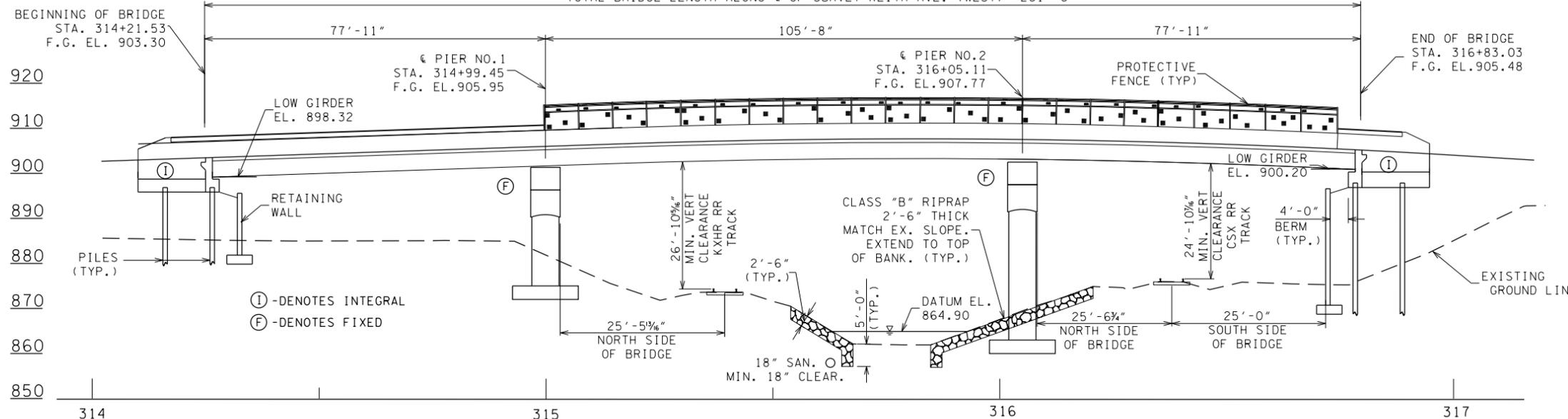


TOTAL BRIDGE LENGTH ALONG C OF SURVEY KEITH AVE. (WEST) = 261'-6"



CURVE DATA

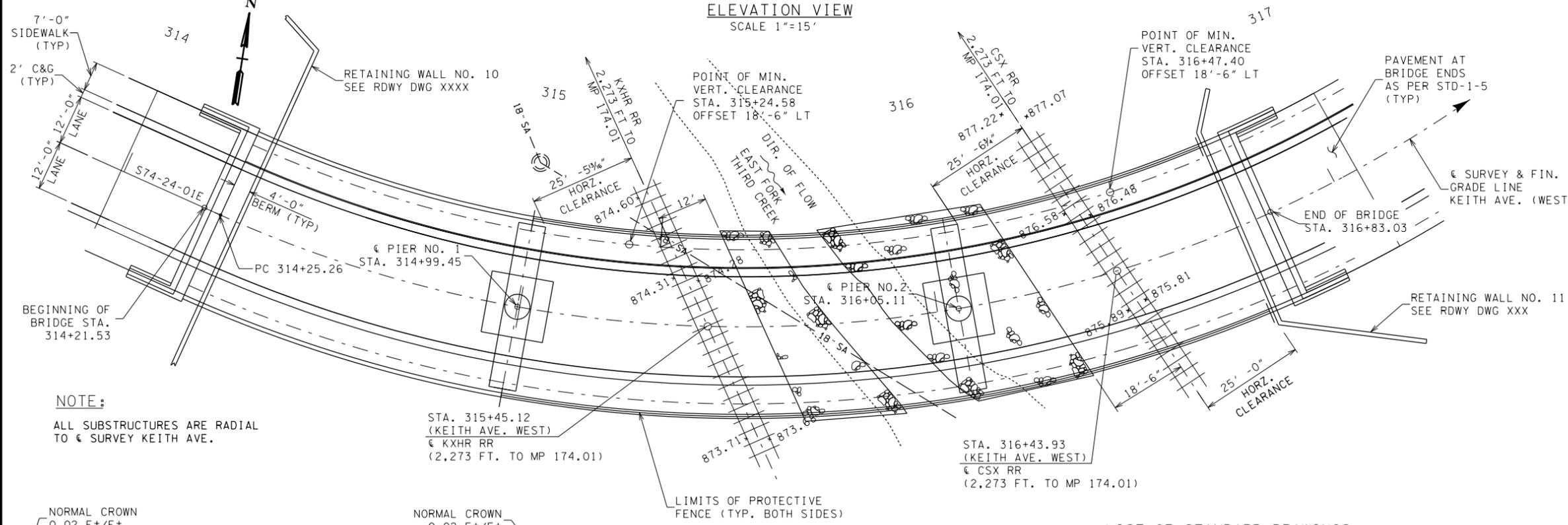
CURVE KEITHWEST-2
 PI 316+60.33
 N 601,917.7962
 E 2,574,010.5664
 PC 314+25.26
 PT 318+24.76
 Δ75° 47' 36" (LT)
 D18° 58' 20"
 R 302.00
 L 399.50
 T 235.07
 SE 0.04 FT/FT
 DESIGN SPEED 30 MPH
 TRANS. LENGTH 110.00

CONST. NO.			
PROJECT NO.	YEAR	SHEET NO.	
HPP/STP-62(34)	2013		
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NO.	DATE	BY	BRIEF DESCRIPTION

HYDRAULIC DATA

100 YEAR DESIGN DISCHARGE-----1280 CFS
 WATER AREA PROVIDED BELOW EL.874.26----247 SQ. FT
 100 YEAR VELOCITY-----6.0 FT/S
 100 YEAR BRIDGE BACKWATER-----874.26 FT
 DRAINAGE AREA-----1.35 SQ. MI.
 ROADWAY OVERTOPPING ELEV.-----894.99

ELEVATION VIEW
SCALE 1"=15'



LIST OF DRAWINGS

DWG NO.	LAST REV. DATE	DRAWING
M-XXX-XXX	----	LAYOUT OF BRIDGE
M-XXX-XXX	----	ESTIMATED QUANTITIES
M-XXX-XXX	----	GENERAL NOTES
M-XXX-XXX	----	FOUNDATION DATA
M-XXX-XXX	----	SUPERSTRUCTURE DETAILS (1 OF 4)
M-XXX-XXX	----	SUPERSTRUCTURE DETAILS (2 OF 4)
M-XXX-XXX	----	SUPERSTRUCTURE DETAILS (3 OF 4)
M-XXX-XXX	----	SUPERSTRUCTURE DETAILS (4 OF 4)
M-XXX-XXX	----	GIRDERS 1 & 2 DETAILS (1 OF 3)
M-XXX-XXX	----	GIRDERS 1 & 2 DETAILS (2 OF 3)
M-XXX-XXX	----	GIRDERS 1 & 2 DETAILS (3 OF 3)
M-XXX-XXX	----	GIRDERS 3 & 4 DETAILS (1 OF 3)
M-XXX-XXX	----	GIRDERS 3 & 4 DETAILS (2 OF 3)
M-XXX-XXX	----	GIRDERS 3 & 4 DETAILS (3 OF 3)
M-XXX-XXX	----	GIRDER 5 DETAILS (1 OF 3)
M-XXX-XXX	----	GIRDER 5 DETAILS (2 OF 3)
M-XXX-XXX	----	GIRDER 5 DETAILS (3 OF 3) & SPLICE DETAILS
M-XXX-XXX	----	STRUCTURAL STEEL DETAILS
M-XXX-XXX	----	UTILITY RELOCATION (1 OF 2)
M-XXX-XXX	----	UTILITY RELOCATION (2 OF 2)
M-XXX-XXX	----	ABUTMENT NO. 1
M-XXX-XXX	----	ABUTMENT NO. 1 DETAILS
M-XXX-XXX	----	ABUTMENT NO. 2
M-XXX-XXX	----	ABUTMENT NO. 2 DETAILS
M-XXX-XXX	----	PIER 1 & 2
M-XXX-XXX	----	PIER 1 & 2 DETAILS
M-XXX-XXX	----	FINAL FOUNDATION DATA SHEET
M-XXX-XXX	----	BILL OF STEEL

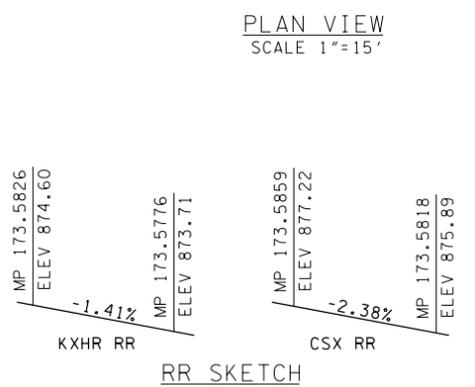
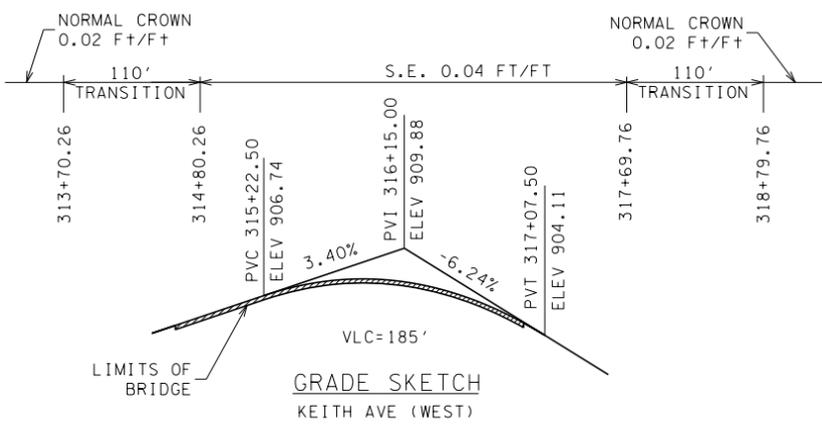
NOTE:
ALL SUBSTRUCTURES ARE RADIAL TO C OF SURVEY KEITH AVE.

LIST OF STANDARD DRAWINGS

DWG NO.	LAST REV. DATE	DRAWING
STD-1-5	06-01-11	PAVEMENT AT BRIDGE ENDS
STD-5-1	10-25-93	STANDARD PILE DETAILS
STD-5-2	04-08-05	STANDARD PILE DETAILS
STD-6-1	11-01-10	STANDARD SEISMIC DETAILS
STD-6-2	11-07-94	STANDARD SEISMIC DETAILS
STD-9-1	10-07-08	REINFORCING BAR SUPPORT DETAILS FOR CONCRETE SLABS
STD-10-1	04-08-05	MISCELLANEOUS ABUTMENT AND DRAINAGE DETAILS
STD-11-1	08-13-02	BRIDGE RAILING W/ STRUCTURAL TUBING
XXX-XX-X	XX-XX-XX	PROTECTIVE FENCE DETAILS FOR ALL RAILROAD CROSSINGS

LIST OF SPECIAL PROVISIONS

REVISION	REV. DATE
RETAINING WALLS 624	08-06-12



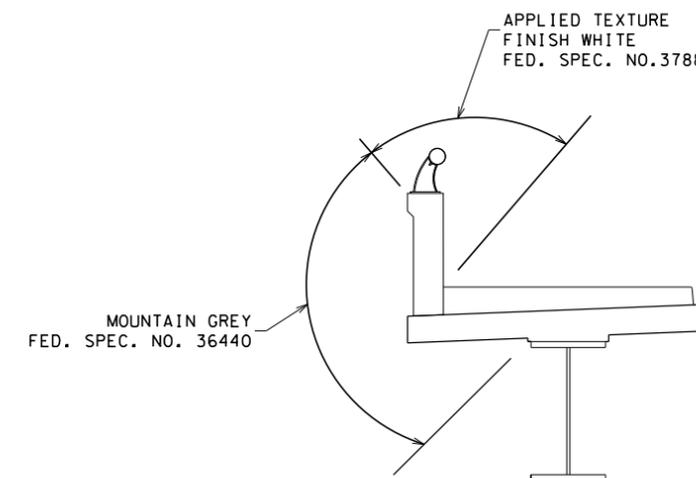
28'-0" ROADWAY WITH 7'-0" SIDEWALKS AND STD-11-1 BRIDGE RAIL. DESIGN SPEED= 30 MPH

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BRIDGE NO.2
 LAYOUT OF BRIDGE
 KEITH AVENUE (WEST) OVER EAST FORK THIRD CREEK & KXHR RR & CSX RR
 BRIDGE NO XX-XXXX-XXXX
 STATION 315+45.12
 KNOX COUNTY
 2013

DESIGNED BY: MRP DATE: 07/2013
 DRAWN BY: FSE DATE: 07/2013
 SUPERVISED BY: BEB DATE: 07/2013
 CHECKED BY: RMD DATE: 07/2013

CONST. NO.			
PROJECT NO.	YEAR	SHEET NO.	
HPP/STD-62(34)	2013		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION

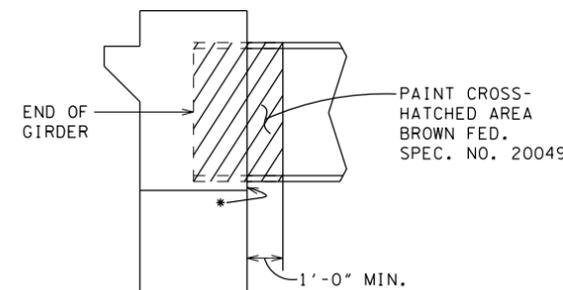
ESTIMATED BRIDGE QUANTITIES								
ITEM NO.	DESCRIPTION	UNIT	TOTAL	SUPERSTRUCTURE	ABUT. NO. 1	PIER NO. 1	PIER NO. 2	ABUT. NO. 2
①	204-02.01 DRY EXCAVATION (BRIDGES)	C.Y.	258		46	112	54	46
①	204-03.01 WET EXCAVATION (BRIDGES)	C.Y.	51				51	
①	204-04.01 ROCK EXCAVATION (BRIDGES)	C.Y.	12			6	6	
	204-05 ROCK DRILLING (BRIDGES)	L.F.	24			12	12	
②	303-01.02 GRANULAR BACKFILL (BRIDGES)	TON	29					
③	602-03 STEEL STRUCTURES	L.S.	1	1				
	604-02.03 EPOXY COATED REINFORCING STEEL	LB.	134,121	130,381	1,870			1,870
④	604-03.01 CLASS "A" CONCRETE (BRIDGES)	C.Y.	441	74	51	125	140	51
	604-03.02 STEEL BAR REINFORCEMENT (BRIDGES)	LB.	71,183		5,016	28,883	32,244	5,040
⑤	604-03.04 PAVEMENT AT BRIDGE ENDS	S.Y.	224					
	604-03.09 CLASS "D" CONCRETE (BRIDGE DECK)	C.Y.	350	350				
	604-04.01 APPLIED TEXTURE FINISH (NEW STRUCTURES)	S.Y.	571	256	72.3	85.1	85.1	72.3
	604-05.31 BRIDGE DECK GROOVING (MECHANICAL)	S.Y.	963					
	606-03.03 STEEL PILES (12 INCH)	L.F.	305		109			196
⑥	606-03.06 PILE TIPS (STEEL PILES, 12 INCH)	EACH	14		7			7
	620-05 CONCRETE PARAPET WITH STRUCTURAL TUBING	L.F.	585					
⑦	710-09.01 6" PERFORATED PIPE WITH VERTICAL DRAIN SYSTEM	L.F.	118		59			59
	710-09.02 6" PIPE UNDERDRAIN	L.F.	42		21			21



FOOTNOTES:

- ① EXCAVATION BASED ON FINAL PROFILE AT THE ABUTMENTS AND EXISTING GROUND AT PIER.
- ② GRANULAR BACKFILL SHALL BE CLASS "A" GRADING "D" MATERIAL. SEE STD-10-1.
- ③ NOTE: LUMP SUM: TOTAL ESTIMATED WEIGHT OF 308,493 LBS. OF STRUCTURAL STEEL INCLUDES GIRDERS, CROSS-FRAMES, STIFFENERS, SPLICE/FILLER PLATES, SHEAR CONNECTORS, BOLTS, CONNECTOR PLATES, SHIPPING PLATES AT ABUTMENT BEARINGS. ALSO SEE TENNESSEE STANDARD SPECIFICATIONS SECTION 602.49 AND 602.50. ALL STEEL TO BE A709 GRADE 50W UNLESS OTHERWISE NOTED.
- ④ COST OF ALL MATERIALS AND LABOR NECESSARY FOR THE INSTALLATION OF 20 1" Ø ASTM F1554 GR. 105 ANCHOR BOLT ASSEMBLIES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CLASS "A" CONCRETE (BRIDGES).
- ⑤ NOTE: PRIOR TO CONSTRUCTION OF THE PAVEMENT AT BRIDGE ENDS, THE CONTRACTOR SHALL SUBMIT A PROPOSED BILL OF STEEL TO THE ENGINEER FOR APPROVAL.
- ⑥ THE UNIT PRICE FOR THE CAST STEEL POINTS SHALL INCLUDE FURNISHING AND INSTALLATION TO THE PILES.
- ⑦ NOTE: COST OF POLYETHYLENE SHEETING AND ALL MISCELLANEOUS ITEMS NECESSARY FOR INSTALLATION IS TO BE INCLUDED IN THE UNIT PRICE BID FOR PERFORATED PIPE.

PAINT: INORGANIC ZINC WITH URETHANE FINISH- BROWN TOP COAT CONFORMING TO FEDERAL STANDARD 595B,20049.



PAINT DETAIL

*NOTE: THE CREVICE BETWEEN THE EMBEDDED STEEL GIRDERS AND CONCRETE AT ABUTMENTS SHALL BE SEALED BY CAULKING WITH SILICONE CAULK.

APPLIED TEXTURE FINISH DETAIL

NOTES:

- ALL COST OF TEXTURE COATING SHALL BE INCLUDED IN ITEM NO. 604-04.01.
- THE CONTRACTOR SHALL USE CONTAINMENT SCREENS OR OTHER MEASURES AS NECESSARY TO PREVENT ANY TEXTURE COATING FROM ENTERING THE ENVIRONMENT. CONTAINMENT MEASURES SHALL BE APPROVED BY THE ENGINEER AND COST SHALL BE INCLUDED IN ITEMS BID ON.
- BEFORE APPLYING ANY TEXTURE FINISH, ALL SURFACES SHALL BE COMPLETELY CLEANED OF ALL DEBRIS AND FOREIGN MATERIALS.
- IN ADDITION TO THE SURFACES SHOWN IN THE APPLIED TEXTURE FINISHED DETAIL SKETCH, ALL EXPOSED SURFACES OF THE WINGWALL, ABUTMENT BEAMS, CONCRETE PIERS, AND EXTERIOR PORTIONS OF ENDWALLS AND RETAINING WALLS ARE TO RECEIVE AND APPLIED TEXTURE FINISH (MOUNTAIN GREY, FED. SPEC. NO. 36440).
- TEXTURE COATING OF ALL AREAS DESIGNATED SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

DESIGNED BY: MRP DATE: 07/2013
 DRAWN BY: FSE DATE: 07/2013
 SUPERVISED BY: BEB DATE: 07/2013
 CHECKED BY: RMD DATE: 07/2013

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BRIDGE NO. 2
 ESTIMATED QUANTITIES
 KEITH AVENUE (WEST) OVER EAST
 FORK THIRD CREEK
 & KXHR RR & CSX RR
 BRIDGE NO XX-XXXX-XXXX
 STATION 315+45.12
 KNOX COUNTY
 2013

SPECIFICATIONS:

STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION, (MARCH 1, 2006 EDITION)

LOADING:

HL-93 LIVE LOADING, (DEAD LOAD TO INCLUDE 35 LBS/SQ FT) SEISMIC ZONE 1, SDS=0.336, SDI=0.119, 1,000 YEAR (RETURN PERIOD.)

DESIGN SPECIFICATIONS:

AASHTO LRFD 4TH EDITION 2007 WITH ADDENDA INCLUDING THE STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES.

CONCRETE:

TO BE CLASS "A" (CAST IN PLACE), F'C =3,000 PSI, EXCEPT AS NOTED OTHERWISE.

CLASS "D" CONCRETE:

CONCRETE FOR BRIDGE DECK SHALL BE IN ACCORDANCE WITH SECTION 604 OF THE STANDARD SPECIFICATIONS.

BRIDGE DECK SURFACE FINISH:

TO BE IN ACCORDANCE WITH NOTE C IN ARTICLE 604.22 OF THE STANDARD SPECIFICATIONS.

BRIDGE DECK FORMS:

BRIDGE DECK FORMS FOR CONCRETE DECKS SHALL BE CONSTRUCTED USING EITHER REMOVABLE OR PERMANENT FORMS. PERMANENT FORMS SHALL BE REMAIN-IN-PLACE STEEL. IN EITHER CASE, FORMS SHALL BE ATTACHED BY MEANS OTHER THAN WELDING TO MAIN STRUCTURAL MEMBERS OR REINFORCING STEEL.

BEARING DEVICES:

5BEARING DEVICES SHALL BE IN ACCORDANCE WITH DETAILS AND DIMENSIONS AS SHOWN ON DRAWING X-XXX-XXX.

REINFORCING STEEL:

SHALL BE ASTM A615 GRADE 60 UNLESS NOTED OTHERWISE (EPOXY COAT ALL SLAB STEEL). SEE SECTION 604 & 907 OF THE STANDARD SPECIFICATIONS.

SPECIAL NOTE FOR RAILROAD CROSSING:

THE CONTRACTOR SHALL CONDJCT HIS WORK SO AS TO PROTECT THE RAILROAD TRACKS AND PROPERTIES FROM ANY DAMAGE. THE WORK SHALL BE DONE IN ACCORDANCE WITH REGULATIONS STIPULATED BY THE CSX R.R. AND THE KXHR R.R. SO AS TO MAINTAIN CLEARANCE AND NOT INTERRUPT TRAFFIC.

RAILROAD GENERAL NOTES:

ALL EXCAVATIONS ON RAILROAD RIGHT-OF-WAY SHALL BE PROTECTED BY HANDRAILS IN CONFORMANCE WITH AREMA SPECIFICATIONS AND PRE-APPROVED BY CSXT R.R. AND KXHR R.R., RESPECTIVELY.

FURNISH GIRDER ERECTION PLANS WITH LOAD CALCULATIONS FOR 150% CRANE BOOM AND SWING CAPACITIES FOR LOADS OVER RESPECTIVE RAILROAD RIGHT-OF WAY.

CONTRACTOR TO PROVIDE THE RESPECTIVE RAILWAYS DETAILED METHOD OF PROTECTION FOR RAILROAD DURING COATING WORK, INCLUDING OVERSPRAY PROTECTION.

A CSXT OR KXHR FLAGMAN MUST BE PRESENT WHEN THE CONTRACTOR IS WRKING ON OR VER THE RESPECTIVE RAILWAT PROPERTY.

SPECIAL NOTE FOR PIERS:

AFTER EXCAVATION TO ROCK FOR FOOTING HAS BEEN COMPLETED, HOLES 6" DEEP SHALL BE DRILLED AT POINTS DESIGNATED BY THE ENGINEER. FROM THE RESULTS OBTAINED, THE ENGINEER SHALL DETERMINE THE FINAL FOOTING ELEVATIONS. NO REINFORCING STEEL FOR PIER COLUMN(S) SHALL BE ORDERED UNTIL FINAL FOOTING ELEVATIONS HAVE BEEN DETERMINED.

PILES:

TO BE HP 12X53 DRIVEN TO REFUSAL ON ROCK OR A MINIMUM BEARING OF 60 TONS FOR THE ABUTMENTS.

SPECIAL NOTE FOR AT&T CONDUIT

COST OF INSTALLING 1177 L.F. OF 4" CONDUIT WITH HANGERS AND SEAL THROUGH ABUTMENT BACKWALL SHALL BE INCLUDED IN OTHERS ITEMS BID ON. COST OF FURNISHING MATERIAL SHALL BE SUPPLIED BY AT&T.

NOTE:

PILES SHALL BE EQUIPPED WITH CAST STEEL POINTS. ALSO, SEE STANDARD DRAWING STD-5-1 FOR ADDITIONAL NOTES.

NOTE:

FILL AT THE ENDS OF THE BRIDGE SHALL BE IN PLACE AND THOROUGHLY COMPACTED BEFORE ANY ABUTMENT PILES ARE DRIVEN.

FOUNDATION PREPARATION:

SEE SECTION 204 OF THE STANDARD SPECIFICATIONS. IF COFFERDAMS ARE REQUIRED, THEY SHALL BE IN ACCORDANCE WITH SECTION 204.09 OF THE STANDARD SPECIFICATIONS.

BRIDGE RAIL SYSTEM:

BUILD BRIDGE RAILINGS ACCORDING TO STANDARD DRAWING STD-11-1. THE BRIDGE RAIL SHALL BE FORMED AND CAST PLUMB, NOT PERPENDICULAR TO CROSS SLOPES. THE DIMENSIONS AT THE FRONT OR TRAFFIC FACE OF THE RAILING SHALL BE KEPT CONSTANT, WITH VARIATION FOR CROSS SLOPE ACCOMMODATED AT THE REAR FACE.

FALL PROTECTION:

THE CONTRACTOR SHALL PROVIDE 100% CONVENTIONAL FALL PROTECTION FOR WORKERS INSTALLING DECKING ABOVE 15 FEET.

SHOP DRAWINGS:

SEE SECTION 105.02 OF THE STANDARD SPECIFICATIONS.

VALUE ENGINEERING ALTERNATE BRIDGE DESIGN CRITERIA:

ALTERNATE BRIDGE DESIGN PROPOSALS MAY NOT DIMINISH THE FUNCTIONAL OR STRUCTURAL EQUIVALENCY OF THE BRIDGE AND MUST MEET OR EXCEED THE SERVICE LEVEL AND ULTIMATE CAPACITIES OF THE CONTRACT PLANS STRUCTURE. ADDITIONALLY, THE WATERWAY OPENING AND FLOOD CLEARANCES MAY NOT BE REDUCED. FOR THE R. R. CROSSINGS, THE HORIZONTAL CLEARANCES MAY NOT BE REDUCED, NOR MAY THE VERTICAL CLEARANCES BE LESS THAN THE MINIMUM ACCEPTABLE FOR THE TYPE FACILITY CROSSED.

FORMS AND FALSEWORK:

CONCRETE FORM WORK, FALSEWORK, AND TEMPORARY SUPPORTS SHALL BE REMOVED FROM THE JOB SITE AFTER WORK IS COMPLETED. COST OF FORMS, FALSEWORK, AND TEMPORARY SUPPORT SHALL BE INCLUDED IN ITEMS BID ON. THIS WORK SHALL BE COMPLETED BEFORE FINAL PAYMENT IS APPROVED.

FINISHING CONCRETE SURFACES:

CONCRETE FINISHING SHALL BE IN ACCORDANCE WITH SECTION 604.21 OF THE TENNESSEE STANDARD SPECIFICATIONS. A CLASS I FINISH FOLLOWED BY AN APPLIED TEXTURE FINISH SHALL BE USED IN LIEU OF A CLASS II FINISH. NO TEXTURE COATING SHALL BE APPLIED PRIOR TO COMPLETION OF PAVING AND HAULING OPERATIONS AT THE BRIDGE SITE. FOR LOCATION DETAILS, SEE DRAWING NO. XX-XX-XX.

SPECIAL NOTE FOR UTILITIES:

CARE SHALL BE TAKEN SO AS NOT TO DISTURB OR DAMAGE ANY UTILITIES.

APPROVAL OF MATERIALS:

NO FABRICATION SHALL BE STARTED UNTIL ALL THE MATERIALS INVOLVED HAVE BEEN APPROVED BY THE TENNESSEE DEPARTMENT OF TRANSPORTATION, DIVISION OF MATERIALS AND TESTS WITH A COPY OF THE TEST REPORTS ALSO GOING TO THE TENNESSEE DEPARTMENT OF TRANSPORTATION, DIVISION OF STRUCTURES,

SPECIAL NOTES TO CONTRACTOR:

CONTRACTOR SHALL USE EXTREME CARE AND TAKE ANY MEASURE NECESSARY TO ENSURE THAT NO DEBRIS IS DROPPED INTO THE STREAM BELOW. THIS SHALL BE ACCOMPLISHED BY THE USE OF BASKETS, NETTING, WRAPPING, WORK PLATFORM, OR OTHER SIMILARLY EFFECTIVE MEANS. ANY DEBRIS WHICH IS ALLOWED TO DROP ON THE BANKS BELOW THE BRIDGE SHALL NOT BE ALLOWED TO ENTER THE WATER AND SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR. COST OF REMOVING AND DISPOSING OF DEBRIS SHALL BE INCLUDED IN OTHER ITEMS BID.

RIP-RAP:

MACHINED RIP-RAP SHALL BE CLASS "B" IN ACCORDANCE WITH SECTION 709 OF THE STANDARD SPECIFICATIONS AND SHALL BE MEASURED AND PAID FOR UNDER ROADWAY ITEM 709-05.08-TON.

BACKFILL:

THE FILLS AT THE ENDS OF THE BRIDGE SHALL BE IN PLACE AND THOROUGHLY COMPACTED BEFORE ANY ABUTMENT PILES ARE DRIVEN.

WELDING:

SEE SECTION 602 OF THE STANDARD SPECIFICATIONS AND NOTES ON DRAWING NO. X-XX-XXX.

RADIOGRAPHIC, ULTRASONIC, AND MAGNETIC INSPECTION:

SEE SECTION 602 AND NOTES ON DRAWING NO. X-XX-XXX AND X-XX-XXX.

