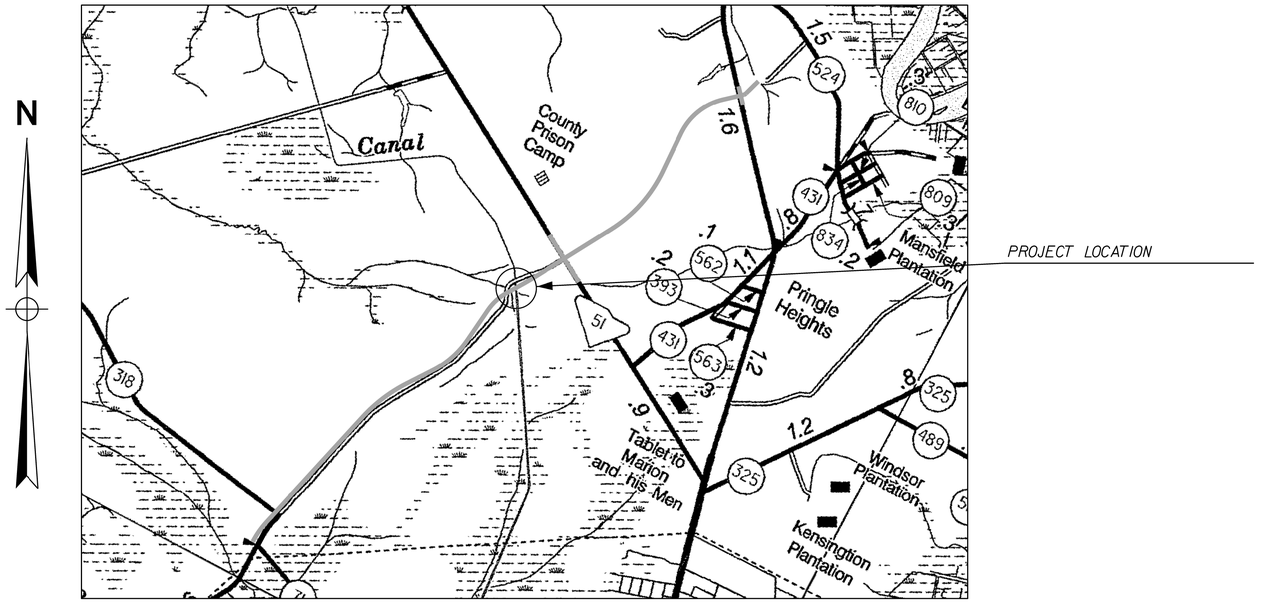
CONSTRUCTION PLANS

FED. ROAD DIV.NO.	STATE	COUNTY	D&F PROJECT NO.	ROAD NAME	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	GEORGETOWN	31811.01	BRICK CHIMNEY		1	

GEORGETOWN COUNTY DEPARTMENT OF PUBLIC SERVICES
DIVISION OF PUBLIC WORKS

PLAN OF PROPOSED BRIDGE FOR PHASE I - BRICK CHIMNEY ROAD CORRIDOR

INDEX OF SHEETS



LAYOUT
1" = 2640'

Submit Shop Plans to:

Davis & Floyd, Inc.
1319 Highway 72/221 E
Greenwood, SC 29649

Telephone: (864) 229-5211

Approximate Location of Bridge is

Latitude	33° - 26' - 02" N
Longitude	79° - 18' - 14" W

ASSET ID "NOT ASSIGNED"

NET LENGTH OF ROADWAY	0.000	MILES
NET LENGTH OF BRIDGES	0.010	MILES
NET LENGTH OF PROJECT	0.010	MILES
LENGTH OF EXCEPTIONS	0.000	MILES
GROSS LENGTH OF PROJECT	0.010	MILES

NOTE: ALL WORKMANSHIP AND MATERIAL ON THIS PROJECT TO CONFORM WITH SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2007 EDITION), AND BOOK OF STANDARD DRAWINGS FOR ROAD CONSTRUCTION.

RAILROAD INVOLVEMENT?
YES / (NO)

3 DAYS BEFORE DIGGING IN
SOUTH CAROLINA

CALL 811

PALMETTO UTILITY PROTECTION SERVICES, INC. (PUPS)
ALL UTILITIES MAY NOT BE A MEMBER OF PUPS.

CONSULTING ENGINEERING FIRM

SOUTH CAROLINA
DAVIS & FLOYD, INC.
No. C00538
CERTIFICATE OF AUTHORIZATION

CONSULTANT - PROJECT ENGINEER

SOUTH CAROLINA
PROFESSIONAL ENGINEER
No. 32080
11/25/19
ROBERT G. STEVENSON, JR.

FOR CONSTRUCTION : _____
DATE

SCALE: 2450.000 ft / in.
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11/25/2019

TABULATION OF ESTIMATED QUANTITIES

ITEM	2.0" SCHEDULE 80 PVC CONDUIT	CONC. FOR STRUCTURES CLASS 4000	GROOVED SURFACE FINISH	REINF. STEEL FOR STRUCTURES (BRIDGE)	PRESTRESSED CONC. BEAM (TYPE I MOD.)	CONCRETE BRIDGE RAILING WALL (2'8" HT)	DYNAMIC PILE ANALYZER TEST SETUP	PILE DRIVING SET-UP	STEEL PIPE PILING (18" DIAMETER)	STEEL PIPE INDEX PILING (18" DIAMETER)	ELASTOMERIC BEARING	AGGREGATE UNDERDRAIN (AGG #789) WITH 4" PERF. PIPE FOR STRUCTURE	WATERPROOFING (SUBSTRUCTURE-SECOND METHOD)
	L.F.	C.Y.	S.Y.	LBS.	L.F.	L.F.	EA.	EA.	L.F.	L.F.	EA.	TONS	S.Y.
END BENT 1	-	29.6	-	7,183	-	-	2	8	171	29	-	60	16.1
END BENT 2	-	41.0	-	7,764	-	-	2	9	197	29	-	73	17.8
SUPERSTRUCTURE	224	98.3	255	19,246	324.8	110.0	-	-	-	-	12	-	-
APPROACH SLAB #1	-	34.4	-	10,298	-	-	-	-	-	-	-	-	-
APPROACH SLAB #2	-	34.4	-	10,298	-	-	-	-	-	-	-	-	-
TOTALS	224	237.7	255	54,788	324.8	110.0	4	17	368	58	12	133	33.9

SUMMARY OF ESTIMATED QUANTITIES

ITEM NO.	BID ITEM	UNIT	QUANTITY
6750278	FURNISH AND INSTALL 2.0" SCHEDULE 80 PVC CONDUIT	L.F.	224
7011400	CONCRETE FOR STRUCTURES - CLASS 4000	C.Y.	237.7
7023200	GROOVED SURFACE FINISH	S.Y.	255
7031200	REINFORCING STEEL FOR STRUCTURES (BRIDGE)	LBS.	54,788
7041010	PRESTRESSED CONCRETE BEAM (TYPE I MOD.)	L.F.	324.8
7054008	CONCRETE BRIDGE RAILING WALL (2'8" HT)	L.F.	110.0
7110001	DYNAMIC PILE ANALYZER TEST SETUP	EA.	4
7110010	PILE DRIVING SET-UP	EA.	17
7113180	STEEL PIPE PILING (18" DIAMETER)	L.F.	368
7113182	STEEL PIPE INDEX PILING (18" DIAMETER)	L.F.	58
7243100	ELASTOMERIC BEARING	EA.	12
8011210	AGGREGATE UNDERDRAIN (AGG #789) WITH 4" PERF. PIPE FOR STRUCTURES	TONS	133
8142100	WATERPROOFING (SUBSTRUCTURE - SECOND METHOD)	S.Y.	33.9

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11/25/2019

SOUTH CAROLINA DAVIS & FLOYD, INC. No. C00538 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 32080 11/25/19 ROBERT G. STEVENSON, JR.

3229 W. MONTAGUE AVENUE
CHARLESTON, SC 29418
(843) 554-8602

DAVIS & FLOYD
SINCE 1954

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
5			
4			
3			
2			
1			

DESIGNED BY JFE DRAWN BY WCG CHECKED BY RGS

GEORGETOWN COUNTY

SUMMARY OF ESTIMATED QUANTITIES

PLOT SIZE = 22" x 34"

CONSTRUCTION PLANS

FED. ROAD DIV.NO.	STATE	COUNTY	D&F PROJECT NO.	ROAD NAME	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	GEORGETOWN	31811.01	BRICK CHIMNEY		3	

MATERIAL & WORKMANSHIP

PROVIDE ALL MATERIAL AND WORKMANSHIP IN ACCORDANCE WITH THE SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION 2007 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, UNLESS OTHERWISE SPECIFIED ON THE PLANS OR IN THE SPECIAL PROVISIONS.

COORDINATION OF PLANS, SPECIFICATIONS, AND SPECIAL PROVISIONS

GENERALLY, IN CASE OF DISCREPANCY, THIS GENERAL NOTES SHEET GOVERNS OVER THE STANDARD SPECIFICATIONS BUT THE REMAINDER OF THE PLANS GOVERN OVER NOTES ON THIS SHEET AND SPECIAL PROVISIONS GOVERN OVER ALL. SEE SUBSECTION 105.4 OF THE STANDARD SPECIFICATIONS.

WATER ELEVATIONS

THE WATER ELEVATIONS SHOWN IN THE PLANS ARE FOR INFORMATION ONLY AND THE ACTUAL WATER ELEVATION DURING CONSTRUCTION MAY VARY DEPENDING ON WEATHER CONDITIONS AND SEASONAL FLUCTUATIONS.

COMPLETION DATES

ON INSIDE FACE OF RIGHT SIDE BARRIER PARAPET/RAILING AT BEGINNING OF BRIDGE AND ON LEFT SIDE BARRIER PARAPET/RAILING AT END OF BRIDGE, PLACE YEAR OF COMPLETION ADJACENT TO GUARDRAIL ATTACHMENT. PLACE THIS COMPLETION DATE SO THAT IT WILL NOT BE COVERED BY THE GUARDRAIL CONNECTOR WHEN IT IS INSTALLED. RECESS NUMBERS IN THE CONCRETE USING NUMBERS FABRICATED FROM REUSABLE/DURABLE MATERIAL THAT IS APPROVED BY THE RCE. PROVIDE NUMBERS IN ACCORDANCE WITH SCDOT STANDARD DRAWING NO. 702-305-00.

REINFORCING STEEL

FABRICATE REINFORCING BARS IN ACCORDANCE WITH THE CURRENT C.R.S.I. MANUAL OF STANDARD PRACTICE EXCEPT FOR TIES, STIRRUPS, AND WELDED HOOPS.

PROVIDE ALL TIES AND STIRRUPS WITH 135° HOOKS THAT HAVE EXTENSIONS NO LESS THAN THE LARGER OF TEN BAR DIAMETERS OR SIX INCHES. THIS 135° HOOK REQUIREMENT DOES NOT APPLY TO STIRRUPS EXTENDING FROM PRESTRESSED CONCRETE BEAMS.

THE FABRICATION TOLERANCE FOR OUT-TO-OUT DIMENSION OF WELDED HOOP DIAMETER IS ± ½ INCH.

DO NOT USE LAP SPLICES IN COLUMN AND SHAFT REINFORCING STEEL.

PRESTRESSED CONCRETE BEAMS

BEAM LENGTHS GIVEN ARE BASED ON HORIZONTAL SPAN ONLY. INCREASE LENGTHS TO CORRECT FOR CONCRETE SHRINKAGE, CONCRETE SHORTENING WHEN THE STRANDS ARE CUT, AND FOR BEAMS BEING ON A GRADE.

ALL OVERHANG BRACKETS IN THE TOP FLANGE OF EXTERIOR BEAMS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 111, AASHTO M 232, OR ASTM F 2329 AS APPROPRIATE AND SHALL BE DETAILED ACCORDINGLY IN THE SHOP PLANS.

CONCRETE

PROVIDE THE CLASS OF CONCRETE AS NOTED IN THE CONTRACT DOCUMENTS. FOR CAST-IN-PLACE STRUCTURAL ELEMENTS, USE CLASS 4000 CONCRETE WHERE THE CLASS OF CONCRETE IS NOT SPECIFIED IN THE CONTRACT DOCUMENTS.

WHEN HOLES ARE CAST IN BEAMS TO ACCOMMODATE FALSEWORK, FILL THE HOLES WITH A NON-SHRINK STRUCTURAL GROUT SUITABLE FOR OVERHEAD REPAIRS AFTER FALSEWORK IS REMOVED.

AFTER ERECTION OF THE BEAMS AND PRIOR TO THE ERECTION OF THE DECK SLAB FALSEWORK, MEASURE BEAM CAMBERS. COMPARE THE MEASURED BEAM CAMBERS TO THE VALUES SHOWN ON THE PLANS TO AID IN DETERMINING IF FIELD ADJUSTMENTS ARE NEEDED. SUBMIT BEAM CAMBER MEASUREMENTS AND ANY PROPOSED FIELD ADJUSTMENTS TO THE RCE FOR APPROVAL. ALL COST OF PERFORMING THIS WORK IS CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION IS ALLOWED FOR THE PERFORMANCE OF THIS WORK.

PAYMENT FOR CONCRETE IN SLAB IS BASED ON THEORETICAL PLAN QUANTITY. NO ADJUSTMENT IS MADE FOR VARIATION IN CAMBER.

CHAMFER ALL EXPOSED EDGES ¾" UNLESS OTHERWISE NOTED.

THE MINIMUM ACCEPTABLE CONCRETE COVER FOR REINFORCING STEEL IS ½" LESS THAN THE PLAN DIMENSIONS WHEN REQUIRED BY REINFORCING BAR FABRICATION TOLERANCES.

CAST BUILD-UPS AND SHEAR KEYS ON BENT CAPS MONOLITHIC WITH THE CAP UNLESS INDICATED OTHERWISE IN THESE PLANS. CONSTRUCT THE TOP OF EACH BUILD-UP LEVEL.

GRINDING & TEXTURING CONCRETE DECKS

FOR BRIDGE STAGE CONSTRUCTION PROJECTS, GRIND AND TEXTURE THE BRIDGE DECKS AS NECESSARY NEAR THE STAGE LONGITUDINAL CONSTRUCTION JOINTS IN ORDER TO MEET THE LONGITUDINAL AND TRANSVERSE RIDEABILITY AND ROLLING STRAIGHTEDGE REQUIREMENTS OF THE CONTRACT.

PRIOR TO CASTING ANY CLOSURE POUR, GRINDING, OR TEXTURING, MAKE PROFILE LINE SURVEYS (2 TO 6 AS DETERMINED BY THE RCE) OF EACH STAGE OF THE BRIDGE DECKS. MAKE ONE OF THESE PROFILE LINE SURVEYS FOR EACH STAGE ALONG THE EDGE OF THE DECK ADJACENT TO THE CLOSURE POUR. COMPARE THE SURVEYS WITHIN EACH STAGE AND COMPARE THE SURVEYS OF EACH STAGE TO SURVEYS OF THE ADJACENT STAGE TO AID IN DETERMINING THE AMOUNT OF GRINDING AND TEXTURING NEEDED TO MEET THE RIDEABILITY AND ROLLING STRAIGHTEDGE REQUIREMENTS. SUBMIT ALL GRINDING AND TEXTURING PROCEDURES, PLOTTED SURVEY PROFILES, AND PROPOSED GRINDING DEPTHS TO THE RCE FOR APPROVAL. MAINTAIN A FINAL COVER OF 2"MINIMUM OVER THE BRIDGE DECK REINFORCING STEEL.

FOLLOW THE ABOVE PROCEDURES FOR ALL STAGES OF THE WORK. FOR ALL SURVEYS PERFORMED ON THE SAME BRIDGE, USE IDENTICAL STATIONS FOR SURVEY SHOTS IN ORDER TO FACILITATE SURVEY COMPARISONS. ALL COSTS FOR PERFORMING, EVALUATING, AND SUBMITTING THE SURVEYS ARE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION IS ALLOWED FOR THE PERFORMANCE OF THIS WORK.

PAYMENT FOR GRINDING AND TEXTURING CONCRETE BRIDGE DECKS AT THE JUNCTION OF NEW AND EXISTING BRIDGE DECK SLABS IS DETERMINED IN ACCORDANCE WITH SUBSECTION 702.6 OF THE STANDARD SPECIFICATIONS. NO PAYMENT IS MADE FOR GRINDING AND TEXTURING OF NEW BRIDGE DECKS TO CORRECT IRREGULARITIES AND EXCESSIVE DEVIATIONS.

ALLOWANCE FOR DEAD LOAD DEFLECTION & SETTLEMENT

IN SETTING FORMS FOR STRUCTURAL STEEL OR PRESTRESSED CONCRETE BEAM SPANS, APPLY AN ALLOWANCE TO THE DESIGN FINISHED GRADE TO COMPENSATE FOR COMPUTED DEAD LOAD DEFLECTIONS.

PRIOR TO MAKING DECK POURS ON ANY STAGE CONSTRUCTION WORK, AND BRIDGE WIDENING PROJECTS, CONSIDER AND MAKE ADJUSTMENTS AS NECESSARY FOR PARTIALLY LOADED BEAMS ADJACENT TO CLOSURE POUR AREAS. VERIFY THAT ANY PROPOSED ADJUSTMENT ON PARTIALLY LOADED BEAMS DOES NOT CREATE A CHANGE IN THE DECK THICKNESS OR A REDUCTION IN THE CONCRETE COVER OVER THE REINFORCING STEEL. WELDED STUDS ON STEEL BEAMS AND REINFORCING STEEL EXTENDING UP OUT OF PRESTRESSED BEAMS SHALL MEET THE REQUIREMENTS FOR A COMPOSITE SECTION (EXTEND UP INTO THE DECK PAST THE BOTTOM MAT OF REINFORCING STEEL) REGARDLESS OF ANY ADJUSTMENTS.

IN SETTING FALSEWORK FOR REINFORCED CONCRETE SPANS, MAKE AN ALLOWANCE FOR THE DEFLECTION OF THE FALSEWORK, FOR ANY SETTLEMENT OF THE FALSEWORK, FOR THE INSTANTANEOUS DEAD LOAD DEFLECTION OF THE SPAN, AND FOR THE LONG-TIME DEAD LOAD DEFLECTION OF THE SPAN SUCH THAT ON REMOVAL OF THE FALSEWORK THE TOP OF THE STRUCTURE SHALL CONFORM TO THEORETICAL FINISHED GRADE PLUS THE ALLOWANCE FOR LONG-TIME DEFLECTION.

FOR INSTANTANEOUS AND LONG-TIME DEAD LOAD DEFLECTION, USE A CAMBER OF ⅛" FOR CONCRETE FLAT SLAB SPANS 22 FEET IN LENGTH, 3/16" FOR CONCRETE FLAT SLAB SPANS 30 FEET IN LENGTH, AND ⅜" FOR CONCRETE FLAT SLAB SPANS 40 FEET IN LENGTH, UNLESS OTHERWISE DIRECTED BY THE RCE. ADJUST THESE CAMBERS AS NECESSARY TO ALLOW FOR FALSEWORK DEFLECTION, FALSEWORK SETTLEMENT, AND VERTICAL CURVE ORDINATES.

PERMANENT STEEL BRIDGE DECK FORMS

PERMANENT STAY-IN-PLACE STEEL BRIDGE DECK FORMS FOR CONCRETE DECK SLABS MAY BE USED AT THE CONTRACTOR'S OPTION.

NOTIFY THE DEPARTMENT AND THE FABRICATOR OF THE BEAMS IF USING THIS OPTION SO THAT SHOP PLANS CAN BE PROPERLY DETAILED.

DRIVEN PILE FOUNDATIONS

WHERE PILES OCCUR IN FILL, PLACE FILL BEFORE DRIVING PILES.

WHERE PRESTRESSED CONCRETE PILES ARE TO BE DRIVEN THROUGH FILL, INSTALL PILES IN PRE-BORED HOLES EXTENDING TO THE ORIGINAL GROUND. FOR SQUARE PRESTRESSED CONCRETE PILES, BORE HOLES HAVING A MINIMUM DIAMETER OF 1.25 TIMES THE NOMINAL PILE SIZE. INCLUDE ALL COST OF PRE-BORING FILLS FOR PILE INSTALLATION IN THE UNIT PRICE BID FOR THE PILES.

EXCAVATION FOR END BENTS

INCLUDE ALL COST OF EXCAVATION NECESSARY TO CONSTRUCT END BENTS AND TO REMOVE MATERIAL UNDER SUPERSTRUCTURE TO AN ELEVATION TWELVE INCHES BELOW TOPS OF END BENT CAPS, IN THE UNIT PRICE BID FOR CLASS OF CONCRETE SPECIFIED IN THE PLANS.

IF A CONCRETE FOOTING IS USED FOR THE END BENT, THE EXCAVATION BELOW THAT INCLUDED FOR THE CAP AND BERM IN THE ABOVE PARAGRAPH IS PAID FOR AT THE UNIT PRICE BID FOR EXCAVATION, INCLUDE EXCAVATION ABOVE THIS IN THE UNIT PRICE BID FOR CLASS OF CONCRETE SPECIFIED IN THE PLANS.

STRUCTURAL STEEL

LAYOUT DIMENSIONS AND STANDARD LENGTHS OF BEAMS SHOWN ARE HORIZONTAL DIMENSIONS WHICH MUST BE INCREASED WHEN BRIDGE IS ON GRADE.

WHEN HOLES ARE PLACED IN WEBS TO ACCOMMODATE FALSEWORK, INSTALL HIGH STRENGTH BOLTS IN THE HOLES AFTER FALSEWORK IS REMOVED.

NOTIFY THE DEPARTMENT OF THE NAME AND ADDRESS OF THE FABRICATOR OF THE STRUCTURAL STEEL AS SOON AS THE FABRICATOR HAS BEEN GIVEN THE CONTRACT TO FABRICATE SO THAT THE INSPECTION PROCEDURE CAN BE SET UP.

DO NOT FIELD OR SHOP WELD ERECTION HARDWARE TO THE STRUCTURAL STEEL MEMBERS.

MAKE ALL BOLTED CONNECTIONS WITH ⅞" DIA. ASTM A 325 BOLTS UNLESS OTHERWISE INDICATED.

GENERALLY, HOLES FOR ⅞" DIA. BOLTS SHALL BE 15/16" DIA. HOWEVER,FOR STRAIGHT GIRDER SPANS, OVERSIZED HOLES, 3/16" LARGER THAN BOLT DIA. MAY BE USED IN DIAPHRAGMS AND/OR CROSSFRAMES AND THEIR CONNECTION PLATES PROVIDED HARDENED WASHERS ARE INSTALLED OVER OVERSIZE HOLES IN THE OUTER PLY OF THE MATERIAL GRIPPED.HARDENED WASHERS ARE REQUIRED UNDER DTIS ON OVERSIZED HOLES. IN EVERY CASE INSTALL A HARDENED WASHER UNDER THE ELEMENT TURNED FOR EACH BOLT OF A BOLTED CONNECTION. INDICATE ON THE SHOP PLANS WHICH HOLES ARE TO BE OVERSIZE AND WHERE HARDENED WASHERS ARE REQUIRED. NO ADDITIONALPAYMENT IS MADE FOR THE COSTS ASSOCIATED WITH THE USE OF OVERSIZE HOLES AND FURNISHING ADDITIONAL HARDENED WASHERS AS NECESSARY.

PAINT FOR STRUCTURAL STEEL

PAINT STRUCTURAL STEEL IN ACCORDANCE WITH SECTION 710 OF THE STANDARD SPECIFICATIONS.

BEARING ASSEMBLIES

IF BEARING ASSEMBLIES SUPPORT WEATHERING STEEL BEAMS OR GIRDERS, FABRICATE BEARING ASSEMBLY COMPONENTS FROM WEATHERING STEEL AND PAINT THEM USING THE NS2 PAINT SYSTEM. GALVANIZE ALL OTHER BEARING ASSEMBLIES IN ACCORDANCE WITH AASHTO M 111, AASHTO M 232, OR ASTM F 2329 AS APPLICABLE.

AFTER THE REQUIRED FIELD WELDING OF PAINTED BEARING ASSEMBLIES, FIELD REPAIR THE WELD AREAS AND/OR ANY DAMAGED AREAS TO THE PAINT IN ACCORDANCE WITH SUBSECTION 710.4.2 OF THE STANDARD SPECIFICATIONS. AFTER THE REQUIRED FIELD WELDING OF GALVANIZED BEARING ASSEMBLIES, FIELD REPAIR THE WELD AREAS AND/OR DAMAGED AREAS OF THE GALVANIZED COATING IN ACCORDANCE WITH ASTM A 780.

INCLUDE ALL COST OF FURNISHING AND INSTALLING STEEL BEARING ASSEMBLY COMPONENTS IN THE LUMP SUM PRICE BID FOR STRUCTURAL STEEL IF A BID ITEM FOR STRUCTURAL STEEL IS INCLUDED IN THE PROJECT. OTHERWISE, INCLUDE THE COST IN THE UNIT PRICE BID FOR PRESTRESSED BEAMS.

ANCHOR BOLTS

GALVANIZE ALL COMPONENTS OF ANCHOR BOLT ASSEMBLIES IN ACCORDANCE WITH AASHTO M 232 OR ASTM F 2329 AS APPLICABLE. THE WEIGHT OF ANCHOR BOLT ASSEMBLIES IS INCLUDED IN THE BENT QUANTITIES FOR REINFORCING STEEL. INCLUDE ALL COSTS OF FURNISHING AND INSTALLING ANCHOR BOLT ASSEMBLIES IN THE UNIT PRICE BID FOR REINFORCING STEEL.

