

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
776	102B-5	HAMILTON	14	1
		ILLINOIS	CONTRACT NO. 78622	

FOR INDEX OF SHEETS, SEE SHEET NO. 3

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

**PROPOSED
HIGHWAY PLANS**

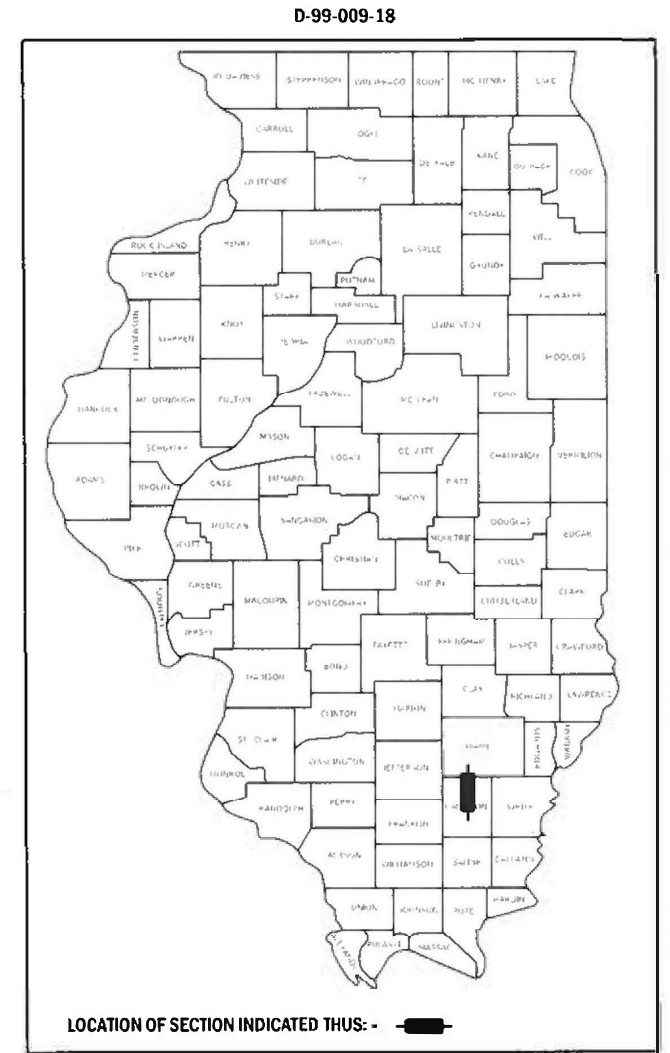
F.A.P. ROUTE 776 (IL 242)
SECTION 102B-5
PROJECT STP-JZJE(437) BOX
CULVERT REPLACEMENT
HAMILTON COUNTY

C-99-017-18

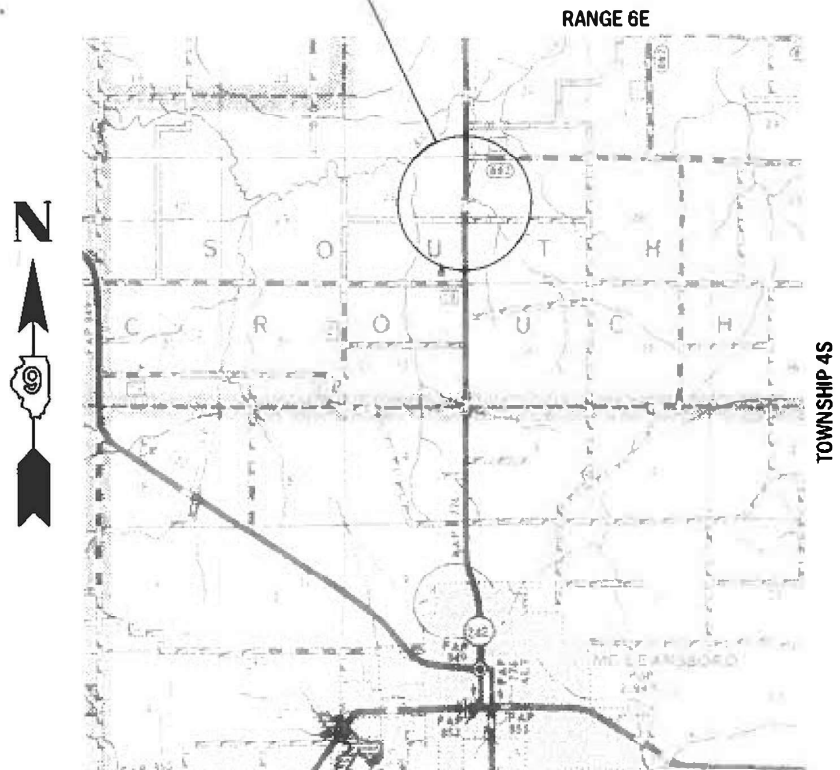
TRAFFIC DATA

2017 ADT = 1,750
WITH 10.2% TRUCKS
SPEED LIMIT: 55 MPH

TOWNSHIP
SOUTH CROUCH



IMPROVEMENT LOCATION
STRUCTURE 033-2000 (E)
STRUCTURE 033-7034 (P)
IL 242 OVER STREAM



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

PROJECT ENGINEER: MIKE STEPHENSON
PROJECT MANAGER: ADRIAN ADAMS

CONTRACT NO. 78622

GROSS LENGTH = 50.00 FT. = 0.001 MILE
NET LENGTH = 50.00 FT. = 0.001 MILE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED 10-05-2020
[Signature]
REGION FIVE ENGINEER

March 19, 2021
[Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

March 19, 2021
[Signature]
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

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Prepared By: Charles Steir
DISTRICT STUDIES & PLANS ENGINEER

