

Benchmark: Temporary bench mark in the park southwest of the culverts, Elevation 796.51 feet.

Datum = NGVD29

Existing Structure: SN 016-6327 built in 1970 as twin CMP Pipe Arches, approximate out-to-out width of 25'-6", and approximately 86'-4" in length.

Traffic: Traffic will be detoured during construction.

### General Notes

1. Precast concrete box culvert sections shall conform to the requirements of ASTM C1577.
2. Lifting holes shall be filled with concrete plugs and mastic after the box sections are in place.
3. Diversion of stream flow during the removal of the existing culvert and the construction of the proposed culvert and all required erosion control measures shall be considered as included in concrete box culverts and no additional compensation will be allowed.

### Total Bill of Material

ITEM	UNIT	QUANTITY
REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL	CU YD	272
TRENCH BACKFILL	CU YD	32
POROUS GRANULAR BACKFILL	CU YD	361
AGGREGATE BASE COURSE, TYPE B 6"	SQ YD	15
PORTLAND CEMENT CONCRETE PAVEMENT 6"	SQ YD	15
BRIDGE RAIL REMOVAL	FOOT	94
PIPE CULVERT REMOVAL	FOOT	173
REINFORCEMENT BARS	POUND	4,060
REINFORCEMENT BARS, EPOXY COATED	POUND	1,010
NAME PLATES	EACH	1
BOX CULVERT END SECTIONS, CULVERT NO. 1	EACH	2
PRECAST CONCRETE BOX CULVERTS 10' X 6'	FOOT	150
CONCRETE COLLAR	CU YD	1
STORM SEWER REMOVAL 10"	FOOT	6
STORM SEWER REMOVAL 21"	FOOT	20
STORM SEWERS, CLASS A, TYPE 2 21"	FOOT	22
STORM SEWERS, CLASS B, TYPE 2 10"	FOOT	11
DECORATIVE STEEL RAILING	FOOT	103
FORM LINER TEXTURED SURFACE, SPECIAL	SQ FT	420

### Sheet No.

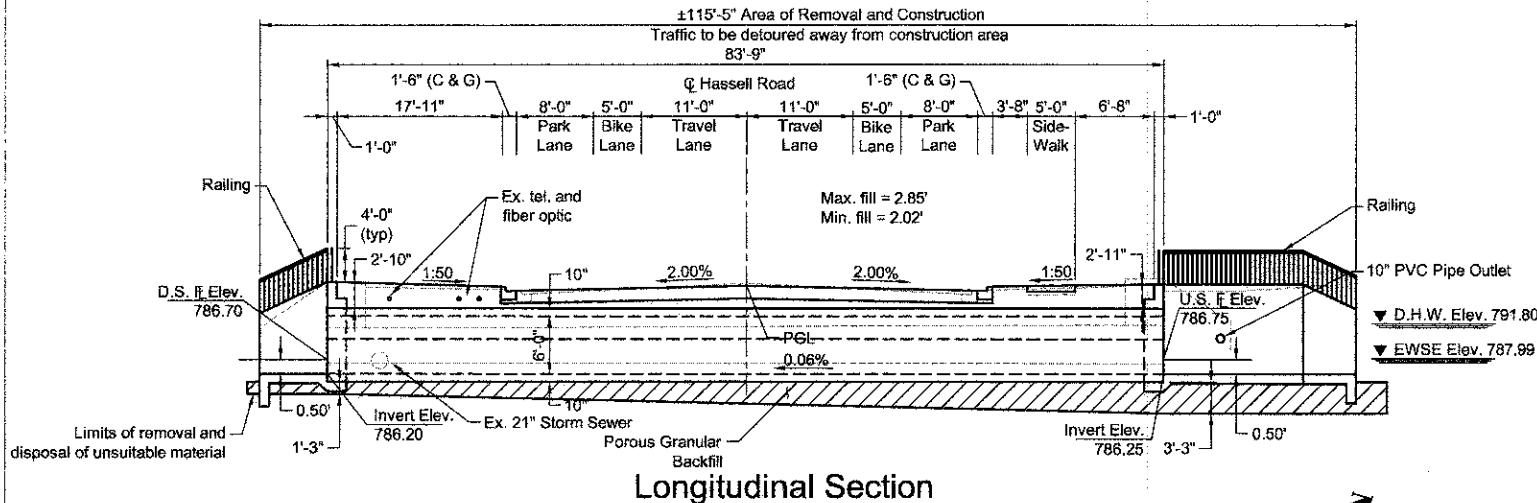
- CB1
- CB2
- CB3
- CB4
- CB5
- CB6
- CB7

