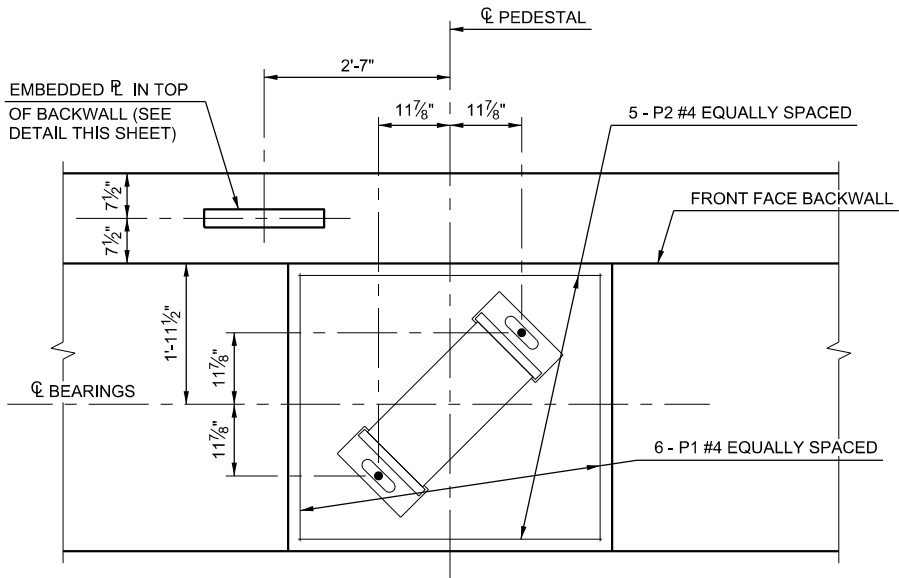
REBAR IS SHOWN IN FRONT FACES ONLY.
REFER TO SHEET B036 FOR ADDITIONAL
REBAR PLACEMENT DETAILS.

PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

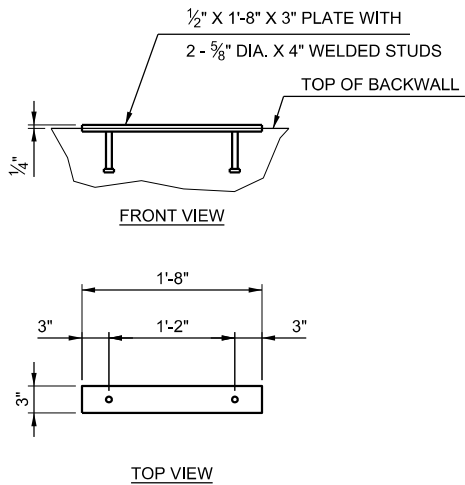
DESIGN	GLF	
DRAWN	JLF	
CHECKED	GLF	
APPROVED		
SQUAD	MacArthur	

US 81 OVER UNION PACIFIC RAILROAD		KINGFISHER COUNTY	
OKLAHOMA DEPARTMENT OF TRANSPORTATION			
ABUTMENT NO. 1 - BRIDGE "B"			
STATE JOB NO. 29849(04)		SHEET NO. B035	

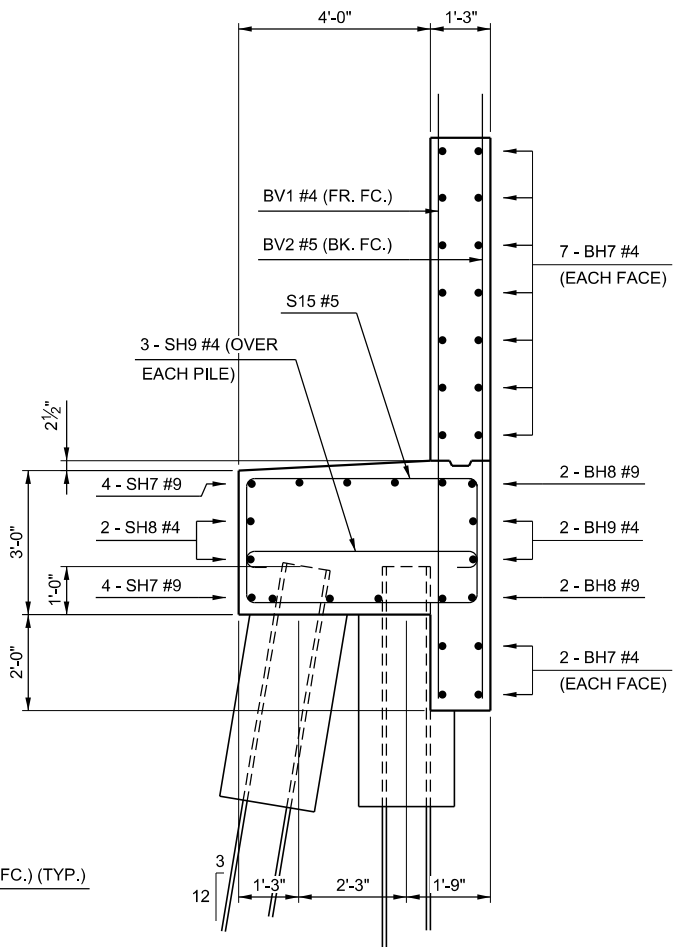
REVISIONS		
REV. NO.	DESCRIPTION	DATE



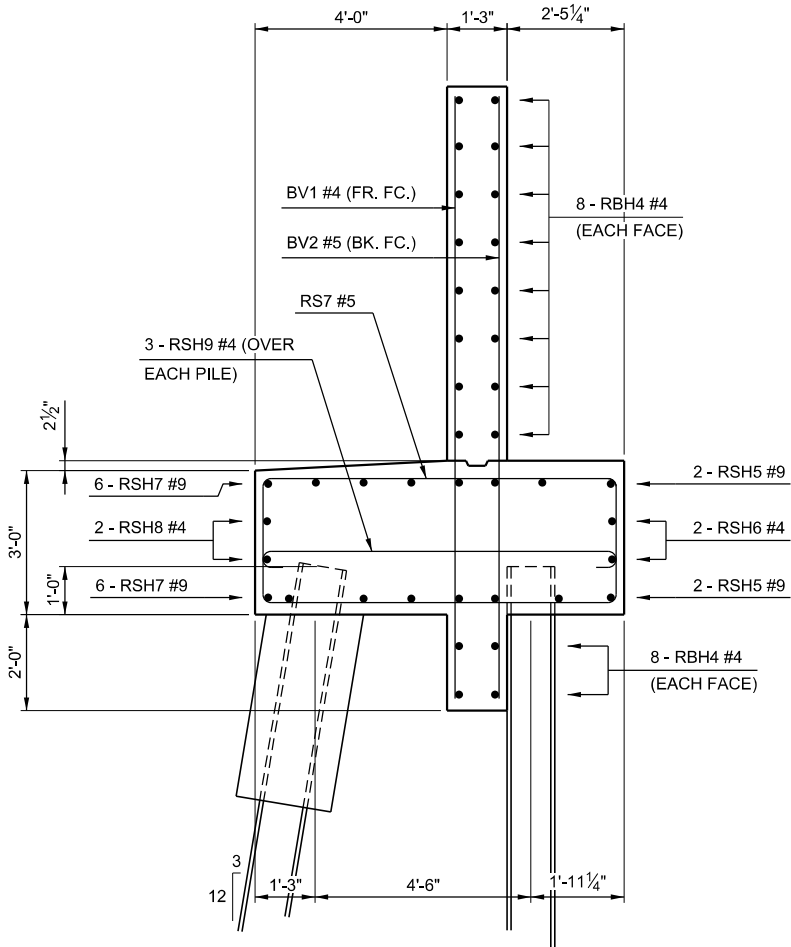
ANCHOR BOLT, EMBEDDED PLATE, AND
PEDESTAL REINFORCING LAYOUT



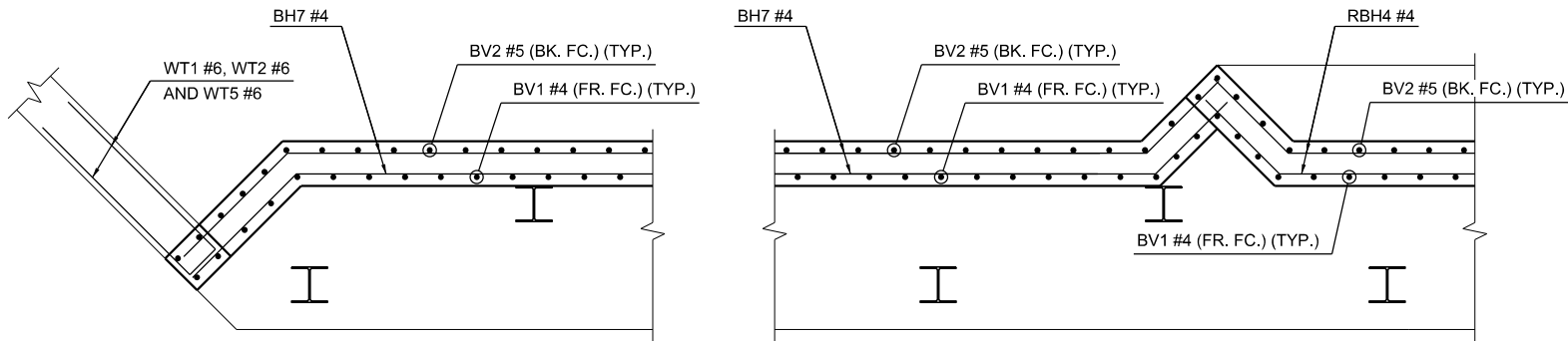
EMBEDDED PLATE DETAIL



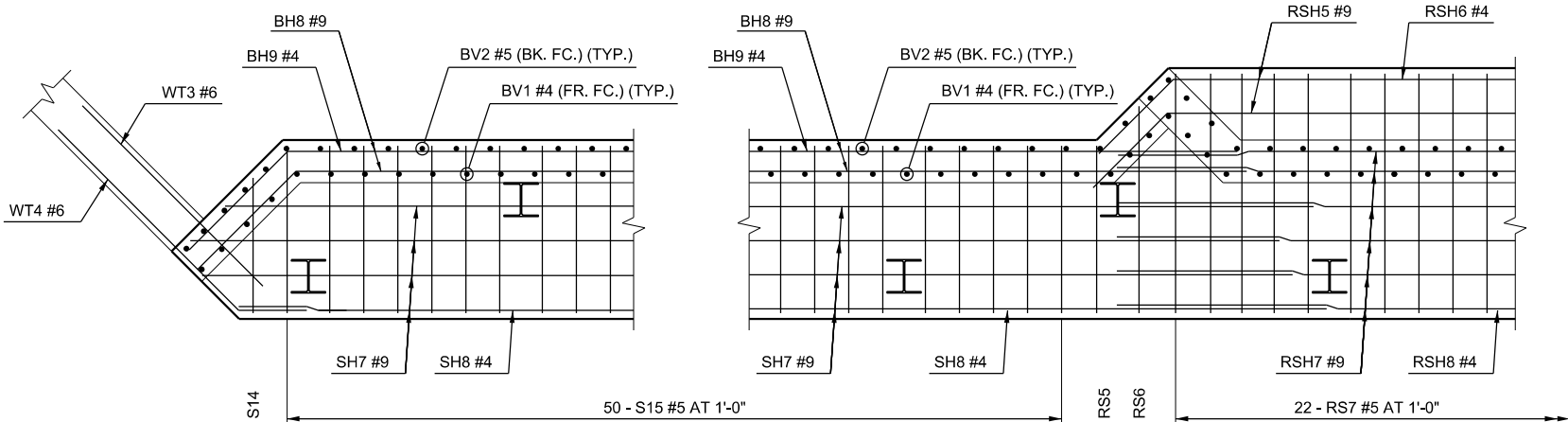
SECTION A-A



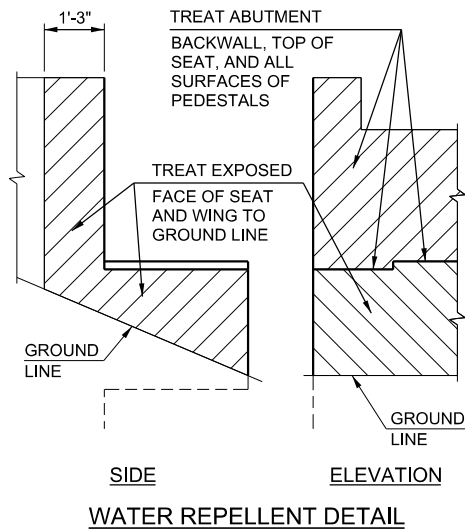
SECTION B-B



BACK WALL AND CURTAIN WALL REBAR DETAIL



SEAT REBAR DETAIL



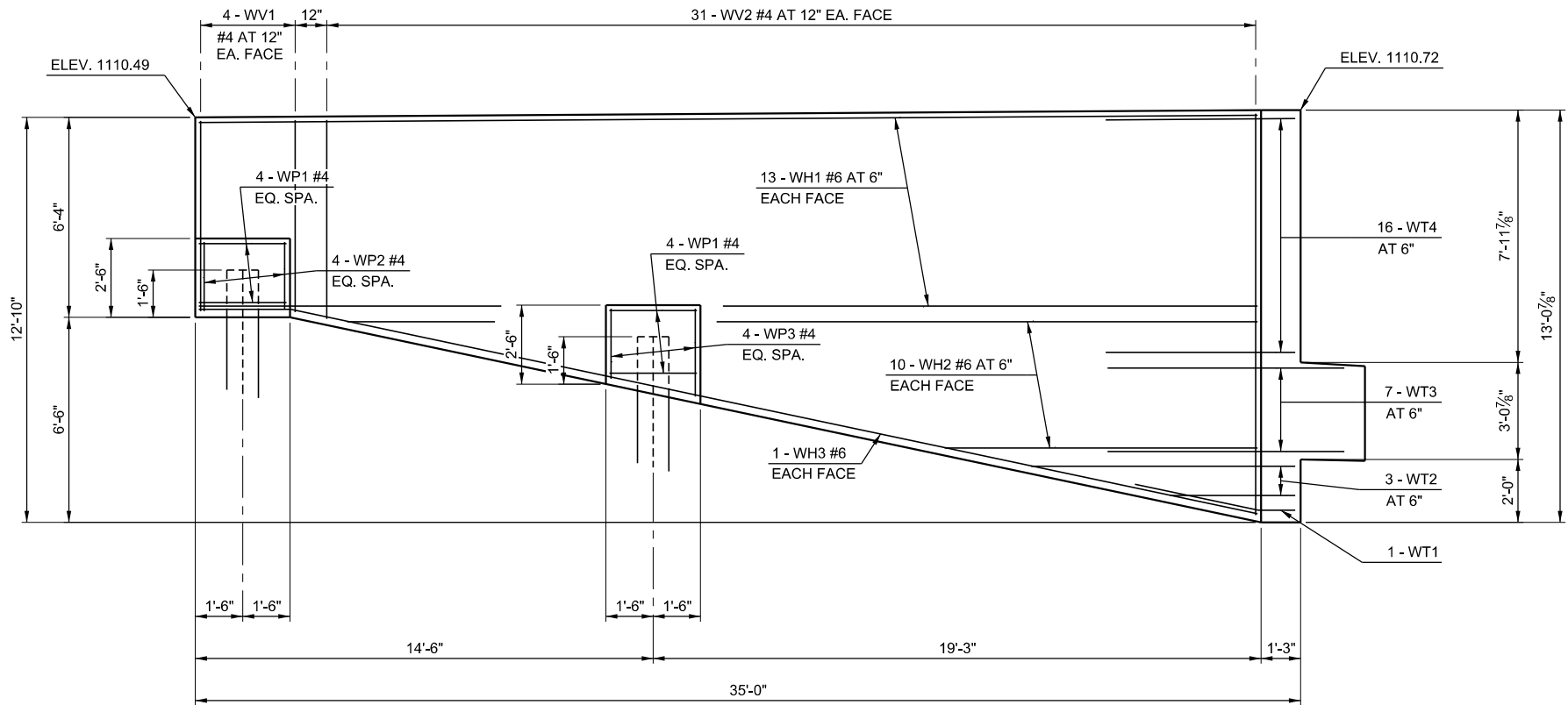
WATER REPELLENT DETAIL

PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

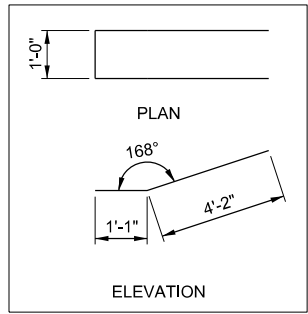
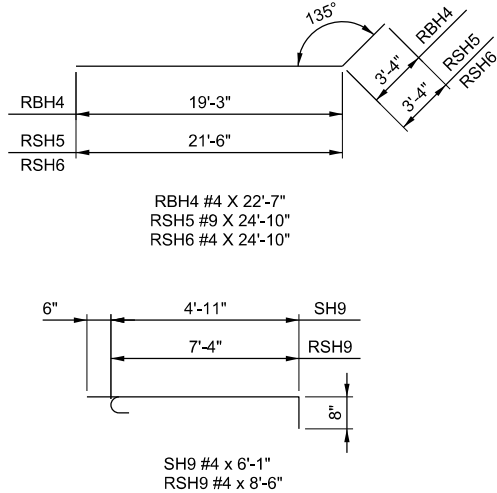
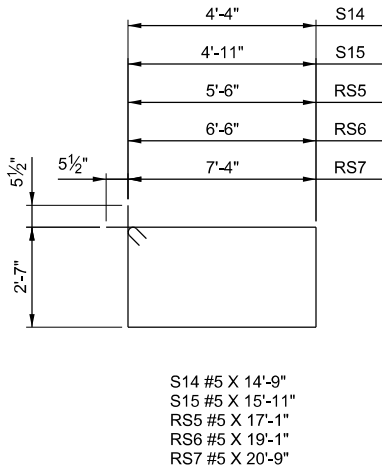
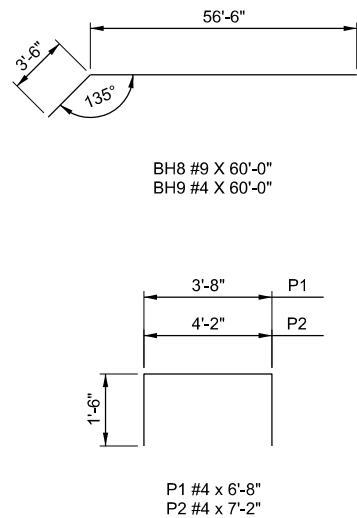
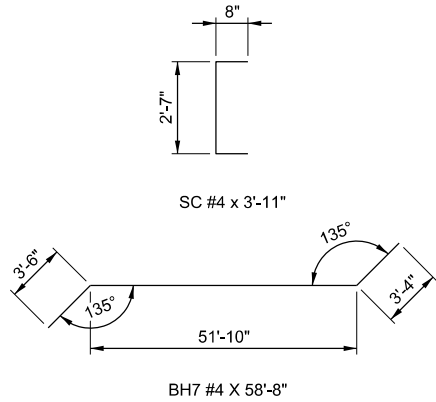
US 81 OVER UNION PACIFIC RAILROAD KINGFISHER COUNTY

DESIGN	GLF	OKLAHOMA DEPARTMENT OF TRANSPORTATION ABUTMENT NO. 1 DETAILS - BRIDGE "B" STATE JOB NO. <u>29849(04)</u> SHEET NO. <u>B036</u>
DRAWN	JLF	
CHECKED	GLF	
APPROVED		
SQUAD	MacArthur	

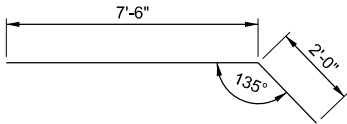
PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-B-abutment1-wing.dgn



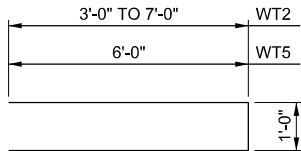
EAST WING WALL - ABUTMENT NO. 1



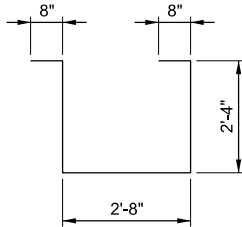
WT1 #6 x 11'-6"



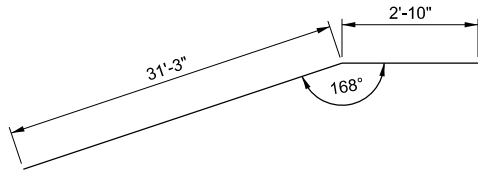
WT4 #6 x 9'-6"



WT2 #6 x 11'-0" AVG.
WT5 #6 x 13'-0"



WP1 #4 x 8'-8"



WH3 #6 x 34'-1"

ABUTMENT QUANTITIES - BRIDGE "B"				
DESCRIPTION	UNIT	ABUT. NO. 1	ABUT. NO. 2	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	161.00	265.00	426.00
CLSM BACKFILL	CY	175.00	260.00	435.00
CLASS A CONCRETE	CY	104.20	195.40	299.60
EPOXY COATED REINFORCING STEEL	LB	11,560.00	20,600.00	32,160.00
PILES, FURNISHED (HP12X53)	LF	532.00	773.00	1,305.00
PILES, DRIVEN (HP12X53)	LF	532.00	773.00	1,305.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	107.00	242.00	349.00
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	102.00	75.00	177.00
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	50.00	50.00	100.00

ABUTMENT NO. 1 BAR LIST - BRIDGE "B"					
MARK	NO.	SIZE	FORM	LENGTH	REMARKS
EPOXY COATED REINFORCING BARS					
BH7	18	#4	BNT	58'-8"	
BH8	4	#9	BNT	60'-0"	
BH9	2	#4	BNT	60'-0"	
BV1	83	#4	STR	12'-8"	
BV2	84	#5	STR	12'-8"	
P1	30	#4	BNT	6'-8"	
P2	25	#4	BNT	7'-2"	
RBH4	20	#4	BNT	22'-7"	
RSH5	4	#9	BNT	24'-10"	
RSH6	2	#4	BNT	24'-10"	
RSH7	12	#9	STR	23'-6"	
RSH8	2	#4	STR	23'-6"	
RSH9	9	#4	BNT	8'-6"	
RS5	1	#5	BNT	17'-1"	
RS6	1	#5	BNT	19'-1"	
RS7	22	#5	BNT	20'-9"	
S14	1	#5	BNT	14'-9"	
S15	50	#5	BNT	15'-11"	

ABUTMENT NO. 1 BAR LIST - CONTINUED					
MARK	NO.	SIZE	FORM	LENGTH	REMARKS
EPOXY COATED REINFORCING BARS					
SC	1	#4	BNT	3'-11"	
SH7	8	#9	STR	60'-0"	
SH8	2	#4	STR	60'-0"	
SH9	30	#4	BNT	6'-1"	
WT1	1	#6	BNT	11'-6"	
WT2	3	#6	BNT	11'-0" AVG	7'-0" TO 15'-0"
WT3	7	#6	STR	7'-6"	
WT4	7	#6	BNT	9'-6"	
WT5	16	#6	BNT	13'-0"	
WH1	26	#6	STR	33'-5"	
WH2	20	#6	STR	18'-7" AVG	9'-0" TO 28'-2"
WH3	2	#6	BNT	34'-1"	
WV1	8	#4	STR	5'-11"	
WV2	62	#4	STR	9'-4" AVG	6'-1" TO 12'-7"
WP1	8	#4	BNT	8'-8"	
WP2	4	#4	STR	2'-1"	
WP3	4	#4	STR	2'-5" AVG	2'-2" TO 2'-8"

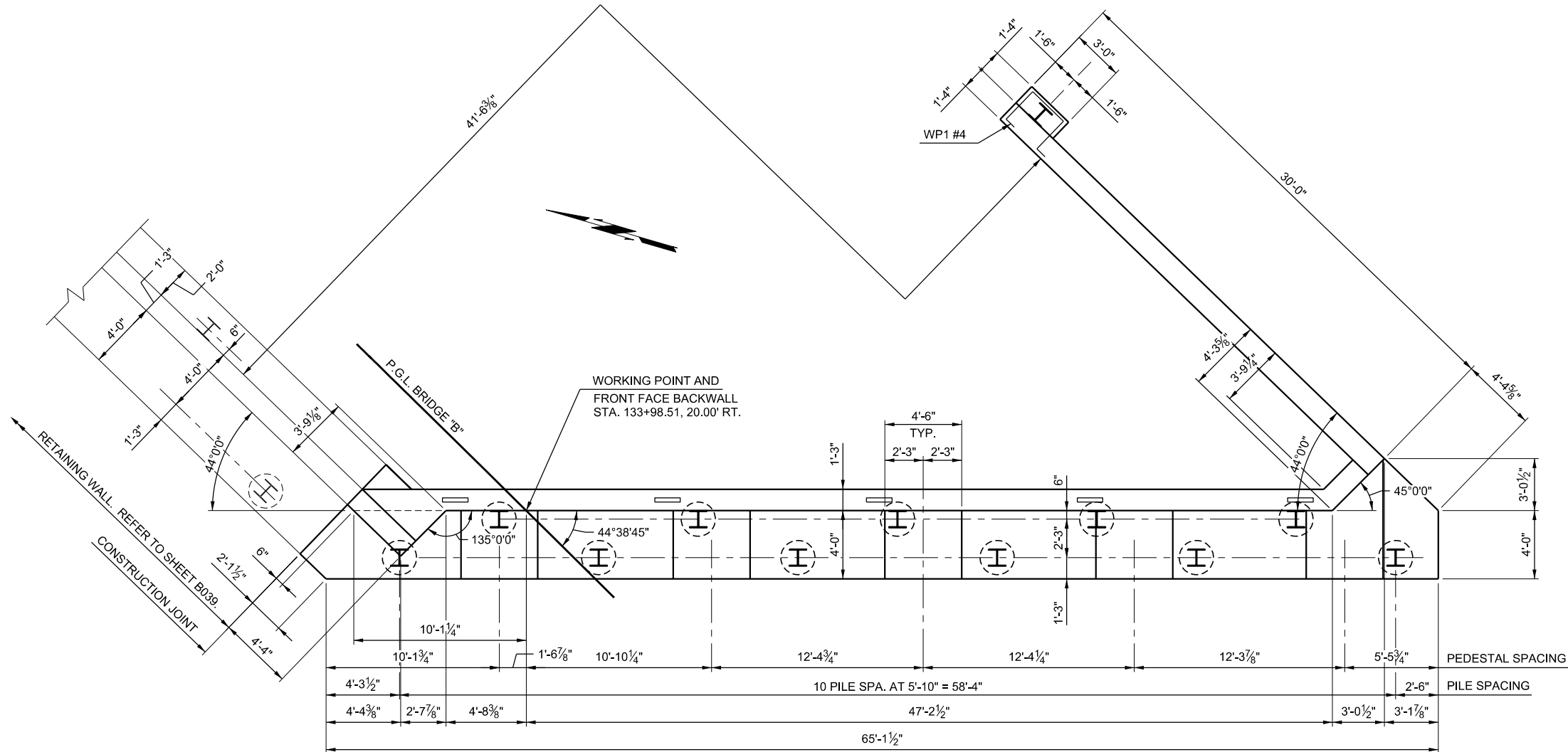
- ① 2 SETS OF 10
② 2 SETS OF 31

PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

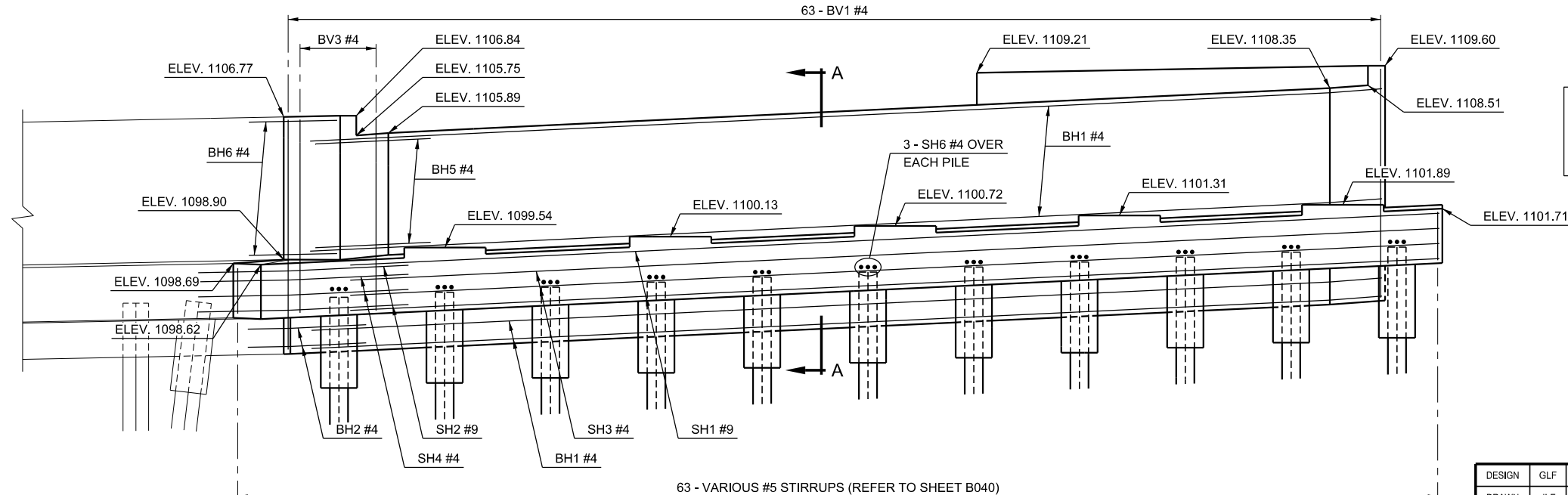
DESIGN	GLF
DRAWN	JLF
CHECKED	GLF
APPROVED	
SQUAD	MacArthur

US 81 OVER UNION PACIFIC RAILROAD		KINGFISHER COUNTY	
OKLAHOMA DEPARTMENT OF TRANSPORTATION			
ABUTMENT NO. 1 WING WALL DETAILS - BRIDGE "B"			
STATE JOB NO. 29849(04)		SHEET NO. B037	

REVISIONS		
REV. NO.	DESCRIPTION	DATE



PLAN



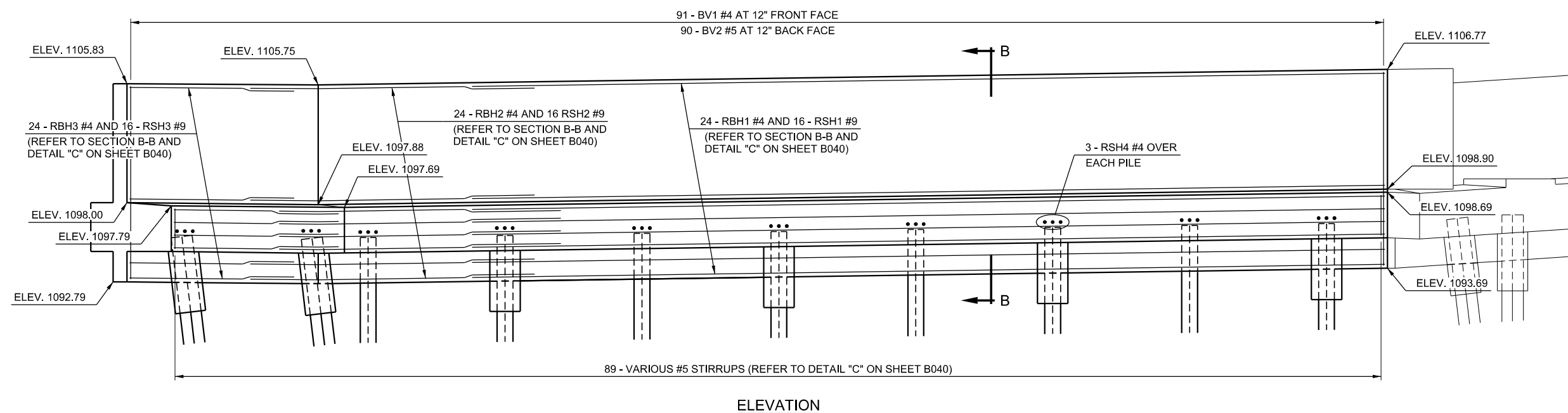
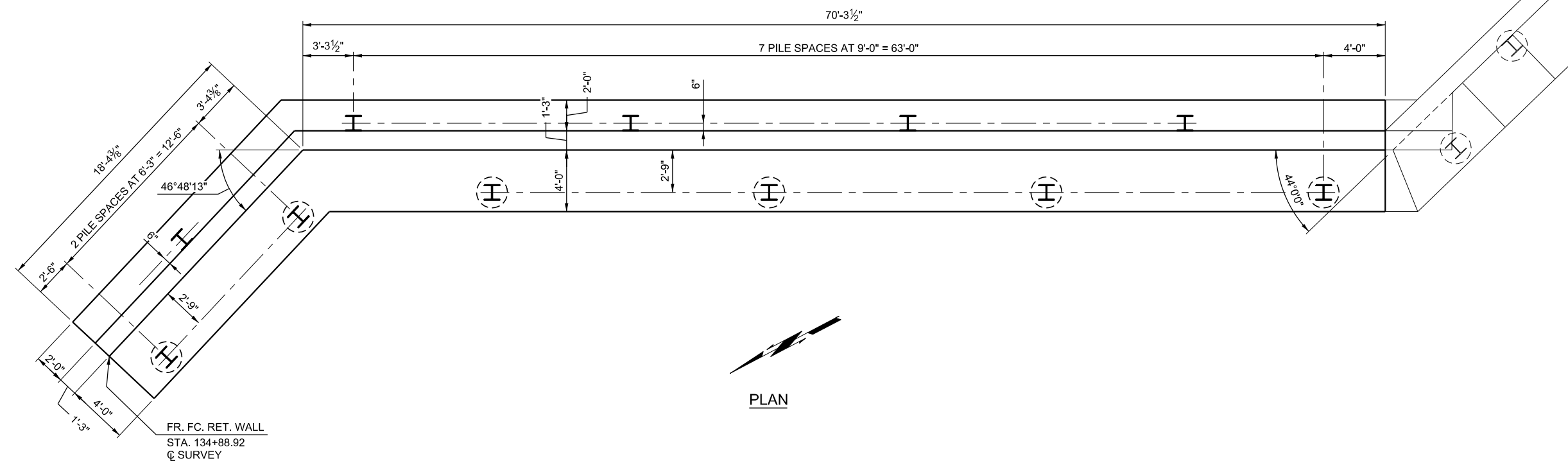
ELEVATION

REBAR IS SHOWN IN FRONT
FACES ONLY. FOR ADDITIONAL
REBAR PLACEMENT DETAILS,
REFER TO DETAIL "A", DETAIL "B",
AND SECTION A-A ON SHEET B040.

PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

DESIGN		GLF		US 81 OVER UNION PACIFIC RAILROAD		KINGFISHER COUNTY
DRAWN		JLF		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
CHECKED		GLF		ABUTMENT NO. 2 BRIDGE SEAT - BRIDGE "B"		
APPROVED				STATE JOB NO. <u>29849(04)</u>		
SQUAD		MacArthur		SHEET NO. <u>B038</u>		

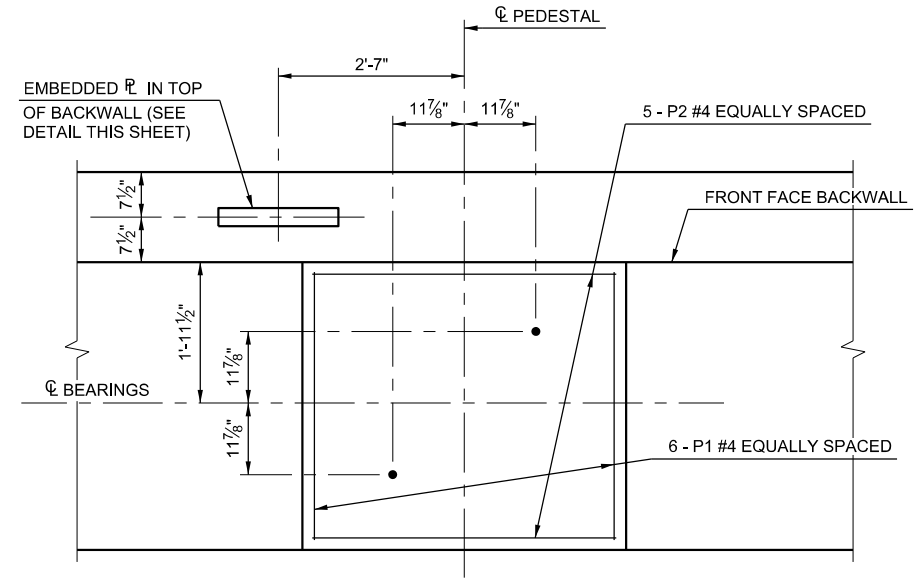
REVISIONS		
REV. NO.	DESCRIPTION	DATE



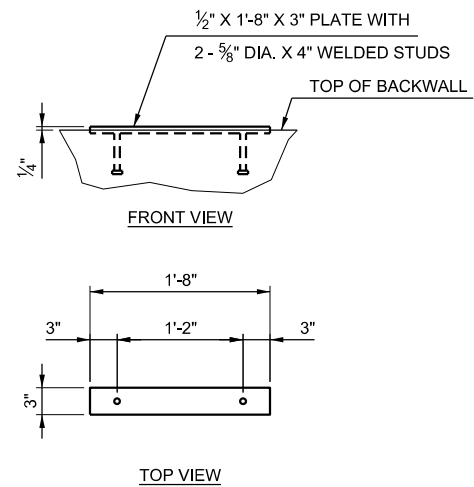
PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

US 81 OVER UNION PACIFIC RAILROAD			KINGFISHER COUNTY		
DESIGN	GLF		OKLAHOMA DEPARTMENT OF TRANSPORTATION ABUTMENT NO. 2 RETAINING WALL - BRIDGE "B" STATE JOB NO. 29849(04) SHEET NO. B039		
DRAWN	JLF				
CHECKED	GLF				
APPROVED					
SQUAD	MacArthur				

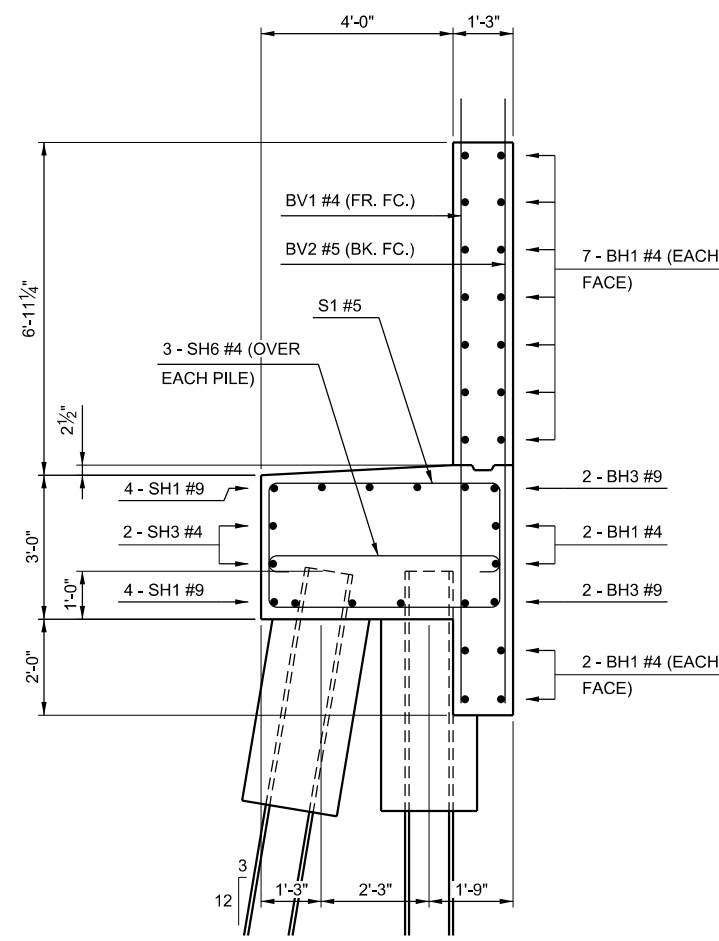
REVISIONS		
REV. NO.	DESCRIPTION	DATE



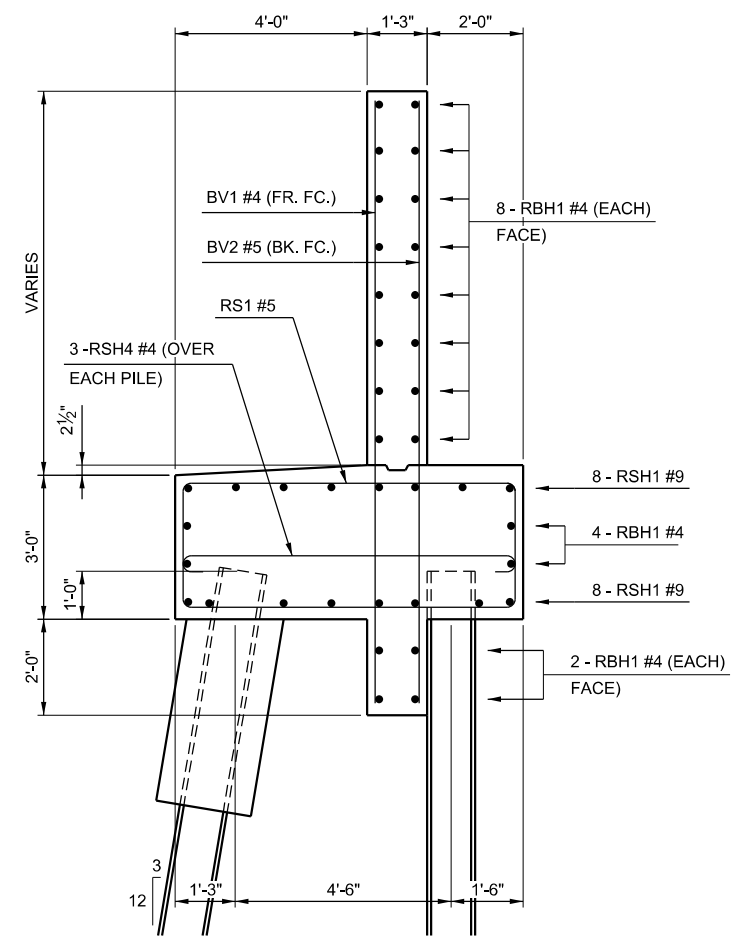
ANCHOR BOLT, EMBEDDED PLATE, AND
PEDESTAL REINFORCING LAYOUT



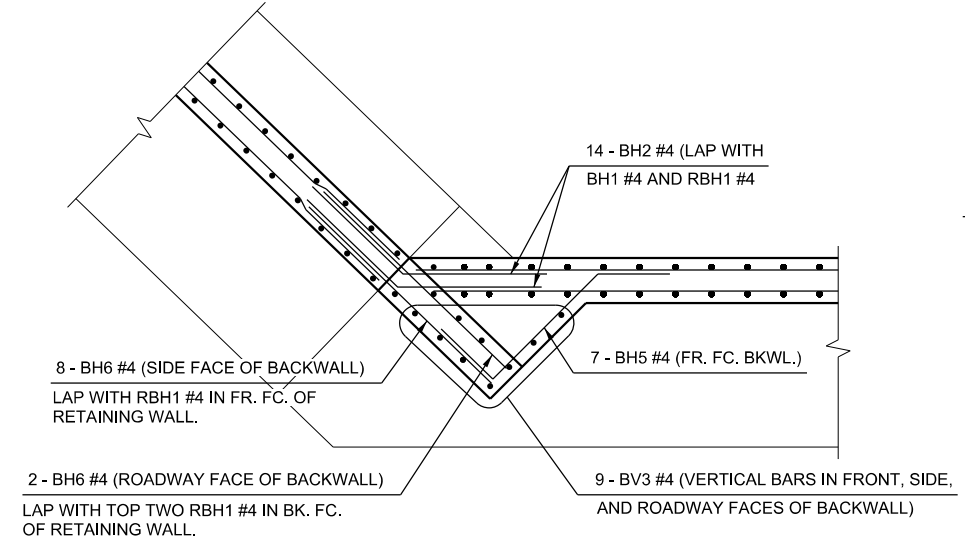
EMBEDDED PLATE DETAIL



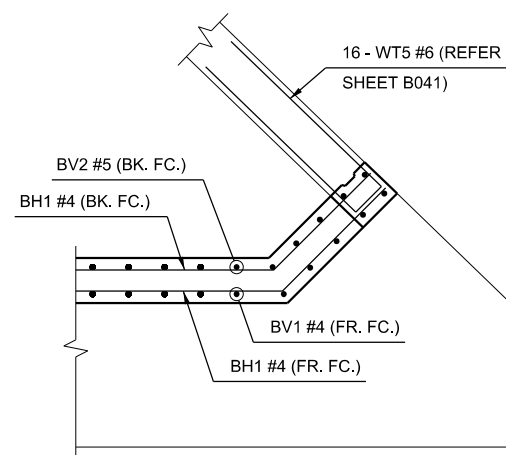
SECTION A-A
TYPICAL SECTION THRU BRIDGE SEAT



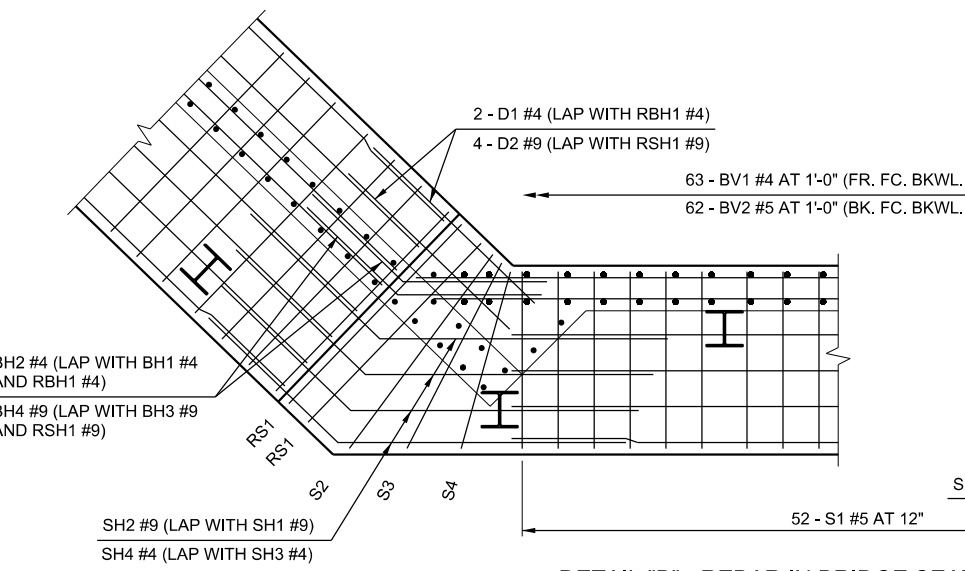
SECTION B-B
TYPICAL SECTION THRU RETAINING WALL



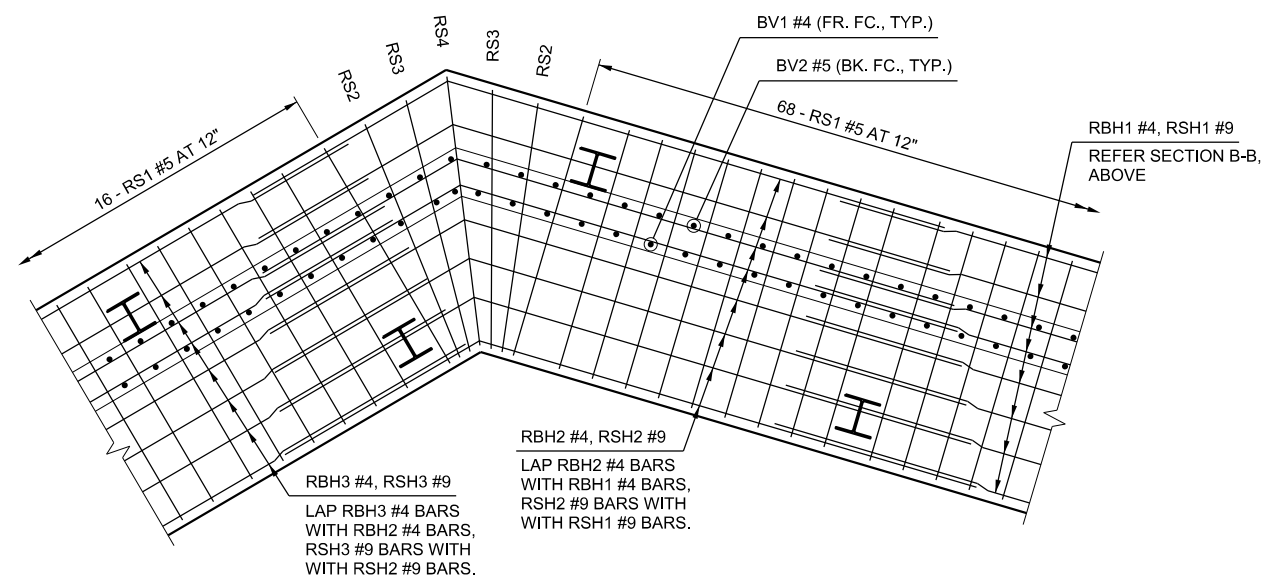
DETAIL "A" - REBAR IN BACKWALL



DETAIL "B" - REBAR IN BRIDGE SEAT



DETAIL "C" - REBAR AT CORNER OF RETAINING WALL



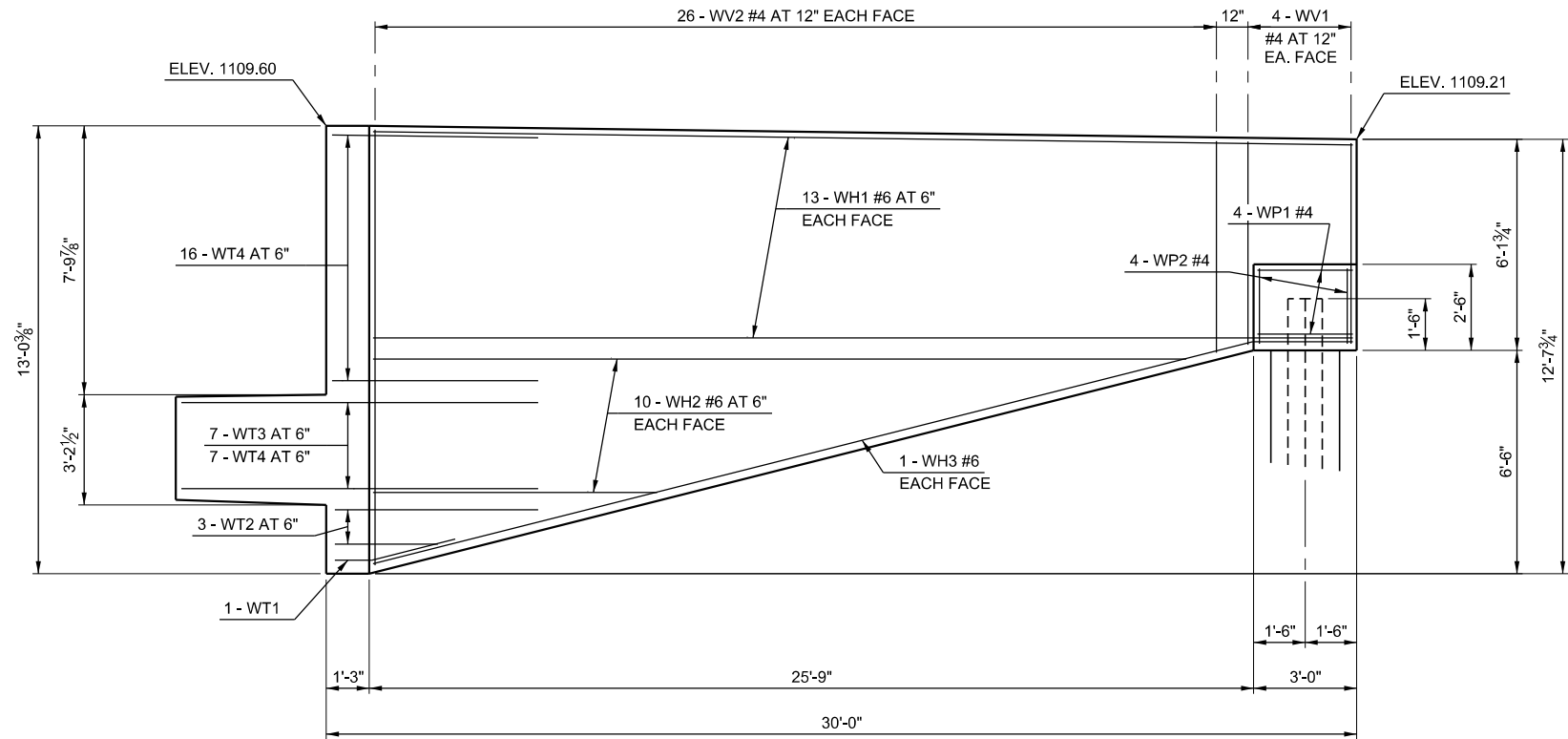
PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

DESIGN	GLF
DRAWN	JLF
CHECKED	GLF
APPROVED	
SQUAD	MacArthur

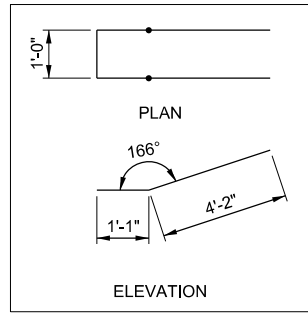
US 81 OVER UNION PACIFIC RAILROAD		KINGFISHER COUNTY
OKLAHOMA DEPARTMENT OF TRANSPORTATION		
ABUTMENT NO. 2 DETAILS - BRIDGE "B"		
STATE JOB NO. 29849(04)		SHEET NO. B040

PRINT DATE: 10/22/2018 T:\403Drawings\Bridges\1403-bridge-B-abutment2-details.dgn

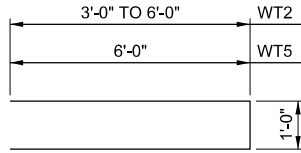
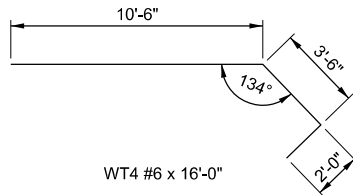
PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-B-abutment2-wing.dgn



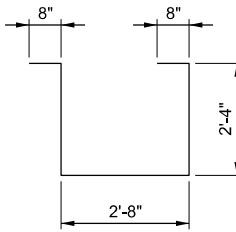
WING WALL ELEVATION



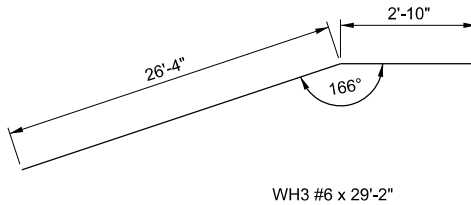
WT1 #6 x 11'-6"



WT2 #6 x 10'-0" AVG.
WT5 #6 x 13'-0"



WP1 #4 x 8'-8"



ABUTMENT NO. 2 BAR LIST - BRIDGE "B"

EPOXY COATED REINFORCING BARS					
MARK	NO.	SIZE	FORM	LENGTH	REMARKS
BH1	20	#4	BNT	60'-0"	
BH2	20	#4	BNT	7'-6"	
BH3	4	#9	BNT	60'-0"	
BH4	4	#9	BNT	7'-6"	
BH5	7	#4	BNT	8'-6"	
BH6	10	#4	STR	7'-4"	
BV1	153	#4	STR	12'-8"	
BV2	153	#5	STR	12'-8"	
BV3	9	#4	STR	10'-8"	
D1	2	#4	STR	6'-3"	
D2	4	#9	STR	6'-3"	
P1	30	#4	BNT	6'-8"	
P2	25	#4	BNT	7'-2"	
RBH1	24	#4	STR	60'-0"	
RBH2	24	#4	BNT	21'-0"	
RBH3	24	#4	STR	16'-3"	
RSH1	16	#9	STR	60'-0"	
RSH2	16	#9	BNT	21'-0"	
RSH3	16	#9	STR	16'-3"	
RSH4	33	#4	BNT	8'-1"	
RS1	84	#5	BNT	19'-11"	
RS2	2	#5	BNT	20'-1"	
RS3	2	#5	BNT	20'-7"	
RS4	1	#5	BNT	21'-3"	
S1	52	#5	BNT	15'-11"	
S2	1	#5	BNT	19'-7"	
S3	1	#5	BNT	17'-9"	
S4	1	#5	BNT	16'-5"	

