

**SPENCER COUNTY
SHELBYVILLE ROAD
KY 55 OVER A DITCH
Station 103+43**

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 are to the current edition of the AASHTO LRFD Bridge Design Specifications, with interims.

DESIGN LOAD: This structure is designed for HL-93 live load increased by 25%. The 25% increase is arrived by increasing the design truck or tandem and the design lane load by 25%.

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

MASONRY COATING: Masonry coating will not be required for this structure.

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.

REINFORCEMENT: Dimensions shown from the face of concrete to bars are to center of bars unless otherwise shown. Spacing of bars is from center to center of bars. Clear distance to face of concrete is 2" unless otherwise noted. Any reinforcing bars designated by suffix (e) in the Plans shall be epoxy coated in accordance with section 811.10 of the Standard Specifications. Any reinforcing bars designated by suffix (s) in a Bill of Reinforcement shall be considered a stirrup for purposes of bend diameters.

BEVELED EDGES: All exposed edges shall be beveled $\frac{3}{4}$ " unless otherwise shown.

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.

CONCRETE: Class "A" concrete shall be used throughout.

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.

FOOTING PRESSURE: Foundation materials for barrel and wing footings shall resist a maximum bearing pressure of 1284 PSF.

FLOWLINE REINFORCEMENT: Reinforcement in the 6 in thick slab shall be Size 4 bars at 18 in 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".

INDEX OF SHEETS

| Sheet No. | Description |
|-----------|-----------------------|
| 1 | Title |
| 2 | Layout |
| 3 & 4 | Barrel Details |
| 5 | Wings 1, 2 & 3 |
| 6 | Wing 4 |
| 7 | Bill of Reinforcement |

SPECIAL NOTES

SPECIAL PROVISIONS

STANDARD DRAWINGS

| | |
|------------|-------------------------|
| BGX-006-10 | Stencils for Structures |
|------------|-------------------------|

SPECIFICATIONS

2019 Standard Specifications for Road and Bridge Construction

2017 AASHTO LRFD Bridge Design Specifications

| | |
|--|--|
| | |
| | |
| | |

| | | |
|----------------------------|------------|------|
| REVISION | | DATE |
| DATE: MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | J. VAN ZEE | |

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY

SPENCER

| | |
|--|----------------------------|
| ROUTE KY 55 | CROSSING A DITCH |
| <i>SINGLE 5.0 x 4.0 CULVERT</i> | |

PREPARED BY

Division of Structural Design

SHEET NO.

S1

DRAWING NO
28320

ESTIMATE OF QUANTITIES

| BID CODE | ITEM | QUANTITY | UNIT |
|----------|---------------------------|----------|------|
| 8100 | Class "A" Concrete | 24.3 | C.Y. |
| 8150 | Reinforcement | 2079 | Lb |
| 8003 | Foundation Preparation | 1 | L.S. |
| 8002 | Structure Excavation Rock | 13 | C.Y. |
| 2625 | Remove Headwall | 2 | Each |

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.

STRUCTURAL ADHESIVES: Bond proposed plastic concrete to existing hardened concrete in all locations using a Type V epoxy resin or other approved Structural Adhesive as detailed in section 826 of the Specifications. Epoxy grout reinforcing steel in detailed locations using a Type IV epoxy meeting the requirements of Section 826. Follow all manufacturers recommendations for application and all work and materials are incidental to the unit price bid for concrete.

SAWCUTTING EXISTING CONCRETE: Prior to the removal of the existing concrete masonry, cut the surface with a concrete saw to a depth of one inch to facilitate a neat line. The cost of cutting concrete shall be included in the lump sum bid for remove headwall.

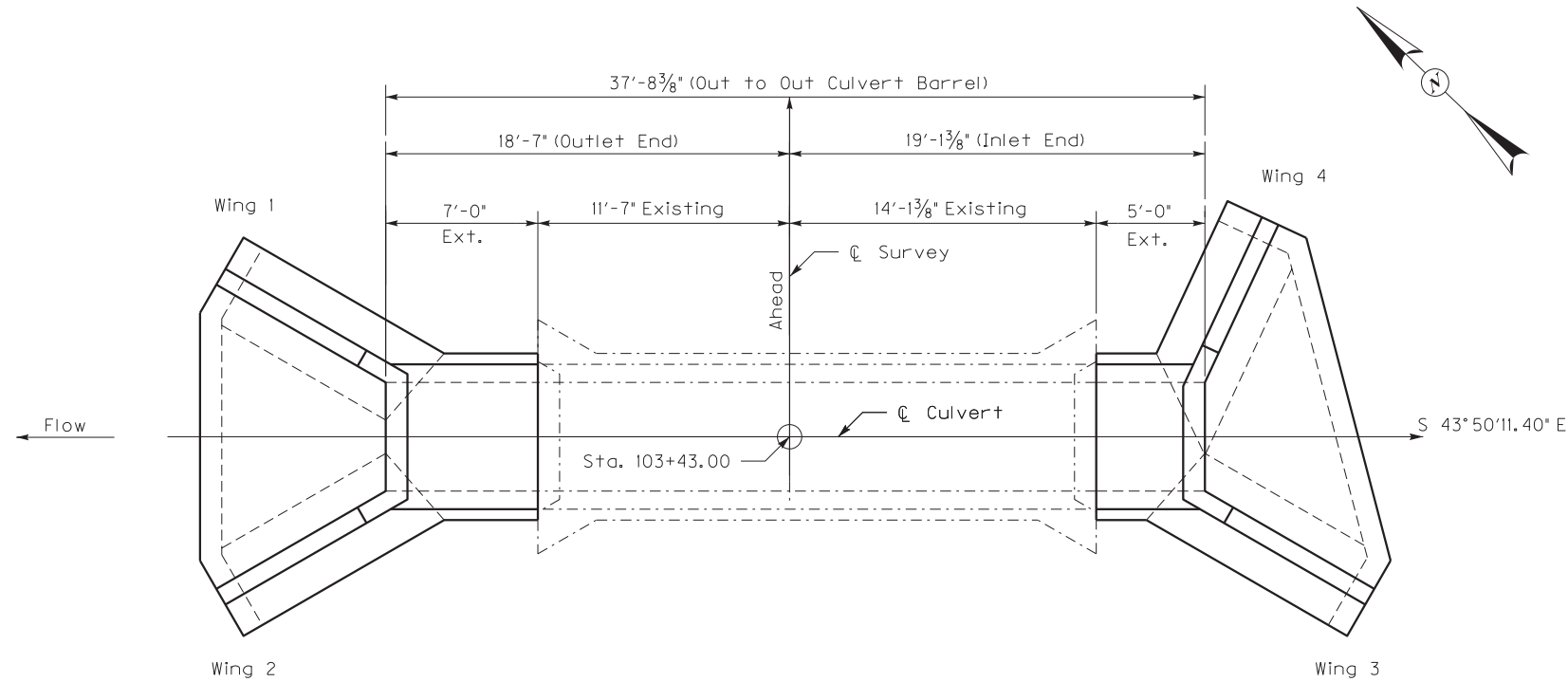
REMOVE HEADWALL: Remove existing wings and portions of existing parapets (if necessary to maintain top of parapet 6 inches below roadway surface) as detailed herein to limits shown. Include all costs to sawcut and remove concrete masonry in the bid price for each.

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 footings 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 footings located in rock. 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 use of bedrock shall be considered and the concrete materials 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.

USER NAME: Earl W. Downey FILE NAME: J:\District\105\5-9017 HSP\Culvert\105\28320 5x4 RCBC Station 103+43 spencer ck\28320\28320.dgn
DATE: 20-NOV-2020
E-SHEET NAME:

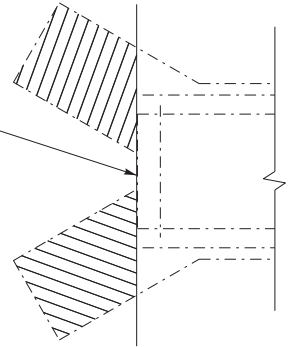


PLAN

SCALE = 1:48

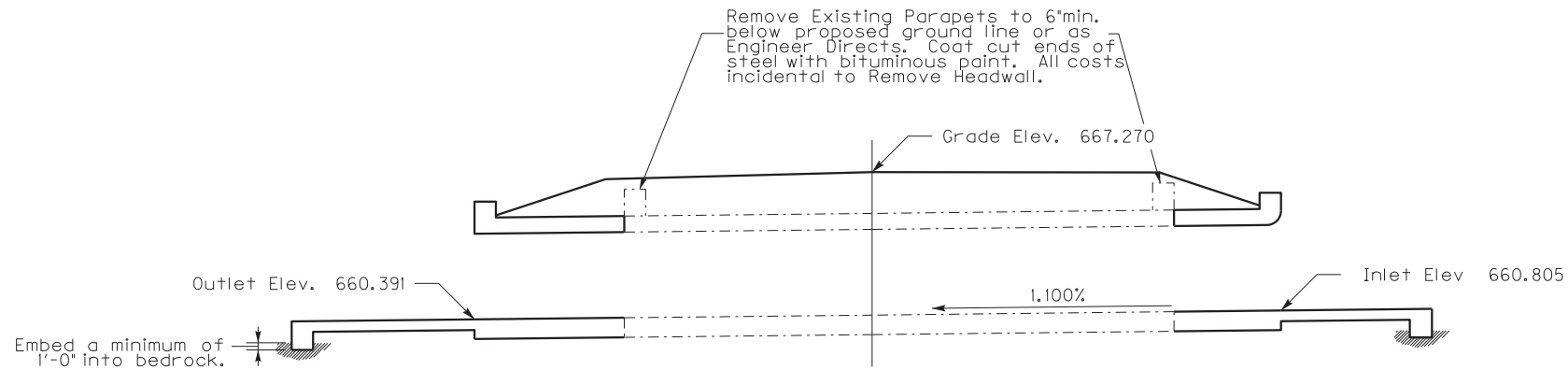
Note: Field verify all dimensions prior to ordering materials. All dimensions are taken from existing survey. Actual barrel lengths may vary from plans in the field. Extension lengths shall be built per the plan.

Remove hatched portions of all wings and footings to a line even with face of parapet. Typ. Each End of Culvert.



Removal Details

SCALE = 1:48



SECTION ON CL

Single 5'-0" x 4'-0" x 37'-8 3/8" R.C.B.C.
19'-1 3/8" Inlet End and 18'-7" Outlet End
0.0000° Skew ~ KYHL-93 Loading ~ 0.33 Fill Slope
Unyielding Foundation

| | | | |
|--|------------|------------|-------------|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY | | | |
| SPENCER | | | |
| ROUTE | CROSSING | | |
| KY 55 | A DITCH | | |
| LAYOUT | | | |
| PREPARED BY | | | SHEET NO. |
| Division of | | | S2 |
| Structural Design | | | DRAWING NO. |
| | | | 28320 |

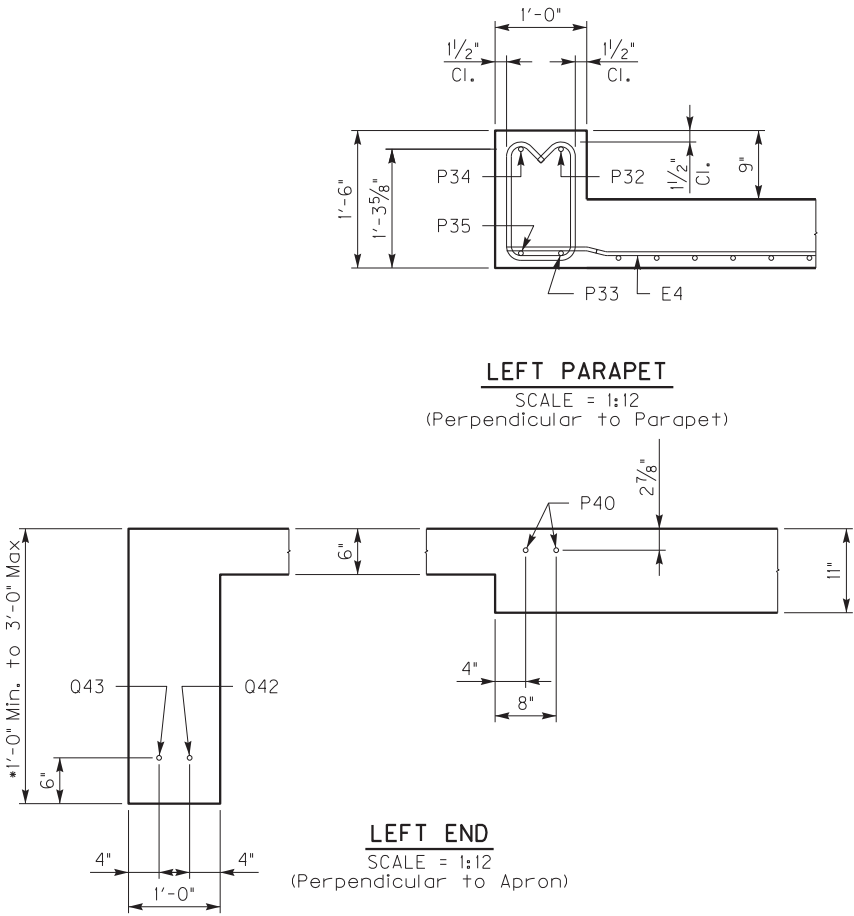


NOTE: The cost of drilling holes, grouting, and epoxy bonding material shall be incidental to the cost of Class "A" Concrete.

"A" 5~R46 @ 1'-0" = 4'-0"
 "B" 5~R47 @ 1'-0" = 4'-0"
 Minimum Lap Distance for E 4 Bars 21 in
 Minimum Lap Distance for E 5 Bars 21 in

| | | | |
|--|------------|------------|--|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| <p align="center">Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS</p> | | | |
| <p align="center">COUNTY</p> <p align="center">SPENCER</p> | | | |
| ROUTE | | CROSSING | |
| KY 55 | | A DITCH | |
| <p align="center"><i>BARREL</i></p> | | | |
| <p align="center">PREPARED BY</p> <p align="center">Division of Structural Design</p> | | | <p align="center">SHEET NO.</p> <p align="center">S3</p> <p align="center">DRAWING NO.</p> <p align="center">28320</p> |

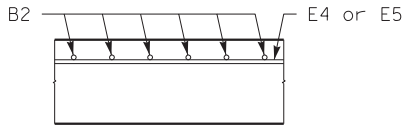
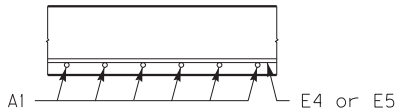
E-SHEET NAME: DATE: 20-NOV-2020 USERNAME: Earl W. Downey FILE NAME: J:\District\05\5-9017 HSP\ Culverts\128320 5x4 RCBC Station 103+43 spencer ck\28320\28320.dgn



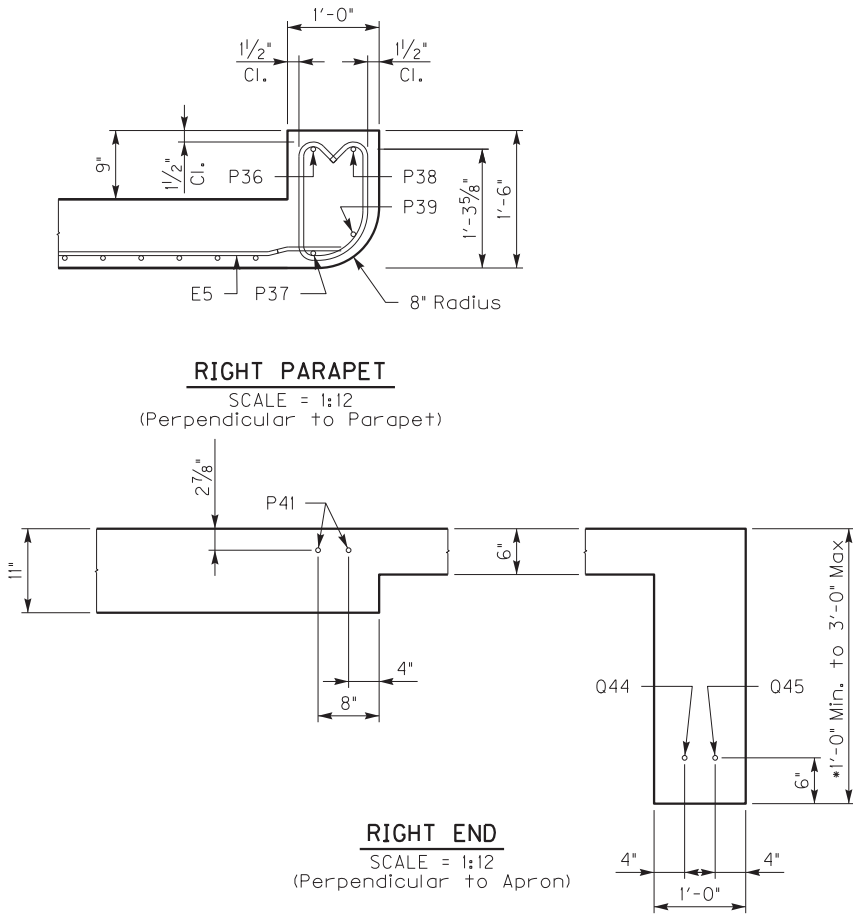
LEFT PARAPET
 SCALE = 1:12
 (Perpendicular to Parapet)

LEFT END
 SCALE = 1:12
 (Perpendicular to Apron)

*Note: Embed apron 1'-0" Min. into solid rock. 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 3'-0" long if solid rock is deep. Quantities are include for the full 3'-0" depth. Adjust concrete paid as necessary for actual depth used.



SECTION ON C
 SCALE = 1:12



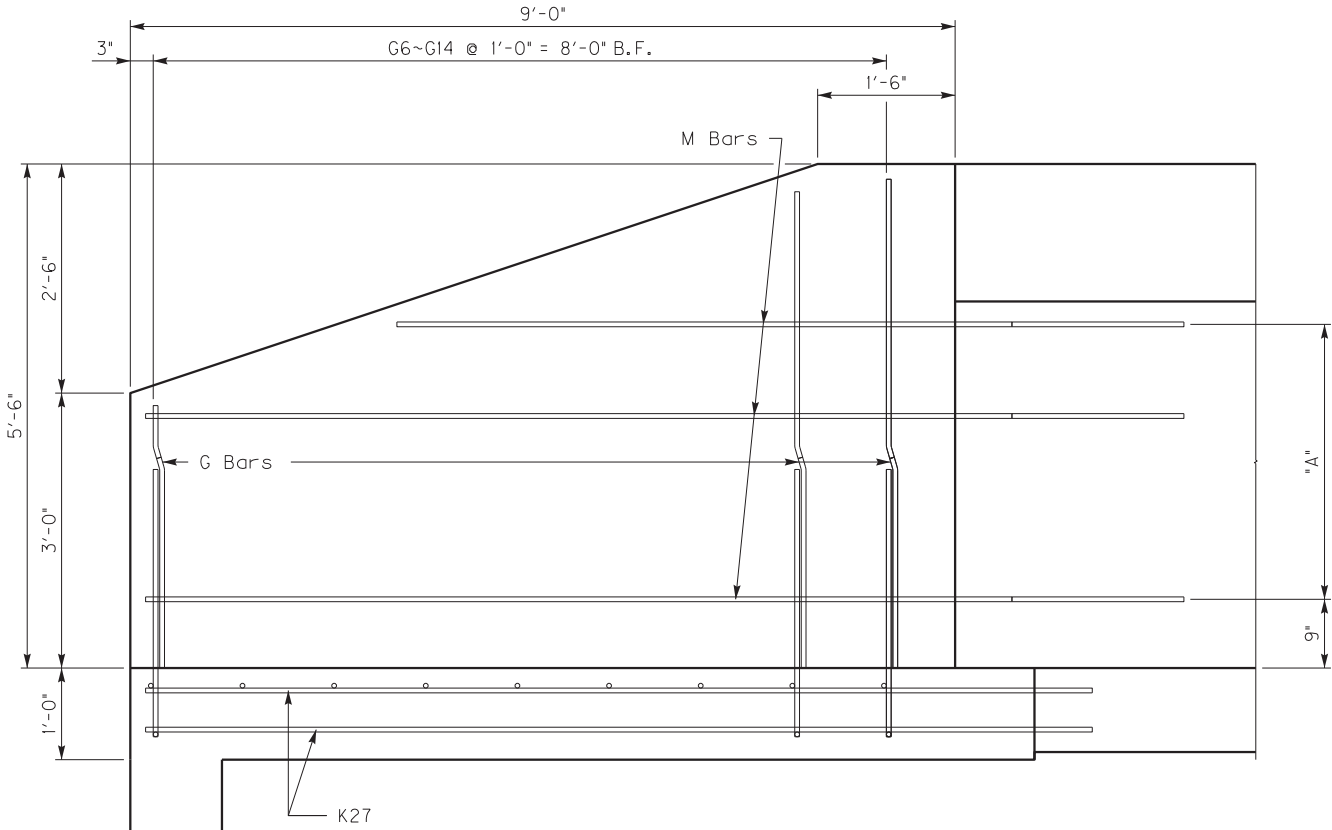
RIGHT PARAPET
 SCALE = 1:12
 (Perpendicular to Parapet)

RIGHT END
 SCALE = 1:12
 (Perpendicular to Apron)

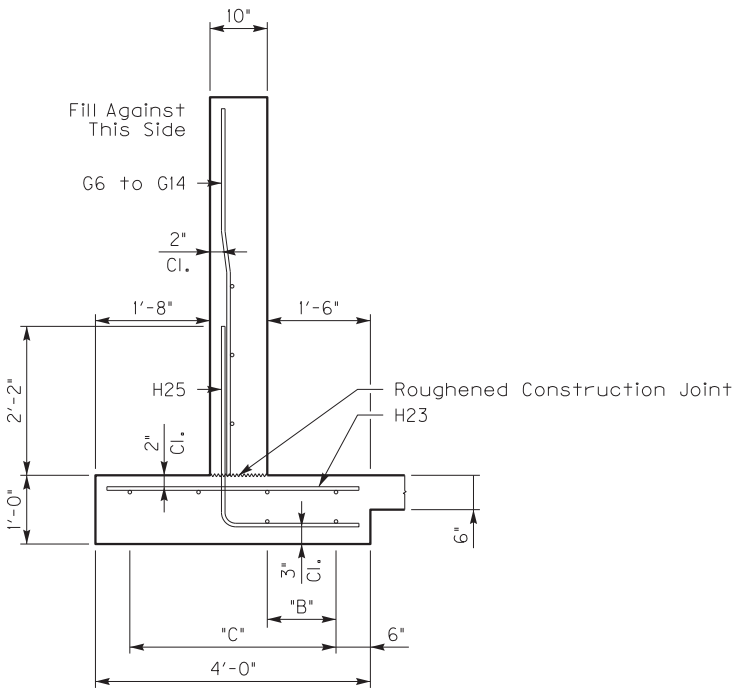
| ITEM NUMBER |
|-------------|
| 05-9017.00 |

| | |
|---|---------------|
| | |
| | |
| | |
| REVISION | |
| DATE: | MARCH 2020 |
| DESIGNED BY: | J. VAN ZEE |
| DETAILED BY: | M. BAWITHAWNG |
| <div> <div>Commonwealth of Kentucky</div> <div>DEPARTMENT OF HIGHWAYS</div> <div>COUNTY</div> <div>SPENCER</div> </div> | |
| ROUTE | CROSSING |
| KY 55 | A DITCH |
| BARREL | |
| PREPARED BY | |
| Division of Structural Design | |
| SHEET NO. | S4 |
| DRAWING NO. | 28320 |

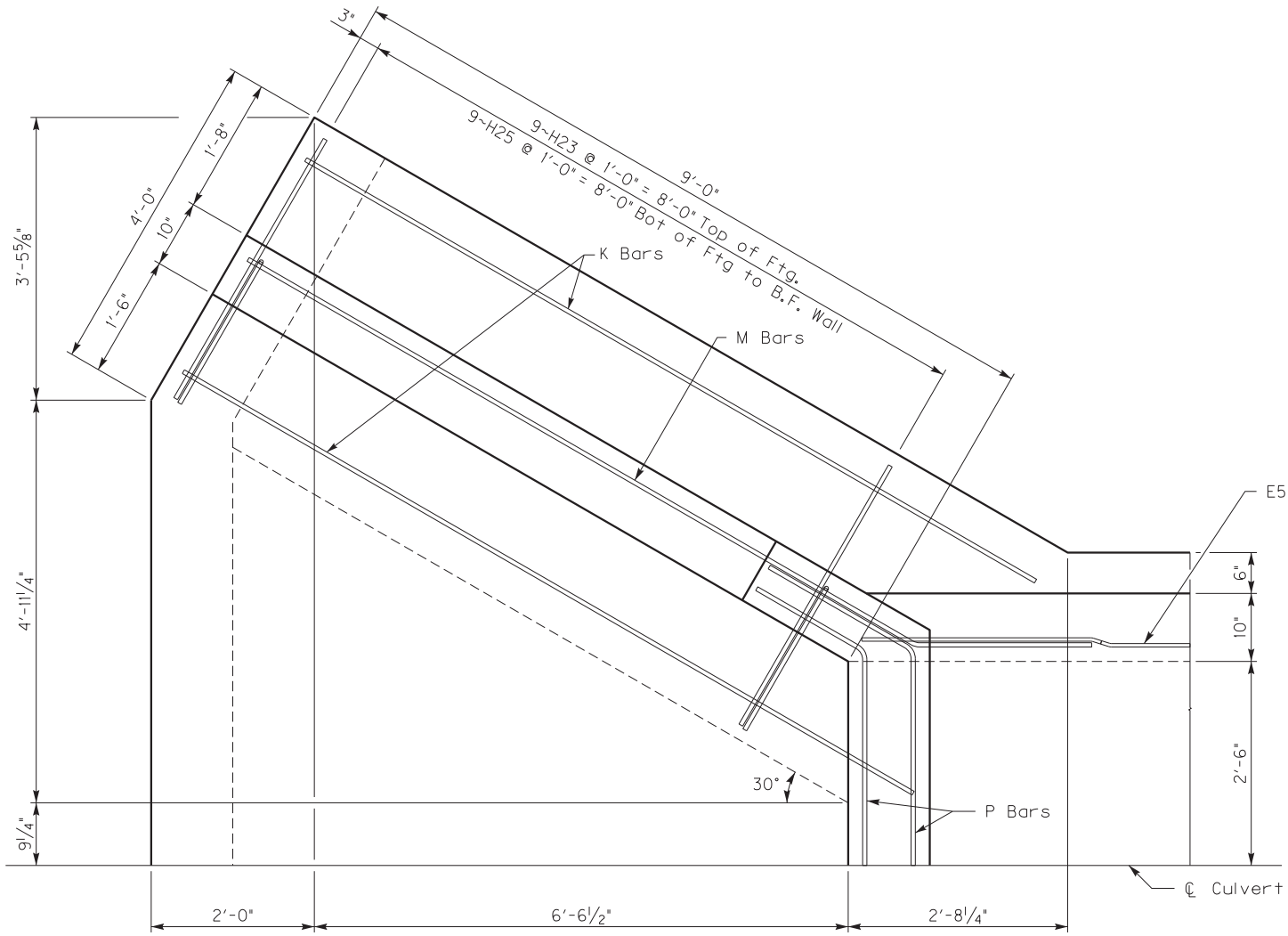
E-SHEET NAME: DATE: 20-NOV-2020 USERNAME: Earl W. Downey FILE NAME: J:\District\05\5-9017 HSP\Culvert\ts\28320 5x4 RCBC Station 103+43 spencer ck\28320\28320.dgn



WING ELEVATION
SCALE = 1:12



WING SECTION
SCALE = 1:16



PLAN
SCALE = 1:12

"A" 3~M29, 1~M30 @ 1'-0" = 3'-0" B.F.
"B" 2~K27 @ 1'-0" = 1'-0" Bot of Ftg.
"C" 4~K27 @ 1'-0" = 3'-0"

| | | | |
|--|------------|----------------------------|--|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY SPENCER | | | |
| ROUTE KY 55 | | CROSSING A DITCH | |
| Wings 1, 2 & 3 | | | |
| PREPARED BY | | SHEET NO. | |
| Division of Structural Design | | S5 DRAWING NO. 28320 | |



"A" 8~H26 @ 1'-0" = 7'-0" Bot of Ftg to B.F. Wall
 "B" 4~M31 @ 1'-0" = 3'-0" B.F.
 "C" 2~K28 @ 1'-0" = 1'-0" Bot of Ftg.
 "D" 4~K28 @ 1'-0" = 3'-0"

| | | | |
|--|----------------------------|------------|---|
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: MARCH 2020 | CHECKED BY | | |
| DESIGNED BY: J. VAN ZEE | L. LIKINS | | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| <p align="center">Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS</p> | | | |
| <p align="center">COUNTY SPENCER</p> | | | |
| ROUTE KY 55 | CROSSING A DITCH | | |
| <p align="center"><i>Wing 4</i></p> | | | |
| <p align="center">PREPARED BY</p> <p align="center">Division of Structural Design</p> | | | <p align="center">SHEET NO. S6 DRAWING NO. 28320</p> |

TYPE 5

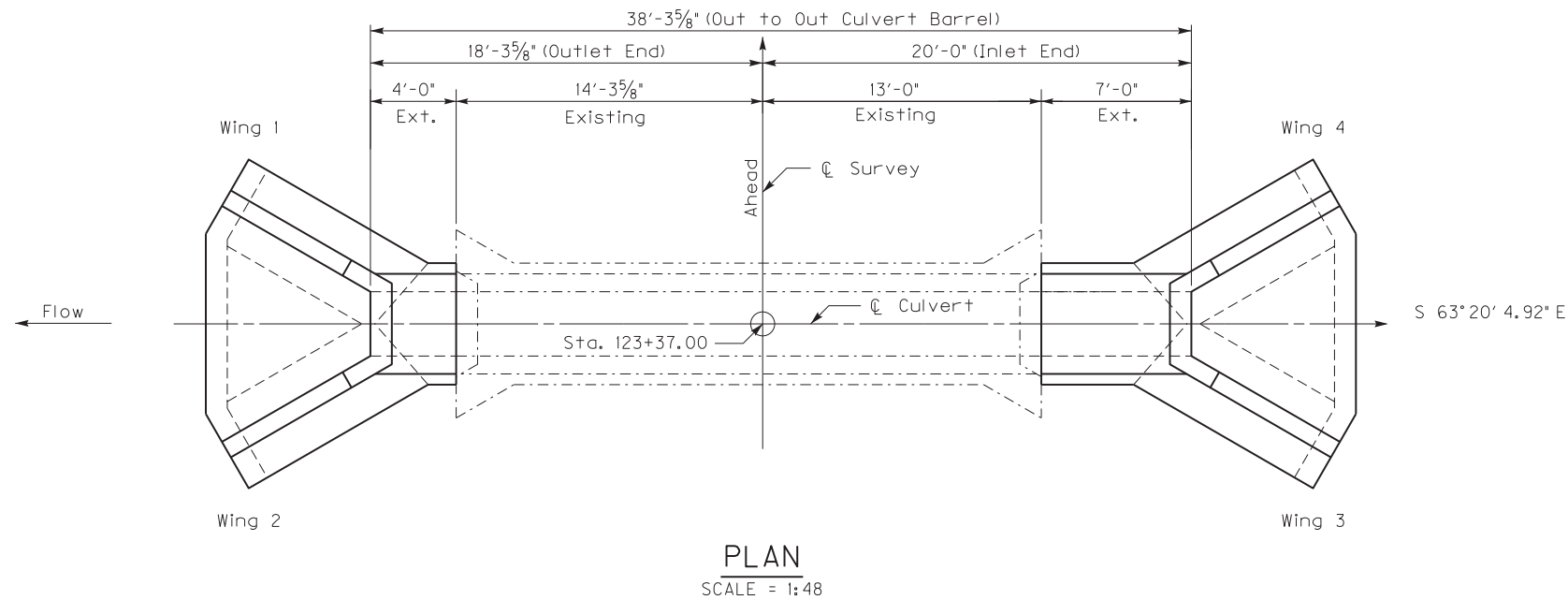
TYPE 8

TYPE 12

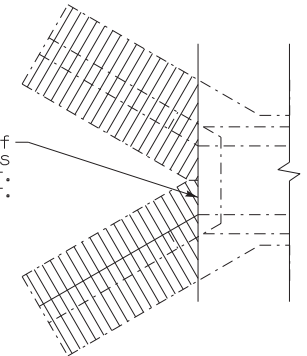
| BILL OF REINFORCEMENT | | | | | | | | | |
|-----------------------|------|-----|------|--------|----------------------------|--------|-------|-------|-------|
| MARK | TYPE | NO. | SIZE | LENGTH | LOCATION | A/E | B/F | C/G | D/H |
| A1 | I | 23 | 5 | 7- 7 | Top Slab | 5-11 | 0-10 | 0- 5 | 6- 4 |
| B2 | I | 23 | 5 | 8- 7 | Bottom Slab | 6-11 | 0-10 | 0- 5 | 7- 4 |
| C3 | Str. | 24 | 5 | 5- 3 | Sidewalls | | | | |
| E4 | Str. | 28 | 4 | 4- 8 | Slabs & Sidewalls (Inlet) | | | | |
| E5 | Str. | 28 | 4 | 6- 8 | Slabs & Sidewalls (Outlet) | | | | |
| G6 | Str. | 3 | 5 | 2-10 | B.F Wings 1, 2 & 3 | | | | |
| G7 | Str. | 3 | 5 | 3- 2 | B.F Wings 1, 2 & 3 | | | | |
| G8 | Str. | 3 | 5 | 3- 6 | B.F Wings 1, 2 & 3 | | | | |
| G9 | Str. | 3 | 5 | 3-10 | B.F Wings 1, 2 & 3 | | | | |
| G10 | Str. | 3 | 5 | 4- 2 | B.F Wings 1, 2 & 3 | | | | |
| G11 | Str. | 3 | 5 | 4- 6 | B.F Wings 1, 2 & 3 | | | | |
| G12 | Str. | 3 | 5 | 4-10 | B.F Wings 1, 2 & 3 | | | | |
| G13 | Str. | 3 | 5 | 5- 2 | B.F Wings 1, 2 & 3 | | | | |
| G14 | Str. | 3 | 5 | 5- 4 | B.F Wings 1, 2 & 3 | | | | |
| G15 | Str. | 1 | 5 | 3-10 | B.F Wing 4 | | | | |
| G16 | Str. | 1 | 5 | 4- 1 | B.F Wing 4 | | | | |
| G17 | Str. | 1 | 5 | 4- 4 | B.F Wing 4 | | | | |
| G18 | Str. | 1 | 5 | 4- 6 | B.F Wing 4 | | | | |
| G19 | Str. | 1 | 5 | 4- 9 | B.F Wing 4 | | | | |
| G20 | Str. | 1 | 5 | 5- 0 | B.F Wing 4 | | | | |
| G21 | Str. | 1 | 5 | 5- 3 | B.F Wing 4 | | | | |
| G22 | Str. | 1 | 5 | 5- 4 | B.F Wing 4 | | | | |
| H23 | Str. | 27 | 5 | 3- 8 | Top Ftq Wings 1, 2 & 3 | | | | |
| H24 | Str. | 8 | 5 | 3- 8 | Top Ftq Wing 4 | | | | |
| H25 | 5 | 27 | 5 | 4- 9 | Bot Ftq Wings 1, 2 & 3 | 2-11 | 2- 0 | | |
| H26 | 5 | 8 | 5 | 4- 8 | Bot Ftq Wing 4 | 2-11 | 1-11 | | |
| K27 | Str. | 18 | 5 | 10- 4 | Ftq Wings 1, 2 & 3 | | | | |
| K28 | Str. | 6 | 5 | 7- 5 | Ftq Wing 4 | | | | |
| M29 | 8 | 9 | 5 | 11- 7 | B.F. Wings 1, 2 & 3 | 9- 5½ | 2- 2 | 1- 1 | 1-10½ |
| M30 | 8 | 3 | 5 | 8-10 | B.F. Wings 1, 2 & 3 | 6- 8½ | 2- 2 | 1- 1 | 1-10½ |
| M31 | 8 | 4 | 5 | 10- 0 | B.F. Wing 4 | 7-10¾ | 2- 2 | 1-11½ | 0-11 |
| P32 | 7 | 1 | 5 | 9- 5 | B.F. Parapet Lt. End | 5- 6¾ | 1-11¾ | 1-11¾ | 1- 8½ |
| | | | | | | 0-11½ | 1- 8½ | 0-11½ | |
| P33 | 7 | 1 | 5 | 9- 5 | B.F. Parapet Lt. End | 5- 6¾ | 1-11¾ | 1-11¾ | 1- 8½ |
| | | | | | | 0-11½ | 1- 8½ | 0-11½ | |
| P34 | 7 | 1 | 5 | 8- 5 | F.F. Parapet Lt. End | 5- 1¼ | 1- 8¾ | 1- 8¾ | 1- 5½ |
| | | | | | | 0-10¼ | 1- 5½ | 0-10¼ | |
| P35 | 7 | 1 | 5 | 8- 5 | F.F. Parapet Lt. End | 5- 1¼ | 1- 8¾ | 1- 8¾ | 1- 5½ |
| | | | | | | 0-10¼ | 1- 5½ | 0-10¼ | |
| P36 | 7 | 1 | 5 | 9- 0 | B.F. Parapet Rt. End | 5- 1½ | 1-11¾ | 1-11¾ | 1- 8½ |
| | | | | | | 0-11½ | 0- 9¾ | 1- 8½ | |
| P37 | 7 | 1 | 5 | 9- 0 | B.F. Parapet Rt. End | 5- 1½ | 1-11¾ | 1-11¾ | 1- 8½ |
| | | | | | | 0-11½ | 0- 9¾ | 1- 8½ | |
| P38 | 7 | 1 | 5 | 8- 4 | F.F. Parapet Rt. End | 4-11¼ | 1- 8¾ | 1- 8¾ | 1- 5½ |
| | | | | | | 0-10¼ | 0- 8¾ | 1- 6¾ | |
| P39 | 7 | 1 | 5 | 8- 4 | F.F. Parapet Rt. End | 4-11¼ | 1- 8¾ | 1- 8¾ | 1- 5½ |
| | | | | | | 0-10¼ | 0- 8¾ | 1- 6¾ | |
| P40 | Str. | 2 | 5 | 7- 4 | Bottom Slab Lt. End | | | | |
| P41 | Str. | 2 | 5 | 7- 4 | Bottom Slab Rt. End | | | | |
| Q42 | 7 | 1 | 5 | 18- 2 | Apron Lt. End | 11- 0¾ | 3- 7 | 3- 7 | 1- 9½ |
| | | | | | | 3- 1½ | 1- 9½ | 3- 1½ | |
| Q43 | 7 | 1 | 5 | 18- 6 | Apron Lt. End | 11- 2½ | 3- 8 | 3- 8 | 1-10 |
| | | | | | | 3- 2½ | 1-10 | 3- 2½ | |
| Q44 | 7 | 1 | 5 | 21- 8 | Apron Rt. End | 14- 9½ | 3- 5½ | 3- 5½ | 2- 5½ |
| | | | | | | 2- 5¼ | 2- 7½ | 2- 2½ | |
| Q45 | 7 | 1 | 5 | 22- 3 | Apron Rt. End | 15- 1 | 3- 7½ | 3- 7¼ | 2- 6½ |
| | | | | | | 2- 7 | 2- 9½ | 2- 3½ | |
| R46 | 12s | 5 | 5 | 4- 1 | Parapet Wall (Left End) | 1- 3½ | 0- 9 | | |
| R47 | 11s | 5 | 5 | 3-11 | Parapet Wall (Right End) | 1- 3½ | 0- 9 | 0- 2½ | 0- 9 |
| | | | | | | 0- 6½ | 0- 9¾ | | |
| X48 | Str. | 44 | 8 | 2- 0 | Dowels | | | | |

| | | | |
|--|--|--|--|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: MARCH 2020 | | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| <p align="center">Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS</p> | | | |
| <p align="center">COUNTY</p> <p align="center">SPENCER</p> | | | |
| ROUTE KY 55 | | CROSSING A DITCH | |
| <p align="center"><i>Bill of Reinforcement</i></p> | | | |
| <p align="center">PREPARED BY</p> <p align="center">Division of Structural Design</p> | | <p align="center">SHEET NO. S7</p> <p align="center">DRAWING NO. 28320</p> | |

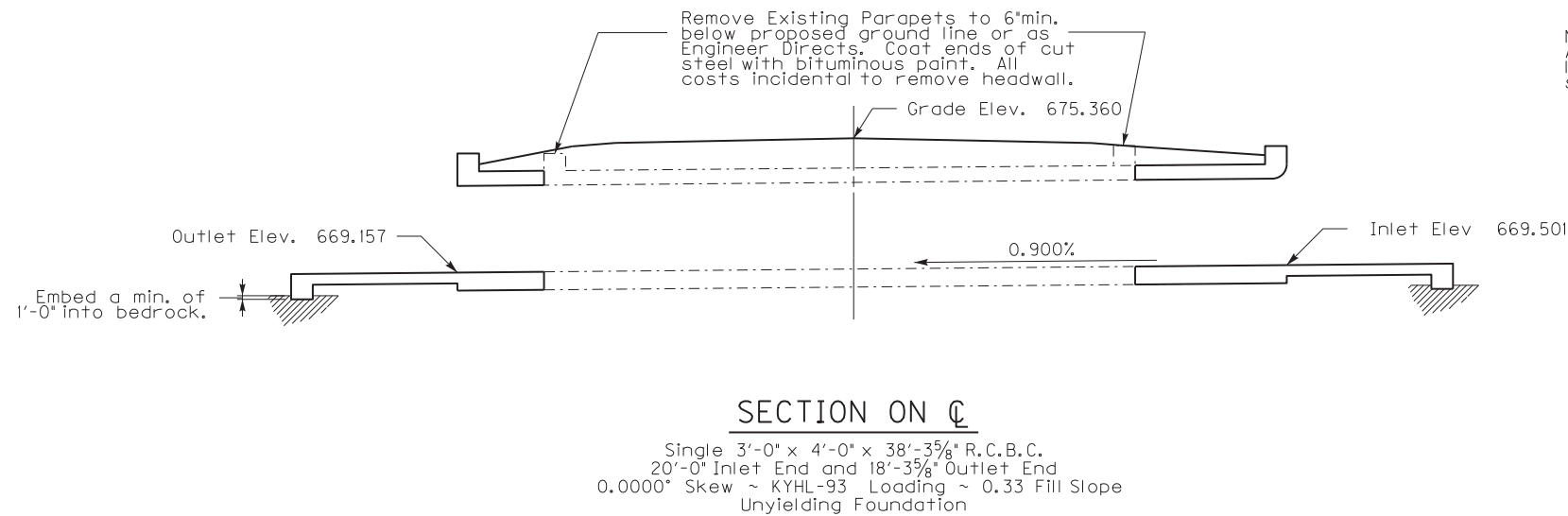
FILE NAME: J:\District\05\5-9017 HSP\ Culverts\2 28321 3x4 RCBC Station 123+37\28321\28321.dgn
USER NAME: Joseph.vanzee
DATE: 21-APR-2020
E-SHEET NAME:



Remove hatched portions of
all wings and footings
to a line even with face of parapet.
Typ. Each End of Culvert.



Removal Details
SCALE = 1:48

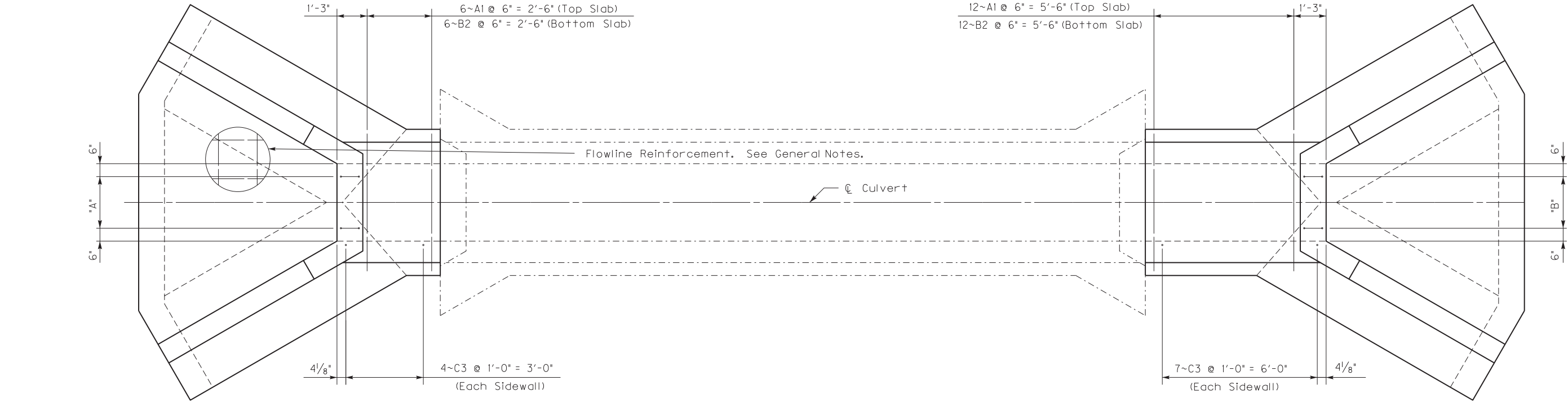


Note: Field verify all dimensions prior to ordering materials. All dimensions are taken from existing survey. Actual barrel lengths may vary from plans in the field. Extension lengths shall be built per the plan.

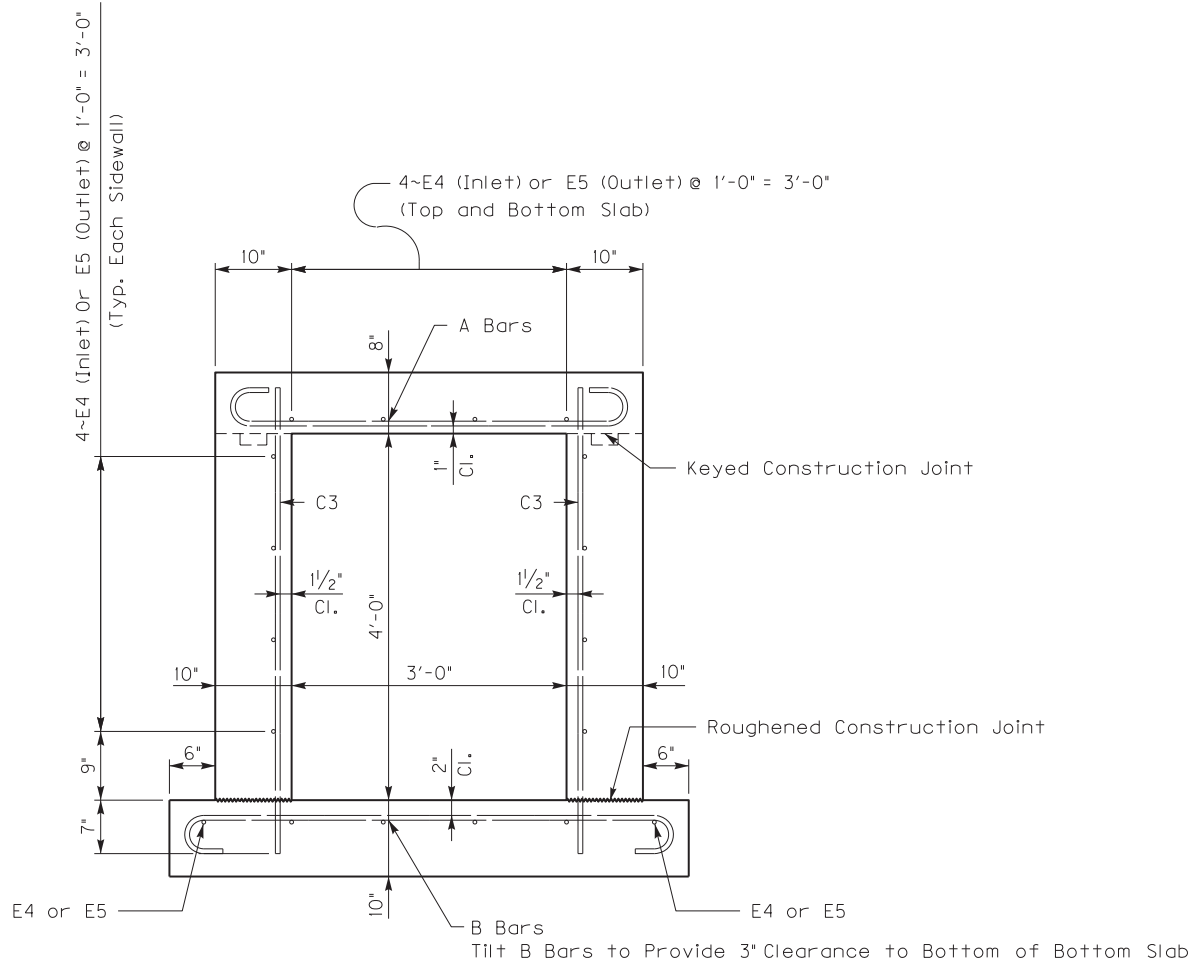
| ITEM NUMBER | | PREPARED BY | | SHEET NO. |
|-------------|--|----------------------------------|--|----------------------------|
| 05-9017.00 | | Division of Structural Design | | S2 DRAWING NO. 28321 |

| | | |
|--|------------|------------|
| | | |
| | | |
| | | |
| REVISION | | DATE |
| DATE: | MARCH 2020 | CHECKED BY |
| DESIGNED BY: J. VAN ZEE | N.O. BODY | |
| DETAILED BY: M. BAWITHAWNG | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY | | |
| SPENCER | | |
| ROUTE | CROSSING | |
| KY 55 | A DITCH | |
| LAYOUT | | |

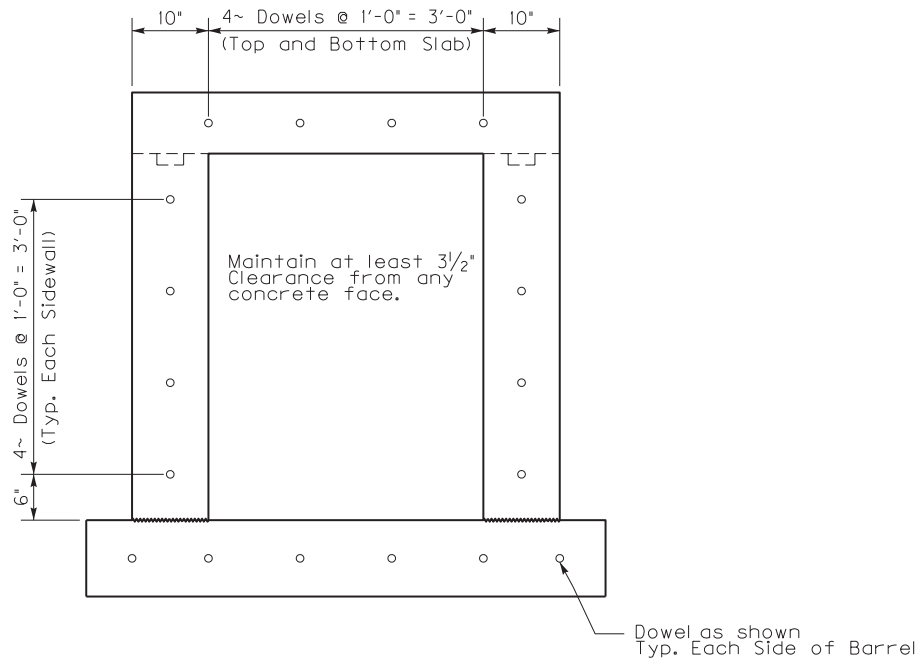
E-SHEET NAME: USER NAME: Joseph.vanzee FILE NAME: J:\District\05\5-9017 HSP\Culverts\2 28321 3x4 RCBC Station 123+37\28321\28321.dgn DATE: 21-APR-2020



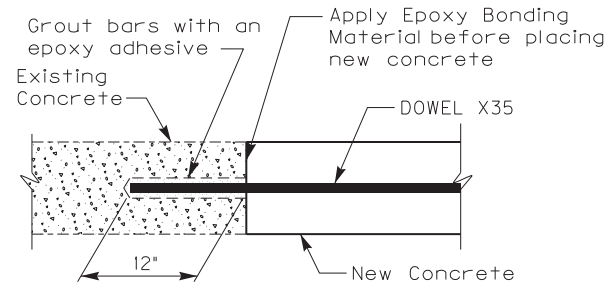
PLAN
SCALE = 1:24



TYPICAL BARREL SECTION
SCALE = 1:12



DOWEL LOCATIONS
SCALE = 1:12

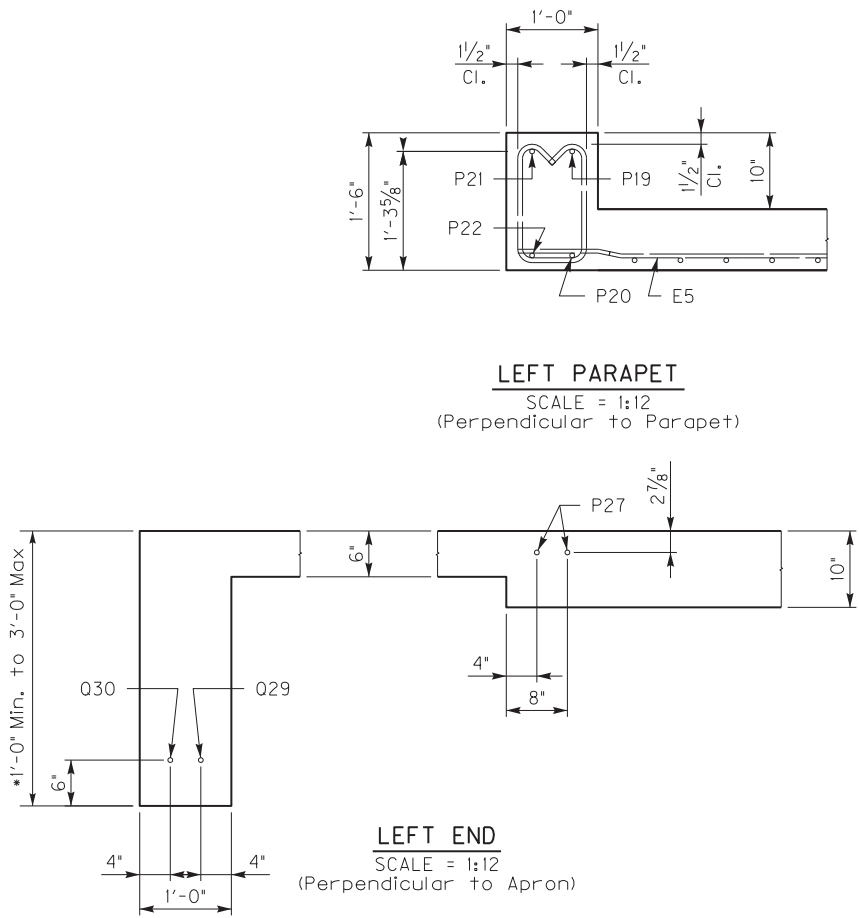


DOWEL DETAILS

NOTE: The cost of drilling holes, grouting, and epoxy bonding material shall be incidental to the cost of Class "A" Concrete.