### Index of Sheets

#### Description

- General Plan & Longitudinal Section
- South End Section
- South End Section Details
- North End Section
- North End Section Details
- Decorative Steel Railing Details
- Soil Boring Logs

PLAN  
 DRAWN: [Name]  
 CHECKED: [Name]  
 DATE: [Date]



### Longitudinal Section

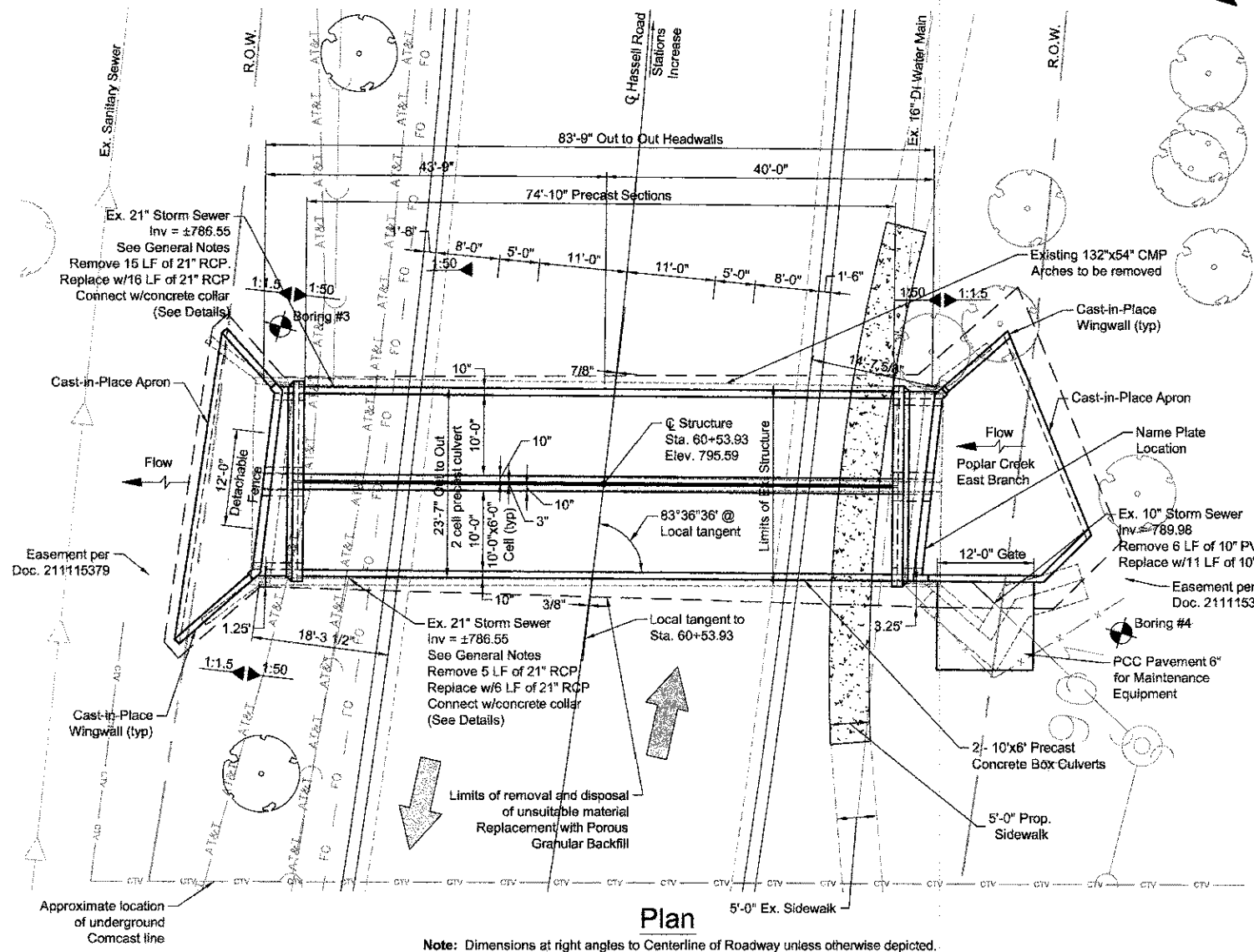
Note: Dimensions at right angles to Centerline of Roadway unless otherwise noted.

