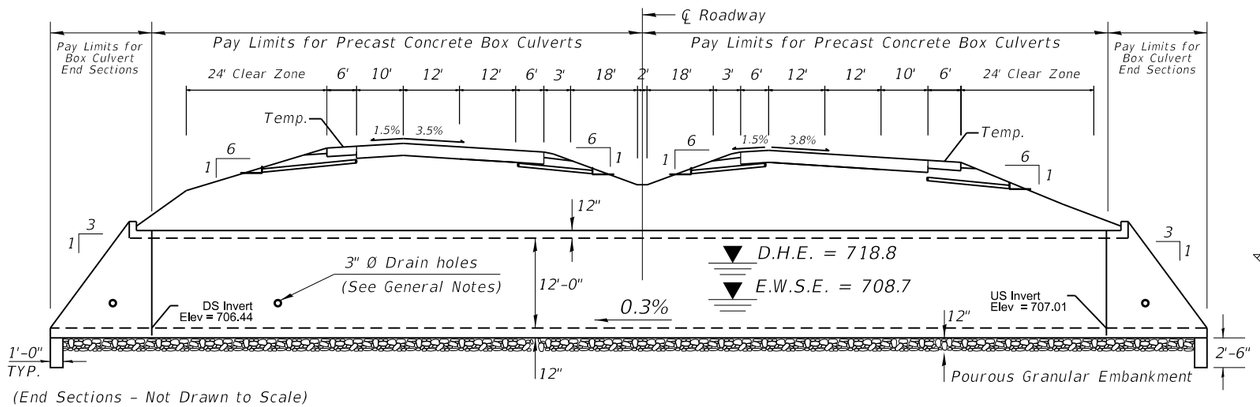
Benchmark:

Existing Structure: SN 094-2004 is a Double 14'-2" x 9'-10" steel plate arch culvert, built at 0 degree skew.

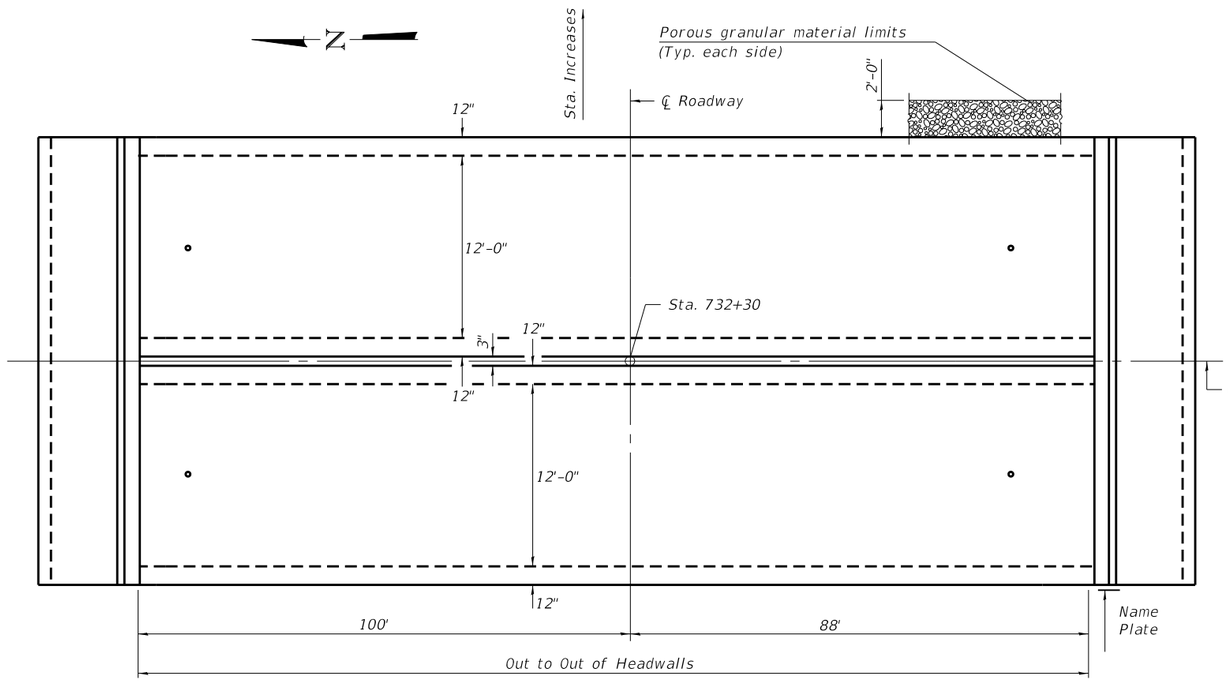
INDEX OF SHEETS

1. General Plan and Elevation



(End Sections – Not Drawn to Scale)

