

TRANSPORTATION CABINET DEPARTMENT OF HIGHWAYS

WOLFE-MORGAN COUNTIES

KY 205 OVER STATE ROAD FORK STA. 339+07.50

ESTIMATE OF QUANTITIES														
BID ITEM CODE	08100	08104	08151	08019	02231	02998	08046	08033	08094	08633	03299	21532ED		
BID ITEM	Concrete Class "A"	Concrete Class "AA"	Steel Reinforcement, Epoxy Coated	Cyclopean Stone Rip Rap	Structure Granular Backfill	Masonry Coating	Piles - Steel HP 12 x 53	Test Piles	Pile Points 12 Inch	Precast PC L-Beam Type 3	Armored Edge for Concrete	Railing System Type 3		
UNIT	C.Y.	C.Y.	LBS.	Tons	C.Y.	S.Y.	L.F.	L.F.	EA.	L.F.	L.F.	L.F.		
Integral End Bent #1	33.5	30.0	6666	419	135	40	275	47	9					
Integral End Bent #2	35.6	30.7	6824	430	142	40	260	46	9					
Substructure														
Superstructure		154.3	28846			337				1026.5	111	211		
BRIDGE TOTALS	69.1	215	42336	849	277.0	417	535	93	18	1026.5	111	211		

INDEX OF SHEETS	
Sheet No.	Description
S1	Title Sheet
S2	General Notes
S3	Layout
S4	Subsurface Data
S5	Subsurface Data
S6	Foundation Layout
S7-S8	Integral End Bent 1
S9-S10	Integral End Bent 2
S11	Integral End Bent Details
S12	Framing Plan
S13	PPC I-Beam Type 3
S14-S15	Superstructure
S16-S17	Construction Elevations
S18	Rail System, Type 3
S19	Steel Diaphragms

SPECIAL NOTES

SPECIAL PROVISIONS

69 Embankment at Bridge End Bent Structures

STANDARD DRAWINGS

BBP-002-04	Bearing Details
BCX-006-10	Stencils for Structures
BCX-012-02	Geotechnical Legend
RGX-100-06	Treatment of Embankment at End Bents
RGX-105-08	Treatment of Embankment at End Bents
BJE-001-13	Neoprene Expansion Dams and Armored Edges
BPS-003-09	HP12x53 Steel Pile


SPECIFICATIONS

2012 Standard Specifications for Road and Bridge Construction.

2012 AASHTO LRFD Bridge Design Specifications.

FILE NAME: I:\LEX\PRJ\000008298\DESIGN\STRUCTURES\FINAL DESIGN\KY 205 OVER SR FORK\DCN\527083_001.DGN
 CONSTRUCTION PROJECT NO.
 LETTING DATE
 USER: breid
 DATE PLOTTED: June 21, 2016
 E-SHEET NAME:
 MicroStation v8.11.9.714

Plans Prepared By:
H. W. LOCHNER, INC.



Bryan C. Reid
Bryan C. Reid, P.E.
KY. No. 27998

ITEM NUMBER
10-126.70

REVISION		DATE
DATE: June, 2016	CHECKED BY	
DESIGNED BY: W.D. BURTON	B.C. REID	
DETAILED BY: W.R. ABBOTT	B.C. REID	
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS		
WOLFE-MORGAN		
ROUTE KY 205	CROSSING STATE ROAD FORK	
TITLE SHEET		
PREPARED BY LOCHNER		SHEET NO. S1
H.W. LOCHNER, INC. LEXINGTON, KENTUCKY		DRAWING NO. 27083

GENERAL NOTES

SPECIFICATIONS: References to the Specifications are to the 2012 current edition of the Kentucky Department of Highways Standard Specification for Road and Bridge Construction including any current Supplemental Specification. All references to the AASHTO Specifications are to the sixth edition of the AASHTO LRFD Bridge Design Specifications for Highway Bridges.

DESIGN LOAD AND METHOD: This bridge is designed for KY HL-93 live load. The KY HL-93 live load is arrived at by increasing the Standard HL-93 truck and lane loads as specified in the AASHTO Specifications by 25%. All reinforced concrete members are designed by the load and resistance factor method as specified in the current AASHTO Specification.

WIND LOAD: This bridge is designed for a wind load based on a wind velocity of 100 mph.

FUTURE WEARING SURFACE: This bridge is designed for a 60 psf future wearing surface.

MATERIALS DESIGN SPECIFICATION:

FOR CLASS "A" REINFORCED CONCRETE	F'C = 3500 PSI
FOR CLASS "AA" REINFORCED" CONCRETE	F'C = 4000 PSI
FOR STEEL REINFORCEMENT	FY = 60000 PSI
For STEEL PILING	FY = 50000 PSI

CONCRETE: Use Class "AA" concrete in the superstructure deck, parapet, and diaphragms. Class "A" Concrete is to be used in substructure. Prestressed girder concrete shall be in accordance with the plans and specifications.

REINFORCEMENT: Dimensions shown from the face of concrete to bars are to center of bars unless otherwise shown. Spacing is from center to center of bars. Clear distance to face of concrete is 2", unless otherwise noted. Epoxy coat bars designated by suffix (e) in accordance with Section 811.10 of the Standard Specifications. Use stirrup bend diameters for bars designated by suffix (s) in a Bill of Reinforcement.

BEVELED EDGES: Bevel all exposed edges $\frac{3}{4}$ ", unless otherwise noted.

SHOP DRAWINGS: Submit shop drawings that are required by the plans and specifications directly to the Bridge Consultant. If any changes in the design plans are proposed by a fabricator of supplier, submit those changes to the Bridge Consultant through the Contractor. Submit the final approved shop plans to the Division of Structural Design.

DIMENSIONS: Dimensions are for a normal temperature of 60 degrees Fahrenheit. Layout dimensions are horizontal dimensions.

SLOPE PROTECTION: Use dry cyclopean stone in accordance with the plans and Specifications. Geotextile Fabric is to be incidental to this item.

PILE POINTS: Provide pile points for all point bearing piles. Ensure pile points are in accordance with Section 604 of the Specifications and of the type shown on the Foundation Layout Sheet.

PILING: Piling shall be driven to refusal as defined on the Foundation Layout Sheet. Test piles shall be driven where designated on the plans to determine the length of pile required. All test piles shall be accurately located so they may be used in the structure.

CONSTRUCTION IDENTIFICATION: The names of the prime contractor and any sub-contractors shall be imprinted in the concrete with Standard Drawing BGX-006 c.e. at a location designated by the Engineer. The contractor shall furnish all plans, equipment, and labor necessary to do the work for which no direct payment will be made.

MASONRY COATING: Apply masonry coating to the concrete surfaces as specified in Section 601.03.18 (B).

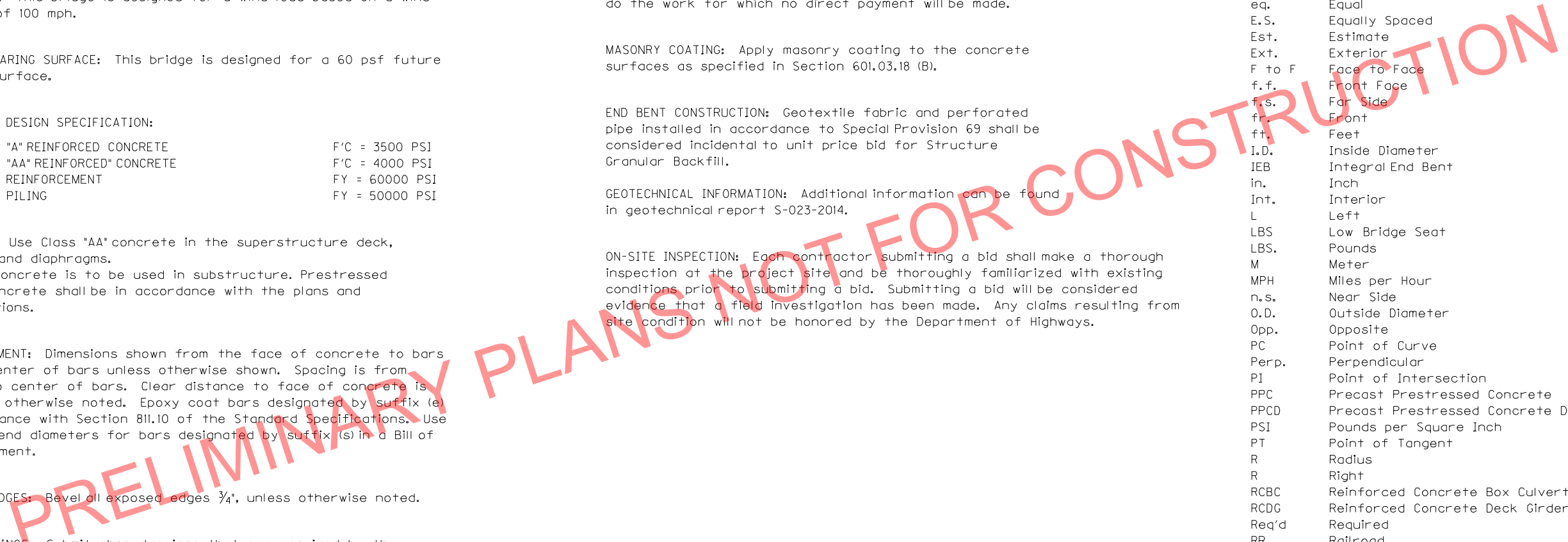
END BENT CONSTRUCTION: Geotextile fabric and perforated pipe installed in accordance to Special Provision 69 shall be considered incidental to unit price bid for Structure Granular Backfill.

GEOTECHNICAL INFORMATION: Additional information can be found in geotechnical report S-023-2014.

ON-SITE INSPECTION: Each contractor submitting a bid shall make a thorough inspection at the project site and be thoroughly familiarized with existing conditions prior to submitting a bid. Submitting a bid will be considered evidence that a field investigation has been made. Any claims resulting from site condition will not be honored by the Department of Highways.

The following abbreviations may have been used in the preparation of these plans:

bet.	Between
b.f.	Back Face
B0F	Bottom of Footing
bot.	Bottom
Brg.	Bearing
C to C	Center to Center
c.e.	Current Edition
C.Y.	Cubic Yard
Chd.	Chord
CL	Center Line
Cl.	Clear
Conc.	Concrete
Cu.	Cubic
Dwg.	Drawing
e.f.	Each Face
El.	Elevation
eq.	Equal
E.S.	Equally Spaced
Est.	Estimate
Ext.	Exterior
F to F	Face to Face
f.f.	Front Face
f.s.	Far Side
fr.	Front
ft.	Feet
I.D.	Inside Diameter
IEB	Integral End Bent
in.	Inch
Int.	Interior
L	Left
LBS	Low Bridge Seat
LBS.	Pounds
M	Meter
MPH	Miles per Hour
n.s.	Near Side
O.D.	Outside Diameter
Opp.	Opposite
PC	Point of Curve
Perp.	Perpendicular
PI	Point of Intersection
PPC	Precast Prestressed Concrete
PPCD	Precast Prestressed Concrete Deck Unit
PSI	Pounds per Square Inch
PT	Point of Tangent
R	Radius
R	Right
RCBC	Reinforced Concrete Box Culvert
RCDG	Reinforced Concrete Deck Girder
Req'd	Required
RR	Railroad
Shld	Shoulder
spa.	Spaces
Sta.	Station
Std.	Standard
Str.	Straight
Tan	Tangent
Thru	Through
TOF	Top of Footing
Tot.	Total
Typ.	Typical
Vert.	Vertical
W.P.	Working Point
Yd.	Yard



FILE NAME: I:\LEX\PRJ\000008298\DESIGN\STRUCTURES\FINAL DESIGN\KY 205 OVER SR FORK\DCN\27083_002.DGN

USER: dsmithson
DATE PLOTTED: July 1, 2016

E-SHEET NAME:

