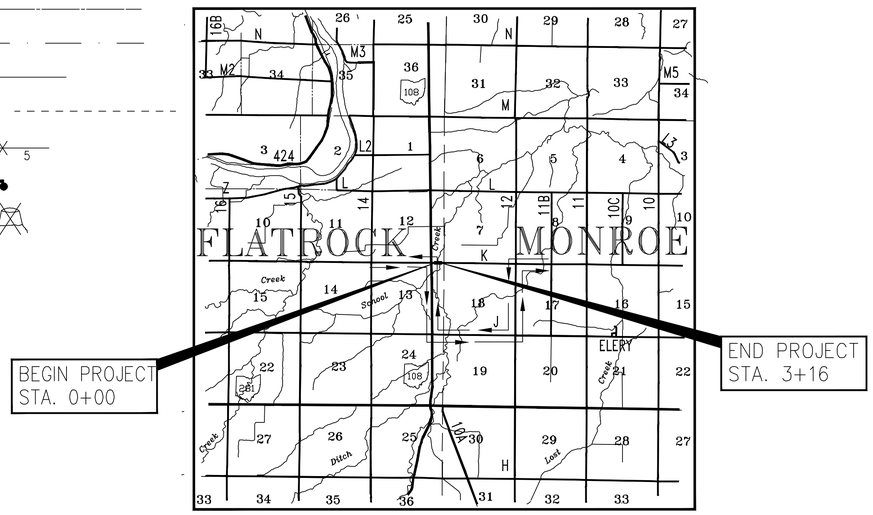
HENRY COUNTY
DEPARTMENT of HIGHWAYS

HEN-K-5.90

STATE of OHIO



LOCATION MAP

1 1/2 0 1 2 3 4

SCALE IN MILES

CONVENTIONAL SIGNS

TOWNSHIP LINE
SECTION LINE
CENTER LINE
PROPERTY LINE — PL —
RAILROAD
FENCE LINE (EXISTING)
GUARDRAIL (EXISTING)
TREES (EX.) – STUMPS (EX.) – (TO BE REMOVED)
UTILITY POLES: TELEPHONE – POWER – LIGHT –

COUNTY LINE
CORPORATION LIMITS
CONSTRUCTION LIMITS
RIGHT of WAY — R/W —
UNDERGROUND UTILITIES
(PROPOSED) — L1 — 5
(PROPOSED)

DETOUR
PORTION TO BE IMPROVED
STATE & U.S. ROUTES — SR US
COUNTY & TOWNSHIP ROADS — K

INDEX of SHEETS

SCALES

PLAN — 0′ 10′ 20′ 30′ 40′ 50′
PROFILE — HORIZONTAL 0′ 20′ VERTICAL 0′ 5′
CROSS SECTION – HORIZONTAL 0′ 5′ VERTICAL 0′ 5′

2019 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE OHIO DEPARTMENT OF TRANSPORTATION (INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS) LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS, DECLARE THAT THIS IMPROVEMENT WILL REQUIRE TEMPORARY CLOSURE OF THE HIGHWAY/ROADWAY, AND AGREE THAT THE NECESSARY LIGHTS & SIGNS SHALL BE MAINTAINED.

APPROVED _____
DATE _____ HENRY COUNTY ENGINEER

APPROVED _____
DATE _____ HENRY COUNTY COMMISSIONER

APPROVED _____
DATE _____ HENRY COUNTY COMMISSIONER

APPROVED _____
DATE _____ HENRY COUNTY COMMISSIONER

UNDERGROUND UTILITIES
CALL BEFORE YOU DIG
2 FULL WORKING DAYS (48 HOURS) PRIOR TO DIGGING, CALL 800–362–2764 OR 811 TO OBTAIN A REFERENCE NUMBER.
OHIO UTILITY PROTECTION SERVICE
NON–MEMBERS MUST BE CALLED DIRECTLY
(OHIO REVISED CODE SEC. 3781.25)

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS	
BP–3.1	7–18–14
DBR–2–73	7–19–02
DM–1.1	1–18–13
DS–1–92	7–18–03
GR.–1.1	7–16–04
GR.–2.1	1–16–04
GR.–2.2	4–18–03
MT–101.60	7–19–13
PSBD–2–07	10–19–07
PSBDD–2–07	10–19–07

SUPPLEMENTAL SPECIFICATIONS	

PLANS PREPARED BY
HENRY COUNTY ENGINEER'S OFFICE
NAPOLEON, OHIO

DRAWING CREATED 03/7/2022

DEPARTMENT of HIGHWAYS
HENRY COUNTY, OHIO

TITLE SHEET

BRIDGE NO. HEN–K–5.90
OVER SCHOOL CREEK
FLATROCK TWP.

Designed:	Drawn:	Checked:	File Name:
HEN. CO. ENG.	JTH	TJS	Z:\BRIDGES–CULVERTS\BRIDGES–CULVERTS\BRIDGES\K–5.90\2022\DRAWINGS\TITLESHEET

GENERAL NOTES

ELEVATION DATUM
All elevations are based on NAVD 988 DATUM.

EROSION CONTROL
ITEM 601 is provided in the plans for erosion control. Rock of a stable nature will not be removed in order to place this item. The Engineer shall check and non-perform quantities, or adjust locations & quantities for this item, where indicated by field conditions during construction.

UTILITY OWNERSHIP
The following utilities are located within the work limits of this project:

Telephone: CENTURYLINK
375 East Riverview
Napoleon, Ohio 43545
(419) 599-4024

Power: TOLEDO EDISON
6099 Angola Road
Holland, Ohio 43528
(419) 249-5900
(419) 249-4170

ITEM 611
Payment for manufactured end sections, coupling bands, precast wing walls, and footings shall be included in the unit price bid for each conduit under this item.

Where plans provide for proposed conduit to be connected to or to cross over/under an existing sewer, it shall be the responsibility of the Contractor to locate the existing pipe both as to line and grade before laying the proposed conduit.

Payment for all operations described above shall be included in the unit price bid for the pertinent 611 conduit items.

Immediately after placement of any conduits, the Contractor shall construct the end treatments required by the plans at both the inlet and outlet ends. This shall include headwalls, wing walls, end sections, concrete riprap, rock channel protection, sodding, etc.

UNDERGROUND UTILITIES
The locations of underground utilities shown on the plans are as obtained from the owners of the utilities as required by Section 153.64 ORC.

SEEDING
Seeding & mulching to be performed by COUNTY FORCES.

ANIMAL GUARDS
Per Standard Construction Drawing DM-1.1, animal guards shall be provided at the outlet of all pipes to be constructed by the Contractor, except when they outlet into a drainage structure. Cost of the animal guards shall be included in the price bid for Item 611.

INGRESS & EGRESS to DRIVES
Ingress & Egress to all residential drives shall be maintained at all times during the construction of this project. Temporary closures of any drives shall require prior approval from the Engineer, and shall be kept as brief as possible.

CONTINGENCY QUANTITIES
Unless authorized by the Engineer, the Contractor shall not order any materials or perform any work listed in the GENERAL SUMMARY for items designated in the plan notes to be used "AS DIRECTED BY ENGINEER." The actual work locations, and quantities used at the Engineers discretion, shall be made a matter of record by incorporation into the final Change Order governing completion of this project.

LOCATION of GUARDRAILS
The location of guardrail runs, as shown in these plans, are subject to adjustment prior to final acceptance. The Engineer must be satisfied all installations will provide maximum protection for traffic.

DETOURS
The Contractor shall provide, erect, maintain, and remove the signs and sign supports for the required project detour, as indicated on Sheet 1.

Signs & supports must conform to details shown in the OHIO MANUAL of UNIFORM TRAFFIC CONTROL DEVICES.

Payment for this shall be included in the lump sum price bid for ITEM 614, MAINTAINING TRAFFIC.

