

Bench Mark: B.M. 4702-1 Chiseled square on NE corner wingwall SN 070-0016, 22.1' Lt. Sta. 453+15.50, Elev. 656.17.

Existing Structure: The existing structure, SN 070-0016, is a single span precast prestressed deck beam bridge on closed abutments. Out-to-out bridge width is 41'-0" and back-to-back abutment length is 42'-2 3/4". It was originally constructed in 1929 as SBI 133, Sec. 120B at Sta. -0+08.00. In 1977 the superstructure was replaced and the substructure widened as FA 749, Sec. 120 BR-1 at Sta. -0+07.97. The existing superstructure is to be removed and replaced.

Traffic is to be detoured.

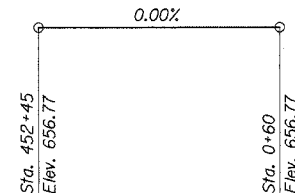
No salvage

**INDEX OF SHEETS**

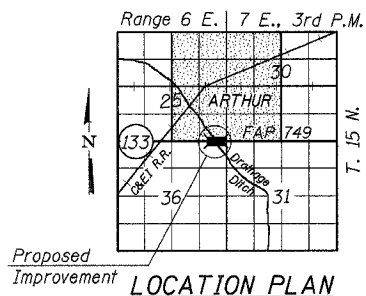
1. General Plan & Elevation
- 2.-5. Superstructure
6. Type SM Steel Bridge Rail Side Mounted
- 7.-8. Bridge Joint System
9. Concrete Removal
10. West Abutment
11. East Abutment
12. Temporary Side Retainer

**CURVE DATA**

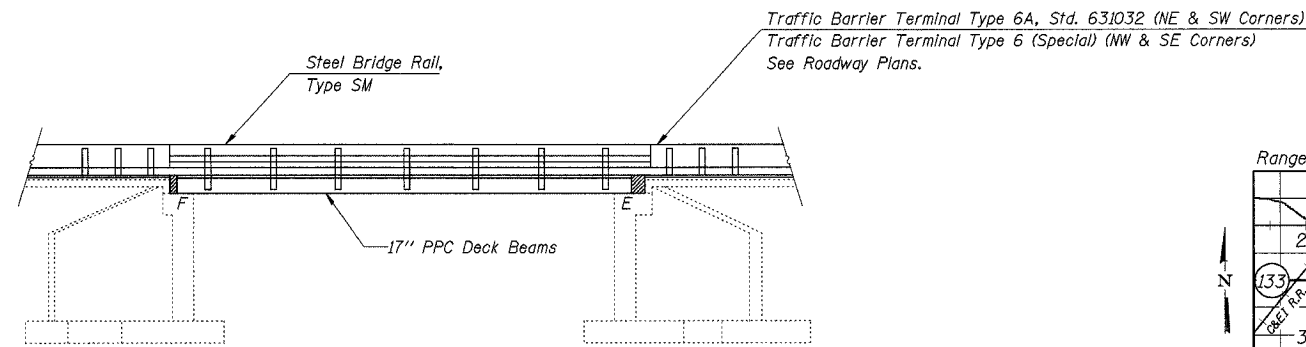
PI Sta. = 2+19.14  
 $\Delta = 14^\circ 34' 02''$  (LT)  
 $D = 3^\circ 28' 24''$   
 $R = 1,649.63'$   
 $T = 210.84'$   
 $L = 419.41'$   
 $E = 13.42'$   
 P.C. Sta. = 0+08.30  
 P.T. Sta. = 4+27.71



