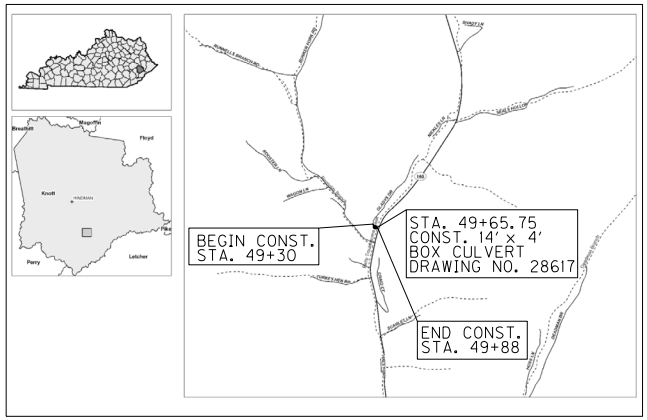
DEPT. OBJECT CODE	FEMA NO.	COUNTY OF	ITEM NO.	SHEET NO.
D23A	4663-DR	KNOTT	12-0292	R1

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

Sheet No.	Description
R1	LAYOUT SHEET
R2	TYP. SECTIONS, COORD. CONTROL, LEGEND
R3	GENERAL & PAVING SUMMARY
R4	PLAN & PROFILE GLADYS DR
R5	PLAN & PROFILE DIVERSION
X1 - X3	CROSS SECTION 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

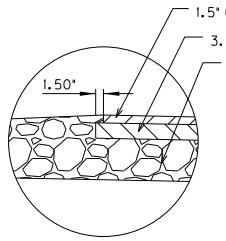
COUNTY OF	ITEM NO.	SHEET NO.
KNOTT	12-0292	R2
DEPT. OBJECT CODE	FEMA NO.	
D23A	4663-DR	

CONVENTIONAL SIGNS

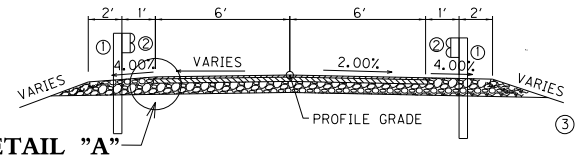
SURVEY LINE
GRADE LINE
GROUND LINE
COUNTY LINE
CORPORATE LIMITS
EXIST. PROPERTY LINE
EXIST. RIGHT OF WAY & PROPERTY LINE
PROPOSED RIGHT OF WAY
RIGHT OF WAY MONUMENT
BENCH MARK
EXISTING R/W MARKER
RIGHT OF WAY MONUMENT EXISTING/PROPOSED
UTILITY TEST HOLE
EXISTING ROAD
RAILROAD
FENCE (CONTROLLED ACCESS)
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

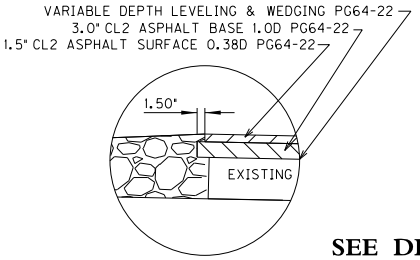


DETAIL "A"



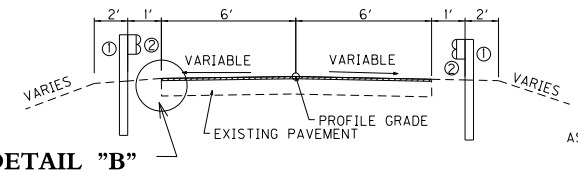
SEE DETAIL "A"

APPROACH NORMAL SECTION



DETAIL "B"

SEE DETAIL "B"



OVERLAY NORMAL SECTION

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

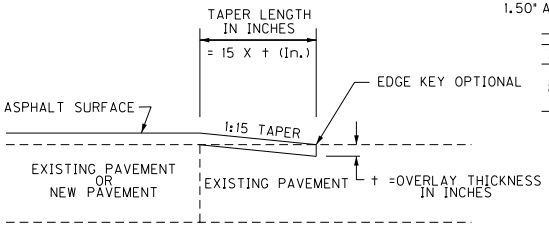
DGA BASE AND/OR GRANULAR EMBANKMENT	FULL DEPTH

OVERLAY PAVEMENT SCHEDULE

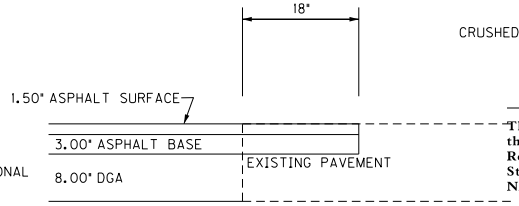
ASPHALT SURFACE	1.5" CL2 ASPHALT SURFACE 0.38D PG64-22
ASPHALT BASE	3.0" CL2 ASPHALT BASE 1.0D PG64-22
(3) ROADWAY PREPERATION	VARIABLE DEPTH LEVELING & WEDGING PG64-22

ENTRANCE PAVEMENT SCHEDULE

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



EDGE KEY TAPER



LONGITUDINAL EDGE KEY

BOX CULVERT SECTION

SEE BRIDGE LAYOUT SHEET FOR BOX CULVERT TYPICAL SECTION

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.

CENTERLINE COORD. CONTROL

POINT	DESCRIPTION	State Plane Coordinates NORTH (Y)	State Plane Coordinates EAST (X)	STATION
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

COORDINATE CONTROL POINTS

POINT	DESCRIPTION	State Plane Coordinates NORTH (Y)	State Plane Coordinates EAST (X)	State Plane Coordinates ELEV. (Z)	STATION	OFFSET
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	-----	-----

NTS

TYPICAL SECTION & LEGEND & COORD. CONTROL SHEET
GLADYS DRIVE

FILE NAME: P:\PROJECTS\5851 - KYTC-GLADYS DRIVE BRIDGE-KNOTT COUNTY\2B-TRANS\CAD\ROADWAY\RG02001S.DGN
USER: mhudson
DATE PLOTTED: November 4, 2022
E-SHEET NAME:
Power InRoads v8.11.5.912

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

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

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

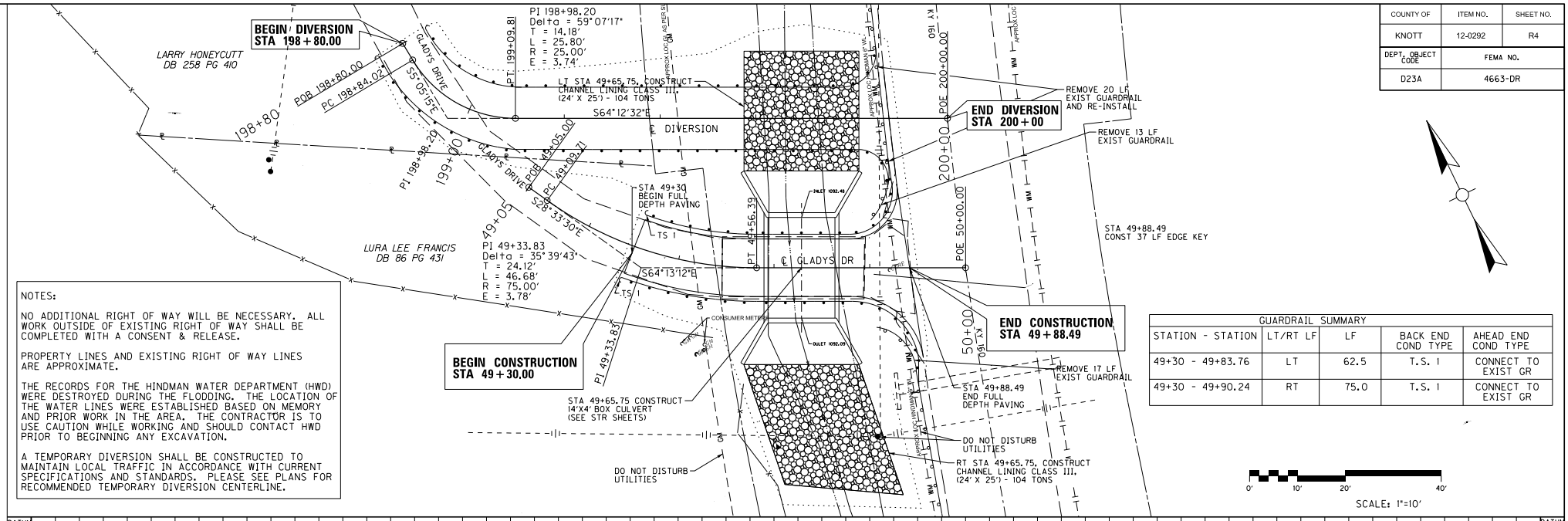
⑤ TWO APPLICATIONS

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.

GENERAL & PAVING SUMMARY SHEET

GLADYS DRIVE

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



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:

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.

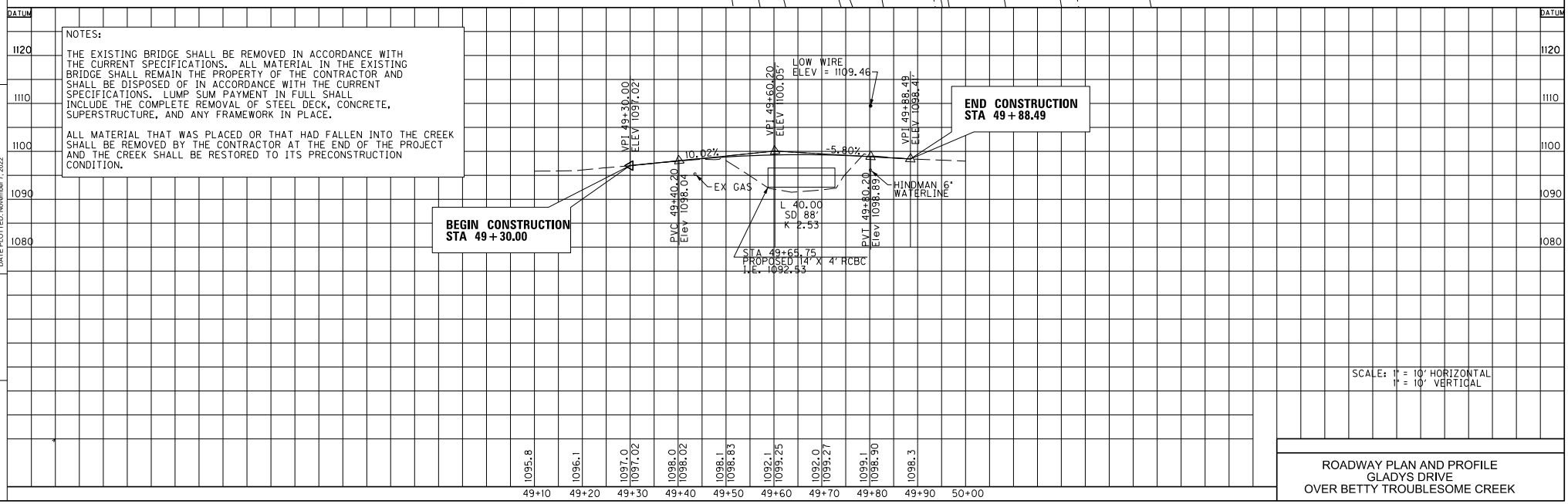
THE RECORDS FOR THE HINDMAN WATER DEPARTMENT (HWD) WERE DESTROYED DURING THE FLODDING. THE LOCATION OF THE WATER LINES WERE ESTABLISHED BASED ON MEMORY AND PRIOR WORK IN THE AREA. THE CONTRACTOR IS TO USE CAUTION WHILE WORKING AND SHOULD CONTACT HWD PRIOR TO BEGINNING ANY EXCAVATION.

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.

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.

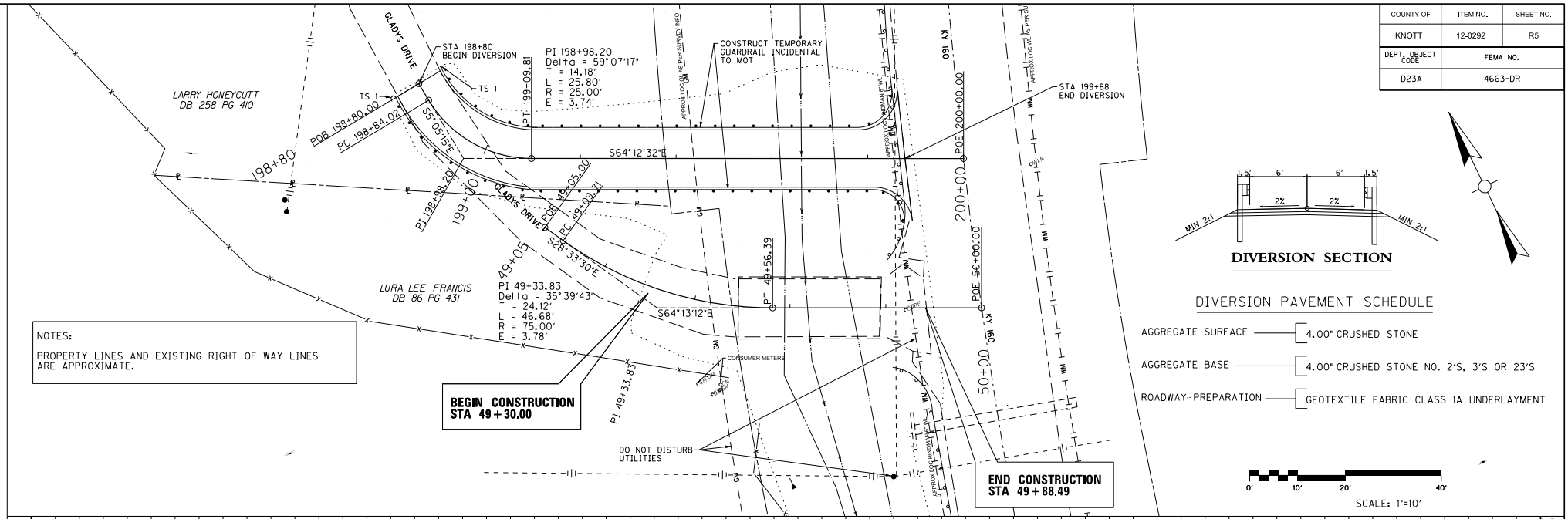
ALL MATERIAL THAT WAS PLACED OR THAT HAD FALLEN INTO THE CREEK SHALL BE REMOVED BY THE CONTRACTOR AT THE END OF THE PROJECT AND THE CREEK SHALL BE RESTORED TO ITS PRECONSTRUCTION CONDITION.



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\28-TRANS\CAD\ROADWAY\R00400PL.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	

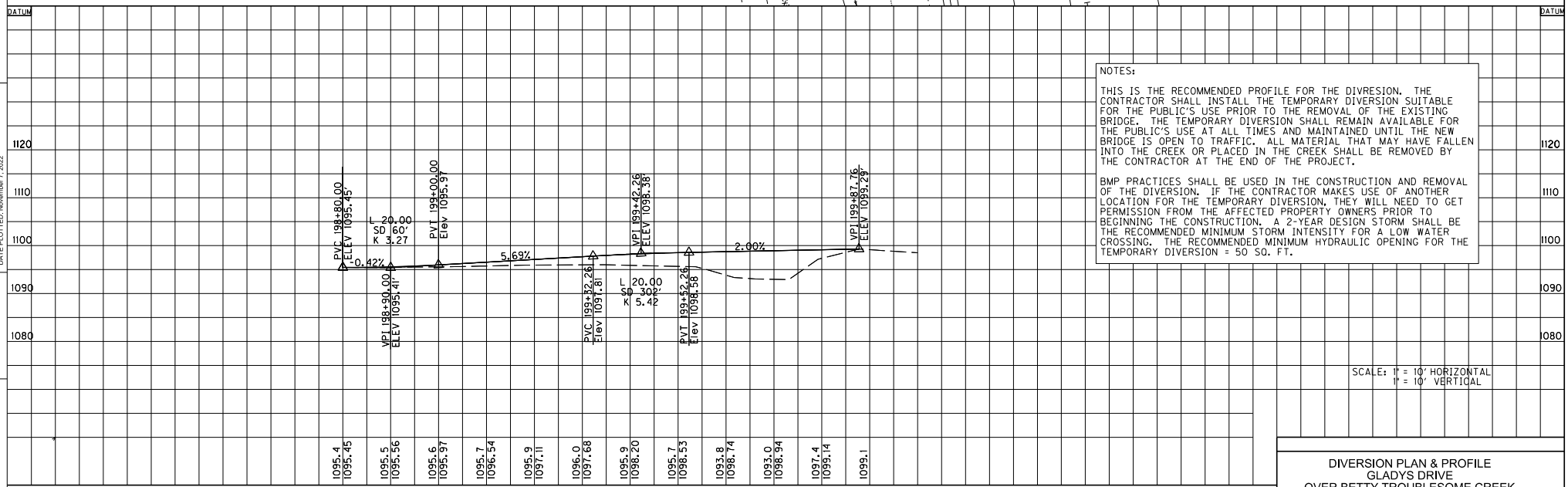
DIVERSION SECTION

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

0' 10' 20' 40'

SCALE: 1"=10'



NOTES:

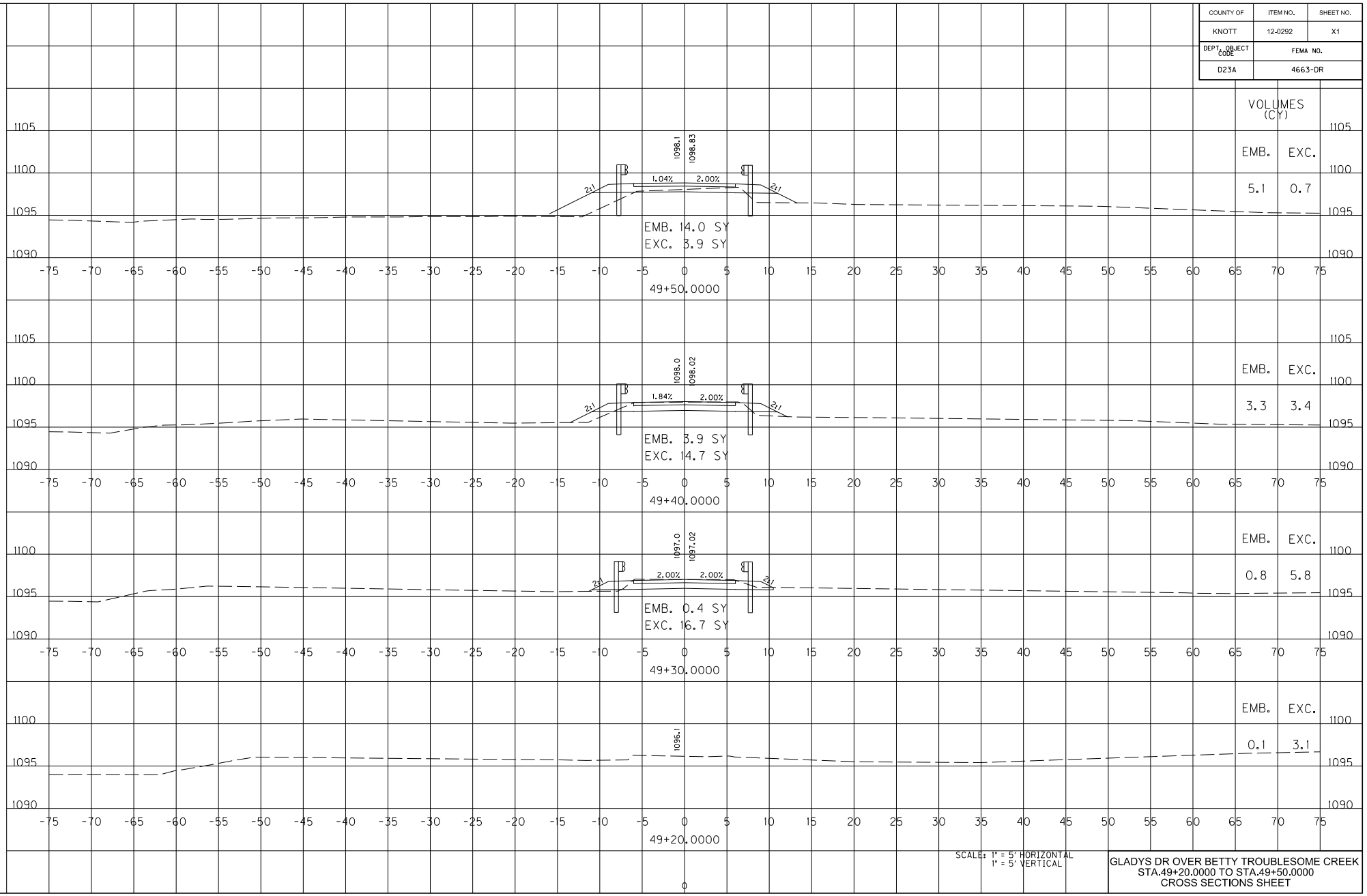
THIS IS THE RECOMMENDED PROFILE FOR THE DIVRESION. THE CONTRACTOR SHALL INSTALL THE TEMPORARY DIVERSION SUITABLE FOR THE PUBLIC'S USE PRIOR TO THE REMOVAL OF THE EXISTING BRIDGE. THE TEMPORARY DIVERSION SHALL REMAIN AVAILABLE FOR THE PUBLIC'S USE AT ALL TIMES AND MAINTAINED UNTIL THE NEW BRIDGE IS OPEN 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.

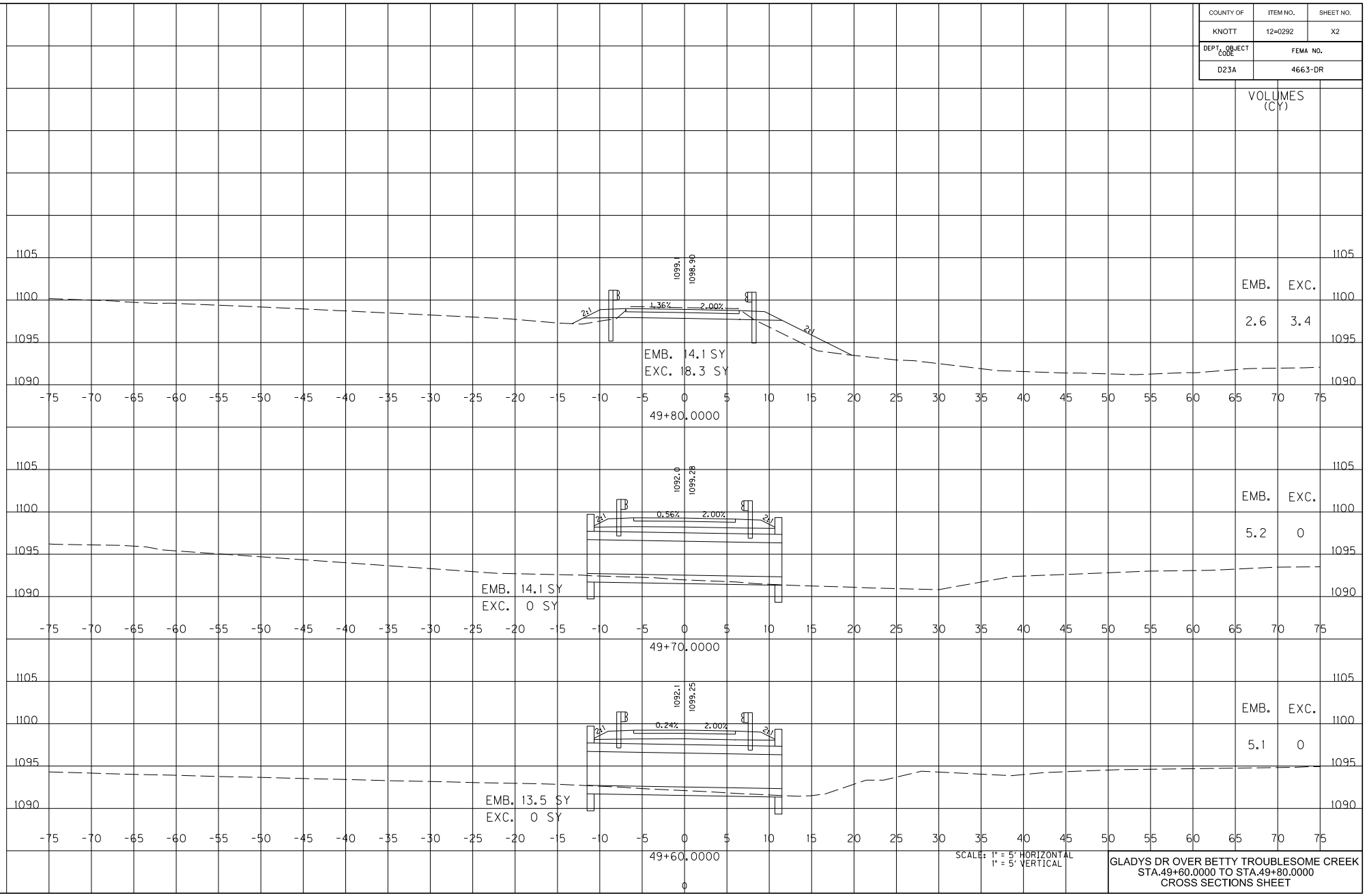
BMP PRACTICES SHALL BE USED IN THE CONSTRUCTION AND REMOVAL OF THE DIVERSION. IF THE CONTRACTOR MAKES USE OF ANOTHER LOCATION FOR THE TEMPORARY DIVERSION, THEY WILL NEED TO GET PERMISSION FROM THE AFFECTED PROPERTY OWNERS PRIOR TO BEGINNING THE CONSTRUCTION. A 2-YEAR DESIGN STORM SHALL BE THE RECOMMENDED 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\26-TRANS\CAD\ROADWAY\R00500PL.DGN
USER: mhutson
DATE PLOTTED: November 7, 2022
E-SHEET NAME:
PowerInRoads v8.11.9.912


COUNTY OF
KNOTT
ITEM NO.
12-0292
SHEET NO.
X1
DEPT. OBJECT CODE
D23A
FEMA NO.
4663-DR
VOLUMES (CY)
EMB. EXC.
5.1 0.7
EMB. EXC.
3.3 3.4
EMB. EXC.
0.8 5.8
EMB. EXC.
0.1 3.1
1098.1
1098.83
1.04%
2.00%
2:1
EMB. 14.0 SY
EXC. 3.9 SY
49+50.0000
1098.0
1098.02
1.84%
2.00%
EMB. 3.9 SY
EXC. 14.7 SY
49+40.0000
1097.0
1097.02
2.00%
2.00%
EMB. 0.4 SY
EXC. 16.7 SY
49+30.0000
1096.1
49+20.0000
1105
1100
1095
1090
-75 -70 -65 -60 -55 -50 -45 -40 -35 -30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75
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	

VOLUMES (CY)

EMB.	EXC.
2.6	3.4
5.2	0
5.1	0

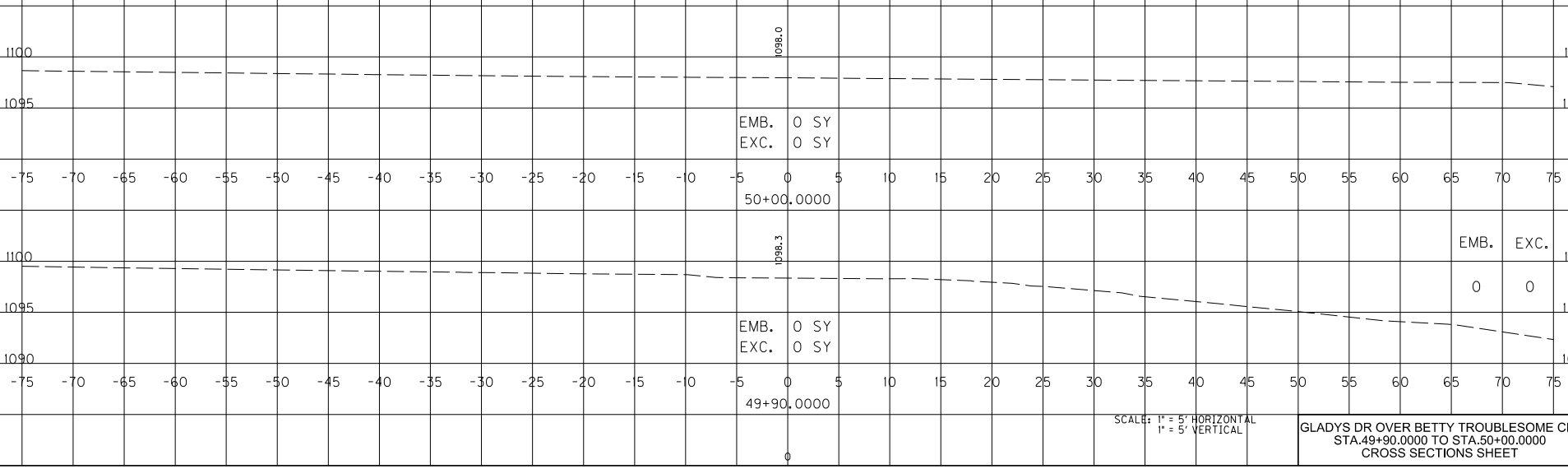
SCALE: 1" = 5' HORIZONTAL
1" = 5' VERTICAL

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)



EMB.	EXC.
0	0

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

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

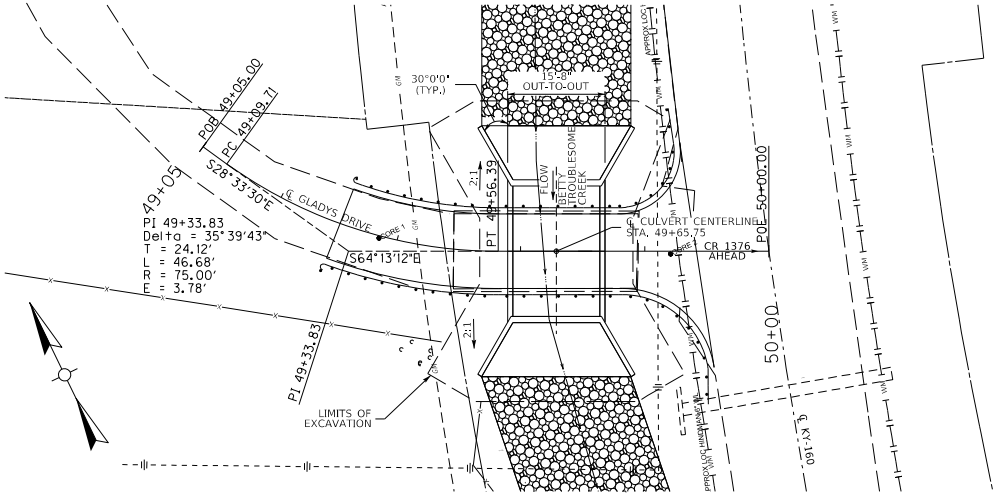
CROSSING
BETTY TROUBLESOME CREEK

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.