MicroStation v8.11.9.459

ITEM NUMBER
10-126.70

REVISION		DATE
DATE: June, 2016	CHECKED BY	
DESIGNED BY: B.C. REID	W.D. BURTON	
DETAILED BY: W.R. ABBOTT	B.C. REID	
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS		
WOLFE-MORGAN		
ROUTE KY 205	CROSSING STATE ROAD FORK	
GENERAL NOTES		
PREPARED BY LOCHNER H. W. LOCHNER, INC. LEXINGTON, KENTUCKY		SHEET NO. S2 DRAWING NO. 27083

FILE NAME: I:\LEX\PRJ\00008298\DESIGN\STRUCTURES\FINAL DESIGN\KY 205 OVER SR FORK\DGN\27083_003.DGN

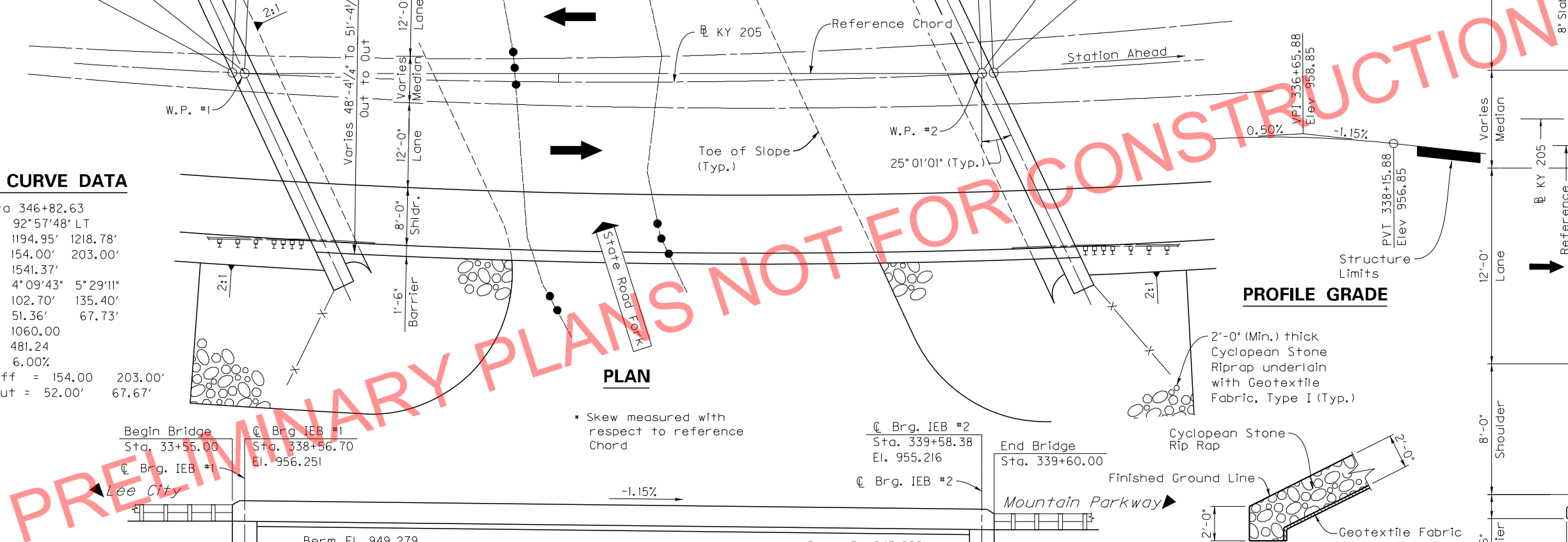
USER: demitson
DATE PLOTTED: July 1, 2016

E-SHEET NAME:

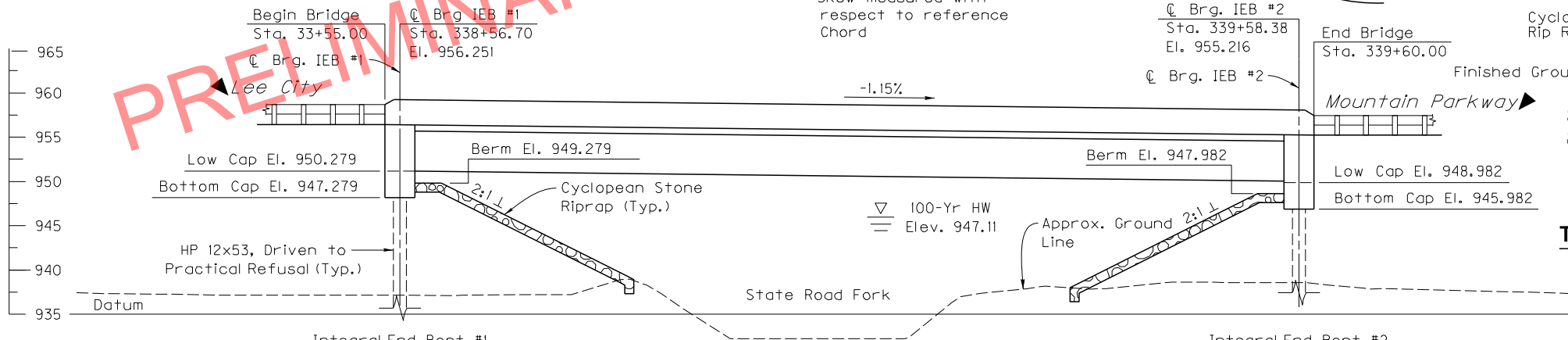
MicroStation v8.11.9.459

KY 205 CURVE DATA

PI Sta 346+82.63
 $\Delta = 92^\circ 57' 48''$ LT
 Ts = 1194.95' 1218.78'
 Ls = 154.00' 203.00'
 Lc = 1541.37'
 $\theta_s = 4^\circ 09' 43''$ $5^\circ 29' 11''$
 LT = 102.70' 135.40'
 ST = 51.36' 67.73'
 R = 1060.00
 E = 481.24
 e = 6.00%
 Runoff = 154.00 203.00'
 Runout = 52.00' 67.67'

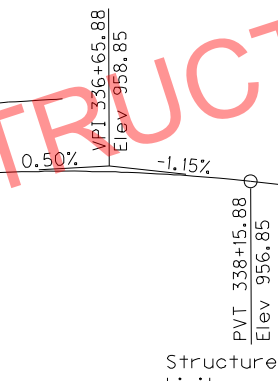


PLAN

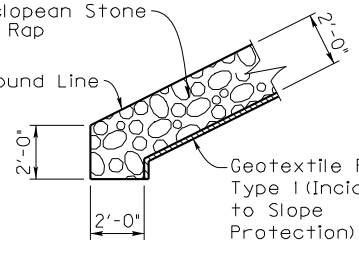


ELEVATION

PROFILE GRADE



TOE OF SLOPE DETAIL



- NOTES:**
- 1.) Roadway guardrail is to attach to bridge barriers, see Roadway Plans.
 - 2.) For end bent backfill and method of construction, see Special Provision 69. All geotextile fabric, if required, shall be incidental to structure granular backfill.

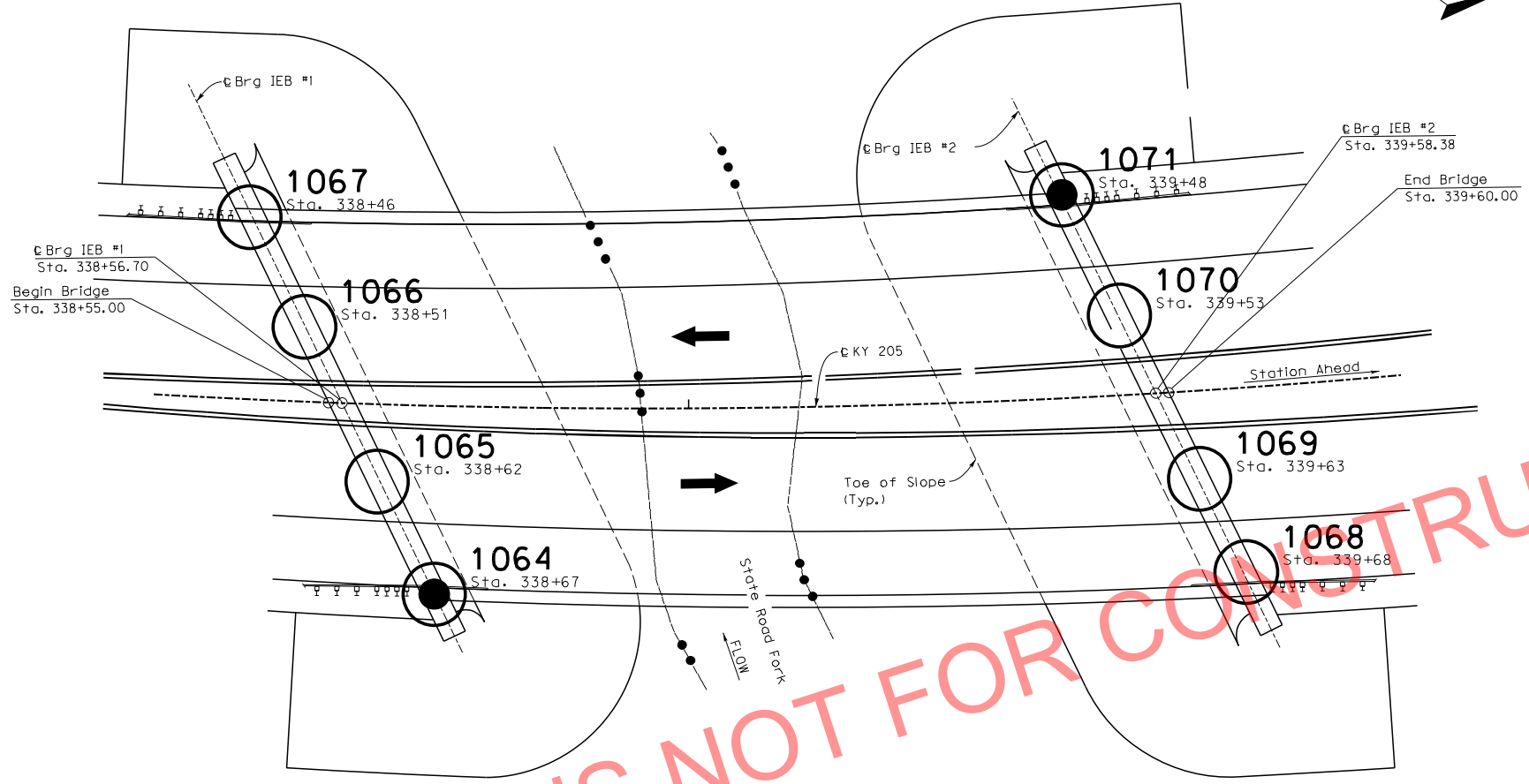
101'-8¹/₈" Type 3 PPC I-Beam ~ KY HL-93 Live Load ~ Simple Span
 Varies 45'-4¹/₄" to 48'-4¹/₈" Roadway Width @ Bridge
 Varies 53'-4¹/₄" to 56'-4¹/₈" Shoulder Width @ Bridge
 Skew Varies ~ 2:1 Fill Slopes

8-Type 3 PPC I-Beams @ 5'-2" = 36'-2"

TYPICAL SECTION

REVISION		DATE
DATE: June, 2016	CHECKED BY	
DESIGNED BY: W.D. BURTON	B.C. REID	
DETAILED BY: D.M. SMITHSON	B.C. REID	
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS		
WOLFE-MORGAN		
ROUTE KY 205	CROSSING STATE ROAD FORK	
LAYOUT		
ITEM NUMBER	PREPARED BY LOCHNER H.W. LOCHNER, INC. LEXINGTON, KENTUCKY	SHEET NO. S3 DRAWING NO. 27083
10-126.70		

Plan Scale 1" = 10'



● CORE BORING
○ SOUNDING

PRELIMINARY PLANS NOT FOR CONSTRUCTION

END BENT #1
APPROXIMATE ROADWAY GRADE ELEV. = 956.35

Hole No.	1067
Station	338+46.00
Offset	22.0' Lt.
Elev.	939.88
(NAVD 88 datum)	