"ROAD CLOSED" SIGNS & LIGHTS @ ADJACENT INTERSECTIONS
In addition to the general requirements of ITEM 614, the Contractor shall perform the following:

Provide, erect, maintain, and remove standard 48"X30" "ROAD CLOSED" signs, sign supports, and lights at the following locations:
1. Intersection of State Route 108 and Township Road K
2. Intersection of Township Road K and County Road 12

Lights & sign supports for "ROAD CLOSED" signs must conform to details shown in the OHIO MANUAL of UNIFORM TRAFFIC CONTROL DEVICES.

Payment for this shall be included in the lump sum price bid for ITEM 614, MAINTAINING TRAFFIC.

BRIDGE APPEARANCE
The Contractor shall be responsible for removing all foreign material (waterproof primer, asphaltic materials, etc.) from fascia beams and wing walls as soon as practical.

REMOVAL & DISPOSAL of EXISTING BRIDGE & WEARING SURFACE
The existing bridge shall be removed. The Contractor may optionally use the removed concrete & stone as embankment protection material (as directed by the Engineer), providing the material meets the gradation requirements in Section 601.08.

Any protruding steel reinforcement must be burned off at the surface of the concrete.

Unusable masonry & other debris shall be disposed of per Section 202.02.

*NOTE: Prior to bridge removal, the wearing course over the bridge limits shall be removed separately, and will be a separate Pay Item. Other asphalt removal will be included under Item 203, EXCAVATION & DISPOSED of PROPERLY.

BRIDGE DESIGN DATA
Design Loading: HL-93 (LRFD)

All abutment items shall be placed to account for variation in quantities.

Unclassified excavation shall apply to all excavation shown on the plans between stations 1+03.3 and 1+90.1, not accounted for in the roadway cross sections.

ITEM 704 - SOLID RED CONCRETE MASONRY UNITS
This item consists of furnishing and placing Solid Concrete Masonry Units (CMU), which are colored Red and meet ASTM C90 with modifications to provide a minimum compressive strength of 4000PSI & a maximum absorption rate of 6.5%.

Begin abutment construction by placing the first course of Solid Red CMU blocks atop & in full contact with the Concrete Footing Foundation. CMU blocks are to be placed side-by-side for the full length of each wall course. The first row of CMU blocks must be level in both directions to ensure proper alignment for the balance of the wall. Continue placing Solid Red CMU blocks for the Abutment wall, and seam blocks on the Wing Walls, for the first (5) courses. Wall plumbness should be checked every 3 layers minimum, with corrections for any deviation greater than ¼". Reposition any misaligned, improperly seated, or unleveled CMU blocks. Assure the top of all CMU blocks are free of debris and/or loose materials prior to placing the next layer of Geotextile Fabric and CMU blocks.

*See Sheets 3 and 4 for further details.

ITEM 704 - SPLIT-FACE CONCRETE MASONRY UNITS
This item consists of furnishing and placing Split-Face Concrete Masonry Units (CMU), which meet ASTM C90 with modifications to provide a minimum compressive strength of 4000PSI & a maximum absorption rate of 6.5%.

CMU blocks are to be placed side-by-side for the full length of each wall course after the initial (5) courses,
and for the Wing Walls. Wall plumbness should be checked every 3 layers minimum, with corrections for any deviation greater than ¼". Reposition any misaligned, improperly seated, or unleveled CMU blocks. Assure the top of all CMU blocks are free of debris and/or loose materials prior to placing the next layer of Geotextile Fabric and CMU blocks.

*See Sheets 3 and 4 for further details.

SPECIAL ITEM - GEOTEXTILE FABRIC (HIGH-STRENGTH WOVEN POLYPROPYLENE)
This item shall include furnishing & placing a Geosynthetic reinforcement, which has a Wide Width Tensile Strength of 4800 lbs/ft in both directions, as per ASTM D-4595.

Placement of this fabric shall be as shown in ABUTMENT DETAILS & FABRIC LAYOUT Sheet 3. Note that length, width, and orientation may vary, depending on the course. The fabric is to extend between the layers of CMU blocks, providing a friction connection. When properly placed, the fabric should cover most/all of the top of the CMU blocks, and be pulled taut to remove wrinkles. No lapping of fabric is permitted along the face. Where lapped elsewhere, a ¼" layer of stone shall be spread between pieces of fabric.

To limit construction damage to the Geotextile fabric, construction equipment shall not drive directly on the fabric. A 6" layer of aggregate atop the fabric is sufficient to prevent damage.

ITEM 203 - GRANULAR EMBANKMENT (#89 STONE)
This item shall include furnishing & placement of Course Aggregate conforming to #89 gradation. The stone backfill shall be placed behind each layer of CMU blocks, in a lift thickness not to exceed the CMU block height, and shall extend back from the CMU blocks filling in above the wrinkle-free Geotextile fabric.

The backfill shall then be completely compacted as per Section 203.07. This is generally achieved by:
1.) Rodding the aggregate fill behind each CMU block, approximately every foot, while exerting downward pressure on the CMU blocks to prevent lateral movement.
2.) Using a vibratory plate compactor (>4 passes) directly behind the CMU blocks, while exerting downward pressure on the CMU blocks to prevent lateral movement.
3.) Larger vibratory compactors may be used for the balance of the area (more than 2' behind the CMU blocks). Multiple passes of a vibratory plate compactor can also achieve the proper density.

At the end of each day's operations, slope of the last lift of backfill away from the wall face, in order to direct any surface runoff away from the wall. Do not allow surface runoff from adjacent areas to enter the wall construction area.

ITEM 511 - CLASS C CONCRETE [TOP (3) COURSES of CMUs, VERTICAL SEAMS, CAPS]
This item includes furnishing & placement of Class C Concrete, using #8 size Course Aggregate.

For connecting the top (3) courses of CMU blocks, the Geotextile fabric will need cut or burned to allow the cavities to be tied together to a depth of (3) full blocks. A piece of #4 rebar shall be placed in each cavity. This will likely require at least two seperate pours, as the cavities in the CMU blocks beneath the beams must be filled prior to placement of the beams, while the remaining cavities must be poured after beam placement. See details on Sheet 3 & Sheet 4.

For connecting CMU blocks on vertical seams, the fabric will need cut or burned, a bent #4 rebar "candy cane" will need placed on the CMU blocks, and concrete poured to fill the cavity. See REBAR INSTALLATION on Sheet 4.

A 3" thick cap to be placed atop the top course of CMU blocks, and shaped to shed water.

The cost of concrete, rebar placement, and fabric preparation shall be included in the unit price bid for Class C Concrete, as per plan.

ITEM 511 - CLASS C CONCRETE [CONCRETE FOOTING FOUNDATIONS]
This item includes furnishing & placement of Class C Concrete, using #8 size Course Aggregate, for Footing Foundations. See CONCRETE FOOTING DETAILS on Sheet 3.

Rebar shall be a separate pay item for STEEL in CONCRETE FOOTINGS.

ITEM SPECIAL - BEAM SEAT CONSTRUCTION
This item shall include all materials & labor not included in other pay items. This includes, but is not limited to, the foam plug needed to complete the Beam Seat. See ABUTMENT DETAILS & FABRIC LAYOUT on Sheet 3.

The fabric, aggregate, and CMU blocks used in creating the Beam Seats shall be covered in their respective items.

