

STANDARD DRAWINGS	
BGX-006-10	STENCILS FOR STRUCTURES
BJE-001-13	NEOPRENE EXPANSION DAMS AND ARMORED EDGES
BBP-003-02	ELASTOMERIC BEARING PADS FOR BOX BEAMS
BDP-002-03	BOX BEAM BEARING DETAILS
BDP-003-03	BOX BEAM MISCELLANEOUS DETAILS
BDP-010-04	BOX BEAM B33 & CB33 DETAILS
BPS-003-09	HP12X53 STEEL PILE
RBI-002-07	TYPICAL GUARDRAIL INSTALLATIONS
RBM-115-10	CONCRETE BARRIER WALL TYPE 9T (TEMPORARY)
RBM-120-01	BOX BEAM STIFFENING OF TEMPORARY CONCRETE BARRIER
RBR-005-11	GUARDRAIL COMPONENTS
RBR-010-06	GUARDRAIL TERMINAL SECTIONS
RBR-015-05	STEEL GUARDRAIL POSTS
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-200-01	ONE POINT PROCTOR FAMILY OF CURVES
TTC-110-03	LANE CLOSURE USING TRAFFIC SIGNALS
ACTIVE SEPIAS	
SEPIA 009	TREATMENT OF EMBANKMENT AT END BENTS
SEPIA 010	TREATMENT OF EMBANKMENT AT END BENT - DETAILS
SEPIA 015	GUARDRAIL CONNECTOR TO BRIDGE END TYPE A
SEPIA 020	CRASH CUSHION TYPE VI ABC (ONE & TWO DIRECTION)
SEPIA 021	CRASH CUSHION TYPE VI-BT
SEPIA 024	TYPICAL GUARDRAIL INSTALLATIONS
SEPIA 025	INSTALLATION OF GUARDRAIL END TREATMENT TYPE I
SEPIA 027	STEEL BEAM GUARDRAIL ("W" BEAM)
SEPIA 028	STEEL GUARDRAIL POSTS
SEPIA 029	GUARDRAIL END TREATMENT TYPE I
SEPIA 032	DELINERATORS FOR GUARDRAIL
SEPIA 047	BOX BEAM GENERAL NOTES & REFERENCES
SEPIA 048	BOX BEAM TENSION ROD DETAILS

TRANSPORTATION CABINET DEPARTMENT OF HIGHWAYS

GREENUP COUNTY KY-1 OVER LOST CREEK STA. 50+03.25

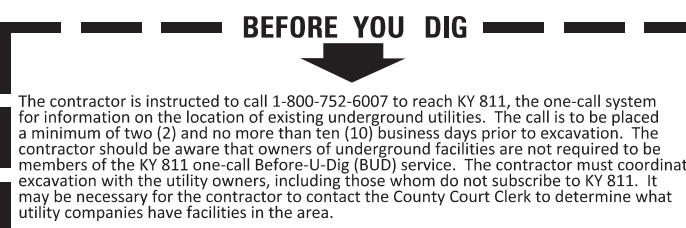


END CONSTRUCTION
KY-1
STA. 51+36.00

STA. 50+03.25 CONSTRUCT
SIMPLE SPAN (82') CB33X48 PPC
BOX BEAM BRIDGE @ 0° SKEW

BEGIN CONSTRUCTION
KY-1
STA. 48+47.00

LOCATION MAP



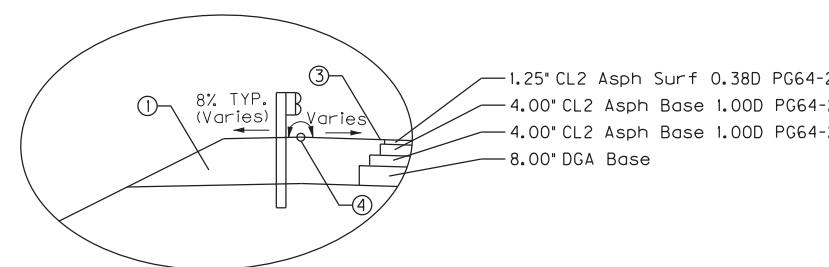
The contractor is instructed to call 1-800-752-6007 to reach KY 811, the one-call system for information on the location of existing underground utilities. The call is to be placed a minimum of two (2) and no more than ten (10) business days prior to excavation. The contractor should be aware that owners of underground facilities are not required to be members of the KY 811 one-call Before-U-Dig (BUD) service. The contractor must coordinate excavation with the utility owners, including those whom do not subscribe to KY 811. It may be necessary for the contractor to contact the County Court Clerk to determine what utility companies have facilities in the area.

REV. NO.	SHEETS REVISED	DATE
TABLE OF REVISIONS		

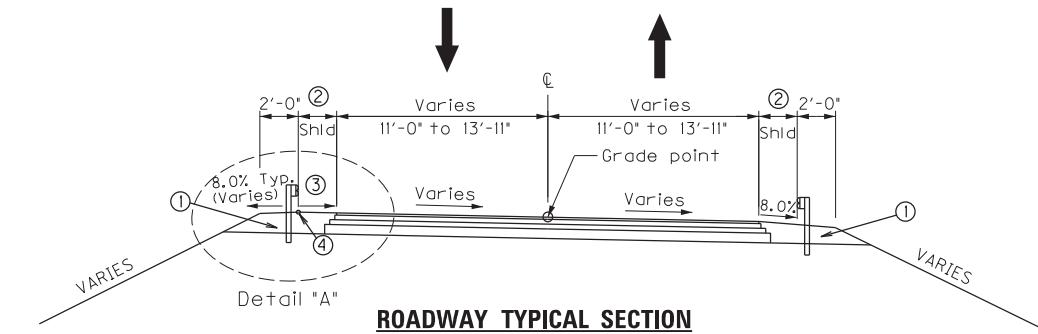
DESIGN CRITERIA							
CLASS OF HIGHWAY	RURAL MAJOR COLLECTOR						
TYPE OF TERRAIN							
DESIGN SPEED							
REQUIRED NPSD							
REQUIRED PSD							
LEVEL OF SERVICE							
ADT PRESENT (2018)	1,194						
ADT FUTURE ()							
DHV							
D %							
T %							
GEOGRAPHIC COORDINATES							
LATITUDE	38	DEGREES	24	MINUTES	50	SECONDS	NORTH
LONGITUDE	-82	DEGREES	54	MINUTES	18	SECONDS	WEST
DESIGNED							
% RESTRICTED SD							
LEVEL OF SERVICE							
MAX. DISTANCE W/O PASSING							

NOTES:

- ① Material needed for shoulders outside of paved area will be measured and paid as GRANULAR EMBANKMENT in accordance with the Special Note for Bridge Overlay Approach Pavement
- ② Width varies 0' to 2'-6" and the location to be determined by the field engineer.
- ③ Highside shoulder width less than 4', full width of shoulder should match super elevation cross slope as per KYTC Geometric Guidelines HD-701 or as determined by the field engineer to match existing conditions.
- ④ Highside granular embankment shoulder maximum rollover = 12.0%.



Detail "A"



ROADWAY TYPICAL SECTION

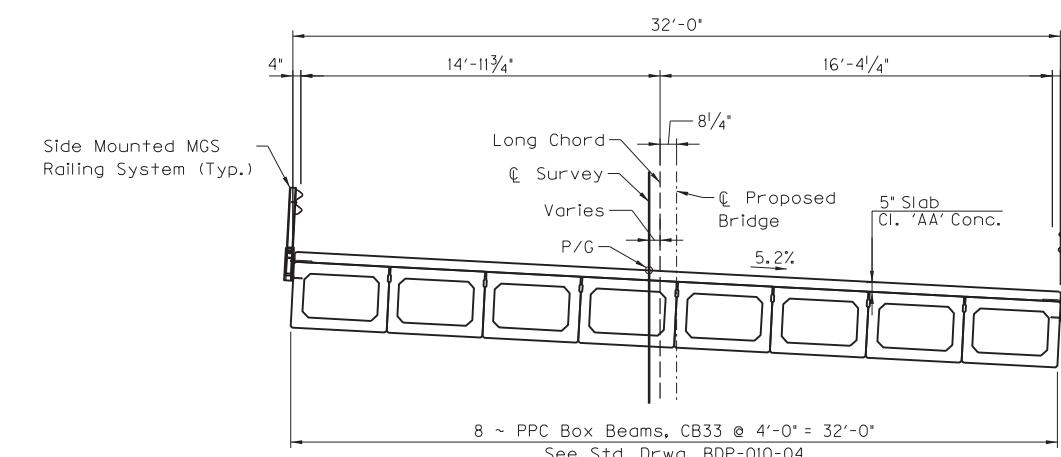
KY-1 PAVEMENT

16.00" Base —
 8.00" DGA Base
 4.00" CL2 Asph Base 1.00D PG64-22
 4.00" CL2 Asph Base 1.00D PG64-22