ABUTMENT NO. 2 BAR LIST - CONTINUED

EPOXY COATED REINFORCING BARS					
MARK	NO.	SIZE	FORM	LENGTH	REMARKS
S5	1	#5	BNT	16'-11"	
S6	1	#5	BNT	18'-11"	
S7	1	#5	BNT	20'-11"	
S8	1	#5	BNT	19'-1"	
S9	1	#5	BNT	16'-9"	
S10	1	#5	BNT	15'-1"	
SC	3	#4	BNT	3'-3"	
SH1	8	#9	STR	60'-0"	
SH2	8	#9	BNT	13'-0"	
SH3	2	#4	STR	60'-0"	
SH4	2	#4	BNT	13'-0"	
SH5	4	#9	STR	9'-0"	
SH6	33	#4	BNT	6'-1"	
WT1	1	#6	BNT	11'-6"	
WT2	3	#6	BNT	10'-10" AVG	6'-10" TO 14'-10"
WT3	7	#6	STR	9'-0"	
WT4	7	#6	BNT	16'-0"	
WT5	16	#6	BNT	13'-0"	
WH1	26	#6	STR	28'-5"	
WH2	20	#6	STR	15'-6" AVG	7'-5" TO 23'-7"
WH3	2	#6	BNT	29'-2"	
WV1	8	#4	STR	5'-9"	
WV2	52	#4	STR	9'-4" AVG	6'-1" TO 12'-7"
WP1	4	#4	BNT	8'-8"	
WP2	4	#4	STR	2'-1"	

① 2 SETS OF 10

② 2 SETS OF 26

PRELIMINARY PLANS

THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

US 81 OVER UNION PACIFIC RAILROAD KINGFISHER COUNTY

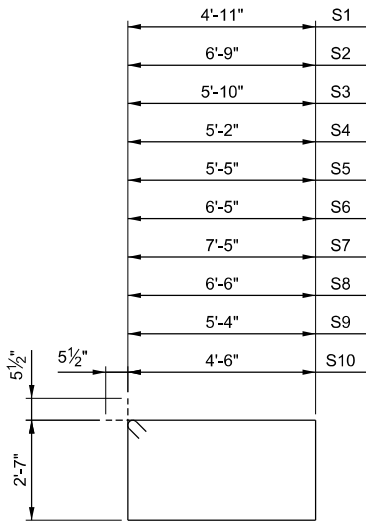
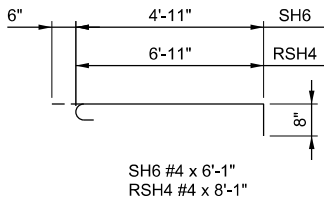
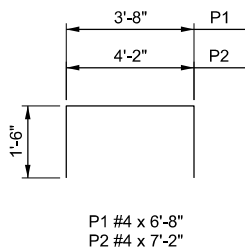
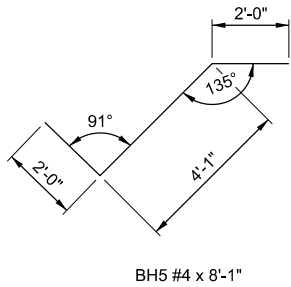
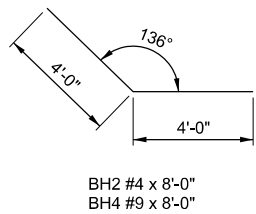
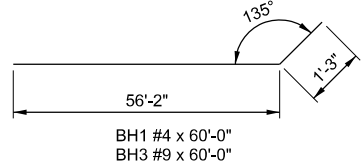
OKLAHOMA DEPARTMENT OF TRANSPORTATION

ABUTMENT NO. 2 WING WALL DETAILS -
BRIDGE "B"

STATE JOB NO. 29849(04)

SHEET NO. B041

DESIGN	GLF
DRAWN	JLF
CHECKED	GLF
APPROVED	
SQUAD	MacArthur



S1 #5 x 15'-11"

S2 #5 x 19'-7"

S3 #5 x 17'-9"

S4 #5 x 16'-5"

S5 #5 x 16'-11"

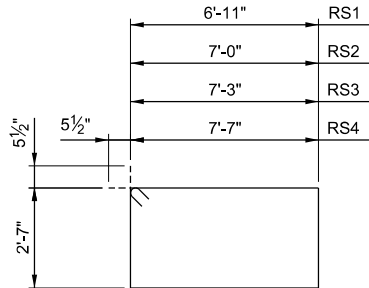
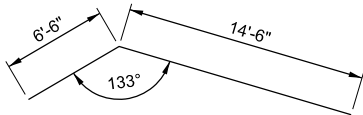
S6 #5 x 18'-11"

S7 #5 x 20'-11"

S8 #5 x 19'-1"

S9 #5 x 16'-9"

S10 #5 x 15'-1"

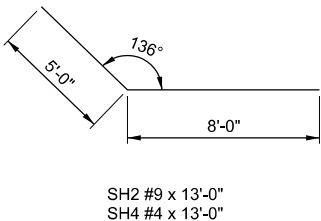
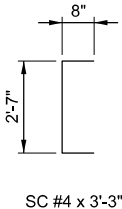


RS1 #5 x 19'-11"

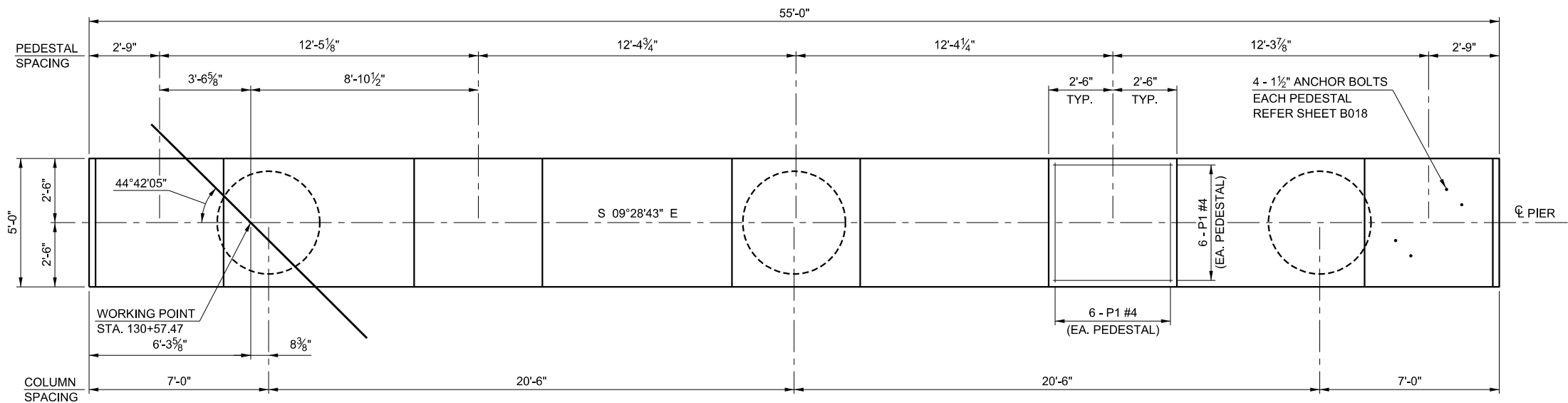
RS2 #5 x 20'-1"

RS3 #5 x 20'-7"

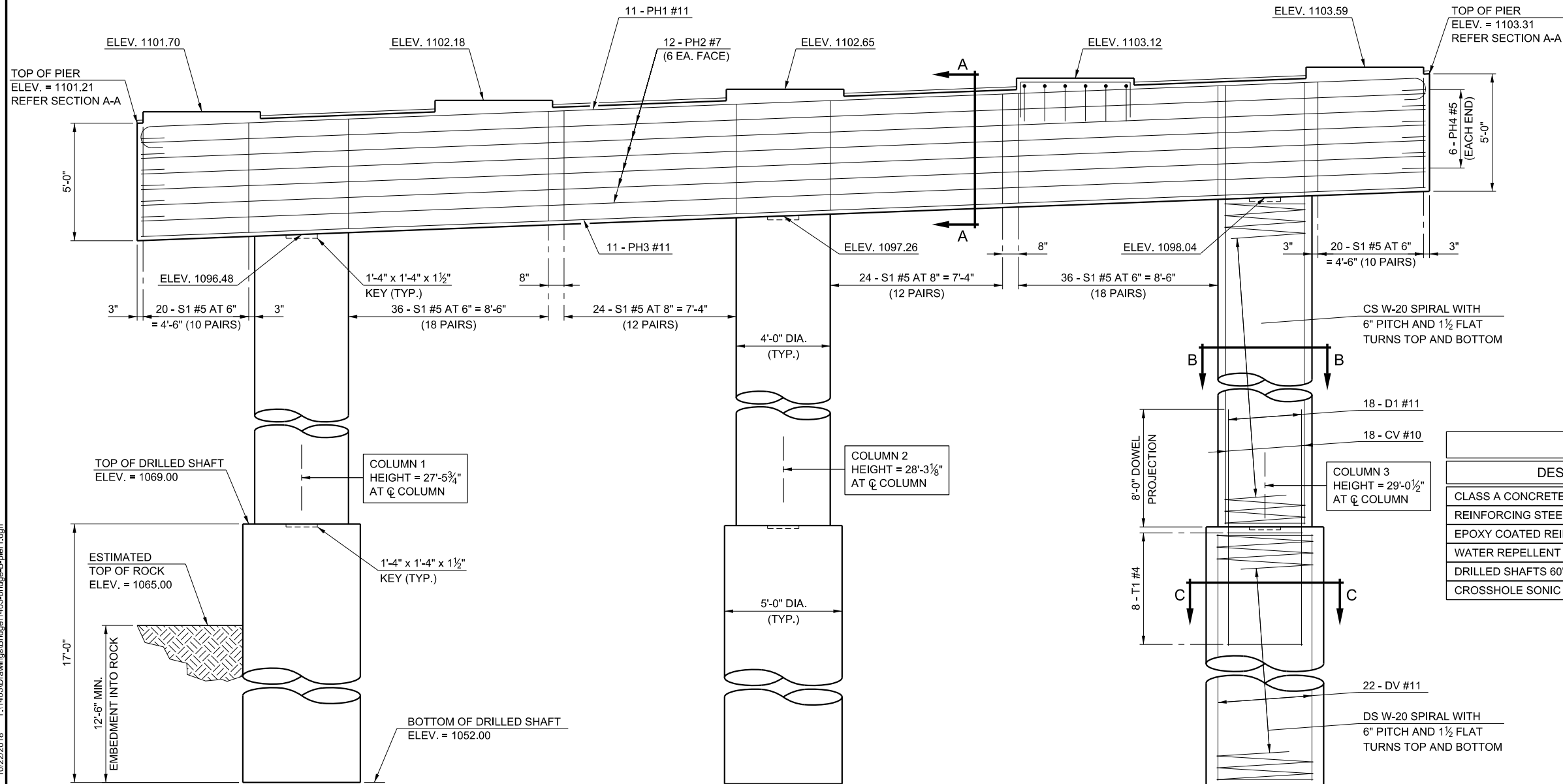
RS4 #5 x 21'-3"



PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-B-plant.dgn



PLAN



ELEVATION

REVISIONS		
REV. NO.	DESCRIPTION	DATE

PIER NO. 1 BAR LIST					
MARK	NO.	SIZE	FORM	LENGTH	REMARKS
PLAIN REINFORCING BARS					
[1]	CS1	1	W-20	BNT.	597'-2"
[1]	CS2	1	W-20	BNT.	613'-6"
[1]	CS3	1	W-20	BNT.	629'-11"
[2]	D1	54	#11	STR.	15'-0"
[1] [2]	DS	3	W-20	BNT.	452'-9"
[2]	DV	66	#11	STR.	16'-6"
[2]	T1	24	#4	BNT.	13'-6"

EPOXY COATED REINFORCING BARS					
CV1	18	#10	STR.	32'-1"	COLUMN 1
CV2	18	#10	STR.	32'-11"	COLUMN 2
CV3	18	#10	STR.	33'-8"	COLUMN 3
P1	60	#4	BNT.	7'-8"	
PH1	11	#11	BNT.	57'-10"	
PH2	12	#7	STR.	54'-8"	
PH3	11	#11	STR.	54'-8"	
PH4	12	#4	BNT.	6'-7"	
S1	160	#5	BNT.	17'-3"	

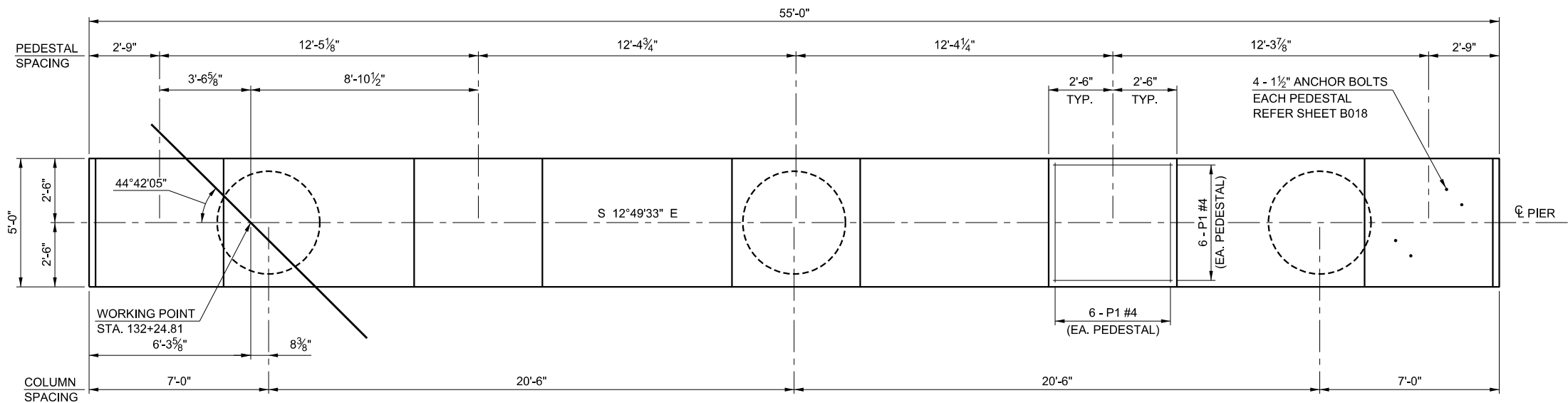
- [1] LENGTH SHOWN DOES NOT ACCOUNT FOR SPLICES. CONTRACTOR MAY ADD SPLICES AS NECESSARY BUT PAYMENT WILL NOT BE MADE FOR EXTRA LENGTH REQUIRED FOR SPLICES. ADD 3'-8" TO SPIRAL LENGTH FOR EACH SPLICE.
- [2] REINFORCING INCLUDED IN PRICE BID PER LF OF DRILLED SHAFT. PROJECTION LENGTH OF D1 BARS SHALL NOT BE CONSIDERED ADDITIONAL PAY LENGTH FOR DRILLED SHAFT.

PIER QUANTITIES - BRIDGE "B"				
DESCRIPTION	UNIT	PIER NO. 1	PIER NO. 2	TOTAL
CLASS A CONCRETE	CY	92.80	93.60	186.40
REINFORCING STEEL	LB	1,260.00	1,280.00	2,540.00
EPOXY COATED REINFORCING STEEL	LB	18,800.00	18,930.00	37,730.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	103.00	103.00	206.00
DRILLED SHAFTS 60" DIAMETER	LF	51.00	45.00	96.00
CROSSHOLE SONIC LOGGING	EA			2.00

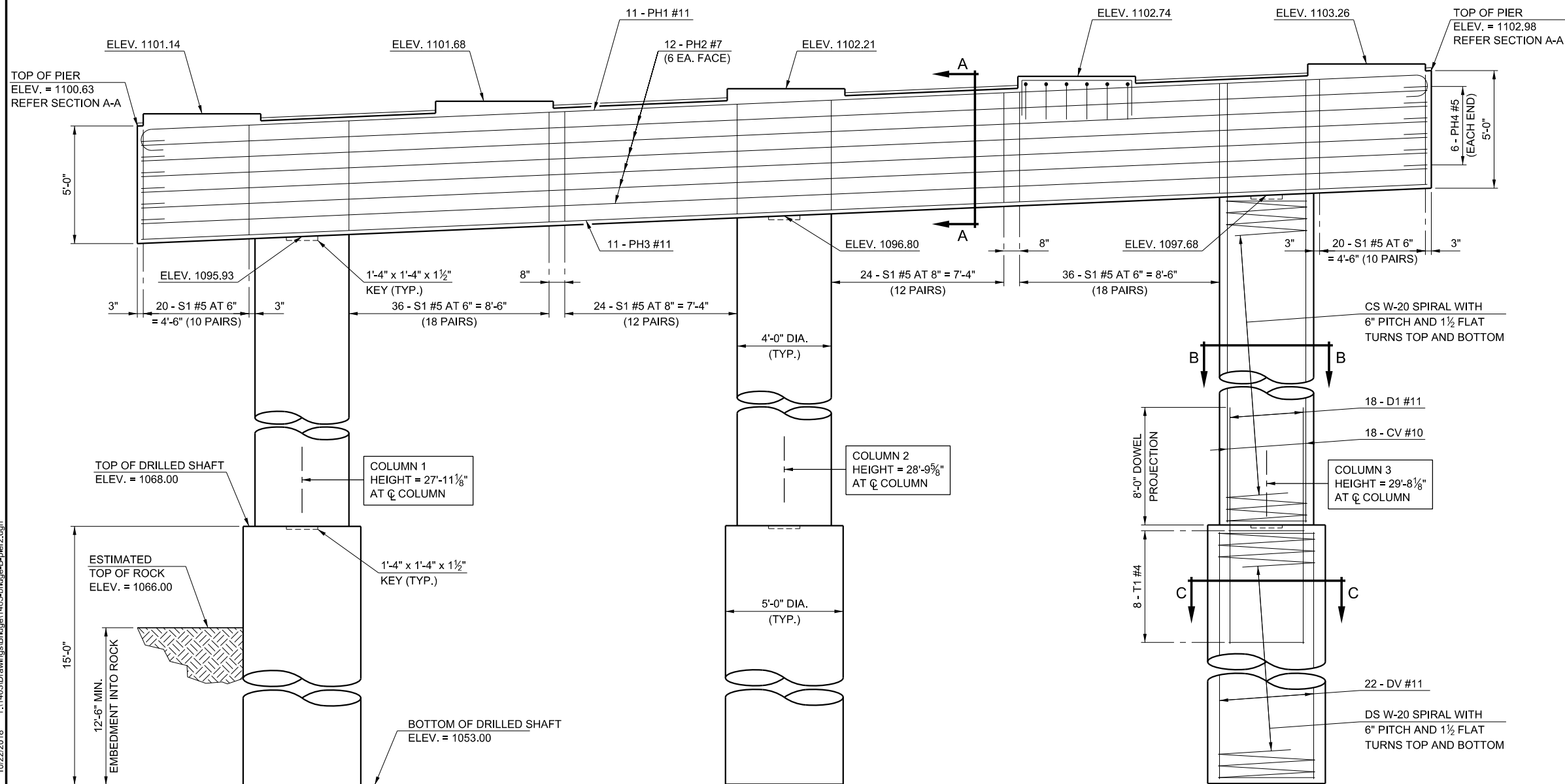
PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

US 81 OVER UNION PACIFIC RAILROAD			KINGFISHER COUNTY		
DESIGN	GLF		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	JLF		PIER NO. 1 - BRIDGE "B"		
CHECKED	GLF				
APPROVED					
SQUAD	MacArthur		STATE JOB NO. <u>29849(04)</u>		SHEET NO. <u>B042</u>

PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-B-pier2.dgn



PLAN



ELEVATION

REVISIONS		
REV. NO.	DESCRIPTION	DATE

PIER NO. 2 BAR LIST					
MARK	NO.	SIZE	FORM	LENGTH	REMARKS
PLAIN REINFORCING BARS					
[1]	CS1	1	W-20	BNT.	606'-7"
[1]	CS2	1	W-20	BNT.	624'-10"
[1]	CS3	1	W-20	BNT.	643'-4"
[2]	D1	54	#11	STR.	15'-0"
[1] [2]	DS	3	W-20	BNT.	402'-6"
[2]	DV	66	#11	STR.	14'-6"
[2]	T1	24	#4	BNT.	13'-6"
EPOXY COATED REINFORCING BARS					
CV1	18	#10	STR.	32'-7"	COLUMN 1
CV2	18	#10	STR.	33'-5"	COLUMN 2
CV3	18	#10	STR.	34'-4"	COLUMN 3
P1	60	#4	BNT.	7'-8"	
PH1	11	#11	BNT.	57'-10"	
PH2	12	#7	STR.	54'-8"	
PH3	11	#11	STR.	54'-8"	
PH4	12	#4	BNT.	6'-7"	
S1	160	#5	BNT.	17'-3"	

[1] LENGTH SHOWN DOES NOT ACCOUNT FOR SPLICES. CONTRACTOR MAY ADD SPLICES AS NECESSARY BUT PAYMENT WILL NOT BE MADE FOR EXTRA LENGTH REQUIRED FOR SPLICES. ADD 3'-8" TO SPIRAL LENGTH FOR EACH SPLICE.

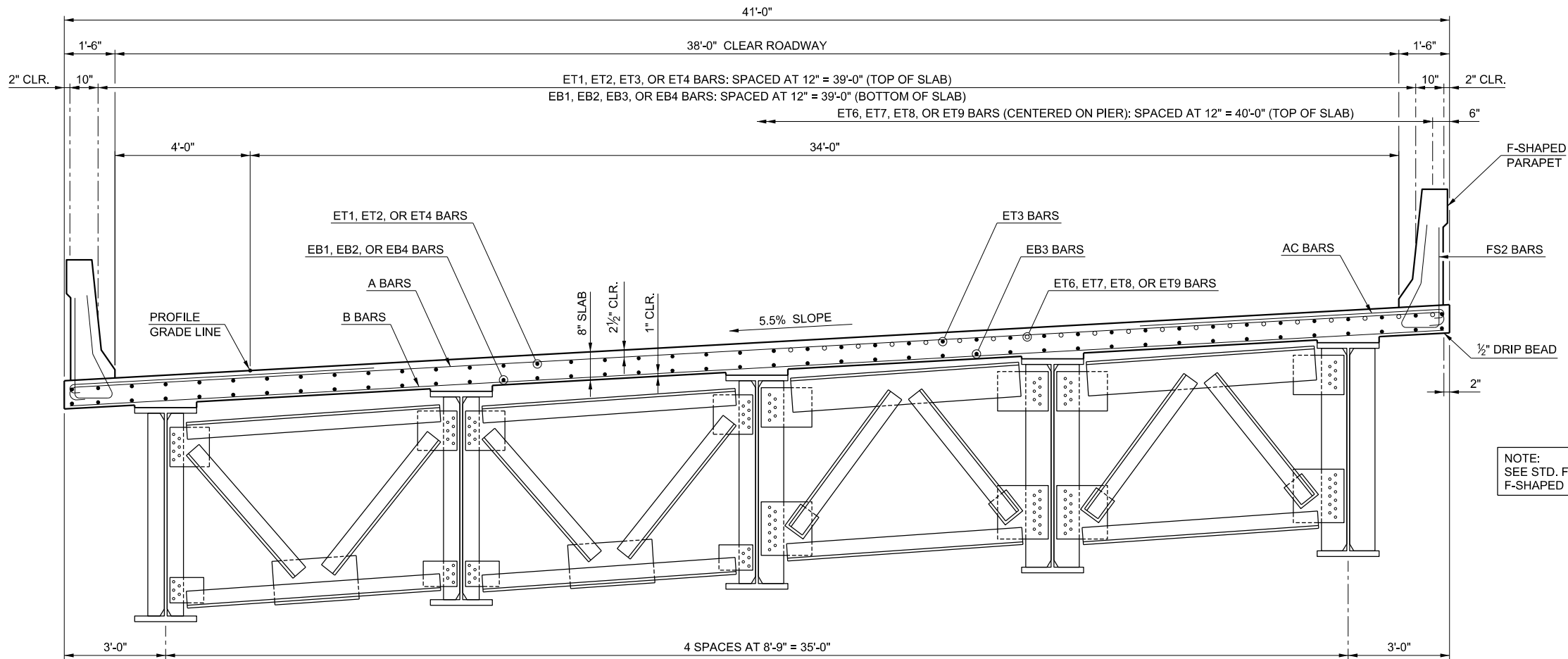
[2] REINFORCING INCLUDED IN PRICE BID PER LF OF DRILLED SHAFT. PROJECTION LENGTH OF D1 BARS SHALL NOT BE CONSIDERED ADDITIONAL PAY LENGTH FOR DRILLED SHAFT.

PRELIMINARY PLANS

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

DESIGN	GLF		US 81 OVER UNION PACIFIC RAILROAD	KINGFISHER COUNTY
DRAWN	JLF		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
CHECKED	GLF		PIER NO. 2 - BRIDGE "B"	
APPROVED			STATE JOB NO. 29849(04)	
SQUAD	MacArthur		SHEET NO. B043	

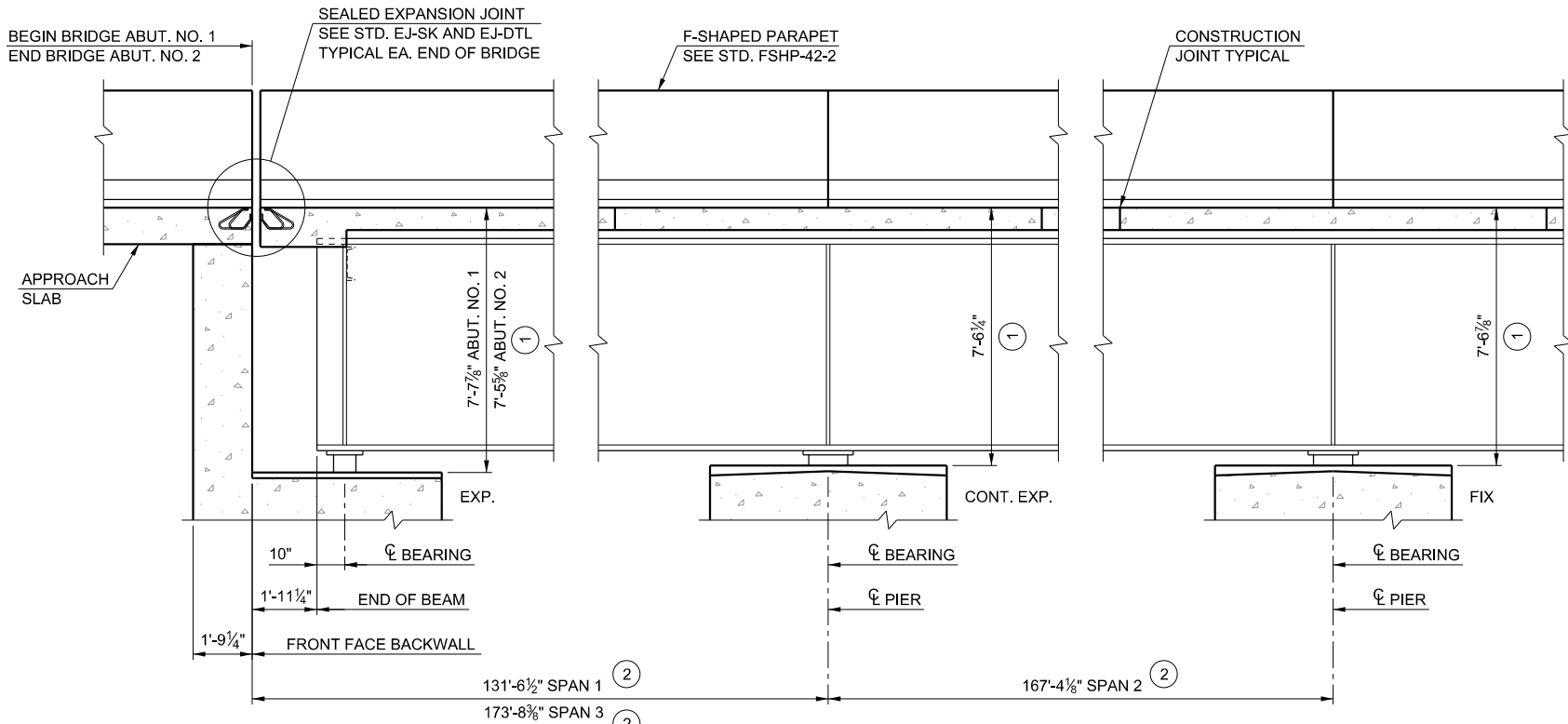
PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-B-typical-sections.dgn



HALF SECTION AT MIDSPAN

HALF SECTION AT PIER

TYPICAL CROSS SECTION



LONGITUDINAL SECTION

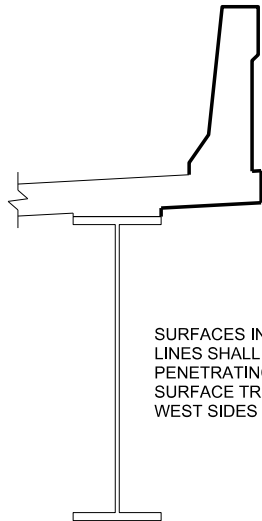
EXPANSION DEVICE SETTING ABUTMENT NO. 1	
EXP. JOINT OPENING	TEMPERATURE °F
1 1/4"	106
1 3/8"	98
1 1/2"	90
1 5/8"	83
1 3/4"	75
1 7/8"	68
2"	60
2 1/8"	47
2 1/4"	34
2 3/8"	37
2 1/2"	30

EXPANSION DEVICE SETTING ABUTMENT NO. 2	
EXP. JOINT OPENING	TEMPERATURE °F
1 1/2"	112
1 5/8"	99
1 3/4"	86
1 7/8"	73
2"	60
2 1/8"	47
2 1/4"	34
2 3/8"	21

- ① MEASURED FROM TOP OF SLAB TO
BOTTOM OF BEARING ASSEMBLY
AT CL BEAM AT CL BEARING.
- ② SPAN DIMENSIONS ARE REFERENCED
TO CL SURVEY.

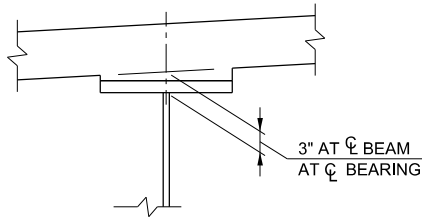
REVISIONS		
REV. NO.	DESCRIPTION	DATE

SUPERSTRUCTURE QUANTITIES - BRIDGE "B"		
DESCRIPTION	UNIT	TOTAL
SAW-CUT GROOVING	SY	2,017.50
SEALED EXPANSION JOINT	LF	114.40
42" F-SHAPED PARAPET	LF	955.80
STRUCTURAL STEEL	LB	992,800.00
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA	5.00
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA	15.00
CLASS AA CONCRETE	CY	510.40
EPOXY COATED REINFORCING STEEL	LB	161,270.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	1,182.00
SEALER CRACK PREPARATION	LF	112.40
SEALER RESIN	GAL	1.50



SURFACES INDICATED WITH HEAVY
LINES SHALL BE TREATED WITH A
PENETRATING WATER REPELLENT
SURFACE TREATMENT (EAST AND
WEST SIDES OF BRIDGE).

WATER REPELLENT PLACEMENT DETAIL



BEAM HAUNCH DETAIL

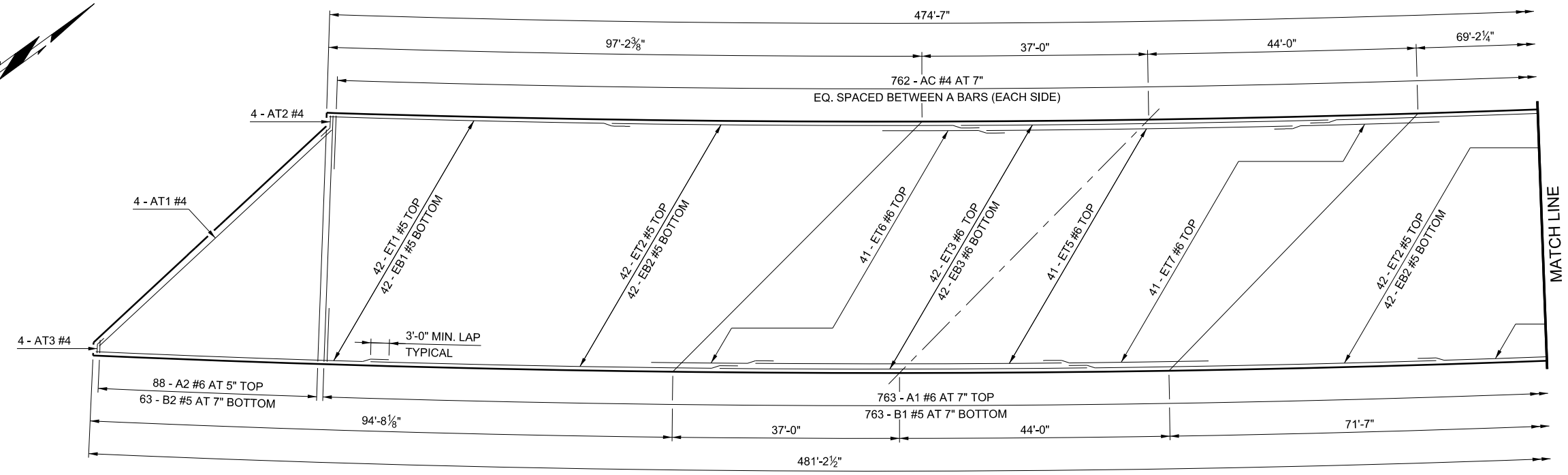
NOTE:
PLAN QUANTITY FOR CLASS "AA" CONCRETE INCLUDES 21.60 CY
FOR HAUNCHES OVER THE BEAMS. THE HAUNCH HEIGHT WILL BE
SET AFTER ERECTION OF BEAMS TO PROVIDE FOR DEAD LOAD
DEFLECTION AND GRADE ADJUSTMENTS, BUT THE PAY QUANTITY
WILL BE AS SHOWN ABOVE.

PRELIMINARY PLANS

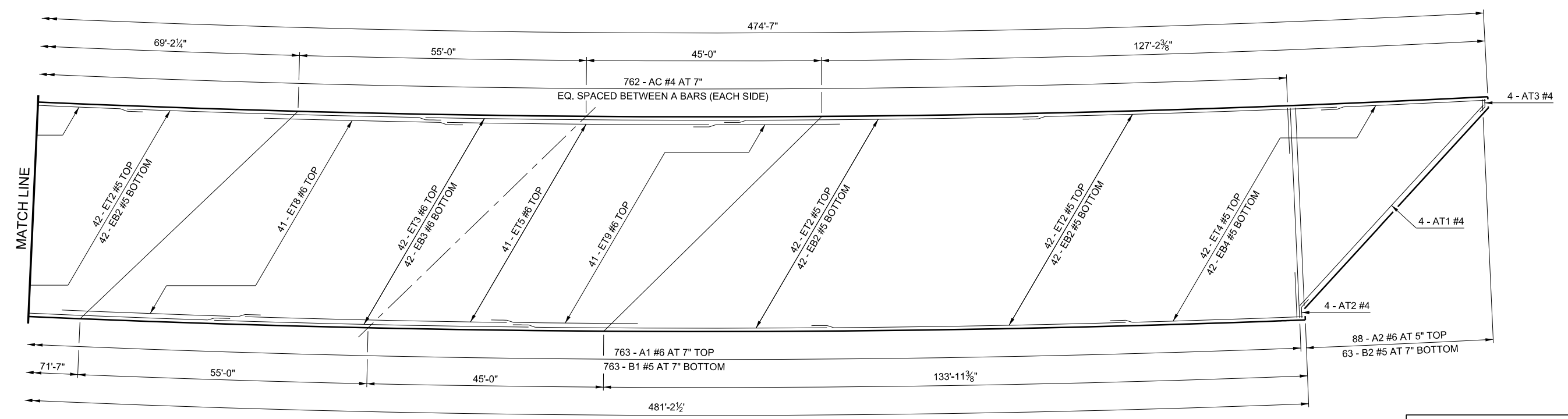
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

DESIGN	GLF		US 81 OVER UNION PACIFIC RAILROAD	KINGFISHER COUNTY
DRAWN	JLF		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
CHECKED	GLF		TYPICAL CROSS SECTION AND LONGITUDINAL SECTION - BRIDGE "B"	
APPROVED			STATE JOB NO. 29849(04)	
SQUAD	MacArthur		SHEET NO. B044	

REVISIONS		
REV. NO.	DESCRIPTION	DATE



BEGIN BRIDGE TO MID-SPAN 2



MID-SPAN 2 TO END BRIDGE

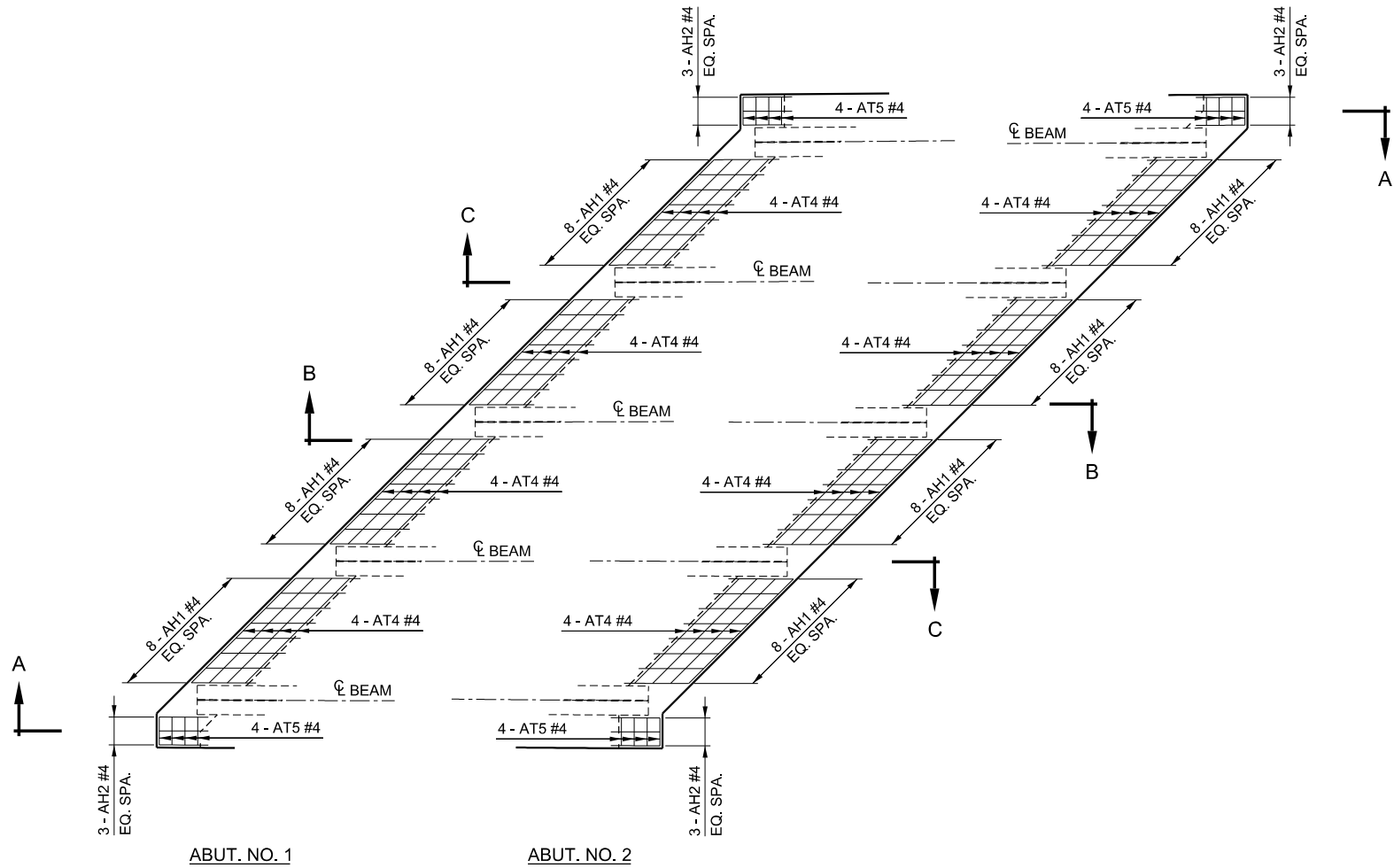
PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

US 81 OVER UNION PACIFIC RAILROAD KINGFISHER COUNTY

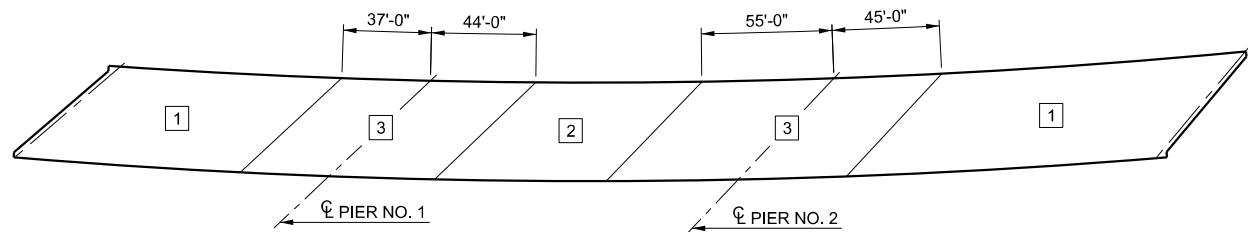
DESIGN	GLF		OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	EMW		
CHECKED	X		
APPROVED			
SQUAD	MacArthur		
SLAB REINFORCING PLAN - BRIDGE "B"			STATE JOB NO. <u>29849(04)</u> SHEET NO. <u>B045</u>

PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-B-slab-reinforcing.dgn

PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-B-slab-details.dgn



SLAB REINFORCING AT END DIAPHRAGMS

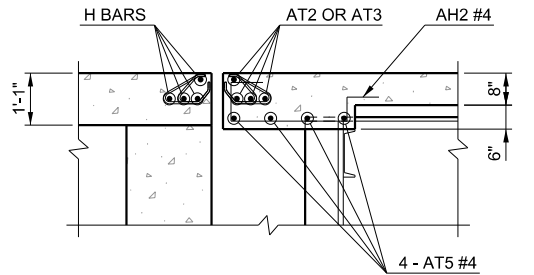


BRIDGE "B" DECK SLAB POURING SEQUENCE

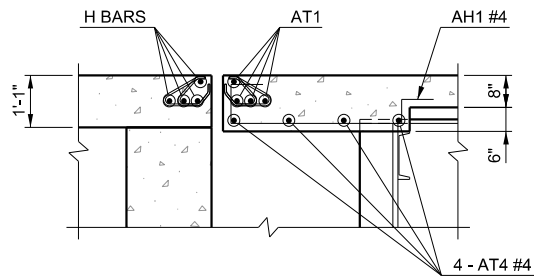
DECK SLAB POURING SEQUENCE

THE POURING SEQUENCE SHALL BE IN THE NUMERICAL SEQUENCE INDICATED. ALL POURS WITH THE SAME NUMBER MAY BE Poured IN ANY SEQUENCE, BUT ALL POURS WITH THE SAME NUMBER SHALL BE COMPLETED BEFORE BEGINNING WITH THE NEXT POUR NUMBER. THERE SHALL BE A LAPSE OF AT LEAST 48 HOURS BETWEEN POURS.

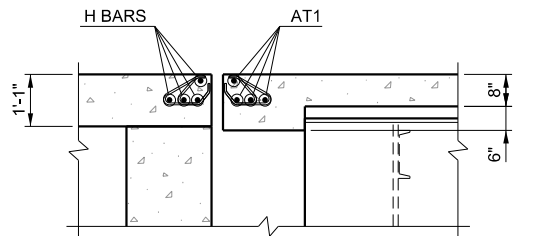
CONSTRUCTION JOINTS AT THE CLOSURE POURS IN THE DECK SLAB SHALL NOT BE KEYED. IN THE EVENT OF AN EMERGENCY, POURING OF DECK SLAB MAY BE HALTED WITH A CONSTRUCTION JOINT MADE PERPENDICULAR TO THE DIRECTION OF TRAFFIC AS DIRECTED BY THE ENGINEER. PRIMARY LONGITUDINAL REINFORCING SHALL BE CONTINUOUS THRU ALL CONSTRUCTION JOINTS. NO HEAVY EQUIPMENT WILL BE PERMITTED ON THE FINISHED DECK WITHIN 5' OF ANY CONSTRUCTION JOINT UNTIL THE DECK SLAB IS IN PLACE ON BOTH SIDES OF THE RESPECTIVE JOINT. ALL CONSTRUCTION JOINTS SHALL BE PREPARED AND SEALED USING HIGH MOLECULAR WEIGHT METHACRYLATE IN ACCORDANCE WITH SECTION 523 OF THE STANDARD SPECIFICATIONS. DO NOT SAW-CUT GROOVE WITHIN 6" OF ANY CONSTRUCTION JOINT.



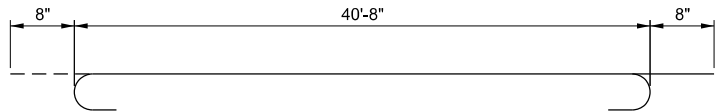
SECTION A



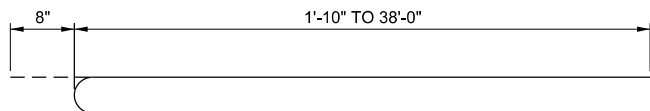
SECTION B



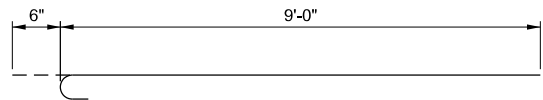
SECTION C



A1 #6 x 42'-0"

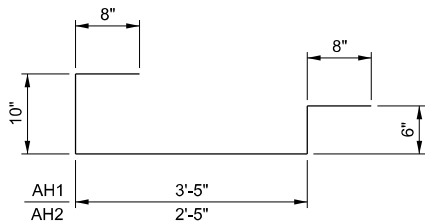


A2 #6 x 20'-7" AVG.

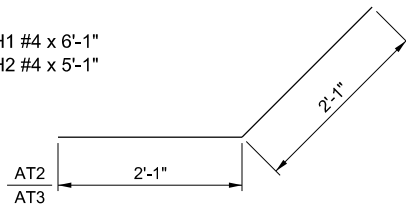


AC #4 x 9'-6"

SLAB BAR LIST - BRIDGE "B"					
MARK	NO.	SIZE	FORM	LENGTH	REMARKS
EPOXY COATED REINFORCING BARS					
A1	763	#6	BNT.	42'-0"	
A2	176	#6	BNT.	20'-7" AVG.	2'-6" TO 38'-8"
AC	1524	#4	BNT.	9'-6"	
AH1	64	#4	BNT.	6'-1"	
AH2	12	#4	BNT.	5'-1"	
AT1	8	#4	STR.	51'-10"	
AT2	8	#4	BNT.	4'-2"	
AT3	8	#4	BNT.	3'-10"	
AT4	32	#4	STR.	9'-3"	
AT5	16	#4	STR.	1'-9"	
B1	763	#5	STR.	40'-8"	
B2	126	#5	STR.	19'-11" AVG.	1'-10" TO 38'-0"
EB1	42	#5	STR.	49'-11"	
EB2	210	#5	STR.	60'-0"	
EB3	84	#6	STR.	60'-0"	
EB4	42	#5	STR.	37'-7"	
ET1	42	#5	STR.	49'-11"	
ET2	210	#5	STR.	60'-0"	
ET3	84	#6	STR.	60'-0"	
ET4	42	#5	STR.	37'-7"	
ET5	82	#6	STR.	50'-0"	
ET6	41	#6	STR.	20'-0"	
ET7	41	#6	STR.	27'-0"	
ET8	41	#6	STR.	38'-0"	
ET9	41	#6	STR.	28'-0"	



AH1 #4 x 6'-1"
AH2 #4 x 5'-1"



AT2 #4 x 4'-2"
AT3 #4 x 3'-10"

PRELIMINARY PLANS

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

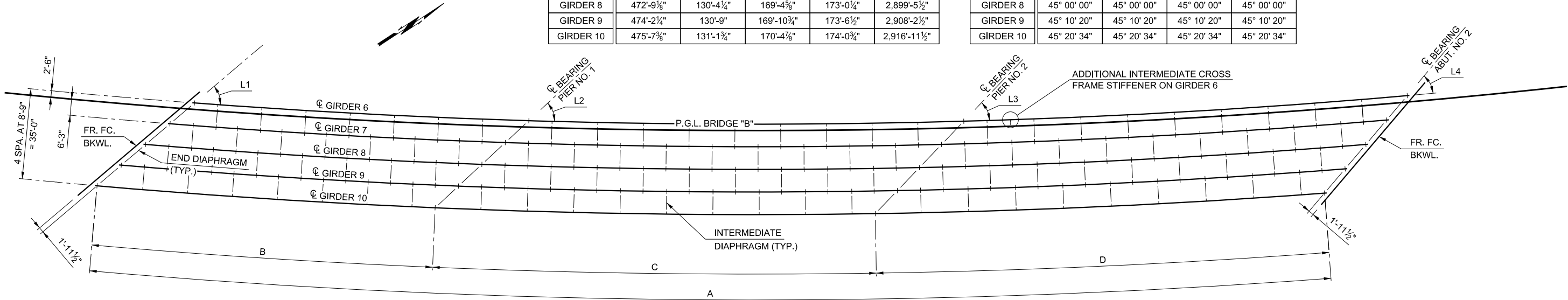
DESIGN	GLF		US 81 OVER UNION PACIFIC RAILROAD	KINGFISHER COUNTY
DRAWN	EMW		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
CHECKED	X		SLAB DETAILS - BRIDGE "B"	
APPROVED			STATE JOB NO. 29849(04) SHEET NO. B046	
SQUAD	MacArthur			

PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-B-framing.dgn

DIMENSION SCHEDULE - BRIDGE "B"					
DIMENSION	A	B	C	D	RADIUS
GIRDER 6	469'-10 ⁷ / ₈ "	129'-6 ¹³ / ₁₆ "	168'-4 ⁵ / ₁₆ "	171'-11 ¹¹ / ₁₆ "	2,881'-11 ¹ / ₂ "
GIRDER 7	471'-4"	129'-11 ¹ / ₁₆ "	168'-10 ⁷ / ₁₆ "	172'-6"	2,890'-8 ¹ / ₂ "
GIRDER 8	472'-9 ¹ / ₈ "	130'-4 ¹ / ₄ "	169'-4 ⁵ / ₈ "	173'-0 ¹ / ₄ "	2,899'-5 ¹ / ₂ "
GIRDER 9	474'-2 ¹ / ₄ "	130'-9"	169'-10 ³ / ₄ "	173'-6 ¹ / ₂ "	2,908'-2 ¹ / ₂ "
GIRDER 10	475'-7 ³ / ₈ "	131'-1 ³ / ₄ "	170'-4 ⁷ / ₈ "	174'-0 ³ / ₄ "	2,916'-11 ¹ / ₂ "

ANGLE SCHEDULE - BRIDGE "B"				
ANGLE	L1	L2	L3	L4
GIRDER 6	44° 39' 04"	44° 39' 04"	44° 39' 04"	44° 39' 04"
GIRDER 7	44° 49' 35"	44° 49' 35"	44° 49' 35"	44° 49' 35"
GIRDER 8	45° 00' 00"	45° 00' 00"	45° 00' 00"	45° 00' 00"
GIRDER 9	45° 10' 20"	45° 10' 20"	45° 10' 20"	45° 10' 20"
GIRDER 10	45° 20' 34"	45° 20' 34"	45° 20' 34"	45° 20' 34"

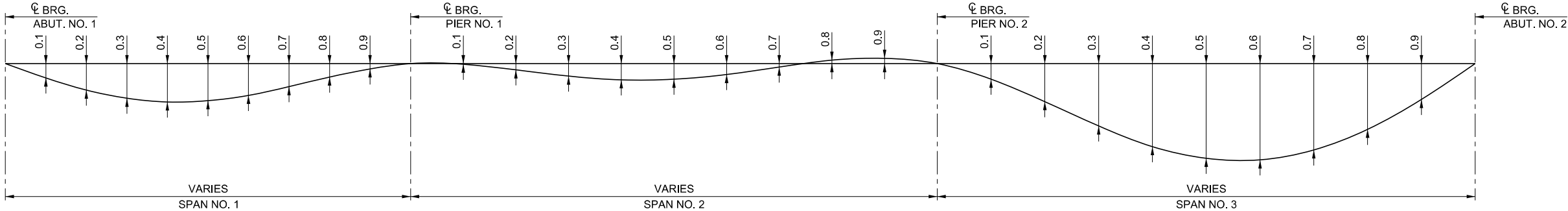
REVISIONS		
REV. NO.	DESCRIPTION	DATE



FRAMING PLAN - BRIDGE "B"

DEAD LOAD DEFLECTION SCHEDULE																															
LOAD	CL BRG. ABUT. NO. 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL BRG. PIER NO. 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL BRG. PIER NO. 2	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL BRG. ABUT. NO. 2
A	0.00"	0.15"	0.28"	0.36"	0.40"	0.38"	0.32"	0.23"	0.13"	0.05"	0.00"	0.02"	0.09"	0.17"	0.21"	0.20"	0.13"	0.04"	-0.04"	-0.06"	0.00"	0.19"	0.47"	0.77"	1.02"	1.17"	1.19"	1.07"	0.81"	0.44"	0.00"
B	0.00"	0.46"	0.85"	1.11"	1.23"	1.19"	1.02"	0.74"	0.43"	0.17"	0.00"	0.02"	0.20"	0.40"	0.52"	0.50"	0.35"	0.11"	-0.11"	-0.17"	0.00"	0.50"	1.22"	2.00"	2.66"	3.04"	3.09"	2.77"	2.11"	1.15"	0.00"

- A GIRDERS, CROSS-FRAMES, AND STIFFENERS
B DECK SLAB, HAUNCH, AND PARAPET (FUTURE WEARING SURFACE IS NOT INCLUDED)

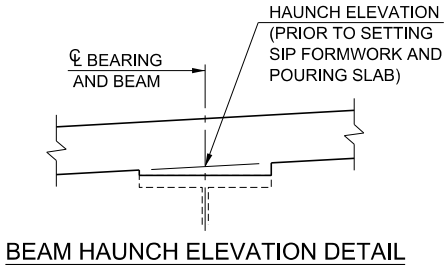


DEAD LOAD DEFLECTION DIAGRAM

SPAN NO. 1 - THEORETICAL HAUNCH ELEVATIONS											
	CL BRG. ABUT. NO. 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL BRG. PIER NO. 1
GIRDER 6	1108.21	1108.70	1109.12	1109.40	1109.55	1109.53	1109.40	1109.16	1108.90	1108.68	1108.56
GIRDER 7	1108.64	1109.15	1109.58	1109.88	1110.04	1110.04	1109.90	1109.67	1109.40	1109.18	1109.04
GIRDER 8	1109.07	1109.60	1110.05	1110.37	1110.54	1110.54	1110.41	1110.18	1109.90	1109.66	1109.51
GIRDER 9	1109.50	1110.06	1110.53	1110.87	1111.06	1111.07	1110.94	1110.70	1110.40	1110.15	1109.98
GIRDER 10	1109.92	1110.52	1111.02	1111.39	1111.60	1111.63	1111.49	1111.23	1110.92	1110.64	1110.45

SPAN NO. 3 - THEORETICAL HAUNCH ELEVATIONS											
	℄ BRG. PIER NO. 2	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ BRG. ABUT. NO. 2
GIRDER 6	1108.05	1108.48	1109.10	1109.74	1110.23	1110.41	1110.26	1109.73	1108.87	1107.72	1106.39
GIRDER 7	1108.58	1108.99	1109.59	1110.24	1110.74	1110.94	1110.80	1110.30	1109.45	1108.31	1106.98
GIRDER 8	1109.11	1109.51	1110.11	1110.76	1111.27	1111.50	1111.38	1110.88	1110.05	1108.91	1107.57
GIRDER 9	1109.64	1110.04	1110.63	1111.29	1111.83	1112.07	1111.98	1111.50	1110.67	1109.52	1108.16
GIRDER 10	1110.17	1110.54	1111.12	1111.82	1112.38	1112.69	1112.63	1112.17	1111.33	1110.14	1108.74

SPAN NO. 2 - THEORETICAL HAUNCH ELEVATIONS											
	℄ BRG. PIER NO. 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ BRG. PIER NO. 2
GIRDER 6	1108.56	1108.60	1108.77	1108.91	1108.96	1108.85	1108.61	1108.31	1108.03	1107.93	1108.05
GIRDER 7	1109.04	1109.08	1109.25	1109.43	1109.50	1109.43	1109.21	1108.90	1108.62	1108.49	1108.58
GIRDER 8	1109.51	1109.55	1109.73	1109.92	1110.02	1109.97	1109.78	1109.48	1109.19	1109.04	1109.11
GIRDER 9	1109.98	1110.01	1110.19	1110.40	1110.52	1110.49	1110.32	1110.03	1109.74	1109.59	1109.64
GIRDER 10	1110.45	1110.45	1110.63	1110.85	1111.00	1111.01	1110.84	1110.57	1110.28	1110.12	1110.17



HAUNCH ELEVATIONS ARE BASED ON DEAD LOAD DEFLECTIONS DESCRIBED IN NOTES A AND B ON THE DEAD LOAD DEFLECTION SCHEDULE ON THIS SHEET. PRIOR TO SETTING FINAL HAUNCH ELEVATIONS, CONTRACTOR SHALL SUBMIT TOP OF GIRDER ELEVATIONS TO THE ENGINEER AT LOCATIONS SHOWN (10TH POINTS) ALONG CENTERLINE OF BEAM. THE DEPARTMENT WILL APPROVE OR REVISE HAUNCH ELEVATIONS SHOWN IN THE PLANS. ANY ADJUSTMENTS TO QUANTITIES BASED ON REVISED HAUNCH HEIGHTS SHALL BE PROVIDED AT NO COST TO THE DEPARTMENT.

PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

DESIGN	GLF		US 81 OVER UNION PACIFIC RAILROAD	KINGFISHER COUNTY
DRAWN	JLF		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
CHECKED	GLF		FRAMING PLAN - BRIDGE "B"	
APPROVED			STATE JOB NO. 29849(04)	
SQUAD	MacArthur		SHEET NO. B047	

PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-Bridge-B-girder.dgn

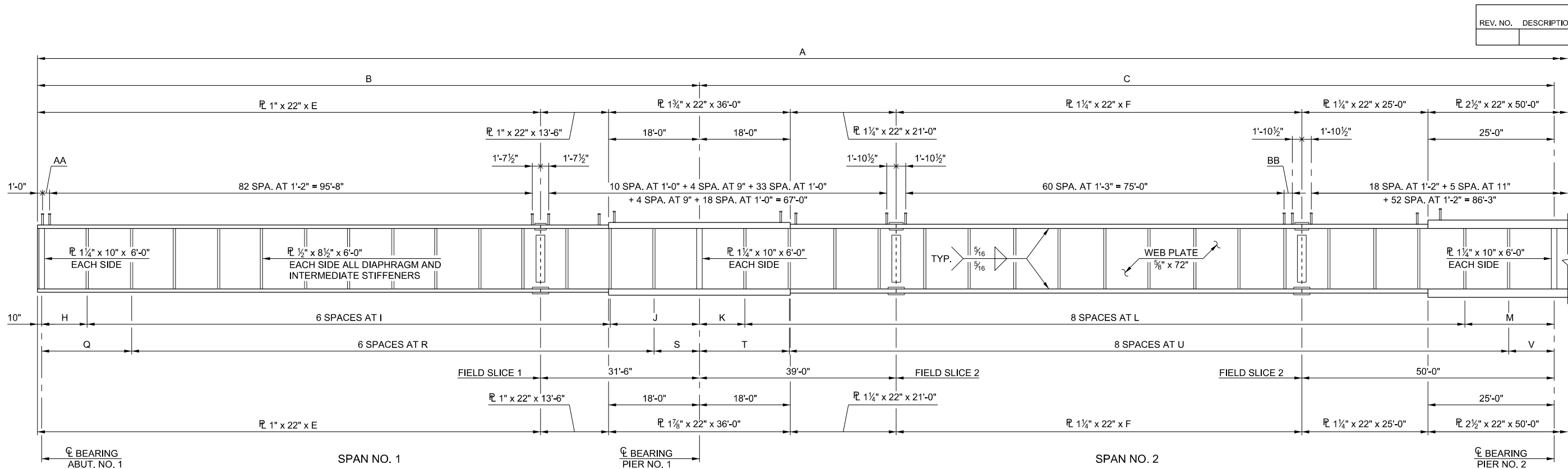


PLATE GIRDER ELEVATION

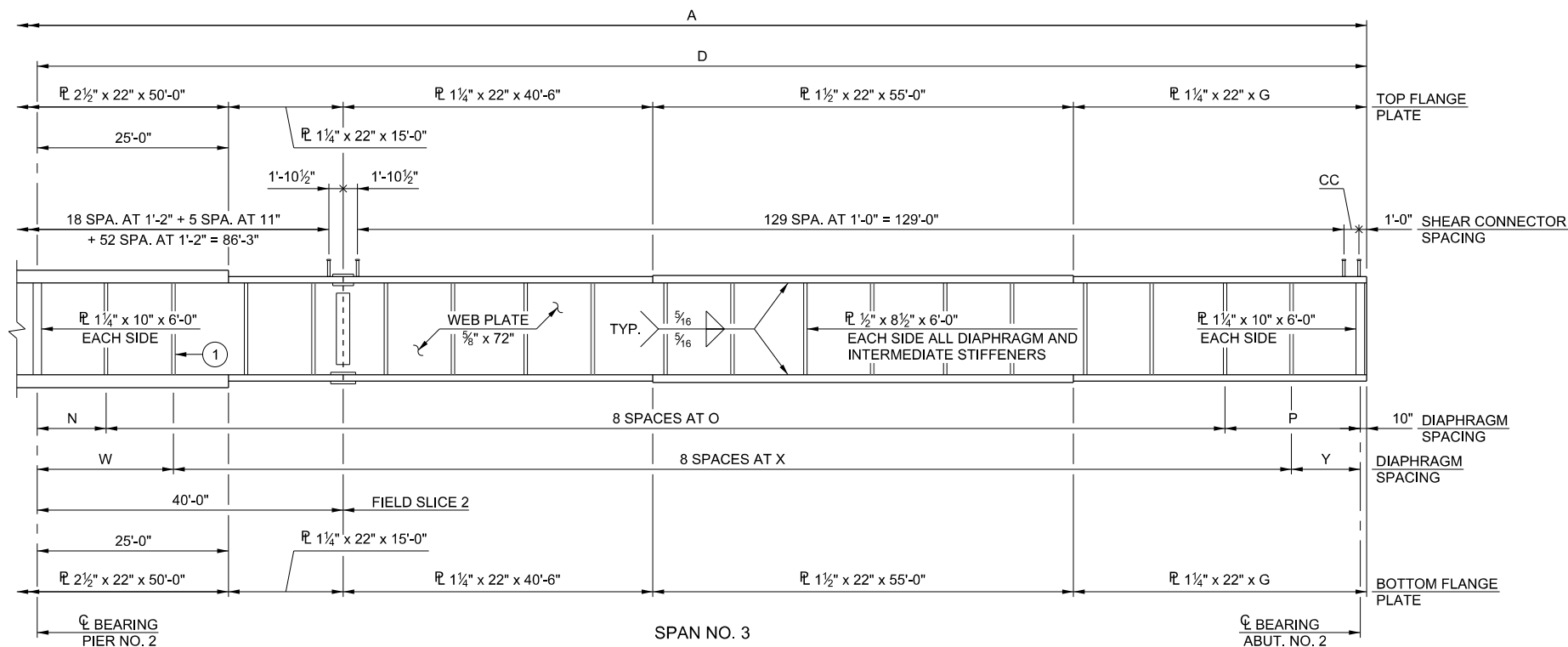


PLATE GIRDER ELEVATION

① ADDITIONAL INTERMEDIATE CROSS FRAME STIFFENER ON INSIDE FACE OF GIRDER 6 AS SHOWN.

SHEAR CONNECTOR SPACING SCHEDULE - BRIDGE "B"			
DIMENSION	AA	BB	CC
GIRDER 1	1 SPA. AT 7 ⁵ / ₁₆ " = 7 ⁵ / ₁₆ "	1 SPA. AT 7 ⁵ / ₁₆ " = 7 ⁵ / ₁₆ "	1 SPA. AT 11 ³ / ₁₆ " = 11 ³ / ₁₆ "
GIRDER 2	1 SPA. AT 1'-0 ¹ / ₁₆ " = 1'-0 ¹ / ₁₆ "	1 SPA. AT 1'-1 ¹ / ₁₆ " = 1'-1 ¹ / ₁₆ "	2 SPA. AT 8 ³ / ₁₆ " = 1'-5 ⁷ / ₁₆ "
GIRDER 3	2 SPA. AT 8 ³ / ₁₆ " = 1'-4 ³ / ₁₆ "	2 SPA. AT 9 ³ / ₁₆ " = 1'-7 ⁵ / ₁₆ "	2 SPA. AT 11 ⁷ / ₁₆ " = 1'-11 ³ / ₁₆ "
GIRDER 4	2 SPA. AT 10 ³ / ₁₆ " = 1'-9 ¹ / ₂ "	2 SPA. AT 1'-0 ⁷ / ₈ " = 2'-1 ¹ / ₄ "	3 SPA. AT 10" = 2'-6"
GIRDER 5	2 SPA. AT 1'-1 ¹ / ₈ " = 2'-2 ³ / ₁₆ "	3 SPA. AT 10 ³ / ₁₆ " = 2'-7 ⁵ / ₁₆ "	4 SPA. AT 9 ¹ / ₁₆ " = 3'-0 ¹ / ₄ "

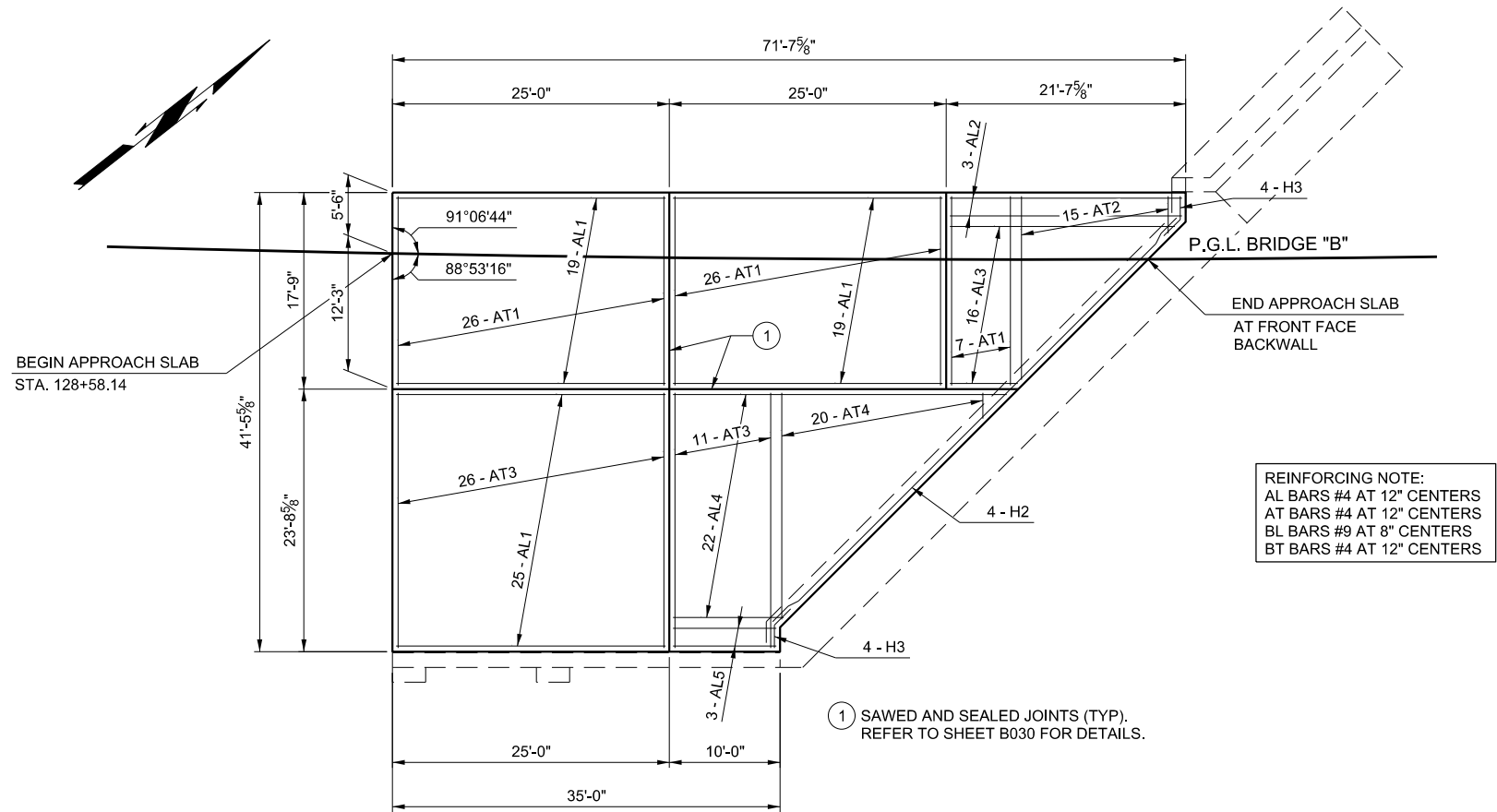
PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

DIMENSION SCHEDULE - BRIDGE "B"					
DIMENSION	GIRDER 6	GIRDER 7	GIRDER 8	GIRDER 9	GIRDER 10
A	471'-6 ⁷ / ₁₆ "	473'-0"	474'-5 ⁵ / ₁₆ "	475'-10 ¹ / ₄ "	477'-3 ³ / ₈ "
B	130'-4 ¹³ / ₁₆ "	130'-9 ⁹ / ₁₆ "	131'-2 ¹ / ₄ "	131'-7"	131'-11 ¹ / ₄ "
C	168'-4 ⁹ / ₁₆ "	168'-10 ⁷ / ₁₆ "	169'-4 ⁵ / ₈ "	169'-10 ³ / ₄ "	170'-4 ¹ / ₈ "
D	172'-9 ¹ / ₁₆ "	173'-4"	173'-10 ¹ / ₄ "	174'-4 ¹ / ₂ "	174'-10 ³ / ₄ "
E	98'-10 ³ / ₁₆ "	99'-3 ⁹ / ₁₆ "	99'-8 ¹ / ₄ "	100'-1"	100'-5 ³ / ₄ "
F	79'-4 ⁵ / ₁₆ "	79'-10 ⁷ / ₁₆ "	80'-4 ⁵ / ₈ "	80'-10 ³ / ₄ "	81'-4 ¹ / ₈ "
G	37'-3 ¹ / ₁₆ "	37'-9 ³ / ₁₆ "	38'-4 ¹ / ₄ "	38'-10 ¹ / ₂ "	39'-4 ³ / ₄ "
H	9'-0"	9'-0"	9'-0"	9'-0"	-
I	17'-1 ⁹ / ₁₆ "	17'-2 ⁷ / ₁₆ "	17'-3 ³ / ₈ "	17'-4 ¹ / ₄ "	-
J	17'-9 ¹ / ₂ "	17'-8 ³ / ₁₆ "	17'-8 ³ / ₁₆ "	17'-7 ⁹ / ₁₆ "	-
K	9'-0"	9'-0"	9'-0"	9'-0"	-
L	17'-8 ³ / ₈ "	17'-9 ³ / ₁₆ "	17'-10 ¹ / ₁₆ "	17'-10 ⁷ / ₈ "	-
M	17'-9 ¹ / ₂ "	17'-8 ³ / ₁₆ "	17'-8 ³ / ₁₆ "	17'-7 ⁹ / ₁₆ "	-
N	9'-0"	9'-0"	9'-0"	9'-0"	-
O	18'-1 ³ / ₄ "	18'-2 ⁵ / ₈ "	18'-3 ¹ / ₂ "	18'-4 ³ / ₈ "	-
P	17'-9 ¹ / ₂ "	17'-8 ¹ / ₁₆ "	17'-8 ³ / ₁₆ "	17'-7 ⁹ / ₁₆ "	-
Q	-	17'-10 ⁷ / ₁₆ "	17'-9 ¹ / ₁₆ "	17'-9 ³ / ₁₆ "	17'-8 ⁹ / ₁₆ "
R	-	17'-2 ³ / ₁₆ "	17'-3 ¹ / ₁₆ "	17'-4"	17'-4 ⁷ / ₈ "
S	-	9'-0"	9'-0"	9'-0"	9'-0"
T	-	17'-10 ⁷ / ₁₆ "	17'-9 ¹ / ₁₆ "	17'-9 ³ / ₁₆ "	17'-8 ⁹ / ₁₆ "
U	-	17'-9"	17'-9 ⁷ / ₈ "	17'-10 ¹ / ₁₆ "	17'-11 ¹ / ₁₆ "
V	-	9'-0"	9'-0"	9'-0"	9'-0"
W	-	17'-10 ⁷ / ₁₆ "	17'-9 ¹ / ₁₆ "	17'-9 ³ / ₁₆ "	17'-8 ⁹ / ₁₆ "
X	-	18'-2 ¹ / ₁₆ "	18'-3 ⁵ / ₁₆ "	18'-4 ³ / ₁₆ "	18'-5"
Y	-	9'-0"	9'-0"	9'-0"	9'-0"

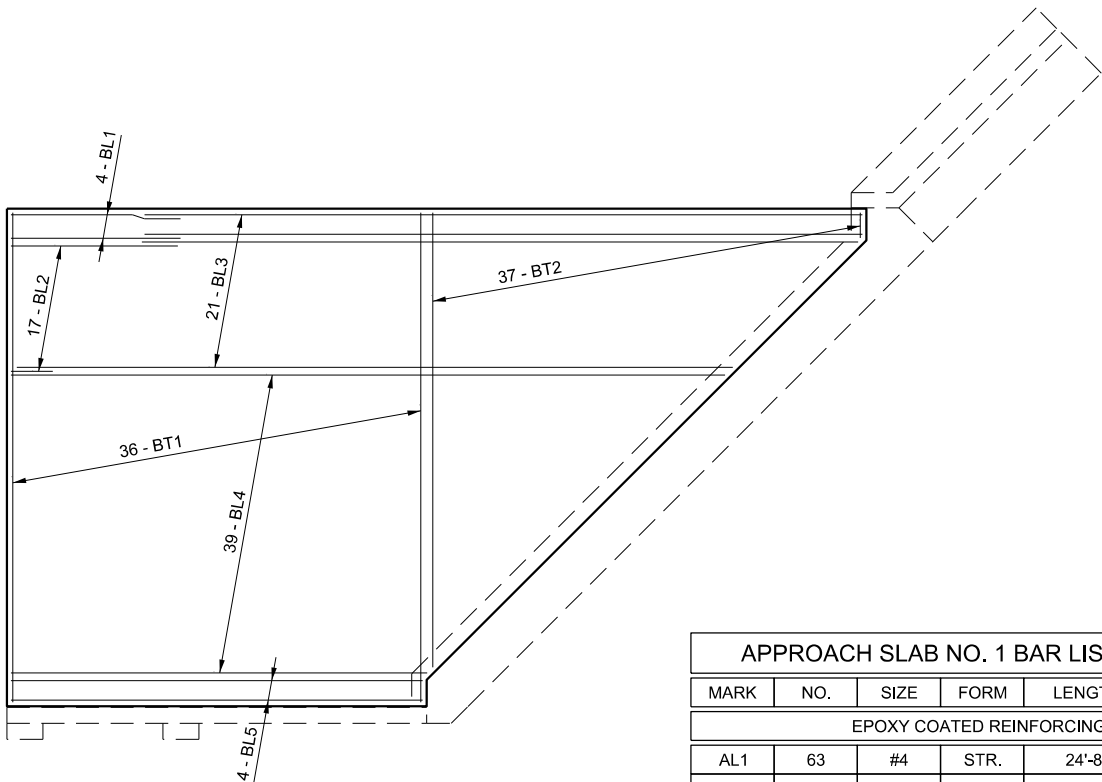
NOTE:
DIAPHRAGM AND INTERMEDIATE STIFFENERS SHALL BE PLACED ONE EACH FACE OF THE WEB FOR INTERIOR GIRDERS. EXTERIOR GIRDERS SHALL HAVE DIAPHRAGM AND INTERMEDIATE STIFFENERS AT THE INTERIOR WEB FACE ONLY.

DESIGN	GLF		US 81 OVER UNION PACIFIC RAILROAD	KINGFISHER COUNTY
DRAWN	EMW		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
CHECKED	X		PLATE GIRDER DETAILS - BRIDGE "B"	
APPROVED			STATE JOB NO. 29849(04)	
SQUAD	MacArthur		SHEET NO. B048	

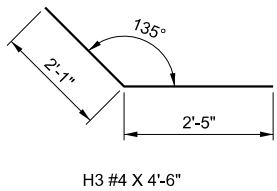
REVISIONS		
REV. NO.	DESCRIPTION	DATE



REINFORCING NOTE:
AL BARS #4 AT 12" CENTERS
AT BARS #4 AT 12" CENTERS
BL BARS #9 AT 8" CENTERS
BT BARS #4 AT 12" CENTERS

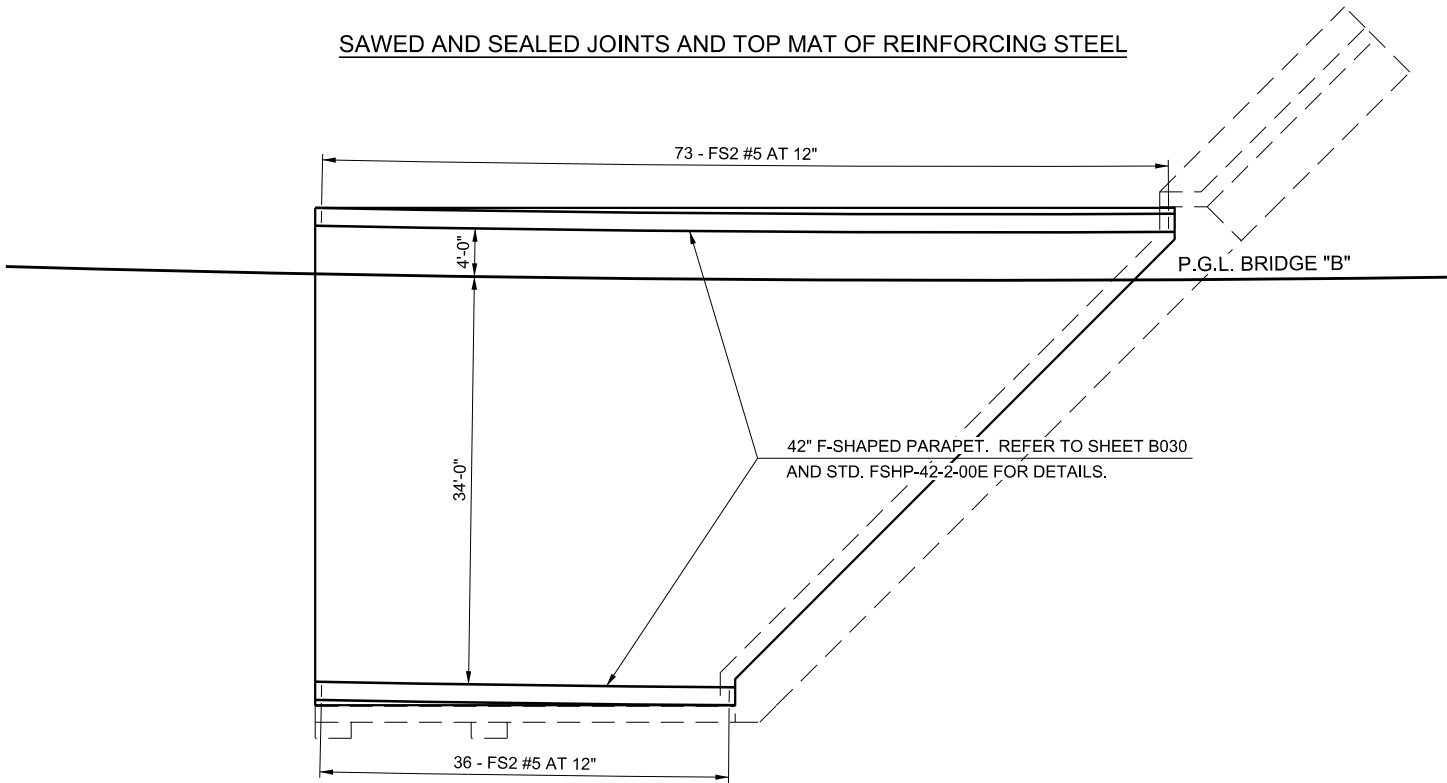


BOTTOM MAT OF REINFORCING STEEL



APPROACH SLAB NO. 1 BAR LIST - BRIDGE "B"					
MARK	NO.	SIZE	FORM	LENGTH	REMARKS
EPOXY COATED REINFORCING BARS					
AL1	63	#4	STR.	24'-8"	
AL2	3	#4	STR.	21'-4"	
AL3	16	#4	STR.	13'-6" AVG.	6'-3" TO 20'-9"
AL4	22	#4	STR.	20'-9" AVG.	10'-6" TO 31'-0"
AL5	3	#4	STR.	9'-8"	
AT1	59	#4	STR.	17'-5"	
AT2	15	#4	STR.	10'-2" AVG.	3'-5" TO 16'-11"
AT3	37	#4	STR.	23'-5"	
AT4	20	#4	STR.	11'-2"	2'-0" TO 20'-4"
BL1	4	#9	STR.	14'-4"	
BL2	17	#9	STR.	8'-11" AVG.	3'-8" TO 14'-2"
BL3	21	#9	STR.	60'-0"	
BL4	39	#9	STR.	47'-4" AVG.	35'-2" TO 60'-0"
BL5	4	#9	STR.	34'-8"	
BT1	36	#4	STR.	41'-2"	
BT2	37	#4	STR.	20'-3" AVG.	2'-5" TO 38'-1"
FS2	109	#5	BNT.	7'-4"	
H2	4	#4	STR.	51'-10"	
H3	8	#4	BNT.	4'-6"	

SAWED AND SEALED JOINTS AND TOP MAT OF REINFORCING STEEL



42" F-SHAPED PARAPET

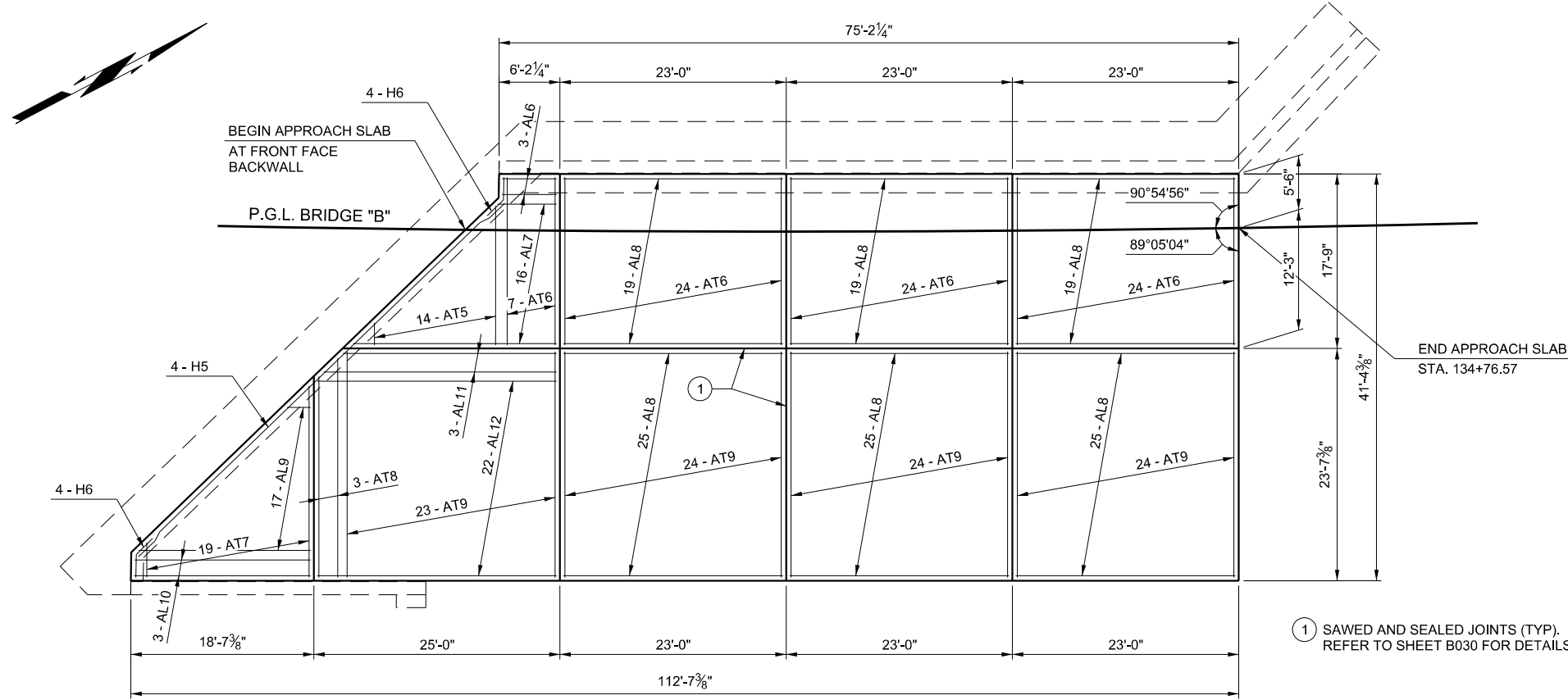
APPROACH SLAB QUANTITIES - BRIDGE "B"				
DESCRIPTION	UNIT	APP. SLAB NO. 1	APP. SLAB NO. 2	TOTAL
APPROACH SLAB	SY	246.60	432.60	679.20
SAW-CUT GROOVING	SY	224.80	396.50	621.30
42" F-SHAPED PARAPET	LF	106.70	187.80	294.50
WATER REPELLENT (VISUALLY INSPECTED)	SY	52.00	92.00	144.00

PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

DESIGN	GLF	
DRAWN	JLF	
CHECKED	GLF	
APPROVED		
SQUAD	MacArthur	

US 81 OVER UNION PACIFIC RAILROAD		KINGFISHER COUNTY
OKLAHOMA DEPARTMENT OF TRANSPORTATION		
APPROACH SLAB NO. 1 - BRIDGE "B"		
STATE JOB NO. 29849(04)	SHEET NO. B049	

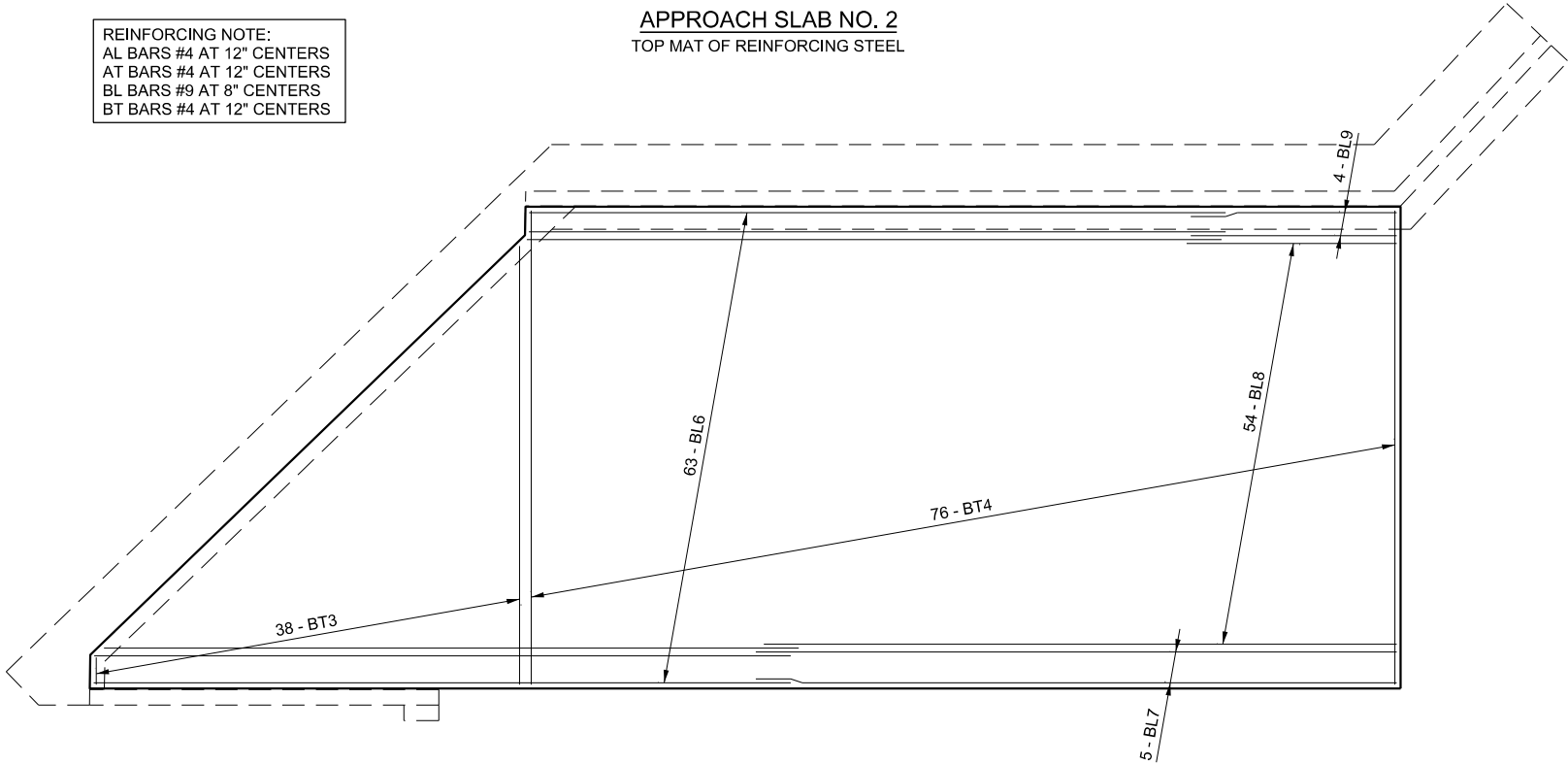
REVISIONS		
REV. NO.	DESCRIPTION	DATE



① SAWED AND SEALED JOINTS (TYP).
REFER TO SHEET B030 FOR DETAILS.

REINFORCING NOTE:
AL BARS #4 AT 12" CENTERS
AT BARS #4 AT 12" CENTERS
BL BARS #9 AT 8" CENTERS
BT BARS #4 AT 12" CENTERS

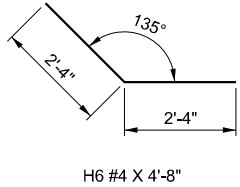
APPROACH SLAB NO. 2
TOP MAT OF REINFORCING STEEL



APPROACH SLAB NO. 2
BOTTOM MAT OF REINFORCING STEEL

APPROACH SLAB NO. 2 BAR LIST - BRIDGE "B"					
MARK	NO.	SIZE	FORM	LENGTH	REMARKS
EPOXY COATED REINFORCING BARS					
AL6	3	#4	STR.	5'-10"	
AL7	16	#4	STR.	14'-0" AVG.	6'-6" TO 21'-6"
AL8	132	#4	STR.	22'-8"	
AL9	17	#4	STR.	9'-11" AVG.	1'-10" TO 18'-0"
AL10	3	#4	STR.	18'-3"	
AL11	3	#4	STR.	22'-10" AVG.	21'-10" TO 23'-10"
AL12	22	#4	STR.	24'-8"	
AT5	14	#4	STR.	7'-11" AVG.	1'-9" TO 14'-1"
AT6	79	#4	STR.	17'-5"	
AT7	19	#4	STR.	11'-11" AVG.	3'-7" TO 20'-3"
AT8	3	#4	STR.	21'-6" AVG.	20'-7" TO 22'-5"
AT9	95	#4	STR.	23'-3"	
BL6	63	#9	STR.	60'-0"	
BL7	5	#9	STR.	55'-3"	
BL8	54	#9	STR.	36'-5" AVG.	18'-3" TO 54'-7"
BL9	4	#9	STR.	17'-10"	
BT3	38	#4	STR.	20'-3" AVG.	2'-8" TO 37'-10"
BT4	76	#4	STR.	41'-0"	
FS2	191	#5	BNT.	7'-4"	
H5	4	#4	STR.	51'-9"	
H6	8	#4	BNT.	4'-8"	

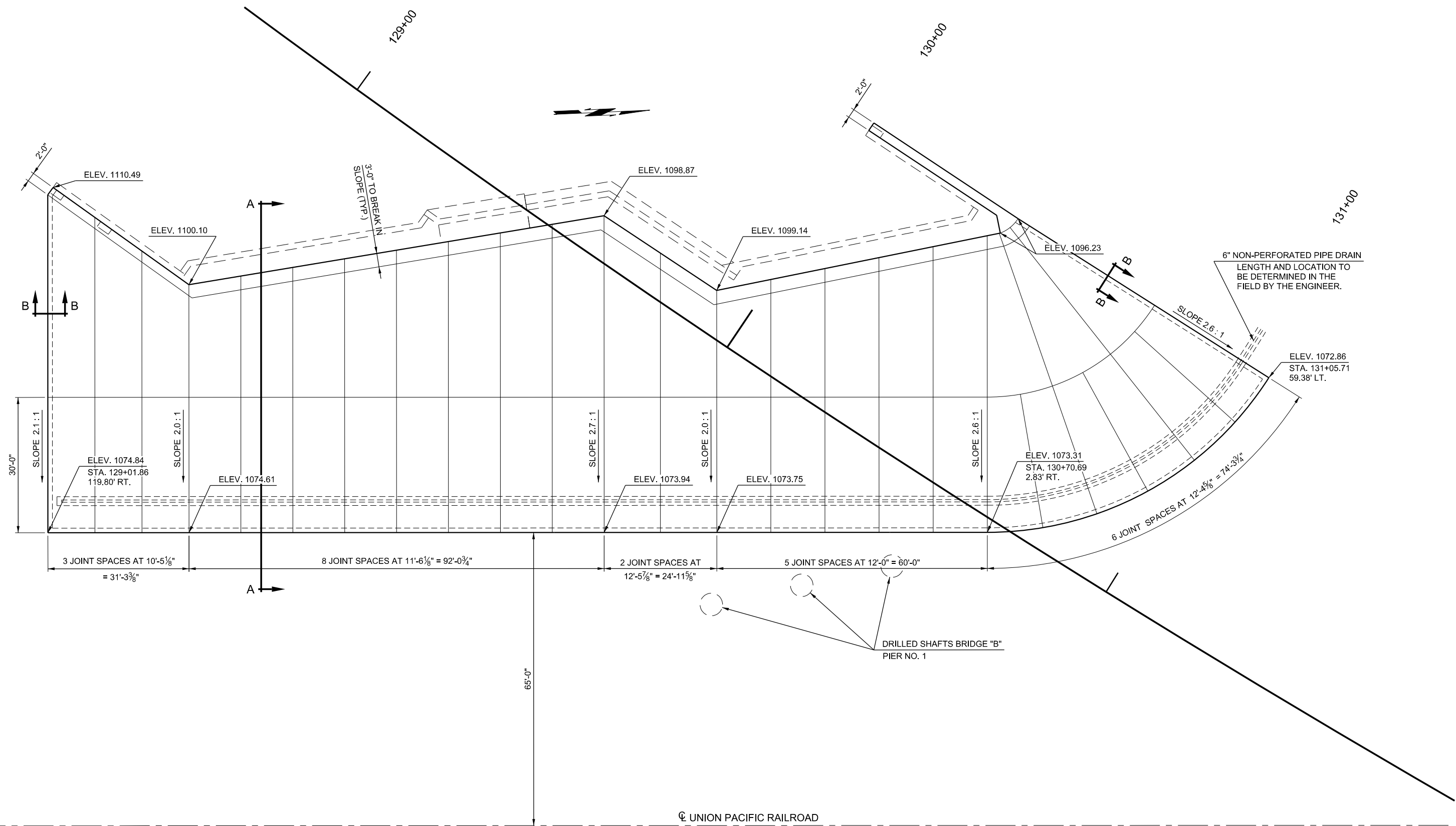
PARAPET DETAIL IS ON SHEET B030.



PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

US 81 OVER UNION PACIFIC RAILROAD			KINGFISHER COUNTY	
DESIGN	GLF		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN	JLF		APPROACH SLAB NO. 2 - BRIDGE "B"	
CHECKED	GLF			
APPROVED				
SQUAD	MacArthur			
STATE JOB NO. 29849(04)			SHEET NO. B050	

REVISIONS		
REV. NO.	DESCRIPTION	DATE



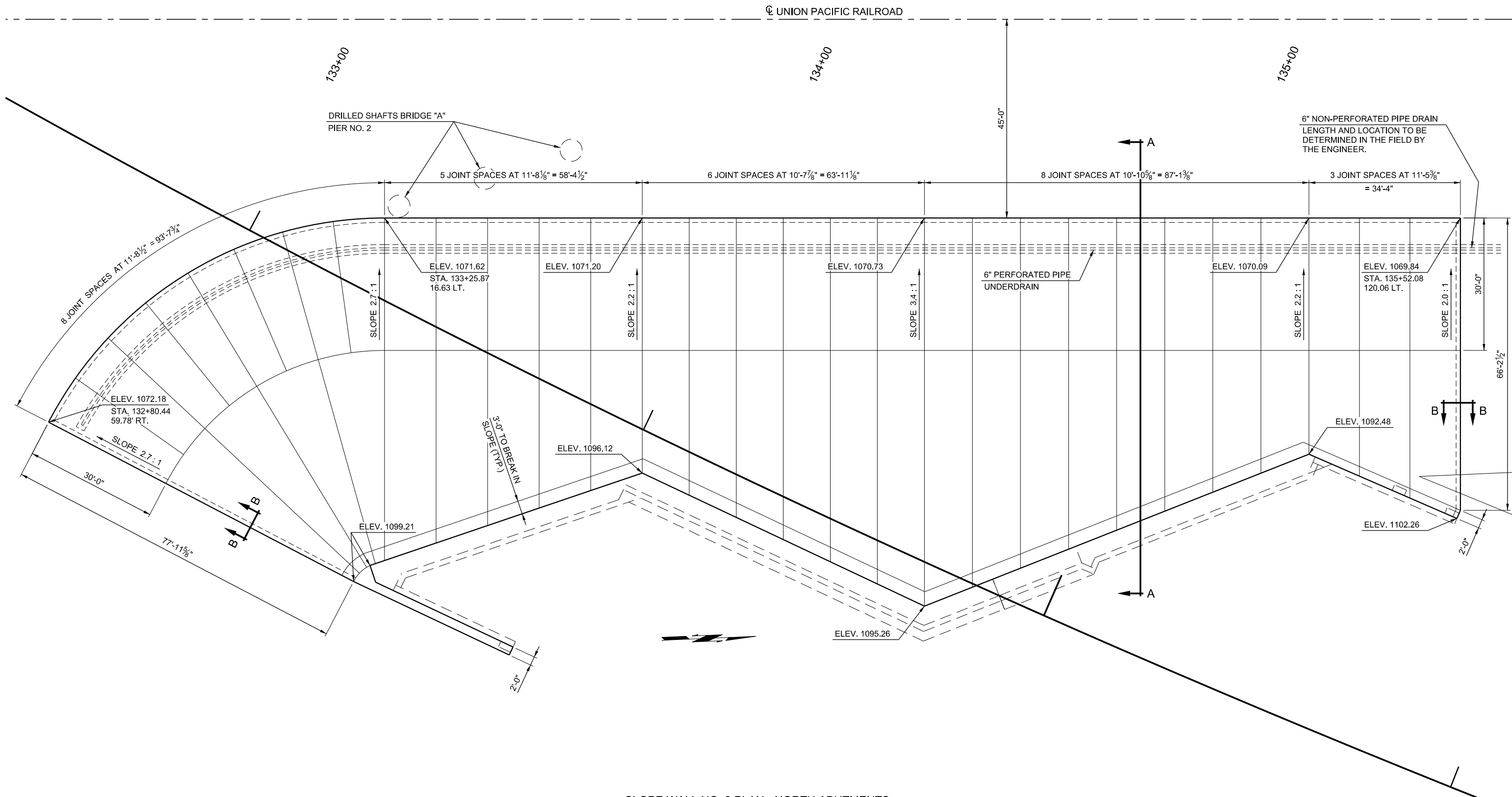
SLOPE WALL NO. 1 PLAN - SOUTH ABUTMENTS

PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

DESIGN		GLF	US 81 OVER UNION PACIFIC RAILROAD		KINGFISHER COUNTY
DRAWN		JLF	OKLAHOMA DEPARTMENT OF TRANSPORTATION SLOPE WALL PLAN AT SOUTH ABUTMENTS - BRIDGE "A" AND "B"		
CHECKED		GLF			
APPROVED					
SQUAD		MacArthur	STATE JOB NO. <u>29849(04)</u>		SHEET NO. <u>B051</u>

PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-slope-wall-abut1.dgn

REVISIONS		
REV. NO.	DESCRIPTION	DATE



SLOPE WALL NO. 2 PLAN - NORTH ABUTMENTS

PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

DESIGN	GLF
DRAWN	JLF
CHECKED	GLF
APPROVED	
SQUAD	MacArthur

US 81 OVER UNION PACIFIC RAILROAD		KINGFISHER COUNTY
OKLAHOMA DEPARTMENT OF TRANSPORTATION		
SLOPE WALL PLAN AT NORTH ABUTMENTS - BRIDGE "A" AND "B"		
STATE JOB NO. 29849(04)		SHEET NO. B052

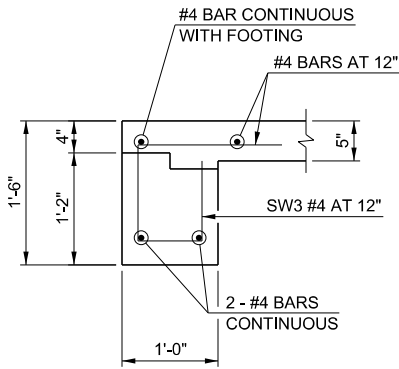
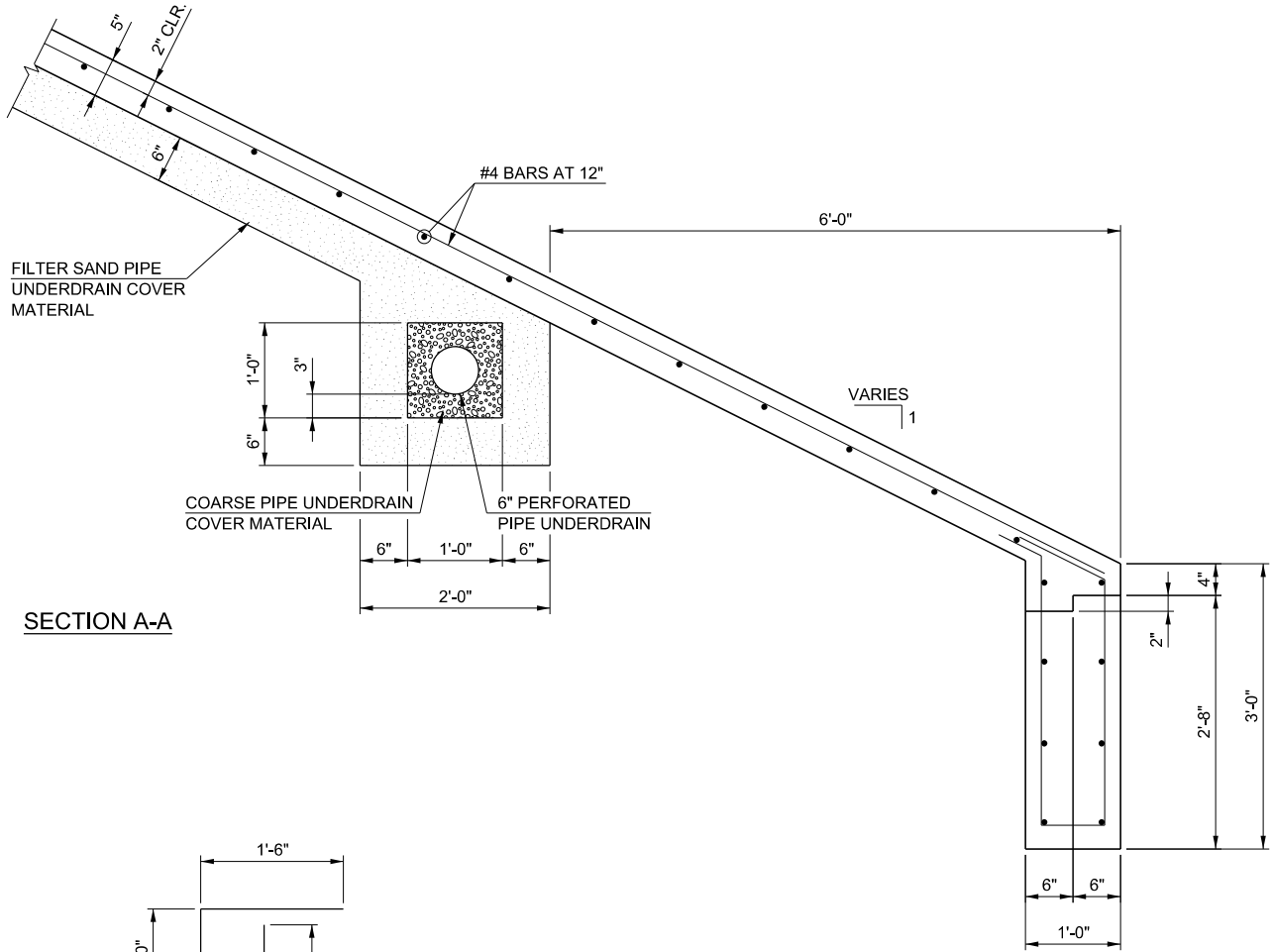
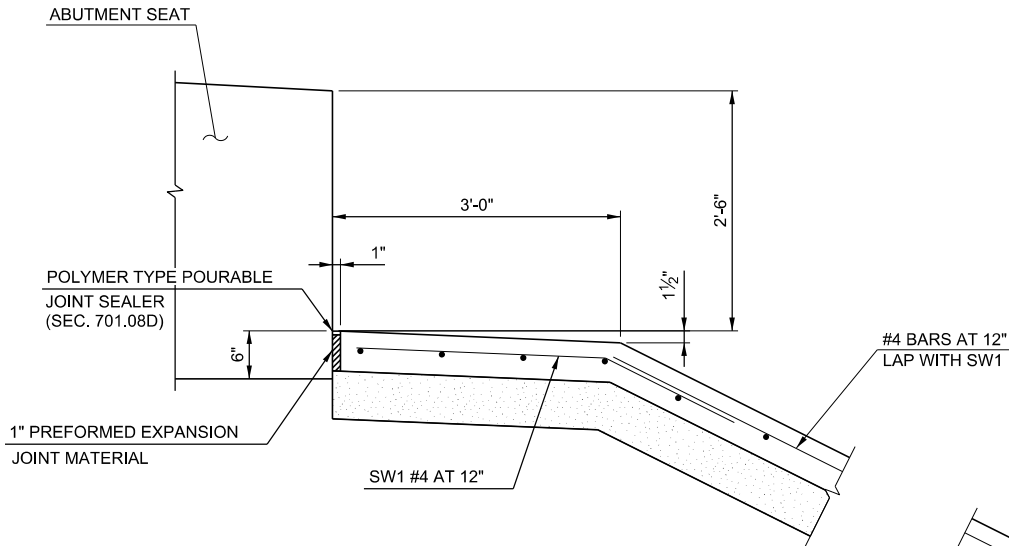
REVISIONS		
REV. NO.	DESCRIPTION	DATE

NOTES

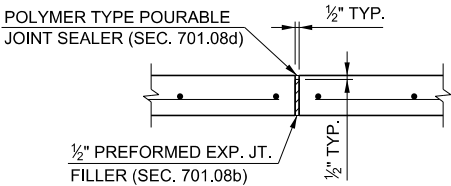
THE SURFACE AREA OF THE TOE OF SLOPE WALL IS INCLUDED IN THE PAY QUANTITY SHOWN FOR SLOPE WALL.

THE 5" CONCRETE SLOPE WALL WILL BE PAID FOR AT THE UNIT PRICE BID PER SQUARE YARD COMPLETE IN PLACE AS SHOWN ON THE PLANS. THIS PRICE SHALL INCLUDE ALL COSTS OF JOINT FILLER, REINFORCING STEEL, LABOR, AND ALL OTHER INCIDENTALS NECESSARY TO COMPLETE THE WORK. ALL MATERIALS AND WORK SHALL BE IN ACCORDANCE WITH THAT PART OF SECTION 610 COVERING CONCRETE SIDEWALKS. SLOPE WALLS SHALL BE CONSTRUCTED WITH CLASS "A" CONCRETE. IN ACCORDANCE WITH SECTION 509, COARSE AGGREGATE FOR THIN SECTION CONCRETE (701.06) MAY BE USED.

