

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42*	1
		ILLINOIS	CONTRACT NO. 70753	

* 42 + 1 = 43 TOTAL SHEETS

FOR INDEX OF SHEETS, SEE SHEET NO. 2
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 3-5

CURRENT TRAFFIC DATA FOR US 136

2023 ADT	1950
PU+PC	88.7%
SU	6.7%
MU	4.6%

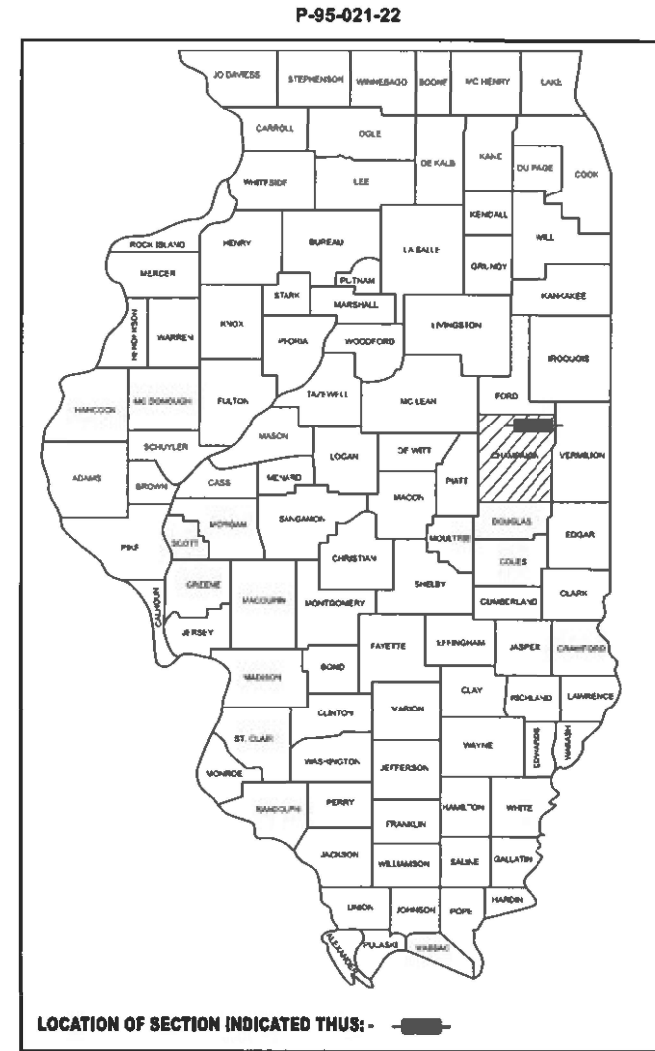
DESIGN DESIGNATION: N/A

PROPOSED
HIGHWAY PLANS

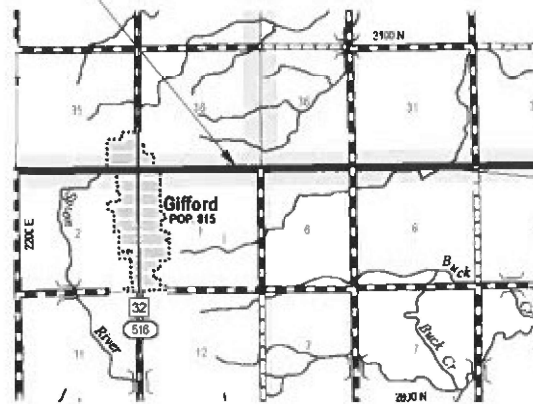
F.A.P. ROUTE 709 (US 136)
SECTION 113CR
PROJECT HBFP-ZQ9R(321)
CULVERT REPLACEMENT
CHAMPAIGN COUNTY

C-95-010-09

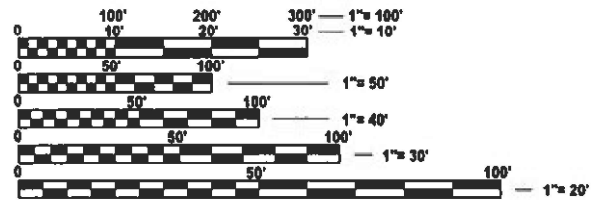
AT DITCH 0.6 & 2.2 MI E OF GIFFORD ECL



CULVERT REPLACEMENT
EXISTING S.N. 010-8072 AT STA. 460+43
SINGLE 6'X3' REINFORCED CONCRETE BOX CULVERT
PROPOSED S.N. 010-8178 AT STA. 460+43
SINGLE 12'X3' PRECAST BOX CULVERT WITH
PRECAST TAPERED END SECTIONS



CULVERT REPLACEMENT
EXISTING S.N. 010-8073 AT STA. 545+41
SINGLE 10'X4' REINFORCED CONCRETE BOX CULVERT
PROPOSED S.N. 010-8178 AT STA. 460+43
SINGLE 12'X3' PRECAST BOX CULVERT WITH
PRECAST TAPERED END SECTIONS



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 EXCAVATION
1-800-892-0123
OR 811 TOWNSHIPS: COMPROMISE & HARDWOOD



GROSS LENGTH = 24.00 FT. = 0.005 MILE
NET LENGTH = 24.00 FT. = 0.005 MILE

PROJECT ENGINEER: RYAN CARROLL
SQUAD LEADER: CLARE DIETZ
PHONE NUMBER: (217) 465-4181

CONTRACT NO. 70753

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED 2/11/2024
[Signature]
REGIONAL ENGINEER

March 22, 2024
[Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

March 22, 2024
[Signature]
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

INDEX OF SHEETS

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GENERAL NOTES

G.N.-100B

CADD FILES OF THIS PROJECT WILL BE MADE AVAILABLE TO THE CONTRACTOR AFTER CONTRACT AWARD. IF THERE IS A CONFLICT BETWEEN THE ELECTRONIC FILES AND THE PRINTED CONTRACT PLANS AND DOCUMENTS, THE PRINTED CONTRACT PLANS AND DOCUMENTS SHALL TAKE PRECEDENCE OVER THE ELECTRONIC FILES. THE CONTRACTOR SHALL ACCEPT ALL RISK ASSOCIATED WITH USING THE ELECTRONIC FILES AND SHALL HOLD THE DEPARTMENT HARMLESS FOR ANY ERRORS OR OMISSIONS IN THE ELECTRONIC FILES AND THE DATA CONTAINED THEREIN. ERRORS OR DELAYS RESULTING FROM THE USE OF THE ELECTRONIC FILES BY THE CONTRACTOR SHALL NOT RESULT IN AN EXTENSION OF TIME FOR ANY INTERIM OR FINAL COMPLETION DATE OR SHALL NOT BE CONSIDERED CAUSE FOR ADDITIONAL COMPENSATION. THE CONTRACTOR SHALL NOT USE, SHARE, OR DISTRIBUTE THESE ELECTRONIC FILES EXCEPT FOR THE PURPOSE OF CONSTRUCTING THIS CONTRACT. ANY CLAIMS BY THIRD PARTIES DUE TO USE OR ERRORS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL INCLUDE THIS DISCLAIMER WITH THE TRANSFER OF THESE ELECTRONIC FILES TO ANY OTHER PARTIES AND SHALL INCLUDE APPROPRIATE LANGUAGE BINDING THEM TO SIMILAR RESPONSIBILITIES.

G.N.-105.09A

ALL ELEVATIONS SHOWN IN THE PLANS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988. (NAVD 88)

GN 406H Mixture Requirements	Contract: 70753	
Location	US 136	US 136
Mixture Use	Base Course Option	Base Course Option (Top 1-1/2")
AC/PG	PG 64-22	PG 64-22
Design Air Voids	4.0% @ Ndes=50	4.0% @ Ndes=50
Mix Comp(Gradation)	IL 19.0	IL 9.5
Friction Aggregate	N.A.	Mix C
Mixture Weight	112	112
Quality Management Program	QC/QA	QC/QA
Sublot Size	3000	3000
Material Transfer Device (Required ?)	NO	NO

LIST OF STANDARDS

STANDARD NO.	DESCRIPTION
000001-08	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001006	DECIMAL OF AN INCH AND OF A FOOT
280001-07	TEMPORARY EROSION CONTROL SYSTEM
420701-03	PAVEMENT WELDED WIRE REINFORCEMENT
442201-03	CLASS C AND D PATCHES
515001-04	NAME PLATE FOR BRIDGES
542311-07	TRAVERSABLE PIPE GRATE FOR CONCRETE END SECTION
602301-04	INLET, TYPE A
604036-03	GRATE, TYPE 8
701001-02	OFF-ROAD OPERATIONS, 2L, 2W, MORE THAN 15' (4.5 m) AWAY
701006-05	OFF-ROAD OPERATIONS, 2L, 2W, 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE
701201-05	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS ≥ 45 MPH
701301-04	LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
701321-18	LANE CLOSURE, 2L, 2W, BRIDGE REPAIR WITH BARRIER
701901-09	TRAFFIC CONTROL DEVICES

COMMITMENTS

NONE

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PLOT DATE = 1/31/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS, HIGHWAY STANDARDS,
& GENERAL NOTES

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	2
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

REV. 4/2/24

LOCATION OF WORK:	FAP 709 (US 136) MINOR ARTERIAL RURAL STA. 460+00 STA. 460+85 CHAMPAIGN	FAP 709 (US 136) MINOR ARTERIAL RURAL STA. 545+00 STA. 545+95 CHAMPAIGN
FUNDING BREAKOUT:	80% FED / 20% STATE	80% FED / 20% STATE
CONSTRUCTION TYPE CODE:	0004	0004

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	SN 010-8178	SN 010-8179
20200100	EARTH EXCAVATION	CU YD	93.00	52.00	41.00
20700220	POROUS GRANULAR EMBANKMENT	CU YD	72.00	38.00	38.00
21001000	GEOTECHNICAL FABRIC FOR GROUND STABILIZATION	SQ YD	256.00	125.00	131.00
25000210	SEEDING, CLASS 2A	ACRE	0.25	0.12	0.13
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	23.00	11.00	12.00
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	23.00	11.00	12.00
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	23.00	11.00	12.00
25100115	MULCH, METHOD 2	ACRE	0.25	0.12	0.13
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	75.00	37.00	38.00
28000305	TEMPORARY DITCH CHECKS	FOOT	96.00	48.00	48.00
28100201	STONE RIPRAP, CLASS A1	TON	64.00	31.00	33.00
44200050	WELDED WIRE REINFORCEMENT	SQ YD	172.00	86.00	86.00
44201371	CLASS C PATCHES, TYPE IV, 11 INCH	SQ YD	86.00	86.00	
44201433	CLASS C PATCHES, TYPE IV, 16 INCH	SQ YD	86.00		86.00
50100300	REMOVAL OF EXISTING STRUCTURES NO. 1	EACH	1.00	1.00	
* DENOTES SPECIALTY ITEM					

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

SCALE: SHEET 1 OF 4 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	3
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

LOCATION OF WORK: FAP 709 (US 136) MINOR ARTERIAL RURAL STA. 460+00 STA. 460+85 CHAMPAIGN 80% FED / 20% STATE 0004

FAP 709 (US 136) MINOR ARTERIAL RURAL STA. 545+00 STA. 545+95 CHAMPAIGN 80% FED / 20% STATE 0004

FUNDING BREAKOUT: 80% FED / 20% STATE

CONSTRUCTION TYPE CODE: 0004

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	SN 010-8178	SN 010-8179
50100400	REMOVAL OF EXISTING STRUCTURES NO. 2	EACH	1.00		1.00
51500100	NAME PLATES	EACH	2.00	1.00	1.00
52200020	TEMPORARY SOIL RETENTION SYSTEM	SQ FT	93.00	60.00	33.00
54001001	BOX CULVERT END SECTIONS, CULVERT NO. 1	EACH	2.00	2.00	
54001002	BOX CULVERT END SECTIONS, CULVERT NO. 2	EACH	2.00		2.00
54011203	PRECAST CONCRETE BOX CULVERTS 12' X 3'	FOOT	56.00	28.00	28.00
54248510	CONCRETE COLLAR	CU YD	1.00	0.50	0.50
54260315	TRAVERSABLE PIPE GRADE FOR CONCRETE END SECTION	FOOT	211.00	105.50	105.50
60236200	INLETS, TYPE A, TYPE 8 GRATE	EACH	1.00		1.00
60500050	REMOVING CATCH BASINS	EACH	1.00		1.00
61100500	EXPLORATION TRENCH 52" DEPTH	FOOT	120.00	60.00	60.00
61140100	STORM SEWERS (SPECIAL), 10"	FOOT	15.00	15.00	
61140200	STORM SEWERS (SPECIAL), 12"	FOOT	45.00	15.00	30.00
67100100	MOBILIZATION	L SUM	1.00	0.50	0.50
* DENOTES SPECIALTY ITEM					

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PLOT DATE = 1/31/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: SHEET 2 OF 4 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	4
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

LOCATION OF WORK:	FAP 709 (US 136) MINOR ARTERIAL RURAL STA. 460+00 STA. 460+85 CHAMPAIGN	FAP 709 (US 136) MINOR ARTERIAL RURAL STA. 545+00 STA. 545+95 CHAMPAIGN
FUNDING BREAKOUT:	80% FED / 20% STATE	80% FED / 20% STATE
CONSTRUCTION TYPE CODE:	0004	0004

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	SN 010-8178	SN 010-8179
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	2.00	1.00	1.00
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1.00	0.50	0.50
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	2.00	1.00	1.00
70107006	PAVEMENT MARKING BLACKOUT TAPE, 6"	FOOT	1,278.00	640.00	638.00
70300150	SHORT TERM PAVEMENT MARKING REMOVAL	SQ FT	639.00	320.00	319.00
70400100	TEMPORARY CONCRETE BARRIER	FOOT	487.50	237.50	250.00
70400125	PINNING TEMPORARY CONCRETE BARRIER	EACH	60.00	30.00	30.00
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	487.50	250.00	237.50
70600250	IMPACT ATTENUATORS, TEMPORARY (NON- REDIRECTIVE), TEST LEVEL 3	EACH	4.00	2.00	2.00
70600350	IMPACT ATTENUATORS, RELOCATE (NON- REDIRECTIVE), TEST LEVEL 3	EACH	4.00	2.00	2.00
X6110073	EXISTING FIELD TILE REMOVAL	FOOT	10.00		10.00
X7200201	WIDTH RESTRICTION SIGNING	L SUM	1.00	0.50	0.50
Z0002900	BASE COURSE (OPTION)	SQ YD	350.00	176.00	174.00
Z0013798	CONSTRUCTION LAYOUT	L SUM	1.00	0.50	0.50
* DFNOTFS SPFCIAI TY ITFM					