Examined By: Nancy D
DISTRICT LAND ACQUISITION ENGINEER

Examined By: Carrie Nelson
DISTRICT PROGRAM DEVELOPMENT ENGINEER

Examined By: Keel M. G.
DISTRICT OPERATIONS ENGINEER

Examined By: KT
DISTRICT PROJECT IMPLEMENTATION ENGINEER

Examined By: Daryl J. Herlihy
DISTRICT CONSTRUCTION ENGINEER

Examined By: [Signature]
DISTRICT MATERIALS ENGINEER

USER NAME = adamsm	DESIGNED - _____	REVISED - _____	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SIGNATURES SHEET				F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.		
PLOT SCALE = 100.0000' / 1" =	DRAWN - _____	REVISED - _____		SCALE: _____	SHEET _____	OF _____	SHEETS	STA _____	TO STA _____	776	102B-5	HAMILTON	14	2
PLOT DATE = 9/18/2020	CHECKED - _____	REVISED - _____										CONTRACT NO. 78622		ILLINOIS FED. AID PROJECT

GENERAL NOTES

- 1) FACTORS USED FOR ESTIMATING PLAN QUANTITIES ARE AS FOLLOWS AND SHALL NOT BE USED FOR THE BASIS OF FINAL QUANTITIES:
- | | |
|---------------|-----------------|
| ALL AGGREGATE | 2.05 TONS/CU YD |
| RIPRAP | 1.50 TONS/CU YD |
- 2) 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.
- 3) A CALCIUM CHLORIDE ACCELERATOR WILL BE ALLOWED FOR THE PCC PAVEMENT, 10", AND PCC SHOULDERS, 8". THE CONCRETE SHALL BE CLASS PP-1 OR PP-2 PER ARTICLE 1020.
- 4) FIELD ENTRANCE AT RT. STA. 786+85 IS TO REMAIN IN PLACE UPON COMPLETION OF THE PROJECT.

INDEX OF SHEETS

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

COMMITMENTS

NONE

STANDARDS

000001-08	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
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
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

REV. - MS

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PLOT SCALE = 100.0000' / in.	DRAWN -	REVISED -				776	102B-5	HAMILTON	14	3
PLOT DATE = 2/16/2021	CHECKED -	REVISED -		SCALE: SHEET OF SHEETS STA. TO STA.		ILLINOIS FED. AID PROJECT CONTRACT NO. 78622				
	DATE -	REVISED -								

SUMMARY OF QUANTITIES

COUNTY	HAMILTON
ROUTE	IL 242
FUNDING	NHPP 80% FED, 20% STATE
LOCATION	RURAL

CODE NUMBER	ITEM DESCRIPTION	UNIT	0004
20200100	EARTH EXCAVATION	CU YD	359
20700220	POROUS GRANULAR EMBANKMENT	CU YD	242
25000200	SEEDING, CLASS 2	ACRE	0.25
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	23
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	23
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	23
25000700	AGRICULTURAL GROUND LIMESTONE	TON	0.5
25100630	EROSION CONTROL BLANKET	SQ YD	188
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	4
28000400	PERIMETER EROSION BARRIER	FOOT	184
28100107	STONE RIPRAP, CLASS A4	SQ YD	57
28200200	FILTER FABRIC	SQ YD	57
42000060	WELDED WIRE REINFORCEMENT	SQ YD	146

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	DRAWN - _____	REVISED - _____
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PLOT DATE = 10/14/2020	DATE - _____	REVISED - _____

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES	
SCALE: _____	SHEET ____ OF ____ SHEETS STA. _____ TO STA. _____

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
776	102B-5	HAMILTON	14	4
CONTRACT NO. 78622				
ILLINOIS FED. AID PROJECT				

SUMMARY OF QUANTITIES - CONT

COUNTY	HAMILTON
ROUTE	IL 242
FUNDING	NHPP 80% FED, 20% STATE
LOCATION	RURAL

CODE NUMBER	ITEM DESCRIPTION	UNIT	0004
42000500	PORTLAND CEMENT CONCRETE PAVEMENT 10"	SQ YD	146
44000100	PAVEMENT REMOVAL	SQ YD	146
48300300	PORTLAND CEMENT CONCRETE SHOULDERS 8"	SQ YD	34
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
54001001	BOX CULVERT END SECTIONS, CULVERT NO. 1	EACH	2
54011204	PRECAST CONCRETE BOX CULVERTS 12' X 4'	FOOT	46
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	89
66600105	FURNISHING AND ERECTING RIGHT OF WAY MARKERS	EACH	8
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
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	3
70107025	CHANGEABLE MESSAGE SIGN	CAL DA	34

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	DRAWN - _____	REVISED - _____
PLOT SCALE = 100,0000' / in.	CHECKED - _____	REVISED - _____
PLOT DATE = 10/14/2020	DATE - _____	REVISED - _____

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES	
SCALE: _____	SHEET ____ OF ____ SHEETS STA. _____ TO STA. _____

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
776	102B-5	HAMILTON	14	5
CONTRACT NO. 78622				
ILLINOIS FED. AID PROJECT				





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PAVING SCHEDULE									
STATION			COMMENTS	PAVEMENT REMOVAL	PORTLAND CEMENT CONCRETE PAVEMENT, 10''	WELDED WIRE REINF.	PCC SHOULDERS - 8''		
				SQ YD	SQ YD	SQ YD	SQ YD		
786+88.25	LT	TO	787+38.25	LT					
786+88.25	RT	TO	787+38.25	RT					
TOTALS					146	146	146	34	

PAVEMENT MARKING SCHEDULE								
STATION			NOTES	PAINT PAVEMENT MARKING - LINE				
				SOLID WHITE		YELLOW SKIP DASH		
				FOOT		FOOT		
786+88.25	RT	TO	787+38.25	RT		50		
786+88.25		TO	787+38.25		ALONG CENTERLINE			10
786+88.25	LT	TO	787+38.25	LT		50		
SUBTOTAL						100		10
TOTAL								110

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-  PROPOSED RIPRAP, CLASS A4
-  PAVEMENT REMOVAL AND PROPOSED PCC PAVEMENT
-  EROSION CONTROL BLANKET & SEEDING, CLASS 2
-  PROPOSED PCC SHOULDER, 8"

STA 786+75
33' & 50' RT

STA 786+75
33' & 50' LT

CL PROPOSED SN 033-7034 (NO SKEW)
STA 787+10, 12' X 4' SINGLE PRECAST BOX
52' OUT-TO-OUT, ASTM C 1577
±2.93' MAX FILL @ CL RDWY.

