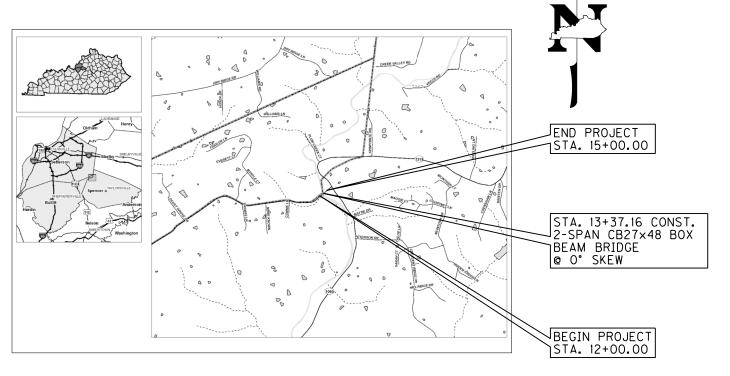
BBP-003-02	ELASTOMERIC BEARING PADS FOR BOX BEAMS
BDP-001-06	BOX BEAM GENERAL NOTES AND REFERENCES
BDP-002-03	BOX BEAM BEARING DETAILS
BDP-003-03	BOX BEAM MISCELLANEOUS DETAILS
BDP-004-04	BOX BEAM TENSION ROD DETAILS
BDP-009-04	BOX BEAM CB27 DETAILS
BGX-006-10	STENCILS FOR STRUCTURES
BHS-011	RAILING SYSTEM SIDE MOUNTED MGS
BJE-001-13	NEOPRENE EXPANSION DAMS AND ARMORED EDGES
BPS-003-09	HPI2x53 STEEL PILE
RBI-002-07	TYPICAL GUARDRAIL INSTALLATIONS
RBI-004-06	INSTALLATION OF GUARDRAIL END TREATMENT TYPE I
RBR-001-13	STEEL BEAM GUARDRAIL ("W" BEAM)
RBR-005-11	GUARDRAIL COMPONENTS
RBR-015-06	STEEL GUARDRAIL POSTS
RBR-016-05	TIMBER GUARDRAIL POSTS
RBR-055-01	DELINEATORS FOR GUARDRAIL
RDI-040-01	EROSION CONTROL BLANKET SLOPE INSTALLATION
RDX-210-03	TEMPORARY SILT FENCE
RDX-220-05	SILT TRAP TYPE A
RDX-225-01	SILT TRAP TYPE B
RDX-230-01	SILT TRAP TYPE C
RGX-001-06	MISCELLANEOUS STANDARDS
RGX-100-07	TREATMENT OF EMBANKMENTS AT END-BENTS
RGX-105-09	TREATMENT OF EMBANKMENTS AT END-BENTS - DETAIL
RGX-200-01	ONE POINT PROCTOR FAMILY OF CURVES

TRANSPORTATION CABINET DEPARTMENT OF HIGHWAYS

SPENCER COUNTY KY 1319 OVER PLUM CREEK STA. 13 + 37.16



LOCATION MAP

INDEX OF SHEETS Sheet No. RI LAYOUT SHEET R2 TYPICAL SECTIONS R3 ROADWAY PLAN SHEET ROADWAY PROFILE SHEET ENVIRONMENTALLY CLEARED AREA GENERAL NOTES BRIDGE LAYOUT FOUNDATION LAYOUT S4 END BENT 1 S5 PIER I END BENT 2 S7 CONSTRUCTION ELEVATIONS **SPECIAL NOTES** TRAFFIC CONTROL ON BRIDGE REPAIR CONTRACTS BRIDGE OVERLAY APPROACH PAVEMENT EROSION PREVENTION AND SEDIMENT CONTROL CONCRETE SEALING CONTRACT COMPLETION DATE AND LIQUIDATED DAMAGES ON BRIDGE REPAIR CONTRACTS STRUCTURES WITH OVER THE SIDE DRAINAGE BRIDGING KENTUCKY PROJECT STENCIL ADDITIONAL ENVIRONMENTAL COMMITMENTS SPECIAL PROVISIONS 69 EMBANKMENT AT BRIDGE END BENT STRUCTURES **SPECIFICATIONS** 2019 Standard Specifications for Road and Bridge 2017 AASHTO LRFD Bridge Design Specifications with Current Interims. Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS

SPENCER

5-80150

SHEET NO.

DESIGN CRITERIA

CLASS OF HIGHWAY	RURAL MAJOR COLLECTOR ROLLING
DESIGN SPEED	
REQUIRED NPSD	
REQUIRED PSD	
LEVEL OF SERVICE	
ADT PRESENT (1	768)
ADT FUTURE ()
DHV	
D %	

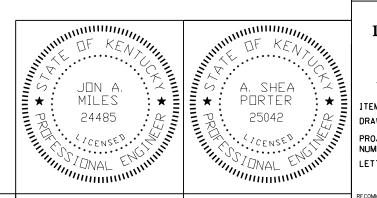
GEOGRAPHIC COORDINATES

LATITUDE 38 DEGREES 06 MINUTES 11 SECONDS NORTH LONGITUDE 85 DEGREES 26 MINUTES 10 SECONDS WEST

DESIGNED

% RESTRICTED SD ___ LEVEL OF SERVICE ___ MAX. DISTANCE W/O PASSING

EX. BRIDGE ID# 108B00042N



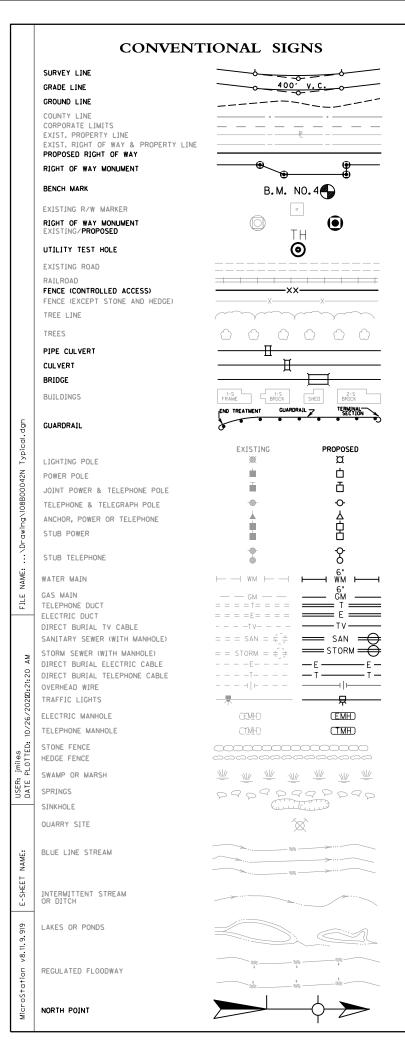
COUNTY OF

SPENCER KY 1319 OVER PLUM CREEK

ITEM NO.	5-80150
	No. 28642
	DATE: DECEMBER 8, 2022
RECOMMENDED	BY:

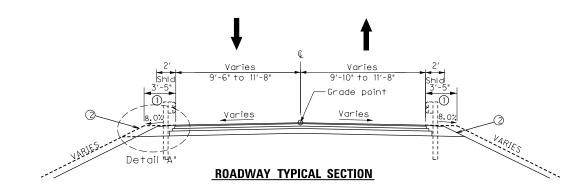
LAN APPROVED BY: _

STATE HIGHWAY ENGINEER



COUNTY OF ITEM NO. SHEET NO.

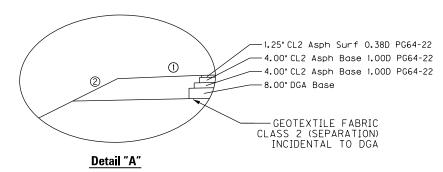
SPENCER 5-80150 R2



NOTES:

- ① SHOULDERS SHALL BE WIDENED 3 FEET 5 INCHES WHERE GUARDRAIL IS TO BE INSTALLED ALLOWING FOR 2 FEET OF FILL BEHIND THE POSTS. IF IT IS NOT PRACTICAL TO WIDEN THE SHOULDER BY 2 FEET, THEN LONGER POSTS MAY BE USED.
- ② ASPHALT SEAL REQUIRED FROM OUTSIDE EDGE OF PAVED SHOULDER TO A POINT 2'DOWN THE DITCH OR FILL SLOPE. TWO APPLICATIONS OF THE FOLLOWING:

ASPHALT SEAL COAT 2.40 LBS/SY
ASPHALT SEAL AGGREGATE 20 LBS/SY (SIZE NO. 8 OR 9M)



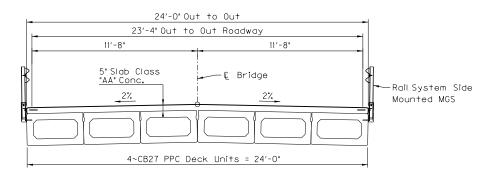
KY-1319 PAVEMENT

8.00° DGA Base
4.00° CL2 Asph Base 1.00D PG64-22
4.00° CL2 Asph Base 1.00D PG64-22
1.25° Surface