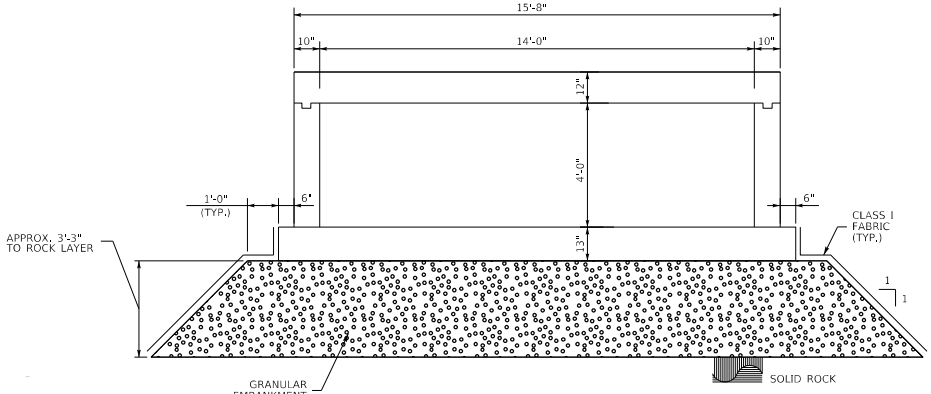


PLAN

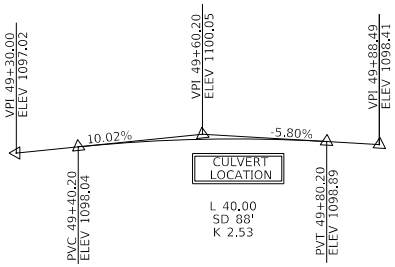
FLOOD EVALUATION DATA			
	RETURN INTERVAL (YRS)	RUNOFF (CFS)	HEADWATER ELEVATION (FT)
DESIGN	10	346.00	1096.8
CHECK	100	611.00	1097.2

NOTE:

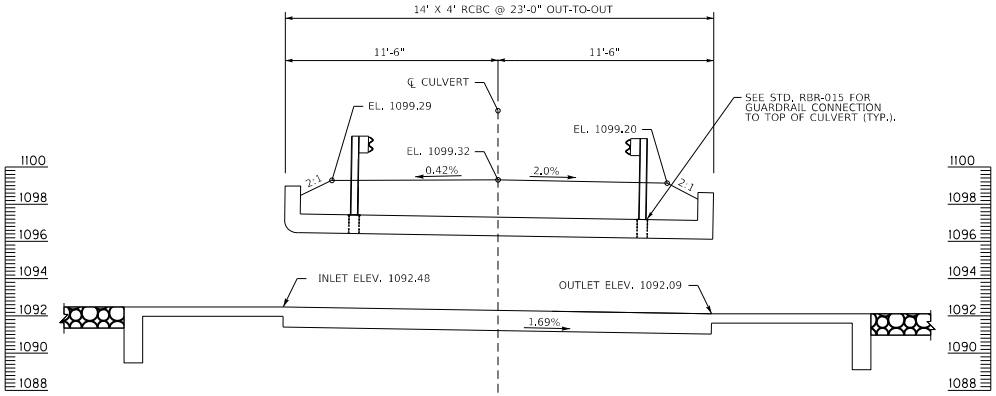
TEMPORARY SHORING MAY BE REQUIRED TO MAINTAIN TRAFFIC ON KY-160 DURING CONSTRUCTION. SEE GENERAL NOTES FOR CONTRACTOR DESIGN REQUIREMENTS.



TYPICAL BARREL SECTION

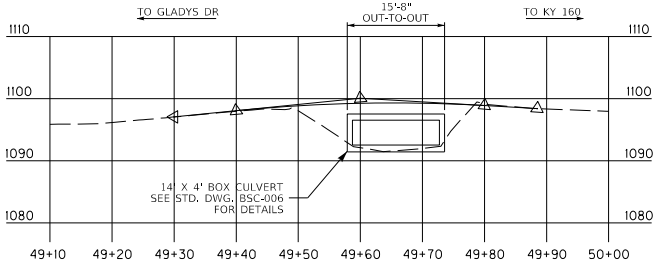


PROFILE GRADE SKETCH



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

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DETAILED BY: J. GENTILINI | J. SCHRECKENBERG

LAYOUT

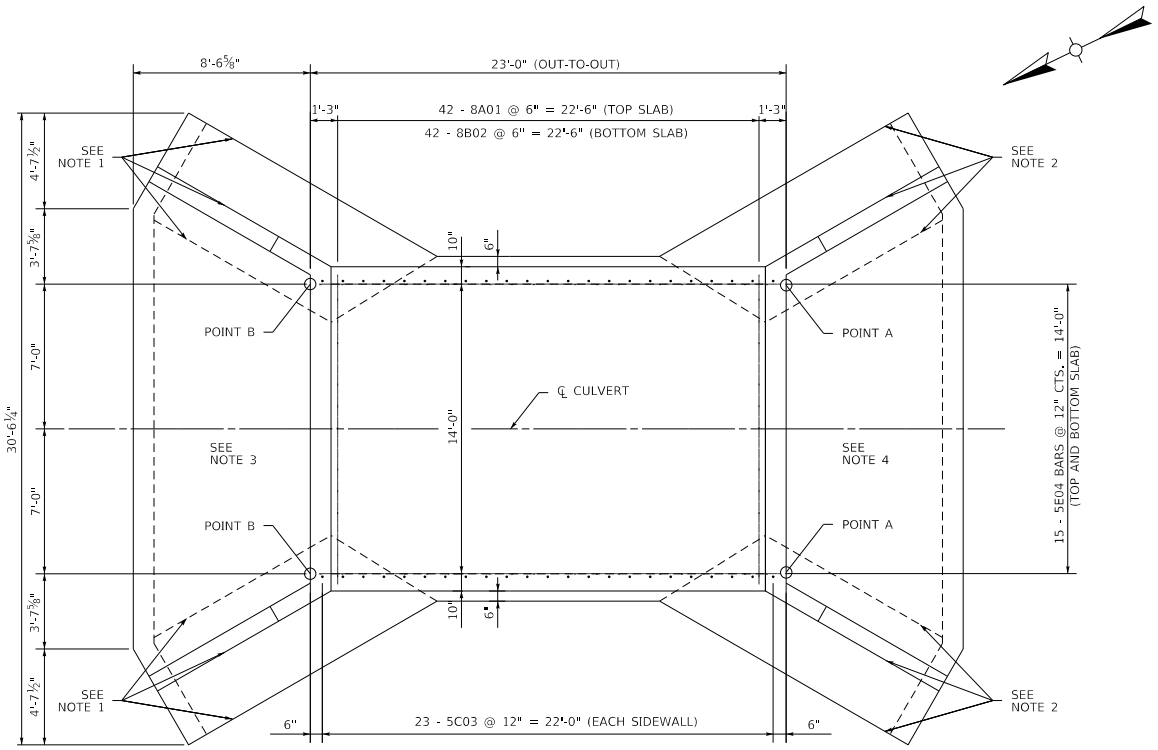
CROSSING
BETTY TROUBLESOME CREEK

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

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

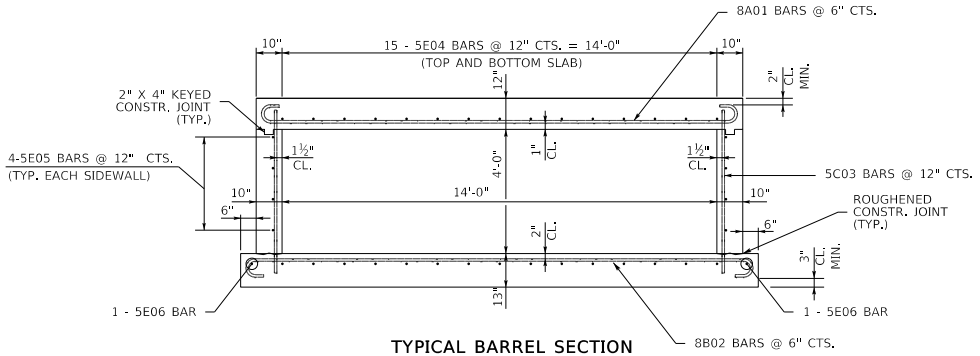
LETTING DATE

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

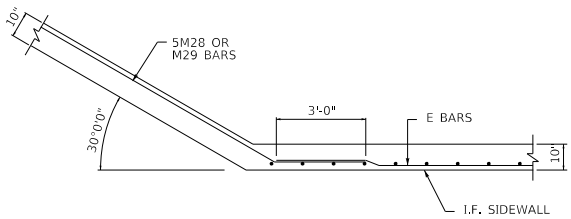
(EF) - EACH FACE
(FF) - FRONT FACE
(BF) - BACK FACE

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".

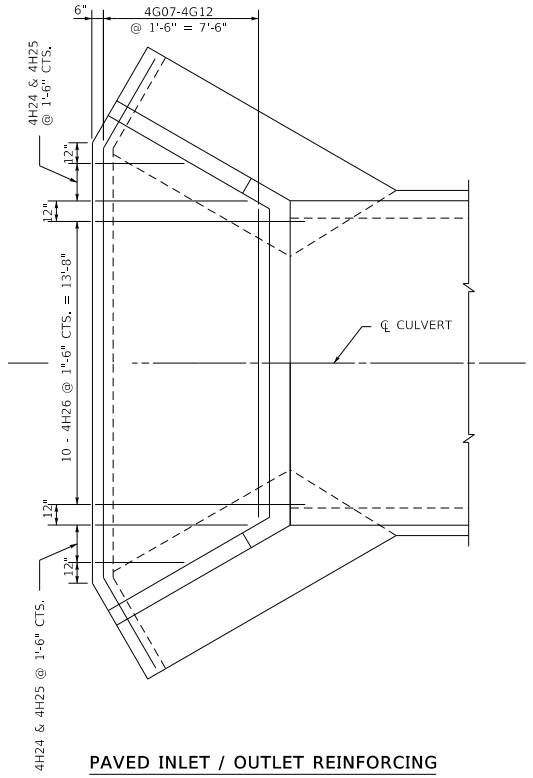
NOTE 2: FOOTING SHALL BE HORIZONTAL BETWEEN THESE LINES. ELEVATION OF TOP OF FOOTING SHALL BE THE SAME AS ELEVATION OF TOP OF BOTTOM SLAB AT POINT "A"

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
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WBE / DBE
LOUISVILLE, KY
LICENSE #3394

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

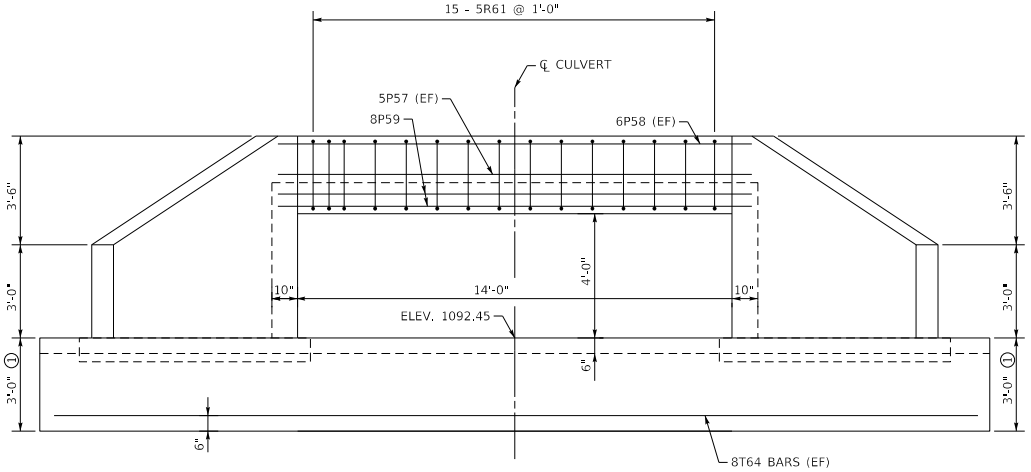
BARREL DETAILS

CROSSING
BETTY TROUBLESOME CREEK

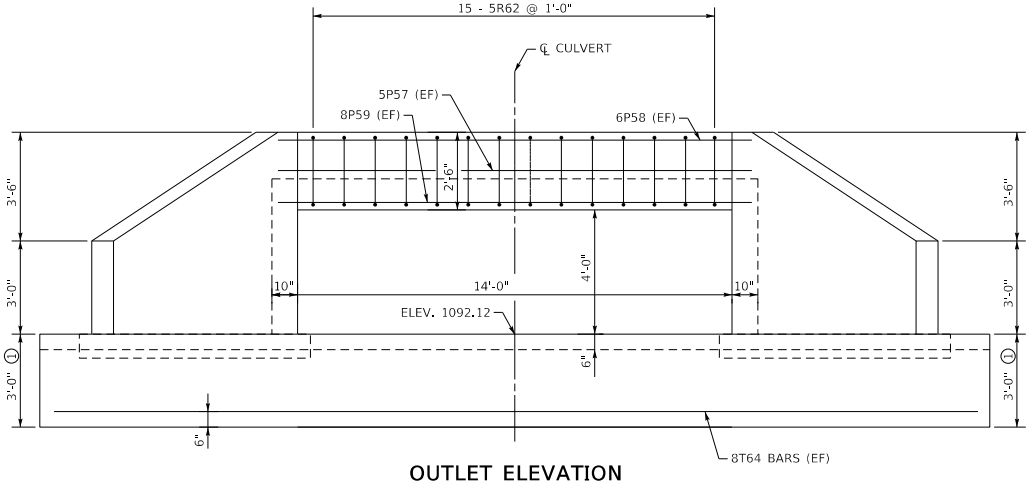
ROUTE	ITEM NO.	BRIDGE ID
CR 1376	12-0292	060C017
	SHEET NO.	COUNTY OF
	S03	KNOTT
		DRAWING NUMBER
		28617

LETTING DATE

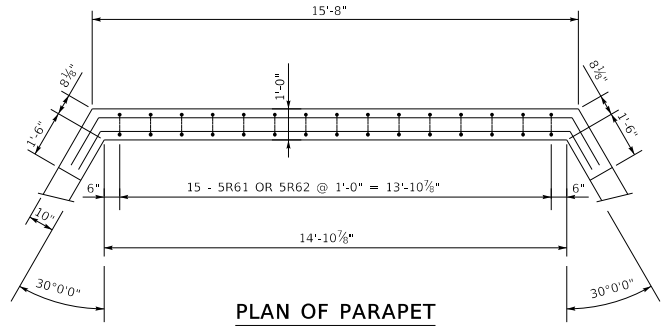
CONSTRUCTION PROJECT NO.



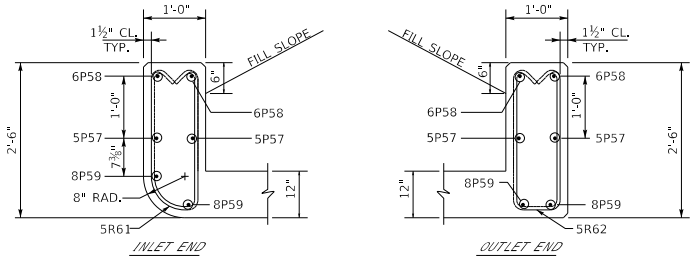
INLET ELEVATION



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

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DESIGNED BY: J. GENTILINI	J. SCHRECKENBERG
DETAILED BY: J. GENTILINI	J. SCHRECKENBERG

INLET / OUTLET DETAILS

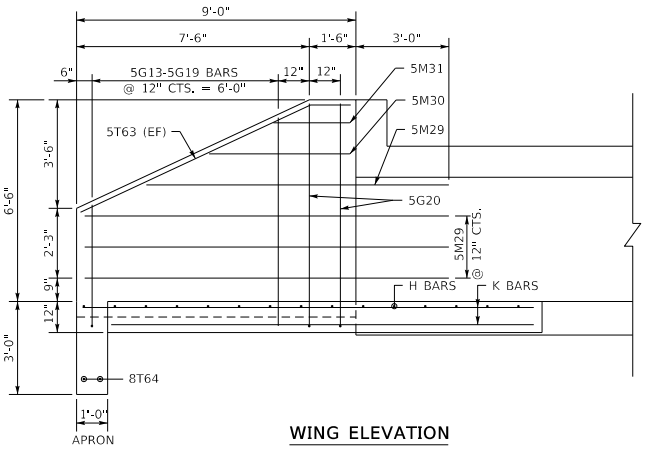
CROSSING
BETTY TROUBLESOME CREEK

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

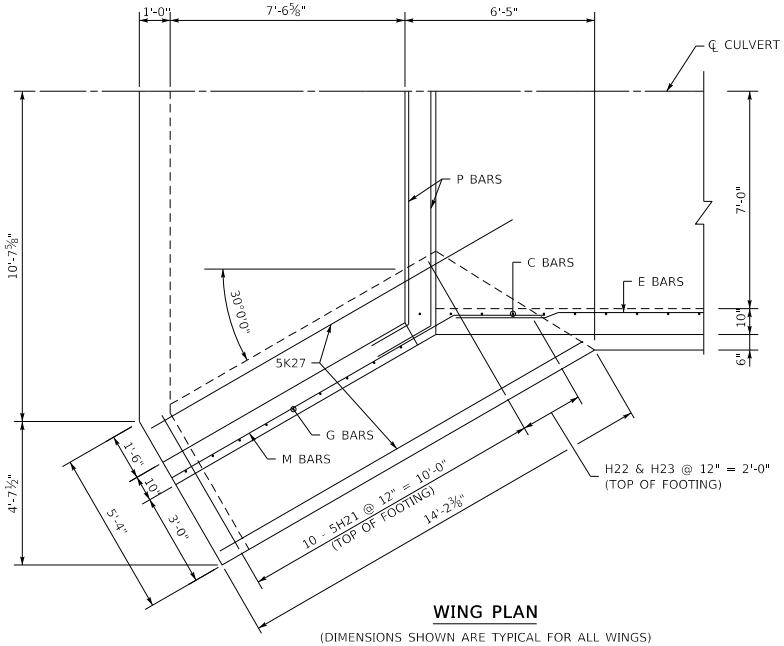
OpenRoads Designer v10.16.2.267 USER: $$$$USER$$$$ DATE PLOTTED: $$$$DATE$$$$ FILE NAME: $$$$designfilesspecifications$$$$

LETTING DATE

CONSTRUCTION PROJECT NO.

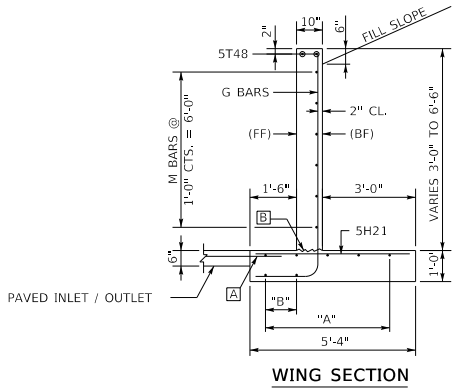


WING ELEVATION



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

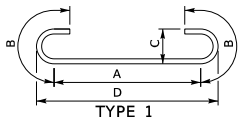
CROSSING
BETTY TROUBLESOME CREEK

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

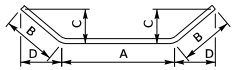
OpenRoads Designer v10.16.2.267 — USER: $$$$USER$$$$ — DATE PLOTTED: $$$$DATE$$$$ — FILE NAME: $$$$designsfilesspecifications$$$$

LETTING DATE

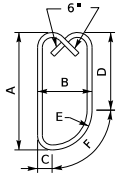
CONSTRUCTION PROJECT NO.



TYPE 1



TYPE 6



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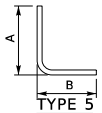

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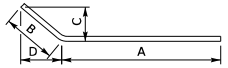
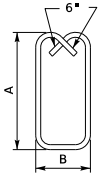


TYPE 8



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

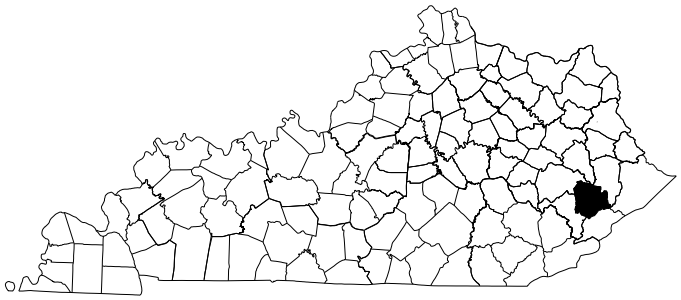
ROUTE	ITEM NO.	BRIDGE ID
CR 1376	12-0292	060C017
	SHEET NO.	COUNTY OF
	S07	KNOTT
		DRAWING NUMBER
		28617

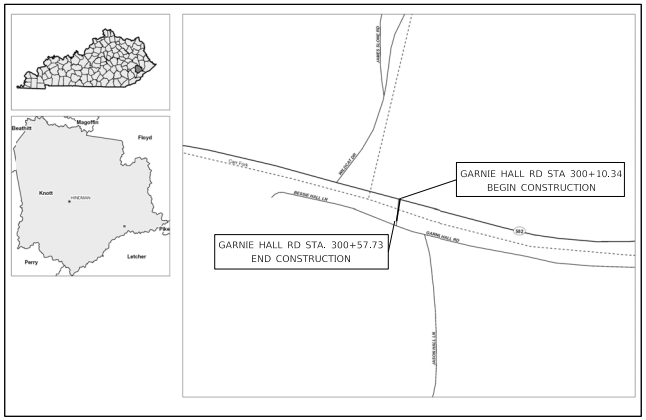
OpenRoads Designer v10.16.2.267 USER: $$$$USER$$$$ DATE PLOTTED: $$$$DATE$$$$ FILE NAME: $$$$designfiles\specifications$$$$$

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

PLANS OF
PROPOSED PROJECT

Garnie Hall Road (CR 1736) over Carr Fork
Knott County, Kentucky
Grade, Drain and Surfacing Plans





LAYOUT MAP

DESIGN CRITERIA

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

GEOGRAPHIC COORDINATES

LATITUDE 37 DEGREES 16 MINUTES 43 SECONDS NORTH
LONGITUDE 82 DEGREES 49 MINUTES 52 SECONDS WEST

DESIGNED

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

INDEX OF SHEETS

R1	LAYOUT SHEET
R2	TYPICAL SECTIONS
R2A	GENERAL SUMMARY
R2B	GENERAL NOTES AND SPECIAL NOTES
R3	LEGEND AND UTILITY OWNER SHEET
R4 - R5	PLAN AND PROFILE SHEETS
R6	MOT NOTES AND PHASING
R7	EROSION CONTROL NOTES
R8	EROSION CONTROL PLAN SHEET
R9	COORDINATE CONTROL SHEET
R10	CULVERT SITUATION SURVEY SHEET

STANDARD DRAWINGS

RBI-001-12	RBR-018	RDX-225-01
RBM-020-09	RBR-055-01	RGS-001-07
RBM-115-10	RBR-060	RGX-001-06
RBM-120-02	RDD-030-08	RGX-200-001
RBR-001-13	RDI-040-01	TTC-100-05
RBR-005-11	RDX-210-03	
RBR-010-06	RDX-215-01	
RBR-015-06	RDX-220-05	

LENGTH 47.39 LIN. FT. .009 MILES	LENGTH X LIN. FT. X MILES	LENGTH X LIN. FT. X MILES	LENGTH X LIN. FT. X MILES
ADDED / DEDUCTED FOR EQUALITIES - 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. - LIN. FT.	RAILROAD CROSSINGS NO. X LIN. FT.	RAILROAD CROSSINGS NO. X LIN. FT.	RAILROAD CROSSINGS NO. X LIN. FT.
BRIDGES - LIN. FT.	BRIDGES X LIN. FT.	BRIDGES X LIN. FT.	BRIDGES X LIN. FT.
-	X	X	X
-	X	X	X

PROJECT NUMBER: FEMA BRIDGE 4663-DR
DEPT. OBJECT CODE: D23A

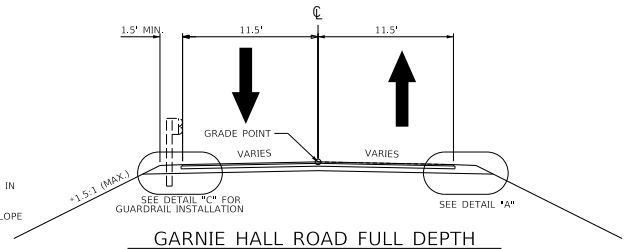
PROJECT DESCRIPTION: BRIDGE REPLACEMENT. GARNIE HALL ROAD OVER CARR FORK. BRIDGE ID #060C019

RECOMMENDED BY: CARL VAN ZEE (PROJECT MANAGER) 1/18/22 (DATE:)

PLAN APPROVED BY: (STATE HIGHWAY ENGINEER) (DATE:)

STATE OF KENTUCKY · TROY M. WOODYARD · 30648 · LICENSED PROFESSIONAL ENGINEER

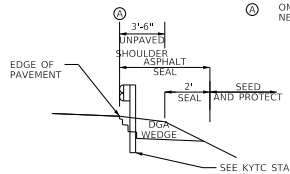
LETTING DATE: 2/23/2023
ITEM NO. 12-0294,OTH COUNTY OF Knott
SHEET NO. R1



* SLOPES STEEPER THAN 2:1 SHOULD BE STABILIZED WITH PARTIALLY GROUTED RIP RAP. IN COMPLICANCE WITH THE APPLICABLE ENVIRONMENTAL REQUIREMENTS. SEE STEEP SLOPE NOTE.

