

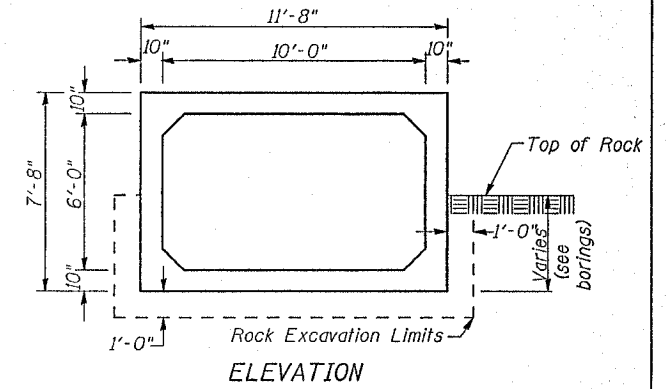
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

CONTRACT NO.				
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	•	CARROLL	548	181
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
• (1,2)RS & (3-D)RS-1				

Benchmark:  
Existing Structure: Built in 1958 as a single barrel 10'-0" X 6'-0" R.C. Box Culvert, with a culvert length of ±61'-11". Current structure is located beneath US 52 and will be filled in place.  
No Salvage

QUARRY ROAD  
HORIZONTAL CURVE DATA

PI STA. = 1005+10.96  
Δ = 31° 54' 56" (LT)  
D = 10° 08' 27"  
R = 565.00'  
T = 161.56'  
L = 314.72'  
E = 22.65'  
P.C. STA. = 1003+49.40  
P.T. STA. = 1006+64.12  
S.E. = 0.040 1/1



DESCRIPTION	UNIT	QTY.
Rock Excavation For Structures	Cu. Yd.	233
Precast Concrete Box Culvert 10' X 6' (M273)	Foot	187

WATERWAY INFORMATION

Drainage Area EX = 178.7 Acres    Drainage Area PR = 178.7 Acres  
Existing Low Grade Elevation: 720.00 ft. @ 450+00  
Proposed Low Grade Elevation: 720.67 ft. @ 450+00

Flood Year	Frequency Year	Discharge EX cfs	Discharge PR cfs	Headwater Elev. (ft) Existing	Headwater Elev. (ft) Proposed
Ten-Year	10	226.0	226.0	716.10	715.78
Design	50	311.0	311.0	716.89	716.74
Base	100	356.0	356.0	717.37	717.22
EX Overtopping	>500				
PR Overtopping	>500				
Max Calc	500	497.0	497.0	718.76	718.61

10-Year Velocity through Existing Culvert = 5.7 fps  
10-Year Velocity through Proposed Culvert = 9.4 fps

DESIGN SPECIFICATIONS

2002 A.A.S.H.T.O. Specifications

LOADING HS 20-44

Allow 50#/Sq. Ft. for future wearing surface

NOTES

Precast Box shall conform to the requirements of A.A.S.H.T.O. M273 (A.S.T.M. C850)

Rock Excavation is estimated at the East End of the culvert for 60'-0". The width is estimated at 1'-0" from the outside of the culvert at an average depth of 5'-0".

For additional notes see the General Notes sheet.

All CA-7 is included in PRECAST CONCRETE BOX CULVERT 10' X 6'.