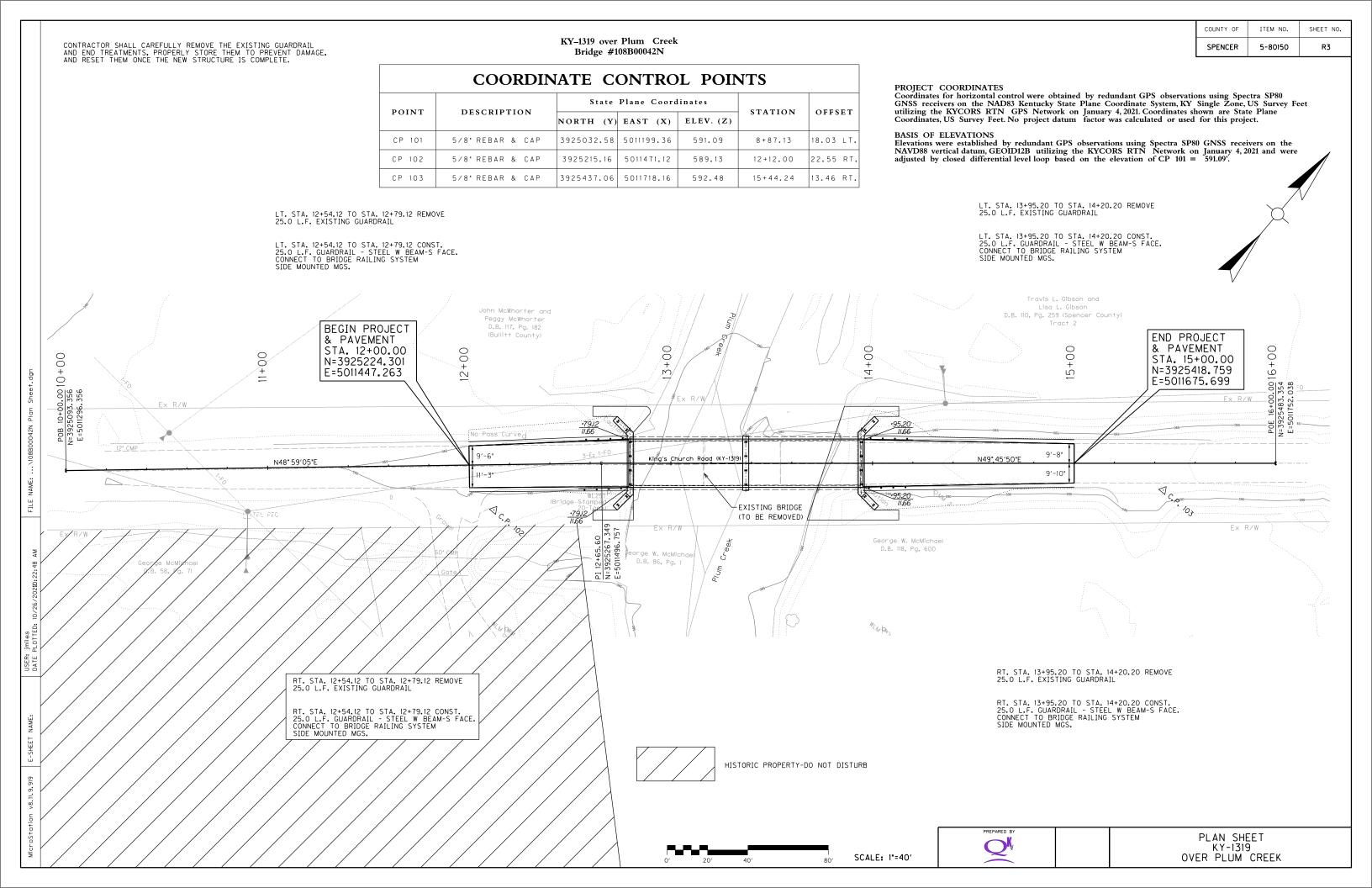
1.25° CL2 Asph Surf 0.38D PG64-22

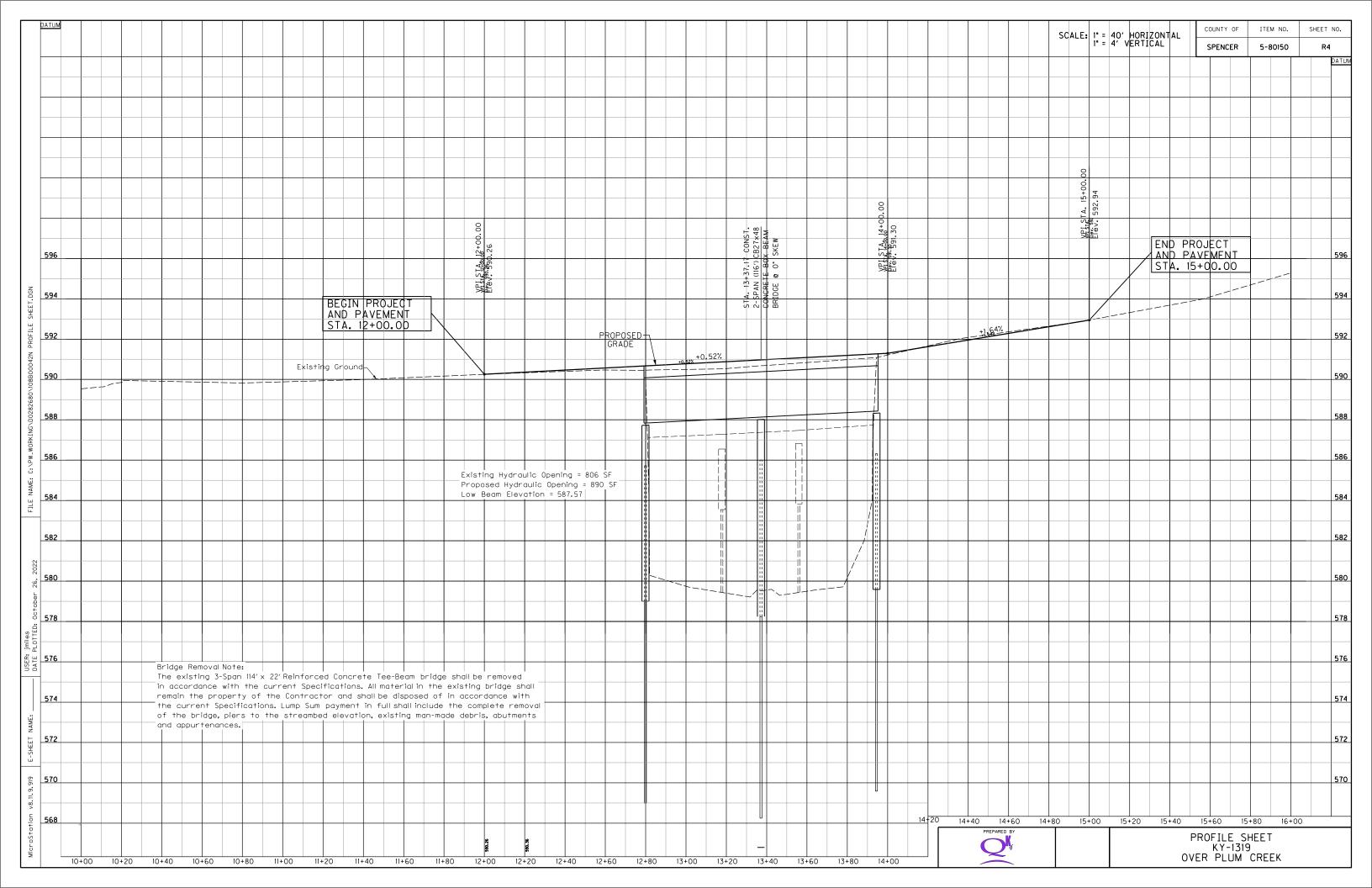
SHOULDERS

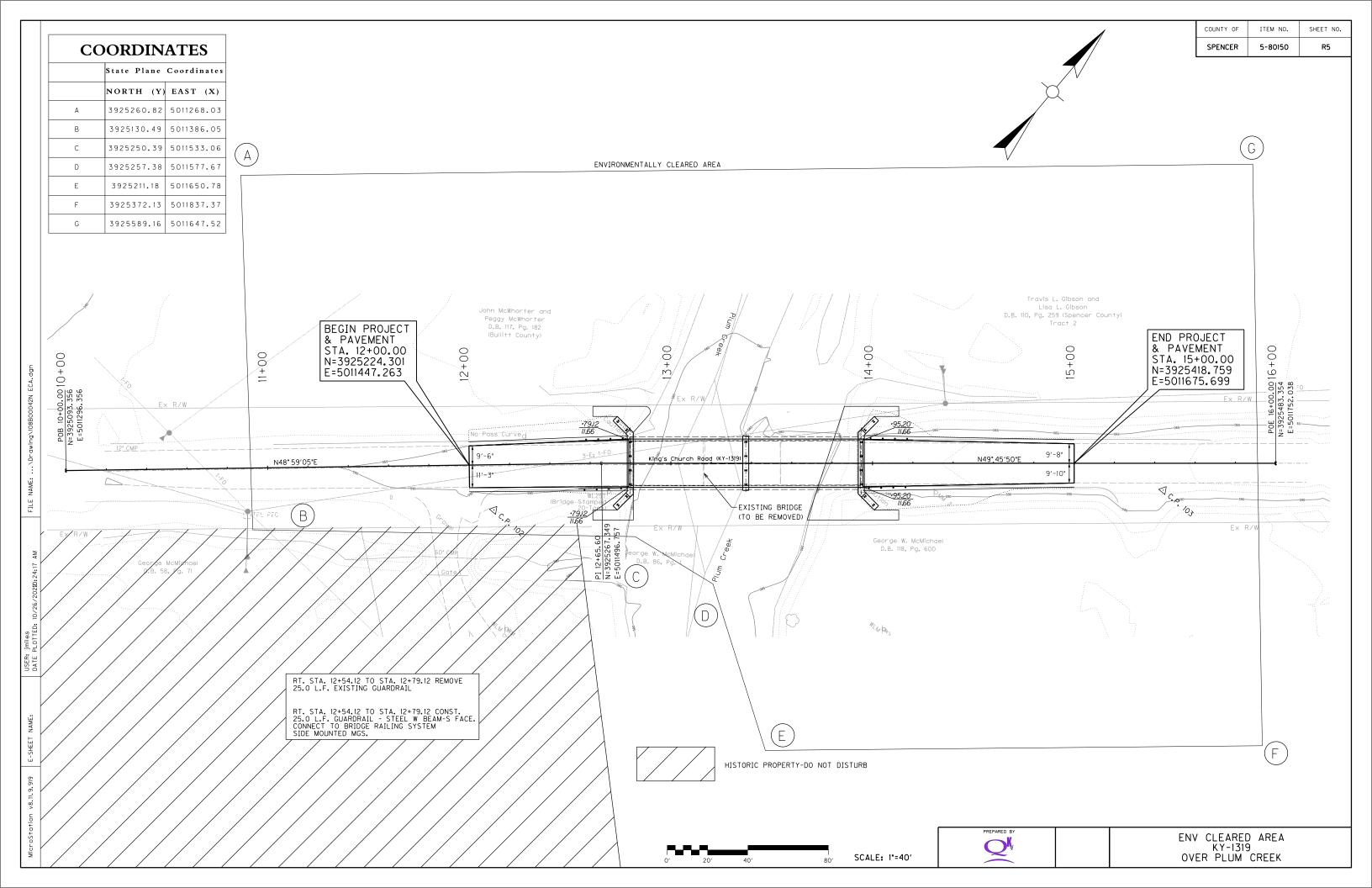
SHOULDERS
Granular Embankment



BRIDGE TYPICAL SECTION







Specifications: References to the specifications are to the current edition of the Utilities: The contractor s

Kentucky Department of Highways Standard Specifications for Road and Bridge Construction including any current supplemental specifications. All references to the AASHTO specifications are to the AASHTO LRFD Bridge Design Specifications, 8th edition with interims.

<u>Design Load</u>: This bridge is designed for KYHL-93 live load, (i.e. 1.25xAASHTO HL93 live load). This bridge is designed for a future wearing surface of 15 psf.

<u>Design Method</u>: All reinforced concrete members are designed to be equivalent or greater than the load and resistance factor design method as specified in the current AASHTO Specifications.

Materials Design Specifications:

For Class "A" Reinforced Concrete f'c = 3500 psi
For Class "AA" Reinforced Concrete f'c = 4000 psi
For Steel Reinforcement fy = 60000 psi

<u>Material Specifications:</u> AASHTO Specifications or ASTM, current edition, as designated below shall govern the materials furnished.

AASHTO MI53 Premolded Cork Filler, Type II

AASHTO M-31 Deformed and Plain Billet-Steel for Concrete Reinforcement,

Grade 60

<u>Preformed Cork Expansion Joint Material</u>: Preformed Cork Expansion Joint Material shall conform to subsection 807.04.02 (Type II) of the Kentucky Department of Highways Standard Specifications.

<u>Concrete</u>: Class "AA" Concrete is to be used throughout the superstructure and in the portions of the substructure above the tops of caps. Class "A" concrete is to be used in the substructure below the caps. Prestressed beam concrete shall be in accordance with the plans and specifications

Reinforcement: Dimensions shown from the face of concrete to bars are to center of bars unless otherwise shown. Clear distance to face of concrete is 2" unless otherwise noted. Spacing of bars is from center to center of bars. Any reinforcing bars designated by suffix "e" in the plans shall be epoxy coated in accordance with section 811.10 of the Standard Specifications. Any reinforcing bars designated by suffix "s" in a Bill of Reinforcement shall be considered a stirrup for purposes of bend diameters.