GARNIE HALL ROAD FULL DEPTH

STA 300+10.34 TO STA 300+57.73



Ⓐ OMIT SHOULDER WIDENING AND USE EXTRA LENGTH GUARDRAIL POSTS WHERE NEEDED AS DIRECTED BY THE ENGINEER.

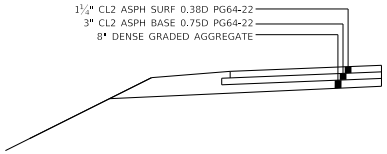
SEE KYTC STANDARD DRAWING RBR-015-06 FOR METHOD OF ATTACHMENT TO CULVERT TOP SLAB. (ALTERNATE CONSTRUCTION METHOD SHALL BE INCIDENTAL TO GUARDRAIL-STEEL W BEAM-S FACE)

DETAIL "C" - GUARDRAIL INSTALLATION

BITUMINOUS SEAL-TWO APPLICATIONS
OF THE FOLLOWING:
ASPHALT SEAL COAT 2.4 LB/SY
ASPHALT SEAL AGGREGATE 20 LB/SY

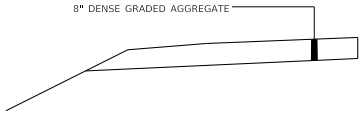
STEEP SLOPE NOTE

UNLESS OTHERWISE DESIGNATED AS AN AREA TO BE LINED WITH MATTRESS UNITS, ALL RIPRAP ON SLOPES STEEPER THAN 2:1 SHALL BE CYCLOPEAN STONE RIP RAP 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 CYCLOPEAN STONE RIP RAP, CONCRETE CLASS B, GEOTEXTILE FABRIC CLASS 1 AND ROADWAY EXCAVATION. GROUT SHALL BE CONTAINED BY TIGHTLY SEALED FORMS OR CELLS. EQUIPMENT SHALL NOT DISCHARGE WASTE WASHWATER INTO SURFACE WATERS AT ANY TIME WITHOUT ADEQUATE WASTEWATER TREATMENTS.



DETAIL "A" - GARNIE HALL ROAD 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" - GRAVEL PAVEMENT DESIGN

TO BE USED AT THE ENGINEER'S DISCRETION FOR THE REPAIR OF ANY PORTION OF GARNIE HALL ROAD OR BESS HALL LANE THAT IS AFFECTED BY CONSTRUCTION ACTIVITIES.

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	DRAWING TITLE: TYPICAL SECTIONS	ITEM NO. 12-0294,OTH COUNTY OF Knott SHEET NO. R2

	ITEM	DESCRIPTION	UNIT	Garnie Hall Rd	TOTAL PROJECT
	1987	DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	EACH	12	12
①	2159	TEMP DITCH	LF	24	24
①	2160	CLEAN TEMP DITCH	LF	12	12
②	2200	ROADWAY EXCAVATION	CUYD	58	58
①	2242	WATER	MGAL	9	9
	2351	GUARDRAIL-STEEL W BEAM-S FAC:	LF	125	125
	2360	GUARDRAIL TERMINAL SECTION NO 1	EACH	2	2
	2381	REMOVE GUARDRAIL	LF	38	38
	2399	EXTRA LENGTH GUARDRAI:. POST	EACH	22	22
④	2482	CHANNEL LINING CLASS IA	TON	63	63
③	2545	CLEARING AND GRUBBING	LS	1	1
	2555	CONCRETE-CLASS B	CUYD	6	6
	2565	OBJECT MARKER TYPE 2	EACH	4	4
⑤	2569	DEMOBILIZATION	LS	1	1
	2585	EDGE KEY	LF	64	64
	2602	FABRIC-GEOTEXTILE CLASS 1	SQYD	172	172
	2650	MAINTAIN & CONTROL TRAFFIC	LS	1	1
①	2701	TEMP SILT FENCE	LF	24	24
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
	2731	REMOVE STRUCTURE	LS	1	1
	3171	CONCRETE BARRIER WALL TYPE 9"	LF	140	140
①	5950	EROSION CONTROL BLANKET	SQYD	43	43
①	5952	TEMP MULCH	SQYD	574	574
①	5953	TEMP SEEDING AND PROTECTION	SQYD	429	429
①	5963	INITIAL FERTILIZER	TON	0.01	0.01
①	5964	MAINTENANCE FERTILIZER	TON	0.01	0.01
①	5985	SEEDING AND PROTECTION	SQYD	121	121
①	5992	AGRICULTURAL LIMESTONE	TON	0.10	0.10
	6514	PAVE STRIPING-PERM PAINT 4-IN	LF	64	64
	8019	CYCLOPEAN STONE RIP RAP	TON	72	72
	24631EC	BARCODE SIGN INVENTORY	EACH	4	4

1 TO BE USED AT THE ENGINEER'S DISCRETION FOR EROSION CONTROL.

2 58 CU YDS OF EXCAVATION TO BE USED AT THE ENGINEER'S DISCRETION FOR THE EXCAVATION NOT INCLUDED IN FOUNDATION PREPARATION.

3 APPROX 1/4 ACRE MORE OR LESS

4 ESTIMATED AT 111 LBS PER CUBIC FOOT

5 INCLUDES REMOVAL OF DIVERSION. PREVIOUSLY CONSTRUCTED BY OTHERS.

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 ALL BASE LIFTS.

G INCLUDES 25 TONS TO BE USED AT THE ENGINEER'S DISCRETION TO REPAIR ANY PORTION OF BESS HALL LANE OR GARNIE HALL ROAD THAT MAY BE DAMAGED BY CONSTRUCTION.

PAVEMENT AREAS

ITEM	GARNIE HALL ROAD	TOTALS
	SQUARE YARDS	
DGA BASE	212	212
ASPHALT SEAL AGGREGATE	126	126
ASPHALT SEAL COAT	126	126
CL2 ASPH BASE 0.75D PG64-22	153	153
ASPHALT PRIME COAT	212	212
CL2 ASPH SURF 0.38D PG64-22	151	151
ASPHALT MATERIAL FOR TACK	153	153

PAVEMENT SUMMARY

	ITEM CODE	ITEM	UNIT	GARNIE HALL ROAD	TOTAL PROJECT
B G	00001	DGA BASE	TON	142	142
C	00100	ASPHALT SEAL AGGREGATE	TON	2.52	2.52
D	00103	ASPHALT SEAL COAT	TON	0.3	0.3
A	00221	CL2 ASPH BASE 0.75D PG64-22	TON	25	25
E	00296	ASPHALT PRIME COAT	TON	0.1	0.1
A	00301	CL2 ASPH SURF 0.38D PG64-22	TON	10	10
F	00356	ASPHALT MATERIAL FOR TACK	TON	0.1	0.1

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: GENERAL SUMMARY

ITEM NO. 12-0294.OTH COUNTY OF Knott

SHEET NO. R2A

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.

SPECIAL NOTE FOR BARCODES ON PERMANENT SIGNS 2019 SHALL APPLY.

SPECIAL NOTE FOR CULVERT REPLACEMENT SHALL APPLY.

ALL RIPRAP (EXCLUDING CLASS 1A) ON SLOPES STEEPER THAN 2:1 SHALL BE PARTIALLY GROUTED WITH CLASS B CONCRETE AT A RATE OF 2.7 CU FT/SQ YD ACCORDING TO THE PROCEDURE DETAILED IN HEC-23 DESIGN GUIDELINE 12 FOR PARTIALLY GROUTED RIP RAP. PAY ITEMS SHALL BE CYCLOPEAN STONE RIP RAP, CONCRETE CLASS B, GEOTEXTILE FABRIC CLASS 1 AND ROADWAY EXCAVATION. GROUT SHALL BE CONTAINED BY TIGHTLY SEALED FORMS OR CELLS. EQUIPMENT SHALL NOT DISCHARGE WASTE WASHWATER INTO SURFACE WATERS AT ANY TIME WITHOUT ADEQUATE WASTEWATER TREATMENTS.

Corporate Limits
County Line
Easement
Fence COA
Mineral Parcel
Property Line
RIght of Way Line
All Overhead Utility Lines
Cable Underground Electric Wlth Quallty Levels
Duct Underground Electric Wlth Quallty Levels
Cable Underground Flber Wlth Quallty Levels
Cable Underground Telephone Wlth Quallty Levels
Duct Underground Telephone Wlth Quallty Levels
Cable Underground TV Wlth Quallty Levels
Maln Gas Wlth Quality Levels
Maln Water With Quality Levels
Maln Water Greater Than 12 With Quality Levels
Sewer Sanitary With Quality Levels
Sewer Sanitary Force Main With Quality Levels
Sewer Storm Wlth Quality Levels
Multi Utility Bank Quality Levels
Oil Line Quality Levels
Steam Line Quallty Levels
Cable Underground Electric Marker
Duct Underground Electric Marker
Cable Underground Flber 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 Sanltary Marker
Sewer Sanitary Force Main Marker
Sewer Storm Marker
Multl Utllity Bank Marker
Oil Line Marker
Steam Line Marker
Cable Guardrail
Ditch
Edge of Water
Fence Hedge
Fence
Flow Llne/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
Centerllne Statlonlng
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
Electrlc Pole
Electrlc Junctlon 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 Pln
Light Pole
Low Wire
Mag Nail
Mailbox
Manhole
Mile Marker Post
Mineral Parcel
Misc Location Point
Monitoring Well
Parklng Meter
Pedestrian Signal
Pins/Pipes
PK Nail

Point (Misc)
Pole
Pole (Light)
Post
Power Pole
Quarry
Random (Ground Shot)
Rallroad Mlle Marker
Railroad Spike
RIght of Way Marker
Right of Way Monument
RR Traffic Signal Pole
RW Parcel
Sanitary Cleanout
Sanitary Manhole
Satelite Dish
Septlc Tank Cleanout
Service Pole
Sewer Alr 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
Trafflc 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 Sprlnkler Water Valve

Utility Owners

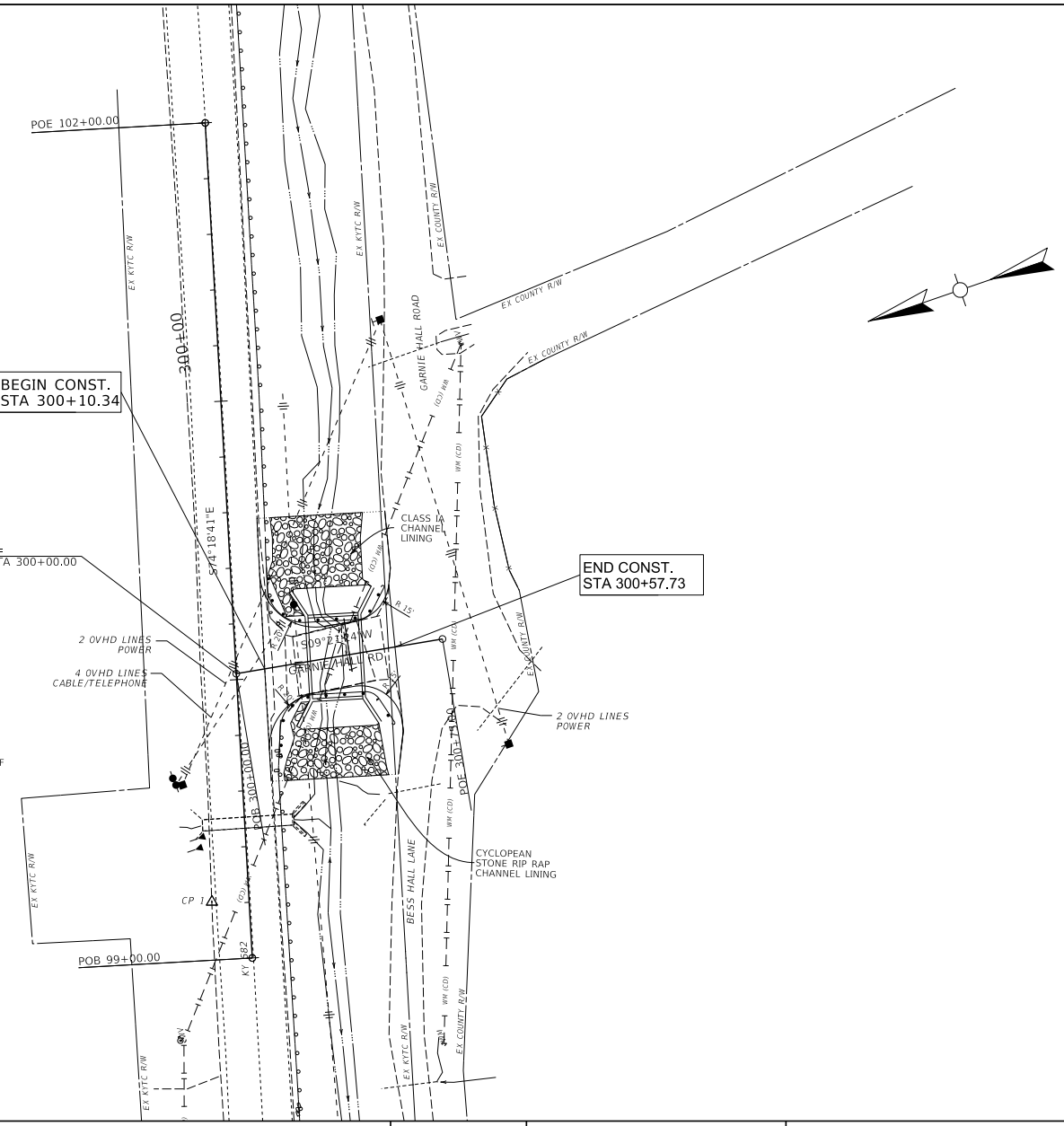
KY Power - AEP
1400 East Main Street
Hazard, KY 41701
Contact – Ellis McKnight – 606-436-1329
Mobile – 606-438-0423
Email – ermcknight@aep.com

Knott County Water & Sewer District · Water
7777 Big Branch Road
Vicco, KY 41773
Contact – Jared Salmons – 606-642-3582
Email – jaredsalmons@kcwsd.com
Contact – Chad Gibson – 606-497-5528
Email – Chad.Gibson@kcwsd.com

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: LEGEND AND UTILITY OWNER SHEET

ITEM NO. 12-0294,OTH
COUNTY OF Knott
SHEET NO. R3



APPROX KY 582 RT STA 99+72 TO STA 99+85 REMOVE GUARDRAIL 13 LF.

APPROX KY 582 RT STA 100+16 TO 100+40 REMOVE GUARDRAIL 25 LF

APPROX KY 582 RT STA 99+72 TO GARNIE HALL RD STA 300+53 CONSTRUCT 62.5 LF STEEL GUARDRAIL W BEAM-S FACE & 1 TERMINAL SECTION NO. 1. TIE TO EX GUARDRAIL AS INCIDENTAL TO PROPOSED GUARDRAIL. GUARDRAIL LAYOUT SHOWN UTILIZES 6' AND 13' RADII.

SEE STUCTURES PLANS FOR WINGWALL AND CULVERT CONSTRUCTION INFORMATION.

APPROX GARNIE HALL RD STA 300+35 REMOVE EXISTING STRUCTURE (APPROX 35' x 23') IN ACCORDANCE WITH SECTION 203 OF THE SPECIFICATIONS: SINGLE SPAN BRIDGE

CONSTRUCT 1 OBJECT MARKER TYPE 2 AT EACH CORNER OF CULVERT. 4 TOTAL.

GARNIE HALL RD STA 300+10.34 CONSTRUCT 64 LF EDGE KEY

APPROX KY 582 RT STA 100+40 TO GARNIE HALL ROAD STA 300+57 CONSTRUCT 62.5 LF STEEL GUARDRAIL W BEAM-S FACE & 1 TERMINAL SECTION NO. 1. TIE TO EX GUARDRAIL AS INCIDENTAL TO PROPOSED GUARDRAIL. GUARDRAIL LAYOUT SHOWN UTILIZES 6' AND 13' RADII.

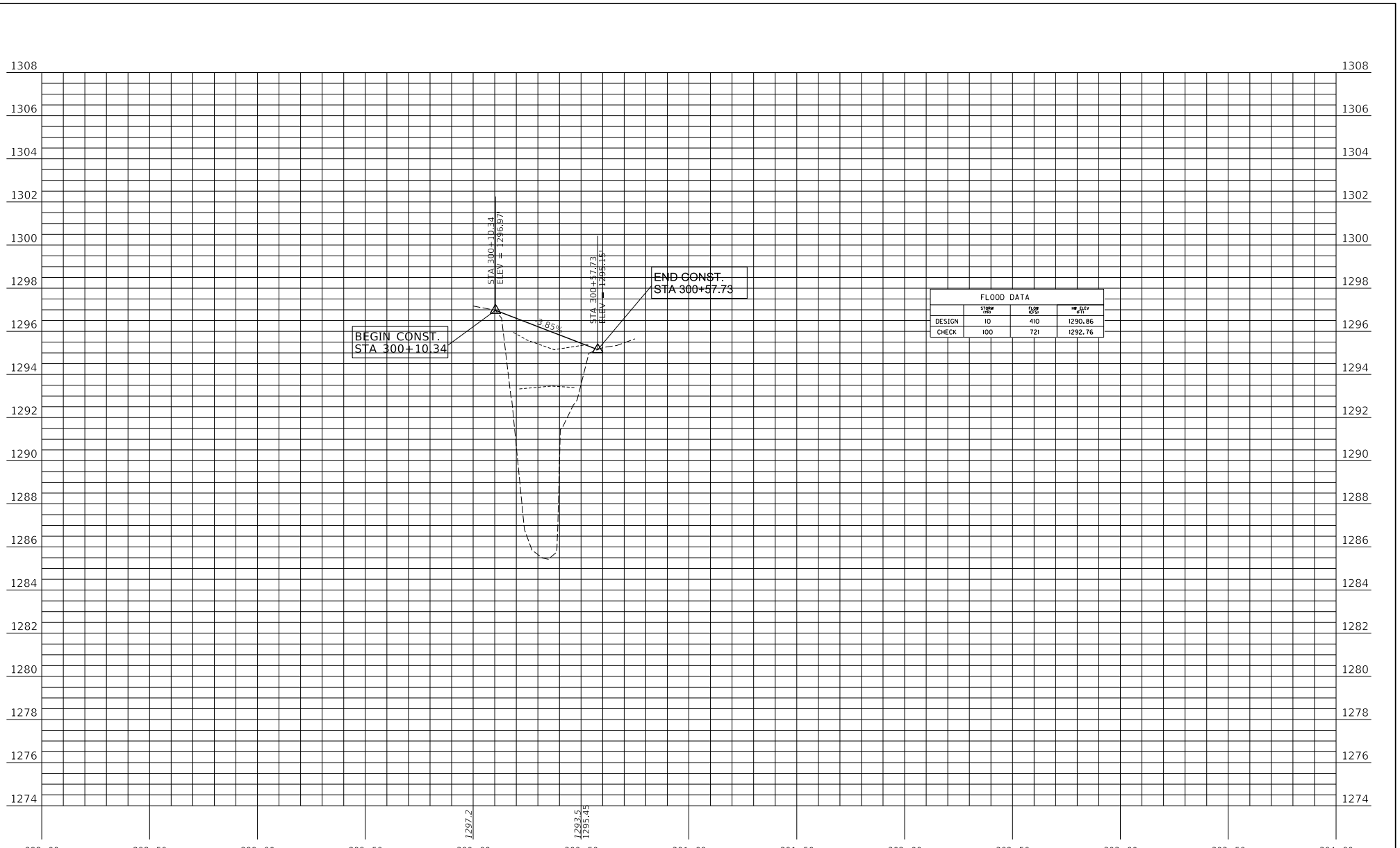
APPROX KY 582 RT STA 100+21 TO STA 100+57 STABILIZE BANKS AND CHANNEL BOTTOM FROM TOP OF BANK TO TOP OF BANK WITH 63 TONS CHANNEL LINING CLASS IA (D50=2.4", T=15" L=26'). UNDERLAY WITH 100 SY FABRIC-GEOTEXTILE CLASS 1, LAY STACK OR ANCHOR MATTRESS UNITS APPROPRIATELY PER THE MANUFACTURER'S RECOMMENDATIONS.

APPROX KY 582 RT STA 99+63 TO STA 99+91 CONSTRUCT 72 TONS CYCLOPEAN STONE RIP RAP (T=24", L=18', D= TOP OF BANK) UNDERLAIN WITH 72 SY FABRIC-GEOTEXTILE CLASS 1. STABILIZE SIDE SLOPES ONLY WITH 6 CU YDS CONCRETE - CLASS B (SEE NOTE ON R2 CONCERNING PARTIALLY GROUTED RIP RAP). NO GROUT IN STREAM.

APPROX STA 300+57.73 REPAIR ANY GRAVEL PAVEMENT ON GARNIE HALL ROAD AND BESS HALL LANE THAT WAS DAMAGED BY CONSTRUCTION ACTIVITIES AS DIRECTED BY THE ENGINEER WITH 8" DGA PAVEMENT.

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	DRAWING TITLE: GARNIE HALL ROAD PLAN SHEET	HORIZONTAL SCALE SCALE: 1" = 20'	STA 300+10.34 TO 300+57.73	ITEM NO. 12-0294,OTH COUNTY OF Knott SHEET NO. R4

0' 20' 40' 80'



FLOOD DATA

	STORM (YR)	FLOW (CFS)	HW ELEV (FT)
DESIGN	10	410	1290.86
CHECK	100	721	1292.76

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: GARNIE HALL ROAD PROFILE SHEET

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

0' 2' 4' 8'
VERTICAL SCALE: 1"=2'

STA 300+10.34 TO 300+57.73

ITEM NO. 12-0294.OTH
COUNTY OF Knott
SHEET NO. R5

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 UNLESS OTHERWISE NOTED.

4. ON KY 582 THE CONTRACTOR SHALL MAINTAIN A TWO-LANE TRAVELED WAY WITH A MINIMUM LANE WIDTH MATCHING EXISTING LANE WIDTH. HOWEVER, DURING WORKING HOURS, ONE-WAY TRAFFIC MAY BE ALLOWED AT THE DISCRETION OF THE ENGINEER, PROVIDED ADEQUATE SIGNING AND A FLAGPERSON ARE AT THE LOCATION. ON GARNIE HALL ROAD AND BESS HALL LANE, ACCESS MUST BE MAINTAINED AT ALL TIMES.

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 BY THE SQUARE FOOT. THIS QUANTITY SHALL INCLUDE SIGN MOUNTING HARDWARE AND POSTS.

11. TEMPORARY SHEETING/SHORING IS REQUIRED ALONG KY 582 AND ALONG GARNIE HALL ROAD AND BESS HALL LANE FOR CULVERT CONSTRUCTION. COST FOR SHEETING/SHORING SHALL BE INCIDENTAL TO "MAINTAIN AND CONTROL TRAFFIC".

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.

PAYMENT WILL BE ALLOWED FOR CONCRETE BARRIER WALL TYPE 9T

PHASING PLAN

PHASE 1

- CONSTRUCTION:
DEMOLISH EXISTING STRUCTURE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
INSTALL TEMPORARY SHEETING/SHORING ALONG KY 582 TO MAINTAIN TWO LANES AT ALL TIMES.
INSTALL TEMPORARY SHEETING/SHORING ALONG GARNIE HALL ROAD AND BESS HALL LANE AS NEEDED TO MAINTAIN ACCESS TO TEMPORARY DIVERSION (CONSTRUCTED BY OTHERS).
CONSTRUCT BOX CULVERT, PERMANENT ROAD GRADE AND PAVEMENT.

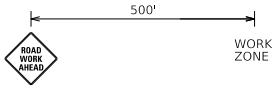
- TRAFFIC:
UTILIZE ON SITE DIVERSION AS CONSTRUCTED BY OTHERS. UTILIZE TEMP SHEETING AND SHORING AS REQUIRED TO MAINTAIN EXISTING PAVEMENT WIDTH ON KY 582. UTILIZE TEMPORARY BARRIER WALL TO MAINTAIN POSITIVE SEPARATION. UTILIZE TEMP SHEETING AND SHORING AS REQUIRED TO MAINTAIN ACCESS ALONG GARNIE HALL ROAD AND BESS HALL LANE. UTILIZE TEMPORARY BARRIER WALL TO MAINTAIN POSITIVE SEPARATION.

