

Benchmark: Chiseled "□" on northwest wingwall of S.N. 041-0045 at Sta. 536+28, Elev. 451.77

Existing Structure: S.N. 041-0045 was built in 1928 as SBI Route 142, Section 113-B at Sta. 536+28. Existing Structure is a single span RC slab bridge on closed abutments restrained top and bottom. 26'-0" bk. to bk. abutments, 36'-2" out to out with no skew. The contractor shall remove and replace the existing structure with a reinforced concrete triple barrel box culvert. Stage Construction shall be utilized to maintain one lane of traffic during construction.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure. The Contractor shall sawcut the upper portion of the existing abutment at the stage removal line before Stage I removal to ensure the remaining portion will not be prematurely damaged.

Precast alternate is not allowed.

Backfill within the limits of the paved surface to the top of culvert elevation shall be performed according to the special provision for Granular Culvert Backfill.

INDEX OF SHEETS

1. General Plan
2. Stage Construction Details
3. Culvert Details
4. Bar Splicer Assembly Details
5. Temporary Concrete Barrier
6. Soil Borings

DESIGN SPECIFICATIONS

2002 AASHTO

DESIGN STRESSES

FIELD UNITS

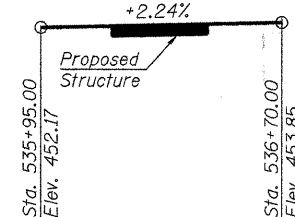
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

LOADING HS20-44

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

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Stone Riprap, Class A5	Sq. Yd.	159
Filter Fabric	Sq. Yd.	159
Removal of Existing Structures	Each	1
Reinforcement Bars	Pound	29180
Bar Splicers	Each	164
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	180.5
Granular Culvert Backfill	Cu. Yd.	312
Temporary Soil Retention System	Sq. Ft.	461
Rock Fill-Foundation	Ton	344
Temporary Support System	L. Sum	1



PROFILE GRADE

(along @ IL Rte. 142)

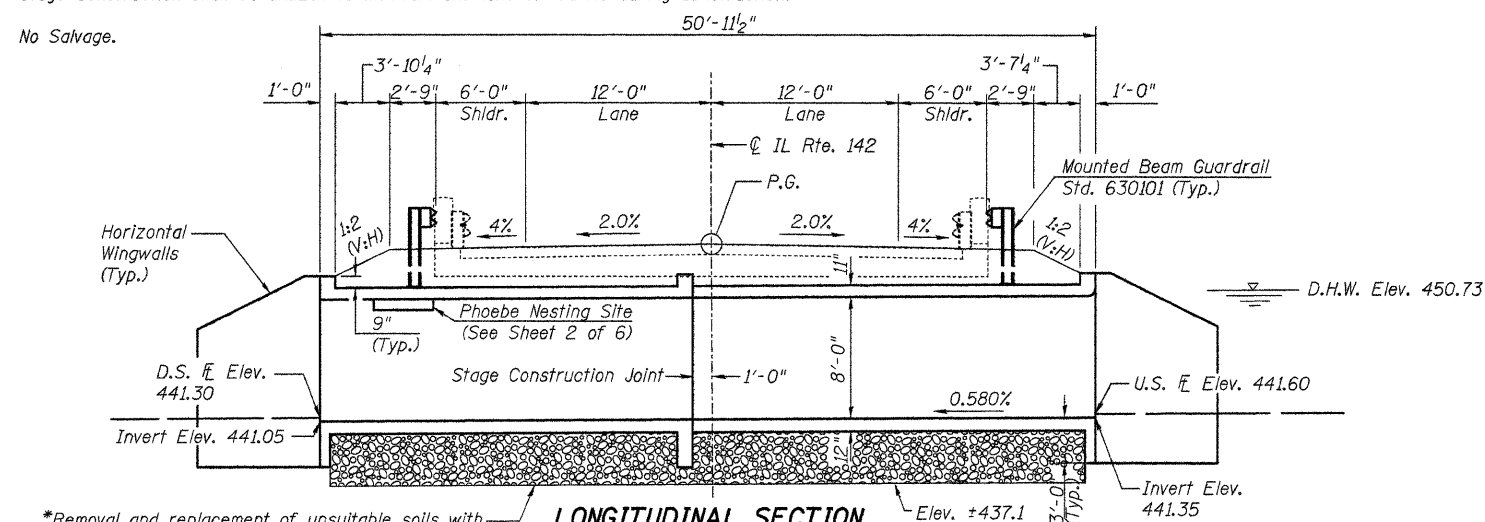
DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	D.S. Invert	U.S. Invert
	438.05	438.35