ELEVATION



PLAN

WATERWAY INFORMATION

Drainage Area = 33.1 sq. mi. Low Grade Elev. = 723.9 @ Sta. 728+90

Flood	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 El. Exist.	Headwater El. Prop.
	10	771	218	244	717.6	1.2	0.9	718.8	718.5
Design	50	1107	218	272	718.8	1.9	1.3	720.7	720.1
Base	100	1256	218	284	719.3	2.3	1.5	721.6	720.8
Existing Overtopping	479	1655	218	NA	720.4	3.5	NA	723.9	NA
Max. Calc.	500	1696	NA	288	720.5	NA	2.4	NA	722.9

DCB-GPE 7-23-2021

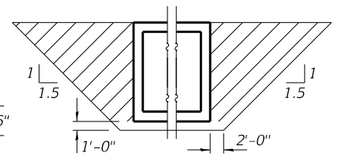
GENERAL NOTES

The design fill height for this box is 2.1 ft (min.) to 4.8 ft (max.). The precast box culvert sections shall conform to the requirements of ASTM C 1577.

Drain holes shall be provided on exterior culvert walls for each precast box segment with a clear rise greater than 3 ft. The drain hole shall be located within 1/3 of the clear rise of the box culvert, shall not intercept the haunch, and shall conform to the requirements of Article 503.11 of the Standard Specification.

Nonwoven geotextile fabric shall conform to the requirements of Art. 1080.01 of the Standard Specifications. The minimum weight of the fabric shall be 6 ounces per square yard.

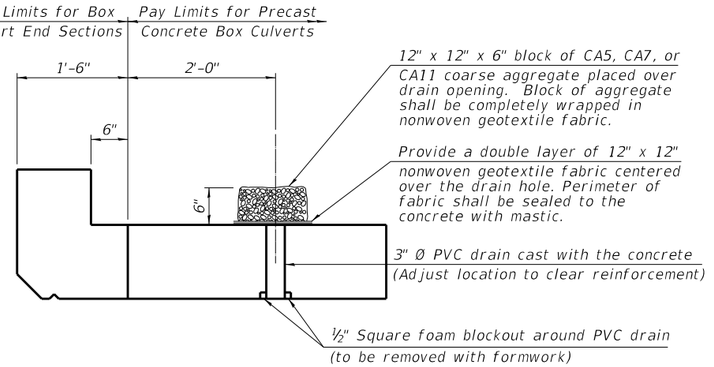
Precast concrete box culverts and box culvert end sections shall be backfilled with Porous Granular Embankment in the required excavation areas on the sides of the box culvert from the top of the box culvert to the bottom of the box culvert. This area of PGE is included in the Porous Granular Embankment pay item. The 6-inch thick layer of porous granular material required under the precast concrete box culvert, according to Section 540.06 of the standard specifications, shall also apply to the end sections. Cost of this porous granular material will not be paid for separately but shall be included in the unit price of the work for which it is required.



PAY LIMITS FOR POROUS GRANULAR EMBANKMENT

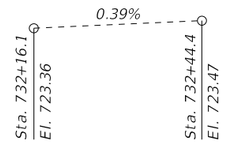
(Hatched area)

SEE EXCAVATION & CULVERT DETAIL



DRAIN DETAIL

(All costs associated with furnishing and constructing the above drain detail will not be measured for payment but shall be included in the contract unit price for the associated work.)



PROFILE GRADE

Flow

℄ Culvert

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications
Customary U.S. Units, 9th Edition

LOADING HL-93

DESIGN STRESSES

PRECAST UNITS

f'c = 5,000 psi
fy = 65,000 psi (Welded Wire Reinforcement)

FIELD UNITS

f'c = 3,500 psi
fy = 65,000 psi (Welded Wire Reinforcement)

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Removal of Existing Structure, Special	Each	1
Name Plates	Each	1
Box Culvert End Sections, Culvert No. 1	Each	2
Precast Concrete Box Culverts 12'x12' (SPECIAL)	Foot	376
Porous Granular Embankment	Cu. Yd.	3739
Temporary Soil Retention System	Sq. Ft.	2576

STATION
BUILT 202_ BY
STATE OF ILLINOIS
F.A.P. RT. 313A
SEC. (94-17)CR
LOADING HL-93
STR. NO. 094-2019

NAME PLATE
See Std. 515001

SEE COVER SHEET

LOCATION SKETCH

N

GENERAL PLAN AND ELEVATION
IL RTE. 110 / US RTE. 34 OVER CEDAR CREEK
F.A.P. RTE. 313A _SEC. (94-17)CR
WARREN COUNTY
STATION 732+30
S.N. 094-2019

MODEL: $MODELNAME$
FILE NAME: $FILE$

USER NAME = $USER$	DESIGNED -	REVISED - 1 10/26/2022 AMJ	
	DRAWN -	REVISED -	
PLOT SCALE = $SCALE$	CHECKED -	REVISED -	
PLOT DATE = $DATE$	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
313A	(94-17)CR	WARREN	57	33A
		CONTRACT NO. 68E43		
		ILLINOIS FED. AID PROJECT		

1 REVISED ENTIRE SHEET 10/31/22