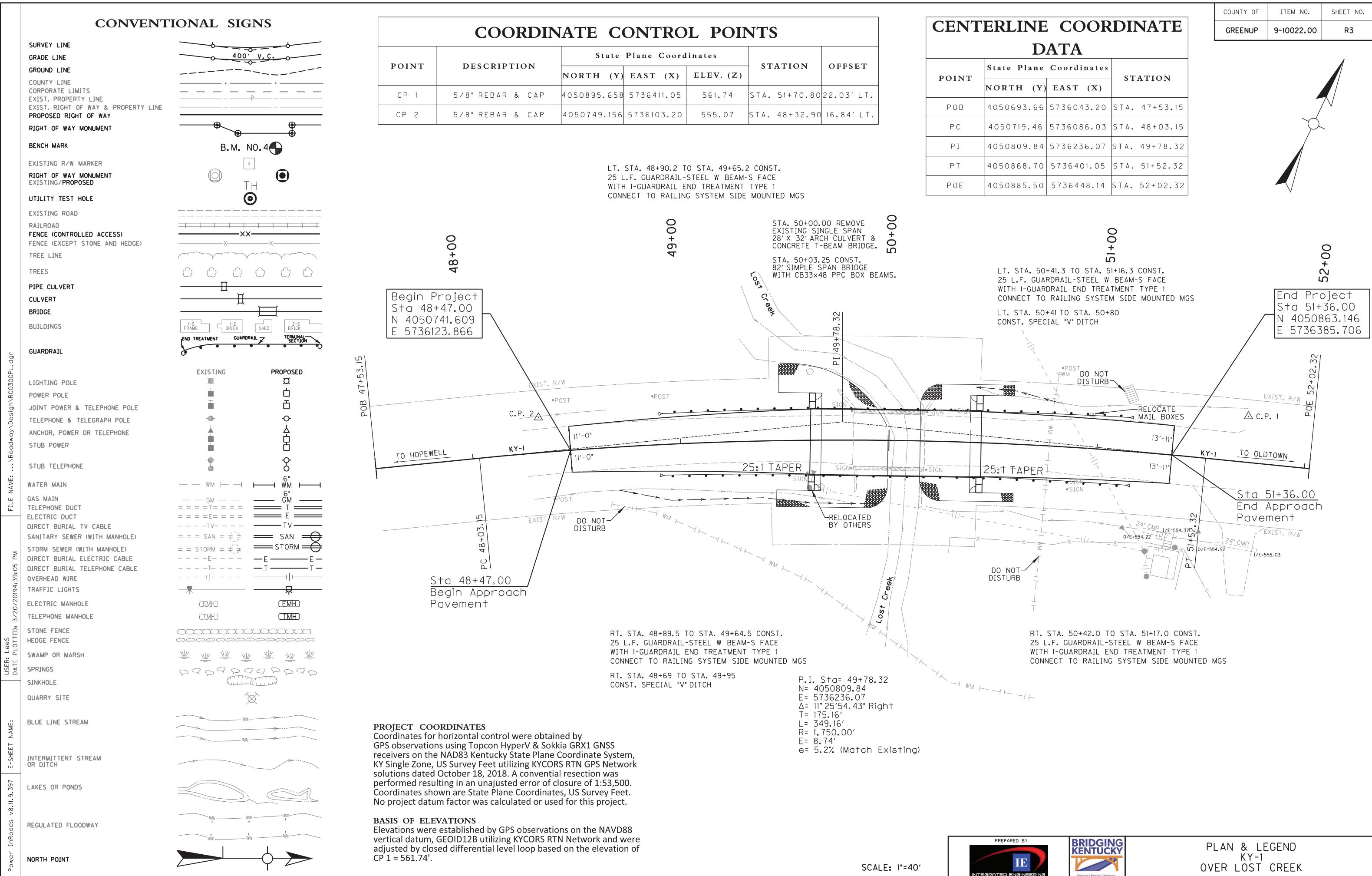
1.25" Surface —
 1.25" CL2 Asph Surf 0.38D PG64-22

