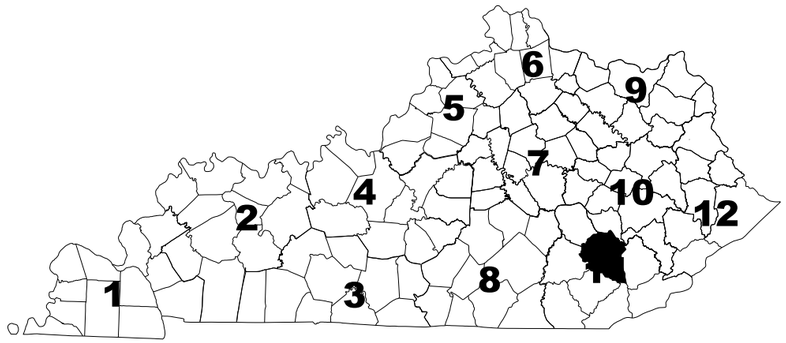
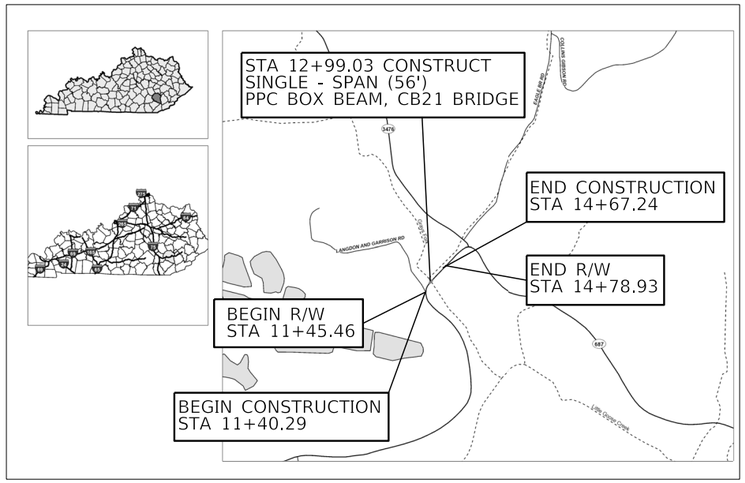
COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

TEAM KENTUCKY
TRANSPORTATION CABINET

PLANS OF
PROPOSED PROJECT
Clay County

KY 687 BRIDGE REPLACEMENT OVER GRAYS FORK





LAYOUT MAP

DESIGN CRITERIA

CLASS OF HIGHWAY	Minor Collector
TYPE OF TERRAIN	Rolling
DESIGN SPEED	X
REQUIRED NPSD	X
REQUIRED PSD	X
LEVEL OF SERVICE	X
ADT PRESENT (2021)	479
ADT FUTURE (X)	X
DHV	X
D %	X
T %	X

GEOGRAPHIC COORDINATES

LATITUDE 37 DEGREES 10 MINUTES 8 SECONDS NORTH
LONGITUDE 83 DEGREES 50 MINUTES 17 SECONDS WEST

DESIGNED

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

INDEX OF SHEETS

STANDARD DRAWINGS

SEPIA001	RBI002
RBR005	RBR010
RBR015	RBR050
RBR055	RDI040
RDX210	RDX225
RGX001	RGX005
TPM175	TTC110
TTS105	RBM115

BEFORE YOU DIG

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.

THE CONTROL OF ACCESS ON THIS PROJECT SHALL BE BY PERMIT

THIS PROJECT IS OFF THE NH SYSTEM

LENGTH 326 LIN. FT. 0.062 MILES	LENGTH X LIN. FT. X MILES	LENGTH X LIN. FT. X MILES	LENGTH X LIN. FT. X MILES
ADDED / DEDUCTED FOR EQUALITIES X LIN. FT.	ADDED / DEDUCTED FOR EQUALITIES X LIN. FT.	ADDED / DEDUCTED FOR EQUALITIES X LIN. FT.	ADDED / DEDUCTED FOR EQUALITIES X LIN. FT.
NOT INCLUDED	NOT INCLUDED	NOT INCLUDED	NOT INCLUDED
RAILROAD CROSSINGS NO. X LIN. FT.	RAILROAD CROSSINGS NO. X LIN. FT.	RAILROAD CROSSINGS NO. X LIN. FT.	RAILROAD CROSSINGS NO. X LIN. FT.
BRIDGES 56 LIN. FT.	BRIDGES X LIN. FT.	BRIDGES X LIN. FT.	BRIDGES X LIN. FT.
X	X	X	X
X	X	X	X

STATE OF KENTUCKY
CHRISTOPHER A SMITH
34429
LICENSED PROFESSIONAL ENGINEER
Chris Smith, PE #34429
1/31/2025

PROJECT NUMBER: TBD

KY 687 BRIDGE REPLACEMENT OVER GRAYS FORK

RECOMMENDED BY: Carl VanZee, PE — PROJECT MANAGER — DATE:

PLAN APPROVED BY: — STATE HIGHWAY ENGINEER — DATE:

LETTING DATE: TBD

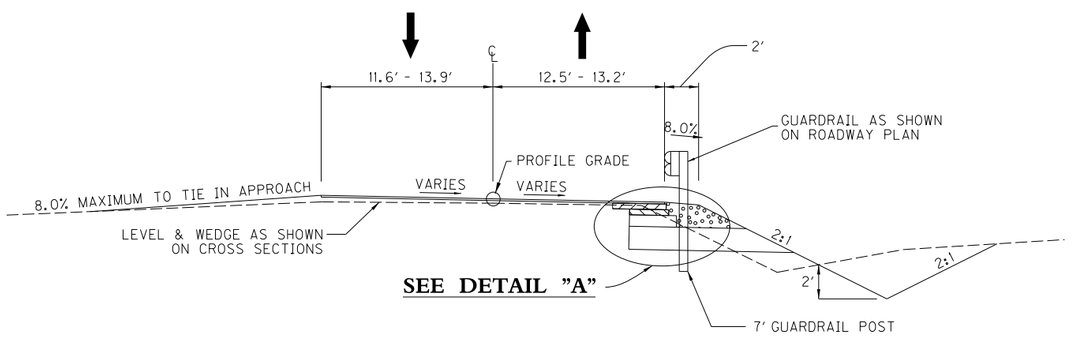
ITEM NO. N/A COUNTY OF CLAY

SHEET NO. R001

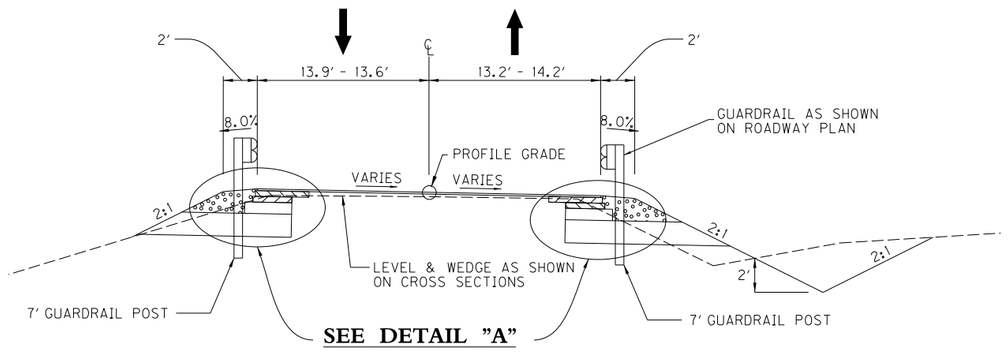
OpenRoads Designer v10.11.00.115 USER: CHRISTSMITH FILE NAME: C:\PWWORKING\EAST01\D3681007\026B00086N_R001.DGN

TYPICAL SECTIONS

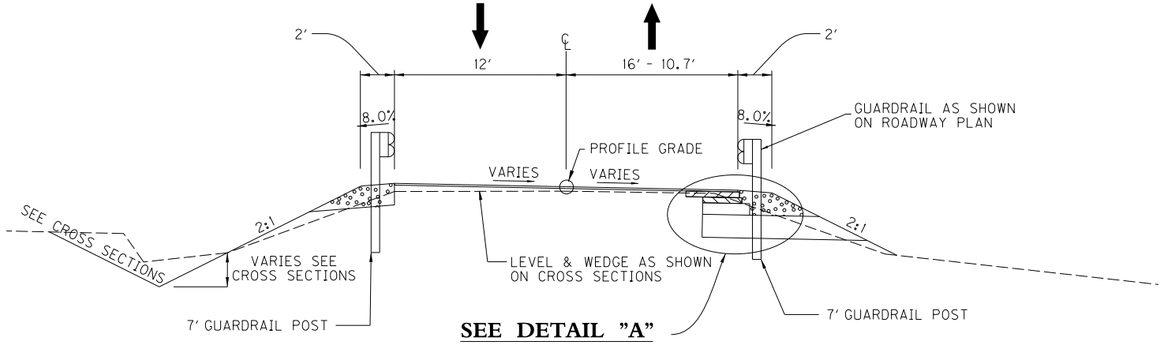
STA 11+95.96 – STA 12+46.24



STA 12+46.24 – STA 12+70.96

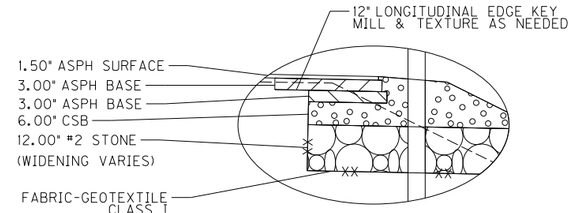


STA 13+27.04 – STA 14+17.04



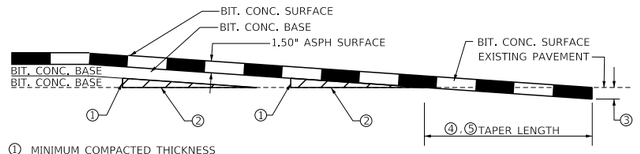
KY 687 PAVEMENT
(WIDENING VARIES)

ASPHALT SURFACE	1.50" DEPTH CL2 ASPHALT SURFACE 0.38D PG 64-22
ASPHALT BASE	6" DEPTH (3"+3") CL2 ASPHALT BASE 1.00D PG 64-22
CSB	6" DEPTH
#2 STONE	12" DEPTH



DETAIL "A"

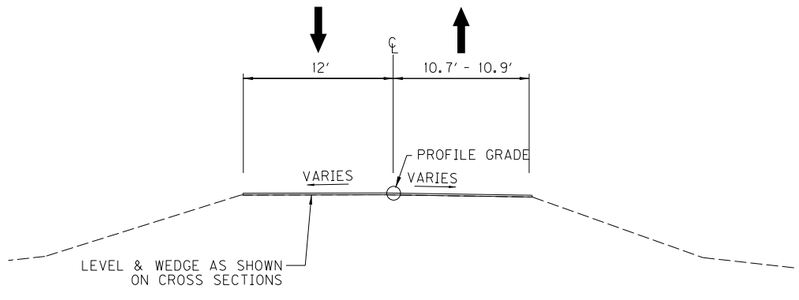
TAPERING OF OVERLAYS ON MEDIUM SPEED FACILITIES (45mph to 65mph)
RECOMMENDED TAPER RATE 1:600 (1" : 50')



① MINIMUM COMPACTED THICKNESS
② BIT. MIXTURE FOR LEVELING & WEDGING OR NEXT COURSE OF BIT. MIX.
③ BIT. SURFACE THICKNESS (FULL DEPTH)
④ MILL EXISTING PAVEMENT TO RECEIVE BIT. SURFACE FULL DEPTH (EDGE KEY).
⑤ TAPER LENGTH (ft) = $\frac{1.5 \times 600}{12}$

FOR A TAPER RATE OF 1:600 (1" :50')
TAPER LENGTH = 62.5 FEET WHEN t = 1.25 inches
TAPER LENGTH = 75 FEET WHEN t = 1.50 inches

STA 14+17.04 – STA 14+50



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

DRAWING TITLE: TYPICAL SECTIONS

ITEM NO. TBD
COUNTY OF CLAY
SHEET NO. R002

Corporate Limits
County Line
Easement
Fence COA
Mineral Parcel
Property Line
Right of Way Line
All Overhead Utility Lines
Cable Underground Electric With Quality Levels
Duct Underground Electric With Quality Levels
Cable Underground Fiber With Quality Levels
Cable Underground Telephone With Quality Levels
Duct Underground Telephone With Quality Levels
Cable Underground TV With Quality Levels
Main Gas With Quality Levels
Main Water With Quality Levels
Main Water Greater Than 12 With Quality Levels
Sewer Sanitary With Quality Levels
Sewer Sanitary Force Main With Quality Levels
Sewer Storm WIth Quality Levels
Multi Utility Bank Quality Levels
Oil Line Quality Levels
Steam Line Quality Levels
Cable Underground Electric Marker
Duct Underground Electric Marker
Cable Underground Fiber Marker
Cable Underground Telephone Marker
Duct Underground Telephone Marker
Cable Underground TV Marker
Main Gas Marker

Main Water Marker
Main Water Greater Than 12 Marker
Sewer Sanitary Marker
Sewer Sanitary Force Main Marker
Sewer Storm Marker
Multi Utility Bank Marker
Oil Line Marker
Steam Line Marker
Cable Guardrail
Ditch
Edge of Water
Fence Hedge
Fence
Flow Line/Thalweg/ Int. Stream or Ditch
Guardrail
Railroad
Shrub Line
Sink Hole
Tree Line
Wall (WSM or DSM)
Blue Line Stream
Lakes and Ponds
Regulated Floodway
RDZ Line
ADA Ramp
Anchor Pole
Benchmark
Bike Lane Symbol
Bollard
Centerline
Centerline Stationing
Control Monument
Control Point
Core Hole
Crash Cushion TY 6 D
Crash Cushion TY 6 A
Crash Cushion TY 9A

Crash Cushion TY 9
Cross Notch
Curb Box Inlet
Curb Notch
Combination Pole
Delineator Post
Drop Box
Existing Spring
Electric Manhole
Electric Meter
Electric Pedestal
Electric Pole
Electric Junction Box
Fire Hydrant
Flag Pole
Force Main Sewer Valve
Fuel Tank Inlet
Fuel Tank Vent
Gas Meter
Gas Monitoring Well
Gas Valve
Gas Vent
Gas Well
Guidewires & Anchors
Headstone
Interstate Shield
Iron Pin
Light Pole
Low Wire
Mag Nail
Mailbox
Manhole
Mile Marker Post
Mineral Parcel
Misc Location Point
Monitoring Well
Parking Meter
Pedestrian Signal
Pins/Pipes
PK Nail

Point (Misc)
Pole
Pole (Light)
Post
Power Pole
Quarry
Random (Ground Shot)
Railroad Mile Marker
Railroad Spike
Right of Way Marker
Right of Way Monument
RR Traffic Signal Pole
RW Parcel
Sanitary Cleanout
Sanitary Manhole
Satelite Dish
Septic Tank Cleanout
Service Pole
Sewer Air Release Valve
Shrub
Sign
Sign Post (Single)
Sign with 2 posts
Sign group (4)
Station Stamp
Storm Manhole
Stub Power
Stub Telephone
Survey Cross Notch
Survey Curb Notch
Survey Nail
Survey Spike
Survey Stone Marker
Swamp
Telephone Booth
Telephone Junction Box
Telephone Line Overhead
Telephone Manhole

Telephone Pedestal
Telephone Pole
Temporary Benchmark
Traffic Light
Traffic Signal Control Box
Traffic Signal Junction Box
Traffic Signal Pole
Traverse Point
Tree
TV Junction Box
Utility Pole
Underground Storage Tank
Utility Test Hole
Water Line Marker
Water Meter
Water Spigot
Water Valve
Water Well
Yard Light
Yard Sprinkler
Yard Sprinkler Water Valve

Utility Owners

TIME WARNER CABLE
866-874-2389

WINDSTREAM
Marcus Johnson - 606-505-6510

MANCHESTER WATER WORKS
Mike White - 606-813-8480

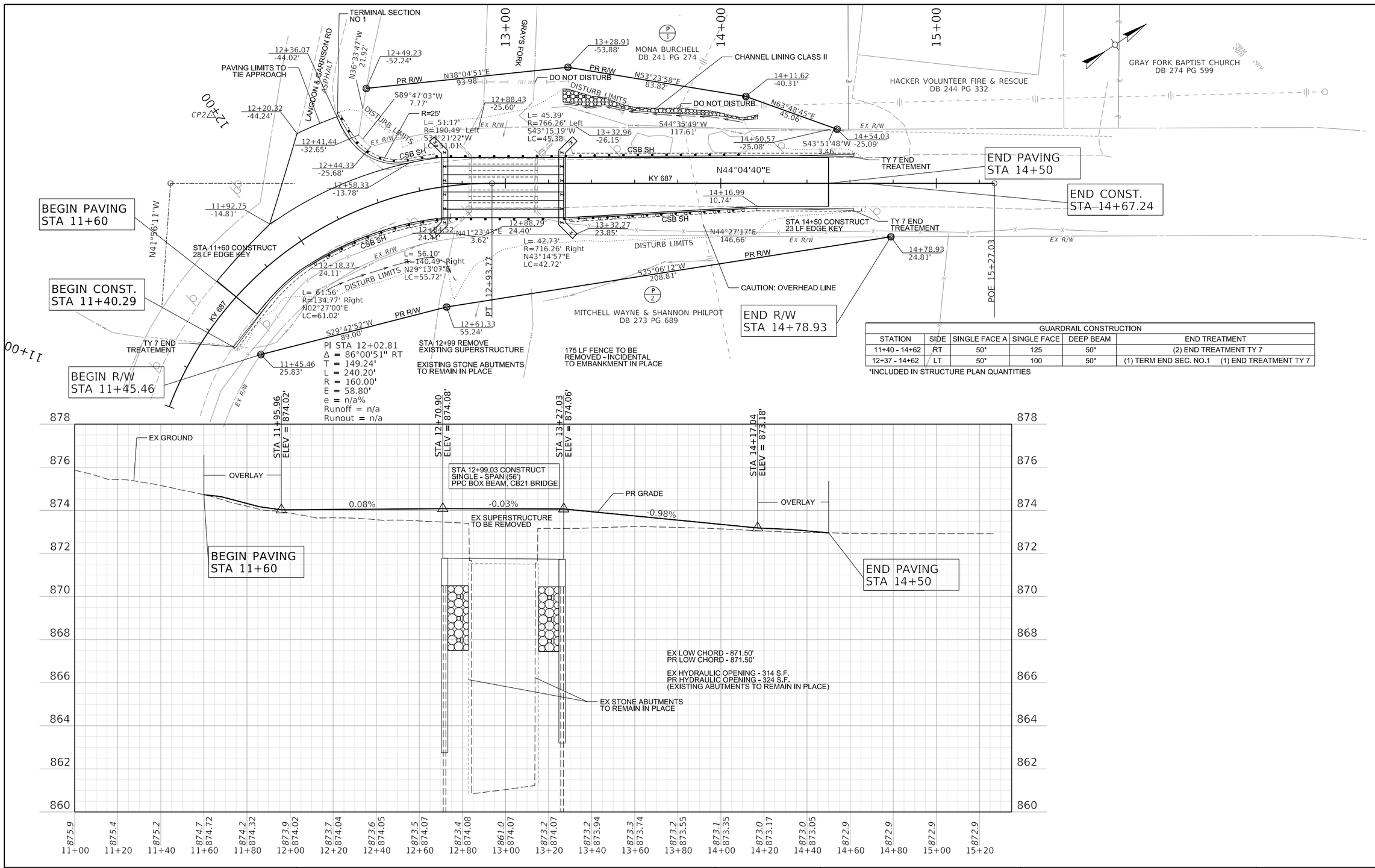
JACKSON ENERGY COOPERATIVE
RYAN HENDRICKSON - 606-364-1000

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

TEAM KENTUCKY

DRAWING TITLE: LEGEND & UTILITY OWNERS

ITEM NO. TBD
COUNTY OF CLAY
SHEET NO. R002B



GUARDRAIL CONSTRUCTION					
STATION	SIDE	SINGLE FACE A	SINGLE FACE	DEEP BEAM	END TREATMENT
11+40 - 14+62	RT	50*	125	50*	(2) END TREATMENT TY 7
12+37 - 14+62	LT	50*	100	50*	(1) TERM END SEC. NO.1 (1) END TREATMENT TY 7

*INCLUDED IN STRUCTURE PLAN QUANTITIES

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

TEAM KENTUCKY

KY 687 OVER GRAYS FORK
PLAN AND PROFILE SHEET

HORIZONTAL SCALE
SCALE: 1"=20'

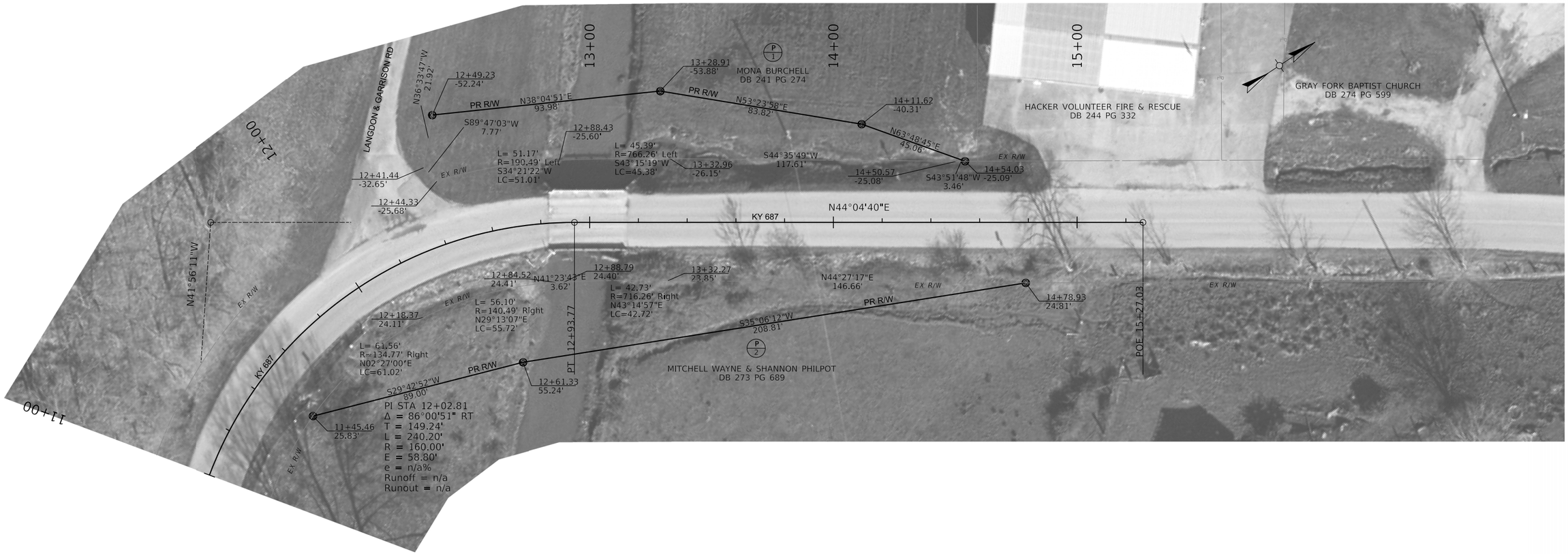
VERTICAL SCALE
SCALE: 1" = 2'

0' 20' 40' 80'
0' 2' 4' 8'

STA. 11+40.29 TO STA. 14+67.24

ITEM NO. TBD
COUNTY OF CLAY
SHEET NO. R003

OpenRoads Designer v10.12.02.4
USER: CHRISTSMITH
FILE NAME: C:\PWWORKING\EAST01\D3681007\026B00086N_R003.DGN



RIGHT OF WAY SUMMARY

TYPE SEWER SYSTEM
1. PRIVATE - INDIVIDUAL
2. PRIVATE - MULTI PARTY
3. PUBLIC
4. NONE
5. NOT APPLICABLE

BUILDINGS ACQUIRED CODE
C - COMMERICAL
R - RESIDENTIAL
F - FARM
S - STORAGE

PARCEL NO.	OWNER(S)	TOTAL AREA OF TRACT		PERMANENT R/W ACQUIRED		EASEMENTS		AREA SEVERED				EXCESS PURCHASED		PORTION REMAINING		SEWER SYSTEM TYPE	SEWER SYSTEM AFFECTED BY PROJECT		BUILDINGS ACQUIRED NUMBER				SOURCE OF TITLE	REMARKS*
						PERMANENT	TEMPORARY	LEFT		RIGHT														
		ACRES	SQ. FT.	ACRES	SQ. FT.	SQ. FT.	SQ. FT.	ACRES	SQ. FT.	ACRES	SQ. FT.	ACRES	SQ. FT.	ACRES	SQ. FT.		YES	NO	C	R	F	S		
1	MONA BURCHELL	564.25		0.103	4467					564.15				564.15		1		X	-	-	-	-	DB 241 PG 274	
2	MITCHELL WAYNE & SHANNON PHILPOT	108		0.127	5531					107.87				107.87		1		X	-	-	-	-	DB 273 PG 689	

NOTE: PERMANENT R/W ACQUIRED + AREA SEVERED = TOTAL AREA OF TRACT.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

RIGHT OF WAY SHEET

HORIZONTAL SCALE
SCALE: 1"=20'