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

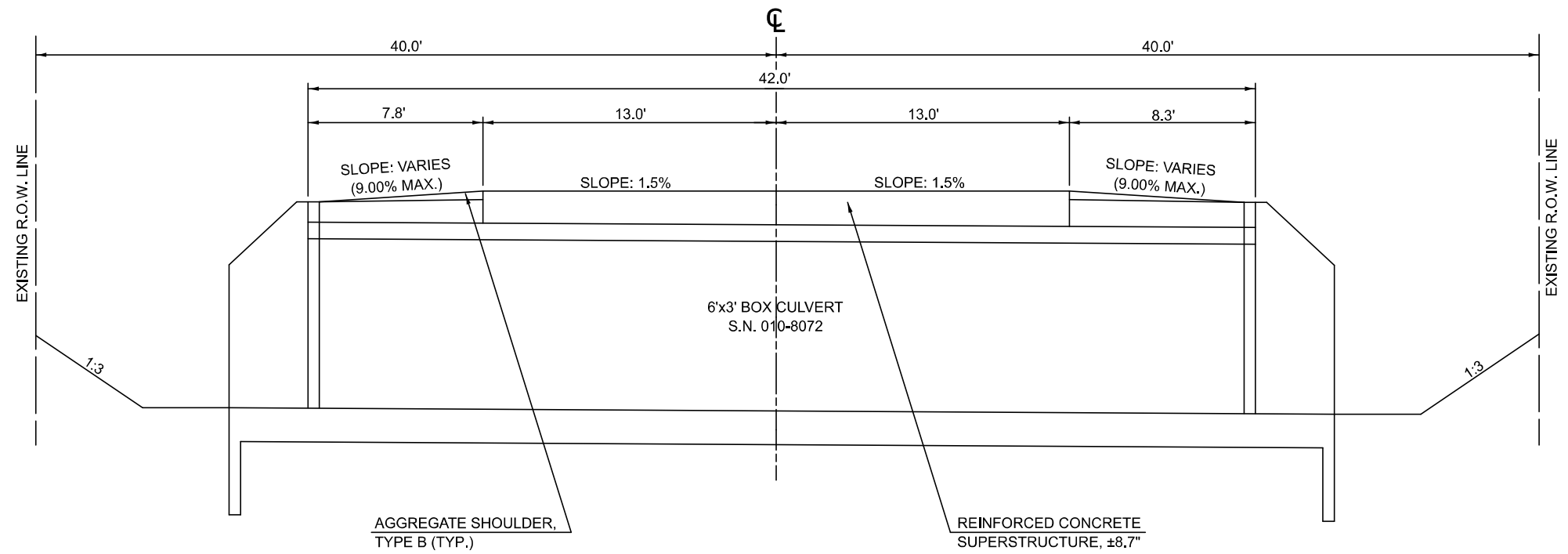
SUMMARY OF QUANTITIES

SCALE: SHEET 3 OF 4 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	5
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

EXISTING TYPICAL CROSS SECTION

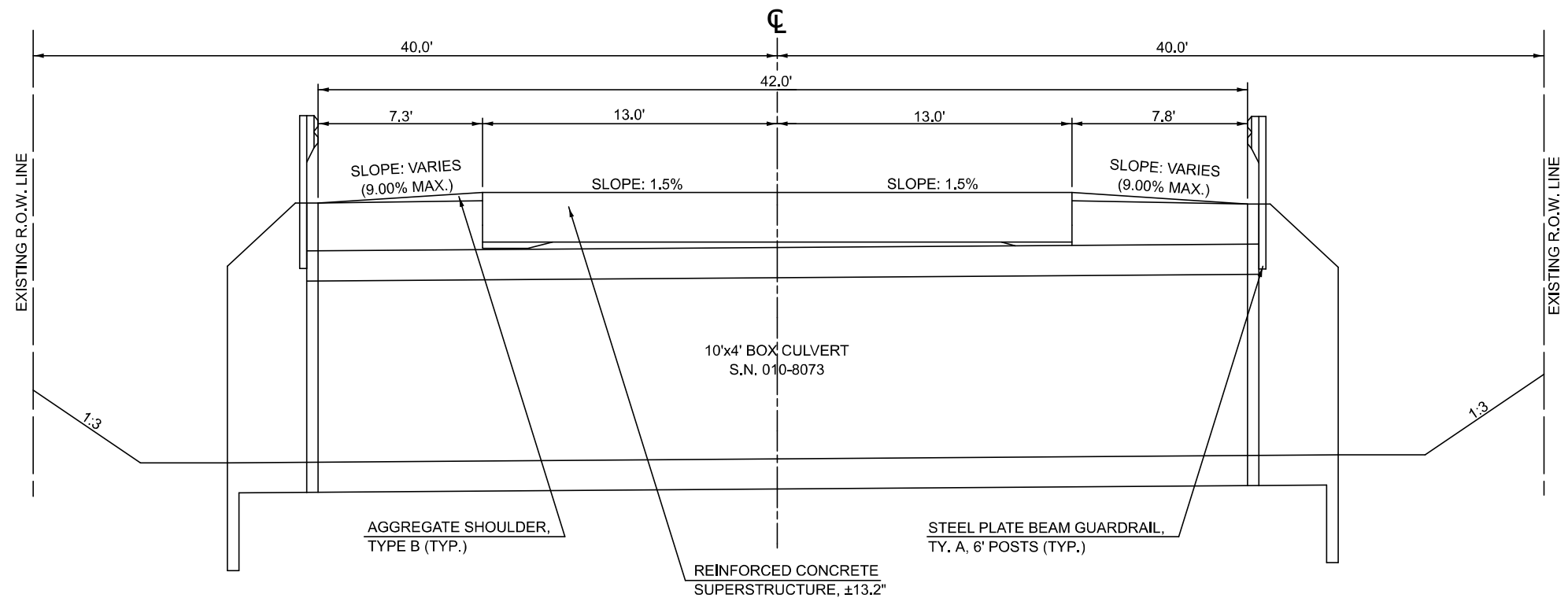
STATION TO STATION
460+40.21 460+45.98



EXISTING TYPICAL CROSS SECTION

STATION TO STATION
545+26.14 545+45.50

GUARDRAIL LT. FROM STA. 544+09.46 TO STA. 547+38.20
GUARDRAIL RT. FROM STA. 543+67.98 TO STA. 546+73.55



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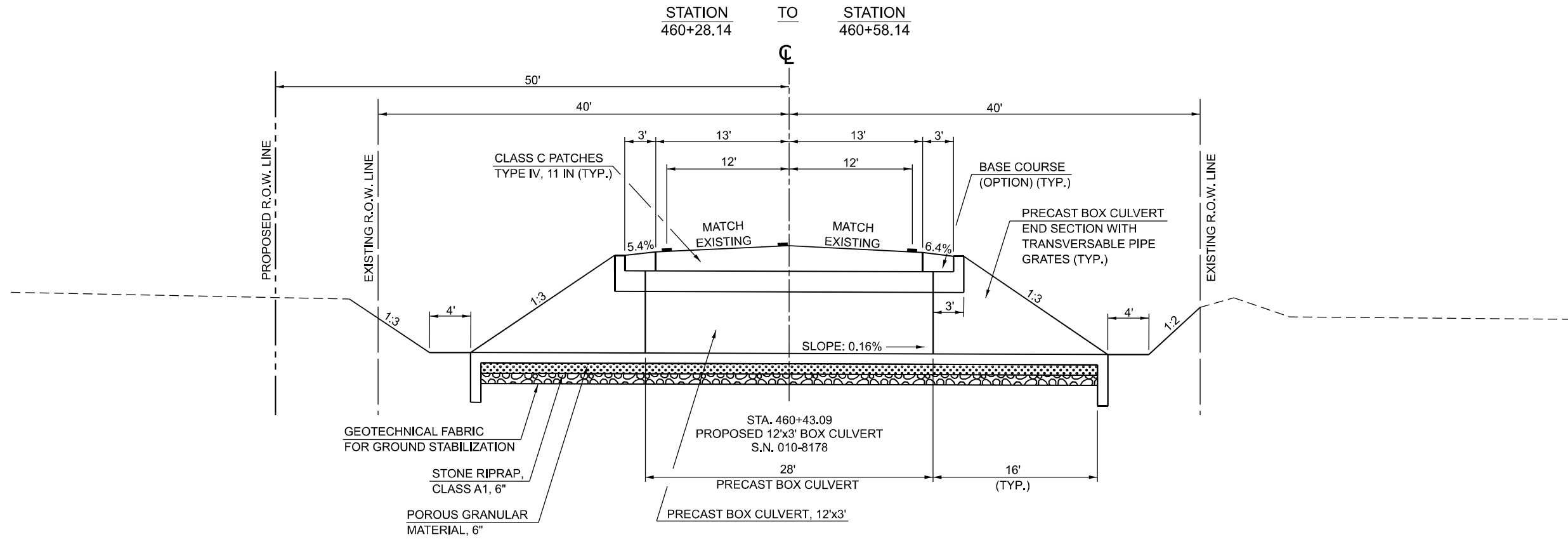
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TYPICAL CROSS SECTIONS
AT BOX CULVERTS**

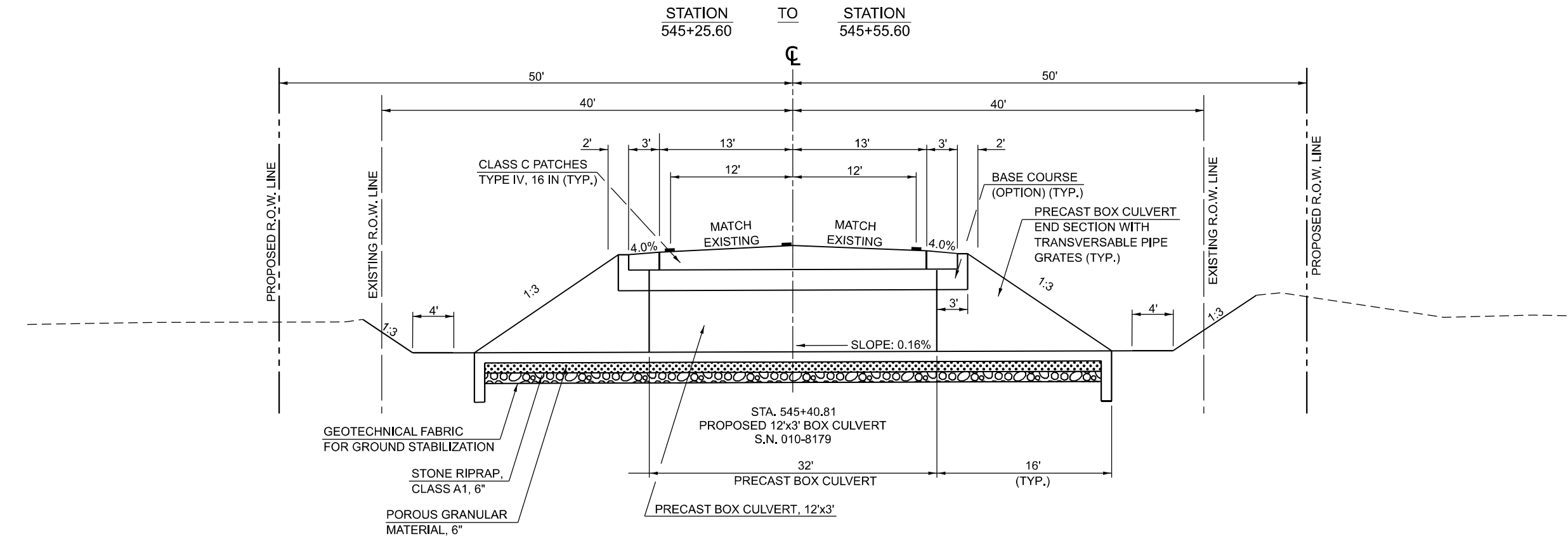
SCALE: SHEET 1 OF 3 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	7
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

PROPOSED TYPICAL CROSS SECTION



PROPOSED TYPICAL CROSS SECTION



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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

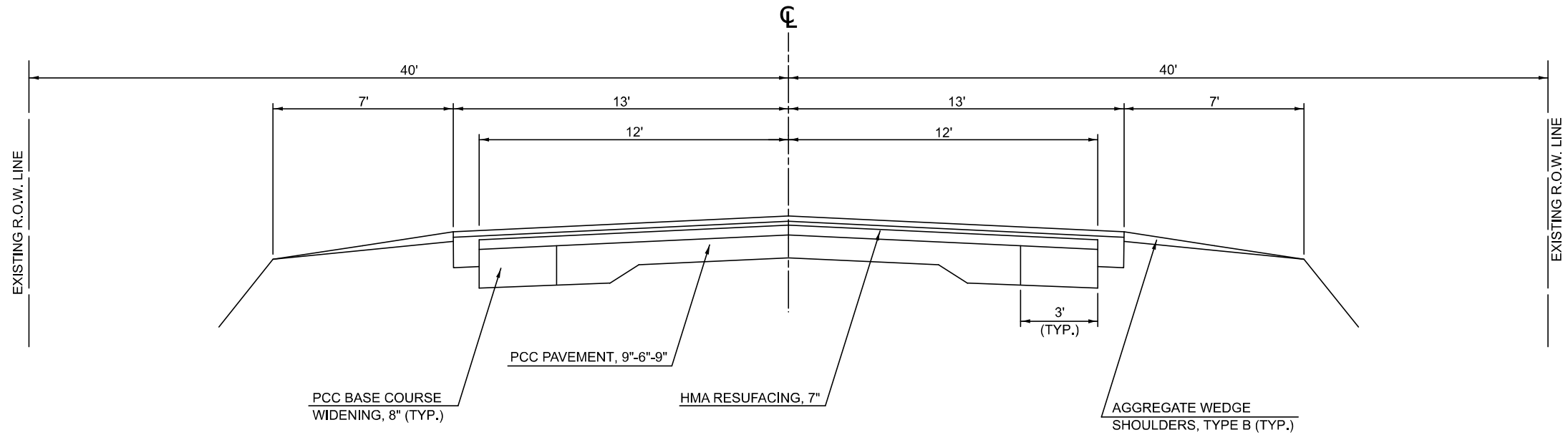
**TYPICAL CROSS SECTIONS
AT BOX CULVERTS**

