SECTION ON TANGENT
TYPICAL SECTION ROUTE 1-29
STA. 54+73.03 TO STA. 54+79.72 (SBL)*
STA. 55+10.09 TO STA. 55+16.79 (NBL)*

SECTION ON TANGENT
TYPICAL SECTION COOK ROAD
STA. 21+37.56 TO STA. 21+65.85

NOTE:
SAFETY EDGE SHALL BE USED ON
OPTIONAL PAVEMENT.

WHERE NEEDED, LIMITS OF MOMENT
SLAB/BARRIER MAY BE EXTENDED TO
REPLACE ANY EXISTING MOMENT
SLAB/BARRIER REMOVED FOR BRIDGE
PIER CONSTRUCTION. ADDITIONAL
MOMENT SLAB/BARRIER SHALL BE
CONSIDERED INCIDENTAL TO BRIDGE
PIER CONSTRUCTION, WITH NO DIRECT
PAY FOR REMOVAL OR CONSTRUCTION.

**PAVEMENT END TREATMENT SHALL
BE IN PLACE ALONG THE DROP-OFF
AT THE END OF EACH WORK DAY
WHEN A >2" PAVEMENT DROP-OFF EXISTS.

NOT TO SCALE

TYPICAL SECTIONS
SHEET 3 OF 1
## Clearing and Grubbing

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Area (ACRE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>17+52.23</td>
<td>COOK RD LT</td>
<td>0.04</td>
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<tr>
<td>17+60.25</td>
<td>COOK RD LT</td>
<td>0.04</td>
</tr>
<tr>
<td>21+12.23</td>
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<td>0.03</td>
</tr>
<tr>
<td>21+22.23</td>
<td>COOK RD LT</td>
<td>0.03</td>
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**TOTAL** 0.03

**PAY TOTAL** 1

## Removal of Improvements

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Description</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>16+42.94</td>
<td>9450, 90</td>
<td>COOK RD AT</td>
<td>20&quot; QUADRAIL</td>
</tr>
<tr>
<td>16+42.94</td>
<td>9450, 90</td>
<td>COOK RD LT</td>
<td>10&quot; QUADRAIL</td>
</tr>
<tr>
<td>17+42.94</td>
<td>9450, 90</td>
<td>COOK RD LT</td>
<td>10&quot; QUADRAIL</td>
</tr>
<tr>
<td>21+12.23</td>
<td>9450, 90</td>
<td>COOK RD AT</td>
<td>20&quot; QUADRAIL</td>
</tr>
<tr>
<td>21+12.23</td>
<td>9450, 90</td>
<td>COOK RD LT</td>
<td>10&quot; QUADRAIL</td>
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</table>

**TOTAL** 1

## Temporary Erosion Control

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Silt Fence</th>
<th>Trap Rock</th>
<th>Sediment Removal</th>
</tr>
</thead>
<tbody>
<tr>
<td>17+29.23</td>
<td>COOK RD LT</td>
<td>150.6</td>
<td>--</td>
<td>1.6</td>
</tr>
<tr>
<td>17+45.29</td>
<td>COOK RD LT</td>
<td>145.0</td>
<td>--</td>
<td>1.0</td>
</tr>
<tr>
<td>21+48.50</td>
<td>COOK RD LT</td>
<td>225.0</td>
<td>--</td>
<td>2.54</td>
</tr>
<tr>
<td>21+52.25</td>
<td>COOK RD LT</td>
<td>105.6</td>
<td>--</td>
<td>129.5</td>
</tr>
<tr>
<td>55+13.40</td>
<td>COOK RD LT</td>
<td>92.6</td>
<td>--</td>
<td>0.0</td>
</tr>
</tbody>
</table>

**TOTALS** 655.0 10.88 9.7

**PAY TOTALS** 655 10.7 10

## Drainage

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>C, R</th>
<th>Y, S, E</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>21+12.23</td>
<td>COOK RD LT</td>
<td>20.8</td>
<td>2.6</td>
<td>6</td>
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**PAY TOTALS** 22 2 6

