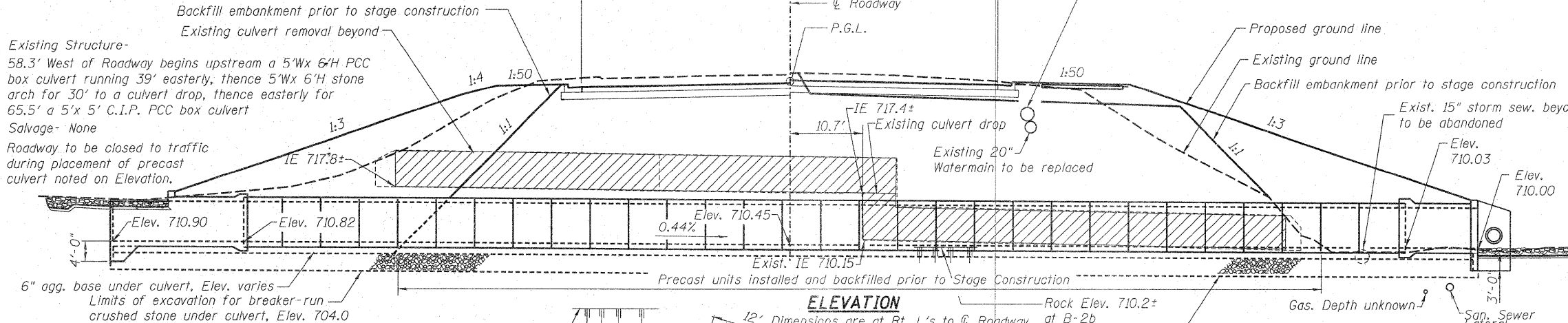


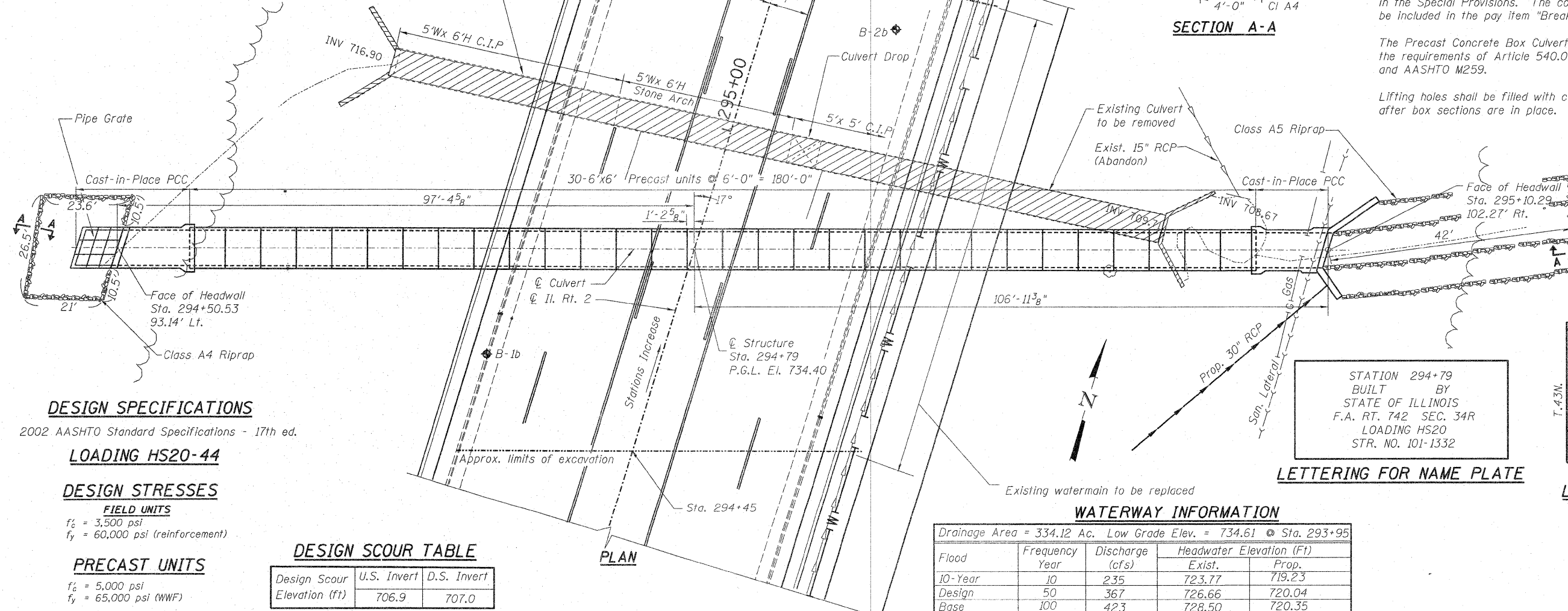
B.M. - CP16, 5/8" IP W/CAP  
Sta. 290+18.03, 33,945' LT  
Elev. 739.847