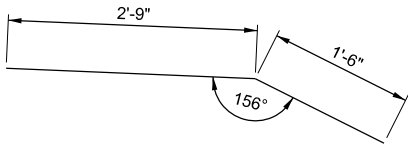
SLOPE WALL QUANTITIES				
DESCRIPTION	UNIT	NO. 1	NO. 2	TOTAL
SLOPE WALL (5")	SY	2,010.00	2,610.00	4,630.00
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	272.00	328.00	600.00
6" NON-PERF.PIPE UNDERDRAIN RND.	LF	40.00	40.00	80.00



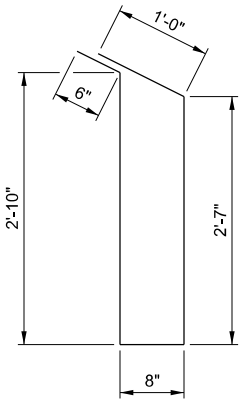
SECTION B-B



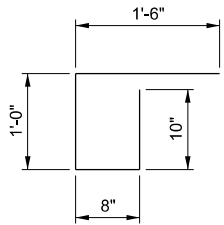
VERTICAL CONSTRUCTION
JOINT DETAIL



SW1 #4 x 4'-3"



SW2 #4 x 7'-7"



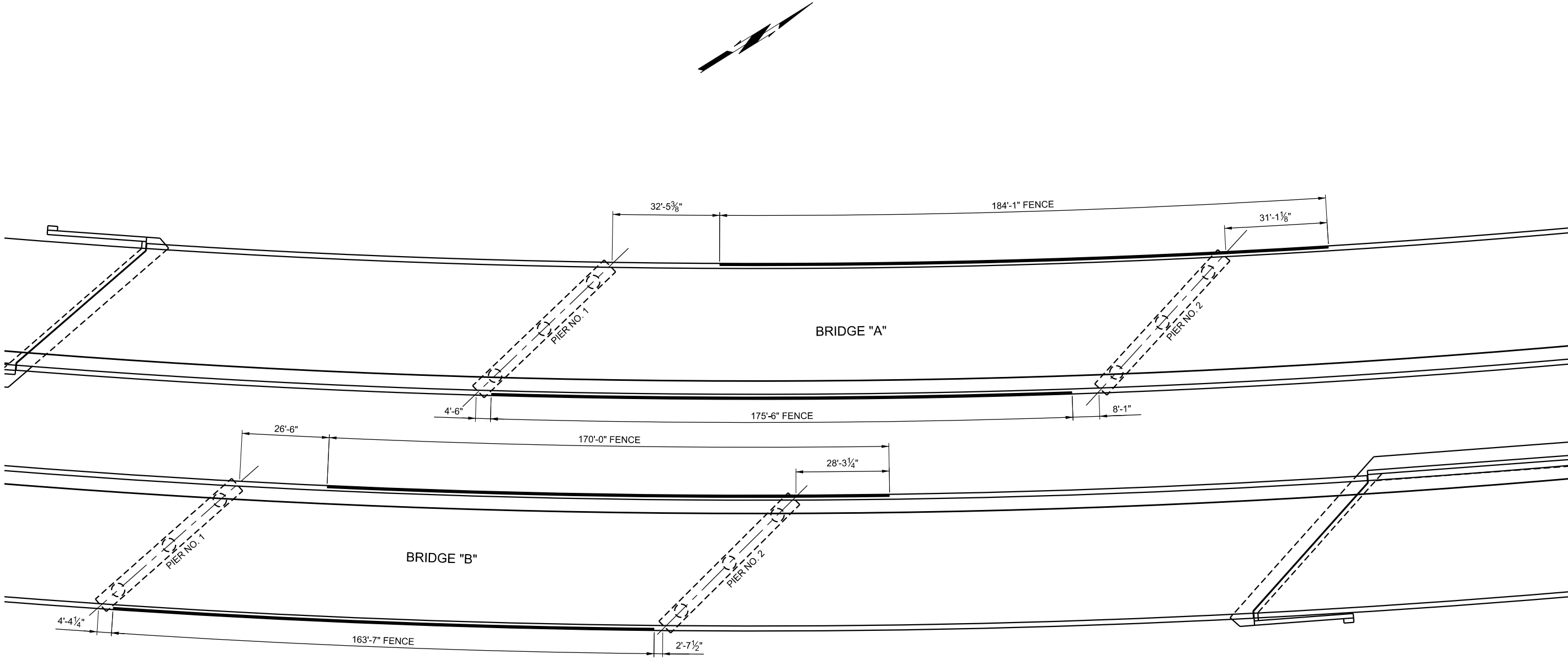
SW3 #4 x 4'-0"

PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

DESIGN	GLF	
DRAWN	JLF	
CHECKED	GLF	
APPROVED		
SQUAD	MacArthur	

US 81 OVER UNION PACIFIC RAILROAD		KINGFISHER COUNTY
OKLAHOMA DEPARTMENT OF TRANSPORTATION		
SLOPE WALL DETAILS - BRIDGE "A" AND "B"		
STATE JOB NO. 29849(04)		SHEET NO. B053

REVISIONS		
REV. NO.	DESCRIPTION	DATE



PLAN
MEASURE DISTANCES ON ϕ OF TOP
OF PARAPET FROM ϕ OF PIERS

PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

US 81 OVER UNION PACIFIC RAILROAD KINGFISHER COUNTY

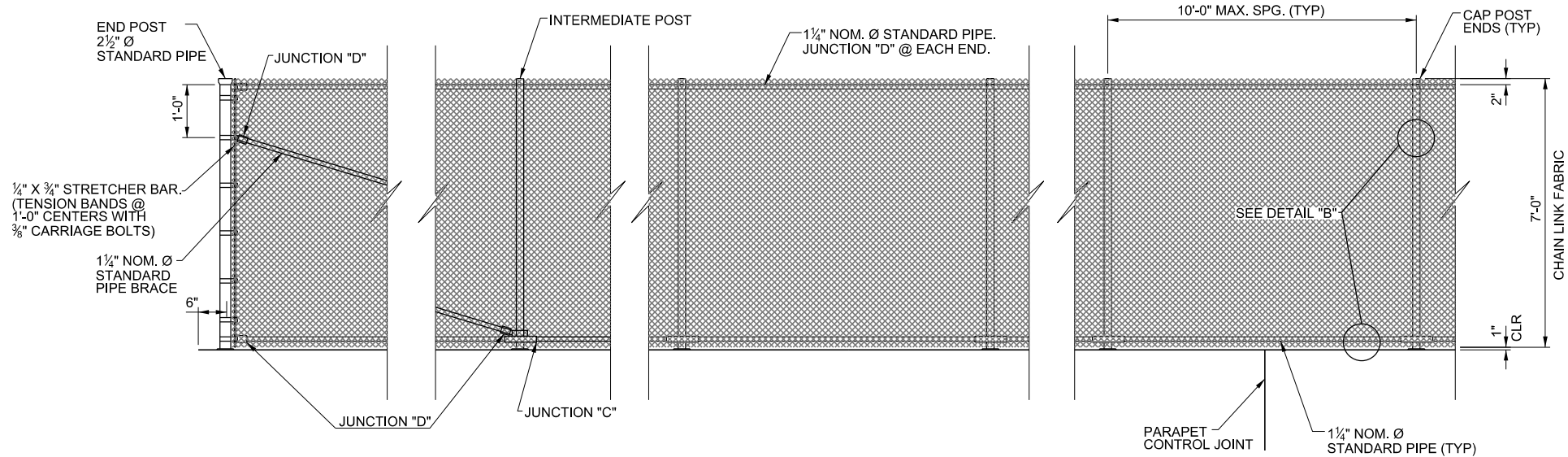
DESIGN	GLF	
DRAWN	JLF	
CHECKED	GLF	
APPROVED		
SQUAD	MacArthur	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

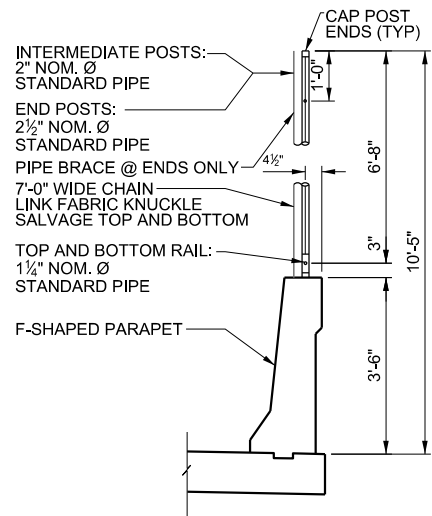
SAFETY FENCE ON PARAPET -
BRIDGE "A" AND "B"

STATE JOB NO. 29849(04) SHEET NO. B054

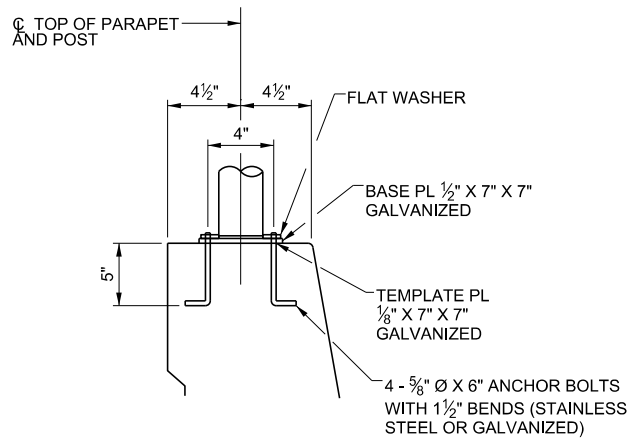
PRINT DATE: 10/22/2018 T:\1403Drawings\Bridges\1403-bridge-fence-2.dgn



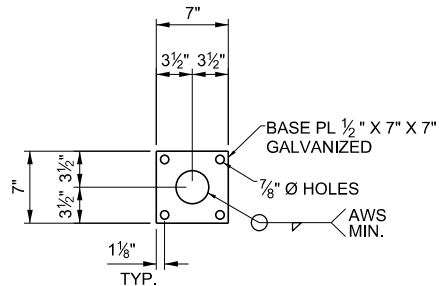
INSIDE ELEVATION OF RAILING



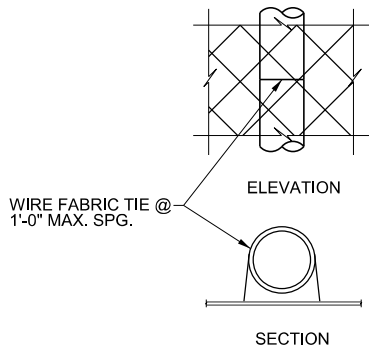
TYPICAL SECTION THROUGH FENCE
INTERMEDIATE POST SHOWN



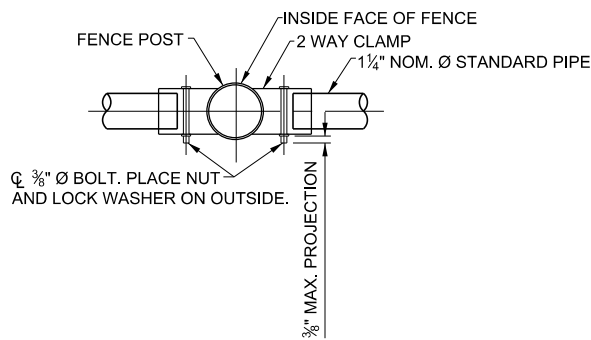
SECTION A



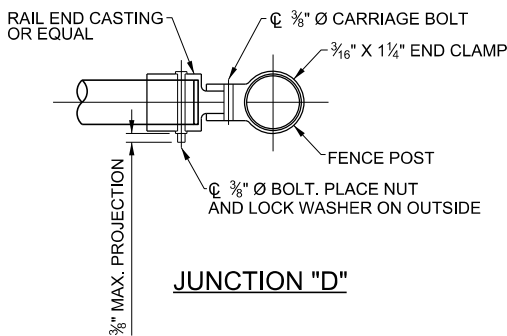
BASE PLATE DETAIL



DETAIL "B"



JUNCTION "C"



JUNCTION "D"

GENERAL NOTES

- PAY ITEM SHALL BE 42" F-SHAPED PARAPET WHICH INCLUDES ALL ITEMS SHOWN.
- REFER TO SECTION 624, "FENCES" STYLE CLF TYPE I
- LENGTH OF "WIRE FENCE," FOR PAYMENT SHALL BE MEASURED BETWEEN THE CENTERS OF END RAIL POSTS.
- FENCE POSTS AND FENCE POST ANCHORAGE SHALL BE SET VERTICAL, UNLESS OTHERWISE NOTED.
- CL OF FENCE POST ANCHORAGE SHALL BE AT 500 FT. MAXIMUM INTERVALS.
- FENCE LAYOUT SHALL CONFORM TO THE VERTICAL AND HORIZONTAL BRIDGE ALIGNMENTS. FENCE POSTS SHALL BE SET PLUMB (TRUE VERTICAL POSITION). PARAPET RAIL CONCRETE SHALL BE AT LEAST 7 DAYS OLD BEFORE STRETCHING AND SECURING FABRIC TO POSTS.
- CAST IN PLACE ANCHOR BOLTS SHALL BE OF STAINLESS STEEL OR HIGH STRENGTH STEEL. STAINLESS STEEL ANCHOR BOLTS SHALL CONFORM TO ASTM A193 OR A320-GRADE B8 WITH A MINIMUM YIELD STRENGTH OF 80,000 PSI. HIGH STRENGTH STEEL ANCHOR BOLTS SHALL CONFORM TO AASHTO M164 OR ASTM A354-GRADE BC GALVANIZED IN ACCORDANCE WITH AASHTO M232.
- NUTS: NUTS SHALL CONFORM TO ASTM A194OGR. 8 (STAINLESS STEEL) OR AASHTO M164 GALVANIZED IN ACCORDANCE WITH AASHTO M232.
- THREADS: THREADS ON BOLTS, SCREWS AND NUTS SHALL CONFORM TO AMERICAN STANDARD COURSE SERIES, CLASS 2 FLT, ASA SPECIFICATION 81.1.
- WASHERS SHALL BE OF HIGH-STRENGTH STEEL CONFORMING TO AASHTO M270, GR. 36 GALVANIZED IN ACCORDANCE WITH AASHTO M232 OR OF STAINLESS STEEL CONFORMING TO ASTM A276 OR A167-TYPE 302.
- BASE PLATES SHALL NOT BE PLACED UPON AREAS THAT ARE IMPROPERLY FINISHED, DEFORMED, OR IRREGULAR.

PRELIMINARY PLANS

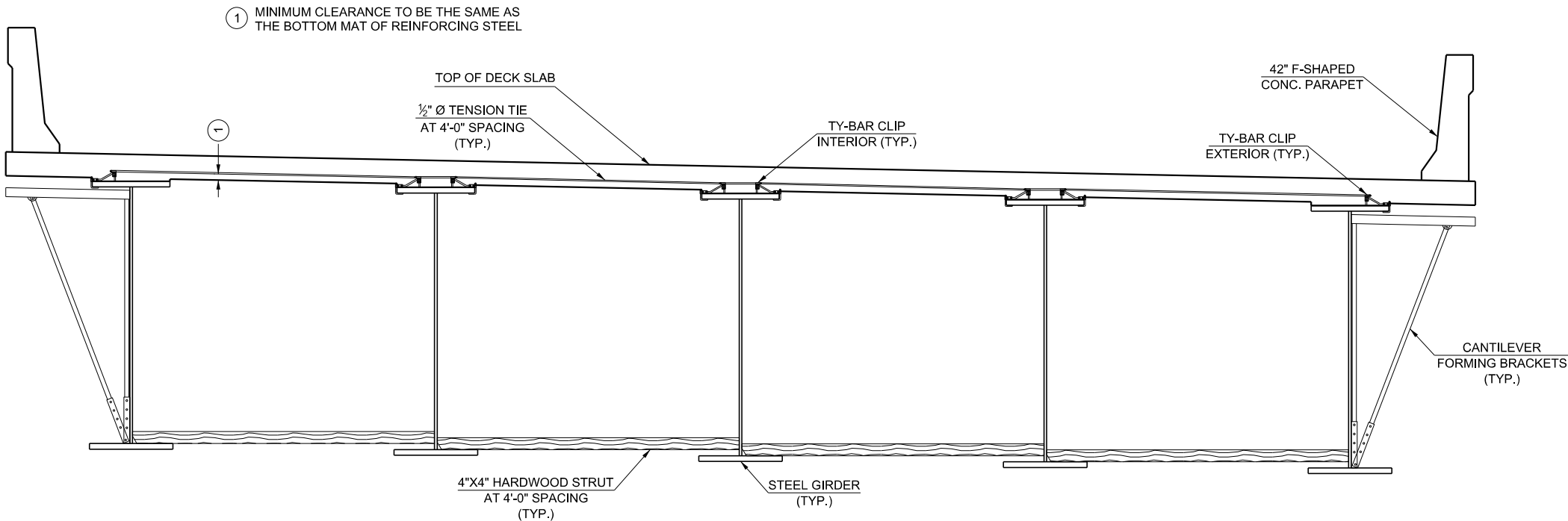
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

US 81 OVER UNION PACIFIC RAILROAD			KINGFISHER COUNTY	
DESIGN	JK		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN	NDA		SAFETY FENCE DETAILS - BRIDGE "A" AND "B"	
CHECKED	SP			
APPROVED				
SQUAD	MacArthur			
STATE JOB NO. 29849(04)			SHEET NO. B055	

BRACING NOTES

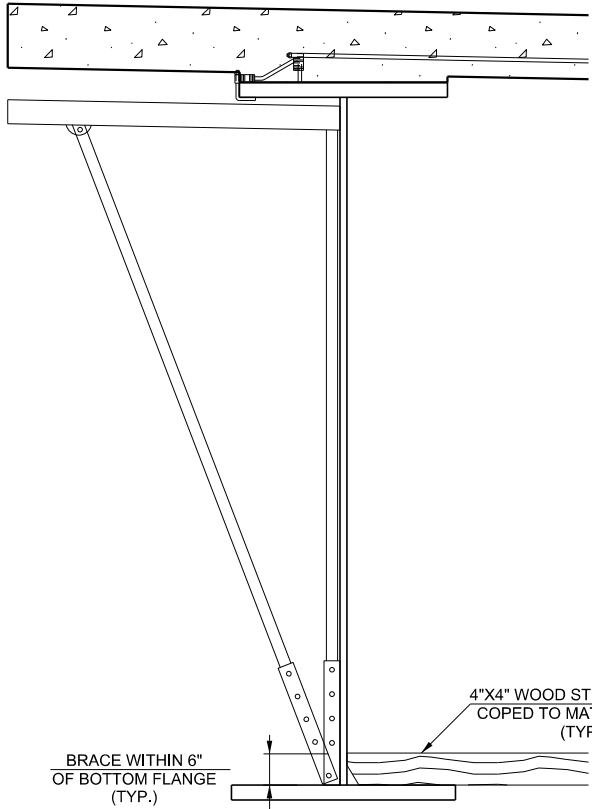
1. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL, DRAWINGS OF THE BRACING SYSTEM TO BE USED. BRACING SYSTEM SHALL BE APPROVED BY THE BRIDGE ENGINEER BEFORE ANY FLOOR CONCRETE IS PLACED.
2. CANTILEVER FORMING BRACKETS SHALL BE USED AT EXTERIOR GIRDERS TO PREVENT GIRDER TWIST. ALL CANTILEVER FORMING BRACKETS SHALL BE ADJUSTABLE AND CAPABLE OF BEING ADJUSTED DURING THE PLACEMENT OF FLOOR CONCRETE IN ORDER TO MAINTAIN PROPER GRADES OF OVERHANG. IF THE CONTRACTOR USES SHIMS TO ADJUST THE FORMING BRACKETS, HE MUST PROVIDE THE ENGINEER A METHOD TO PREDICT THE CRUSH AND SETTLEMENT OF THE SHIMS. THE RESULTING FORCE OF THE LEG BRACE OF THE CANTILEVER BRACKETS SHALL BEAR ON THE WEB AND WITHIN 6 INCHES OF THE BOTTOM FLANGE OF THE GIRDERS. THE GIRDERS SHALL BE TIED TOGETHER AT 4'-0" INTERVALS AS SHOWN IN THE DETAILS.
3. HARDWOOD 4"x4" STRUTS OR MATERIAL OF AN EQUIVALENT STRENGTH SHALL BE WEDGED BETWEEN WEBS OF GIRDERS WITHIN 6" OF THE BOTTOM FLANGE OF EACH GIRDER AT EACH LOCATION WHERE THE TOP OF THE GIRDERS ARE TIED TOGETHER WITH TENSION TIES.
4. TENSION TIES SHALL BE A MINIMUM #4 EPOXY COATED REINFORCING STEEL BARS WITH THREADED ENDS OR 0.5 INCH GALVANIZED ALL-THREAD, FURNISHED BY THE CONTRACTOR. THE TENSION TIES SHALL BE PLACED PERPENDICULAR TO THE GIRDERS AND SHALL HAVE A MINIMUM CLEARANCE FROM THE DECK FORMWORK AS THE BOTTOM MAT OF TRANSVERSE REINFORCING BARS.
5. TENSION TIES SHALL BE ATTACHED TO THE TOP FLANGE OF GIRDERS BY MEANS OF TY-BAR CLIPS AS SHOWN ON DETAILS, WELDING CLIPS TO THE TOP FLANGE OF GIRDERS SHALL NOT BE PERMITTED.
6. IF THE CONTRACTOR ELECTS TO USE A FORMWORK BRACING SYSTEM OTHER THAN IS SHOWN IN THE PLANS, THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS AND CALCULATIONS OF THE BRACING SYSTEM TO THE ENGINEER FOR APPROVAL. DRAWINGS AND CALCULATIONS OF THE PROPOSED BRACINGS SHALL BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF OKLAHOMA.
7. ALL COST FOR BRACING AND FORMWORK SHALL BE INCLUDED IN OTHER ITEMS OF WORK.

REVISIONS		
REV. NO.	DESCRIPTION	DATE

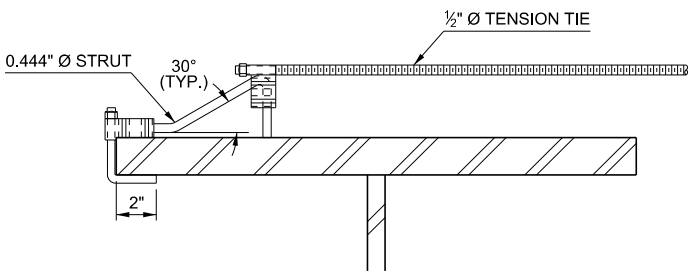


BEAM BRACING FOR DECK SLAB PLACEMENT

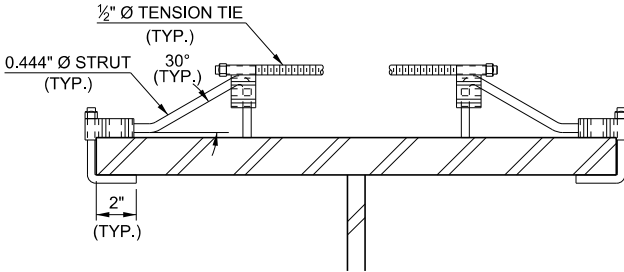
BRIDGE "A" SHOWN, BRIDGE "B" SIMILAR



CANTILEVER FORMING BRACKETS SETTING

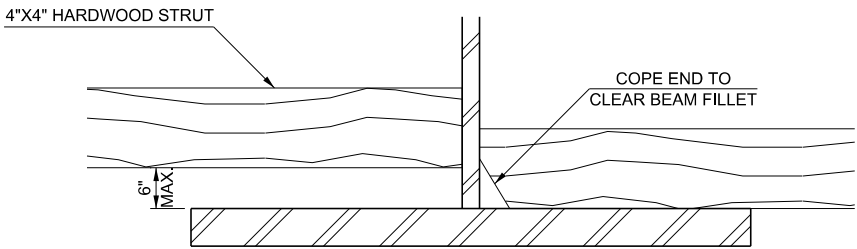


EXTERIOR



INTERIOR

TY-BAR CLIP DETAIL
(EPOXY COATED)

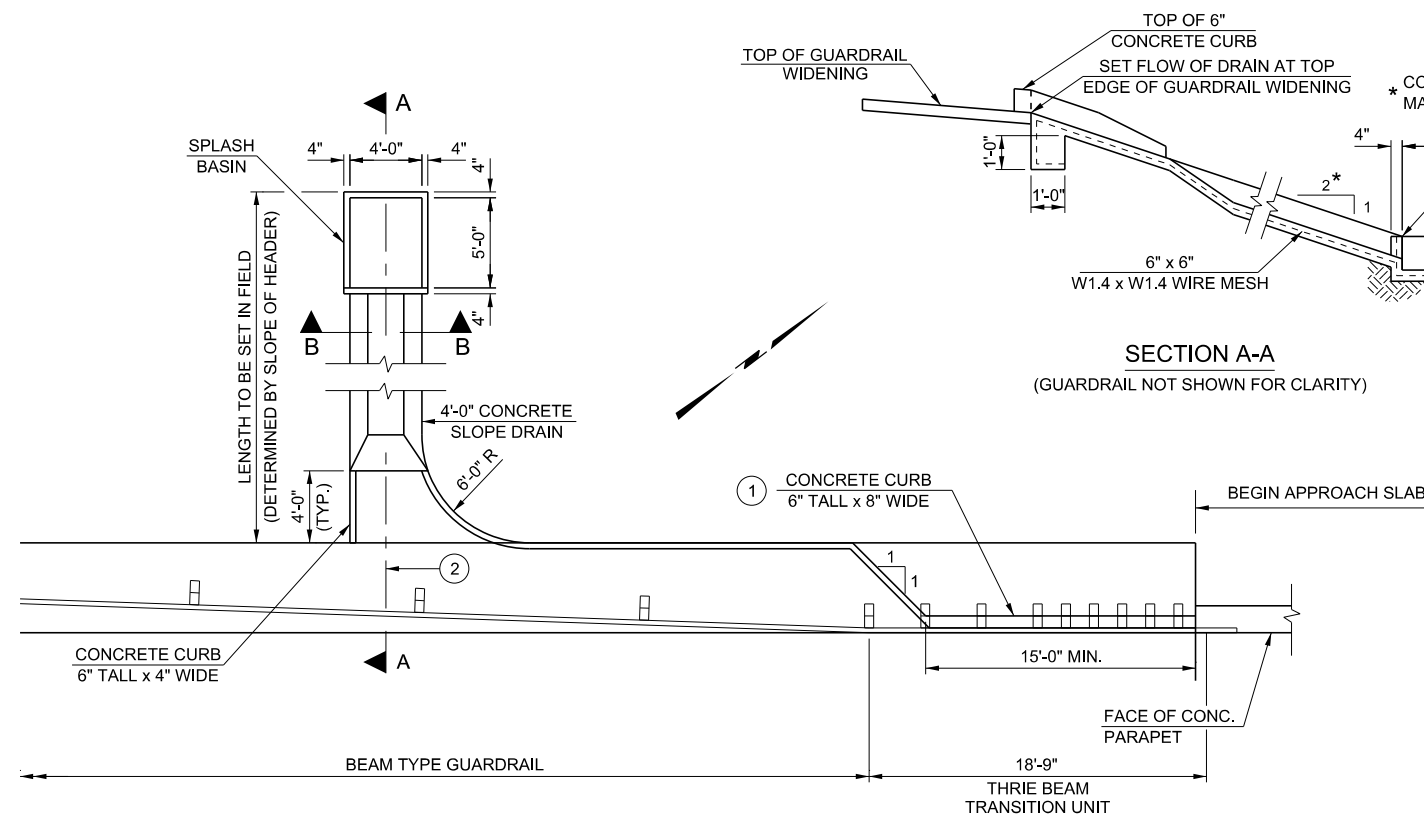


HARDWOOD STRUT COPING DETAIL

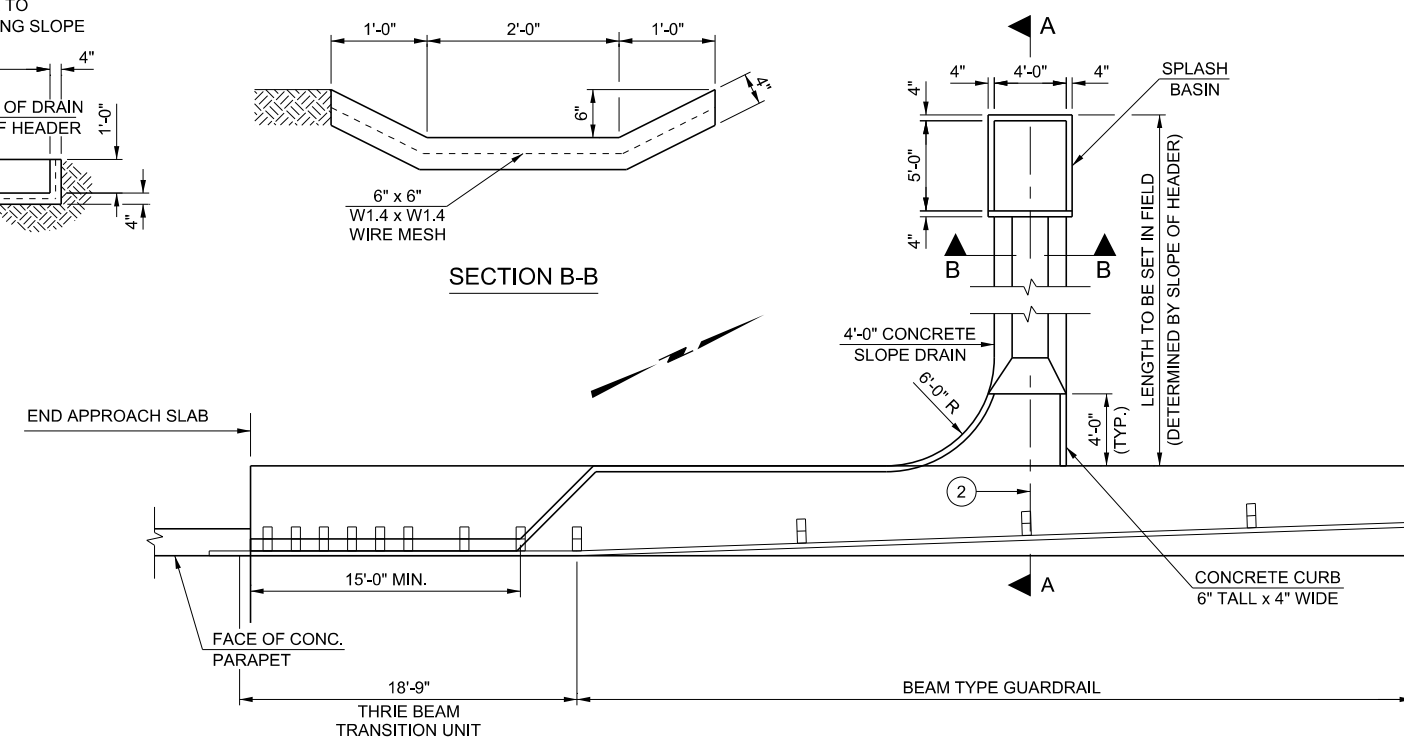
PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

DESIGN		GLF		US 81 OVER UNION PACIFIC RAILROAD		KINGFISHER COUNTY
DRAWN		JLF		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
CHECKED		GLF		BRIDGE DECK FORMWORK BRACING		
APPROVED						
SQUAD		MacArthur				
				STATE JOB NO. 29849(04)		SHEET NO. B056

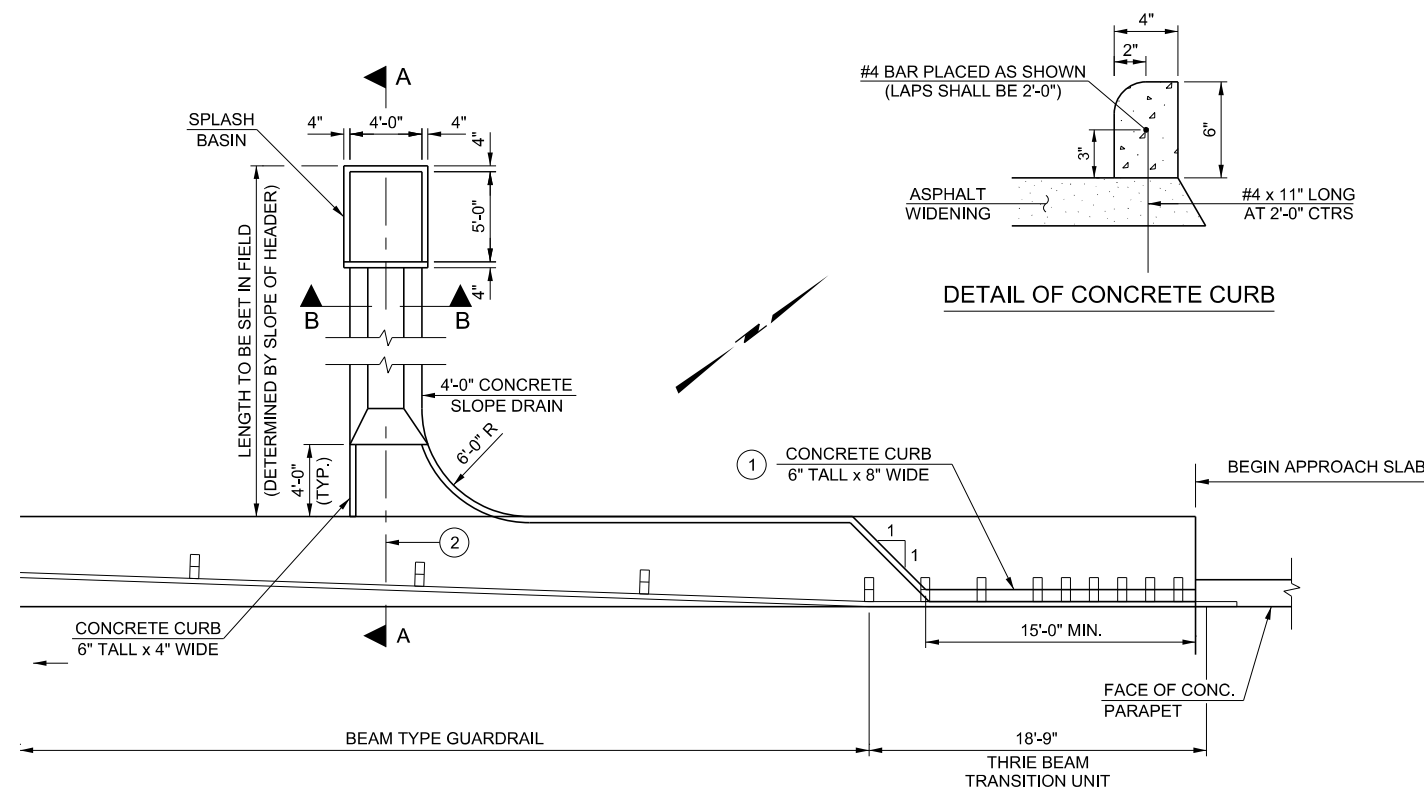
REVISIONS		
REV. NO.	DESCRIPTION	DATE



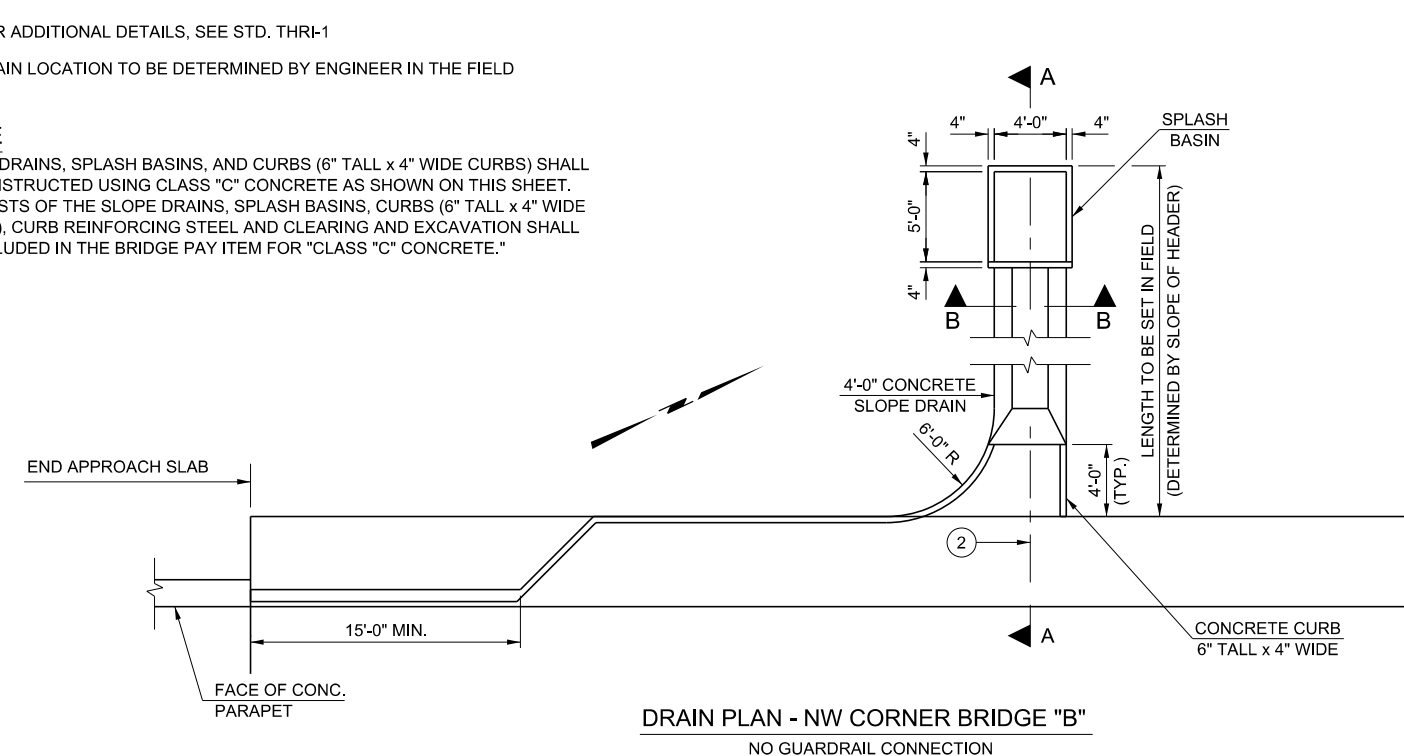
DRAIN PLAN - SW CORNER BRIDGE "A"



DRAIN PLAN - NW CORNER BRIDGE "A"



DRAIN PLAN - SW CORNER BRIDGE "B"



DRAIN PLAN - NW CORNER BRIDGE "B"
NO GUARDRAIL CONNECTION

① FOR ADDITIONAL DETAILS, SEE STD. THRI-1

② DRAIN LOCATION TO BE DETERMINED BY ENGINEER IN THE FIELD

NOTE

SLOPE DRAINS, SPLASH BASINS, AND CURBS (6" TALL x 4" WIDE CURBS) SHALL BE CONSTRUCTED USING CLASS "C" CONCRETE AS SHOWN ON THIS SHEET. ALL COSTS OF THE SLOPE DRAINS, SPLASH BASINS, CURBS (6" TALL x 4" WIDE CURBS), CURB REINFORCING STEEL AND CLEARING AND EXCAVATION SHALL BE INCLUDED IN THE BRIDGE PAY ITEM FOR "CLASS "C" CONCRETE."

DESIGN	GLF		OKLAHOMA DEPARTMENT OF TRANSPORTATION DRAINS AT END OF BRIDGE STATE JOB NO. 29849(04) SHEET NO. B057
DRAWN	JLF		
CHECKED	GLF		
APPROVED			
SQUAD	MacArthur		

PRELIMINARY PLANS
THIS DOCUMENT IS PRELIMINARY
IN NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT

US 81 OVER UNION PACIFIC RAILROAD KINGFISHER COUNTY

OKLAHOMA DEPARTMENT OF TRANSPORTATION

DRAINS AT END OF BRIDGE

STATE JOB NO. 29849(04) SHEET NO. B057

PRINT DATE: 10/22/2018 T:\1403Drawings\Bridge-1403-brdige-drains.dgn

STORM WATER MANAGEMENT PLAN

SITE DESCRIPTION

PROJECT LIMITS: U.S. HIGHWAY 81 OVER UNION PACIFIC RAILROAD IN KINGFISHER COUNTY

PROJECT DESCRIPTION: THE OBJECTIVE OF THIS PROJECT IS TO REPLACE BRIDGES OVER OVER UNION PACIFIC RAILROAD ON U.S. HIGHWAY 81.

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES: PRIOR TO INITIATING SOIL DISTURBING ACTIVITIES, THE CONTRACTOR WILL INSTALL ALL PERIMETER TEMPORARY SEDIMENT CONTROLS SPECIFIED. STRIP, 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 THE DATES OF MAJOR SOIL DISTURBANCE ACTIVITIES, AND ALSO THE DATES OF INSTALLATION OF EROSION CONTROL MEASURES.

SOIL TYPE: SILTY SAND/SANDSTONE

TOTAL AREA OF THE CONSTRUCTION SITE: 12.82 ACRES

ESTIMATED AREA TO BE DISTURBED: 12.82 ACRES

OFFSITE AREA TO BE DISTURBED: (FOR CONTRACTOR USE)

TOTAL IMPERVIOUS AREA PRE-CONSTRUCTION: 0.00 ACRES

TOTAL IMPERVIOUS AREA POST-CONSTRUCTION: 0.74 ACRES

POST-CONSTRUCTION RUNOFF COEFFICIENT OF THE SITE: 0.45

LATITUDE & LONGITUDE OF CENTER OF PROJECT: 35.931984, -97.916113

PROJECT WILL DISCHARGE TO:

NAME OF RECEIVING WATERS: CIMARRON RIVER

SENSITIVE WATERS OR WATERSHEDS: YES ☒ NO ☐

303(d) IMPAIRED WATERS: YES ☒ NO ☐

IF YES, LIST IMPAIRMENT: Enterococcus, E coli, Selenium

LOCATED IN A TMDL: YES ☒ NO ☐

LAKE THUNDERBIRD TMDL: ☐ NO ☒

MS4 ENTITY YES ☐ NO ☒

IF YES, LOCATION:

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 CONTROL SUMMARIES, PAY ITEMS, & NOTES.

EROSION AND SEDIMENT CONTROLS

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 TARPAULIN
- ☒ 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 MEET THE 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 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 CERTIFICATE 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 2010 OTA STANDARD SPECIFICATIONS SHOULD BE NOTED:

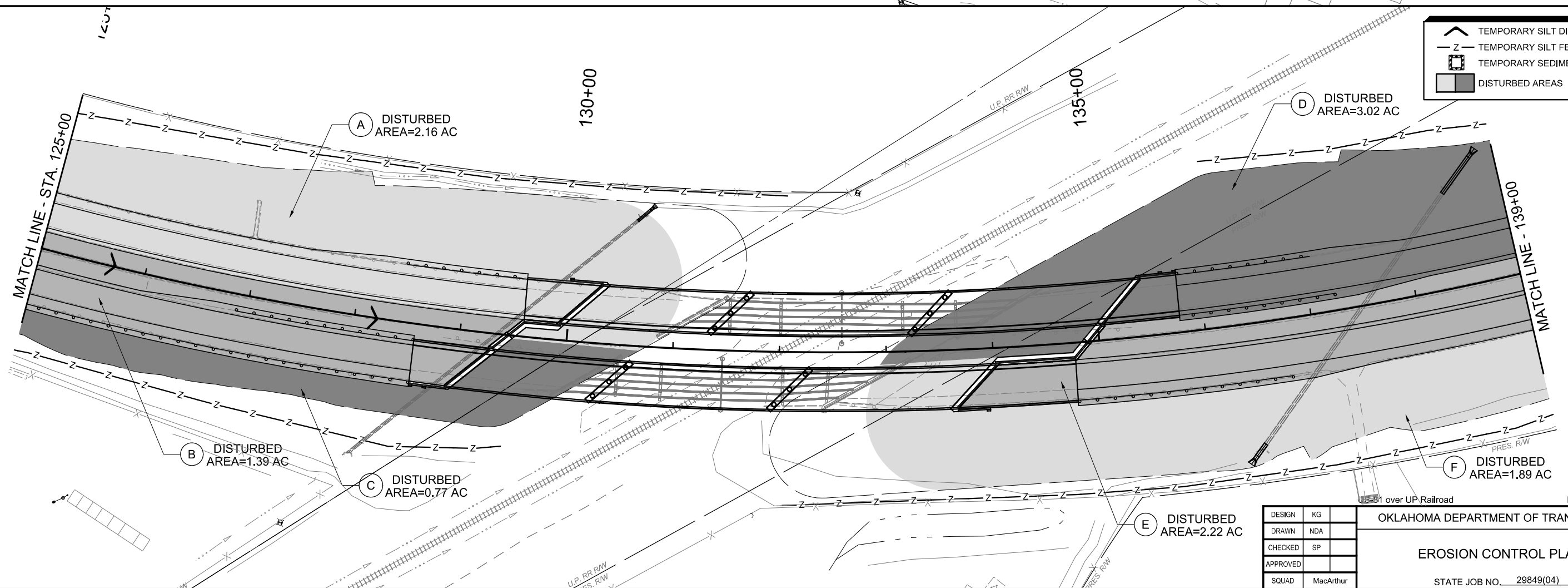
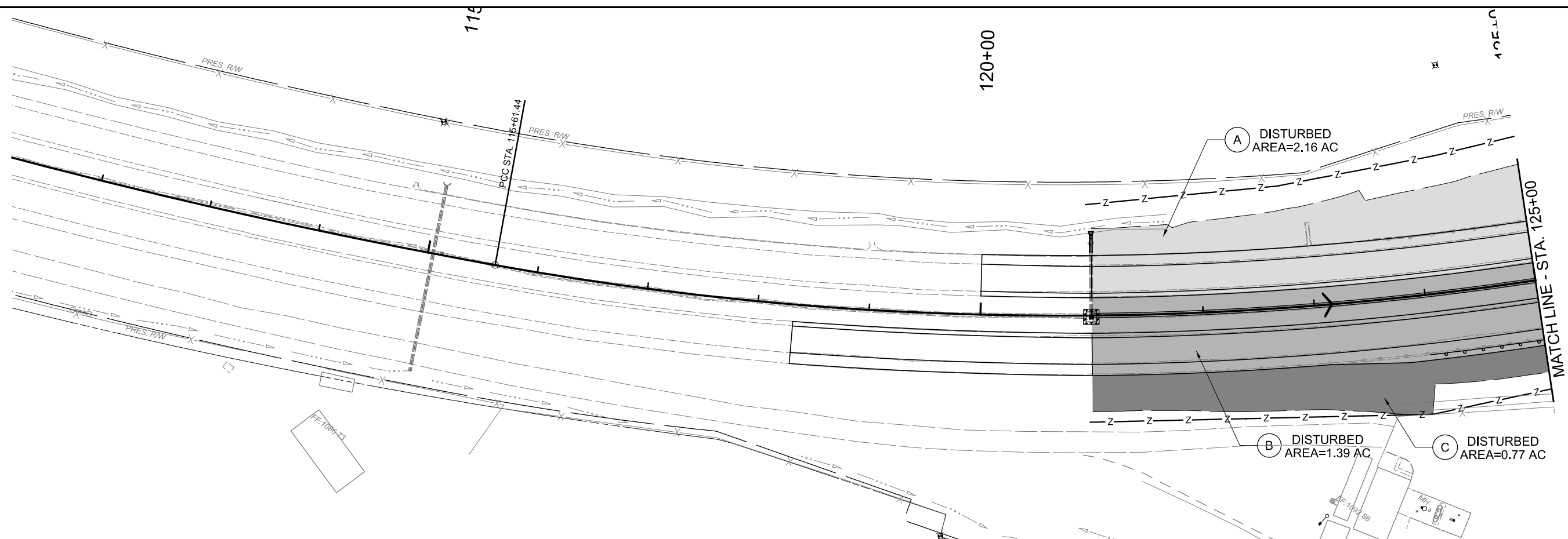
- 103.05 BONDING REQUIREMENTS
- 104.10 FINAL CLEANING UP
- 104.12 CONTRACTOR'S RESPONSIBILITY FOR WORK
- 104.13 ENVIRONMENTAL PROTECTION
- 106.08 STORAGE AND HANDLING OF MATERIAL
- 107.01 LAWS, RULES AND REGULATIONS TO BE OBSERVED
- 107.20 STORM WATER MANAGEMENT
- 220 MANAGEMENT OF EROSION, SEDIMENTATION AND STORM WATER POLLUTION PREVENTION AND CONTROL
- 221 TEMPORARY SEDIMENT CONTROL

IN ADDITION:

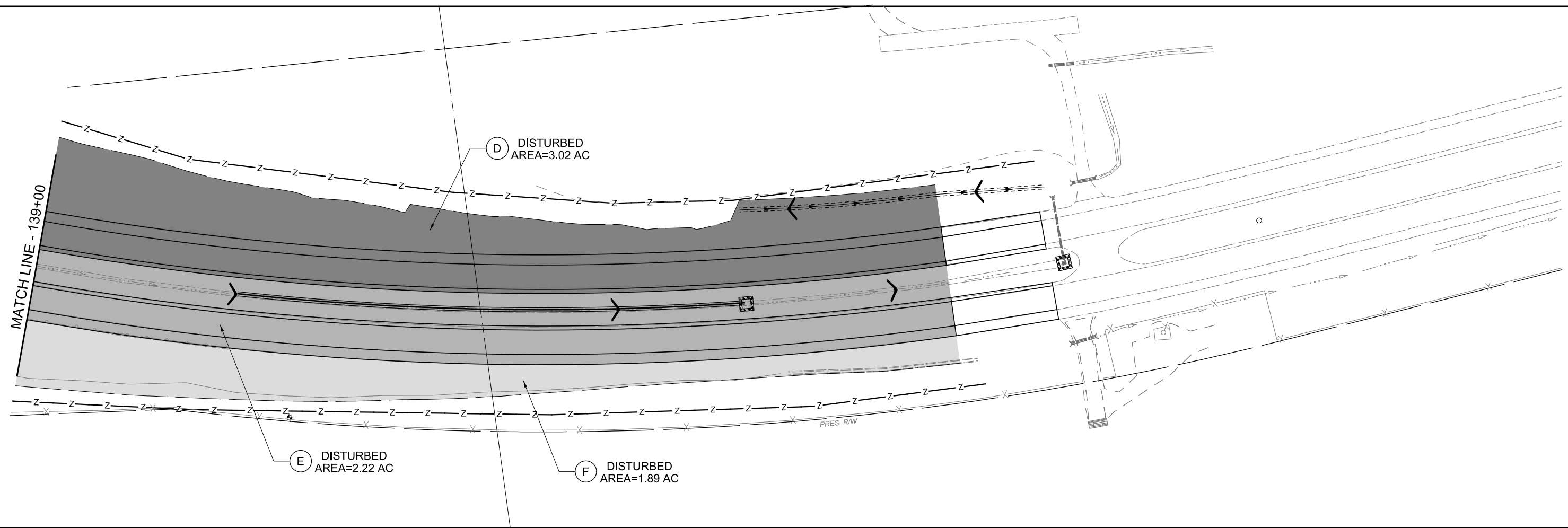
"ODEQ GENERAL PERMIT (OKR10) FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES WITHIN THE STATE OF OKLAHOMA." ODEQ, WATER QUALITY DIVISION, SEPTEMBER 18, 2017.

US-81 over UP Railroad KINGFISHER COUNTY

DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	NDA		
CHECKED	SP		
APPROVED			
SQUAD	MacArthur		STATE JOB NO. 29849(04) SHEET NO. E001
STORM WATER MANAGEMENT PLAN			



PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-ero02.dgn



	TEMPORARY SILT DIKE
	TEMPORARY SILT FENCE
	TEMPORARY SEDIMENT FILTER
	DISTURBED AREAS

US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP				
APPROVED					
SQUAD	MacArthur		EROSION CONTROL PLAN (2)		
			STATE JOB NO. 29849(04) SHEET NO. E003		

UTILITY OWNERSHIP

CITY OF KINGFISHER (WATER)
405-375-3705

CIMARRON ELECTRIC COOPERATIVE
405-375-4121

PIONEER TELEPHONE
800-992-0234

DCP MIDSTREAM
888-204-1781

OKLAHOMA NATURAL GAS
405-551-6946

CONTINENTAL PIPELINE COMPANY
580-628-3234

CRL - CURVE No. 1
PI STA. 135+14.81
N= 338674.9720
E= 1994003.2410
 $\Delta= 80^{\circ}01'54"$ Lt.
D= 02^{\circ}00'01"
T= 2404.92'
L= 4001.13'
R= 2864.46'
E= 875.70'

SEC. 23, T-17-N, R-7-W

120+00

EXISTING LIMITS OF NO ACCESS

☉ SURVEY STA. 121+00
N= 338446.89
E= 1992576.98

TOE OF SLOPE

PGL LT.

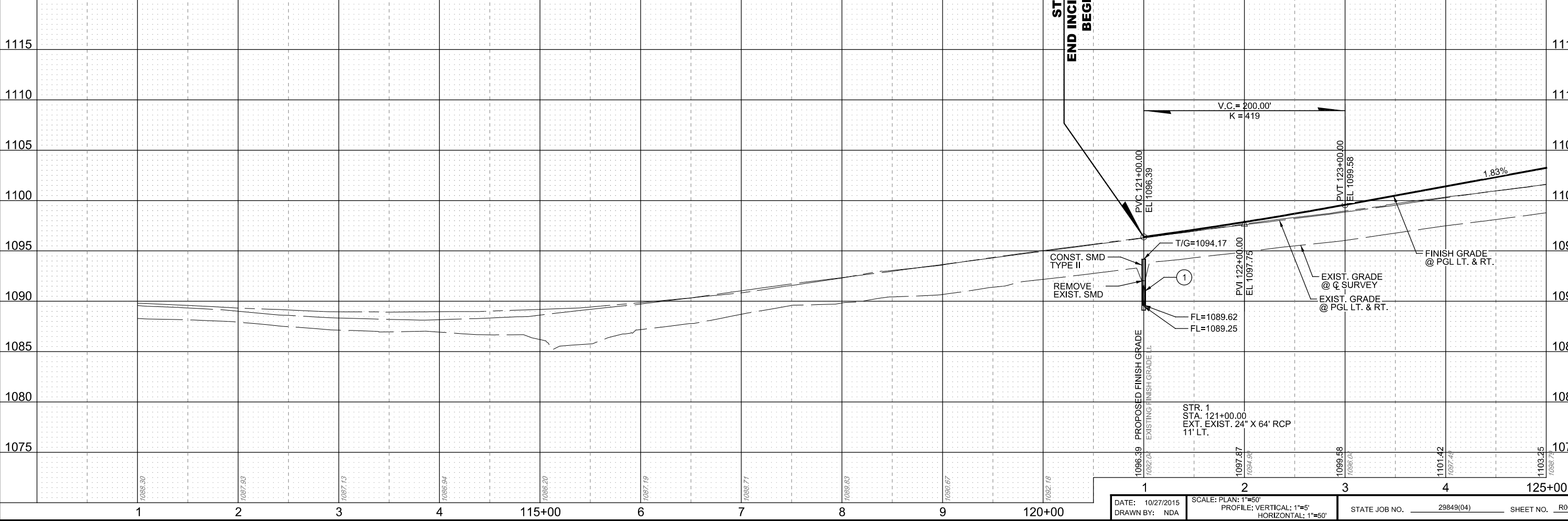
PGL RT.