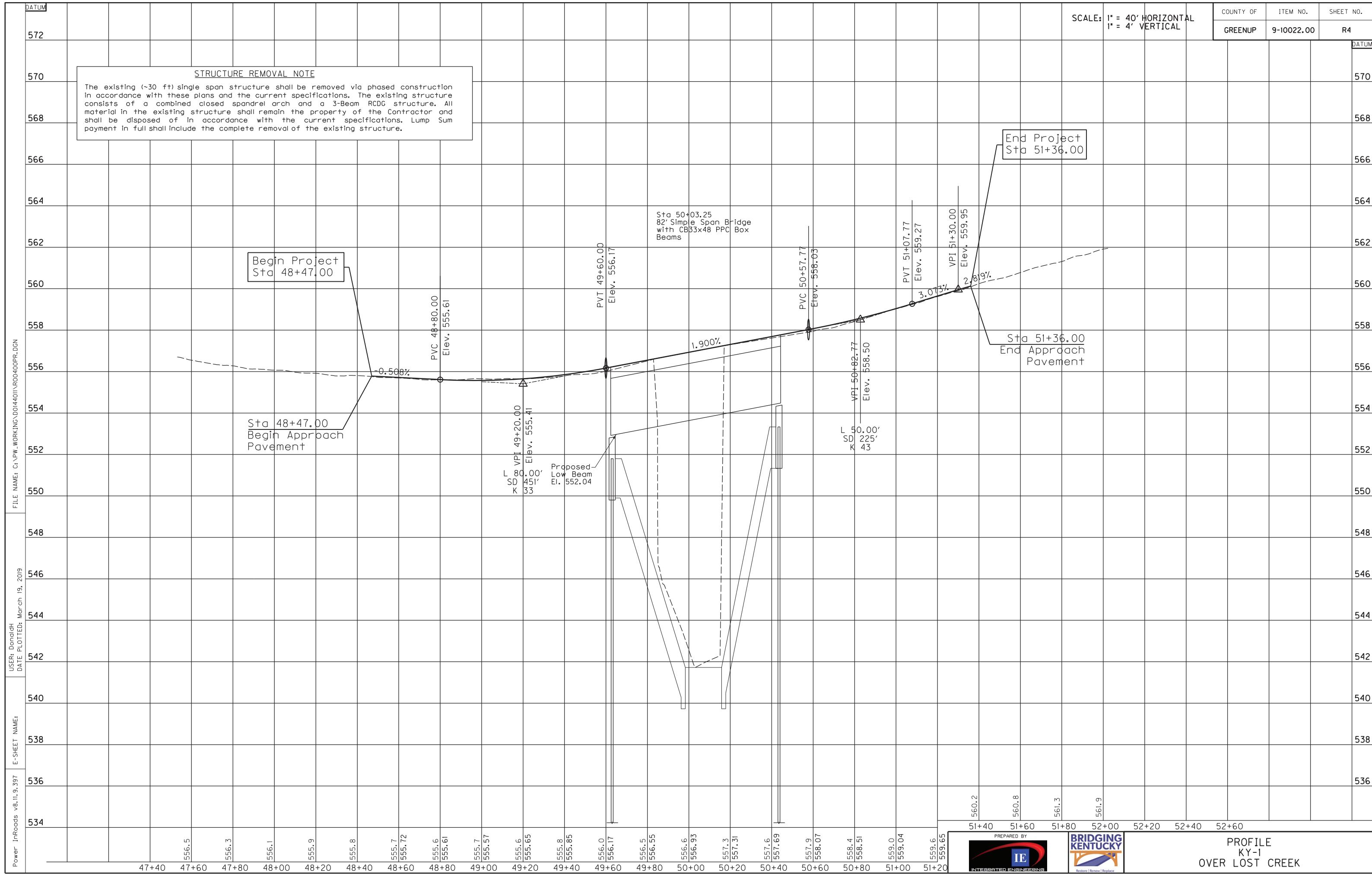
SHOULDERS

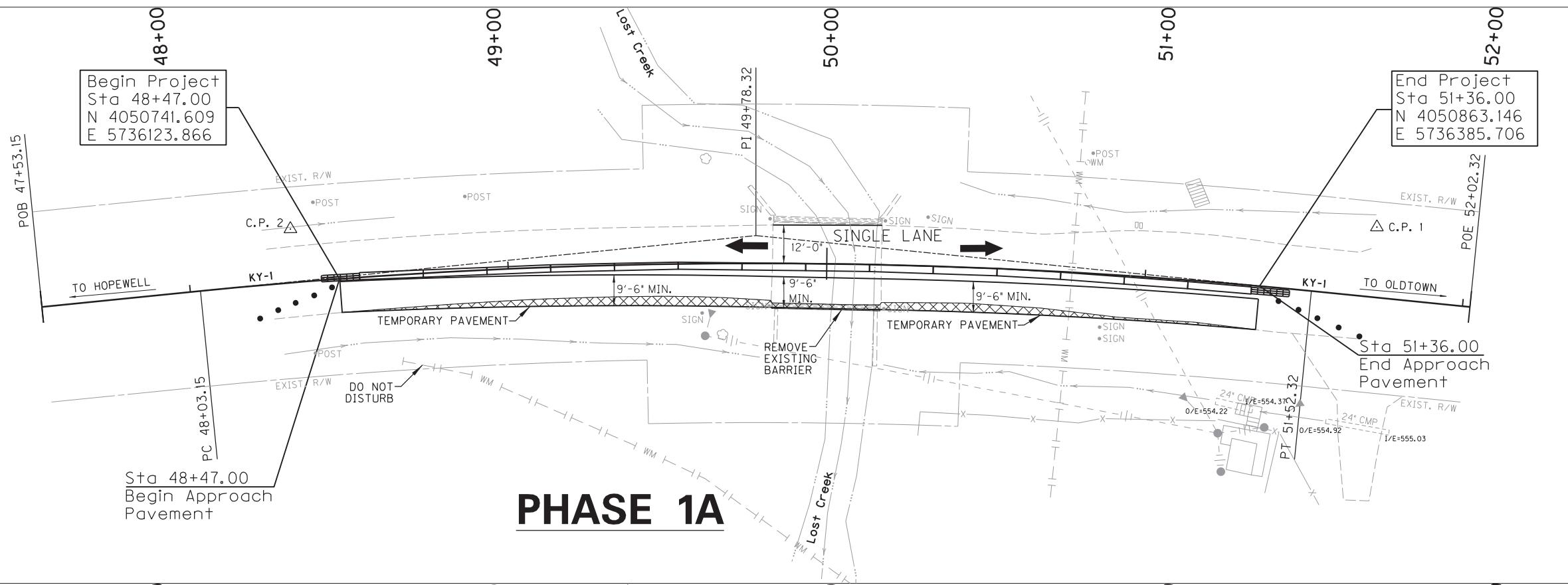
Granular Embankment



TYPICAL DECK SECTION

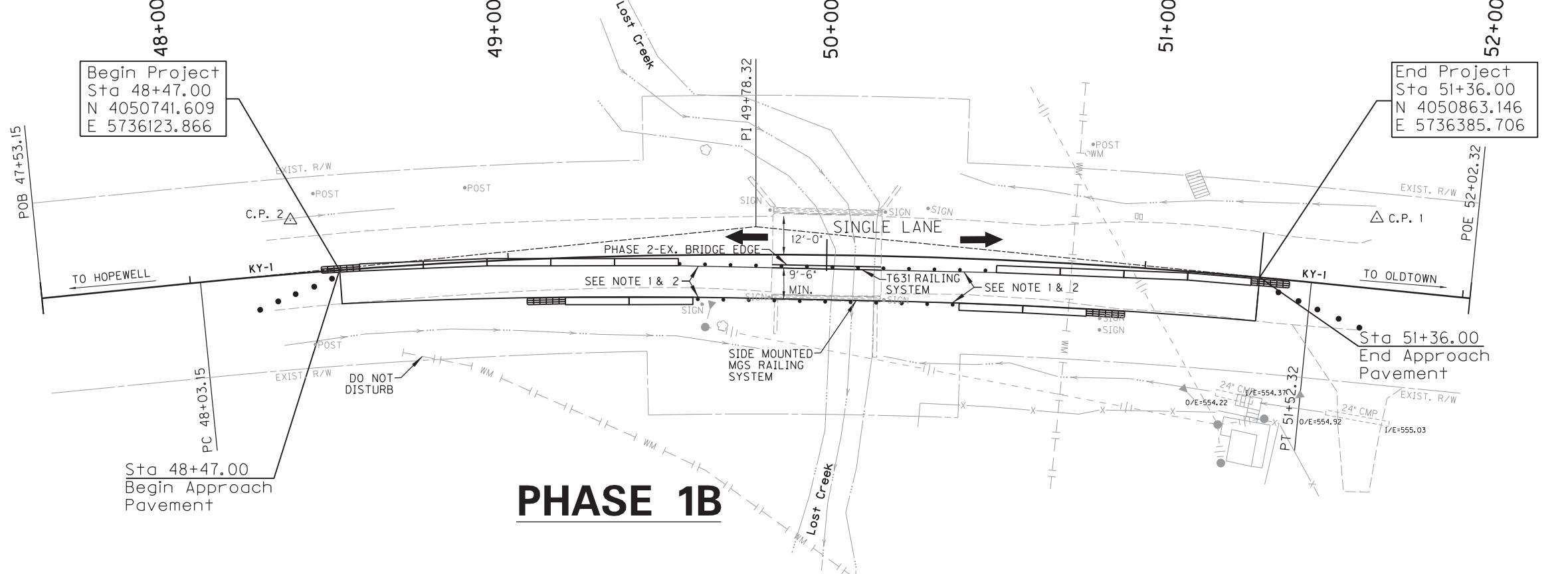






TRAFFIC CONTROL PLAN NOTES

- DURING CONSTRUCTION OF THIS PROJECT, MAINTAIN ACCESS TO PROPERTIES, ENTRANCES TO REMAIN OPEN AT ALL TIMES. ONE LANE OF TRAFFIC ON KY-1 MUST BE MAINTAINED AT ALL TIMES. (9' 6" MINIMUM LANE WIDTH)
- ADDITIONAL SHORT-TERM LANE CLOSURES SHALL BE APPROVED BY ENGINEER TO AVOID SCHOOL TRANSPORTATION HOURS.
- SEE SHEET S8 FOR BRIDGE PARTIAL WIDTH CONSTRUCTION PHASE NOTES, DETAILS, AND TYPICAL SECTIONS.



PHASE 1A - REMOVAL NOTES

- INSTALL AND MAINTAIN TEMPORARY BARRIERS AND TRAFFIC CONTROL DEVICES.
- MAINTAIN ONE LANE OF TRAFFIC ON EXISTING WESTBOUND LANE OF KY-1 PAVEMENT WITH TWO-WAY OPERATIONS.
- REMOVE EXISTING BRIDGE BARRIER AND ASPHALT OVERLAY PAVEMENT. (SEE SHEET S8)
- INSTALL TEMPORARY PAVEMENT ALONG EXISTING EASTBOUND LANE AS NEEDED TO OBTAIN 9' 6" MIN. LANE WIDTH AND ALIGN WITH SIDE MOUNTED MGS RAILING SYSTEM INSTALLED IN PHASE 1B.

PHASE 1B - CONSTRUCTION NOTES

- MAINTAIN TEMPORARY BARRIERS AND TRAFFIC CONTROL DEVICES.
- MAINTAIN ONE LANE OF TRAFFIC ON EXISTING WESTBOUND LANE OF KY-1 PAVEMENT WITH TWO-WAY OPERATIONS.
- REPAIR BRIDGE DECK ALONG SIDE OF EXISTING BRIDGE.
- INSTALL SIDE MOUNTED MGS RAILING SYSTEM.
- INSTALL T631 RAILING SYSTEM.
- INSTALL AND RELOCATE TEMPORARY BARRIERS AND TRAFFIC CONTROL DEVICES ALONG EASTBOUND LANE.

NOTES:

- DRIVE GUARDRAIL POSTS INTO EXISTING ROADWAY AND PATCH WHEN PHASED WORK IS COMPLETE (TYP). CONSTRUCT 25 LF MINIMUM, OR AS DETERMINED BY ENGINEER TO ANCHOR RAILING MOUNTED ON BRIDGE.
- TEMPORARY GUARDRAIL WILL BE ATTACHED TO TEMPORARY CONCRETE BARRIER USING TERMINAL SECTION NO.2. (SEE STANDARD DRAWING RBR-010-06 & SEE SECTION A-A ON SEPIA 15).
- ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS REQUIRED FOR MOT AND CONSTRUCTION PHASING SHALL BE CONSIDERED INCIDENTAL TO MAINTENANCE OF TRAFFIC.

FOR MAINTENANCE OF
TRAFFIC ONLY

NOTE:

SEE SHEET S8 FOR BRIDGE PARTIAL WIDTH CONSTRUCTION PHASE NOTES, DETAILS, AND TYPICAL SECTIONS.

TEMPORARY PAVEMENT IS INCIDENTAL TO MAINTAIN AND CONTROL TRAFFIC LUMPSUM.

LEGEND



BRIDGE CONSTRUCTION



TEMPORARY TRAFFIC BARRIER (TYPE 9T)



CHANNELIZING DEVICES



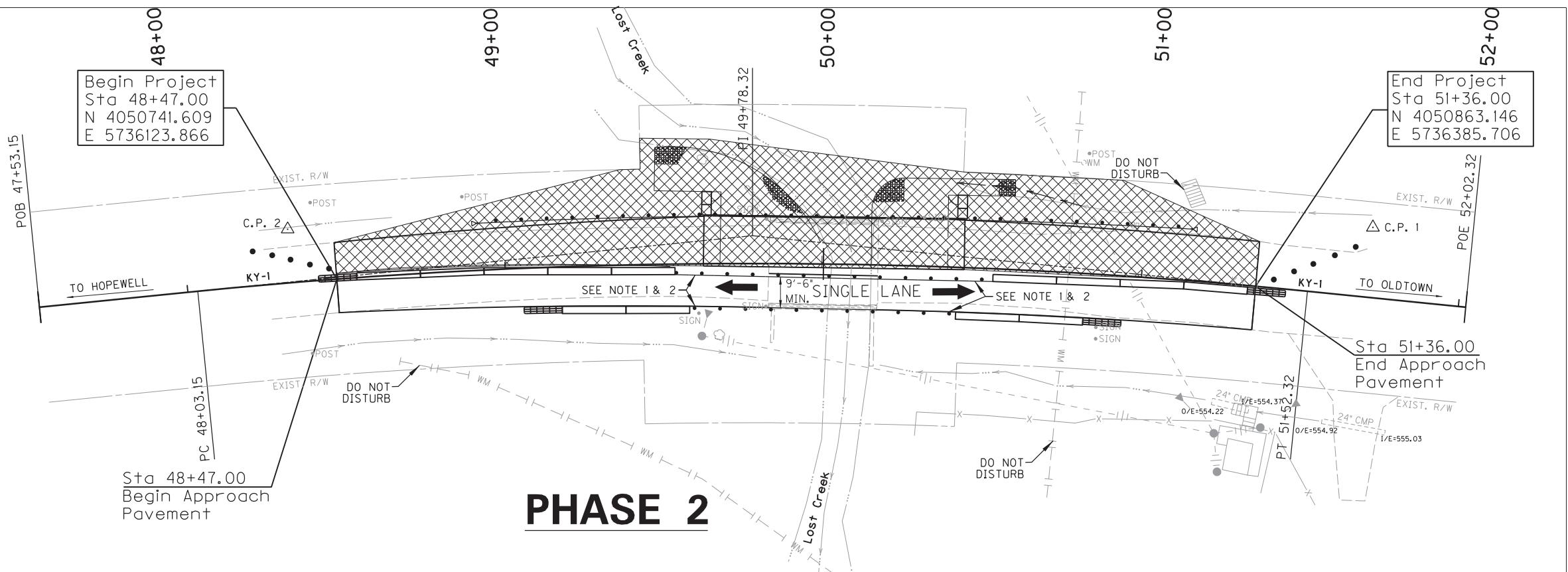
CRASH CUSHION

0' 20' 40' 80'

SCALE: 1"=40'

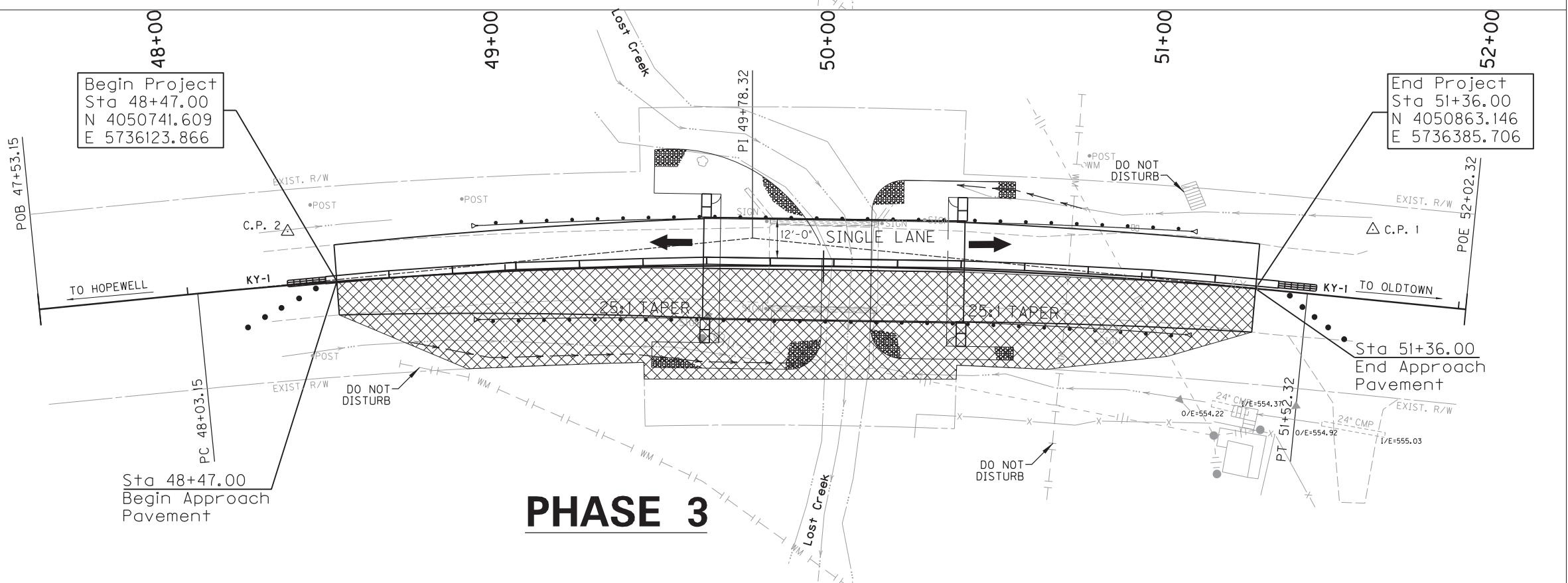


TRAFFIC CONTROL PLAN
KY-1
OVER LOST CREEK



TRAFFIC CONTROL PLAN NOTES

- DURING CONSTRUCTION OF THIS PROJECT, MAINTAIN ACCESS TO PROPERTIES, ENTRANCES TO REMAIN OPEN AT ALL TIMES. ONE LANE OF TRAFFIC ON KY-1 MUST BE MAINTAINED AT ALL TIMES. (9' 6" MINIMUM LANE WIDTH)
- ADDITIONAL SHORT-TERM LANE CLOSURES SHALL BE APPROVED BY ENGINEER TO AVOID SCHOOL TRANSPORTATION HOURS.
- SEE SHEET S8 FOR BRIDGE PARTIAL WIDTH CONSTRUCTION PHASE NOTES, DETAILS, AND BRIDGE TYPICAL SECTIONS.