BM 416, Top Bolt on Fire Hydrant  
Sta. 290+40.75, 37.44' RT  
Elev. 741.221



**INDEX OF SHEETS**

1. General Plan and Elevation
2. Stage Construction Details
3. Cast-in-place Culvert Details
4. Upstream Cast-in-place Culvert Reinforcement
5. Downstream Cast-in-place Culvert Reinforcement
6. Details



**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specifications - 17th ed.

**LOADING HS20-44**

**DESIGN STRESSES**

**FIELD UNITS**  
 $f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (reinforcement)

**PRECAST UNITS**

$f'_c = 5,000$  psi  
 $f_y = 65,000$  psi (WWF)

**DESIGN SCOUR TABLE**

Design Scour Elevation (ft)	U.S. Invert	D.S. Invert
	706.9	707.0

**WATERWAY INFORMATION**

Drainage Area = 334.12 Ac. Low Grade Elev. = 734.61 @ Sta. 293+95

Flood	Frequency Year	Discharge (cfs)	Headwater Elevation (ft)	
			Exist.	Prop.
10-Year	10	235	723.77	719.23
Design	50	367	726.66	720.04
Base	100	423	728.50	720.35
Max Calc	500	556	733.98	723.40

10-Year Velocity through Existing Culvert = 11.48 ft/sec  
 10-Year Velocity through Proposed Culvert = 11.44 ft/sec

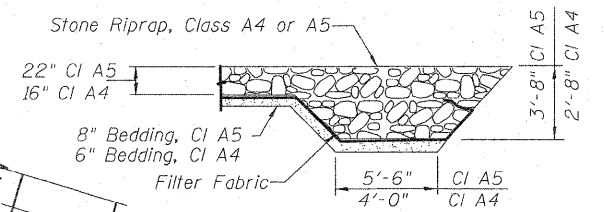
**TOTAL BILL OF MATERIAL**

Item	Unit	Total
Removal and disposal of unsuitable material	Cu. Yd.	573.8
Stone Riprap, Class A4	Sq. Yd.	58.9
Stone Riprap, Class A5	Sq. Yd.	85.2
Filter fabric	Sq. Yd.	144.1
Removal of Existing Structures No. 2	Each	1
Concrete Box Culverts	Cu. Yd.	38.5
Reinforcement Bars	Pound	6,460
Name Plates	Each	1
Precast Concrete Box Culvert, 6'x 6'	Foot	180
Breaker-run Crushed Stone	Ton	1,177

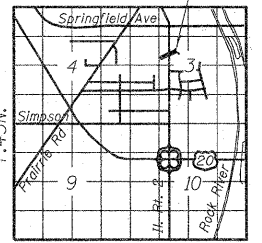
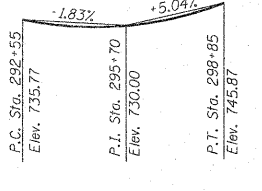
**GENERAL NOTES**

- Reinforcement bars shall conform to the requirements of AASHTO A706 Grade 60.
- Exposed edges shall be beveled 3/4" unless otherwise noted.
- All construction joints shall be bonded.
- The limits and quantities of removal and replacement shown, may be modified by the District Geotechnical and Field Engineer for variable subsurface conditions encountered in the field.
- The Breaker-run Crushed Stone shall be capped with 6" of CA7 and satisfy the Standard Specifications, unless otherwise indicated in the Special Provisions. The cost of the capping material shall be included in the pay item "Breaker-run Crushed Stone".
- The Precast Concrete Box Culvert shall conform to the requirements of Article 540.06 of the Standard Specifications and AASHTO M259.
- Lifting holes shall be filled with concrete plugs and mastic after box sections are in place.

**SECTION A-A**



**PROFILE GRADE**



STATION 294+79  
 BUILT BY  
 STATE OF ILLINOIS  
 F.A. RT. 742 SEC. 34R  
 LOADING HS20  
 STR. NO. 101-1332

**LETTERING FOR NAME PLATE**

**LOCATION SKETCH**

Exp 11/30/12  
 JOHN B. FELLMAN  
 081-006167  
 LICENSED  
 STRUCTURAL  
 ENGINEER  
 STATE OF ILLINOIS  
 John B. Fellman  
 1-13-2012