Beveled Edges: All exposed edges shall be beveled $\frac{3}{4}$, unless otherwise shown.

<u>Payment for Precast Concrete Beams:</u> The basis of payment for the Prestressed Concrete Beams shall be at the contract unit price per linear foot of beam, in accordance with the specifications.

Slope Protection: Slope Protection at abutments shall be dry cyclopean stone riprap in accordance with the plans and specifications. Geotextile Fabric, Class I shall be placed between the embankment and the slope protection in accordance with Standard Specifications 214 and 843. Payment for Geotextile Fabric, Class I, shall be considered incidental to the unit price bid for Dry Cyclopean Stone Riprap.

Completion of the Structure: The contractor is required to complete the structure in accordance with the plans and specifications. Material, labor, or construction operations not otherwise specified, are to be included in the bid item most appropriate to the work involved. This may include cofferdams, shoring, excavations, backfilling, removal of all or parts of existing structures, phase construction, incidental materials, labor, or anything else required to complete the structure.

Shop Drawings: The fabricator shall submit all required shop plans, by email to SHOP 108B00042N@docs.e-Builder.net, for review. These submissions shall depict the shop plans in .PDF format, as either 11*x17* or 22*x36* sheets. Designers will make review comments on these electronic submissions as needed and, if required, shall return them to the fabricator for corrections and resubmittal. Upon acceptable reconciliation of all comments, files shall be sent to the Bridge Program GEC Shop Plan Coordinator for distribution. Only plans submitted directly to the Shop Plan Coordinator will be distributed. Additionally, only plans electronically stamped 'Distributed by The Bridge Program GEC* are to be used for fabrication. While this process does not require the submission of paper copies, the Engineer of Record reserves the right to require such copies on a case by case basis.

When any changes to the design plans are proposed, the shop drawings reflecting these changes shall be submitted through the process above.

General Notes

<u>Utilities:</u> The contractor shall be responsible for locating any and all existing utilities prior to excavation of material or installation of guardrail or other construction activities that may involve utilities (overhead or underground).

