

## INDEX OF SHEETS

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## CURRENT TRAFFIC DATA FOR F.A.S. 1517

2020 ADT=1,600

P.U. = 90.0%

S.U. = 5.0%

M.U. = 5.0%

DESIGN DESIGNATION: N/A

PROPOSED  
HIGHWAY PLANS

FAS ROUTE 1517 (US 150)  
SECTION 11CR  
PROJECT STP-WRNS(916)  
CULVERT REPLACEMENT  
PIATT COUNTY

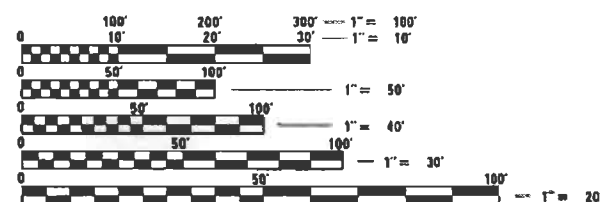
C-95-012-09

1.7 &amp; 2.6 MILE OF DEWITT CO LINE

FAS 1517 SECTION 11CR  
LOCATION 1  
BEGIN STA 81+99.15  
END STA 82+37.15

CULVERT TO BE  
TERMINATED  
EX SN 074-8053 AT  
STA 128+72.09  
60° LT FORWARD SKEW  
SINGLE 6'X2'-6"  
REINFORCED CONC  
BOX CULV

FAS 1517 SECTION 11CR  
LOCATION 2  
BEGIN STA 129+13.67  
END STA 129+47.17



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 BLUE RIDGE TOWNSHIP

PROJECT ENGINEER: JASON W. STULTS, P.E.  
PROJECT MANAGER: DAVID F. JAYME, P.E.  
DESIGNER: RAFAEL T. MONJARDIN  
PHONE: (217)-465-4181  
CONTRACT NO. 70755

## CULVERT REPLACEMENT

EX SN 074-8052 AT STA 82+18.15

SINGLE 8'X7'-6" 'V-BOTTOM' REINFORCED CONC BOX CULV

PR SN 074-8066 AT STA 82+18.15

SINGLE 12'X9' REINFORCED CONC BOX CULV

## CULVERT REPLACEMENT

EX SN 074-8054 AT STA 129+30.42

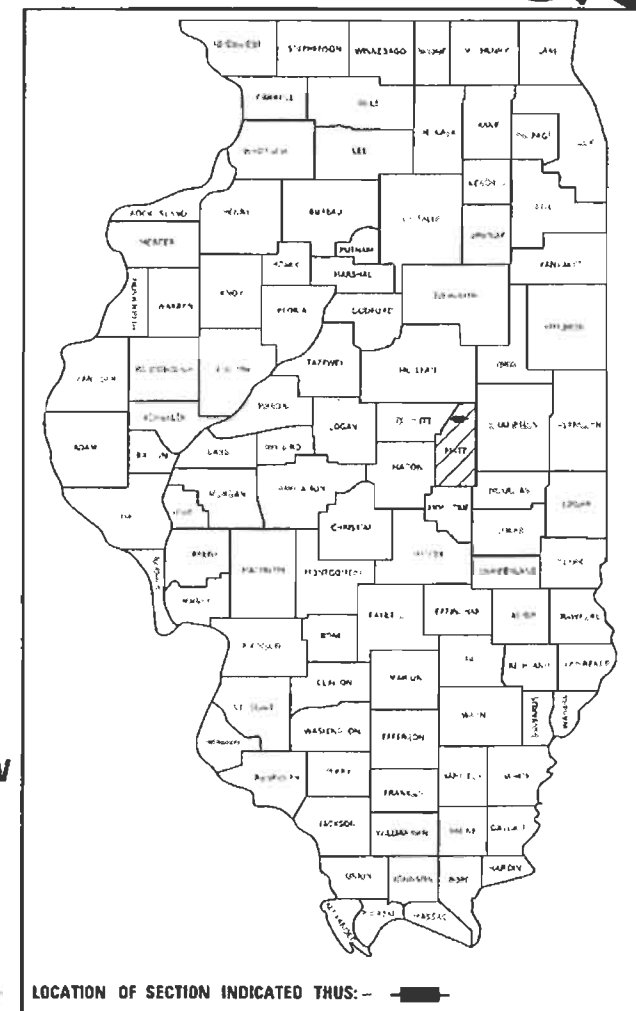
SINGLE 72" DIA CMP

PR SN 074-8067 AT STA 129+30.42

SINGLE 9'X9' REINFORCED CONC BOX CULV

GROSS LENGTH = 71.5 FT. = 0.014 MILE  
NET LENGTH = 71.5 FT. = 0.014 MILE

SCALE:



LOCATION OF SECTION INDICATED THUS: —

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUBMITTED

10/20/2021

Yenela G. Gammattsun

REGIONAL ENGINEER

December 10, 2021

Stephen M. Ziaja

December 10, 2021

DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY  
OF THE STATE OF ILLINOIS

MODEL: \$MODELNAME  
FILE NAME: pw-wildcat-pw-bentley.com-PWIDOTDocuments\DOT Offices\District 5\projects\DS70755\CADD\DATA\CAB\sheet\DS70755-abi- Index of Sheets & List of Standards.dgn

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Benchmark: BM 4911-2 Chiseled square, top of 90" concrete  
railroad south of U.S. 150, Station 82+31.00, 56.70' RT  
Existing Structure: S.N. 074-8052 was originally constructed as a  
single-barrel 8'x3' cast-in-place box culvert, with 31'-4" length. It was rebuilt in the late 1970s  
to its present "V-bottom" RC Box shape measuring 8'x7'-6" and approximately 32' long from  
face-to-face of headwall. The structure is to be completely removed and replaced. The road is  
to be temporarily closed during construction.

Fill height for the Culvert Loads should equal the design fill  
height of the precast box. It is usually assumed that 12" of  
the fill consists of wearing surface.

## INDEX OF SHEETS

1. General Plan and Elevation
2. Box Culvert End Section Details
3. Bar Splicer Assembly Details
4. Porous Granular Embankment Detail
5. Soil Boring Logs
6. Existing Structure Details

## GENERAL NOTES

The design fill height for this box is < 1.3 feet. 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 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.

## CULVERT CONSTRUCTION SEQUENCE

1. Remove existing structure
2. Build cutoff wall
3. Prepared bed
4. Place precast box culvert sections
5. Form and place concrete in end section
6. Drive sheeting
7. Backfill culvert and wings
8. Install sheet pile cap

## 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  
 $f_y$  = 65,000 psi (Welded Wire Reinforcement)

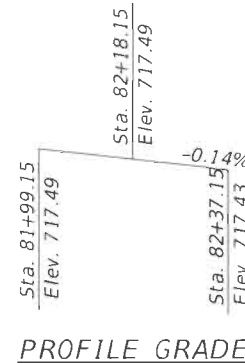
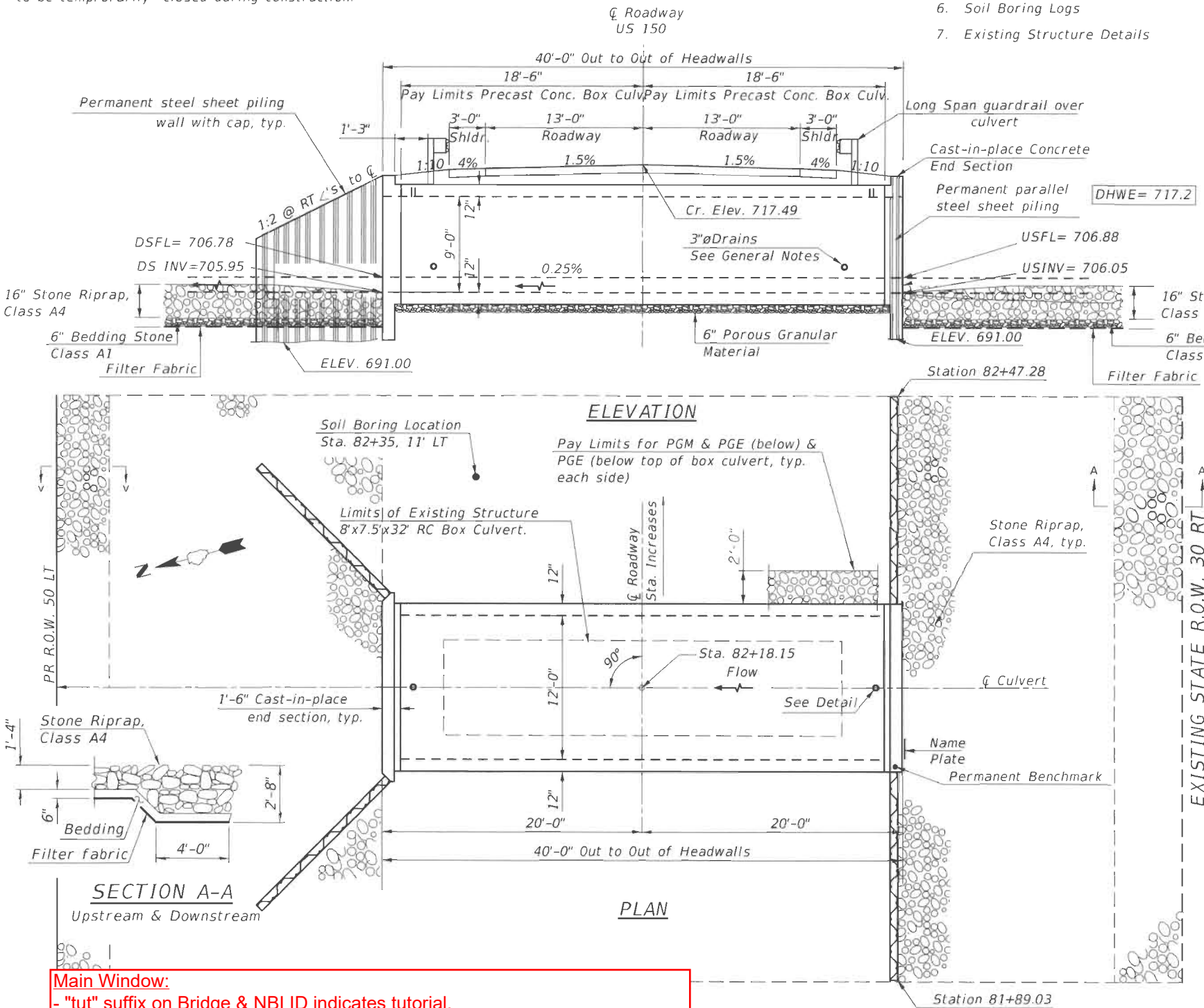
## FIELD UNITS

$f'_c$  = 3,500 psi  
 $f_y$  = 60,000 psi (Reinforcement)  
 $f_y$  = 38,000 psi (Permanent Sheet Piling)  
 $f_y$  = 50,000 psi (AASHTO M270, Grade 50W)

