01-19-2024 LETTING ITEM 119

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	**	CRAWFORD	10	1
	ILLINOIS	CONTRACT NO. 74A85		

* TR 183A (1000TH AVENUE)
** D7 ENTRANCE CULVERT 2022-1

D-97-116-21

FOR INDEX OF SHEETS, SEE SHEET NO. 2

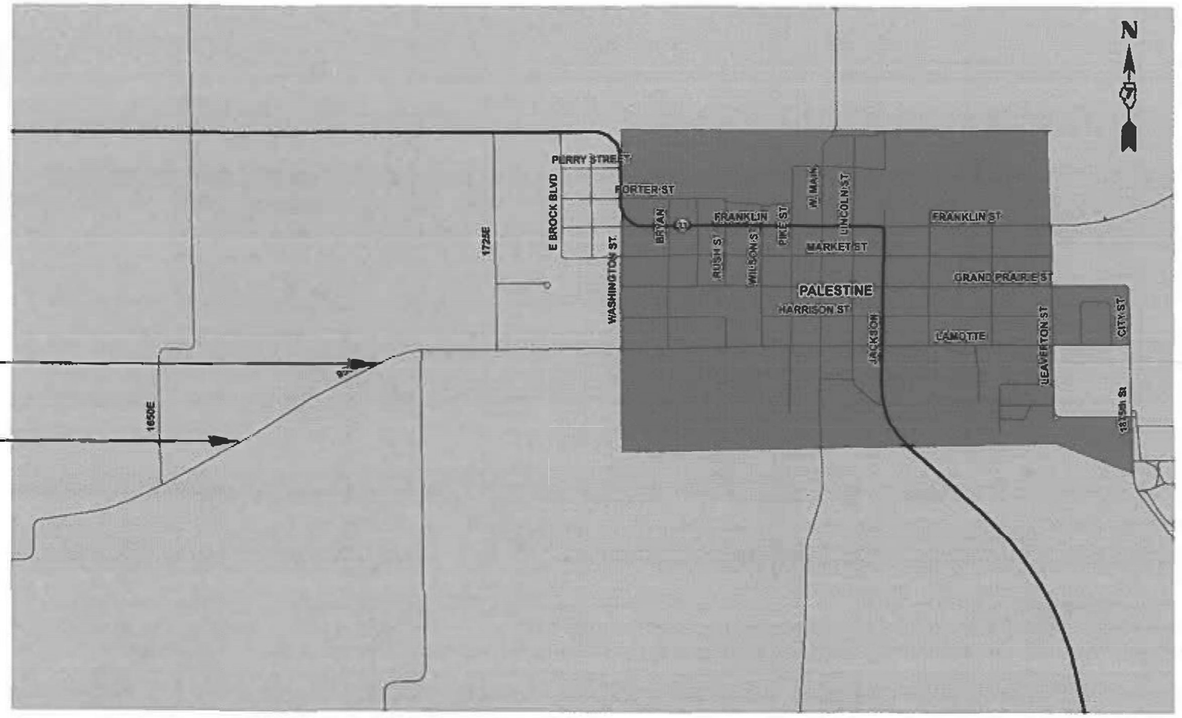
ADT = 450

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED HIGHWAY PLANS

TR 183A (1000TH AVE)
SECTION D7 ENTRANCE CULVERTS 2022-1
CULVERT REPLACEMENTS
CRAWFORD COUNTY

C-97-185-21



LOCATION OF SECTION INDICATED THUS:-

100' 200' 300' — 1" = 100'
10' 20' 30' — 1" = 10'
50' 100' — 1" = 50'
50' 100' — 1" = 40'
50' 100' — 1" = 30'
50' 100' — 1" = 20'

FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS
1-800-892-0123
OR 811

PROJECT ENGINEER BRIAN LEWIS
PROJECT MANAGER BENJAMIN J. DETERS

CONTRACT NO. 74A85

GROSS LENGTH = 1930.00 FT. = 0.366 MILE
NET LENGTH = 1930.00 FT. = 0.366 MILE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED February 9 20 23
Jeffrey P Myerlo
REGIONAL ENGINEER

March 24, 2023
Scott A. Eck
ENGINEER OF DESIGN AND ENVIRONMENT

March 24, 2023
Stephen McGrath
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

REV. - MS

INDEX OF SHEETS

HIGHWAY STANDARDS

STANDARD NO.	DESCRIPTION
000001 - 08	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
001001 - 02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
701201 - 05	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS ≥ 45 MPH
701901 - 09	TRAFFIC CONTROL DEVICES

GENERAL NOTES

THE WORK INCLUDED IN SECTION D7 ENTRANCE CULVERTS 2022-1 CONSISTS OF PIPE CULVERT AND HEADWALL REMOVAL ALONG WITH PRECAST CULVERT PLACEMENTS, RIPRAP, FURNISHED EXCAVATION, AGGREGATE SURFACE COURSE, AND ANY OTHER WORK NECESSARY TO COMPLETE THIS SECTION.

THE PROPOSED PROJECT BEGINS APPROXIMATELY 0.54 MILES AND ENDS APPROXIMATELY 0.32 MILES WEST OF N 1725TH ST. ON THE WEST END OF PALESTINE.

THE MATERIAL USED FOR AGGREGATE SURFACE COURSE, TYPE B SHALL BE CRUSHED STONE.

ANY EXISTING PRIVATELY OWNED LIGHTING WIRING OR CONDUIT DISCOVERED WITHIN THE EXISTING ENTRANCES DURING CULVERT REPLACEMENT OPERATIONS SHALL BE LOCATED AND REPAIRED BACK TO PROPER WORKING ORDER ONCE OPERATIONS FOR THAT PARTICULAR LOCATION HAVE BEEN COMPLETED.

