

Bench Mark: Chiseled "□" on northwest wingwall of S.N. 033-0028 Elev. 387.37.

Existing Structure: S.N. 033-0028 was built in 1928 as part of S.B.I. Route 142 Section 102B at Sta. 659+13.00. The existing structure is a single-span reinforced concrete slab bridge on closed abutments with timber piles, and is restrained at top and bottom. The clear width is 34'-0" between concrete rails with an out-to-out width of 36'-2"; 30'-0" from back to back abutments with no skew.

Proposed Structure: Existing structure to be removed and replaced with a double barrel 15' x 8' cast-in-place concrete box culvert. Traffic to be maintained utilizing stage construction with one lane of traffic open at all times.

No Salvage

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LOADING HS 20-44

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

DESIGN STRESSES

FIELD UNITS

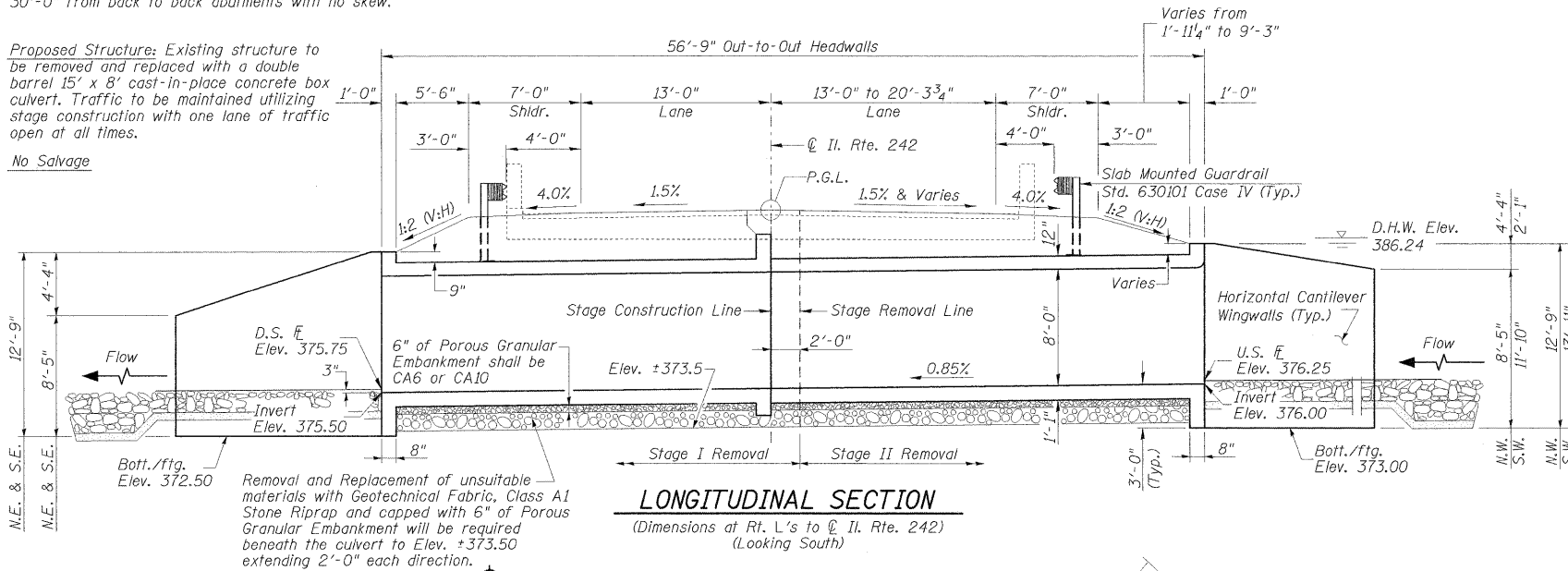
$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)

DESIGN SPECIFICATIONS

AASHTO Standard Specifications for Highway Bridges 2002

INDEX OF SHEETS

SHEET NO.	TITLE
1.	General Plan
2.	Stage Construction Details
3.	Temporary Concrete Barrier
4.	Box Culvert Details - 1
5.	Box Culvert Details - 2
6.	Bar Splicer Assembly Details
7.	Boring Logs 1
8.	Boring Logs 2



