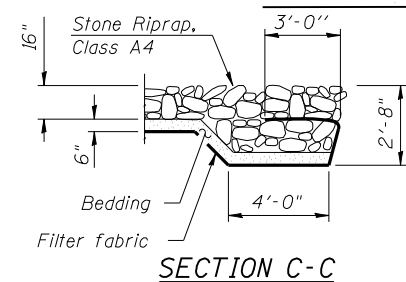
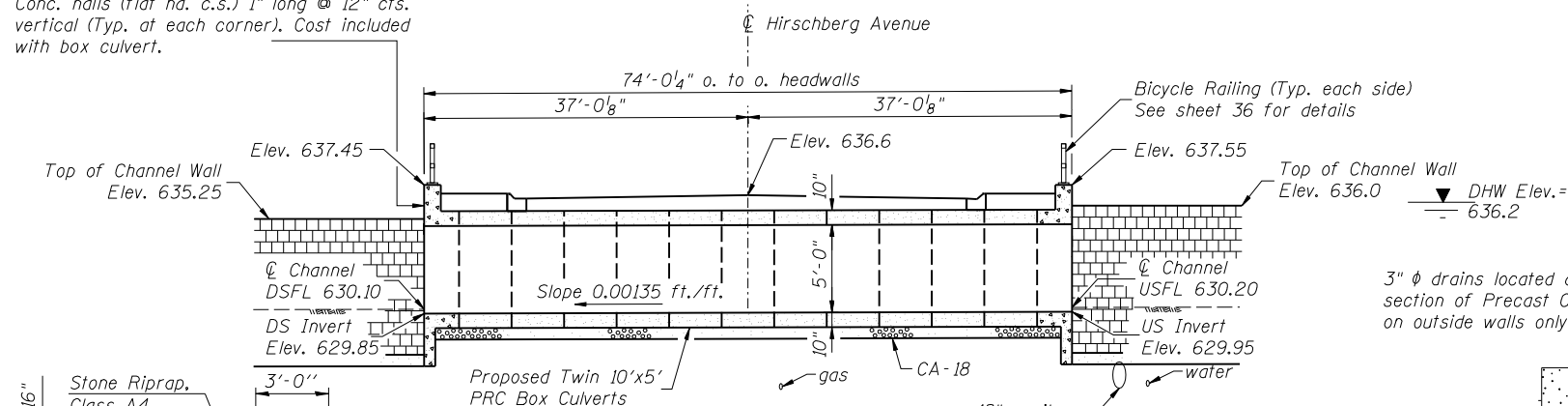
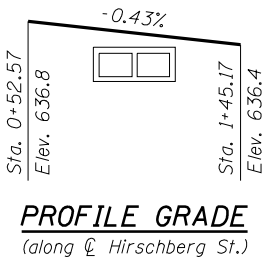


1/2" PJF (12" wide x retaining wall height)  
Conc. nails (flat hd. c.s.) 1" long @ 12" cts.  
vertical (Typ. at each corner). Cost included  
with box culvert.



SECTION A-A

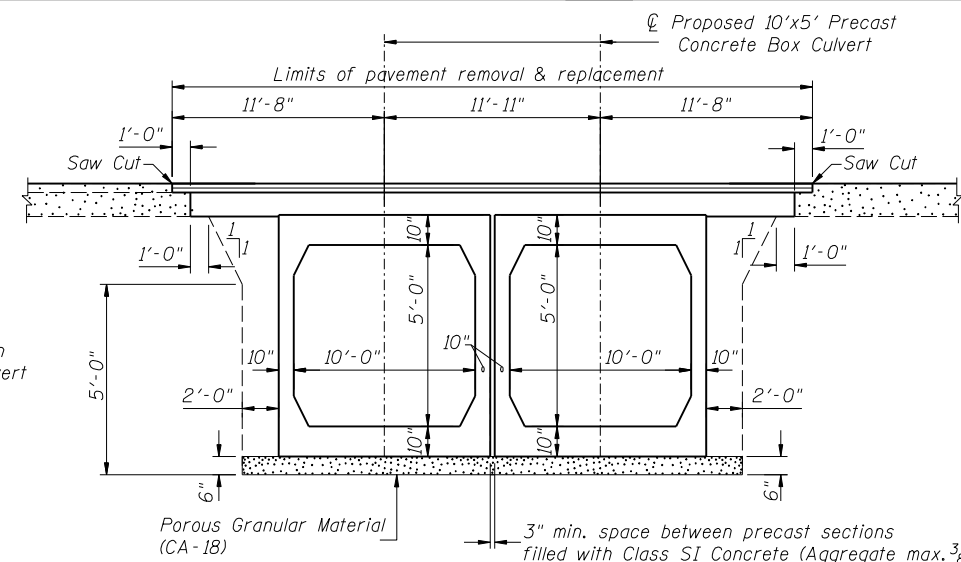


PROFILE GRADE  
(along C Hirschberg St.)

