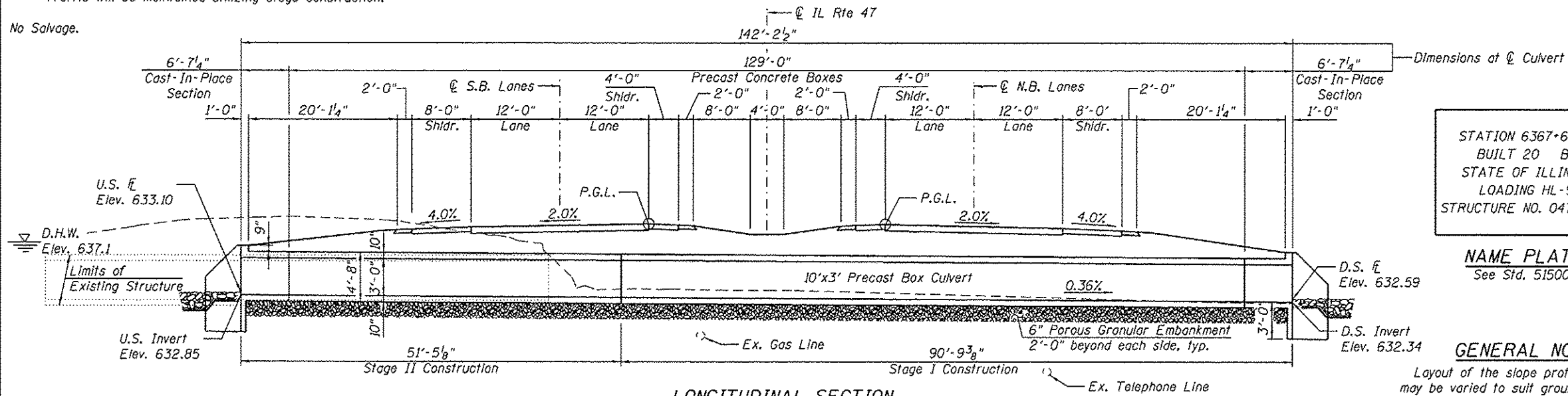


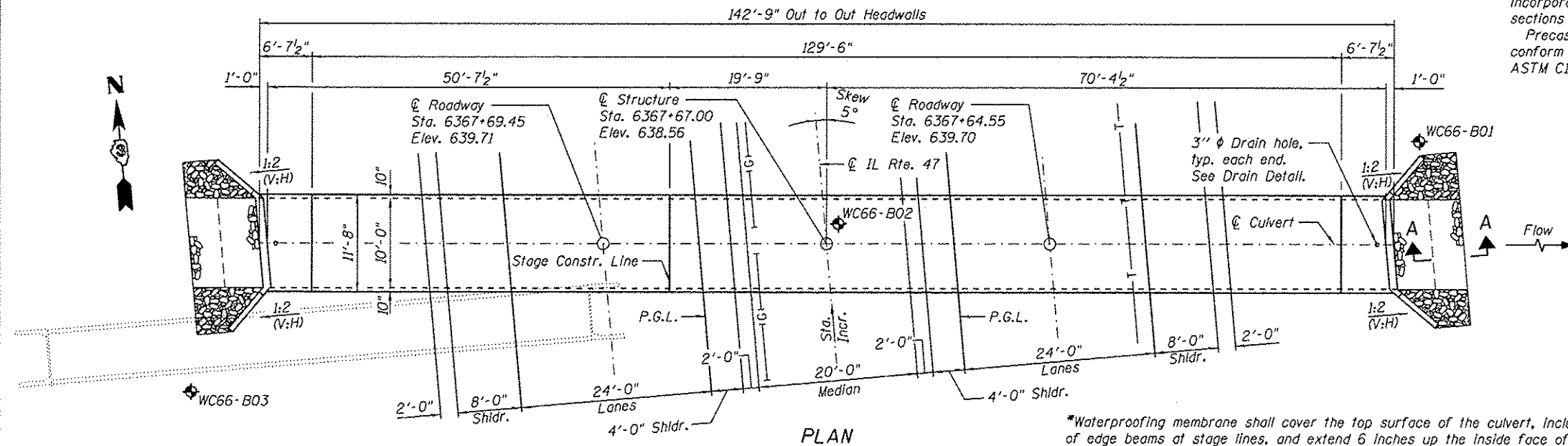
Benchmark: B.M. 7015. Found cut "+" northwest corner of westerly end of box culvert 2290' north of Joliet Road, Elevation 637.52.

Existing Structure: The existing structure consists of a single 6'x4' concrete box culvert with concrete wingwalls. The culvert is approximately 85'-9" in length with no skew. Existing structure to be removed and replaced. Traffic will be maintained utilizing stage construction.

No Salvage.



**LONGITUDINAL SECTION**  
(Dimensions of Rt L's to  $\odot$  Roadway, unless noted otherwise)  
(Looking North)



**PLAN**

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Porous Granular Embankment	Cu. Yd.	42
Stone Riprap, Class A4	Sq. Yd.	30
Filter Fabric	Sq. Yd.	30
Removal of Existing Structures No. 2	Each	1
Reinforcement Bars	Pound	3120
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	18.5
Precast Concrete Box Culvert 10'x3'	Foot	129.5
*Membrane Waterproofing for Culverts	Sq. Yd.	216

**DESIGN SCOUR ELEVATION TABLE**

Design Scour Elevation (ft.)	U.S. Invert	D.S. Invert
	629.85	629.34

**WATERWAY INFORMATION**

Drainage Area = 0.25 sq mi      Exist. Low Grade Elev. 638.10  
Prop. Low Grade Elev. 639.18

Flood Yr.	Freq. C.F.S.	Q	Opening Sq. Ft.	Nat. Exist. Prop.	Head - Ft. Exist. Prop.	Headwater El. Exist. Prop.
10	88	24	30	636.9	0.0	636.9
Design	50	179	24	30	637.1	2.1
Base	100	237	24	30	637.1	2.3
Overtopping	-	180	24	30	637.1	2.1
Max. Calc.	500	403	24	30	637.4	2.9

10 year velocity through Existing Structure = 3.7 fps  
10 year velocity through Proposed Structure = 2.9 fps

**INDEX OF SHEETS**

1. General Plan & Elevation
2. General Data
3. Culvert Details
4. Soil Borings

**DESIGN SPECIFICATIONS**  
2012 AASHTO LRFD Bridge Design Specifications, 6th Edition

**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)

**PRECAST UNITS**

$f'_c = 5,000$  psi  
 $f_y = 60,000$  psi (Reinforcement)  
 $f_y = 65,000$  psi (Welded Wire Fabric)

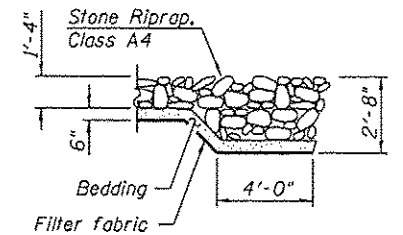
STATION 6367+67.00  
BUILT 20 BY  
STATE OF ILLINOIS  
LOADING HL-93  
STRUCTURE NO. 047-2562

**NAME PLATE**

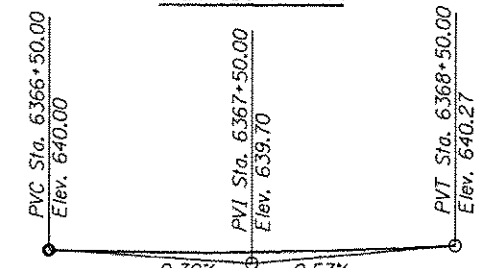
See Std. 515001

**GENERAL NOTES**

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer. The last section of precast culvert on each end shall have reinforcing bars extending from the precast culvert to be incorporated into the cast-in-place end sections as shown on sheet 3 of 4. Precast concrete box culverts shall conform to the design requirements of ASTM C1577.



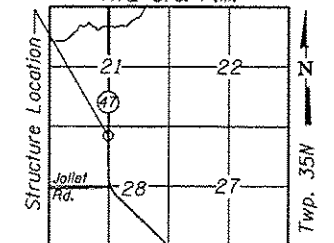
**SECTION A-A**



**PROFILE GRADE**

(Along IL Rte. 47 P.G.)

RTE-3rd. P.M.



**LOCATION SKETCH**

**GENERAL PLAN & ELEVATION**

IL. RTE. 47 OVER  
DRAINAGE DITCH  
F.A.P. RTE. 326  
SEC-(109, 110)R-1  
KENDALL COUNTY

STATION 6367+67.00  
STRUCTURE NO. 047-2562



Vincent P. Tabor      7/14/2014  
Date

Vincent P. Tabor  
Licensed Structural Engineer  
State of Illinois No. 081-007047  
Expires 11/30/2014

REVISION	USER NAME	DESIGNED	DESIGNED BY
REVISION	FILE NAME	CHECKED	CHECKED BY
REVISION	PLOT SCALE	DRAWN	DRAWN BY
REVISION	PLOT DATE	CHECKED	CHECKED BY



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION  
STRUCTURE NO. 047-2562

SHEET NO. 1 OF 4 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(109, 110)R-1	KENDALL	619	368

CONTRACT NO. 66884  
ILLINOIS FED. AID PROJECT