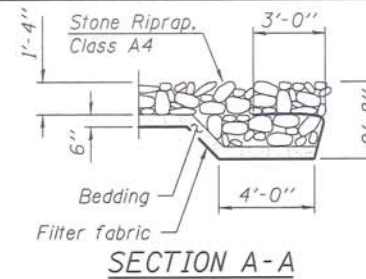


Temporary Benchmark: 8" inch Nail in west face of 10th power pole north of I-190 and 50 feet west of C.N. Railroad and 1st power pole north of Drainage creek. Nail is about 2 feet above ground. Pole Number is B1 N.=1,938,308 E=1,108,049, El. 636.91.

Existing Structure: The existing structure was originally built in 1960 in Cook County over O'hare Ditch located underneath Mannheim Rd. approximately 2,300 ft north of I-190. The existing structure is a 5 ft wide x 8 ft high reinforced concrete single cell box culvert measuring 154'-10" out to out of headwalls.

No Salvage.

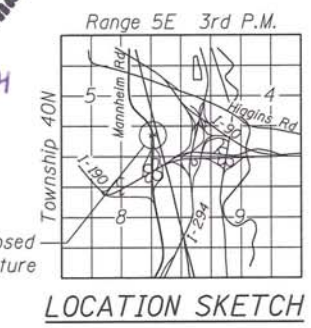


**INDEX OF SHEETS**

1. General Plan and Elevation
2. Stage Construction
3. Reinforcement Details
4. Bar Splicer and Pipe Opening Details
5. Soil Boring Logs 1
6. Soil Boring Logs 2
7. Soil Boring Logs 3
8. Soil Boring Logs 4

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Porous Granular Embankment	Cu Yd	1,329.2
Stone Riprap, Class A4	Sq Yd	123
Filter Fabric	Sq Yd	123
Removal of Existing Structures	Each	1
Reinforcement Bars	Pound	60,530
Bar Splicers	Each	94
Concrete Box Culverts	Cu Yd	304.9
Temporary Soil Retention System	Sq Ft	1,734



PROP. CURVE PRMAN-4  
 PI STA. = 137+18.87  
 Δ = 9° 53' 04" (LT)  
 D = 1° 00' 00"  
 R = 5,729.58'  
 T = 495.45'  
 L = 988.44'  
 E = 21.38'  
 e = 2.00%  
 T.R. = 96'  
 S.E. RUN = 96'  
 P.C. STA = 132+23.42  
 P.T. STA = 142+11.87

**PROFILE GRADE**  
 (along Mannheim Rd.)

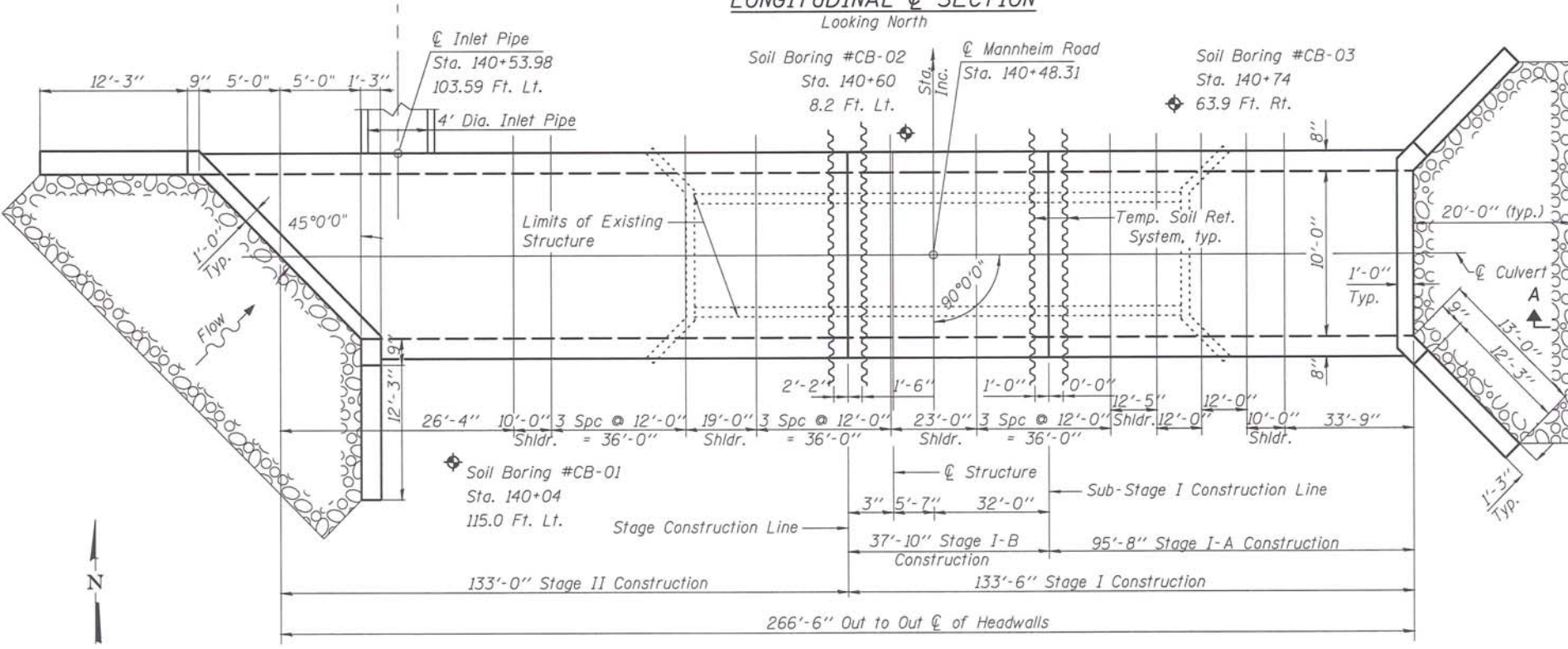
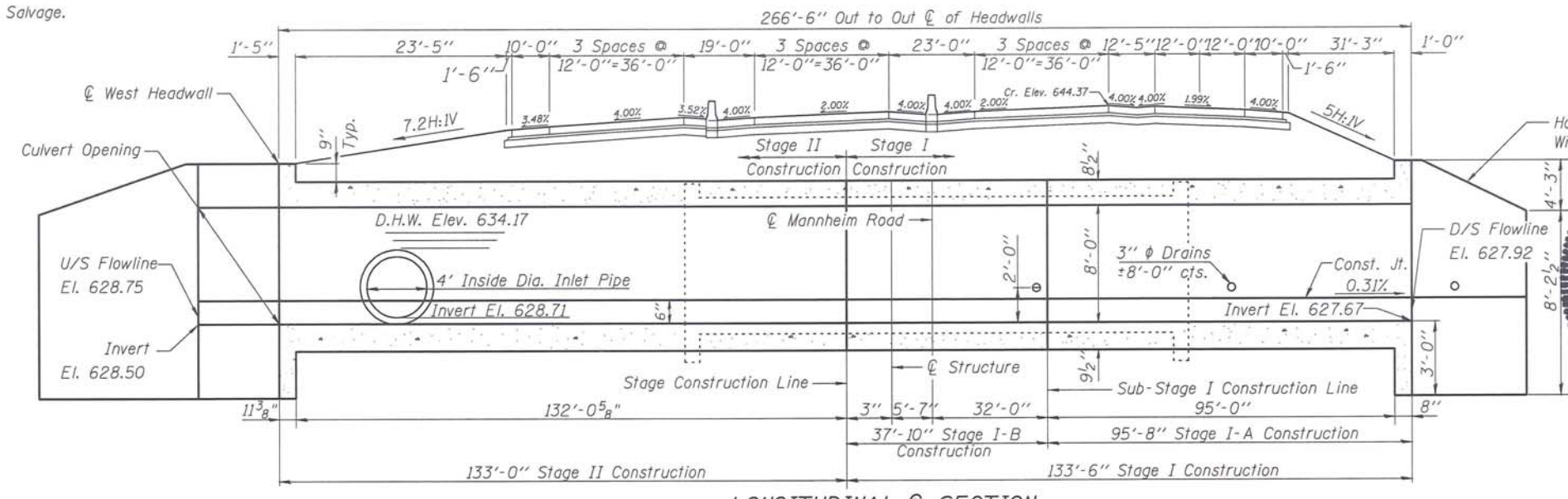
**LOADING HS20-44**