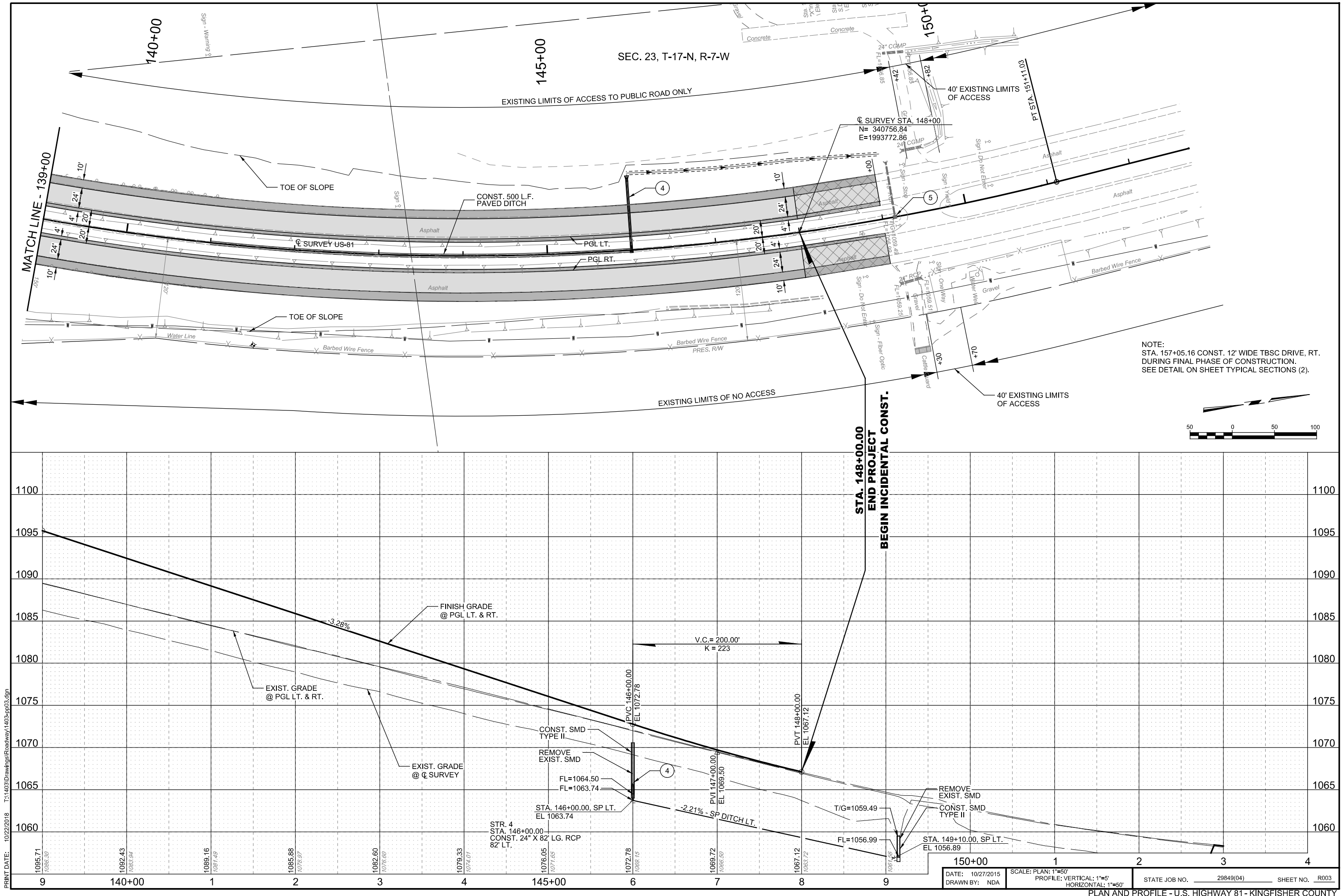
TOE OF SLOPE

CONST. 400 L.F.
PAVED DITCH
Link Fence

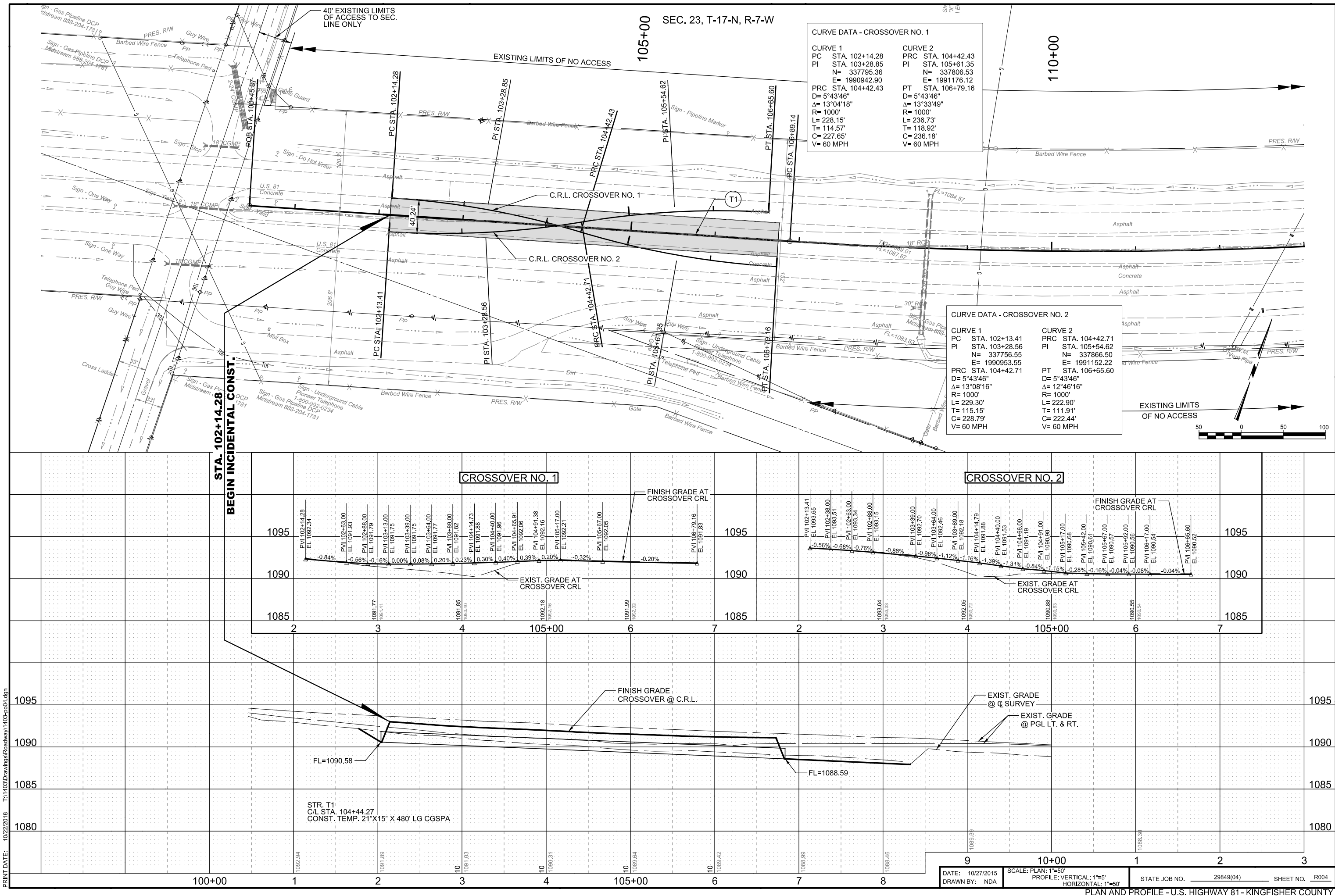
MATCH LINE - STA. 125+00

STA. 121+00
END INCIDENTAL CONST.
BEGIN PROJECT

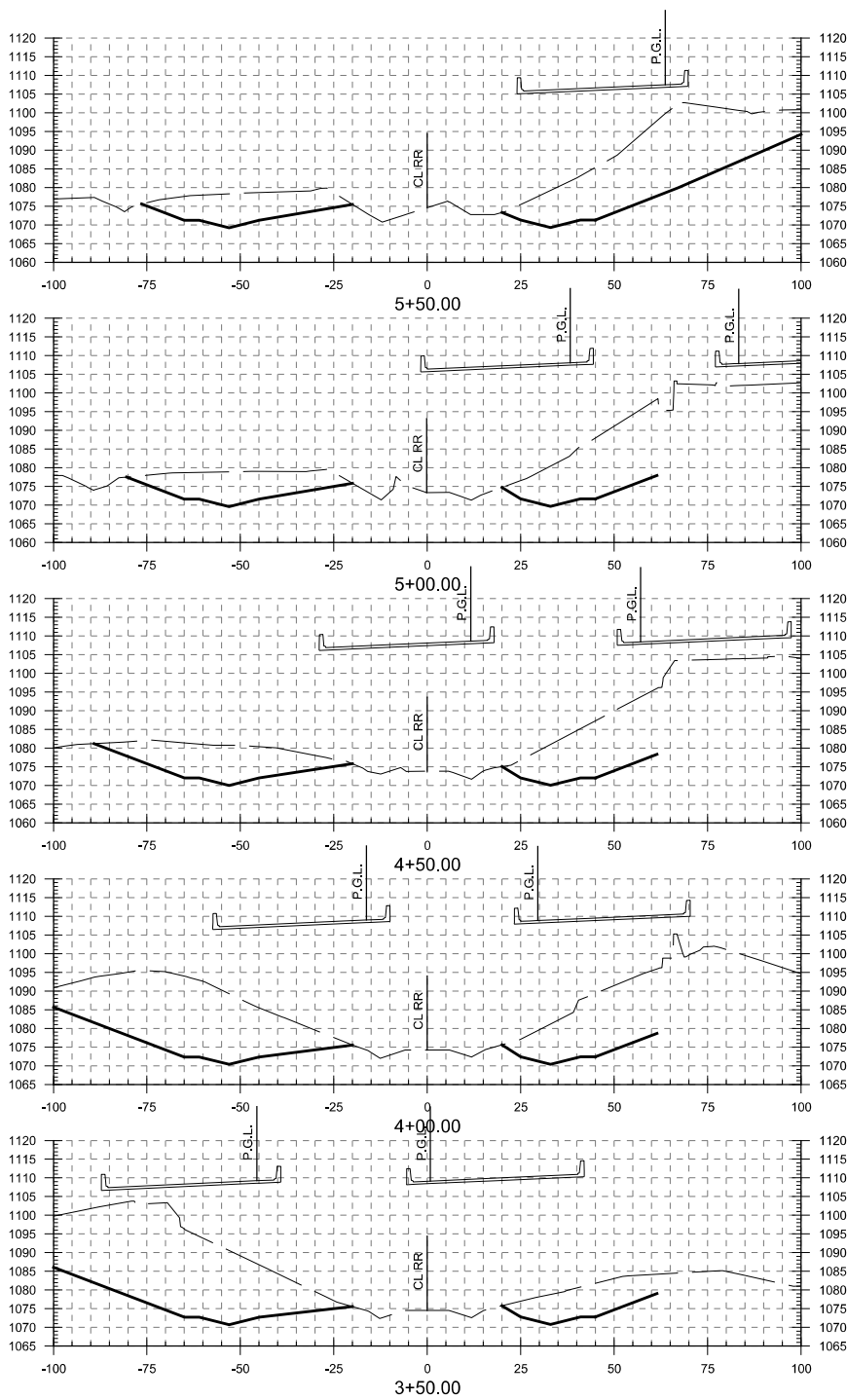
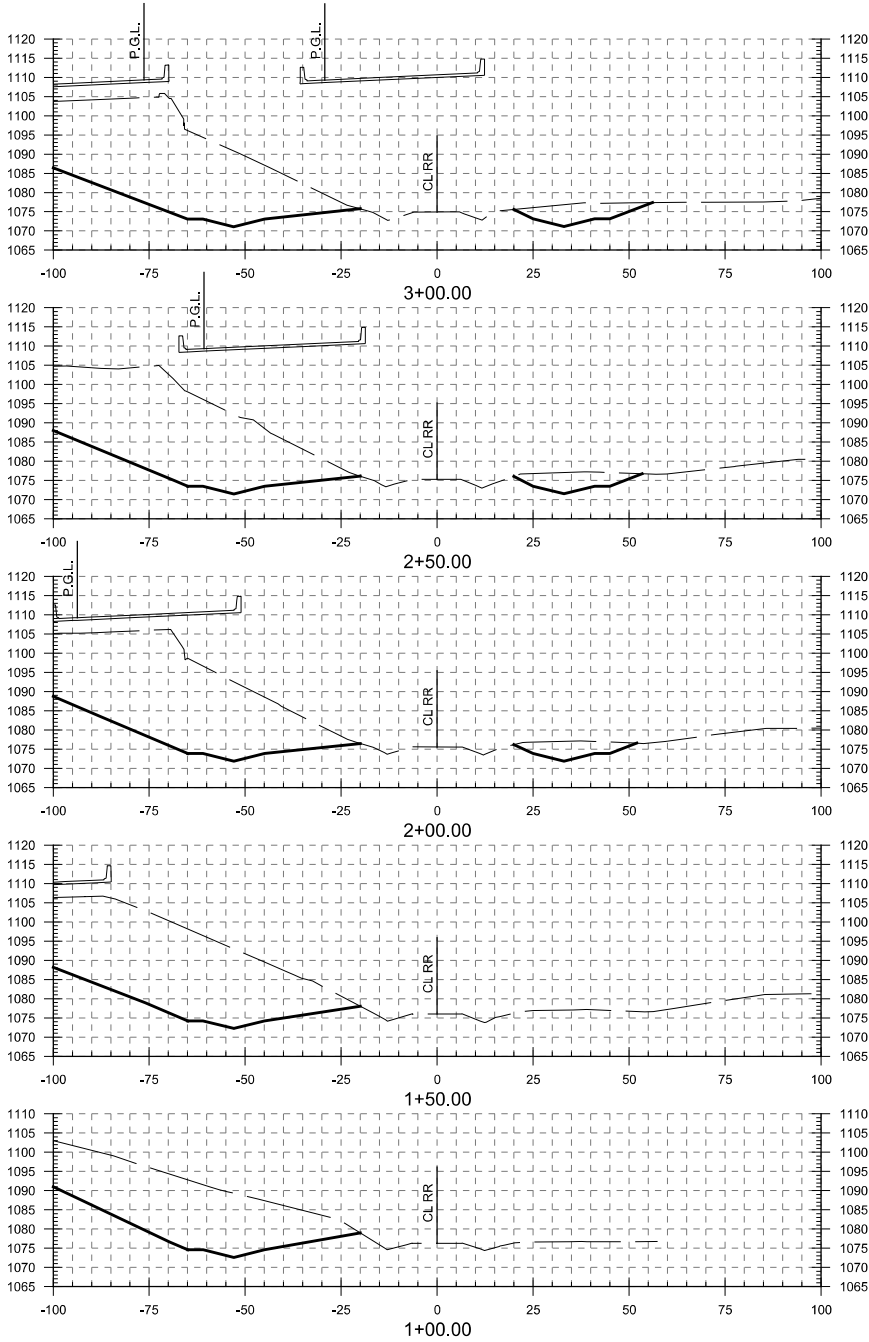




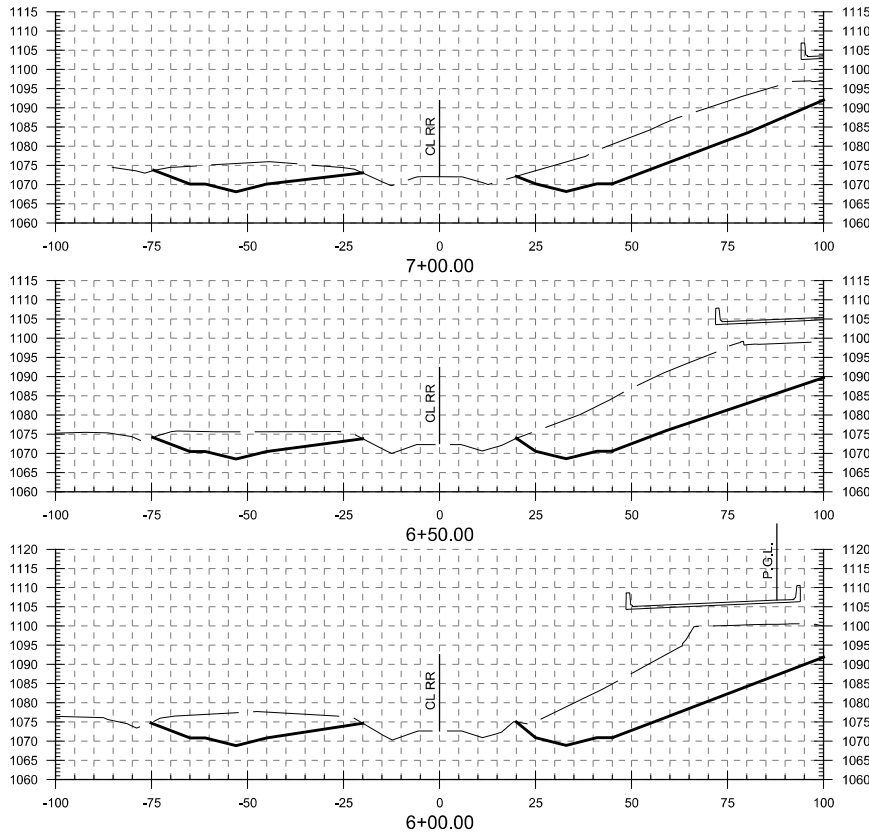
PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-pp03.dgn



PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-rd2.dgn

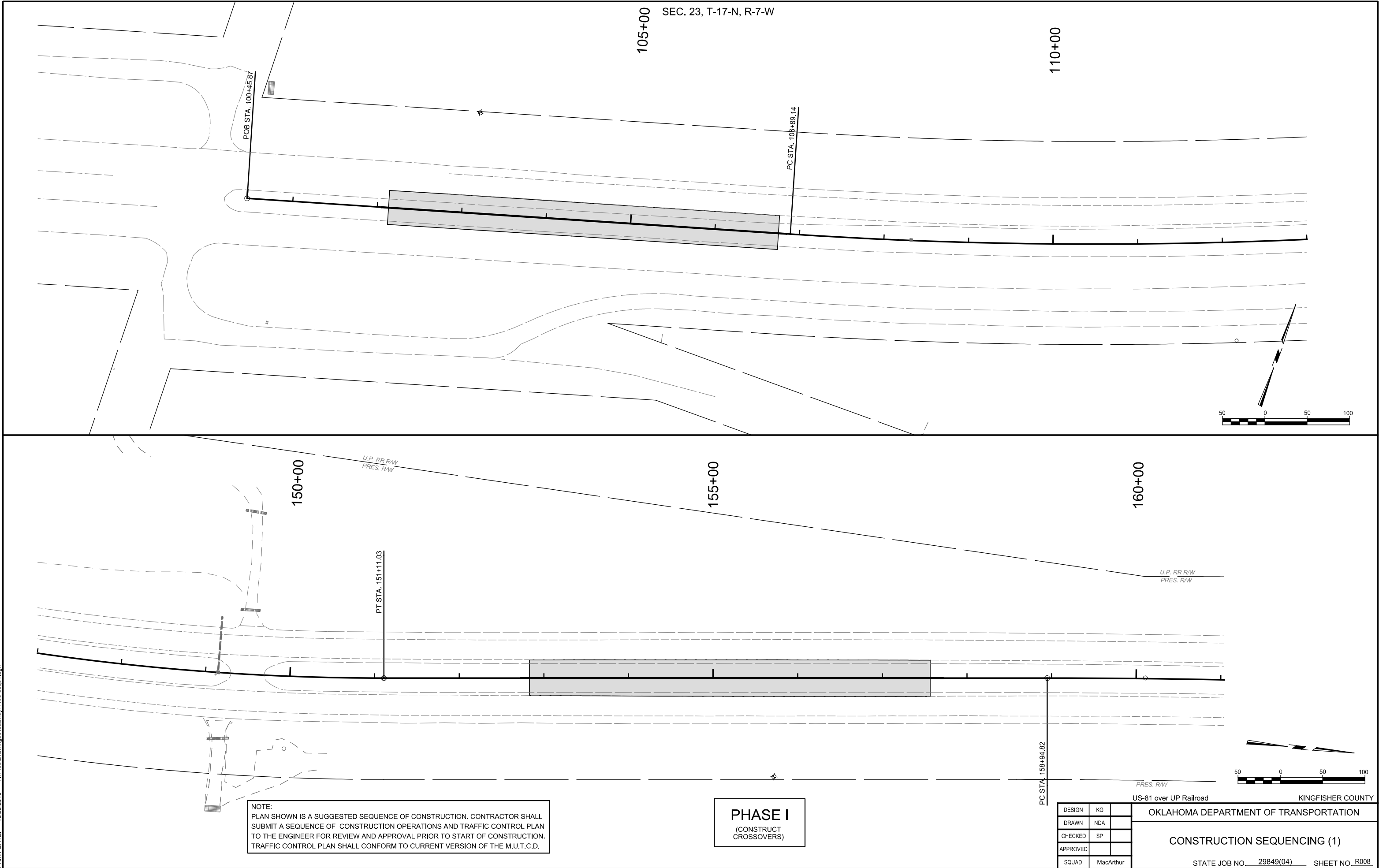


CROSS SECTIONS

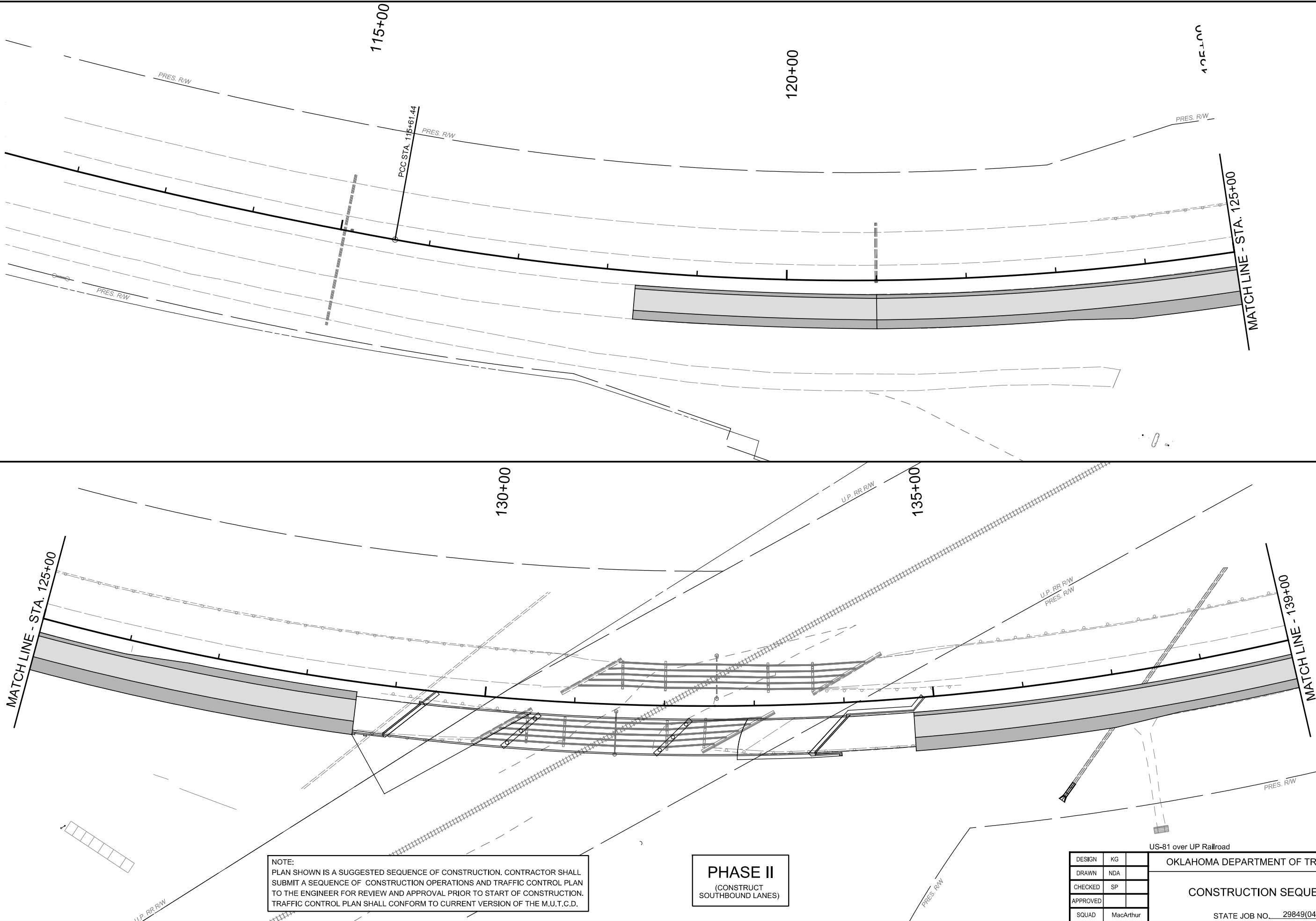


US-81 over UP Railroad		KINGFISHER COUNTY	
DESIGN	KG	OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN	NDA		
CHECKED	SP	TYPICAL GRADING ALONG RAILROAD (2)	
APPROVED			
SQUAD	MacArthur	STATE JOB NO. 29849(04) SHEET NO. R007	

PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-seq01.dgn



PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-seq02.dgn

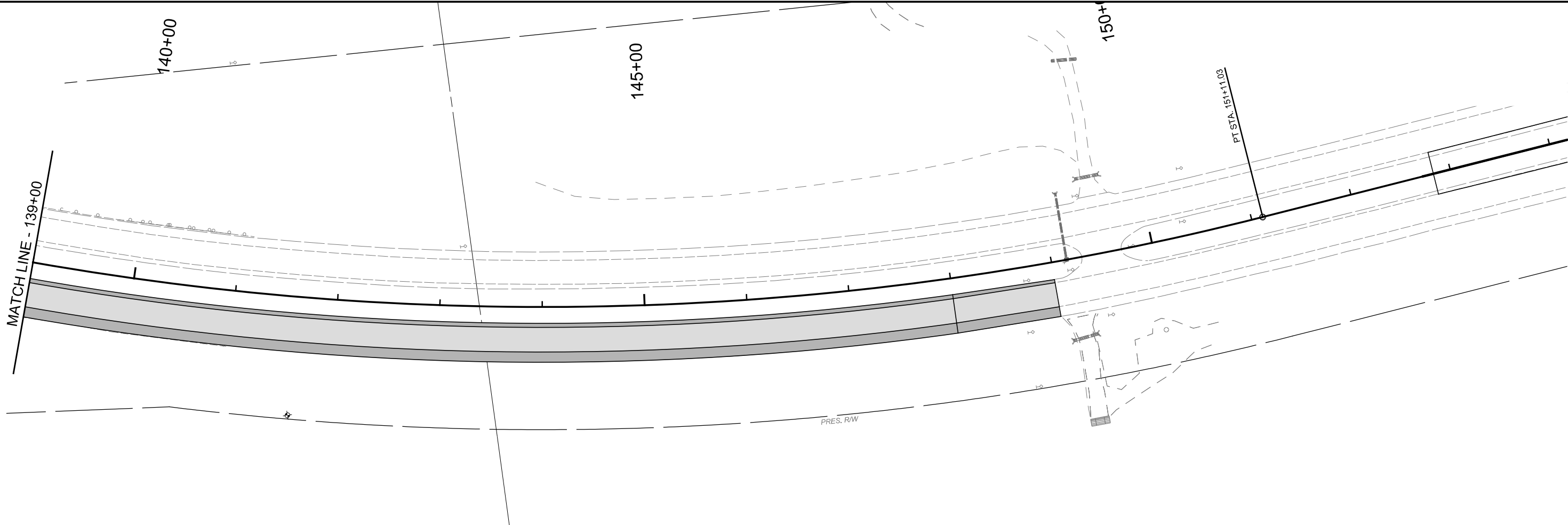


NOTE:
PLAN SHOWN IS A SUGGESTED SEQUENCE OF CONSTRUCTION. CONTRACTOR SHALL
SUBMIT A SEQUENCE OF CONSTRUCTION OPERATIONS AND TRAFFIC CONTROL PLAN
TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO START OF CONSTRUCTION.
TRAFFIC CONTROL PLAN SHALL CONFORM TO CURRENT VERSION OF THE M.U.T.C.D.

PHASE II
(CONSTRUCT
SOUTHBOUND LANES)

DESIGN	KG	
DRAWN	NDA	
CHECKED	SP	
APPROVED		
SQUAD	MacArthur	

US-81 over UP Railroad		KINGFISHER COUNTY
OKLAHOMA DEPARTMENT OF TRANSPORTATION		
CONSTRUCTION SEQUENCING (2)		
STATE JOB NO. 29849(04) SHEET NO. R009		

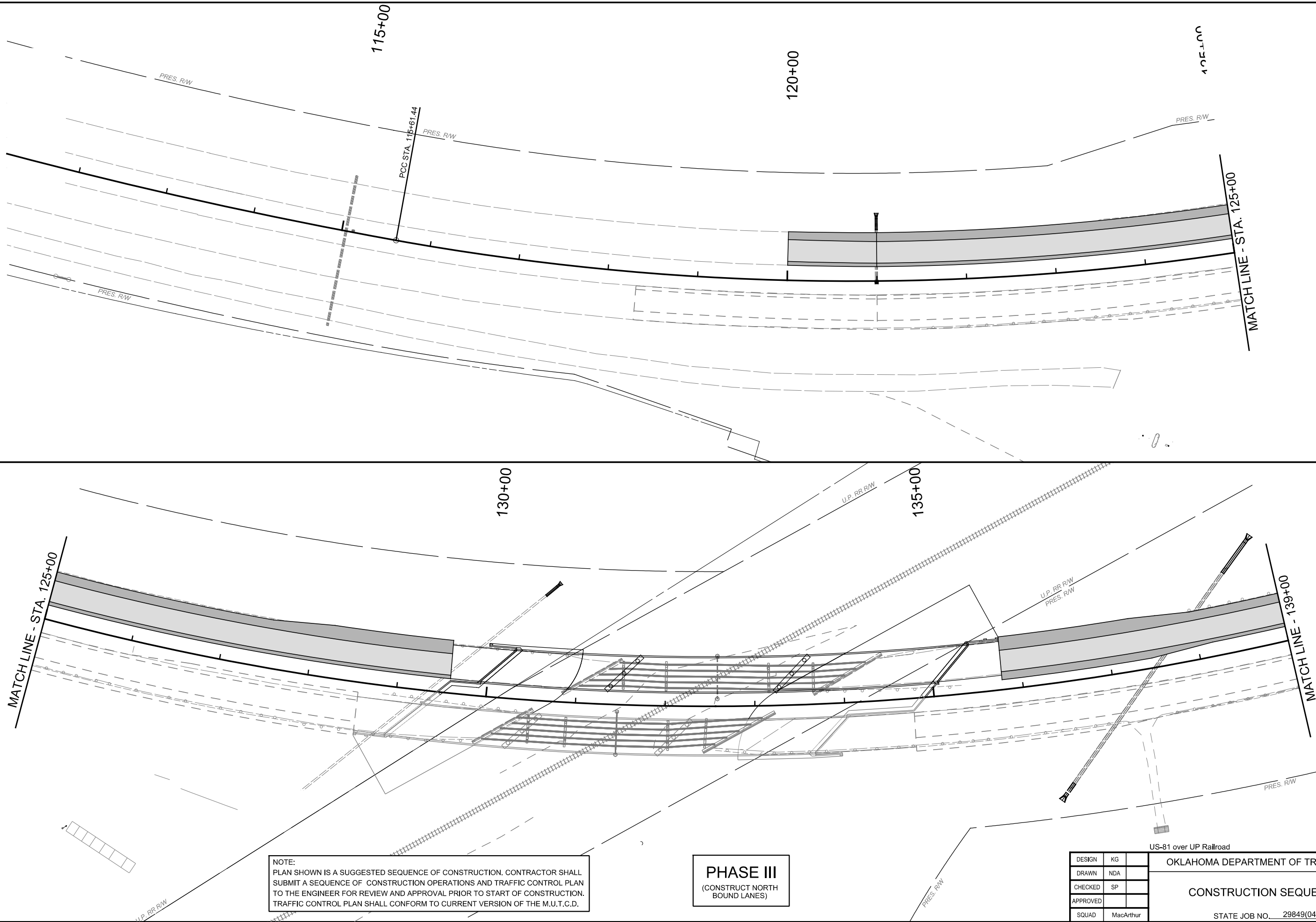


NOTE:
PLAN SHOWN IS A SUGGESTED SEQUENCE OF CONSTRUCTION. CONTRACTOR SHALL
SUBMIT A SEQUENCE OF CONSTRUCTION OPERATIONS AND TRAFFIC CONTROL PLAN
TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO START OF CONSTRUCTION.
TRAFFIC CONTROL PLAN SHALL CONFORM TO CURRENT VERSION OF THE M.U.T.C.D.

PHASE II
(CONSTRUCT
SOUTHBOUND LANES)

US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP		CONSTRUCTION SEQUENCING (3)		
APPROVED					
SQUAD	MacArthur				

PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-seq04.dgn



NOTE:
PLAN SHOWN IS A SUGGESTED SEQUENCE OF CONSTRUCTION. CONTRACTOR SHALL
SUBMIT A SEQUENCE OF CONSTRUCTION OPERATIONS AND TRAFFIC CONTROL PLAN
TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO START OF CONSTRUCTION.
TRAFFIC CONTROL PLAN SHALL CONFORM TO CURRENT VERSION OF THE M.U.T.C.D.

PHASE III
(CONSTRUCT NORTH
BOUND LANES)

DESIGN	KG	
DRAWN	NDA	
CHECKED	SP	
APPROVED		
SQUAD	MacArthur	

US-81 over UP Railroad

KINGFISHER COUNTY

OKLAHOMA DEPARTMENT OF TRANSPORTATION

CONSTRUCTION SEQUENCING (4)

STATE JOB NO. 29849(04) SHEET NO. R011



NOTE:
PLAN SHOWN IS A SUGGESTED SEQUENCE OF CONSTRUCTION. CONTRACTOR SHALL
SUBMIT A SEQUENCE OF CONSTRUCTION OPERATIONS AND TRAFFIC CONTROL PLAN
TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO START OF CONSTRUCTION.
TRAFFIC CONTROL PLAN SHALL CONFORM TO CURRENT VERSION OF THE M.U.T.C.D.

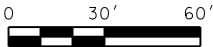
PHASE III
(CONSTRUCT NORTH
BOUND LANES)

DESIGN	KG	
DRAWN	NDA	
CHECKED	SP	
APPROVED		
SQUAD	MacArthur	

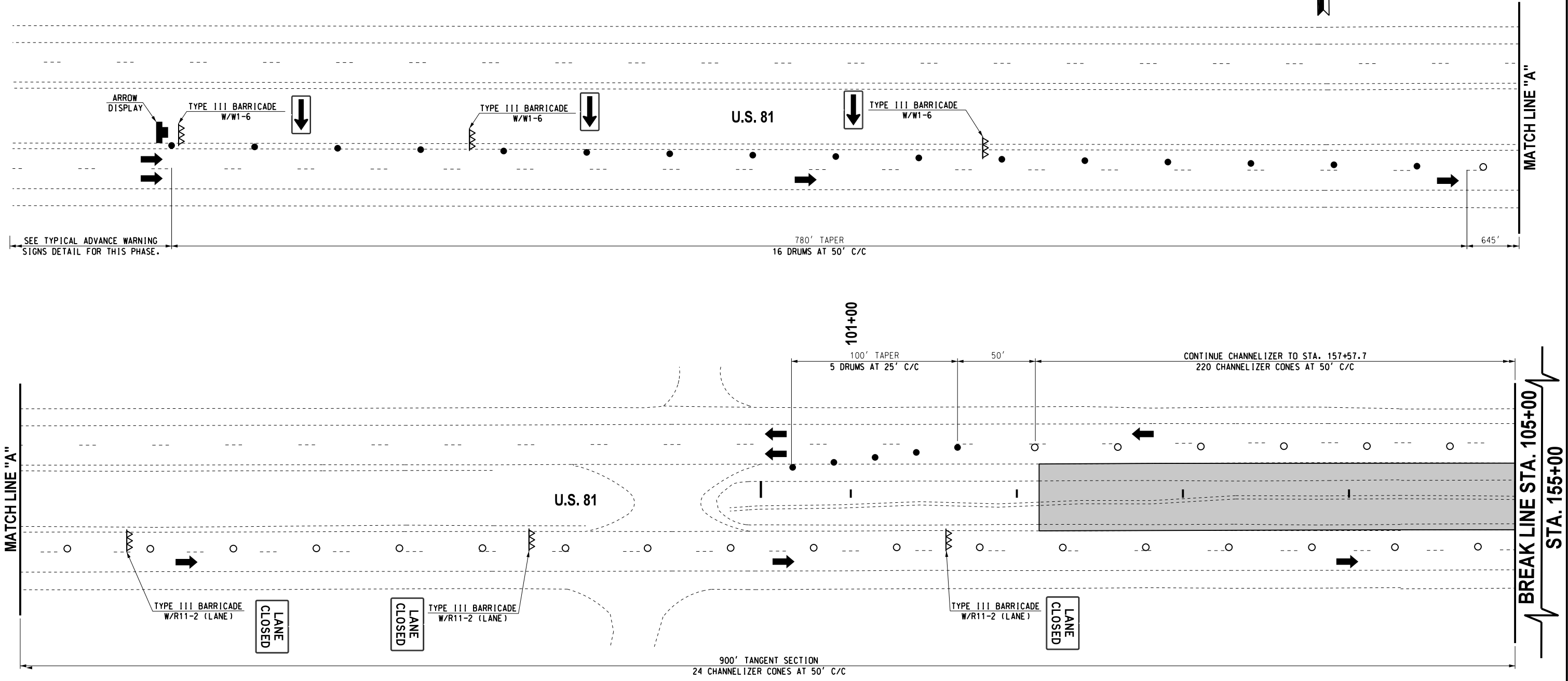
US-81 over UP Railroad	KINGFISHER COUNTY
OKLAHOMA DEPARTMENT OF TRANSPORTATION	
CONSTRUCTION SEQUENCING (5)	
STATE JOB NO. 29849(04) SHEET NO. R012	

10/19/18 G:\01Projects\T-2586 US 81 Bridge over IPRR, Kingfisher, Co., OK\CAD\1002-2984904.dgn

REVISIONS		
NO.	DESCRIPTION	DATE



CONTRACTOR SHALL KEEP
11' MINIMUM LANES UNLESS
OTHERWISE NOTED.



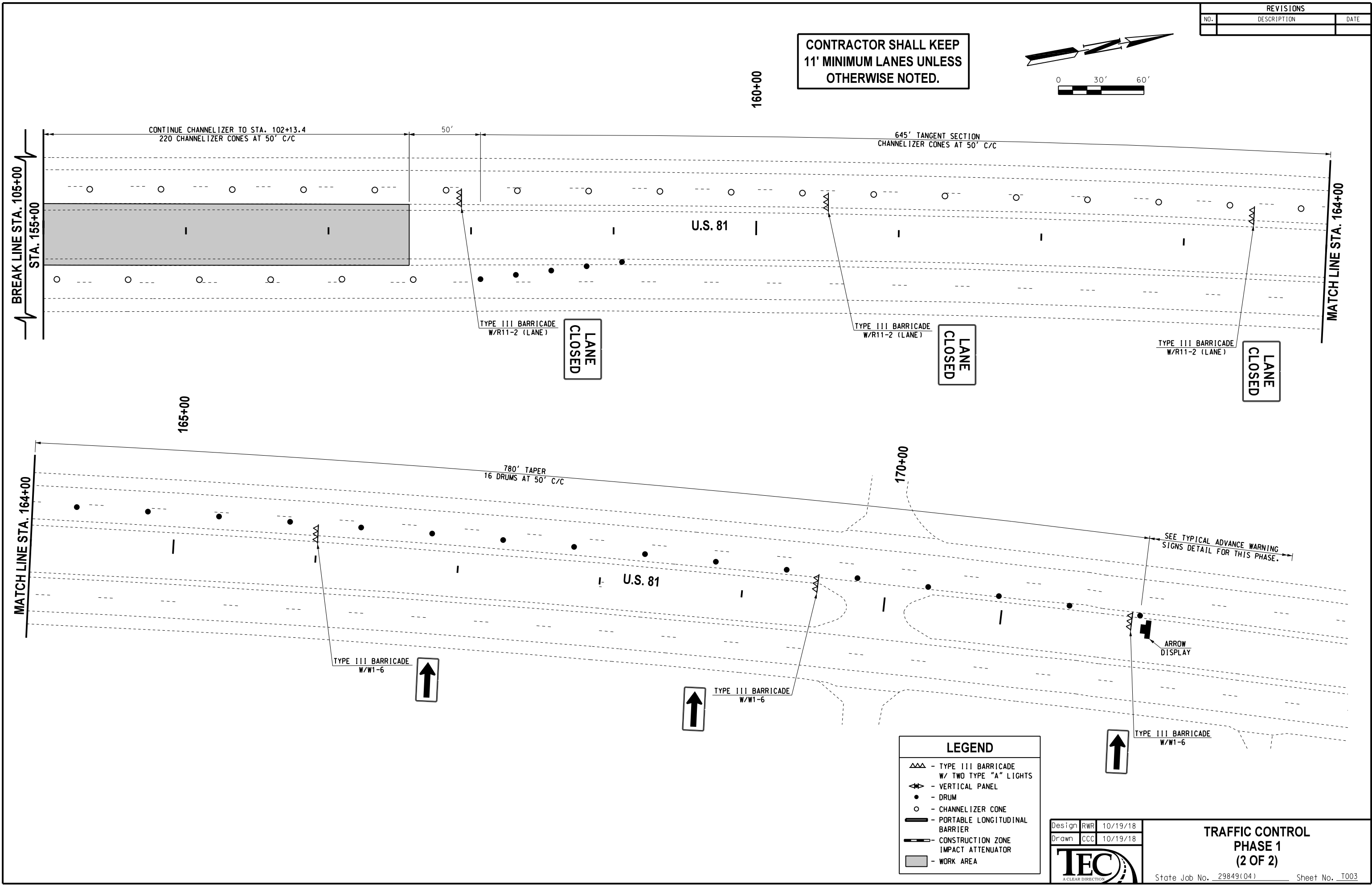
LEGEND	
	- TYPE III BARRICADE W/ TWO TYPE "A" LIGHTS
	- VERTICAL PANEL
	- DRUM
	- CHANNELIZER CONE
	- PORTABLE LONGITUDINAL BARRIER
	- CONSTRUCTION ZONE IMPACT ATTENUATOR
	- WORK AREA

Design	RWR	10/19/18
Drawn	CCC	10/19/18

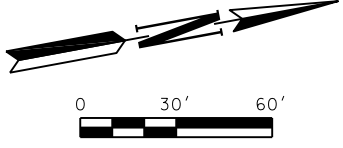
TRAFFIC CONTROL
PHASE 1
(1 OF 2)

State Job No. 29849(04) Sheet No. _____

10/19/18 G:\V\Projects\T-2586 US 81 Bridge over IPRR, Kingfisher, Co., OK\CAD\T003-2984904.dgn



REVISIONS		
NO.	DESCRIPTION	DATE



LEGEND		
	-	TYPE III BARRICADE W/ TWO TYPE "A" LIGHTS
	-	VERTICAL PANEL
	-	DRUM
	-	CHANNELIZER CONE
	-	PORTABLE LONGITUDINAL BARRIER
	-	CONSTRUCTION ZONE IMPACT ATTENUATOR
	-	WORK AREA

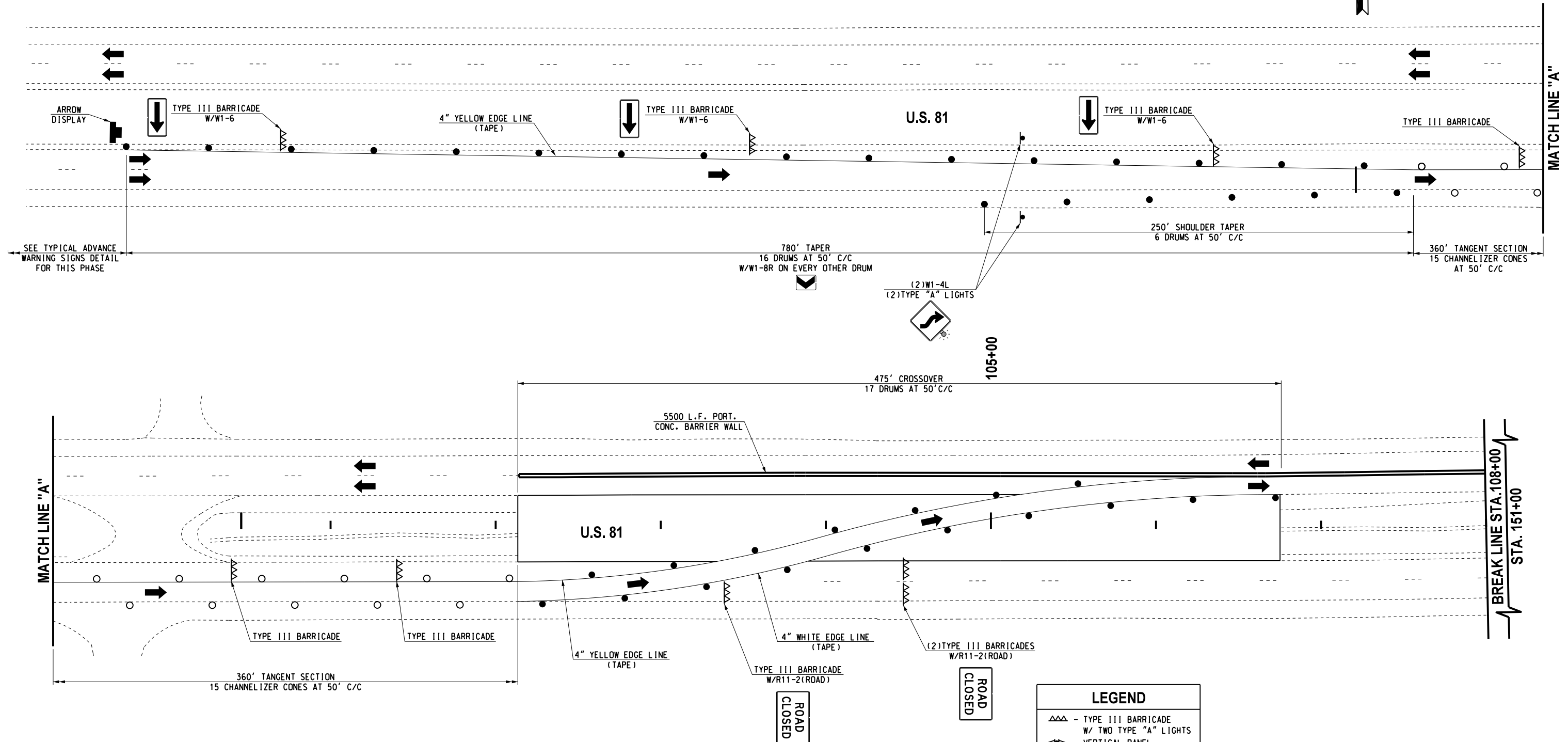
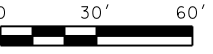
Design	RWR	10/19/18
Drawn	CCC	10/19/18

TRAFFIC CONTROL PHASE 1 (2 OF 2)	
State Job No. 29849(04)	Sheet No. T003

KINGFISHER COUNTY

10/19/18 G:\01Projects\T-2586 US 81 Bridge over UPRR, Kingfisher, Co., OK\CAD\1005-2984904.dgn

REVISIONS		
NO.	DESCRIPTION	DATE



LEGEND	
	- TYPE III BARRICADE W/ TWO TYPE "A" LIGHTS
	- VERTICAL PANEL
	- DRUM
	- CHANNELIZER CONE
	- PORTABLE LONGITUDINAL BARRIER
	- CONSTRUCTION ZONE IMPACT ATTENUATOR
	- WORK AREA

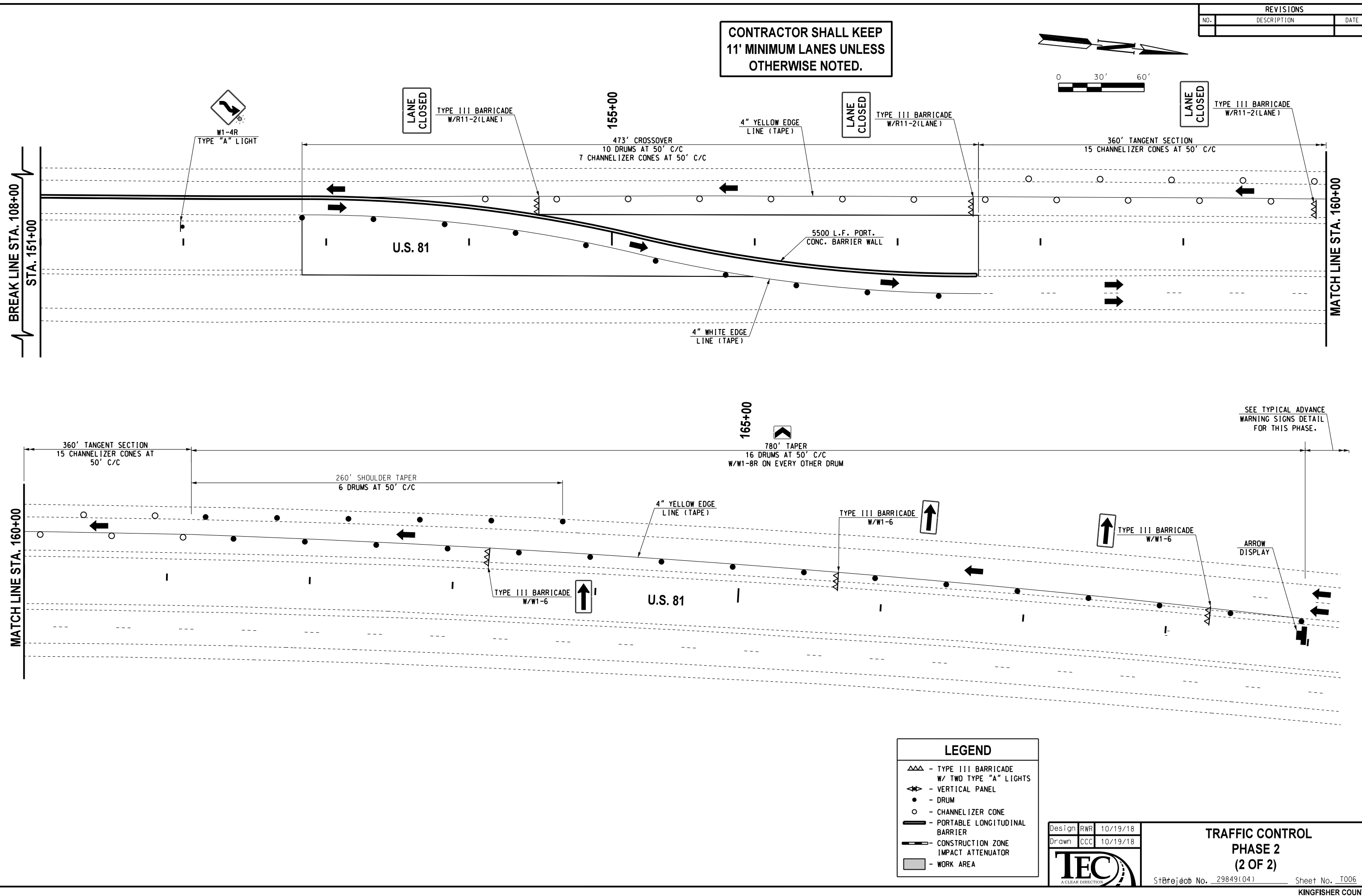
Design	RWR	10/19/18
Drawn	CCC	10/19/18

TRAFFIC CONTROL
PHASE 2
(1 OF 2)

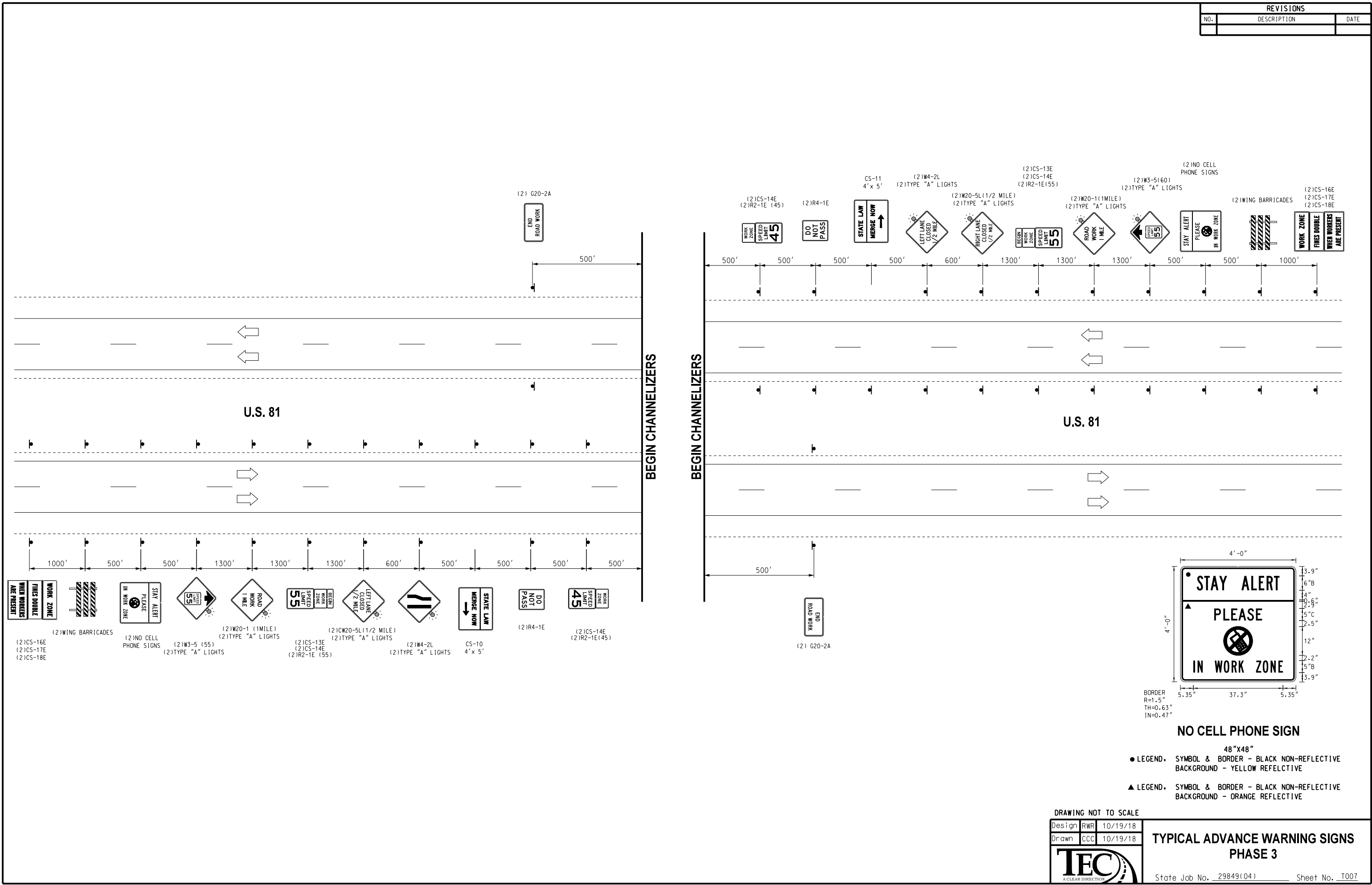
State Job No. 29849(04) Sheet No. T005

KINGFISHER COUNTY

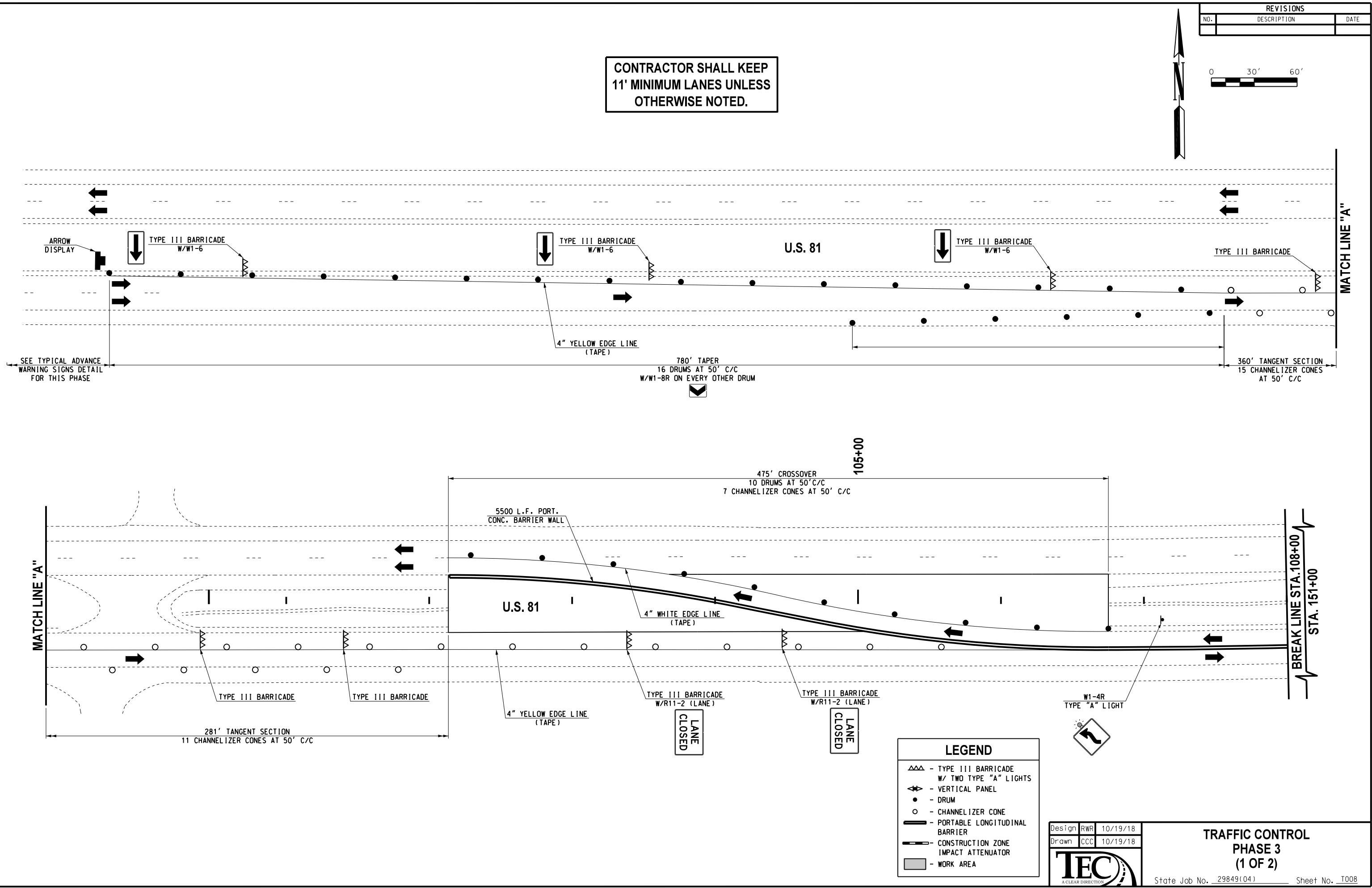
REVISIONS		
NO.	DESCRIPTION	DATE



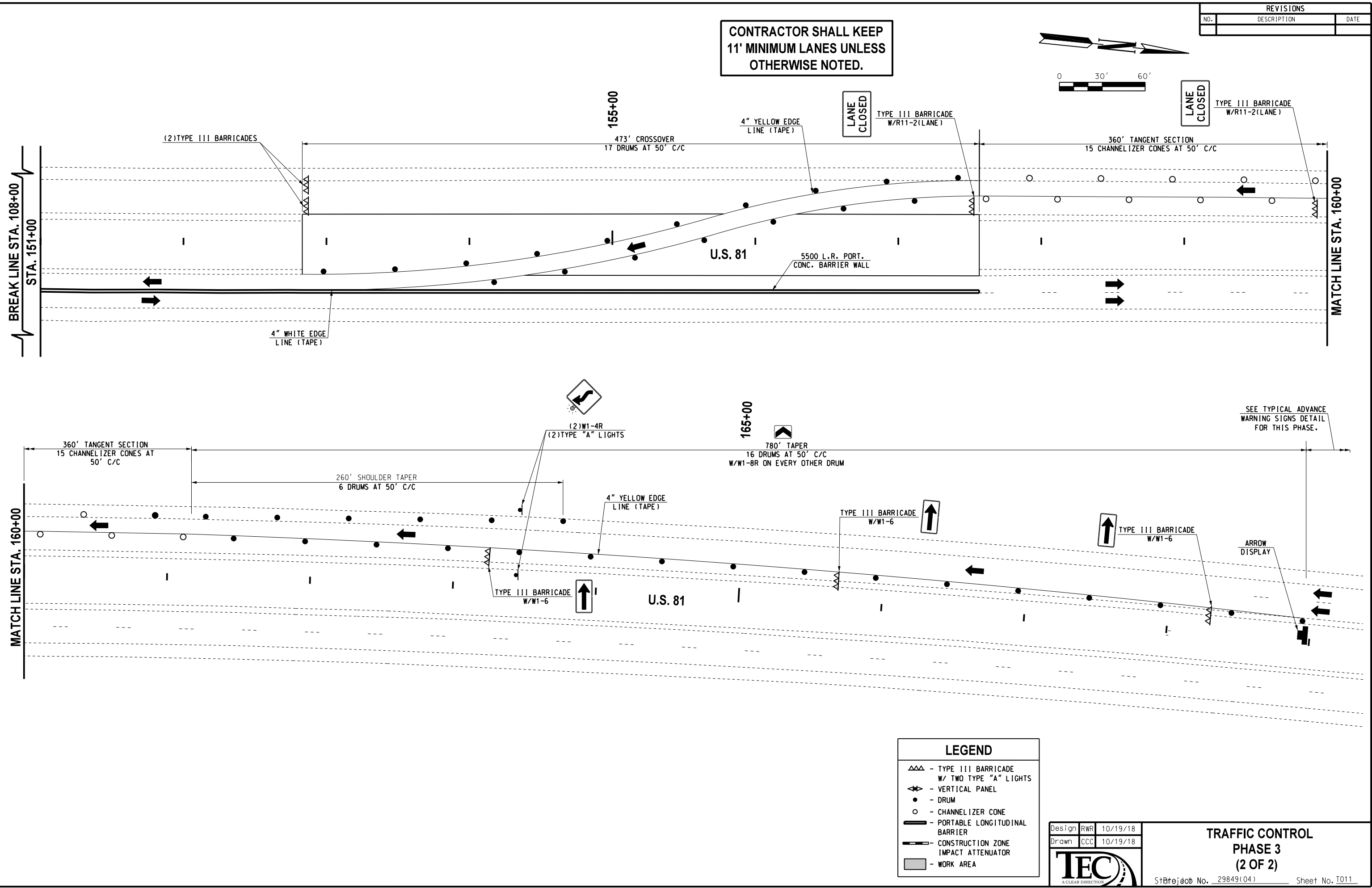
10/19/18 G:\01Projects\T-2586 US 81 Bridge over IPRR, Kingfisher, Co., OK\CAD\T007-2984904.dgn



10/19/18 G:\01Projects\T-2586 US 81 Bridge over IPRR, Kingfisher, Co., OK\CAD\T008-2984904.dgn

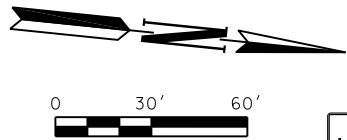


10/19/18 G:\01Projects\T-2586 US 81 Bridge over UPRR Kingfisher, Co., OK\CAD\T009-2984904.dgn



CONTRACTOR SHALL KEEP
11' MINIMUM LANES UNLESS
OTHERWISE NOTED.