## TOTAL BILL OF MATERIAL

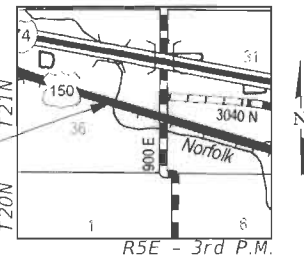
ITEM	UNIT	TOTAL
Removal of Existing Structures, Loc. 1	Each	1.0
Name Plates	Each	1.0
Box Culvert End Sections, Culvert No. 1	Each	2.0
Precast Concrete Box Culverts, 12' x 9'	Foot	37.0
Porous Granular Embankment	Cu. Yd.	173.0
Membrane Waterproofing for Buried Str.	Sq. Yd.	68.0
Geocomposite Wall Drain	Sq. Yd.	68.0

GENERAL PLAN AND ELEVATION  
SINGLE 12' X 9' PRECAST BOX CULVERT  
RTE. US 150  
F.A.S. 1517 SEC. 11CR  
PIATT COUNTY  
STATION 82+18.15  
S.N. 074-8066



STATION 82+18.15  
BUILT 2021 BY  
STATE OF ILLINOIS  
F.A.S. 1517 SEC. 11CR  
LOADING HL-93  
STR. NO. 074-8066

NAME PLATE  
See Std. 515001



## LOCATION SKETCH

## Main Window:

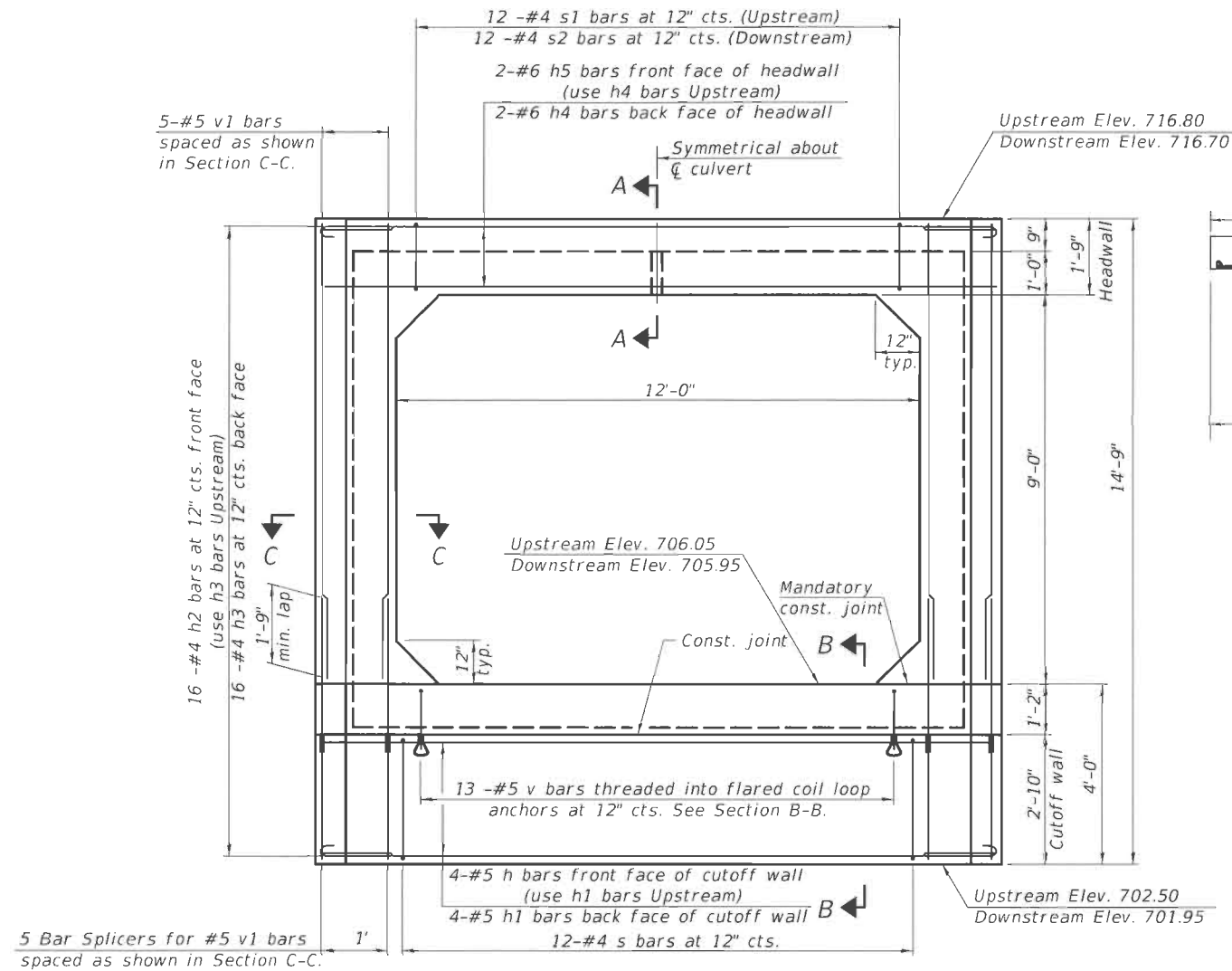
- "tut" suffix on Bridge & NBI ID indicates tutorial.
- "Template" should be unchecked in active models.
- Name includes initials of creator and latest modifier of model, facility carried over feature intersected, and acronym for structure type (see setup guide).
- Fields should match Structure Summary Report.
- Length refers to AASHTO Bridge Length (clear span).
- Route number refers to Key Route Number.
- Mi. post refers to Station.
- Fill in remaining tabs if info is available.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

LOC 1 SN 074-8066  
GENERAL PLAN & ELEVATION

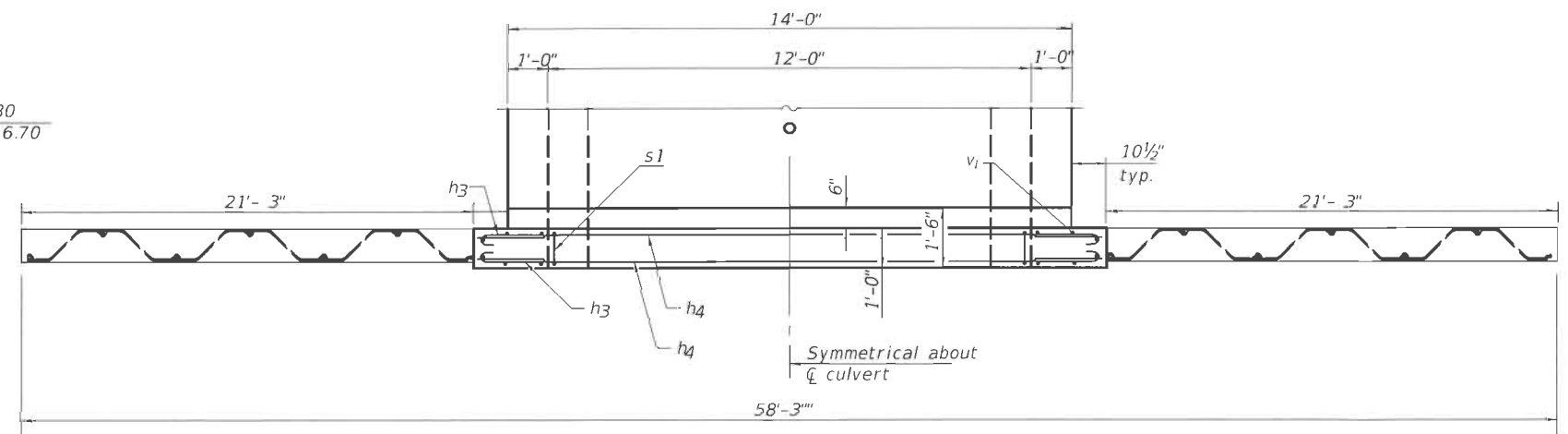
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1517	11CR	PIATT	62	24
CONTRACT NO. 70755				

SCALE: SHEET 1 OF 7 SHEETS STA. TO STA.

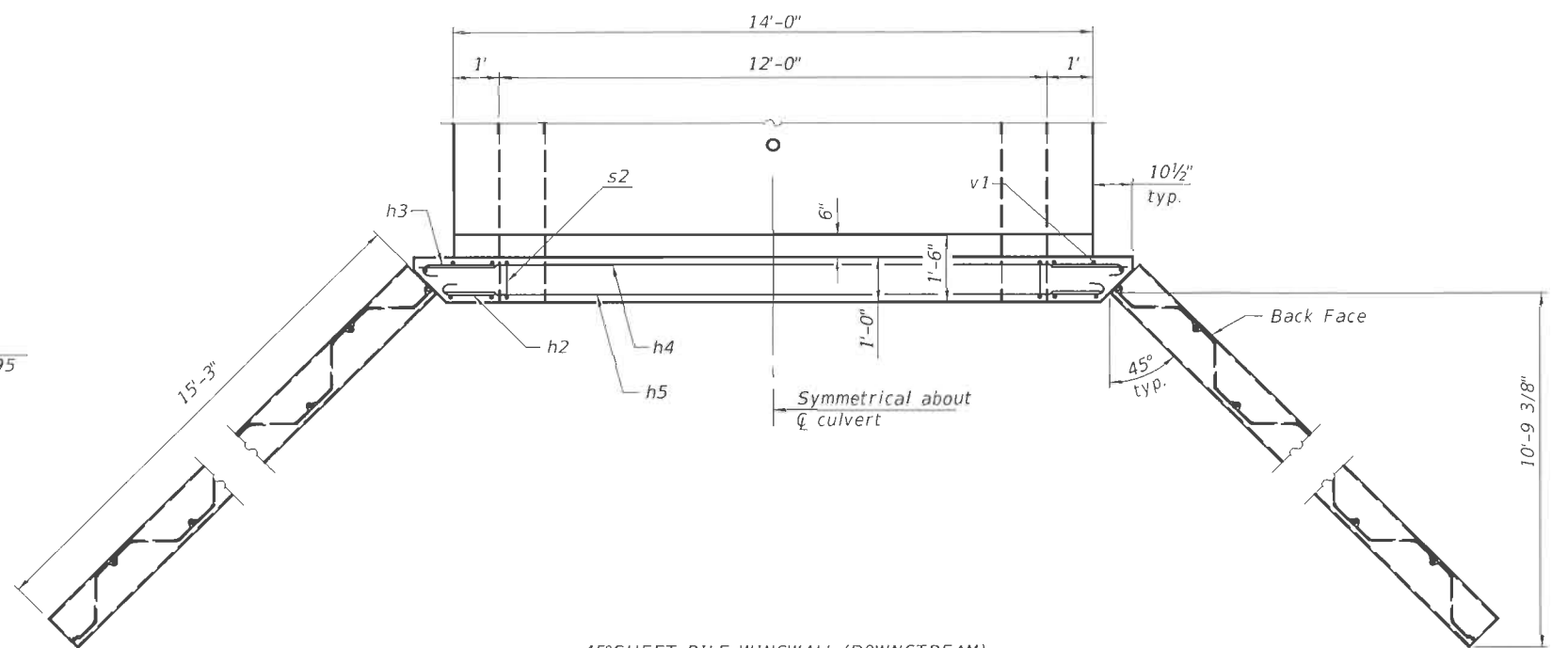


END ELEVATION

(Wingwalls omitted in this view for clarity.)



