COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0243.0TH	R1

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

PLANS OF
PROPOSED PROJECT

KNOTT COUNTY
GRADE, DRAIN & SURFACE WITH STRUCTURE PLANS
HOLLYBUSH ROAD CR 1108
OVER HOLLYBUSH CREEK
060C00022N

INDEX OF SHEETS

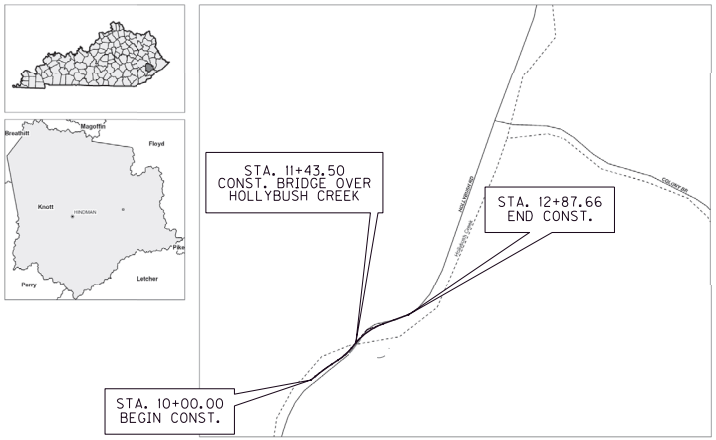
SHEETS NOT INCLUDED IN TOTAL SHEETS

U2A

STANDARD DRAWINGS

NUMBER

RBE-060-15
RBI-001-12
RBI-002-07
RBR-001-13
RBR-005-11
RBR-010-06
RBR-015-06
RBR-016-05
RBR-050-08
RBR-051-01
RBR-055-01
RBR-060
RDD-040-05
RDI-004-04
RDI-040-01
RDX-210-03
RDX-220-05
RDX-225-01
RGX-001-06
RGX-100-07
RGX-105-09
RGX-200-01
TTC-150-04
TTC-155-02
BGX-006-10



THIS PROJECT IS OFF THE NH SYSTEM

THE CONTROL OF ACCESS ON THIS PROJECT SHALL BE BY PERMIT

LAYOUT MAP

DESIGN CRITERIA

CLASS OF HIGHWAY: RURAL LOCAL ROAD
TYPE OF TERRAIN: ROLLING
DESIGN SPEED: NO POSTED SPEED
REQUIRED NPSD:
REQUIRED PSD:
LEVEL OF SERVICE:
ADT PRESENT (-):
ADT FUTURE (-):
DHV:
D %:
T %:

GEOGRAPHIC COORDINATES

LATITUDE 37 DEGREES 20 MINUTES 46 SECONDS NORTH
LONGITUDE 82 DEGREES 51 MINUTES 29 SECONDS WEST

DESIGNED

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

HOLLYBUSH ROAD

LENGTH 287.66 LIN. FT. 0.054 MILES	LENGTH ___ LIN. FT. ___ MILES	LENGTH ___ LIN. FT. ___ MILES	LENGTH ___ LIN. FT. ___ MILES
ADDED / DEDUCTED — FOR EQUALITIES ___ LIN. FT. NOT INCLUDED	ADDED / DEDUCTED — FOR EQUALITIES ___ LIN. FT. NOT INCLUDED	ADDED / DEDUCTED — FOR EQUALITIES ___ LIN. FT. NOT INCLUDED	ADDED / DEDUCTED — FOR EQUALITIES ___ LIN. FT. NOT INCLUDED
RAILROAD CROSSINGS NO. ___ LIN. FT.	RAILROAD CROSSINGS NO. ___ LIN. FT.	RAILROAD CROSSINGS NO. ___ LIN. FT.	RAILROAD CROSSINGS NO. ___ LIN. FT.
BRIDGES ___ LIN. FT.	BRIDGES ___ LIN. FT.	BRIDGES ___ LIN. FT.	BRIDGES ___ LIN. FT.

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS
COUNTY OF

KNOTT

ITEM NO. 12-0243.0TH
PROJECT NUMBER: 060C00022N
D23A 4663-DR
LETTING DATE:

RECOMMENDED BY: _____ PROJECT MANAGER DATE:

PLAN APPROVED BY: _____ STATE HIGHWAY ENGINEER DATE:

STATE OF KENTUCKY
LORA N. BOLLER
27316
LICENSED
PROFESSIONAL ENGINEER

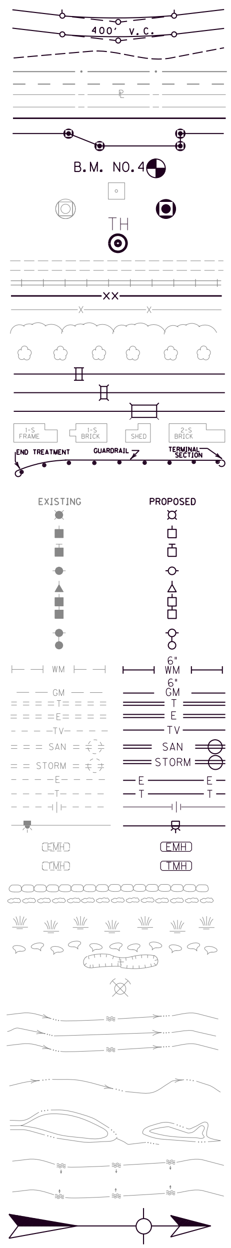
Lora Boller, PE
2022.11.21
22:31:49 -05'00'

HMB Professional Engineers, Inc.
3 HMB Circle
Frankfort, KY 40601
(502) 695-9800
(502) 695-9810 FAX

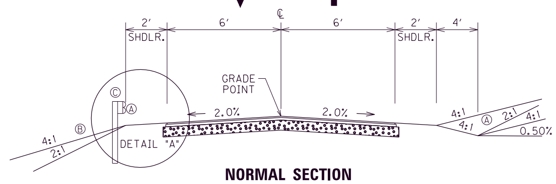
COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0243.0TH	R2

CONVENTIONAL SIGNS

- SURVEY LINE
- GRADE LINE
- GROUND LINE
- COUNTY LINE
- CORPORATE LIMITS
- EXIST. PROPERTY LINE
- EXIST. RIGHT OF WAY & PROPERTY LINE
- PROPOSED RIGHT OF WAY
- RIGHT OF WAY MONUMENT
- BENCH MARK
- EXISTING R/W MARKER
- RIGHT OF WAY MONUMENT EXISTING/PROPOSED
- UTILITY TEST HOLE
- EXISTING ROAD
- RAILROAD
- FENCE (CONTROLLED ACCESS)
- FENCE (EXCEPT STONE AND HEDGE)
- TREE LINE
- TREES
- PIPE CULVERT
- CULVERT
- BRIDGE
- BUILDINGS
- GUARDRAIL
- LIGHTING POLE
- POWER POLE
- JOINT POWER & TELEPHONE POLE
- TELEPHONE & TELEGRAPH POLE
- ANCHOR, POWER OR TELEPHONE
- STUB POWER
- STUB TELEPHONE
- WATER MAIN
- GAS MAIN
- TELEPHONE DUCT
- ELECTRIC DUCT
- DIRECT BURIAL TV CABLE
- SANITARY SEWER (WITH MANHOLE)
- STORM SEWER (WITH MANHOLE)
- DIRECT BURIAL ELECTRIC CABLE
- DIRECT BURIAL TELEPHONE CABLE
- OVERHEAD WIRE
- TRAFFIC LIGHTS
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- STONE FENCE
- HEDGE FENCE
- SWAMP OR MARSH
- SPRINGS
- SINKHOLE
- QUARRY SITE
- BLUE LINE STREAM
- INTERMITTENT STREAM OR DITCH
- LAKES OR PONDS
- REGULATED FLOODWAY
- NORTH POINT



TYPICAL SECTIONS



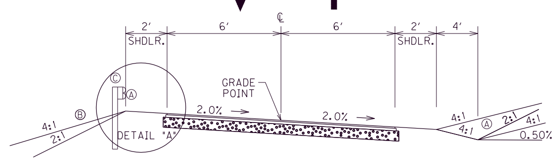
NORMAL SECTION
HOLLYBUSH ROAD

Ⓐ 7 FT Post

Ⓑ See Cross Sections for Slopes Outside the Limits of the Shoulders.

Ⓒ When guardrail is used, pave shoulder to face of rail.

TYPICAL SECTIONS



SUPERELEVATED SECTION
HOLLYBUSH ROAD

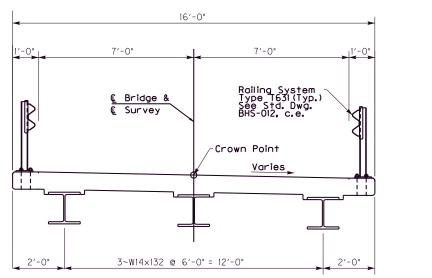
Ⓐ 7 FT Post

Ⓑ See Cross Sections for Slopes Outside the Limits of the Shoulders.

Ⓒ When guardrail is used, pave shoulder to face of rail.

TRAFFIC LANE & SHOULDER PAVEMENT

DGA Base — 4" Depth
Asphalt Base — 3" Depth Cl. 2 Asphalt Base 1.00D PG64-22
Asphalt Surface — 1½" Depth Cl. 2 Asphalt Surface 0.38D PG64-22

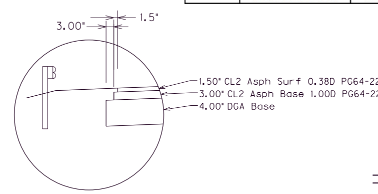


NOTE: Roadway Guardrail is Attached to Bridge Barriers. See Roadway Plans.

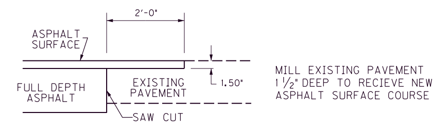
BRIDGE TYPICAL SECTION

COORDINATE CONTROL POINTS						
POINT	DESCRIPTION	State Plane Coordinates			STATION	OFFSET
		NORTH (Y)	EAST (X)	ELEV. (Z)		
CP 1	PK NAIL/WASHER	3662687.2010	5761879.8540	894.142	12+55.06	-5.42
CP 2	PK NAIL/WASHER	3662531.5140	5761664.7560	895.295	9+88.13	-4.65
CP 3	PK NAIL/WASHER	3662530.3520	5761686.4210	896.044	10+04.15	9.98

CENTERLINE CONTROL POINTS							
POINT	State Plane Coordinates		RADIUS	LENGTH	TANGENT	STATION	OFFSET
	NORTHING (Y)	EASTING (X)					
POB	3662535.4395	5761676.8865				10+00.00	0.00
PC	3662544.0233	5761687.3746				10+13.55	0.00
PI	3662559.7755	5761706.6213	500	49.7	24.87	10+38.42	-0.78
PT	3662573.5400	5761727.3362				10+63.25	0.00
PC	3662583.3479	5761742.0969				10+80.98	0.00
PI	3662595.6549	5761760.6184	154	44.17	22.24	11+03.21	1.60
PT	3662612.6990	5761774.9017				11+25.15	0.00
PC	3662625.1264	5761785.3162				11+41.36	0.00
PI	3662656.9945	5761812.0223	154	81.22	41.58	11+82.94	-5.51
PT	3662671.0910	5761851.1385				12+22.58	0.00
POE	3662693.1555	5761912.3645				12+87.66	0.00



DETAIL "A"



EDGE KEY DETAIL

UTILITY OWNERS

ELECTRIC SERVICES:
KY Power Company
1400 East Main St
Hazard, KY 41701
Contact Ellis McKnight 606-436-1329

TV SERVICES:
TV Services
60 Communications Lane P.O. Box 789
Hindman, KY 41822
Contact Freddy Williams 606-785-9500

TELEPHONE SERVICES:
Thacker Grigsby Telephone Co.
60 Communications Lane P.O. Box 789
Hindman, KY 41822
Contact Freddy Williams 606-785-9500

Datum Reference and Final Coordinates
All new horizontal GNSS control is based on the Kentucky State Plane Coordinate System (Single Zone), referenced to North American Datum 1983, 2011 adjustment, expressed in U.S. Survey Feet. All vertical control is based on the North American Vertical Datum of 1988 (NAVD88) with GEOID18 (CONUS) applied to model the elevations, also expressed in U.S. Survey Feet.

SCALE: N.T.S

TYPICAL SECTIONS, COORD. CONTROL, AND LEGEND

FILE NAME: F:\ENGR\EASTERN KY FLOOD WORK\KNOTT COUNTY\HOLLYBUSH ROAD\CAD\PLAN\R002_TYPICALS_COORDCONTROL_LEGEND.DGN
USER: wmattingly
DATE PLOTTED: October 19, 2022
E-SHEET NAME:
MicroStation v8.11.7.443

GENERAL SUMMARY

COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0243.0TH	R2A

ITEM	DESCRIPTION	UNIT	PROJECT TOTAL
00001	DGA BASE (1)	TON	348
00020	TRAFFIC BOUND BASE (1)(7)	TON	50
00078	CRUSHED AGGREGATE SIZE NO 2 (9)(10)	TON	97
00212	CL2 ASPH BASE 1.00D PG64-22	TON	247
00301	CL2 ASPH SURF 0.38D PG64-22	TON	29
02014	BARRICADE - TYPE III	EA	2
02159	TEMP DITCH	LF	144
02160	CLEAN TEMP DITCH	LF	72
02200	ROADWAY EXCAVATION	CUYD	161
02242	WATER (2)	MGAL	100
21802EN	G/R STEEL W BEAM-S FACE (7 FT POST)	LF	250
02360	GUARDRAIL TERMINAL SECTION NO 1	EACH	2
02371	GUARDRAIL END TREATMENT TYPE 7	EACH	2
02484	CHANNEL LINING CLASS III (6)	TON	630
02545	CLEARING AND GRUBBING (3)	LS	1
02562	TEMPORARY SIGNS	SQFT	300
02565	OBJECT MARKER TYPE 2 (8)	EACH	4
02585	EDGE KEY	LF	27
02569	DEMOBILIZATION	LS	1
02603	FABRIC - GEOTEXTILE CLASS 2 (9)	SQYD	225
02650	MAINTAIN & CONTROL TRAFFIC (4)	LS	1
02651	DIVERSIONS (BY-PASS DETOURS)	LS	1
02671	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2
02726	STAKING	LS	1
02731	REMOVE STRUCTURE	LS	1
02701	TEMPORARY SILT FENCE	LF	576
02703	SILT TRAP TYPE "A"	EACH	1
02704	SILT TRAP TYPE "B"	EACH	1
02706	CLEAN SILT TRAP TYPE "A"	EACH	1
02707	CLEAN SILT TRAP TYPE "B"	EACH	1
03171	CONCRETE BARRIER WALL TYPE 9T	LF	60
01987	DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	EACH	5
04933	TEMP SIGNAL 2 PHASE (11)	EA	2
05950	EROSION CONTROL BLANKET	SQYD	2100
05952	TEMP MULCH	SQYD	1400
05953	TEMP SEEDING AND PROTECTION	SQYD	1050
05985	SEEDING AND PROTECTION	SQYD	2100
05963	INITIAL FERTILIZER	TON	0.3
05964	MAINTENANCE FERTILIZER	TON	0.2
05992	AGRICULTURAL LIMESTONE	TON	1
06514	PAVE STRIPING - PERM PAINT - 4 IN	LF	576
06587	PAVEMENT MARKER TY IVA-BW TEMP	EA	20
06510	PAVE STRIPING - TEMP PAINT - 4 IN	LF	612
08901	CRASH CUSHION TY VI CLASS BT TL2	EA	1
24970EC	ASPHALT MATERIAL FOR TACK NON-TRACKING (5)	TON	0.6
20430ED	SAW CUT	LF	27
23265ES717	PAVE MARK TY 1 TAPE STOP BAR-24 IN	LF	24

NOTES:

ALL ASPHALT MIXTURES SHALL BE ESTIMATED AT 110 LBS. PER SQ. YD. PER INCH OF DEPTH, UNLESS NOTED OTHERWISE.

(1) ESTIMATED AT 115 LBS. PER SQ. YD. PER INCH OF DEPTH

(2) FOR CONTROLLING DUST CAUSED BY MAINTAINING TRAFFIC ONLY.

(3) APPROXIMATELY 0.43 ACRES

(4) LANE & ROAD CLOSURES ARE INCIDENTAL TO MAINTAIN AND CONTROL TRAFFIC

(5) ESTIMATED AT 0.70 LBS. PER SQ. YD.

(6) 530 TONS FOR STREAM BANK STABILIZATION 100 TONS TO BE USED AS DIRECTED BY THE ENGINEER TO STABILIZE OTHER STREAM BANKS

(7) TO BE USED AS DIRECTED BY THE ENGINEER TO MAINTAIN ACCESS

(8) TO BE INSTALLED AT LOCATIONS IDENTIFIED IN STANDARD DRAWING NO. RBR-060

(9) FOR CONSTRUCTION ENTRANCES

(10) ESTIMATED AT 1.3 TONS PER CU. YD.

(11) TEMPORARY SIGNAL IS FULL COMPENSATION FOR EACH PHASE OF MOT

SCALE: N.T.S

GENERAL SUMMARY

GENERAL & SPECIAL NOTES

COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0243.0TH	R2B

PROPOSAL ATTACHMENTS

SPECIAL NOTE FOR FOR NON-TRACKING TACK COAT

SPECIAL PROVISION FOR EMBANKMENT AT BRIDGE END BENT STRUCTURES

SPECIAL NOTE FOR CONCRETE SEALING

160 N.G.S. (U.S.G.S.) BENCH MARKS

DO NOT DISTURB N.G.S. (U.S.G.S.) BENCH MARKS IN ANY MANNER UNLESS DIRECTED BY THE ENGINEER.

165 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.

429 WINTER CLOSEDOWN

ANY ASPHALT CONCRETE BASE AND/OR SURFACE COURSE USED AS A RIDING SURFACE EXPOSED TO TRAFFIC DURING WINTER CLOSEDOWN PERIODS SHALL CONTAIN NATURAL, CONGLOMERATE, CRUSHED SLAG, CRUSHED GRANITE OR CRUSHED SANDSTONE SAND IN THE PROPORTION OF NO LESS THAN 25% OF THE TOTAL COMBINED COARSE AND FINE AGGREGATE.

448 COMPACTION OF ASPHALT MIXTURES

WILL ACCEPT THE COMPACTION OF ASPHALT MIXTURES FURNISHED ON THIS PROJECT BY OPTION B ACCORDING TO SUBSECTIONS 402.03.02 AND 403.03.10 OF THE STANDARD SPECIFICATIONS.

445 EDGE KEY

THIS WORK INCLUDES CUTTING OUT THE EXISTING ASPHALT SURFACE TO A MINIMUM DEPTH AND WIDTH AS DETAILED ELSEWHERE IN THE PLANS SO THAT THE NEW SURFACE MAY HEEL INTO THE EXISTING SURFACE. THE CONTRACT UNIT PRICE BID LINEAR FOOT FOR "EDGE KEY" INCLUDES ALL NECESSARY MATERIALS, LABOR AND EQUIPMENT NECESSARY TO PERFORM THE WORK AND DISPOSE OF THE REMOVED ASPHALT MATERIAL.

650 STANDARD DRAWINGS

STANDARD DRAWINGS ARE NOT ATTACHED TO THESE PLANS. A STANDARD DRAWING BOOK AND THE HEADWALL SUPPLEMENTAL BOOK MAY BE OBTAINED FROM THE POLICY SUPPORT BRANCH OF THE DEPARTMENT OF ADMINISTRATIVE SERVICES IN FRANKFORT, KY. AT (502) 564-3670

CONSTRUCTION ENTRANCES

THE CONTRACTOR SHALL CONSTRUCT TEMPORARY CONSTRUCTION VEHICLE ACCESS ENTRANCES INTENDED TO REDUCE OFF- SITE TRACKING / WASHING OF SEDIMENT ONTO PUBLIC RIGHT OF WAY. THESE ENTRANCES SHALL BE CONSTRUCTED AT LOCATIONS APPROVED BY THE ENGINEER AND CONSISTING OF A MINIMUM OF 50 FEET IN LENGTH, 20 FEET IN WIDTH, AND 1 FOOT DEPTH OF CRUSHED AGGREGATE SIZE NO. 2 AND UNDERLAID WITH GEOTEXTILE FABRIC CLASS 2. QUANTITIES HAVE BEEN INCLUDED FOR TWO TEMPORARY CONSTRUCTION ENTRANCES.

TYPICAL SECTION

DIMENSIONS SHOWN ON THE TYPICAL SECTIONS FOR PAVEMENT WIDTH AND THICKNESS ARE NOMINAL OR TYPICAL DIMENSIONS. THE ACTUAL DIMENSIONS TO BE CONSTRUCTED MAY BE VARIED TO FIT EXISTING CONDITIONS AS DIRECTED OR APPROVED BY THE ENGINEER.

SPECIAL NOTE FOR EROSION PREVENTION AND SEDIMENT CONTROL

THE CONTRACTOR SHALL BE RESPONSIBLE FOR FILING THE KENTUCKY POLLUTION DISCHARGE ELIMINATION SYSTEM (KPDES) KYR10 PERMIT NOTICE OF INTENT (NOI) WITH THE KENTUCKY DIVISION OF WATER (DOW) AND ANY KPDES LOCAL MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROGRAM THAT HAS JURISDICTION. THE NOI SHALL NAME THE CONTRACTOR AS THE FACILITY OPERATOR AND INCLUDE THE KYTC CONTRACT ID NUMBER (CID) FOR REFERENCE.

THE CONTRACTOR SHALL PERFORM ALL TEMPORARY EROSION/SEDIMENT CONTROL FUNCTIONS INCLUDING: PROVIDING A BEST MANAGEMENT PRACTICE (BMP) PLAN, CONDUCTING REQUIRED INSPECTIONS, MODIFYING THE BMP PLAN DOCUMENTS AS CONSTRUCTION PROGRESSES AND DOCUMENTING THE INSTALLATION AND MAINTENANCE OF BMPS IN CONFORMANCE WITH THE KPDES KYR10 PERMIT DATED SEPTEMBER 30, 2003 OR A PERMIT RE-ISSUED TO REPLACE THE KYR10 PERMIT. THIS WORK SHALL BE CONDUCTED IN CONFORMANCE WITH THE REQUIREMENTS OF SECTION 213 OF KYTC 2008 DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

CONTRARY TO SECTION 213.03.03, PARAGRAPH 2, THE ENGINEER SHALL CONDUCT INSPECTIONS AS NEEDED TO VERIFY COMPLIANCE WITH SECTION 213 OF KYTC 2012 DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. THE ENGINEER'S INSPECTIONS SHALL BE PERFORMED A MINIMUM OF ONCE PER MONTH AND WITHIN SEVEN DAYS AFTER A STORM OF 1/2" INCH OR GREATER. COPIES OF THE ENGINEER'S INSPECTIONS SHALL NOT BE PROVIDED TO THE CONTRACTOR UNLESS IMPROVEMENTS TO THE BMP'S ARE REQUIRED. THE CONTRACTOR SHALL INITIATE CORRECTIVE ACTION WITHIN 24 HOURS OF ANY REPORTED DEFICIENCY AND COMPLETE THE WORK WITHIN 5 DAYS. THE ENGINEER SHALL USE FORM TC 63-61 A FOR THIS REPORT. INSPECTIONS PERFORMED BY THE ENGINEER DO NOT RELIEVE THE CONTRACTOR OF ANY RESPONSIBILITY FOR COMPLIANCE WITH THE KPDES PERMIT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR APPLYING "GOOD ENGINEERING PRACTICES" AS REQUIRED BY THE KPDES PERMIT. THE CONTRACTOR MAY USE ANY TEMPORARY BMPS WITH THE APPROVAL OF THE KYTC ENGINEER.

THE CONTRACTOR SHALL PROVIDE THE ENGINEER COPIES OF ALL DOCUMENTS REQUIRED BY THE KPDES PERMIT AT THE TIME THEY ARE PREPARED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EXAMINATION OF THE SOILS TO BE ENCOUNTERED AND MAKE HIS OWN INDEPENDENT DETERMINATION OF THE TEMPORARY BMPS THAT WILL BE REQUIRED TO ACCOMPLISH EFFECTIVE EROSION PREVENTION AND SEDIMENT CONTROL.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR FILING THE KPDES PERMIT NOTICE OF TERMINATION (NOT) WITH THE KENTUCKY DOW AND ANY LOCAL MS4 PROGRAM THAT HAS JURISDICTION. THE NOT SHALL BE FILED AFTER THE ENGINEER AGREES THAT THE PROJECT IS STABILIZED OR THE PROJECT HAS BEEN FORMALLY ACCEPTED.

SPECIAL NOTE FOR OVERHEAD UTILITIES

THE CONTRACTOR MUST WORK SAFELY AROUND THE POWERLINES TO COMPLETE THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL COORDINATE WITH THE KY POWER COMPANY AND TV SERVICES PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES. CONTACT TV SERVICES IF THEIR LINE NEEDS TO BE RELOCATED. RELOCATION OF THE POWER LINE IS NOT AN OPTION. THE CONTRACTOR SHALL CONTACT KY POWER 10 DAYS PRIOR TO PERFORMING CONSTRUCTION ACTIVITIES THAT REQUIRE KY POWER TO DEENERGIZE ELECTRICAL LINES. THE CONTRACTOR SHALL ORGANIZE CONSTRUCTION ACTIVITIES TO MINIMIZE THE TIME REQUIRED FOR DEENERGIZED LINES. THE CONTRACTOR MUST TAKE CARE TO NOT DAMAGE ANY OVERHEAD UTILITIY LINES. THE KY POWER COMPANY WILL PLACE A SHIELD AROUND THE POWER LINE UPON CONSTRACTORS REQUEST.

THE CONTRACTOR SHALL CONTACT KY POWER 10 DAYS PRIOR TO PERFORMING CONSTRUCTION ACTIVITIES THAT REQUIRE KY POWER TO DEENERGIZE ELECTRICAL LINES. THE CONTRACTOR SHALL ORGANIZE CONSTRUCTION ACTIVITIES TO MINIMIZE THE TIME REQUIRED FOR DEENERGIZED LINES. THE CONTRACTOR MUST TAKE CARE TO NOT DAMAGE ANY OVERHEAD UTILITIY LINES.

WORKING WITH OR NEAR POWER LINES CAN EXPOSE WORKERS TO ELECTRICAL HAZARDS, BUT THESE DANGERS CAN BE AVOIDED THROUGH SAFE WORK PRACTICES. THESE PRACTICAL STEPS CAN PREVENT INJURIES FROM CONTACT WITH POWER LINES.
- CONDUCT A HAZARD ASSESSMENT TO IDENTIFY AND ADDRESS POTENTIAL SAFETY HAZARDS BEFORE WORK BEGINS.
- ASK THE ELECTRIC COMPANY TO DE-ENERGIZE AND GROUND OVERHEAD POWER LINES.
- EDUCATE WORKERS ON SAFETY PROCEDURES AND REQUIREMENTS.
- KNOW THE SAFE WORKING DISTANCE FOR WORKERS AND EQUIPMENT.
- USE NON-CONDUCTIVE WOOD OR FIBERGLASS LADDERS.
- WEAR PERSONAL PROTECTIVE EQUIPMENT, SUCH AS RUBBER INSULATING GLOVES AND INSULATING SLEEVES, AND INDUSTRIAL PROTECTIVE HELMETS. FOR MORE INFORMATION ON RECOGNIZING HAZARDS FROM ENERGIZED POWER LINES, VISIT OSHA'S ELECTRICAL SAFETY AND HEALTH TOPICS PAGE.

GENERAL NOTES

COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0243.0TH	R3

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.

R/W & EASEMENT TRACT AREAS

P 1	Tract 1 R/W 0.016 AC. 688.44 SF
P 2	Tract 1 R/W 0.024 AC. 1,065.13 SF
P 2	Tract 2 Easement 0.084 AC. 3,652.93 SF
P 3	Tract 1 R/W 0.015 AC. 660.49 SF
P 3	Tract 2 Easement 0.243 AC. 10,568.17 SF
P 4	Tract 1 R/W 0.016 AC. 709.19 SF

CONSTRUCT STEEL "W" BEAM GUARDRAIL

LOCATION	L.F.	END TREATMENT
RT. STA. 11+24.50 TO STA. 11+29.79	12.5'	TERM SEC NO. 1
LT. STA. 10+00.00 TO STA. 11+22.07	100'	TYPE 7
RT. STA. 11+65.90 TO STA. 12+87.66	100'	TERM SEC NO. 1
LT. STA. 11+56.56 TO STA. 11+80.12	37.5'	TYPE 7

NOTES:

1. ABSOLUTELY NO CONSTRUCTION EQUIPMENT IS ALLOWED IN THE STREAM. CONTRACTOR MUST TAKE SPECIAL CARE TO NOT DROP ANY MATERIAL IN THE STREAM.
2. PROPERTY AND EXISTING RIGHT OF WAY LINES ARE FOR REFERENCE ONLY. THESE LINES ARE APPROXIMATE LOCATIONS BASED ON AVAILABLE PVA DATA.

GENERAL LEE SLONE CEMETERY

GENERAL LEE & JEANETTE SLONE

PI 10+38.42
Delta = 5° 41' 43.17"
T = 24.87'
L = 49.70'
R = 500.00'
E = 0.62'

PI 11+03.21
Delta = 16° 26' 00.39"
T = 22.24'
L = 44.17'
R = 154.00'
E = 1.60'

OVERHEAD POWER AND TELEPHONE WILL NOT BE RELOCATED. THE CONTRACTOR SHALL WORK AROUND THE LINES. THE TELEPHONE MAY BE TEMPORARILY RELOCATED DURING CONSTRUCTION WITH COORDINATION WITH THE OWNER. SEE SPECIAL NOTE FOR OVERHEAD UTLITIES.

PI 11+82.94
Delta = 30° 13' 05.66"
T = 41.58'
L = 81.22'
R = 154.00'
E = 5.51'

PHILLIP L & JANE SLONE

BEGIN CONST.
STA. 10+00.00
N 3662535.4395
E 5761676.8865

12' EDGE KEY
12' SAW CUT

HOLLYBUSH ROAD (CR 1108)

TO HOLLYBUSH

EXIST. R/W

C.P. 2

C.P. 3

PROP. R/W

CONST. LIMIT

DIVERSION CONST. LIMIT

DIVERSION ℄

TEMP. ESMNT. FOR BRIDGE REPLACEMENT

SEE WATERLINE RELOCATION PLANS

GATE

PC 10+80.98

PT 11+25.15

PC 11+41.36

PC 10+13.55

PT 10+63.25

PT 12+22.58

10+00

11+00

12+00

12+88

12+68

N 70° 10' 55" E

HOLLYBUSH ROAD (CR 1108) ℄

HOLLYBUSH CREEK

TO PIPPA PASSES

BRYAN & NATA SWAFFORD

END CONST.
STA. 12+87.66
N 3662693.1555
E 5761912.3645

BETTY SUE & JOHN MAYS

PHILLIP L & JANE SLONE

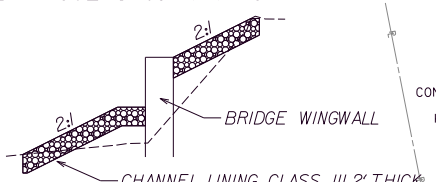
GENERAL LEE & JEANETTE SLONE

COMMONWEALTH OF KY TRANSPORTATION CABINET

CONSTRUCT CHANNEL LINING

LOCATION	TYPE	LINING TY.	A	T	QUANT.
North Bank	Bank Prot.	CL. III	240 SQ YD	2'	240 TONS
South Bank	Bank Prot.	CL. III	290 SQ YD	2'	290 TONS

CONST. PROPOSED BRIDGE STA. 11+43.50
~ 35'-0" W14x176, Simple Span
KYHL-93 LIVE LOAD~ 35° SKEW LT
16'-0" BRIDGE ROADWAY
WIDTH ~ 2:1 FILL SLOPES



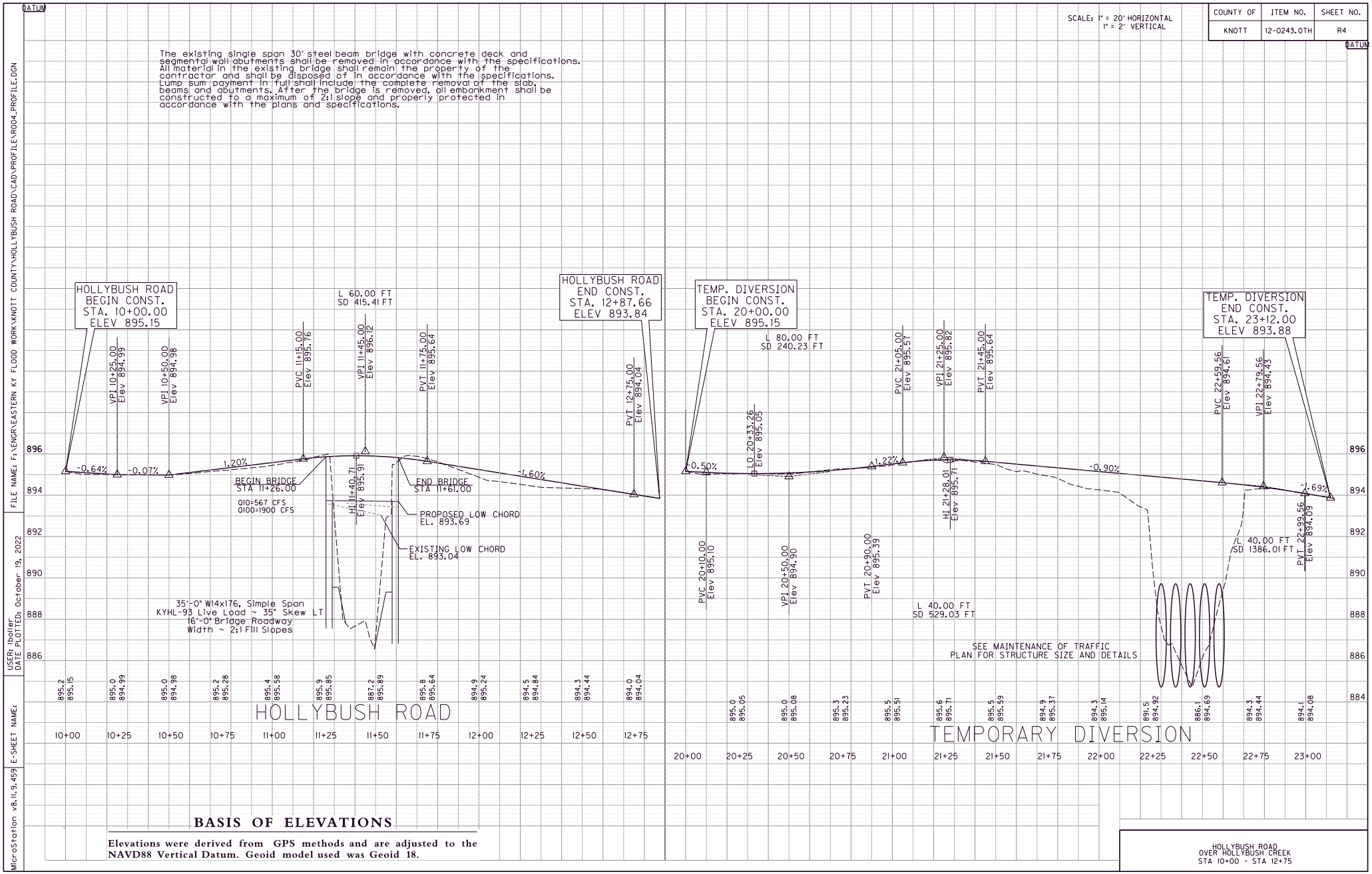
SECTION A-A
BANK REPAIR DETAIL

SCALE: 1"=20'

0' 20' 40' 80'

PLAN
HOLLYBUSH ROAD
OVER HOLLYBUSH CREEK

FILE NAME: F:\ENGR\EASTERN KY FLOOD WORK\KNOTT COUNTY\HOLLYBUSH ROAD\CAD\PLAN\R003_PLAN.DGN
USER: lholler
DATE PLOTTED: June 14, 2022
E-SHEET NAME:
MicroStation v8.11.9.459



BASIS OF ELEVATIONS

Elevations were derived from GPS methods and are adjusted to the NAVD88 Vertical Datum. Geoid model used was Geoid 18.

HOLLYBUSH ROAD
OVER HOLLYBUSH CREEK
STA 10+00 - STA 12+75

COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0243.0TH	R5

MAINTENANCE OF TRAFFIC GENERAL NOTES:

A) EXCEPT AS PROVIDED HEREIN, "MAINTAIN AND CONTROL TRAFFIC" SHALL BE IN ACCORDANCE WITH THE 2019 STANDARD SPECIFICATIONS, STANDARD DRAWINGS, CURRENT EDITION AND IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION, EXCEPT FOR THE ROADWAY AND TRAFFIC CONTROL BID ITEMS LISTED IN THE GENERAL SUMMARY, ALL ITEMS OF WORK NECESSARY TO MAINTAIN AND CONTROL TRAFFIC WILL PAID AT THE LUMP SUM BID PRICE TO "MAINTAIN AND CONTROL TRAFFIC." ALL SHIFTS IN TRAFFIC PATTERNS THROUGHOUT THE DURATION OF THE PROJECT SHALL BE IN COMPLIANCE WITH THE APPROPRIATE STANDARD DRAWINGS. CONES WILL NOT BE PERMITTED FOR LANE AND OR SHOULDER CLOSURES.
B) THE "DIVERSIONS (BYPASS DETOURS)" BID ITEM WILL INCLUDE EARTHWORK AND TEMPORARY DRAINAGE STRUCTURE FOR THE DIVERSION.
C) PAVING AND STONE MATERIALS FOR THE DIVERSION WILL BE PAID FOR EACH INDIVIDUAL ITEM AT THE UNIT PRICES ESTABLISHED FOR THE CONTRACT.
D) THE ENGINEER AND THE CONTRACTOR, OR THEIR AUTHORIZED REPRESENTATIVES, SHALL REVIEW THE SIGNING BEFORE TRAFFIC IS ALLOWED TO USE ANY LANE CLOSURES, TEMPORARY PAVEMENT, OR DETOURS. ALL SIGNING SHALL BE APPROVED BY THE ENGINEER BEFORE WORK CAN BE STARTED BY THE CONTRACTOR.
E) IF THE CONTRACTOR DESIRES TO DEVIATE FROM THE TRAFFIC CONTROL SCHEME AND CONSTRUCTION PHASES OUTLINED IN THESE PLANS AND THIS PROPOSAL, HE SHALL PREPARE AN ALTERNATE PLAN AND PRESENT IT IN WRITING TO THE ENGINEER. THIS ALTERNATE PLAN MAY BE USED ONLY AFTER REVIEW AND APPROVAL OF THE DIVISIONS OF TRAFFIC, DESIGN AND CONSTRUCTION.
F) ROAD CLOSURES: LIMIT THE DURATION OF ROAD CLOSURES TO THE MINIMUM REQUIRED TO ACCOMPLISH THE COMPLETION OF THE PHASE REQUIRING CLOSURE. CONTINUOUSLY PURSUE WORK UNTIL COMPLETE TO MINIMIZE DURATIONS OF CLOSURES. THE CONTRACTOR SHALL NOTIFY THE KNOTT COUNTY SHERIFF'S OFFICE, EMERGENCY SERVICES AND BOARD OF EDUCATION PRIOR TO ANY CHANGES IN TRAFFIC PATTERNS ALONG STATE AND COUNTY ROUTES.
G) SCHOOL BUSES AND EMERGENCY VEHICLES: IF TRAFFIC IS STOPPED DUE TO CONSTRUCTION AND AN EMERGENCY VEHICLE ON AN EMERGENCY RUN OR A SCHOOL BUS ARRIVES AT THE PROJECT SITE, THE CONTRACTOR SHALL MAKE PROVISIONS FOR THE PASSAGE OF THAT VEHICLE AS QUICKLY AS POSSIBLE.
H) REASONABLE MEANS OF INGRESS AND EGRESS SHALL BE MAINTAINED TO ALL PROPERTIES WITHIN THE PROJECT LIMITS. ALL TEMPORARY ENTRANCE WORK AND REMOVAL IS INCIDENTAL TO LUMP SUM BID TO "MAINTAIN AND CONTROL TRAFFIC".
I) SPEED LIMIT: THE SPEED LIMIT WILL BE REDUCED TO 15 MPH IN THE WORK ZONE.
J) PAVEMENT MARKING REMOVAL - REMOVAL OF EXISTING PAVEMENT MARKINGS OR TEMPORARY MARKINGS DUE TO TRAFFIC PHASE CHANGES IS CONSIDERED INCIDENTAL TO "MAINTAIN AND CONTROL TRAFFIC."

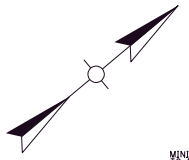
MOT PHASING NOTES:

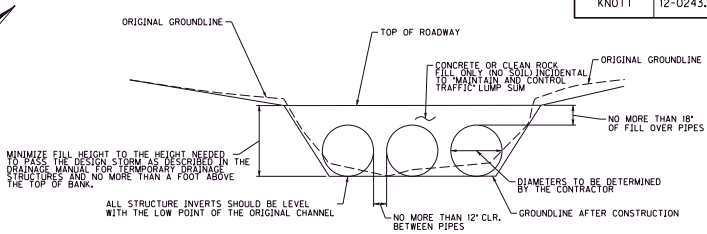
PHASE 1:
MAINTAIN TRAFFIC ON EXISTING CR 1108 HOLLYBUSH ROAD. INSTALL STEEL PLATES AND CONSTRUCT TEMPORARY DIVERSION, INSTALL TEMPORARY BARRIER WALL TYPE 9T, INSTALL TEMPORARY TRAFFIC SIGNAL AT BOTH ENDS, INSTALL PAVEMENT MARKINGS AND STRIPING AND INSTALL TEMPORARY DRAINAGE STRUCTURE. TEMPORARY DRAINAGE STRUCTURE OPENING SHALL BE A MINIMUM OF 100 SQ FT AND 2-YEAR HEADWATER ELEVATION LESS THAN OR EQUAL TO 890.90.

PHASE 2:
SHIFT TRAFFIC ONTO DIVERSION. REMOVE THE EXISTING STRUCTURE AND CONSTRUCT THE NEW BRIDGE. RECONSTRUCT THE PROPOSED CR 1108 HOLLYBUSH ROAD BASE STONE AND UP THROUGH THE ASPHALT BASE LAYER. INSTALL GUARDRAIL AND END TREATMENTS.

PHASE 3:
CONSTRUCT ASPHALT SURFACING, PERMANENT PAVEMENT MARKINGS AND FINAL CLEANUP UNDER TRAFFIC.

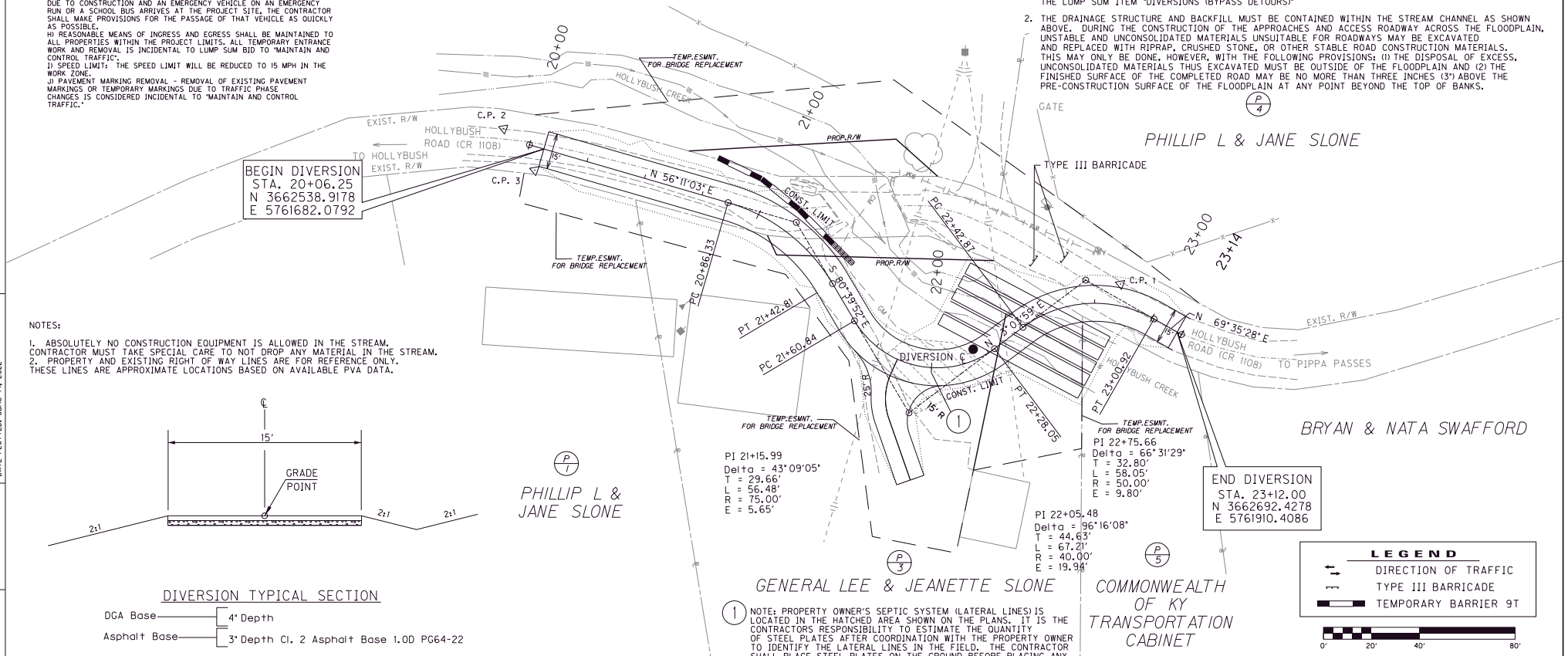
NOTE:
CONTRACTOR SHALL MAINTAIN ACCESS TO LOCAL PROPERTIES AND APPROACH ROADS AT ALL TIMES.





LOW-WATER CROSSING
NOT TO SCALE

NOTES:
1. THIS CONCEPTUAL DRAWING ASSUMES THE USE OF 5-60" PIPE CULVERTS AS THE TEMPORARY DRAINAGE STRUCTURE. ALTERNATE SIZES OR STRUCTURES WILL BE CONSIDERED, AS LONG AS THE OPENING IS GREATER THAN OR EQUAL TO A 100 SQ FT FLOW AREA AND 2 YEAR HEADWATER ELEVATION IS LESS THAN OR EQUAL TO 890.90. TEMPORARY DRAINAGE STRUCTURE WILL BE CONSIDERED INCIDENTAL TO THE LUMP SUM ITEM "DIVERSIONS (BYPASS DETOURS)"
2. THE DRAINAGE STRUCTURE AND BACKFILL MUST BE CONTAINED WITHIN THE STREAM CHANNEL AS SHOWN ABOVE. DURING THE CONSTRUCTION OF THE APPROACHES AND ACCESS ROADWAY ACROSS THE FLOODPLAIN, UNSTABLE AND UNCONSOLIDATED MATERIALS UNSUITABLE FOR ROADWAYS MAY BE EXCAVATED AND REPLACED WITH RIPRAP, CRUSHED STONE, OR OTHER STABLE ROAD CONSTRUCTION MATERIALS. THIS MAY ONLY BE DONE, HOWEVER, WITH THE FOLLOWING PROVISIONS: (1) THE DISPOSAL OF EXCESS, UNCONSOLIDATED MATERIALS THUS EXCAVATED MUST BE OUTSIDE OF THE FLOODPLAIN AND (2) THE FINISHED SURFACE OF THE COMPLETED ROAD MAY BE NO MORE THAN THREE INCHES (3") ABOVE THE PRE-CONSTRUCTION SURFACE OF THE FLOODPLAIN AT ANY POINT BEYOND THE TOP OF BANKS.



NOTES:
1. ABSOLUTELY NO CONSTRUCTION EQUIPMENT IS ALLOWED IN THE STREAM. CONTRACTOR MUST TAKE SPECIAL CARE TO NOT DROP ANY MATERIAL IN THE STREAM.
2. PROPERTY AND EXISTING RIGHT OF WAY LINES ARE FOR REFERENCE ONLY. THESE LINES ARE APPROXIMATE LOCATIONS BASED ON AVAILABLE PVA DATA.

DIVERSION TYPICAL SECTION

DGA Base — 4" Depth
Asphalt Base — 3" Depth Cl. 2 Asphalt Base 1.0D PG64-22

(1) NOTE: PROPERTY OWNER'S SEPTIC SYSTEM (LATERAL LINES) IS LOCATED IN THE HATCHED AREA SHOWN ON THE PLANS. IT IS THE CONTRACTORS RESPONSIBILITY TO ESTIMATE THE QUANTITY OF STEEL PLATES AFTER COORDINATION WITH THE PROPERTY OWNER TO IDENTIFY THE LATERAL LINES IN THE FIELD. THE CONTRACTOR SHALL PLACE STEEL PLATES ON THE GROUND BEFORE PLACING ANY FILL MATERIAL OR DRIVING ACROSS. THE AREA HATCHED IS APPROXIMATELY 900 SF. STEEL PLATES INSTALLED AND REMOVED WILL BE CONSIDERED INCIDENTAL TO THE "DIVERSIONS (BYPASS DETOURS)" BID ITEM.

LEGEND
- DIRECTION OF TRAFFIC
- TYPE III BARRICADE
- TEMPORARY BARRIER 9T

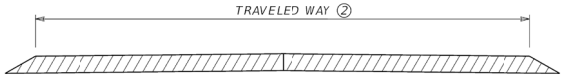
0' 20' 40' 80'

SCALE: 1"=20'

PLAN
HOLLYBUSH ROAD
OVER HOLLYBUSH CREEK

FILE NAME: F:\ENGR\EASTERN KY FLOOD WORK\KNOTT COUNTY\HOLLYBUSH ROAD\CAD\PLAN\R005_MOT PLAN.DGN
USER: wmottingly
DATE PLOTTED: June 14, 2022
E-SHEET NAME:
MicroStation v8.11.7.443

COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0243.0TH	R6



TWO LANE ROADWAY
PAVEMENT CROSS-SECTION

TRAVELED WAY (2)	TYPE OF PAVEMENT STRIPING	NON-STATE PRIMARY ROUTES				STATE PRIMARY ROUTES	
		< 1000 ADT		>= 1000 ADT		ANY ADT	
		WIDTH	MATERIAL	WIDTH	MATERIAL	WIDTH	MATERIAL*
< 16' (4)	EDGELINE STRIPES ONLY	4"	PAINT	4"	PAINT	6"	THERMO (ASHPALT) TYPE I TAPE (CONCRETE)
16' TO < 20'	EDGELINE STRIPES ONLY OR CENTERLINE STRIPE ONLY	4"	PAINT	4"	PAINT	6"	THERMO (ASHPALT) TYPE I TAPE (CONCRETE)
>=20' (3)	CENTERLINE AND EDGELINE STRIPES	4" (5)	PAINT	6"	PAINT	6"	THERMO (ASHPALT) TYPE I TAPE (CONCRETE)

*OTHER DURABLE NON-WATERBORNE MARKINGS MAY BE USED WITH APPROVAL FROM THE DIVISION OF TRAFFIC OPERATIONS.

~ NOTES ~

1. INSTALL PAVEMENT STRIPING ON TWO LANE, TWO WAY ROADWAYS AS DETAILED IN THE ABOVE TABLE AND IN ACCORDANCE WITH THE PAVEMENT MARKINGS AND DELINEATION CHAPTER OF THE TRAFFIC OPERATIONS GUIDANCE MANUAL. CONTACT THE DIVISION OF TRAFFIC OPERATIONS FOR ADDITIONAL GUIDANCE IF NECESSARY.

(2) THE TRAVELED WAY IS THE PORTION OF ROADWAY FOR THE MOVEMENT OF VEHICLES, EXCLUSIVE OF THE SHOULDERS.

(3) ON TWO LANE, TWO WAY ROADWAYS THAT HAVE A TOTAL PAVEMENT WIDTH (W) THAT IS 20 FT OR GREATER, BUT LESS THAN 22 FT, EDGELINE RUMBLE STRIPS ARE NOT A STANDARD APPLICATION, BUT THEY MAY BE INSTALLED. THE DIVISION OF TRAFFIC OPERATIONS IS AVAILABLE TO ASSIST WITH THE DETERMINATION OF WHETHER OR NOT TO INSTALL EDGELINE RUMBLE STRIPS ON PAVEMENT WIDTHS LESS THAN 22 FT, AS WELL AS THE DIMENSION AND PLACEMENT DETAILS OF THE RUMBLE STRIPS AND PAVEMENT STRIPING.

ON TWO LANE, TWO WAY ROADWAYS THAT HAVE A TOTAL PAVEMENT WIDTH (W) THAT IS 22 FT OR GREATER, BUT LESS THAN 34 FT, INSTALL PAVEMENT STRIPING AS DETAILED IN THE ABOVE TABLE AND IN CONJUNCTION WITH CENTERLINE AND EDGELINE RUMBLE STRIPS AS DETAILED ON TPR-120 .

ON TWO LANE, TWO WAY ROADWAYS THAT HAVE A TOTAL PAVEMENT WIDTH (W) THAT IS 34 FT OR GREATER, INSTALL PAVEMENT STRIPING AS DETAILED IN THE ABOVE TABLE AND IN CONJUCTION WITH CENTERLINE AND SHOULDER RUMBLE STRIPS AS DETAILED ON TPR-125.

(4) EDGELINES MAY BE OMITTED FROM ROADWAYS WITH A TRAVELED WAY WIDTH LESS THAN 16 FEET WITH THE APPROVAL OF THE DIVISION OF TRAFFIC OPERATIONS.

(5) EDGELINES MAY BE OMITTED ON NON-STATE PRIMARY ROUTES WITH A TRAVELED WAY WIDTH GREATER THAN OR EQUAL TO 20 FEET AND AN ADT LESS THAN 1,000.

6. EDGELINES MAY BE OMITTED, BASED ON ENGINEERING JUDGMENT, IN AREAS WHERE THE PAVEMENT EDGE IS DELINEATED BY PHYSICAL OBJECTS SUCH AS CURBS, PARKING SPACES, OR OTHER MARKINGS. EDGELINES SHOULD BE INSTALLED ON ROADWAYS WITH CURB AND GUTTER IF THE POSTED SPEED LIMIT IS 45 MPH OR GREATER.

DRAWING NOT TO SCALE

USE WITH CUR. STD. DWGS. TPR-120 & TPR-125

SUBMITTED _____ DIVISION DIRECTOR 06-09-21 DATE

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: SEPIA 017 - PAVEMENT STRIPING DETAILS FOR TWO LANE TWO WAY ROADWAYS

ITEM NO.	COUNTY OF
XX-XXXXX.XX	XXXXXXXXXX
SHEET NO.	
RXXX	

OpenRoads Designer v10.16.0.80 USER: cwillmerdinger DATE PLOTTED: 8/7/2015 9:53:17 AM FILE NAME: C:\PWWORK\KYTC_CWILLMEDINGER\D1859968\SEPIA017.DGN

SCALE: N.T.S

HOLLYBUSH ROAD OVER
HOLLYBUSH CREEK
SEPIA 017

FILE NAME: F:\ENGR\EASTERN KY FLOOD WORK\KNOTT COUNTY\HOLLYBUSH ROAD\CAD\PLAN\R006_DETAIL.DGN
USER: wmattingly
DATE PLOTTED: October 19, 2022
E-SHEET NAME:
MicroStation v8.11.7.443

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

KNOTT COUNTY
CR-1108 (HOLLYBUSH ROAD)
OVER HOLLYBUSH CREEK
STA. 11+43.50

ESTIMATE OF QUANTITIES

	BID ITEM CODE	08100	08104	08150	08151	08003	08033	08046	08039	08160	02231	03299	23378EC	23539EC
	BID ITEM	CONCRETE-CLASS A	CONCRETE-CLASS AA	STEEL REINFORCEMENT	STEEL REINFORCEMENT EPOXY COATED	FOUNDATION PREPARATION	TEST PILES	PILES-STEEL HP12X53	PRE-DRILLING FOR PILES	STRUCTURAL STEEL	STRUCTURE GRANULAR BACKFILL	ARMORED EDGE FOR CONCRETE	CONCRETE SEALING	BRIDGE RAIL
	UNIT	CUYD	CUYD	LB	LB	LS	LF	LF	LF	LS	CUYD	LF	SQFT	LF
SUBSTRUCTURE	END BENT #1	29.4		2432			19	57	20		76.4	19	407	
SUBSTRUCTURE	END BENT #2	47.3		3740			19	95	30		110.0	19	526	
	SUPERSTRUCTURE		30.7		5212					1			1089	
	BRIDGE TOTALS	76.7	30.7	6172	5212	1	38	152	50	1	186.4	28	2022	70

NOTE: The total estimated weight for structural steel is 14,171 LB.

INDEX OF SHEETS

SPECIAL NOTES

Special Note for Concrete Sealing

Special Note for Hot-Dip Galvanizing Steel

SPECIAL PROVISIONS

69 Embankment at Bridge End Bent Structures, c.e.

STANDARD DRAWINGS

BGX-006-10	Stencils for Structures
BGX-012-02	Geotechnical Legend
BGX-022	Joint Waterproofing
BHS-012	Railing System Type T631 Details
BJE-001-14	Armored Edges
BPS-003-09	HP12x53 Steel Pile
BSB-101	Composite Steel Beam Superstructures General Notes
BSB-102	Composite Steel Beam Superstructures Beam Tables
BSB-103	Composite Steel Beam Superstructures Slab Details
BSB-104	Composite Steel Beam Superstructures Framing Plan / Diaphragms

SPECIFICATIONS

2019 Standard Specifications for Road and Bridge Construction.

AASHTO LRFD Bridge Design Specifications, 9th Edition, 2020

FEMA Bridge: D023A 4663-DR

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY
HMB PROFESSIONAL ENGINEERS, INC.

DATE: 10/15/22 — CHECKED BY
DESIGNED BY: L. BOLLER — B. REID
DETAILED BY: L. BOLLER — B. REID

TITLE AND ESTIMATE OF QUANTITIES
CROSSING: HOLLYBUSH CREEK

ROUTE	ITEM NO.	COUNTY OF
CR-1108	12-0243.OTH	KNOTT
	SHEET NO.	DRAWING NUMBER
	S1	28598

MicroStation v8.11.9.459 USER: $USER$ DATE PLOTTED: $DATE$ $TIME$ FILE: $FILE$

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

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

MATERIAL SPECIFICATIONS: AASHTO Specifications or ASTM, current edition, as designated below shall govern the materials furnished.

STEEL REINFORCEMENT, GRADE 60	AASHTO M-203, GRADE 270
STRUCTURAL STEEL, 36,000 PSI MIN. YIELD	AASHTO M-270, GRADE 36

PREFORMED 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.

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

REINFORCEMENT: Dimensions shown from the face of concrete to bars are to center of bars unless otherwise shown. Spacing of bars is from center to center of bars. Clear distance to face of concrete is 2", unless otherwise noted. 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.

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.

BEVELED EDGES: Bevel all exposed edges ¾", unless otherwise noted.

SITE INSPECTION: The contractor shall familiarize themselves with all conditions at the bridge site. Submission of a bid shall be considered evidence that the contractor has performed a site visit and is familiar with all aspects of the existing bridge and requirements in these plans. The cabinet will not consider any claims due to changed site conditons.

DAMAGE TO STRUCTURE: The contractor shall bear all responsibility and expense for any and all damage to the structure during repair work, even to the removal and replacement of the entire structure, should it be damaged by the contractors actions or inaction.

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: Fabricators shall submit all required shop plans by e-mail to the design engineer for review (xxx@docs.e-builder.net). 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 Managment 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.

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.

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).

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.

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

SUPERSTRUCTURE SLAB: The superstructure slab shall be poured continuously from end to end of slab before the concrete is allowed to set.

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

Mastic Tape shall be either:
EZ-Wrap Rubber by Press-seal Casket Corporation,
SealWrap by Mar Mac Manufacturing Co. Inc.,
Cadilloc by The UP Rubber Co. Inc.,
or approved equal.

Mastic tape shal 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.

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.

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

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

FOUNDATION PREPARATION: Foundation Preparation shall be in accordance with Section 603 of the Specifications.

CONCRETE SEALER: Apply concrete sealer in accordance with the Special Note for Concrete Sealing to the superstructure limits shown on the superstructure detail sheet and all exposed surfaces of the end bents to 6" below finished ground line.

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.

JOINT WATERPROOFING: In addition to the standard drawing, all joints are to be sealed including those between beams.

FEMA Bridge: D23A 4663-DR

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

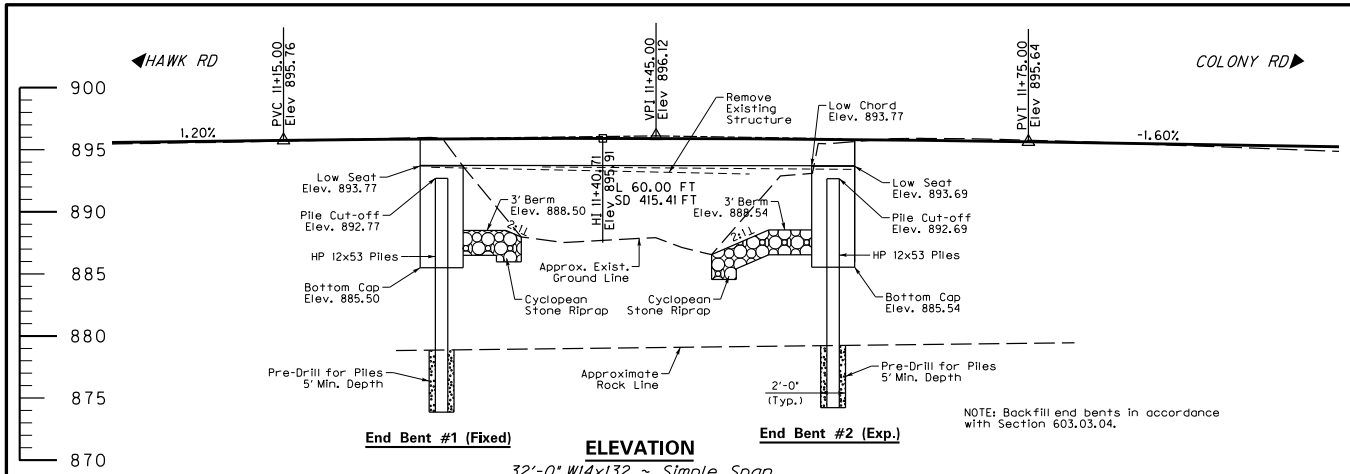
PREPARED BY
HMB PROFESSIONAL ENGINEERS, INC.

DATE: 10/15/2022	CHECKED BY
DESIGNED BY: L. BOLLER	B. REID
DETAILED BY: L. BOLLER	B. REID

GENERAL NOTES
CROSSING: HOLLYBUSH CREEK

ROUTE	ITEM NO.	COUNTY OF
CR-1108	12-0243.OTH	KNOTT
	SHEET NO. S2	DRAWING NUMBER 28598

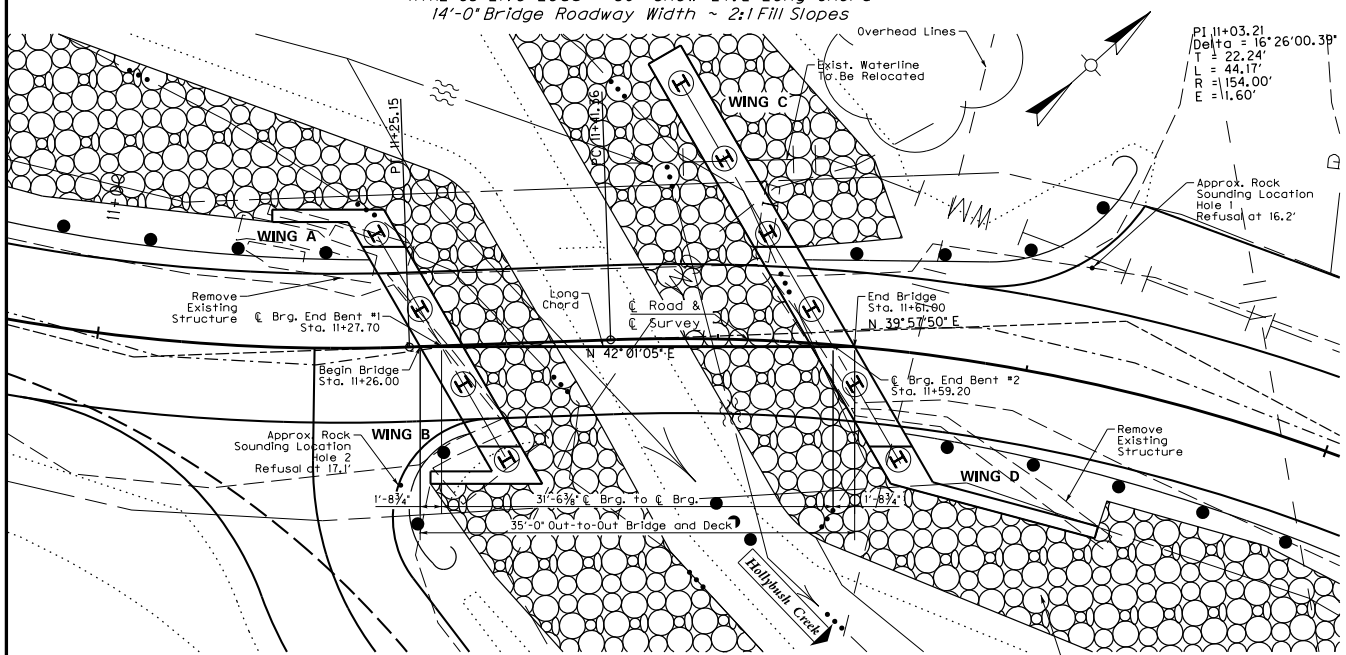
MicroStation v8.11.9.459 USER: $USER$ DATE PLOTTED: $DATE$ $TIME$ FILE: $FILE$



NOTE: Backfill end bents in accordance with Section 603.03.04.

ELEVATION

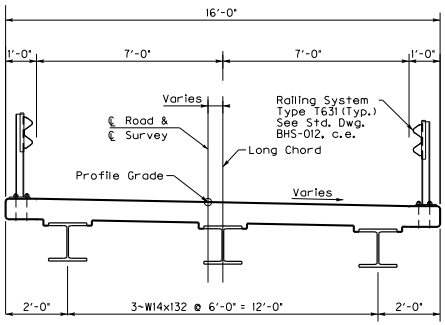
32'-0" WI4x132 ~ Simple Span
KYHL-93 Live Load ~ 30° Skew Lt.@ Long Chord
14'-0" Bridge Roadway Width ~ 2:1 Fill Slopes



PLAN

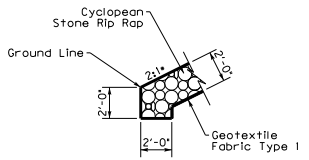
~Superstructure not shown~

Cyclopean Stone RipRap See Roadway sheets for details and quantities



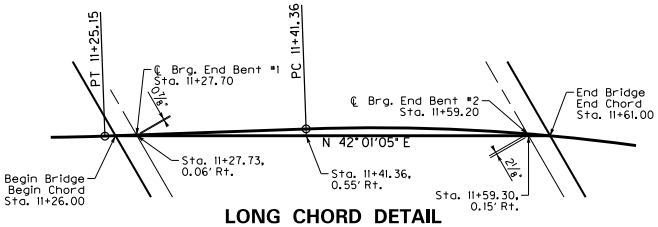
NOTE: Roadway Guardrail is Attached to Bridge Barriers. See Roadway Plans.

TYPICAL SECTION



• Normal to Face of Bent

TOE OF SLOPE DETAIL



LONG CHORD DETAIL

FEMA Bridge: D23A 4663-DR

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION	DATE	PREPARED BY HMB PROFESSIONAL ENGINEERS, INC.	DATE: 10/15/2022	CHECKED BY	LAYOUT	ROUTE CR-1108	ITEM NO. 12-0243.OTH	COUNTY OF KNOTT
				DESIGNED BY: L. BOLLER	B. REID	CROSSING HOLLYBUSH CREEK		SHEET NO. S3	DRAWING NUMBER 28598
				DETAILED BY: L. BOLLER	B. REID				

MicroStation v8.11.9.459 USER: $USER$ DATE PLOTTED: $DATE$ $TIME$ FILE: $FILE$

Drilling Firm: Kentucky Transportation Cabinet
For: Division of Structural Design
Geotechnical Branch

DRILLER'S SUBSURFACE LOG

Printed: 8/22/22

Page 1 of 1

Project ID: 060C00022N Item Number:	Knott - HOLLYBUSH RD HOLLYBUSH CREEK	Project Type: Structure Bridge Project Manager: _

Hole Number 1 Surface Elevation ' Total Depth 16.2' Location + 'Lt.	Immediate Water Depth NA Static Water Depth NA Driller James Roark	Start Date 08/20/2022 End Date 08/20/2022 Latitude(83) 37.346094 Longitude(83) -82.857996	Hole Type sounding Rig_Number

Lithology Elevation	Depth	Description (Overburden / Rock Core)	Sample No. Std/Ky RQD	Depth (ft) Run (ft)	Rec. (ft) Rec (ft)	SPT Blows Rec (%)	Sample Type SDI (JS)	Remarks
	0.4	Blacktop.						
5		Brown, moist, silty clay with sandstone boulders.						5
10	10.0							10
		Gray, wet, sandy clay with rock fragments.						
15	14.6							15
	16.2	Gray, sandstone. (Refusal)						
20		(Bottom of Hole 16.2') (Refusal @ 16.2)						20
25								25
30								30
35								35
40								40
45								45
50								50

Drilling Firm: Kentucky Transportation Cabinet
For: Division of Structural Design
Geotechnical Branch

DRILLER'S SUBSURFACE LOG

Printed: 8/22/22

Page 1 of 1

Project ID: 060C00022N Item Number:	Knott - HOLLYBUSH RD HOLLYBUSH CREEK	Project Type: Structure Bridge Project Manager: _

Hole Number 2 Surface Elevation ' Total Depth 17.1' Location + 'Lt.	Immediate Water Depth NA Static Water Depth NA Driller James Roark	Start Date 08/20/2022 End Date 08/20/2022 Latitude(83) 37.346094 Longitude(83) -82.857996	Hole Type sounding Rig_Number

Lithology Elevation	Depth	Description (Overburden / Rock Core)	Sample No. Std/Ky RQD	Depth (ft) Run (ft)	Rec. (ft) Rec (ft)	SPT Blows Rec (%)	Sample Type SDI (JS)	Remarks
5		Medium stiff, brown, clay with boulders.						5
10	10.0							10
		Gray, wet, sand with rock fragments.						
	14.1							
15		Gray, sandstone. (Refusal)						15
	17.1							
20		(Bottom of Hole 17.1') (Refusal @ 17.1)						20
25								25
30								30
35								35
40								40
45								45
50								50

SUBSURFACE DATA

FEMA Bridge: D23A 4663-DR

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY
HMB PROFESSIONAL ENGINEERS, INC.

DATE: 10/15/2022	CHECKED BY
DESIGNED BY: L. BOLLER	B. REID
DETAILED BY: L. BOLLER	B. REID

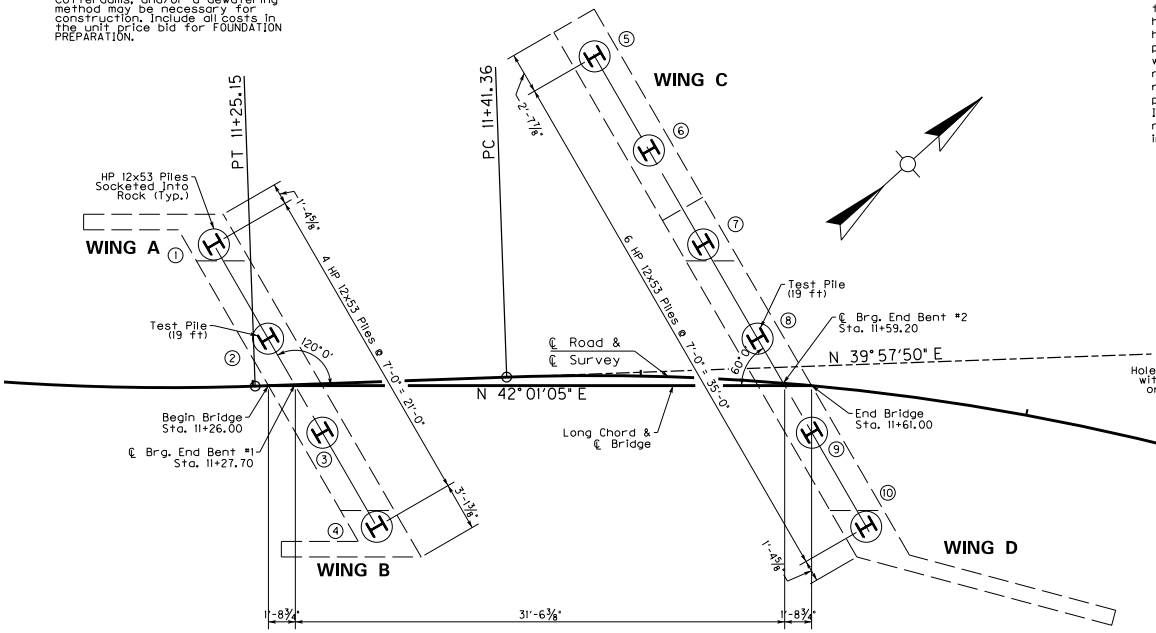
SUBSURFACE DATA

CROSSING
HOLLYBUSH CREEK

ROUTE	ITEM NO.	COUNTY OF
CR-1108	12-0243.OTH	KNOTT
	SHEET NO.	DRAWING NUMBER
	S4	28598

MicroStation v8.11.9.459 USER: $USER$ DATE PLOTTED: $DATE$ $TIME$ FILE: $FILE$

NOTE: Temporary shoring, sheeting, cofferdams, and/or a dewatering method may be necessary for construction. Include all costs in the unit price bid for FOUNDATION PREPARATION.

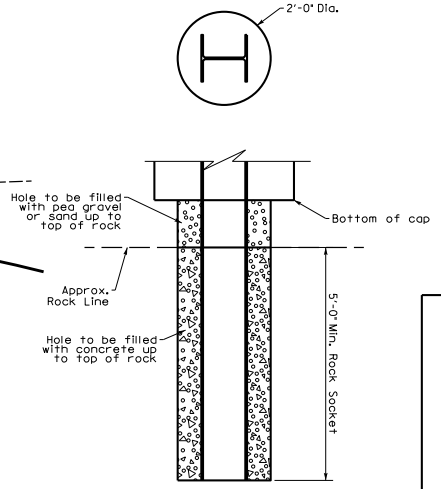


End Bent #1 **End Bent #2**

FOUNDATION PLAN

PRE-DRILLING PILES

PRE-DRILLING END BENT PILES: All piles at both End Bents shall be pre-drilled through solid rock in order to obtain the required embedment of piles. Use 24-inch diameter holes drilled a minimum of 5 feet into rock. Backfill the holes with concrete up to the rock line after the pile is placed in the hole. Backfill the hole above the rock line with sand or pea gravel. A temporary casing may be necessary to prevent collapse of the hole. If used, remove the casing as the hole is being backfilled. Drive piles to refusal after backfill operations are complete. Include the cost of all materials, labor, and equipment needed to pre-drill, backfill, and drive the piles to refusal in the price per linear foot for PRE-DRILLING FOR PILES.



PRE-DRILLING DETAIL

PILE STRIKE ALTERNATE

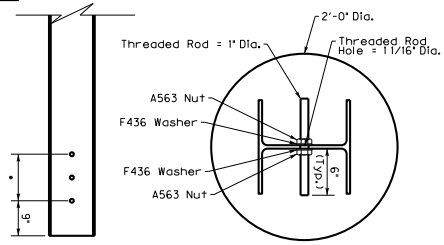
As an alternate to striking the pile once placed inside the pre-drilled hole, the contractor may include shear resisting devices on the pile. Place pile in hole and use excavator to apply full hydraulic load to top of pile before filling hole with concrete. Use ASTM F1554 Grade 36 threaded rods with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

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

Notes:
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.

Contractor is to ensure hole is cleaned during and after excavation. The portion of the pre-drilled 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.

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.



SHEAR RESISTANT DEVICE DETAIL **PLAN VIEW OF PILE WITH THREADED ROD DETAIL**

PILE RECORD FOR POINT BEARING PILES

PILE NO.	PILE CUT-OFF ELEVATION (FEET)	TIP OF PILE ELEVATION AS DRIVEN (FEET)	LENGTH OF PILE IN PLACE (FEET)	DESIGN AXIAL LOAD (TONS)
1	892.77			73
2	892.77			73
3	892.77			73
4	892.77			73
5	892.69			73
6	892.69			73
7	892.69			73
8	892.69			73
9	892.69			73
10	892.69			73

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:

DIRECTOR, DIVISION OF STRUCTURAL DESIGN
ROOM #322
200 MERO STREET
FRANKFORT, KY. 40622-0001

THIS PILE RECORD DOES NOT REPLACE OTHER PILE RECORDS THE PROJECT ENGINEER IS REQUIRED TO KEEP AND SUBMIT.

USE HP 12X53 IN ACCORDANCE WITH BPS-003, C.E.
USE GRADE 50 STEEL H-PILES WITH PILE POINTS FOR END BEARING PILES.

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: Drive point bearing piles to practical refusal.

PRACTICAL REFUSAL: FOR THIS PROJECT MINIMUM BLOW REQUIREMENTS ARE REACHED AFTER TOTAL PENETRATION BECOMES ½" OR LESS FOR 10 CONSECUTIVE BLOWS. PRACTICAL REFUSAL IS OBTAINED AFTER THE PILE IS STRUCK AN ADDITIONAL 10 BLOWS WITH TOTAL PENETRATION OF ½" OR LESS. IMMEDIATELY CEASE DRIVING OPERATIONS IF THE PILE VISIBLY YIELDS OR BECOMES DAMAGED DURING DRIVING. DRIVE ADDITIONAL PRODUCTION AND TEST PILES IF DIRECTED BY THE ENGINEER.

FEMA Bridge: D23A 4663-DR

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

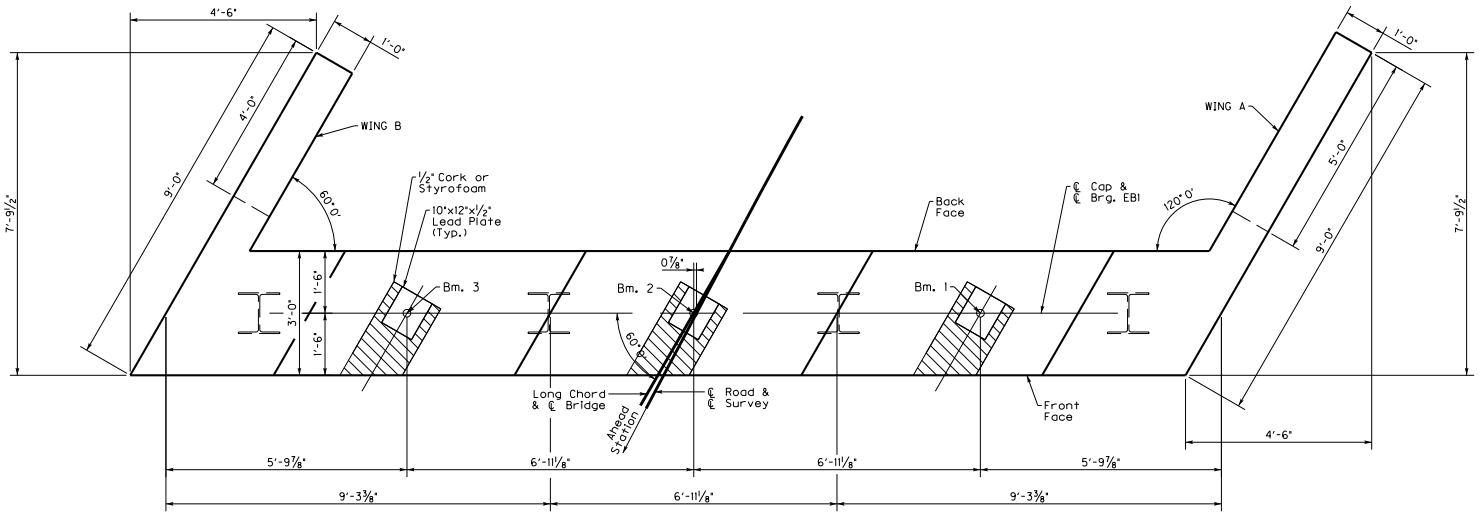
PREPARED BY
HMB PROFESSIONAL ENGINEERS, INC.

DATE: 10/15/2022	CHECKED BY
DESIGNED BY: L. BOLLER	B. REID
DETAILED BY: L. BOLLER	B. REID

FOUNDATION LAYOUT
CROSSING
HOLLYBUSH CREEK

ROUTE	ITEM NO.	COUNTY OF
CR-1108	12-0243.OTH	KNOTT
	SHEET NO. S5	DRAWING NUMBER 28598

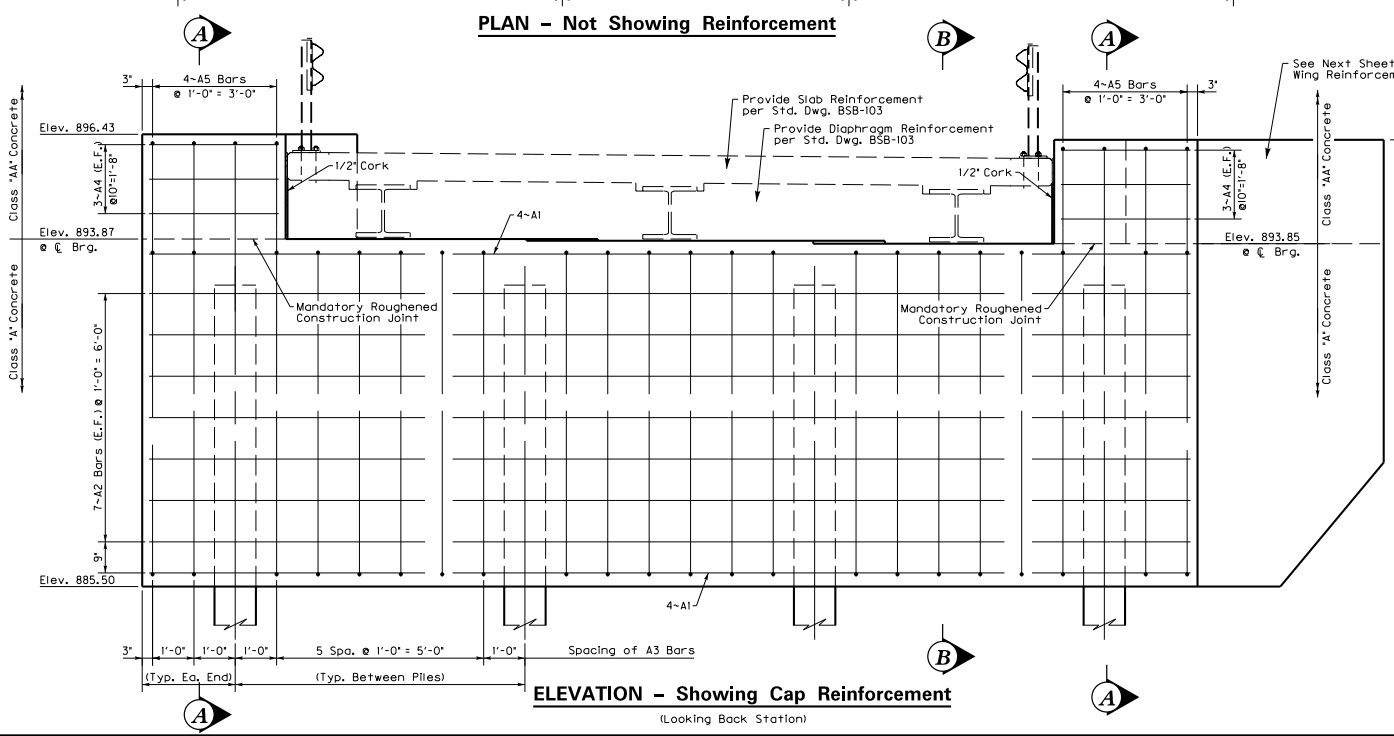
MicroStation v8.11.9.459 USER: $USER$ DATE PLOTTED: $DATE$ $TIME$ FILE: $FILE$



PLAN – Not Showing Reinforcement

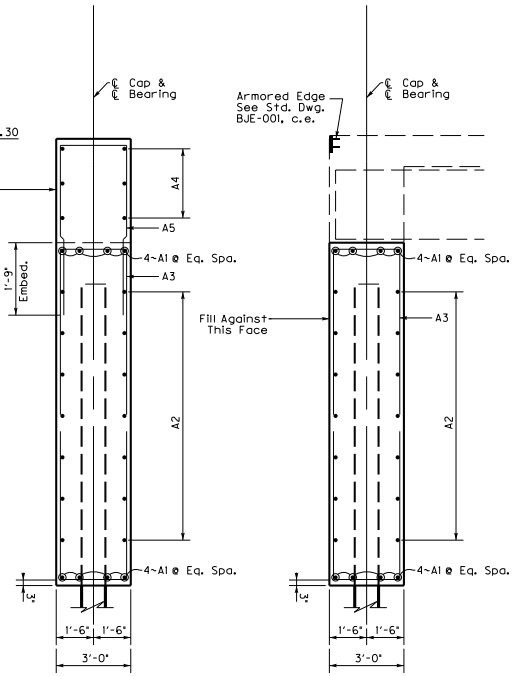
Table of Beam Seat Elevations			
Beam	Back Face	Centerline Brg.	Front Face
1	893.769	893.789	893.809
2	893.847	893.859	893.870
3	893.900	893.903	893.907

Note: Seat Elevations given at Top of Concrete
Note: For Pile Location, See Foundation Layout



ELEVATION – Showing Cap Reinforcement

(Looking Back Station)



SECTION A–A

SECTION B–B

FEMA Bridge: D23A 4663-DR

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

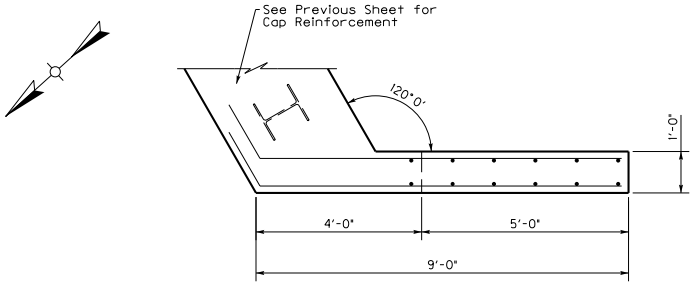
PREPARED BY: HMB PROFESSIONAL ENGINEERS, INC.

