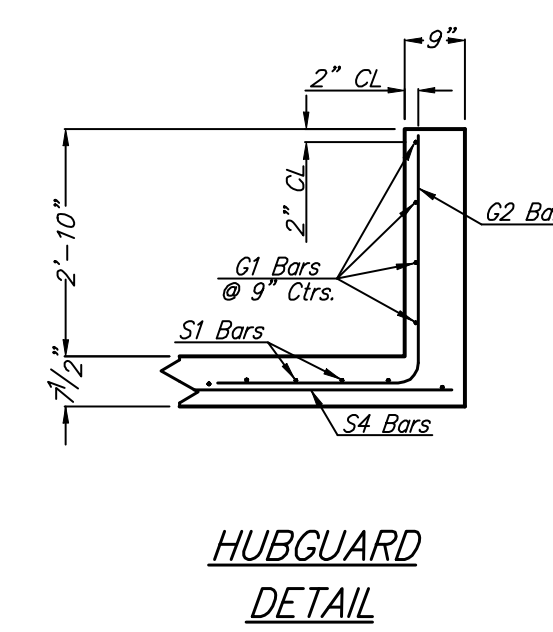
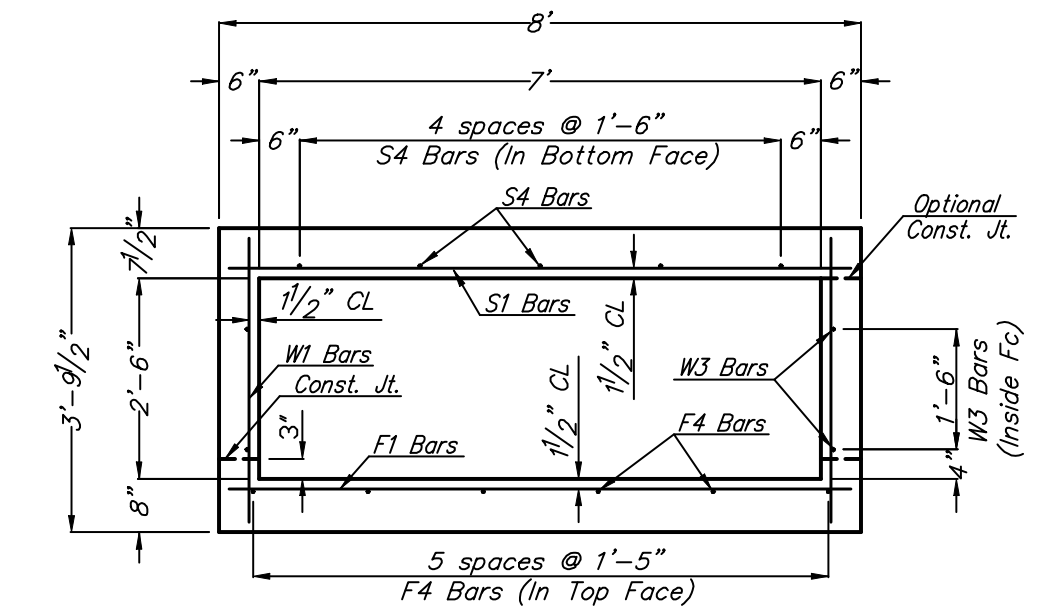


