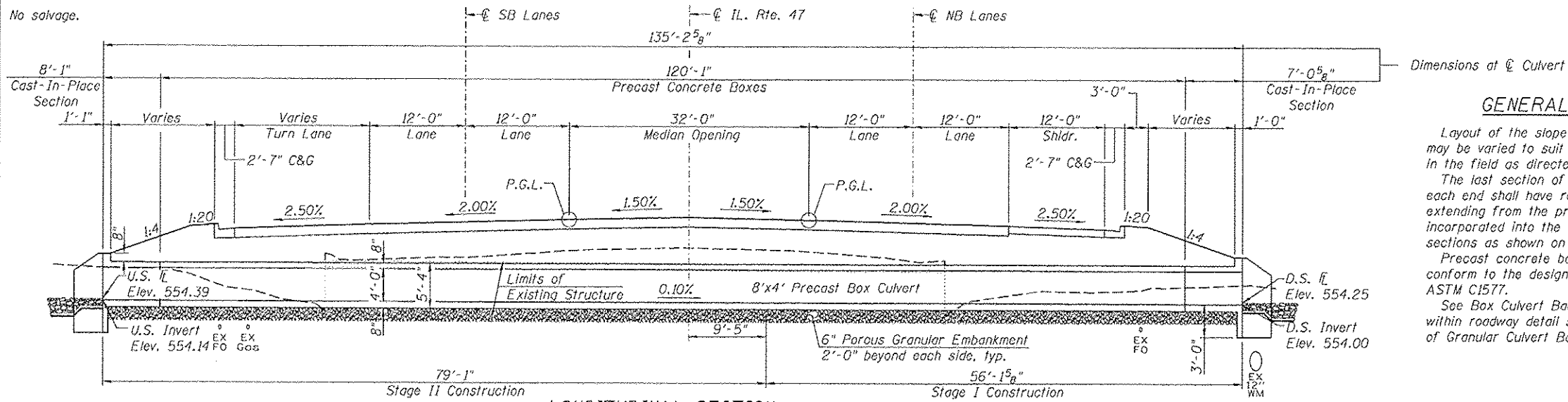


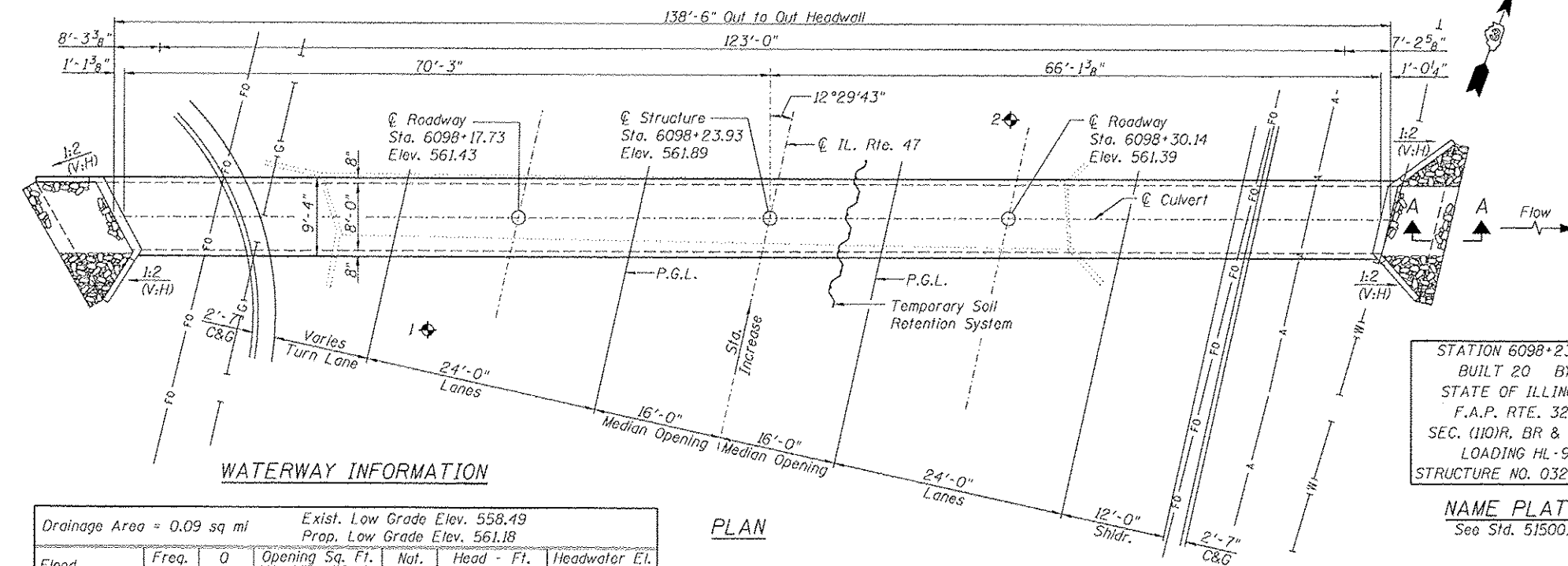
Benchmark: R.R. spike in west face of P.P. located approximately 1050' south of Nelson Rd. on east side of IL. Rte. 47 across from farm buildings, Elev. 560.06

Existing Structure: The existing structure consists of a 6' x 4' concrete box culvert with concrete wingwalls. The culvert is approximately 80'-0" in length with a 12° right ahead skew. Existing structure to be removed and replaced. Traffic to be maintained utilizing stage construction.

No salvage.



**LONGITUDINAL SECTION**  
(Dimensions at Rt L's to C.Roadway, unless noted otherwise)  
(Looking North)



**PLAN**

**WATERWAY INFORMATION**

Drainage Area = 0.09 sq mi		Exist. Low Grade Elev. 558.49		Prop. Low Grade Elev. 561.18			
Flood	Freq. Yr.	C.F.S.	Opening Sq. Ft.	Nat. H.W.E.	Head - Ft.	Headwater El.	
	10	36	20.3	24	556.7	0.2	556.9
Design	50	73	21.6	24	557.0	0.4	557.4
Base	100	97	22.2	24	557.1	0.6	557.5
Overtopping	-	149	-	-	-	-	-
Max. Calc.	500	165	23.4	24	557.3	1.5	558.2

10 year velocity through Existing Structure = 1.8 fps  
10 year velocity through Proposed Structure = 1.5 fps

**DESIGN SCOUR ELEVATION TABLE**

Design Scour Elevation (ft.)	U.S. Invert	D.S. Invert
	551.14	551.00

**TOTAL BILL OF MATERIAL**

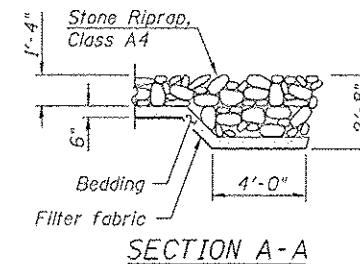
ITEM	UNIT	TOTAL
Porous Granular Embankment	Cu. Yd.	34.2
Stone Riprap, Class A4	Sq. Yd.	31
Filter Fabric	Sq. Yd.	31
Removal of Existing Structures	Each	1
Reinforcement Bars	Pound	2380
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	15.9
Precast Concrete Box Culverts 8'x4'	Foot	123.0
Temporary Soil Retention System	Sq. Ft.	233

STATION 6098+23.93  
BUILT 20 BY  
STATE OF ILLINOIS  
F.A.P. RTE. 326  
SEC. (110)R, BR & BR-1  
LOADING HL-93  
STRUCTURE NO. 032-2537

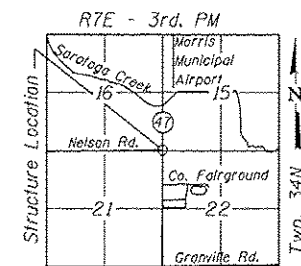
**NAME PLATE**  
See Std. 515001



Vincent P. Tabor 7/15/2013  
Vincent P. Tabor  
Licensed Structural Engineer  
State of Illinois No. 081-007047  
Expires 11/30/2014



**SECTION A-A**



**LOCATION SKETCH**

**GENERAL PLAN & ELEVATION**  
**IL. RTE. 47 OVER**  
**DRAINAGE DITCH**  
**F.A.P. RTE. 326-SEC (110)R,**  
**BR & BR-1**  
**GRUNDY COUNTY**  
**STATION 6098+23.93**  
**STRUCTURE NO. 032-2537**

**INDEX OF SHEETS**

1. General Plan & Elevation
2. General Data
- 3-4. Culvert Details
5. 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  
fy = 60,000 psi (Reinforcement)

**PRECAST UNITS**

f'c = 5,000 psi  
fy = 60,000 psi (Reinforcement)  
fy = 65,000 psi (Welded Wire Fabric)

**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 sheets 3 and 4. Precast concrete box culverts shall conform to the design requirements of ASTM C1577. See Box Culvert Backfilling Detail within roadway detail sheets for limits of Granular Culvert Backfill.

REVISED -	USER NAME =	DESIGNED - PSS
REVISED -	FILE NAME =	CHECKED - VPT
REVISED -	PLOT SCALE =	DRAWN - AJF
REVISED -	PLOT DATE =	CHECKED - VPT



**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN & ELEVATION**  
**STRUCTURE NO. 032-2537**

SHEET NO. 1 OF 5 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	322
				CONTRACT NO. 66B83
ILLINOIS FED. AID PROJECT				