PARALLEL SHEET PILE WINGWALL (UPSTREAM)



45° SHEET PILE WINGWALL (DOWNSTREAM)

PLAN

BILL OF MATERIAL

Item	Unit	Total
Box Culvert End Sections, Culvert No. 1	Each	2

Note:

The design fill height for this structure is 1.3 feet. The precast concrete box culvert sections shall conform to the standard designs of ASTM C 1577.

The box culvert end section shall be built in the field and a precast option is not allowed except the cutoff wall may be precast. If the Contractor elects to use a precast cutoff wall, shop drawings and a proposed construction sequence shall be submitted to the Engineer for approval.

Areas of the precast box culvert in contact with cast-in-place concrete shall be sandblasted, cleaned, and wetted prior to placing concrete in the field according to Article 503.09(b).

The ends of the precast box sections adjacent to the end section shall be formed without male and female shapes.

The joints between precast box sections shall be sealed, all voids filled with a mastic joint sealer. In addition, the joints shall be externally sealed on all four sides with a 13 inch wide external sealing band. The seal shall be centered over the joint, secured in place and protected during the backfilling process.

Tilt h2 and h3 bars as required to maintain clearance.

Extend precast concrete box culvert welded wire reinforcement into end section. Bend as necessary to provide 1 1/2" clear cover.

See sheet 3 of 7 for Section A-A, B-B and C-C.

CIPES-SCB-PSSP-25

DESIGNED -	8-11-2017	DESIGNED -	REVIS
DRAWN -		DRAWN -	REVIS
CHECKED -		CHECKED -	REVIS
DATE -		DATE -	REVIS

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

LOC 1 SN 074-8066  
END SECTION DETAIL

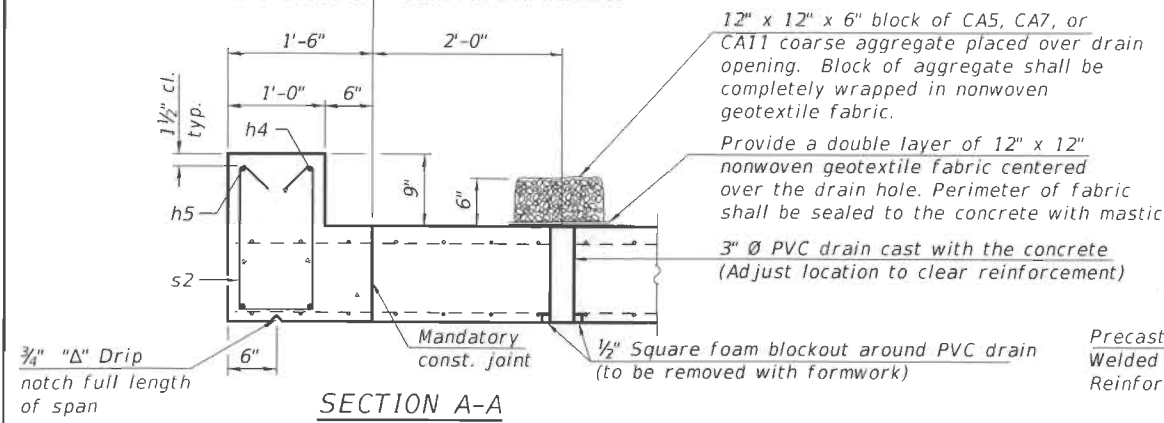
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F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1517	11CR	PIATT	62	25
CONTRACT NO. 70755				
ILLINOIS FED. AID PROJECT				

(Sheet 1 of 2)



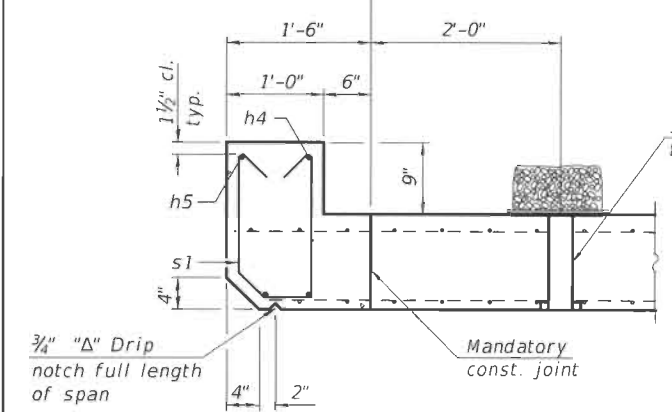
Pay Limits for Box Culvert End Sections  
Pay Limits for Precast Concrete Box Culverts



SECTION A-A  
(Downstream End)

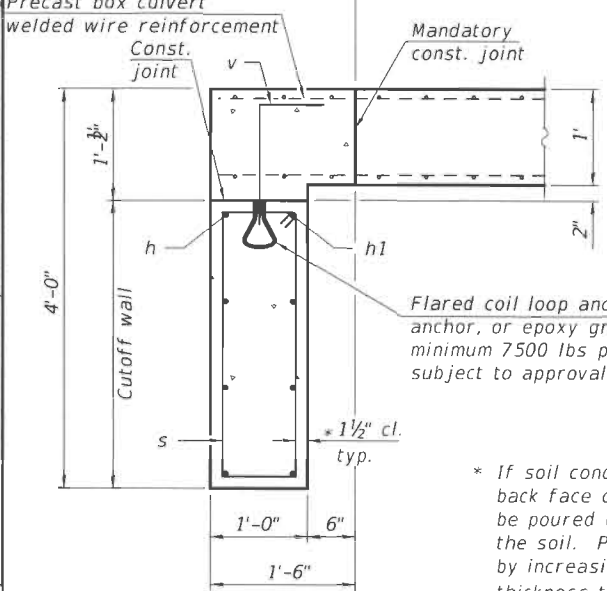
(All costs associated with furnishing and constructing the above drain detail will not be measured for payment but shall be included in the contract unit price for the associated work.)

Pay Limits for Box Culvert End Sections  
Pay Limits for Precast Concrete Box Culverts



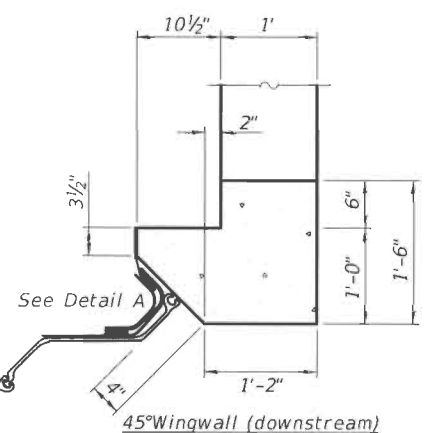
SECTION A-A  
(Upstream End)

Pay Limits for Box Culvert End Sections  
Pay Limits for Precast Concrete Box Culverts

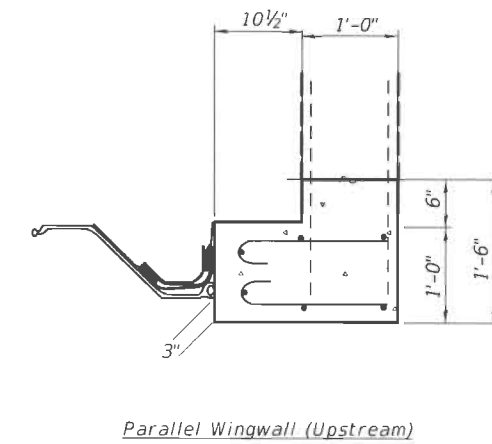


SECTION B-B

See downstream end section for drain notes and details.



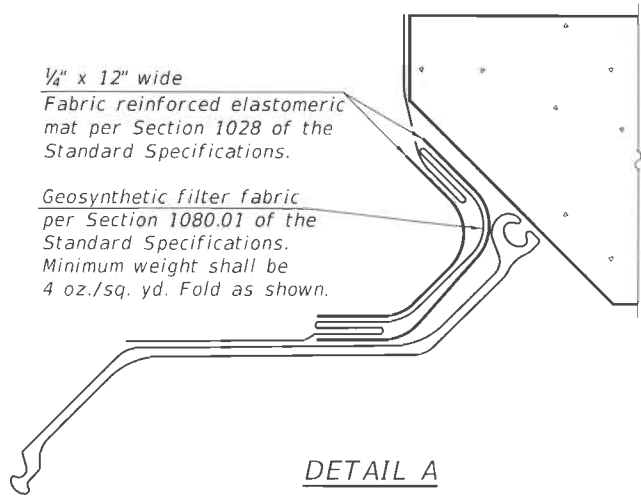
SECTION C-C  
(Showing reinforcement)



SECTION C-C  
(Showing dimensions)

1/4" x 12" wide Fabric reinforced elastomeric mat per Section 1028 of the Standard Specifications.

Geosynthetic filter fabric per Section 1080.01 of the Standard Specifications. Minimum weight shall be 4 oz./sq. yd. Fold as shown.