## Earthwork

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Class 3 Excavation</th>
<th>Compacting</th>
<th>Embankment</th>
<th>Furnishing Rock Fill</th>
<th>Placing Rock Fill</th>
<th>Permanent Erosion Control</th>
<th>Geotextiles</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>17+29.23</td>
<td>COOK RD LT</td>
<td>229.2</td>
<td>236.2</td>
<td>236.2</td>
<td>236.2</td>
<td>236.2</td>
<td>236.2</td>
<td>236.2</td>
<td>236.2</td>
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<td>21+12.23</td>
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<td>95</td>
<td>--</td>
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<td>--</td>
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<tr>
<td>55+13.40</td>
<td>COOK RD LT</td>
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<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
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<td>--</td>
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**TOTALS** 393 41 236.2 236.2 409.6

**PAY TOTALS** 393 41 236 236 410

## Paving

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Optional Pavement</th>
<th>Aggregate Base (6 6&quot; thick)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>17+29.63</td>
<td>COOK RD LT</td>
<td>120.8</td>
<td>120.0</td>
<td>LAYER AT 3&quot; TO MATCH EXIST. PAVEMENT</td>
</tr>
<tr>
<td>21+12.23</td>
<td>COOK RD LT</td>
<td>78.4</td>
<td>78.4</td>
<td>AFTER DRAIN RASING, PAPER WORK AT 3&quot; TO MATCH EXIST. PAVEMENT</td>
</tr>
</tbody>
</table>

**TOTALS** 190.26 190.3

**PAY TOTALS** 190.3 190.3

## Summary of Quantities

<table>
<thead>
<tr>
<th>Sheet</th>
<th>1 of 3</th>
</tr>
</thead>
</table>
## Concrete Curb

<table>
<thead>
<tr>
<th>Station</th>
<th>Station Location</th>
<th>Concrete Curb (6 in. Height and Under): Type S</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>219+28.42</td>
<td>COOK RD, S.</td>
<td>26.4</td>
<td>From Bridge Approach slab curb to end of drain basin</td>
</tr>
<tr>
<td>219+65.43</td>
<td>COOK RD, W.</td>
<td>30.2</td>
<td>From Bridge Approach slab curb to end of drain basin</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td><strong>33.6</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Pavement Total</strong></td>
<td><strong>33</strong></td>
</tr>
</tbody>
</table>

## Concrete Traffic Barrier, Type B

<table>
<thead>
<tr>
<th>Station</th>
<th>Station Location</th>
<th>Aggregate Type</th>
<th>Aggregate Base (11 Inch)</th>
<th>Paver Treatment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>219+28.42</td>
<td>COOK RD, S.</td>
<td></td>
<td>6.0</td>
<td>6.4</td>
<td>Outside Shoulder Scr</td>
</tr>
<tr>
<td>219+53.92</td>
<td>COOK RD, W.</td>
<td></td>
<td>6.0</td>
<td>6.4</td>
<td>Outside Shoulder Scr</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td><strong>12.5</strong></td>
<td><strong>12.5</strong></td>
<td><strong>13.4</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Pavement Total</strong></td>
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<td><strong>13</strong></td>
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## Guardrail

<table>
<thead>
<tr>
<th>Station</th>
<th>Station Location</th>
<th>MGS Guardrail L.F.</th>
<th>MGS Bridge Approach Transition Section (Extended Curb)</th>
<th>MGS Bridge Approach Transition Section (Regular/No Curb)</th>
<th>MGS Vertical Height</th>
<th>Type A Guardrail, End Termin</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td><strong>82.5</strong></td>
<td><strong>1</strong></td>
<td><strong>1</strong></td>
<td><strong>4</strong></td>
<td><strong>105.4</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Pavement Total</strong></td>
<td><strong>63</strong></td>
<td><strong>1</strong></td>
<td><strong>1</strong></td>
<td><strong>4</strong></td>
<td><strong>105</strong></td>
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</tbody>
</table>

