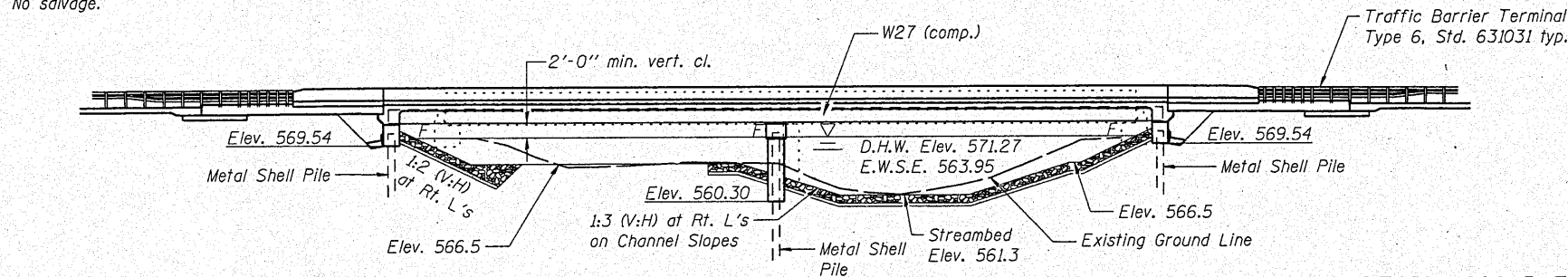


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Benchmark: Chiseled square on SW wingwall of bridge, S.N. 036-0038, Sta. 150+06.74, 17.2' Rt., Elev. 576.39.

Existing Structure: S.N. 036-0038 was built in 1979 as F.A. Rt. 657, Sec. 116-C-BR, at Station 150+75. The existing two-span structure consists of 27" P.P.C. deck beams supported on pile bent abutments and pier. The structure is 118'-0" back to back of abutments and 36'-0" out to out of deck beams. Existing structure will be removed and replaced utilizing stage construction to maintain one lane of traffic.

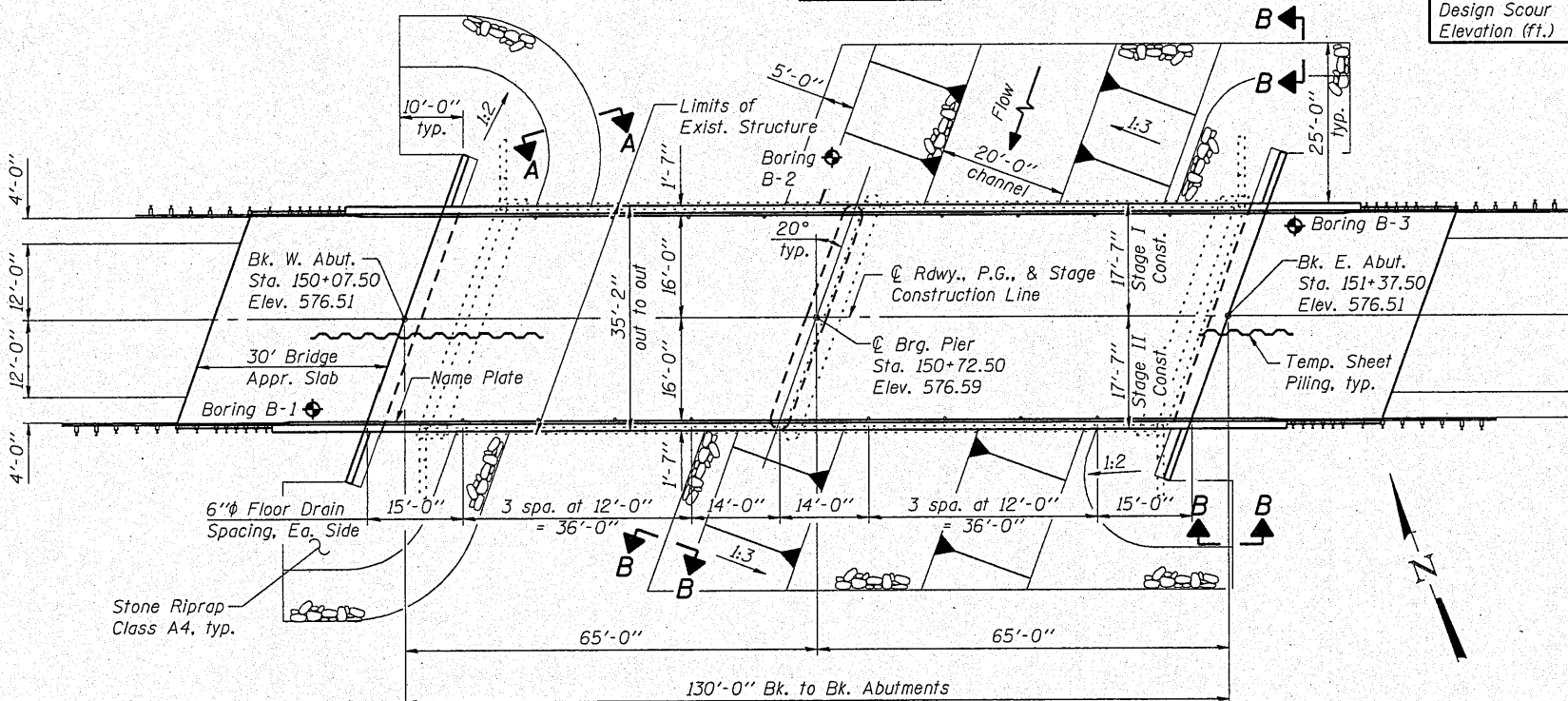
No salvage.