AMEREN GAS LINES HAVE BEEN IDENTIFIED AT LOCATIONS 1 & 3 OF THIS SECTION. CARE SHALL BE TAKEN TO ENSURE THESE UTILITIES HAVE BEEN RELOCATED PRIOR TO WORK AT THESE LOCATIONS OR THAT A REPRESENTATIVE OF THESE UITILITIES HAS BEEN CONTACTED PRIOR TO THE START OF WORK TO ENSURE THESE ARE ADDRESSED APPROPRIATELY.

ANY ITEMS OR APPURTANCES EXISTING AROUND THE EXISTING STRUCTURES THAT ARE NO LONGER REQUIRED AFTER COMPLETION OF THE NEW CULVERTS SHALL BE THE PROPERTY OF THE OWNERS OF THE CORRESPONDING ENTRANCE.

THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN THE CALCULATING PLAN QUANTITIES:
AGGREGATE SHOULDERS & AGGREGATE SURFACE COURSE 2.05 TONS/CU YD

REV. - MS

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PLOT DATE = 2/8/2023	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS, HIGHWAY STANDARDS, AND GENERAL NOTES

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
**	*	CRAWFORD	10	2
** TR 183A		CONTRACT NO. 74A85		
	ILLINOIS FED. AID PROJECT			

* D7 ENTRANCE CULVERTS 2022-1

SUMMARY OF QUANTITIES

CODE NO	ITEM	UNIT	TOTAL QUANTITIES	CONSTRUCTION TYPE CODE 0004 100% STATE		
20400800	FURNISHED EXCAVATION	CU YD	792	792		
20700110	POROUS GRANULAR EMBANKMENT	TON	231	231		
28100107	STONE RIPRAP, CLASS A4	SQ YD	326	326		
28200200	FILTER FABRIC	SQ YD	326	326		
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	74	74		
54001001	BOX CULVERT END SECTIONS, CULVERT NO. 1	EACH	2	2		
54001002	BOX CULVERT END SECTIONS, CULVERT NO. 2	EACH	2	2		
54001003	BOX CULVERT END SECTIONS, CULVERT NO. 3	EACH	2	2		
54001004	BOX CULVERT END SECTIONS, CULVERT NO. 4	EACH	2	2		
54001005	BOX CULVERT END SECTIONS, CULVERT NO. 5	EACH	2	2		
54011006	PRECAST CONCRETE BOX CULVERTS 10' X 6'	FOOT	48	48		
54011206	PRECAST CONCRETE BOX CULVERTS 12' X 6'	FOOT	116	116		
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	166	166		
67100100	MOBILIZATION	L SUM	1	1		

SUMMARY OF QUANTITIES

CODE NO	ITEM	UNIT	TOTAL QUANTITIES	CONSTRUCTION TYPE CODE 0004 100% STATE		
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD	L SUM	1	1		
	701201					
X6350108	FLEXIBLE DELINEATORS	EACH	20	20		
X5810103	MEMBRANE WATERPROOFING SYSTEM FOR BURIED	SQ YD	166	166		
	STRUCTURES					
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.5	0.5		
X5015225	PIPE CULVERT REMOVAL (SPECIAL)	FOOT	98	98		

REV. - MS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
**	*	CRAWFORD	10	3
** TR 183A		CONTRACT NO. 74A85		
	ILLINOIS	FED. AID PROJECT		

* D7 ENTRANCE CULVERTS 2022-1

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	* AREA PER END SECTION (SQ FT)	STONE RIPRAP, CLASS A4 (SQ YD)	FILTER FABRIC (SQ YD)
LOCATION 1	30.9	61.7	61.7
LOCATION 2	30.9	61.7	61.7
LOCATION 3	33.7	67.4	67.4
LOCATION 4	33.7	67.4	67.4
LOCATION 5	33.7	67.4	67.4
	TOTAL =	325.6	325.6
	ROUND TO:	326.0	326.0

* - MEASURED IN CAD

	* WIDTH (FOOT)	LENGTH (FOOT)	AREA (SQ FT)	THICKNESS (FOOT)	AGGREGATE SURFACE COURSE, TYPE B (TON)
LOCATION 1	15.0	29.0	435	0.5	14.5
LOCATION 2	12.0	29.0	348	0.5	11.6
LOCATION 3	13.0	36.8	478.4	0.5	15.9
LOCATION 4	12.0	36.8	441.6	0.5	14.7
LOCATION 5	14.0	36.8	515.2	0.5	17.2
				TOTAL =	73.9
				ROUND TO:	74.0

* - MEASURED IN CAD

	FURNISHED EXCAVATION (CU YD)	BOX CULVERT END SECTIONS (EACH)	PRECAST CONCRETE BOX CULVERTS, 10' x 6' (FOOT)	PRECAST CONCRETE BOX CULVERTS, 12' x 6' (FOOT)	SEEDING, CLASS 2 (SPECIAL) (ACRE)
LOCATION 1	56.9	2.0	24.0		0.1
LOCATION 2	79.1	2.0	24.0		0.1
LOCATION 3	179.7	2.0		36	0.1
LOCATION 4	205.3	2.0		36	0.1
LOCATION 5	270.4	2.0		44	0.1
TOTAL =	791.4	10.0	48.0	116.0	0.5
ROUND TO:	792.0	---	---	---	---

	LENGTH (F00T)	WIDTH (FOOT)	GEOCOMPOSITE WALL DRAIN (SQ YD)	MEMBRANE WATERPROOFING SYSTEM FOR BURIED STRUCTURES (SQ YD)
LOCATION 1	30.0	13.7	45.6	45.6
LOCATION 2	30.0	13.7	45.6	45.6
LOCATION 3	42.0	16.0	74.8	74.8
* LOCATION 4				
* LOCATION 5				
		TOTAL =	166.0	166.0