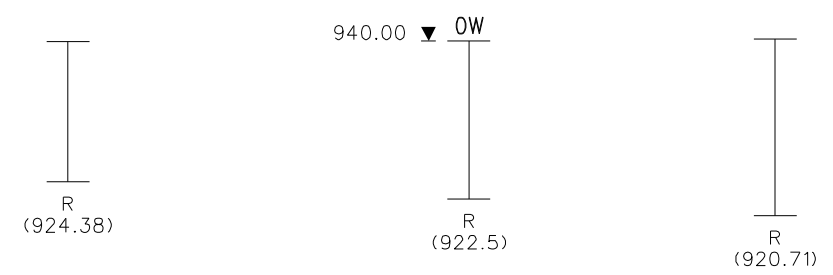
1066	338+51.00
10.0' Lt.	940.0

1065	338+62.00
10.0' Rt.	940.21

1064	338+67.00
22.0' Rt.	940.28

Profile Scale:
Vertical 1" = 10'
Horizontal not to scale

USER: dsmitthson
DATE PLOTTED: July 1, 2016
E-SHEET NAME:
MicroStation v8.11.9.459



W%	LI	D50	D95	SDI (JS)	
21		0.008	0.060		A-4(0), ML, S+C-64(44+20)
20		0.010	0.061		N=2, A-2-4(0), SM, S+C=24(15+9)
28		0.010	0.061		N=8, A-2-4(0), SM, S+C=23(12+11)
35		0.009	0.061		N=4, A-2-4(0), SM, S+C=28(15+13)
12					N=R/0.50'
KY RQD	REC				24 (2) (920.78 - 916.98) Weathered shale, gray, planar fractures
25	90				
50	93				97 (6) (916.98 - 910.78) Shale, mica, fine grains, gray, planar partings
38	90				

Top of rock elev. = 920.78
Base of weathered rock elev. = 916.98

970
960
950
940
930
920
910

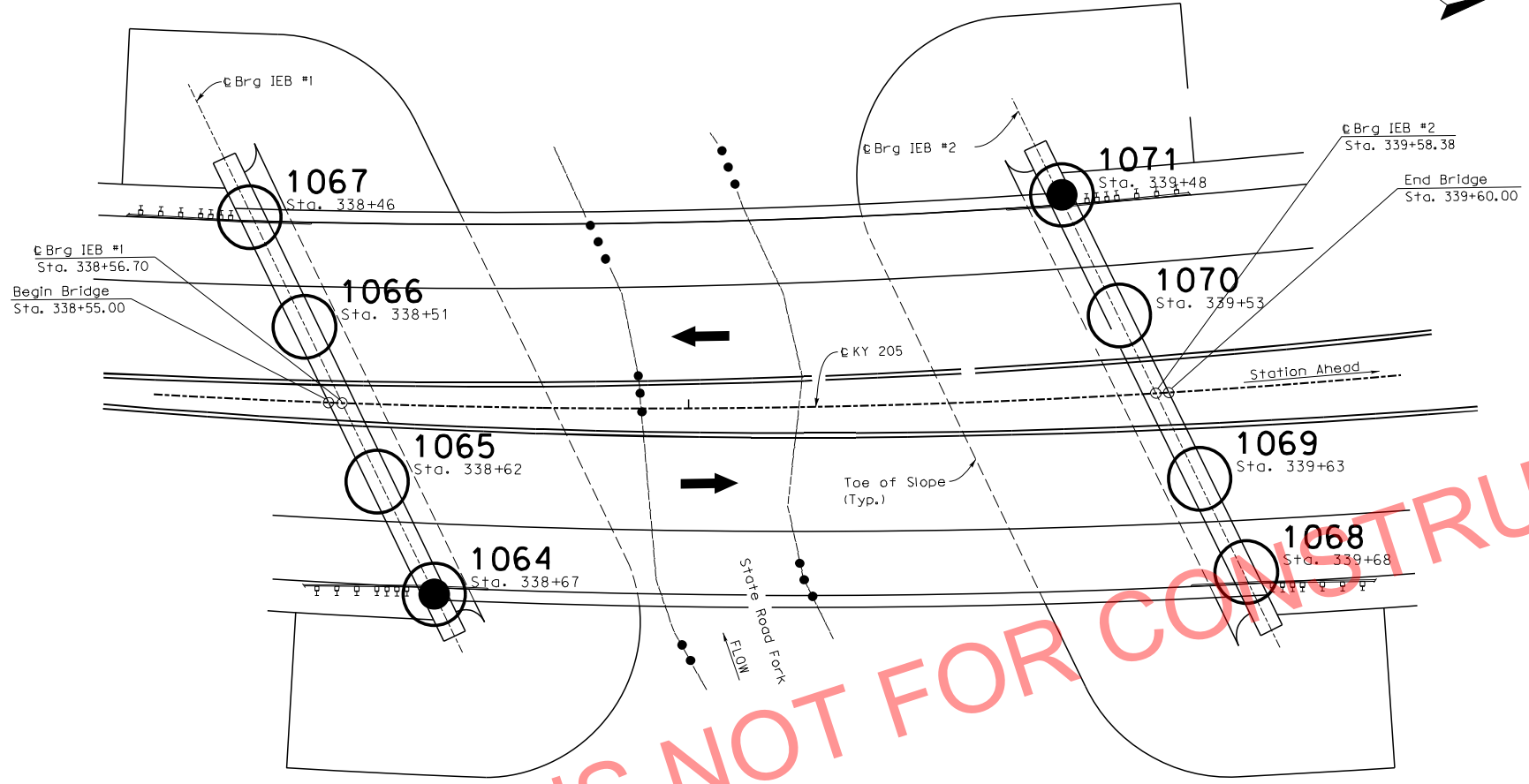
S-023-2014

ITEM NUMBER	10-126.70
-------------	-----------

REVISION		DATE
DATE: June, 2016	CHECKED BY	
DESIGNED BY:	J. GODFREY	
DETAILED BY: S. ANDREWS		
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS		
COUNTY		
ROUTE KY 205	CROSSING State Road Fork	
SUBSURFACE DATA		
PREPARED BY		SHEET NO.
K.S. WARE & ASSOCIATES, LLC		S4
		DRAWING NO.
		27083

SHEET 1 OF 2

Plan Scale 1" = 10'



● CORE BORING
○ SOUNDING

PRELIMINARY PLANS NOT FOR CONSTRUCTION

END BENT #2
APPROXIMATE ROADWAY GRADE ELEV. = 955.15

Hole No.
Station
Offset
Elev.
(NAVD 88
datum)

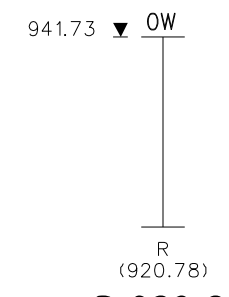
1071	339+48.00	23.0' Lt.	941.00
1070	339+53.00	11.0' Lt.	941.33
1069	339+63.00	11.0' Rt.	941.75
1068	339+68.00	23.0' Rt.	941.73

Profile Scale:
Vertical 1" = 10'
Horizontal not to scale

USER: dsmitthson
DATE PLOTTED: July 1, 2016
E-SHEET NAME:
MicroStation v8.11.9.459

WZ	LI	D50	D95	SDI (JS)	DESCRIPTION
27		0.008	0.060	█	A-4(0), ML, S+C=58(38+20)
28		0.009	0.061	█	N=2, A-4(0), SM, S+C=35(22+13)
51		0.011	0.062	█	N=0, A-2-4(0), SM, S+C=15(10+5)
181		0.010	0.061	█	N=4, A-2-4(0), SM, S+C=19(9+10)
36		0.011	0.062	█	N=5, A-3(0), SP-SM, S+C=10(5+5)
KY RQD	REC				
30	95				88 (6) (920.3 - 917.7) Weathered shale, mica, fine grains, gray, planar partings
77	100				92 (5) (917.7 - 910.3) Shale, mica, fine grains, gray, planar partings
88	100				

Top of rock elev. = 920.3
Base of weathered rock elev. = 917.7



S-023-2014

ITEM NUMBER
10-126.70

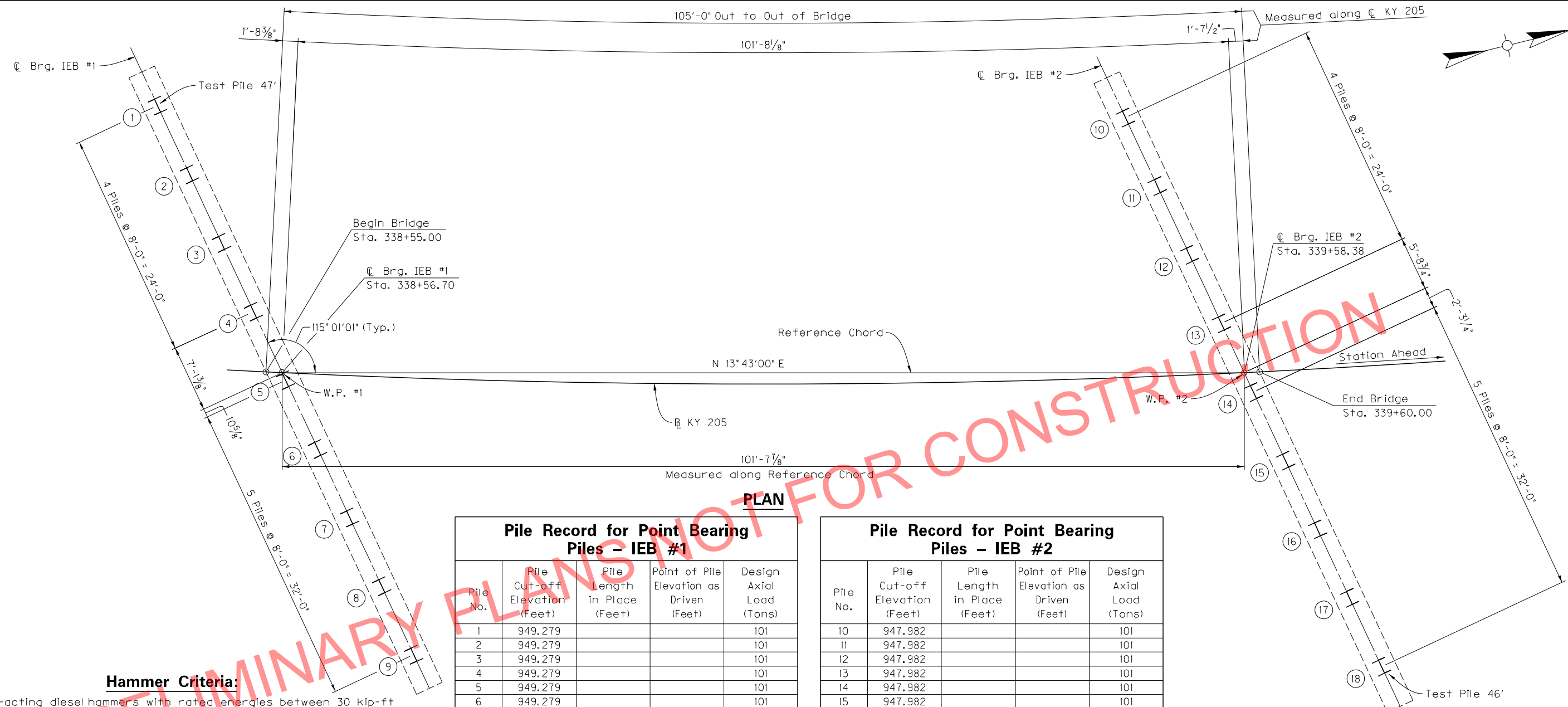
REVISION		DATE
DATE: June, 2016	CHECKED BY	
DESIGNED BY:	DETAILED BY: S. ANDREWS	
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS		
COUNTY		
ROUTE KY 205	CROSSING State Road Fork	
SUBSURFACE DATA		
PREPARED BY		SHEET NO.
K.S. WARE & ASSOCIATES, LLC		S5
		DRAWING NO.
		27083

FILE NAME: I:\LEX\PRJ\00008298\DESIGN\STRUCTURES\FINAL DESIGN\KY 205 OVER SR FORK\DCN\527083_006.DGN

USER: dsmitthson
DATE PLOTTED: July 1, 2016

E-SHEET NAME:

MicroStation v8.11.9.459



PLAN

Pile Record for Point Bearing Piles - IEB #1

Pile No.	Pile Cut-off Elevation (Feet)	Pile Length in Place (Feet)	Point of Pile Elevation as Driven (Feet)	Design Axial Load (Tons)
1	949.279			101
2	949.279			101
3	949.279			101
4	949.279			101
5	949.279			101
6	949.279			101
7	949.279			101
8	949.279			101
9	949.279			101

Pile Record for Point Bearing Piles - IEB #2

Pile No.	Pile Cut-off Elevation (Feet)	Pile Length in Place (Feet)	Point of Pile Elevation as Driven (Feet)	Design Axial Load (Tons)
10	947.982			101
11	947.982			101
12	947.982			101
13	947.982			101
14	947.982			101
15	947.982			101
16	947.982			101
17	947.982			101
18	947.982			101

Slope Protection

Slope protection will be required at the bridge meeting the requirements of sections 703 and 805 of the Standard Specifications of Road and Bridge Construction, current edition. The limits, size, and thickness of the slope protection shall be as specified in HEC 23. Place a Type I Geotextile Fabric, in accordance with Sections 214 and 843 of the Standard Specifications of Road and Bridge Construction, current edition, between the embankment and the slope protection.