DATE: 10/15/2022	CHECKED BY
DESIGNED BY: L. BOLLER	B. REID
DETAILED BY: L. BOLLER	B. REID

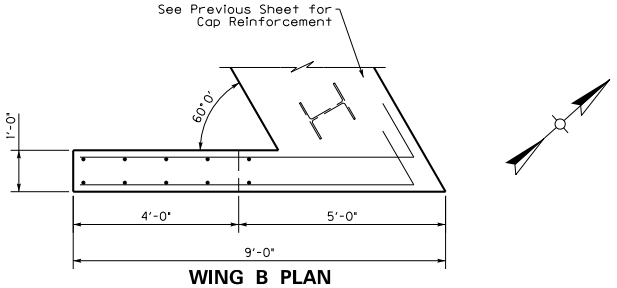
END BENT #1 (1 OF 2)
CROSSING: HOLLYBUSH CREEK

ROUTE	ITEM NO.	COUNTY OF
CR-1108	12-0243.OTH	KNOTT
	SHEET NO. S6	DRAWING NUMBER 28598

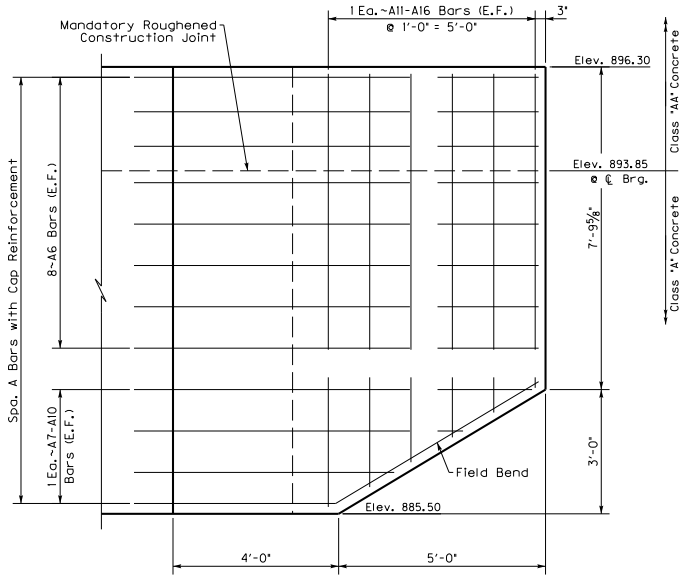
MicroStation v8.11.9.459 USER: $USER$ DATE PLOTTED: $DATE$ $TIME$ FILE: $FILE$



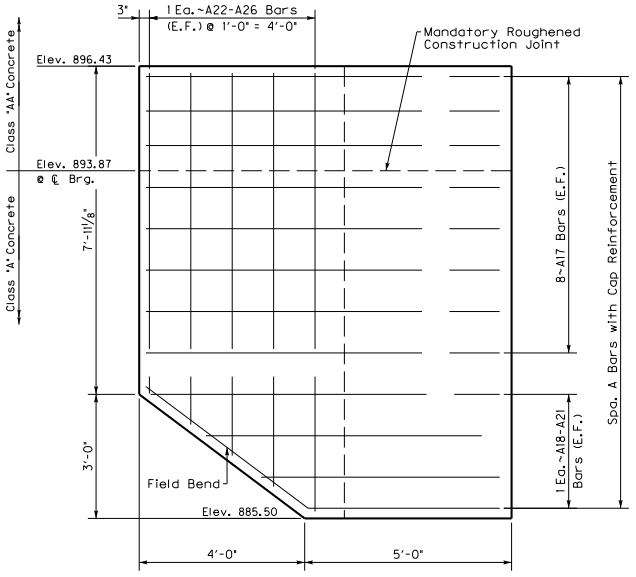
WING A PLAN



WING B PLAN



WING A ELEVATION

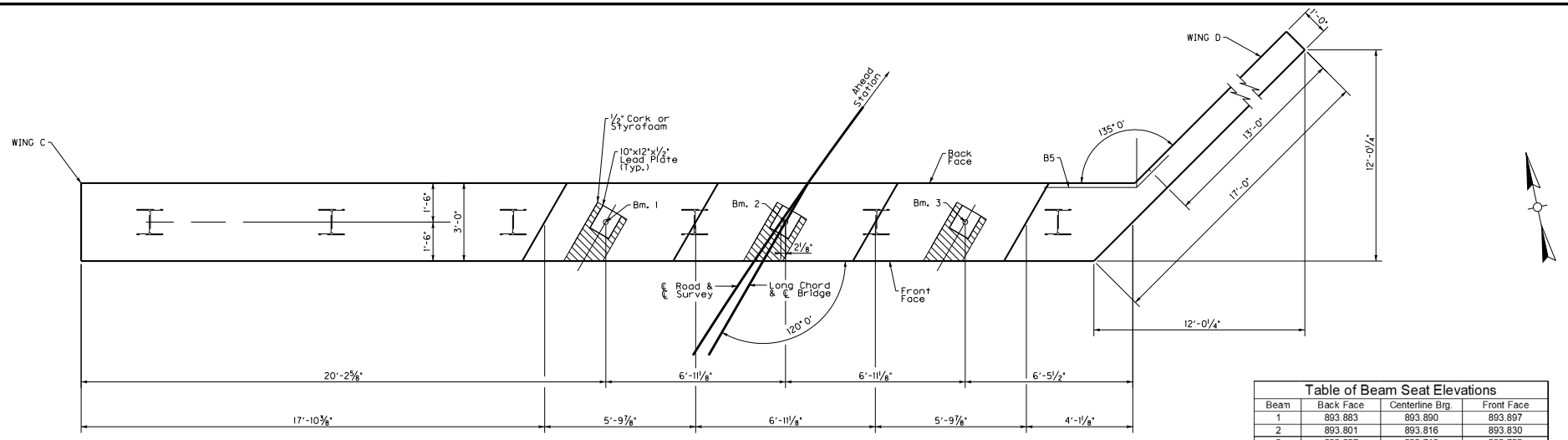


WING B ELEVATION

FEMA Bridge: D23A 4663-DR

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION / DATE	PREPARED BY HMB PROFESSIONAL ENGINEERS, INC.	DATE: 10/15/2022	CHECKED BY	END BENT #1 (2 OF 2)	ROUTE CR-1108	ITEM NO. 12-0243.OTH	COUNTY OF KNOTT
			DESIGNED BY: L. BOLLER	B. REID	CROSSING HOLLYBUSH CREEK		SHEET NO. S7	DRAWING NUMBER 28598
			DETAILED BY: L. BOLLER	B. REID				

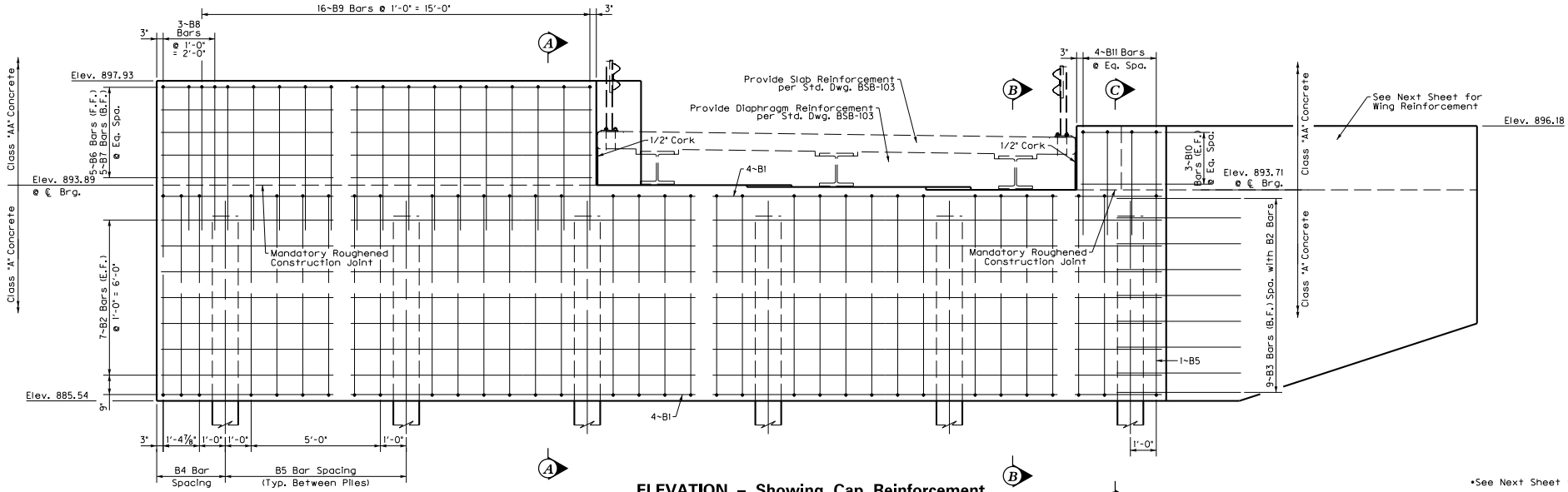
MicroStation v8.11.9.459 USER: $USER$ DATE PLOTTED: $DATE$ $TIME$ FILE: $FILE$



PLAN – Not Showing Reinforcement

Table of Beam Seat Elevations			
Beam	Back Face	Centerline Brg.	Front Face
1	893.883	893.890	893.897
2	893.801	893.816	893.830
3	893.687	893.710	893.732

Note: Seat Elevations given at Top of Concrete
Note: For Pile Location, See Foundation Layout



ELEVATION – Showing Cap Reinforcement

(Looking Ahead Station)

•See Next Sheet for Sections

FEMA Bridge: D23A 4663-DR

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

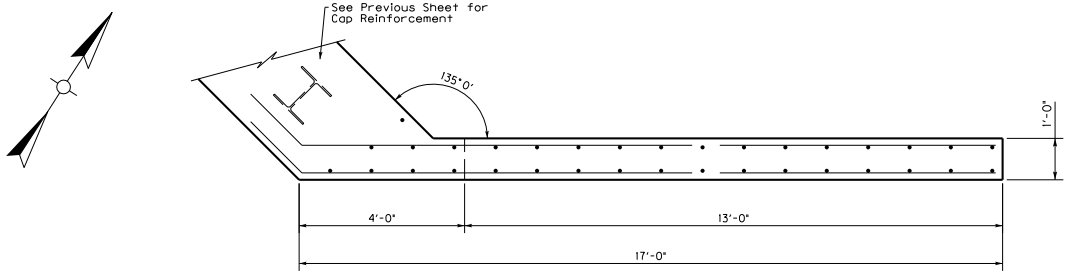
PREPARED BY: HMB PROFESSIONAL ENGINEERS, INC.

DATE: 10/15/2022	CHECKED BY
DESIGNED BY: L. BOLLER	B. REID
DETAILED BY: L. BOLLER	B. REID

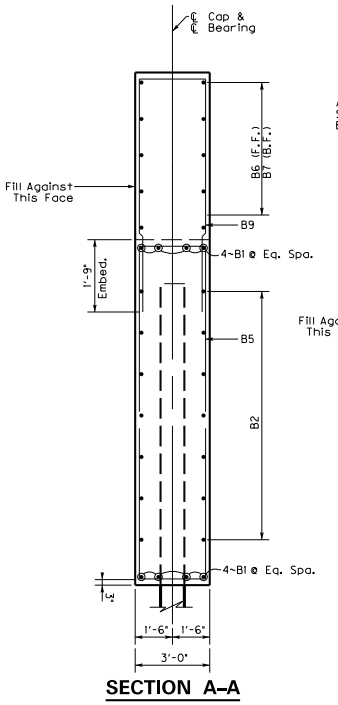
END BENT #2 (1 OF 2)
CROSSING: HOLLYBUSH CREEK

ROUTE	ITEM NO.	COUNTY OF
CR-1108	12-0243.OTH	KNOTT
	SHEET NO. S8	DRAWING NUMBER 28598

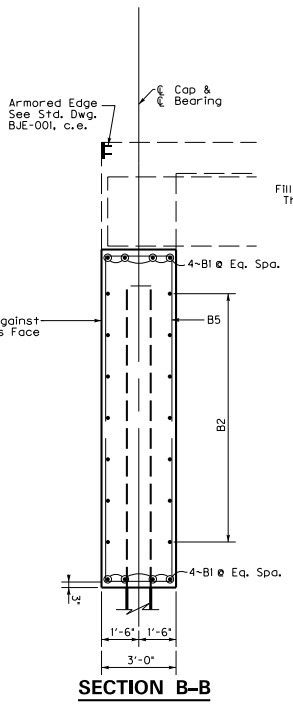
MicroStation v8.11.9.459 USER: $USER$ DATE PLOTTED: $DATE$ $TIME$ FILE: $FILE$



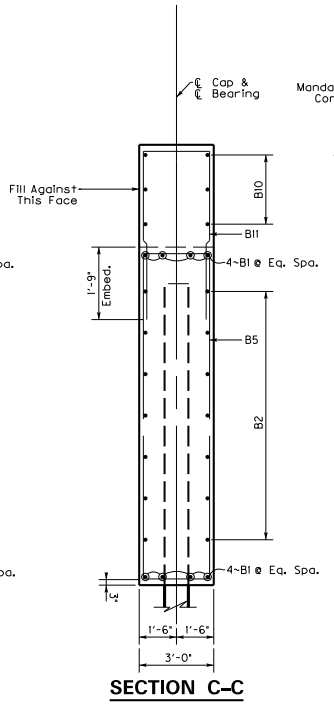
WING D PLAN



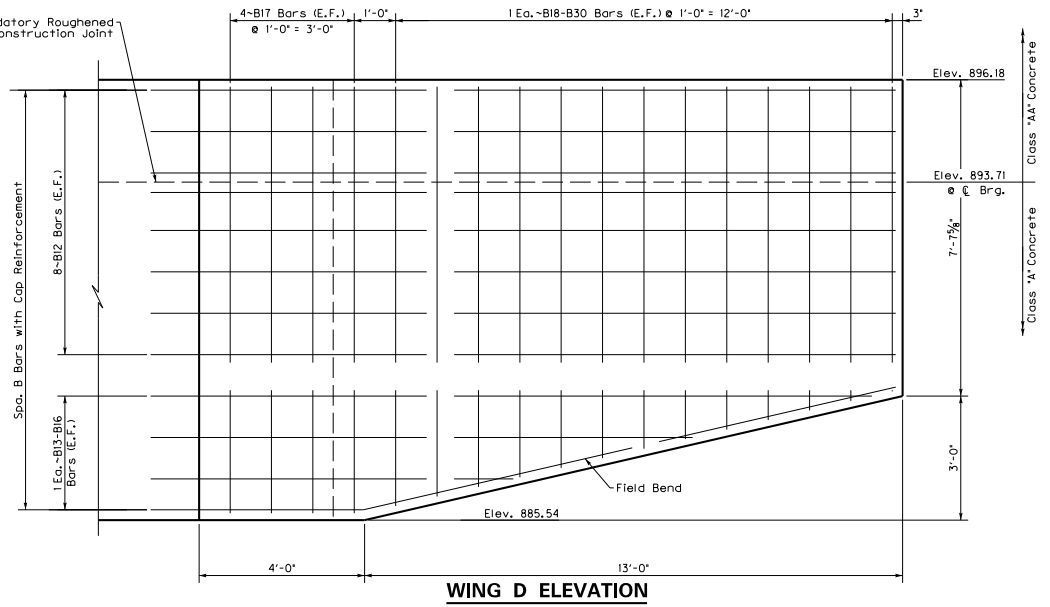
SECTION A–A



SECTION B–B



SECTION C–C



WING D ELEVATION

FEMA Bridge: D23A 4663-DR

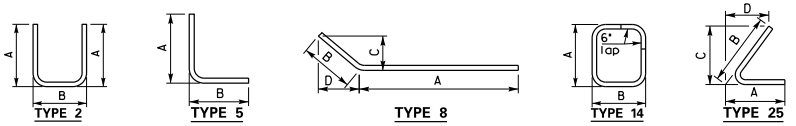
COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION / DATE	PREPARED BY HMB PROFESSIONAL ENGINEERS, INC.	DATE: 10/15/2022	CHECKED BY	END BENT #2 (2 OF 2)	ROUTE CR-1108	ITEM NO. 12-0243.OTH	COUNTY OF KNOTT
			DESIGNED BY: L. BOLLER	B. REID	CROSSING HOLLYBUSH CREEK		SHEET NO. S9	DRAWING NUMBER 28598
			DETAILED BY: L. BOLLER	B. REID				

MicroStation v8.11.9.459 USER: $USER$ DATE PLOTTED: $DATE$ $TIME$ FILE: $FILE$

END BENT BILL OF REINFORCEMENT

MARK	TYPE	NO.	SIZE	LENGTH		LOCATION	A		B		C		D	
				FT	IN		FT	IN	FT	IN	FT	IN	FT	IN
A1	STR	8	#6	25	2	EB1 CAP HORIZONTAL								
A2	STR	14	#5	25	2	EB1 CAP FACES								
A3	14	22	#6	22	10	EB1 CAP STIRRUP	7	10	3	1				
A4	STR	12	#5	3	1	EB1 CAP WING HORIZ								
A5	2	8	#6	11	7	EB1 CAP WING STIRRUP	4	2	3	1				
A6	8	16	#6	10	2	WING A HORIZONTAL	8	8	1	6	1	4	0	9
A7	8	2	#5	10	0	WING A HORIZONTAL	8	6	1	6	1	4	0	9
A8	8	2	#5	8	6	WING A HORIZONTAL	7	0	1	6	1	4	0	9
A9	8	2	#5	6	9	WING A HORIZONTAL	5	3	1	6	1	4	0	9
A10	8	2	#5	11	0	WING A HORIZONTAL	9	6	1	6	1	4	0	9
A11	STR	2	#5	10	5	WING A VERTICAL								
A12	STR	2	#5	9	11	WING A VERTICAL								
A13	STR	2	#5	9	4	WING A VERTICAL								
A14	STR	2	#5	8	9	WING A VERTICAL								
A15	STR	2	#5	8	2	WING A VERTICAL								
A16	STR	2	#5	7	7	WING A VERTICAL								
A17	25	16	#6	9	6	WING B HORIZONTAL	8	0	1	6	1	3	0	9
A18	25	2	#5	9	5	WING B HORIZONTAL	7	11	1	6	1	3	0	9
A19	25	2	#5	8	1	WING B HORIZONTAL	6	7	1	6	1	3	0	9
A20	25	2	#5	6	9	WING B HORIZONTAL	5	3	1	6	1	3	0	9
A21	25	2	#5	10	6	WING B HORIZONTAL	9	0	1	6	1	3	0	9
A22	STR	2	#5	10	7	WING B VERTICAL								
A23	STR	2	#5	10	0	WING B VERTICAL								
A24	STR	2	#5	9	3	WING B VERTICAL								
A25	STR	2	#5	8	6	WING B VERTICAL								
A26	STR	2	#5	7	9	WING B VERTICAL								
B1	STR	8	#6	38	8	EB2 CAP HORIZONTAL								
B2	STR	14	#5	38	8	EB2 CAP FACES								
B3	8	9	#5	5	5	EB2 CAP BEND HORIZ	3	8	1	9	1	3	1	3
B4	14	3	#6	21	10	EB2 CAP STIRRUP	7	9	2	8				
B5	14	31	#6	22	8	EB2 CAP STIRRUP	7	9	3	1				
B6	STR	5	#5	16	8	WING C HORIZONTAL								
B7	STR	5	#5	18	3	WING C HORIZONTAL								
B8	2	3	#6	14	0	WING C STIRRUP	5	8	2	8				
B9	2	16	#6	14	5	WING C STIRRUP	5	8	3	1				
B10	STR	6	#5	3	1	EB2 CAP WING HORIZ								
B11	2	4	#6	11	5	EB2 CAP WING STIRRUP	4	2	3	1				
B12	8	16	#6	18	6	WING D HORIZONTAL	16	9	1	9	1	3	1	3
B13	8	2	#5	17	11	WING D HORIZONTAL	16	2	1	9	1	3	1	3
B14	8	2	#5	13	7	WING D HORIZONTAL	11	10	1	9	1	3	1	3
B15	8	2	#5	9	3	WING D HORIZONTAL	7	6	1	9	1	3	1	3
B16	8	2	#5	18	9	WING D HORIZONTAL	17	0	1	9	1	3	1	3
B17	STR	2	#5	10	3	WING D VERTICAL								
B18	STR	2	#5	10	1	WING D VERTICAL								
B19	STR	2	#5	9	10	WING D VERTICAL								
B20	STR	2	#5	9	8	WING D VERTICAL								
B21	STR	2	#5	9	5	WING D VERTICAL								
B22	STR	2	#5	9	2	WING D VERTICAL								
B23	STR	2	#5	8	11	WING D VERTICAL								
B24	STR	2	#5	8	9	WING D VERTICAL								
B25	STR	2	#5	8	6	WING D VERTICAL								
B26	STR	2	#5	8	3	WING D VERTICAL								
B27	STR	2	#5	8	0	WING D VERTICAL								
B28	STR	2	#5	7	10	WING D VERTICAL								
B29	STR	2	#5	7	6	WING D VERTICAL								
B30	STR	2	#5	7	4	WING D VERTICAL								

NOTE: Bar marks designated as 'e' should be epoxy coated.



FEMA Bridge: D23A 4663-DR

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
KENTUCKY TRANSPORTATION CABINET

REVISION	DATE

PREPARED BY
HMB PROFESSIONAL ENGINEERS, INC.

DATE: 10/15/2022	CHECKED BY
DESIGNED BY: L. BOLLER	B. REID
DETAILED BY: L. BOLLER	B. REID

END BENT BILL OF REINFORCEMENT
CROSSING: HOLLYBUSH CREEK

ROUTE	ITEM NO.	COUNTY OF
CR-1108	12-0243.OTH	KNOTT
	SHEET NO.	DRAWING NUMBER
	S10	28598

MicroStation v8.11.9.459 USER: $USER$ DATE PLOTTED: $DATE$ $TIME$ FILE: $FILE$

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 & Slab sections are designed for 1.25*HL93 (KYHL93) Live Load.

DESIGN LOAD DISTRIBUTION : Beams are designed according to the AASHTO LRFD Bridge Design Specifications for beam spacings up to 6ft and overhangs up to 3'-0" with a 9" wide barrier.

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, Diaphragms, SIP Forms, and assumed railing dead loads of 533 lbs/ft.
DW (kips): Future wearing surface.
LL+I (kips): LL with Dynamic load allowance.

MATERIAL DESIGN SPECIFICATIONS:

for Beam Steel	FY = 50000 PSI
for Steel Reinforcement	FY = 60000 PSI
for Class "AA" Deck Concrete	FY = 4000 PSI

MATERIAL STEEL	A.S.T.M	AASHTO	
High Strength Low Alloy Structural Steel		A709 GR 50	M270 GR 50
Shear Stud Connectors		UNS G 1018	M-169
Sheet lead and Pig Lead	B29-79		
High strength bolts, nuts, and washers	F3125 Grade A325		M-164 Type 1

All steel in longitudinal rolled wide flange beams shall meet the longitudinal Charpy V-Notch toughness test for non-fracture critical components Zone 2 in accordance with the following:

M270 GR 50 (up to 2" thickness) of 15 ft-lbs at 40°F.

Sampling and testing procedures shall be in accordance with AASHTO T243 current edition, utilizing (H) frequency testing. When plate thickness exceeds 1 ½" frequency of testing shall be (P).

HIGH STRENGTH BOLT CONNECTIONS : Unless otherwise specified on the plans, all bolted connnections shall be ASTM F3125 Grade A325 ¾" diameter high strength bolts, nuts, and washers. Open holes shall be $^{13}/_{16}$" diameter. Type 1 galvanized bolts shall be used as described in AASHTO M164. All high strength bolted field connections are to be installed with "direct tension indicators" (DTI's) in accordance with the Standard Specifications and ASTM F959. All DTI's shall be manufactured from a steel conforming to the chemical requirements of ASTM A325 for Type 1 galvanized steel. DTI's shall be installed under the bolt head with the bumps facing the underside of the bolt head. Put a hardened washer under the nut and tension from the nut.

BEVELED EDGES : Bevel all exposed edges ¾".

REINFORCEMENT : Dimensions shown from the face of concrete to reinforcement 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. Epoxy coat all bars. Use stirrup bend diameters for all bent bars.

CORROSION PROTECTION : These beams and all steel components are to be hot dip galvanized according to ASTM A123. Weathering Steel is not allowed.

SHEAR CONNECTORS : The minimum length of studs is 6". Provide the necessary length to penetrate at least 2" above bottom of slab.

Include all costs for shear connectors with the price of the steel beams. Including shear connectors, welding and welding material, and materials necessary to field weld or shop weld the shear connectors in place according to the plans and specifications.

If the Contractor wishes to use something other than the stud shear connectors shown on the plans, the proposed arrangement shall be submitted for approval with the shop plans.

Studs shall be welded in accordance with AWS Specifications.

MILL TEST REPORTS : Notarized mill test reports shall be furnished in triplicate to the Department, showing that all material used in the structural steel conform to the requirements of the specifications.

PROHIBITED WELDING : No welding of any nature, other than indicated on the plans, is to be performed without the written consent of the designer, and then only in the manner and at the locations designated in the authorization.

SLAB: Ensure the entire superstructure slab and diaphragms are poured continuously, out to out, before allowing any concrete to set.

SHOP DRAWINGS: The fabricator shall submit all required shop plans, by email, to the design engineer for review. These submissions shall depict the shop plans in .pdf format. As either 11"x17" or 22"x36" sheets. Designers will make review comments on these electronic submissions as needed and shall return them to the fabricator. Upon reconciliation of the designers comments, files shall be returned to the designer and plans will be forwarded to the Division of Structural Designs Shop Plan coordinator for distribution. Only plans submitted directly to the shop plan coordinator will be distributed and only plans electronically stamped "Distributed by The Division of Structural Design" are to be used for fabrication. While this process does not require the submission of paper copies, The Division of Structural Design reserves the right to require such copies on a case by case basis.

When any changes to the design plans are proposed by the Fabricator or Supplier, the shop drawings reflecting these changes shall be submitted to the Design Engineer through the contractor.

Note:
This plan sheet has been adapted from Standard Drawing BSB-101. Shaded regions on this plan sheet do not apply to this project.

FEMA Bridge: D23A 4663-DR

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY
HMB PROFESSIONAL ENGINEERS, INC.

DATE: 10/15/2022	CHECKED BY
DESIGNED BY: L. BOLLER	B. REID
DETAILED BY: L. BOLLER	B. REID

COMPOSITE STEEL BEAM SUPERSTRUCTURE
GENERAL NOTES

CROSSING
HOLLYBUSH CREEK

ROUTE	ITEM NO.	COUNTY OF
CR-1108	12-0243.OTH	KNOTT
	SHEET NO.	DRAWING NUMBER
	S11	28598

MicroStation v8.11.9.459 USER: $USER$ DATE PLOTTED: $DATE$ $TIME$ FILE: $FILE$

TABLE OF BEAM SIZES AND DESIGN DATA (6 FT. MAX. BEAM SPACING WITH 3 FT. MAX. OVERHANG)

BEAM SPAN	ROLLED BEAM		DEFLECTION IN INCHES		SHEAR CONNECTORS				UNFACTORED BEAM END REACTION			LL DIST. FACT. (LANES)	
	BEAM MEMBER	BEAM DEPTH (IN.)	STEEL ONLY	TOTAL DL	#Per Row	Spa. @ Ea. End of Beam	Middle Spacing	ADTT	DC (kips)	DW (kips)	LL+I (kips)	LLDFM	LLDFV
20' Max.	W18x55	18.1	0.00	0.11	2	10 Spa. @ 5 ¼"	5¾" Spa.	300	11.85	0.90	72.65		.877
	W16x77	16.5	0.00	0.09	3	5 Spa. @ 5 ¾"	6" Spa.	Inf.	12.10		71.61		.865
	W14x82	14.3	0.00	0.11	3	14 Spa. @ 5 ¼"	6" Spa.	450	12.14		72.36		.874
	W12x106	12.9	0.00	0.11	3	14 Spa. @ 5 ¼"	6" Spa.	400	12.40		71.78		.867
25' Max.	W24x62	23.7	0.02	0.17	2	23 Spa. @ 5 ¼"	6" Spa.	400	14.75	1.13	74.47		.860
	W21x62	21.0	0.03	0.21	2	23 Spa. @ 5 ¼"	6" Spa.	350	14.75		75.31		.870
	W18x71	18.5	0.03	0.24	2	23 Spa. @ 5 ¼"	6" Spa.	290	14.86		75.67		.874
	W16x77	16.5	0.04	0.25	3	11 Spa. @ 5 ½"	6" Spa.	Inf.	14.96		76.05		.878
	W14x82	14.3	0.05	0.31	3	23 Spa. @ 5 ¼"	6" Spa.	425	15.01		76.89		.888
	W12x106	12.9	0.05	0.31	3	23 Spa. @ 5 ¼"	6" Spa.	385	15.33		76.25		.880
30' Max.	W24x76	23.9	0.04	0.28	2	28 Spa. @ 5 ¼"	6" Spa.	415	17.78	1.35	80.90		.856
	W21x83	21.4	0.05	0.32	2	28 Spa. @ 5 ¼"	6" Spa.	350	17.89		81.41		.862
	W18x86	18.4	0.06	0.39	3	7 Spa. @ 5 ¾"	6" Spa.	Inf.	17.94		82.40		.872
	W16x100	17.0	0.06	0.40	3	14 Spa. @ 5 ½"	6" Spa.	Inf.	18.18		82.26		.871
	W14x120	14.5	0.08	0.45	3	28 Spa. @ 5 ¼"	6" Spa.	440	18.48		82.48		.873
	W12x120	13.1	0.10	0.57	3	28 Spa. @ 5 ¼"	6" Spa.	375	18.48		83.41		.883
35' Max.	W27x84	26.7	0.06	0.39	3	6 Spa. @ 7 ⅜"	8" Spa.	Inf.	20.79	1.58	86.49		.850
	W24x94	24.3	0.06	0.41	2	24 Spa. @ 5 ¼"	6" Spa.	420	20.97		86.69		.852
	W21x101	21.4	0.07	0.47	3	7 Spa. @ 6 ½"	7" Spa.	Inf.	21.10		87.33		.858
	W18x119	19.0	0.09	0.52	3	7 Spa. @ 6"	6½" Spa.	Inf.	21.43		87.50		.860
	W14x132	14.7	0.14	0.76	3	24 Spa. @ 5 ¼"	6" Spa.	425	21.66		89.15		.876
	W12x152	13.7	0.17	0.82	3	24 Spa. @ 5 ⅜"	6" Spa.	375	22.03		89.00		.874
40' Max.	W30x99	29.7	0.07	0.48	3	12 Spa. @ 8"	9" Spa.	Inf.	23.97	1.80	90.47		.840
	W27x102	27.1	0.08	0.53	3	20 Spa. @ 7 ½"	9" Spa.	Inf.	24.03		91.07		.845
	W24x117	24.3	0.09	0.56	3	14 Spa. @ 7"	8" Spa.	Inf.	24.35		91.22		.846
	W21x122	21.7	0.12	0.67	3	16 Spa. @ 6"	7" Spa.	Inf.	24.45		92.04	0.65	.854
	W18x130	19.3	0.15	0.81	3	9 Spa. @ 5 ½"	6" Spa.	Inf.	24.62		92.79		.861
	W14x176	15.2	0.21	0.98	3	19 Spa. @ 5 ¼"	6" Spa.	425	25.58		93.11		.864
	W12x190	14.4	0.25	1.12	3	19 Spa. @ 5 ¼"	6" Spa.	375	25.86		93.25		.865
45' Max.	W33x118	32.9	0.09	0.54	3	12 Spa. @ 9"	10" Spa.	Inf.	27.33	2.03	93.45		.828
	W30x116	30.0	0.11	0.64	3	21 Spa. @ 8"	10" Spa.	Inf.	27.29		94.36		.836
	W27x129	27.6	0.12	0.68	3	15 Spa. @ 7 ½"	9" Spa.	Inf.	27.57		94.53		.838
	W24x131	24.5	0.14	0.80	3	16 Spa. @ 7"	8" Spa.	Inf.	27.63		95.48		.846
	W21x147	22.1	0.17	0.91	3	17 Spa. @ 6 ½"	7" Spa.	Inf.	28.00		95.83		.849
	W18x158	19.7	0.22	1.08	3	10 Spa. @ 5 ½"	6" Spa.	Inf.	28.25		96.54		.855
50' Max.	W33x130	33.1	0.13	0.74	3	23 Spa. @ 8"	10" Spa.	Inf.	30.60	2.25	97.11		.828
	W30x132	30.3	0.15	0.86	3	24 Spa. @ 7 ½"	9" Spa.	Inf.	30.65		97.86		.834
	W27x146	27.4	0.17	0.89	3	18 Spa. @ 7"	8" Spa.	Inf.	31.02		98.11		.836
	W24x162	25.0	0.20	0.99	3	28 Spa. @ 6 ½"	8" Spa.	Inf.	31.43		98.43		.839
	W21x182	22.7	0.24	1.11	3	20 Spa. @ 6"	7" Spa.	Inf.	31.95		98.70		.841
	W18x192	20.4	0.30	1.36	3	35 Spa. @ 5 ¼"	7" Spa.	Inf.	32.19		99.51		.848
55' Max.	W36x135	35.6	0.17	0.93	3	16 Spa. @ 8 ¼"	10" Spa.	Inf.	33.73	2.48	100.10		.825
	W33x141	33.3	0.18	0.99	3	25 Spa. @ 8"	10" Spa.	Inf.	33.91		100.45		.828
	W30x148	30.7	0.21	1.11	3	28 Spa. @ 7 ¼"	9" Spa.	Inf.	34.09		100.97		.832
	W27x178	27.8	0.23	1.10	3	19 Spa. @ 7"	8" Spa.	Inf.	34.96		100.75		.830
	W24x192	25.5	0.27	1.25	3	31 Spa. @ 6 ½"	8" Spa.	Inf.	35.33		101.20		.834
	W21x223	23.4	0.33	1.35	3	33 Spa. @ 6"	8" Spa.	Inf.	36.21		101.10		.833
	W18x258	21.5	0.40	1.51	3	35 Spa. @ 5 ⅜"	7" Spa.	Inf.	37.22		101.21		.834
60' Max.	W36x150	35.9	0.22	1.17	3	27 Spa. @ 8 ¼"	10" Spa.	Inf.	37.20	2.70	102.92		.823
	W33x169	33.8	0.24	1.16	3	18 Spa. @ 8"	9" Spa.	Inf.	37.76		102.82		.822

← USE W14x132

Note:
This plan sheet has been adapted from Standard Drawing BSB-102. Shaded regions on this plan sheet do not apply to this project.

FEMA Bridge: D23A 4663-DR

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY
HMB PROFESSIONAL ENGINEERS, INC.

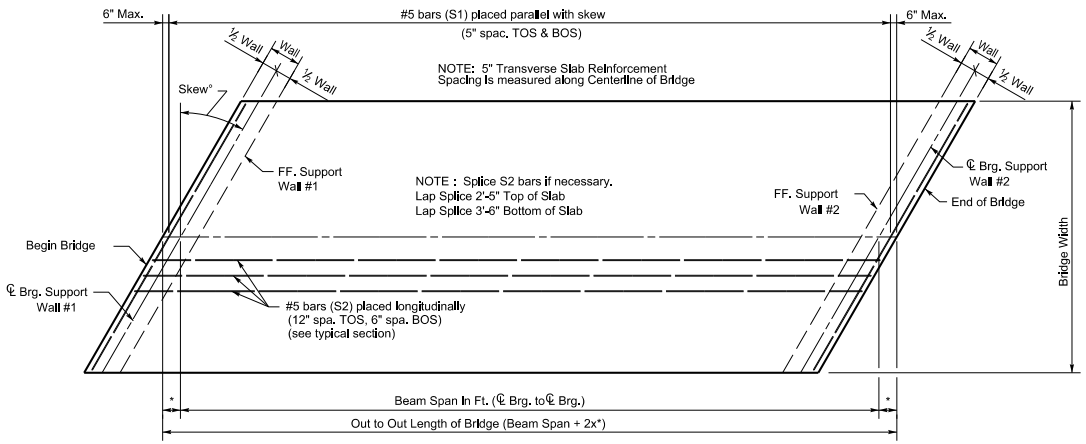
DATE: 10/15/2022 CHECKED BY
DESIGNED BY: L. BOLLER B. REID
DETAILED BY: L. BOLLER B. REID

COMPOSITE STEEL BEAM SUPERSTRUCTURE
BEAM TABLES

CROSSING
HOLLYBUSH CREEK

ROUTE	ITEM NO.	COUNTY OF
CR-1108	12-0243.OTH	KNOTT
	SHEET NO.	DRAWING NUMBER
	S12	28598

MicroStation v8.11.9.459 USER: $USER$ DATE PLOTTED: $DATE$ $TIME$ FILE: $FILE$



PLAN OF SLAB

NOTE : All reinforcing steel shall be epoxy coated.

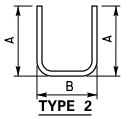
* = ½ Wall / SF

BILL OF REINFORCEMENT

MARK	TYPE	NO.	SIZE	LENGTH FT	LENGTH IN	LOCATION	A FT	A IN	B FT	B IN
S1e	STR	174	#5	18	1	SLAB TRANSVERSE				
S2e	STR	47	#5	34	8	SLAB LONGITUDINAL				
D3e	2	32	#5	6	3	DIAPHRAGM STIRRUPS	1	7	3	1
D4e	STR	4	#8	2	0	DIAPHRAGM DOWELS				

NOTES:
Bar marks designated as "e" should be epoxy coated.

Deck and Diaphragm Reinforcement Based on
Std. Dwg. BSB-103, Included In This Plan Set.



TYPE 2

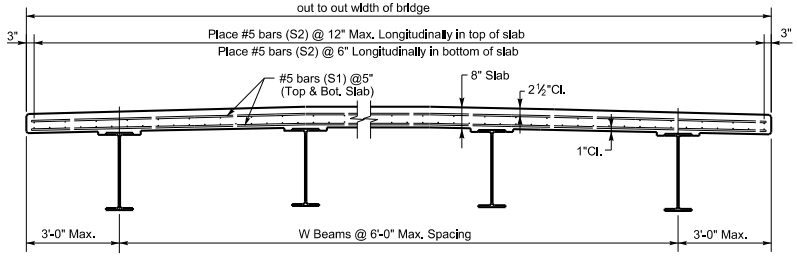
Skew Factors	
Skew	SF
0°	1.000
5°	0.996
10°	0.985
15°	0.966
20°	0.940
25°	0.906
30°	0.866
35°	0.819
40°	0.766
45°	0.707

Estimate of Steel Quantities = (Bridge Length-4in)*(Bridge Width-4in) * (3.129 lb/sq. ft. + 5.006 lb/sq. ft.) / SF

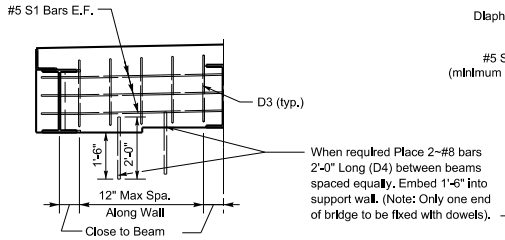
NOTE: Provide Railing System T631 at each overhang.
See Railing System Details sheet.

NOTES : 1.) Diaphragm stirrups are to project into the slab regardless of slab forming method.

2.) Place stirrup bars parallel to face of beams.

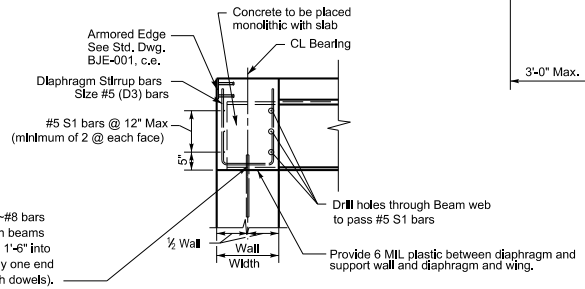


TYPICAL SECTION



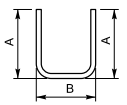
DIAPHRAGM

NOTE : End Diaphragms are required on both ends of Slabs.



DIAPHRAGM X-SECTION

(Perpendicular to Diaphragm)



D3 BARS

Dim. "A" = Beam Depth + 4"

Dim. "B" = (Wall Width - 4") / SF

Note:
This plan sheet has been adapted from Standard Drawing BSB-103. Shaded regions on this plan sheet do not apply to this project.

FEMA Bridge: D23A 4663-DR

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY
HMB PROFESSIONAL ENGINEERS, INC.

DATE: 10/15/2022 | CHECKED BY
DESIGNED BY: L. BOLLER | B. REID
DETAILED BY: L. BOLLER | B. REID

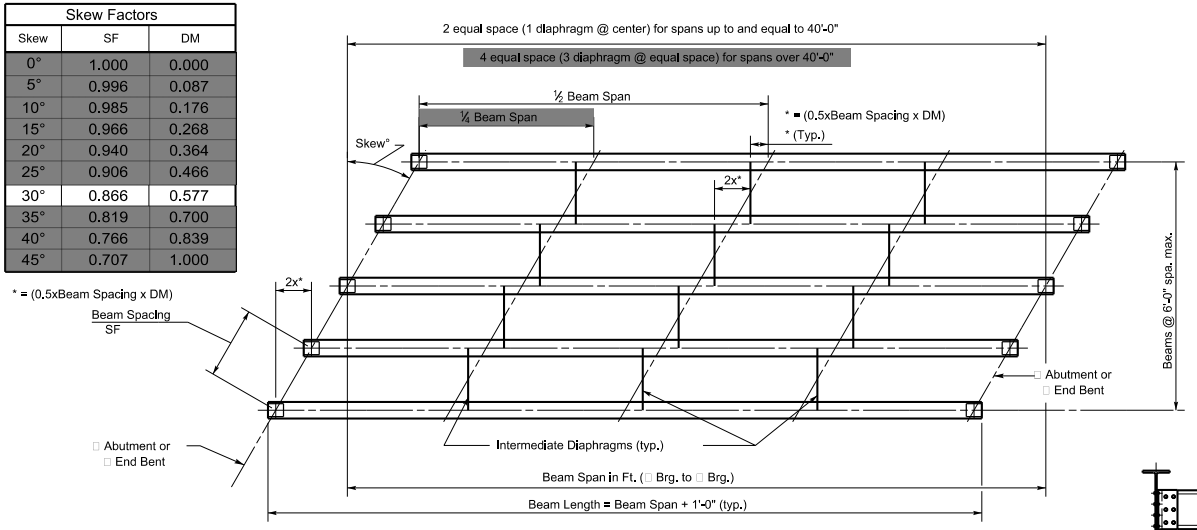
COMPOSITE STEEL BEAM SUPERSTRUCTURE
SLAB DETAILS

CROSSING
HOLLYBUSH CREEK

ROUTE	ITEM NO.	COUNTY OF
CR-1108	12-0243.OTH	KNOTT
	SHEET NO.	DRAWING NUMBER
	S13	28598

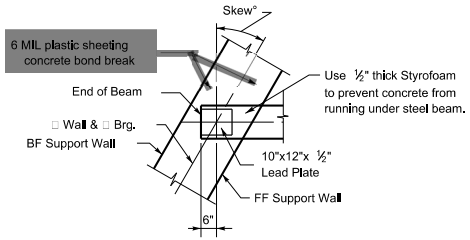
MicroStation v8.11.9.459 USER: $USER$ DATE PLOTTED: $DATE$ $TIME$ FILE: $FILE$

Skew Factors		
Skew	SF	DM
0°	1.000	0.000
5°	0.996	0.087
10°	0.985	0.176
15°	0.966	0.268
20°	0.940	0.364
25°	0.906	0.466
30°	0.866	0.577
35°	0.819	0.700
40°	0.766	0.839
45°	0.707	1.000

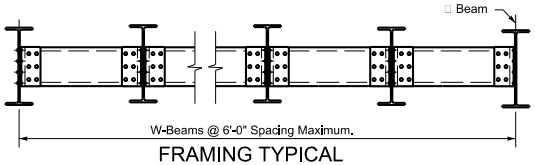


FRAMING PLAN

NOTE: Place girders with any mill or shop camber bowed up in the middle. Heat cambering is not required.

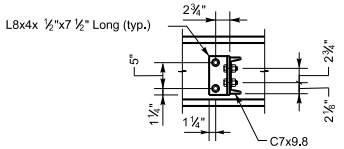


END OF BEAM DETAIL
@ SUPPORTS

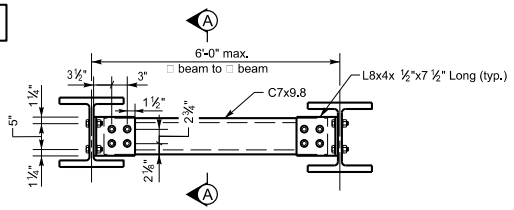


FRAMING TYPICAL

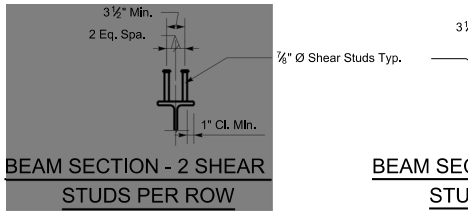
NOTE : Use ¾" Ø Bolts with 13/16" Ø Holes Throughout.



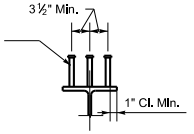
SECTION A-A



INTERMEDIATE DIAPHRAGM
(for up to 14" beam depth)

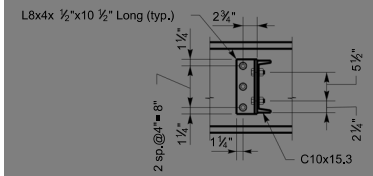


BEAM SECTION - 2 SHEAR
STUDS PER ROW

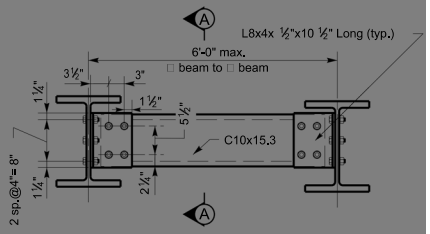


BEAM SECTION - 3 SHEAR
STUDS PER ROW

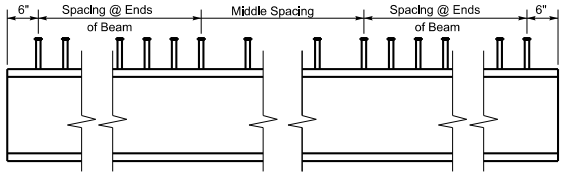
NOTE : Use ¾" Ø Bolts with 13/16" Ø Holes Throughout.



SECTION A-A



INTERMEDIATE DIAPHRAGM
(for up to 20" beam depth)



SHEAR CONNECTOR LAYOUT
(See Beam Tables for Spacings required and number of shear connectors per row)

Note:
This plan sheet has been adapted from Standard Drawing BSB-104. Shaded regions on this plan sheet do not apply to this project.

FEMA Bridge: D23A 4663-DR

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

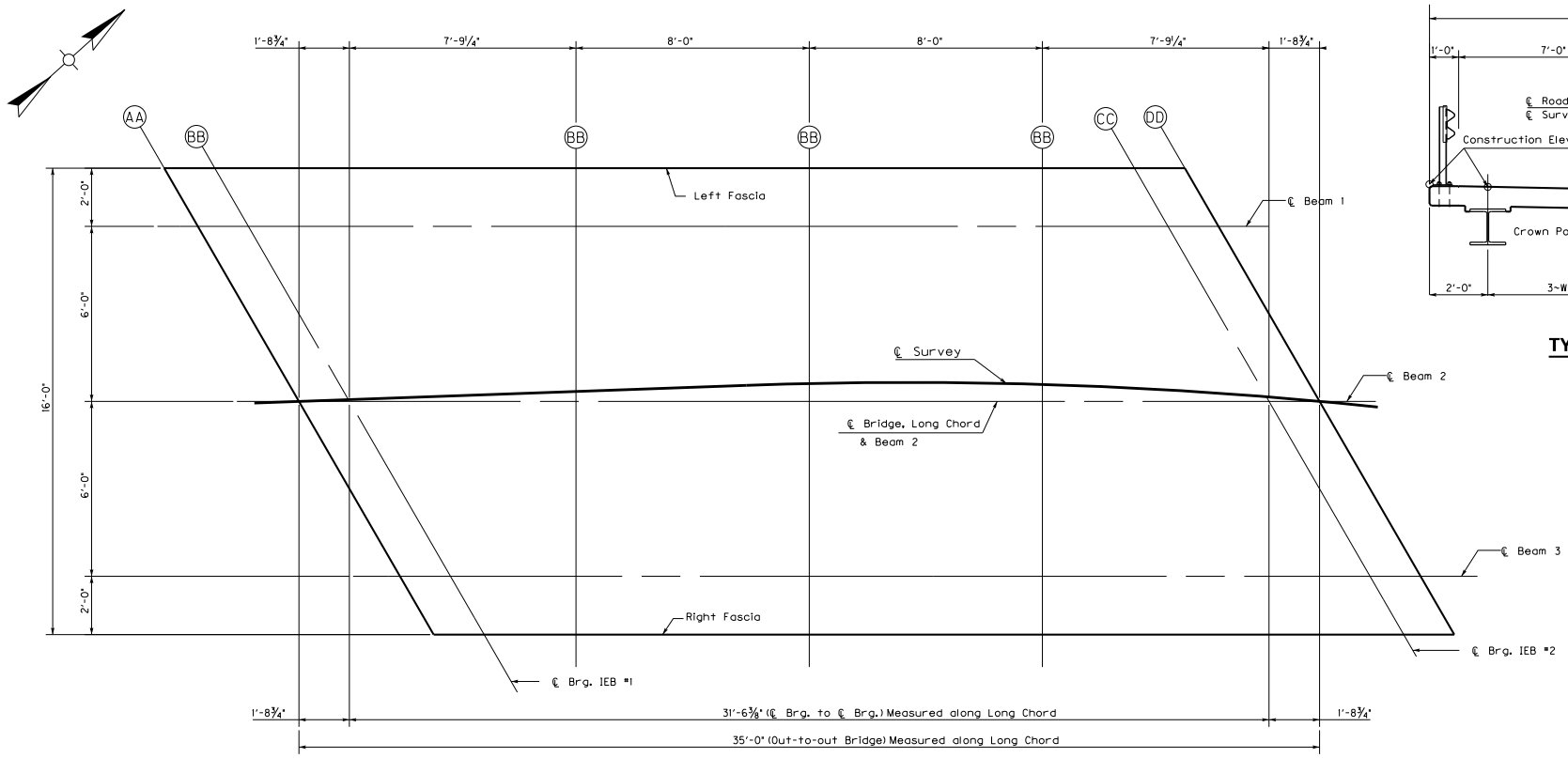
PREPARED BY
HMB PROFESSIONAL ENGINEERS, INC.

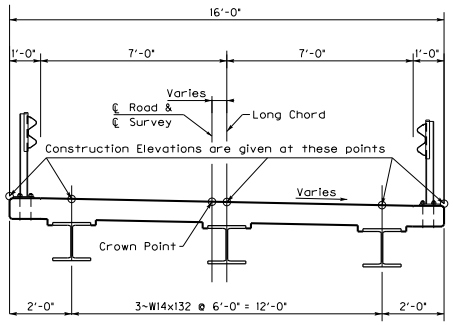
DATE: 10/15/2022	CHECKED BY
DESIGNED BY: L. BOLLER	B. REID
DETAILED BY: L. BOLLER	B. REID

COMPOSITE STEEL BEAM SUPERSTRUCTURE
FRAMING PLAN / DIAPHRAGMS
CROSSING
HOLLYBUSH CREEK

ROUTE	ITEM NO.	COUNTY OF
CR-1108	12-0243.OTH	KNOTT
	SHEET NO.	DRAWING NUMBER
	S14	28598

MicroStation v8.11.9.459 USER: $USER$ DATE PLOTTED: $DATE$ $TIME$ FILE: $FILE$





TYPICAL SECTION

NOTES FOR ELEVATIONS TAKEN ON STEEL BEAMS

Take elevations on top of beam at points indicated by the grid layout. The beam elevations are to be read to three decimals, 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.

Construct rail to roadway grade. Do not add camber to the rail.

CONSTRUCTION ELEVATIONS

LOCATION	LEFT FASCIA	BEAM 1			BEAM 2 & LONG CHORD			BEAM 3			RIGHT FASCIA
		CONSTR. ELEV.	TOP OF BEAM	DIM. "X"	CONSTR. ELEV.	TOP OF BEAM	DIM. "X"	CONSTR. ELEV.	TOP OF BEAM	DIM. "X"	
SKEW LN AA	895.753	895.785			895.864			895.917			895.929
SKEW LN BB	895.776	895.806			895.875			895.920			895.929
SKEW LN CC	895.925	895.907			895.832			895.726			895.684
SKEW LN DD	895.921	895.900			895.818			895.704			895.658
GRID LN 01	896.285	896.289			896.238			896.186			896.191
GRID LN 02	896.338	896.335			896.308			896.325			896.322
GRID LN 03	896.148	896.137			896.132			896.216			896.204

FEMA Bridge: D23A 4663-DR

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY
HMB PROFESSIONAL ENGINEERS, INC.

DATE: 10/15/2022	CHECKED BY
DESIGNED BY: L. BOLLER	B. REID
DETAILED BY: L. BOLLER	B. REID

CONSTRUCTION ELEVATIONS
CROSSING
HOLLYBUSH CREEK

ROUTE	ITEM NO.	COUNTY OF
CR-1108	12-0243.OTH	KNOTT
	SHEET NO.	DRAWING NUMBER
	S15	28598

MicroStation v8.11.9.459 USER: $USER$ DATE PLOTTED: $DATE$ $TIME$ FILE: $FILE$

COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0243.0TH	U1

UTILITY SUMMARY

ITEM	DESCRIPTION	UNIT	SHEET U3			PROJECT TOTALS
WATER LINE SUMMARY						
14000	W AIR RELEASE VALVE 1 INCH	EA	1			1
14003	W CAP EXISTING MAIN	EA	2			2
14004	W DIRECTIONAL BORE	LF	160			160
14059	W PIPE PVC 06	LF	86			86
14089	W TAPPING SLEEVE AND VALVE SIZE 1	EA	2			2
21233ED	ASPHALT PAVING REPLACEMENT	LF	85			85

UTILITY CONSTRUCTION TO BE COMPLETED BY OTHER PRIOR TO CONSTRUCTION. UTILITY PLANS ARE FOR INFORMATION ONLY.

UTILITY SUMMARY
HOLLYBUSH ROAD
AT HOLLYBUSH CREEK

P:\engrenv\Hollybush Road Bridge Relocation\CAD\Hollybush Creek Crossing WL update.dwg

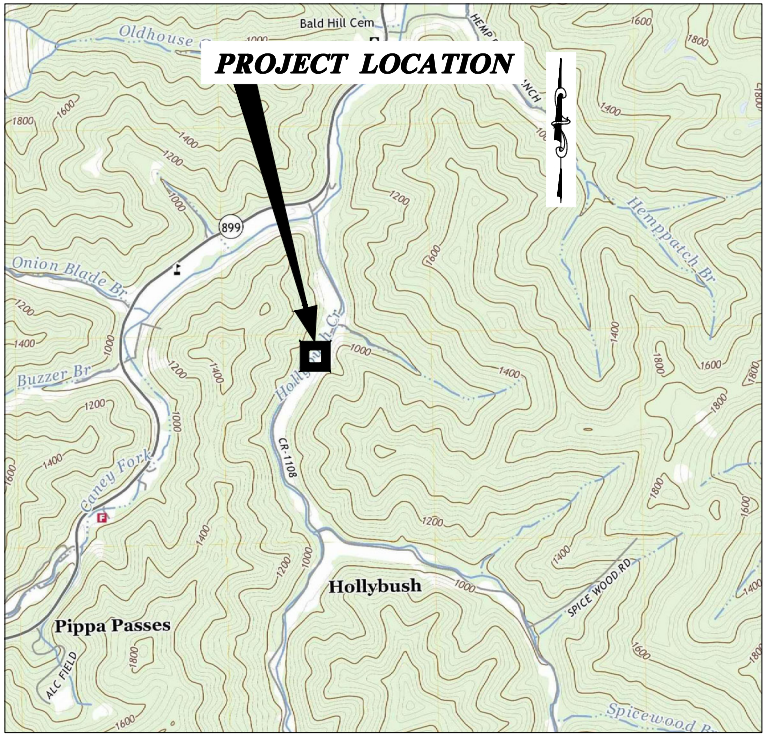
COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0243.0TH	U2

GENERAL NOTES

1. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR IS TO VERIFY ALL FINISHED GRADES AND DIMENSIONS IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE ENGINEER.
2. EFFORTS HAVE BEEN MADE TO INDICATE THE MOST ACCURATE LOCATION OF EXIST. STRUCTURES, PIPING AND UTILITIES. HOWEVER, THE CONTRACTOR IS TO VERIFY THE EXACT LOCATION OF ALL EXISTING STRUCTURES, PIPING AND UTILITIES PRIOR TO COMMENCEMENT OF THE WORK. REPORT ANY DISCREPANCIES TO THE ENGINEER. TAKE CARE TO PROTECT ALL PIPING AND UTILITIES THAT ARE TO REMAIN. REPAIR ANY DAMAGE ACCORDING TO LOCAL STANDARDS AND AT THE EXPENSE OF THE CONTRACTOR. COORDINATE ALL CONSTRUCTION WITH THE APPROPRIATE UTILITY COMPANY.
3. DIMENSIONS OF EXIST. STRUCTURES AND/OR SIZE RESTRICTIONS ARE APPROXIMATE. ALL NECESSARY DIMENSIONS AND ELEVATIONS OF EXIST. STRUCTURES & TOPOGRAPHY SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD PRIOR TO HIS CONSTRUCTION OPERATIONS.
4. THE CONTRACTOR SHALL OBTAIN REQUIRED PERMITS AND GIVE ALL NOTICES REQUIRED FOR EXECUTION OF THE WORK. THE CONTRACTOR SHALL PAY FOR ALL PERMITS AND ANY APPLICABLE SERVICES INSPECTION FEES.
5. THE CONTRACTOR'S WORK AND OPERATIONS SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL CODES AND RECEIVE APPROVAL WHERE NECESSARY PRIOR TO COMMENCEMENT OF THE WORK.
6. ALL MATERIALS BEING REMOVED AND NOT RE-USED IN THE NEW CONSTRUCTION SHALL BE FIRST OFFERED TO THE OWNER. ALL MATERIALS NOT ACCEPTED SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR.
7. ALL BURIED PIPES SHALL HAVE A MINIMUM OF 3'-6" COVER AS MEASURED VERTICALLY FROM FINISHED GRADE TO THE TOP OF PIPE, UNLESS OTHERWISE NOTED.
8. ALL REQUIRED PIPING BENDS MAY NOT BE SHOWN ON THE DRAWINGS. ADDITIONAL BENDS MAY BE NECESSARY TO CONFORM WITH ELEVATIONS SHOWN AND TO MAINTAIN ADEQUATE GROUND COVER. THE COST OF ANY ADDITIONAL BENDS REQUIRED SHALL BE INCLUDED IN THE LUMP SUM OR UNIT BID PRICE.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR FOR THE PROTECTION OF LIFE DURING CONSTRUCTION. SLOPED SIDES OF EXCAVATIONS SHALL COMPLY WITH FEDERAL, STATE AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION. SHORE AND BRACE WHERE SLOPING IS NOT POSSIBLE BECAUSE OF SPACE RESTRICTIONS OR STABILITY OF MATERIAL EXCAVATED. TRENCH SHORING AND BRACING SHALL COMPLY WITH FEDERAL, STATE AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION.
10. THE PROPERTY LINES OR EASEMENTS SHOWN ON THE DRAWINGS SHALL BE THE LIMITS OF CONSTRUCTION. ANY ADDITIONAL EASEMENTS REQUIRED SHALL BE OBTAINED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER BY SUBMITTING A REQUEST FOR SUCH TO THE OWNER.
11. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO WORK ALL APPLICABLE DRAWINGS AND SPECIFICATIONS AS A UNIT. ANY OMISSIONS, DELETIONS AND/OR CONFLICTS ARISING AS A RESULT OF FAILURE TO INCORPORATE ALL DRAWINGS AND SPECIFICATIONS WHICH APPLY SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
12. ALL PIPING SUPPORTS MAY NOT BE SHOWN ON THE DRAWINGS. HOWEVER, ALL PIPING, INSIDE AND OUTSIDE, SHALL BE ADEQUATELY SUPPORTED TO PREVENT UNDUE STRAIN OR VIBRATION ON PIPE JOINTS OR EQUIPMENT. ANY ADDITIONAL PIPING SUPPORTS SHALL BE INCLUDED IN THE LUMP SUM BID PRICE.
13. ALL CONCRETE THRUST BLOCKS MAY NOT BE SHOWN ON THE DRAWINGS. HOWEVER, CONCRETE THRUST BLOCKS SHALL BE INSTALLED AT ALL BENDS, TEES, CROSSES, DEAD ENDS, ETC. THRUST BLOCKS SHALL BE SIZED ACCORDINGLY AS SHOWN ON THE CONCRETE THRUST BLOCK DETAIL. ALL NECESSARY THRUST BLOCKS REQUIRED SHALL BE INCLUDED IN THE LUMP SUM OR UNIT BID PRICE.
14. BOLD STRENGTH LINES REPRESENT PROPOSED WORK. LIGHT/SHADED LINES REPRESENT EXIST. FACILITIES.
15. THE ENGINEER RESERVES THE RIGHT TO MAKE MINOR ADJUSTMENTS IN THE WORK IN ORDER TO ACCOMPLISH THE INTENT OF THE DESIGN
16. THE CONTRACTOR SHALL PLACE TEMPORARY STORM WATER CONTROL STRUCTURES AND TAKE ALL NECESSARY PRECAUTIONS TO CONTROL STORM WATER RUNOFF AND EROSION. DO NOT CLOG, BLOCK OR OTHERWISE INTERFERE WITH THE EXISTING STORM WATER SYSTEM. PLACE HAY BALES AND SILT DAMS AS NECESSARY TO CONTROL EROSION.
17. GENERALLY SLOPE GRADES UNIFORMLY BETWEEN NOTED GRADE POINTS.
18. ALL EARTH FILL TO BE COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS.
19. CONTRACTOR SHALL CLEAN SITE/ROADS WEEKLY, UNLESS REQUESTED MORE FREQUENTLY.
20. CONTRACTOR SHALL COORDINATE ANY TIE-INS/SHUT DOWNS WITH OWNERS PERSONNEL WITH A MINIMUM NOTIFICATION OF 7 DAYS.
21. ALL PIPE JOINTS AND FITTINGS BELOW STRUCTURES SHALL BE RESTRAINED JOINTS.
22. COATING SYSTEMS REQUIRED ON ALL EXPOSED STEEL, DIP VALVES, FITTINGS AND MISC METALS PER SECTION 09900 OF THE SPECIFICATIONS.
23. ALL FLANGED PIPE/FITTING CONNECTIONS SHALL BE PROVIDED WITH TYPE 304 STAINLESS STEEL NUTS AND BOLTS/HARDWARE.
24. ALL DUCTILE IRON PIPE AND FITTINGS FOR AIR PIPING SHALL BE UNLINED INCLUDING CEMENT LINING.
25. ALL ANCHOR BOLTS AND HARDWARE SHALL BE TYPE 304 STAINLESS STEEL UNLESS OTHERWISE INDICATED.
26. INSTALL VALVE BOXES, TRACER WIRE, AND LINE MARKERS PER SPECIFICATIONS.

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.



LOCATION MAP
SCALE : N.T.S.

LEGEND: EXISTING: PROPOSED:

WATER — W — ▬▬

CONTACT INFORMATION

WATER
KNOTT CO WATER & SEWER DISTRICT
JARED SALMONS, GENERAL MANAGER
777 BIG BRANCH ROAD
VICCO, KY, 41773
(606) 645-3582

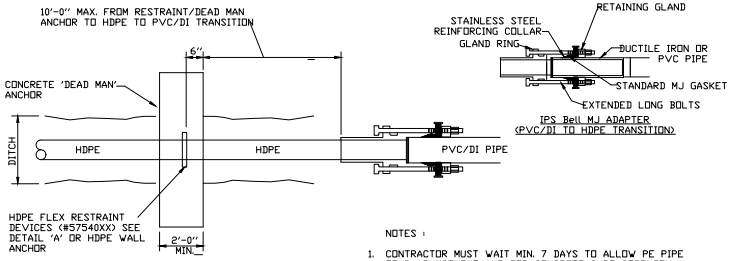
INDEX OF SHEETS

UTILITY CONSTRUCTION TO BE COMPLETED BY OTHER PRIOR TO CONSTRUCTION. UTILITY PLANS ARE FOR INFORMATION ONLY.

NOTES, INDEX AND MAP
HOLLYBUSH ROAD
AT HOLLYBUSH CREEK

P:\engrenv\Hollybush Road Bridge Relocation\CAD\Hollybush Creek Crossing WL update.dwg

COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0243.0TH	U2A

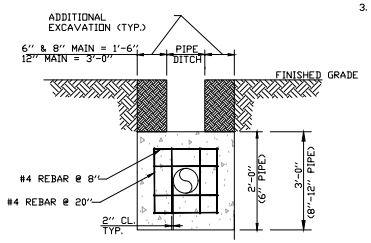


HDPE CONNECTION TO PVC/DI PLAN VIEW

SCALE : N.T.S.

NOTES :

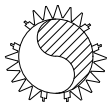
1. CONTRACTOR MUST WAIT MIN. 7 DAYS TO ALLOW PE PIPE TEMP ADJUSTMENT AND FOR CONCRETE CURE STRENGTH BEFORE MAKING TIE IN CONNECTION.
2. ON INITIAL FILL OF NEW PE PIPE, FILL AT AN EXTREME LOW FLOW RATE TO AVOID CENTRALIZER EFFECT (PIPE SHIFT).
3. THIS HDPE CONNECTION REQUIRED ON BOTH SIDES OF HDPE.



NOTE: CENTER BLOCK ON PIPE

SECTION A-A

SCALE : N.T.S.

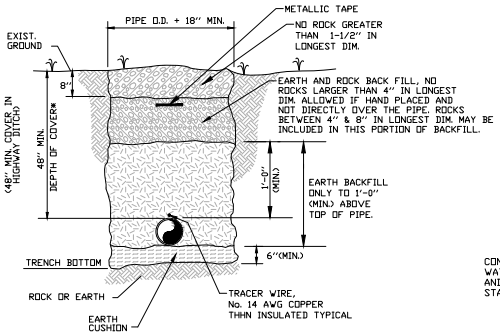


DETAIL 'A'

SCALE : N.T.S.

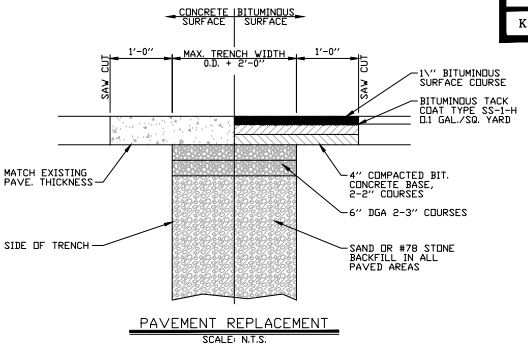
NOTE :
6"-8" 2-HDPE FLEX RESTRAINTS
12"-16" 3-HDPE FLEX RESTRAINTS
16"+ AT ENG. DISCRETION

NOTE :
TRACER WIRE SHALL BE SPLICED WITH GEL FILLED WIRE CONNECTORS.



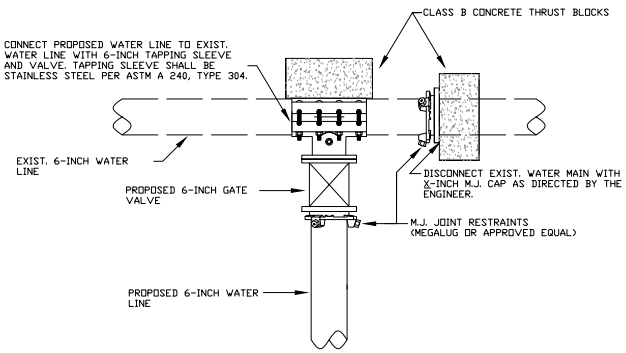
BEDDING/BACKFILL

SCALE : N.T.S.



PAVEMENT REPLACEMENT

SCALE: N.T.S.

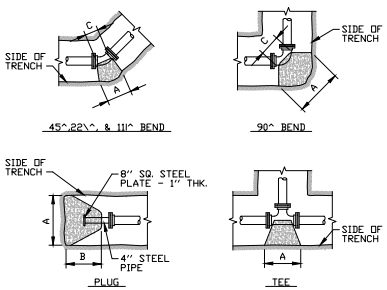


TAPPING SLEEVE CONNECTION - TYPE I

SCALE : N.T.S.

HDPE CONNECTION TO PVC/DI

SCALE : N.T.S.



NOTES:

1. THRUST BLOCKS DESIGNED FOR 100 PSI PRESSURE AND 1000 PSF SOIL BEARING. FOR GREATER PRESSURE OR LESS SOIL BEARING, QUANTITIES WILL HAVE TO BE RECALCULATED.
2. THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
3. IF EXACT SIZE PIPE BLOCKING IS NOT SHOWN, USE NEXT LARGER SIZE.
4. THRUST BLOCKING TO BE POURED IN PLACE CLASS B CONCRETE.

THRUST BLOCKS

SCALE : N.T.S.

90° BEND							
SIZE	18"	16"	12"	10"	8"	6"	4"	2"
A	72	64	50	40	33	26	16	16
B	72	64	50	40	33	24	16	16
C	32	30	16	15	12	12	9	9
D	36	32	25	20	16	12	8	9

45° BEND							
SIZE	18"	16"	12"	10"	8"	6"	4"	2"
A	54	48	37	31	24	18	12	12
B	54	48	37	31	24	18	12	12
C	16	18	16	14	12	12	8	8
D	25	22	18	15	12	9	6	6

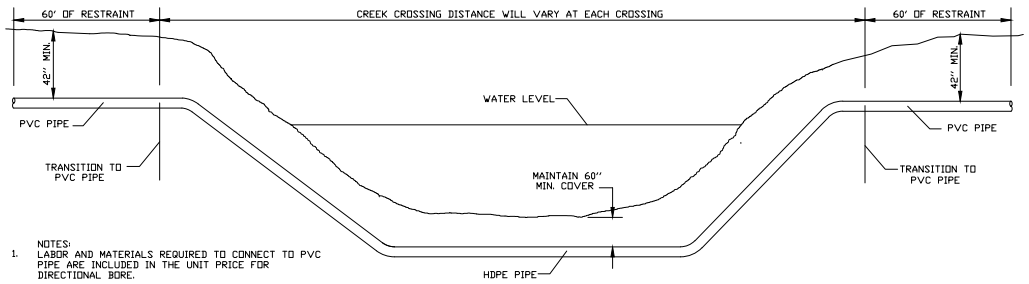
22 1/2° BEND							
SIZE	18"	16"	12"	10"	8"	6"	4"	2"
A	38	34	26	23	18	13	9	9
B	38	34	26	23	18	13	9	9
C	16	18	16	14	12	10	8	8
D	18	16	13	11	9	6	4	4

11 1/4° BEND							
SIZE	18"	16"	12"	10"	8"	6"	4"	2"
A	27	24	18	16	13	11	9	9
B	27	24	18	16	13	11	9	9
C	16	18	16	14	12	10	8	8
D	14	12	9	8	6	5	4	4

PLUG							
SIZE	18"	16"	12"	10"	8"	6"	4"	2"
A	60	54	52	43	34	26	26	26
B	60	54	52	43	34	26	26	26
C	12	12	12	12	12	12	12	12
D	54	44	32	22	15	11	11	11

TEE										
SIZE	MAIN / BRANCH	18" / 18"	16" / 16"	12" / 12"	10" / 10"	8" / 8"	6" / 6"	4" / 4"	2" / 2"	4" / 6"	6" / 8"
	A	60	54	52	42	26	43	26	26		
	B	60	54	52	43	26	43	26	26		
	C	32	30	12	12	12	12	12	12		
	D	36	30	26	21	13	21	13	13		

DIMENSIONS ARE IN INCHES



ELEVATION

NOTES:

1. LABOR AND MATERIALS REQUIRED TO CONNECT TO PVC PIPE ARE INCLUDED IN THE UNIT PRICE FOR DIRECTIONAL BORE.
2. DIRECTIONAL BORE SHALL BE ACCOMPLISHED SUCH THAT MANUFACTURER'S RECOMMENDATIONS FOR PIPE DEFLECTION ARE NOT EXCEEDED. COMPLIANCE AND VERIFICATION ARE CONTRACTORS RESPONSIBILITY.
3. M.J. ADAPTOR SHALL BE USED TO TRANSITION FROM HDPE PIPE TO PVC OR D.I. PIPE.
4. COST OF RESTRAINTS SHALL BE INCLUDED IN THE LUMP SUM FOR CREEK CROSSING.
5. ALL JOINTS AND FITTINGS WITHIN 60 FEET OF THE TRANSITION FROM HDPE TO PVC OR DI SHALL BE RESTRAINED.
6. TRACER WIRE SHALL BE INSTALLED WITH DIRECTIONAL BORE, REFER TO SPECS FOR TRACER WIRE WITH DIRECTIONAL BORE.

DIRECTIONAL BORE CREEK CROSSING

SCALE : N.T.S.

STANDARD DETAILS HOLLYBUSH ROAD AT HOLLYBUSH CREEK

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COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0243.0TH	U3

BEFORE YOU DIG

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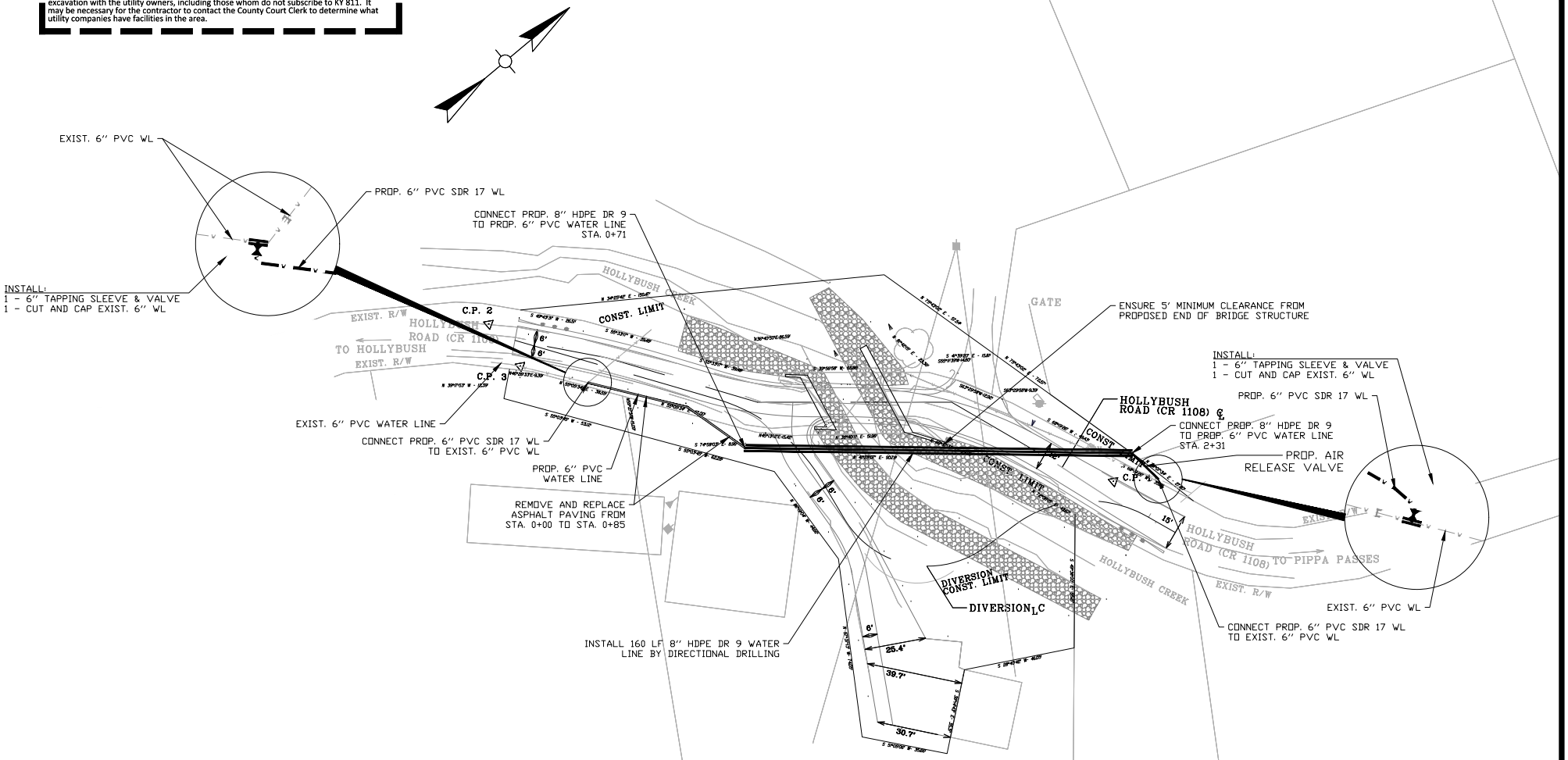

UTILITY CONSTRUCTION TO BE COMPLETED BY OTHER PRIOR TO CONSTRUCTION. UTILITY PLANS ARE FOR INFORMATION ONLY.

0' 20' 40' 80'

SCALE: 1"=40'

WL PLAN
HOLLYBUSH ROAD
AT HOLLYBUSH CREEK

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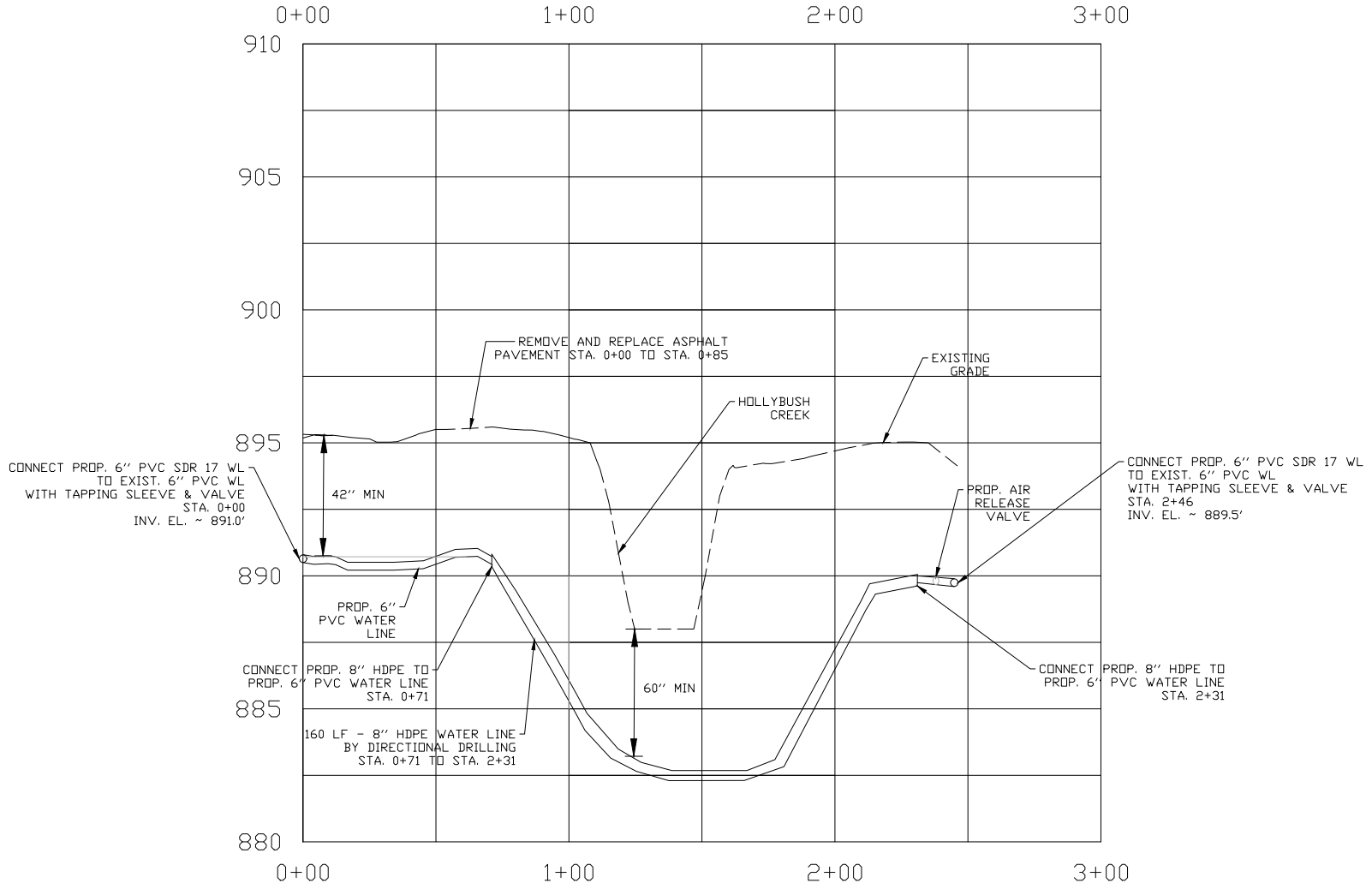
COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0243.0TH	U4



SCALE: 1"=4' VERT.
1"=40' HORIZ.