46'-0" - 12' X 4' PROP PRECAST BOX CULVERT

PROP. PRECAST CONCRETE
APRON END SECTION. COST
INCLUDED IN BOX CULVERT
END SECTIONS. NO.1 (TYP.)

PROJECT LIMITS
STA 786+88.25

CONST. LIMITS

CONST. LIMITS

2'-0" (TYP.)

2'-0" (TYP.)

10'-0" (TYP.)

CL EXISTING SN 033-2000 (NO SKEW)
STA 787+13.25, 10' X 3.5' DOUBLE BOX CULVERT

PROJECT LIMITS
STA 787+38.25

CONST. LIMITS

CONST. LIMITS

3'-0" SHLD.

13'-0"

13'-0"

3'-0" SHLD.

STA 787+50
33' & 50' RT

STA 787+50
33' & 50' LT

CL F.A.P. 776
(IL 242)

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DRAWN - _____	REVISED - _____	
PLOT SCALE = 10.0000' / in.	CHECKED - _____	REVISED - _____
PLOT DATE = 10/14/2020	DATE - _____	REVISED - _____

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN
SN 033-7034**

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
776	102B-5	HAMILTON	14	8
CONTRACT NO. 78622				
ILLINOIS FED. AID PROJECT				

PARCEL ID	PROPERTY OWNER	PURPOSE	ACREAGE
100	ROGER & ALAN RUBENACKER	R.O.W.	0.052 AC±
101	VIRGINIA L. RUBENACKER	R.O.W.	0.029 AC±

NE QUARTER, SE QUARTER, NE QUARTER
SECTION 28
T. 4 S., R. 6 E., 3RD P.M.

POINT ID	NORTHING	EASTING
JH7	539715.28	925256.60
JH8	539715.19	925273.60
JH9	539715.71	925173.61
JH10	539715.62	925190.61
JH11	539640.62	925190.22
JH12	539640.71	925173.22
JH13	539640.19	925273.21
JH14	539640.28	925256.21
JH37	539722.68	925177.30
JH43	539715.69	925177.26
JH44	539640.69	925176.88

SE QUARTER, SE QUARTER, NE QUARTER
SECTION 28
T. 4 S., R. 6 E., 3RD P.M.

☐ FAP 776 (IL RTE 242)
ALIGNMENT INFO

POINT #	STATION	NORTHING	EASTING
P.T. 16	752+10.99	543179.41	925241.61
P.O.T. 18	806+99.99	537690.48	925213.08

SECTION LINE
EXISTING ROW
PROPOSED ROW
EXISTING ROW
SECTION LINE
EXISTING ROW

784
☐ FAP 776 (IL RTE 242)
785+00
786
787
788
789

JH37 786+68.01
46.34 RT

JH43 786+75.00
46.34 RT

786+75.00
33 & 50 RT
JH10 JH9

787+50.00
33 & 50 RT
JH11 JH12

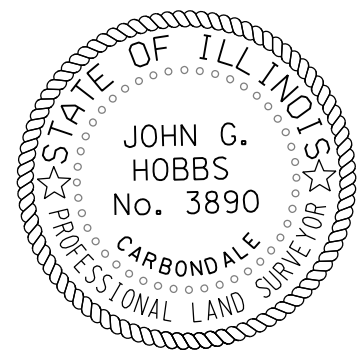
787+50.00
46.34 RT
JH44

784+75.00
33 & 88 LT

786+75.00
33 & 50 LT
JH7 JH8

787+50.00
33 & 50 LT
JH14 JH13

SW QUARTER, NW QUARTER
SECTION 27
T. 4 S., R. 6 E., 3RD P.M.



JOHN G. HOBBS
ILLINOIS PROFESSIONAL LAND SURVEYOR

Current license expires 11/2020.

This professional service conforms to the current Illinois minimum standards for a boundary survey.

NOTE:
NAD 83 (1997 ADJUSTMENTS)
WGS 1984 (GEOID 03)
ILLINOIS EAST ZONE

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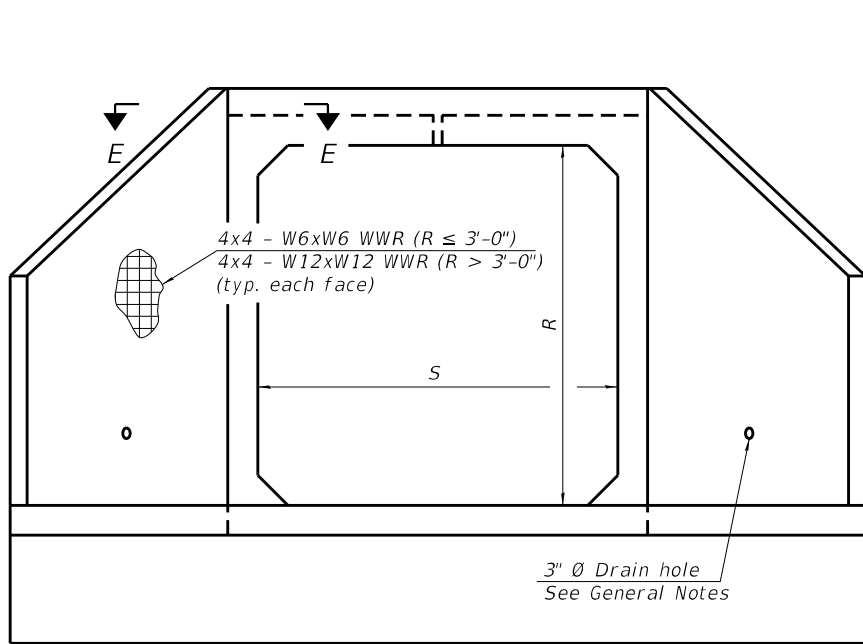
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PLOT SCALE = 50.0000' / in.	CHECKED - _____	REVISOR - _____
PLOT DATE = 10/1/2020	DATE - _____	REVISOR - _____