Field Data

For each pile, the Project Engineer shall record the following on this sheet: Pile Length in Place and Point of Pile Elevation as Driven.

Submit this record to: Kentucky Transportation Cabinet
Director, Division of Structural Design
Room #322
200 Mero Street
Frankfort, KY 40622

This pile record does not replace other pile records the Project Engineer is required to keep and submit.

Use HP 12x53 in accordance with BPS-003, c.e.
Use grade 50 steel H-piles with reinforced points as end bearing piles.

Definitions of Terms

- PILE CUT-OFF ELEVATION: Elevation of the top of pile in the finished structure.
- PILE LENGTH IN PLACE: Actual pile length below the Pile Cut-Off Elevation in the finished structure.
- POINT OF PILE ELEVATION AS DRIVEN: Actual point of pile elevation in the finished structure.
- DESIGN AXIAL LOAD: Load carried by each pile as estimated from structural design calculations for Factored LRFD Loadings.
- CALCULATED FIELD BEARING: Contrary to Section 604.03.07 of the Standard Specifications, in place bearing values are not required for piles bearing on rock when driven to practical refusal.

Hammer Criteria:

Single-acting diesel hammers with rated energies between 30 kip-ft and 40 kip-ft are recommended to adequately drive the H-piles to practical refusal without encountering excessive blow counts or overstressing the piles. The use of hammers other than single-acting diesel may require different energies. The contractor shall submit the proposed pile driving system to the Department for approval prior to the installation of the first pile. Approval of the pile driving system by the Engineer will be subject to satisfactory field performance of the pile driving procedures.

Driving Criteria

DRIVING CRITERIA: Drive point bearing piles to practical refusal.

PRACTICAL REFUSAL: For this project minimum blow requirements are reached after total penetration becomes 1/2' or less for 10 consecutive blows, practical refusal is obtained after the pile is struck an additional 10 blows with total penetration of 1/2' or less. Advance the production piling to the driving resistances specified above and to depths determined by test pile(s) and subsurface data sheet(s). Immediately cease driving operations if the pile visibly yields or becomes damaged during driving. If hard driving is encountered because of dense strata or an obstruction, such as a boulder before the pile is advanced to the depth anticipated, the Engineer will determine if more blows than the average driving resistances specified for practical refusal is required to further advance the pile. Drive additional production and test piles if directed by the Engineer.

ITEM NUMBER
10-126.70

REVISION		DATE
DATE: June, 2016	CHECKED BY	
DESIGNED BY: W.D. BURTON	B.C. REID	
DETAILED BY: D.M. SMITHSON	B.C. REID	
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS		
WOLFE-MORGAN		
ROUTE KY 205	CROSSING STATE ROAD FORK	
FOUNDATION LAYOUT		
PREPARED BY LOCHNER H.W. LOCHNER, INC. LEXINGTON, KENTUCKY		SHEET NO. 56 DRAWING NO. 27083

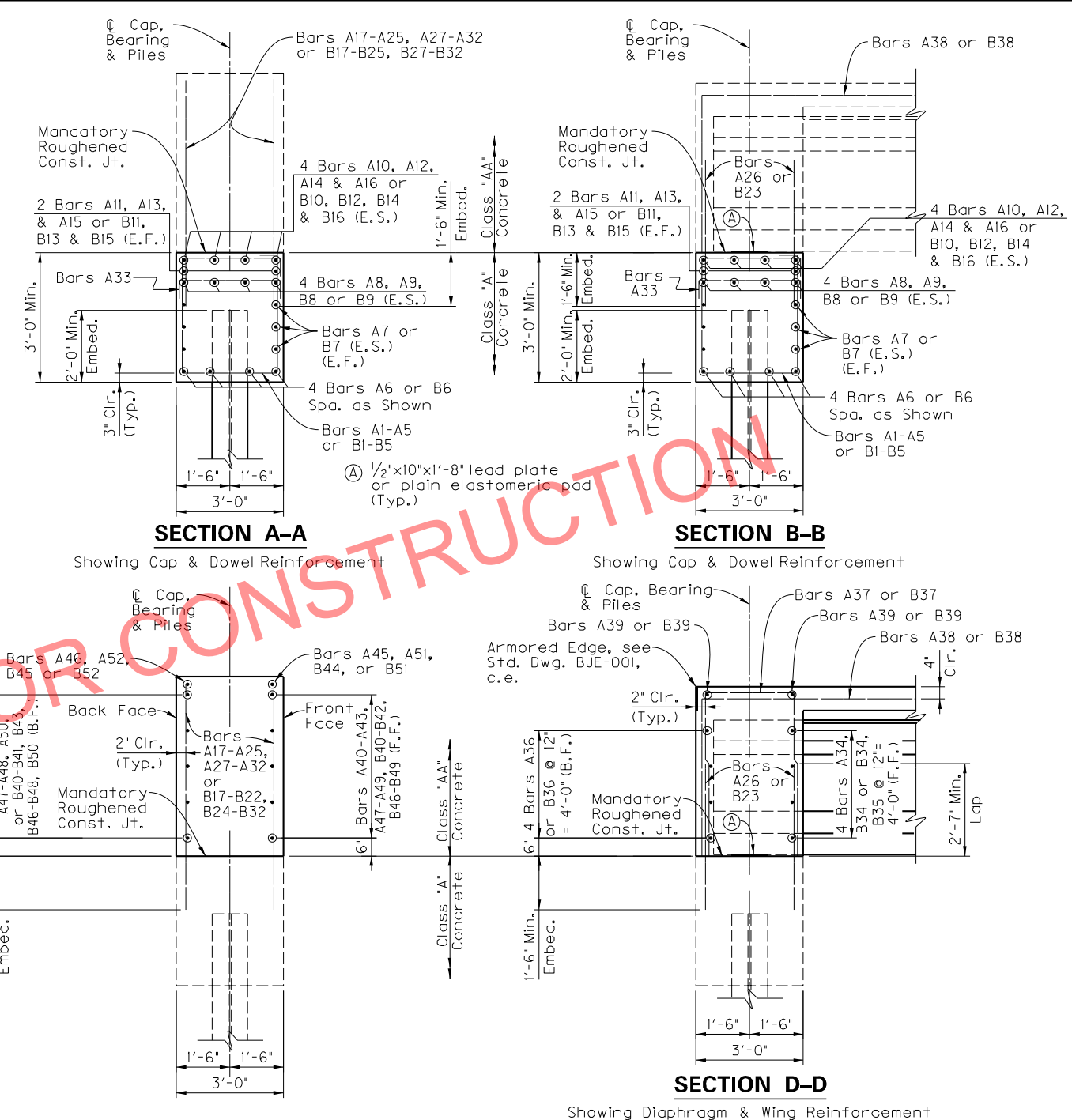
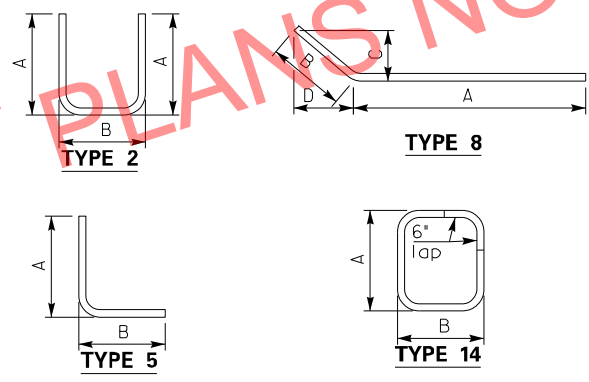
FILE NAME: I:\LEXPRJ\0008298\DESIGN\STRUCTURES\FINAL DESIGN\KY 205 OVER SR FORK\DCN\SZ7083_01.DGN
 USER: breid
 DATE PLOTTED: July 1, 2016
 E-SHEET NAME: MicroStation v8.11.9.714

BILL OF REINFORCEMENT

MARK	TYPE	SIZE	NO.	LENGTH		LOCATION	A	B	C	D
				FT.	IN.					
A1e	I4s	5	34	11-6		Cap	2-7	2-8		
A2e	I4s	5	19	12-6		Cap	3-1	2-8		
A3e	I4s	5	21	13-6		Cap	3-7	2-8		
A4e	I4s	5	18	14-8		Cap	4-2	2-8		
A5e	I4s	5	34	15-8		Cap	4-8	2-8		
A6e	Str.	8	8	39-2		Cap				
A7e	Str.	5	12	37-1		Cap				
A8e	Str.	8	4	33-0		Cap				
A9e	Str.	8	4	46-1		Cap				
A10e	Str.	5	4	15-9		Cap				
A11e	Str.	5	2	39-9		Cap				
A12e	Str.	5	4	15-9		Cap				
A13e	Str.	5	2	28-4		Cap				
A14e	Str.	5	4	15-9		Cap				
A15e	Str.	5	2	16-11		Cap				
A16e	Str.	5	4	18-8		Cap				
A17e	Str.	5	2	4-7		Cap/Wing				
A18e	Str.	5	2	3-11		Cap/Wing				
A19e	Str.	5	2	4-5		Cap/Wing				
A20e	Str.	5	2	4-10		Cap/Wing				
A21e	Str.	5	2	5-3		Cap/Wing				
A22e	Str.	5	2	5-8		Cap/Wing				
A23e	Str.	5	2	6-1		Cap/Wing				
A24e	Str.	5	2	6-7		Cap/Wing				
A25e	Str.	5	4	6-8		Cap/Wing				
A26e	Str.	5	94	4-1		Cap/Wing				
A27e	Str.	5	7	6-6		Cap/Wing				
A28e	Str.	5	2	6-4		Cap/Wing				
A29e	Str.	5	2	5-11		Cap/Wing				
A30e	Str.	5	2	5-6		Cap/Wing				
A31e	Str.	5	2	5-0		Cap/Wing				
A32e	Str.	5	2	4-7		Cap/Wing				
A33e	2s	5	53	3-8		Cap	0-6	2-8		
A34e	Str.	5	8	2-11		Diaphragm				
A35e	Str.	5	28	3-5		Diaphragm				
A36e	Str.	5	8	30-4		Diaphragm/Wing				
A37e	2s	5	38	11-10		Diaphragm	4-7	2-8		
A38e	5	5	20	14-7		Diaphragm/Slab	4-7	10-0		
A39e	Str.	5	2	53-11		Slab				
A40e	Str.	5	4	9-1		Wing				
A41e	Str.	5	2	7-10		Wing				
A42e	Str.	5	2	5-7		Wing				
A43e	Str.	5	1	2-8		Wing				
A44e	Str.	5	1	3-11		Wing				
A45e	8	5	1	9-1		Wing	8-0	1-1	0-5 ¹ / ₈	0-11 ⁷ / ₈
A46e	8	5	1	10-4		Wing	8-0	2-4	0-11 ¹ / ₈	2-1 ³ / ₄
A47e	Str.	5	6	10-2		Wing				
A48e	Str.	5	2	9-0		Wing				
A49e	Str.	5	1	5-0		Wing				
A50e	Str.	5	1	3-9		Wing				
A51e	8	5	1	8-8		Wing	4-9	3-11	1-7 ¹ / ₈	3-7
A52e	8	5	1	7-5		Wing	4-9	2-8	1-1	2-5 ¹ / ₄
B1e	I4s	5	32	11-6		Cap	2-7	2-8		
B2e	I4s	5	19	12-6		Cap	3-2	2-8		
B3e	I4s	5	21	13-10		Cap	3-9	2-8		
B4e	I4s	5	20	15-0		Cap	4-4	2-8		
B5e	I4s	5	36	16-2		Cap	4-11	2-8		
B6e	Str.	8	8	39-10		Cap				
B7e	Str.	5	12	38-1		Cap				
B8e	Str.	8	4	34-3		Cap				
B9e	Str.	8	4	46-4		Cap				
B10e	Str.	5	4	15-9		Cap				
B11e	Str.	5	2	41-10		Cap				
B12e	Str.	5	4	15-9		Cap				
B13e	Str.	5	2	30-5		Cap				
B14e	Str.	5	4	15-9		Cap				
B15e	Str.	5	2	19-0		Cap				
B16e	Str.	5	4	20-9		Cap				
B17e	Str.	5	2	4-7		Cap/Wing				
B18e	Str.	5	2	5-0		Cap/Wing				
B19e	Str.	5	2	5-6		Cap/Wing				
B20e	Str.	5	2	5-11		Cap/Wing				

