STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION SECTION JACKSON 14 CONTRACT NO.

D-99-024-18



STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

PROPOSED

F.A.P. ROUTE 322 (US 51) SECTION 3CR-1 PROJECT NHPP-X91E(540) **BOX CULVERT REPLACEMENT JACKSON COUNTY**

C-99-050-18

HIGHWAY PLANS

TRAFFIC DATA 2017 ADT = 5,250 WITH 10.5% TRUCKS

FOR INDEX OF SHEETS, SEE SHEET NO. 2

FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 4-6

TOWNSHIP DE SOTO

IMPROVEMENT LOCATION STRUCTURE 039-7061 (E) STRUCTURE 039-7121 (P) **US 51 OVER UNNAMED CREEK**

RANGE 1W

COORDINATE SYSTEM: WEST ZONE POSTED SPEED: 55 MPH

J.U.L.I.E.

JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION 1-800-892-0123

OR 811

0

0

0

PROJECT ENGINEER: DAVID PICHE **DESIGN ENGINEER: ADRIAN ADAMS**

CONTRACT NO. 78635

GROSS LENGTH = 40.00 FT. = 0.01 MILES NET LENGTH = 40.00 FT. = 0.01 MILES

REV. - MS

GENERAL NOTES

- 1) AT ALL LOCATIONS WHERE EXISTING HOT-MIX ASPHALT OR CONCRETE PAVEMENT JOINS AN EXISTING HOT-MIX ASPHALT OR CONCRETE PAVEMENT, A FULL DEPTH SAWED JOINT SHALL BE CONSTRUCTED. THE COST OF THIS JOINT WILL BE INCLUDED IN THE COST OF THE TYPE OF PAVEMENT BEING CONSTRUCTED.
- 2) A CALCIUM CHLORIDE ACCELERATOR WILL BE ALLOWED ONLY FOR THE PCC PAVEMENT, 10".
- 3) REMOVAL OF EXISTING AGGREGATE SHOULDERS SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION.
- 4) THERE ARE NO AVAILABLE WASTE SITES ON THE EXISTING RIGHT OF WAY WITHIN THE PROJECT LIMITS. DISPOSAL WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND WASTE MUST BE DISPOSED OF IN ACCORDANCE WITH ARTICLE 202.03 OF THE STANDARD SPECIFICATIONS.

COMMITMENTS

- A. NO EQUIPMENT SHALL BE PARKED OR STAGED EAST OF US 51 ROADWAY, BEHIND GUARDRAIL, OUTSIDE OF THE CONSTRUCTION LIMITS. ADDITIONALLY, NO STOCKPILING SHALL OCCUR IN THIS AREA.
- B. TREES THREE (3) INCHES OR GREATER IN DIAMETER AT BREAST HEIGHT WILL NOT BE CLEARED FROM APRIL 1 THROUGH SEPTEMBER 30.

STANDARDS

000001-07	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
420001-09	PAVEMENT JOINTS
420701-03	PAVEMENT WELDED WIRE REINFORCEMENT
630001-12	STEEL PLATE BEAM GUARDRAIL
630101-10	STRONG POST GUARDRAIL ATTACHED TO CULVERT
701001-02	OFF-RD OPERATIONS, 2L, 2W, MORE THAN 15' AWAY
701006-05	OFF-RD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE
701201-05	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS > 45 MPH
701901-08	TRAFFIC CONTROL DEVICES
780001-05	TYPICAL PAVEMENT MARKINGS
782006	GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

INDEX OF SHEETS

1	COVER SHEET
2	GENERAL NOTES, COMMITMENTS, INDEX OF SHEETS, AND STANDARDS
3	SIGNATURE SHEET
4-6	SUMMARY OF QUANTITIES
7	SCHEDULES
8	GENERAL PLAN SN 039-7121 (P)
9	FINAL SECTION SN 039-7121 (P)
10	LIMITS OF POROUS GRANULAR EMBANKMENT AND TYPICAL SECTION WITHIN PAVEMENT REMOVAL SN 039-7121 (P.
11	RIGHT OF WAY PLAN
12-13	PRECAST CONCRETE BOX CULVERT APRON END SECTION DETAILS
14	DISTRICT STANDARDS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCALE:

GENERAL NOTES, COMMITMENTS,
INDEX OF SHEETS, AND STANDARDS

SHEET OF SHEETS STA. TO STA.

F.A.P. RTE. SECTION COUNTY SHEETS NO.
322 3CR-1 JACKSON 14 2
CONTRACT NO. 78635

Prepared By: Claulles &

Examined By:

Examined By:

Examined By:

Examined By:

Examined By:

DISTRIPT CONSTRUCTION ENGINEER

Examined By: DISTRICT MATERIALS ENGINEER

USER NAME = adamsam	DESIGNED -	REVISED
	DRAWN -	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 12/3/2018	DATE -	REVISED -

STATE OF ILLINOIS							
DEPARTMENT	0F	TRANSPORTATION					

	SIGNA	NATURE SHEE	
SHEET	OF	SHEETS	STA.

SECTION	COUNTY	TOTAL SHEETS	SHE
3CR-1	JACKSON	14	
	CONTRAC	T NO. 78	363

SUMMARY OF QUANTITIES

COUNTY: JACKSON COUNTY

ROUTE: US 51

FUNDING: NHPP, 80% FED, 20% STATE

LOCATION: RURAL

SHEET __

		LUCATION:	RURAL
CODE NUMBER	ITEM DESCRIPTION	UNIT	0004
NOMBER			· ×
20200100	EARTH EXCAVATION	CU YD	351
20720222	DODOUG CDANWAR FARANKAFAT	CU YD	198
20700220	POROUS GRANULAR EMBANKMENT	CO 10	130
25000200	SEEDING, CLASS 2	ACRE	0.25
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	23
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	23
	The state of the s	POUND	23
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	
25000700	AGRICULTURAL GROUND LIMESTONE	TON	0.5
25100630	EROSION CONTROL BLANKET	SO YD	172
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	25
42000060	WELDED WIRE REINFORCEMENT	SO YD	120
*			
42000500	PORTLAND CEMENT CONCRETE PAVEMENT 10"	SO YD	120
44000100	PAVEMENT REMOVAL	SO YD	120
48101600	AGGREGATE SHOULDERS, TYPE B 8"	SO YD	63

USER NAME = adamsam	DESIGNED -	REVISED
	DRAWN	REVISED -
PLOT SCALE = 100.0000 ° / in.	CHECKED -	REVISED
PLOT DATE = 1/17/2019	DATE	REVISED

		SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
SUMMARY OF QUANTITIES	322	3CR-1	JACKSON	14	4
			CONTRAC	T NO. 78	3635
OF SHEETS STA TO STA	_	ILLINOIS FE	D. AID PROJECT		

Offices\District 9\Projects\78635\CADData\CADsheets\78635-Sheets.d

SUMMARY OF QUANTITIES - CONT

COUNTY:	JACKSON COUNTY					
ROUTE:	US 51					
FUNDING:	NHPP,	80%	FED,	20%	STAT	
LOCATION:	RURAL					

		LOCATION:	RURAL
CODE NUMBER	ITEM DESCRIPTION	UNIT	0004
50102400	CONCRETE REMOVAL	CU YD	40.0
54001001	BOX CULVERT END SECTIONS, CULVERT NO. 1	EACH	2
54010706	PRECAST CONCRETE BOX CULVERTS 7' X 6'	FOOT	50
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	62
63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	450
63000030	STRONG POST GUARDRAIL ATTACHED TO CULVERT	FOOT	38
63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4
63200310	GUARDRAIL REMOVAL	FOOT	670
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	1
67100100	MOBILIZATION	L SUM	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1
X7011800	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	4
70107025	CHANGEABLE MESSAGE SIGN	CAL DA	36

* SPECIALTY ITEM

REV. - MS

USER NAME = adamsam	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION S					F.A.P. RTE	SECTION	COUNTY	TOTAL S SHEETS	HEET NO,
	DRAWN -	REVISED -		SUMMARY OF QUANTITIES				322	3CR-1	JACKSON	14	5
PLOT SCALE = 100 0000 ' / in	CHECKED -	REVISED								CONTRACT	T NO. 786	35
PLOT DATE = 1/17/2019	DATE -	REVISED -		SCALE:	SHEET OF SHEE	TS STA.	TO STA.		ILLINOIS FEO. A	ID PROJECT		

SUMMARY OF QUANTITIES - CONT

COUNTY: JACKSON COUNTY

ROUTE: US 51

FUNDING: NHPP, 80% FED, 20% STATE

LOCATION: RURAL

UNIT

ITEM DESCRIPTION	UNIT		
		0004	
TERMINAL MARKER - DIRECT APPLIED	EACH	4	
PAINT PAVEMENT MARKING - LINE 4"	FOOT	90	
RAISED REFLECTIVE PAVEMENT MARKER	EACH	1	
Ŷ.			
GUARDRAIL REFLECTORS, TYPE B	EACH	10	
MEMBRANE WATERPROOFING SYSTEM FOR BURIED STRUCTURES	SO YD	62	
	TERMINAL MARKER - DIRECT APPLIED PAINT PAVEMENT MARKING - LINE 4" RAISED REFLECTIVE PAVEMENT MARKER GUARDRAIL REFLECTORS, TYPE B	TERMINAL MARKER - DIRECT APPLIED PAINT PAVEMENT MARKING - LINE 4" RAISED REFLECTIVE PAVEMENT MARKER EACH GUARDRAIL REFLECTORS, TYPE B MEMBRANE WATERPROOFING SYSTEM FOR BURIED STRUCTURES SO YD	

* SPECIALTY ITEM

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SHEET __ OF __ SHEETS STA. ____ TO STA

 F.A.P. RTE.
 SECTION
 COUNTY SHEETS NO.
 TOTAL SHEETS NO.

 322
 3CR-1
 JACKSON
 14
 6

 CONTRACT NO. 78635

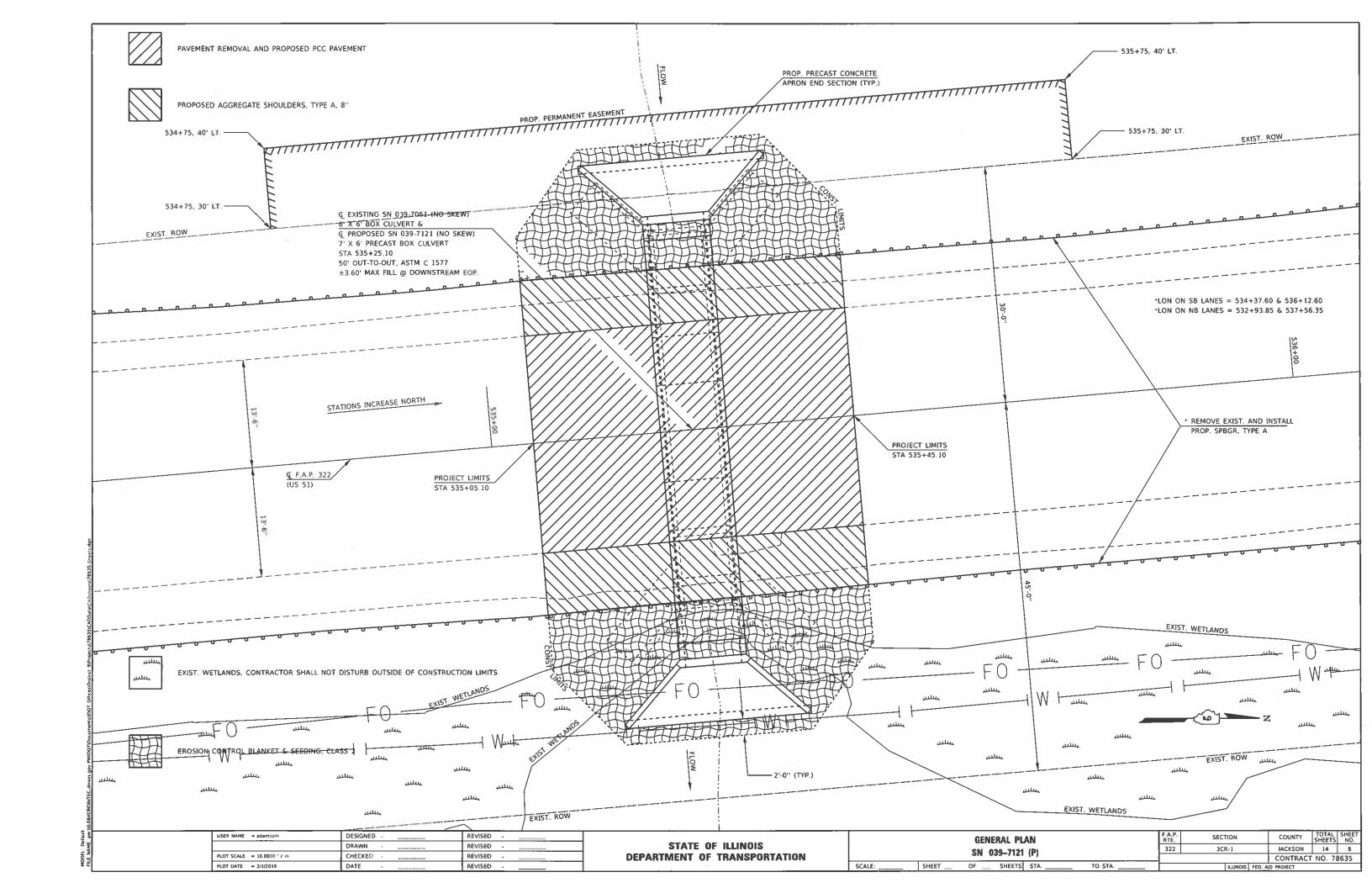
					GUARDRAIL	SCHEDULE		
	ST	ΑΤΙ	ON		TRAFFIC BARRIER TERMINAL, TY 1 SPL TANGENT	TERMINAL MARKER DIRECT APPLIED	STEEL PLATE BEAM GUARDRAIL	STRONG POST GUARDRAIL ATTACHED TO CULVERT
					EACH	EACH	FOOT	FOOT
JAC	CKS	ON (COUNTY					
534+25.10	LT	ТО	534+75.10	LT	1	1		
534+75.10	LT	ТО	535+12.60	LT			37.5	
535+12.60	LT	ТО	535+37.60	LT				25.00
535+37.60	LT	ТО	535+75.10	LT			37.5	
535+75.10	LT	ТО	536+25, 10	LT	1	1		
532+81.35	RT	ТО	533+31.35	RT	1	1		
533+31.35	RT	ТО	535+18.85	RT			187.50	
535+18.85	RT	ТО	535+31.35	RT				12.50
535+31.35	RT	ТО	537+18.85	RT			187.50	
537+18.85	RT	ТО	537+68.85	RT	1	1		
	T	DTAL	LS ,		4	4	450	38