<u>Dimensions</u>: Dimensions are for a normal temperature of 60 degrees fahrenheit, Layout dimensions are horizontal dimensions.

<u>Superstructure Slab</u>: The superstructure slab shall be poured continuously from end to end of slab before the concrete is allowed to set.

<u>Slab Thickness</u>: The slab thickness shown in the proposed typical section is taken at mid-span. Due to beam camber and in order to achieve the design profile, the slab will be approximately 5/8' thicker at the supports. No additional payment will be made for any additional concrete above the plan quantity should be placed without the approval of the Engineer. If applicable, guardrail inserts are to be placed in such a way that accommodates tolerances for guardrail height.

<u>Mastic Tape</u>: Mastic Tape used to seal joints is to meet the requirements of ASTM C-877 Type I, II, or III. The joint is to be covered with 12" wide mastic tape. Prior to application, the joint surface shall be clean and free of dirt, debris, or deleterious material. Primer, if required by the tape manufacturer, shall be applied for a minimum width of 9" on each side of the joint.

Mastic Tape shall be either:

EZ-Wrap Rubber by Press-seal Casket Corporation, Seal Wrap by Mar Mac Manufacturing Co. Inc., Cadilloc by The UP Rubber Co. Inc. or approved equal.

Mastic Tape shall cover the joint continuously unless otherwise shown in the plans. Mastic Tape shall be spliced by taping a minimum of 6" and in accordance with the manufacturer's recommendations with the overlap running downhill.

Additionally, the Contractor shall place Mastic Tape along vertical joints between the Concrete Box Beams. The vertical joints should be covered after the abutment seat interface, in the same manner as outlined above.

The cost of labor, materials, and incidental items for furnishing and installing Mastic Tape shall be considered incidental to the unit price bid for concrete box beams and no separate measurement of payment shall be made.

Temporary Supports: Temporary Supports or shoring will not be permitted under the beams when pouring the concrete deck slab or when taking "top of beam" elevations.

Armored Edge: Fabricate armored edge to match cross slope and parabolic crown at each end of bridge.

<u>Elastomeric Bearing Pads</u>: Elastomeric Bearing Pads shall conform to the AASHTO Standard Specifications for Highway Bridges, Division II, Section 18.

Bearings shall be Low Temperature Grade 3 with a shear modulus between 95 psi and 130 psi and shall be subjected to the load testing requirements corresponding to Design Method B. The cost of bearing pads is to be included in the unit price per linear feet for Precast Beams.

<u>Foundation Preparation:</u> Foundation Preparation shall be in accordance with Section 603 of the Specifications.

Foundation excavations should be properly braced/shored to provide adequate safety to persons working in or around excavations. Bracing should be performed in accordance with applicable federal, state and local guidelines.

Temporary shoring, sheeting, cofferdams, and/or dewatering methods may be required to facilitate foundation construction. It should be anticipated that groundwater will be encountered at foundation locations within the flood plain.

Temporary shoring, bracing, sheeting, cofferdams and dewatering shall be included in the Lump Sum Bid for Foundation Preparation.

<u>Structural Granular Backfill:</u> Materials for Structural Granular Backfill shall be in accordance with Section 805 of the Specifications.

Contrary to the Specifications, Structural Granular Backfill will not be measured for payment but shall be included in the Lump Sum Bid for Foundation Preparation.

<u>Concrete Sealer:</u>

Apply concrete sealer in accordance with the Special Note Concrete Sealing.

No Geotechnical Report: This Bridge did not have any drilling performed because rock was noted in the creek.

<u>Substructures:</u> Excavation for substructures should be level and free of loose, water softened material, etc. Additional rock excavation to achieve suitable bearing conditions may be required depending upon topography and bedrock weathering conditions.

Solid rock excavation will be required for installation of the end bents and piers. The contractor shall take care during blasting and other excavation methods to avoid over-breakage and damage to the bedrock beneath the footings.

Footing excavations in bedrock shall be cut neatly so that no forming or backfilling is necessary in the construction of the portions of the footings located in rock. Concrete shall be placed directly against the cut rock faces.

Bearing elevation of substructures may be adjusted at the discretion of the Engineer if competent, unweathered bedrock is found at a higher elevation than specified for the respective substructure element. The bottom of substructure should be embedded a minimum of one foot into competent bedrock.

Prior to placement of any concrete or reinforcing steel in a foundation excavation, the excavation bottom should be clean and all soft, wet, or loose materials should be removed. In no case should concrete be placed upon compressible or water-softened materials.

Concrete placement for substructures should be placed as soon as practical after completion of the footing excavation. If the bedrock becomes softened at bearing elevation, the softened material should be undercut to unweathered material prior to placement of reinforcing steel and concrete. Seasonal groundwater fluctuations may cause groundwater infiltration into the footing excavation, and a dewatering method may be necessary.

Piling: Piling shall be driven to practical refusal as defined on the pile record sheet.

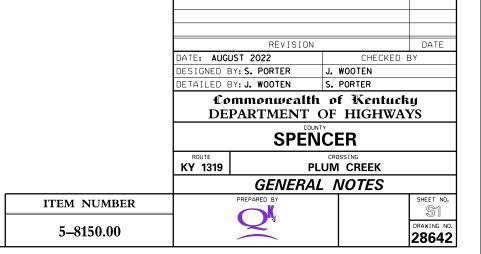
Test piles shall be driven where designated on the plans to determine the length of pile required.