WL PROFILE
HOLLYBUSH ROAD
AT HOLLYBUSH CREEK

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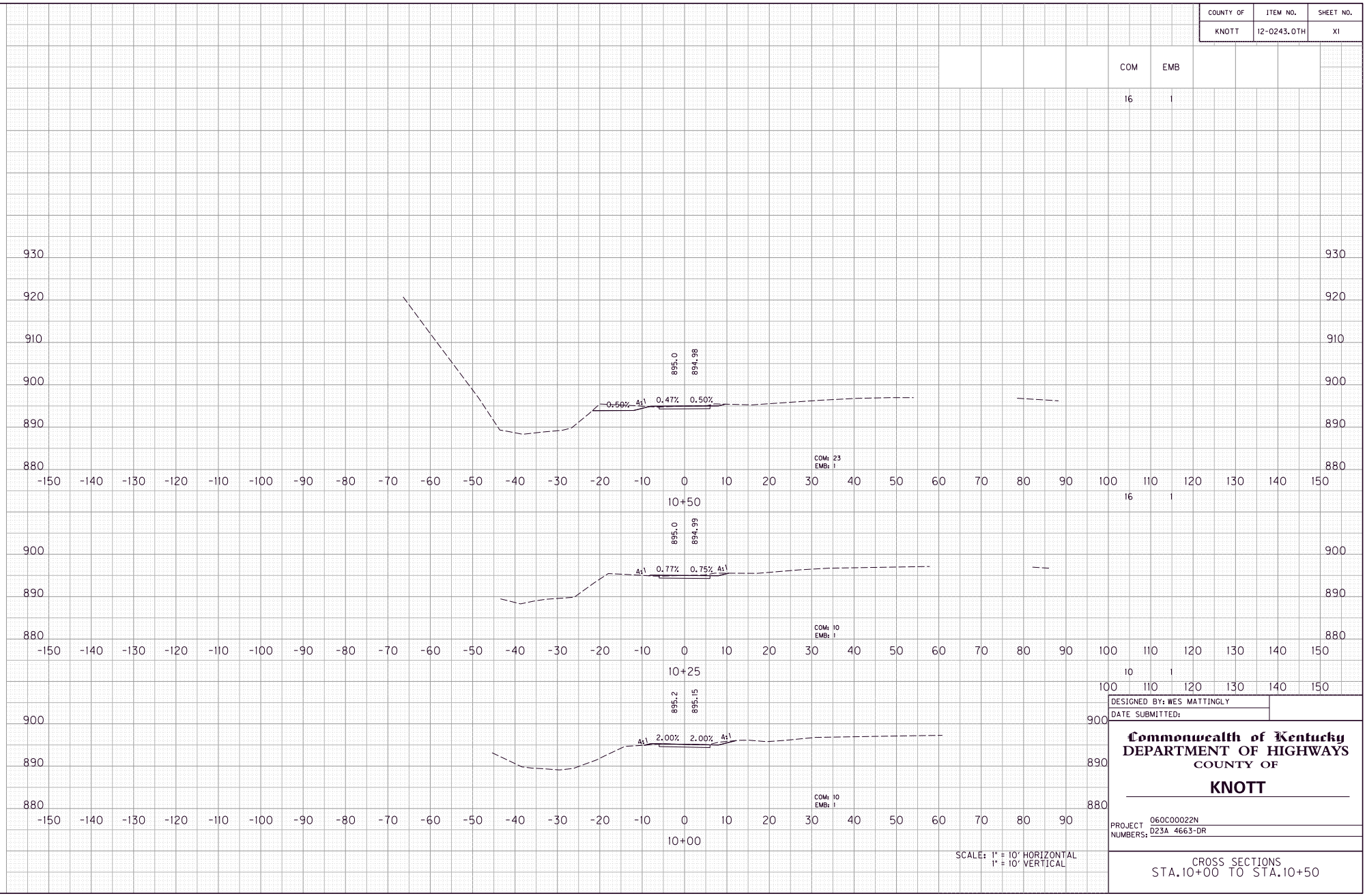
COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0243.0TH	X1



SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

DESIGNED BY: WES MATTINGLY
DATE SUBMITTED:

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS
COUNTY OF

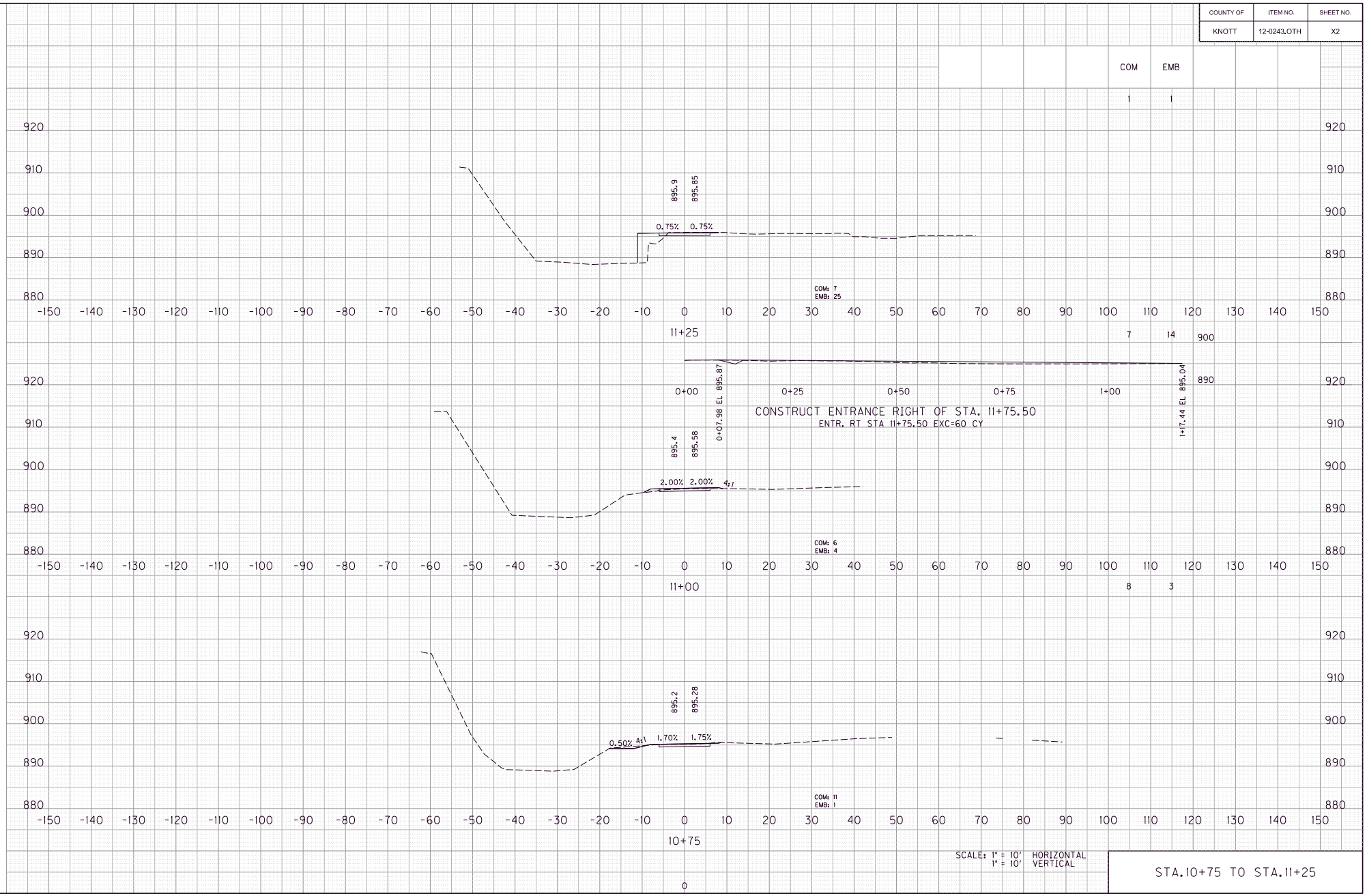
KNOTT

PROJECT NUMBERS: 060C00022N
D23A 4663-DR

CROSS SECTIONS
STA.10+00 TO STA.10+50

FILE NAME: F:\ENGR\EASTERN KY FLOOD WORK\KNOTT COUNTY\HOLLYBUSH ROAD\CAD\XSECXS.DGN
USER: wmattingly
DATE PLOTTED: October 19, 2022
E-SHEET NAME:
MicroStation v8.11.7.443

COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0243.OTH	X2

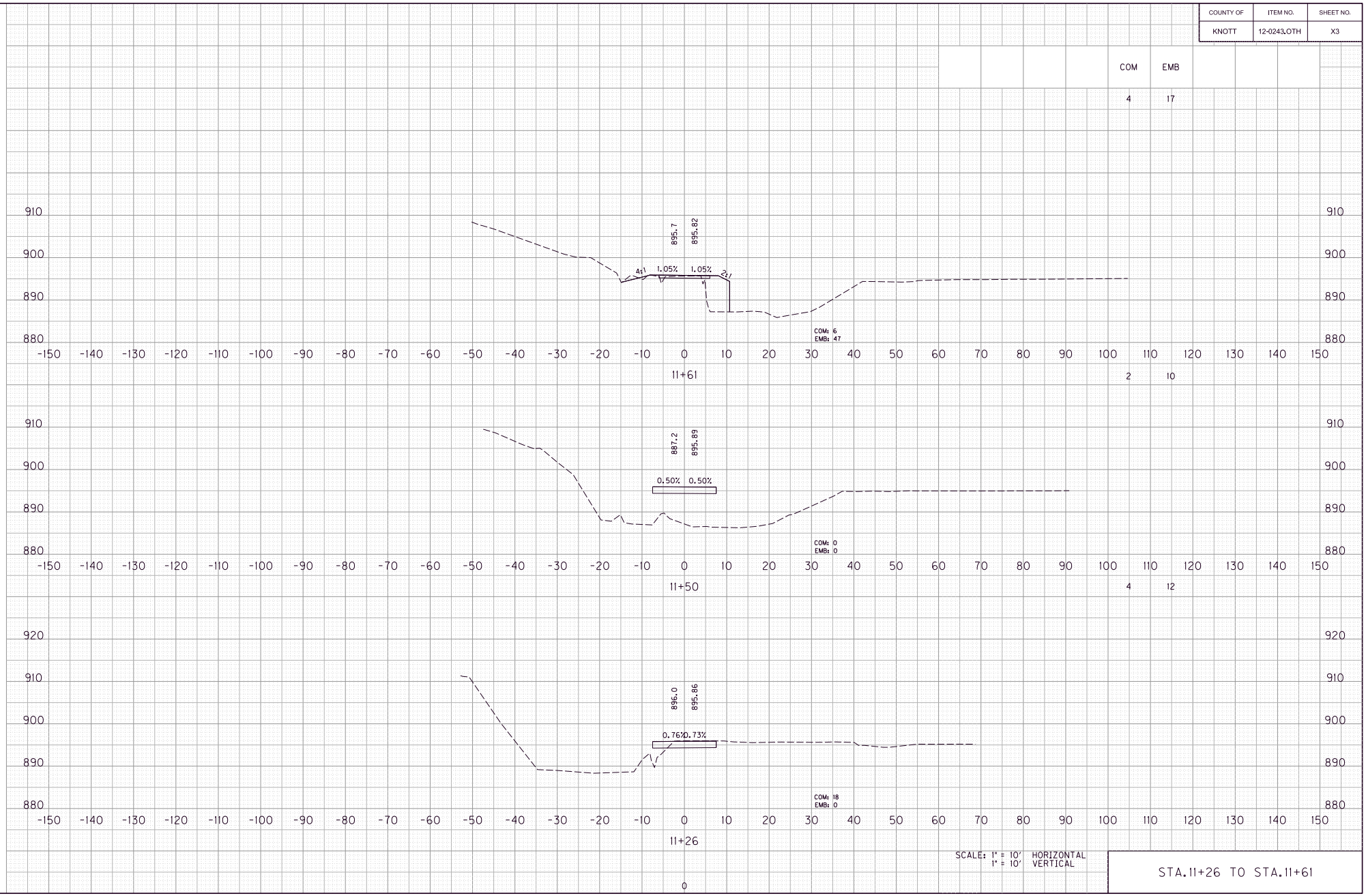


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

STA.10+75 TO STA.11+25

FILE NAME: F:\ENGR\EASTERN KY FLOOD WORK\KNOTT COUNTY\HOLLYBUSH ROAD\CADD\XSECXS.DGN
USER: smatthijs
DATE PLOTTED: October 19, 2022
E-SHEET NAME:
MicroStation v8.11.7.443

COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0243.OTH	X3

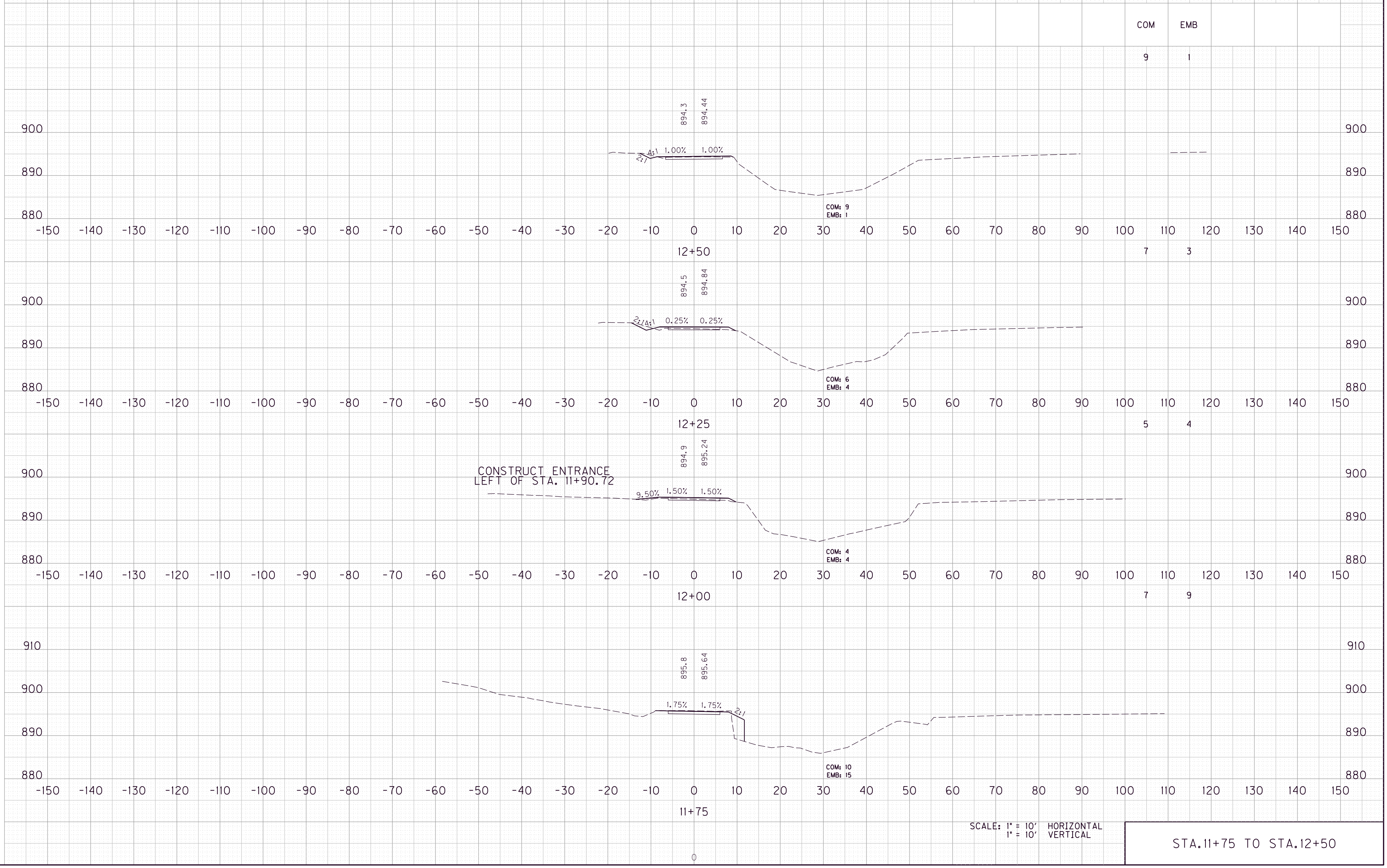


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

STA. 11+26 TO STA. 11+61

FILE NAME: F:\ENGR\EASTERN KY FLOOD WORK\KNOTT COUNTY\HOLLYBUSH ROAD\CADD\XSECXS.DGN
USER: smatthijs
DATE PLOTTED: October 19, 2022
E-SHEET NAME:
MicroStation v8.11.7.443

COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0243.OTH	X4



SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

STA.11+75 TO STA.12+50

FILE NAME: F:\ENGR\EASTERN KY FLOOD WORK\KNOTT COUNTY\HOLLYBUSH ROAD\CADD\XSECXS.DGN

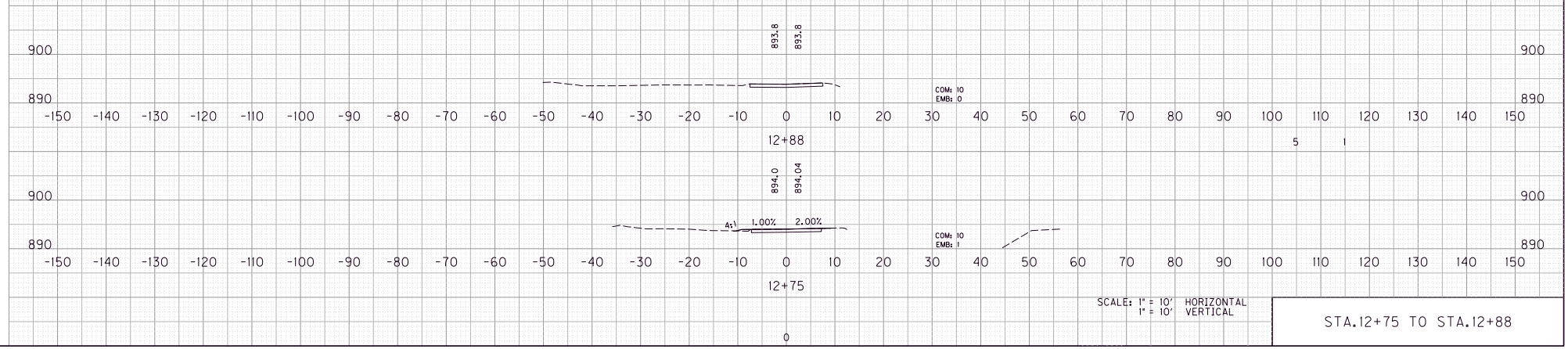
USER: wmattingly
DATE PLOTTED: October 19, 2022

E-SHEET NAME:

MicroStation v8.11.7.443

COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0243.OTH	X5

	COM	EMB
PROJECT TOTALS	161	78



SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

STA.12+75 TO STA.12+88

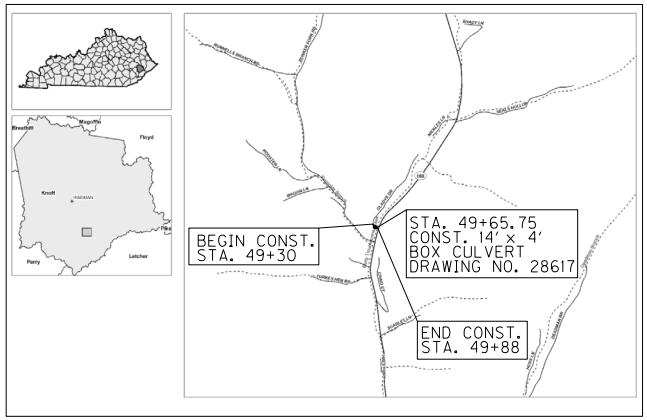
DEPT. OBJECT CODE	FEMA NO.	COUNTY OF	ITEM NO.	SHEET NO.
D23A	4663-DR	KNOTT	12-0292	R1

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
KNOTT COUNTY
GLADYS DRIVE
OVER BETTY TROUBLESOME CREEK
BRIDGE ID # 060C017

STANDARD DRAWINGS

BHS-011	RAILING SYSTEM SIDE MOUNTED MGS DETAIL
RBI-001-12	TYPICAL GUARDRAIL INSTALLATIONS
RBI-002-07	TYPICAL GUARDRAIL INSTALLATIONS
RBR-001-13	STEEL BEAM GUARDRAIL "W" BEAM
RBR-010-16	GUARDRAIL TERMINAL SECTIONS
RBR-015-06	STEEL GUARDRAIL POSTS
RBR-050-08	GUARDRAIL END TREATMENT TYPE 7
RBR-055-01	DELINEATORS FOR GUARDRAIL
TTC-150-04	ROAD CLOSURE WITH DIVERSION

ACTIVE SEPIAS



LOCATION MAP

SCALE: 1"=NTS

INDEX OF SHEETS

SPECIAL NOTES

SPECIAL PROVISIONS

USACE LOW WATER CROSSING DETAIL

SPECIFICATIONS

2019, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION

9TH EDITION AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

REVISION	DATE

DESIGN CRITERIA

CLASS OF HIGHWAY: RURAL LOCAL
TYPE OF TERRAIN: MOUNTAIN
DESIGN SPEED
REQUIRED NPSD
REQUIRED PSD
LEVEL OF SERVICE
ADT PRESENT ( )
ADT FUTURE ( )
DHV
D %
T %

GEOGRAPHIC COORDINATES

LATITUDE 37 DEGREES 16 MINUTES 01 SECONDS NORTH
LONGITUDE 82 DEGREES 56 MINUTES 39 SECONDS WEST

DESIGNED

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

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.

REV. NO.	SHEETS REVISED	DATE

EXISTING BRIDGE ID # 060C017

PREPARED BY
CIVIL DESIGN, INC.
9400 BUNSEN PKWY, SUITE 150
LOUISVILLE, KY 40220
502-671-0060

RELEASE FOR CONSTRUCTION

STATE OF KENTUCKY * MICHAEL A. HUDSON 16295 LICENSED PROFESSIONAL ENGINEER *

ROADWAY P.E. STAMP

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS
COUNTY OF

KNOTT

ITEM NO. 12-0292
DRAWING NO. 28617
PROJECT NUMBER: DEPT. OBJECT CODE D23A FEMA NO. FEMA NO. 4663-DR
LETTING DATE:

RECOMMENDED BY: _____ PROJECT MANAGER DATE:

PLAN APPROVED BY: _____ STATE HIGHWAY ENGINEER DATE:

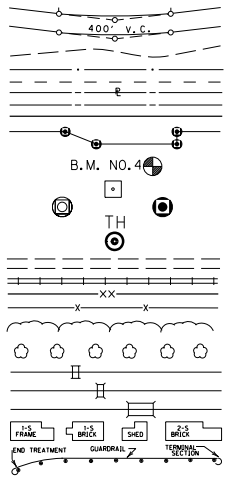
FILE NAME: $DGNSPEC$
USER: $USER$ DATE PLOTTED: $DATE$ $TIME$
E-SHEET NAME:
Power InRoads v8.11.9.912

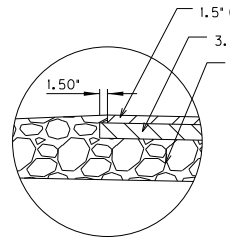
COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0292	R2
DEPT. OBJECT CODE	FEMA NO.	
D23A	4663-DR	

CONVENTIONAL SIGNS

SURVEY LINE
GRADE LINE
GROUND LINE
COUNTY LINE
CORPORATE LIMITS
EXIST. PROPERTY LINE
EXIST. RIGHT OF WAY & PROPERTY LINE
PROPOSED RIGHT OF WAY
RIGHT OF WAY MONUMENT
BENCH MARK
EXISTING R/W MARKER
RIGHT OF WAY MONUMENT EXISTING/PROPOSED
UTILITY TEST HOLE
EXISTING ROAD
RAILROAD
FENCE (CONTROLLED ACCESS)
FENCE (EXCEPT STONE AND HEDGE)
TREE LINE
TREES
PIPE CULVERT
CULVERT
BRIDGE
BUILDINGS
GUARDRAIL

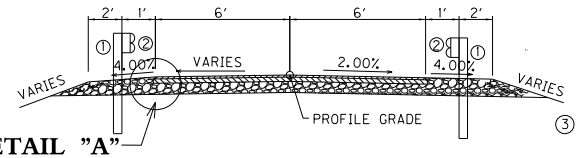
	EXISTING	PROPOSED
LIGHTING POLE		
POWER POLE		
JOINT POWER & TELEPHONE POLE		
TELEPHONE & TELEGRAPH POLE		
ANCHOR, POWER OR TELEPHONE		
STUB POWER		
STUB TELEPHONE		
WATER MAIN	WM	6" WM
GAS MAIN	GM	6" GM
TELEPHONE DUCT	T	T
ELECTRIC DUCT	E	E
DIRECT BURIAL TV CABLE	TV	TV
SANITARY SEWER (WITH MANHOLE)	SAN	SAN
STORM SEWER (WITH MANHOLE)	STORM	STORM
DIRECT BURIAL ELECTRIC CABLE	E	E
DIRECT BURIAL TELEPHONE CABLE	T	T
OVERHEAD WIRE		
TRAFFIC LIGHTS		
ELECTRIC MANHOLE	EMH	EMH
TELEPHONE MANHOLE	TMH	TMH
STONE FENCE		
HEDGE FENCE		
SWAMP OR MARSH		
SPRINGS		
SINKHOLE		
QUARRY SITE		
BLUE LINE STREAM		
INTERMITTENT STREAM OR DITCH		
LAKES OR PONDS		
REGULATED FLOODWAY		
NORTH POINT		



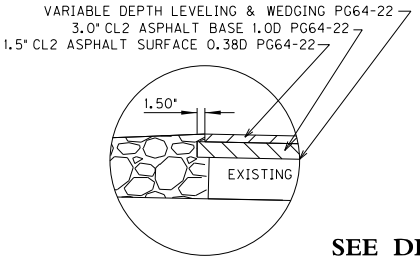


DETAIL "A"

SEE DETAIL "A"

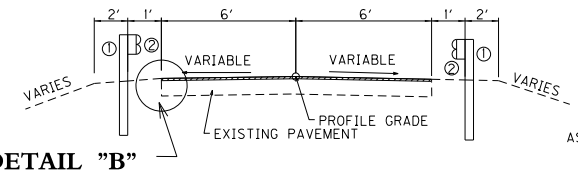


APPROACH NORMAL SECTION

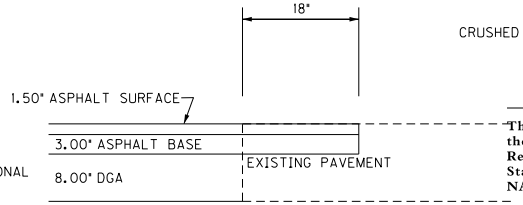


DETAIL "B"

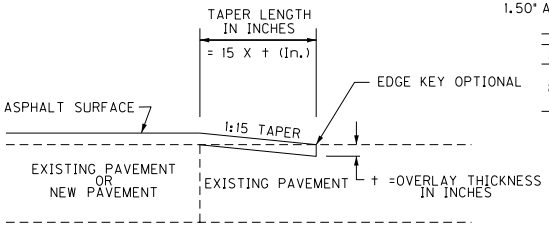
SEE DETAIL "B"



OVERLAY NORMAL SECTION



LONGITUDINAL EDGE KEY



EDGE KEY TAPER

BOX CULVERT SECTION

SEE BRIDGE LAYOUT SHEET FOR BOX CULVERT TYPICAL SECTION

NOTES

1. SEE PLAN SHEETS FOR LOCATIONS.
2. ASPHALT SEAL REQUIRED FROM EDGE OF PAVED SHOULDER TO A POINT 2.0 FT DOWN THE DITCH OR FILL SLOPE TO RETARD VEGETATION GROWTH AND PREVENT EROSION. TWO APPLICATIONS OF THE FOLLOWING ARE REQUIRED.

ASPHALT SEAL COAT	2.4LB/SQ.YD.
ASPHALT SEAL AGGREGATE	20 LB/SQ.YD. (SIZE NO. 8 OR 9)

NOTE: ASPHALT MATERIAL FOR TACK AS DIRECTED BY ENGINEER MEASURED AT 0.4 LBS/SQ.YD.

3. SEE CROSS SECTIONS FOR LOCATIONS

APPROACH & WIDENING PAVEMENT SCHEDULE

ASPHALT SURFACE	1.5" CL2 ASPHALT SURFACE 0.38D PG64-22
ASPHALT BASE	3.0" CL2 ASPHALT BASE 1.0D PG64-22
DGA BASE	8.0" DGA (4"+4")

SHOULDERS

DGA BASE AND/OR GRANULAR EMBANKMENT	FULL DEPTH

OVERLAY PAVEMENT SCHEDULE

ASPHALT SURFACE	1.5" CL2 ASPHALT SURFACE 0.38D PG64-22
ASPHALT BASE	3.0" CL2 ASPHALT BASE 1.0D PG64-22
(3) ROADWAY PREPERATION	VARIABLE DEPTH LEVELING & WEDGING PG64-22

ENTRANCE PAVEMENT SCHEDULE

CRUSHED STONE BASE	6.00" CRUSHED STONE BASE (3"+3")

BASIS OF COORDINATES & ELEVATIONS

The horizontal datum for this project is based on GPS observations using the National Geodetic Survey*s (NGS) network of Continuously Operating Reference Stations (CORS) and is referenced to the Kentucky Single Zone State Plane Coordinate system, NAD83. The vertical datum is based on NAVD88 (GEOID18).

Coordinate are based on State Plane Coordinate System Single Zone and in U.S. SURVEY FEET.

COORDINATE CONTROL POINTS

POINT	DESCRIPTION	State Plane Coordinates			STATION	OFFSET
		NORTH (Y)	EAST (X)	ELEV. (Z)		
1	CP 1 – 5/8" IPC	3633243.511	5737699.464	1101.924	-----	-----
2	CP 2 – 5/8" IPC	3633096.682	5737666.147	1096.372	-----	-----
3	CP 3 – 5/8" IPC	3633080.210	5737666.147	1096.754	49+05.34	61.25' LT
4	CP 4 – HUB & TAC	3632946.922	5737655.284	1095.629	49+93.01	58.37' RT
5	TBM-RR SPIKE UP	3633153.198	5737693.051	1098.488	-----	-----

CENTERLINE COORD. CONTROL

POINT	DESCRIPTION	State Plane Coordinates		STATION
		NORTH (Y)	EAST (X)	
1	POB	3633051.226	5737612.183	49+05.00
2	PI 1	3633025.902	5737625.966	49+33.83
3	PC 1	3633047.091	5737614.433	49+09.71
4	PT 1	3633015.410	5737647.690	49+56.39
5	POE	3632996.443	5737686.960	50+00.00

NTS

TYPICAL SECTION & LEGEND & COORD. CONTROL SHEET
GLADYS DRIVE

FILE NAME: P:\PROJECTS\5851 - KYTC-GLADYS DRIVE BRIDGE-KNOTT COUNTY\2B-TRANS\CAD\ROADWAY\RG02OOTS.DGN
USER: mhudson
DATE PLOTTED: November 4, 2022
E-SHEET NAME:
Power InRoads v8.11.9.912

COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0292	R3
DEPT. OBJECT CODE	FEMA NO.	
D23A	4663-DR	

GENERAL SUMMARY

ITEM	DESCRIPTION	UNIT	GLADYS DRIVE	TEMP DIVERSION		PROJECT TOTAL
1987	DELINEATOR FOR GUARDRAIL	EACH	6			6
2230	EMBANKMENT IN PLACE	CY	29			29
2351	GUARDRAIL - STEEL W BEAM - S FACE	LF	137.5			137.5
2360	GUARDRAIL TERMINAL SECTION NO. 1	EACH	2			2
2569	DEMOBILIZATION	LS	1			1
2585	EDGE KEY	LF	37			37
2604	FABRIC-GEOTEXTILE CLASS 1A	SY	0	104		104
2650	MAINTAIN AND CONTROL TRAFFIC	LS	1			1
2726	STAKING	LS	1			1
2731	REMOVE STRUCTURE ⑥	LS	1			1
5952	TEMPORARY MULCH	SY	298			298
5953	TEMP SEEDING AND PROTECTION	SY	224			224
5963	INITIAL FERTILIZER	TON	.02			.02
5964	20-10-10 FERTILIZER	TON	.01			.01
5985	SEEDING AND PROTECTION	SY	448			448
5992	AGRICULTURAL LIMESTONE	TON	.28			.28

NOTES

ALL ASPHALT MIXTURES SHALL BE ESTIMATED AT 110 LBS. PER SQ. YD. PER INCH OF DEPTH, UNLESS NOTED OTHERWISE.

① ESTIMATED AT 115 LBS. PER SQ. YD. PER INCH OF DEPTH.

② ESTIMATED AT .4 LBS/SY

③ ESTIMATED AT 2.4 LBS/SY

④ ESTIMATED AT 20 LBS/SY

⑤ TWO APPLICATIONS

⑥ REMOVAL OF THE STRUCTURE INCLUDES THE REMOVAL OF THE CONCRETE SLAB, ABUTMENTS, STEEL, AND ALL OTHER PARTS OF THE EXISTING BRIDGE. THE REMOVAL OF THE BRIDGE SHALL INCLUDE THE TRANSPORTATION AND DISPOSAL OF ALL DEMOLISHED MATERIAL. UNLESS OTHER WISE DIRECTED BY THE ENGINEER, ALL MATERIAL REMOVED FROM THE STRUCTURE SHALL BE THE PROPERTY OF THE CONTRACTOR.

PAVING SUMMARY

ITEM CODE	ITEM	TONS				PROJECT TOTAL
1	DGA BASE ①	87				87
3	CRUSHED STONE BASE	24				24
80	CRUSHED STONE 23	24				24
212	CL2 ASPHALT BASE 1.00D PG64-22	15				15
301	CL2 ASPHALT SURFACE 0.38D PG64-22	7				7
356	ASPHALT MATERIAL FOR TACK ②	.02				.02
103	ASPHALT SEAL COAT ③	.04				.04
100	ASPHALT SEAL AGGREGATE ④	.3				.3

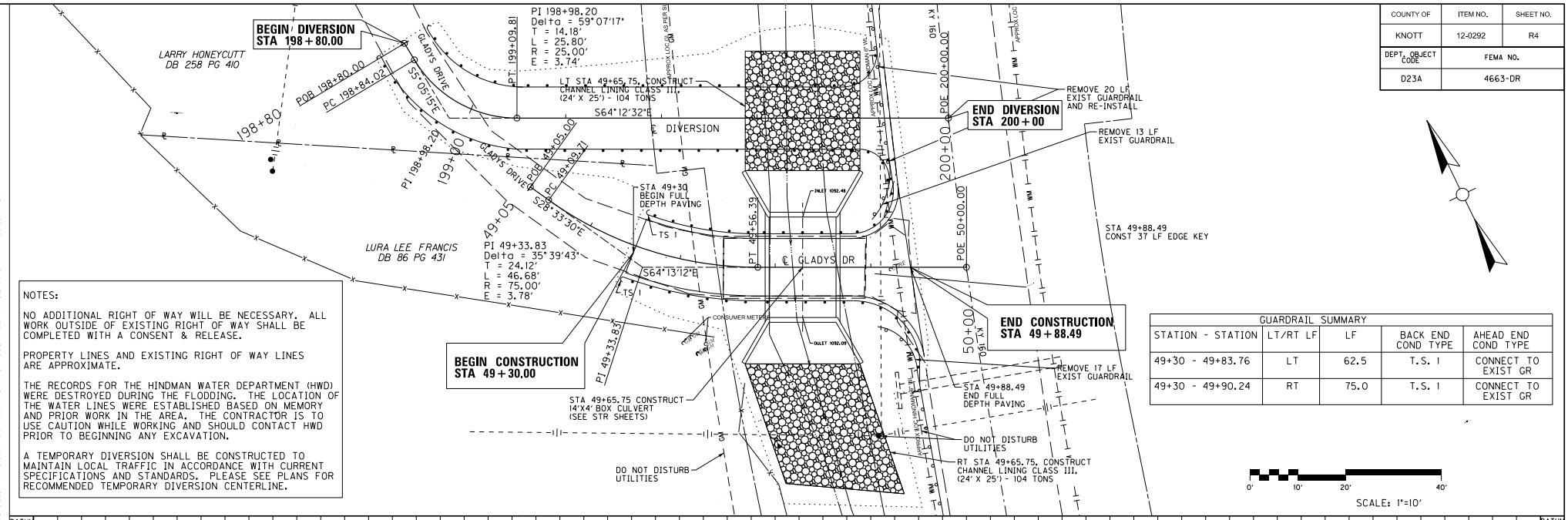
PAVING AREAS

ITEM	GLADYS DRIVE	TEMP DIVERSION				PROJECT TOTAL
	S Q	U A R E		Y A R D S		
FULL DEPTH DGA BASE	65					65
8.0" DGA BASE	87					87
3.0" CL2 ASPHALT BASE 1.00D PG64-22	87					87
1.50" CL2 ASPHALT SURFACE 0.38D PG64-22	85					85
ASPHALT MATERIAL FOR TACK	85					85
ASPHALT SEAL COAT ⑤	28					28
ASPHALT SEAL AGGREGATE ⑤	28					28
4.0" CRUSHED STONE 23		104				104
4.0" CRUSHED STONE BASE		104				104
GEOTEXTILE FABRIC CLASS 1A		104				104

GENERAL & PAVING SUMMARY SHEET

GLADYS DRIVE

COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0292	R4
DEPT. OBJECT CODE	FEMA NO.	
D23A	4663-DR	



NOTES:

NO ADDITIONAL RIGHT OF WAY WILL BE NECESSARY. ALL WORK OUTSIDE OF EXISTING RIGHT OF WAY SHALL BE COMPLETED WITH A CONSENT & RELEASE.

PROPERTY LINES AND EXISTING RIGHT OF WAY LINES ARE APPROXIMATE.

THE RECORDS FOR THE HINDMAN WATER DEPARTMENT (HWD) WERE DESTROYED DURING THE FLODDING. THE LOCATION OF THE WATER LINES WERE ESTABLISHED BASED ON MEMORY AND PRIOR WORK IN THE AREA. THE CONTRACTOR IS TO USE CAUTION WHILE WORKING AND SHOULD CONTACT HWD PRIOR TO BEGINNING ANY EXCAVATION.

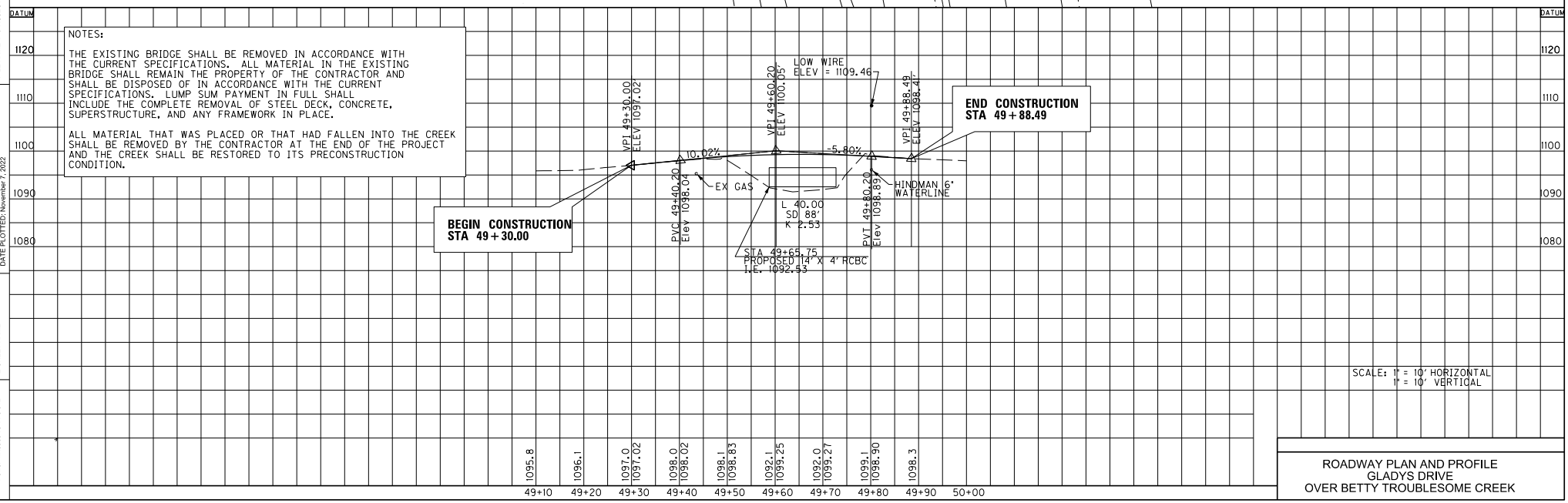
A TEMPORARY DIVERSION SHALL BE CONSTRUCTED TO MAINTAIN LOCAL TRAFFIC IN ACCORDANCE WITH CURRENT SPECIFICATIONS AND STANDARDS. PLEASE SEE PLANS FOR RECOMMENDED TEMPORARY DIVERSION CENTERLINE.

GUARDRAIL SUMMARY				
STATION - STATION	LT/RT LF	LF	BACK END COND TYPE	AHEAD END COND TYPE
49+30 - 49+83.76	LT	62.5	T.S. I	CONNECT TO EXIST GR
49+30 - 49+90.24	RT	75.0	T.S. I	CONNECT TO EXIST GR

NOTES:

THE EXISTING BRIDGE SHALL BE REMOVED IN ACCORDANCE WITH THE CURRENT SPECIFICATIONS. ALL MATERIAL IN THE EXISTING BRIDGE SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF IN ACCORDANCE WITH THE CURRENT SPECIFICATIONS. LUMP SUM PAYMENT IN FULL SHALL INCLUDE THE COMPLETE REMOVAL OF STEEL DECK, CONCRETE, SUPERSTRUCTURE, AND ANY FRAMEWORK IN PLACE.

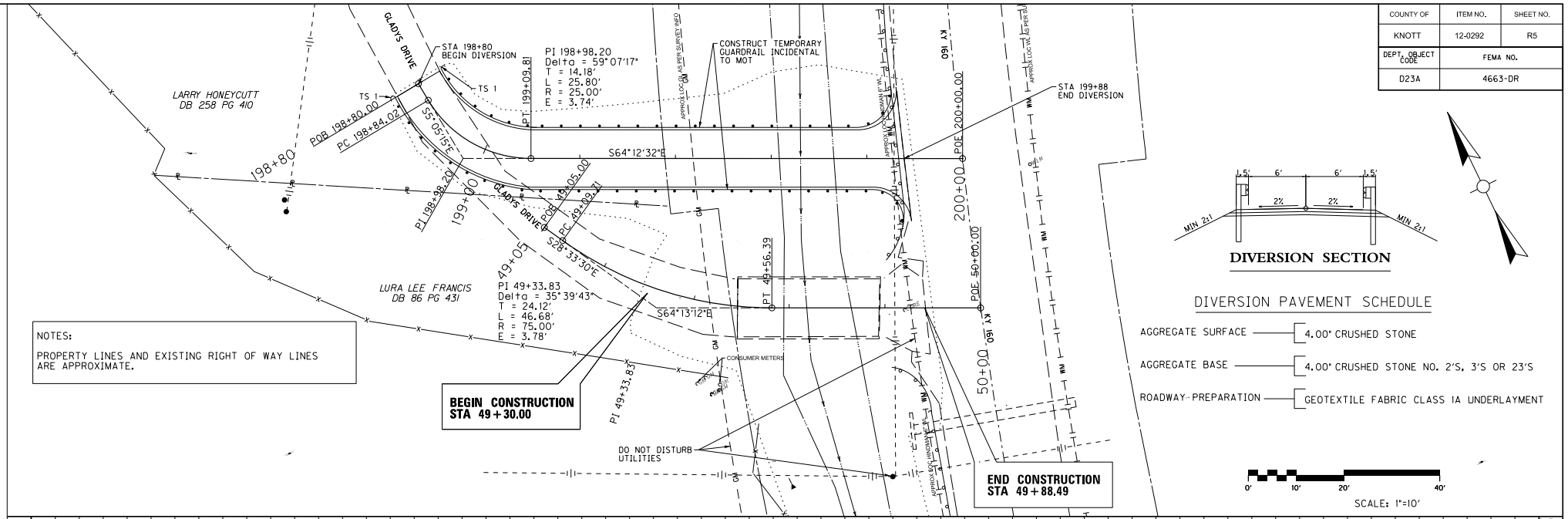
ALL MATERIAL THAT WAS PLACED OR THAT HAD FALLEN INTO THE CREEK SHALL BE REMOVED BY THE CONTRACTOR AT THE END OF THE PROJECT AND THE CREEK SHALL BE RESTORED TO ITS PRECONSTRUCTION CONDITION.



SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

ROADWAY PLAN AND PROFILE
GLADYS DRIVE
OVER BETTY TROUBLESOME CREEK

FILE NAME: P:\PROJECTS\55851 - KYTC-GLADYS DRIVE BRIDGE-KNOTT COUNTY\2b-TRANS\CAD\ROADWAY\R0040PL.DGN
USER: mhutton
DATE PLOTTED: November 7, 2022
E-SHEET NAME:
PowerInRoads v8.11.9.912



NOTES:

PROPERTY LINES AND EXISTING RIGHT OF WAY LINES ARE APPROXIMATE.

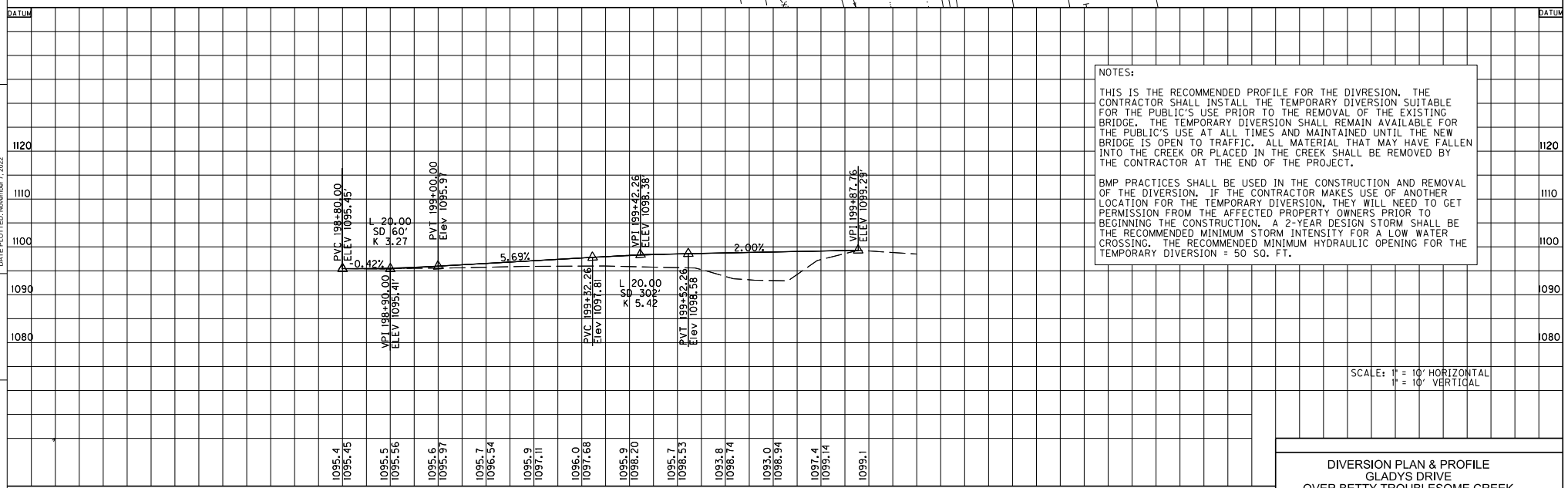
COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0292	R5
DEPT. OBJECT CODE	FEMA NO.	
D23A	4663-DR	

DIVERSION SECTION

DIVERSION PAVEMENT SCHEDULE

AGGREGATE SURFACE	4.00" CRUSHED STONE
AGGREGATE BASE	4.00" CRUSHED STONE NO. 2'S, 3'S OR 23'S
ROADWAY PREPARATION	GEOTEXTILE FABRIC CLASS IA UNDERLAYMENT

SCALE: 1"=10'



NOTES:

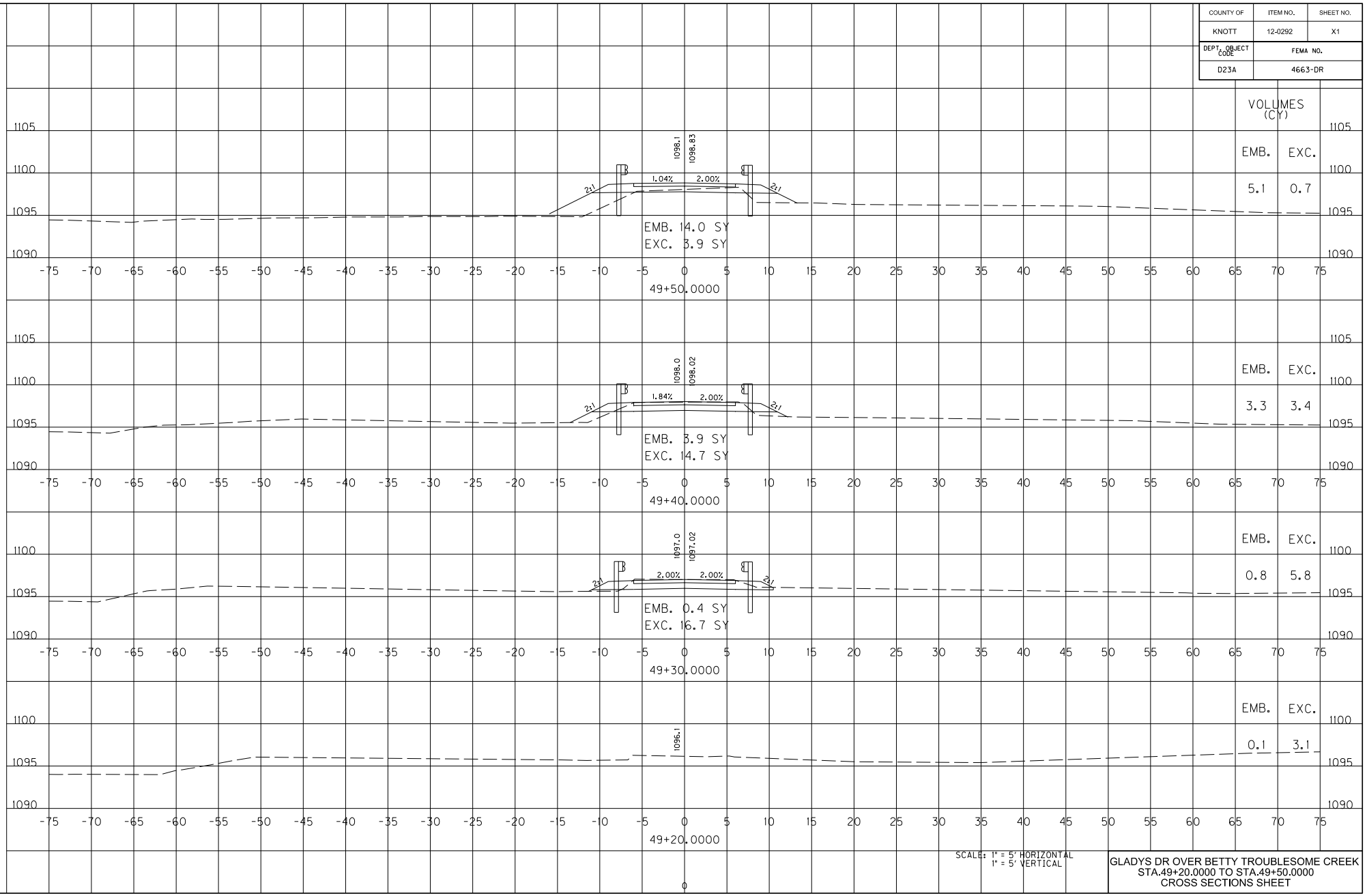
THIS IS THE RECOMMENDED PROFILE FOR THE DIVRESION. THE CONTRACTOR SHALL INSTALL THE TEMPORARY DIVERSION SUITABLE FOR THE PUBLIC'S USE PRIOR TO THE REMOVAL OF THE EXISTING BRIDGE. THE TEMPORARY DIVERSION SHALL REMAIN AVAILABLE FOR THE PUBLIC'S USE AT ALL TIMES AND MAINTAINED UNTIL THE NEW BRIDGE IS OPEN TO TRAFFIC. ALL MATERIAL THAT MAY HAVE FALLEN INTO THE CREEK OR PLACED IN THE CREEK SHALL BE REMOVED BY THE CONTRACTOR AT THE END OF THE PROJECT.

BMP PRACTICES SHALL BE USED IN THE CONSTRUCTION AND REMOVAL OF THE DIVERSION. IF THE CONTRACTOR MAKES USE OF ANOTHER LOCATION FOR THE TEMPORARY DIVERSION, THEY WILL NEED TO GET PERMISSION FROM THE AFFECTED PROPERTY OWNERS PRIOR TO BEGINNING THE CONSTRUCTION. A 2-YEAR DESIGN STORM SHALL BE THE RECOMMENDED MINIMUM STORM INTENSITY FOR A LOW WATER CROSSING. THE RECOMMENDED MINIMUM HYDRAULIC OPENING FOR THE TEMPORARY DIVERSION = 50 SQ. FT.

SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

DIVERSION PLAN & PROFILE
GLADYS DRIVE
OVER BETTY TROUBLESOME CREEK

FILE NAME: P:\PROJECTS\55851 - KYTC-GLADYS DRIVE BRIDGE-KNOTT COUNTY\2b-TRANS\CAD\ROADWAY\R00500PLD.DGN
USER: mhutson
DATE PLOTTED: November 7, 2022
E-SHEET NAME:
PowerInRoads v8.11.9.912



COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0292	X1
DEPT. OBJECT CODE	FEMA NO.	
D23A	4663-DR	

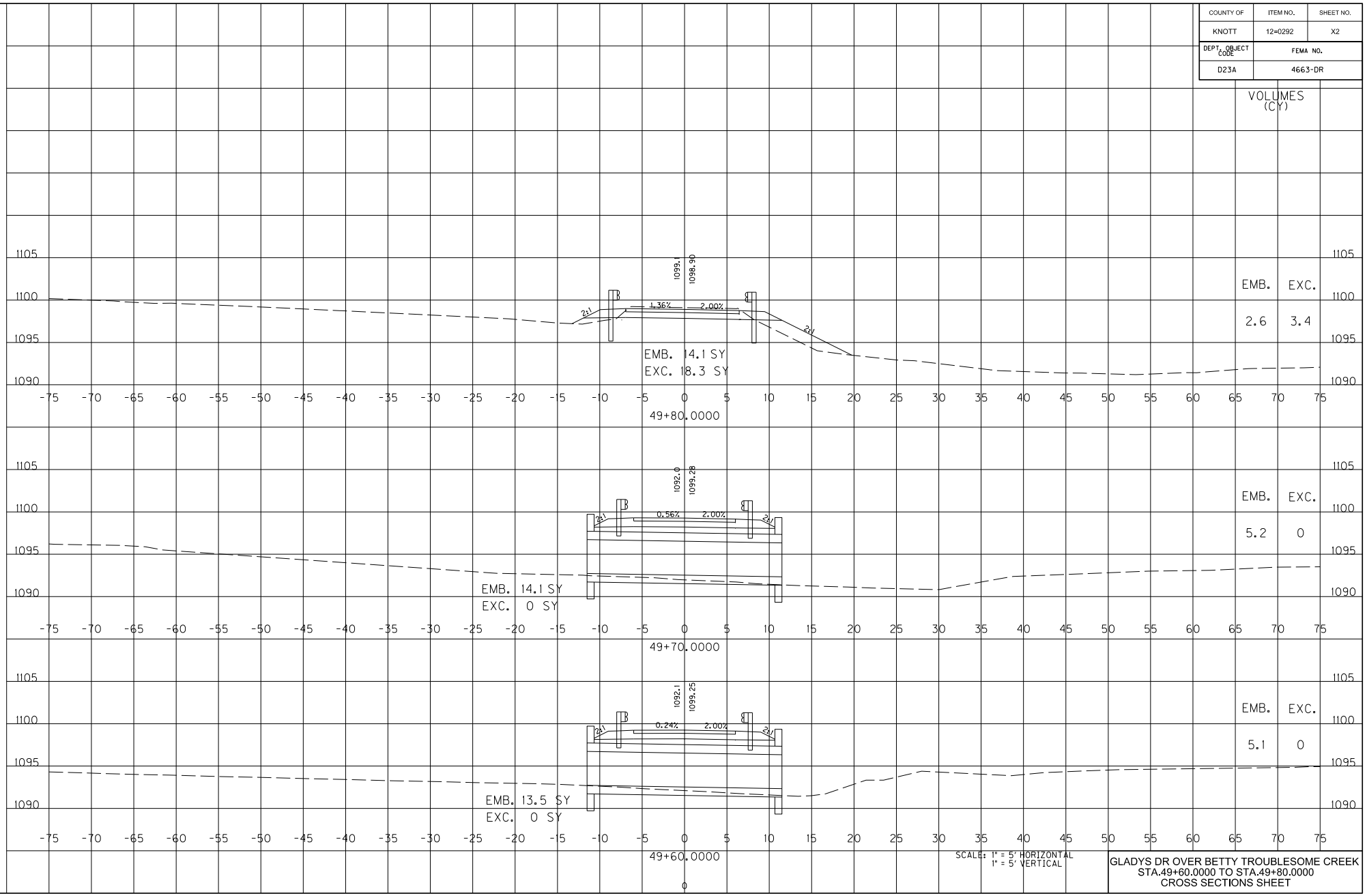
VOLUMES (CY)

	EMB.	EXC.
49+50.0000	5.1	0.7
49+40.0000	3.3	3.4
49+30.0000	0.8	5.8
49+20.0000	0.1	3.1

SCALE: 1" = 5' HORIZONTAL
1" = 5' VERTICAL

GLADYS DR OVER BETTY TROUBLESOME CREEK
STA.49+20.0000 TO STA.49+50.0000
CROSS SECTIONS SHEET

FILE NAME: P:\PROJECTS\56851 - KYTC-GLADYS DRIVE BRIDGE-KNOTT COUNTY\28-TRANS\CAD\ROADWAY\X0001-X0003XS.DGN
USER: mhutson
DATE PLOTTED: November 4, 2022
E-SHEET NAME:
PowerInRoads v8.11.9.912



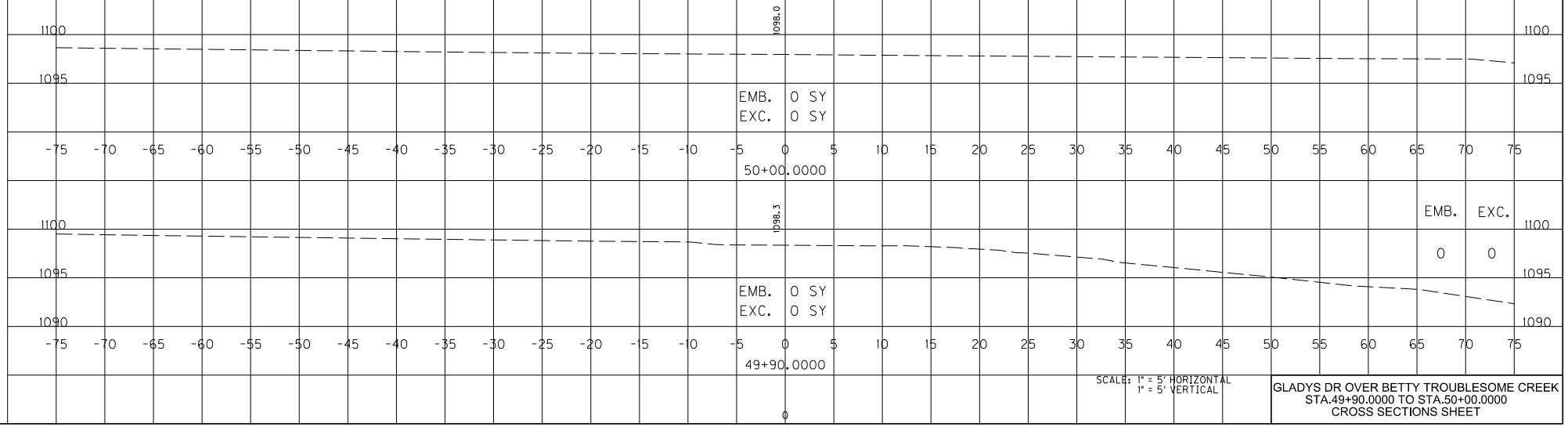
COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12=0292	X2
DEPT. OBJECT CODE	FEMA NO.	
D23A	4663-DR	

GLADYS DR OVER BETTY TROUBLESOME CREEK
STA.49+60.0000 TO STA.49+80.0000
CROSS SECTIONS SHEET

FILE NAME: P:\PROJECTS\5851 - KYTC-GLADYS DRIVE BRIDGE-KNOTT COUNTY\2b-TRANS\CAD\ROADWAY\X0001-X0003XS.DGN
USER: mhutson
DATE PLOTTED: November 4, 2022
E-SHEET NAME:
PowerInRoads v8.11.9.912

COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0292	X3
DEPT. OBJECT CODE	FEMA NO.	
D23A	4663-DR	

VOLUMES
(CY)



SCALE: 1" = 5' HORIZONTAL
1" = 5' VERTICAL

GLADYS DR OVER BETTY TROUBLESOME CREEK
STA.49+90.0000 TO STA.50+00.0000
CROSS SECTIONS SHEET

FILE NAME: P:\PROJECTS\58851 - KYTC-GLADYS DRIVE BRIDGE-KNOTT COUNTY\2b-TRANS\CAD\ROADWAY\X0001-X0003XS.DGN
USER: mhutson
DATE PLOTTED: November 4, 2022
E-SHEET NAME:
PowerInRoads v8.11.9.912

LETTING DATE

CONSTRUCTION PROJECT NO.

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

KNOTT COUNTY
GLADYS DRIVE
OVER BETTY TROUBLESOME CREEK 14' x 4' R.C.B.C.
STA. 49+65.75

GENERAL NOTES:

SPECIFICATIONS:
ALL REFERENCES TO THE STANDARD SPECIFICATION ARE TO THE 2019 EDITION OF THE KENTUCKY DEPARTMENT OF HIGHWAYS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WITH CURRENT SUPPLEMENTAL SPECIFICATIONS, ALL REFERENCES TO THE AASHTO SPECIFICATION ARE TO THE 9TH EDITION OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

DESIGN LOAD:
CULVERT SLABS ARE DESIGNED FOR AN ASSUMED WEIGHT OF FILL MATERIAL OF 120 PCF AND KYTC SPECIAL LOADING FOR CULVERTS ON UNYIELDING FOUNDATIONS SPECIFIED IN THE BRIDGE GUIDANCE MANUAL. SLABS ARE ALSO DESIGNED FOR KYHL-93 WHICH IS 1.25 TIMES THE HL-93 LIVE LOAD.

MATERIAL DESIGN SPECIFICATIONS:
FOR CLASS "A" CONCRETE: f'C = 3,500 PSI
FOR STEEL REINFORCEMENT: FY = 60,000 PSI

CONCRETE:
ALL CONCRETE SHALL BE CLASS "A" UNLESS OTHERWISE NOTED.

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 INCHES UNLESS OTHERWISE NOTED. 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 BAR FOR PURPOSES OF BEND DIAMETERS.

BEVELED EDGES:
ALL EXPOSED EDGES SHALL BE BEVELED ¾" UNLESS OTHERWISE SHOWN.

TEMPORARY RETAINING STRUCTURE EXCAVATIONS:
TEMPORARY SHEETING, SHORING AND/OR DEWATERING METHODS MAY BE REQUIRED FOR THE INSTALLATION OF THE CULVERT AND WINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY AND SAFETY OF ALL EXCAVATIONS. THE CONTRACTOR SHALL SUBMIT SHORING CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF KENTUCKY. COST OF TEMPORARY SHEETING, SHORING AND/OR DEWATERING SHALL BE INCIDENTAL TO THE COST OF FOUNDATION PREPARATION.

SPECIFICATIONS CONTRARY TO THE STANDARD DRAWINGS:
WHERE THE PLANS AND SPECIFICATIONS DIFFER FROM THE STANDARD DRAWINGS, THE PLANS AND SPECIFICATIONS SHALL CONTROL.

FLOWLINE REINFORCEMENT:
REINFORCEMENT IN THE 6" THICK SLAB SHALL BE SIZE 4 BARS AT 18" CENTERS IN EACH DIRECTION OR AN EQUIVALENT AREA OF WELDED DEFORMED STEEL FABRIC. THE BARS SHALL EXTEND A MINIMUM OF 12" INTO WING FOOTINGS AND/OR THE BOTTOM SLAB. THE COST OF THIS REINFORCEMENT SHALL BE INCIDENTAL TO THE UNIT PRICE BID FOR CONCRETE, CLASS "A".

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.

CONSTRUCTION PHASING AND MAINTENANCE OF TRAFFIC:
THE CONTRACTOR SHALL ARRANGE TO DO THE WORK IN ACCORDANCE WITH THE PLANS AND MAINTENANCE OF TRAFFIC NOTES AS SHOWN ON THE ROADWAY PLANS DURING CONSTRUCTION OF THIS PROJECT.

CULVERT FOUNDATION
THIS CULVERT HAS BEEN DESIGNED FOR A NON- YIELDING FOUNDATION, SOIL OR LOOSE ROCK SHALL BE EXCAVATED TO COMPETENT BEDROCK WITHIN THE FOOTPRINT OF THE CULVERT. THE EXCAVATION MAY BE BACKFILLED WITH "GRANULAR EMBANKMENT", NON- ERODIBLE ONLY, MEETING THE MATERIAL REQUIREMENTS OF SECTION 805 OF THE STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, CURRENT EDITION. CONTRARY TO THE STANDARD SPECIFICATIONS, THE MAXIMUM SIZE LIMIT FOR "GRANULAR EMBANKMENT" IS 4 INCHES. THE GRANULAR REPLACEMENT SHALL BE PLACED ON A 1H:1V SLOPE OR FLATTER DOWN AND AWAY FROM THE SIDES OF THE CULVERT BARREL EQUAL TO THE BOTTOM OF THE EXCAVATION. PLACE FABRIC GEOTEXTILE CLASS I (STABILIZATION) BETWEEN THE SOIL AND GROUND REPLACEMENT. THE GEOTEXTILE FABRIC SHALL BE IN ACCORDANCE WITH SECTIONS 214 AND 843 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, CURRENT EDITION.

TEMPORARY CAUSEWAY:
CONTRACTOR SHALL INSTALL A TEMPORARY CAUSEWAY SUITABLE FOR THE PUBLIC'S USE PRIOR TO THE REMOVAL OF THE EXISTING BRIDGE. THE TEMPORARY CAUSEWAY SHALL REMAIN AVAILABLE FOR THE PUBLIC'S USE AT ALL TIMES AND MAINTAINED UNTIL THE NEW CULVERT IS OPEN TO TRAFFIC. ALL MATERIAL THAT MAY HAVE FALLEN INTO THE CREEK OR PLACED INTO THE CREEK SHALL BE REMOVED BY THE CONTRACTOR AT THE END OF THE PROJECT. BMP PRACTICES SHALL BE USED IN THE CONSTRUCTION AND REMOVAL OF THE CAUSEWAY.

COST FOR TEMPORARY CAUSEWAY SHALL BE INCIDENTAL TO THE COST FOR FOUNDATION PREPARATION.

ESTIMATE OF QUANTITIES

BID CODE	ITEM	UNIT	QUANTITY
02231	STRUCTURAL GRANULAR BACKFILL	C.Y.	145
02602	FABRIC - GEOTEXTILE CLASS I	S.Y.	83
08002	STRUCTURE EXCAVATION - SOLID ROCK	C.Y.	13
08003	FOUNDATION PREPARATION	L.S.	1
08100	CLASS "A" CONCRETE	C.Y.	65
08150	STEEL REINFORCEMENT	L.B.	7,596

STATE OF KENTUCKY
JASON SCHRECKENBERG
30868
LICENSED PROFESSIONAL ENGINEER

JASON SCHRECKENBERG
P.E. 30868

November 9, 2022
DATE

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
S1	TITLE SHEET
S2	LAYOUT
S3	BARREL DETAILS
S4	INLET / OUTLET DETAILS
S5	WINGWALL DETAILS
S6	BILL OF REINFORCEMENT
S7	BORING LOGS

SPECIAL NOTES

SPECIAL PROVISIONS

STANDARD DRAWINGS

BSC-006	STANDARD CULVERT 14'-0" WIDTH
BGX-006-10	STENCILS FOR STRUCTURES
BGX-012-02	GEOTECHNICAL LEGEND

SPECIFICATIONS

2019 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

2020 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY
CIVIL DESIGN, INC.
WBE / DBE
LOUISVILLE, KY
LICENSE #3394

DATE: NOVEMBER 7, 2022	CHECKED BY	
DESIGNED BY: J. GENTILINI	J. SCHRECKENBERG	
DETAILED BY: J. GENTILINI	J. SCHRECKENBERG	

TITLE SHEET

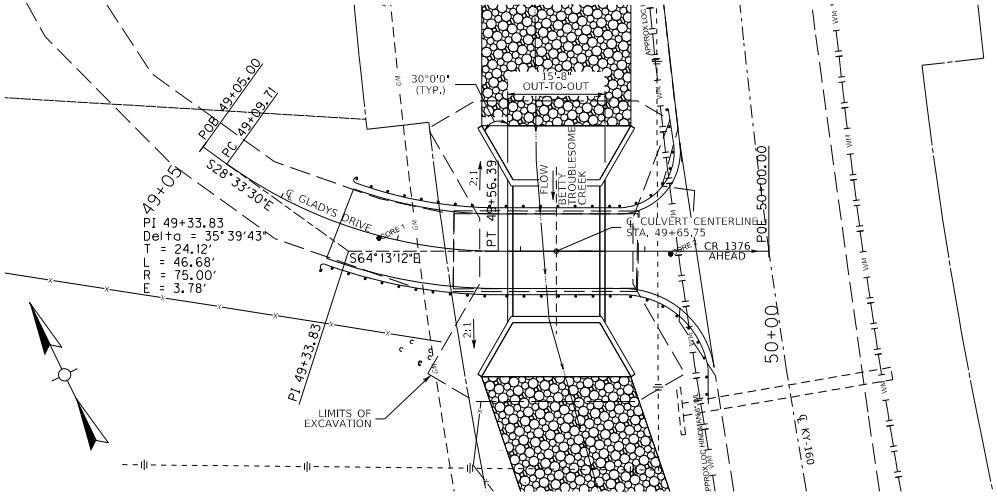
CROSSING
BETTY TROUBLESOME CREEK

ROUTE	ITEM NO.	BRIDGE ID
CR 1376	12-0292	060C017
	SHEET NO.	COUNTY OF
	S01	KNOTT
		DRAWING NUMBER
		28617

OpenRoads Designer v10.16.2.267 USER: $$$$USER$$$$ DATE PLOTTED: $$$$DATE$$$$ FILE NAME: $$$$designfilesspecifications$$$$

LETTING DATE

CONSTRUCTION PROJECT NO.

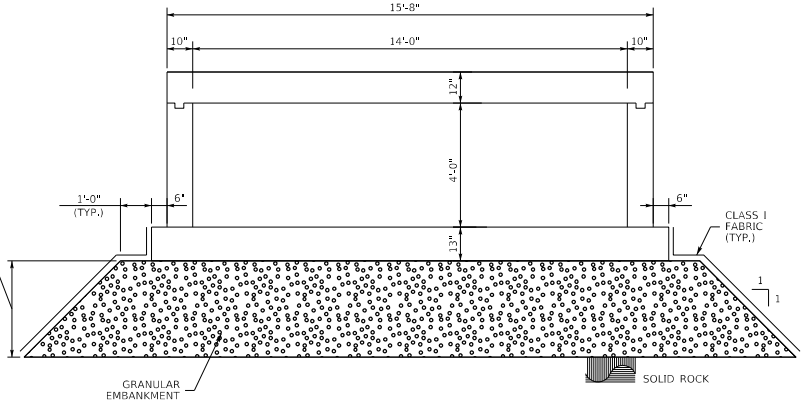


PLAN

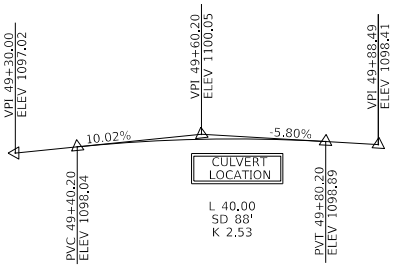
FLOOD EVALUATION DATA			
	RETURN INTERVAL (YRS)	RUNOFF (CFS)	HEADWATER ELEVATION (FT)
DESIGN	10	346.00	1096.8
CHECK	100	611.00	1097.2

NOTE:

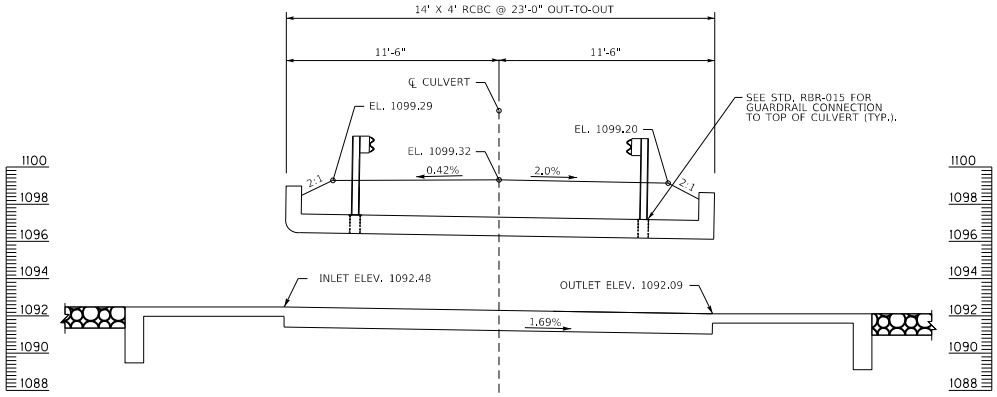
TEMPORARY SHORING MAY BE REQUIRED TO MAINTAIN TRAFFIC ON KY-160 DURING CONSTRUCTION. SEE GENERAL NOTES FOR CONTRACTOR DESIGN REQUIREMENTS.



TYPICAL BARREL SECTION

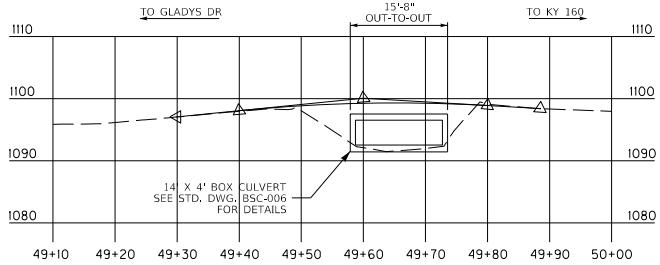


PROFILE GRADE SKETCH



SECTION ALONG CULVERT CENTERLINE

SINGLE 14'-0" X 4'-0" R.C.B.C.
00°00'00" SKEW - KYHL-93 LOADING, 2:1 FILL SLOPE
UNYIELDING FOUNDATION



ELEVATION ALONG CENTERLINE OF SURVEY

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY
CIVIL DESIGN, INC.
WBE / DBE
LOUISVILLE, KY
LICENSE #3394

DATE: NOVEMBER 7, 2022 | CHECKED BY
DESIGNED BY: J. GENTILINI | J. SCHRECKENBERG
DETAILED BY: J. GENTILINI | J. SCHRECKENBERG

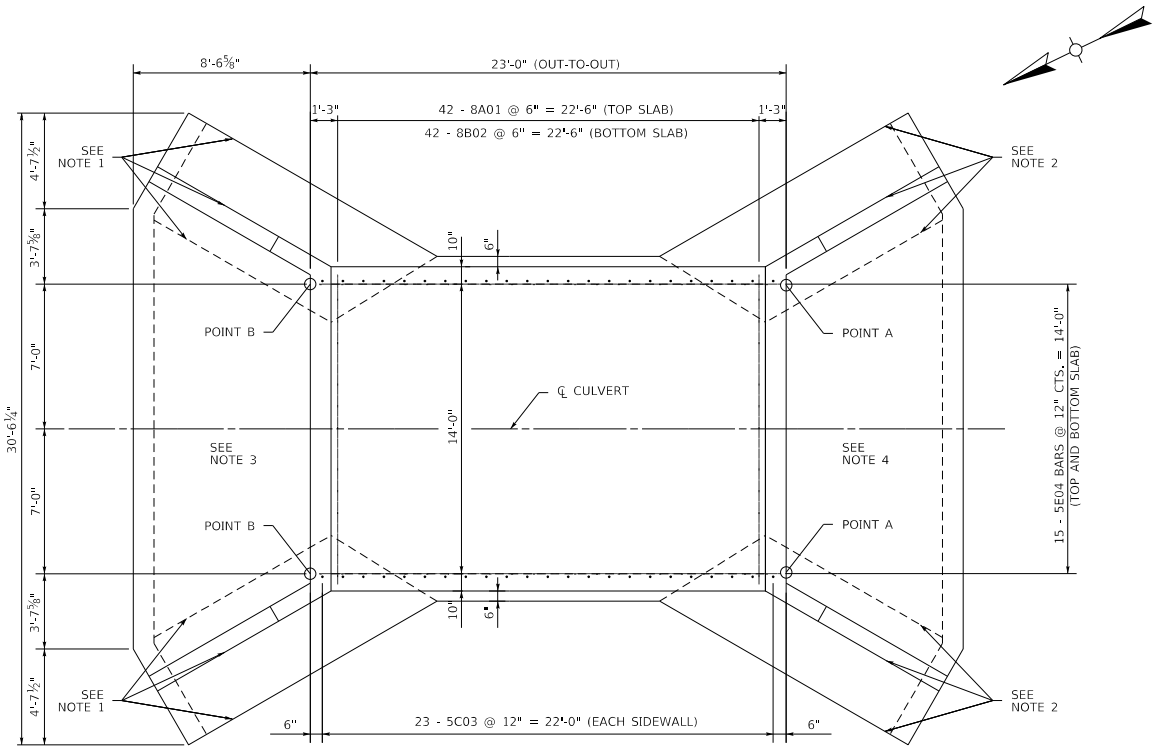
LAYOUT

CROSSING
BETTY TROUBLESOME CREEK

ROUTE	ITEM NO.	BRIDGE ID
CR 1376	12-0292	060C017
	SHEET NO.	COUNTY OF
	S02	KNOTT
		DRAWING NUMBER
		28617

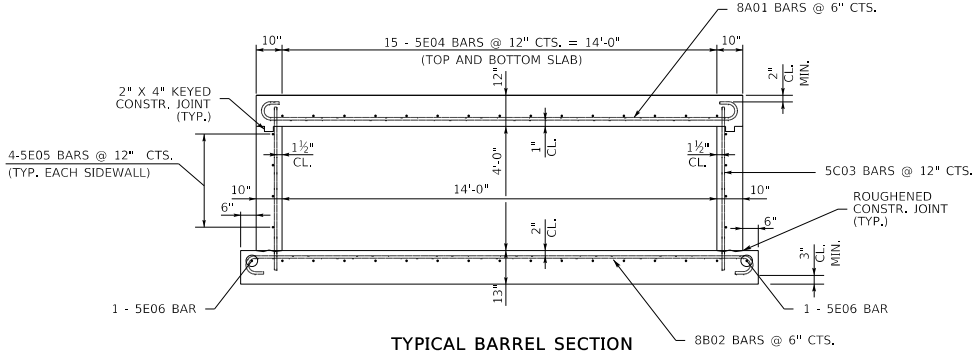
LETTING DATE

CONSTRUCTION PROJECT NO.



SLAB REINFORCEMENT PLAN

* SEE WINGWALL DETAILS SHEET FOR TYPICAL WING DIMENSIONS



TYPICAL BARREL SECTION

(STND. DRWG. BSC-006)

MINIMUM LAP SPLICES

#4 BARS - 1'-9"
#5 BARS - 2'-9"
#6 BARS - 2'-7"
#8 BARS - 5'-7"

LEGEND

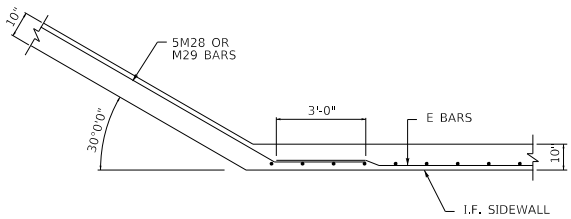
(EF) - EACH FACE
(FF) - FRONT FACE
(BF) - BACK FACE

NOTE 1: FOOTING SHALL BE HORIZONTAL BETWEEN THESE LINES. ELEVATION OF TOP OF FOOTING SHALL BE THE SAME AS ELEVATION OF TOP OF BOTTOM SLAB AT POINT "B".

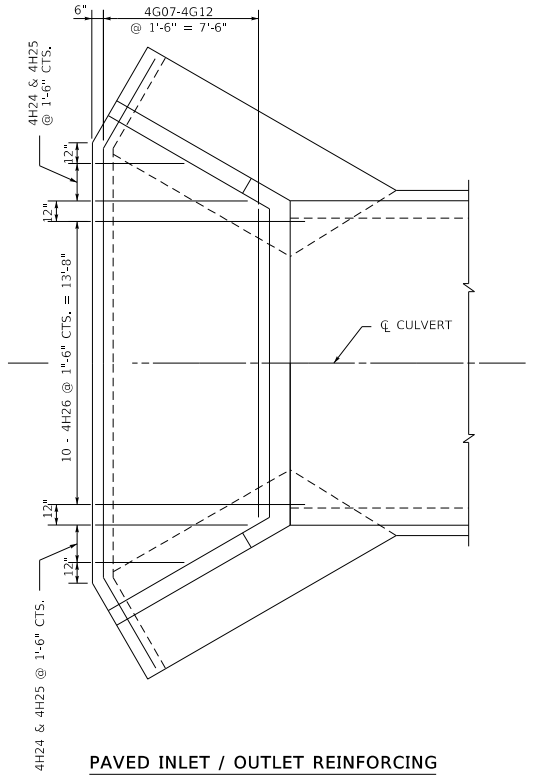
NOTE 2: FOOTING SHALL BE HORIZONTAL BETWEEN THESE LINES. ELEVATION OF TOP OF FOOTING SHALL BE THE SAME AS ELEVATION OF TOP OF BOTTOM SLAB AT POINT "A"

NOTE 3: TOP OF PAVING BETWEEN THESE LINES SHALL BE THE SAME ELEVATION AS POINT "B"

NOTE 4: TOP OF PAVING BETWEEN THESE LINES SHALL BE THE SAME ELEVATION AS POINT "A"



WING TO BARREL CONNECTION



PAVED INLET / OUTLET REINFORCING

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY
CIVIL DESIGN, INC.
WBE / DBE
LOUISVILLE, KY
LICENSE #3394

DATE: NOVEMBER 7, 2022 | CHECKED BY
DESIGNED BY: J. GENTILINI | J. SCHRECKENBERG
DETAILED BY: J. GENTILINI | J. SCHRECKENBERG

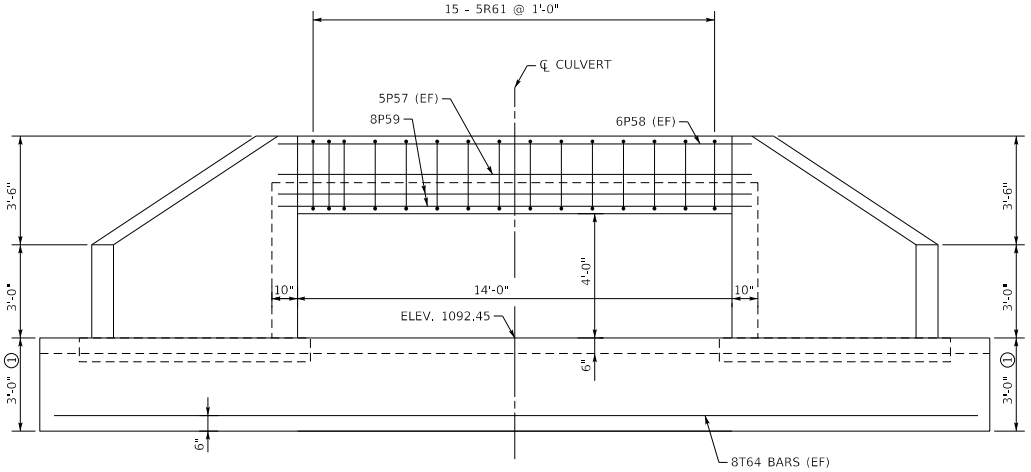
BARREL DETAILS

CROSSING
BETTY TROUBLESOME CREEK

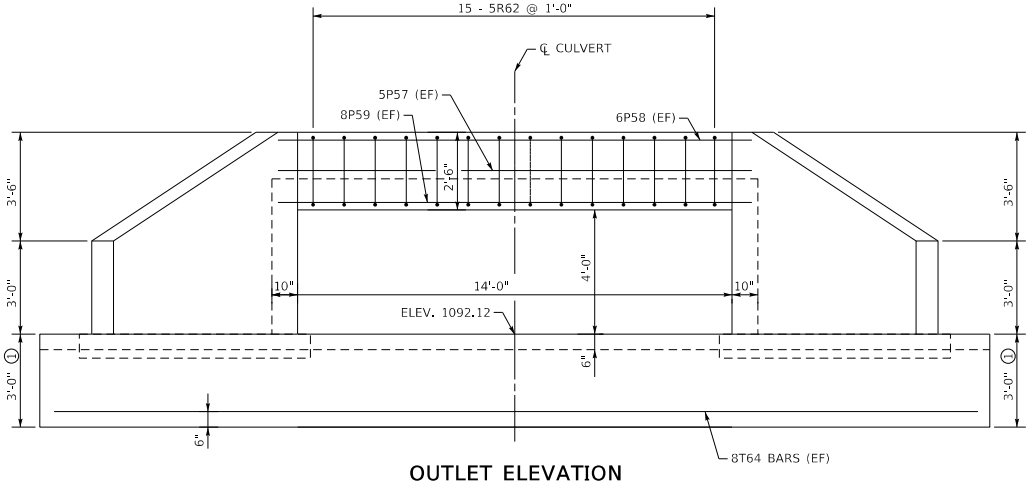
ROUTE	ITEM NO.	BRIDGE ID
CR 1376	12-0292	060C017
	SHEET NO.	COUNTY OF
	S03	KNOTT
		DRAWING NUMBER
		28617

LETTING DATE

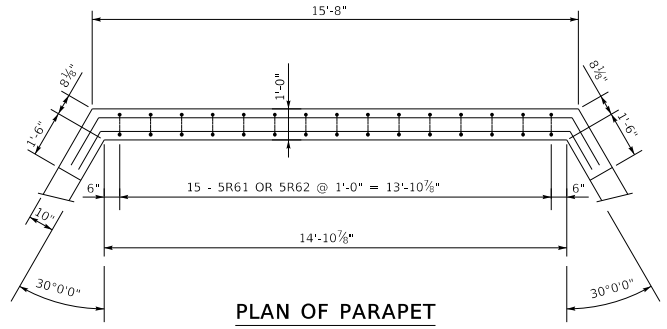
CONSTRUCTION PROJECT NO.



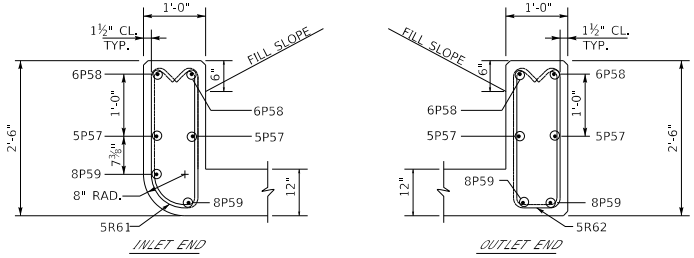
INLET ELEVATION



OUTLET ELEVATION



PLAN OF PARAPET



PARAPET DETAILS (NORMAL TO PARAPET)

(TOP SLAB REINFORCEMENT NOT SHOWN FOR CLARITY)

NOTES:

① APRON TO EXTEND A MINIMUM OF 2'-0" INTO SOLID UNWEATHERED BEDROCK OR IF ROCK IS DEEP, THE APRON SHALL BE A MAXIMUM OF 3'-0" DEEP.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY
CIVIL DESIGN, INC.
WBE / DBE
LOUISVILLE, KY
LICENSE #3394

DATE: NOVEMBER 7, 2022	CHECKED BY
DESIGNED BY: J. GENTILINI	J. SCHRECKENBERG
DETAILED BY: J. GENTILINI	J. SCHRECKENBERG

INLET / OUTLET DETAILS

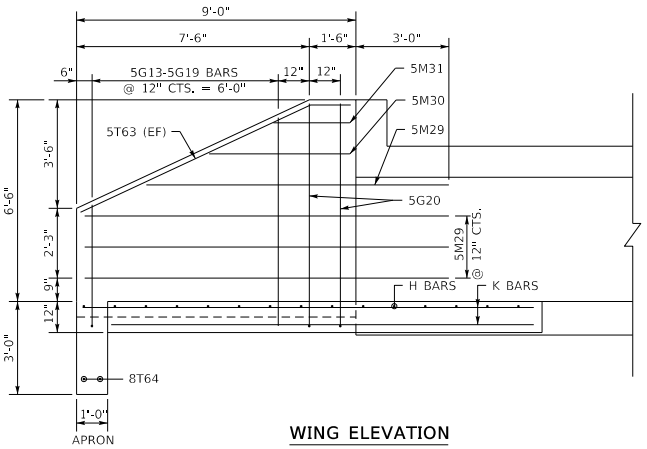
CROSSING
BETTY TROUBLESOME CREEK

ROUTE	ITEM NO.	BRIDGE ID
CR 1376	12-0292	060C017
	SHEET NO.	COUNTY OF
	S04	KNOTT
		DRAWING NUMBER
		28617

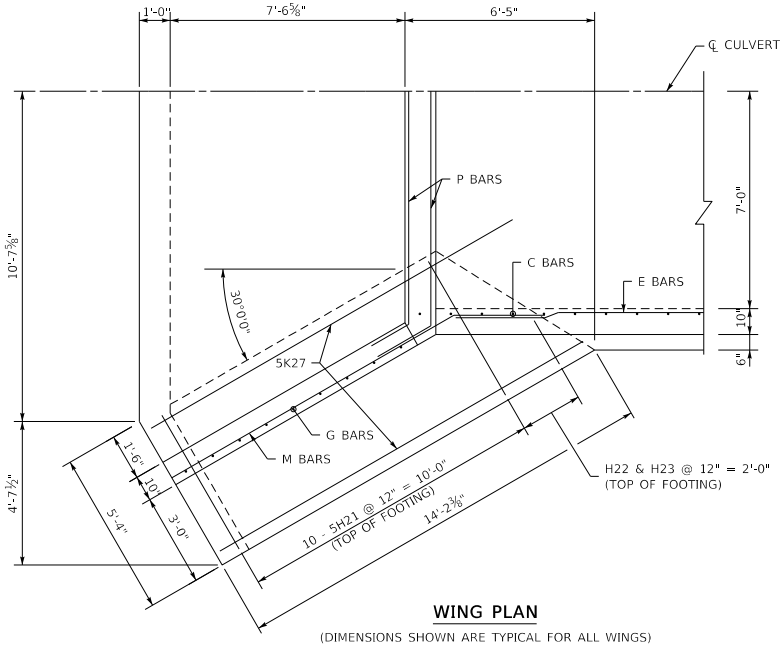
OpenRoads Designer v10.16.2.267 USER: $$$$USER$$$$ DATE PLOTTED: $$$$DATE$$$$ FILE NAME: $$$$designsfilesspecifications$$$$

LETTING DATE

CONSTRUCTION PROJECT NO.

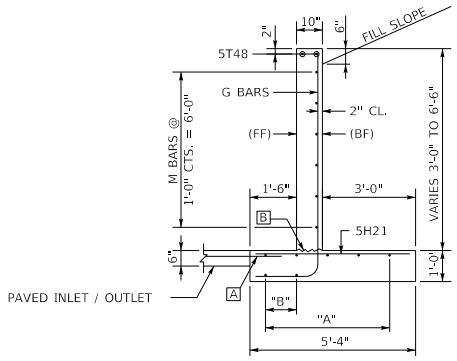


WING ELEVATION



WING PLAN

(DIMENSIONS SHOWN ARE TYPICAL FOR ALL WINGS)



WING SECTION

"A" 5 - 5K27 @ 12" = 5'-0" (TOP OF FOOTING)
"B" 2 - 5K27 @ 12" = 1'-0" (BOTTOM OF FOOTING)

A 1-0" MIN. LAP SPLICE PAVED INLET/OUTLET REINFORCEMENT WITH TOP MAT OF FOOTING BARS

B ROUGHENED CONSTRUCTION JOINT

GEOTECHNICAL NOTES

THE CULVERT BARREL, PAVED FLOWLINE AND PAVED INLET / OUTLET SHALL BEAR ON SANDSTONE AND/OR ON GRANULAR REPLACEMENT EXTENDED TO SANDSTONE.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY
CIVIL DESIGN, INC.
WBE / DBE
LOUISVILLE, KY
LICENSE #3394

DATE: NOVEMBER 7, 2022 | CHECKED BY
DESIGNED BY: J. GENTILINI | J. SCHRECKENBERG
DETAILED BY: J. GENTILINI | J. SCHRECKENBERG

WINGWALL DETAILS

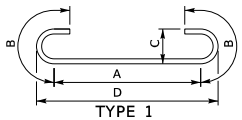
CROSSING
BETTY TROUBLESOME CREEK

ROUTE	ITEM NO.	BRIDGE ID
CR 1376	12-0292	060C017
	SHEET NO.	COUNTY OF
	S05	KNOTT
		DRAWING NUMBER
		28617

OpenRoads Designer v10.16.2.267 | USER: $$$$USER$$$$ | DATE PLOTTED: $$$$DATE$$$$ | FILE NAME: $$$$designsfilesspecifications$$$$$

LETTING DATE

CONSTRUCTION PROJECT NO.



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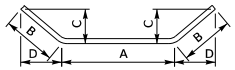
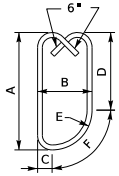


TYPE 6



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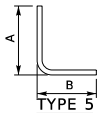
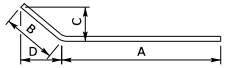
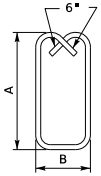


TYPE 5



TYPE 8



TYPE 12

BILL OF REINFORCEMENT

MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	A	B	C	D	E	F
8A01	1	42	8	17'-2"	TOP SLAB	14'-8"	1'-3"	0'-8"	15'-4"		
8B02	1	42	8	18'-2"	BOTTOM SLAB	15'-8"	1'-3"	0'-8"	16'-4"		
5C03	STR.	46	5	5'-8"	SIDEWALLS						
5E04	STR.	30	5	22'-8"	TOP & BOTTOM SLAB						
5E05	STR.	8	5	22'-8"	SIDEWALLS						
5E06	STR.	2	5	22'-8"	BOTTOM SLAB						
4G07	STR.	2	4	15'-0"	PAVED INLET / OUTLET						
4G08	STR.	2	4	16'-8"	PAVED INLET / OUTLET						
4G09	STR.	2	4	18'-5"	PAVED INLET / OUTLET						
4G10	STR.	2	4	20'-2"	PAVED INLET / OUTLET						
4G11	STR.	2	4	21'-10"	PAVED INLET / OUTLET						
4G12	6	2	4	25'-0"	PAVED INLET / OUTLET	20'-8"	2'-2"	0'-7⅜"	0'-4¼"		
5G13	5	4	5	5'-11"	WING WALLS	3'-11"	2'-0"				
5G14	5	4	5	6'-4"	WING WALLS	4'-4"	2'-0"				
5G15	5	4	5	6'-10"	WING WALLS	4'-10"	2'-0"				
5G16	5	4	5	7'-2"	WING WALLS	5'-3"	2'-0"				
5G17	5	4	5	7'-8"	WING WALLS	5'-8"	2'-0"				
5G18	5	4	5	8'-2"	WING WALLS	6'-2"	2'-0"				
5G19	5	4	5	8'-8"	WING WALLS	6'-8"	2'-0"				
5G20	5	8	5	9'-1"	WING WALLS	7'-1"	2'-0"				
5H21	STR.	40	5	5'-0"	WING FOOTINGS						
5H22	STR.	4	5	3'-4"	WING FOOTINGS						
5H23	STR.	4	5	1'-8"	WING FOOTINGS						
4H24	STR.	4	4	4'-4"	PAVED INLET / OUTLET						
4H25	STR.	4	4	7'-4"	PAVED INLET / OUTLET						
4H26	STR.	20	4	10'-2"	PAVED INLET / OUTLET						
5K27	STR.	28	5	13'-8"	WING FOOTINGS						
5M28	8	12	5	11'-9"	WING WALLS	8'-9"	3'-0"	1'-5½"	2'-6¼"		
5M29	8	4	5	9'-10"	WING WALLS	6'-10"	3'-0"	1'-5½"	2'-6¼"		
5M30	STR.	4	5	4'-6"	WING WALLS						
5M31	STR.	4	5	2'-6"	WING WALLS						
5P57	6	4	5	17'-0"	PARAPET	15'-3"	1'-7"	0'-9½"	1'-4½"		
6P58	6	4	6	17'-0"	PARAPET	15'-3"	1'-7"	0'-9½"	1'-4½"		
8P59	6	4	8	17'-0"	PARAPET	15'-3"	1'-7"	0'-9½"	1'-4½"		
5R61	11	15	5	6'-0"	INLET PARAPET	2'-3"	0'-9"	0'-2½"	1'-8½"	0'-6½"	0'-9¾"
5R62	12	15	5	6'-3"	OUTLET PARAPET	2'-3"	0'-9"				
5T63	8	8	5	9'-6"	WING WALLS	8'-2"	1'-4"	0'-6¾"	1'-2½"		
8T64	6	4	8	31'-2"	APRON BASE	21'-2"	5'-0"	2'-6"	4'-4"		

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY
CIVIL DESIGN, INC.
WBE / DBE
LOUISVILLE, KY
LICENSE #3394

DATE: NOVEMBER 7, 2022 | CHECKED BY
DESIGNED BY: J. GENTILINI | J. SCHRECKENBERG
DETAILED BY: J. GENTILINI | J. SCHRECKENBERG

BILL OF REINFORECEMENT

CROSSING
BETTY TROUBLESOME CREEK

ROUTE	ITEM NO.	BRIDGE ID
CR 1376	12-0292	060C017
	SHEET NO.	COUNTY OF
	S06	KNOTT
		DRAWING NUMBER
		28617

OpenRoads Designer v10.16.2.267 USER: $$$$USER$$$$ DATE PLOTTED: $$$$DATE$$$$ FILE NAME: $$$$designsfilesspecifications$$$$

LETTING DATE

CONSTRUCTION PROJECT NO.