**DESIGN SPECIFICATIONS**  
 2002 AASHTO Standard Specifications for Highway Bridges

**DESIGN STRESSES**  
**FIELD UNITS**

f'c = 3,500 psi  
 fy = 60,000 psi (Reinforcement)  
 Max Soil Pressure Under Footing = 3000 psf

**GENERAL PLAN & ELEVATION**  
**MANNHEIM ROAD OVER O'HARE DITCH**  
**COOK COUNTY**  
**STATION 140+48.31**



**WATERWAY INFORMATION**

Drainage Area = 0.47 sq. mi. Existing Low Grade Elev. 642.68 @ Sta. 140+08 Proposed Low Grade Elev. 642.21 @ Sta. 140+08

Flood	Freq. Yr.	O.C.F.S.		Opening Sq. Ft.		Head - Ft.		Headwater El.		
		Exist.	Prop.	Exist.	Prop.	H.W.E.	Exist.	Prop.	Exist.	Prop.
10-YR	10	188	140	20.45	37.40	6.32	2.36	0.18	634.59	632.41
Design	50	302	224	24.40	45.30	6.33	4.14	1.15	637.16	634.17
Base	100	384	262	25.90	48.30	6.33	6.17	1.64	639.49	634.96
Overtopping	>500	-	-	-	-	-	-	-	-	-
Max. Calc.	500	614	445	32.75	62.00	6.34	8.70	5.65	643.40	640.35

Velocities at upstream face for 10-Year Flood Event: Existing - 5.84 f/s, Proposed - 3.58 f/s

**GENERAL NOTES:**

1. A cantilevered sheet piling design does not appear to be feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan, details and calculations for review and acceptance by the Engineer.
2. Locate Inlet Pipe connecting to north wall of box culvert in field. Cut horizontal and vertical reinforcement in field to accommodate pipe and see 'Bar Splicers and Pipe Opening Details' sheet for additional opening reinforcement.
3. Roadway profile shown in the longitudinal section is for the ultimate condition to be completed after construction of culvert.

**DELTA ENGINEERING GROUP, LLC**  
 FILE NAME = c:\caddlib\p\k\khan\pgr\greet.lakes\dms47849\60P35-SI-GPE.dgn

USER NAME = kkhan	DESIGNED SK	REVISED -
PLOT SCALE = #SCALE#	DRAWN SK	REVISED -
PLOT DATE = 10/18/2012	CHECKED GBC	REVISED -
	DATE 10/19/2012	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**MANNHEIM RD OVER O'HARE DITCH CULVERT**  
**GENERAL PLAN AND ELEVATION**

F.A.P. RTE. 330	SECTION 0105-WRS	COUNTY COOK	TOTAL SHEETS 597	SHEET NO. 35
SCALE: N.T.S.			SHEET NO. OF SHEETS STA. TO STA.	
[ILLINOIS] FED. AID PROJECT CONTRACT NO. 60P35				