PHASE 3 NOTES

- MAINTAIN TEMPORARY BARRIERS AND TRAFFIC CONTROL DEVICES.
- SHIFT TRAFFIC & MAINTAIN ONE LANE OF TRAFFIC ON EXISTING EASTBOUND LANE OF KY-1 PAVEMENT WITH TWO-WAY OPERATIONS.
- REMOVE PHASE 2 OF EXISTING BRIDGE. (SEE SHEET S8)
- CONSTRUCT PHASE 3 OF PROPOSED BRIDGE (SEE SHEET S8) AND PROPOSED KY-1 PAVEMENT.

PHASE 3 NOTES

- RELOCATE AND MAINTAIN TEMPORARY BARRIERS AND TRAFFIC CONTROL DEVICES.
- SHIFT TRAFFIC TO WESTBOUND LANE OF NEWLY CONSTRUCTED BRIDGE AND KY-1 PAVEMENT AND MAINTAIN ONE LANE OF TRAFFIC WITH TWO-WAY OPERATIONS.
- REMOVE PHASE 3 OF EXISTING BRIDGE. (SEE SHEET S8)
- CONSTRUCT PHASE 3 OF PROPOSED BRIDGE (SEE SHEET S8) AND PROPOSED KY-1 PAVEMENT.
- REMOVE TEMPORARY BARRIERS AND TRAFFIC CONTROL DEVICES.
- OPEN NEWLY CONSTRUCTED KY-1 TO TRAFFIC.

NOTES:

1. DRIVE GUARDRAIL POSTS INTO EXISTING ROADWAY AND PATCH WHEN PHASED WORK IS COMPLETE (TYP). CONSTRUCT 25 LF MINIMUM, OR AS DETERMINED BY ENGINEER TO ANCHOR RAILING MOUNTED ON BRIDGE.
2. TEMPORARY GUARDRAIL WILL BE ATTACHED TO TEMPORARY CONCRETE BARRIER USING TERMINAL SECTION NO.2. (SEE STANDARD DRAWING RBR-010-06 & SEE SECTION A-A ON SEPIA 15).
3. ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS REQUIRED FOR MOT AND CONSTRUCITON PHASING SHALL BE CONSIDERED INCIDENTAL TO MAINTENANCE OF TRAFFIC.

FOR MAINTENANCE OF
TRAFFIC ONLY

NOTE:

SEE SHEET S8 FOR BRIDGE PARTIAL WIDTH CONSTRUCTION PHASE NOTES, DETAILS, AND TYPICAL SECTIONS.

TEMPORARY PAVEMENT IS INCIDENTAL TO MAINTAIN AND CONTROL TRAFFIC LUMP SUM.

LEGEND

- BRIDGE CONSTRUCTION
- TEMPORARY TRAFFIC BARRIER (TYPE 9T)
- CHANNELIZING DEVICES
- CRASH CUSHION

0' 20' 40' 80'
SCALE: 1"=40'

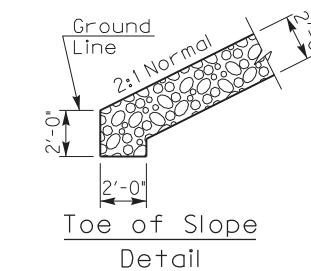
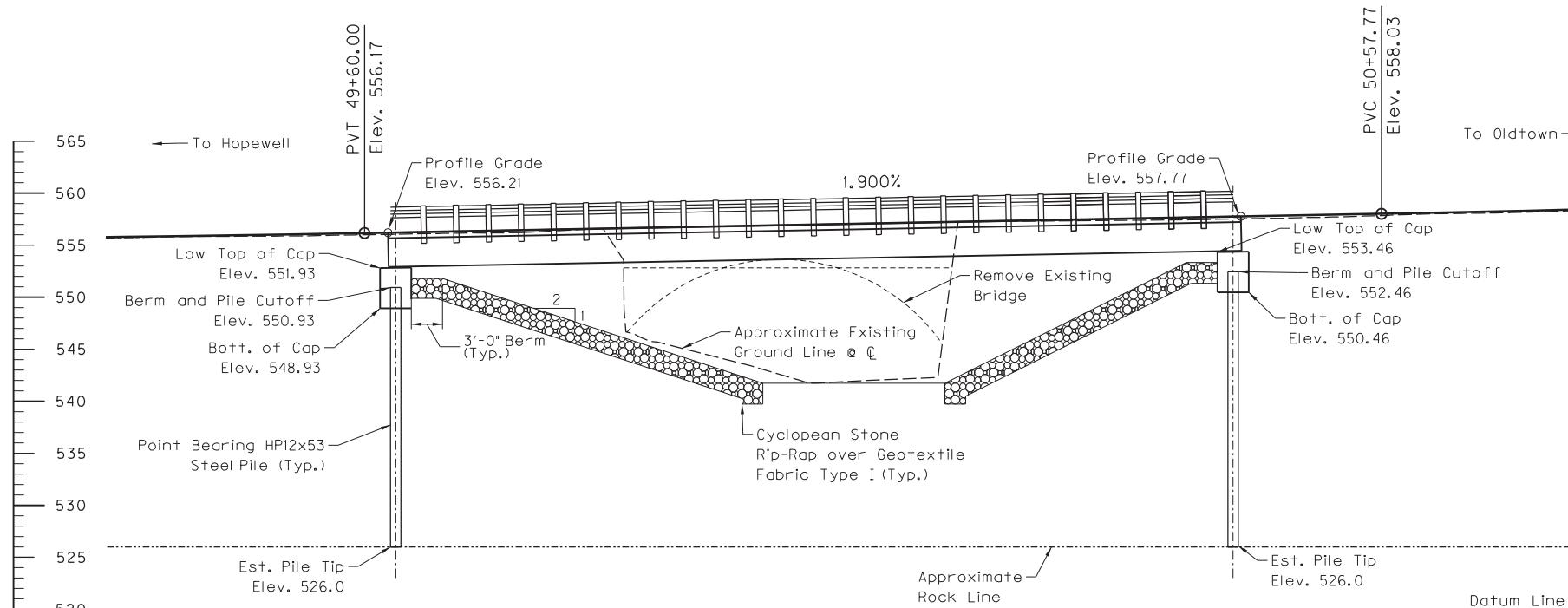
PREPARED BY
IE
INTEGRATED ENGINEERING