SCALE: SHEET 2 OF 3 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	8
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

EXISTING TYPICAL CROSS SECTION

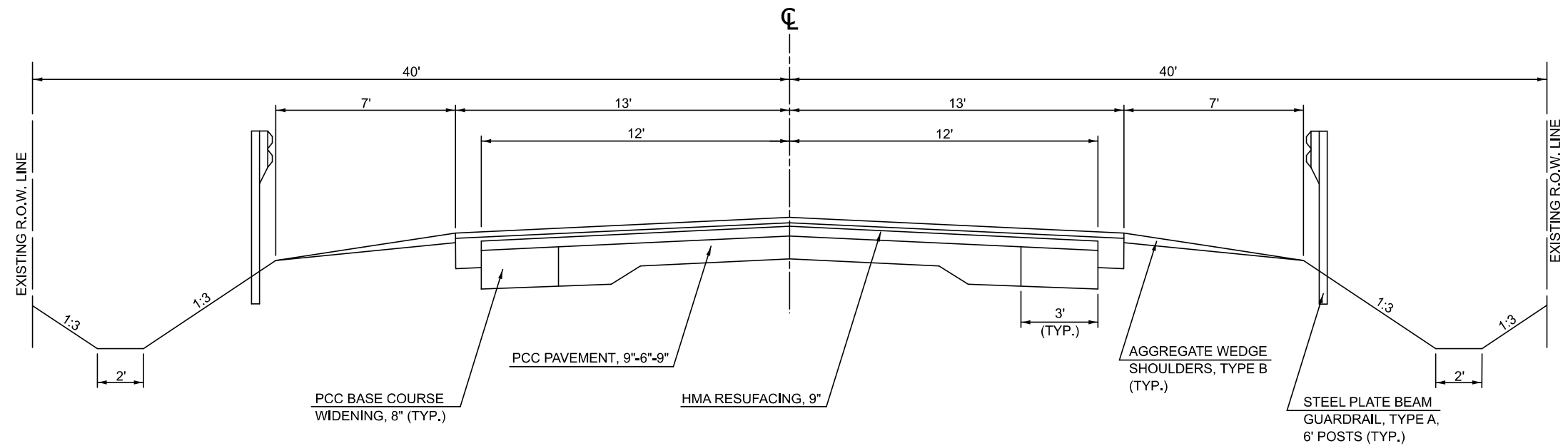
STATION TO STATION
 458+25.00 460+28.14
 460+58.14 462+63.00



EXISTING TYPICAL CROSS SECTION

STATION TO STATION
 543+40.00 545+25.60
 545+55.53 547+42.00

EXISTING GUARDAIL LIMITS
 STA. 514+09.46 TO STA. 547+38.18 LT.
 STA. 543+67.97 TO STA. 546+73.20 RT.



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PLOT DATE = 1/30/2024	DATE -	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**TYPICAL CROSS SECTIONS
 ROADWAY**

SCALE: SHEET 3 OF 3 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	9
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

SCHEDULE OF QUANTITIES

EARTHWORK

					20200100			
BOX CULVERT	SIDE	STATION	TO	STATION	EARTH EXCAVATION (CU YD)	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE (CU YD)	EMBANKMENT (CU YD)	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-) (CU YD)
010-8178	LEFT	460+00		460+85	23.51	17.63	0.84	16.79
010-8178	RIGHT	460+00		460+85	28.06	21.05	0.16	20.89
010-8179	LEFT	545+00		545+80	20.12	15.09	3.47	11.62
010-8179	RIGHT	545+00		545+80	21.34	16.01	5.06	10.95
TOTAL					93.03	69.77	9.53	60.24

1. SHRINKAGE FACTOR USED IS 25%
2. SHRINKAGE, EMBANKMENT, AND BALANCE IS FOR INFORMATION ONLY
3. NO PAYMENT WILL BE ALLOWED FOR OVERHAUL
4. EARTH EXCAVATION CALCULATIONS DO NOT INCLUDE THE AREA BEING PAID FOR AS THE RIPRAP PAY ITEMS. THIS EXCAVATION IS INCLUDED IN THE BID PRICE FOR THE RIPRAP PAY ITEM

PATCHES

											44201371		44201433		44200050	
BOX CULVERT	STAGE	STATION	TO	STATION	OFFSET	TO	OFFSET	LENGTH (FT)	WIDTH (FT)	AREA (SQ YD)	CLASS C PATCHES, TYPE IV, 11 INCH (SQ YD)	CLASS C PATCHES, TYPE IV, 16 INCH (SQ YD)	WELDED WIRE REINFORCEMENT (SQ YD)			
010-8178	I	460+30.25		460+57.01	0.5 RT		13.0 RT	26.76	12.5	37.2	37		37			
010-8178	II	460+30.25		460+57.01	0.5 RT		16.0 LT	26.76	16.5	49.1	49		49			
010-8179	I	545+28.25		545+55.00	0.5 LT		13.0 LT	26.75	12.5	37.2		37	37			
010-8179	II	545+28.25		545+55.00	0.5 LT		16.0 RT	26.75	16.5	49.0	49		49			
TOTAL											86	86	172			

SEEDING

					25000210		25000400		25000500		25000600		25100115		28000250	
BOX CULVERT	SIDE	STATION	TO	STATION	SEEDING, CLASS 2A (ACRE)	NITROGEN FERTILIZER NUTRIENT (POUND)	PHOSPHORUS FERTILIZER NUTRIENT (POUND)	POTASSIUM FERTILIZER NUTRIENT (POUND)	MULCH, METHOD 2 (ACRE)	TEMPORARY EROSION CONTROL SEEDING (POUND)						
010-8178	LEFT	460+00		460+85	0.03	2.86	2.86	2.86	0.03	9.53						
010-8178	RIGHT	460+00		460+85	0.04	3.75	3.75	3.75	0.04	12.51						
010-8179	LEFT	545+00		545+80	0.04	3.18	3.18	3.18	0.04	10.61						
010-8179	RIGHT	545+00		545+80	0.04	3.81	3.81	3.81	0.04	12.71						
TOTAL					0.15	13.6	13.6	13.6	0.15	45.4						
USE					0.25	23	23	23	0.25	75						

ASSUMES 3 APPLICATIONS OF TEMPORARY EROSION CONTROL SEEDING

TEMPORARY DITCH CHECKS

			28000305	
STATION	SIDE		TEMPORARY DITCH CHECKS (FT)	
460+36	LEFT		12	
460+50	LEFT		12	
460+36	RIGHT		12	
460+50	RIGHT		12	
545+34	LEFT		12	
545+48	LEFT		12	
545+34	RIGHT		12	
545+48	RIGHT		12	
TOTAL			96	

FIELD TILE

		54248510		61100500		61140100		61140200		Z0030900		60500050		X 6110073		60236200	
BOX CULVERT	SIDE	CONCRETE COLLAR (CU YD)	EXPLORATION TRENCH, 52" (FT)	STORM SEWERS (SPECIAL), 10" (FT)	STORM SEWERS (SPECIAL), 12" (FT)	INSPECTION WELLS (EACH)	REMOVING CATCH BASINS (EACH)	EXISTING FIELD TILE REMOVAL (FT)	INLETS, TYPE A, TYPE 8 GRATE (EACH)								
010-8178	RT	0.22	15	15		1											
010-8178	LT	0.25	15		15	1											
010-8179	RT	0.25	15		15	1											
010-8179	LT	0.25	15		15	1	1	1	1								
TOTAL		0.97	60	15	45	4	1	1	1								

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	DRAWN -	REVISED -
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PLOT DATE = 3/27/2024	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SCHEDULE OF QUANTITIES

SCALE: SHEET 1 OF 2 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	10
CONTRACT NO. 70753				
ILLINOIS			FED. AID PROJECT	

SCHEDULE OF QUANTITIES

IMPACT ATTENUATORS

BOX CULVERT	STAGE	70600250	70600350
		IMPACT ATTENUATORS, TEMPORARY (NON- REDIRECTIVE), TEST LEVEL 3 (EACH)	IMPACT ATTENUATORS, RELOCATE (NON- REDIRECTIVE), TEST LEVEL 3 (EACH)
010-8178	I	2.0	
010-8178	II	2.0	
010-8179	I		2.0
010-8179	II		2.0
TOTAL		4.0	4.0

BASE COURSE (OPTION)

BOX CULVERT	BEFORE STAGE	STATION	TO	STATION	OFFSET	TO	OFFSET	LENGTH (FT)	WIDTH (FT)	AREA (SQ YD)	Z0002900
											BASE COURSE (OPTION) (SQ YD)
010-8178	I	459+16.09		461+74.01	13.0	LT	16.0	257.92	3.0	86.0	86
010-8178	II	459+19.25		461+87.81	13.0	RT	16.0	268.56	3.0	89.5	90
010-8179	I	544+17.25		546+78.48	13.0	RT	16.0	261.23	3.0	87.1	87
010-8179	II	544+09.52		546+72.00	13.0	LT	16.0	262.48	3.0	87.5	87
TOTAL											350

TEMPORARY PAVEMENT MARKING

BOX CULVERT	STAGE	PAVEMENT MARKING DESC.	STATION	TO	STATION	LENGTH (FT)	70107006	70300150
							PAVEMENT MARKING BLACKOUT TAPE, 6" (FT)	SHORT TERM PAVEMENT MARKING REMOVAL (SQ FT)
010-8178	I	WB EDGE LINE	459+16.09		461+74.01	257.92	258	129
010-8178	I	CL SKIP DASH	458+19.25		462+74.01	113.69	114	57
010-8178	II	EB EDGE LINE	459+19.25		461+87.81	268.56	269	134
010-8179	I	EB EDGE LINE	544+17.25		546+78.48	261.23	261	131
010-8179	I	CL SKIP DASH	543+17.25		547+72.00	113.69	114	57
010-8179	II	WB EDGE LINE	544+09.52		546+72.00	262.48	263	131
TOTAL							1278	639

TEMPORARY CONCRETE BARRIER

BOX CULVERT	STAGE	STATION	TO	STATION	LENGTH (FT)	70400100	70400200	704001265
						TEMPORARY CONCRETE BARRIER (FT)	RELOCATE TEMPORARY CONCRETE BARRIER (FT)	PINNING TEMPORARY CONCRETE BARRIER (EACH)
010-8178	I	459+27.25		461+60.01	237.50	237.5		15
010-8178	II	459+21.25		461+66.01	250.00	250.0		15
010-8179	I	544+17.25		546+64.00	250.00		250.0	15
010-8179	II	545+25.25		546+58.00	237.50		237.5	15
TOTAL						487.5	487.5	60

TEMPORARY BRIDGE TRAFFIC SIGNALS

BOX CULVERT	70106500
	TEMPORARY BRIDGE TRAFFIC SIGNALS (EACH)
SN 010-8178	1.0
SN 010-8179	1.0
TOTAL	2.0

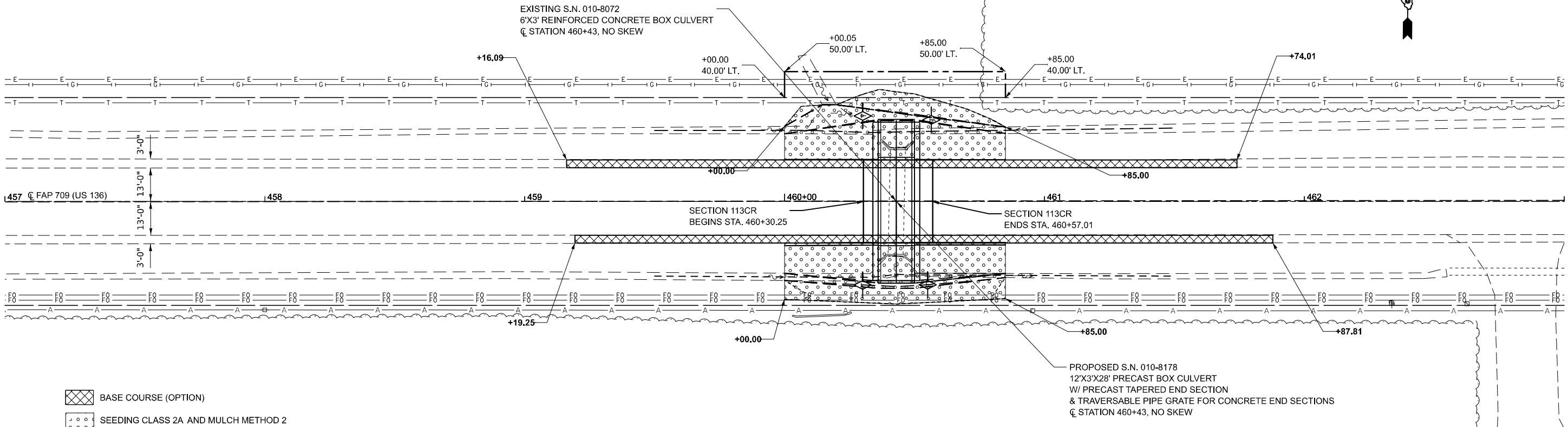
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SCHEDULE OF QUANTITIES

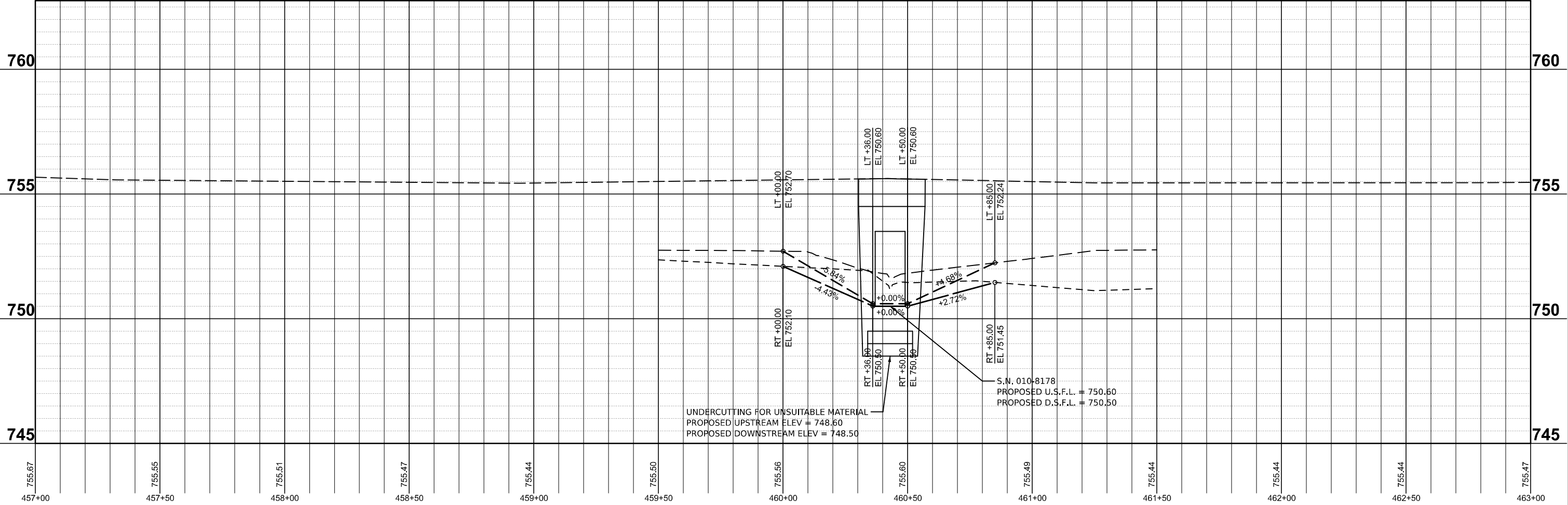
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	11
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