ORIENTATION IN RELATION TO STATIONING

LEFT AND RIGHT SIDES, WHERE REFERRED TO IN THESE PLANS, ARE IN RELATION TO DIRECTION OF STATIONING.

SPECIFICATIONS

AASHTO 2012 LRFD BRIDGE DESIGN SPECIFICATIONS, 6TH EDITION, WITH INTERIM REVISIONS THROUGH 2013.

ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE (LATEST EDITION) WITH ADDITIONS AND REVISIONS AS STATED IN THE STANDARD SPECIFICATIONS.

DESIGN DATA

LOAD AND RESISTANCE FACTOR DESIGN (LRFD) METHOD

LIVE LOAD: AASHTO HL-93 LOADING

THE TOP ¼" OF ALL CONCRETE SLABS IS CONSIDERED AS A WEARING SURFACE AND IS NOT INCLUDED IN THE SLAB DEPTH USED FOR THE CALCULATION OF SECTION PROPERTIES.

ALL BOLTED CONNECTIONS, EXCEPT FOR STEEL DIAPHRAGM MEMBERS USED WITH PRESTRESSED CONCRETE BEAMS, ARE DESIGNED AS SLIP-CRITICAL CONNECTIONS HAVING CLASS "B" CONTACT SURFACES.

AN EXTRA DEAD LOAD OF 0.016 KSF IS INCORPORATED INTO THE DESIGN OF THIS STRUCTURE TO ACCOMMODATE THE USE OF STEEL STAY-IN-PLACE FORMS.

AN EXTRA DEAD LOAD OF 0.015 KSF IS INCORPORATED INTO THE DESIGN OF THIS STRUCTURE AS AN ALLOWANCE FOR A FUTURE WEARING SURFACE.

SEISMIC DESIGN IS IN ACCORDANCE WITH THE 2008 SCDOT "SEISMIC DESIGN SPECIFICATIONS FOR HIGHWAY BRIDGES", VERSION 2.0, WITH THE FOLLOWING PARAMETERS:

SEISMIC DESIGN CATEGORY: A

ANALYSIS METHOD: NO DETAILED ANALYSIS

OPERATIONAL CLASSIFICATION: II

SITE CLASS:

FINAL FINISH OF EXPOSED CONCRETE SURFACES

APPLY THE FINAL SURFACE FINISH ON THE BRIDGE(S) ONLY TO THE FOLLOWING CHECKED AND DESIGNATED BRIDGE AREAS:

☐ A) ENTIRE SURFACE OF ALL BARRIER RAILS, PARAPET WALLS, APPROACH SLAB CURBS, CONCRETE UTITLITY SUPPORTS, AND WING WALLS; OUTSIDE VERTICAL EDGE OF BRIDGE DECK SLABS AND SIDEWALKS.

☐ B) OUTSIDE FACE OF EXTERIOR PRESTRESSED GIRDERS.

☐ C) ENTIRE SURFACE OF DESIGNATED SUBSTRUCTURE UNITS, EXCEPT TOP OF BENT CAPS AND PIERS.

☐ ALL UNITS ☐ DESIGNATED UNITS:

☒ D) NO FINAL SURFACE REQUIRED.

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11/25/2019

SOUTH CAROLINA DAVIS & FLOYD, INC. No. C00538 CERTIFICATE OF AUTHORIZATION

REGISTERED PROFESSIONAL ENGINEER SOUTH CAROLINA No. 32080 11/25/19 ROBERT G. STEVENSON, JR.

3229 W. MONTAGUE AVENUE
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DAVIS & FLOYD
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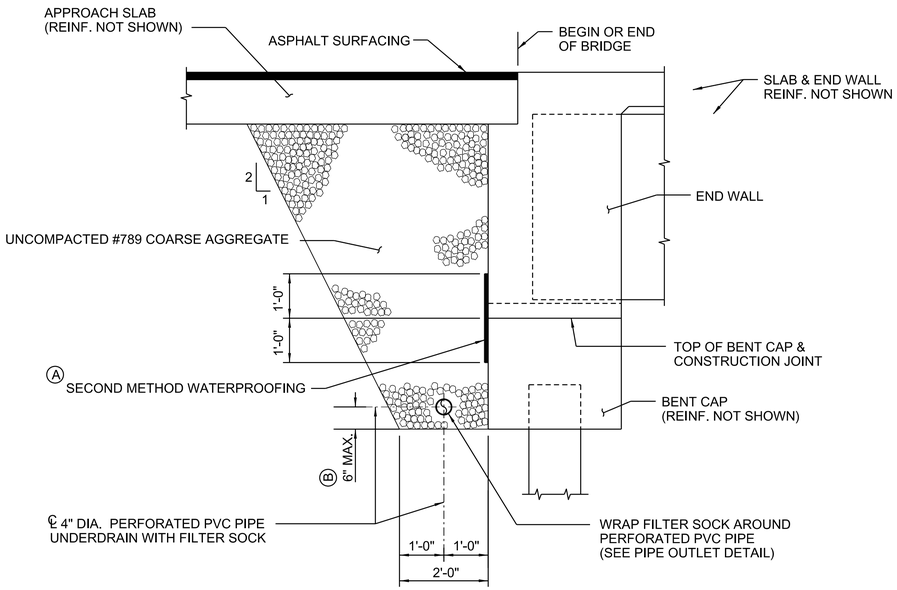
DESIGNED BY JFE DRAWN BY WCG CHECKED BY RGS

GEORGETOWN COUNTY

GENERAL NOTES

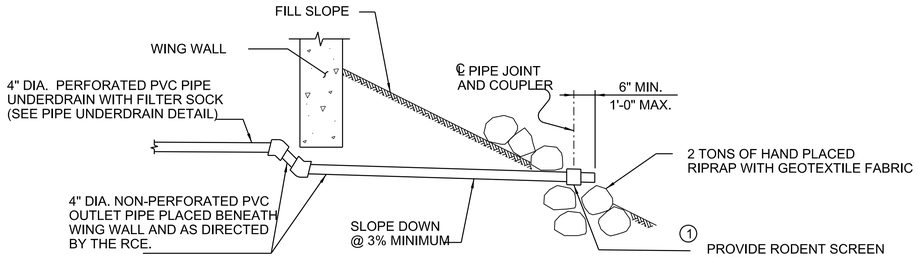
PLOT SIZE = 22" x 34"



PIPE UNDERDRAIN DETAIL

Ⓐ EXTEND SECOND METHOD WATERPROOFING THE FULL LENGTH OF THE END WALL AND WING WALLS. SEE SECTION 814 OF THE STANDARD SPECIFICATIONS.

Ⓑ SLOPE PIPE A MINIMUM OF 0.5% TO DRAIN.



PIPE OUTLET DETAIL

NOTES:

INSTALL 4" DIA. PERFORATED PIPE UNDERDRAIN IN ACCORDANCE WITH SECTION 802 OF THE STANDARD SPECIFICATIONS. USE UNCOMPACTED #789 COARSE AGGREGATE IN ACCORDANCE WITH SECTION 701 OF THE STANDARD SPECIFICATIONS.USE GEOTEXTILE FOR DRAINAGE FILTRATION, CLASS 1 FABRIC (PROTECTED) FOR THE FILTER SOCK IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

INCLUDE ALL COSTS FOR FURNISHING AND INSTALLING THE 4" DIA. PERFORATED PVC PIPE UNDERDRAIN, FILTER SOCK, #789 COARSE AGGREGATE, 4" DIA. NON-PERFORATED PVC OUTLET PIPE, RIPRAP, GEOTEXTILE FABRIC FOR RIPRAP, RODENT SCREEN, AND CONSTRUCTING THE OUTLET AS DIRECTED BY THE RCE IN THE UNIT PRICE BID FOR AGGREGATE UNDERDRAIN (AGGREGATE #789) WITH 4" PERFORATED PIPE FOR STRUCTURES.

INCLUDE ALL COSTS FOR FURNISHING AND INSTALLING THE SECOND METHOD WATERPROOFING IN THE UNIT PRICE BID FOR WATERPROOFING (SUBSTRUCTURE - SECOND METHOD).

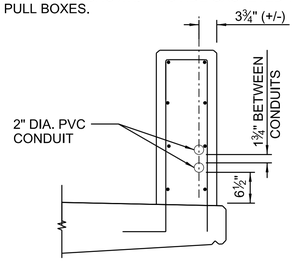
1 CONSTRUCT THE PIPE OUTLET WITH A PIPE JOINT THAT IS A MINIMUM OF 6" AND A MAXIMUM OF 1'-0" FROM THE OUTLET END OF THE PIPE. PROVIDE RODENT SCREEN MANUFACTURED FROM T304 STAINLESS STEEL OR GALVANIZED STEEL WITH A MINIMUM WIRE DIAMETER OF 0.050". PROVIDE A RODENT SCREEN WITH A MINIMUM OF 2 OPENINGS PER INCH AND A MAXIMUM OF 4 OPENINGS PER INCH.

GENERAL CONDUIT NOTES

FURNISH AND INSTALL APPROVED CONDUITS AND FITTINGS IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC) AND AS DIRECTED BY THE RCE.

FURNISH SCHEDULE 80 PVC RIGID NONMETALLIC CONDUITS IN ACCORDANCE WITH NEMA TC-2 AND UL STANDARD 651 AND FURNISH FITTINGS IN ACCORDANCE WITH NEMA TC-3 AND UL STANDARD 514B. FURNISH CONDUIT AND FITTINGS WITH UL LABELS: CONDUIT - ON EACH 10 FOOT LENGTH; FITTINGS - STAMPED OR MOLDED ON EACH FITTING. CONNECT CONDUIT AND FITTINGS USING SOLVENT CEMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

FURNISH AND INSTALL NEMA TYPE 4X NON-METALLIC OR GALVANIZED STEEL PULL BOXES SIZED IN ACCORDANCE WITH NEC REQUIREMENTS AND THE MAXIMUM LIMITS SHOWN. PROVIDE GASKETED WEATHERPROOF COVERS FOR THE PULL BOXES.



SECTION THRU
RAILING WALL

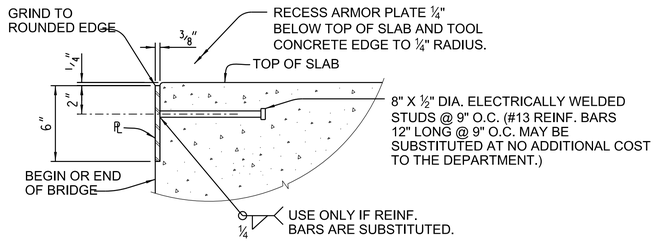
DETAILS OF CONDUIT IN RAILING WALL

(TYP. EA. SIDE OF BRIDGE)

USE SCHEDULE 80 PVC NONMETALLIC PIPE FOR CONDUIT.

EXTEND CONDUITS 6 INCHES BEYOND EACH END OF THE BARRIER PARAPET TRANSITION AND CAP WITH WATERTIGHT COVERS.

INCLUDE ALL COSTS FOR FURNISHING AND INSTALLING CONDUIT AND ANY INCIDENTALS REQUIRED IN THE UNIT PRICE BID FOR 2.0" SCHEDULE 80 PVC CONDUIT.



ARMOR PLATE DETAIL

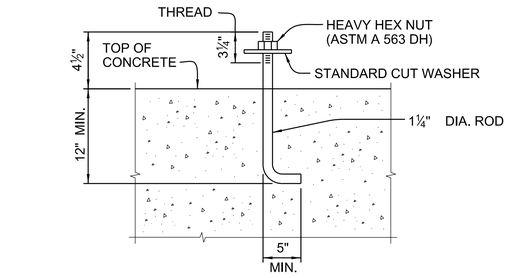
INSTALL ⅜" THICK PLATES, AS DETAILED ABOVE, AT THE BEGINNING AND END OF THE BRIDGE.

PROVIDE STEEL FOR THE ARMOR PLATES THAT CONFORMS TO THE LATEST AASHTO M 270 GRADE 50W (ASTM A 709 GR. 50W) STEEL AND NEITHER THE PLATES NOR THE ANCHOR STUDS NEED TO BE PAINTED.

PROVIDE FABRICATED PLATES THAT CONFORM TO THE CROWN AND GRADE OF THE ROADWAY AND EXTEND FROM GUTTER LINE TO GUTTER LINE. THE PLATES MAY BE FABRICATED IN REASONABLE LENGTHS AND CONNECTED AT THE JOB SITE WITH FULL PENETRATION BUTT WELDS GROUND FLUSH ALONG THE TOP FACE OF CONNECTED PLATES.

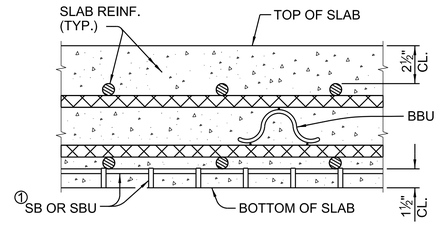
HOLES, 9/16" DIA., SPACED APPROXIMATELY 2'-0" ON CENTER MAY BE PROVIDED IN THE LOWER PORTION OF THE PLATES TO BOLT THE PLATES TO THE FORMS.

INCLUDE ALL COSTS OF MATERIAL AND WORKMANSHIP TO FABRICATE, FURNISH, AND INSTALL THE ARMOR PLATES AND ANCHOR STUDS COMPLETE IN PLACE IN THE UNIT PRICE BID FOR CLASS 4000 CONCRETE.



ANCHOR BOLT DETAILS

SEE REINFORCING STEEL SCHEDULE ON BENT SHEETS FOR LENGTH AND NUMBER OF ANCHOR BOLT ASSEMBLIES REQUIRED. PROVIDE ANCHOR BOLTS THAT CONFORM WITH ASTM F 1554 (GR. 36). SHIP ANCHOR BOLTS AND NUTS ASSEMBLED.



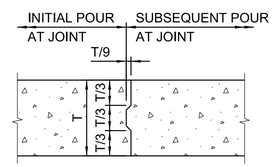
BAR SUPPORT DETAIL

(SECTION PARALLEL TO ℄ ROADWAY)

FOR BAR SUPPORTS THAT CONTACT FORMS OR FLOOR SURFACES, USE PLASTIC BAR SUPPORTS THAT CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS. PROTECT THE PLASTIC BAR SUPPORTS FROM EXPOSURE TO SUNLIGHT UNTIL PLACED IN THE FORM. WHERE REMOVABLE FORMS ARE USED, DO NOT USE CONTINUOUS LEGS OR RAILS THAT ARE IN CONTACT WITH THE FORMS.

FOR SUPPORTS THAT DO NOT CONTACT FORMS OR FLOOR SURFACES, USE WIRE BAR SUPPORTS THAT CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS. IN APPLICATIONS WHERE GALVANIZED BARS ARE USED, USE GALVANIZED WIRE SUPPORTS.

1 USE SBU WHERE STEEL STAY-IN-PLACE FORMS USED, USE SB ELSEWHERE.



CONST. JT. DETAIL

BEFORE MAKING SUBSEQUENT POUR, WAIT EITHER A MINIMUM OF 96 HOURS AFTER PLACEMENT OF THE INITIAL POUR OR UNTIL THE INITIAL POUR CONCRETE HAS ATTAINED A MINIMUM OF 75% OF THE SPECIFIED 28-DAY COMPRESSIVE STRENGTH AS VERIFIED BY TESTING EXTRA CYLINDERS.

SCALE: 1.000 ft / in.
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PLOT DRIVER: G:\Resource\Standards\Bentley\Vertical\Plotting\BRIDGES pdf MS i.pltcfg
FILE: G:\JobsOdd\31811-01\Production\Structural\Drawings\31811-01_BC_BR_04_General Details.dgn
11/25/2019

SOUTH CAROLINA
DAVIS & FLOYD, INC.
No. C00538
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
PROFESSIONAL ENGINEER
No. 32080
11/25/19
ROBERT G. STEVENSON, JR.

3229 W. MONTAGUE AVENUE
CHARLESTON, SC 29418
(843) 554-8602

DAVIS & FLOYD
SINCE 1954

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
5			
4			
3			
2			
1			

DESIGNED BY JFE DRAWN BY WCG CHECKED BY RGS

GEORGETOWN COUNTY

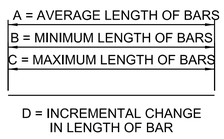
GENERAL DETAILS

PLOT SIZE = 22" x 34"

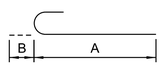
CONSTRUCTION PLANS

FED. ROAD DIV.NO.	STATE	COUNTY	D&F PROJECT NO.	ROAD NAME	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	GEORGETOWN	31811.01	BRICK CHIMNEY		5	

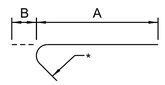
BARS A



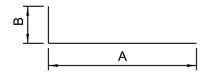
BARS AV



BARS B



BARS BA



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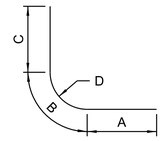

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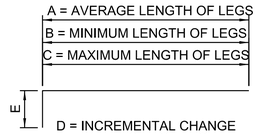
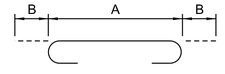


BARS CV



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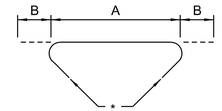

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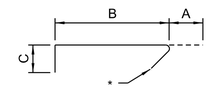

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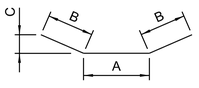

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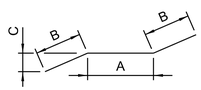

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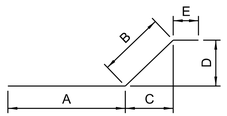

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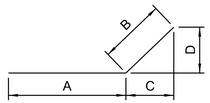

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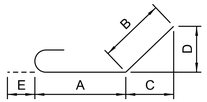
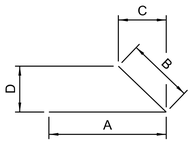


BARS FA



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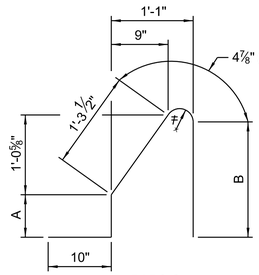

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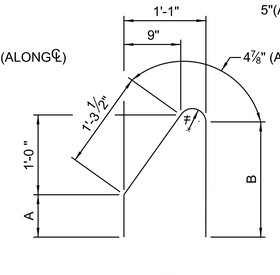

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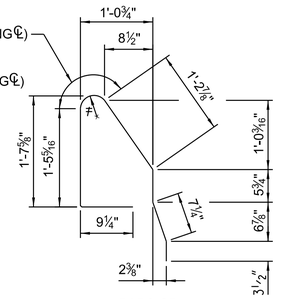

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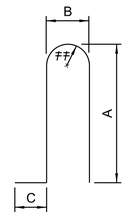

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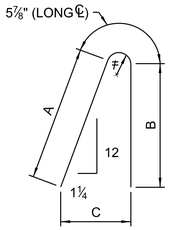
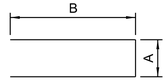


BARS H



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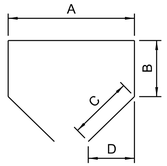

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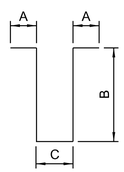

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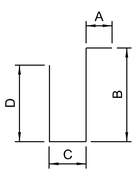

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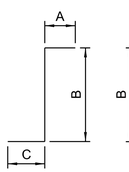

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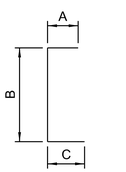

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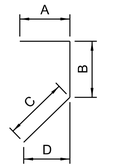

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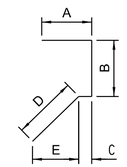

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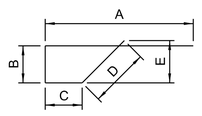

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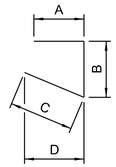

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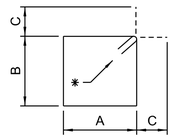

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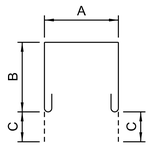

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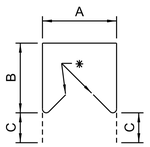

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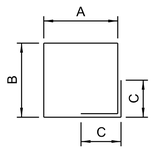

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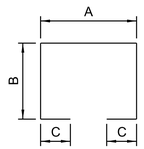

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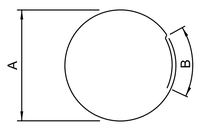

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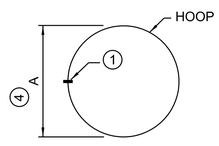

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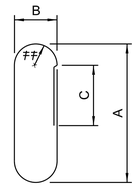

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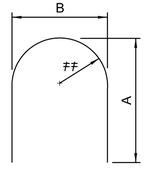

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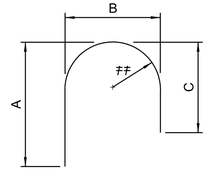

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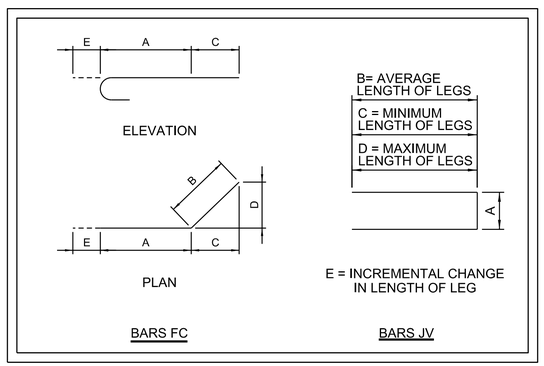
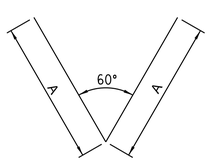


BARS FC BARS JV



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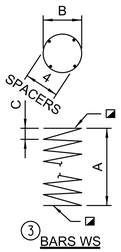

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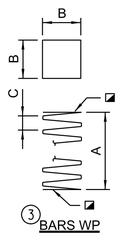
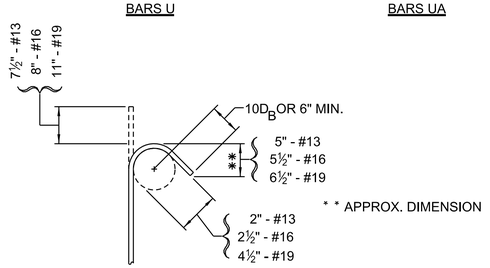


3 BARS WP



* * APPROX. DIMENSION

*STANDARD 135° SEISMIC HOOK

NOTES:

DIMENSIONS SHOWN ARE OUT-TO-OUT AND STANDARD C.R.S.I. BENDING DETAILS SHALL APPLY, EXCEPT AS NOTED.

∓ - 1⅝" INSIDE RADIUS

∓∓ - OUTSIDE RADIUS = B/2

◪ - 1½ TURNS @ A CLOSED PITCH SECURED BY AN ULTIMATE WELDED LAP SPLICE.

REINFORCING STEEL CODE

TYPE	SIZE	SERIES	COUPLER
A	16	01	②

① ULTIMATE BUTT-WELDED SPLICE - USE COMPLETE JOINT PENETRATION BUTT WELD CONFORMING TO THE REQUIREMENTS OF AWS D1.4/D1.4M STRUCTURAL WELDING CODE - REINFORCING STEEL (LATEST EDITION) AND THE STANDARD SPECIFICATIONS.

② IF A MECHANICAL COUPLER IS REQUIRED, THE REINFORCING STEEL CODE INCLUDES A DESIGNATION OF "S" FOR A STANDARD COUPLER AND A DESIGNATION OF "U" FOR AN ULTIMATE COUPLER. UNLESS NOTED OTHERWISE, BAR LENGTHS SHOWN IN THE REINFORCING STEEL SCHEDULES ARE TO THE CENTER OF THE COUPLER. IF NECESSARY, ADJUST THE LENGTH OF THE BARS TO MAINTAIN THE REQUIRED CONCRETE COVER.

③ SPLICE WS AND WP BARS WITH EITHER ULTIMATE WELDED LAP SPLICES OR ULTIMATE MECHANICAL COUPLERS. USE OVER AND UNDER LAP SPLICES, NOT SIDE BY SIDE, TO MAINTAIN BAR CLEARANCES.

④ THE FABRICATION TOLERANCE FOR WELDED HOOP DIAMETER IS ± ½ INCH.