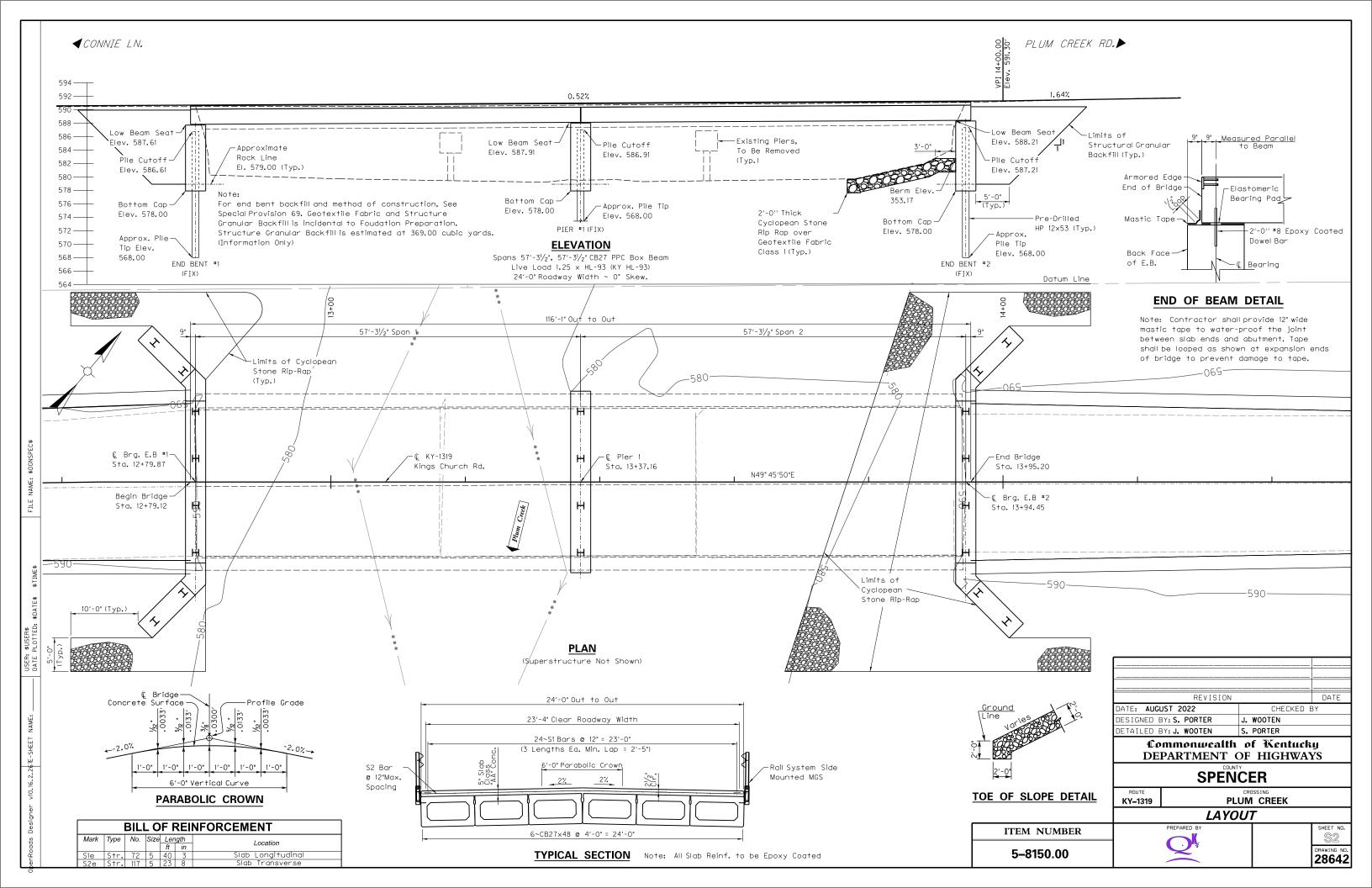
All test piles shall be accurately located so that they may be used in the finished structure.

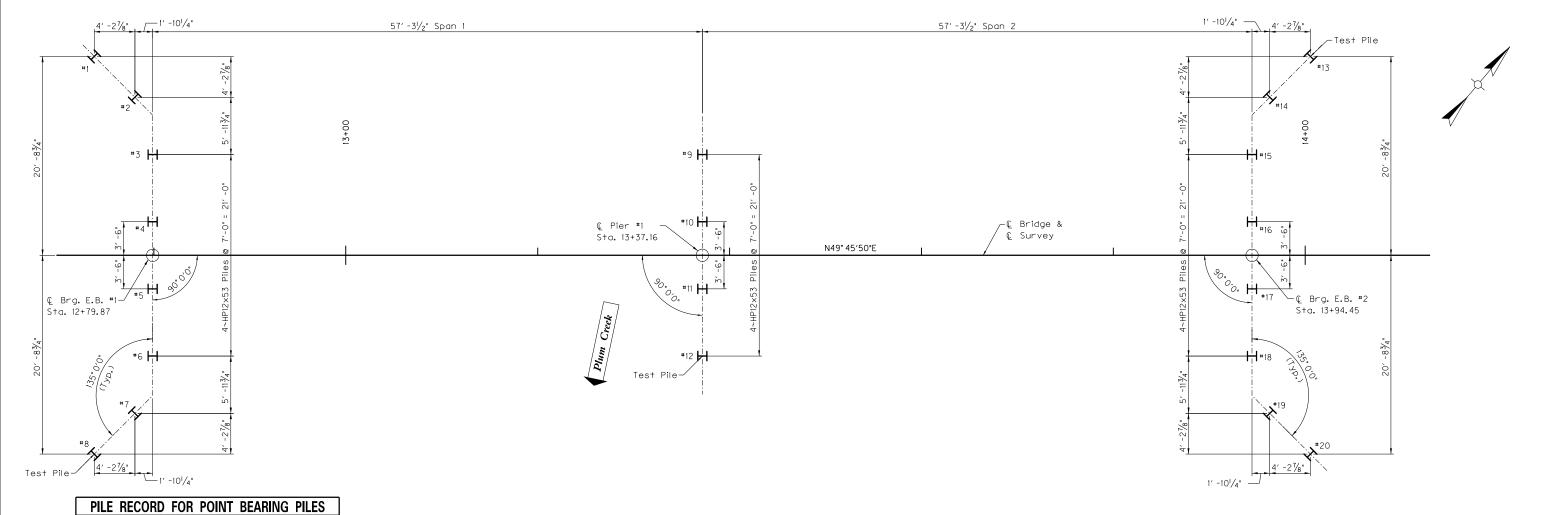
Contrary to the standard drawings for steelpiling, mill test reports are not required to be notarized.

<u>Pile Points:</u> Provide pile points for all piles. Pile points shall be in accordance with Section 604 of the specifications and of the type shown on the pile record sheet.