MODEL: Schedule-1 [Sheet]
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- BASE COURSE (OPTION)
- SEEDING CLASS 2A AND MULCH METHOD 2



MODEL: STR6072 - Plan Profile 8178 (Sheet)
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PLOT DATE = 1/31/2024	CHECKED -	REVISED -
	DATE -	REVISED -

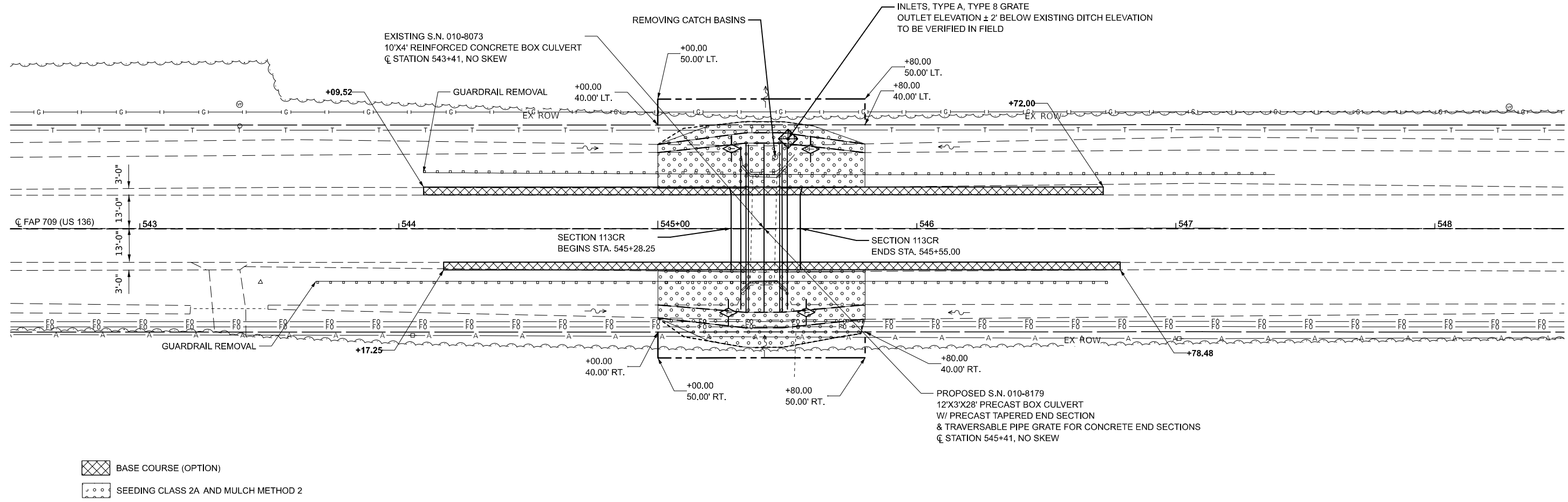
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PLAN & PROFILE
S.N. 010-8178**

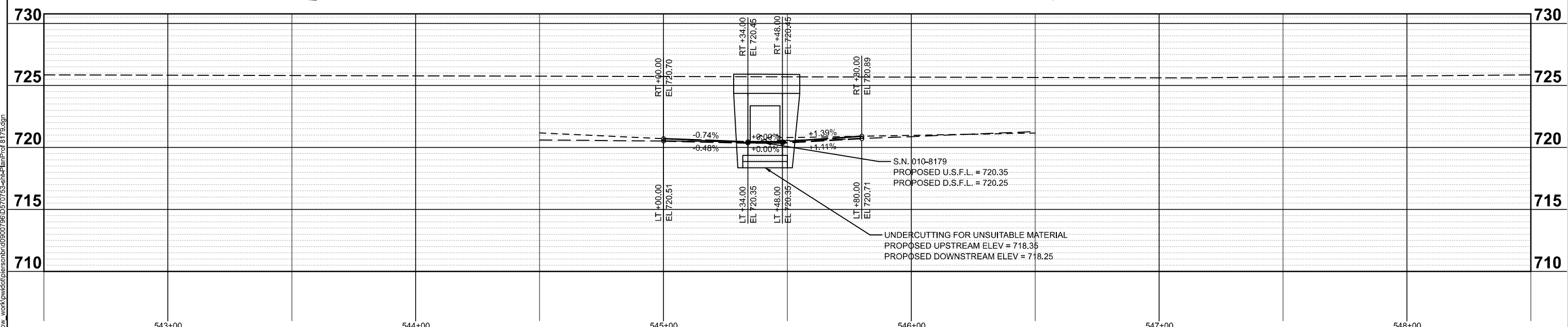
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	12
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

SEC. 31, T 22N, R 14W, 2ND PM



SEC. 6, T 21N, R 14W, 2ND PM



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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

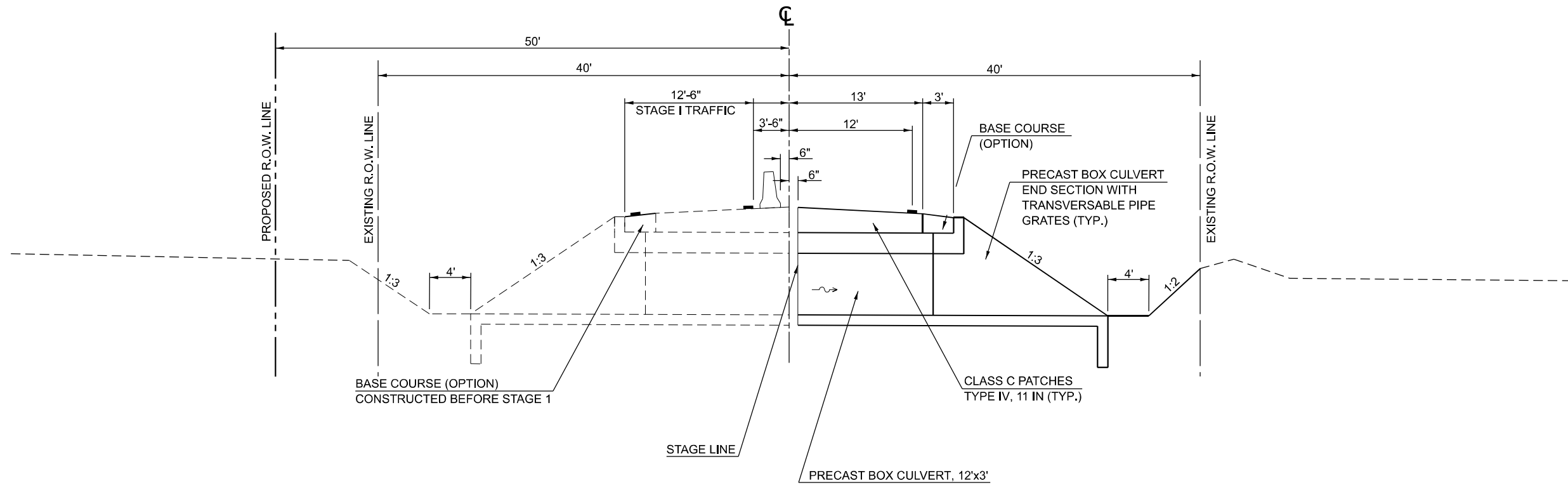
**PLAN & PROFILE
S.N. 010-8179**

SCALE: 1"=20' SHEET 2 OF 2 SHEETS STA. 542+50.00 TO STA. 548+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	13
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

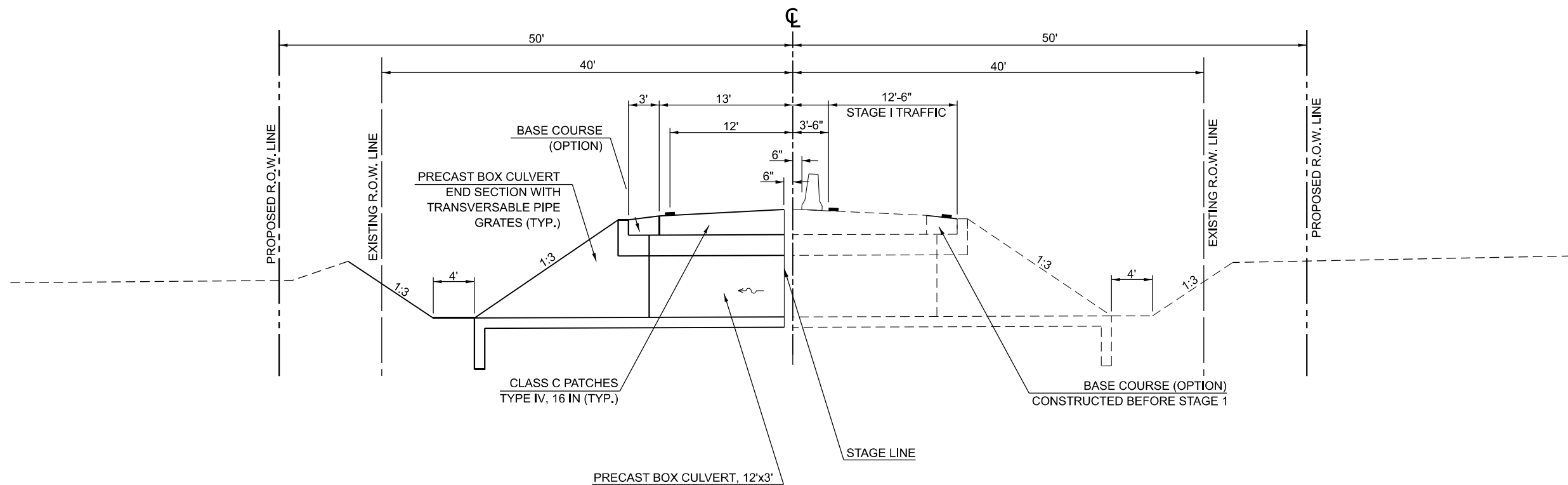
STAGE I TYPICAL STAGING DETAILS

S.N. 010-8178



STAGE I TYPICAL STAGING DETAILS

S.N. 010-8179



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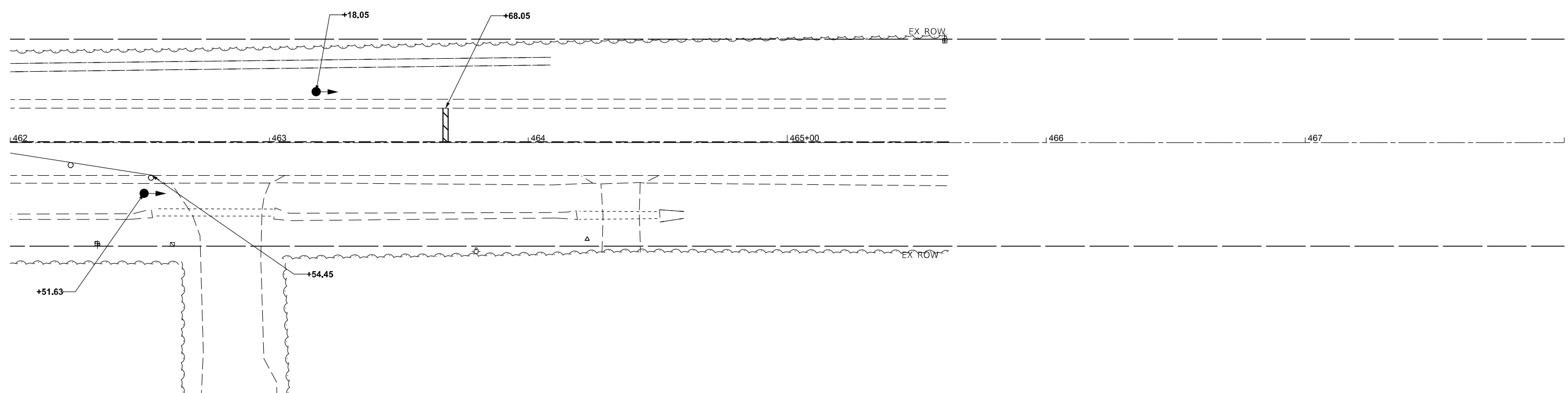
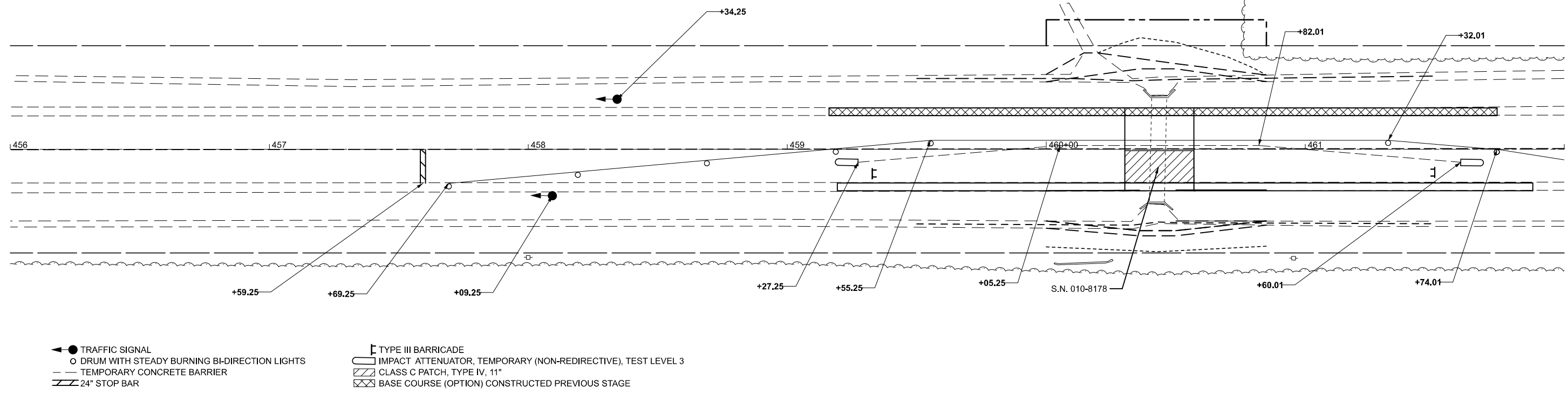
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE I
TYPICAL STAGING DETAILS