SCALE: 1.000 ft / in.
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11/25/2019

SOUTH CAROLINA DAVIS & FLOYD, INC. No. C00538 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 32080 ROBERT G. STEVENSON, JR. 11/25/19

3229 W. MONTAGUE AVENUE
CHARLESTON, SC 29418
(843) 554-8602

DAVIS & FLOYD

SINCE 1954

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
5			
4			
3			
2			
1			

DESIGNED BY JFE DRAWN BY WCG CHECKED BY RGS

GEORGETOWN COUNTY

REINFORCING BENDING DETAILS

PLOT SIZE = 22" x 34"

TYPICAL SECTION OF IMPROVEMENT

BRICK CHIMNEY ROAD - GEORGETOWN COUNTY

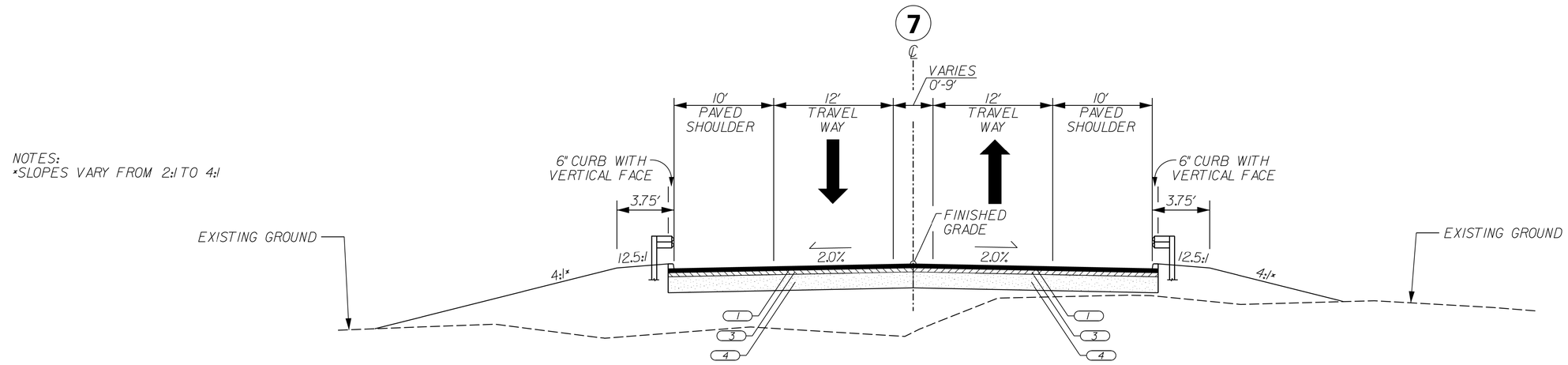
CONSTRUCTION PLANS

FED. ROAD DIV.NO.	STATE	COUNTY	D&F PROJECT NO.	ROAD NAME	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	GEORGETOWN	31811.01	BRICK CHIMNEY		3C	

BRIDGE PLANS

SHEET NO.
6

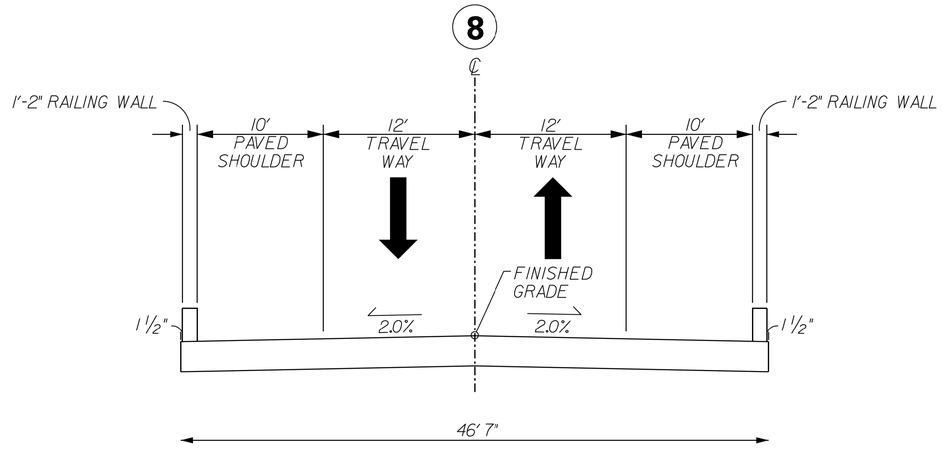
7



NOTES:
*SLOPES VARY FROM 2:1 TO 4:1

BRICK CHIMNEY ROAD
FROM STA.127+32.74 TO STA.127+71.40 (BEGIN BRIDGE)
FROM STA.128+26.40 (END BRIDGE) TO STA.128+65.08

8



FOR INFORMATION ONLY
TYPICAL SECTION FOR
BRIDGE OVER IP CANAL
STA.127+71.40 TO STA.128+26.40

PAVEMENT DESIGN	RTE. BRICK CHIMNEY		DESIGN SPEED
	MPH	FROM STA.	TO STA.
	45	126+00.00	147+00.00
	RTE. SC-51 (BROWNS FERRY RD.)		
APPROVED BY	55	400+58.95	417+39.82
DATE			

ROAD FUNCTIONAL CLASSIFICATION:
BRICK CHIMNEY ROAD - MAJOR COLLECTOR
SC-51 (BROWNS FERRY RD.) - MINOR ARTERIAL

1	▬	ASPHALT SURFACE COURSE TYPE B (200 LB/SY)
2	▭	ASPHALT SURFACE COURSE TYPE C (VARIABLE)
3	▨	ASPHALT INTERMEDIATE COURSE TYPE B (325 LB/SY)
4	▭	10" GRADED AGGREGATE BASE COURSE

FOR INFORMATION ONLY

SCALE: 6.000 ft / in.
PEN TABLE: 31811-01 BC Plan-PDF.tbl
PLOT DRIVER: PDF.pltcfg
FILE: G:\Jobs0dd\31811-01\Production\Transportation\Sheets\PHASE I\31811-01 BC-PH1_03-TypicalSections.dgn
11/22/2019

SOUTH CAROLINA — DAVIS & FLOYD, INC. — No. C00538 — CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA — LICENSED PROFESSIONAL ENGINEER — No. 30344 — 11/22/2019 — LINDSEY KEZIAH

DAVIS & FLOYD
SINCE 1954
3229 W. MONTAGUE AVENUE
CHARLESTON, SC 29418
(843) 554-8602

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
5			
4			
3			
2			
1			

DESIGNED BY ____ DRAWN BY ____ CHECKED BY ____

GEORGETOWN COUNTY

TYPICAL SECTIONS SHEET

SCALE 1"= 6' PLOT SIZE = 22" x 34"

FED. ROAD DIV.NO.	STATE	COUNTY	D&F PROJECT NO.	ROAD NAME	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	GEORGETOWN	31811.01	BRICK CHIMNEY		14	

SHEET NO. 7

CONSTRUCTION PLANS
BRIDGE PLANS

NOTES:

(A) INSTALL PIPE AND BOLLARD DESIGN DOUBLE GATE AT STA.10+40.00, ADJUST LOCATION IF PIPE CONFLICT

(B) 6" CURB WITH VERTICAL FACE. TIE TO BRIDGE APPROACH SLAB (PLANS BOUND UNDER SEPARATE COVER)

(C) INSTALL 3' CURB TRANSITION SEE STD.DWG.720-105-02

SEE SHEET 14A FOR OUTFALL DITCH DETAILS

(4) SANTEE TIMBERLANDS LP 02-1009-004-15-00

(3) MADISON LUMBER PRODUCTS LLC02-1009-004-16-00

(5) INTERNATIONAL PAPER COMPANY (D.B.9, PG.23) TMS# 03-1004-027-00-00

(6) COPPER STATION HOLDINGS LLC TMS# 02-1009-004-00-00

MATCHLINE STA. 118+00.00 – SEE SHEET 13

MATCHLINE STA. 132+00.00 – SEE SHEET 15

2' PAVED SHOULDER

NEW 68' R/W

NEW 132' R/W

NEW 132' ROADWAY EASEMENT

NEW 50' DRAINAGE EASEMENT

NEW TRANS. R/W - 9620' R

NEW TRANS. R/W- 9820' R

POT = 300+00.00

PT 125+68.78

PC 130+80.14

N 61°08'23" E

℄ BRICK CHIMNEY RD.

DRIVEWAY NW

DRIVEWAY NE

DRIVEWAY SW

DRIVEWAY SE

BEGIN BRIDGE STA.127+71.40

END BRIDGE STA.128+26.40

INSTALL ONE THRIE BEAM BRIDGE CONN., 12.5 LF GUARDRAIL, AND 8.5' RADIUS CURVED W-BEAM GUARDRAIL W/ 3 POSTS WITH TYPE B END TREATMENT PER SCDOT STD.DRAWING 805-635-00

INSTALL ONE THRIE BEAM BRIDGE CONN. AND 8.5' RADIUS CURVED W-BEAM GUARDRAIL W/ 2 POSTS WITH TYPE B END TREATMENT PER SCDOT STD.DRAWING 805-635-00

CONSTRUCT 16 LF DRAINAGE FLUME AT APPROXIMATE STA.127+60.00 CONTRACTOR TO ADJUST FLUME LOCATION DEPENDING ON GUARDRAIL POST LOCATION

CONSTRUCT 15 LF DRAINAGE FLUME AT APPROXIMATE STA.127+40.00 CONTRACTOR TO ADJUST FLUME LOCATION DEPENDING ON GUARDRAIL POST LOCATION

CONSTRUCT 55 LF BRIDGE WITH AASHTO TYPE I MOD BEAMS (PLANS BOUND UNDER SEPARATE COVER)

SEE SHEET 14A FOR DRAINAGE AND EROSION CONTROL NOTES

0 50 100 150 200

EARTHWORK STA. 128+26.41 TO STA. 148+79.84
EXCAVATION = 3327 CY FILL = 6219 CY
30% = 1867 CY
8086 CY
TOTAL BORROW = 4759 CY

VPI = 131+73.00
Elev. = 20.96

K = 202
200' V.C.

K = 500
300' V.C.

+20.00 VPC Elev = 19.38

+20.00 VPT Elev = 18.99

+23.00 VPC Elev = 20.50

VPI = 124+20.00
Elev. = 18.69

VPI = 126+00.00
Elev. = 12.60

VPI = 125+00.00
Elev. = 12.06

PROPOSED

EXISTING

(-) 0.690%

(-) 0.736%

(-) 0.750%

(-) 1.523%

(+) 0.838%

(+) 0.300%

(-) 0.300%

SPECIAL DITCH LEFT

SPECIAL DITCH EL. - LEFT

SPECIAL DITCH RIGHT

SPECIAL DITCH EL. - RIGHT

	118+00	119+00	120+00	121+00	122+00	123+00	124+00	125+00	126+00	127+00	128+00	129+00	130+00	131+00	132+00
PROP.	22.97	22.63	22.28	21.94	21.59	21.25	20.90	20.56	20.21	19.87	19.52	19.20	18.99	18.90	18.94	19.08	19.23	19.38	19.53	19.68	19.83	19.98	20.13	20.29	20.44	20.58	20.68	20.72	20.72
EXIST.	22.84	21.83	20.26	19.37	18.47	18.42	19.95	17.83	17.43	18.56	16.79	16.76	16.76	16.57	16.37	16.12	15.88	15.30	14.47	18.42	6.42	16.94	14.50	14.93	15.33	15.05	14.99	15.39	15.89
	18.36	17.99	17.63	17.26	16.89	16.52	16.15	15.79	15.42	15.05	14.68	14.32	13.95	13.72	13.35	12.97	12.60	12.48	12.89										15.22
											14.47	14.10	13.72	13.35	13.58	12.82	12.06	12.48	12.89										

FOR INFORMATION ONLY

DAVIS & FLOYD, INC. No. C00538 CERTIFICATE OF AUTHORIZATION SOUTH CAROLINA

No. 30344 LICENSED PROFESSIONAL ENGINEER 11/22/2019 LINDSEY K. ZIAJKA SOUTH CAROLINA

3229 W. MONTAGUE AVENUE
CHARLESTON, SC 29418
(843) 554-8602

DAVIS & FLOYD
SINCE 1954

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
5			
4			
3			
2			
1			

DESIGNED BY ____ DRAWN BY ____ CHECKED BY ____

GEORGETOWN COUNTY

PLAN AND PROFILE SHEET
BRICK CHIMNEY
STA. 118+00.00 TO STA. 132+00.00

SCALE 1"= 50' HOR. 1" = 5' VER. PLOT SIZE = 22" x 34"

SCALE: 50.000 ft / in.
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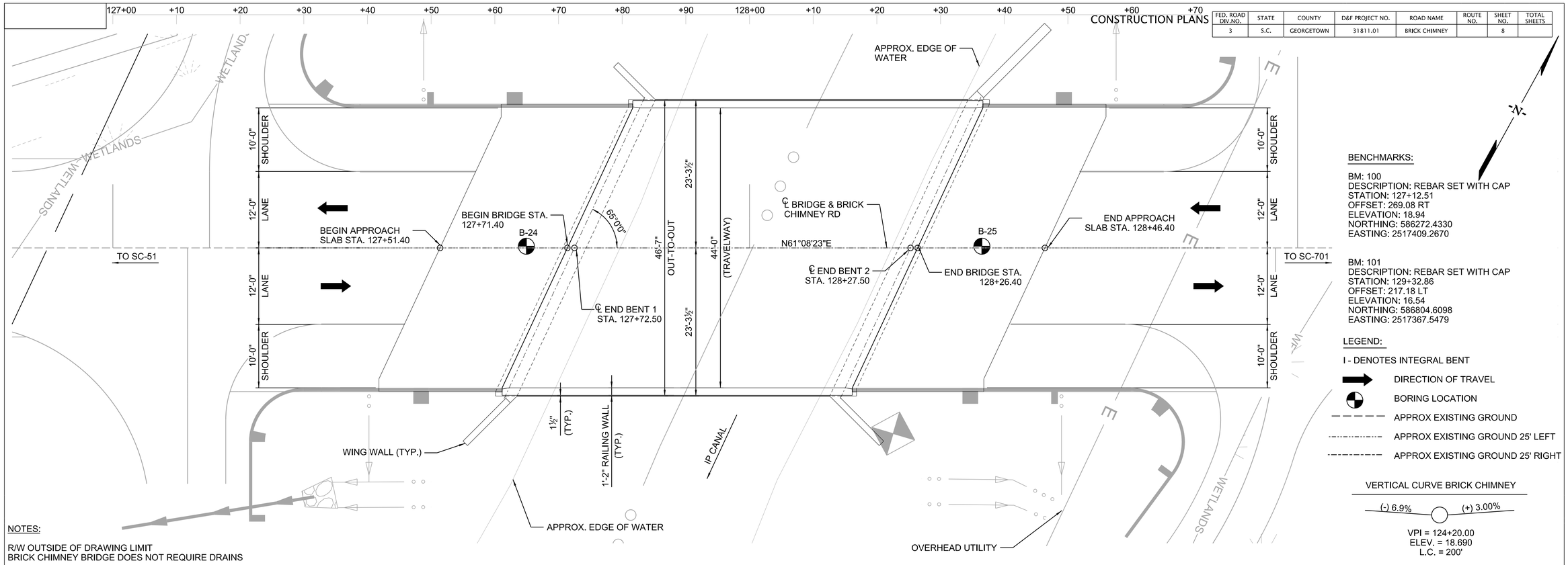
PLOT DRIVER: PDF.pltcfg
FILE: G:\JobsOdd\31811-01\Production\Transportation\Sheets\PHASE 1\31811-01 BC-PH1_50SCALE_PLPR.dgn
11/22/2019

FED. ROAD DIV.NO.	STATE	COUNTY	D&F PROJECT NO.	ROAD NAME	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	GEORGETOWN	31811.01	BRICK CHIMNEY		8	

CONSTRUCTION PLANS



BENCHMARKS:

BM: 100
DESCRIPTION: REBAR SET WITH CAP
STATION: 127+12.51
OFFSET: 269.08 RT
ELEVATION: 18.94
NORTHING: 586272.4330
EASTING: 2517409.2670

BM: 101
DESCRIPTION: REBAR SET WITH CAP
STATION: 129+32.86
OFFSET: 217.18 LT
ELEVATION: 16.54
NORTHING: 586804.6098
EASTING: 2517367.5479

LEGEND:

I - DENOTES INTEGRAL BENT

- DIRECTION OF TRAVEL
- BORING LOCATION
- APPROX EXISTING GROUND
- APPROX EXISTING GROUND 25' LEFT
- APPROX EXISTING GROUND 25' RIGHT

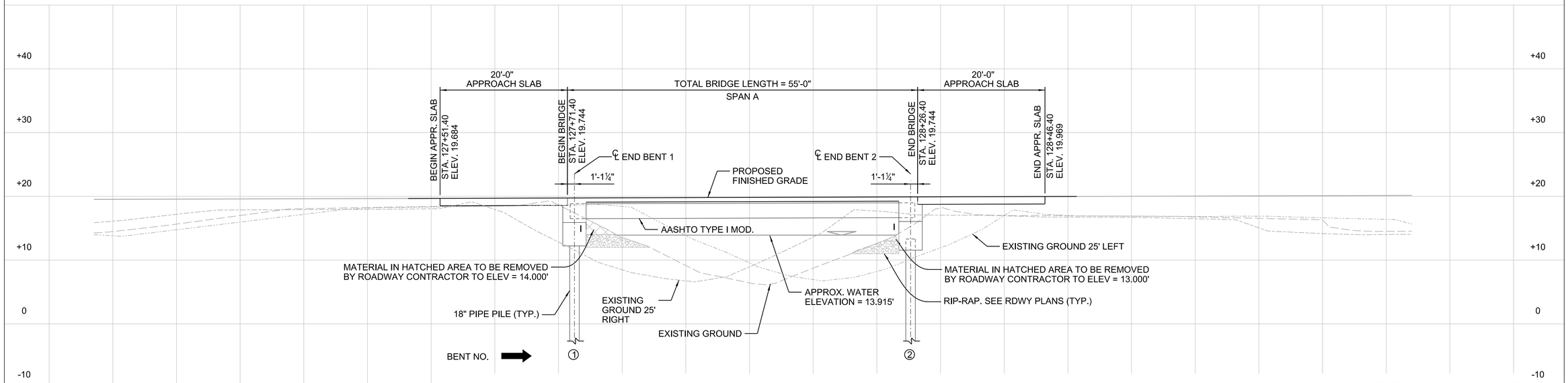
VERTICAL CURVE BRICK CHIMNEY

(-) 6.9% (+) 3.00%

VPI = 124+20.00
ELEV. = 18.690
L.C. = 200'

NOTES:

R/W OUTSIDE OF DRAWING LIMIT
BRICK CHIMNEY BRIDGE DOES NOT REQUIRE DRAINS



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11/25/2019

SOUTH CAROLINA — DAVIS & FLOYD, INC. — No. C00538 — CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA — REGISTERED PROFESSIONAL ENGINEER — ROBERT G. STEVENSON, JR. — No. 32080 — 11/25/19

3229 W. MONTAGUE AVENUE
CHARLESTON, SC 29418
(843) 554-8602

DAVIS & FLOYD

SINCE 1954

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
5			
4			
3			
2			
1			

DESIGNED BY JFE DRAWN BY WCG CHECKED BY RGS

GEORGETOWN COUNTY

BRIDGE PLAN & PROFILE

PLOT SIZE = 22" x 34"

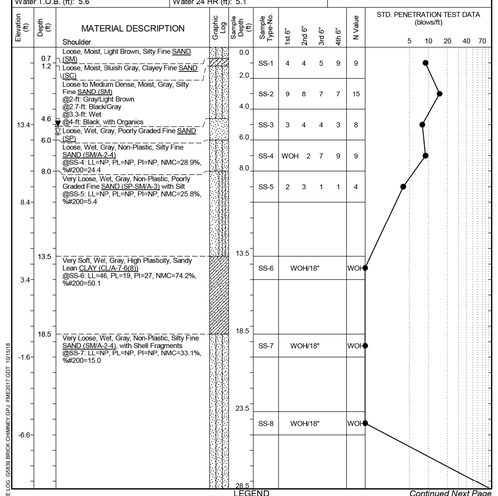
F&ME CONSULTANTS

Brick Chimney Road
Georgetown County, South Carolina
G5839

LOG OF BORING No. B-24

Latitude: 33.433745
Longitude: -79.304

Date Drilled: 8/28/2018 | Supervisor: C. Piercy | Notes:
Date Completed: 8/28/2018 | Approx. Ground Elevation (ft): 18
Drill Machine: CME 45B | Drilling Method: HSA
Water T.O.B. (ft): 5.6 | Water 24 HR (ft): 5.1



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LEGEND

SAMPLER TYPE				DRILLING METHOD			
SS	- Split Spoon	NQ - Rock Core, 1-7/8"		HSA	- Hollow Stem Auger	RW	- Rotary Wash
UD	- Undisturbed Sample	CU - Cuttings		CFA	- Continuous Flight Augers	RC	- Rock Core
AWG	- Rock Core, 1-1/8"	CT - Continuous Tube		DC	- Driving Casing	PHD	- Percussion Hammer Drill

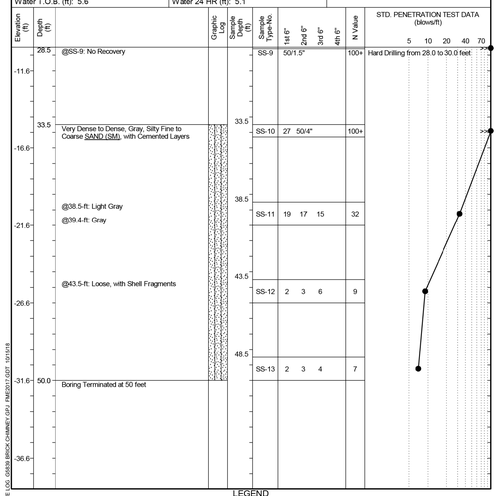
F&ME CONSULTANTS

Brick Chimney Road
Georgetown County, South Carolina
G5839

LOG OF BORING No. B-24

Latitude: 33.433745
Longitude: -79.304

Date Drilled: 8/28/2018 | Supervisor: C. Piercy | Notes:
Date Completed: 8/28/2018 | Approx. Ground Elevation (ft): 18
Drill Machine: CME 45B | Drilling Method: HSA
Water T.O.B. (ft): 5.6 | Water 24 HR (ft): 5.1



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LEGEND

SAMPLER TYPE				DRILLING METHOD			
SS	- Split Spoon	NQ - Rock Core, 1-7/8"		HSA	- Hollow Stem Auger	RW	- Rotary Wash
UD	- Undisturbed Sample	CU - Cuttings		CFA	- Continuous Flight Augers	RC	- Rock Core
AWG	- Rock Core, 1-1/8"	CT - Continuous Tube		DC	- Driving Casing	PHD	- Percussion Hammer Drill

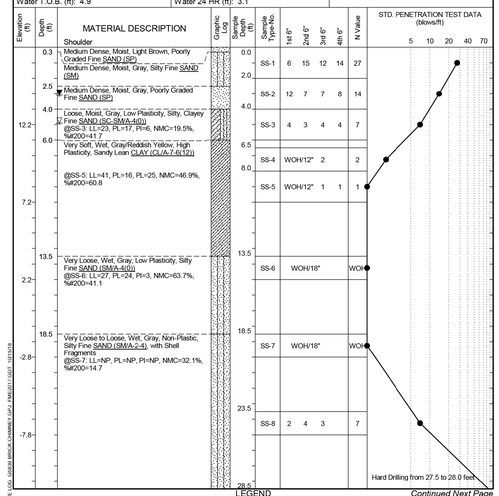
F&ME CONSULTANTS

Brick Chimney Road
Georgetown County, South Carolina
G5839

LOG OF BORING No. B-25

Latitude: 33.433864
Longitude: -79.303738

Date Drilled: 8/28/2018 | Supervisor: C. Piercy | Notes:
Date Completed: 8/28/2018 | Approx. Ground Elevation (ft): 17
Drill Machine: CME 45B | Drilling Method: HSA
Water T.O.B. (ft): 4.9 | Water 24 HR (ft): 3.1



Continued Next Page

LEGEND

SAMPLER TYPE				DRILLING METHOD			
SS	- Split Spoon	NQ - Rock Core, 1-7/8"		HSA	- Hollow Stem Auger	RW	- Rotary Wash
UD	- Undisturbed Sample	CU - Cuttings		CFA	- Continuous Flight Augers	RC	- Rock Core
AWG	- Rock Core, 1-1/8"	CT - Continuous Tube		DC	- Driving Casing	PHD	- Percussion Hammer Drill

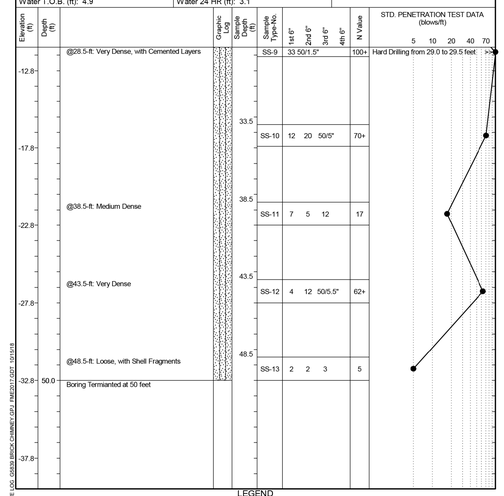
F&ME CONSULTANTS

Brick Chimney Road
Georgetown County, South Carolina
G5839

LOG OF BORING No. B-25

Latitude: 33.433864
Longitude: -79.303738

Date Drilled: 8/28/2018 | Supervisor: C. Piercy | Notes:
Date Completed: 8/28/2018 | Approx. Ground Elevation (ft): 17
Drill Machine: CME 45B | Drilling Method: HSA
Water T.O.B. (ft): 4.9 | Water 24 HR (ft): 3.1



LEGEND

SAMPLER TYPE				DRILLING METHOD			
SS	- Split Spoon	NQ - Rock Core, 1-7/8"		HSA	- Hollow Stem Auger	RW	- Rotary Wash
UD	- Undisturbed Sample	CU - Cuttings		CFA	- Continuous Flight Augers	RC	- Rock Core
AWG	- Rock Core, 1-1/8"	CT - Continuous Tube		DC	- Driving Casing	PHD	- Percussion Hammer Drill

FOR INFORMATION ONLY

SCALE: 1.000 ft / in.
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11/25/2019