DRAWING CREATED 01/28/2022

DEPARTMENT of HIGHWAYS
HENRY COUNTY, OHIO

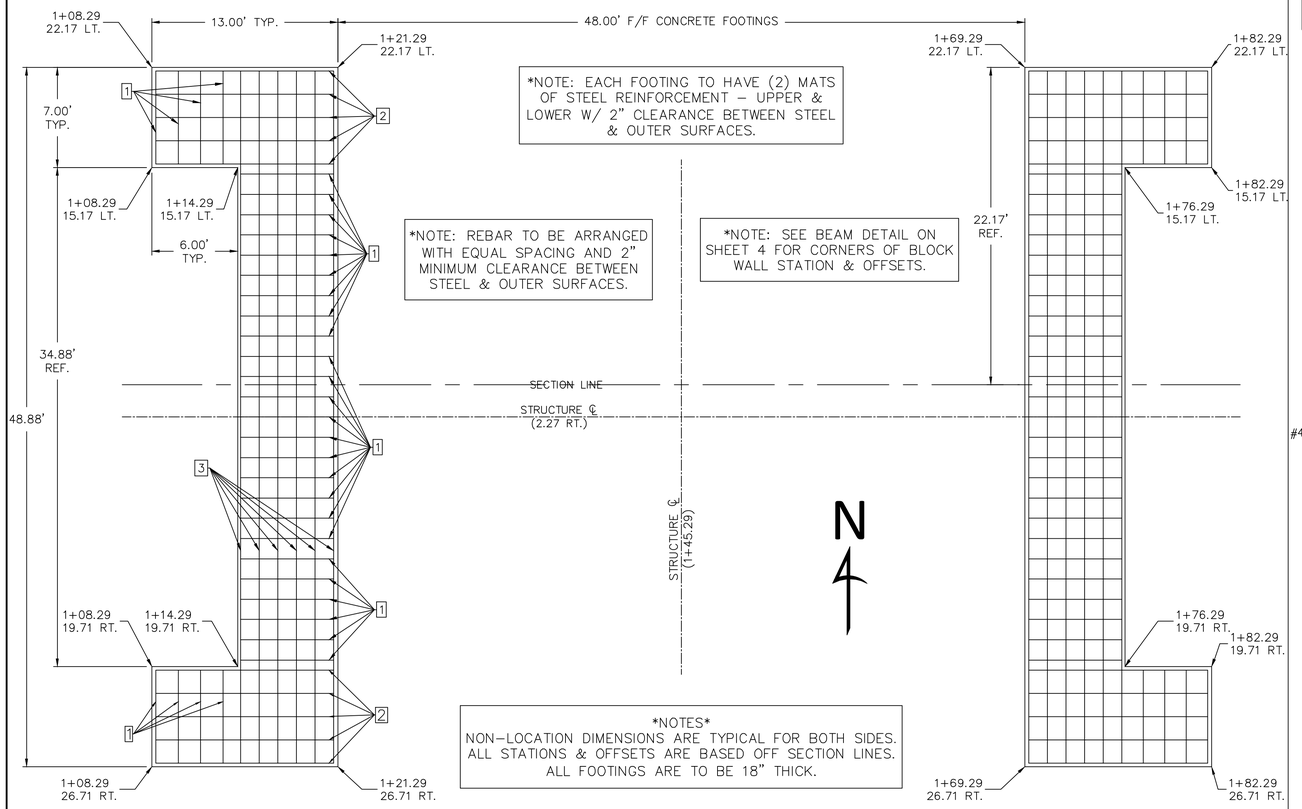
GENERAL NOTES

BRIDGE NO. HEN-K-5.90
OVER SCHOOL CREEK
FLATROCK TWP.

Designed:	Drawn:	Checked:	File Name:
HEN. CO. ENG.	JTH	TJS	Z:\BRIDGES-CULVERTS\BRIDGES-CULVERTS\BRIDGES\K-5.90\2022\DRAWINGS\GENERAL NOTES

HENRY COUNTY
BRIDGE K-5.90
STRUCTURE DETAILS

DRAWING CREATED 01/21/2022



*NOTE: EACH FOOTING TO HAVE (2) MATS OF STEEL REINFORCEMENT – UPPER & LOWER W/ 2" CLEARANCE BETWEEN STEEL & OUTER SURFACES.

*NOTE: REBAR TO BE ARRANGED WITH EQUAL SPACING AND 2" MINIMUM CLEARANCE BETWEEN STEEL & OUTER SURFACES.

*NOTE: SEE BEAM DETAIL ON SHEET 4 FOR CORNERS OF BLOCK WALL STATION & OFFSETS.

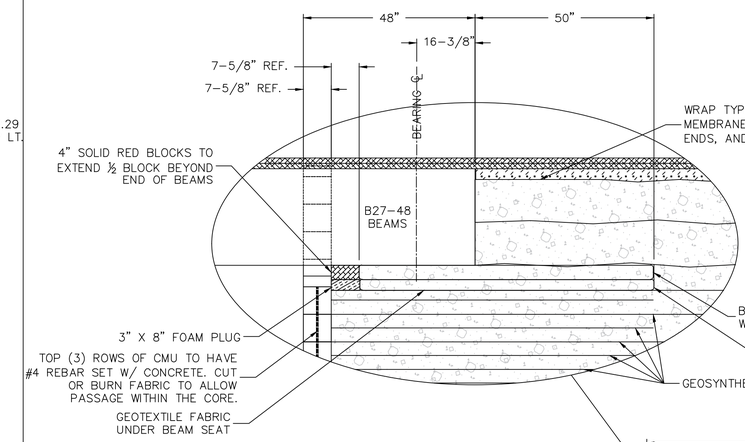
NOTES
NON-LOCATION DIMENSIONS ARE TYPICAL FOR BOTH SIDES.
ALL STATIONS & OFFSETS ARE BASED OFF SECTION LINES.
ALL FOOTINGS ARE TO BE 18" THICK.

#5 REBAR QUANTITIES

PER MAT	629.75' PER MAT
1.) (33) X 6.50'	X (4) MATS
2.) (10) X 12.50'	2519' TOTAL
3.) (6) X 48.38'	X 1.043# PER LIN. FT.
	TOTAL = 2627.32#

CONCRETE FOOTING DETAILS

*NOTE: LOOSE FILL TO 1" ABOVE 4" BLOCKS BEFORE COMPACTION. BEAMS TO REST ON STONE, NOT ON THE 4" BLOCKS.



*NOTE: FABRIC BEHIND BEAMS, ON THE BEAM SEAT, AND ON INTERMEDIATE LAYERS MUST EXTEND 24" BEYOND BEAMS.