### Waterway Information Table

Flood		Frequency	Discharge	Waterway Opening (sq. ft.)		Natural	Created Head (ft.)		Headwater Elev.	
		Year	(cfs)	Existing	Proposed	H.W.E.	Existing	Proposed	Existing	Proposed
Design		10	215.00	86.2	101.6	791.33	0.00	0.00	791.33	791.33
		30	270.00	86.4	111.0	791.80	0.04	0.00	791.84	791.80
		50	340.00	86.4	114.0	791.95	0.07	0.00	792.02	791.95
Base		100	400.00	86.4	117.2	792.29	0.15	0.00	792.44	792.29
Max Calc.		500	555.00	86.4	117.2	792.69	0.36	0.00	793.05	792.69

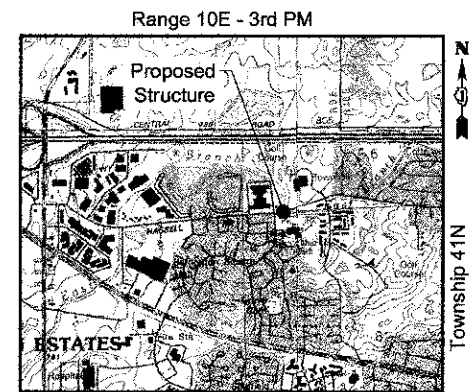
C/L CURVE DATA  
 PC=STA 58+96.90  
 PT=STA 62+20.33  
 R=1432.69'  
 D=3° 59' 57"  
 L=323.43'  
 C=322.74'  
 T=161.37'

PROFILE  
 DRAWN: [Name]  
 CHECKED: [Name]  
 DATE: [Date]



### Plan

Note: Dimensions at right angles to Centerline of Roadway unless otherwise depicted.



### Location Sketch

**Loading HL-93**  
 Allow 50#/sq-ft for future wearing surface.

**Design Specifications**  
 2012 AASHTO LRFD Bridge Design Specifications, 6th Edition

**Design Stresses**  
 Field Units  
 $f_c = 5,000$  psi (pre-cast)  
 $f_c = 3,500$  psi (cast in place)  
 $f_y = 60,000$  psi (reinforcement)  
 $f_y = 65,000$  psi (welded wire fabric)

Station	Offset
60+71.52	38.06' RT
60+81.24	47.34' RT
60+54.30	62.59' RT
60+46.35	55.99' RT
60+34.72	41.73' LT
60+23.81	50.90' LT
60+26.47	53.88' LT
60+68.26	52.73' LT
60+71.11	50.20' LT
60+63.44	42.09' LT

### Limits of Removal/Disposal

Station 60+54  
 Built 201\_ by Hoffman Estates Loading HL-93 Structure No. 016-6344

Name Plate  
 See Std. 515001

CIVILTECH ENGINEERING, INC.  
 GREGORY J. HATLESTAD, S.E.  
 (Professional Seal and Signature)

**General Plan & Longitudinal Section**  
**Hassell Road over Poplar Creek East Branch**  
**F.A.U. Rt. 1100**  
**Section 11-00087-00-FP**  
**Cook County**  
**Station 60+53.93**  
**Structure No. 016-6344**

I certify that to the best knowledge, information and belief, this box culvert design is structurally adequate for the design loading shown on the shown plans. The design is an economical one for the style of the structure and complies with the requirements of the current AASHTO LRFD Bridge Design Specifications of Highway Bridges.