## Seeding

<table>
<thead>
<tr>
<th>Station</th>
<th>Station Location</th>
<th>Seeding - Cool Season Grasses Acre</th>
<th>Mulching Acre</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>219+28.42</td>
<td>COOK RD, S.</td>
<td>0.61</td>
<td>0.61</td>
<td>**Outside Shoulder Scr</td>
</tr>
<tr>
<td>219+53.92</td>
<td>COOK RD, W.</td>
<td>0.61</td>
<td>0.61</td>
<td>**Outside Shoulder Scr</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td><strong>0.61</strong></td>
<td><strong>0.61</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Pavement Total</strong></td>
<td><strong>1.0</strong></td>
<td><strong>1.0</strong></td>
</tr>
</tbody>
</table>

## Paving Marking

<table>
<thead>
<tr>
<th>Station</th>
<th>Station Location</th>
<th>4 In. Yellow Pavement Marking</th>
<th>4 In. White Pavement Marking</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>219+28.42</td>
<td>COOK RD, S.</td>
<td>84.8</td>
<td>678</td>
<td>intermittent centerline</td>
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<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td><strong>85</strong></td>
<td><strong>678</strong></td>
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</tbody>
</table>

Summary of Quantities Sheet 2 of 3
<table>
<thead>
<tr>
<th>SHEET NO.</th>
<th>STATION</th>
<th>LOCATION (USFT)</th>
<th>OFFSET MODIFIED STATE PLANE (GROUND)</th>
<th>ELEVATION US SURVEY FT</th>
<th>DESCRIPTION</th>
<th>GPK</th>
<th>POINT ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>J06 2422</td>
<td>02422</td>
<td>Q - 129</td>
<td>9.47' HT.</td>
<td>1.325.397.18</td>
<td>2.704.335.53</td>
<td>983.20</td>
<td>CONTROL POINT #105</td>
</tr>
<tr>
<td>J06 2422</td>
<td>02422</td>
<td>Q - 129</td>
<td>18.27' LT.</td>
<td>1.325.398.23</td>
<td>2.704.335.81</td>
<td>983.20</td>
<td>CONTROL POINT #105</td>
</tr>
<tr>
<td></td>
<td>02422</td>
<td>Q - 129</td>
<td>0.26' LT.</td>
<td>1.325.396.24</td>
<td>2.704.335.31</td>
<td>983.20</td>
<td>CONTROL POINT #105</td>
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<tr>
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<td>02422</td>
<td>Q - 129</td>
<td>9.47' HT.</td>
<td>1.325.396.31</td>
<td>2.704.335.31</td>
<td>983.20</td>
<td>CONTROL POINT #105</td>
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<td>Q - 129</td>
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<td>1.325.396.55</td>
<td>2.704.335.81</td>
<td>983.20</td>
<td>CONTROL POINT #105</td>
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</tbody>
</table>

**PROJECT COORDINATE INFORMATION**

**COORDINATE SYSTEM MODIFIED STATE PLANE (GROUND)**

**HORIZONTAL DATUM NAAD 92 (2011) EPOCH 2010.00**

**VERTICAL DATUM NAVD 88**

**SOFTWARE MODEL GESIO 18**

**ELEVATIONS DETERMINED BY AERIAL/MOBILE LIDAR**

**PROJECT AVERAGE GRID FACTOR 0.99999509**

**EXAMPLE OF PROJECT COORDINATE TO S.P.C.**

**COORDINATE POINTS SHEET 3 OF 1**
LEFT TURN LANE CLOSURE PRECEDING RAMP CLOSURE
AT BUSINESS ROUTE 71, ROUTE 169 NORTH, & FREDERICK AVE.