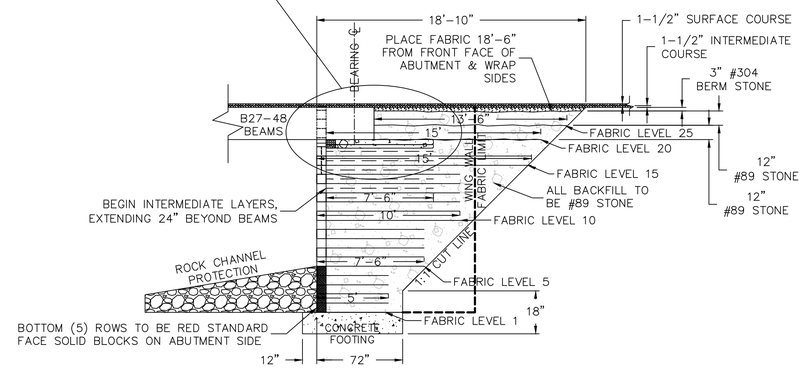
FABRIC CUT LENGTHS

(15' WIDE ROLLS)
15' = FULL ROLL
10' = ⅔ OF ROLL
7'-6" = ½ OF ROLL
5' = ⅓ OF ROLL

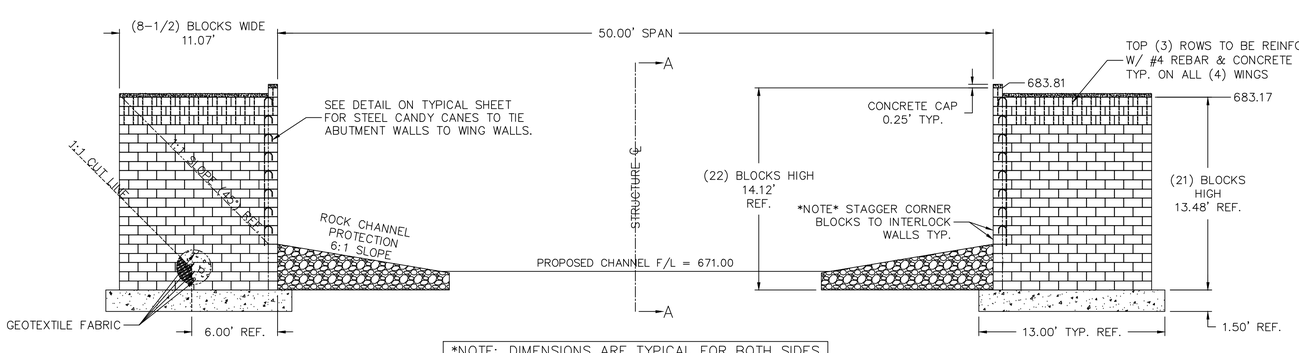
SIZE/QUANTITY PER ABUTMENT (X 2 ABUTMENTS)
LEVEL 1 – 5' X 46'-11" – (5) PC.
LEVEL 5 – 7'-6" X 46'-11" – (5) PC.
LEVEL 10 – 10' X 46'-11" – (6) PC.
LEVEL 15 – 15' X 46'-11" – (2) PC.
LEVEL 20 – 15' X 15' – (3*) PC.
LEVEL 25 – 15' X 13'-6" – (3*) PC.
INTERMEDIATE – 7'-6" X 46'-11" – (5) PC.
BEAM SEAT LAYER 1 – 15' X 14'-9" – (3*) PC.
BEAM SEAT LAYER 2 – 15' X 15' – (3*) PC.

SIZE/QUANTITY PER WING WALL (X 4 WING WALLS)
LEVEL 1 – 5' X 6' – (5) PC.
LEVEL 5 – 7'-6" X 3'-7" – (5) PC.
LEVEL 10 – 10' X 1' – (6) PC.

*NOTE: UPPER LAYERS OF FABRIC TO BE PLACED IN STRIPS PARALLEL TO ROAD, WITH 2' OVERLAPS.



ABUTMENT DETAILS & FABRIC LAYOUT
(VIEW B-B)

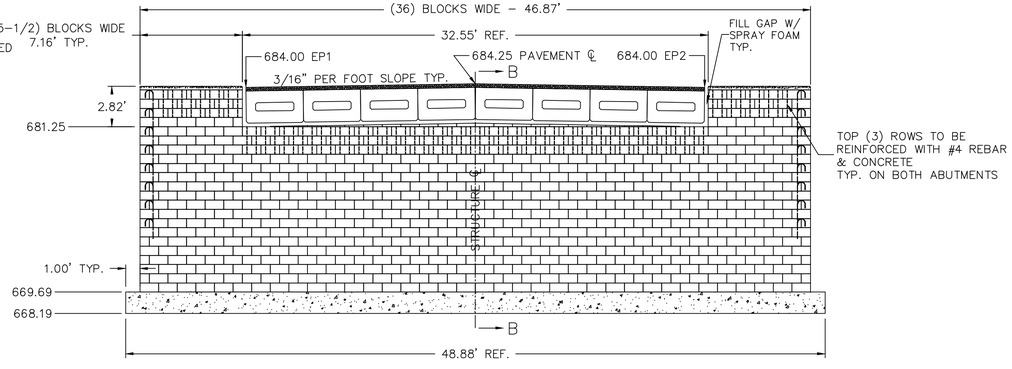


*NOTE: DIMENSIONS ARE TYPICAL FOR BOTH SIDES

S.W. WING LOOKING NORTH
N.E. WING LOOKING SOUTH

S.E. WING LOOKING NORTH
N.W. WING LOOKING SOUTH

WINGWALL & STEEL DETAILS



ABUTMENT WALL DETAILS
(VIEW A-A)

CMU BLOCK QUANTITIES

SPLIT FACE	STANDARD FACE SOLID RED
NW WING = 171 BLOCKS	NW WING = 2 BLOCKS
NE WING = 171 BLOCKS	NE WING = 2 BLOCKS
SW WING = 171 BLOCKS	SW WING = 2 BLOCKS
SE WING = 171 BLOCKS	SE WING = 2 BLOCKS
WEST ABUTMENT = 525 BLOCKS	WEST ABUTMENT = 203 BLOCKS
EAST ABUTMENT = 525 BLOCKS	EAST ABUTMENT = 203 BLOCKS
TOTAL = 1734 BLOCKS	TOTAL = 414 BLOCKS

#4 REBAR QUANTITIES

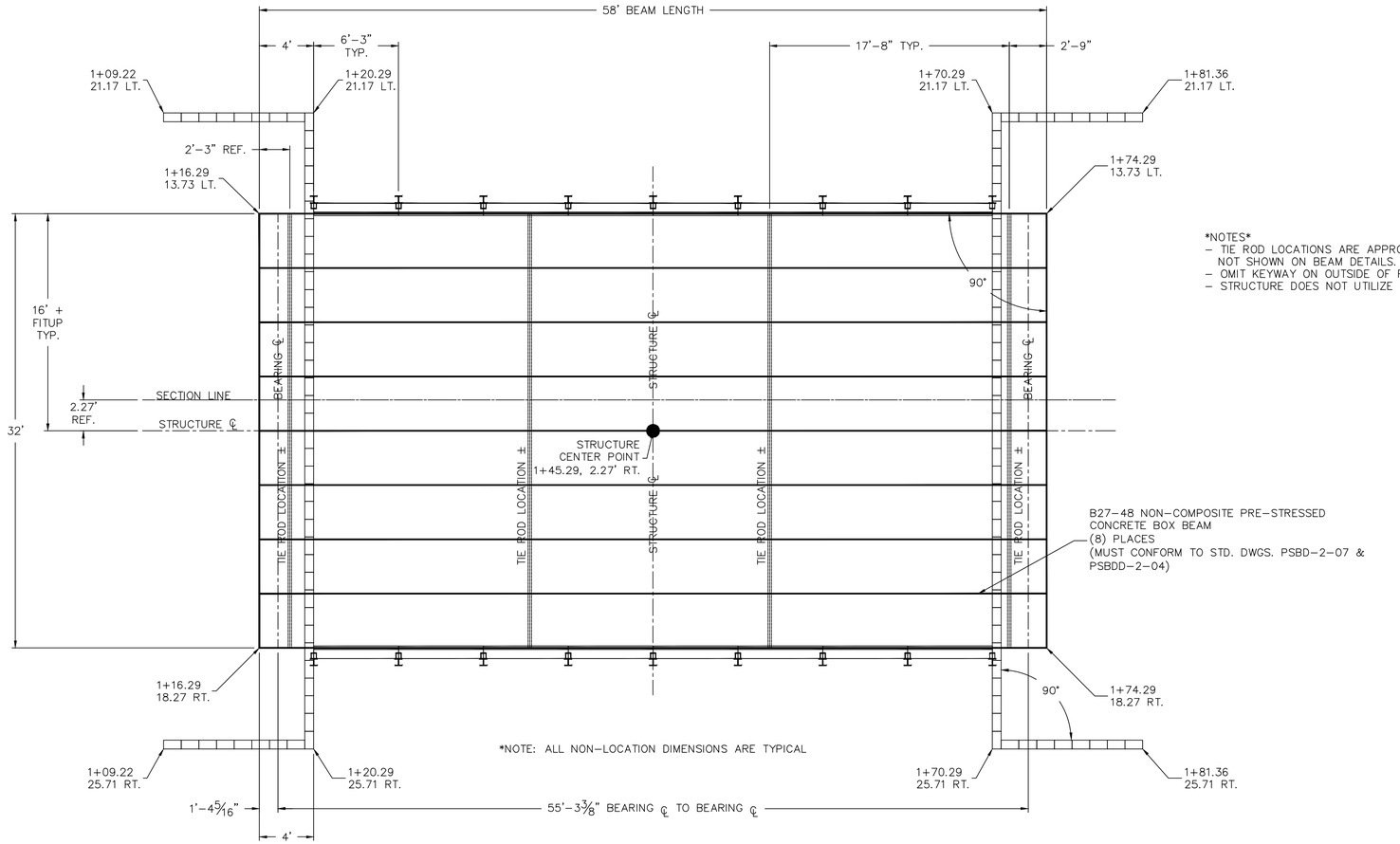
NW WING = 16 RODS	1.9' PER ROD
NE WING = 16 RODS	X (208) RODS
SW WING = 16 RODS	395.2' TOTAL
SE WING = 16 RODS	X 0.668# PER LIN. FT.
WEST ABUTMENT = 72 RODS	TOTAL = 263.99#
EAST ABUTMENT = 72 RODS	
TOTAL = 208 RODS	