DETAIL A

DOWNSTREAM SECTION

BILL OF MATERIAL

(For information only)

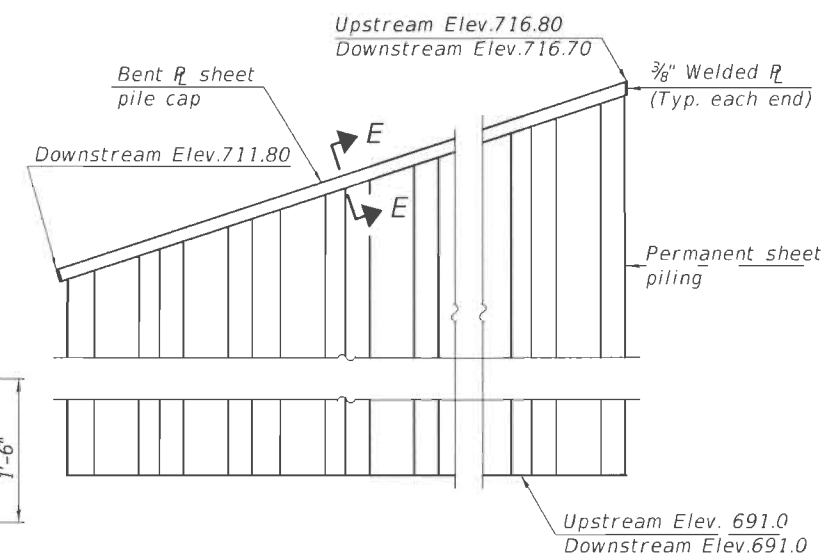
Bar	No.	Size	Length	Shape
h	4	#5	14'-3"	
h1	4	#5	15'-5"	
h2	32	#4	1'-7"	C
h3	32	#4	2'-0"	C
h4	2	#6	15'-6"	
h5	2	#6	14'-2"	
s	12	#4	7'-5"	U
s2	12	#4	4'-6"	U
v	13	#5	1'-11"	
v1	10	#5	9'-6"	
Concrete Box Culverts				Cu. Yd. 5.3
Reinforcement Bars				Pound 510
Bar Splicers				Each 10
Total Permanent Sheet Piling				Sq. Ft. 711.87

UPSTREAM SECTION

BILL OF MATERIAL

(For information only)

Bar	No.	Size	Length	Shape
h1	8	#5	15'-5"	
h3	64	#4	2'-0"	C
h4	4	#6	15'-6"	
s	12	#4	7'-5"	U
s1	12	#4	4'-4"	U
v	13	#5	1'-11"	
v1	10	#5	9'-6"	
Concrete Box Culverts				Cu. Yd. 5.3
Reinforcement Bars				Pound 527
Bar Splicers				Each 10
Total Permanent Sheet Piling				Sq. Ft. 1,096.5



WINGWALL ELEVATION

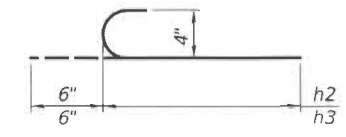
Notes:

The minimum effective section modulus of the permanent sheet pile wall shall be 35 in.<sup>3</sup>/ft.

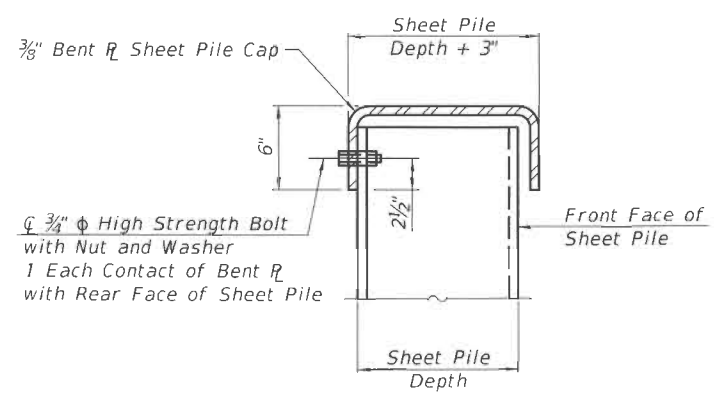
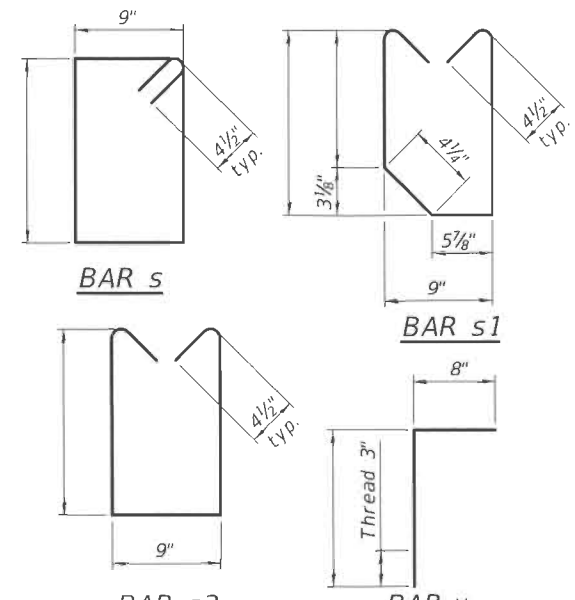
Sheet piling shall not be driven until the concrete strength has attained a minimum flexural strength of 650 psi or a minimum compressive strength of 3500 psi.

The contractor will need appropriate driving equipment to achieve the required minimum tip elevations.

The cost of furnishing and installing the bent R sheet pile cap, elastomeric mat, and filter fabric shall be included in the cost of the end section.



BARS h2 and h3



SECTION E-E

(Sheet 2 of 2)

CIPES-PSSP-ZS-DETAILS 8-11-2017

USER NAME	monjandmrt	DESIGNED	-	REVISED	-
PLOT SCALE	= 2.0000' / in.	DRAWN	-	REVISED	-
PLOT DATE	= 11/9/2021	CHECKED	-	REVISED	-
		DATE	-	REVISED	-

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

LOC 1 074-8066  
END SECTION DETAIL

SCALE: SHEET 25 OF 7 SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1517	11CR	PIATT	62	26
CONTRACT NO. 70755				
ILLINOIS FED. AID PROJECT				

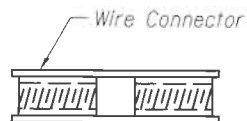
The diameter of this part is the same as the diameter of the bar spliced.

The diameter of this part is equal or larger than the diameter of bar spliced.

ROLLED THREAD DOWEL BAR



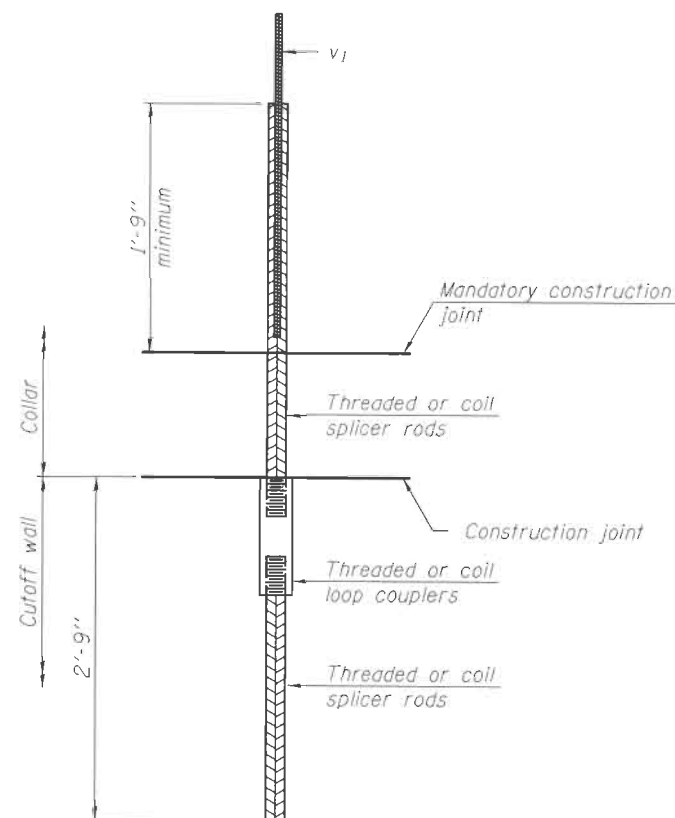
\*\* ONE PIECE



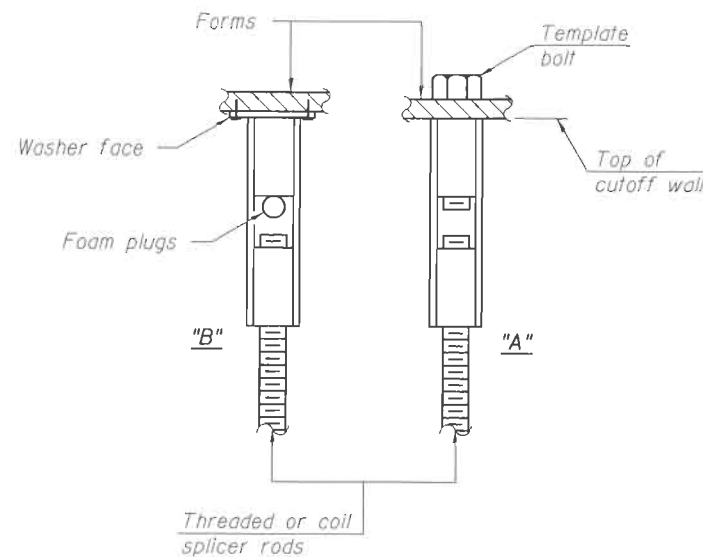
WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

\*\*Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



FOR BOX CULVERT END SECTIONS



INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.  
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.  
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.  
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.  
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- ① Minimum Capacity (Tension in kips) =  $1.25 \times f_y \times A_t$
- ② Minimum \*Pull-out Strength (Tension in kips) =  $0.66 \times f_y \times A_t$

Where  $f_y$  = Yield strength of lapped reinforcement bars in ksi.  
 $A_t$  = Tensile stress area of lapped reinforcement bars.  
\* = 28 day concrete

Bar Splicer for #5 bar

Min. Capacity = 23.0 kips - tension

Min. Pull-out Strength = 12.3 kips - tension

No. Required = 20

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

LOC 1 SN 074-8066  
BAR SPLICER ASSEMBLY DETAILS

SCALE: SHEET 4 OF 7 SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1517	11CR	PIATT	62	27
CONTRACT NO. 70755				
ILLINOIS FED. AID PROJECT				



F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1517	11CR	PIATT	62	28
CONTRACT NO. 70755				



Illinois Department  
of Transportation  
Division of Highways  
Illinois Department of Transportation

## SOIL BORING LOG

Page 1 of 1

Date 11/14/12

ROUTE FAS 1517 (US 150) DESCRIPTION 4 Miles West of Mansfield @ 40.229626N, 88.580196W LOGGED BY CNA  
SECTION 11CR LOCATION SE, SEC. 36, TWP. 21N, RING. 5E, 3<sup>rd</sup> PM GPS: 40.229663N, 88.580245W  
COUNTY Piatt DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 074-8052E/8066P Station 82+18.15	DEPTHS THS QuT	BLWS OS S T	UCS QuT	MOIST S T	Surface Water Elev. 722.6 ft Stream Bed Elev. 706.8 ft Groundwater Elev.: First Encounter ft Upon Completion ft After Hrs.	DEPTHS THS QuT	BLWS OS S T	UCS QuT	MOIST S T
BORING NO. 2 NW Boring Station 82+35 Offset 11.0 ft Lt. Ground Surface Elev. 717.2 ft	(ft)	(ft)	(blf)	(%)		(ft)	(ft)	(blf)	(%)
Asphalt Pavement (Widening)					Gray Sandy Clay Loam Till (continued)				
715.7									
Brown to Black Clay Loam (Backfill)									
	1					9			
	3	0.8	9			9	3.5	10	
	4	B				12	S		
	-5				End of Boring				
711.2									
Brown/Gray Mottled Silty Clay									
	4								
	3	0.7	33						
	2	B							
	2								
	2	0.8	24						
	3	B							
707.2									
Gray Sandy Clay Loam Till									
	6								
	6	4.5	9						
	9	B							
	9								
	9	3.3	8						
	12	B							
	-15								
	9								
	10	5.8	8						
	12	B							
	8								
	8	6.8	10						
	10	B							
	-20								

