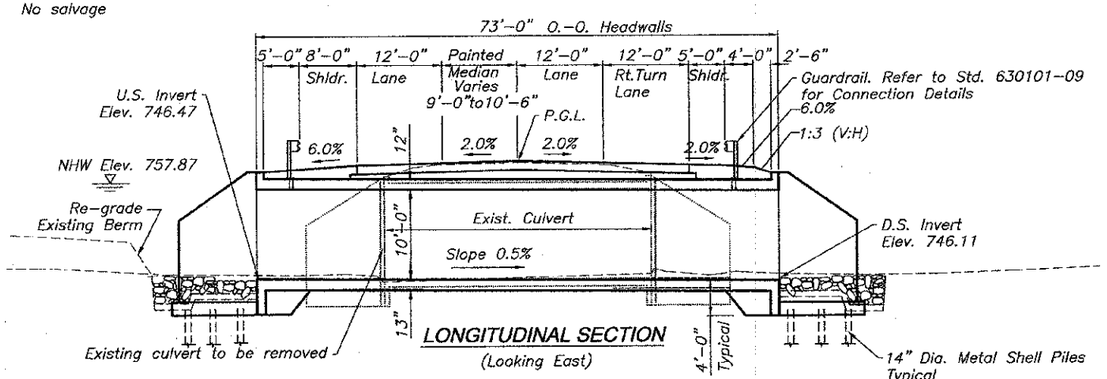
85577

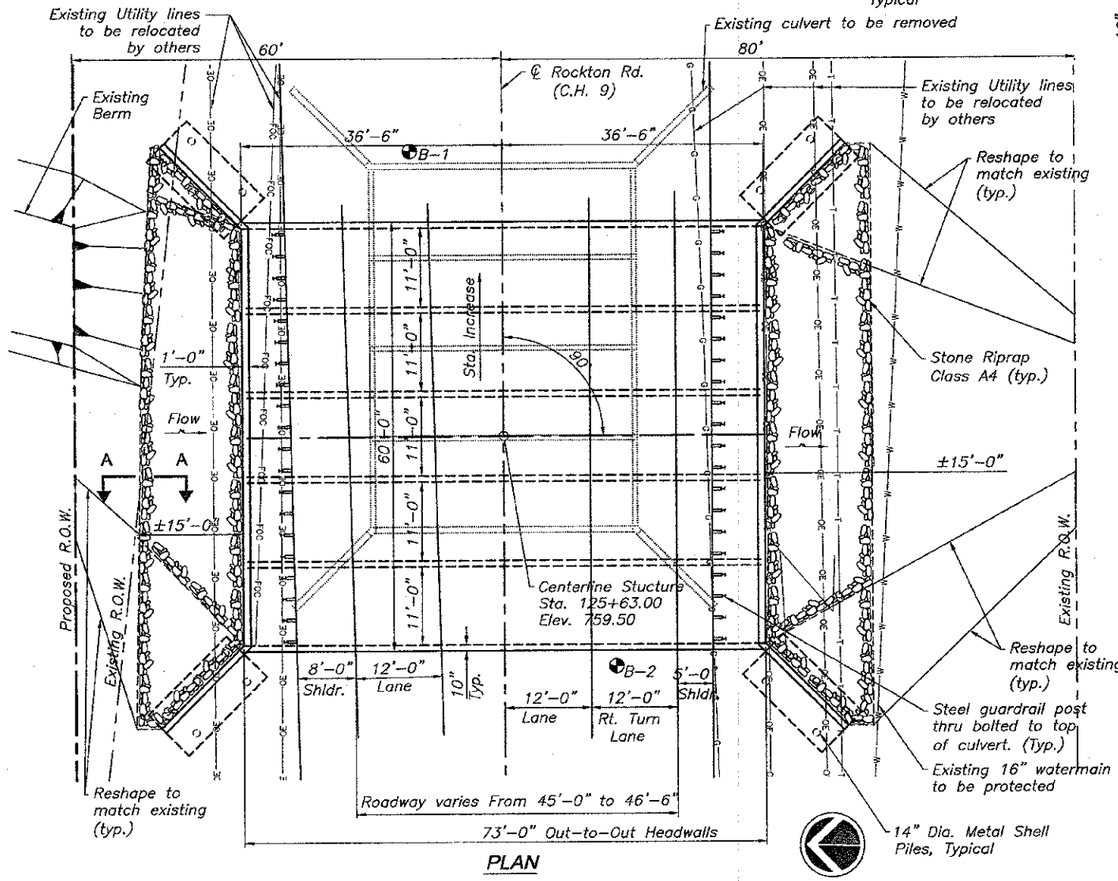
Bench Mark: BM#400 1st Fire hydrant west of creek and south of Rockton Rd. Bolt in mueller Sta. 124+56 Elev. 754.69
BM#401 Chiseled "□" at NE corner of headwall on n. side of Rockton Rd. ±42' Lt., Sta. 126+00, Elev. 757.73

Existing Structure: S.N. 101-5022, built in 1954 under section 91B MFT, is a 4-barrel 12'x10' reinforced box culvert with a length of 51'-8", 37'-4" in width. The south headwall was repaired in 2003. The existing structure will be removed and replaced with a 5-barrel 11'-0"x 10'-0" reinforced concrete box culvert with a length of 73'-0", 60'-0" in width.