DETAIL A

DETAIL B

PROJECT LOCATION

DETAIL C

* SEE ROUTE CLOSURE DETAIL ON SHEET 9
DETOUR SIGNS SHALL BE COMPLETELY COVERED OR REMOVED WHEN NOT IN USE.

DETUR ROUTE DURING I-29 CLOSURES

TRAFFIC CONTROL
SHEET 3 OF 8
DETAIL B: I-29 SBL CLOSURE AT BUSINESS 71 INTERCHANGE

NOT TO SCALE
General Notes:

- Performance Category A

Design Loadings:
- FHWA-14 (4 axle loads)
- HST: 100-Lb. Equivalent
- Future Working Load: 125-Lb. Equivalent

Design Live Loads:
- 15 ft. Bridge: Future Traffic
- 45 ft. Bridge: Live Load Pressure
- 60 ft. Bridge: Fatigue Stress - Case 1

Details of Seismic Design:
- Class B: Concrete Foundation
- Class C: Concrete Superstructure
- Class D: Reinforced Concrete Superstructure

Steel:
- Structural Steel: ASTM A 992 (Grade 50)
- Steel Plate: ASTM A 36 (Grade 36)
- HSLA Steel: ASTM A 913 (Grade 70)

Required Splice Lengths:

- Length: 48 in.
- Width: 2 in.
- Splice: 6 in.
- Overall Length: 64 in.
- Splice: 6 in.
- Overall Length: 64 in.

Typical Section Thru End Bents No. 1 & 5 Showing Protective Coating

- Location: Thru sisters
- Description: Intensive Coating
- Material: High-Strength Steel

Details of Concrete Removal and Cover:
- Section No. 1
- Section No. 5
- Removal of Reinforcement
- Removal of Concrete
- Concrete Cutting

Detailed Expansion Joint:
- Section No. 1
- Section No. 5
- Removal of Reinforcement
- Removal of Concrete
- Concrete Cutting

Estimated Quantities:

| Item | Material | Unit | Quantity
|------|----------|------|----------
|      |          |      |          

Required Lap Length for Bar Splices:

<table>
<thead>
<tr>
<th>Length</th>
<th>Splice Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 in.</td>
<td>2.5 in.</td>
</tr>
<tr>
<td>5 in.</td>
<td>2.5 in.</td>
</tr>
<tr>
<td>6 in.</td>
<td>3.0 in.</td>
</tr>
</tbody>
</table>

Note: This drawing is not to scale. Follow dimensions as specified in accordance with Section 1501.
GALVANIZED CLOSED ENDED CAST-IN-PLACE (CECIP) CONCRETE PILE

NOTES:
- Welded or seamless steel tube (pipe) shall be ASTM A252 Grade 3 (Syle A 85,000 psi).
- Concrete for cast-in-place pile shall be Class B1.
- Steel casing for central pile point reinforcement shall be ASTM A27 Grade 60, 75.
- The Nominal Wall Thickness of any spot of local area of any type shall not be less than 12.00 in under the specified Nominal Wall Thickness.
- The Contractor shall determine the pipe wall thickness required to avoid damage from all driving activities, but wall thickness shall not be less than the minimum specified, by visual inspection with a caliper.
- For furnishing the thicker pipe wall than specified on the plans.
- Closure plate shall not project beyond the outside diameter of the pile pipe. Satisfactory welds may be made by boring holes at the end of the pipe, and incomplete penetration welds shall be made to obtain a penetration wall thickness of pipe. Payment for furnishing and installing closure plate will be considered complete when covered by the contract unit price for Galvanized Closed In-place Concrete Piles.
- Splices of pipe for cast-in-place concrete piles shall be made watertight and in the full strength of the pipe above and below the splice to permit hard driving without damage. Pipe damage during driving shall be replaced without cost to the state.
- Pipe sections used for splicing shall be at least 5 feet in length.