GENERAL PLAN

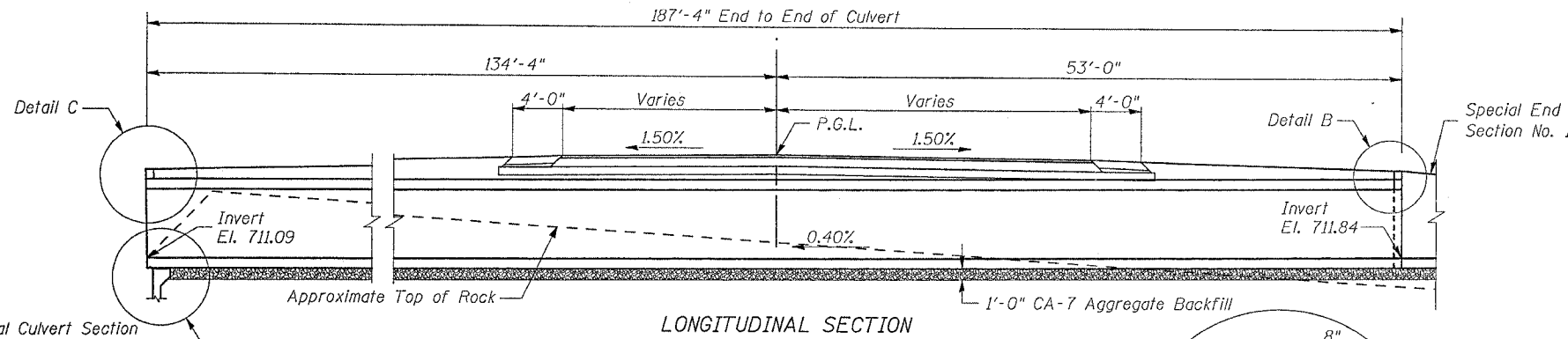
US RTE 52 / IL RTE 64

CULVERT NO. 3 (M273)

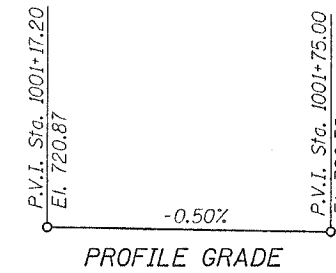
F.A.P. RTE 17 SECTION (1,2)RS & (3-D)RS-1

CARROLL COUNTY

STA. 1001+58 (QUARRY RD.)

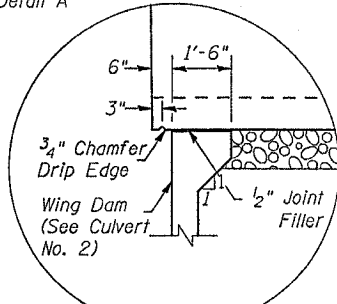


LONGITUDINAL SECTION

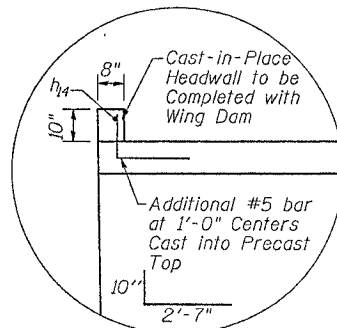


PROFILE GRADE

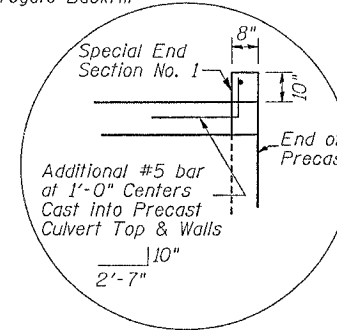
Final Culvert Section rests on Wing Dam see Detail A