Drilling Firm: Kentucky Transportation Cabinet
For: Division of Structural Design
Geotechnical Branch

DRILLER'S SUBSURFACE LOG

Printed: 9/6/22

Page 1 of 1

Project ID: **060C017**	**Knott - GLADYS DR (CR 1376)**	Project Type: **Structure Bridge**
Item Number:		Project Manager: _

Hole Number **1**	Immediate Water Depth **NA**	Start Date **09/01/2022**	Hole Type **sounding**
Surface Elevation **1097.7**	Static Water Depth **NA**	End Date **09/01/2022**	Rig Number __
Total Depth **10.5'**	Driller **Cody Davidson**	Latitude(83) **37.266883**	
Location **+ 'Lt.**		Longitude(83) **-82.944106**	

Lithology Elevation	Lithology Depth	Description (Overburden / Rock Core)	Sample No. Std/Ky RQD	Depth (ft) Run (ft)	Rec. (ft) Rec (ft)	SPT Blows Rec (%)	Sample Type SDI (JS)	Remarks
	2.0	Limestone and gravel fill.						
5		Medium stiff, brown, very moist, sandy clay with rock fragments.						5
10	9.9	(Refusal)						10
	10.5	Hard, gray, sandstone.						
15		(Bottom of Hole 10.5') (Refusal @ 9.9)						15
20								20
25								25
30								30
35								35
40								40
45								45
50								50

Drilling Firm: Kentucky Transportation Cabinet
For: Division of Structural Design
Geotechnical Branch

DRILLER'S SUBSURFACE LOG

Printed: 9/6/22

Page 1 of 1

Project ID: **060C017**	**Knott - GLADYS DR (CR 1376)**	Project Type: **Structure Bridge**
Item Number:		Project Manager: _

Hole Number **2**	Immediate Water Depth **NA**	Start Date **09/01/2022**	Hole Type **sounding**
Surface Elevation **1098.8**	Static Water Depth **NA**	End Date **09/01/2022**	Rig Number __
Total Depth **10.6'**	Driller **Cody Davidson**	Latitude(83) **37.266883**	
Location **+ 'Lt.**		Longitude(83) **-82.944106**	

Lithology Elevation	Lithology Depth	Description (Overburden / Rock Core)	Sample No. Std/Ky RQD	Depth (ft) Run (ft)	Rec. (ft) Rec (ft)	SPT Blows Rec (%)	Sample Type SDI (JS)	Remarks
	1.2	Limestone gravel fill.						
5		Medium stiff, brown, moist, sandy clay with rock fragments.						5
10	10.1	(Refusal)						10
	10.6	Hard, gray, sandstone.						
15		(Bottom of Hole 10.6') (Refusal @ 10.1)						15
20								20
25								25
30								30
35								35
40								40
45								45
50								50

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY
CIVIL DESIGN, INC.
WBE / DBE
LOUISVILLE, KY
LICENSE #3394

DATE: NOVEMBER 7, 2022	CHECKED BY	
DESIGNED BY: J. GENTILINI	J. SCHRECKENBERG	
DETAILED BY: J. GENTILINI	J. SCHRECKENBERG	

BORING LOGS

CROSSING
BETTY TROUBLESOME CREEK

ROUTE	ITEM NO.	BRIDGE ID
CR 1376	12-0292	060C017
	SHEET NO.	COUNTY OF
	S07	KNOTT
		DRAWING NUMBER
		28617

OpenRoads Designer v10.16.2.267 USER: $$$$USER$$$$ DATE PLOTTED: $$$$DATE$$$$ FILE NAME: $$$$designfiles\specifications$$$$$

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
KNOTT COUNTY
DOBSON DR. (CR-1387)
OVER BALLS FORK CREEK
BRIDGE ID # 060C014

DEPT. OBJECT CODE	FEMA NO.	COUNTY OF	ITEM NO.	SHEET NO.
D23A	4663-DR	KNOTT	12-0289	R1

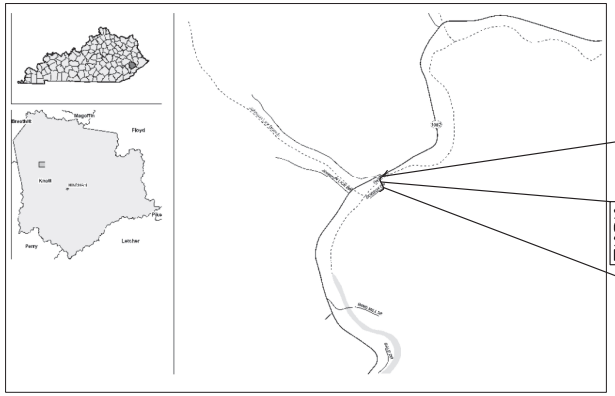
STANDARD DRAWINGS

RBI-001-12	TYPICAL GUARDRAIL INSTALLATIONS
RBI-002-07	TYPICAL GUARDRAIL INSTALLATIONS
RBR-001-13	STEEL BEAM GUARDRAIL "W" BEAM
RBR-010-16	GUARDRAIL TERMINAL SECTIONS
RBR-015-06	STEEL GUARDRAIL POSTS
RBR-050-08	GUARDRAIL END TREATMENT TYPE 7
RBR-055-01	DELINEATORS FOR GUARDRAIL
TTC-150-04	ROAD CLOSURE WITH DIVERSION
BHS-011	RAILING SYSTEM SIDE MOUNTED MGS DETAIL

ACTIVE SEPIAS

INDEX OF SHEETS

Sheet No.	Description
R1	LAYOUT SHEET
R2	TYP. SECTIONS, COORD. CONTROL, & LEGEND
R3	GENERAL, PAVING, & RIGHT OF WAY SUMMARY
R4	ROADWAY PLAN & PROFILE SHEET
R5	DIVERSION PLAN & PROFILE SHEET
U1	WATERLINE RELOCATION PLAN



LOCATION MAP

SCALE: 1"=NTS

SPECIAL NOTES

SPECIAL PROVISIONS

SPECIFICATIONS

2019, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION

9TH EDITION AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

REVISION	DATE

DESIGN CRITERIA

CLASS OF HIGHWAY: RURAL LOCAL
TYPE OF TERRAIN: MOUNTAIN
DESIGN SPEED
REQUIRED NPSD
REQUIRED PSD
LEVEL OF SERVICE
ADT PRESENT ( )
ADT FUTURE ( )
DHV
D %
T %

GEOGRAPHIC COORDINATES

LATITUDE 37 DEGREES 23 MINUTES 59 SECONDS NORTH
LONGITUDE 83 DEGREES 03 MINUTES 08 SECONDS WEST

DESIGNED

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

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.

REV. NO.	SHEETS REVISED	DATE

EXISTING BRIDGE ID # 060C014

PREPARED BY
PALMER ENGINEERING CO.
400 SHOPPERS DR.
WINCHESTER, KY 40392
859-744-1218

RELEASE FOR CONSTRUCTION

Kevin F. Damron

Digitally signed by Kevin F. Damron
DN: cn=Kevin F. Damron, o=Palmer Engineering, ou=Palmer Engineering, email=kdamron@palmereng.com, c=US
Date: 2022.11.07 18:35:35 -05'00'

STATE OF KENTUCKY
KEVIN F. DAMRON
16975
LICENSED PROFESSIONAL ENGINEER

ROADWAY P.E. STAMP

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS
COUNTY OF

KNOTT

ITEM NO. 12-0289
DRAWING NO. 28616

PROJECT NUMBER:	DEPT. OBJECT CODE	FEMA NO.
	D23A	4663-DR

LETTING DATE:

RECOMMENDED BY: _____ PROJECT MANAGER DATE:

PLAN APPROVED BY: _____ STATE HIGHWAY ENGINEER DATE:

FILE NAME: $DGNSPEC$
USER: PEC gmhorry-d
DATE PLOTTED: 10/7/2022 5:58:42 PM
E-SHEET NAME:
Power InRoads v8.11.9.397

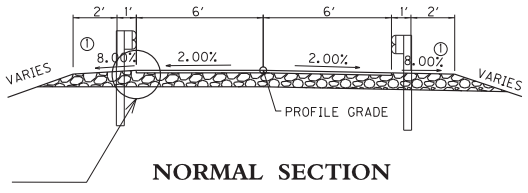
COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0289	R2
DEPT. OBJECT CODE	FEMA NO.	
D23A	4663-DR	

CONVENTIONAL SIGNS

SURVEY LINE
GRADE LINE
GROUND LINE
COUNTY LINE
CORPORATE LIMITS
EXIST. PROPERTY LINE
EXIST. RIGHT OF WAY & PROPERTY LINE
PROPOSED RIGHT OF WAY
RIGHT OF WAY MONUMENT
BENCH MARK
EXISTING R/W MARKER
RIGHT OF WAY MONUMENT EXISTING/PROPOSED
UTILITY TEST HOLE
EXISTING ROAD
RAILROAD
FENCE (CONTROLLED ACCESS)
FENCE (EXCEPT STONE AND HEDGE)
TREE LINE
TREES
PIPE CULVERT
CULVERT
BRIDGE
BUILDINGS
GUARDRAIL

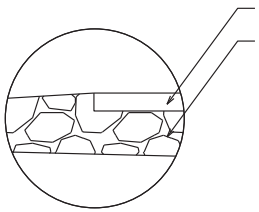
	EXISTING	PROPOSED
LIGHTING POLE		
POWER POLE		
JOINT POWER & TELEPHONE POLE		
TELEPHONE & TELEGRAPH POLE		
ANCHOR, POWER OR TELEPHONE		
STUB POWER		
STUB TELEPHONE		
WATER MAIN	WM	6" WM
GAS MAIN	GM	GM
TELEPHONE DUCT	T	T
ELECTRIC DUCT	E	E
DIRECT BURIAL TV CABLE	TV	TV
SANITARY SEWER (WITH MANHOLE)	SAN	SAN
STORM SEWER (WITH MANHOLE)	STORM	STORM
DIRECT BURIAL ELECTRIC CABLE	E	E
DIRECT BURIAL TELEPHONE CABLE	T	T
OVERHEAD WIRE		
TRAFFIC LIGHTS		
ELECTRIC MANHOLE	EMH	EMH
TELEPHONE MANHOLE	TMH	TMH

STONE FENCE
HEDGE FENCE
SWAMP OR MARSH
SPRINGS
SINKHOLE
QUARRY SITE
BLUE LINE STREAM
INTERMITTENT STREAM OR DITCH
LAKES OR PONDS
REGULATED FLOODWAY
NORTH POINT



SEE DETAIL "A"

NORMAL SECTION



DETAIL "A"

SEE BRIDGE LAYOUT SHEET FOR BRIDGE TYPICAL SECTION

BRIDGE SECTION

NOTES

① SEE PLAN SHEETS FOR LOCATIONS.

TRAFFIC LANE & SHOULDER PAVEMENT

CSB — 4.00"

2's, 3's, or 23's — 8.00" (4"+4")

TRAFFIC LANE & SHOULDER PAVEMENT OVERLAY

CSB — VARIABLE DEPTH

BASIS OF COORDINATES

Coordinates for horizontal control were obtained from GPS methods and adjusted to the National NAD83/FBN System.

Coordinate are based on State Plane Coordinate System Single Zone and in U.S. SURVEY FEET.

BASIS OF ELEVATIONS

Elevations were derived from GPS methods and are adjusted to the NAVD88 Vertical Datum. Geoid model used was Geoid03.

COORDINATE CONTROL POINTS

POINT	DESCRIPTION	State Plane Coordinates			STATION	OFFSET
		NORTH (Y)	EAST (X)	ELEV. (Z)		
1	IP	3680461.970	5704738.529	1005.620	11+32.57	23.64' RT
2	IP	3680389.853	5704811.870	1002.075	12+20.95	14.23' LT
26	MAG	3680535.350	5704835.287	1018.614	10+29.58	9.17' LT
121	MAG	3680361.697	5704764.096	996.030	12+77.53	22.91' RT
149	MAG	3680400.462	5704829.595	1001.392	12+19.01	34.8' LT
150	MAG	3680400.542	5704786.909	1001.841	12+00.55	3.69' RT
151	MAG	3680366.437	5704603.601	1001.129	11+52.38	183.81' RT
191	MAG	3680222.164	5704517.458	991.357	11+38.88	

CENTERLINE COORD. CONTROL

POINT	DESCRIPTION	State Plane Coordinates		STATION
		NORTH (Y)	EAST (X)	
1	POB	3680564.783	5704844.929	10+00.00
2	PC 1	3680525.542	5704817.085	10+48.12
3	PI 1	3680521.299	5704814.074	10+53.32
4	PT 1	3680517.767	5704810.254	10+58.48
5	PC 2	3680478.521	5704767.815	11+16.29
6	PI 2	3680469.519	5704758.081	11+29.55
7	PT 2	3680457.553	5704763.791	11+39.14
8	PC 3	3680376.979	5704802.243	12+28.42
9	PI 3	3680362.278	5704809.258	12+44.71
10	PT 3	3680353.834	5704795.328	12+54.90
11	POE	3680332.429	5704760.018	12+96.19

NTS

TYPICAL SECTION & LEGEND & COORD. CONTROL SHEET
DOBSON DR. OVER BALLS FORK

COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0289	R3
DEPT. OBJECT CODE	FEMA NO.	
D23A	4663-DR	

GENERAL SUMMARY

ITEM	DESCRIPTION	UNIT	DOBSON DR.			PROJECT TOTAL
1987	DELINEATOR FOR GUARDRAIL	EACH	6			6
2014	BARRICADE - TYPE III ⑤	EACH	2			2
2351	GUARDRAIL - STEEL W BEAM - S FACE	LF	100			100
2360	GUARDRAIL TERMINAL SECTION NO. 1	EACH	4			4
2562	TEMPORARY SIGNS	SF	79			79
2569	DEMOBILIZATION	LS	1			1
2650	MAINTAIN AND CONTROL TRAFFIC ②	LS	1			1
2726	STAKING	LS	1			1
2731	REMOVE STRUCTURE ④	LS	1			1
5952	TEMPORARY MULCH	SY	575			575
5953	TEMP SEEDING AND PROTECTION	SY	431			431
5963	INITIAL FERTILIZER	TON	.01			.01
5964	20-10-10 FERTILIZER	TON	.02			.02
5985	SEEDING AND PROTECTION	SY	307			307
5992	AGRICULTURAL LIMESTONE	TON	.2			.2
14004	W DIRECTIONAL BORE	LF	40			40
14056	W PIPE (PVC 02 INCH)	LF	140			140
14091	W TIE-IN (02 INCH)	EACH	2			2
14114	W VALVE CUT-IN 02 INCH	EACH	2			2
20191ED	OBJECT MARKER TY 3 ⑤	EACH	4			4

PAVING SUMMARY

ITEM CODE	ITEM	TONS	ENTRANCE			PROJECT TOTAL
3	CRUSHED STONE BASE ①	22	16			38
80	CRUSHED AGGREGATE NO. 23 ①	35				35

PAVING AREAS

ITEM	DOBSON DR.	ENTRANCE			PROJECT TOTAL
	S Q U A R E Y A R D S				
4.00" CRUSHED STONE BASE	96				96
8.00" CRUSHED AGGREGATE NO. 23 ③	43				43
FULL DEPTH CRUSHED AGGREGATE NO. 23 ③	22				22
6.00" CRUSHED STONE BASE		46			46

NOTES

① ESTIMATED AT 115 LBS. PER SQ. YD. PER INCH OF DEPTH.

② THE COST TO CONSTRUCT, MAINTAIN, AND REMOVE THE TEMPORARY DIVERSION SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM 'MAINTAIN AND CONTROL TRAFFIC'.

③ CONTRACTOR MAY USE CRUSHED AGGREGATE NO. 2's, NO. 3's, OR NO. 23's.

④ REMOVAL OF THE STRUCTURE INCLUDES THE REMOVAL OF THE CONCRETE SLAB, CONCRETE CURB, STEEL, SUPERSTRUCTURE AND ANY FRAMEWORK IN PLACE. REMOVAL OF THE BRIDGE SHALL INCLUDE THE TRANSPORTATION AND DISPOSAL OF ALL DEMOLISHED MATERIAL. UNLESS OTHER WISE DIRECTED BY THE ENGINEER, ALL MATERIAL REMOVED FROM THE STRUCTURE SHALL BE THE PROPERTY OF THE CONTRACTOR.

⑤ FOR TEMPORARY CROSSING.

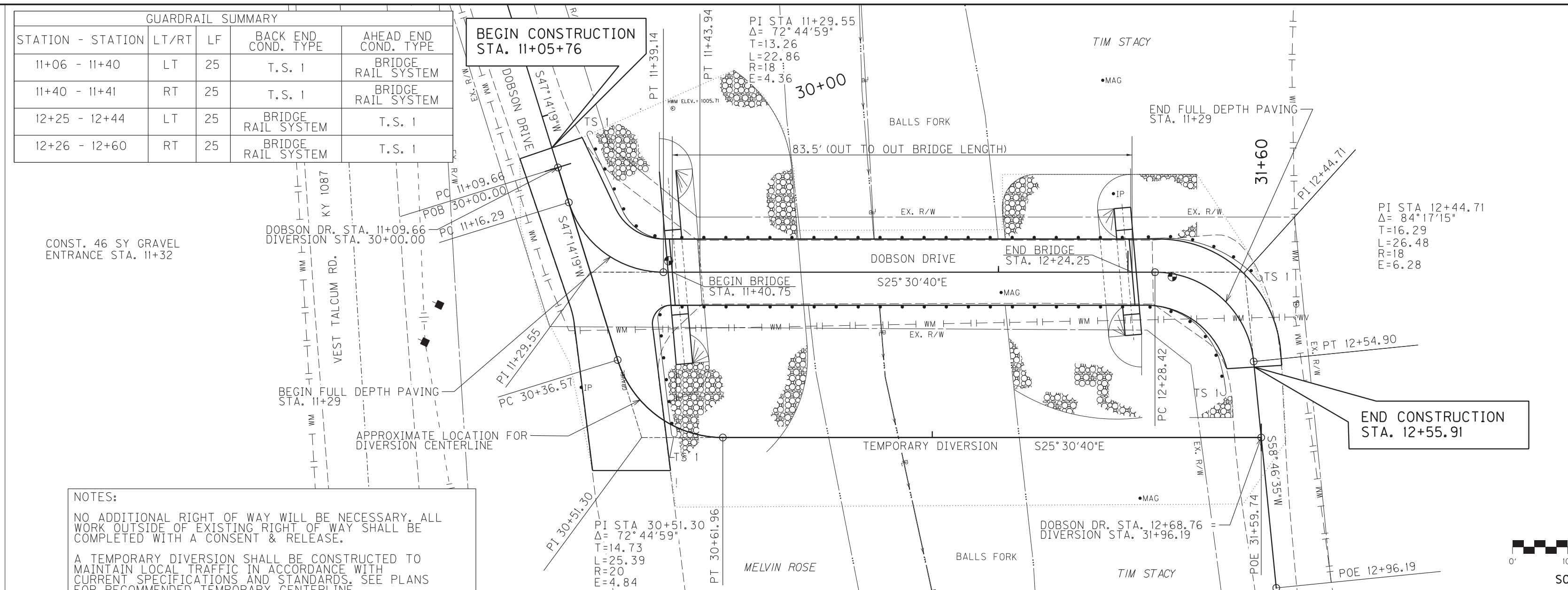
GENERAL & PAVING SUMMARY SHEET

DOBSON DR. OVER BALLS FORK

COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0289	R4
DEPT. OBJECT CODE		FEMA NO.
D23A		4663-DR

GUARDRAIL SUMMARY

STATION - STATION	LT/RT	LF	BACK END COND. TYPE	AHEAD END COND. TYPE
11+06 - 11+40	LT	25	T.S. 1	BRIDGE RAIL SYSTEM
11+40 - 11+41	RT	25	T.S. 1	BRIDGE RAIL SYSTEM
12+25 - 12+44	LT	25	BRIDGE RAIL SYSTEM	T.S. 1
12+26 - 12+60	RT	25	BRIDGE RAIL SYSTEM	T.S. 1

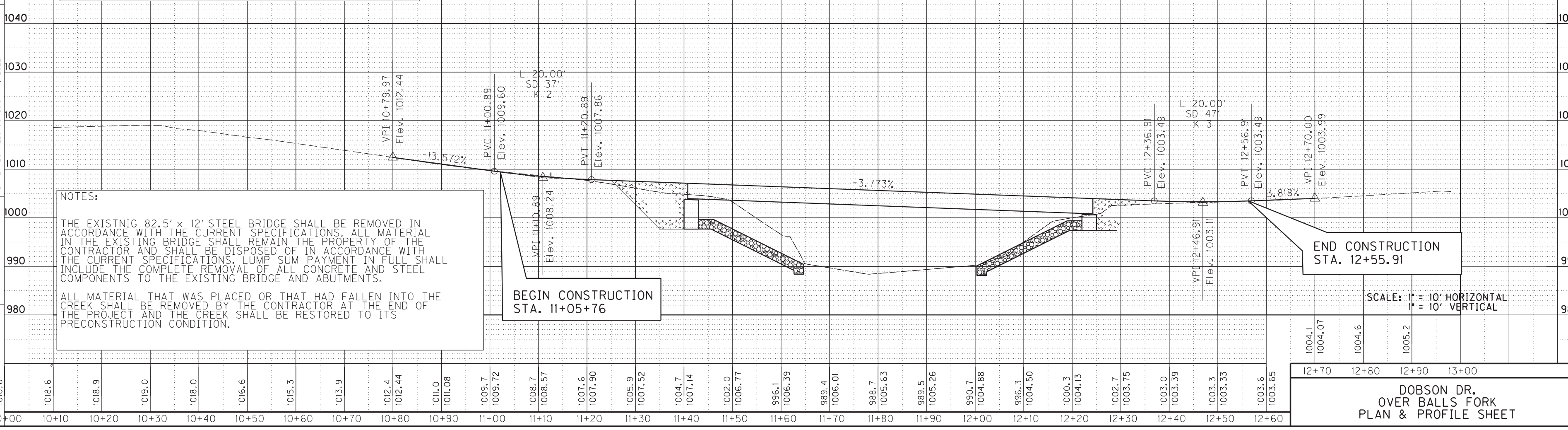


NOTES:

NO ADDITIONAL RIGHT OF WAY WILL BE NECESSARY. ALL WORK OUTSIDE OF EXISTING RIGHT OF WAY SHALL BE COMPLETED WITH A CONSENT & RELEASE.

A TEMPORARY DIVERSION SHALL BE CONSTRUCTED TO MAINTAIN LOCAL TRAFFIC IN ACCORDANCE WITH CURRENT SPECIFICATIONS AND STANDARDS. SEE PLANS FOR RECOMMENDED TEMPORARY CENTERLINE.

THE RECORDS FOR THE HINDMAN WATER DEPARTMENT (HWD) WERE DESTROYED DURING THE FLOODING. THE LOCATION OF THE WATER LINES WERE ESTABLISHED BASED ON MEMORY AND PRIOR WORK IN THE AREA. THE CONTRACTOR IS TO USE CAUTION WHILE WORKING AND SHOULD CONTACT HWD PRIOR TO BEGINNING ANY EXCAVATION.



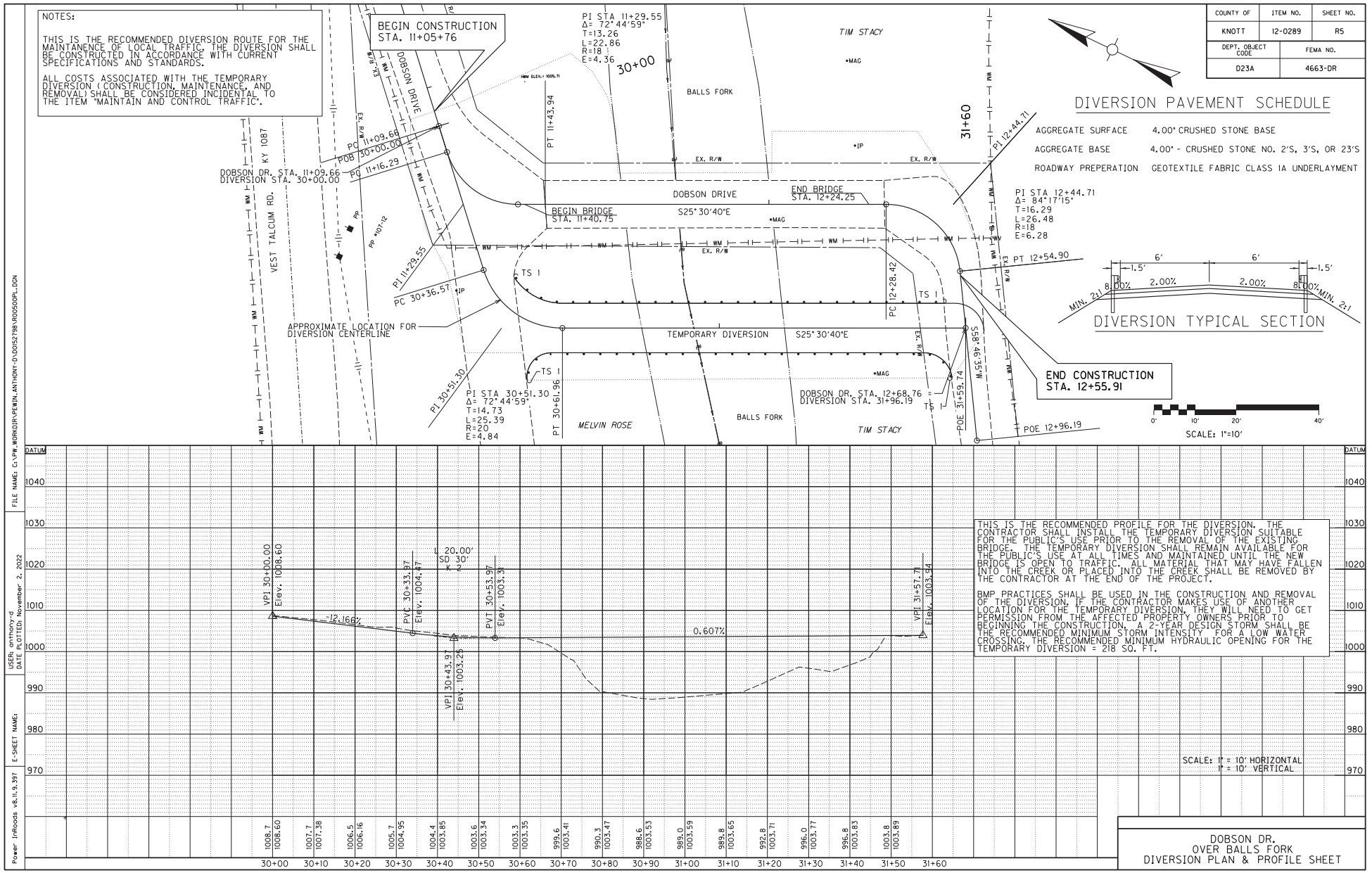
NOTES:

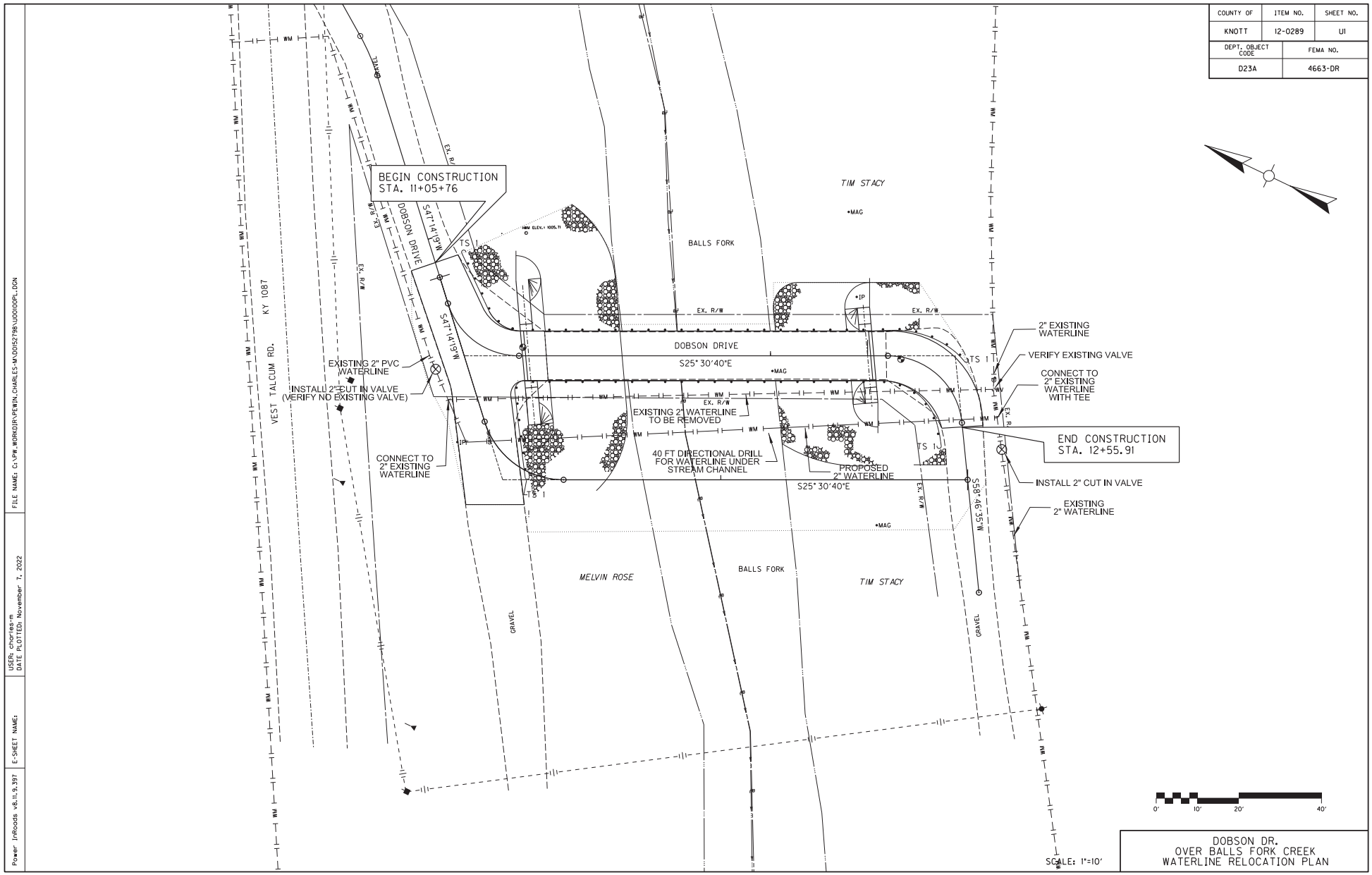
THE EXISTNIG 82.5' x 12' STEEL BRIDGE SHALL BE REMOVED IN ACCORDANCE WITH THE CURRENT SPECIFICATIONS. ALL MATERIAL IN THE EXISTING BRIDGE SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF IN ACCORDANCE WITH THE CURRENT SPECIFICATIONS. LUMP SUM PAYMENT IN FULL SHALL INCLUDE THE COMPLETE REMOVAL OF ALL CONCRETE AND STEEL COMPONENTS TO THE EXISTING BRIDGE AND ABUTMENTS.

ALL MATERIAL THAT WAS PLACED OR THAT HAD FALLEN INTO THE CREEK SHALL BE REMOVED BY THE CONTRACTOR AT THE END OF THE PROJECT AND THE CREEK SHALL BE RESTORED TO ITS PRECONSTRUCTION CONDITION.

DOBSON DR.
OVER BALLS FORK
PLAN & PROFILE SHEET

FILE NAME: C:\PW_WORKDIR\PEWIN.ANTHONY-D\D0152798\R0040PL.DGN
USER: anthony-d
DATE PLOTTED: October 17, 2022
E-SHEET NAME:
Power InRoads v8.11.9.397


NOTES:
THIS IS THE RECOMMENDED DIVERSION ROUTE FOR THE MAINTANENCE OF LOCAL TRAFFIC. THE DIVERSION SHALL BE CONSTRUCTED IN ACCORDANCE WITH CURRENT SPECIFICATIONS AND STANDARDS.
ALL COSTS ASSOCIATED WITH THE TEMPORARY DIVERSION (CONSTRUCTION, MAINTENANCE, AND REMOVAL) SHALL BE CONSIDERED INCIDENTAL TO THE ITEM "MAINTAIN AND CONTROL TRAFFIC".
BEGIN CONSTRUCTION STA. 11+05+76
PI STA 11+29.55
Δ= 72°44'59"
T=13.26
L=22.86
R=18
E=4.36
DOBSON DRIVE
KY 1087
VEST TALCUM RD.
PC 11+09.66
POB 30+00.00
PC 11+16.29
DOBSON DR. STA. 11+09.66
DIVERSION STA. 30+00.00
PI 11+43.94
BALLS FORK
TIM STACY
*MAG
*IP
EX. R/W
30+00
31+60
PI 12+44.71
DOBSON DRIVE
END BRIDGE
STA. 12+24.25
BEGIN BRIDGE
STA. 11+40.75
S25°30'40"E
PI STA 12+44.71
Δ= 84°17'15"
T=16.29
L=26.48
R=18
E=6.28
PT 12+54.90
PI 11+29.55
PC 30+36.57
TS I
PC 12+28.42
APPROXIMATE LOCATION FOR DIVERSION CENTERLINE
TEMPORARY DIVERSION
S25°30'40"E
S58°46'35"W
PI 30+51.30
PI STA 30+51.30
Δ= 72°44'59"
T=14.73
L=25.39
R=20
E=4.84
PT 30+61.96
MELVIN ROSE
DOBSON DR. STA. 12+68.76
DIVERSION STA. 31+96.19
POE 31+59.74
POE 12+96.19
END CONSTRUCTION
STA. 12+55.91
DIVERSION PAVEMENT SCHEDULE
AGGREGATE SURFACE 4.00" CRUSHED STONE BASE
AGGREGATE BASE 4.00" - CRUSHED STONE NO. 2'S, 3'S, OR 23'S
ROADWAY PREPERATION GEOTEXTILE FABRIC CLASS IA UNDERLAYMENT
6' 6' 1.5' 1.5' 8.00% 2.00% 2.00% 8.00% MIN. 2:1 MIN. 2:1
DIVERSION TYPICAL SECTION
SCALE: 1"=10'
COUNTY OF KNOTT
ITEM NO. 12-0289
SHEET NO. R5
DEPT. OBJECT CODE D23A
FEMA NO. 4663-DR
VPI 30+00.00 Elev. 1008.60
-12.16%
PVC 30+33.87 Elev. 1004.47
L 20.00' SD 30'
VPI 30+43.91 Elev. 1003.26
PVT 30+53.97 Elev. 1003.31
0.60%
VPI 31+57.71 Elev. 1003.94
THIS IS THE RECOMMENDED PROFILE FOR THE DIVERSION. THE CONTRACTOR SHALL INSTALL THE TEMPORARY DIVERSION SUITABLE FOR THE PUBLIC'S USE PRIOR TO THE REMOVAL OF THE EXISTING BRIDGE. THE TEMPORARY DIVERSION SHALL REMAIN AVAILABLE FOR THE PUBLIC'S USE AT ALL TIMES AND MAINTAINED UNTIL THE NEW BRIDGE IS OPEN TO TRAFFIC. ALL MATERIAL THAT MAY HAVE FALLEN INTO THE CREEK OR PLACED INTO THE CREEK SHALL BE REMOVED BY THE CONTRACTOR AT THE END OF THE PROJECT.
BMP PRACTICES SHALL BE USED IN THE CONSTRUCTION AND REMOVAL OF THE DIVERSION. IF THE CONTRACTOR MAKES USE OF ANOTHER LOCATION FOR THE TEMPORARY DIVERSION, THEY WILL NEED TO GET PERMISSION FROM THE AFFECTED PROPERTY OWNERS PRIOR TO BEGINNING THE CONSTRUCTION. A 2-YEAR DESIGN STORM SHALL BE THE RECOMMENDED MINIMUM STORM INTENSITY FOR A LOW WATER CROSSING. THE RECOMMENDED MINIMUM HYDRAULIC OPENING FOR THE TEMPORARY DIVERSION = 218 SQ. FT.
SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL
DATUM 1040 1030 1020 1010 1000 990 980 970
1008.7 1008.60 1007.7 1007.38 1006.5 1006.16 1005.7 1004.95 1004.4 1003.85 1003.6 1003.34 1003.3 1003.35 999.6 1003.41 990.3 1003.47 988.6 1003.53 989.0 1003.59 989.8 1003.65 992.8 1003.71 996.0 1003.77 996.8 1003.83 1003.8 1003.89
30+00 30+10 30+20 30+30 30+40 30+50 30+60 30+70 30+80 30+90 31+00 31+10 31+20 31+30 31+40 31+50 31+60
DOBSON DR.
OVER BALLS FORK
DIVERSION PLAN & PROFILE SHEET
FILE NAME: C:\PW..WORKDIR\PEWIN.ANTHONY-D\D0052798\R00500PL.DGN
USER: anthony-d
DATE PLOTTED: November 2, 2022
E-SHEET NAME:
Power InRoads v8.11.9.397



COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0289	UI
DEPT. OBJECT CODE	FEMA NO.	
D23A	4663-DR	

DOBSON DR.
OVER BALLS FORK CREEK
WATERLINE RELOCATION PLAN

Power InRoads v8.11.9.397 | E-SHEET NAME: | USER: chorides-m DATE PLOTTED: November 7, 2022 | FILE NAME: C:\PW_WORKDIR\PEWIN.CHARLES^M\D0052798\U00100PL.DGN

LETTING DATE

CONSTRUCTION PROJECT NO.

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

KNOTT COUNTY
CR 1387 - DOBSON DRIVE
OVER BALLS FORK
STA. 11+82.50

ESTIMATE OF QUANTITIES

	BID ITEM CODE	02231	02998	03299	08001	08019	08033	08039	08046	08100	08104	08151	08665	23378EC	25017ED
	BID ITEM	Structure Granular Backfill	Masonry Coating	Armored Edge for Concrete	Structure Excavation, Common	Cyclopean Stone Rip Rap [A]	Test Piles	Pre-drilling for Piles [B]	Piles - Steel HP 12 x 53	Concrete Class "A"	Concrete Class "AA"	Steel Reinforcement, Epoxy Coated	PPC Box Beam CB33-48	Concrete Sealing	Rail System Side Mounted MGS
	UNIT	C.Y.	S.Y.	L.F.	C.Y.	TONS	L.F.	L.F.	L.F.	C.Y.	C.Y.	LBS.	L.F.	S.F.	L.F.
Substructure	End Bent #1	81	30		62	220	20	40	43.5	29.0		2893			
Substructure	End Bent #2	28	14		27	174	18	30	24	12.2		1376			
Superstructure			123	24.1							16.3	2094	250.5	1072	155
BRIDGE TOTALS		109	167	24.1	89	394	38	70	67.5	41.2	16.3	6363	250.5	1072	155

[A] See note on Sheet S03.

[B] Quantity may be increased or decreased based on conditions in the field.

INDEX OF SHEETS

SPECIAL NOTES

Special note for Sealing Bridge Decks

SPECIAL PROVISIONS

69 Embankment at Bridge End Bent Structures

STANDARD DRAWINGS

BBP-003-02	Elastomeric Bearing Pads for Box Beams
BDP-001-06	Box Beam General Notes and References
BDP-002-03	Box Beam Bearing Details
BDP-003-03	Box Beam Miscellaneous Details
BDP-004-04	Box Beam Tension Rod Details
BDP-010-04	Box Beam B33 & CB33 Details
BGX-006-10	Stencils for Structures
BGX-012-02	Geotechnical Legend
BHS-011	Railing System Side Mounted MGS Details
BJE-001-14	Armored Edges
BPS-003-09	HP12x53 Steel Pile
RBR-001-13	Steel Beam Guardrail ("W" Beam)
RBR-015-06	Steel Guardrail Posts
RGX-100-07	Treatments of Embankments at End Bents
RGX-105-09	Treatments of Embankments at End Bents

SPECIFICATIONS

2019 Standard Specifications for Road and Bridge Construction.

9th Edition AASHTO LRFD Bridge Design Specifications

STATE OF KENTUCKY
LUCAS A. BEATTIE
37678
LICENSED PROFESSIONAL ENGINEER

Digitally signed by Lucas Beattie
DN: cn=Lucas Beattie, o=Palmer Engineering Company, ou, email=lbeattie@palmernet.com, c=US
Date: 2022.11.07 18:37:59 -05'00'

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY
Palmer ENGINEERING

DATE:	NOVEMBER, 2022	CHECKED BY	
DESIGNED BY:	L.A. BEATTIE		L.M. SALLEE
DETAILED BY:	J.A. ROSE		L.A. BEATTIE

TITLE SHEET

CROSSING
BALLS FORK

ITEM NO.	DEPT. OBJECT CODE	FEMA BRIDGE
12-0289	D23A	4663-DR
ROUTE	BRIDGE ID	COUNTY OF
CR 1387	060C014	KNOTT
	SHEET NO.	DRAWING NUMBER
	S01	28616

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GENERAL NOTES

SPECIFICATIONS:

All references to the Standard Specifications are to the 2019 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 9th edition of the AASHTO LRFD Bridge Design Specifications.

LIVE LOAD:

This bridge is designed for KYHL-93 which is 1.25 times the HL-93 live load.

FUTURE WEARING SURFACE:

The bridge has been designed for a future wearing surface weight of 15 psf.

MATERIAL DESIGN SPECIFICATIONS:

For Class "A" Reinforced Concrete:	f'c = 3500 PSI
For Class "AA" Reinforced Concrete:	f'c = 4000 PSI
For Steel Reinforcement:	fy = 60,000 PSI
For Structural Steel Piling:	fy = 50,000 PSI

MATERIAL SPECIFICATIONS:

AASHTO Specifications or ASTM, current edition, as designated below shall govern the materials furnished.

AASHTO M153	Premolded Cork Filler, Type II
AASHTO M-31	Deformed and Plain Billet-Steel for Concrete Reinforcement, Grade 60

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.

CONCRETE:

Class "AA" concrete is to be used throughout the Slab. Prestressed beam concrete shall be in accordance with the Standard Drawing BDP-001-06. All other concrete shall be Class "A" unless otherwise noted.

FOUNDATION DATA:

See Foundation Layout Sheet.

DIMENSIONS:

Dimensions are for a normal temperature of 60 degrees F. Layout dimensions are horizontal measurements. Stationing and elevations are in feet.

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 inches unless otherwise noted. 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 bar for purposes of bend diameters.

FABRIC GEOTEXTILE CLASS 2:

Fabric Geotextile Class 2 is incidental to Structure Granular Backfill.

SLOPE PROTECTION:

Slope protection shall be cyclopean stone rip rap in accordance with the plans and specifications. Geotextile fabric is incidental to this item.

BEVELED EDGES:

All exposed edges shall be beveled ¾" unless otherwise shown.

TEMPORARY RETAINING STRUCTURE EXCAVATIONS:

Temporary sheeting, shoring and/or dewatering methods may be required for the installation of the pile caps. The contractor shall be responsible for the stability and safety of all excavations.

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.

CONSTRUCTION PHASING AND MAINTENANCE OF TRAFFIC:

The contractor shall arrange to do the work in accordance with the plans and maintenance of traffic notes as shown on the roadway plans during construction of this project.

MASONRY COATING:

A masonry coating finish shall be applied in accordance with Section 601.03.18b of the Standard Specifications. This masonry coating shall not be applied until the deck has been completed.

GUARDRAIL:

Side mounted MGS railing system shall be installed per Standard Drawing BHS-011.

SHOP DRAWINGS:

Submit shop drawings that are required by the plans and specifications directly to the Consultant. If changes in the design plans are proposed by a fabricator or supplier, submit those changes to the Consultant. Submit all final, approved shop drawings to the Division of Structural Design.

CONSTRUCTION IDENTIFICATION:

The names of the prime contractor and the sub-contractor shall be imprinted in the concrete with 1" 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.

TEMPORARY SUPPORTS:

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

PILING:

Piling shall be driven to refusal. See Foundation Layout on sheet S04 for additional pile details.

PILE POINTS:

Provide pile points conforming to Section 604 of the Standard Specifications and of the size shown on the Foundation Layout. If pre-drilling for piles is required for pile installation, pile points are not required.

CONCRETE SEALING:

Apply Concrete Sealer in accordance with the Special Note for Sealing Bridge Decks.

SPECIFICATIONS CONTRARY TO THE STANDARD DRAWINGS:

Where the plans and specifications differ from the standard drawings, the plans and specifications shall control.

MASTIC TAPE:

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

Mastic Tape shall be either:

EZ-Wrap Rubber by Press-Seal 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 tape a minimum of 6" and in accordance with the manufacturer's recommendations with the overlap running downhill.

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

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.

TEMPORARY DIVERSION:

Contractor shall install a temporary diversion suitable for the public's use prior to the removal of the existing bridge. The temporary diversion shall remain available for the public's use at all times and maintained until the new bridge is open to traffic. All material that may have fallen into the creek or placed into the creek shall be removed by the Contractor at the end of the project. BMP practices shall be used in the construction and removal of the diversion.

For hydraulic opening and additional diversion details see Roadway Plans.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY Palmer ENGINEERING

DATE:	NOVEMBER, 2022	CHECKED BY	L.M. SALLEE
DESIGNED BY:	L.A. BEATTIE		
DETAILED BY:	J.A. ROSE		L.A. BEATTIE

GENERAL NOTES

CROSSING: BALLS FORK

ITEM NO.	DEPT. OBJECT CODE	FEMA BRIDGE
12-0289	D23A	4663-DR
ROUTE	BRIDGE ID	COUNTY OF
CR 1387	060C014	KNOTT
	SHEET NO.	DRAWING NUMBER
	S02	28616

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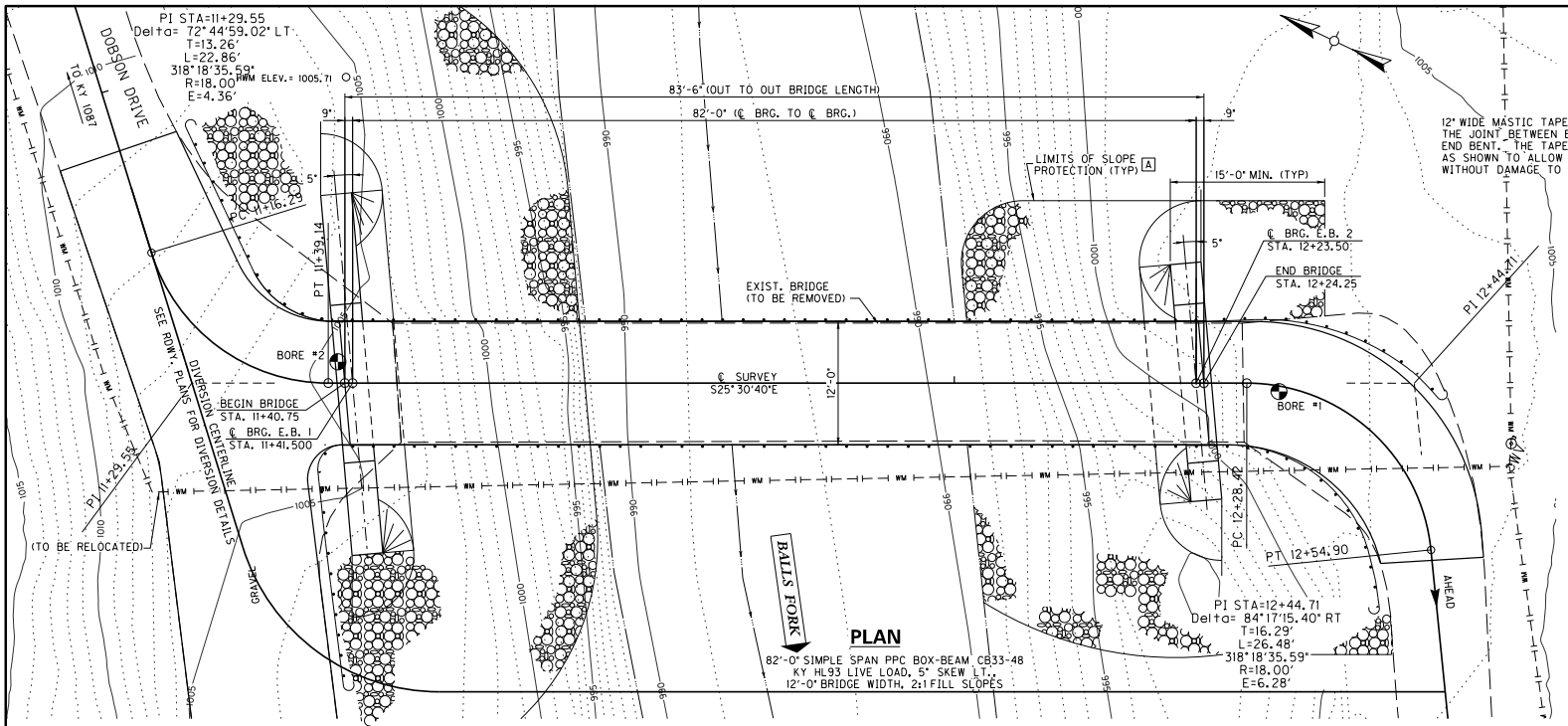
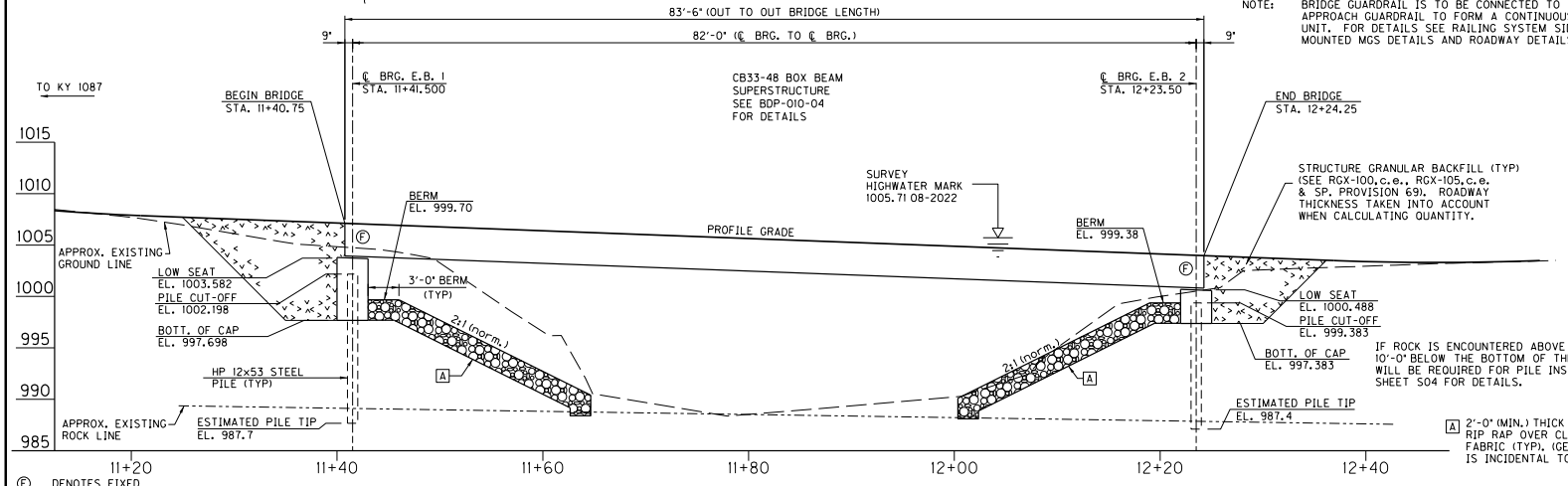


PLAN

82'-0" SIMPLE SPAN PPC BOX-BEAM CB33-48
KY HL93 LIVE LOAD, 5° SKEW LT.,
12'-0" BRIDGE WIDTH, 2:1 FILL SLOPES

NOTE: BRIDGE GUARDRAIL IS TO BE CONNECTED TO APPROACH GUARDRAIL TO FORM A CONTINUOUS UNIT. FOR DETAILS SEE RAILING SYSTEM SIDE MOUNTED MGS DETAILS AND ROADWAY DETAILS.

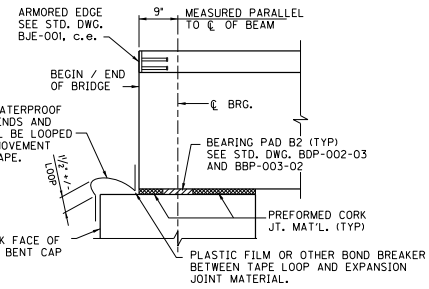


Ⓕ DENOTES FIXED
Ⓔ DENOTES EXPANSION

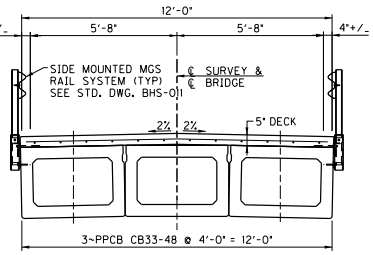
ELEVATION ALONG CENTERLINE OF SURVEY

IF ROCK IS ENCOUNTERED ABOVE AN ELEVATION 10'-0" BELOW THE BOTTOM OF THE CAP, PRE-DRILLING WILL BE REQUIRED FOR PILE INSTALLATION. SEE SHEET S04 FOR DETAILS.

A 2'-0" (MIN.) THICK CYCLOPEAN STONE RIP RAP OVER CLASS I GEOTEXTILE FABRIC (TYP). (GEOTEXTILE FABRIC IS INCIDENTAL TO SLOPE PROTECTION)



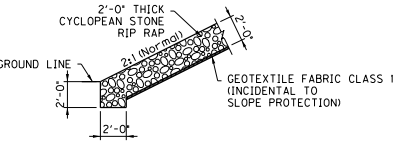
JOINT WATERPROOFING DETAIL



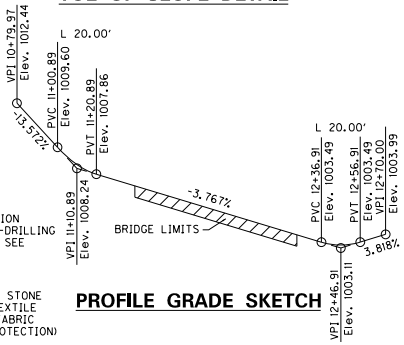
TYPICAL SECTION

(LOOKING AHEAD)

BEAM LENGTH = 83'-6"
USE DETAILS FOR 84'-0" CB33-48



TOE OF SLOPE DETAIL



PROFILE GRADE SKETCH

ITEM NO. 12-0289	DEPT. OBJECT CODE D23A	FEMA BRIDGE 4663-DR
ROUTE CR 1387	BRIDGE ID 060C014	COUNTY OF KNOTT
CROSSING BALLS FORK	SHEET NO. S03	DRAWING NUMBER 28616

BRIDGE LAYOUT

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY Palmer ENGINEERING

DATE:	NOVEMBER, 2022	CHECKED BY	
DESIGNED BY:	L.A. BEATTIE		L.M. SALLEE
DETAILED BY:	J.A. ROSE		L.A. BEATTIE

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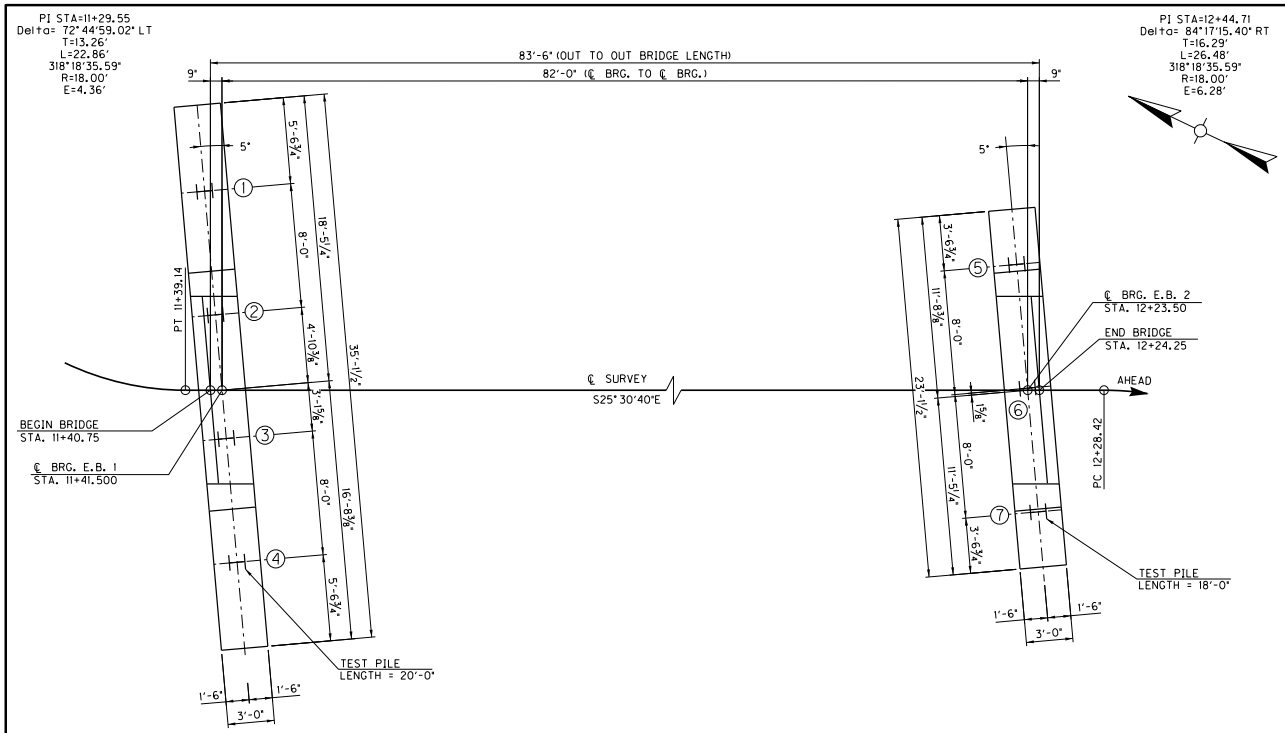

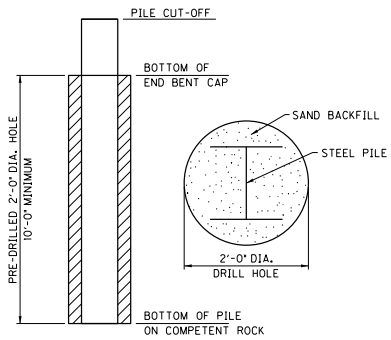

PILE PRE-DRILL DETAIL

FIELD DATA

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

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

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

Use HP 12x53, Grade 50, in accordance with BPS-003, C.E.

DEFINITION OF TERMS

Pile Length In Place: Actual pile length below the Pile Cut-Off Elevation in the finished structure.

Pile Cut-Off Elevation: Elevation of the top of pile 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 loads.

PILE DRIVING NOTES

End Bent 1: Use Pre-Drilled end bearing steel H-Piles driven to bedrock.

End Bent 2: Use Pre-Drilled end bearing steel H-Piles driven to bedrock.

IF FIELD CONDITIONS SHOW PRE-DRILLING IS NOT REQUIRED, USE END BEARING STEEL H-PILES WITH REINFORCED PILE POINTS DRIVEN TO BEDROCK.

Practical Refusal: Drive point bearing piles to practical refusal. For this project minimum blow requirements are reached after total penetration becomes ¼ inch or less for 5 consecutive blows. Practical refusal is obtained after the pile is struck an additional 5 blows with total penetration of ¼ inch 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.

Minimum Pile Length:
10 Feet below bottom of cap as per
Standard Drawing BSE-001.

PRE-DRILLING:
WHERE PRE-DRILLING IS NECESSARY FOR PILE INSTALLATION, HOLES SHALL BE DRILLED INTO SOLID ROCK. BACKFILL THE HOLES WITH SAND OR PEA GRAVEL AFTER THE PILE IS PLACED IN THE HOLE. A TEMPORARY CASING MAY BE REQUIRED TO PREVENT COLLAPSE OF THE HOLE. IF USED, REMOVE THE CASING AS THE HOLE IS BEING BACKFILLED. DRIVE PILES TO REFUSAL AFTER BACKFILL OPERATIONS ARE COMPLETE. INCLUDE THE COST OF ALL MATERIALS, LABOR, AND EQUIPMENT NEEDED TO PRE-DRILL, BACKFILL THE HOLES, AND DRIVE THE PILES TO REFUSAL IN THE PRICE PER LINEAR FOOT FOR "PRE-DRILLING FOR PILES."

PILE RECORD FOR POINT BEARING PILES

INTEGRAL END BENT #1

Pile No.	Pile Cut-off Elevation	Pile Length In Place	Point Of Pile Elev. As Driven	Design Axial Load
	FEET	FEET	FEET	TONS
1	1002.198			70
2	1002.198			70
3	1002.198			70
4	1002.198			70

PILE RECORD FOR POINT BEARING PILES

INTEGRAL END BENT #2

Pile No.	Pile Cut-off Elevation	Pile Length In Place	Point Of Pile Elev. As Driven	Design Axial Load
	FEET	FEET	FEET	TONS
5	999.383			59
6	999.383			59
7	999.383			59

NOTE:

Stations are taken along ℄ Survey.

LEGEND:

I - Denotes HP 12x53 vertical pile
- Piles oriented web axis perpendicular to ℄ end bent.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY Palmer ENGINEERING

DATE:	NOVEMBER, 2022	CHECKED BY	
DESIGNED BY:	L.A. BEATTIE		L.M. SALLEE
DETAILED BY:	J.A. ROSE		L.A. BEATTIE

FOUNDATION LAYOUT

CROSSING: BALLS FORK

ITEM NO.	DEPT. OBJECT CODE	FEMA BRIDGE
12-0289	D23A	4663-DR
ROUTE	BRIDGE ID	COUNTY OF
CR 1387	060C014	KNOTT
	SHEET NO.	DRAWING NUMBER
	S04	28616

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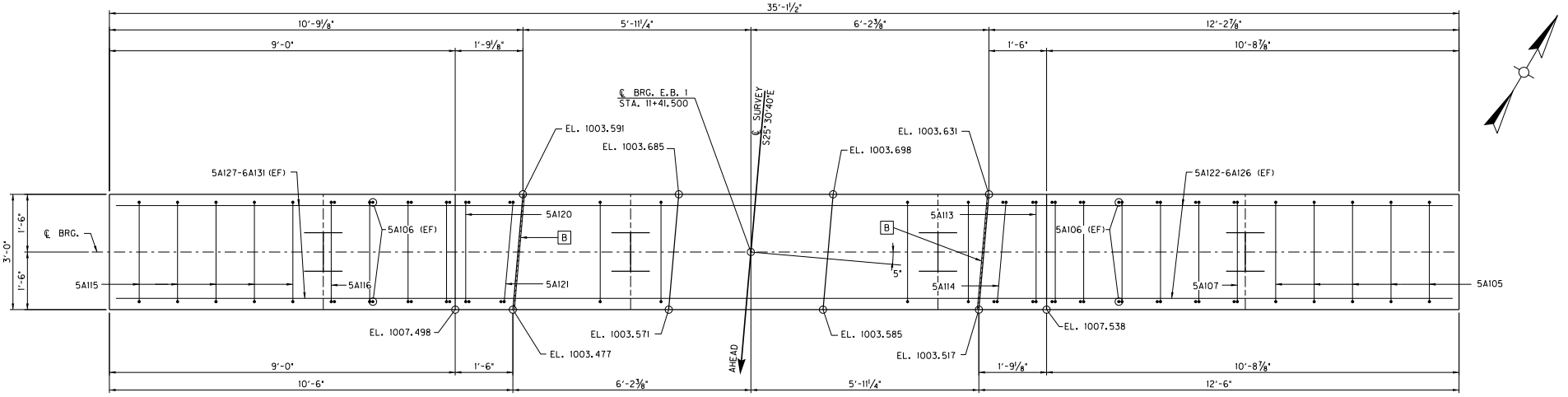
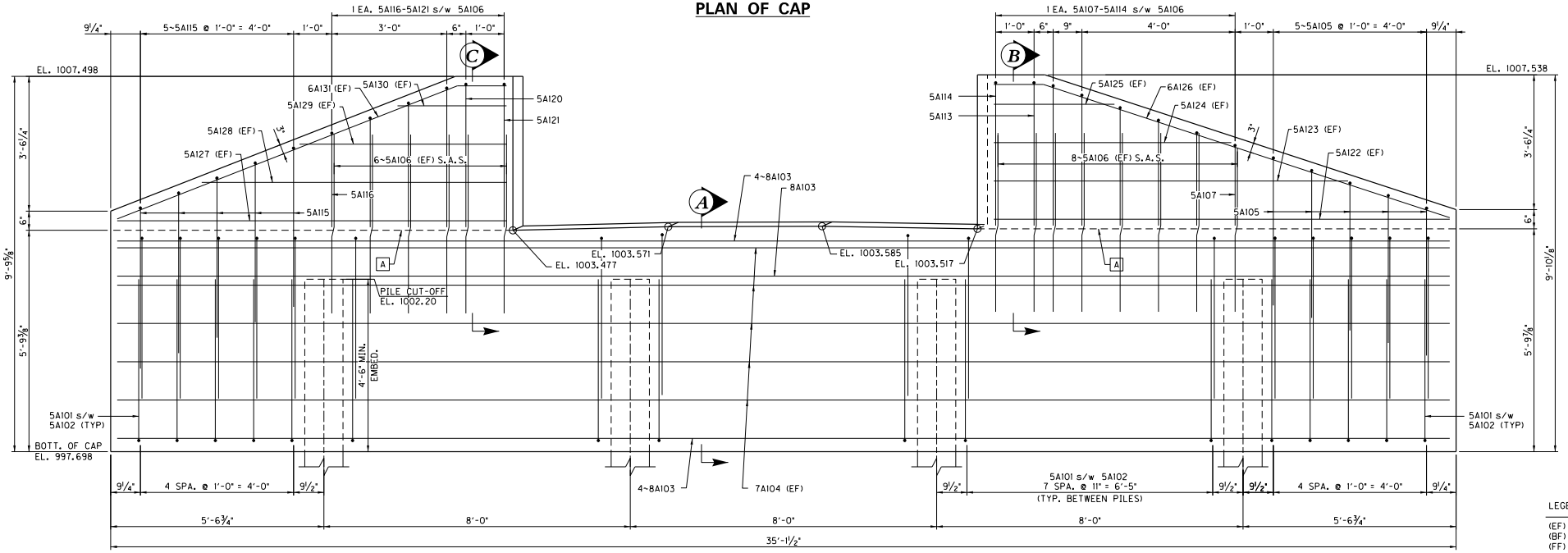


PLAN OF CAP



FOR SECTIONS SEE SHEET S06

ELEVATION
(LOOKING BACK STATION)

A MANDATORY CONST. JT. (TYP)
WINGS SHALL BE POURED AFTER BEAMS ARE SET AND TENSIONING RODS ARE TIGHTENED

B ½" EXPANSION JOINT MATERIAL (TYP) BETWEEN FACE OF BEAM AND WING

LEGEND
(EF) - EACH FACE
(BF) - BACK FACE
(FF) - FRONT FACE
s/w - SPLICE WITH
spa/w - SPACE WITH
S.A.S. - SPA. AS SHOWN

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY Palmer ENGINEERING

DATE:	NOVEMBER, 2022	CHECKED BY	
DESIGNED BY:	L.A. BEATTIE	L.M. SALLEE	
DETAILED BY:	J.A. ROSE	L.A. BEATTIE	

END BENT 1

CROSSING: BALLS FORK

ITEM NO.	DEPT. OBJECT CODE	FEMA BRIDGE
12-0289	D23A	4663-DR
ROUTE	BRIDGE ID	COUNTY OF
CR 1387	060C014	KNOTT
	SHEET NO.	DRAWING NUMBER
	S05	28616

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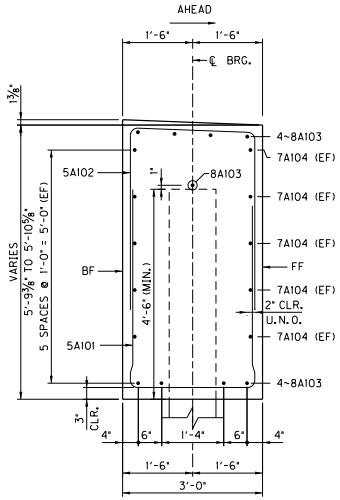
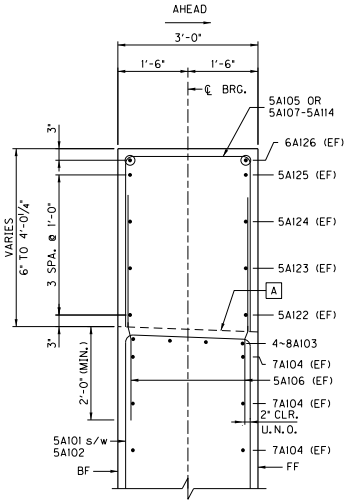
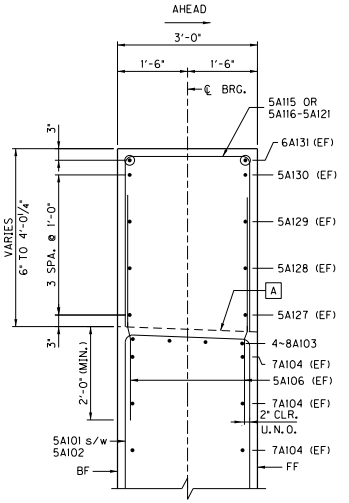


SECTION A



SECTION B



SECTION C

A MANDATORY CONST. JT. (TYP)
WINGS SHALL BE POURED AFTER BEAMS ARE SET AND TENSIONING RODS ARE TIGHTENED

LEGEND

(EF) - EACH FACE
(BF) - BACK FACE
(FF) - FRONT FACE
s/w - SPLICE WITH
spa/w - SPACE WITH
S.A.S. - SPA. AS SHOWN
U.N.O. - UNLESS NOTED OTHERWISE

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY Palmer ENGINEERING

DATE:	NOVEMBER, 2022	CHECKED BY
DESIGNED BY:	L.A. BEATTIE	L.M. SALLEE
DETAILED BY:	J.A. ROSE	L.A. BEATTIE

END BEND 1 - DETAILS

CROSSING: BALLS FORK

ITEM NO.	DEPT. OBJECT CODE	FEMA BRIDGE
12-0289	D23A	4663-DR
ROUTE	BRIDGE ID	COUNTY OF
CR 1387	060C014	KNOTT
	SHEET NO.	DRAWING NUMBER
	S06	28616

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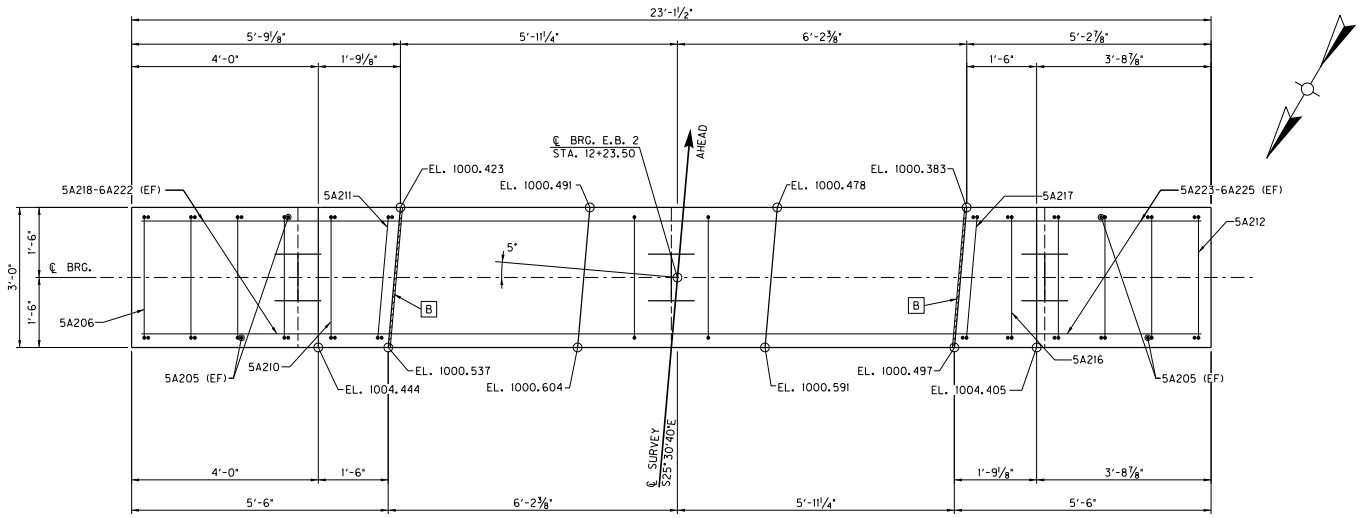
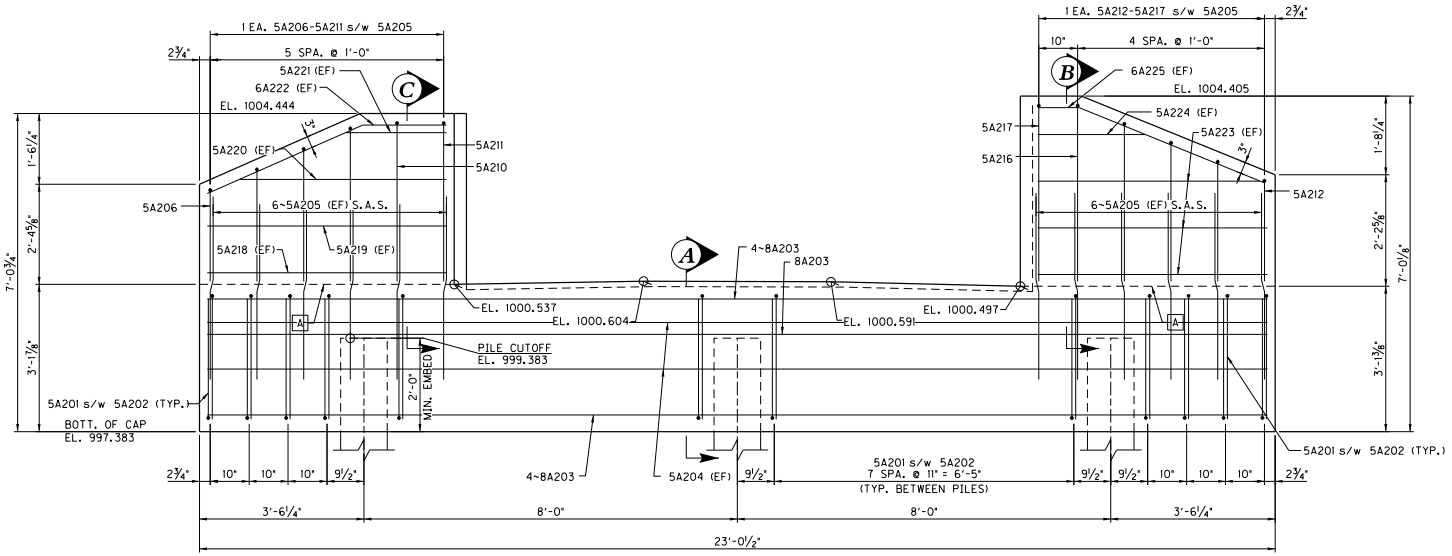


PLAN OF CAP



ELEVATION

(LOOKING AHEAD STATION)

NOTE : SEE SHEET S08 FOR SECTION DETAILS

[A] MANDATORY CONST. JT. (TYP)
WINGS SHALL BE POURED AFTER BEAMS ARE SET AND TENSIONING RODS ARE TIGHTENED

[B] ½" EXPANSION JOINT MATERIAL (TYP)
BETWEEN FACE OF BEAM AND WING

LEGEND

(EF) - EACH FACE
(BF) - BACK FACE
(FF) - FRONT FACE
s/w - SPLICE WITH
spa/w - SPACE WITH
S.A.S. - SPA. AS SHOWN

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY: Palmer ENGINEERING

DATE:	NOVEMBER, 2022	CHECKED BY	
DESIGNED BY:	L.A. BEATTIE	L.M. SALLEE	
DETAILED BY:	J.A. ROSE	L.A. BEATTIE	

END BENT 2

CROSSING: BALLS FORK

ITEM NO.	DEPT. OBJECT CODE	FEMA BRIDGE
12-0289	D23A	4663-DR
ROUTE	BRIDGE ID	COUNTY OF
CR 1387	060C014	KNOTT
	SHEET NO.	DRAWING NUMBER
	S07	28616

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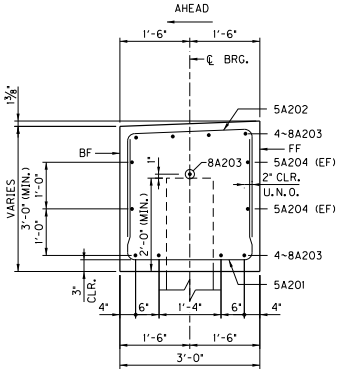
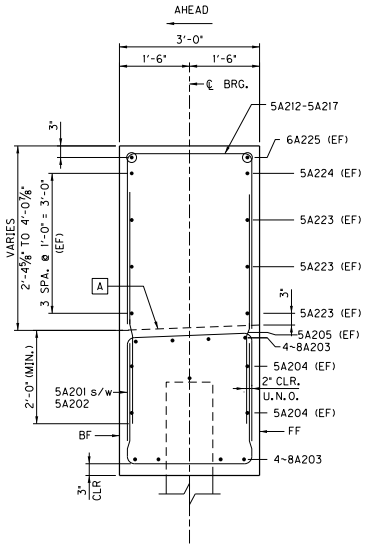
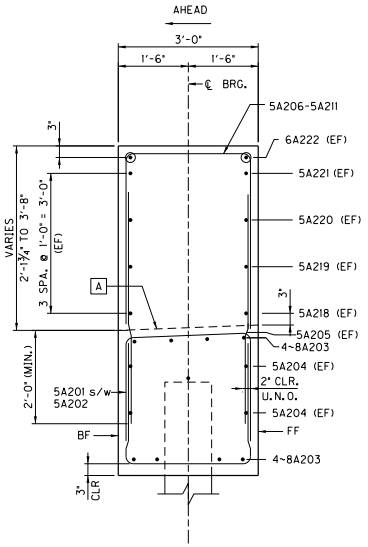


SECTION A



SECTION B



SECTION C

A MANDATORY CONST. JT. (TYP)
WINGS SHALL BE POURED AFTER BEAMS ARE SET AND TENSIONING RODS ARE TIGHTENED

LEGEND

(EF) - EACH FACE
(BF) - BACK FACE
(FF) - FRONT FACE
s/w - SPLICE WITH
spa/w - SPACE WITH
S.A.S. - SPA. AS SHOWN
U.N.O - UNLESS OHTERWISE NOTED

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY Palmer ENGINEERING

DATE:	NOVEMBER, 2022	CHECKED BY	
DESIGNED BY:	L.A. BEATTIE	L.M. SALLEE	
DETAILED BY:	J.A. ROSE	L.A. BEATTIE	

END BENT 2 DETAILS

CROSSING: BALLS FORK

ITEM NO.	DEPT. OBJECT CODE	FEMA BRIDGE
12-0289	D23A	4663-DR
ROUTE	BRIDGE ID	COUNTY OF
CR 1387	060C014	KNOTT
	SHEET NO.	DRAWING NUMBER
	S08	28616

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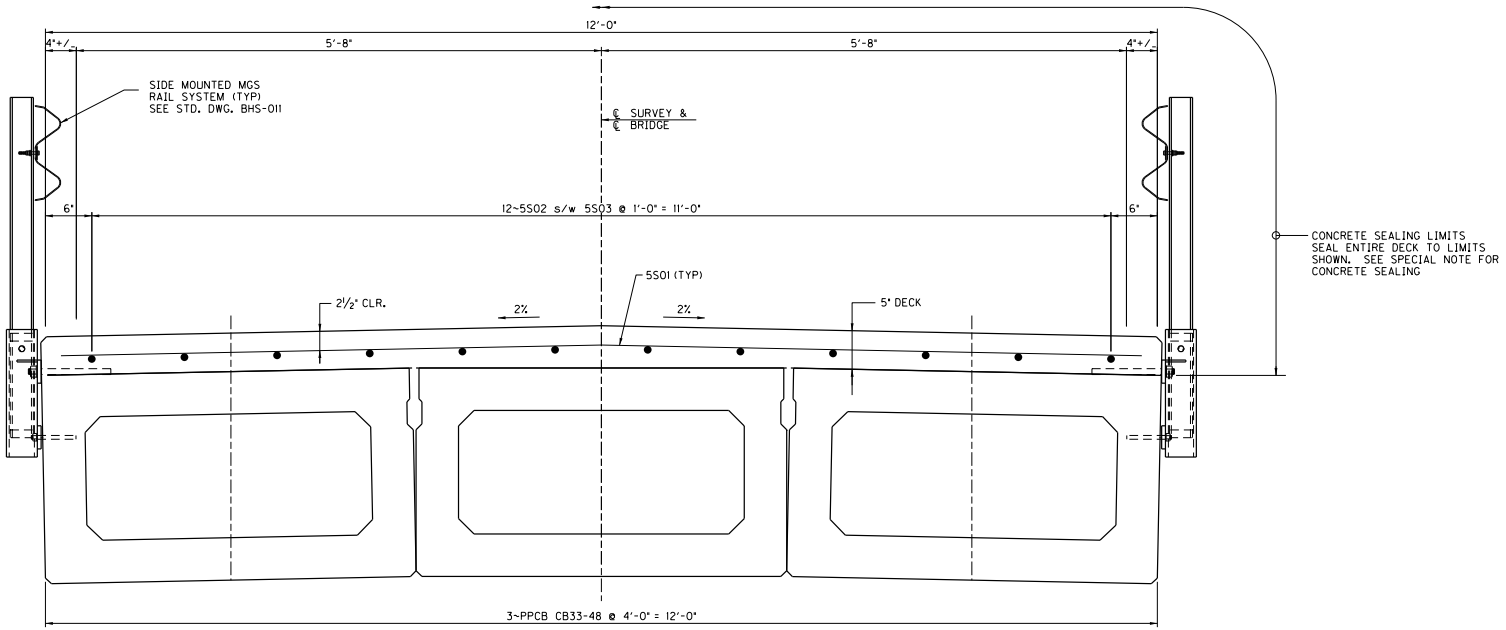
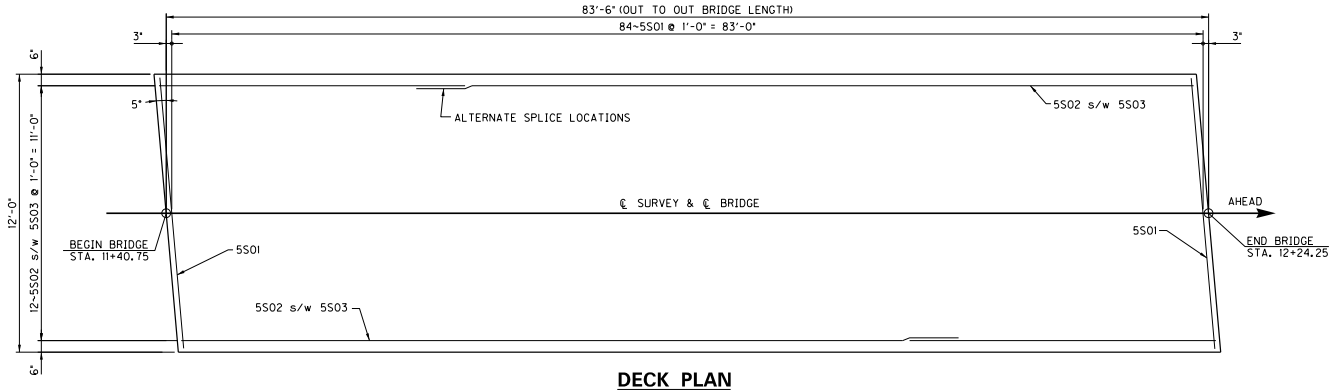


TYPICAL SECTION

(LOOKING AHEAD)



DECK PLAN

MINIMUM LAP SPLICES
#5 BARS - 2'-6"

BILL OF REINFORCEMENT – DECK

MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION
5S01(E)	STR.	84	#5	11'-8"	DECK
5S02(E)	STR.	12	#5	60'-0"	DECK
5S03(E)	STR.	12	#5	25'-8"	DECK

1. THE ENTIRE DECK SHALL BE POURED CONTINUOUSLY FROM END TO END OF THE SLAB BEFORE THE CONCRETE IS ALLOWED TO SET. THE CONCRETE SHALL REMAIN PLASTIC THROUGHOUT THE CONCRETE PLACEMENT.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY Palmer ENGINEERING

DATE:	NOVEMBER, 2022	CHECKED BY	
DESIGNED BY:	L.A. BEATTIE	L.M. SALLEE	
DETAILED BY:	M.B. HAGGARD	L.A. BEATTIE	

DECK DETAILS

CROSSING: BALLS FORK

ITEM NO.	DEPT. OBJECT CODE	FEMA BRIDGE
12-0289	D23A	4663-DR
ROUTE: CR 1387	BRIDGE ID: 060C014	COUNTY OF: KNOTT
	SHEET NO.: S09	DRAWING NUMBER: 28616

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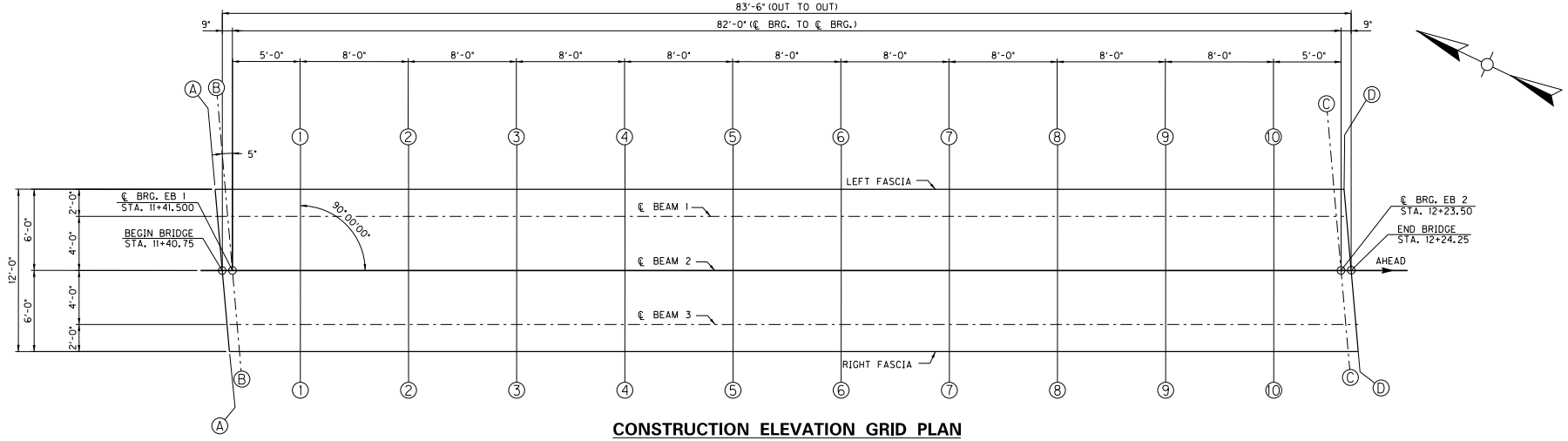
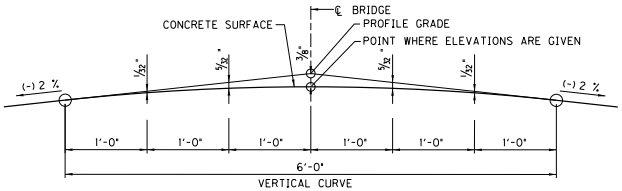
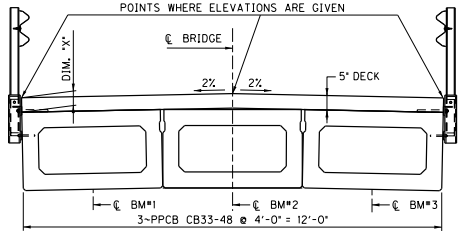


CONSTRUCTION ELEVATION GRID PLAN



PARABOLIC CROWN



TYPICAL SECTION

(LOOKING AHEAD)

TABLE OF ELEVATIONS									
LINE	LEFT FASCIA			PROFILE GRADE			RIGHT FASCIA		
	CONSTR. ELEV.	TOP OF GIRDER	DIM. "X"	CONSTR. ELEV.	TOP OF GIRDER	DIM. "X"	CONSTR. ELEV.	TOP OF GIRDER	DIM. "X"
A - A	1007.012			1007.081			1006.972		
B - B	1006.983			1007.052			1006.944		
C - C	1003.895			1003.964			1003.855		
D - D	1003.867			1003.936			1003.827		
1 - 1	1006.775			1006.864			1006.775		
2 - 2	1006.474			1006.563			1006.474		
3 - 3	1006.173			1006.261			1006.173		
4 - 4	1005.871			1005.960			1005.871		
5 - 5	1005.570			1005.659			1005.570		
6 - 6	1005.269			1005.357			1005.269		
7 - 7	1004.967			1005.056			1004.967		
8 - 8	1004.666			1004.755			1004.666		
9 - 9	1004.365			1004.454			1004.365		
10 - 10	1004.063			1004.152			1004.063		

NOTES FOR ELEVATIONS TAKEN ON PRESTRESSED CONCRETE BOX BEAMS

TAKE ELEVATIONS ON TOP OF BEAM AT POINTS INDICATED BY THE GRID LAYOUT. THE BEAM ELEVATIONS ARE TO BE READ TO THREE DECIMALS, 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 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 BEAMS WHEN POURING THE CONCRETE FLOOR SLAB OR WHEN TAKING "TOP OF BEAM" ELEVATIONS.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY Palmer ENGINEERING

DATE:	NOVEMBER, 2022	CHECKED BY	
DESIGNED BY:	L.A. BEATTIE	L.M. SALLEE	
DETAILED BY:	M.B. HAGGARD	L.A. BEATTIE	

CONSTRUCTION ELEVATIONS

CROSSING: BALLS FORK

ITEM NO.	DEPT. OBJECT CODE	FEMA BRIDGE
12-0289	D23A	4663-DR
ROUTE	BRIDGE ID	COUNTY OF
CR 1387	060C014	KNOTT
	SHEET NO.	DRAWING NUMBER
	S10	28616

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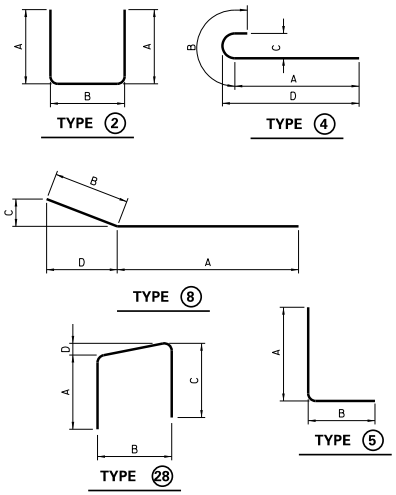
BILL OF REINFORCEMENT – END BENT 1

MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	a	b	c	d	e
5A101(S)(E)	2	34	# 5	11'-2"	CAP BEAM	4'-3"	2'-8"			
5A102(S)(E)	28	34	# 5	10'-5"	CAP BEAM	3'-10"	2'-8"	3'-11"	1"	
8A103(E)	STR.	9	# 8	34'-10"	CAP BEAM					
7A104(E)	STR.	10	# 7	34'-10"	CAP BEAM					
5A105(S)(E)	2	5	# 5	10'-4"	LEFT WING	3'-10"	2'-8"			
5A106(E)	STR.	28	# 5	5'-0"	WING DOWEL					
5A107(S)(E)	2	1	# 5	7'-0"	LEFT WING	2'-2"	2'-8"			
5A108(S)(E)	2	1	# 5	7'-8"	LEFT WING	2'-6"	2'-8"			
5A109(S)(E)	2	1	# 5	8'-2"	LEFT WING	2'-9"	2'-8"			
5A110(S)(E)	2	1	# 5	9'-0"	LEFT WING	3'-2"	2'-8"			
5A111(S)(E)	2	1	# 5	9'-8"	LEFT WING	3'-6"	2'-8"			
5A112(S)(E)	2	1	# 5	10'-0"	LEFT WING	3'-8"	2'-8"			
8A113(S)(E)	2	1	# 5	10'-2"	LEFT WING	3'-9"	2'-8"			
5A114(S)(E)	2	1	# 5	10'-3"	LEFT WING	3'-9"	2'-8½"			
5A115(S)(E)	2	5	# 5	11'-0"	RIGHT WING	4'-2"	2'-8"			
5A116(S)(E)	2	1	# 5	7'-8"	RIGHT WING	2'-6"	2'-8"			
5A117(S)(E)	2	1	# 5	8'-6"	RIGHT WING	2'-11"	2'-8"			
5A118(S)(E)	2	1	# 5	9'-2"	RIGHT WING	3'-3"	2'-8"			
5A119(S)(E)	2	1	# 5	10'-0"	RIGHT WING	3'-8"	2'-8"			
5A120(S)(E)	2	1	# 5	10'-2"	RIGHT WING	3'-9"	2'-8"			
5A121(S)(E)	2	1	# 5	10'-3"	RIGHT WING	3'-9"	2'-8½"			
5A122(E)	STR.	2	# 5	11'-10"	LEFT WING					
5A123(E)	STR.	2	# 5	9'-3"	LEFT WING					
5A124(E)	STR.	2	# 5	6'-2"	LEFT WING					
5A125(E)	STR.	2	# 5	3'-2"	LEFT WING					
6A126(E)	8	2	# 6	12'-5"	LEFT WING	11'-2"	1'-3"	4⅝"	1'-2¼"	
5A127(E)	STR.	2	# 5	10'-2"	RIGHT WING					
5A128(E)	STR.	2	# 5	7'-11"	RIGHT WING					
5A129(E)	STR.	2	# 5	5'-5"	RIGHT WING					
5A130(E)	STR.	2	# 5	2'-10"	RIGHT WING					
6A131(E)	8	2	# 6	10'-9"	RIGHT WING	9'-6"	1'-3"	5½"	1'-2"	

BILL OF REINFORCEMENT – END BENT 2

MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	a	b	c	d	e
5A201(S)(E)	2	24	# 5	7'-10"	CAP BEAM	2'-7"	2'-8"			
5A202(S)(E)	28	24	# 5	8'-1"	CAP BEAM	2'-8"	2'-8"	2'-9"	1"	
8A203(E)	STR.	9	# 8	22'-8"	CAP BEAM					
5A204(E)	STR.	4	# 5	22'-8"	CAP BEAM					
5A205(E)	STR.	24	# 5	5'-0"	WING DOWELS					
5A206(S)(E)	2	1	# 5	7'-2"	LEFT WING	2'-3"	2'-8"			
5A207(S)(E)	2	1	# 5	8'-0"	LEFT WING	2'-8"	2'-8"			
5A208(S)(E)	2	1	# 5	8'-10"	LEFT WING	3'-1	2'-8"			
5A209(S)(E)	2	1	# 5	9'-6"	LEFT WING	3'-5"	2'-8"			
5A210(S)(E)	2	1	# 5	10'-2"	LEFT WING	3'-9"	2'-8"			
5A211(S)(E)	2	1	# 5	10'-3"	LEFT WING	3'-9"	2'-8½"			
5A212(S)(E)	2	1	# 5	7'-0"	RIGHT WING	2'-2"	2'-8"			
5A213(S)(E)	2	1	# 5	7'-10"	RIGHT WING	2'-7"	2'-8"			
5A214(S)(E)	2	1	# 5	8'-8"	RIGHT WING	3'-0"	2'-8"			
5A215(S)(E)	2	1	# 5	9'-6"	RIGHT WING	3'-5"	2'-8"			
5A216(S)(E)	2	1	# 5	10'-2"	RIGHT WING	3'-9"	2'-8"			
5A217(S)(E)	2	1	# 5	10'-3"	RIGHT WING	3'-9"	2'-8½"			
5A218(E)	STR.	2	# 5	5'-2"	LEFT WING					
5A219(E)	STR.	2	# 5	5'-2"	LEFT WING					
5A220(E)	STR.	2	# 5	4'-5"	LEFT WING					
5A221(E)	STR.	2	# 5	2'-1"	LEFT WING					
6A222(E)	8	2	# 6	5'-2"	LEFT WING	3'-11"	1'-3"	6"	1'-1¾"	
5A223(E)	STR.	6	# 5	4'-11"	RIGHT WING					
5A224(E)	STR.	2	# 5	2'-6"	RIGHT WING					
6A225(E)	8	2	# 6	5'-0"	RIGHT WING	3'-9"	1'-3"	5⅝"	1'-1⅞"	



NOTE : REINFORCING BARS DESIGNATED WITH SUFFIX (E) IN PLANS SHALL BE EPOXY COATED IN ACCORDANCE WITH THE SPECIFICATIONS.