At the contractor's option, the holes of vertical bars embedded in the beam cap may be oriented toward or outward.
- Closure plate need not be galvanized.
- Reinforcing steel for cast-in-place piles is included in the BIL of reinforcing steel.
- All reinforcement for cast-in-place piles is included in the estimated quantities for units.

GALVANIZED CLOSED ENDED CAST-IN-PLACE (CECIP) CONCRETE PILE

FOUNDATION DATA

Note: This drawing is not in scale, follow dimensions.

FOUNDATION DATA

Note: This drawing is not in scale, follow dimensions.
ELEVATION VIEW

For details of End Bent No. 1, see Sheet No. 5 & 6.

Reinforcing cage shall be shifted to clear piles, U bars shall clear piles by at least 1 1/2" places.
The #8:1:8 bars shall be bent in field to clear beams.
The #6:1/2 bars are segmented for ease of placement through beam web holes.
The total bar length for #6:1/2 bars shown in Bill of reinforcing steel allows for one lap outside of a length of 12". Actual bar segment length shall be determined by an engineer in the field. The total bar length shall be a maximum of 12". If the total bar length exceeds 12" of the #6:1/2 bars used, the actual bar segment length will be determined by the contractor to accommodate manufacturer's requirements for installation and ease of construction. The cost of cutting and installing the bar splices will be
considered completely covered by the contract price. The cost of #6:1/2 bar on steel, no matter the quantity of reinforcing steel will be allowed for the cost of mechanical bar splices,
All concrete is the method above top of beam and below top of slab shall be Class B2.
For notes of resin anchor systems, see Sheet No. 2.
For details of resin anchor systems, see Sheet No. 6.
For details of vertical drain at end bent, see Sheet No. 7.
For details of barriers, see Sheets Nos. 20 thru 23.
For details of approach slab, see Sheet No. 26.

PLAN

Details relative to end anchor. U104 bars 6 System G & H resin anchors not shown for clarity.
ELEVATION OF WING

DETAIL A

ELEVATION OF END BENT

PLAN OF END BENT

PART SECTION A-A

OPTIONAL TURNED DRAIN

VERITICAL DRAIN AT END BENTS

General Notes:

1. All drain pipe shall be slope 1 to 2 percent.

2. Drain pipe may be either 6-inch diameter corrugated steel pipe, 3-inch diameter corrugated polyethylene (PE) drain pipe or 4-inch diameter corrugated polyethylene (PE) drain pipe.

3. Drain pipe shall be placed at 1 foot face of end bent and base face of wing. The pipe shall slope to lowest point of ground line. If slope is not feasible, drain pipe may be placed as shown in the diagram.

4. Perforated pipe shall be placed at 1 foot face side and basket face of wing at the bottom of end bent with drain pipe. Perforated pipe shall be placed at the exit at ground line.
ELEVATION VIEW
Proposed only, not shown for clarity

Notes:
For details of End Bent No. 5 not shown, see Sheets No. 10 and 11.
Reinforcing steel shall be stiffened to clear plies, if bars shall be clear of plies by at least 1 1/2 inches.
The #8-90O bars shall be bent to fit to clear beams.
The #6-902 bars are segmented for ease of placement through beam web holes.
The total bar length for #6 bars shown in Figure 4 of Reinforcing Steel shall
for the top splice with a length of 5'-10". Actual bar segment lengths to be
determined by contractor for ease of bending bars. The contractor may use a
mechanical bar splicer to replace the top splice. Where a mechanical bar splice is
used, the actual bar segment length will be determined by the contractor to
accommodate manufacturer's recommendations for installation and ease of
construction. The cost of furnishing and installing the bar splices will be
considered completely covered by the contract unit price for Slab on Steel. No
adjustment at the quantity of reinforcing steel will be allowed for the use of
mechanical bar splices.
All concrete in the end bent above top of beam and below
top of slab shall be Class B-2.
For notes of rest anchor systems, see Sheet No. 2.
For details of vertical diaphragm at end bent, see Sheet No. 7.
For details of rest anchor systems, see Sheet No. 11.
For details of barriers, see Sheet No. 10 thru 13.
For details of approach slabs, see Sheet No. 24.