					Р	AVING SCHE	DULE			
	ST	ΑΤΙ	ON	*	COMMENTS	PAVEMENT REMOVAL	PORTLAND CEMENT CONCRETE PAVEMENT, 10''	WELDED WIRE REINF.	AGGREGATE SHOULDERS, TYPE B - 8'	
						SQ YD	SO YD	SQ YD	SQ YD	
535+05.1	LT	ТО	535+45.1	LT		60	60	60	31.5	
535+05.1	RT	ТО	535+45.1	RT		60	60	60	31.5	
	T	DTAL	_S			120	120	120	63	

				PA	VEMENT	MARKING SCH	EDULE	
							PAINT PAVEMEN	T MARKING - LINE
	STATION					NOTES	SOLID WHITE	YELLOW SKIP DASH
							FOOT	FOOT
535+05.10	RT	ТО	535+45.10	RT			40	
535+05.10		TO	535+45.10		ALONG	CENTERLINE		10
535+05.10	LT	ТО	535+45.10	LT			40	
			SUBTOTA	L	~		80	10
			TOTAL					90

USER NAME = adamsam	DESIGNED -	REVISED
	DRAWN -	REVISED
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 1/17/2019	DATE	REVISED

				F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	SCHEDUL	ES		322	3CR-1	JACKSON	14	7
						CONTRAC	T NO. 78	3635
ET	OF SHEET	STA	TO STA.	ILLINOIS FED. AID PROJECT				



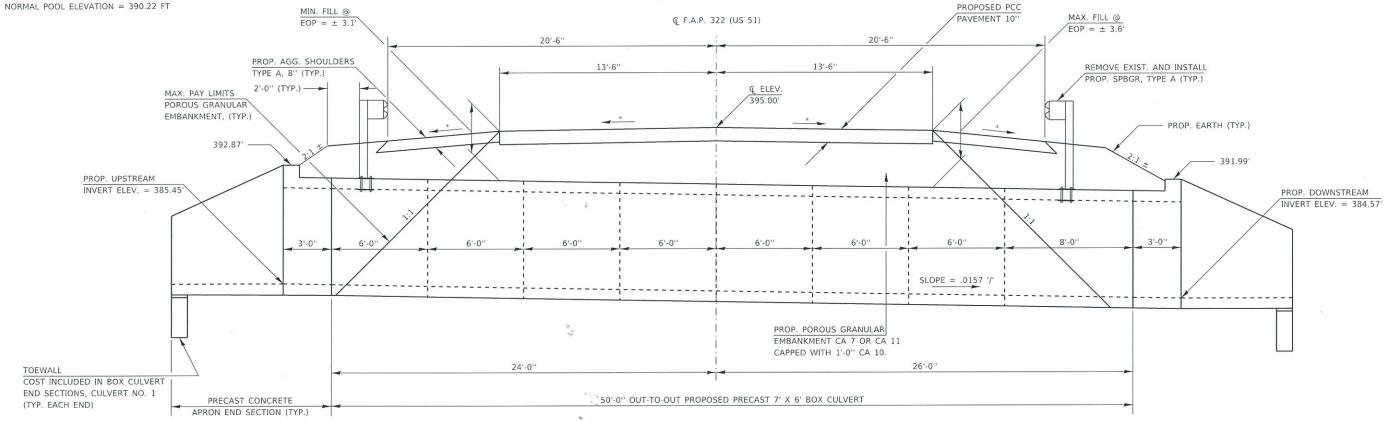
PRECAST BOX LOADING HL-93. ASTM C 1577

3" DIA.

WEEP HOLES

DRAINAGE AREA = 1.04 SQ MI
DESIGN WATERWAY OPENING = 49 SQ FT
DESIGN DISCHARGE = 497 CFS
DESIGN HEADWATER ELEVATION = 394.25 FT
100 YEAR DISCHARGE = 585 CFS
100 YEAR HEADWATER ELEVATION = 395.16 FT

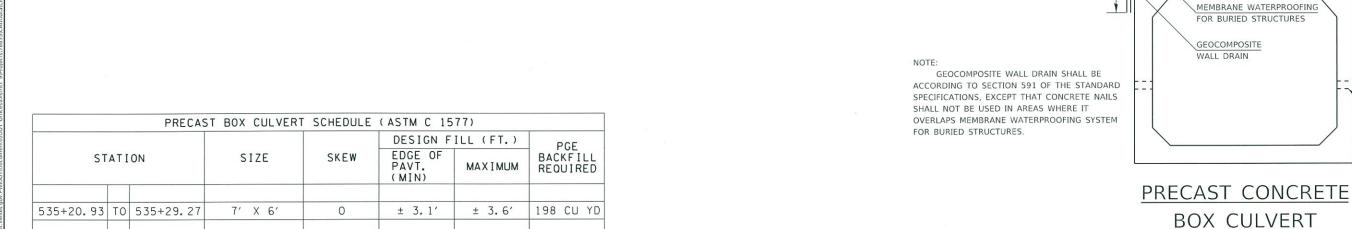
HYDRAULIC DATA



THE REMOVAL OF THE EXISTING BOX CULVERT IS TO BE INCLUDED IN THE COST OF CONCRETE REMOVAL.