STATION 659+11.74
BUILT 20L BY
STATE OF ILLINOIS
F.A.P. RT 776 SEC. 102B-4
LOADING HS 20
STR. NO. 033-2010

NAME PLATE

See Std. 515001
(Locate Name Plate on North end of West headwall)

TOTAL BILL OF MATERIAL

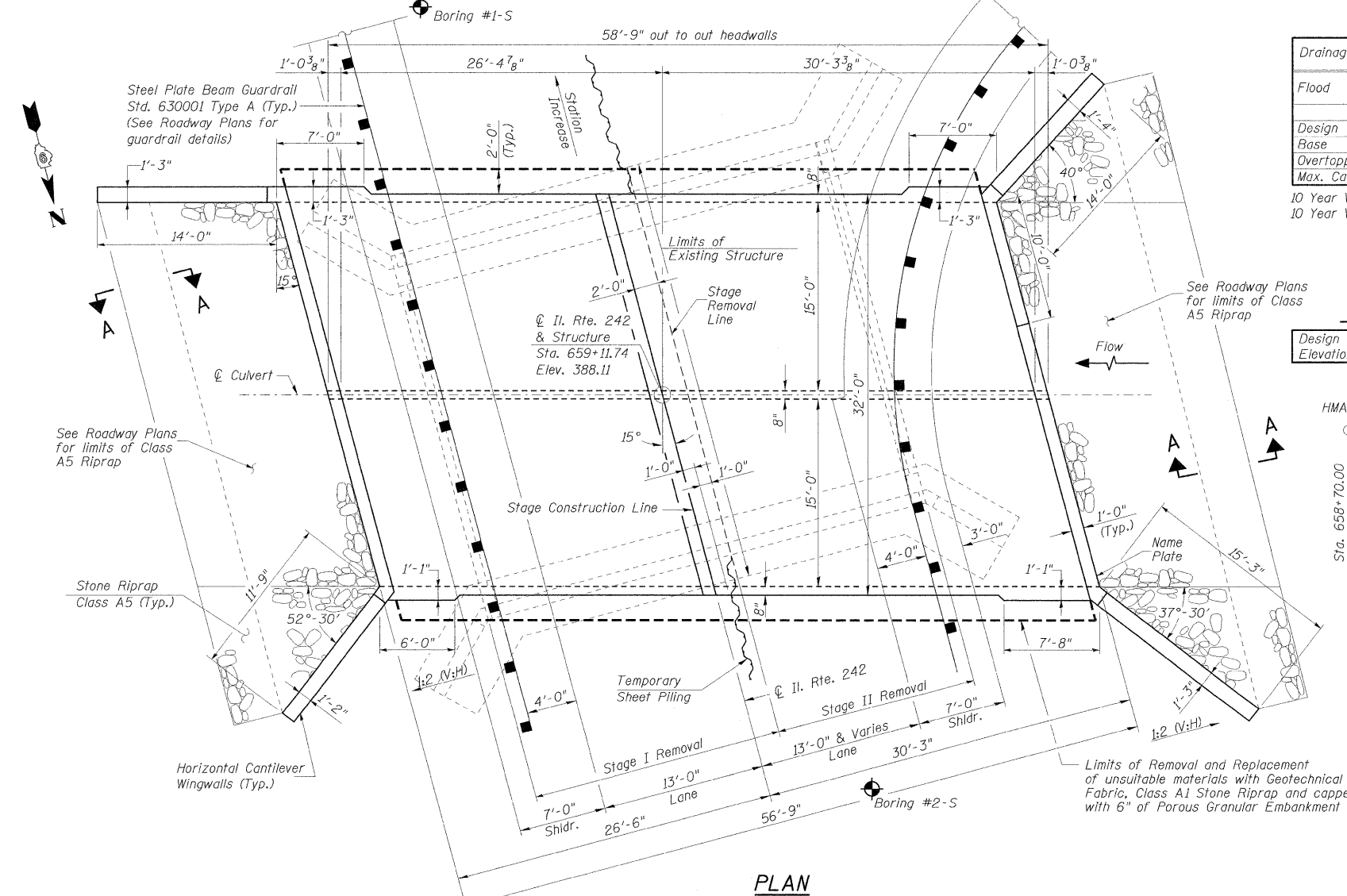
ITEM	UNIT	QUANTITY
Removal and Disposal of Unsuitable Material	Cu. Yd.	176
Porous Granular Embankment	Cu. Yd.	542
Geotechnical Fabric for Ground Stabilization	Sq. Yd.	235
Stone Riprap, Class A1	Ton	103
Removal of Existing Structures	Each	1
Structure Excavation	Cu. Yd.	312
Reinforcement Bars	Pound	47,030
Bar Splicers	Each	169
Temporary Sheet Piling	Sq. Ft.	950
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	222.1