REINFORCING BARS DESIGNATED WITH THE SUFFIX (S) IN PLANS ARE STIRRUP BARS.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY Palmer ENGINEERING

DATE:	NOVEMBER, 2022	CHECKED BY	
DESIGNED BY:	L.A. BEATTIE	L.M. SALLEE	
DETAILED BY:	J.A. ROSE	L.A. BEATTIE	

BILL OF REINFORCEMENT

CROSSING: BALLS FORK

ITEM NO.	DEPT. OBJECT CODE	FEMA BRIDGE
12-0289	D23A	4663-DR
ROUTE	BRIDGE ID	COUNTY OF
CR 1387	060C014	KNOTT
	SHEET NO.	DRAWING NUMBER
	S11	28616

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Drilling Firm: Kentucky Transportation Cabinet
For: Division of Structural Design
Geotechnical Branch

DRILLER'S SUBSURFACE LOG

Printed: 9/6/22

Project ID: 060C014	Knott - DOBSON DR (CR 1387)	Project Type: Structure Bridge
Item Number:		Project Manager:

Hole Number 1	Immediate Water Depth NA	Start Date 09/01/2022	Hole Type sounding
Surface Elevation 1002.3	Static Water Depth NA	End Date 09/01/2022	Rig_Number
Total Depth 15.7'	Driller Cody Davidson	Latitude(83) 37.399715	
Location + 'Lt.		Longitude(83) -83.052309	

Lithology Elevation	Lithology Depth	Description (Overburden / Rock Core)	Sample No. Std/Ky RQD	Depth (ft) Run (ft)	Rec. (ft) Rec (ft)	SPT Blows Rec (%)	Sample Type SDI (JS)	Remarks
	0.6	Limestone gravel.						
		Medium stiff, brown, moist, sandy clay with rock fragments.						
	14.1	(Refusal)						
	15.7	Medium hard, gray, shale.						
		Hard, gray, shale.						
		(Bottom of Hole 15.7') (Refusal @ 14.1)						

Drilling Firm: Kentucky Transportation Cabinet
For: Division of Structural Design
Geotechnical Branch

DRILLER'S SUBSURFACE LOG

Printed: 9/6/22

Project ID: 060C014	Knott - DOBSON DR (CR 1387)	Project Type: Structure Bridge
Item Number:		Project Manager:

Hole Number 2	Immediate Water Depth NA	Start Date 09/01/2022	Hole Type sounding
Surface Elevation 1004.8	Static Water Depth NA	End Date 09/01/2022	Rig_Number
Total Depth 16.6'	Driller Cody Davidson	Latitude(83) 37.399715	
Location + 'Lt.		Longitude(83) -83.052309	

Lithology Elevation	Lithology Depth	Description (Overburden / Rock Core)	Sample No. Std/Ky RQD	Depth (ft) Run (ft)	Rec. (ft) Rec (ft)	SPT Blows Rec (%)	Sample Type SDI (JS)	Remarks
	0.6	Limestone gravel.						
		Medium stiff, brown, moist, sandy clay with rock fragments and sandstone boulders.						
	15.6	(Refusal)						
	16.6	Medium hard, gray, shale.						
		Hard, gray, shale.						
		(Bottom of Hole 16.6') (Refusal @ 15.6)						

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY Palmer ENGINEERING

DATE:	NOVEMBER, 2022	CHECKED BY	
DESIGNED BY:	L.A. BEATTIE	L.M. SALLEE	
DETAILED BY:	J.A. ROSE	L.A. BEATTIE	

BORING LOGS

CROSSING: BALLS FORK

ITEM NO.	DEPT. OBJECT CODE	FEMA BRIDGE
12-0289	D23A	4663-DR
ROUTE	BRIDGE ID	COUNTY OF
CR 1387	060C014	KNOTT
	SHEET NO.	DRAWING NUMBER
	S12	28616

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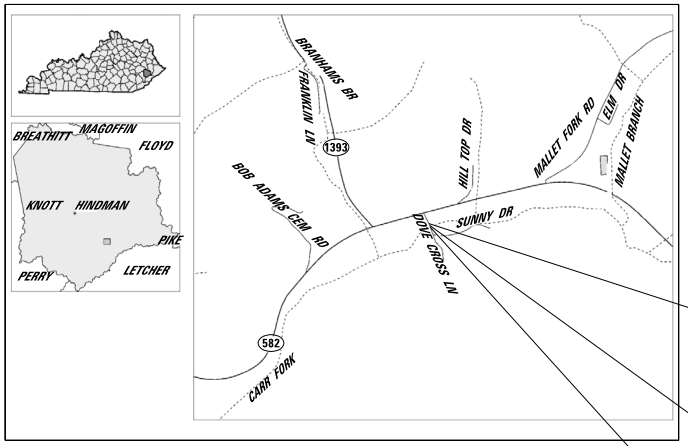
TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
KNOTT COUNTY
DOVE CROSS LANE (CR 1538) OVER CARR FORK
FEMA BRIDGE: 4663-DR
STA. 6+27.75

COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	N/A	R1

STANDARD DRAWINGS

BDP-001-06	BOX BEAM GENERAL NOTES AND REFERENCES
BDP-002-03	BOX BEAM BEARING DETAILS
BDP-003-03	BOX BEAM MISCELLANEOUS DETAILS
BDP-004-04	BOX BEAM TENSION ROD DETAILS
BDP-008-04	BOX BEAM CB21 DETAILS
BGX-006-10	STENCILS FOR STRUCTURES
BHS-011	RAILING SYSTEM SIDE MOUNTED MGS DETAILS
BJE-001-14	ARMORED EDGES
BPS-011-04	HP 14X89 STEEL PILE
RBR-010-06	GUARDRAIL TERMINAL SECTIONS
RBR-055-01	DELINEATORS FOR GUARDRAIL
RDI-040-01	EROSION CONTROL BLANKET SLOPE INSTALLATION
RDX-210-03	TEMPORARY SILT FENCE
RDX-220-05	SILT TRAP TYPE A
RDX-225-01	SILT TRAP TYPE B
RDX-230-1	SILT TRAP TYPE C
RGX-001-06	MISCELLANEOUS STANDARDS
RGX-100-07	TREATMENT OF EMBANKMENTS AT END-BENTS
RGX-105-09	TREATMENT OF EMBANKMENTS AT END-BENTS - DETAILS
RPM-110-07	APPROACHES, ENTRANCES AND MAIL BOX TURNOUT
TTC150-04	ROAD CLOSURE WITH DIVERSON
TTC155-02	TEMP. PAVEMENT MARKER ARRANGEMENTS FOR CONST. ZONES

ACTIVE SEPIAS



BEGIN CONSTRUCTION STA.5+85.00

STA. 6+27.75 CONST. 1 SPAN (56.0') CB 21x48 BOX BEAM BRIDGE @ 0°SKEW

END CONSTRUCTION STA. 6+75.00

LOCATION MAP

GRAPHIC SCALE

0' 4000' 8000'

INDEX OF SHEETS

Sheet No.	Description
R1	LAYOUT SHEET
R2	LEGEND AND TYPICAL SECTIONS
R3	ROADWAY PLAN SHEET
R4	ROADWAY PROFILE SHEET
X1-X3	CROSS SECTIONS
S1	TITLE SHEET
S2	GENERAL NOTES
S3	LAYOUT
S4	FOUNDATION LAYOUT
S5	END BENT #1 DETAILS
S6	END BENT #2 DETAILS
S7	SUPERSTRUCTURE
S8	CONSTRUCTION ELEVATIONS

SPECIAL NOTES

CONCRETE SEALING
PLACING BRIDGE OVERLAY APPROACH PAVEMENT
EROSION PREVENTION AND SEDIMENT CONTROL
TRAFFIC CONTROL ON BRIDGE REPAIR CONTRACTS

SPECIAL PROVISIONS

69 EMBANKMENT AT BRIDGE END BENT STRUCTURES

SPECIFICATIONS

2019 Standard Specifications for Road and Bridge Construction.

2020 AASHTO LRFD Bridge Design Specifications with Current Interims.

REVISION	DATE

DESIGN CRITERIA

CLASS OF HIGHWAY: RURAL LOCAL
TYPE OF TERRAIN: MOUNTAIN
DESIGN SPEED
REQUIRED NPSD
REQUIRED PSD
LEVEL OF SERVICE
ADT PRESENT ( )
ADT FUTURE ( )
DHV
D %
T %

GEOGRAPHIC COORDINATES

LATITUDE 37 DEGREES 27 MINUTES 00 SECONDS NORTH
LONGITUDE 82 DEGREES 82 MINUTES 00 SECONDS WEST

DESIGNED

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

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.

REV. NO.	SHEETS REVISED	DATE

TABLE OF REVISIONS

EX BRIDGE ID 060C001

PREPARED BY
J.M. Crawford & Associates Consulting Engineers

STATE OF KENTUCKY
P. STUART MCINTOSH
19302
LICENSED PROFESSIONAL ENGINEER

Philip S. McIntosh
Digitally signed by Philip S. McIntosh
Date: 2022.12.16 14:57:29 -05'00'

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS
COUNTY OF
KNOTT
DOVE CROSS LANE OVER CARR FORK

ITEM NO. N/A
DRAWING NO. 28541
PROJECT NUMBER:
LETTING DATE:

RECOMMENDED BY: _____ PROJECT MANAGER DATE:
PLAN APPROVED BY: _____ STATE HIGHWAY ENGINEER DATE:

FILE NAME: $DGNSPEC$
USER: $USER$ DATE PLOTTED: $DATE$ $TIME$
E-SHEET NAME:
MicroStation v8.11.9.919

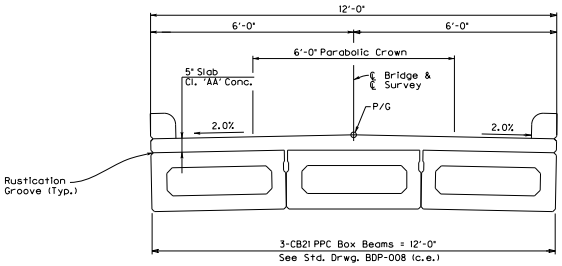
TYPICAL SECTIONS

CONVENTIONAL SIGNS

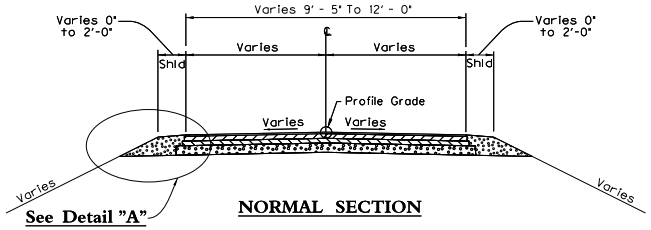
SURVEY LINE
GRADE LINE
GROUND LINE
COUNTY LINE
CORPORATE LIMITS
EXIST. PROPERTY LINE
EXIST. RIGHT OF WAY & PROPERTY LINE
PROPOSED RIGHT OF WAY
RIGHT OF WAY MONUMENT
BENCH MARK
EXISTING R/W MARKER
RIGHT OF WAY MONUMENT EXISTING/PROPOSED
UTILITY TEST HOLE
EXISTING ROAD
RAILROAD
FENCE (CONTROLLED ACCESS)
FENCE (EXCEPT STONE AND HEDGE)
TREE LINE
TREES
PIPE CULVERT
CULVERT
BRIDGE
BUILDINGS
GUARDRAIL

	EXISTING	PROPOSED
LIGHTING POLE		
POWER POLE		
JOINT POWER & TELEPHONE POLE		
TELEPHONE & TELEGRAPH POLE		
ANCHOR, POWER OR TELEPHONE		
STUB POWER		
STUB TELEPHONE		
WATER MAIN	WM	6" WM
GAS MAIN	GM	6" GM
TELEPHONE DUCT	T	T
ELECTRIC DUCT	E	E
DIRECT BURIAL TV CABLE	TV	TV
SANITARY SEWER (WITH MANHOLE)	SAN	SAN
STORM SEWER (WITH MANHOLE)	STORM	STORM
DIRECT BURIAL ELECTRIC CABLE	E	E
DIRECT BURIAL TELEPHONE CABLE	T	T
OVERHEAD WIRE		
TRAFFIC LIGHTS		
ELECTRIC MANHOLE	EMH	EMH
TELEPHONE MANHOLE	TMH	TMH

STONE FENCE
HEDGE FENCE
SWAMP OR MARSH
SPRINGS
SINKHOLE
QUARRY SITE
BLUE LINE STREAM
INTERMITTENT STREAM OR DITCH
LAKES OR PONDS
REGULATED FLOODWAY
NORTH POINT



BRIDGE DECK SECTION



NORMAL SECTION

Traffic Lane Pavement

Asphalt Surface	1¼" Depth Cl. 2 Asphalt Surface 0.38D PG64-22
Asphalt Base	8" Depth (4"+4") Cl. 2 Asphalt Base 1.00D PG 64-22
DGA Base	8" Depth (4"+4")

Shoulders

DGA Base	Full Depth

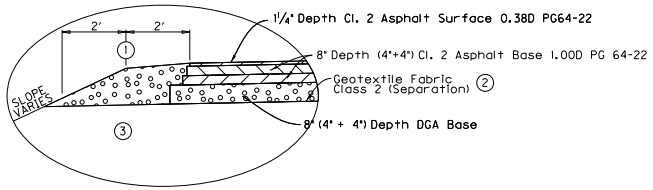
NOTES:

1. ASPHALT SEAL REQUIRED FROM OUTSIDE EDGE OF PAVEMENT TO A POINT 2' DOWN THE DITCH OR FILL SLOPE. TWO APPLICATIONS OF THE FOLLOWING:

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

2. GEOTEXTILE FABRIC CLASS 2 (SEPARATION SHALL BE INCIDENTAL TO DGA.
3. GRANULAR EMBANKMENT FOR NECESSARY WIDENING LOCATIONS AS APPROVED BY ENGINEER

NOTES:
MATERIAL NEEDED FOR SHOULDERS OUTSIDE OF PAVED AREA WILL BE MEASURED AND PAID AS GRANULAR EMBANKMENT. GEOTEXTILE FABRIC CLASS II (SEPARATION) SHALL BE INCIDENTAL TO GRANULAR EMBANKMENT.

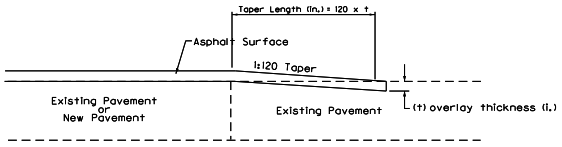


Detail "A"

FULL-DEPTH MAINLINE & SHOULDER PAVEMENT RECONSTRUCTION

NOT TO SCALE

TAPERING OF OVERLAYS ON LOW SPEED FACILITIES < (45mph)



EDGE KEY

Work under this item shall include cutting out the existing asphalt surface to a minimum depth and width as shown, so the new surface may heel into the existing surface. The contract unit price bid per linear foot for EDGE KEY shall include all necessary materials, labor, equipment, etc. to perform the work and dispose of the bituminous material removed.

KNOTT COUNTY
BRIDGE# 060C001
DOVE CROSS LN OVER CARR FORK

Point	Description	Northing	Easting	Elevation	Station	Offset
CP #1	MAG NAIL	3636600.961	5751142.06	1096.494	4+79.43	15.54' RT
CP #2	MAG NAIL	3636372.153	5751270.82	1098.245	7+41.83	9.59' LT

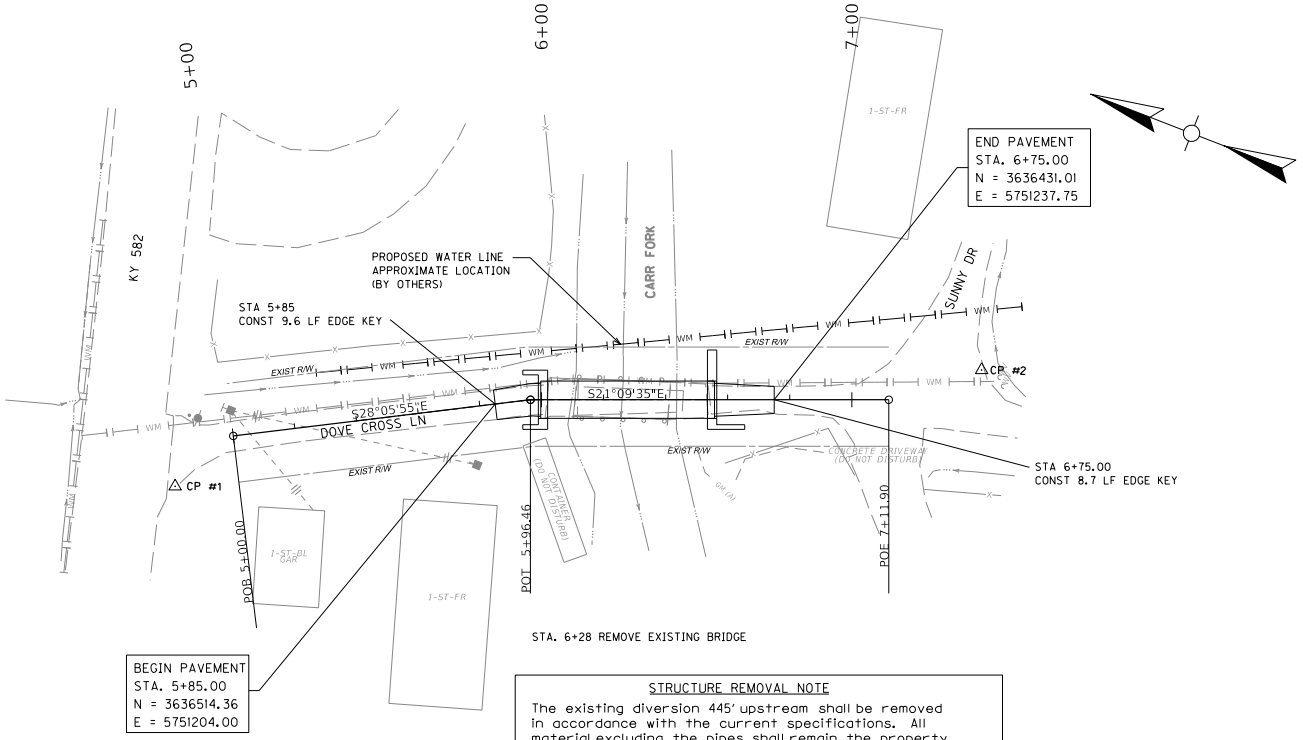
Project Control
Coordinates for horizontal control were established using the KY CORS Network NAD 83 using Trimble R12's on the Kentucky Single Zone Network, US Survey Feet on August 15th, 2022. Values are expressed in US Survey Feet. No project datum factor was calculated for this project.

Basis of Elevations
The elevations were established using GPS.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: TYPICAL SECTIONS AND LEGEND
DOVE CROSS LANE (CR 1538) OVER CARR FORK

ITEM NO. N/A
COUNTY OF KNOTT
SHEET NO. R2



STRUCTURE REMOVAL NOTE

The existing diversion 445' upstream shall be removed in accordance with the current specifications. All material excluding the pipes shall remain the property of the contractor and shall be disposed of in accordance with the current specifications. Lump sum payment in full shall include the complete removal of all material. The contractor shall final dress all slopes.

Pipes will be delivered to:

KYTC Department of Highways
Knott County Maintenance
1894 Highway 160 South
Hindman, KY 41822

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: ROADWAY PLAN
DOVE CROSS LANE (CR 1538) OVER CARR FORK

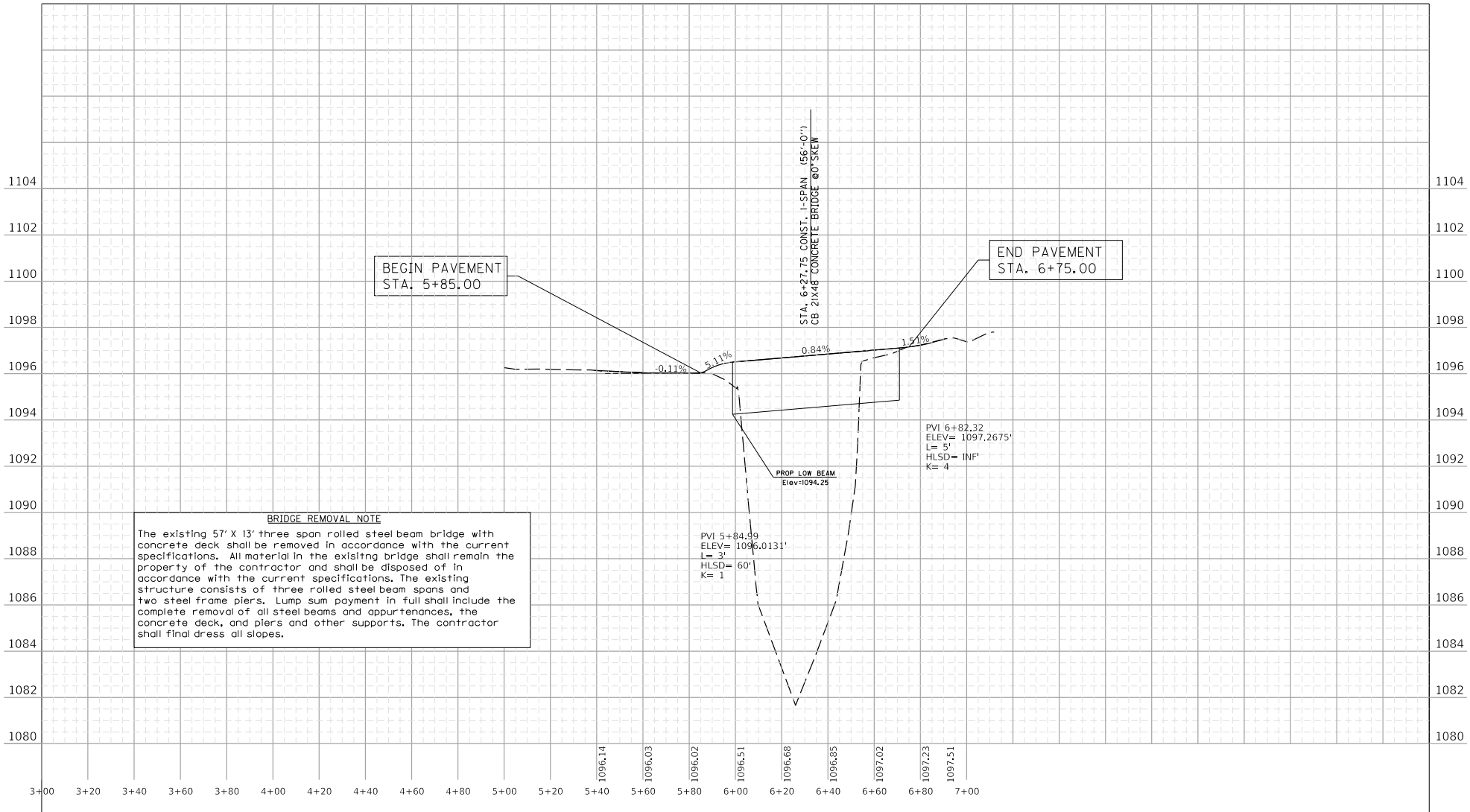
HORIZONTAL SCALE
SCALE: 1" = 20'

0' 20' 40' 80'

STA 5+85.00 TO 6+75

ITEM NO. N/A
COUNTY OF KNOTT
SHEET NO. R3

OpenRoads Designer v10.16.0.80 USER: gdchilders DATE PLOTTED: 9/7/2005 7:08:02 PM FILE NAME: G:\KY\KNOTT\DOVE CROSS LANE (CR 1538)\ROADWAY\DOVE_CROSS_MAINLINE_PLAN_PROFILE.DGN



BRIDGE REMOVAL NOTE

The existing 57' X 13' three span rolled steel beam bridge with concrete deck shall be removed in accordance with the current specifications. All material in the exisitng bridge shall remain the property of the contractor and shall be disposed of in accordance with the current specifications. The existing structure consists of three rolled steel beam spans and two steel frame piers. Lump sum payment in full shall include the complete removal of all steel beams and appurtenances, the concrete deck, and piers and other supports. The contractor shall final dress all slopes.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: ROADWAY PROFILE
DOVE CROSS LANE (CR 1538)
OVER CARR FORK

HORIZONTAL SCALE: 1"=20'

VERTICAL SCALE: 1"=2'

STA 5+85 TO 6+75

ITEM NO. N/A
COUNTY OF KNOTT
SHEET NO. R4

OpenRoads Designer v10.16.0.80
USER: gdchilders
DATE PLOTTED: 9/7/2005 7:08:02 PM
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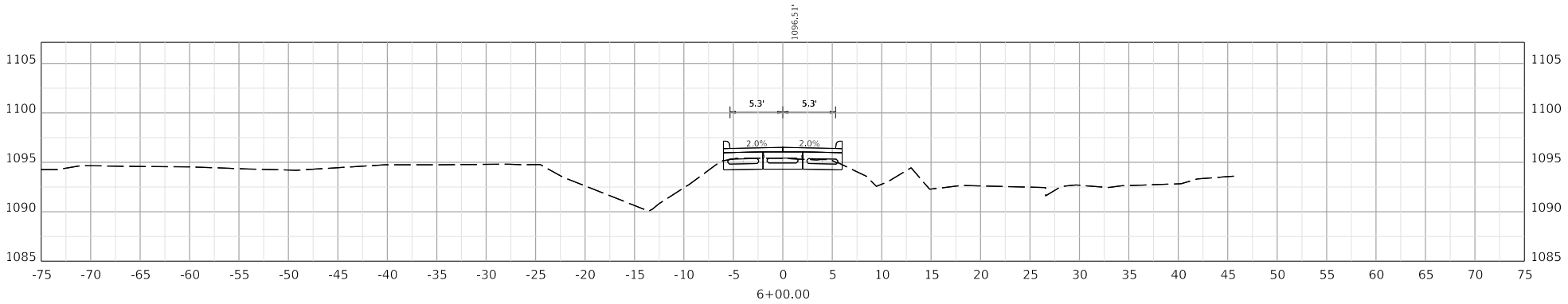
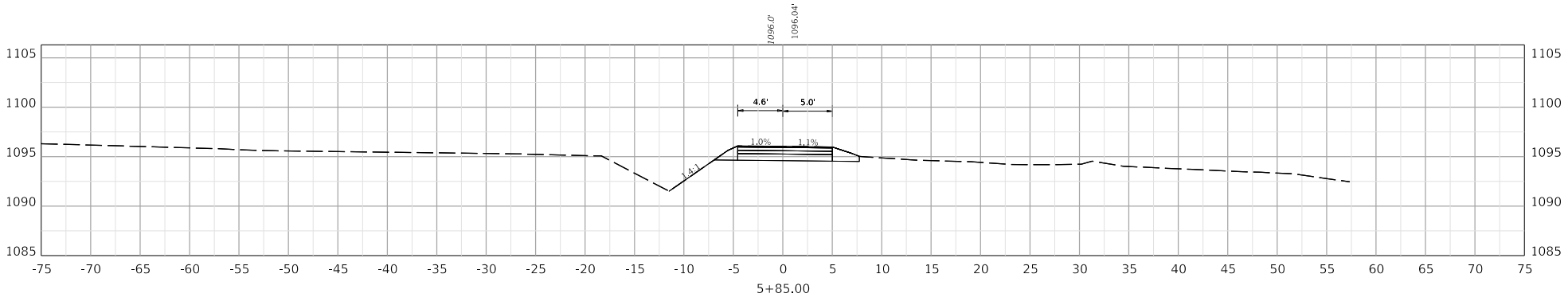
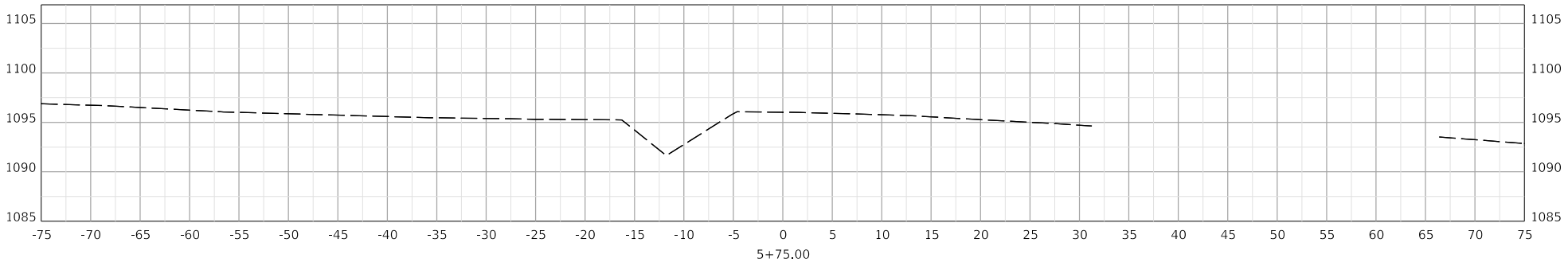


6+00.00



5+85.00



5+75.00

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: CROSS SECTIONS
DOVE CROSS LANE (CR 1538) OVER CARR FORK

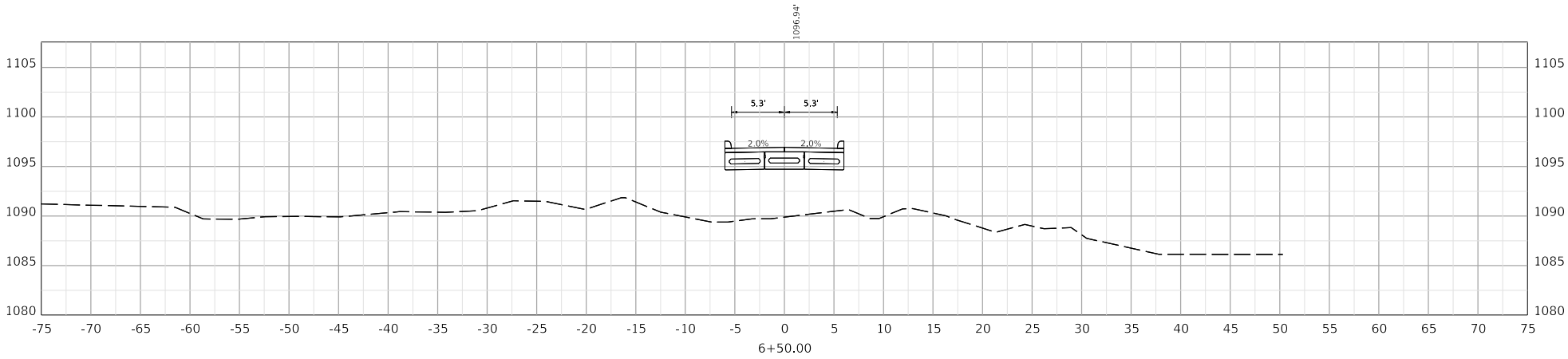
HORIZONTAL SCALE
SCALE: 1" = 5'

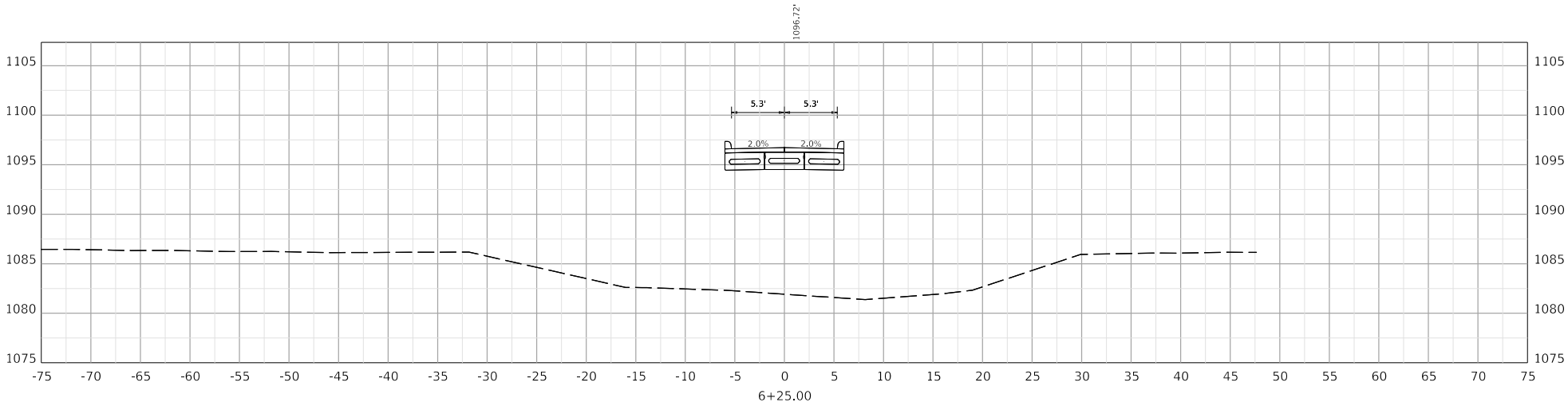
0' 5' 10' 20'

STA 5+75 TO 6+00

ITEM NO. N/A
COUNTY OF KNOTT
SHEET NO. X1

OpenRoads Designer v10.16.0.80 USER: gdchilders DATE PLOTTED: 9/7/2005 7:08:02 PM FILE NAME: G:\KY\KNOTT\DOVE CROSS LANE (CR 1538)\ROADWAY\DOVE_CROSS_MAINLINE_XS.DGN





COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: CROSS SECTIONS
DOVE CROSS LANE (CR 1538) OVER CARR FORK

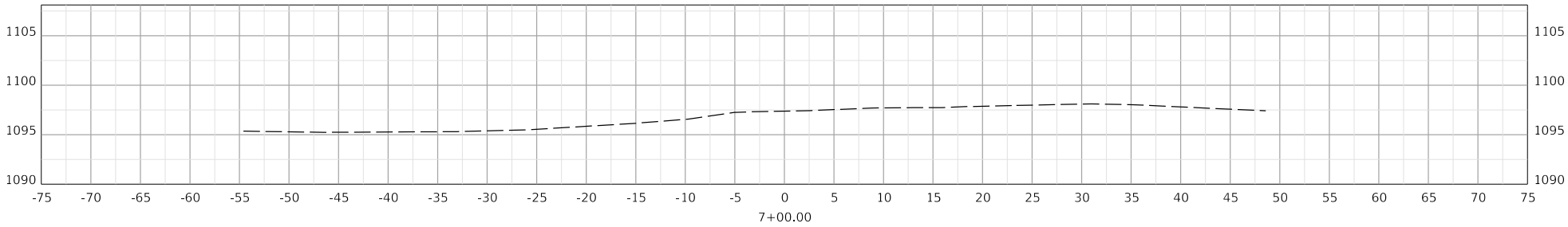
HORIZONTAL SCALE
SCALE: 1" = 5'

0' 5' 10' 20'

STA 6+25 TO 6+50

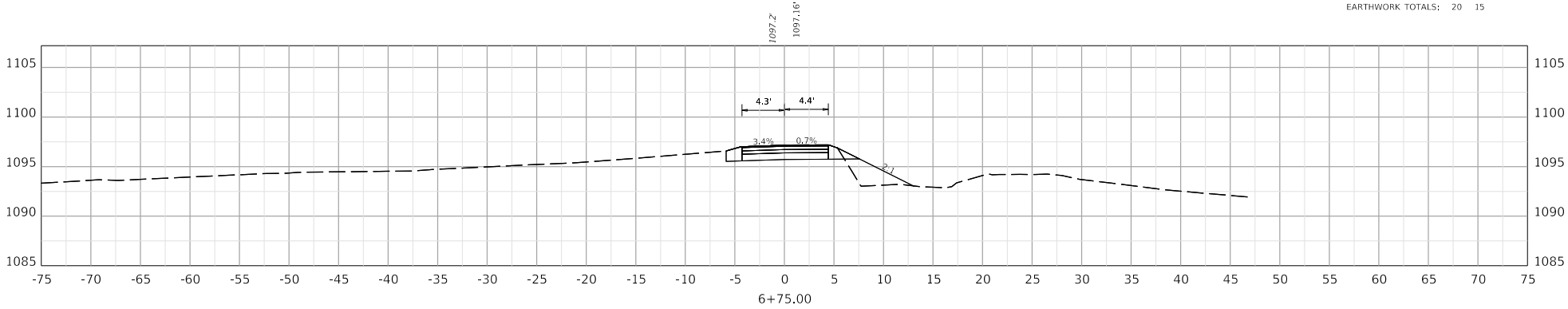
ITEM NO. N/A
COUNTY OF KNOTT
SHEET NO. X2

OpenRoads Designer v10.16.0.80 USER: gdchilders DATE PLOTTED: 9/7/2005 7:08:02 PM FILE NAME: G:\KY\KNOTT\DOVE CROSS LANE (CR 1538)\ROADWAY\DOVE_CROSS_MAINLINE_XS.DGN



CUT FILL

EARTHWORK TOTALS: 20 15



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: CROSS SECTIONS
DOVE CROSS LANE (CR 1538) OVER CARR FORK

HORIZONTAL SCALE
SCALE: 1" = 5'

0' 5' 10' 20'

STA 6+75 TO 7+00

ITEM NO. N/A
COUNTY OF KNOTT
SHEET NO. X3

OpenRoads Designer v10.16.0.80 USER: gdchilders DATE PLOTTED: 9/7/2005 7:08:02 PM FILE NAME: G:\KY\KNOTT\DOVE CROSS LANE (CR 1538)\ROADWAY\DOVE_CROSS_MAINLINE_XS.DGN

LETTING DATE

CONSTRUCTION PROJECT NO.

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

KNOTT COUNTY
DOVE CROSS LANE (CR 1538)
OVER CARR FORK
STA. 6+27.75

ESTIMATE OF QUANTITIES

BID ITEM CODE		08100	08104	08151	08019	08051	08039	08033	03299	08663	08003	23378EC
BID ITEM		Concrete Class "A"	Concrete Class "AA"	Steel Reinforcement, Epoxy Coated	Cyclopean Stone Rip-Rap	Piles - Steel HP 14 x 89	Pre-Drilling for Piles	Test Piles	Armored Edge for Concrete	Precast PC Box Beam CB21-48	Foundation Preparation	Concrete Sealing
UNIT		C.Y.	C.Y.	LBS.	TON	L.F.	L.F.	L.F.	L.F.	L.F.	L.S.	S.F.
Substructure	End Bent #1	24.9		2136	42	40.2	39.3	25				308
	End Bent #2	31.9		2453	53	59.6	51.5	25				366
Superstructure			13.3	1558					24	168		1152
BRIDGE TOTALS		56.8	13.3	6147	95	99.8	90.8	50	24	168	1	1826

NOTE: Per the General Notes, Structure Granular Backfill and Geotextile Fabric Class 2 shall be incidental to Foundation Preparation. Geotextile Fabric Class 1 shall be incidental to Cyclopean Stone Rip-rap.

REPLACEMENT OF EXISTING
BRIDGE NO. 060C001

DEPARTMENT OBJECT CODE: D23A
SYP FOR UTILITIES: 12-0262.OTH
FEMA CODE: 4663-DR

INDEX OF SHEETS

SPECIAL NOTES

Concrete Sealing

SPECIAL PROVISIONS

69 Embankment at Bridge End Bent Structures

STANDARD DRAWINGS

BDP-001-06	Box Beam General Notes & References
BDP-002-03	Box Beam Bearing Details
BDP-003-03	Box Beam Miscellaneous Details
BDP-004-04	Box Beam Tension Rod Details
BDP-008-04	Box Beam B21 & CB21 Details
BGX-006-10	Stencils for Structures
BGX-022	Joint Waterproofing
BJE-001-14	Armored Edges
BPS-011-04	HP14x89 Steel Pile
RGX-100-07	Treatment of Embankments at End Bents
RGX-105-09	Treatment of Embankments at End Bents-Details
RPM-100-11	Curb and Gutter Curbs and Valley Gutter

Plans Prepared By
J.M. CRAWFORD & ASSOC.
Consulting Engineers

STATE OF KENTUCKY
LEE A. CARLISLE
25709
LICENSED PROFESSIONAL ENGINEER

Lee A. Carlisle

Lee A. Carlisle

SPECIFICATIONS

2019 Standard Specifications for Road and Bridge Construction.

9th Edition AASHTO LRFD Bridge Design Specifications (2020)

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION	DATE	PREPARED BY: JMC JM Crawford & Associates Consulting Engineers	DATE: 9/30/2022	CHECKED BY
				DESIGNED BY: Lee Carlisle	Stuart McIntosh
				DETAILED BY: Greg Crank	Lee Carlisle

TITLE SHEET	ROUTE	ITEM NO.	COUNTY OF
CROSSING: CARR FORK	CR 1538	SHEET NO. S1	KNOTT
			DRAWING NUMBER 28541

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, 9TH EDITION WITH INTERIMS.

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.

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.

MATERIALS DESIGN SPECIFICATIONS

FOR CLASS "A" REINFORCED CONCRETE	F'C = 3500 PSI
FOR CLASS "AA" REINFORCED CONCRETE	F'C = 4000 PSI
FOR STEEL REINFORCEMENT	FY = 60000 PSI

MATERIAL SPECIFICATIONS

AASHTO SPECIFICATIONS OR ASTM, CURRENT EDITION, AS DESIGNATED BELOW SHALL GOVERN THE MATERIALS FURNISHED.

AASHTO M153	PREMOLDED CORK FILLER, TYPE II
AASHTO M-31	DEFORMED AND PLAIN BILLET-STEEL FOR CONCRETE REINFORCEMENT, GRADE 60

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.

CONCRETE

CLASS "AA" CONCRETE IS TO BE USED THROUGHOUT THE SUPERSTRUCTURE. CLASS "A" CONCRETE IS TO BE USED THROUGHOUT THE SUBSTRUCTURE, PRESTRESSED BEAM CONCRETE SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

REINFORCEMENT

DIMENSIONS SHOWN FROM THE FACE OF CONCRETE TO BARS ARE TO CENTER OF BARS UNLESS OTHERWISE SHOWN. 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.

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.

BEVELED EDGES

ALL EXPOSED EDGES SHALL BE BEVELED ¾", UNLESS OTHERWISE SHOWN.

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.

SLOPE PROTECTION

SLOPE PROTECTION AT END BENTS SHALL BE DRY CYCLOPEAN STONE RIPRAP MEETING THE REQUIREMENTS OF SECTIONS 703 AND 805 OF THE SPECIFICATIONS. GEOTEXTILE FABRIC, CLASS 1 SHALL BE PLACED BETWEEN THE EMBANKMENT AND THE SLOPE PROTECTION IN ACCORDANCE WITH STANDARD SPECIFICATIONS 214 AND 843. PAYMENT FOR GEOTEXTILE FABRIC, CLASS 1, SHALL BE CONSIDERED INCIDENTAL TO THE UNIT PRICE BID FOR DRY CYCLOPEAN STONE RIPRAP.

COMPLETION OF THE STRUCTURE

THE CONTRACTOR IS REQUIRED TO COMPLETE THE STRUCTURE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. MATERIAL, LABOR, OR CONSTRUCTION OPERATIONS NOT OTHERWISE SPECIFIED, ARE TO BE INCLUDED IN THE BID ITEM MOST APPROPRIATE TO THE WORK INVOLVED. THIS MAY INCLUDE COFFERDAMS, SHORING, EXCAVATIONS, BACKFILLING, REMOVAL OF ALL OR PARTS OF EXISTING STRUCTURES, PHASE CONSTRUCTION, INCIDENTAL MATERIALS, LABOR, OR ANYTHING ELSE REQUIRED TO COMPLETE THE STRUCTURE.

SHOP DRAWING PROCEDURE

1. FABRICATORS SHALL SUBMIT ALL REQUIRED SHOP PLANS, BY E-MAIL, TO THE DESIGN CONSULTANT FOR REVIEW.
2. DESIGNERS WILL MAKE REVIEW COMMENTS ON THESE ELECTRONIC SUBMISSIONS AS NEEDED AND RETURN THEM TO THE FABRICATOR.
3. UPON RECONCILIATION OF THE DESIGNER'S COMMENTS, FILES SHALL BE RETURNED TO THE DESIGNER.
4. EACH SHEET WILL BE ELECTRONICALLY STAMPED BY THE DESIGNER AND PLANS WILL BE FORWARDED BY EMAIL TO THE KYTC DIVISION OF STRUCTURAL DESIGN'S SHOP PLAN COORDINATOR FOR DISTRIBUTION.
5. ONLY PLANS SUBMITTED DIRECTLY TO THE SHOP PLAN COORDINATOR WILL BE DISTRIBUTED AND ONLY PLANS CONTAINING BOTH THE "DISTRIBUTED BY THE DIVISION OF STRUCTURAL DESIGN" AND THE DESIGNER REVIEW STAMP ARE TO BE USED FOR FABRICATION.

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).

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.

DIMENSIONS

DIMENSIONS ARE FOR A NORMAL TEMPERATURE OF 60 DEGREES FAHRENHEIT. LAYOUT DIMENSIONS ARE HORIZONTAL DIMENSIONS.

SUPERSTRUCTURE SLAB

THE SUPERSTRUCTURE SLAB SHALL BE POURED CONTINUOUSLY FROM END TO END OF SLAB BEFORE THE CONCRETE IS ALLOWED TO SET.

MASTIC TAPE

APPLY MASTIC TAPE AT BRIDGE IN ACCORDANCE WITH STANDARD DRAWING BGX-022, C,E. THE CONTRACTOR SHALL FURNISH ALL PLANS, EQUIPMENT, AND LABOR NECESSARY TO DO THE WORK FOR WHICH NO DIRECT PAYMENT WILL BE MADE.

TEMPORARY SUPPORTS

TEMPORARY SUPPORTS OR SHORING WILL NOT BE PERMITTED UNDER THE BEAMS WHEN POURING THE CONCRETE DECK SLAB OR WHEN TAKING "TOP OF BEAM" ELEVATIONS.

ARMORED EDGE

FABRICATE ARMORED EDGE TO MATCH CROSS SLOPE AND PARABOLIC CROWN AT EACH END OF BRIDGE.

FOUNDATION PREPARATION

FOUNDATION PREPARATION SHALL BE IN ACCORDANCE WITH SECTION 603 OF THE SPECIFICATIONS.

FOUNDATION EXCAVATIONS SHOULD BE PROPERLY BRACED/SHORED TO PROVIDE ADEQUATE SAFETY TO PERSONS WORKING IN OR AROUND EXCAVATIONS, BRACING SHOULD BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL GUIDELINES.

TEMPORARY SHORING, SHEETING, COFFERDAMS, AND/OR DEWATERING METHODS MAY BE REQUIRED TO FACILITATE FOUNDATION CONSTRUCTION, IT SHOULD BE ANTICIPATED THAT GROUNDWATER WILL BE ENCOUNTERED AT FOUNDATION LOCATIONS WITHIN THE FLOOD PLAIN.

TEMPORARY SHORING, BRACING, SHEETING, COFFERDAMS AND DEWATERING SHALL BE INCLUDED IN THE LUMP SUM BID FOR FOUNDATION PREPARATION.

STRUCTURE GRANULAR BACKFILL

THE ESTIMATED QUANTITY OF STRUCTURE GRANULAR BACKFILL IS 123.7 C.Y., AND MATERIALS FOR STRUCTURE GRANULAR BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 805 OF THE SPECIFICATIONS.

CONTRARY TO THE SPECIFICATIONS, STRUCTURE GRANULAR BACKFILL WILL NOT BE MEASURED FOR PAYMENT BUT SHALL BE INCLUDED IN THE LUMP SUM BID FOR FOUNDATION PREPARATION.

CONCRETE SEALER

APPLY CONCRETE SEALER IN ACCORDANCE WITH THE SPECIAL NOTE FOR CONCRETE SEALING. SEE SHEET S7 FOR LIMITS OF SEALING ON THE SUPERSTRUCTURE.

GEOTEXTILE FABRIC

GEOTEXTILE FABRIC SHALL CONFORM TO THE STANDARD SPECIFICATIONS.

GEOTEXTILE FABRIC CLASS 1 IS TO BE PLACED BETWEEN THE EMBANKMENT AND SLOPE PROTECTION AT LOCATIONS WHERE CYCLOPEAN STONE RIP-RAP IS SPECIFIED. PAYMENT FOR FABRIC IS TO BE INCIDENTAL TO THE SLOPE PROTECTION.

GEOTEXTILE FABRIC CLASS 2 IS TO BE PLACED AROUND THE STRUCTURE GRANULAR BACKFILL AS SHOWN ON STANDARD DRAWING RGX-105 AND IN ACCORDANCE WITH SPECIAL PROVISION 69. PAYMENT FOR FABRIC IS TO BE INCIDENTAL TO THE LUMP SUM BID FOR FOUNDATION PREPARATION.

PRE-DRILLING FOR PILES AT END BENTS

PRE-DRILLING FOR PILES IS REQUIRED. SEE THE FOUNDATION LAYOUT, SHEET S4, FOR DETAILS.

PILE POINTS

PILE POINTS ARE NOT REQUIRED FOR THIS BRIDGE, PER THE KYTC DIVISION OF STRUCTUAL DESIGN, 2022 INTERIM GUIDANCE, PILE POINTS MAY BE LEFT OFF WHERE PILES ARE FULLY PRE-DRILLED INTO SOLID ROCK.

PILING

PILING SHALL BE PRE-DRILLED AND DRIVEN TO SATISFY THE DRIVING CRITERIA DEFINED 1N THE PILE RECORD ON SHEET S4.

TEST PILES SHALL BE PRE-DRILLED AND 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.

EMBANKMENTS

CONSTRUCT THE EMBANKMENTS IN ACCORDANCE WITH SPECIAL PROVISION 69.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

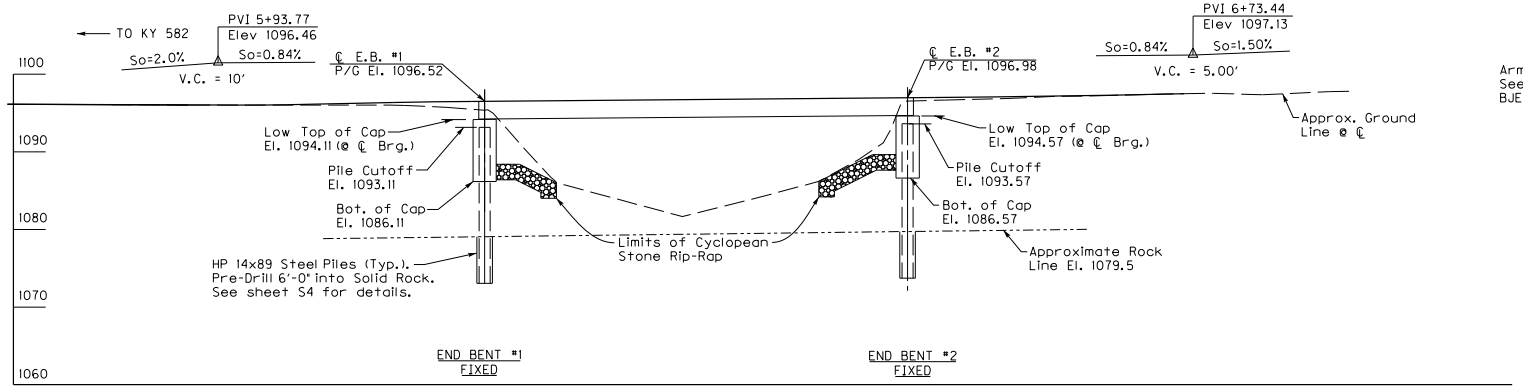
PREPARED BY: JM Crawford & Associates Consulting Engineers

DATE: 9/30/2022	CHECKED BY
DESIGNED BY: Lee Carlisle	Stuart McIntosh
DETAILED BY: Greg Crank	Lee Carlisle

GENERAL NOTES

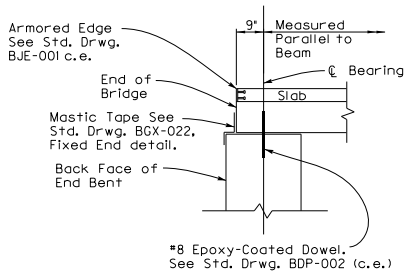
CROSSING: CARR FORK

ROUTE	ITEM NO.	COUNTY OF
CR 1538		KNOTT
	SHEET NO. S2	DRAWING NUMBER 28541

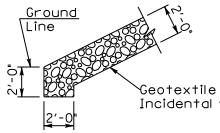


ELEVATION

54'-6" CB21x48 PPC Box Beam - Simple Span
Live Load 125% of HL-93 (KYHL-93)
10'-8" Bridge Roadway Width - 0° Skew

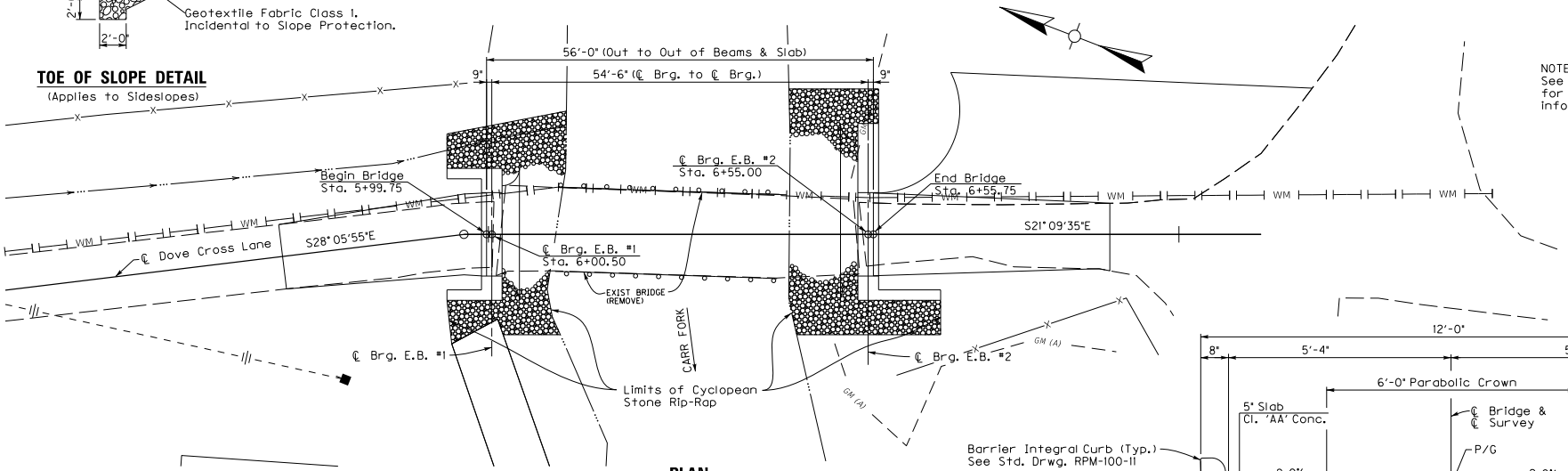


END OF BRIDGE DETAIL



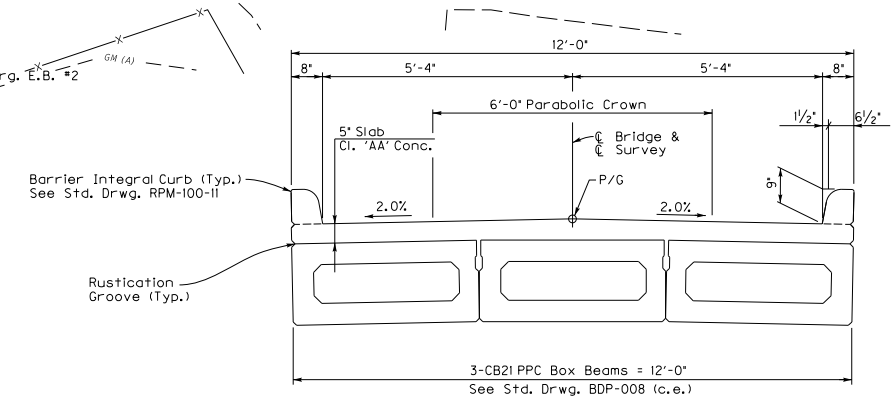
TOE OF SLOPE DETAIL

(Applies to Sideslopes)



PLAN

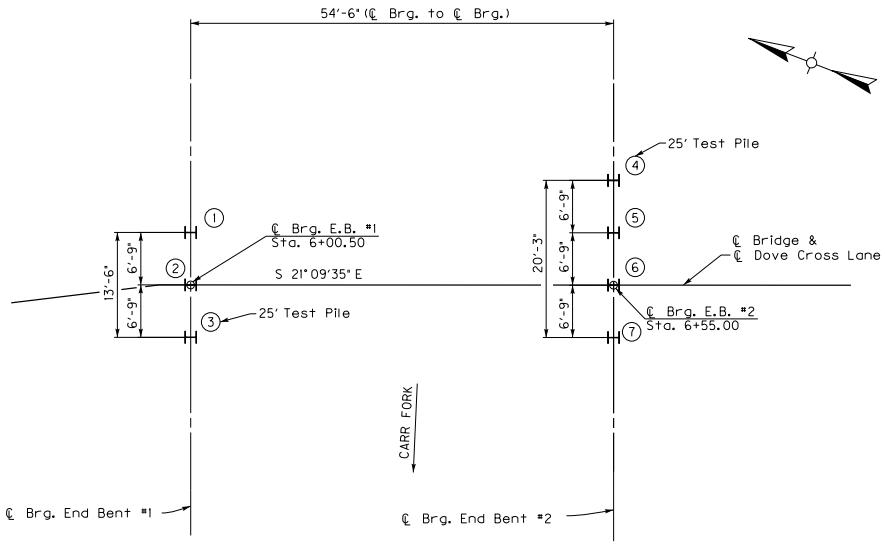
(Superstructure Not Shown)



TYPICAL SECTION

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION	DATE	PREPARED BY JM Crawford & Associates Consulting Engineers	DATE: 9/30/2022	CHECKED BY	LAYOUT	ROUTE	ITEM NO.	COUNTY OF KNOTT
				DESIGNED BY: Lee Carlisle	Stuart McIntosh		CR 1538	SHEET NO. S3	DRAWING NUMBER 28541
				DETAILED BY: Greg Crank	Lee Carlisle	CROSSING CARR FORK			

OpenRoads Designer v10.16.2.267 USER: $$$$USER$$$$ DATE PLOTTED: $$$$DATE$$$$ FILE NAME: $$$$designs\file$$specification$$$$



FOUNDATION LAYOUT

H Denotes HP14x89 Vertical Piles

Notes

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: Pre-drilling will be required at End Bents 1 & 2. Use 24-inch diameter holes with a minimum embedment of 6 feet into sound bedrock and a mimimum of 10 feet total embedment below the cap. The pile must be struck with a pile hammer once in place to ensure that adequate capacity and refusal has been achieved. The rock socket shall then be filled with Class B 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 flyash may be used to obtain this slump. Casing or some other method of maintaining an open hole above the rock socket may be needed for installation of the piles and concrete. If casing is used, it must be removed, as the hole above the rock socket is backfilled with concrete, flowable fill, or sand. Care must be taken that the piling is located correctly since the piling is an integral part of the structure and protrudes up into the cap. The cost of all materials, labor, and equipment required to pre-drill, drive piles to refusal, place concrete, and backfill the holes shall be included in the price per linear foot for Pre-Drilling Piles.

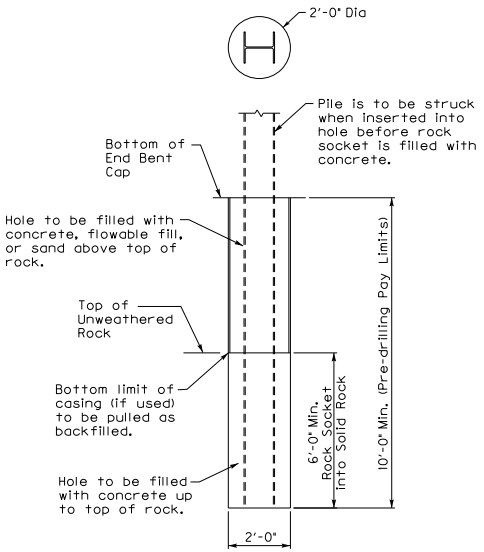
Orient Piles as shown in the Foundation Plan.

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.

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	1093.11			90
2	1093.11			90
3	1093.11			90
END BENT #2				
4	1093.57			90
5	1093.57			90
6	1093.57			90
7	1093.57			90



PRE-DRILLING DETAIL

NOTE: Maintain 6'-0" Min. rock socket into solid unweathered bedrock.

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 1/2 inch or less for 10 consecutive blows, practical refusal is obtained after the pile is struck an additional 10 blows with total penetration of 1/2 inch 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.

Field Data

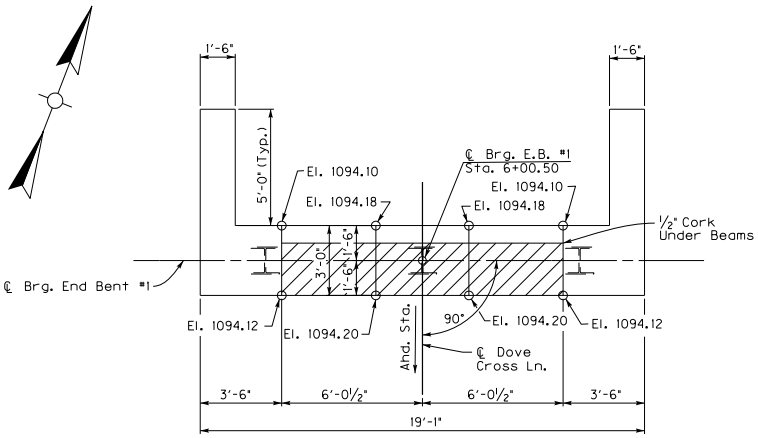
For each pile, the Project Engineer shall record the following on this sheet: Pile Length in Place and Point of Pile Elevation as Driven.

Submit this record to:

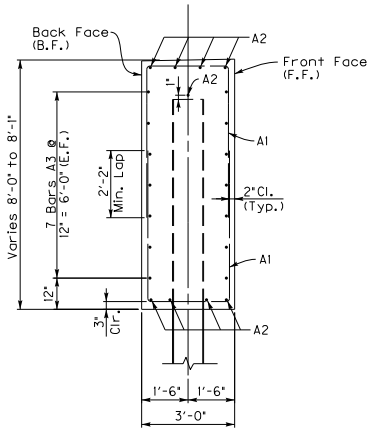
Kentucky Transportation Cabinet
Director, Division of Structural Design
3rd Floor East
200 Mero Street
Frankfort, KY 40622

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

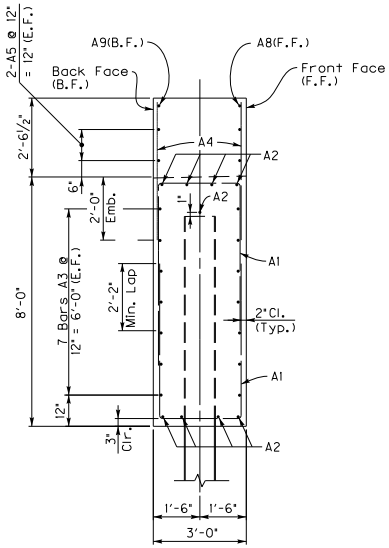
Use HP 14x89 in accordance with BPS-011, c.e.



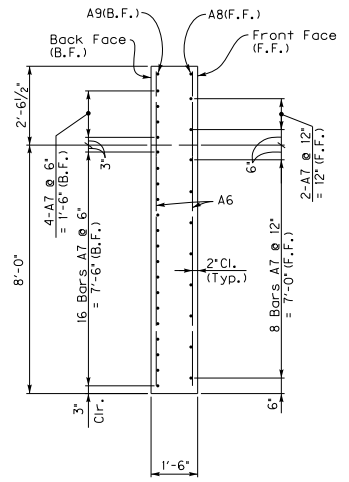
PLAN



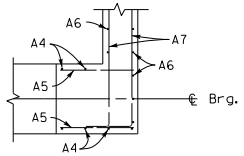
SECTION A–A



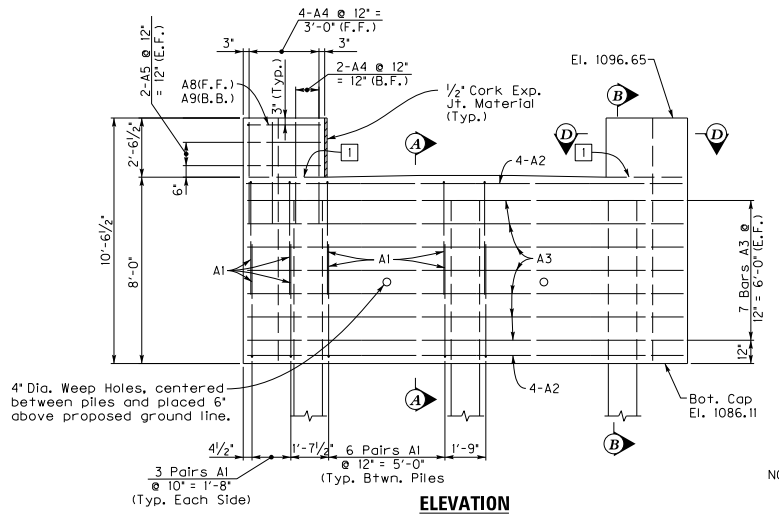
SECTION B–B



SECTION C–C

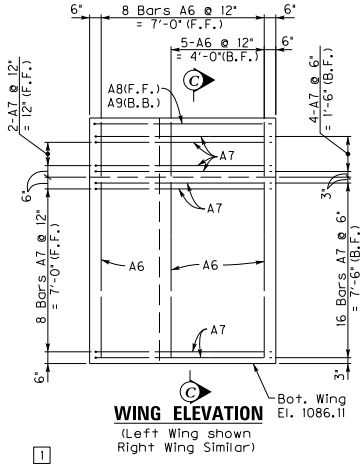


SECTION D–D



ELEVATION

(Looking at Front Face)



WING ELEVATION

(Left Wing shown
Right Wing Similar)

NOTE: Dimensions are measured at ℄ Brg. of the End Bent.

[1] NOTE: Mandatory Construction joint for side by side box beams. Concrete above bridge seat shall be poured after beams are set and tensioning rods are tightened (typ. each side).

NOTE: Dowel Box Beams in accordance with Std. Drwg. BDP-002, (c.e.).

NOTE: For Pile Location see Foundation Layout.

NOTE: Seat Elevations are given on top of concrete.

BILL OF REINFORCEMENT

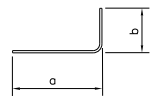
MARK	TYPE	SIZE	NO.	LENGTH FT.	LENGTH IN.	LOCATION	a FT.	a IN.	b FT.	b IN.
A1ES	②	#5	36	12	5	CAP	2	8	4	11
A2E	Str	#8	9	18	9					
A3E	Str	#5	14	18	9					
A4E	Str	#5	12	4	5					
A5E	Str	#5	8	3	2	CAP				
A6E	Str	#5	26	10	1	WINGS				
A7E	①	#5	60	8	7		7	7	1	0
A8E	①	#6	2	10	7		7	7	3	1
A9E	①	#6	2	7	1	WINGS	5	1	2	1

Note:
Use 2" min. clearance for all reinforcement unless noted otherwise.

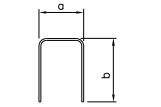
All reinforcement designated with suffix "E" shall be epoxy coated.

"S" denotes bars to have stirrup bend dimensions.

BAR TYPES



TYPE ①



TYPE ②

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY: JM Crawford & Associates Consulting Engineers

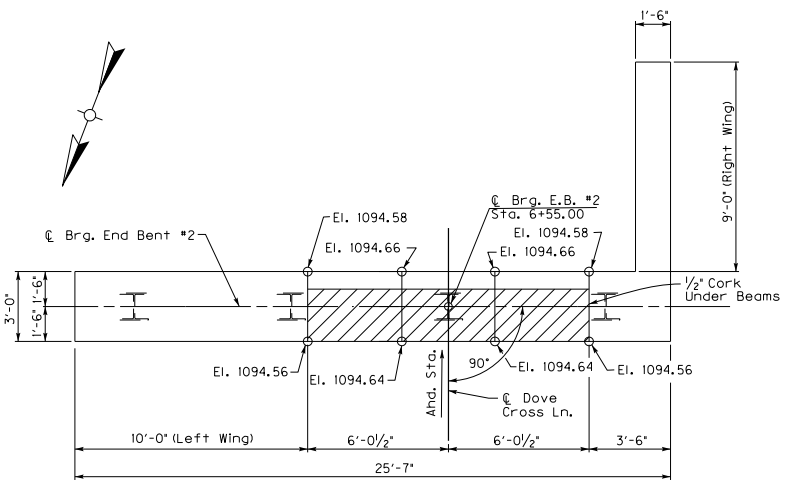
DATE: 9/30/2022	CHECKED BY
DESIGNED BY: Lee Carlisle	Stuart McIntosh
DETAILED BY: Greg Crank	Lee Carlisle

END BENT #1

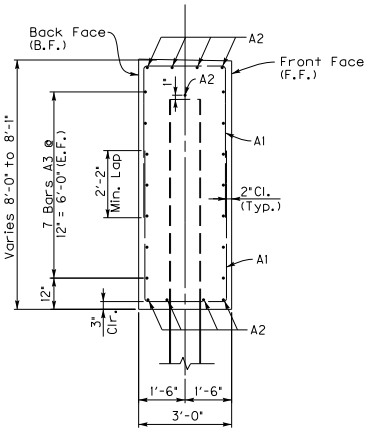
CROSSING: CARR FORK

ROUTE	ITEM NO.	COUNTY OF
CR 1538		KNOTT
	SHEET NO.	DRAWING NUMBER
	S5	28541

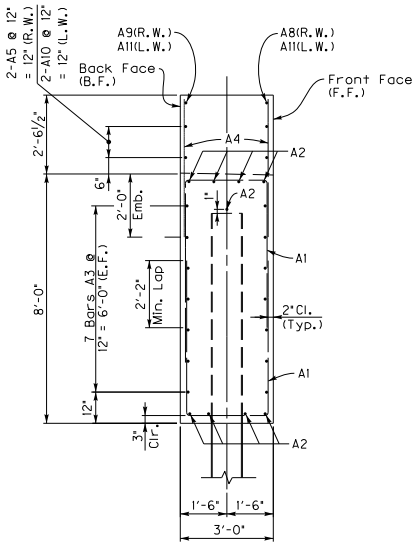
OpenRoads Designer v10.16.2.267 USER: $$$$USER$$$$ DATE PLOTTED: $$$$DATE$$$$ FILE NAME: $$$$designs\files$specification$$$$



PLAN



SECTION A–A



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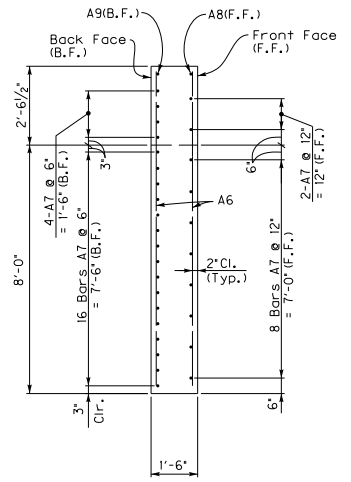

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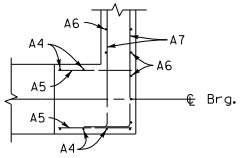
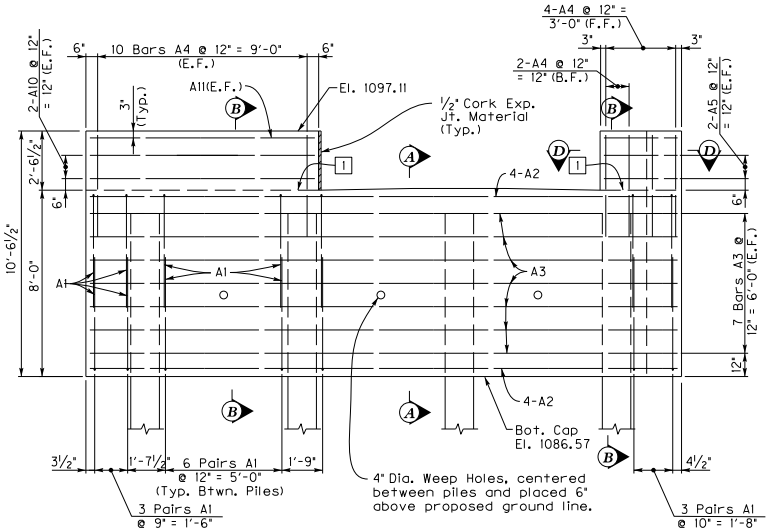


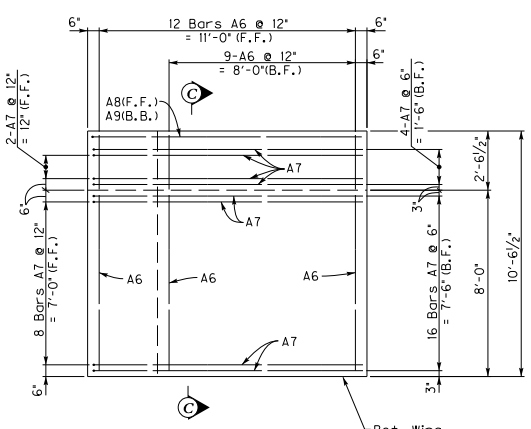
SECTION D–D



ELEVATION

(Looking at Front Face)

NOTE: Dimensions are measured at ℄ Brg. of the End Bent.



RIGHT WING ELEVATION

[1] NOTE: Mandatory Construction joint for side by side box beams. Concrete above bridge seat shall be poured after beams are set and tensioning rods are tightened (typ. each side).

NOTE: Dowel Box Beams in accordance with Std. Drwg. BDP-002, (c.e.).

NOTE: For Pile Location see Foundation Layout.

NOTE: Seat Elevations are given on top of concrete.

BILL OF REINFORCEMENT

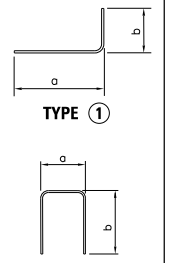
MARK	TYPE	SIZE	NO.	LENGTH FT.	LENGTH IN.	LOCATION	a FT.	a IN.	b FT.	b IN.
A1ES	②	#5	48	12	5	CAP	2	8	4	11
A2E	Str	#8	9	25	3					
A3E	Str	#5	14	25	3					
A4E	Str	#5	26	4	5					
A5E	Str	#5	4	3	2	CAP				
A6E	Str	#5	21	10	1	WINGS				
A7E	①	#5	30	12	7		11	7	1	0
A8E	①	#6	1	14	7		11	7	3	1
A9E	①	#6	1	11	1		9	1	2	1
A10E	Str	#5	4	9	8					
A11E	Str	#6	2	9	8	WINGS				

Note:
Use 2" min. clearance for all reinforcement unless noted otherwise.

All reinforcement designated with suffix "E" shall be epoxy coated.

"S" denotes bars to have stirrup bend dimensions.

BAR TYPES



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

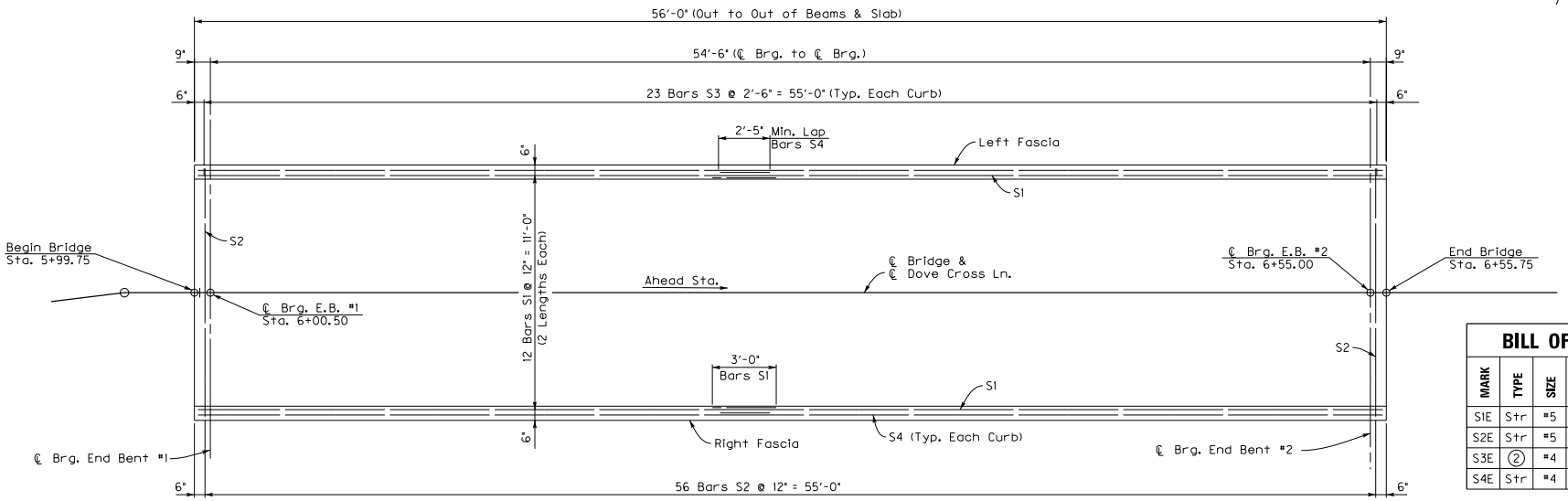
PREPARED BY: JM Crawford & Associates Consulting Engineers

DATE: 9/30/2022	CHECKED BY
DESIGNED BY: Lee Carlisle	Stuart McIntosh
DETAILED BY: Greg Crank	Lee Carlisle

END BENT #2

CROSSING: CARR FORK

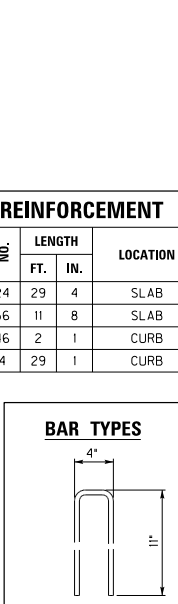
ROUTE	ITEM NO.	COUNTY OF
CR 1538		KNOTT
	SHEET NO. S6	DRAWING NUMBER 28541

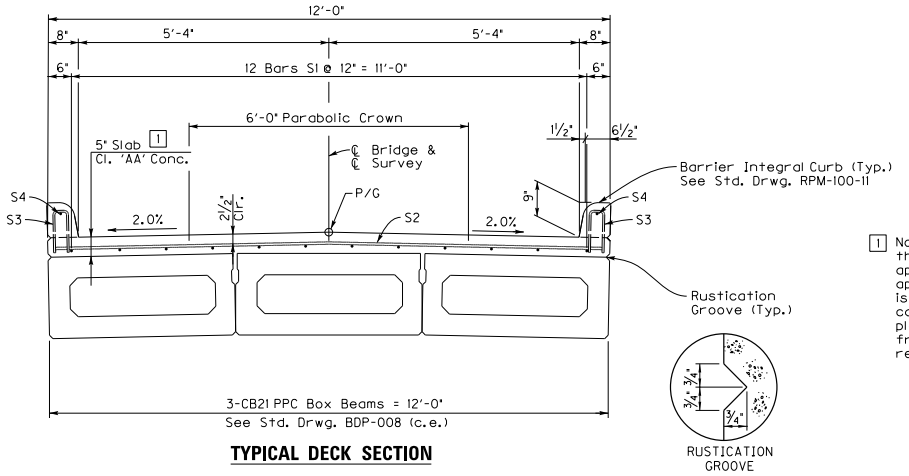


SLAB PLAN

BILL OF REINFORCEMENT						
MARK	TYPE	SIZE	NO.	LENGTH FT.	LENGTH IN.	LOCATION
S1E	Str	#5	24	29	4	SLAB
S2E	Str	#5	56	11	8	SLAB
S3E	②	#4	46	2	1	CURB
S4E	Str	#4	4	29	1	CURB

BAR TYPES

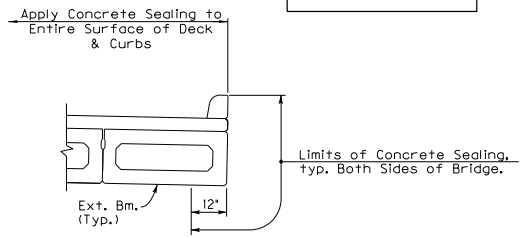




TYPICAL DECK SECTION

RUSTICATION
GROOVE

[1] Note: Contrary to the Standard Drawings (5" thickness), the construction elevations will cause the slab to be approximately 6" thick at each end and go to approximately 5" thick at the center of the span. This is how the quantity of class 'AA' concrete was calculated. Any additional concrete required above the plan quantity, due to beam camber being different from the designer's assumptions, is the contractor's responsibility and at no cost to the department.