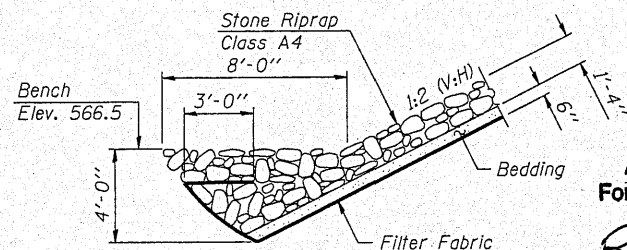
ELEVATION

DESIGN SCOUR ELEVATION TABLE

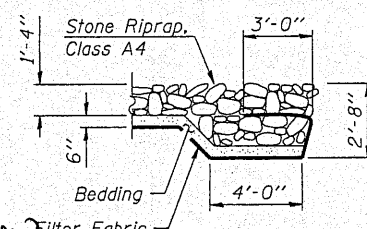
Design Scour Elevation (ft.)	W. Abut.	Pier 1	E. Abut.
	569.5	552.1	569.5



PLAN



SECTION A-A



SECTION B-B

APPROVED
For Structural Adequacy Only

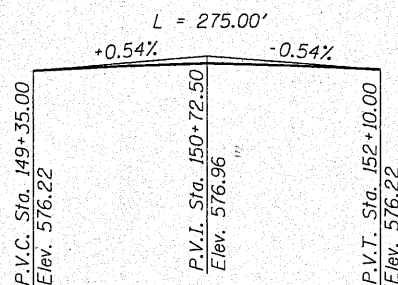
Ralph E. Anderson
Engineer of Bridges & Structures (100)

WATERWAY INFORMATION

		Low Grade Elev.: N/A		Grade decreases to west					
Drainage Area = 12.6 sq. mi.		Low Grade is beyond the limits of this contract							
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Head - Ft.		Headwater El.		
			Exist.	Prop.	Nat. H.W.E.	Exist.	Prop.	Exist.	Prop.
	10	2046	415	565	570.31	0.78	0.47	571.09	570.78
Design	50	3218	508	670	571.27	1.84	0.97	573.11	572.24
Base	100	3756	542	708	571.61	1.66	1.23	573.27	572.84
Overtopping	500	5049	610	---	572.29	2.68	---	574.97	---
Max. Calc.	500	5049	---	786	572.29	---	1.87	---	574.16

10-Year Velocity through Existing Structure = 4.6 fps
10-Year Velocity through Proposed Structure = 3.9 fps

PROFILE GRADE
(along Roadway)



INDEX OF SHEETS

- General Plan and Elevation
- Staging Details
- Temporary Concrete Barrier
- Top of Slab Elevations
- Top of Approach Slab Elevations
- Superstructure
- Superstructure Details
- Integral Abutment Diaphragm Details
- Bridge Approach Slab Details
- Structural Steel
- Structural Steel Details
- West Abutment
- East Abutment
- Pier
- Metal Shell Pile Details
- Bar Splicer Assembly
- Cantilever Forming Brackets
- 20-22. Soil Borings