An assumed centerline elevation of 100.00 and station of 10+00 is used when this information is not available.  
The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer E-Estimate)  
The SPT (N Value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-90)



Illinois Department  
of Transportation  
Division of Highways  
Illinois Department of Transportation

## SOIL BORING LOG

Page 1 of 1

Date 11/14/12

ROUTE FAS 1517 (US 150) DESCRIPTION 4 Miles West of Mansfield @ 40.229626N, 88.580196W LOGGED BY CNA  
SECTION 11CR LOCATION SE, SEC. 36, TWP. 21N, RING. 5E, 3<sup>rd</sup> PM GPS: 40.229663N, 88.580245W  
COUNTY Piatt DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 074-8052E/8066P Station 82+18.15	DEPTHS THS QuT	BLWS OS S T	UCS QuT	MOIST S T	Surface Water Elev. 722.6 ft Stream Bed Elev. 706.8 ft Groundwater Elev.: First Encounter ft Upon Completion ft After Hrs.	DEPTHS THS QuT	BLWS OS S T	UCS QuT	MOIST S T
BORING NO. 2 NW Boring Station 82+35 Offset 11.0 ft Lt. Ground Surface Elev. 717.2 ft	(ft)	(ft)	(blf)	(%)		(ft)	(ft)	(blf)	(%)
Asphalt Pavement (Widening)					Gray Sandy Clay Loam Till (continued)				
715.7									
Brown to Black Clay Loam (Backfill)									
	1					9			
	3	0.8	9			9	3.5	10	
	4	B				12	S		
	-5				End of Boring				
711.2									
Brown/Gray Mottled Silty Clay									
	4								
	3	0.7	33						
	2	B							
	2								
	2	0.8	24						
	3	B							
707.2									
Gray Sandy Clay Loam Till									
	6								
	6	4.5	9						
	9	B							
	9								
	9	3.3	8						
	12	B							
	-15								
	9								
	10	5.8	8						
	12	B							
	8								
	8	6.8	10						
	10	B							
	-20								

An assumed centerline elevation of 100.00 and station of 10+00 is used when this information is not available.  
The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer E-Estimate)  
The SPT (N Value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-90)

MODEL: 440081 NAMES  
FILE NAME: jnc\lab\paw\_bentley.com\FMIDOT\Documents\DOT\_Offices\District 3\Projects\DOT70755\CADD\BAs\CADD\BAs\DOT70755-415-GPE\_074-8066

USER NAME = morjandiert	DESIGNED -	REVISED -
DRAWN -	REVISED -	
PLOT SCALE = 2.0003" = 1 in.	CHECKED -	REVISED -
PLOT DATE = 10/18/2011	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

LOC 1 SN 074-8066  
SOIL BORING LOGS

SCALE: SHEET 6 OF 7 SHEETS STA. TO STA.

F.A.S. RTE. 1517	SECTION 11CR	COUNTY PIATT	TOTAL SHEETS 62	SHEET NO. 29
CONTRACT NO. 70755				
ILLINOIS FED. AID PROJECT				



F.A.S ROUTE 1517 (US 150)  
SECTION: 11CR  
CONTRACT: # 70755  
JOB NO. C-95-012-09  
STRUCTURE 074-8066  
12x9 PRECAST BOX CULVERT  
REPLACEMENT  
PIATT COUNTY

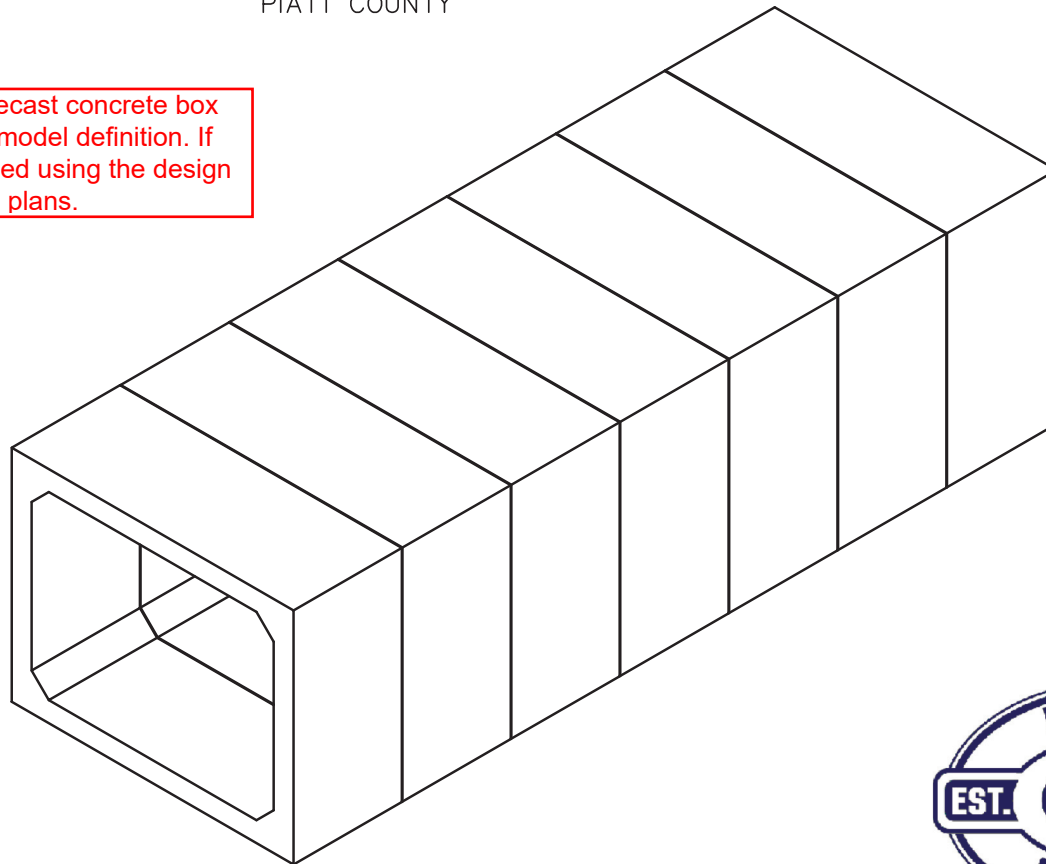
**DRAWINGS SUBMITTED  
FOR APPROVAL**

APPROVED BY: \_\_\_\_\_  
APPROVAL DATE: \_\_\_\_\_  
PRODUCTS NEEDED BY: \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_  
REVIEW DATE: \_\_\_\_\_

REVISIONS

When shop plans are available for precast concrete box culverts, they should be used for the model definition. If unavailable, the culvert can be modeled using the design specification referenced in the design plans.



**APPROVED**  
For Main Dimensions and  
Materials Only

April 29, 2022



JOB: BOX CULVERT  
IDOT: C-95-012-09  
RTE. SECTIONS PIATT  
1517 11CR MASSAC  
CONTRACTOR: CROSS CONSTRUCTION

**WIESER CONCRETE**  
4419 WAGON WHEEL ROAD ROXANA, IL 62084  
618-251-9210

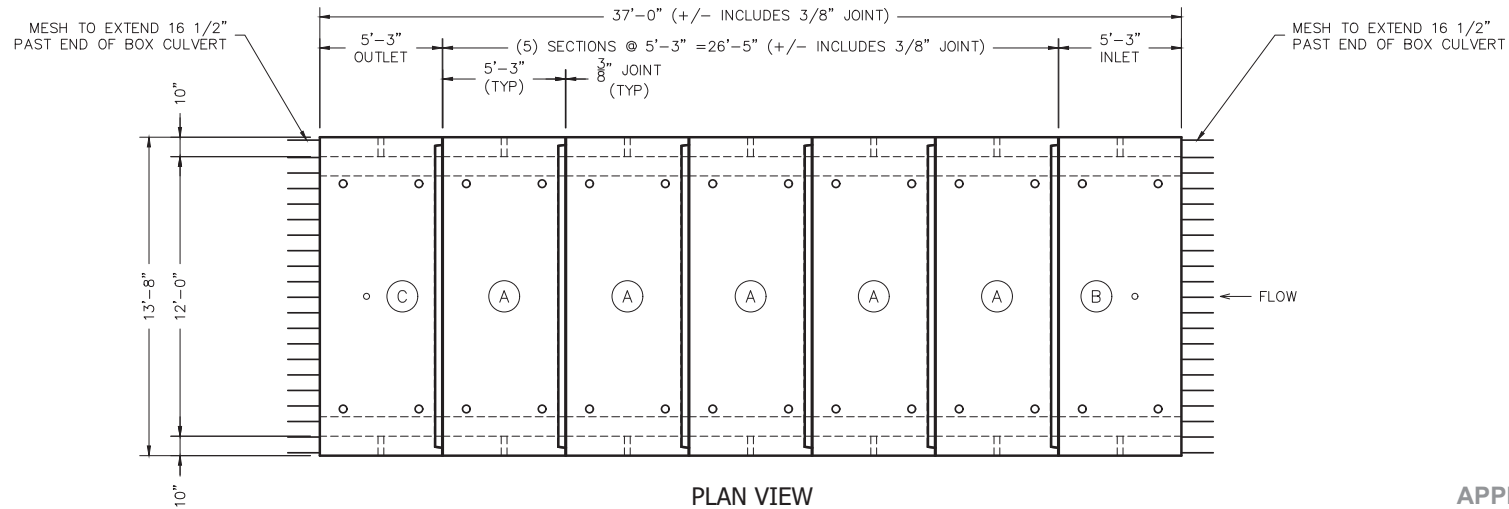
PREPARED BY: JRC	JOB NO: 70755
CHECKED BY: APW	SHEET NO: 1 OF 6
SCALE: NO SCALE	
DATE: 04/15/2022	