BRIDGING
KENTUCKY
Restore | Remove | Replace

TRAFFIC CONTROL PLAN
KY-1
OVER LOST CREEK

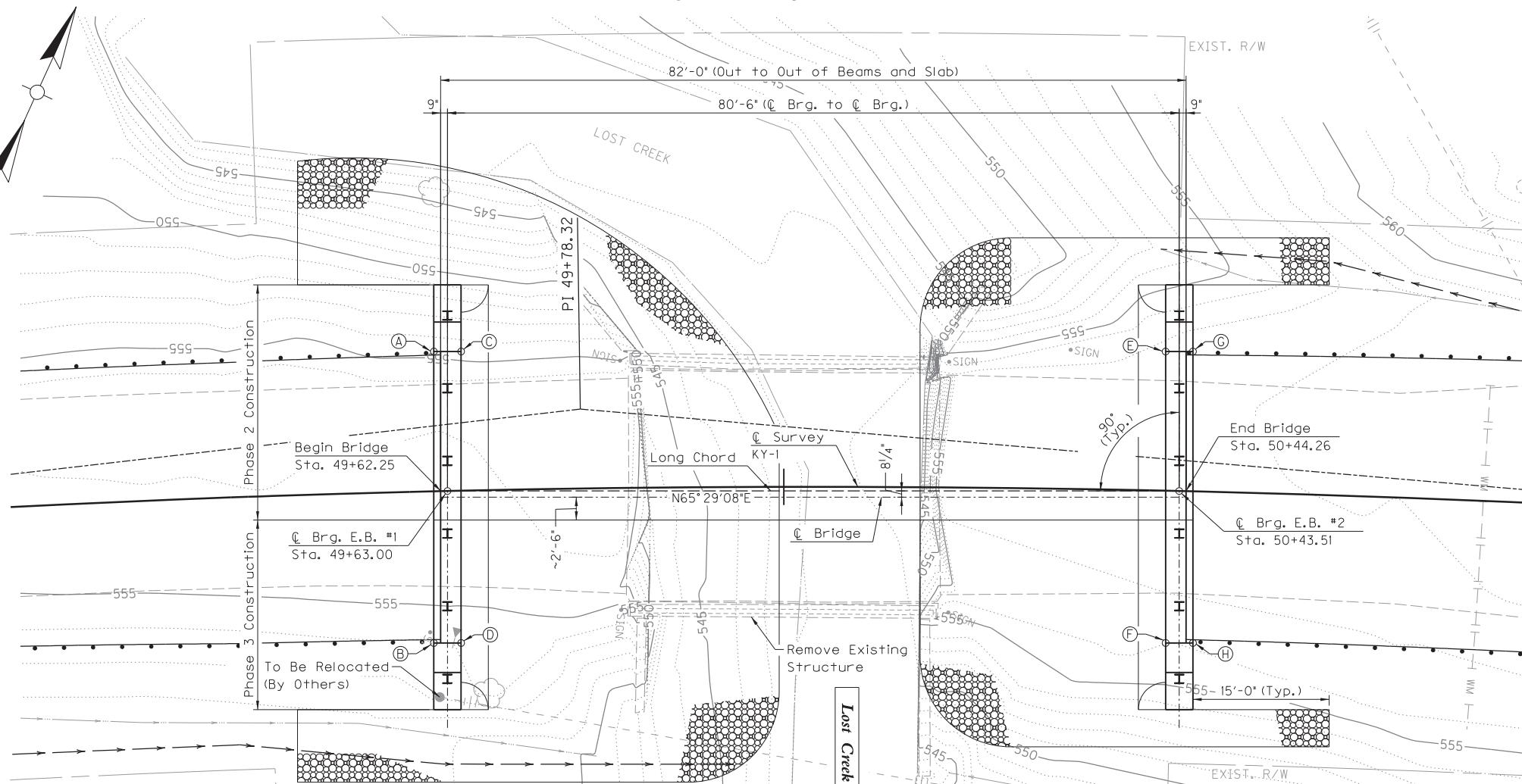
Power InRoads v8.11.9, 397	FILE NAME: ...\\9-10022.00-045B00006N_General Notes.dgn	USER: LeeS DATE PLOTTED: 3/20/2019 10:50:26 AM	E-SHEET NAME:	<p>General Notes</p> <p>Specifications: References to the specifications are to the current edition of the Kentucky Department of Highways Standard Specifications 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.</p> <p>Design Load: 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.</p> <p>Design Method: 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.</p> <p>Materials Design Specifications:</p> <table border="0"> <tr> <td>For Class "A" Reinforced Concrete</td><td>$f'c = 3500$ psi</td></tr> <tr> <td>For Class "AA" Reinforced Concrete</td><td>$f'c = 4000$ psi</td></tr> <tr> <td>For Steel Reinforcement</td><td>$fy = 60000$ psi</td></tr> </table> <p>Material Specifications: AASHTO Specifications or ASTM, current edition, as designated below shall govern the materials furnished.</p> <table border="0"> <tr> <td>AASHTO MI53</td><td>Premolded Cork Filler, Type II</td></tr> <tr> <td>AASHTO M-31</td><td>Deformed and Plain Billet-Steel for Concrete Reinforcement, Grade 60</td></tr> </table> <p>Preformed Cork Expansion Joint Material: Preformed Cork Expansion Joint Material shall conform to subsection 807.04.02 (Type II) of the Kentucky Department of Highways Standard Specifications.</p> <p>Concrete: Class "AA" Concrete is to be used throughout the superstructure. Class "A" concrete is to be used in the substructure.</p> <p>Reinforcement: Dimensions shown from the face of concrete to bars are to center of bars unless otherwise shown. 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.</p> <p>Construction Identification: The names of the Prime Contractor and the Sub-Contractor shall be imprinted in the concrete with 1 inch letters at a location designated by the engineer. The contractor shall furnish all plans, equipment and labor necessary to do the work for which no direct payment will be made.</p> <p>Beveled Edges: All exposed edges shall be beveled $\frac{3}{4}$", unless otherwise shown.</p> <p>Payment for Precast Concrete Beams: 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.</p> <p>Slope Protection: Slope Protection at abutments shall be dry cyclopean stone riprap in accordance with the plans and specifications. Geotextile Fabric, Type I shall be placed between the embankment and the slope protection in accordance with Standard Specifications 214 and 843. Payment for Geotextile Fabric, Type I, shall be considered incidental to the unit price bid for Dry Cyclopean Stone Riprap.</p> <p>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.</p> <p>Shop Drawings: Fabricators shall submit all required shop plans, by e-mail, to the design consultant for review. These submissions shall depict the shop plans, in .pdf format, as either 11" x 17" or 22" x 36" sheets. Designers will make review comments on these electronic submissions as needed and return them to the fabricator. Upon reconciliation of the designer's comments, files shall be returned to the designer. Each sheet will be electronically stamped by the designer and plans will be forwarded to the Construction Management Team for distribution. Only plans submitted directly to the Construction Management Team will be distributed, and only plans electronically stamped "Distributed by Construction Management Team" are to be used for fabrication. While this process does not require the submission of paper copies, Construction Management Team reserves the right to require such copies on a case by case basis.</p> <p>When any changes in the design plans are proposed by the fabricator or supplier, the shop drawings reflecting these changes shall be submitted to the consultant through the contractor.</p> <p>Utilities: 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).</p> <p>Verifying Field Conditions: The contractor shall field verify all dimensions before ordering material. New material that is unsuitable because of variations in the existing structure shall be replaced at the contractor's expense.</p> <p>Dimensions: Dimensions are for a normal temperature of 60 degrees fahrenheit. Layout dimensions are horizontal dimensions.</p> <p>Superstructure Slab: The superstructure slab shall be poured continuously from end to end of slab before the concrete is allowed to set.</p> <p>Mastic Tape: 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.</p> <p>Mastic Tape shall be either:</p> <ul style="list-style-type: none"> 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. <p>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.</p> <p>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 class 'AA' and no separate measurement of payment shall be made.</p> <p>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.</p> <p>Armored Edge: Fabricate armored edge to match cross slope and parabolic crown at each end of bridge.</p> <p>Foundation Preparation: Foundation Preparation shall be in accordance with Section 603 of the Specifications.</p> <p>Structural Granular Backfill: Materials for Structural Granular Backfill shall be in accordance with Section 805 of the Specifications.</p> <p>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.</p> <p>Concrete Coating: Concrete Coating is estimated at 1622 SF. It is the responsibility of the contractor to verify this estimate and bid appropriately. No payment adjustments will be made if the actual quantity is different than this estimate.</p> <p>Partial Width Construction: Project requires phased partial width construction. Refer to Phased Construction plans for phasing scheme. End Bents and slab exact partial widths shall be dependent on the extent of partial demolition of the existing bridge structure. The location of the construction joints on the end bents shall be located to provide a minimum of 2" cover to the nearest reinforcing bar. The contractor has the option to use the minimum lap splice lengths or KYTC approved mechanical couplers in accordance with the information provided within the plans and specifications. No adjustment in pay quantity will be made for the use of mechanical couplers and will be incidental to "Steel Reinforcement Epoxy Coated". The contractor shall provide temporary shoring, sheeting, steel traffic plates as needed to maintain traffic and allow partial width abutment construction.</p> <p>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 steel piling, mill test reports are not required to be notarized.</p> <p>Pile Points: 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.</p> <p>Elastomeric Bearing Pads: 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.</p>	For Class "A" Reinforced Concrete	$f'c = 3500$ psi	For Class "AA" Reinforced Concrete	$f'c = 4000$ psi	For Steel Reinforcement	$fy = 60000$ psi	AASHTO MI53	Premolded Cork Filler, Type II	AASHTO M-31	Deformed and Plain Billet-Steel for Concrete Reinforcement, Grade 60
For Class "A" Reinforced Concrete	$f'c = 3500$ psi													
For Class "AA" Reinforced Concrete	$f'c = 4000$ psi													
For Steel Reinforcement	$fy = 60000$ psi													
AASHTO MI53	Premolded Cork Filler, Type II													
AASHTO M-31	Deformed and Plain Billet-Steel for Concrete Reinforcement, Grade 60													

ITEM NUMBER	PREPARED BY	SHEET NO.
9-10022.00		S1
GENERAL NOTES		BRIDGING KENTUCKY
ROUTE KY-1		CROSSING LOST CREEK
COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS COUNTY GREENUP		



ELEVATION

80'-6" PPC Box Beam Span, CB33, Simple Span
1.25xHL-93 (KYHL-93) Live Load
29'-0" Bridge Roadway Width ~ No Skew



PLAN
(Superstructure Not Shown)

End Bent 1 Table of Elevations	End Bent 2 Table of Elevations
A 553.60	E 555.13
B 551.93	F 553.46
C 553.65	G 555.18
D 551.99	H 553.51

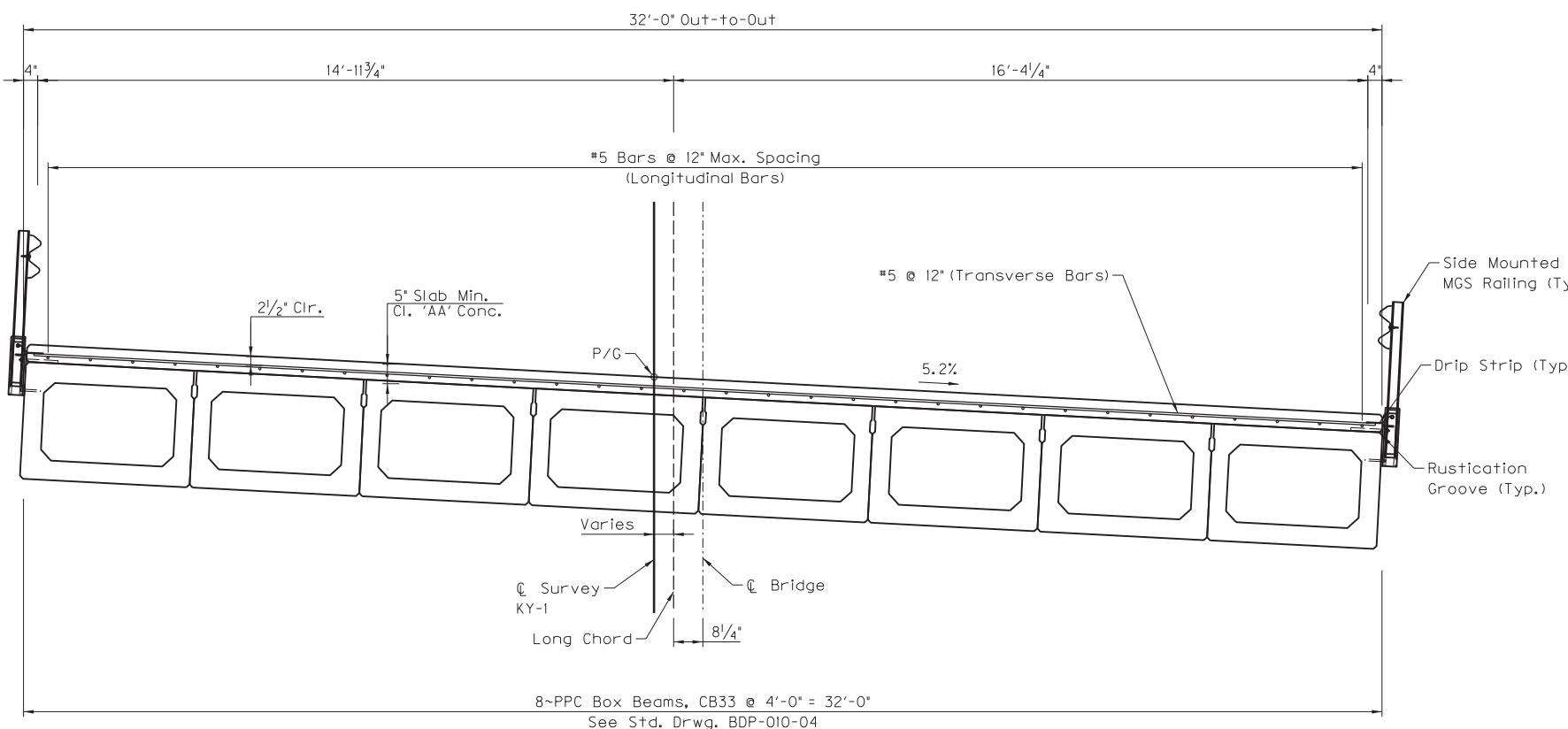
LONG CHORD COORDINATES		
STATION	State Plane Coordinates	
	NORTH (Y)	EAST (X)
49+63.00	4050795.57	5736226.52
50+43.51	4050828.98	5736299.77