STEEL STRUCTURES:

SEE TENNESSEE STANDARD SPECIFICATIONS SECTION 602 AND NOTES ON DRAWING NO. X-XX-XX AND X-XX-XXX.

PROTECTION OF SUBSTRUCTURES:

SINCE THIS BRIDGE UTILIZES WEATHERING STEEL, THE CONTRACTOR MUST TAKE SPECIAL PRECAUTIONS TO PREVENT STAINING OF BENTS AND ABUTMENTS. PRIOR TO THE ERECTION OF ANY STEEL, THE TOPS AND SIDES OF COMPLETED SUBSTRUCTURES SHALL BE PROTECTED FROM STAINING BY WRAPPING WITH TRANSLUCENT, REINFORCED, HIGH DENSITY, TWO-PLY, CROSS LAMINATED POLYETHYLENE. IN LIEU OF THIS PROTECTION, THE CONTRACTOR MAY ELECT TO THOROUGHLY CLEAN THE CONCRETE OF RUST STAINING BY SANDBLASTING OR OTHER APPROVED METHODS, PRIOR TO APPLYING A TEXTURE COATED FINISH. NO SEALANT TYPE MATERIALS SHALL BE APPLIED WHICH ARE INCOMPATIBLE WITH THE TEXTURE COAT FINISH UNLESS THEY CAN BE THOROUGHLY REMOVED PRIOR TO APPLYING THE FINISH. TEXTURE COATING OF THE SUBSTRUCTURE SHOULD BE DELAYED UNTIL AFTER THE DECK IS COMPLETED. AFTER A SUBSTRUCTURE HAS RECEIVED ITS FINAL FINISH, THE TOP AND SIDES SHALL BE PROTECTED FROM STAINING BY WRAPPING WITH REINFORCED POLYETHYLENE, WHICH, IF BEING REUSED, SHALL BE IN GOOD CONDITION AND FREE FROM HOLES AND TEARS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT THE SUBSTRUCTURES FROM STAINING FOR THE DURATION OF THE CONTRACT. ANY CORRECTIVE TEXTURE COATING SHALL BE AT THE CONTRACTOR'S EXPENSE. COST TO BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS.

BLAST CLEANING:

THE FASCIA AND ALL FAYING SURFACES OF FIELD SPLICES OF ALL GIRDERS SHALL BE BLAST CLEANED IN ACCORDANCE WITH THE STEEL STRUCTURES PAINTING COUNCIL SURFACE PREPARATION SPECIFICATIONS "NO. 6 COMMERCIAL BLAST CLEANING" SSPC-SP 6. PRIOR TO BOLTING, ANY LOOSE RUST ON THE FAYING SURFACES SHALL BE REMOVED.

FINAL APPEARANCE:

PRIOR TO FINAL ACCEPTANCE, ALL STRUCTURAL STEEL SHALL BE FREE OF GREASE, OIL, CHALK MARKS, PAINT, CONCRETE SPLATTER AND SIMILAR SOILAGE. DEPENDING ON THE LOCATION WITH RESPECT TO VIEW, AND SEVERITY OF THE FOREGOING SOILAGE, THE STRUCTURAL STEEL SHALL BE CLEANED UNDER THE PROVISIONS OF ONE OF THE FOLLOWING: STEEL STRUCTURES PAINTING COUNCIL SURFACE PREPARATION SPECIFICATIONS; "NO. 1 SOLVENT CLEANING" SSPC-SP 1, "NO. 2 HAND CLEANING" SSPC-SP 2, "NO. 3 POWER TOOL CLEANING" SSPC-SP 3 OR "NO. 7 BRUSH-OFF BLAST CLEANING" SSPC-SP 7.

WEATHERING BOLTS:

ALL BOLTS SHALL BE ASTM A-325, TYPE 3. ALL BOLTS, NUTS, AND WASHERS SHALL HAVE THE SAME WEATHERING CHARACTERISTICS AS THE STRUCTURAL STEEL USED. IN LIEU OF USING DIRECT TENSION INDICATORS (DT'S), ALL BOLTS SHALL BE INSTALLED BY EITHER TURN-OF-NUT TIGHTENING OR CALIBRATED WRENCH TIGHTENING IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, CURRENT EDITION.

WEATHERING STEEL:

ALL WEATHERING STEEL SHALL HAVE ATMOSPHERIC CORROSION RESISTANCE EQUAL TO OR BETTER THAN TWO TIMES THAT OF CARBON STRUCTURAL STEEL WITH COPPER.

PAINTING GIRDERS ENCASED IN CONCRETE:

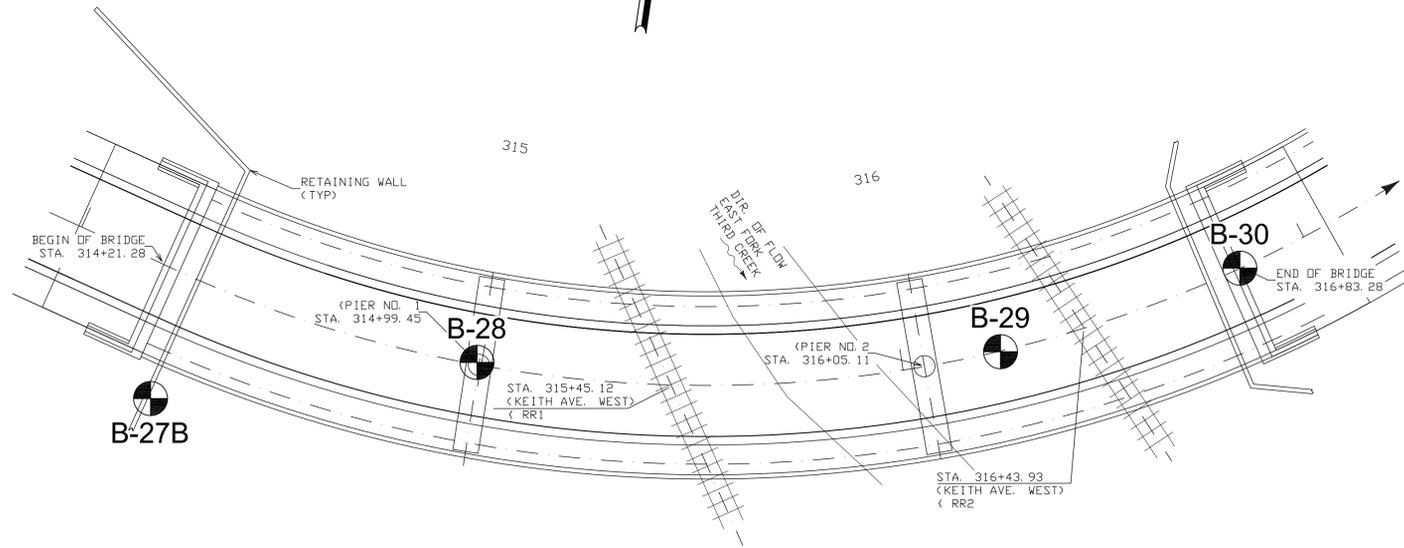
WHERE WEATHERING STEEL GIRDERS ARE ENCASED IN CONCRETE AT INTEGRAL ABUTMENTS, THE GIRDERS SHALL BE PAINTED OVER THE ENTIRE EMBEDMENT LENGTH PLUS AT LEAST ONE FOOT OUTSIDE THE ENCASEMENT. THE PAINT SHALL BE INORGANIC ZINC WITH URETHANE FINISH. THE COLOR OF THE TOP COAT SHALL BE BROWN, FEDERAL STANDARD COLOR 595B, COLOR NO. 20049.

CONST. NO.

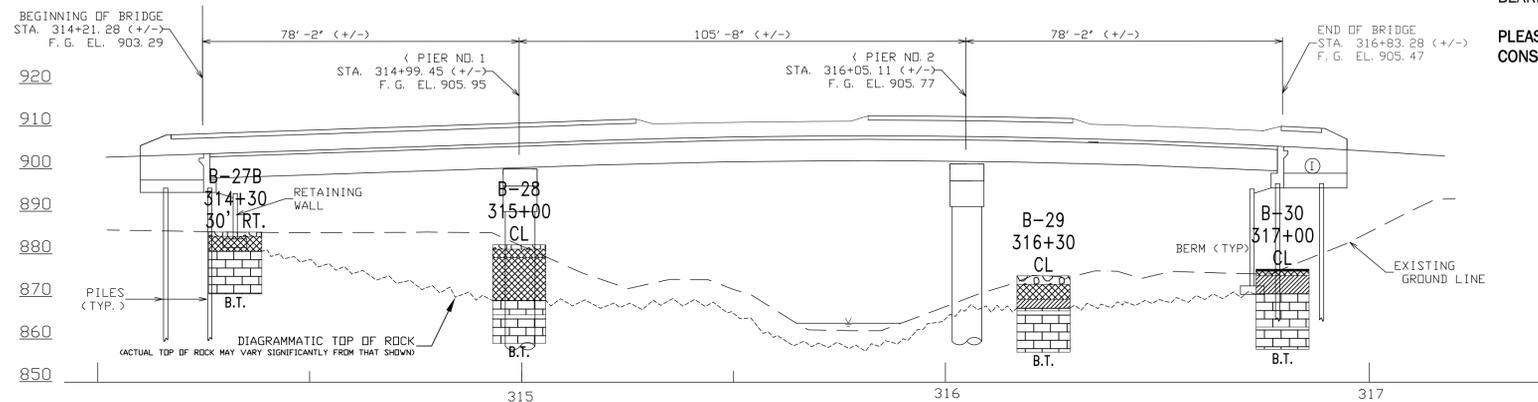
PROJECT NO.	YEAR	SHEET NO.	
HPP/STP-62(34)	2013		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BRIDGE NO. 2
GENERAL NOTES
KEITH AVENUE (WEST) OVER EAST
FORK THIRD CREEK
& KXHR RR & CSX RR
BRIDGE NO XX-XXXX-XXXX
STATION 315+45.12
KNOX COUNTY
2013

DESIGNED BY MRP DATE 07/2013
DRAWN BY FSE DATE 07/2013
SUPERVISED BY BEB DATE 07/2013
CHECKED BY RMD DATE 07/2013



BRIDGE NO. 2 PLAN VIEW
SCALE: 1" = 20'



BRIDGE NO. 2 PROFILE VIEW
SCALE: 1" = 20'

BRIDGE FOUNDATION NOTES

BORING NO.	STATION NO.	OFFSET DISTANCE AND DIRECTION	TOTAL BORING DEPTH (FEET)	APPROXIMATE SURFACE ELEVATION (FEET)	APPROXIMATE REFUSAL ELEVATION (FEET)
B-27B	314+30	38 FT, Right	14.5	885	880 1/2
B-28	315+00	Centerline	23.1	886 1/2	873
B-29	316+30	Centerline	17.9	875	867 1/2
B-30	317+00	Centerline	18.8	875	869

THE BRIDGE FOUNDATIONS MAY BE SUPPORTED BY CONTINUOUS BEDROCK. FOUNDATIONS MAY BE DESIGNED USING THE FOLLOWING:

- THE ULTIMATE BEARING CAPACITY OF THE BEDROCK IS 200 KSF.
- USING A FACTOR OF SAFETY OF 3, THE ALLOWABLE BEARING CAPACITY OF THE BEDROCK IS 66 KSF.

THE ACTUAL TYPE OF FOUNDATIONS USED TO SUPPORT THE ABUTMENT AND BENTS WILL BE DETERMINED BASED ON THE DEPTH TO CONTINUOUS BEDROCK

DRIVEN PILES

THE ABUTMENT FOUNDATIONS MAY BE SUPPORTED BY H-PILES DRIVEN TO REFUSAL. POINTS SHOULD BE INCLUDED ON THE PILES TO REDUCE DAMAGE ASSOCIATED WITH HARD DRIVING CONDITIONS AND VARIABLE ROCK SURFACES. IT IS POSSIBLE THAT FILL MATERIALS USED TO CONSTRUCT THE EMBANKMENTS OR MATERIALS CONTAINED WITHIN OVERBURDEN WILL INCLUDE ROCK MATERIALS OF VARIABLE PARTICLE SIZES. PRE-DRILLING MAY BE REQUIRED TO PENETRATE DEBRIS LADEN OR ROCK FILL.

SHALLOW FOUNDATIONS

THE BENTS MAY BE SUPPORTED BY SPREAD FOUNDATIONS BEARING ON CONTINUOUS LIMESTONE BEDROCK. IRREGULAR BEDROCK SURFACE IS EXPECTED DUE TO SLOT AND PINNACLED BEDROCK CONDITIONS. ANY SOIL MATERIALS BETWEEN THE SLOTS SHOULD BE REMOVED. CHASING OF SOIL FILLED SLOTS OUTSIDE THE FOUNDATION AREA MAY BE REQUIRED DEPENDING ON THE CONDITIONS AT THE TIME OF CONSTRUCTION AS DIRECTED BY THE GEOTECHNICAL ENGINEER. FOUNDATION EXCAVATIONS OR SLOT REMOVAL MAY BE BACKFILLED WITH LEAN CONCRETE AFTER EXCAVATING TO BEDROCK AS DIRECTED BY THE GEOTECHNICAL ENGINEER.

AT LEAST ONE PROBE HOLE SHOULD BE DRILLED IN EACH FOUNDATION TO A DEPTH OF AT LEAST 5 FEET BELOW THE PLANNED BEARING SURFACE. THE PROBE HOLE SHOULD BE CHECKED FOR DISCONTINUITIES USING A HOOKED STEEL ROD. IF DISCONTINUITIES ARE ENCOUNTERED, THE GEOTECHNICAL ENGINEER SHOULD EVALUATE THE DISCONTINUITY AND DETERMINE IF ADDITIONAL ROCK SHOULD BE EXCAVATED TO ACHIEVE THE RECOMMENDED BEARING CAPACITY. WE EXPECT THAT SOME BEDROCK REMOVAL WILL BE REQUIRED.

DRILLED PIERS

AS AN ALTERNATIVE, THE BENTS OR ABUTMENTS MAY BE SUPPORTED BY DRILLED PIER FOUNDATIONS. DRILLED PIERS SHOULD BE DESIGNED AS STRAIGHT-SIDED SHAFTS DRILLED TO DEPTHS NECESSARY TO ENCOUNTER SOUND BEDROCK ACROSS THE ENTIRE BEARING SURFACE AND SOCKETED A MINIMUM OF 1 FOOT INTO BEDROCK. THE MINIMUM PIER DIAMETER SHOULD BE GREATER THAN 30 INCHES. THE MINIMUM PIER LENGTH SHOULD BE AT LEAST 1 1/2 TIMES THE PIER DIAMETER. WHERE REFUSAL IS SHALLOW, THIS COULD RESULT IN ADDITIONAL ROCK REMOVAL.

AT LEAST ONE PROBE HOLE SHOULD BE DRILLED IN EACH FOUNDATION TO A DEPTH OF AT LEAST 5 FEET BELOW THE PLANNED BEARING SURFACE. THE PROBE HOLE SHOULD BE CHECKED FOR DISCONTINUITIES USING A HOOKED STEEL ROD. IF DISCONTINUITIES ARE ENCOUNTERED, THE GEOTECHNICAL ENGINEER SHOULD EVALUATE THE DISCONTINUITY AND DETERMINE IF ADDITIONAL ROCK SHOULD BE EXCAVATED TO ACHIEVE THE RECOMMENDED BEARING CAPACITY. WE EXPECT THAT SOME BEDROCK REMOVAL WILL BE REQUIRED.

PLEASE REFER TO THE SOIL AND GEOLOGICAL SURVEY REPORT FOR ADDITIONAL FOUNDATION DESIGN AND CONSTRUCTION RECOMMENDATIONS.

PROJECT NO.	YEAR	SHEET NO.
HPP-62(34)	2012	R

REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION

B-30 Boring Location and Identifier

BORING LOCATIONS			
BORING NO.	STATION	OFFSET	DEPTH*
B-27B	314+30	38 RT	14.5 ft.
B-28	315+00	CL	23.1 ft.
B-29	316+30	CL	17.9 ft.
B-30	317+00	CL	18.8 ft.

*TERMINATION OR REFUSAL

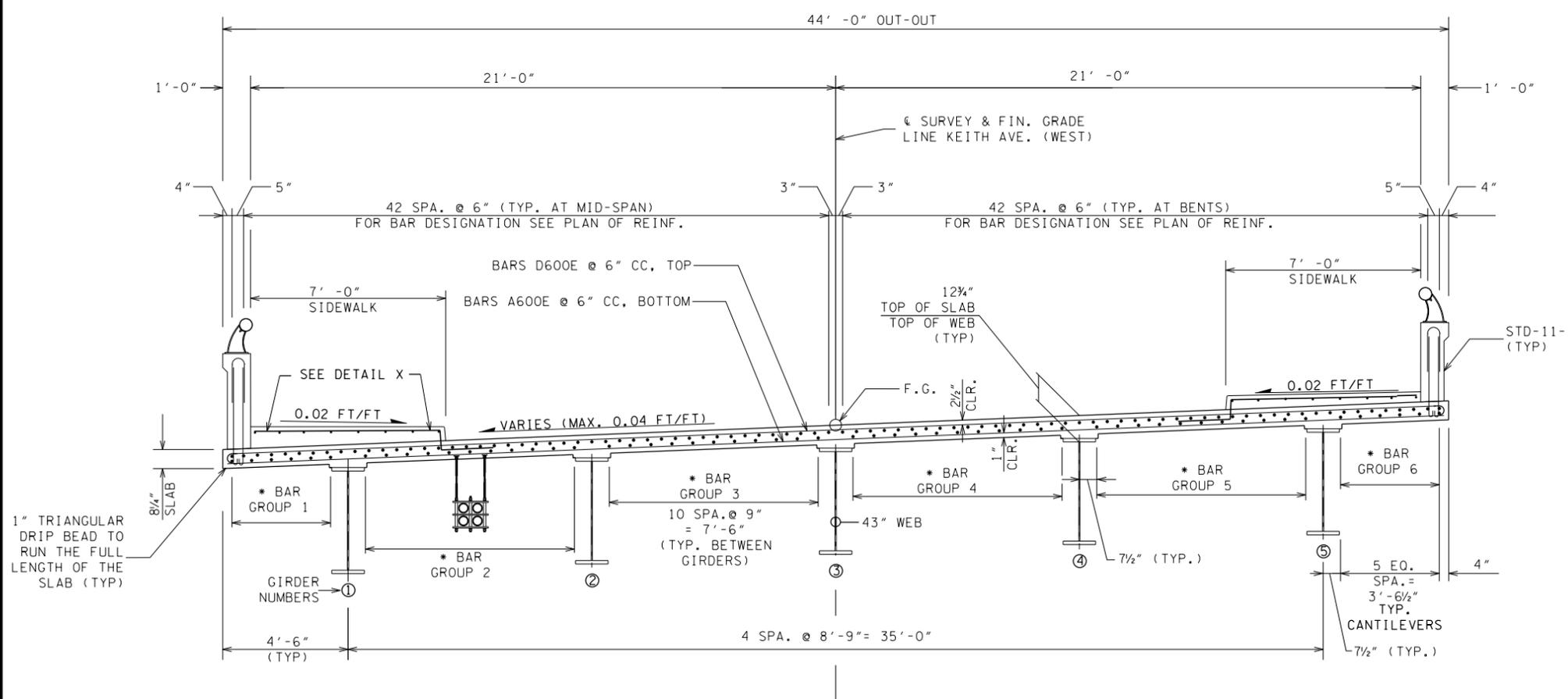
	ASPHALT (BITUMINOUS CONCRETE)		GRAVEL, POORLY-GRADED
	FAT CLAY		LIMESTONE
	LEAN CLAY		TOPSOIL
	DENSE GRADED AGGREGATE		FILL

DRAFT

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BRIDGE NO. 2
PRELIMINARY LAYOUT OF BRIDGE
KEITH AVENUE (WEST) over EAST
FORK THIRD CREEK & RR'S
BRIDGE ID NO XX-XXXX-XXXX
STATION 315+45.12
KNOX COUNTY
2012

DESIGNED BY _____ DATE _____
DRAWN BY _____ DATE _____
SUPERVISED BY _____ DATE _____
CHECKED BY _____ DATE _____

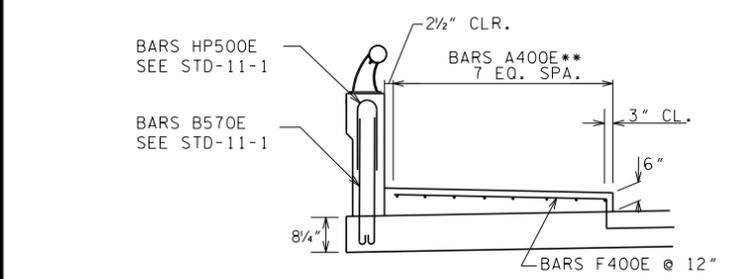
CONST. NO.			
PROJECT NO.	YEAR	SHEET NO.	
HPP/STP-62(34)	2013		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION



TYPICAL SECTION
(LOOKING FORWARD ON SURVEY)
DIAPHRAGMS NOT SHOWN FOR CLARITY

SUPERSTRUCTURE GENERAL NOTES

1. THE CONCRETE DECK SHALL NOT BE POURED UNTIL ALL STRUCTURAL STEEL IS ERECTED AND ALL WELDING AND/OR BOLTING COMPLETE.
2. THE CONTRACTOR SHALL INSURE THAT THE FASCIA WEBS ARE ADEQUATELY BRACED TO PREVENT WEB DISTORTION AND BUCKLING DUE TO FORCES TRANSMITTED BY OVERHANG FORM BRACKETS DURING SLAB POURING OPERATIONS.
3. DEAD LOAD CORRECTION CURVE: GIRDERS SHALL BE CAMBERED TO COMPENSATE FOR DEAD LOAD DEFLECTION (SEE SHEETS X-XX-XXX THRU X-XX-XXX).
4. OUTSIDE EDGE OF SLAB AND BRIDGE RAIL TO CONFORM TO HORIZONTAL CURVE.
5. WHEN POURING SLAB, PROVISIONS SHALL BE MADE FOR SETTING REINFORCING STEEL FOR BRIDGE RAIL & SIDEWALK. THE BRIDGE RAIL & SIDEWALK SHALL NOT BE POURED UNTIL THE ENTIRE DECK SLAB IS POURED AND CURED. ALSO SEE DRAWING NO. STD-11-1.
6. APPROVAL OF MATERIALS: NO FABRICATION SHALL BE STARTED UNTIL THE MATERIALS INVOLVED HAVE BEEN APPROVED BY THE TENNESSEE DEPARTMENT OF TRANSPORTATION, DIVISION OF MATERIALS AND TESTS.
7. IDENTITY OF MAIN MATERIALS: SEE SECTION 602 OF THE STANDARD SPECIFICATIONS.
8. STRUCTURAL STEEL: SHALL CONFORM TO AASHTO M270 (ASTM A709) GRADE 50W UNLESS OTHERWISE NOTED. ALL STRUCTURAL STEEL FOR GIRDER FLANGES IN TENSION AND ALL WEBS SHALL MEET THE SUPPLEMENTAL REQUIREMENTS FOR LONGITUDINAL CHARPY V-NOTCH TESTS SPECIFIED IN AASHTO MATERIALS SPECIFICATIONS. ZONE 2 OF NON-FRACTURE CRITICAL CRITERIA SHALL APPLY.
9. WELDING: ANSI/AASHTO/AWS D1.5M (LATEST REVISION) BRIDGE WELDING CODE AND SECTION 602 OF THE STANDARD SPECIFICATIONS.
10. FIELD CONNECTIONS: SHALL BE 1"59*64 HIGH TENSILE STRENGTH BOLTS ASTM A 325W UNLESS OTHERWISE SHOWN. SEE AASHTO SPECIFICATIONS ART. 6.4.3 DIVISION II AND SECTION 602 OF THE STANDARD SPECIFICATIONS.
11. ADDITIONAL SHOP SPLICE NOTE: SHOP SPLICES NECESSARY DUE TO LENGTHS OR SIZE OF MATERIAL INVOLVED MAY BE ADDED BY THE FABRICATOR SUBJECT TO APPROVAL BY THE ENGINEER AND SHALL BE AT NO ADDITIONAL COST TO THE PROJECT.
12. FIELD SPLICE NOTE: FIELD SPLICES SHOWN ON THE PLANS MAY BE DELETED BY THE CONTRACTOR. ADJUSTMENT TO THE LUMP SUM PRICE FOR STEEL STRUCTURES SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
13. SHOP ASSEMBLY: PROGRESSIVE SHOP ASSEMBLY WILL BE ALLOWED. SEE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, ART. 11.5.3.1 DIVISION II.
14. SEE AASHTO SPECIFICATIONS ART. 6.13.3.4 FOR MINIMUM SIZE OF FILLET WELD.



DETAIL X

*** BOTTOM LAYER LONGITUDINAL REINFORCING**

BAR GROUP 1: 4 BARS A607E @ 60'-0" S/W 1 SERIES BAR FROM 11'-4" TO 14'-5 1/4" (A601E)
BAR GROUP 2: 4 BARS A607E @ 60'-0" S/W 1 SERIES BAR FROM 15'-6 3/4" TO 22'-0" (A602E)
BAR GROUP 3: 4 BARS A607E @ 60'-0" S/W 1 SERIES BAR FROM 23'-1" TO 29'-7 1/2" (A603E)
BAR GROUP 4: 4 BARS A607E @ 60'-0" S/W 1 SERIES BAR FROM 30'-8 1/2" TO 37'-2 1/2" (A604E)
BAR GROUP 5: 4 BARS A607E @ 60'-0" S/W 1 SERIES BAR FROM 38'-3 1/2" TO 44'-9" (A605E)
BAR GROUP 6: 4 BARS A607E @ 60'-0" S/W 1 SERIES BAR FROM 45'-10" TO 48'-11 1/8" (A606E)

NOTE: FOR PLAN OF REINFORCING SEE DWG. NO. XX-XXX-XXX

- ** BARS A400E S/W SERIES BAR A401E (LEFT SIDE LOOKING FORWARD ON SURVEY)
- ** BARS A400E S/W SERIES BAR A402E (RIGHT SIDE LOOKING FORWARD ON SURVEY)
- ** 1'-0" MINIMUM SPLICE LENGTH

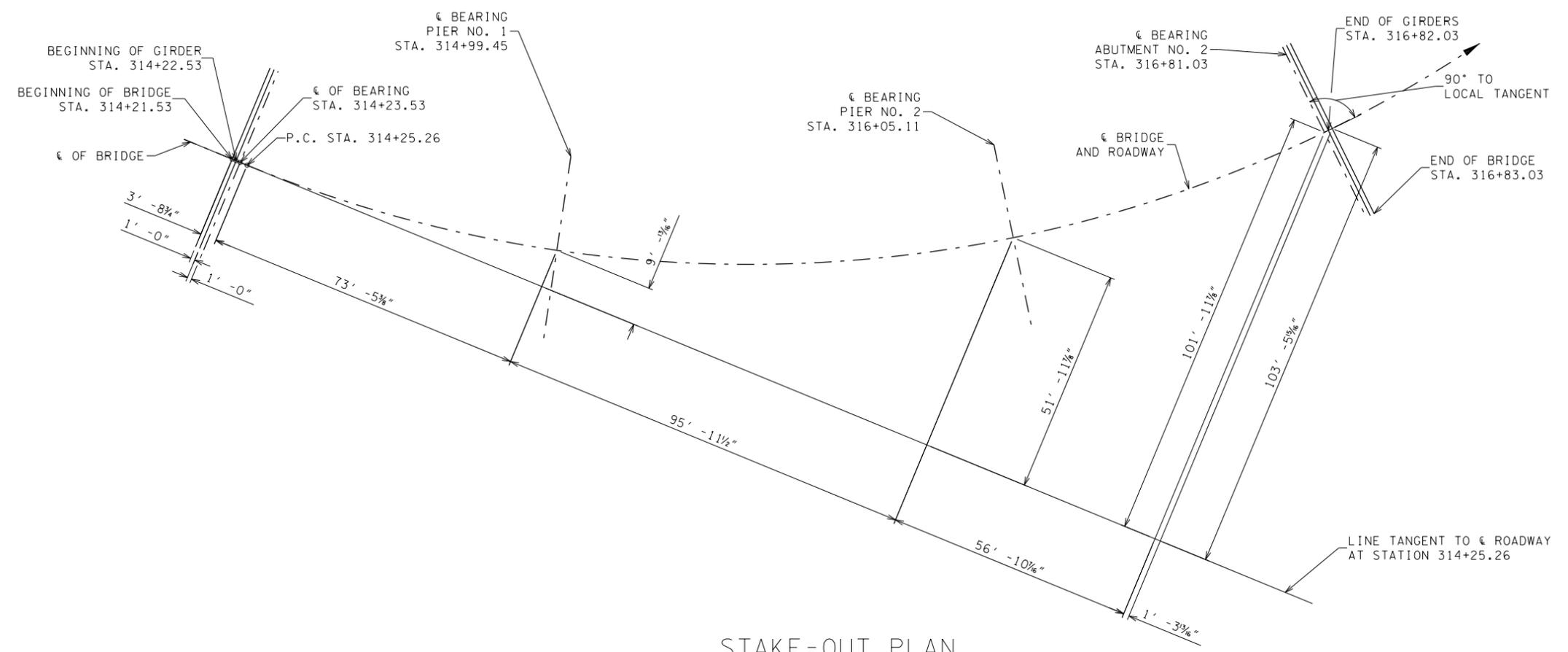
ESTIMATED QUANTITIES

604-03.09 CLASS "A" CONCRETE (BRIDGES) (C.Y.)	604-03.09 CLASS "D" CONCRETE (BRIDGE DECK) (C.Y.)	604-02.03 EPOXY COATED REINFORCING STEEL (LBS)
74	350	130,381