NOTES

CMU – CONCRETE MASONRY UNIT
GRS – GEOSYNTHETICALLY REINFORCED SOIL
GEOTEXTILE FABRIC – WIDE WIDTH 4800 LBS/FT TENSILE STRENGTH

HENRY COUNTY
BRIDGE K–5.90
STRUCTURE & CHANNEL DETAILS

DATE CREATED: 01/26/2022



*NOTE: ALL NON–LOCATION DIMENSIONS ARE TYPICAL

NOTES
– TIE ROD LOCATIONS ARE APPROXIMATE. DIAPHRAGMS, VOIDS, ETC. ARE NOT SHOWN ON BEAM DETAILS. REFER TO ODOT BOX BEAM DETAILS.
– OMIT KEYWAY ON OUTSIDE OF FASCIA BEAMS.
– STRUCTURE DOES NOT UTILIZE DOWELS OR ELASTOMERIC BEARING PADS.

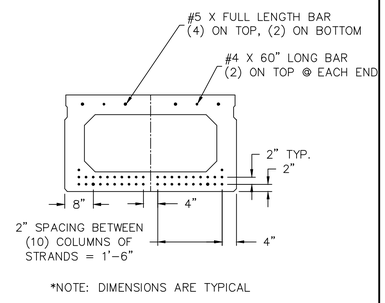
BEAM & BLOCK WALL DETAILS
(NOT TO SCALE)

B27–48 BOX BEAMS
(REFERENCE STD. DWG. PSBD–2–07 & PSBDD–2–07)

LIVE LOADING – HL–93
CONCRETE – MIN. COMPRESSIVE STRENGTH @ 28 DAYS f'c = 7 KSI MIN.
COMPRESSIVE STRENGTH @ TIME OF INITIAL PRESTRESS f'ci = 5 KSI
REINFORCING STEEL – GRADE 60; MIN. YIELD STRENGTH = 60 KSI
PRESTRESSED STEEL – ASTM A416 LOW RELAXATION STRANDS, ø½"
Aps = 0.167 SQ. IN. PER STRAND
fpu = 270 KSI
Ep = 28,500 KSI
RELATIVE HUMIDITY, H = 70%
INITIAL STRESS 0.75 FPU = 202.5 KSI
INITIAL TENSION LOAD = 33.82 KIPS/STRAND

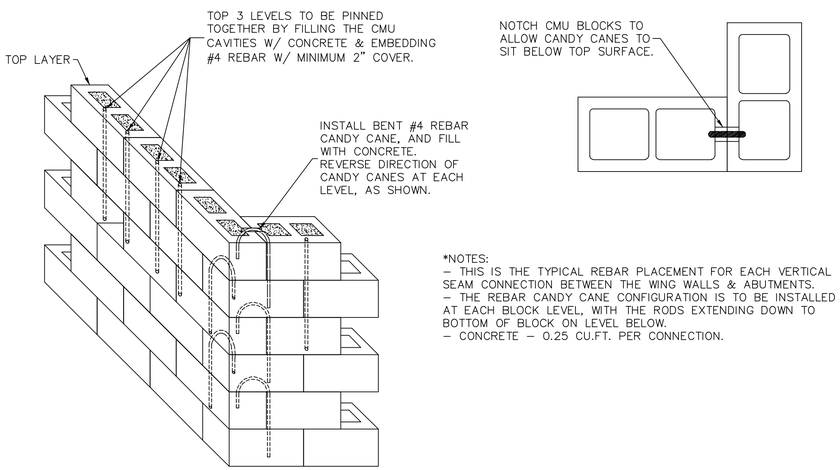
BARS & STRANDS SHALL BE PLACED AS SHOWN.

STRANDS SHALL BE DISTRIBUTED SYMMETRICALLY OVER THE BEAM WIDTH.



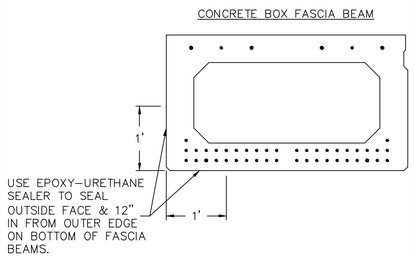
*NOTE: DIMENSIONS ARE TYPICAL

BAR & STRAND LAYOUT
(NOT TO SCALE)

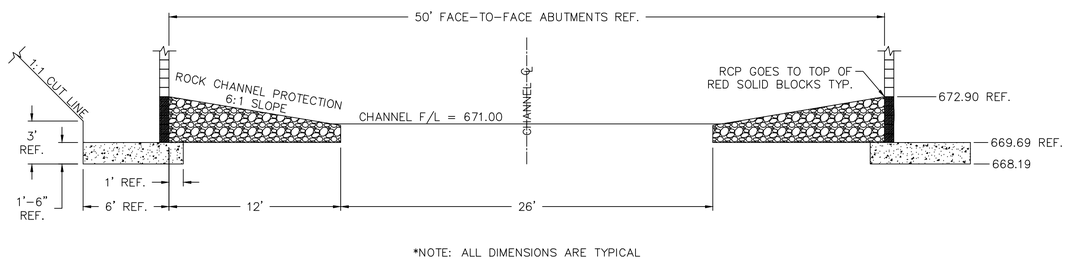


*NOTES:
– THIS IS THE TYPICAL REBAR PLACEMENT FOR EACH VERTICAL SEAM CONNECTION BETWEEN THE WING WALLS & ABUTMENTS.
– THE REBAR CANDY CANE CONFIGURATION IS TO BE INSTALLED AT EACH BLOCK LEVEL, WITH THE RODS EXTENDING DOWN TO BOTTOM OF BLOCK ON LEVEL BELOW.
– CONCRETE – 0.25 CU.FT. PER CONNECTION.

REBAR INSTALLATION
(NOT TO SCALE)



SEALING CONCRETE SURFACES
(NOT TO SCALE)



*NOTE: ALL DIMENSIONS ARE TYPICAL

CHANNEL DETAILS THRU STRUCTURE
(NOT TO SCALE)