PHASE 2

- CONSTRUCTION:
FINISH CONSTRUCTION, STABILIZE TEMPORARILY DISTURBED AREA, REMOVE ON SITE DIVERSION (PREVIOUSLY CONSTRUCTED BY OTHERS). DIVERSION PIPE TO BE DELIVERED TO KNOTT COUNTY MAINTENANCE BARN TO REMAIN PROPERTY OF KYTC. ALL OTHER DIVERSION MATERIAL TO BE DISPOSED OF BY THE CONTRACTOR. DIVERSION REMOVAL SHALL BE INCIDENTAL TO DEMOBILIZATION.

- TRAFFIC:
OPEN GARNIE HALL ROAD TO TRAFFIC AT THE CONCLUSION OF THE CONSTRUCTION ACTIVITIES.

ADVANCE WARNING SIGN SETUP



W20-1
(36"x36")

G20-2
(36"x18")

*TO BE INSTALLED ON KY 582, GARNIE HALL ROAD AND BESS HALL LANE.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: MOT NOTES AND PHASING SHEET

ITEM NO. 12-0294,OTH
COUNTY OF Knott
SHEET NO. R6

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.

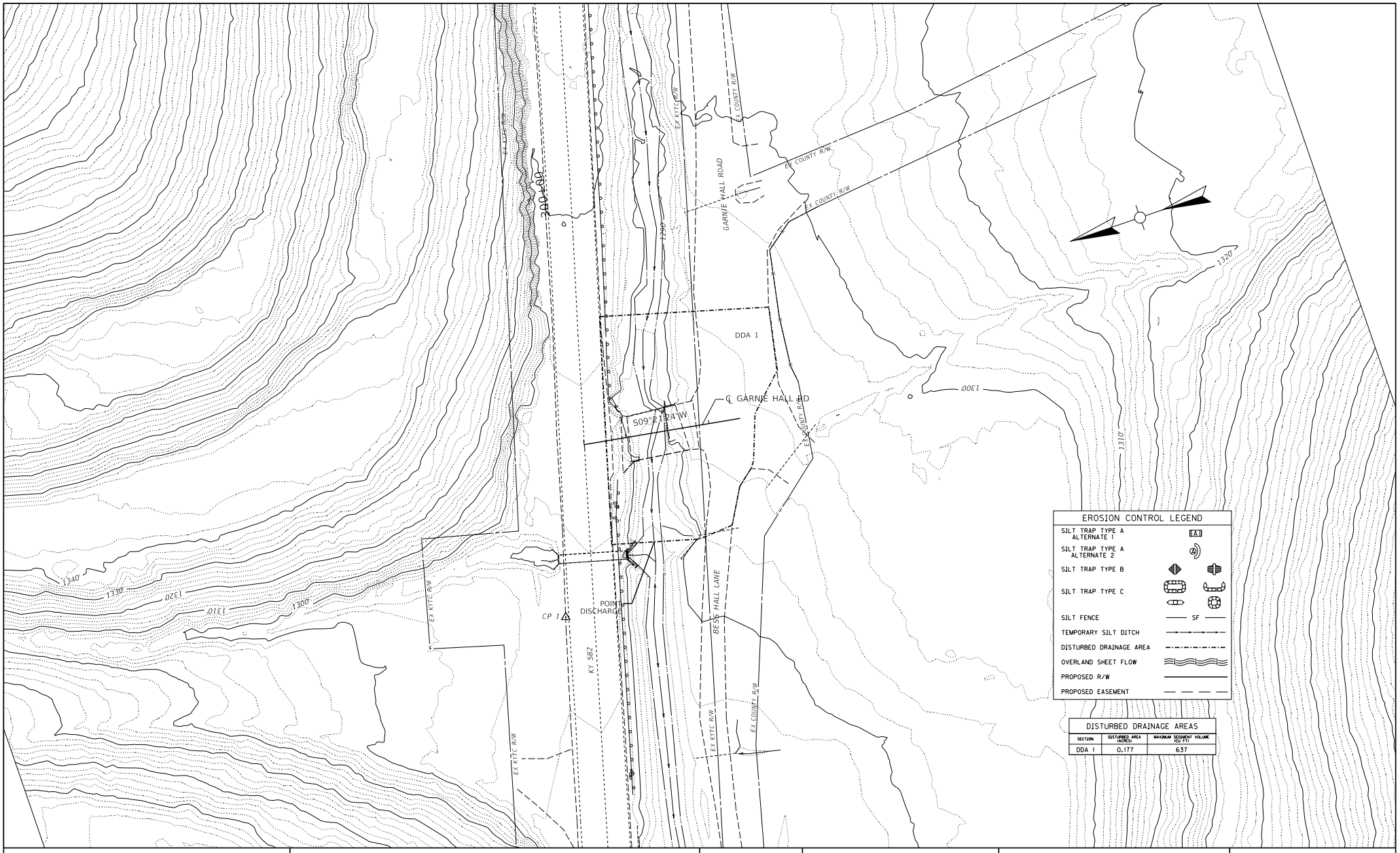
IF A SILT BASIN IS NOT USED THEN ONE SILT TRAP TYPE A, ALTERNATE NUMBER 2 OR SILT TRAP TYPE B SHALL ALWAYS BE PLACED AT THE MOST REMOTE DOWNSTREAM COLLECTION POINT PRIOR TO DISCHARGING INTO A BLUE LINE STREAM OR ONTO AN ADJACENT PROPERTY OWNER. WHERE OVERLAND FLOW EXIST, A SILT FENCE OR OTHER FILTER 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

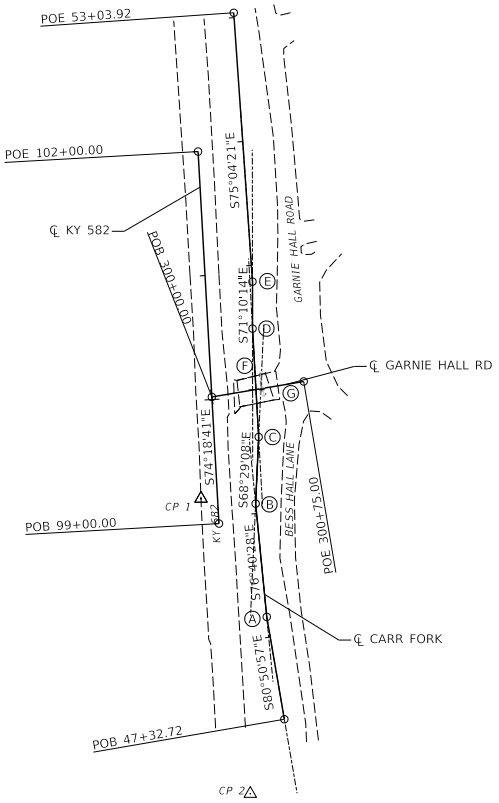
HORIZONTAL SCALE
SCALE: 1" = 20'

0' 20' 40' 80'

STA 300+10.34 TO 300+57.73

ITEM NO. 12-0294,OTH
COUNTY OF Knott

SHEET NO. R8



Ⓐ POT 48+16.37

Ⓑ POT 49+07.98

Ⓒ POT 49+61.70

Ⓓ POT 50+49.10

Ⓔ POT 50+86.93

Ⓕ S74°19'17"E

Ⓖ S09°21'24"W

COORDINATE CONTROL POINTS						
CP NUMBER	TYPE	NORTHING (Y)	EASTING (X)	ELEVATION (Z)	STATION	OFFSET
1	PK NAIL	3638408.183	5770317.602	1295.107	99+20.88	-13.31
2	SURVEY NAIL	3638447.670	5770079.946	1289.268	NA	NA

GARNIE HALL ROAD			
POINT	STATION	NORTHING (Y)	EASTING (X)
START	300+00.00	3638373.40	5770392.22
END	300+75.00	3638299.40	5770380.03

KY 582			
POINT	STATION	NORTHING (Y)	EASTING (X)
START	99+00.00	3538401.01	5770293.90
END	102+00.00	3538319.89	5770582.73

CARR FORK			
POINT	STATION	NORTHING (Y)	EASTING (X)
START	47+32.72	3638402.32	5770127.78
HPI	48+16.37	3638389.01	5770210.37
HPI	49+07.98	3638367.90	5770299.52
HPI	49+61.70	3638348.20	5770349.49
HPI	50+49.10	3638324.58	5770433.64
HPI	50+86.93	3638312.37	5770469.44
END	53+03.92	3638256.47	5770679.11

BASIS OF ELEVATIONS

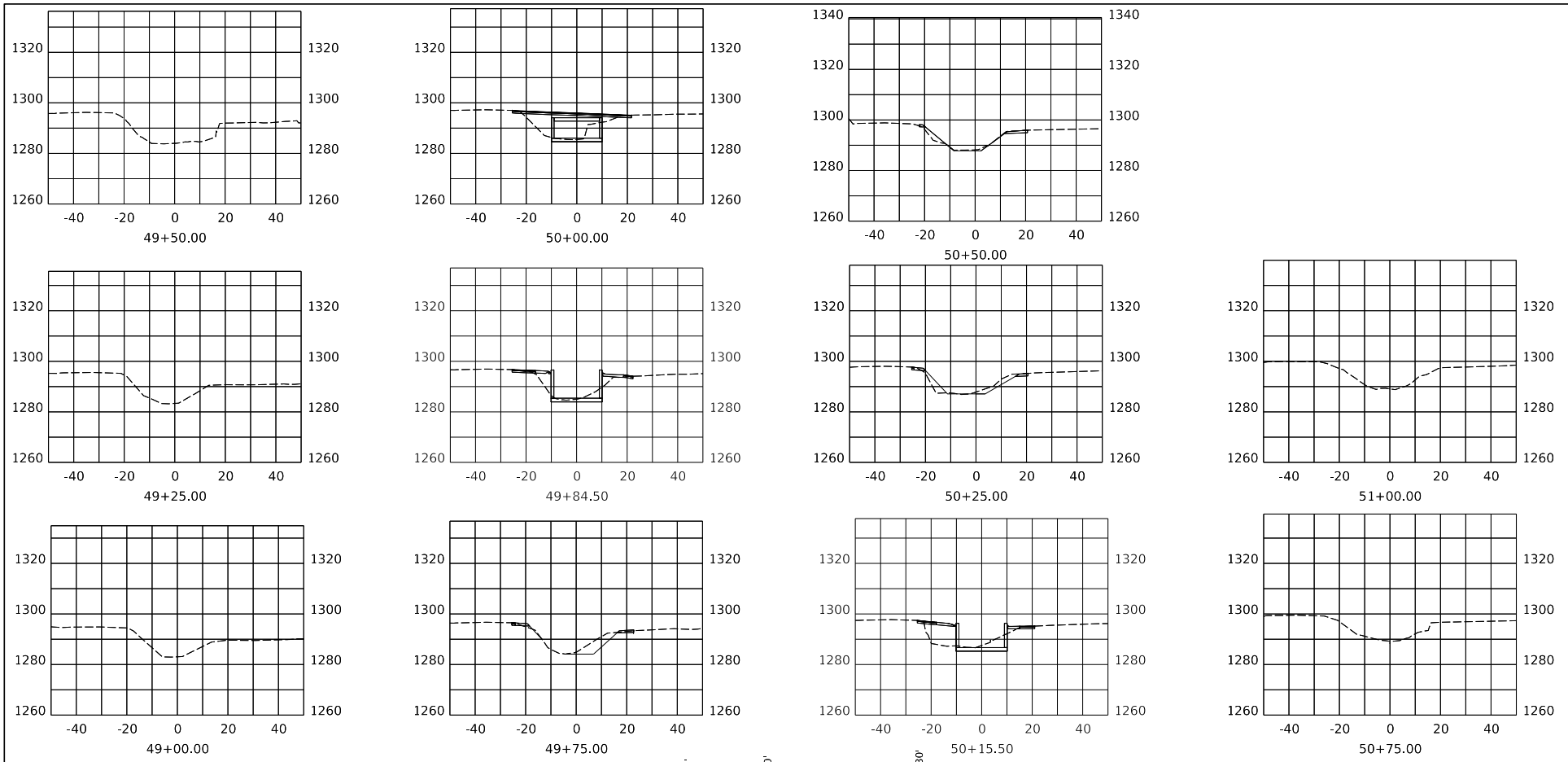
Elevations were derived from GPS methods and are adjusted to the NAVD88 Vertical Datum. Geoid model used was Geoid18.

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.

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	DRAWING TITLE: COORDINATE CONTROL SHEET	HORIZONTAL SCALE SCALE: 1" = 50'	0' 50' 100' 200'	STA 300+00 TO 300+75.00	ITEM NO. 12-0294,OTH COUNTY OF Knott SHEET NO. R9



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: CULVERT SITUATION SURVEY SHEET

HORIZONTAL SCALE: 1"=20'

VERTICAL SCALE: 1"=2'

ITEM NO. 12-0294.OTH COUNTY OF Knott

SHEET NO. R.10

LETTING DATE:

CONSTRUCTION PROJECT NO.:

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

KNOTT COUNTY
GARNIE HALL ROAD
OVER CARR FORK
FEMA BRIDGE: 4663-DR
DEPT. OBJ. CODE: D23A
STA. 300+25.97

ESTIMATE OF QUANTITIES

BID ITEM CODE	08100	08150	08151	08003	02231	02223	23378EC	08002	03250
BID ITEM	CONCRETE-CLASS A	STEEL REINFORCEMENT	STEEL REINFORCEMENT -EPOXY COATED	FOUNDATION PREPARATION	STRUCTURE GRANULAR BACKFILL	GRANULAR EMBANKMENT	CONCRETE SEALING	STRUCTURE EXCAV-SOLID ROCK	WATERPROOFING MEMBRANE
UNIT	CUYD	LB	LB	LS	CUYD	CUYD	SQFT	CUYD	SQYD
Culvert	123.7	14633	11093	1	131	108	913	36	71
TOTALS	123.7	14633.0	11093	1	131	108	913	36	71

INDEX OF SHEETS

Sheet No.	Description
S1	Title Sheet
S2	Culvert Layout
S3	Barrel Details 1
S4	Barrel Details 2
S5	Wingwall Details 1
S6	Wingwall Details 2
S7	Bill of Reinforcement
S8	Subsurface Data

SPECIAL NOTES

Special Note for Concrete Sealing

Special Note for One Step Membrane

SPECIAL PROVISIONS

69 Embankment at Bridge End Bent Structures

STANDARD DRAWINGS

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

STATE OF KENTUCKY
CORY WILLIAM LARKIN
32748
LICENCED PROFESSIONAL ENGINEER

Cory Larkin, P.E.
KY No. 32748

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

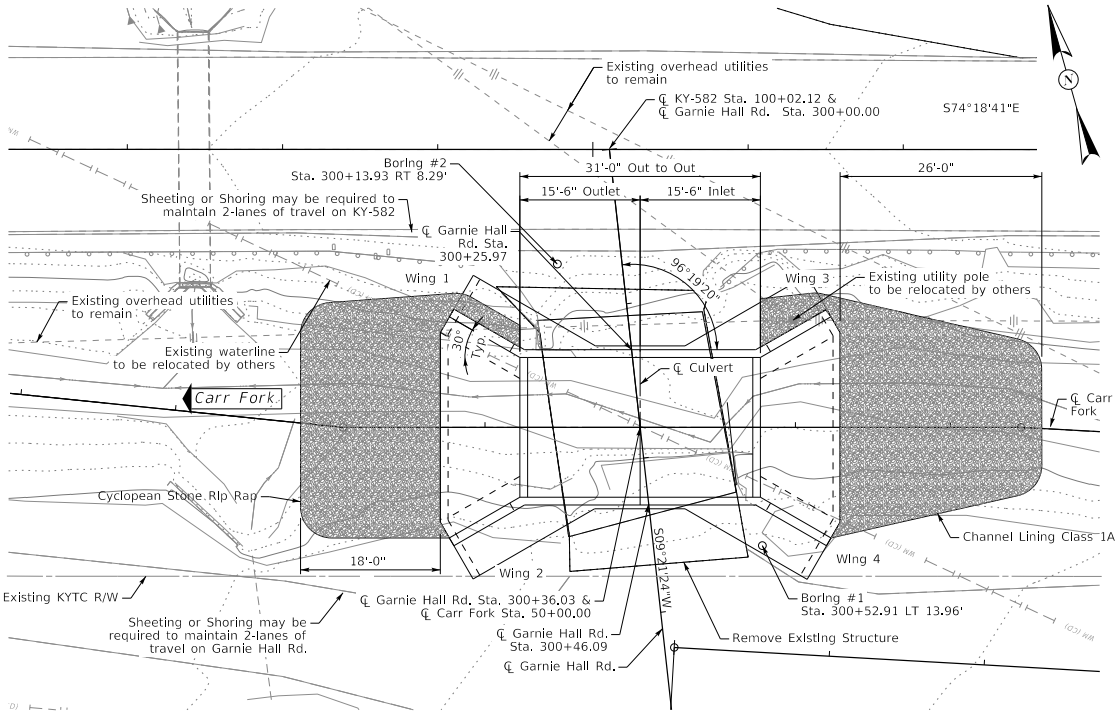
PREPARED BY
Division of Structural Design

DATE: 01/19/2023	CHECKED BY
DESIGNED BY: M. Syed	C. Larkin
DETAILED BY: G. Cleary	C. Larkin

TITLE SHEET

CROSSING: CARR FORK

ROUTE	ITEM NO.	COUNTY OF
GARNIE HALL	12-0294.OTH	KNOTT
	SHEET NO. S1	DRAWING NUMBER 28618



PLAN

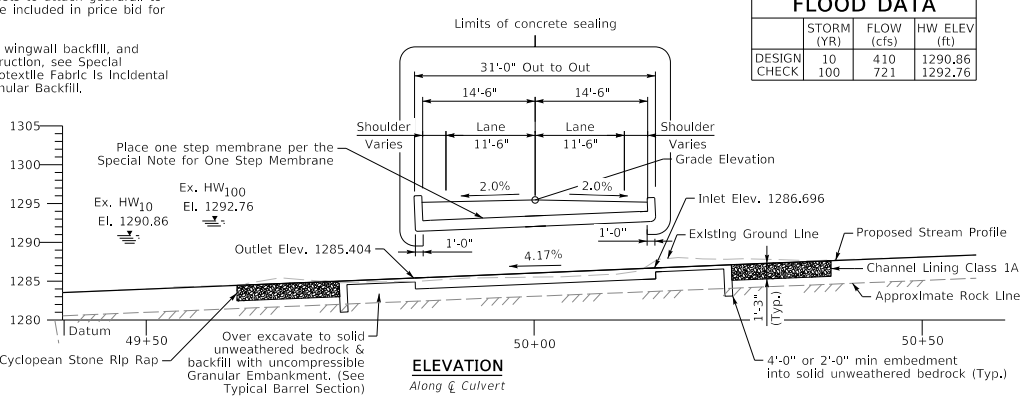
18'-0" X 6'-9" X 31'-0" RCBC, SKEW 6°19'20", 1:1 FILL SLOPES WITH PAVED INLET & OUTLET
1.56' FILL HEIGHT, UNYIELDING FOUNDATION, KYHL-93,
24'-0" OUT TO OUT SHOULDERS, 30° FLARED WINGS

Note:
For guardrail attachment to culvert top slab, see Standard Drawing RBR-015-06.

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.

For sidewall and wingwall backfill, and method of construction, see Special Provision 69. Geotextile Fabric is Incidental to Structure Granular Backfill.

FLOOD DATA			
	STORM (YR)	FLOW (cfs)	HW ELEV (ft)
DESIGN	10	410	1290.86
CHECK	100	721	1292.76



ELEVATION

Along ℄ Culvert

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.

CONCRETE SEALER: Apply concrete sealer in accordance with the Special Note for Concrete Sealing. Seal concrete prior to placing of one step membrane.

STRUCTURE GRANULAR BACKFILL: Materials for Structure Granular Backfill shall be in accordance with Section 805 of the Specifications.

SCOUR PROTECTION: Scour Protection shall be Channel Lining Class 1A Riprap (Upstream) and Cyclopean Stone Riprap (Downstream) 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 2200 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

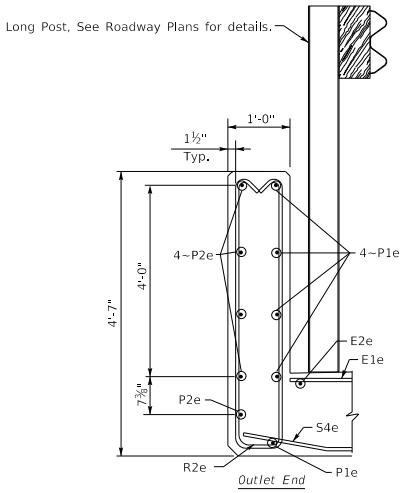
REVISION	DATE

PREPARED BY: Michael Baker INTERNATIONAL
1650 Lyndon Farm Court
Louisville, KY
Phone: (502)-339-3557
MBAKERINTL.COM

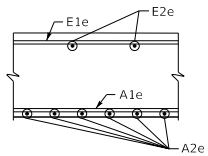
DATE: 01/19/2023	CHECKED BY
DESIGNED BY: M. Syed	C. Larkin
DETAILED BY: G. Cleary	C. Larkin

CULVERT LAYOUT
CROSSING: CARR FORK

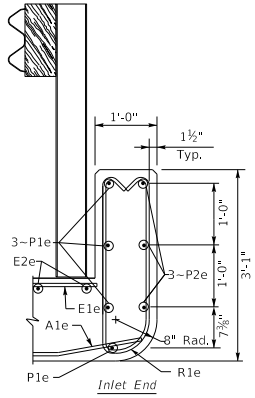
ROUTE	ITEM NO.	COUNTY OF
GARNIE HALL	12-0294.OTH	KNOTT
	SHEET NO. S2	DRAWING NUMBER 28618



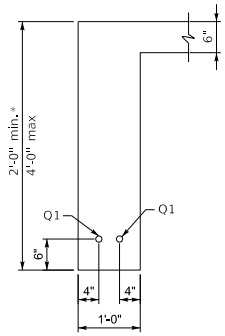
LEFT PARAPET



SECTION ON ℄

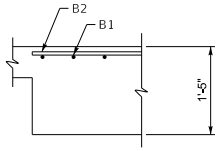


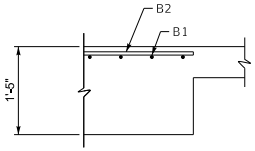
RIGHT PARAPET



DOWNSTREAM END

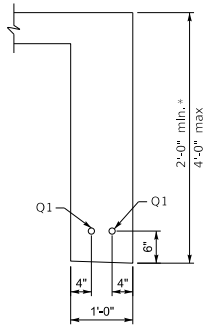
(Perpendicular to Apron)





BARREL ELEVATION

*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.



UPSTREAM END

(Perpendicular to Apron)

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

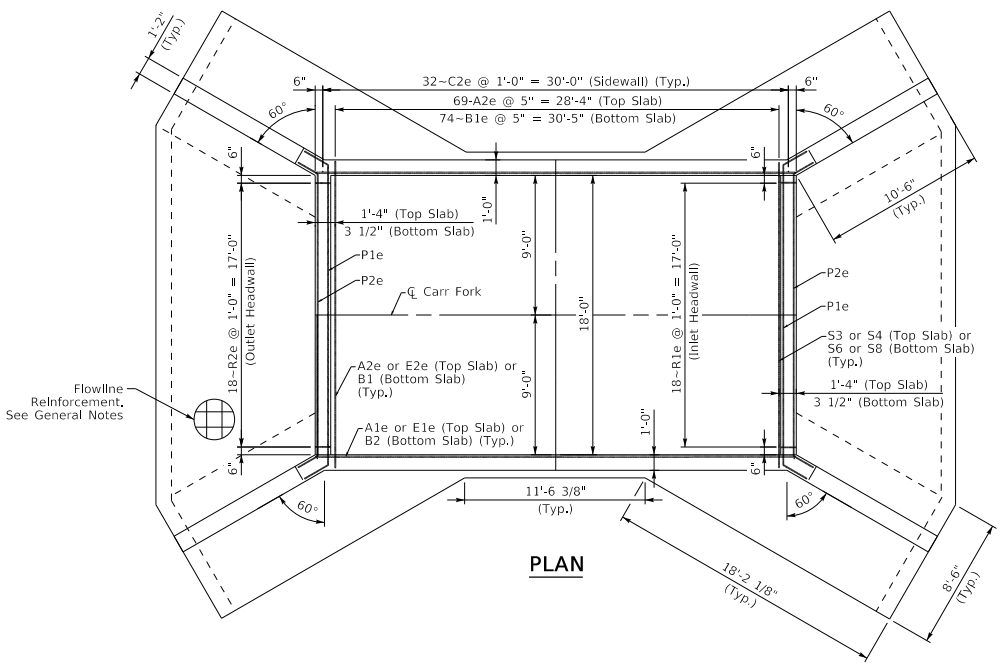
DATE: 01/19/2023	CHECKED BY
DESIGNED BY: M. Syed	C. Larkin
DETAILED BY: G. Cleary	C. Larkin

BARREL DETAILS 1

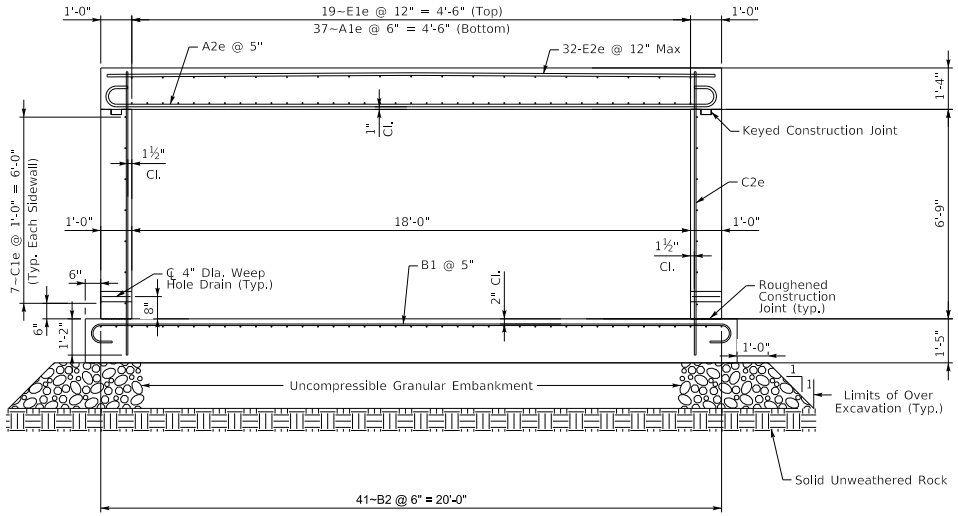
CROSSING
CARR FORK

ROUTE	ITEM NO.	COUNTY OF
GARNIE HALL	12-0294.OTH	KNOTT
	SHEET NO. S3	DRAWING NUMBER 28618

OpenRoads Designer v10.16.2.267 USER: Gustin.Cleary DATE PLOTTED: 19-JAN-2023
FILE NAME: pw://mb-us-pw.bentley.com:mb-us-pw-03/Documents/Louisville_KY/01_Projects/KYTC_2022_Statewide_Structures/LA 6/060C019 - Garnie Hall/Structures/Culvert/CADD/Barrel Details 1