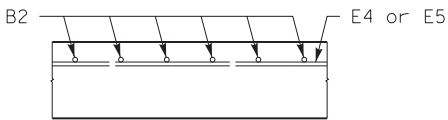
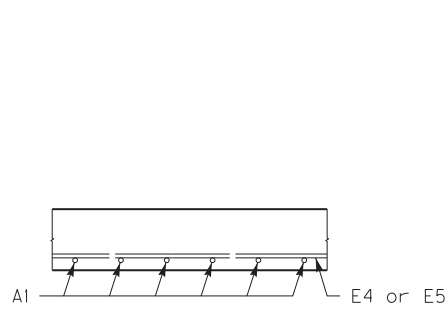
| ITEM NUMBER | | PREPARED BY | | SHEET NO. | |
|-------------|--|-------------------------------|--|-------------------|--|
| 05-9017.00 | | Division of Structural Design | | S3 | |
| | | | | DRAWING NO. 28321 | |

E-SHEET NAME: DATE: 21-APR-2020 USERNAME: Joseph.vanzee FILE NAME: J:\District05\5-9017 HSP\Culverts\2 28321 3x4 RCBC Station 123+37\28321\28321.dgn

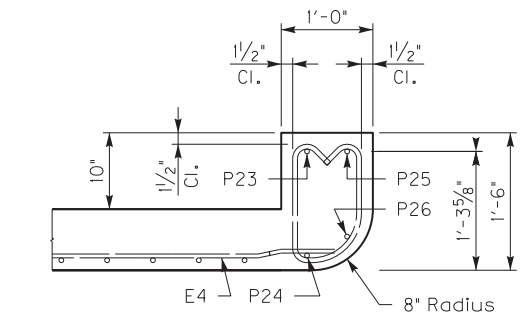


LEFT PARAPET
SCALE = 1:12
(Perpendicular to Parapet)

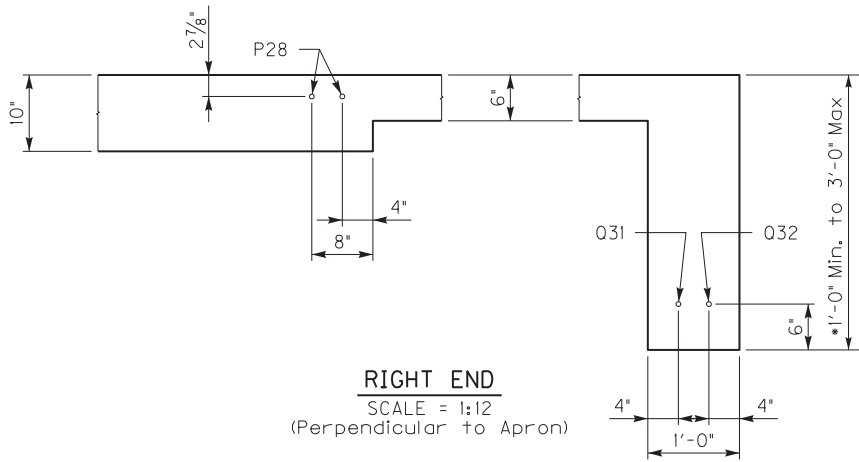
LEFT END
SCALE = 1:12
(Perpendicular to Apron)



SECTION ON C
SCALE = 1:12



RIGHT PARAPET
SCALE = 1:12
(Perpendicular to Parapet)



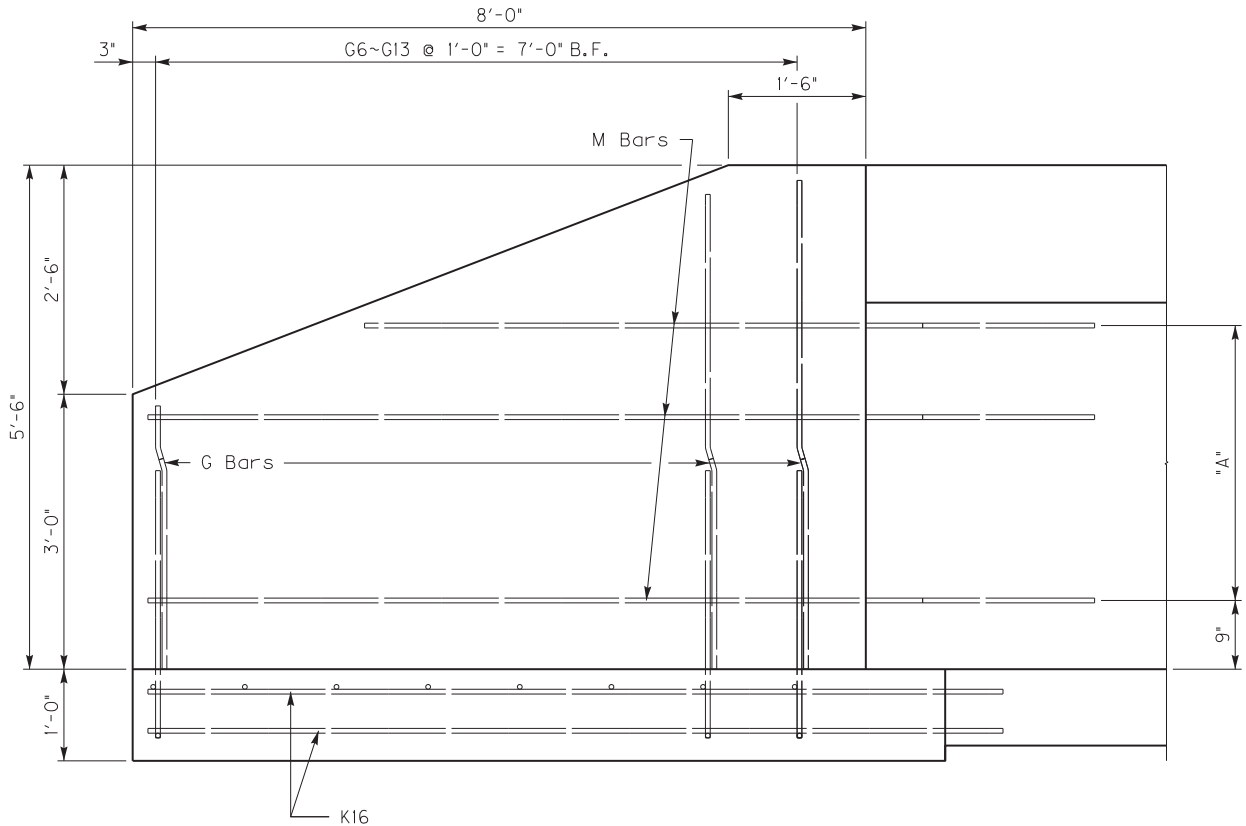
RIGHT END
SCALE = 1:12
(Perpendicular to Apron)

*Note: Embed apron 1'-0" Min. into solid rock. 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 3'-0" long if solid rock is deep. Quantities are include for the full 3'-0" depth. Adjust concrete paid as necessary for actual depth used.

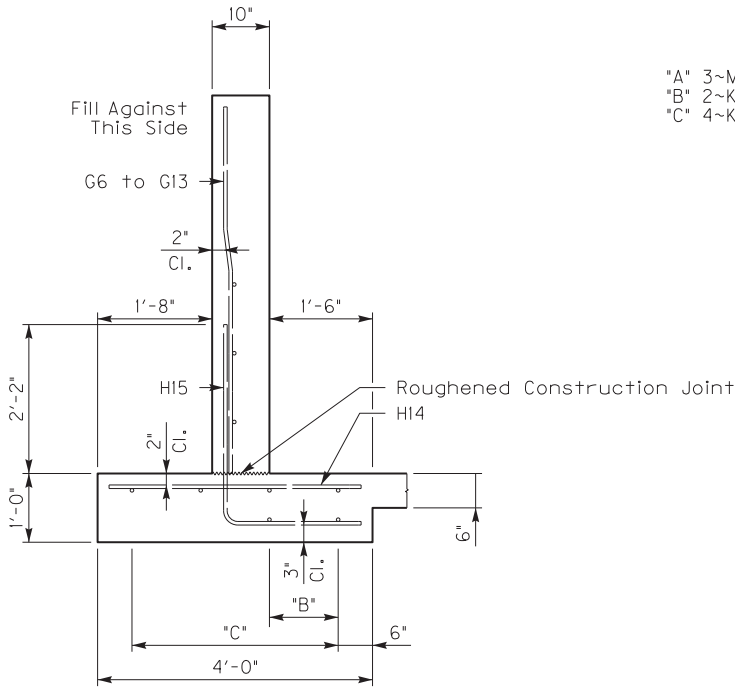
| ITEM NUMBER |
|-------------|
| 05-9017.00 |

| | | |
|--|---------------------|---|
| | | |
| | | |
| | | |
| REVISION | | DATE |
| DATE: MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | N.O. BODY | |
| DETAILED BY: M. BAWITHAWNG | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY SPENCER | | |
| ROUTE KY 55 | CROSSING A DITCH | |
| BARREL | | |
| PREPARED BY Division of Structural Design | | SHEET NO. S4 DRAWING NO. 28321 |

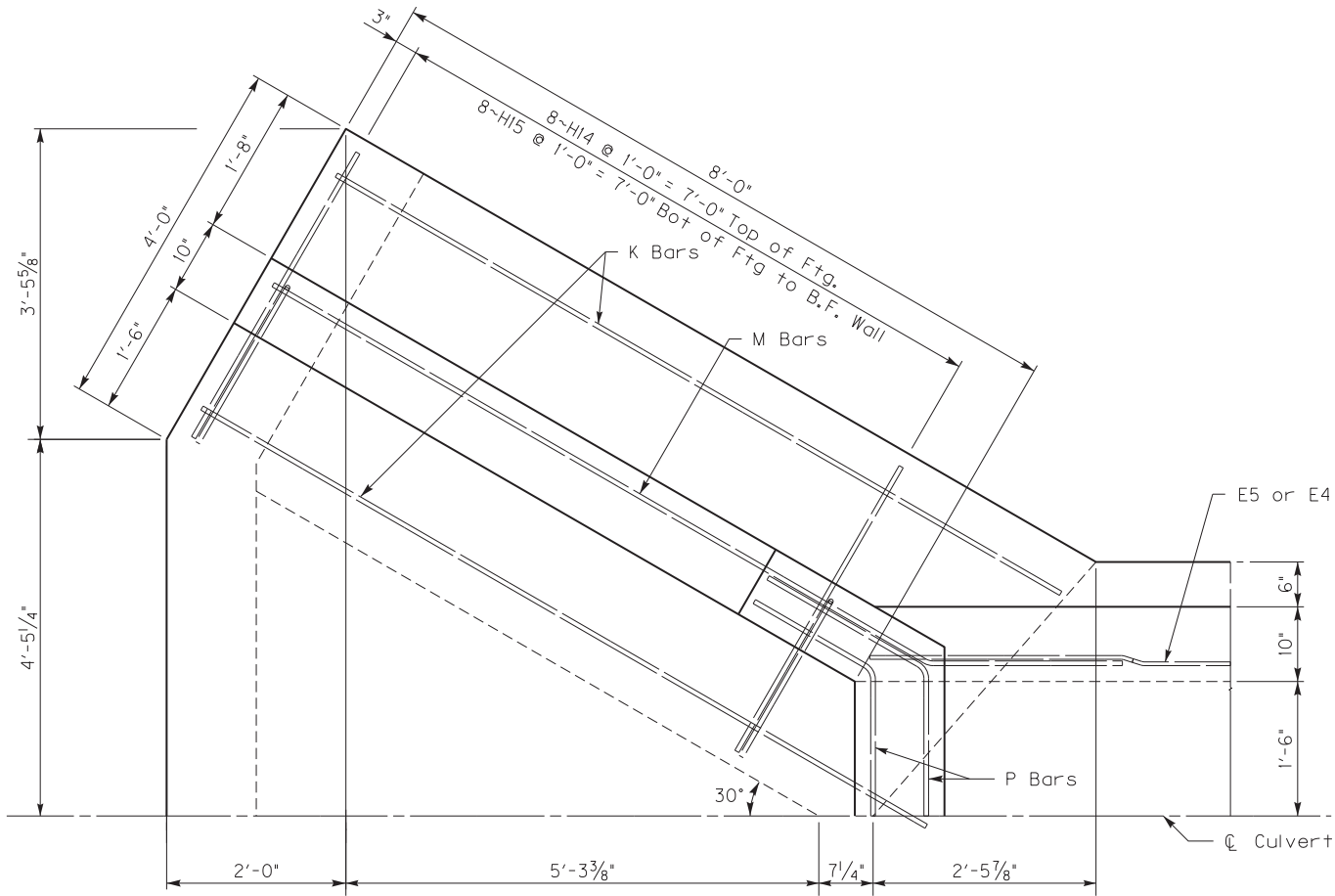
E-SHEET NAME: DATE: 21-APR-2020 USERNAME: Joseph.vanzee FILE NAME: J:\District\05\5-9017 HSP\Culverts\2 28321 3x4 RCBC Station 123+37\28321\28321.dgn



WING ELEVATION
SCALE = 1:12



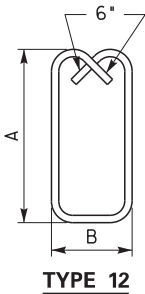
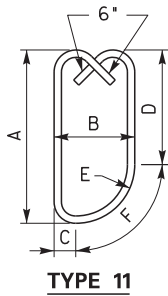
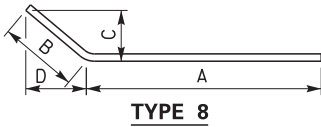
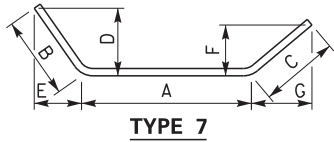
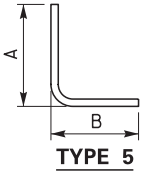
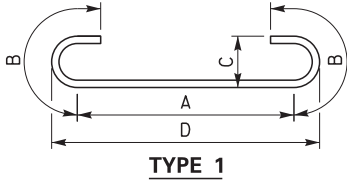
WING SECTION
SCALE = 1:16



PLAN
SCALE = 1:12

"A" 3~M17,1~M18 @ 1'-0" = 3'-0" B.F.
"B" 2~K16 @ 1'-0" = 1'-0" Bot of Ftg.
"C" 4~K16 @ 1'-0" = 3'-0"

| | | | |
|--|------------|---------------------|--|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | N.O. BODY | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY SPENCER | | | |
| ROUTE KY 55 | | CROSSING A DITCH | |
| Wings 1, 2, 3 & 4 | | | |
| PREPARED BY | | SHEET NO. | |
| Division of | | S5 | |
| Structural Design | | DRAWING NO. | |
| | | 28321 | |

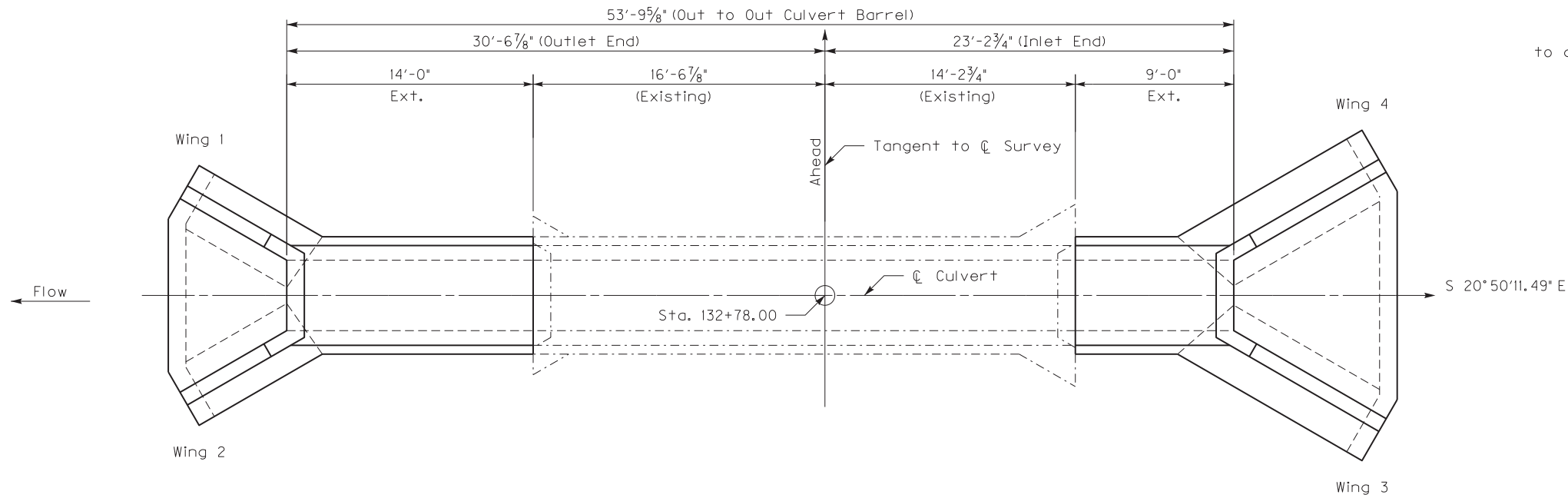


BILL OF REINFORCEMENT

| MARK | TYPE | NO. | SIZE | LENGTH | LOCATION | A/E | B/F | C/G | D/H |
|------|------|-----|------|--------|------------------------------|-----------|-----------|-----------|-----------|
| A1 | I | 18 | 5 | 5- 7 | Top Slab | 3- 11 | 0- 10 | 0- 5 | 4- 4 |
| B2 | I | 18 | 5 | 6- 7 | Bottom Slab | 4- 11 | 0- 10 | 0- 5 | 5- 4 |
| C3 | Str. | 22 | 5 | 5- 1 | Sidewalls | | | | |
| E4 | Str. | 18 | 4 | 6- 8 | Slabs and sidewalls (Inlet) | | | | |
| E5 | Str. | 18 | 4 | 3- 8 | Slabs and sidewalls (Outlet) | | | | |
| G6 | Str. | 4 | 5 | 2- 10 | B.F Wings 1, 2, 3 & 4 | | | | |
| G7 | Str. | 4 | 5 | 3- 3 | B.F Wings 1, 2, 3 & 4 | | | | |
| G8 | Str. | 4 | 5 | 3- 8 | B.F Wings 1, 2, 3 & 4 | | | | |
| G9 | Str. | 4 | 5 | 4- 0 | B.F Wings 1, 2, 3 & 4 | | | | |
| G10 | Str. | 4 | 5 | 4- 5 | B.F Wings 1, 2, 3 & 4 | | | | |
| G11 | Str. | 4 | 5 | 4- 10 | B.F Wings 1, 2, 3 & 4 | | | | |
| G12 | Str. | 4 | 5 | 5- 2 | B.F Wings 1, 2, 3 & 4 | | | | |
| G13 | Str. | 4 | 5 | 5- 4 | B.F Wings 1, 2, 3 & 4 | | | | |
| H14 | Str. | 32 | 5 | 3- 8 | Top Ftg Wings 1, 2, 3 & 4 | | | | |
| H15 | 5 | 32 | 5 | 4- 9 | Bot Ftg Wings 1, 2, 3 & 4 | 2- 11 | 2- 0 | | |
| K16 | Str. | 24 | 5 | 9- 4 | Ftg Wings 1, 2, 3 & 4 | | | | |
| M17 | 8 | 12 | 5 | 10- 7 | B.F. Wings 1, 2, 3 & 4 | 8- 5 1/2 | 2- 2 | 1- 1 | 1- 10 1/2 |
| M18 | 8 | 4 | 5 | 8- 3 | B.F. Wings 1, 2, 3 & 4 | 6- 1 1/8 | 2- 2 | 1- 1 | 1- 10 1/2 |
| P19 | 7 | 1 | 5 | 7- 5 | B.F. Parapet Lt. End | 3- 6 3/4 | 1- 11 5/8 | 1- 11 5/8 | 1- 8 1/2 |
| | | | | | | 0- 11 1/8 | 1- 8 1/2 | 0- 11 1/8 | |
| P20 | 7 | 1 | 5 | 7- 5 | B.F. Parapet Lt. End | 3- 6 3/4 | 1- 11 5/8 | 1- 11 5/8 | 1- 8 1/2 |
| | | | | | | 0- 11 1/8 | 1- 8 1/2 | 0- 11 1/8 | |
| P21 | 7 | 1 | 5 | 6- 5 | F.F. Parapet Lt. End | 3- 1 3/4 | 1- 8 3/8 | 1- 8 3/8 | 1- 5 5/8 |
| | | | | | | 0- 10 1/8 | 1- 5 5/8 | 0- 10 1/8 | |
| P22 | 7 | 1 | 5 | 6- 5 | F.F. Parapet Lt. End | 3- 1 3/4 | 1- 8 3/8 | 1- 8 3/8 | 1- 5 5/8 |
| | | | | | | 0- 10 1/8 | 1- 5 5/8 | 0- 10 1/8 | |
| P23 | 7 | 1 | 5 | 7- 5 | B.F. Parapet Rt. End | 3- 6 3/4 | 1- 11 5/8 | 1- 11 5/8 | 1- 8 1/2 |
| | | | | | | 0- 11 1/8 | 1- 8 1/2 | 0- 11 1/8 | |
| P24 | 7 | 1 | 5 | 7- 5 | B.F. Parapet Rt. End | 3- 6 3/4 | 1- 11 5/8 | 1- 11 5/8 | 1- 8 1/2 |
| | | | | | | 0- 11 1/8 | 1- 8 1/2 | 0- 11 1/8 | |
| P25 | 7 | 1 | 5 | 6- 5 | F.F. Parapet Rt. End | 3- 1 3/4 | 1- 8 3/8 | 1- 8 3/8 | 1- 5 5/8 |
| | | | | | | 0- 10 1/8 | 1- 5 5/8 | 0- 10 1/8 | |
| P26 | 7 | 1 | 5 | 6- 5 | F.F. Parapet Rt. End | 3- 1 3/4 | 1- 8 3/8 | 1- 8 3/8 | 1- 5 5/8 |
| | | | | | | 0- 10 1/8 | 1- 5 5/8 | 0- 10 1/8 | |
| P27 | Str. | 2 | 5 | 5- 4 | Bottom Slab Lt. End | | | | |
| P28 | Str. | 2 | 5 | 5- 4 | Bottom Slab Rt. End | | | | |
| Q29 | 7 | 1 | 5 | 15- 2 | Apron Lt. End | 8- 0 3/4 | 3- 7 | 3- 7 | 1- 9 1/2 |
| | | | | | | 3- 1 1/8 | 1- 9 1/2 | 3- 1 1/8 | |
| Q30 | 7 | 1 | 5 | 15- 6 | Apron Lt. End | 8- 2 1/8 | 3- 8 | 3- 8 | 1- 10 |
| | | | | | | 3- 2 1/8 | 1- 10 | 3- 2 1/8 | |
| Q31 | 7 | 1 | 5 | 15- 2 | Apron Rt. End | 8- 0 3/4 | 3- 7 | 3- 7 | 1- 9 1/2 |
| | | | | | | 3- 1 1/8 | 1- 9 1/2 | 3- 1 1/8 | |
| Q32 | 7 | 1 | 5 | 15- 6 | Apron Rt. End | 8- 2 1/8 | 3- 8 | 3- 8 | 1- 10 |
| | | | | | | 3- 2 1/8 | 1- 10 | 3- 2 1/8 | |
| R33 | 12s | 3 | 5 | 4- 1 | Parapet Wall (Left End) | 1- 3 1/2 | 0- 9 | | |
| R34 | 11s | 3 | 5 | 3- 11 | Parapet Wall (Right End) | 1- 3 1/2 | 0- 9 | 0- 2 1/2 | 0- 9 |
| | | | | | | 0- 6 1/2 | 0- 9 3/4 | | |
| X35 | Str. | 36 | 8 | 2- 0 | Dowels | | | | |

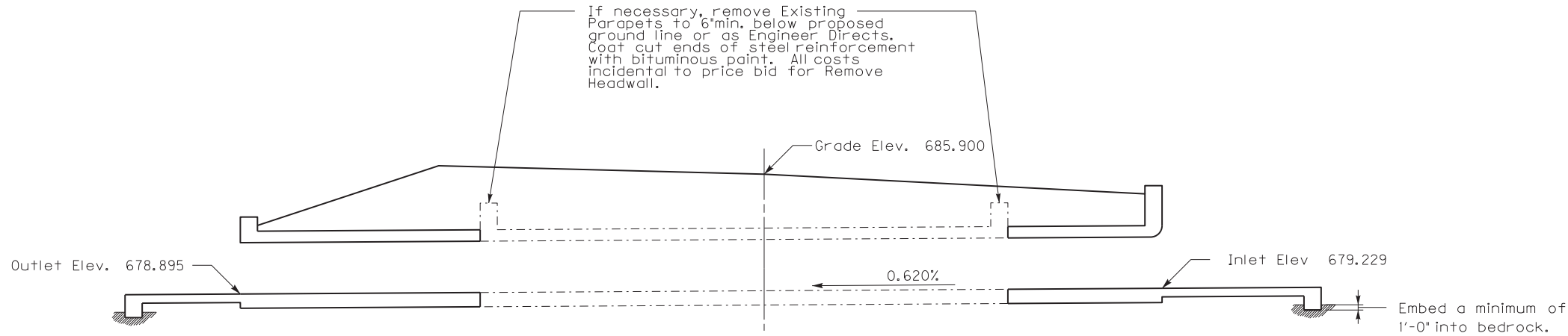
| | | |
|--|----------------------------------|----------------------|
| | | |
| | | |
| REVISION | | DATE |
| DATE: | MARCH 2020 | CHECKED BY |
| DESIGNED BY: | J. VAN ZEE | N.O. BODY |
| DETAILED BY: | M. BAWITHAWNG | J. VAN ZEE |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY SPENCER | | |
| ROUTE KY 55 | CROSSING A DITCH | |
| Bill of Reinforcement | | |
| ITEM NUMBER | PREPARED BY | SHEET NO. |
| 05-9017.00 | Division of Structural Design | S6 |
| | | DRAWING NO. 28321 |

USER NAME: Joseph.vanzee FILE NAME: J:\District05\5-9017 HSP\Culverts\3 28322 4x3 RCBC Station 132+78\28322\28322.dgn
DATE: 21-APR-2020
E-SHEET NAME:



PLAN
SCALE = 1:48

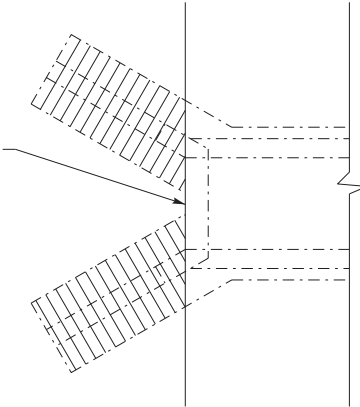
Note: Field verify all dimensions prior to ordering materials. All dimensions are taken from existing survey. Actual barrel lengths may vary from plans in the field. Extension lengths shall be built per the plan.



SECTION ON CL

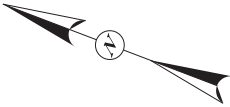
Single 4'-0" x 3'-0" x 53'-9 5/8" R.C.B.C.
23'-2 3/4" Inlet End and 30'-6 7/8" Outlet End
0.0000° Skew ~ KYHL-93 Loading ~ 0.33 Fill Slope
Unyielding Foundation

Remove hatched portions of all wings and footings to a line even with face of parapet. Typ. Each End of Culvert.



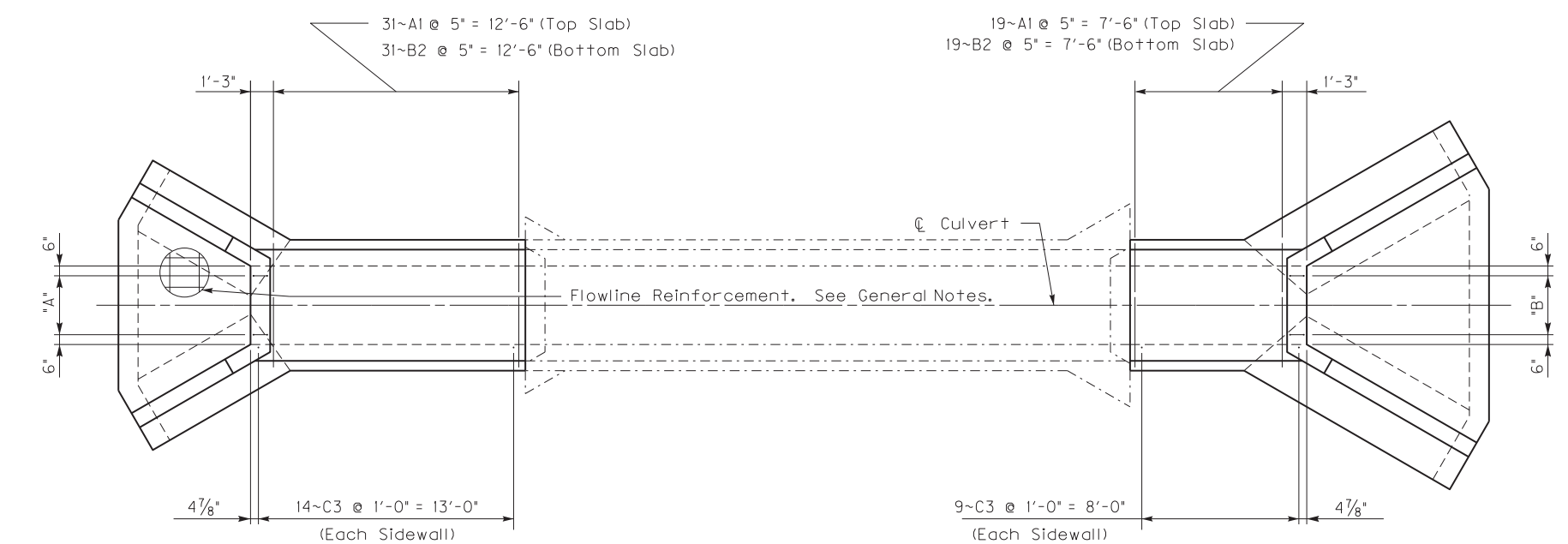
Removal Details

SCALE = 1:48

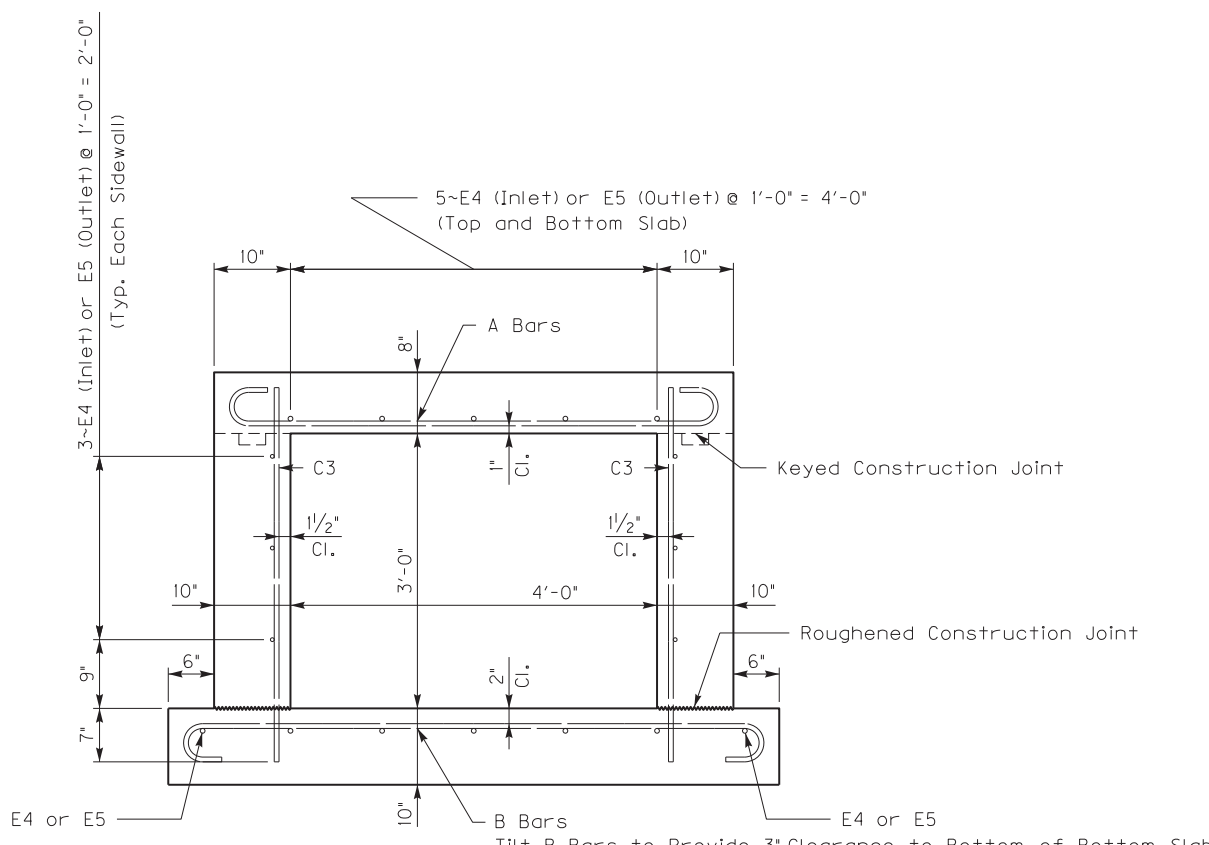


| | | | |
|--|---------------------|------------|----------------------|
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | N.O. BODY | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY SPENCER | | | |
| ROUTE KY 55 | CROSSING A DITCH | | |
| LAYOUT | | | |
| PREPARED BY | | | SHEET NO. |
| Division of Structural Design | | | S2 |
| | | | DRAWING NO. 28322 |

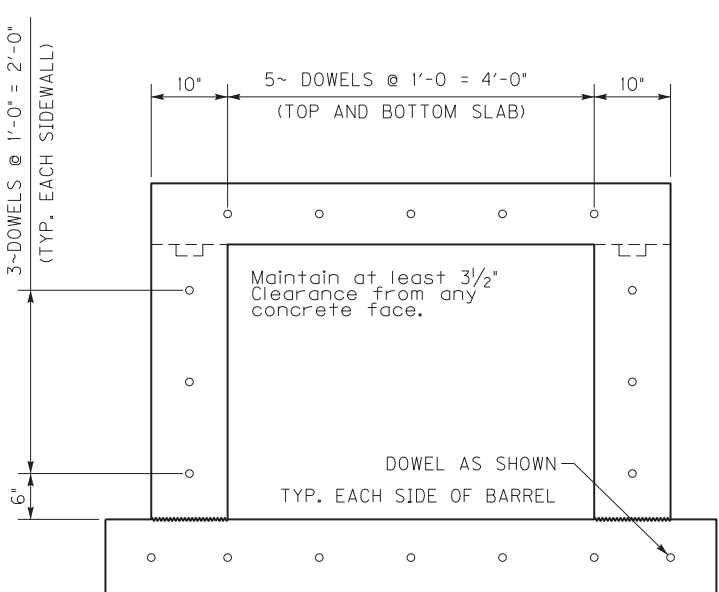
| |
|-------------|
| ITEM NUMBER |
| 05-9017.00 |



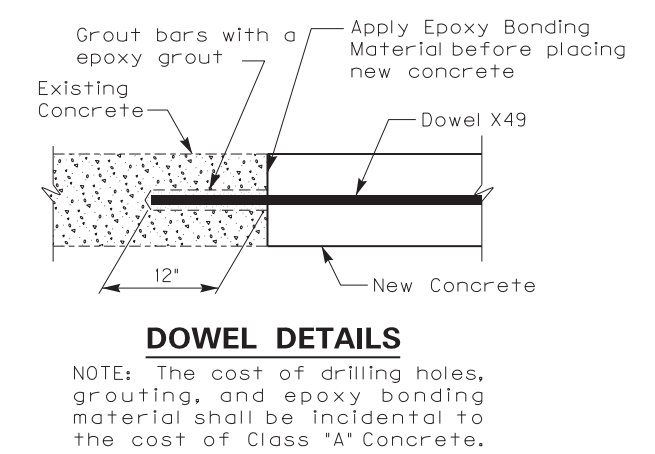
PLAN
SCALE = 1:48



TYPICAL BARREL SECTION
SCALE = 1:12



DOWEL LOCATIONS
SCALE = 1:12



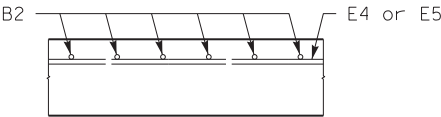
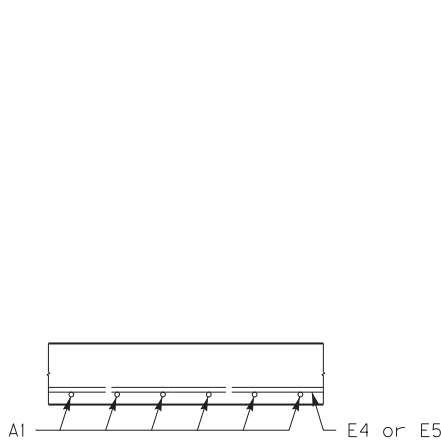
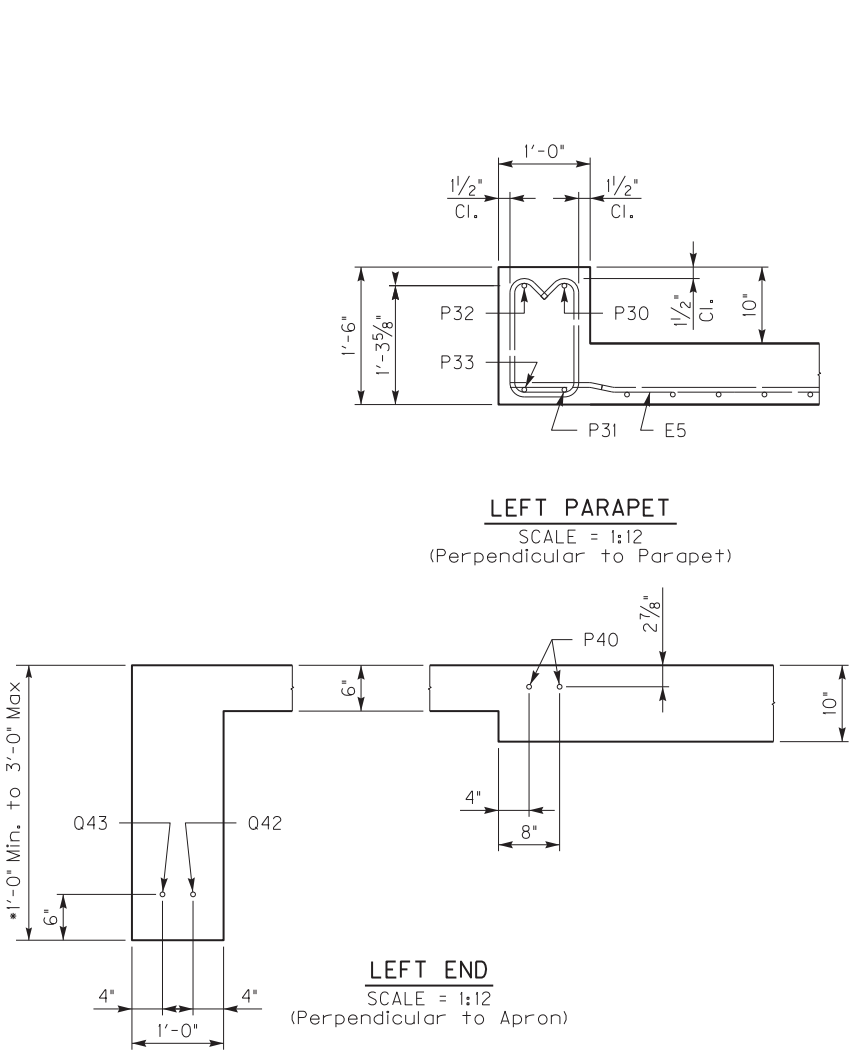
DOWEL DETAILS

NOTE: The cost of drilling holes, grouting, and epoxy bonding material shall be incidental to the cost of Class "A" Concrete.

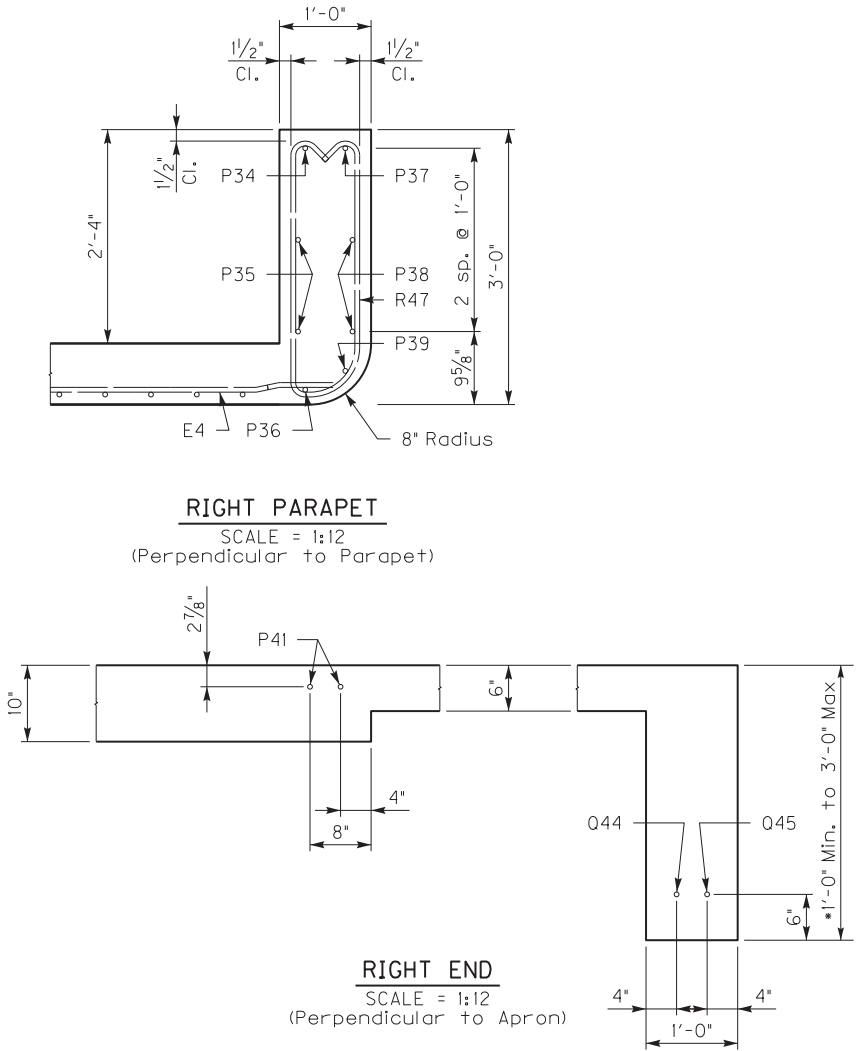
"A" 4~R46 @ 1'-0" = 3'-0"
"B" 4~R47 @ 1'-0" = 3'-0"
Minimum Lap Distance for E 4 Bars 26 in
Minimum Lap Distance for E 5 Bars 21 in

| ITEM NUMBER | | PREPARED BY | | SHEET NO. | |
|-------------|--|-------------------------------|--|-------------------|--|
| 05-9017.00 | | Division of Structural Design | | S3 | |
| | | | | DRAWING NO. 28322 | |

| | | |
|--|---------------------|------------|
| | | |
| | | |
| REVISION | | DATE |
| DATE: | MARCH 2020 | CHECKED BY |
| DESIGNED BY: J. VAN ZEE | N.O. BODY | |
| DETAILED BY: M. BAWITHAWNG | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY SPENCER | | |
| ROUTE KY 55 | CROSSING A DITCH | |
| BARREL | | |



SECTION ON C
SCALE = 1:12



*Note: Embed apron 1'-0" Min. into solid rock. 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 3'-0" long if solid rock is deep. Quantities are include for the full 3'-0" depth. Adjust concrete paid as necessary for actual depth used.

| ITEM NUMBER |
|-------------|
| 05-9017.00 |

| | | |
|--|---------------------|----------------------|
| | | |
| | | |
| REVISION | | DATE |
| DATE: MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | N.O. BODY | |
| DETAILED BY: M. BAWITHAWNG | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY SPENCER | | |
| ROUTE KY 55 | CROSSING A DITCH | |
| BARREL | | |
| PREPARED BY | | SHEET NO. S4 |
| Division of Structural Design | | DRAWING NO. 28322 |



"A" 2~M27, 1~M28 @ 1'-0" = 2'-0" B.F.

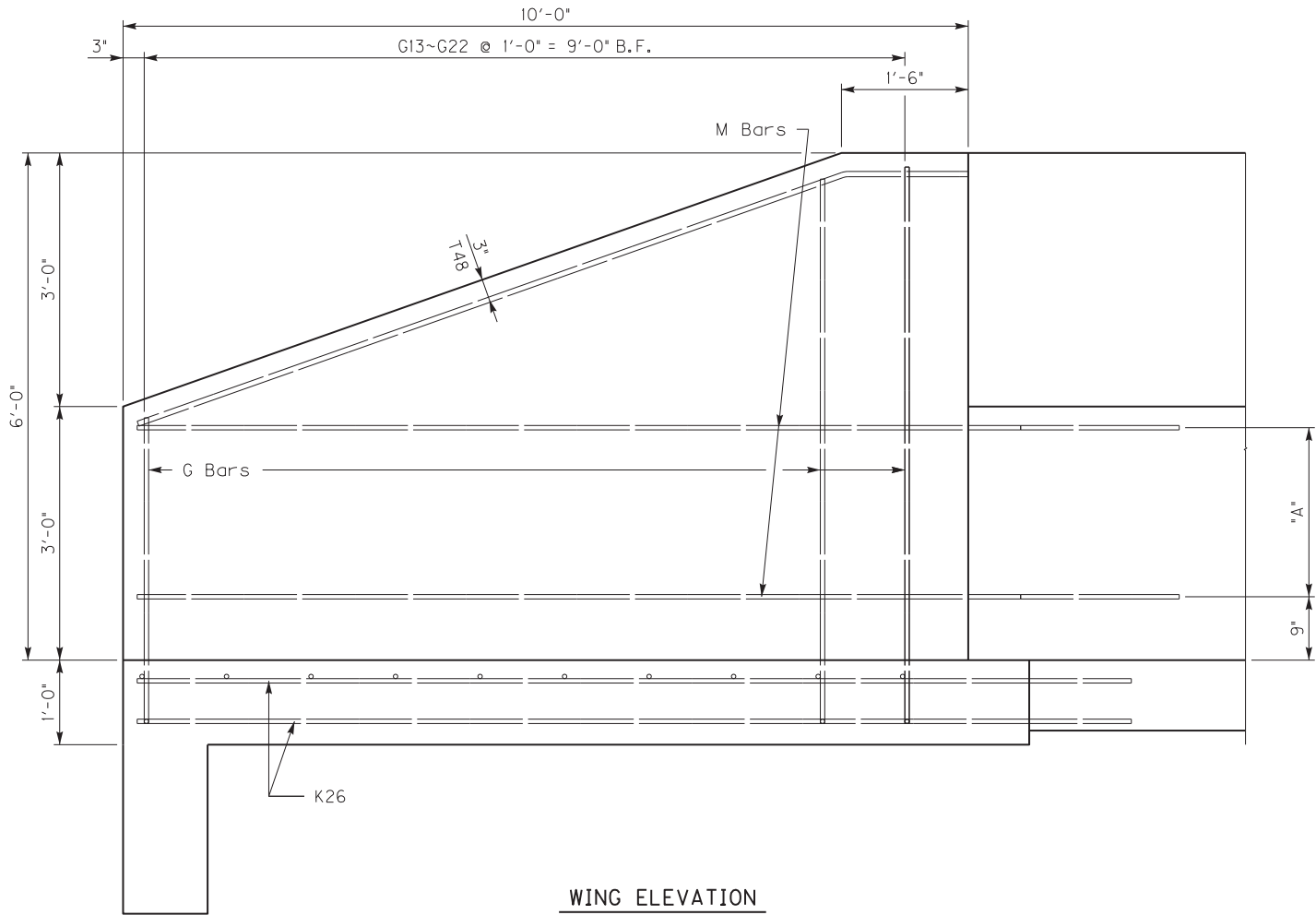
Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
SPENCER

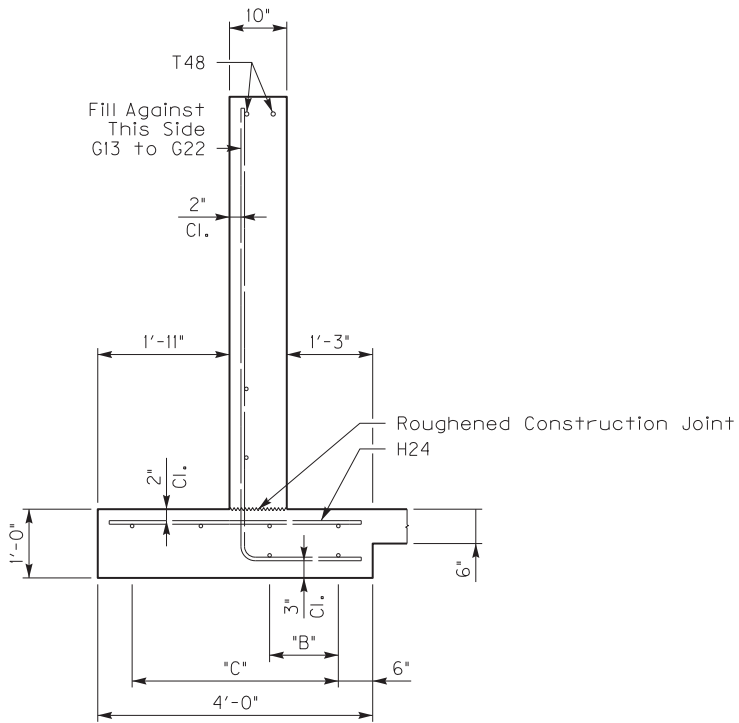
| | |
|-----------------------|----------------------------|
| ROUTE KY 55 | CROSSING A DITCH |
|-----------------------|----------------------------|

| | |
|------------------------|----|
| Wings 1 & 2 | |
| PREPARED BY | SH |

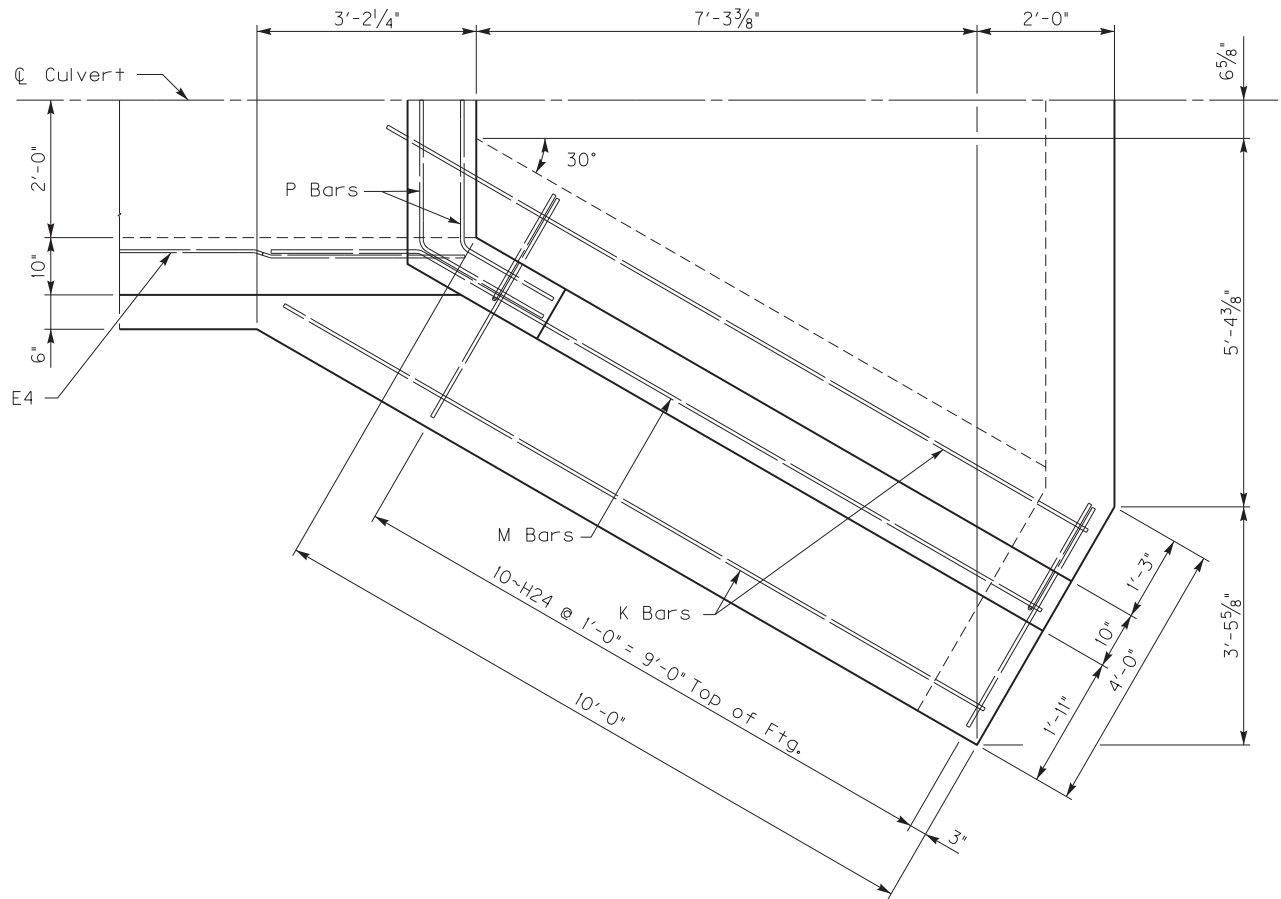
Division of Structural Design



WING ELEVATION
SCALE = 1:12



WING SECTION
SCALE = 1:16



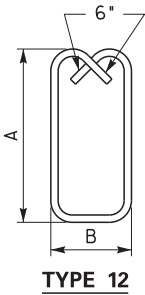
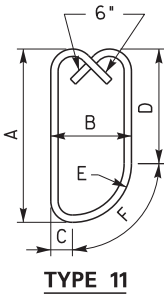
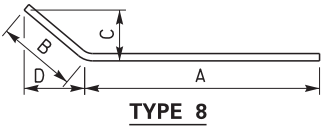
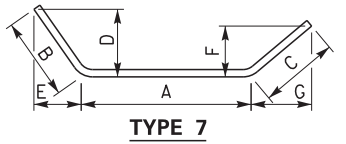
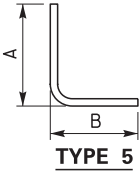
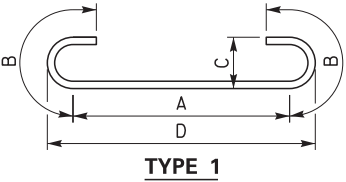
PLAN
SCALE = 1:16