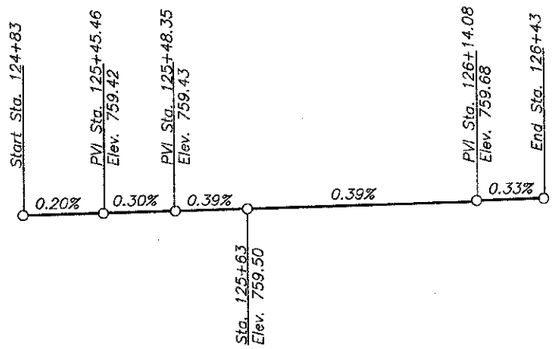
No salvage



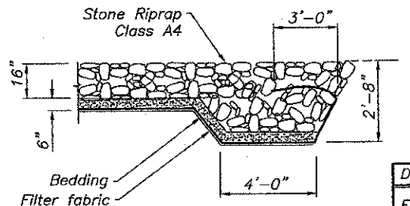
LONGITUDINAL SECTION
(Looking East)



PLAN



PROFILE GRADE
(Along ℄ roadway)



SECTION A-A

GENERAL NOTES

Reinforcement bars shall conform to the requirements of AASHTO A706 Grade 60. (IL modified) See Special Provisions.

Exposed edges shall be beveled ¾" unless otherwise noted.

Precast culvert alternate is not allowed.

Layout of Slope Protection System may be varied in the field to suit ground conditions as directed by the Engineer.

Existing utility lines shall be relocated as required by others. Watermain is to be protected on the downstream end of culvert.

TOTAL BILL OF MATERIAL

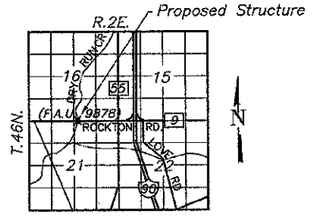
ITEM	UNIT	TOTAL
Channel Excavation	Cu. Yd.	141
Porous Granular Embankment	Ton	1,177
Stone Riprap, Class A4	Sq. Yd.	240
Filter Fabric	Sq. Yd.	240
Removal of Existing Structure	Each	1
Reinforcement Bars	Pound	50,530
Reinforcement Bars, Epoxy Coated	Pound	33,660
Furnishing Metal Shell Piles, 14"x0.25"	Foot	540
Driving Piles	Foot	540
Test Pile Metal Shells	Each	2
Name Plates	Each	1
Concrete Box Culvert	Cu. Yd.	548.8

WATERWAY INFORMATION

Drainage Area = 31.6 sq. mi. Low Grade Elev.758.80 (E.O.P.)@ Sta. 125+75.43

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Natural H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	10	2,500	194.5	555.0	755.29	0.58	0.00	755.87	755.29
Base	100	4,030	194.5	555.0	757.87	1.11	0.13	758.98	758.00
Overtopping		4,710	194.5	555.0	758.33	1.41	0.53	759.74	758.86
Max. Calc.	500	6,410	194.5	555.0	759.24	1.99	1.21	761.23	760.45

10 Yr. velocity thru existing bridge = 12 ft/s
10 Yr. velocity thru proposed bridge = 4.3 ft/s



LOCATION SKETCH

DRY RUN CREEK
BUILT 20 BY
WINNEBAGO COUNTY
SECTION 12-00356-01-BR
C.H. 9 (F.A.U. 9878), STA. 125+63
STR. NO. 101-5158, LOADING HL93

NAME PLATE
Refer to Stand. 515001

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	D.S. Invert	U.S. Invert
	742.11	742.47

LOADING HL-93

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

DESIGN SPECIFICATIONS

2012 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGN STRESSES

FIELD UNITS

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

JOHN B. FELLMAN 061-006197 LICENSED STRUCTURAL ENGINEER STATE OF ILLINOIS

I certify that to the best of my knowledge, information and belief this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the 2012 AASHTO LRFD Bridge Design Specifications.

John B. Fellman 1-15-2013
John B. Fellman, S.E. Date
License expires 11-30-2014

GENERAL PLAN & ELEVATION
ROCKTON ROAD, C.H. 9 (F.A.U. 9878)
OVER DRY RUN CREEK
SECTION 12-00356-01-BR
WINNEBAGO COUNTY
STA. 125+63
STRUCTURE NO. 101-5158

FILE NAME =	USER NAME =	DESIGNED - MHM/MAM	REVISED -
		DRAWN - RAP	REVISED -
	PLOT SCALE =	CHECKED - JBF	REVISED -
	PLOT DATE =	DATE -	REVISED -

Missman, Inc. Professional Engineers & Land Surveyors
Rock Island, IL (309) 788-7644 • Bettendorf, IA (563) 344-0280 • www.missman.com • Rockford, IL (815) 965-6400 • Sycamore, IL (815) 895-3625

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 101-5158
SHEET NO. 1 OF 7 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9878	12-00356-01-BR	WINNEBAGO	16	8
	SN 101-5158	CONTRACT NO.	85577	
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

IL DESIGN FIRM NO. 184-000843