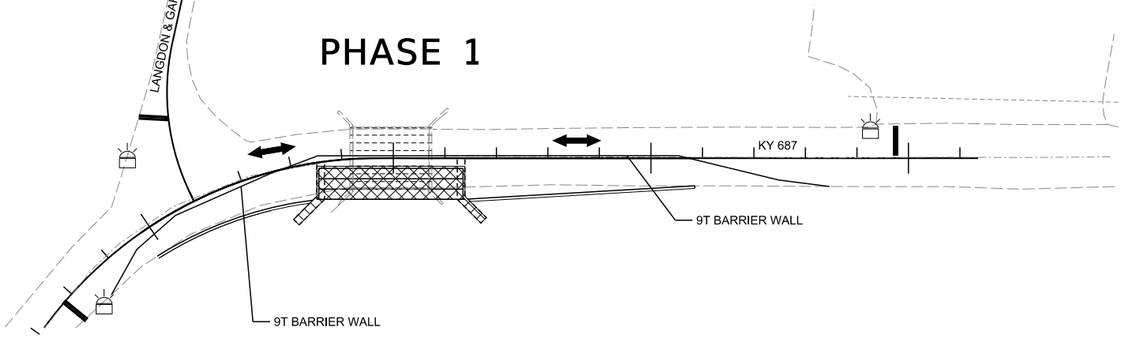
0' 20' 40' 80'

STA. 11+45.46 TO STA. 14+78.93

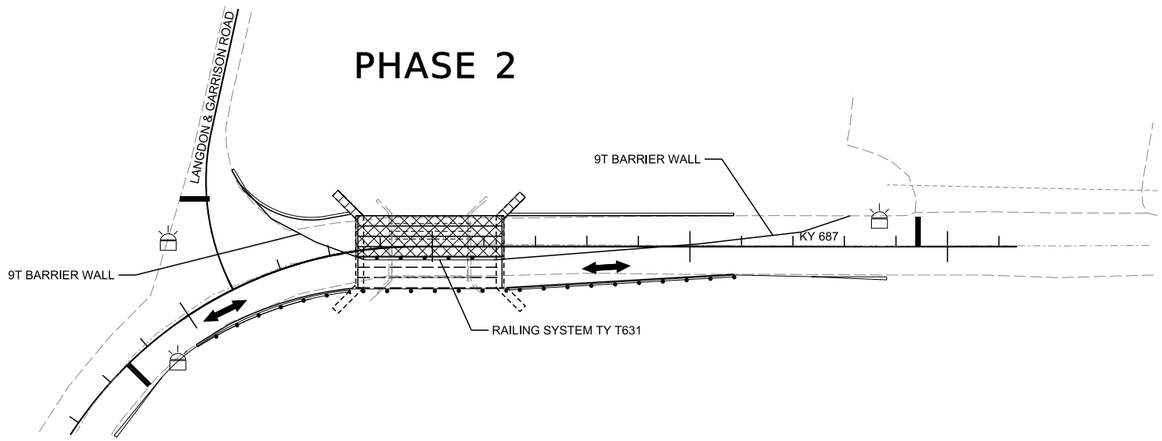
ITEM NO. TBD
COUNTY OF CLAY
SHEET NO. R004

MAINTENANCE OF TRAFFIC

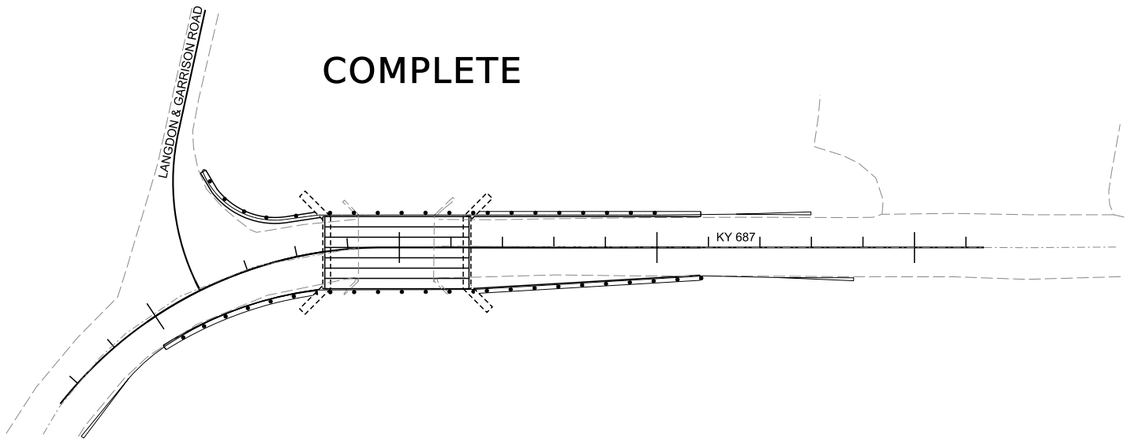
PHASE 1



PHASE 2



COMPLETE



MAINTENANCE OF TRAFFIC PHASING:

CONSTRUCTION OF THE PROPOSED BRIDGE AND REMOVAL OF THE EXISTING BRIDGE IS TO BE ACCOMPLISHED IN PHASES IN ACCORDANCE WITH THESE PLANS AND THE ROADWAY MAINTENANCE OF TRAFFIC PLANS.

PHASE 1

1. INSTALL AND MAINTAIN TEMPORARY TRAFFIC CONTROL SIGNS AND DEVICES PER KYTC STANDARD DRAWING TTC-100-05 AND TTC-110-04 ALONG KY 687.
2. DIRECT TRAFFIC TO SOUTHBOUND EXISTING KY 687. THREE-PHASE TEMPORARY SIGNALS SHALL BE INSTALLED AS PER THE MOT PLAN AS SHOWN.
3. INSTALL TEMPORARY BARRIER WALL SEPARATING TRAFFIC LANES AND REMOVE EAST SIDE OF EXISTING BRIDGE.
4. CONSTRUCT PHASE 1 OF NEW BRIDGE, PROPOSED ROADWAY WIDENING AND PERMANENT GUARDRAIL.

PHASE 2

1. INSTALL ALL REMAINING APPLICABLE SIGNS AND DEVICES PER KTYC STANDARD DRAWING TTC-150-04 AND TTC-110-04.
2. INSTALL TEMPORARY GUARDRAIL AND BARRIER WALL SEPARATING TRAFFIC LANES AND DIRECT TRAFFIC TO NORTHBOUND KY 687 THAT WAS CONSTRUCTED IN PHASE 1.
4. REMOVE REMAINING PORTION OF EXISTING KY 687 BRIDGE ON SOUTHBOUND SIDE.
5. CONSTRUCT REMAINING PORTION OF KY 687 BRIDGE AND ROADWAY AS SHOWN ON PLANS.

PHASE 3

1. INSTALL PERMANENT SIGNS ALONG NEW ROADWAY AND REQUIRED PAVEMENT MARKINGS.
2. REMOVE TEMPORARY GUARDRAIL AND BARRIER WALL. CONSTRUCT PERMANENT GUARDRAIL ON SOUTHBOUND SIDE.
3. DIRECT TRAFFIC TO PROPOSED KY 687 BRIDGE AND ROADWAY.

LEGEND

- STRUCTURE CONSTRUCTION
- GUARDRAIL
- ONE-LANE TRAFFIC THIS PHASE
- TEMPORARY 24" STOP BAR
- TEMPORARY TRAFFIC SIGNAL

FOR MAINTENANCE OF TRAFFIC ONLY

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

MAINTENANCE OF TRAFFIC PHASING

ITEM NO. TBD
COUNTY OF CLAY
SHEET NO. R005

MAINTENANCE OF TRAFFIC

GENERAL NOTES

1. TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND THE STANDARD DRAWINGS, CURRENT EDITIONS.

2. EXCEPT FOR THE ROADWAY AND TRAFFIC CONTROL BID ITEMS LISTED, ALL ITEMS OF WORK NECESSARY TO MAINTAIN AND CONTROL TRAFFIC WILL BE PAID AT THE LUMP SUM BID PRICE TO "MAINTAIN AND CONTROL TRAFFIC" AS SET FORTH IN THE CURRENT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION UNLESS OTHERWISE PROVIDED FOR IN THESE NOTES. THE LUMP SUM BID TO "MAINTAIN AND CONTROL TRAFFIC" SHALL ALSO INCLUDE, BUT IS NOT LIMITED TO, THE FOLLOWING ITEMS AND OPERATIONS:

   A. ALL GRADING AND NECESSARY DRAINAGE (UNLESS A BID ITEM FOR DETOUR CONSTRUCTION IS INCLUDED) FOR THE TEMPORARY ROADWAY AND REMOVAL THEREOF, WHEN IT IS NO LONGER NEEDED. IF A BID ITEM FOR DETOUR CONSTRUCTION IS INCLUDED, GRADING AND DRAINAGE WILL BE PAID FOR IN THE BID ITEM "DETOUR CONSTRUCTION".

   B. ALL LABOR AND MATERIALS NECESSARY FOR CONSTRUCTION AND MAINTENANCE OF TRAFFIC CONTROL DEVICES AND MARKINGS.

   C. ALL FLAGPERSONS AND TRAFFIC CONTROL DEVICES SUCH AS, BUT NOT LIMITED TO, FLASHERS, SIGNS BARRICADES AND VERTICAL PANELS, PLASTIC DRUMS (STEEL DRUMS WILL NOT BE PERMITTED) AND CONES NECESSARY FOR THE CONTROL AND PROTECTION OF VEHICULAR AND PEDESTRIAN TRAFFIC AS SPECIFIED IN THESE NOTES, THE PLANS, THE MUTCD OR THE ENGINEER.

3. ANY TEMPORARY TRAFFIC CONTROL ITEMS, DEVICES, MATERIALS AND INCIDENTALS SHALL REMAIN THE PROPERTY OF THE CONTRACTOR WHEN NO LONGER NEEDED.

4. THE CONTRACTOR SHALL MAINTAIN A TRAVELED WAY MINIMUM LANE WIDTH OF 10 FEET.

5. THE CONTRACTOR SHALL COMPLETELY COVER ANY SIGNS, EITHER EXISTING, PERMANENT OR TEMPORARY, WHICH DO NOT PROPERLY APPLY TO THE CURRENT TRAFFIC PHASING, AND SHALL MAINTAIN THE COVERING UNTIL THE SIGNS ARE APPLICABLE OR ARE REMOVED.

6. IN GENERAL, ALL TRAFFIC CONTROL DEVICES SHALL BE PLACED STARTING AND PROCEEDING IN THE DIRECTION OF THE FLOW OF TRAFFIC AND REMOVED STARTING AND PROCEEDING IN THE DIRECTION OPPOSITE THE FLOW OF TRAFFIC.

7. THE ENGINEER AND THE CONTRACTOR, OR THEIR AUTHORIZED REPRESENTATIVES, SHALL REVIEW THE SIGNING BEFORE TRAFFIC IS ALLOWED TO USE ANY LANE CLOSURES, CROSSOVERS OR DETOURS. ALL SIGNING SHALL BE APPROVED BY THE ENGINEER BEFORE WORK CAN BE STARTED BY THE CONTRACTOR.

8. IF THE CONTRACTOR DESIRES TO DEVIATE FROM THE TRAFFIC CONTROL SCHEME AND CONSTRUCTION SCHEDULE OUTLINED IN THESE PLANS AND THIS PROPOSAL, HE SHALL PREPARE AN ALTERNATE PLAN AND PRESENT IT IN WRITING TO THE ENGINEER. THIS ALTERNATE PLAN CAN BE USED ONLY AFTER REVIEW AND APPROVAL OF THE DIVISIONS OF TRAFFIC, DESIGN AND CONSTRUCTION, AND THE FEDERAL HIGHWAY ADMINISTRATION, WHERE APPLICABLE.

9. IF TRAFFIC SHOULD BE STOPPED DUE TO CONSTRUCTION OPERATIONS AND AN EMERGENCY VEHICLE ON AN OFFICIAL EMERGENCY RUN ARRIVES AT THE SCENE, THE CONTRACTOR SHALL MAKE THE PROVISIONS FOR THE PASSAGE OF THAT VEHICLE AS QUICKLY AS POSSIBLE.

PAVEMENT DROP-OFF

A PAVEMENT EDGE THAT TRAFFIC IS NOT EXPECTED TO CROSS, EXCEPT ACCIDENTALLY, SHOULD BE TREATED AS FOLLOWS:

* LESS THAN TWO INCHES - NO PROTECTION REQUIRED. WARNING SIGNS SHOULD BE PLACED IN ADVANCE AND THROUGHOUT THE DROP-OFF AREA.

* TWO TO FOUR INCHES - PLASTIC DRUMS, VERTICAL PANELS OR BARRICADES EVERY 100 FEET ON TANGENT SECTIONS FOR SPEEDS OF 50 MPH OR GREATER. CONES MAY BE USED IN PLACE OF PLASTIC DRUMS, PANELS AND BARRICADES DURING DAYLIGHT HOURS. FOR TANGENT SECTIONS WITH SPEEDS LESS THAN 50 MPH AND FOR CURVES, DEVICES SHOULD BE PLACED EVERY 50 FEET. SPACING OF DEVICES ON TAPERED SECTIONS SHOULD BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION.

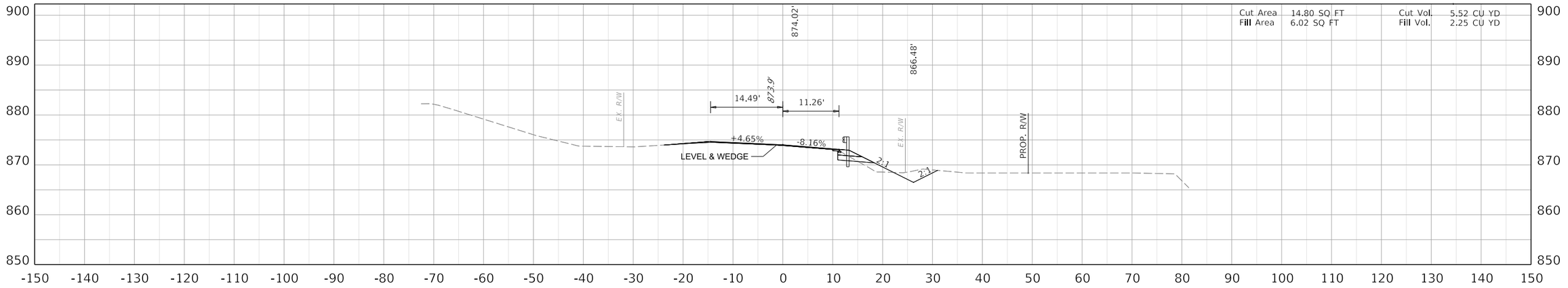
* GREATER THAN FOUR INCHES - POSITIVE SEPARATION OR WEDGE WITH 3:1 OR FLATTER SLOPE NEEDED. IF THERE IS FIVE FEET OR MORE DISTANCE BETWEEN THE EDGE OF THE PAVEMENT AND THE DROP-OFF, THEN DRUMS, PANEL, OR BARRICADES MAY BE USED. IF THE DROP-OFF IS GREATER THAN 12 INCHES, POSITIVE SEPARATION IS STRONGLY ENCOURAGED. IF CONCRETE BARRIERS ARE USED, SPECIAL REFLECTIVE DEVICES OR STEADY BURN LIGHTS SHOULD BE USED FOR OVERNIGHT INSTALLATIONS.

FOR TEMPORARY CONDITIONS, DROP-OFFS GREATER THAN FOUR INCHES MAY BE PROTECTED WITH PLASTIC DRUMS, VERTICAL PANELS OR BARRICADES FOR SHORT DISTANCES DURING DAYLIGHT HOURS WHILE WORK IS BEING DONE IN THE DROP-OFF AREA.

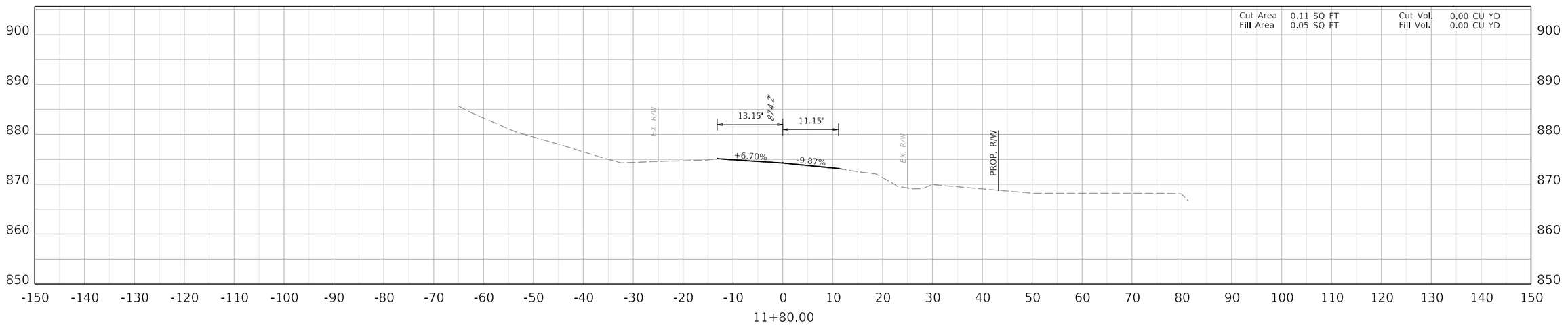
LESSER TREATMENTS THAN THOSE DESCRIBED ABOVE MAY BE CONSIDERED FOR LOW-VOLUME LOCAL STREETS.

PAYMENT WILL BE ALLOWED FOR DGA MATERIAL USED FOR WEDGING.

FOR MAINTENANCE OF TRAFFIC ONLY



12+00.00



11+80.00

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

TEAM KENTUCKY

CROSS SECTIONS

HORIZONTAL SCALE
SCALE: 1" = 10'

0' 10' 20' 40'

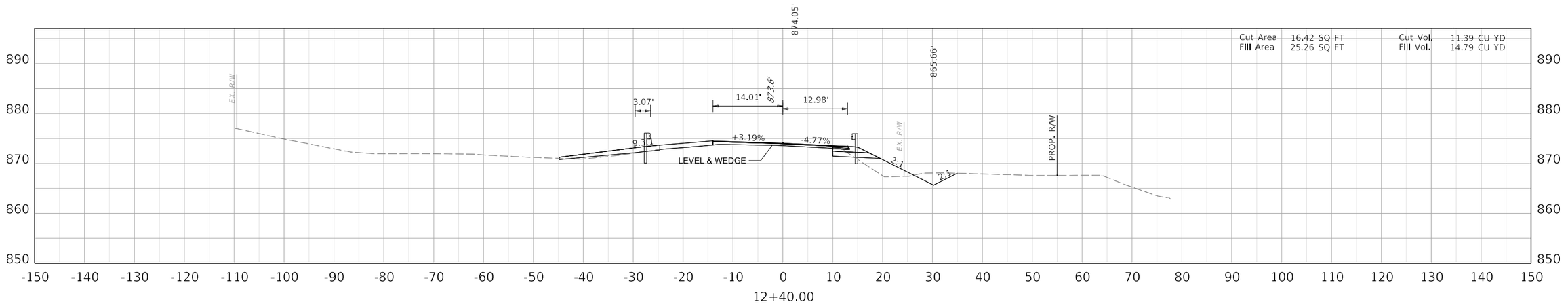
STA. 11+80.00 TO STA. 12+00.00

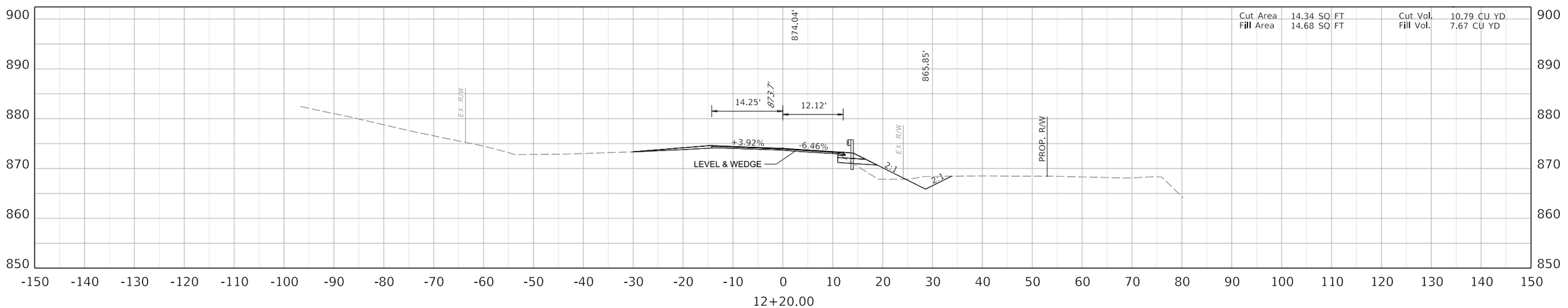
ITEM NO. TBD
COUNTY OF CLAY
SHEET NO. X1

OpenRoads Designer v10.12.02.4

USER: CHRISTSMITH

FILE NAME: C:\PWWORKING\EAST01\D3681007\026B00086N_X1-XXX.DGN





COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

TEAM KENTUCKY Transportation for a Changing Commonwealth

CROSS SECTIONS

HORIZONTAL SCALE
SCALE: 1" = 10'

0' 10' 20' 40'

STA. 12+20.00 TO STA. 12+40.00

ITEM NO. TBD

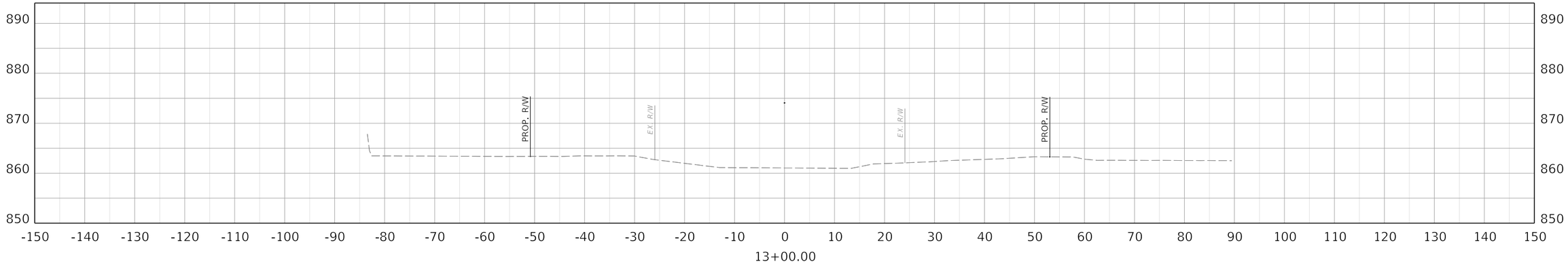
COUNTY OF CLAY

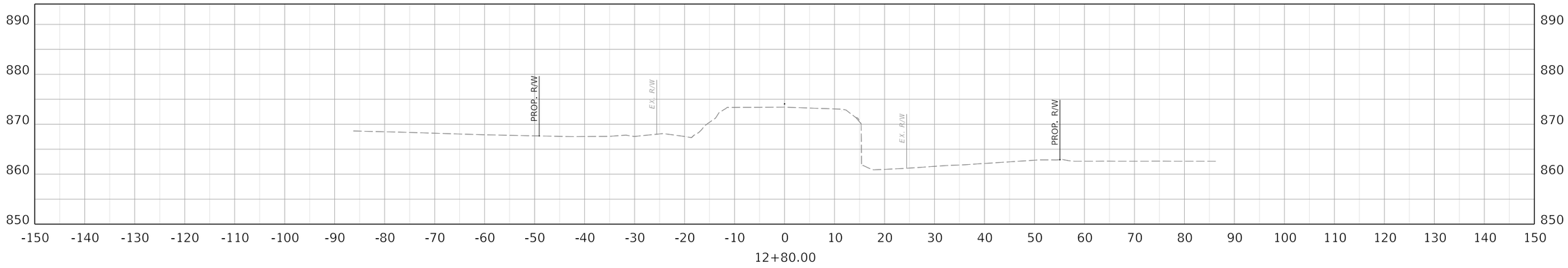
SHEET NO. X2

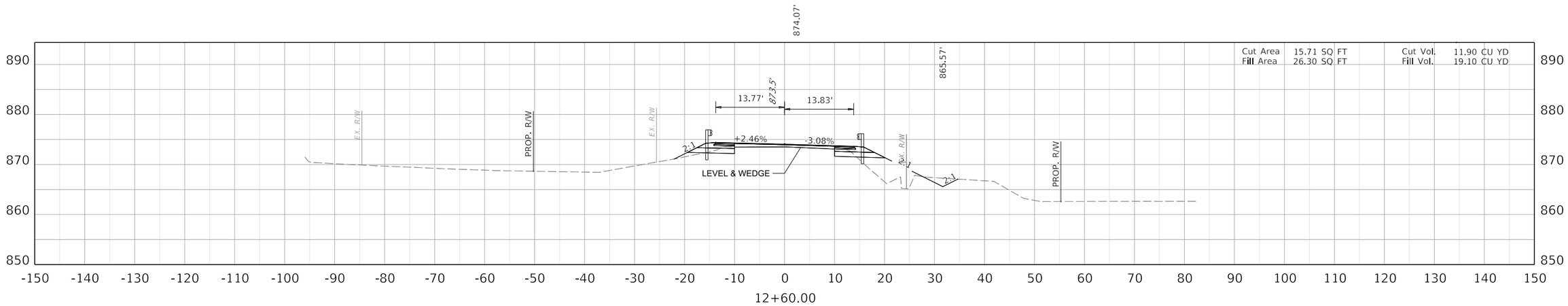
OpenRoads Designer v10.12.02.4

USER: CHRISTSMITH

FILE NAME: C:\PWWORKING\EAST01\D3681007\026B00086N_X1-X5.DGN







COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY TRANSPORTATION CABINET

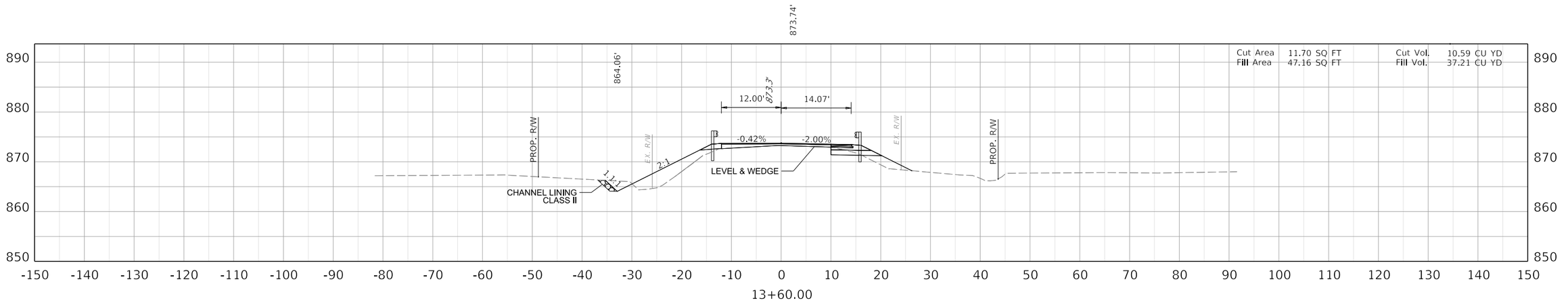
CROSS SECTIONS

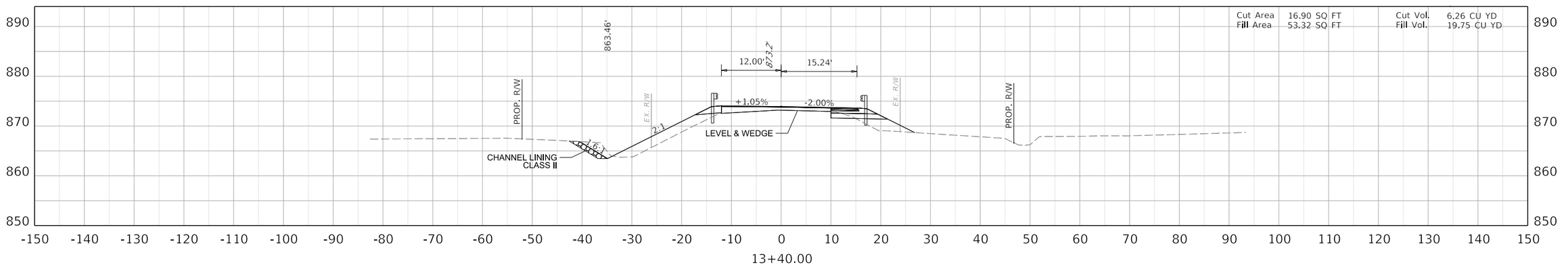
HORIZONTAL SCALE
SCALE: 1" = 10'