A 3~M29 @ 1'-0" = 2'-0" B.F.
B 2~K26 @ 1'-0" = 1'-0" Bot of Ftg.
C 4~K26 @ 1'-0" = 3'-0"

| | | | |
|--|------------|---------------------|---|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | N.O. BODY | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY SPENCER | | | |
| ROUTE KY 55 | | CROSSING A DITCH | |
| Wings 3 & 4 | | | |
| PREPARED BY Division of Structural Design | | | SHEET NO. S6 DRAWING NO. 28322 |

| |
|-------------|
| ITEM NUMBER |
| 05-9017.00 |

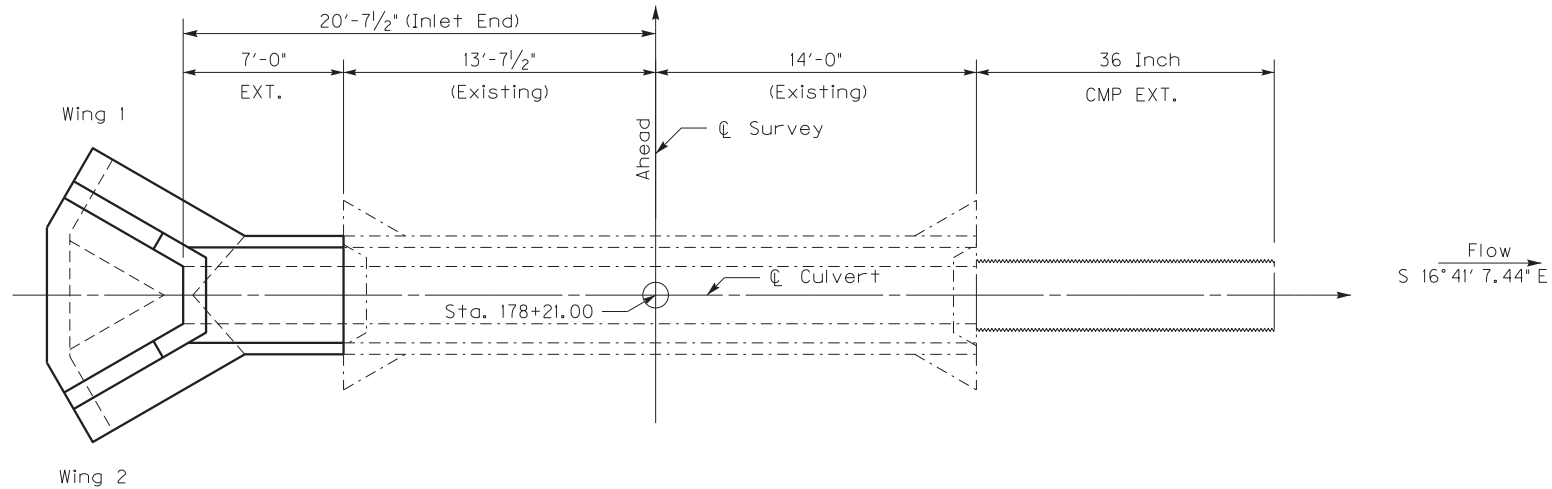
| BILL OF REINFORCEMENT | | | | | | | | | |
|-----------------------|------|-----|------|--------|-------------|------|------|------|------|
| MARK | TYPE | NO. | SIZE | LENGTH | LOCATION | A/E | B/F | C/G | D/H |
| A1 | I | 50 | 5 | 6- 7 | Top Slab | 4-11 | 0-10 | 0- 5 | 5- 4 |
| B2 | I | 50 | 5 | 7- 7 | Bottom Slab | 5-11 | 0-10 | 0- 5 | 6- 4 |
| C3 | Str. | 46 | 5 | 4- 1 | Sidewalls | | | | |



| BILL OF REINFORCEMENT | | | | | | | | | |
|-----------------------|------|-----|------|--------|----------------------------|-----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| MARK | TYPE | NO. | SIZE | LENGTH | LOCATION | A/E | B/F | C/G | D/H |
| E4 | Str. | 18 | 4 | 8- 8 | Slabs & Sidewalls (Inlet) | | | | |
| E5 | Str. | 18 | 4 | 13- 8 | Slabs & Sidewalls (Outlet) | | | | |
| G6 | 5 | 2 | 5 | 4- 4 | B.F Wings 1 & 2 | 2- 7 ⁵ / ₈ | 1-10 | | |
| G7 | 5 | 2 | 5 | 4-10 | B.F Wings 1 & 2 | 3- 1 ¹ / ₈ | 1-10 | | |
| G8 | 5 | 2 | 5 | 5- 3 | B.F Wings 1 & 2 | 3- 6 ¹ / ₂ | 1-10 | | |
| G9 | 5 | 2 | 5 | 5- 8 | B.F Wings 1 & 2 | 4- 0 | 1-10 | | |
| G10 | 5 | 2 | 5 | 6- 2 | B.F Wings 1 & 2 | 4- 5 ³ / ₈ | 1-10 | | |
| G11 | 5 | 2 | 5 | 6- 7 | B.F Wings 1 & 2 | 4-10 ¹ / ₈ | 1-10 | | |
| G12 | 5 | 2 | 5 | 6- 9 | B.F Wings 1 & 2 | 5- 1 | 1-10 | | |
| G13 | 5 | 2 | 5 | 5- 3 | B.F Wings 3 & 4 | 3- 7 ³ / ₈ | 1- 9 | | |
| G14 | 5 | 2 | 5 | 5- 7 | B.F Wings 3 & 4 | 3-11 ³ / ₈ | 1- 9 | | |
| G15 | 5 | 2 | 5 | 5-11 | B.F Wings 3 & 4 | 4- 3 ¹ / ₈ | 1- 9 | | |
| G16 | 5 | 2 | 5 | 6- 4 | B.F Wings 3 & 4 | 4- 8 ¹ / ₈ | 1- 9 | | |
| G17 | 5 | 2 | 5 | 6- 8 | B.F Wings 3 & 4 | 5- 0 ³ / ₈ | 1- 9 | | |
| G18 | 5 | 2 | 5 | 7- 0 | B.F Wings 3 & 4 | 5- 4 ⁵ / ₈ | 1- 9 | | |
| G19 | 5 | 2 | 5 | 7- 4 | B.F Wings 3 & 4 | 5- 8 ¹ / ₈ | 1- 9 | | |
| G20 | 5 | 2 | 5 | 7- 8 | B.F Wings 3 & 4 | 6- 1 | 1- 9 | | |
| G21 | 5 | 2 | 5 | 8- 1 | B.F Wings 3 & 4 | 6- 5 ¹ / ₄ | 1- 9 | | |
| G22 | 5 | 2 | 5 | 8- 2 | B.F Wings 3 & 4 | 6- 7 | 1- 9 | | |
| H23 | Str. | 14 | 5 | 3- 2 | Top Ftq Wings 1 & 2 | | | | |
| H24 | Str. | 20 | 5 | 3- 8 | Top Ftq Wings 3 & 4 | | | | |
| K25 | Str. | 12 | 5 | 7- 9 | Ftq Wings 1 & 2 | | | | |
| K26 | Str. | 12 | 5 | 11- 9 | Ftq Wings 3 & 4 | | | | |
| M27 | 8 | 4 | 5 | 9- 7 | B.F. Wings 1 & 2 | 7- 5 ¹ / ₂ | 2- 2 | 1- 1 | 1-10 ¹ / ₂ |
| M28 | 8 | 2 | 5 | 7- 7 | B.F. Wings 1 & 2 | 5- 5 ⁵ / ₈ | 2- 2 | 1- 1 | 1-10 ¹ / ₂ |
| M29 | 8 | 6 | 5 | 12- 7 | B.F. Wings 3 & 4 | 10- 5 ¹ / ₂ | 2- 2 | 1- 1 | 1-10 ¹ / ₂ |
| P30 | 7 | 1 | 5 | 8- 5 | B.F. Parapet Lt. End | 4- 6 ³ / ₄ | 1-11 ³ / ₈ | 1-11 ³ / ₈ | 1- 8 ¹ / ₂ |
| P31 | 7 | 1 | 5 | 8- 5 | B.F. Parapet Lt. End | 0-11 ³ / ₄ | 1- 8 ¹ / ₂ | 0-11 ³ / ₄ | |
| P32 | 7 | 1 | 5 | 7- 5 | F.F. Parapet Lt. End | 4- 6 ³ / ₄ | 1-11 ³ / ₈ | 1-11 ³ / ₈ | 1- 8 ¹ / ₂ |
| P33 | 7 | 1 | 5 | 7- 5 | F.F. Parapet Lt. End | 0-11 ³ / ₄ | 1- 8 ¹ / ₂ | 0-11 ³ / ₄ | |
| P34 | 7 | 1 | 5 | 8- 5 | B.F. Parapet Rt. End | 4- 1 ³ / ₄ | 1- 8 ¹ / ₄ | 1- 8 ¹ / ₄ | 1- 5 ⁵ / ₈ |
| P35 | 7 | 2 | 5 | 8- 6 | B.F. Parapet Rt. End | 0-10 ¹ / ₈ | 1- 5 ⁵ / ₈ | 0-10 ¹ / ₈ | |
| P36 | 7 | 1 | 5 | 8- 5 | B.F. Parapet Rt. End | 4- 1 ³ / ₄ | 1- 8 ¹ / ₄ | 1- 8 ¹ / ₄ | 1- 5 ⁵ / ₈ |
| P37 | 7 | 1 | 5 | 7- 5 | F.F. Parapet Rt. End | 0-10 ¹ / ₈ | 1- 5 ⁵ / ₈ | 0-10 ¹ / ₈ | |
| P38 | 7 | 2 | 5 | 7- 4 | F.F. Parapet Rt. End | 4- 6 ³ / ₄ | 1-11 ³ / ₄ | 1-11 ³ / ₄ | 1- 8 ¹ / ₂ |
| P39 | 7 | 1 | 5 | 7- 5 | F.F. Parapet Rt. End | 0-11 ³ / ₈ | 1- 8 ¹ / ₂ | 0-11 ³ / ₈ | |
| P40 | Str. | 2 | 5 | 6- 4 | Bottom Slab Lt. End | 4- 5 ³ / ₈ | 1- 8 ³ / ₈ | 1- 8 ³ / ₈ | 1- 5 ⁵ / ₈ |
| P41 | Str. | 2 | 5 | 6- 4 | Bottom Slab Rt. End | 0-10 ¹ / ₄ | 1- 5 ⁵ / ₈ | 0-10 ¹ / ₄ | |
| Q42 | 7 | 1 | 5 | 14- 6 | Apron Lt. End | 4- 2 ¹ / ₈ | 1- 7 ¹ / ₄ | 1- 7 ¹ / ₄ | 1- 4 ³ / ₄ |
| Q43 | 7 | 1 | 5 | 14-10 | Apron Lt. End | 0- 9 ⁵ / ₈ | 1- 4 ³ / ₄ | 0- 9 ⁵ / ₈ | |
| Q44 | 7 | 1 | 5 | 18- 7 | Apron Rt. End | 4- 1 ³ / ₄ | 1- 8 ³ / ₈ | 1- 8 ³ / ₈ | 1- 5 ⁵ / ₈ |
| Q45 | 7 | 1 | 5 | 19- 0 | Apron Rt. End | 0-10 ¹ / ₄ | 1- 5 ⁵ / ₈ | 0-10 ¹ / ₄ | |
| R46 | 12s | 4 | 5 | 4- 1 | Parapet Wall (Left End) | 2- 8 | 1- 6 ¹ / ₂ | 2- 8 | |
| R47 | 11s | 4 | 5 | 6-11 | Parapet Wall (Right End) | 8- 6 ¹ / ₄ | 3- 2 | 3- 2 | 1- 7 |
| T48 | 8 | 4 | 6 | 10- 4 | Top of Wings 3 & 4 | 2- 8 ⁵ / ₈ | 1- 7 | 2- 8 ⁵ / ₈ | |
| X49 | Str. | 36 | 8 | 2- 0 | Dowels | 11- 5 ⁵ / ₈ | 3- 7 | 3- 7 | 1- 9 ¹ / ₂ |

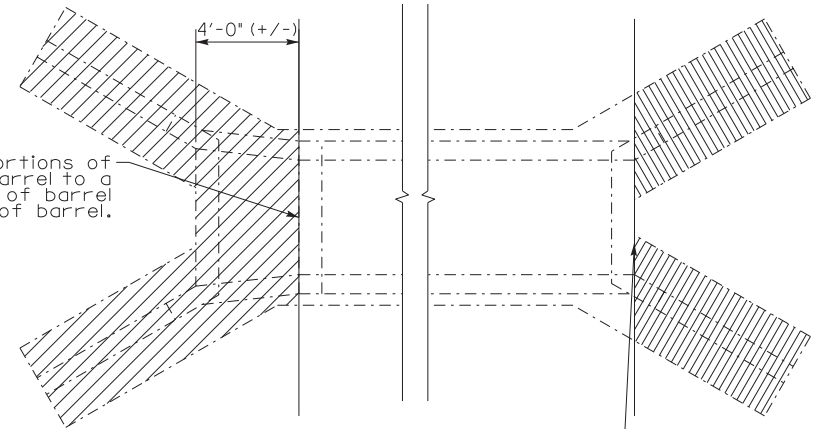
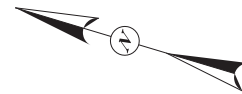
| | | |
|--|----------------------------------|----------------------|
| | | |
| | | |
| REVISION | | DATE |
| DATE: | MARCH 2020 | CHECKED BY |
| DESIGNED BY: | J. VAN ZEE | N.O. BODY |
| DETAILED BY: | M. BAWITHAWNG | J. VAN ZEE |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY SPENCER | | |
| ROUTE KY 55 | CROSSING A DITCH | |
| Bill of Reinforcement | | |
| ITEM NUMBER | PREPARED BY | SHEET NO. |
| 05-9017.00 | Division of Structural Design | S7 |
| | | DRAWING NO. 28322 |

USERNAME: Joseph.vanzee FILE NAME: J:\District\05\5-9017 HSP\Culverts\4 28323 2.5x2.6 RBC Station 178+2\28323\28323.dgn DATE: 05-AUG-2020 E-SHEET NAME:



PLAN
SCALE = 1:48

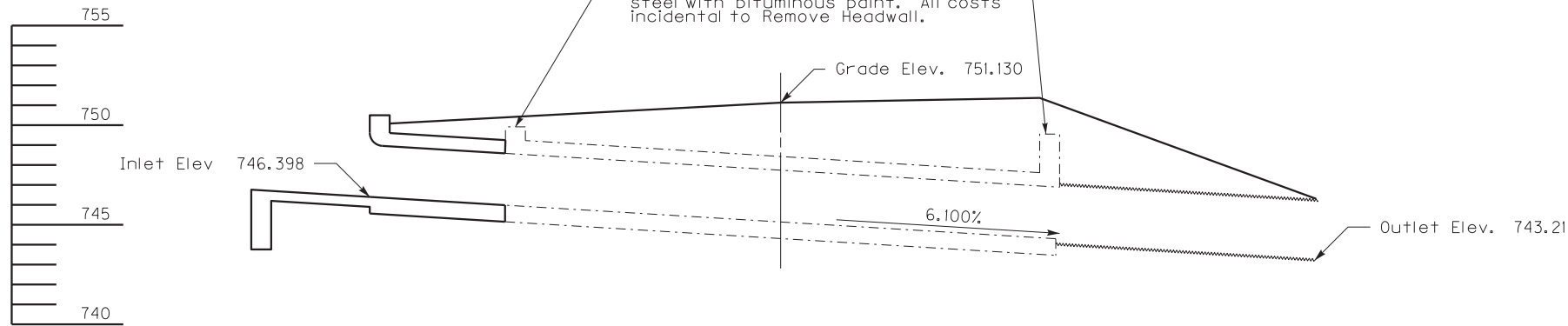
NOTE: Right Extension to be extended with 36 in Corrugated Metal Pipe, see Roadway Plans.



Remove hatched portions of all wings and footings to a line even with face of parapet.

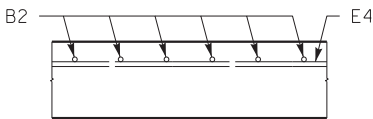
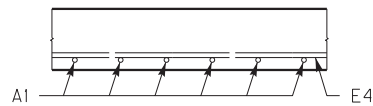
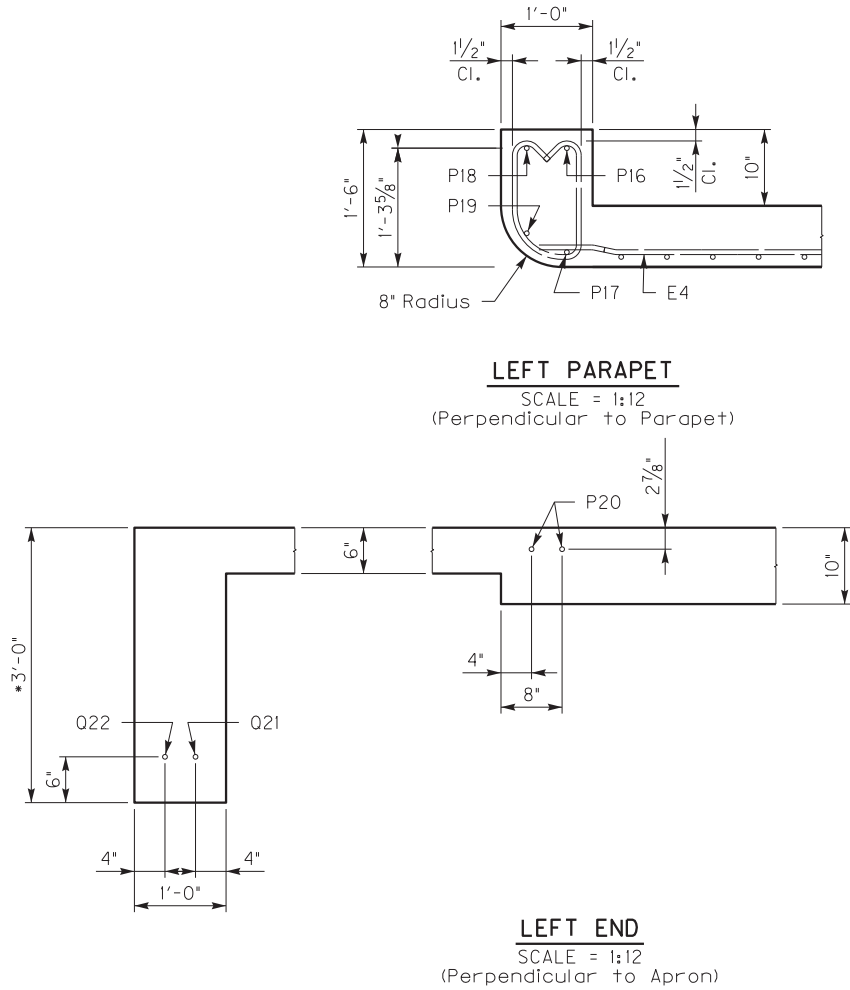
Removal Details

Note: Field verify all dimensions prior to ordering materials. All dimensions are taken from existing survey. Actual barrel lengths may vary from plans in the field. Extension lengths shall be built per the plan.

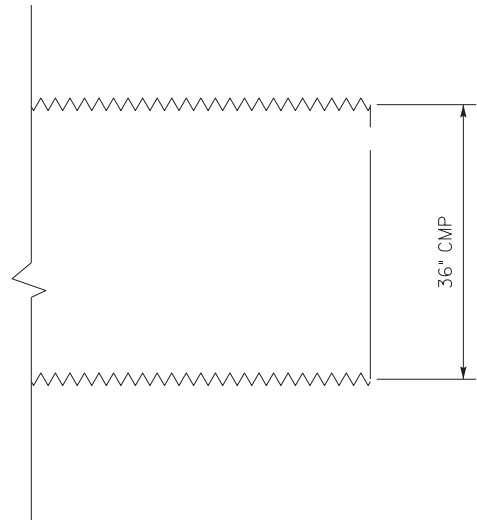


SECTION ON ϕ
Single 2'-6" x 2'-7 1/4" x 47'-7 1/2" R.C.B.C.
20'-7 1/2" Inlet End
0.0000° Skew ~ KYHL-93 Loading ~ 0.33 Fill Slope
Yielding Foundation

| | | | |
|--|------------|----------------------------------|----------------------|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | L. LIKINS | | |
| DETAILED BY: M. BAWITHAWNG | J. VAN ZEE | | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY | | | |
| SPENCER | | | |
| ROUTE | | CROSSING | |
| KY 55 | | A DITCH | |
| LAYOUT | | | |
| ITEM NUMBER | | PREPARED BY | SHEET NO. |
| 05-9017.00 | | Division of Structural Design | S2 |
| | | | DRAWING NO. 28323 |



SECTION ON C-C
SCALE = 1:12

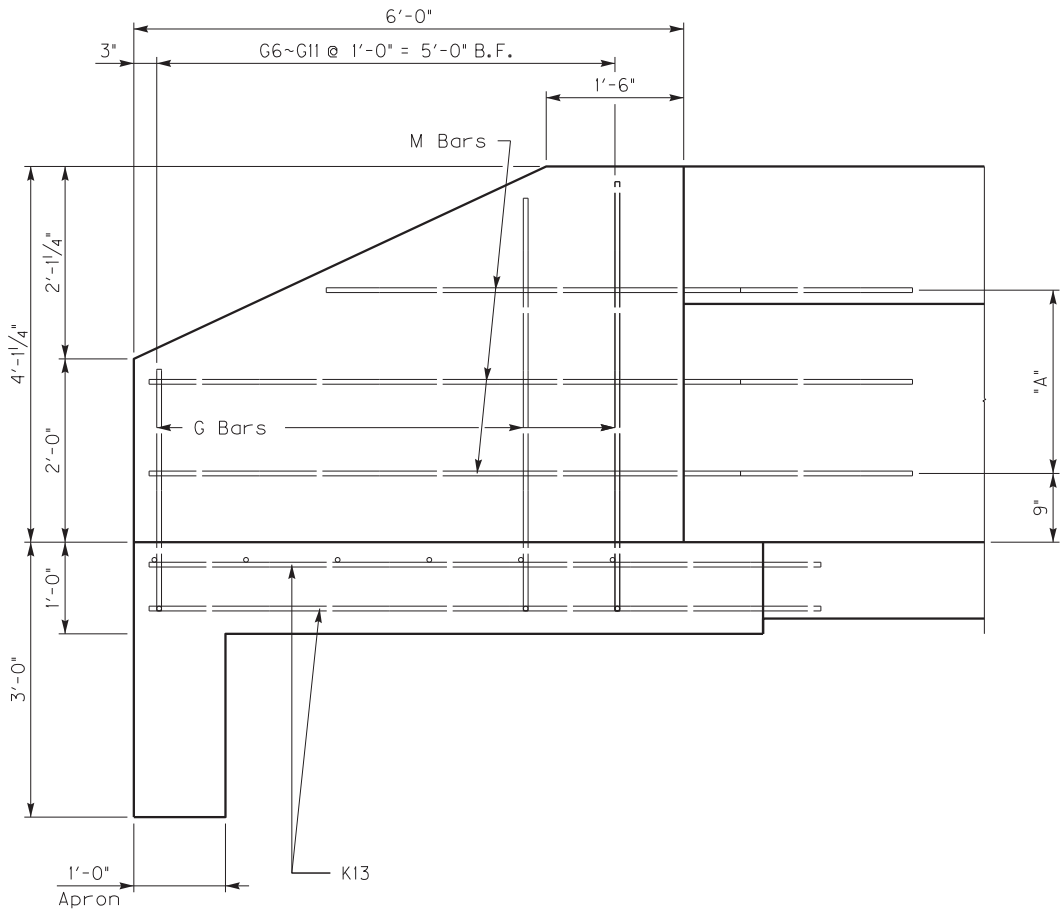


RIGHT END
SCALE = 1:12

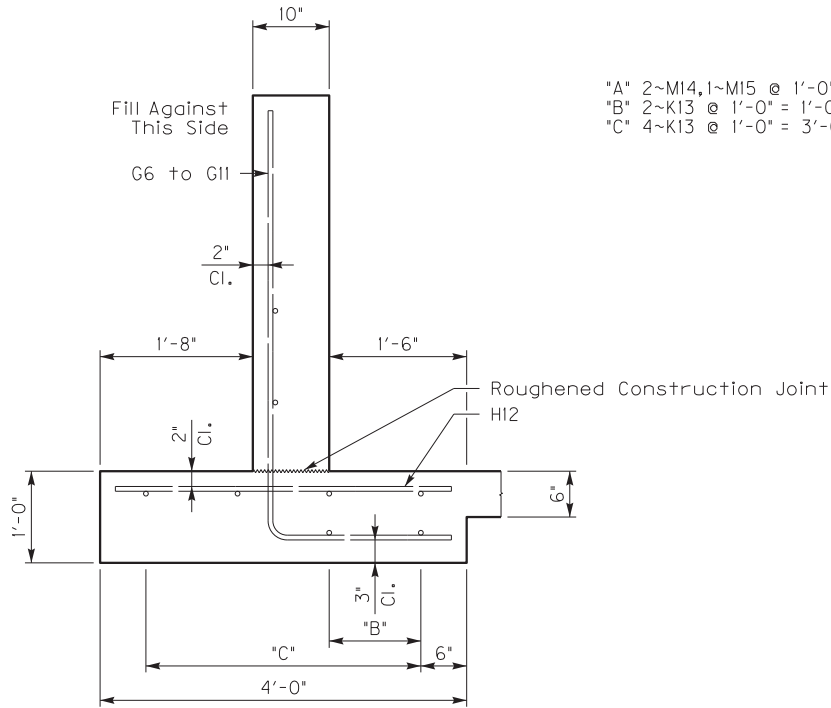
*Note: If rock is close, embed apron 1'-0" Min. into solid rock. Pour all sides against solid rock. Any extra concrete required is incidental to the unit price bid for Class A concrete. Apron to be a maximum of 3'-0" long if solid rock is deep. Quantities are included for the full 3'-0" depth. Adjust concrete paid as necessary for actual depth used.

| ITEM NUMBER |
|-------------|
| 05-9017.00 |

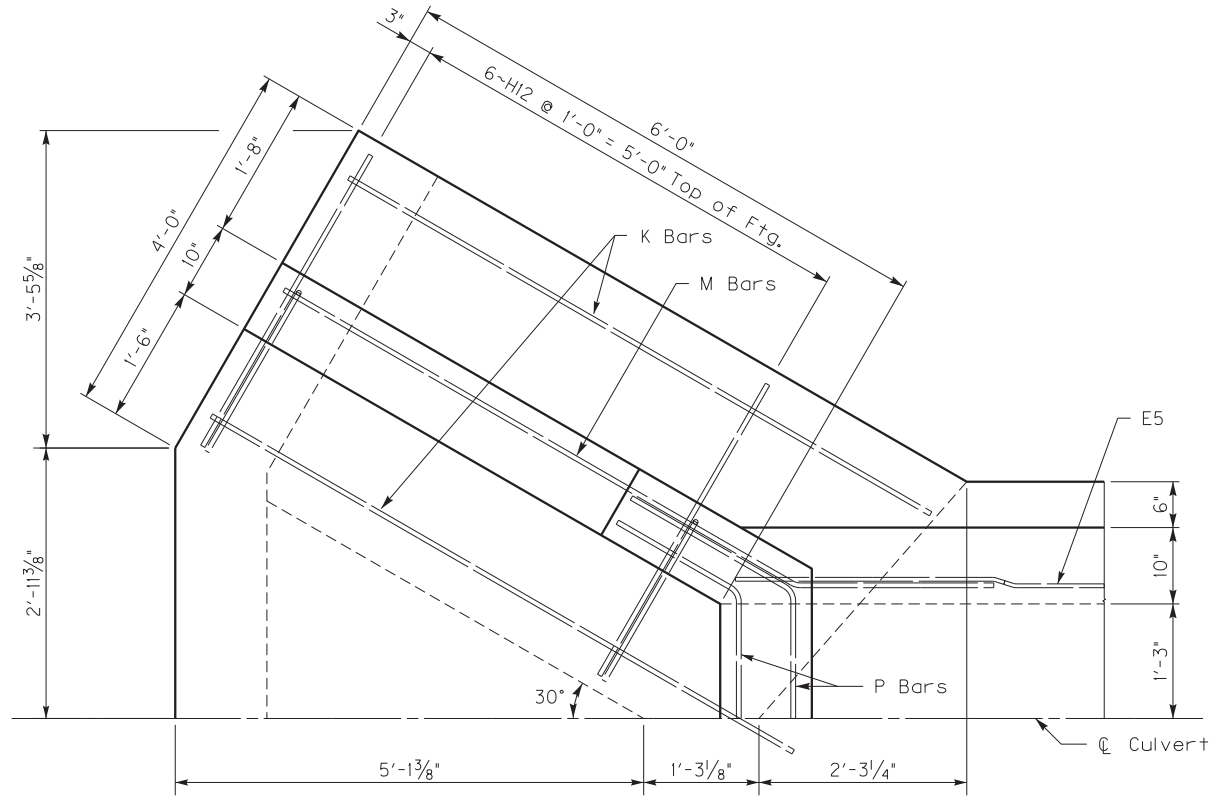
| | | | |
|--|------------|----------------------|--|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY SPENCER | | | |
| ROUTE KY 55 | | CROSSING A DITCH | |
| BARREL | | | |
| PREPARED BY | | SHEET NO. S4 | |
| Division of Structural Design | | DRAWING NO. 28323 | |



WING ELEVATION
SCALE = 1:12



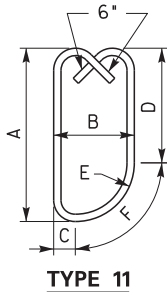
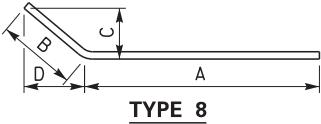
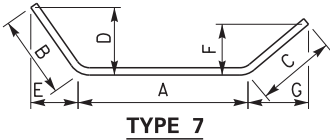
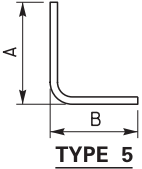
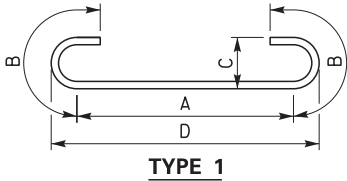
WING SECTION
SCALE = 1:12



PLAN
SCALE = 1:12

"A" 2~M14,1~M15 @ 1'-0" = 2'-0" B.F.
"B" 2~K13 @ 1'-0" = 1'-0" Bot of Ftg.
"C" 4~K13 @ 1'-0" = 3'-0"

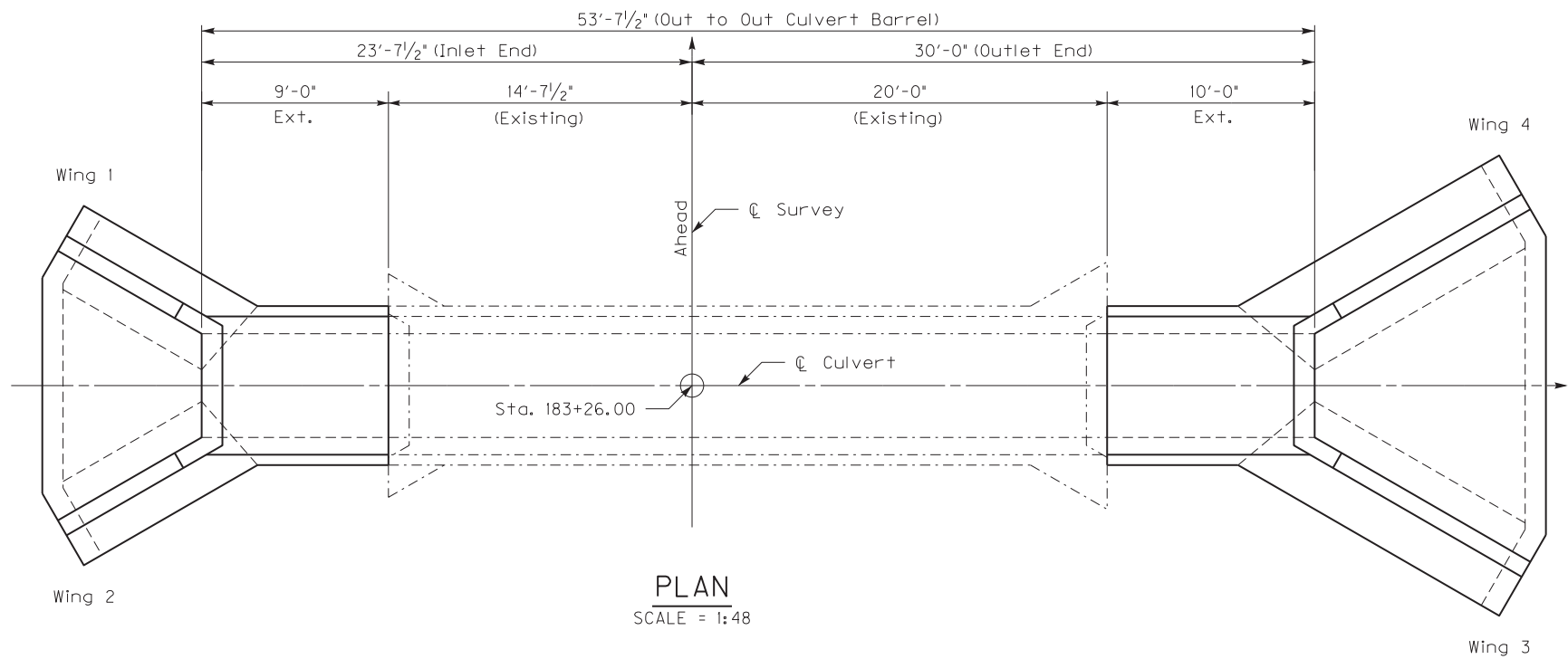
| | | | |
|--|------------|-------------|--|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY | | | |
| SPENCER | | | |
| ROUTE | CROSSING | | |
| KY 55 | A DITCH | | |
| Wings 1 & 2 | | | |
| PREPARED BY | | SHEET NO. | |
| Division of | | S5 | |
| Structural Design | | DRAWING NO. | |
| | | 28323 | |



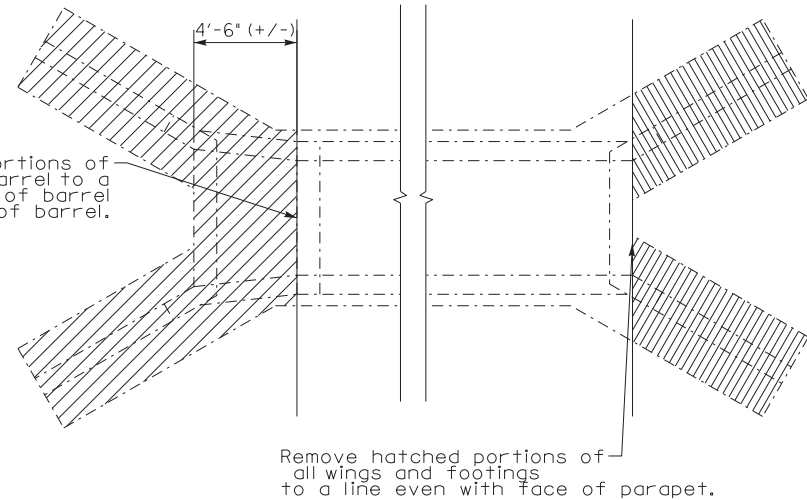
| BILL OF REINFORCEMENT | | | | | | | | | |
|-----------------------|------|-----|------|--------|-------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| MARK | TYPE | NO. | SIZE | LENGTH | LOCATION | A/E | B/F | C/G | D/H |
| A1 | I | 15 | 5 | 5- 1 | Top Slab | 3- 5 | 0-10 | 0- 5 | 3-10 |
| B2 | I | 15 | 5 | 6- 1 | Bottom Slab | 4- 5 | 0-10 | 0- 5 | 4-10 |
| C3 | Str. | 14 | 5 | 3- 8 | Sidewalls | | | | |
| E4 | Str. | 8 | 5 | 6- 8 | Top & Bottom Slabs | | | | |
| E5 | Str. | 4 | 5 | 6- 8 | Sidewalls | | | | |
| G6 | 5 | 2 | 5 | 4- 6 | B.F Wings 1 & 2 | 2- 7 ⁵ / ₈ | 2- 0 | | |
| G7 | 5 | 2 | 5 | 5- 0 | B.F Wings 1 & 2 | 3- 1 ¹ / ₄ | 2- 0 | | |
| G8 | 5 | 2 | 5 | 5- 5 | B.F Wings 1 & 2 | 3- 6 ⁷ / ₈ | 2- 0 | | |
| G9 | 5 | 2 | 5 | 5-11 | B.F Wings 1 & 2 | 4- 0 ¹ / ₂ | 2- 0 | | |
| G10 | 5 | 2 | 5 | 6- 4 | B.F Wings 1 & 2 | 4- 6 | 2- 0 | | |
| G11 | 5 | 2 | 5 | 6- 7 | B.F Wings 1 & 2 | 4- 8 ¹ / ₄ | 2- 0 | | |
| H12 | Str. | 12 | 5 | 3- 8 | Top Ftq Wings 1 & 2 | | | | |
| K13 | Str. | 12 | 5 | 7- 4 | Ftq Wings 1 & 2 | | | | |
| M14 | 8 | 4 | 5 | 8- 7 | B.F. Wings 1 & 2 | 6- 5 ¹ / ₂ | 2- 2 | 1- 1 | 1-10 ¹ / ₂ |
| M15 | 8 | 2 | 5 | 6- 8 | B.F. Wings 1 & 2 | 4- 6 ¹ / ₄ | 2- 2 | 1- 1 | 1-10 ¹ / ₂ |
| P16 | 7 | 1 | 5 | 6-11 | B.F. Parapet Lt. End | 3- 0 ³ / ₄ | 1-11 ⁵ / ₈ | 1-11 ⁵ / ₈ | 1- 8 ³ / ₈ |
| | | | | | | 0-11 ³ / ₄ | 1- 8 ³ / ₈ | 0-11 ³ / ₄ | |
| P17 | 7 | 1 | 5 | 6-11 | B.F. Parapet Lt. End | 3- 0 ³ / ₄ | 1-11 ⁵ / ₈ | 1-11 ⁵ / ₈ | 1- 8 ³ / ₈ |
| | | | | | | 0-11 ³ / ₄ | 1- 8 ³ / ₈ | 0-11 ³ / ₄ | |
| P18 | 7 | 1 | 5 | 5-11 | F.F. Parapet Lt. End | 2- 7 ³ / ₄ | 1- 8 ¹ / ₄ | 1- 8 ¹ / ₄ | 1- 5 ¹ / ₂ |
| | | | | | | 0-10 ³ / ₈ | 1- 5 ¹ / ₂ | 0-10 ³ / ₈ | |
| P19 | 7 | 1 | 5 | 5-11 | F.F. Parapet Lt. End | 2- 7 ³ / ₄ | 1- 8 ¹ / ₄ | 1- 8 ¹ / ₄ | 1- 5 ¹ / ₂ |
| | | | | | | 0-10 ³ / ₈ | 1- 5 ¹ / ₂ | 0-10 ³ / ₈ | |
| P20 | Str. | 2 | 5 | 4-10 | Bottom Slab Lt. End | | | | |
| Q21 | 7 | 1 | 5 | 12- 8 | Apron Lt. End | 5- 6 ³ / ₄ | 3- 7 | 3- 7 | 1- 9 ¹ / ₂ |
| | | | | | | 3- 1 ¹ / ₈ | 1- 9 ¹ / ₂ | 3- 1 ¹ / ₈ | |
| Q22 | 7 | 1 | 5 | 13- 0 | Apron Lt. End | 5- 8 ⁷ / ₈ | 3- 8 | 3- 8 | 1-10 |
| | | | | | | 3- 2 ¹ / ₈ | 1-10 | 3- 2 ¹ / ₈ | |
| R23 | IIs | 3 | 5 | 3-11 | Parapet Wall (Left End) | 1- 3 ¹ / ₂ | 0- 9 | 0- 2 ¹ / ₂ | 0- 9 |
| | | | | | | 0- 6 ¹ / ₂ | 0- 9 ³ / ₄ | | |
| X24 | Str. | 16 | 8 | 2- 0 | Dowels | | | | |

| | | |
|--|----------------------------------|----------------------|
| | | |
| | | |
| REVISION | | DATE |
| DATE: | MARCH 2020 | CHECKED BY |
| DESIGNED BY: | J. VAN ZEE | L. LIKINS |
| DETAILED BY: | M. BAWITHAWNG | J. VAN ZEE |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY SPENCER | | |
| ROUTE KY 55 | CROSSING A DITCH | |
| Bill of Reinforcement | | |
| ITEM NUMBER | PREPARED BY | SHEET NO. |
| 05-9017.00 | Division of Structural Design | S6 |
| | | DRAWING NO. 28323 |

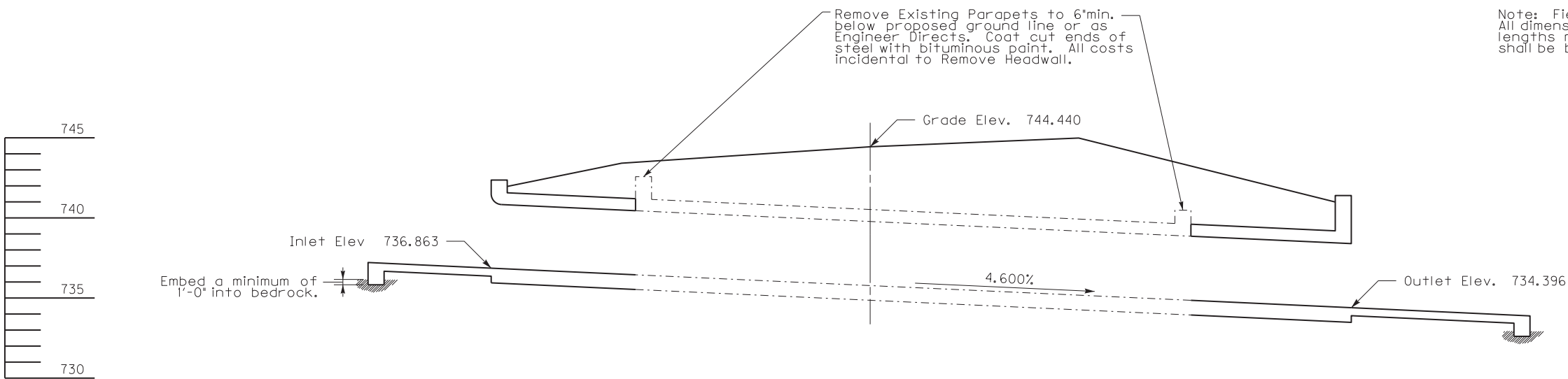
USER NAME: Joseph.vanzee FILE NAME: J:\District05\5-9017 HSP\Culverts\5 28324 5x4 RCB Station 183+26 spencer\28324.dgn DATE: 21-APR-2020 E-SHEET NAME:



Remove hatched portions of all wings, footings, and barrel to a line where tapered portion of barrel ties into straight portion of barrel.



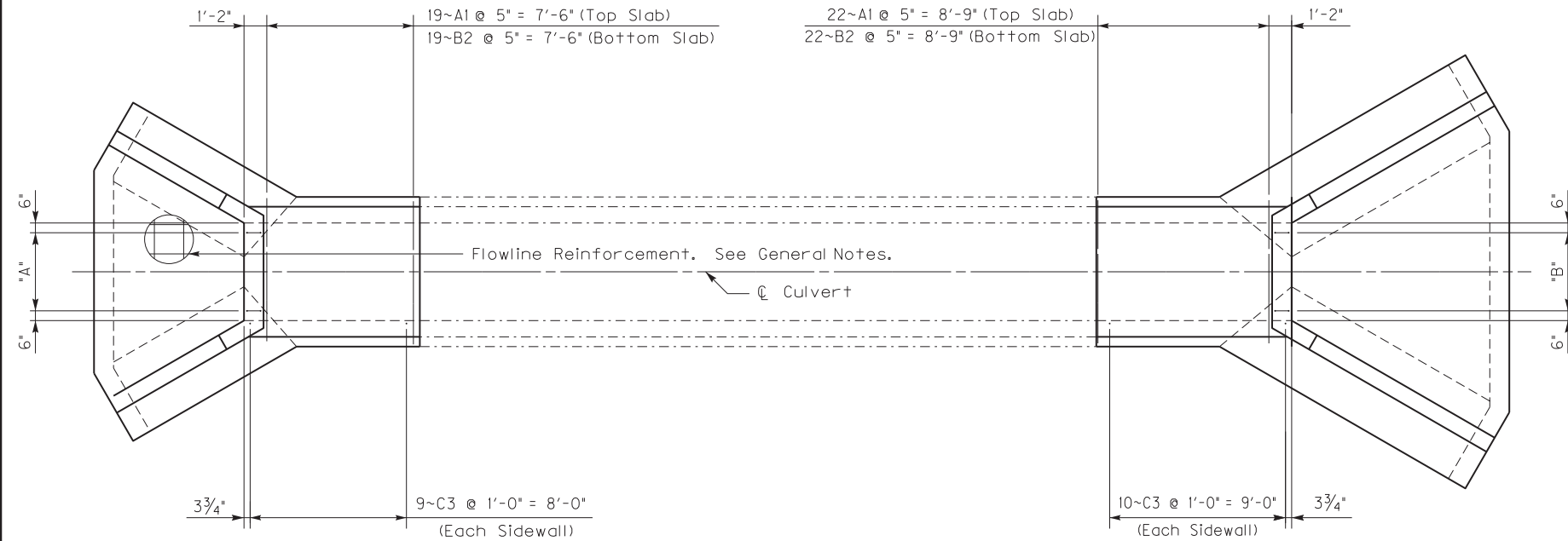
Removal Details
SCALE = 1:48



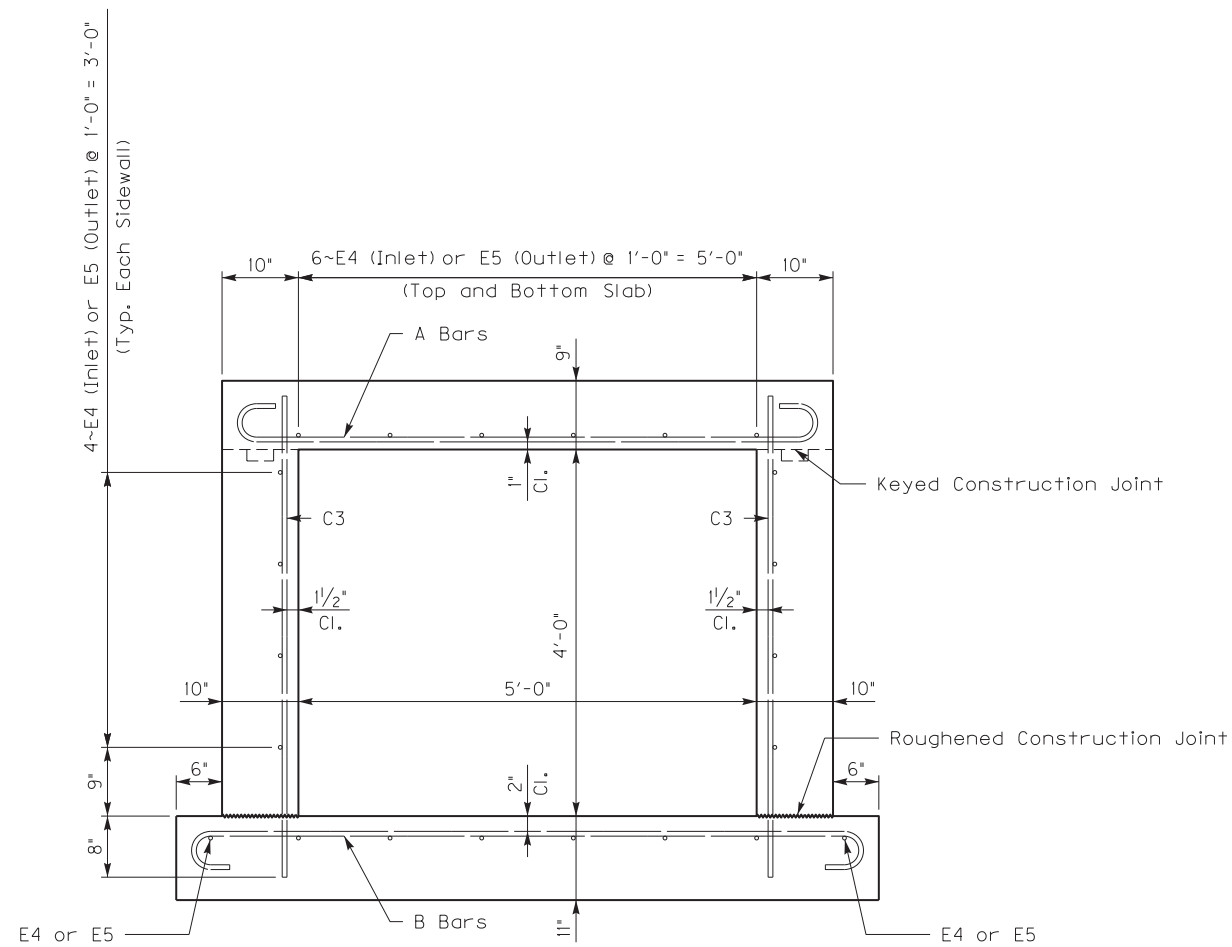
Note: Field verify all dimensions prior to ordering materials. All dimensions are taken from existing survey. Actual barrel lengths may vary from plans in the field. Extension lengths shall be built per the plan.

SECTION ON CL
Single 5'-0" x 4'-0" x 53'-7 1/2" R.C.B.C.
23'-7 1/2" Inlet End and 30'-0" Outlet End
0.0000" Skew ~KYHL-93 Loading ~ 0.33 Fill Slope
Unyielding Foundation

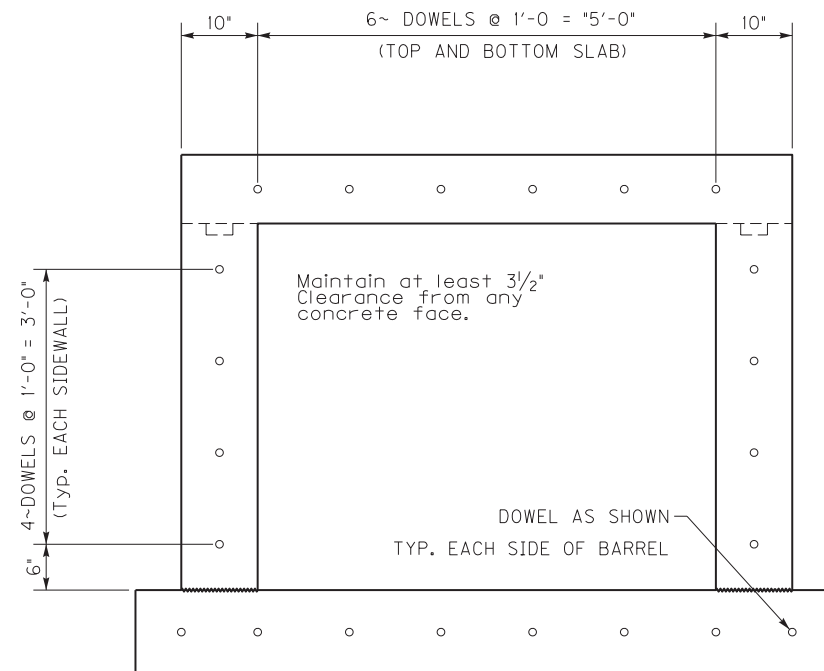
| | | | |
|--|------------|----------------------|--|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | S.T. ANDARD | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY SPENCER | | | |
| ROUTE KY 55 | | CROSSING A DITCH | |
| LAYOUT | | | |
| PREPARED BY | | SHEET NO. S2 | |
| Division of Structural Design | | DRAWING NO. 28324 | |



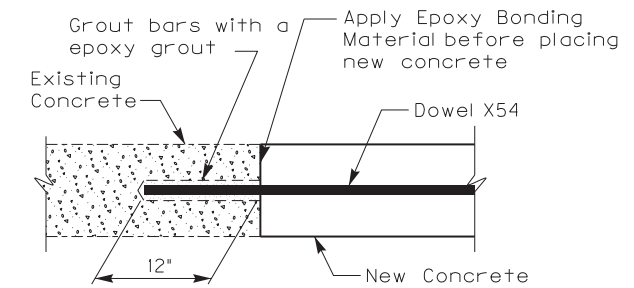
PLAN
SCALE = 1:48



TYPICAL BARREL SECTION
SCALE = 1:12



DOWEL LOCATIONS
SCALE = 1:12

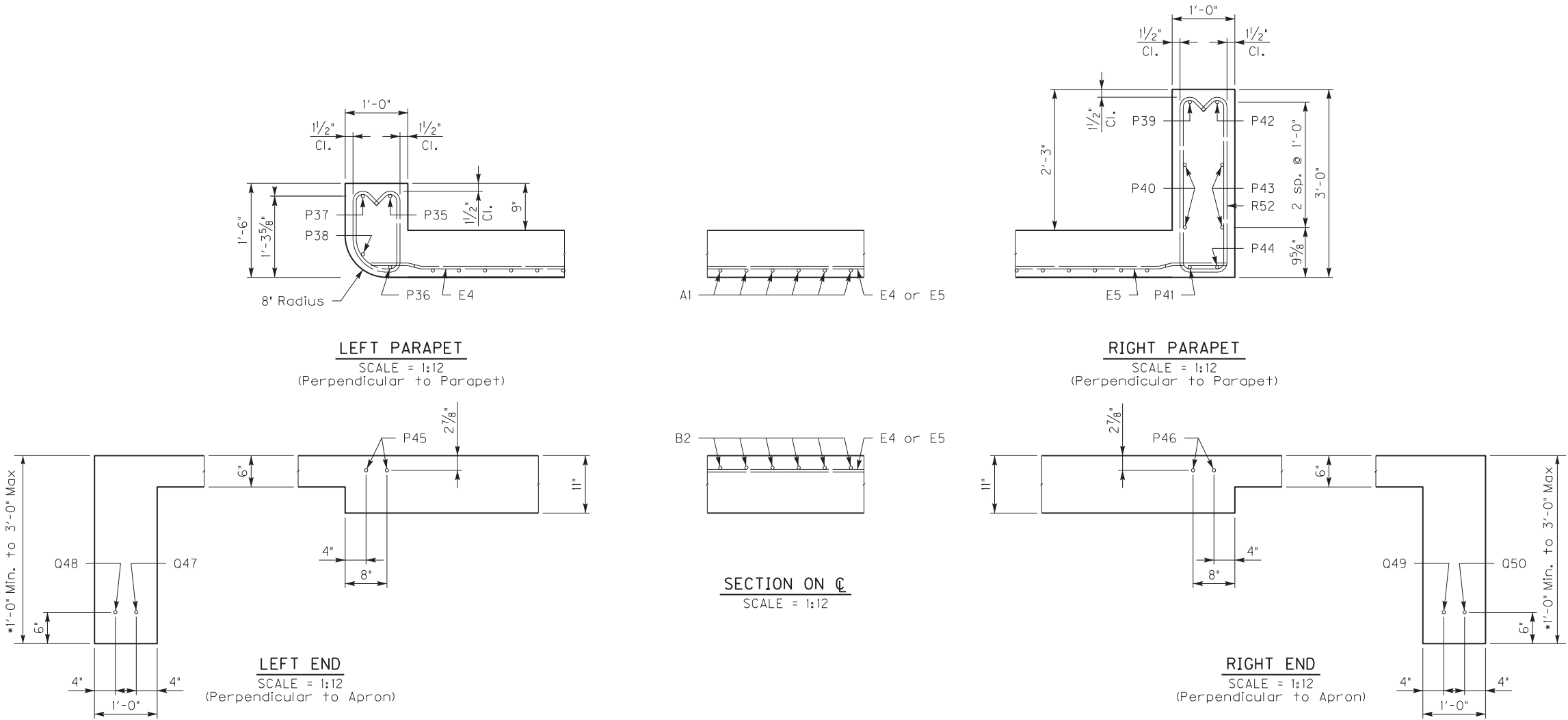


DOWEL DETAILS

NOTE: The cost of drilling holes, grouting, and epoxy bonding material shall be incidental to the cost of Class "A" Concrete.