BILL OF REINFORCEMENT

MARK	TYPE	SIZE	NO.	LENGTH		LOCATION	A	B	C	D
				FT.	IN.					
B21e	Str.	5	2	6-5		Cap/Wing				
B22e	Str.	5	3	6-6		Cap/Wing				
B23e	Str.	5	97	4-1		Cap/Wing				
B24e	Str.	5	5	6-8		Cap/Wing				
B25e	Str.	5	2	6-7		Cap/Wing				
B26e	Str.	5	2	6-1		Cap/Wing				
B27e	Str.	5	2	5-8		Cap/Wing				
B28e	Str.	5	2	5-3		Cap/Wing				
B29e	Str.	5	2	4-10		Cap/Wing				
B30e	Str.	5	2	4-5		Cap/Wing				
B31e	Str.	5	2	3-11		Cap/Wing				
B32e	Str.	5	2	3-6		Cap/Wing				
B33e	2s	5	55	3-8		Cap	0-6	2-8		
B34e	Str.	5	8	3-6		Diaphragm				
B35e	Str.	5	28	3-4		Diaphragm				
B36e	Str.	5	8	30-11		Diaphragm/Wing				
B37e	2s	5	39	11-10		Diaphragm	4-7	2-8		
B38e	5	5	20	14-7		Diaphragm/Slab	4-7	10-0		
B39e	Str.	5	2	55-7		Slab				
B40e	Str.	5	6	7-5		Wing				
B41e	Str.	5	2	6-4		Wing				
B42e	Str.	5	1	2-7		Wing				
B43e	Str.	5	1	3-7		Wing				
B44e	8	5	1	6-0		Wing	4-9	1-3	0-6 ¹ / ₈	1-1 ³ / ₄
B45e	8	5	1	7-0		Wing	4-9	2-3	0-11	2-0 ⁵ / ₈
B46e	Str.	5	4	11-6		Wing				
B47e	Str.	5	2	10-3		Wing				
B48e	Str.	5	2	8-0		Wing				
B49e	Str.	5	1	5-0		Wing				
B50e	Str.	5	1	4-0		Wing				
B51e	8	5	1	11-6		Wing	8-0	3-6	1-4 ³ / ₄	3-2 ¹ / ₂
B52e	8	5	1	10-6		Wing	8-0	2-6	0-11 ⁷ / ₈	2-3 ¹ / ₂



- Notes:
- Reinforcing Bars designated by suffix (s) shall be considered a stirrup for purposes of bend diameter.
 - All bars are epoxy coated.

ITEM NUMBER
10-126.70

REVISION		DATE
DATE: June, 2016	CHECKED BY	
DESIGNED BY: W.D. BURTON	B.C. REID	
DETAILED BY: W.R. ABBOTT	B.C. REID	
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS		
WOLFE-MORGAN		
ROUTE KY 205	CROSSING STATE ROAD FORK	
INTEGRAL END BENT DETAILS		
PREPARED BY LOCHNER H.W. LOCHNER, INC. LEXINGTON, KENTUCKY		SHEET NO. \$11 DRAWING NO. 27083

FILE NAME: I:\LEX\PROJ\0008298\DESIGN\STRUCTURES\FINAL DESIGN\KY 205 OVER SR FORK\DCN\527083_013.DGN

USER: dsmitthson
DATE PLOTTED: July 1, 2016

E-SHEET NAME:

MicroStation v8.11.9.459

Mark	Strand Data with number indicated in rows																Concrete Stress (psi)			No. of S Bars	Hold-Down Capacity lbs.	Beam Data (measured along centerline)											Maximum Allowable Camber										
	Midspan (SECTION B-B)								End (SECTION A-A)								Total No.	Dimensions											Appr. Weight														
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		(9)	(10)			(11)	(12)	(13)	(14)	(15)	(16)	A		B	C	D		E	F	G	H	I	M				
B1	10	10	10	8	2			8	8	8	6						2	2	2	2	2			40	6500	8000	26	16	59	18286	1	102'-3 1/2"	46'-2"	10'-0"	13	6"	18"	59	13 3/4"	11 1/4"	0'	62,398 lbs	6 7/8"
B2	10	10	10	8	2			8	8	8	6						2	2	2	2	2			40	6500	8000	26	16	59	18220	8	102'-7 3/4"	46'-4"	10'-0"	13	6"	18"	59	15 7/8"	11 1/4"	0'	62,614 lbs	6 7/8"
B3	10	10	10	8	2			8	8	8	6						2	2	2	2	2			40	6500	8000	26	16	59	18155	1	102'-11 1/8"	46'-6"	10'-0"	13	6"	18"	59	18"	11 1/4"	0'	62,824 lbs	6 7/8"

General Notes

CONCRETE: Ensure prestressed girder concrete is in accordance with these plans and the specifications.

MATERIALS DESIGN SPECIFICATIONS: For prestressed beams:
FY = 60,000 psi F'S = 270,000 psi

PRESTRESSING REINFORCEMENT: Ensure that strands are 1/2" (over-sized diameter, 0.167 sq. in.), uncoated seven-wire low-relaxation conforming to AASHTO M 203, Grade 270.

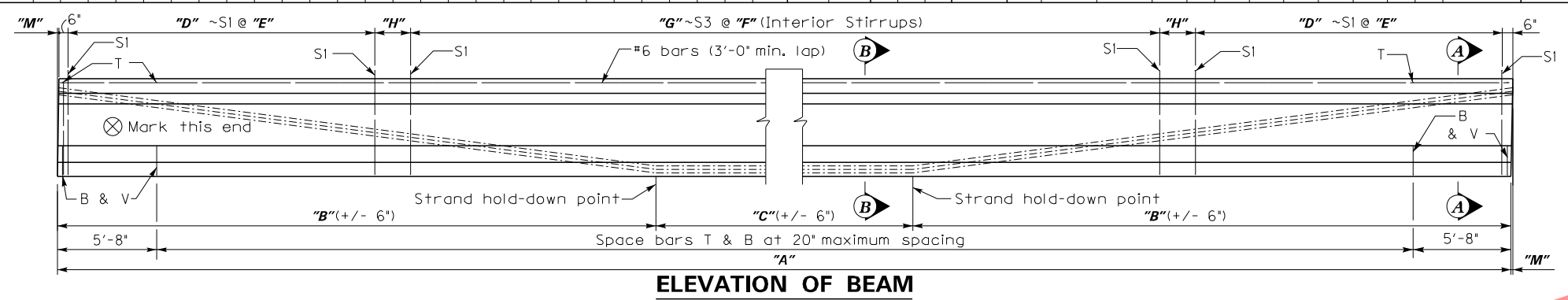
Billing of the cost for redesign of beam and subsequent plan modifications will be made for any request of alternate strand type or arrangement. The designer of the original plans is responsible for the billing and work.

CONSTRUCTION METHOD: Pretension all beams. Ensure concrete has attained f'ci (shown in the table) in standard test cylinders that are made and cured identically with the beams without bond stresses being transferred to the concrete or releasing the end anchors. Attain f'ci (shown in the table) at or prior to 28 days. Apply an initial force of 33,817 lbs. per low-relaxation strand to develop a stress of 202,500 psi. No beam will be accepted that is honeycombed to the extent that strength of the beam or resistance to deterioration has been affected. An allowance of 0.0005L is made for shortening of beams due to shrinkage and elastic change. Show a detensioning plan by sequential numbering of the strand pattern on the shop plans.

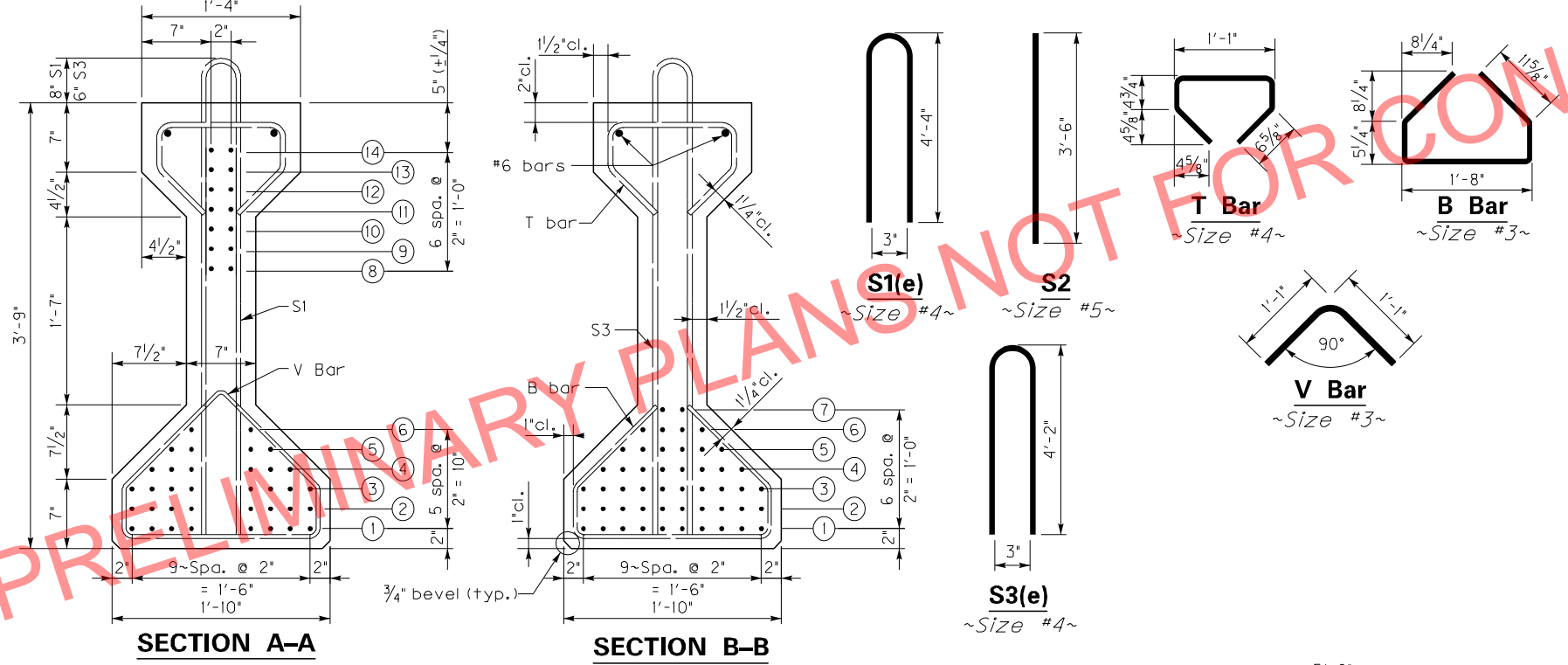
LIFTING DEVICES: Detail lifting devices on the shop plans. Loads are to be distributed equally to each device.