REVISIONS		
NO.	DESCRIPTION	DATE



LEGEND	
	- TYPE III BARRICADE W/ TWO TYPE "A" LIGHTS
	- VERTICAL PANEL
	- DRUM
	- CHANNELIZER CONE
	- PORTABLE LONGITUDINAL BARRIER
	- CONSTRUCTION ZONE IMPACT ATTENUATOR
	- WORK AREA

Design	RWR	10/19/18
Drawn	CCC	10/19/18

TRAFFIC CONTROL PHASE 3 (2 OF 2)	
Sheet No. T011	Job No. 29849(04)

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

SURVEY OF
U.S. 81

SWO 4987(1)

STATE JOB NO. 29849(04)

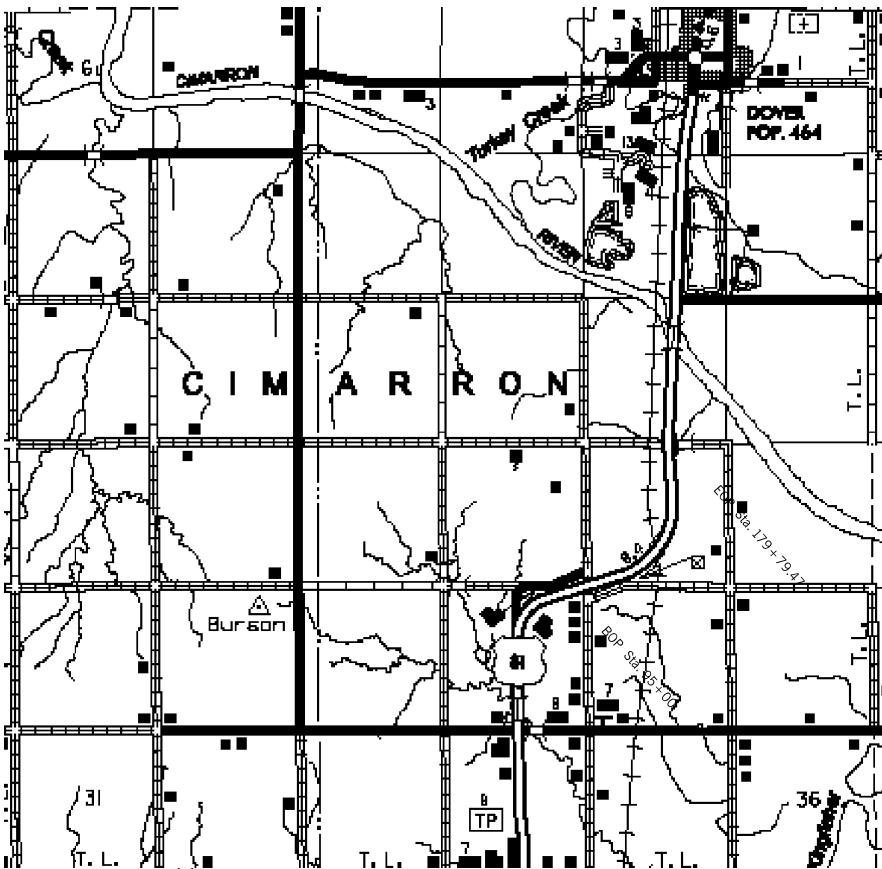
KINGFISHER COUNTY,

OKLAHOMA

NB & SB BRIDGES OVER THE UNION PACIFIC RAILROAD,

5.3 MILES NORTH OF S.H. 33

R-7-W



PROJECT EXTENTS

PROJECT LENGTH 8479.47 FT. 1.61 MI.

BEGINNING STATION : 95+00
ENDING STATION : 179+79.47

THIS SURVEY MEETS THE OKLAHOMA MINIMUM STANDARDS
FOR THE PRACTICE OF LAND SURVEYING AS ADOPTED BY THE
OKLAHOMA STATE BOARD OF REGISTRATION FOR PROFESSIONAL
ENGINEERS AND LAND SURVEYORS, MAY 11, 2010.

SDS 1 OF 13

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS			DATE

INDEX OF SURVEY SHEETS

1. TITLE SHEET
2. HISTORICAL LETTER & WRITTEN REPORT
3. HISTORICAL LETTER & WRITTEN REPORT
4. BENCHMARK LIST, ALIGNMENT REPORT
5. COGO POINTS
6. HORIZONTAL CONTROL DIAGRAM
- 7-10. SURVEY DATA SHEETS
- 11-12. GEOMETRIC DATA SHEETS

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

SWO 4987(1) Job/Piece 29849(04) Engr. Contract No. 1506

LAND SURVEYOR'S CERTIFICATION

I hereby certify that all land and property sub-division distances, angles, corners, and monuments made or used in conjunction with this survey and depicted or recorded herein or hereon were recovered, established or re-established in substantial conformity with:

- Applicable instructions contained in the U.S. Government Bureau of Land Management publication "Manual of Survey Instruction";
- Its supplement, "Restoration of Lost or Obliterated Corners and Sub-division of Sections";
- "Oklahoma Minimum Standards for the Practice of Land Surveying" as adopted by the State Board of Licensure for Professional Engineers and Land Surveyors; and
- Sound land surveying practices;

including a thorough search, study, analysis and consideration of all existing records and field evidence.

I further certify that all survey monuments depicted exist and that all land survey work was done by me or under my direct supervision.

Dated this 7th day of August, 2015.

Land Surveyor

Dustin M. McNally
Signature

Dustin M. McNally

Printed Name

Oklahoma Licensed Land Surveyor No. 1636

Certificate of Authorization No. 1427



UTILITIES

City of Kingfisher	405-375-3705
Cimarron Electric Cooperative	405-375-4121
Pioneer Telephone	800-992-0234
DCP Midstream	888-204-1781
Oklahoma Natural Gas	405-551-6946
Continental Pipeline Company	580-628-3234

State of Oklahoma
Department of Transportation

Guy Engineering Services, Inc.
Dustin M. McNally, PLS 1636
10759 East Admiral Place Tulsa, Oklahoma 74116
Phone (918) 437-0282 Fax (918) 437-0455 C.A. 1427, Expires 6/2016

To: Mr. William Tackett, Chief of Surveys
From: Dustin M. McNally, Professional Land Surveyor

Subject: SWO 4987(1), J/P No. 29489(04), U.S. 81, NB & SB Bridges over the Union Pacific Railroad, 5.3 miles North of S.H. 33.

KINGFISHER COUNTY
Historical Letter and Written Report

1. General:

Survey began: August 11, 2014
Survey completed: July 9, 2015
GUY Engineering Services, Inc. personnel on this survey:
Dustin M. McNally, PLS
Ryan Harrison, LSIT
Tim DeArmon, Survey Technician
Redmon Kaiser, Survey Technician
Stevfen Miller, Survey Technician
Amanda Reid, Survey Technician
Vince Miller, Survey Technician
Brandon Travers, Survey Technician
Benjamin Marts, Engineer Intern
Thomas Perkins, CAD Technician

MacArthur Associated Consultants, L.L.C. personnel on this survey:
James L. Buckley, PLS
Casey Dodge, Survey Technician
David Hancock, Survey Technician
Aubrey McCoy, Survey Technician
Tristan Thompson, Survey Technician
Eddie Willis, CAD Technician
Desmond Bryant, CAD Technician
Neil Archibald, CAD Technician
Ken Gillespie, PE

Previous Surveys and Plans relevant to this project:

SWO 2229(1) survey
SWO 2516(1) survey
FAP No. 124(14) plans
FAP No. F-124(22)(23) plans

2. Assignment:

Assignment of this survey originated by ODOT Project Management Division Task Order No. EC-1506 dated March 2, 2014 from Mr. Larry Reser, PLS, Chief of Surveys. This survey was assigned to me under Engineering Contract No. EC-1506, J/P No. 29849(04).

The Assignment of the survey included:
SWO 4987(1) Survey Special Provisions
Attachment No. 1- Location Map
Attachment No. 2-Land Surveyor's Certification Form
Attachment No. 3-SD Form #7
Attachment No. 4-Specifications for surveys for Primary and Secondary Highways dated January 2011.
Attachment No. 5-Suggested sequence of survey
Attachment No. 6-Project Completion Percentages
Attachment No. 7-Standard CADD files, issued March 5, 2004

3. Purpose:
The purpose of this survey is to develop plans to construct new bridges over the Union Pacific Railroad north of Kingfisher.

4. Survey Limits:
This survey begins at a point 500.00 feet west of NS-285 Section Line and extends East and north to a point identified as P.T. Sta. 79+80.05, as established under SWO 2229(1) survey and shown on FAP No. F-124(14) plans (approximate centerline length=1.61 miles).

5. Alignment:
A001 – Centerline of U.S. 81 (median)
The Centerline of Survey for this project is along and identical to the centerline of present U.S. 81 (median) as established under SWO 2229(1) survey and shown on FAP No. F-124(14) plans.

6. Stationing:
A station value of 100+00.00 is assigned to P.O.T. at NS-285 Section Line and decreases west to Beginning of Survey and increases east and north to the End of Survey.

7. Horizontal Control:
A. Horizontal control for this survey is N.G.S. Oklahoma State Plane Coordinate System NAD 83 Lambert Projection North Zone (Zone 3501). The distances, coordinates, and elevations shown in this survey are U.S. Survey Feet. All angles and bearings are shown are in degrees, minutes, and seconds.

8. Vertical Control:
A. Datum:
Level datum for this survey is N.G.S. N.A.V.D. 88.
B. Source:
Stations K-37-506 through K-37-509. These station's elevations were established by a network adjustment utilizing C.O.R.S. Stations "OKAO", "OKCL", "OKPR" and H.A.R.N. monument "Schroder".
C. Method:
A double line of differential levels was run through the site using Topcon AT-B3 & Nikon AC-2s automatic levels.
D. Accuracy:
These benchmarks exceed the requirements for N.G.S. 3rd order leveling.

E. Results:

The results of these level runs have been placed in a list in the project design file showing the BM number, elevation, run 1 and run 2 differences, description of each benchmark, and position by station and offset from the CLS.

Note: The source BMs were established by Guy Engineering Services, Inc. The site BMs were established by MacArthur Associated Consultants, LLC.

9. Measurement Units:

The distances, coordinates, and elevations shown on this survey are in US SURVEY FEET. All angles and bearings shown are in degrees, minutes, and seconds.

10. Topography/Digital Terrain Model:

Topography on this project was obtained from conventional field level topography using Trimble S-6 Robotic Total Stations, Topcon Hiper V GPS Receivers using Carlson Surveyor 2 data collectors, Trimble R8 GPS receivers with Trimble TCS-2 data collectors, and using Carlson RTK GPS receivers with Carlson Surveyor+ data collectors. All paving, structures, and finished floor elevations were obtained with the total stations. GPS RTK surveying was used for land ties and miscellaneous topography. As a minimum, the coverage bandwidths for topographic and/or surface features data obtained on this survey are as follows:

- 200 feet right and left of Centerline of Survey from the Beginning of Survey to the End of Survey.

Note: Topography/Digital Terrain Model data was collected by MacArthur Associated Consultants, L.L.C.

11. Land Ties:

Section 22, T-17-N, R-7-W, I.M.

We recovered the Northwest, North Quarter, Northeast, West Quarter, East Quarter, Southwest, South Quarter and Southeast Corners referenced by various private sector surveyors, we accepted these corners.

Section 23, T-17-N, R-7-W, I.M.

We recovered the North Quarter and Northeast, East Quarter, South Quarter and Southeast Corners referenced by various private sector surveyors, we accepted these corners.

Section 26, T-17-N, R-7-W, I.M.

We recovered the West Quarter, East Quarter, Southwest, South Quarter and Southeast Corners referenced by various private sector surveyors, we accepted these corners.

Section 27, T-17-N, R-7-W, I.M.

We recovered the West Quarter, Southwest and South Quarter Corners referenced by various private sector surveyors, we accepted these corners.

12. Right-of-Way:

The existing rights-of-way shown on this survey were obtained from documents found on file in the ODOT right-of-way division. All property divisions adjacent to the present rights-of-way throughout the project limits have been properly established. This includes, as a minimum, the complete mathematical bounding of all parcels that fall partially or completely within the survey coverage limits. "Property division" includes present rights-of-way. The present rights-of-way have been tied to the centerline of survey and shown on the submitted survey notes.

13. Environmental Concerns:

We did not identify any environmental concerns during the course of this survey.

14. WPA Structures:

We did not identify any WPA structures during the course of this survey.

15. Utilities:

Note: All utilities are shown as flagged by the utilities contacted or their representatives. All utilities serving the project area were contacted through OKIE One-Call. All utility locations are approximate, and depths and types are unknown. The utility locations shown on this survey are based on the flagged locations as performed by the utility owners or their contractors. Contact CALL OKIE at 1-800-522-OKIE.

Note: The utility information was collected by MacArthur Associated Consultants, LLC.

16. Cross Sections and DTM Information

The surface area was mapped through by conventional total station and GPS methods. All paved surfaces, floor elevations, storm structures, and bridge structures were located with total stations. GPS was used to gather ground surface data outside of the present right-of-way. A combination of breakline and cross section methods were used to obtain the DTM. Surface features were placed in a digital terrain model by the field crew. (See: submitted data below) As a minimum, the coverage bandwidths for topographic and/or surface features data obtained on this survey are as follows:

- 200 feet right and left of Centerline of Survey from the Beginning of Survey to the End of Survey.

Note: Cross Sections and DTM Information was collected by MacArthur Associated Consultants, L.L.C.

17. Drainage:

Drainage areas for all drains crossing the Survey Centerline were taken from USGS quad maps that had been scanned into a Microstation Design File.

18. Data Submitted:

- Computer files:
- SWO4987_1_v1.dgn-Survey Data Sheets
 - SWO4987_1_v1_TOPO.dgn-Topographic/Planimetric Data
 - SWO4987_1_v1_SFF.dgn-Surface Feature File
 - SWO5987_1_v1_TRI.dgn-DTM Triangle Drawing
 - SWO4987_1_v1_DRA.dgn-Drainage Area Map
 - SWO4987.txt-Cogo Points
 - PDF versions of all hard copied documents.

Prepared by:
Guy
MacArthur
MacArthur
MacArthur
Guy
Guy

BM NO.	RUN 1	RUN 2	MEAN DIFF.	ADJ.	ADJ. ELEV.	PUBLISHED ELEV.	BENCHMARK DESCRIPTION
						7401	1/2" Iron Pin with Aluminum Cap
7401					1117.72	1117.72	87+08.42 ~ 136.11' Right
	-20.89	-20.89	-20.89	-20.89		BM 1	3/4" Steele Pin
BM 1					1096.83		96+95.24 ~ 144.67' Right
	-3.62	-3.64	-3.63	-3.63		BM 2	80d Nail in fence post
BM 2					1093.20		103+16.14 ~ 86.59' Left
	-3.39	-3.39	-3.39	-3.39		BM 3	80d Nail in fence post
BM 3					1089.81		108+61.77 ~ 261.62 Right
	-2.24	-2.24	-2.24	-2.24		BM 4	80d Nail in fence post
BM 4					1087.57		114+80.35 ~ 117.67' Left
	-1.14	-1.12	-1.13	-1.12		BM 5	80d Nail in fence post
BM 5					1086.45		119+71.14 ~ 200.04' Right
	5.07	5.08	5.08	5.07		7402	1/2" Iron Pin with Aluminum Cap
7402					1091.52	1091.52	121+02.42 ~ 100.10' Left
	-4.84	-4.82	-4.83	-4.83		BM 6	3/4" Steele Pin
BM 6					1086.89		124+35.15 ~ 204.12' Left
	-1.41	-1.41	-1.41	-1.41		BM 7	3/4" Steele Pin
BM 7					1085.28		127+63.92 ~ 203.34' Right
	-7.22	-7.20	-7.21	-7.21		BM 8	3/4" Steele Pin
BM 8					1078.07		132+74.74 ~ 148.99' Left
	-1.28	-1.26	-1.27	-1.27		BM 9	3/4" Steele Pin
BM 9					1076.80		141+60.55 ~ 116.32' Right
	-4.81	-4.81	-4.81	-4.81		7403	1/2" Iron Pin with Aluminum Cap
7403					1071.99	1071.99	141+98.24 ~ 107.99' Left
	-12.39	-12.40	-12.40	-12.39		BM 10	3/4" Steele Pin
BM 10					1059.80		147+77.53 ~ 339.22' Left
	-3.64	-3.63	-3.64	-3.63		BM 11	3/4" Steele Pin
BM 11					1055.97		155+72.05 ~ 116.68' Right
	-11.13	-11.13	-11.13	-11.12		BM 12	3/4" Steele Pin
BM 12					1044.85		163+62.91 ~ 136.05' Left
	-8.12	-8.12	-8.12	-8.11		7404	1/2" Iron Pin with Aluminum Cap
7404					1036.74	1036.74	180+03.58 ~ 105.01' Right

Project Name: SW04987
Description: A001
Horizontal Alignment Name: A001
Description:
Style: Default

A001.txt

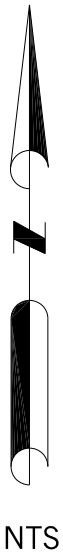
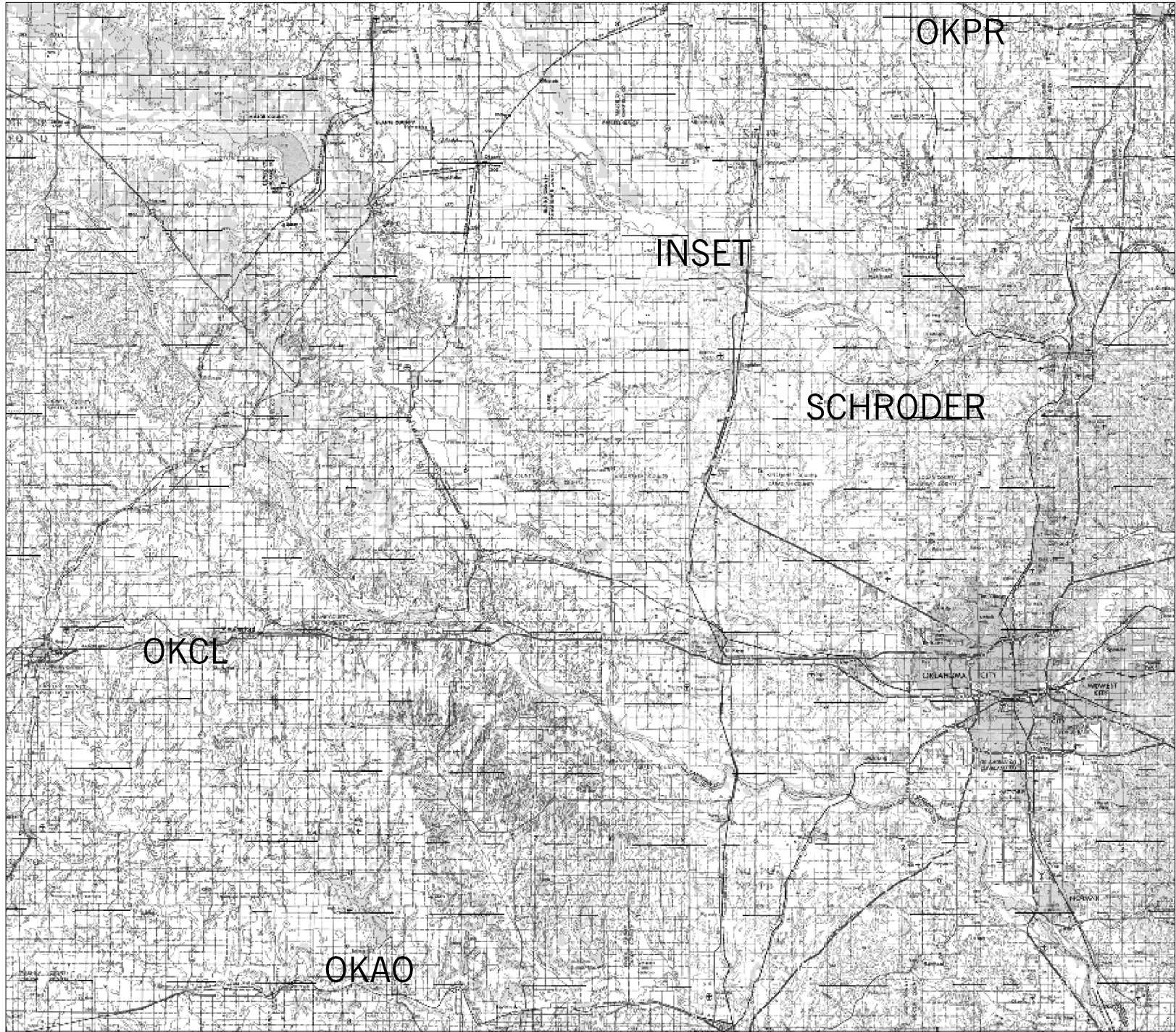
STATION	NORTHING	EASTING
Element: Linear		
POB ()	95+00.00	337580.37
PC ()	111+09.89	338019.29
Tangent Direction: N 74°10'42.76" E		
Tangent Length: 1609.8948		
Element: Circular		
PC ()	111+09.89	338019.29
PI ()	135+14.81	338674.97
CC ()		340775.23
PT ()	151+11.02	341067.35
Radius: 2864.4582		
Delta: 80°01'54.27" Left		
Degree of Curvature(Arc): 2°00'00.83"		
Length: 4001.1251		
Tangent: 2404.9183		
Chord: 3683.6920		
Middle Ordinate: 670.6660		
External: 875.6959		
Tangent Direction: N 74°10'42.76" E		
Radial Direction: S 15°49'17.24" E		
Chord Direction: N 34°09'45.62" E		
Radial Direction: N 84°08'48.49" E		
Tangent Direction: N 5°51'11.51" W		
Element: Linear		
PT ()	151+11.02	341067.35
PC ()	160+11.01	341962.66
Tangent Direction: N 5°51'11.51" W		
Tangent Length: 899.9950		
Element: Circular		
PC ()	160+11.01	341962.66
PI ()	169+97.67	342944.17
CC ()		343131.59
PT ()	179+79.47	343928.44
Radius: 11462.4053		
Delta: 9°50'22.23" Right		
Degree of Curvature(Arc): 0°29'59.49"		
Length: 1968.4599		
Tangent: 986.6560		
Chord: 1966.0419		
Middle Ordinate: 42.2299		
External: 42.3861		
Tangent Direction: N 5°51'11.51" W		
Radial Direction: N 84°08'48.49" E		
Chord Direction: N 0°56'00.40" W		
Radial Direction: S 86°00'49.28" E		
Tangent Direction: N 3°59'10.72" E		

COORDINATE POINT LIST					
SWO 4778(1)			JOB PIECE 24266(04)		
PT. NO.	NORTHING	EASTING	PT. NO.	NORTHING	EASTING
1000	337580.371127979	1990140.525191050	7629	338167.943297724	1992360.710553950
1001	337853.011680819	1991102.641155450	7630	338218.529393921	1992539.222848690
1002	338019.293745153	1991689.430710500	7631	338199.287074632	1992544.675659750
1003	338506.549812618	1992657.231277150	7632	338394.592372675	1993233.884741890
1004	339086.776222375	1993222.383890750	7633	335006.951883378	1992761.629219970
1005	340064.348225573	1993683.307615320	7634	335006.147811542	1992862.583483150
1006	341067.352140937	1993757.987476220	7635	337633.981330103	1993248.451393170
1007	342944.167020735	1993565.586839360	7636	337651.200574855	1993301.489026560
1008	342945.950783785	1993607.949561450	7637	338438.177778122	1993387.692434700
1009	343928.435991493	1993634.177330960	7638	338445.110702718	1993412.157897960
1010	337674.361828606	1990472.207153380	7639	339256.227090793	1993749.552275320
1011	337716.691404399	1990621.583173250	7640	339246.528596175	1993732.061157510
1012	340297.725017155	1993732.840234840	7641	339347.081278394	1993676.306593510
1013	338674.972000000	1994003.241000000	7642	339461.067113053	1993621.380831780
1014	341962.655000000	1993666.206000000	7643	338790.333200505	1993408.557119880
7600	337730.461218400	1990097.993264800	7644	339103.638119208	1993222.094372280
7601	337868.731186083	1990585.931474640	7645	339824.712467316	1993769.139002980
7602	340329.552309872	1990543.093656380	7646	339983.675179756	1993786.035894340
7603	340329.256780335	1990609.108800380	7647	341079.589738719	1993877.361850360
7604	337817.014401848	1990652.841756580	7648	341822.935177730	1993801.158204800
7605	337986.893549442	1991252.324989050	7649	341949.036848707	1993546.973152540
7606	338274.848887640	1992039.892966340	7650	342335.297397093	1993513.851307240
7607	338661.265289512	1992658.658696010	7651	342911.424122635	1993742.480961370
7608	338777.827567803	1992746.573156660	7652	342888.362224177	1995777.550435900
7609	339348.752668652	1993217.885759760	7653	342954.368881279	1995777.336939950
7610	339375.164859291	1993233.992814900	7654	342977.430617888	1993742.281747510
7611	342915.428392348	1993389.128999670	7655	343469.336033168	1993752.674473720
7612	342918.063458526	1993156.600756070	7656	343918.821861126	1993772.139459230
7613	342948.414130992	1993390.574451850	7657	342946.713508030	1993540.643878440
7614	342947.847256671	1993440.597594040	7658	343930.645292835	1993583.760279730
7615	342980.832995315	1993442.043046230	7659	337003.301864002	1990598.876602410
7616	342984.069881279	1993156.407939950	7660	337651.616051572	1993251.026791710
7617	343935.023143476	1993483.856153570	7661	337648.509420328	1993149.512348330
7618	337437.015849284	1990181.148633420	7662	337652.443371700	1993150.090005000
7619	337553.171002851	1990591.046304290	7663	337618.654645831	1993246.200841310
7620	335023.682053343	1990627.066970210	7664	337618.644655565	1993247.419925900
7621	335023.427307971	1990693.077289450	7665	341950.417402218	1993546.831625860
7622	337478.632685102	1990658.114443440	8000	337678.823546440	1989915.770084640
7623	337635.332172420	1991211.088228120	8001	337878.038099254	1990618.774460200
7624	337619.481927112	1993145.249986170	8002	337807.707488676	1990619.998771020
7625	337685.405324538	1993154.868014110	8003	340302.350805348	1993274.581053290
7626	337702.020834731	1991127.323090800	8004	342944.427912900	1993742.333472000
7627	337755.985717987	1991317.758721730	8005	337339.973400000	1989835.035500000
7628	338056.189025611	1992138.831756970	8006	337003.823900000	1989839.980500000

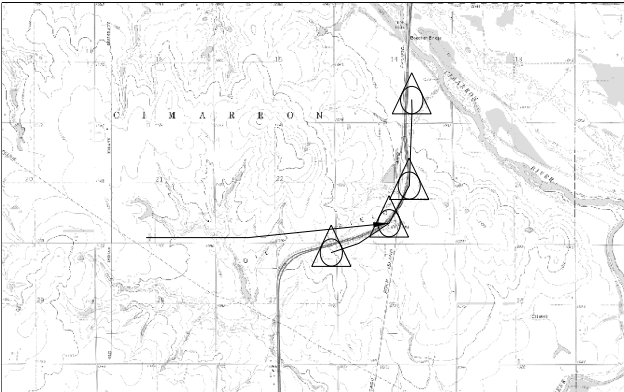
Page 1 of 2

COORDINATE POINT LIST					
SWO 4778(1)			JOB PIECE 24266(04)		
PT. NO.	NORTHING	EASTING	PT. NO.	NORTHING	EASTING
8007	337003.279161153	1990631.880271500			
8008	337563.389132474	1990623.904140920			
8009	337701.545305944	1991185.350558370			
8010	340296.499229200	1993854.274372800			
8011	335399.352112448	1990654.720663980			
8012	335406.482199114	1991024.651957410			
8013	335020.742660032	1991030.145001800			
8014	337669.437880852	1991076.296888480			
8015	337762.694700000	1991393.046000000			
8016	338162.422315871	1992365.444657630			
8017	338167.681800000	1992379.652600000			
8018	338182.290668560	1992427.933672720			
8019	338215.458271505	1992540.093131010			
8020	338225.116313346	1992572.752733900			
8021	338208.863929784	1992578.471238330			
8022	338205.843379806	1992579.534038040			
8023	338384.079328639	1993196.785464480			
8024	338395.183051450	1993233.931739630			
9000	342977.951300000	1985253.656100000			
9001	342979.694900000	1987895.008300000			
9002	342981.127000000	1990534.838000000			
9003	342951.072000000	1993156.034000000			
9004	342921.371000000	1995776.963000000			
9005	340323.546700000	1985284.124700000			
9006	340326.559060501	1987921.976757980			
9007	340329.590000000	1990576.098000000			
9008	340303.088506354	1993201.499830160			
9009	340276.616000000	1995824.030000000			
9010	337672.127200000	1985320.618100000			
9011	337694.596000000	1987948.730000000			
9012	337673.158000000	1990622.341000000			
9013	337651.649000000	1993247.025000000			
9014	337630.037000000	1995871.937000000			
9015	335022.376600000	1985338.495400000			
9016	335023.029917814	1987985.175987770			
9017	335023.690200000	1990660.070200000			
9018	335002.833400000	1993278.720400000			
9019	334981.997600000	1995906.479100000			
9020	332369.558100000	1985353.780000000			
9021	332366.254400000	1988021.420200000			
9022	332363.204200000	1990693.317400000			
9023	332347.904100000	1993310.383500000			
9024	332332.746300000	1995945.337000000			

Page 2 of 2



INSET



NETWORK ADJUSTMENT SUMMARY
EZSurv 2.94

Network	4987
Adjustment Date	2014/08/20 16:10:40.27 (LOCAL)
Mapping System	SPCS NAD83cors96 3501 Oklahoma (North)
Projection Template	Lambert Conformal Conic
Datum	NAD83 - National Spatial Reference System (USA)
Geoid Model	g2009u06 [Continuous United States Grid # GEOID09]
Units	Ft

ADJUSTMENT PARAMETERS

Confidence Region Type:	2D:1D	Confidence Level:	95%
Number of Sites:	10	Number of Vectors:	60
Adjustment type:	Weighted		

ADJUSTMENT RESULTS

Iterations:	1	Residual Critical Value:	3.742
Degrees of Freedom:	168	Residuals over Critical Value:	0
Estimated Variance Factor:	2.1559	Chi2 Test:	0.818 < 1 < 1.254 (PASSED)

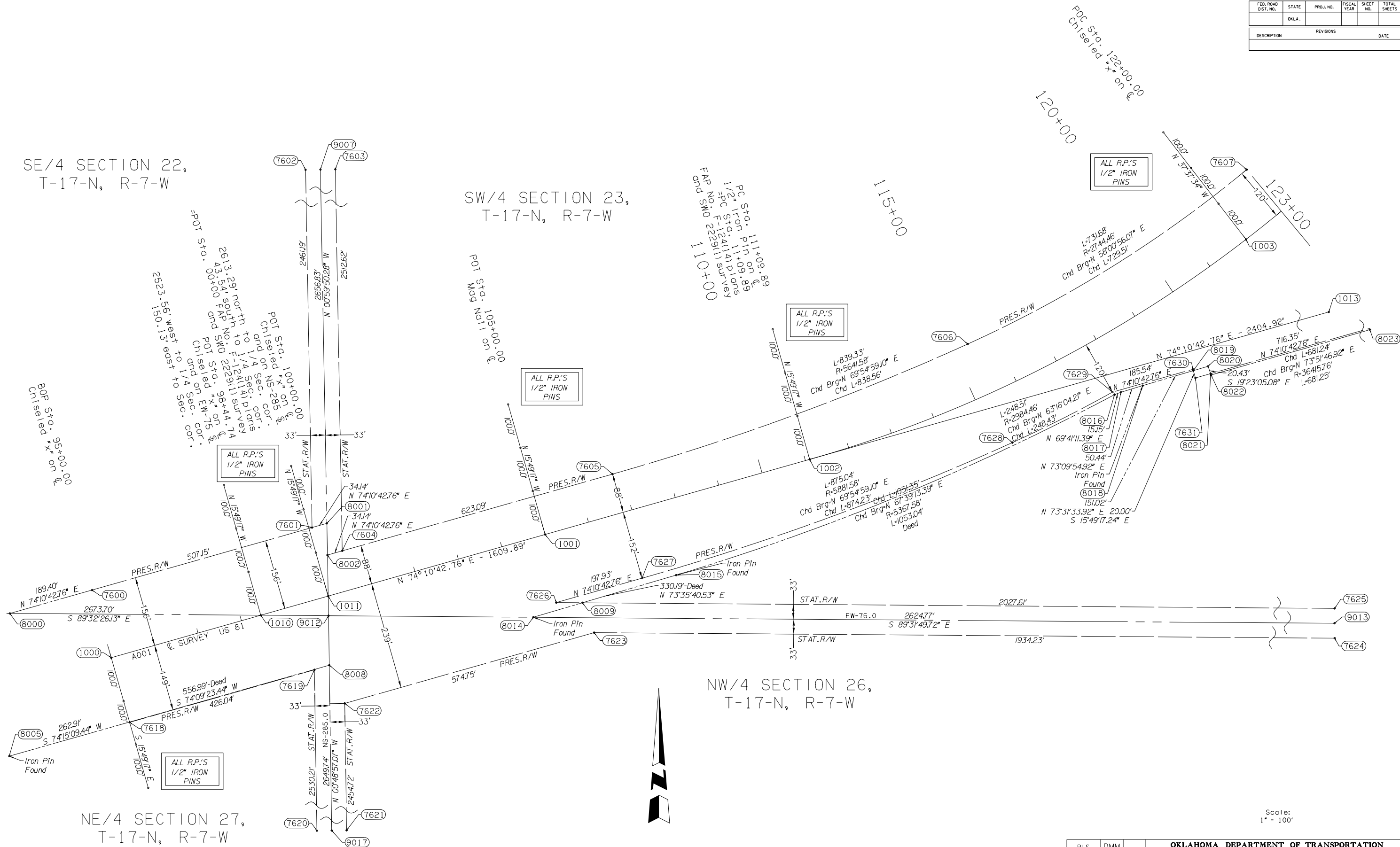
Adjusted Results (from Least Squares)

Site	Position				Standard deviation			Source	Provider
	X (ft)	Y (ft)	EllHgt (ft)	MSL (ft)	X (ft)	Y (ft)	Hgt (ft)		
7401	1989416.039	337233.599	1028.370	1117.723	0.031	0.029	0.028	Network	N/A
7402	1992520.569	338529.642	1002.114	1091.516	0.031	0.029	0.028	Network	N/A
7403	1993600.577	340183.116	982.557	1071.989	0.031	0.029	0.029	Network	N/A
7404	1993740.600	343945.184	947.271	1036.743	0.031	0.029	0.027	Network	N/A

References

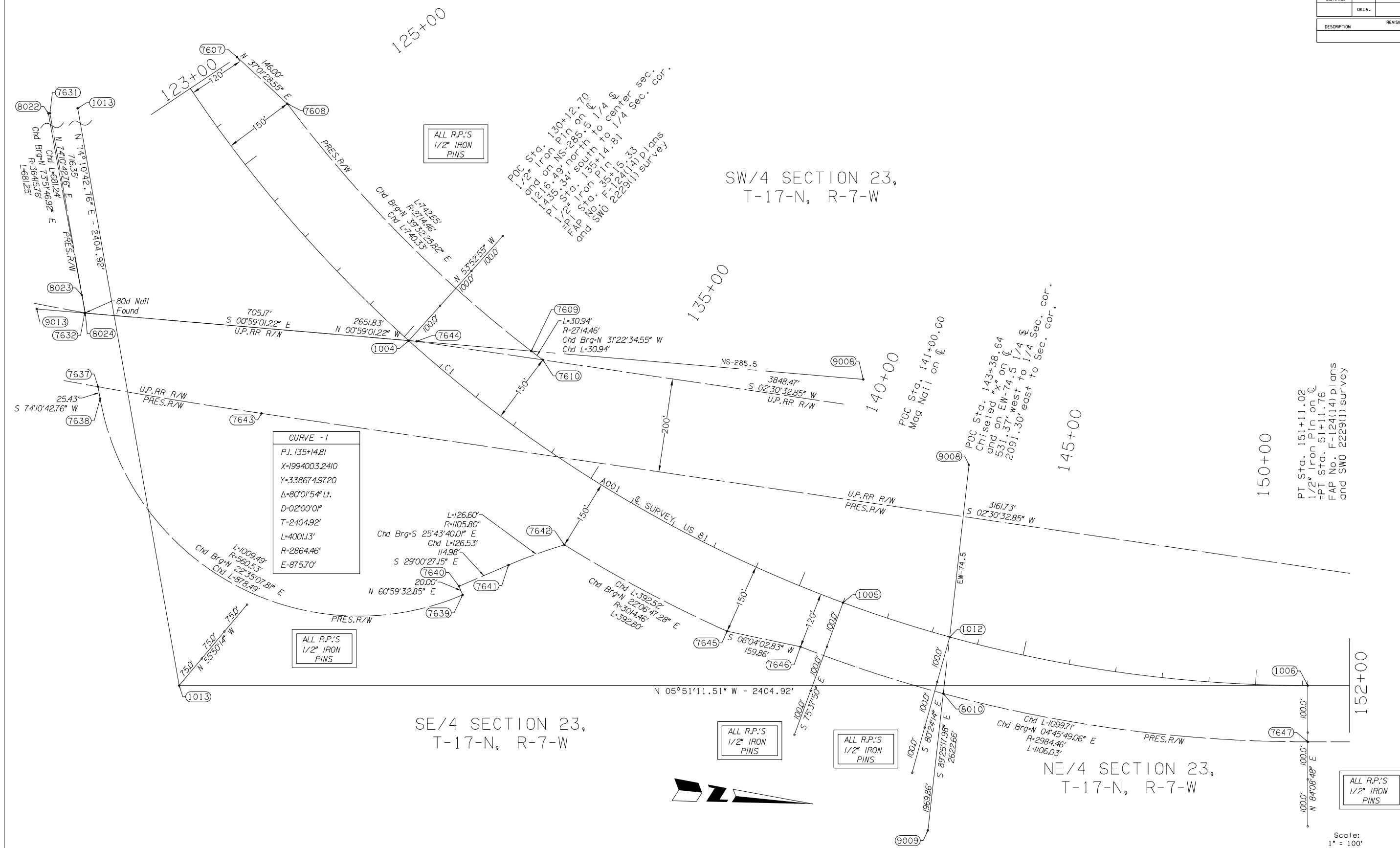
Site	Position				Source	Provider
	X (ft)	Y (ft)	EllHgt (ft)	MSL (ft)		
okao	1894915.346	27905.635	1117.033	1204.895	Base	CORS/2010
okcl	1679267.987	177324.412	1544.288	1633.510	Base	CORS/2010
okpr	2168446.837	465274.288	1070.601	1163.408	Base	CORS/2010
schroder	1974419.375	285303.812	1108.120	1196.994	User	N/A
U204	1990885.885	337636.918	1008.091	1097.466	User	N/A
V204	1993750.046	343466.021	953.796	1043.263	User	N/A

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS		DATE

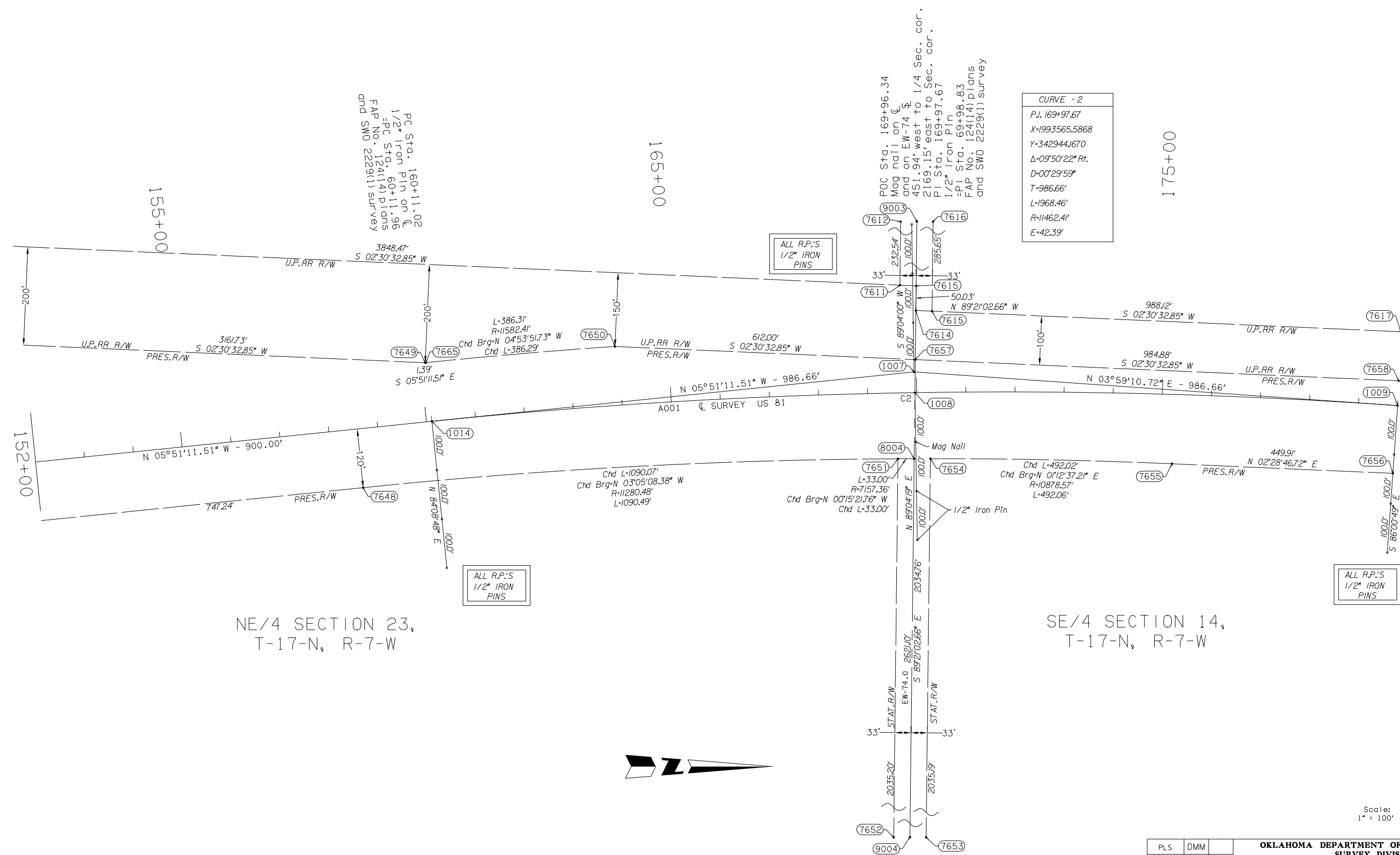


Scale:
1" = 100'

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
PLS	DMM		
DRAWN	ARR		
CHECKED	DMM		
APPROVED	DMM		
CREW	GES, INC.	SWO 4987(I)	PROJECT NO. 29849(04) SHEET NO. S007



OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS		DATE	



CURVE - 2
P.I. 169+97.67
X=1993565.5868
Y=3429441.670
Δ=09°50'22" Rt.
D=00°29'59"
T=986.66'
L=1968.46'
R=11462.41'
E=42.39'

NE/4 SECTION 23,
T-17-N, R-7-W

SE/4 SECTION 14,
T-17-N, R-7-W

Scale:
1" = 100'

OKLAHOMA DEPARTMENT OF TRANSPORTATION			SURVEY DIVISION		
PLS	DMM		SURVEY DATA SHEET		
DRAWN	ARR				
CHECKED	DMM				
APPROVED	DMM				
CREW	GES, INC.	SWO 4987(I)	PROJECT NO.	29849(04)	SHEET NO. S009

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS		DATE	

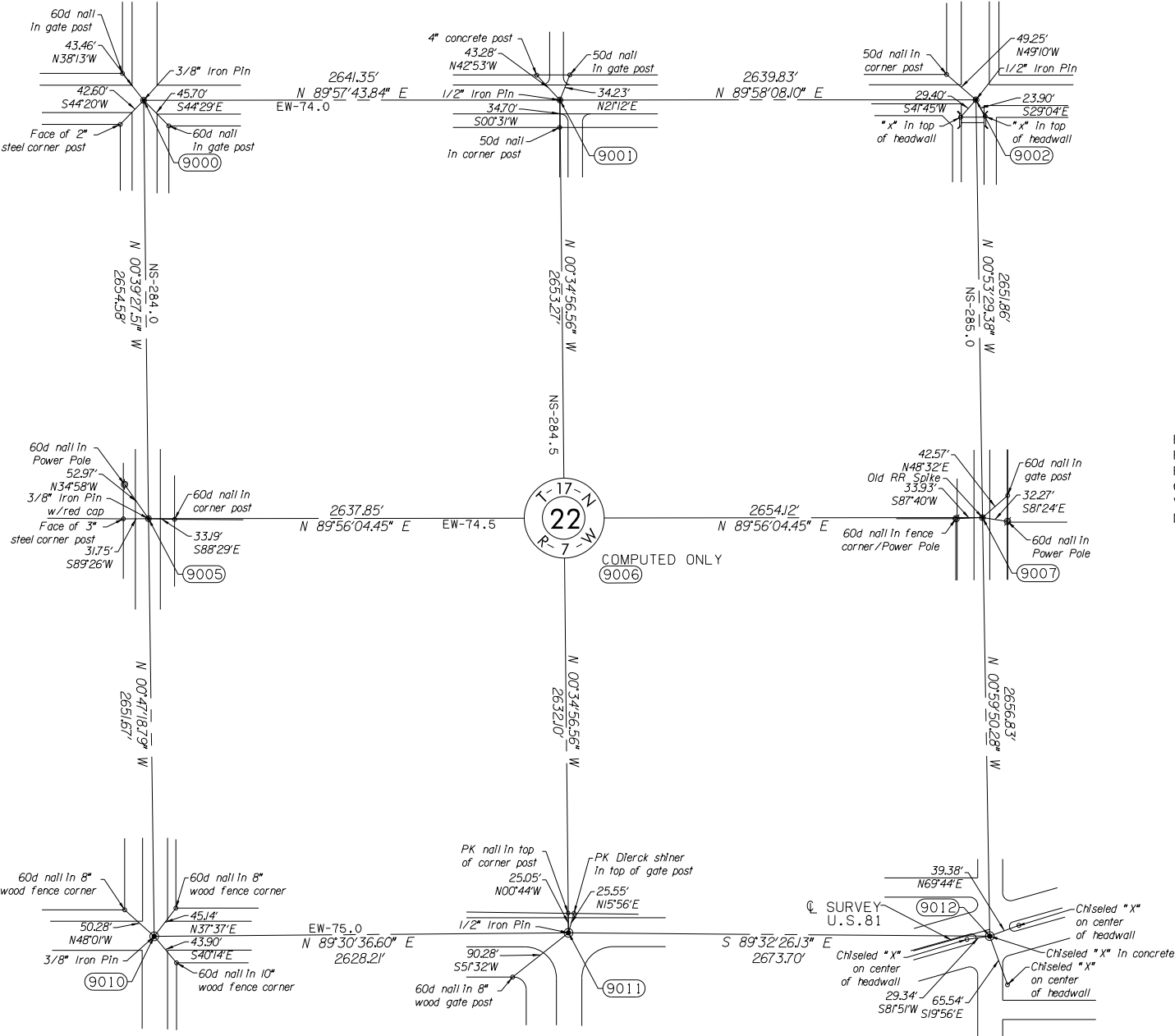
NORTHWEST CORNER OF SECTION 22, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 3/8" IRON PIN AND 3 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY VIRGIL R. ROGERS, RPLS NO. 569, OF TOPOGRAPHIC LAND SURVEYORS, DATED SEPTEMBER 26, 2008.

NORTH QUARTER CORNER OF SECTION 22, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 1/2" IRON PIN AND 3 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY BUDDY R. HOKIT, LS 1326, OF M.J. LEWIS AND ASSOCIATES, INC., DATED MARCH 16, 1992.

NORTHEAST CORNER OF SECTION 22, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 1/2" IRON PIN AND 3 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY BUDDY R. HOKIT, LS 1326, OF M.J. LEWIS AND ASSOCIATES, INC., DATED MARCH 16, 1992.

WEST QUARTER CORNER OF SECTION 22, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 3/8" IRON PIN WITH RED CAP AND 3 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY VIRGIL R. ROGERS, RPLS NO. 569, OF TOPOGRAPHIC LAND SURVEYORS, DATED SEPTEMBER 26, 2008.

EAST QUARTER CORNER OF SECTION 22, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED AN OLD RAILROAD SPIKE AND 3 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY VIRGIL C. VAUGHN, LS 405, OF H & S SURVEYING, INC., DATED SEPTEMBER 20, 2005.



SOUTHWEST CORNER OF SECTION 22, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 3/8" IRON PIN AND 2 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY VIRGIL R. ROGERS, RPLS NO. 569, OF TOPOGRAPHIC LAND SURVEYORS, DATED SEPTEMBER 26, 2008. SET 1 REFERENCE TO FOUND MONUMENT.

SOUTH QUARTER CORNER OF SECTION 22, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 1/2" IRON PIN SET BY PERSONS UNKNOWN. FOUND 2 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY ANTHONY J. FELDER, SR., LS 864, OF FELDER AND WEBER ENGINEERING AND SURVEYING, DATED OCTOBER 22, 1986. FOUND MONUMENT FITS THE REFERENCED POSITION. FOUND 1 REFERENCE SET BY PERSONS UNKNOWN.

SOUTHEAST CORNER OF SECTION 22, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A CHISELED "X" IN CONCRETE LISTED ON A CERTIFIED CORNER RECORD FILED BY ANTHONY J. FELDER, SR., LS 864, OF FELDER & WEBER ENGINEERING AND SURVEYING, DATED OCTOBER 21, 1986. SET 3 REFERENCES TO FOUND MONUMENT.



Scale:
1" = 500'

NOTE: REFERENCES SHOWN ARE NOT TO SCALE

PLS	DMM		OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION		
			SURVEY DATA SHEET		
DRAWN	ARR				
CHECKED	DMM				
APPROVED	DMM				
CREW	GES, INC.		SWO 4987(1)	PROJECT NO. 29849(04)	SHEET NO. S010

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION		REVISIONS			DATE	

NORTHWEST CORNER OF SECTION 23, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 1/2" IRON PIN AND 3 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY BUDDY R. HOKIT, LS 1326, OF M.J. LEWIS AND ASSOCIATES, INC., DATED MARCH 16, 1992.

NORTH QUARTER CORNER OF SECTION 23, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 1/2" IRON PIN WITH RED CAP AND 1 REFERENCE LISTED ON A CERTIFIED CORNER RECORD FILED BY ROGERS D. JIVIDEN, OLS 1083, OF JIVIDEN'S LAND SURVEY CO., INC., DATED MAY 29, 2004. FOUND 1 REFERENCE SET BY PERSONS UNKNOWN. SET 1 REFERENCE TO FOUND MONUMENT.

NORTHEAST CORNER OF SECTION 23, T-17-N, R-7-W, I.M. JAMES BUCKLEY, LS 1582 OF MACARTHUR ASSOCIATED CONSULTING SET A 1/2" IRON BAR WITH CAP MACOKC CA 699 12" DEEP. RE-ESTABLISHED FROM THE TWO 100D NAIL CCR REFERENCES BY LS 1083 ON MAY 29TH, 2004.

WEST QUARTER CORNER OF SECTION 23, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED AN OLD RAILROAD SPIKE AND 3 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY VIRGIL C. VAUGHN, LS 405, OF H & S SURVEYING, INC., DATED SEPTEMBER 20, 2005.

EAST QUARTER CORNER OF SECTION 23, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 1/2" IRON PIN AND 3 REFERENCES SET BY PERSONS UNKNOWN.

SOUTHWEST CORNER OF SECTION 23, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A CHISELED "X" IN CONCRETE LISTED ON A CERTIFIED CORNER RECORD FILED BY ANTHONY J. FELDER, SR., LS 864, OF FELDER & WEBER ENGINEERING AND SURVEYING, DATED OCTOBER 21, 1986. SET 3 REFERENCES TO FOUND MONUMENT.

SOUTH QUARTER CORNER OF SECTION 23, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 1/2" IRON PIN WITH CAP STAMPED "CA 980" AND 3 REFERENECS LISTED ON A CERTIFIED CORNER RECORD FILED BY ANTHONY J. FELDER, SR., RPLS 864, OF FELDER AND ASSOCIATES SURVEYING, INC., DATED SEPTEMBER 30, 2004.

SOUTHEAST CORNER OF SECTION 23, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 1/2" IRON PIN SET BY PERSONS UNKNOWN. FOUND 4 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY ANTHONY J. FELDER, SR., RLS 864, OF FELDER AND ASSOCIATES SURVEYING, INC., DATED MAY 31, 2000. FOUND MONUMENT FITS THE REFERENCED POSITION.



Scale:
1" = 500'

NOTE: REFERENCES SHOWN ARE NOT TO SCALE

PLS	DMM		OKLAHOMA DEPARTMENT OF TRANSPORTATION			
DRAWN	ARR		SURVEY DIVISION			
CHECKED	DMM		SURVEY DATA SHEET			
APPROVED	DMM					
CREW	GES, INC.		SWO 4987(1)	PROJECT NO. 29849(04)	SHEET NO. 5011	

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS		DATE	

NORTHWEST CORNER OF SECTION 27, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 3/8" IRON PIN AND 2 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY VIRGIL R. ROGERS, RPLS NO. 569, OF TOPOGRAPHIC LAND SURVEYORS, DATED SEPTEMBER 26, 2008. SET 1 REFERENCE TO FOUND MONUMENT.

NORTH QUARTER CORNER OF SECTION 27, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 1/2" IRON PIN SET BY PERSONS UNKNOWN. FOUND 2 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY ANTHONY J. FELDER, SR., LS 864, OF FELDER AND WEBER ENGINEERING AND SURVEYING, DATED OCTOBER 22, 1986. FOUND MONUMENT FITS THE REFERENCED POSITION. FOUND 1 REFERENCE SET BY PERSONS UNKNOWN.