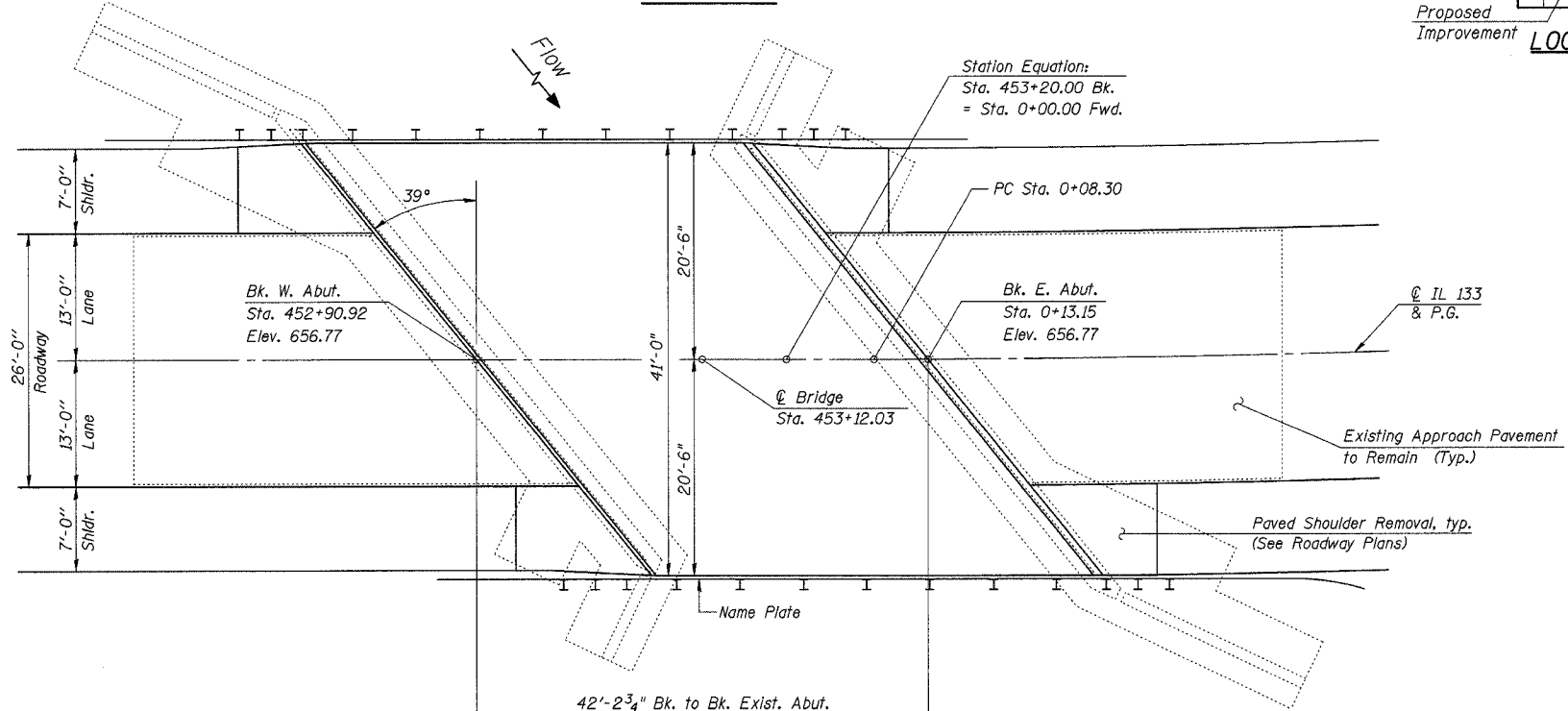
**PROFILE GRADE**



**LOCATION PLAN**



**ELEVATION**



**PLAN**

**EXISTING WATERWAY INFORMATION**

Drainage Area	3860 acres
Design Discharge (50 year)	1210 c.f.s.
Required Opening (below 50 year H.W.E.)	175 sq. ft.
Existing Opening (below 50 year H.W.E.)	175 sq. ft.
Created Head for Design Flood	0.0'
100 year Discharge	1530 c.f.s.
Created Head for 100 year Flood	0.0'
100 year H.W. Elevation	653.5

Note: Information per 1977 reconstruction plans.