CONCRETE SEALING DETAIL

Applied in the field. See General Notes.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

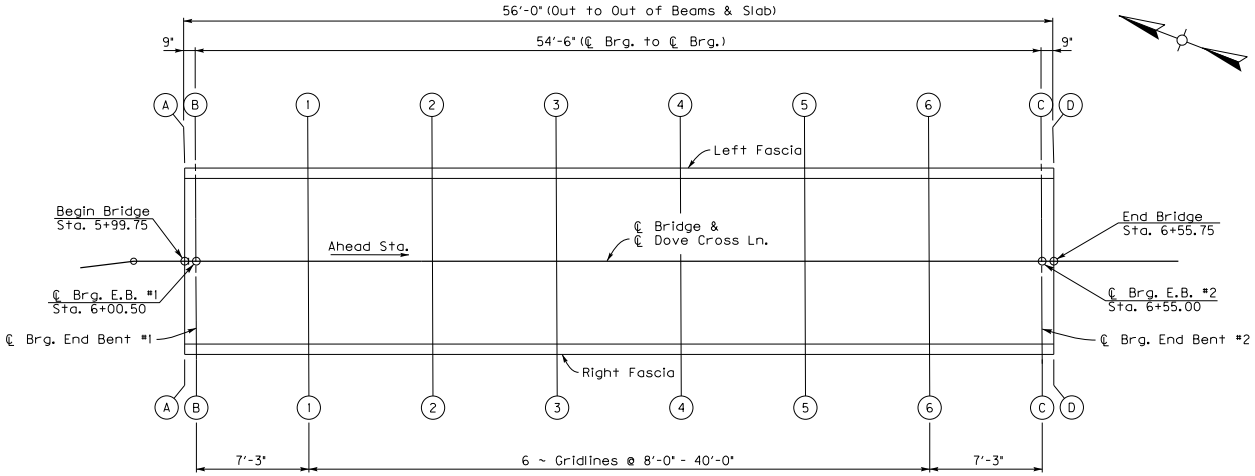
PREPARED BY
JM Crawford & Associates
Consulting Engineers

DATE: 9/30/2022	CHECKED BY
DESIGNED BY: Lee Carlisle	Stuart McIntosh
DETAILED BY: Greg Crank	Lee Carlisle

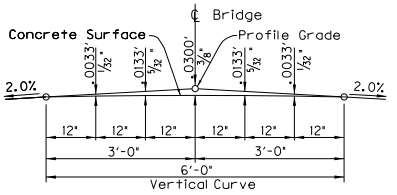
SUPERSTRUCTURE
CROSSING
CARR FORK

ROUTE	ITEM NO.	COUNTY OF
CR 1538		KNOTT
	SHEET NO. S7	DRAWING NUMBER 28541

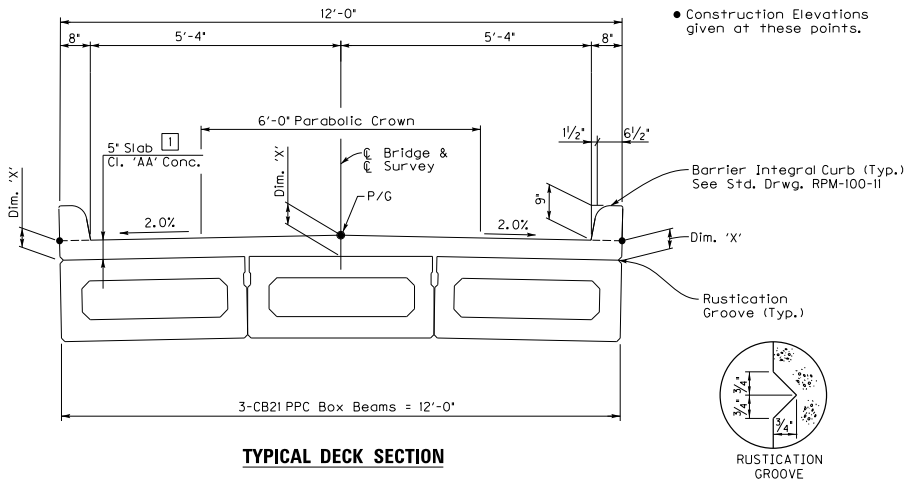
OpenRoads Designer v10.16.2.267 USER: $$$$USER$$$$ DATE PLOTTED: $$$$DATE$$$$ FILE NAME: $$$$designs\file$$spec\fication$$$$



GRID LAYOUT



PARABOLIC CROWN DETAIL



● Construction Elevations given at these points.

TYPICAL DECK SECTION

RUSTICATION GROOVE

NOTES FOR ELEVATIONS TAKEN ON PRESTRESSED CONCRETE 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.
The minimum allowable dimension "X" or slab thickness is 4 3/4" (0. 395').
The maximum allowable dimension "X" or slab thickness is 6" (0.500').
If any computed dimension "X" is outside limits, adjustments need to be made to the dimensions "X" on one or more gridlines at the discretion of the Engineer.

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: The Table of Elevations at Centerline includes the ⅜" deduction for Parabolic Crown.

[1] See Note 1 on sheet S7.

CONSTRUCTION ELEVATIONS

LOCATION	LEFT FASCIA			PROFILE GRADE & CENTER LINE OF BRIDGE			RIGHT FASCIA		
	CONSTR. ELEV.	TOP OF BEAM	DIM "X"	CONSTR. ELEV.	TOP OF BEAM	DIM "X"	CONSTR. ELEV.	TOP OF BEAM	DIM "X"
SKEW LINE A-A	1096.390			1096.480			1096.390		
SKEW LINE B-B	1096.397			1096.487			1096.397		
SKEW LINE C-C	1096.857			1096.947			1096.857		
SKEW LINE D-D	1096.863			1096.953			1096.863		
GRID LINE 1	1096.467			1096.557			1096.467		
GRID LINE 2	1096.544			1096.634			1096.544		
GRID LINE 3	1096.621			1096.711			1096.621		
GRID LINE 4	1096.689			1096.779			1096.689		
GRID LINE 5	1096.747			1096.837			1096.747		
GRID LINE 6	1096.804			1096.894			1096.804		

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY: JM Crawford & Associates Consulting Engineers

DATE: 9/30/2022	CHECKED BY
DESIGNED BY: Lee Carlisle	Stuart McIntosh
DETAILED BY: Greg Crank	Lee Carlisle

CONSTRUCTION ELEVATIONS

CROSSING: CARR FORK

ROUTE	ITEM NO.	COUNTY OF
CR 1538		KNOTT
	SHEET NO. S8	DRAWING NUMBER 28541

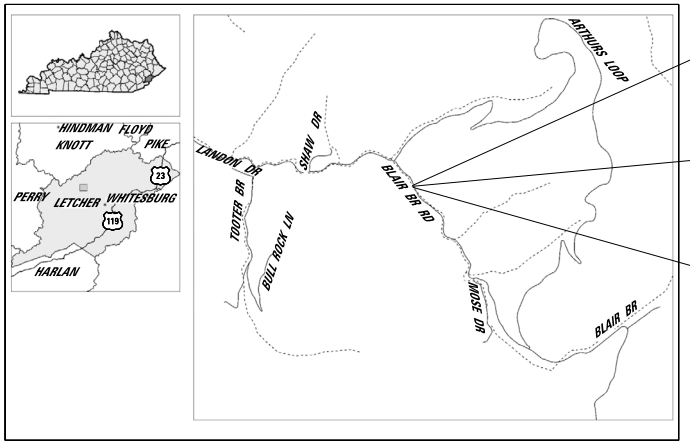
COUNTY OF	ITEM NO.	SHEET NO.
LETCHER	N/A	R1

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
LETCHER COUNTY
BLAIR BRANCH ROAD (CR 1339)
OVER BLAIR BRANCH
STA. 10+00.00

STANDARD DRAWINGS

BDP-001-06	BOX BEAM GENERAL NOTES AND REFERENCES
BDP-002-03	BOX BEAM BEARING DETAILS
BDP-003-03	BOX BEAM MISCELLANEOUS DETAILS
BDP-004-04	BOX BEAM TENSION ROD DETAILS
BDP-006-05	BOX BEAM B12 & CB12 DETAILS
BGX-006-10	STENCILS FOR STRUCTURES
BGX-022	JOINT WATER PROOFING
BJE-001-14	ARMORED EDGES
RBR-001-13	STEEL BEAM GUARDRAIL ("W" BEAM)
RBR-005-11	GUARDRAIL COMPONENTS
RBR-010-06	GUARDRAIL TERMINAL SECTIONS
RBR-060	DELINEATORS AT NARROW SHOULDER BRIDGES
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-230-1	SILT TRAP TYPE C
RGX-100-07	TREATMENT OF EMBANKMENTS AT END-BENTS
RGX-105-09	TREATMENT OF EMBANKMENTS AT END-BENTS - DETAILS
RGX-200-01	ONE POINT PROCTOR FAMILY OF CURVES
RPM-110-07	APPROACHES, ENTRANCES AND MAIL BOX TURNOUT
TTC150-04	ROAD CLOSURE WITH DIVERSON
TTC155-02	TEMP. PAVEMENT MARKER ARRANGEMENTS FOR CONST. ZONES

ACTIVE SEPIAS



LOCATION MAP

INDEX OF SHEETS

Sheet No.	Description
R1	LAYOUT SHEET
R2	TYPICAL SECTIONS AND COORDINATE CONTROL
R3	ROADWAY PLAN AND PROFILE SHEET
X1-X2	CROSS SECTIONS
S1	TITLE SHEET
S2	GENERAL NOTES
S3	LAYOUT
S4	FOUNDATION LAYOUT
S5-S6	END BENT #1
S7-S8	END BENT #2
S9	SUPERSTRUCTURE
S10	CONSTRUCTION ELEVATIONS
S11	BRIDGE RAIL

SPECIAL NOTES

- SEDIMENT PREVENTION AND EROSION CONTROL
- TRAFFIC CONTROL ON BRIDGE REPAIR CONTRACTS
- SEASONAL TREE CLEARING RESTRICTION
- CONTRACT COMPLETION DATE AND LIQUIDATED
- DAMAGES ON BRIDGE REPAIR CONTRACTS
- ADDITIONAL ENVIRONMENTAL COMMITMENTS

SPECIAL PROVISIONS

69 EMBANKMENT AT BRIDGE END BENT STRUCTURES

SPECIFICATIONS

2019 Standard Specifications for Road and Bridge Construction.

2020 AASHTO LRFD Bridge Design Specifications with Current Interims.

REVISION	DATE

DESIGN CRITERIA

CLASS OF HIGHWAY: RURAL LOCAL
TYPE OF TERRAIN: MOUNTAIN
DESIGN SPEED
REQUIRED NPSD
REQUIRED PSD
LEVEL OF SERVICE
ADT PRESENT ( )
ADT FUTURE ( )
DHV
D %
T %

GEOGRAPHIC COORDINATES

LATITUDE 37 DEGREES 10 MINUTES 07 SECONDS NORTH
LONGITUDE 82 DEGREES 54 MINUTES 11 SECONDS WEST

DESIGNED

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

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.

REV. NO.	SHEETS REVISED	DATE

TABLE OF REVISIONS

EX BRIDGE ID 067C009
FEMA BRIDGE: 4663-DR

PREPARED BY
J.M. Crawford & Associates
Consulting Engineers

STATE OF KENTUCKY
P. STUART MCINTOSH
19302
LICENSED PROFESSIONAL ENGINEER

Philip S. McIntosh
Digitally signed by Philip S. McIntosh
Date: 2022.12.15 17:07:43 -05'00'

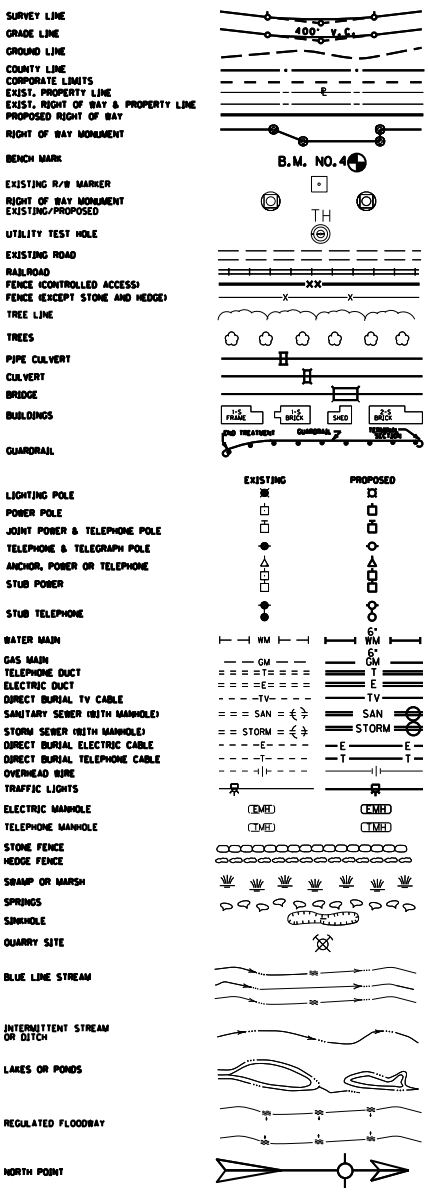
Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS
COUNTY OF
LETCHER
CR 1339 OVER BLAIR BRANCH

ITEM NO. N/A
DRAWING NO. 28597
PROJECT NUMBER:
LETTING DATE:

RECOMMENDED BY: _____ PROJECT MANAGER DATE:
PLAN APPROVED BY: _____ STATE HIGHWAY ENGINEER DATE:

TYPICAL SECTIONS

CONVENTIONAL SIGNS



LETCHER COUNTY
BRIDGE# 067C009
BLAIR BRANCH ROAD OVER BLAIR BRANCH

Point	Description	Northing	Easting	Elevation	Station	Offset
CP #1	HUB & TACK	3597675.44	5750687.52	1186.31	9+43.68	6.39' RT
CP #2	MAGNAIL	3597518.50	5750758.08	1188.13	11+14.75	5.55' RT

PROJECT CONTROL

COORDINATES FOR HORIZONTAL CONTROL ARE AUTONOMOUS, THEY ARE NOT AN OPUS SOLUTION. USE FOR DESIGN PURPOSES.

MAINTENANCE OF TRAFFIC NOTE

THE CONTRACTOR SHALL MAINTAIN TRAFFIC ALONG BLAIR BRANCH ROAD AT ALL TIMES AND PROVIDE INGRESS/EGRESS TO ALL RESIDENTS ALONG BLAIR BRANCH ROAD. THE SPECIAL NOTE FOR TRAFFIC CONTROL ON BRIDGE REPAIR CONTRACTS SHALL BE IMPLEMENTED.

ALL LABOR AND MATERIALS NECESSARY FOR CONSTRUCTION AND MAINTENANCE OF TRAFFIC CONTROL DEVICES SHALL BE INCIDENTAL TO THE BID ITEM FOR "MAINTAIN AND CONTROL TRAFFIC".

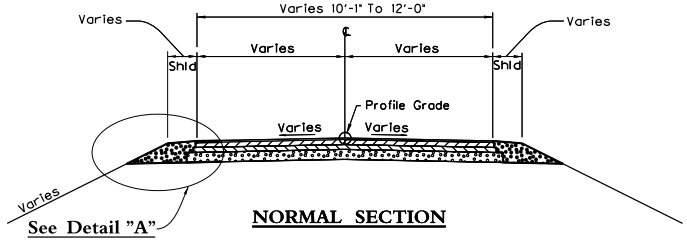
ALL FLAGPERSONS AND TRAFFIC CONTROL DEVICES, SUCH AS, BUT NOT LIMITED TO, FLASHERS, BARRICADES, VERTICAL PANELS, PLASTIC DRUMS (STEEL DRUMS ARE NOT PERMITTED), AND CONES NECESSARY FOR THE CONTROL AND PROTECTION OF VEHICULAR AND PEDESTRIAN TRAFFIC SHALL BE PROVIDED AS SPECIFIED IN THESE NOTES, THE MUTCD,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

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

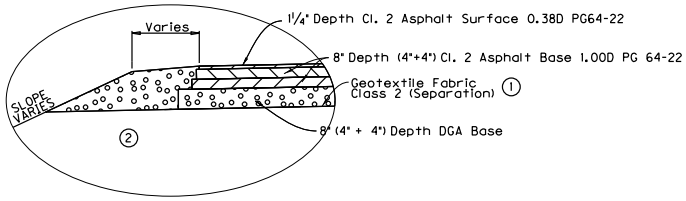
ALL TEMPORARY SIGNAGE SHALL BE INCIDENTAL TO THE BID ITEM "MAINTAIN AND CONTROL TRAFFIC"

UTILITY COORDINATION

BEFORE BEGINNING WORK, LOCATE ALL EXISTING UTILITIES. CONSIDER UTILITY LINE LOCATIONS DEPICTED IN THE PLANS TO BE APPROXIMATE AND FOR INFORMATIONAL PURPOSES ONLY. THE DEPARTMENT DOES NOT WARRANT THE LOCATION AND ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS. THE CONTRACTOR MUST MAKE THEIR OWN DETERMINATION. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES AND/OR PROPERTY OWNERS REGARDING ALL UTILITIES, SERVICE LINES, OR PRIVATE LINES DURING CONSTRUCTION.



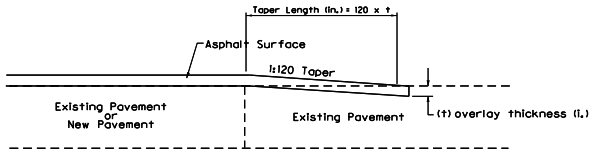
NORMAL SECTION



Detail "A"

FULL-DEPTH MAINLINE & SHOULDER PAVEMENT RECONSTRUCTION
NOT TO SCALE

TAPERING OF OVERLAYS ON LOW SPEED FACILITIES < (45mph)

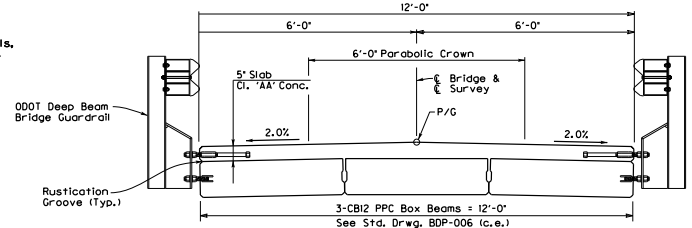


EDGE KEY

Work under this item shall include cutting out the existing asphalt surface to a minimum depth and width as shown, so the new surface may heel into the existing surface. The contract unit price bid per linear foot for EDGE KEY shall include all necessary materials, labor, equipment, etc. to perform the work and dispose of the bituminous material removed.

NOTES:

1. GEOTEXTILE FABRIC CLASS 2 (SEPARATION) SHALL BE INCIDENTAL TO DGA.
2. GRANULAR EMBANKMENT FOR NECESSARY WIDENING LOCATIONS AS APPROVED BY ENGINEER. MATERIAL NEEDED FOR SHOULDERS OUTSIDE OF PAVED AREA WILL BE MEASURED AND PAID AS GRANULAR EMBANKMENT.

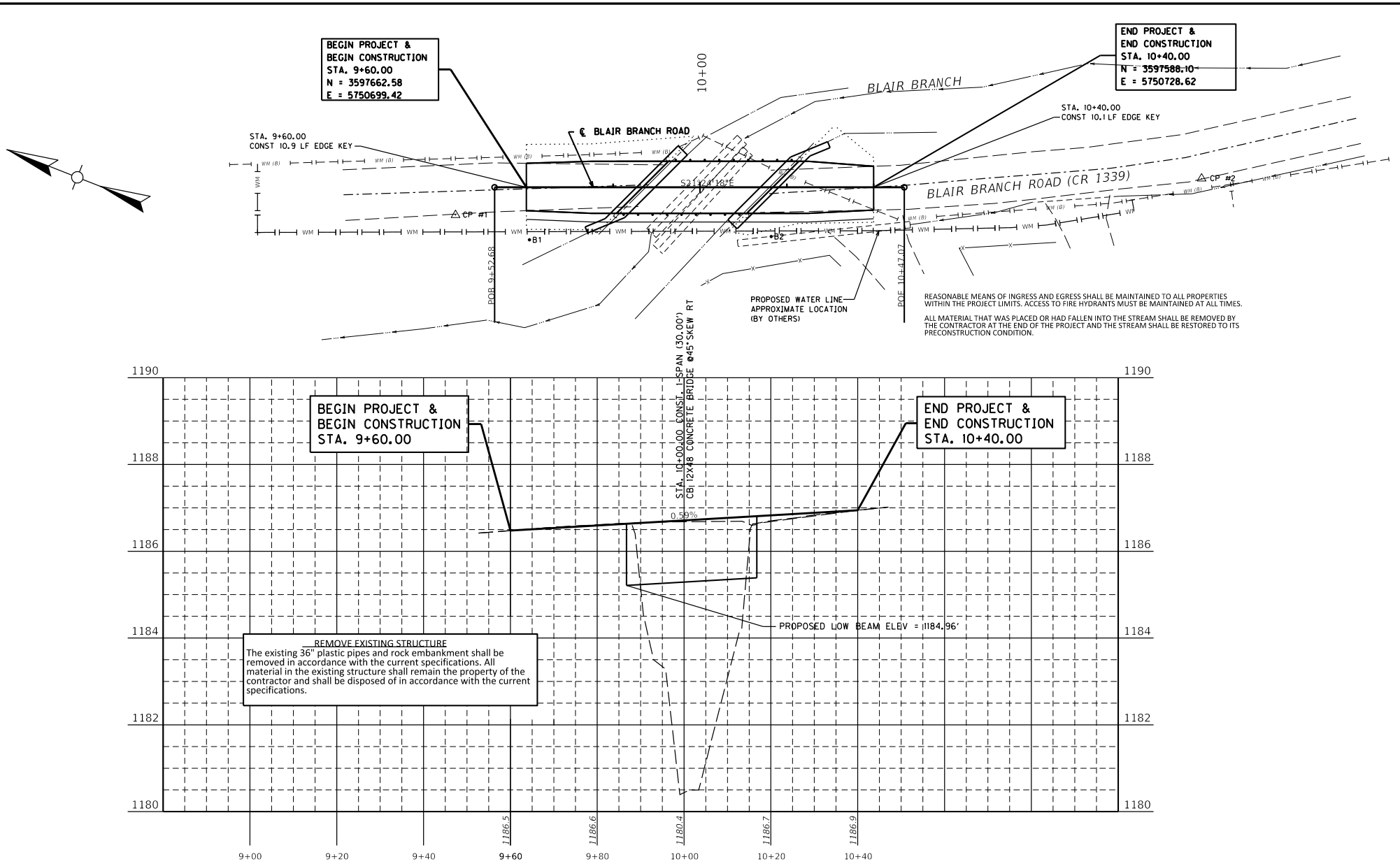


TYPICAL BRIDGE SECTION

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: TYPICAL SECTIONS AND COORDINATE CONTROL
BLAIR BRANCH ROAD (CR 1339)
OVER BLAIR BRANCH

ITEM NO. N/A
COUNTY OF LETCHER
SHEET NO. R2



REMOVE EXISTING STRUCTURE

The existing 36" plastic pipes and rock embankment shall be removed in accordance with the current specifications. All material in the existing structure shall remain the property of the contractor and shall be disposed of in accordance with the current specifications.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: PLAN AND PROFILE
BLAIR BRANCH ROAD (CR 1339)
OVER BLAIR BRANCH

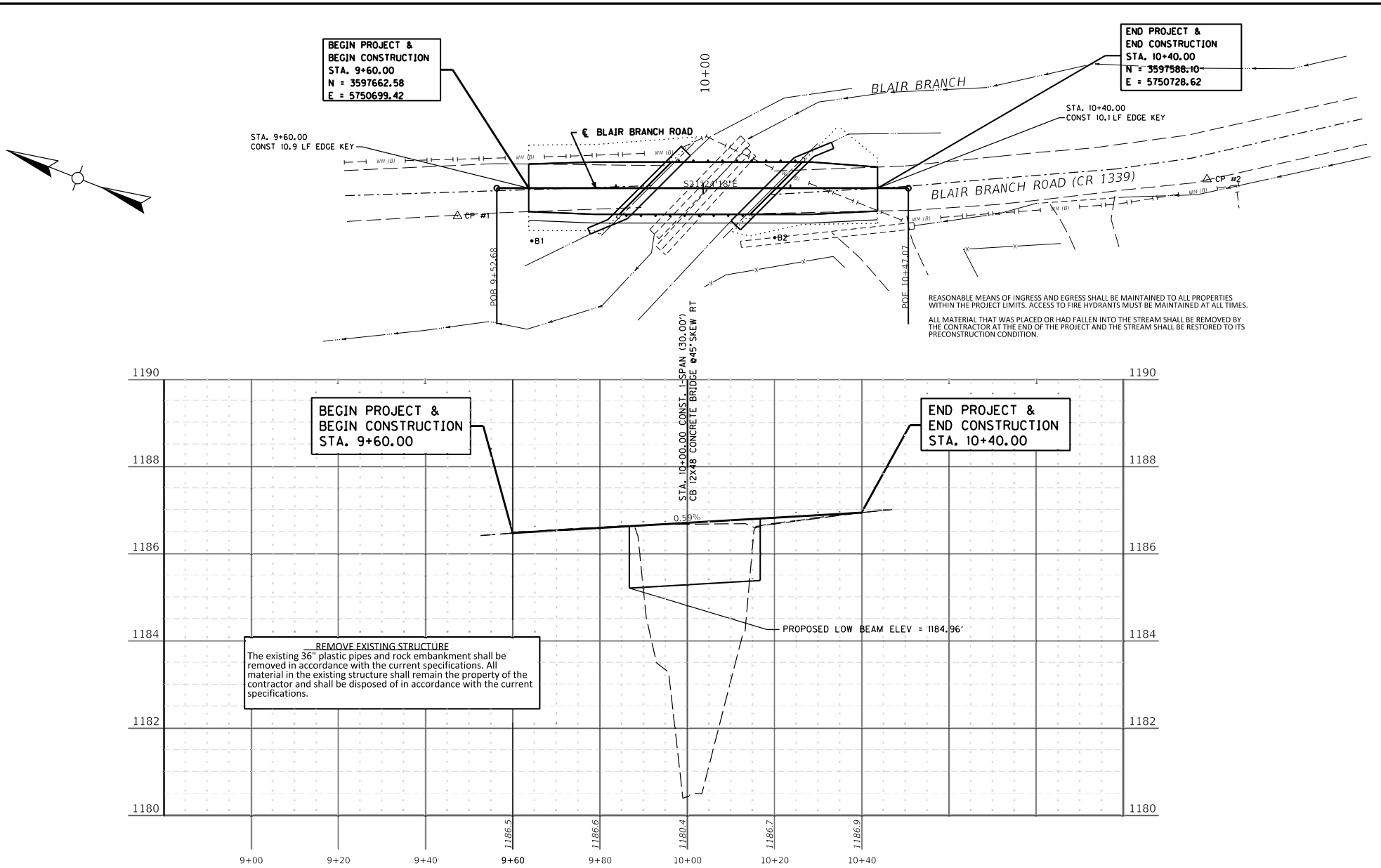
HORIZONTAL SCALE
SCALE: 1" = 10'

0' 20' 40' 80'

STA 9+60 TO 10+40

ITEM NO. N/A
COUNTY OF LETCHER
SHEET NO. R3

OpenRoads Designer v10.16.0.80 USER: gdchilders DATE PLOTTED: 9/7/2005 7:08:02 PM FILE NAME: G:\KY\LETCHER\067C009 BLAIR RD\FINAL PLANS\PLAN_PROFILE_BLAIR_RD.DGN



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COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

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BLAIR BRANCH ROAD (CR 1339)
OVER BLAIR BRANCH

HORIZONTAL SCALE
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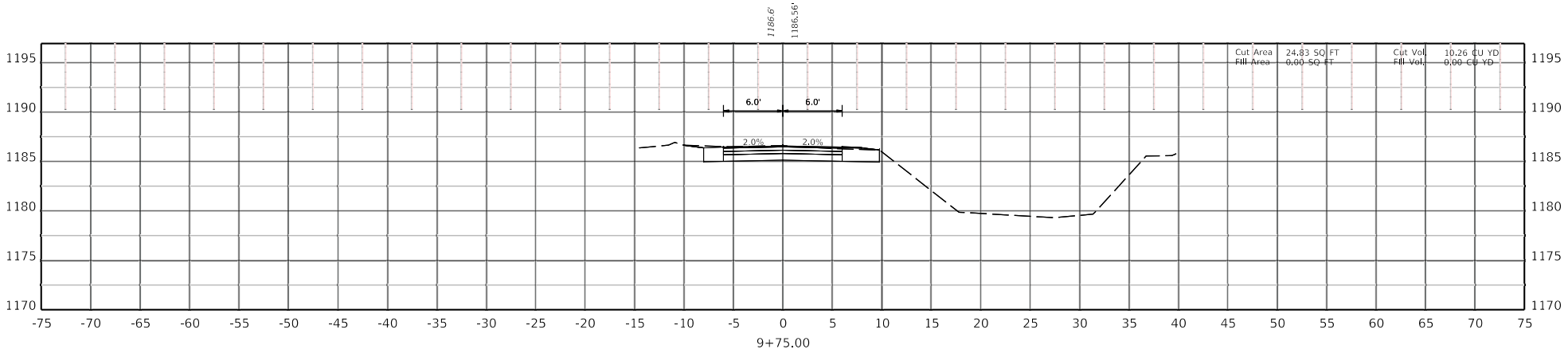
0' 20' 40' 80'

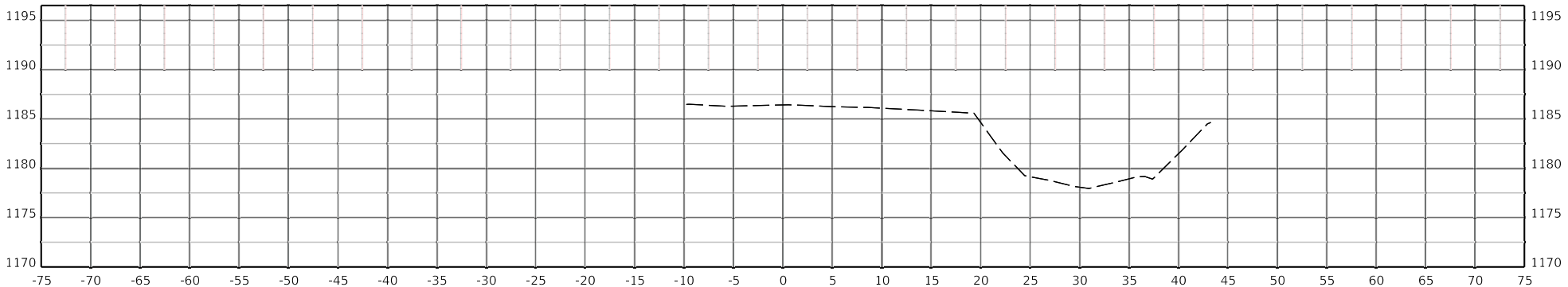
STA 9+60 TO 10+40

ITEM NO. N/A
COUNTY OF LETCHER
SHEET NO. R3

OpenRoads Designer v10.16.0.80 USER: gdchilders DATE PLOTTED: 9/7/2005 7:08:02 PM FILE NAME: G:\KY\LETCHER\067C009 BLAIR RD\FINAL PLANS\PLAN_PROFILE_BLAIR_RD.DGN



9+75.00



9+50.00

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: CROSS SECTIONS
BLAIR BRANCH ROAD (CR 1339)
OVER BLAIR BRANCH

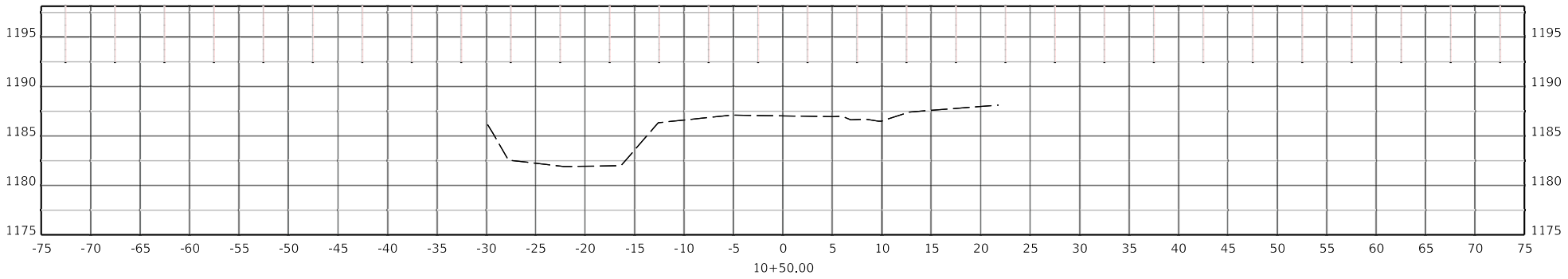
HORIZONTAL SCALE
SCALE: 1" = 5'

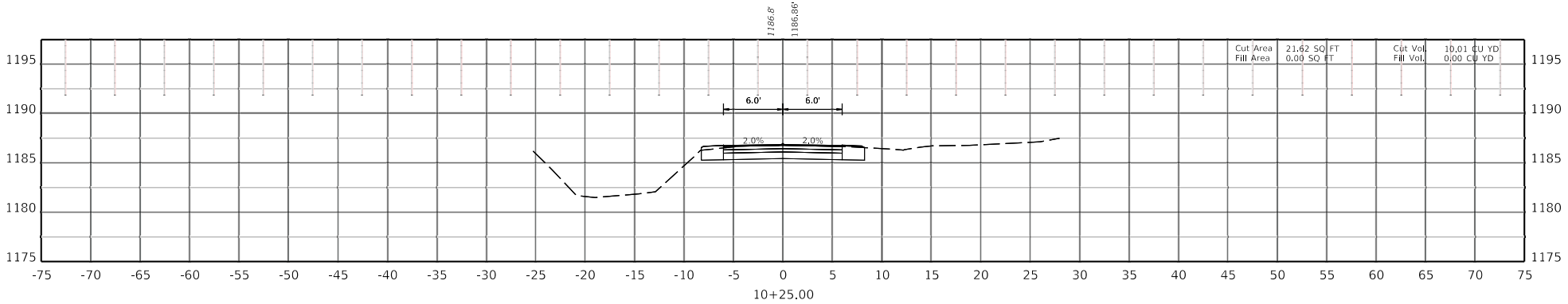
0' 5' 10' 20'

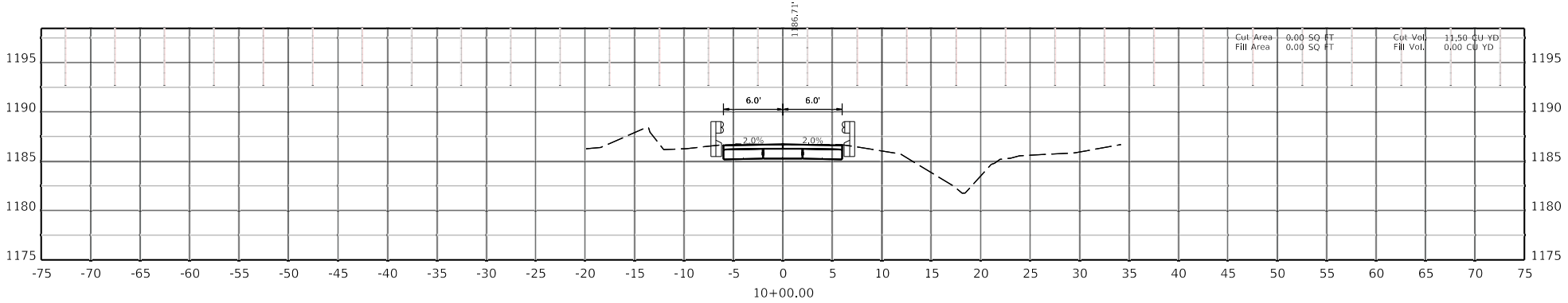
STA 9+50 TO 9+75

ITEM NO. N/A
COUNTY OF LETCHER
SHEET NO. X1

OpenRoads Designer v10.16.0.80 USER: gdchilders DATE PLOTTED: 9/7/2005 7:08:02 PM FILE NAME: G:\KY\LETCHER\067C009 BLAIR RD\FINAL PLANS\XS_BLAIR_RD.DGN







COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: CROSS SECTIONS
BLAIR BRANCH ROAD (CR 1339)
OVER BLAIR BRANCH

HORIZONTAL SCALE
SCALE: 1" = 5'

0' 5' 10' 20'

STA 10+00 TO 10+50

ITEM NO. N/A
COUNTY OF LETCHER
SHEET NO. X2

OpenRoads Designer v10.16.0.80 USER: gdchilders DATE PLOTTED: 9/7/2005 7:08:02 PM FILE NAME: G:\KY\LETCHER\067C009 BLAIR RD\FINAL PLANS\XS_BLAIR_RD.DGN

LETTING DATE

CONSTRUCTION PROJECT NO.

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

LETCHER COUNTY
BLAIR BRANCH ROAD (CR 1339)
OVER BLAIR BRANCH
STA. 10+01.75

ESTIMATE OF QUANTITIES

	BID ITEM CODE	08100	08104	08151	08019	08046	08039	08033	03299	08661	08003	23378EC	23539EC	02360	02565	01987
	BID ITEM	Concrete Class "A"	Concrete Class "AA"	Steel Reinforcement, Epoxy Coated	Cyclopean Stone Rip-Rap	Piles - Steel HP 12 x 53	Pre-Drilling for Piles	Test Piles	Armored Edge for Concrete	Precast PC Box Beam CB12-48	Foundation Preparation	Concrete Sealing	Bridge Rail	Guardrail Terminal Section No. 1	Object Marker Type 2	Delineator for Guardrail B/W
	UNIT	C.Y.	C.Y.	LBS.	TON	L.F.	L.F.	L.F.	L.F.	L.F.	L.S.	S.F.	L.F.	Each	Each	Each
Substructure	End Bent #1	19		1534	72	40	45	27				200				
Substructure	End Bent #2	19		1535	65	41	46.5	27				187				
Superstructure			6	726					24	90		477	60	4	4	4
BRIDGE TOTALS		38	6	3795	137	81	91.5	54	24	90	1	864	60	4	4	4

NOTE: Per the General Notes, Structure Granular Backfill and Geotextile Fabric Class 2 shall be incidental to Foundation Preparation. Geotextile Fabric Class 1 shall be incidental to Cyclopean Stone Rip-rap.

REPLACEMENT OF EXISTING STRUCTURE NO. 067C009

DEPARTMENT OBJECT CODE: D23A
SYP FOR UTILITIES: 12-0303.OTH
FEMA CODE: 4663-DR

Plans Prepared By
J.M. CRAWFORD & ASSOC.
Consulting Engineers

STATE OF KENTUCKY
LEE A. CARLISLE
25709
LICENSED PROFESSIONAL ENGINEER

Lee A. Carlisle

Lee A. Carlisle Digitally signed by Lee A. Carlisle DN: cn=US, o=Kentucky, l=Lexington, ou=J.M. Crawford & Associates, cn=Lee A. Carlisle, email=lcarlisle@jmcpe.com Date: 2022.12.15 16:33:25 -05'00'

INDEX OF SHEETS

SPECIAL NOTES

Concrete Sealing

SPECIAL PROVISIONS

69 Embankment at Bridge End Bent Structures

STANDARD DRAWINGS

BDP-001-06	Box Beam General Notes & References
BDP-002-03	Box Beam Bearing Details
BDP-003-03	Box Beam Miscellaneous Details
BDP-004-04	Box Beam Tension Rod Details
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RBR-010-06	Guardrail Terminal Sections
RBR-060	Delineators at Narrow Shoulder Bridges
RGX-100-07	Treatment of Embankments at End Bents
RGX-105-09	Treatment of Embankments at End Bents-Details

SPECIFICATIONS

2019 Standard Specifications for Road and Bridge Construction.

9th Edition AASHTO LRFD Bridge Design Specifications (2020)

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY
JMC JM Crawford & Associates Consulting Engineers

DATE: 10/21/2022	CHECKED BY
DESIGNED BY: Lee Carlisle	Stuart McIntosh
DETAILED BY: Greg Crank	Lee Carlisle

TITLE SHEET

CROSSING: BLAIR BRANCH

ROUTE	ITEM NO.	COUNTY OF
CR 1339		LETCHER
	SHEET NO. S1	DRAWING NUMBER 28597

OpenRoads Designer v10.16.2.267 USER: $$$$USER$$$$ DATE PLOTTED: $$$$DATE$$$$ FILE NAME: $$$$designs\files\specification$$$$

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, 9TH EDITION WITH INTERIMS.

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.

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.

MATERIALS DESIGN SPECIFICATIONS

FOR CLASS "A" REINFORCED CONCRETE	F'C = 3500 PSI
FOR CLASS "AA" REINFORCED CONCRETE	F'C = 4000 PSI
FOR STEEL REINFORCEMENT	FY = 60000 PSI

MATERIAL SPECIFICATIONS

AASHTO SPECIFICATIONS OR ASTM, CURRENT EDITION, AS DESIGNATED BELOW SHALL GOVERN THE MATERIALS FURNISHED.

AASHTO M153	PREMOLDED CORK FILLER, TYPE II
AASHTO M-31	DEFORMED AND PLAIN BILLET-STEEL FOR CONCRETE REINFORCEMENT, GRADE 60

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.

CONCRETE

CLASS "AA" CONCRETE IS TO BE USED THROUGHOUT THE SUPERSTRUCTURE. CLASS "A" CONCRETE IS TO BE USED THROUGHOUT THE SUBSTRUCTURE, PRESTRESSED BEAM CONCRETE SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

REINFORCEMENT

DIMENSIONS SHOWN FROM THE FACE OF CONCRETE TO BARS ARE TO CENTER OF BARS UNLESS OTHERWISE SHOWN. 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.

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.

BEVELED EDGES

ALL EXPOSED EDGES SHALL BE BEVELED ¾", UNLESS OTHERWISE SHOWN.

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.

SLOPE PROTECTION

SLOPE PROTECTION AT END BENTS SHALL BE DRY CYCLOPEAN STONE RIPRAP MEETING THE REQUIREMENTS OF SECTIONS 703 AND 805 OF THE SPECIFICATIONS. GEOTEXTILE FABRIC, CLASS 1 SHALL BE PLACED BETWEEN THE EMBANKMENT AND THE SLOPE PROTECTION IN ACCORDANCE WITH STANDARD SPECIFICATIONS 214 AND 843. PAYMENT FOR GEOTEXTILE FABRIC, CLASS 1, SHALL BE CONSIDERED INCIDENTAL TO THE UNIT PRICE BID FOR DRY CYCLOPEAN STONE RIPRAP.

COMPLETION OF THE STRUCTURE

THE CONTRACTOR IS REQUIRED TO COMPLETE THE STRUCTURE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. MATERIAL, LABOR, OR CONSTRUCTION OPERATIONS NOT OTHERWISE SPECIFIED, ARE TO BE INCLUDED IN THE BID ITEM MOST APPROPRIATE TO THE WORK INVOLVED. THIS MAY INCLUDE COFFERDAMS, SHORING, EXCAVATIONS, BACKFILLING, REMOVAL OF ALL OR PARTS OF EXISTING STRUCTURES, PHASE CONSTRUCTION, INCIDENTAL MATERIALS, LABOR, OR ANYTHING ELSE REQUIRED TO COMPLETE THE STRUCTURE.

SHOP DRAWING PROCEDURE

1. FABRICATORS SHALL SUBMIT ALL REQUIRED SHOP PLANS, BY E-MAIL, TO THE DESIGN CONSULTANT FOR REVIEW.
2. DESIGNERS WILL MAKE REVIEW COMMENTS ON THESE ELECTRONIC SUBMISSIONS AS NEEDED AND RETURN THEM TO THE FABRICATOR.
3. UPON RECONCILIATION OF THE DESIGNER'S COMMENTS, FILES SHALL BE RETURNED TO THE DESIGNER.
4. EACH SHEET WILL BE ELECTRONICALLY STAMPED BY THE DESIGNER AND PLANS WILL BE FORWARDED BY EMAIL TO THE KYTC DIVISION OF STRUCTURAL DESIGN'S SHOP PLAN COORDINATOR FOR DISTRIBUTION.
5. ONLY PLANS SUBMITTED DIRECTLY TO THE SHOP PLAN COORDINATOR WILL BE DISTRIBUTED AND ONLY PLANS CONTAINING BOTH THE "DISTRIBUTED BY THE DIVISION OF STRUCTURAL DESIGN" AND THE DESIGNER REVIEW STAMP ARE TO BE USED FOR FABRICATION.

UTILITIES

BEFORE BEGINNING WORK, LOCATE ALL EXISTING UTILITIES. CONSIDER LOCATION OF UTILITIES SHOWN ON THE DRAWINGS TO BE APPROXIMATE AND FOR INFORMATIONAL PURPOSES ONLY. THE DEPARTMENT DOES NOT WARRANT THE LOCATIONS AND ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS. THE CONTRACTOR MUST MAKE HIS OWN DETERMINATION. EXCEPT AS SHOWN ON THE PLANS, WORK AROUND AND DO NOT DISTURB EXISTING UTILITIES.

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.

DIMENSIONS

DIMENSIONS ARE FOR A NORMAL TEMPERATURE OF 60 DEGREES FAHRENHEIT. LAYOUT DIMENSIONS ARE HORIZONTAL DIMENSIONS.

SUPERSTRUCTURE SLAB

THE SUPERSTRUCTURE SLAB SHALL BE POURED CONTINUOUSLY FROM END TO END OF SLAB BEFORE THE CONCRETE IS ALLOWED TO SET.

MASTIC TAPE

APPLY MASTIC TAPE AT BRIDGE IN ACCORDANCE WITH STANDARD DRAWING BGX-022, C.E. THE CONTRACTOR SHALL FURNISH ALL PLANS, EQUIPMENT, AND LABOR NECESSARY TO DO THE WORK FOR WHICH NO DIRECT PAYMENT WILL BE MADE.

TEMPORARY SUPPORTS

TEMPORARY SUPPORTS OR SHORING WILL NOT BE PERMITTED UNDER THE BEAMS WHEN POURING THE CONCRETE DECK SLAB OR WHEN TAKING "TOP OF BEAM" ELEVATIONS.

ARMORED EDGE

FABRICATE ARMORED EDGE TO MATCH CROSS SLOPE AND PARABOLIC CROWN AT EACH END OF BRIDGE.

FOUNDATION PREPARATION

FOUNDATION PREPARATION SHALL BE IN ACCORDANCE WITH SECTION 603 OF THE SPECIFICATIONS.

FOUNDATION EXCAVATIONS SHOULD BE PROPERLY BRACED/SHORED TO PROVIDE ADEQUATE SAFETY TO PERSONS WORKING IN OR AROUND EXCAVATIONS, BRACING SHOULD BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL GUIDELINES.

TEMPORARY SHORING, SHEETING, COFFERDAMS, AND/OR DEWATERING METHODS MAY BE REQUIRED TO FACILITATE FOUNDATION CONSTRUCTION, IT SHOULD BE ANTICIPATED THAT GROUNDWATER WILL BE ENCOUNTERED AT FOUNDATION LOCATIONS WITHIN THE FLOOD PLAIN.

TEMPORARY SHORING, BRACING, SHEETING, COFFERDAMS AND DEWATERING SHALL BE INCLUDED IN THE LUMP SUM BID FOR FOUNDATION PREPARATION.

STRUCTURE GRANULAR BACKFILL

THE ESTIMATED QUANTITY OF STRUCTURE GRANULAR BACKFILL IS 101.4 C.Y., AND MATERIALS FOR STRUCTURE GRANULAR BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 805 OF THE SPECIFICATIONS.

CONTRARY TO THE SPECIFICATIONS, STRUCTURE GRANULAR BACKFILL WILL NOT BE MEASURED FOR PAYMENT BUT SHALL BE INCLUDED IN THE LUMP SUM BID FOR FOUNDATION PREPARATION.

CONCRETE SEALER

APPLY CONCRETE SEALER IN ACCORDANCE WITH THE SPECIAL NOTE FOR CONCRETE SEALING. SEE SHEET S9 FOR LIMITS OF SEALING ON THE SUPERSTRUCTURE.

GEOTEXTILE FABRIC

GEOTEXTILE FABRIC SHALL CONFORM TO THE STANDARD SPECIFICATIONS.

GEOTEXTILE FABRIC CLASS 1 IS TO BE PLACED BETWEEN THE EMBANKMENT AND SLOPE PROTECTION AT LOCATIONS WHERE CYCLOPEAN STONE RIP-RAP IS SPECIFIED. PAYMENT FOR FABRIC IS TO BE INCIDENTAL TO THE SLOPE PROTECTION.

GEOTEXTILE FABRIC CLASS 2 IS TO BE PLACED AROUND THE STRUCTURE GRANULAR BACKFILL AS SHOWN ON STANDARD DRAWING RGX-105 AND IN ACCORDANCE WITH SPECIAL PROVISION 69. PAYMENT FOR FABRIC IS TO BE INCIDENTAL TO THE STRUCTURE GRANULAR BACKFILL.

PRE-DRILLING FOR PILES AT END BENTS

PRE-DRILLING FOR PILES IS REQUIRED. SEE THE FOUNDATION LAYOUT, SHEET S4, FOR DETAILS.

PILE POINTS

PILE POINTS ARE NOT REQUIRED FOR THIS BRIDGE, PER THE KYTC DIVISION OF STRUCTUAL DESIGN, 2022 INTERIM GUIDANCE, PILE POINTS MAY BE LEFT OFF WHERE PILES ARE FULLY PREDRILLED INTO SOLID ROCK.

PILING

PILING SHALL BE PRE-DRILLED AND DRIVEN TO SATISFY THE DRIVING CRITERIA DEFINED 1N THE PILE RECORD ON SHEET S4.

TEST PILES SHALL BE PRE-DRILLED AND 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.

EMBANKMENTS

CONSTRUCT THE EMBANKMENTS IN ACCORDANCE WITH SPECIAL PROVISION 69.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY: JM Crawford & Associates Consulting Engineers

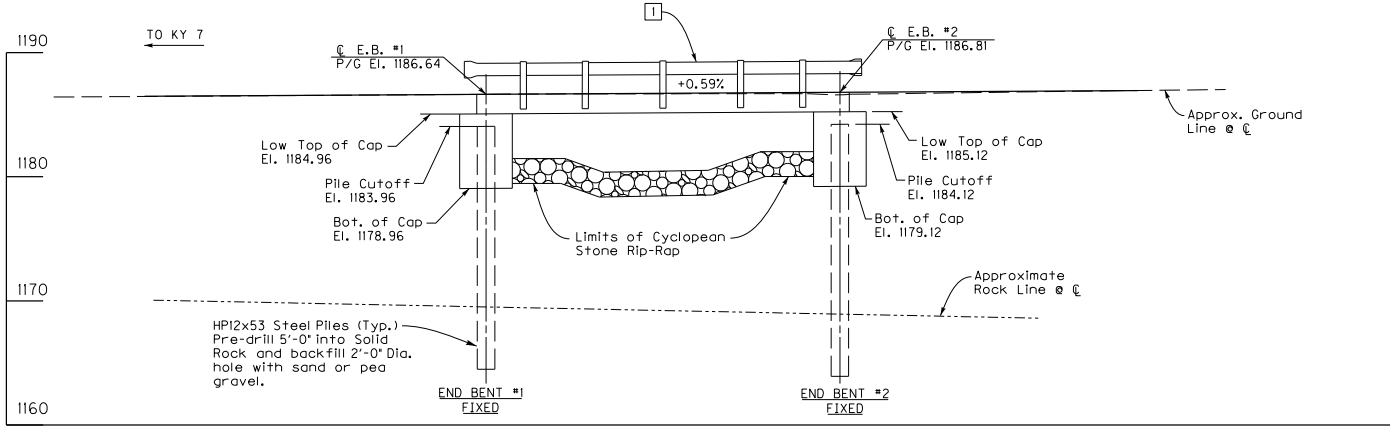
DATE: 10/21/2022	CHECKED BY
DESIGNED BY: Lee Carlisle	Stuart McIntosh
DETAILED BY: Greg Crank	Lee Carlisle

GENERAL NOTES

CROSSING: BLAIR BRANCH

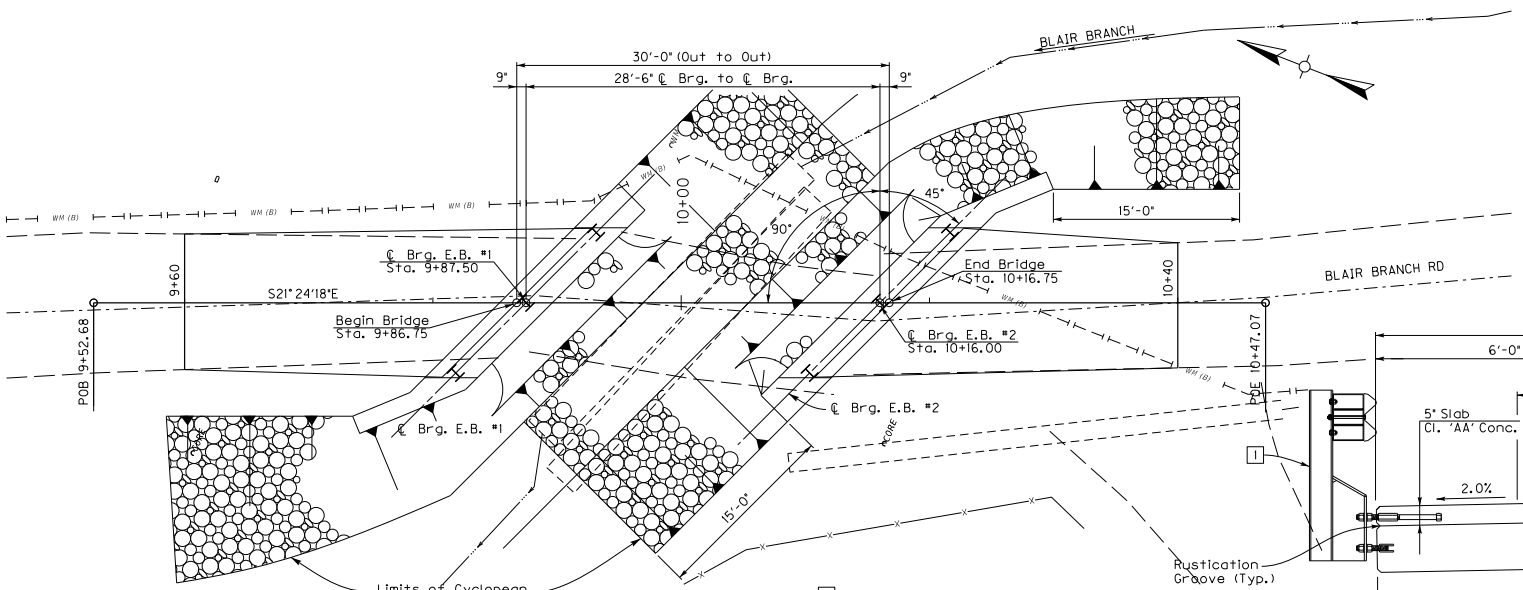
ROUTE	ITEM NO.	COUNTY OF
CR 1339	SHEET NO. S2	LETCHER
		DRAWING NUMBER 28597

OpenRoads Designer v10.16.2.267 USER: $$$$USER$$$$ DATE PLOTTED: $$$$DATE$$$$ FILE NAME: $$$$designs\files$$specification$$$$



ELEVATION

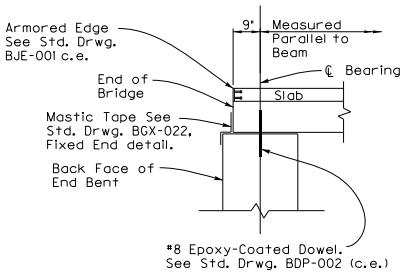
28'-6" CB12x48 PPC Box Beam - Simple Span
Live Load 125% of HL-93 (KYHL-93)
12'-0" Bridge Roadway Width - 45° Skew Rt.



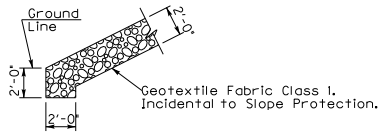
PLAN

(Superstructure Not Shown)

1 Bridge Rail, formerly referred to as "ODOT Deep Beam Bridge Rail" with Terminal Scetion No. 1 at ends (Typ.). See Sheet S11 and Standard Drawing List on Sheet S1 for details.

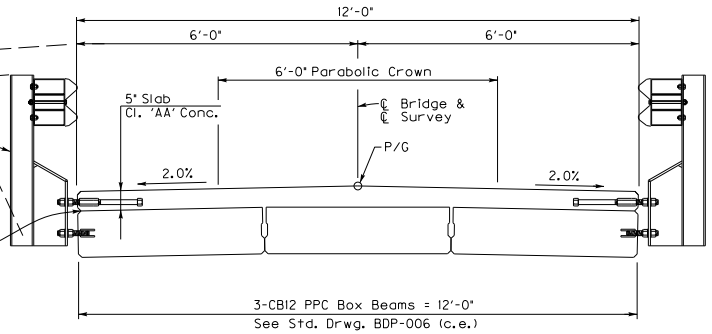


END OF BRIDGE DETAIL



TOE OF SLOPE DETAIL

(Applies to Sideslopes)



TYPICAL SECTION

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

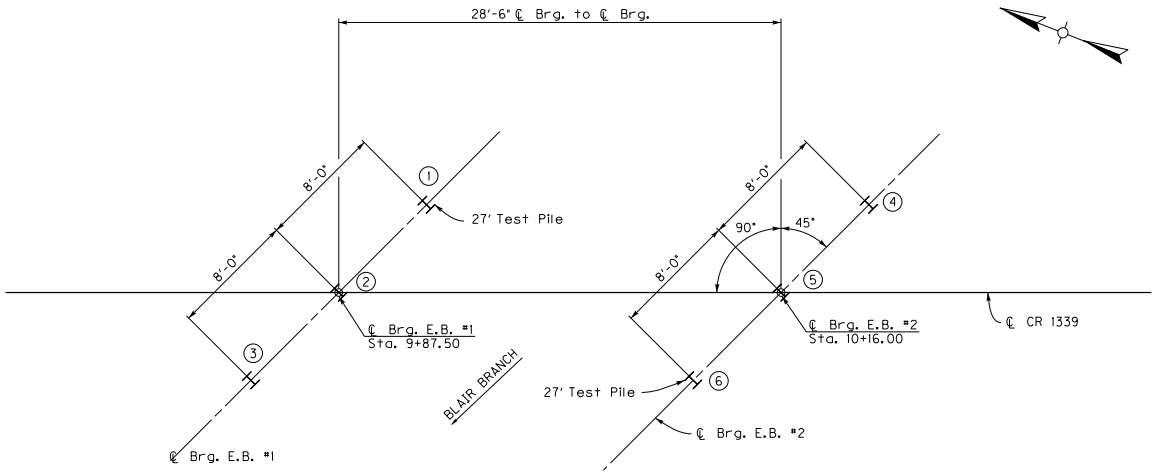
REVISION	DATE

PREPARED BY
JM Crawford & Associates
Consulting Engineers

DATE: 10/21/2022	CHECKED BY
DESIGNED BY: Lee Carlisle	Stuart McIntosh
DETAILED BY: Greg Crank	Lee Carlisle

LAYOUT
CROSSING
BLAIR BRANCH

ROUTE	ITEM NO.	COUNTY OF
CR 1339		LETCHER
	SHEET NO.	DRAWING NUMBER
	S3	28597



FOUNDATION LAYOUT

H Denotes HP12x53 Vertical Piles

Notes

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 holes shall be backfilled with sand or pea gravel once the pile is in place. The casing shall be removed, as the hole is being backfilled. Piles shall then be driven to refusal. Include the cost of all materials, labor, and equipment needed to pre-drill, backfill the holes, and drive the piles to refusal in the price per linear foot for Pre-drilling Piles.

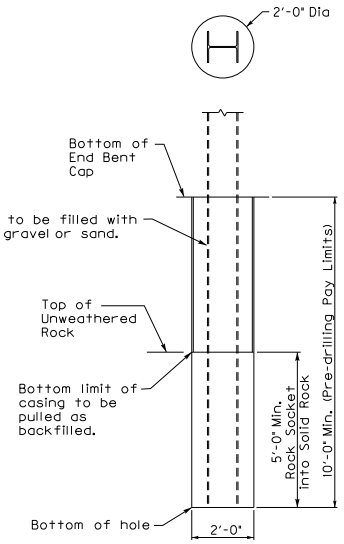
Orient the piles as shown in the Foundation Layout.

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

Temporary sheeting and/or shoring may be required for installation of pile caps.

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	1183.96			60
2	1183.96			60
3	1183.96			60
END BENT #2				
4	1184.12			60
5	1184.12			60
6	1184.12			60



PRE-DRILLING DETAIL

NOTE: Maintain 5'-0" Min. rock socket into solid unweathered bedrock, and 10'-0" min. pile length below bottom of End Bent Cap.

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 1/2 inch or less for 10 consecutive blows, practical refusal is obtained after the pile is struck an additional 10 blows with total penetration of 1/2 inch 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.

Field Data

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

Submit this record to:

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

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

Use HP 12X53 in accordance with BPS-003, c.e.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY
JMC JM Crawford & Associates Consulting Engineers

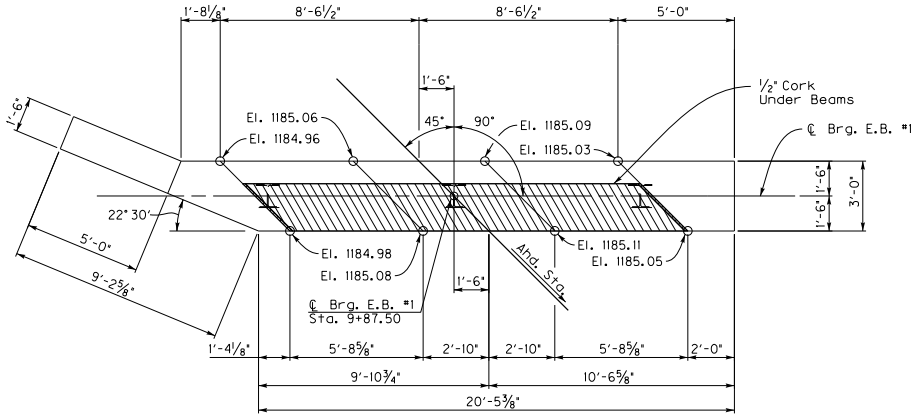
DATE: 10/21/2022	CHECKED BY
DESIGNED BY: Lee Carlisle	Stuart McIntosh
DETAILED BY: Greg Crank	Lee Carlisle

FOUNDATION LAYOUT

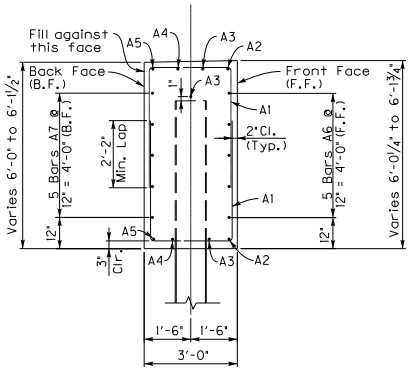
CROSSING: BLAIR BRANCH

ROUTE	ITEM NO.	COUNTY OF
CR 1339		LETCHER
	SHEET NO. S4	DRAWING NUMBER 28597

OpenRoads Designer v10.16.0.80 USER: $$$$USER$$$$ DATE PLOTTED: $$$$DATE$$$$ FILE NAME: $$$$designs\file$$specification$$$$



PLAN



SECTION A–A

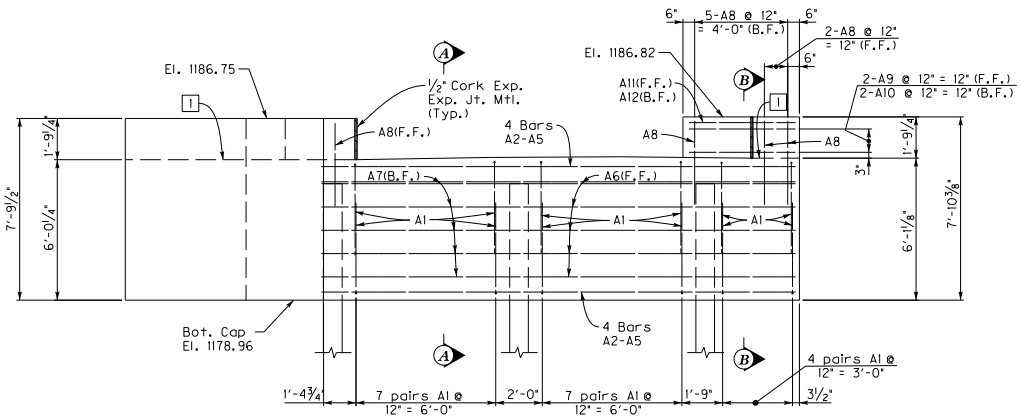
[1]

NOTE: Mandatory Construction joint for side by side box beams. Concrete above bridge seat shall be poured after beams are set and tensioning rods are tightened (typ. each side).

NOTE: Dowel Box Beams in accordance with Std. Drwg. BDP-002, (c.e.).

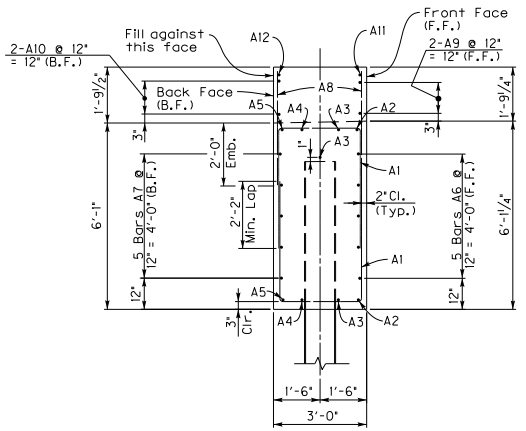
NOTE: For Pile Location see Foundation Layout.

NOTE: Seat Elevations are given on top of concrete.



ELEVATION

(Looking at front face)

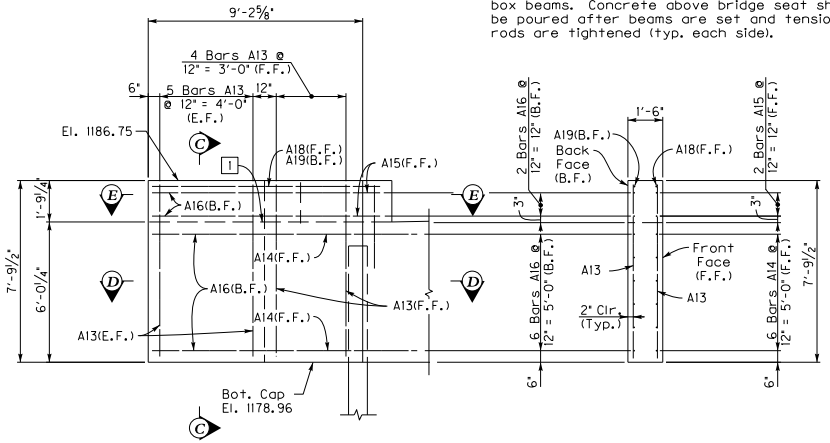


SECTION B–B

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION	DATE	PREPARED BY JM Crawford & Associates Consulting Engineers	DATE: 10/21/2022	CHECKED BY	END BENT #1	ROUTE	ITEM NO.	COUNTY OF
				DESIGNED BY: Lee Carlisle	Stuart McIntosh		CR 1339		LETCHER
				DETAILED BY: Greg Crank	Lee Carlisle	CROSSING BLAIR BRANCH		SHEET NO. S5	DRAWING NUMBER 28597

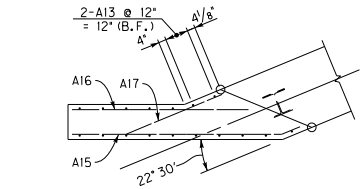
OpenRoads Designer v10.16.2.267 USER: $$$$USER$$$$ DATE PLOTTED: $$$$DATE$$$$ FILE NAME: $$$$designs\file$$specification$$$$

[1] Mandatory Construction joint for side by side box beams. Concrete above bridge seat shall be poured after beams are set and tensioning rods are tightened (typ. each side).

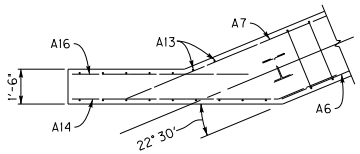


RIGHT WING ELEVATION

SECTION C–C



SECTION E–E

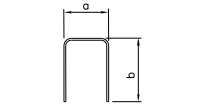


SECTION D–D

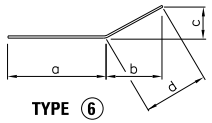
BILL OF REINFORCEMENT

MARK	TYPE	SIZE	NO.	LENGTH FT.	LENGTH IN.	LOCATION	a FT.	a IN.	b FT.	b IN.	c FT.	c IN.	d FT.	d IN.
A1ES	②	#5	36	10	7	CAP	2	8	4	0				
A2E	Str	#8	2	20	4									
A3E	Str	#8	3	21	8									
A4E	Str	#8	2	22	6									
A5E	Str	#8	2	23	7									
A6E	Str	#5	5	20	4									
A7E	Str	#5	5	26	5	CAP								
A8E	Str	#5	8	3	7	WINGS								
A9E	Str	#5	2	1	10	LT. WING								
A10E	Str	#5	2	4	4									
A11E	Str	#6	1	1	10									
A12E	Str	#6	1	4	4	LT. WING								
A13E	Str	#5	16	7	4	RT. WING								
A14E	⑥	#5	6	11	7		9	0	2	4 5/8	0	11 7/8	2	7
A15E	⑥	#5	2	9	10		9	0	0	9 1/4	0	3 7/8	0	10
A16E	Str	#5	8	7	7									
A17E	Str	#5	2	4	5									
A18E	⑥	#6	1	9	10		9	0	0	9 1/4	0	3 7/8	0	10
A19E	⑥	#6	1	6	6	RT. WING	4	10	1	6 1/2	0	7 5/8	1	8

BAR TYPES



TYPE ②



TYPE ⑥

Note:
Use 2" min. clearance for all reinforcement unless noted otherwise.

All reinforcement designated with suffix "E" shall be epoxy coated.

"S" denotes bars to have stirrup bend dimensions.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

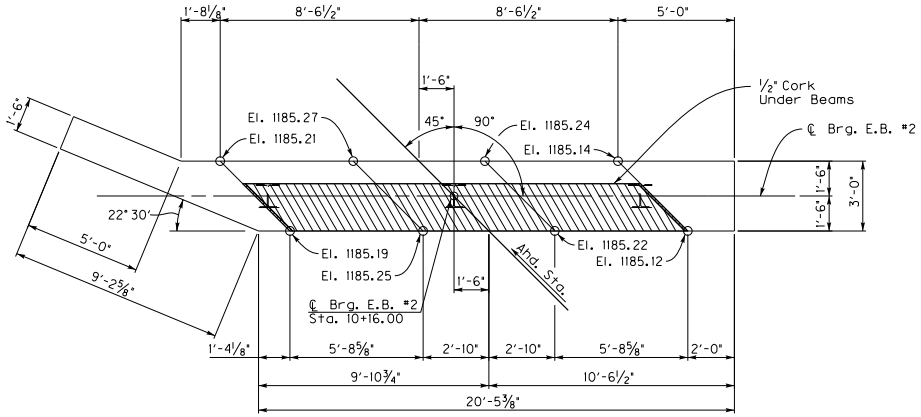
PREPARED BY
JM Crawford & Associates
Consulting Engineers

DATE: 10/21/2022	CHECKED BY
DESIGNED BY: Lee Carlisle	Stuart McIntosh
DETAILED BY: Greg Crank	Lee Carlisle

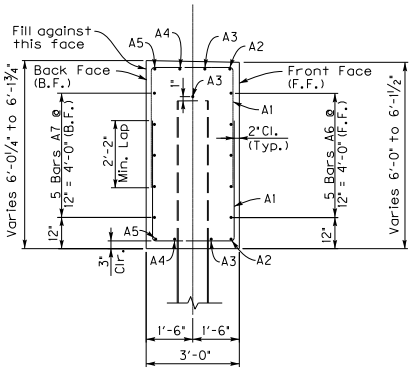
END BENT #1

CROSSING
BLAIR BRANCH

ROUTE	ITEM NO.	COUNTY OF
CR 1339		LETCHER
	SHEET NO. S6	DRAWING NUMBER 28597



PLAN



SECTION A–A

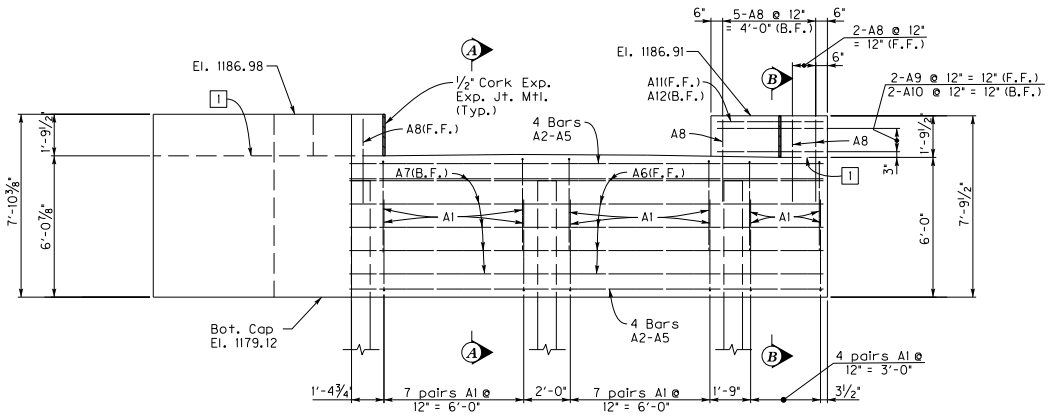
[1]

NOTE: Mandatory Construction joint for side by side box beams. Concrete above bridge seat shall be poured after beams are set and tensioning rods are tightened (typ. each side).

NOTE: Dowel Box Beams in accordance with Std. Drwg. BDP-002, (c.e.).

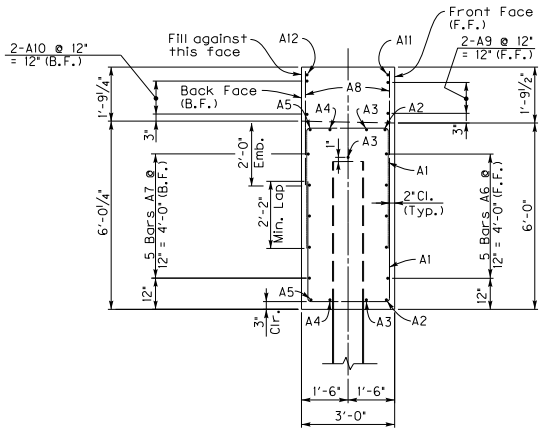
NOTE: For Pile Location see Foundation Layout.

NOTE: Seat Elevations are given on top of concrete.



ELEVATION

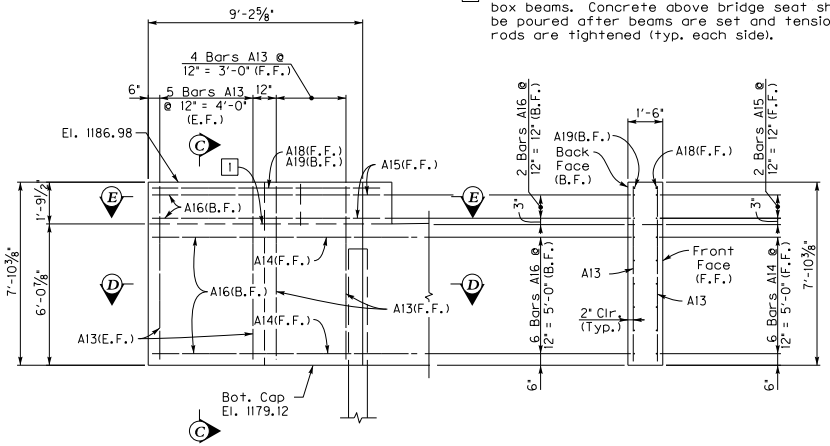
(Looking at front face)



SECTION B–B

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION	DATE	PREPARED BY JM Crawford & Associates Consulting Engineers	DATE: 10/21/2022	CHECKED BY	END BENT #2	ROUTE	ITEM NO.	COUNTY OF
				DESIGNED BY: Lee Carlisle	Stuart McIntosh				LETCHER
				DETAILED BY: Greg Crank	Lee Carlisle	CROSSING BLAIR BRANCH	CR 1339	SHEET NO. S7	DRAWING NUMBER 28597

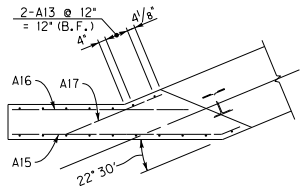
OpenRoads Designer v10.16.2.267 USER: $$$$USER$$$$ DATE PLOTTED: $$$$DATE$$$$ FILE NAME: $$$$designs\file$$specification$$$$



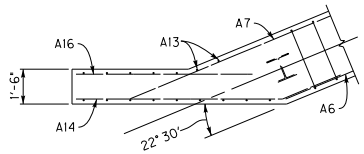
1 Mandatory Construction joint for side by side box beams. Concrete above bridge seat shall be poured after beams are set and tensioning rods are tightened (typ. each side).

RIGHT WING ELEVATION

SECTION C–C



SECTION E–E

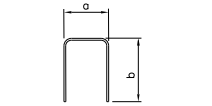


SECTION D–D

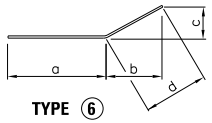
BILL OF REINFORCEMENT

MARK	TYPE	SIZE	NO.	LENGTH FT.	LENGTH IN.	LOCATION	a FT.	a IN.	b FT.	b IN.	c FT.	c IN.	d FT.	d IN.
A1ES	②	#5	36	10	7	CAP	2	8	4	0				
A2E	Str	#8	2	20	4									
A3E	Str	#8	3	21	8									
A4E	Str	#8	2	22	6									
A5E	Str	#8	2	23	7									
A6E	Str	#5	5	20	4									
A7E	Str	#5	5	26	5	CAP								
A8E	Str	#5	8	3	7	WINGS								
A9E	Str	#5	2	1	10	LT. WING								
A10E	Str	#5	2	4	4									
A11E	Str	#6	1	1	10									
A12E	Str	#6	1	4	4	LT. WING								
A13E	Str	#5	16	7	5	RT. WING								
A14E	⑥	#5	6	11	7		9	0	2	4 5/8	0	11 7/8	2	7
A15E	⑥	#5	2	9	10		9	0	0	9 1/4	0	3 7/8	0	10
A16E	Str	#5	8	7	7									
A17E	Str	#5	2	4	5									
A18E	⑥	#6	1	9	10		9	0	0	9 1/4	0	3 7/8	0	10
A19E	⑥	#6	1	6	6	RT. WING	4	10	1	6 1/2	0	7 5/8	1	8

BAR TYPES



TYPE ②



TYPE ⑥

Note:
Use 2" min. clearance for all reinforcement unless noted otherwise.

All reinforcement designated with suffix "E" shall be epoxy coated.

"S" denotes bars to have stirrup bend dimensions.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

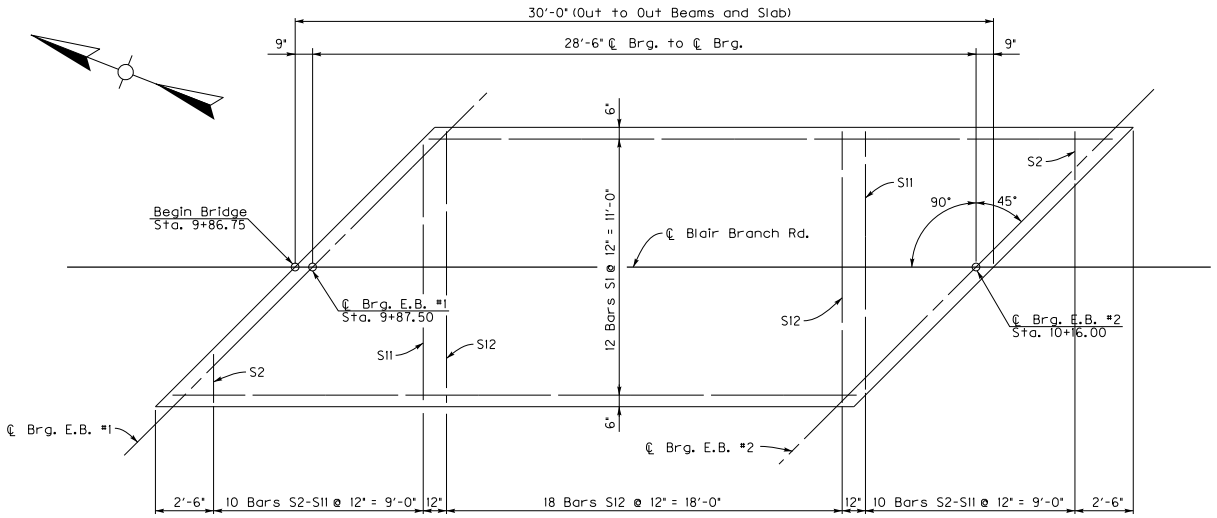
PREPARED BY
JM Crawford & Associates
Consulting Engineers

DATE: 10/21/2022	CHECKED BY
DESIGNED BY: Lee Carlisle	Stuart McIntosh
DETAILED BY: Greg Crank	Lee Carlisle

END BENT #2

CROSSING
BLAIR BRANCH

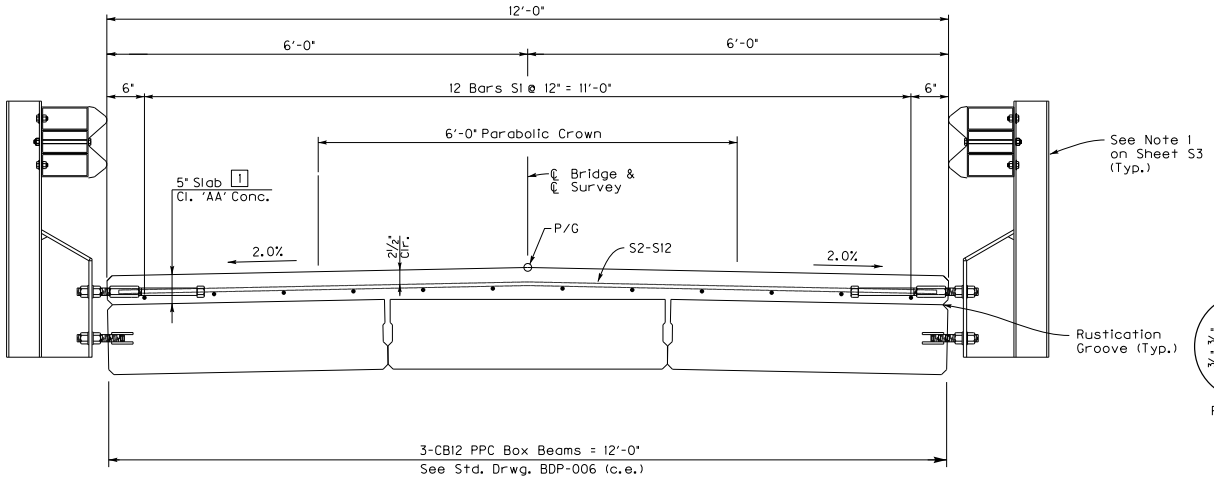
ROUTE	ITEM NO.	COUNTY OF
CR 1339		LETCHER
	SHEET NO.	DRAWING NUMBER
	S8	28597



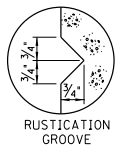
SLAB PLAN

BILL OF REINFORCEMENT						
MARK	TYPE	SIZE	NO.	LENGTH FT.	LENGTH IN.	LOCATION
S1E	Str	#5	12	29	6	SLAB
S2E	Str	#5	2	2	1	
S3E	Str	#5	2	3	1	
S4E	Str	#5	2	4	1	
S5E	Str	#5	2	5	1	
S6E	Str	#5	2	6	1	
S7E	Str	#5	2	7	1	
S8E	Str	#5	2	8	1	
S9E	Str	#5	2	9	1	
S10E	Str	#5	2	10	1	
S11E	Str	#5	2	11	1	
S12E	Str	#5	18	11	8	SLAB

All reinforcement designated with suffix "E" shall be Epoxy Coated.

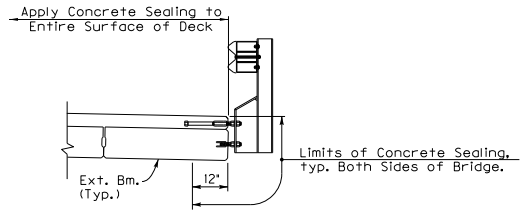


TYPICAL DECK SECTION



RUSTICATION GROOVE

[1] Note: Contrary to the Standard Drawings (5" thickness), the construction elevations will cause the slab to be approximately 5¾" thick at each end and go to approximately 5" thick at the center of the span. This is how the quantity of class "AA" concrete was calculated. Any additional concrete required above the plan quantity, due to beam camber being different from the designer's assumptions, is the contractor's responsibility and at no cost to the department.



CONCRETE SEALING DETAIL

Applied in the field. See General Notes.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

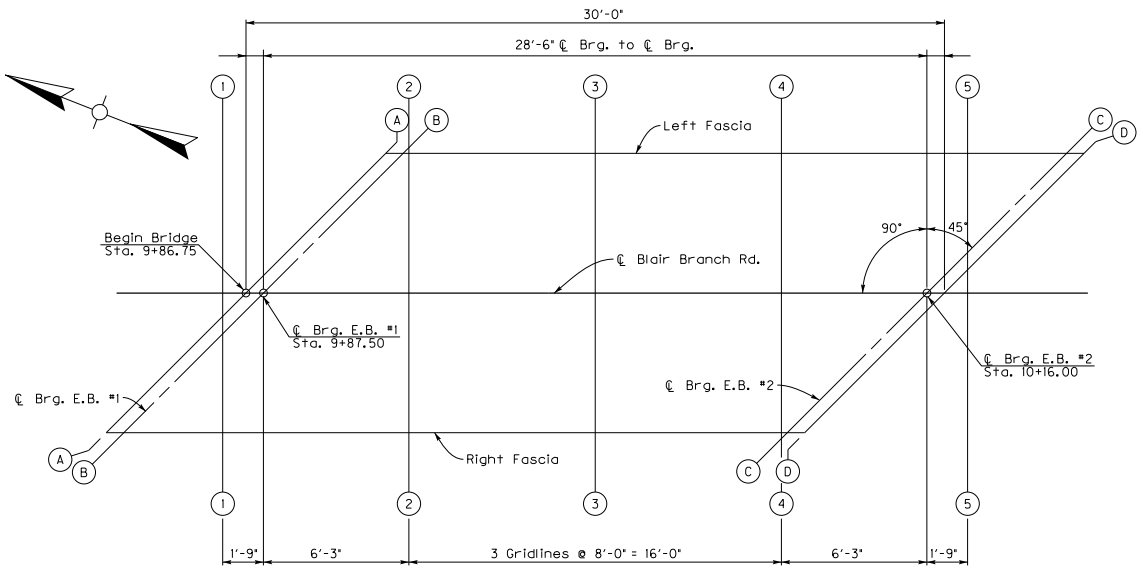
REVISION	DATE

PREPARED BY
JM Crawford & Associates
Consulting Engineers

DATE: 10/21/2022	CHECKED BY
DESIGNED BY: Lee Carlisle	Stuart McIntosh
DETAILED BY: Greg Crank	Lee Carlisle

SUPERSTRUCTURE
CROSSING
BLAIR BRANCH

ROUTE	ITEM NO.	COUNTY OF
CR 1339		LETCHER
	SHEET NO.	DRAWING NUMBER
	S9	28597



GRID LAYOUT

CONSTRUCTION ELEVATIONS

LOCATION	LEFT FASCIA			PROFILE GRADE & CENTER LINE OF BRIDGE			RIGHT FASCIA		
	CONSTR. ELEV.	TOP OF BEAM	DIM "X"	CONSTR. ELEV.	TOP OF BEAM	DIM "X"	CONSTR. ELEV.	TOP OF BEAM	DIM "X"
SKEW LINE A-A	1186.551			1186.606			1186.480		
SKEW LINE B-B	1186.555			1186.610			1186.485		
SKEW LINE C-C	1186.724			1186.778			1186.653		
SKEW LINE D-D	1186.728			1186.783			1186.657		
GRID LINE 1	----			----			1186.514		
GRID LINE 2	1186.557			1186.653			1186.568		
GRID LINE 3	1186.612			1186.708			1186.612		
GRID LINE 4	1186.663			1186.747			1186.652		
GRID LINE 5	1186.702			----			----		

NOTES FOR ELEVATIONS TAKEN ON PRESTRESSED CONCRETE 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.