WATERWAY INFORMATION

Drainage Area = 3.54 sq. mi. Existing Low Grade Elev. 387.87 @ Sta. 659+50.00
Proposed Low Grade Elev. 387.87 @ Sta. 659+53.00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. Head - Ft.		Headwater El.		
			Exist.	Prop.	H.W.E. Exist.	Prop.	Exist.	Prop.	
10	1150	223.74	240.00	385.99	1.31	0.58	387.30	386.57	
Design	50	1870	223.74	240.00	386.24	1.94	1.43	388.18	387.67
Base	100	2200	223.74	240.00	386.34	2.17	1.65	388.51	387.99
Overtopping									
Max. Calc.	500	3040	223.74	240.00	386.61	2.07	1.62	388.68	388.23

10 Year Velocity through Existing Bridge = 5.31 fps
10 Year Velocity through Proposed Culvert = 4.07 fps

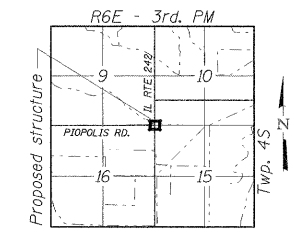
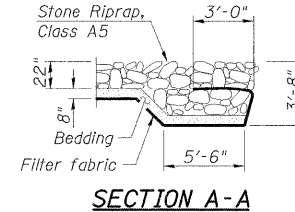
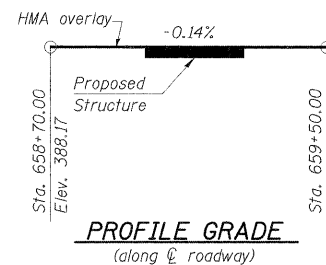


DESIGN SCOUR
ELEVATION TABLE

Design Scour Elevation (ft.)	D.S. Invert	U.S. Invert
	372.50	373.00

BORING DATA

Boring No.	Station	Offset
1-S	659+60	9' Lt.
2-S	658+77	8' Rt.



APPROVED
FOR STRUCTURAL ADEQUACY ONLY

William L. Bailey, Jr.
ENGINEER OF BRIDGES AND STRUCTURES



William L. Bailey, Jr., P.E. S.E.
Illinois Licensed Structural Engineer
License Number 081-005087
Expiration Date: November 30, 2010

GENERAL PLAN
IL RTE. 242 OVER UNNAMED STREAM
STATION 659+11.74
STRUCTURE NO. 033-2010

CMT CRAWFORD MURPHY & TILLY, INC. CONSULTING ENGINEERS SPRINGFIELD, IL ■ AURORA, IL ■ ST. LOUIS, MO ROCKFORD, IL ■ PEORIA, IL ■ CHICAGO, IL	SHEET NO. 1	F.A.P. RTE. 776	SECTION 102B-4	COUNTY HAMILTON	TOTAL SHEETS 42	SHEET NO. 21
	8 SHEETS	CONTRACT NO. 78081				
DESIGNED BY: CJW CHECKED BY: WLB	DRAWN BY: GLD DATE: 4/12/10	FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				