DESIGNED	R.V.B.
CHECKED	T.S.H.
DRAWN	N.L.D.
CHECKED	M.D.C.

**GENERAL NOTES**

Reinforcement bars shall conform to the requirements of AASHTO M31 or M322 Grade 60. Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work. However, the Contractor will be paid for the quantity actually furnished at the unit price for the work. All construction joints shall be bonded. The minimum thickness of the Concrete overlay shall be 5" and varies as required to adjust for the new profile grade and beam camber. The cut strands at each beam end shall be given two coats of zinc dust spray or paint meeting the requirements of ASTM A 780. The zinc dust spray or paint shall be applied before corrosion appears and allowed to dry according to the manufacturer's specifications prior to another coat of zinc. A concrete sealer meeting the requirements of Section 587 of the Standard Specifications shall be applied to the exterior face and 9" in on the underside of the fascia beams. The sealer shall be applied after visible crack growth has subsided. This work shall be performed by the producer and included with the cost of the beam. No instream work will be allowed on this project. The contractor is advised that the existing PPC Deck Beams are in a deteriorated condition with reduced load carrying capacity. It is the contractor's responsibility to account for the condition of the beams when developing construction procedures for removal and replacement of the superstructure.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Superstructures No. 2	Each	1		1
Concrete Removal	Cu. Yd.		5.3	5.3
Structure Excavation	Cu. Yd.		11	11
Concrete Structures	Cu. Yd.		5.7	5.7
Bridge Deck Grooving	Sq. Yd.	181		181
Protective Coat	Sq. Yd.	198		198
Concrete Wearing Surface, 5"	Sq. Yd.	189		189
Formed Concrete Repair (Depth Greater Than 5")	Sq. Ft.		11.9	11.9
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	1698		1698
Reinforcement Bars, Epoxy Coated	Pound	3070	920	3990
Steel Bridge Rail, Type SM	Foot	81		81
Name Plates	Each	1		1
Bridge Joint System (Expansion), 1 5/8"	Foot	53		53

**DESIGN STRESSES (NEW)**

**FIELD UNITS**  
 $f_c = 5,000$  p.s.i. (Concrete Wearing Surface)  
 $f_c = 3,500$  p.s.i.  
 $f_y = 60,000$  p.s.i. (Reinf. Bars)  
**PRECAST PRESTRESSED UNITS**  
 $f'_c = 5,000$  p.s.i.  
 $f_{ci} = 4,000$  p.s.i.  
 $f'_s = 270,000$  p.s.i. (1/2"  $\phi$  low relax strands)  
 $f_{si} = 201,960$  p.s.i. (1/2"  $\phi$  low relax strands)

STATION 453+12.03  
 REBUILT 200 BY  
 STATE OF ILLINOIS  
 F.A.P. RT. 749  
 SEC. 119(BR-2 & BR-3)  
 LOADING HS20  
 STR. NO. 070-0016

**DESIGN SPECIFICATIONS**

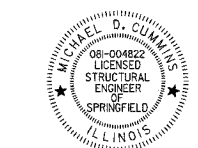
2002 AASHTO

**LOADING HS20-44**

No future wearing surface is allowed.

**NAME PLATE**

See Std. 515001  
 Existing Name Plate shall be cleaned and relocated adjacent to new Name Plate. Cost included with Name Plates.



Michael D. Cummins (Signature)  
 (Expires 11/30/2006)

**GENERAL PLAN & ELEVATION**  
 ILLINOIS ROUTE 133 OVER  
 DRAINAGE DITCH  
 F.A.P. ROUTE 749 - SEC. 119(BR-2 & BR-3)  
 MOULTRIE COUNTY  
 STATION 453+12.03  
 STRUCTURE NO. 070-0016

JOB #:	2114.3
FILE:	21143GPE
DATE:	10/12/05

CUMMINS ENGINEERING CORPORATION