Bench Mark: NGS Monument with PID#ME1606 N 1,760,564.961 E 1,148,917.748 Elevation 712.39'.

Existing Structure: S.N. 016-1341 was originally constructed at an unknown time before 1948 as a cast-in-place single box culvert 13'-6" wide and 4'-0" high and 27'-9" long. Extensions were added to each side of the culvert in 1948 making it a 69'-6" long structure. The existing structure to be removed and replaced with a cast-in-place triple box culvert 12'-0" wide by 6'-0" high and 80'-3¼" long. Traffic will be detoured during construction.

Salvage: No salvage.

Precast alternative is not allowed.

DESIGN SPECIFICATIONS

2017 AASHTO LRFD Design Specifications, 8th edition.

HIGHWAY CLASSIFICATION

F.A.U. Rte. 2860 - Chicago Rd.
Functional Class: Major Collector
ADT: 6000 (2018); 8700 (2037)
ADTT: 180 (2018); 261 (2037)
Design Speed: 35 mph
Posted Speed: 35 mph

DESIGN STRESSES

FIELD UNITS
f'c = 3,500 psi (Concrete)
fy = 60,000 psi (Reinforcement)

LOADING HL-93

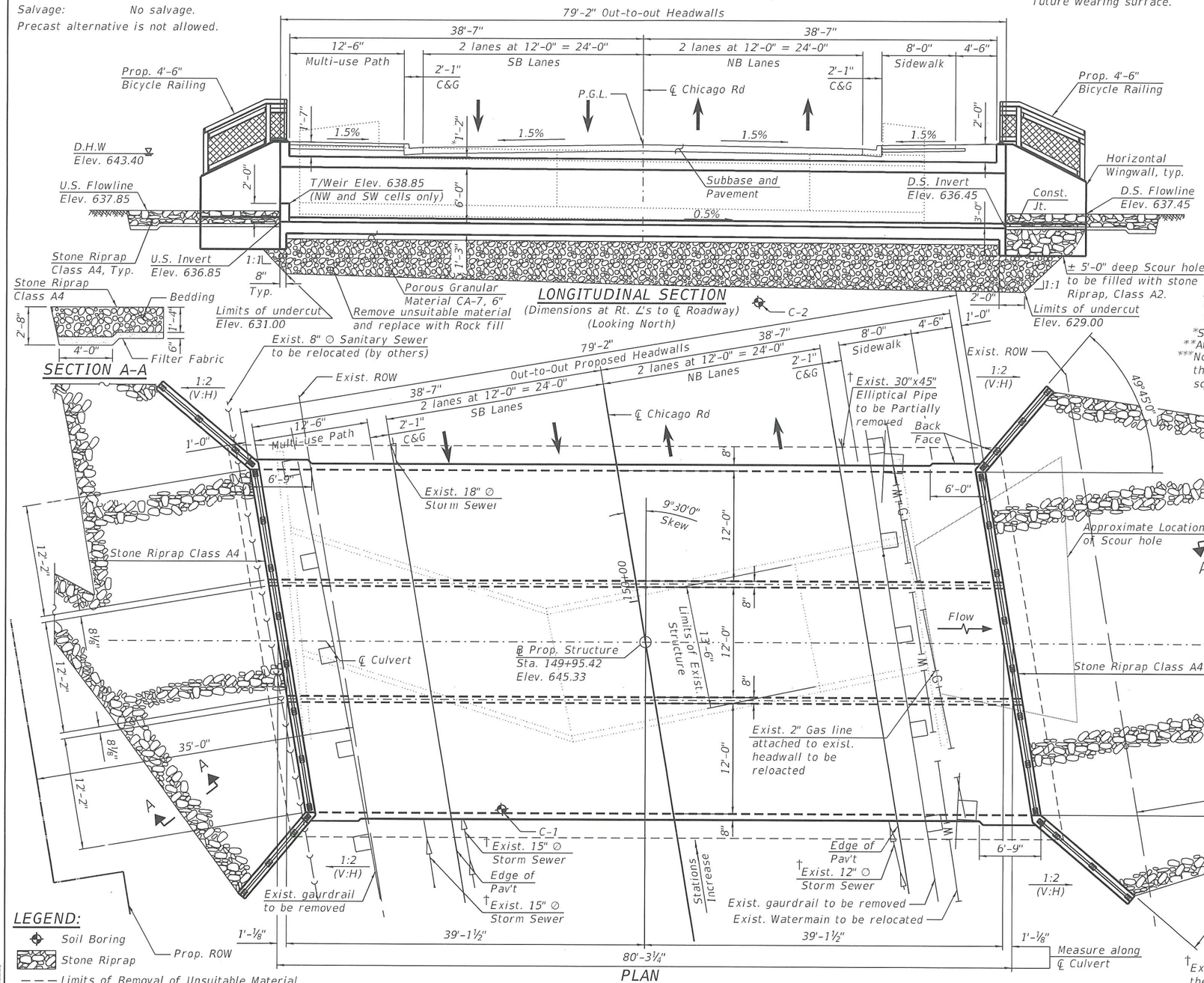
Allow 50 lb/sq. ft. for future wearing surface.