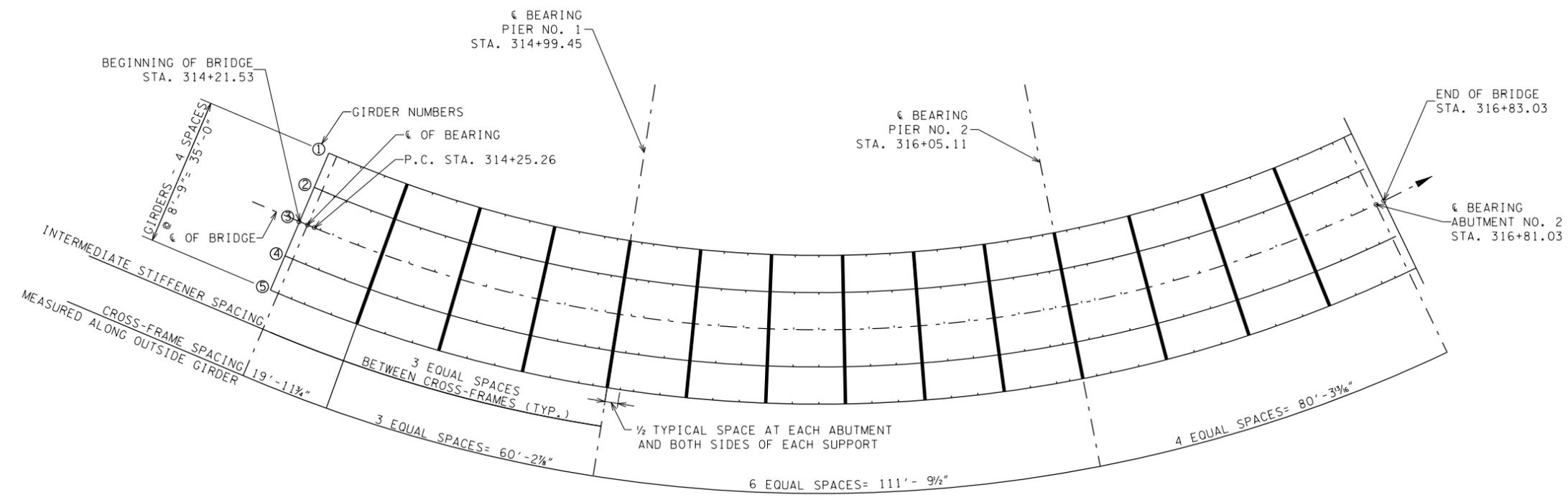
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BRIDGE NO. 2
SUPERSTRUCTURE DETAILS (1 OF 4)
KEITH AVENUE (WEST) OVER EAST
FORK THIRD CREEK
& KXHR RR & CSX RR
BRIDGE NO XX-XXXX-XXXX
STATION 315+45.12
KNOX COUNTY
2013

DESIGNED BY: MRP DATE: 07/2013
DRAWN BY: FSE DATE: 07/2013
SUPERVISED BY: BEB DATE: 07/2013
CHECKED BY: RMD DATE: 07/2013

CONST. NO.			
PROJECT NO.	YEAR	SHEET NO.	
HPP/STP-62(34)	2013		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION



STAKE-OUT PLAN

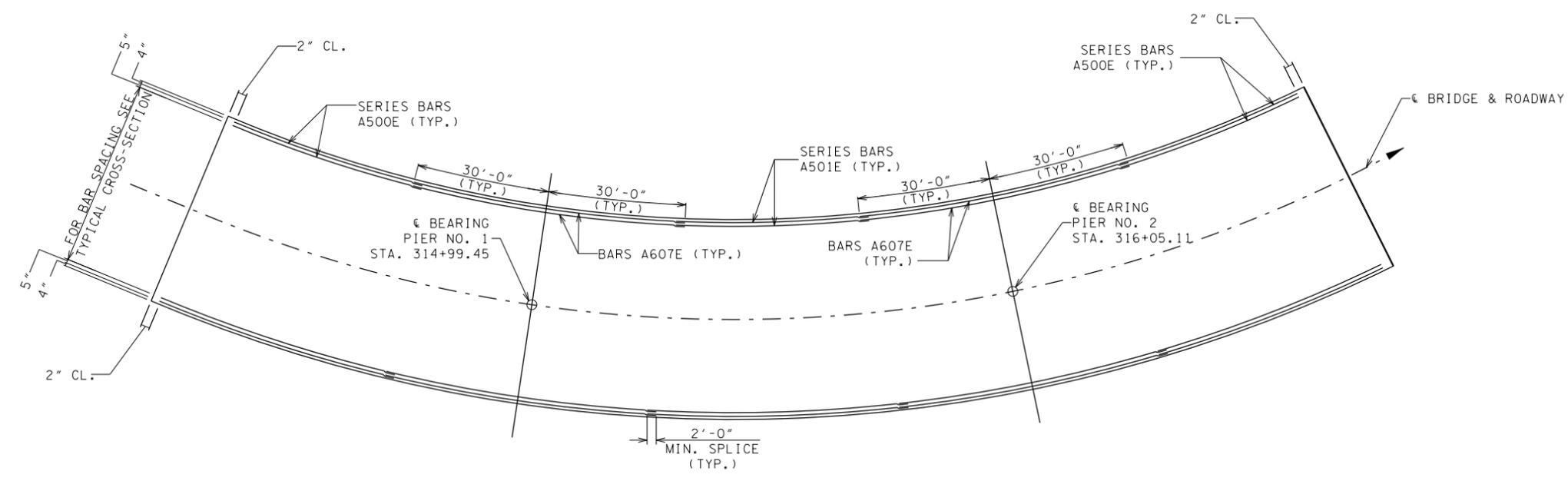


FRAMING PLAN

DESIGNED BY MRP DATE 07/2013
 DRAWN BY FSE DATE 07/2013
 SUPERVISED BY BEB DATE 07/2013
 CHECKED BY RMD DATE 07/2013

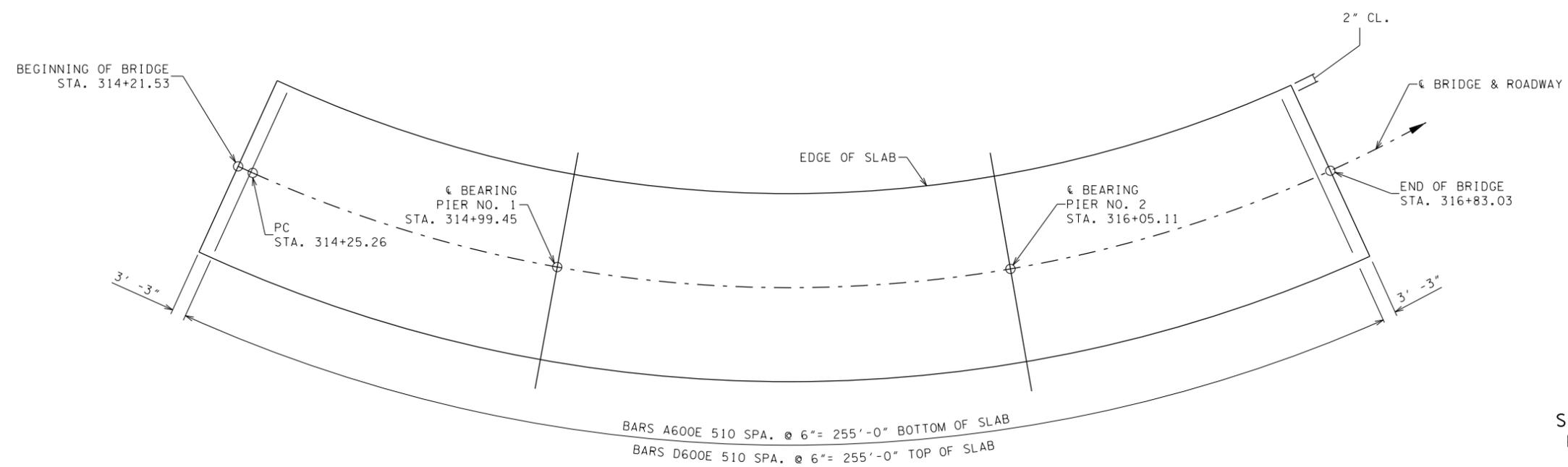
STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BRIDGE NO.2
 SUPERSTRUCTURE DETAILS (2 OF 4)
 KEITH AVENUE (WEST) OVER EAST
 FORK THIRD CREEK
 & KXHR RR & CSX RR
 BRIDGE NO XX-XXXX-XXXX
 STATION 315+45.12
 KNOX COUNTY
 2013

CONST. NO.			
PROJECT NO.	YEAR	SHEET NO.	
HPP/STP-62(34)	2013		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION



PLAN OF REINFORCING (TOP LAYER ONLY)

(NOTE: FOR BOTTOM LAYER, REFER TO THIS SHEET AND X-XX-XXX)



SLAB PLAN

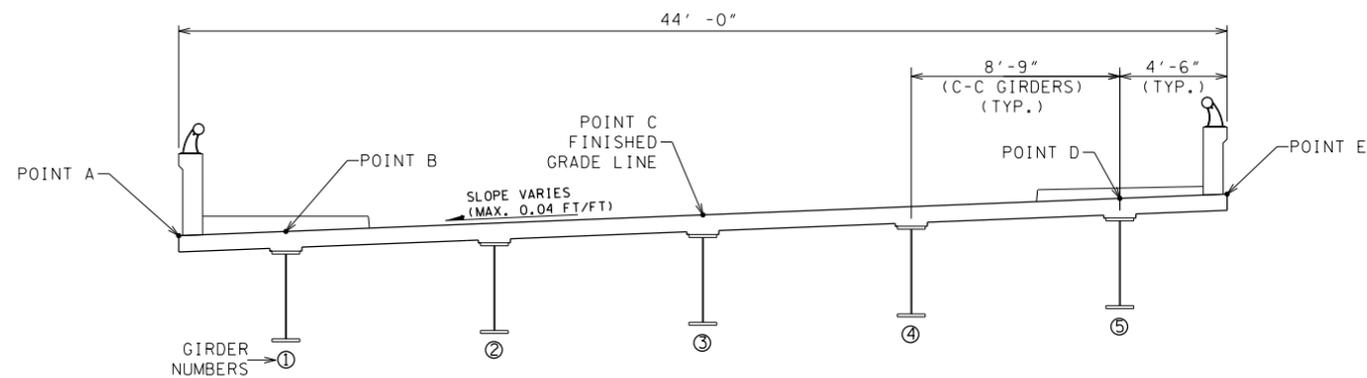
(TOP & BOTTOM SLAB)
(BAR SPACING IS RADIAL ALONG € BRIDGE)

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BRIDGE NO.2
SUPERSTRUCTURE DETAILS (3 OF 4)
KEITH AVENUE (WEST) OVER EAST
FORK THIRD CREEK
& KXHR RR & CSX RR
BRIDGE NO XX-XXXX-XXXX
STATION 315+45.12
KNOX COUNTY
2013

DESIGNED BY MRP DATE 07/2013
DRAWN BY FSE DATE 07/2013
SUPERVISED BY BEB DATE 07/2013
CHECKED BY MRD DATE 07/2013

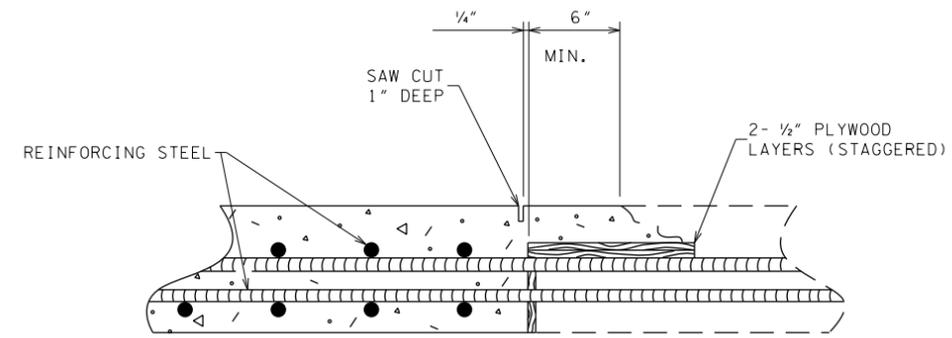
ALL SLAB CONSTRUCTION JOINTS SHALL BE IN ACCORDANCE WITH THE SLAB CONSTRUCTION JOINT DETAIL AS SHOWN.

CONST. NO.		PROJECT NO.	YEAR	SHEET NO.
		HPP/STP-62(34)	2013	
REVISIONS				
NO.	DATE	BY	BRIEF DESCRIPTION	



TYPICAL CROSS SECTION

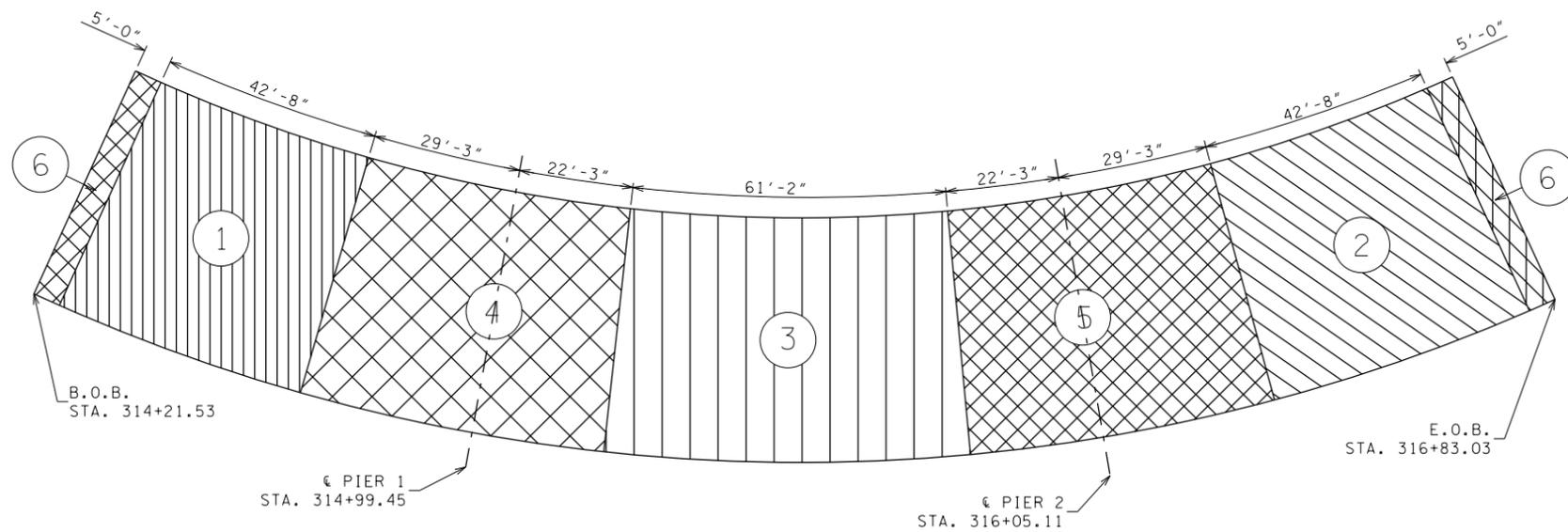
SCALE 1/4" = 1"



SLAB CONSTRUCTION JOINT DETAIL

TABLE OF STATIONS AND ELEVATIONS

LOCATION	STATION	LEFT SLOPE	RIGHT SLOPE	ELEV. PT. A	ELEV. PT. B	ELEV. PT. C	ELEV. PT. D	ELEV. PT. E
C/L BEARING ABUT.1	314+23.530	-2.00%	0.91%	902.93	903.02	903.37	903.53	903.57
SPAN 1 - 1/10	314+31.122	-2.00%	1.32%	903.18	903.27	903.62	903.86	903.91
SPAN 1 - 2/10	314+38.714	-2.00%	1.74%	903.44	903.53	903.88	904.19	904.26
SPAN 1 - 3/10	314+46.306	-2.15%	2.15%	903.67	903.76	904.14	904.52	904.61
SPAN 1 - 4/10	314+53.898	-2.56%	2.56%	903.83	903.95	904.40	904.85	904.96
SPAN 1 - 5/10	314+61.490	-2.97%	2.97%	904.00	904.14	904.66	905.18	905.31
SPAN 1 - 6/10	314+69.082	-3.39%	3.39%	904.17	904.32	904.92	905.51	905.66
SPAN 1 - 7/10	314+76.674	-3.80%	3.80%	904.34	904.51	905.17	905.84	906.01
SPAN 1 - 8/10	314+84.266	-4.00%	4.00%	904.55	904.73	905.43	906.13	906.31
SPAN 1 - 9/10	314+91.858	-4.00%	4.00%	904.81	904.99	905.69	906.39	906.57
PIER 1 C/L	314+99.450	-4.00%	4.00%	905.07	905.25	905.95	906.65	906.83
SPAN 2 - 1/10	315+10.016	-4.00%	4.00%	905.43	905.61	906.31	907.01	907.19
SPAN 2 - 2/10	315+20.582	-4.00%	4.00%	905.79	905.97	906.67	907.37	907.55
SPAN 2 - 3/10	315+31.148	-4.00%	4.00%	906.13	906.31	907.01	907.71	907.89
SPAN 2 - 4/10	315+41.714	-4.00%	4.00%	906.42	906.60	907.30	908.00	908.18
SPAN 2 - 5/10	315+52.280	-4.00%	4.00%	906.64	906.82	907.52	908.22	908.40
SPAN 2 - 6/10	315+62.846	-4.00%	4.00%	906.81	906.99	907.69	908.39	908.57
SPAN 2 - 7/10	315+73.412	-4.00%	4.00%	906.92	907.10	907.80	908.50	908.68
SPAN 2 - 8/10	315+83.978	-4.00%	4.00%	906.97	907.15	907.85	908.55	908.73
SPAN 2 - 9/10	315+94.544	-4.00%	4.00%	906.96	907.14	907.84	908.54	908.72
PIER 2 C/L	316+05.110	-4.00%	4.00%	906.89	907.07	907.77	908.47	908.65
SPAN 3 - 1/10	316+12.702	-4.00%	4.00%	906.81	906.99	907.69	908.39	908.57
SPAN 3 - 2/10	316+20.294	-4.00%	4.00%	906.69	906.87	907.57	908.27	908.45
SPAN 3 - 3/10	316+27.886	-4.00%	4.00%	906.55	906.73	907.43	908.13	908.31
SPAN 3 - 4/10	316+35.478	-4.00%	4.00%	906.38	906.56	907.26	907.96	908.14
SPAN 3 - 5/10	316+43.070	-4.00%	4.00%	906.17	906.35	907.05	907.75	907.93
SPAN 3 - 6/10	316+50.662	-4.00%	4.00%	905.94	906.12	906.82	907.52	907.70
SPAN 3 - 7/10	316+58.254	-4.00%	4.00%	905.67	905.85	906.55	907.25	907.43
SPAN 3 - 8/10	316+65.846	-4.00%	4.00%	905.38	905.56	906.26	906.96	907.14
SPAN 3 - 9/10	316+73.438	-4.00%	4.00%	905.06	905.24	905.94	906.64	906.82
C/L BEARING ABUT.2	316+81.030	-4.00%	4.00%	904.70	904.88	905.58	906.28	906.46



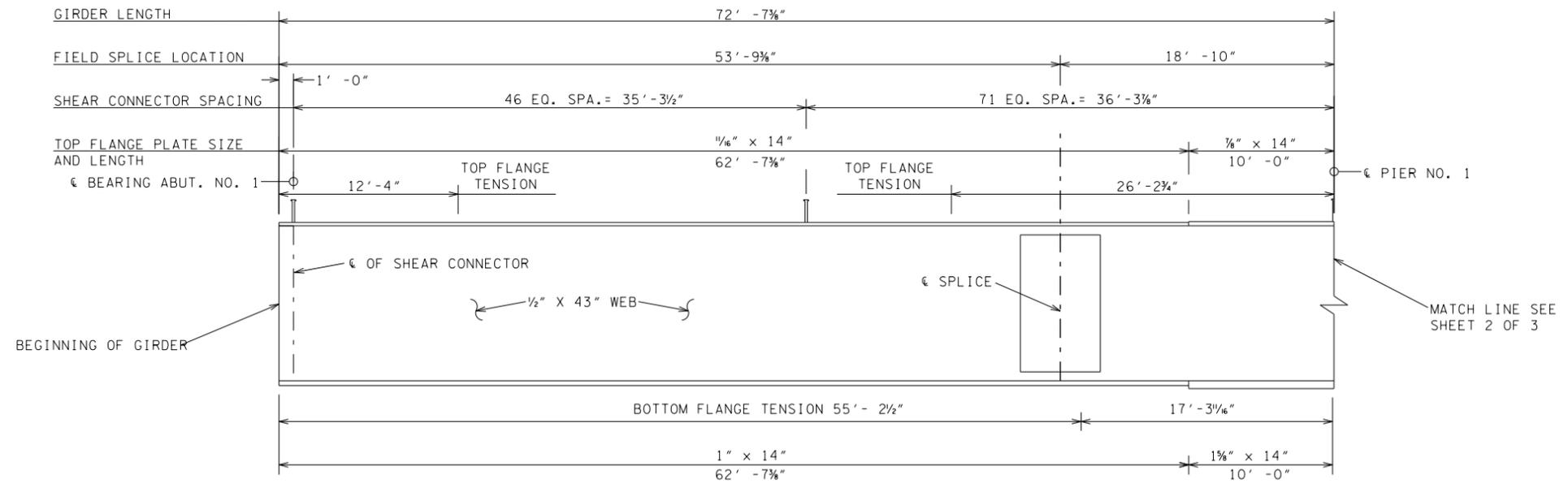
POURING SEQUENCE

(MEASUREMENTS TAKEN ALONG C BRIDGE/GIRDER LINE 3)

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BRIDGE NO.2
 SUPERSTRUCTURE DETAILS (4 OF 4)
 KEITH AVENUE (WEST) OVER EAST
 FORK THIRD CREEK
 & KXHR RR & CSX RR
 BRIDGE NO XX-XXXX-XXXX
 STATION 315+45.12
 KNOX COUNTY
 2013

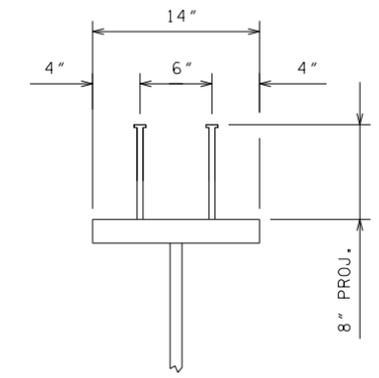
DESIGNED BY MRP DATE 07/2013
 DRAWN BY FSE DATE 07/2013
 SUPERVISED BY BEB DATE 07/2013
 CHECKED BY RMD DATE 07/2013

CONST. NO.			
PROJECT NO.	YEAR	SHEET NO.	
HPP/STP-62(34)	2013		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION

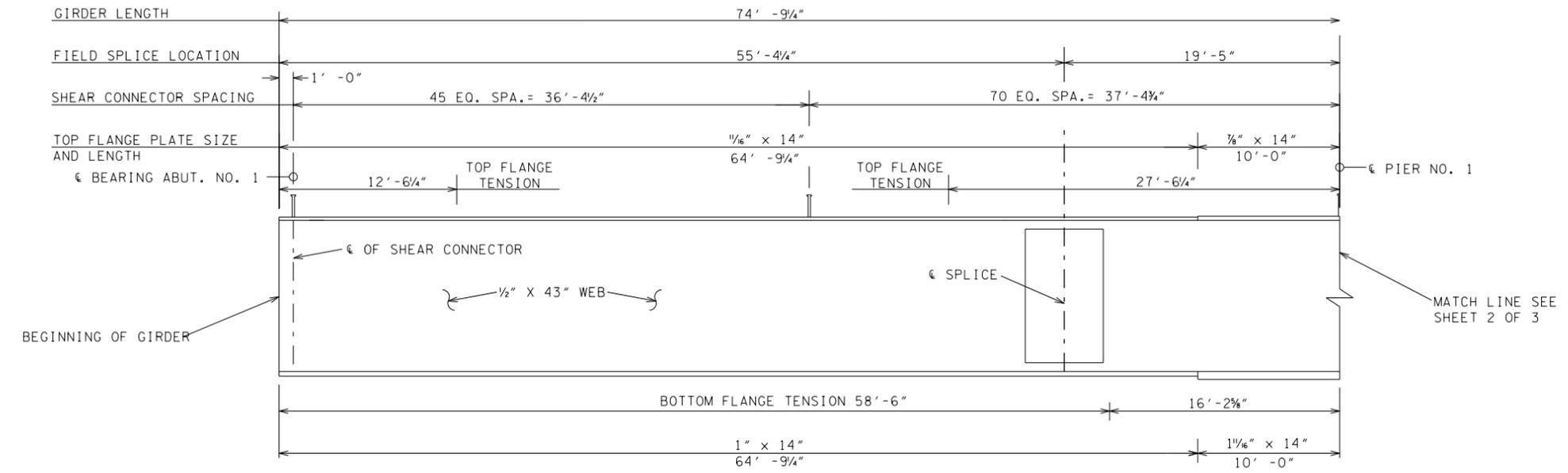


SPAN POINTS	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
DEAD LOAD GIRDER	0	0	0	0	0	0	0	0	-1/16	0	0
TOTAL DEAD LOAD	0	0	1/16	1/8	1/8	0	-3/16	-1/4	-3/16	-1/4	0

DEAD LOAD CORRECTION CURVE (IN.)



SHEAR CONNECTOR DETAIL
 7/8"Ø A108 GRADES G10100 THRU G10200
 NOTE: SHEAR CONNECTORS NOT REQUIRED ON TOP OF SPLICE PLATES.



SPAN POINTS	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
DEAD LOAD GIRDER	0	0	0	0	0	0	0	0	-1/16	0	0
TOTAL DEAD LOAD	0	0	1/16	1/8	1/8	1/16	-1/16	-3/16	-1/4	-3/16	0

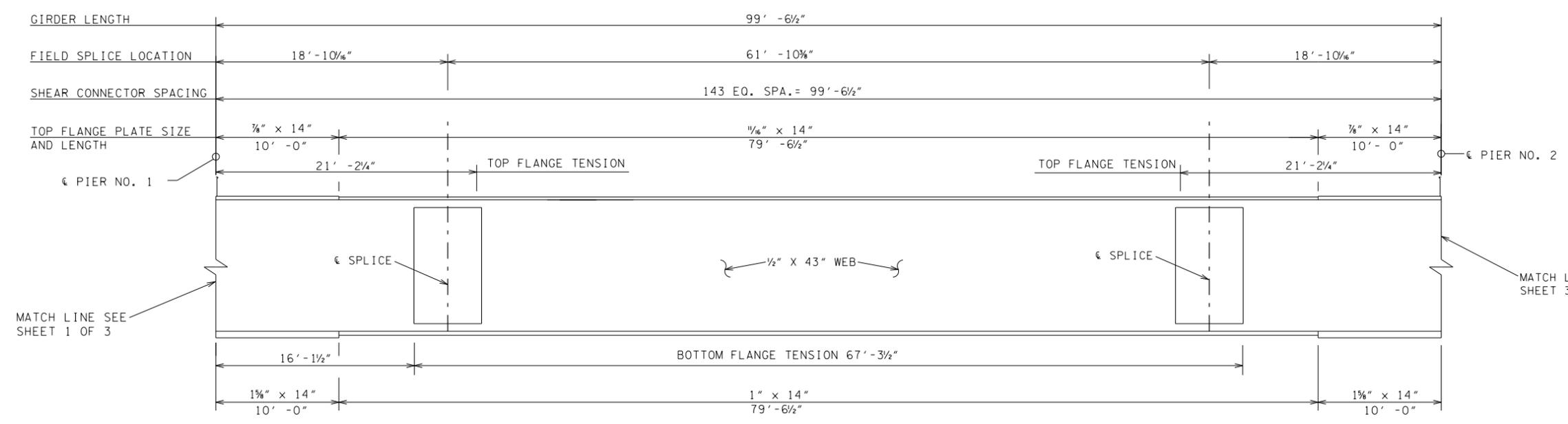
DEAD LOAD CORRECTION CURVE (IN.)