"A" 5~R51 @ 1'-0" = 4'-0"
 "B" 5~R52 @ 1'-0" = 4'-0"
 Minimum Lap Distance for E 4 Bars 21 in
 Minimum Lap Distance for E 5 Bars 21 in

| | | | |
|--|----------------|-------------|---|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | S.T. ANDARD | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| <p align="center">Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS</p> | | | |
| <p align="center">COUNTY SPENCER</p> | | | |
| ROUTE | CROSSING | | |
| KY 55 | A DITCH | | |
| <i>BARREL</i> | | | |
| <p align="center">PREPARED BY</p> <p align="center">Division of Structural Design</p> | | | <p align="center">SHEET NO. S3</p> |
| | | | <p align="center">DRAWING NO. 28324</p> |



*Note: Embed apron 1'-0" Min. into solid rock. 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 3'-0" long if solid rock is deep. Quantities are include for the full 3'-0" depth. Adjust concrete paid as necessary for actual depth used.

| | | |
|--|---------------------|----------------------|
| | | |
| | | |
| REVISION | | DATE |
| DATE: | MARCH 2020 | CHECKED BY |
| DESIGNED BY: J. VAN ZEE | S.T. ANDARD | |
| DETAILED BY: M. BAWITHAWNG | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY SPENCER | | |
| ROUTE KY 55 | CROSSING A DITCH | |
| BARREL | | |
| PREPARED BY | | SHEET NO. |
| Division of Structural Design | | S4 |
| | | DRAWING NO. 28324 |

| |
|-------------|
| ITEM NUMBER |
| 05-9017.00 |

8'-0"

3"

G6~G13 @ 1'-0" = 7'-0" B.F.

1'-6"

M Bars

G Bars

5'-6"

2'-6"

3'-0"

1'-0"

9"

"A"

K30

WING ELEVATION

SCALE = 1:12

Technical drawing of a wing section showing dimensions and material specifications. The drawing includes the following details:

- Dimensions:**
 - Top horizontal dimension: 10"
 - Left vertical dimension: 2'-2"
 - Left vertical dimension: 1'-0"
 - Left vertical dimension: 1'-8"
 - Right vertical dimension: 1'-6"
 - Right vertical dimension: 6"
 - Bottom horizontal dimension: 4'-0"
 - Bottom horizontal dimension: 6"
 - Bottom horizontal dimension: "B"
 - Bottom horizontal dimension: "C"
 - Bottom horizontal dimension: 3"
 - Bottom horizontal dimension: 2"
 - Bottom horizontal dimension: 2"
- Material Specifications:**
 - G6 to G13
 - H28
 - H26
- Notes:**
 - Fill Against This Side
 - Roughened Construction Joint
- Labels:**
 - CL.
 - CL.
 - CL.

3'-5⁵/₈"

4'-0"

1'-6"

1'-8"

10"

3"

8'-0"

8-H26 @ 1'-0" = 7'-0" Top of Ftg. Wall

8-H28 @ 1'-0" = 7'-0" Bot of Ftg. to B.F. Wall

K Bars

M Bars

30°

P Bars

E4

6"

10"

2'-6"

2'-0"

5'-8¹/₈"

2'-8¹/₄"

9¹/₄"

4'-5¹/₄"

CL Culvert

PLAN

SCALE = 1:12

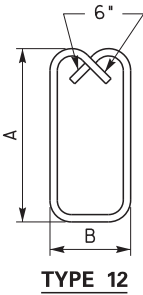
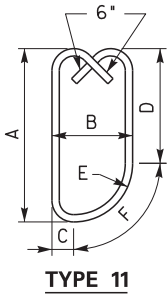
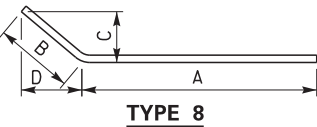
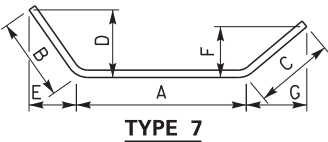
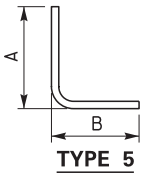
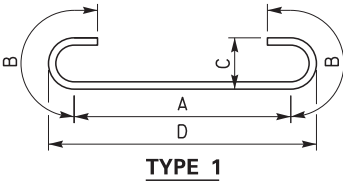
| | | |
|-------------------|--|-----------------------------|
| ITEM NUMBER | PREPARED BY <div style="text-align: center;"> Division of Structural Design </div> | SHEET NO. S5 |
| 05-9017.00 | | DRAWING NO. 28324 |



"A" 4~M34 @ 1'-0" = 3'-0" B.F.
 "B" 2~K31 @ 1'-0" = 1'-0" Bot of Ftg.
 "C" 5~K31 @ 1'-0" = 4'-0"

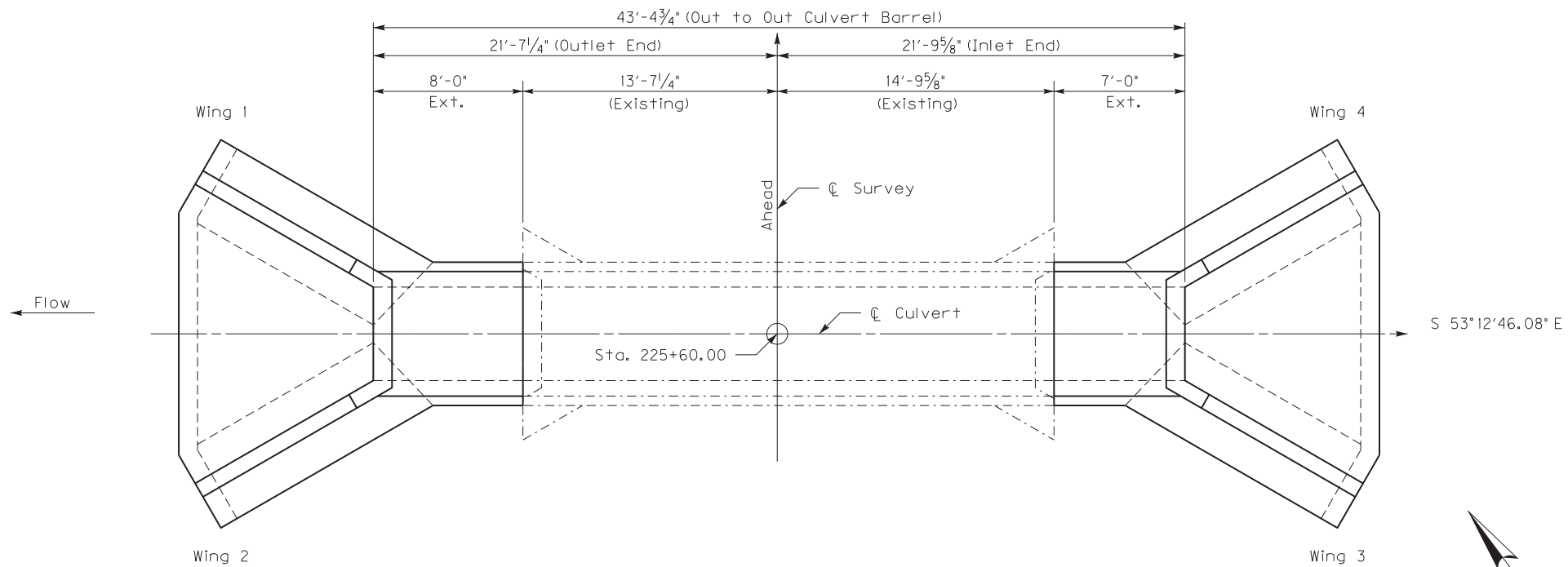
| | | | |
|--|----------------------------|-------------|--|
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: MARCH 2020 | | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | S.T. ANDARD | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| <p align="center">Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS</p> | | | |
| <p align="center">COUNTY SPENCER</p> | | | |
| ROUTE KY 55 | CROSSING A DITCH | | |
| <i>Wings 3 & 4</i> | | | |
| <p align="center">PREPARED BY</p> <p align="center">Division of Structural Design</p> | | | <p align="center">SHEET NO. S6</p> <p align="center">DRAWING NO. 28324</p> |

| BILL OF REINFORCEMENT | | | | | | | | | | BILL OF REINFORCEMENT | | | | | | | | | |
|-----------------------|------|-----|------|--------|----------------------------|------|------|------|------|-----------------------|------|-----|------|--------|--------------------------|--------|-------|-------|-------|
| MARK | TYPE | NO. | SIZE | LENGTH | LOCATION | A/E | B/F | C/G | D/H | MARK | TYPE | NO. | SIZE | LENGTH | LOCATION | A/E | B/F | C/G | D/H |
| A1 | I | 41 | 5 | 7- 7 | Top Slab | 5-11 | 0-10 | 0- 5 | 6- 4 | G9 | Str. | 2 | 5 | 4- 0 | B.F Wings 1 & 2 | | | | |
| B2 | I | 41 | 5 | 8- 7 | Bottom Slab | 6-11 | 0-10 | 0- 5 | 7- 4 | G10 | Str. | 2 | 5 | 4- 5 | B.F Wings 1 & 2 | | | | |
| C3 | Str. | 38 | 5 | 5- 3 | Sidewalls | | | | | G11 | Str. | 2 | 5 | 4-10 | B.F Wings 1 & 2 | | | | |
| E4 | Str. | 22 | 4 | 8- 8 | Slabs & Sidewalls (Inlet) | | | | | G12 | Str. | 2 | 5 | 5- 2 | B.F Wings 1 & 2 | | | | |
| E5 | Str. | 22 | 4 | 9- 8 | Slabs & Sidewalls (Outlet) | | | | | G13 | Str. | 2 | 5 | 5- 4 | B.F Wings 1 & 2 | | | | |
| G6 | Str. | 2 | 5 | 2-10 | B.F Wings 1 & 2 | | | | | G14 | Str. | 2 | 5 | 3-10 | B.F Wings 3 & 4 | | | | |
| G7 | Str. | 2 | 5 | 3- 3 | B.F Wings 1 & 2 | | | | | G15 | Str. | 2 | 5 | 4- 2 | B.F Wings 3 & 4 | | | | |
| G8 | Str. | 2 | 5 | 3- 8 | B.F Wings 1 & 2 | | | | | G16 | Str. | 2 | 5 | 4- 5 | B.F Wings 3 & 4 | | | | |
| | | | | | | | | | | G17 | Str. | 2 | 5 | 4- 9 | B.F Wings 3 & 4 | | | | |
| | | | | | | | | | | G18 | Str. | 2 | 5 | 5- 0 | B.F Wings 3 & 4 | | | | |
| | | | | | | | | | | G19 | Str. | 2 | 5 | 5- 3 | B.F Wings 3 & 4 | | | | |
| | | | | | | | | | | G20 | Str. | 2 | 5 | 5- 7 | B.F Wings 3 & 4 | | | | |
| | | | | | | | | | | G21 | Str. | 2 | 5 | 5-10 | B.F Wings 3 & 4 | | | | |
| | | | | | | | | | | G22 | Str. | 2 | 5 | 6- 2 | B.F Wings 3 & 4 | | | | |
| | | | | | | | | | | G23 | Str. | 2 | 5 | 6- 5 | B.F Wings 3 & 4 | | | | |
| | | | | | | | | | | G24 | Str. | 2 | 5 | 6- 9 | B.F Wings 3 & 4 | | | | |
| | | | | | | | | | | G25 | Str. | 2 | 5 | 6-10 | B.F Wings 3 & 4 | | | | |
| | | | | | | | | | | H26 | Str. | 16 | 5 | 3- 8 | Top Ftg Wings 1 & 2 | | | | |
| | | | | | | | | | | H27 | Str. | 24 | 5 | 4- 2 | Top Ftg Wings 3 & 4 | | | | |
| | | | | | | | | | | H28 | 5 | 16 | 5 | 4- 9 | Bot Ftg Wings 1 & 2 | 2-11 | 2- 0 | | |
| | | | | | | | | | | H29 | 5 | 24 | 5 | 4- 9 | Bot Ftg Wings 3 & 4 | 2-11 | 2- 0 | | |
| | | | | | | | | | | K30 | Str. | 12 | 5 | 9- 4 | Ftg Wings 1 & 2 | | | | |
| | | | | | | | | | | K31 | Str. | 14 | 5 | 14- 2 | Ftg Wings 3 & 4 | | | | |
| | | | | | | | | | | M32 | 8 | 6 | 5 | 10- 7 | B.F. Wings 1 & 2 | 8- 5½ | 2- 2 | 1- 1 | 1-10½ |
| | | | | | | | | | | M33 | 8 | 2 | 5 | 8- 3 | B.F. Wings 1 & 2 | 6- 1⅛ | 2- 2 | 1- 1 | 1-10½ |
| | | | | | | | | | | M34 | 8 | 8 | 5 | 14- 7 | B.F. Wings 3 & 4 | 12- 5½ | 2- 2 | 1- 1 | 1-10½ |
| | | | | | | | | | | P35 | 7 | 1 | 5 | 9- 5 | B.F. Parapet Lt. End | 5- 6¾ | 1-11⅝ | 1-11⅝ | 1- 8½ |
| | | | | | | | | | | | | | | | | 0-11⅞ | 1- 8½ | 0-11⅞ | |
| | | | | | | | | | | P36 | 7 | 1 | 5 | 9- 5 | B.F. Parapet Lt. End | 5- 6¾ | 1-11⅝ | 1-11⅝ | 1- 8½ |
| | | | | | | | | | | | | | | | | 0-11⅞ | 1- 8½ | 0-11⅞ | |
| | | | | | | | | | | P37 | 7 | 1 | 5 | 8- 5 | F.F. Parapet Lt. End | 5- 1¾ | 1- 8⅜ | 1- 8⅜ | 1- 5⅝ |
| | | | | | | | | | | | | | | | | 0-10⅞ | 1- 5⅝ | 0-10⅞ | |
| | | | | | | | | | | P38 | 7 | 1 | 5 | 8- 5 | F.F. Parapet Lt. End | 5- 1¾ | 1- 8⅜ | 1- 8⅜ | 1- 5⅝ |
| | | | | | | | | | | | | | | | | 0-10⅞ | 1- 5⅝ | 0-10⅞ | |
| | | | | | | | | | | P39 | 7 | 1 | 5 | 9- 5 | B.F. Parapet Rt. End | 5- 6¾ | 1-11¾ | 1-11¾ | 1- 8⅝ |
| | | | | | | | | | | | | | | | | 0-11⅞ | 1- 8⅝ | 0-11⅞ | |
| | | | | | | | | | | P40 | 7 | 2 | 5 | 9- 6 | B.F. Parapet Rt. End | 5- 5⅝ | 2- 0⅞ | 2- 0⅞ | 1- 9½ |
| | | | | | | | | | | | | | | | | 1- 0⅞ | 1- 9½ | 1- 0⅞ | |
| | | | | | | | | | | P41 | 7 | 1 | 5 | 9- 5 | B.F. Parapet Rt. End | 5- 6¾ | 1-11¾ | 1-11¾ | 1- 8⅝ |
| | | | | | | | | | | | | | | | | 0-11⅞ | 1- 8⅝ | 0-11⅞ | |
| | | | | | | | | | | P42 | 7 | 1 | 5 | 8- 6 | F.F. Parapet Rt. End | 5- 1¾ | 1- 8½ | 1- 8½ | 1- 5¾ |
| | | | | | | | | | | | | | | | | 0-10¼ | 1- 5¾ | 0-10¼ | |
| | | | | | | | | | | P43 | 7 | 2 | 5 | 8- 4 | F.F. Parapet Rt. End | 5- 2⅞ | 1- 7⅞ | 1- 7⅞ | 1- 4¾ |
| | | | | | | | | | | | | | | | | 0- 9⅝ | 1- 4¾ | 0- 9⅝ | |
| | | | | | | | | | | P44 | 7 | 1 | 5 | 8- 6 | F.F. Parapet Rt. End | 5- 1¾ | 1- 8½ | 1- 8½ | 1- 5¾ |
| | | | | | | | | | | | | | | | | 0-10¼ | 1- 5¾ | 0-10¼ | |
| | | | | | | | | | | P45 | Str. | 2 | 5 | 7- 4 | Bottom Slab Lt. End | | | | |
| | | | | | | | | | | P46 | Str. | 2 | 5 | 7- 4 | Bottom Slab Rt. End | | | | |
| | | | | | | | | | | Q47 | 7 | 1 | 5 | 17- 2 | Apron Lt. End | 10- 0¾ | 3- 7 | 3- 7 | 1- 9½ |
| | | | | | | | | | | | | | | | | 3- 1⅛ | 1- 9½ | 3- 1⅛ | |
| | | | | | | | | | | Q48 | 7 | 1 | 5 | 17- 6 | Apron Lt. End | 10- 2⅞ | 3- 8 | 3- 8 | 1-10 |
| | | | | | | | | | | | | | | | | 3- 2⅞ | 1-10 | 3- 2⅞ | |
| | | | | | | | | | | Q49 | 7 | 1 | 5 | 22- 2 | Apron Rt. End | 14- 0¾ | 4- 1 | 4- 1 | 2- 0½ |
| | | | | | | | | | | | | | | | | 3- 6⅜ | 2- 0½ | 3- 6⅜ | |
| | | | | | | | | | | Q50 | 7 | 1 | 5 | 22- 6 | Apron Rt. End | 14- 2⅞ | 4- 2 | 4- 2 | 2- 1 |
| | | | | | | | | | | | | | | | | 3- 7¼ | 2- 1 | 3- 7¼ | |
| | | | | | | | | | | R51 | 11s | 5 | 5 | 3-11 | Parapet Wall (Left End) | 1- 3½ | 0- 9 | 0- 2½ | 0- 9 |
| | | | | | | | | | | | | | | | | 0- 6½ | 0- 9¾ | | |
| | | | | | | | | | | R52 | 12s | 5 | 5 | 7- 1 | Parapet Wall (Right End) | 2- 9½ | 0- 9 | | |
| | | | | | | | | | | T53 | 8 | 4 | 6 | 12- 3 | Top of Wings 3 & 4 | 10- 9⅜ | 1- 5⅝ | 0- 4⅞ | 1- 5 |
| | | | | | | | | | | X54 | Str. | 44 | 8 | 2- 0 | Dowels | | | | |



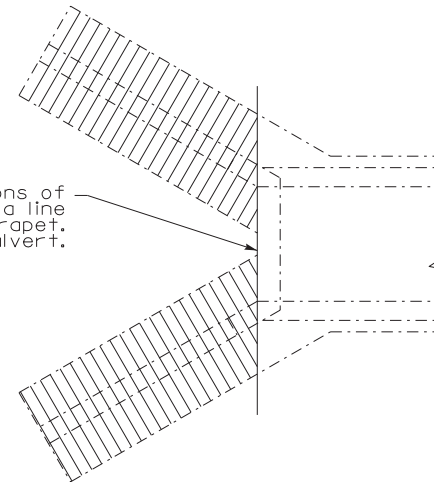
| | | | |
|--|---------------------|----------------------------------|--|
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: MARCH 2020 | | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | S.T. ANDARD | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY SPENCER | | | |
| ROUTE KY 55 | CROSSING A DITCH | | |
| Bill of Reinforcement | | | |
| ITEM NUMBER | | PREPARED BY | |
| 05-9017.00 | | Division of Structural Design | |
| | | SHEET NO. S7 | |
| | | DRAWING NO. 28324 | |

USERNAME: Joseph.vanzee FILE NAME: J:\District05\5-9017 HSP\Culverts\6 28325 5x4 RCBC Station 225+60 shely county\28325\28325.dgn
 DATE: 27-APR-2020
 E-SHEET NAME:



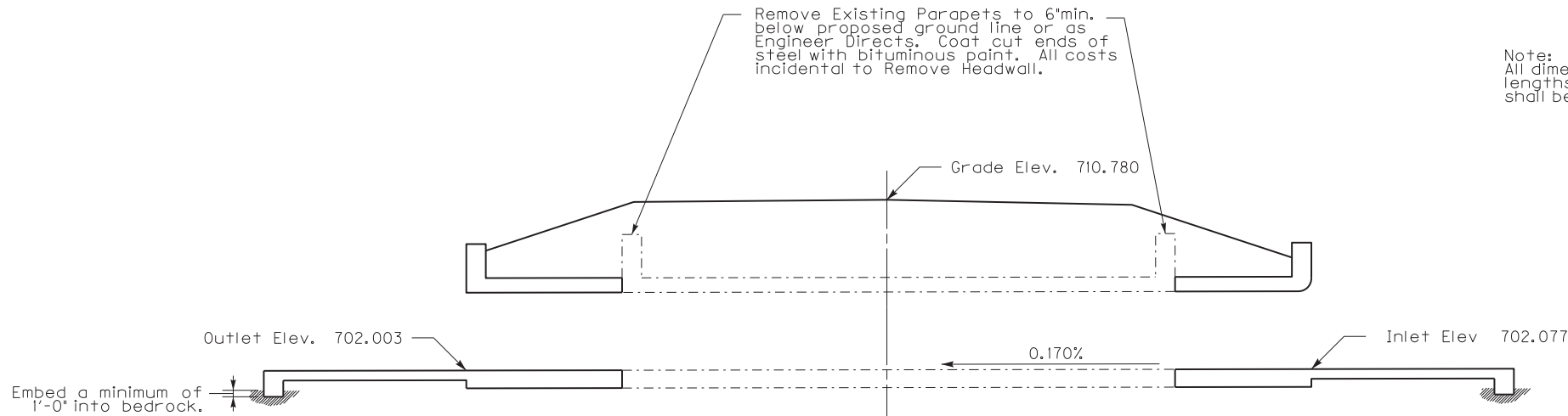
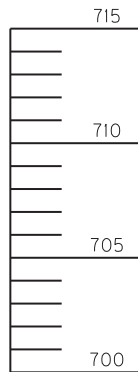
PLAN
 SCALE = 1:48

Remove hatched portions of
 all wings and footings to a line
 even with face of parapet.
 Typ. Each End of Culvert.



Removal Details

SCALE = 1:48

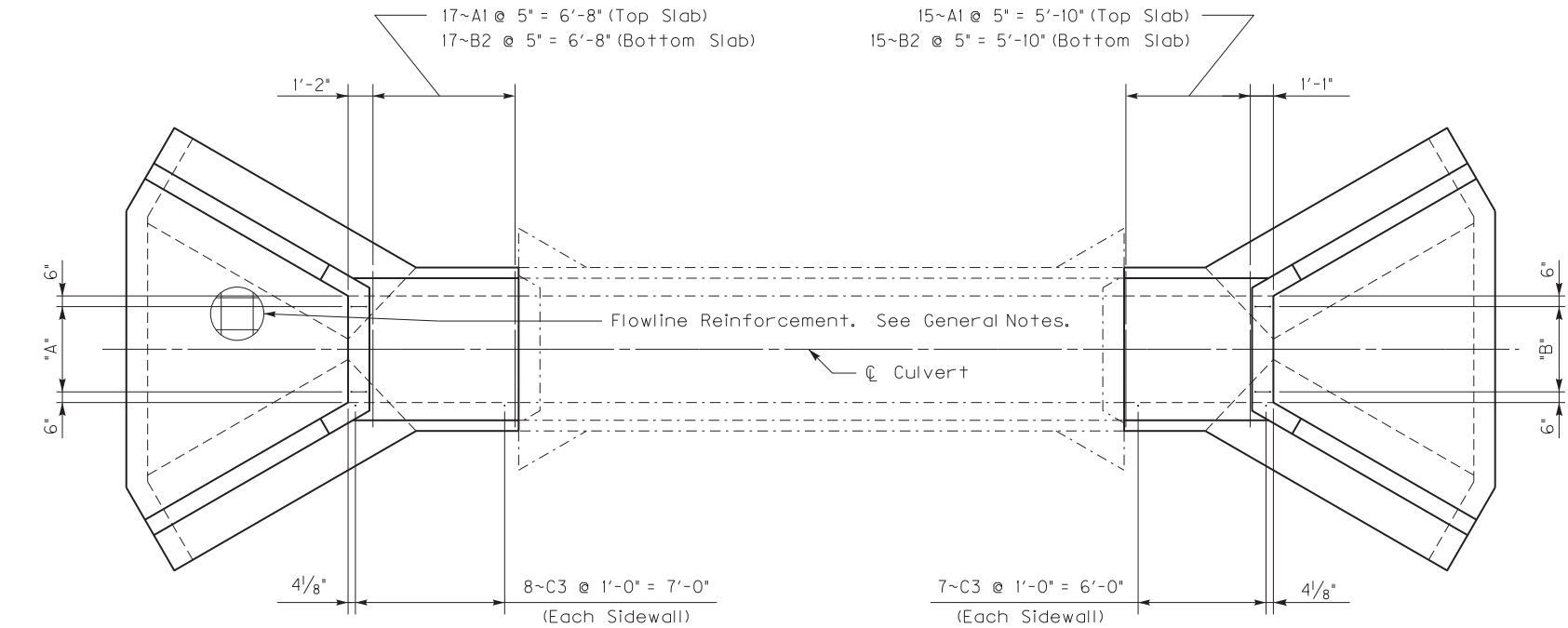


Note: Field verify all dimensions prior to ordering materials. All dimensions are taken from existing survey. Actual barrel lengths may vary from plans in the field. Extension lengths shall be built per the plan.

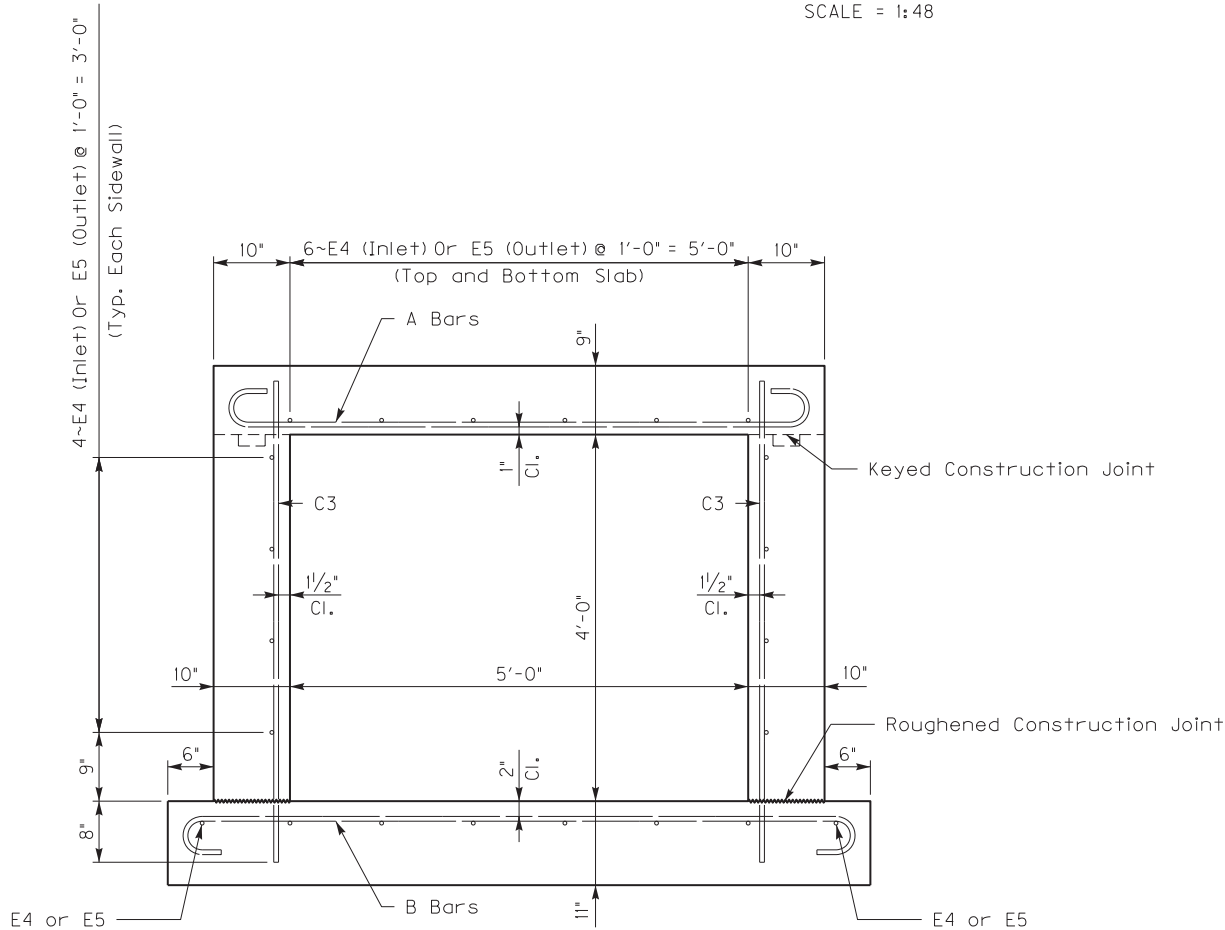
SECTION ON ϕ
 Single 5'-0" x 4'-0" x 43'-4 3/4" R.C.B.C.
 21'-9 5/8" Inlet End and 21'-7 1/4" Outlet End
 0.0000° Skew ~ KYHL-93 Loading ~ 0.33 Fill Slope
 Unyielding Foundation

| | | | |
|--|------------|------------|-------------|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | L. LIKINS | | |
| DETAILED BY: M. BAWITHAWNG | J. VAN ZEE | | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY | | | |
| SHELBY | | | |
| ROUTE | CROSSING | | |
| KY 55 | A DITCH | | |
| LAYOUT | | | |
| PREPARED BY | | | SHEET NO. |
| Division of | | | S2 |
| Structural Design | | | DRAWING NO. |
| | | | 28325 |

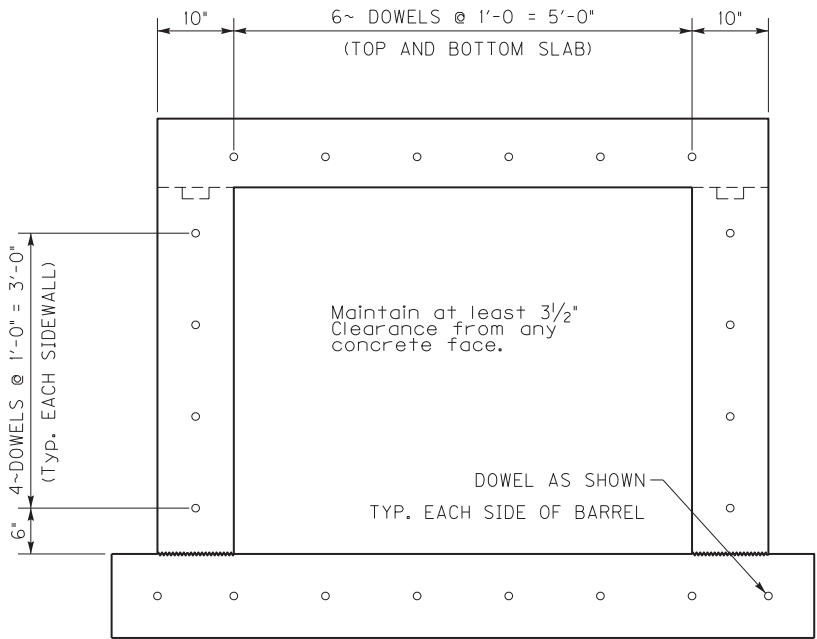
E-SHEET NAME: J:\District\05\5-9017 HSP\ Culverts\6 28325 5x4 RCBC Station 225+60 shelby county\28325\28325.dgn
USER NAME: Joseph.vanzee
FILE NAME: J:\District\05\5-9017 HSP\ Culverts\6 28325 5x4 RCBC Station 225+60 shelby county\28325\28325.dgn
DATE: 27-APR-2020



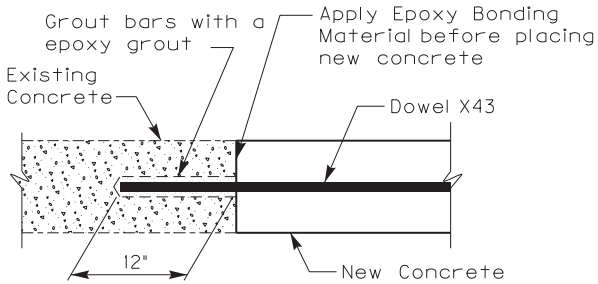
PLAN
SCALE = 1:48



TYPICAL BARREL SECTION
SCALE = 1:12



DOWEL LOCATIONS
SCALE = 1:12

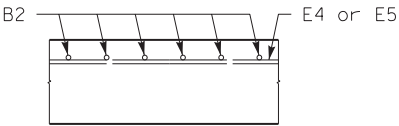
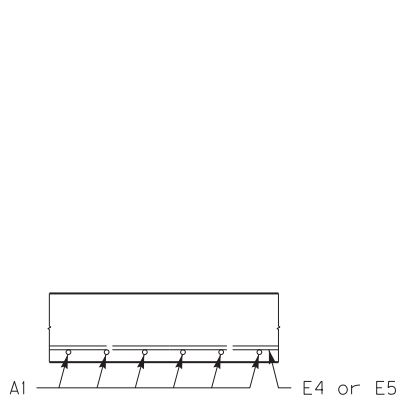
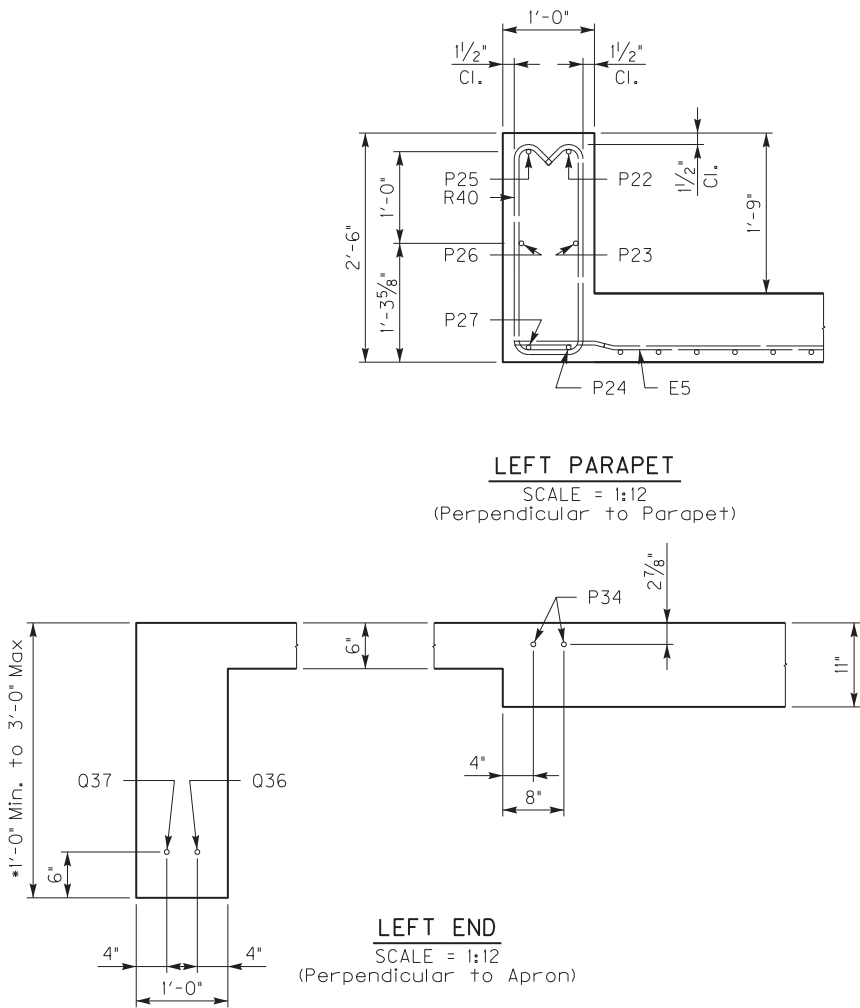


DOWEL DETAILS

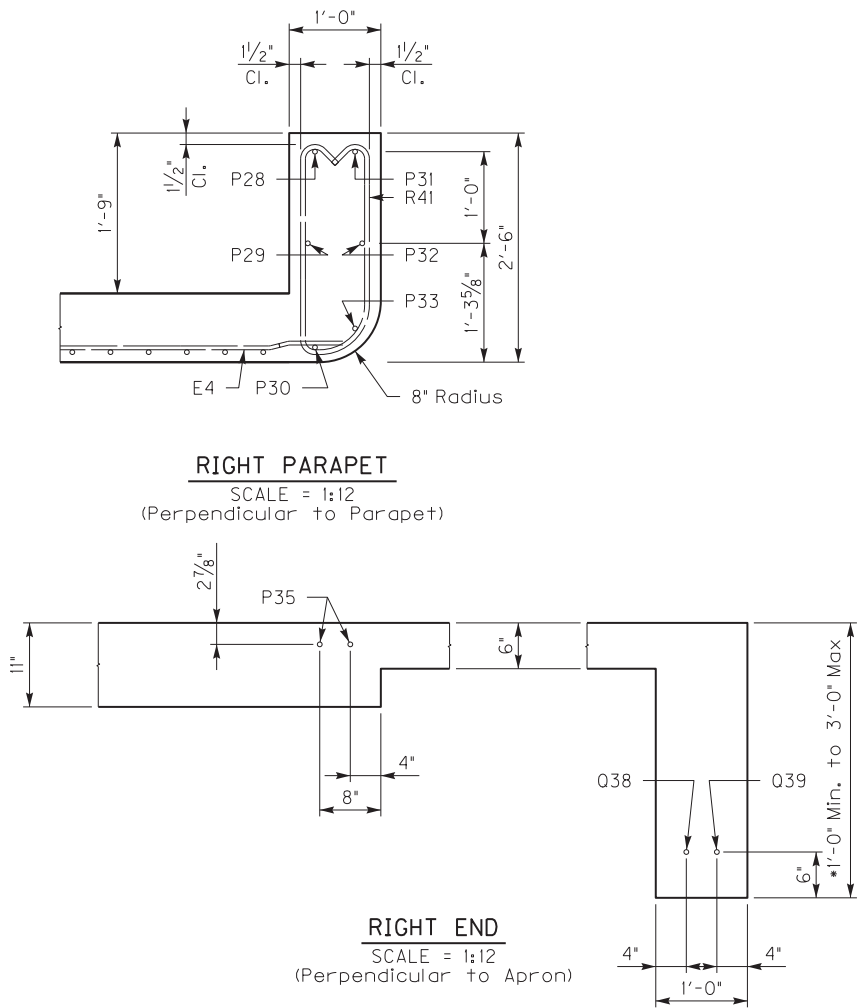
NOTE: The cost of drilling holes, grouting, and epoxy bonding material shall be incidental to the cost of Class "A" Concrete.

"A" 5~R40 @ 1'-0" = 4'-0"
"B" 5~R41 @ 1'-0" = 4'-0"
Minimum Lap Distance for E 4 Bars 21 in
Minimum Lap Distance for E 5 Bars 21 in

| | | | |
|--|------------|----------------------------|--|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY SHELBY | | | |
| ROUTE KY 55 | | CROSSING A DITCH | |
| BARREL | | | |
| PREPARED BY | | SHEET NO. | |
| Division of Structural Design | | S3 DRAWING NO. 28325 | |



SECTION ON C
SCALE = 1:12

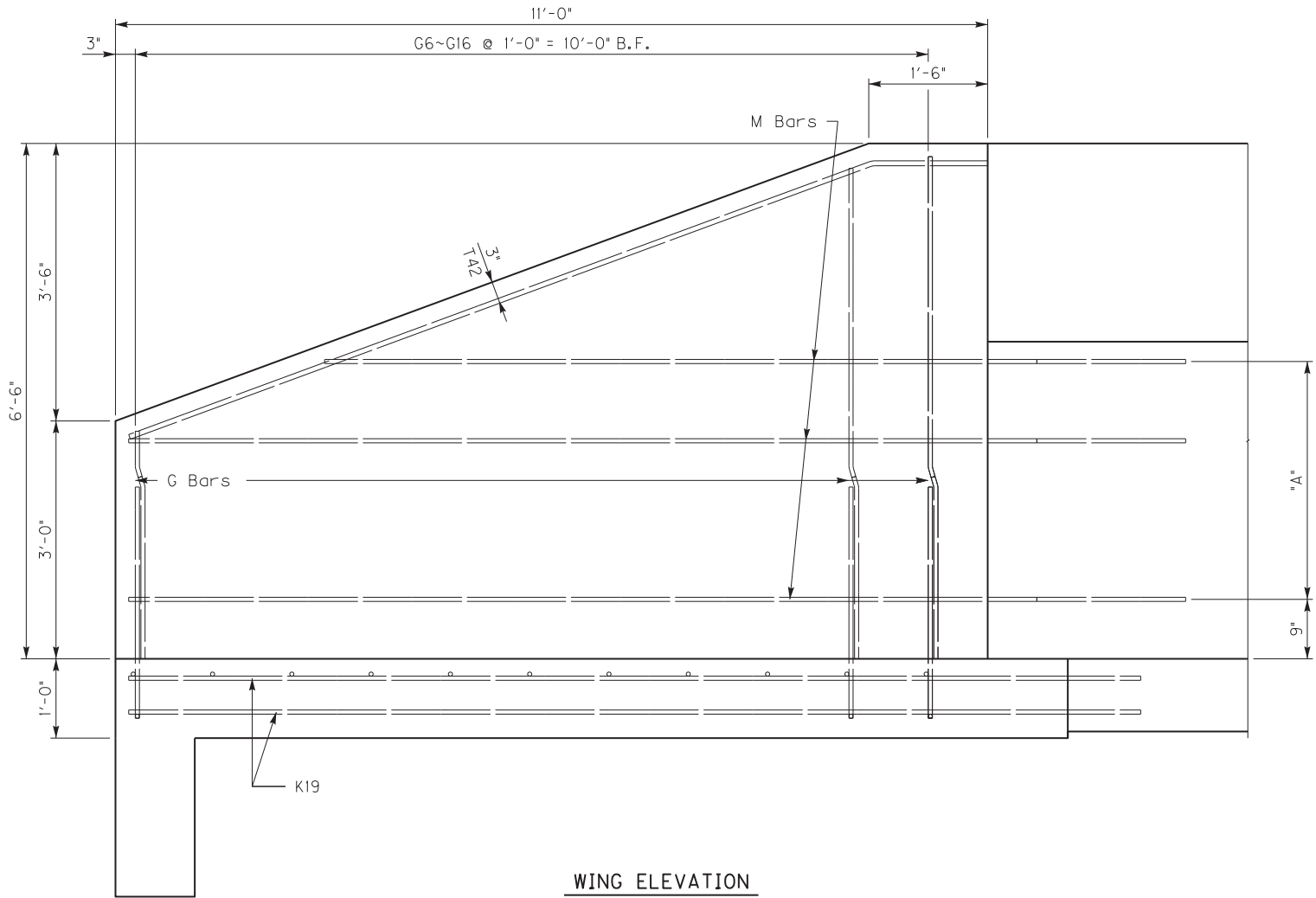


*Note: Embed apron 1'-0" Min. into solid rock. Pour all sides against solid rock. Any extra concrete required is incidental to the unit price bid for Class A concrete. Apron to be a maximum of 3'-0" long if solid rock is deep. Quantities are include for the full 3'-0" depth. Adjust concrete paid as necessary for actual depth used.

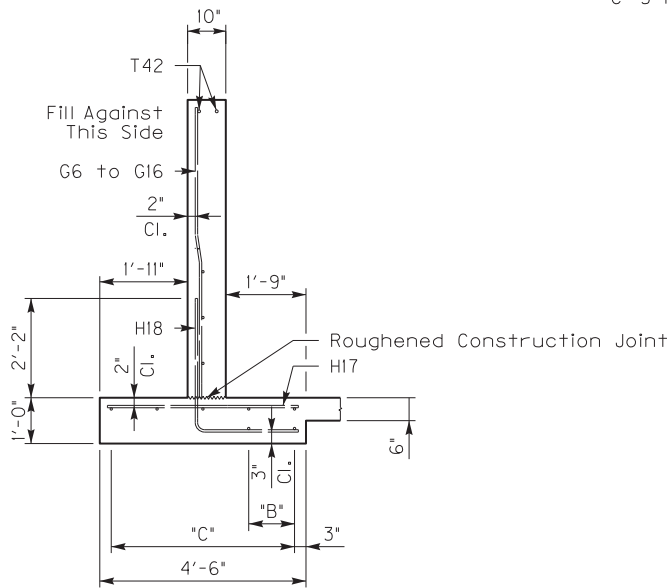
| ITEM NUMBER |
|-------------|
| 05-9017.00 |

| | | |
|--|---------------------|-------------|
| | | |
| | | |
| REVISION | | DATE |
| DATE: MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY SHELBY | | |
| ROUTE KY 55 | CROSSING A DITCH | |
| BARREL | | |
| PREPARED BY | | SHEET NO. |
| Division of Structural Design | | S4 |
| | | DRAWING NO. |
| | | 28325 |

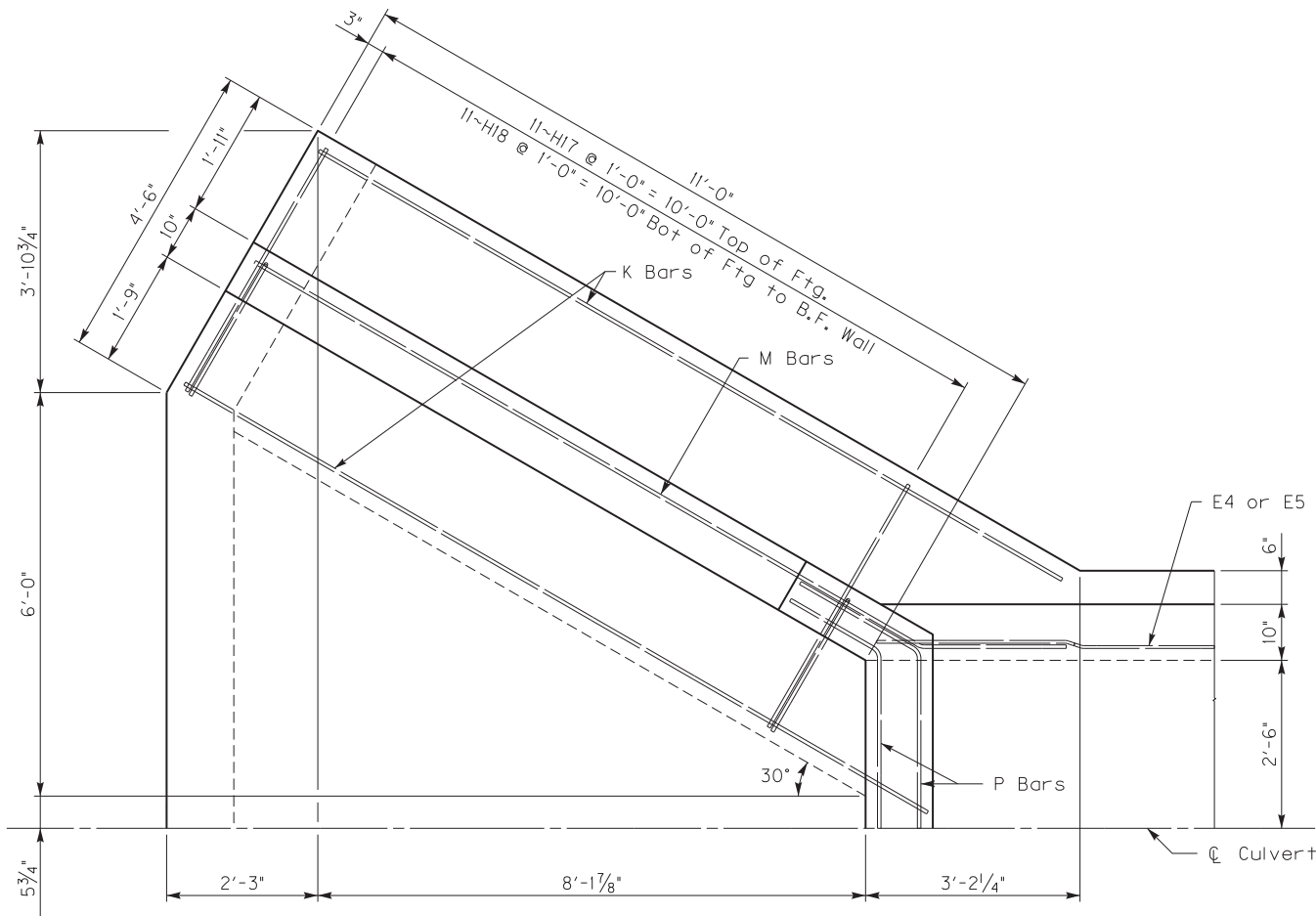
E-SHEET NAME: DATE: 27-APR-2020 USERNAME: Joseph.vanzee FILE NAME: J:\District\05\5-9017 HSP\Culverts\6 28325 5x4 RCBC Station 225+60 shelby county\28325\28325.dgn



WING ELEVATION
 SCALE = 1:12



WING SECTION
 SCALE = 1:24

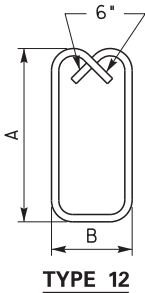
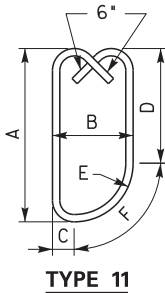
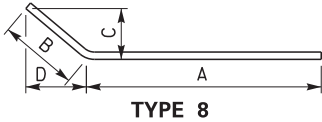
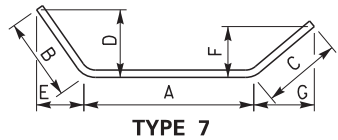
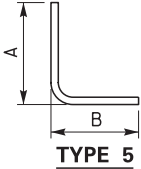
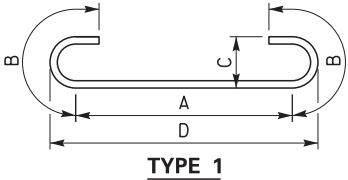


PLAN
 SCALE = 1:16

"A" 3~M20,1~M21 @ 1'-0" = 3'-0" B.F.
 "B" 2~K19 @ 1'-0" = 1'-0" Bot of Ftg.
 "C" 5~K19 @ 1'-0" = 4'-0"

| ITEM NUMBER |
|-------------|
| 05-9017.00 |

| | | |
|--|---------------------|---|
| | | |
| | | |
| REVISION | | DATE |
| DATE: MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY SHELBY | | |
| ROUTE KY 55 | CROSSING A DITCH | |
| Wings 1, 2, 3 & 4 | | |
| PREPARED BY Division of Structural Design | | SHEET NO. S5 DRAWING NO. 28325 |