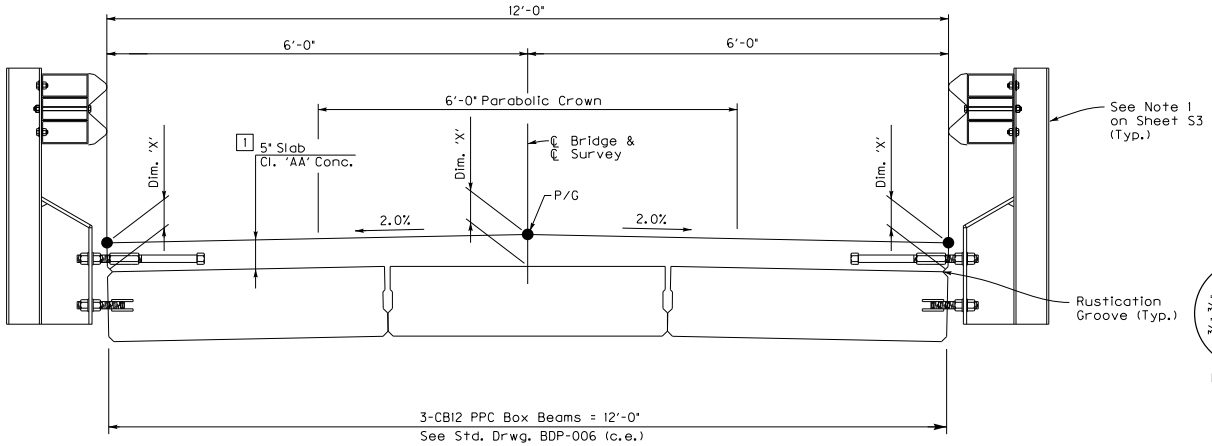
Compute dimension "X" as follows: "Construction Elevation" minus "Top of Beam" elevation equals dimension "X". Construction Elevations include camber due to weight of the concrete slab and barrier. Measuring of dimension "X" gives the final check on beam tolerances for camber, beam damage, and errors in erection that produce reverse cambers, sags, and unsightly fascia beams.
The minimum allowable dimension "X" or slab thickness is 4 3/4" (0. 395').
The maximum allowable dimension "X" or slab thickness is 6" (0.500').
If any computed dimension "X" is outside limits, adjustments need to be made to the dimensions "X" on one or more gridlines at the discretion of the Engineer.

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.

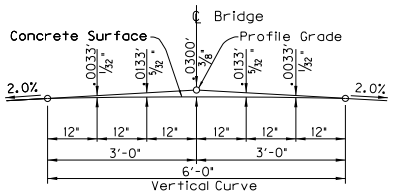
Note: The Table of Elevations at Centerline includes the 3/8" deduction for Parabolic Crown.

● Construction Elevations given at these points.



TYPICAL DECK SECTION

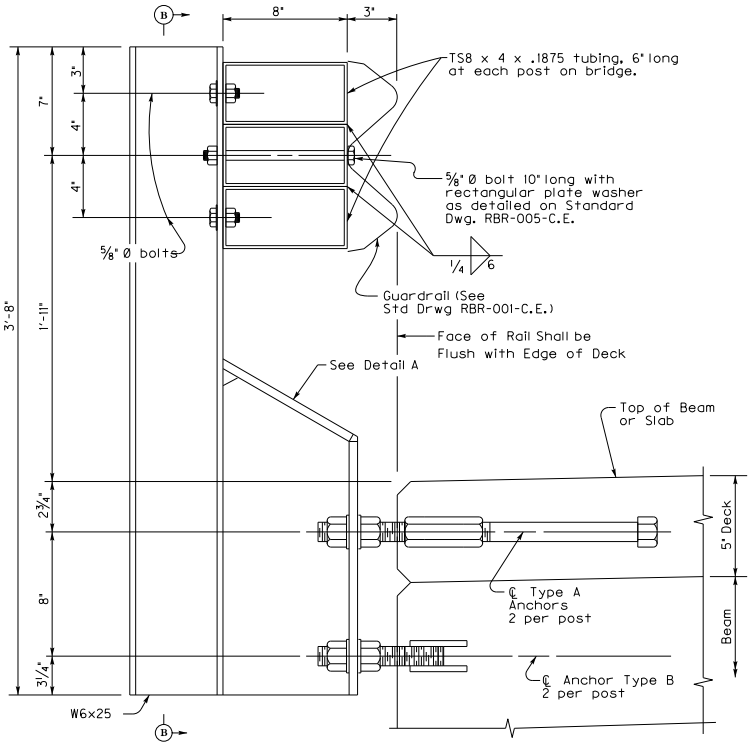
1 See Note 1 on Sheet S9



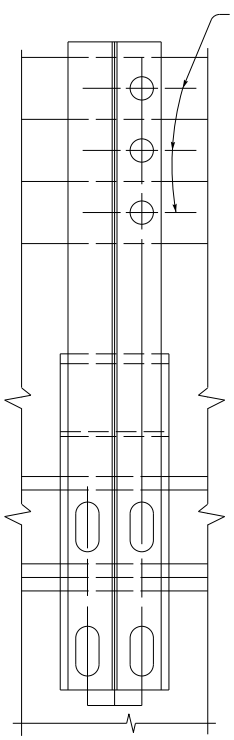
PARABOLIC CROWN DETAIL

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION	DATE	PREPARED BY JM Crawford & Associates Consulting Engineers	DATE: 10/21/2022	CHECKED BY	CONSTRUCTION ELEVATIONS	ROUTE	ITEM NO.	COUNTY OF
				DESIGNED BY: Lee Carlisle	Stuart McIntosh		CR 1339		LETCHER
				DETAILED BY: Greg Crank	Lee Carlisle	CROSSING BLAIR BRANCH		SHEET NO. S10	DRAWING NUMBER 28597

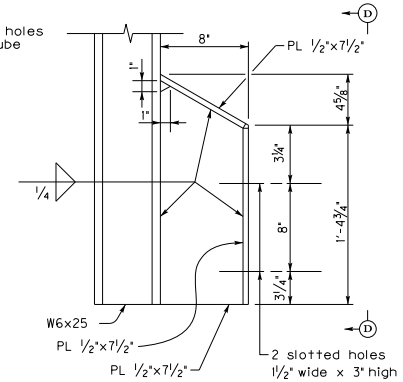
OpenRoads Designer v10.16.2.267 USER: $$$$USER$$$$ DATE PLOTTED: $$$$DATE$$$$ FILE NAME: $$$$designs\file$$specification$$$$



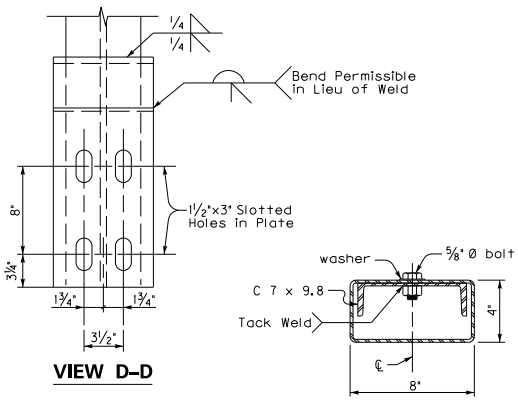
TYPICAL SECTION



SECTION B–B

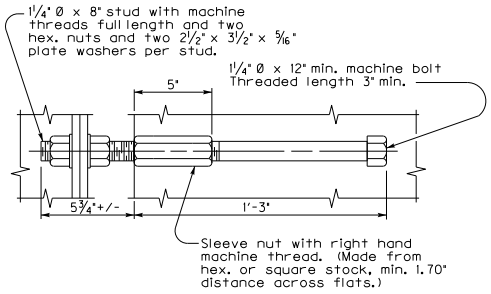


DETAIL A

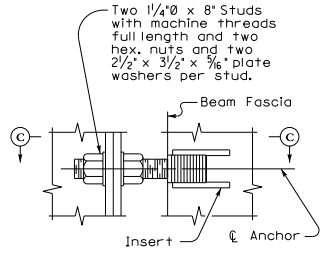


VIEW D–D

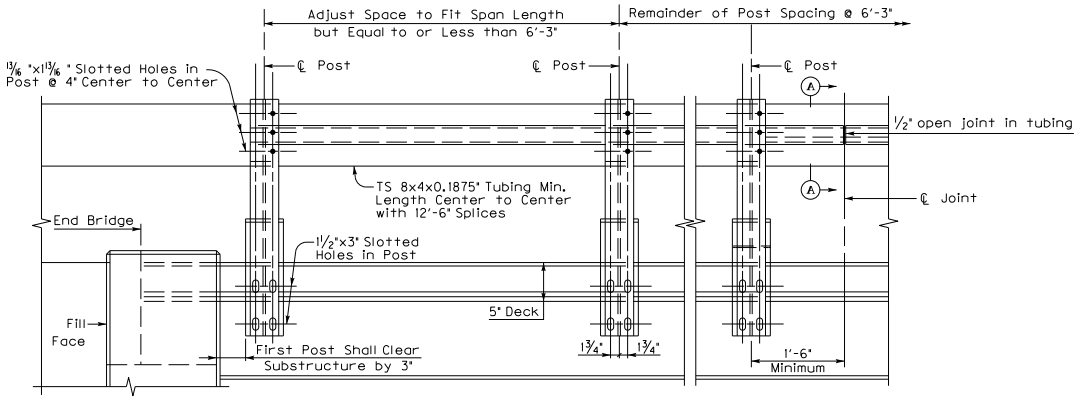
SECTION A–A



TYPE A ANCHOR DETAIL

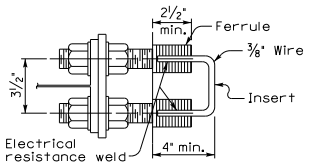


TYPE B ANCHOR DETAIL

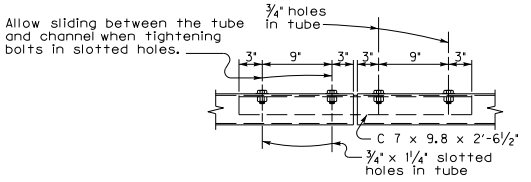


GUARDRAIL ELEVATION

Post Spacing



SECTION C–C



OPEN JOINT

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY
JM Crawford & Associates
Consulting Engineers

DATE: 10/21/2022	CHECKED BY
DESIGNED BY: Lee Carlisle	Stuart McIntosh
DETAILED BY: Greg Crank	Lee Carlisle

BRIDGE RAIL
CROSSING: BLAIR BRANCH

ROUTE	ITEM NO.	COUNTY OF
CR 1339	SHEET NO. S11	LETCHER
		DRAWING NUMBER 28597

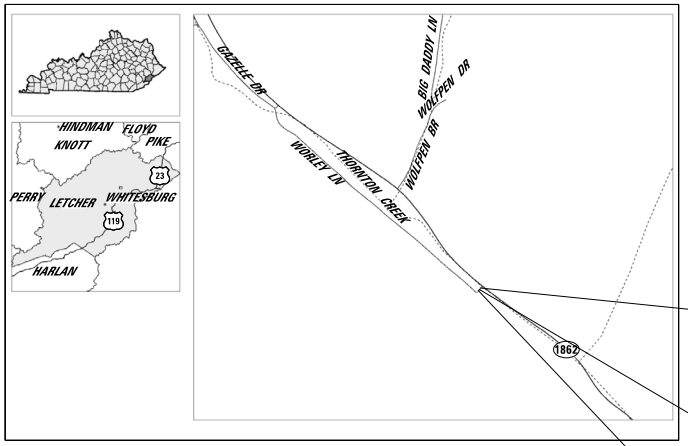
TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
LETCHER COUNTY
CR 1835 OVER THORNTON CREEK
FEMA BRIDGE: 4663-DR
STA. 5+34.25

COUNTY OF	ITEM NO.	SHEET NO.
LETCHER	N/A	R1

STANDARD DRAWINGS

BDP-001-06	BOX BEAM GENERAL NOTES AND REFERENCES
BDP-002-03	BOX BEAM BEARING DETAILS
BDP-003-03	BOX BEAM MISCELLANEOUS DETAILS
BDP-004-04	BOX BEAM TENSION ROD DETAILS
BDP-005-06	RAILING SYSTEM TYPE II
BDP-008-04	BOX BEAM CB21 DETAILS
BGX-006-10	STENCILS FOR STRUCTURES
RBR-001-13	STEEL BEAM GUARDRAIL ("W" BEAM)
RBR-005-11	GUARDRAIL COMPONENTS
RBR-010-06	GUARDRAIL TERMINAL SECTIONS
RBR-055-01	DELINEATORS FOR GUARDRAIL
RBR-060	DELINEATORS AT NARROW SHOULDER BRIDGES
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-230-1	SILT TRAP TYPE C
RGX-010-04	TYPICAL EMBANKMENT FOUNDATION BENCHES
RGX-100-07	TREATMENT OF EMBANKMENTS AT END-BENTS
RGX-105-09	TREATMENT OF EMBANKMENTS AT END-BENTS - DETAILS
RGX-200-01	ONE POINT PROCTOR FAMILY OF CURVES
RPM-110-07	APPROACHES, ENTRANCES AND MAIL BOX TURNOUT
TTC150-04	ROAD CLOSURE WITH DIVERSON
TTC155-02	TEMP. PAVEMENT MARKER ARRANGEMENTS FOR CONST. ZONES

ACTIVE SEPIAS



LOCATION MAP

INDEX OF SHEETS

Sheet No.	Description
R1	LAYOUT SHEET
R2	TYPICAL SECTIONS AND COORDINATE CONTROL
R3	ROADWAY PLAN AND PROFILE SHEET
S1	TITLE SHEET
S2	GENERAL NOTES
S3	LAYOUT
S4	FOUNDATION LAYOUT
S5	ABUTMENT #1
S6	ABUTMENT #2
S7	BOX BEAM GENERAL NOTES
S8	B12 X 48 BOX BEAMS

SPECIAL NOTES

SEDIMENT PREVENTION AND EROSION CONTROL
TRAFFIC CONTROL ON BRIDGE REPAIR CONTRACTS
SEASONAL TREE CLEARING RESTRICTION
CONTRACT COMPLETION DATE AND LIQUIDATED
DAMAGES ON BRIDGE REPAIR CONTRACTS
ADDITIONAL ENVIRONMENTAL COMMITMENTS

SPECIAL PROVISIONS

69 EMBANKMENT AT BRIDGE END BENT STRUCTURES

SPECIFICATIONS

2019 Standard Specifications for Road and Bridge Construction.

2020 AASHTO LRFD Bridge Design Specifications with Current Interims.

REVISION	DATE

DESIGN CRITERIA

CLASS OF HIGHWAY: RURAL LOCAL
TYPE OF TERRAIN: MOUNTAIN
DESIGN SPEED
REQUIRED NPSD
REQUIRED PSD
LEVEL OF SERVICE
ADT PRESENT ( )
ADT FUTURE ( )
DHV
D %
T %

GEOGRAPHIC COORDINATES

LATITUDE 37 DEGREES 09 MINUTES 42 SECONDS NORTH
LONGITUDE 82 DEGREES 46 MINUTES 11 SECONDS WEST

DESIGNED

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

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.

REV. NO.	SHEETS REVISED	DATE

TABLE OF REVISIONS

EX BRIDGE ID 067C006

PREPARED BY
J.M. Crawford & Associates
Consulting Engineers

STATE OF KENTUCKY
P. STUART MCINTOSH
19302
LICENSED PROFESSIONAL ENGINEER

Philip S. McIntosh
Digitally signed by Philip S. McIntosh
Date: 2022.12.15 17:04:29 -05'00'

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS
COUNTY OF
LETCHER
CR 1835 OVER THORNTON CREEK

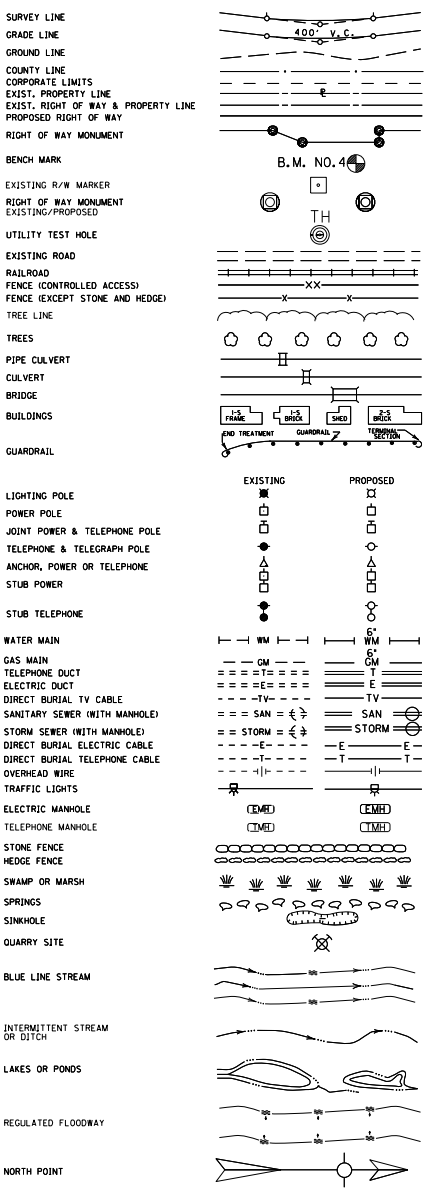
ITEM NO. N/A
DRAWING NO. 28595
PROJECT NUMBER:
LETTING DATE:

RECOMMENDED BY: _____ PROJECT MANAGER DATE:
PLAN APPROVED BY: _____ STATE HIGHWAY ENGINEER DATE:

FILE NAME: $DGNSPEC$
USER: $USER$
DATE PLOTTED: $DATE$ $TIME$
SUB-SHEET NAME:
OpenRoads Designer v10.16.0.80

TYPICAL SECTIONS

CONVENTIONAL SIGNS



LETCHER COUNTY
BRIDGE# 067C006
CR 1835 OVER THORNTON CREEK

Point	Description	Northing	Easting	Elevation	Station	Offset
CP #1	HUB & TACK	3596303.64	5789547.28	1242.02	4+94.53	0.36' LT
CP #1	SURVEY NAIL IN DIRT	3596414.34	5789423.65	1243.20	4+94.53	165.92' LT

PROJECT CONTROL

COORDINATES FOR HORIZONTAL CONTROL ARE AUTONOMOUS.
THEY ARE NOT AN OPUS SOLUTION. USE FOR DESIGN PURPOSES.

MAINTENANCE OF TRAFFIC NOTE

THE CONTRACTOR SHALL MAINTAIN TRAFFIC ALONG WORLEY LANE (CR 1835) AT ALL TIMES AND PROVIDE INGRESS/EGRESS TO ALL RESIDENTS ALONG WORLEY LANE. THE CONTRACTOR SHALL MAINTAIN, AT A MINIMUM, ONE LANE OF TRAFFIC ALONG KY 1862 OR AS DIRECTED BY THE ENGINEER. THE SPECIAL NOTE FOR TRAFFIC CONTROL ON BRIDGE REPAIR CONTRACTS SHALL BE IMPLEMENTED.

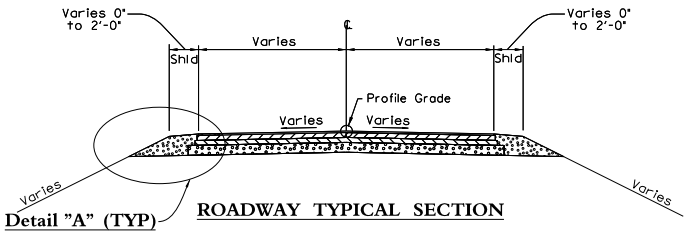
ALL LABOR AND MATERIALS NECESSARY FOR CONSTRUCTION AND MAINTENANCE OF TRAFFIC CONTROL DEVICES SHALL BE INCIDENTAL TO THE BID ITEM FOR "MAINTAIN AND CONTROL TRAFFIC".

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

ALL TEMPORARY TRAFFIC CONTROL ITEMS, DEVICES, MATERIALS, AND INCIDENTALS SHALL REMAIN THE PROPERTY OF THE CONTRACTOR WHEN NO LONGER NEEDED.
ALL TEMPORARY SIGNAGE SHALL BE INCIDENTAL TO THE BID ITEM "MAINTAIN AND CONTROL TRAFFIC"

UTILITY COORDINATION

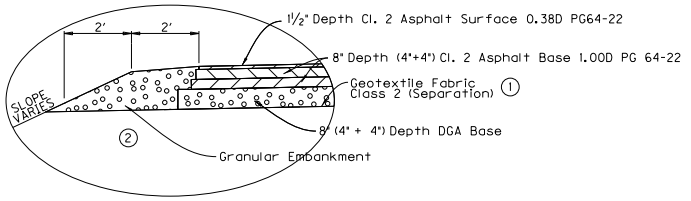
BEFORE BEGINNING WORK, LOCATE ALL EXISTING UTILITIES. CONSIDER UTILITY LINE LOCATIONS DEPICTED IN THE PLANS TO BE APPROXIMATE AND FOR INFORMATIONAL PURPOSES ONLY. THE DEPARTMENT DOES NOT WARRANT THE LOCATION AND ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS. THE CONTRACTOR MUST MAKE THEIR OWN DETERMINATION. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES AND/OR PROPERTY OWNERS REGARDING ALL UTILITIES, SERVICE LINES, OR PRIVATE LINES DURING CONSTRUCTION.



Detail "A" (TYP)

ROADWAY TYPICAL SECTION

Traffic Lane Pavement



Detail "A"

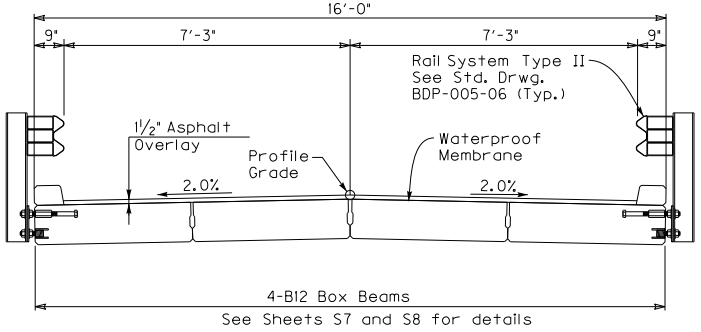
FULL-DEPTH MAINLINE & SHOULDER PAVEMENT RECONSTRUCTION

NOT TO SCALE

NOTES:

① GEOTEXTILE FABRIC CLASS 2 (SEPARATION) SHALL BE INCIDENTAL TO DGA.

② GRANULAR EMBANKMENT FOR NECESSARY WIDENING LOCATIONS AS APPROVED BY ENGINEER. MATERIAL NEEDED FOR SHOULDERS OUTSIDE OF PAVED AREA WILL BE MEASURED AND PAID AS GRANULAR EMBANKMENT.



BRIDGE TYPICAL SECTION

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: TYPICAL SECTIONS AND COORDINATE CONTROL
CR 1835 OVER THORNTON CREEK

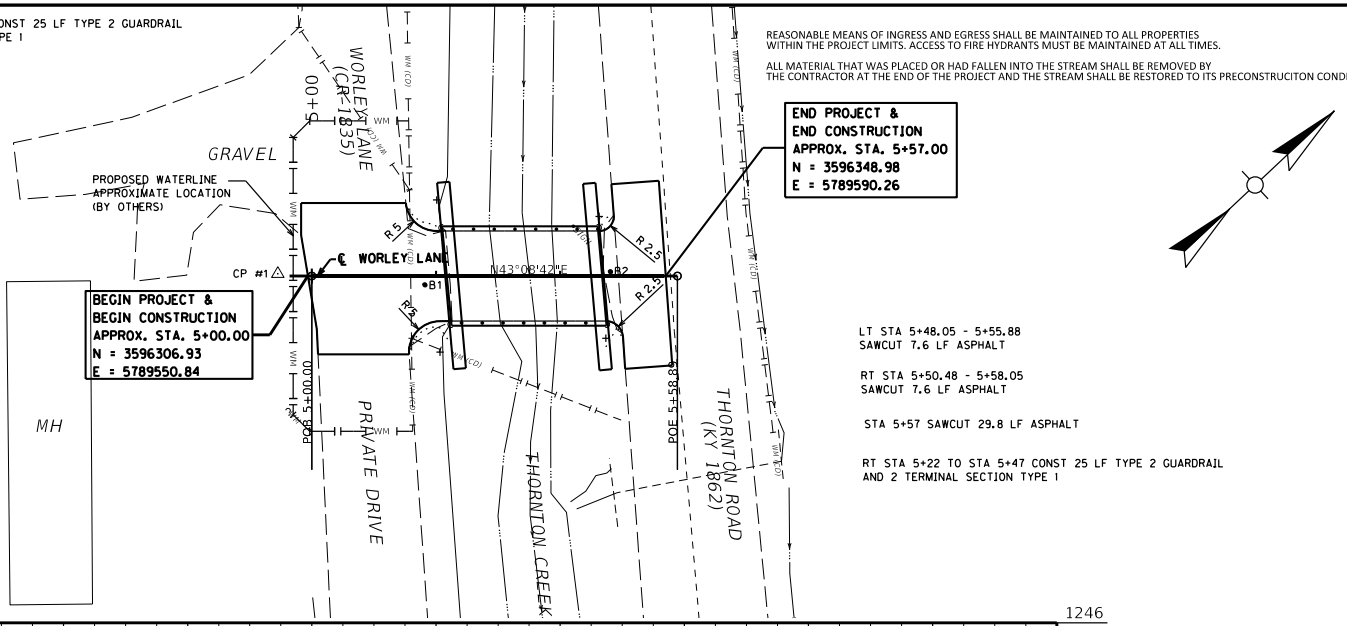
HORIZONTAL SCALE
SCALE: NTS

ITEM NO. N/A
COUNTY OF LETCHER
SHEET NO. R2

LT STA 5+21 TO STA 5+46 CONST 25 LF TYPE 2 GUARDRAIL
AND 2 TERMINAL SECTION TYPE 1

REASONABLE MEANS OF INGRESS AND EGRESS SHALL BE MAINTAINED TO ALL PROPERTIES WITHIN THE PROJECT LIMITS. ACCESS TO FIRE HYDRANTS MUST BE MAINTAINED AT ALL TIMES.

ALL MATERIAL THAT WAS PLACED OR HAD FALLEN INTO THE STREAM SHALL BE REMOVED BY THE CONTRACTOR AT THE END OF THE PROJECT AND THE STREAM SHALL BE RESTORED TO ITS PRECONSTRUCITON CONDITION.

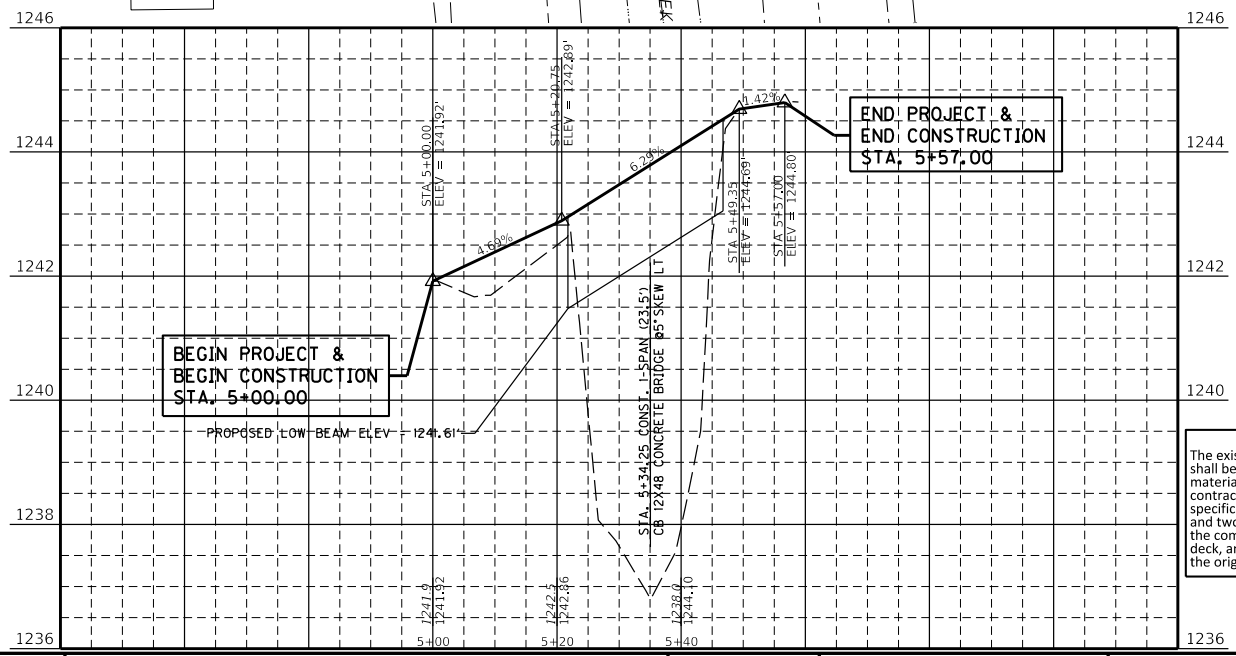


LT STA 5+48.05 - 5+55.88
SAWCUT 7.6 LF ASPHALT

RT STA 5+50.48 - 5+58.05
SAWCUT 7.6 LF ASPHALT

STA 5+57 SAWCUT 29.8 LF ASPHALT

RT STA 5+22 TO STA 5+47 CONST 25 LF TYPE 2 GUARDRAIL
AND 2 TERMINAL SECTION TYPE 1



BRIDGE REMOVAL NOTE

The existing 25' x 15' simple span steel beam bridge with concrete deck shall be removed in accordance with the current specifications. All material in the existing bridge shall remain the property of the contractor and shall be disposed of in accordance with the current specifications. The existing structure consists of one steel beam span and two masonry abutments. Lump sum payment in full shall include the complete removal of all steel beams and appurtenances, the concrete deck, and abutments. The abutments shall be removed to two feet below the original ground line. The contractor shall final dress all slopes.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: PLAN AND PROFILE
CR 1835 OVER THORNTON CREEK

HORIZONTAL SCALE
SCALE: 1" = 10'

0' 50' 100' 200'

STA 5+00 TO 5+57

ITEM NO. N/A
COUNTY OF LETCHER
SHEET NO. R3

LETTING DATE

CONSTRUCTION PROJECT NO.

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

LETCHER COUNTY
WORLEY LANE (CR 1835)
OVER THORNTON CREEK
STA. 5+34.25

ESTIMATE OF QUANTITIES

BID ITEM CODE		08100	08150	08002	08019	08651	08003	23378EC	03250	02360	02565	08801	01987
BID ITEM		Concrete Class "A"	Steel Reinforcement	Structure Excavation, Solid Rock	Cyclopean Stone Rip-Rap	Precast PC Box Beam B12-48	Foundation Preparation	Concrete Sealing	Waterproofing Membrane	Guardrail Terminal Section No. 1	Object Marker Type 2	Guardrail-Steel W Beam - S Face BR	Delineator for Guardrail B/W
UNIT		C.Y.	LBS.	C.Y.	TON	L.F.	L.S.	S.F.	S.Y.	Each	Each	L.F.	Each
Substructure	Abutment #1	38.7	2828	26.1	16			159					
	Abutment #2	32.1	2190	26.3	15			146					
Superstructure						100			43.5	4	4	50	4
BRIDGE TOTALS		70.8	5018	52.4	31	100	1	305	43.5	4	4	50	4

NOTE: Per the General Notes, Structure Granular Backfill and Geotextile Fabric Class 2 shall be incidental to Foundation Preparation. Geotextile Fabric Class 1 shall be incidental to Cyclopean Stone Rip-rap.

NOTE: The quantity of Asphalt Overlay on the bridge is included in the Roadway quantities.

REPLACEMENT OF EXISTING
BRIDGE NO. 067C006

DEPARTMENT OBJECT CODE: D23A
FEMA CODE: 4663-DR

INDEX OF SHEETS

SPECIAL NOTES

Concrete Sealing
Waterproofing Membrane

SPECIAL PROVISIONS

69 Embankment at Bridge End Bent Structures

STANDARD DRAWINGS

BDP-002-03	Box Beam Bearing Details
BDP-003-03	Box Beam Miscellaneous Details
BDP-004-04	Box Beam Tension Rod Details
BDP-005-06	Railing System Type II
BGX-006-10	Stencils for Structures
BGX-022	Joint Waterproofing
RBR-001-13	Steel Beam Guardrail ("W" Beam)
RBR-005-11	Guardrail Components
RBR-010-06	Guardrail Terminal Sections
RBR-060	Delineators at Narrow Shoulder Bridges
RGX-100-07	Treatment of Embankments at End Bents
RGX-105-09	Treatment of Embankments at End Bents-Details

NOTE: See Sheets S7 & S8 for Box Beam General Notes & Details.

Plans Prepared By
J.M. CRAWFORD & ASSOC.
Consulting Engineers

STATE OF KENTUCKY
LEE A. CARLISLE
25709
LICENSED PROFESSIONAL ENGINEER

Lee A. Carlisle

SPECIFICATIONS

2019 Standard Specifications for Road and Bridge Construction.

9th Edition AASHTO LRFD Bridge Design Specifications (2020)

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION	DATE	PREPARED BY JMC JM Crawford & Associates Consulting Engineers	DATE: 10/14/2022	CHECKED BY
				DESIGNED BY: Lee Carlisle	Stuart McIntosh
				DETAILED BY: Greg Crank	Lee Carlisle

	ROUTE	ITEM NO.	COUNTY OF
TITLE SHEET	CR 1835	12-0183.OTH	LETCHER
CROSSING THORNTON CREEK		SHEET NO. S1	DRAWING NUMBER 28595

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, 9TH EDITION WITH INTERIMS.

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.

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.

MATERIALS DESIGN SPECIFICATIONS

FOR CLASS "A" REINFORCED CONCRETE	F'C = 3500 PSI
FOR STEEL REINFORCEMENT	FY = 60000 PSI

MATERIAL SPECIFICATIONS

AASHTO SPECIFICATIONS OR ASTM, CURRENT EDITION, AS DESIGNATED BELOW SHALL GOVERN THE MATERIALS FURNISHED.

AASHTO M153	PREMOLDED CORK FILLER, TYPE II
AASHTO M-31	DEFORMED AND PLAIN BILLET-STEEL FOR CONCRETE REINFORCEMENT, GRADE 60

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.

CONCRETE

CLASS "A" CONCRETE IS TO BE USED THROUGHOUT THE SUBSTRUCTURE. PRESTRESSED BEAM CONCRETE SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

REINFORCEMENT

DIMENSIONS SHOWN FROM THE FACE OF CONCRETE TO BARS ARE TO CENTER OF BARS UNLESS OTHERWISE SHOWN. 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.

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.

BEVELED EDGES

ALL EXPOSED EDGES SHALL BE BEVELED ¾", UNLESS OTHERWISE SHOWN.

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.

SLOPE PROTECTION

SLOPE PROTECTION AT END BENTS SHALL BE DRY CYCLOPEAN STONE RIPRAP MEETING THE REQUIREMENTS OF SECTIONS 703 AND 805 OF THE SPECIFICATIONS. GEOTEXTILE FABRIC, CLASS 1 SHALL BE PLACED BETWEEN THE EMBANKMENT AND THE SLOPE PROTECTION IN ACCORDANCE WITH STANDARD SPECIFICATIONS 214 AND 843. PAYMENT FOR GEOTEXTILE FABRIC, CLASS 1, SHALL BE CONSIDERED INCIDENTAL TO THE UNIT PRICE BID FOR DRY CYCLOPEAN STONE RIPRAP.

COMPLETION OF THE STRUCTURE

THE CONTRACTOR IS REQUIRED TO COMPLETE THE STRUCTURE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. MATERIAL, LABOR, OR CONSTRUCTION OPERATIONS NOT OTHERWISE SPECIFIED, ARE TO BE INCLUDED IN THE BID ITEM MOST APPROPRIATE TO THE WORK INVOLVED. THIS MAY INCLUDE COFFERDAMS, SHORING, EXCAVATIONS, BACKFILLING, REMOVAL OF ALL OR PARTS OF EXISTING STRUCTURES, PHASE CONSTRUCTION, INCIDENTAL MATERIALS, LABOR, OR ANYTHING ELSE REQUIRED TO COMPLETE THE STRUCTURE.

SHOP DRAWING PROCEDURE

1. FABRICATORS SHALL SUBMIT ALL REQUIRED SHOP PLANS, BY E-MAIL, TO THE DESIGN CONSULTANT FOR REVIEW.
2. DESIGNERS WILL MAKE REVIEW COMMENTS ON THESE ELECTRONIC SUBMISSIONS AS NEEDED AND RETURN THEM TO THE FABRICATOR.
3. UPON RECONCILIATION OF THE DESIGNER'S COMMENTS, FILES SHALL BE RETURNED TO THE DESIGNER.
4. EACH SHEET WILL BE ELECTRONICALLY STAMPED BY THE DESIGNER AND PLANS WILL BE FORWARDED BY EMAIL TO THE KYTC DIVISION OF STRUCTURAL DESIGN'S SHOP PLAN COORDINATOR FOR DISTRIBUTION.
5. ONLY PLANS SUBMITTED DIRECTLY TO THE SHOP PLAN COORDINATOR WILL BE DISTRIBUTED AND ONLY PLANS CONTAINING BOTH THE "DISTRIBUTED BY THE DIVISION OF STRUCTURAL DESIGN" AND THE DESIGNER REVIEW STAMP ARE TO BE USED FOR FABRICATION.

UTILITIES:

BEFORE BEGINNING WORK, LOCATE ALL EXISTING UTILITIES. CONSIDER LOCATION OF UTILITIES SHOWN ON THE DRAWINGS TO BE APPROXIMATE AND FOR INFORMATIONAL PURPOSES ONLY. THE DEPARTMENT DOES NOT WARRANT THE LOCATIONS AND ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS. THE CONTRACTOR MUST MAKE HIS OWN DETERMINATION. EXCEPT AS SHOWN ON THE PLANS, WORK AROUND AND DO NOT DISTURB EXISTING UTILITIES.

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.

DIMENSIONS

DIMENSIONS ARE FOR A NORMAL TEMPERATURE OF 60 DEGREES FAHRENHEIT. LAYOUT DIMENSIONS ARE HORIZONTAL DIMENSIONS.

MASTIC TAPE

APPLY MASTIC TAPE AT BRIDGE IN ACCORDANCE WITH STANDARD DRAWING BGX-022, C.E. THE CONTRACTOR SHALL FURNISH ALL PLANS, EQUIPMENT, AND LABOR NECESSARY TO DO THE WORK FOR WHICH NO DIRECT PAYMENT WILL BE MADE.

FOUNDATION PREPARATION

FOUNDATION PREPARATION SHALL BE IN ACCORDANCE WITH SECTION 603 OF THE SPECIFICATIONS.

FOUNDATION EXCAVATIONS SHOULD BE PROPERLY BRACED/SHORED TO PROVIDE ADEQUATE SAFETY TO PERSONS WORKING IN OR AROUND EXCAVATIONS. BRACING SHOULD BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL GUIDELINES.

TEMPORARY SHORING, SHEETING, COFFERDAMS, AND/OR DEWATERING METHODS MAY BE REQUIRED TO FACILITATE FOUNDATION CONSTRUCTION. IT SHOULD BE ANTICIPATED THAT GROUNDWATER WILL BE ENCOUNTERED AT FOUNDATION LOCATIONS WITHIN THE FLOOD PLAIN.

TEMPORARY SHORING, BRACING, SHEETING, COFFERDAMS AND DEWATERING SHALL BE INCLUDED IN THE LUMP SUM BID FOR FOUNDATION PREPARATION.

STRUCTURE GRANULAR BACKFILL

THE ESTIMATED QUANTITY OF STRUCTURE GRANULAR BACKFILL IS 74.1 C.Y., AND MATERIALS FOR STRUCTURE GRANULAR BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 805 OF THE SPECIFICATIONS.

CONTRARY TO THE SPECIFICATIONS, STRUCTURE GRANULAR BACKFILL WILL NOT BE MEASURED FOR PAYMENT BUT SHALL BE INCLUDED IN THE LUMP SUM BID FOR FOUNDATION PREPARATION.

CONCRETE SEALER

APPLY CONCRETE SEALER IN ACCORDANCE WITH THE SPECIAL NOTE FOR CONCRETE SEALING. SEE SHEET S8 FOR LIMITS OF SEALING ON THE SUPERSTRUCTURE.

GEOTEXTILE FABRIC

GEOTEXTILE FABRIC SHALL CONFORM TO THE STANDARD SPECIFICATIONS.

GEOTEXTILE FABRIC CLASS 1 IS TO BE PLACED BETWEEN THE EMBANKMENT AND SLOPE PROTECTION AT LOCATIONS WHERE CYCLOPEAN STONE RIP-RAP IS SPECIFIED. PAYMENT FOR FABRIC IS TO BE INCIDENTAL TO THE SLOPE PROTECTION.

GEOTEXTILE FABRIC CLASS 2 IS TO BE PLACED AROUND THE STRUCTURE GRANULAR BACKFILL AS SHOWN ON STANDARD DRAWING RGX-105 AND IN ACCORDANCE WITH SPECIAL PROVISION 69. PAYMENT FOR FABRIC IS TO BE INCIDENTAL TO THE FOUNDATION PREPARATION.

EMBANKMENTS

CONSTRUCT THE EMBANKMENTS IN ACCORDANCE WITH SPECIAL PROVISION 69, EXCEPT SEE SHEET S3 FOR TRUNCATED LIMITS OF EXCAVATION AND STRUCTURAL GRANULAR BACKFILL.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

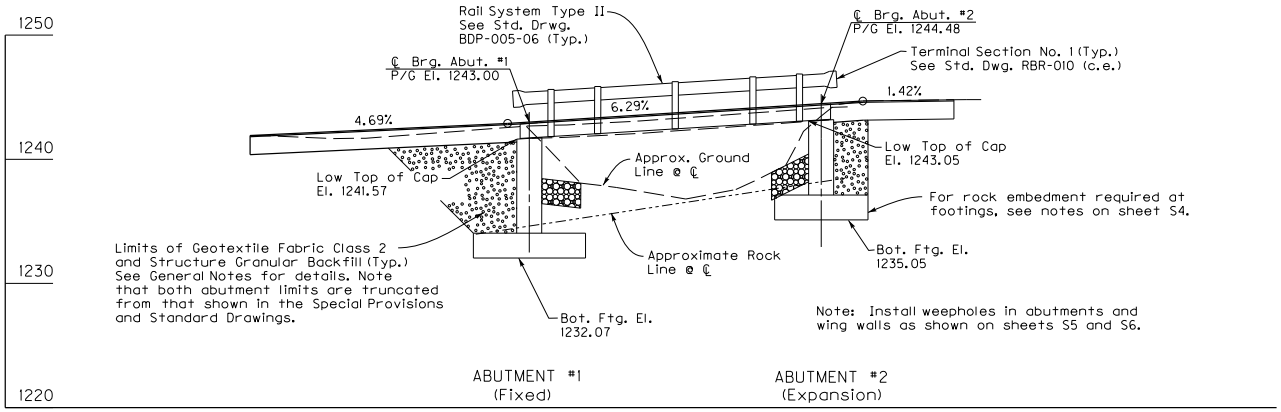
PREPARED BY
JM Crawford & Associates
Consulting Engineers

DATE: 10/14/2022	CHECKED BY
DESIGNED BY: Lee Carlisle	Stuart McIntosh
DETAILED BY: Greg Crank	Lee Carlisle

GENERAL NOTES

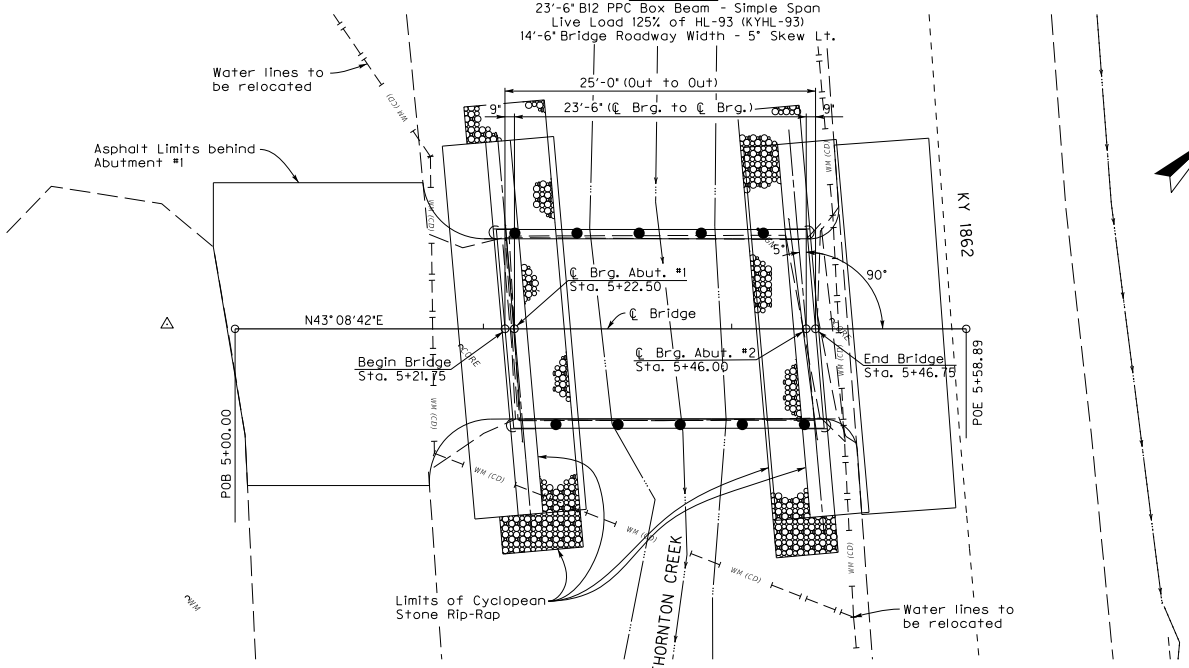
CROSSING
THORNTON CREEK

ROUTE	ITEM NO.	COUNTY OF
CR 1835	12-0183.OTH	LETCHER
	SHEET NO.	DRAWING NUMBER
	S2	28595



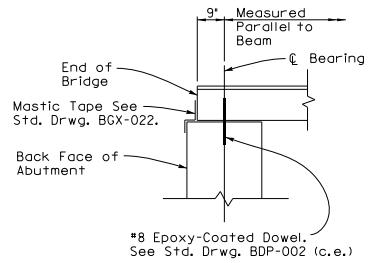
ELEVATION

23'-6" B12 PPC Box Beam - Simple Span
Live Load 125% of HL-93 (KYHL-93)
14'-6" Bridge Roadway Width - 5° Skew Lt.

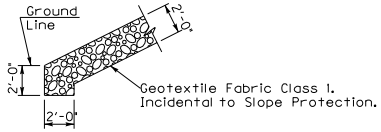


PLAN

(Superstructure Not Shown)

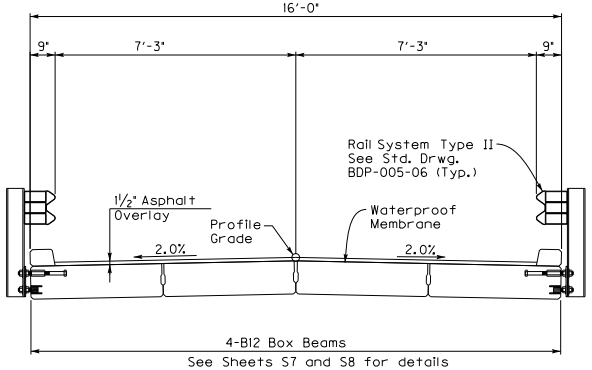


END OF BRIDGE DETAIL



TOE OF SLOPE DETAIL

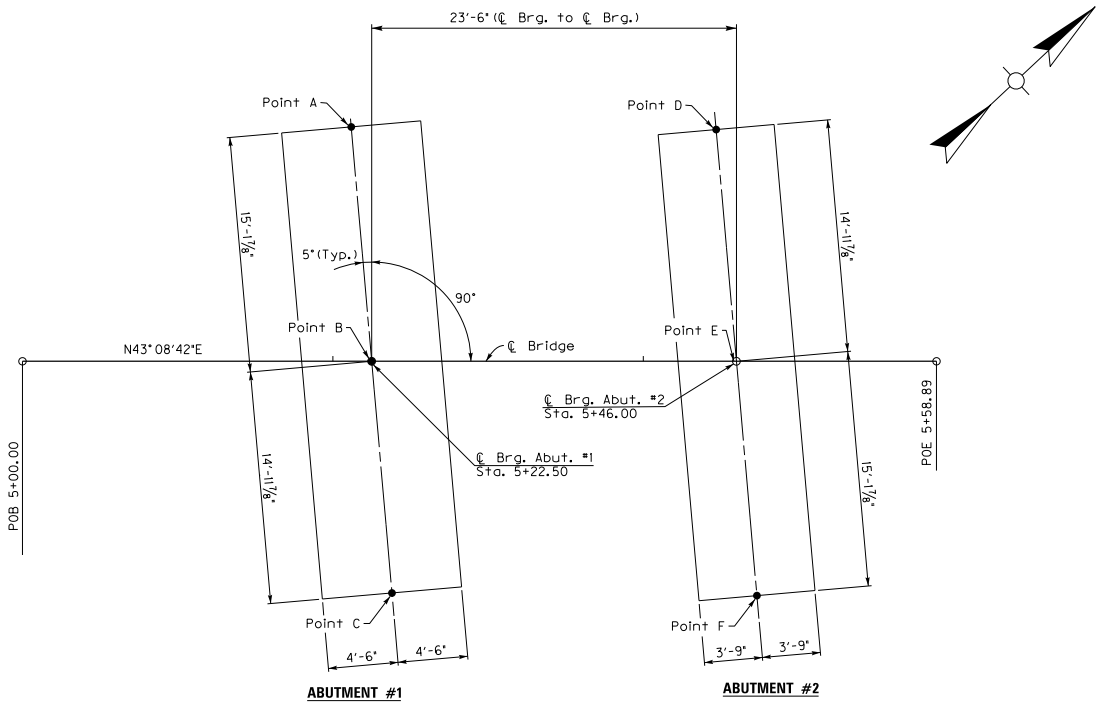
(Applies to Sideslopes)



TYPICAL SECTION

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION	DATE	PREPARED BY JM Crawford & Associates Consulting Engineers	DATE: 10/14/2022	CHECKED BY	LAYOUT	ROUTE CR 1835	ITEM NO. 12-0183.OTH	COUNTY OF LETCHER
				DESIGNED BY: Lee Carlisle	Stuart McIntosh	CROSSING THORNTON CREEK		SHEET NO. S3	DRAWING NUMBER 28595
				DETAILED BY: Greg Crank	Lee Carlisle				

OpenRoads Designer v10.16.2.267 USER: $$$$USER$$$$ DATE PLOTTED: $$$$DATE$$$$ FILE NAME: $$$$designs\files\specification$$$$



ABUTMENT #1 **ABUTMENT #2**

FOUNDATION LAYOUT

NOTES

1. All footing excavations in bedrock shall be cut neat so that no forming or back filling is necessary in the construction of the portions of the footing located in rock. Concrete should be placed directly against the cut rock faces.
2. Bearing elevation of footings may be adjusted at the discretion of the Engineer if competent, unweathered bedrock is found at a higher elevation than specified for the respective substructure element. The top of new spread footings should be fully embedded into unweathered bedrock. The spread footings shall be embedded a minimum of 2.0 ft. into competent unweathered bedrock. Footings may be raised if competent unweathered bedrock is encountered at a higher elevation. (Note: Minimum 2.0 ft. of embedment must still be attained.)
3. Prior to placement of any concrete or reinforcing steel in a foundation excavation, the excavation bottom should be clean and all soft, wet, or loose materials should be removed. In no case should concrete be placed upon compressible or water-softened materials. Additional rock excavation to achieve suitable bearing conditions may be required depending upon topography and bedrock weathering conditions.
4. Solid rock excavation will be required for installation of the substructure's spread footings. The contractor shall take care during blasting and other excavation methods to avoid over-breakage and damage to the bedrock beneath the footings.
5. Concrete placement for footings should be placed as soon as practical after completion of the footing excavation. If the bedrock becomes softened at bearing elevation, the softened material should be undercut to unweathered material prior to placement of reinforcing steel and concrete. Seasonal groundwater fluctuations may cause groundwater infiltration into the footing excavation, and a dewatering method may be necessary.
6. The footings are designed for a maximum pressure of 8.0 ksf service or 10.8 ksf strength factored.

SPREAD FOOTING ABUTMENT #1		
POINT	PLAN FOOTING ELEV.	AS-BUILT FTG. ELEV.
A	1232.07	
B	1232.07	
C	1232.07	

Note:
After all foundations have been placed, the Project Resident Engineer shall record the bottom of footing elevation "As-Built" and shall submit one copy of this sheet with this data to:

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

Note:
If the spread footing foundation is stepped due to unsuitable material found at the given elevation, the location and elevation of the step shall be shown on this sheet and submitted along with as-built elevations.

SPREAD FOOTING ABUTMENT #2		
POINT	PLAN FOOTING ELEV.	AS-BUILT FTG. ELEV.
D	1235.05	
E	1235.05	
F	1235.05	

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

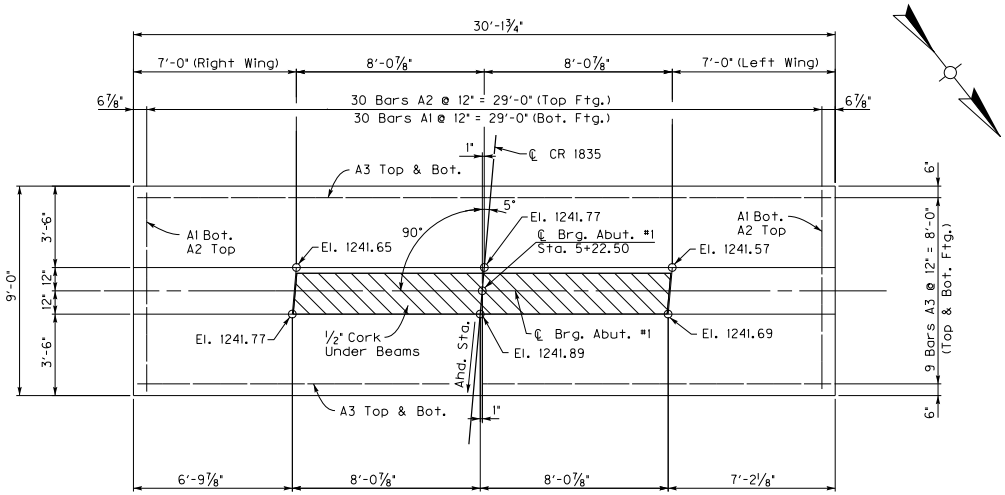
REVISION	DATE

PREPARED BY
JM Crawford & Associates
Consulting Engineers

DATE: 10/14/2022	CHECKED BY
DESIGNED BY: Lee Carlisle	Stuart McIntosh
DETAILED BY: Greg Crank	Lee Carlisle

FOUNDATION LAYOUT
CROSSING: THORNTON CREEK

ROUTE	ITEM NO.	COUNTY OF
CR 1835	12-0183.OTH	LETCHER
	SHEET NO.	DRAWING NUMBER
	S4	28595

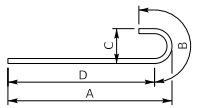


PLAN

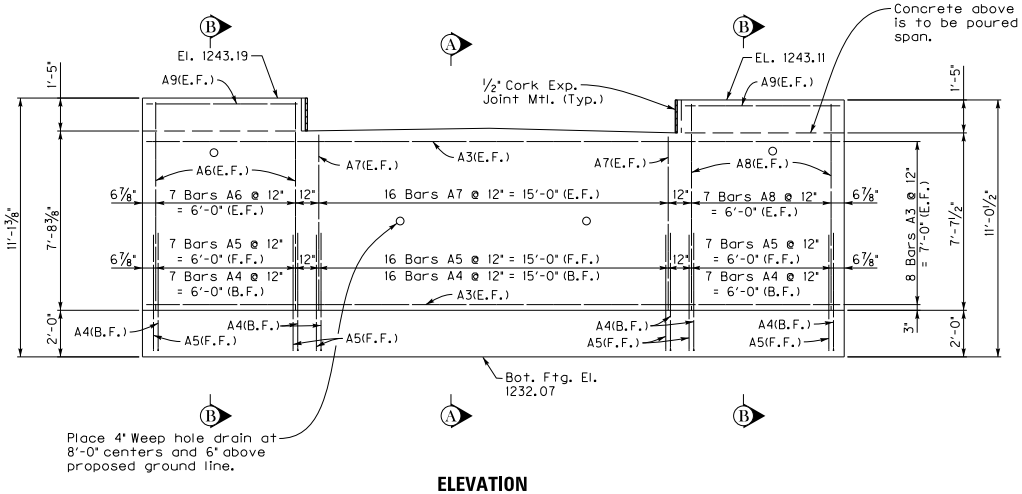
BILL OF REINFORCEMENT

MARK	TYPE	SIZE	NO.	LENGTH FT.	LENGTH IN.	LOCATION	A FT.	A IN.	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.
A1	Str	#7	30	8	8	BOT. FTG.								
A2	Str	#5	30	8	8	TOP FTG.								
A3	Str	#5	34	29	10	FTG. & STEM								
A4	④	#6	30	6	1	FTG. & STEM	5	4	1	0	0	6	5	1
A5	Str	#5	30	4	11	FTG. & STEM								
A6	Str	#5	14	9	0	RT. WING								
A7	Str	#5	32	7	6	STEM								
A8	Str	#5	14	8	11	LT. WING								
A9	Str	#5	4	6	8	WINGS								

BAR TYPES

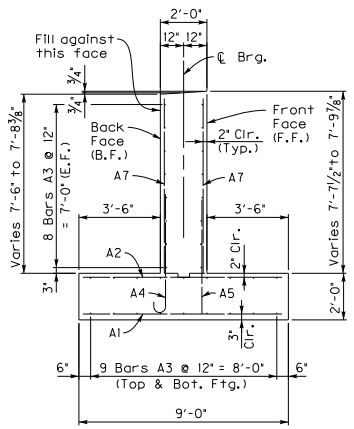


TYPE 4

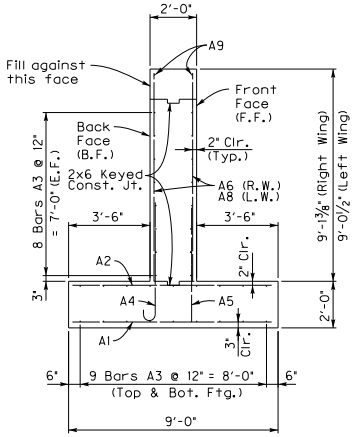


ELEVATION

(Dimensions measured along front face of abutment)



SECTION A–A



SECTION B–B

NOTE: For rock embedment required at footings, see notes on sheet S4

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

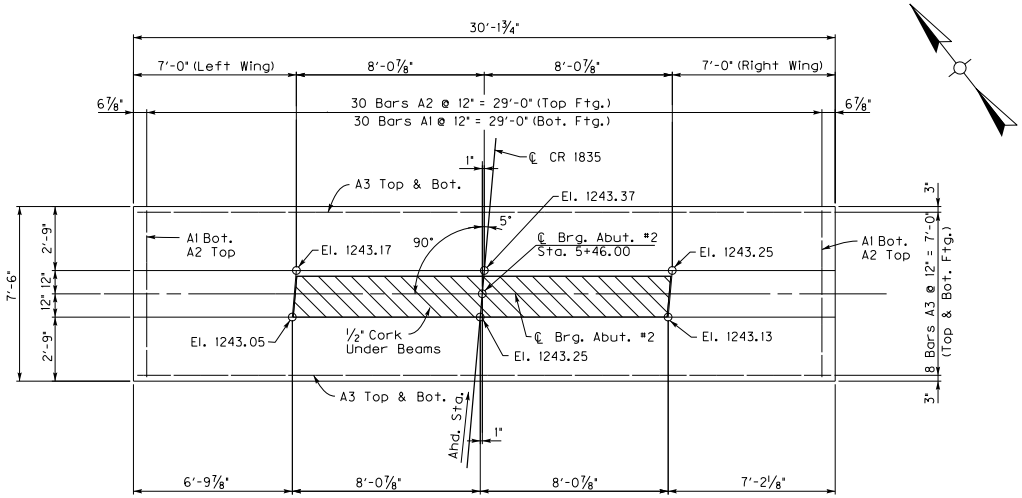
PREPARED BY: JM Crawford & Associates Consulting Engineers

DATE: 10/14/2022	CHECKED BY: Stuart McIntosh
DESIGNED BY: Lee Carlisle	
DETAILED BY: Greg Crank	Lee Carlisle

ABUTMENT #1

CROSSING: THORNTON CREEK

ROUTE	ITEM NO.	COUNTY OF
CR 1835	12-0183.OTH	LETCHER
	SHEET NO. S5	DRAWING NUMBER 28595

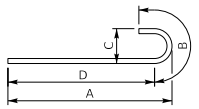


PLAN

BILL OF REINFORCEMENT

MARK	TYPE	SIZE	NO.	LENGTH FT.	LENGTH IN.	LOCATION	A FT.	A IN.	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.
A1	Str	#6	30	7	2	BOT. FTG.								
A2	Str	#5	30	7	2	TOP FTG.								
A3	Str	#5	28	29	10	FTG. & STEM								
A4	④	#5	30	5	7	FTG. & STEM	4	11	0	10	0	5	4	8 1/2
A5	Str	#5	30	4	11	FTG. & STEM								
A6	Str	#5	14	7	6	LT. WING								
A7	Str	#5	32	5	10	STEM								
A8	Str	#5	14	7	7	RT. WING								
A9	Str	#5	4	6	8	WINGS								

BAR TYPES



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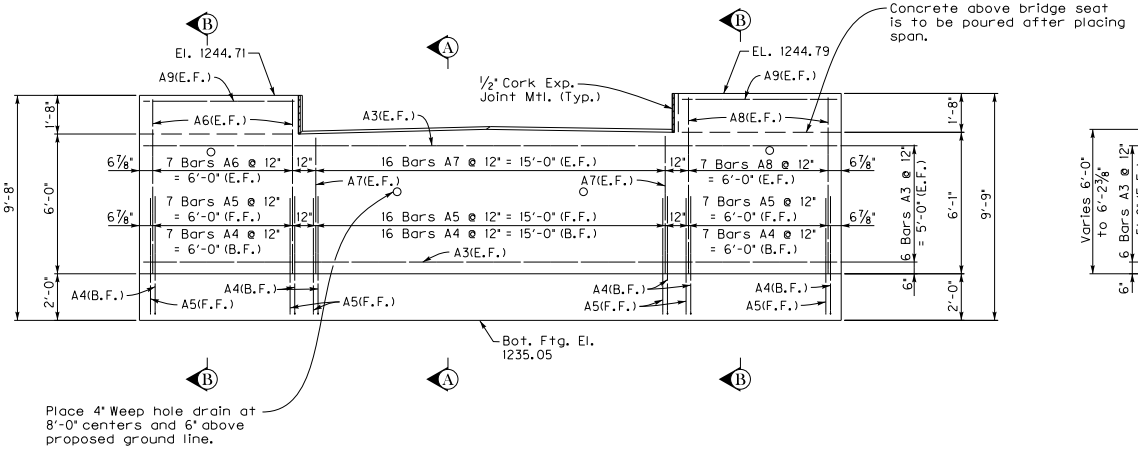
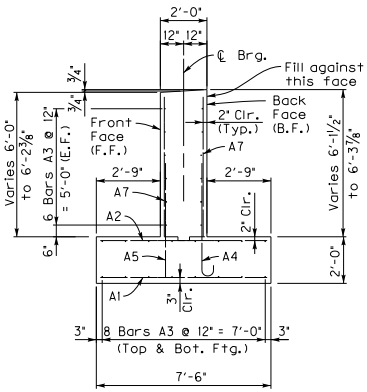
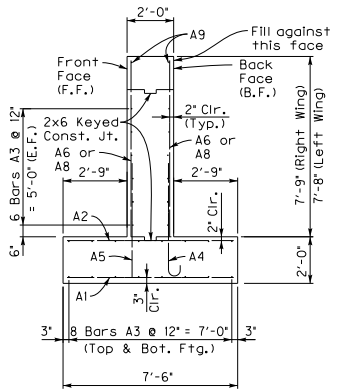


ELEVATION

(Dimensions measured along front face of abutment)



SECTION A–A



SECTION B–B

NOTE: For rock embedment required at footings, see notes on sheet S4

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION	DATE	PREPARED BY JM Crawford & Associates Consulting Engineers	DATE: 10/14/2022	CHECKED BY	ABUTMENT #2	ROUTE	ITEM NO.	COUNTY OF
				DESIGNED BY: Lee Carlisle	Stuart McIntosh		CR 1835	12-0183.0TH	LETCHER
				DETAILED BY: Greg Crank	Lee Carlisle	CROSSING THORNTON CREEK		SHEET NO. S6	DRAWING NUMBER 28595

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.

MATERIAL DESIGN SPECIFICATIONS:

for Steel Reinforcement	FY = 60000 PSI
for Prestressed Girder Concrete (Typ. U.N.O.)	F'C = 7000 PSI
	F'CI = 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'CI 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 non-composite box beams (B beams), seal the bottom and both side faces of all beams, except take care to ensure the grout pockets are not sealed. Do not seal the top faces of beams. Do not seal the inside face of the concrete curbs on the exterior beams. 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 beams are to be erected.

CURBS: Pour curbs on B-type beams in the plant. Concrete must have the same mix design as the beam section, except that the cylinder strength need not exceed that for Class "AA" Concrete. Include the cost of the curbs in the price of beam.

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 1¼" Bolt	ASTM A108 (12L14 Steel)	B633, Type II, Class 25
Nut	for 1¼" Stud	ASTM A325M	B633, Type II, Class 25
Washers	for 1¼" Stud	ASTM A325M	B633, Type II, Class 25

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

STANDARD DRAWINGS

BHS-007 Railing System Type II
RBR-001 Steel Beam Guardrail
RBR-005 Guardrail Components

SPECIAL NOTES

for Corrosion Inhibitors

NOTE: These notes are from Std. Dwg. BDP-001-06, edited for project-specific content where required.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

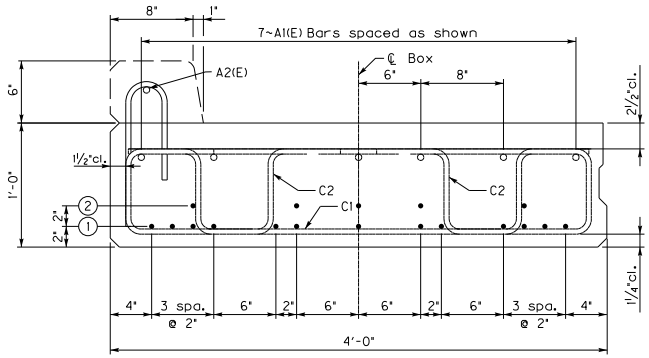
REVISION	DATE

PREPARED BY
JM Crawford & Associates
Consulting Engineers

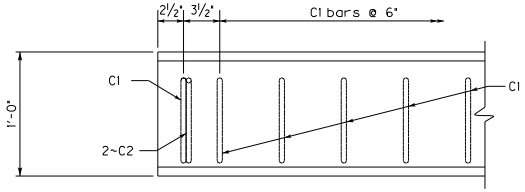
DATE: 10/14/2022	CHECKED BY
DESIGNED BY: Lee Carlisle	Stuart McIntosh
DETAILED BY: Greg Crank	Lee Carlisle

BOX BEAM GENERAL NOTES
CROSSING: THORNTON CREEK

ROUTE	ITEM NO.	COUNTY OF
CR 1835	12-0183.OTH	LETCHER
	SHEET NO.	DRAWING NUMBER
	S7	28595

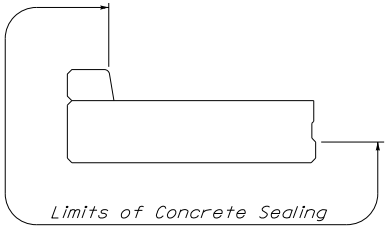


B12 BEAM

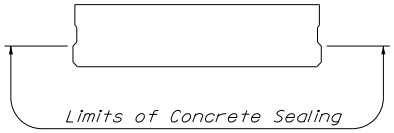


B12 ELEVATION OF O° SKEW

(Refer to BDP-003, for skewed details)

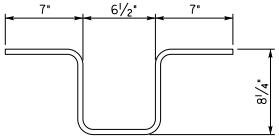


EXTERIOR BEAM



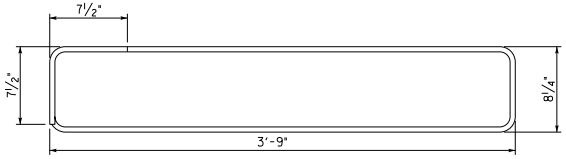
INTERIOR BEAM

CONCRETE SEALING DETAIL



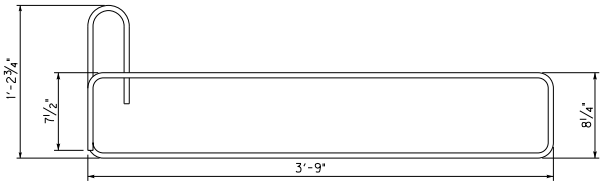
C2(e) Bar

#4 Stirrup



C1(e) Bar

#4 Stirrup



C1(e) Bar – #4 Stirrup

for Exterior Beam, Only

TABLE OF STRAND DATA

Beam Type	Beam Length (feet)	Number of Strands Required Row ①	Number of Strands Required Row ②	Concrete Strength F'CI (psi)	Concrete Strength F'C (psi)
B12	12	9	1		
	14	10	1		
	16	11	1		
	18	12	1		
	20	12	1		
	22	12	2		
	24	13	2		
	26	13	5		

BAR QUANTITIES / DESIGN DATA

Beam Type	Beam Length (feet)	C1	C2	C3	DC (Kips)	DW (Kips)	LL (Kips)	LL+I (Kips)	Δd (In.)	Δ (In.)
B12	12	25	2		3.9	0.4	27.8	36.3		
	14	29	2		4.6	0.4	29.1	37.8		
	16	33	2		5.2	0.5	30.1	39.1		
	18	37	2		5.8	0.5	31.0	40.1		
	20	41	2		6.5	0.6	31.8	41.0		
	22	45	2		7.1	0.6	32.5	41.9		
	24	49	2		7.8	0.7	33.2	42.6		
	26	53	2		8.4	0.7	33.8	43.4		

Straight Reinforcement

MARK	SIZE	LENGTH
A1(E)	#5	Beam Length Minus 3"
A2(E)	#5	Beam Length Minus 4"
D(E)	#8	2'-0"

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY: JM Crawford & Associates Consulting Engineers

DATE: 10/14/2022	CHECKED BY
DESIGNED BY: Lee Carlisle	Stuart McIntosh
DETAILED BY: Greg Crank	Lee Carlisle

B12X48 BOX BEAM

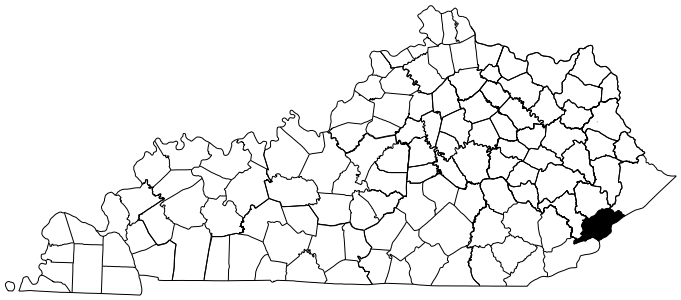
CROSSING: THORNTON CREEK

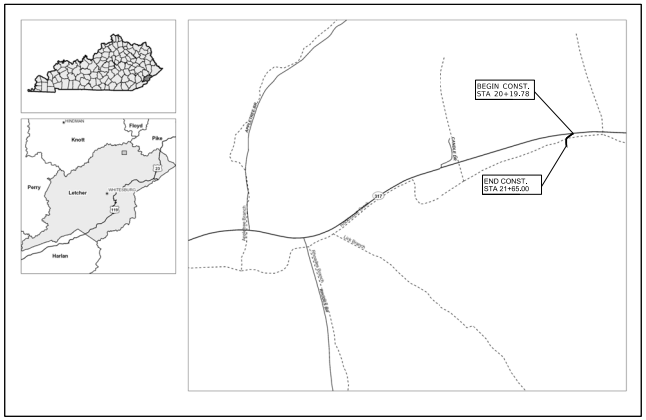
ROUTE	ITEM NO.	COUNTY OF
CR 1835	12-0183.OTH	LETCHER
	SHEET NO. S8	DRAWING NUMBER 28595

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

PLANS OF
PROPOSED PROJECT

Jim McCray Road (CR 1880)
Over Rockhouse Creek
Letcher County, Kentucky
Grade, Drain, and Surfacing Plans





THIS PROJECT IS OFF THE NH SYSTEM

THE CONTROL OF ACCESS ON THIS PROJECT SHALL BE BY PERMIT

LAYOUT MAP

DESIGN CRITERIA

CLASS OF HIGHWAY	RURAL LOCAL
TYPE OF TERRAIN	MOUNTAINOUS
DESIGN SPEED	NA
REQUIRED NPSD	NA
REQUIRED PSD	NA
LEVEL OF SERVICE	NA
ADT PRESENT (X)	X
ADT FUTURE (X)	X
DHV	X
D %	X
T %	X

GEOGRAPHIC COORDINATES

LATITUDE 37 DEGREES 14 MINUTES 29 SECONDS NORTH
LONGITUDE 82 DEGREES 45 MINUTES 05 SECONDS WEST

DESIGNED

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

INDEX OF SHEETS

STANDARD DRAWINGS

BHS-012	RDI-040-01	RGS-001-07
RBI-001-12	RDX-210-03	RGX-001-06
RBR-001-13	RDX-215-01	RGX-100-07
RBR-005-11	RDX-220-05	RGX-105-09
RBR-010-06	RDX-225-01	RGX-200-01
RBR-015-06	RFC-001-08	RPM-110-07
RBR-055-01	RFG-005-06	TTC-100-05

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.

JIM MCCRAY ROAD (CR 1880)

LENGTH 145.22 LIN. FT. 0.028 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 X LIN. FT.	BRIDGES X LIN. FT.	BRIDGES X LIN. FT.	BRIDGES X LIN. FT.
X	X	X	X
X	X	X	X

PROJECT NUMBER: FEMA BRIDGE: 4663-DR, DEPT. OBJECT CODE: D23A

PROJECT DESCRIPTION: CULVERT REPLACEMENT, JIM MCCRAY ROAD OVER ROCKHOUSE CREEK. BRIDGE ID #067C021

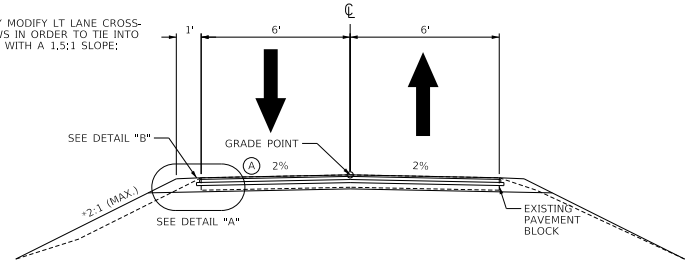
RECOMMENDED BY: Carl van Zee 11/4/2022
PROJECT MANAGER DATE:

PLAN APPROVED BY: _____
STATE HIGHWAY ENGINEER DATE:

STATE OF KENTUCKY TROY M. WOODYARD 19548 LICENSED PROFESSIONAL ENGINEER

LETTING DATE: 12/8/2022
ITEM NO. 12-0305,OTH COUNTY OF LETCHER
SHEET NO. R001

(A) CONTRACTOR MAY MODIFY LT LANE CROSS-SLOPE AS FOLLOWS IN ORDER TO TIE INTO STREAM CHANNEL WITH A 1.5:1 SLOPE:
STA 20+75.00 2%
STA 20+90.00 4%
STA 21+05.00 2%



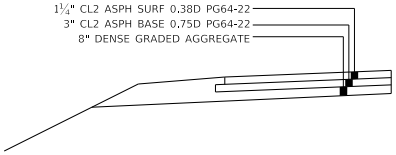
JIM MCCRAY RD FULL DEPTH

STA 20+19.78 TO STA 21+09.15
STA 21+29.86 TO STA 21+65.00

*1.5:1 SLOPES ARE PERMISSABLE TO TIE IN TO CULVERT WINGS AND STREAM CHANNEL. SLOPES STEEPER THAN 2:1 SHOULD BE STABILIZED WITH PARTIALLY GROUTED RIP RAP.

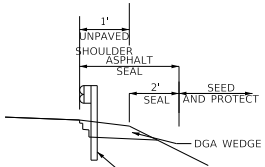
STEEP SLOPE NOTE

ALL RIPRAP ON SLOPES STEEPER THAN 2:1 SHALL BE CHANNEL LINING CLASS III PARTIALLY GROUTED WITH CLASS B CONCRETE AT A RATE OF 2.7 CU FT/SQ YD AND UNDERLAIN WITH GEOTEXTILE FABRIC CLASS 1 ACCORDING TO THE PROCEDURE DETAILED IN HEC-23 DESIGN GUIDELINE 12 FOR PARTIALLY GROUTED RIP RAP. ONLY WOVEN MONOFILAMENT OR NON-WOVEN NEEDLE-PUNCHED GEOTEXTILES WITH A MASS DENSITY GREATER THAN 12 OUNCES PER SQUARE YARD MAY BE USED. PAY ITEMS SHALL BE CHANNEL LINING CLASS III, CONCRETE CLASS B, GEOTEXTILE FABRIC CLASS 1 AND ROADWAY EXCAVATION.



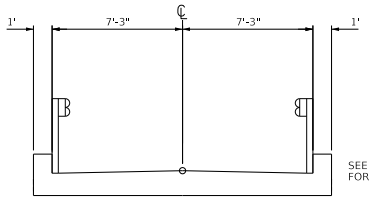
DETAIL "A" - JIM MCCRAY RD PAVEMENT DESIGN

FROM EDGE OF PAVED SHOULDER TO A POINT 2' DOWN THE SLOPE
BITUMINOUS SEAL-TWO APPLICATIONS
OF THE FOLLOWING:
ASPHALT SEAL COAT 2.4 LB/SY
ASPHALT SEAL AGGREGATE 20 LB/SY



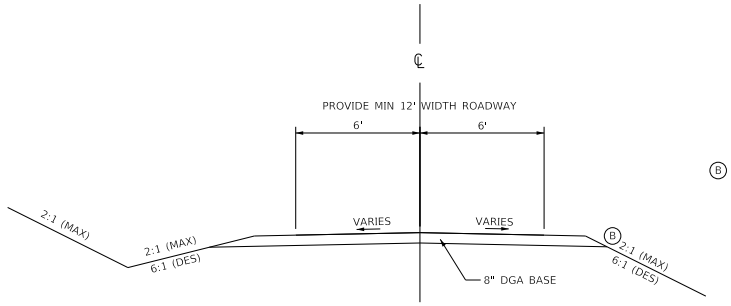
DETAIL "B" - GUARDRAIL INSTALLATION

BITUMINOUS SEAL-TWO APPLICATIONS
OF THE FOLLOWING:
ASPHALT SEAL COAT 2.4 LB/SY
ASPHALT SEAL AGGREGATE 20 LB/SY



CULVERT DETAIL

STA 21+09.15 TO STA 21+29.86



(B) 1.5:1 SLOPES AND/OR SHEETING AND SHORING AS INCIDENTAL TO "MAINTAIN AND CONTROL TRAFFIC" MAY BE REQUIRED TO ALLOW FOR CULVERT EXCAVATION.

DIVERSION

STA 60+73.18 TO STA 61+61.68

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	DRAWING TITLE: TYPICAL SECTIONS	ITEM NO. 12-0305,OTH COUNTY OF LETCHER SHEET NO. R002

	ITEM	DESCRIPTION	UNIT	JIM MCCRAY ROAD	TOTAL PROJECT
	1987	DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	EACH	8	8
①	2159	TEMP DITCH	LF	73	73
①	2160	CLEAN TEMP DITCH	LF	37	37
⑥⑦	2200	ROADWAY EXCAVATION	CUYD	107	107
①	2242	WATER	MGAL	28	28
	2273	FENCE-4 FT CHAIN LINK	LF	42	42
	2281	PEDESTRIAN GATE CHAIN LINK	EACH	1	1
	2351	GUARDRAIL-STEEL W BEAM-S FACE	LF	62.5	62.5
	2360	GUARDRAIL TERMINAL SECTION NO 1	EACH	4	4
	2399	EXTRA LENGTH GUARDRAIL POST	EACH	12	12
②④	2545	CLEARING AND GRUBBING	LS	1	1
	2555	CONCRETE-CLASS B	CUYD	4.3	4.3
	2585	EDGE KEY	LF	167	167
	2565	OBJECT MARKER TYPE 2	EACH	4	4
	2569	DEMOBILIZATION	LS	1	1
	2602	FABRIC-GEOTEXTILE CLASS 1	SQYD	59	59
	2650	MAINTAIN & CONTROL TRAFFIC	LS	1	1
⑤	2651	DIVERSIONS (BY-PASS DETOURS)	LS	1	1
①	2701	TEMP SILT FENCE	LF	73	73
①	2703	SILT TRAP TYPE A	EACH	1	1
①	2704	SILT TRAP TYPE B	EACH	1	1
①	2706	CLEAN SILT TRAP TYPE A	EACH	1	1
①	2707	CLEAN SILT TRAP TYPE B	EACH	1	1
	2726	STAKING	LS	1	1
①	5950	EROSION CONTROL BLANKET	SQYD	81	81
①	5952	TEMP MULCH	SQYD	1090	1090
①	5953	TEMP SEEDING AND PROTECTION	SQYD	813	813
①	5963	INITIAL FERTILIZER	TON	0.04	0.04
①	5964	MAINTAINENCE FERTILIZER	TON	0.06	0.06
①	5985	SEEDING AND PROTECTION	SQYD	1123	1123
①	5992	AGRICULTURAL LIMESTONE	TON	0.75	0.75
	23864EC	CHANNEL LINING CLASS III-MOD	TON	59	59
	24631EC	BARCODE SIGN INVENTORY	EACH	4	4
	24896ED	RAIL SYSTEM TYPE T631	LF	37.5	37.5

1 TO BE USED AT THE ENGINEER'S DISCRETION FOR EROSION CONTROL.

2 APPROX 1/3 ACRE MORE OR LESS

3 INCLUDES ALL EXCAVATION AND EMBANKMENT REQUIRED ON THE PROJECT.

4 INCLUDES REMOVAL OF EXISTING DIVERSION

5 INCLUDES ALL MATERIALS AND LABOR REQUIRED TO COMPLETE THE CONSTRUCTION OF THE DIVERSION, INCLUDING BUT NOT LIMITED TO ROCK, EARTHWORK, GRAVEL, AND PIPES. 8" DGA BASE FOR DRIVING SURFACE IS THE ONLY SEPARATE PAY ITEM.

6 THE CONTRACTOR IS ADVISED THAT THE EARTHWORK CALCULATIONS SHOWN ARE FOR INFORMATION ONLY. ASSUMPTIONS FOR THE SHRINKAGE AND SWELL FACTORS ARE THE CONTRACTOR'S RESPONSIBILITY.

7 EXCLUDES QUANTITIES NEEDED TO CONSTRUCT DIVERSION.

A ALL ASPHALT MIXTURES SHALL BE ESTIMATED AT 110 LBS PER SQ YD PER INCH OF DEPTH, UNLESS NOTED OTHERWISE.

B ESTIMATED AT 115 LBS PER SQ YD PER IN OF DEPTH.

C ESTIMATED AT 20 LBS PER SQ YD, 2 APPLICATIONS REQUIRED.

D ESTIMATED AT 2.40 LBS PER SQ YD, 2 APPLICATIONS REQUIRED.

E ESTIMATED AT 0.84 LBS PER SQ YD. TO BE PLACED ON TOP OF DGA PRIOR TO ASPHALT PAVING.

F ESTIMATED AT 0.84 LBS PER SQ YD. TO BE PLACED ON TOP OF BASE LIFT

PAVING AREAS

ITEM	JIM MCCRAY ROAD	DIVERSION	TOTALS
	SQUARE YARDS		
8" DGA BASE	363	99	462
ASPHALT SEAL AGGREGATE	141	0	141
ASPHALT SEAL COAT	141	0	141
3" CL2 ASPH BASE 0.75D PG64-22	351	0	351
ASPHALT PRIME COAT	363	0	363
1.25" CL2 ASPH SURF 0.38D PG64-22	347	0	347
ASPHALT MATERIAL FOR TACK	351	0	351

PAVING SUMMARY

	ITEM CODE	ITEM	UNIT	JIM MCCRAY ROAD	DIVERSION	TOTAL PROJECT
Ⓑ	00001	DGA BASE	TON	234	58	292
Ⓒ	00100	ASPHALT SEAL AGGREGATE	TON	2.8	0	2.8
Ⓓ	00103	ASPHALT SEAL COAT	TON	0.3	0	0.3
Ⓐ	00221	CL2 ASPH BASE 0.75D PG64-22	TON	58	0	58
Ⓔ	00296	ASPHALT PRIME COAT	TON	0.2	0	0.2
Ⓐ	00301	CL2 ASPH SURF 0.38D PG64-22	TON	24	0	24
Ⓕ	00356	ASPHALT MATERIAL FOR TACK	TON	0.2	0	0.2

Earthwork VOLUMES (CUYD)

	Exc.	Emb.
JIM MCCRAY RD	73	1
CHANNEL	34	0
⑥ TOTAL	107	1

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: GENERAL SUMMARY

ITEM NO. 12-0305.OTH
COUNTY OF LETCHER
SHEET NO. R002A

General Notes

DIVISION 100 -- GENERAL PROVISIONS

165 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 WHO 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.

DIVISION 400 -- ASPHALT PAVEMENTS

448 COMPACTION OF ASPHALT MIXTURES

WILL ACCEPT THE COMPACTION OF ASPHALT MIXTURES FURNISHED ON THIS PROJECT BY OPTION B ACCORDING TO SUBSECTIONS 402.03.02 AND 403.03.10 OF THE STANDARD SPECIFICATIONS.

455 EDGE KEY

THIS WORK INCLUDES CUTTING OUT THE EXISTING ASPHALT SURFACE TO A MINIMUM DEPTH AND WIDTH AS DETAILED ELSEWHERE IN THE PLANS SO THAT THE NEW SURFACE MAY HEEL INTO THE EXISTING SURFACE. THE CONTRACT UNIT PRICE BID LINEAR FOOT (PER METER) FOR "EDGE KEY" INCLUDES ALL NECESSARY MATERIALS, LABOR AND EQUIPMENT NECESSARY TO PERFORM THE WORK AND DISPOSE OF THE REMOVED ASPHALT MATERIAL.

DIVISION 600 -- STRUCTURES AND CONCRETE

650 STANDARD DRAWINGS

STANDARD DRAWINGS ARE NOT ATTACHED TO THESE PLANS. A STANDARD DRAWING BOOK AND THE HEADWALL SUPPLEMENTAL BOOK MAY BE OBTAINED FROM THE POLICY SUPPORT BRANCH OF THE DEPARTMENT OF ADMINISTRATIVE SERVICES IN FRANKFORT, KY. AT (502) 564-4610

Special Notes

THE CONTRACTOR IS ADVISED THAT THE EARTHWORK CALCULATIONS SHOWN ARE FOR INFORMATION ONLY. ASSUMPTIONS FOR SHRINKAGE AND SWELL FACTORS ARE THE CONTRACTOR'S RESPONSIBILITY.

ALONG JIM MCCRAY ROAD, CLEAR AND GRUB ONLY THAT RIPARIAN AREA THAT IS NECESSARY FOR STAGING AND CONSTRUCTION. IF VEGETATION DOES NOT CONFLICT WITH CONSTRUCTION ACTIVITIES IT SHOULD REMAIN UNDISTURBED. REMOVAL OF EXISTING DIVERSION SHALL BE INCIDENTAL TO CLEARING AND GRUBBING. EXISTING PIPES TO BE RETURNED TO THE PROPERTY OWNER, IF THE PROPERTY OWNER DESIRES, OR DISPOSED OF AT THE CONTRACTOR'S EXPENSE.

SPECIAL NOTE FOR BARCODES ON PERMANENT SIGNS 2019 SHALL APPLY.

SPECIAL PROVISION 69 FOR EMBANKMENT AT BRIDGE END BENT STRUCTURES SHALL APPLY.