NOTE: FOR DETAILS OF GIRDER SPLICE SEE DRAWING NO. XX-XXX-XXX

DESIGNED BY MRP DATE 07/2013
 DRAWN BY FSE DATE 07/2013
 SUPERVISED BY BEB DATE 07/2013
 CHECKED BY RMD DATE 07/2013

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BRIDGE NO.2
 GIRDERS 1 & 2 DETAILS (1 OF 3)
 KEITH AVENUE (WEST) OVER EAST
 FORK THIRD CREEK
 & KXHR RR & CSX RR
 BRIDGE NO XX-XXXX-XXXX
 STATION 315+45.12
 KNOX COUNTY
 2013

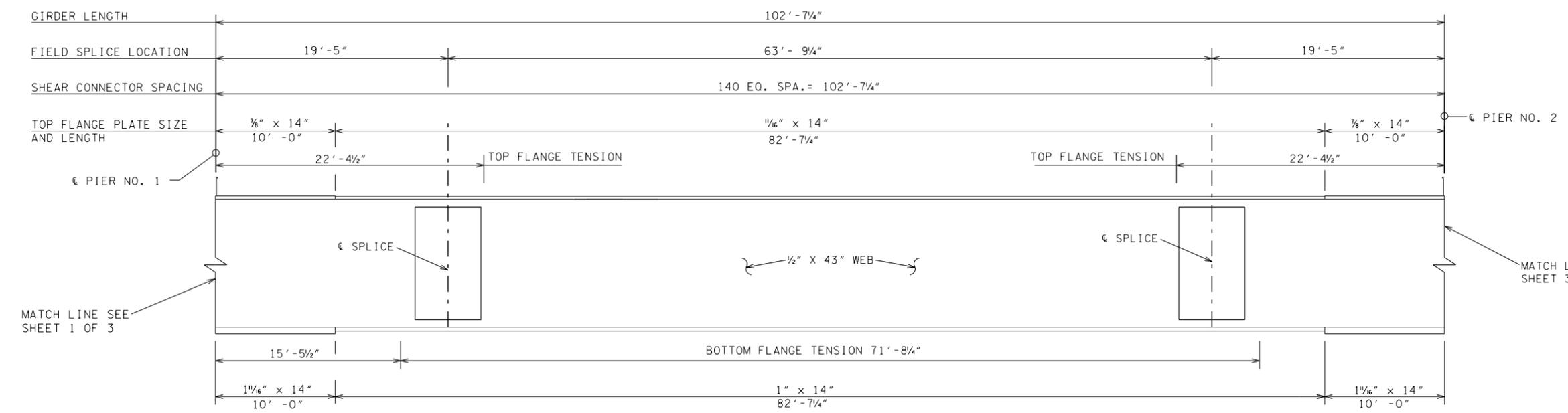
CONST. NO.			
PROJECT NO.	YEAR	SHEET NO.	
HPP/STP-62(34)	2013		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION



GIRDER LINE "1" ELEVATION

SPAN POINTS	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0
DEAD LOAD GIRDER	0	1/8	1/4	3/8	1/2	5/8	1	3/4	1/2	1/8	0
TOTAL DEAD LOAD	0	3/8	1 1/8	2 1/8	2 3/8	3	2 3/8	2 1/8	1 1/8	3/8	0

DEAD LOAD CORRECTION CURVE



GIRDER LINE "2" ELEVATION

SPAN POINTS	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0
DEAD LOAD GIRDER	0	1/8	1/4	3/8	1/2	5/8	1	3/4	1/2	1/8	0
TOTAL DEAD LOAD	0	3/8	1 1/8	2 1/8	2 3/8	3	2 3/8	2 1/8	1 1/8	3/8	0

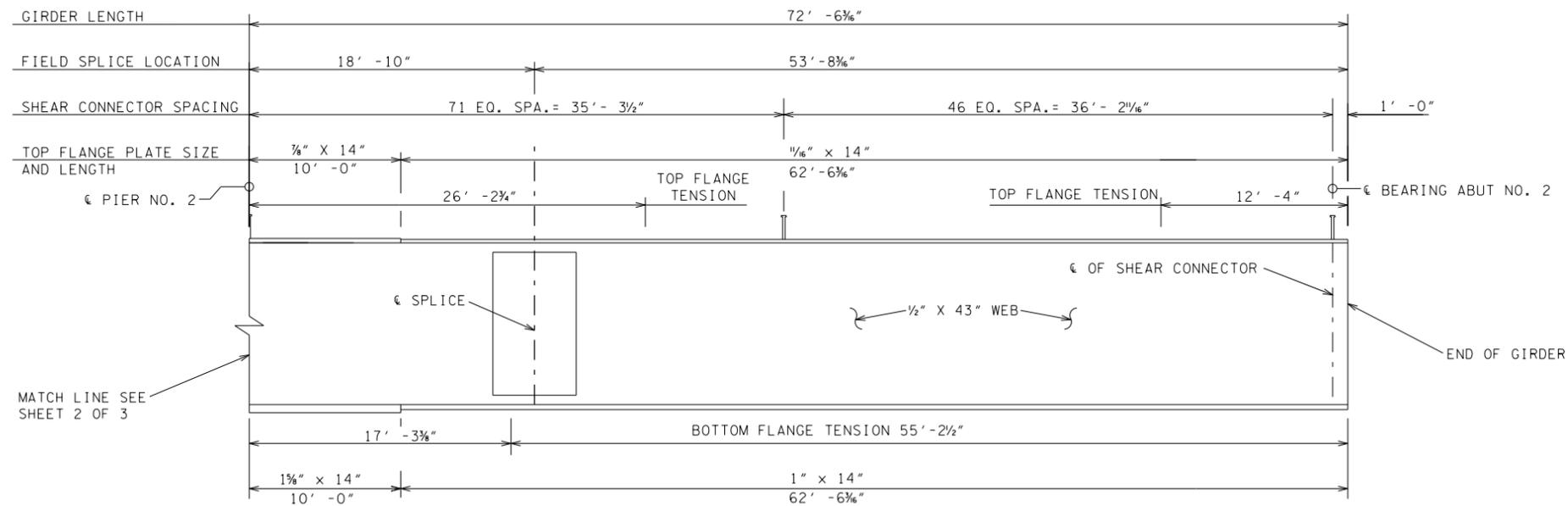
DEAD LOAD CORRECTION CURVE

NOTE: FOR DETAILS OF GIRDER SPLICE SEE DRAWING NO. XX-XXX-XXX

DESIGNED BY: MRP DATE: 07/2013
 DRAWN BY: FSE DATE: 07/2013
 SUPERVISED BY: BEB DATE: 07/2013
 CHECKED BY: RMD DATE: 07/2013

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BRIDGE NO.2
 GIRDERS 1 & 2 DETAILS (2 OF 3)
 KEITH AVENUE (WEST) OVER EAST
 FORK THIRD CREEK
 & KXHR RR & CSX RR
 BRIDGE NO XX-XXXX-XXXX
 STATION 315+45.12
 KNOX COUNTY
 2013

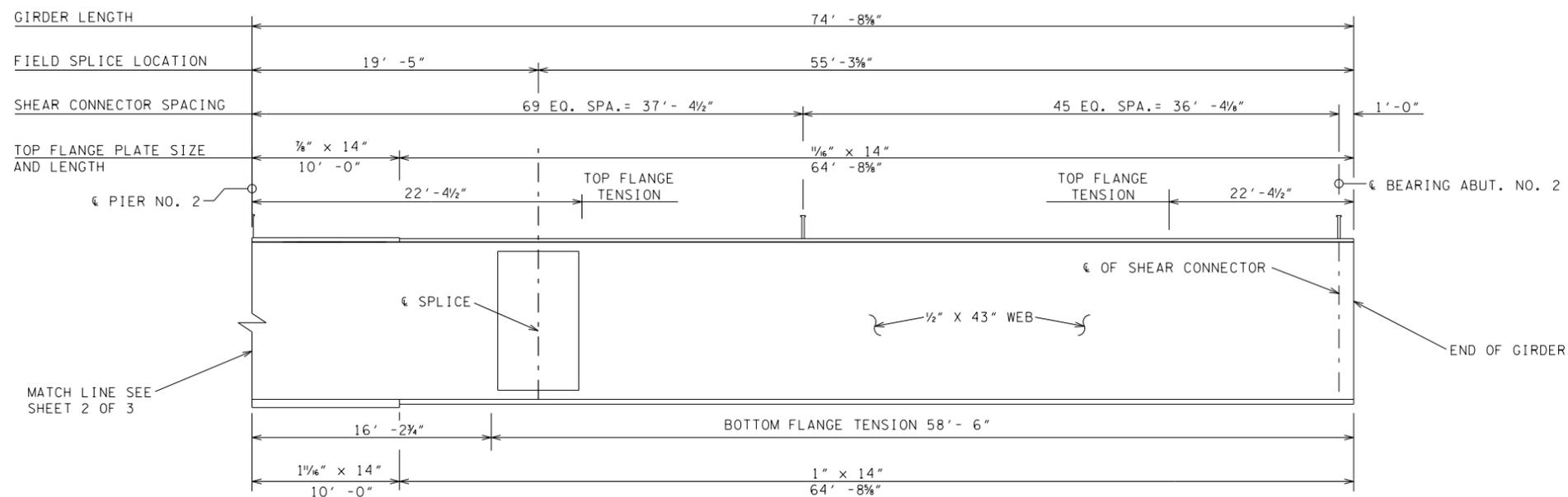
CONST. NO.			
PROJECT NO.	YEAR	SHEET NO.	
HPP/STP-62(34)	2013		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION



GIRDER LINE "1" ELEVATION

SPAN POINTS	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0
DEAD LOAD GIRDER	0	0	-1/16	0	0	0	0	0	0	0	0
TOTAL DEAD LOAD	0	-1/4	-3/16	-1/4	-3/16	0	1/8	1/8	1/16	0	0

DEAD LOAD CORRECTION CURVE



GIRDER LINE "2" ELEVATION

SPAN POINTS	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0
DEAD LOAD GIRDER	0	0	-1/16	0	0	0	0	0	0	0	0
TOTAL DEAD LOAD	0	-3/16	-1/4	-3/16	-1/16	1/16	1/8	1/8	1/16	0	0

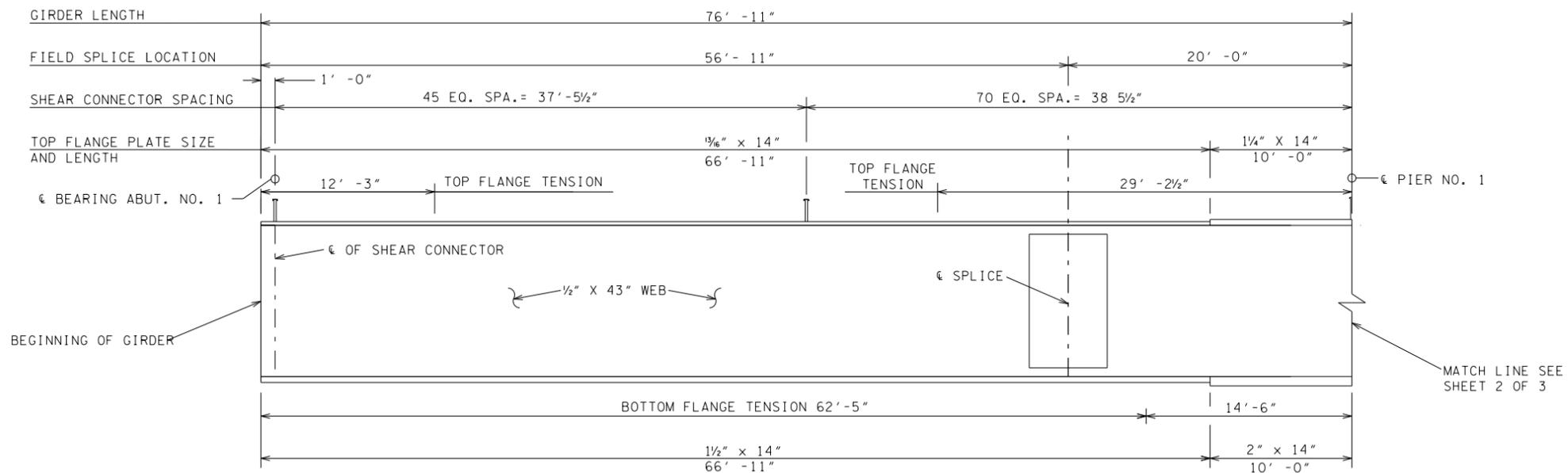
DEAD LOAD CORRECTION CURVE

NOTE: FOR DETAILS OF GIRDER SPLICE SEE DRAWING NO. XX-XXX-XXX

DESIGNED BY MRP DATE 07/2013
 DRAWN BY FSE DATE 07/2013
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STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BRIDGE NO.2
 GIRDERS 1 & 2 DETAILS (3 OF 3)
 KEITH AVENUE (WEST) OVER EAST
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 & KXHR RR & CSX RR
 BRIDGE NO XX-XXXX-XXXX
 STATION 315+45.12
 KNOX COUNTY
 2013

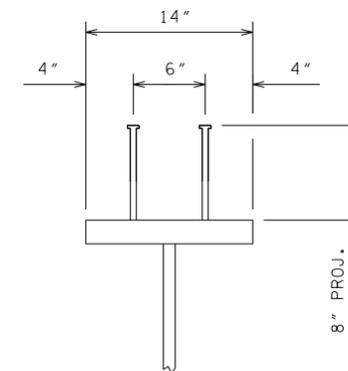
CONST. NO.			
PROJECT NO.	YEAR	SHEET NO.	
HPP/STP-62(34)	2013		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION



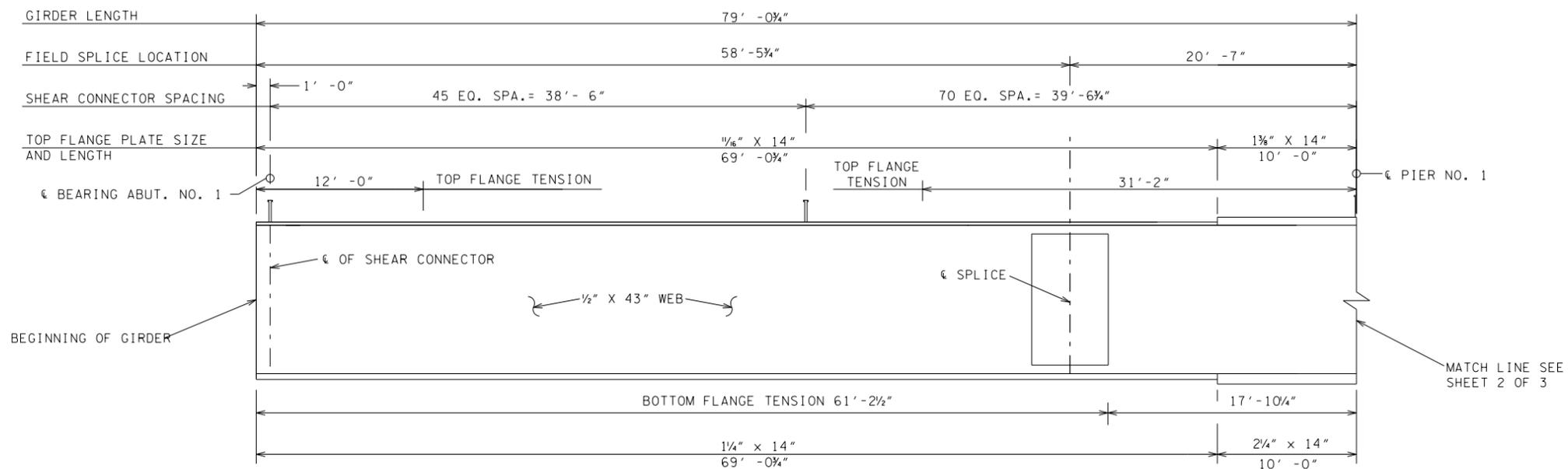
GIRDER LINE "3" ELEVATION

SPAN POINTS	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
DEAD LOAD GIRDER	0	0	0	0	0	0	0	0	0	0	0
TOTAL DEAD LOAD	0	1/16	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	0

DEAD LOAD CORRECTION CURVE



SHEAR CONNECTOR DETAIL
 3/8"Ø A108 GRADES G10100 THRU G10200
 NOTE: SHEAR CONNECTORS NOT REQUIRED ON TOP OF SPLICE PLATES.



GIRDER LINE "4" ELEVATION

SPAN POINTS	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
DEAD LOAD GIRDER	0	0	0	1/16	1/8	0	0	0	0	0	0
TOTAL DEAD LOAD	0	1/16	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	0

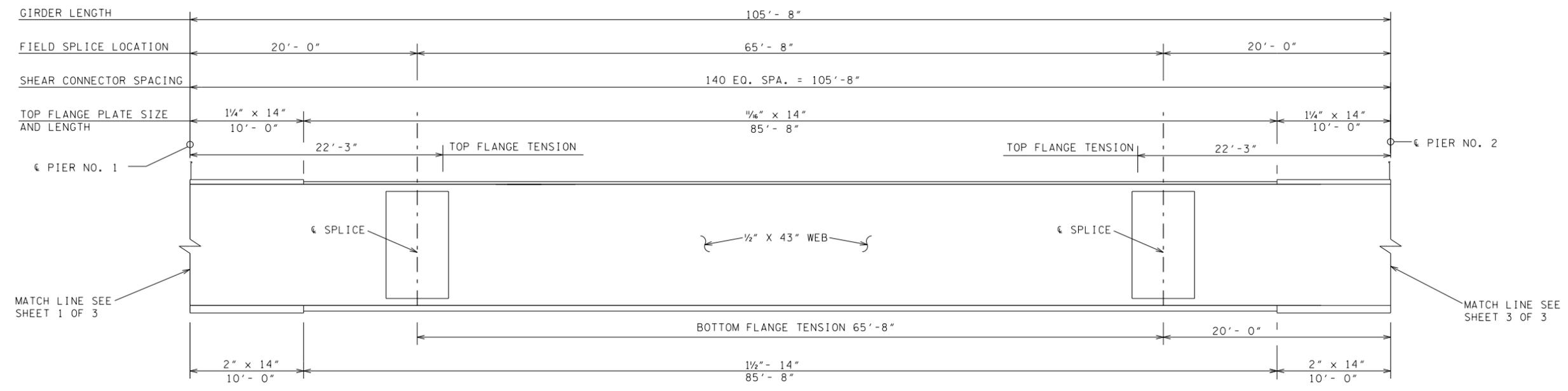
DEAD LOAD CORRECTION CURVE

NOTE: FOR DETAILS OF GIRDER SPLICE SEE DRAWING NO. XX-XXX-XXX

DESIGNED BY MRP DATE 07/2013
 DRAWN BY FSE DATE 07/2013
 SUPERVISED BY BEB DATE 07/2013
 CHECKED BY RMD DATE 07/2013

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BRIDGE NO.2
 GIRDERS 3 & 4 DETAILS (1 OF 3)
 KEITH AVENUE (WEST) OVER EAST
 FORK THIRD CREEK
 & KXHR RR & CSX RR
 BRIDGE NO XX-XXXX-XXXX
 STATION 315+45.12
 KNOX COUNTY
 2013

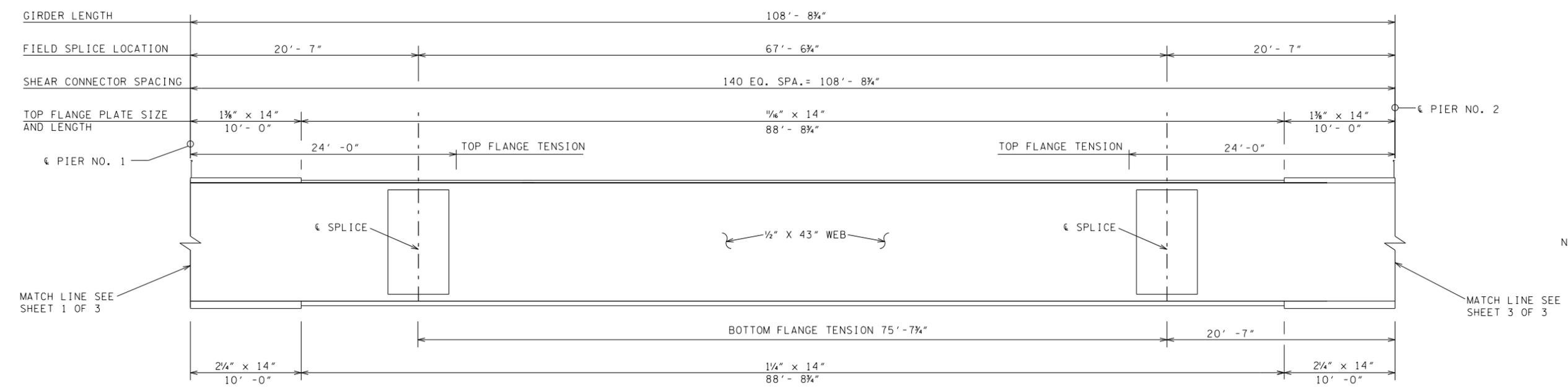
CONST. NO.			
PROJECT NO.	YEAR	SHEET NO.	
HPP/STP-62(34)	2013		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION



GIRDER LINE "3" ELEVATION

SPAN POINTS	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0
DEAD LOAD GIRDER	0	1/16	3/16	3/16	3/16	1/2	3/16	3/16	3/16	1/16	0
TOTAL DEAD LOAD	0	1/2	1 1/4	2	2 3/8	2 3/4	2 3/8	2	1 1/4	1/2	0

DEAD LOAD CORRECTION CURVE



GIRDER LINE "4" ELEVATION

SPAN POINTS	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0
DEAD LOAD GIRDER	0	1/16	3/16	3/16	3/16	1/2	3/16	3/16	3/16	1/16	0
TOTAL DEAD LOAD	0	1/2	1 1/4	1 3/8	2 1/2	2 3/8	2 1/2	1 5/8	1 1/4	1/2	0

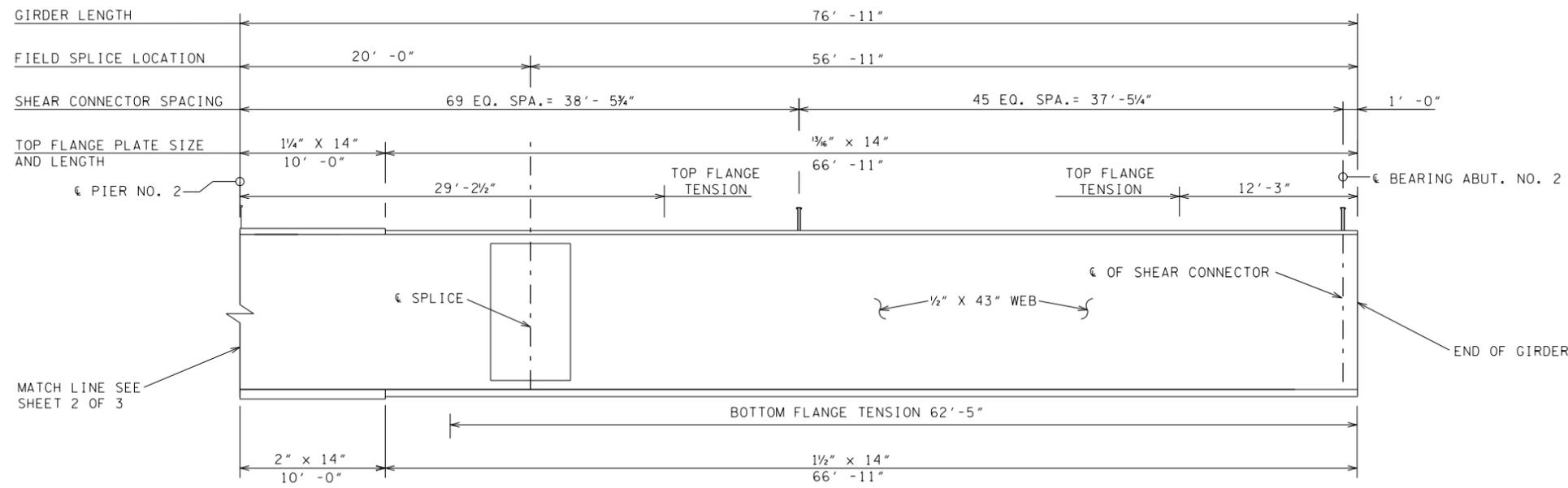
DEAD LOAD CORRECTION CURVE

NOTE: FOR DETAILS OF GIRDER SPLICE SEE DRAWING NO. XX-XXX-XXX

DESIGNED BY: MRP DATE: 07/2013
 DRAWN BY: FSE DATE: 07/2013
 SUPERVISED BY: BEB DATE: 07/2013
 CHECKED BY: RMD DATE: 07/2013

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BRIDGE NO.2
 GIRDERS 3 & 4 DETAILS (2 OF 3)
 KEITH AVENUE (WEST) OVER EAST
 FORK THIRD CREEK
 & KXHR RR & CSX RR
 BRIDGE NO XX-XXXX-XXXX
 STATION 315+45.12
 KNOX COUNTY
 2013

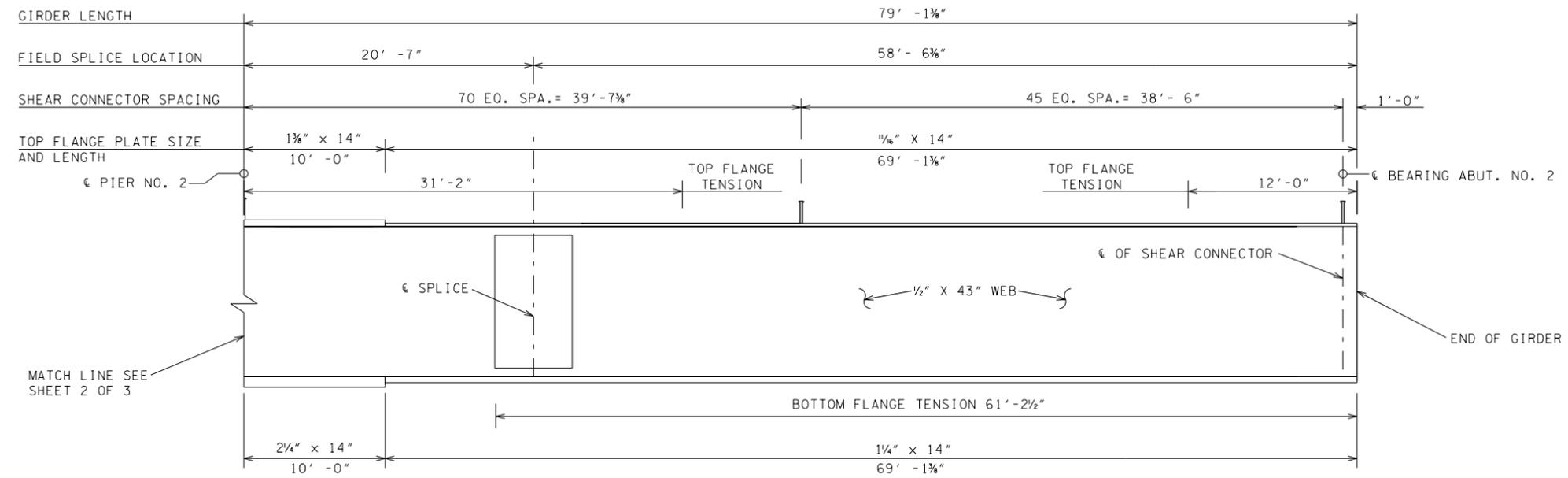
CONST. NO.			
PROJECT NO.	YEAR	SHEET NO.	
HPP/STP-62(34)	2013		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION



GIRDER LINE "3" ELEVATION

SPAN POINTS	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0
DEAD LOAD GIRDER	0	0	0	0	0	0	0	0	0	0	0
TOTAL DEAD LOAD	0	-3/16	-3/16	-1/8	0	1/8	3/16	3/16	1/8	1/16	0

DEAD LOAD CORRECTION CURVE



GIRDER LINE "4" ELEVATION

SPAN POINTS	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0
DEAD LOAD GIRDER	0	0	0	0	0	0	1/16	1/16	0	0	0
TOTAL DEAD LOAD	0	-3/16	-3/16	-1/16	1/16	3/16	1/4	3/16	1/8	1/16	0

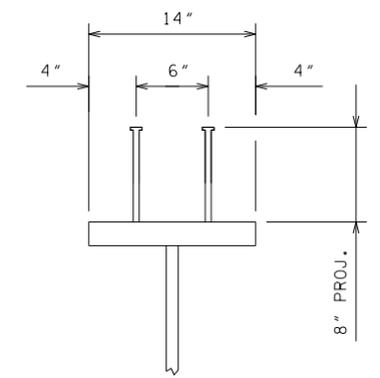
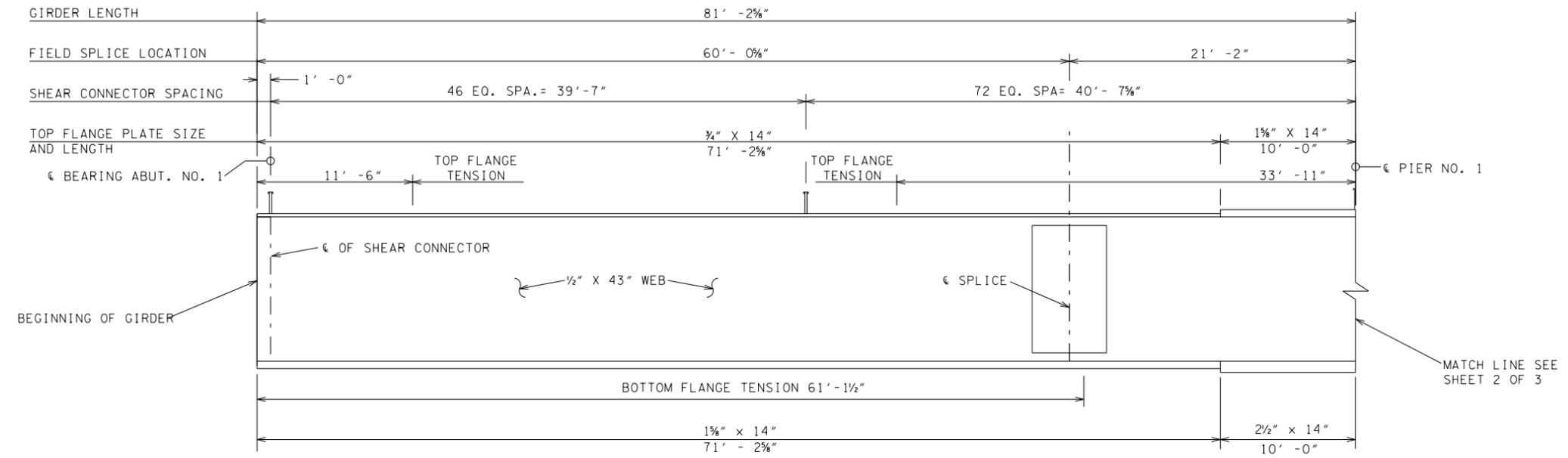
DEAD LOAD CORRECTION CURVE

NOTE: FOR DETAILS OF GIRDER SPLICE SEE DRAWING NO. XX-XXX-XXX

DESIGNED BY MRP DATE 07/2013
 DRAWN BY FSE DATE 07/2013
 SUPERVISED BY BEB DATE 07/2013
 CHECKED BY RMD DATE 07/2013

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BRIDGE NO.2
 GIRDERS 3 & 4 DETAILS (3 OF 3)
 KEITH AVENUE (WEST) OVER EAST
 FORK THIRD CREEK
 & KXHR RR & CSX RR
 BRIDGE NO XX-XXXX-XXXX
 STATION 315+45.12
 KNOX COUNTY
 2013

CONST. NO.			
PROJECT NO.	YEAR	SHEET NO.	
HPP/STP-62(34)	2013		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION



GIRDER LINE "5" ELEVATION

SHEAR CONNECTOR DETAIL
 3/8"Ø A108 GRADES G10100 THRU G10200
 NOTE: SHEAR CONNECTORS NOT REQUIRED ON TOP OF SPLICE PLATES.