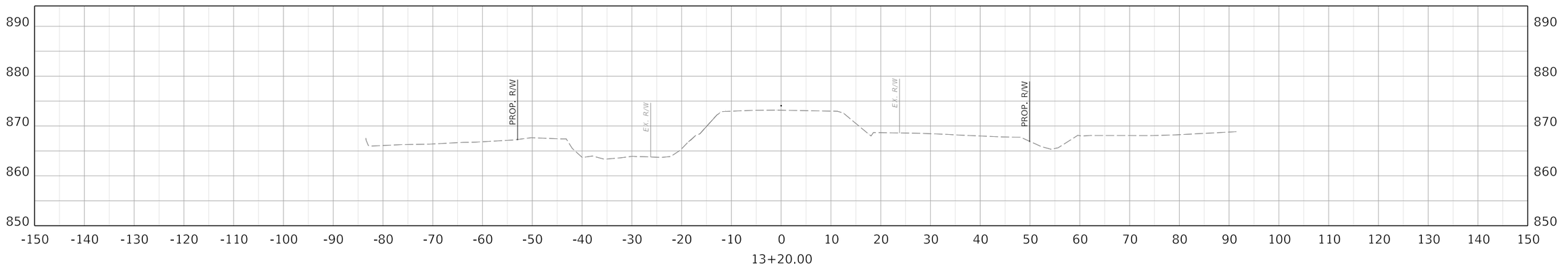
0' 10' 20' 40'

STA. 12+60.00 TO STA. 13+00.00

ITEM NO. TBD
COUNTY OF CLAY
SHEET NO. X3







COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

CROSS SECTIONS

HORIZONTAL SCALE
SCALE: 1" = 10'

0' 10' 20' 40'

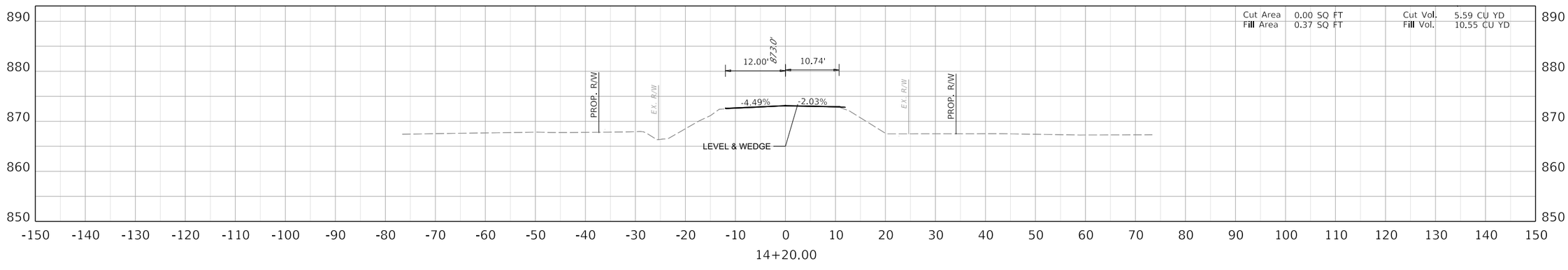
STA. 13+20.00 TO STA. 13+60.00

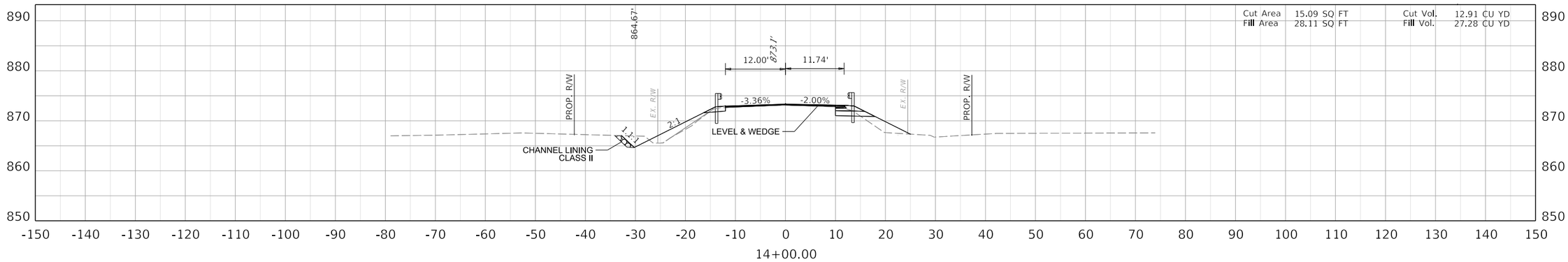
ITEM NO. TBD
COUNTY OF CLAY
SHEET NO. X4

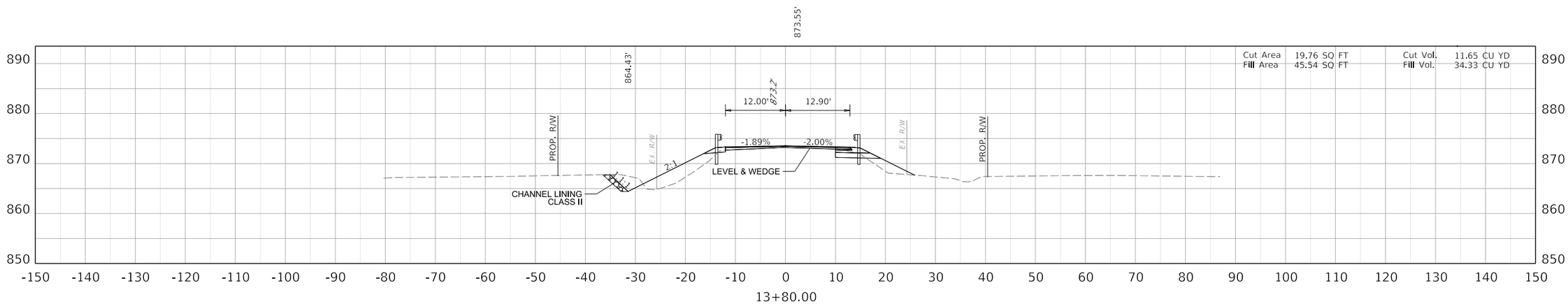
OpenRoads Designer v10.12.02.4

USER: CHRISTSMITH

FILE NAME: C:\PWWORKING\EAST01\D3681007\026B00086N_X1-X5.DGN







COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

CROSS SECTIONS

HORIZONTAL SCALE
SCALE: 1" = 10'

0' 10' 20' 40'

STA. 13+80.00 TO STA. 14+20.00

ITEM NO. TBD
COUNTY OF CLAY
SHEET NO. X5

OpenRoads Designer v10.12.02.4
USER: CHRISTSMITH
FILE NAME: C:\PWWORKING\EAST01\D3681007\026B00086N_X1-XXX.DGN

LETTING DATE

CONSTRUCTION PROJECT NO.

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

CLAY COUNTY
KY 687 OVER
GRAYS FORK
STA. 12+99.03

ESTIMATE OF QUANTITIES

BID ITEM CODE		08100	08104	23378EC	08151	08019	02231	08051	08033	08039	08003	08663	25099ED	24896ED	03299	08140	24405EC	02355	26233EC	08301							
BID ITEM		Concrete Class "A"	Concrete Class "AA"	Concrete Sealing	Steel Reinforcement, Epoxy Coated	Cyclopean Stone Rip Rap	Structure Granular Backfill	Piles - Steel HP 14 x 89	Test Piles	Pre-Drilling For Piles	Foundation Preparation	PPC Box Beams CB-21	Deep Beam Bridge Guardrail	Rail System Type T631	Armored Edge for Concrete	Mechanical Reinf. Coupler #5 Epoxy Coated	Mechanical Reinf. Coupler #8 Epoxy Coated	Guardrail-Steel W BM S Face A	Mobilization - For Concrete Surf Treatment	Remove Superstructure							
UNIT		C.Y.	C.Y.	S.F.	LBS.	Tons	C.Y.	L.F.	L.F.	L.F.	L.S.	L.F.	L.F.	L.F.	L.F.	Each	Each	L.F.	L.S.	L.S.							
Substructure	End Bent #1	51.1	5.7	265	5651	174	238	127	22	83							25										
	End Bent #2	48.1	5.5	256	5238	174	215	114	20	73							23										
Superstructure			26.6	1924	3349							392	100	54	56	56		100									
BRIDGE TOTALS		99.2	37.8	2445	14238	348	453	241	42	156	1	392	100	54	56	56	48	100	1	1							

INDEX OF SHEETS

SPECIAL NOTES

Special Note for Concrete Sealing

SPECIAL PROVISIONS

69 Embankment at Bridge End Bent Structures

STANDARD DRAWINGS

BGX-006-10	Stencils for Structures
BGX-012-02	Geotechnical Legend
BJE-001-14	Armored Edges
BDP-003-03	Box Beam Misc Details
BDP-004-04	Box Beam Tension Rod Details
BDP-008-04	Box Beam B21 and CB21 Beam Details
BPS-011-04	HP14x89 Steel Pile

SPECIFICATIONS

2019 Standard Specifications for Road and Bridge Construction.

2020 AASHTO LRFD Bridge Design Specifications

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

TEAM KENTUCKY

REVISION	DATE

PREPARED BY
Division of Structural Design

DATE: September 2024 — CHECKED BY
DESIGNED BY: N. Cordtz — L. Likins
DETAILED BY: K. Bishop — N. Cordtz

TITLE SHEET

CROSSING: GRAYS FORK

ROUTE	EXISTING BRIDGE ID	COUNTY OF
KY 687	026B00086N	CLAY
	SHEET NO. S1	DRAWING NUMBER 28928

MicroStation v10.16.3.31 USER: messiah.bawithawn DATE PLOTTED: 2-JAN-2025 FILE NAME: J:\District11\RS & M\026B00086N\10390023 Clay County Ky 687\Nick's Design\Details\28928.dgn

GENERAL NOTES

SPECIFICATIONS: All references to the Specifications are to the current edition of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction with current Supplemental Specifications. All references to the AASHTO Specifications are to the current edition of the AASHTO LRFD Bridge Design Specs, with interims.

DESIGN LOAD: This bridge is designed for a KYHL-93 live load. The KYHL-93 live load is arrived at by increasing the standard HL-93 truck and lane loads as specified in the AASHTO Specifications by 25%.

FUTURE WEARING SURFACE: This structure is designed for a 15 PSF future wearing surface load.

DESIGN STRESSES:

Concrete Class "A"	~	f'c = 3500 psi
Concrete Class "AA"	~	f'c = 4000 psi
Steel Reinforcement	~	Fy = 60,000 psi
Structural Steel Yield Strength	~	Fy = 50,000 psi

DESIGN METHOD: All reinforced concrete members are designed by the load and resistance factor method as specified in the current AASHTO Specifications.

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. Clear distance to face of concrete is 2", unless otherwise noted. Any reinforcement bars designed be 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: Bevel all exposed edges $\frac{3}{4}$" unless otherwise noted.

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: Submit shop drawings that are required by the plans and specifications directly to the Division of Structural Design. Is any changes in the design plans are proposed by a fabricator or supplier, submit those changes to the Department through the Contractor.

FOUNDATION DATA: See Foundation Layout Sheet.

DIMENSIONS: Dimensions are for a normal temperature of 60 degrees Fahrenheit. Layout dimensions are horizontal dimensions.

SUPERSTRUCTURE SLAB: Ensure the entire superstructure slab is poured continuously, out to out, before allowing any concrete to set.

SLOPE PROTECTION: Slope protection will be required at the bridge meeting the requirements of Sections 703 & 805 of the Standard Specifications for Road and Bridge Construction, current edition. Place a Class 1 Geotextile Fabric, in accordance with Sections 214 & 843 of the Standard Specifications for Road and Bridge Construction, current edition, between the embankment and the slope protection.

MASONRY COATING: Contrary to the Specifications, do not apply Masonry Coating. Apply Concrete Sealing in place of Masonry Coating as noted in CONCRETE SEALER note.

PILE POINTS: Pile Points are not required for pre-drilled piles.

CONCRETE SEALER: All areas detailed in the specifications as requiring masonry coating shall be sealed in accordance with the special note for concrete sealing. The superstructure deck, barriers and overhangs shall also be sealed as shown herein these plans. Concrete surfaces (except the deck) shall receive the ordinary surface finish as described in section 601.03.18(A) prior to being sealed.

TENSION RODS: Tension rods to be installed prior to pouring the deck. Use mechanical couplers to extend rods between phases of construction.

REMOVE SUPERSTRUCTURE: Include in the lump sum bid for "Remove Superstructure" all costs (materials, labor, equipment) associated with removing and disposing of the existing superstructure (including any wearing surface) and soil/backfill as necessary behind beams as detailed herein in accordance with Section 203 of the Specifications.

The following abbreviations may have been used in the preparation of these plans:

bet.	between
b.f.	Back Face
BOF	Bottom of Footing
BOS	Bottom of Slab
bot.	Bottom
Brg.	Bearing
C to C	Center to Center
c.e.	Current Edition
C.Y.	Cubic Yards
Chd.	Chord
CL	Center Line
Clr.	Clear
Conc.	Concrete
Cu.	Cubic
Dwg.	Drawing
e.f.	Each Face
El.	Elevation
eq.	Equal
Est.	Estimate
Ext.	Exterior
F to F	Face to Face
f.f.	Front Face
f.s.	Far Side
fr.	Front
ft.	Feet
I.D.	Inside Diameter
in.	Inch
Int.	Interior
L	Left
LBS	Low Bridge Seat
LBS.	Pounds
M	Meter
MPH	Miles Per Hour
n.s.	Near Side
O.D.	Outside Diameter
Opp.	Opposite
PC	Point of Curvature
Perp.	Perpendicular
PI	Point of Intersection
PPC	Precast Prestressed Concrete
PPCDU	Precast Prestressed Deck Unit
PSI	Pounds per Square Inch
PT	Point of Tangency
R	Radius
R	Right
RCBC	Reinforced Concrete Box Culvert
RCDG	Reinforced Concrete Deck Girder
Req'd	Required
RR	Railroad
Shld.	Shoulder
spa.	Spaces
Sta.	Station
Std.	Standard
Str.	Straight
Tan	Tangent
Thru	Through
TOF	Top of Footing
TOS	Top of Slab
Tot.	Total
Typ.	Typical
Vert.	Vertical
W.P.	Working Point
Yd.	Yard

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

REVISION	DATE

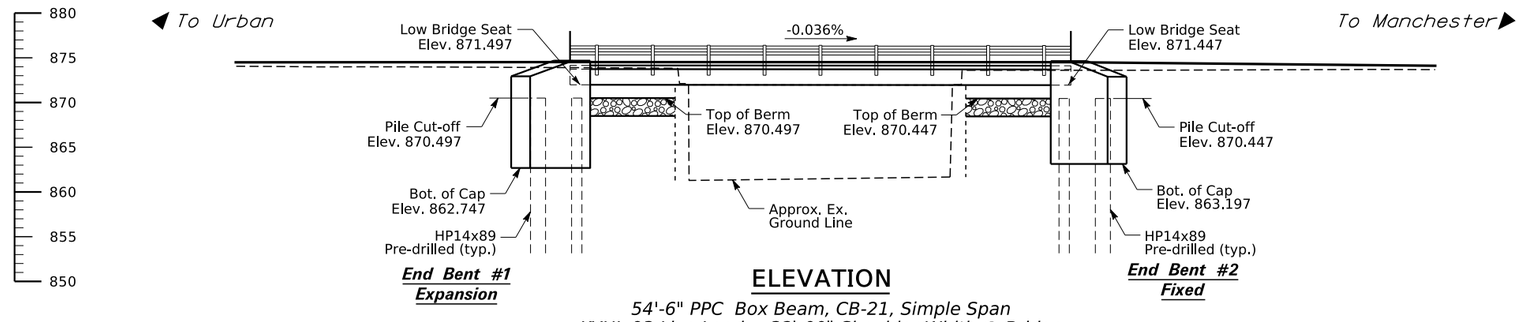
PREPARED BY
Division of Structural Design

DATE: September 2024	CHECKED BY
DESIGNED BY: N. Cordtz	L. Likins
DETAILED BY: K. Bishop	N. Cordtz

GENERAL NOTES
CROSSING: GRAYS FORK

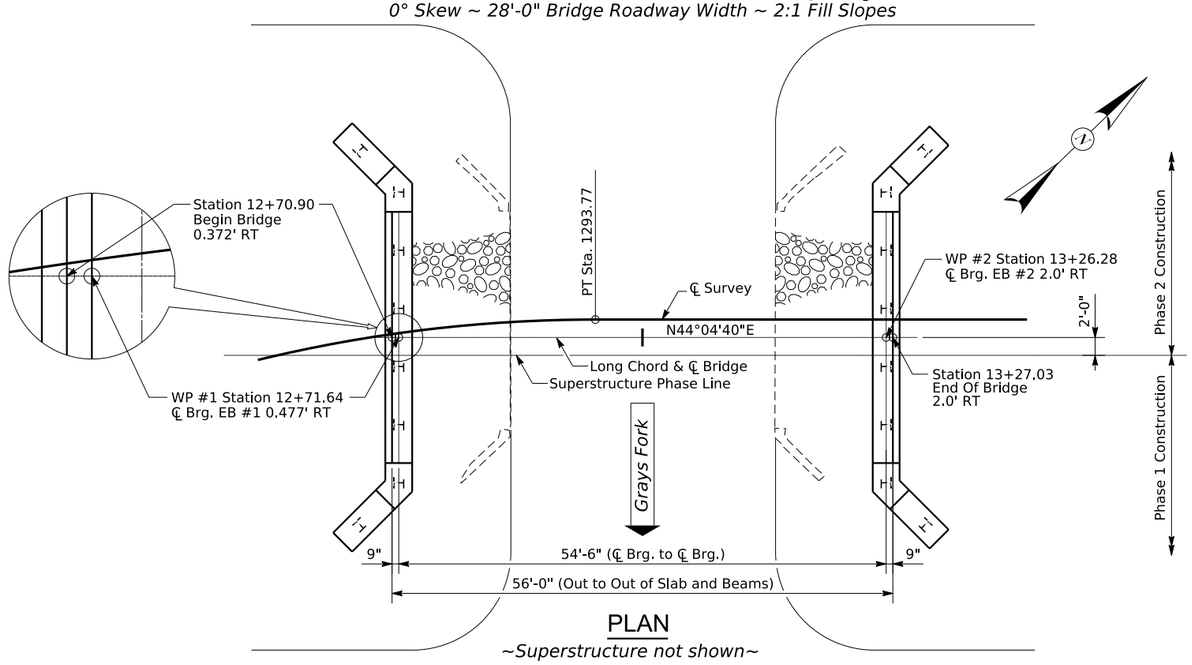
ROUTE	EXISTING BRIDGE ID	COUNTY OF
KY 687	026B00086N	CLAY
	SHEET NO. S2	DRAWING NUMBER 28928

MicroStation v10.16.3.31 USER: messiah.bawithawn DATE PLOTTED: 2-JAN-2025 FILE NAME: J:\District11\RS & M\026B00086N\10390023 Clay County Ky 687\Nick's Design\Details\28928.dgn



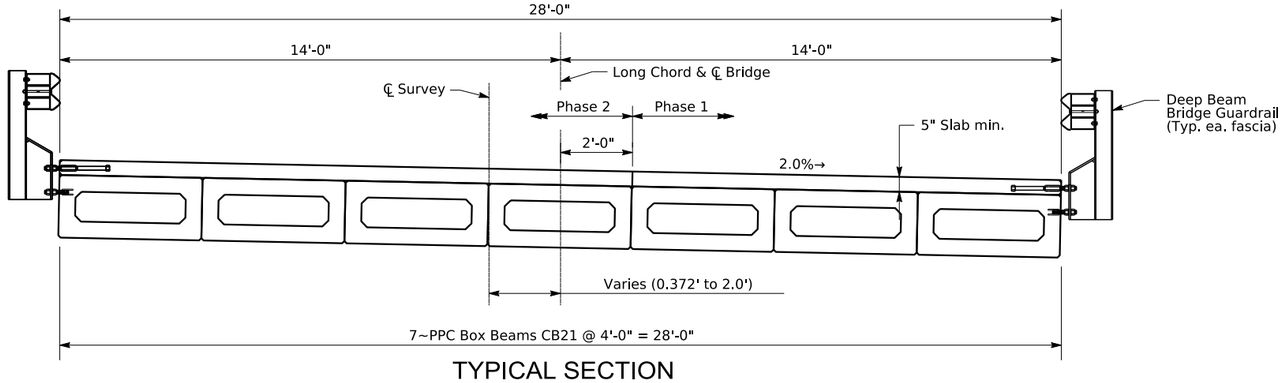
ELEVATION

54'-6" PPC Box Beam, CB-21, Simple Span
KYHL-93 Live Load ~ 32'-00" Shoulder Width @ Bridge
0° Skew ~ 28'-0" Bridge Roadway Width ~ 2:1 Fill Slopes



PLAN

~Superstructure not shown~

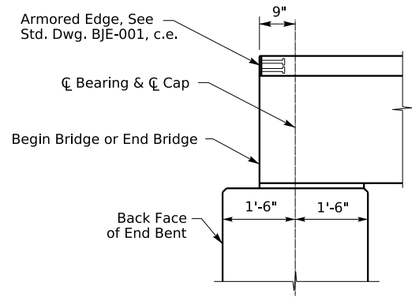


TYPICAL SECTION

Note: Roadway guardrail is to attach to bridge guardrail to form a continuous unit. See std. Dwg. BHS-011

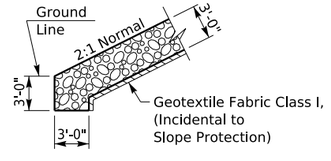
Note: For end bent backfill and method of construction see special provision 69. Include the cost of any required geotextile fabric in the unit price for Structure Granular Backfill.

Note: The existing abutments are to remain. Remove the top portions of the existing abutments such that there is at least 1 foot below the low seats of the new end bents. Cost of this removal is incidental to remove existing superstructure.