TABLE OF CONTENTS

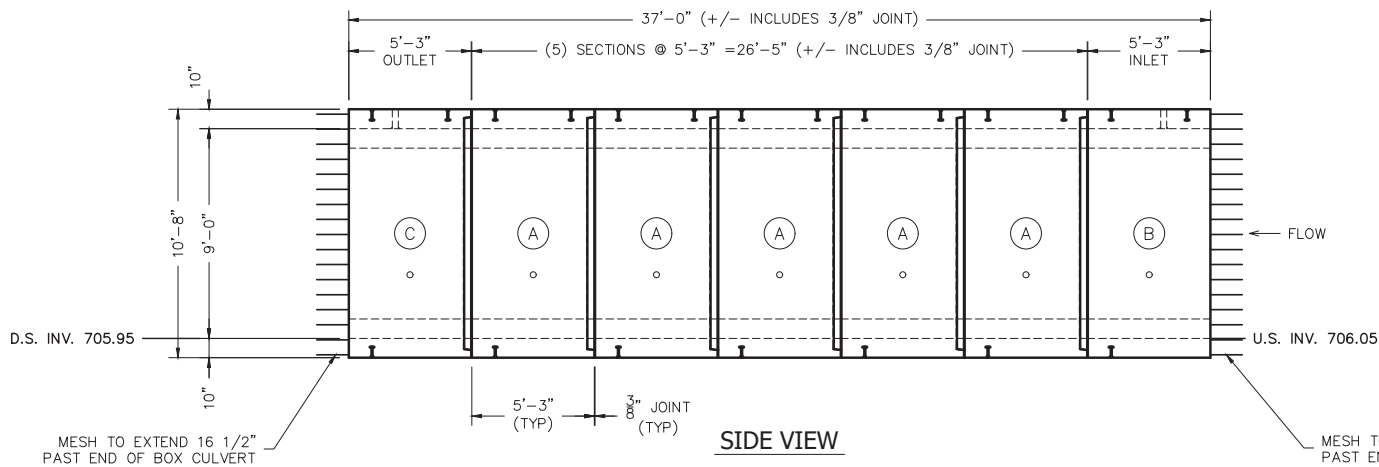
SHEET	CONTENTS
1.	COVER
2.	12x9 PLAN LAYOUT
3.	12x9 SECTION A
4.	12x9 SECTION B
5.	12x9 SECTION C
6.	12x9 REINFORCING
1-4	INSTEEL DRAWINGS

F.A.S ROUTE 1517 (US 150)  
SECTION: 11CR  
CONTRACT: # 70755  
JOB NO. C-95-012-09  
STRUCTURE 074-8066  
12x9 PRECAST BOX CULVERT  
REPLACEMENT  
PIATT COUNTY  
12x9 PRECAST BOX CULVERT

REVISIONS



PLAN VIEW



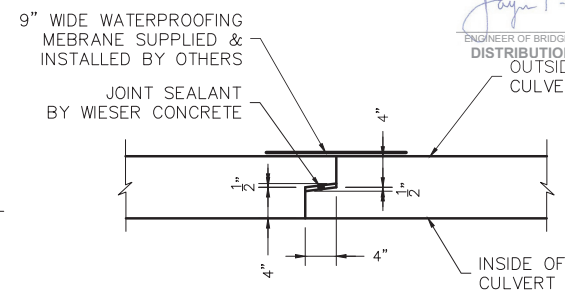
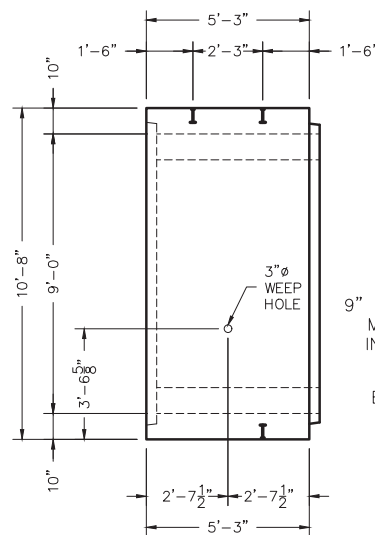
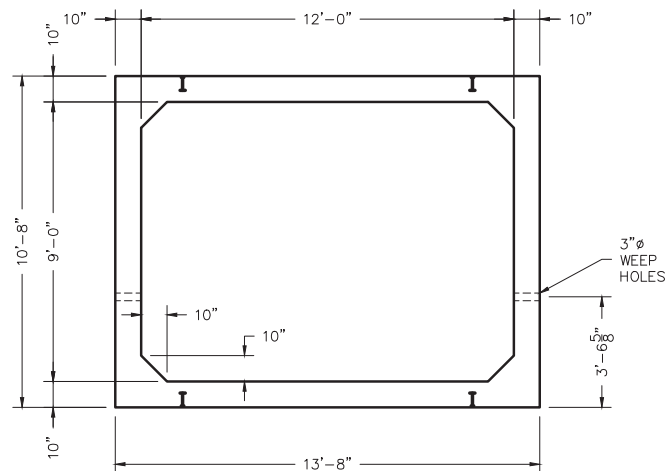
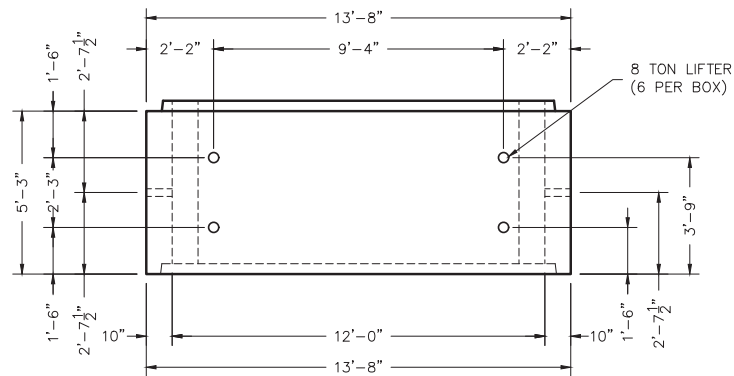
SIDE VIEW

APPROVED  
For Main Dimensions and  
Materials Only

April 29, 2022

*John F. Schaff*  
ENGINEER OF BRIDGES & STRUCTURES  
DISTRIBUTION DRAWING

BOX CULVERT IDOT: C-95-012-09 SECTIONS 11CR CONTRACTOR:		PIATT MASSAC	CROSS CONSTRUCTION
JOB: BOX CULVERT IDOT: C-95-012-09 SECTIONS 11CR CONTRACTOR:		PIATT MASSAC	CROSS CONSTRUCTION
WIESER 4419 WAGON WHEEL ROAD ROXANA, IL 62084 618-251-9210		CONCRETE 4419 WAGON WHEEL ROAD ROXANA, IL 62084 618-251-9210	
PREPARED BY: JRC	JOB NO: 70755	CHECKED BY: APW	SHEET NO: 2 OF 6
SCALE: NO SCALE			
DATE: 04/15/2022			



F.A.S ROUTE 1517 (US 150)  
SECTION: 11CR  
CONTRACT: # 70755  
JOB NO. C-95-012-09  
STRUCTURE 074-8066  
12x9 PRECAST BOX CULVERT  
REPLACEMENT  
PIATT COUNTY  
12x9 PRECAST BOX CULVERT  
(5)-12x9 SECTION A

- NOTES:

- CONCRETE STRENGTH: 28 DAY COMPRESSIVE F'C=6000 PSI., AIR ENTRAINED
- BOX CULVERT: PER AASHTO LRFD 8TH EDITION
- WIRE MESH: ASTM A1064; GRADE 80 FOR DEFORMED
- WEIGHT: APPROX. 30,844 LBS. TOTAL
- DESIGN FILL HEIGHT = 1.3 FEET.

**APPROVED**  
For Main Dimensions and  
Materials Only

April 29, 2022

Jay F. Schiff  
ENGINEER OF BRIDGES & STRUCTURES

### DISTRIBUTION DRAWING OUTSIDE OF CULVERT

PREPARED BY:  
JRC

CHECKED BY:  
APW

SCALE:  
NO SCALE

DATE:  
04/15/2022

JOB NO:  
70755

SHEET NO:

## REVISIONS

JOB: BOX CULVERT  
IDOT: C-95-012-09  
RTE. SECTIONS  
1517 11CR  
CONTRACTOR: PIATT  
MASSAC

## CROSS CONSTRUCTION

r:\2022 jobs\22-0320a\_cross construction-pitt county idot 025-99.9 & 1259-box culvert\plans\cross construction - pitt county - 1259 box culvert.dwg

# CONCRETE

**WIESER**

4419 WAGON WHEEL ROAD ROXANA, IL 62084  
618-251-9210

F.A.S ROUTE 1517 (US 150)  
SECTION: 11CR  
CONTRACT: # 70755  
JOB NO. C-95-012-09  
STRUCTURE 074-8066  
12x9 PRECAST BOX CULVERT  
REPLACEMENT  
PIATT COUNTY  
12x9 PRECAST BOX CULVERT  
(1)-12x9 SECTION B

NOTES:

- CONCRETE STRENGTH: 28 DAY COMPRESSIVE F'C=6000 PSI., AIR ENTRAINED
- BOX CULVERT: PER AASHTO LRFD 8TH EDITION
- WIRE MESH: ASTM A1064; GRADE 80 FOR DEFORMED
- WEIGHT: APPROX. 30,844 LBS. TOTAL
- DESIGN FILL HEIGHT = 1.3 FEET.

**APPROVED**  
For Main Dimensions and  
Materials Only

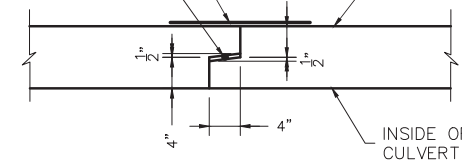
April 29, 2022

*Jason F. Schiff*  
ENGINEER OF BRIDGES & STRUCTURES

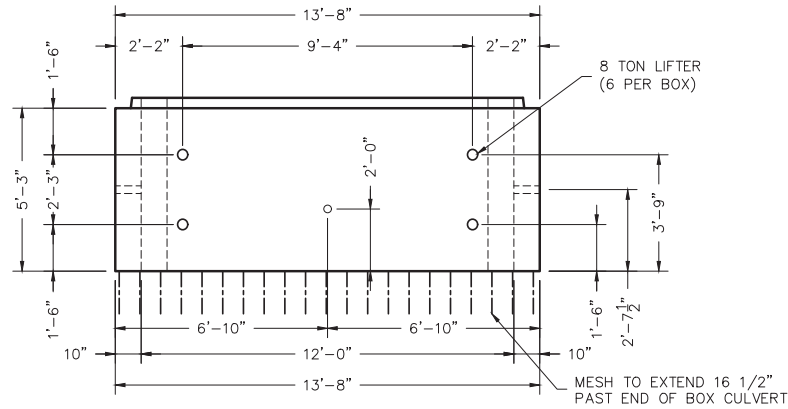
DISTRIBUTION DRAWING  
OUTSIDE OF  
CULVERT