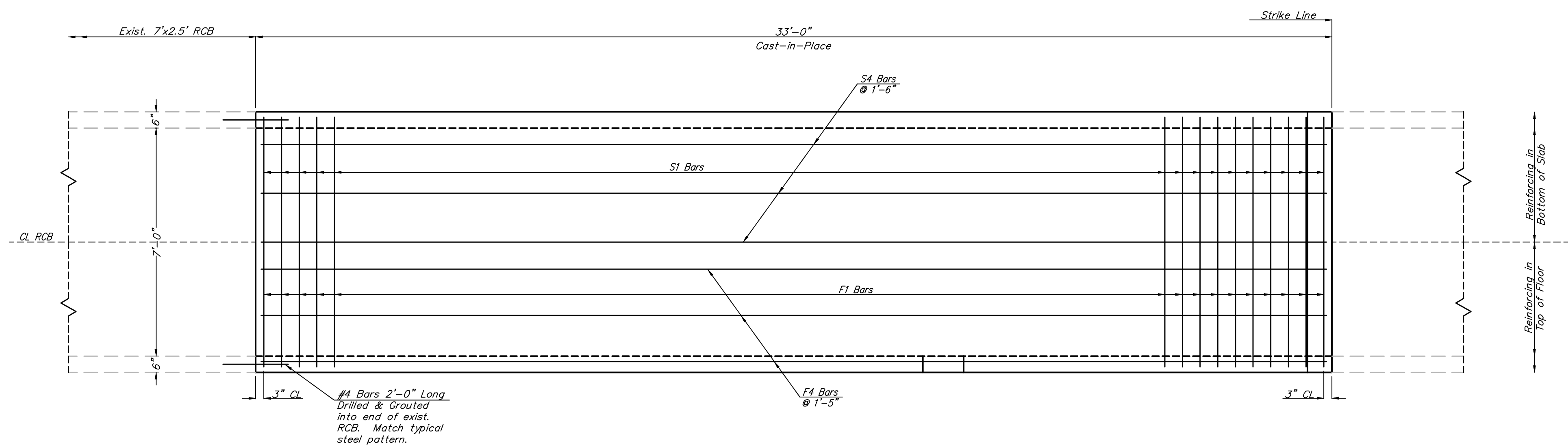
SECTION & ELEVATION



HUBGUARD DETAIL



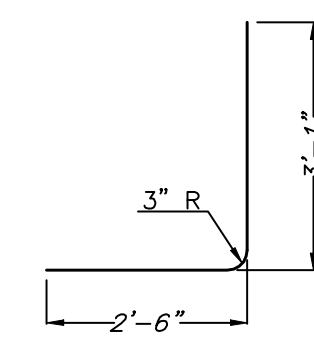
SECTION A-A



PLAN

GENERAL NOTES

**LOADING:** HS20-44 AASHTO Specifications, 1983 Edition.  
**UNIT STRESSES:** Grade 4.0 Concrete;  $f'_c = 4,000$  p.s.i.  
 Reinforcing Steel;  $f_y = 60,000$  p.s.i.  
**FILL HEIGHT:** Unless otherwise noted, the Design Fill Height is measured from the riding surface at the culvert and shall include the surfacing.  
**CONCRETE:** Grade 4.0 Concrete shall be used throughout. Bevel all exposed edges with a  $\frac{3}{4}$  inch triangular moulding. Where Grade 4.0 Concrete (AE) is specified, it shall be placed in the top slab above the Construction Joint.  
**REINFORCING:** All reinforcing shall conform to ASTM A615, Grade 60. All dimensions relative to reinforcing steel shall be to centerline of bar unless otherwise noted.  
**EXCAVATION:** Excavation for culverts less than bridge length shall not be paid for directly but shall be subsidiary to Grade 4.0 Concrete.  
**SEAL COURSE:** A Seal Course may be required by the Engineer. The Seal Course shall be unreinforced Concrete (Commercial Grade) to a minimum depth of 3 inches or as determined by the Engineer.  
**FOUNDATION STABILIZATION:** Foundation Stabilization may be required as directed by the Engineer. The depth of Foundation Stabilization shall be determined by the Engineer.  
**QUANTITIES:** The quantities shown in the Culvert Summary include apron and/or soil saver quantities when their construction is required by the plans.  
**GRANULAR BACKFILL (WINGWALLS):** Special backfill procedures may be required at the direction of the Engineer. See Auxiliary Details Sheet.  
**STRIKE LINE:** Wingwalls and that portion of the RCB outside the Strike Line shall be constructed level. Footing for wingwalls shall be constructed with the culvert floor. See wingwall detail sheet.



G2

BENDING DIAGRAM  
(All Dimensions are Out-to-Out of Bars)

CULVERT SUMMARY														
Flow Line Elev. Lt.	Flow Line Elev. Rt.	Crown Gr. Elev.	Design Fill Height	Skew (Lt.)	Left Wings	Right Wings	Scour Apron	Soil Saver	Concrete			Reinf. Steel (Gr. 60)		
									Barrel (Cu. Yds.)	Wings (Cu. Yds.)	Total (Cu. Yds.)	Barrel (Lbs)	Wings (Lbs)	Total (Lbs)
-	159.48	164.40	5'	0°	-	Straight	NO	NO	16.3	4.50	20.8	1,552	279	1,831

Bar Schedule																							
F1			F4			S1			S4			X1			W1								
Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length				
5	6 1/2"	61	7'-8"	4	1'-5"	6	32'-8"	5	6 1/2"	61	7'-8"	4	1'-6"	5	32'-8"	4	-	4	2'-6"	4	9"	45	3'-6"

W3			G1			G2 *					
Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length
4	1'-6"	4	32'-8"	5	9"	4	7'-8"	6	9"	11	5'-7"

NOTE: Reinforcing Bar List is for outlet at one end of box only.

Minimum Splice Lengths		
#4	1'-4"	
#5	1'-8"	
#6	2'-0"	

Summary of Quantities	
Concrete (Grade 4.0)	9.6 C.Y.
Concrete (Grade 4.0)(AE)	6.7 C.Y.
Reinforcing Steel (Gr. 60)	828 Lbs
Reinforcing Steel (Epoxy Coated)	724 Lbs
Class III Excavation	C.Y.

Drawing File: E:\eng\29th (Maine-119th)\Detail\RCB Detail 4

Design: KK  
 Drawn: JEB  
 Approved: JFB  
 Scale: 1"=30'

Project No. 0403-E828 CAPITAL IMPROVEMENT PROJECT  
 29th Street Paving Plan (7'x2.5')  
 Cast-in-Place RCB Detail Sta 62+58.20. Rt.  
 29th Street Paving Project - Maine Road to 119th Street

**Baughman Company, P.A.**  
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 ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

MAY, 2007

SHEET 43 OF 135