THE MOUNTING PLATE FOR THE STRONG POST GUARDRAIL ATTACHED TO CULVERT SHALL BE 12" MINIMUM FROM THE JOINT BETWEEN THE PRECAST BOX CULVERT SECTIONS.

ELEVATION
(LOOKING NORTH)

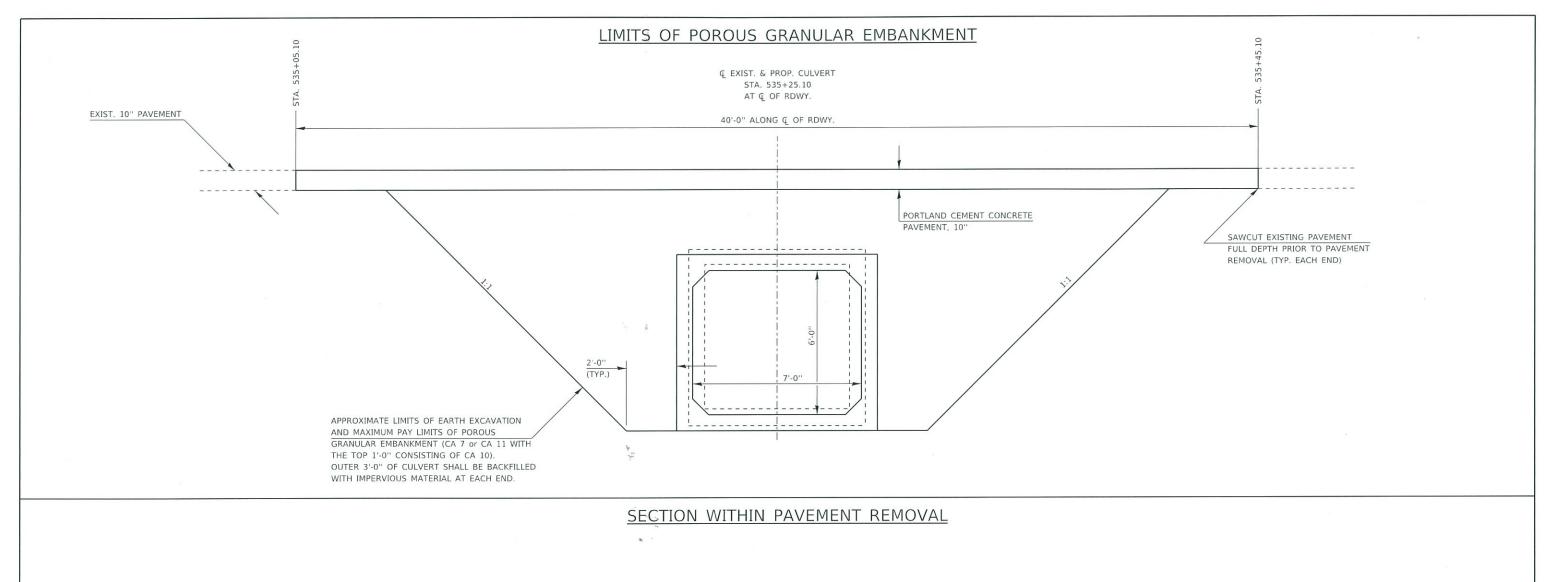


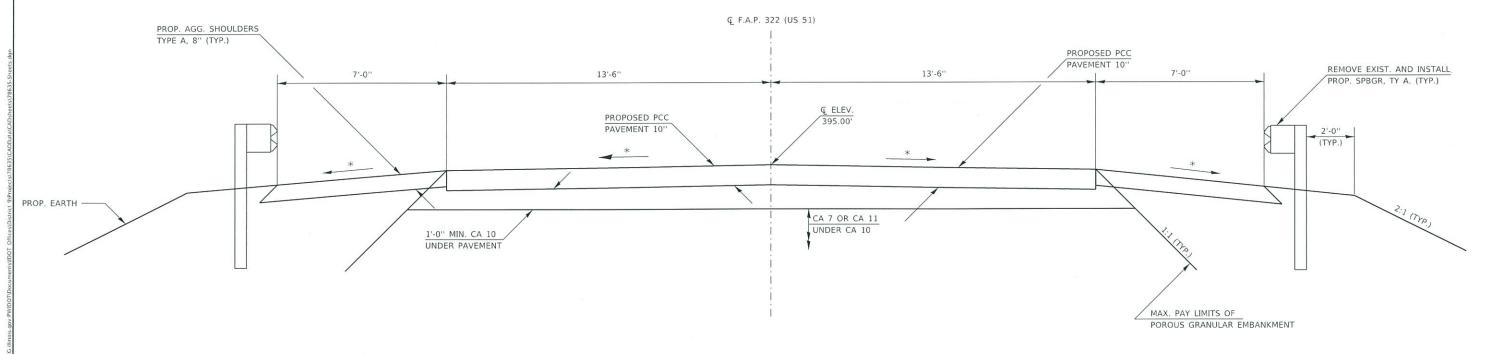
USER NAME = adamsam	DESIGNED -	REVISED
	DRAWN	REVISED
PLOT SCALE = 6.0000 ' / in.	CHECKED -	REVISED
PLOT DATE = 3/14/2019	DATE	REVISED -

STATI	E OF	ILLINOIS
DEPARTMENT	OF	TRANSPORTATION

DET	AIL AND	FINAL	SECTION		F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	CNI OS	9-7121	/D\		776	102B-5	JACKSON	14	9
	214 03	9-/121	(F)				CONTRAC	T NO. 78	3635
SHEET	OF	SHEETS	STA	TO STA.		ILLINOIS FED.	AID PROJECT		