BILL OF REINFORCEMENT

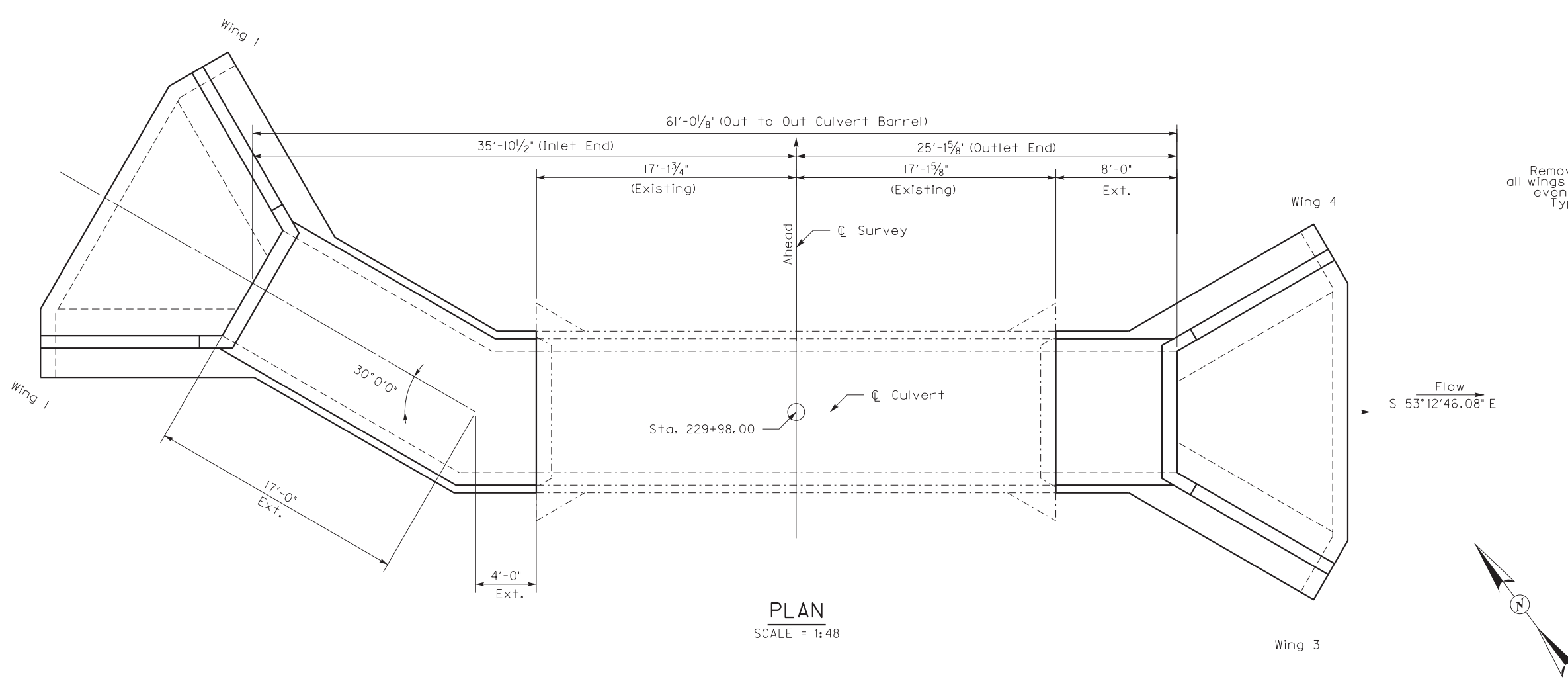
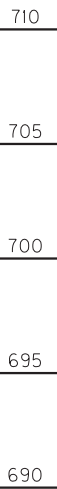
| MARK | TYPE | NO. | SIZE | LENGTH | LOCATION | A/E | B/F | C/G | D/H |
|------|------|-----|------|--------|----------------------------|--------|-------|-------|-------|
| A1 | I | 32 | 5 | 7- 7 | Top Slab | 5-11 | 0-10 | 0- 5 | 6- 4 |
| B2 | I | 32 | 5 | 8- 7 | Bottom Slab | 6-11 | 0-10 | 0- 5 | 7- 4 |
| C3 | Str. | 30 | 5 | 5- 3 | Sidewalls | | | | |
| E4 | Str. | 22 | 4 | 6- 8 | Slabs & Sidewalls (Inlet) | | | | |
| E5 | Str. | 22 | 4 | 7- 8 | Slabs & Sidewalls (Outlet) | | | | |
| G6 | Str. | 4 | 5 | 2-10 | B.F Wings 1, 2, 3 & 4 | | | | |
| G7 | Str. | 4 | 5 | 3- 3 | B.F Wings 1, 2, 3 & 4 | | | | |
| G8 | Str. | 4 | 5 | 3- 7 | B.F Wings 1, 2, 3 & 4 | | | | |
| G9 | Str. | 4 | 5 | 4- 0 | B.F Wings 1, 2, 3 & 4 | | | | |
| G10 | Str. | 4 | 5 | 4- 4 | B.F Wings 1, 2, 3 & 4 | | | | |
| G11 | Str. | 4 | 5 | 4- 9 | B.F Wings 1, 2, 3 & 4 | | | | |
| G12 | Str. | 4 | 5 | 5- 1 | B.F Wings 1, 2, 3 & 4 | | | | |
| G13 | Str. | 4 | 5 | 5- 5 | B.F Wings 1, 2, 3 & 4 | | | | |
| G14 | Str. | 4 | 5 | 5-10 | B.F Wings 1, 2, 3 & 4 | | | | |
| G15 | Str. | 4 | 5 | 6- 2 | B.F Wings 1, 2, 3 & 4 | | | | |
| G16 | Str. | 4 | 5 | 6- 4 | B.F Wings 1, 2, 3 & 4 | | | | |
| H17 | Str. | 44 | 5 | 4- 2 | Top Ftq Wings 1, 2, 3 & 4 | | | | |
| H18 | 5 | 44 | 5 | 5- 0 | Bot Ftq Wings 1, 2, 3 & 4 | 2-11 | 2- 3 | | |
| K19 | Str. | 28 | 5 | 12- 9 | Ftq Wings 1, 2, 3 & 4 | | | | |
| M20 | 8 | 12 | 5 | 13- 7 | B.F. Wings 1, 2, 3 & 4 | 11- 5½ | 2- 2 | 1- 1 | 1-10½ |
| M21 | 8 | 4 | 5 | 11- 2 | B.F. Wings 1, 2, 3 & 4 | 8-11¾ | 2- 2 | 1- 1 | 1-10½ |
| P22 | 7 | 1 | 5 | 9- 5 | B.F. Parapet Lt. End | 5- 6¾ | 1-11⅝ | 1-11⅝ | 1- 8½ |
| | | | | | | 0-11⅞ | 1- 8½ | 0-11⅞ | |
| P23 | 7 | 1 | 5 | 9- 6 | B.F. Parapet Lt. End | 5- 5⅝ | 2- 0¾ | 2- 0¾ | 1- 9½ |
| | | | | | | 1- 0¾ | 1- 9½ | 1- 0¾ | |
| P24 | 7 | 1 | 5 | 9- 5 | B.F. Parapet Lt. End | 5- 6¾ | 1-11⅝ | 1-11⅝ | 1- 8½ |
| | | | | | | 0-11⅞ | 1- 8½ | 0-11⅞ | |
| P25 | 7 | 1 | 5 | 8- 5 | F.F. Parapet Lt. End | 5- 1¾ | 1- 8¾ | 1- 8¾ | 1- 5⅝ |
| | | | | | | 0-10⅞ | 1- 5⅝ | 0-10⅞ | |
| P26 | 7 | 1 | 5 | 8- 4 | F.F. Parapet Lt. End | 5- 2⅞ | 1- 7¼ | 1- 7¼ | 1- 4¾ |
| | | | | | | 0- 9⅞ | 1- 4¾ | 0- 9⅞ | |
| P27 | 7 | 1 | 5 | 8- 5 | F.F. Parapet Lt. End | 5- 1¾ | 1- 8¾ | 1- 8¾ | 1- 5⅝ |
| | | | | | | 0-10⅞ | 1- 5⅝ | 0-10⅞ | |
| P28 | 7 | 1 | 5 | 9- 5 | B.F. Parapet Rt. End | 5- 6¾ | 1-11⅝ | 1-11⅝ | 1- 8½ |
| | | | | | | 0-11⅞ | 1- 8½ | 0-11⅞ | |
| P29 | 7 | 1 | 5 | 9- 6 | B.F. Parapet Rt. End | 5- 5⅝ | 2- 0¾ | 2- 0¾ | 1- 9½ |
| | | | | | | 1- 0¾ | 1- 9½ | 1- 0¾ | |
| P30 | 7 | 1 | 5 | 9- 5 | B.F. Parapet Rt. End | 5- 6¾ | 1-11⅝ | 1-11⅝ | 1- 8½ |
| | | | | | | 0-11⅞ | 1- 8½ | 0-11⅞ | |
| P31 | 7 | 1 | 5 | 8- 5 | F.F. Parapet Rt. End | 5- 1¾ | 1- 8¾ | 1- 8¾ | 1- 5⅝ |
| | | | | | | 0-10⅞ | 1- 5⅝ | 0-10⅞ | |
| P32 | 7 | 1 | 5 | 8- 4 | F.F. Parapet Rt. End | 5- 2⅞ | 1- 7¼ | 1- 7¼ | 1- 4¾ |
| | | | | | | 0- 9⅞ | 1- 4¾ | 0- 9⅞ | |
| P33 | 7 | 1 | 5 | 8- 5 | F.F. Parapet Rt. End | 5- 1¾ | 1- 8¾ | 1- 8¾ | 1- 5⅝ |
| | | | | | | 0-10⅞ | 1- 5⅝ | 0-10⅞ | |
| P34 | Str. | 2 | 5 | 7- 4 | Bottom Slab Lt. End | | | | |
| P35 | Str. | 2 | 5 | 7- 4 | Bottom Slab Rt. End | | | | |
| Q36 | 7 | 1 | 5 | 20- 9 | Apron Lt. End | 12- 7½ | 4- 1 | 4- 1 | 2- 0½ |
| | | | | | | 3- 6⅞ | 2- 0½ | 3- 6⅞ | |
| Q37 | 7 | 1 | 5 | 21- 1 | Apron Lt. End | 12- 9⅞ | 4- 2 | 4- 2 | 2- 1 |
| | | | | | | 3- 7¼ | 2- 1 | 3- 7¼ | |
| Q38 | 7 | 1 | 5 | 20- 9 | Apron Rt. End | 12- 7½ | 4- 1 | 4- 1 | 2- 0½ |
| | | | | | | 3- 6⅞ | 2- 0½ | 3- 6⅞ | |
| Q39 | 7 | 1 | 5 | 21- 1 | Apron Rt. End | 12- 9⅞ | 4- 2 | 4- 2 | 2- 1 |
| | | | | | | 3- 7¼ | 2- 1 | 3- 7¼ | |
| R40 | 12s | 5 | 5 | 6- 1 | Parapet Wall (Left End) | 2- 3½ | 0- 9 | | |
| R41 | 11s | 5 | 5 | 5-11 | Parapet Wall (Right End) | 2- 3½ | 0- 9 | 0- 2½ | 1- 9 |
| | | | | | | 0- 6½ | 0- 9¾ | | |
| T42 | 8 | 8 | 6 | 11- 5 | Top of Wings 1, 2, 3 & 4 | 9-11⅞ | 1- 5½ | 0- 6 | 1- 4½ |
| X43 | Str. | 44 | 8 | 2- 0 | Dowels | | | | |

| | | |
|--|---------------------|---|
| | | |
| | | |
| REVISION | | DATE |
| DATE: | MARCH 2020 | CHECKED BY |
| DESIGNED BY: | J. VAN ZEE | L. LIKINS |
| DETAILED BY: | M. BAWITHAWNG | J. VAN ZEE |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY SHELBY | | |
| ROUTE KY 55 | CROSSING A DITCH | |
| Bill of Reinforcement | | |
| PREPARED BY Division of Structural Design | | SHEET NO. S6 DRAWING NO. 28325 |

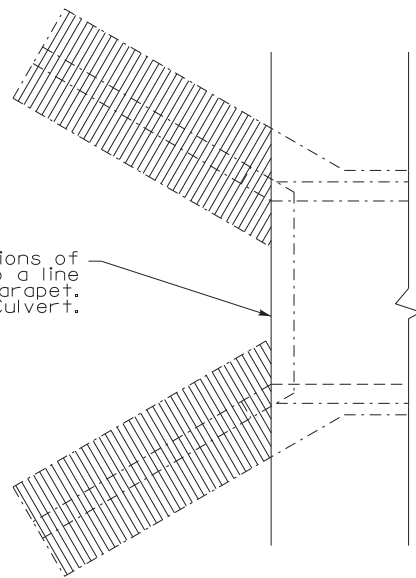
ITEM NUMBER

05-9017.00

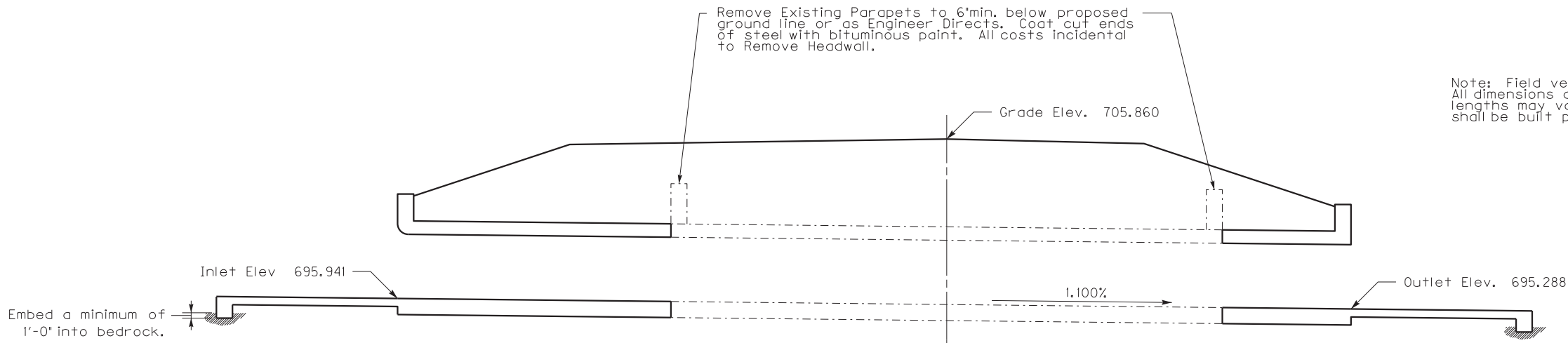
FILE NAME: J:\District05\5-9017 HSP\ Culverts\7 28326 8x4 RCBC Station 229+98\28326.dgn
USER NAME: Joseph, vanzee
DATE: 26-JUN-2020
E-SHEET NAME:



PLAN
SCALE = 1:48



Removal Details
SCALE = 1:48

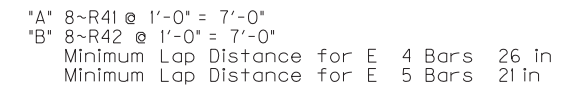


Note: Field verify all dimensions prior to ordering materials. All dimensions are taken from existing survey. Actual barrel lengths may vary from plans in the field. Extension lengths shall be built per the plan.

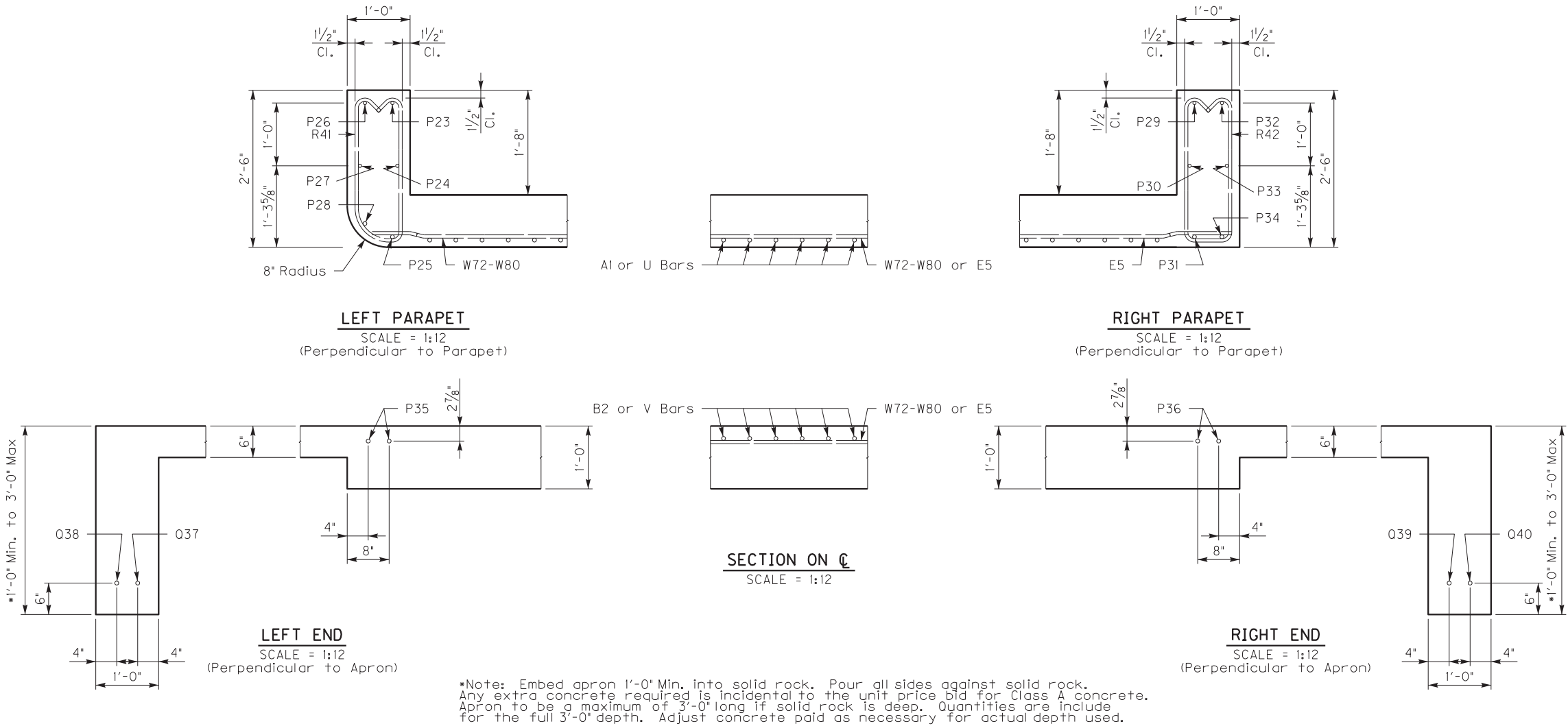
SECTION ON CL
Single 8'-0" x 4'-0" x 61'-0 1/8" R.C.B.C.
35'-10 1/2" Inlet End and 25'-1 5/8" Outlet End
0.0000° Skew ~ KYHL-93 Loading ~ 0.33 Fill Slope
Unyielding Foundation

| ITEM NUMBER |
|-------------|
| 5-9017.00 |

| | | |
|--|---------------------|---|
| | | |
| | | |
| | | |
| REVISION | | DATE |
| DATE: MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY SHELBY | | |
| ROUTE KY 55 | CROSSING A DITCH | |
| LAYOUT | | |
| PREPARED BY Division of Structural Design | | SHEET NO. S2 DRAWING NO. 28326 |



| | | | |
|--|----------------|------------|--|
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| <p align="center">Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS</p> | | | |
| <p align="center">COUNTY SHELBY</p> | | | |
| ROUTE | CROSSING | | |
| KY 55 | A DITCH | | |
| <i>BARREL</i> | | | |
| <p align="center">PREPARED BY</p> <p align="center">Division of Structural Design</p> | | | <p align="center">SHEET NO. S3</p> <p align="center">DRAWING NO. 28326</p> |

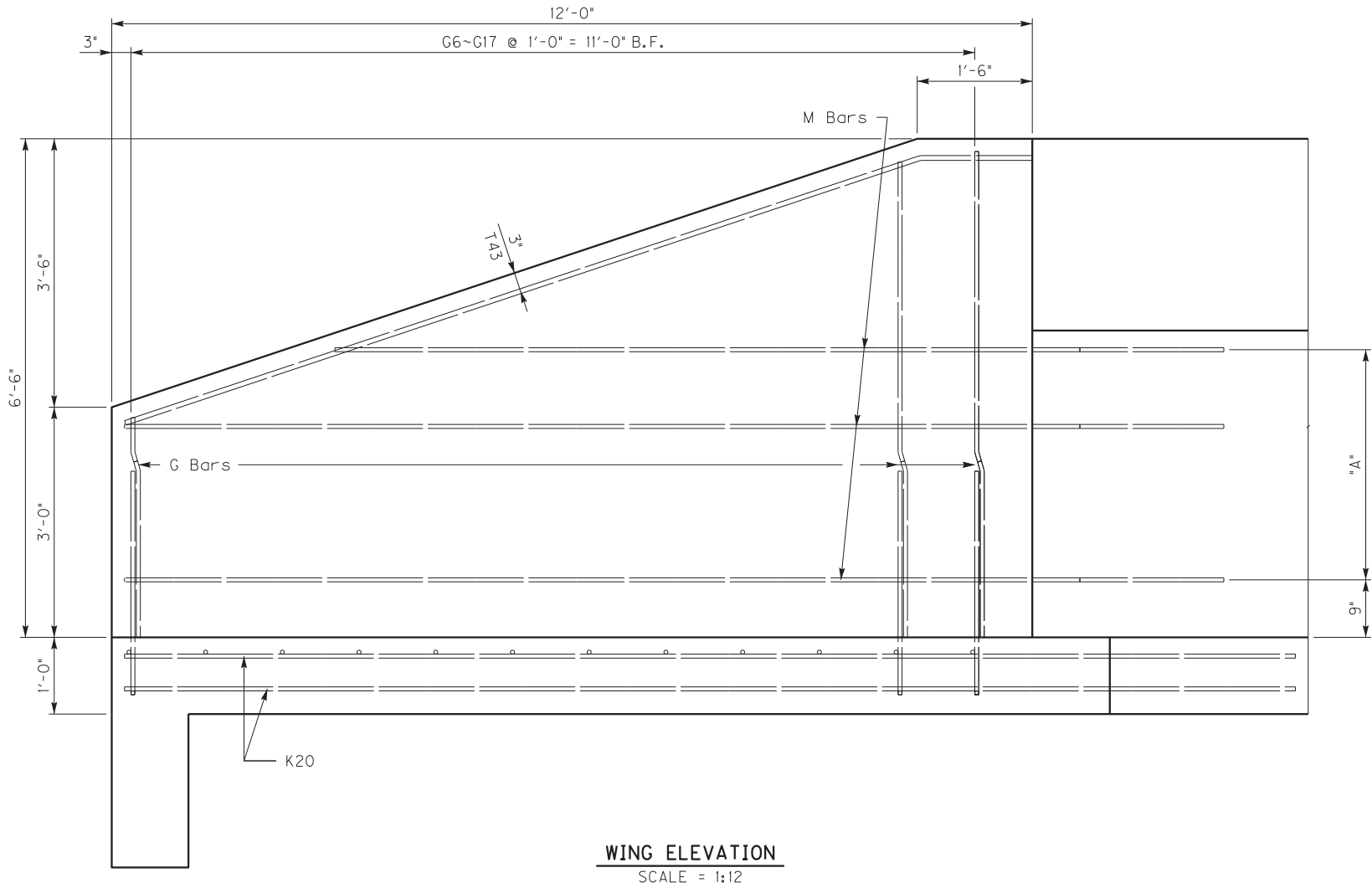


ITEM NUMBER

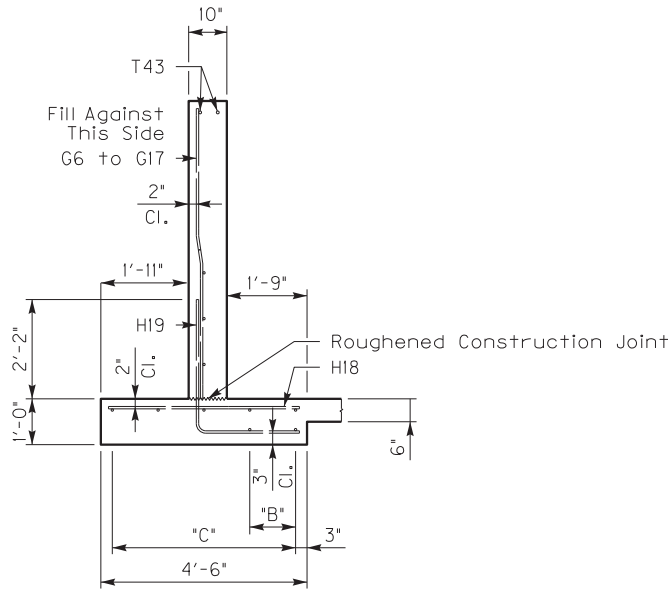
5-9017.00

| | | |
|--|---------------------|----------------------|
| | | |
| | | |
| REVISION | | DATE |
| DATE: MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY SHELBY | | |
| ROUTE KY 55 | CROSSING A DITCH | |
| BARREL | | |
| PREPARED BY | | SHEET NO. S4 |
| Division of Structural Design | | DRAWING NO. 28326 |

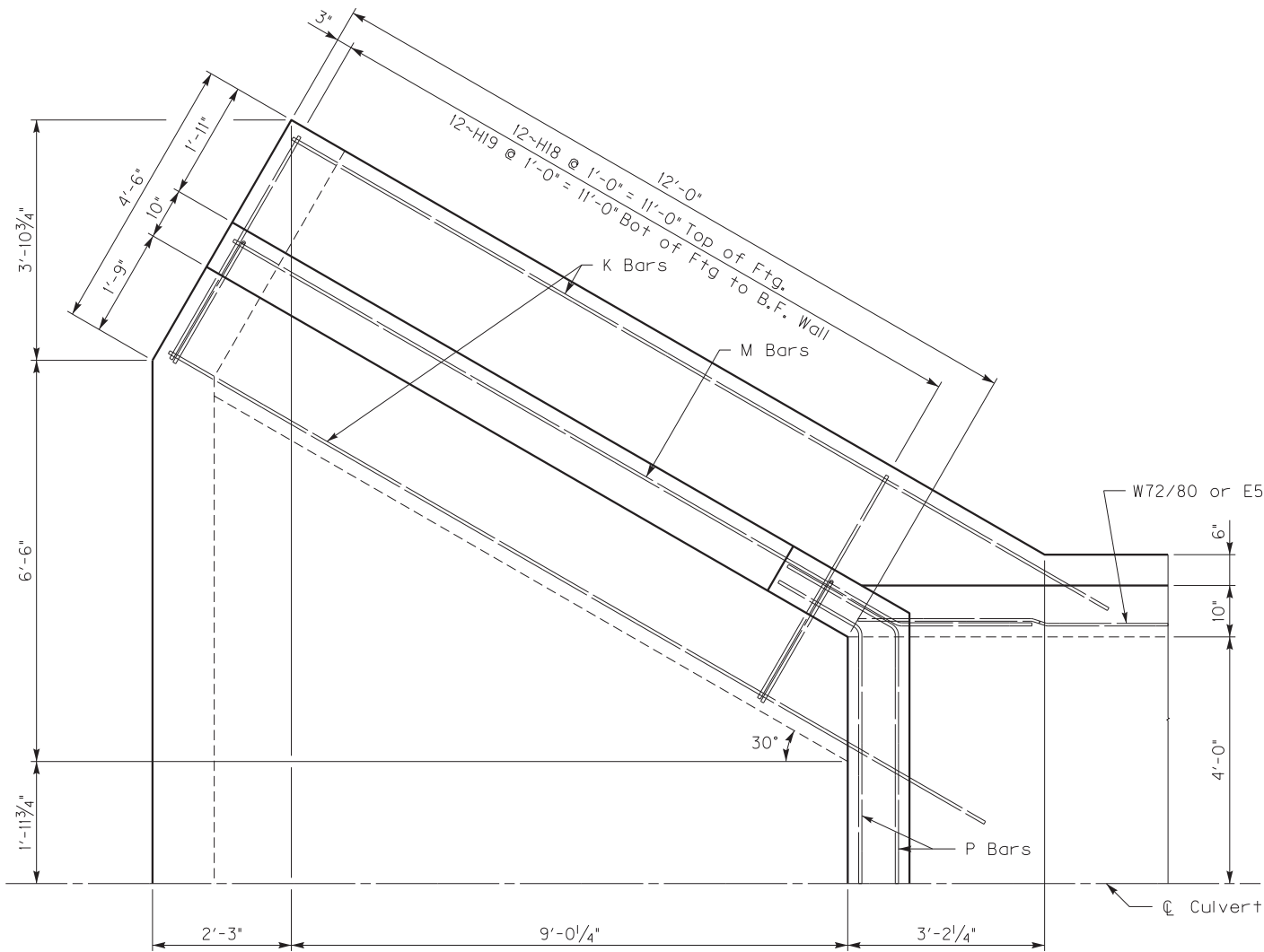
E-SHEET NAME: DATE: 26-JUN-2020 USERNAME: Joseph.vanzee FILE NAME: J:\District05\5-9017 HSP\Culverts\7 28326 8x4 RCBC Station 229+98\28326\28326.dgn



WING ELEVATION
SCALE = 1:12



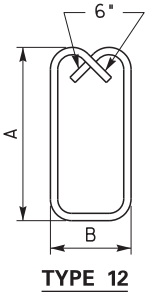
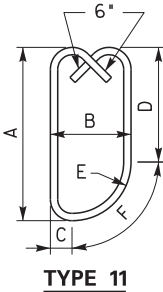
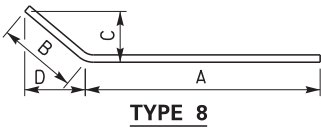
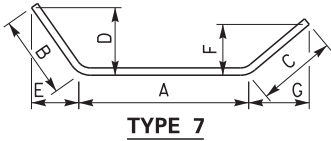
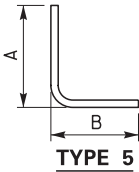
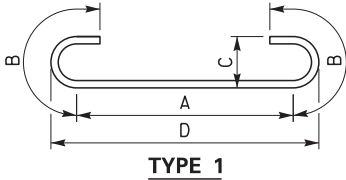
WING SECTION
SCALE = 1:24



PLAN
SCALE = 1:16

"A" 3~M21,1~M22 @ 1'-0" = 3'-0" B.F.
"B" 2~K20 @ 1'-0" = 1'-0" Bot of Ftg.
"C" 5~K20 @ 1'-0" = 4'-0"

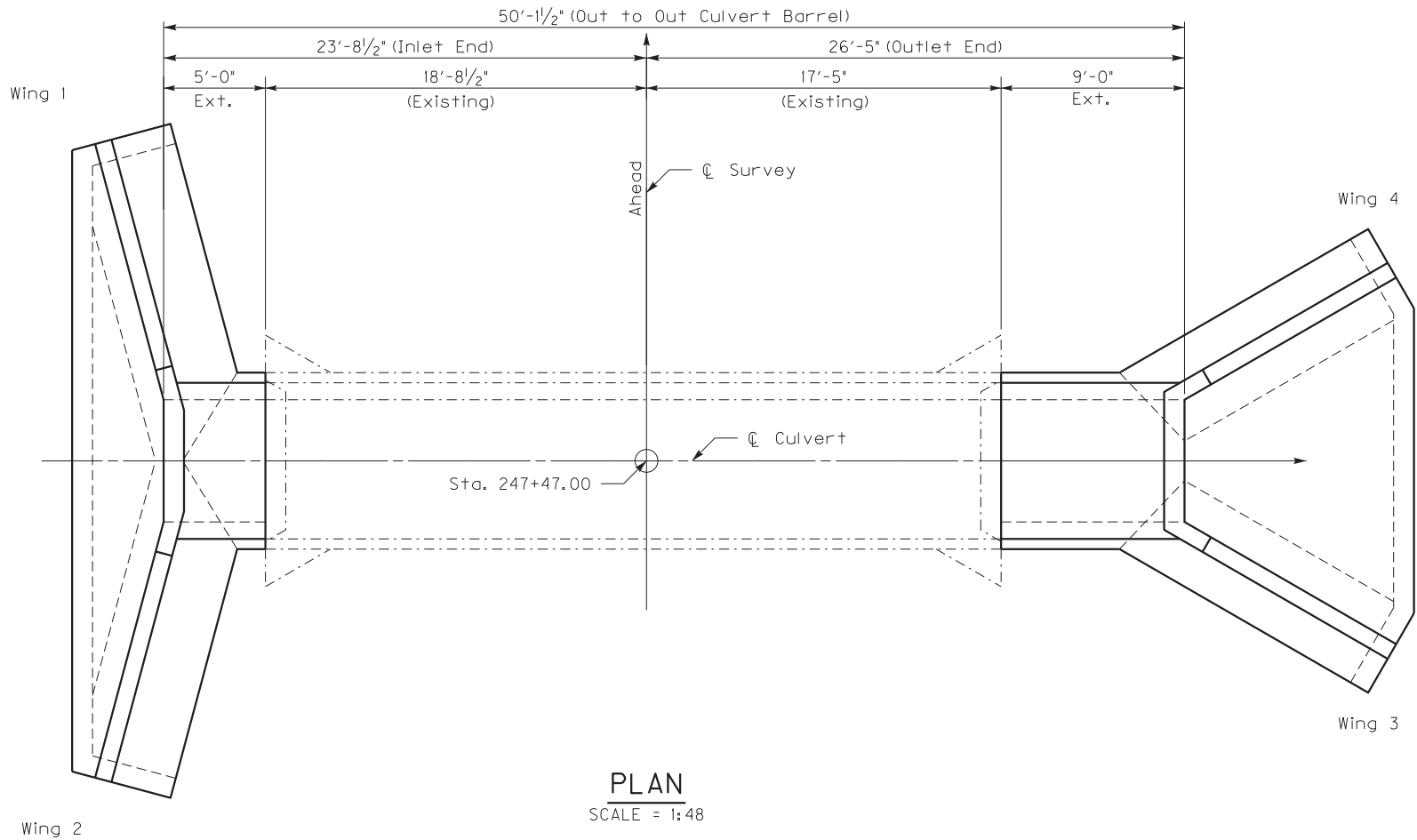
| | | | |
|--|------------|----------------------------|--|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY SHELBY | | | |
| ROUTE KY 55 | | CROSSING A DITCH | |
| Wings 1, 2, 3 & 4 | | | |
| PREPARED BY | | SHEET NO. | |
| Division of Structural Design | | S5 DRAWING NO. 28326 | |



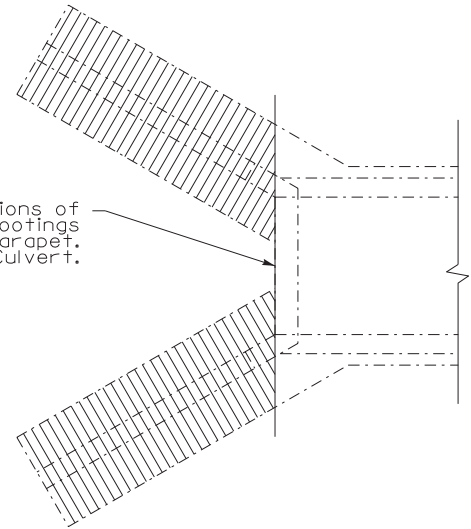
| BILL OF REINFORCEMENT | | | | | | | | | | BILL OF REINFORCEMENT | | | | | | | | | |
|-----------------------|------|-----|------|--------|-----------------------------|-----------------------------------|----------------------------------|----------------------------------|----------------------------------|-----------------------|------|-----|------|--------|------------------------------|-----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| MARK | TYPE | NO. | SIZE | LENGTH | LOCATION | A/E | B/F | C/G | D/H | MARK | TYPE | NO. | SIZE | LENGTH | LOCATION | A/E | B/F | C/G | D/H |
| A1 | I | 44 | 6 | 10-10 | Top Slab | 8-10 | 1- 0 | 0- 6 | 9- 4 | P32 | 7 | I | 5 | 11- 5 | F.F. Parapet Rt. End | 8- 1 ³ / ₄ | 1- 8 ³ / ₈ | 1- 8 ³ / ₈ | 1- 5 ⁵ / ₈ |
| B2 | I | 44 | 6 | 11-10 | Bottom Slab | 9-10 | 1- 0 | 0- 6 | 10- 4 | | | | | | | 0-10 ¹ / ₄ | 1- 5 ⁵ / ₈ | 0-10 ¹ / ₄ | |
| C3 | Str. | 58 | 5 | 5- 5 | Sidewalls | | | | | P33 | 7 | I | 5 | 11- 4 | F.F. Parapet Rt. End | 8- 2 ⁷ / ₈ | 1- 7 ⁷ / ₈ | 1- 7 ⁷ / ₈ | 1- 4 ³ / ₄ |
| E4 | Str. | 8 | 5 | 7- 8 | Sidewalls (Outlet) | | | | | | | | | | | 0- 9 ⁵ / ₈ | 1- 4 ³ / ₄ | 0- 9 ⁵ / ₈ | |
| E5 | Str. | 20 | 5 | 7- 8 | Top & Bottom Slabs (Outlet) | | | | | P34 | 7 | I | 6 | 11- 5 | F.F. Parapet Rt. End | 8- 2 | 1- 8 ³ / ₈ | 1- 8 ³ / ₈ | 1- 5 ⁵ / ₈ |
| G6 | Str. | 4 | 5 | 2-10 | B.F Wings 1, 2, 3 & 4 | | | | | | | | | | | 0-10 ¹ / ₄ | 1- 5 ⁵ / ₈ | 0-10 ¹ / ₄ | |
| G7 | Str. | 4 | 5 | 3- 2 | B.F Wings 1, 2, 3 & 4 | | | | | P35 | Str. | 2 | 6 | 10- 4 | Bottom Slab Lt. End | | | | |
| G8 | Str. | 4 | 5 | 3- 6 | B.F Wings 1, 2, 3 & 4 | | | | | P36 | Str. | 2 | 6 | 10- 4 | Bottom Slab Rt. End | | | | |
| G9 | Str. | 4 | 5 | 3-10 | B.F Wings 1, 2, 3 & 4 | | | | | Q37 | 7 | I | 6 | 24- 9 | Apron Lt. End | 16- 7 ¹ / ₂ | 4- 1 | 4- 1 | 2- 0 ¹ / ₂ |
| G10 | Str. | 4 | 5 | 4- 2 | B.F Wings 1, 2, 3 & 4 | | | | | | | | | | | 3- 6 ³ / ₈ | 2- 0 ¹ / ₂ | 3- 6 ³ / ₈ | |
| G11 | Str. | 4 | 5 | 4- 6 | B.F Wings 1, 2, 3 & 4 | | | | | Q38 | 7 | I | 6 | 25- 1 | Apron Lt. End | 16- 9 ⁵ / ₈ | 4- 2 | 4- 2 | 2- 1 |
| G12 | Str. | 4 | 5 | 4-10 | B.F Wings 1, 2, 3 & 4 | | | | | | | | | | | 3- 7 ⁷ / ₈ | 2- 1 | 3- 7 ⁷ / ₈ | |
| G13 | Str. | 4 | 5 | 5- 2 | B.F Wings 1, 2, 3 & 4 | | | | | Q39 | 7 | I | 6 | 24- 9 | Apron Rt. End | 16- 7 ¹ / ₂ | 4- 1 | 4- 1 | 2- 0 ¹ / ₂ |
| G14 | Str. | 4 | 5 | 5- 6 | B.F Wings 1, 2, 3 & 4 | | | | | | | | | | | 3- 6 ³ / ₈ | 2- 0 ¹ / ₂ | 3- 6 ³ / ₈ | |
| G15 | Str. | 4 | 5 | 5-10 | B.F Wings 1, 2, 3 & 4 | | | | | Q40 | 7 | I | 6 | 25- 1 | Apron Rt. End | 16- 9 ⁵ / ₈ | 4- 2 | 4- 2 | 2- 1 |
| G16 | Str. | 4 | 5 | 6- 2 | B.F Wings 1, 2, 3 & 4 | | | | | | | | | | | 3- 7 ⁷ / ₈ | 2- 1 | 3- 7 ⁷ / ₈ | |
| G17 | Str. | 4 | 5 | 6- 4 | B.F Wings 1, 2, 3 & 4 | | | | | R41 | IIs | 8 | 5 | 5-11 | Parapet Wall (Left End) | 2- 3 ¹ / ₂ | 0- 9 | 0- 2 ¹ / ₂ | 1- 9 |
| H18 | Str. | 48 | 5 | 4- 2 | Top Ftq Wings 1, 2, 3 & 4 | | | | | | | | | | | 0- 6 ¹ / ₂ | 0- 9 ³ / ₄ | | |
| H19 | 5 | 48 | 5 | 5- 0 | Bot Ftq Wings 1, 2, 3 & 4 | 2-11 | 2- 3 | | | R42 | I2s | 8 | 5 | 6- 1 | Parapet Wall (Right End) | 2- 3 ¹ / ₂ | 0- 9 | | |
| K20 | Str. | 28 | 5 | 15- 3 | Ftg Wings 1, 2, 3 & 4 | | | | | T43 | 8 | 8 | 6 | 12- 5 | Top of Wings 1, 2, 3 & 4 | 10-11 ¹ / ₈ | 1- 5 ⁵ / ₈ | 0- 5 ¹ / ₂ | 1- 4 ⁵ / ₈ |
| M21 | 8 | 12 | 5 | 14- 7 | B.F. Wings 1, 2, 3 & 4 | 12- 5 ¹ / ₂ | 2- 2 | 1- 1 | 1-10 ¹ / ₂ | U44 | I | I | 6 | 10-10 | Top Slab | 8-10 | 1- 0 | 0- 6 | 9- 4 |
| M22 | 8 | 4 | 5 | 11-10 | B.F. Wings 1, 2, 3 & 4 | 9- 8 ¹ / ₂ | 2- 2 | 1- 1 | 1-10 ¹ / ₂ | U45 | I | I | 6 | 10-10 | Top Slab | 8-10 | 1- 0 | 0- 6 | 9- 4 |
| P23 | 7 | I | 5 | 12- 5 | B.F. Parapet Lt. End | 8- 6 ³ / ₄ | 1-11 ³ / ₄ | 1-11 ³ / ₄ | 1- 8 ¹ / ₂ | U46 | I | I | 6 | 10-10 | Top Slab | 8-10 | 1- 0 | 0- 6 | 9- 4 |
| | | | | | | 0-11 ⁷ / ₈ | 1- 8 ¹ / ₂ | 0-11 ⁷ / ₈ | | U47 | I | I | 6 | 10-11 | Top Slab | 8-11 | 1- 0 | 0- 6 | 9- 5 |
| P24 | 7 | I | 5 | 12- 6 | B.F. Parapet Lt. End | 8- 5 ⁵ / ₈ | 2- 0 ³ / ₄ | 2- 0 ³ / ₄ | 1- 9 ¹ / ₂ | U48 | I | I | 6 | 10-11 | Top Slab | 8-11 | 1- 0 | 0- 6 | 9- 5 |
| | | | | | | 1- 0 ³ / ₈ | 1- 9 ¹ / ₂ | 1- 0 ³ / ₈ | | U49 | I | I | 6 | 11- 0 | Top Slab | 9- 0 | 1- 0 | 0- 6 | 9- 6 |
| P25 | 7 | I | 6 | 12- 5 | B.F. Parapet Lt. End | 8- 6 ³ / ₄ | 1-11 ³ / ₄ | 1-11 ³ / ₄ | 1- 8 ⁵ / ₈ | U50 | I | I | 6 | 11- 1 | Top Slab | 9- 1 | 1- 0 | 0- 6 | 9- 7 |
| | | | | | | 0-11 ⁷ / ₈ | 1- 8 ⁵ / ₈ | 0-11 ⁷ / ₈ | | U51 | I | I | 6 | 11- 1 | Top Slab | 9- 1 | 1- 0 | 0- 6 | 9- 7 |
| P26 | 7 | I | 5 | 11- 5 | F.F. Parapet Lt. End | 8- 1 ³ / ₄ | 1- 8 ³ / ₈ | 1- 8 ³ / ₈ | 1- 5 ⁵ / ₈ | U52 | I | I | 6 | 11- 0 | Top Slab | 9- 0 | 1- 0 | 0- 6 | 9- 6 |
| | | | | | | 0-10 ¹ / ₄ | 1- 5 ⁵ / ₈ | 0-10 ¹ / ₄ | | U53 | I | I | 6 | 10-11 | Top Slab | 8-11 | 1- 0 | 0- 6 | 9- 5 |
| P27 | 7 | I | 5 | 11- 4 | F.F. Parapet Lt. End | 8- 2 ⁷ / ₈ | 1- 7 ⁷ / ₈ | 1- 7 ⁷ / ₈ | 1- 4 ³ / ₄ | U54 | I | I | 6 | 10-11 | Top Slab | 8-11 | 1- 0 | 0- 6 | 9- 5 |
| | | | | | | 0- 9 ⁵ / ₈ | 1- 4 ³ / ₄ | 0- 9 ⁵ / ₈ | | U55 | I | I | 6 | 10-10 | Top Slab | 8-10 | 1- 0 | 0- 6 | 9- 4 |
| P28 | 7 | I | 6 | 11- 5 | F.F. Parapet Lt. End | 8- 2 | 1- 8 ³ / ₈ | 1- 8 ³ / ₈ | 1- 5 ⁵ / ₈ | U56 | I | I | 6 | 10-10 | Top Slab | 8-10 | 1- 0 | 0- 6 | 9- 4 |
| | | | | | | 0-10 ¹ / ₄ | 1- 5 ⁵ / ₈ | 0-10 ¹ / ₄ | | U57 | I | I | 6 | 10-10 | Top Slab | 8-10 | 1- 0 | 0- 6 | 9- 4 |
| P29 | 7 | I | 5 | 12- 5 | B.F. Parapet Rt. End | 8- 6 ³ / ₄ | 1-11 ³ / ₄ | 1-11 ³ / ₄ | 1- 8 ¹ / ₂ | V58 | I | I | 6 | 11-10 | Bottom Slab | 9-10 | 1- 0 | 0- 6 | 10- 4 |
| | | | | | | 0-11 ⁷ / ₈ | 1- 8 ¹ / ₂ | 0-11 ⁷ / ₈ | | V59 | I | I | 6 | 11-10 | Bottom Slab | 9-10 | 1- 0 | 0- 6 | 10- 4 |
| P30 | 7 | I | 5 | 12- 6 | B.F. Parapet Rt. End | 8- 5 ⁵ / ₈ | 2- 0 ³ / ₄ | 2- 0 ³ / ₄ | 1- 9 ¹ / ₂ | V60 | I | I | 6 | 11-10 | Bottom Slab | 9-10 | 1- 0 | 0- 6 | 10- 4 |
| | | | | | | 1- 0 ³ / ₈ | 1- 9 ¹ / ₂ | 1- 0 ³ / ₈ | | V61 | I | I | 6 | 11-11 | Bottom Slab | 9-11 | 1- 0 | 0- 6 | 10- 5 |
| P31 | 7 | I | 6 | 12- 5 | B.F. Parapet Rt. End | 8- 6 ³ / ₄ | 1-11 ³ / ₄ | 1-11 ³ / ₄ | 1- 8 ⁵ / ₈ | V62 | I | I | 6 | 12- 0 | Bottom Slab | 10- 0 | 1- 0 | 0- 6 | 10- 6 |
| | | | | | | 0-11 ⁷ / ₈ | 1- 8 ⁵ / ₈ | 0-11 ⁷ / ₈ | | V63 | I | I | 6 | 12- 0 | Bottom Slab | 10- 0 | 1- 0 | 0- 6 | 10- 6 |
| | | | | | | | | | | V64 | I | I | 6 | 12- 1 | Bottom Slab | 10- 1 | 1- 0 | 0- 6 | 10- 7 |
| | | | | | | | | | | V65 | I | I | 6 | 12- 1 | Bottom Slab | 10- 1 | 1- 0 | 0- 6 | 10- 7 |
| | | | | | | | | | | V66 | I | I | 6 | 12- 0 | Bottom Slab | 10- 0 | 1- 0 | 0- 6 | 10- 6 |
| | | | | | | | | | | V67 | I | I | 6 | 12- 0 | Bottom Slab | 10- 0 | 1- 0 | 0- 6 | 10- 6 |
| | | | | | | | | | | V68 | I | I | 6 | 11-11 | Bottom Slab | 9-11 | 1- 0 | 0- 6 | 10- 5 |
| | | | | | | | | | | V69 | I | I | 6 | 11-10 | Bottom Slab | 9-10 | 1- 0 | 0- 6 | 10- 4 |
| | | | | | | | | | | V70 | I | I | 6 | 11-10 | Bottom Slab | 9-10 | 1- 0 | 0- 6 | 10- 4 |
| | | | | | | | | | | V71 | I | I | 6 | 11-10 | Bottom Slab | 9-10 | 1- 0 | 0- 6 | 10- 4 |
| | | | | | | | | | | W72 | 8 | 6 | 5 | 18- 6 | Lt. Sidewall & Slabs (Inlet) | 15- 8 | 2-10 | 1- 5 | 2- 5 ¹ / ₂ |
| | | | | | | | | | | W73 | 8 | 2 | 5 | 19- 2 | Top and Bottom Slabs (Inlet) | 16- 0 | 3- 2 | 1- 7 | 2- 8 ¹ / ₈ |
| | | | | | | | | | | W74 | 8 | 2 | 5 | 19- 8 | Top and Bottom Slabs (Inlet) | 16- 3 | 3- 5 | 1- 8 ¹ / ₂ | 2-11 ¹ / ₂ |
| | | | | | | | | | | W75 | 8 | 2 | 5 | 20- 3 | Top and Bottom Slabs (Inlet) | 16- 6 | 3- 9 | 1-10 ¹ / ₂ | 3- 3 |
| | | | | | | | | | | W76 | 8 | 2 | 5 | 20-10 | Top and Bottom Slabs (Inlet) | 16-10 | 4- 0 | 2- 0 | 3- 5 ⁵ / ₈ |
| | | | | | | | | | | W77 | 8 | 2 | 5 | 21- 4 | Top and Bottom Slabs (Inlet) | 17- 1 | 4- 3 | 2- 1 ¹ / ₂ | 3- 8 ¹ / ₈ |
| | | | | | | | | | | W78 | 8 | 2 | 5 | 21-10 | Top and Bottom Slabs (Inlet) | 17- 4 | 4- 6 | 2- 3 | 3-10 ³ / ₄ |
| | | | | | | | | | | W79 | 8 | 2 | 5 | 22- 4 | Top and Bottom Slabs (Inlet) | 17- 7 | 4- 9 | 2- 4 ¹ / ₂ | 4- 1 ³ / ₈ |
| | | | | | | | | | | W80 | 8 | 6 | 5 | 23- 0 | Rt. Sidewall & Slabs (Inlet) | 17-11 | 5- 1 | 2- 6 ¹ / ₂ | 4- 4 ¹ / ₈ |
| | | | | | | | | | | W81 | 8 | I | 5 | 18- 1 | Bottom Slab (Inlet) | 15- 5 | 2- 8 | 1- 4 | 2- 3 ³ / ₄ |
| | | | | | | | | | | W82 | 8 | I | 5 | 23- 4 | Bottom Slab (Inlet) | 18- 1 | 5- 3 | 2- 7 ¹ / ₂ | 4- 6 ¹ / ₂ |
| | | | | | | | | | | X83 | Str. | 56 | 8 | 2- 0 | Dowels | | | | |

| | | | |
|--|---------------------|----------------------------------|----------------------|
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: | J. VAN ZEE | L. LIKINS | |
| DETAILED BY: | M. BAWITHAWNG | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY SHELBY | | | |
| ROUTE KY 55 | CROSSING A DITCH | | |
| BILL OF REINFORCEMENT | | | |
| ITEM NUMBER | | PREPARED BY | SHEET NO. |
| 5-9017.00 | | Division of Structural Design | S6 |
| | | | DRAWING NO. 28326 |

FILE NAME: J:\District\05\5-9017 HSP\ Culverts\8 28327 6x4 RCBC Station 247+47 CK\28327\28327.dgn
USER NAME: Earl W. Downey
DATE: 7-DEC-2020
E-SHEET NAME:

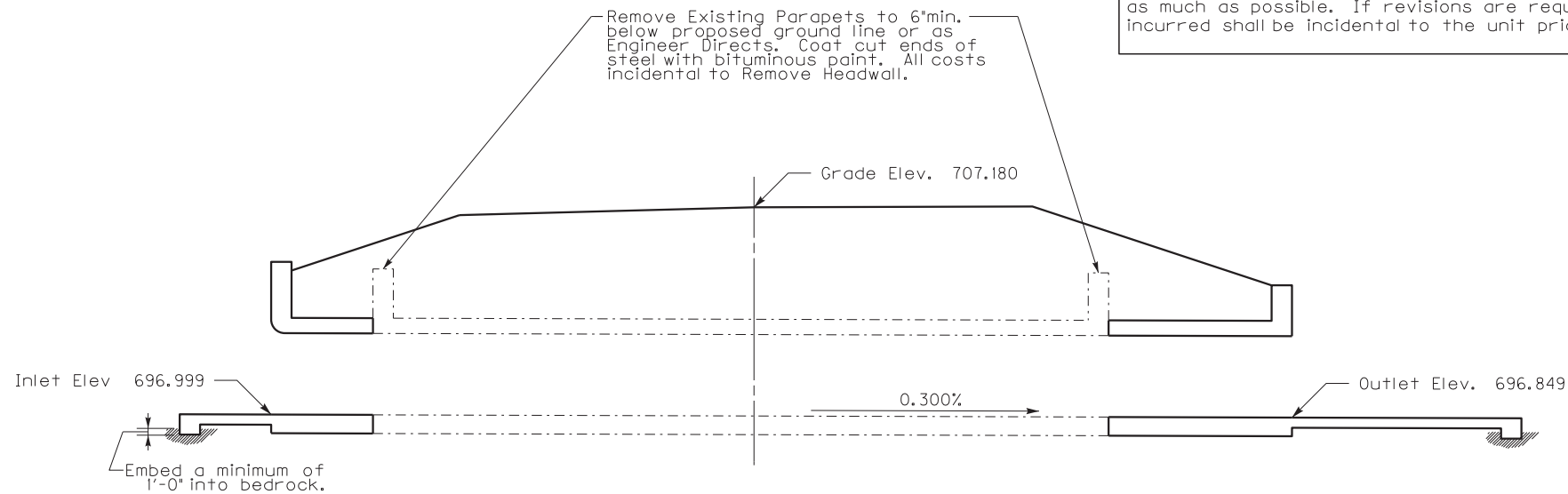


Remove hatched portions of all wings and footings to a line even with face of parapet. Typ. Each End of Culvert.



Removal Details

SCALE = 1:48



AT&T Utility Note: There is a communication line present near the construction of the headwall. Contractor shall be responsible for locating and making sure the line is undisturbed. Contractor shall construct the culvert per the plans and work around the line as much as possible. If revisions are required, KYTC Engineer must approve all revisions prior to beginning work. Any extra costs incurred shall be incidental to the unit price bid for Class A concrete.

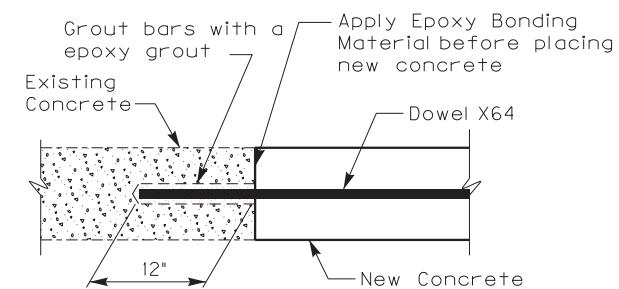
Note: Field verify all dimensions prior to ordering materials. All dimensions are taken from existing survey. Actual barrel lengths may vary from plans in the field. Extension lengths shall be built per the plan.

SECTION ON C

Single 6'-0" x 4'-0" x 50'-1 1/2" R.C.B.C.
23'-8 1/2" Inlet End and 26'-5" Outlet End
0.0000° Skew ~ KYHL-93 Loading ~ 0.33 Fill Slope
Unyielding Foundation

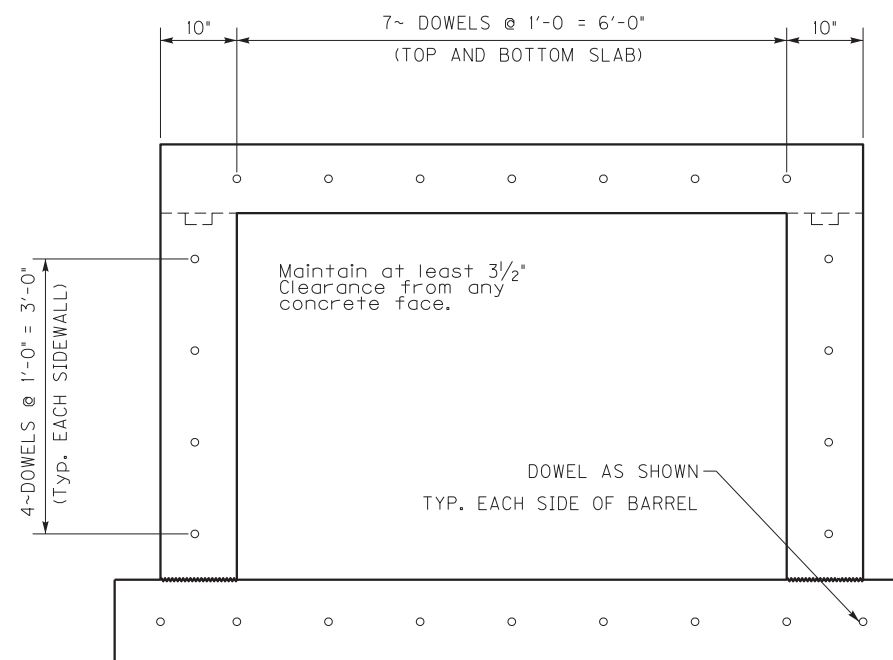
| | | |
|--|------------|------------|
| | | |
| | | |
| | | |
| REVISION | | DATE |
| DATE: | MARCH 2020 | CHECKED BY |
| DESIGNED BY: J. VAN ZEE | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY | | |
| SHELBY | | |
| ROUTE | CROSSING | |
| KY 55 | A DITCH | |
| LAYOUT | | |
| PREPARED BY | | SHEET NO. |
| Division of Structural Design | | S2 |
| DRAWING NO. | | 28327 |

| ITEM NUMBER |
|-------------|
| 5-9017.00 |



NOTE: The cost of drilling holes, grouting, and epoxy bonding material shall be incidental to the cost of Class "A" Concrete.