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

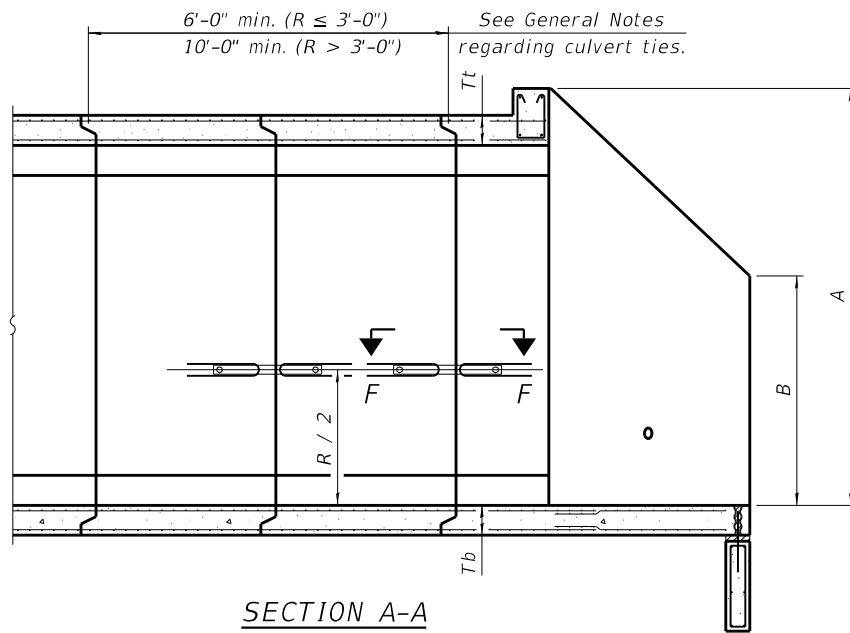
RIGHT OF WAY SHEETS
IL RTE 242 SNO33-2000

SCALE: 1" = 50' SHEET 1 OF 1 SHEETS STA. 784+00 TO STA. 789+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
776	102B-5	HAMILTON	___	___
CONTRACT NO. 78622				
R-99-007-06 ILLINOIS FED. AID PROJECT				



END VIEW



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 increased 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 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 in 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.

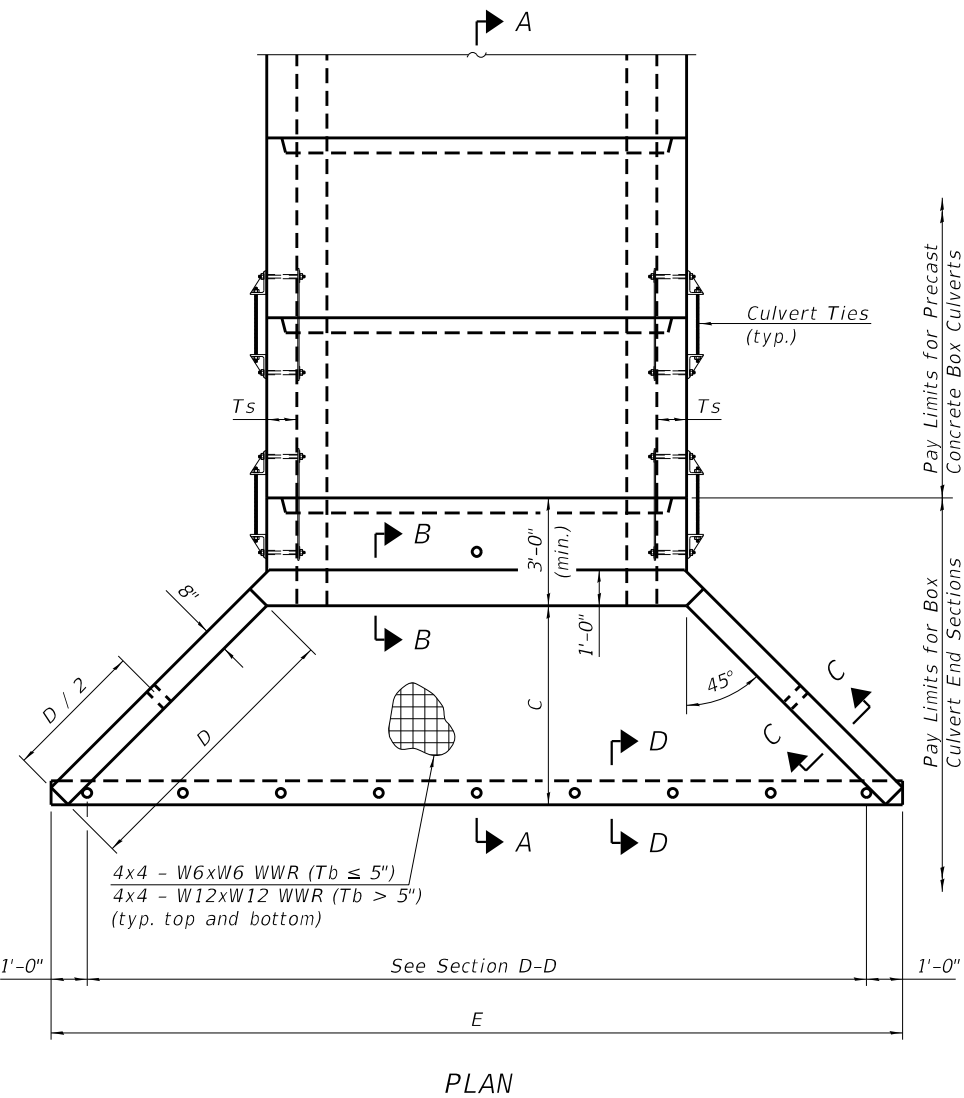
Reinforcement (circumferential and longitudinal) in the culvert barrel portion of the end section being lapped with reinforcement from the wingwalls or bottom slab of the end section shall not be less than that required by ASTM C 1577 for the design fill height or the reinforcement detailed for the end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