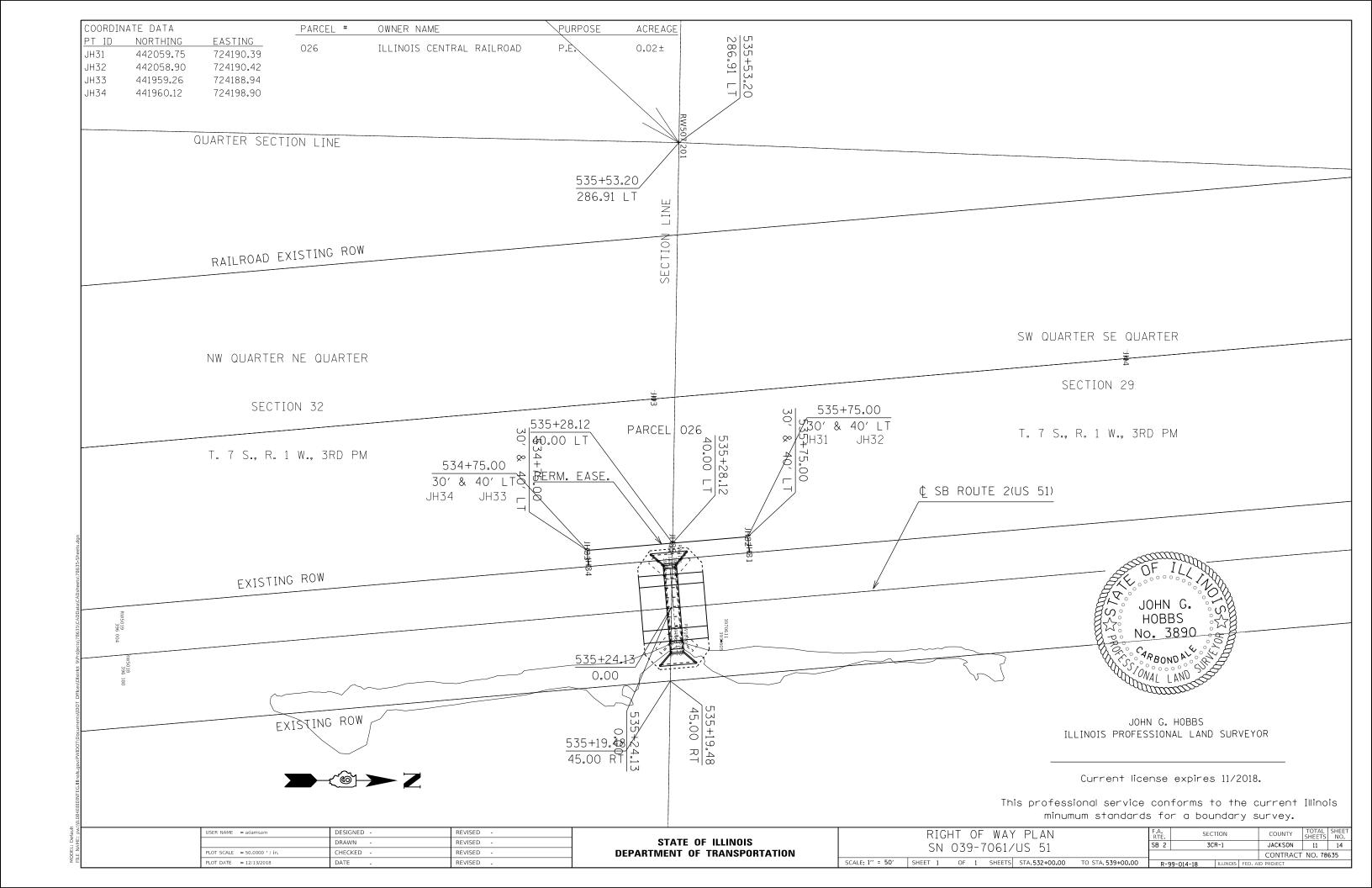
PAY LIMITS FOR MEMBRANE WATERPROOFING
SYSTEM FOR BURIED STRUCTURES AND
GEOCOMPOSITE WALL DRAIN

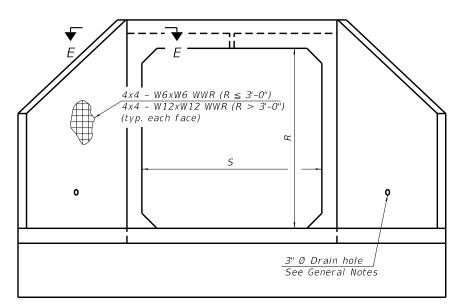




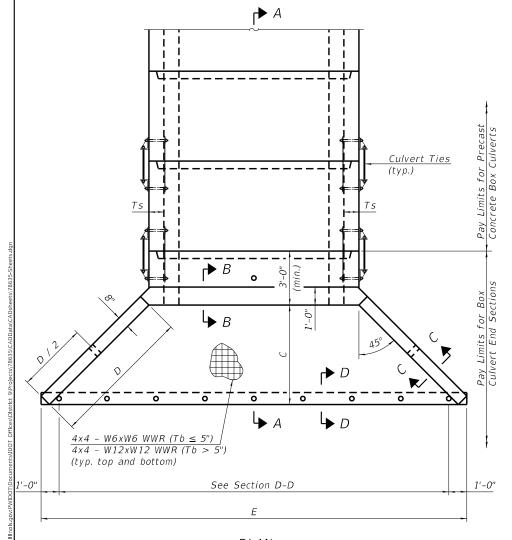
* MATCH EXISTING CROSS SLOPES

PLOT DATE = 1/17/2019 DATE -	REVISED	Carried Address Address Contractor Contracto	SCALE: OF SHEETS STA TO STA		ILLINOIS FED.	AID PROJECT	
PLOT SCALE = 4.0000 ' / in.	CHECKED	REVISED	DEPARTMENT OF TRANSPORTATION	SECTION WITHIN PAVEMENT REMOVAL SN 039-7121 (P) SCALE: SHEET OF SHEETS STA. TO STA. ILLINOIS FED. AID PROJECT	CONTRACT NO. 78622		
D	DRAWN	REVISED	STATE OF ILLINOIS		776	102B-5	HAMILTON 14 10
USER NAME = adamsam	DESIGNED	REVISED		LIMITS OF POROUS GRANULAR EMBANKMENT AND	RTE.	SECTION	COUNTY SHEETS NO.





END VIEW



PLAN

SCB-AES 2-17-2017

> JSER NAME = adamsam DESIGNED -REVISED -DRAWN REVISED HECKED REVISED PLOT DATE = 12/13/2018 REVISED DATE

 $6'-0'' \ min. \ (R \le 3'-0'')$ See General Notes $10'-0'' \text{ min. } (R > \overline{3'-0'')}$ regarding culvert ties. SECTION A-A

GENERAL NOTES

Box Culvert End Sections shall be constructed according to the requirements of Section 540 of the Standard Specifications except as modified herein. End sections will be paid for at the contract unit price per each for Box Culvert End Sections.