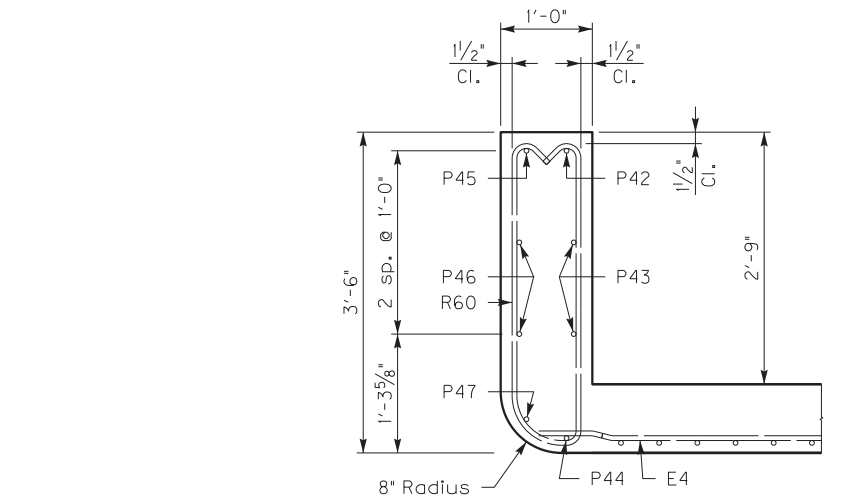
"A" 6~R60 @ 1'-0" = 5'-0"
"B" 6~R61 @ 1'-0" = 5'-0"



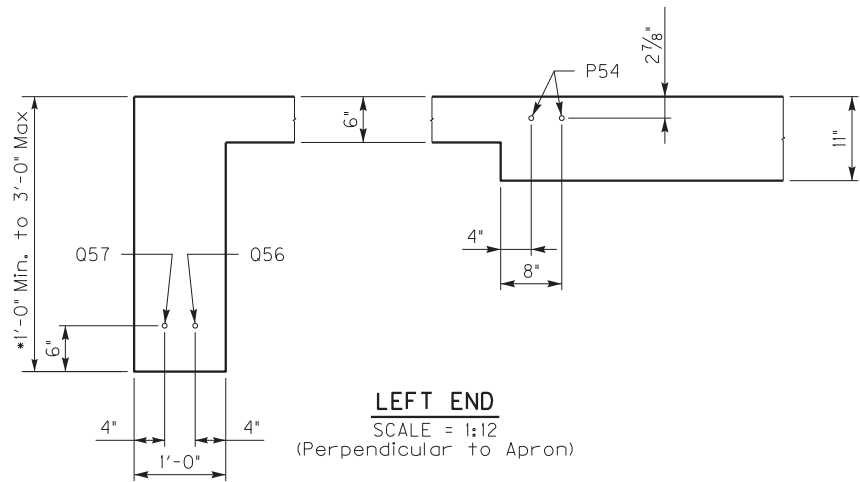
DOWEL LOCATIONS
SCALE = 1:12

| ITEM NUMBER |
|-------------|
| 5-9017.00 |

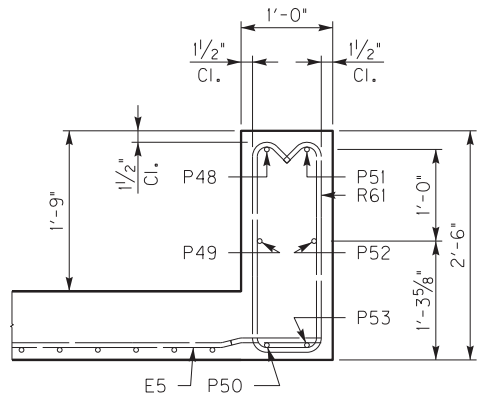
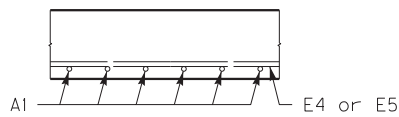
E-SHEET NAME: DATE: 7-DEC-2020 USERNAME: Earl W. Downey FILE NAME: J:\District\05\5-9017 HSP\ Culverts\8 28327 6x4 RCBC Station 247+47 CK\28327\28327.dgn



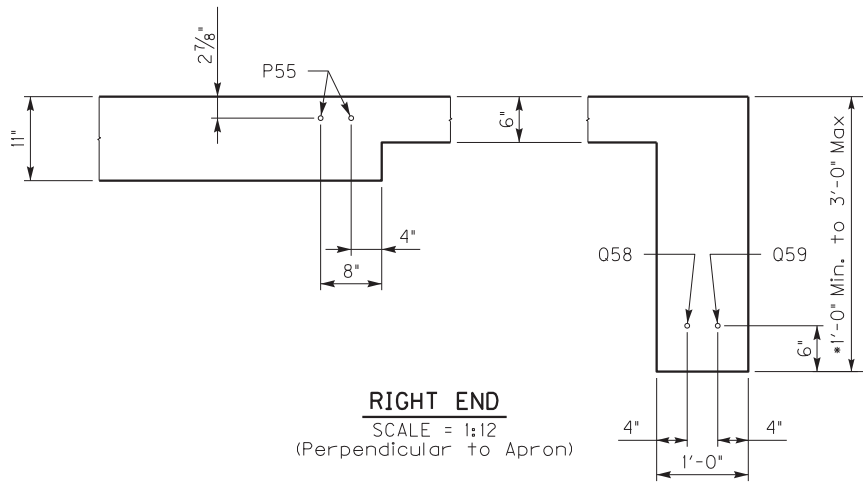
LEFT PARAPET
 SCALE = 1:12
 (Perpendicular to Parapet)



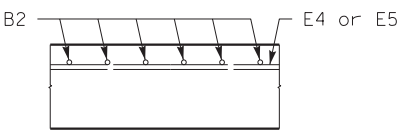
LEFT END
 SCALE = 1:12
 (Perpendicular to Apron)



RIGHT PARAPET
 SCALE = 1:12
 (Perpendicular to Parapet)



RIGHT END
 SCALE = 1:12
 (Perpendicular to Apron)



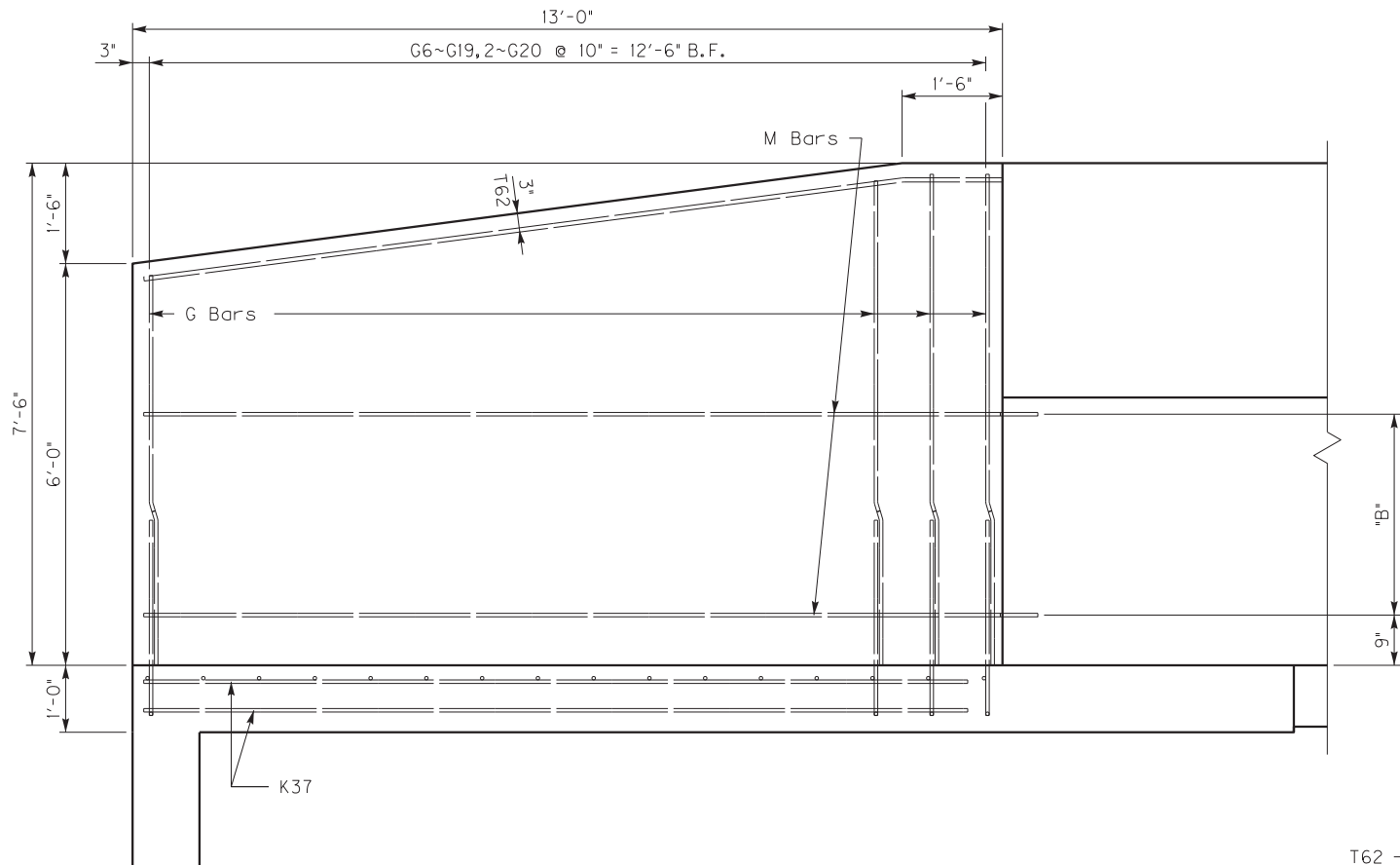
SECTION ON C
 SCALE = 1:12

*Note: Embed apron 1'-0" Min. into solid rock. 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 3'-0" long if solid rock is deep. Quantities are include for the full 3'-0" depth. Adjust concrete paid as necessary for actual depth used.

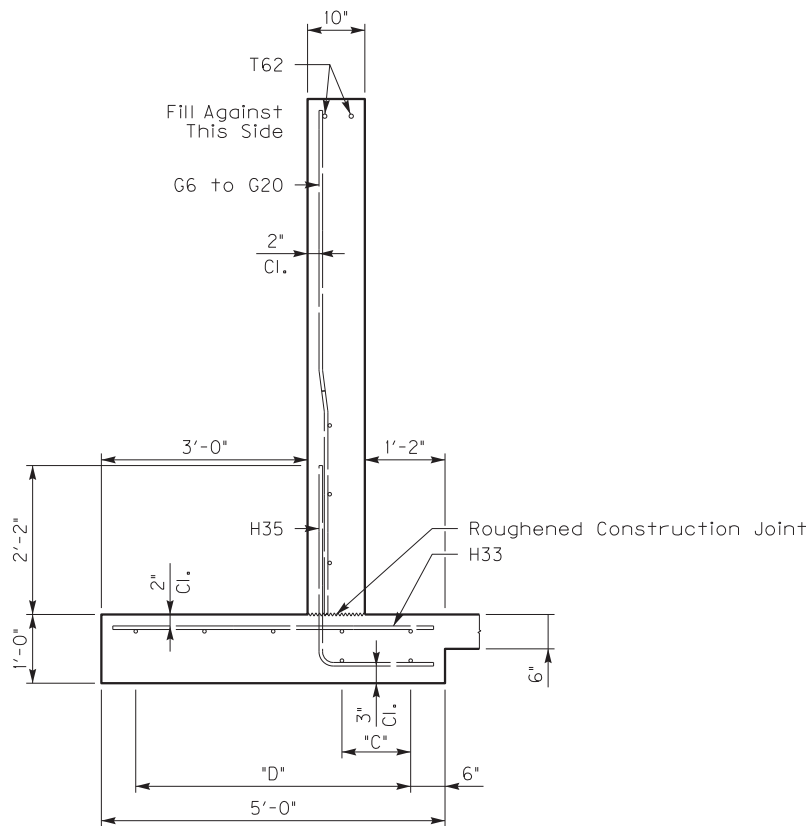
| ITEM NUMBER |
|-------------|
| 5-9017.00 |

| | | | |
|--|------------|---------------------|--|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY SHELBY | | | |
| ROUTE KY 55 | | CROSSING A DITCH | |
| BARREL | | | |
| PREPARED BY | | SHEET NO. | |
| Division of | | S4 | |
| Structural Design | | DRAWING NO. | |
| | | 28327 | |

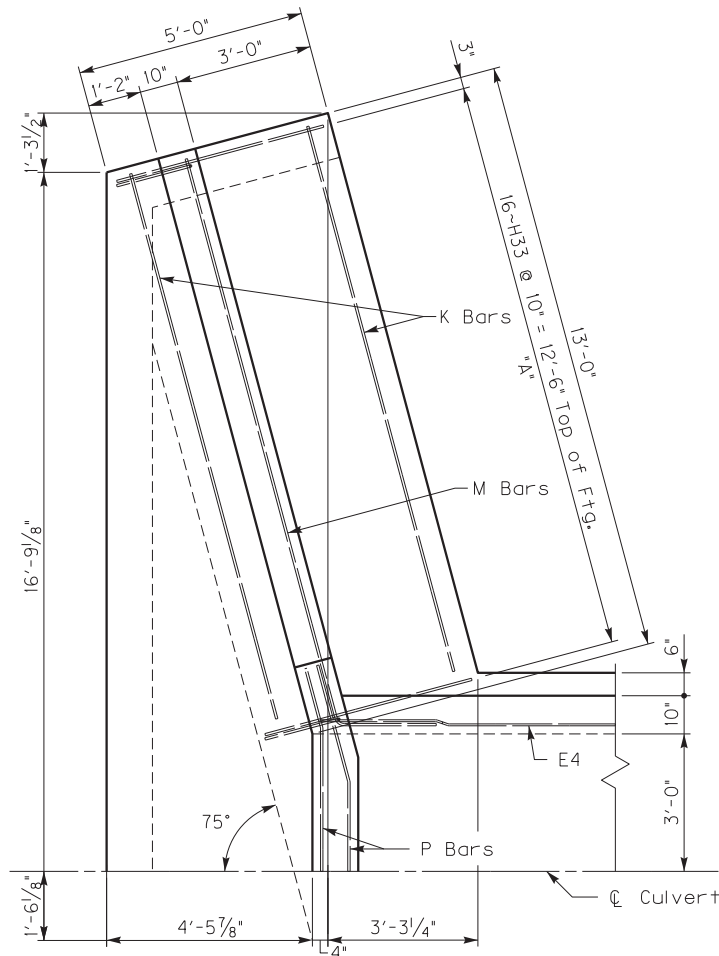
E-SHEET NAME: DATE: 7-DEC-2020 USERNAME: Earl W. Downey FILE NAME: J:\District\05\5-9017 HSP\Culverts\8 28327 6x4 RCBC Station 247+47 CK\28327\28327.dgn



WING ELEVATION
SCALE = 1:16



WING SECTION
SCALE = 1:16



PLAN
SCALE = 1:24

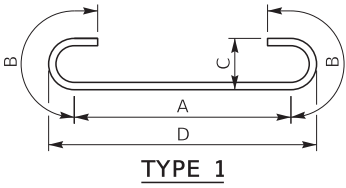
"A" 16~H35 @ 10" = 12'-6" Bot of Ftg to B.F. Wall
"B" 4~M39 @ 1'-0" = 3'-0" B.F.
"C" 2~K37 @ 1'-0" = 1'-0" Bot of Ftg.
"D" 5~K37 @ 1'-0" = 4'-0"

| | | | |
|--|---------------------|------------|----------------------|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY SHELBY | | | |
| ROUTE KY 55 | CROSSING A DITCH | | |
| Wings 1 & 2 | | | |
| PREPARED BY Division of Structural Design | | | SHEET NO. S5 |
| | | | DRAWING NO. 28327 |

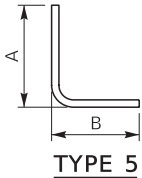


"A" 3~M40, 1~M41 @ 1'-0" = 3'-0" B.F.
 "B" 2~K38 @ 1'-0" = 1'-0" Bot of Ftg.
 "C" 5~K38 @ 1'-0" = 4'-0"

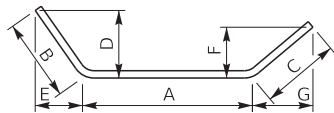
| | | | |
|--|--|--|--|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: MARCH 2020 | | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| <p align="center">Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS</p> | | | |
| <p align="center">COUNTY SHELBY</p> | | | |
| ROUTE KY 55 | | CROSSING A DITCH | |
| <p align="center"><i>Wings 3 & 4</i></p> | | | |
| <p align="center">PREPARED BY</p> <p align="center">Division of Structural Design</p> | | <p align="center">SHEET NO. S6</p> <p align="center">DRAWING NO. 28327</p> | |



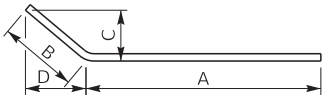
TYPE 1



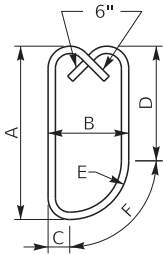
TYPE 5



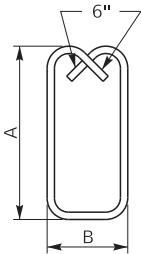
TYPE 7



TYPE 8



TYPE 11



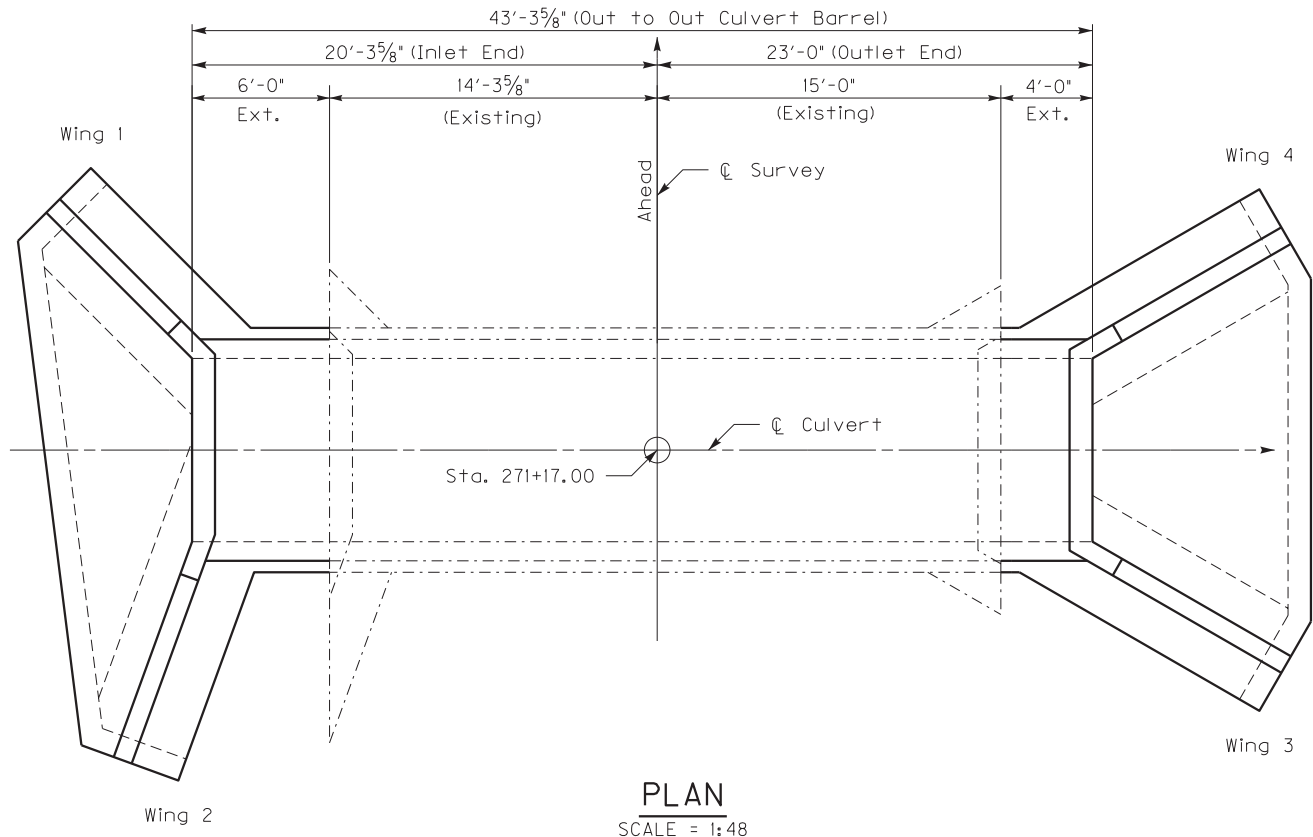
TYPE 12

| BILL OF REINFORCEMENT | | | | | | | | | | BILL OF REINFORCEMENT | | | | | | | | | |
|-----------------------|------|-----|------|--------|----------------------------|------|------|------|------|-----------------------|------|-----|------|--------|--------------------------|-----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| MARK | TYPE | NO. | SIZE | LENGTH | LOCATION | A/E | B/F | C/G | D/H | MARK | TYPE | NO. | SIZE | LENGTH | LOCATION | A/E | B/F | C/G | D/H |
| A1 | I | 28 | 5 | 8- 7 | Top Slab | 6-11 | 0-10 | 0- 5 | 7- 4 | G21 | Str. | 2 | 5 | 2-10 | B.F Wings 3 & 4 | | | | |
| B2 | I | 28 | 5 | 9- 7 | Bottom Slab | 7-11 | 0-10 | 0- 5 | 8- 4 | G22 | Str. | 2 | 5 | 3- 2 | B.F Wings 3 & 4 | | | | |
| C3 | Str. | 28 | 5 | 5- 3 | Sidewalls | | | | | G23 | Str. | 2 | 5 | 3- 6 | B.F Wings 3 & 4 | | | | |
| E4 | Str. | 24 | 5 | 4- 8 | Slabs & Sidewalls (Inlet) | | | | | G24 | Str. | 2 | 5 | 3-10 | B.F Wings 3 & 4 | | | | |
| E5 | Str. | 24 | 5 | 8- 8 | Slabs & Sidewalls (Outlet) | | | | | G25 | Str. | 2 | 5 | 4- 2 | B.F Wings 3 & 4 | | | | |
| G6 | Str. | 2 | 5 | 5-10 | B.F Wings 1 & 2 | | | | | G26 | Str. | 2 | 5 | 4- 6 | B.F Wings 3 & 4 | | | | |
| G7 | Str. | 2 | 5 | 5-11 | B.F Wings 1 & 2 | | | | | G27 | Str. | 2 | 5 | 4-10 | B.F Wings 3 & 4 | | | | |
| G8 | Str. | 2 | 5 | 6- 0 | B.F Wings 1 & 2 | | | | | G28 | Str. | 2 | 5 | 5- 2 | B.F Wings 3 & 4 | | | | |
| G9 | Str. | 2 | 5 | 6- 2 | B.F Wings 1 & 2 | | | | | G29 | Str. | 2 | 5 | 5- 6 | B.F Wings 3 & 4 | | | | |
| G10 | Str. | 2 | 5 | 6- 3 | B.F Wings 1 & 2 | | | | | G30 | Str. | 2 | 5 | 5-10 | B.F Wings 3 & 4 | | | | |
| G11 | Str. | 2 | 5 | 6- 4 | B.F Wings 1 & 2 | | | | | G31 | Str. | 2 | 5 | 6- 2 | B.F Wings 3 & 4 | | | | |
| G12 | Str. | 2 | 5 | 6- 6 | B.F Wings 1 & 2 | | | | | G32 | Str. | 2 | 5 | 6- 4 | B.F Wings 3 & 4 | | | | |
| G13 | Str. | 2 | 5 | 6- 7 | B.F Wings 1 & 2 | | | | | H33 | Str. | 32 | 5 | 4- 8 | Top Ftg Wings 1 & 2 | | | | |
| G14 | Str. | 2 | 5 | 6- 8 | B.F Wings 1 & 2 | | | | | H34 | Str. | 24 | 5 | 4- 2 | Top Ftg Wings 3 & 4 | | | | |
| G15 | Str. | 2 | 5 | 6-10 | B.F Wings 1 & 2 | | | | | H35 | 5 | 32 | 5 | 4- 5 | Bot Ftg Wings 1 & 2 | 2-11 | 1- 8 | | |
| G16 | Str. | 2 | 5 | 6-11 | B.F Wings 1 & 2 | | | | | H36 | 5 | 24 | 5 | 5- 0 | Bot Ftg Wings 3 & 4 | 2-11 | 2- 3 | | |
| G17 | Str. | 2 | 5 | 7- 0 | B.F Wings 1 & 2 | | | | | K37 | Str. | 14 | 5 | 12- 4 | Ftg Wings 1 & 2 | | | | |
| G18 | Str. | 2 | 5 | 7- 2 | B.F Wings 1 & 2 | | | | | K38 | Str. | 14 | 5 | 13- 9 | Ftg Wings 3 & 4 | | | | |
| G19 | Str. | 2 | 5 | 7- 3 | B.F Wings 1 & 2 | | | | | M39 | 8 | 8 | 5 | 14-11 | B.F. Wings 1 & 2 | 12- 9 ⁵ / ₈ | 2- 2 | 2- 1 ¹ / ₈ | 0- 6 ³ / ₄ |
| G20 | Str. | 4 | 5 | 7- 4 | B.F Wings 1 & 2 | | | | | M40 | 8 | 6 | 5 | 14- 7 | B.F. Wings 3 & 4 | 12- 5 ¹ / ₂ | 2- 2 | 1- 1 | 1-10 ¹ / ₂ |
| | | | | | | | | | | M41 | 8 | 2 | 5 | 11-10 | B.F. Wings 3 & 4 | 9- 8 ¹ / ₂ | 2- 2 | 1- 1 | 1-10 ¹ / ₂ |
| | | | | | | | | | | P42 | 7 | 1 | 5 | 9- 4 | B.F. Parapet Lt. End | 5- 2 ¹ / ₄ | 2- 0 ⁷ / ₈ | 2- 0 ⁷ / ₈ | 0- 6 ³ / ₈ |
| | | | | | | | | | | | | | | | | 2- 0 | 0- 6 ³ / ₈ | 2- 0 | |
| | | | | | | | | | | P43 | 7 | 2 | 5 | 9- 4 | B.F. Parapet Lt. End | 4- 7 ¹ / ₄ | 2- 4 ¹ / ₂ | 2- 4 ¹ / ₂ | 0- 7 ³ / ₈ |
| | | | | | | | | | | | | | | | | 2- 3 ¹ / ₂ | 0- 7 ³ / ₈ | 2- 3 ¹ / ₂ | |
| | | | | | | | | | | P44 | 7 | 1 | 5 | 9- 4 | B.F. Parapet Lt. End | 5- 2 ¹ / ₄ | 2- 0 ⁷ / ₈ | 2- 0 ⁷ / ₈ | 0- 6 ³ / ₈ |
| | | | | | | | | | | | | | | | | 2- 0 | 0- 6 ³ / ₈ | 2- 0 | |
| | | | | | | | | | | P45 | 7 | 1 | 5 | 9- 1 | F.F. Parapet Lt. End | 5- 4 ³ / ₄ | 1-10 ³ / ₈ | 1-10 ³ / ₈ | 0- 5 ³ / ₄ |
| | | | | | | | | | | | | | | | | 1- 9 ¹ / ₂ | 0- 5 ³ / ₄ | 1- 9 ¹ / ₂ | |
| | | | | | | | | | | P46 | 7 | 2 | 5 | 9- 1 | F.F. Parapet Lt. End | 5-11 ³ / ₄ | 1- 6 ³ / ₄ | 1- 6 ³ / ₄ | 0- 4 ⁷ / ₈ |
| | | | | | | | | | | | | | | | | 1- 6 | 0- 4 ⁷ / ₈ | 1- 6 | |
| | | | | | | | | | | P47 | 7 | 1 | 5 | 9- 1 | F.F. Parapet Lt. End | 5- 4 ³ / ₄ | 1-10 ³ / ₈ | 1-10 ³ / ₈ | 0- 5 ³ / ₄ |
| | | | | | | | | | | | | | | | | 1- 9 ¹ / ₂ | 0- 5 ³ / ₄ | 1- 9 ¹ / ₂ | |
| | | | | | | | | | | P48 | 7 | 1 | 5 | 10- 5 | B.F. Parapet Rt. End | 6- 6 ³ / ₄ | 1-11 ³ / ₄ | 1-11 ³ / ₄ | 1- 8 ¹ / ₂ |
| | | | | | | | | | | | | | | | | 0-11 ⁷ / ₈ | 1- 8 ¹ / ₂ | 0-11 ⁷ / ₈ | |
| | | | | | | | | | | P49 | 7 | 1 | 5 | 10- 6 | B.F. Parapet Rt. End | 6- 5 ⁵ / ₈ | 2- 0 ³ / ₄ | 2- 0 ³ / ₄ | 1- 9 ¹ / ₂ |
| | | | | | | | | | | | | | | | | 1- 0 ³ / ₈ | 1- 9 ¹ / ₂ | 1- 0 ³ / ₈ | |
| | | | | | | | | | | P50 | 7 | 1 | 5 | 10- 5 | B.F. Parapet Rt. End | 6- 6 ³ / ₄ | 1-11 ³ / ₄ | 1-11 ³ / ₄ | 1- 8 ¹ / ₂ |
| | | | | | | | | | | | | | | | | 0-11 ⁷ / ₈ | 1- 8 ¹ / ₂ | 0-11 ⁷ / ₈ | |
| | | | | | | | | | | P51 | 7 | 1 | 5 | 9- 5 | F.F. Parapet Rt. End | 6- 1 ³ / ₄ | 1- 8 ³ / ₈ | 1- 8 ³ / ₈ | 1- 5 ⁵ / ₈ |
| | | | | | | | | | | | | | | | | 0-10 ¹ / ₄ | 1- 5 ⁵ / ₈ | 0-10 ¹ / ₄ | |
| | | | | | | | | | | P52 | 7 | 1 | 5 | 9- 4 | F.F. Parapet Rt. End | 6- 2 ⁵ / ₈ | 1- 7 ³ / ₈ | 1- 7 ³ / ₈ | 1- 4 ³ / ₄ |
| | | | | | | | | | | | | | | | | 0- 9 ⁵ / ₈ | 1- 4 ³ / ₄ | 0- 9 ⁵ / ₈ | |
| | | | | | | | | | | P53 | 7 | 1 | 5 | 9- 5 | F.F. Parapet Rt. End | 6- 1 ³ / ₄ | 1- 8 ³ / ₈ | 1- 8 ³ / ₈ | 1- 5 ⁵ / ₈ |
| | | | | | | | | | | | | | | | | 0-10 ¹ / ₄ | 1- 5 ⁵ / ₈ | 0-10 ¹ / ₄ | |
| | | | | | | | | | | P54 | Str. | 2 | 5 | 8- 4 | Bottom Slab Lt. End | | | | |
| | | | | | | | | | | P55 | Str. | 2 | 5 | 8- 4 | Bottom Slab Rt. End | | | | |
| | | | | | | | | | | Q56 | 7 | 1 | 5 | 37-11 | Apron Lt. End | 29- 6 ³ / ₈ | 4- 3 ³ / ₈ | 4- 3 ³ / ₈ | 4- 1 ³ / ₈ |
| | | | | | | | | | | | | | | | | 1- 1 ¹ / ₄ | 4- 1 ³ / ₈ | 1- 1 ¹ / ₄ | |
| | | | | | | | | | | Q57 | 7 | 1 | 5 | 38-11 | Apron Lt. End | 30- 0 ¹ / ₂ | 4- 6 ¹ / ₈ | 4- 6 ¹ / ₈ | 4- 4 ³ / ₈ |
| | | | | | | | | | | | | | | | | 1- 2 | 4- 4 ³ / ₈ | 1- 2 | |
| | | | | | | | | | | Q58 | 7 | 1 | 5 | 22- 9 | Apron Rt. End | 14- 7 ¹ / ₂ | 4- 1 | 4- 1 | 2- 0 ¹ / ₂ |
| | | | | | | | | | | | | | | | | 3- 6 ³ / ₈ | 2- 0 ¹ / ₂ | 3- 6 ³ / ₈ | |
| | | | | | | | | | | Q59 | 7 | 1 | 5 | 23- 1 | Apron Rt. End | 14- 9 ⁵ / ₈ | 4- 2 | 4- 2 | 2- 1 |
| | | | | | | | | | | | | | | | | 3- 7 ¹ / ₄ | 2- 1 | 3- 7 ¹ / ₄ | |
| | | | | | | | | | | R60 | 11s | 6 | 5 | 7-11 | Parapet Wall (Left End) | 3- 3 ¹ / ₂ | 0- 9 | 0- 2 ¹ / ₂ | 2- 9 |
| | | | | | | | | | | | | | | | | 0- 6 ¹ / ₂ | 0- 9 ³ / ₄ | | |
| | | | | | | | | | | R61 | 12s | 6 | 5 | 6- 1 | Parapet Wall (Right End) | 2- 3 ¹ / ₂ | 0- 9 | | |
| | | | | | | | | | | T62 | 8 | 4 | 6 | 12-11 | Top of Wings 1 & 2 | 11- 5 ⁵ / ₈ | 1- 5 ⁵ / ₈ | 0- 2 ¹ / ₄ | 1- 5 ⁵ / ₈ |
| | | | | | | | | | | T63 | 8 | 4 | 6 | 12- 5 | Top of Wings 3 & 4 | 10-11 ¹ / ₈ | 1- 5 ⁵ / ₈ | 0- 5 ¹ / ₂ | 1- 4 ⁵ / ₈ |
| | | | | | | | | | | X64 | Str. | 48 | 8 | 2- 0 | Dowels | | | | |

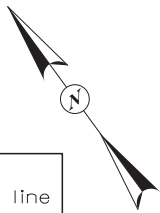
| | | |
|--|---------------------|----------------------|
| | | |
| | | |
| REVISION | | DATE |
| DATE: | MARCH 2020 | CHECKED BY |
| DESIGNED BY: | J. VAN ZEE | N.O. BODY |
| DETAILED BY: | Computer | J. VAN ZEE |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY SHELBY | | |
| ROUTE KY 55 | CROSSING A DITCH | |
| Bill of Reinforcement | | |
| PREPARED BY | | SHEET NO. |
| Division of Structural Design | | S7 |
| | | DRAWING NO. 28327 |

| ITEM NUMBER |
|-------------|
| 5-9017.00 |

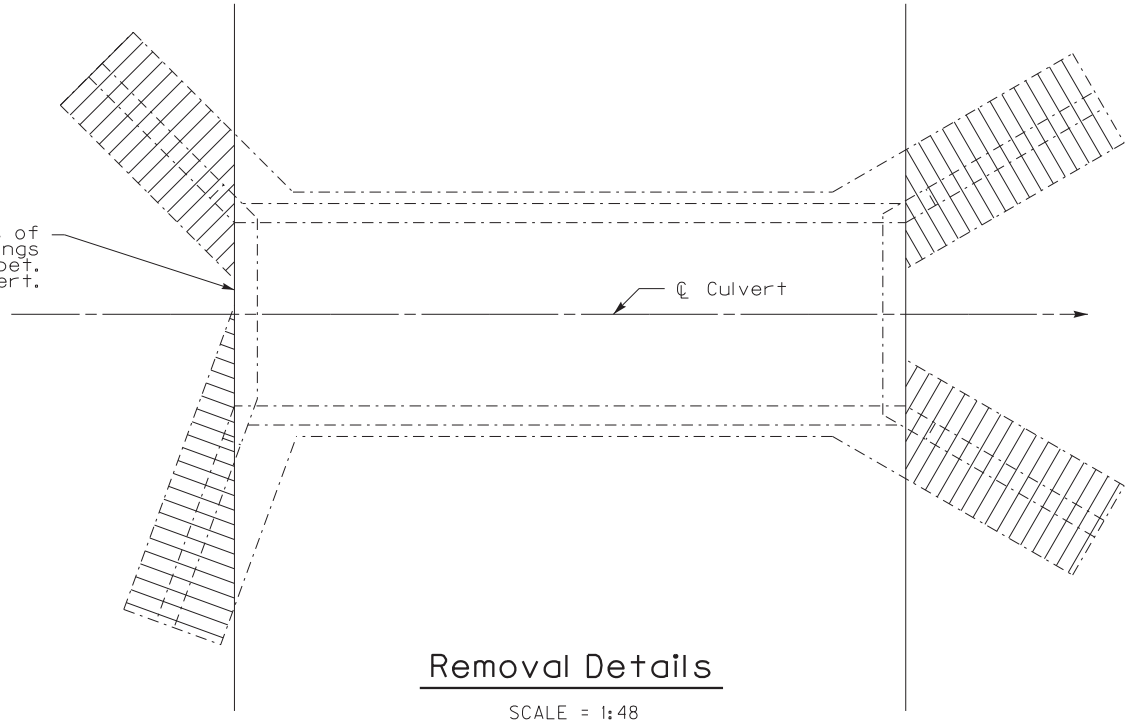
DATE: 20-NOV-2020
E-SHEET NAME: J:\District05\5-9017 HSP\Culverts\9 28328 8x4 RCBC Station 271+17 ck\28328 FINAL\28328.dgn
USERNAME: Joseph.vanzee
FILE NAME: J:\District05\5-9017 HSP\Culverts\9 28328 8x4 RCBC Station 271+17 ck\28328 FINAL\28328.dgn



Flow
S 53°51'51.84° E

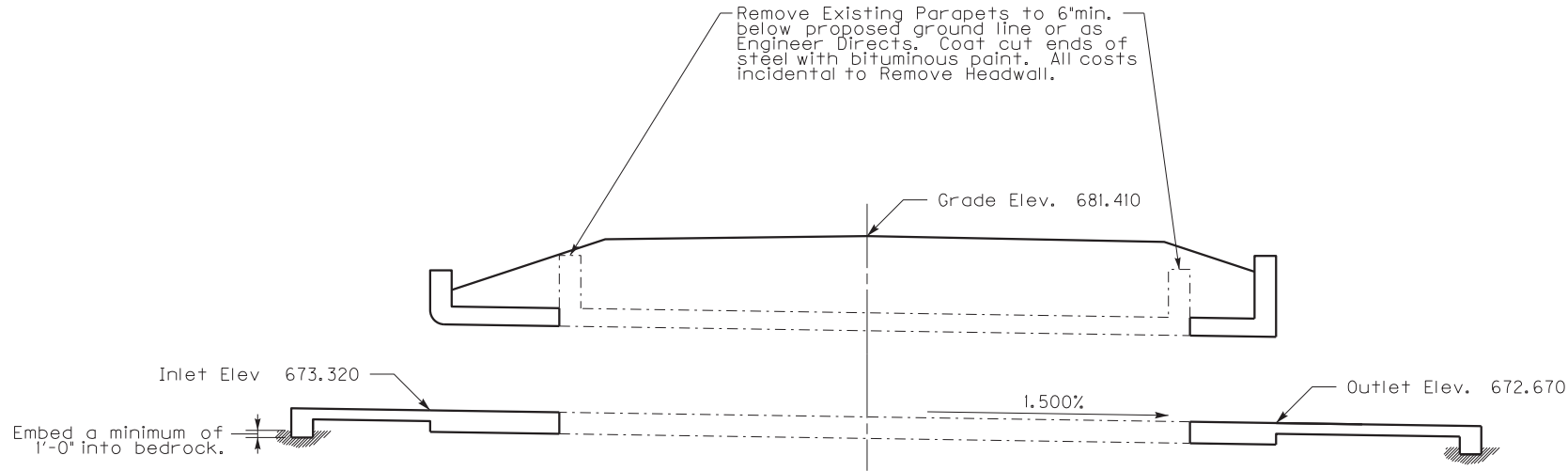
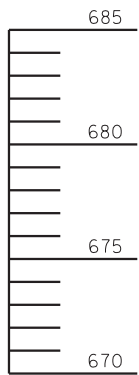


Remove hatched portions of
all wings and footings
to a line even with face of parapet.
Typ. Each End of Culvert.



AT&T Utility Note: There is a communication line present near the construction of the headwall. Contractor shall be responsible for locating and making sure the line is undisturbed. Contractor shall construct the culvert per the plans and work around the line as much as possible. If revisions are required, KYTC Engineer must approve all revisions prior to beginning work. Any extra costs incurred shall be incidental to the unit price bid for Class A concrete.

Note: Field verify all dimensions prior to ordering materials. All dimensions are taken from existing survey. Actual barrel lengths may vary from plans in the field. Extension lengths shall be built per the plan.

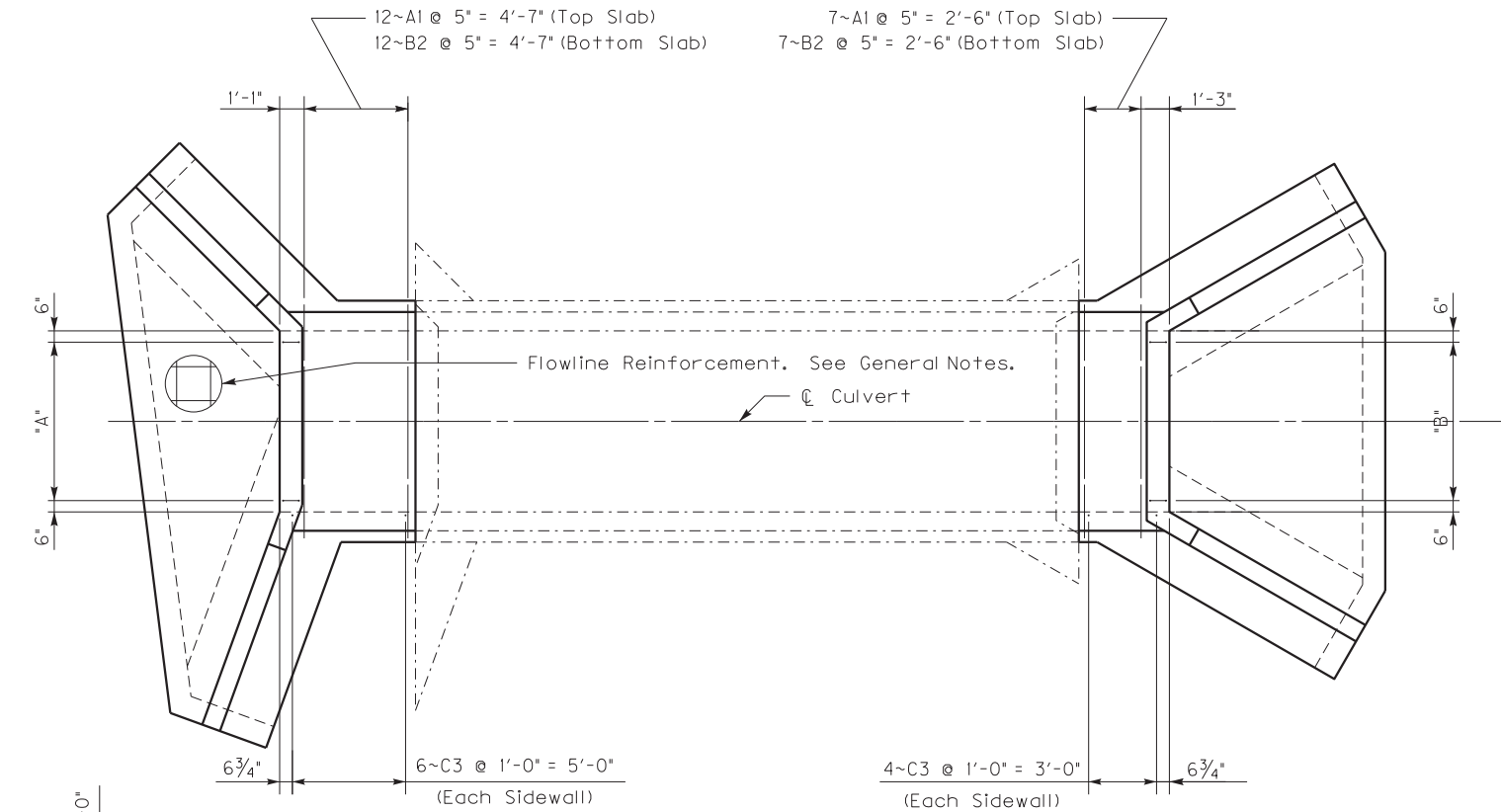


SECTION ON C
Single 8'-0" x 4'-0" x 43'-3 5/8" R.C.B.C.
20'-3 5/8" Inlet End and 23'-0" Outlet End
0.0000° Skew ~ KYHL-93 Loading ~ 0.33 Fill Slope
Unyielding Foundation

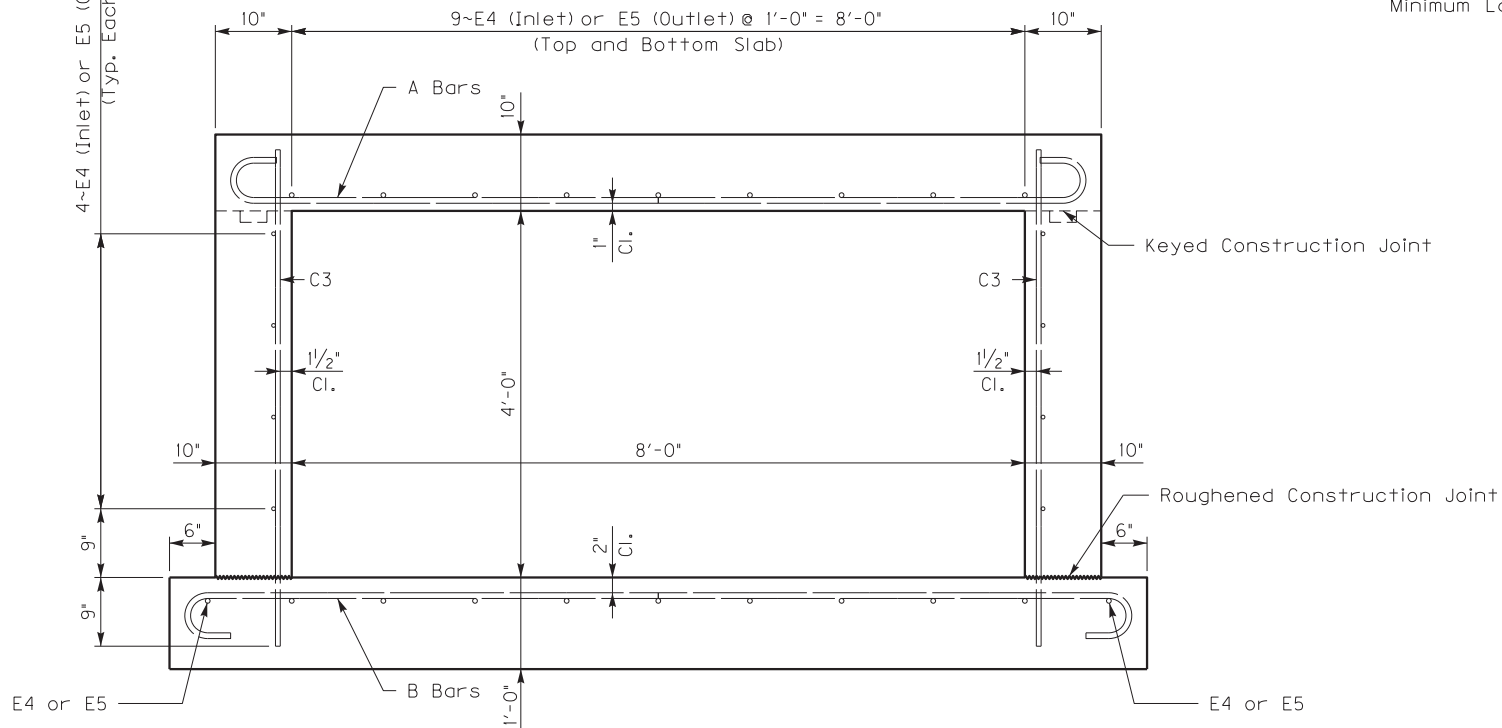
| | | |
|--|------------|-------------|
| | | |
| | | |
| REVISION | | DATE |
| DATE: MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY | | |
| SHELBY | | |
| ROUTE | CROSSING | |
| KY 55 | A DITCH | |
| LAYOUT | | |
| PREPARED BY | | SHEET NO. |
| Division of | | S2 |
| Structural Design | | DRAWING NO. |
| | | 28328 |

| |
|-------------|
| ITEM NUMBER |
| 5-9017.00 |

E-SHEET NAME: J:\District05\5-9017 HSP\Culverts\9 28328 8x4 RCBC Station 271+17 ck\28328 FINAL\28328.dgn
USERNAME: Joseph.vanzee FILE NAME: J:\District05\5-9017 HSP\Culverts\9 28328 8x4 RCBC Station 271+17 ck\28328 FINAL\28328.dgn
DATE: 20-NOV-2020

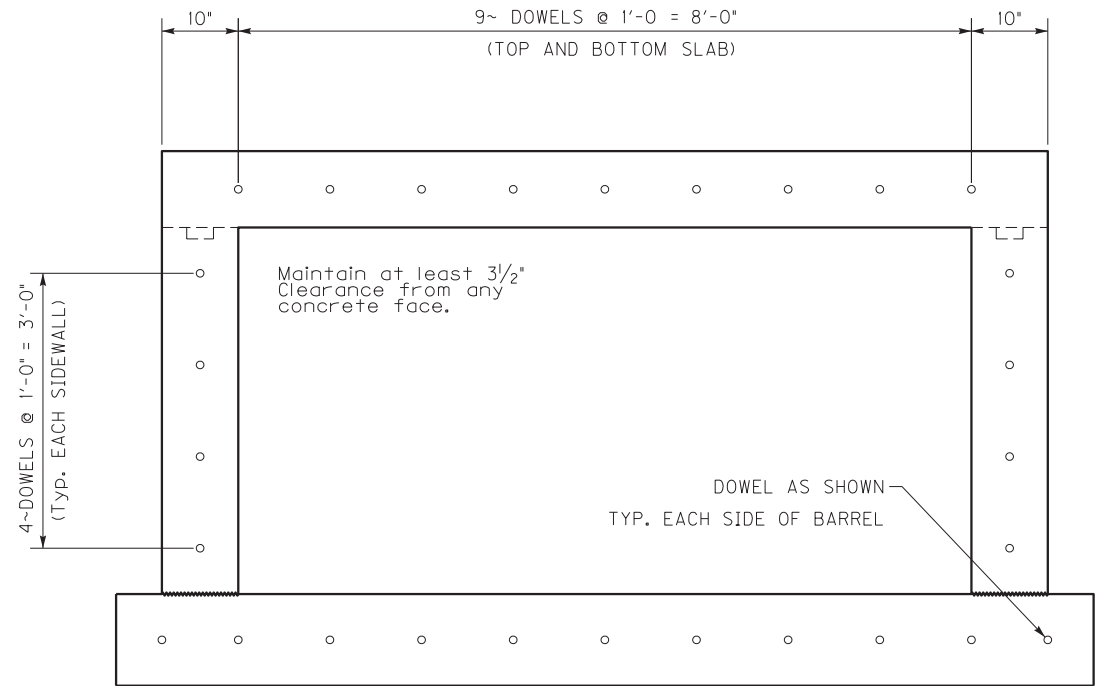


PLAN
SCALE = 1:48

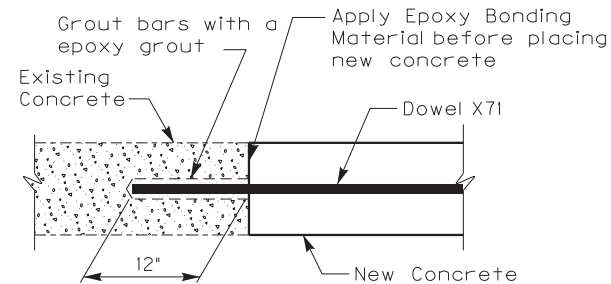


TYPICAL BARREL SECTION
SCALE = 1:12

"A" 8~R67 @ 1'-0" = 7'-0"
"B" 8~R68 @ 1'-0" = 7'-0"
Minimum Lap Distance for E 4 Bars 26 in
Minimum Lap Distance for E 5 Bars 21 in



DOWEL LOCATIONS
SCALE = 1:12

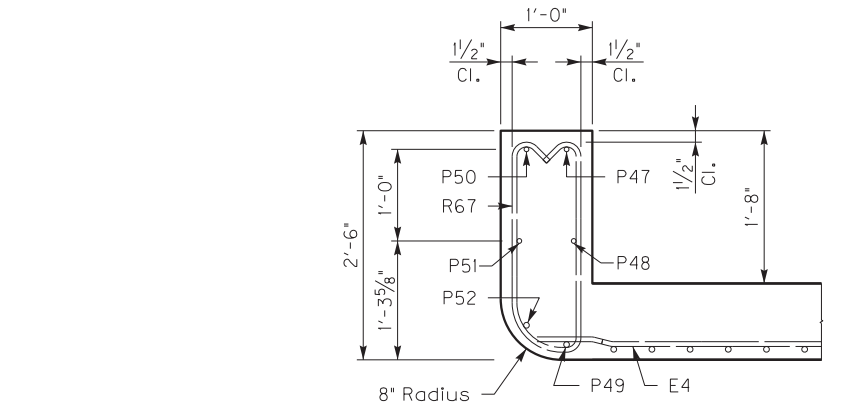


DOWEL DETAILS

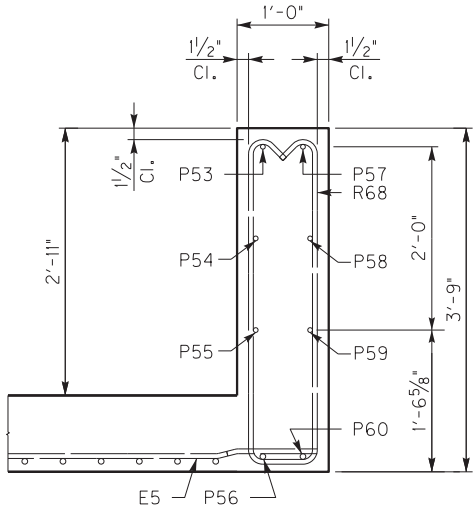
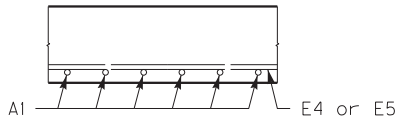
NOTE: The cost of drilling holes, grouting, and epoxy bonding material shall be incidental to the cost of Class "A" Concrete.

| | | | |
|--|------------|------------|-------------|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | L. LIKINS | | |
| DETAILED BY: M. BAWITHAWNG | J. VAN ZEE | | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY | | | |
| SHELBY | | | |
| ROUTE | CROSSING | | |
| KY 55 | A DITCH | | |
| BARREL | | | |
| PREPARED BY | | | SHEET NO. |
| Division of | | | S3 |
| Structural Design | | | DRAWING NO. |
| | | | 28328 |

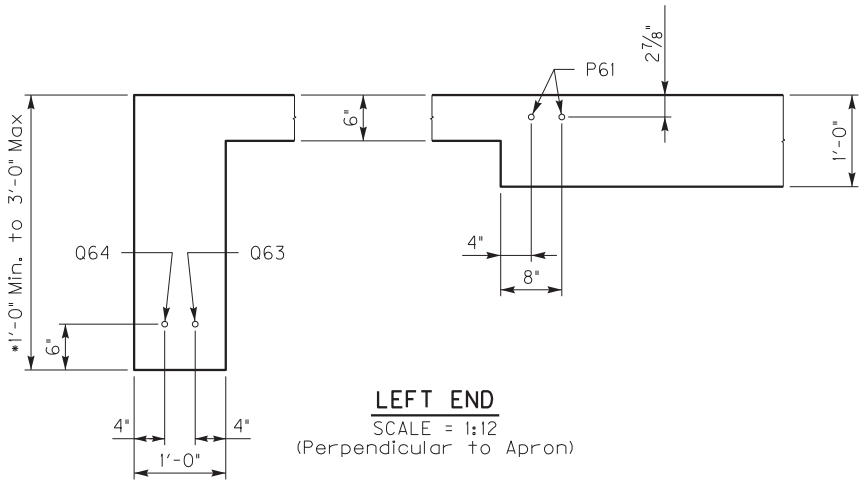
USERNAME: Joseph.vanzee FILE NAME: J:\District\05\5-9017 HSP\Culverts\9 28328 8x4 RCBC Station 271+17 ck\28328 FINAL\28328.dgn DATE: 20-NOV-2020 E-SHEET NAME:



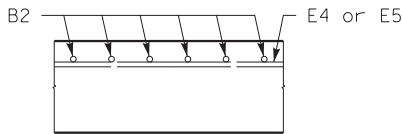
LEFT PARAPET
SCALE = 1:12
(Perpendicular to Parapet)



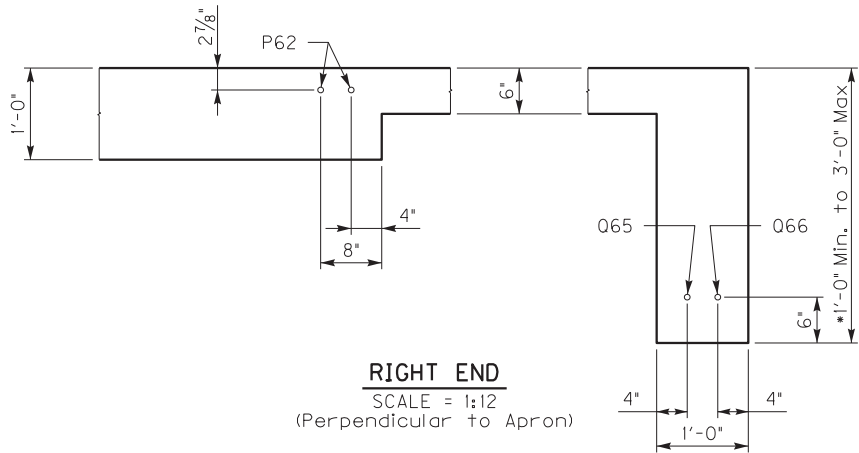
RIGHT PARAPET
SCALE = 1:12
(Perpendicular to Parapet)



LEFT END
SCALE = 1:12
(Perpendicular to Apron)