S:\BRIDGES–CULVERTS\BRIDGES–CULVERTS\BRIDGES\K–5.90\2022\DRAWINGS\STR.DETAILS2

GENERAL SUMMARY

ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
				ROADWAY
201		1	LUMP	CLEARING & GRUBBING
202		187	SQ. YARD	WEARING COURSE REMOVAL (STA. 1+01.5 TO 1+89.1)
202		73	LIN. FT.	PIPE REMOVAL – ø24" & UNDER
202		1	LUMP	STRUCTURE REMOVAL (K-5.90) – OVER 20' SPAN
203		167	CU. YARD	EXCAVATION (INCLUDES FULL-DEPTH PAVEMENT REMOVAL AS SHOWN ON PLAN & X-SEC. SHEETS 0+00 TO 1+01.5 & 1+89.1 TO 3+16.0)
203		580	CU. YARD	EMBANKMENT
203		1	LUMP	CUTS OR FILLS TO DRESS CHANNEL AREAS ON EACH SIDE OF BRIDGE AND THE SLOPE AREAS IN ALL (4) QUADRANTS
204		474	SQ. YARD	SUBGRADE COMPACTION (18'10" WIDE, 0+0.0 TO 1+01.5 AND 1+89.1 TO 3+16.0)
517		125	LIN. FT.	RAILING (DEEP BEAM W/ STEEL TUBULAR BACKUP, TYPE 2 STEEL POSTS & ANCHOR BOLTS)
606		75	LIN FT.	GUARDRAIL, TYPE 5, AS PER PLAN (INCLUDES ALL HARDWARE)
				EROSION CONTROL
601		202	CU. YARD	ROCK CHANNEL PROTECTION, TYPE D W/O FILTER, AS PER PLAN
659		---	M. GAL.	WATER (TO BE PERFORMED BY COUNTY FORCES)
659		---	SQ. YARD	SEEDING & MULCHING (TO BE PERFORMED BY COUNTY FORCES)
659		---	TON	COMMERCIAL FERTILIZER (TO BE PERFORMED BY COUNTY FORCES)
				DRAINAGE
503		1	LUMP	UNCLASSIFIED EXCAVATION (STA. 1+01.5 TO 1+89.10, BOUND BY WINGWALL FOOTINGS)
512		230	SQ. YARD	MEMBRANE, WATERPROOFING TYPE 3
512		42	SQ. YARD	SEALER, EPOXY-URETHANE
611		45	LIN. FT.	ø8" CONDUIT, TYPE C, 707.33, AS PER PLAN
611		70	LIN. FT.	ø24" CONDUIT, TYPE C. 707.33, AS PER PLAN
515		8	EACH	PRESTRESSED CONCRETE NON-COMPOSITE BOX BEAM (B27-48) LEVEL 1
SPECIAL		143	LIN. FT.	DRIP STRIP, STAINLESS STEEL
704		1734	EACH	CONCRETE MASONRY UNIT, SPLIT-FACE
704		414	EACH	CONCRETE MASONRY UNIT, SOLID RED
SPECIAL		3000	SQ. YARD	GEOTEXTILE FABRIC, HIGH-STRENGTH WOVEN POLYPROPYLENE, TYPE A (INCLUDES 10% EXTRA FOR OVERLAPS & WASTE)
203		502	CU. YARD	GRANULAR EMBANKMENT, #89 STONE
511		5	CU. YARD	CLASS C CONCRETE, AS PER PLAN (SEE GENERAL NOTES) (INCLUDES: CONCRETE FOR CAPS; CONCRETE & #4 STEEL REBAR FOR VERTICAL SEAMS; AND CMU, CONCRETE, AND #4 REBAR FOR TOP THREE ABUTMENT & WINGWALL COURSES)
511		48	CU. YARD	CLASS C CONCRETE FOR FOOTINGS (SEE GENERAL NOTES)
509		2628	LBS.	REINFORCING STEEL FOR CONCRETE FOOTINGS (GRADE 60, NON-COATED)
SPECIAL		1	LUMP	BEAM SEAT CONSTRUCTION (SEE GENERAL NOTES)
				PAVEMENT
301		63	CU. YD.	ASPHALT CONCRETE BASE
304		80	CU. YD.	AGGREGATE BASE (FOR ROADWAY)
407		59	GALLON	TACK COAT (APPLIED @ RATE OF 0.05 GALLON/SQUARE YARD)
823		35	CU. YARD	ASPHALT CONCRETE INTERMEDIATE COURSE
823		31	CU. YARD	ASPHALT CONCRETE SURFACE COURSE
SPECIAL		2	EACH	FORMED CONSTRUCTION JOINTS (17 LINEAR FEET EACH)
				MISCELLANEOUS
614		1	LUMP	MAINTAINING TRAFFIC
623		1	LUMP	CONSTRUCTION LAYOUT STAKES
624		1	LUMP	MOBILIZATION
103.05		1	LUMP	CONTRACT PERFORMANCE & PAYMENT BOND

SUB-SUMMARY

REFERENCE NUMBER	STATION FROM	STATION TO	SIDE	ROAD	202 WEARING COURSE REMOVAL (SQ. YARD)	202 PIPE REMOVAL ø24" & UNDER (LIN. FT.)	202 STRUCTURE REMOVAL OVER 20' SPAN (LUMP)	517 RAILING – DEEP BEAM W/ STEEL TUBULAR BACKUP; TYPE 2 STEEL POSTS & ANCHOR BOLTS (LIN. FT.)	606 GUARDRAIL TYPE 5 (AS PER PLAN) (LIN. FT.)	601 ROCK CHANNEL PROTECTION – TYPE D W/O FILTER; 18" THICK, EXCEPT THRU STRUCTURE (AS PER PLAN) (CU. YARD)	611 ø8" CONDUIT TYPE C; 707.33 (AS PER PLAN) (LIN. FT.)	611 ø24" CONDUIT TYPE C; 707.33 (AS PER PLAN) (LIN. FT.)	515 PRE-STRESSED CONCRETE NON-COMPOSITE BOX BEAMS (B27-48) LEVEL 1 (EACH)	SHEET NUMBER
1R	1+01.50	1+89.1	N-S	K	187									6,7
2R	0+66.25	0+97.25	S	K		31								6,7
3R	1+55.25	1+97.25	N	K		42								6
4R	1+13.7	1+78.1	N-S	K			1							6,7
1D	1+56.0	1+96.5	N	K							45			6
2D	0+63.0	1+31.2	S	K								70		6,7
3D	1+16.3	1+74.3	N-S	K									8	4,6,7
1RCP	NORTH SIDE OF STRUCTURE		N	K						68				6
2RCP	THRU STRUCTURE		C	K						94				4,6
3RCP	SOUTH SIDE OF STRUCTURE		S	K						40				6
1GR	1+01.9	1+14.0	N	K					12.5					6
	1+14.0	1+76.5	N	K				62.5						6
	1+76.5	2+01.2	N	K					25.0					6
2GR	0+89.4	1+14.0	S	K					25.0					6
	1+14.0	1+76.5	S	K				62.5						6
	1+76.5	1+88.7	S	K					12.5					6
TOTALS					187.00	73.00	1.00	125.00	75.00	202.00	45.00	70.00	8.00	

NOTE
RSF – REINFORCED SOIL FOUNDATION
GRS – GEOSYNTHETICALLY REINFORCED SOIL
CMU – CONCRETE MASONRY UNITS

DRAWING CREATED 04/12/2022

DEPARTMENT of HIGHWAYS
HENRY COUNTY, OHIO

GENERAL SUMMARY
& SUB-SUMMARY

BRIDGE NO. HEN-K-5.90
OVER SCHOOL CREEK
FLATROCK TWP.

DESIGNED BY:	DRAWN BY:	CHECKED:	FILE NAME:
HEN. CO. ENG.	JTH	TJS	Z:\BRIDGES-CULVERTS\BRIDGES-CULVERTS\BRIDGES\K-5.90\2022\DRAWINGS\GEN-SUMM

HENRY COUNTY
BRIDGE K-5.90
PLAN & PROFILE

DATE CREATED: 03/01/2022

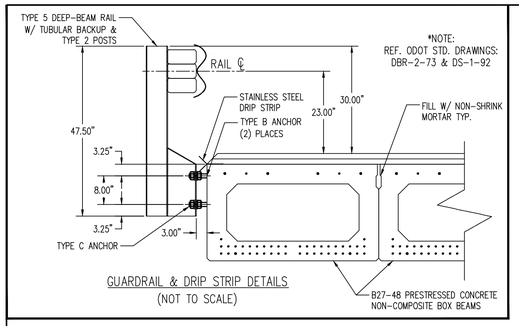
FOREMAN: ANY ADDITIONS AND/OR CHANGES DURING CONSTRUCTION ARE TO BE NOTED & RETURNED TO THE ENGINEER.

TYPE D ROCK CHANNEL PROTECTION
18" THICK, EXCEPT THRU STRUCTURE (SEE CHANNEL DETAIL)

(1RCP) 68.0 CU. YD. – NORTH SIDE OF STRUCTURE
(2RCP) 94.0 CU. YD. – THRU STRUCTURE
(3RCP) 40.0 CU. YD. – SOUTH SIDE OF STRUCTURE

*NOTE: ALL AREAS WHICH ARE BARE, OR HAVE TURF DAMAGED FROM CONSTRUCTION ACTIVITIES, ARE TO BE SEEDED & MULCHED. MULCHING MATERIALS ARE TO BE KEPT IN PLACE WITH ASPHALT EMULSION (OR OTHER PRE-APPROVED METHOD).