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

AT&T - Telephone/Internet
102 Walters Road,
Pikeville, KY 41501
Contact: Jack Salyers
Mobile: (606) 424 9328
Email: js2299@att.com

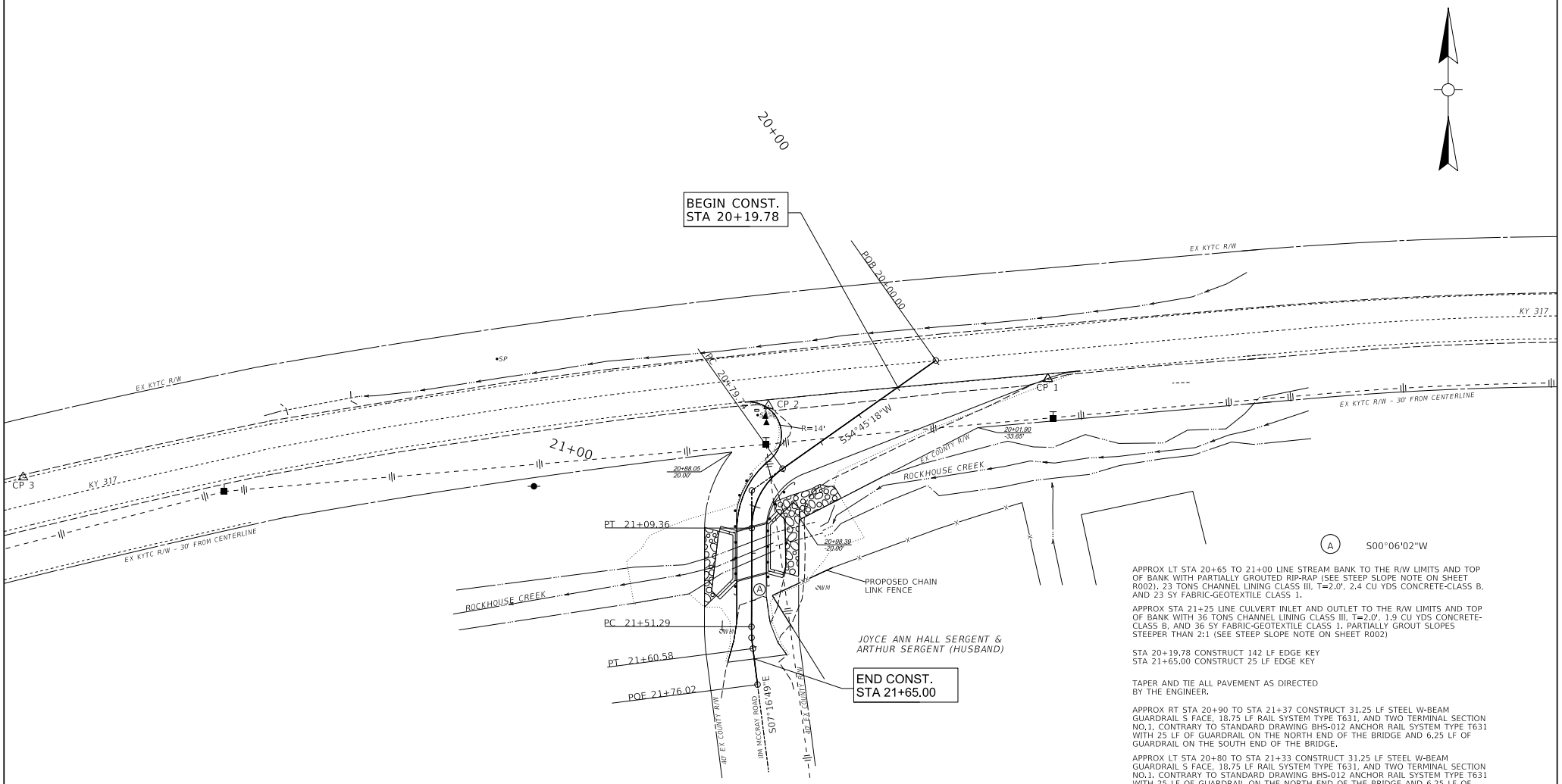
KY Power Co. - Electric
1400 E Main Street,
Hazard, KY 41701
Contact: Ellis McKnight
Mobile: (606) 436 1329
Email: ermcknight@aep.com

Letcher County Water and Sewer District - Water
3443 US 119 N,
Mayking, KY 41837
Contact: Mark Lewis
Mobile: (606) 633 8550
Email: marklws21@gmail.com

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: LEGEND AND UTILITY OWNERS SHEET

ITEM NO. 12-0305,OTH
COUNTY OF LETCHER
SHEET NO. R003



JIM MCCRAY CURVE #1
PI STA 20+95.78
Δ = 54°39'16" LT
T = 16.05'
L = 29.62'
R = 31.05'
E = 3.90'

JIM MCCRAY CURVE #2
PI STA 21+55.94
Δ = 07°22'51" LT
T = 4.65'
L = 9.30'
R = 72.16'
E = 0.15'

APPROX LT STA 20+65 TO 21+00 LINE STREAM BANK TO THE R/W LIMITS AND TOP OF BANK WITH PARTIALLY GROUTED RIP-RAP (SEE STEEP SLOPE NOTE ON SHEET R002), 23 TONS CHANNEL LINING CLASS III, T=2.0', 2.4 CU YDS CONCRETE-CLASS B, AND 23 SY FABRIC-GEOTEXTILE CLASS 1.

APPROX STA 21+25 LINE CULVERT INLET AND OUTLET TO THE R/W LIMITS AND TOP OF BANK WITH 36 TONS CHANNEL LINING CLASS III, T=2.0', 1.9 CU YDS CONCRETE-CLASS B, AND 36 SY FABRIC-GEOTEXTILE CLASS 1. PARTIALLY GROUT SLOPES STEEPER THAN 2:1 (SEE STEEP SLOPE NOTE ON SHEET R002)

STA 20+19.78 CONSTRUCT 142 LF EDGE KEY
STA 21+65.00 CONSTRUCT 25 LF EDGE KEY

TAPER AND TIE ALL PAVEMENT AS DIRECTED BY THE ENGINEER.

APPROX RT STA 20+90 TO STA 21+37 CONSTRUCT 31.25 LF STEEL W-BEAM GUARDRAIL S FACE, 18.75 LF RAIL SYSTEM TYPE T631, AND TWO TERMINAL SECTION NO.1, CONTRARY TO STANDARD DRAWING BHS-012 ANCHOR RAIL SYSTEM TYPE T631 WITH 25 LF OF GUARDRAIL ON THE NORTH END OF THE BRIDGE AND 6.25 LF OF GUARDRAIL ON THE SOUTH END OF THE BRIDGE.

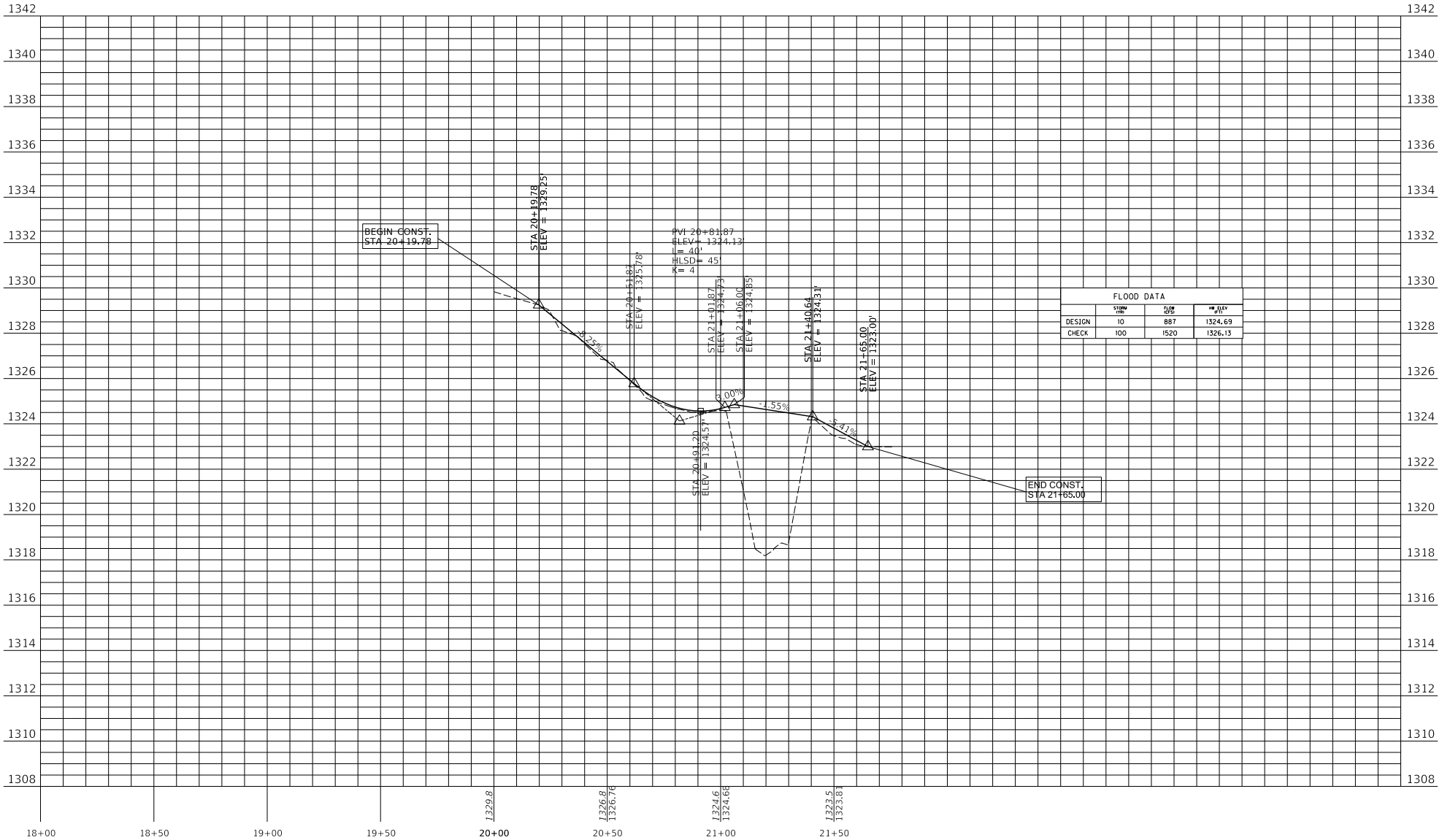
APPROX LT STA 20+80 TO STA 21+33 CONSTRUCT 31.25 LF STEEL W-BEAM GUARDRAIL S FACE, 18.75 LF RAIL SYSTEM TYPE T631, AND TWO TERMINAL SECTION NO.1, CONTRARY TO STANDARD DRAWING BHS-012 ANCHOR RAIL SYSTEM TYPE T631 WITH 25 LF OF GUARDRAIL ON THE NORTH END OF THE BRIDGE AND 6.25 LF OF GUARDRAIL ON THE SOUTH END OF THE BRIDGE.

CONSTRUCT OBJECT MARKER TYPE 2 AT EACH CORNER OF CULVERT (4 TOTAL).

APPROX LT STA 20+26 CONSTRUCT 42 LF FENCE 4 FT CHAIN LINK AND ONE PEDESTRIAN GATE CHAIN LINK, REMOVE DAMAGED FENCE AND TIE TO EXISTING FENCE AS INCIDENTAL TO CHAIN LINK FENCE 4 FT.

REMOVE EXISTING DIVERSION AS INCIDENTAL TO CLEARING AND GRUBBING, CONTRACTOR SHALL ALLOW PROPERTY OWNER TO RETAIN OWNERSHIP OF PIPES IF PROPERTY OWNER DESIRES. IF NOT, CONTRACTOR IS RESPONSIBLE FOR DISPOSAL.

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	DRAWING TITLE: JIM MCCRAY ROAD PLAN SHEET	HORIZONTAL SCALE SCALE: 1" = 20'	0' 20' 40' 80'	STA 20+19.78 TO STA 21+65.00	ITEM NO. 12-0305,OTH COUNTY OF LETCHER SHEET NO. R004



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: JIM MCCRAY ROAD PROFILE SHEET

HORIZONTAL SCALE: 1"=20' (0' 20' 40' 80')

VERTICAL SCALE: 1"=2' (0' 2' 4' 8')

STA 20+19.78 TO STA 21+65.00

ITEM NO. 12-0305.OTH

COUNTY OF LETCHER

SHEET NO. R005

OpenRoads Designer v10.16.2.267

USER: AASAOLU

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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 THE EXISTING TRAVELED WAY WIDTH, OR UTILIZE TEMPORARY FLAGGING WITH ONE-LANE TRAFFIC AS DIRECTED BY THE ENGINEER.

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.

10. ALL SIGNS NECESSARY FOR A MARKED DETOUR WILL BE PROVIDED BY THE CONTRACTOR AS REQUIRED BY STANDARD DRAWINGS AND THE MUTCD. SIGNS OUTSIDE THE PROJECT LIMITS SHALL BE PAID FOR AS PART OF THE LUMP SUM BID PRICE FOR "MAINTAIN AND CONTROL TRAFFIC". THIS QUANTITY SHALL INCLUDE SIGN MOUNTING HARDWARE AND POSTS.

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.

PHASING PLAN

PHASE 1

- CONSTRUCTION:
  CONSTRUCT TEMPORARY DIVERSION, AND REMOVE EXISTING DIVERSION (AS INCIDENTAL TO CLEARING AND GRUBBING). RETURN EXISTING DIVERSION PIPE TO PROPERTY OWNER, IF PROPERTY OWNER DESIRES IT, OR DISPOSE OF AT THE EXPENSE OF THE CONTRACTOR.
- TRAFFIC:
  MAINTAIN EXISTING TRAFFIC LANES, IF NECESSARY USE FLAGGERS, COORDINATE ENTRANCE CLOSURES WITH PROPERTY OWNER.

PHASE 2

- CONSTRUCTION:
  CONSTRUCT PERMANENT ROAD GRADE, PAVEMENT, SLOPE PROTECTION, AND CULVERT.
- TRAFFIC:
  UTILIZE THE TEMPORARY DIVERSION.

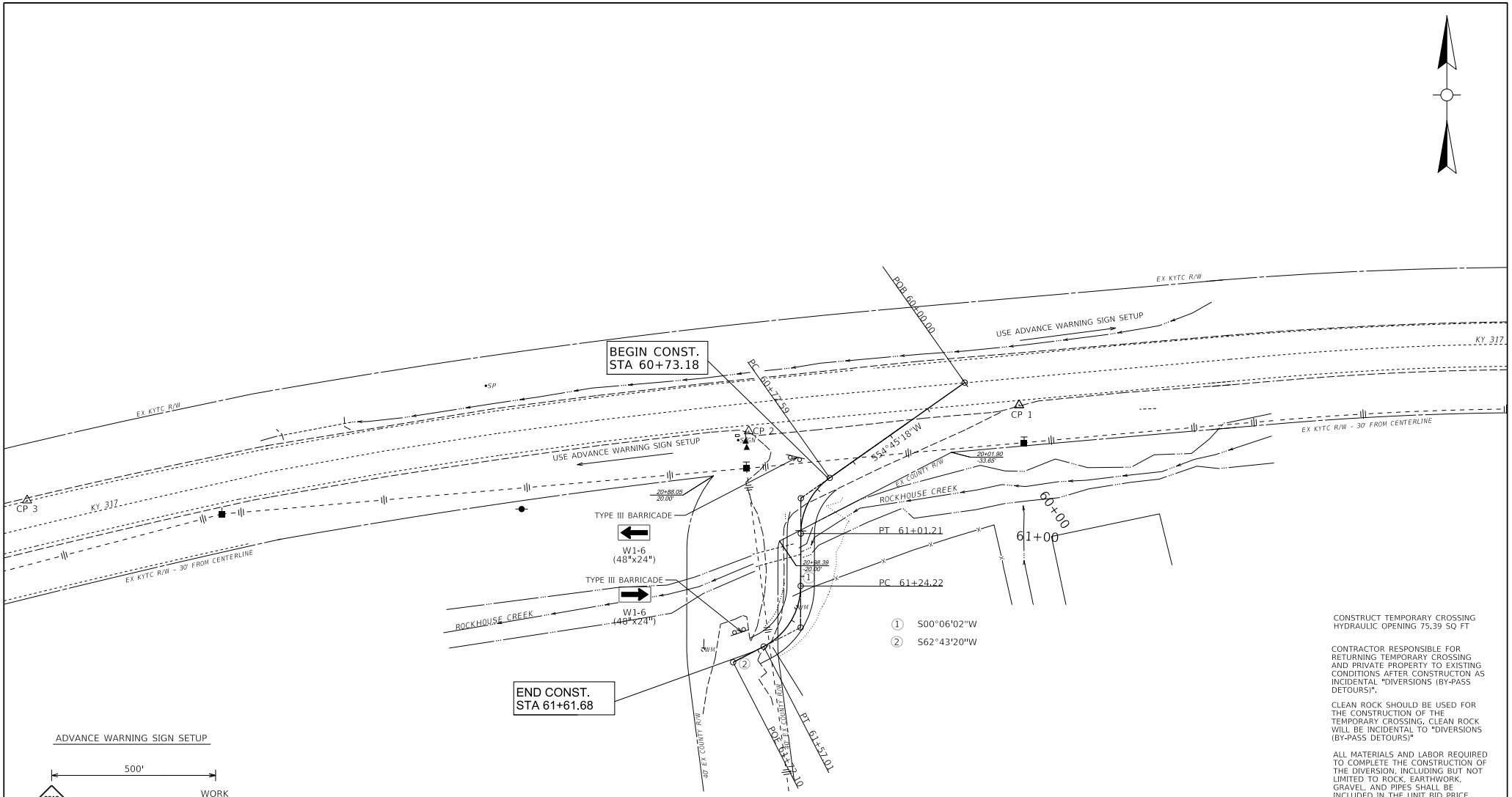
PHASE 3

- CONSTRUCTION:
  FINISH CONSTRUCTION, STABILIZE TEMPORARILY DISTURBED AREA AND REPAIR ANY DAMAGE TO ENTRANCES OR OTHER IMPROVEMENTS ON PRIVATE PROPERTY. REMOVE DIVERSION TEMPORARY DIVERSION AS INCIDENTAL TO DIVERSION (BY-PASS DETOURS).
- TRAFFIC:
  OPEN JIM MCCRAY ROAD TRAFFIC, AND NEW CULVERT.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: MOT NOTES AND PHASING SHEET

ITEM NO. 12-0305,OTH
COUNTY OF LETCHER
SHEET NO. R006



ADVANCE WARNING SIGN SETUP

500'

WORK ZONE

ROAD WORK AHEAD

W20-1
(36"x36")

END ROAD WORK

G20-2
(36"x18")

DIVERSION CURVE #1
PI STA 60+88.09
Δ = 54°39'16" LT
T = 15.50'
L = 28.62'
R = 30.00'
E = 3.77'

DIVERSION CURVE #2
PI STA 61+42.47
Δ = 62°37'18" RT
T = 18.25'
L = 32.79'
R = 30.00'
E = 5.11'

CONSTRUCT TEMPORARY CROSSING HYDRAULIC OPENING 75.39 SQ FT

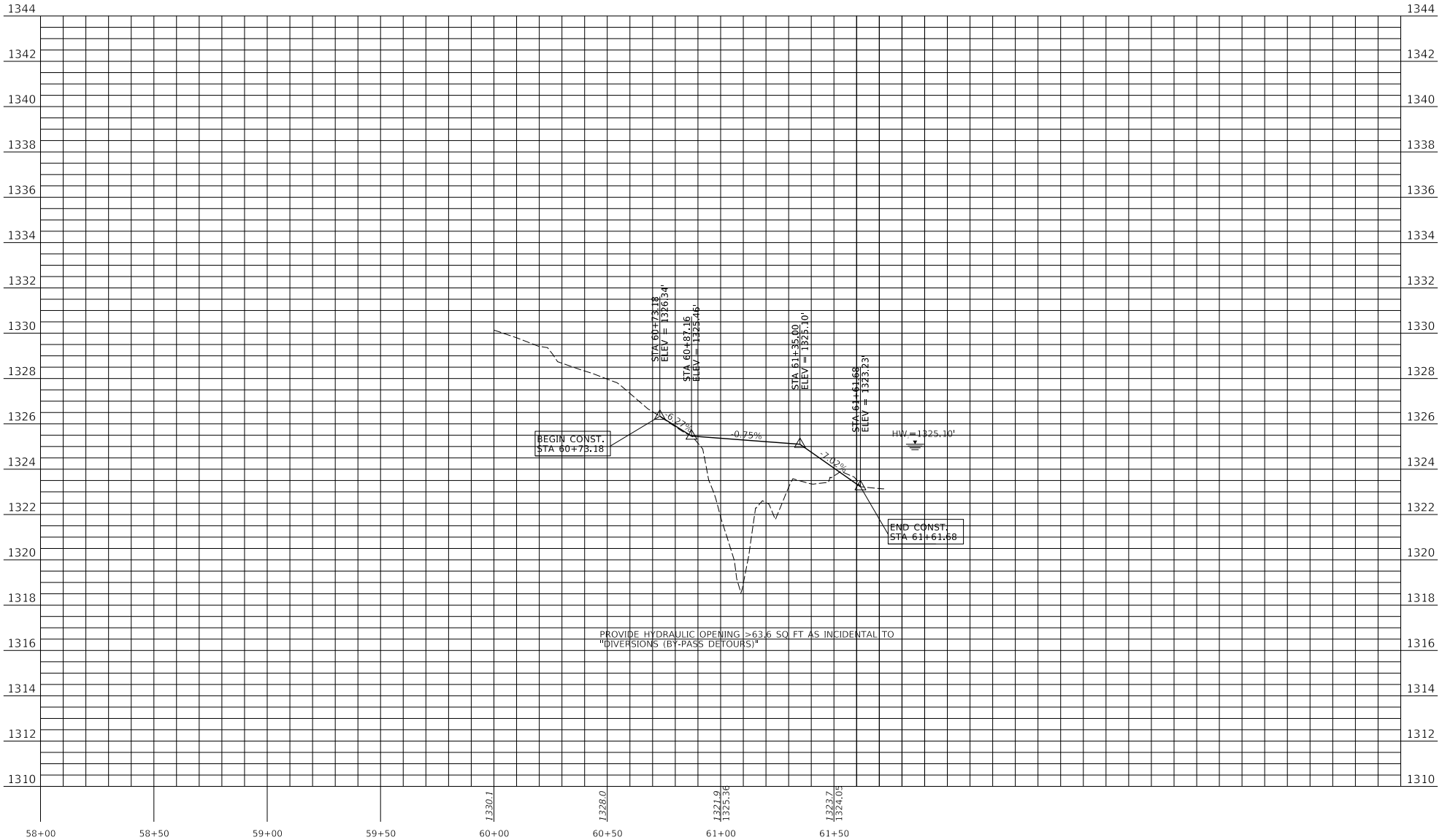
CONTRACTOR RESPONSIBLE FOR RETURNING TEMPORARY CROSSING AND PRIVATE PROPERTY TO EXISTING CONDITIONS AFTER CONSTRUCTON AS INCIDENTAL "DIVERSIONS (BY-PASS DETOURS)".

CLEAN ROCK SHOULD BE USED FOR THE CONSTRUCTION OF THE TEMPORARY CROSSING. CLEAN ROCK WILL BE INCIDENTAL TO "DIVERSIONS (BY-PASS DETOURS)"

ALL MATERIALS AND LABOR REQUIRED TO COMPLETE THE CONSTRUCTION OF THE DIVERSION, INCLUDING BUT NOT LIMITED TO ROCK, EARTHWORK, GRAVEL, AND PIPES SHALL BE INCLUDED IN THE UNIT BID PRICE FOR "DIVERSIONS (BY-PASS DETOURS)". 8" DGA BASE IS THE ONLY SEPARATE PAY ITEM.

EXISTING DIVERSION TO BE REMOVED AS INCIDENTAL TO CLEARING AND GRUBBING. EXISTING PIPES TO BE RETURNED TO PROPERTY OWNER, IF THE PROPERTY OWNER DESIRES, OR DISPOSED OF AT THE CONTRACTOR'S EXPENSE.

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	DRAWING TITLE: DIVERSION PLAN SHEET	HORIZONTAL SCALE SCALE: 1" = 20'	0' 20' 40' 80'	STA 60+73.18 TO STA 61+61.68	ITEM NO. 12-0305,OTH COUNTY OF LETCHER SHEET NO. R007



COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	DRAWING TITLE: DIVERSION PROFILE SHEET	0' 20' 40' 80' HORIZONTAL SCALE: 1"=20'	0' 2' 4' 8' VERTICAL SCALE: 1"=2'	STA 60+19.54 TO STA 61+61.68	ITEM NO. 12-0305.OTH COUNTY OF LETCHER SHEET NO. R008

EROSION CONTROL NOTES

ALL SILT CONTROL DEVICES SHALL BE SIZED TO RETAIN A VOLUME OF 3,600 CUBIC FEET PER DISTURBED CONTRIBUTING ACRE.

THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS TO MINIMIZE THE AMOUNT OF DISTURBED GROUND DURING EACH PHASE OF CONSTRUCTION. THE CONTRACTOR SHALL COMPUTE THE VOLUME NECESSARY TO CONTROL SEDIMENT DURING EACH PHASE OF CONSTRUCTION. AS WORK PROCEEDS, SILT TRAPS MAY BE ADDED OR REMOVED IN ORDER TO ACHIEVE THE BEST MANAGEMENT PLAN. THE REQUIRED VOLUME AT EACH ADDED SILT TRAP SHALL BE COMPUTED AS UP GRADIENT CONTRIBUTING AREAS ARE DISTURBED OR ARE STABILIZED TO THE SATISFACTION OF THE ENGINEER. THE REQUIRED VOLUME CALCULATION FOR EACH SILT TRAP SHALL BE DETERMINED BY THE CONTRACTOR AND VERIFIED BY THE ENGINEER. THE REQUIRED VOLUME AT EACH SILT TRAP MAY BE REDUCED BY THE FOLLOWING AMOUNTS:

- UP GRADIENT AREAS NOT DISTURBED (ACRES).
- UP GRADIENT AREAS THAT HAVE BEEN RECLAIMED AND PROTECTED BY EROSION CONTROL BLANKET OR OTHER GROUND PROTECTION MATERIAL SUCH AS TEMPORARY MULCH.(ACRES).
- THE USE OF TEMPORARY MULCH IS ENCOURAGED.
- UP GRADIENT AREAS THAT HAVE BEEN PROTECTED BY SILT FENCE (ACRES). AREAS PROTECTED BY SILT FENCE SHALL BE COMPUTED AT A MAXIMUM RATE OF 100 SQUARE FOOT PER LINEAR FOOT OF SILT FENCE.
- UP GRADIENT AREAS THAT HAVE BEEN PROTECTED BY SILT TRAPS (ACRES).

THE EROSION CONTROL PLAN SHALL BE ANNOTATED AS THE WORK PROCEEDS BY THE CONTRACTOR TO DETAIL THE SELECTION OF EACH EROSION CONTROL DEVICE USED AND THE VOLUME PROVIDED BY EACH SILT TRAP IN ACCORDANCE WITH THE DOCUMENTATION PROCEDURES ESTABLISHED BY THE DIVISION OF CONSTRUCTION.

IF A SILT BASIN IS NOT USED THEN ONE SILT TRAP TYPE A, ALTERNATE NUMBER 2 OR SILT TRAP TYPE B SHALL ALWAYS BE PLACED AT THE MOST REMOTE DOWNSTREAM COLLECTION POINT PRIOR TO DISCHARGING INTO A BLUE LINE STREAM OR ONTO AN ADJACENT PROPERTY OWNER. WHERE OVERLAND FLOW EXIST, A SILT FENCE OR OTHER FILTER DEVICES MAY BE USED OR THE OVERLAND FLOW MAY BE DIVERTED TO ONE OF THE AFOREMENTED SILT BASIN OR TRAPS.

THE EROSION CONTROL PLANS DO NOT CONSTITUTE A BMP BY THEMSELVES. THEY PROVIDE A STARTING POINT FOR THE CONTRACTOR AND SECTION ENGINEER TO DEVELOP THE BMP ACCORDING TO SECTION 213.03.01 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AND THE SUPPLEMENTAL SPECS EFFECTIVE WITH THE OCTOBER, 2004 LETTING.

EROSION CONTROL MEASURES SHALL BE IN PLACE AND FUNCTIONING PRIOR TO ANY EXCAVATION OR DISTURBANCE WITHIN A DRAINAGE AREA.

THE CONTRACTOR SHALL BE REQUIRED TO CLEAN OUT (REMOVE SEDIMENT FROM) SILT TRAPS AND SILT FENCES WHENEVER THEY BECOME ONE- HALF FULL AND PROPERLY DISPOSE OF THE MATERIAL AT SITES APPROVED BY THE SECTION ENGINEER.

EROSION CONTROL MEASURES EMPLOYED BY THE CONTRACTOR WILL BE UNIQUE TO THE PROJECT AND WORK CONDITIONS AND SHALL BE APPROVED BY THE SECTION ENGINEER. THE DEVELOPMENT AND UTILIZATION OF THESE MEASURES WILL BE RECORDED AS PART OF THE BMP, KEPT ON SITE, AND AVAILABLE FOR PUBLIC INSPECTION.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: EROSION CONTROL PLAN SHEET

HORIZONTAL SCALE
SCALE: 1" = 20'

0' 20' 40' 80'

STA 20+19.78 TO STA 21+65.00

ITEM NO. 12-0305,OTH
COUNTY OF LETCHER
SHEET NO. R010

OpenRoads Designer v10.16.2.267
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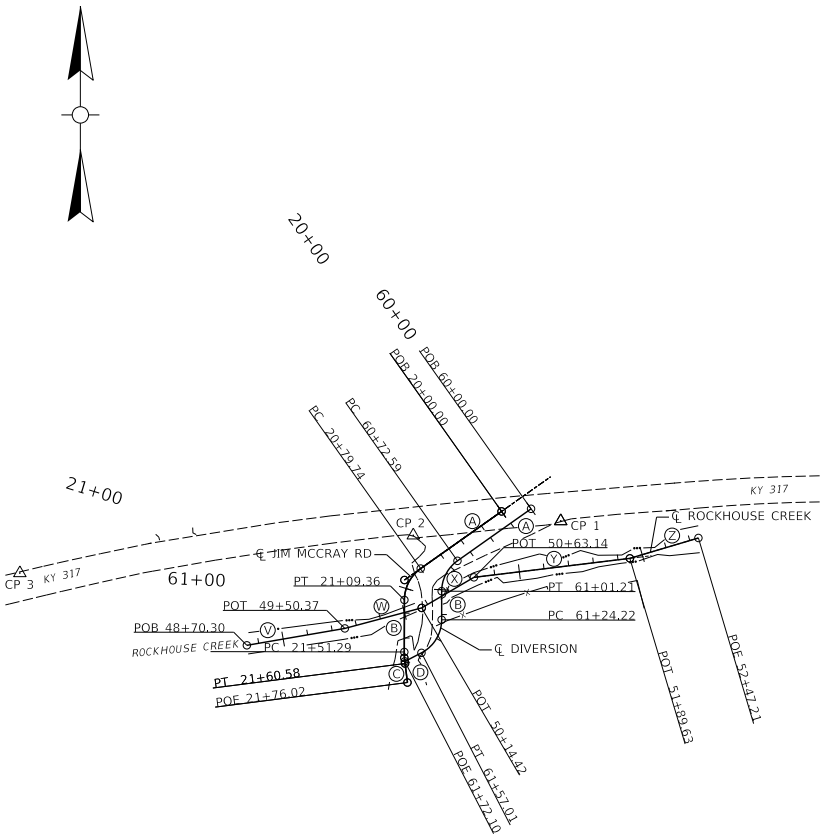


Ⓐ S54°45'18"W
Ⓑ S00°06'02"W
Ⓒ S07°16'49"E
Ⓓ S62°43'20"W
Ⓥ N80°12'28"E
Ⓦ N75°04'25"E
Ⓧ N59°40'13"E
Ⓨ N83°02'41"E
Ⓩ N73°26'14"E

JIM MCCRAY RD CURVE #1
PI STA 20+95.78
Δ = 54°39'16" LT
T = 16.05'
L = 29.62'
R = 31.05'
E = 3.90'

DIVERSION CURVE #1
PI STA 60+88.09
Δ = 54°39'16" LT
T = 15.50'
L = 28.62'
R = 30.00'
E = 3.77'

JIM MCCRAY RD CURVE #2
PI STA 21+55.94
Δ = 07°22'51" LT
T = 4.65'
L = 9.30'
R = 72.16'
E = 0.15'

DIVERSION CURVE #2
PI STA 61+42.47
Δ = 62°37'18" RT
T = 18.25'
L = 32.79'
R = 30.00'
E = 5.11'

COORDINATE CONTROL POINTS

CP NUMBER	TYPE	NORTHING (Y)	EASTING (X)	ELEVATION (Z)	STATION	OFFSET
1	PK NAIL & WASHER	3625497.829	5794104.565	1329.900	NA	NA
2	PK NAIL WASHER	3625486.355	5793985.874	1327.094	20+69.20	25.28
3	PK NAIL	3625455.976	5793669.095	1326.693	21+07.44	310.32

JIM MCCRAY ROAD

POINT	STATION	NORTHING (Y)	EASTING (X)
START	20+00.00	3625505.64	5794056.97
PC	20+79.74	3625459.63	5793991.85
HPI	20+95.78	3625450.37	5793978.75
PT	21+09.36	3625434.36	5793978.72
PC	21+51.29	3625392.43	5793978.65
HPI	21+55.94	3625387.77	5793978.64
PT	21+60.58	3625383.15	5793979.23
END	21+76.02	3625367.84	5793981.19

DIVERSION

POINT	STATION	NORTHING (Y)	EASTING (X)
START	60+00.00	3625507.72	5794080.71
PC	60+72.59	3625465.83	5794021.42
HPI	60+88.09	3625456.88	5794008.76
PT	61+01.21	3625441.38	5794008.73
PC	61+24.22	3625418.37	5794008.69
HPI	61+42.47	3625400.12	5794008.66
PT	61+57.01	3625391.75	5793992.44
END	61+72.10	3625384.84	5793979.04

ROCKHOUSE CREEK

POINT	STATION	NORTHING (Y)	EASTING (X)
START	48+70.30	3625397.80	5793851.85
HPI	49+50.37	3625411.42	5793930.75
HPI	50+14.42	3625427.92	5793992.64
HPI	50+63.14	3625452.52	5794034.69
HPI	51+89.63	3625467.84	5794160.25
END	52+47.21	3625484.25	5794215.44

COORDINATE SYSTEM

Coordinates for horizontal control were obtained from GPS methods and adjusted to the National NAD83/FBN System.

Coordinates are based on State Plane Coordinate System Single Zone and in U.S. Survey Feet.

BASIS OF ELEVATIONS

Elevations were derived from GPS methods and are adjusted to the NAVD88 Vertical Datum. Geoid model used was Geoid18.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: COORDINATE CONTROL SHEET

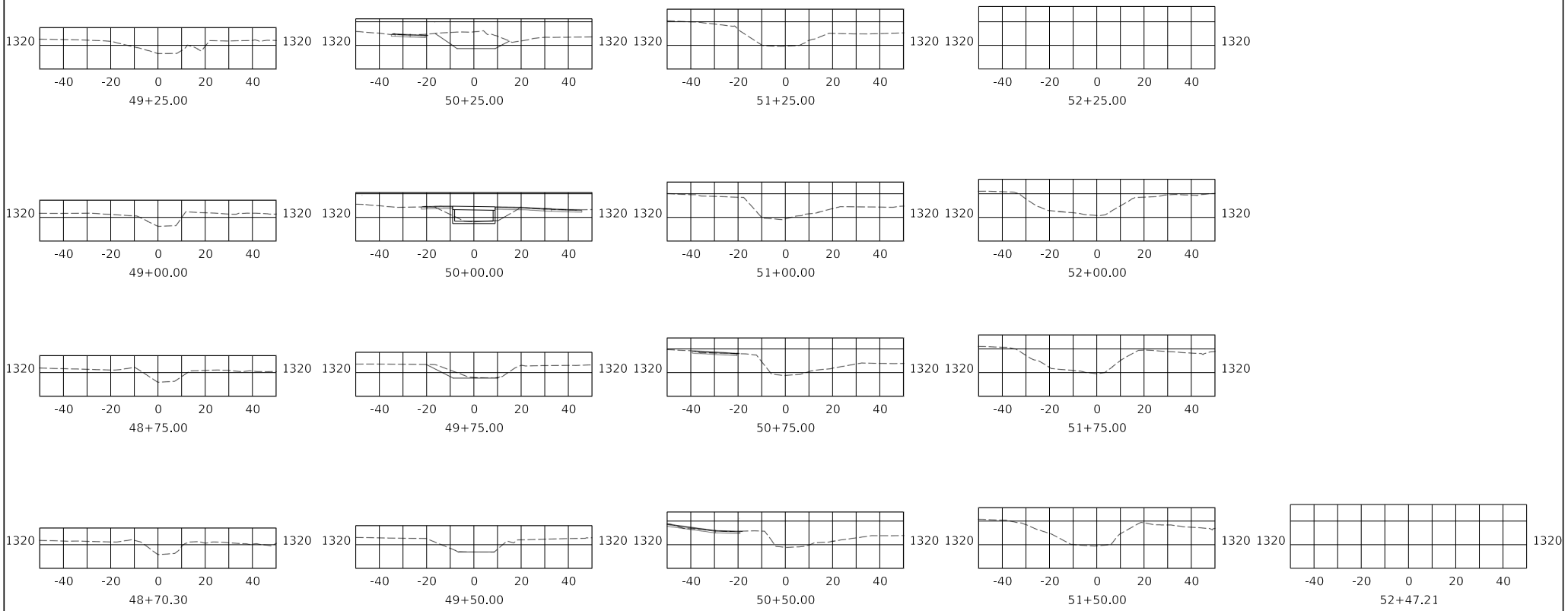
HORIZONTAL SCALE
SCALE: 1" = 50'

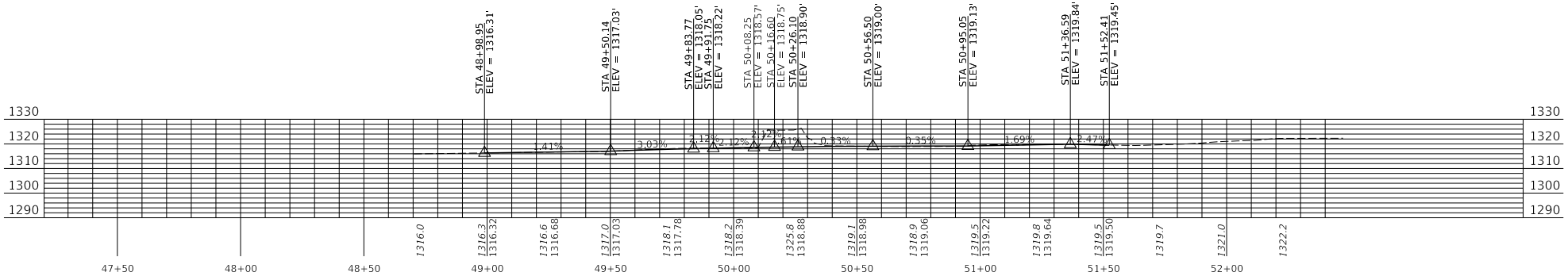
0' 50' 100' 200'

STA 20+00.00 TO STA 21+76.02

ITEM NO. 12-0305,OTH COUNTY OF LETCHER

SHEET NO. R011





COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	DRAWING TITLE: SITUATION SURVEY SHEET	0' 20' 40' 80' HORIZONTAL SCALE: 1"=20'	0' 20' 40' 80' VERTICAL SCALE: 1"=20'	STA 45+50.19 TO STA 51+52.41	ITEM NO. 12-0305,OTH COUNTY OF LETCHER SHEET NO. R012

LETTING DATE

CONSTRUCTION PROJECT NO.

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

LETCHER COUNTY
JIM MCCRAY ROAD
OVER ROCKHOUSE CREEK
FEMA BRIDGE: 4663-DR,
DEPT. OBJ CODE: D23A,
STA. 21+19.51

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	Neoprene Expansion Dams and Armored Edges
BHS-012	Railing System Type T631 Details

ESTIMATE OF QUANTITIES

BID ITEM CODE	08100	08150	08151	08003	08002	02223	02231	23378EC	3299
BID ITEM	CONCRETE-CLASS A	STEEL REINFORCEMENT	EPOXY REINFORCEMENT - COATED STEEL	FOUNDATION PREPARATION	STRUCTURE EXCAV - SOLID ROCK	GRANULAR EMBANKMENT	STRUCTURE GRANULAR BACKFILL	CONCRETE SEALING	ARMORED EDGE FOR CONCRETE
UNIT	CUYD	LB	LB	LS	CUYD	CUYD	CUYD	SQFT	LF
QUANTITY	71.4	4701	3950	1	48.8	65.6	101	525	28.9

PLANS PREPARED BY:

Cory Larkin, P.E.
KY No. 32748

SPECIFICATIONS

2019 Standard Specifications for Road and Bridge Construction.

2020 AASHTO LRFD Bridge Design Specifications

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

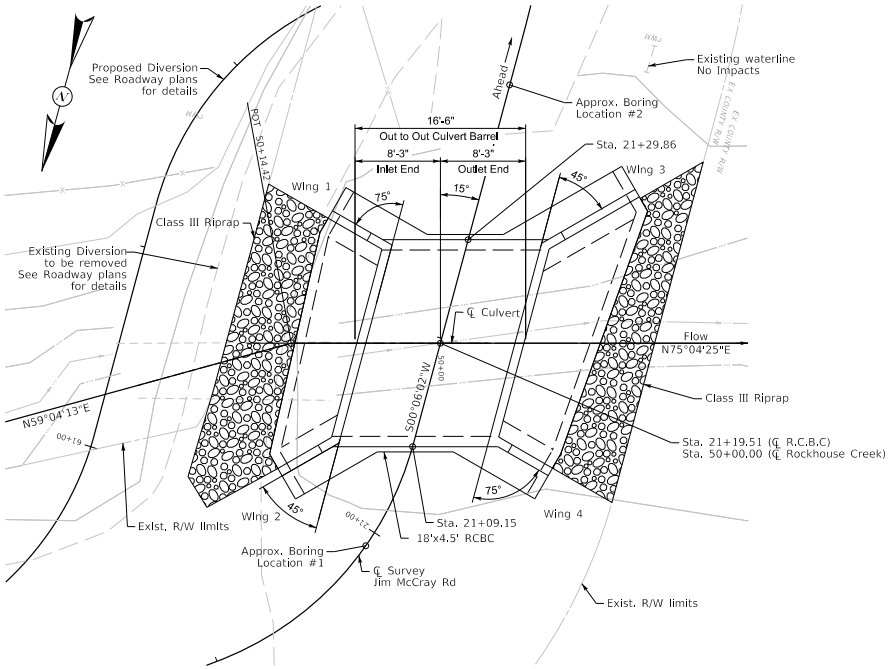
PREPARED BY:
Michael Baker INTERNATIONAL
1650 Lyndon Farm Court
Louisville, KY
Phone: (502)-339-3557
MBAKERINTL.COM

DATE:	CHECKED BY
DESIGNED BY: S. Daghash	G. Shen
DETAILED BY: T. Blanchard	G. Shen

SINGLE 18'x4.5' CULVERT

CROSSING: ROCKHOUSE CREEK

ROUTE	ITEM NO.	COUNTY OF
JIM MCCRAY	12-0305.OTH	LETCHER
	SHEET NO. S1	DRAWING NUMBER 28622

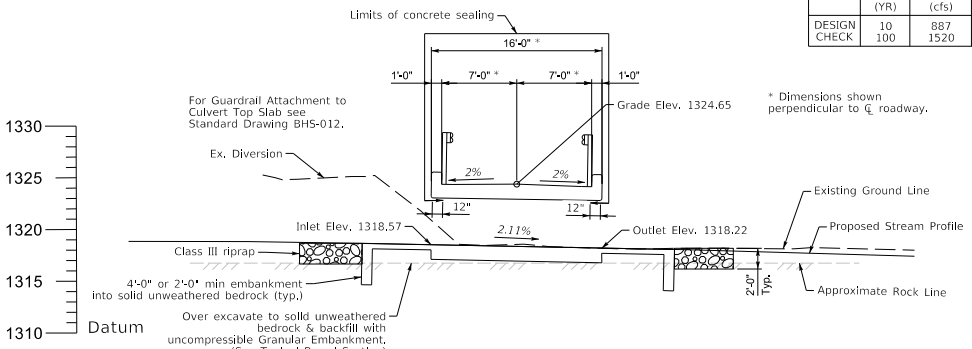


PLAN

For guardrail attachment to culvert top slab, see Standard Drawing BHS-012.

See Roadway plans for guardrail layout. Guardrail quantities included in Roadway Quantities. All costs to attach guardrail to top of culvert are included in price bid for guardrail.

FLOOD DATA	STORM (YR)	FLOW (cfs)	HW ELEV (ft)
DESIGN	10	887	1324.69
CHECK	100	1520	1326.13



SECTION ON ℄

Single 18'-0" x 4'-6" x 16'-6" Reinforced Concrete Box Culvert
8'-3" Inlet End and 8'-3" Outlet End
15 degree Skew ~ KYHL-93 Loading ~ 1:2 Fill Slope
Unyielding Foundation

GENERAL NOTES

SPECIFICATIONS: References to the specifications are to the 2019 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, 9th edition with all interim revisions and the AASHTO LRFD Bridge Construction Specifications 4th edition with all interim revisions.

DESIGN LIVE LOAD: This structure is designed for KY HL-93 live load. The KY HL-93 live load is arrived at by increasing the standard HL-93 trucks and lane loads as specified in the AASHTO specifications by 25%.

DESIGN METHOD: All structural members are designed to have a capacity equivalent or greater than the load and resistance factor design method, as specified in the referenced AASHTO Specifications.

MATERIALS DESIGN SPECIFICATIONS:
For Class "A" Reinforced Concrete f'c = 3,500 psi
For Steel Reinforcement Fy = 60,000 psi

CONCRETE: Class A Concrete is to be used throughout the entire culvert.

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. Clear cover shall be 2" unless noted otherwise.

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. See STD. DWG. BGX-006, C.E.

BEVELED EDGES: All exposed edges shall be beveled ¾", unless otherwise shown.

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,dewatering, shoring, excavations, backfilling, removal of all parts of existing structures, phase construction, incidental materials, labor, or anything else required to complete the structure.

CONSTRUCTION JOINTS: Vertical construction joints shall be located in the field, except that no construction joint shall be located in the barrel within six feet of the ends of the culvert.

FOUNDATION PREPARATION: Foundation Preparation shall be in accordance with Section 603 of the Specifications.

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

The Contractor is responsible for slope stability during any activity required for installation of foundations. Temporary sheeting and/or shoring methods may be required. Any temporary device used for stability is to be designed by a professional Engineer registered in Kentucky. The Engineer is to have 21 days to review any proposed sheeting or shoring designs. Cost of any device used for stabilizing the site for installation of foundations is incidental to installation of the foundation.

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

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

CULVERTS WITH UNYIELDING FOUNDATIONS: If solid rock is not encountered at the design footing elevation, soil must be excavated and backfilled with "Granular Embankment", non-erodible only, meeting the material requirements of Section 805 in the current edition of the Kentucky Standard Specifications with the exception that the maximum size is 4 inches. Payment for this work shall be included in the lump sum bid for Foundation Preparation.

Any bedrock or boulders encountered within 2 ft. of the bottom slab must be excavated and backfilled with "Granular Embankment" to the base of the footing elevation.

CONSTRUCTION NOTES: Temporary sheeting, shoring, cofferdams, and/or dewatering methods may be necessary for construction of the culvert. Include all costs in the price bid for Foundation Preparation.

Solid rock excavation may be required for construction of this culvert.

All aprons and footing excavations in bedrock shall be cut neatly so that no forming or backfilling is necessary in the construction of the portions of the aprons and footing located in rock. The aprons at the ends of the flowlines and ends of the wings shall be embedded 2'-0" minimum into solid unweathered bedrock. Concrete shall be placed directly against the cut rock faces. Mass concrete shall be placed in the excavation from the top of the footing to the bedrock surface where the footing does not extend to the bedrock surface. If the bedrock becomes softened at bearing elevation, the softened material shall be undercut to unweathered material prior to placing the concrete. Seasonal groundwater fluctuations may cause groundwater infiltration into the excavations and a dewatering method may be necessary. All costs for extra concrete to be incidental to price bid for Class A concrete.

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

CONCRETE SEALER: Apply concrete sealer in accordance with the Special Note for Concrete Sealing.

STRUCTURE GRANULAR BACKFILL: Materials for Structure Granular Backfill shall be in accordance with Section 805 of the Specifications.

SCOUR PROTECTION: Scour Protection shall be Class III riprap in accordance with the plans and specifications. Geotextile Fabric, Class 1 shall be placed between the native material and the scour protection in accordance with Standard Specifications 214 and 843.

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

WEIGHT OF FILL MATERIAL: The assumed weight of fill material is 120 lbs per cubic foot.

FOOTING PRESSURE: Foundation materials for barrel and wing footings shall resist a maximum service limit state bearing pressure of 1520 PSF.

FLOWLINE REINFORCEMENT: Construct the 6" paved inlet and outlet using Size 4 bars at 18in centers in each direction or an equivalent area of welded deformed steel fabric. The bars shall extend a minimum of 12 in into wing footings and/or the bottom slab. The cost of this reinforcement shall be incidental to the unit price bid for Concrete, Class "A".

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

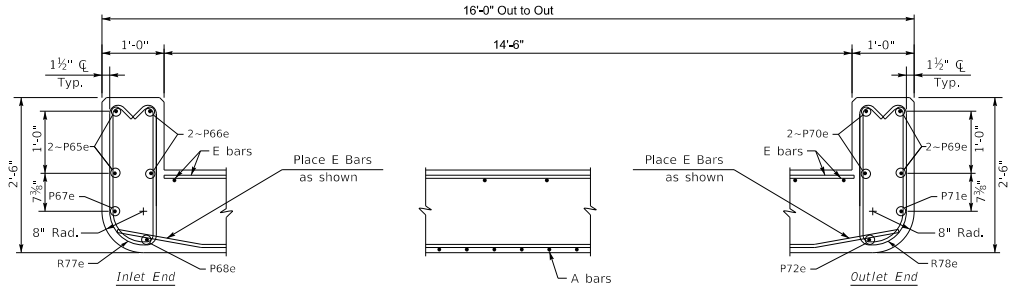
PREPARED BY: Michael Baker INTERNATIONAL
1650 Lyndon Farm Court
Louisville, KY
Phone: (502)-339-3557
MBAKERINTL.COM

DATE:	CHECKED BY
DESIGNED BY: S. Daghash	G. Shen
DETAILED BY: T. Blanchard	G. Shen

CULVERT LAYOUT
CROSSING
ROCKHOUSE CREEK

ROUTE	ITEM NO.	COUNTY OF
JIM MCCRAY	12-0305.OTH	LETCHER
	SHEET NO. S2	DRAWING NUMBER 28622

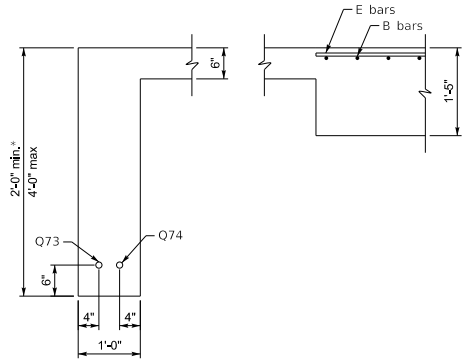
OpenRoads Designer v10.16.2.267 USER: Tosha.Blanchard DATE PLOTTED: 7-NOV-2022
FILE NAME: pw://mb-us-pw.bentley.com:mb-us-pw-03/Documents/Louisville_KY/01_Projects/KYTC_2022_Statewide_Structures/LA 6/067C021/Structures/Bridge/CADD/Culvert Layout.dgn



LEFT PARAPET

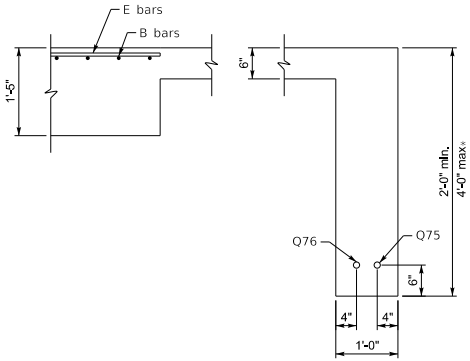
SECTION ON ℄

RIGHT PARAPET



LEFT END

(Perpendicular to Apron)



RIGHT END

(Perpendicular to Apron)

*Note: Embed apron 2'-0" Min. into solid unweathered bedrock. Pour all sides against solid rock. Any extra concrete required is incidental to the unit price bid for Class A concrete. Apron to be a maximum of 4'-0" long if solid rock is deep. Quantities are included for the full 4'-0" depth. Adjust concrete paid as necessary for actual depth used.

BARREL ELEVATION

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

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Phone: (502)-339-3557
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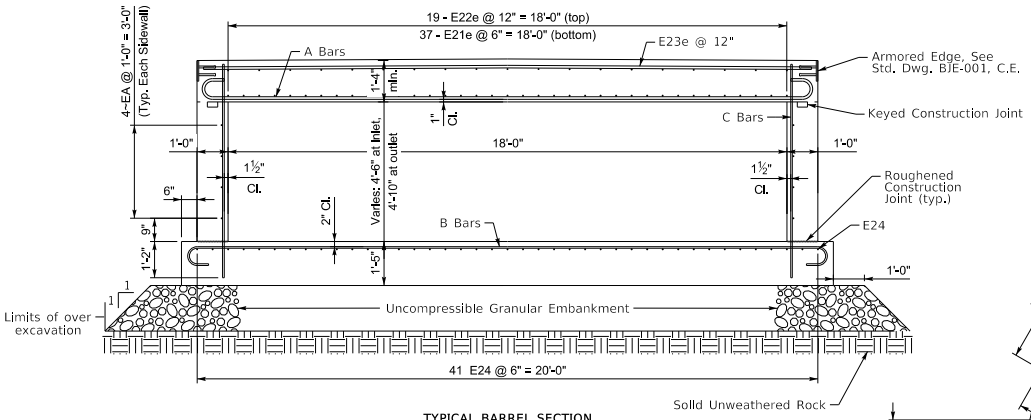
DETAILED BY: T. Blanchard	G. Shen

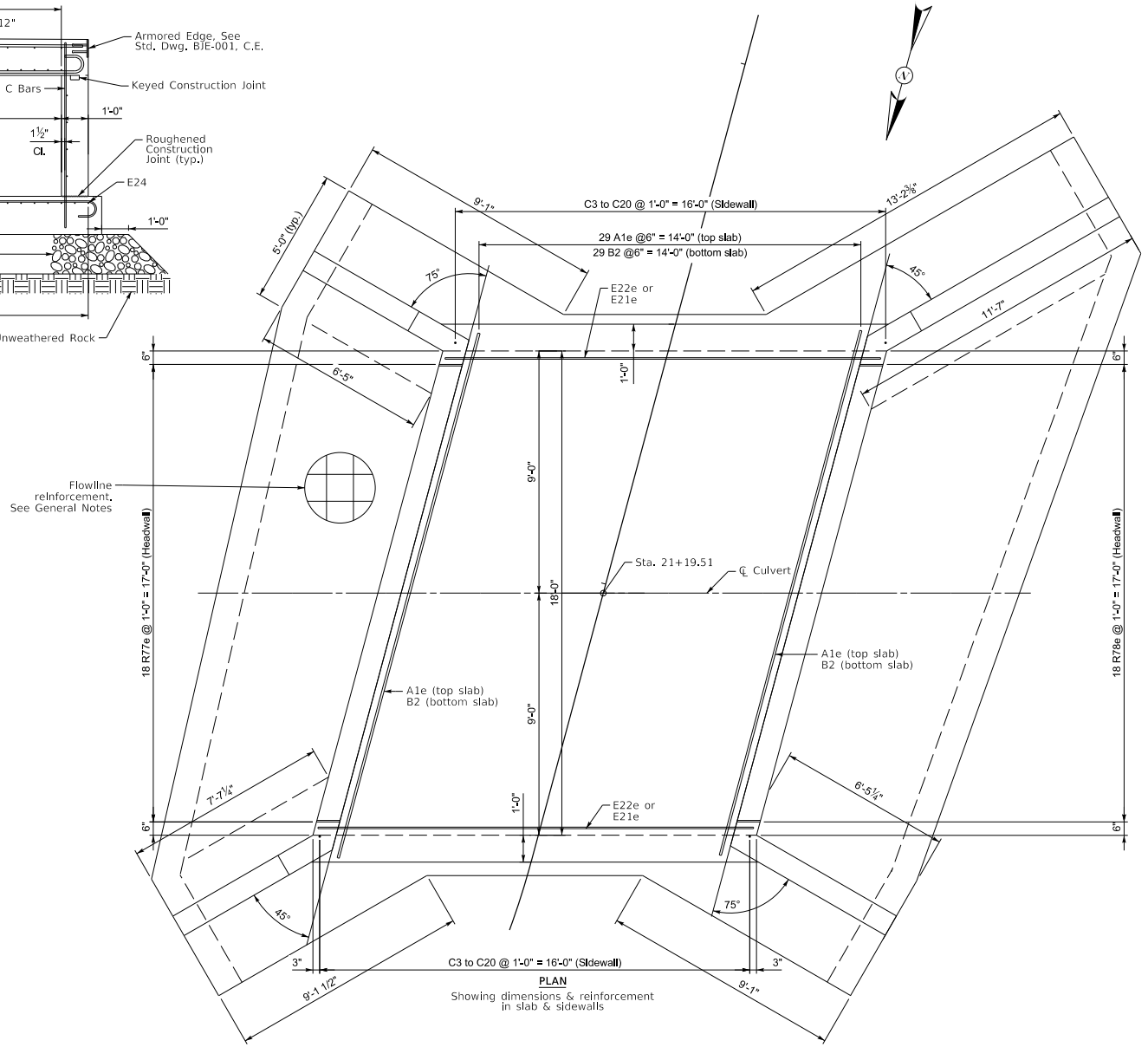
BARREL DETAILS 1

CROSSING
ROCKHOUSE CREEK

ROUTE	ITEM NO.	COUNTY OF
JIM MCCRAY	12-0305.OTH	LETCHER
	SHEET NO. S3	DRAWING NUMBER 28622



TYPICAL BARREL SECTION



PLAN

Showing dimensions & reinforcement in slab & sidewalls

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY:
Michael Baker INTERNATIONAL
1650 Lyndon Farm Court
Louisville, KY
Phone: (502)-339-3557
MBAKERINTL.COM

DATE:	CHECKED BY
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DETAILED BY: T. Blanchard	G. Shen

BARREL DETAILS 2

CROSSING: ROCKHOUSE CREEK

ROUTE	ITEM NO.	COUNTY OF
JIM MCCRAY	12-0305.OTH	LETCHER
	SHEET NO. S4	DRAWING NUMBER 28622

OpenRoads Designer v10.16.2.267 USER: Tosha.Blanchard DATE PLOTTED: 7-NOV-2022
FILE NAME: pw://mb-us-pw.bentley.com:mb-us-pw-03/Documents/Louisville_KY/01_Projects/KYTC_2022_Statewide_Structures/LA 6/067C021/Structures/Bridge/CADD/Barrel Detail 2.dgn

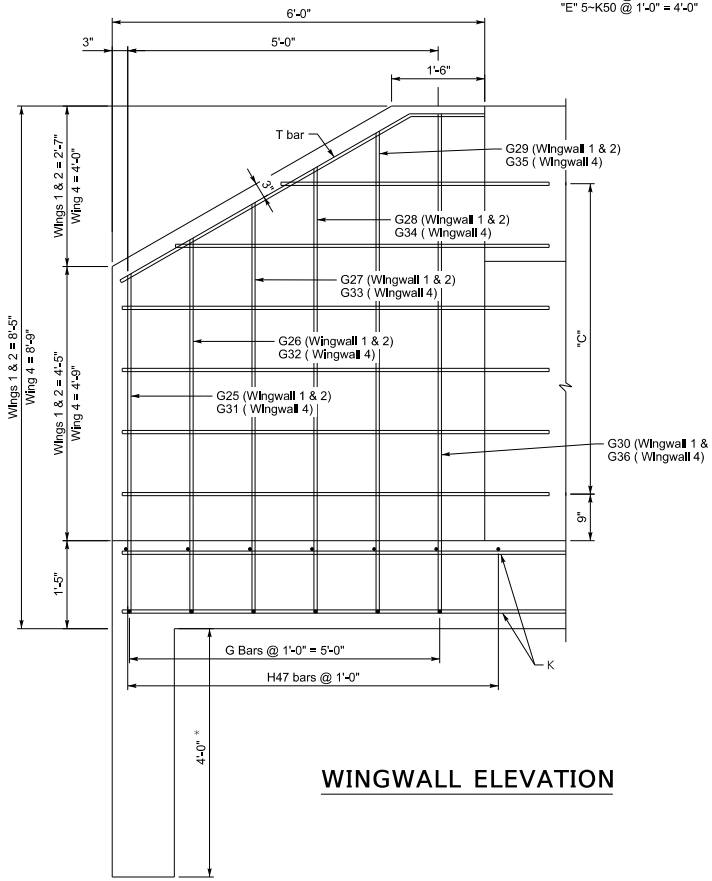
NOTES:

1. Wingwall 1, 2, & 4 Reinforcing:
"A" 7~H47 @ 1'-0" = 6'-0" top of footing
"B" 6~H48 @ 1'-0" = 5'-0"

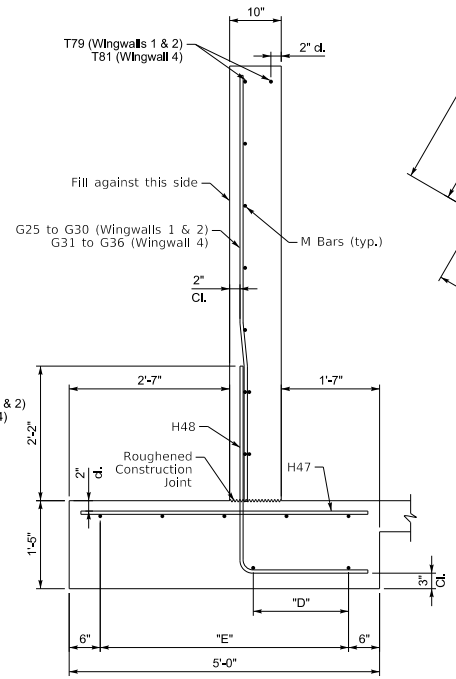
2. Wingwall 1 Reinforcing:
"C" 4~M52, 1~M53, 1~M54 @ 1'-0" = 5'-0"
"D" 2~K49 @ 1'-0" Bottom of Footing
"E" 5~K49 @ 1'-0" = 4'-0"

3. Wingwall 2 Reinforcing:
"C" 4~M55, 1~M56, 1~M57 @ 1'-0" = 5'-0"
"D" 2~K49 @ 1'-0" Bottom of Footing
"E" 5~K49 @ 1'-0" = 4'-0"

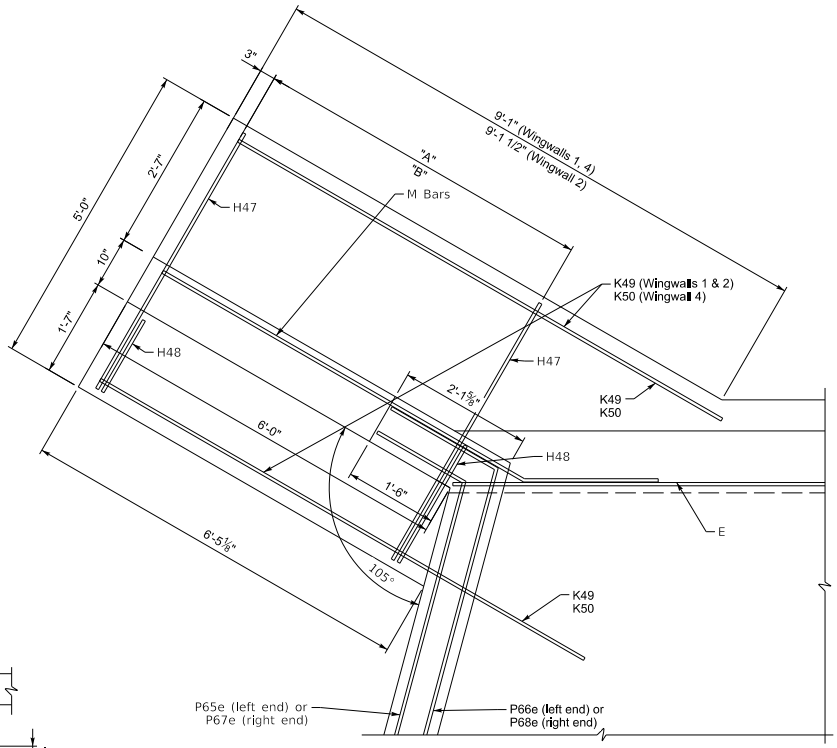
4. Wingwall 4 Reinforcing:
"C" 4~M62, 1~M63, 1~M64 @ 1'-0" = 5'-0"
"D" 2~K50 @ 1'-0" Bottom of Footing
"E" 5~K50 @ 1'-0" = 4'-0"



WINGWALL ELEVATION



WING SECTION



PLAN

Note:
Wing 1 shown, Wings 2 & 4 similar.

* Terminate at solid rock (2'-0" min. embedment)

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

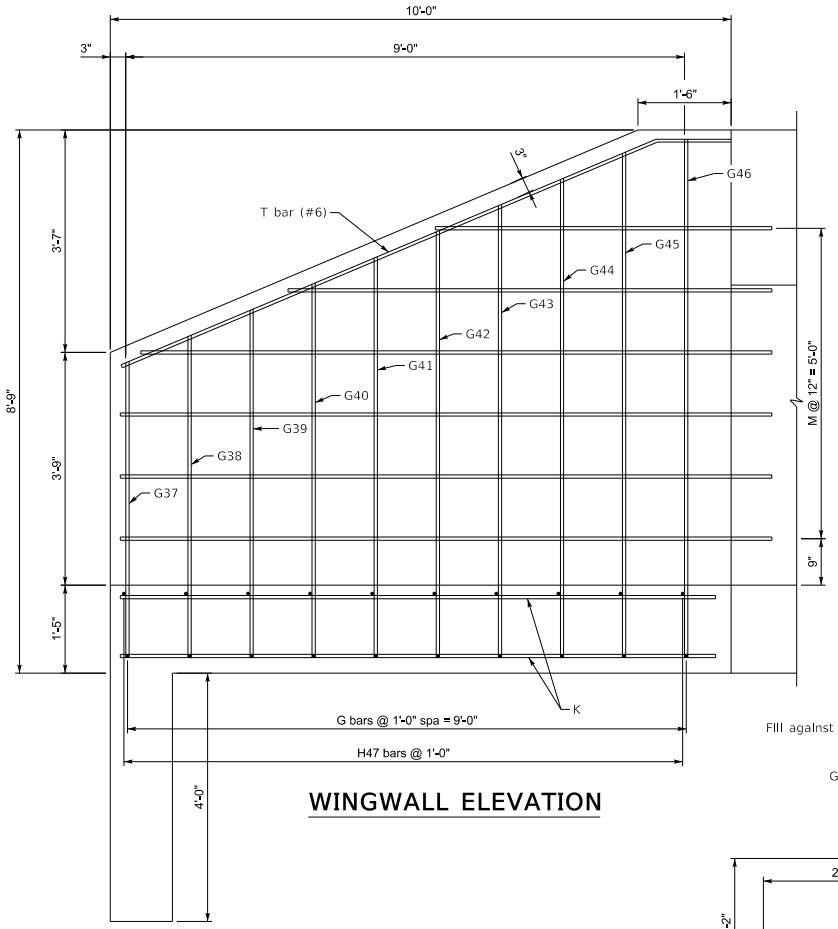
PREPARED BY: Michael Baker INTERNATIONAL
1650 Lyndon Farm Court
Louisville, KY
Phone: (502)-339-3557
MBAKERINTL.COM

DATE:	CHECKED BY
DESIGNED BY: S. Daghash	G. Shen
DETAILED BY: T. Blanchard	G. Shen

WINGWALLS 1, 2 & 4

CROSSING
ROCKHOUSE CREEK

ROUTE	ITEM NO.	COUNTY OF
JIM MCCRAY	12-0305.OTH	LETCHER
	SHEET NO. S5	DRAWING NUMBER 28622

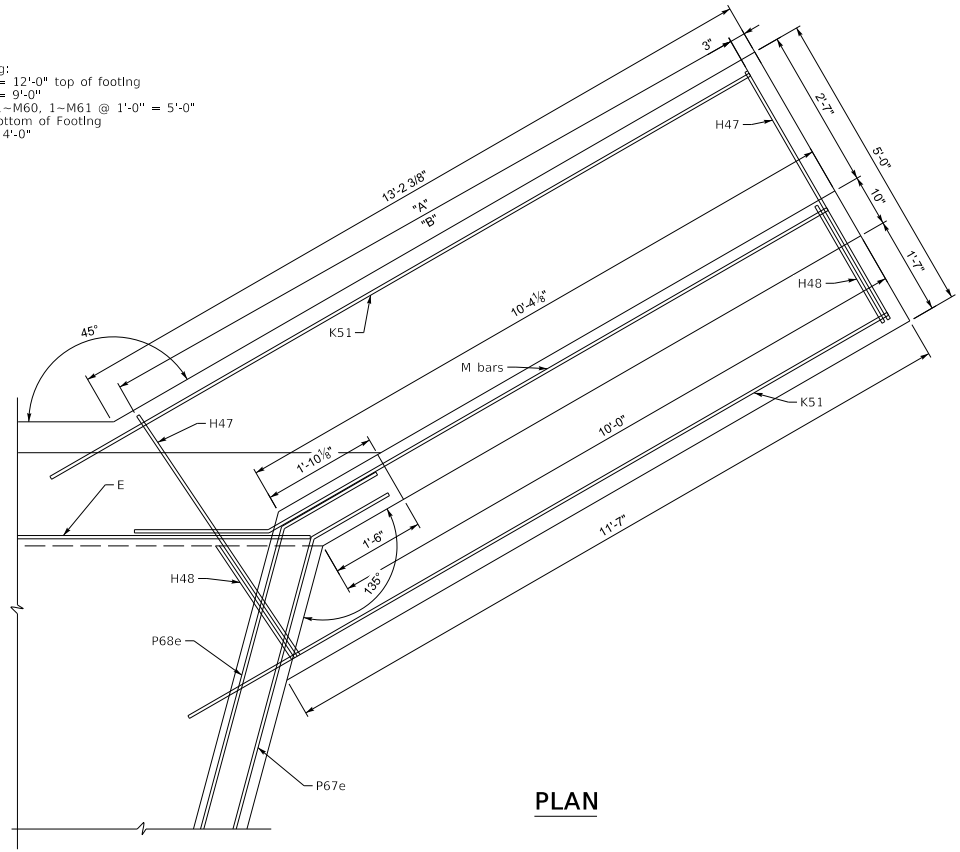


WINGWALL ELEVATION

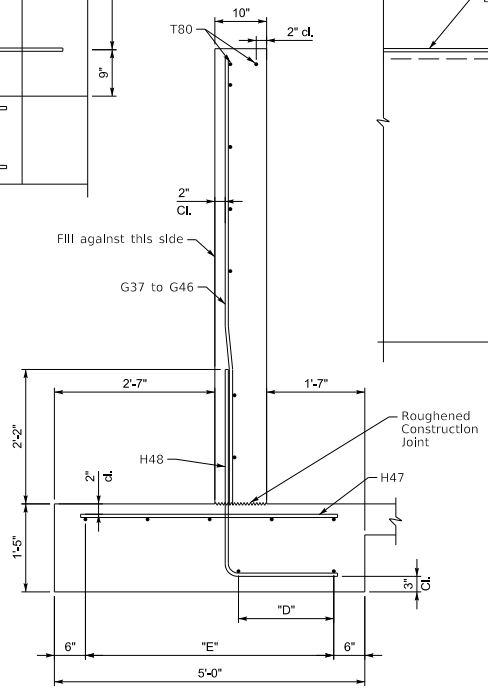
* Terminate at solid rock (2'-0" min. embedment)

NOTE:

Wingwall 3 Reinforcing:
"A" 13~H47 @ 1'-0" = 12'-0" top of footing
"B" 10~H48 @ 1'-0" = 9'-0"
"C" 3~M58, 1~M59, 1~M60, 1~M61 @ 1'-0" = 5'-0"
"D" 2~K51 @ 1'-0" Bottom of Footing
"E" 5~K51 @ 1'-0" = 4'-0"



PLAN

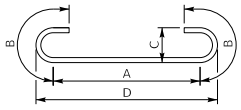


WING SECTION

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION	DATE	PREPARED BY: Michael Baker INTERNATIONAL 1650 Lyndon Farm Court Louisville, KY Phone: (502)-339-3557 MBAKERINTL.COM	DATE:	CHECKED BY	*WINGWALL 3* CROSSING ROCKHOUSE CREEK	ROUTE JIM MCCRAY	ITEM NO. 12-0305.OTH SHEET NO. S6	COUNTY OF LETCHER DRAWING NUMBER 28622
				DESIGNED BY: S. Daghash	G. Shen				
				DETAILED BY: T. Blanchard	G. Shen				

OpenRoads Designer v10.16.2.267 USER: Tosha.Blanchard DATE PLOTTED: 7-NOV-2022 FILE NAME: pw://mb-us-pw.bentley.com:mb-us-pw-03/Documents/Louisville_KY/01_Projects/KYTC_2022_Statewide_Structures/LA 6/067C021/Structures/Bridge/CADD/Wingwall 3.dgn

BILL OF REINFORCEMENT



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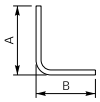

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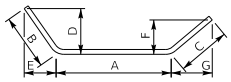

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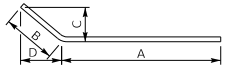

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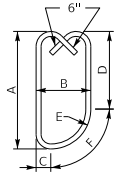

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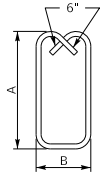

TYPE 12s

MARK.	TYPE.	NO.	SIZE	LENGTH	LOCATION	A	B	C	D
A1e	1	29	8	22'-6½"	Top Slab	20'-0½"	1'-3"	6"	20'-4½"
B2	1	29	8	23'-6½"	Bottom Slab	21'-0½"	1'-3"	6"	21'-4½"
C3-C20	Stralght	2	5	Varies: 6'-10" to 7'-2⅛" by 1⅝" each	Sldewalls				
E21e	Stralght	37	6	16'-2"	Top Slab				
E22e	Straight	19	5	16'-2"	Top Slab				
E23e	Straight	15	5	20'-4½"	Top Slab				
E24	Straight	41	6	17'-2"	Bottom Slab				
G25	Stralght	2	5	4'-2¾"	Wlngwalls 1,2				
G26	Stralght	2	5	4'-9⅞"	Wlngwalls 1,2				
G27	Straight	2	5	5'-4¾"	Wingwalls 1,2				
G28	Straight	2	5	5'-11⅝"	Wingwalls 1,2				
G29	Straight	2	5	6'-6½"	Wingwalls 1,2				
G30	Stralght	2	5	6'-8¾"	Wlngwalls 1,2				
G31	Stralght	1	5	4'-7⅛"	Wlngwall 4				
G32	Stralght	1	5	5'-1⅛"	Wingwall 4				
G33	Straight	1	5	5'-7"	Wingwall 4				
G34	Straight	1	5	6'-1"	Wingwall 4				
G35	Stralght	1	5	6'-6⅞"	Wlngwall 4				
G36	Stralght	1	5	6'-8¾"	Wlngwall 4				
G37	Straight	1	5	3'-7"	Wingwall 3				
G38	Straight	1	5	4'-0⅛"	Wingwall 3				
G39	Straight	1	5	4'-5⅛"	Wingwall 3				
G40	Stralght	1	5	4'-10⅛"	Wlngwall 3				
G41	Stralght	1	5	5'-3¼"	Wlngwall 3				
G42	Straight	1	5	5'-8¼"	Wingwall 3				
G43	Straight	1	5	6'-1⅜"	Wingwall 3				
G44	Straight	1	5	6'-6⅜"	Wingwall 3				
G45	Stralght	1	5	6'-11½"	Wlngwall 3				
G46	Stralght	1	5	7'-1"	Wlngwall 3				
H47	Straight	34	5	4'-8"	Wingwalls 1,2,3 & 4				
H48	5	28	5	3'-1"	Wingwalls 1,2,3 & 4	1'-0"	2'-1"		
K49	Straight	14	5	9'-0"	Wingwalls 1,2 footing				
K50	Stralght	7	5	9'-0"	Wlngwall 4 footlng				
K51	Stralght	7	5	13'-0"	Wlngwall 3 footlng				

BILL OF REINFORCEMENT

MARK.	TYPE.	NO.	SIZE	LENGTH	LOCATION	A	B	C	D	E	F	G
M52	8	4	5	9'-0⅝"	Wingwall 1	6'-10⅜"	2'-2"	1'-1"	1'-10½"			
M53	8	1	5	8'-2"	Wingwall 1	5'-11⅞"	2'-2"	1'-1"	1'-10½"			
M54	8	1	5	6'-5¼"	Wlngwall 1	4'-3"	2'-2"	1'-1"	1'-10½"			
M55	8	4	5	8'-10⅝"	Wlngwall 2	6'-8⅜"	2'-2"	1'-1"	1'-10½"			
M56	8	1	5	8'-0"	Wingwall 2	5'-9⅞"	2'-2"	1'-1"	1'-10½"			
M57	8	1	5	6'-3¼"	Wingwall 2	4'-1"	2'-2"	1'-1"	1'-10½"			
M58	8	3	5	8'-10⅜"	Wingwall 3	6'-8⅜"	2'-2"	1'-1"	1'-10½"			
M59	8	1	5	8'-6"	Wlngwall 3	6'-3⅝"	2'-2"	1'-1"	1'-10½"			
M60	8	1	5	6'-1½"	Wlngwall 3	3'-11⅛"	2'-2"	1'-1"	1'-10½"			
M61	8	1	5	3'-9"	Wingwall 3	1'-6¾"	2'-2"	1'-1"	1'-10½"			
M62	8	4	5	12'-7"	Wingwall 4	10'-4¾"	2'-2"	1'-1"	1'-10½"			
M63	8	1	5	12'-3¼"	Wingwall 4	10'-1"	2'-2"	1'-1"	1'-10½"			
M64	8	4	5	10'-3"	Wlngwall 4	8'-0¾"	2'-2"	1'-1"	1'-10½"			
P65e	7	2	5	23'-8¾"	F.F. Parapet Left End	19'-4½"	1'-7⅛"	1'-9¾"	1'-1½"	1'-1½"	1'-9"	5⅝"
P66e	7	2	5	22'-4¼"	B.F. Parapet Left End	18'-10⅝"	1'-5"	1'-5⅞"	1'-0"	1'-0"	1'-5⅜"	4⅜"
P67e	7	1	8	23'-8¾"	F.F. Parapet Left End	19'-4½"	1'-9⅜"	1'-7⅛"	1'-9"	5⅝"	1'-1½"	1'-1½"
P68e	7	1	8	22'-4¼"	B.F. Parapet Left End	18'-10⅝"	1'-5⅞"	1'-5"	1'-5⅜"	4⅝"	1'-0"	1'-0"
P69e	7	2	5	23'-8⅜"	F.F. Parapet RIght End	19'-4½"	1'-7⅛"	1'-9¾"	1'-1½"	1'-1½"	1'-9"	5⅝"
P70e	7	2	5	22'-4"	B.F. Parapet RIght End	18'-10⅝"	1'-5"	1'-5⅞"	1'-0"	1'-0"	1'-5⅜"	4⅜"
P71e	7	1	8	23'-8⅜"	F.F. Parapet Right End	19'-4½"	1'-9⅜"	1'-7⅛"	1'-9"	5⅝"	1'-1½"	1'-1½"
P72e	7	1	8	22'-4"	B.F. Parapet Right End	18'-10⅝"	1'-5⅞"	1'-5"	1'-5⅜"	4⅝"	1'-0"	1'-0"
Q73	7	1	8	31'-3⅜"	Apron Left End	21'-8¼"	4'-9"	4'-9⅝"	3'-2¾"	3'-5⅞"	1'-4⅞"	4'-7⅛"
Q74	7	1	8	30'-7¾"	Apron Left End	21'-4⅜"	4'-6½"	4'-8⅝"	3'-0⅞"	3'-3⅞"	1'-4⅝"	4'-6⅛"
Q75	7	1	8	32'-4¼"	Apron RIght End	24'-4"	3'-6⅛"	4'-5⅝"	7½"	3'-5½"	3'-4⅞"	2'-10¾"
Q76	7	1	8	33'-0"	Apron Right End	24'-7⅞"	3'-6¾"	4'-8⅞"	7⅝"	3'-6⅛"	3'-7⅜"	3'-0¾"
R77e	11s	18	5	5'-11"	Parapet Wall (Left End)	2'-3½"	9"	0'-¼"	1'-9"	6½"	9¾"	
R78e	12s	18	5	6'1"	Parapet Wall (Right End)	2'-3½"	9¾"					
T79	8	4	6	6'-2⅞"	Top of Wlngwall 1 &2	4'-11¾"	1'-3½"	7⅜"	1'-1⅛"			
T80	8	2	6	10'-3½"	Top of Wlngwall 3	9'-0⅛"	1'-3⅜"	6"	1'-2⅛"			
T81	8	2	6	6'1"	Top of Wingwall 4	4'-9⅝"	1'-3½"	6¾"	1'-1¾"			

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY:
Michael Baker INTERNATIONAL
1650 Lyndon Farm Court
Louisville, KY
Phone: (502)-339-3557
MBAKERINTL.COM

DATE:	CHECKED BY
DESIGNED BY: S. Daghash	G. Shen
DETAILED BY: T. Blanchard	G. Shen

BILL OF REINFORCEMENT

CROSSING
ROCKHOUSE CREEK

ROUTE
JIM MCCRAY

ITEM NO. 12-0305.OTH
SHEET NO. S7

COUNTY OF LETCHER
DRAWING NUMBER 28622

Drilling Firm: Kentucky Transportation Cabinet
For: Division of Structural Design
Geotechnical Branch

DRILLER'S SUBSURFACE LOG

Printed: 9/19/22

Project ID: *067C021* Item Number:	*Letcher - Jim McCray Rd (CR 1880)* *Stevens Fork*	Project Type: *Structure Bridge* Project Manager: _

Hole Number *1* Surface Elevation *'* Total Depth *7.8'* Location *+ 'Lt.*	Immediate Water Depth *NA* Static Water Depth *NA* Driller *Cody Davidson*	Start Date *09/15/2022* End Date *09/15/2022* Latitude(83) *37.241300* Longitude(83) *-82.751400*	Hole Type *sounding* Rig_Number

Lithology Elevation	Lithology Depth	Description (Overburden / Rock Core)	Sample No. Std/Ky RQD	Depth (ft) Run (ft)	Rec. (ft) Rec (ft)	SPT Blows Rec (%)	Sample Type SDI (JS)	Remarks
	0.4	Moist, sandy gravel fill.						
5		Loose, brown, moist, sandy clay with rock fragments.						5
	7.8	(Refusal)						
		Hard, gray, sandstone.						
10		(Bottom of Hole 7.8') (Refusal @ 7.8)						10
15								15
20								20
25								25
30								30
35								35
40								40
45								45
50								50

Drilling Firm: Kentucky Transportation Cabinet
For: Division of Structural Design
Geotechnical Branch

DRILLER'S SUBSURFACE LOG

Printed: 9/19/22

Project ID: *067C021* Item Number:	*Letcher - Jim McCray Rd (CR 1880)* *Stevens Fork*	Project Type: *Structure Bridge* Project Manager: _

Hole Number *2* Surface Elevation *'* Total Depth *9.0'* Location *+ 'Lt.*	Immediate Water Depth *NA* Static Water Depth *NA* Driller *Cody Davidson*	Start Date *09/15/2022* End Date *09/15/2022* Latitude(83) *37.241300* Longitude(83) *-82.751400*	Hole Type *sounding* Rig_Number

Lithology Elevation	Lithology Depth	Description (Overburden / Rock Core)	Sample No. Std/Ky RQD	Depth (ft) Run (ft)	Rec. (ft) Rec (ft)	SPT Blows Rec (%)	Sample Type SDI (JS)	Remarks
	0.3	Blacktop.						
5		Loose, brown, moist, sandy clay with rock fragments.						5
	7.3	(Refusal)						
	9.0	Hard, gray, sandstone.						
10		(Bottom of Hole 9.0') (Refusal @ 7.3)						10
15								15
20								20
25								25
30								30
35								35
40								40
45								45
50								50

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

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DESIGNED BY: S. Daghash	G. Shen
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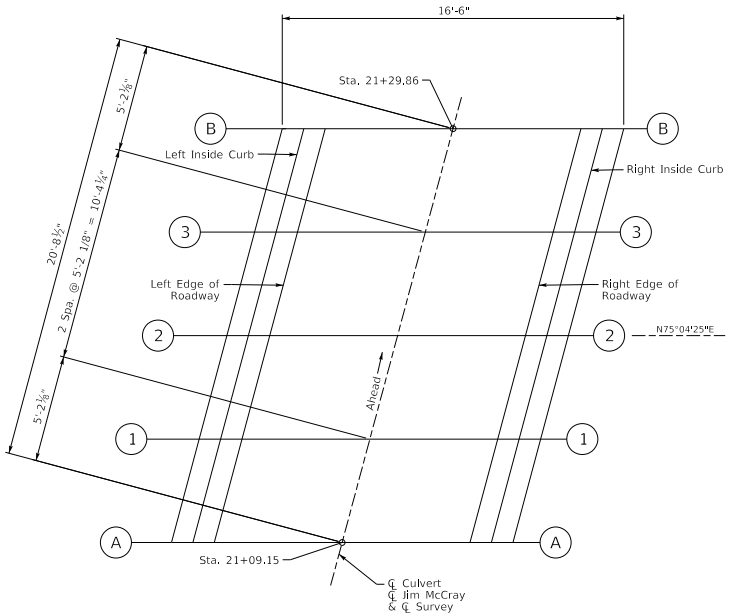
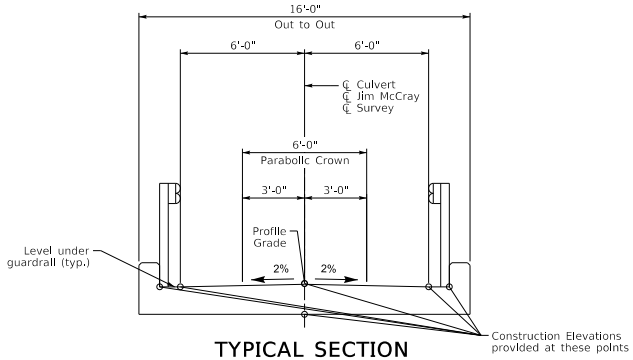
SUBSURFACE DATA
CROSSING: ROCKHOUSE CREEK

ROUTE	ITEM NO.	COUNTY OF
JIM MCCRAY	12-0305.OTH	LETCHER
	SHEET NO. S8	DRAWING NUMBER 28622

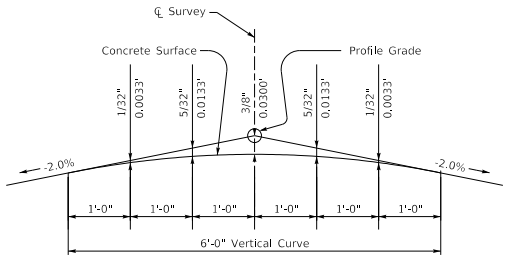


GRID LAYOUT



TYPICAL SECTION

Dimensions shown perpendicular to ℄ Roadway.



PARABOLIC CROWN

Dimensions shown perpendicular to ℄ Roadway.

CONSTRUCTION ELEVATIONS																
LOCATION	TOP OF TOP SLAB															
	Left Inside Curb	Form Deflection	Left Inside Curb	Left Edge of Roadway	Form Deflection	Left Edge of Roadway	℄ Survey	Form Deflection	℄ Survey	Right Edge of Roadway	Form Deflection	Right Edge of Roadway	Right Inside Curb	Form Deflection	Right Inside Curb
Skew Line AA	1324.71	0.000	1324.71	1324.71	0.000	1324.71	1324.80	0.000	1324.80	1324.71	0.000	1324.71	1324.71	0.000	1324.71
Grid Line 1	1324.63			1324.63			1324.72			1324.63			1324.63		
Grid Line 2	1324.56			1324.55			1324.65			1324.55			1324.56		
Grid Line 3	1324.48			1324.47			1324.57			1324.47			1324.48		
Skew Line BB	1324.40	0.000	1324.40	1324.39	0.000	1324.39	1324.49	0.000	1324.49	1324.39	0.000	1324.39	1324.40	0.000	1324.40

CONSTRUCTION ELEVATIONS			
LOCATION	BOTTOM OF TOP SLAB		
	℄ Survey	Form Deflection	℄ Survey
Skew Line AA	1323.06	0.000	1323.06
Grid Line 1	1323.06		
Grid Line 2	1323.06		
Grid Line 3	1323.06		
Skew Line BB	1323.06	0.000	1323.06

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

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CONSTRUCTION ELEVATIONS
CROSSING: ROCKHOUSE CREEK

ROUTE: JIM MCCRAY
ITEM NO.: 12-0305.OTH
SHEET NO.: S9
COUNTY OF: LETCHER
DRAWING NUMBER: 28622

OpenRoads Designer v10.16.2.267 USER: Tosha.Blanchard DATE PLOTTED: 7-NOV-2022
FILE NAME: pw://mb-us-pw.bentley.com:mb-us-pw-03/Documents/Louisville_KY/01_Projects/KYTC_2022_Statewide_Structures/LA 6/067C021/Structures/Bridge/CADD/Construction Elevations.dgn