PLAN
Details relate to 3°-30' Ears, U/Hb, & R bars.
System G & H rest anchor not shown for clarity.

Note: This drawing is not to scale, follow dimensions.

Detaled Oct, 2003
Sheet No. 9 of 33

Details of End Bent No. 5
TYPICAL PART SECTION SHOWING CROSS FRAMES & INTERMEDIATE DIAPHRAGMS

INTERMEDIATE DIAPHRAGM CONNECTION

DETAIL OF BOLTED FIELD SPLICE
- Holes shall be 7/8-inch diameter ASTM F1171 Grade 435 Type 1 in 1/2-inch diameter holes.
- Contact surfaces shall be in accordance with Sec 1081 for surface preparation.
- The flange and web splice plates shall be subject to notching requirements when notched to satisfy requirements for flanges on both sides of splice.

PART LONGITUDINAL SECTIONS
- Notes:
  - All the contract's option holes to the diaphragm plate of non slab spooling diaphragm may be made 3/16" larger than the nominal diameter of the bolt. A hardened washer shall be used under the bolt head and nut where this option is used.
  - Holes in the diaphragm connection plate and the diaphragm plate shall be a minimum of 1/8" larger than the nominal diameter of the bolt. A hardened washer shall be used under the bolt head and nut when this option is used.
  - Longitudinal dimensions are horizontal.
  - For elevation of beam and details of bearing stiffeners and connection plates, see Sheet No. 14.
  - All fabricated structural steel shall be ASTM A706 Grade 50, except as noted.

Detailed Nov 2023
Checked Nov 2023
Note: This drawing is not to scale. Follow dimensions.
General Notes:
Contractor shall have the option to construct slab drain as FPR slab drains. All drains shall be of same type.

Slab drain bracket assembly shall be ASTM A501 G1 Structural Steel.
Locate drains In slab by dimensions shown in Part Section Near Drain.

Reinforcing steel shall be shifted to clear drains.

The work assembly shall be galvanized in accordance with ASTM A525.

All 1/4" bolts shall be ASTM A563, except as shown.

Shop drawings will not be required for the slab drains and the bracket assembly.

The bolt hole for the bracket assembly attachment shall be shifted to clear the reinforcing bar and to yield drill In the existing area.

Notes for Steel Drain:
Slab drains may be fabricated of either 1/4" thick sheet of ASTM A501 Grade B, 1/2" thick, or ASTM A525 Structural Steel using ASTM A501 or A525.

Outside dimensions of drains are 4" x 4".

Notes for FPR Drain:
Drains shall be machine fillet-wound (Type I) FPR pipe. Drains shall meet the requirements of ASTM D4969 with the following exceptions:

Shape of drain shall be rectangular with outside nominal dimensions of 4" x 4".

Minimum reinforced wall thickness shall be 1/4" inch.

The resin used shall be ultraviolet (UV) resistant and meet the requirements of ASTM D4969, Type I, except for the coating for additional UV resistance.

The color of the slab drain shall be gray (Federal Standard 16637). The color shall be uniform throughout the resin and any coating used.

The combination of materials used in the manufacture of the slab drains shall be tested for compatibility in accordance with ASTM C1731. The resulting material shall withstand at least 500 hours of testing with only minor deterioration and without any physical deterioration. The contractor shall furnish the results of the test report with the product prior to delivery.

At the contractor's option, drains may be field cut. The method of cutting FPR slab drains shall be recommended by the contractor to ensure a smooth, chip-free cut.
PLAN OF SLAB SHOWING BOTTOM REINFORCEMENT

Note: This drawing is not to scale, follow dimensions.

Sheet No. 18 of 31
OPTIONAL SHIFTING TOP BARS AT BARRIER
Right-side shown. Left-side similar.