EXIST. SFN-3530981
PROP. SFN-3531025



*NOTE:
REF. ODOT STD. DRAWINGS:
DBR-2-73 & DS-1-92

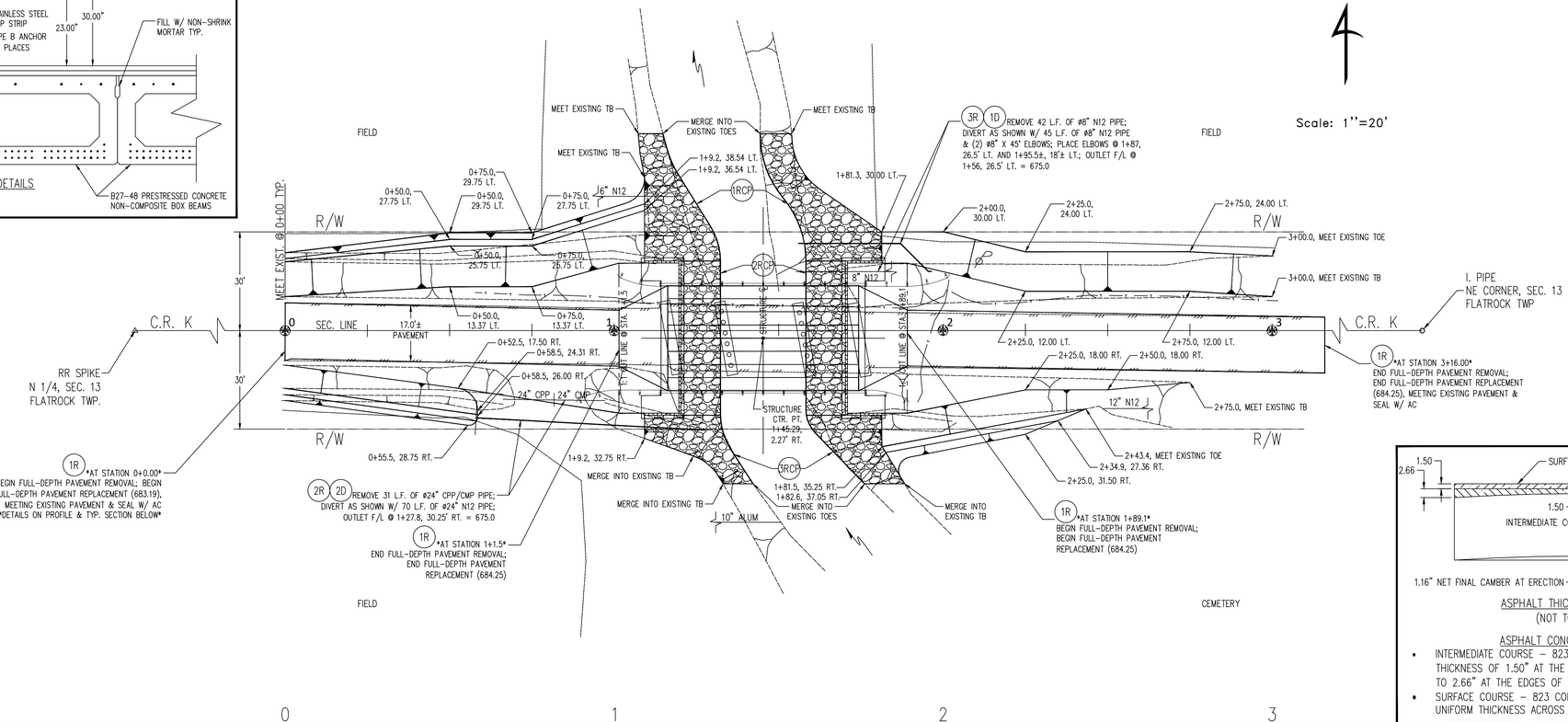
GUARDRAIL & DRIP STRIP DETAILS
(NOT TO SCALE)

UTILITY OWNERS
TELEPHONE: CENTURYLINK
ELECTRIC: TOLEDO EDISON

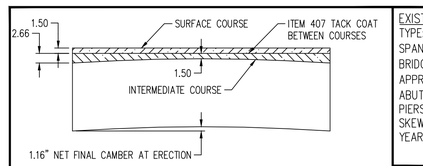
GUARDRAIL LIST
SEE DETAIL & PLAN FOR STEEL POST LOCATIONS & # OF TYPE 2 POSTS

(1GR) NORTH SIDE
62.5 L.F. – TYPE 5, DEEP BEAM RAIL W/ TUBULAR BACKUP
12.5 L.F. – TYPE 5 STRAIGHT RAIL
25 L.F. – TYPE 5, 30' RADIUS RAIL
(2) FLARED END SECTIONS
(8) STEEL GUARDRAIL POSTS

(2GR) SOUTH SIDE
62.5 L.F. – TYPE 5, DEEP BEAM RAIL W/ TUBULAR BACKUP
12.5 L.F. – TYPE 5 STRAIGHT RAIL
25 L.F. – TYPE 5, 30' RADIUS RAIL
(2) FLARED END SECTIONS
(8) STEEL GUARDRAIL POSTS



SBM
MAG NAIL @ STA. 0+00, ELEV. = 683.19
MAG NAIL @ STA. 1+00, ELEV. = 683.67
MAG NAIL @ STA. 2+00, ELEV. = 683.76
MAG NAIL @ STA. 3+00, ELEV. = 684.06

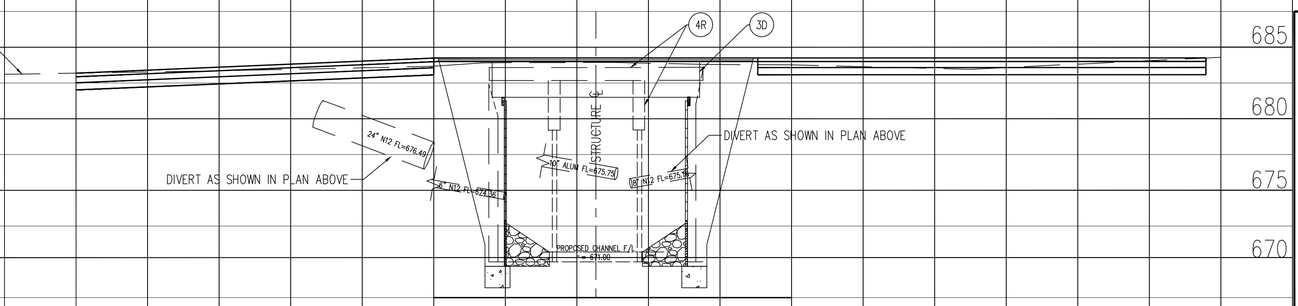


ASPHALT THICKNESS DIAGRAM
(NOT TO SCALE)

ASPHALT CONCRETE COURSES:
- INTERMEDIATE COURSE – 823 ASPHALT CONCRETE, WITH THICKNESS OF 1.50" AT THE CENTER OF THE SPAN, INCREASING TO 2.66" AT THE EDGES OF THE SPAN.
- SURFACE COURSE – 823 CONCRETE ASPHALT, WITH 1.50" UNIFORM THICKNESS ACROSS ENTIRE SPAN.