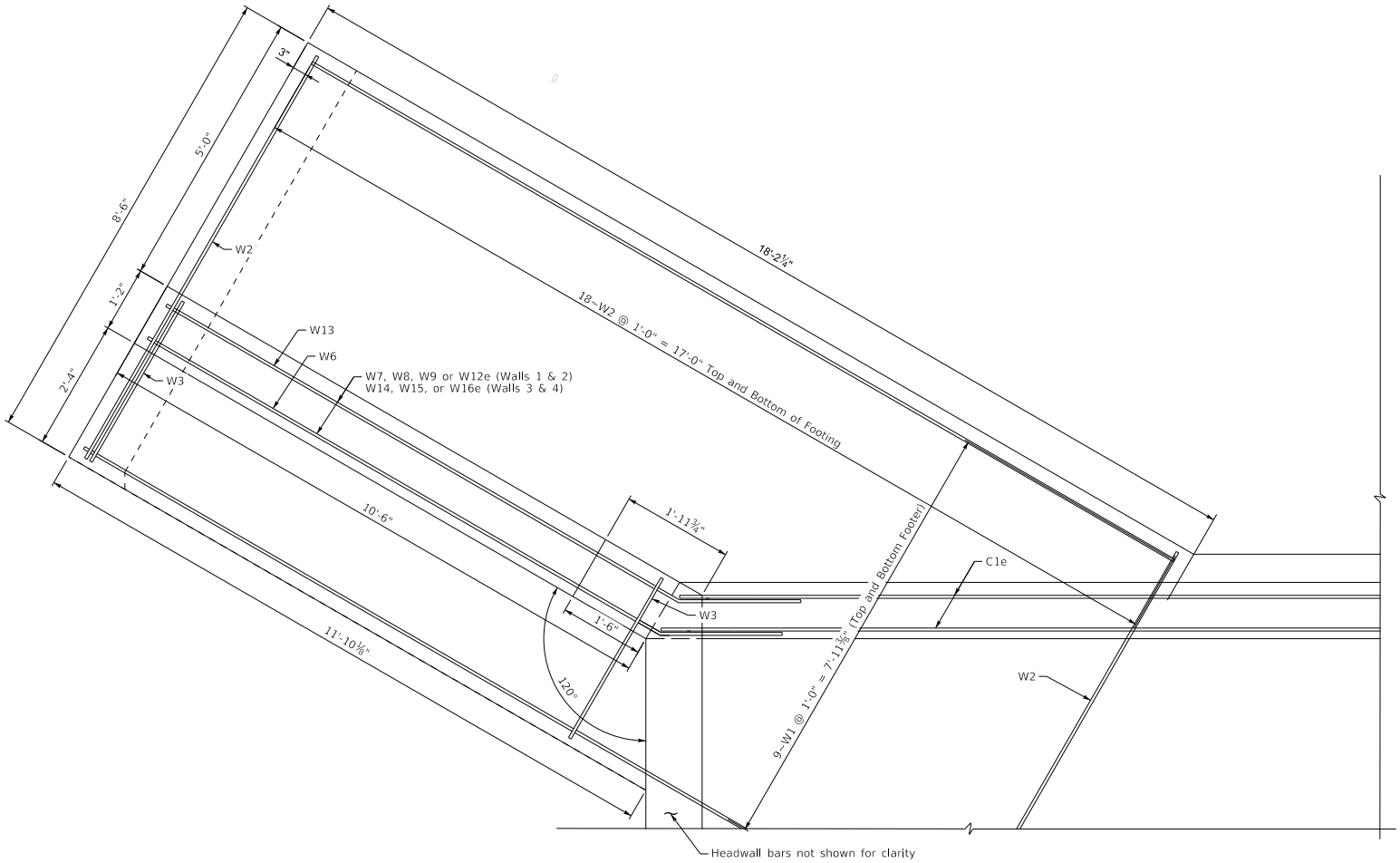


PLAN



TYPICAL BARREL SECTION

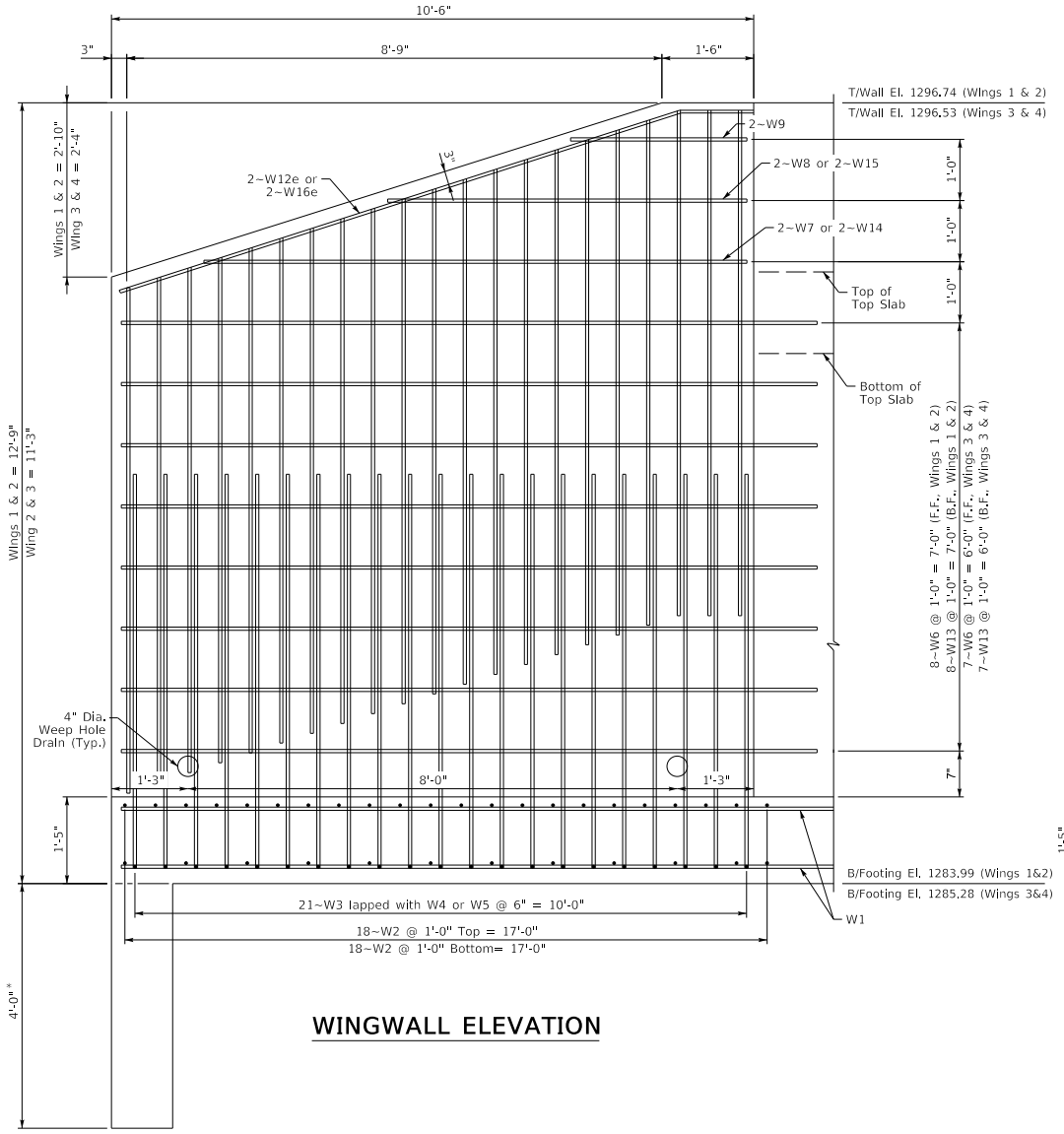
COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION	DATE	PREPARED BY Michael Baker INTERNATIONAL 1650 Lyndon Farm Court Louisville, KY Phone: (502)-339-3557 MBAKERINTL.COM	DATE: 01/19/2023	CHECKED BY	*BARREL DETAILS 2*	ROUTE GARNIE HALL	ITEM NO. 12-0294.OTH	COUNTY OF KNOTT
				DESIGNED BY: M. Syed	C. Larkin	CROSSING CARR FORK		SHEET NO. S4	DRAWING NUMBER 28618
				DETAILED BY: G. Cleary	C. Larkin				



PLAN

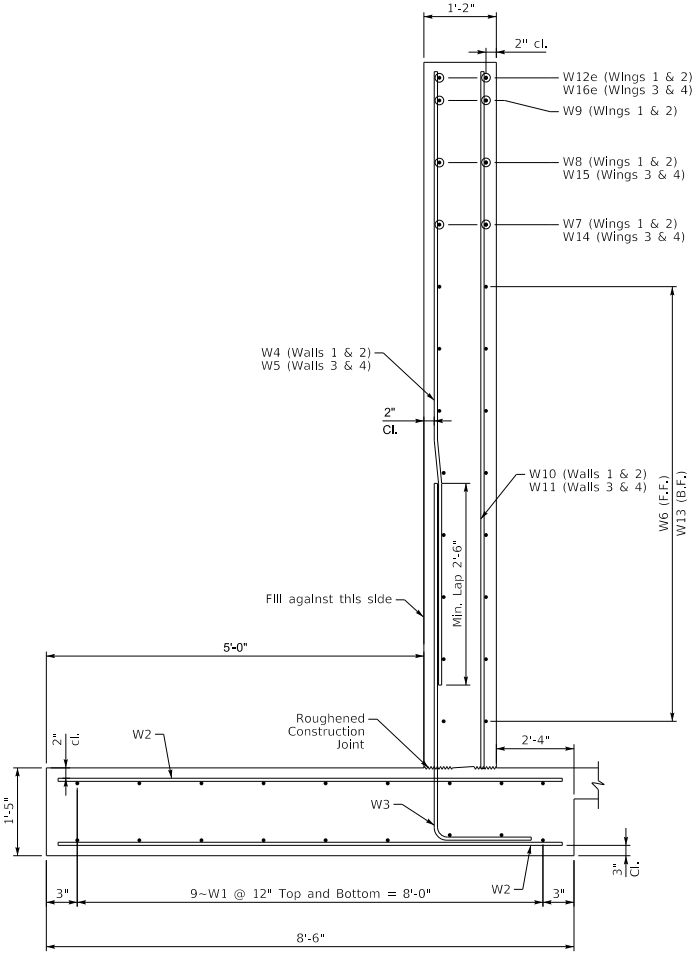
Note:
Wing 1 shown, Wings 2-4 similar.

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: 01/19/2023	CHECKED BY	*WINGWALL DETAILS 1*	ROUTE GARNIE HALL	ITEM NO. 12-0294.OTH	COUNTY OF KNOTT
				DESIGNED BY: M. Syed	C. Larkin	CROSSING CARR FORK		SHEET NO. S5	DRAWING NUMBER 28618
				DETAILED BY: G. Cleary	C. Larkin				



WINGWALL ELEVATION

* 4'-0" or 2'-0" min. embedment
into solid unweathered bedrock



WING SECTION

NOTE:

1. Trim W10 and W11 bars as required to maintain 2" clear.

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: 01/19/2023	CHECKED BY	WINGWALL DETAILS 2	ROUTE	ITEM NO.	COUNTY OF
				DESIGNED BY: M. Syed	C. Larkin	CROSSING CARR FORK	GARNIE HALL	12-0294.OTH	KNOTT
				DETAILED BY: G. Cleary	C. Larkin			SHEET NO. S6	DRAWING NUMBER 28618

SIDEWALL BILL OF REINFORCEMENT

MARK	TYPE	NO.	SIZE	LENGTH		LOCATION	A		B		C		D	
				FT	IN		FT	IN	FT	IN	FT	IN	FT	IN
C1e	Str.	14	#5	30	8	Sidewall								
C2e	Str.	64	#5	9	1	Sidewall								

TOP SLAB BILL OF REINFORCEMENT

MARK	TYPE	NO.	SIZE	LENGTH		LOCATION	A		B		C		D	
				FT	IN		FT	IN	FT	IN	FT	IN	FT	IN
E1e	Str.	19	#5	30	6	Top Slab								
A1e	Str.	37	#8	30	6	Top Slab								
E2e	Str.	32	#5	19	6	Top Slab								
A2e	1	69	#9	21	0	Top Slab	18	6	1	3	0	11 3/4	18	10

BOTTOM SLAB BILL OF REINFORCEMENT

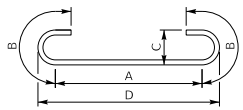
MARK	TYPE	NO.	SIZE	LENGTH		LOCATION	A		B		C		D	
				FT	IN		FT	IN	FT	IN	FT	IN	FT	IN
B2	Str.	41	#8	30	6	Bottom Slab								
B1	1	74	#9	22	0	Bottom Slab	19	6	1	3	0	11 3/4	20	6
Q1	7	4	#5	40	2	Apron	24	2	8	0	6	11	4	0

WING WALLS BILL OF REINFORCEMENT

MARK	TYPE	NO.	SIZE	LENGTH		LOCATION	A		B		C		D	
				FT	IN		FT	IN	FT	IN	FT	IN	FT	IN
W1	Str.	72	#5	17	0	Wing Walls Footing								
W2	Str.	144	#6	8	2	Wing Walls Footing								
W3	5	84	#6	7	5	Wing Walls Footing	6	5	1	0				
W4	Str.	42	#6	8	6	Wing Walls								
W5	Str.	42	#6	7	5	Wing Walls								
W6	8	15	#5	12	4	Wing Walls	10	3	2	1	1	1/2	1	9 5/8
W7	Str.	4	#5	9	6	Wing Walls								
W8	Str.	4	#5	6	4	Wing Walls								
W9	Str.	4	#5	3	2	Wing Walls								
W10	Str.	4	#5	11	2	Wing Walls								
W11	Str.	4	#5	9	8	Wing Walls								
W12e	8	4	#6	10	6	Wing Walls	9	3	1	3	0	4 1/2	1	2 1/4
W13	8	15	#5	12	0	Wing Walls	10	5	1	7	0	9 1/2	1	4 1/2
W14	Str.	4	#5	9	4	Wing Walls								
W15	Str.	4	#5	5	6	Wing Walls								
W16e	8	4	#6	10	6	Wing Walls	9	3	1	3 1/2	0	3 7/8	1	3

HEADWALLS BILL OF REINFORCEMENT

MARK	TYPE	NO.	SIZE	LENGTH		LOCATION	A		B		C		D		E		F	
				FT	IN		FT	IN	FT	IN	FT	IN	FT	IN	FT	IN	FT	IN
P1e	7	9	#5	21	0	Headwall	18	2	1	5	0	8 1/2	1	2 3/4				
P2e	7	8	#5	22	8	Headwall	19	4	1	8	0	10	1	5 1/4				
R1e	11s	18	#5	7	2	Headwall	2	10	0	9	0	2 1/2	2	3 1/2	0	6 1/2	0	9 3/4
R2e	12s	18	#5	10	5	Headwall	4	4	0	9								



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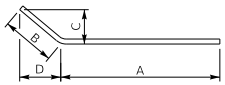

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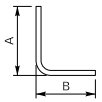

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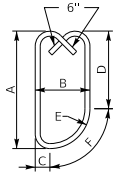
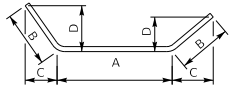


TYPE 11s



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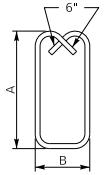


TYPE 12s

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: 01/19/2023	CHECKED BY
DESIGNED BY: M. Syed	C. Larkin
DETAILED BY: G. Cleary	C. Larkin

BILL OF REINFORCEMENT

CROSSING
CARR FORK

ROUTE	ITEM NO.	COUNTY OF
GARNIE HALL	12-0294.OTH	KNOTT
	SHEET NO. S7	DRAWING NUMBER 28618

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

DRILLER'S SUBSURFACE LOG

Printed: 9/6/22

Project ID: ***060C019***	***Knott - Garnie Hall RD (CR 1736)***	Project Type: ***Structure Bridge***
Item Number:		Project Manager: _

Hole Number ***1***	Immediate Water Depth ***NA***	Start Date ***09/02/2022***	Hole Type ***sounding***
Surface Elevation ***'***	Static Water Depth ***NA***	End Date ***09/02/2022***	Rig_Number __
Total Depth ***11.7'***	Driller ***Cody Davidson***	Latitude(83) ***37.278847***	
Location ***+ 'Lt.***		Longitude(83) ***-82.831172***	

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
		Fill dirt with limestone gravel.						
5	5.0							5
	7.4	Medium stiff, brown, moist, sandy clay with rock fragments and sandstone boulders.						
10		Soft, gray, wet, sandy clay.						10
	11.4	(Refusal)						
	11.7	Hard, gray, sandstone.						
15		(Bottom of Hole 11.7') (Refusal @ 11.4)						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

Project ID: ***060C019***	***Knott - Garnie Hall RD (CR 1736)***	Project Type: ***Structure Bridge***
Item Number:		Project Manager: _

Hole Number ***2***	Immediate Water Depth ***NA***	Start Date ***09/02/2022***	Hole Type ***sounding***
Surface Elevation ***'***	Static Water Depth ***NA***	End Date ***09/02/2022***	Rig_Number __
Total Depth ***12.0'***	Driller ***Cody Davidson***	Latitude(83) ***37.278847***	
Location ***+ 'Lt.***		Longitude(83) ***-82.831172***	

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	Concrete.						
5		Medium stiff, brown, moist, sandy clay with rock fragments and sandstone boulders.						5
10								10
	11.4	(Refusal)						
	12.0	Hard, gray, sandstone.						
15		(Bottom of Hole 12.0') (Refusal @ 11.4)						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
Michael Baker INTERNATIONAL
1650 Lyndon Farm Court
Louisville, KY
Phone: (502)-339-3557
MBAKERINTL.COM

DATE: 11/05/2022	CHECKED BY
DESIGNED BY: KYTC	KYTC
DETAILED BY: KYTC	KYTC

SUBSURFACE DATA SHEET 1

CROSSING: CARR FORK

ROUTE	ITEM NO.	COUNTY OF
GARNIE HALL	12-0294.OTH	KNOTT
	SHEET NO. S8	DRAWING NUMBER 28618

OpenRoads Designer v10.16.2.267 USER: Gustin.Cleary DATE PLOTTED: 19-JAN-2023
FILE NAME: pw://mb-us-pw.bentley.com:mb-us-pw-03/Documents/Louisville_KY/01_Projects/KYTC_2022_Statewide_Structures/LA 6/060C019 - Garnie Hall/Structures/Culvert/CADD/Subsurface Data 1

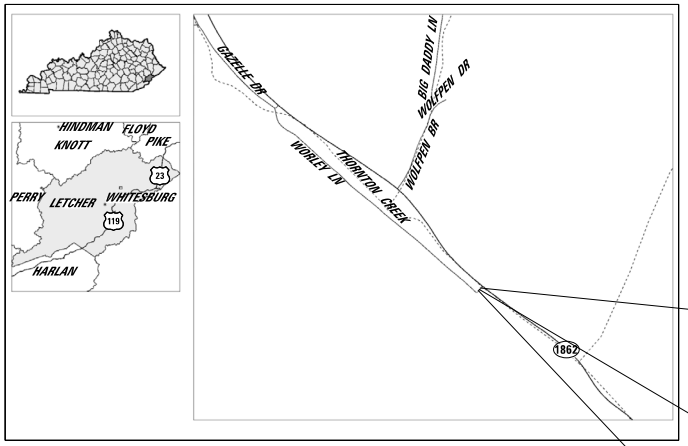
TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
LETCHER COUNTY
CR 1835 OVER THORNTON CREEK
FEMA BRIDGE: 4663-DR
STA. 5+34.25

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

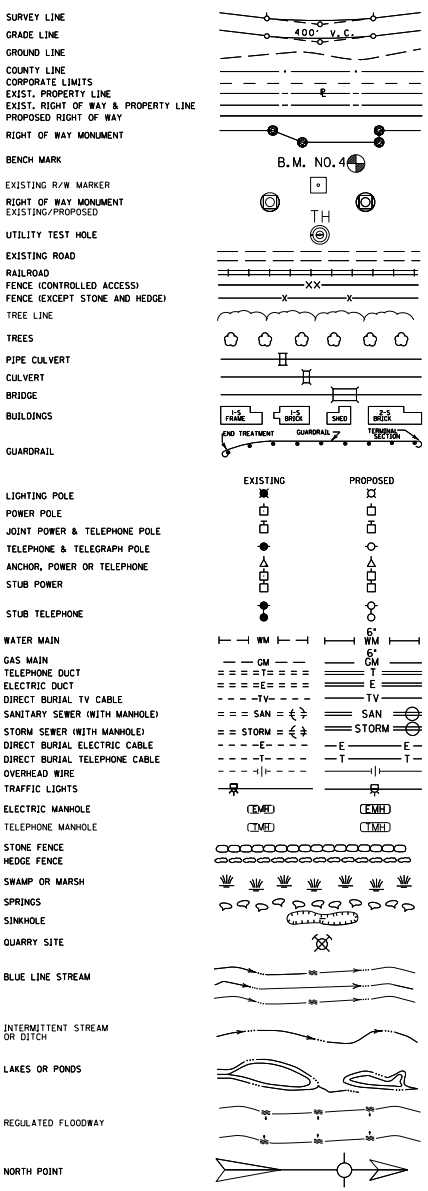
ITEM NO. N/A
DRAWING NO. 28595
PROJECT NUMBER:
LETTING DATE:

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.

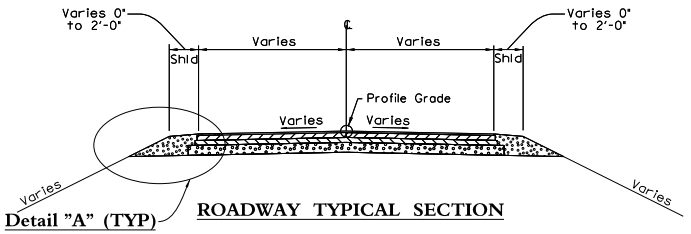
ALL LABOR AND MATERIALS NECESSARY FOR CONSTRUCTION AND MAINTENANCE OF TRAFFIC CONTROL DEVICES SHALL BE INCIDENTAL TO THE BID ITEM FOR "MAINTAIN AND CONTROL TRAFFIC".

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

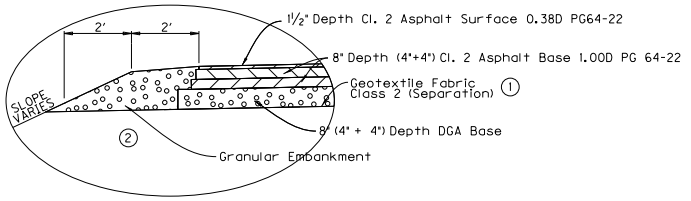
BEFORE BEGINNING WORK, LOCATE ALL EXISTING UTILITIES. CONSIDER UTILITY LINE LOCATIONS DEPICTED IN THE PLANS TO BE APPROXIMATE AND FOR INFORMATIONAL PURPOSES ONLY. THE DEPARTMENT DOES NOT WARRANT THE LOCATION AND ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS. THE CONTRACTOR MUST MAKE THEIR 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"

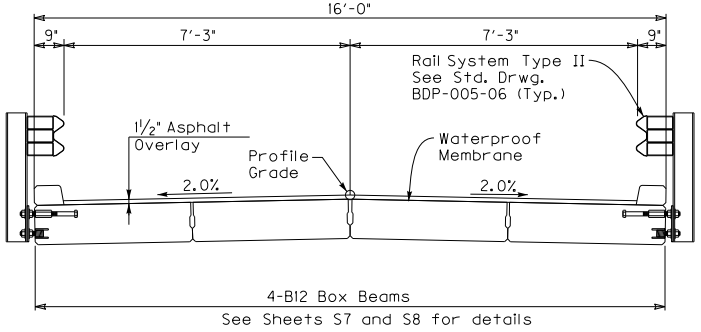
FULL-DEPTH MAINLINE & SHOULDER PAVEMENT RECONSTRUCTION

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

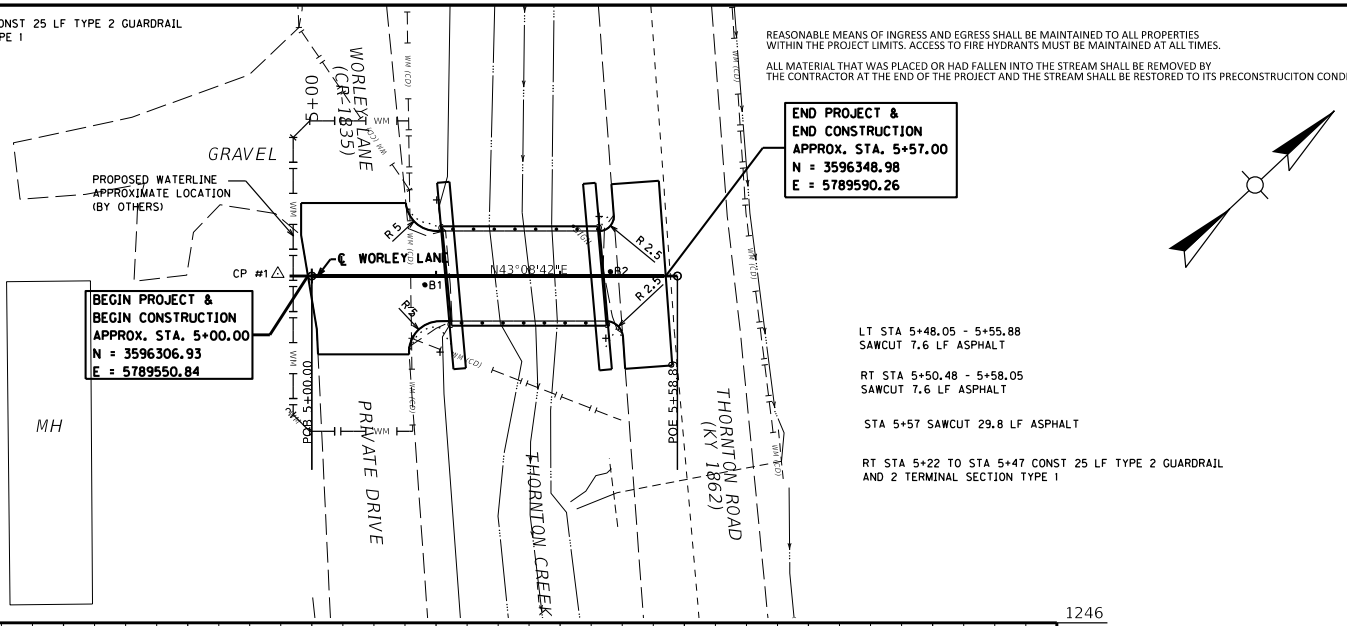
HORIZONTAL SCALE
SCALE: NTS

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.