3229 W. MONTAGUE AVENUE
CHARLESTON, SC 29418
(843) 554-8602

DAVIS & FLOYD
SINCE 1954

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
5			
4			
3			
2			
1			

DESIGNED BY ____ DRAWN BY WCG CHECKED BY ____

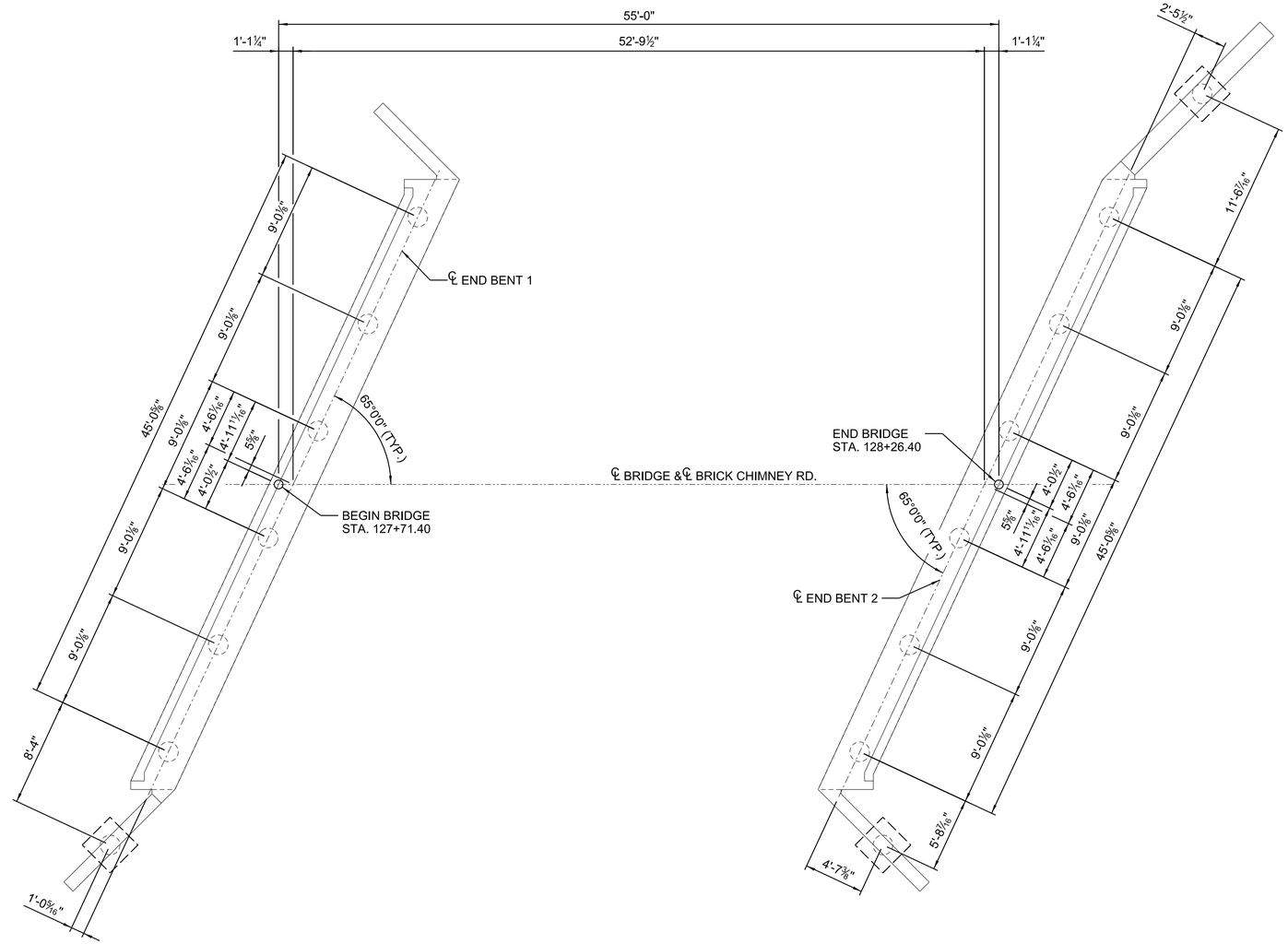
GEORGETOWN COUNTY

BORING LOGS

PLOT SIZE = 22" x 34"

CONSTRUCTION PLANS

FED. ROAD DIV.NO.	STATE	COUNTY	D&F PROJECT NO.	ROAD NAME	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	GEORGETOWN	31811.01	BRICK CHIMNEY		10	



PLAN

SCALE: 5:4 :" / In.
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FILE: G:\JobsOdd\31811-01\Production\Structural\Drawings\31811-01_BC_BR_10_Foundation Layout.dgn
11/25/2019

SOUTH CAROLINA
DAVIS & FLOYD, INC.
No. C00538
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
LICENSED PROFESSIONAL
No. 32080
11/25/19
R. G. STEVENSON, JR.

3229 W. MONTAGUE AVENUE
CHARLESTON, SC 29418
(843) 554-8602

DAVIS & FLOYD
SINCE 1954

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
5			
4			
3			
2			
1			

DESIGNED BY JFE DRAWN BY WCG CHECKED BY RGS

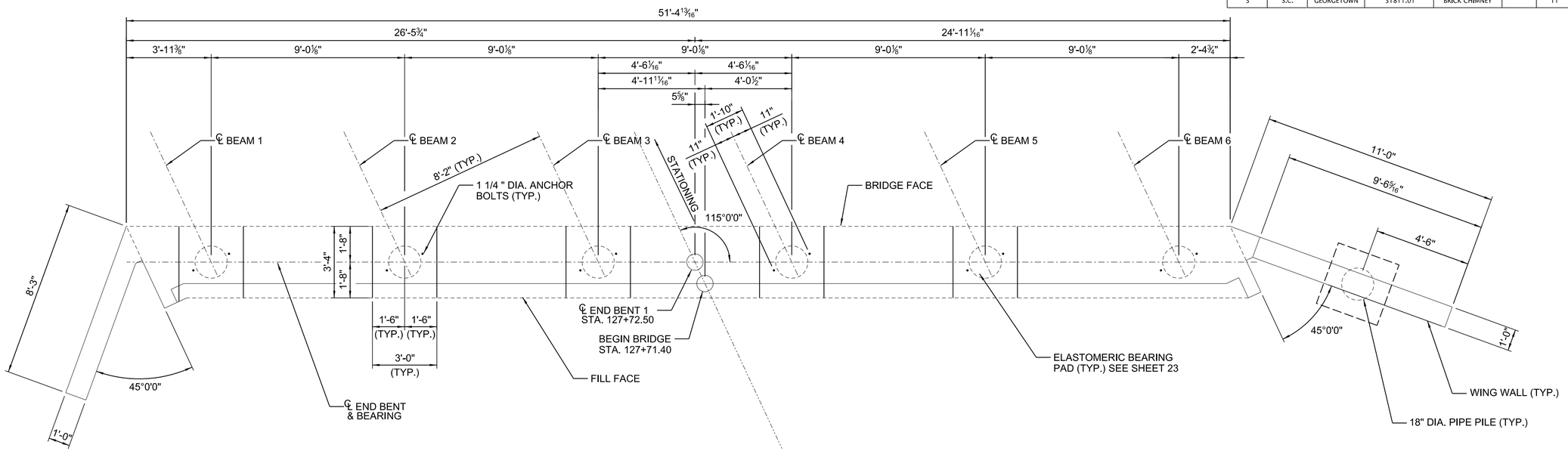
GEORGETOWN COUNTY

FOUNDATION LAYOUT

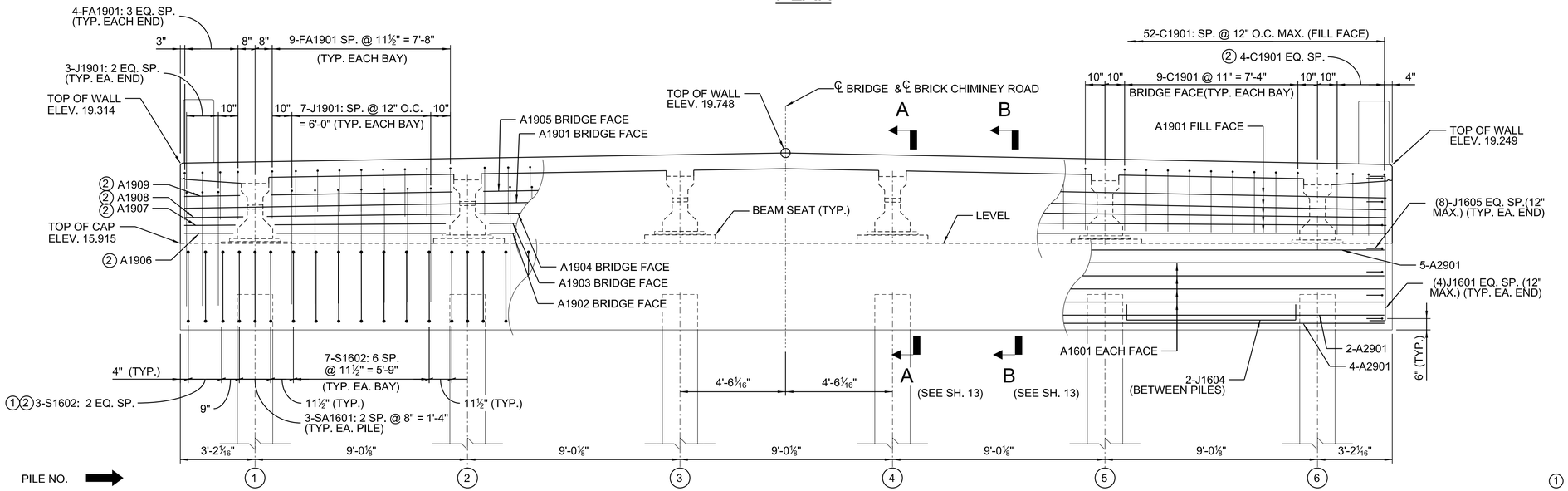
PLOT SIZE = 22" x 34"

CONSTRUCTION PLANS

FED. ROAD DIV.NO.	STATE	COUNTY	D&F PROJECT NO.	ROAD NAME	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	GEORGETOWN	31811.01	BRICK CHIMNEY		11	



PLAN



ELEVATION

LOOKING UP STATION.
ELEVATIONS & DIMENSIONS
MEASURED AT ℄ BENT

BEAM SEAT ELEV. TABLE	
GIRDER	ELEV.
1	15.972
2	16.124
3	16.276
4	16.264
5	16.090
6	N/A

① SPLAY BARS AS REQUIRED TO MAINTAIN DIMENSION AT END OF CAP AND TO BARS OVER PILE

② TYP. EACH END

SCALE: 2:8 ":" / in.
PEN TABLE: G:\Resource\Standards\Bentley\Vertical\Plotting\DO_NOTHING_BRIDGES.tbl
PLOT DRIVER: G:\Resource\Standards\Bentley\Vertical\Plotting\BRIDGES pdf MS1.pltcfg
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11/25/2019

DAVIS & FLOYD, INC. No. C00538 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 32080 11/25/19 ROBERT G. STEVENSON, JR.

3229 W. MONTAGUE AVENUE
CHARLESTON, SC 29418
(843) 554-8602

DAVIS & FLOYD
SINCE 1954

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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DESIGNED BY JFE DRAWN BY WCG CHECKED BY RGS

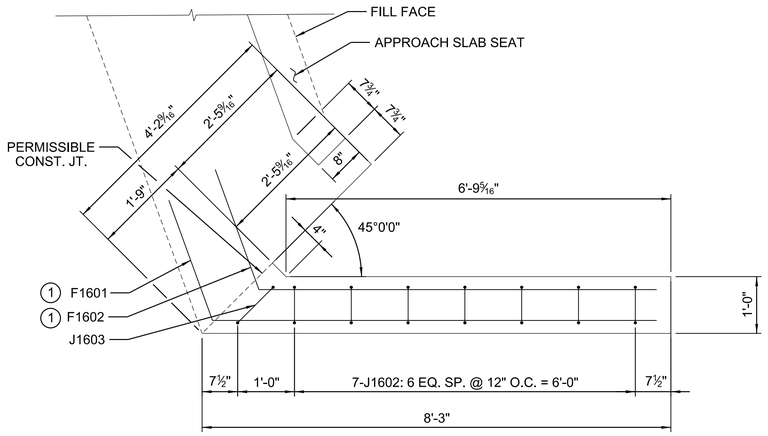
GEORGETOWN COUNTY

END BENT 1 PLAN & ELEVATION

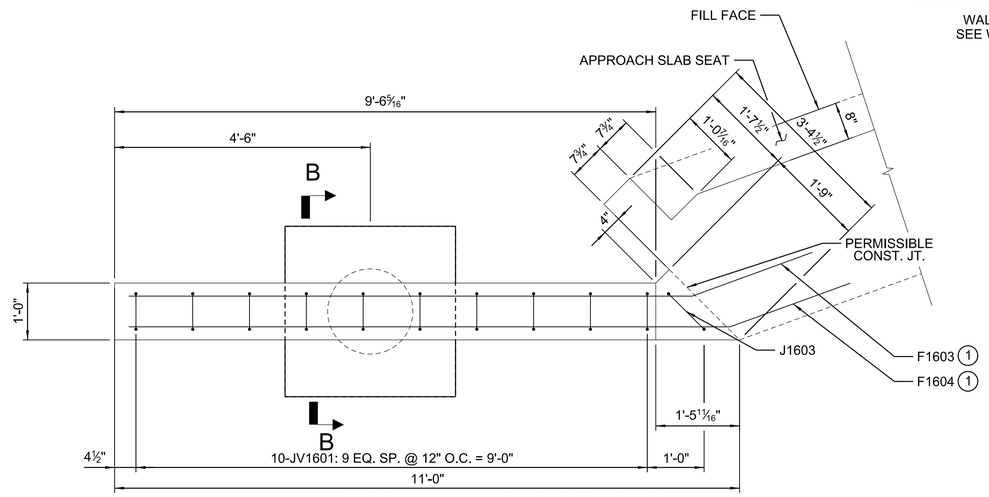
PLOT SIZE = 22" x 34"

CONSTRUCTION PLANS

FED. ROAD DIV.NO.	STATE	COUNTY	D&F PROJECT NO.	ROAD NAME	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	GEORGETOWN	31811.01	BRICK CHIMNEY		12	

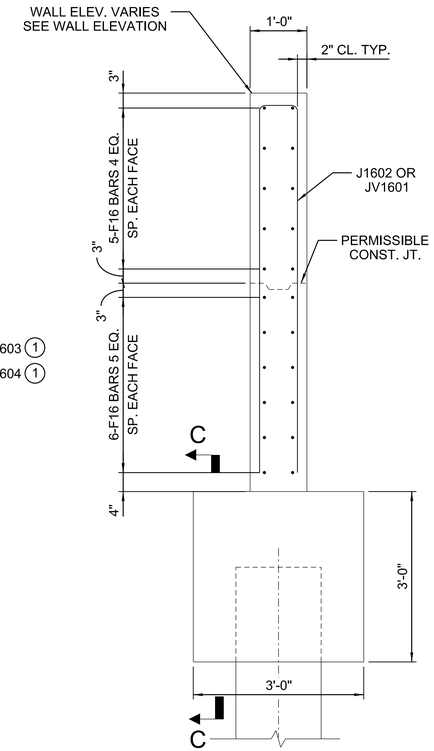


LEFT WING WALL PLAN

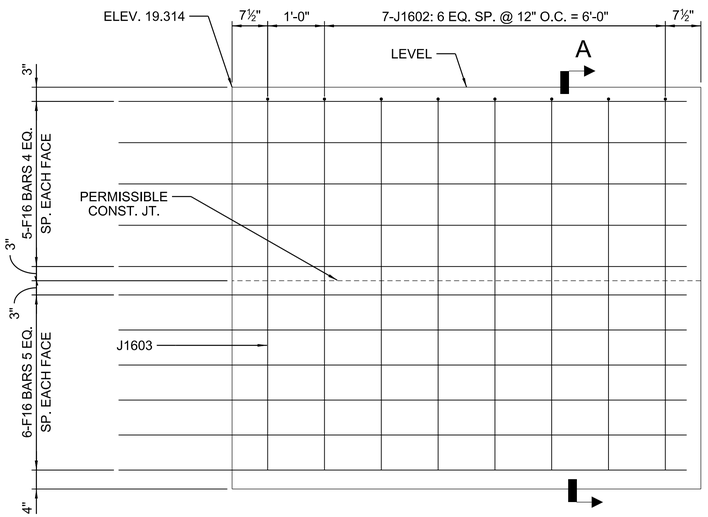


RIGHT WING WALL PLAN

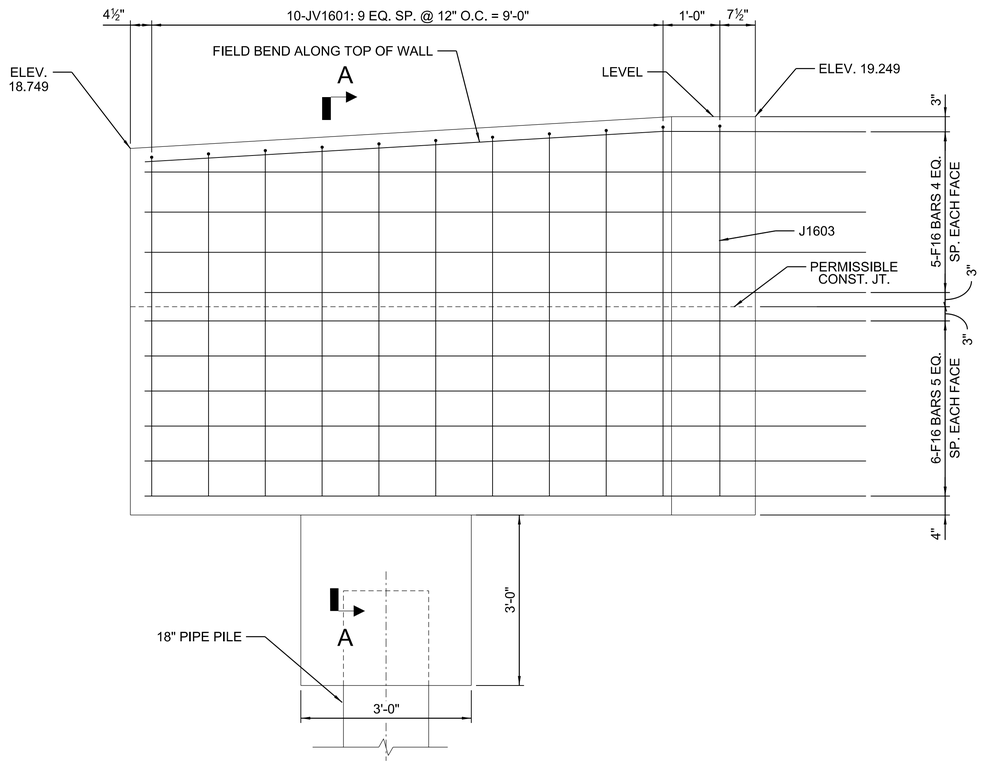
① FIELD CUT BARS AS REQUIRED TO AVOID CONFLICT WITH BEAMS



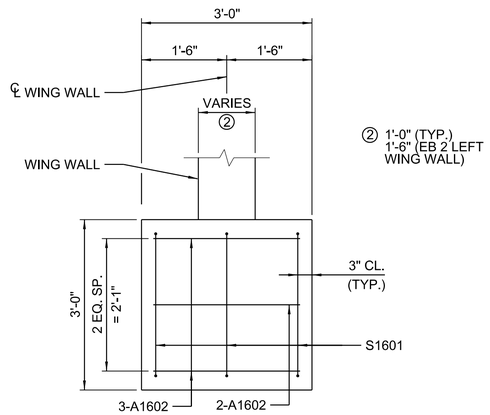
SECTION A-A



LEFT WING WALL ELEVATION

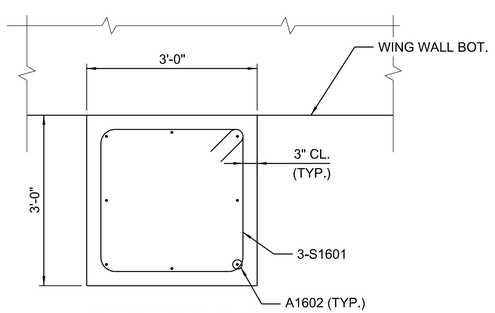


RIGHT WING WALL ELEVATION



SECTION B-B

(WING WALL REINF. NOT SHOWN FOR CLARITY)



SECTION C-C

(WING WALL REINF. NOT SHOWN FOR CLARITY)

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FILE: G:\JobsOdd\31811-01\Production\Structural\Drawings\31811-01_BC_BR_12_End Bent 1 Details (Sheet 1 of 2).dgn
11/25/2019

SOUTH CAROLINA — DAVIS & FLOYD, INC. — No. C00538 — CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA — LICENSED PROFESSIONAL — No. 32080 — 11/25/19 — R. G. STEVENSON, JR.

3229 W. MONTAGUE AVENUE
CHARLESTON, SC 29418
(843) 554-8602

DAVIS & FLOYD

SINCE 1954

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
5			
4			
3			
2			
1			

DESIGNED BY JFE DRAWN BY WCG CHECKED BY RGS

GEORGETOWN COUNTY

END BENT 1 DETAILS (SHEET 1 OF 2)

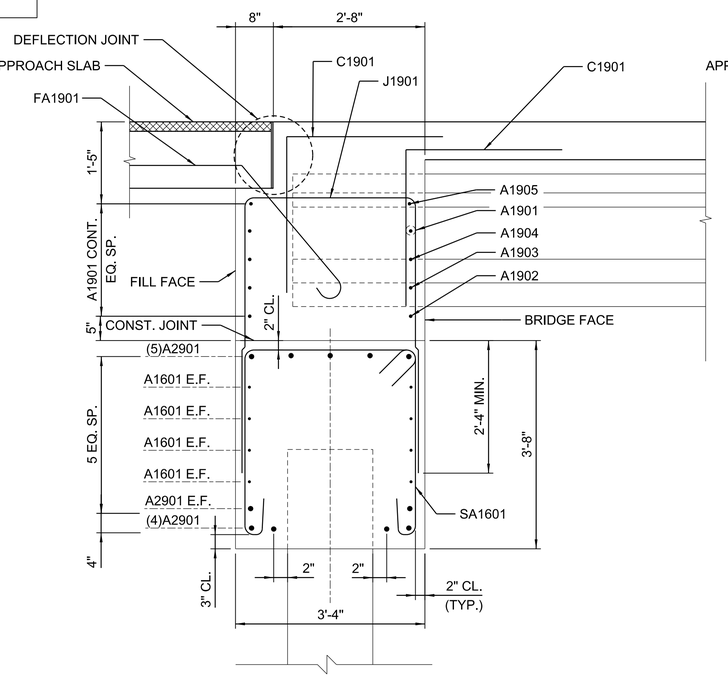
PLOT SIZE = 22" x 34"

CONSTRUCTION PLANS

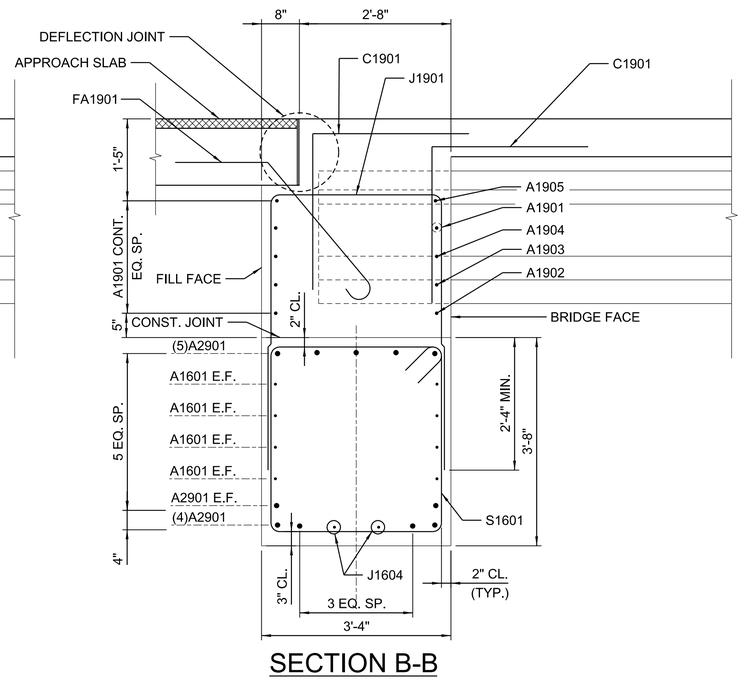
FED. ROAD DIV.NO.	STATE	COUNTY	D&F PROJECT NO.	ROAD NAME	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	GEORGETOWN	31811.01	BRICK CHIMNEY		13	