WATERWAY INFORMATION

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Nat.		Head - Ft.		Headwater El.		
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	
Drainage Area = 1.91 sq. mi.			Exist. Low Grade Elev. 451.73 @ Sta. 535+00 Prop. Low Grade Elev. 451.73 @ Sta. 535+00						
Design	10	790	154.8	194.8	448.82	0.12	0.00	448.94	448.82
Base	100	1527	190.5	216.0	451.44	1.17	0.35	452.61	451.79
Overtopping	-	1563	190.5	216.0	451.65	1.32	0.25	452.97	451.90
Max. Calc.	500	2121	190.5	216.0	455.12	0.06	0.03	455.18	455.15

10 year velocity through existing bridge (main channel) = 5.09 fps
10 year velocity through prop. bridge (main channel) = 4.04 fps

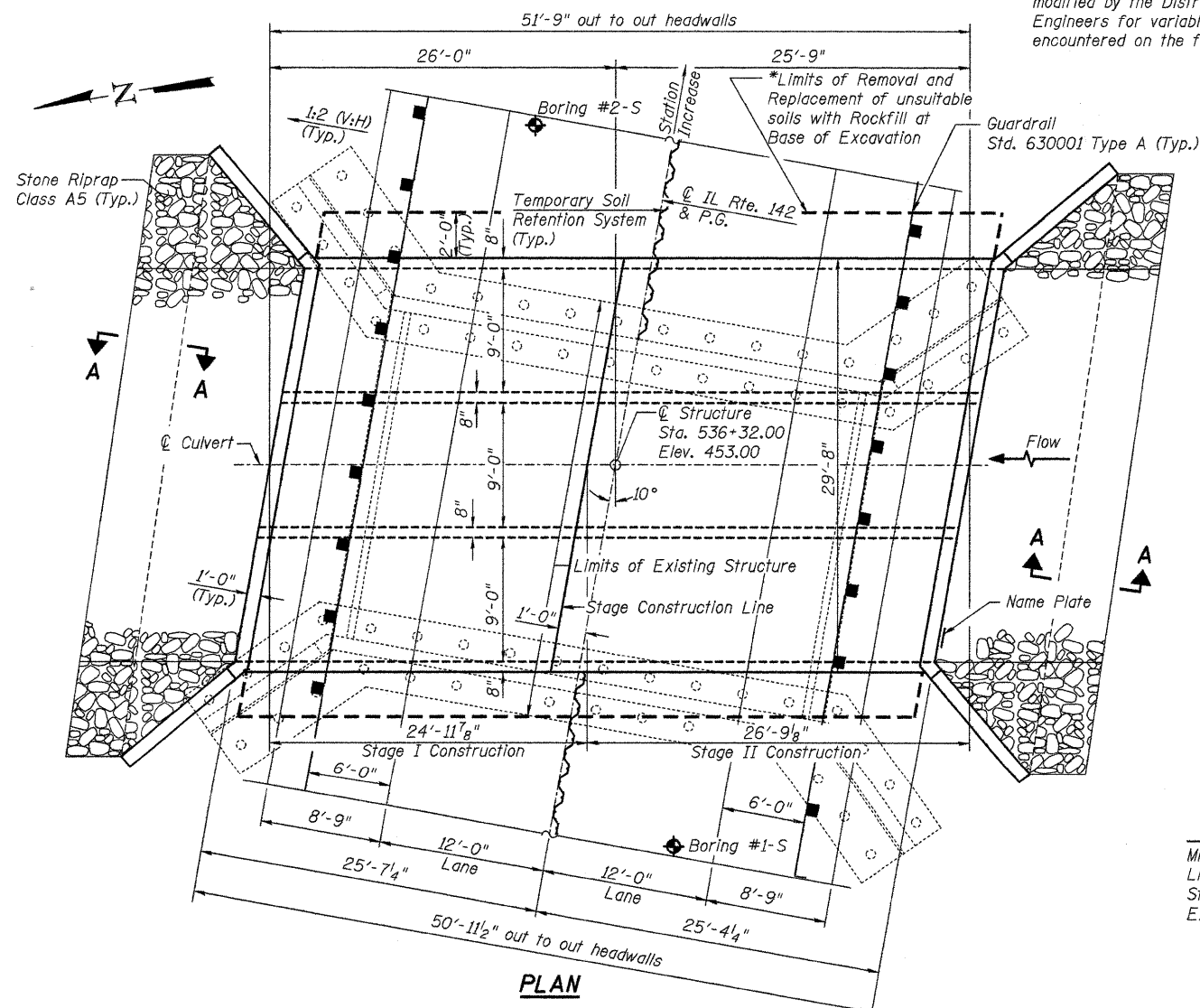


LONGITUDINAL SECTION

(Looking East)
(Dimensions at Rf. L's to @ IL 142)

*Removal and replacement of unsuitable soils with Rock Fill-Foundation may be required beneath the culvert. Rockfill to be capped with 6" of CA7. Cost included with Rock Fill-Foundation.