SCALE: SHEET 1 OF 3 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	14
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				



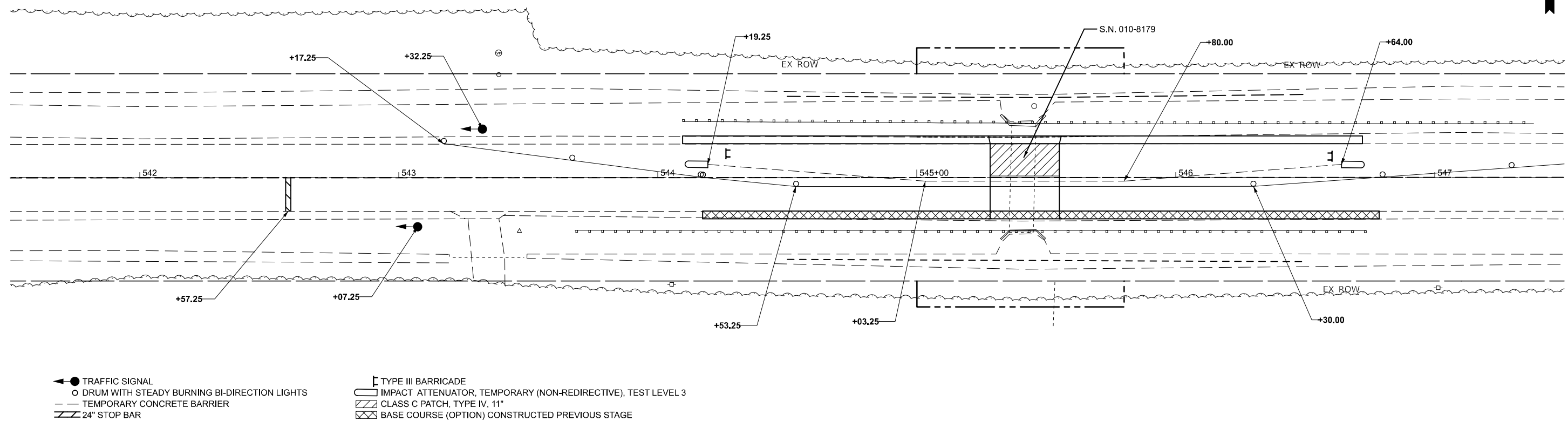
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	DATE -	REVISED -

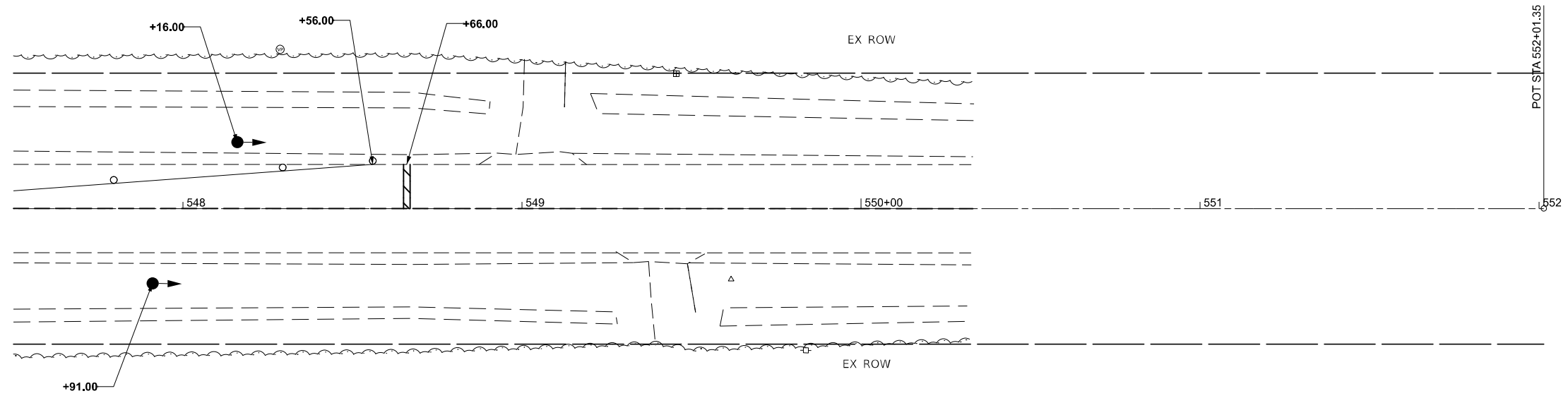
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE I			
PLAN SHEET			
SCALE: 1"=20'	SHEET 2	OF 3 SHEETS	STA. 456+00.00 TO STA. 468+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	15
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				



- TRAFFIC SIGNAL
- DRUM WITH STEADY BURNING BI-DIRECTION LIGHTS
- TEMPORARY CONCRETE BARRIER
- ▨ 24" STOP BAR
- ⌊ TYPE III BARRICADE
- ▭ IMPACT ATTENUATOR, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3
- ▨ CLASS C PATCH, TYPE IV, 11"
- ▨ BASE COURSE (OPTION) CONSTRUCTED PREVIOUS STAGE



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PLOT DATE = 1/31/2024	CHECKED -	REVISED -
	DATE -	REVISED -

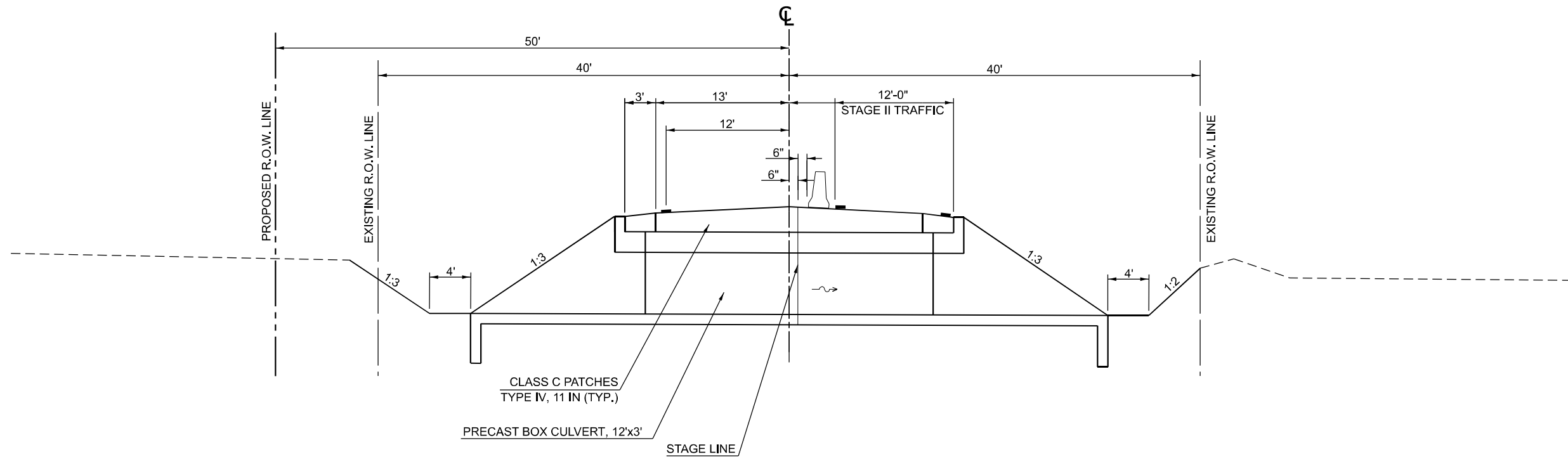
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

STAGE I PLAN SHEET	
SCALE: 1"=20'	SHEET 3 OF 3 SHEETS
STA. 541+50.00	TO STA. 553+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	16
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

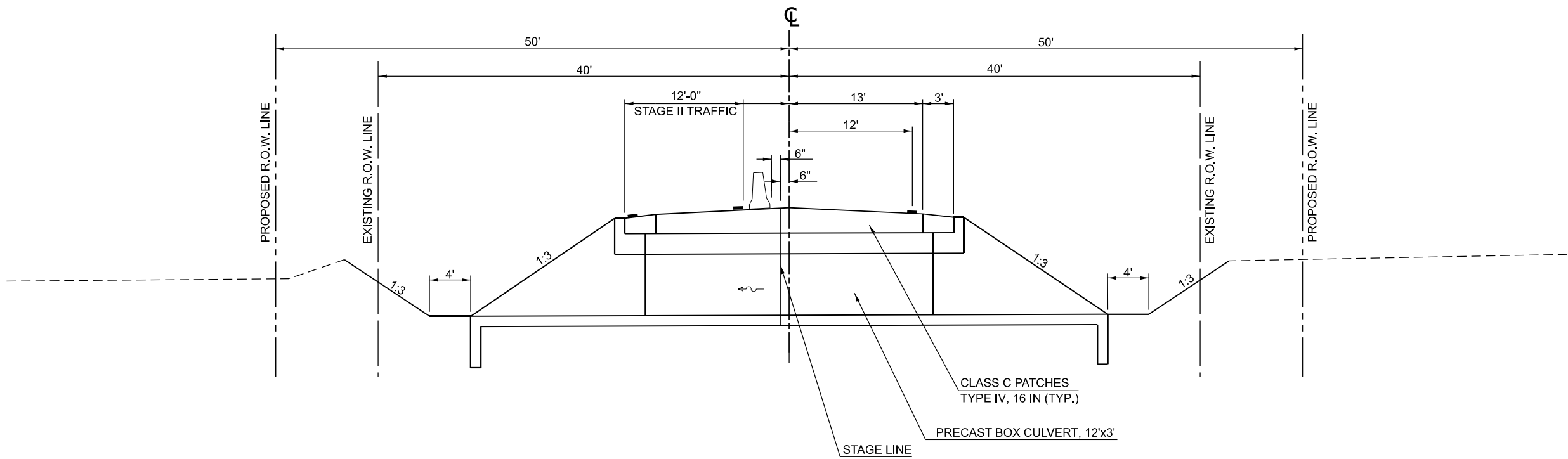
STAGE II TYPICAL STAGING DETAILS

S.N. 010-8178



STAGE II TYPICAL STAGING DETAILS

S.N. 010-8179



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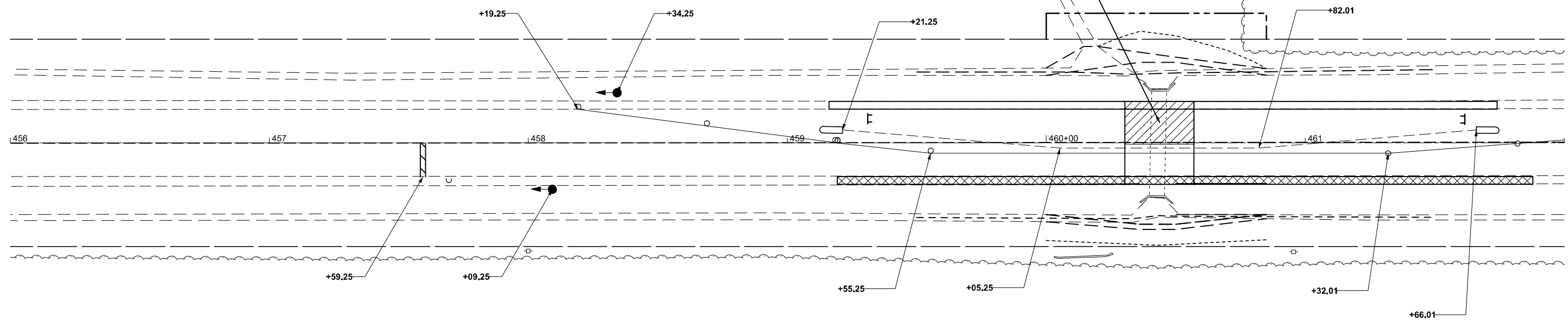
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	DRAWN -	REVISED -
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PLOT DATE = 3/27/2024	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

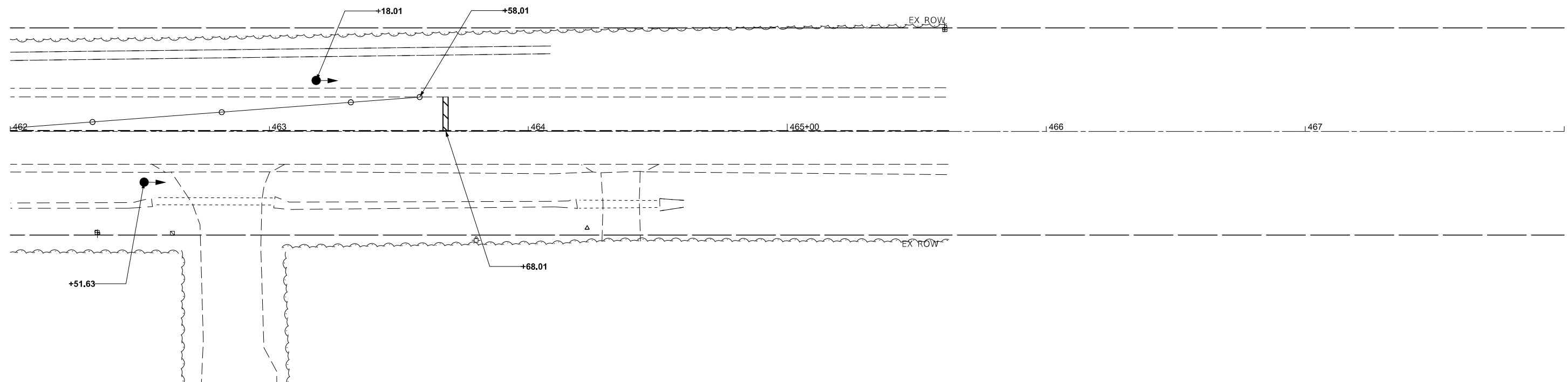
**STAGE II
TYPICAL STAGING DETAILS**

SCALE: SHEET 1 OF 3 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	17
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				