9" WIDE WATERPROOFING  
MEBRANE SUPPLIED &  
INSTALLED BY OTHERS

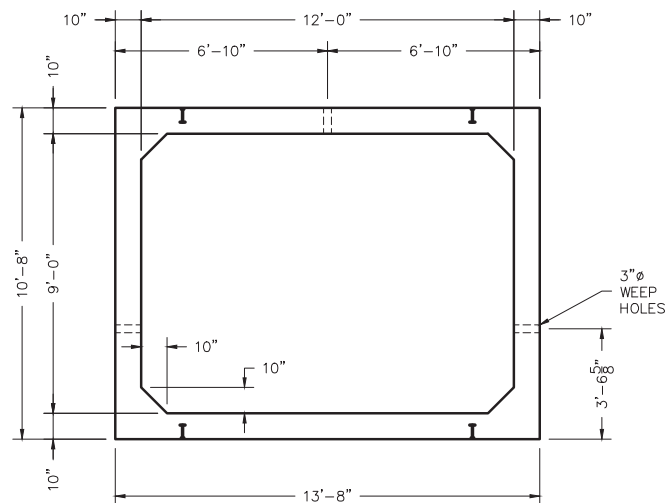
JOINT SEALANT  
BY WIESER CONCRETE



SHIPLAP JOINT DETAIL

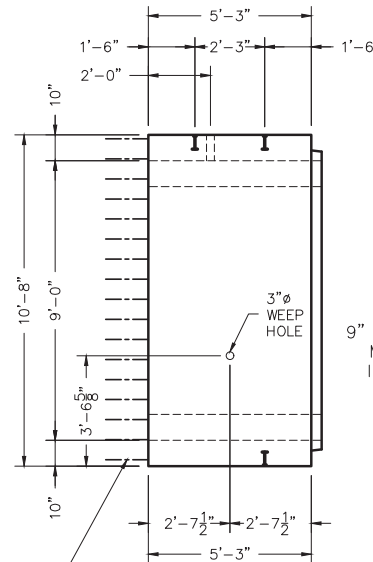


TOP VIEW



END VIEW

MESH TO EXTEND 16 1/2"  
PAST END OF BOX CULVERT



SIDE VIEW

REVISIONS

JOB: BOX CULVERT  
IDOT: C-95-012-09  
RTE: 1517  
SECTIONS: 11CR  
PIATT COUNTY  
MASSAC  
CONTRACTOR: CROSS CONSTRUCTION

**WIESER**  
CONCRETE

4419 WAGON WHEEL ROAD ROXANA, IL 62084  
618-251-9210

PREPARED BY:  
JRC

JOB NO:  
70755

CHECKED BY:  
APW

SHEET NO:

SCALE:  
NO SCALE

4  
OF  
6

DATE:  
04/15/2022



NOTES:

- CONCRETE STRENGTH: 28 DAY COMPRESSIVE F'C=6000 PSI, AIR ENTRAINED
- BOX CULVERT: PER AASHTO LRFD 8TH EDITION
- WIRE MESH: ASTM A1064; GRADE 80 FOR DEFORMED
- WEIGHT: APPROX. 30,844 LBS. TOTAL
- DESIGN FILL HEIGHT = 1.3 FEET.

**APPROVED**  
For Main Dimensions and  
Materials Only

April 29, 2022

Jay F. Schiff

ENGINEER OF BRIDGES & STRUCTURES  
DISTRIBUTION DRAWING  
OUTSIDE OF  
CULVERT

		JOB NO: 70755 SHEET NO: 5 OF 6	
PREPARED BY: JRC		JOB NO: 70755	
CHECKED BY: APW		SHEET NO: 5 OF 6	
SCALE: NO SCALE		DATE: 04/15/2022	
4419 WAGON WHEEL ROAD ROXANA, IL 62084 618-251-9210		CROSS CONSTRUCTION	
CONTRACTOR:		BOX CULVERT IDOT: C-95-012-09 SECTIONS PIATT MASSAC 11CR	
JOB:		RTE. 1517	
REVISIONS		11CR	



Corner rebar allows transfer of moment into the walls so moments should not be released in the End Conditions. Sidesway support is assumed by default for all culverts.

Reinforcement for precast boxes is typically wire mesh in the shop plans, however mesh configurations are limited in AASHTOWare. Therefore, it's acceptable to define applicable types of rebar with a spacing adjusted to meet the equivalent areas specified in the shop plans.

F.A.S ROUTE 1517 (US 150)  
SECTION: 11CR  
CONTRACT: # 70755  
JOB NO. C-95-012-09  
STRUCTURE 074-8066  
12x9 PRECAST BOX CULVERT  
REPLACEMENT  
PIATT COUNTY  
12x9 PRECAST BOX CULVERT

#### NOTES:

- CONCRETE STRENGTH: 28 DAY COMPRESSIVE F'C=6000 PSI., AIR ENTRAINED
- BOX CULVERT: PER AASHTO LRFD 8TH EDITION
- WIRE MESH: ASTM A1064; GRADE 80 FOR DEFORMED
- WEIGHT: APPROX. 30,844 LBS. TOTAL
- DESIGN FILL HEIGHT = 1.3 FEET.

**APPROVED**  
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Materials Only

April 29, 2022

*Jay F. Schiff*  
ENGINEER OF BRIDGES & STRUCTURES  
DISTRIBUTION DRAWING

#### MESH REQUIRED (PER 5'-3" CULVERT SECTION)

#	REQ'D AREA	ACT. AREA	FABRIC SIZE	LENGTH
AS1	0.280	0.285	D9.5	25'-2"
AS2	0.510	0.510	D15.0 + D6.0	12'-0"
AS3	0.442	0.450	D7.5	22'-6"
AS4	0.442	0.450	D15.0/D7.5	-
AS5	0.133	0.133	D10.0	61"
AS6	0.150	0.150	D10.0	61"
AS7	0.280	0.285	D9.5	13'-6"
AS8	0.280	0.285	D9.5	13'-6"

**REINFORCING**

#### REVISIONS

JOB: BOX CULVERT  
RTE. 1517  
CONTRACTOR: PIATT MASSAC  
SECTIONS 11CR

CROSS CONSTRUCTION

**CONCRETE**

**WIESER**

4419 WAGON WHEEL ROAD ROXANA, IL 62084  
618-251-9210

PREPARED BY:  
JRC

JOB NO:  
70755

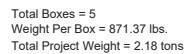
CHECKED BY:  
APW

SHEET NO:

SCALE:  
NO SCALE

6  
OF  
6

DATE:  
04/15/2022



#	REQD AREA	ACTUAL AREA	FABRIC SIZE	LENGTH
As1	0.280	0.285	D9.5	25'-1"
As2	0.510	0.510	D15.0 x D6.0	12'-0"
As3	0.442	0.450	D7.5	22'-6"
As4	0.442	0.450	D15.0 / D7.5	
As5	0.133	0.133	D10.0	61"
As6	0.150	0.150	D10.0	61"
As7	0.280	0.285	D9.5	13'-6"
As8	0.280	0.285	D9.5	13'-6"

Note: This drawing was prepared by Insteel Wire Products Company ("Insteel") and remains the exclusive property of Insteel, subject only to a license to the named customer to use it for the named project, including any required submittals to the engineer of record or other governing agencies whose approval is required. This drawing is not to be furnished or distributed to other parties without Insteel's prior written approval.

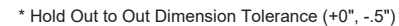
Description:  
12'x9'x5'-3" SGL 1.3' Fill ETCulvert 80ksi  
Project:  
Piatt County

Drawn By:  
Carrie Bowen  
Date:  
2022-03-11

Sold to:  
Wieser Concrete  
Scale:                  Sheet:  
None                  1 of 4

Location:  
IL  
Dwg #:

Dwg #:  
031122cb-10 ALL WIRE MEETS ASTM A1064.



Description:  
12'x9'x5'-3" SGL 1.3' Fill ETCulvert 80ksi  
Project:  
Piatt County

Drawn By:  
Carrie Bowen  
Date:  
2022-03-11

Sold to: Wieser Concrete  
Scale: None  
Sheet: 2 of 4  
Location: IL  
Dwg #: 031122cb-10

As1-7-8-6 (Grade 80)  
4xV D9.5 x D10.0 x 60" (+1/2", +1/2") x 25'-2"(1", 1")  
CW = 1" - 6" - 9 @ 8" - 16" - 14 @ 8" - 16" - 9 @ 8" - 6" - 1"

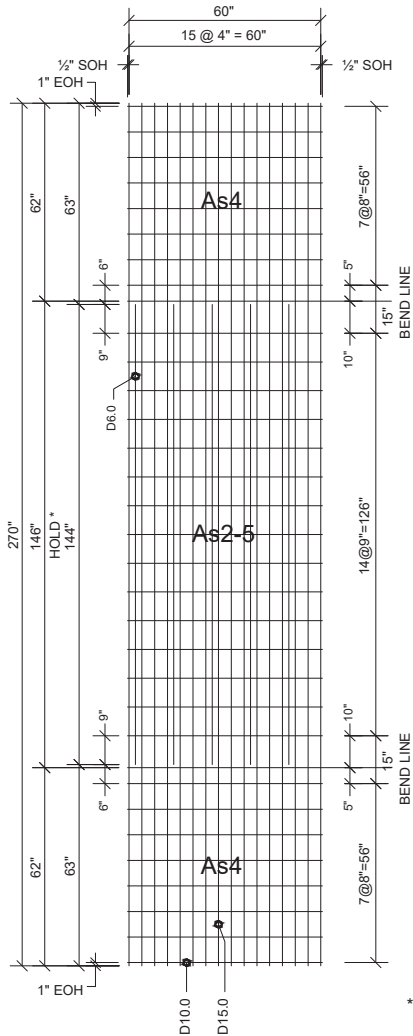
10 sheets	NO.		SIZE	LENGTH	WEIGHT
LINE WIRE	16	D	9.5	25'-1"	129.61
SHORT LINE					
CROSS WIRE	37	D	10.0	61"	63.94
TOTAL					193.56

**APPROVED**  
For Main Dimensions and  
Materials Only

April 29, 2022

*Jay F. Schiff*  
ENGINEER OF BRIDGES & STRUCTURES  
**DISTRIBUTION DRAWING**

<b>WIESER</b> <b>CONCRETE</b> 4419 WAGON WHEEL ROAD ROXANA, IL 62084 618-251-9210		JOB: BOX CULVERT IDOT: C-95-012-09 RTE. SECTIONS 1517 PIATT 11CR MASSAC		REVISIONS	
PREPARED BY: JRC		JOB NO: 70755		P:\2022\160112-020_cross_constructor\piatt_cowley\dot\05-98 & 125-tee_culvert\piatt_cross_constructor - piatt_cowley - 1258 by chad.dag	
CHECKED BY: APW		SHEET NO: INS-1 OF 4			
SCALE: NO SCALE					
DATE: 04/15/2022					



**As2-4-5 (Grade 80)**  
 VxV D15.0 / D6.0 x D10.0 x 60" (+1/2", +1/2") x 22'-6" (1", 1")  
 ALTERNATE D15.0 x 22'-6" w/ D6.0 x 12'-0" @ 12" (9", 9")  
 CW = 1" - 7 @ 8" - 15" - 14 @ 9" - 15" - 7 @ 8" - 1"

5 sheets	NO.		SIZE	LENGTH	WEIGHT
LINE WIRE	16	D	15.0	22'-6"	183.58
SHORT LINE	5	D	6.0	12'-0"	12.24
CROSS WIRE	31	D	10.0	61"	53.57
TOTAL					249.39