EXISTING STRUCTURE
TYPE: CONCRETE SLAB CONTINUOUS
SPAN: 3-SPAN @65', MAX SPAN = 22'
BRIDGE ROADWAY WIDTH: 20'
APPROACH ROADWAY WIDTH: 13'
ABUTMENTS: CONCRETE/GRAVITY
PIERS: CONCRETE CAPPED PILE
SKEW: 10°
YEAR BUILT: 1947

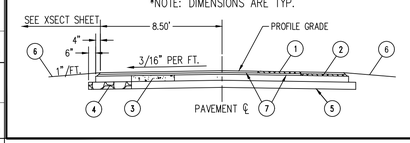
PROPOSED STRUCTURE
TYPE: PRE-STRESSED CONCRETE BOX BEAMS (B27-48) WITH GRS ABUTMENTS & WINGS
SPAN: 55'-3 3/8" C/C BEARINGS ALONG ℄ STR.
BRIDGE ROADWAY WIDTH: 32' F/F GUARDRAIL
DESIGN LOADING: HL-93 (LRFD)
SKEW: NONE
WEARING SURFACE: ASPHALT CONCRETE



TYPICAL PAVEMENT SECTION
(NOT TO SCALE)
– 0+0.00 TO 1+1.50 AND 1+89.10 TO 3+16.00 – SEE PROFILE
– 1+1.50 TO 1+89.10 – OMIT 5" 301 ASPHALT CONCRETE & 6" 304 AGGREGATE BASES
– 1+1.50 TO 1+89.10 – MAINTAIN 1-1/2" 823 INTERMEDIATE & 1-1/2" 823 SURFACE COURSES

1 ITEM 823, 1-1/2" ASPHALT CONCRETE SURFACE COURSE
2 ITEM 823, 1-1/2" ASPHALT CONCRETE INTERMEDIATE COURSE
3 ITEM 301, 5" ASPHALT CONCRETE BASE
4 ITEM 304, 6" AGGREGATE BASE
5 ITEM 204, SUBGRADE COMPACTION
6 ITEM 659, SEEDING & MULCHING (TO BE DONE BY COUNTY FORCES)
7 ITEM 407, TACK COAT – APPLIED @ RATE OF 0.05 GAL./SQ.YD. (APPLY BETWEEN 301 & INTERMEDIATE AND BETWEEN INTERMEDIATE & SURFACE)

*NOTE: DIMENSIONS ARE TYP.



NOTE
PAVE ROADWAY TO EDGES OF DECK OVER STRUCTURE

PLAN — PROFILE

S:\BRIDGES-CULVERTS\BRIDGES-CULVERTS\BRIDGES\K-5.90\2022\DRAWINGS\PLANPROF

FULL CROSS SECTION

CROSS SECTIONS – STA. 0+00 TO 3+00

S:\BRIDGES-CULVERTS\BRIDGES-CULVERTS\BRIDGES\K-5.90\2022\DRAWING\XSECT

AT STATION 3+16
END FULL-DEPTH PAVEMENT REMOVAL;
END FULL-DEPTH PAVEMENT REPLACEMENT (684.25),
MEETING EXISTING PAVEMENT & SEAL W/ AC

E.P. 4.11' LT. — 4.39' — E.P. 12.86' RT.
E/F — MEET EXISTING SLOPES @ 3+00 — UG TEL. — E/P — E/P
684.25
3+16
684.25

MEET EXISTING SLOPES @ 2+75

E.P. 5.22' LT. — 3.27' — E.P. 11.78' RT.
T.B. 12.00' LT. — T.B. 18.00' RT.
SLOPE: 1"/FT. — SLOPE: 1"/FT.
SLOPE: 3:1 — SLOPE: 3:1
E/F — UG TEL. — E/P — E/P
684.25
2+50
683.46
Ø12" N12
2+48.0

AT STATION 1+90.58
BEGIN FULL-DEPTH PAVEMENT REMOVAL;
BEGIN FULL-DEPTH PAVEMENT REPLACEMENT (684.25)

T.B. 20.18' LT. — P/POLE 2+10.9 — E.P. 6.23' LT. — 2.27' — E.P. 10.77' RT. — T.B. 25.07' RT.
SLOPE: 1"/FT. — SLOPE: 1"/FT.
MEET EXISTING SURFACE — SLOPE: 3:1 — SLOPE: 2:1 — MEET EXISTING SURFACE
E/F — TEL. PEDESTAL 2+01.2 — UG TEL. — UG TEL. — UG TEL. — E/P — E/P — UG TEL.
684.25
1+89.1
683.76
F/L = 678.5
2.00'

PLACE 1-1/2" INTERMEDIATE COURSE & 1-1/2" SURFACE COURSE
OVER STRUCTURE (1+16.29 TO 1+74.29); TAPER E.P. FROM EDGES
OF DECK (1+74.29) TO 17' WIDE @ 1+90.58

TELEPHONE CONDUIT — PROPOSED PAVEMENT ℄ ELEVATION = 684.25 — TYPE 5 DEEP BEAM RAIL W/ TUBULAR BACKUP & TYPE 2 POSTS TYP. BOTH SIDES

REMOVE 42 L.F. OF ø8" N12 PIPE; DIVERT AS SHOWN ON PLAN W/ 45 L.F OF ø8" N12 PIPE & (2) ø8" X 45° ELBOWS; PLACE ELBOWS @ 1+87.5, 26.5' LT. AND 1+96±, 18.0'± LT.; OUTLET F/L @ 1+56.0, 26.5' LT. = 675.0

ø10" ALUM.
(ACTUAL LOCATION IS 5' FURTHER SOUTH)

EXISTING CHANNEL F/L
PROPOSED CHANNEL F/L = 671.0

684.25
1+50
683.94

E.P. 6.23' LT. — 2.27' — E.P. 10.77' RT.
T.B. 20.53' LT. — T.B. 25.07' RT.
SLOPE: 1"/FT. — SLOPE: 1"/FT.
38.09 LT. — SLOPE: 3:1 — SLOPE: 6:1 — MEET EXISTING SURFACE
F/L = 678.5 — E/P — E/P — ø24" CMP 0+97 — 28.83' RT.
2.00' — UG TEL. — F/L = 676.7
684.24
1+1.5
683.67

AT STATION 1+1.5
END FULL-DEPTH PAVEMENT REMOVAL;
END FULL-DEPTH PAVEMENT REPLACEMENT (684.25);
TAPER E.P. TO EDGES OF DECK (1+16.29)

REMOVE 31 L.F. OF ø24" CPP/CMP PIPE;
DIVERT AS SHOWN ON PLAN W/ 70 L.F.
OF ø24" N12 PIPE; OUTLET F/L @
1+27.8, 30.25' RT. = 675.0

E.P. 7.36' LT. — 1.14' — E.P. 9.64' RT. — T.B. 17.16' RT.
T.B. 13.37' LT.
SLOPE: 1"/FT. — SLOPE: 1"/FT. — SLOPE: 2:1 — MEET EXISTING SURFACE
MEET E/F — SLOPE: 3:1 — E/P — E/P — F/L = 679.4 — 0+58.0, 26.50' RT.
F/L = 679.0 — E/F — 2.00' — UG TEL. — ø24" CPP 0+66 — 2.00' — E/F
683.71
0+50
683.40

*NOTE: DEPTH OF UNDERGROUND UTILITIES IS UNKNOWN.

AT STATION 0+00
BEGIN FULL-DEPTH PAVEMENT REMOVAL;
BEGIN FULL-DEPTH PAVEMENT REPLACEMENT (683.19),
MEETING EXISTING PAVEMENT & SEAL W/ AC

MEET EXISTING SLOPE @ 0+00 — MEET EXISTING SLOPE @ 0+00
EDGE OF FIELD — EDGE OF PAVEMENT — EDGE OF PAVEMENT — EDGE OF FIELD
683.19 (PROPOSED PAVEMENT ℄ ELEVATION)
0+00
~~683.19 (EXISTING PAVEMENT ℄ ELEVATION)~~

R/W — R/W

40 30 20 10 0 10 20 30 40 50

℄ SURVEY & SEC. LINE

EARTHWORK			
END AREA		VOLUME	
CUT	FILL	CUT	FILL
21.2	0.1		
		32.8	52.4
5.6	42.8		
		27.4	136.9
18.7	78.6		
		14.1	59.3
0	0		
		20.3	120.3
22.6	133.9		
		37.7	169.9
16.9	44.2		
		33.9	41.2
19.7	0.3		
		166.2	580.0
TOTAL THIS SHEET			

HENRY COUNTY
BRIDGE K-5.90

7/7