Span (S)	Rise (R)	Tt	Tb	Ts	A	B	C	D	E	Concrete Cu. Yd.	Culvert Ties Required
3'-0"	2'-0"	7"	6"	4"	3'-4"	2'-2"	2'-10 3/8"	4'-1"	10'-4 5/8"	2.8	Yes
3'-0"	2'-0"	4"	4"	4"	3'-1"	2'-1"	2'-7 7/8"	3'-9"	9'-11"	2.3	Yes
3'-0"	3'-0"	7"	6"	4"	4'-4"	2'-8"	3'-10 3/8"	5'-6"	12'-4 5/8"	3.7	Yes
3'-0"	3'-0"	4"	4"	4"	4'-1"	2'-7"	3'-7 7/8"	5'-2"	11'-11"	3.1	Yes
4'-0"	2'-0"	7.5"	6"	5"	3'-4 1/2"	2'-2 1/2"	2'-11 3/8"	4'-2"	11'-8"	3.3	Yes
4'-0"	2'-0"	5"	5"	5"	3'-2"	2'-1"	2'-8 1/2"	3'-10"	11'-2 3/8"	2.8	Yes
4'-0"	3'-0"	7.5"	6"	5"	4'-4 1/2"	2'-8 1/2"	3'-11 3/8"	5'-7"	13'-8 1/8"	4.2	Yes
4'-0"	3'-0"	5"	5"	5"	4'-2"	2'-7"	3'-8 1/2"	5'-3"	13'-2 3/8"	3.7	Yes
4'-0"	4'-0"	7.5"	6"	5"	5'-4 1/2"	3'-2 1/2"	4'-11 3/8"	7'-0"	15'-8 1/8"	5.3	Yes
4'-0"	4'-0"	5"	5"	5"	5'-2"	3'-1"	4'-8 3/8"	6'-8"	15'-2 1/2"	4.7	Yes
5'-0"	2'-0"	8"	7"	6"	3'-5"	2'-3"	2'-11 3/8"	4'-2"	12'-10"	3.9	Yes
5'-0"	2'-0"	6"	6"	6"	3'-3"	2'-2"	2'-10"	4'-0"	12'-7 1/4"	3.5	Yes
5'-0"	3'-0"	8"	7"	6"	4'-5"	2'-9"	3'-11 3/8"	5'-7"	14'-10 1/8"	4.9	Yes
5'-0"	3'-0"	6"	6"	6"	4'-3"	2'-8"	3'-10"	5'-5"	14'-7 1/4"	4.5	Yes
5'-0"	4'-0"	8"	7"	6"	5'-5"	3'-3"	4'-11 3/8"	7'-0"	16'-10 1/8"	6.1	Yes
5'-0"	4'-0"	6"	6"	6"	5'-3"	3'-2"	4'-9 1/4"	6'-9"	16'-5 1/8"	5.5	Yes
5'-0"	5'-0"	8"	7"	6"	6'-5"	3'-9"	5'-11 3/8"	8'-5"	18'-10 1/8"	7.4	Yes
5'-0"	5'-0"	6"	6"	6"	6'-3"	3'-8"	5'-9 1/4"	8'-2"	18'-5 7/8"	6.8	Yes
6'-0"	2'-0"	8"	7"	6"	3'-5"	2'-3"	2'-11 3/8"	4'-2"	14'-0"	4.3	Yes
6'-0"	2'-0"	7"	7"	7"	3'-4"	2'-2"	2'-10 3/8"	4'-1"	13'-10 3/8"	4.2	Yes
6'-0"	3'-0"	8"	7"	7"	4'-5"	2'-9"	3'-11 3/8"	5'-7"	16'-0 1/8"	5.4	Yes
6'-0"	3'-0"	7"	7"	7"	4'-4"	2'-8"	3'-10 3/8"	5'-6"	15'-10 3/8"	5.2	Yes
6'-0"	4'-0"	8"	7"	7"	5'-5"	3'-3"	4'-11 3/8"	7'-0"	18'-0 1/8"	6.5	Yes
6'-0"	4'-0"	7"	7"	7"	5'-4"	3'-2"	4'-10 3/4"	6'-11"	17'-10 3/4"	6.5	Yes
6'-0"	5'-0"	8"	7"	7"	6'-5"	3'-9"	5'-11 3/8"	8'-5"	20'-0 1/8"	8.0	Yes
6'-0"	5'-0"	7"	7"	7"	6'-4"	3'-8"	5'-10 3/4"	8'-4"	19'-10 3/4"	7.8	Yes
6'-0"	6'-0"	8"	7"	7"	7'-5"	4'-3"	6'-11 1/2"	9'-10"	22'-0 1/4"	9.5	Yes
6'-0"	6'-0"	7"	7"	7"	7'-4"	4'-2"	6'-10 3/4"	9'-9"	21'-10 3/4"	9.3	Yes
7'-0"	2'-0"	8"	8"	8"	3'-5"	2'-3"	2'-11 3/8"	4'-2"	15'-2"	4.9	Yes
7'-0"	3'-0"	8"	8"	8"	4'-5"	2'-9"	3'-11 3/8"	5'-7"	17'-2 1/8"	6.1	Yes
7'-0"	4'-0"	8"	8"	8"	5'-5"	3'-3"	4'-11 3/8"	7'-0"	19'-2 1/8"	7.4	Yes
7'-0"	5'-0"	8"	8"	8"	6'-5"	3'-9"	5'-11 3/8"	8'-5"	21'-2 1/8"	8.9	Yes
7'-0"	6'-0"	8"	8"	8"	7'-5"	4'-3"	6'-11 1/2"	9'-10"	23'-2 1/4"	10.6	Yes
8'-0"	2'-0"	8"	8"	8"	3'-5"	2'-3"	2'-11 3/8"	4'-2"	16'-2"	5.3	Yes
8'-0"	3'-0"	8"	8"	8"	4'-5"	2'-9"	3'-11 3/8"	5'-7"	18'-2 1/8"	6.5	Yes
8'-0"	4'-0"	8"	8"	8"	5'-5"	3'-3"	4'-11 3/8"	7'-0"	20'-2 1/8"	7.8	Yes
8'-0"	5'-0"	8"	8"	8"	6'-5"	3'-9"	5'-11 3/8"	8'-5"	22'-2 1/8"	9.3	Yes
8'-0"	6'-0"	8"	8"	8"	7'-5"	4'-3"	6'-11 1/2"	9'-10"	24'-2 1/4"	11.0	Yes
9'-0"	2'-0"	9"	9"	9"	3'-6"	2'-3"	3'-0 3/4"	4'-4"	17'-6 7/8"	6.2	Yes
9'-0"	3'-0"	9"	9"	9"	4'-6"	2'-9"	4'-0 3/4"	5'-9"	19'-6 7/8"	7.5	Yes
9'-0"	4'-0"	9"	9"	9"	5'-6"	3'-3"	5'-0 3/4"	7'-2"	21'-6 7/8"	9.0	Yes
9'-0"	5'-0"	9"	9"	9"	6'-6"	3'-9"	6'-0 3/8"	8'-7"	23'-7"	10.6	Yes
9'-0"	6'-0"	9"	9"	9"	7'-6"	4'-3"	7'-0 1/8"	9'-11"	25'-5 3/8"	12.4	Yes
10'-0"	2'-0"	10"	10"	10"	3'-7"	2'-4"	3'-1 1/2"	4'-5"	18'-10 1/4"	7.1	No
10'-0"	3'-0"	10"	10"	10"	4'-7"	2'-10"	4'-1 1/2"	5'-10"	20'-10 1/4"	8.6	No
10'-0"	4'-0"	10"	10"	10"	5'-7"	3'-4"	5'-1 1/2"	7'-3"	22'-10 3/8"	10.2	Yes
10'-0"	5'-0"	10"	10"	10"	6'-7"	3'-10"	6'-1 1/2"	8'-8"	24'-10 3/8"	12.0	Yes
10'-0"	6'-0"	10"	10"	10"	7'-7"	4'-4"	7'-1 1/2"	10'-1"	26'-10 3/8"	13.9	Yes
11'-0"	2'-0"	11"	11"	11"	3'-8"	2'-4"	3'-2 1/8"	4'-7"	20'-3 1/8"	8.2	No
11'-0"	3'-0"	11"	11"	11"	4'-8"	2'-10"	4'-2 1/8"	6'-0"	22'-3 1/8"	9.8	No
11'-0"	4'-0"	11"	11"	11"	5'-8"	3'-4"	5'-2 1/4"	7'-4"	24'-1 3/4"	11.5	Yes
11'-0"	5'-0"	11"	11"	11"	6'-8"	3'-10"	6'-2 1/4"	8'-9"	26'-1 3/4"	13.3	Yes
11'-0"	6'-0"	11"	11"	11"	7'-8"	4'-4"	7'-2 1/4"	10'-2"	28'-1 1/8"	15.5	Yes
12'-0"	2'-0"	12"	12"	12"	3'-9"	2'-5"	3'-3 3/8"	4'-8"	21'-6 1/2"	9.3	No
12'-0"	3'-0"	12"	12"	12"	4'-9"	2'-11"	4'-3 5/8"	6'-1"	23'-6 1/2"	11.1	No
12'-0"	4'-0"	12"	12"	12"	5'-9"	3'-5"	5'-3 3/8"	7'-6"	25'-6 3/8"	13.0	Yes
12'-0"	5'-0"	12"	12"	12"	6'-9"	3'-11"	6'-3 3/8"	8'-11"	27'-6 3/8"	14.1	Yes
12'-0"	6'-0"	12"	12"	12"	7'-9"	4'-5"	7'-3 3/8"	10'-4"	29'-6 3/8"	17.4	Yes