BEARING DEVICES: Include the price for lead plates and/or bearing pads in the bid for precast beams.

FABRICATION: The "Maximum Allowable Camber" shown on the beam sheet is the amount of camber, measured prior to casting the deck, above which the beam will begin to encroach into the slab. If the measured camber is greater than the "Maximum Allowable Camber" the contractor will be responsible for any necessary adjustments to assure a minimum slab thickness as shown in the plans. This work will be considered incidental to the completion of the structure and have the approval of the Engineer.

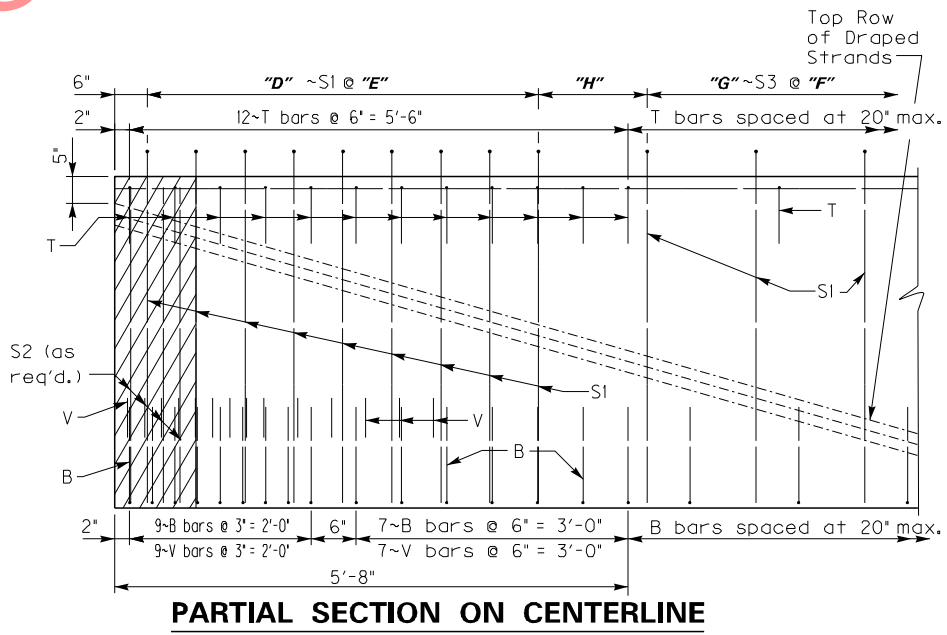


ELEVATION OF BEAM

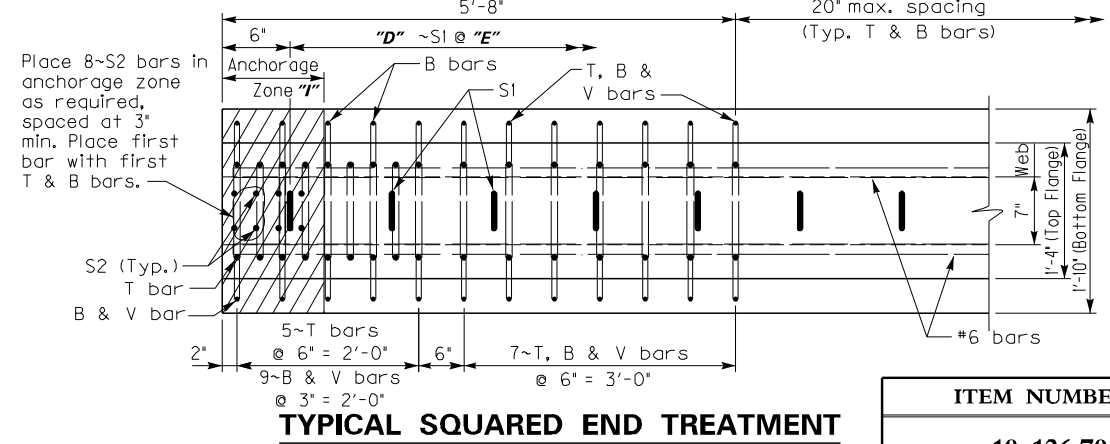


SECTION A-A

SECTION B-B



PARTIAL SECTION ON CENTERLINE

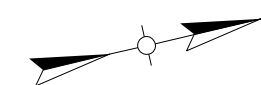


TYPICAL SQUARED END TREATMENT

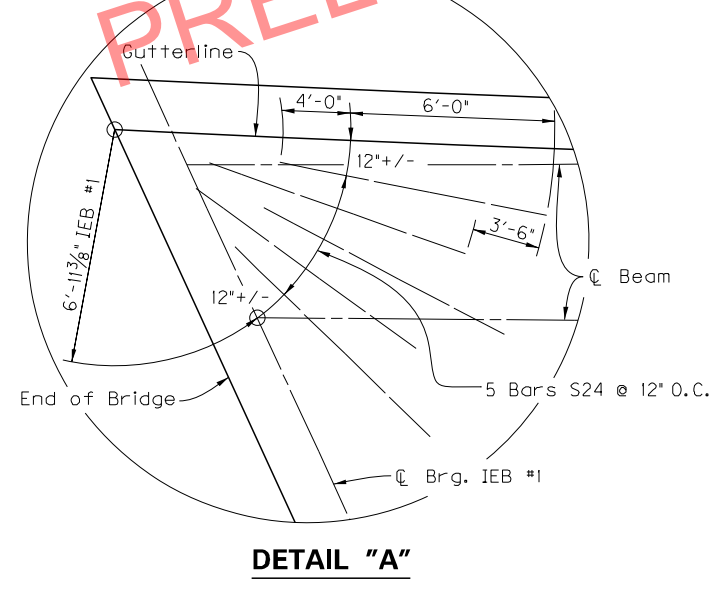
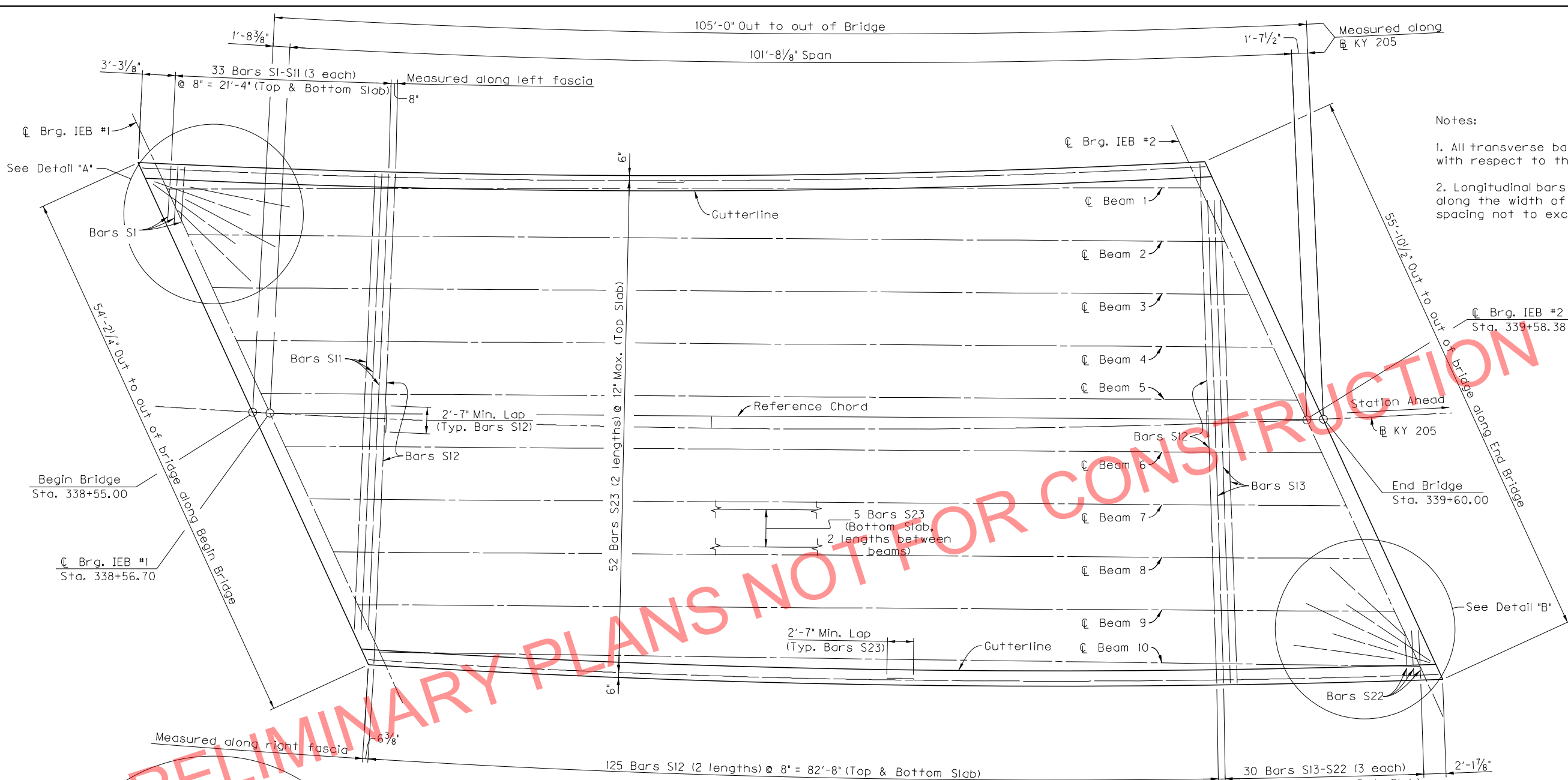
ITEM NUMBER
10-126.70

REVISION		DATE
DATE: June, 2016	DESIGNED BY: B.C. REID	CHECKED BY: W.D. BURTON
DETAILED BY: W.R. ABBOTT	B.C. REID	
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS		
WOLFE-MORGAN		
ROUTE KY 205	CROSSING STATE ROAD FORK	
PPC I-BEAM TYPE 3		
PREPARED BY LOCHNER H.W. LOCHNER, INC. LEXINGTON, KENTUCKY		
		SHEET NO. S13 DRAWING NO. 27083

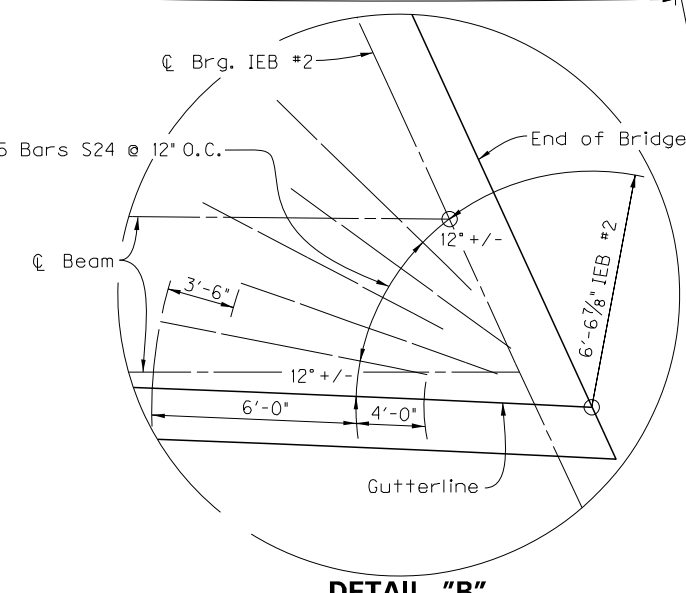
FILE NAME: I:\LEX\PR\A00008298\DESIGN\STRUCTURES\FINAL DESIGN\KY 205 OVER SR FORK\DCN\527083_014.DGN
 USER: dsmithson
 DATE PLOTTED: July 1, 2016
 E-SHEET NAME:
 MicroStation v8.11.9.459



- Notes:
1. All transverse bars shall be placed radially with respect to the \perp of KY 205.
 2. Longitudinal bars shall be equally spaced along the width of the deck, with a maximum spacing not to exceed 12".