*The limits and quantities of removal and replacement shown are based on the boring data and may be modified by the District Geotechnical and Field Engineers for variable subsurface conditions encountered on the field.

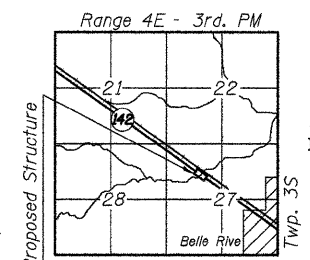


PLAN

STATION 536+32.00
BUILT 20 BY
STATE OF ILLINOIS
F.A.P. RT. 849 SEC. 113-B
LOADING HS20-44
STR. NO. 041-2017

NAME PLATE

See Std. 515001



LOCATION SKETCH

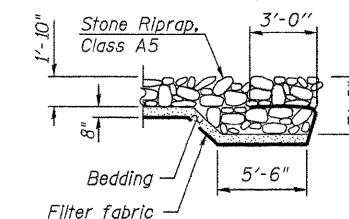
APPROVED
FOR STRUCTURAL ADEQUACY ONLY

Michael T. Haley (TS)
ENGINEER OF BRIDGES AND STRUCTURES



Michael J. Haley
Michael T. Haley
Licensed Structural Engineer
State of Illinois No. 81-5991
Expires 11/30/2010

9/15/09 Date



SECTION A-A

 LIN ENGINEERING LTD. Consulting Engineers Chatham, Illinois Designed By: TBP Checked By: MTH Date: 2/2009 Drawn By: TBP File: 041-2017.dwg	SHEET NO. 1	F.A.P. RTE. 849	SECTION 113-B	COUNTY JEFFERSON	TOTAL SHEETS 24	SHEET NO. 14
	6 SHEETS	CONTRACT NO. 78085		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

GENERAL PLAN
IL RT. 142 OVER UNNAMED STREAM
F.A.P. RTE. 849 - SEC. 113-B
JEFFERSON COUNTY
STATION 536+32.00
STRUCTURE NO. 041-2017