Note:
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.
(Sheet 1 of 2)



PLAN

SCB-AES

2-17-2017

USER NAME = adamsam	DESIGNED - _____	REVISED - _____
PLOT SCALE = 100.0000' / in.	CHECKED - _____	REVISED - _____
PLOT DATE = 10/6/2020	DATE - _____	REVISED - _____

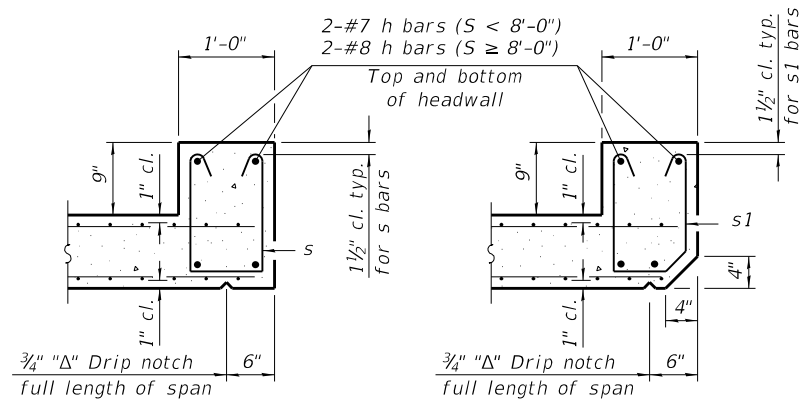
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRECAST CONCRETE BOX CULVERT
APRON END SECTION DETAILS

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

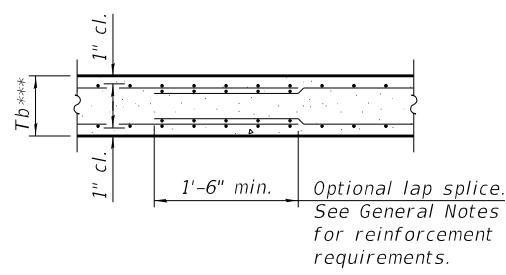
F.A.P. RTE. 776	SECTION 102B-5	COUNTY HAMILTON	TOTAL SHEETS 14	SHEET NO. 12
CONTRACT NO. 78622				
ILLINOIS FED. AID PROJECT				

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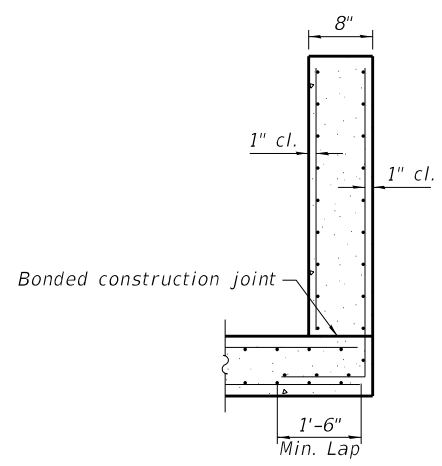


SECTION B-B
(Top slab at downstream end)