- TRAFFIC SIGNAL
- DRUM WITH STEADY BURNING BI-DIRECTION LIGHTS
- TEMPORARY CONCRETE BARRIER
- ▬ 24" STOP BAR
- ⌊ TYPE III BARRICADE
- ▭ IMPACT ATTENUATOR, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3
- ▨ CLASS C PATCH, TYPE IV, 11"
- ▩ BASE COURSE (OPTION) CONSTRUCTED PREVIOUS STAGE



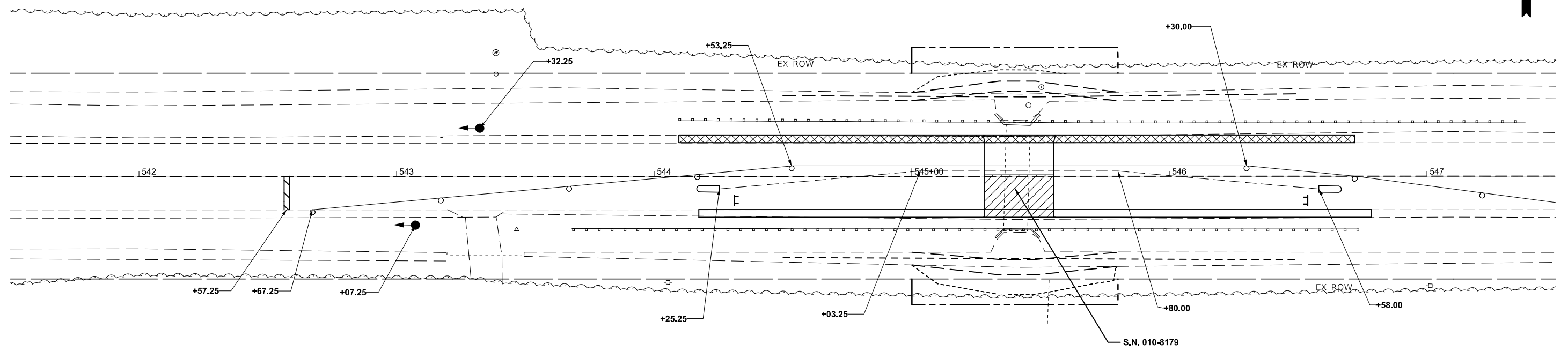
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PLOT DATE = 1/31/2024	CHECKED -	REVISED -
	DATE -	REVISED -

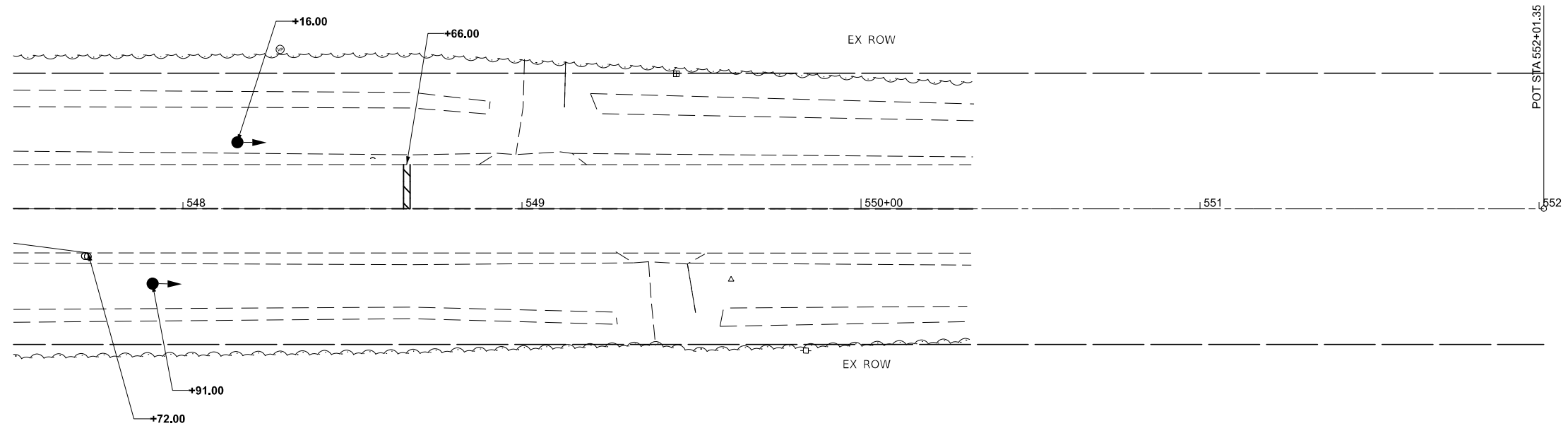
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

STAGE II PLAN SHEET	
SCALE: 1"=20'	SHEET 2 OF 3 SHEETS
STA. 456+00.00	TO STA. 468+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	18
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				



- TRAFFIC SIGNAL
- DRUM WITH STEADY BURNING BI-DIRECTION LIGHTS
- TEMPORARY CONCRETE BARRIER
- ▨ 24" STOP BAR
- TYPE III BARRICADE
- ▭ IMPACT ATTENUATOR, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3
- ▨ CLASS C PATCH, TYPE IV, 11"
- ▨ BASE COURSE (OPTION) CONSTRUCTED PREVIOUS STAGE



MODEL: STR0077 - SN 010-8179 Stage 2 (Sheet)
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DRAWN -	REVISIONS -	
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PLOT DATE = 1/31/2024	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**STAGE II
PLAN SHEET**

SCALE: 1"=20' SHEET 3 OF 3 SHEETS STA. 541+50.00 TO STA. 553+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	19
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

Benchmark: Chiseled Square on Top of West Headwall of Box Culvert Running Under CR 2400 E. STA 475+48 , 30.4' RT. Vertical Datum = NAVD 88 ELEV = 751.01

Existing Structure: S.N. 010-8072, Sta. 460+43, 6'x3' Reinforced Concrete Box Culvert

INDEX OF SHEETS

1. General Plan and Elevation
- 2.-3. Single Cell Precast Box Culvert
- 4.-5. Tapered End Section Details
6. Traversable Pipe Grate for Box Culvert Details
7. Porous Granular Embankment Details

GENERAL NOTES

The design fill height for this box is 1.0 ft. The precast box culvert sections shall conform to the requirements of ASTM C 1577.
 Drain holes shall be provided on exterior culvert walls for each precast box segment with a clear rise greater than 3 ft. The drain hole shall be located within 1/3 of the clear rise of the box culvert, shall not intercept the haunch, and shall conform to the requirements of Article 503.11 of the Standard Specification.
 Nonwoven geotextile fabric shall conform to the requirements of Art. 1080.01 of the Standard Specifications. The minimum weight of the fabric shall be 6 ounces per square yard.
 Precast concrete box culverts and box culvert end sections shall be backfilled with Porous Granular Embankment in the required excavation areas on the sides of the box culvert from the top of the box culvert to the bottom of the box culvert. This area of PGE is included in the Porous Granular Embankment pay item. The 6-inch thick layer of porous granular material required under the precast concrete box culvert, according to Section 540.06 of the standard specifications, shall also apply to the end sections. Cost of this porous granular material will not be paid for separately but shall be included in the unit price of the work for which it is required.

DESIGN SPECIFICATIONS

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

LOADING HL-93

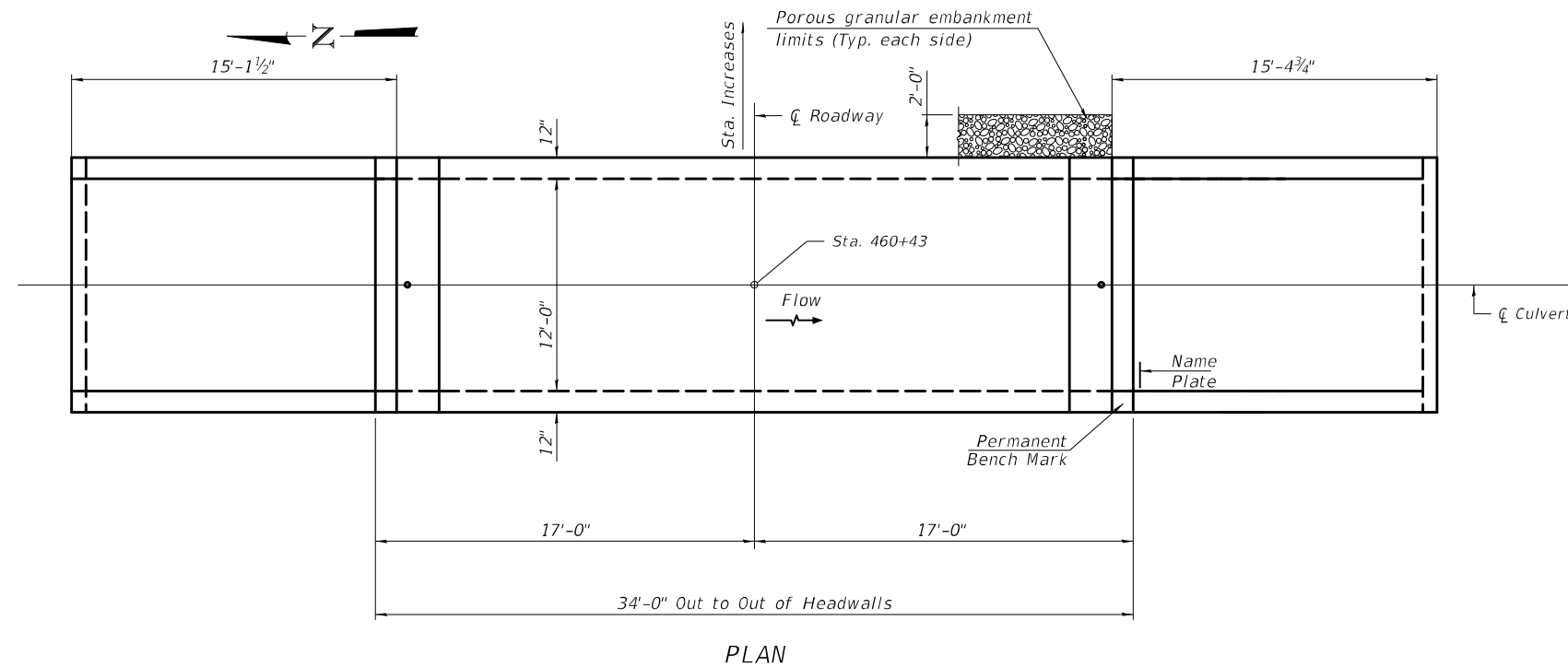
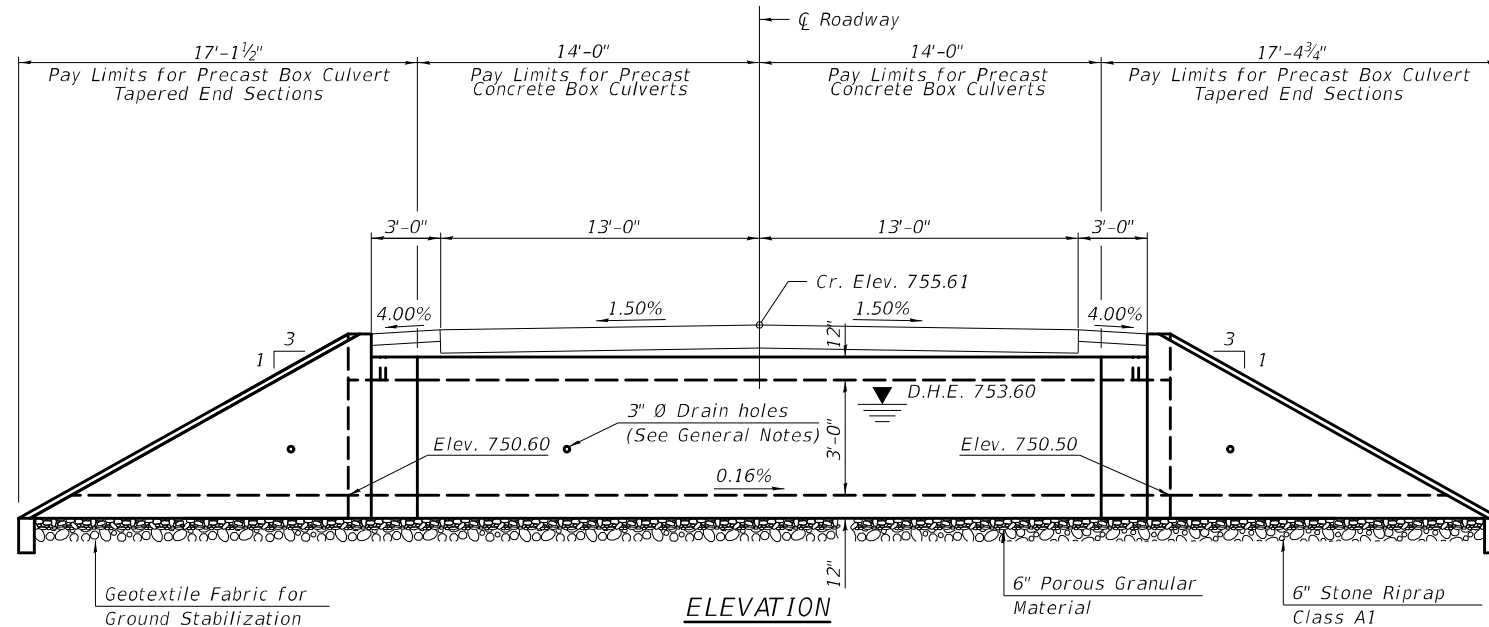
DESIGN STRESSES

PRECAST UNITS

$f_c = 5,000 \text{ psi}$
 $f_y = 65,000 \text{ psi}$ (Welded Wire Reinforcement)

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Removal of Existing Structures, No. 1	Each	1
Name Plates	Each	1
Box Culvert End Sections, Culvert No. 1	Each	2
Precast Concrete Box Culverts, 12x3	Foot	28
Porous Granular Embankment	Cu. Yd.	38
Stone Riprap, Class A1	Tons	31
Permanent Bench Marks	Each	1
Geotextile Fabric for Ground Stabilization	Sq. Yd.	125
Traversable Pipe Grate for Concrete End Section	Foot	105.5
Temporary Soil Retention System	Sq. Ft.	60



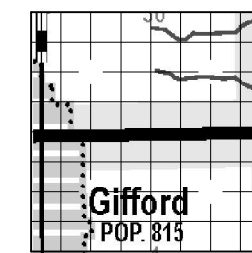
WATERWAY INFORMATION

Drainage Area = 0.30 sq. mi. Low Grade Elev. = 755.61 @ Sta. 460+43

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	177	15	30	753.0	3.6	0.9	756.6	753.9
Base	50	301	18	36	753.6	-	1.8	0	755.4
Overtopping	100	358	18	36	753.8	-	2.5	0	756.3
Max. Calc.	57	312	15	36	753.6	3.6	3.0	756.6	756.6
	500	499	-	-	-	-	-	-	-

STATION 460+43
 BUILT 2024 BY
 STATE OF ILLINOIS
 F.A.P. RTE. 709 SECTION 113CR
 LOADING HL-93
 STRUCTURE NO.