REINFORCING STEEL SCHEDULE

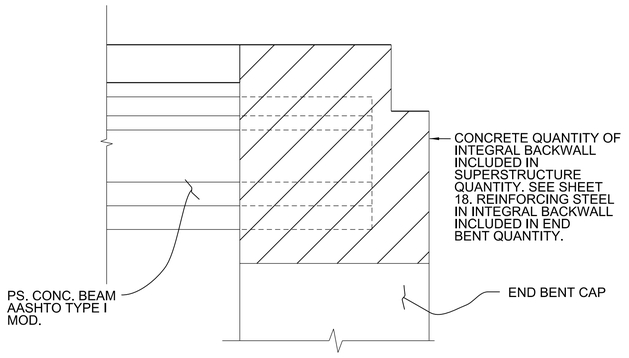
LOCATION	MARK	NO. REQ'D	DIMENSION "a"	"b"	"c"	"d"	"e"	LENGTH
CAP	A1601	8	50'-10¾"	-	-	-	-	50'-10¾"
PILE CAP	A1602	8	2'-6"	-	-	-	-	2'-6"
BACK WALL	A1901	6	50'-10¾"	-	-	-	-	50'-10¾"
BACK WALL	A1902	5	7'-2"	-	-	-	-	7'-2"
BACK WALL	A1903	5	7'-3¼"	-	-	-	-	7'-3¼"
BACK WALL	A1904	5	8'-0"	-	-	-	-	8'-0"
BACK WALL	A1905	5	7'-8½"	-	-	-	-	7'-8½"
BACK WALL	A1906	2	2'-1"	-	-	-	-	2'-1"
BACK WALL	A1907	2	2'-2"	-	-	-	-	2'-2"
BACK WALL	A1908	2	2'-6"	-	-	-	-	2'-6"
BACK WALL	A1909	2	2'-4¼"	-	-	-	-	2'-4¼"
CAP	A2901	11	50'-10¾"	-	-	-	-	50'-10¾"
BACK WALL	C1901	105	2'-9"	2'-9"	-	-	-	5'-6"
BACK WALL	FA1901	53	2'-10"	2'-0"	1'-3 7/16"	1'-6⅜"	8½"	5'-6½"
WING WALL	F1601	11	7'-10"	3'-0"	1'-0 5/16"	2'-9 13/16"	-	10'-10"
WING WALL	F1602	11	7'-0"	3'-0"	1'-0 5/16"	2'-9 13/16"	-	10'-0"
WING WALL	F1603	11	9'-11"	3'-0"	2'-9 13/16"	1'-0 5/16"	-	12'-11"
WING WALL	F1604	11	10'-7"	3'-0"	2'-9 13/16"	1'-0 5/16"	-	13'-7"
BEAM SEAT	J1301	8	3'-0"	1'-8"	-	-	-	6'-4"
BEAM SEAT	J1302	8	2'-8"	1'-8"	-	-	-	6'-0"
END OF CAP	J1601	8	6'-7"	1'-0"	-	-	-	8'-7"
WING WALL	J1602	7	8"	6'-7"	-	-	-	13'-10"
WING WALL	J1603	2	11¼"	6'-7"	-	-	-	14'-1¼"
CAP	J1604	10	6'-8"	9"	-	-	-	8'-2"
END OF CAP (2)	J1605	16	2'-8"	1'-0"	-	-	-	4'-8"
BACK WALL	J1901	41	3'-0"	4'-10"	-	-	-	12'-8"
WING WALL	JV1601	10	8"	6'-4"	6'-1"	6'-7"	1 1/16"	13'-4"
PILE CAP	S1601	3	2'-6"	2'-6"	8"	-	-	11'-4"
CAP	S1602	41	3'-0"	3'-3"	8"	-	-	13'-10"
CAP	SA1601	18	3'-0"	3'-3"	8"	-	-	10'-10"



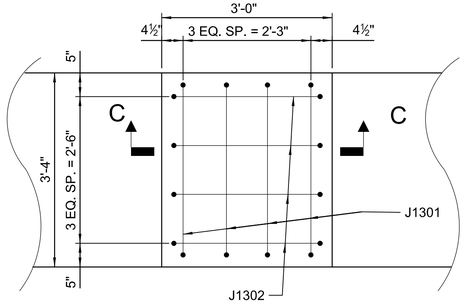
SECTION A-A



SECTION B-B

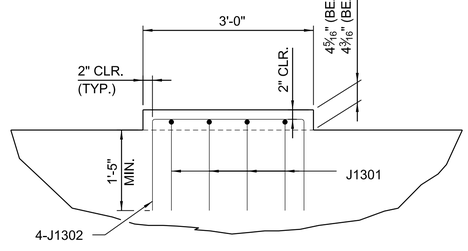


INTEGRAL BACKWALL QUANTITY DETAIL

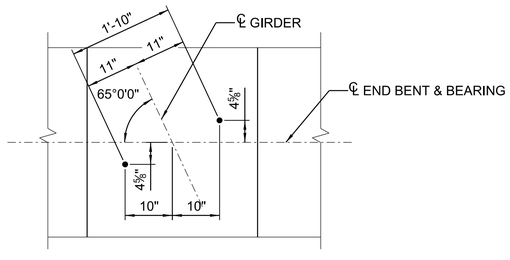


BEAM SEAT PLAN DETAIL

NOTE:
REINFORCING SHALL ONLY BE USED IN BEAM SEATS 3 & 4.



SECTION C-C



ANCHOR BOLT LAYOUT

QUANTITIES

ITEM	UNIT	
CONC. FOR STRUCTURES CLASS 4000	CY	29.6
REINF. STEEL FOR STRUCTURES(BRIDGES) (1)	LB	7,183
DYNAMIC PILE ANALYZER TEST SET-UP	EA	2
PILE DRIVING SET-UP	EA	8
STEEL PIPE PILING (18" DIAMETER)	LF	171
STEEL PIPE INDEX PILING - (18" DIA.)	LF	29
AGGREGATE UNDERDRAIN #789 W/4" PERF. PIPE FOR STRUCT.	TON	60
WATERPROOFING (SUBSTRUCTURE SECOND METHOD)	SY	16.1

NOTES:

FOR REINFORCING BENDING DETAILS, SEE SHEET 5.

PILE LENGTH ESTIMATE INCLUDES 24" PILE EMBEDMENT INTO CAP.

FIRST PILE DRIVEN AT EACH END BENT SHALL BE AN INDEX PILE.

(1) INCLUDES 90 LBS FOR ANCHOR BOLTS.

(2) FIELD BEND TO MATCH SKEW OF CAP

SCALE: 1:4 '-' / in.
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PLOT DRIVER: G:\Resource\Standards\Bentley\Vertical\Plotting\BRIDGES pdf MS i.pltcfg
FILE: G:\JobsOdd\31811-01\Production\Structural\Drawings\31811-01_BC_BR_13_End Bent 1 Details (Sheet 2 of 2).dgn
11/25/2019

SOUTH CAROLINA DAVIS & FLOYD, INC. No. C00538 CERTIFICATE OF AUTHORIZATION

REGISTERED SOUTH CAROLINA PROFESSIONAL ENGINEER No. 32080 11/25/19 ROBERT G. STEVENSON JR.

3229 W. MONTAGUE AVENUE
CHARLESTON, SC 29418
(843) 554-8602

DAVIS & FLOYD
SINCE 1954

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
5			
4			
3			
2			
1			

DESIGNED BY JFE DRAWN BY WCG CHECKED BY RGS

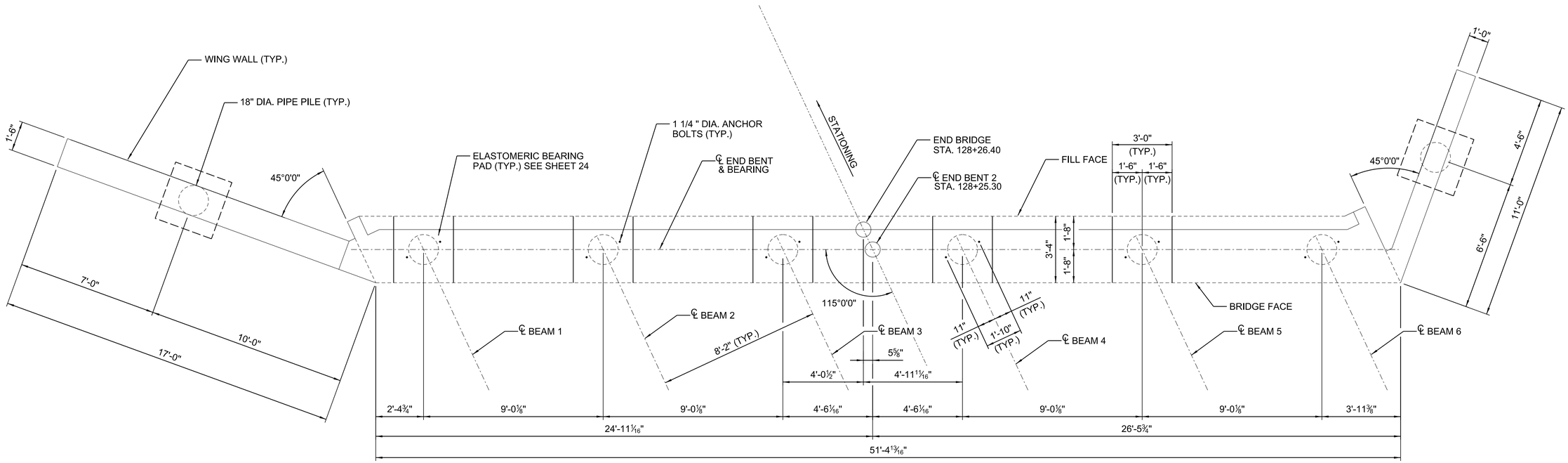
GEORGETOWN COUNTY

END BENT 1 DETAILS (SHEET 2 OF 2)

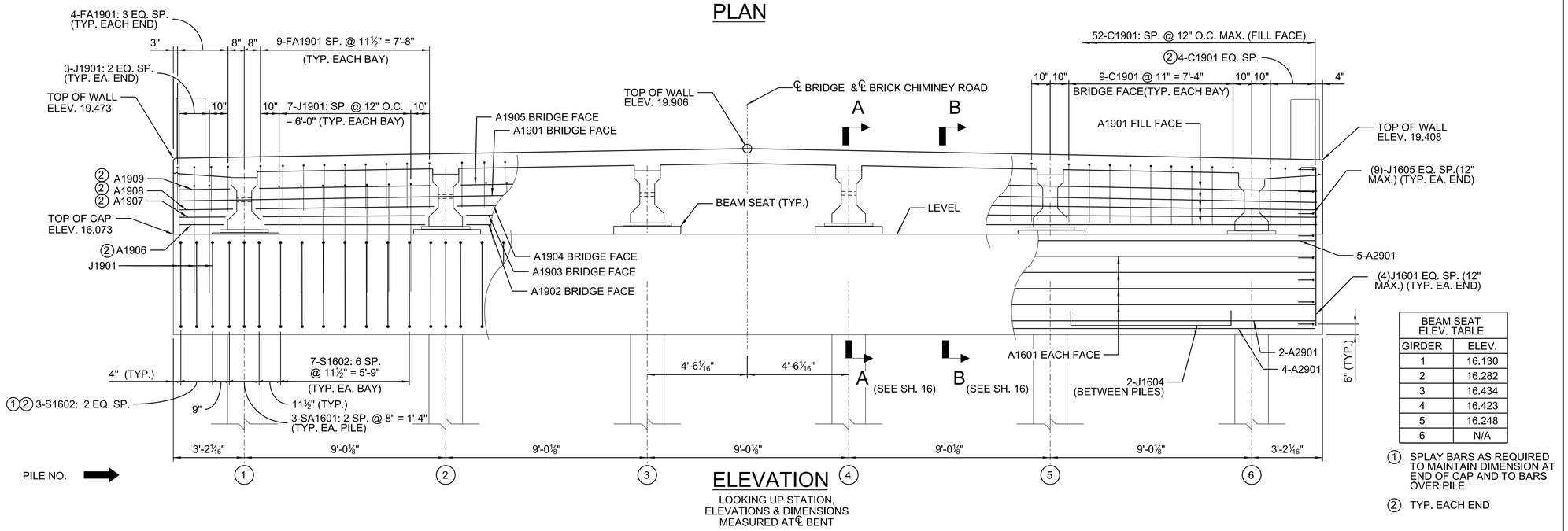
PLOT SIZE = 22" x 34"

CONSTRUCTION PLANS

FED. ROAD DIV.NO.	STATE	COUNTY	D&F PROJECT NO.	ROAD NAME	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	GEORGETOWN	31811.01	BRICK CHIMNEY		14	



PLAN



ELEVATION

LOOKING UP STATION, ELEVATIONS & DIMENSIONS MEASURED AT ℄ BENT

BEAM SEAT ELEV. TABLE	
GIRDER	ELEV.
1	16.130
2	16.282
3	16.434
4	16.423
5	16.248
6	N/A

① SPLAY BARS AS REQUIRED TO MAINTAIN DIMENSION AT END OF CAP AND TO BARS OVER PILE

② TYP. EACH END

SCALE: 2:8 ":" / in.
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PLOT DRIVER: G:\Resource\Standards\Bentley\Vertical\Plotting\BRIDGES pdf MS i.pltcfg
FILE: G:\JobsOdd\31811-01\Production\Structural\Drawings\31811-01_BC_BR_14_End Bent 2 Plan & Elevation.dgn
11/25/2019

SOUTH CAROLINA DAVIS & FLOYD, INC. No. C00538 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER ROBERT G. STEVENSON No. 32080 11/25/19

3229 W. MONTAGUE AVENUE
CHARLESTON, SC 29418
(843) 554-8602

DAVIS & FLOYD

SINCE 1954

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
5			
4			
3			
2			
1			

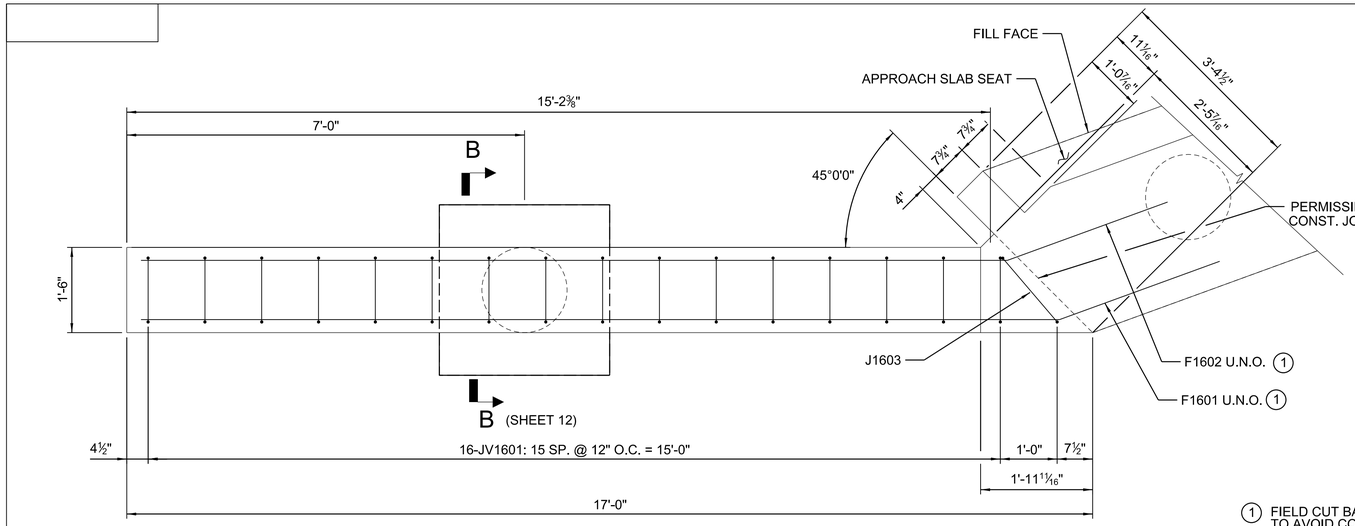
DESIGNED BY JFE DRAWN BY WCG CHECKED BY RGS

GEORGETOWN COUNTY

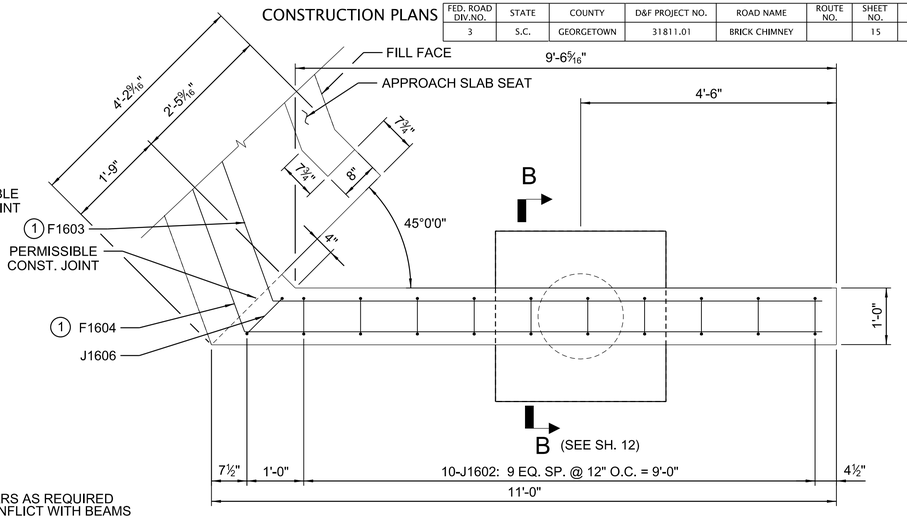
END BENT 2 PLAN & ELEVATION

PLOT SIZE = 22" x 34"

CONSTRUCTION PLANS	FED. ROAD DIV.NO.	STATE	COUNTY	D&F PROJECT NO.	ROAD NAME	ROUTE NO.	SHEET NO.	TOTAL SHEETS
	3	S.C.	GEORGETOWN	31811.01	BRICK CHIMNEY		15	

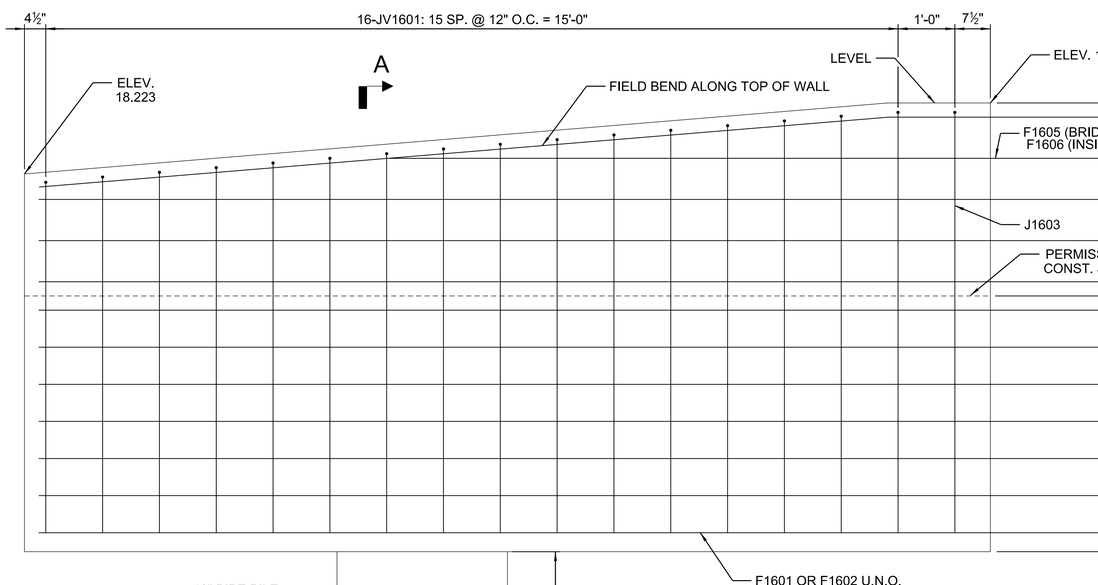


LEFT WING WALL PLAN

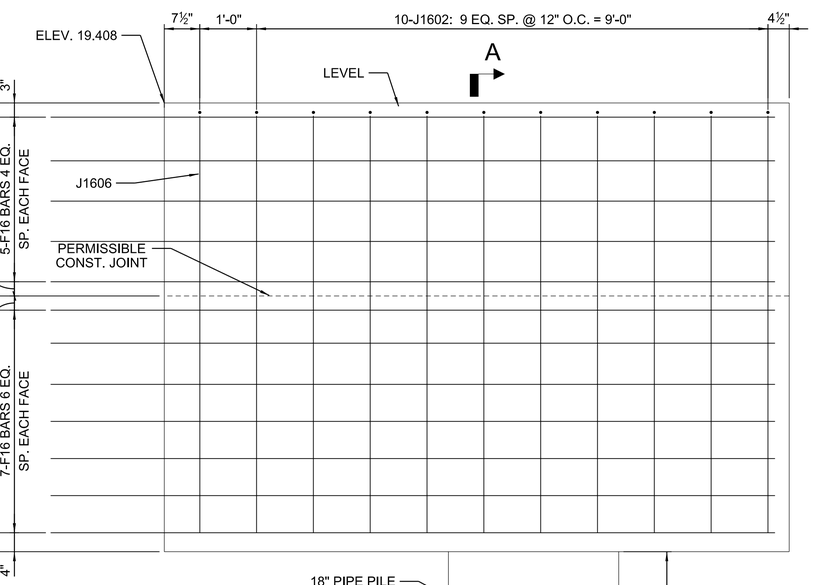


(1) FIELD CUT BARS AS REQUIRED TO AVOID CONFLICT WITH BEAMS

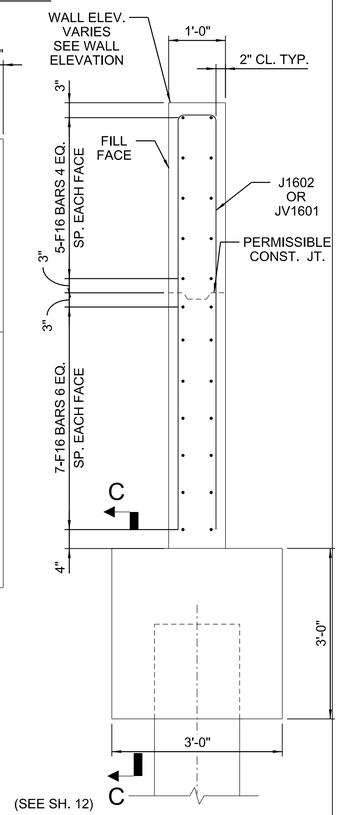
RIGHT WING WALL PLAN



LEFT WING WALL ELEVATION



RIGHT WING WALL ELEVATION



SECTION A-A

SCALE: 1:4 " / in.
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FILE: G:\JobsOdd\31811-01\Production\Structural\Drawings\31811-01_BC_BR_15_End Bent 2 Details (Sheet 1 of 2).dgn
11/25/2019

SOUTH CAROLINA — DAVIS & FLOYD, INC. — No. C00538 — CERTIFICATE OF AUTHORIZATION

REGISTERED LICENSED — SOUTH CAROLINA — PROFESSIONAL ENGINEER — No. 32080 — 11/25/19 — R. G. STEVENSON JR.