END OF BEAM DETAIL

(Measured Along ℄ Beam)



TOE OF SLOPE DETAIL

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

REVISION	DATE

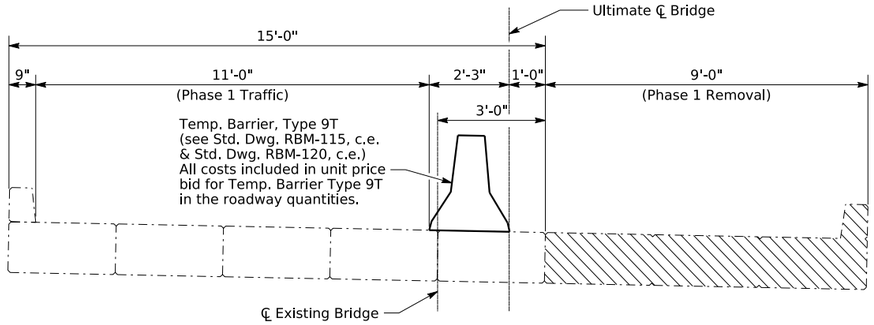
PREPARED BY
Division of
Structural Design

DATE: September 2024	CHECKED BY
DESIGNED BY: N. Cordtz	L. Likins
DETAILED BY: K. Bishop	N. Cordtz

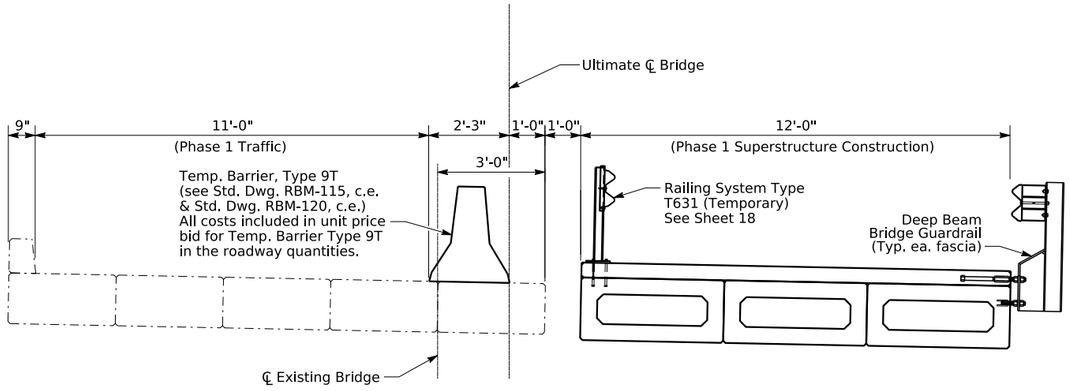
LAYOUT
CROSSING
GRAYS FORK

ROUTE	EXISTING BRIDGE ID	COUNTY OF
KY 687	026B00086N	CLAY
	SHEET NO. S3	DRAWING NUMBER 28928

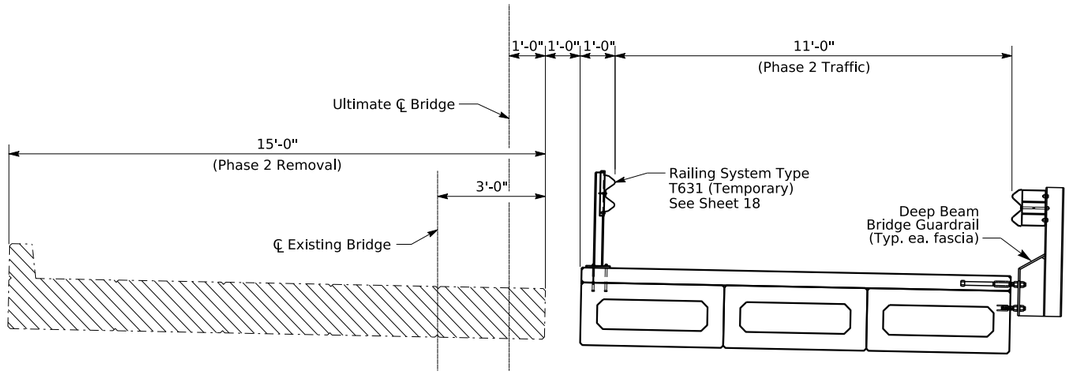
To be removed



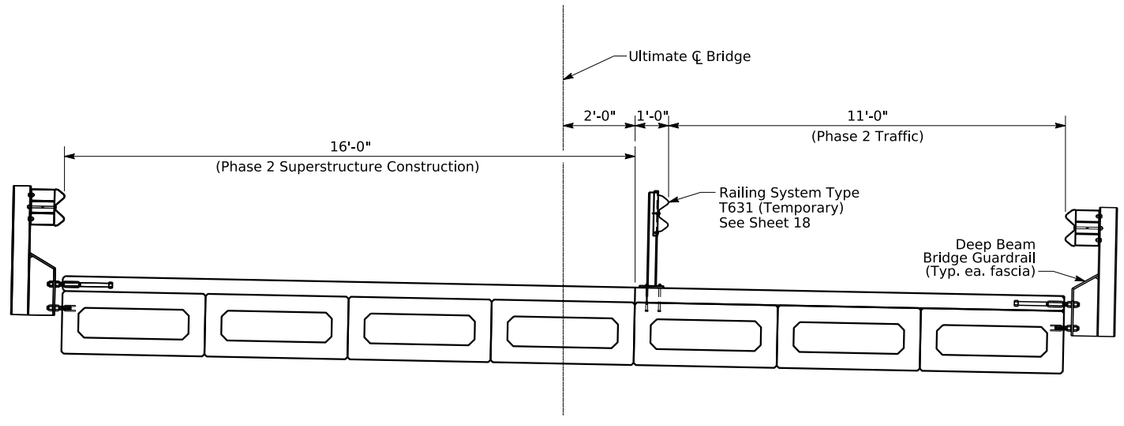
Phase I Removal



Phase I Construction



Phase 2 Removal



Phase 2 Construction

Note: Railing System Type T631 to be removed after completion of phase 2 construction. Remove the threaded rods and fill holes with non-shrink grout. Coat the grouted holes with epoxy concrete sealer. The cost of the removal is incidental to the price bid of the rail.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

REVISION	DATE

PREPARED BY
Division of
Structural Design

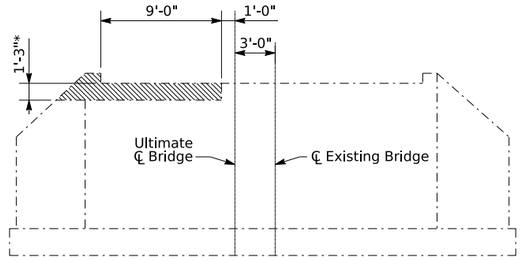
DATE: September 2024	CHECKED BY
DESIGNED BY: N. Cordtz	L. Likins
DETAILED BY: K. Bishop	N. Cordtz

SUPERSTRUCTURE PHASING

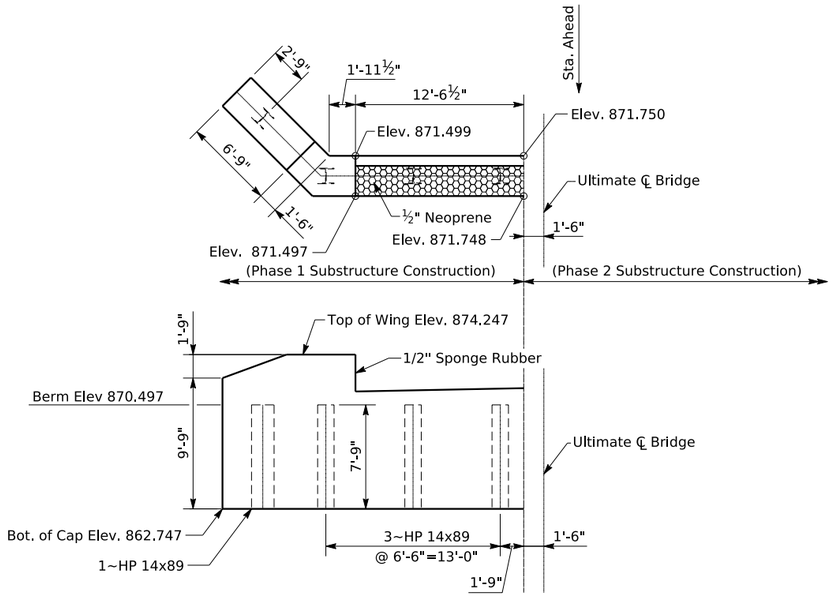
CROSSING
GRAYS FORK

ROUTE	EXISTING BRIDGE ID	COUNTY OF
KY 687	026B00086N	CLAY
	SHEET NO. S4	DRAWING NUMBER 28928

MicroStation v10.16.3.31 USER: messiah.bawithawn DATE PLOTTED: 2-JAN-2025 FILE NAME: J:\District11\RS & M\026B00086N\10390023 Clay County Ky 687\Nick's Design\Details\28928.dgn



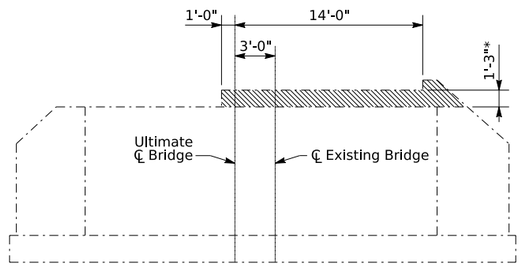
EB #1 - PHASE 1 SUBSTRUCTURE REMOVAL



EB #1 - PHASE 1 SUBSTRUCTURE CONSTRUCTION

*Remove the top portion of the existing abutment such that it is at least 1 ft below the low seat of End Bent 1.

NOTE: Front Face of existing abutment shown.



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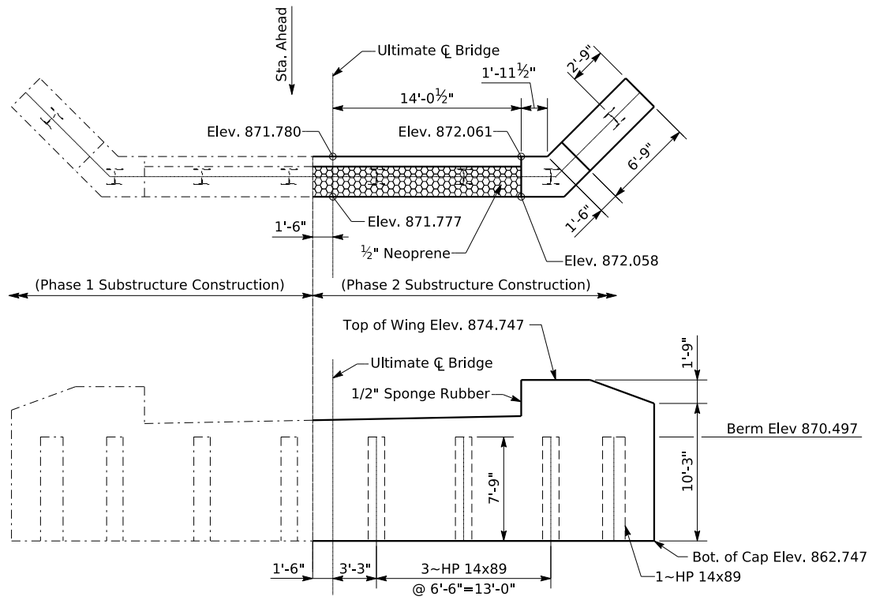


EB #1 - PHASE 2 SUBSTRUCTURE CONSTRUCTION

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

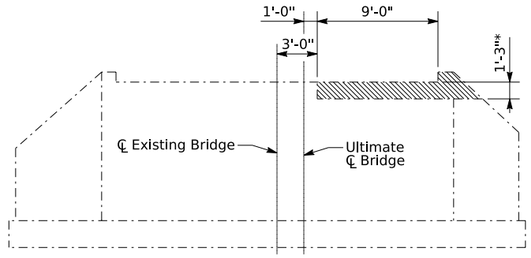
PREPARED BY
Division of
Structural Design

DATE: September 2024	CHECKED BY	
DESIGNED BY: N. Cordtz	L. Likins	
DETAILED BY: K. Bishop	N. Cordtz	

END BENT 1 PHASING
CROSSING
GRAYS FORK

ROUTE	EXISTING BRIDGE ID	COUNTY OF
KY 687	026B00086N	CLAY
	SHEET NO. S5	DRAWING NUMBER 28928

MicroStation v10.16.3.31 USER: messiah.bawithawn DATE PLOTTED: 2-JAN-2025
FILE NAME: J:\District11\RS & M\026B00086N\10390023 Clay County Ky 687\Nick's Design\Details\28928.dgn



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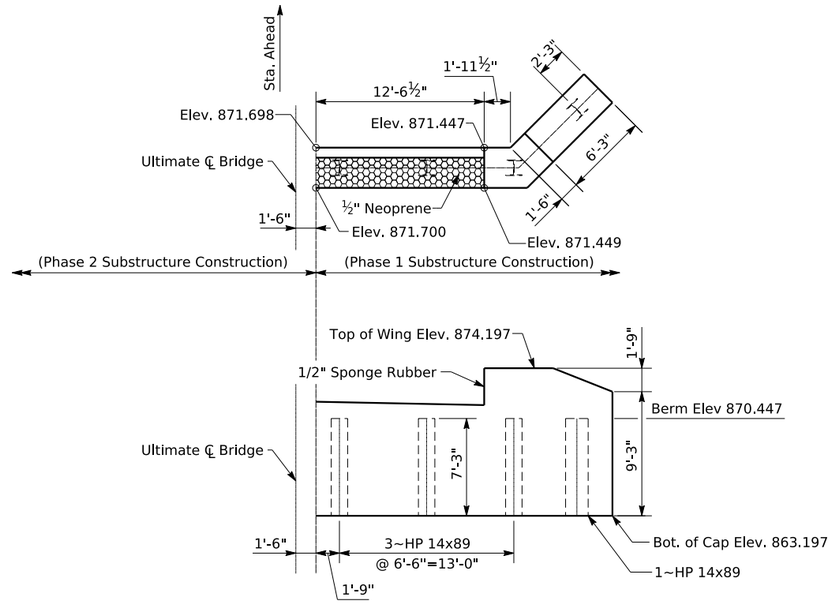
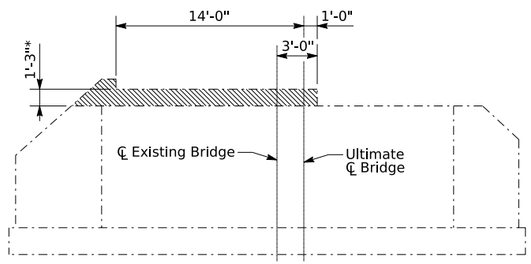


EB #2 - PHASE 1 SUBSTRUCTURE CONSTRUCTION

*Remove the top portion of the existing abutment such that it is at least 1 ft below the low seat of End Bent 2.

NOTE: Front Face of existing abutment shown.



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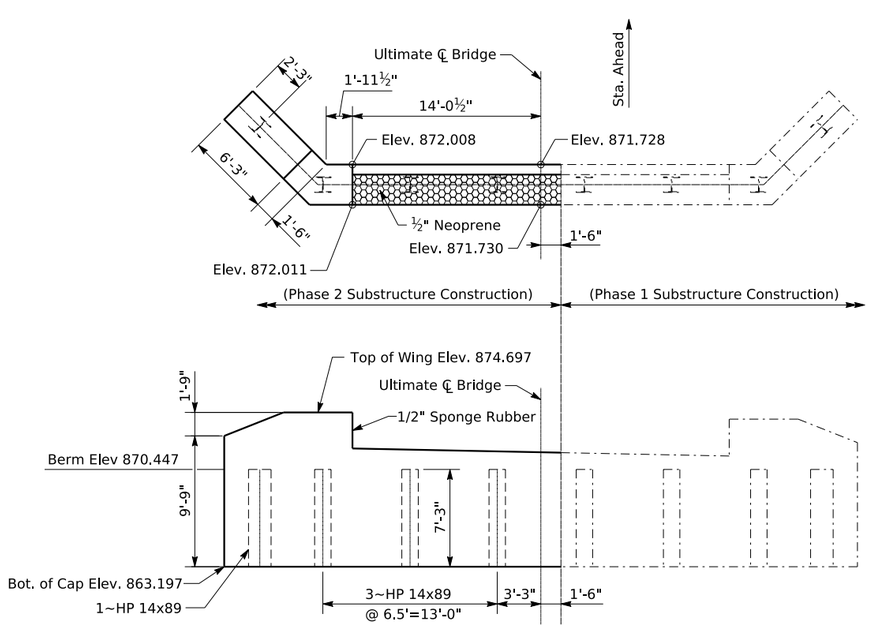

EB #2 - PHASE 2 SUBSTRUCTURE CONSTRUCTION

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY
Division of
Structural Design

DATE: September 2024	CHECKED BY
DESIGNED BY: N. Cordtz	L. Likins
DETAILED BY: K. Bishop	N. Cordtz

END BEND 2 PHASING
CROSSING
GRAYS FORK

ROUTE	EXISTING BRIDGE ID	COUNTY OF
KY 687	026B00086N	CLAY
	SHEET NO. S6	DRAWING NUMBER 28928

MicroStation v10.16.3.31 USER: messiah.bawithawn DATE PLOTTED: 2-JAN-2025 FILE NAME: J:\District11\RS & M\026B00086N\10390023 Clay County Ky 687\Nick's Design\Details\28928.dgn

SUBSURFACE DATA

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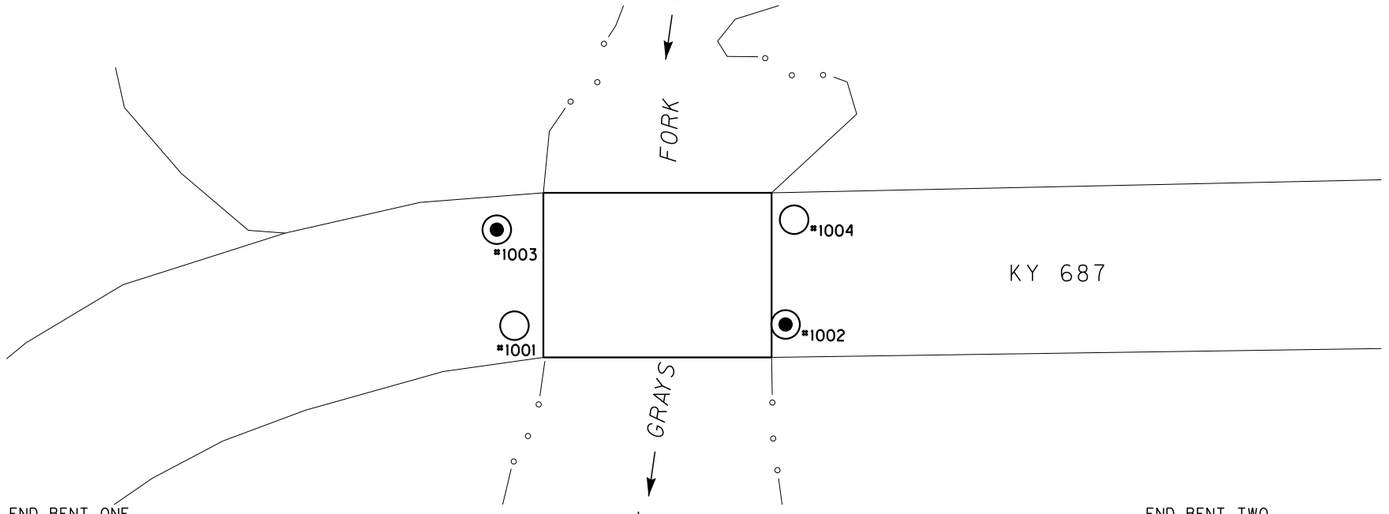


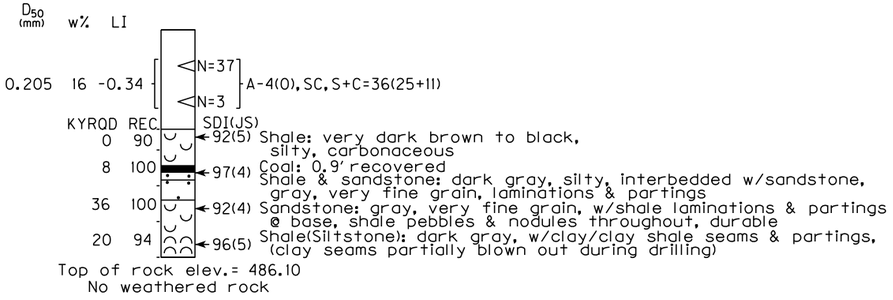
Profile Scale:
Vertical 1" = 10'
Horizontal not to scale

END BENT ONE
APPROXIMATE ROADWAY GRADE ELEV. = 500.00

END BENT TWO
APPROXIMATE ROADWAY GRADE ELEV. = 500.00

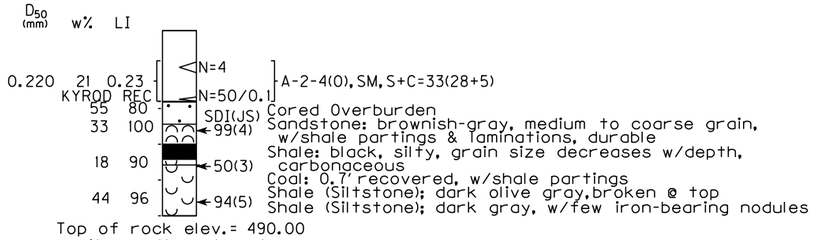
Hole No.	1003	1001	1004	1002
Lat.	37.168944	37.168931	37.169033	37.169006
Long.	-83.838252	-83.838214	-83.838144	-83.838122
Elev.	500.10	499.08	500.20	500.00
(Assumed datum)				

510 500 490 480 470 460 450



R
(485.00)

R
(489.90)



Datum

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
KENTUCKY TRANSPORTATION CABINET

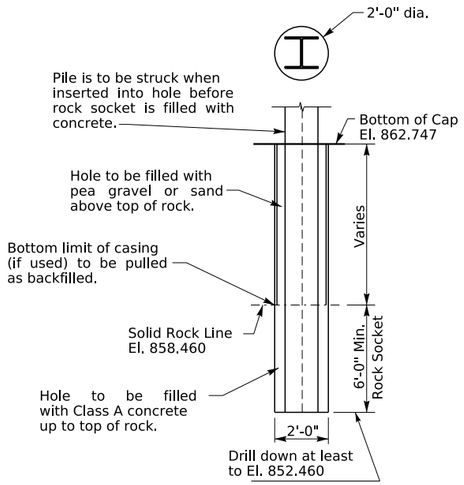
REVISION	DATE

PREPARED BY
Division of Structural Design
Geotechnical Branch

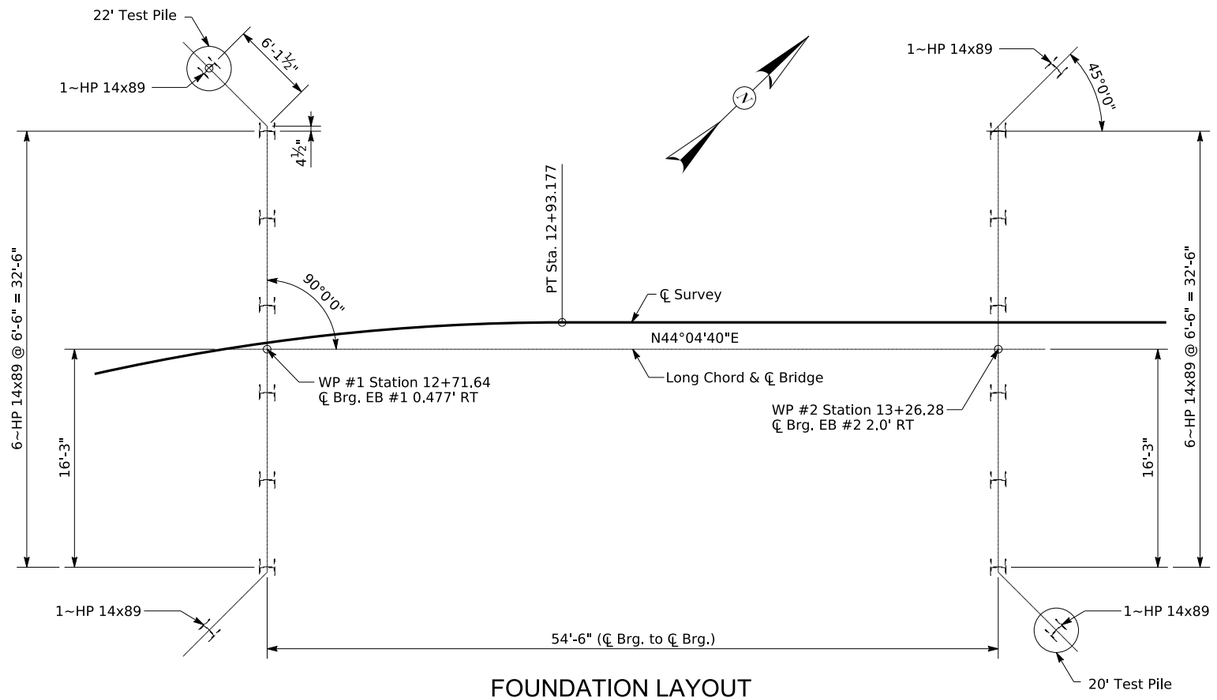
DATE: 12-AUGUST-2023	CHECKED BY
DESIGNED BY:	
DETAILED BY: E. BAILEY	R. McDONALD

SUBSURFACE DATA
CROSSING
Bridge over Grays Fork

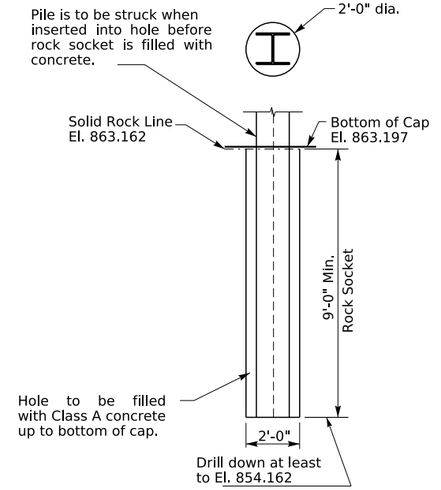
ROUTE	ITEM NO.	COUNTY OF
KY 687	026B00086N	CLAY
	SHEET NO. S7	DRAWING NUMBER S-124-2022



PRE-DRILLING DETAIL
END BENT #1



FOUNDATION LAYOUT



PRE-DRILLING DETAIL
END BENT #2

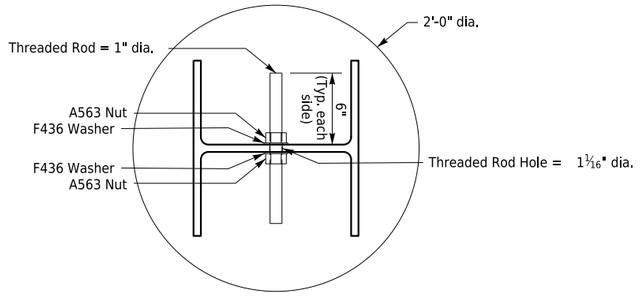
Note:
Splicing piles will not be allowed. Piles shall be installed in one piece from cut-off elevation to bottom of pile tip.