* - NOT REQUIRED, FILL HEIGHT GREATER THAN 3'

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCHEDULES OF QUANTITIES

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
**	*	CRAWFORD	10	4
** TR 183A		CONTRACT NO. 74A85		
	ILLINOIS	FED. AID PROJECT		

* D7 ENTRANCE CULVERTS 2022-1

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLAN SHEETS – E. 1000TH AVE

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	*	CRAWFORD	10	5
** TR 183A		CONTRACT NO. 74A85		
	ILLINOIS	FED. AID PROJECT		

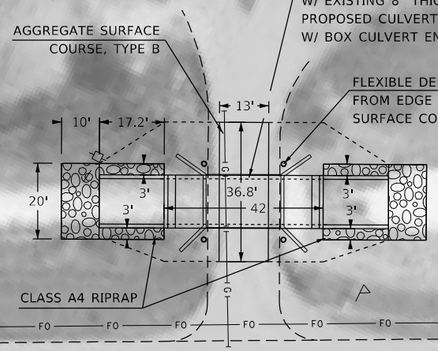
† D7 ENTRANCE CULVERTS 2022-1

LOCATION 3:
EXISTING CULVERT: 142" SPAN x 83" RISE = 10' EQUIVALENT ARCH DIAMETER CMP
W/ EXISTING 8" THICK FLARED PCC END SECTIONS
PROPOSED CULVERT: PRECAST 12' x 6' x 36' - 36' PAY LIMIT
W/ BOX CULVERT END SECTIONS, CULVERT NO. 3 - 2 EACH

AGGREGATE SURFACE COURSE, TYPE B

FLEXIBLE DELINEATORS TO BE LOCATED 4' FROM EDGE OF PROPOSED AGGREGATE SURFACE COURSE - 4 EACH

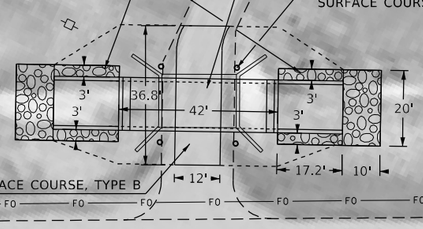
CLASS A4 RIPRAP



LOCATION 4:
EXISTING CULVERT: 142" SPAN x 83" RISE = 10' EQUIVALENT ARCH DIAMETER CMP
W/ EXISTING 8" THICK FLARED PCC END SECTIONS
PROPOSED CULVERT: PRECAST 12' x 6' x 36' - 36' PAY LIMIT
W/ BOX CULVERT END SECTIONS, CULVERT NO. 4 - 2 EACH

CLASS A4 RIPRAP

FLEXIBLE DELINEATORS TO BE LOCATED 4' FROM EDGE OF PROPOSED AGGREGATE SURFACE COURSE - 4 EACH

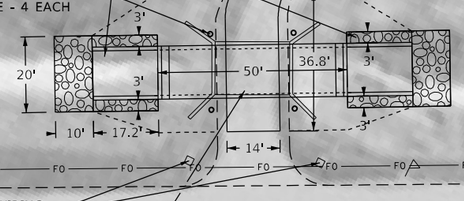


AGGREGATE SURFACE COURSE, TYPE B

AGGREGATE SURFACE COURSE, TYPE B

CLASS A4 RIPRAP

FLEXIBLE DELINEATORS TO BE LOCATED 4' FROM EDGE OF PROPOSED AGGREGATE SURFACE COURSE - 4 EACH



E 1000TH AVE

EXISTING ENTRANCE LIGHTING WIRING
SHALL BE LOCATED AND REPLACED TO WORKING
ORDER IF DISRUPTED DURING STRUCTURE REPLACEMENT OPERATIONS

LOCATION 5:
EXISTING CULVERT: 142" SPAN x 83" RISE = 10' EQUIVALENT ARCH DIAMETER CMP
W/ EXISTING 8" THICK FLARED PCC END SECTIONS
PROPOSED CULVERT: PRECAST 12' x 6' x 44' - 44' PAY LIMIT
W/ BOX CULVERT END SECTIONS, CULVERT NO. 5 - 2 EACH

* TR 183A (E 1000TH AVE)
** D7 ENTRANCE CULVERTS 2022-1

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLAN SHEETS – E. 1000TH AVE

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
**	*	CRAWFORD	10	6
** TR 183A		CONTRACT NO. 74A85		
	ILLINOIS	FED. AID PROJECT		

* D7 ENTRANCE CULVERTS 2022-1

Benchmark:

Existing Structure:

INDEX OF SHEETS

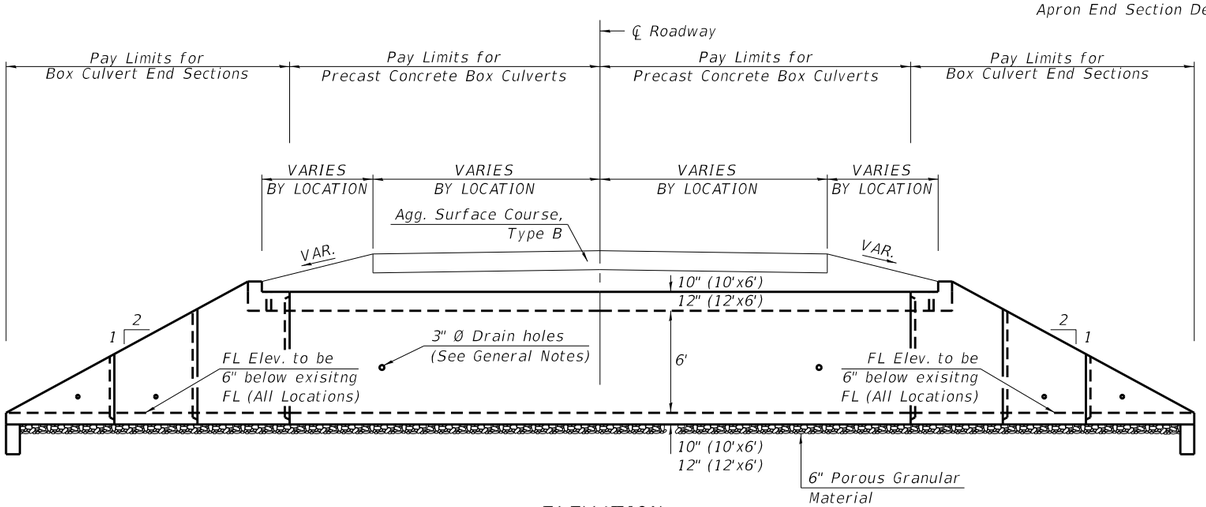
GENERAL NOTES

The design fill height for the respective structures can be found on sheet 10. The precast box culvert sections shall conform to the requirements of ASTM 1577.

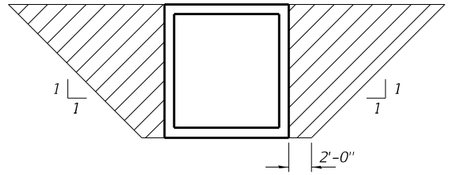
Drain holes shall be provided on exterior culvert walls for each precast box segment with a clear rise greater than 3 ft. The drain hole shall be located within 1/3 of the clear rise of the box culvert, shall not intercept the haunch, and shall conform to the requirements of Article 503.11 of the Standard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

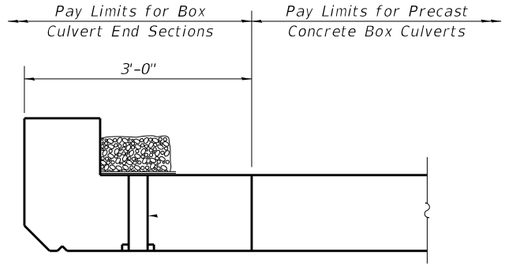


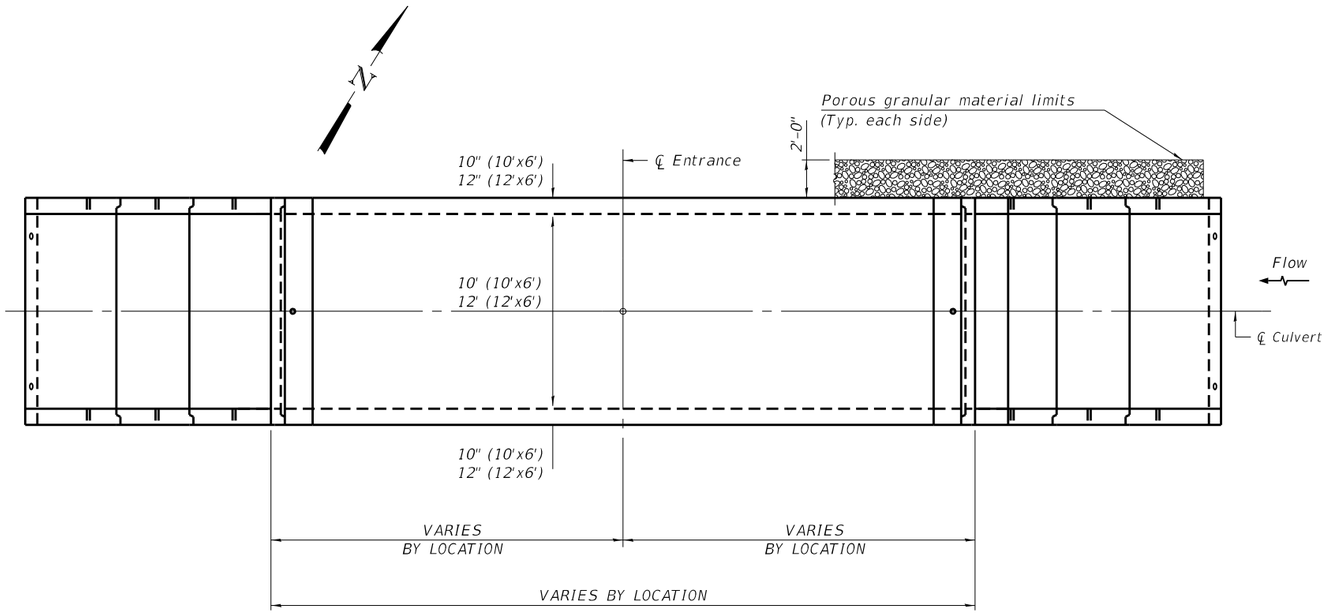
ELEVATION



PAY LIMITS FOR POROUS GRANULAR EMBANKMENT

(Hatched area)





PLAN

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)

TOTAL BILL OF MATERIAL (Total 5 Culverts)

ITEM	UNIT	TOTAL
Pipe Culvert Removal (Special)	Foot	98.0
Box Culvert End Sections, Culvert No. 1	Each	2.0
Box Culvert End Sections, Culvert No. 2	Each	2.0
Box Culvert End Sections, Culvert No. 3	Each	2.0
Box Culvert End Sections, Culvert No. 4	Each	2.0
Box Culvert End Sections, Culvert No. 5	Each	2.0
Precast Concrete Box Culverts, 10' x 6'	Foot	48.0
Precast Concrete Box Culverts, 12' x 6'	Foot	116.0
Porous Granular Embankment	Ton	231.0
Geocomposite Wall Drain	Sq Yd	166.0
Membrane Waterproofing System For Buried Structures	Sq Yd	166.0