DAVIS & FLOYD
SINCE 1954
3229 W. MONTAGUE AVENUE
CHARLESTON, SC 29418
(843) 554-8602

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
5			
4			
3			
2			
1			

DESIGNED BY JFE DRAWN BY WCG CHECKED BY RGS

GEORGETOWN COUNTY

END BENT 2 DETAILS (SHEET 1 OF 2)

PLOT SIZE = 22" x 34"

CONSTRUCTION PLANS

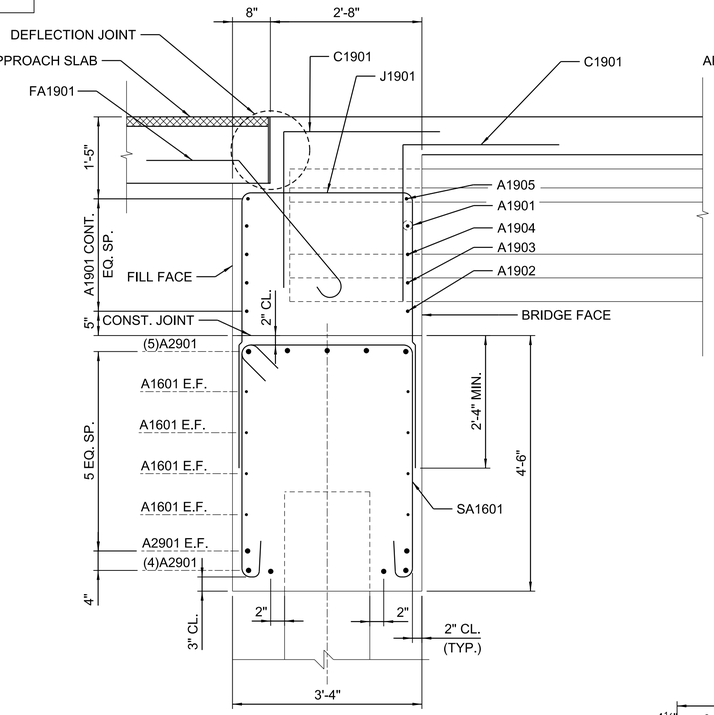
FED. ROAD DIV.NO.	STATE	COUNTY	D&F PROJECT NO.	ROAD NAME	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	GEORGETOWN	31811.01	BRICK CHIMNEY		16	

REINFORCING STEEL SCHEDULE

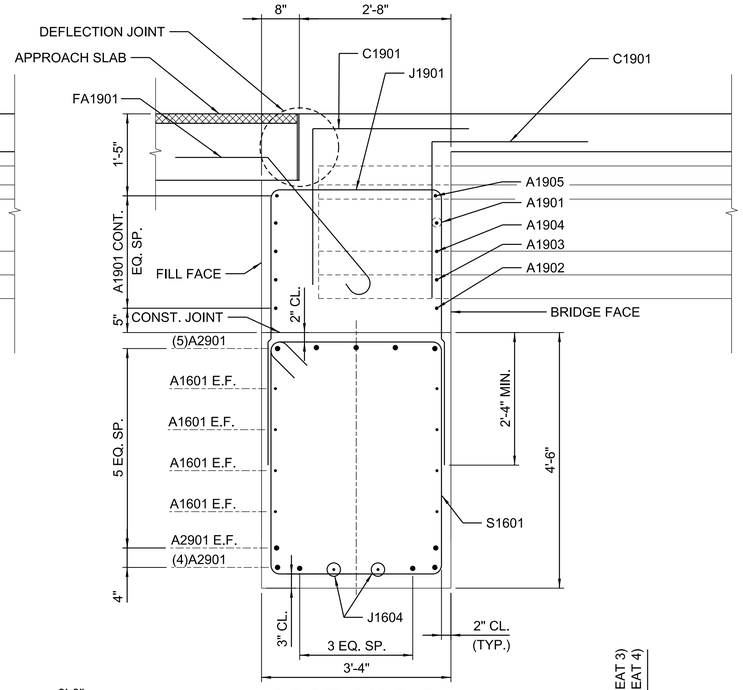
LOCATION	MARK	NO. REQ'D	DIMENSION "a"	"b"	"c"	"d"	"e"	LENGTH
CAP	A1601	8	50'-10¾"	-	-	-	-	50'-10¾"
PILE CAP	A1602	16	2'-6"	-	-	-	-	2'-6"
BACK WALL	A1901	6	50'-10¾"	-	-	-	-	50'-10¾"
BACK WALL	A1902	5	7'-2"	-	-	-	-	7'-2"
BACK WALL	A1903	5	7'-3¼"	-	-	-	-	7'-3¼"
BACK WALL	A1904	5	8'-0"	-	-	-	-	8'-0"
BACK WALL	A1905	5	7'-8½"	-	-	-	-	7'-8½"
BACK WALL	A1906	2	2'-1"	-	-	-	-	2'-1"
BACK WALL	A1907	2	2'-2"	-	-	-	-	2'-2"
BACK WALL	A1908	2	2'-6"	-	-	-	-	2'-6"
BACK WALL	A1909	2	2'-4¼"	-	-	-	-	2'-4¼"
CAP	A2901	11	50'-10¾"	-	-	-	-	50'-10¾"
BACK WALL	C1901	105	2'-9"	2'-9"	-	-	-	5'-6"
BACK WALL	FA1901	53	2'-10"	2'-0"	1'-3 7/16"	1'-6⅜"	8½"	5'-6½"
WING WALL	F1601	11	16'-2"	3'-0"	2'-9 13/16"	1'-0 5/16"	-	19'-2"
WING WALL	F1602	11	15'-3"	3'-0"	2'-9 13/16"	1'-0 5/16"	-	18'-3"
WING WALL	F1603	12	9'-8"	3'-0"	1'-0 5/16"	2'-9 13/16"	-	12'-8"
WING WALL	F1604	12	10'-2"	3'-0"	1'-0 5/16"	2'-9 13/16"	-	13'-2"
WING WALL	F1605	1	10'-7"	3'-0"	1'-0 5/16"	2'-9 13/16"	-	13'-7"
WING WALL	F1606	1	9'-8"	3'-0"	1'-0 5/16"	2'-9 13/16"	-	12'-8"
BEAM SEAT	J1301	8	3'-0"	1'-8"	-	-	-	6'-4"
BEAM SEAT	J1302	8	2'-8"	1'-8"	-	-	-	6'-0"
END OF CAP	J1601	8	7'-5"	1'-0"	-	-	-	9'-5"
WING WALL	J1602	10	8"	7'-4"	-	-	-	15'-4"
WING WALL	J1603	1	1'-6¼"	7'-4"	-	-	-	16'-2¼"
CAP	J1604	10	6'-8"	9"	-	-	-	8'-2"
END OF CAP (2)	J1605	18	2'-8"	1'-0"	-	-	-	4'-8"
WING WALL	J1606	1	11¼"	7'-4"	-	-	-	15'-7¼"
BACK WALL	J1901	41	3'-0"	4'-10"	-	-	-	12'-8"
WING WALL	JV1601	16	1'-2"	6'-9"	6'-2"	7'-4"	15/16"	14'-8"
PILE CAP	S1601	6	2'-6"	2'-6"	8"	-	-	11'-4"
CAP	S1602	41	3'-0"	4'-1"	8"	-	-	15'-6"
CAP	SA1601	18	3'-0"	4'-1"	8"	-	-	12'-6"

QUANTITIES

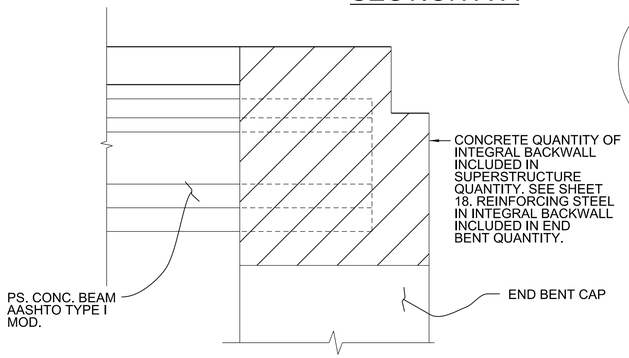
ITEM	UNIT	EB 2
CONC. FOR STRUCTURES CLASS 4000	CY	41.0
REINF. STEEL FOR STRUCTURES(BRIDGES) (1)	LB	7,764
DYNAMIC PILE ANALYZER TEST SET-UP	EA	2
PILE DRIVING SET-UP	EA	9
STEEL PIPE PILING (18" DIAMETER)	LF	197
STEEL PIPE INDEX PILING - (18" DIA.)	LF	29
AGGREGATE UNDERDRAIN #789 W/4" PERF. PIPE FOR STRUCT.	TON	73
WATERPROOFING (SUBSTRUCTURE SECOND METHOD)	SY	17.8



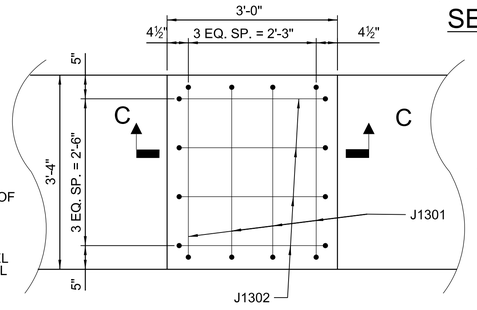
SECTION A-A



SECTION B-B

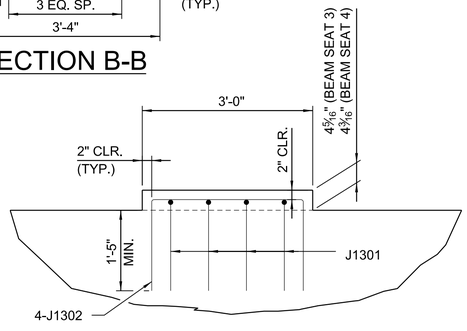


INTEGRAL BACKWALL QUANTITY DETAIL

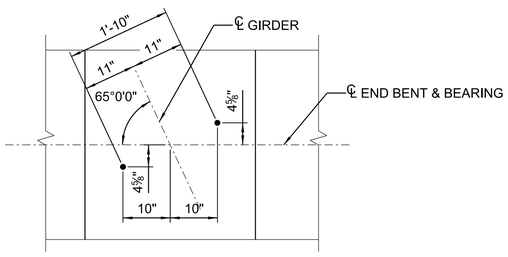


BEAM SEAT PLAN DETAIL

NOTE:
REINFORCING SHALL ONLY BE USED IN BEAM SEATS 3 & 4.



SECTION C-C



ANCHOR BOLT LAYOUT

NOTES:

FOR REINFORCING BENDING DETAILS, SEE SHEET 5.

PILE LENGTH ESTIMATE INCLUDES 24" PILE EMBEDMENT INTO CAP.

FIRST PILE DRIVEN AT EACH END BENT SHALL BE AN INDEX PILE.

(1) INCLUDES 90 LBS FOR ANCHOR BOLTS.

(2) FIELD BEND TO MATCH SKEW OF CAP.

SCALE: 1:4 " / in.
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PLOT DRIVER: G:\Resource\Standards\Bentley\Vertical\Plotting\BRIDGES pdf MS i.pltcfg
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11/25/2019

SOUTH CAROLINA DAVIS & FLOYD, INC. No. C00538 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER ROBERT G. STEVENSON, JR. No. 32080 11/25/19

3229 W. MONTAGUE AVENUE
CHARLESTON, SC 29418
(843) 554-8602

DAVIS & FLOYD
SINCE 1954

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GEORGETOWN COUNTY

END BENT 2 DETAILS (SHEET 2 OF 2)

PLOT SIZE = 22" x 34"

CONSTRUCTION PLANS

FED. ROAD DIV.NO.	STATE	COUNTY	D&F PROJECT NO.	ROAD NAME	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	GEORGETOWN	31811.01	BRICK CHIMNEY		17	

END BENT DRIVEN PILE BEARING (PER PILE)

PARAMETERS	18"X0.5" PIPE PILE
FACTORED DESIGN LOAD	94.5 TONS
GEOTECHNICAL RESISTANCE FACTOR	0.65
NOMINAL RESISTANCE	145 TONS
ESTIMATED SCOUR	N/A
LIQUEFICATION-INDUCED DOWNDRAG	N/A
REQUIRED DRIVING RESISTANCE	145 TONS

METHOD OF CONTROLLING INSTALLATION OF PILES AND VERIFYING THEIR CAPACITY: RESISTANCE AND STRESSES WILL BE VERIFIED BY PILE DRIVING ANALYZER (PDA) AND CAPWAP ANALYSIS OF INDEX PILE(S) DURING DRIVING. A PILE INSTALLATION CHART DEVELOPED FROM THE ANALYSIS WILL BE USED TO VERIFY THE RESISTANCE OF PRODUCTION PILES.

PERFORM PILE DRIVING ANALYZER (PDA) TESTING ON THE FIRST PRODUCTION PILE DRIVEN AT END BENT 1 AND ON THE FIRST PRODUCTION PILE INSTALLED AT END BENT 2. IF A CAPWAP ANALYSIS DETERMINES THAT RESISTANCE HAS NOT BEEN ACHIEVED, A RESTRIKE SHALL BE PERFORMED AT 1 OF THE PRODUCTION PILES INSTALLED AT EACH END BENT AS NECESSARY. PERFORM THE RESTRIKE ON THE PRODUCTION PILE EXHIBITING THE LEAST BLOWS PER FOOT.

ON INITIAL DRIVE, PILES SHALL BE STOPPED AT THE HIGHEST ALLOWABLE FINISHED GRADE ON THE PLANS TO ACCOMMODATE A RESTRIKE. PERFORM PDA TESTING DURING THE RESTRIKE. THE TIME BETWEEN INITIAL DRIVE AND RESTRIKE IS ESTIMATED AT 7 DAYS. PAYMENT FOR THE RESTRIKE WILL BE AS INDICATED IN THE PROJECT DOCUMENTS.

FOR EB1 AND EB2 STEEL PILES, THE REQUIRED MINIMUM PILE TIP ELEVATION TO ACHIEVE LATERAL STABILITY AND THE ESTIMATED PILE TIP ELEVATION TO ACHIEVE THE REQUIRED AXIAL CAPACITY ARE PROVIDED IN THE FOLLOWING TABLE:

PILE TIPE ELVATION TABLE

BENT I.D.	MINIMUM PILE TIP ELEVATION (FT-NAVD88)	ESTIMATED PILE TIP ELEVATION (FT-NAVD88)
END BENT 1	-13	-15
END BENT 2	-13	-15

THE FOLLOWING ESTIMATED PARAMETES WERE USED FOR PERFORMING A DRIVABILITY ANALYSIS FOR EB1 AND EB2:

GRLWEAP INPUT PARAMETERS FOR DRIVEN END BENT PILES

PARAMETERS	18"X0.5" PIPE PILE
SKIN QUAKE	0.10 IN.
TOE QUAKE	0.04 IN.
SKIN DAMPING	0.10 SEC/FT.
TOE DAMPING	0.15 SEC/FT.
% SKIN FRICTION	10%
DISTRIBUTION SHAPE NO.	1.0 ①
BEARING GRAPH	CONSTANT SKIN FRICTION ②
PILE PENETRATION	95%
HAMMER ENERGY RANGE	30-50 FT.-KIPS

① DISTIBUTION SHAPE NO. VARIES WITH DEPTH: 0 AT THE GROUND SURFACE AND 1.0 AT THE PILE TIP ELEVATION
② BEARING GRAPH OPTIONS - PROPOSTIONAL, CONSTANT SKIN FRICTION, AND CONSTANT END BEARING. NOTE: GRLWEAP (2010) WAS USED TO PERFORM THE WAVE EQUATION ANALYSIS

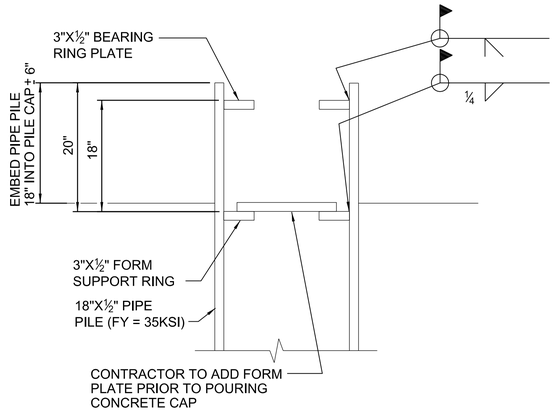
A PILE HAMMER HAVING A RATED ENERGY AS INDICATED ABOVE IS CONSIDERED SUITABLE FOR DRIVEN PILE INSTALLATION. HOWEVER, FINAL HAMMER APPROVAL IS BASED ON A WAVE EQUATION ANALYSIS THAT ACCURATELY REFLECTS THE CONTRACTOR'S PROPOSED DRIVING SYSTEM.

END BENT PILE INSTALLATIONS SHALL BE TERMINATED IMMEDIATELY ONCE REQUIRED ULTIMATE DRIVING RESISTANCE IS ACHIEVED. OVER DRIVING OF PILE TO AVOID PILE CUT-OFF SHALL NOT BE PERMITTED.

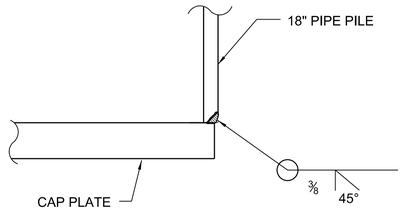
EACH PILE IS TO BE INSTALLED IN ONE CONTINUOUS OPERATION. INCLUDE DETAILS OF ANY ANTICIPATED TEMPORARY DRIVING DISCONTINUITIES INCLUDING ANTICIPATED TIME INTERVALS IN THE PILE INSTALLATION PLAN.

REFERENCE THE 2007 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION FOR DRIVEN PILE FOUNDATIONS, SECTION 711. NOTES INCLUDED IN THESE PLANS ARE IN ADDITION TO THE REQUIREMENTS OF SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

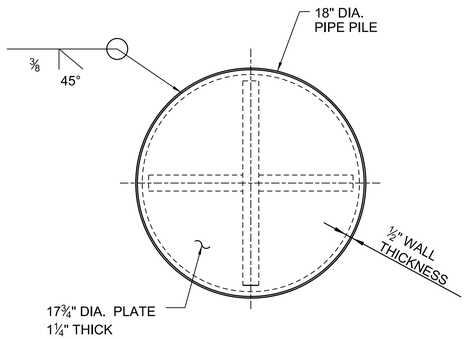
INCLUDE ALL COSTS ASSOCIATED WITH PILE CAP IN THE UNIT BID PRICE FOR PILE DRIVING SETUP



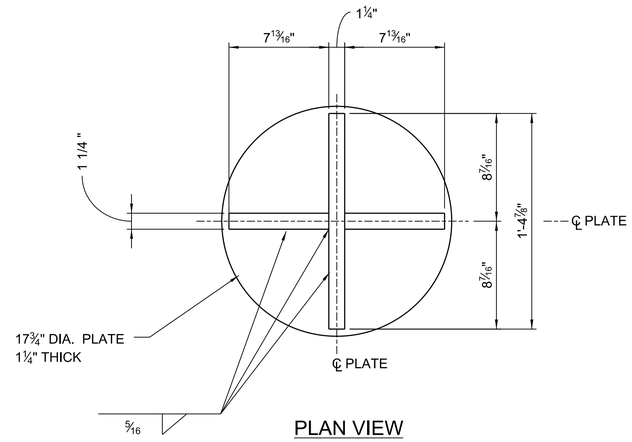
PILE ANCHORAGE DETAILS



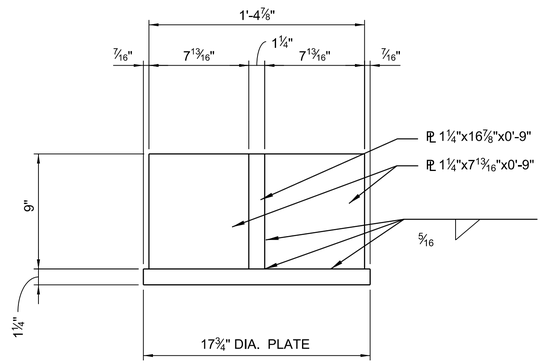
ELEVATION



END VIEW



PLAN VIEW



ELEVATION VIEW

PIPE PILE CAP DESIGN

(36 KSI STEEL)

PILE CAP WELD DETAILS

SCALE: 1 " / in.
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11/25/2019

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GEORGETOWN COUNTY

PIPE PILE DETAILS

PLOT SIZE = 22" x 34"

CONSTRUCTION PLANS

FED. ROAD DIV.NO.	STATE	COUNTY	D&F PROJECT NO.	ROAD NAME	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	GEORGETOWN	31811.01	BRICK CHIMNEY		18	

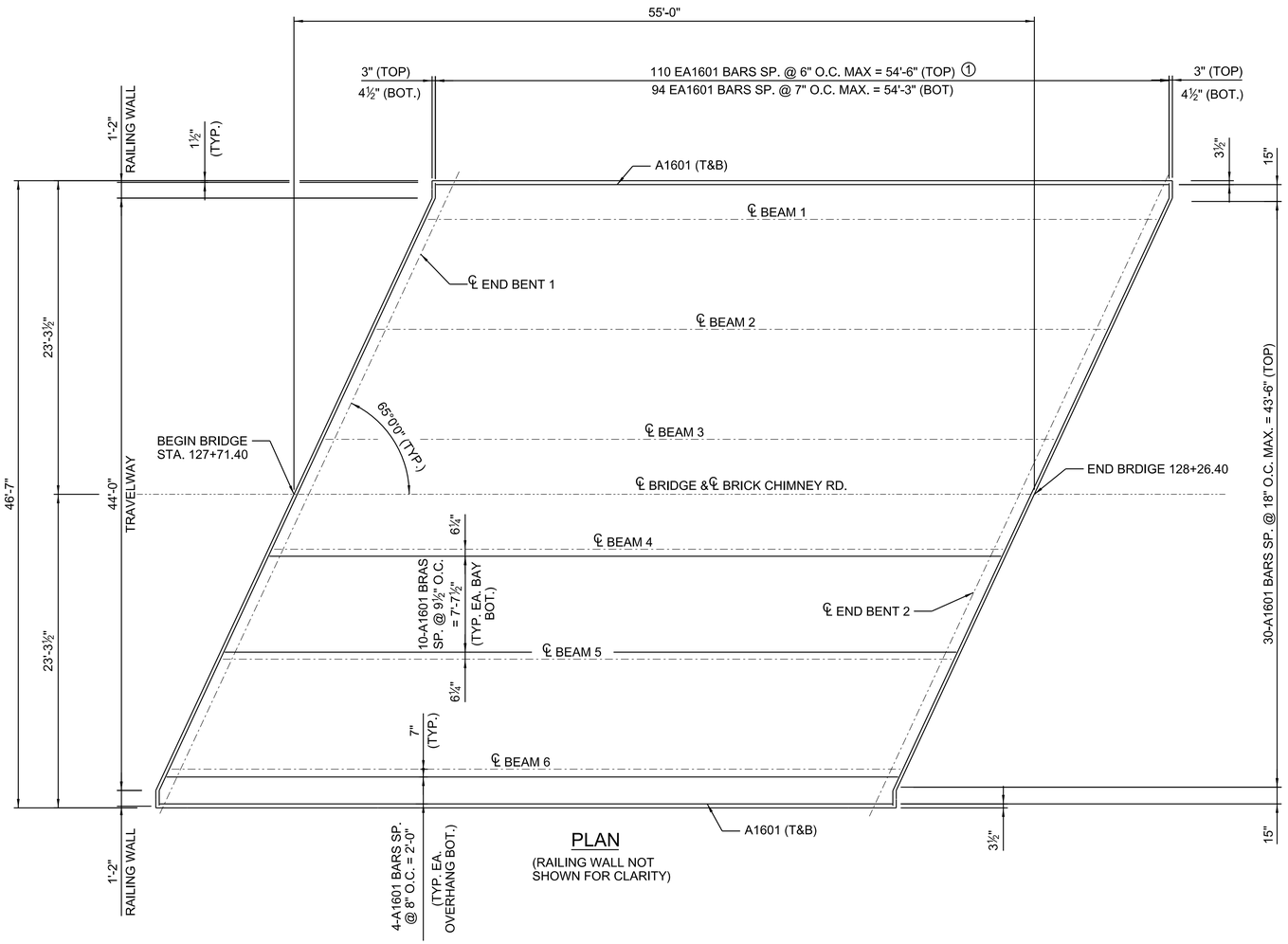
REINFORCING STEEL SCHEDULE

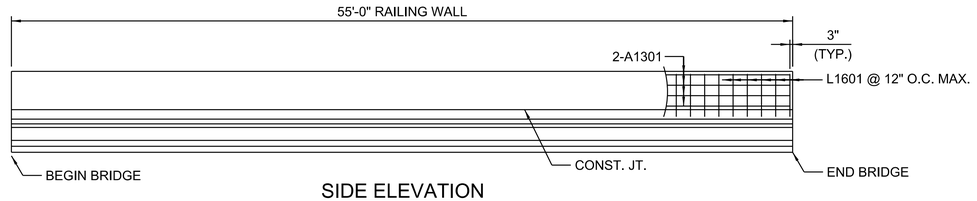
LOCATION	MARK	NO. REQ'D	DIMENSION "a"	"b"	"c"	"d"	"e"	LENGTH
RAILING WALL	A1301	16	54'-8"	-	-	-	-	54'-8"
DECK	A1601	90	54'-8"	-	-	-	-	54'-8"
DECK	EA1601	204	48'-6½"	1'-1½"	5 11/16"	-	-	50'-9½"
DECK (TOP)	FC1301	220	1'-1½"	10'-9"	9'-9"	4'-6 9/16"	6½"	12'-5 "
RAILING WALL	L1601	112	9"	10'-9"	9½"	3'-0"	-	7'-6½"
RAILING WALL	U1601	4	2'-0"	5"	-	-	-	4'-2"
SU		1½" Ht.	AS NECESSARY					
BBU		1½" Ht.	AS NECESSARY					

QUANTITIES

ITEM	UNIT	SPAN A
CONCRETE, CLASS 4000	CY	98.3
REINFORCING STEEL FOR STRUCTURES (BRIDGES)	LB	19,246
CONCRETE BRIDGE RAILING WALL (2'-8" HT.)	LF	110
2" SCHEDULE 80 PVC CONDUIT	LF	224
GROOVED SURFACE FINISH	SY	255
PRESTRESSED CONC. BEAM (TYPE I MOD.)	LF	324.8
ELASTOMERIC BEARING	EA.	12

① BUNDLE FC1301 BRAS @ 6" O.C. W/ EA1601 BARS (TOP) (TYP. EA. OVERHANG)





SIDE ELEVATION

SCALE: 5:4 " / in.
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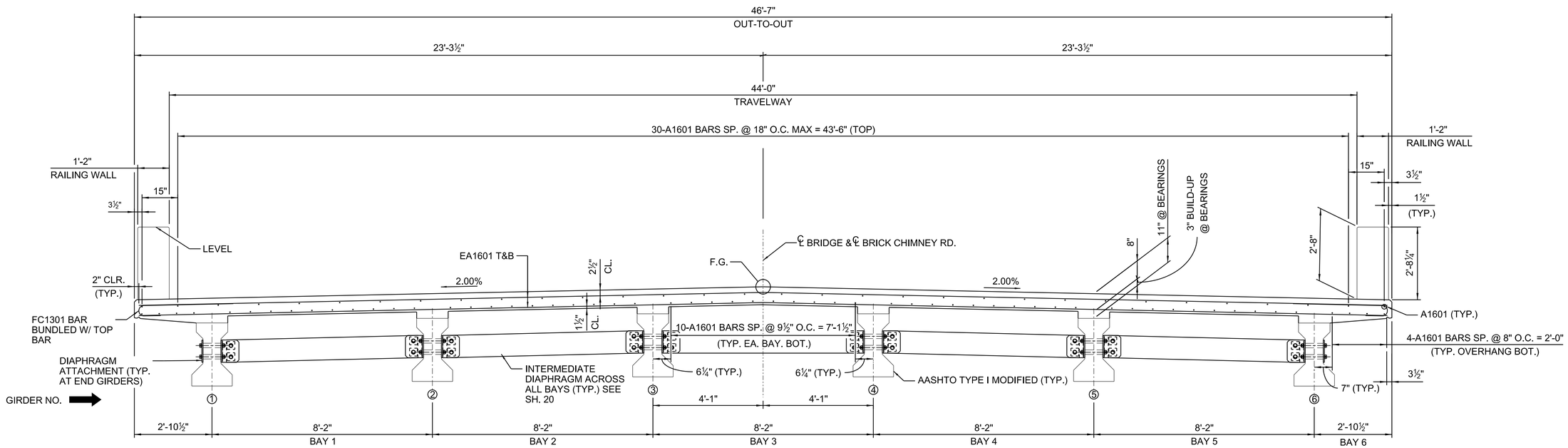
GEORGETOWN COUNTY