REVISION	DATE
DATE: MAY 24, 2019	CHECKED BY
DESIGNED BY: L. SEWELL	B. DRECKMAN
DETAILED BY: L. SEWELL	B. DRECKMAN
Commonwealth of Kentucky	
DEPARTMENT OF HIGHWAYS	
COUNTY GREENUP	
ROUTE KY-1	CROSSING LOST CREEK
LAYOUT	

ITEM NUMBER
9-10022.00



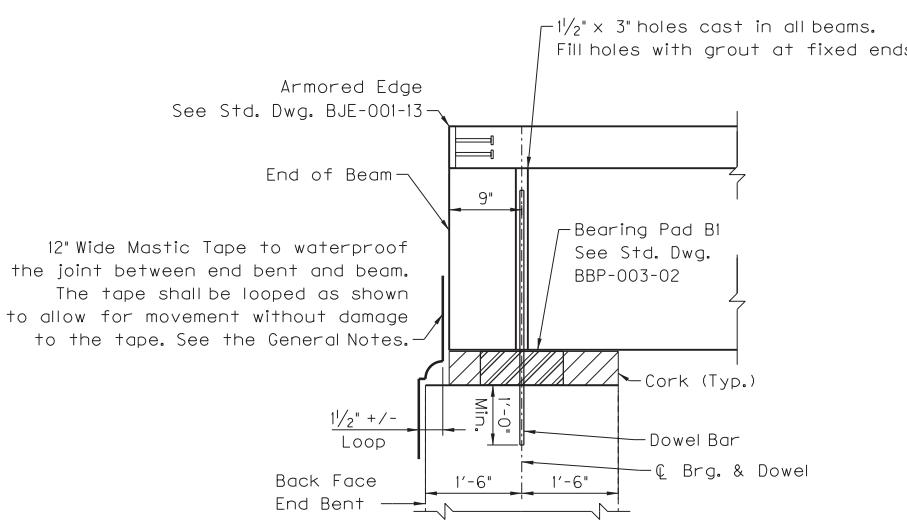
SHEET NO. S2
DRAWING NO. 27961



Slab Note:

1. Phased Partial Width Construction requires #5 transverse slab bars to be lap spliced (or mechanically coupled using KYTC approved epoxy coated couplers). Minimum required lap splice length for #5 slab bars is 2'-8". Longitudinal construction joint shall provide a minimum of 3" clear cover to the nearest longitudinal slab bar.

TYPICAL SECTION



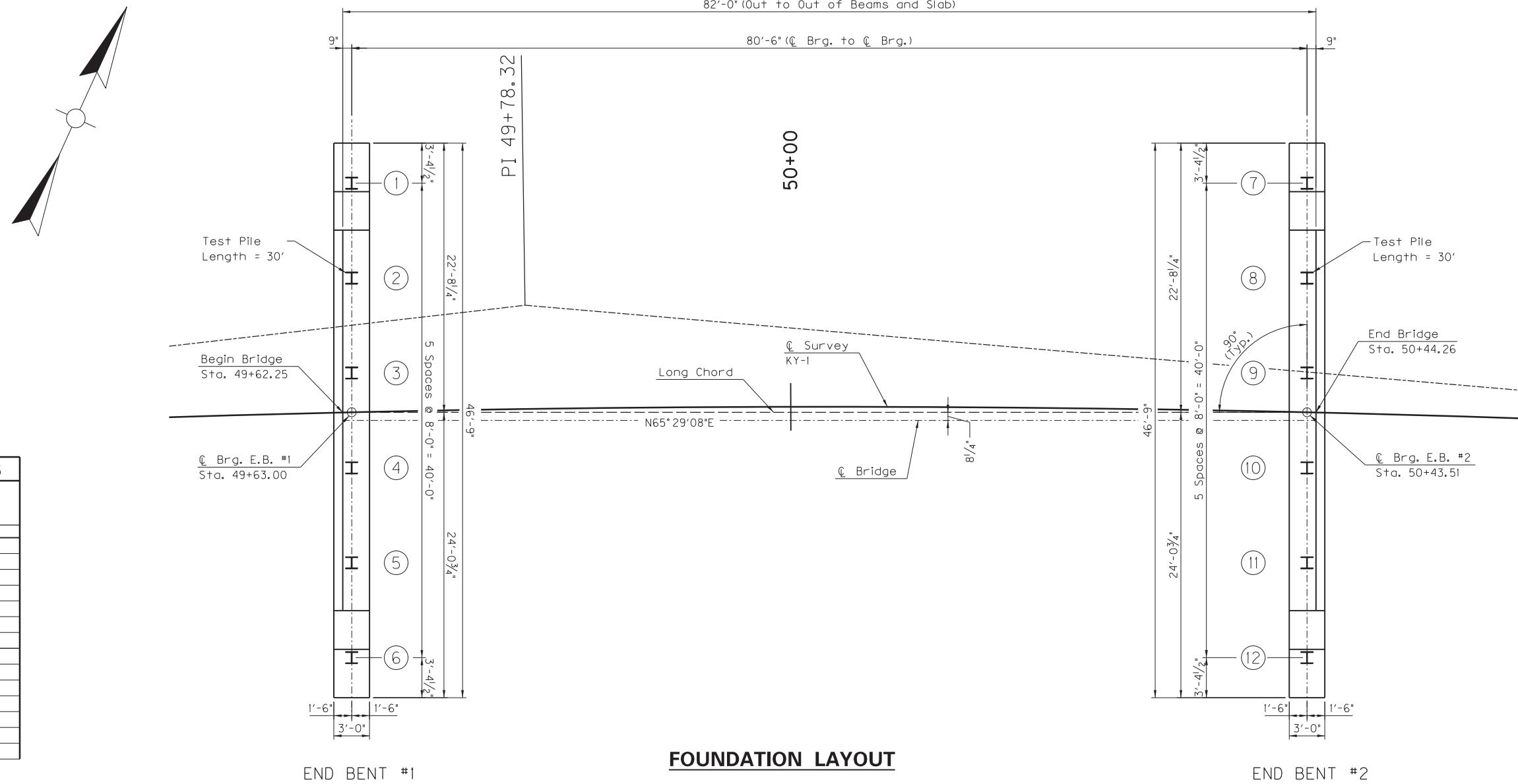
TYPICAL SECTION AT END BENT

Beam End Notes:

1. Dowel bar shall be #8 epoxy coated measuring 2'-0".
2. After cutting prestress strands flush with surface, paint with approved bituminous material, incidental to Precast Box Beams.
3. Place plastic film or other bond breaker between tape loop and expansion joint material

REVISION		DATE
DATE: MAY 24, 2019		CHECKED BY
DESIGNED BY:	L. SEWELL	B. DRECKMAN
DETAILED BY:	L. SEWELL	B. DRECKMAN
Commonwealth of Kentucky		
DEPARTMENT OF HIGHWAYS		
COUNTY		
GREENUP		
ROUTE	CROSSING	
KY-1	LOST CREEK	
TYPICAL DECK SECTION		
ITEM NUMBER	PREPARED BY	
9-10022.00	IE	
BRIDGING KENTUCKY		SHEET NO. S3
INTEGRATED ENGINEERING		DRAWING NO. 27961

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
END BENT #1				
1	550.93			133
2	550.93			133
3	550.93			133
4	550.93			133
5	550.93			133
6	550.93			133
END BENT #2				
7	552.46			133
8	552.46			133
9	552.46			133
10	552.46			133
11	552.46			133
12	552.46			133



FOUNDATION LAYOUT

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.

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.

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 $\frac{1}{2}$ ' or less for 10 consecutive blows, practical refusal is obtained after the pile is struck an additional 10 blows with total penetration of $\frac{1}{2}$ ' or less. Advance the production piling to the driving resistances specified 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.

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 I2x53 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. 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.

3. 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.

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.

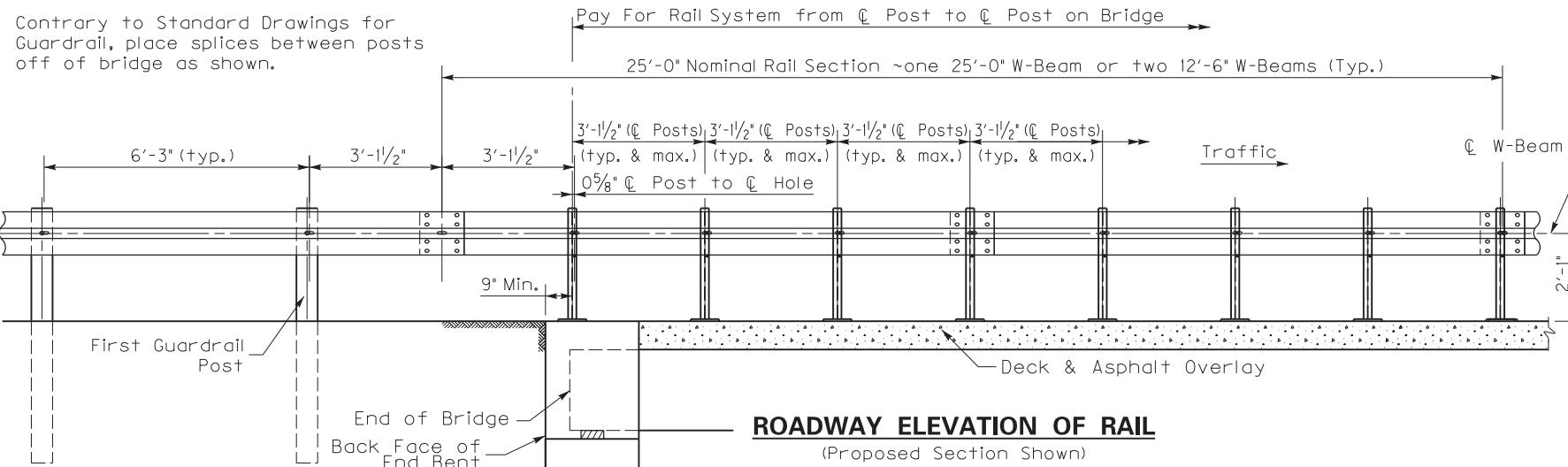
Use HP I2x53 in accordance with BPS-003, c.e.

All piles are HP I2x53 point bearing piles with 12 inch pile points.

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 floodplain. Cost of temporary shoring, sheeting, cofferdams, and any dewatering shall be considered incidental to other bid items appropriate to the work involved.

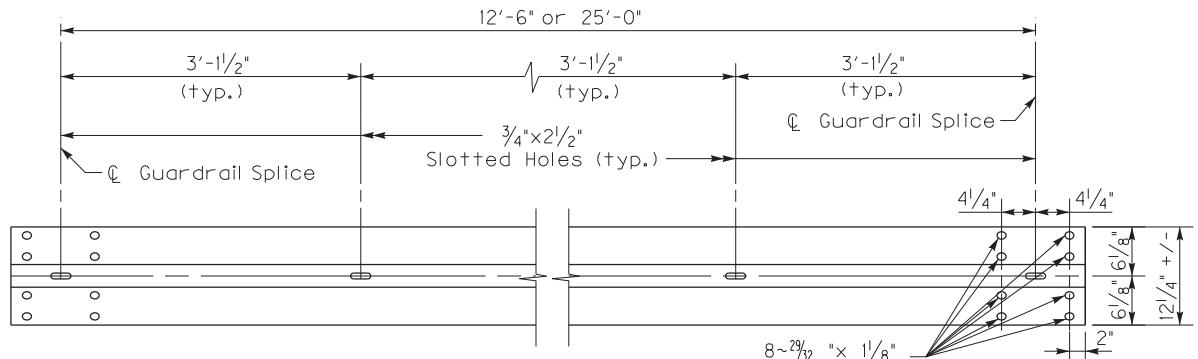
ITEM NUMBER	PREPARED BY	SHEET NO.
9-10022.00		SA
BRIDGING KENTUCKY		DRAWING NO.
INTEGRATED ENGINEERING		27961

Contrary to Standard Drawings for Guardrail, place splices between posts off of bridge as shown.



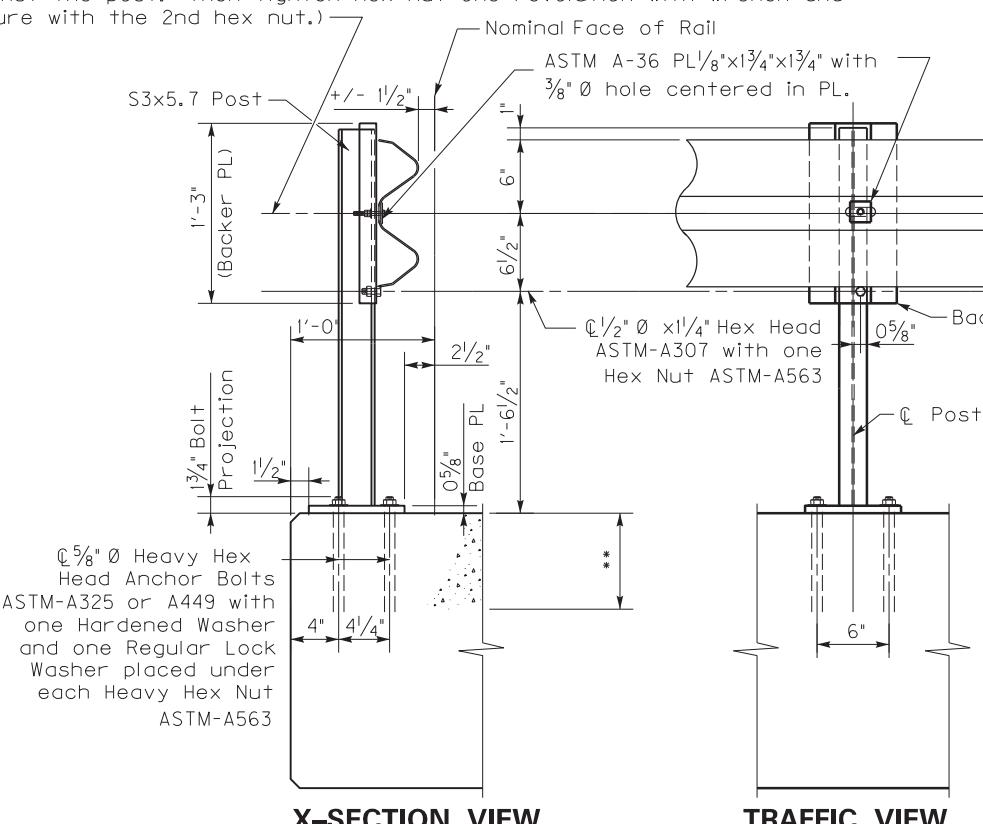
ROADWAY ELEVATION OF RAIL

(Proposed Section Shown)

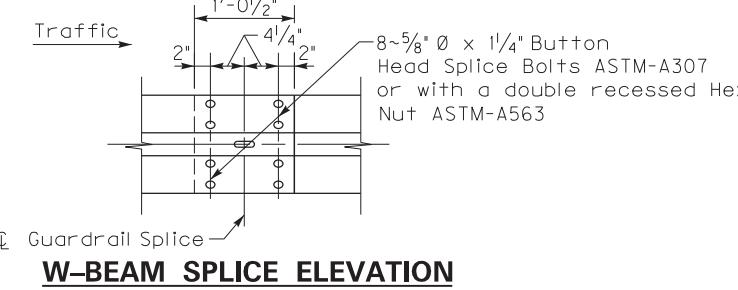


W-BEAM ELEVATION

C 5/8" 0 x 2 1/2" Hex Head Bolt ASTM-A307 with one Regular Washer and one Regular Lock Washer placed under two Hex Nuts. (Tighten the first hex nut by hand until the top and bot. edges of the W-beam engage the backer plate snug against the post. Then tighten hex nut one revolution with wrench and secure with the 2nd hex nut.)

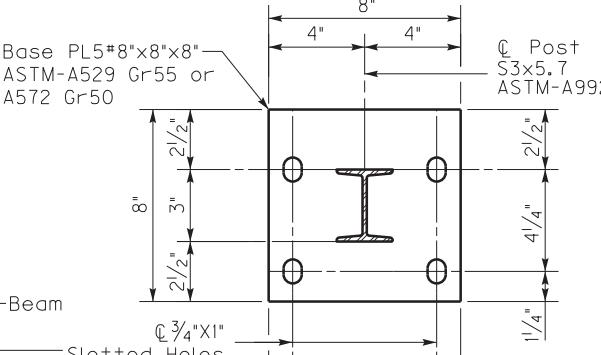


TRAFFIC VIEW

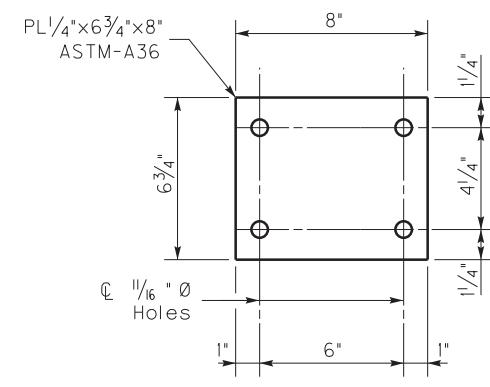


W-BEAM SPLICE ELEVATION

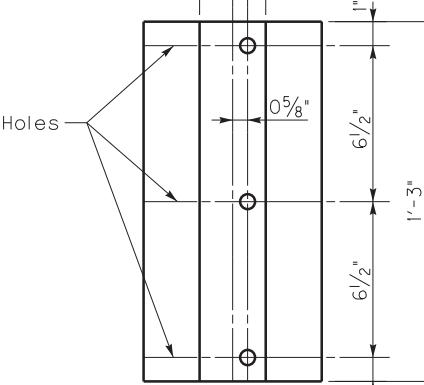
** Drill and grout anchor bolts a minimum of 7" into existing concrete deck during Phase 1 operations. Exclude asphalt overlay in embedment depth. Maintain 2'-1" barrier rail height.



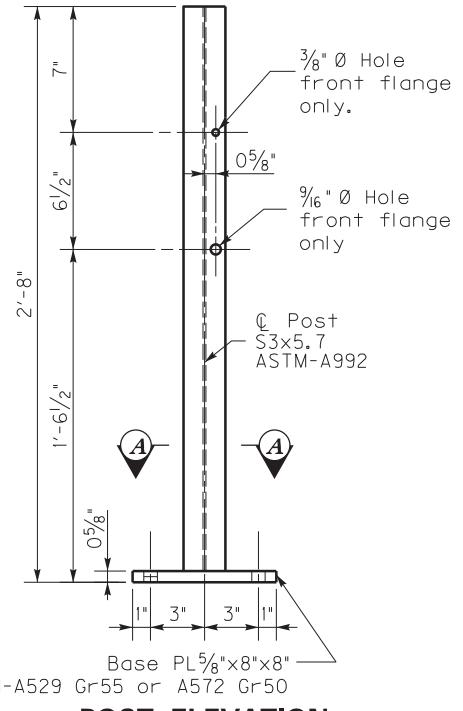
SECTION A-A



WASHER PLATE



ELEVATION
(Bent Plate)
Backer PL 1/8" x 8" x 1'-3"
ASTM-A1011 CS or SS Gr 33,
or A1008 CS or SS Gr 33
(II Gage acceptable)



POST ELEVATION

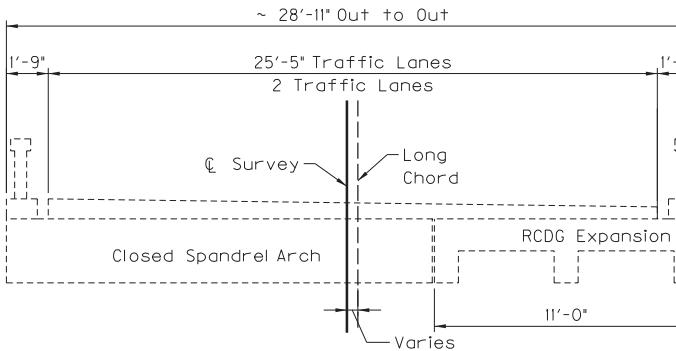
REVISION	DATE
DATE: MAY 24, 2019	CHECKED BY
DESIGNED BY: L. SEWELL	B. DRECKMAN
DETAILED BY: L. SEWELL	B. DRECKMAN
Commonwealth of Kentucky	
DEPARTMENT OF HIGHWAYS	
CROSSING	
ROUTE KY-1	LOST CREEK
RAILING SYSTEM TYPE T631	
PREPARED BY	
IE	
BRIDGING KENTUCKY	
SHEET NO. S7	
DRAWING NO. 27961	

TRANSITION AND END TREATMENT NOTES:
This traffic railing must be anchored by a minimum of 25 feet of guardrail. This 25 feet at each corner of the bridge is to be paid with the roadway plans. See roadway plans for layout.

CONSTRUCTION NOTES:
Face of rail post must be plumb unless otherwise approved by the Engineer. Post must be perpendicular to adjacent roadway grade. Use epoxy mortar with Type III binder conforming to Section 826 and ASTM C881 under post base plates if gaps larger than $\frac{1}{16}$ " exist. Fully anchored guardrail must be attached to each end of rail. Typical guardrail construction as indicated above and not bridge rail transition or bridge end connector. It is recommended that the bridge plans show rail post locations. Round or chamfer exposed edges of rail posts and backer Plate to approximately $\frac{1}{16}$ " by grinding. Shop drawings are not required.

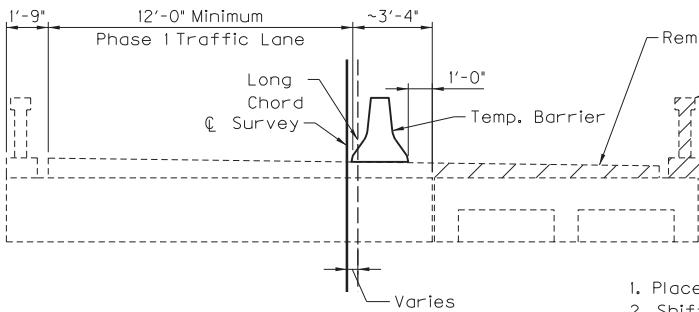
MATERIAL NOTES:
Galvanize all steel components. Anchor bolts for base plate must be $\frac{5}{8}$ " 0 ASTM-A325 or A449 bolts with one hardened washer and one regular lock washer placed under each heavy hex nut. Nuts must conform to A563 requirements. W-beam must meet the requirements of Std. Dwg. RBR-001-12 except as modified in these plans. The contractor may furnish rail elements of 25'-0" or 12'-6" (Nominal) lengths. W-beam must have slotted holes at 3'-1 1/2".

GENERAL NOTES:
This railing has been successfully evaluated by full scale crash test to meet MASH TL-3 criteria. This railing can be used for speeds 50 mph and greater. This rail is designed to deflect approximately 4' - 4'-6" as it contains and redirects the errant vehicle. This rail may not be installed on top of or behind curbs that project above finished grade, on bridges with expansion joints providing more than 5" of movement, on retaining walls, or on grade separations and interchanges. Repairs to impact-damaged post and base plate unit are not permitted. Replace all impact-damaged posts with a new post and base plate unit. Average weight of railing with no overlay: 19 plf total.



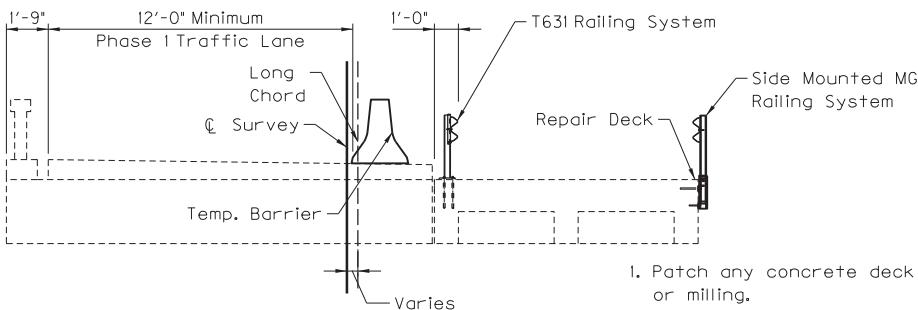
TYPICAL SECTION EXISTING

Note: Field Verify Existing Dimensions



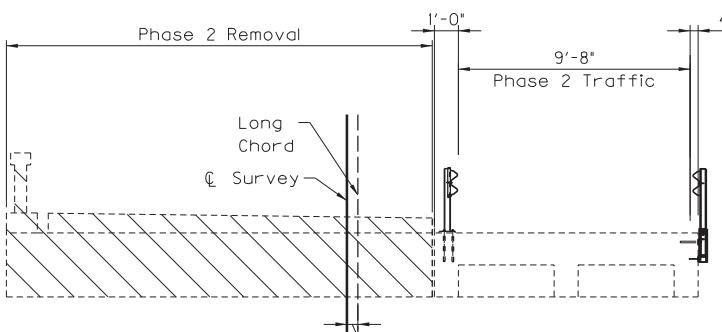
PHASE 1 REMOVAL

1. Place Temporary 9T Barrier
2. Shift traffic to Westbound lane (two way operations)
3. Remove existing barrier on RCDG section of structure.
4. Asphalt Overlay should be milled down to concrete deck in order to maintain specified railing heights for temporary barriers.



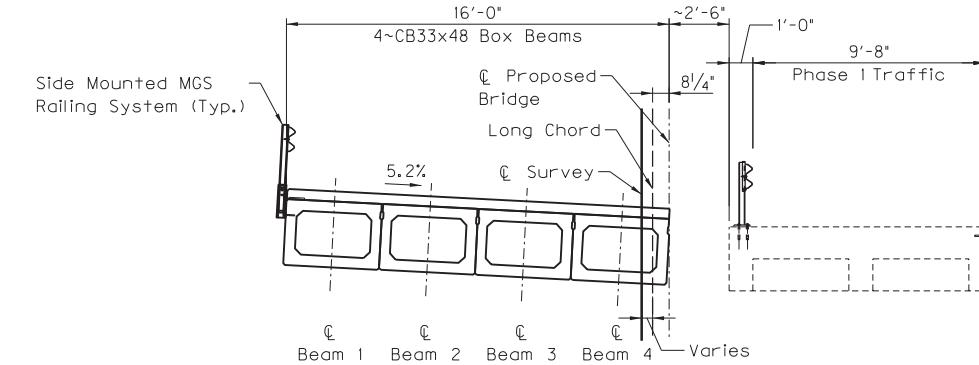
PHASE 1 CONSTRUCTION

1. Patch any concrete deck surface damaged in barrier removal or milling.
2. Install Side Mounted MGS Rail System into existing RCDG Structure. Maintain 2'-1" barrier height to 1/2 W-Beam
3. Install T631 Railing System by drilling and grouting anchor bolts a minimum of 7" into existing concrete deck. Maintain 2'-1" barrier rail height to 1/2 W-Beam.



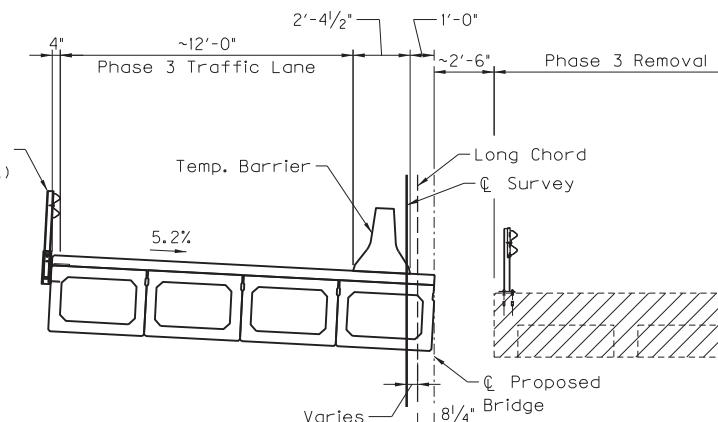
PHASE 2 REMOVAL

1. Shift traffic to Eastbound lane (two way operations).
2. Remove existing North side Spandrel Arch and wingwalls.



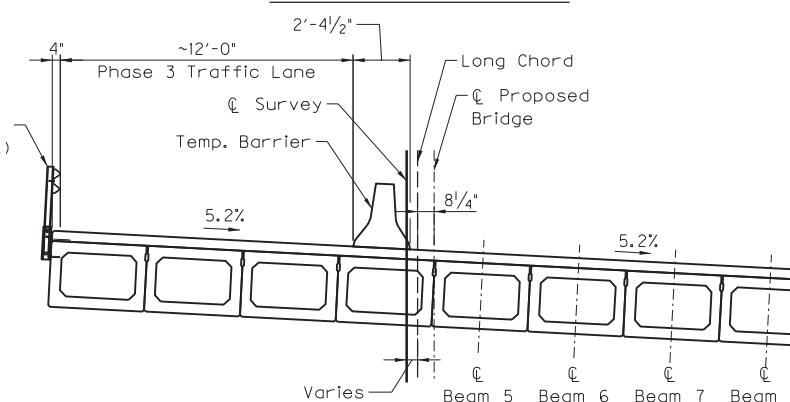
1. Construct End Bents 1 and 2 on the North side.
2. Set Beams 1-4 of new structure.
3. Place 5" Concrete Slab.
4. Place Side Mounted MGS Railing System.

PHASE 2 CONSTRUCTION



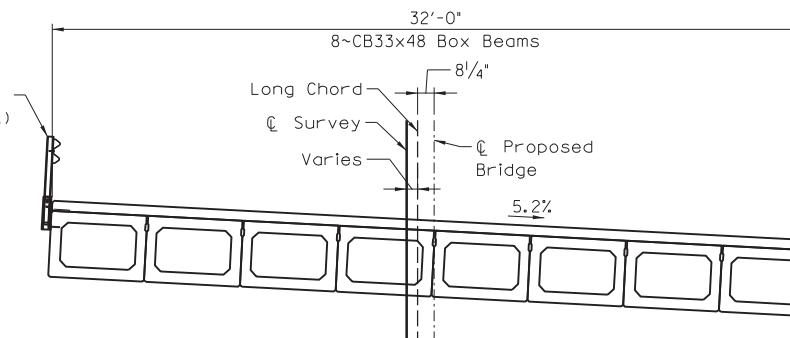
1. Install temporary barrier Type 9T on newly constructed bridge.
2. Shift traffic to Westbound lane on new bridge (Two Way Operations).
3. Remove remaining existing structure.

PHASE 3 REMOVAL



1. Construct remaining portion of End Bents.
2. Set Beams 5-8 and place 5" slab.
3. Place Side Mounted MGS Railing System.

PHASE 3 CONSTRUCTION



TYPICAL SECTION - FINAL

(Slab and Beam Reinforcement not shown for clarity)

ITEM NUMBER
9-10022.00

REVISION	DATE
DATE: MAY 24, 2019	CHECKED BY
DESIGNED BY: L. SEWELL	B. DRECKMAN
DETAILED BY: L. SEWELL	B. DRECKMAN
Commonwealth of Kentucky	
DEPARTMENT OF HIGHWAYS	
COUNTY	
GREENUP	
ROUTE	CROSSING
KY-1	LOST CREEK
PHASED CONSTRUCTION	
PREPARED BY	BRIDGING KENTUCKY
SHEET NO.	SB
DRAWING NO.	27961



Restore | Renew | Replace