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	DRAWN -	REVISED -
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PLOT DATE = $DATE$	DATE -	REVISED -

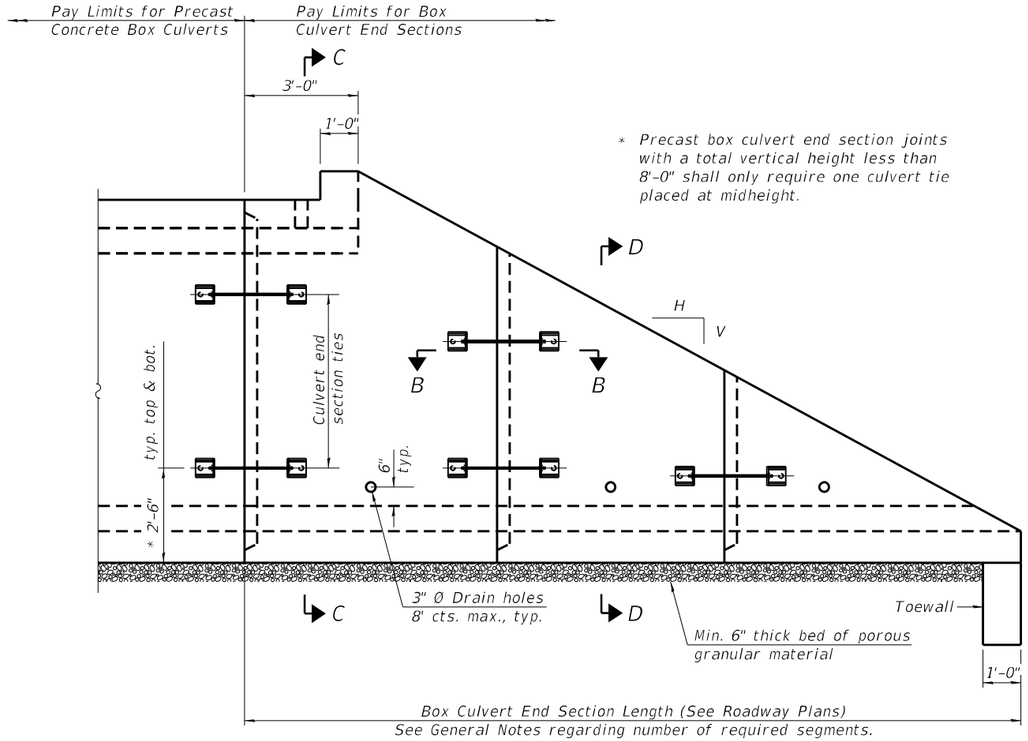
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
**	*	CRAWFORD	10	7
** TR 183A		CONTRACT NO. 74A85		
	ILLINOIS FED. AID PROJECT			

* D7 ENTRANCE CULVERTS 2022-1



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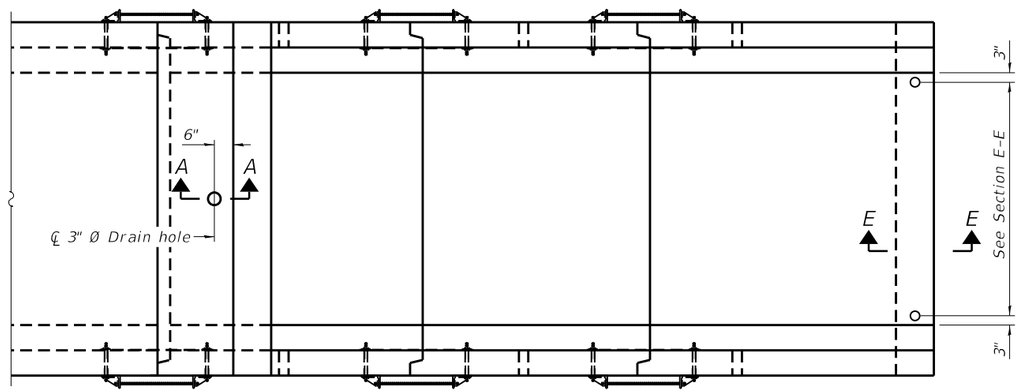
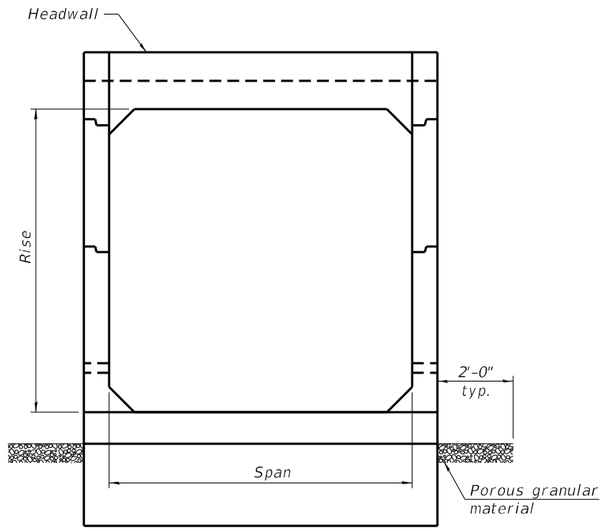
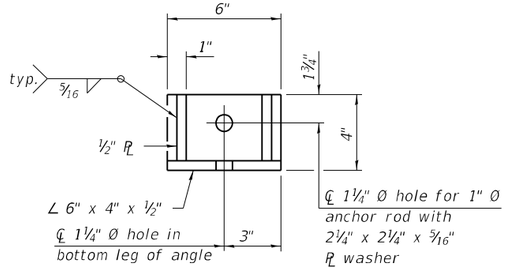