DESIGN SPECIFICATIONS

2007 AASHTO LRFD Bridge Design Specifications
with 2008 and 2009 Interims

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 50,000$ psi (M270 Grade 50) - Primary
 $f_y = 36,000$ psi (M270 Grade 36)

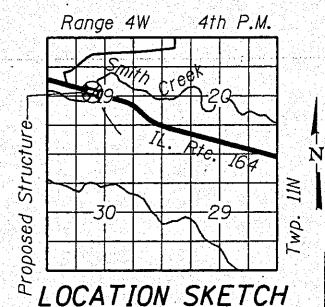
SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.096g
Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.138g
Soil Site Class = D

STATION 150+72.50
BUILT 20__ BY
STATE OF ILLINOIS
F.A.P. RT. 657 SEC. (116-C)BR-1
LOADING HL-93
STRUCTURE NO. 036-0070

NAME PLATE

See Std. 515001



LOCATION SKETCH

GENERAL NOTES

Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts $\frac{3}{8}$ in. ϕ , holes $\frac{7}{16}$ in. ϕ , unless otherwise noted.
Calculated weight of Structural Steel = 104,370 lbs. (Grade 50)
4,510 lbs. (Grade 36)
No field welding is permitted except as specified in the contract documents.
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
Reinforcement bars designated (E) shall be epoxy coated.
Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $\frac{1}{8}$ inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all interior steel surfaces shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Blue, Munsell No. 10B 3/6. See Special Provision for "Cleaning and Painting New Metal Structures".
Layout of slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
Slipforming of the parapets is not allowed.
Removal of the existing concrete slopewalls shall be included in the cost of Removal of Existing Structures.
The piles to be dynamically monitored, according to the special provision "Dynamic Pile Monitoring", shall be the test piles specified at each of the substructure units. The scheduling of the test pile driving (initial and restrikes) shall be coordinated with the researcher. The test pile shall be driven with a Diesel Hammer, possibly at a reduced fuel setting, to a minimal penetration resistance as determined by the researcher. A restrike shall be applied between 1 and 24 hours after end of initial driving. A second restrike shall occur at least 7 days later and preferably much later when production piling is completed for that stage in each substructure. Restrikes will consist of up to 30 hammer blows, or up to 3 inches of pile penetration. The hammer shall be warmed up before restriking the test pile on another pile or surface as directed by the researcher.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment, Special	Cu. Yd.		91	91
Stone Riprap, Class A4	Sq. Yd.		1038	1038
Filter Fabric	Sq. Yd.		1038	1038
Removal of Existing Structures	Each		1	1
Structure Excavation	Cu. Yd.		191	191
Floor Drains	Each	16		16
Concrete Structures	Cu. Yd.		92.5	92.5
Concrete Superstructure	Cu. Yd.	274.7		274.7
Bridge Deck Grooving	Sq. Yd.	636		636
Concrete Encasement	Cu. Yd.		3.4	3.4
Protective Coat	Sq. Yd.	817		817
Furnishing and Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	2268		2268
Reinforcement Bars, Epoxy Coated	Pound	62470	10700	73170
Bar Splicers	Each	613	132	745
Furnishing Metal Shell Piles 14"x0.312"	Foot		932	932
Driving Piles	Foot		932	932
Test Pile Metal Shells	Each		3	3
Pile Shoes	Each		6	6
Temporary Sheet Piling	Sq. Ft.		928	928
Name Plates	Each	1		1
Anchor Bolts, 1"	Each		36	36
Geocomposite Wall Drain	Sq. Yd.		56	56
Pipe Underdrains for Structures 4"	Foot		135	135
Underwater Structure Excavation Protection - Location 1	Each		1	1
Asbestos Bearing Pad Removal	Each			32

GENERAL PLAN AND ELEVATION

IL 164 OVER SMITH CREEK

F.A.P. RTE. 657 SEC. (116-C)BR-1

HENDERSON COUNTY

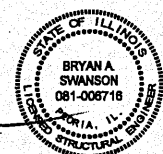
STATION 150+72.50

STRUCTURE NO. 036-0070

SHEET NO. 1	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
22 SHEETS	657	(116-C)BR-1	HENDERSON	56	18
CONTRACT NO. 68761					
FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT					



DESIGNED - BAS
CHECKED - KEF
DRAWN - SGM
CHECKED - BAS



Date Signed: 10-25-10
Exp. Date: 11-30-10