SPAN POINTS	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
DEAD LOAD GIRDER	0	0	0	1/16	1/16	0	0	0	0	0	0
TOTAL DEAD LOAD	0	1/16	1/8	3/16	1/4	3/16	1/16	0	-3/16	-3/16	0

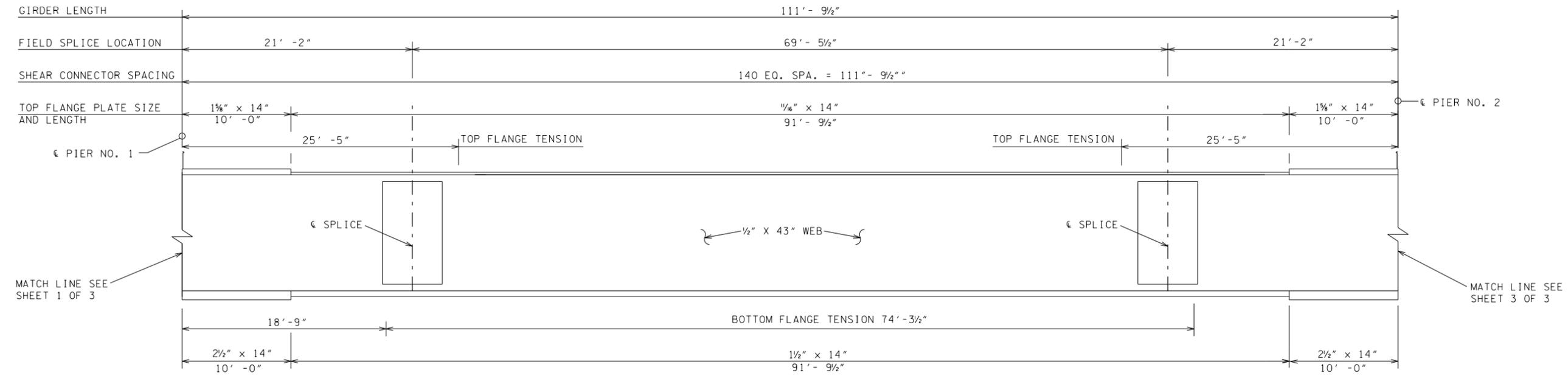
DEAD LOAD CORRECTION CURVE

NOTE: FOR DETAILS OF GIRDER SPLICE SEE DRAWING NO. XX-XXX-XXX

DESIGNED BY: MRP DATE: 07/2013
 DRAWN BY: FSE DATE: 07/2013
 SUPERVISED BY: BEB DATE: 07/2013
 CHECKED BY: RMD DATE: 07/2013

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BRIDGE NO.2
 GIRDER 5 DETAILS (1 OF 3)
 KEITH AVENUE (WEST) OVER EAST
 FORK THIRD CREEK
 & KXHR RR & CSX RR
 BRIDGE NO XX-XXXX-XXXX
 STATION 315+45.12
 KNOX COUNTY
 2013

CONST. NO.			
PROJECT NO.	YEAR	SHEET NO.	
HPP/STP-62(34)	2013		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION



GIRDER LINE "5" ELEVATION

SPAN POINTS	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0
DEAD LOAD GIRDER	0	1/16	3/16	3/16	3/16	1/8	3/16	3/16	3/16	1/8	0
TOTAL DEAD LOAD	0	1/2	1 1/8	1 1/8	2%	2 1/2	2%	1%	1 1/8	1/2	0

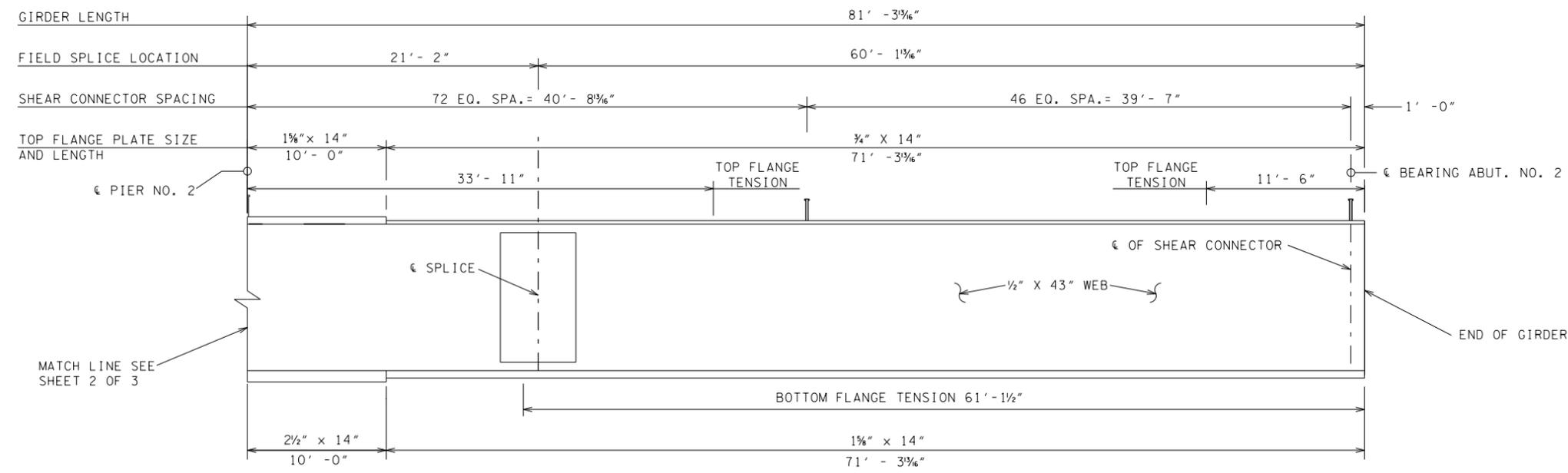
DEAD LOAD CORRECTION CURVE

NOTE: FOR DETAILS OF GIRDER SPLICE SEE DRAWING NO. XX-XXX-XXX

DESIGNED BY MRP DATE 07/2013
 DRAWN BY FSE DATE 07/2013
 SUPERVISED BY BEB DATE 07/2013
 CHECKED BY RMD DATE 07/2013

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BRIDGE NO.2
 GIRDER 5 DETAILS (2 OF 3)
 KEITH AVENUE (WEST) OVER EAST
 FORK THIRD CREEK
 & KXHR RR & CSX RR
 BRIDGE NO XX-XXXX-XXXX
 STATION 315+45.12
 KNOX COUNTY
 2013

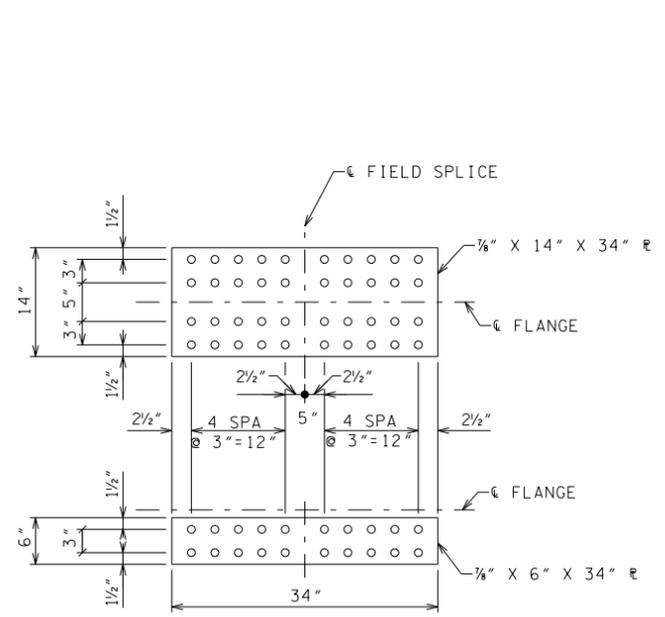
CONST. NO.			
PROJECT NO.	YEAR	SHEET NO.	
HPP/STP-62(34)	2013		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION



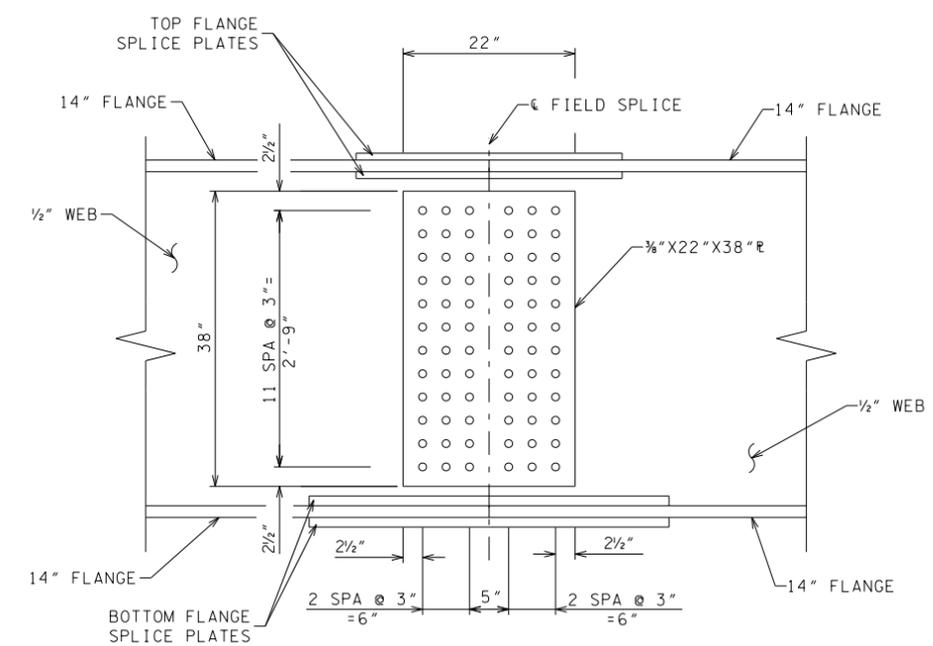
GIRDER LINE "5" ELEVATION

SPAN POINTS	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0
DEAD LOAD GIRDER	0	0	0	0	0	0	1/16	1/16	0	0	0
TOTAL DEAD LOAD	0	-3/16	-3/16	0	1/16	3/16	1/4	3/16	1/8	1/16	0

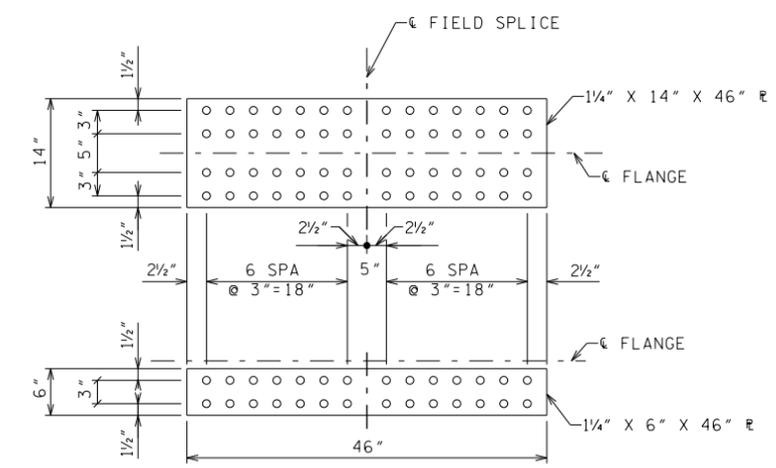
DEAD LOAD CORRECTION CURVE



PLAN OF TOP FLANGE SPLICE PLATES
(FILL PLATE NOT REQUIRED) (40 3/4" Ø BOLTS)



ELEVATION OF WEB SPLICE PLATE
(FILL PLATE NOT REQUIRED) (72 3/4" Ø BOLTS)



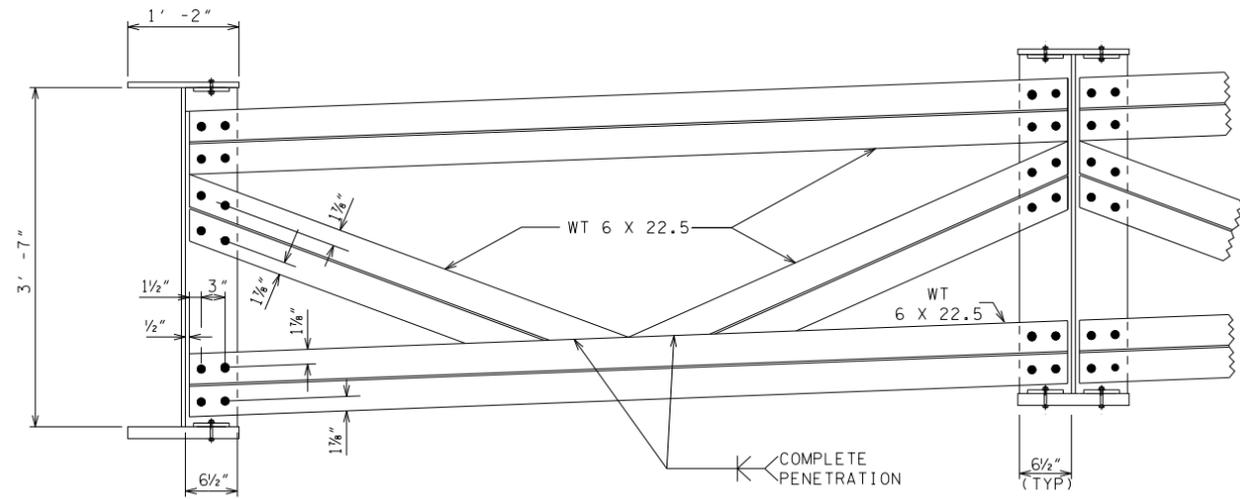
PLAN OF BOTTOM SPLICE PLATES
(FILL PLATE NOT REQUIRED) (56 3/4" Ø BOLTS)

SPLICE WEIGHT = 846 LBS.

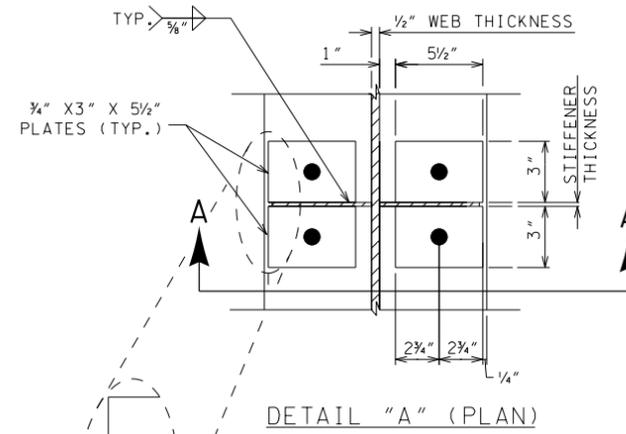
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BRIDGE NO.2
GIRDER 5 DETAILS (3 OF 3) &
SPLICE DETAILS
KEITH AVENUE (WEST) OVER EAST
FORK THIRD CREEK
& KXHR RR & CSX RR
BRIDGE NO XX-XXXX-XXXX
STATION 315+45.12
KNOX COUNTY
2013

DESIGNED BY: MRP DATE: 07/2013
DRAWN BY: FSE DATE: 07/2013
SUPERVISED BY: BEB DATE: 07/2013
CHECKED BY: RMD DATE: 07/2013

CONST. NO.			
PROJECT NO.	YEAR	SHEET NO.	
HPP/STP-62(34)	2013		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION

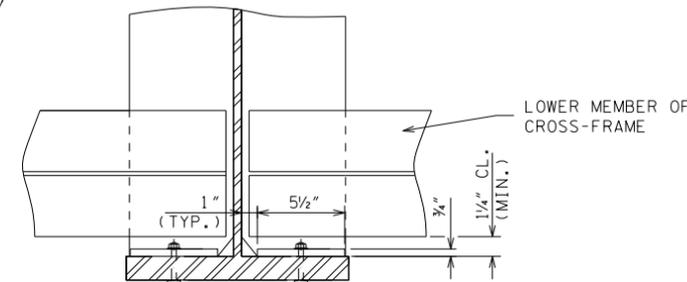


TYPICAL CROSS-FRAME

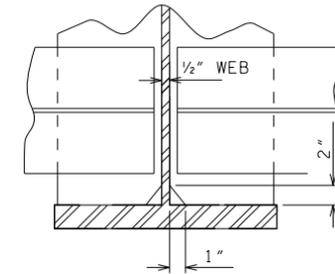


DETAIL "A" (PLAN)

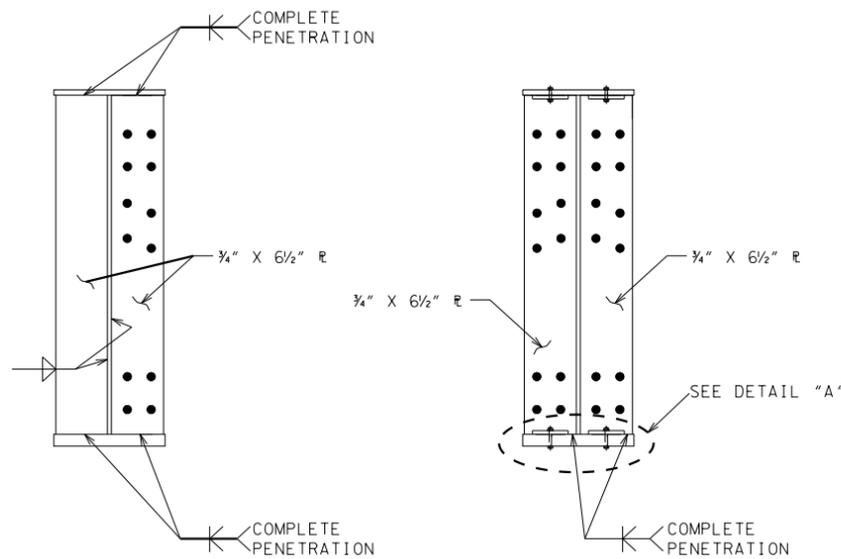
SEE NOTE 1



SECTION "A" - "A"

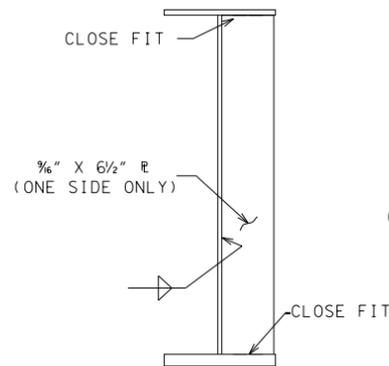


STIFFENER CLIP
(TOP AND BOTTOM)

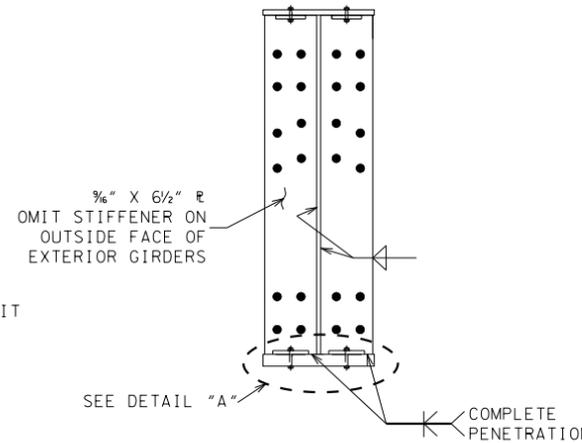


TYPICAL AT PIERS

BEARING STIFFENERS



INTERMEDIATE
STIFFENER DETAIL



INTERMEDIATE
CROSS FRAME STIFFENERS

INTERMEDIATE STIFFENERS

TOP AND BOTTOM FLANGE CONNECTIONS ARE BOLTED OR WELDED. BOLTED CONNECTIONS ARE REQUIRED AT BOTTOM FLANGE WHERE BOTTOM FLANGE IS IN TENSION, TOP FLANGE WHERE TOP FLANGE IS IN TENSION, AND AT BOTH FLANGES IN REVERSAL REGIONS. (SEE DRAWING NOS. XX-XX-XXX THRU XX-XX-XXX)

TAB CONNECTION NOTE:

1. TAB YIELD STRENGTH SHALL MATCH STIFFENER YIELD STRENGTH. TAB SIZE AND LOCATION SHALL BE AS SHOWN REGARDLESS OF STIFFENER WIDTH.
2. 1"Ø- A325W BOLTS TO BE TORQUED TO AASHTO SPECIFICATION FOR FRICTION CONNECTION PRIOR TO TAB TO STIFFENER WELD.
3. WEB STIFFENER FIT SHALL BE WITHIN AWS D1.1 FABRICATION TOLERANCE.
4. THE FABRICATOR MAY SUBSTITUTE A SINGLE 3/4" PLATE PROVIDED: THE LOCATION OF BOLTS AND THE LENGTH PARALLEL TO THE STIFFENER DOES NOT CHANGE. THE PLATE LENGTH PARALLEL TO THE WEB PLATE MUST BE 6" PLUS THE STIFFENER PLATE THICKNESS.
5. DETAILS SHOWN ARE TYPICAL AT ALL CROSS-FRAMES @ INTERIOR GIRDERS.

DESIGNED BY MRP DATE 07/2013
 DRAWN BY FSE DATE 07/2013
 SUPERVISED BY BEB DATE 07/2013
 CHECKED BY RMD DATE 07/2013

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BRIDGE NO. 2
 STRUCTURAL STEEL DETAILS
 KEITH AVENUE (WEST) OVER EAST
 FORK THIRD CREEK
 & KXHR RR & CSX RR
 BRIDGE NO XX-XXXX-XXXX
 STATION 315+45.12
 KNOX COUNTY
 2013

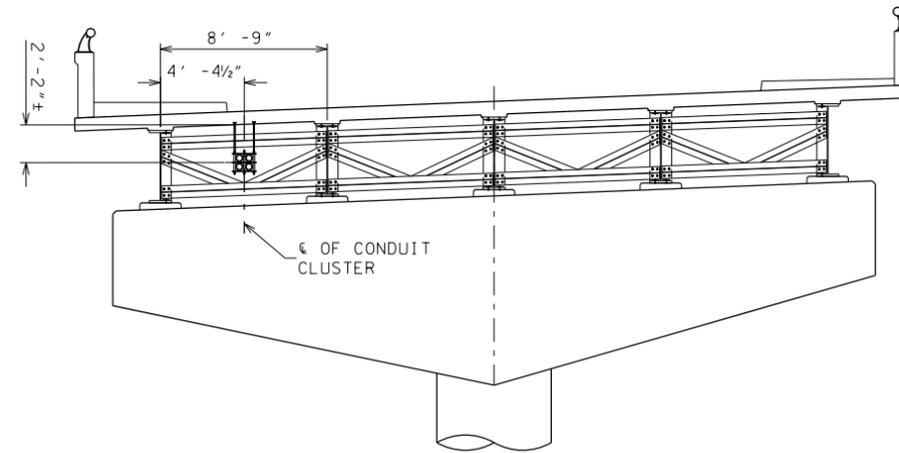
EXTEND CONDUIT OUT 5'-0" PAST APPROACH SLAB. FINAL LENGTH TO BE DETERMINED BY AT&T

FOUR 5" I.D. PIPE SLEEVES REQUIRED IN ABUTMENT FOR CONDUIT(S) TO PASS THROUGH. SEAL AROUND CONDUITS AFTER THEY ARE INSTALLED WITH A NON-EPOXY NON-SHRINK CEMENT GROUT.*

*NOTE: SEE SHEETS X-XXX-XX AND X-XXX-XX FOR MORE DETAILS.

UTILITY PASS THROUGH
DETAIL AT ABUTMENTS

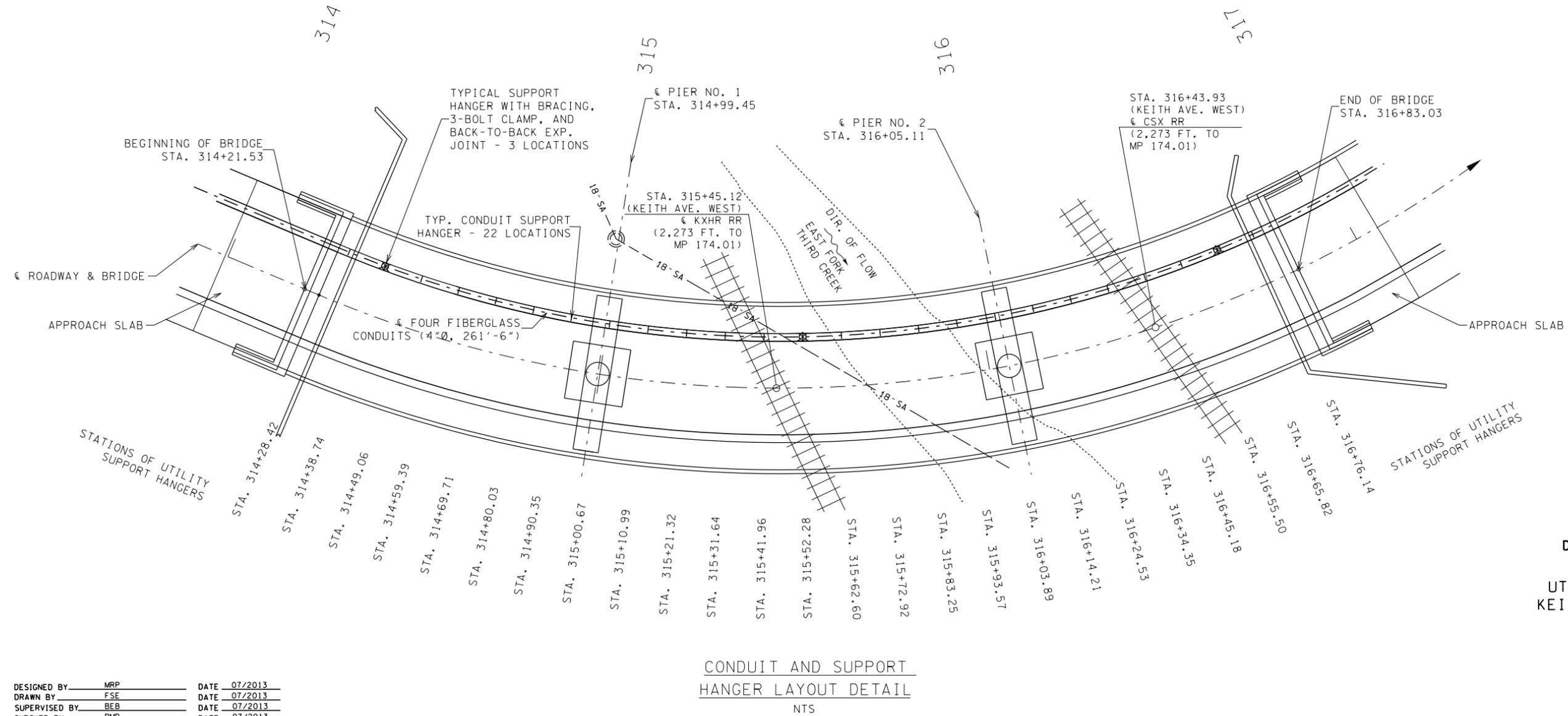
NTS



UTILITY HANGER
TYPICAL SECTION AT PIER

(LOOKING FORWARD ON SURVEY)
NTS

CONST. NO.			
PROJECT NO.	YEAR	SHEET NO.	
HPP/STP-62(34)	2013		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION



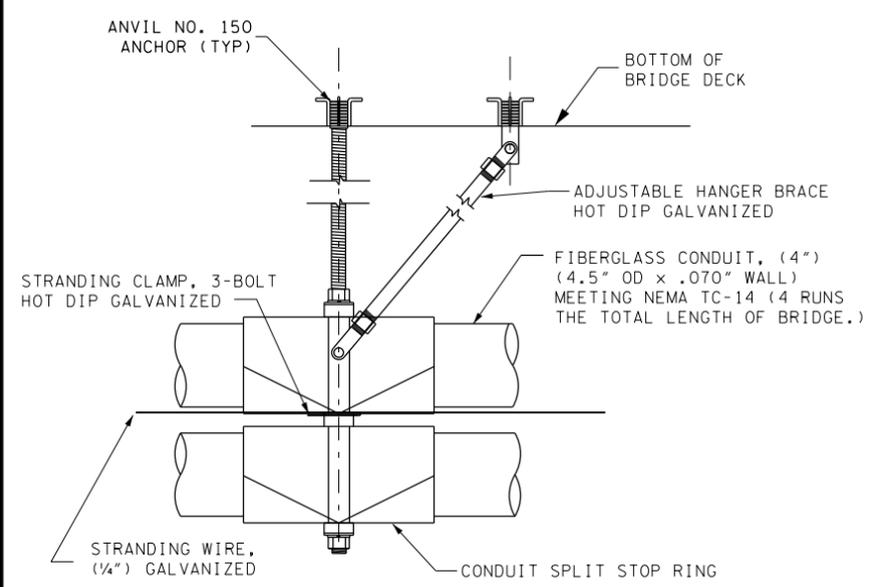
CONDUIT AND SUPPORT
HANGER LAYOUT DETAIL

NTS

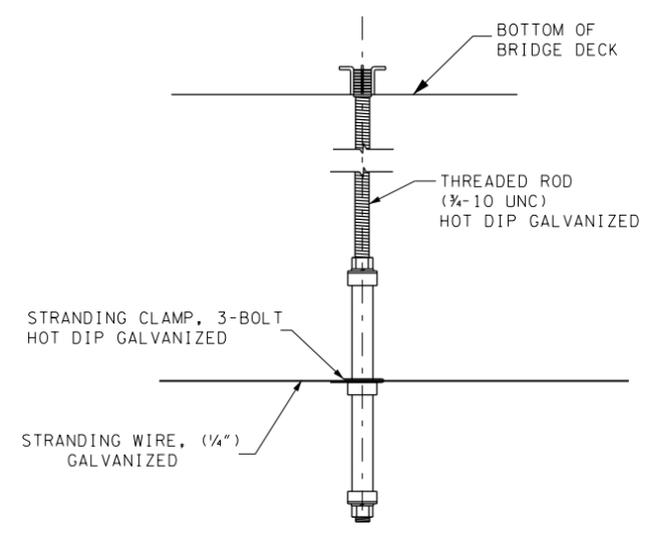
DESIGNED BY: MRP DATE: 07/2013
 DRAWN BY: FSE DATE: 07/2013
 SUPERVISED BY: BEB DATE: 07/2013
 CHECKED BY: RMD DATE: 07/2013

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BRIDGE NO.2
 UTILITY RELOCATION (1 OF 2)
 KEITH AVENUE (WEST) OVER EAST
 FORK THIRD CREEK
 & KXHR RR & CSX RR
 BRIDGE NO XX-XXXX-XXXX
 STATION 315+45.12
 KNOX COUNTY
 2013

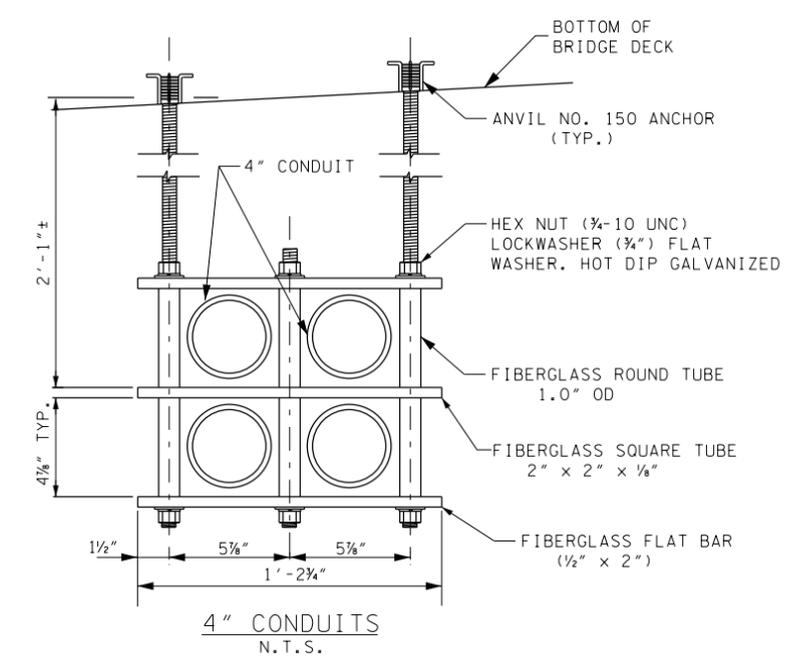
CONST. NO.		PROJECT NO.	YEAR	SHEET NO.
		HPP/STP-62(34)	2013	
REVISIONS				
NO.	DATE	BY	BRIEF DESCRIPTION	



TYPICAL SPLIT STOP RING HANGER DETAIL
SUPPORT HANGER WITH SPLIT STOP RINGS,
3 LOCATIONS
N.T.S.