HALF SECTION NEAR MIDSAP & END BENTS
HALF SECTION NEAR INTERMEDIATE BENT

SECTION THRU SLAB

SLAB CONSTRUCTION JOINT

OPTIONAL STAY-IN-PLACE FORM DETAILS

Stay-In-Place Forms:
Corrugated steel forms, supports, closure elements and accessories shall be in accordance with grade requirements and coating designation G50 at A553. Complete shop drawings of the permanent steel deck shall be required in accordance with Sec 1080.

Corrugations of stay-in-place forms shall be fitted with an expanded polystyrene material. The polystyrene material shall be placed in the forms with an adhesive in accordance with the manufacturer's recommendations.

Form closures shall not rest directly on the top of open flanges. Sheets shall be securely fastened to form supports with 1/4" minimum bearing length at one end or spaced support shall be placed in contact with the flange. Drilling holes in the beam flanges will not be permitted. All steel fabrication and construction shall be in accordance with Sec 1090 and 1092. Certified field welders will not be required for welding of the form supports.

The design of stay-in-place corrugated steel forms is per manufacturer's recommendation for reinforcement. The actual weight of corrugated steel forms shall be assumed for beam loading.

Notes:
For reinforcement of Type D Barrier not shown, see Sheets No. 20 thru 25.
For details of pedestrian fence and curb, see Sheets No. 24 and 25.
For Theoretical Bottom of Slab Elevation, Dead Load Definition Diagram and Theoretical Slab Reinforcing Diagram, see Sheet No. 25.
For Plan of Slab Showing Top Reinforcement, see Sheet No. 27.
For Plan of Slab Showing Bottom Reinforcement, see Sheet No. 18.

SLAB POURING SEQUENCE

SLAB DETAILS

Note: This drawing is not to scale. Follow dimensions.
General Notes:
Concrete traffic barrier elements shall be placed on top of the barrier as shown on Missouri Standard Plan MCT-10 and in accordance with Sec. 417. Detectors on D-102nom with two-way traffic shall have retroreflective sheeting on both sides. Concrete traffic barrier elements will be completely covered by the contract unit price for Type D Barrier.

For notes and details of Resin Anchor System, see Sheets No. 2 & 20.

Reinforcing Steel:
Minimum coverage to reinforcing steel shall be 1 1/2".

Use a 0.65-mm gap of 3/8" between horizontal K bars and A bars.

KID-X11 BAR PERMISSIBLE ALTERNATE SHAPE
Other K bars not shown for clarity
The KID-X11 bar combination may be furnished as one bar as shown, at the contractor's option.

All dimensions are cut to cut.

TYPE D BARRIER (LEFT) AT END BENTS

Note: This drawing is not to scale. Follow dimensions.
Sheet No. 22 of 32
General Notes:
Concrete traffic barrier delineators shall be placed on top of the barrier as shown on Missouri Standard Plan D17.10 and in accordance with Section 6.171. Delineators on D17.10 with two-way traffic shall face retroreflective sheathing on both sides. Concrete traffic barrier delineators will be completed completely covered by the contract unit price for Type D Barrier.

Minimum clearance to reinforcing steel shall be 1 1/2".
Use a minimum lap of 3 x 1" between horizontal K bars and K bars.

K10-K11 BAR PERMISSIBLE ALTERNATE SHAPE
(Other K bars not shown for clarity)
The K10-K11 bar combination may be furnished as one bar as shown, at the contractor's option.

All dimensions are cut to cut.

TYPE D BARRIER (RIGHT) AT END BENTS

Note: This drawing is not to scale, follow dimensions.
Sheet No. 24 of 32

Detailed Oct. 2023
Checked Dec. 2023
TYPICAL ELEVATION OF PEDESTRIAN CHAIN LINK FENCE

* At about 30'-0" centers with at least one splice gap between pull or end post.