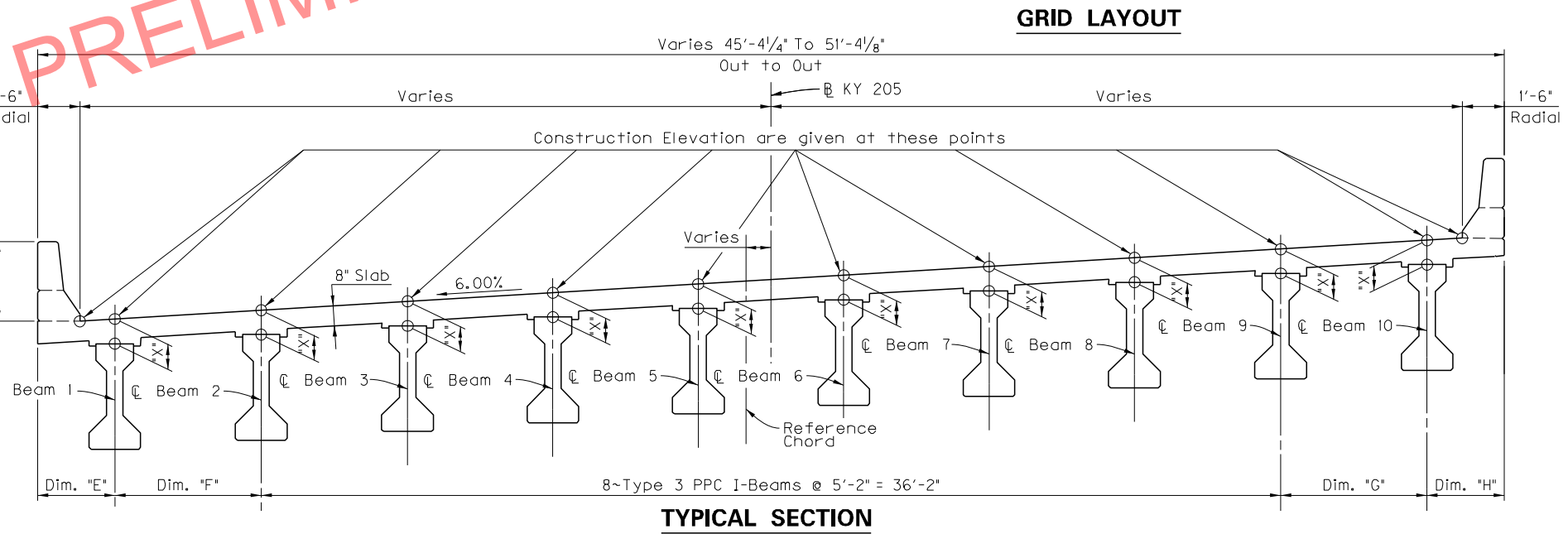
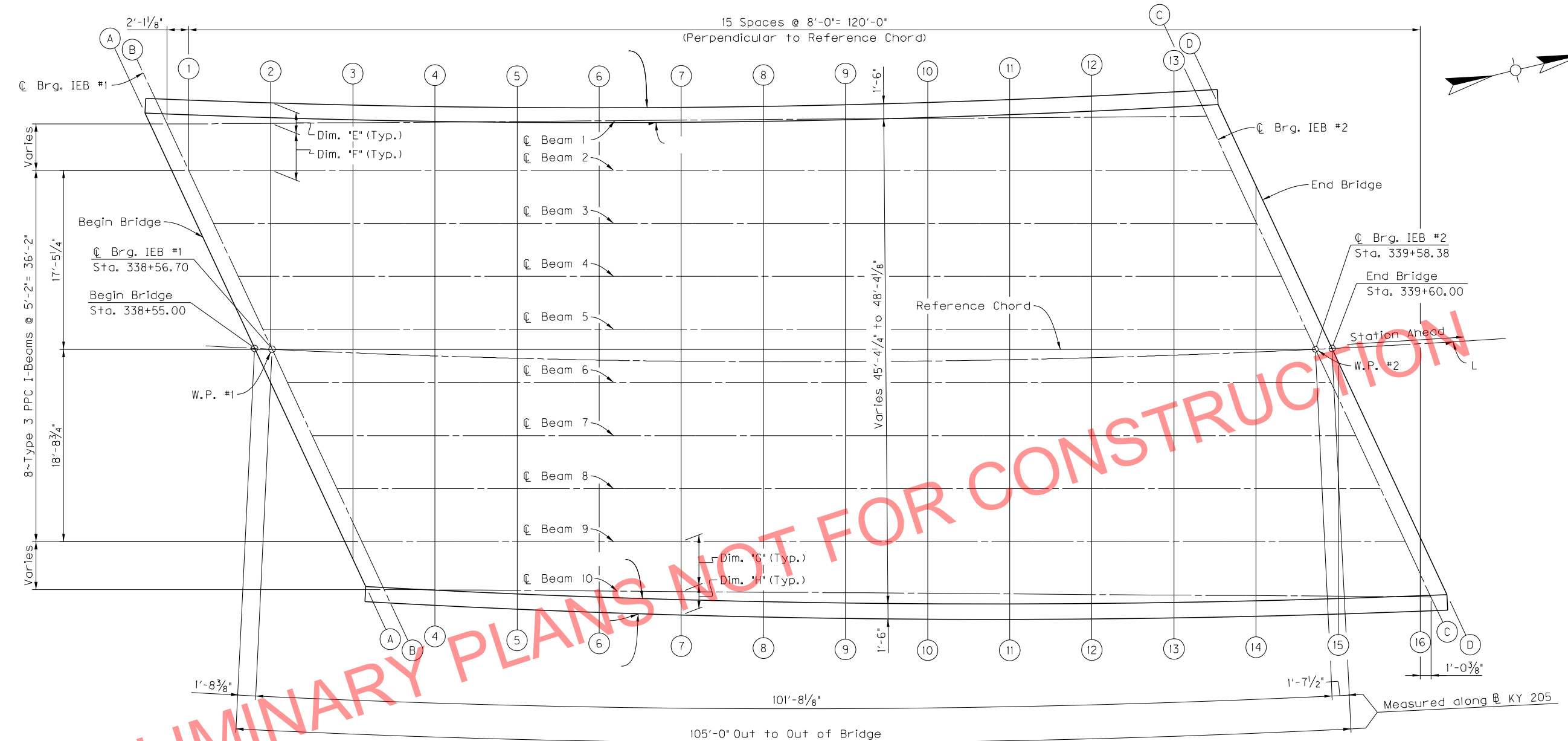
PLAN



ITEM NUMBER	10-126.70
-------------	-----------

REVISION		DATE
DATE: June, 2016	DESIGNED BY: B.C. REID	CHECKED BY: W.D. BURTON
DETAILED BY: D.M. SMITHSON		B.C. REID
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS		
COUNTY WOLFE-MORGAN		
ROUTE KY 205	CROSSING STATE ROAD FORK	
SUPERSTRUCTURE (1 OF 2)		
PREPARED BY LOCHNER H.W. LOCHNER, INC. LEXINGTON, KENTUCKY		SHEET NO. S14 DRAWING NO. 27083

FILE NAME: I:\LEX\PRJ\00008298\DESIGN\STRUCTURES\FINAL DESIGN\KY 205 OVER SR FORK\DCN\527083.016.DGN
 USER: dsmitthson
 DATE PLOTTED: July 1, 2016
 E-SHEET NAME: MicroStation v8.11.9.459



PRELIMINARY PLANS NOT FOR CONSTRUCTION

REVISION		DATE
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS		
COUNTY WOLFE-MORGAN		
ROUTE KY 205	CROSSING STATE ROAD FORK	
CONSTRUCTION ELEVATIONS (1 OF 2)		
PREPARED BY LOCHNER H. W. LOCHNER, INC. LEXINGTON, KENTUCKY		SHEET NO. S16 DRAWING NO. 27083

ITEM NUMBER
10-126.70

FILE NAME: I:\LEXPR\A00008298\DESIGN\STRUCTURES\FINAL DESIGN\KY 205 OVER SR FORK\DCN\527083.017.DGN
 USER: breid
 DATE PLOTTED: July 1, 2016
 E-SHEET NAME:
 MicroStation v8.11.9.714

CONSTRUCTION ELEVATIONS

LOCATION	Dim. "E" (Ft.)	Dim. "F" (Ft.)	Left Gutter	☉ Beam 1			☉ Beam 2			☉ Beam 3			☉ Beam 4			☉ Beam 5		
				Const. Elev.	Top of Beam	Dim. "X"	Const. Elev.	Top of Beam	Dim. "X"	Const. Elev.	Top of Beam	Dim. "X"	Const. Elev.	Top of Beam	Dim. "X"	Const. Elev.	Top of Beam	Dim. "X"
Skew Line AA	--	--	955.207	955.263			955.496			955.766			956.037			956.308		
Skew Line BB	--	--	955.185	955.237			955.471			955.741			956.012			956.284		
Skew Line CC	--	--	953.881	953.941			954.235			954.525			954.816			955.107		
Skew Line DD	--	--	953.842	953.924			954.220			954.510			954.801			955.093		
Grid Line 1	2.333	4.508	955.170	955.218			--			--			--			--		
Grid Line 2	1.998	4.568	955.120	955.149			955.406			955.697			955.987			956.278		
Grid Line 3	1.725	4.628	955.066	955.079			955.341			955.634			955.925			956.218		
Grid Line 4	1.513	4.687	955.005	955.006			955.273			955.568			955.863			956.156		
Grid Line 5	1.364	4.747	954.932	954.925			955.200			955.499			955.797			956.093		
Grid Line 6	1.276	4.807	954.847	954.836			955.119			955.422			955.724			956.024		
Grid Line 7	1.250	4.867	954.750	954.738			955.028			955.336			955.642			955.947		
Grid Line 8	1.286	4.927	954.638	954.629			954.928			955.241			955.551			955.861		
Grid Line 9	1.384	4.986	954.515	954.512			954.819			955.136			955.452			955.766		
Grid Line 10	1.543	5.046	954.379	954.386			954.701			955.022			955.343			955.661		
Grid Line 11	1.765	5.106	954.232	954.253			954.558			954.884			955.226			955.549		
Grid Line 12	2.048	5.166	954.079	954.118			954.446			954.774			955.103			955.429		
Grid Line 13	2.394	5.225	953.922	953.982			954.314			954.646			954.976			955.306		
Grid Line 14	--	--	--	--			--			--			954.849			955.181		
Grid Line 15	--	--	--	--			--			--			--			--		
Grid Line 16	--	--	--	--			--			--			--			--		

CONSTRUCTION ELEVATIONS

LOCATION	☉ Beam 6			☉ Beam 7			☉ Beam 8			☉ Beam 9			☉ Beam 10			Right Gutter	Dim. "G" (Ft.)	Dim. "H" (Ft.)
	Const. Elev.	Top of Beam	Dim. "X"	Const. Elev.	Top of Beam	Dim. "X"	Const. Elev.	Top of Beam	Dim. "X"	Const. Elev.	Top of Beam	Dim. "X"	Const. Elev.	Top of Beam	Dim. "X"			
Skew Line AA	956.579			956.852			957.126			957.399			957.646			957.630	--	--
Skew Line BB	956.556			956.829			957.103			957.377			957.624			957.613	--	--
Skew Line CC	955.399			955.691			955.984			956.277			956.583			956.575	--	--
Skew Line DD	955.385			955.678			955.971			956.264			956.571			956.558	--	--
Grid Line 1	--			--			--			--			--			--	--	--
Grid Line 2	--			--			--			--			--			--	--	--
Grid Line 3	956.509			956.800			957.091			--			--			--	--	--
Grid Line 4	956.450			956.743			957.035			957.328			957.593			957.595	4.686	1.526
Grid Line 5	956.388			956.684			956.978			957.273			957.543			957.564	4.742	1.841
Grid Line 6	956.324			956.622			956.918			957.215			957.491			957.527	4.799	2.096
Grid Line 7	956.251			956.553			956.854			957.155			957.436			957.484	4.856	2.293
Grid Line 8	956.169			956.476			956.781			957.086			957.374			957.430	4.912	2.430
Grid Line 9	956.078			956.390			956.700			957.008			957.304			957.365	4.969	2.509
Grid Line 10	955.979			956.295			956.610			956.923			957.227			957.288	5.026	2.528
Grid Line 11	955.871			956.192			956.511			956.829			957.140			957.199	5.083	2.488
Grid Line 12	955.755			956.081			956.404			956.726			957.045			957.098	5.139	2.389
Grid Line 13	955.635			955.963			956.290			956.616			956.942			956.986	5.196	2.232
Grid Line 14	955.512			955.843			956.173			956.501			956.833			956.863	5.253	2.015
Grid Line 15	--			954.722			955.053			955.385			955.722			956.736	5.310	1.739
Grid Line 16	--			--			--			--			954.610			956.603	--	1.404

NOTES FOR ELEVATIONS TAKEN ON PRESTRESSED CONCRETE BEAMS

Take elevations on top of beam at points indicated by the grid layout. The beam elevations are to be read to three decimals and entered into table under "Top of Beam" elevations.