TYPICAL INTERMEDIATE CONDUIT
AND SUPPORT HANGER DETAIL
22 LOCATIONS
N.T.S.



GENERAL NOTES:

1. ALL MATERIALS REQUIRED FOR THE PLACEMENT OF THIS UNDERBRIDGE CONDUIT SYSTEM WILL BE PROVIDED BY AT&T
2. THE CONTRACTOR WILL NOTIFY AT&T A MINIMUM OF 60 DAYS PRIOR TO REQUIRING THE MATERIALS TO BE ON THE SITE. MATERIAL WILL BE DELIVERED TO A LOCATION DESIGNATED BY THE CONTRACTOR. CONTRACTOR WILL BE RESPONSIBLE FOR STORAGE OF MATERIAL AFTER DELIVERY.
3. ALL JOINTS IN THE FIBERGLASS DUCTS ARE TO BE EPOXIED.
4. SPLIT STOP RINGS ARE TO BE EPOXIED TO EACH DUCT AT SPECIFIED SUPPORT HANGERS WITH BRACING.
5. BACK-TO-BACK EXPANSION JOINTS CONSISTS OF ONE EXPANSION JOINT BEING PLACED ON EACH SIDE OF THE SPECIFIED INTERMEDIATE HANGERS. ON EACH DUCT A SHORT SECTION OF FIBERGLASS DUCT CONNECTS TO AN EXPANSION JOINT ON BOTH SIDES OF THE HANGER. "O" RING COUPLINGS WILL BE PLACED IN EACH EXPANSION JOINT.
6. QUANTITIES ARE TO BE PAID BY TDOT INSPECTOR AS DETERMINED BY AT&T INSPECTOR.
7. SUPPORT HANGERS AND INSERTS MANUFACTURED FROM CONDUX INTERNATIONAL, INC. OF MANKATO, MN. (PHONE: 800-533-2077) OR APPROVED EQUAL.
8. AT&T POINT OF CONTACT IS DAVID OVERMAN, 865-539-8579.
9. INSPECTION OF DECK-EMBEDDED HANGERS TO BE COORDINATED WITH DECK FORM MANUFACTURER.

SCOPE OF WORK:

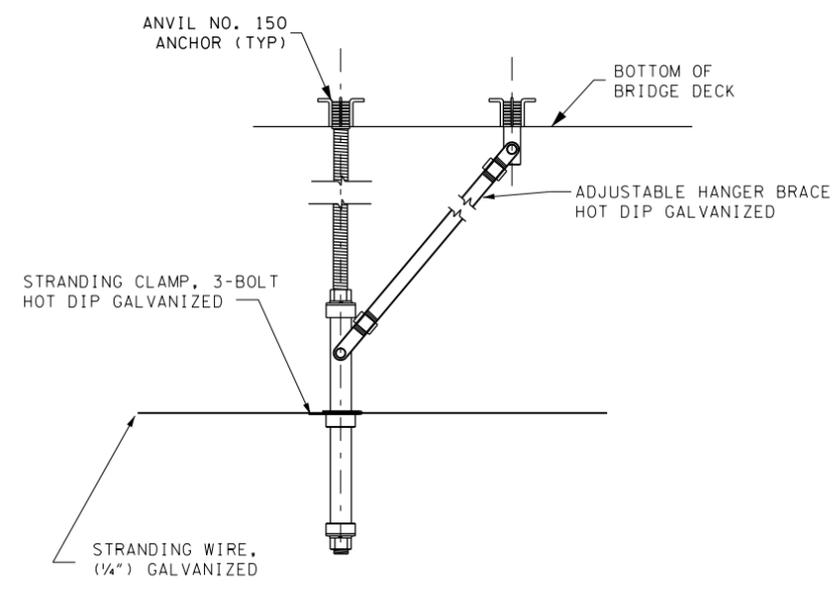
INSTALL CONCRETE INSERTS, CONDUIT SUPPORT HANGERS, SUPPORT HANGER BRACING, FOUR RUNS OF TYPE "D" FBGL CONDUIT AND FITTINGS FOR THE ENTIRE LENGTH OF BRIDGE.

ALSO PLACE CONDUITS THROUGH PIPE SLEEVES AT BOTH ABUTMENTS AND EXTEND TO MANHOLES ON EACH END OF THE BRIDGE.

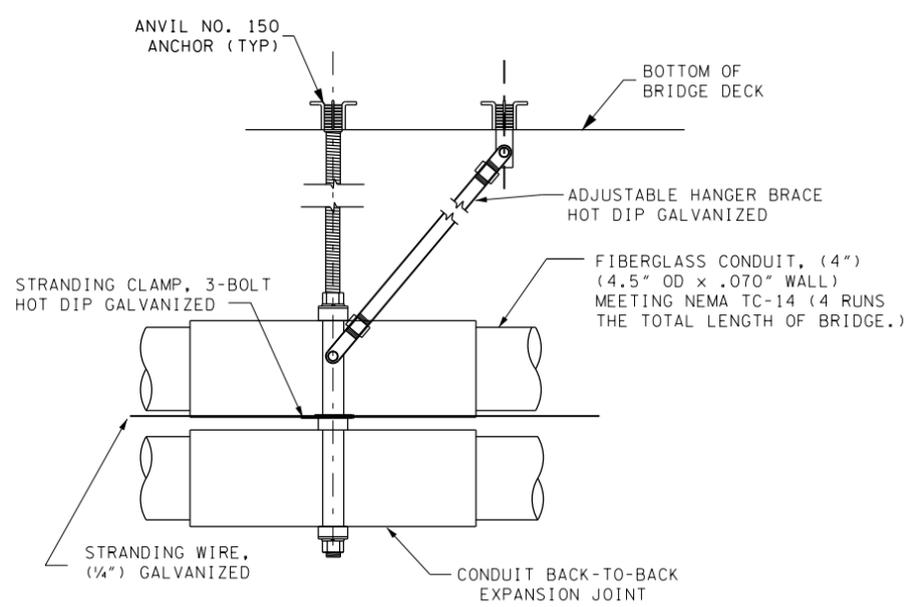
ALL MATERIALS REQUIRED FOR THE PLACEMENT OF THIS UNDERBRIDGE CONDUIT SYSTEM WILL BE PROVIDED BY AT&T.

CONDUITS ARE BEING INSTALLED FOR USE BY AT&T.

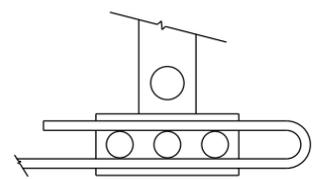
IT IS AT&T'S INTENT THAT THE ITEMS IDENTIFIED BE INCLUSIVE OF ALL WORK TO COMPLETE THE INSTALLATION.



TYPICAL SUPPORT HANGER
WITH ADJUSTABLE BRACE
3 LOCATIONS
N.T.S.



TYPICAL BACK-TO-BACK EXPANSION
JOINT DETAIL WITH SUPPORT HANGER
WITH ADJUSTABLE BRACE
CONDUIT EXPANSION JOINTS
3 LOCATIONS
N.T.S.



DETAIL STRANDING END POINT

NOTES:

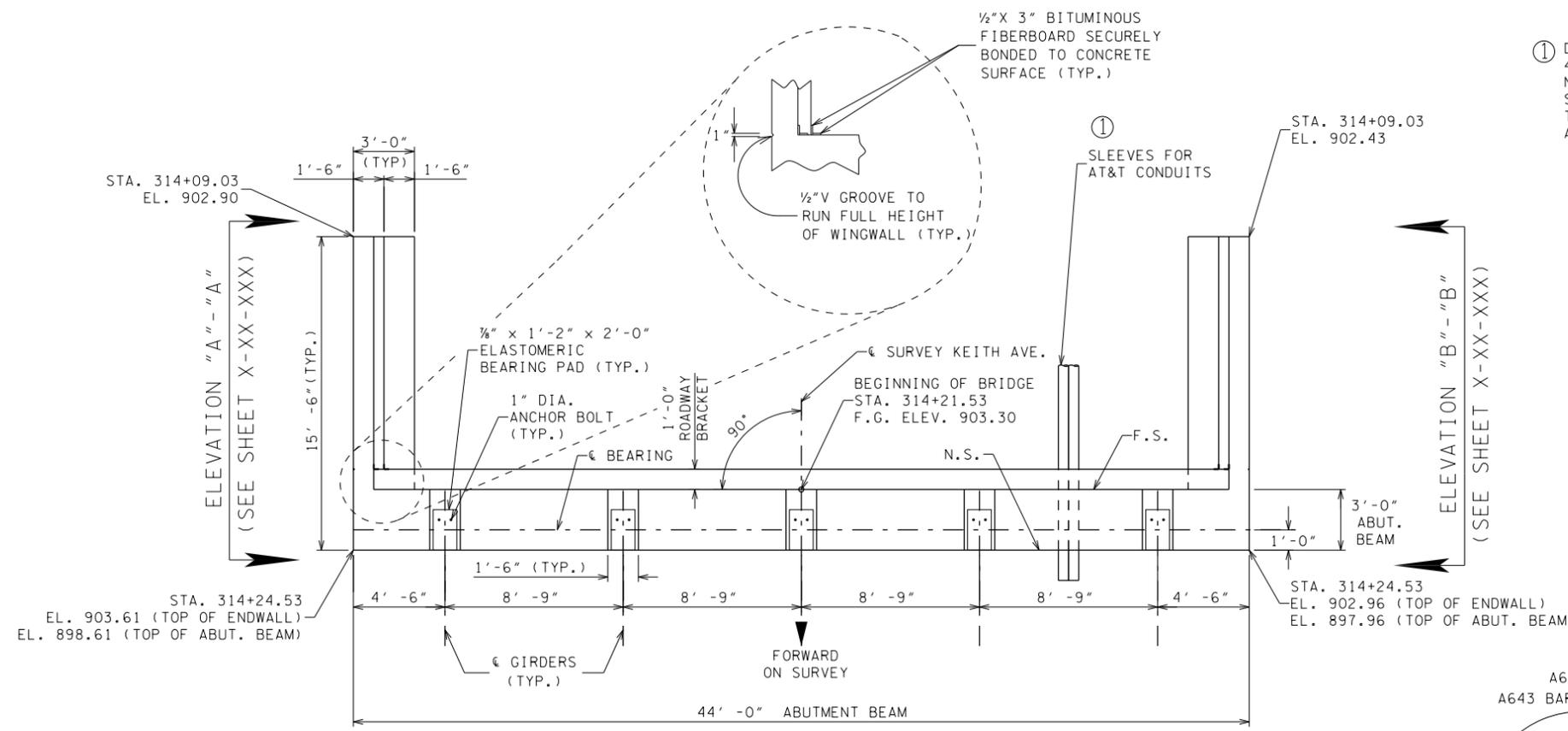
1. HANGER SPACING: PLACE HANGERS ACCORDING TO HANGER LAYOUT DETAIL ON DRAWING X-XXX-XX.
2. CONDUIT EXPANSION JOINT PLACEMENT: ONE EXPANSION JOINT IS REQUIRED FOR EVERY 200 FT. OF CONDUIT.
3. "A" OPENING FOR FOUR (4") FIBERGLASS CONDUIT, CONDUIT HANGERS, AND CABLE WEIGHT IS 34 LBS/FT.
4. COORDINATE FINAL DIMENSIONS OF CONDUIT HANGERS WITH DECK FORMING BRACKET, SEE ABUTMENT DRAWINGS FOR DETAILS.

DESIGNED BY	MRP	DATE	07/2013
DRAWN BY	FSE	DATE	07/2013
SUPERVISED BY	BEB	DATE	07/2013
CHECKED BY	RMD	DATE	07/2013

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BRIDGE NO. 2
UTILITY RELOCATION (2 OF 2)
KEITH AVENUE (WEST) OVER EAST
FORK THIRD CREEK
& KXHR RR & CSX RR
BRIDGE ID NO XX-XXXX-XXXX
STATION 315+45.12
KNOX COUNTY
2013

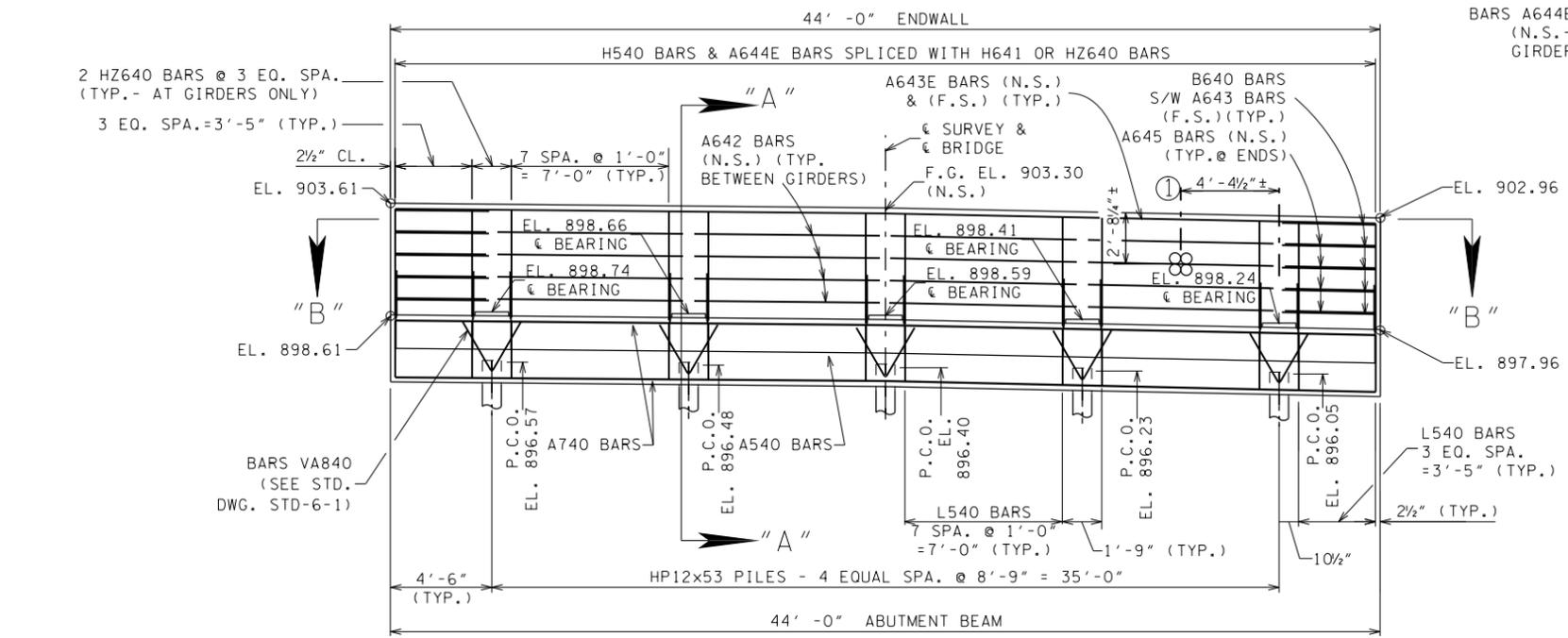
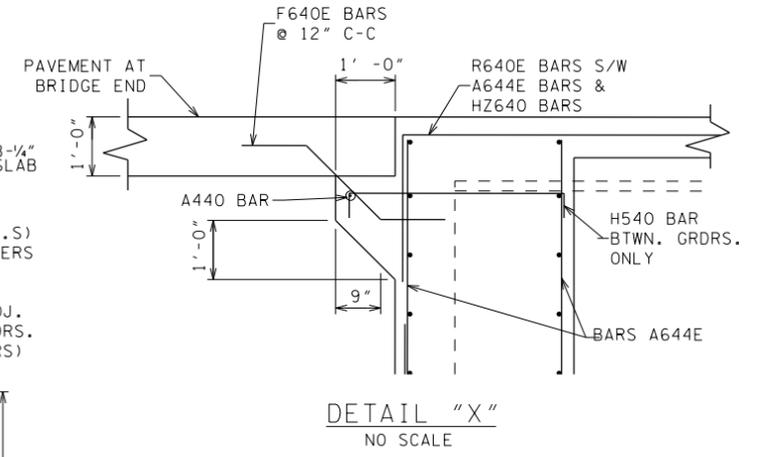
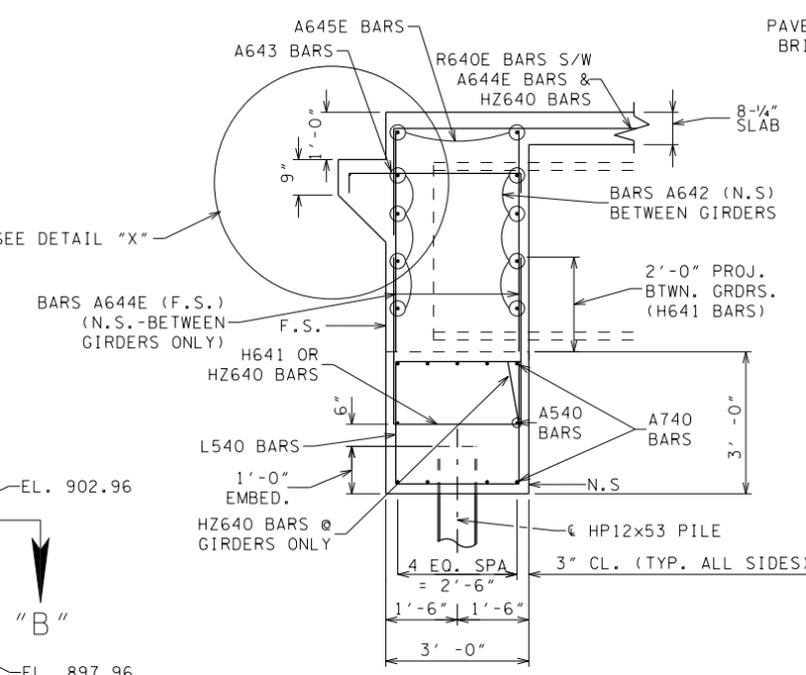
CONST. NO.			
PROJECT NO.	YEAR	SHEET NO.	
HPP/STP-62(34)	2013		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION

① DIAMETER OF SLEEVE SHALL BE 6" FOR 4" CONDUITS. A RUBBERIZED FLOWABLE NON-EPOXY NON-SHRINK CEMENT GROUT SHALL BE PLACED IN THE VOID BETWEEN THE SLEEVE AND THE PROPOSED CONDUIT. ADJUST REINFORCING STEEL AS REQUIRED.



ABUTMENT GENERAL NOTES:

1. WHEN POURING ABUTMENT BEAM, PROVISIONS SHALL BE MADE FOR SETTING ANCHOR BOLTS. IF THE CONTRACTOR ELECTS TO DRILL THE HOLES FOR THE ANCHOR BOLTS, THE REINFORCING STEEL SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE DRILLING. BOLT PROJECTION 6".
2. RISER BLOCKS SHALL BE POURED MONOLITHICALLY WITH ABUTMENT BEAM.
3. RISER BLOCK BEARING PAD SURFACE TO CONFORM TO BOTTOM OF BEAM GRADE.
4. WHEN POURING WINGWALLS, PROVISIONS SHALL BE MADE FOR SETTING REINFORCING STEEL FOR WINGPOST & BRIDGE RAILS. FOR DETAILS OF WINGPOST & BRIDGE RAIL SEE STD. DWG. NO. STD-11-1.
5. THE GIRDERS SHALL BE IN PLACE PRIOR TO POURING THE ABUTMENT BACKWALL. AT LEAST 12 INCHES OF THE BACKWALL SHALL BE POURED CONCURRENTLY WITH THE END OF SLAB.
6. COST OF BRIDGERAIL AND POST IS TO BE INCLUDED IN THE UNIT PRICE BID FOR BRIDGE RAIL SYSTEM.
7. THE CONTRACTOR SHALL SUPPORT THE ABUTMENT UNTIL THE SUPERSTRUCTURE IS IN PLACE, FALSEWORK HAS BEEN REMOVED AND BACKFILLING HAS BEEN COMPLETED.
8. FOR SECTION "B"- "B", ELEVATION "A"- "A", ELEVATION "B"- "B", AND WINGWALL DETAILS SEE DRAWING NO. X-XXX-XXX.



NOTE: SEE SHEET X-XX-XXX FOR SECTION "B"- "B"

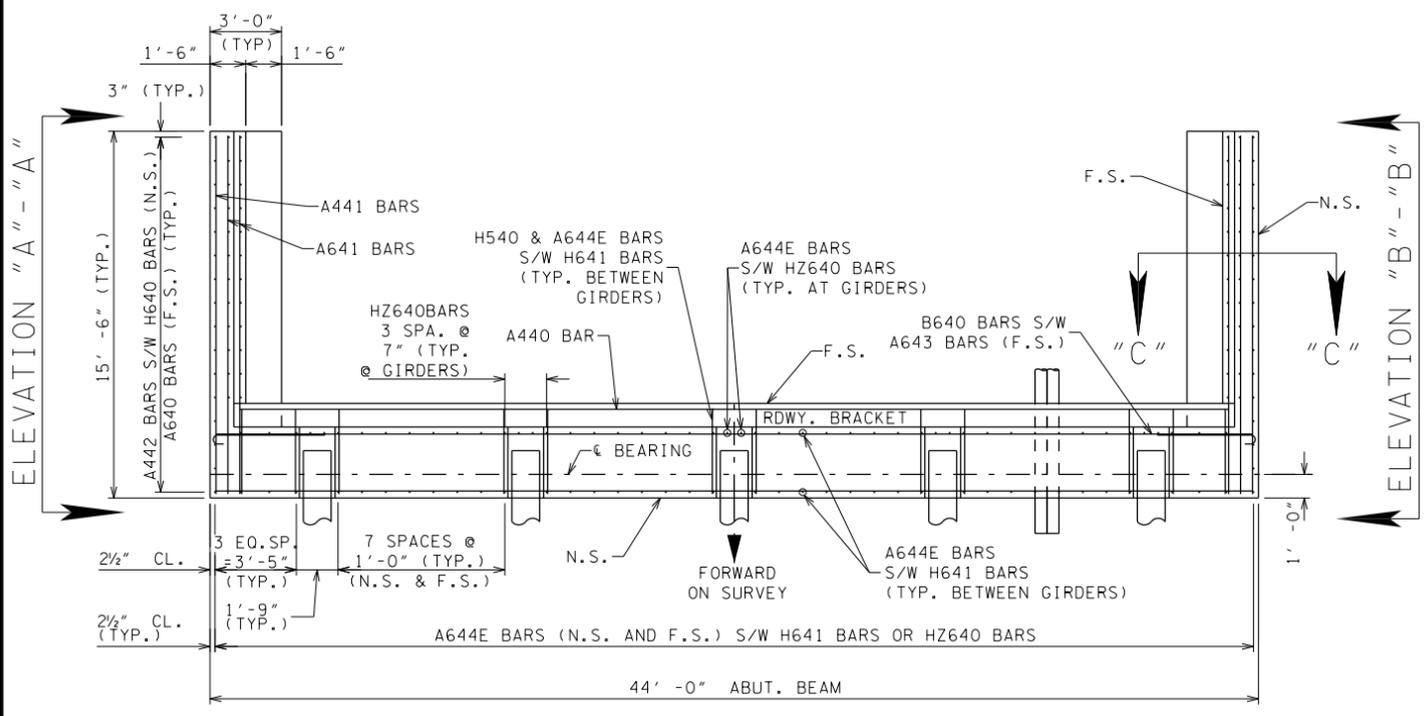
ESTIMATED QUANTITIES

604-02.03 EPOXY COATED REINFORCING STEEL (LBS)	604-03.02 STEEL BAR REINFORCEMENT (BRIDGES) (LBS.)	604-03.09 CLASS "A" CONCRETE (BRIDGES) (C.Y.)
1,870	5,016	51

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BRIDGE NO.2
ABUTMENT NO. 1
KEITH AVENUE (WEST) OVER EAST
FORK THIRD CREEK
& KXHR RR & CSX RR
BRIDGE NO XX-XXXX-XXXX
STATION 315+45.12
KNOX COUNTY
2013

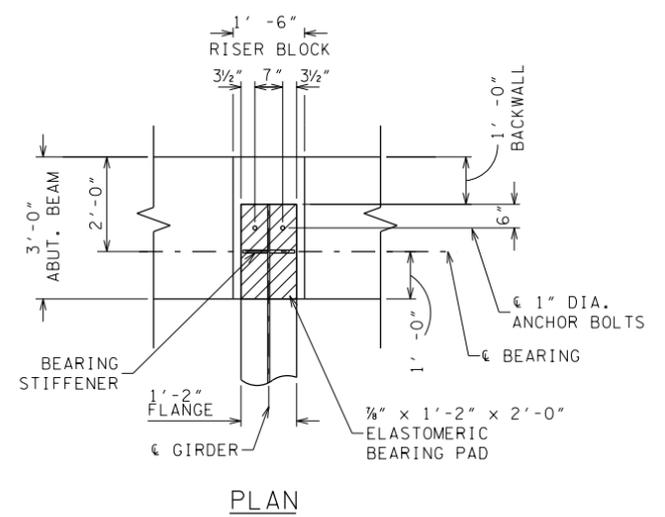
DESIGNED BY MRP DATE 07/2013
DRAWN BY FSE DATE 07/2013
SUPERVISED BY BEB DATE 07/2013
CHECKED BY RMD DATE 07/2013

CONST. NO.			
PROJECT NO.	YEAR	SHEET NO.	
HPP/STP-62(34)	2013		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION

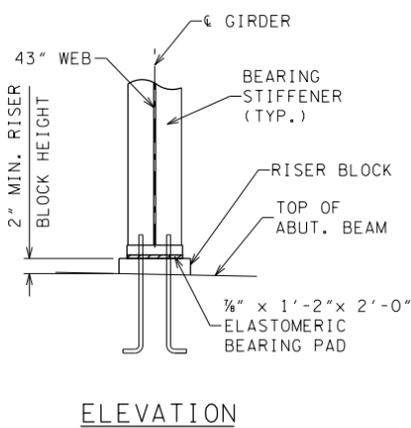


SECTION "B"-"B"
SCALE: 1/4"=1'-0"

(F.S.) DENOTES FAR SIDE
(N.S.) DENOTES NEAR SIDE

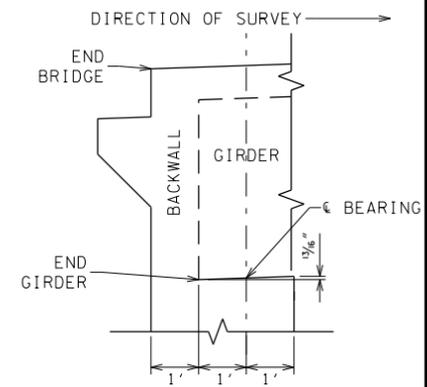


PLAN

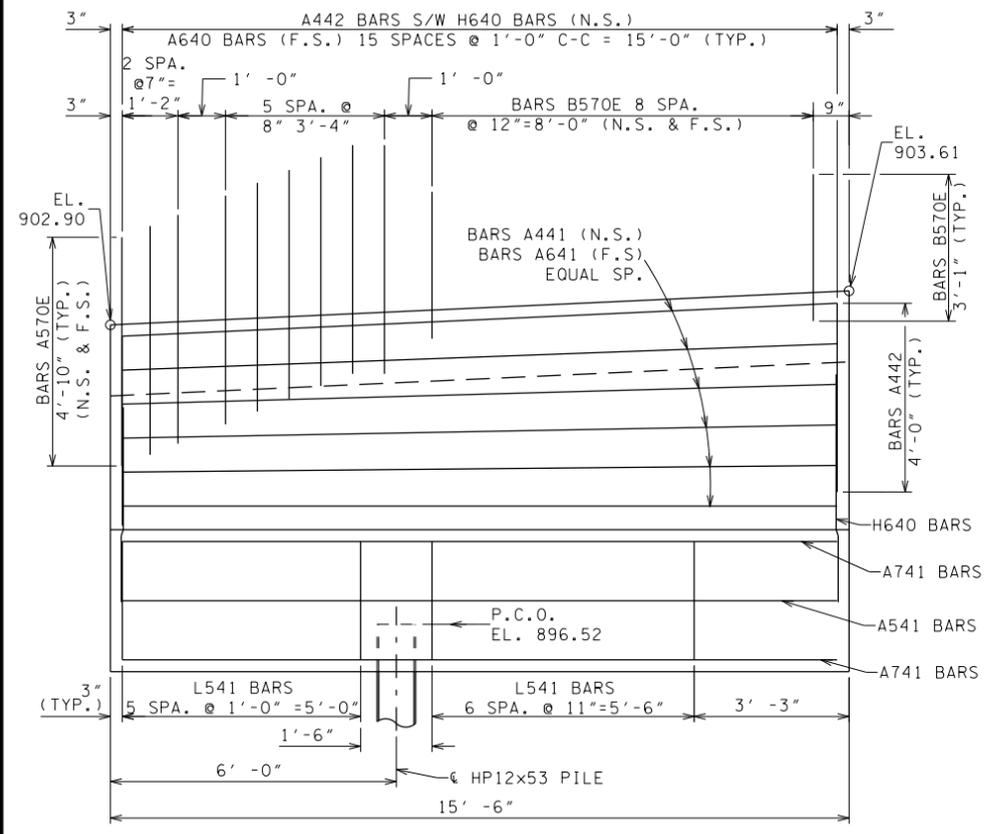


ELEVATION

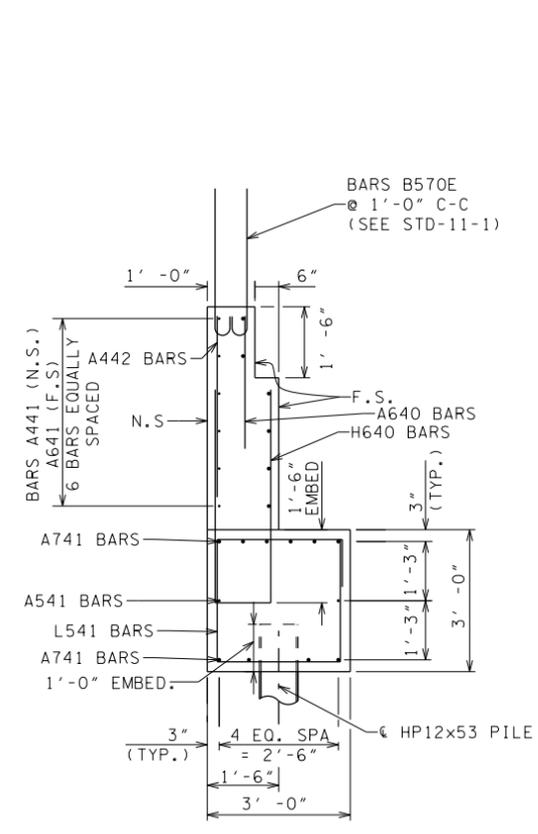
RISER BLOCK DETAILS
SCALE: 1/2"=1'-0"



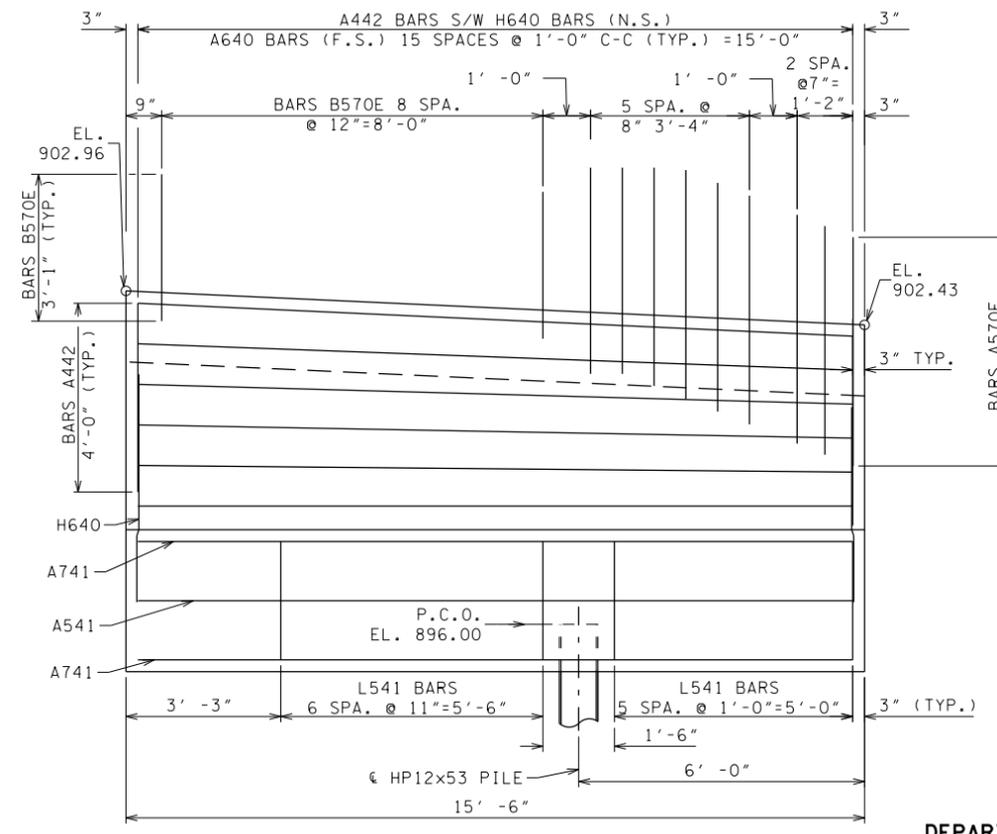
RISER BLOCK
SLOPE DETAIL



ELEVATION "A"-"A"
SCALE: 1/2"=1'-0"



SECTION "C"-"C"
SCALE: 1/2"=1'-0"

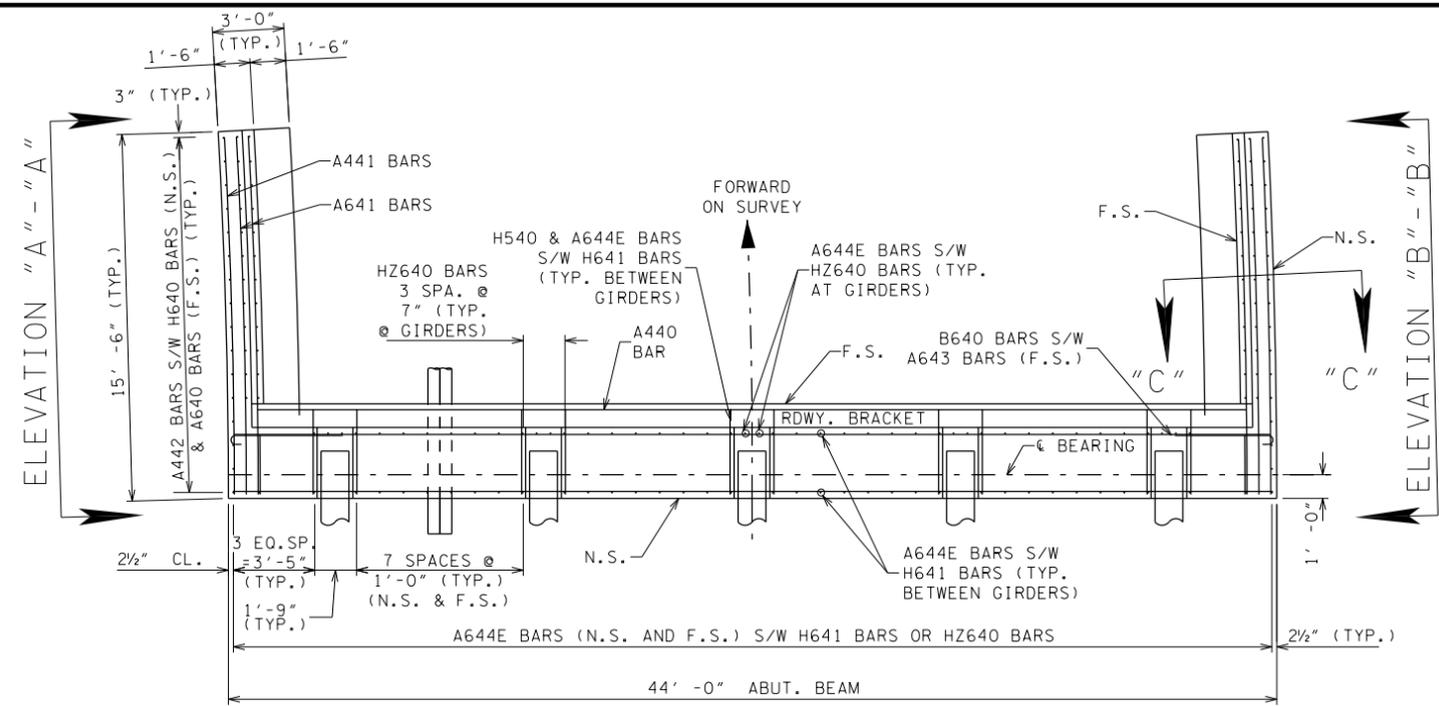


ELEVATION "B"-"B"
SCALE: 1/2"=1'-0"

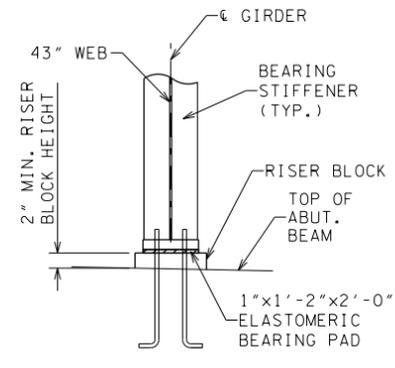
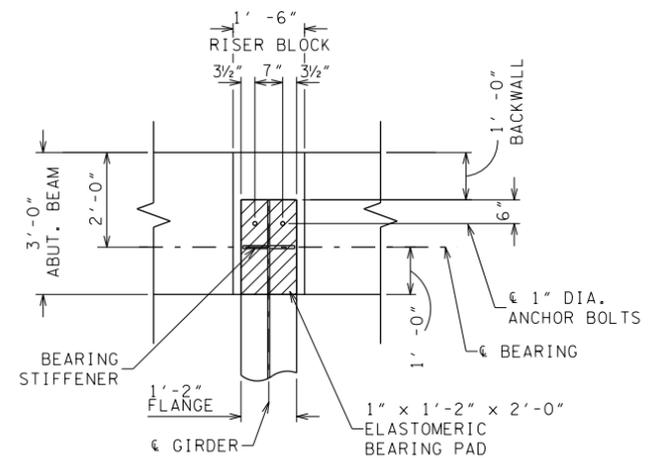
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BRIDGE NO.2
ABUTMENT NO. 1 DETAILS
KEITH AVENUE (WEST) OVER EAST
FORK THIRD CREEK
& KXHR RR & CSX RR
BRIDGE NO XX-XXXX-XXXX
STATION 315+45.12
KNOX COUNTY
2013

DESIGNED BY: MRP DATE: 07/2013
DRAWN BY: FSE DATE: 07/2013
SUPERVISED BY: BEB DATE: 07/2013
CHECKED BY: RMD DATE: 07/2013

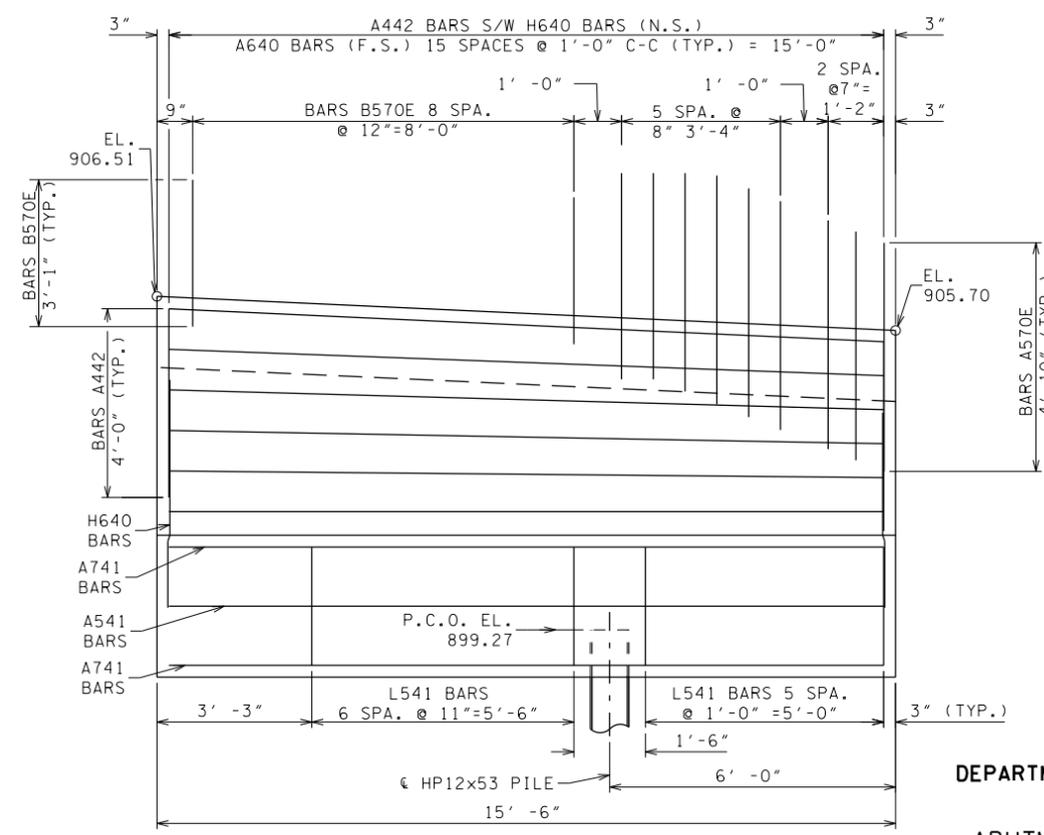
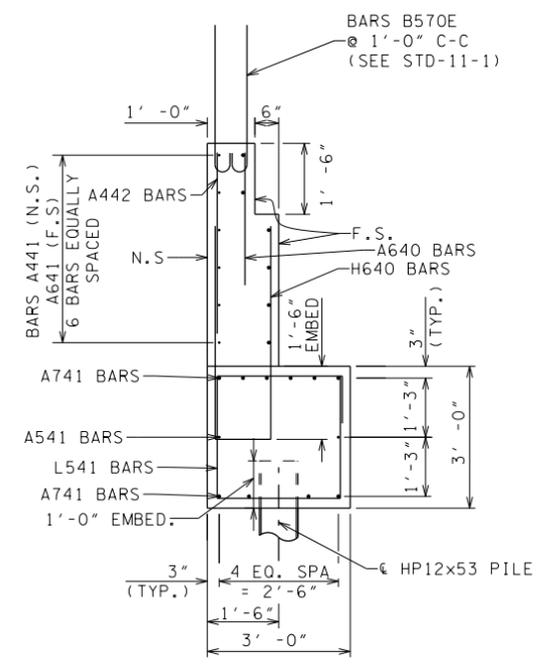
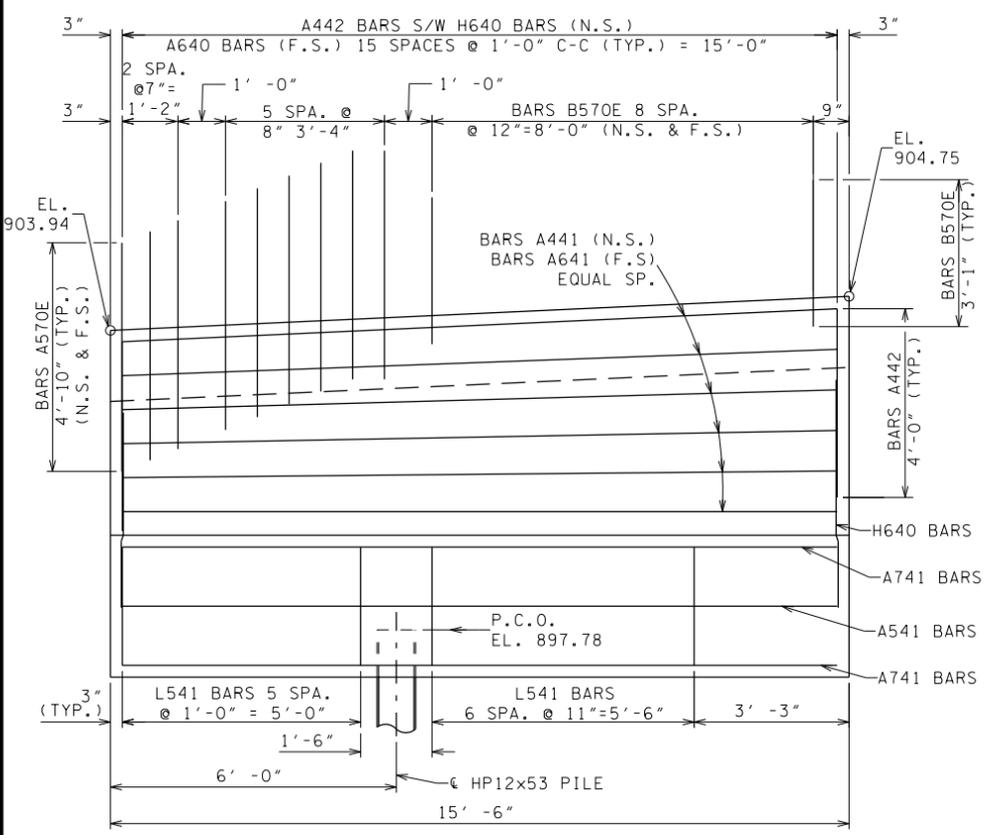
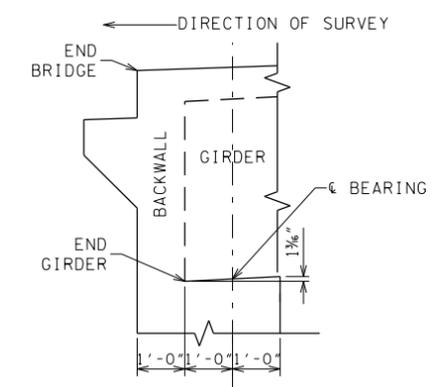
CONST. NO.			
PROJECT NO.	YEAR	SHEET NO.	
HPP/STP-62(34)	2013		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION



(F.S.) DENOTES FAR SIDE
(N.S.) DENOTES NEAR SIDE



RISER BLOCK DETAILS
SCALE: 1/2"=1'-0"



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BRIDGE NO. 2
ABUTMENT NO. 2 DETAILS
KEITH AVENUE (WEST) OVER EAST
FORK THIRD CREEK
& KXHR RR & CSX RR
BRIDGE NO XX-XXXX-XXXX
STATION 315+45.12
KNOX COUNTY
2013

DESIGNED BY: MRP
DRAWN BY: FSE
SUPERVISED BY: BEB
CHECKED BY: RMD

DATE: 07/2013
DATE: 07/2013
DATE: 07/2013
DATE: 07/2013

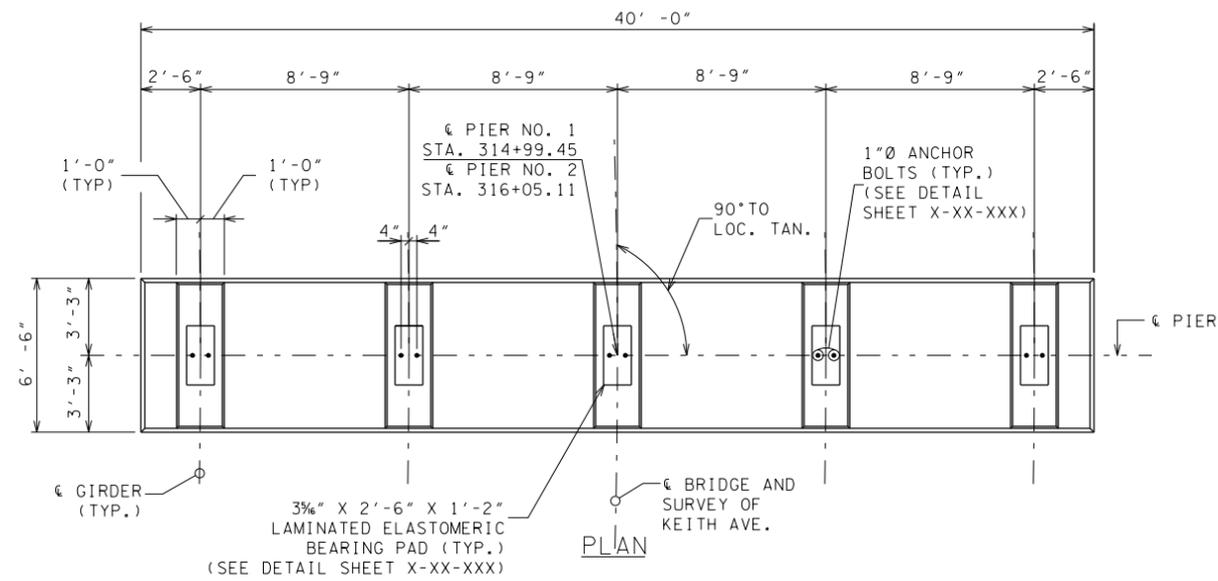
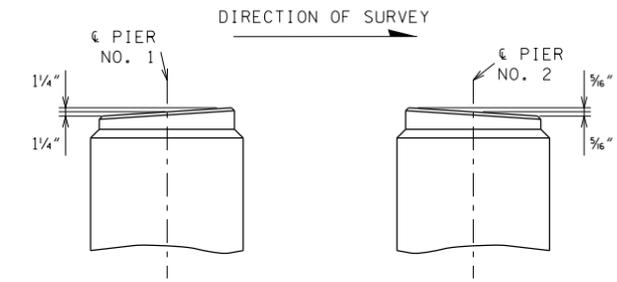


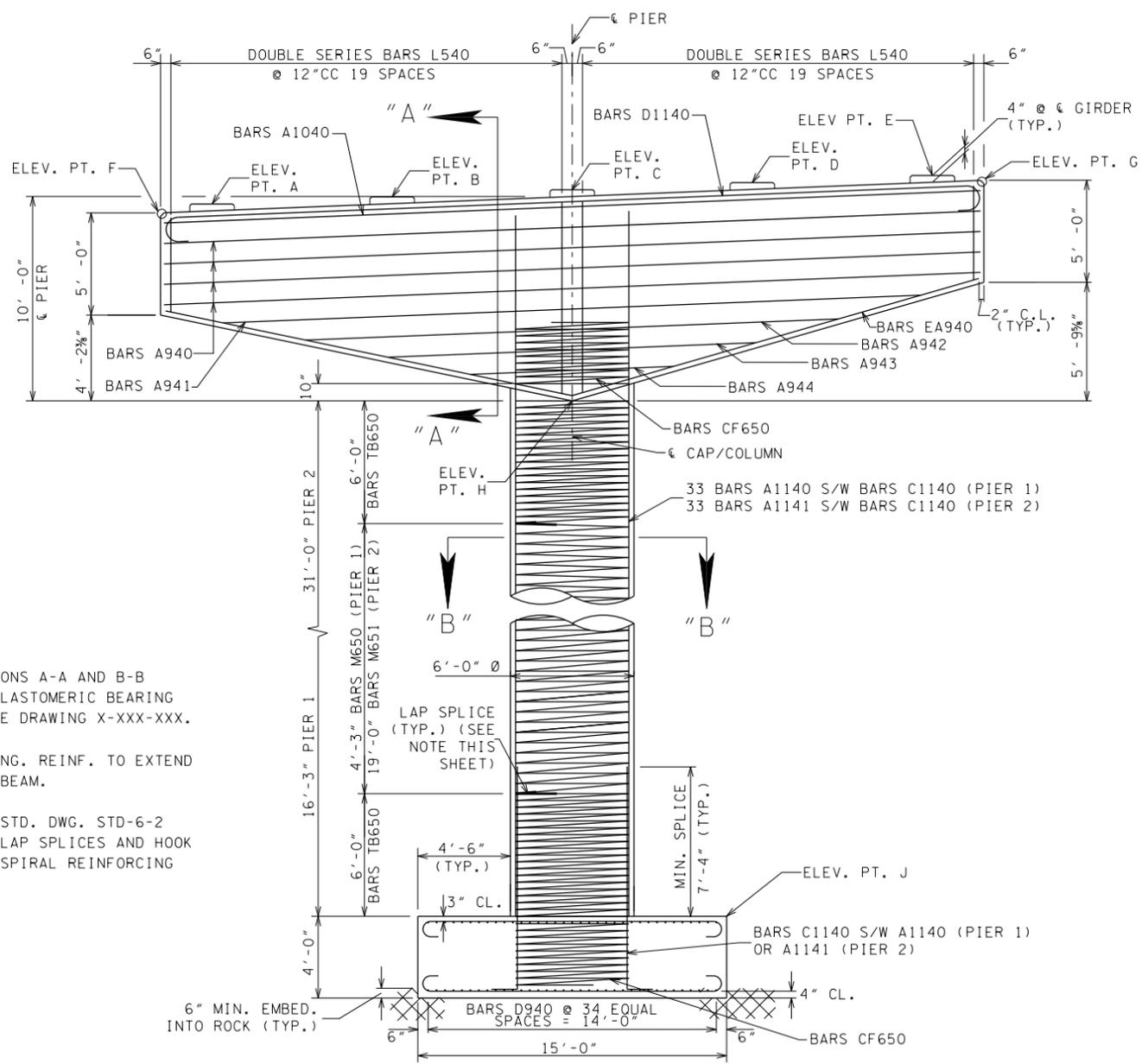
TABLE OF ELEVATIONS

POINT	A	B	C	D	E	F	G	H	J
PIER 1	900.19	900.54	900.86	901.19	901.54	899.76	901.31	890.51	874.26
PIER 2	902.01	902.36	902.68	903.01	903.36	901.58	903.13	892.33	861.33

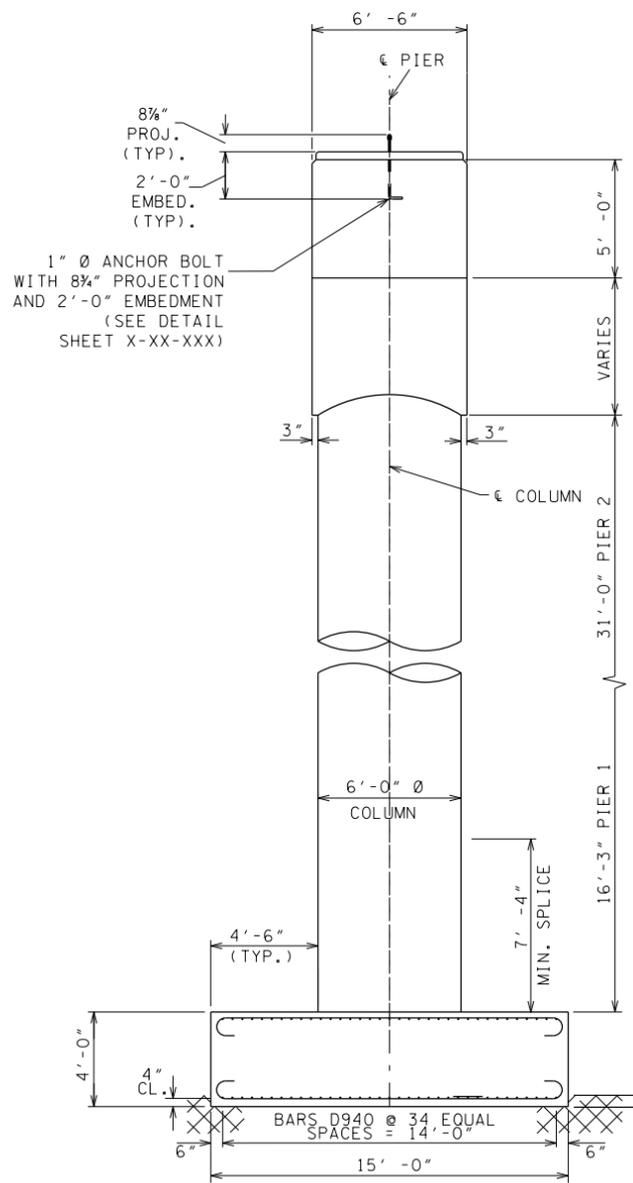
CONST. NO.			
PROJECT NO.	YEAR	SHEET NO.	
HPP/STP-62(34)	2013		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION



RISER BLOCK SLOPE DETAIL



ELEVATION
LOOKING FORWARD ON SURVEY



END ELEVATION

- NOTE: RISER BLOCKS TO BE POURED MONOLITHICALLY WITH CAP BEAM.
- NOTE: ELASTOMERIC PADS SHALL BE IN PLACE A MINIMUM OF ONE DAY BEFORE BEING DISTURBED BY SETTING BEAMS. PLACE RUBBER BONDING CEMENT IN SUCH A WAY THAT VISIBLE CONCRETE SURFACES WILL NOT BE STAINED.
- NOTE: SEE TDOT STANDARD DRAWING NO. STD-6-1 FOR SEISMIC ANCHOR BOLT DETAILS AND NOTES AND MODIFICATIONS ON DRAWING NO XX-XX-XXX.
- NOTE: RISER BLOCK BEARING PAD SURFACE TO CONFORM TO BOTTOM OF BEAM GRADE.