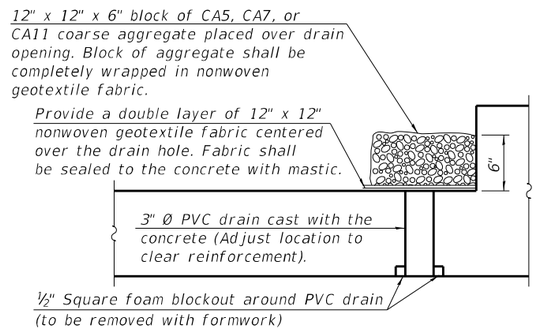
PLAN



END VIEW

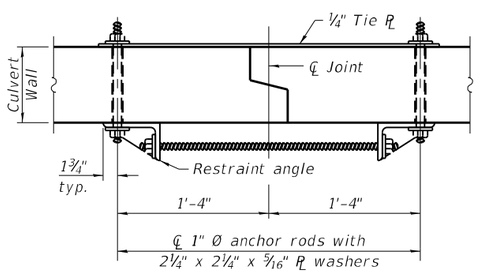


RESTRAINT ANGLE DETAIL



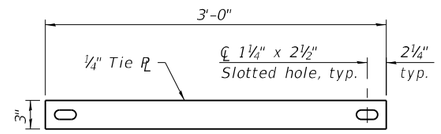
SECTION A-A

(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.)



SECTION B-B

(Showing end section tie details)



TIE PLATE DETAIL

GENERAL NOTES

Box Culvert End Sections shall be constructed according to the requirements of Section 540 of the Standard Specifications except as modified herein. This work will be measured for payment as each, with each end of each culvert being one each. End sections will be paid for at the contract unit price per each for Box Culvert End Sections of the culvert number specified.

Typical box section dimensions, materials, and reinforcement details for Box Culvert End Sections shall be according to the requirements of ASTM C 1577 as required for the design of the portion of the culvert within the limits of Precast Concrete Box Culverts except as modified herein.

Number of segments shown in Elevation is for example only. Length and number of precast box sections required to construct Box Culvert End Sections shall be determined by the Contractor.

See roadway plans for embankment slope (V:H).

1" Ø anchor rods for the culvert ties shall conform to the requirements of ASTM F1554, Grade 105. Structural steel for tie plate and restraint angle shall conform to the requirements of Article 1006.04 of the Standard Specifications. All components of the culvert tie detail shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable. 2¼" x 2¼" x 5/16" plate washers shall be provided under each nut required for the anchor rods. Anchor rods connecting precast sections shall be brought to a snug tight condition followed by an additional ½ turn on one of the nuts for anchor rods installed in the walls. Match marks shall be provided on the bolt and nut to verify relative rotation between the bolt and the nut. Holes in the walls for the culvert tie assembly may be drilled using core bits in lieu of using formed holes.

All costs associated with furnishing and installing or constructing the toewall and culvert ties will not be measured for payment but shall be included in the contract unit price for Box Culvert End Sections of the culvert number specified.

Drain holes shall conform to the requirements of Article 503.11 of the Standard Specifications unless noted otherwise.

Nonwoven geotextile fabric shall conform to the requirements of Article 1080.01. The minimum weight of the fabric shall be 6 oz. / sq. yd..

For end sections with traversable pipe grate systems, see grate detail sheet for required modifications.

SCB-TES 2-17-2017

USER NAME = JessicaHille	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 2/8/2023	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SINGLE CELL PRECAST BOX CULVERT TAPERED END SECTIONS
STRUCTURE NO.

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	*	CRAWFORD	10	8
**	TR 183A	CONTRACT NO. 74A85		
	ILLINOIS	FED. AID PROJECT		

* D7 ENTRANCE CULVERTS 2022-1

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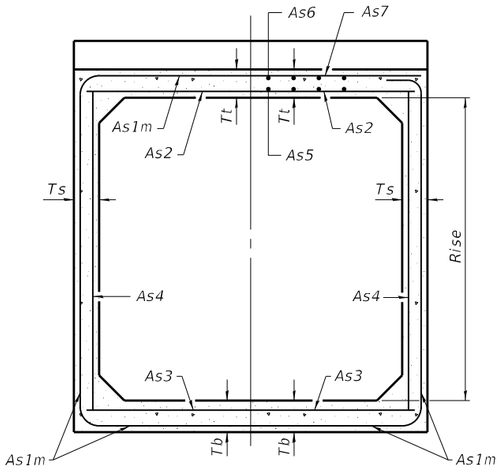
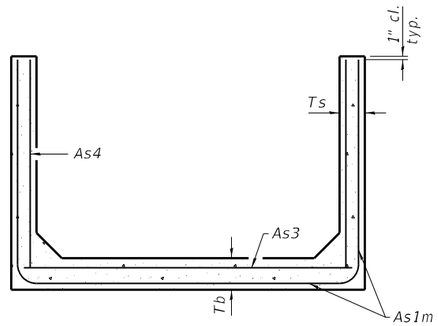
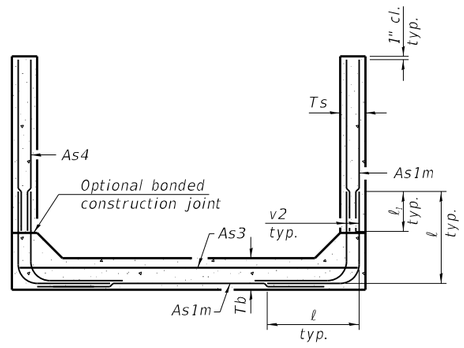