NAME PLATE
 See Std. 515001



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
US RTE. 136 OVER UNNAMED DITCH
F.A.P. RTE. 709 SEC. 113CR
CHAMPAIGN COUNTY
STATION 460+43
S.N. 010-8178

SCB-GPE (MODIFIED)

5-15-2023

USER NAME = Justin.Cearlock	DESIGNED -	REVISED -
PLOT SCALE = 0.16666833' / in.	DRAWN -	REVISED -
PLOT DATE = 1/30/2024	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
STRUCTURE NO. 010-8178

SCALE: SHEET 1 OF 6 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	20
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

MODEL: GPE (Sheet) FILE NAME: c:\p\work\1136\1136\scb\0108178.dgn

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.

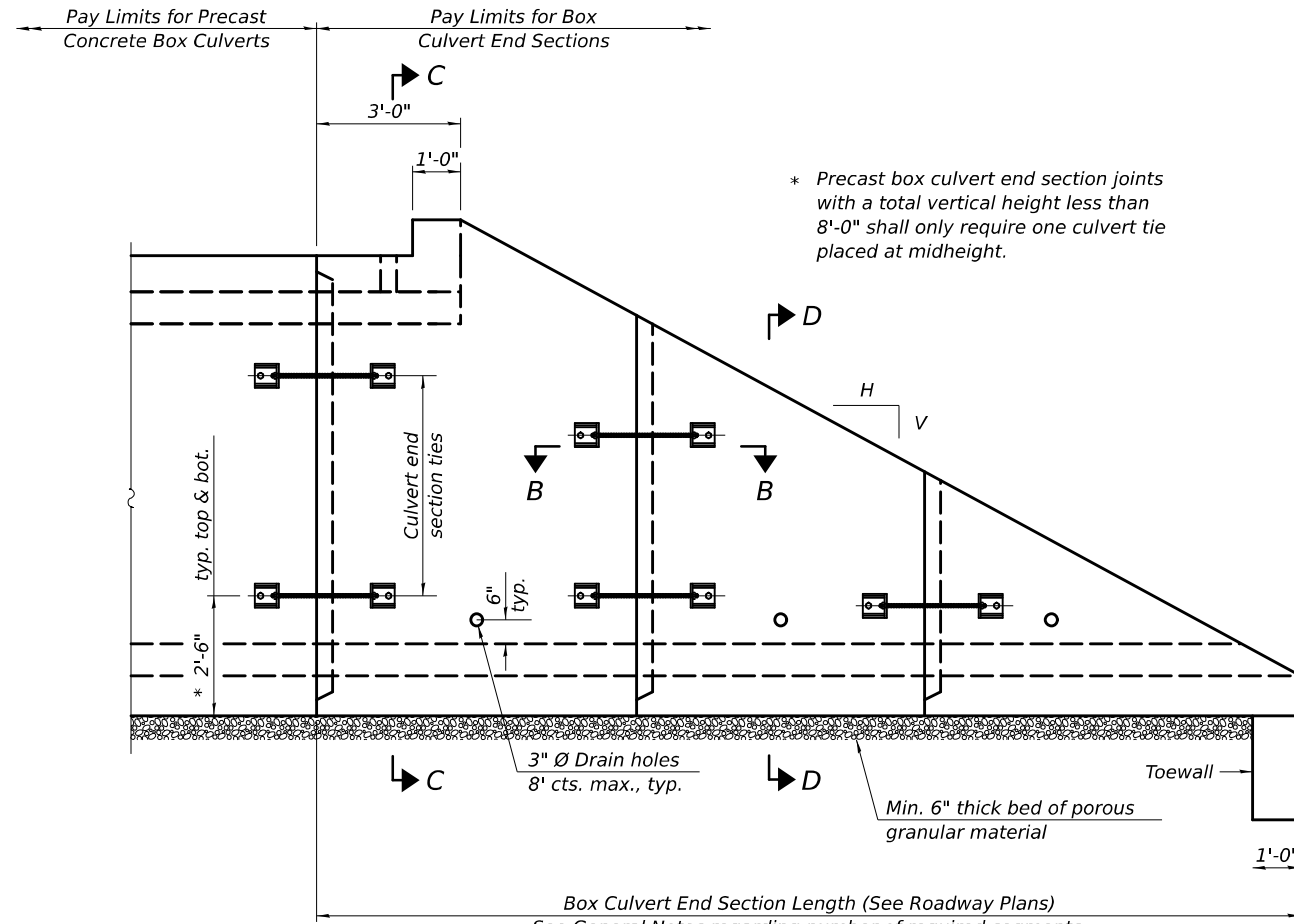
2 1/4" x 2 1/4" x 5/16" plate washers shall be provided under each nut required for the anchor rods. Anchor rods connecting precast sections shall be brought to a snug tight condition followed by an additional 1/2 turn on one of the nuts for anchor rods installed in the walls. Match marks shall be provided 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.

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.

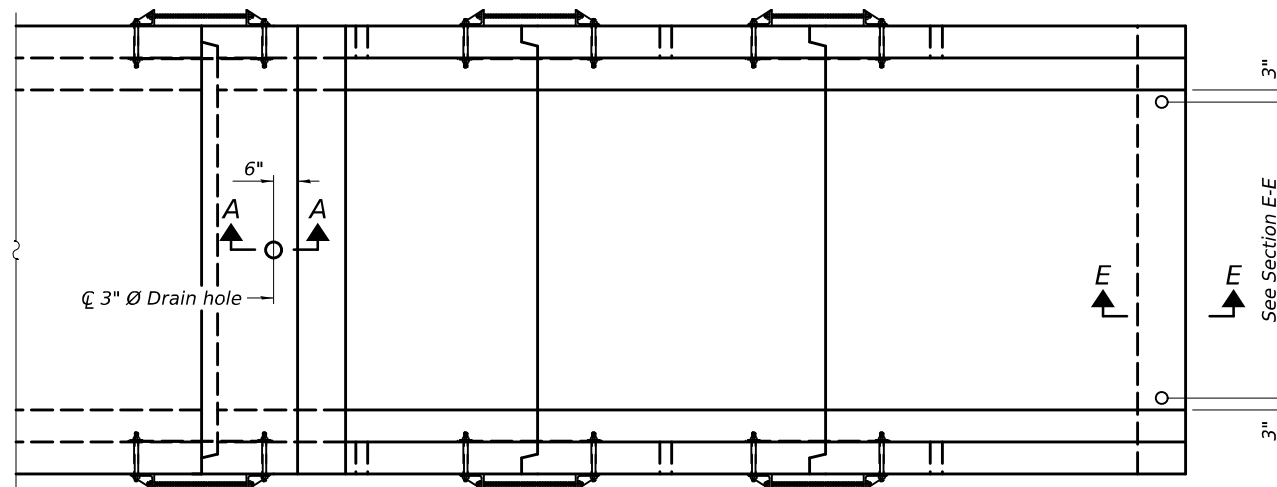
Drain holes shall conform to the requirements of Article 503.11 of the Standard Specifications unless noted otherwise.

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

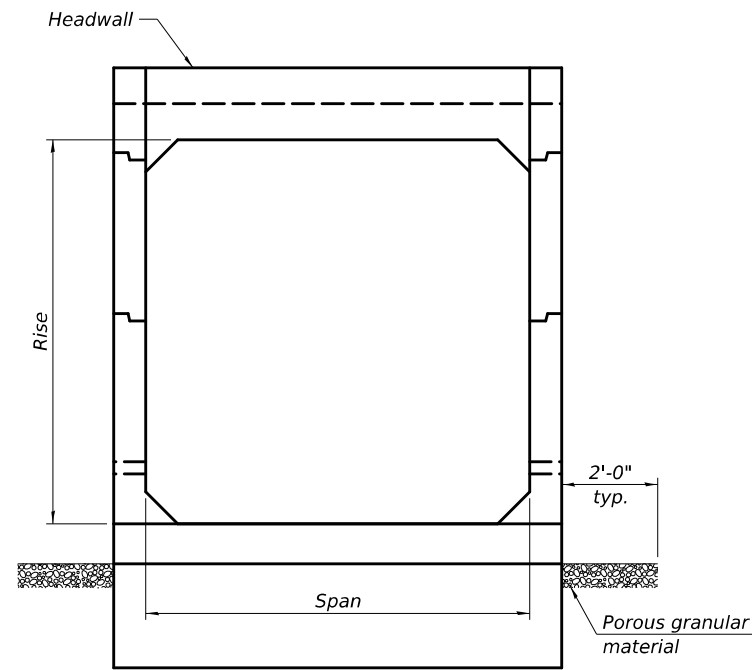
For end sections with traversable pipe grate systems, see grate detail sheet for required modifications.



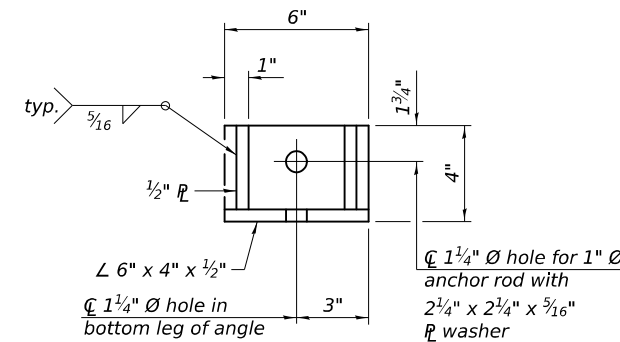
ELEVATION



PLAN



END VIEW



RESTRAINT ANGLE DETAIL

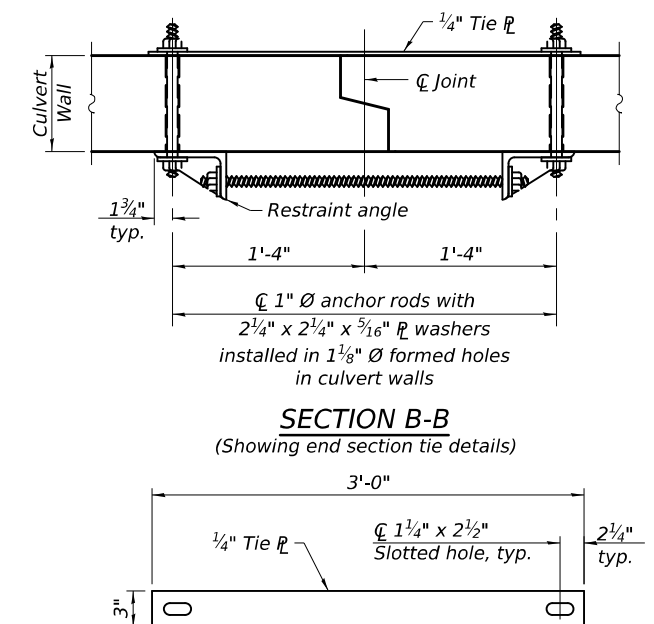
12" x 12" x 6" block of CA5, CA7, or CA11 coarse aggregate placed over drain opening. Block of aggregate shall be completely wrapped in nonwoven geotextile fabric.

Provide a double layer of 12" x 12" nonwoven geotextile fabric centered over the drain hole. Fabric shall be sealed to the concrete with mastic.

SECTION A-A

3" Ø PVC drain cast with the concrete (Adjust location to clear reinforcement).
1/2" Square foam blockout around PVC drain (to be removed with formwork)

(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.)



TIE PLATE DETAIL

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SCB-TES

5-15-2023

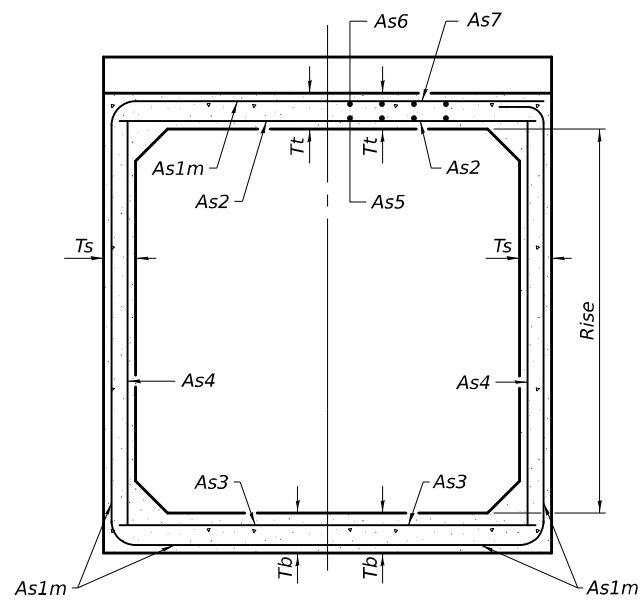
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DRAWN -	REVISOR -	
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PLOT DATE = 1/31/2024	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SINGLE CELL PRECAST BOX CULVERT TAPERED END SECTIONS
STRUCTURE NO. 010-8178**

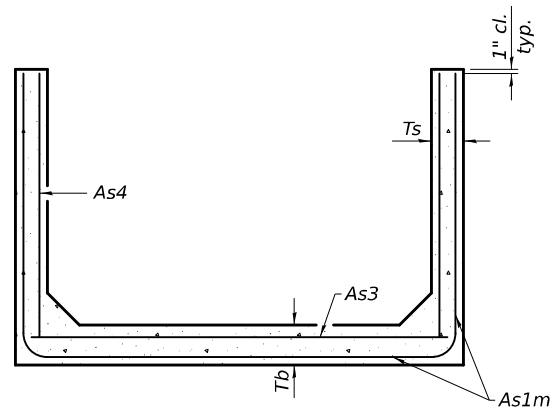
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	21
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