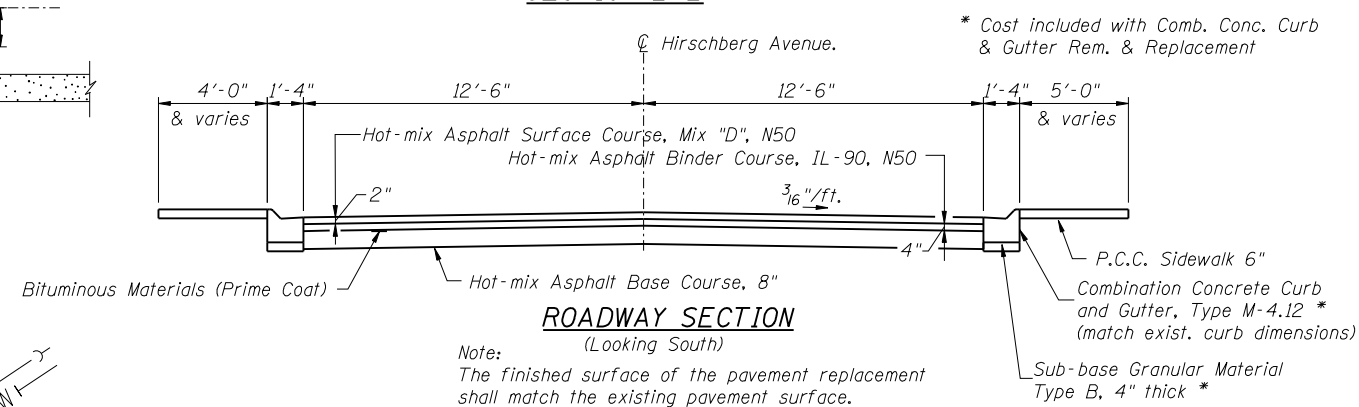
3" φ drains located as shown on each  
section of Precast Concrete Box Culvert  
on outside walls only.

2'x2'x2' Gravel or crushed  
stone, typical of all drains.  
Cost included with box culvert.

DRAIN DETAIL



SECTION B-B



ROADWAY SECTION  
(Looking South)

**LOADING HS20-44**  
Allow 50#/sq. ft. for future wearing surface.

**DESIGN SPECIFICATIONS**  
2002 AASHTO Bridge Design Specifications

**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 (Welded Wire Fabric)  
 $f_y = 60,000$  (Reinforcement)

CRYSTAL CREEK  
BUILT 2010 BY  
IL. DEPT. OF NATURAL RESOURCES  
OFFICE OF WATER RESOURCES  
LOADING HS20

**NAME PLATE**  
See Std. 515001  
(Attach to downstream headwall)

**GENERAL NOTES**

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.  
Reinforcement bars designated (E) shall be epoxy coated.  
All exposed edges of concrete shall be beveled 3/4".  
For backfilling and embankment, see Standard Specifications.  
It shall be the responsibility of the Contractor to divert the stream flow during construction in order to keep the construction areas free of water. The method of water diversion shall be subject to the approval of the Engineer, and the cost shall be included with "Concrete Box Culverts".  
This box culvert has a fill height of 0.5 feet. The Precast Concrete Box Culvert sections shall conform to the requirements of AASHTO M-273.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	QTY.
Precast Concrete Box Culvert 10' x 5' (M273)	Foot	99
Concrete Box Culverts	Cu Yd	72.1
Reinforcement Bars, Epoxy Coated	Pound	9,160
Hot-mix Asphalt Base Course, 8"	Sq Yd	173
Hot-mix Asphalt Surface Course, Mix "D", N50	Ton	21
Hot-mix Asphalt Binder Course, IL-90, N50	Ton	41
Portland Cement Concrete Sidewalk 6 Inch	Sq Ft	623
Bicycle Railing	Foot	96
Stone Riprap, Class A4	Sq Yd	127
Filter Fabric	Sq Yd	127
Pavement Removal	Sq Yd	183
Combination Conc. Curb and Gutter Removal and Repl.	Foot	64
Removal of Existing Structures No. 8	Foot	63
Bituminous Materials (Prime Coat)	Gallon	9
Name Plates	Each	1

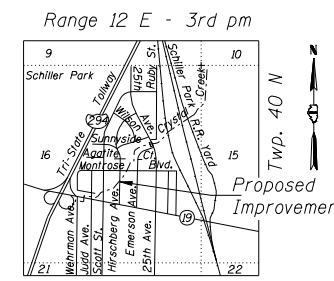
**WATERWAY INFORMATION**

Drainage Area = 4.24 sq. mi. Low Grade Elev. 636.4 @ Sta. 1+45.17

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.		Head - Ft.		Headwater E.L.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	10	305	67.5	100	634.22	2.28	0.07	636.5	634.29	
Base	50	484	67.5	100	635.91	2.23	0.29	638.14	636.2	
Overtopping	100	579	67.5	100	636.79	2.53	0	639.32	636.75	
Max. Calc.	500									

Note:  
Extend existing 8" concrete pipe and 6" clay tile  
thru sidewall of proposed culvert. Refer to Detail  
on sheet 47. Contractor to verify invert elevations.

PLAN



LOCATION SKETCH

Designed By TMM Checked By JUF  
 Drawn By JUF Checked By RLP  
 1/29/2010 12:11:55 PM  
 C:\Dwn\Proj\Imp\Projects\Crystal Creek\Culvert No 2 Hirschberg Avenue.dgn