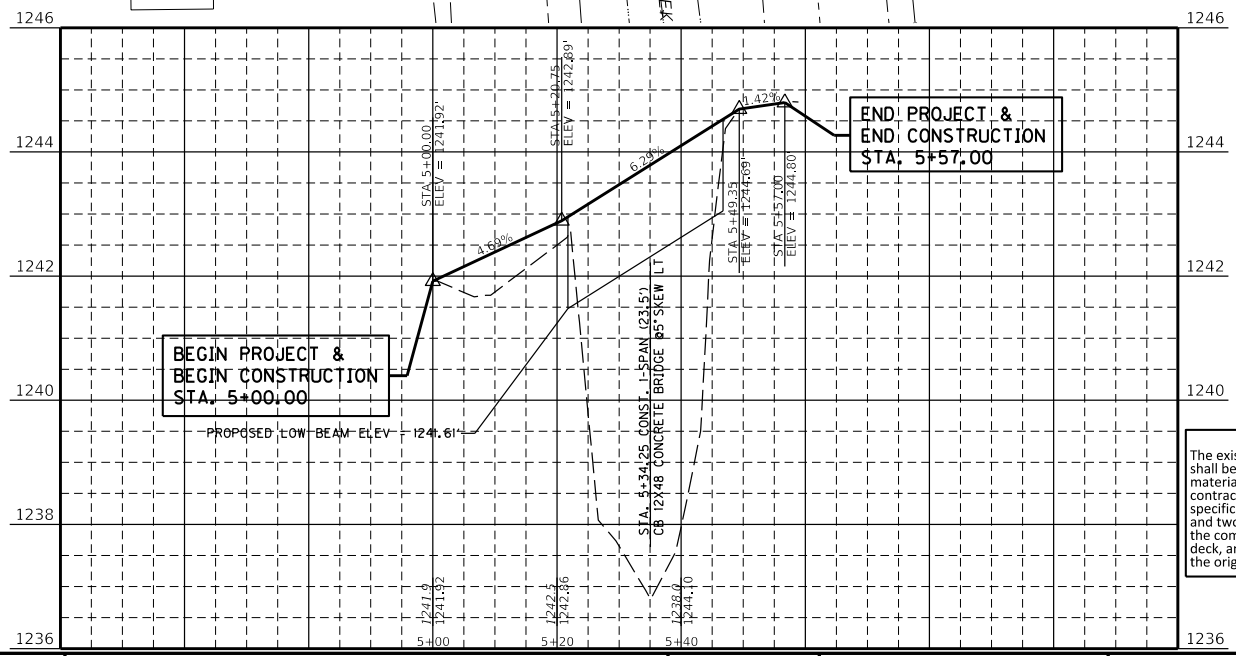


LT STA 5+48.05 - 5+55.88
SAWCUT 7.6 LF ASPHALT

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

Sheet No.	Description
S1	Title Sheet
S2	General Notes
S3	Layout
S4	Foundation Layout
S5	Abutment #1
S6	Abutment #2
S7	Box Beam General Notes
S8	B12x48 Box Beam

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.

SPECIFICATIONS

2019 Standard Specifications for Road and Bridge Construction.

9th Edition AASHTO LRFD Bridge Design Specifications (2020)

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: c=US, st=Kentucky, l=Lexington, o=J.M. Crawford & Associates, cn=Lee A. Carlisle, email=lacarlisle@jmcaa.com
Date: 2022.12.15 16:42:58 -05'00'

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION	DATE	PREPARED BY JMC J.M Crawford & Associates Consulting Engineers	DATE: 10/14/2022	CHECKED BY	TITLE SHEET	ROUTE	ITEM NO.	COUNTY OF
				DESIGNED BY: Lee Carlisle	Stuart McIntosh	CROSSING: THORNTON CREEK	CR 1835	12-0183.OTH	LETCHER
				DETAILED BY: Greg Crank	Lee Carlisle			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

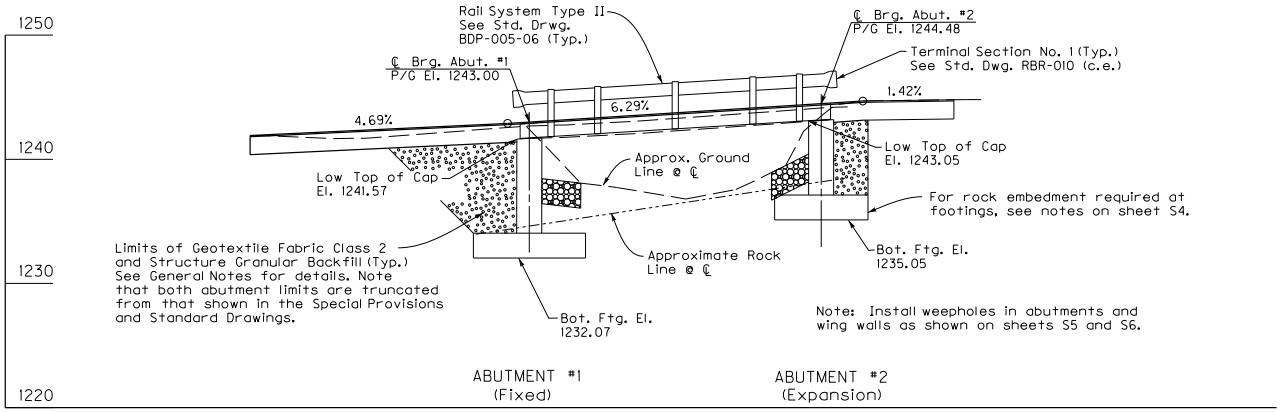
PREPARED BY
JM Crawford & Associates
Consulting Engineers

DATE: 10/14/2022	CHECKED BY
DESIGNED BY: Lee Carlisle	Stuart McIntosh
DETAILED BY: Greg Crank	Lee Carlisle

GENERAL NOTES

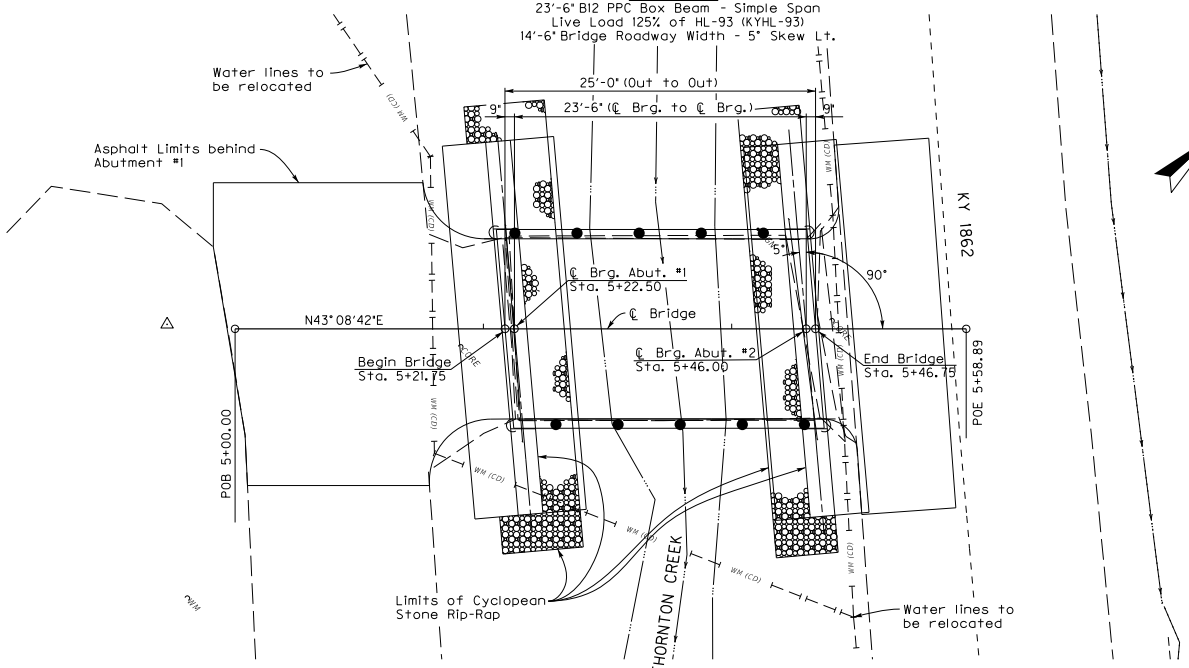
CROSSING
THORNTON CREEK

ROUTE	ITEM NO.	COUNTY OF
CR 1835	12-0183.OTH	LETCHER
	SHEET NO.	DRAWING NUMBER
	S2	28595



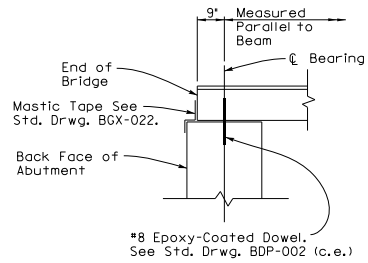
ELEVATION

23'-6" B12 PPC Box Beam - Simple Span
Live Load 125% of HL-93 (KYHL-93)
14'-6" Bridge Roadway Width - 5° Skew Lt.

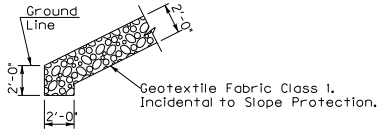


PLAN

(Superstructure Not Shown)

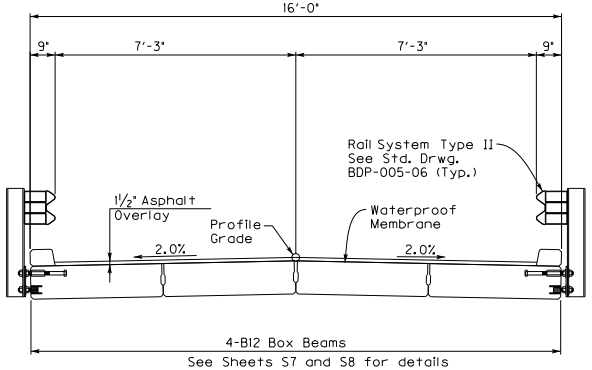


END OF BRIDGE DETAIL



TOE OF SLOPE DETAIL

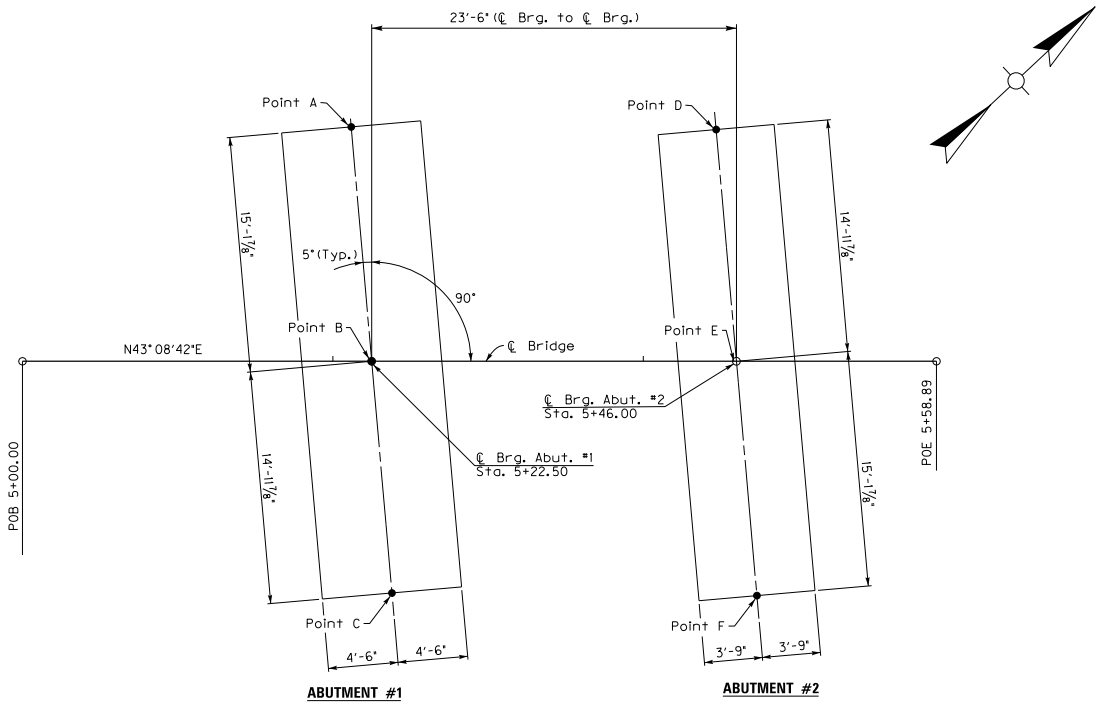
(Applies to Sideslopes)



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

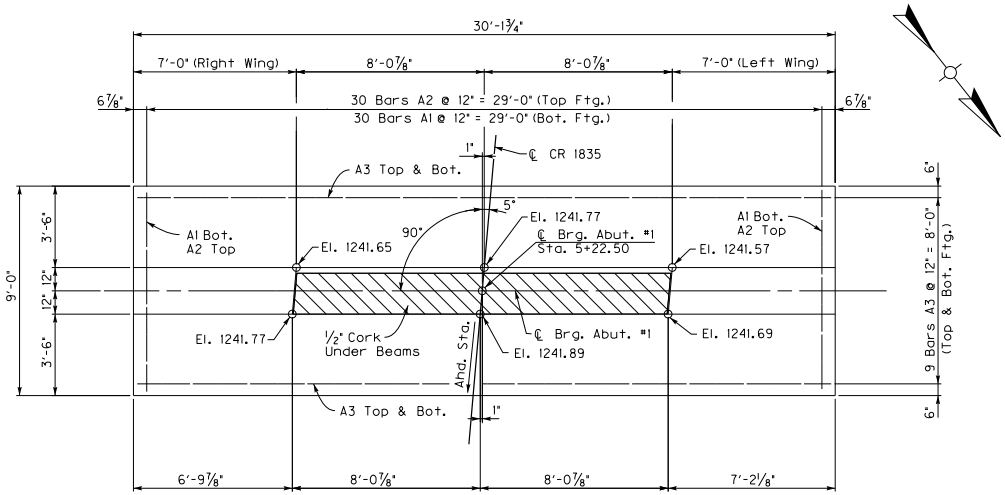
REVISION	DATE

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

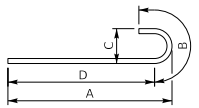


PLAN

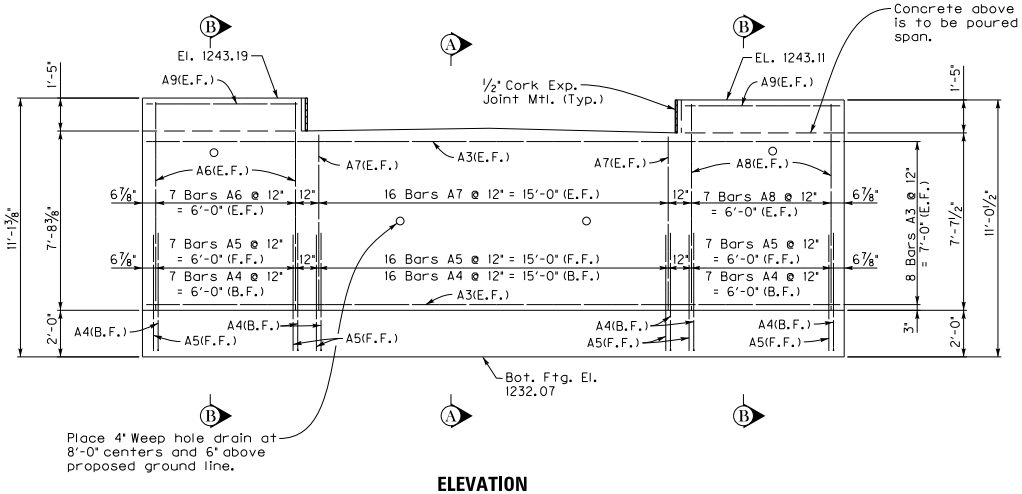
BILL OF REINFORCEMENT

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

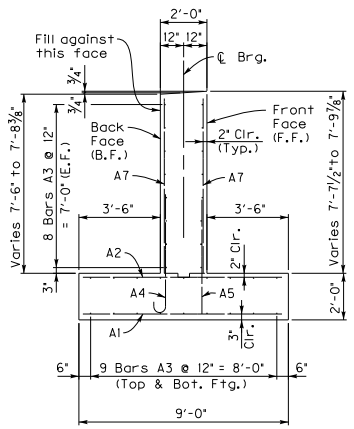


TYPE 4

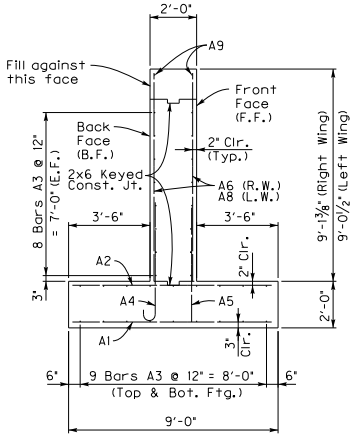


ELEVATION

(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

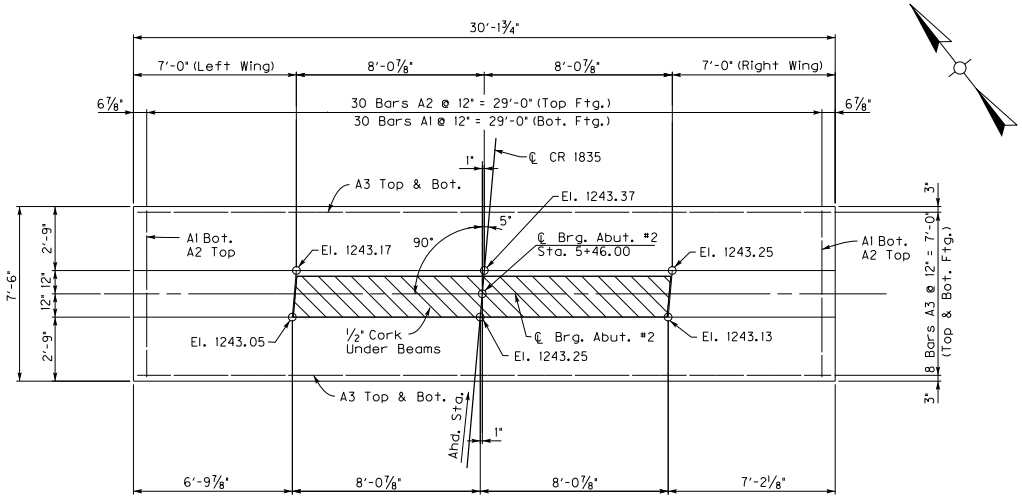
PREPARED BY: JM Crawford & Associates Consulting Engineers

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

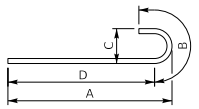


PLAN

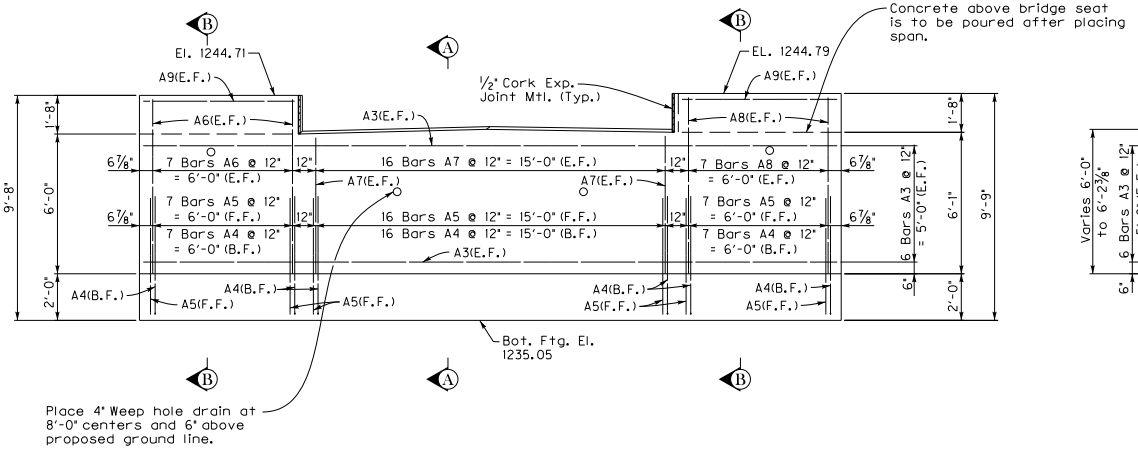
BILL OF REINFORCEMENT

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

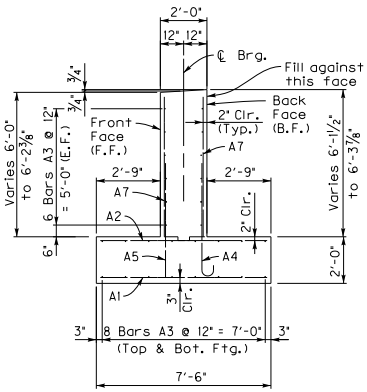


TYPE 4

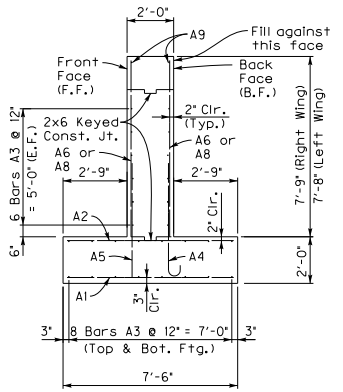


ELEVATION

(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	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

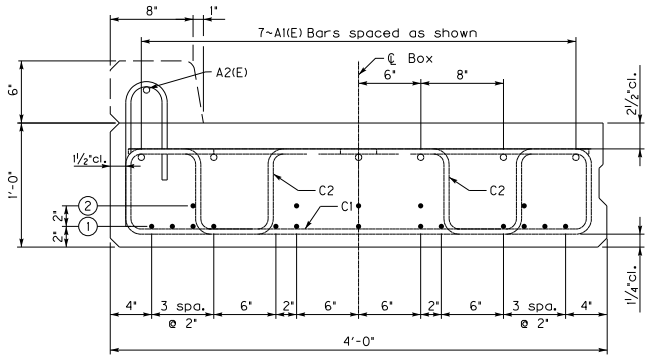
REVISION	DATE

PREPARED BY
JM Crawford & Associates
Consulting Engineers

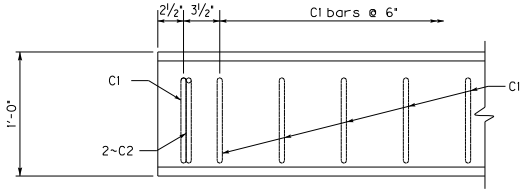
DATE: 10/14/2022	CHECKED BY
DESIGNED BY: Lee Carlisle	Stuart McIntosh
DETAILED BY: Greg Crank	Lee Carlisle

BOX BEAM GENERAL NOTES
CROSSING: THORNTON CREEK

ROUTE	ITEM NO.	COUNTY OF
CR 1835	12-0183.OTH	LETCHER
	SHEET NO.	DRAWING NUMBER
	S7	28595

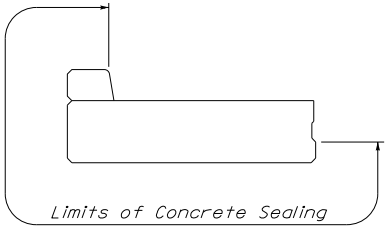


B12 BEAM

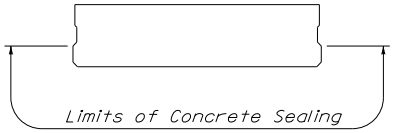


B12 ELEVATION OF O° SKEW

(Refer to BDP-003, for skewed details)

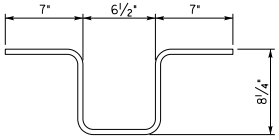


EXTERIOR BEAM



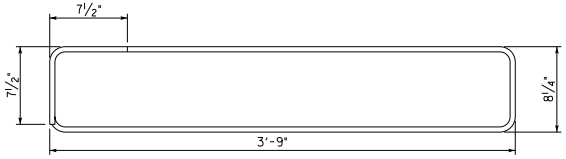
INTERIOR BEAM

CONCRETE SEALING DETAIL



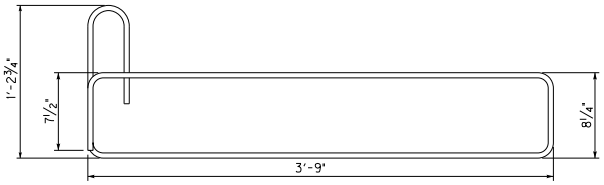
C2(e) Bar

#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

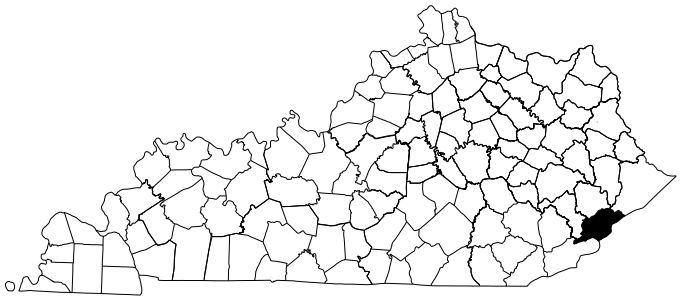
CROSSING: THORNTON CREEK

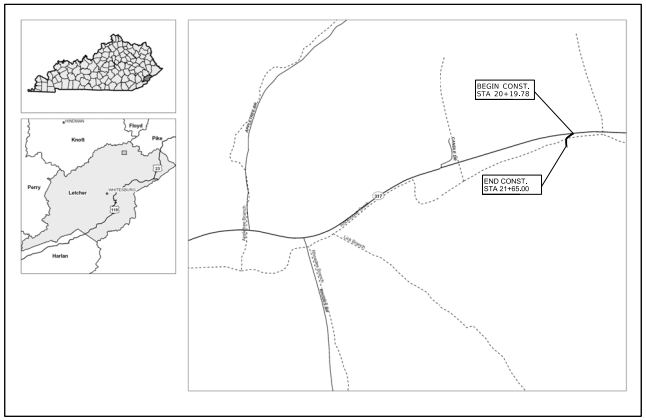
ROUTE	ITEM NO.	COUNTY OF
CR 1835	12-0183.OTH	LETCHER
	SHEET NO. S8	DRAWING NUMBER 28595

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

R001	LAYOUT SHEET
R002	TYPICAL SECTIONS
R002A	GENERAL SUMMARY
R002B	GENERAL NOTES AND SPECIAL NOTES
R003	LEGEND AND UTILITY OWNERS SHEET
R004 - R005	PLAN AND PROFILE SHEETS
R006	MOT NOTES AND PHASING SHEET
R007 - R008	DIVERSION PLAN AND PROFILE SHEETS
R009	EROSION CONTROL NOTES
R010	EROSION CONTROL PLAN SHEET
R011	COORDINATE CONTROL SHEET
R012	SITUATION SURVEY SHEET

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

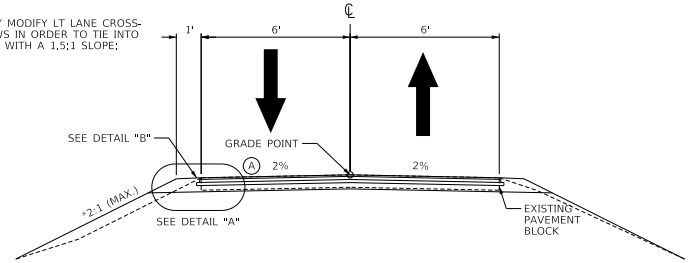
RECOMMENDED BY: Carl van Zee 11/4/2022
PROJECT MANAGER DATE:

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%



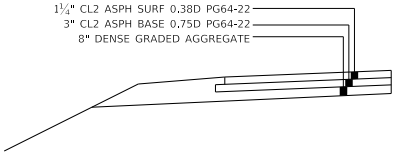
JIM MCCRAY RD FULL DEPTH

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.