18'-0" Post spacing
Stretcher Bar (Typ.)
Grout (1/2")
2" x 6" x 1/2"
Floor Plate (Typ.)
End Post (Typ.)
Stretcher Bar Build-Up (Typ.)
2 1/2" x 2.5" Box (Helix)
Flow (Typ.)

TYPICAL SECTION THRU PEDESTRIAN CURB AT WING

GENERAL NOTES:
Pedestrian fence (Chain Link type) shall be in accordance with Sec. 1049, except all joints shall have the top and bottom edges snipped.
All posts shall be vermicular. Grout of 1/2" minimum thickness shall be placed under floor plates to provide for vertical alignment of posts.
Payment for furnishing, gabion filling and erecting the fence and frame complete with access doors and covers will be considered completely covered by the contract with pricing for (1) Pedestrian Fence [Structures] per lineal foot.
Dimensions of pedestrian fence are measured horizontally.
The maximum spacing allowed between pull posts and end posts is 200 ft. Most brass and 1/2" chains rod are required for panels adjacent to pull posts and end posts only.
Connect the lower end of the 1/2" chain rod to the bottom of the pull posts and end posts to which the stretcher bar is attached.
(2) Pedestrian Fence (Structures) shall be measured in the nearest linear foot for each structure measured along the top outside edge of the curb from end of wing 18" end of wing.
Core wire size for wire fabric shall be 6 gauge minimum.
Notes:

These details are a general representation of a Decorative Pedestrian Fence. The actual fence components and component positions may be different than what is shown.

Fence shall have a glass black finish (Federal Standard 17308). See special provisions.

Base plate shall be ASTM A570, Grade 50.

All base plates, U-bolts, hex nuts and washers shall be galvanized in accordance with ASTM A223 and Sec 168.

Measurement of pedestrian fence will be made horizontally and to the nearest linear foot along centerline of fence.

Payment for furnishing and erector the fence, complete in place, will be considered completely covered by the contract unit price for 112 ft. Decorative Pedestrian Fence (Structures).

Air fence posts shall be vertical.

Miter shall be placed under the base plate in accordance with Sec 168.

Decorative pedestrian fencing shall be in accordance with 2920-49801000-000-000000 Bridge Design Specifications, 19s Ed.

Shop drawings and structural calculations will not be required for the decorative pedestrian fences on the Bridge Pre-qualified Products List.

All materials used in fabrication and construction of the decorative pedestrian fencing shall be in accordance with the manufacturer's specifications, except as modified in the contract documents.

Decorative pedestrian fencing system shall be supported by only one manufacturer. Decorative pedestrian fencing system shall include all components except the anchor bolts and foundation. Acceptable style shall be as described by a NCHRP Report 259. The components shall be the same as the style described by the manufacturer.

See Bridge Pre-qualified Products List (BPP) for a list of approved manufacturers.

Substitution for the Kwalt cages will not be permitted.

Top of curb shall be built parallel to grade and curb joints incase at end of fence normal to grade.

All exposed edges of curb shall have either a 1/2-inch radius or a 3/4-inch bevel, unless otherwise noted.

Payment for all components and reinforcement be concrete curb, concrete in curb shall be Class H-11.

Measurement of pedestrian curb is the nearest linear foot for construction measured along outside of top of curb from fence post to fence post, inclusive.

Center of posts shall clear curb top or ends by at least 6 inches.

TYPICAL PART ELEVATION

PART SECTION SHOWING PEDESTRIAN CURB AT SLAB

PART SECTION SHOWING PEDESTRIAN CURB AT WING

PLAN OF PEDESTRIAN CURB SHOWING REINFORCEMENT

DECORATIVE PEDESTRIAN FENCE AND PEDESTRIAN CURB

Note: This drawing is not to scale. Follow dimensions. Sheet No. 25 of 31
### Bill of Reinforcing Steel

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**Note:** This drawing is not to scale. Follow dimensions.

Sheet No. 27 of 31