(Design Earth Cover ≥ 2 ft) (Design Earth Cover < 2 ft)

SECTION C-C



SECTION D-D



ALTERNATE SECTION D-D

As1m REINFORCEMENT

(in.²/ ft)

Ts (in.) \ Rise (ft)	2	3	4	5	6	7	8	9	10	11	12
4	0.19	0.17									
5	0.26	0.21	0.18								
6	0.22	0.26	0.23	0.22							
7	0.25	0.33	0.59	0.27	0.28						
8	0.40	0.35	0.43	0.39	0.36	0.34	0.40				
9	0.44	0.39	0.35	0.43	0.40	0.37	0.36	0.48			
10	0.48	0.42	0.38	0.47	0.44	0.41	0.38	0.42	0.56		
11	0.52	0.45	0.54	0.50	0.46	0.44	0.41	0.46	0.50	0.65	
12	0.55	0.49	0.58	0.54	0.50	0.48	0.45	0.46	0.46	0.61	0.75

(As1m reinforcement based upon welded wire reinforcement conforming to AASHTO M 55 or M 221).

ℓ_1 DIMENSION

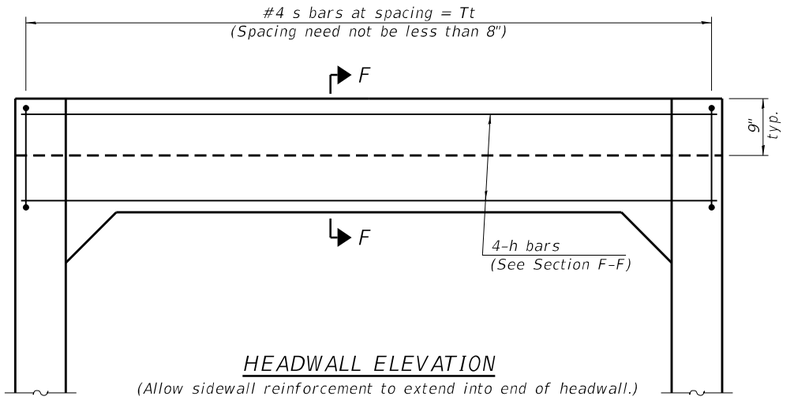
#3 bar = 2'-0"
#4 bar = 2'-8"
#5 bar = 3'-4"
#6 bar = 3'-11"

Notes:

Alternate Section D-D is provided to allow the Contractor the option of casting the bottom slab of the end section first followed by construction of the sidewalls using conventional forming methods. Shop drawings that detail slab thickness and reinforcement layout shall be submitted to the Engineer for review and approval when using Alternate Section D-D.

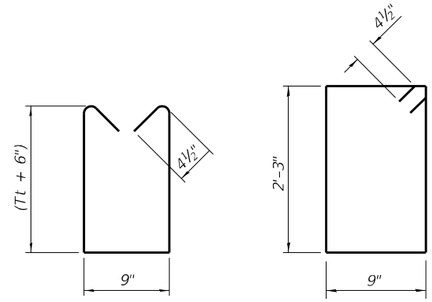
The size and spacing of the v2 bars shall provide a minimum reinforcement area along each face of the walls (in.²/ft.) equal to 1.10*(As1m). v2 bars may consist of #3 thru #6 size reinforcement bars and the longitudinal spacing shall not exceed the lesser of the wall thickness or 8 inches.

Bonded construction joints shall be prepared according to Article 503.09 of the Standard Specifications.



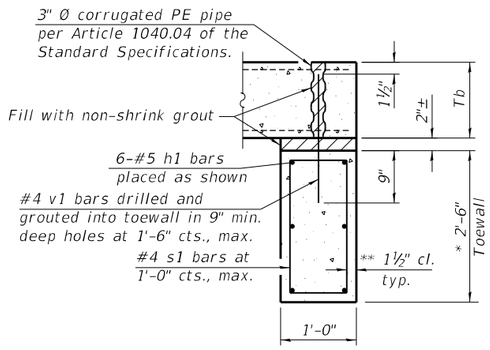
HEADWALL ELEVATION

(Allow sidewall reinforcement to extend into end of headwall.)



BAR s

BAR s1



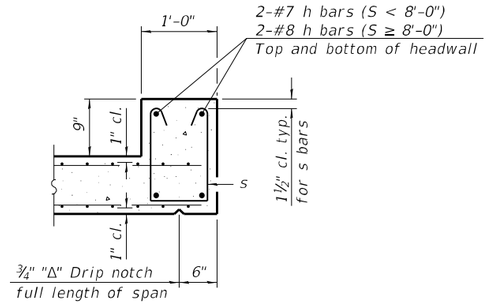
SECTION E-E

TOEWALL CONSTRUCTION SEQUENCE

1. Perform excavation and construct toewall.
2. Backfill according to the applicable paragraphs of Article 502.10 of the Standard Specifications and place bedding for precast box culvert end sections.
3. Set precast box culvert end section.
4. Drill and epoxy grout reinforcement in toewall in accordance with Section 584 of the Standard Specifications.
5. Pressure grout voids using non-shrink grout conforming to Section 1024 of the Standard Specifications.

* The Contractor may furnish a precast or cast-in-place toewall. The Contractor shall be responsible for the strength and stability of the precast toewall during handling. Additional lifting points may be required depending upon the length of the toewall or the Contractor may need to modify the design of the toewall for the proposed handling the method.

** If soil conditions permit, the sides of the toewall may be poured directly against the soil. The clear cover on the sides of the toewall shall be increased to 3" by increasing the thickness of the toewall.