<u>Pre-drilling Piles:</u> Where pre-drilling is necessary for pile installation, holes shall be drilled into solid rock. Minimum distance between bottom of cap or pile bent and pile tip shall be 10'-0'. Backfill the holes with sand or pea gravel after the pile is placed in the hole. A temporary casing may be required to prevent collapse of the hole. If used, remove the casing as the hole is backfilled. Drive piles to refusal after backfill operations are complete Include the cost of all materials, labor, and equipment needed to pre-drill, backfill the holes, and drive the piles to refusal in the price per linear foot for 'Pre-drilling for Piles'.







PILE RECORD FOR POINT BEARING PILES				
Pile No.	Pile Cut–off Elevation	Pile Length In Place	Point of Pile Elevation As Driven	Design Axial Load
	FEET	FEET	FEET	TONS
- 1	586.61			58
2	586.61			58
3	586.61			58
4	586.61			58
5	586.61			58
6	586.61			58
7	586.61			58
8	586.61			58
9	586.91			131
10	586.91			131
11	586.91			131
12	586.91			131
13	587.21			59
14	587.21			59
15	587.21			59
16	587.21			59
17	587.21			59
18	587.21			59
19	587.21			59
20	587.21	·		59

Definitions of Terms

PILE CUT-OFF ELEVATION: Elevation of the top of pile in the finished structure.

PILE LENGTH IN PLACE: Actual pile length below the Pile Cut-Off Elevation in the finished structure.

 ${\tt POINT}$ OF PILE ELEVATION AS DRIVEN: Actual point of pile elevation in the finished structure.

DESIGN AXIAL LOAD: Load carried by each pile as estimated from structural design calculations for Factored LRFD Loadings.

CALCULATED FIELD BEARING: Contrary to Section 604.03.07 of the Standard Specifications, in place bearing values are not required for piles bearing on rock when driven to practical refusal.

Notes

- 1. A diesel pile driving hammer with a rated energy between 10.5 foot-kips and 20.1 foot-kips will be required to drive 12x53 steel H-piles to practical refusal without encountering excessive blow counts or damaging the piles. The Contractor shall submit the proposed pile driving system to the Engineer for approval prior to the installation of the first pile. Approval of the pile driving system by the Engineer will be subject to satisfactory field performance of the pile driving procedures.
- 2. If hard driving is encountered because of dense strata or an obstruction, such as a boulder before the pile is advanced to the depth anticipated, the Engineer will determine if more blows than the average driving resistance specified for practical refusal is required to further advance the pile. Drive additional production and test piles if directed by the Engineer.
- 3. The installation of the pile foundations should conform to current AASHTO LRFD Bridge Design Specifications, and Section 604 of the current edition of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction.
- 4. The Kentucky Transportation Cabinet recommends that protective pile points be used on end bearing piles to allow for embedment into the top of bedrock. Use of reinforced pile points capable of penetrating boulders and hard layers which may be encountered is recommended. Installation of pile points should be in accordance with Section 604 of the Kentucky Standard Specifications for Road and Bridge Construction, current edition.

Driving Criteria

DRIVING CRITERIA: Drive point bearing piles to practical refusal.

PRACTICAL REFUSAL (Case 2): For this project minimum blow requirements are reached after total penetration becomes ½ or less for 10 consecutive blows, practical refusal is obtained after the pile is struck an additional 10 blows with total penetration of ½ or less. Advance the production piling to the driving resistances specifed above and to depths determined by test pile(s) and subsurface data sheet(s). Immediately cease driving operations if the pile visibly yields or becomes damaged during driving. If hard driving is encountered because of dense strata or an obstruction, such as a boulder before the pile is advanced to the depth anticipated, the Engineer will determine if more blows than the average driving resistance specified for practical refusal is required to further advance the pile. Drive additional production and test piles if directed by the Engineer.

Field Data

For each pile, the Project Engineer shall record the following on this sheet: Pile Length in Place and Point of Pile Elevation as Driven.

Submit this record to:

Kentucky Transportation Cabinet Director, Division of Structural Design 3rd Floor East 200 Mero Street Frankfort, KY 40622

This pile record does not replace other pile records the Project Engineer is required to keep and submit.

Use HP 12x53 in accordance with BPS-003, c.e.

REVISION		DATE		
DATE: AUGUST 2022	CHECKED E	CHECKED BY		
DESIGNED BY: J. WOOTEN	S. PORTER			
DETAILED BY: J. WOOTEN	S. PORTER			
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS				
CO	UNTY			