SECTION ON C
SCALE = 1:12

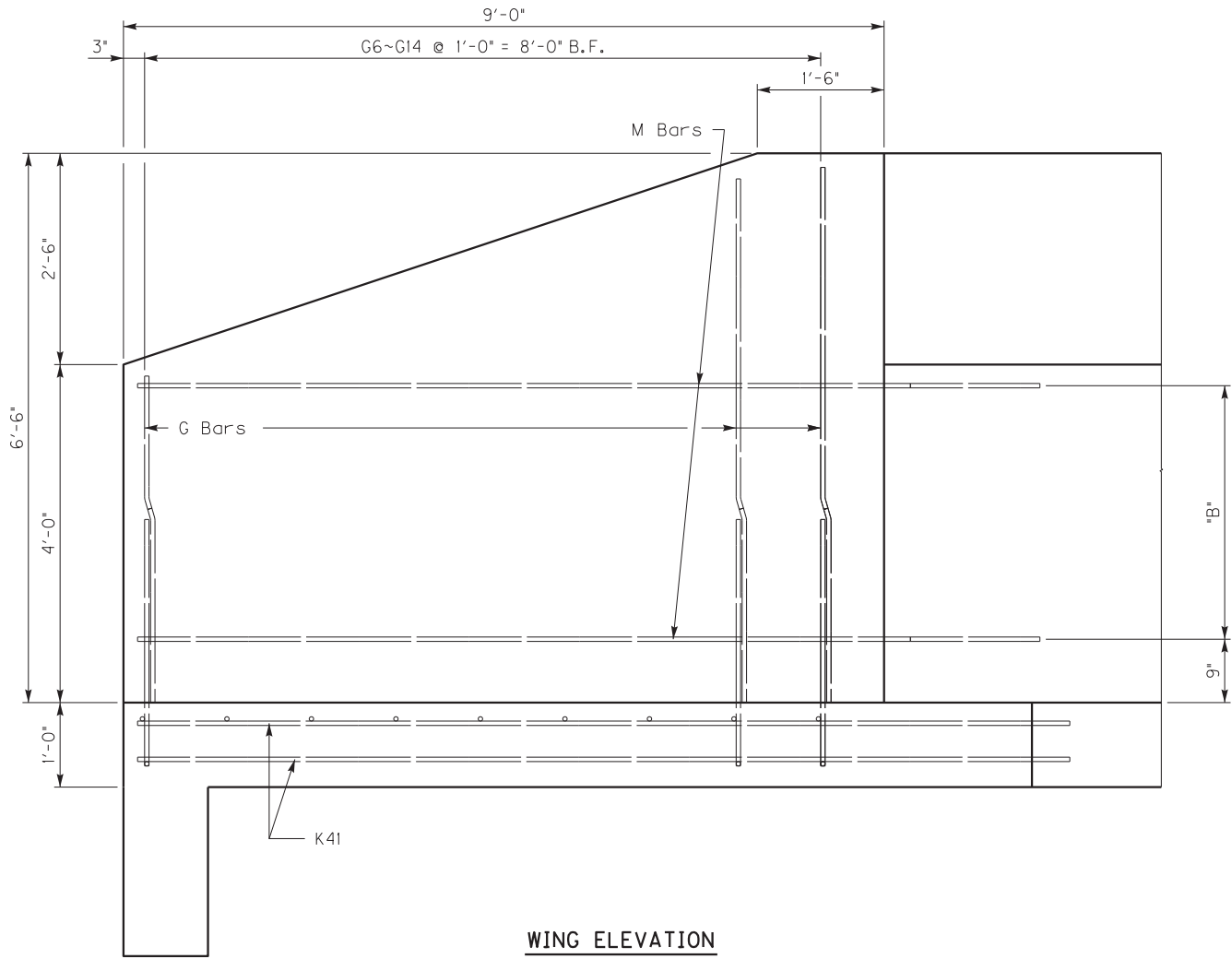


RIGHT END
SCALE = 1:12
(Perpendicular to Apron)

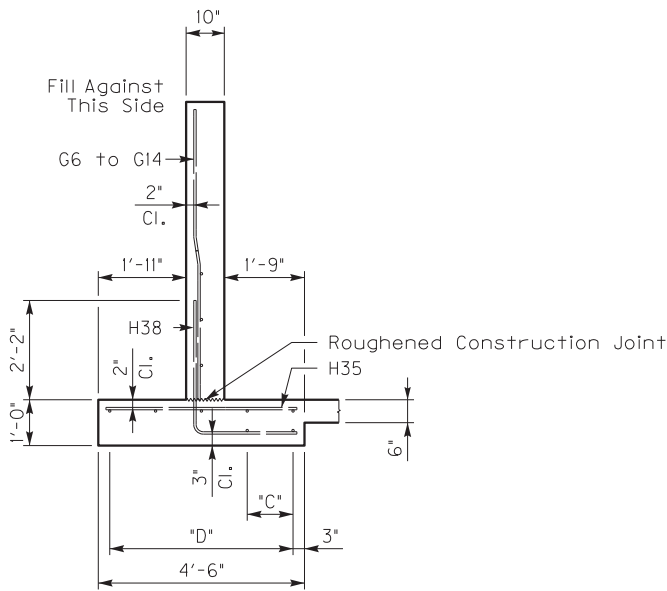
*Note: Embed apron 1'-0" Min. into solid rock. Pour all sides against solid rock. Any extra concrete required is incidental to the unit price bid for Class A concrete. Apron to be a maximum of 3'-0" long if solid rock is deep. Quantities are include for the full 3'-0" depth. Adjust concrete paid as necessary for actual depth used.

| | | | |
|--|------------|----------------------|--|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY SHELBY | | | |
| ROUTE KY 55 | | CROSSING A DITCH | |
| BARREL | | | |
| PREPARED BY | | SHEET NO. | |
| Division of Structural Design | | S4 | |
| | | DRAWING NO. 28328 | |

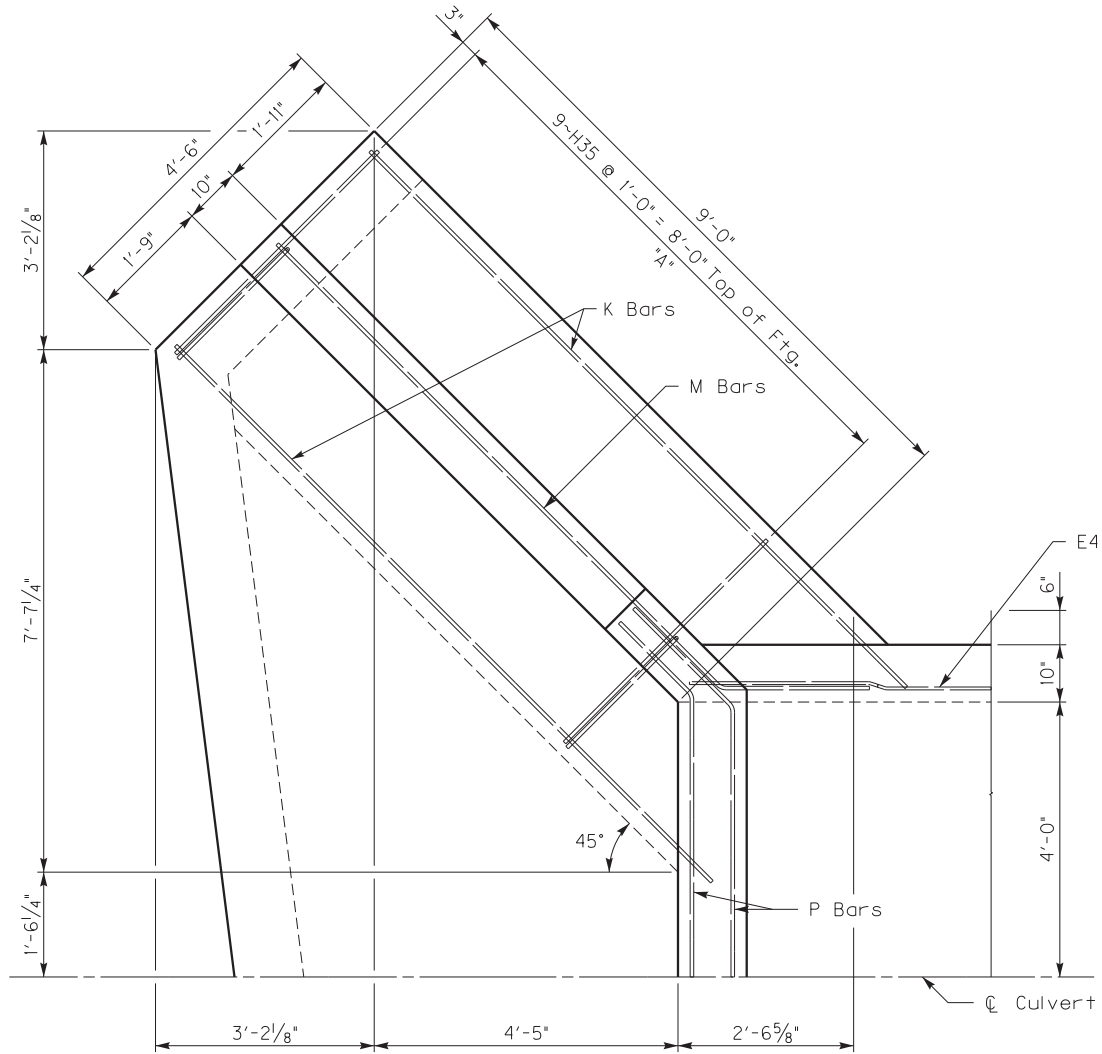
E-SHEET NAME: 20-NOV-2020 USERNAME: Joseph.vanzee FILE NAME: J:\District\05\5-9017 HSP\Culverts\9 28328 8x4 RCBC Station 271+17 ck\28328 FINAL\28328.dgn



WING ELEVATION
 SCALE = 1:12



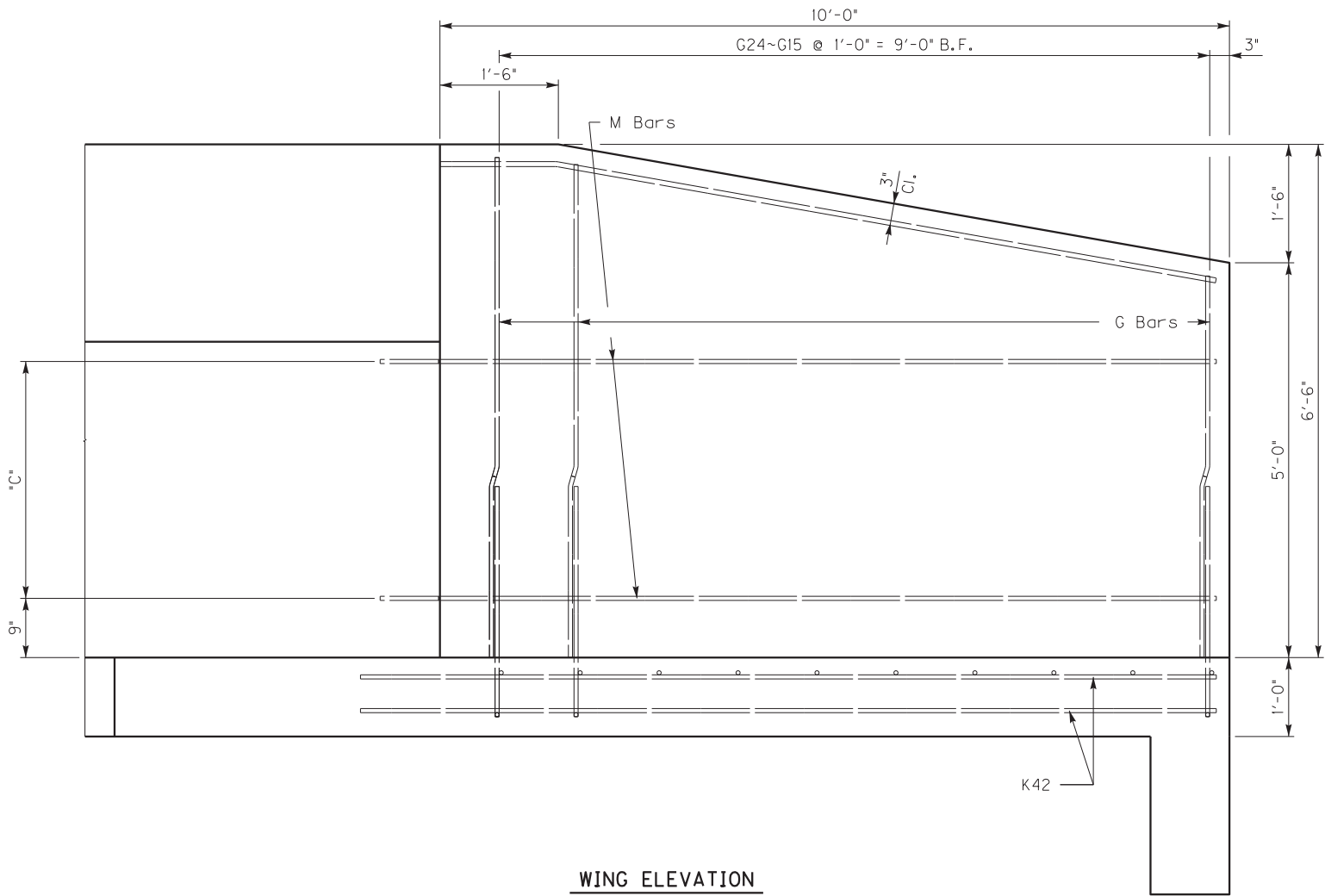
WING SECTION
 SCALE = 1:24



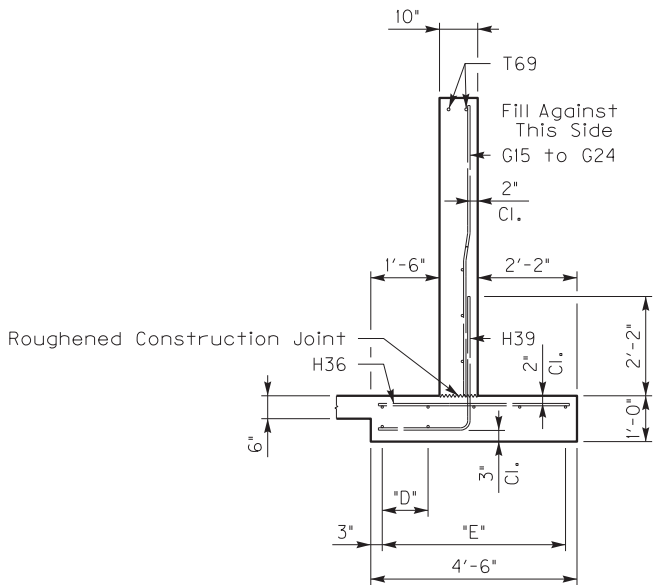
PLAN
 SCALE = 1:16

A 9~H38 @ 1'-0" = 8'-0" Bot of Ftg to B.F. Wall
 B 4~M44 @ 1'-0" = 3'-0" B.F.
 C 2~K41 @ 1'-0" = 1'-0" Bot of Ftg.
 D 5~K41 @ 1'-0" = 4'-0"

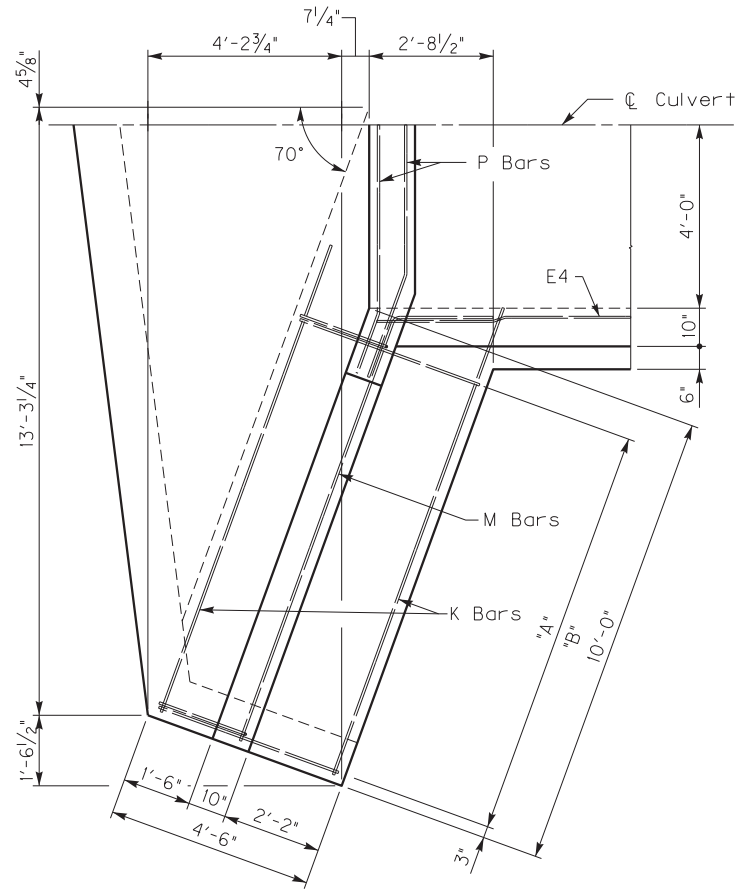
| | | | |
|--|------------|----------------------|--|
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY SHELBY | | | |
| ROUTE KY 55 | | CROSSING A DITCH | |
| Wing 1 | | | |
| PREPARED BY | | SHEET NO. | |
| Division of Structural Design | | S5 | |
| | | DRAWING NO. 28328 | |



WING ELEVATION
SCALE = 1:12



WING SECTION
SCALE = 1:24

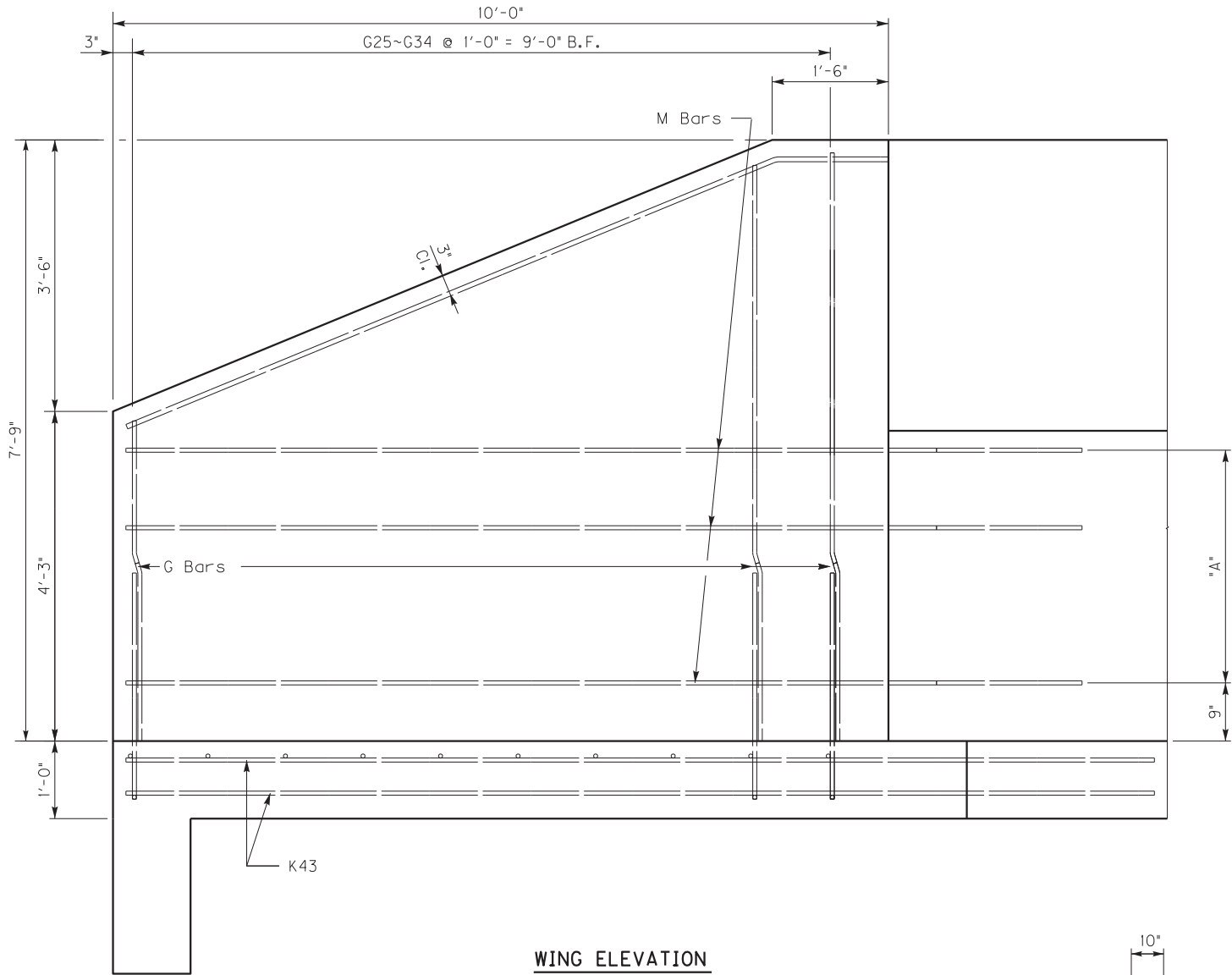


PLAN
SCALE = 1:24

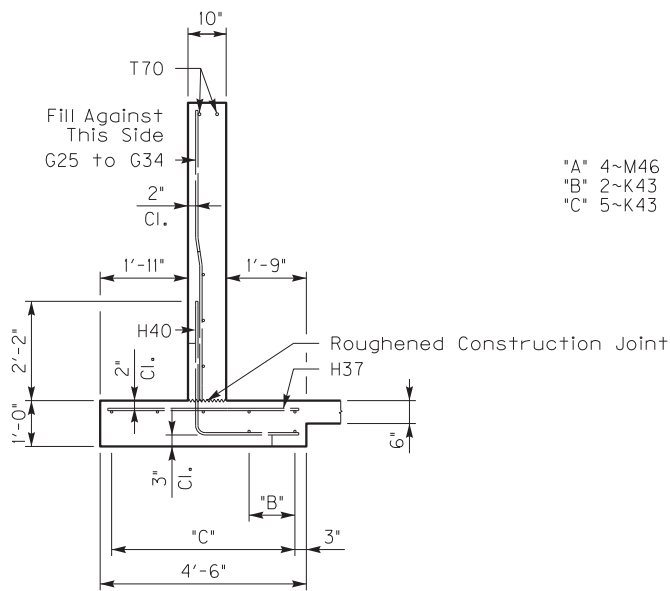
"A" 10~H36 @ 1'-0" = 9'-0" Top of Ftg.
"B" 10~H39 @ 1'-0" = 9'-0" Bot of Ftg to B.F. Wall
"C" 4~M45 @ 1'-0" = 3'-0" B.F.
"D" 2~K42 @ 1'-0" = 1'-0" Bot of Ftg.
"E" 5~K42 @ 1'-0" = 4'-0"

| | | | |
|--|------------|-------------|--|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY | | | |
| SHELBY | | | |
| ROUTE | | CROSSING | |
| KY 55 | | A DITCH | |
| Wing 2 | | | |
| PREPARED BY | | SHEET NO. | |
| Division of | | S6 | |
| Structural Design | | DRAWING NO. | |
| | | 28328 | |

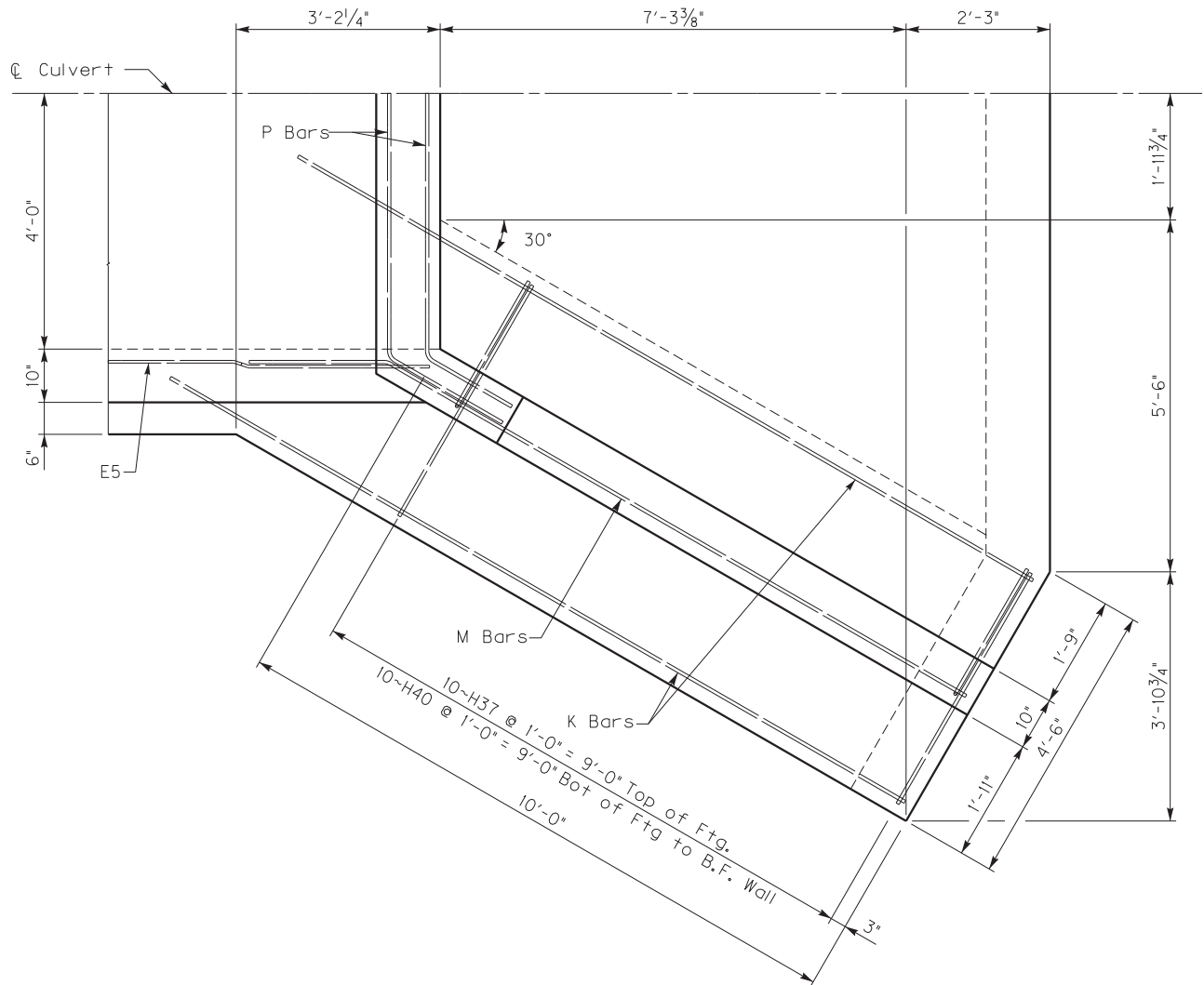
E-SHEET NAME: DATE: 20-NOV-2020 USERNAME: Joseph.vanzee FILE NAME: J:\District\05\5-9017 HSP\Culverts\9 28328 8x4 RCBC Station 271+17 ck\28328 FINAL\28328.dgn



WING ELEVATION
SCALE = 1:12



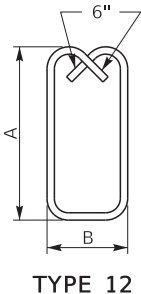
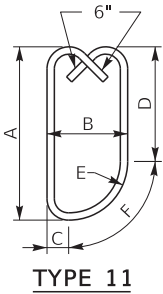
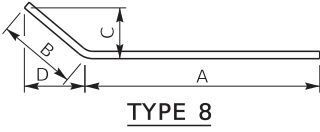
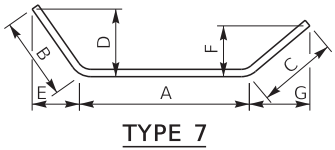
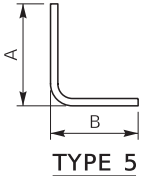
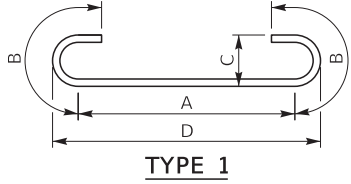
WING SECTION
SCALE = 1:24



PLAN
SCALE = 1:16

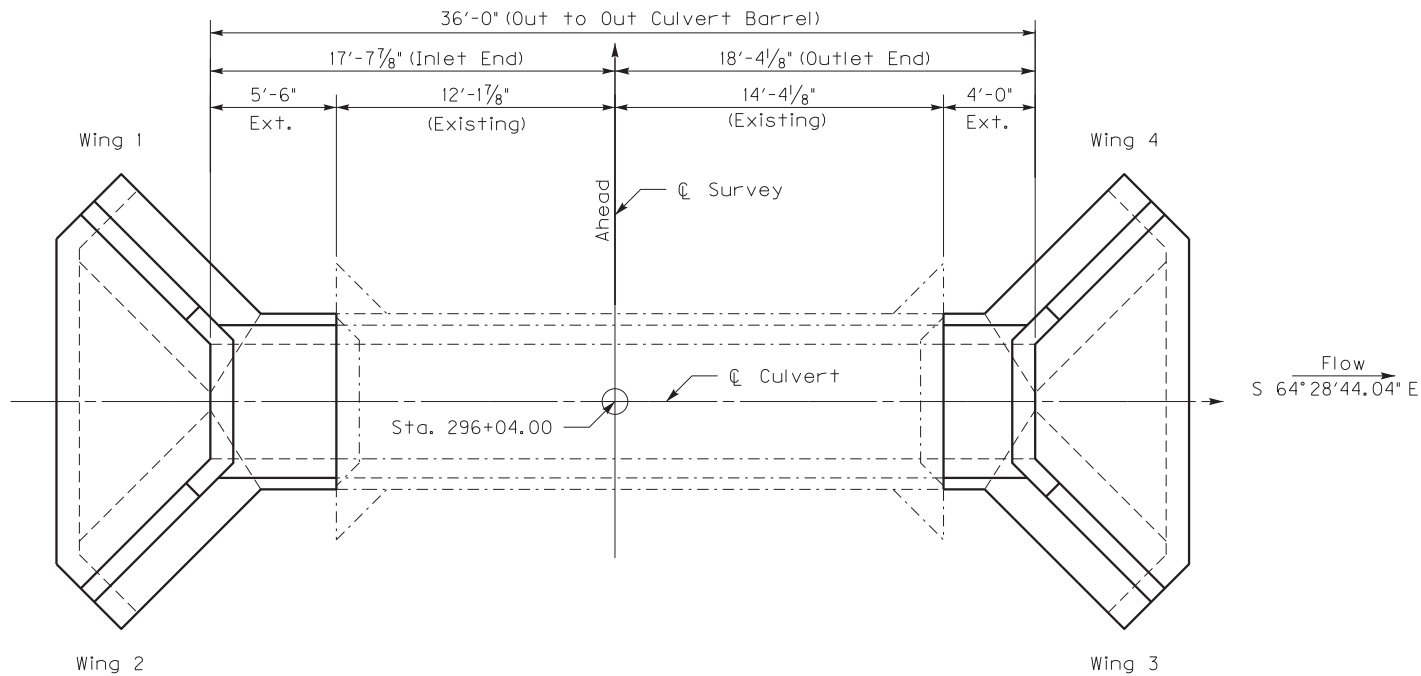
A 4~M46 @ 1'-0" = 3'-0" B.F.
B 2~K43 @ 1'-0" = 1'-0" Bot of Ftg.
C 5~K43 @ 1'-0" = 4'-0"

| | | | |
|--|------------|----------------------|--|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY SHELBY | | | |
| ROUTE KY 55 | | CROSSING A DITCH | |
| Wings 3 & 4 | | | |
| PREPARED BY | | SHEET NO. | |
| Division of Structural Design | | S7 | |
| | | DRAWING NO. 28328 | |



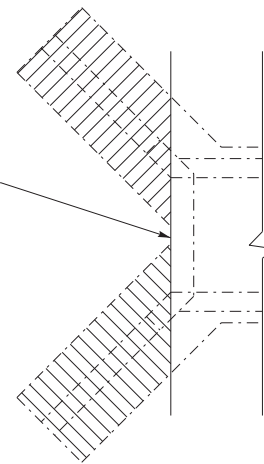
| BILL OF REINFORCEMENT | | | | | | | | | | BILL OF REINFORCEMENT | | | | | | | | | | |
|-----------------------|------|-----|------|--------|----------------------------|------|------|------|-------|-----------------------|------|-----|------|--------|--------------------------|--------|-------|-------|-------|--|
| MARK | TYPE | NO. | SIZE | LENGTH | LOCATION | A/E | B/F | C/G | D/H | MARK | TYPE | NO. | SIZE | LENGTH | LOCATION | A/E | B/F | C/G | D/H | |
| A1 | I | 19 | 6 | 10-10 | Top Slab | 8-10 | 1- 0 | 0- 6 | 9- 4 | G30 | Str. | 2 | 5 | 6- 1 | B.F Wings 3 & 4 | | | | | |
| B2 | I | 19 | 6 | 11-10 | Bottom Slab | 9-10 | 1- 0 | 0- 6 | 10- 4 | G31 | Str. | 2 | 5 | 6- 6 | B.F Wings 3 & 4 | | | | | |
| C3 | Str. | 20 | 5 | 5- 5 | Sidewalls | | | | | G32 | Str. | 2 | 5 | 6-11 | B.F Wings 3 & 4 | | | | | |
| E4 | Str. | 28 | 5 | 5- 8 | Slabs & Sidewalls (Inlet) | | | | | G33 | Str. | 2 | 5 | 7- 4 | B.F Wings 3 & 4 | | | | | |
| E5 | Str. | 28 | 5 | 3- 8 | Slabs & Sidewalls (Outlet) | | | | | G34 | Str. | 2 | 5 | 7- 6 | B.F Wings 3 & 4 | | | | | |
| G6 | Str. | I | 5 | 3-10 | B.F Wing 1 | | | | | H35 | Str. | 9 | 5 | 4- 2 | Top Ftg Wing 1 | | | | | |
| G7 | Str. | I | 5 | 4- 2 | B.F Wing 1 | | | | | H36 | Str. | 10 | 5 | 4- 2 | Top Ftg Wing 2 | | | | | |
| G8 | Str. | I | 5 | 4- 6 | B.F Wing 1 | | | | | H37 | Str. | 20 | 5 | 4- 2 | Top Ftg Wings 3 & 4 | | | | | |
| G9 | Str. | I | 5 | 4-10 | B.F Wing 1 | | | | | H38 | 5 | 9 | 5 | 5- 0 | Bot Ftg Wing 1 | 2-11 | 2- 3 | | | |
| G10 | Str. | I | 5 | 5- 2 | B.F Wing 1 | | | | | H39 | 5 | 10 | 5 | 4- 9 | Bot Ftg Wing 2 | 2-11 | 2- 0 | | | |
| G11 | Str. | I | 5 | 5- 6 | B.F Wing 1 | | | | | H40 | 5 | 20 | 5 | 5- 0 | Bot Ftg Wings 3 & 4 | 2-11 | 2- 3 | | | |
| G12 | Str. | I | 5 | 5-10 | B.F Wing 1 | | | | | K41 | Str. | 7 | 5 | 11- 0 | Ftg Wing 1 | | | | | |
| G13 | Str. | I | 5 | 6- 2 | B.F Wing 1 | | | | | K42 | Str. | 7 | 5 | 10-10 | Ftg Wing 2 | | | | | |
| G14 | Str. | I | 5 | 6- 4 | B.F Wing 1 | | | | | K43 | Str. | 14 | 5 | 13- 3 | Ftg Wings 3 & 4 | | | | | |
| G15 | Str. | I | 5 | 4-10 | B.F Wing 2 | | | | | M44 | 8 | 4 | 5 | 11- 3 | B.F. Wing 1 | 9- 1¼ | 2- 2 | 1- 6⅜ | 1- 6⅜ | |
| G16 | Str. | I | 5 | 5- 0 | B.F Wing 2 | | | | | M45 | 8 | 4 | 5 | 11-11 | B.F. Wing 2 | 9-10¼ | 2- 2 | 2- 0⅜ | 0- 8⅞ | |
| G17 | Str. | I | 5 | 5- 2 | B.F Wing 2 | | | | | M46 | 8 | 8 | 5 | 12- 7 | B.F. Wings 3 & 4 | 10- 5½ | 2- 2 | 1- 1 | 1-10½ | |
| G18 | Str. | I | 5 | 5- 4 | B.F Wing 2 | | | | | P47 | 7 | I | 5 | 11- 9 | B.F. Parapet Lt. End | 7-10½ | 1-10⅞ | 1-11⅜ | 1- 4¼ | |
| G19 | Str. | I | 5 | 5- 6 | B.F Wing 2 | | | | | | | | | | 1- 4¼ | 0- 8⅞ | 1-10¼ | | | |
| G20 | Str. | I | 5 | 5- 9 | B.F Wing 2 | | | | | P48 | 7 | I | 5 | 11- 9 | B.F. Parapet Lt. End | 7- 7 | 2- 0¼ | 2- 2⅜ | 1- 5⅞ | |
| G21 | Str. | I | 5 | 5-11 | B.F Wing 2 | | | | | | | | | | 1- 5⅞ | 0- 9 | 2- 0⅞ | | | |
| G22 | Str. | I | 5 | 6- 1 | B.F Wing 2 | | | | | P49 | 7 | I | 6 | 11- 9 | B.F. Parapet Lt. End | 7-10¼ | 1-11 | 1-11⅞ | 1- 4¼ | |
| G23 | Str. | I | 5 | 6- 3 | B.F Wing 2 | | | | | | | | | | 1- 4¼ | 0- 8⅞ | 1-10⅜ | | | |
| G24 | Str. | I | 5 | 6- 4 | B.F Wing 2 | | | | | P50 | 7 | I | 5 | 11- 3 | F.F. Parapet Lt. End | 7- 9⅞ | 1- 8¼ | 1- 9⅜ | 1- 2⅜ | |
| G25 | Str. | 2 | 5 | 4- 2 | B.F Wings 3 & 4 | | | | | | | | | | 1- 2⅜ | 0- 7⅞ | 1- 8⅞ | | | |
| G26 | Str. | 2 | 5 | 4- 5 | B.F Wings 3 & 4 | | | | | P51 | 7 | I | 5 | 11- 2 | F.F. Parapet Lt. End | 8- 1⅞ | 1- 6⅞ | 1- 6⅞ | 1- 1⅞ | |
| G27 | Str. | 2 | 5 | 4-10 | B.F Wings 3 & 4 | | | | | | | | | | 1- 1⅞ | 0- 6⅞ | 1- 5½ | | | |
| G28 | Str. | 2 | 5 | 5- 3 | B.F Wings 3 & 4 | | | | | P52 | 7 | I | 6 | 11- 3 | F.F. Parapet Lt. End | 7- 9⅞ | 1- 8¼ | 1- 9¼ | 1- 2¼ | |
| G29 | Str. | 2 | 5 | 5- 8 | B.F Wings 3 & 4 | | | | | | | | | | 1- 2¼ | 0- 7¼ | 1- 8 | | | |
| | | | | | | | | | | P53 | 7 | I | 5 | 12- 5 | B.F. Parapet Rt. End | 8- 6¼ | 1-11⅞ | 1-11⅞ | 1- 8½ | |
| | | | | | | | | | | | | | | | 0-11⅞ | 1- 8½ | 0-11⅞ | | | |
| | | | | | | | | | | P54 | 7 | I | 5 | 12- 6 | B.F. Parapet Rt. End | 8- 5⅞ | 2- 0¼ | 2- 0¼ | 1- 9⅞ | |
| | | | | | | | | | | | | | | | 1- 0⅞ | 1- 9⅞ | 1- 0⅞ | | | |
| | | | | | | | | | | P55 | 7 | I | 5 | 12- 6 | B.F. Parapet Rt. End | 8- 5⅞ | 2- 0¼ | 2- 0¼ | 1- 9⅞ | |
| | | | | | | | | | | | | | | | 1- 0⅞ | 1- 9⅞ | 1- 0⅞ | | | |
| | | | | | | | | | | P56 | 7 | I | 6 | 12- 5 | B.F. Parapet Rt. End | 8- 6⅞ | 1-11¾ | 1-11¾ | 1- 8½ | |
| | | | | | | | | | | | | | | | 0-11⅞ | 1- 8½ | 0-11⅞ | | | |
| | | | | | | | | | | P57 | 7 | I | 5 | 11- 5 | F.F. Parapet Rt. End | 8- 1¾ | 1- 8⅜ | 1- 8⅜ | 1- 5⅞ | |
| | | | | | | | | | | | | | | | 0-10⅞ | 1- 5⅞ | 0-10⅞ | | | |
| | | | | | | | | | | P58 | 7 | I | 5 | 11- 4 | F.F. Parapet Rt. End | 8- 2⅞ | 1- 7¼ | 1- 7¼ | 1- 4⅞ | |
| | | | | | | | | | | | | | | | 0- 9⅞ | 1- 4⅞ | 0- 9⅞ | | | |
| | | | | | | | | | | P59 | 7 | I | 5 | 11- 4 | F.F. Parapet Rt. End | 8- 2⅞ | 1- 7¼ | 1- 7¼ | 1- 4⅞ | |
| | | | | | | | | | | | | | | | 0- 9⅞ | 1- 4⅞ | 0- 9⅞ | | | |
| | | | | | | | | | | P60 | 7 | I | 6 | 11- 5 | F.F. Parapet Rt. End | 8- 2 | 1- 8⅜ | 1- 8⅜ | 1- 5⅞ | |
| | | | | | | | | | | | | | | | 0-10⅞ | 1- 5⅞ | 0-10⅞ | | | |
| | | | | | | | | | | P61 | Str. | 2 | 6 | 10- 4 | Bottom Slab Lt. End | | | | | |
| | | | | | | | | | | P62 | Str. | 2 | 6 | 10- 4 | Bottom Slab Rt. End | | | | | |
| | | | | | | | | | | Q63 | 7 | I | 6 | 29- 2 | Apron Lt. End | 21- 5⅞ | 3-11¼ | 3-10⅜ | 3- 1⅜ | |
| | | | | | | | | | | | | | | | 2- 5 | 3- 5¼ | 1- 9⅞ | | | |
| | | | | | | | | | | Q64 | 7 | I | 6 | 29-11 | Apron Lt. End | 21-10¼ | 4- 1¼ | 4- 0¾ | 3- 2⅞ | |
| | | | | | | | | | | | | | | | 2- 6⅞ | 3- 7⅞ | 1-10¼ | | | |
| | | | | | | | | | | Q65 | 7 | I | 6 | 22- 9 | Apron Rt. End | 14- 7½ | 4- 1 | 4- 1 | 2- 0½ | |
| | | | | | | | | | | | | | | | 3- 6⅞ | 2- 0½ | 3- 6⅞ | | | |
| | | | | | | | | | | Q66 | 7 | I | 6 | 23- 1 | Apron Rt. End | 14- 9⅞ | 4- 2 | 4- 2 | 2- 1 | |
| | | | | | | | | | | | | | | | 3- 7⅞ | 2- 1 | 3- 7⅞ | | | |
| | | | | | | | | | | R67 | IIs | 8 | 5 | 5-11 | Parapet Wall (Left End) | 2- 3½ | 0- 9 | 0- 2½ | 1- 9 | |
| | | | | | | | | | | | | | | | 0- 6½ | 0- 9¾ | | | | |
| | | | | | | | | | | R68 | I2s | 8 | 5 | 8- 7 | Parapet Wall (Right End) | 3- 6½ | 0- 9 | | | |
| | | | | | | | | | | T69 | 8 | 2 | 6 | 9-11 | Top of Wing 2 | 8- 5¾ | 1- 5¾ | 0- 3⅞ | 1- 5½ | |
| | | | | | | | | | | T70 | 8 | 4 | 6 | 10- 6 | Top of Wings 3 & 4 | 9- 0¾ | 1- 5½ | 0- 6⅞ | 1- 4⅞ | |
| | | | | | | | | | | X71 | Str. | 56 | 8 | 2- 0 | Dowels | | | | | |

| | | | |
|--|---------------------|---|--|
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: | J. VAN ZEE | L. LIKINS | |
| DETAILED BY: | M. BAWITHAWNG | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY SHELBY | | | |
| ROUTE KY 55 | CROSSING A DITCH | | |
| <i>Bill of Reinforcement</i> | | | |
| ITEM NUMBER | | PREPARED BY | |
| 5-9017.00 | | Division of Structural Design | |
| | | SHEET NO. S8 DRAWING NO. 28328 | |



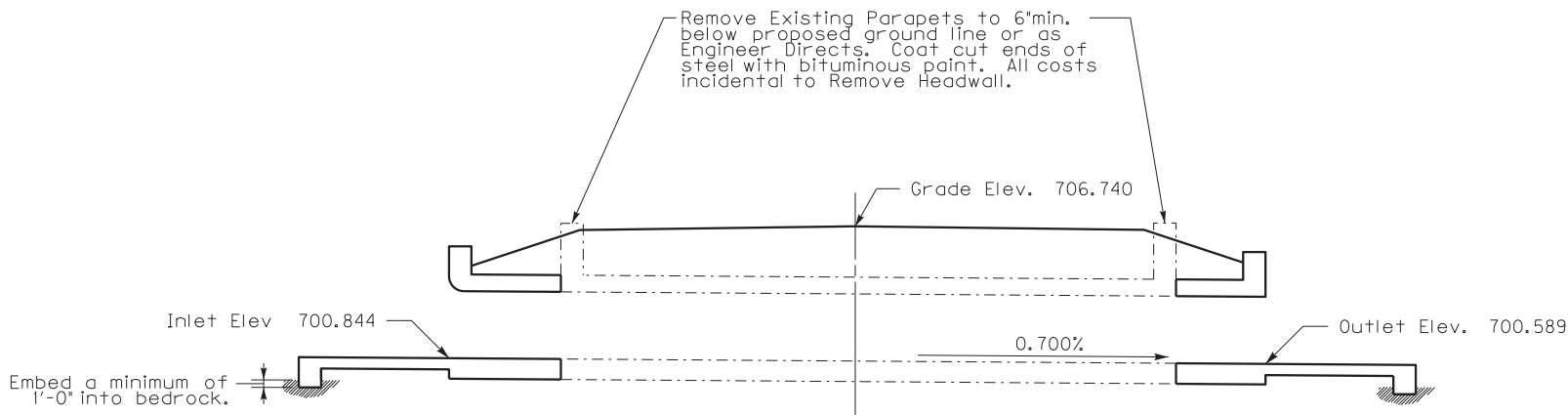
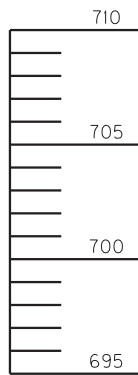
PLAN
SCALE = 1:48

Remove hatched portions of all wings and footings to a line even with face of parapet. Typ. Each End of Culvert.



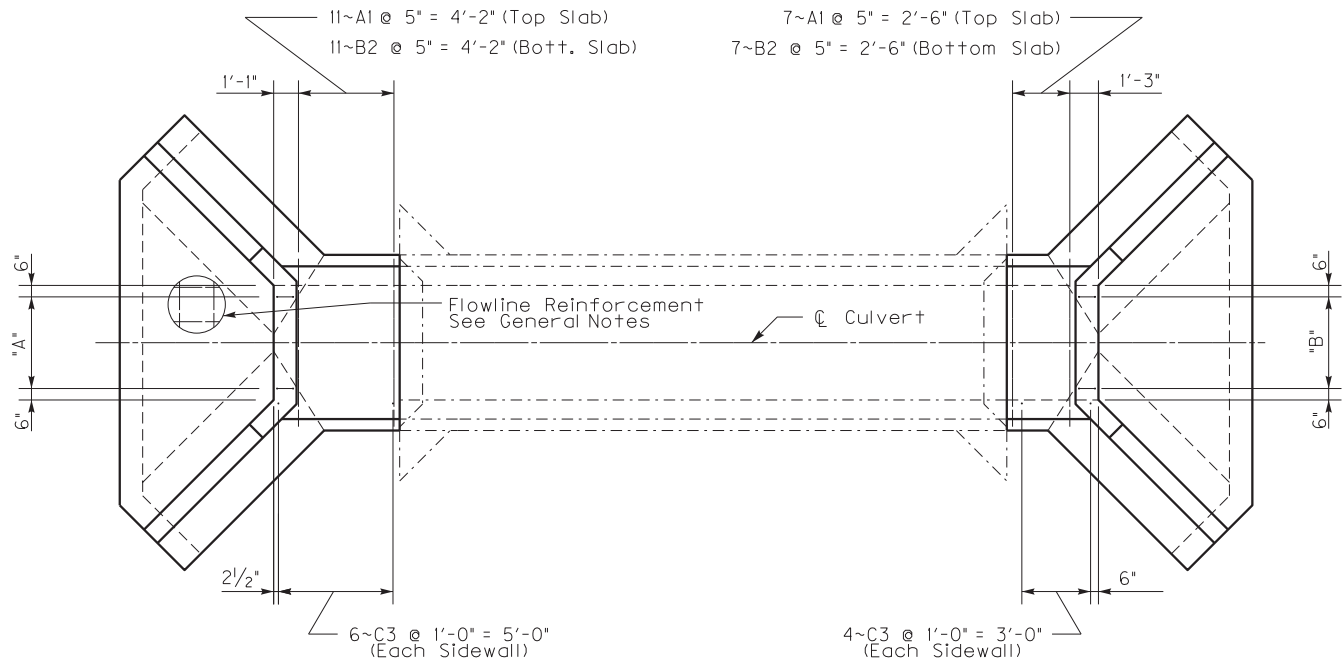
Removal Details
SCALE = 1:48

Note: Field verify all dimensions prior to ordering materials. All dimensions are taken from existing survey. Actual barrel lengths may vary from plans in the field. Extension lengths shall be built per the plan.

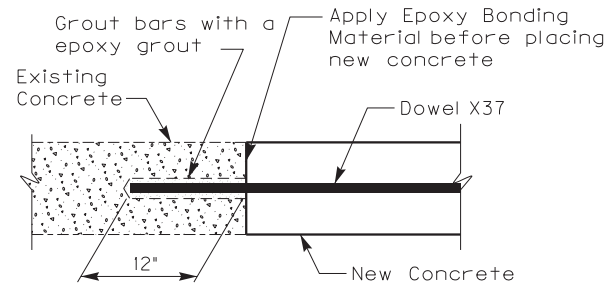


SECTION ON C
Single 5'-0" x 3'-0" x 36'-6" R.C.B.C.
18'-1 7/8" Inlet End and 18'-4 1/8" Outlet End
0.0000° Skew ~ KYHL-93 Loading ~ 0.33 Fill Slope
Unyielding Foundation

| | | | |
|--|------------|----------------------|--|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY | | | |
| SHELBY | | | |
| ROUTE | CROSSING | | |
| KY 55 | A DITCH | | |
| LAYOUT | | | |
| PREPARED BY | | | |
| Division of Structural Design | | | |
| | | SHEET NO. S2 | |
| | | DRAWING NO. 28329 | |



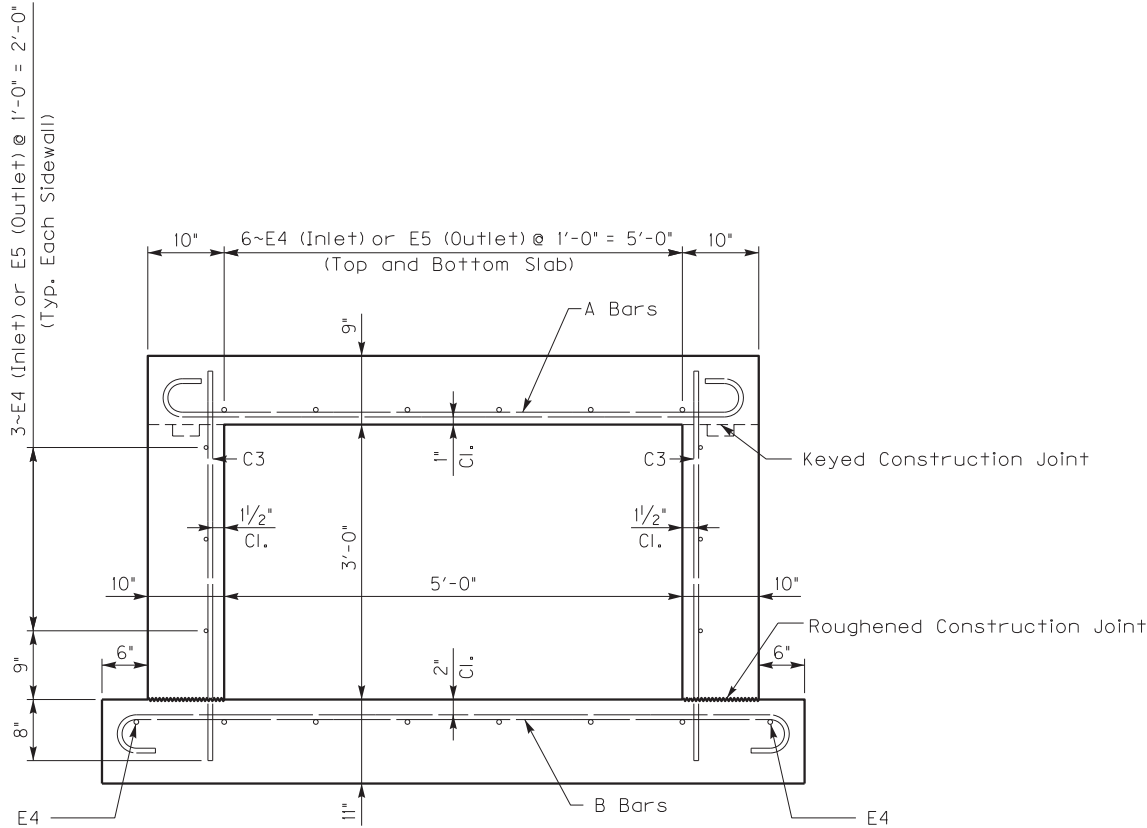
PLAN
SCALE = 1:48



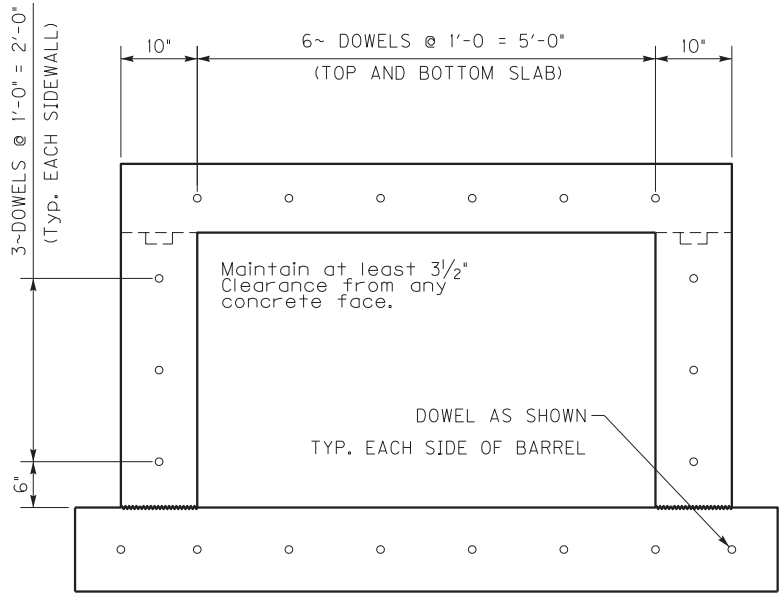
DOWEL DETAILS

NOTE: The cost of drilling holes, grouting, and epoxy bonding material shall be incidental to the cost of Class "A" Concrete.