WATERWAY INFORMATION

Drainage Area = 2.2 Square Miles
Exist. Overtopping Elev. = 644.01 at Sta. 152+00
Prop. Overtopping Elev. = 644.01 at Sta. 152+00

Flood Event	Freq. Yr.	Q C.F.S.	Opening - Sq. Ft. Exist.	Opening - Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater Elev. Exist.	Headwater Elev. Prop.
	10	375	50	156	642.8	1.0	0.0	643.8	642.8
Design	50	520	58	156	643.4	0.9	0.0	644.3	643.4
Base	100	590	61	156	643.7	0.8	0.1	644.5	643.8
Scour Design Check	200	640							
Overtop Exist.									
Overtop Prop.									
Max. Calc.	500	735	65	156	644.1	0.5	0.0	644.6	644.1

10-year velocity through the existing culvert = 7 ft/s
10-year velocity through proposed culvert = 3 ft/s
2 year flow rate (Q) = 280 cfs
Estimated water surface elevation = 639.33 ft

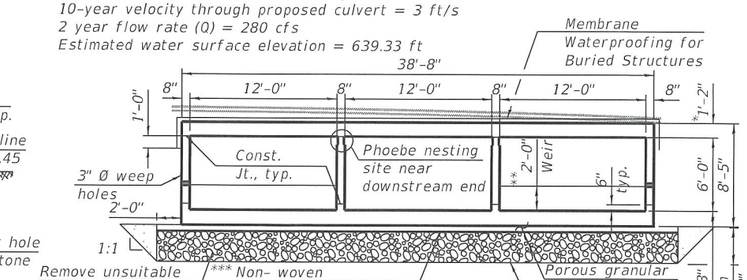


LONGITUDINAL SECTION

(Dimensions at Rt. ∠'s to ℄ Roadway)
(Looking North)

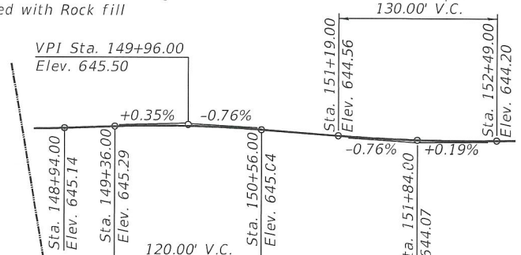
SECTION A-A

PLAN



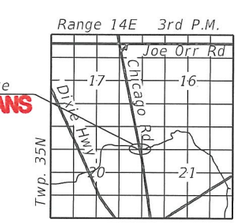
SECTION THRU BARREL

*Slab thickness may be refined in final design
**At upstream end, NW and SW cells only.
***Non- woven geotextile fabric shall conform to the requirement of Article 1080.01 of the Standard Specifications. The minimum weight of the fabric shall be 6 ounces per square yard. Cost included with Rock fill



PROFILE GRADE

APPROVED
NOV 20 2019
AS A BASIS FOR PREPARATION OF DETAILED PLANS



LOCATION SKETCH

LEGEND:
- Soil Boring
- Stone Riprap
- Limits of Removal of Unsuitable Material

†Exist. pipe to be retrofitted and reattached to the exterior walls of the proposed culvert.

GENERAL PLAN
CHICAGO ROAD OVER
THORN CREEK TRIBUTARY
F.A.U. RTE 2860 - SEC. 2018-055-CR
COOK COUNTY
STATION 149+95.42
S.N. 016-2305

MODEL: $MODELNAME$
FILE NAME: $FILEL$

HBM ENGINEERING GROUP, LLC

USER NAME =	DESIGNED - MAA	REVISED -
	CHECKED - MI, RTB	REVISED -
PLOT SCALE =	DRAWN - MAA	REVISED -
PLOT DATE =	DATE - 09/16/2019	REVISED -

$DATE$ $TIME$

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE NO. 016-2305

SHEET 1 OF 1 SHEET

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2860	2018-055-CR	COOK	1	1
		CONTRACT NO. 62G92		
		ILLINOIS	FED. AID PROJECT	