The Contractor may furnish the end section as a single precast concrete piece or construct the end section in the field using cast-in-place (CIP) construction. For CIP construction, the bottom slab thickness shall be ncreased by 2" and the clear cover to the bottom mat of reinforcement shall be increased to 3".

Box section dimensions, materials, and reinforcement details for Box Culvert End Sections shall be according to the requirements for 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.

The number of culvert ties shall be sufficient to engage the minimum length of culvert barrel shown within the pay limits for Precast Concrete Box Culverts and will be dependent upon the length of box culvert segments furnished by the Contractor. Culvert ties are not required for box culverts having a rise (R) less than or equal to 3 ft and a span (S) greater than or equal to 10 ft.

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 unit price for Box Culvert End Sections of the culvert number specified.

Shop drawings that detail slab thickness and reinforcement layout for the Box Culvert End Sections shall be provided to the Engineer for review and approval. Reinforcement bars not detailed herein shall be detailed with a clear distance at the end of the reinforcement not less than $\frac{1}{2}$ " nor more than 2". For the precast option, it shall be the Contractor's responsibility for determining a method of handling and a construction procedure shall be included on the shop drawings. The Contractor shall determine and detail in the shop drawings any necessary strengthening or stiffening provisions necessary to handle the precast segment. Any required modifications shall be at no extra charge.

The Contractor may use reinforcement bars in lieu of welded wire reinforcement (WWR). Reinforcement bars shall be limited to the sizes of #3 through #5 bars, a maximum spacing of the lesser of 8" or the member thickness, and shall result in an area of reinforcement equal to or greater than that provided by the WWR. Minimum lap lengths detailed herein are applicable to WWR and reinforcement bars.

Reinforcement (circumferential and longitudinal) in the culvert barrel portion of the end section being lapped with reinforcement from the wingwalls or bottom slab of the end section shall not be less than that required by ASTM C 1577 for the design fill height or the reinforcement detailed for the end section, whichever is greater.

One drain hole shall be provided in each wingwall for end sections of box culverts having an opening with a clear rise greater than 3 ft. The drain hole shall be located within the lower 1/3 of the clear rise of the box culvert and shall conform to the requirements of Article 503.11 of the Standard Specifications.