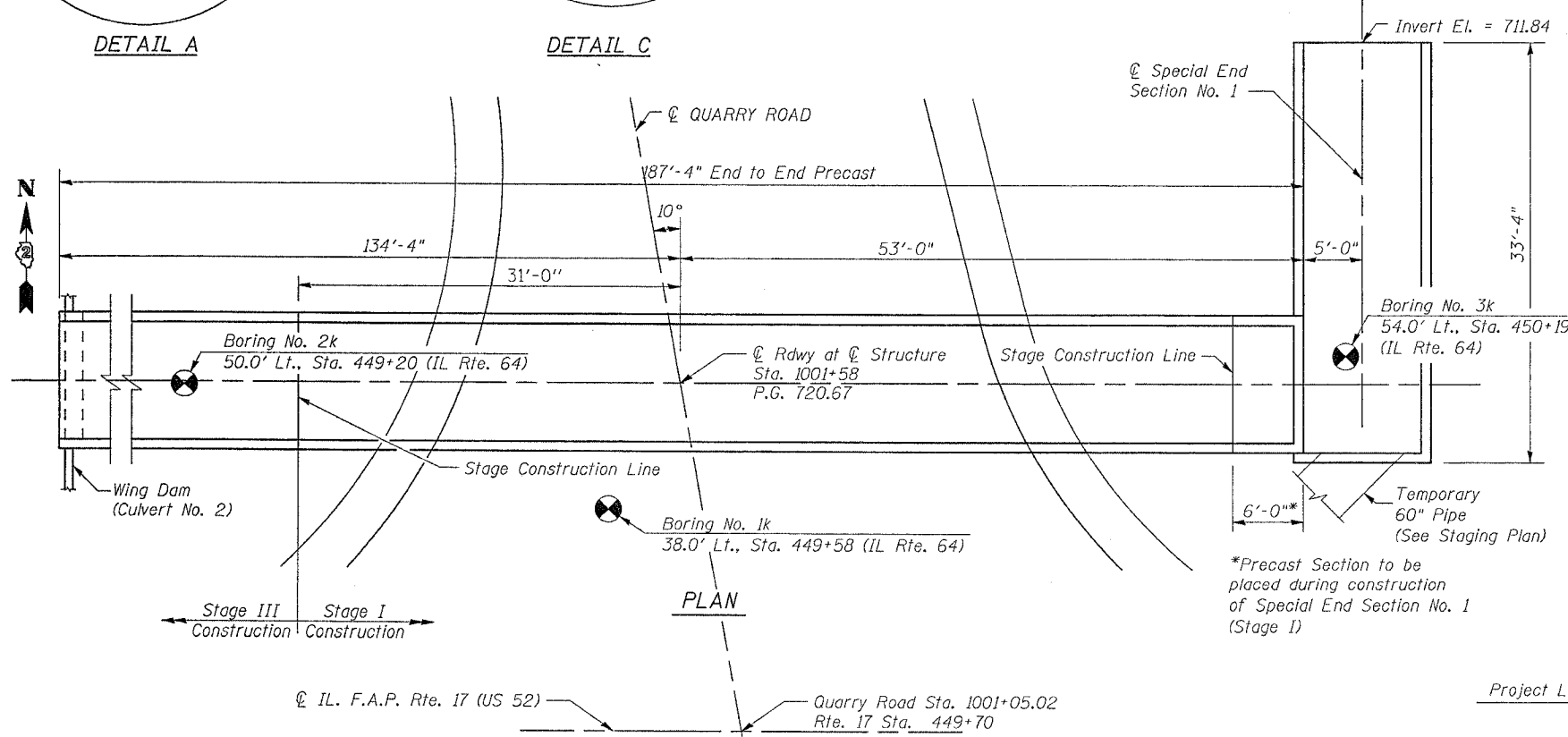
DETAIL A



DETAIL C



DETAIL B



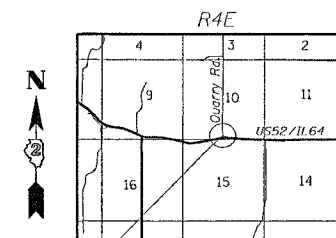
PLAN

STATE OF ILLINOIS  
DAVID F. MAXWELL  
081-005455  
ST. LOUIS, MO.  
REGISTERED STRUCTURAL ENGINEER

David F. Maxwell, S.E.  
Date: 3/15/07  
My registration expires November 30, 2008.

DESIGN STRESSES

$f_y = 60,000 \text{ psi}$   
 $f_y = 65,000 \text{ psi}$  (Welded Wire Fabric)  
 $f'_c = 3,500 \text{ psi}$   
 $f'_c = 5,000 \text{ psi}$  (Precast)



LOCATION SKETCH

PLOT DATE = 3/15/07  
 FILE NAME = C:\Users\maxwell\Documents\1001+58\1001+58.dgn  
 PLOT SCALE = 1/8"=1'-0"  
 USER NAME = MUSER