SPENCER

KY-1319 PLUM CREEK

PILE RECORD

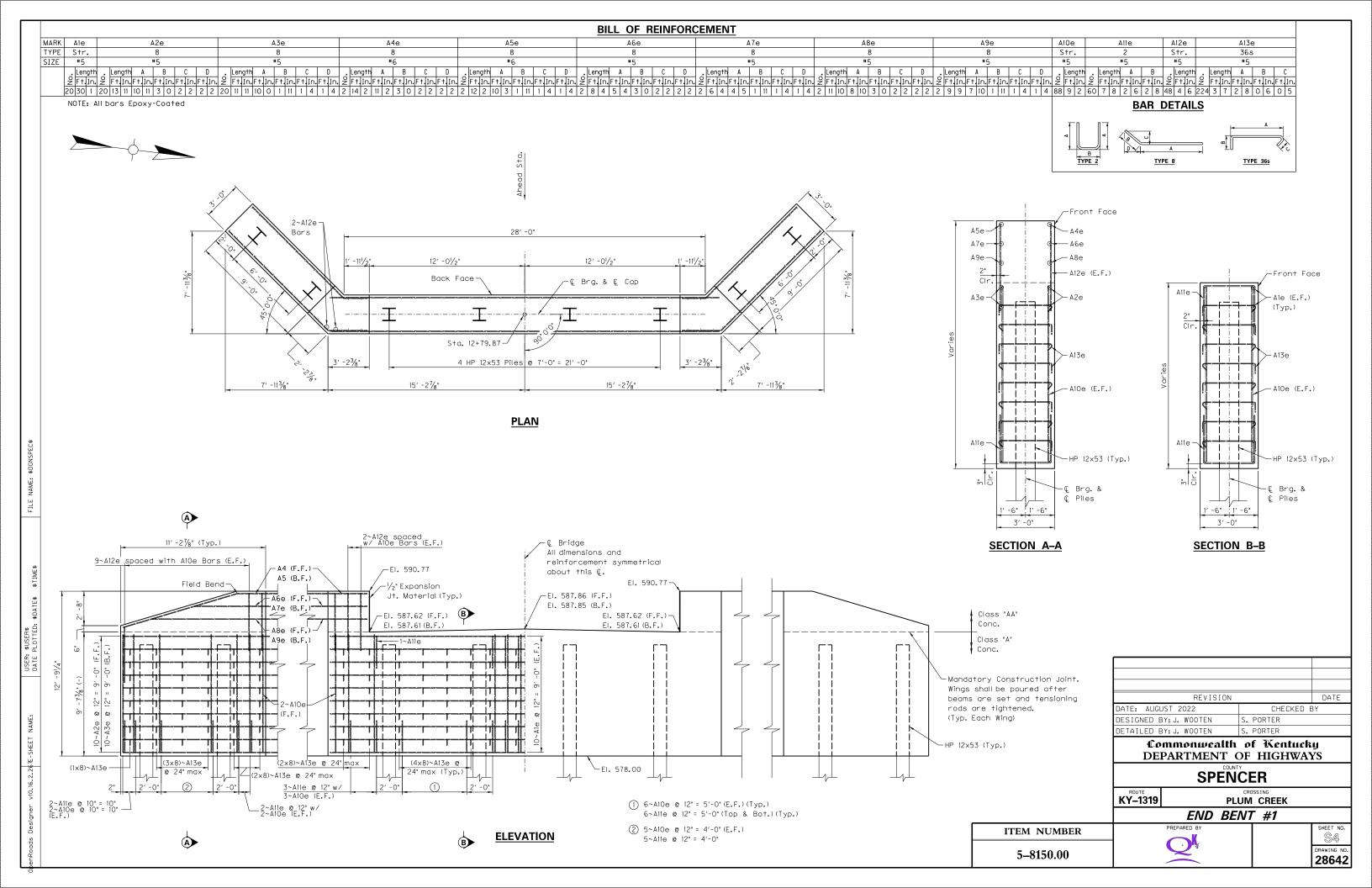
PREPARED BY

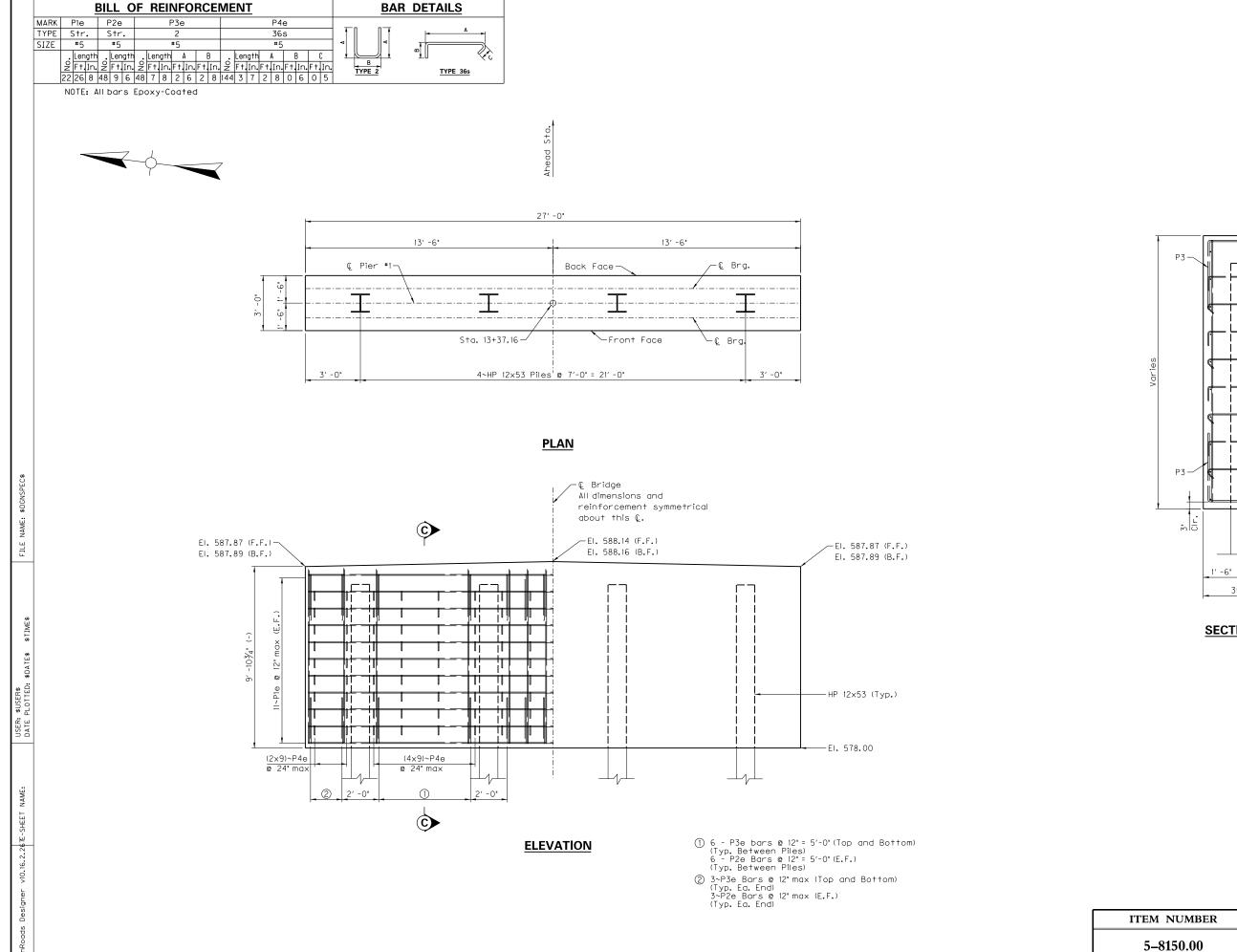
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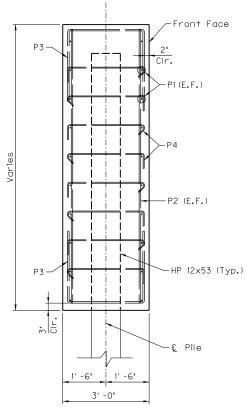
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SHEET NO.
\$3

DRAWING NO.
28642







SECTION C-C

	REVISION		DATE	
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DETAILED E	BY: J. WOOTEN	S. PORTER		
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