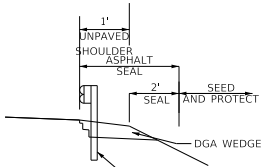
STEEP SLOPE NOTE

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.



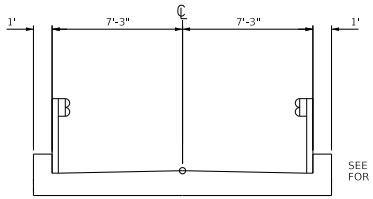
DETAIL "A" - JIM MCCRAY RD PAVEMENT DESIGN

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



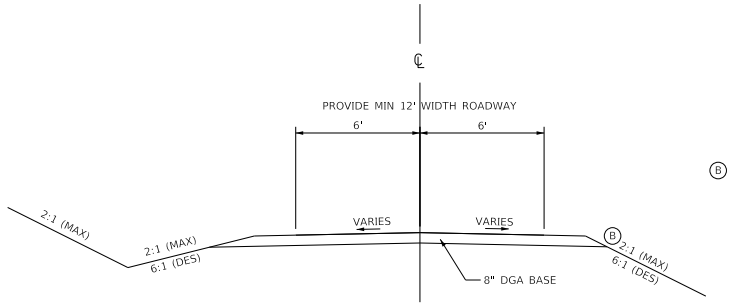
DETAIL "B" - GUARDRAIL INSTALLATION

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

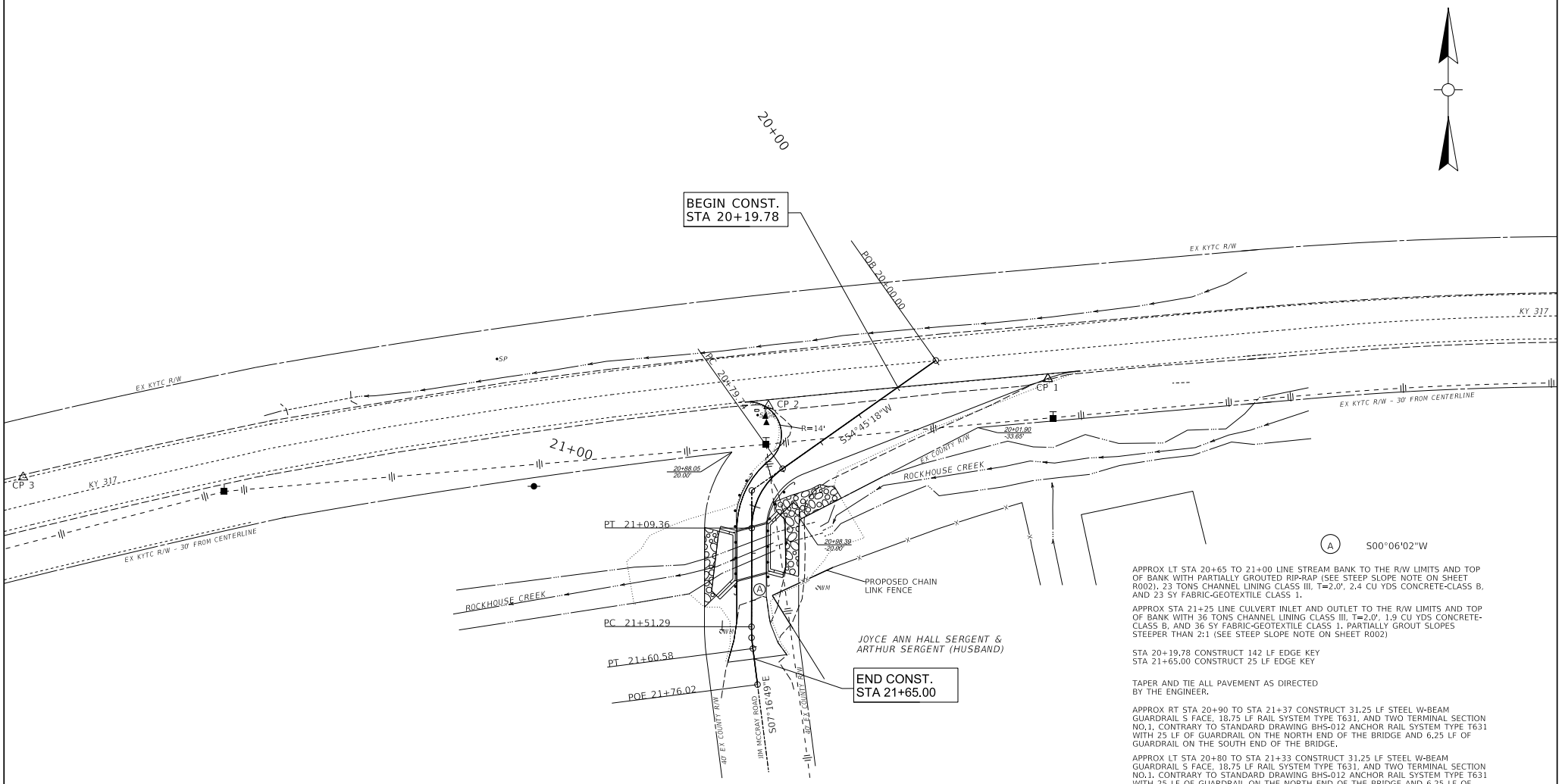
KY Power Co. - Electric
1400 E Main Street,
Hazard, KY 41701
Contact: Ellis McKnight
Mobile: (606) 436 1329
Email: ermcknight@aep.com

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.

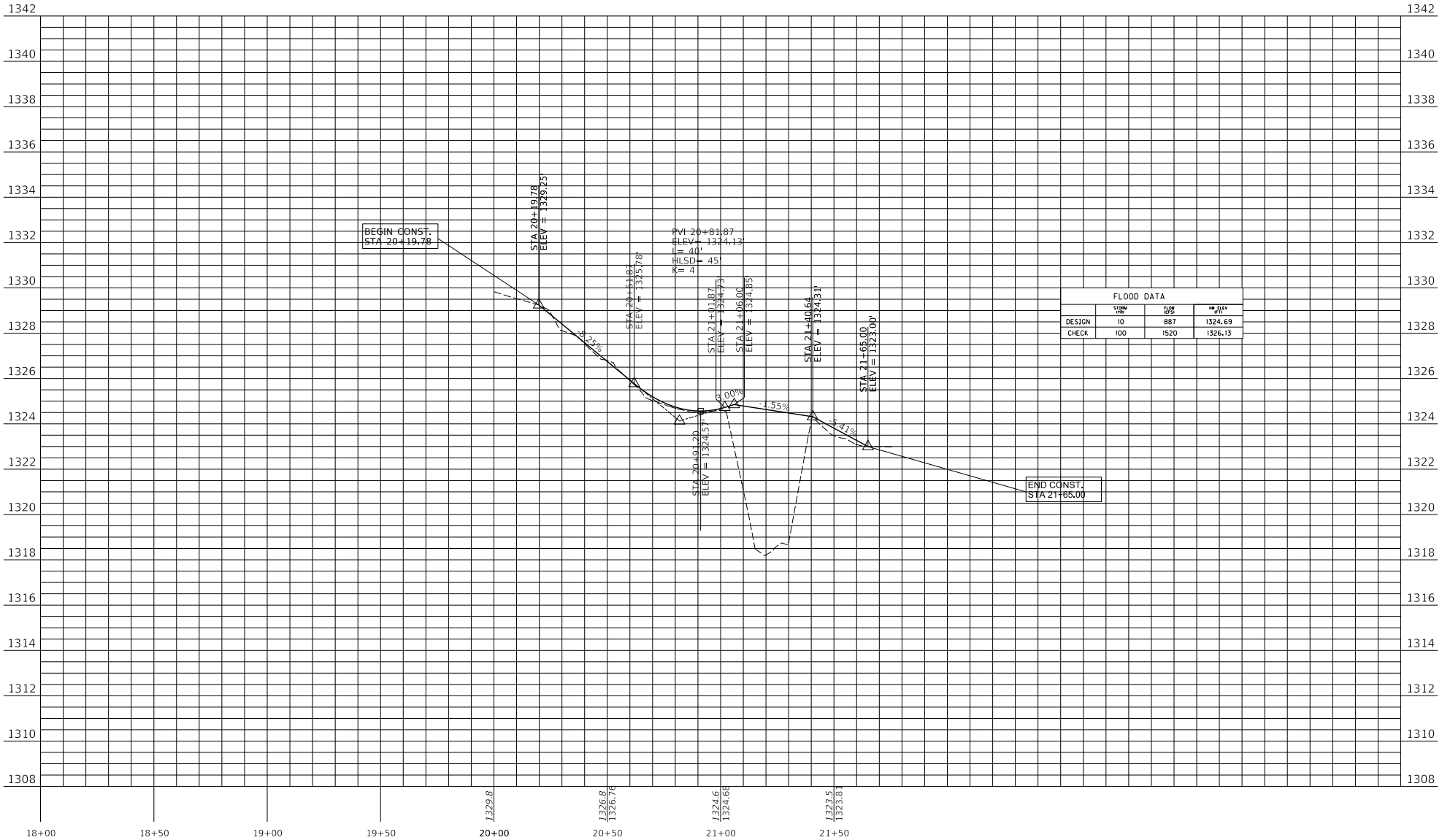
APPROX LT STA 20+80 TO STA 21+33 CONSTRUCT 31.25 LF STEEL W-BEAM GUARDRAIL S FACE, 18.75 LF RAIL SYSTEM TYPE T631, AND TWO TERMINAL SECTION NO.1, CONTRARY TO STANDARD DRAWING BHS-012 ANCHOR RAIL SYSTEM TYPE T631 WITH 25 LF OF GUARDRAIL ON THE NORTH END OF THE BRIDGE AND 6.25 LF OF GUARDRAIL ON THE SOUTH 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

FILE NAME: C:\PW_WORKING\LOCHNER-PW-01\DMS59046\12_0305_OTH_JIM_MCCRAY_PR_SHEET.DGN

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.

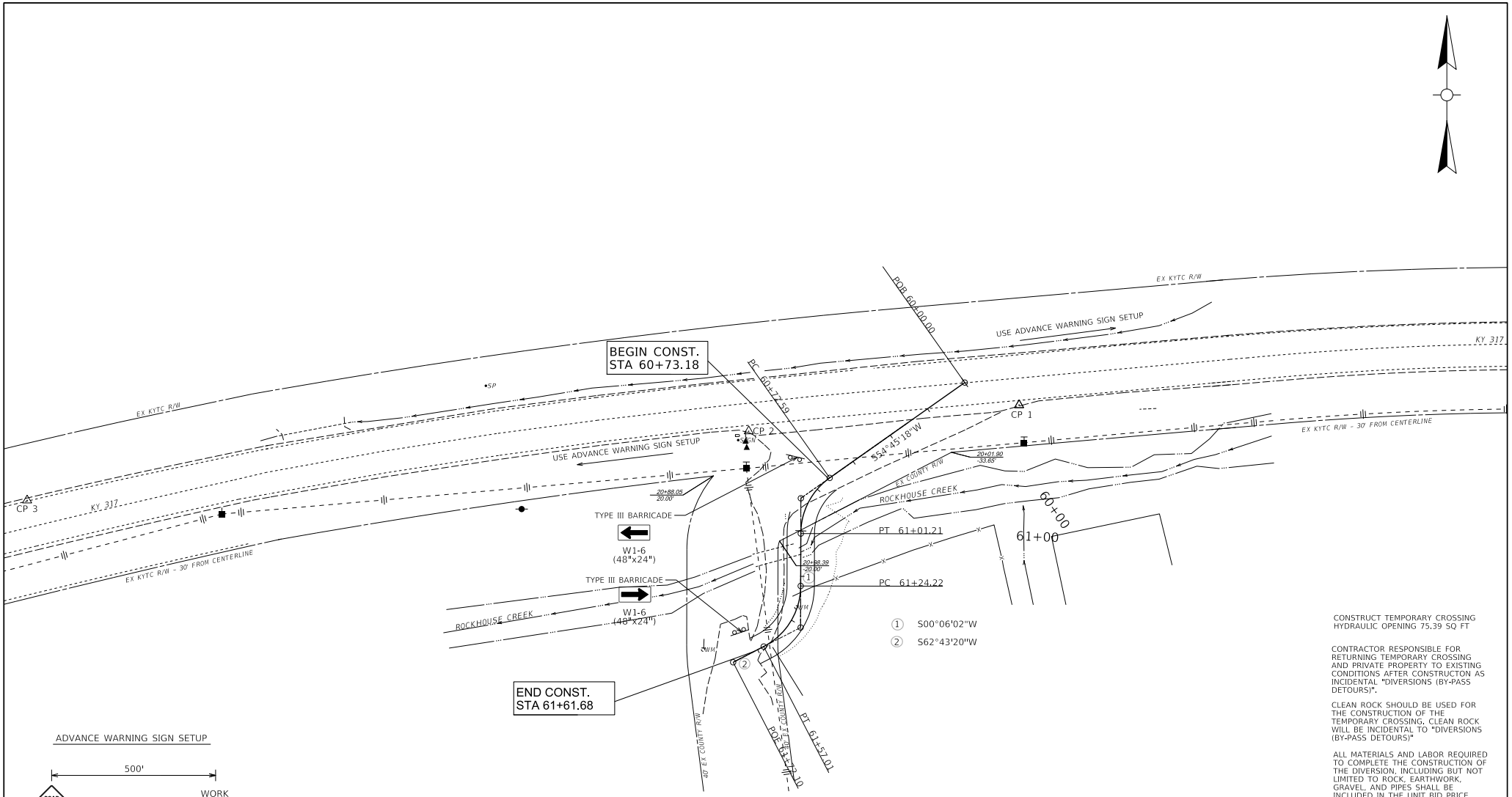
PHASE 3

- 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

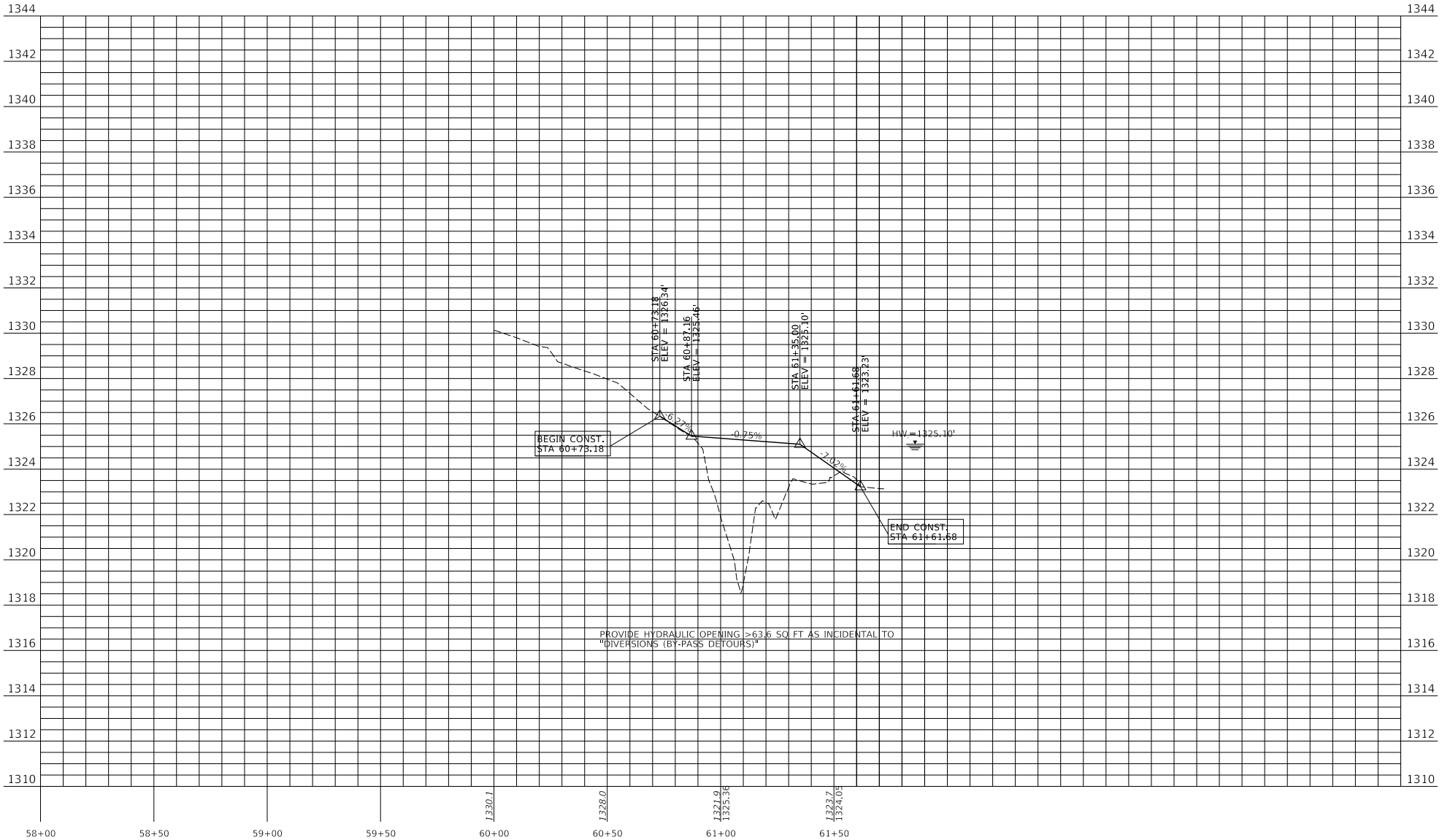
CONTRACTOR RESPONSIBLE FOR RETURNING TEMPORARY CROSSING AND PRIVATE PROPERTY TO EXISTING CONDITIONS AFTER CONSTRUCTON AS INCIDENTAL "DIVERSIONS (BY-PASS DETOURS)".

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
USER: TWOODYARD
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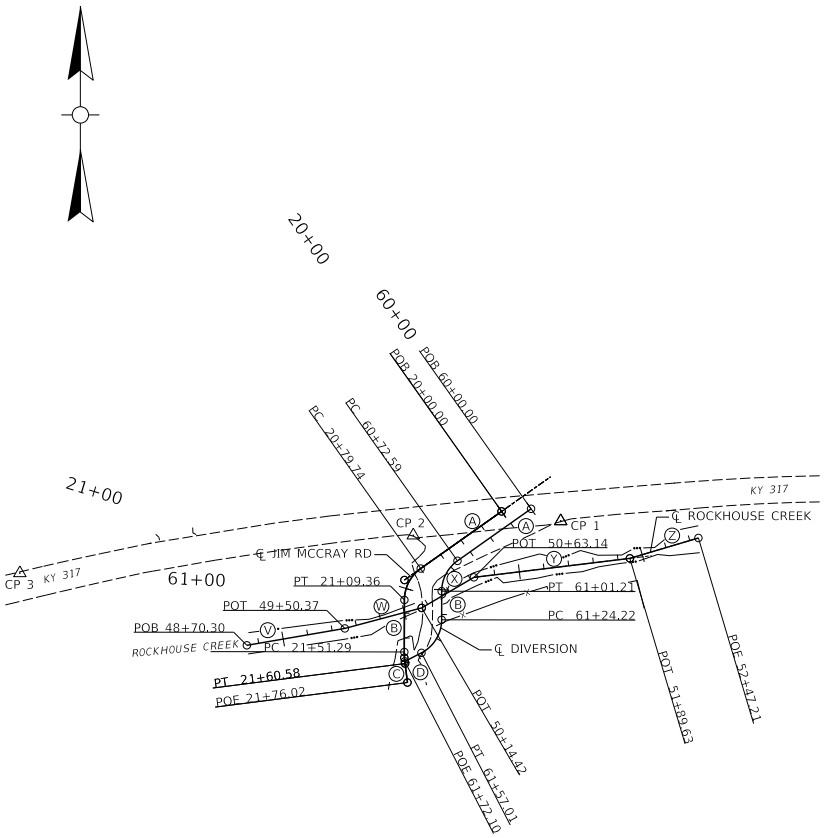


Ⓐ S54°45'18"W
Ⓑ S00°06'02"W
Ⓒ S07°16'49"E
Ⓓ S62°43'20"W
Ⓥ N80°12'28"E
Ⓦ N75°04'25"E
Ⓧ N59°40'13"E
Ⓨ N83°02'41"E
Ⓩ N73°26'14"E

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

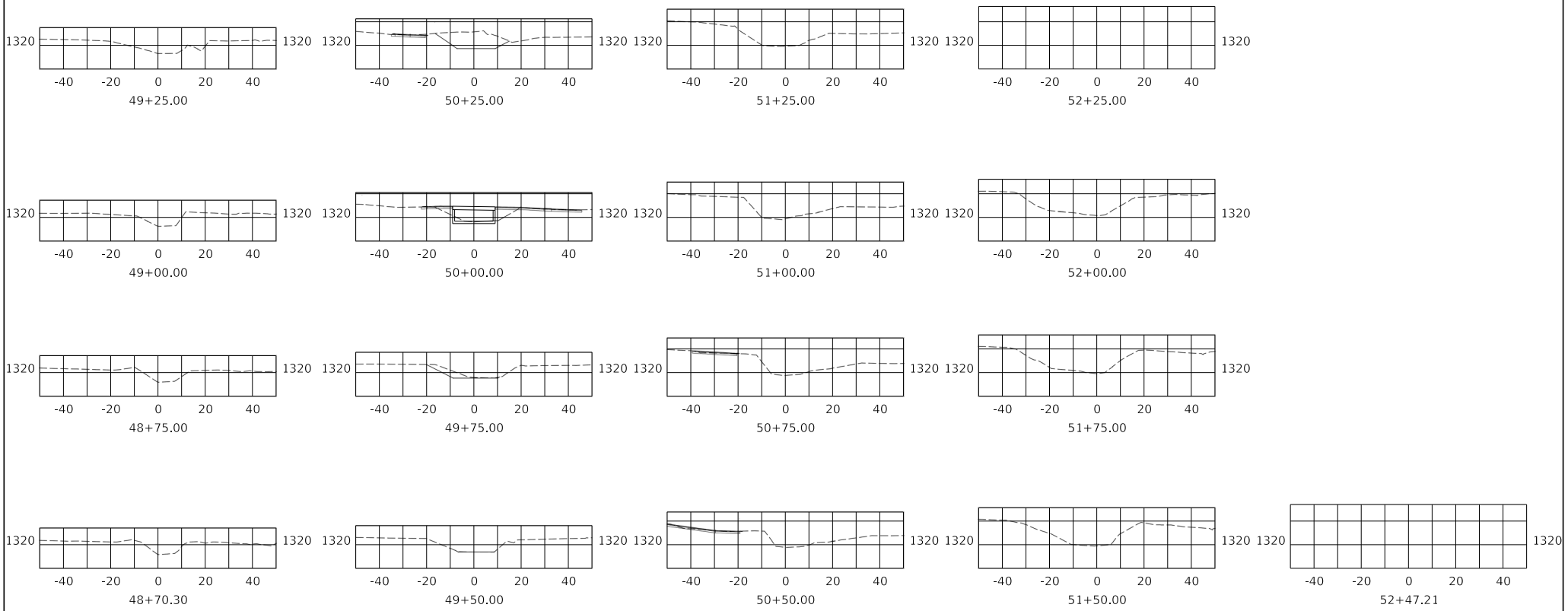
HORIZONTAL SCALE
SCALE: 1" = 50'

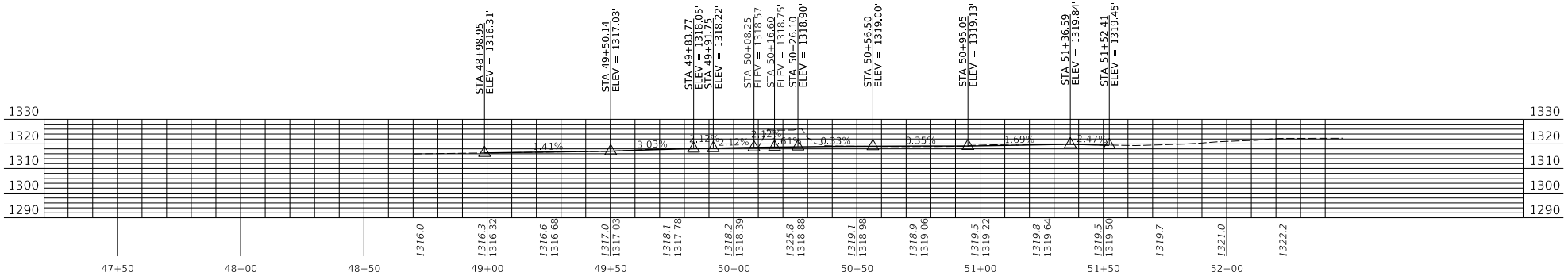
0' 50' 100' 200'

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

Sheet No.	Description
S1	Title Sheet
S2	Culvert Layout
S3	Barrel Details 1
S4	Barrel Details 2
S5	Wingwalls 1, 2, & 4
S6	Wingwalls 3
S7	Subsurface Data
S8	Bill of Reinforcement
S9	Construction Elevations