ESTIMATED QUANTITIES

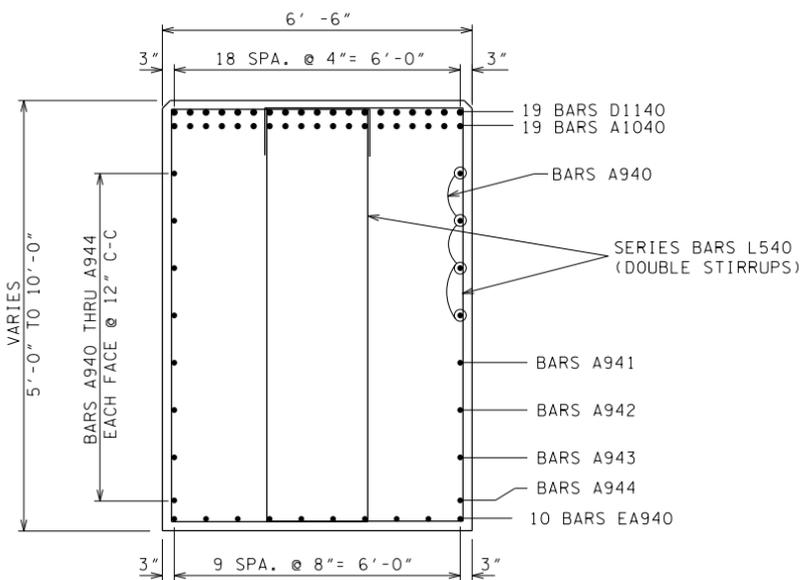
	604-03.02 STEEL BAR REINFORCEMENT (BRIDGES) (LBS.)	604-03.09 CLASS "A" CONCRETE (BRIDGES) (C.Y.)
PIER 1	28,884	125
PIER 2	32,244	140

- NOTE: FOR SECTIONS A-A AND B-B AND LAMINATED ELASTOMERIC BEARING PAD DETAILS, SEE DRAWING X-XXX-XXX.
- NOTE: COLUMN LONG. REINF. TO EXTEND 8'-6" INTO CAP BEAM.
- NOTE: SEE TDOT STD. DWG. STD-6-2 FOR DETAILS OF LAP SPLICES AND HOOK EXTENSIONS FOR SPIRAL REINFORCING IN COLUMNS.

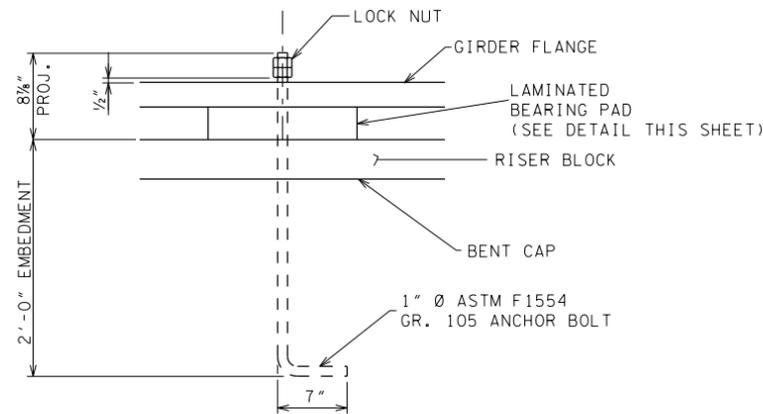
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BRIDGE NO. 2
PIER 1 & 2
KEITH AVENUE (WEST) OVER EAST
FORK THIRD CREEK
& KXHR RR & CSX RR
BRIDGE NO XX-XXXX-XXXX
STATION 315+45.12
KNOX COUNTY
2013

DESIGNED BY: MRP DATE: 07/2013
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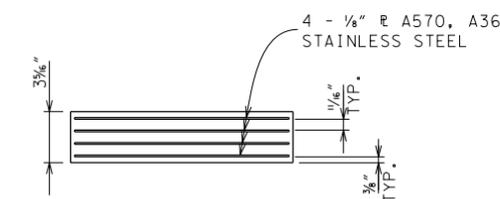
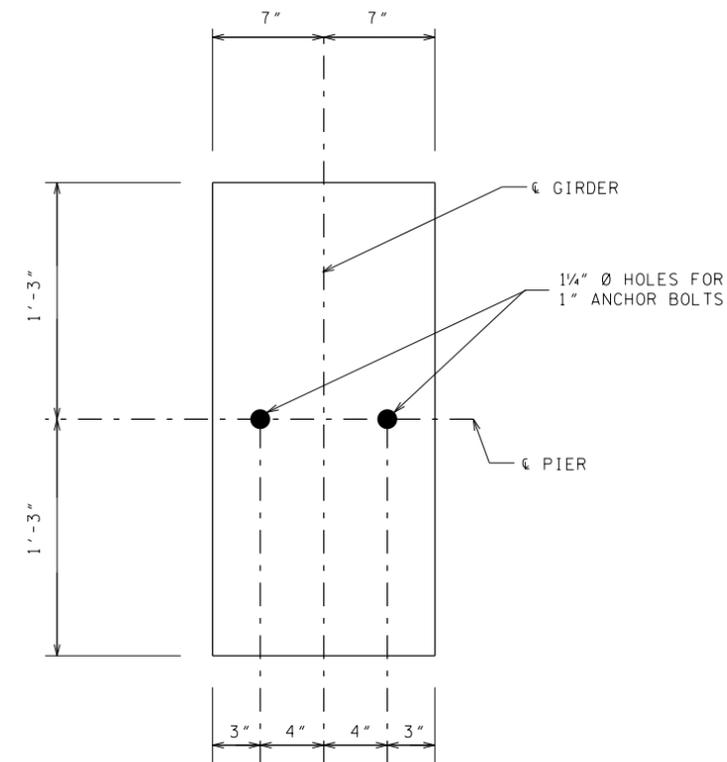
CONST. NO.			
PROJECT NO.	YEAR	SHEET NO.	
HPP/STP-62(34)	2013		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION



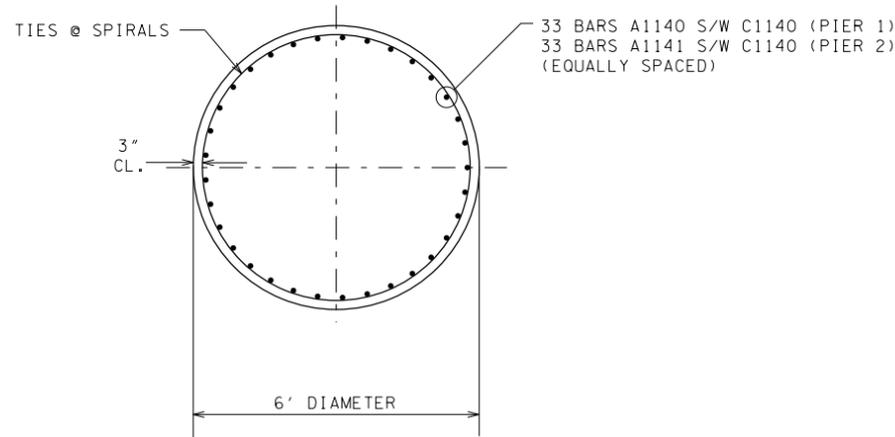
SECTION A-A



ANCHOR BOLT DETAIL

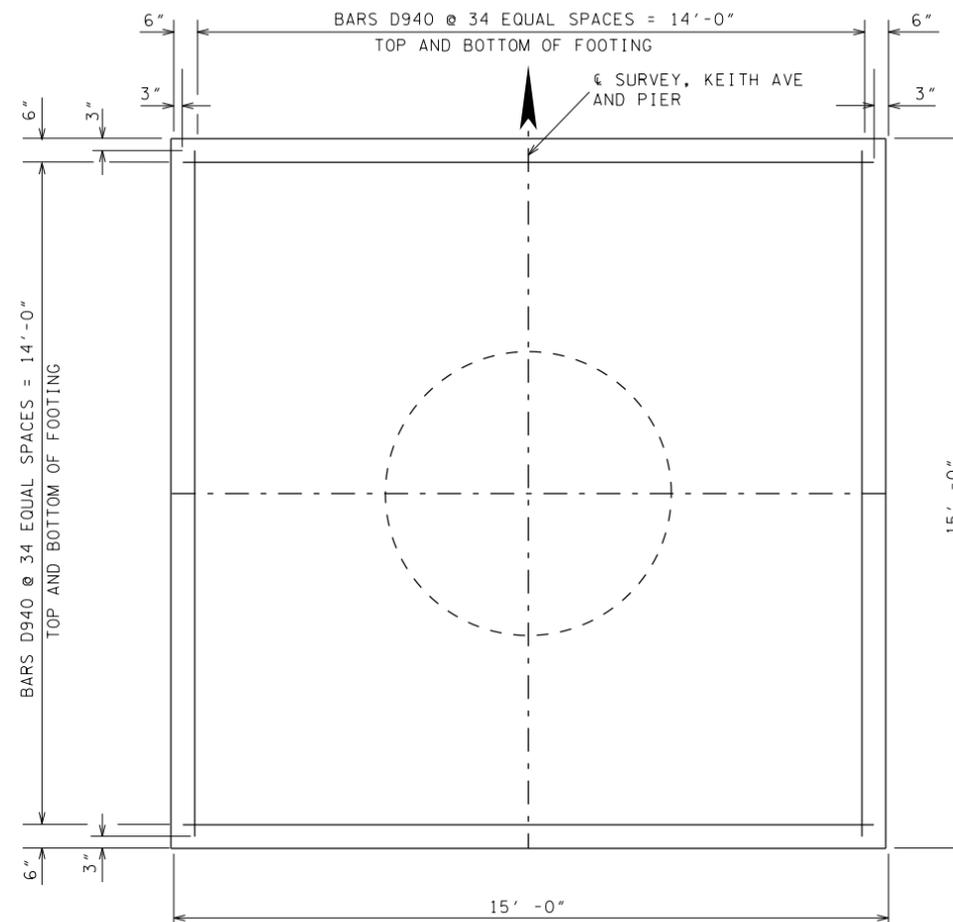


LAMINATED BEARING PAD DETAIL



SECTION B-B

NOTE: SEE TDOT STD. DWG. STD-6-2 FOR DETAILS OF LAP SPLICES AND HOOK EXTENSIONS FOR SPIRAL REINFORCING IN COLUMNS.



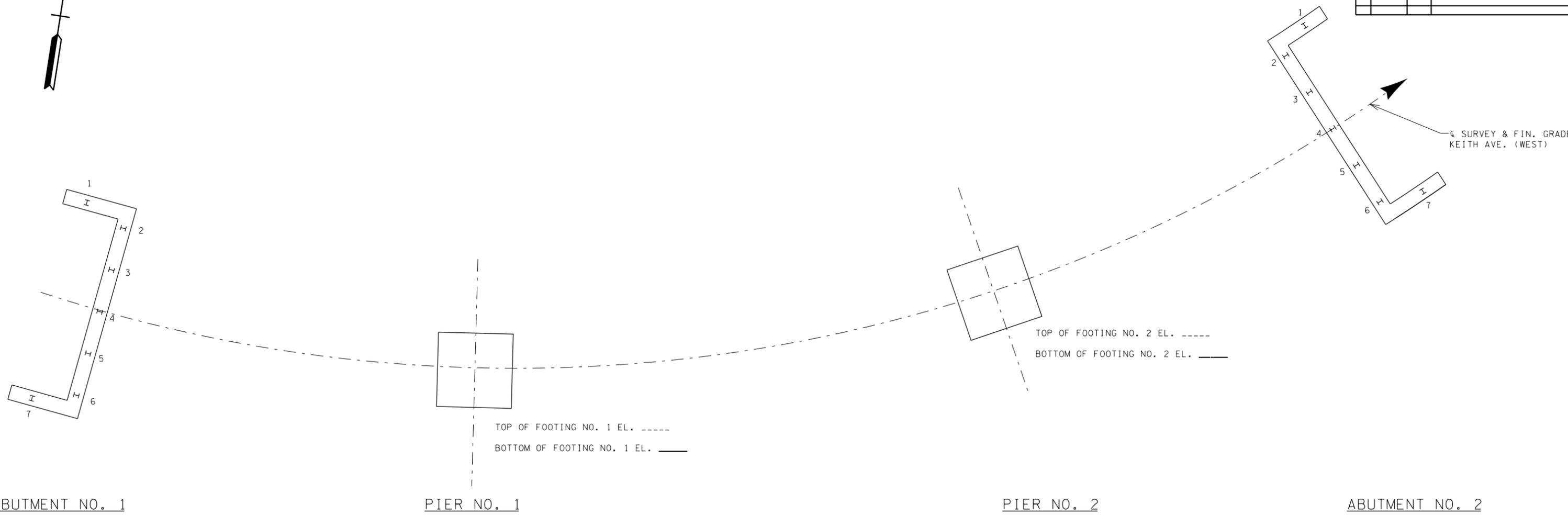
PLAN OF FOOTING

DESIGNED BY: MRP DATE: 07/2013
 DRAWN BY: FSE DATE: 07/2013
 SUPERVISED BY: BEB DATE: 07/2013
 CHECKED BY: RMD DATE: 07/2013

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BRIDGE NO. 2
 PIER 1 & 2 DETAILS
 KEITH AVENUE (WEST) OVER EAST
 FORK THIRD CREEK
 & KXHR RR & CSX RR
 BRIDGE NO XX-XXXX-XXXX
 STATION 315+45.12
 KNOX COUNTY
 2013



CONST. NO.			
PROJECT NO.	YEAR	SHEET NO.	
HPP/STP-62(34)	2013		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION



ABUTMENT NO. 1

PIER NO. 1

PIER NO. 2

ABUTMENT NO. 2

ABUTMENT PILE DATA TABLE

		1	2	3	4	5	6	7
ABUTMENT NO. 1	PILE CUT-OFF ELEVATION							
	PILE TIP ELEVATION							
	IN PLACE PILE LENGTH							

		1	2	3	4	5	6	7
ABUTMENT NO. 2	PILE CUT-OFF ELEVATION							
	PILE TIP ELEVATION							
	IN PLACE PILE LENGTH							



NOTE TO THE CONTRACTOR AND CONSTRUCTION OFFICE:
 THE BLANKS ON THIS SHEET ARE TO BE FILLED IN BY THE CONSTRUCTION OFFICE AND/OR FIELD ENGINEER GIVING AS BUILT CONDITIONS. AFTER COMPLETION, IT IS TO BE SENT TO THE DIVISION OF STRUCTURES TO BECOME PART OF FINAL BRIDGE DOCUMENTS.

DESIGNED BY: MRP DATE: 07/2013
 DRAWN BY: FSE DATE: 07/2013
 SUPERVISED BY: BEB DATE: 07/2013
 CHECKED BY: RMD DATE: 07/2013

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BRIDGE NO. 2
 FINAL FOUNDATION DATA PLAN
 KEITH AVENUE (WEST) OVER EAST
 FORK THIRD CREEK
 & KXHR RR & CSX RR
 BRIDGE NO XX-XXXX-XXXX
 STATION 315+45.12
 KNOX COUNTY
 2013

BILL OF STEEL

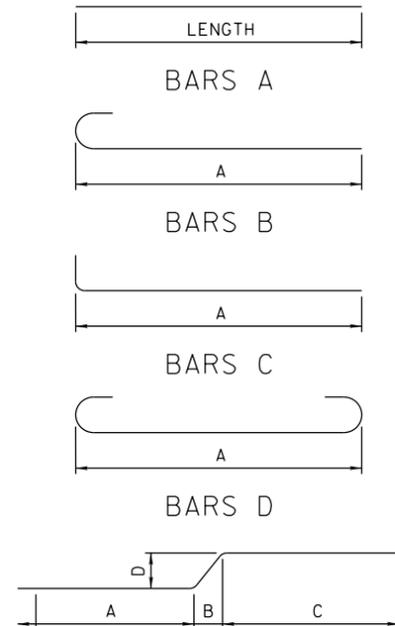
SUPERSTRUCTURE (EPOXY-COATED)									
BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS				LENGTH	
				A	B	C	D		
A400E	SIDEWALK	4	64					60'-0"	
A401E	SIDEWALK	4	1	*1				117'-6"	
A402E	SIDEWALK	4	1	*2				290'-8"	
A500E	SLAB	5	2	*3				4378'-11"	
A501E	SLAB	5	1	*4				4018'-8"	
A600E	SLAB	6	511					43'-8"	
A601E	SLAB	6	1	*5				83'-7 ⁷ / ₈ "	
A602E	SLAB	6	1	*6				218'-3 ³ / ₈ "	
A603E	SLAB	6	1	*7				299'-10 ³ / ₈ "	
A604E	SLAB	6	1	*8				383'-2"	
A605E	SLAB	6	1	*9				466'-7"	
A606E	SLAB	6	1	*10				290'-4 ¹ / ₈ "	
A607E	SLAB	6	400	60'-0"				60'-0"	
B570	SLAB & BRIDGE RAIL	5	1052	2'-9"				3'-4"	
D600E	SLAB	6	511	43'-8"				43'-4"	
F4004	SLAB & SIDEWALK	4	524	2'-0"	2"	6'-6"	8"	9'-2"	
HP500E	SLAB & BRIDGE RAIL	5	524	1'-8"	5"			3'-6"	
*1	DIMENSION A VARIES FROM 11'-11" TO 17'-5 ¹ / ₂ " IN INCREMENTS OF 9 ¹ / ₂ " (8 BARS)								
*2	DIMENSION A VARIES FROM 33'-6 ³ / ₈ " TO 39'-1 ¹ / ₈ " IN INCREMENTS OF 9 ¹ / ₂ " (8 BARS)								
*3	DIMENSION A VARIES FROM 44'-3 ³ / ₈ " TO 55'-2 ³ / ₈ " IN INCREMENTS OF 1 ¹ / ₂ " (88 BARS)								
*4	DIMENSION A VARIES FROM 42'-1" TO 58'-3" IN INCREMENTS OF 2'(-) (88 BARS)								
*5	DIMENSION A VARIES FROM 12'-4 ¹ / ₈ " TO 15'-5 ³ / ₄ " IN INCREMENTS OF 7 ³ / ₈ " (6 BARS)								
*6	DIMENSION A VARIES FROM 16'-6 ³ / ₄ " TO 23'-0 ⁵ / ₈ " IN INCREMENTS OF 7 ⁷ / ₈ "(-) (11 BARS)								
*7	DIMENSION A VARIES FROM 24'-1 ⁵ / ₈ " TO 30'-7 ¹ / ₂ " IN INCREMENTS OF 7 ³ / ₄ " (+) (11 BARS)								
*8	DIMENSION A VARIES FROM 31'-8 ¹ / ₂ " TO 38'-2 ¹ / ₂ " IN INCREMENTS OF 7 ³ / ₄ "(-) (11 BARS)								
*9	DIMENSION A VARIES FROM 39'-3 ¹ / ₂ " TO 45'-9 ⁵ / ₈ " IN INCREMENTS OF 7 ³ / ₄ " (+) (11 BARS)								
*10	DIMENSION A VARIES FROM 46'-10 ³ / ₈ " TO 49'-11 ¹ / ₈ " IN INCREMENTS OF 7 ³ / ₈ "(-) (6 BARS)								
PIER 1 & 2 (EACH)									
NO.	SIZE REQ.	A	B	C	D	E	LENGTH		
A940	CAP	9	8						39'-8 ¹ / ₄ "
A941	CAP	9	2						33'-11"
A942	CAP	9	2						25'-11"
A943	CAP	9	2						17'-10 ³ / ₄ "
A944	CAP	9	2						9'-10 ⁵ / ₈ "
A1040	CAP	10	19						39'-8"
A1140	COLUMN (PIER 1)	11	33						24'-9"
A1141	COLUMN (PIER 2)	11	33						39'-6"
C1140	FOOTING&COLUMN	11	33	10'-3 ³ / ₄ "					12'-3 ³ / ₄ "
D940	FOOTING	9	140	14'-6"					17'-0"
D1140	CAP	11	19	39'-8"					42'-10"
EA940	CAP	9	10	20'-2"	20'-7"	4'-1 ³ / ₄ "	5'-8 ³ / ₄ "	19'-9"	40'-9"
L540	CAP	5	4	4'-1 ¹ / ₂ "	1'-0"	*11			464'-7"
CF650	CAP & FOOTING SPIRALS	6	2	3'-0"	5'-5 ¹ / ₄ "	0'-4"			175'-5"
TB650	COLUMN SPIRALS TOP AND BOTTOM	6	2	6'-0"	5'-5 ¹ / ₄ "	0'-4"			323'-8 ¹ / ₂ "
M650	COLUMN SPIRAL (PIER 1)	6	1	4'-3"	5'-5 ¹ / ₄ "	0'-6"			156'-6 ³ / ₄ "
M651	COLUMN SPIRAL (PIER 2)	6	1	19'-0"	5'-5 ¹ / ₄ "	0'-6"			673'-0"
*11	DIMENSION C VARIES FROM 4'-7 ³ / ₈ " TO 9'-4 ³ / ₈ " IN INCREMENTS OF 3" (4 SERIES @ 20 BARS EACH SERIES)								

ABUTMENT NO. 1 (REGULAR)									
BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS				LENGTH	
				A	B	C	D		
A440	ROADWAY BRACKET	4	1					41'-6"	
A441	WINGWALLS	4	12					15'-0"	
A442	WINGWALLS	4	32					4'-0"	
A540	ABUTMENT BEAM	5	2					43'-7"	
A541	WING BEAM	5	4					15'-0"	
A640	WINGWALL	6	32					3'-0"	
A641	WINGWALL	6	12					15'-0"	
A642	ENDWALL	6	16					8'-6"	
A643	ENDWALL	6	4					43'-7"	
A645	ENDWALL	6	8					4'-0"	
A740	ABUTMENT BEAM	7	9					43'-7"	
A741	WING BEAM	7	20					15'-0"	
B640	ENDWALL	6	10	4'-2"				4'-10"	
H540	ROADWAY BRACKET	5	40	3'-8"	6"			4'-8"	
H640	WING BEAM	6	32	1'-2"	4'-0"			9'-2"	
H641	ABUTMENT BEAM	6	40	2'-7"	3'-6"			9'-7"	
HZ640	ABUTMENT BEAM	6	10	2'-7"	3'-6"	1'-4"		7'-5"	
L540	ABUTMENT BEAM	5	40	2'-6"	1'-0"	2'-6"		11'-0"	
L541	WING BEAM	5	26	2'-6"	1'-0"	2'-6"		11'-0"	
VA840	PILE	8	10	2'-6"	2'-6"			5'-0"	

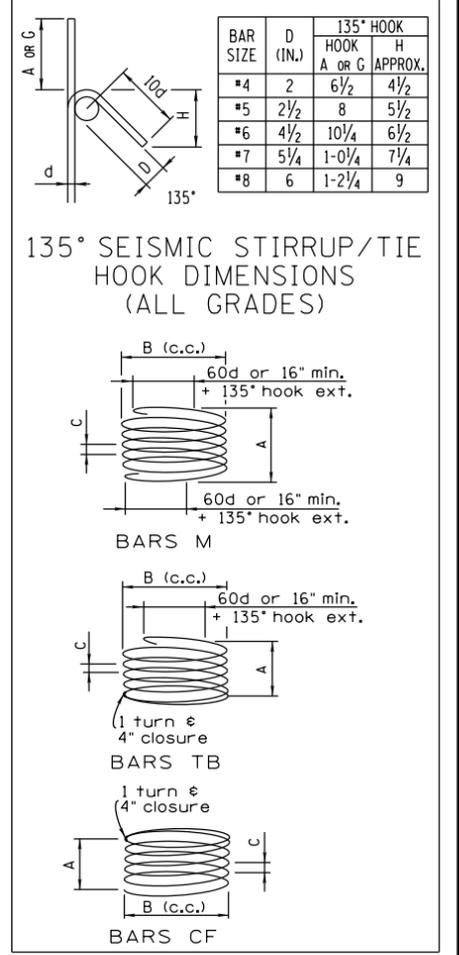
ABUTMENT NO. 1 (EPOXY)									
BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS				LENGTH	
				A	B	C	D		
A570E	WINGWALLS	5	36					4'-10"	
A643E	ENDWALL	6	2					43'-7"	
A644E	ENDWALL	6	90					4'-9"	
B570E	WINGWALLS	5	36	3'-1"				3'-8"	
F640E	ROADWAY BRACKET	6	42	1'-1"	1'-3"	1'-1"	1'-3"	4'-0"	
R640E	ENDWALL & SLAB	6	50	5'-0"	2'-0"			7'-0"	

ABUTMENT NO. 2 (REGULAR)									
BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS				LENGTH	
				A	B	C	D		
A440	ROADWAY BRACKET	4	1					41'-6"	
A441	WINGWALLS	4	12					15'-0"	
A442	WINGWALLS	4	32					4'-0"	
A540	ABUTMENT BEAM	5	2					43'-7"	
A541	WING BEAM	5	4					15'-0"	
A640	WINGWALL	6	32					3'-0"	
A641	WINGWALL	6	12					15'-0"	
A642	ENDWALL	6	16					8'-6"	
A643	ENDWALL	6	4					43'-7"	
A645	ENDWALL	6	8					4'-0"	
A740	ABUTMENT BEAM	7	9					43'-7"	
A741	WING BEAM	7	20					15'-0"	
B640	ENDWALL	6	10	4'-2"				4'-10"	
H540	ROADWAY BRACKET	5	40	3'-8"	6"			4'-8"	
H640	WING BEAM	6	32	1'-2"	4'-3"			9'-8"	
H641	ABUTMENT BEAM	6	40	2'-7"	3'-6"			9'-7"	
HZ640	ABUTMENT BEAM	6	10	2'-7"	3'-6"	1'-4"		7'-5"	
L540	ABUTMENT BEAM	5	40	2'-6"	1'-0"	2'-6"		11'-0"	
L541	WING BEAM	5	26	2'-6"	1'-0"	2'-6"		11'-0"	
VA840	PILE	8	10	2'-6"	2'-6"			5'-0"	

ABUTMENT NO. 2 (EPOXY)									
BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS				LENGTH	
				A	B	C	D		
A570E	WINGWALLS	5	36					4'-10"	
A643E	ENDWALL	6	2					43'-7"	
A644E	ENDWALL	6	90					4'-9"	
B570E	WINGWALLS	5	36	3'-1"				3'-8"	
F640E	ROADWAY BRACKET	6	42	1'-1"	1'-3"	1'-1"	1'-3"	4'-0"	
R640E	ENDWALL & SLAB	6	50	5'-0"	2'-0"			7'-0"	



CONST. NO.		
PROJECT NO.	YEAR	SHEET NO.
HPP/STP-62(34)	2013	
REVISIONS		
NO.	DATE	BY
BRIEF DESCRIPTION		



REINFORCING STEEL CODE

TYPE	SIZE	SERIES
A	5	06

NOTE: DIMENSIONS SHOWN ON THIS SHEET ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK DETAILS SHALL APPLY, EXCEPT AS NOTED.
NOTE: THE SUFFIX E FOR BARS SO MARKED DENOTES EPOXY COATED REINFORCEMENT.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BRIDGE NO. 2
BILL OF STEEL
KEITH AVENUE (WEST) OVER EAST
FORK THIRD CREEK
& KXHR RR & CSX RR
BRIDGE NO XX-XXXX-XXXX
STATION 315+45.12
KNOX COUNTY
2013

DESIGNED BY: MRP DATE: 07/2013
DRAWN BY: FSE DATE: 07/2013
SUPERVISED BY: BEB DATE: 07/2013
CHECKED BY: RMD DATE: 07/2013