SECTION F-F

SCB-TES 2-17-2017

(Sheet 2 of 2)

USER NAME = Jessica.Hille	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 2/8/2023	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SINGLE CELL PRECAST BOX CULVERT TAPERED END SECTIONS
STRUCTURE NO.

SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	*	CRAWFORD	10	9
** TR 183A		CONTRACT NO. 74A85		
	ILLINOIS FED. AID PROJECT			

* D7 ENTRANCE CULVERTS 2022-1

MODEL: Default
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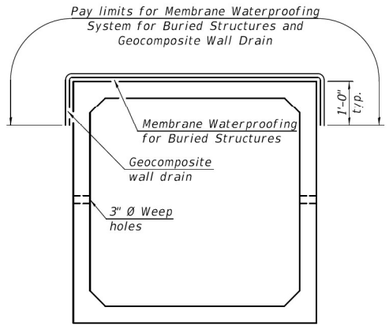
MEMBRANE WATERPROOFING SYSTEM DETAILS



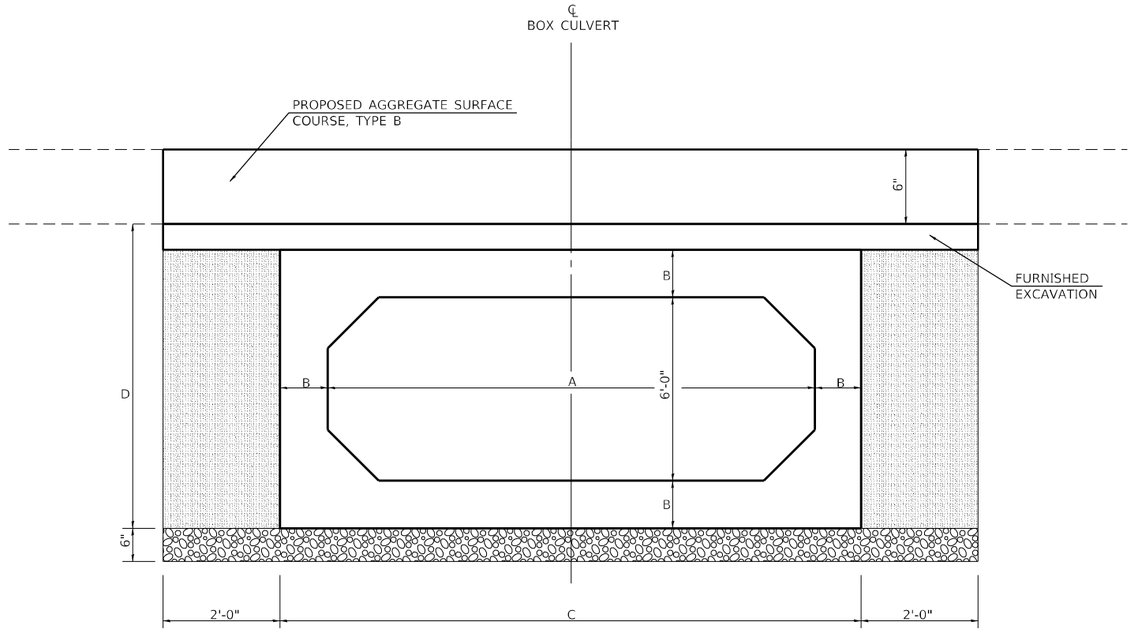
PRECAST CONCRETE BOX CULVERT

Fill Height ≤ 3 ft.

For fill heights > 3 ft., omit Membrane Waterproofing System for Buried Structures and Geocomposite Wall Drain.

Note:
Geocomposite Wall Drain shall be according to Section 591 of the Standard Specifications, except that concrete nails shall not be used in areas where it overlaps Membrane Waterproofing System for Buried Structures.

POROUS GRANULAR EMBANKMENT DETAILS



POROUS GRANULAR EMBANKMENT SHALL EXTEND 2 FT. BEYOND THE LIMITS OF THE EXISTING AGGREGATE ENTRANCE.

THE WORK SHOWN IN THIS DETAIL SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF ARTICLE 207 AND ARTICLE 540 OF THE STANDARD SPECIFICATIONS.

THIS WORK SHALL BE PAID FOR AT THE CONRACT UNIT PRICE PER CUBIC YARD OF POROUS GRANULAR EMBANKMENT.

THE AREA TO BE EXCAVATED FOR THE PROPOSED BOX CULVERT SHALL NOT BE MEASURED FOR PAYMENT. THE COST OF THE EXCAVATION SHALL BE INCLUDED IN THE COST OF PRECAST CONCRETE BOX CULVERTS AND PRECAST CONCRETE BOX CULVERT END SECTIONS.

LEGEND	
	POROUS GRANULAR EMBANKMENT
	BOX CULVERT BEDDING (INCLUDED IN THE COST OF THE BOX CULVERT AND END SECTIONS)

DIMENSION:	A	B	C	D
LOCATION 1:	10'	10"	11'-8"	9'-4"
LOCATION 2:	10'	10"	11'-8"	9'-4"
LOCATION 3:	12'	12"	14'	10'-6"
LOCATION 4:	12'	12"	14'	10'-6"
LOCATION 5:	12'	12"	14'	10'-6"

BILL OF MATERIAL (5 CULVERTS)

ITEM	UNIT	TOTAL
Porous Granular Embankment	Ton	231.0
(Total All 5 Locations)		

MODEL: Default
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USER NAME = JessicaHille	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 3/9/2023	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MEMBRANE WATERPROOFING SYSTEM
POROUS GRANULAR EMBANKMENT DETAILS

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	*	CRAWFORD	10	10
**	TR 183A	CONTRACT NO. 74A85		
	ILLINOIS FED. AID PROJECT			

* D7 ENTRANCE CULVERTS 2022-1