NORTHEAST CORNER OF SECTION 27, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A CHISELED "X" IN CONCRETE LISTED ON A CERTIFIED CORNER RECORD FILED BY ANTHONY J. FELDER, SR., LS 864, OF FELDER & WEBER ENGINEERING AND SURVEYING, DATED OCTOBER 21, 1986. SET 3 REFERENCES TO FOUND MONUMENT.

WEST QUARTER CORNER OF SECTION 27, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 3/8" IRON PIN AND 3 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY VIRGIL L. ROGERS, RPLS 569, OF TOPOGRAPHIC LAND SURVEYORS, DATED SEPTEMBER 26, 2008.

EAST QUARTER CORNER OF SECTION 27, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 1/2" IRON PIN AND 2 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY ANTHONY J. FELDER, SR., RLS 864, OF FELDER & ASSOCIATES SURVEYING, INC., DATED JUNE 20, 2001. SET 1 REFERENCE TO FOUND MONUMENT.

SOUTHWEST CORNER OF SECTION 27, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 5/8" IRON PIN AND 4 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY ANTHONY J. FELDER, SR., LS 864, OF FELDER AND ASSOCIATES, INC., DATED FEBRUARY 22, 1995.

SOUTH QUARTER CORNER OF SECTION 27, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A MAG NAIL WSHINER STAMPED LS 1006.

SOUTHEAST CORNER OF SECTION 27, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A RAILROAD SPIKE LISTED ON A CERTIFIED CORNER RECORD FILED BY J. MELVIN ROSS, LS 231, DATED NOVEMBER 19, 1980. SET 3 REFERENCES TO FOUND MONUMENT.



Scale:
1" = 500'

NOTE: REFERENCES SHOWN ARE NOT TO SCALE

PLS	DMM		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	ARR		SURVEY DIVISION		
CHECKED	DMM		SURVEY DATA SHEET		
APPROVED	DMM				
CREW	GES, INC.		SWO 4987(1)	PROJECT NO. 29849(04)	SHEET NO. 5012

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS		DATE	

NORTHEAST CORNER OF SECTION 26, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 1/2" IRON PIN SET BY PERSONS UNKNOWN. FOUND 4 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY ANTHONY J. FELDER, SR., RLS 864, OF FELDER AND ASSOCIATES SURVEYING, INC., DATED MAY 31, 2000. FOUND MONUMENT FITS THE REFERENCED POSITION.

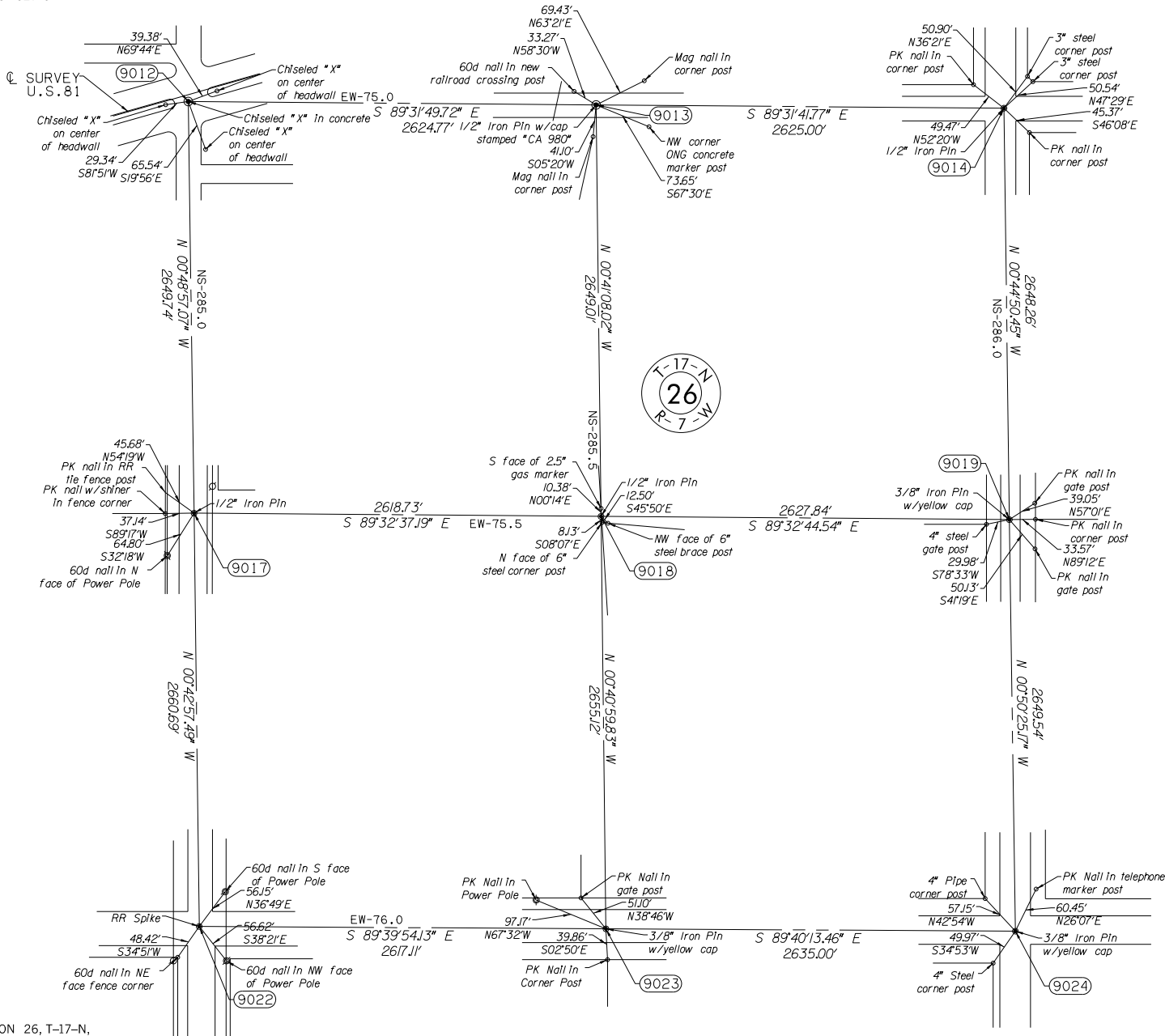
NORTH QUARTER CORNER OF SECTION 26, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 1/2" IRON PIN WITH CAP STAMPED "CA 980" AND 3 REFERENECS LISTED ON A CERTIFIED CORNER RECORD FILED BY ANTHONY J. FELDER, SR., RPLS 864, OF FELDER AND ASSOCIATES SURVEYING, INC., DATED SEPTEMBER 30, 2004.

NORTHWEST CORNER OF SECTION 26, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A CHISELED "X" IN CONCRETE LISTED ON A CERTIFIED CORNER RECORD FILED BY ANTHONY J. FELDER, SR., LS 864, OF FELDER & WEBER ENGINEERING AND SURVEYING, DATED OCTOBER 21, 1986. SET 3 REFERENCES TO FOUND MONUMENT.

CENTER OF SECTION 26, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 1/2" IRON PIN WITH YELLOW CAP AND 2 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY VIRGIL C. VAUGHN, LS 405, OF H & S SURVEYING, INC., DATED JULY 9, 2004. SET 1 REFERENCE TO FOUND MONUMENT.

EAST QUARTER CORNER OF SECTION 26, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 3/8" IRON PIN AND 4 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY ANTHONY J. FELDER, SR., RLS 864, OF FELDER & ASSOCIATES SURVEYING, INC., DATED MAY 31, 2000.

WEST QUARTER CORNER OF SECTION 26, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 1/2" IRON PIN AND 2 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY ANTHONY J. FELDER, SR., RLS 864, OF FELDER & ASSOCIATES SURVEYING, INC., DATED JUNE 20, 2001. SET 1 REFERENCE TO FOUND MONUMENT.



SOUTHEAST CORNER OF SECTION 26, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 3/8" IRON PIN WITH YELLOW CAP AND 2 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY ANTHONY J. FELDER, SR., RLS 864, OF FELDER AND ASSOCIATES, INC., DATED JUNE 20, 2001. SET 1 REFERENCE TO FOUND MONUMENT.

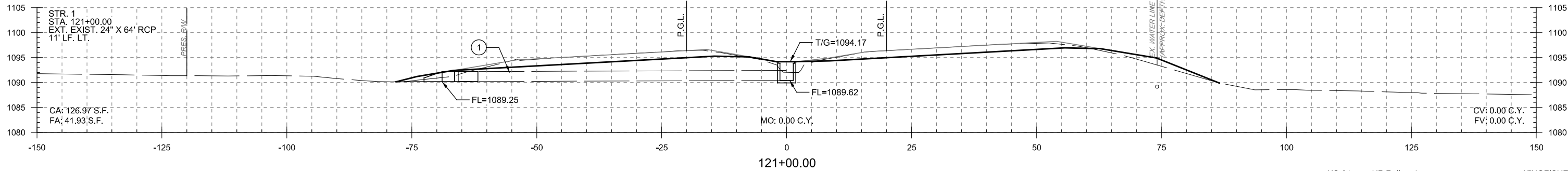
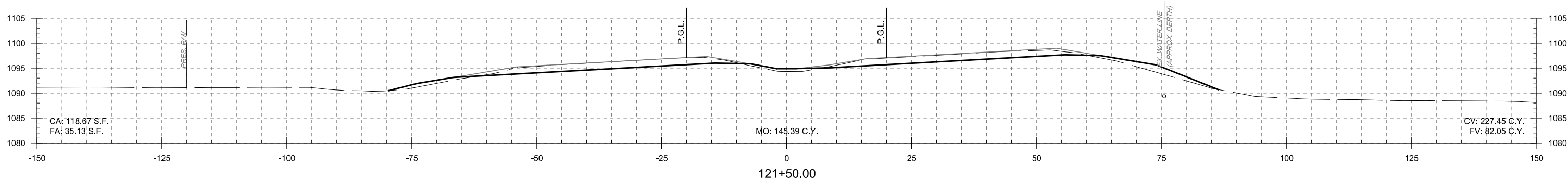
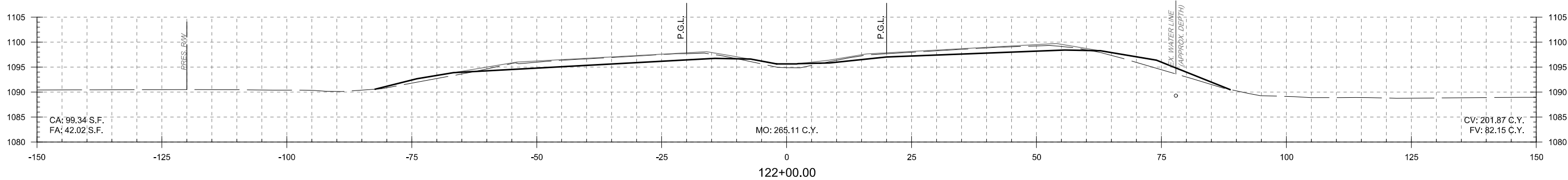
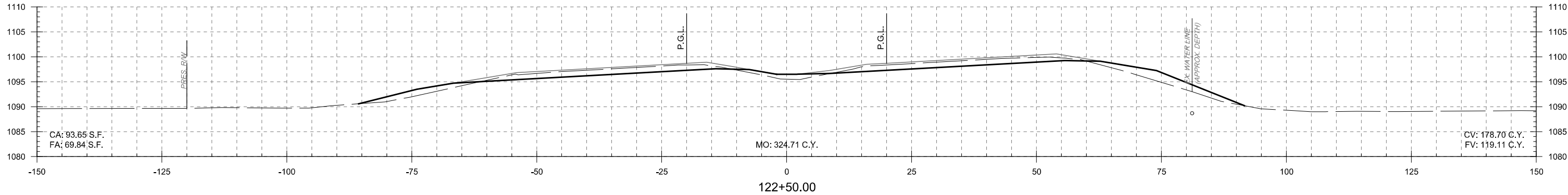
SOUTH QUARTER CORNER OF SECTION 26, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A 3/8" IRON PIN WITH YELLOW CAP AND 3 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY ANTHONY J. FELDER, SR., RLS 864, OF FELDER AND ASSOCIATES SURVEYING, INC., DATED JUNE 20, 2001.

SOUTHWEST CORNER OF SECTION 26, T-17-N, R-7-W, I.M. FOUND AND ACCEPTED A RAILROAD SPIKE LISTED ON A CERTIFIED CORNER RECORD FILED BY J. MELVIN ROSS, LS 231, DATED NOVEMBER 19, 1980. SET 3 REFERENCES TO FOUND MONUMENT.

NOTE: REFERENCES SHOWN ARE NOT TO SCALE

PLS	DMM	OKLAHOMA DEPARTMENT OF TRANSPORTATION			
DRAWN	ARR	SURVEY DIVISION			
CHECKED	DMM	SURVEY DATA SHEET			
APPROVED	DMM				
CREW	GES, INC.	SWO	4987(I)	PROJECT NO.	29849(04)
				SHEET NO.	S013

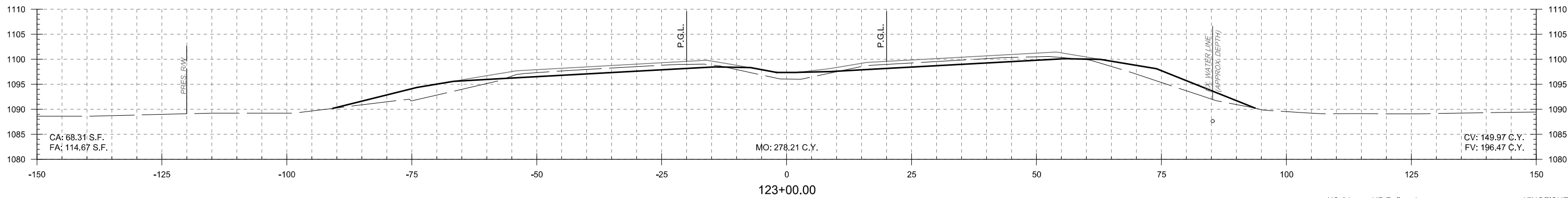
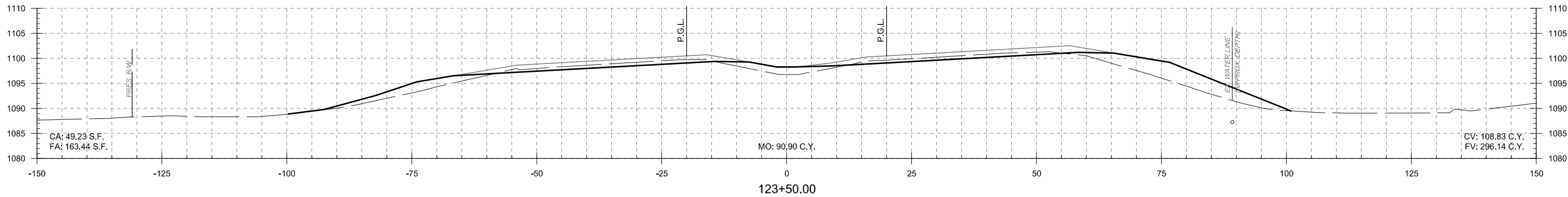
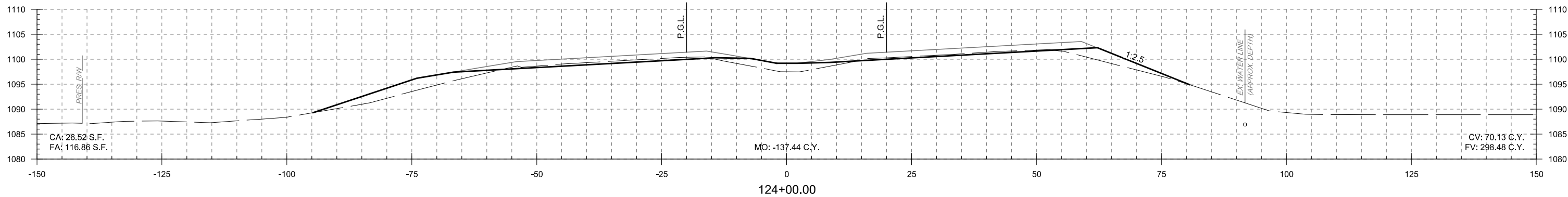
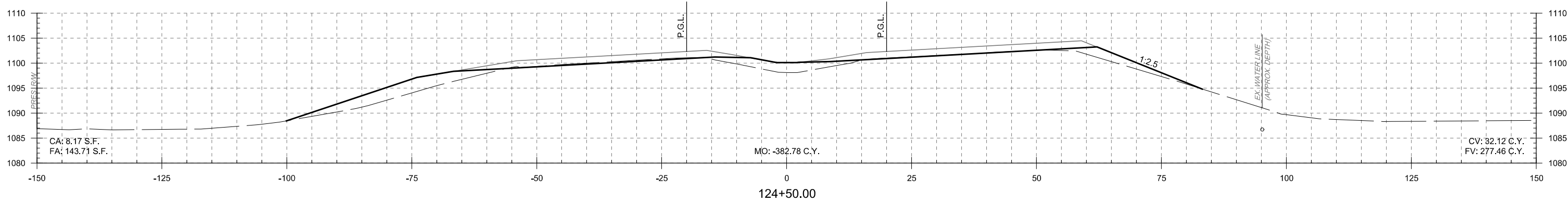
PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-X-section.dgn



DESIGN		KG	
DRAWN		NDA	
CHECKED		SP	
APPROVED			
SQUAD		MacArthur	

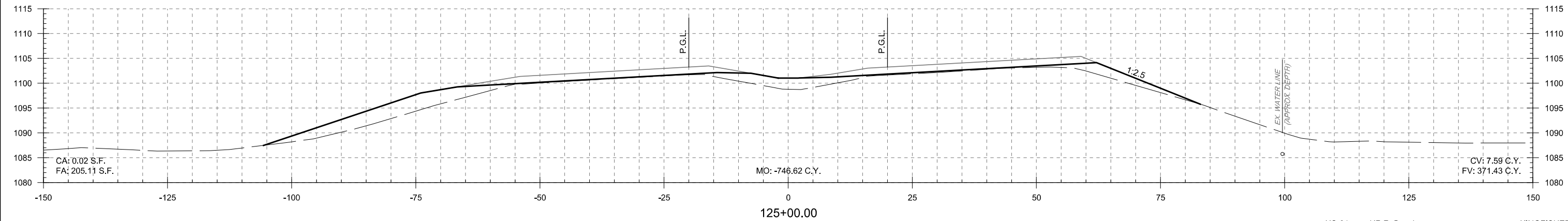
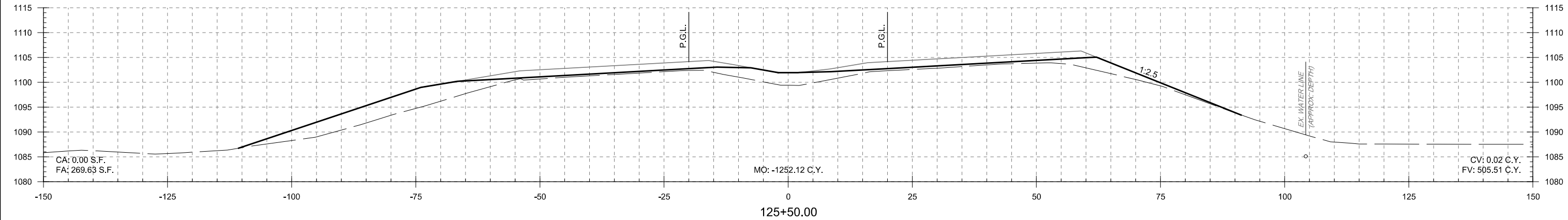
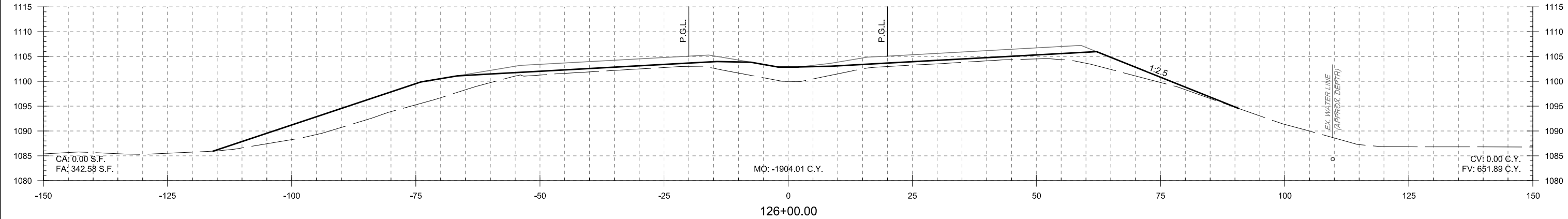
US-81 over UP Railroad		KINGFISHER COUNTY
OKLAHOMA DEPARTMENT OF TRANSPORTATION		
CROSS SECTIONS		
STA.121+00.00 TO STA.122+50.00		
STATE JOB NO. 29849(04)		SHEET NO. X001

PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-Xsection.dgn



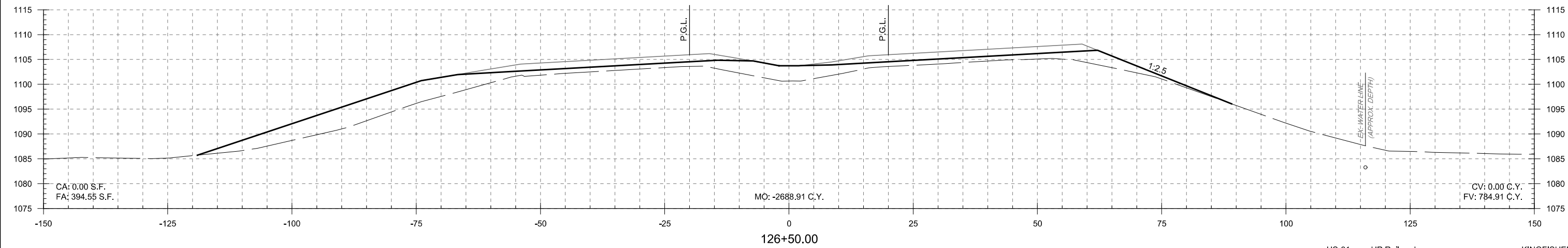
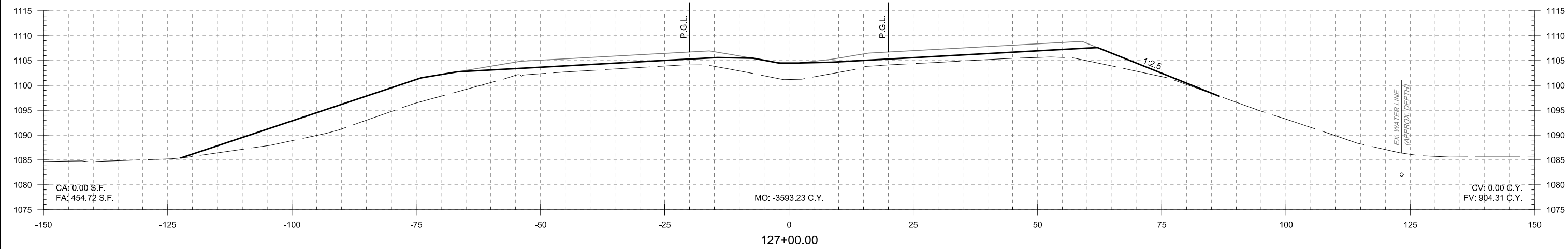
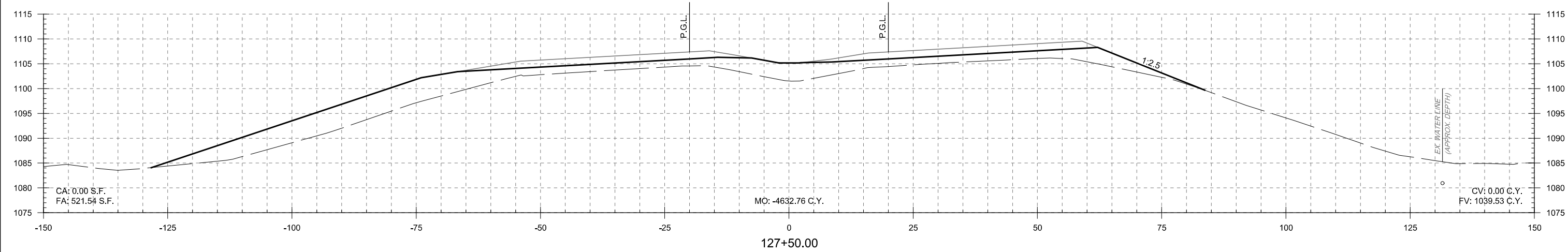
US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP				
APPROVED					
SQUAD	MacArthur		CROSS SECTIONS STA.123+00.00 TO STA.124+50.00 STATE JOB NO. <u>29849(04)</u> SHEET NO. <u>X002</u>		

PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-Xsection.dgn



US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP				
APPROVED					
SQUAD	MacArthur		CROSS SECTIONS STA.125+00.00 TO STA.126+00.00 STATE JOB NO. <u>29849(04)</u> SHEET NO <u>X003</u>		

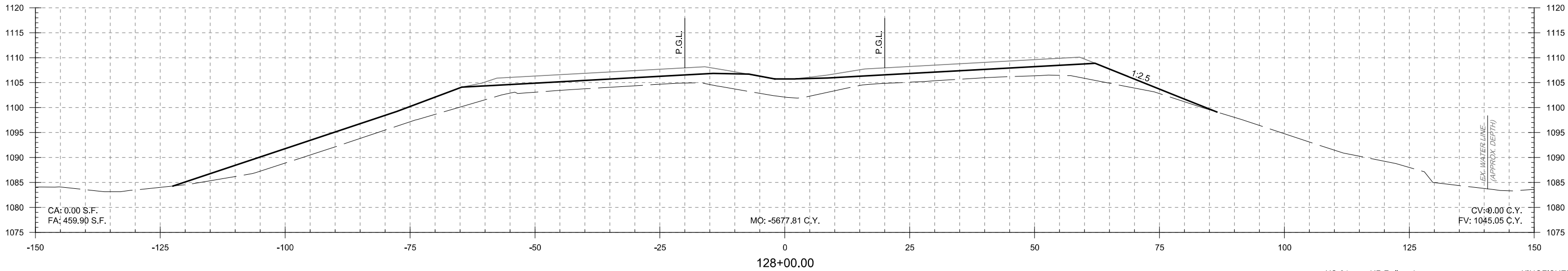
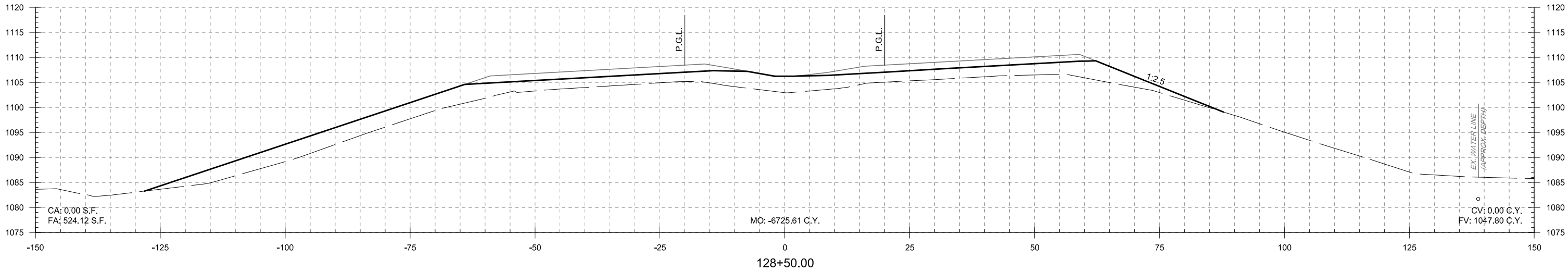
PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-Xsection.dgn



US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP				
APPROVED					
SQUAD	MacArthur		CROSS SECTIONS STA.126+50.00 TO STA.127+50.00 STATE JOB NO. <u>29849(04)</u> SHEET NO. <u>X004</u>		

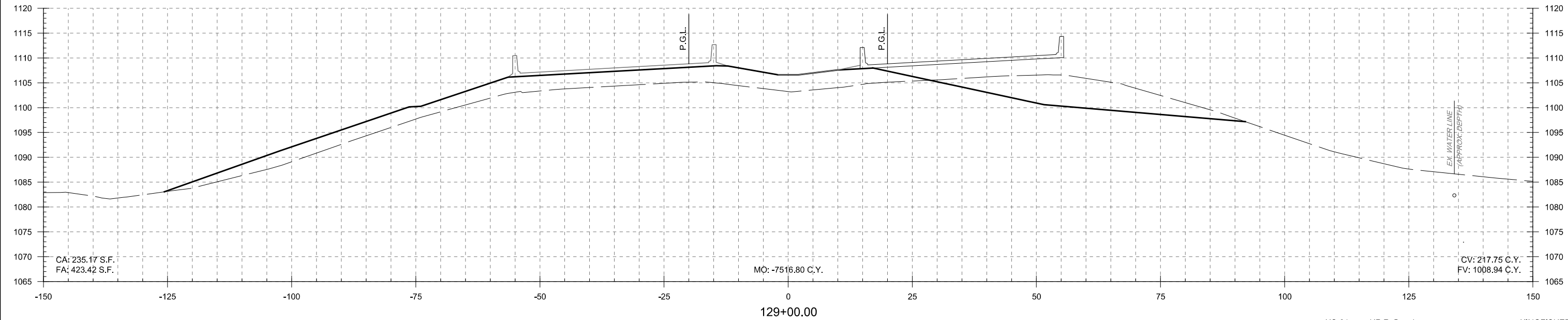
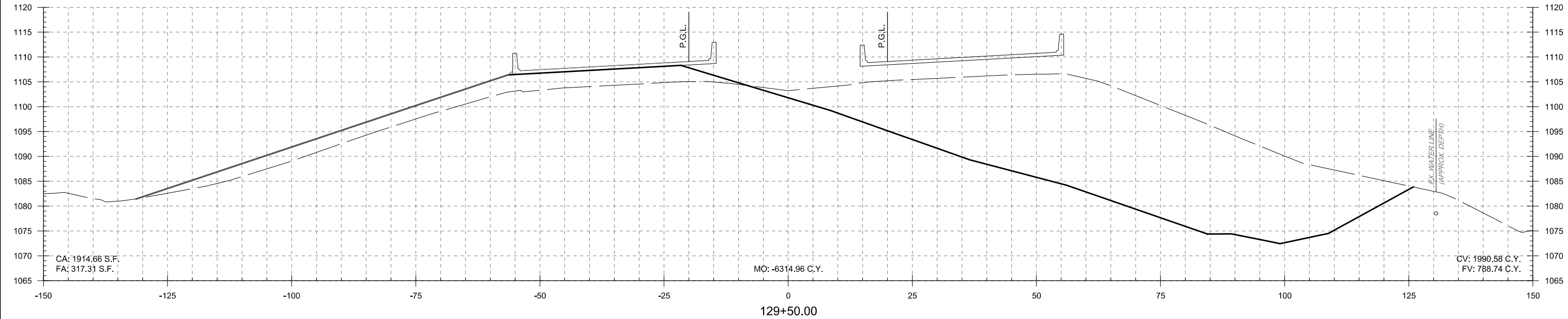
T:\1403\Drawings\Roadway\1403-X-section.dgn

PRINT DATE: 10/22/2018



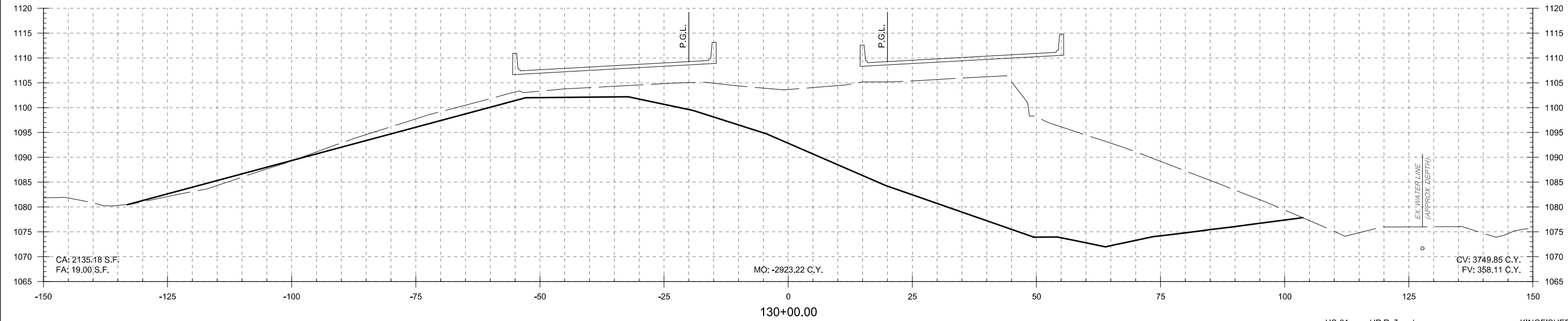
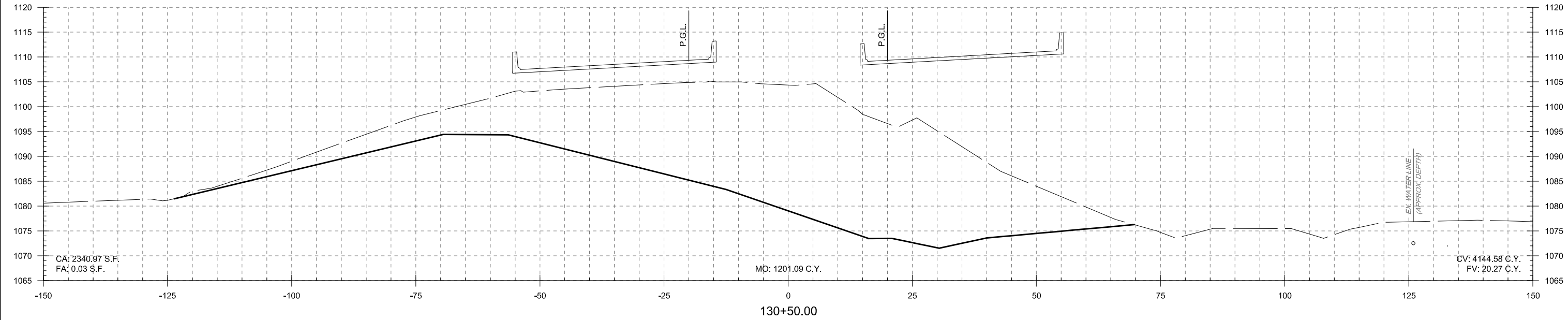
US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP				
APPROVED					
SQUAD	MacArthur		CROSS SECTIONS STA.128+00.00 TO STA.128+50.00 STATE JOB NO. 29849(04) SHEET NO. X005		

PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-X-section.dgn



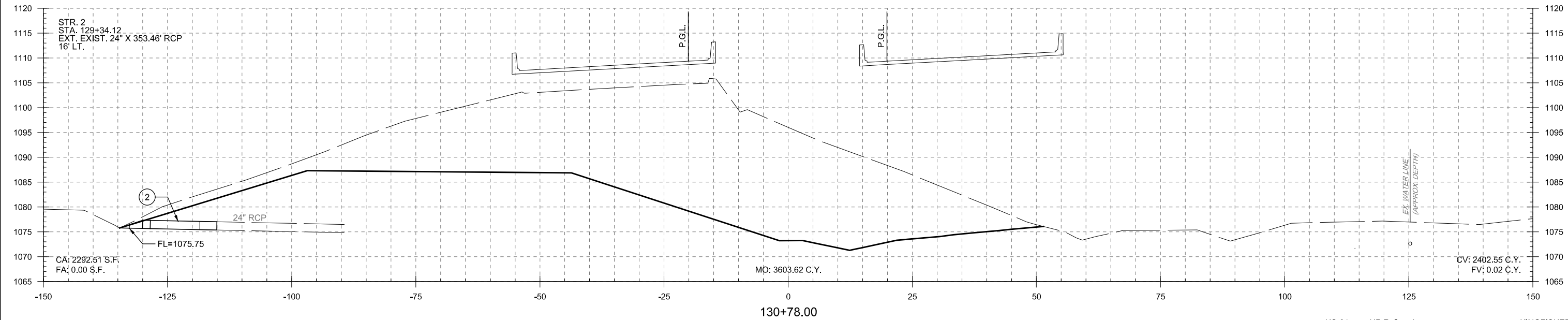
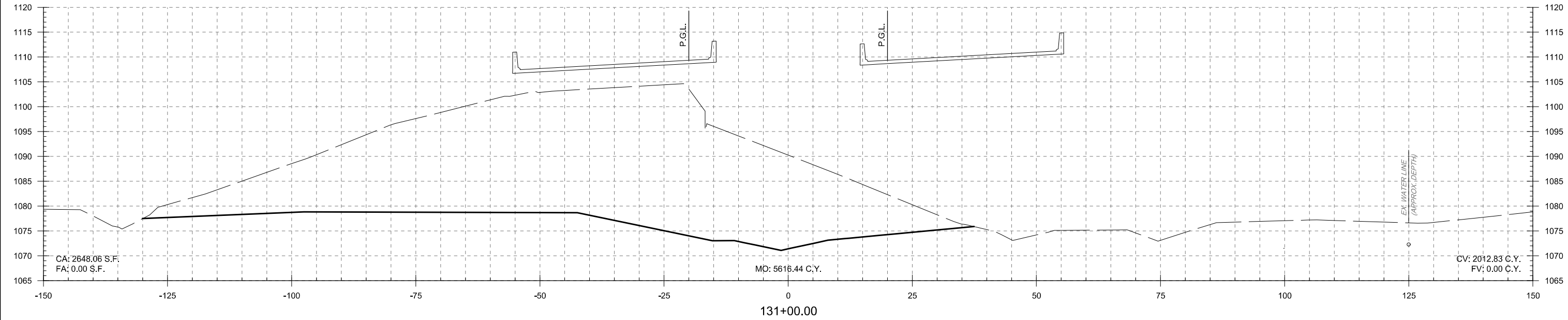
US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP				
APPROVED					
SQUAD	MacArthur		CROSS SECTIONS STA.129+00.00 TO STA.129+50.00 STATE JOB NO. <u>29849(04)</u> SHEET NO. <u>X006</u>		

PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-X-section.dgn



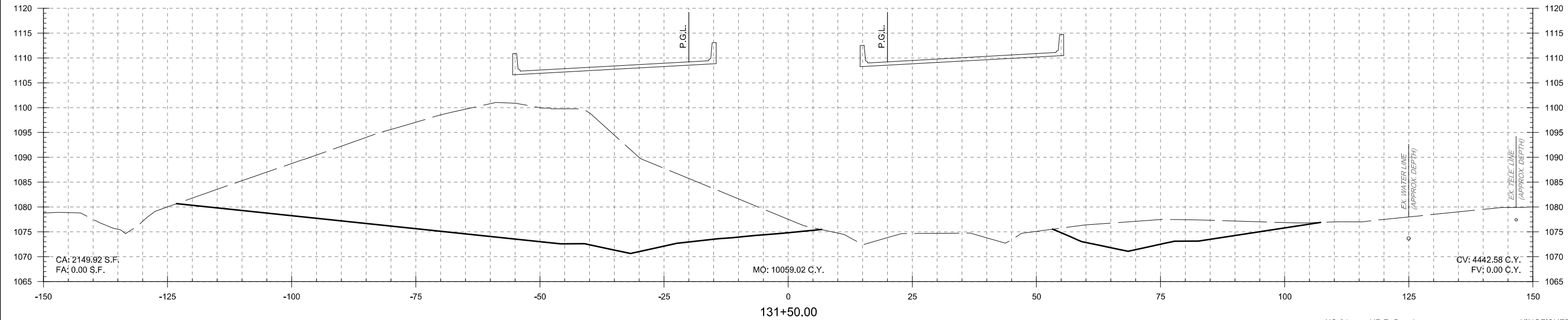
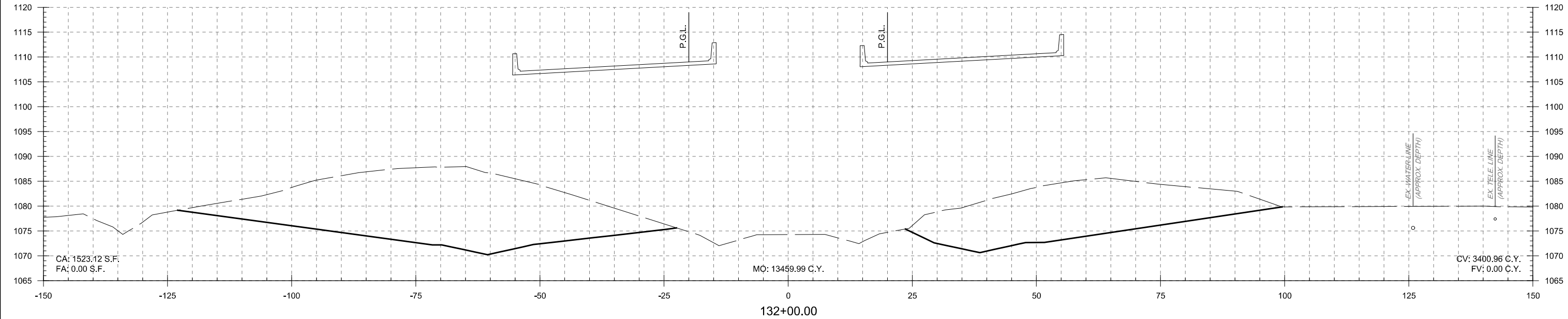
US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP				
APPROVED					
SQUAD	MacArthur		CROSS SECTIONS STA.130+00.00 TO STA.130+50.00 STATE JOB NO. <u>29849(04)</u> SHEET NO. <u>X007</u>		

PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-X-section.dgn



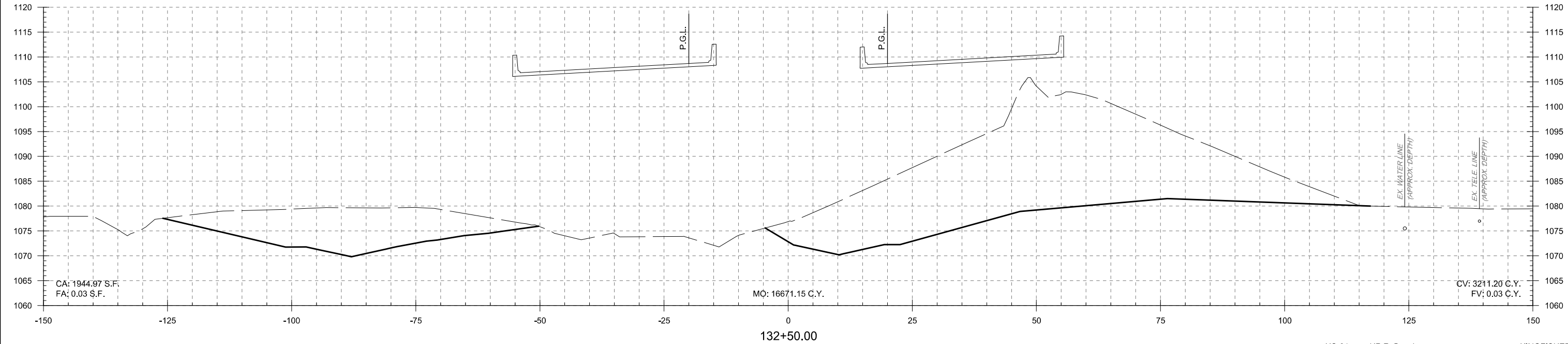
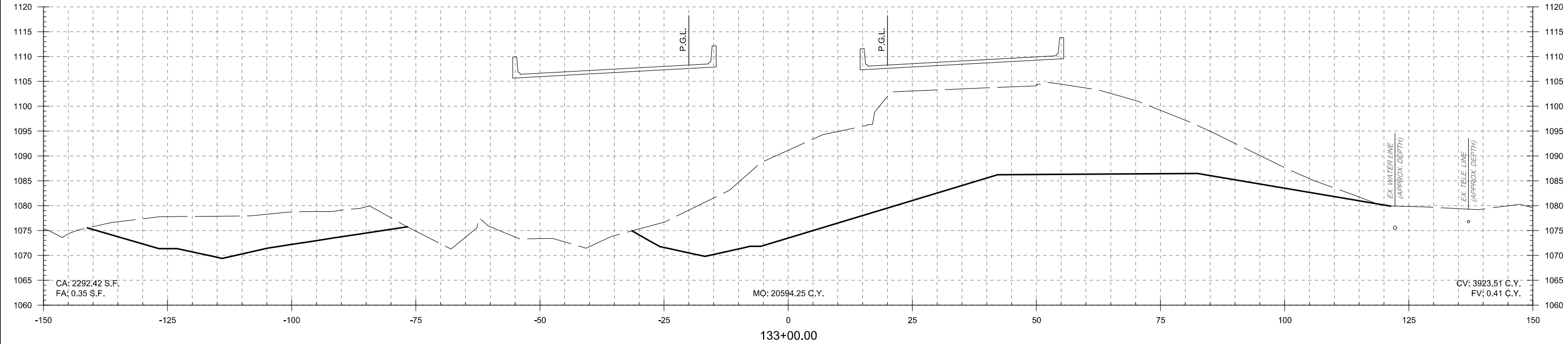
US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP				
APPROVED					
SQUAD	MacArthur		CROSS SECTIONS STA.130+78.00 TO STA.131+00.00		
			STATE JOB NO. 29849(04) SHEET NO. X008		

PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-X-section.dgn



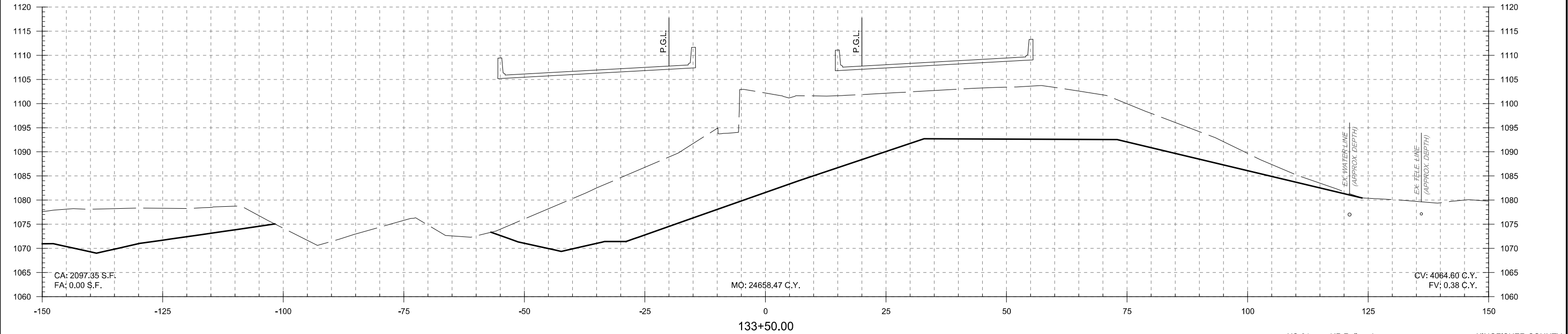
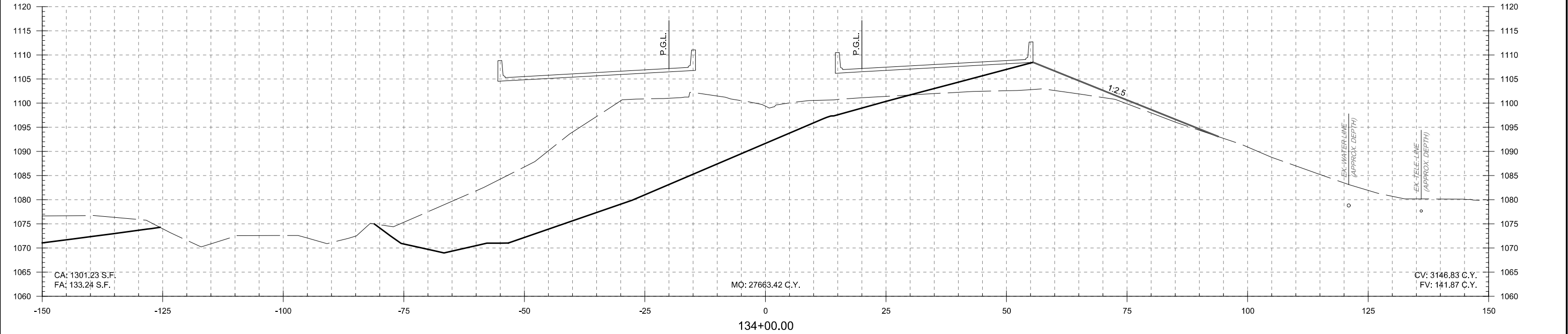
US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP				
APPROVED					
SQUAD	MacArthur		CROSS SECTIONS STA.131+50.00 TO STA.132+00.00 STATE JOB NO. <u>29849(04)</u> SHEET NO. <u>X009</u>		

PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-Xsection.dgn



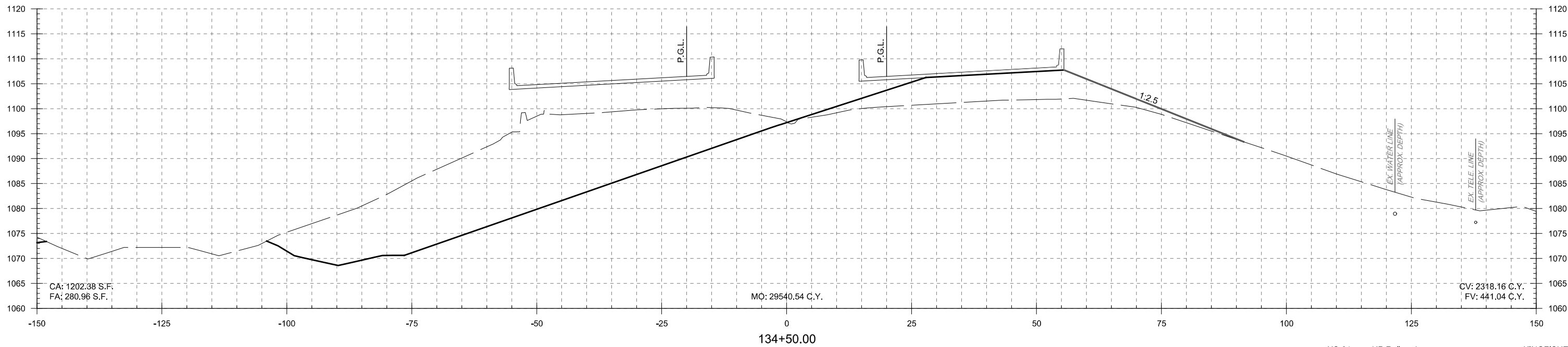
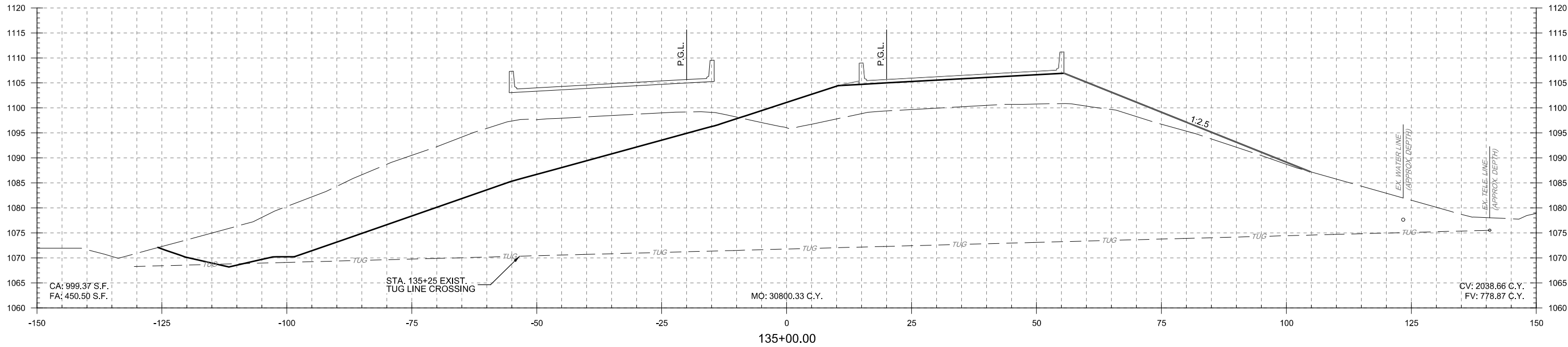
US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP				
APPROVED					
SQUAD	MacArthur		CROSS SECTIONS STA.132+50.00 TO STA.133+00.00		
			STATE JOB NO. 29849(04) SHEET NO. X010		

PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-X-section.dgn



US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP				
APPROVED					
SQUAD	MacArthur		CROSS SECTIONS STA.133+50.00 TO STA.134+00.00 STATE JOB NO. <u>29849(04)</u> SHEET NO. <u>X011</u>		

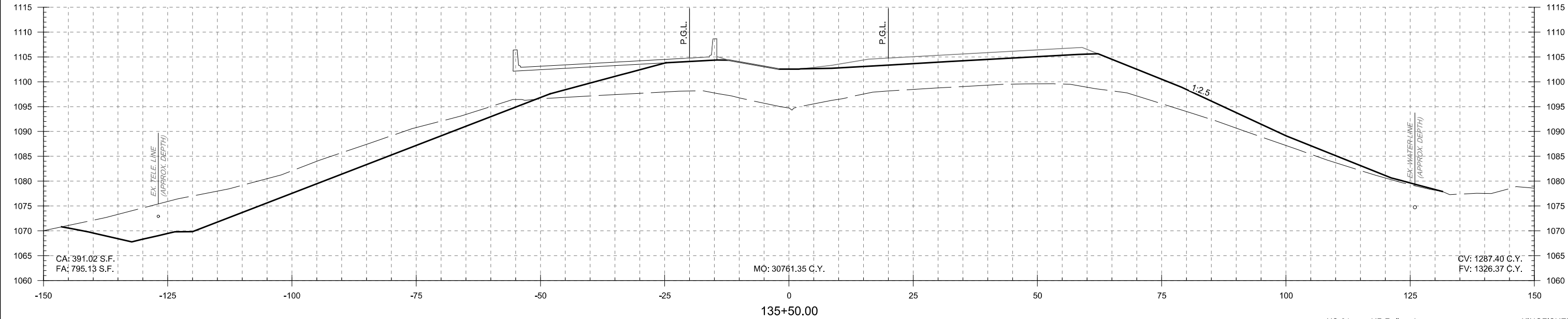
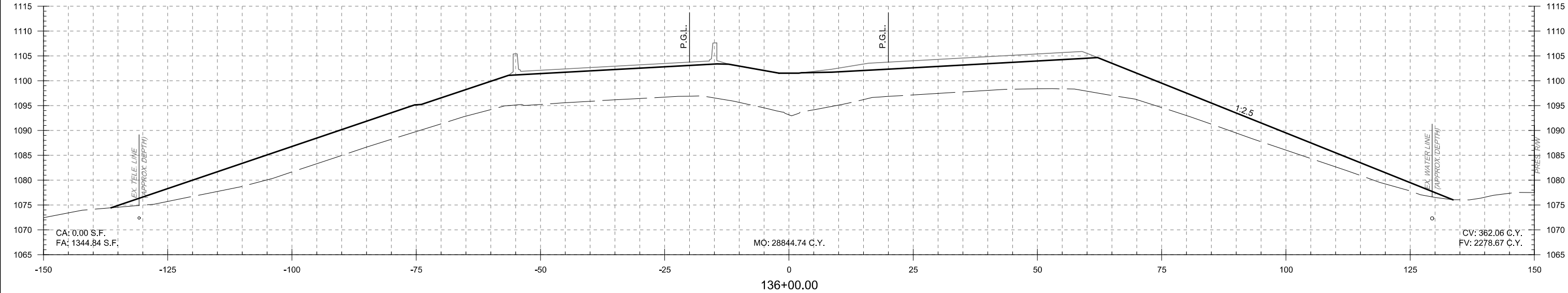
PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-X-section.dgn