"A" 5~R35 @ 1'-0" = 4'-0"
"B" 5~R36 @ 1'-0" = 4'-0"
Minimum Lap Distance for E 4 Bars 26 in
Minimum Lap Distance for E 5 Bars 21 in



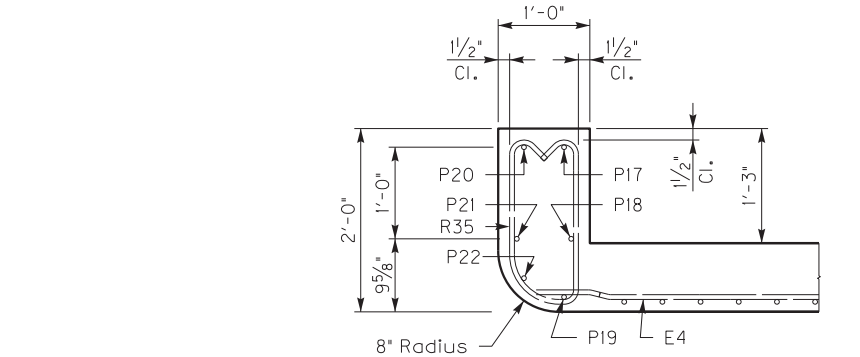
TYPICAL BARREL SECTION
SCALE = 1:12



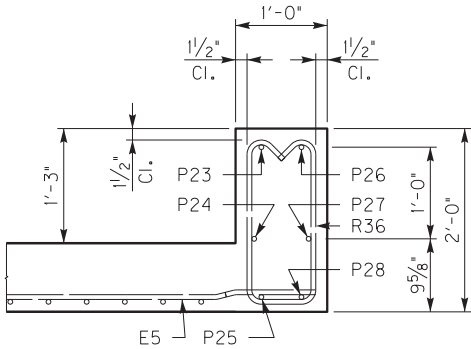
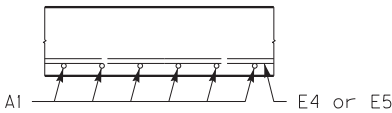
DOWEL LOCATIONS
SCALE = 1:12

| | | | |
|--|------------|----------------------------|--|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | | |
| COUNTY SHELBY | | | |
| ROUTE KY 55 | | CROSSING A DITCH | |
| BARREL | | | |
| PREPARED BY | | SHEET NO. | |
| Division of Structural Design | | S3 DRAWING NO. 28329 | |

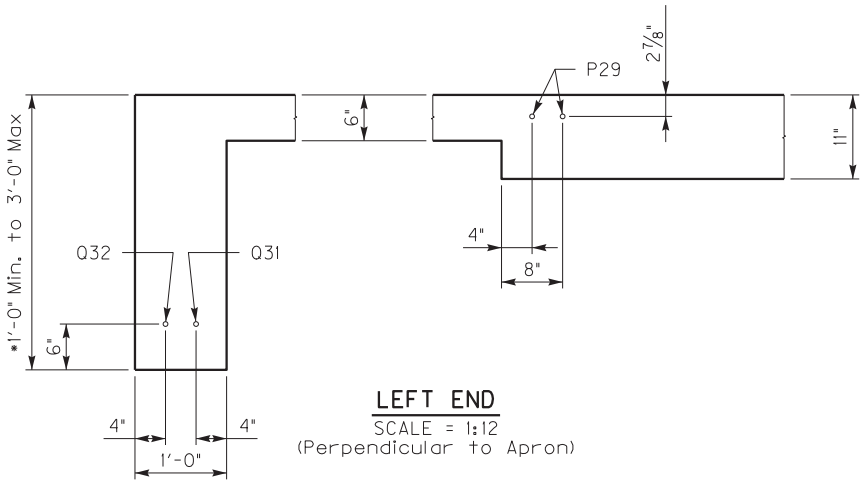
E-SHEET NAME: DATE: 05-AUG-2020 USERNAME: Joseph.vanzee FILE NAME: J:\District\05\5-9017 HSP\Culverts\0 28329 5x3 RCBC Station 296+04 CK\28329\28329.dgn



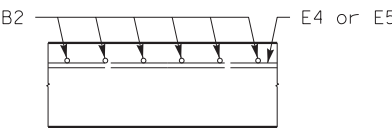
LEFT PARAPET
 SCALE = 1:12
 (Perpendicular to Parapet)



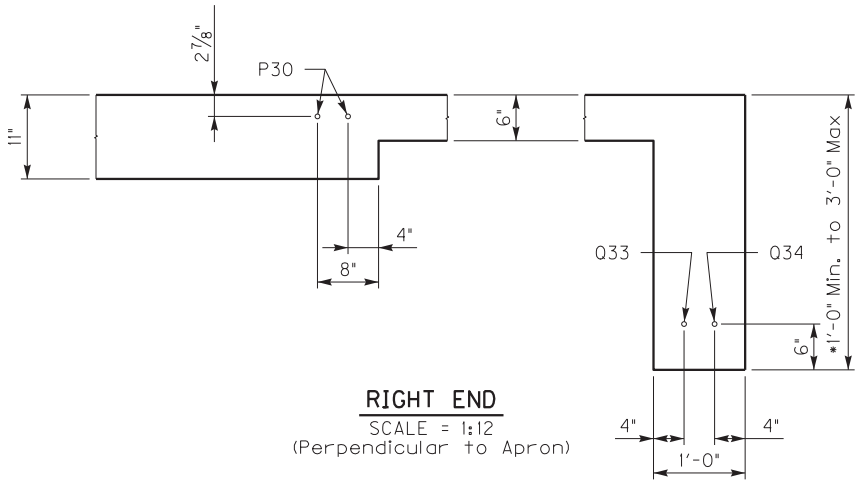
RIGHT PARAPET
 SCALE = 1:12
 (Perpendicular to Parapet)



LEFT END
 SCALE = 1:12
 (Perpendicular to Apron)



SECTION ON C
 SCALE = 1:12



RIGHT END
 SCALE = 1:12
 (Perpendicular to Apron)

*Note: Embed apron 1'-0" Min. into solid rock. 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 3'-0" long if solid rock is deep. Quantities are include for the full 3'-0" depth. Adjust concrete paid as necessary for actual depth used.

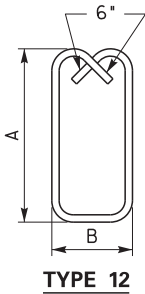
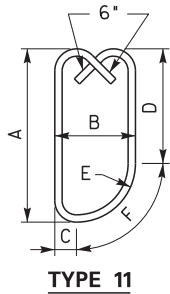
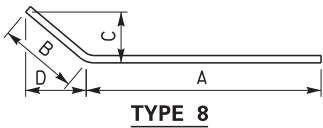
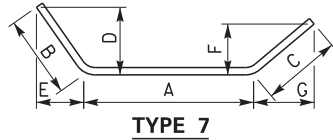
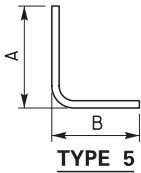
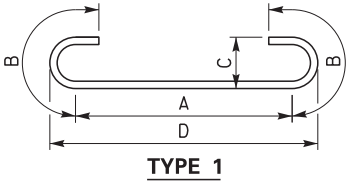
| | | |
|--|------------|-------------|
| | | |
| | | |
| | | |
| REVISION | | DATE |
| DATE: | MARCH 2020 | CHECKED BY |
| DESIGNED BY: J. VAN ZEE | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY SHELBY | | |
| ROUTE | CROSSING | |
| KY 55 | A DITCH | |
| BARREL | | |
| PREPARED BY | | SHEET NO. |
| Division of | | S4 |
| Structural Design | | DRAWING NO. |
| | | 28329 |

| |
|-------------|
| ITEM NUMBER |
| 5-9017.00 |



"A" 3~M16 @ 1'-0" = 2'-0" B.F.
 "B" 2~K15 @ 1'-0" = 1'-0" Bot of Ftg.
 "C" 1~K15 @ 1'-0" = 3'-0"

| | | | |
|--|--|--|--|
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: MARCH 2020 | | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | L. LIKINS | |
| DETAILED BY: M. BAWITHAWNG | | J. VAN ZEE | |
| <p align="center">Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS</p> | | | |
| <p align="center">COUNTY SHELBY</p> | | | |
| ROUTE KY 55 | | CROSSING A DITCH | |
| <p align="center"><i>Wings 1, 2, 3 & 4</i></p> | | | |
| <p align="center">PREPARED BY</p> <p align="center">Division of Structural Design</p> | | <p align="center">SHEET NO. S5</p> <p align="center">DRAWING NO. 28329</p> | |



BILL OF REINFORCEMENT

| MARK | TYPE | NO. | SIZE | LENGTH | LOCATION | A/E | B/F | C/G | D/H |
|------|------|-----|------|--------|----------------------------|---------|-------|-------|-------|
| A1 | I | 18 | 5 | 7- 7 | Top Slab | 5- 11 | 0- 10 | 0- 5 | 6- 4 |
| B2 | I | 18 | 5 | 8- 7 | Bottom Slab | 6- 11 | 0- 10 | 0- 5 | 7- 4 |
| C3 | Str. | 20 | 5 | 4- 3 | Sidewalls | | | | |
| E4 | Str. | 20 | 4 | 5- 2 | Slabs & Sidewalls (Inlet) | | | | |
| E5 | Str. | 20 | 4 | 3- 8 | Slabs & Sidewalls (Outlet) | | | | |
| G6 | 5 | 4 | 5 | 5- 6 | B.F Wings 1, 2, 3 & 4 | 3- 7¼ | 2- 0 | | |
| G7 | 5 | 4 | 5 | 5- 9 | B.F Wings 1, 2, 3 & 4 | 3- 11 | 2- 0 | | |
| G8 | 5 | 4 | 5 | 6- 1 | B.F Wings 1, 2, 3 & 4 | 4- 2¾ | 2- 0 | | |
| G9 | 5 | 4 | 5 | 6- 5 | B.F Wings 1, 2, 3 & 4 | 4- 6⅜ | 2- 0 | | |
| G10 | 5 | 4 | 5 | 6- 9 | B.F Wings 1, 2, 3 & 4 | 4- 10⅞ | 2- 0 | | |
| G11 | 5 | 4 | 5 | 7- 0 | B.F Wings 1, 2, 3 & 4 | 5- 1¾ | 2- 0 | | |
| G12 | 5 | 4 | 5 | 7- 4 | B.F Wings 1, 2, 3 & 4 | 5- 5½ | 2- 0 | | |
| G13 | 5 | 4 | 5 | 7- 5 | B.F Wings 1, 2, 3 & 4 | 5- 7 | 2- 0 | | |
| H14 | Str. | 32 | 5 | 3- 8 | Top Ftg Wings 1, 2, 3 & 4 | | | | |
| K15 | Str. | 24 | 5 | 8- 3 | Ftg Wings 1, 2, 3 & 4 | | | | |
| M16 | 8 | 12 | 5 | 10- 3 | B.F. Wings 1, 2, 3 & 4 | 8- 1¾ | 2- 2 | 1- 6⅜ | 1- 6⅜ |
| P17 | 7 | I | 5 | 9- 0 | B.F. Parapet Lt. End | 5- 3 | 1- 11 | 1- 11 | 1- 4¼ |
| | | | | | | 1- 4¼ | 1- 4¼ | 1- 4¼ | |
| P18 | 7 | I | 5 | 9- 1 | B.F. Parapet Lt. End | 5- 1⅞ | 2- 0¼ | 2- 0¼ | 1- 5⅞ |
| | | | | | | 1- 5⅞ | 1- 5⅞ | 1- 5⅞ | |
| P19 | 7 | I | 5 | 9- 0 | B.F. Parapet Lt. End | 5- 3 | 1- 11 | 1- 11 | 1- 4¼ |
| | | | | | | 1- 4¼ | 1- 4¼ | 1- 4¼ | |
| P20 | 7 | I | 5 | 8- 4 | F.F. Parapet Lt. End | 5- 0 | 1- 8¼ | 1- 8¼ | 1- 2⅜ |
| | | | | | | 1- 2⅜ | 1- 2⅜ | 1- 2⅜ | |
| P21 | 7 | I | 5 | 8- 3 | F.F. Parapet Lt. End | 5- 1⅞ | 1- 7 | 1- 7 | 1- 1⅜ |
| | | | | | | 1- 1⅞ | 1- 1⅜ | 1- 1⅜ | |
| P22 | 7 | I | 5 | 8- 4 | F.F. Parapet Lt. End | 5- 0 | 1- 8¼ | 1- 8¼ | 1- 2⅜ |
| | | | | | | 1- 2⅜ | 1- 2⅜ | 1- 2⅜ | |
| P23 | 7 | I | 5 | 9- 0 | B.F. Parapet Rt. End | 5- 3 | 1- 11 | 1- 11 | 1- 4¼ |
| | | | | | | 1- 4¼ | 1- 4¼ | 1- 4¼ | |
| P24 | 7 | I | 5 | 9- 1 | B.F. Parapet Rt. End | 5- 1⅞ | 2- 0¼ | 2- 0¼ | 1- 5⅞ |
| | | | | | | 1- 5⅞ | 1- 5⅞ | 1- 5⅞ | |
| P25 | 7 | I | 5 | 9- 0 | B.F. Parapet Rt. End | 5- 3 | 1- 11 | 1- 11 | 1- 4¼ |
| | | | | | | 1- 4¼ | 1- 4¼ | 1- 4¼ | |
| P26 | 7 | I | 5 | 8- 4 | F.F. Parapet Rt. End | 5- 0 | 1- 8¼ | 1- 8¼ | 1- 2⅜ |
| | | | | | | 1- 2⅜ | 1- 2⅜ | 1- 2⅜ | |
| P27 | 7 | I | 5 | 8- 3 | F.F. Parapet Rt. End | 5- 1⅞ | 1- 7 | 1- 7 | 1- 1⅜ |
| | | | | | | 1- 1⅞ | 1- 1⅜ | 1- 1⅜ | |
| P28 | 7 | I | 5 | 8- 4 | F.F. Parapet Rt. End | 5- 0 | 1- 8¼ | 1- 8¼ | 1- 2⅜ |
| | | | | | | 1- 2⅜ | 1- 2⅜ | 1- 2⅜ | |
| P29 | Str. | 2 | 5 | 7- 4 | Bottom Slab Lt. End | | | | |
| P30 | Str. | 2 | 5 | 7- 4 | Bottom Slab Rt. End | | | | |
| Q31 | 7 | I | 5 | 20- 7 | Apron Lt. End | 13- 8 | 3- 5⅞ | 3- 5⅞ | 2- 5⅞ |
| | | | | | | 2- 5⅞ | 2- 5⅞ | 2- 5⅞ | |
| Q32 | 7 | I | 5 | 21- 1 | Apron Lt. End | 13- 11¼ | 3- 7½ | 3- 7½ | 2- 6¾ |
| | | | | | | 2- 6¾ | 2- 6¾ | 2- 6¾ | |
| Q33 | 7 | I | 5 | 20- 7 | Apron Rt. End | 13- 8 | 3- 5⅞ | 3- 5⅞ | 2- 5⅞ |
| | | | | | | 2- 5⅞ | 2- 5⅞ | 2- 5⅞ | |
| Q34 | 7 | I | 5 | 21- 1 | Apron Rt. End | 13- 11¼ | 3- 7½ | 3- 7½ | 2- 6¾ |
| | | | | | | 2- 6¾ | 2- 6¾ | 2- 6¾ | |
| R35 | IIs | 5 | 5 | 4- 11 | Parapet Wall (Left End) | 1- 9½ | 0- 9 | 0- 2½ | 1- 3 |
| | | | | | | 0- 6½ | 0- 9¾ | | |
| R36 | I2s | 5 | 5 | 5- 1 | Parapet Wall (Right End) | 1- 9½ | 0- 9 | | |
| X37 | Str. | 40 | 8 | 2- 0 | Dowels | | | | |

REVISION

DATE

DATE: MARCH 2020

CHECKED BY

DESIGNED BY: J. VAN ZEE

L. LIKINS

DETAILED BY: M. BAWITHAWNG

J. VAN ZEE

Commonwealth of Kentucky

DEPARTMENT OF HIGHWAYS

COUNTY

SHELBY

ROUTE

CROSSING

KY 55

A DITCH

Bill of Reinforcement

PREPARED BY

SHEET NO.

Division of

Structural Design

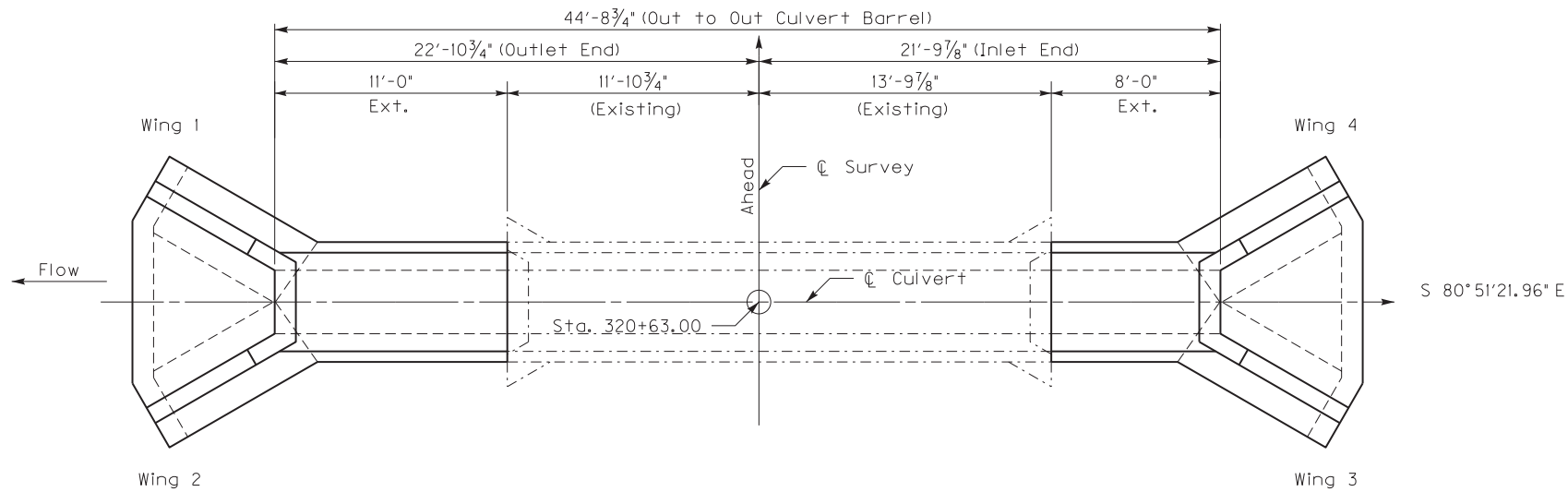
S6

DRAWING NO.

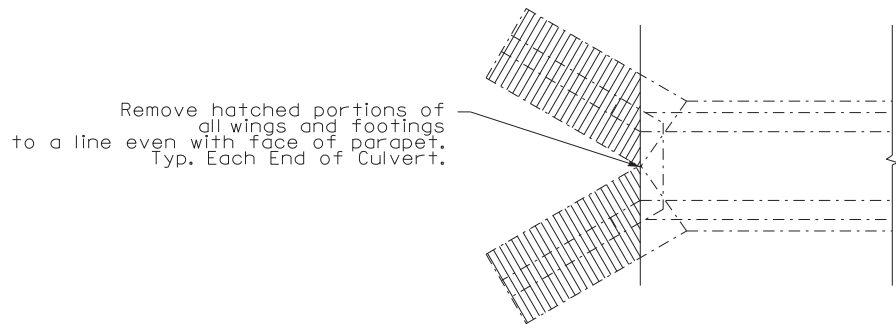
28329

ITEM NUMBER

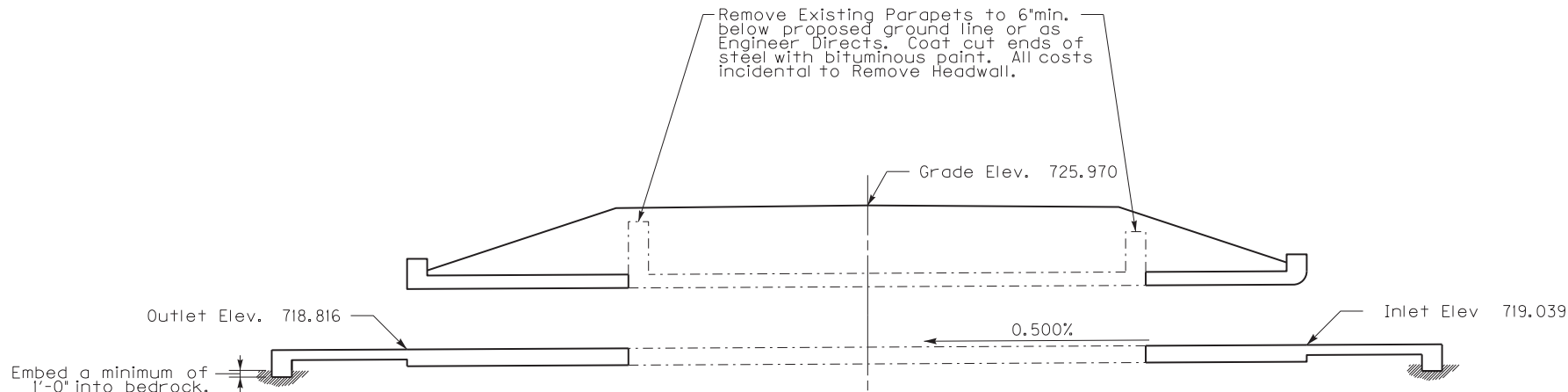
5-9017.00



PLAN
SCALE = 1:48



Removal Details
SCALE = 1:48



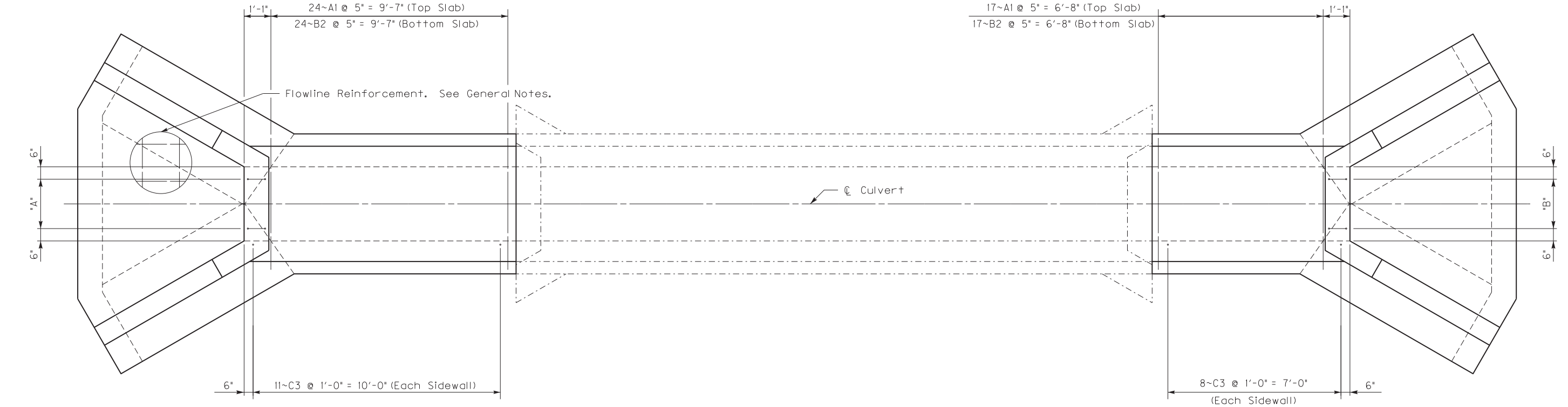
SECTION ON C
Single 3'-0" x 3'-0" x 44'-8 3/4" R.C.B.C.
21'-9 7/8" Inlet End and 22'-10 3/4" Outlet End
0.0000° Skew ~KYHL-93 Loading ~ 0.33 Fill Slope
Unyielding Foundation

Note: Field verify all dimensions prior to ordering materials. All dimensions are taken from existing survey. Actual barrel lengths may vary from plans in the field. Extension lengths shall be built per the plan.

| | | |
|--|---------------------|---|
| | | |
| | | |
| REVISION | | DATE |
| DATE: MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | N.O. BODY | |
| DETAILED BY: B. Miller | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY SHELBY | | |
| ROUTE KY 55 | CROSSING A DITCH | |
| LAYOUT | | |
| PREPARED BY Division of Structural Design | | SHEET NO. S2 DRAWING NO. 28330 |

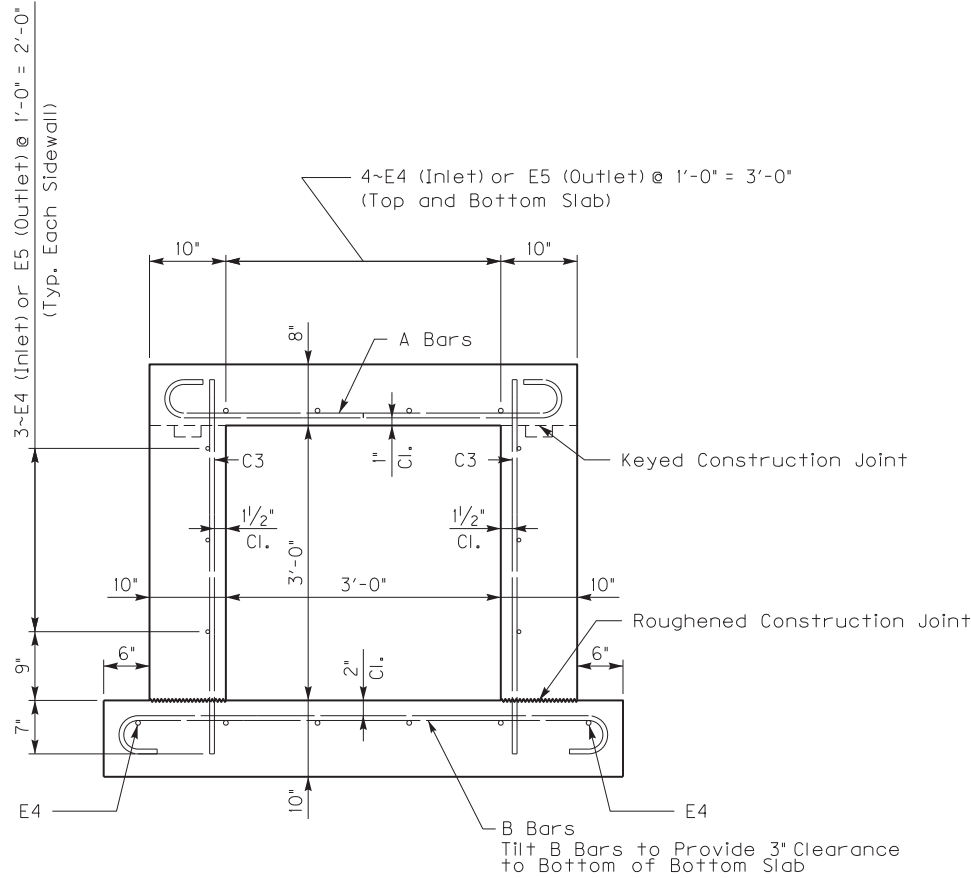
| |
|-------------|
| ITEM NUMBER |
| 5-9017.00 |

E-SHEET NAME: USERNAME: Joseph.vanzee FILE NAME: J:\District05\5-9017 HSP\Culverts\28330 3x3 RCBC Station 320+63 shelby county\28330\28330.dgn DATE: 22-MAY-2020



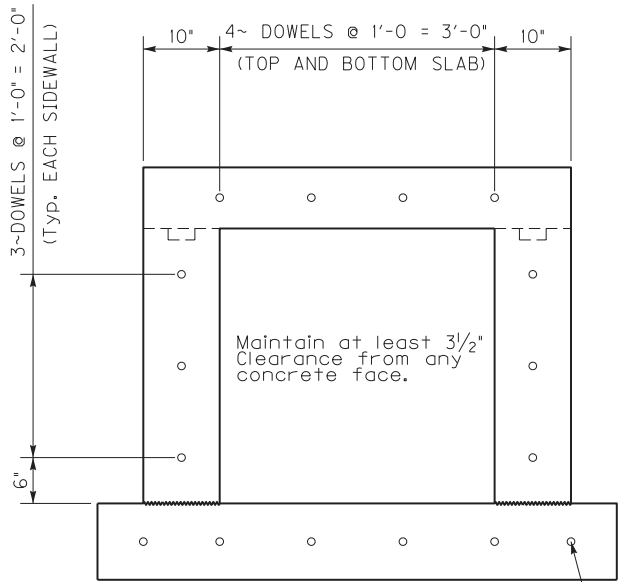
PLAN

SCALE = 1:24



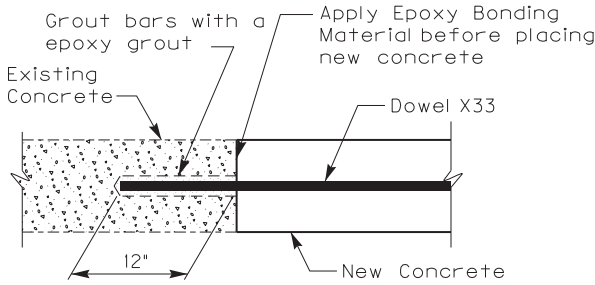
TYPICAL BARREL SECTION

SCALE = 1:12



DOWEL LOCATIONS

SCALE = 1:12



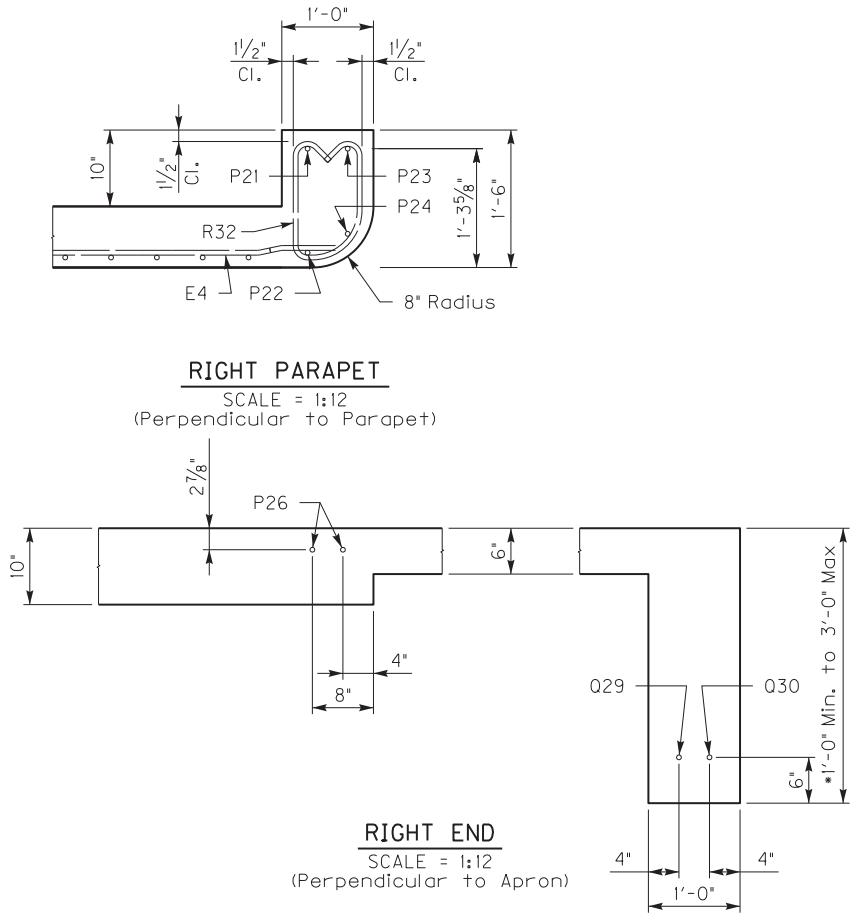
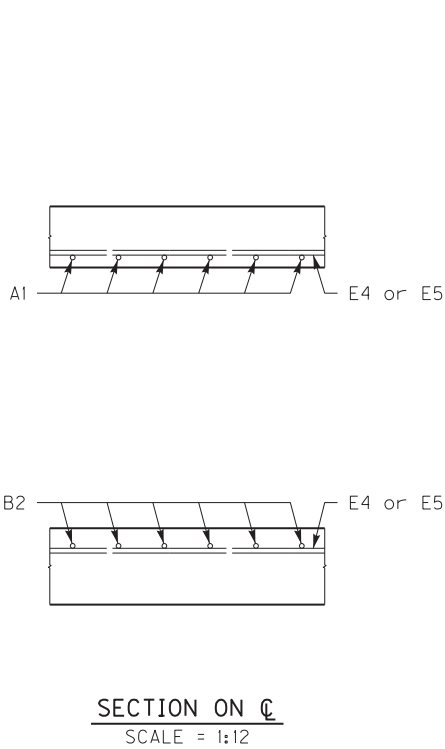
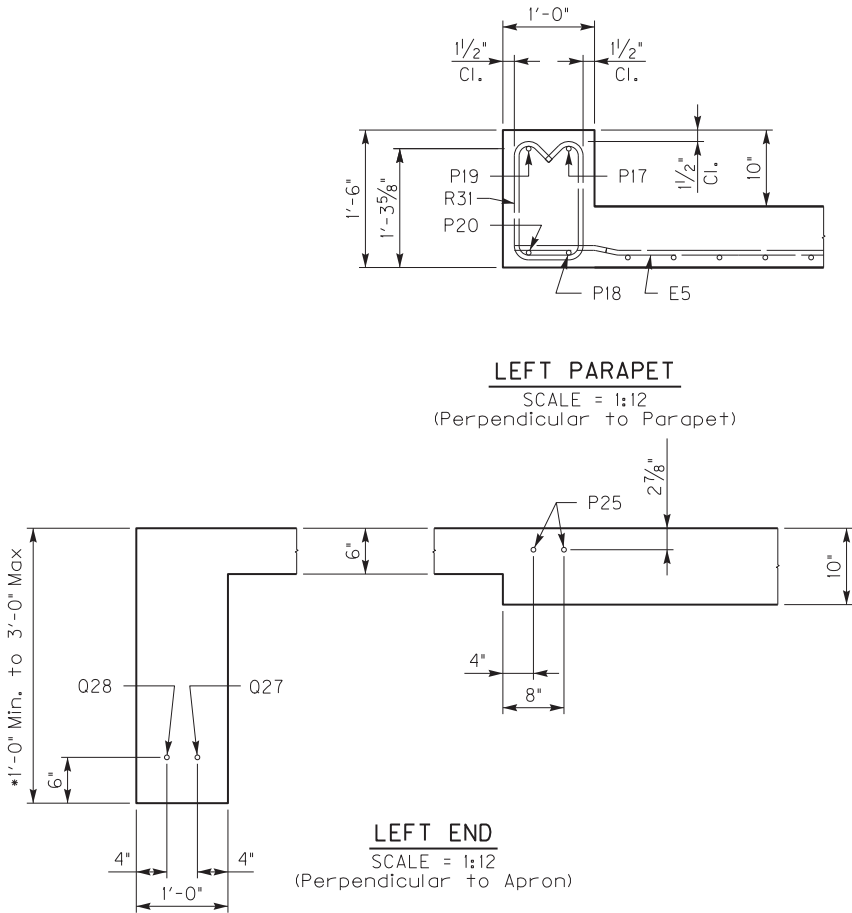
DOWEL DETAILS

NOTE: The cost of drilling holes, grouting, and epoxy bonding material shall be incidental to the cost of Class "A" Concrete.

A 3~R31 @ 1'-0" = 2'-0"
B 3~R32 @ 1'-0" = 2'-0"
Minimum Lap Distance for E 4 Bars 26 in
Minimum Lap Distance for E 5 Bars 21 in

| ITEM NUMBER |
|-------------|
| 5-9017.00 |

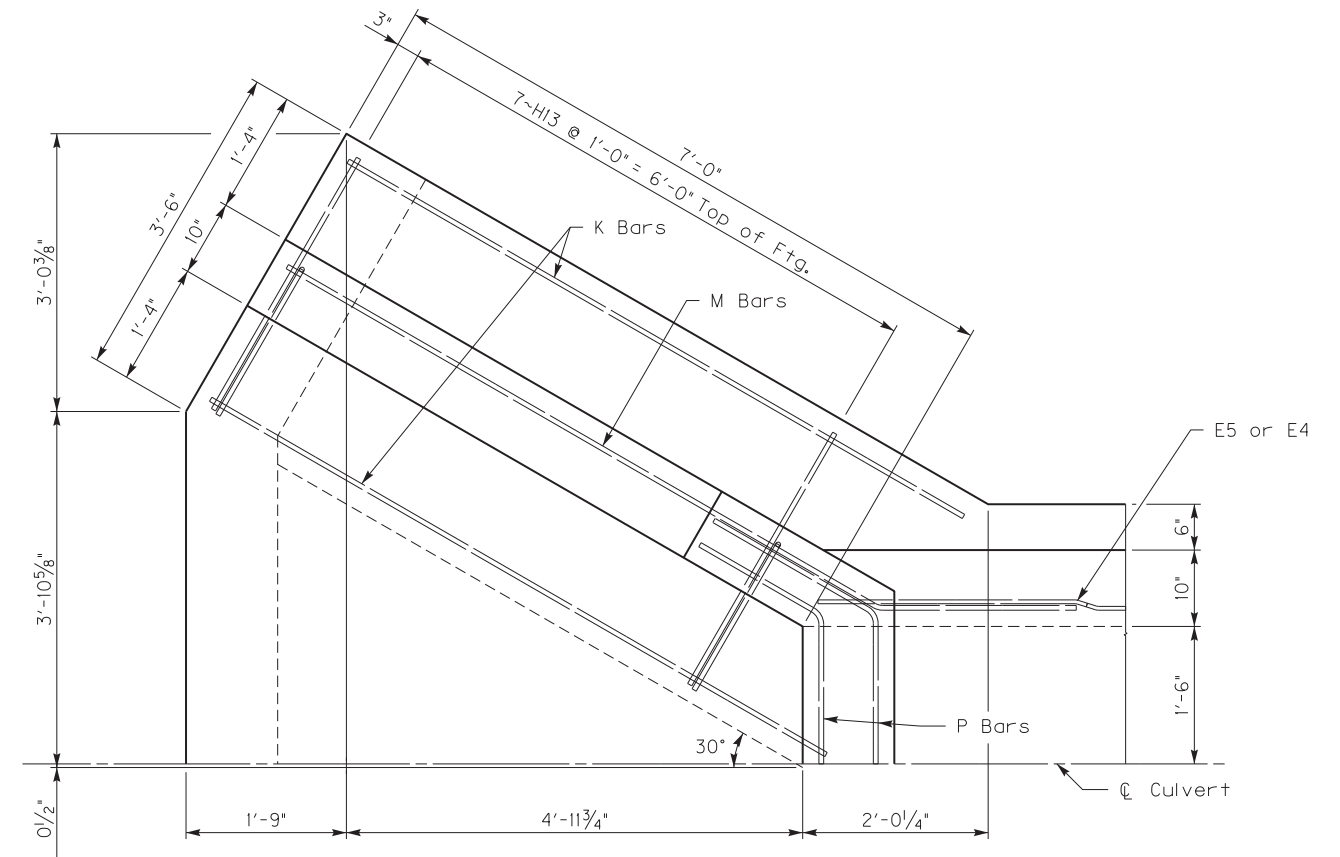
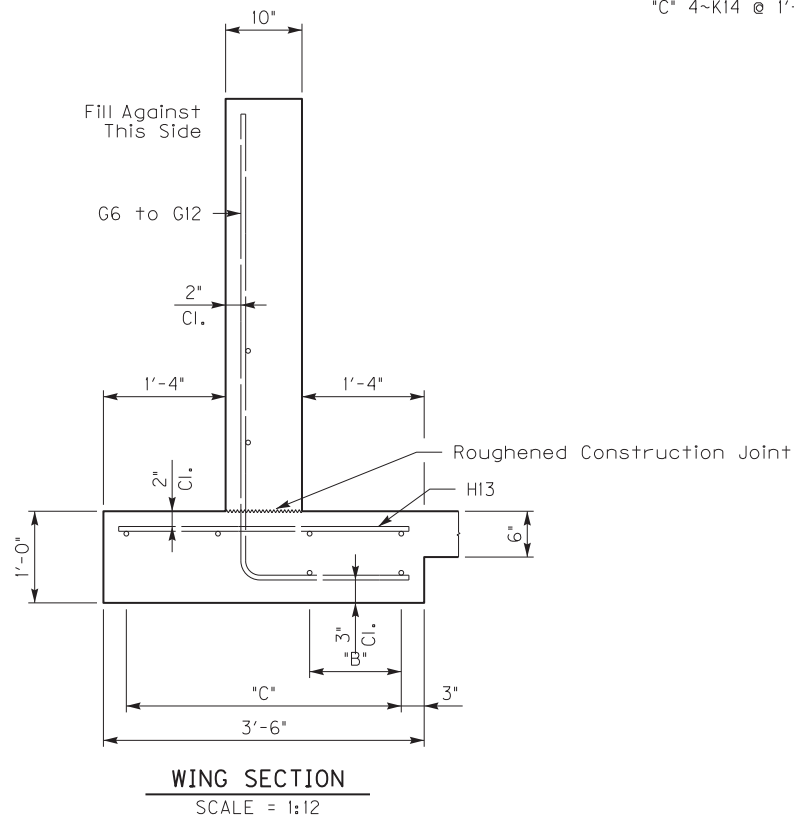
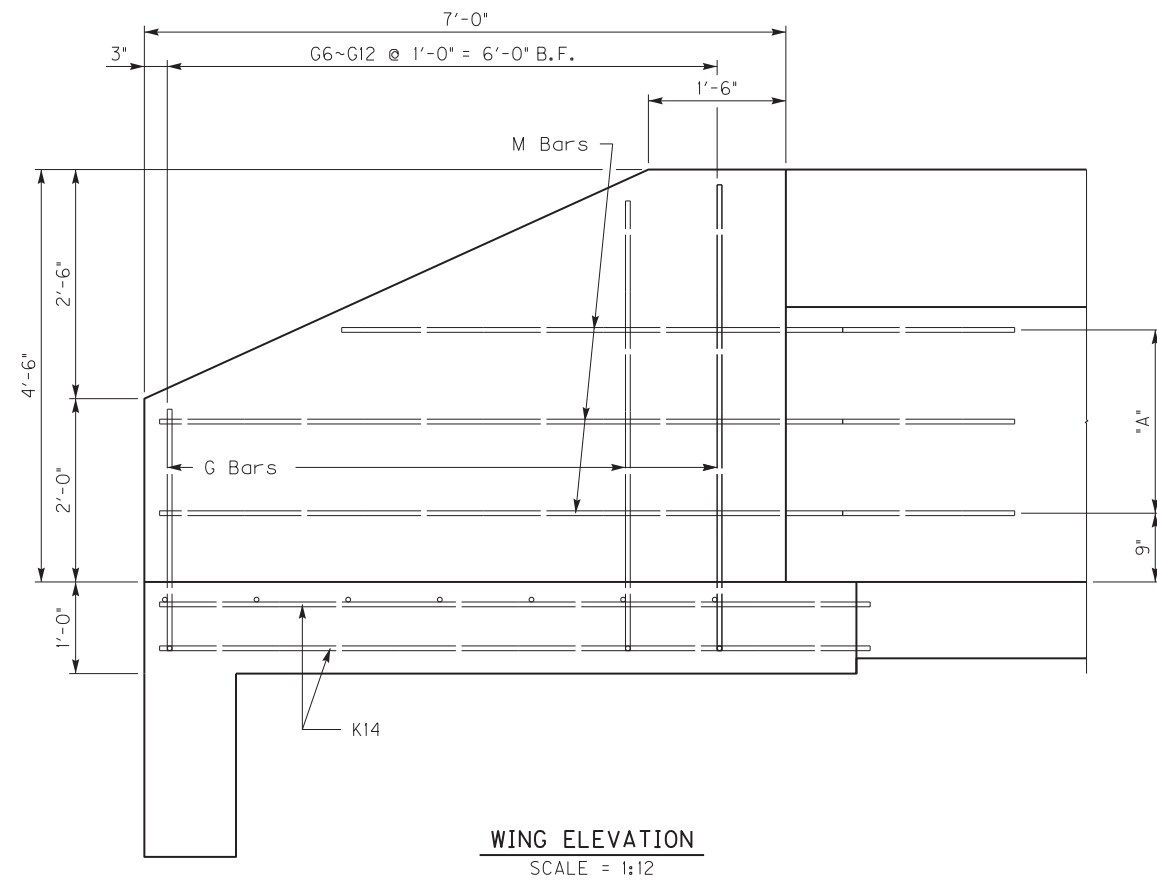
| | | |
|--|---------------------|---|
| | | |
| | | |
| REVISION | | DATE |
| DATE: MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | N.O. BODY | |
| DETAILED BY: B. Miller | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY SHELBY | | |
| ROUTE KY 55 | CROSSING A DITCH | |
| BARREL | | |
| PREPARED BY Division of Structural Design | | SHEET NO. S3 DRAWING NO. 28330 |



•Note: Embed apron 1'-0" Min. into solid rock. 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 3'-0" long if solid rock is deep. Quantities are include for the full 3'-0" depth. Adjust concrete paid as necessary for actual depth used.

| ITEM NUMBER |
|-------------|
| 5-9017.00 |

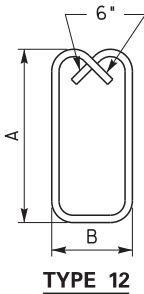
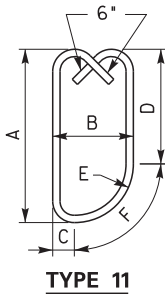
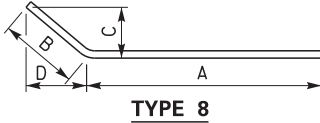
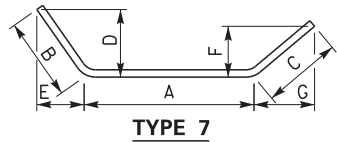
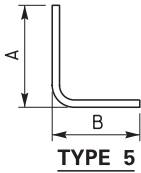
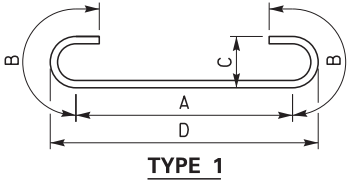
| | | |
|--|---------------------|---|
| | | |
| | | |
| REVISION | | DATE |
| DATE: MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | N.O. BODY | |
| DETAILED BY: B. Miller | J. VAN ZEE | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY SHELBY | | |
| ROUTE KY 55 | CROSSING A DITCH | |
| BARREL | | |
| PREPARED BY Division of Structural Design | | SHEET NO. S4 DRAWING NO. 28330 |



PLAN
SCALE = 1:12

"A" 2~M15, 1~M16 @ 1'-0" = 2'-0" B.F.
 "B" 2~K14 @ 1'-0" = 1'-0" Bot of Ftg.
 "C" 4~K14 @ 1'-0" = 3'-0"

| | | | |
|--|----------------------------|------------|--|
| | | | |
| | | | |
| | | | |
| REVISION | | DATE | |
| DATE: | MARCH 2020 | CHECKED BY | |
| DESIGNED BY: J. VAN ZEE | | N.O. BODY | |
| DETAILED BY: B. Miller | | J. VAN ZEE | |
| <p align="center">Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS</p> | | | |
| <p align="center">COUNTY</p> <p align="center">SHELBY</p> | | | |
| ROUTE KY 55 | CROSSING A DITCH | | |
| <p align="center"><i>Wings 1, 2, 3 & 4</i></p> | | | |
| <p align="center">PREPARED BY</p> <p align="center">Division of Structural Design</p> | | | <p align="center">SHEET NO. S5</p> <p align="center">DRAWING NO. 28330</p> |



| BILL OF REINFORCEMENT | | | | | | | | | |
|-----------------------|------|-----|------|--------|----------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| MARK | TYPE | NO. | SIZE | LENGTH | LOCATION | A/E | B/F | C/G | D/H |
| A1 | I | 41 | 5 | 5- 7 | Top Slab | 3- 11 | 0- 10 | 0- 5 | 4- 4 |
| B2 | I | 41 | 5 | 6- 7 | Bottom Slab | 4- 11 | 0- 10 | 0- 5 | 5- 4 |
| C3 | Str. | 38 | 5 | 4- 1 | Sidewalls | | | | |
| E4 | Str. | 16 | 4 | 7- 8 | Slabs & Sidewalls (Inlet) | | | | |
| E5 | Str. | 16 | 4 | 10- 8 | Slabs & Sidewalls (Outlet) | | | | |
| G6 | 5 | 4 | 5 | 4- 4 | B.F Wings 1, 2, 3 & 4 | 2- 7 ⁵ / ₈ | 1- 10 | | |
| G7 | 5 | 4 | 5 | 4- 10 | B.F Wings 1, 2, 3 & 4 | 3- 1 ¹ / ₈ | 1- 10 | | |
| G8 | 5 | 4 | 5 | 5- 3 | B.F Wings 1, 2, 3 & 4 | 3- 6 ¹ / ₂ | 1- 10 | | |
| G9 | 5 | 4 | 5 | 5- 8 | B.F Wings 1, 2, 3 & 4 | 4- 0 | 1- 10 | | |
| G10 | 5 | 4 | 5 | 6- 2 | B.F Wings 1, 2, 3 & 4 | 4- 5 ³ / ₈ | 1- 10 | | |
| G11 | 5 | 4 | 5 | 6- 7 | B.F Wings 1, 2, 3 & 4 | 4- 10 ¹ / ₈ | 1- 10 | | |
| G12 | 5 | 4 | 5 | 6- 9 | B.F Wings 1, 2, 3 & 4 | 5- 1 | 1- 10 | | |
| H13 | Str. | 28 | 5 | 3- 2 | Top Ftg Wings 1, 2, 3 & 4 | | | | |
| K14 | Str. | 24 | 5 | 7- 9 | Ftg Wings 1, 2, 3 & 4 | | | | |
| M15 | 8 | 8 | 5 | 9- 7 | B.F. Wings 1, 2, 3 & 4 | 7- 5 ¹ / ₂ | 2- 2 | 1- 1 | 1- 10 ¹ / ₂ |
| M16 | 8 | 4 | 5 | 7- 7 | B.F. Wings 1, 2, 3 & 4 | 5- 5 ⁵ / ₈ | 2- 2 | 1- 1 | 1- 10 ¹ / ₂ |
| P17 | 7 | 1 | 5 | 7- 5 | B.F. Parapet Lt. End | 3- 6 ³ / ₄ | 1- 11 ⁵ / ₈ | 1- 11 ⁵ / ₈ | 1- 8 ¹ / ₂ |
| | | | | | | 0- 11 ³ / ₄ | 1- 8 ¹ / ₂ | 0- 11 ³ / ₄ | |
| P18 | 7 | 1 | 5 | 7- 5 | B.F. Parapet Lt. End | 3- 6 ³ / ₄ | 1- 11 ⁵ / ₈ | 1- 11 ⁵ / ₈ | 1- 8 ¹ / ₂ |
| | | | | | | 0- 11 ³ / ₄ | 1- 8 ¹ / ₂ | 0- 11 ³ / ₄ | |
| P19 | 7 | 1 | 5 | 6- 5 | F.F. Parapet Lt. End | 3- 1 ³ / ₄ | 1- 8 ¹ / ₄ | 1- 8 ¹ / ₄ | 1- 5 ⁵ / ₈ |
| | | | | | | 0- 10 ¹ / ₈ | 1- 5 ⁵ / ₈ | 0- 10 ¹ / ₈ | |
| P20 | 7 | 1 | 5 | 6- 5 | F.F. Parapet Lt. End | 3- 1 ³ / ₄ | 1- 8 ¹ / ₄ | 1- 8 ¹ / ₄ | 1- 5 ⁵ / ₈ |
| | | | | | | 0- 10 ¹ / ₈ | 1- 5 ⁵ / ₈ | 0- 10 ¹ / ₈ | |
| P21 | 7 | 1 | 5 | 7- 5 | B.F. Parapet Rt. End | 3- 6 ³ / ₄ | 1- 11 ⁵ / ₈ | 1- 11 ⁵ / ₈ | 1- 8 ¹ / ₂ |
| | | | | | | 0- 11 ³ / ₄ | 1- 8 ¹ / ₂ | 0- 11 ³ / ₄ | |
| P22 | 7 | 1 | 5 | 7- 5 | B.F. Parapet Rt. End | 3- 6 ³ / ₄ | 1- 11 ⁵ / ₈ | 1- 11 ⁵ / ₈ | 1- 8 ¹ / ₂ |
| | | | | | | 0- 11 ³ / ₄ | 1- 8 ¹ / ₂ | 0- 11 ³ / ₄ | |
| P23 | 7 | 1 | 5 | 6- 5 | F.F. Parapet Rt. End | 3- 1 ³ / ₄ | 1- 8 ¹ / ₄ | 1- 8 ¹ / ₄ | 1- 5 ⁵ / ₈ |
| | | | | | | 0- 10 ¹ / ₈ | 1- 5 ⁵ / ₈ | 0- 10 ¹ / ₈ | |
| P24 | 7 | 1 | 5 | 6- 5 | F.F. Parapet Rt. End | 3- 1 ³ / ₄ | 1- 8 ¹ / ₄ | 1- 8 ¹ / ₄ | 1- 5 ⁵ / ₈ |
| | | | | | | 0- 10 ¹ / ₈ | 1- 5 ⁵ / ₈ | 0- 10 ¹ / ₈ | |
| P25 | Str. | 2 | 5 | 5- 4 | Bottom Slab Lt. End | | | | |
| P26 | Str. | 2 | 5 | 5- 4 | Bottom Slab Rt. End | | | | |
| Q27 | 7 | 1 | 5 | 13- 6 | Apron Lt. End | 7- 4 ¹ / ₈ | 3- 1 | 3- 1 | 1- 6 ¹ / ₂ |
| | | | | | | 2- 8 | 1- 6 ¹ / ₂ | 2- 8 | |
| Q28 | 7 | 1 | 5 | 13- 10 | Apron Lt. End | 7- 6 ¹ / ₄ | 3- 2 | 3- 2 | 1- 7 |
| | | | | | | 2- 8 ⁷ / ₈ | 1- 7 | 2- 8 ⁷ / ₈ | |
| Q29 | 7 | 1 | 5 | 13- 6 | Apron Rt. End | 7- 4 ¹ / ₈ | 3- 1 | 3- 1 | 1- 6 ¹ / ₂ |
| | | | | | | 2- 8 | 1- 6 ¹ / ₂ | 2- 8 | |
| Q30 | 7 | 1 | 5 | 13- 10 | Apron Rt. End | 7- 6 ¹ / ₄ | 3- 2 | 3- 2 | 1- 7 |
| | | | | | | 2- 8 ⁷ / ₈ | 1- 7 | 2- 8 ⁷ / ₈ | |
| R31 | 12s | 3 | 5 | 4- 1 | Parapet Wall (Left End) | 1- 3 ¹ / ₂ | 0- 9 | | |
| R32 | 11s | 3 | 5 | 3- 11 | Parapet Wall (Right End) | 1- 3 ¹ / ₂ | 0- 9 | 0- 2 ¹ / ₂ | 0- 9 |
| | | | | | | 0- 6 ¹ / ₂ | 0- 9 ³ / ₄ | | |
| X33 | Str. | 32 | 8 | 2- 0 | Dowels | | | | |

REVISION

DATE

DATE: MARCH 2020

CHECKED BY

DESIGNED BY: J. VAN ZEE

N.O. BODY

DETAILED BY: B. Miller

J. VAN ZEE

Commonwealth of Kentucky

DEPARTMENT OF HIGHWAYS

COUNTY

SHELBY

ROUTE

CROSSING

KY 55

A DITCH

Bill of Reinforcement

PREPARED BY

SHEET NO.

Division of

S6

Structural Design

DRAWING NO.

28330

| ITEM NUMBER |
|-------------|
| 5-9017.00 |