Cofferdams and/or dewatering methods may be required to facilitate foundation construction of pile caps.

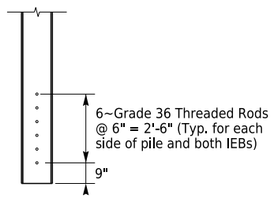
Temporary sheeting and/or shoring may be required for installation of pile caps. The contractor shall be responsible for the stability and safety of all excavations. All costs Incidental to Foundation Preparation.

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
EB #1				
1	870.497			64
2	870.497			64
3	870.497			64
4	870.497			64
5	870.497			64
6	870.497			64
7	870.497			64
8	870.497			64
EB #2				
9	870.447			62
10	870.447			62
11	870.447			62
12	870.447			62
13	870.447			62
14	870.447			62
15	870.447			62
16	870.447			62



PLAN VIEW OF PILE WITH THREADED ROD DETAIL



SHEAR RESISTANT DEVICE DETAIL

Pile Strike Alternate

As an alternative to striking the pile once placed inside the pre-drilled hole, the contractor may include shear resisting devices on the pile. Place pile in hole and use an excavator to apply full hydraulic load to top of pile before filling hole with concrete. Use ASTM F1554 Grade 36 threaded rods with a minimum tensile strength of 58 ksi. The cost of all materials needed is incidental to Pre-drilling For Piles.

This alternative was designed to withstand 125% of the pile's design axial load shown on the pile record.

Note:
Provide an excavator with sufficient capacity and reach to lift and place piles without contacting the ground or sides of the boring and to pull casing as the hole is being backfilled.

Note:
Contractor is to ensure hole is cleaned during and after excavation. The portion of the predrilled bore hole above the rock socket shall be excavated using casing to prevent excavated walls from collapsing. The rock socket shall be visually inspected. The bottom of hole shall be visible to the inspector by normal means from the surface elevation. If not adequately cleared of debris or water the contractor may be required to clean out the holes using vacuum excavator and/or a pump. After the pile and concrete are placed the casing shall be backfilled with sand or pea gravel. Remove the casing as the hole above the rock socket is backfilled.

Note:
Measure final excavation depths with a weighted tape or other approved methods after final cleaning. Ensure the base of excavation has less than ½ inch of sediment at the time of pile and concrete placement. Do not allow the depth of water to exceed 3 inches during concrete placement.

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.

PILE TIP ELEVATION AS DRIVEN: Actual point of pile elevation in the finished structure.

DESIGN AXIAL LOAD: Strength load carried by each pile as estimated from structural design calculations.

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: Drive point bearing piles to practical refusal

PRACTICAL REFUSAL : Drive point bearing piles to practical refusal. For this project minimum blow requirements are reached after total penetration becomes ½ inch or less for 10 consecutive blows, practical refusal is obtained after the pile is struck an additional 10 blows with total penetration of ½ inch or less. Advance the production piling to the driving resistances specified above and to depths determined by test pile(s) and subsurface data sheets(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 speified for practical refusal is required to further advance the pile. Drive additional production test piles if directed by the Engineer.

HAMMER CRITERIA: A hammer with a rated energy of between 20 and 30 kip-ft. will be required to drive the H-piles to practical refusal without encountering excessive blow counts or damaging the pile. The contractor shall submit the proposed pile driving system to the Department 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.

PRE-DRILLING PILES: Temporary casing will be required to prevent the collapse of the hole pre-drilled for the H-pile. The casing shall be removed, as the hole is being backfilled.
Pre-drilling will be required for the installation of the steel H-piles. Pre-drilling shall extend through soil overburden, weatherd rock and solid rock to depths indicated in the plans. The rock socket shall be filled with Class A concrete conforming to Section 601 of the Standard Specifications; however, provide a mix with a 6 to 10 inch slump at the time of placement; high range water reducing and retarding admixtures and Class F fly ash may be used to obtain this slump. The drilled H-piles shall be centered in rock socket, and the class A concrete shall extend to limits specified by plans. If allowed by the plans, flowable fill may be placed above the concrete socket elevation. Due to the granular nature of are soils, the placement of the concrete or flowable fill must be concurrent with the removal of the temporary casing in order to avoid collapse of the hole.
The cost of all materials, labor and equipment needed to pre-drill and backfill the holes shall be included in the price per linear foot for "Pre-drilling Piles".

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 HP14x89 (50 ksi) piles in accordance with BPS-011.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

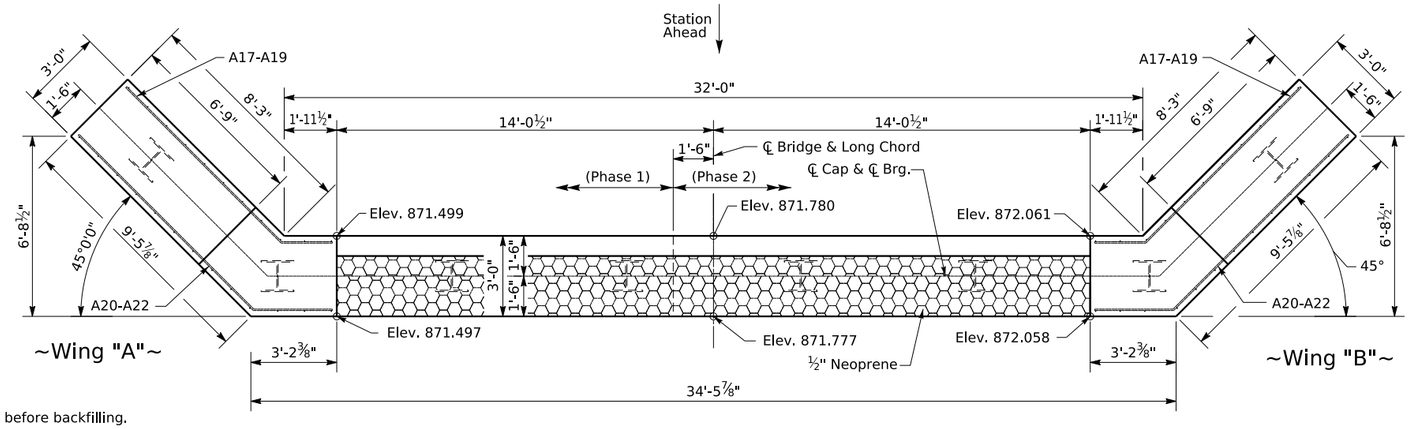
REVISION	DATE

PREPARED BY
Division of Structural Design

DATE: September 2024	CHECKED BY
DESIGNED BY: N. Cordtz	L. Likins
DETAILED BY: K. Bishop	N. Cordtz

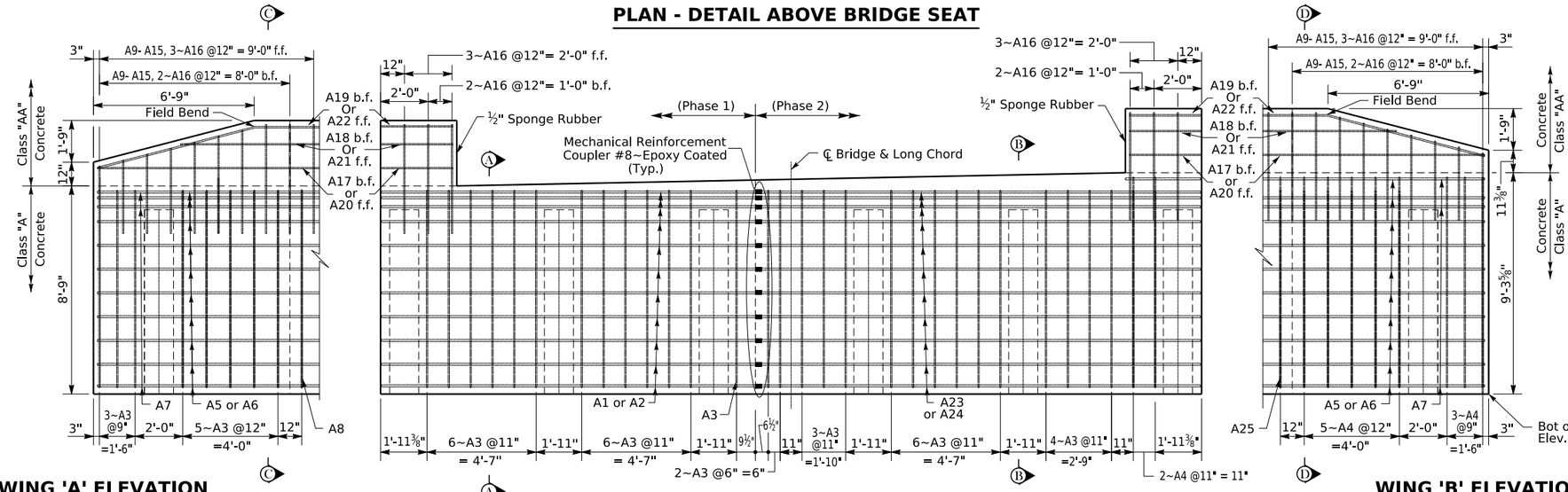
FOUNDATION LAYOUT
CROSSING: GRAYS FORK

ROUTE	EXISTING BRIDGE ID	COUNTY OF
KY 687	026B00086N	CLAY
	SHEET NO. S8	DRAWING NUMBER 28928



Note: Place beams before backfilling.

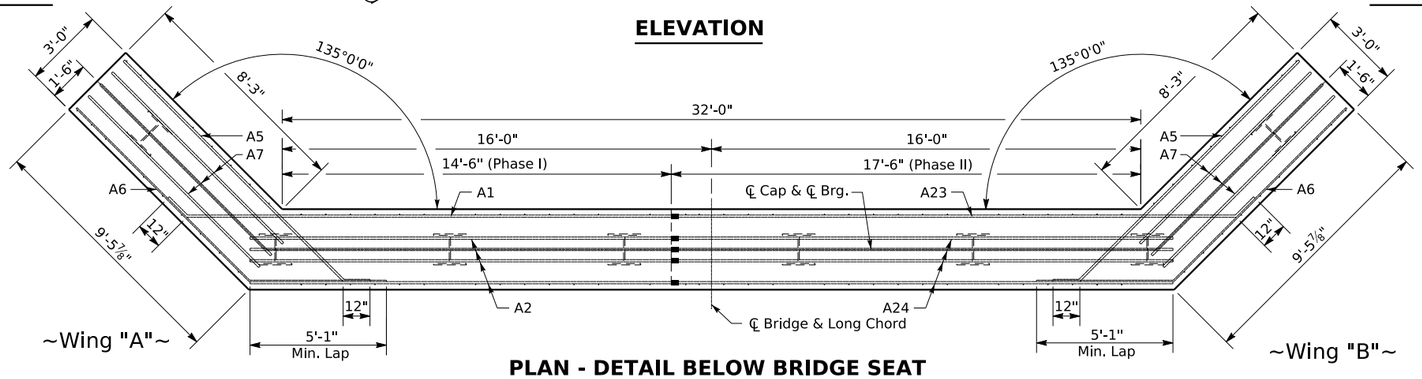
PLAN - DETAIL ABOVE BRIDGE SEAT



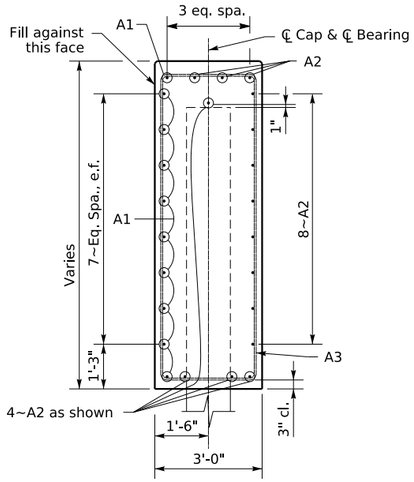
WING 'A' ELEVATION

WING 'B' ELEVATION

ELEVATION

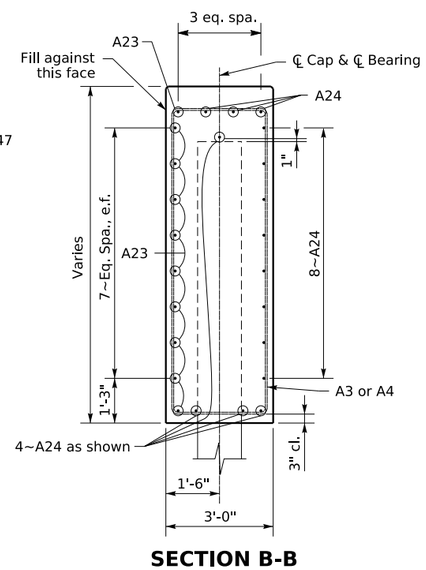


PLAN - DETAIL BELOW BRIDGE SEAT



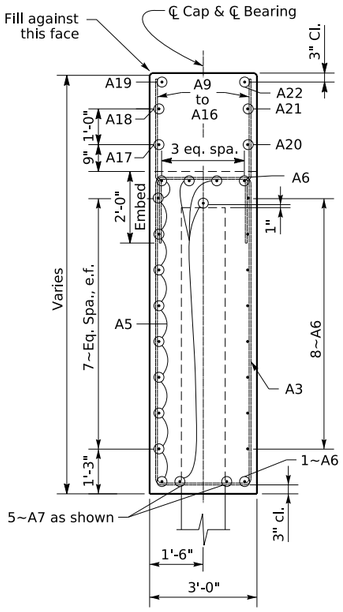
SECTION A-A

Note:
1) Pour Class "A" Concrete
2) Place the designated ½" Neoprene underneath beams as detailed above.
3) Erect beams and tension lateral rods
4) Pour Class "AA" Concrete with ½ inch Sponge Rubber between the face of beams and wings.

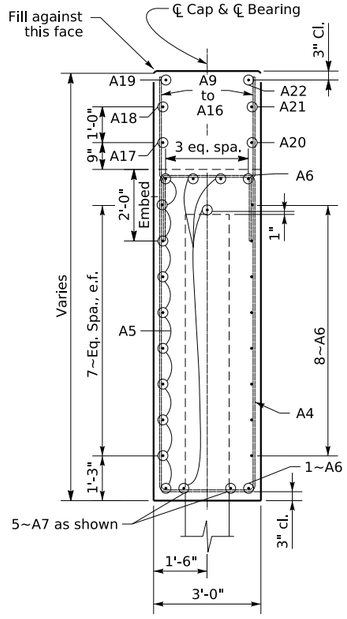


SECTION B-B

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION	DATE	PREPARED BY Division of Structural Design	DATE: September 2024	CHECKED BY	*END BENT 1*	ROUTE KY 687	EXISTING BRIDGE ID 026B00086N
				DESIGNED BY: N. Cordtz	L. Likins	CROSSING GRAYS FORK		SHEET NO. S9
				DETAILED BY: M. BawlThawng	N. Cordtz			DRAWING NUMBER 28928
								COUNTY OF CLAY



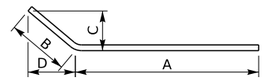
SECTION C-C



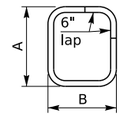
SECTION D-D

BILL OF REINFORCEMENT

MARK	TYPE	NO.	SIZE	LENGTH	LOCATION	A	B	C	D
A1e	8	10	8	19- 0	Phase I Cap B.F.	18- 1	1- 0	0- 8½	0- 8½
A2e	Str.	15	8	15- 8	Phase I Cap				
A3e	14s	36	5	22- 6	Cap / Wing A	8- 4	2- 8		
A4e	14s	10	5	23- 6	Cap / Wing B	8-10	2- 8		
A5e	8	20	8	12- 7	Wing A/B B.F.	11- 8	1- 0	0- 8½	0- 8½
A6e	8	20	8	14- 2	Wing A/B F.F.	9- 2	5- 1	2- 2⅞	2- 2⅞
A7e	Str.	10	8	9- 0	Wing A/B				
A8e	Str.	1	5	8- 4	Wing A F.F.				
A9e	Str.	4	5	2-10	Wing A/B				
A10e	Str.	4	5	3- 1	Wing A/B				
A11e	Str.	4	5	3- 4	Wing A/B				
A12e	Str.	4	5	3- 7	Wing A/B				
A13e	Str.	4	5	3-10	Wing A/B				
A14e	Str.	4	5	4- 1	Wing A/B				
A15e	Str.	4	5	4- 4	Wing A/B				
A16e	Str.	20	5	4- 7	Wing A/B				
A17e	8	2	8	10- 0	Horizontal Wing A/B B.F.	8- 2	1-11	1- 4¼	1- 4¼
A18e	8	2	8	6- 4	Horizontal Wing A/B B.F.	4- 6	1-11	1- 4¼	1- 4¼
A19e	8	2	6	10- 4	Top Of Wing A/B B.F.	8- 5	1-11	1- 4¼	1- 4¼
A20e	8	2	5	12- 2	Horizontal Wing A/B F.F.	9- 3	2-11	2- 0¾	2- 0¾
A21e	8	2	5	8- 5	Horizontal Wing A/B F.F.	5- 6	2-11	2- 0¾	2- 0¾
A22e	8	2	6	12- 4	Top Of Wing A/B F.F.	9- 5	2-11	2- 0¾	2- 0¾
A23e	8	10	8	22- 0	Cap B.F. Phase II	21- 1	1- 0	0- 8½	0- 8½
A24e	Str.	15	8	18- 8	Cap F.F. Phase II				
A25e	Str.	1	5	8-11	Wing B F.F.				



TYPE 8



TYPE 14

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY
Division of Structural Design

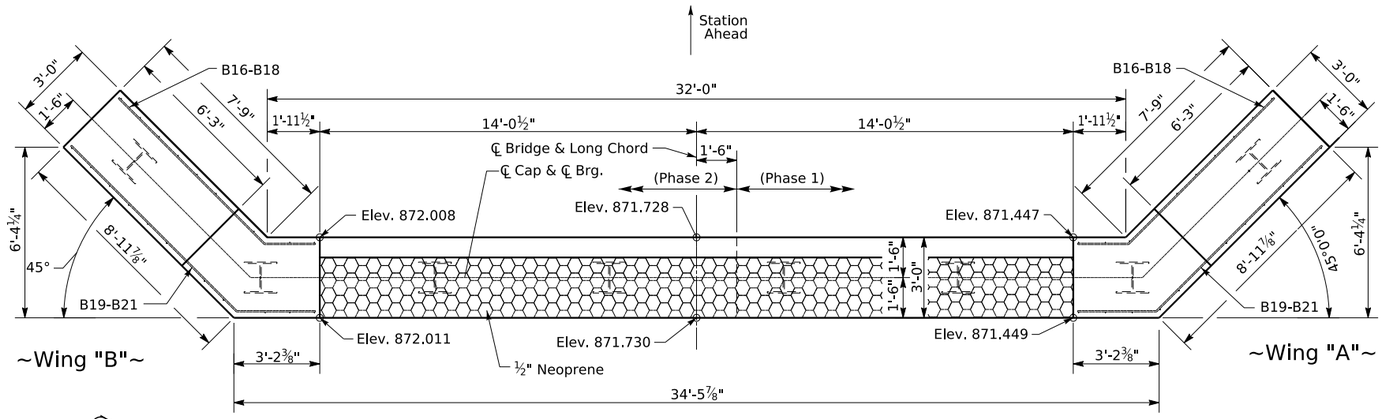
DATE: September 2024	CHECKED BY
DESIGNED BY: N. Cordtz	L. Likins
DETAILED BY: M. BawlThawng	N. Cordtz

END BENT 1

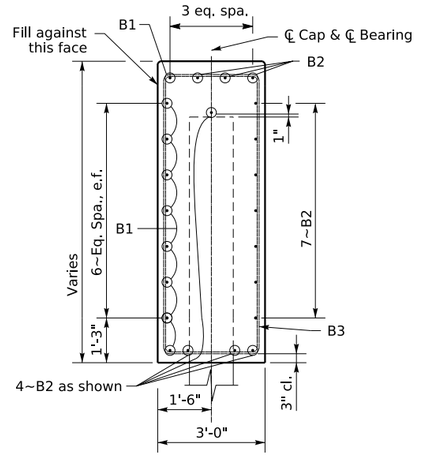
CROSSING: GRAYS FORK

ROUTE	EXISTING BRIDGE ID	COUNTY OF
KY 687	026B00086N	CLAY
	SHEET NO. S10	DRAWING NUMBER 28928

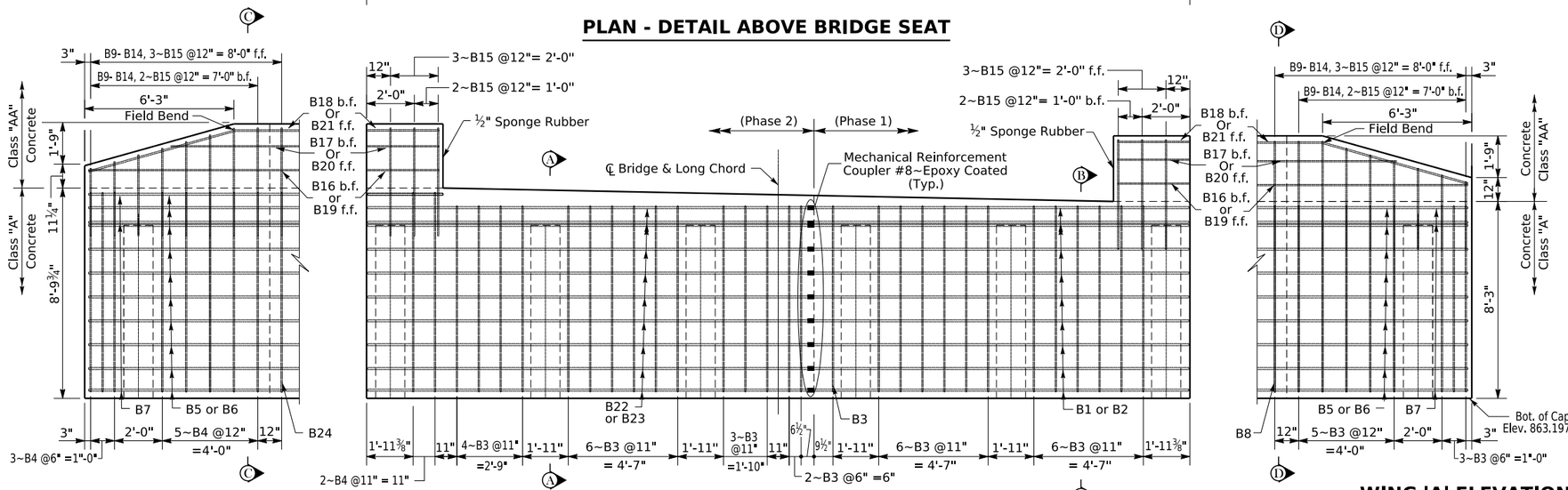
MicroStation v10.16.3.31 USER: messiah.bawithawn DATE PLOTTED: 2-JAN-2025 FILE NAME: J:\District11\RS & M\026B00086N\10390023 Clay County Ky 687\Nick's Design\Details\28928.dgn



PLAN - DETAIL ABOVE BRIDGE SEAT



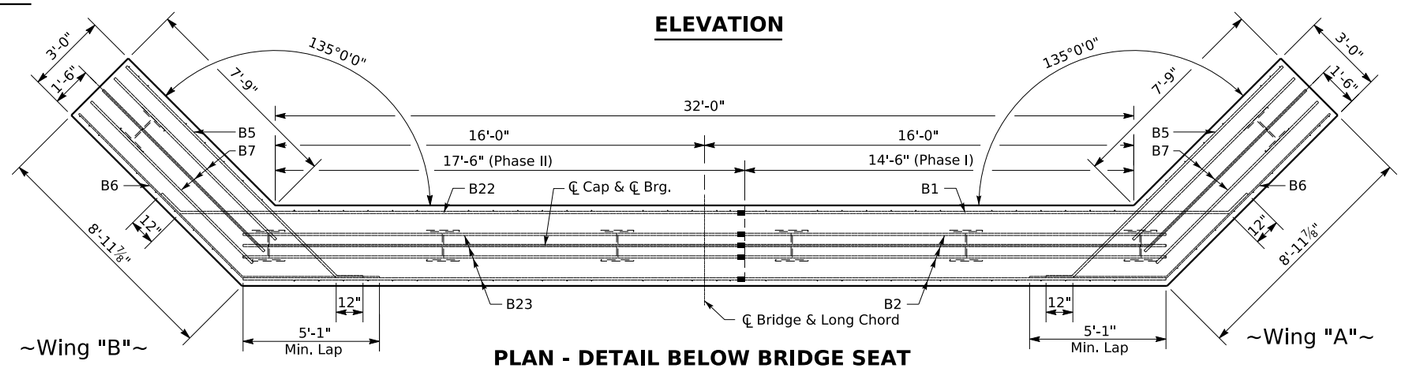
SECTION B-B



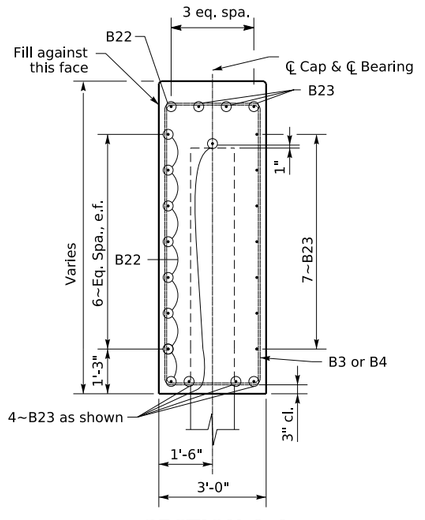
WING 'B' ELEVATION

WING 'A' ELEVATION

ELEVATION



PLAN - DETAIL BELOW BRIDGE SEAT



SECTION A-A

Note:
1) Pour Class "A" Concrete
2) Place the designated ½" Neoprene underneath beams as detailed above.
3) Erect beams and tension lateral rods
4) Pour Class "AA" Concrete with ½ inch Sponge Rubber between the face of beams and wings.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