US-81 over UP Railroad KINGFISHER COUNTY

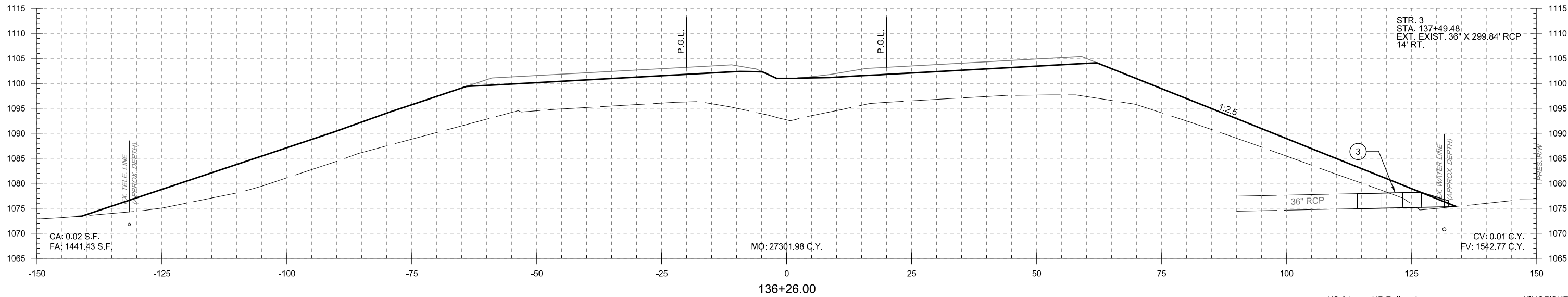
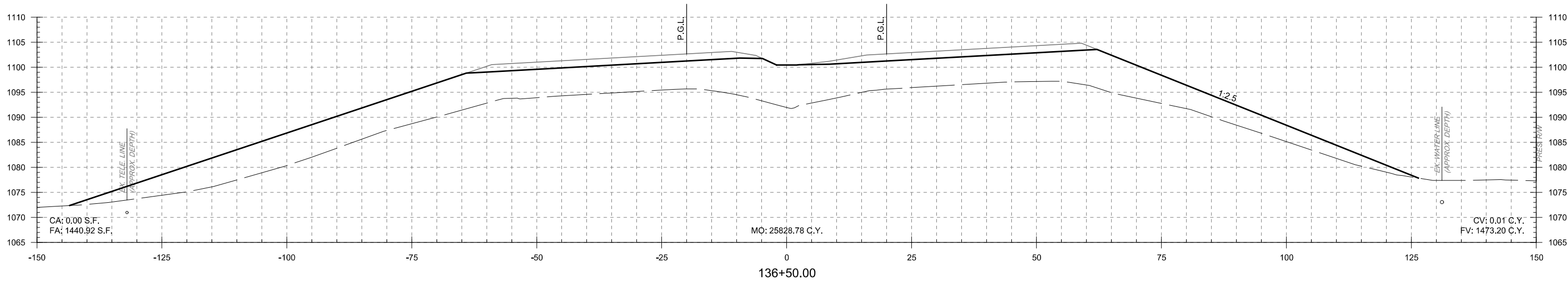
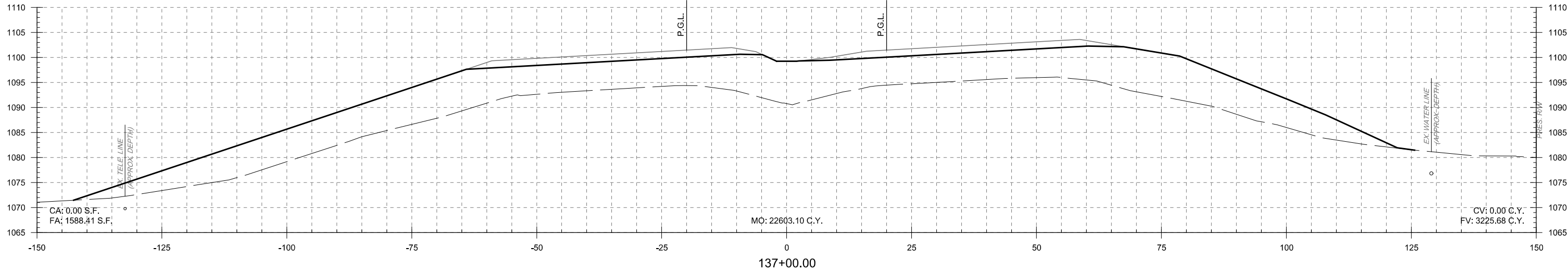
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	NDA		
CHECKED	SP		
APPROVED			
SQUAD	MacArthur		CROSS SECTIONS STA.134+50.00 TO STA.135+00.00 STATE JOB NO. 29849(04) SHEET NO. X012

PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-Xsection.dgn



US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP				
APPROVED					
SQUAD	MacArthur		CROSS SECTIONS STA.135+50.00 TO STA.136+00.00 STATE JOB NO. 29849(04) SHEET NO. X013		

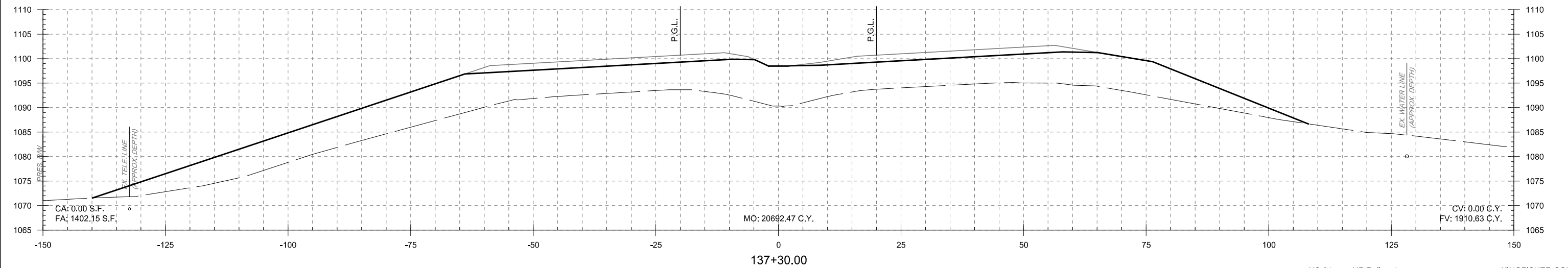
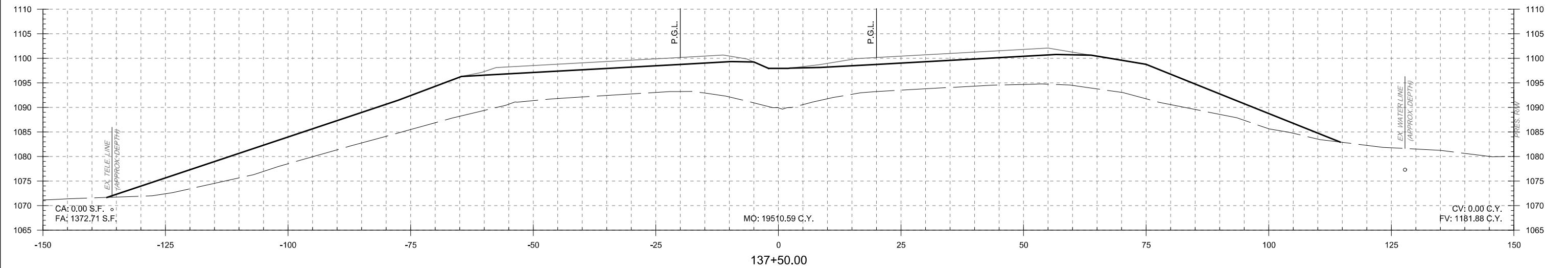
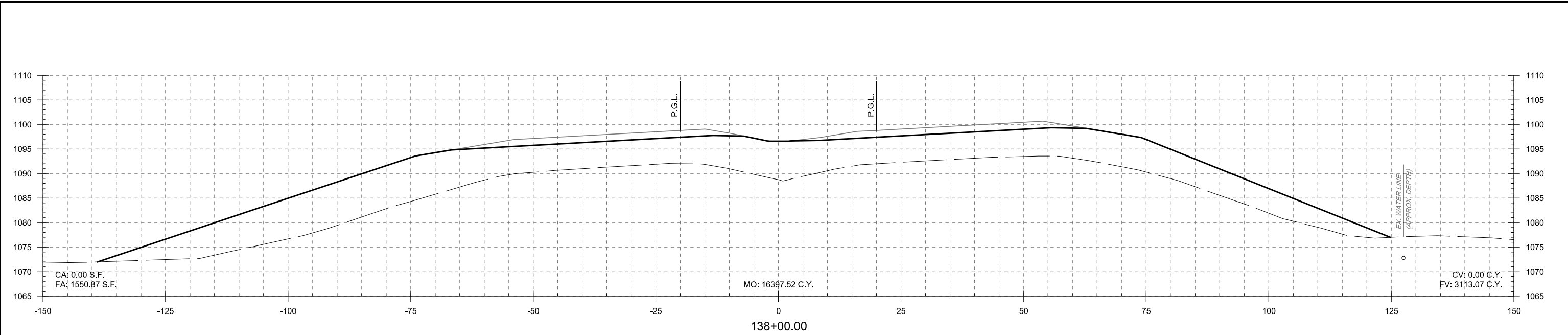
PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-Xsection.dgn



DESIGN		KG	
DRAWN		NDA	
CHECKED		SP	
APPROVED			
SQUAD		MacArthur	

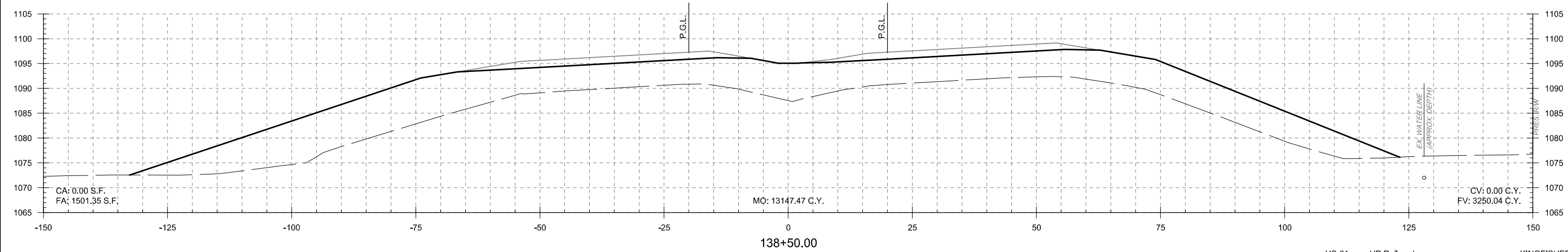
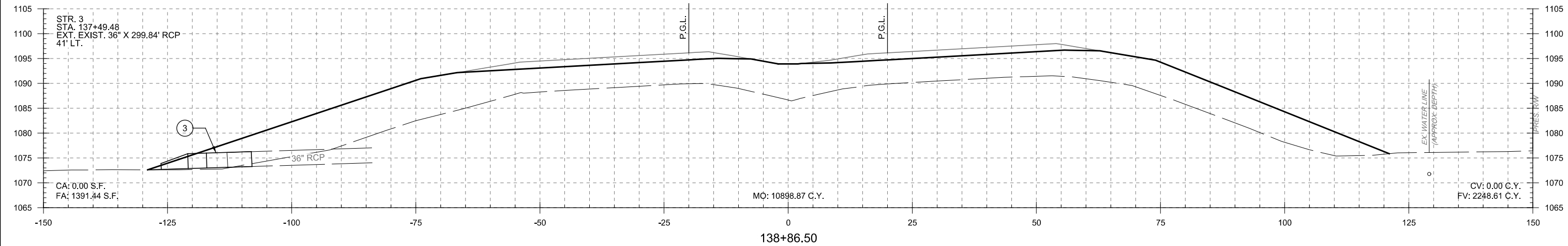
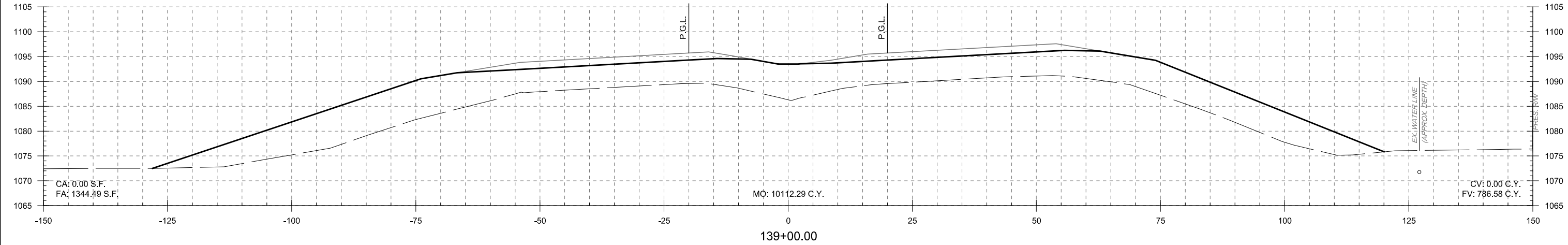
US-81 over UP Railroad		KINGFISHER COUNTY
OKLAHOMA DEPARTMENT OF TRANSPORTATION		
CROSS SECTIONS		
STA. 136+26.00 TO STA. 137+00.00		
STATE JOB NO. 29849(04) SHEET NO. X014		

PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-X-section.dgn



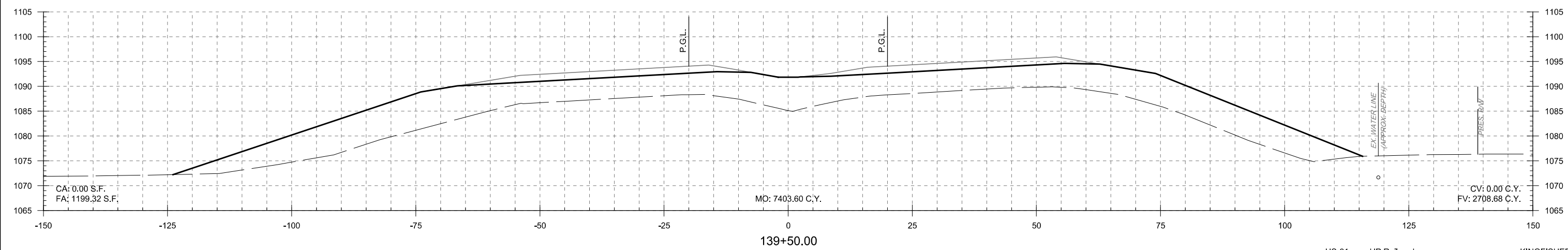
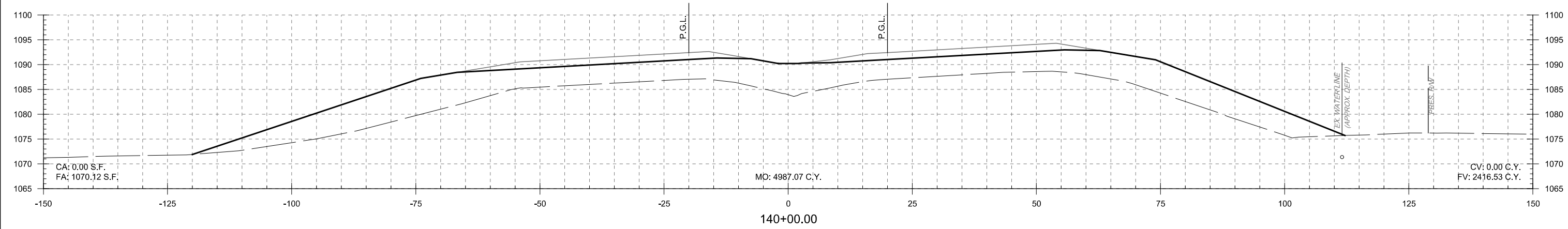
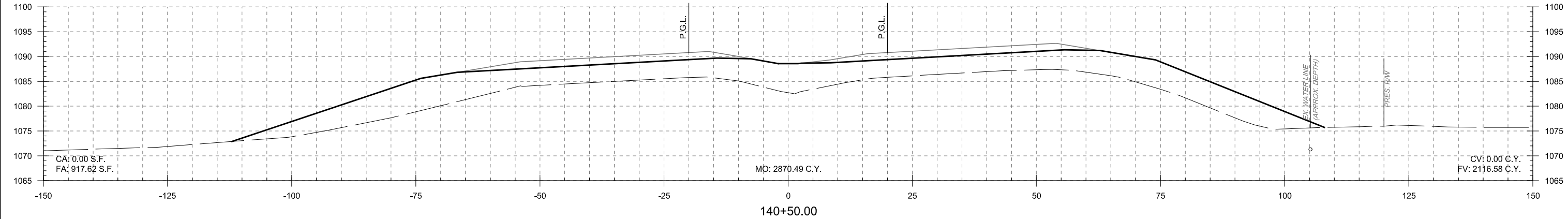
US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP				
APPROVED					
SQUAD	MacArthur		CROSS SECTIONS STA.137+30.00 TO STA.138+00.00 STATE JOB NO. 29849(04) SHEET NO. X015		

PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-Xsection.dgn



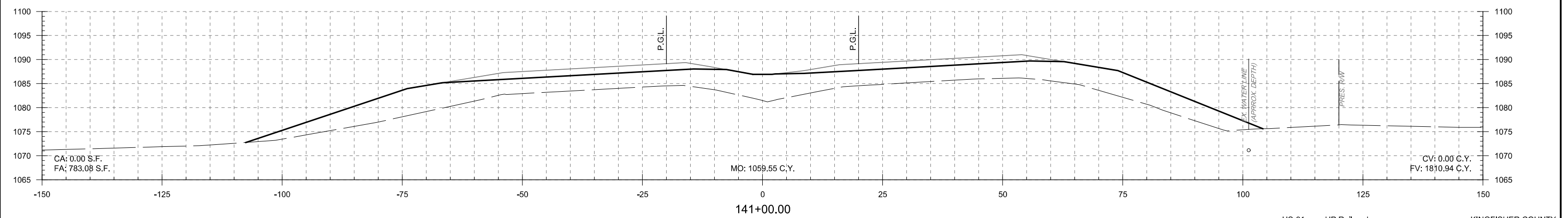
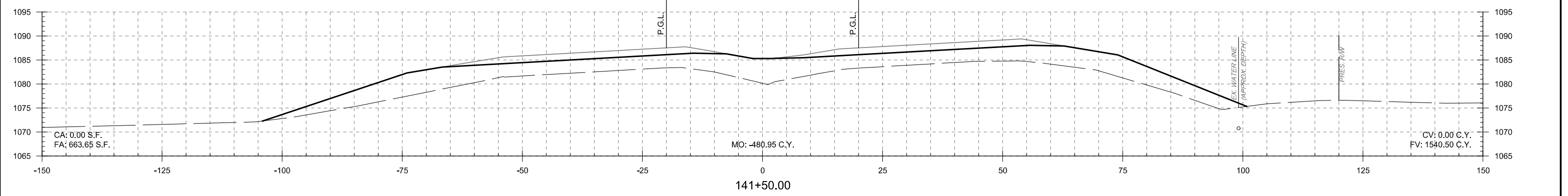
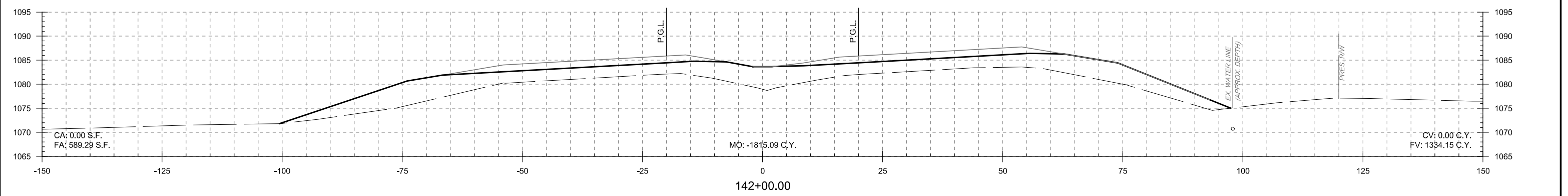
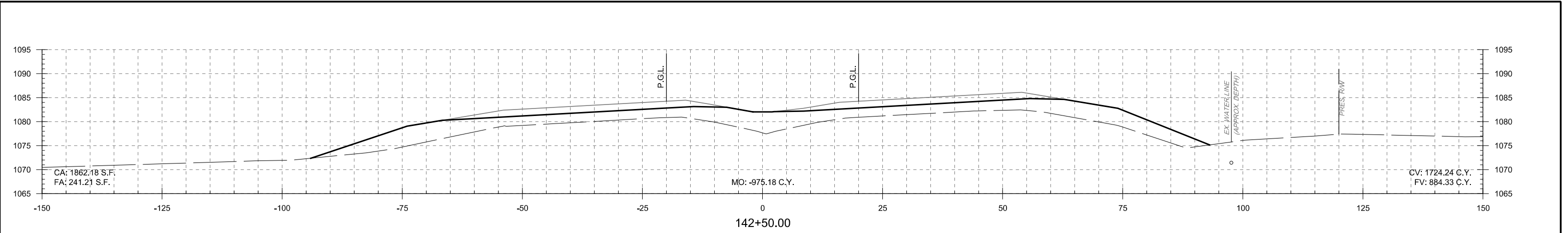
US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP				
APPROVED					
SQUAD	MacArthur		CROSS SECTIONS STA.138+50.00 TO STA.139+00.00 STATE JOB NO. 29849(04) SHEET NO. X016		

T:\1403\Drawings\Roadway\1403-Xsection.dgn
10/22/2018 10:22:2018



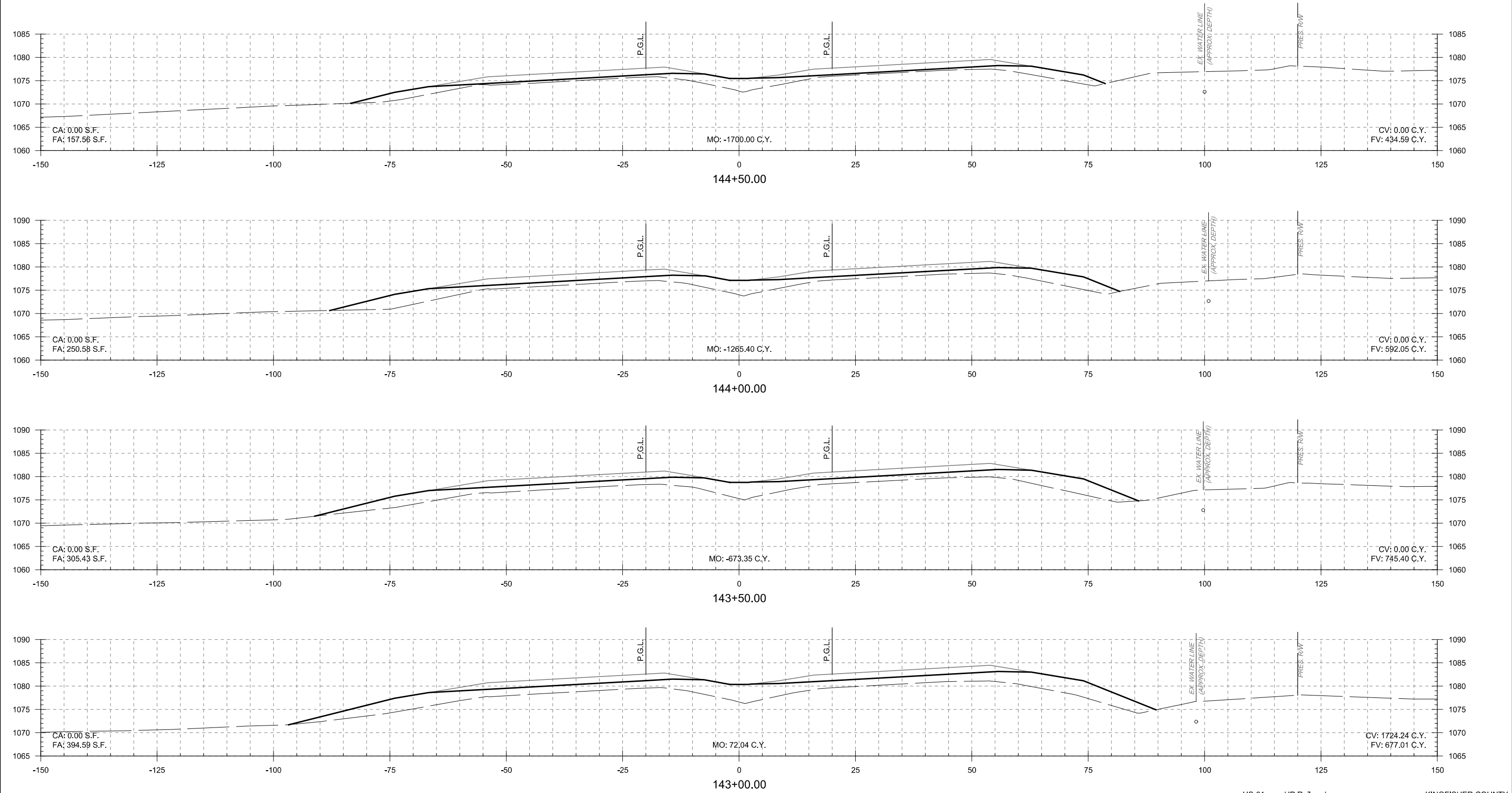
US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP				
APPROVED					
SQUAD	MacArthur				
			CROSS SECTIONS		
			STA.139+50.00 TO STA.140+50.00		
			STATE JOB NO. 29849(04) SHEET NO. X017		

PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-Xsection.dgn



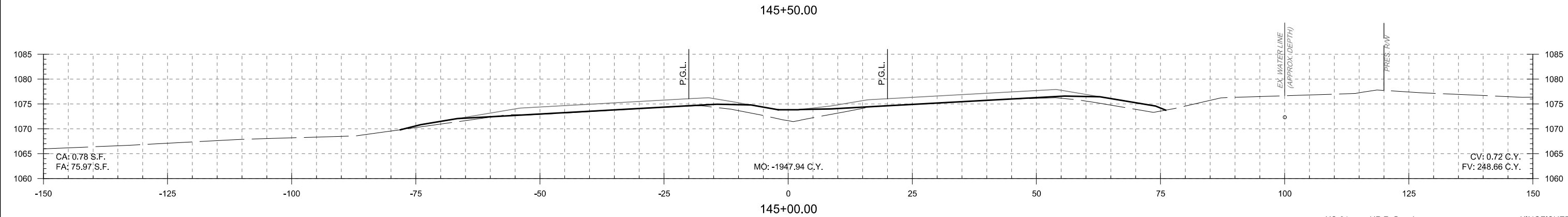
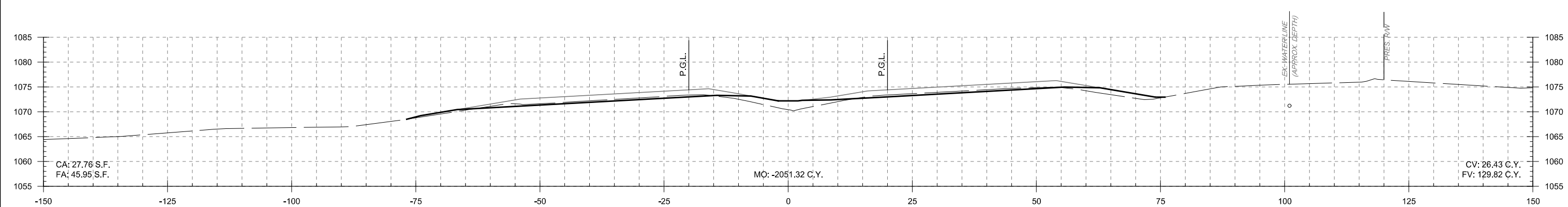
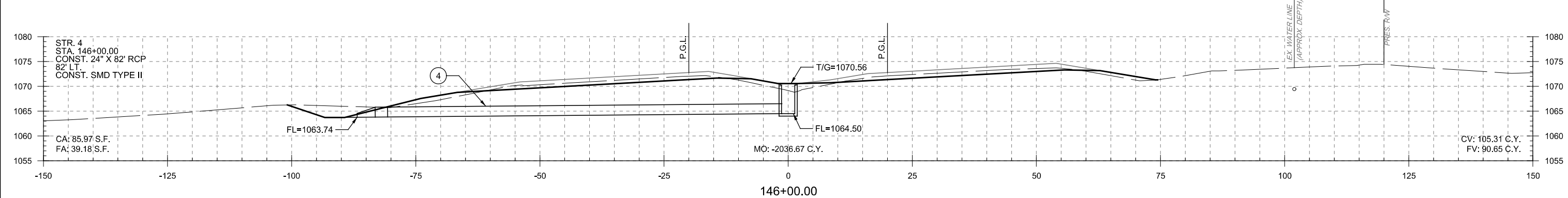
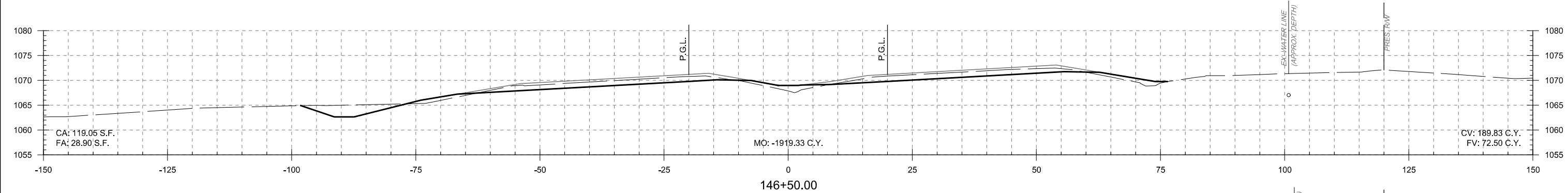
US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP				
APPROVED					
SQUAD	MacArthur		CROSS SECTIONS STA.141+00.00 TO STA.142+50.00		
			STATE JOB NO. 29849(04) SHEET NO. X018		

PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-Xsection.dgn



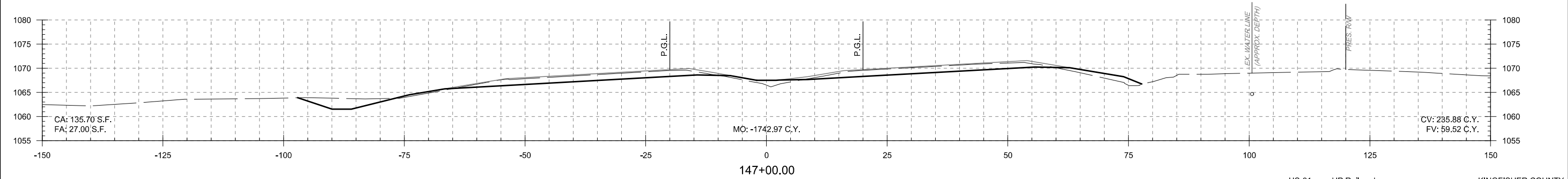
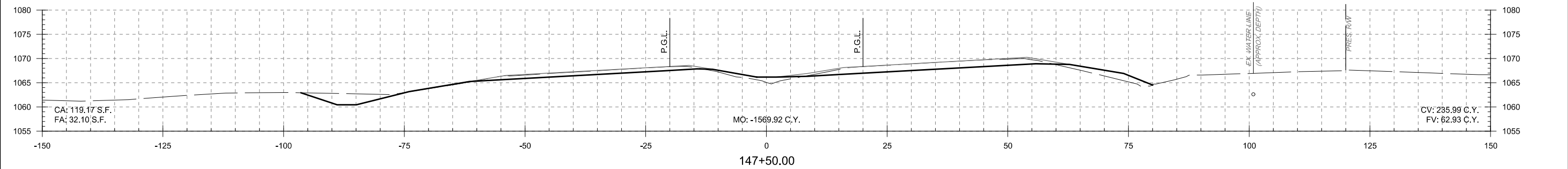
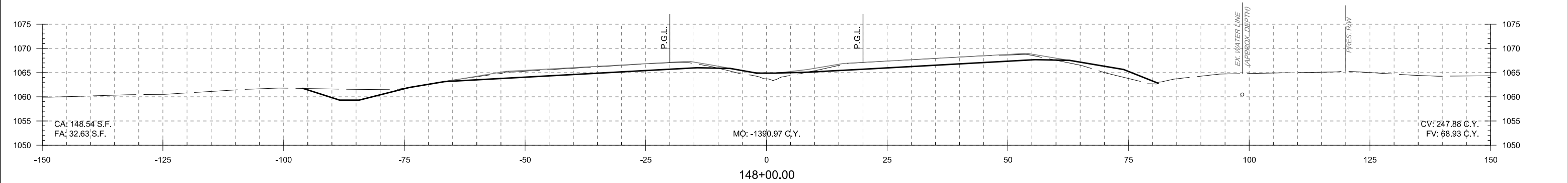
US-81 over UP Railroad			KINGFISHER COUNTY					
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION					
DRAWN	NDA							
CHECKED	SP							
APPROVED								
SQUAD	MacArthur		CROSS SECTIONS STA.143+00.00 TO STA.144+50.00 STATE JOB NO. 29849(04) SHEET NO. X019					

PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-Xsection.dgn



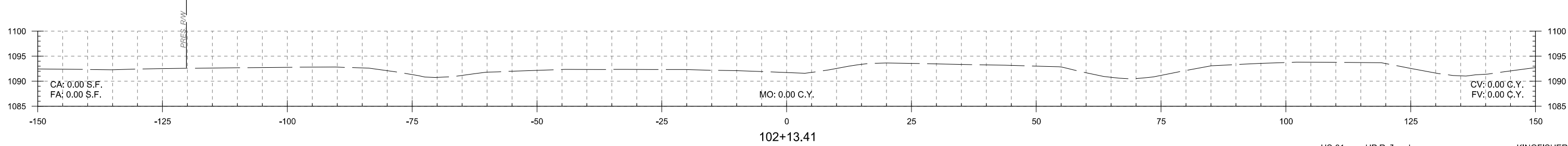
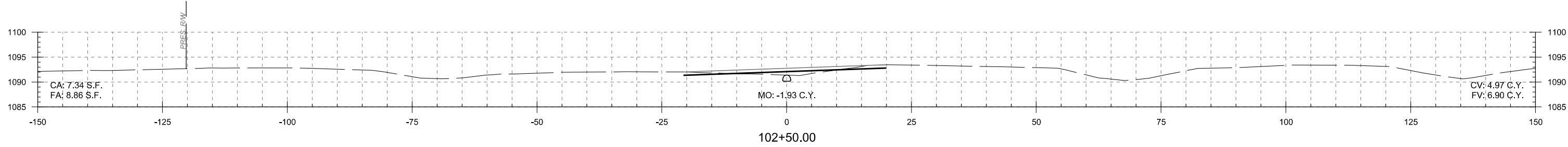
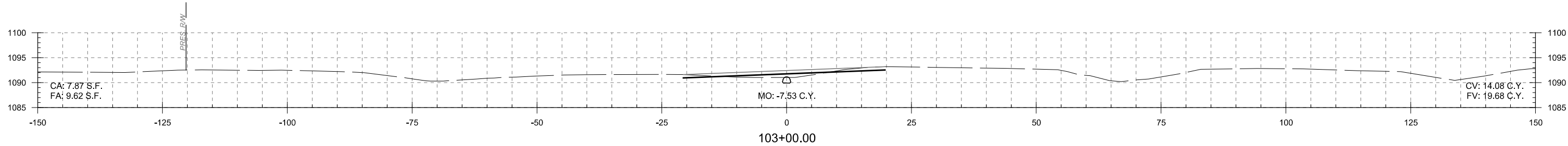
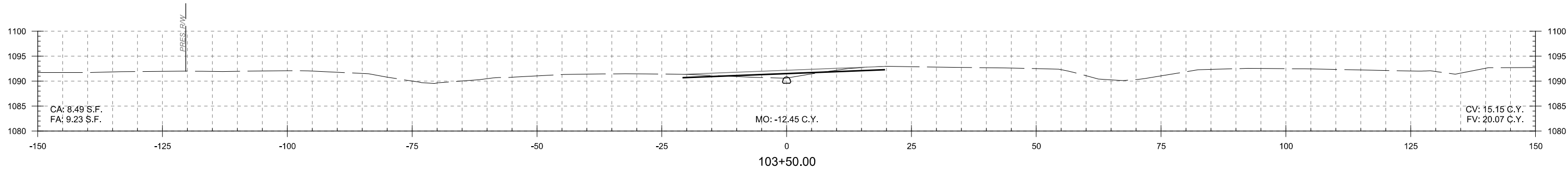
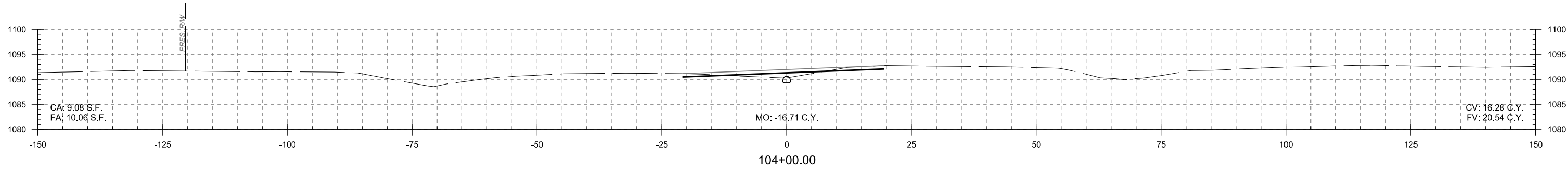
US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP				
APPROVED					
SQUAD	MacArthur		CROSS SECTIONS STA.145+00.00 TO STA.146+50.00 STATE JOB NO. <u>29849(04)</u> SHEET NO. <u>X020</u>		

PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-Xsection.dgn



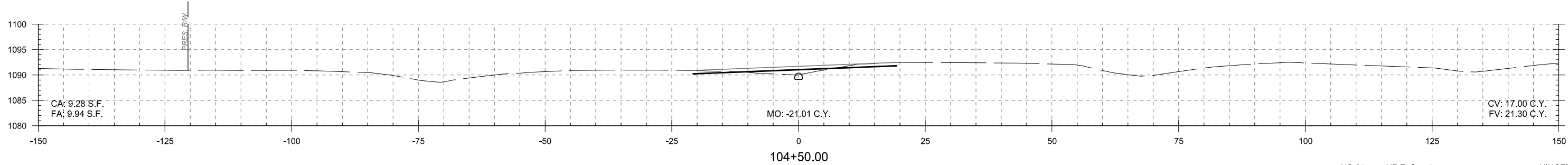
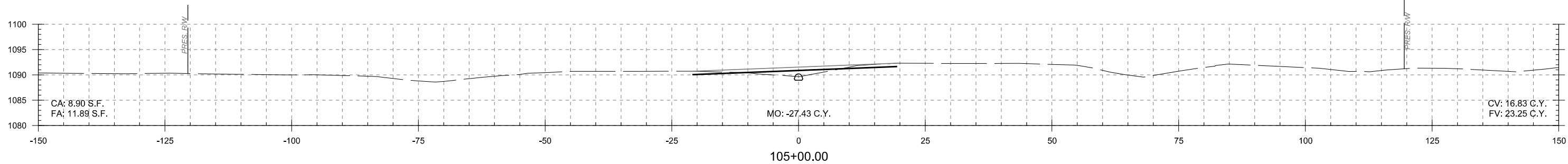
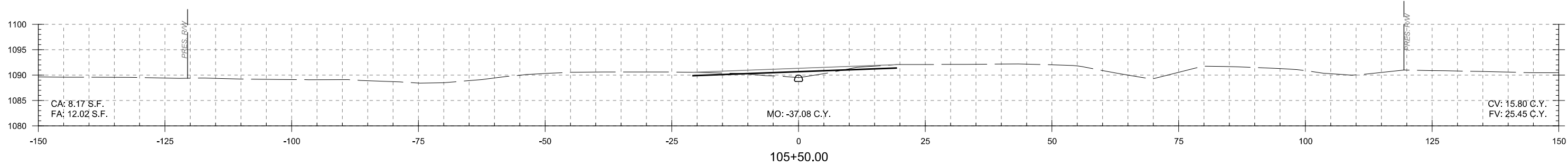
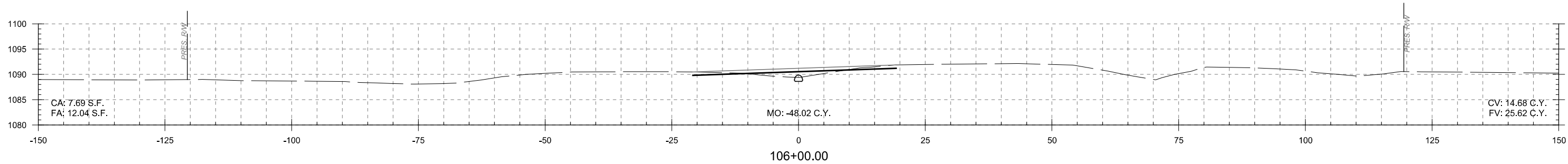
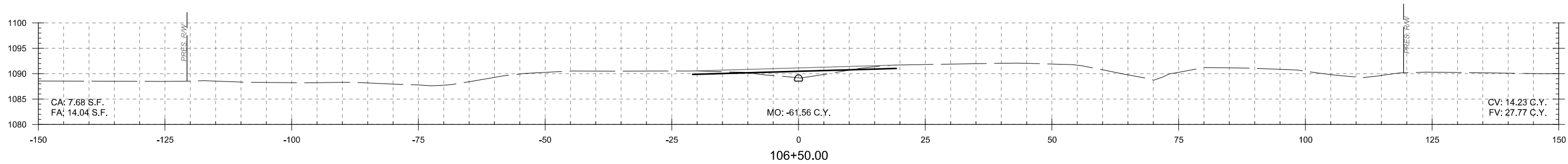
US-81 over UP Railroad			KINGFISHER COUNTY	
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN	NDA			
CHECKED	SP			
APPROVED				
SQUAD	MacArthur		STA.147+00.00 TO STA.148+00.00	
			STATE JOB NO. 29849(04) SHEET NO. X021	

PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-Xsection.dgn



US-81 over UP Railroad			KINGFISHER COUNTY	
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN	NDA			
CHECKED	SP			
APPROVED				
SQUAD	MacArthur		CROSS SECTIONS - CROSSOVER STA.102+13.41 TO STA.104+00.00	
			STATE JOB NO. 29849(04) SHEET NO. X022	

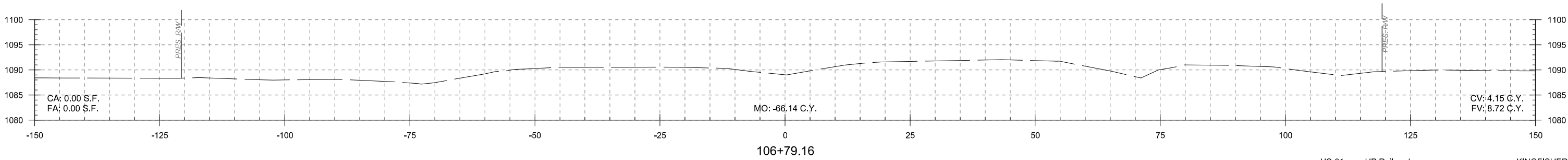
PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-Xsection.dgn



US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP				
APPROVED					
SQUAD	MacArthur		CROSS SECTIONS - CROSSOVER		
			STA.104+50.00 TO STA.106+50.00		
			STATE JOB NO. 29849(04) SHEET NO. X023		

T:\1403\Drawings\Roadway\1403-Xsection.dgn

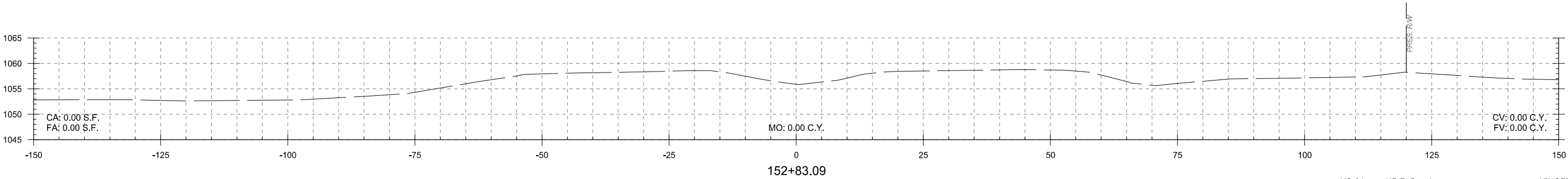
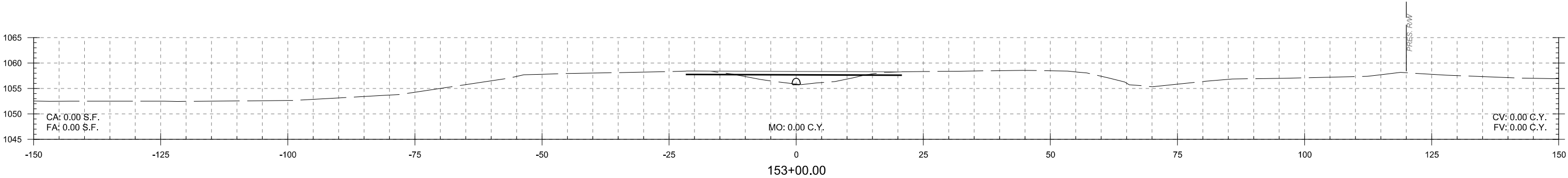
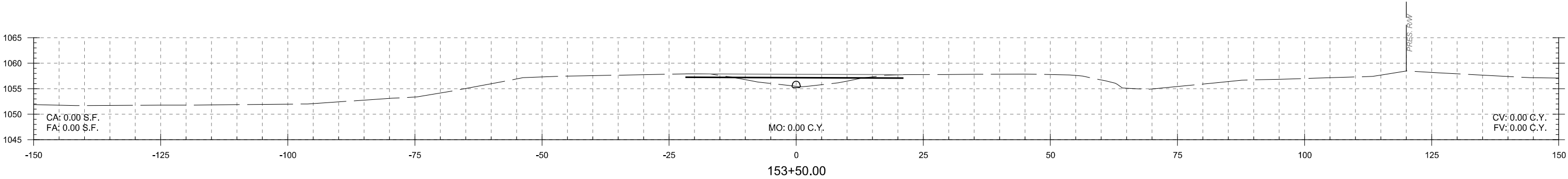
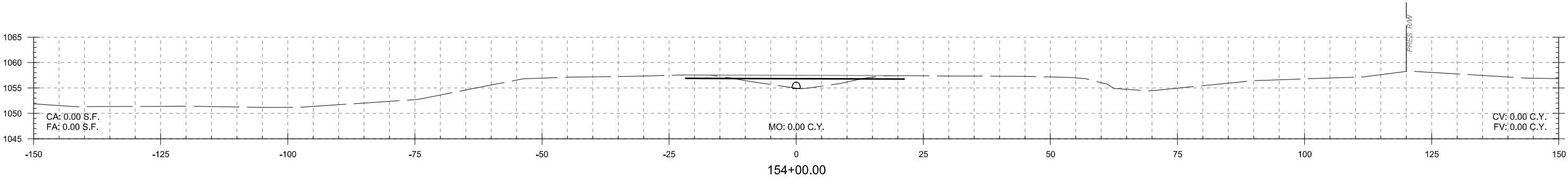
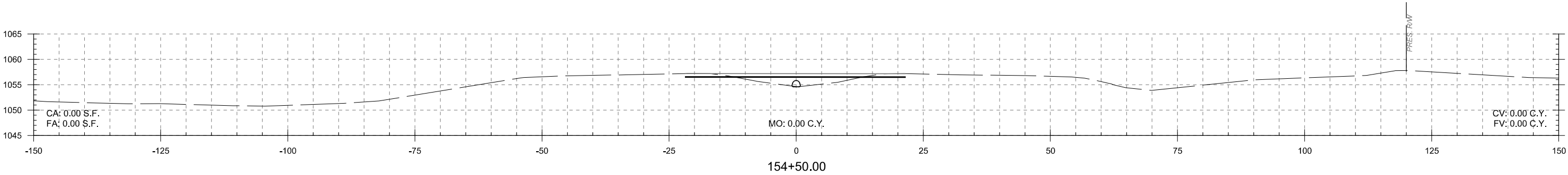
PRINT DATE: 10/22/2018



US-81 over UP Railroad KINGFISHER COUNTY

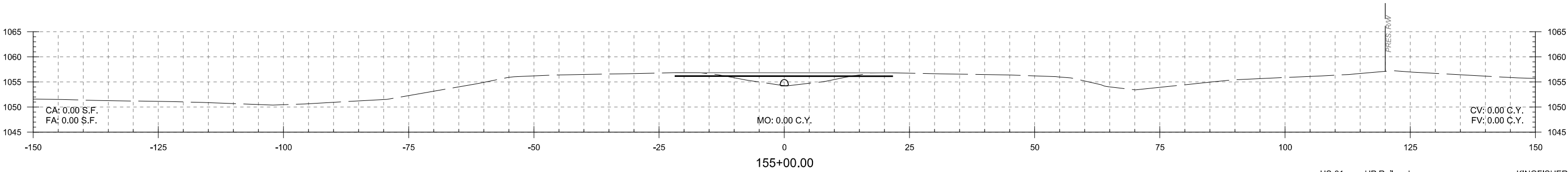
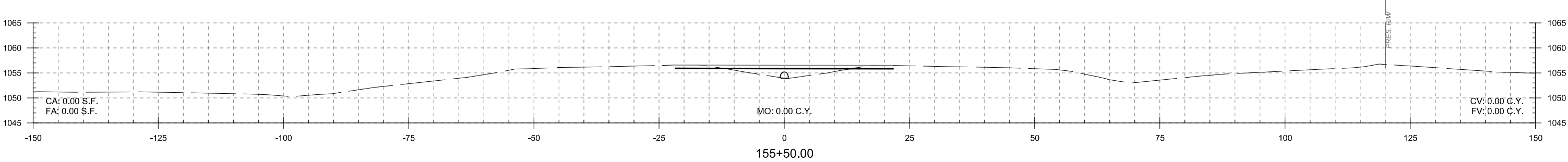
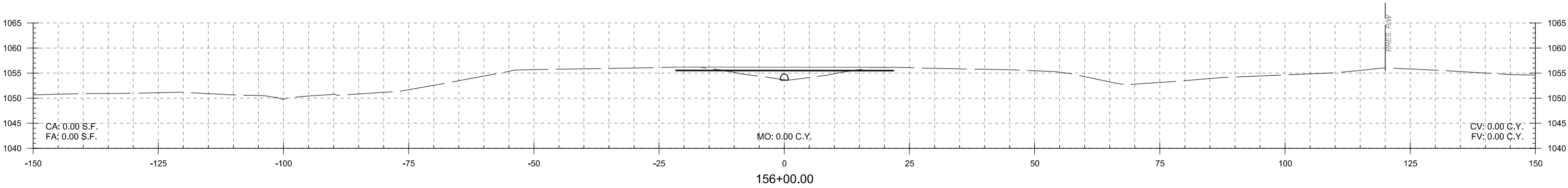
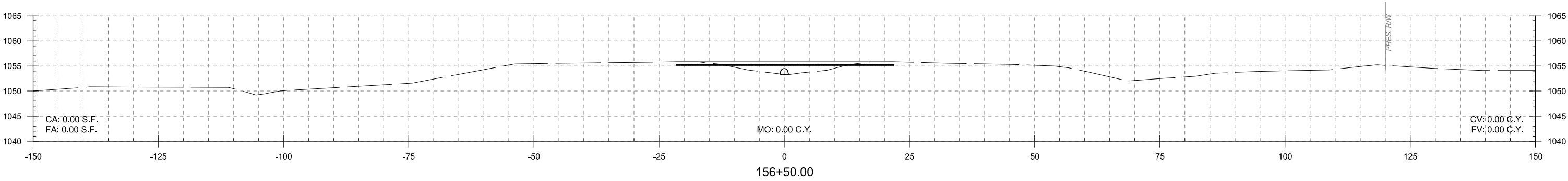
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	NDA		
CHECKED	SP		
APPROVED			
SQUAD	MacArthur		
CROSS SECTIONS - CROSSOVER			
STA.106+79.16 TO STA.106+79.16			
STATE JOB NO. 29849(04) SHEET NO. X024			

PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-xsection.dgn



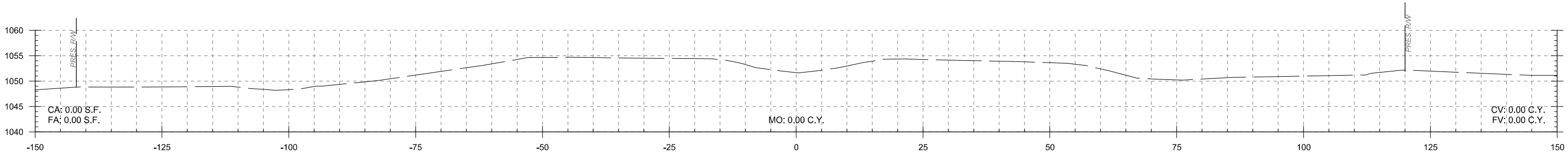
US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP				
APPROVED					
SQUAD	MacArthur		CROSS SECTIONS - CROSSOVER		
			STA.152+83.09 TO STA.154+50.00		
			STATE JOB NO. 29849(04) SHEET NO. X025		

PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-Xsection.dgn

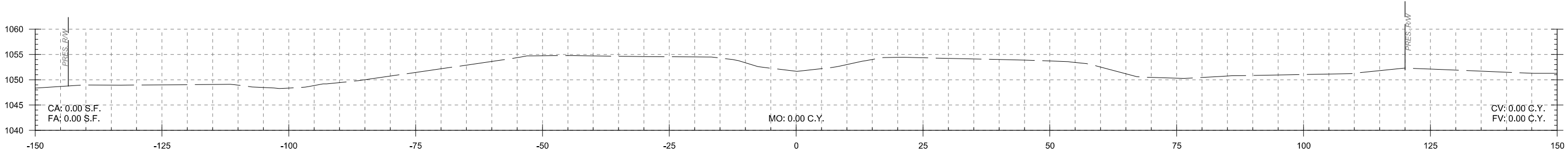


US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP				
APPROVED					
SQUAD	MacArthur		CROSS SECTIONS - CROSSOVER		
			STA.155+00.00 TO STA.156+50.00		
			STATE JOB NO. 29849(04) SHEET NO. X026		

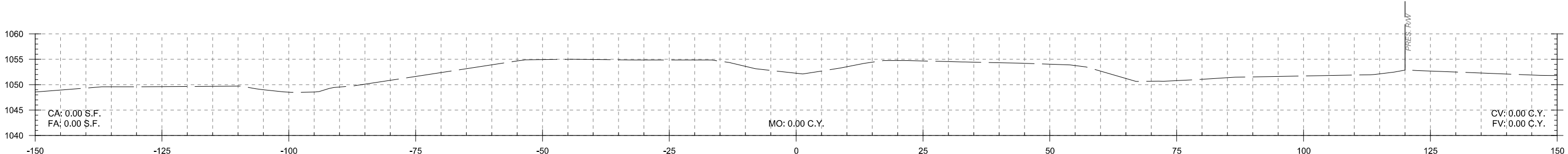
PRINT DATE: 10/22/2018 T:\1403\Drawings\Roadway\1403-Xsection.dgn



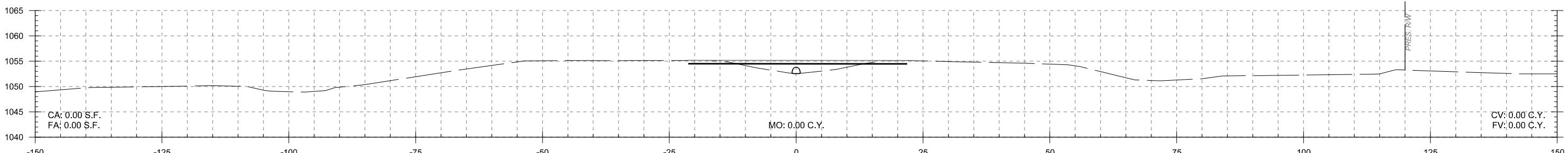
158+60.79



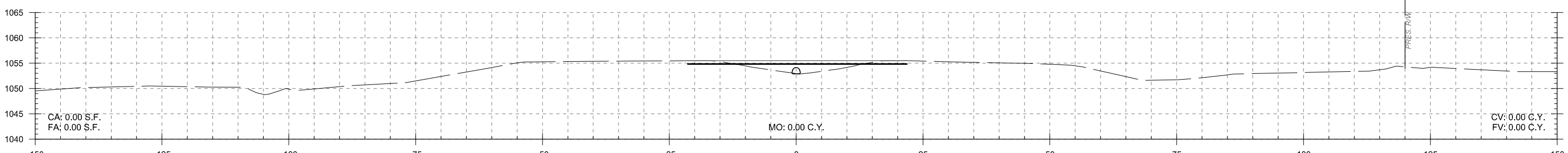
158+50.00



158+00.00



157+50.00



157+00.00

US-81 over UP Railroad			KINGFISHER COUNTY		
DESIGN	KG		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	NDA				
CHECKED	SP				
APPROVED					
SQUAD	MacArthur		CROSS SECTIONS - CROSSOVER STA.157+00.00 TO STA.158+60.79		
			STATE JOB NO. <u>29849(04)</u> SHEET NO. <u>X027</u>		