APRON END SECTION DIMENSIONS

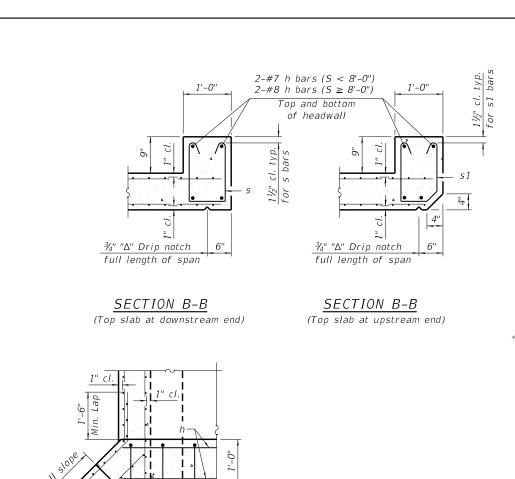
					TON EN		TON DI				
Span (S)	Rise (R)	Tt	Tb	Ts	Α	В	С	D	E	Concrete Cu. Yd.	Culvert Tie Required
3'-0"	2'-0"	7"	6"	4"	3'-4"	2'-2"	2'-10%"	4'-1"	10'-45%"	2.8	Yes
3'-0"	2'-0"	4"	4"	4"	3'-1"	2'-1"	2'-77/8"	3'-9"	9'-11"	2.3	Yes
3'-0"	3'-0"	7"	6"	4"	4'-4"	2'-8"	3'-105/8"	5'-6"	12-45/8"	3.7	Yes
3'-0"	3'-0"	4"	4"	4"	4'-1"	2'-7"	3'-77/8"	5'-2"	11'-11"	3.1	Yes
1'-0"	2'-0"	7.5"	6"	5"	3'-41/2"	2'-21/2"	2'-113/8"	4'-2"	11'-8"	3.3	Yes
1'-0''	2'-0"	5"	5"	5"	3'-2"	2'-1"	2'-81/2"	3'-10"	11'-23/8"	2.8	Yes
1'-0"	3'-0"	7.5"	6"	5"	4'-41/2"	2'-81/2"	3'-113/8"	5'-7"	13'-81/8"	4.2	Yes
!'-0"		5"	5"	_	4'-2"	2'-7"		5'-3"			
	3'-0"			5"			3'-81/2"		13'-23/8"	3.7	Yes
1'-0"	4'-0"	7.5"	6"	5"	5'-4½"	3'-21/2"	4'-113/8"	7'-0"	15'-81/8"	5.3	Yes
!'-0"	4'-0"	5"	5"	5"	5'-2"	3'-1"	4'-85/8"	6'-8"	15'-2 ¹ / ₂ "	4.7	Yes
5'-0''	2'-0"	8"	7"	6"	3'-5"	2'-3"	2'-113/8"	4'-2"	12'-10"	3.9	Yes
5'-0"	2'-0"	6"	6"	6"	3'-3"	2'-2"	2'-10"	4'-0"	12'-71/4"	3.5	Yes
5'-0"	3'-0"	8"	7"	6"	4'-5"	2'-9"	3'-11¾	5'-7"	14'-101/8"	4.9	Yes
5'-0"	3'-0"	6"	6"	6"	4'-3"	2'-8"	3'-10"	5'-5"	14'-71/4"	4.5	Yes
5'-0"	4'-0"	8"	7"	6"	5'-5"	3'-3"	4'-113/8"	7'-0"	16'-101/8"	6.1	Yes
5'-0"	4'-0"	6"	6"	6"	5'-3"	3'-2"	4'-91/4"	6'-9"	16'-57/8"	5.5	Yes
5'-0"	5'-0"	8"	7"	6"	6'-5"	3'-9"	5'-113/8"	8'-5"	18'-101/8"	7.4	Yes
'-0''	5'-0"	6"	6"	6"	6'-3"	3'-8"	5'-91/4"	8'-2"	18'-57/8"	6.8	Yes
'-0''		-	-	-	3'-5"						
	2'-0"	8"	7"	7"		2'-3"	2'-113%"	4'-2"	14'-0"	4.3	Yes
'-0"	2'-0"	7"	7"	7"	3'-4"	2'-2"	2'-105/8"	4'-1"	13'-10%"	4.2	Yes
'-0"	3'-0"	8"	7"	7"	4'-5"	2'-9"	3'-113/8"	5'-7"	16'-01/8"	5.4	Yes
'-0"	3'-0"	7"	7"	7"	4'-4''	2'-8"	3'-101/8"	5'-6"	15'-10%"	5.2	Yes
5'-0"	4'-0"	8"	7"	7"	5'-5"	3'-3"	4'-113%"	7'-0"	18'-01/8"	6.5	Yes
'-0"	4'-0"	7"	7"	7"	5'-4"	3'-2"	4'-10¾"	6'-11"	17'-10¾"	6.5	Yes
'-0"	5'-0"	8"	7"	7"	6'-5"	3'-9"	5'-11¾''	8'-5"	20'-01/8"	8.0	Yes
i'-0''	5'-0"	7"	7"	7"	6'-4"	3'-8"	5'-103/4"	8'-4"	19'-10¾''	7.8	Yes
·-O''	6'-0"	8"	7"	7"	7'-5"	4'-3"	6'-111/2"	9'-10"	22'-01/4"	9.5	Yes
·-O''	6'-0"	7"	7"	7"	7'-4"	4'-2"	6'-103/4"	9'-9"	21'-10¾"	9.3	Yes
''-0''	2'-0"	8"	8"	8"	3'-5"	2'-3"	2'-113/8"	4'-2"	15'-2"	4.9	Yes
''-0''	3'-0"	8"	8"	8"	4'-5"	2'-9"	3'-113/8"	5'-7"	17'-21/8"	6.1	Yes
''-0''	4'-0"	8"	8"	8"	5'-5"	3'-3"	4'-113/8"	7'-0"	19'-21/8"	7.4	Yes
"-0"	5'-0"	8"	8"	8"	6'-5"	3'-9"	5'-113/8"	8'-5"	21'-21/8"	8.9	Yes
"-0"	6'-0"	8"	8"	8"	7'-5"	4'-3"	6'-11 ¹ / ₂ "	9'-10"	23'-21/4"	10.6	Yes
3'-0"	2'-0"	8"	8"	8"	3'-5"	2'-3"	2'-113/8"	4'-2"	16'-2"	5.3	Yes
3'-0"	3'-0"	8"	8"	8"	4'-5"	2'-9"	3'-113/8"	5'-7"	18'-2 ¹ / ₈ "	6.5	Yes
3'-0"	4'-0"	8"	8"	8"	5'-5"	3'-3"	4'-113%"	7'-0"	20'-21/8"	7.8	Yes
3'-0"	5'-0"	8"	8"	8"	6'-5"	3'-9"	5'-11 ³ / ₈ "	8'-5"	22'-21/8"	9.3	Yes
3'-0"	6'-0"	8"	8"	8"	7'-5"	4'-3"	6'-111/2"	9'-10"	24'-21/4"	11.0	Yes
9'-0"	2'-0"	9"	9"	9"	3'-6"	2'-3"	3'-03/4"	4'-4"	17'-67/8"	6.2	Yes
9'-0"	3'-0"	9"	9"	9"	4'-6"	2'-9"	4'-03/4"	5'-9"	19'-67/8"	7.5	Yes
9'-0"	4'-0"	9'	9"	9"	5'-6"	3'-3"	5'-03/4"	7'-2"	21'-67/8"	9.0	Yes
0'-0"		9"	9"	9"							
	5'-0"	_	_	_	6'-6"	3'-9"	6'-07/8"	8'-7"	23'-7"	10.6	Yes
'-0"	6'-0"	9"	9"	9"	7'-6"	4'-3"	7'-01/8"	9'-11"	25'-5%"	12.4	Yes
0'-0"	2'-0"	10"	10"	10"	3'-7"	2'-4"	3'-11/2"	4'-5"	18'-101/4"	7.1	No
0'-0''	3'-0"	10"	10"	10"	4'-7"	2'-10"	4'-11/2"	5'-10"	20'-101/4"	8.6	No
0'-0"	4'-0"	10"	10"	10"	5'-7"	3'-4"	5'-1½"	7'-3"	22'-10%"	10.2	Yes
0'-0"	5'-0"	10"	10"	10"	6'-7"	3'-10"	6'-11/2"	8'-8"	24'-10%"	12.0	Yes
O'-O''	6'-0"	10"	10"	10"	7'-7"	4'-4"	7'-1½"	10'-1"	26'-10¾"	13.9	Yes
1'-0"	2'-0"	11"	11"	11"	3'-8"	2'-4"	3'-2 ⁷ / ₈ "	4'-7"	20'-31/8"	8.2	No
1'-0"	3'-0"	11"	11"	11"	4'-8"	2'-10"	4'-27/8"	6'-0"	22'-31/8"	9.8	No
!'-0"	4'-0"	11"	11"	11"	5'-8"	3'-4"	5'-21/4"	7'-4"	24'-13/4"	11.5	Yes
1'-0"	5'-0"	11"	11"	11"	6'-8"	3'-10"	6'-21/4"	8'-9"	26'-13/4"	13.3	Yes
!'-0"	6'-0"	11"	11"	11"	7'-8"	4'-4"	7'-21/4"	10'-2"	28'-11/8"	15.5	Yes
2'-0"	2'-0"	12"	12"	12"	7 -0 3'-9"	2'-5"	3'-35%"	4'-8"	21'-61/2"	9.3	No
2'-0"	3'-0"	12"	12"	12"	4'-9"	2'-11"	4'-35%"	6'-1"	23'-61/2"	11.1	No
2'-0''	4'-0"	12"	12"	12"	5'-9"	3'-5"	5'-35%"	7'-6"	25'-6%"	13.0	Yes
2'-0"	5'-0"	12"	12"	12"	6'-9"	3'-11"	6'-35%"	8'-11"	27'-65%"	14.1	Yes
2'-0"	6'-0"	12"	12"	12"	7'-9"	4'-5"	7'-35%"	10'-4"	29'-65%"	17.4	Yes

Two sets of apron end section dimensions are shown above for some box culvert sizes due to the top and bottom slabs having different thicknesses per ASTM C 1577 for design fill heights less than 2 ft.