SUPERSTRUCTURE PLAN & ELEVATION

PLOT SIZE = 22" x 34"

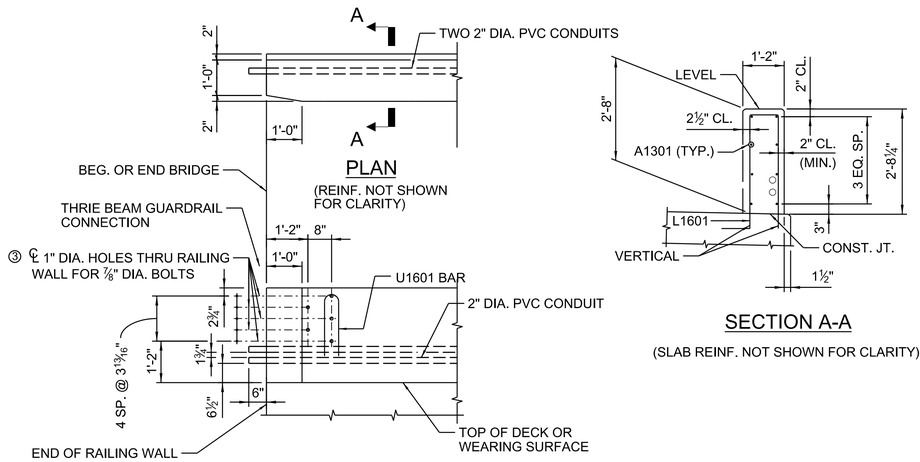
CONSTRUCTION PLANS

FED. ROAD DIV.NO.	STATE	COUNTY	D&F PROJECT NO.	ROAD NAME	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	GEORGETOWN	31811.01	BRICK CHIMNEY		19	



TYPICAL SECTION

LOOKING UP STATION

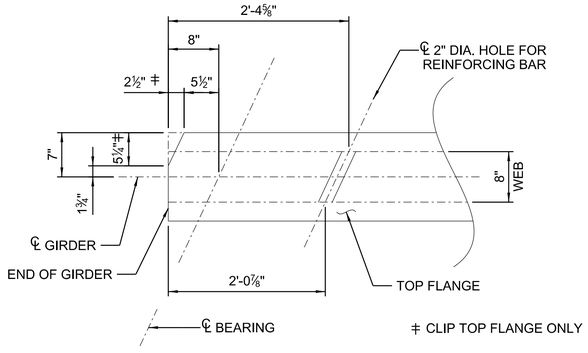


ELEVATION

(REINF. NOT SHOWN FOR CLARITY)

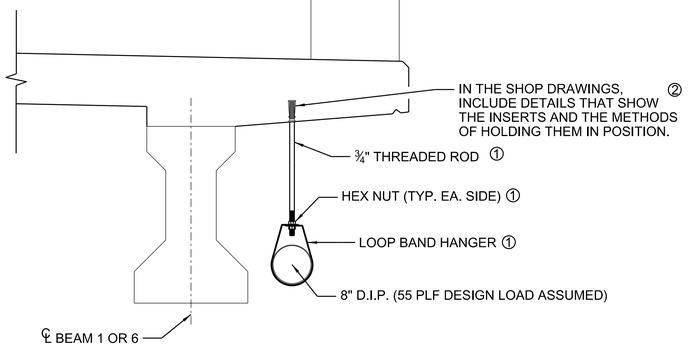
SECTION A-A

(SLAB REINF. NOT SHOWN FOR CLARITY)



BEAM ENDS ARE SQUARE WITH THE EXCEPTION OF THE CORNER OF THE TOP FLANGE AT EACH END WHICH SHALL BE CAST PARALLEL TO THE SKEW AS SHOWN. ADJUST N1601, A1301 AND A1001 BARS AS NEEDED.

HALF PLAN VIEW AT GIRDER ENDS



UTILITY PIPE SUPPORT DETAIL

(10'-0" O.C. MAX.)

① UTILITY PIPE & SUPPORT SYSTEM PROVIDED BY OTHERS

② ¾" ZINC ELECTROPOLATED NOT MORE THAN 4" IN DEPTH WITH A MINIMUM ULTIMATE TENSILE STRENGTH OF 2.5 KIPS IN 4,000 PSI CONCRETE SPACED AT 10' O.C. MAX.

③ FORM THE 1" DIA. HOLES WITH PLASTIC PIPE, PVC PIPE, OR GALVANIZED STANDARD WEIGHT STEEL PIPE HAVING AN I.D. OF 1". INCLUDE ALL COST OF PIPE AND INSTALLATION IN THE PRICE BID FOR REINCIFORING STEEL. ALL PIPE TO REMAIN IN PLACE WHEN FORMS ARE REMOVED. RCE TO VERIFY LOCATION OF THE HOLES TO INSURE THAT THE GUARDRAIL SHOE WILL FIT PROPERLY WHEN INSTALLED.

SOUTH CAROLINA — DAVIS & FLOYD, INC. — No. C00538 — CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA — REGISTERED PROFESSIONAL ENGINEER — No. 32080 — 11/25/19 — ROBERT G. STEVENSON, JR.

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GEORGETOWN COUNTY

SUPERSTRUCTURE SECTION & DETAILS

PLOT SIZE = 22" x 34"

SCALE: 2:0 ":" / in.
PEN TABLE: G:\Resource\Standards\Bentley\Vertical\Plotting\DO_NOTHING_BRIDGES.tbl
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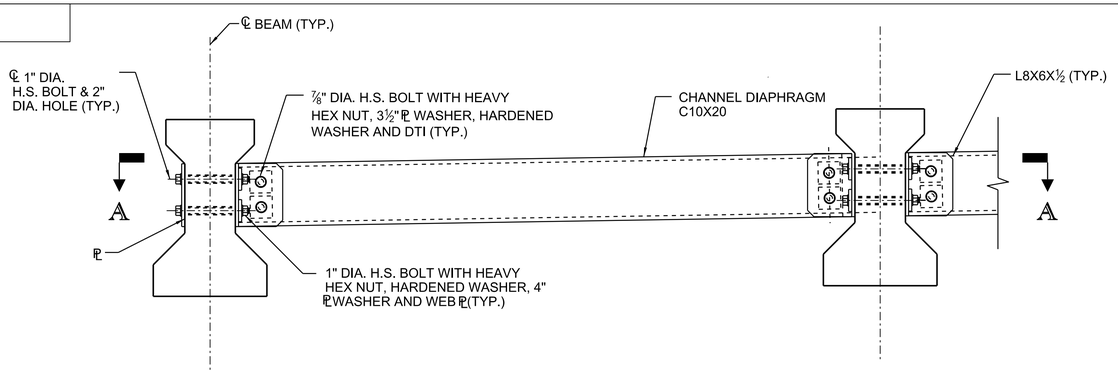
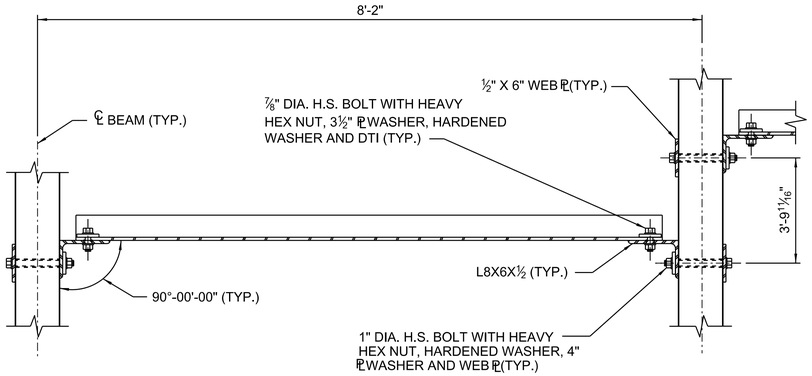
11/25/2019

CONSTRUCTION PLANS

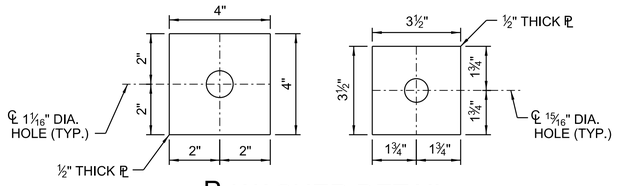
FED. ROAD DIV.NO.	STATE	COUNTY	D&F PROJECT NO.	ROAD NAME	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	GEORGETOWN	31811.01	BRICK CHIMNEY		20	



ELEVATION

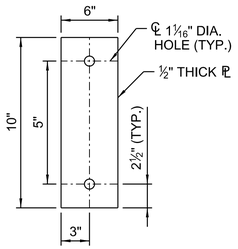


SECTION A-A



℄ WASHER DETAIL

NOTE: USE 3½" ℄ WASHER OVER ALL 1⁵⁄₁₆" X 2⁳⁄₁₆" HOLES.
USE 4" ℄ WASHER OVER ALL 1⁁16" X 2½" HOLES.



℄ WEB DETAIL

NOTES:

PROVIDE STRUCTURAL STEEL SECTIONS, PLATES, AND PLATE WASHERS THAT CONFORM TO THE REQUIREMENTS OF AASHTO M 270, GRADE 50. GALVANIZE ALL COMPONENTS OF DIAPHRAGMS INCLUDING CONNECTION ANGLE AND ℄WASHERS IN ACCORDANCE WITH AASHTO M 111. PERFORM GALVANIZING AFTER FABRICATION IS COMPLETED. ROUGHEN FAYING SURFACES OF BOLTED CONNECTIONS BY MEANS OF HAND-WIRE BRUSHING. POWER-WIRE BRUSHING IS NOT PERMITTED.

MAKE ALL BOLTED DIAPHRAGM CONNECTIONS WITH ⅞" OR 1" ASTM A 325 BOLTS. MECHANICALLY GALVANIZE BOLTS, HEAVY HEX NUTS, HARDENED WASHERS, AND DIRECT TENSION INDICATORS (DTI'S) IN ACCORDANCE WITH ASTM B 695 CLASS 50. FOR THE 1" BOLT ASSEMBLIES, GALVANIZING IN ACCORDANCE WITH AASHTO M 232 MAY BE SUBSTITUTED FOR MECHANICAL GALVANIZING.

SUBMIT SHOP PLANS FOR STEEL INTERMEDIATE DIAPHRAGMS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

AFTER INSTALLATION OF STEEL DIAPHRAGMS, REPAIR ALL DAMAGED AREAS OF THE GALVANIZED FINISH IN ACCORDANCE WITH ASTM A 780. USE PAINT METHOD TO REPAIR FINISH ON HARDWARE.

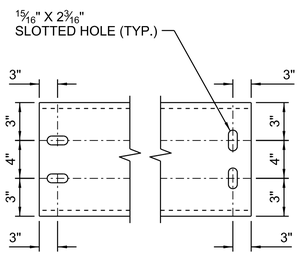
FORM BOLT HOLES IN PRESTRESSED CONCRETE BEAMS USING 2" INSIDE DIAMETER PIPE AND LEAVE PIPE IN PLACE AFTER FORMS ARE REMOVED.

TENSION BOLTS THROUGH THE BEAM WEB TO BE SNUG TIGHT AND THEN TURN THE BOLTS AN ADDITIONAL 1/4 TURN. PEEN THREADS ON ALL BOLTS INSTALLED THROUGH THE BEAM WEB. INSTALL ALL OTHER BOLTS USING A DTI AND HARDENED WASHER WITH EACH BOLT ASSEMBLY TO VERIFY PROPER TENSIONING.

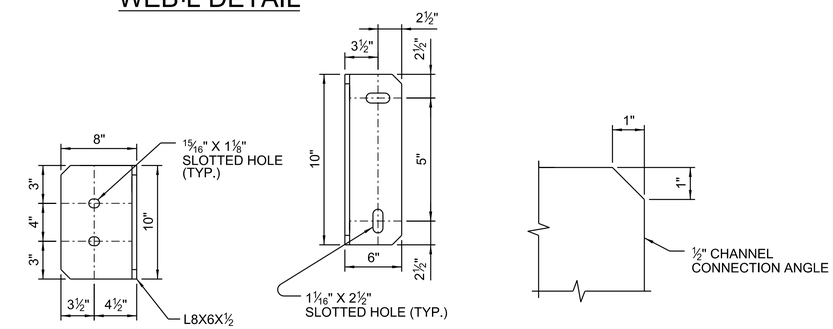
DO NOT PLACE DECK SLAB UNTIL ALL INTERMEDIATE DIAPHRAGMS ARE PROPERLY INSTALLED AND TIGHTENED IN EACH SPAN WHERE DECK CONCRETE WILL BE PLACED DURING THE POUR.

LEAVE STEEL INTERMEDIATE DIAPHRAGMS IN PLACE AS A PERMANENT PART OF THE COMPLETED STRUCTURE.

INCLUDE ALL COST OF FURNISHING AND INSTALLING STEEL INTERMEDIATE DIAPHRAGM ASSEMBLIES IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE BEAMS.



CHANNEL END DETAIL



DIAPHRAGM FACE | WEB FACE | CORNER CLIP

CHANNEL CONNECTION ANGLE DETAILS

SCALE: 1:0 ":" / in.
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11/25/2019

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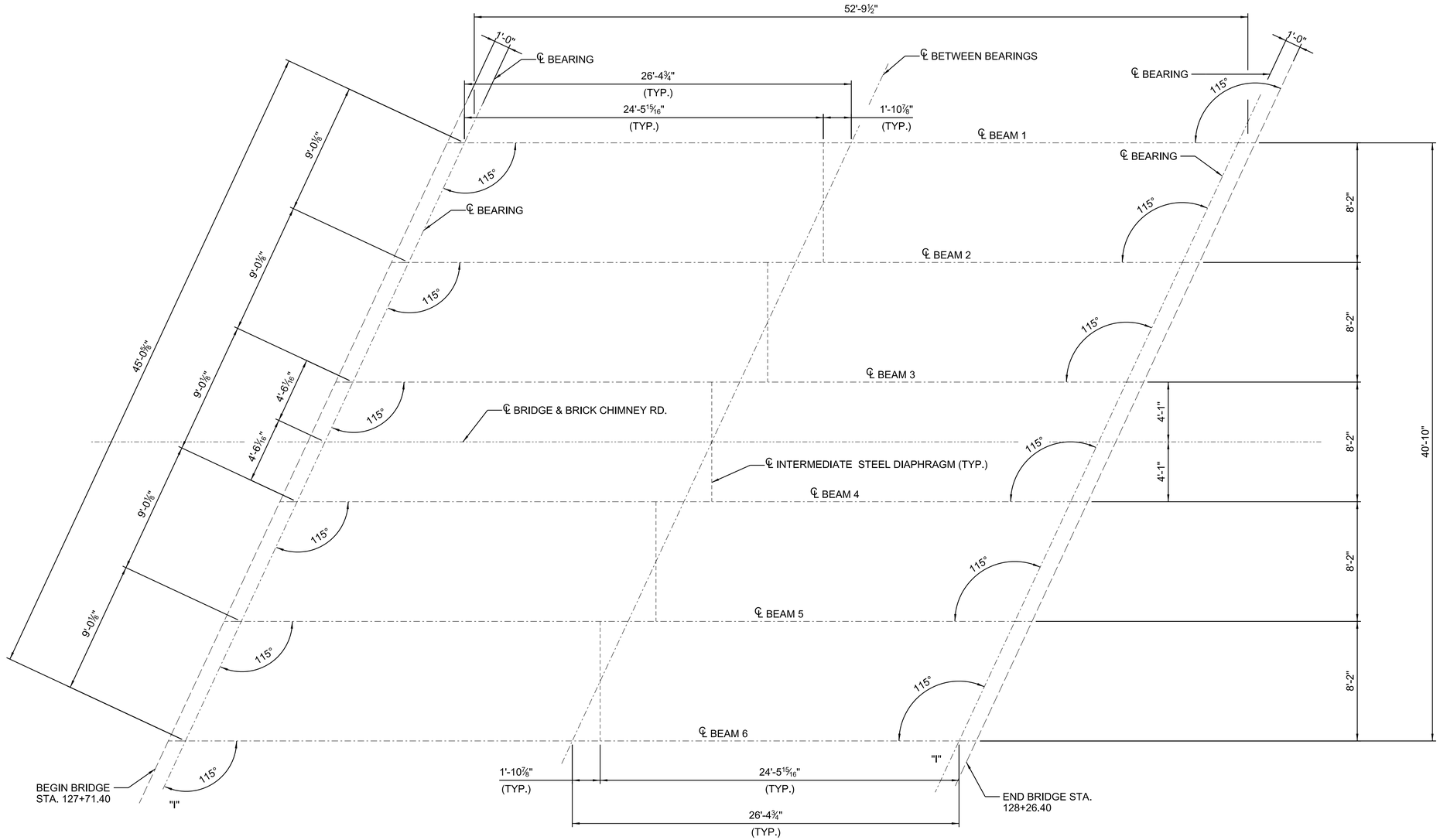
GEORGETOWN COUNTY

STEEL INTERMEDIATE DIAPHRAGM DETAILS

PLOT SIZE = 22" x 34"

CONSTRUCTION PLANS

FED. ROAD DIV.NO.	STATE	COUNTY	D&F PROJECT NO.	ROAD NAME	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	GEORGETOWN	31811.01	BRICK CHIMNEY		21	



NOTES:

"I" - DENOTES INTEGRAL BEARING

ALL BEAMS ARE PARALLEL

SCALE: 4:0 ':" / in.
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11/25/2019

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GEORGETOWN COUNTY

FRAMING PLAN

PLOT SIZE = 22" x 34"

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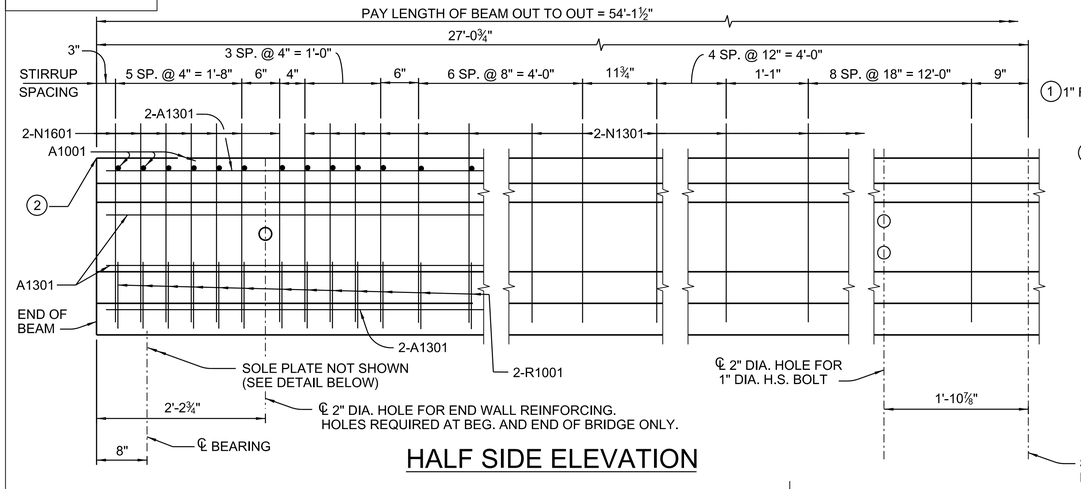
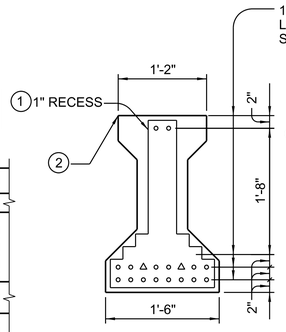
3	S.C.	GEORGETOWN	31811.01	BRICK CHIMNEY		22	

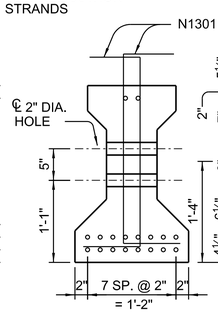
CONSTRUCTION PLANS



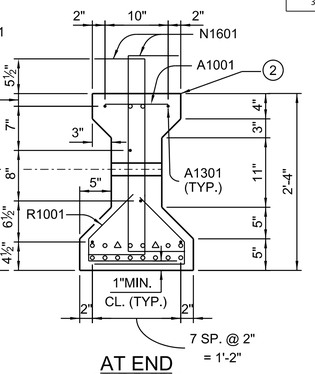
HALF SIDE ELEVATION



END ELEV.



AT CENTER OF BEAM



AT END OF BEAM

DEBONDING LENGTH
△ 12.00'

SECTIONS THRU BEAM

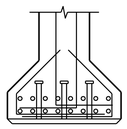
REINF. STEEL SCHED.

MARK	NO. REQ'D	DIMENSION "a"	"b"	"c"	"d"	LENGTH
A1001	17	11"	——	——	——	11"
A1301	12	7'-6"	——	——	——	7'-6"
N1301	100	8"	2'-7"	9"	——	4'-0"
N1601	14	10"	2'-7"	9"	——	4'-2"
R1001	34	1'-2"	3½"	10"	7"	2'-4"

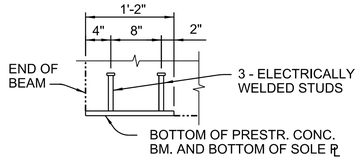
QUANTITIES

FOR INFO. ONLY - PAID FOR AS PRES. BEAM

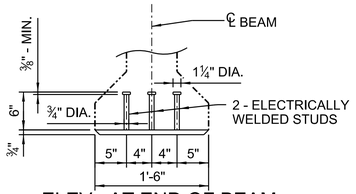
ITEM	UNIT	ONE BEAM
CONCRETE, CLASS 8000	CY	4.6
REINFORCING STEEL	LB	424
PRESTRESSING STRANDS	LF	974
STRUCTURAL STEEL	LB	AS NECESSARY



END VIEW



ELEV. AT SIDE OF BEAM



ELEV. AT END OF BEAM

SOLE PLATE DETAIL

NOTES:

SEE SECTION 704 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND INFORMATION REGARDING PRESTRESSED CONCRETE BEAMS. SHOP DRAWINGS MUST BE SUBMITTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL OVERHANG BRACKETS IN THE TOP FLANGE OF EXTERIOR BEAMS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 111, AASHTO M 232, OR ASTM F 2329 AS APPROPRIATE AND SHALL BE DETAILED ACCORDINGLY IN THE SHOP PLANS.

USE PRESTRESSING STRANDS THAT CONFORM TO THE LATEST AASHTO M 203 FOR GRADE 270 (LOW RELAXATION).

THE TENSIONING LOAD IN ALL 0.6" DIA. LOW RELAXATION STRANDS IS 43.9 KIPS. DO NOT RELEASE THE STRANDS UNTIL THE COMPRESSIVE STRENGTH OF THE CONCRETE HAS REACHED THE VALUE SHOWN FOR f'ci.

ON THE TOP SURFACE OF BEAMS WHERE CAST-IN-PLACE CONCRETE WILL BE PLACED, PROVIDE A FINISH THAT IS CLEAN, FREE OF LAITANCE, AND INTENTIONALLY ROUGHENED TO A FULL AMPLITUDE OF APPROXIMATELY ¼". FINISH TOP OF BEAM LEVEL.

ALWAYS MAINTAIN PRESTRESSED CONCRETE BEAMS IN AN UPRIGHT POSITION. USE LIFTING DEVICES PROVIDED AT EACH END OF THE BEAM TO LIFT OR HANDLE BEAMS. DO NOT PERMIT BEAMS TO BE PLACED OR STORED ON INTERIOR SUPPORTS CAUSING NEGATIVE MOMENTS.

LOCATE HOLES FOR REINFORCING BARS & H.S. BOLTS AS SHOWN ON THIS DRAWING. FORM HOLES WITH 2" INSIDE DIA. PIPE AND PREVENT MOVEMENT DURING CASTING BY SECURELY FASTENING THE PIPE.

(1) PROVIDE A 1" RECESS IN THE END OF THE BEAM, ONLY AT BEAM ENDS THAT ARE ADJACENT TO EXPANSION JOINTS. CUT ALL STRANDS ½" BACK INTO RECESS AND FILL THE RECESS WITH AN EPOXY MORTAR ESPECIALLY FORMULATED FOR APPLICATIONS ON VERTICAL SURFACES.

(2) FOR "HALF PLAN VIEW AT ENDS" DETAIL SEE SHT. 19

DEBONDING:

1) FOR ALL DEBONDING MATERIAL, USE TUBULAR CONDUIT CAPABLE OF RESISTING THE PRESSURE EXERTED BY THE CONCRETE. WHEN USING SLIT CONDUIT, USE TWO CONDUITS WITH THE SLITS LOCATED ON OPPOSITE SIDES OF THE STRAND. USE CONDUIT MADE OF HIGH DENSITY POLYETHYLENE OR POLYPROPHYLENE WITH A MINIMUM THICKNESS OF 0.025". USE CONDUIT WITH AN INSIDE DIAMETER THAT WILL PERMIT FREE MOVEMENT OF THE ENCASED STRAND, BUT NO LARGER THAN THE DIAMETER OF THE STRAND PLUS ⅛". PLACE CONDUIT ON THE STRAND AT THE LOCATION(S) SHOWN ON THE PLANS (+/- 1") TO PREVENT BONDING OF THE CONCRETE. SECURE CONDUIT TO PREVENT ANY LONGITUDINAL MOVEMENT ALONG THE STRAND. PREVENT CONCRETE FROM ENTERING THE CONDUIT BY SEALING WITH TAPE. USE TAPE MANUFACTURED FROM A NON-CORROSIVE MATERIAL THAT IS COMPATIBLE WITH THE CONCRETE, CONDUIT, AND STEEL.