\* Hold Inside to Inside Dimension Tolerance (+.5", -0")

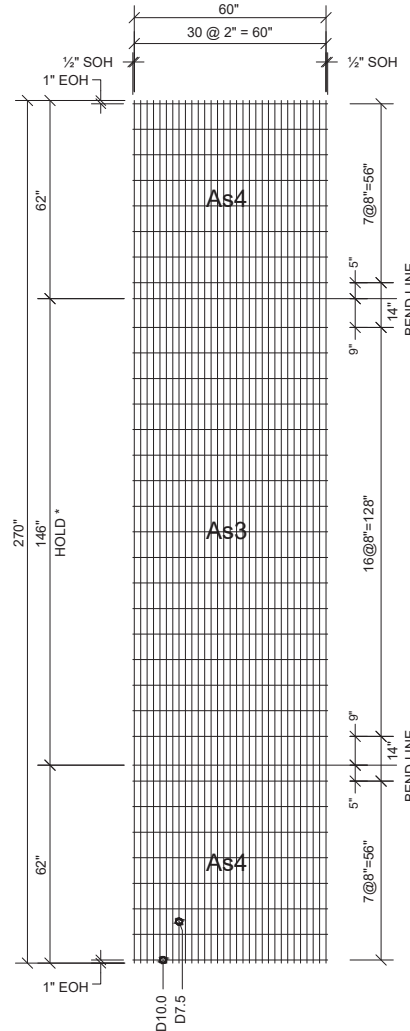
Description:  
 12'x9'x5'-3" SGL 1.3' Fill ETCulvert 80ksi  
 Project:  
 Piatt County

Drawn By:  
 Carrie Bowen  
 Date:  
 2022-03-11

Sold to:  
 Wieser Concrete  
 Scale: None  
 Sheet: 3 of 4

Location:  
 IL  
 Dwg #:  
 031122cb-10

ALL WIRE MEETS ASTM A1064.



**As3-4 (Grade 80)**  
 2xV D7.5 x D10.0 x 60" (+1/2", +1/2") x 22'-6" (1", 1")  
 CW = 1" - 7 @ 8" - 14" - 16 @ 8" - 14" - 7 @ 8" - 1"

5 sheets	NO.		SIZE	LENGTH	WEIGHT
LINE WIRE	31	D	7.5	22'-6"	177.84
SHORT LINE					
CROSS WIRE	33	D	10.0	61"	57.03
TOTAL					234.87

\* Hold Inside to Inside Dimension Tolerance (+.5", -0")

Description:  
 12'x9'x5'-3" SGL 1.3' Fill ETCulvert 80ksi  
 Project:  
 Piatt County

Drawn By:  
 Carrie Bowen  
 Date:  
 2022-03-11

Sold to:  
 Wieser Concrete  
 Scale: None  
 Sheet: 4 of 4

Location:  
 IL  
 Dwg #:  
 031122cb-10

F.A.S ROUTE 1517 (US 150)  
 SECTION: 11CR  
 CONTRACT: # 70755  
 JOB NO. C-95-012-09  
 STRUCTURE 074-8066  
 12x9 PRECAST BOX CULVERT  
 REPLACEMENT  
 PIATT COUNTY  
 12x9 PRECAST BOX CULVERT

**APPROVED**  
 For Main Dimensions and  
 Materials Only

April 29, 2022

*Jason F. Schiff*  
 ENGINEER OF BRIDGES & STRUCTURES  
 DISTRIBUTION DRAWING

REVISIONS

BOX CULVERT  
 IDOT: C-95-012-09  
 SECTIONS  
 11CR  
 PIATT  
 MASSAC  
 CROSS CONSTRUCTION

CONCRETE  
 4419 WAGON WHEEL ROAD ROXANA, IL 62084  
 618-251-9210

PREPARED BY:  
 JRC

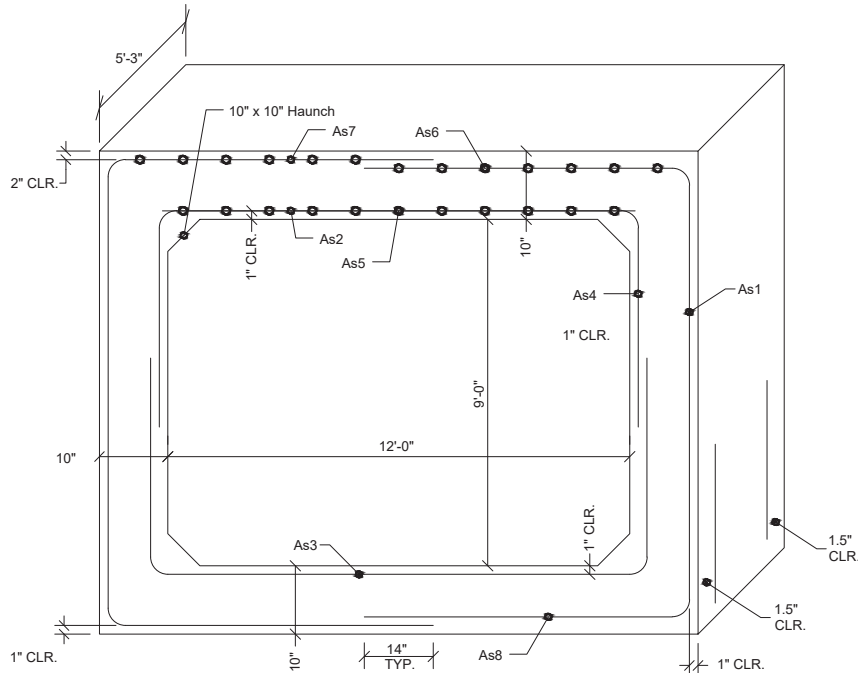
JOB NO:  
 70755

CHECKED BY:  
 APW

SHEET NO:  
 INS-2  
 OF  
 4

SCALE:  
 NO SCALE

DATE:  
 04/15/2022



**BOX CULVERT SECTION**

Total Boxes = 2  
Weight Per Box = 939.79 lbs.  
Total Project Weight = 0.94 tons

#	REQ'D AREA	ACTUAL AREA	FABRIC SIZE	LENGTH
As1	0.280	0.285	D9.5	25'-1"
As2	0.510	0.510	D15.0 + D6.0	12'-0"
As3	0.442	0.450	D7.5	22'-6"
As4	0.442	0.450	D15.0 / D7.5	
As5	0.133	0.133	D10.0	78.5"
As6	0.150	0.150	D10.0	78.5"
As7	0.280	0.285	D9.5	13'-6"
As8	0.280	0.285	D9.5	13'-6"

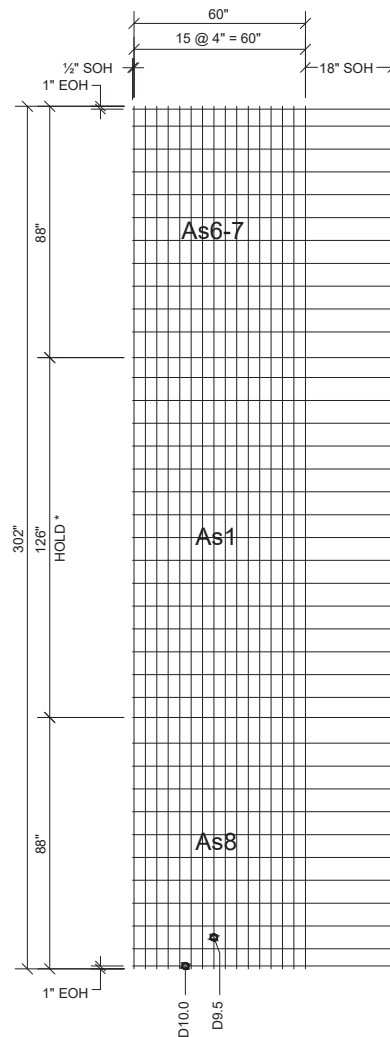
Note: This drawing was prepared by Insteel Wire Products Company ("Insteel") and remains the exclusive property of Insteel, subject only to a license to the named customer to use it for the named project, including any required submittals to the engineer of record or other governing agencies whose approval is required. This drawing is not to be furnished or distributed to other parties without Insteel's prior written approval.

Description:  
12'x9'x5'-3" SGL 1.3' Fill ETCulvert 80ksi  
Project:  
Platt County

Drawn By:  
Carrie Bowen  
Date:  
2022-03-11

Sold to:  
Wieser Concrete  
Scale: None  
Sheet: 1 of 4

Location:  
IL  
Dwg #: 031122cb-10  
ALL WIRE MEETS ASTM A1064.



F.A.S ROUTE 1517 (US 150)  
SECTION: 11CR  
CONTRACT: # 70755  
JOB NO. C-95-012-09  
STRUCTURE 074-8066  
12x9 PRECAST BOX CULVERT  
REPLACEMENT  
PIATT COUNTY  
12x9 PRECAST BOX CULVERT

As1-7-8-6 (Grade 80)  
4xV D9.5 x D10.0 x 60" (+1/2", +18") x 25'-1" (1", 1")  
CW = 1" - 5.5" - 9 @ 8" - 16" - 14 @ 8" - 16" - 9 @ 8" - 5.5" - 1"

4 sheets	NO.	SIZE	LENGTH	WEIGHT
LINE WIRE	16	D	9.5	25'-1"
SHORT LINE				
CROSS WIRE	37	D	10.0	78.5"
TOTAL				211.90

**APPROVED**  
For Main Dimensions and  
Materials Only

April 29, 2022

*Jason F. Schiff*  
ENGINEER OF BRIDGES & STRUCTURES  
DISTRIBUTION DRAWING

\* Hold Out to Out Dimension Tolerance (+0", -.5")

Description:  
12'x9'x5'-3" SGL 1.3' Fill ETCulvert 80ksi  
Project:  
Platt County

Drawn By:  
Carrie Bowen  
Date:  
2022-03-11

Sold to:  
Wieser Concrete  
Scale: None  
Sheet: 2 of 4  
Location:  
IL  
Dwg #: 031122cb-10

REVISIONS

BOX CULVERT  
IDOT: C-95-012-09  
SECTIONS  
11CR  
PIATT  
MASSAC  
CONSTRUCTION

WIESER  
CONCRETE  
4419 WAGON WHEEL ROAD ROXANA, IL 62084  
618-251-9210

PREPARED BY:  
JRC  
CHECKED BY:  
APW  
SCALE:  
NO SCALE  
DATE:  
04/15/2022  
JOB NO:  
70755  
SHEET NO:  
INS-1  
OF  
4



ALL WIRE MEETS ASTM A1064.



Location:  
IL  
Dwg #:  
031122cb-10

## REVISIONS

INS-2  
OF  
4

\\2022-jobs\22-032a\_cross construction-pitt county\dot 035-9-9 & 129-box culvert\plans\cross construction - pitt county - 129 box culvert.dwg