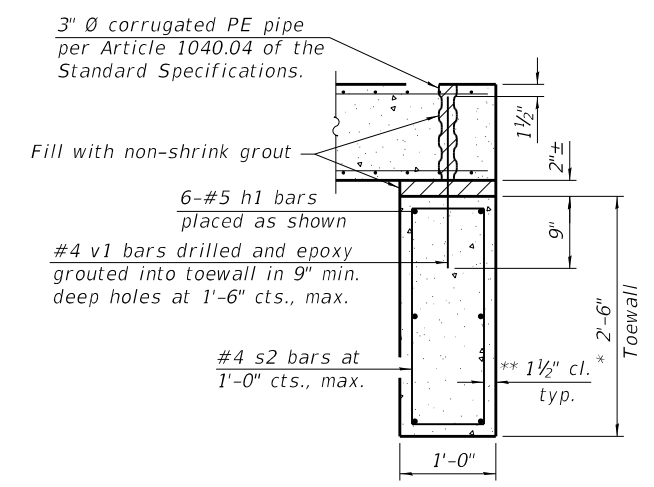
SECTION B-B
(Top slab at upstream end)



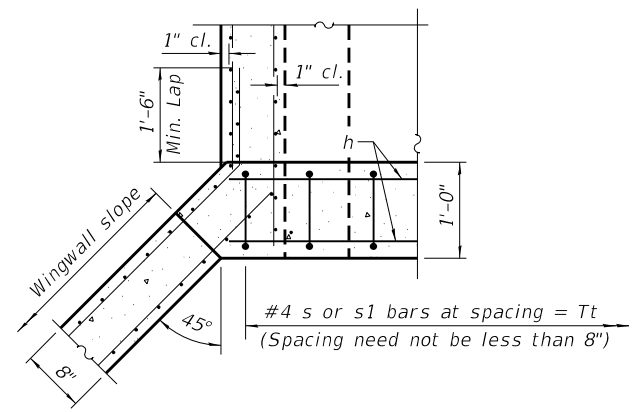
SECTION B-B
(Bottom Slab)



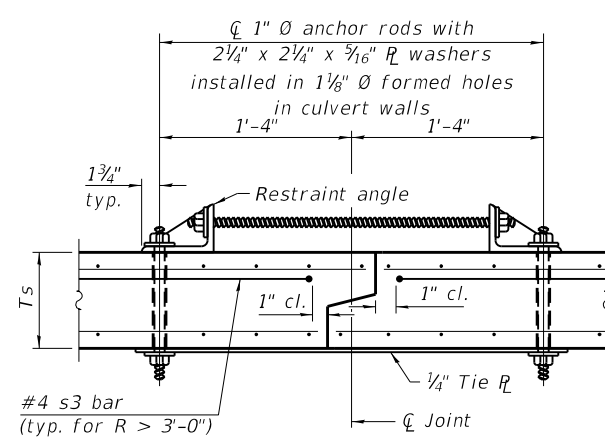
SECTION C-C



SECTION D-D



SECTION E-E



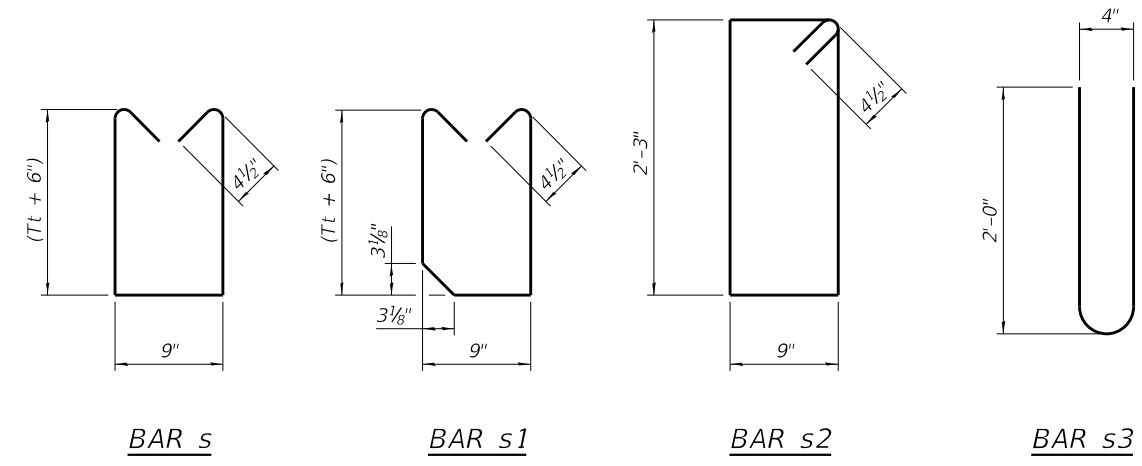
SECTION F-F
(Showing culvert tie details)

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.

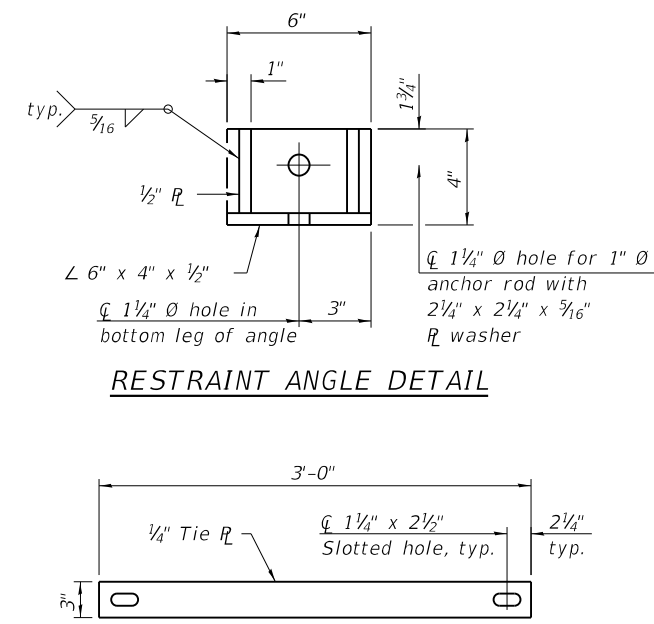


BAR s

BAR s1

BAR s2

BAR s3



RESTRAINT ANGLE DETAIL

TIE PLATE DETAIL

Notes:

1" diameter 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 1/4" x 2 1/4" x 3/16" 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 1/2 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

2-17-2017

(Sheet 2 of 2)

MOE: L. Defaul... FILE: M:\AE... Projects\78622\CADD\Drawings\78622-Sheets.dwg

USER NAME = adamsam	DESIGNED - _____	REVISED - _____
PLOT SCALE = 100,0000' / in.	DRAWN - _____	REVISED - _____
PLOT DATE = 10/6/2020	CHECKED - _____	REVISED - _____
	DATE - _____	REVISED - _____

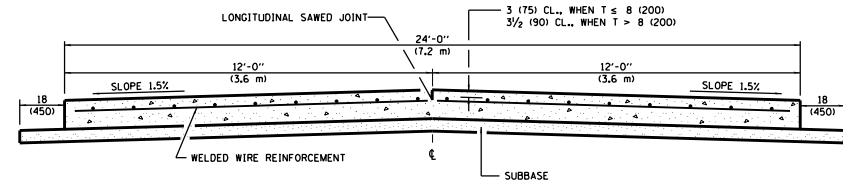
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PRECAST CONCRETE BOX CULVERT
APRON END SECTION DETAILS**

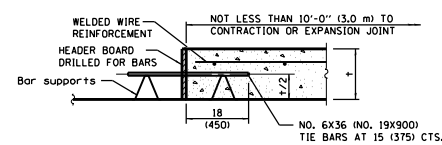
SCALE: _____ SHEET _____ OF _____ SHEETS STA. _____ TO STA. _____

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
776	102B-5	HAMILTON	14	13
CONTRACT NO. 78622				
ILLINOIS FED. AID PROJECT				

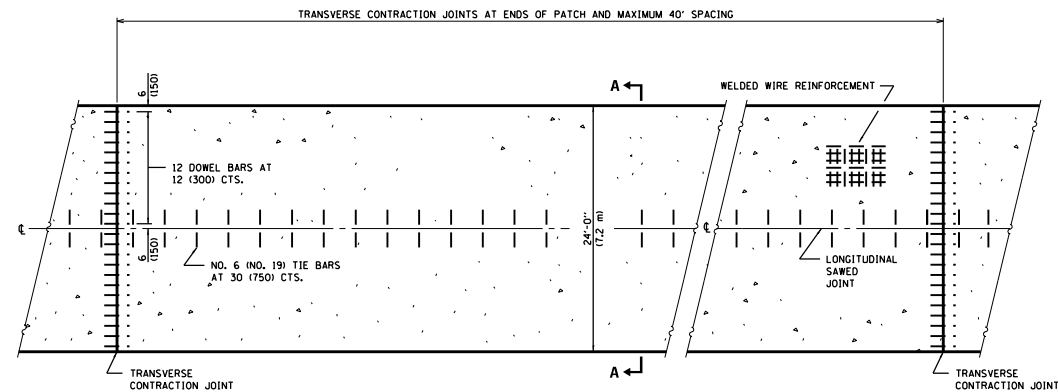
**24' (7.2 m) PCC PAVEMENT
OVER BOX CULVERT**



SECTION A-A
(TYPICAL 2-LANE WITH SHOULDERS)



TRANSVERSE CONSTRUCTION JOINT
(IF NEEDED PER STANDARD SPECIFICATIONS)



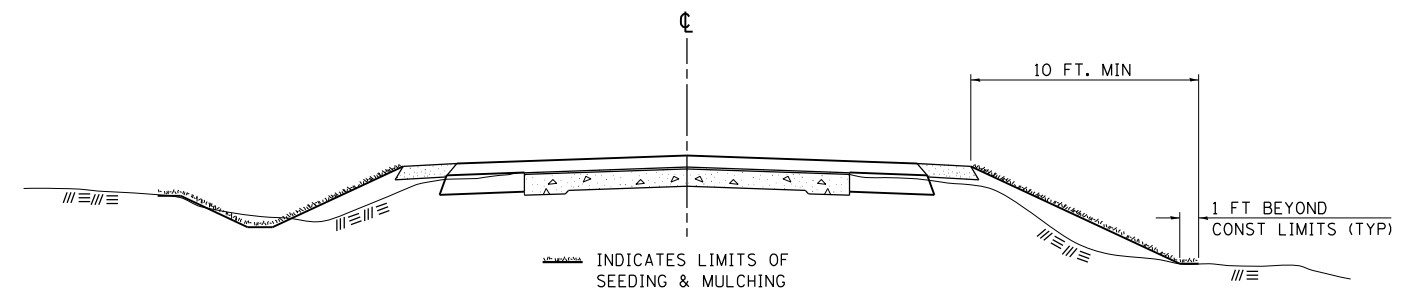
PLAN

GENERAL NOTES
SEE STANDARD 420001 FOR DETAILS NOT SHOWN.
SEE STANDARD 420701 FOR WELDED WIRE REINFORCEMENT DETAILS.
ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
ACTUAL DIMENSIONS TO MATCH FIELD CONDITIONS AND CONSTRUCTION METHODS.

REVISIONS	
DRAWN	11-9-17
REVISED	7-23-18

STD. 9-25

SEEDING & MULCHING



GENERAL NOTES

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 SEEDED SHALL BE CLASS 7.

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

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.

REVISIONS	
REDRAWN	2-15-89
REVISED	8-15-94
REVISED	6-3-99
REVISED	3-27-08
REVISED	5-16-13

STD. 9-12

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USER NAME = adamsam	DESIGNED - _____	REVISED - _____
PLOT SCALE = 100.0000' / in.	CHECKED - _____	REVISED - _____
PLOT DATE = 10/6/2020	DATE - _____	REVISED - _____

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

DISTRICT STANDARDS

SCALE: _____ SHEET ____ OF ____ SHEETS STA. _____ TO STA. _____

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
776	102B-5	HAMILTON	14	14
CONTRACT NO. 78622				
ILLINOIS FED. AID PROJECT				