REVISION	DATE

PREPARED BY
Division of Structural Design

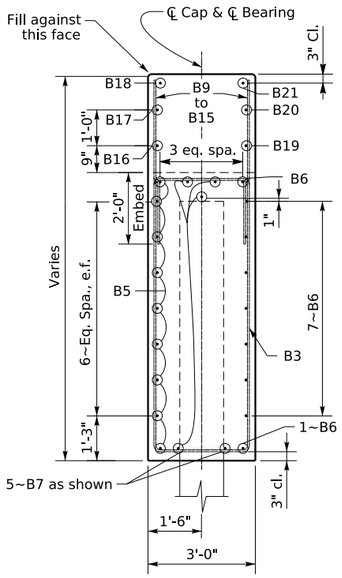
DATE: September 2024	CHECKED BY
DESIGNED BY: N. Cordtz	L. Likins
DETAILED BY: M. BawlThawng	N. Cordtz

END BENT 2

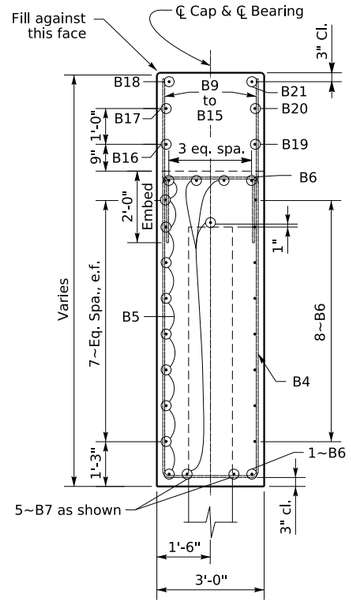
CROSSING: GRAYS FORK

ROUTE	EXISTING BRIDGE ID	COUNTY OF
KY 687	026B00086N	CLAY
	SHEET NO. S11	DRAWING NUMBER 28928

MicroStation v10.16.3.31 USER: messiah.bawithawn DATE PLOTTED: 2-JAN-2025 FILE NAME: J:\District11\RS & M\026B00086N\10390023 Clay County Ky 687\Nick's Design\Details\28928.dgn



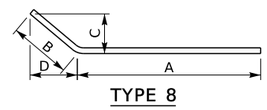
SECTION C-C



SECTION D-D

BILL OF REINFORCEMENT

MARK	TYPE	NO.	SIZE	LENGTH	LOCATION	A	B	C	D
B1e	8	9	8	19- 0	Phase I Cap B.F.	18- 1	1- 0	0- 8½	0- 8½
B2e	Str.	14	8	15- 8	Phase I Cap				
B3e	14s	36	5	21- 6	Cap / Wing A	7-10	2- 8		
B4e	14s	10	5	22- 6	Cap / Wing B	8- 4	2- 8		
B5e	8	19	8	12- 1	Wing A/B B.F.	11- 2	1- 0	0- 8½	0- 8½
B6e	8	19	8	13- 8	Wing A/B F.F.	8- 8	5- 1	2- 2⅞	2- 2⅞
B7e	Str.	10	8	8- 6	Wing A/B				
B8e	Str.	1	5	7-10	Wing A F.F.				
B9e	Str.	4	5	2-10	Wing A/B				
B10e	Str.	4	5	3- 1	Wing A/B				
B11e	Str.	4	5	3- 4	Wing A/B				
B12e	Str.	4	5	3- 8	Wing A/B				
B13e	Str.	4	5	3-11	Wing A/B				
B14e	Str.	4	5	4- 3	Wing A/B				
B15e	Str.	20	5	4- 6	Wing A/B				
B16e	8	2	8	9- 6	Horizontal Wing A/B B.F.	7- 8	1-11	1- 4¼	1- 4¼
B17e	8	2	8	6- 1	Horizontal Wing A/B B.F.	4- 3	1-11	1- 4¼	1- 4¼
B18e	8	2	6	9-10	Top Of Wing A/B B.F.	7-11	1-11	1- 4¼	1- 4¼
B19e	8	2	5	11- 8	Horizontal Wing A/B F.F.	8- 9	2-11	2- 0¾	2- 0¾
B20e	8	2	5	8- 2	Horizontal Wing A/B F.F.	5- 3	2-11	2- 0¾	2- 0¾
B21e	8	2	6	11-10	Top Of Wing A/B F.F.	8-11	2-11	2- 0¾	2- 0¾
B22e	8	9	8	22- 0	Cap B.F. Phase II	21- 1	1- 0	0- 8½	0- 8½
B23e	Str.	14	8	18- 8	Cap F.F. Phase II				
B24e	Str.	1	5	8- 5	Wing B F.F.				



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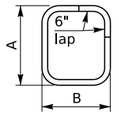


TYPE 14

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY TRANSPORTATION CABINET

REVISION	DATE

PREPARED BY
Division of Structural Design

DATE: September 2024	CHECKED BY	
DESIGNED BY: N. Cordtz	L. Likins	
DETAILED BY: M. BawlThawng	N. Cordtz	

END BENT 2

CROSSING: GRAYS FORK

ROUTE: KY 687

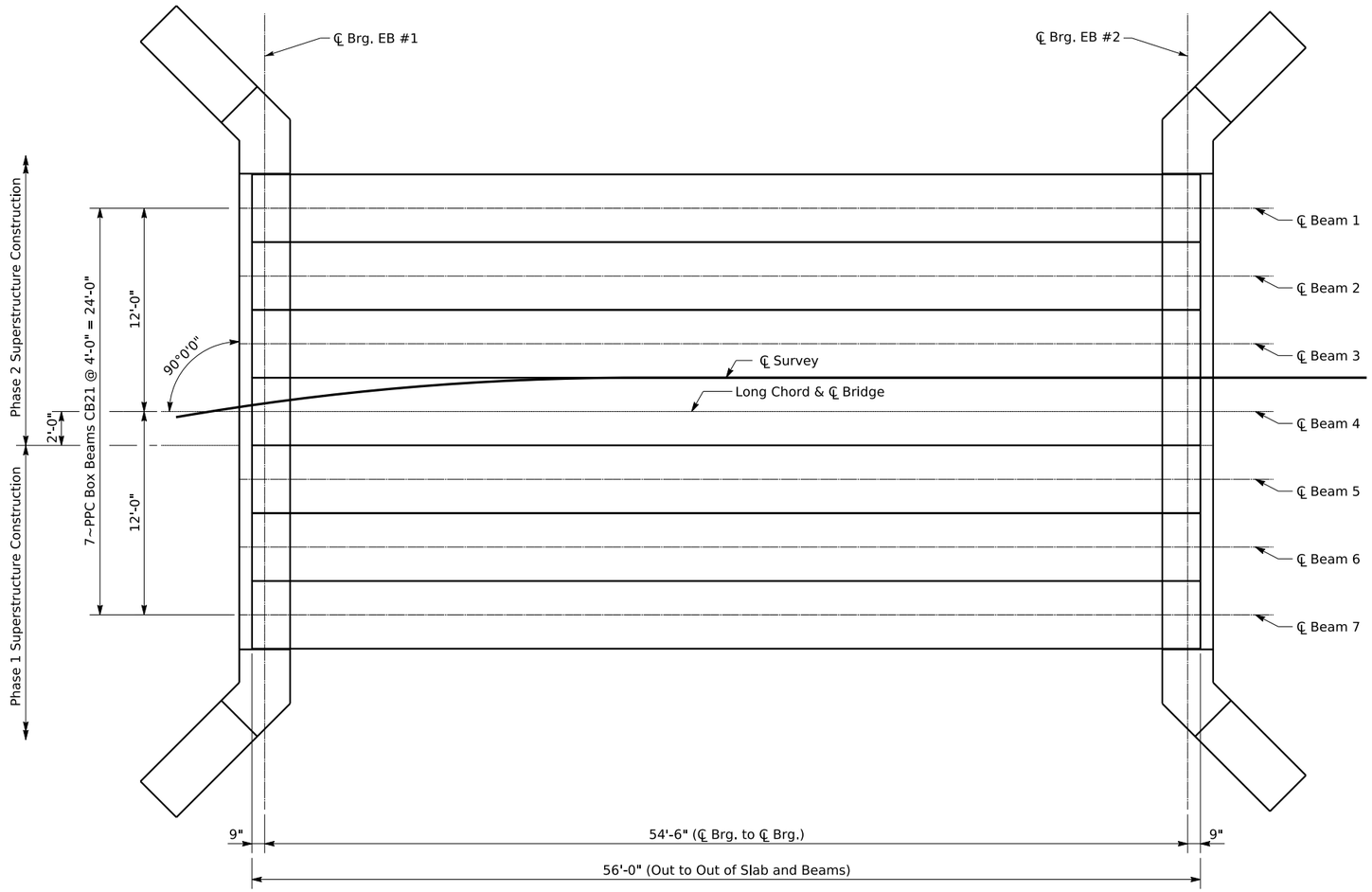
EXISTING BRIDGE ID: 026B00086N

SHEET NO.: S12

COUNTY OF: CLAY

DRAWING NUMBER: 28928

MicroStation v10.16.3.31 USER: messiah.bawithawn DATE PLOTTED: 2-JAN-2025 FILE NAME: J:\District11\RS & M\026B00086N\10390023 Clay County Ky 687\Nick's Design\Details\28928.dgn



FRAMING PLAN

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION	DATE	PREPARED BY Division of Structural Design	DATE: September 2024	CHECKED BY	*FRAMING PLAN*	ROUTE	EXISTING BRIDGE ID	COUNTY OF
				DESIGNED BY: N. Cordtz	L. Likins	CROSSING GRAYS FORK	KY 687	026B00086N	CLAY
				DETAILED BY: K. Bishop	N. Cordtz			SHEET NO. S13	DRAWING NUMBER 28928

MicroStation v10.16.3.31 USER: messiah.bawithawn DATE PLOTTED: 2-JAN-2025 FILE NAME: J:\District11\RS & M\026B00086N\10390023 Clay County Ky 687\Nick's Design\Details\28928.dgn

PRECAST PRESTRESSED BOX BEAMS

General Notes

SPECIFICATIONS: *All references to the standard Specifications are to the current edition of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction, with current supplemental specifications. All references to the AASHTO Specifications are to the current edition of the AASHTO LRFD Bridge Design Specifications, with interims.*

DESIGN LOADS: *Beam sections are designed for 1.25*HL93 (KYHL93) Live Load.*

DESIGN LOAD DISTRIBUTION: *Contrary to AASHTO LRFD Bridge Design Specifications, the design moment and shear distribution for all beams is 0.5 lanes.*

FUTURE WEARING SURFACE: *These beams are designed for a 15 PSF future wearing surface load.*

SUBSTRUCTURE DESIGN LOADS: *Unfactored design reaction forces per beam end.*
DC (kips): Beam, Slab (if applicable), and Type II railing dead loads.
DW (kips): Future wearing surface.
LL (kips): Beam Live Load reaction per lane x Design load distribution.
LL+I (kips): LL with Dynamic load allowance.

DESIGN DEFLECTIONS:
Δd (in.): Sum of the downwards deflections caused by the design 5" deck, railing, and future wearing surface. (Positive Downwards)
Δc (in.): Upwards midspan camber of the beam caused by prestressing minus the downward deflection of the beam due to self weight. (Positive Upwards)

MATERIAL DESIGN SPECIFICATIONS:

for Steel Reinforcement	*FY = 60000 PSI*
for Prestressed Girder Concrete (Typ. U.N.O.)	*F'C = 7000 PSI*
	F'Cl = 5500 PSI
for Class "AA" Concrete	*F'C = 4000 PSI*
for Prestressing Steel	*F'S = 270000 PSI*

DESIGN LENGTH: *Beam lengths shown in the Standards represent total beam length. Use the next greater designed section for non-Standard lengths.*

CONSTRUCTION METHOD: *Transferring bond stress to the concrete will not be allowed, nor releasing of end anchors until the concrete has attained a minimum compressive strength of F'Cl as shown by standard cylinders made and cured identically with the girders; attain F'C at or prior to 28 days. Apply an initial prestress force of 33817 lbs. per low relaxation strand. Beams with honeycomb of such extent as to affect the strength of resistance to deterioration will not be accepted. The allowance of .0005L (length) is made for shortening of beams due to shrinkage and elastic change. Furnish shop plans showing a detensioning plan by numbering, in sequence, the strand pattern.*

PRESTRESSING STRANDS: *Ensure prestressing strands to be ½" oversize (0.167 sq. in.) uncoated seven-wire stress relieved, low-relaxation strands conforming to AASHTO M 203, Grade 270. If an alternate strand arrangement or strand type is preferred by the Contractor, the designer that developed the original plans will provide the design and also revise the original plans to reflect the changes. These design and plan modifications will be done at the Contractor's expense.*

CORROSION INHIBITOR: *Provide a corrosion inhibitor for B-type (non-composite) beams from the list of approved materials.*

BEVELED EDGES: *Bevel all exposed edges ¾".*

BEAM SEALER: *For composite box beams (CB Beams), seal the full length of the exterior face of all exterior beams with the extent from the top of the beam to 1'-0" underneath the beam. For non-composite box beams (B beams), seal all faces of all beams, except take care to ensure the grout pockets are not sealed. Use an approved silane sealer as specified by the Division of Structural Design.*

REINFORCEMENT: *Dimensions shown from the face of concrete to reinforcement are clear distances. Spacing of reinforcement is from center to center of reinforcement. All steel reinforcement is to be epoxy coated in accordance with Section 811.10 of the Specifications. Consider bars marked "C" to be a stirrup for purposes of bend diameters. Non-epoxy reinforcement may be used for fabrication purposes, only, provided that the steel is not used in the top 5½" of the beam and the location of the steel is indicated on the shop drawings.*

FABRICATION: *Beams shall not be fabricated more than 120 days before the deck is to be poured.*

GROUT: *Provide non-shrink grout for anchor dowels, shear keys, and tensioning rod block-outs conforming with Section 601.03.03 of the Specifications. When side by side superstructure is utilized, grouting will be completed after lateral tension rods have been fully tightened and before leveling devices have been removed. Include the cost of furnishing and placing grout in the price of beam.*

~~RAILING SYSTEM TYPE II: *Furnish this material per these specifications.*~~

ITEM	*DESCRIPTION*	*MATERIAL SPECIFICATION*	*COATING SPECIFICATION*
Post	*W6x25*	*ASTM A36 or A572*	*A123*
Channel	*C7x9.8*	*ASTM A36 or A572*	*A123*
Plate	*½"x 7"*	*ASTM A36 or A572*	*A123*
Tubing	*8x4x0.1875*	*ASTM A500 or A501*	*A123*
Bolts	*⅝"*	*ASTM A307*	*A153*
Nuts	*for ⅝"*	*ASTM A563, Grade A or better*	*A153*
Washers	*for ⅝"*	*ASTM A563, Grade A or better*	*A153*
Stud	*1¼"*	*ASTM A108 (1045 C.D. Bar)*	*B633, Type II, Class 25*
Ferrule	*2½"x 5"*	*ASTM A108 (11L17 Steel)*	*B633, Type II, Class 25*
Wire	*⅜"*	*ASTM A510 (1018 Steel)*	*B633, Type II, Class 25*
Nut	*for 1 ¼" Bolt*	*ASTM A108 (12L14 Steel)*	*B633, Type II, Class 25*
Nut	*for 1 ¼" Stud*	*ASTM A325M*	*B633, Type II, Class 25*
Washers	*for 1 ¼" Stud*	*ASTM A325M*	*B633, Type II, Class 25*

Deep Beam Guardrail: Is to be used on this structure, see sheet S16.

Use the current edition of the references listed below with these standards.

STANDARD DRAWINGS

BBP-003 Elastomeric Bearing Pads
~~BHS-007 Railing System Type II~~
BJE-001 Armored Edge
RBR-001 Steel Beam Guardrail
RBR-005 Guardrail Components

SPECIAL NOTES

for Corrosion Inhibitors

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY TRANSPORTATION CABINET

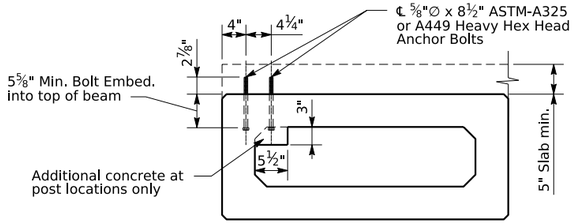
REVISION	DATE

PREPARED BY
Division of Structural Design

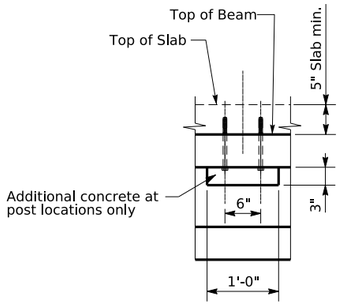
DATE: September 2024	CHECKED BY
DESIGNED BY: N. Cordtz	L. Likins
DETAILED BY: K. Bishop	N. Cordtz

BOX BEAM GENERAL NOTES
CROSSING: GRAYS FORK

ROUTE	EXISTING BRIDGE ID	COUNTY OF
KY 687	026B00086N	CLAY
	SHEET NO. S14	DRAWING NUMBER 28928

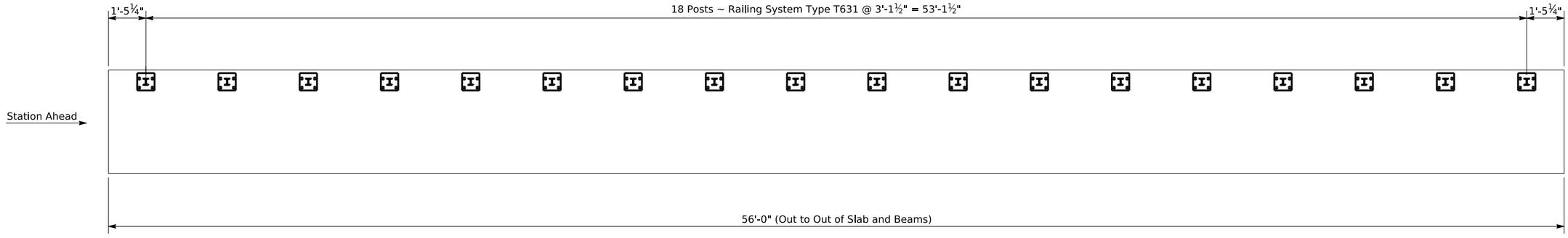


SECTION VIEW



TRAFFIC VIEW

Note: See Sheet S18 for Railing System Type T631 details.



Plan View

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY
Division of
Structural Design

DATE: March 2024	CHECKED BY
DESIGNED BY: N. Cordtz	L. Likins
DETAILED BY: K. Bishop	N. Cordtz

BEAM 5 DETAILS

CROSSING
GRAYS FORK

ROUTE	ITEM NO.	COUNTY OF
KY 687	026B00086N	CLAY
	SHEET NO. S15	DRAWING NUMBER 28928

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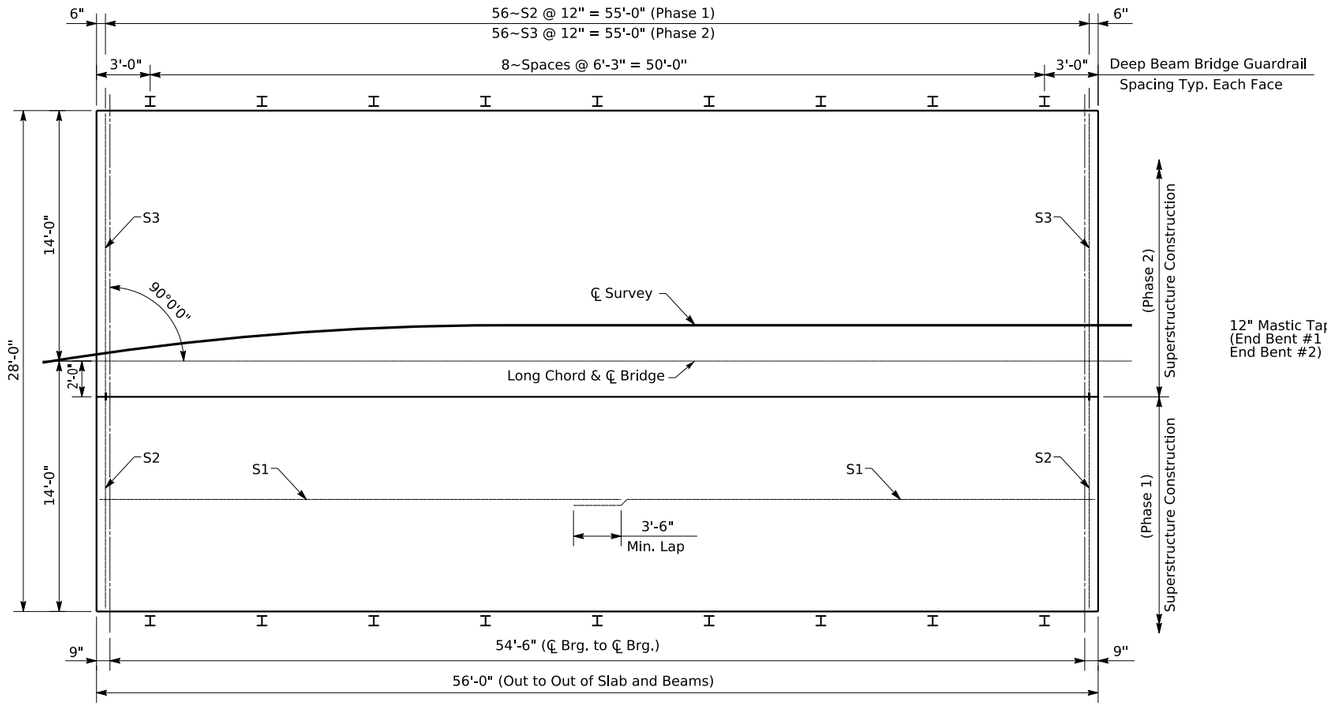
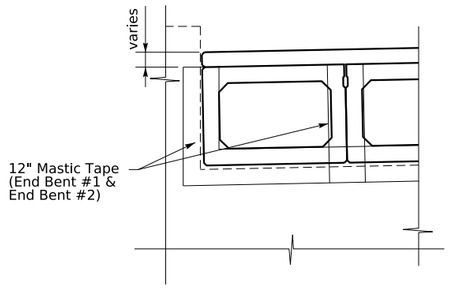
BILL OF REINFORCEMENT

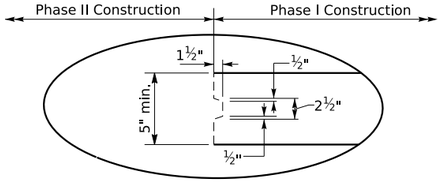
MARK	TYPE	NO.	SIZE	LENGTH	LOCATION
S1e	Str.	56	5	29- 7	Slab
S2e	Str.	56	5	11-10	Slab
S3e	Str.	56	5	15-10	Slab



PLAN



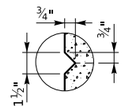
END OF BEAM ELEVATION



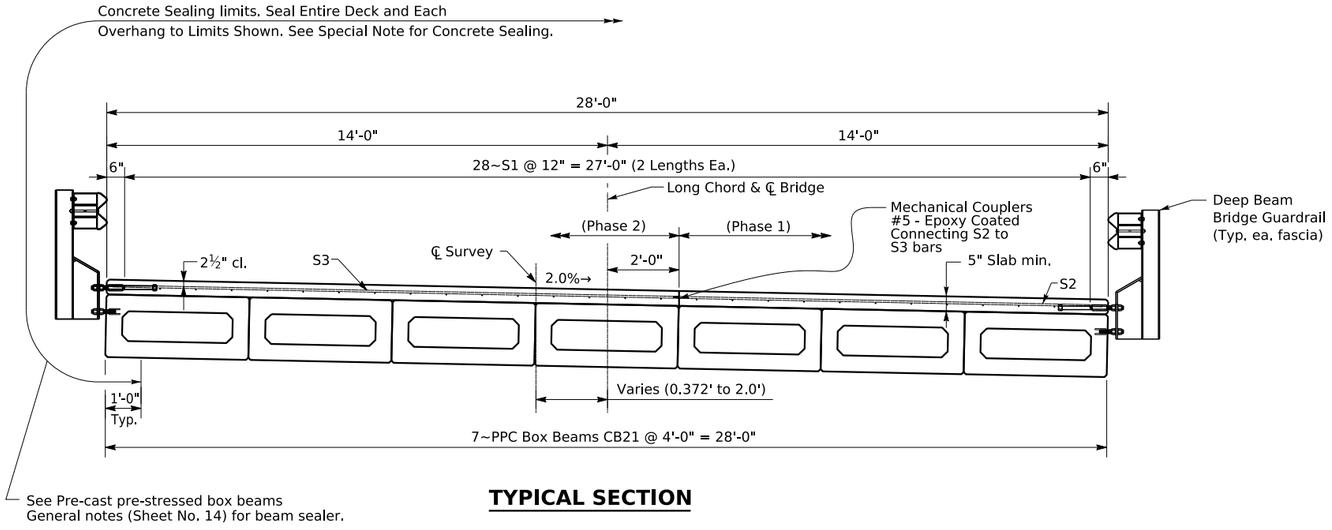
CONSTRUCTION KEY DETAIL

For Phase Longitudinal Slab Joint

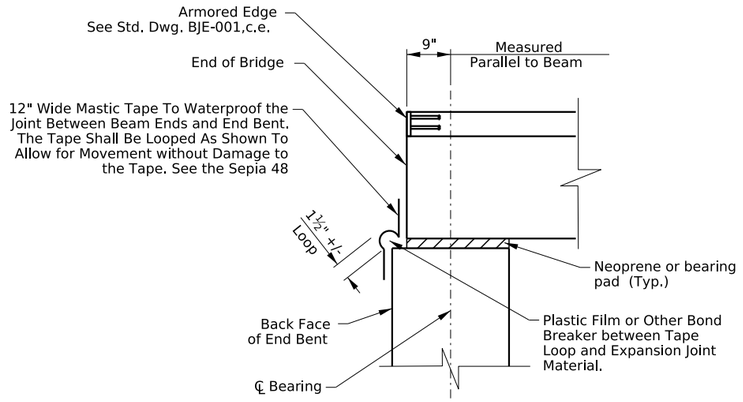
NOTE: Contrary to the Standard Drawings (5" slab thickness), the construction elevations will cause the slab to be approximately 6" thick at the ends and go to approximately 5.0" thick at the center of the bridge. This is how the quantities for Class "AA" Concrete were calculated. No additional concrete shall be paid for to maintain the maximum and minimum allowable slab depths as shown on the construction elevation.



"V-Groove"
Rustication



TYPICAL SECTION



JOINT WATERPROOFING DETAIL

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
KENTUCKY TRANSPORTATION CABINET

REVISION	DATE

PREPARED BY
Division of
Structural Design

DATE: September 2024	CHECKED BY
DESIGNED BY: N. Cordtz	L. Likins
DETAILED BY: M. BawlThawng	N. Cordtz

SUPERSTRUCTURE
CROSSING
GRAYS FORK

ROUTE	EXISTING BRIDGE ID	COUNTY OF
KY 687	026B00086N	CLAY
	SHEET NO. S16	DRAWING NUMBER 28928

MicroStation v10.16.3.31 USER: messiah.bawithawn DATE PLOTTED: 2-JAN-2025
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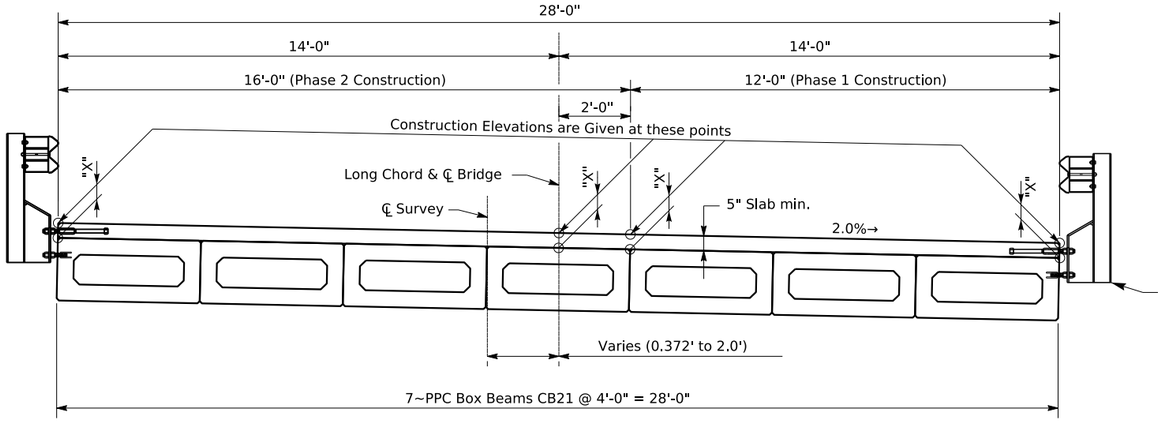
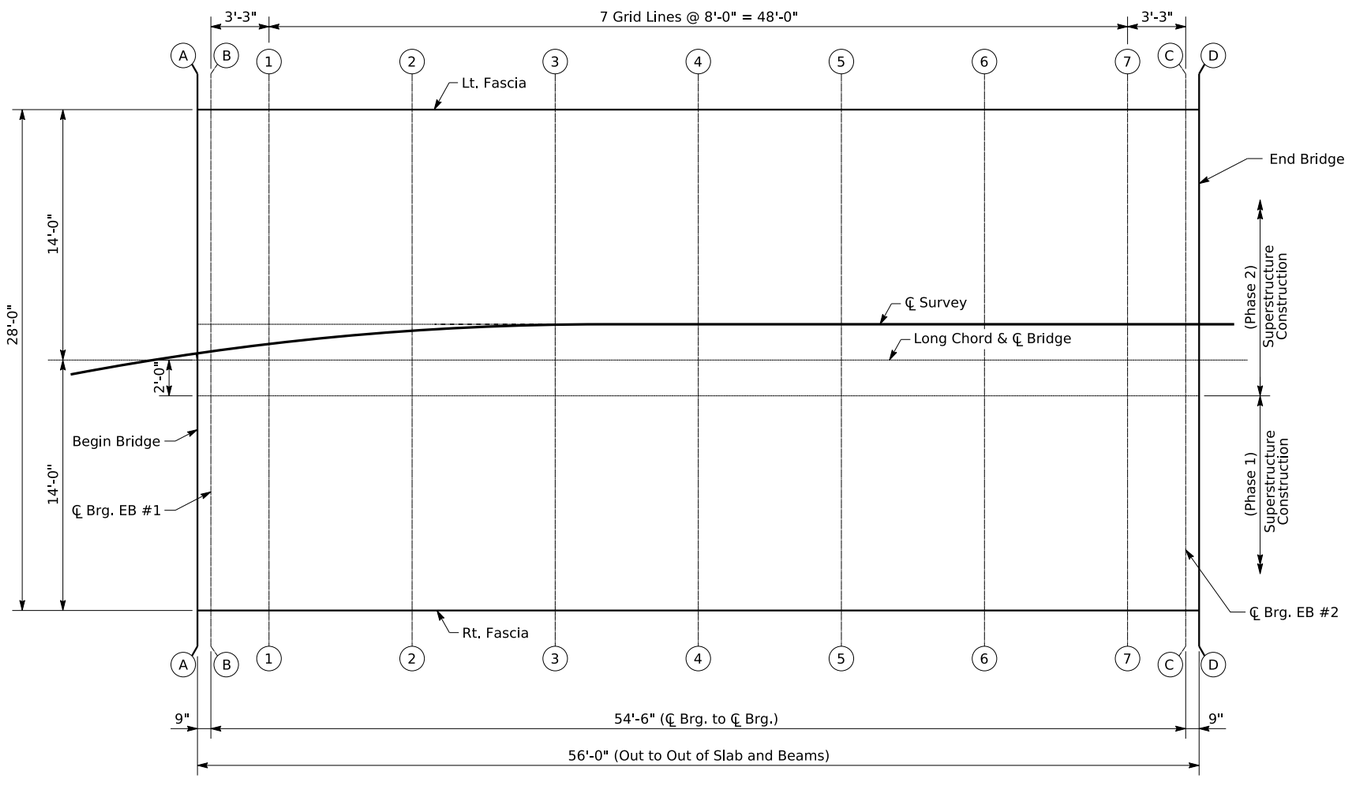


TYPICAL SECTION

CONSTRUCTION ELEVATIONS

LOCATION	LT. FASCIA			℄ BRIDGE			CONST. JT.			RT. FASCIA		
	CONSTR. ELEV.	TOP OF BEAM	DIM. "X"	CONSTR. ELEV.	TOP OF BEAM	DIM. "X"	CONSTR. ELEV.	TOP OF BEAM	DIM. "X"	CONSTR. ELEV.	TOP OF BEAM	DIM. "X"
SKEW LN AA	874.349			874.072			874.032			873.791		
SKEW LN BB	874.347			874.070			874.031			873.791		
SKEW LN CC	874.300			874.020			873.980			873.740		
SKEW LN DD	874.300			874.020			873.980			873.740		
GRID LN 01	874.345			874.067			874.027			873.790		
GRID LN 02	874.342			874.063			874.024			873.784		
GRID LN 03	874.343			874.063			874.023			873.783		
GRID LN 04	874.343			874.063			874.023			873.783		
GRID LN 05	874.337			874.057			874.017			873.777		
GRID LN 06	874.325			874.045			874.005			873.765		
GRID LN 07	874.308			874.028			873.988			873.748		



GRID LAYOUT

NOTES FOR ELEVATIONS TAKEN ON PRESTRESSED CONCRETE BOX BEAMS

Take elevations on top of beam at points indicated after the beams have been laterally tensioned and grouted. The beam elevations are to be read to three decimal places and entered in tables under "Top of Beam" elevations.

Compute dimension "X" as follows: "Construction Elevation" minus "Top of Beam" elevation equals dimension "X". Construction Elevations include camber due to weight of the concrete slab and barrier. Measuring of dimension "X" gives the final check on beam tolerances for camber, beam damage, and errors in erection that produce reverse cambers, sags, and unsightly fascia beams.

For setting templates, measure dimension "X" above top of beams for top of template. Do not set template by elevations.

Temporary supports or shoring will not be permitted under the girders when pouring the concrete floor slab or when taking "Top of Beam" elevations.

Note to Resident: The "Maximum Allowable Camber" shown on the beam sheet is the amount of camber, measured prior to casting the deck, above which the beam will begin to encroach into the slab.

The minimum allowable dimension "X" or slab thickness is $4\frac{3}{4}$" (0.395'). If any computed dimension "X" is less than that, adjustmants will need to be made to the "X" dimensions on some or all grid lines. Adjustments must meet approval of the Engineer.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

REVISION	DATE

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Division of Structural Design

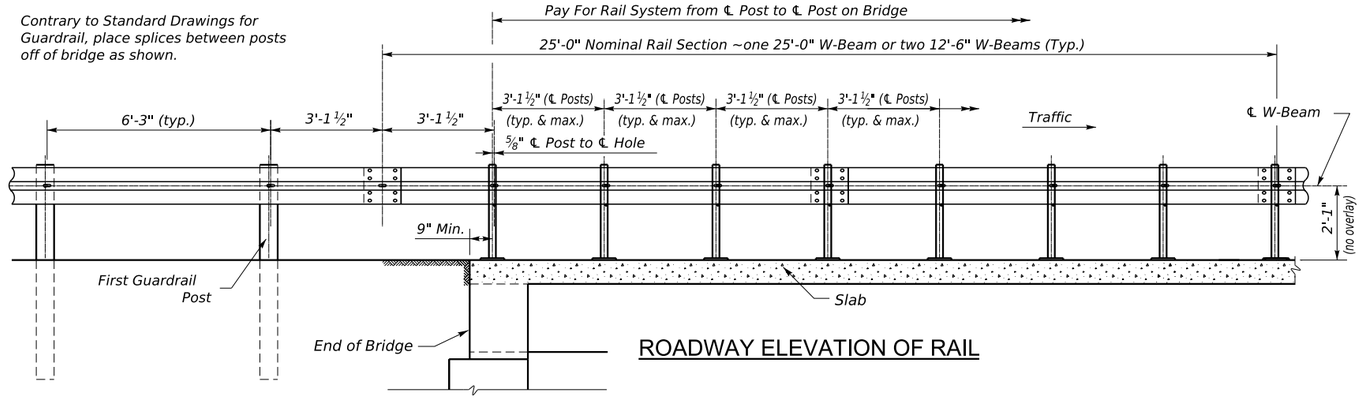
DATE: September 2024	CHECKED BY
DESIGNED BY: N. Cordtz	L. Likins
DETAILED BY: K. Bishop	N. Cordtz

CONSTRUCTION ELEVATIONS
CROSSING
GRAYS FORK

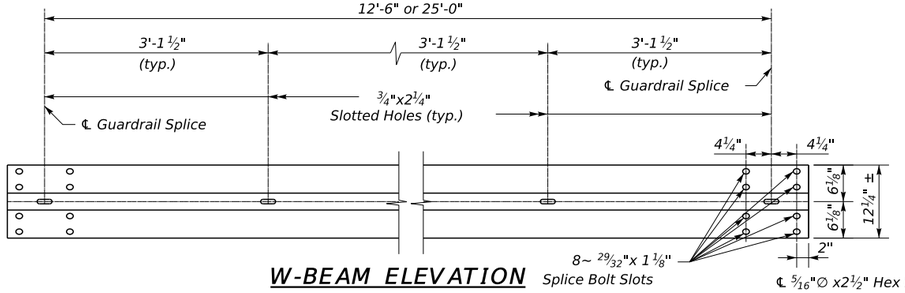
ROUTE	EXISTING BRIDGE ID	COUNTY OF
KY 687	026B00086N	CLAY
	SHEET NO. S17	DRAWING NUMBER 28928

MicroStation v10.16.3.31 USER: messiah.bawithawn DATE PLOTTED: 2-JAN-2025 FILE NAME: J:\District11\RS & M\026B00086N\10390023 Clay County Ky 687\Nick's Design\Details\28928.dgn

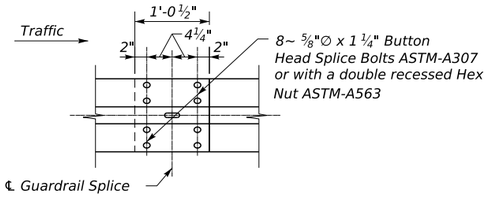
Contrary to Standard Drawings for Guardrail, place splices between posts off of bridge as shown.



ROADWAY ELEVATION OF RAIL



W-BEAM ELEVATION



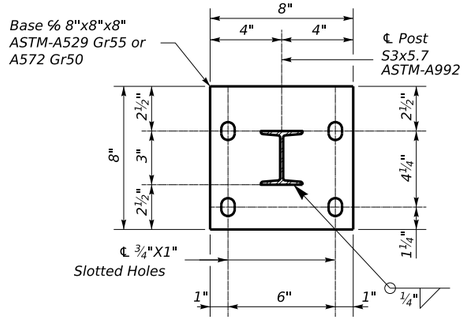
W-BEAM SPLICE ELEVATION

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.

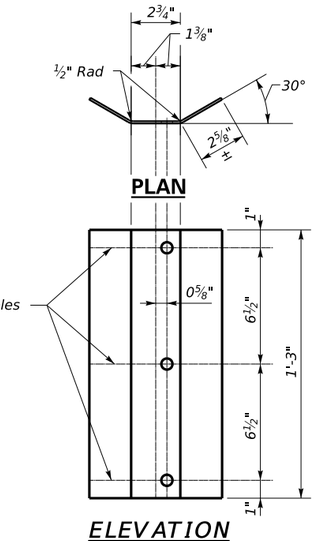
CONSTRUCTION NOTES:
Face of rail post must be plumb unless otherwise approved by the Engineer. Post must be perpendicular to adjacent roadway grade. Use epoxy mortar with Type III binder conforming to Section 826 and ASTM C881 under post base plates if gaps larger than 1/16" exist. Fully anchored guardrail 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 1/16" by grinding. Shop drawings are not required.

MATERIAL NOTES:
Galvanize all steel components. Anchor bolts for base plate must be ⅝"∅ ASTM-A325 or A449 bolts with one hardened washer and one regular lock washer placed under each heavey hex nut. Nuts must conform to A563 requirements. W-beam must meet the requirements of Std. Dwg. RBR-001, c.e. 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'-1½".

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'-0" - 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.



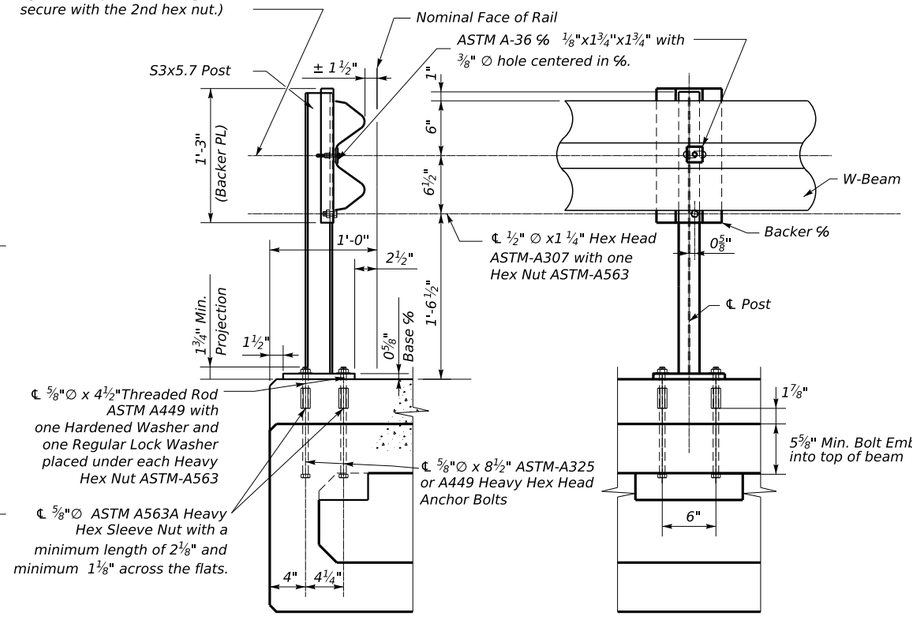
SECTION A-A



ELEVATION

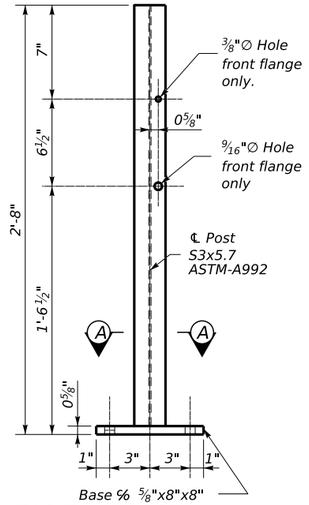
(Bent Plate)
Backer ⅝ ⅛"x8"x1'-3" ASTM-A1011 CS or SS Gr 33, or A1008 CS or SS Gr 33 (11 Gage acceptable)

℄ 5/16"∅ x2½" 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.)



X-SECTION VIEW

TRAFFIC VIEW



POST ELEVATION

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

REVISION	DATE

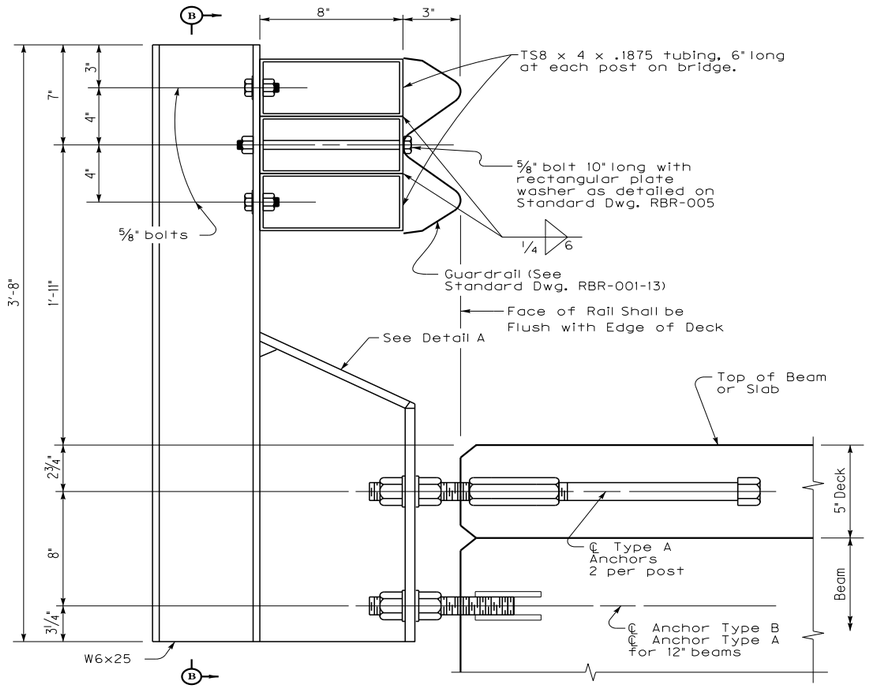
PREPARED BY
Division of Structural Design

DATE: September 2024	CHECKED BY
DESIGNED BY: N. Cordtz	L. Likins
DETAILED BY: K. Bishop	N. Cordtz

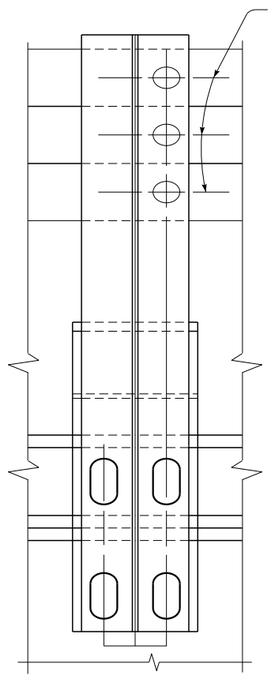
RAILING SYSTEM TYPE T631 DETAILS

CROSSING: GRAYS FORK

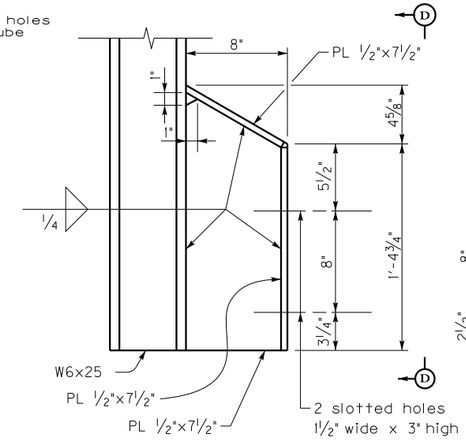
ROUTE	EXISTING BRIDGE ID	COUNTY OF
KY 687	026B00086N	CLAY
	SHEET NO. S18	DRAWING NUMBER 28928



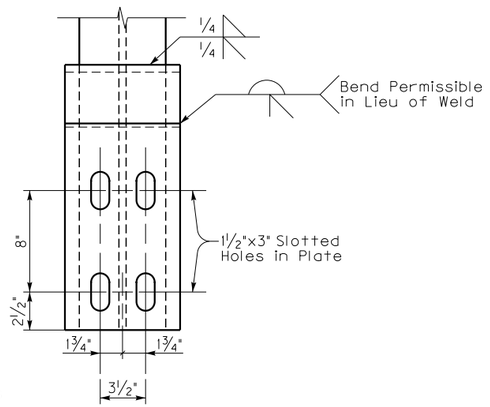
TYPICAL SECTION



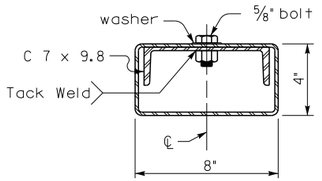
SECTION B–B



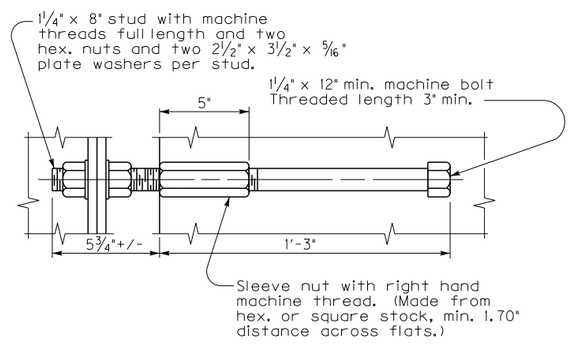
DETAIL A



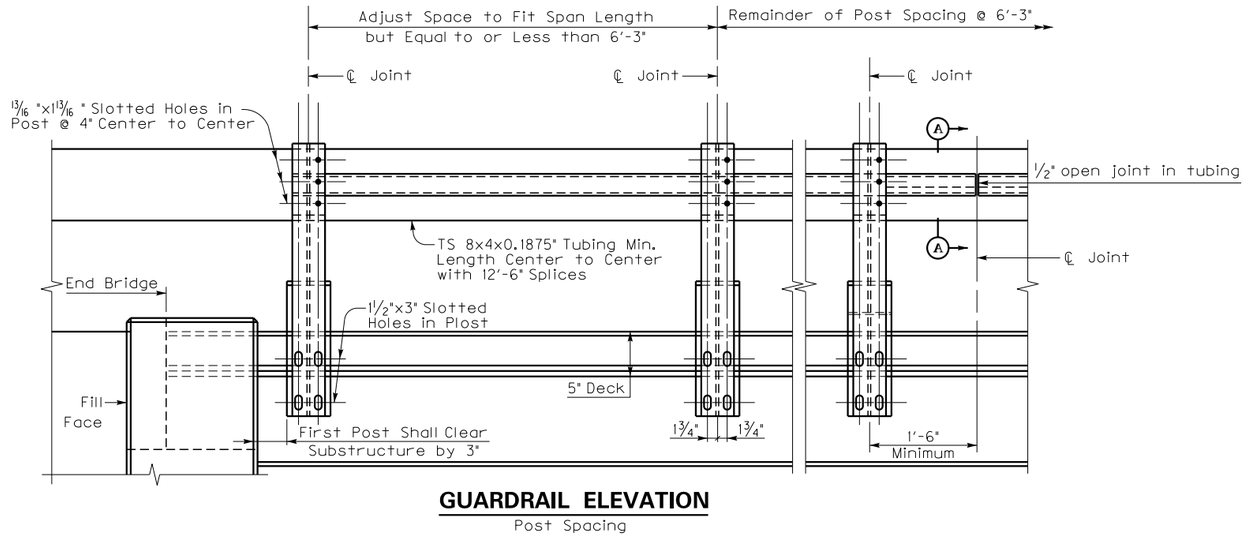
VIEW D–D



SECTION A–A

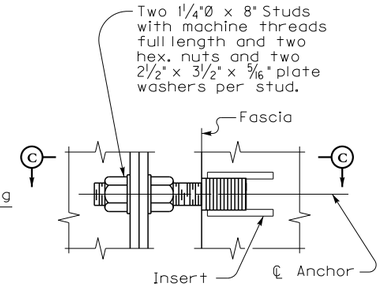


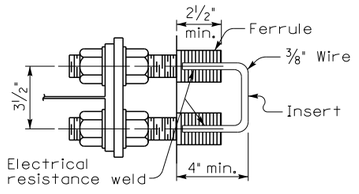
TYPE A ANCHOR DETAIL



GUARDRAIL ELEVATION

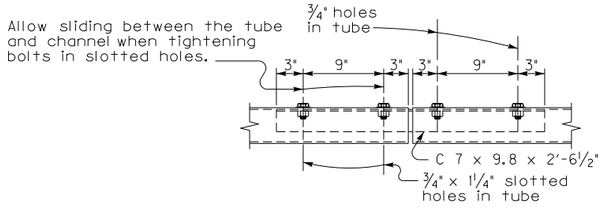
Post Spacing





SECTION C-C

TYPE B ANCHOR DETAIL



OPEN JOINT

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

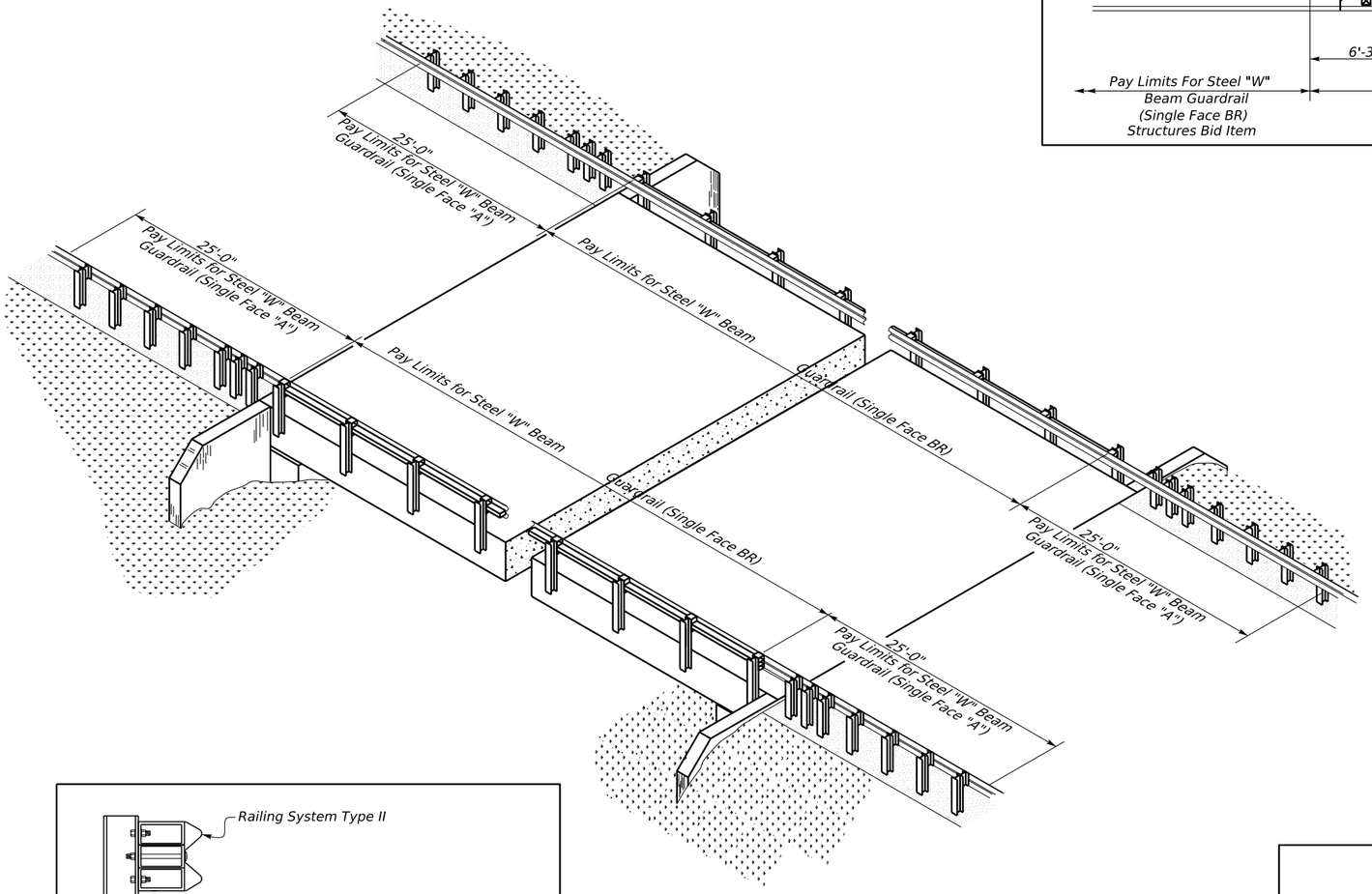
PREPARED BY
Division of Structural Design

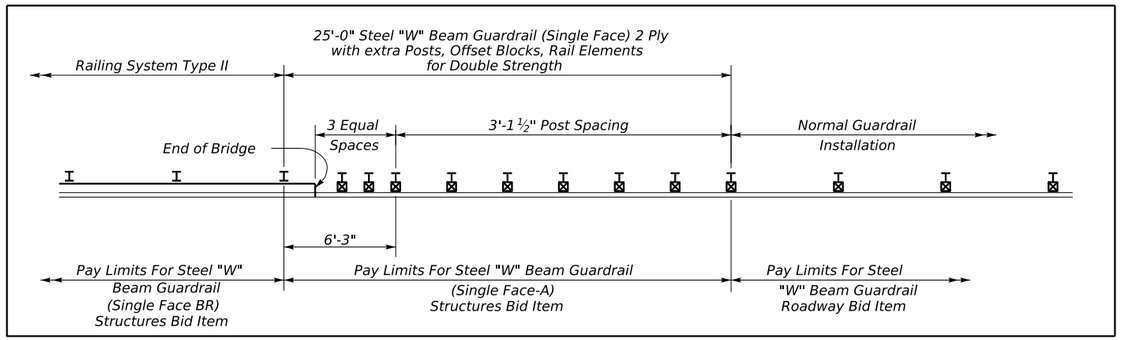
DATE: March 2024	CHECKED BY
DESIGNED BY: N. Cordtz	L. Likins
DETAILED BY: K. Bishop	N. Cordtz

DEEP BEAM GUARDRAIL
CROSSING
GRAYS FORK

ROUTE	ITEM NO.	COUNTY OF
KY 687	026B00086N	CLAY
	SHEET NO. S19	DRAWING NUMBER 28928

MicroStation v10.16.3.31 USER: messiah.bawithawn DATE PLOTTED: 2-JAN-2025 FILE NAME: J:\District11\RS & M\026B00086N\10390023 Clay County Ky 687\Nick's Design\Details\28928.dgn

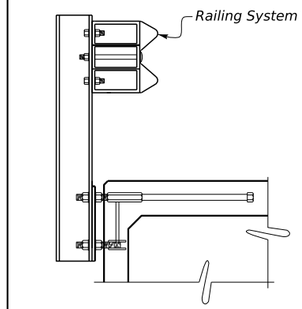




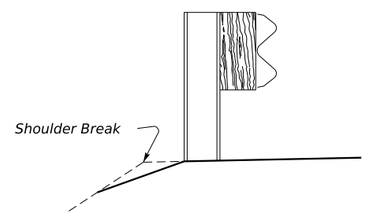
BID ITEM NOTES

GUARDRAIL-STEEL W BEAM (SINGLE FACE BR): The bid unit for this item is be linear feet. This item shall include the Railing System Type II that is to be installed on the bridge between the endmost posts attached to the bridge and all labor and incidentals necessary to properly install the railing system. For non-composite box beams, the railing system is attached to the beam prior to shipment.

GUARDRAIL-STEEL W BEAM (SINGLE FACE A): The bid unit for this item is be linear feet. This item includes the W-Beam guardrail (2 ply for extra strength), guardrail posts, offset blocks, hardware, and labor and incidentals necessary to properly install the approach guardrail within the 25'-0" limits at each corner of the structure. For guardrail components, refer to Standard Drawings RBR-001,c.e., RBR-005,c.e. and RBR-015,c.e.



BRIDGE GUARDRAIL INSTALLATION



ROADWAY SHOULDER G.R. INSTALLATION

SUBMITTED _____ DIVISION DIRECTOR _____ DATE

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
KENTUCKY TRANSPORTATION CABINET

REVISION	DATE

PREPARED BY
Division of Structural Design

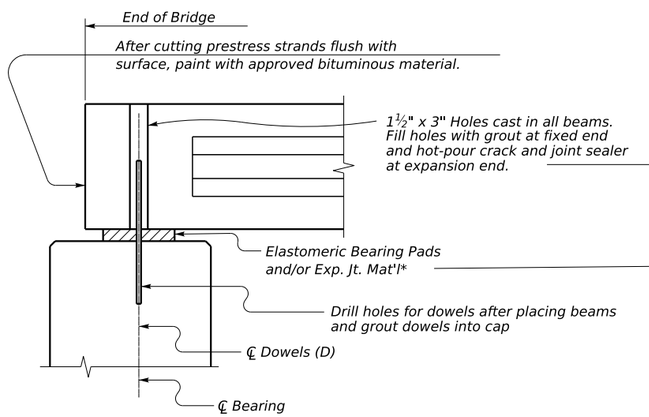
DATE: March 2024	CHECKED BY
DESIGNED BY: N. Cordtz	L. Likins
DETAILED BY: K. BIshop	N. Cordtz

SEPIA 001-RAILING SYSTEM TYPE II GUARDRAIL TREATMENT

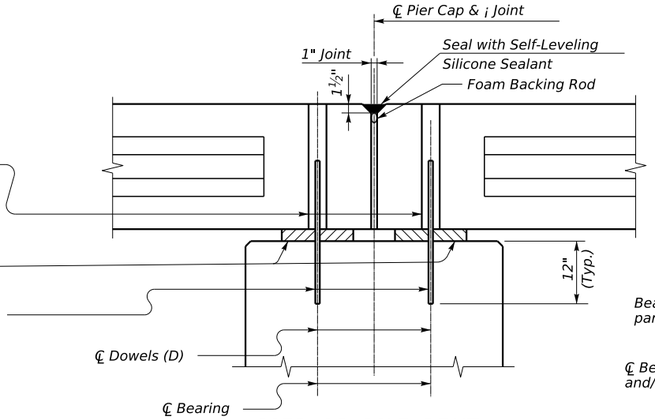
CROSSING
GRAYS FORK

ROUTE	ITEM NO.	COUNTY OF
KY 687	026B00086N	CLAY
	SHEET NO. S20	DRAWING NUMBER 28928

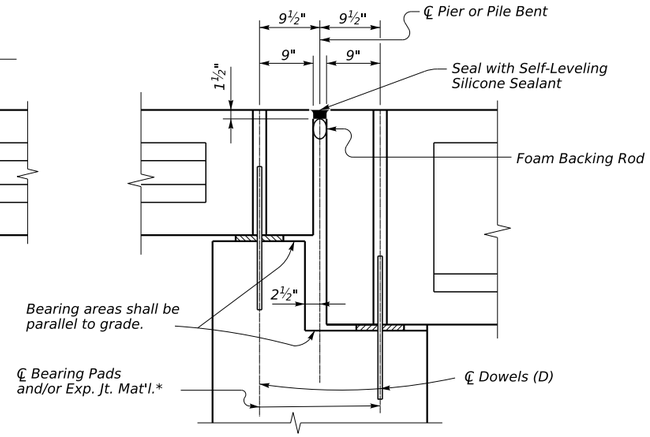
MicroStation v10.16.3.31 USER: messiah.bawithawn DATE PLOTTED: 2-JAN-2025 FILE NAME: J:\District11\RS & M\026B00086N\10390023 Clay County Ky 687\Nick's Design\Details\28928.dgn



ABUTMENT OR END BENT



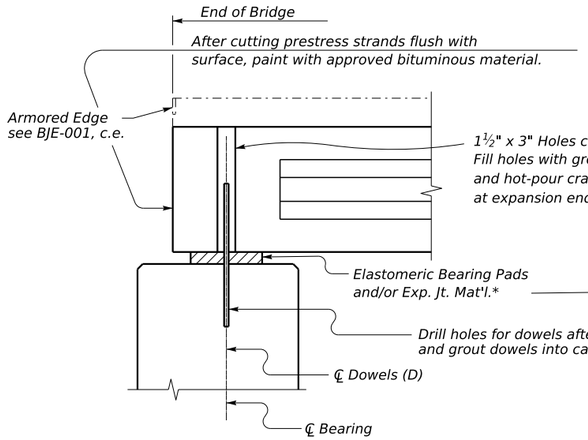
PIER OR PILE BENT



STEPPED PIER OR PILE BENT

(Showing Location & Placement of Box Beams)

TYPICAL BEARING DETAILS (NON-COMPOSITE)



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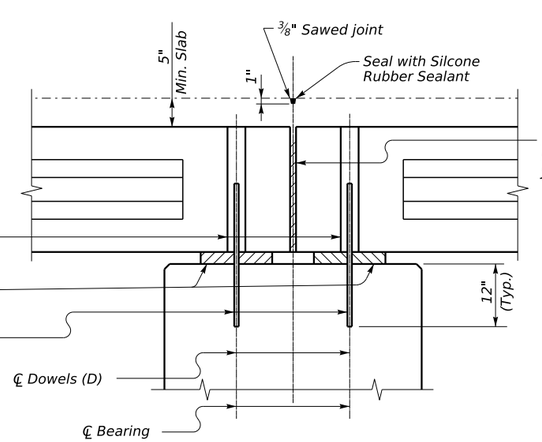
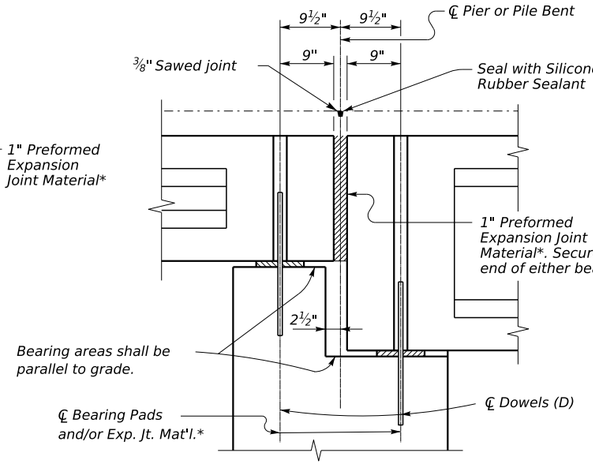


PIER OR PILE BENT



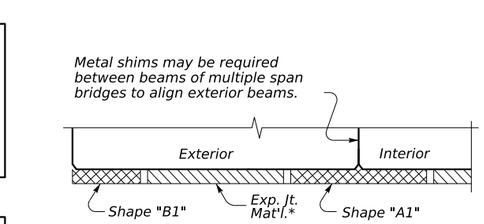
STEPPED PIER OR PILE BENT

(Showing Location & Placement of Box Beams)

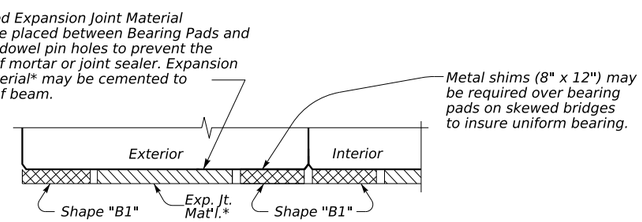
TYPICAL BEARING DETAILS (COMPOSITE)

*Expansion Joint Material:
AASHTO M153
Type-I Sponge Rubber
Type-II Cork permitted with contractor provided documentation that the Build America Buy America requirments are satisfied.

** Preformed Neoprene Rubber Sheet:
50 Durometer
AASHTO M251, Grade 3

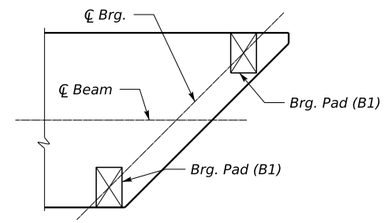


(0°Skew)



(Skewed Spans)

For Elastomeric Bearing Pad Details of Shapes A1 & B1, see Std. Dwg. BBP-003, c.e.



PAD PLACEMENT FOR SKEWS

Pads "B1" are to always be placed perpendicular to ℄ beam with center of pad over ℄ bearing.

SHOWING PADS FOR BEAM TYPES B27-B42 & CB27-CB42

Use ½" x 1'-6" preformed neoprene rubber sheet** for beam types B12-B21 & CB12-CB21 for bearing.

GENERAL NOTES

Provide metal shims conforming to ASTM A36 and galvanize in accordance with ASTM A123. As alternates, polymer, or elastomer shims may be used. Include the cost of furnishing and placing these shims in the price per beam.

SUBMITTED _____ DIVISION DIRECTOR 10/25/2024 DATE

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
KENTUCKY TRANSPORTATION CABINET

REVISION	DATE

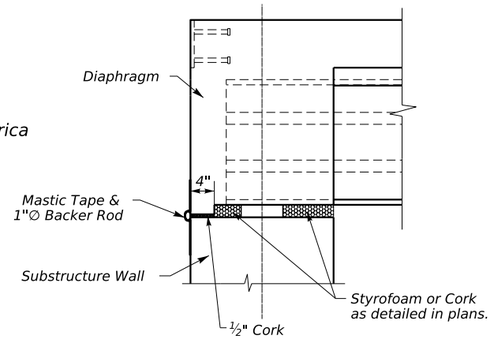
PREPARED BY
Division of Structural Design

DATE: March 2024	CHECKED BY	SEPIA 044-BOX BEAM BEARING DETAILS	ROUTE
DESIGNED BY: N. Cordtz	L. Likins	CROSSING	KY 687
DETAILED BY: K. Bishop	N. Cordtz	GRAYS FORK	

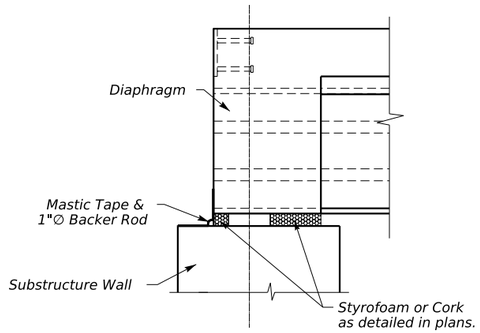
ITEM NO.	COUNTY OF
026B00086N	CLAY
SHEET NO.	DRAWING NUMBER
S21	28929

MicroStation v10.16.3.31 USER: messiah.bawithawn DATE PLOTTED: 2-JAN-2025
FILE NAME: J:\District11\RS & M\026B00086N\10390023 Clay County Ky 687\Nick's Design\Details\28928.dgn

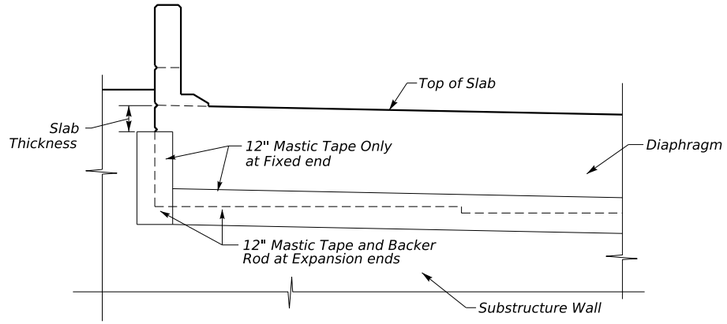
*Expansion Joint Material:
AASHTO M153
Type-I Sponge Rubber
Type-II Cork permitted with contractor provided documentation that the Build America Buy America requirments are satisfied.



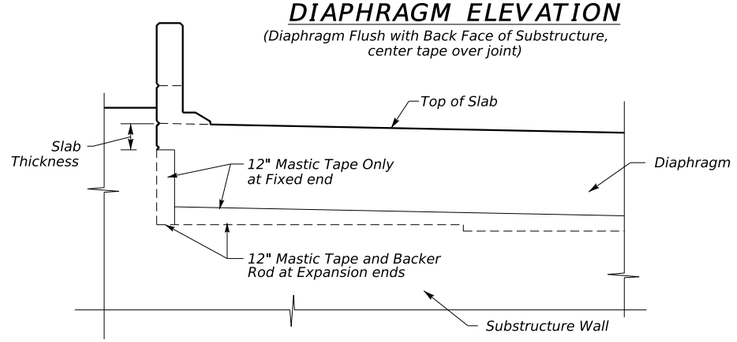
EXPANSION END
(Flush Diaphragm and Substructure)



EXPANSION END
(Offset Diaphragm and Substructure)

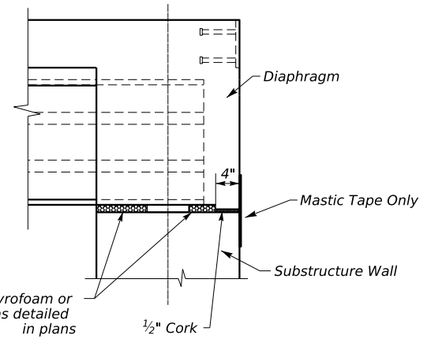


DIAPHRAGM ELEVATION
(Diaphragm Flush with Back Face of Substructure, center tape over joint)

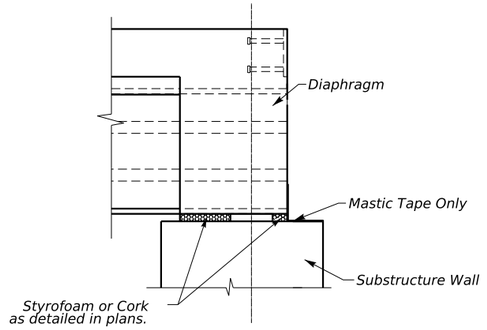


DIAPHRAGM ELEVATION
(Offset Diaphragm and Substructure)

MASTIC TAPE APPLICATION AT BRIDGE ENDS
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 or payment shall be made.

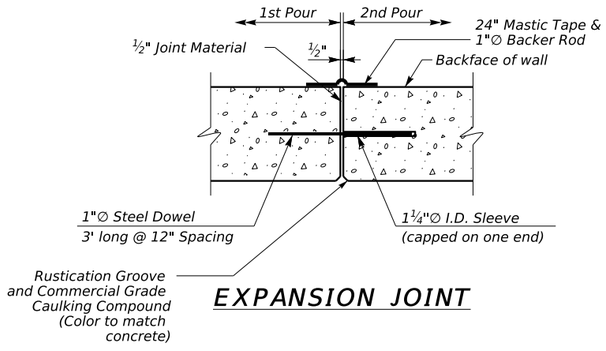


FIXED END
(Flush Diaphragm and Substructure)

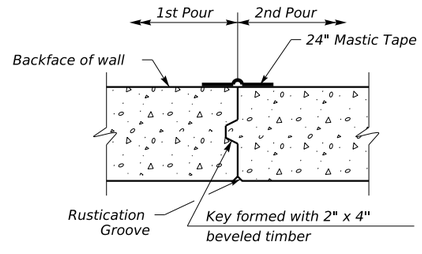


FIXED END
(Offset Diaphragm and Substructure)

Note: Center Mastic Tape over joint.



EXPANSION JOINT



CONTRACTION JOINT

NOTE:
Maintain 2 inch clearance from ends of Longitudinal reinforcement to edge of expansion joint.

MASTIC TAPE APPLICATION AT RETAINING WALLS

GENERAL NOTES

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-inch 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 mfgr., shall be applied for a minimum width of nine inches on each side of the joint.

Mastic Tape shall be either:

EZ-WRAP RUBBER by PRESS-SEAL GASKET 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 lapping a minimum of six inches and in accordance with the mfgrs. recommendations with the overlap running downhill.

All preformed expansion joint material, caulking, mastic tape, pipe sleeve and equipment and labor necessary to complete the joints are incidental to the square foot bid for Retaining Walls.

SUBMITTED _____ DIVISION DIRECTOR 10/25/2024 DATE

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
KENTUCKY TRANSPORTATION CABINET

REVISION	DATE

PREPARED BY
Division of
Structural Design

DATE: March 2024	CHECKED BY
DESIGNED BY: N. Cordtz	L. Likins
DETAILED BY: K. Bishop	N. Cordtz

SEPIA 048-JOINT WATERPROOFING
CROSSING
GRAYS FORK

ROUTE	ITEM NO.	COUNTY OF
KY 687	026B00086N	CLAY
	SHEET NO.	DRAWING NUMBER
	S22	28928