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

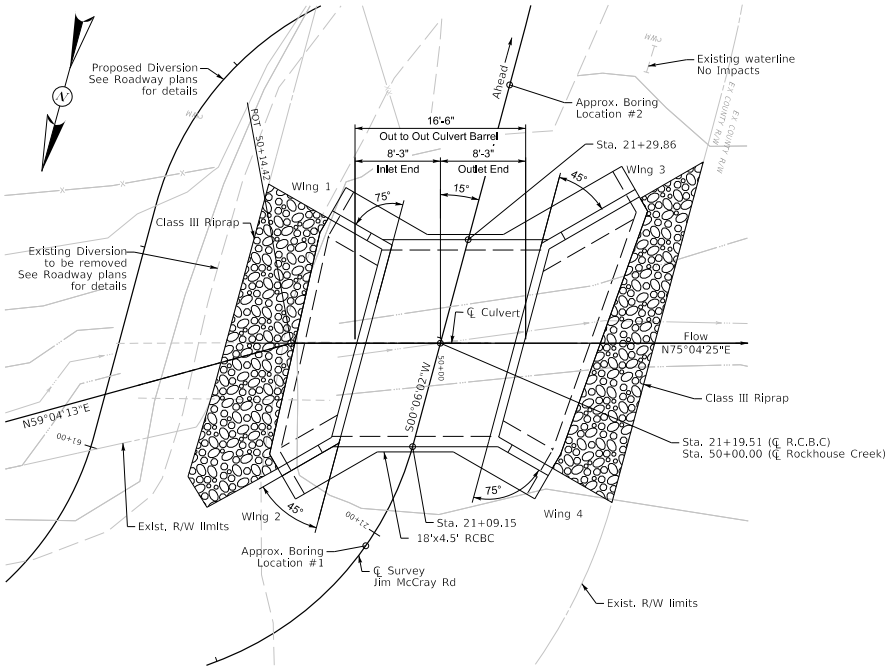
PREPARED BY:
Michael Baker INTERNATIONAL
1650 Lyndon Farm Court
Louisville, KY
Phone: (502)-339-3557
MBAKERINTL.COM

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

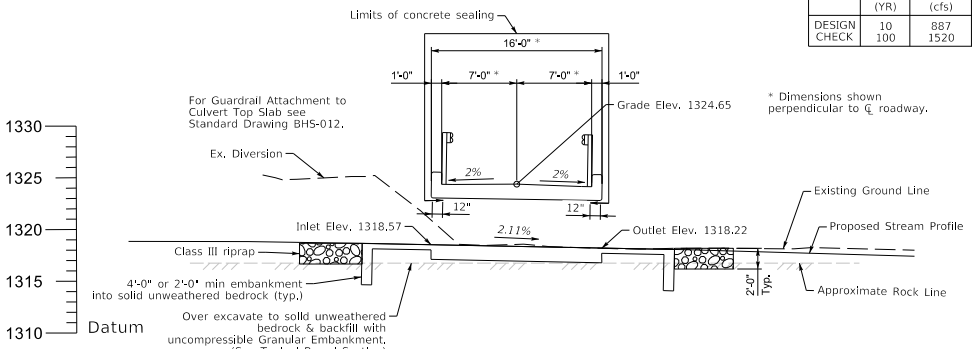


PLAN

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
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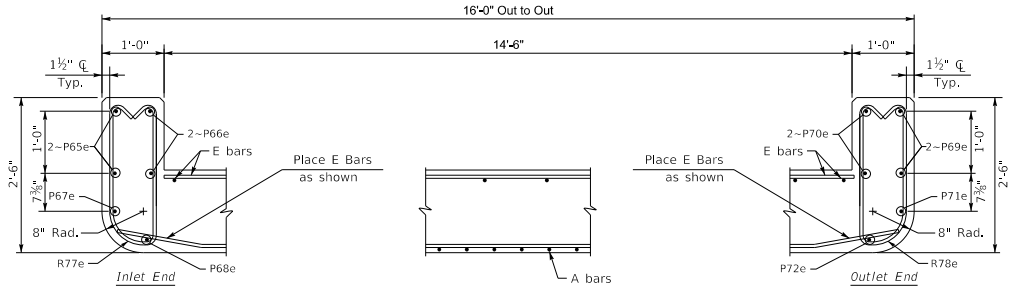
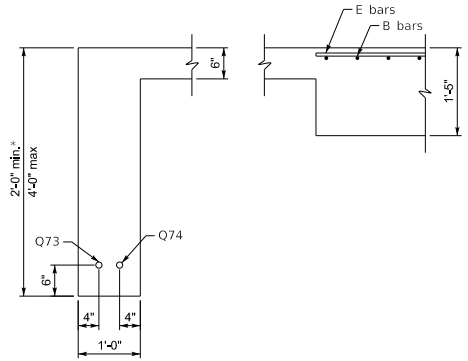


LEFT PARAPET

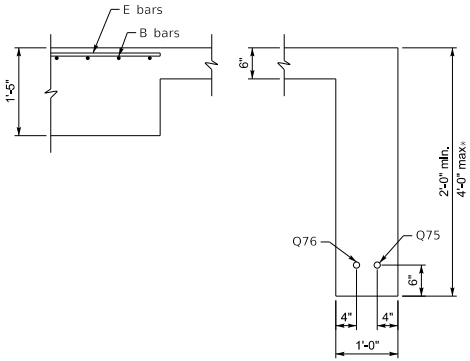
SECTION ON ℄

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

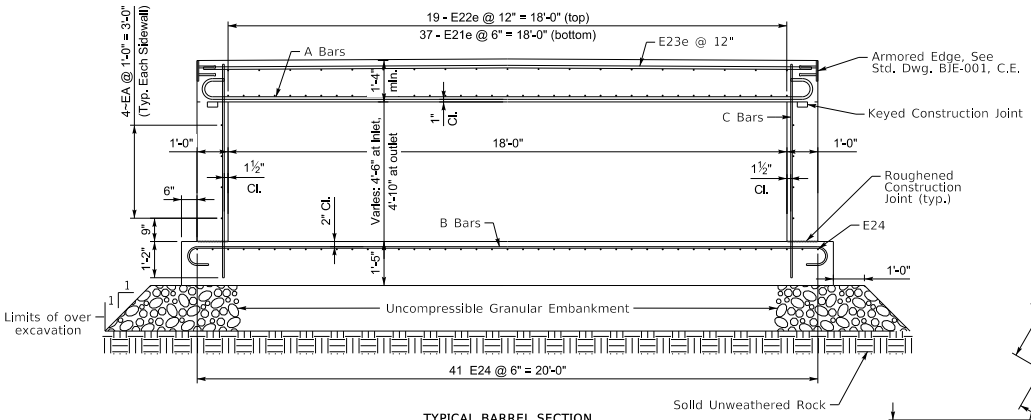
PREPARED BY:
Michael Baker INTERNATIONAL
1650 Lyndon Farm Court
Louisville, KY
Phone: (502)-339-3557
MBAKERINTL.COM

DATE:	CHECKED BY
DESIGNED BY: S. Daghash	G. Shen
DETAILED BY: T. Blanchard	G. Shen

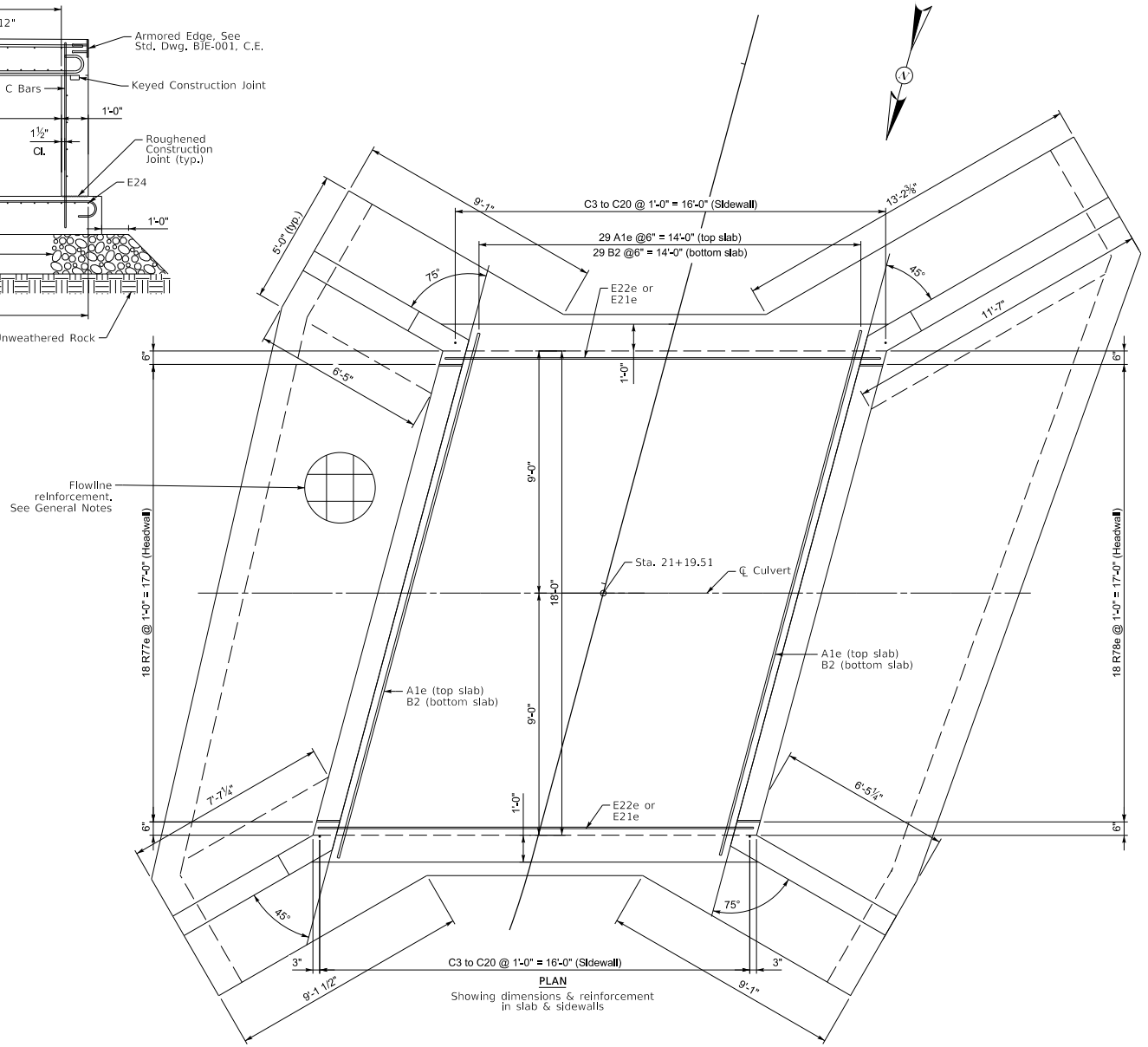
BARREL DETAILS 1

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
DESIGNED BY: S. Daghash	G. Shen
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

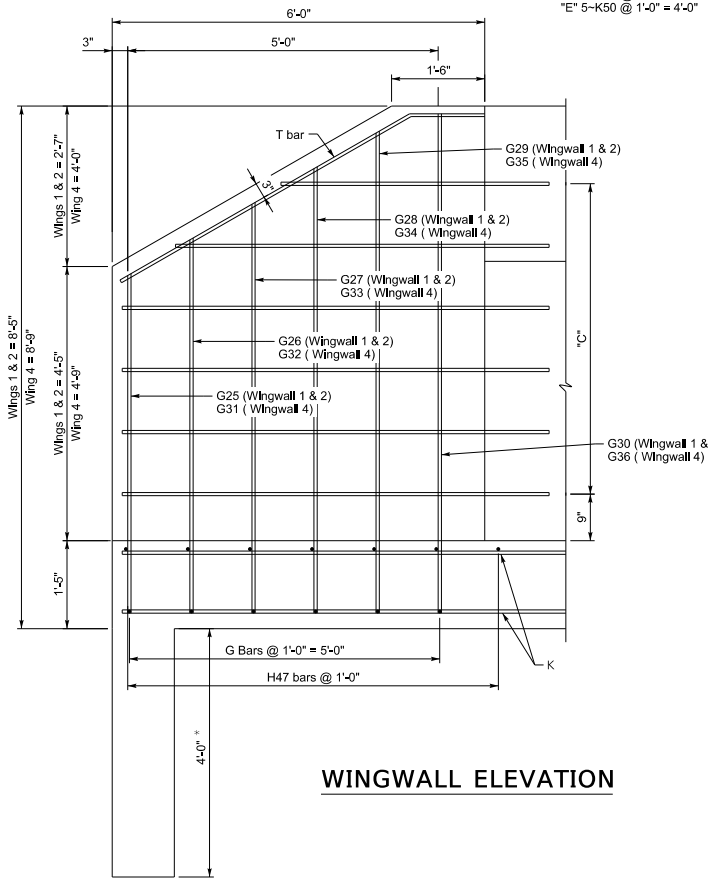
NOTES:

1. Wingwall 1, 2, & 4 Reinforcing:
"A" 7~H47 @ 1'-0" = 6'-0" top of footing
"B" 6~H48 @ 1'-0" = 5'-0"

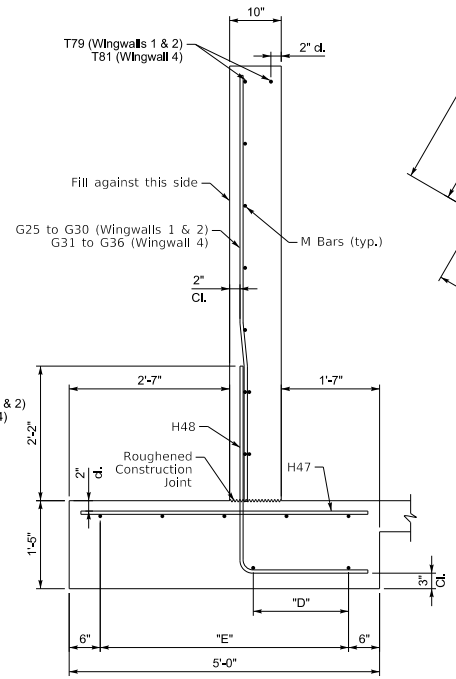
2. Wingwall 1 Reinforcing:
"C" 4~M52, 1~M53, 1~M54 @ 1'-0" = 5'-0"
"D" 2~K49 @ 1'-0" Bottom of Footing
"E" 5~K49 @ 1'-0" = 4'-0"

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"

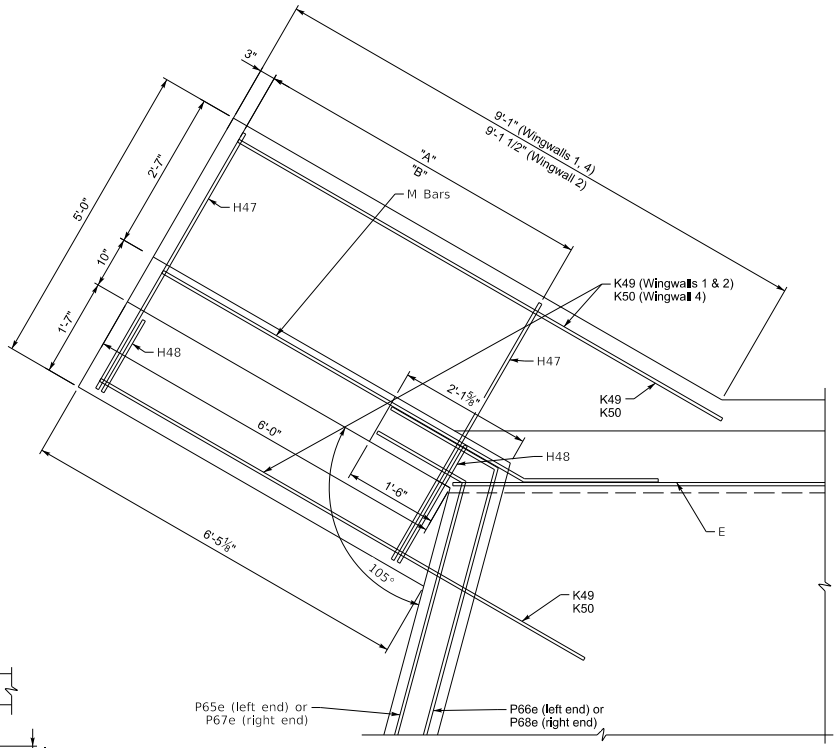
4. Wingwall 4 Reinforcing:
"C" 4~M62, 1~M63, 1~M64 @ 1'-0" = 5'-0"
"D" 2~K50 @ 1'-0" Bottom of Footing
"E" 5~K50 @ 1'-0" = 4'-0"



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

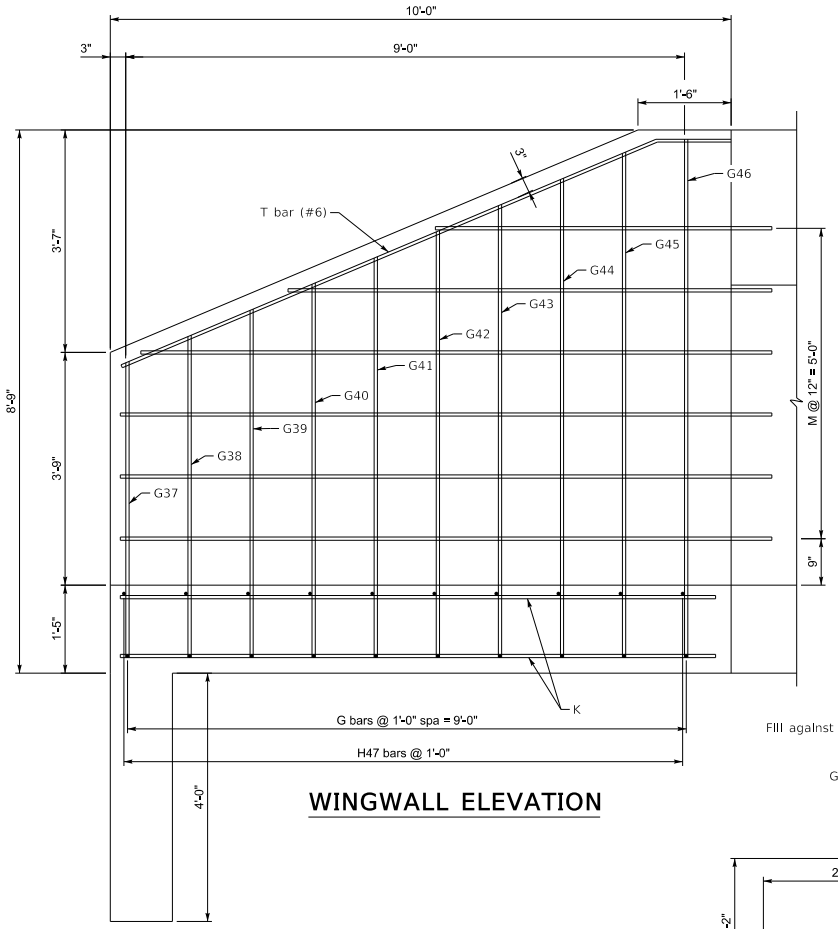
PREPARED BY: Michael Baker INTERNATIONAL
1650 Lyndon Farm Court
Louisville, KY
Phone: (502)-339-3557
MBAKERINTL.COM

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

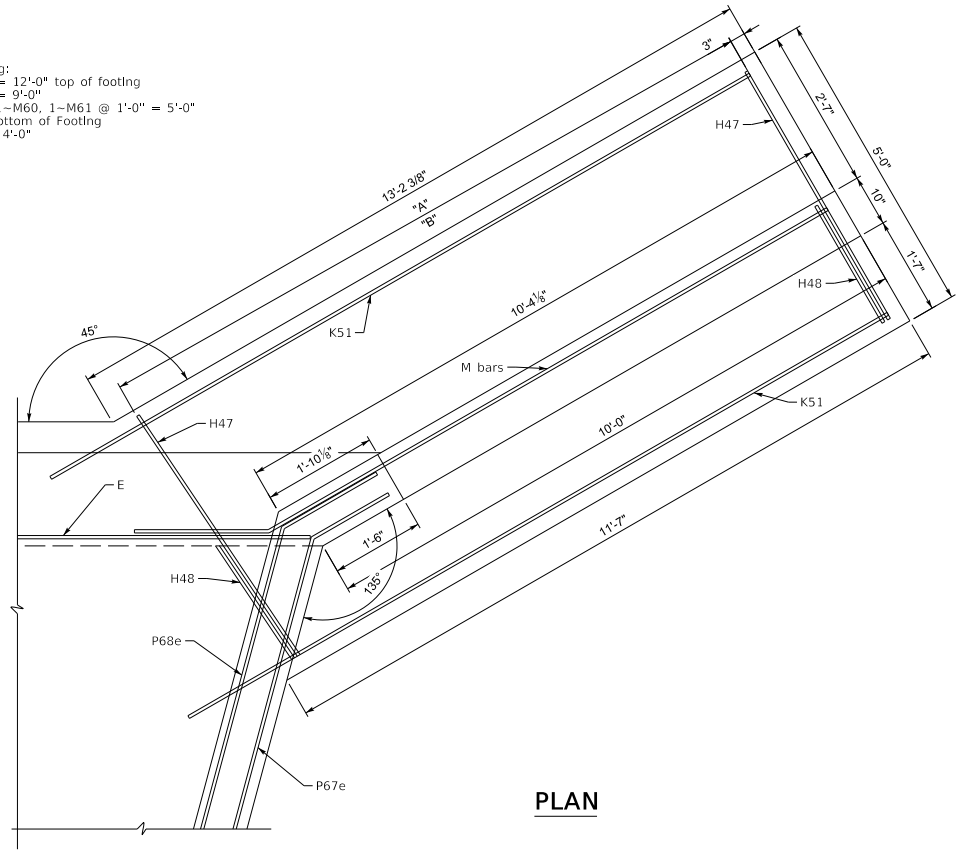


WINGWALL ELEVATION

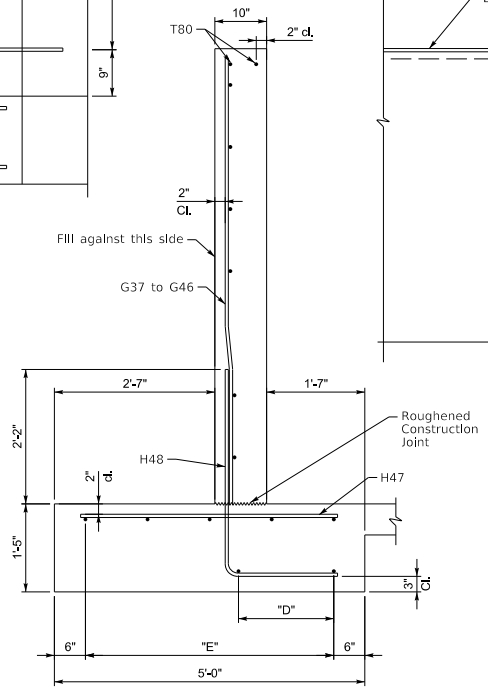
* Terminate at solid rock (2'-0" min. embedment)

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

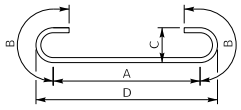


WING SECTION

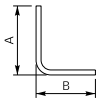
COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION	DATE	PREPARED BY: Michael Baker INTERNATIONAL 1650 Lyndon Farm Court Louisville, KY Phone: (502)-339-3557 MBAKERINTL.COM	DATE:	CHECKED BY	*WINGWALL 3* CROSSING ROCKHOUSE CREEK	ROUTE JIM MCCRAY	ITEM NO. 12-0305.OTH SHEET NO. S6	COUNTY OF LETCHER 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

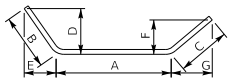
BILL OF REINFORCEMENT



TYPE 1



TYPE 5



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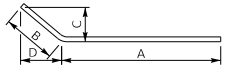
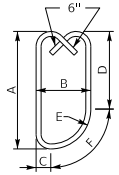
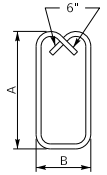


TYPE 8



TYPE 11s



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

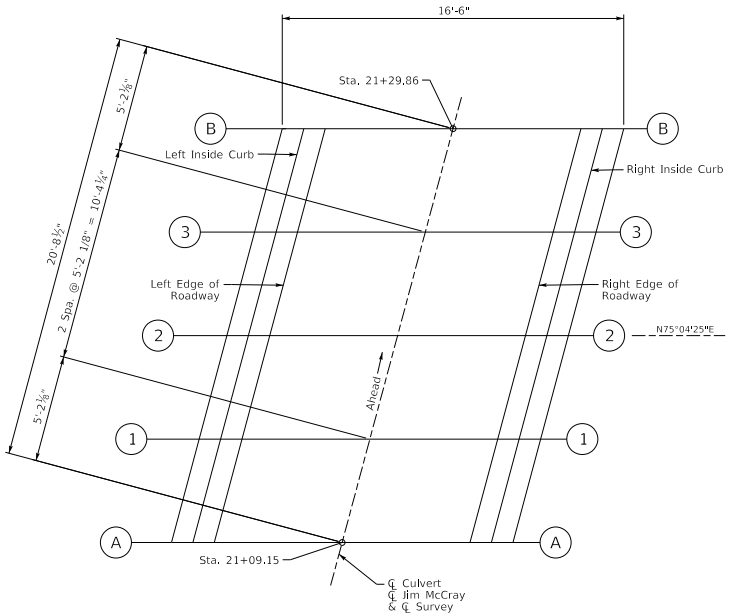
REVISION	DATE

PREPARED BY: Michael Baker INTERNATIONAL
1650 Lyndon Farm Court
Louisville, KY
Phone: (502)-339-3557
MBAKERINTL.COM

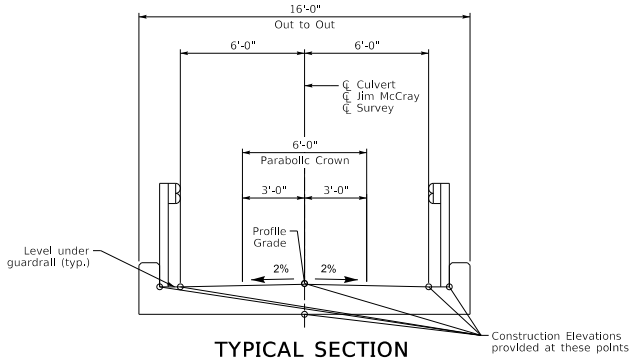
DATE:	CHECKED BY
DESIGNED BY: S. Daghash	G. Shen
DETAILED BY: T. Blanchard	G. Shen

SUBSURFACE DATA
CROSSING: ROCKHOUSE CREEK

ROUTE	ITEM NO.	COUNTY OF
JIM MCCRAY	12-0305.OTH	LETCHER
	SHEET NO. S8	DRAWING NUMBER 28622

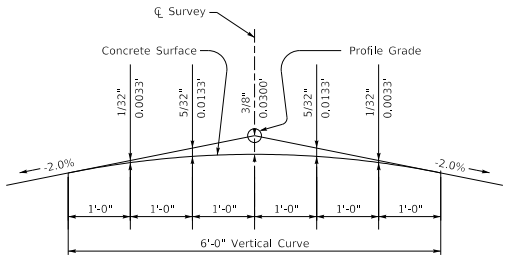


GRID LAYOUT



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

REVISION	DATE

PREPARED BY:
Michael Baker INTERNATIONAL
1650 Lyndon Farm Court
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Phone: (502)-339-3557
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DATE:	CHECKED BY
DESIGNED BY: S. Daghash	G. Shen
DETAILED BY: T. Blanchard	G. Shen

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