2) RELEASE STRANDS IN ACCORDANCE WITH SECTION 704 OF THE STANDARD SPECIFICATIONS WITH THE FOLLOWING EXCEPTIONS:
A) RELEASE FULLY BONDED STRANDS FIRST.
B) RELEASE SHEATHED STRANDS AFTER ALL FULLY BONDED STRANDS HAVE BEEN RELEASED. RELEASE THE SHEATHED STRANDS IN SEQUENCE STARTING WITH THOSE STRANDS HAVING THE MINIMUM LENGTH OF SHEATHING AND PROGRESSING BASED ON INCREASING LENGTH OF SHEATHING UNTIL THE STRANDS WITH THE MAXIMUM LENGTH OF SHEATHING HAVE BEEN RELEASED.

3) WITHIN 48 HOURS OF DETENSIONING, SEAL THE OPENINGS BETWEEN THE STRANDS AND THE SHEATHING . USE AN APPROVED SEALANT THAT IS MADE OF EITHER EPOXY OR SILICONE. IF SILICONE SEALANT IS PROVIDED, USE A LOW MODULUS SILICONE SEALANT THAT IS WHITE IN COLOR.

STRAND DATA		
DIAMETER	AREA (in²)	TENSIONING LOAD
0.6"	0.217	43.9 KIPS

DESIGN DATA

LOW RELAXATION STRANDS
TENSILE STRENGTH (Fpu) = 270 KSI
INITIAL PRESTRESS (0.75 Fpu) = 202.5 KSI

CLASS 8,000 CONCRETE
f'c = 8.0 KSI
f'ci = 6.3 KSI

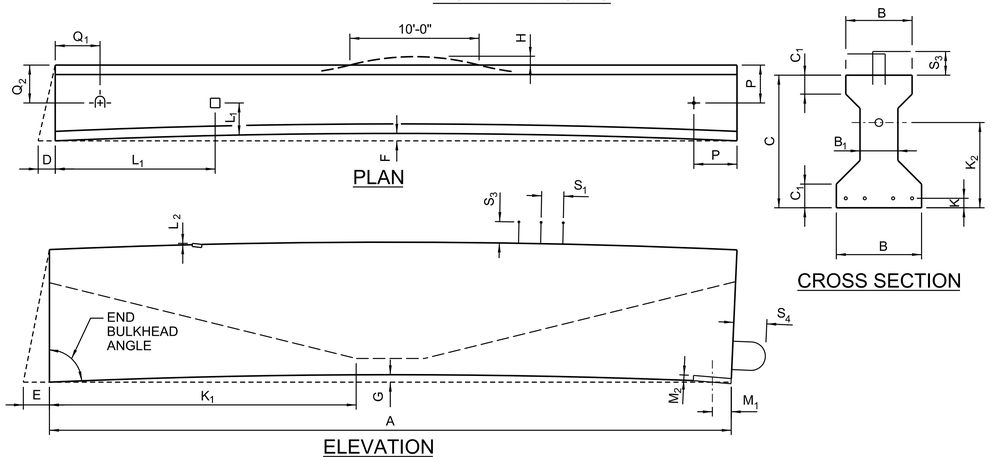
BEAM CAMBER AND DEFLECTION					
BEAM CAMBER		DEFLECTION DUE TO			
AT RELEASE	* AT ERECTION	INTERIOR DIAPHRAGM	STAY-IN-PLACE FORMS**	SLAB	BARRIER PARAPET
+1½"	+2 1⁵⁄₁₆"	-1⁄₁₆"	-3⁄₁₆"	-1"	-1⁄₁₆"

* BASED ON A BEAM AGE OF 60 DAYS AT THE TIME OF ERECTION

** DEFLECTION DUE TO THE WEIGHT OF THE METAL FORMS AND THE WEIGHT OF THE CONCRETE IN THE VALLEYS OF THE FORMS.

"+" INDICATES UPWARD MOVEMENT
"-" INDICATES DOWNWARD MOVEMENT

TOLERANCES



PLAN

CROSS SECTION

ELEVATION

A	LENGTH	± ¼" PER 25' LENGTH, ± 1" MAX.
B	WIDTH (OVERALL)	+ ⅜", - ¼"
B_1	WEB WIDTH	+ ⅜", - ¼"
C	DEPTH (OVERALL)	+ ½", - ¼"
C_1	FLANGE DEPTH	± ¼"
D	VARIATION FROM SPECIFIED PLAN END SQUARENESS OR SKEW	± ⅛" PER 12" WIDTH, ± ½" MAX.
E	VARIATION FROM SPECIFIED ELEVATION END SQUARENESS OR SKEW	± 3⁄16" PER 12" DEPTH, ± 1" MAX.
F	SWEEP	⅛" PER 10' LENGTH
G	CAMBER VARIATION FROM DESIGN CAMBER (MEASUREMENT OF CAMBER FOR COMPARISON TO PREDICTED DESIGN VALUES SHOULD BE COMPLETED WITHIN 72 HRS. OF TRANSFER OF PRESTR. FORCE)	± ⅜" PER 10' ± ½" MAX. UP TO 80' LENGTH ± 1" MAX. FOR LENGTH GREATER THAN 80'
H	LOCAL SMOOTHNESS OF ANY SURFACE	¼" IN 10'
K	LOCATION OF STRAND (INDIVIDUAL) LOCATION OF STRAND (BUNDLED)	± ¼" ± ½"
K_1	LOCATION OF HARP POINTS FOR HARPED STRANDS FROM DESIGN LOCATION	± 20"
K_2	LOCATION OF POST-TENSIONING DUCT	± ¼"
L_1	LOCATION OF EMBEDMENT	± 1"
L_2	TIPPING AND FLUSHNESS OF EMBEDMENT	± ¼"
M_1	LOCATION OF BEARING ASSEMBLY	± 5⁄8"
M_2	TIPPING AND FLUSHNESS OF BEARING ASSEMBLY	± ⅛"
P	LOCATION OF INSERTS, SLEEVES, OR HOLES FOR STRUCTURAL CONNECTIONS	± ½"
Q_1	LOCATION OF HANDLING DEVICE PARALLEL TO LENGTH OF MEMBER	± 6"
Q_2	LOCATION OF HANDLING DEVICE TRANSVERSE TO LENGTH OF MEMBER	± 1"
S_1	LONGITUDINAL SPACING OF STIRRUPS	± 2"
S_2	LONGITUDINAL SPACING OF STIRRUPS WITHIN DISTANCE "C" FROM MEMBER ENDS	± 1"
S_3	STIRRUP PROJECTION FROM BEAM SURFACE	+ ¼", – ½"
S_4	REINFORCING BAR PROJECTION FROM BEAM END	± ½"

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11/25/2019

SOUTH CAROLINA — DAVIS & FLOYD, INC. — No. C00538 — CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA — PROFESSIONAL ENGINEER — No. 32080 — 11/25/19 — ROBERT G. STEVENSON, JR.

DAVIS & FLOYD
SINCE 1954
3229 W. MONTAGUE AVENUE
CHARLESTON, SC 29418
(843) 554-8602

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3			
2			
1			

DESIGNED BY JFE DRAWN BY WCG CHECKED BY RGS

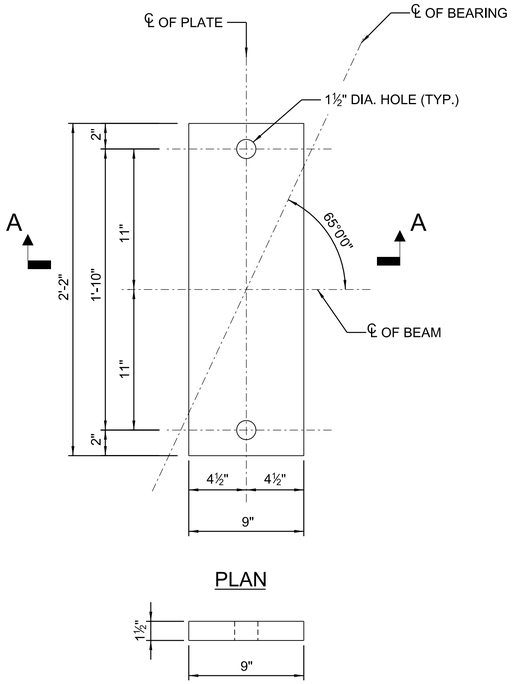
GEORGETOWN COUNTY

PRESTR. CONC. BEAM DETAILS
AASHTO TYPE I MOD.

PLOT SIZE = 22" x 34"

CONSTRUCTION PLANS

FED. ROAD DIV.NO.	STATE	COUNTY	D&F PROJECT NO.	ROAD NAME	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	GEORGETOWN	31811.01	BRICK CHIMNEY		23	



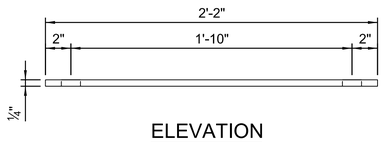
PLAN

SECTION A-A

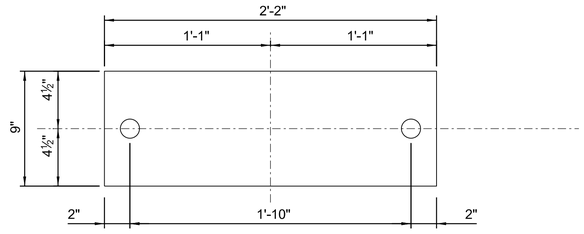
BEARING PLATE DETAIL

(AASHTO M270 GR. 36 STEEL)

6 REQUIRED AT END BENT 1
6 REQUIRED AT END BENT 2



ELEVATION

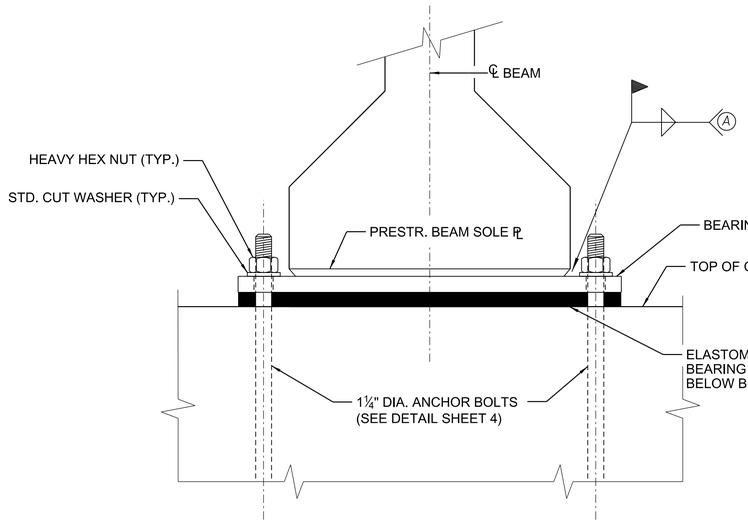


PLAN

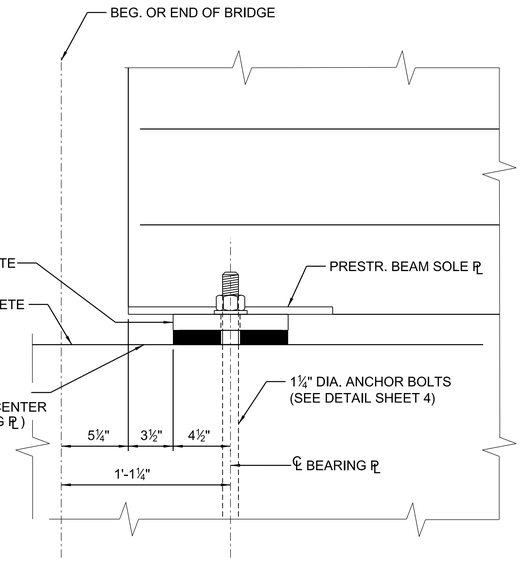
PLAIN ELASTOMERIC BEARING PAD DETAIL FOR END BENT

(PLAIN ELASTOMERIC PAD SHORE HARDNESS 50)

6 REQUIRED AT END BENT 1
6 REQUIRED AT END BENT 2

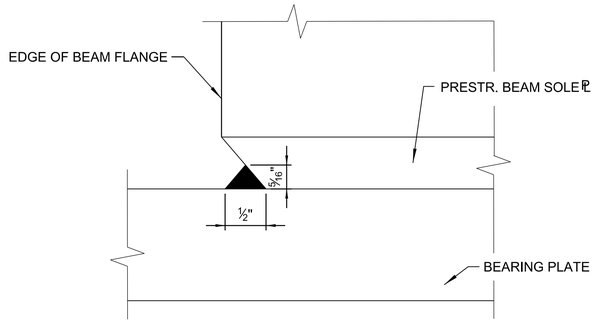


END ELEVATION



SIDE ELEVATION

BEAM BEARING ASSEMBLY DETAILS



WELD Ⓐ

NOTE:

CAUTION SHALL BE EXERCISED WHERE A FIELD WELD OR SHOP WELD WILL BE MADE WHILE THE ELASTOMERIC BEARING PAD IS IN CONTACT WITH METAL. IN NO CASE SHALL THE ELASTOMER OR ELASTOMER BOND BE EXPOSED TO INSTANTANEOUS TEMPRATURES GREATER THAN 400° F. ANY DAMAGE TO ELASTOMER BEARING DUE TO WELDING WILL BE CAUSE FOR REJECTION. TEMPERATURE SHALL BE CONTROLLED BY USE OF HEAT CRAYONS FURNISHED BY THE CONTRACTOR.

BEARING WELD DETAILS

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11/25/2019

SOUTH CAROLINA DAVIS & FLOYD, INC. No. C00538 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA LICENSED PROFESSIONAL No. 32080 ENGINEER R. G. STEVENSON JR. 11/25/19

3229 W. MONTAGUE AVENUE
CHARLESTON, SC 29418
(843) 554-8602

DAVIS & FLOYD
SINCE 1954

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
5			
4			
3			
2			
1			

DESIGNED BY JFE DRAWN BY WCG CHECKED BY RGS

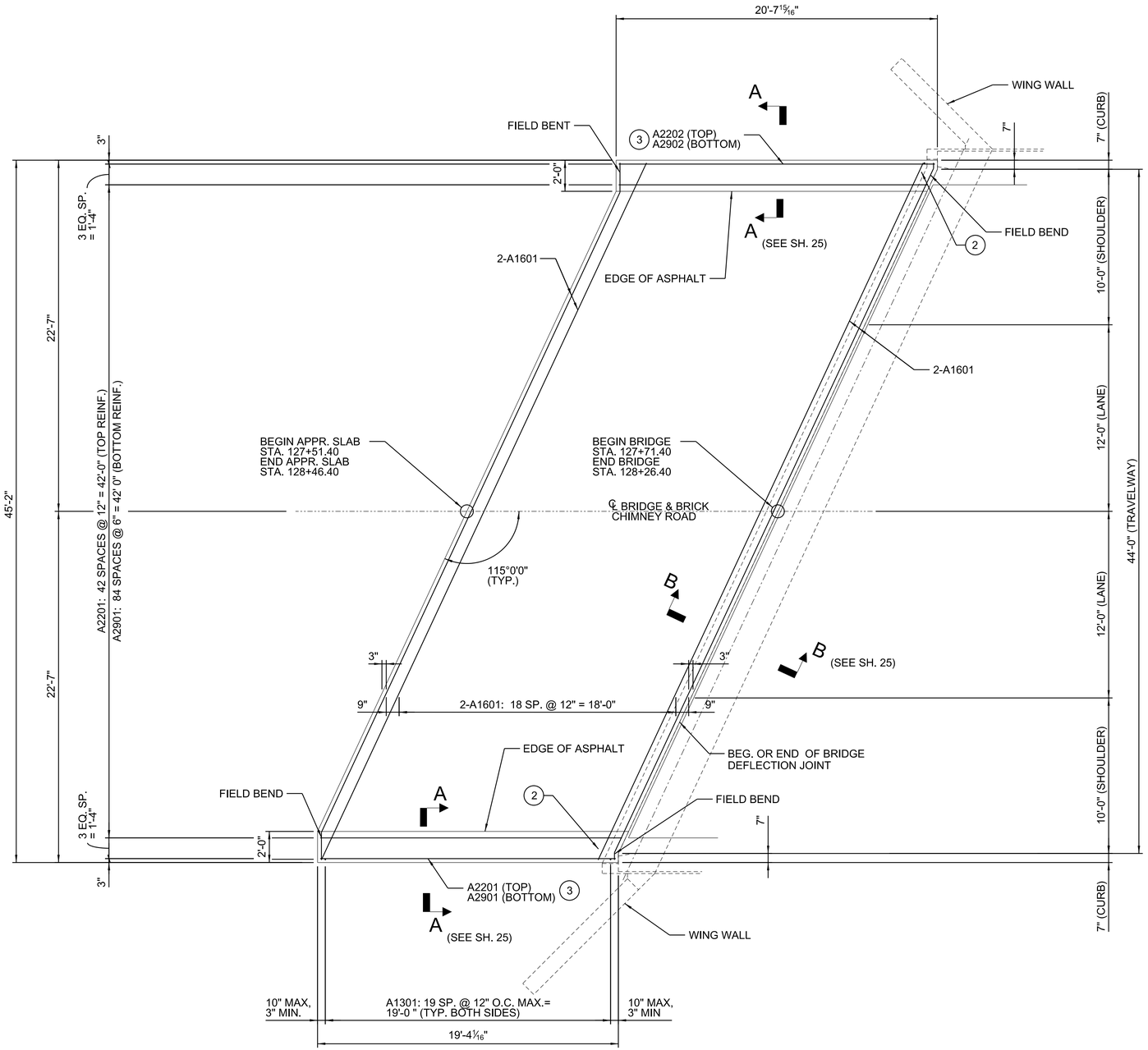
GEORGETOWN COUNTY

BEARING DETAILS

PLOT SIZE = 22" x 34"

CONSTRUCTION PLANS

FED. ROAD DIV.NO.	STATE	COUNTY	D&F PROJECT NO.	ROAD NAME	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	GEORGETOWN	31811.01	BRICK CHIMNEY		24	



PLAN

REINF. STEEL SCHED.

MARK	NO. REQ'D	DIMENSION "a"	"b"	"c"	"d"	LENGTH
A1301	40	1'-3"	———	———	———	1'-3"
A1302	2	20'-4"	———	———	———	20'-4"
A1601	42	49'-6"	———	———	———	49'-6"
A2201	45	19'-8"	———	———	———	19'-8"
A2202	4	20'-4"	———	———	———	20'-4"
A2901	87	19'-8"	———	———	———	19'-8"
A2902	4	20'-4"	———	———	———	20'-4"
CHCU		3½" Ht.	AS NECESSARY			

QUANTITIES

ITEM	UNIT	ONE APPR. SLAB
CONCRETE, CLASS 4000	CY	34.4 (1)
REINFORCING STEEL	LB	10,298

NOTES:

CONSTRUCT APPROACH SLABS TO THE GRADES AND ELEVATIONS SHOWN ON THE BRIDGE PLAN AND PROFILE DRAWING. CONSTRUCT APPROACH SLABS TO THE SAME CROWN AS THE BRIDGE DECK.

GRADE FILL UNDER APPROACH SLABS TO A UNIFORM SURFACE 1'-2" BELOW THE FINISHED SURFACE OF ROADWAY. THOROUGHLY COMPACT FILL UNDER THE APPROACH SLAB IN ACCORDANCE WITH SECTION 208 OF THE STANDARD SPECIFICATIONS. INCLUDE ALL COSTS ASSOCIATED WITH COMPACTION OF FILL BENEATH APPROACH SLAB TO NOT LESS THAN 95% OF MAXIMUM DENSITY IN THE UNIT PRICE BID FOR CONCRETE FOR STRUCTURES - CLASS 4000.

SUPPORT THE BOTTOM MAT OF REINFORCING STEEL USING CONCRETE BLOCK OR SIMILAR MATERIAL. PROVIDE A MINIMUM CONCRETE COVER OF 3" BELOW THE BOTTOM REINFORCING STEEL.

SPACE C.H.C.U. BOLSTERS TO PROVIDE ADEQUATE SUPPORT FOR TOP REINFORCING STEEL, APPROXIMATELY 2'-6" ON CENTER AND PARALLEL TO CENTERLINE OF APPROACH SLAB. WEIGHT OF BAR SUPPORTS IS NOT INCLUDED IN THE REINFORCING STEEL QUANTITIES. CONSIDER BAR SUPPORTS AS INCIDENTAL TO THE REINFORCING STEEL, AND INCLUDE ALL COSTS FOR FURNISHING AND PLACING BAR SUPPORTS IN THE UNIT PRICE BID FOR REINFORCING STEEL.

(1) INCLUDES 0.4 CY FOR CURBS.

(2) TRANSITION TO A 5" CURB WITH A VERTICAL FACE AT BRIDGE END (2'-0" MINIMUM TRANSITION LENGTH).

(3) FIELD CUT BARS AS REQUIRED TO MAINTIAN 2" CLR. COVER

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11/25/2019

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CHARLESTON, SC 29418
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DAVIS & FLOYD
SINCE 1954

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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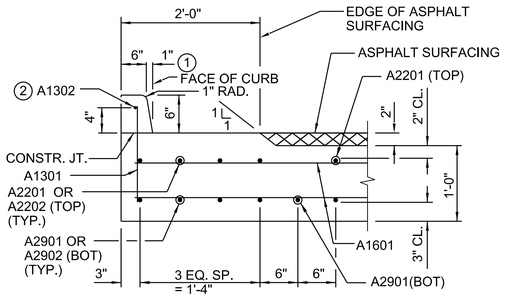
4			
3			
2			
1			

DESIGNED BY JFE DRAWN BY WCG CHECKED BY RGS

GEORGETOWN COUNTY

APPROACH SLAB PLAN

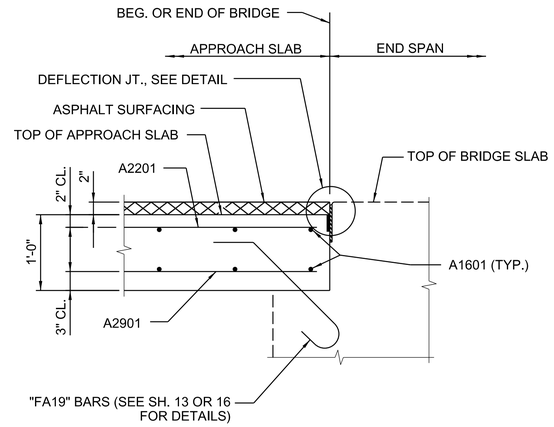
PLOT SIZE = 22" x 34"



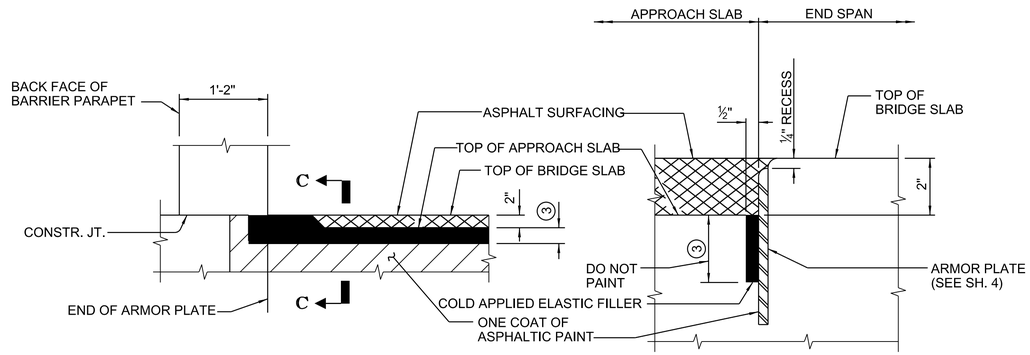
SECTION A-A

(1) TRANSITION TO A 5" CURB WITH A VERTICAL FACE AT BRIDGE END (2'-0" MIN. TRANSITION LENGTH)

(2) FIELD CUT BAR TO MAINTAIN 2" CLR. COVER



SECTION B-B



SECTION ALONG DEFLECTION JOINT

SECTION C-C

DEFLECTION JOINT DETAIL

FORM OR SAW CUT THE DEFLECTION JOINT.

APPLY ONE COAT OF ASPHALTIC PAINT TO THE JOINT TO PREVENT BONDING OF END SPAN AND APPROACH SLAB CONCRETE. ALTERNATE METHODS TO PREVENT BONDING MAY BE PROPOSED. SUBMIT DETAILS OF BOND BREAKING METHOD TO RCE FOR APPROVAL.

INCLUDE ALL COSTS FOR FURNISHING AND INSTALLING COLD APPLIED ELASTIC FILLER IN THE UNIT PRICE BID FOR CONCRETE FOR STRUCTURES - CLASS 4000.

(3) SET THIS DIMENSION IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS

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REV. NO.	BY	DATE	DESCRIPTION OF REVISION
5			
4			
3			
2			
1			

DESIGNED BY JFE DRAWN BY WCG CHECKED BY RGS

GEORGETOWN COUNTY

APPROACH SLAB DETAILS

PLOT SIZE = 22" x 34"