SCALE:

		(Sne	et I oi .	<i>2)</i>							
PRECAST CONCRETE BOX CULVERT					F.A.P. SECTION			COUNTY	TOTAL SHEETS	SHEE NO.	
APRON END SECTION DETAILS						322	3CR-1		JACKSON	14	12
		IOIN LIND	JEUITO	IN DEIA	ILO				CONTRACT	NO. 78	8635
	SHEET	OF	SHEETS	STA.	TO STA.		ILLINOIS	FED. All	D PROJECT		

STATE OF ILLINOIS **DEPARTMENT OF TRANSPORTATION**



#4 s or s1 bars at spacing = Tt

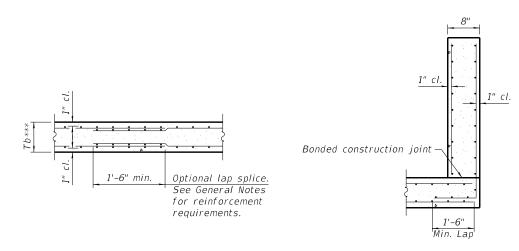
(Spacing need not be less than 8")

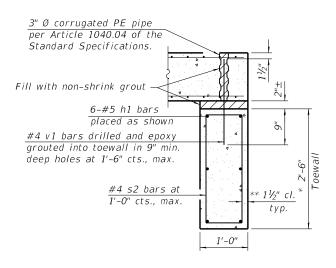
SECTION E-E

31/8"

BAR s1

2-17-2017





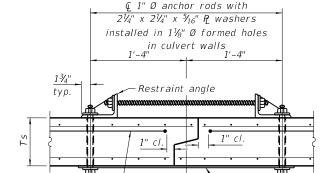
SECTION D-D

SECTION B-B (Bottom Slab)

#4 s3 bar

 $\overline{(typ. for R > 3'-0")}$

*** This dimension shall be increased by 2" for CIP construction.



SECTION F-F (Showing culvert tie details)

~ ¼" Tie ₽

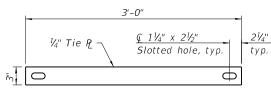
---- € Joint

TOEWALL CONSTRUCTION SEQUENCE

- 1. Perform excavation and construct toewall.
- 2. Backfill accordingly 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 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.

Q 11/4" Ø hole for 1" Ø anchor rod with <u>€</u> 1½" Ø hole in 21/4" x 21/4" x 5/16" bottom leg of angle

RESTRAINT ANGLE DETAIL



TIE PLATE DETAIL

SCALE:

SHEET

SECTION C-C

1" Ø anchor rods for the culvert ties shall conform to the requirements of ASTM F1554, Grade 105. Structural steel for the 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. $2\frac{1}{4}$ " x $2\frac{1}{4}$ " x $\frac{5}{16}$ " 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.

SCB-AES

9"

BAR s

JSER NAME = adamsam DESIGNED -REVISED DRAWN REVISED LOT SCALE = 100.0000 ' / in. HECKED REVISED PLOT DATE = 12/13/2018 REVISED DATE

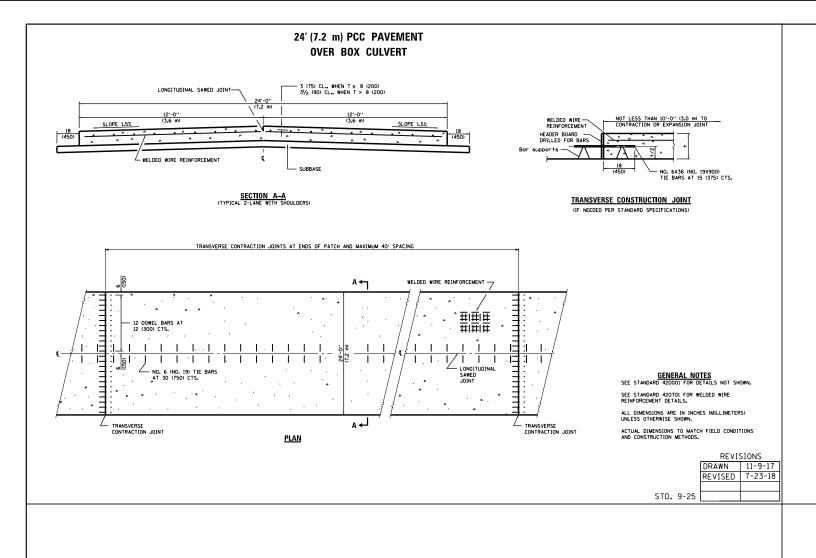
9"

BAR s2

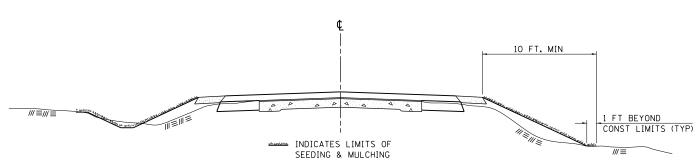
BAR s3

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	(She	eet 2 of	2)									
PRECAST CONCRETE BOX CULVERT APRON END SECTION DETAILS						SECTION CO		COUNTY	TOTAL SHEETS	SHEET NO.		
						3CI	3CR-1		JACKSON	14	13	
ALTION END SECTION DETAILS					CONTRACT NO. 78635						3635	
HEET	OF	SHEETS	STA.	TO STA.			ILLINOIS	FED. AI	D PROJECT			



SEEDING & MULCHING



GENERAL NOTES

SCALE:

IN GENERAL, ALL EARTH SURFACES DISTURBED DURING CONSTRUCTION OPERATIONS SHALL BE SEEDED AND MULCHED UPON COMPLETION OF ALL GRADING OPERATIONS.

ON DETOUR ROADS, SLOPES SHALL BE SEEDED IMMEDIATELY UPON COMPLETION OF ANY GIVEN STAGE GRADING. TEMPORARY SEEDING SHALL BE CLASS 7.

FERTILIZER NUTRIENTS SHALL BE APPLIED TO ALL SEEDED AREAS. LIMESTONE SHALL BE APPLIED TO ALL AREAS OF FINAL SEEDING.

THE RATES OF APPLICATION OF FERTILIZER, MULCH AND LIMESTONE SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS FOR ROAD AND BRIDGE CONSTRUCTION.

SECTIONS 250 AND 251 OF THE STANDARD SPECIFICATIONS SHALL GOVERN THIS WORK EXCEPT AS SPECIFIED HEREIN OR AS NOTED IN THE SPECIAL PROVISIONS.

	REVI:	SIONS
	REDRAWN	2-15-8
	REVISED	8-15-9
	REVISED	6-3-9
	REVISED	3-27-08
>	REVISED	5-16-13

STD. 9-12

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION