

Benchmark: R.R. spike in west face of first P.P. north of south entrance to Grundy Co. Fair Grounds, Elev. 553.42.

Existing Structure: The existing structure consists of a 6' x 4' precast box culvert with concrete wingwalls. The culvert is approximately 74'-0" in length with no skew. Existing structure to be removed and replaced. Traffic to be maintained utilizing stage construction.

No Salvage.

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.

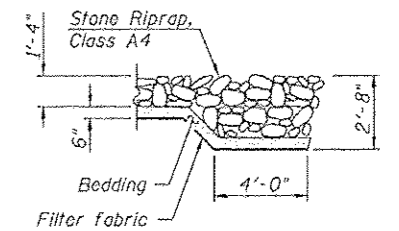
DESIGN STRESSES

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

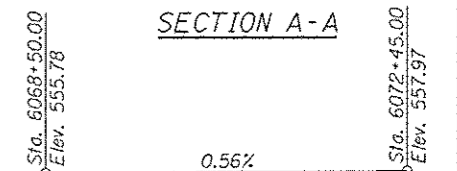
PRECAST UNITS
f'c = 5,000 psi
fy = 60,000 psi (Reinforcement)
fy = 65,000 psi (Welded Wire Fabric)

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 sheet 3. 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.

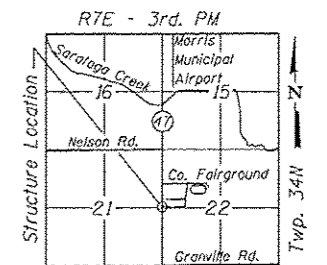


SECTION A-A



PROFILE GRADE

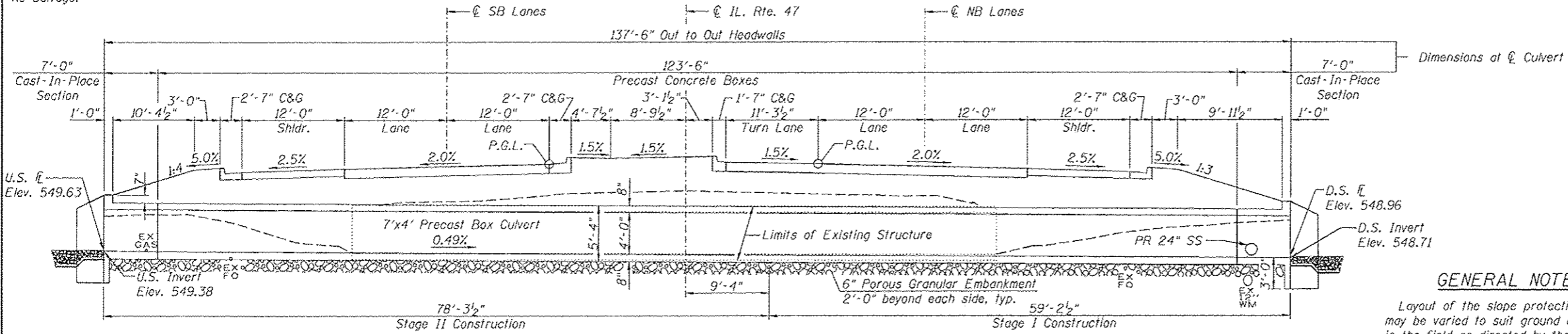
(Along IL. Rte. 47 P.G.)



LOCATION SKETCH

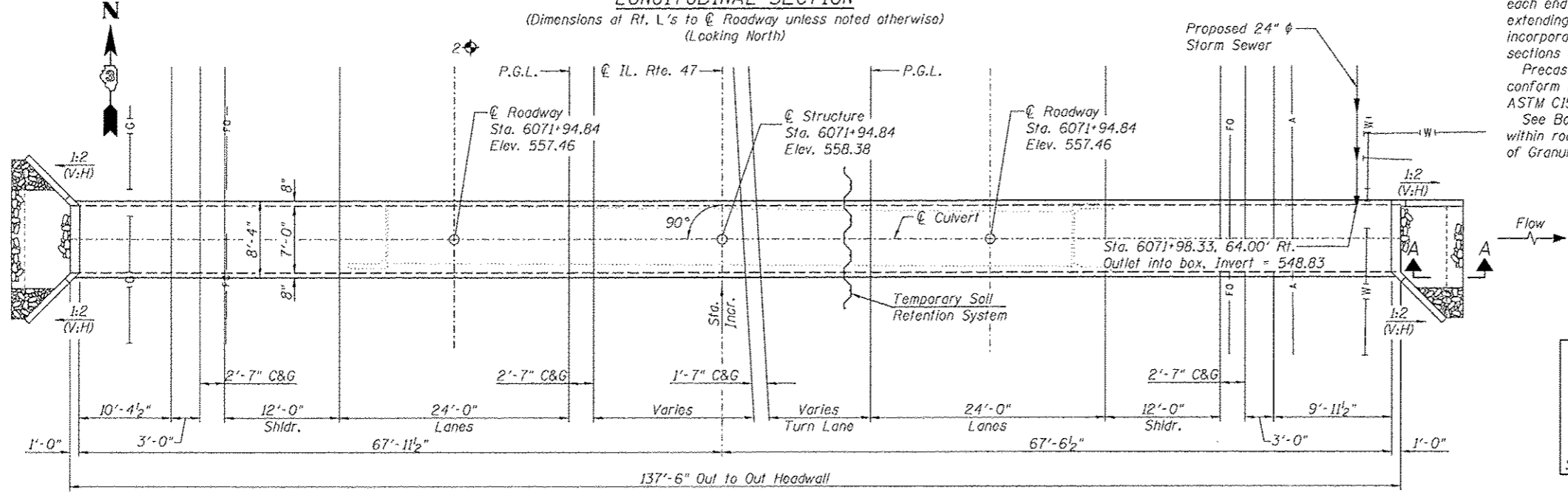
GENERAL PLAN & ELEVATION

**IL. RTE. 47 OVER
DRAINAGE DITCH
F.A.P. RTE. 326-SEC (110)R,
BR & BR-1
GRUNDY COUNTY
STATION 6071+94.84
STRUCTURE NO. 032-2538**



LONGITUDINAL SECTION

(Dimensions at Rt. L's to & Roadway unless noted otherwise) (Looking North)



PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Porous Granular Embankment	Cu. Yd.	31.4
Stone Riprap, Class A4	Sq. Yd.	24
Filter Fabric	Sq. Yd.	24
Removal of Existing Structures	Each	1
Reinforcement Bars	Pound	1850
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	13.7
Precast Concrete Box Culverts 7'x4'	Foot	125.5
Temporary Soil Retention System	Sq. Ft.	281

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	U.S. Invert	D.S. Invert
	546.38	545.71

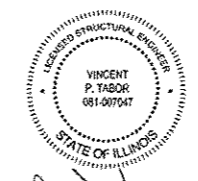
WATERWAY INFORMATION

Drainage Area = 0.69 sq mi

Flood	Freq. Yr.	C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
10	100	23	25	553.1	0.4	0.0	553.5	553.0	
Design	50	149	24	26	553.4	0.9	0.4	554.3	553.8
Base	100	168	24	27	553.4	1.2	0.7	554.6	554.1
Overlapping	-	-	-	-	-	-	-	-	-
Max. Calc.	500	213	24	27	553.5	1.6	1.4	555.1	554.9

10 year velocity through Existing structure = 4.3 fps
10 year velocity through Proposed structure = 4.0 fps

NAME PLATE
See Std. 515001



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