Compute Dimension "X" as follows: "Construction Elevation" minus "Top of Beam" elevation equals Dimension "X". Construction elevations include camber due to weight of concrete slab and barrier. Measuring of Dimension "X" gives the final check on beam tolerances for camber, beam damage and errors in erection that produce reverse cambers, sags and unsightly fascia beams.

For setting templates, measure Dimension "X" above top of beam for top of template. Do NOT set template by elevations.

Temporary supports or shoring will not be permitted under the girders when pouring the concrete floor or slab or when taking the "Top of Beam" elevations.

Construct barriers to roadway grade. Do NOT add camber to the barrier.

Note to Engineer: The "Maximum Allowable Camber" shown on the beam sheet is the amount of camber, measured prior to casting the deck, above which the beam will begin to encroach into the slab. If the measured camber is greater than the "Maximum Allowable Camber" the Contractor will be responsible for any necessary adjustments to assure a minimum slab thickness of 8 inches as shown in the plans. This work will be considered incidental to the completion of the structure and must have the approval of the Engineer.

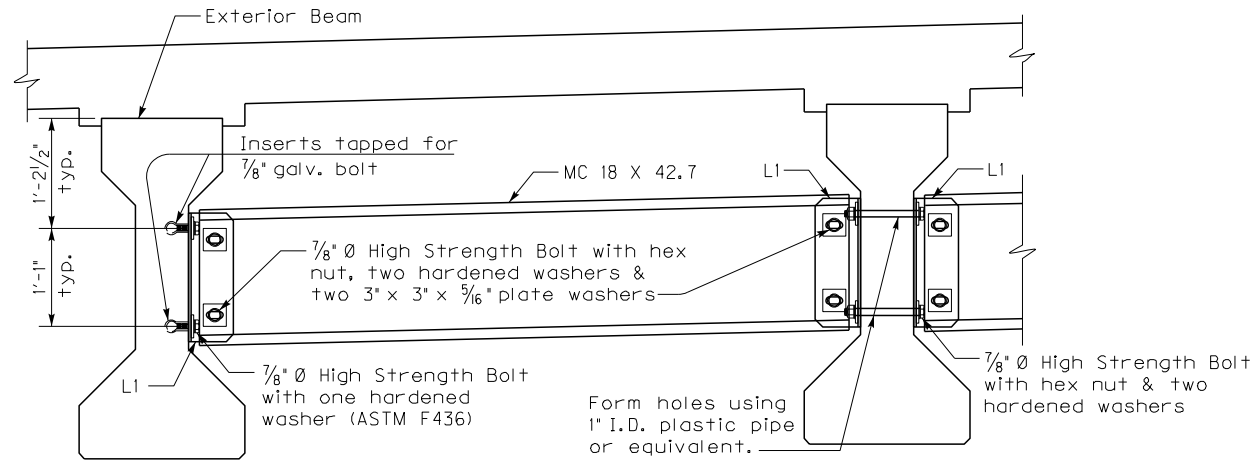
REVISION		DATE
DATE: June, 2016	CHECKED BY	
DESIGNED BY: B.C. REID	W.D. BURTON	
DETAILED BY: W.R. ABBOTT	B.C. REID	
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS		
COUNTY WOLFE-MORGAN		
ROUTE KY 205	CROSSING STATE ROAD FORK	
CONSTRUCTION ELEVATIONS (2 OF 2)		
ITEM NUMBER		PREPARED BY
10-126.70		LOCHNER
		H.W. LOCHNER, INC. LEXINGTON, KENTUCKY
		SHEET NO. \$17
		DRAWING NO. 27083

FILE NAME: I:\LEX\PRJ\00008298\DESIGN\STRUCTURES\FINAL DESIGN\KY 205 OVER SR FORK\DCN\527083_019.DGN

USER: dsmitthson
DATE PLOTTED: July 1, 2016

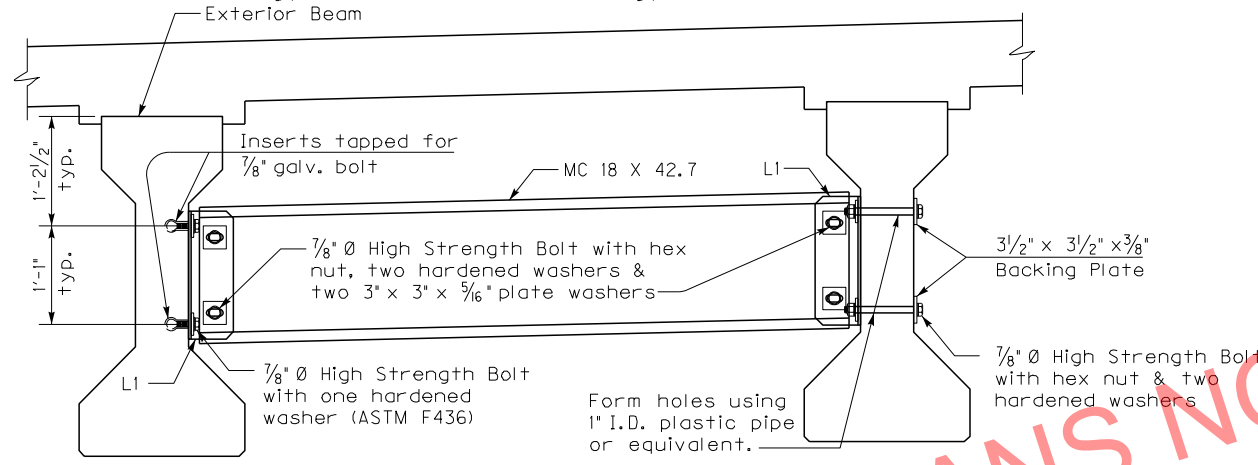
E-SHEET NAME:

MicroStation v8.11.9.459



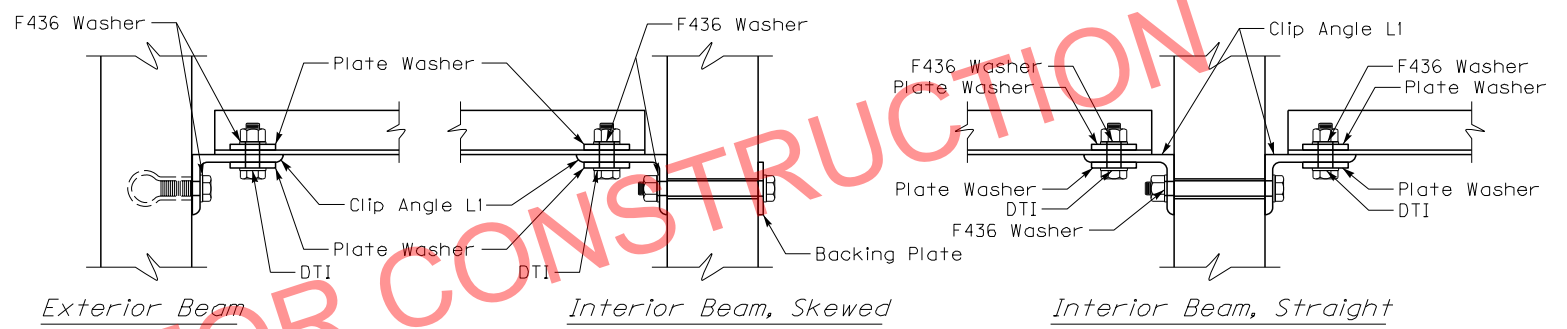
INTERMEDIATE DIAPHRAGM

~Typical for 0° Skew PCI, Type 3 Beams~

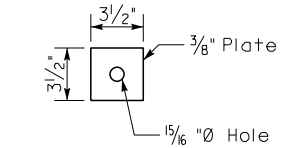


INTERMEDIATE DIAPHRAGM

~Typical for Skewed PCI, Type 3 Beams~



CONNECTION DETAILS



BACKING PLATE
Skewed Spans, Only

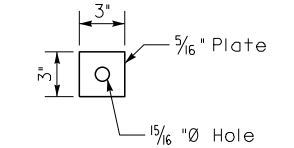


PLATE WASHER

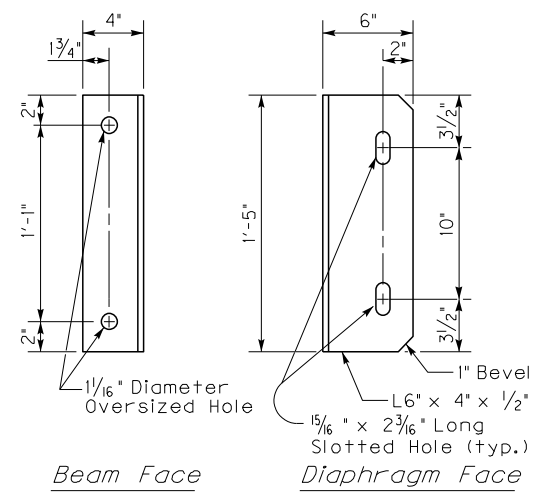
Diaphragm Notes

CONNECTIONS: Ensure all bolted connections are ASTM A325, 7/8 inch diameter high strength bolts, nuts, and washers, mechanically zinc coated in accordance with AASHTO M298, for Class 50. Install all high strength bolted field connections using "direct tension indicators" (DTI's) in accordance with the Standard Specifications and ASTM F959. Ensure all DTI's are mechanically zinc coated. Show installation details of the DTI's on the shop plans. Place DTI's under the bolt head. ASTM A449 bolts may be used in lieu of A325 for the bolts carried through the girder webs only.

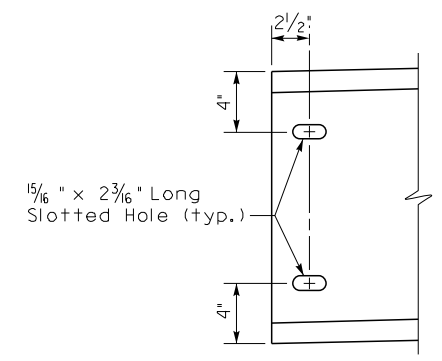
STRUCTURAL STEEL: Ensure plates, angles, and channels conform to ASTM A36 or A572 and galvanized after fabrication.

SHOP DRAWINGS: Show the location of all inserts and holes on the precast beam shop drawings. Submit shop drawings for the steel diaphragms to the Bridge Consultant for approval.

DIAPHRAGMS: Erect the diaphragms the same day that the precast beams are placed on the substructure. Include the cost of all materials and labor required to fabricate and erect the diaphragms in the bid for Precast Beams.



CLIP ANGLE - L1



CHANNEL END

REVISION	DATE

DATE: June, 2016
DESIGNED BY: B.C. REID
CHECKED BY: W.D. BURTON
DETAILED BY: W.R. ABBOTT
B.C. REID

Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS	
WOLFE-MORGAN	
ROUTE KY 205	CROSSING STATE ROAD FORK
STEEL DIAPHRAGMS	
ITEM NUMBER 10-126.70	PREPARED BY LOCHNER H.W. LOCHNER, INC. LEXINGTON, KENTUCKY
SHEET NO. S19 DRAWING NO. 27083	