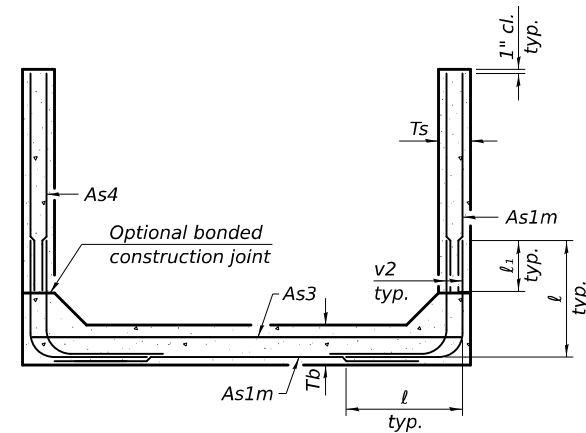


(Design Earth Cover \geq 2 ft) (Design Earth Cover < 2 ft)

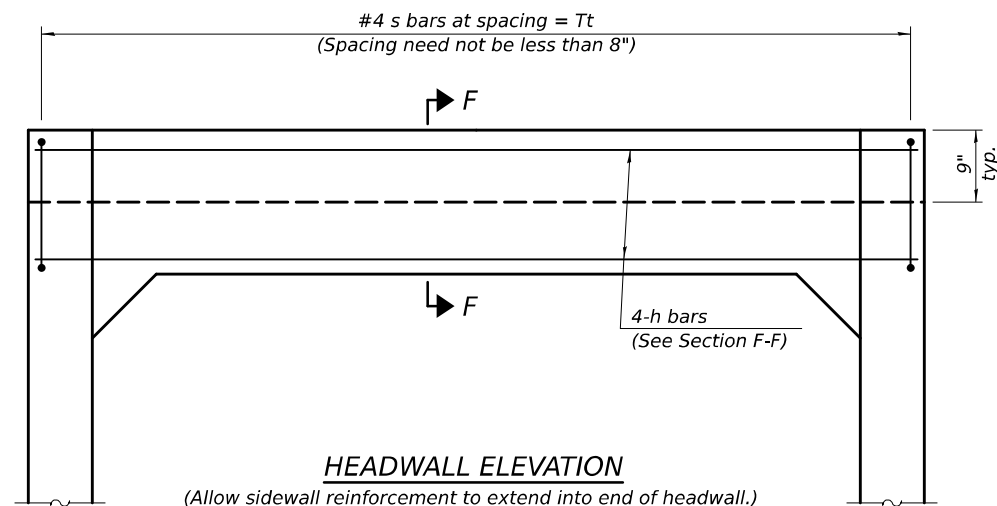
SECTION C-C



SECTION D-D



ALTERNATE SECTION D-D



HEADWALL ELEVATION

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

		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	0.29	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).

l₁ DIMENSION

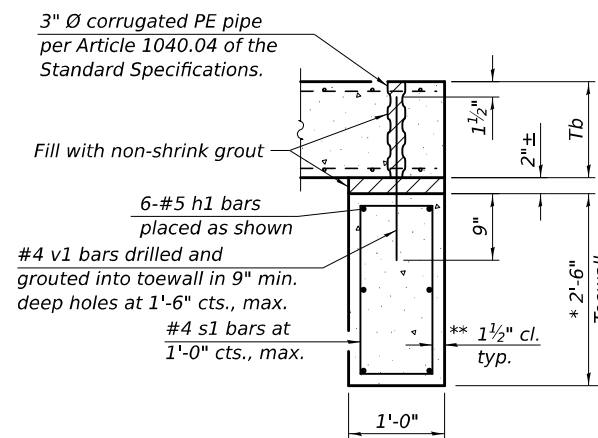
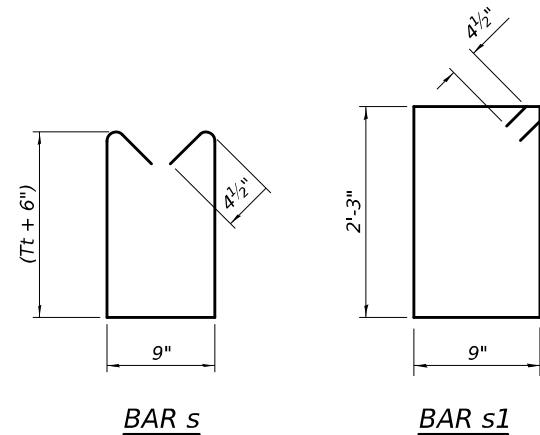
- #3 bar = 2'-0"
- #4 bar = 2'-8"
- #5 bar = 3'-4"
- #6 bar = 3'-11"

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.



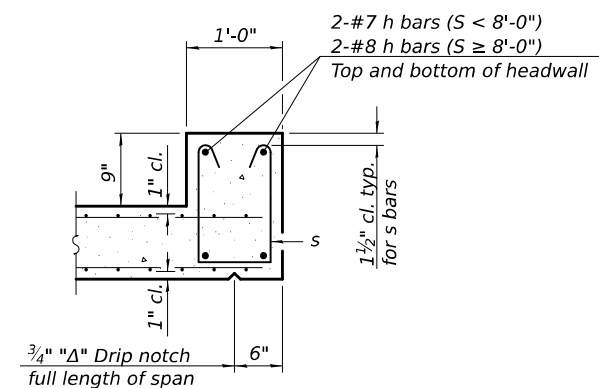
SECTION E-E

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

MODEL: End section 2 (Sheet) FILE NAME: c:\p\work\wtd\p\scb\scb\0108178.dgn

SCB-TES

5-15-2023

USER NAME = Bridgette,Plerson	DESIGNED -	REVISED -
PLOT SCALE = 0.16666633 / in.	DRAWN -	REVISED -
PLOT DATE = 1/31/2024	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SINGLE CELL PRECAST BOX CULVERT TAPERED END SECTIONS
STRUCTURE NO. 010-8178**

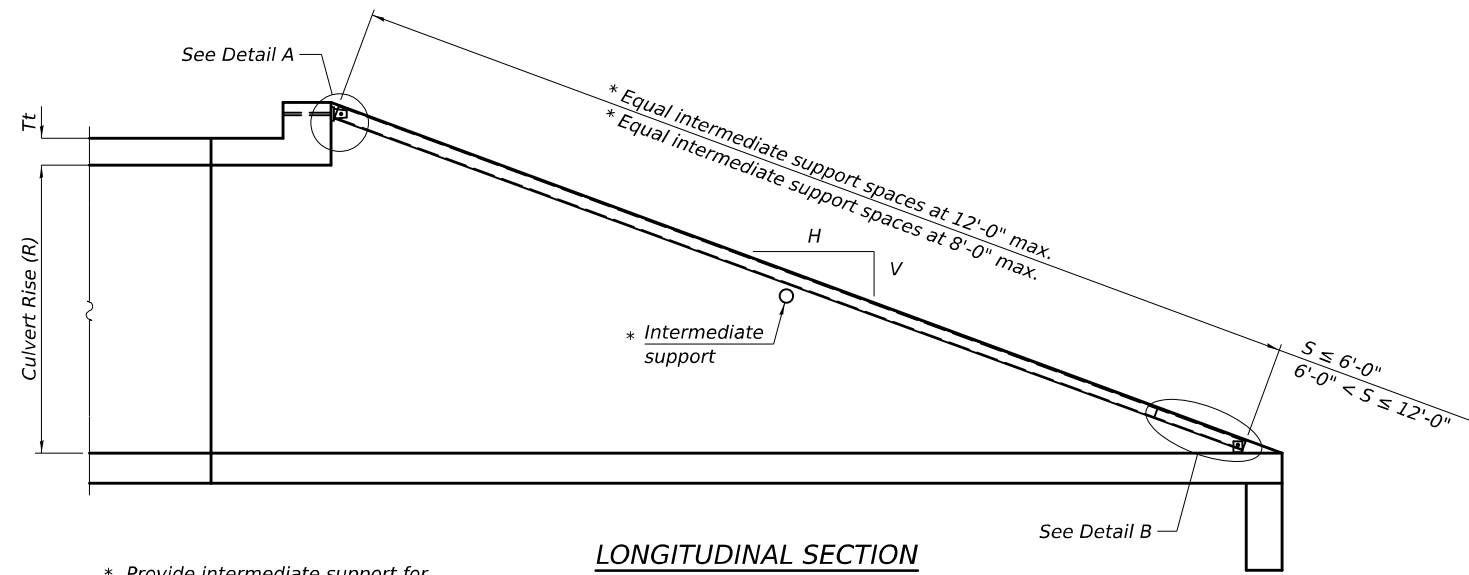
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	22
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

(Sheet 2 of 2)

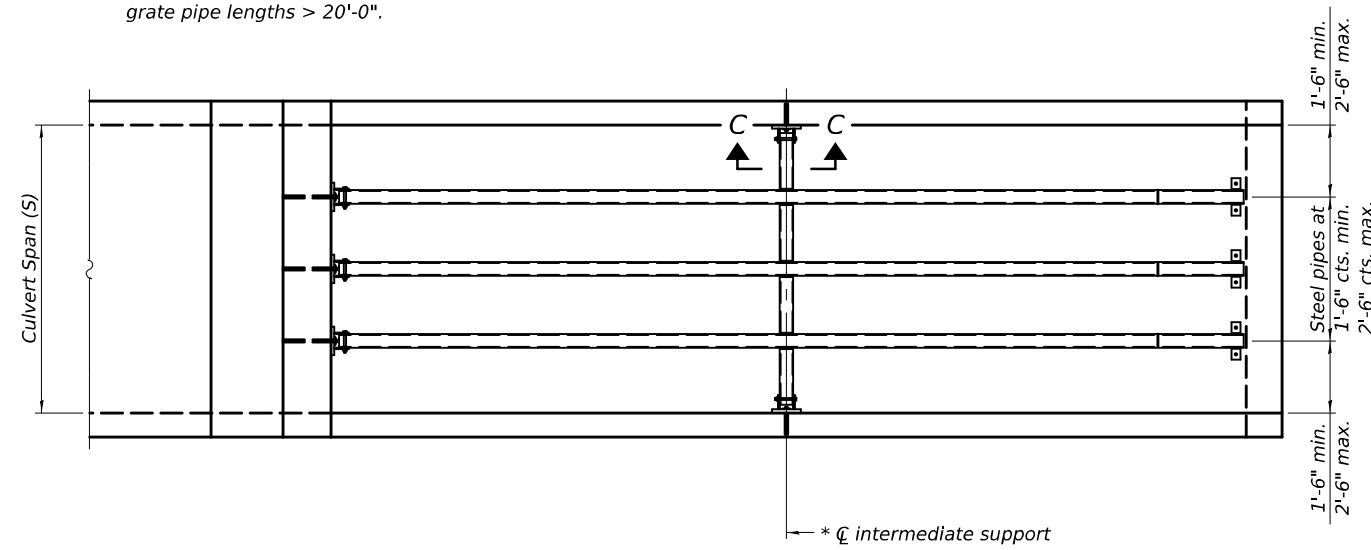
GENERAL NOTES

The minimum edge distance from the center of a hole to the free edge of a structural shape or plate shall be 1½" unless noted otherwise.
 This standard shall only be used on concrete end sections not skewed more than ±15 degrees with roadway.
 The Contractor may install the thru bolts using drilling and grouting in lieu of providing a formed hole using steel pipe. Installation shall be in accordance with Article 509.06 using a method that results in the annulus surrounding the bolt being completely filled with adhesive. The method of drilling shall not result in spalled concrete at the exit face. Epoxy grouted thru bolts shall be snug tightened followed by an additional ½ turn on the interior nut at final installation. Cost included with Traversable Pipe Grate.

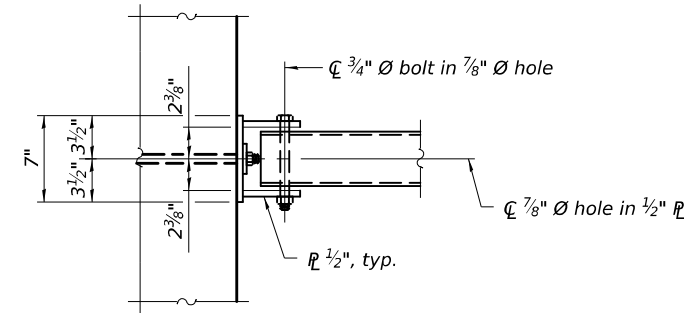


LONGITUDINAL SECTION

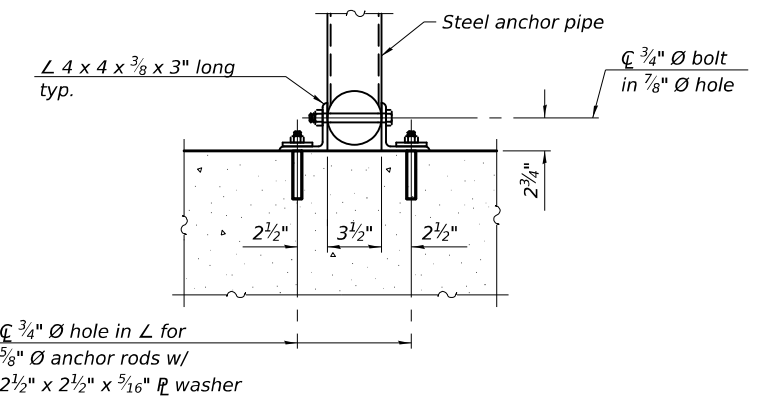
* Provide intermediate support for grate pipe lengths > 20'-0".



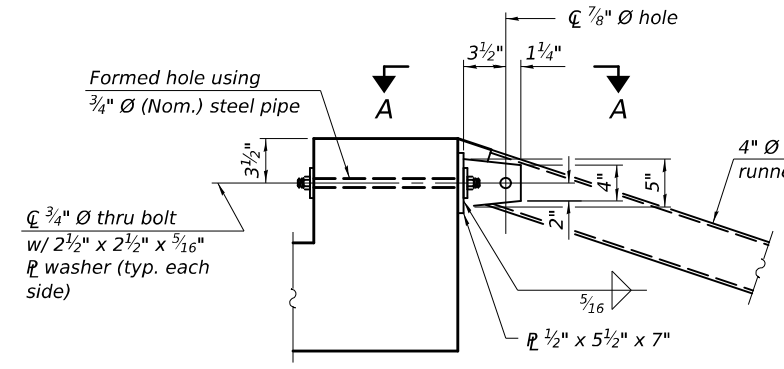
PLAN VIEW



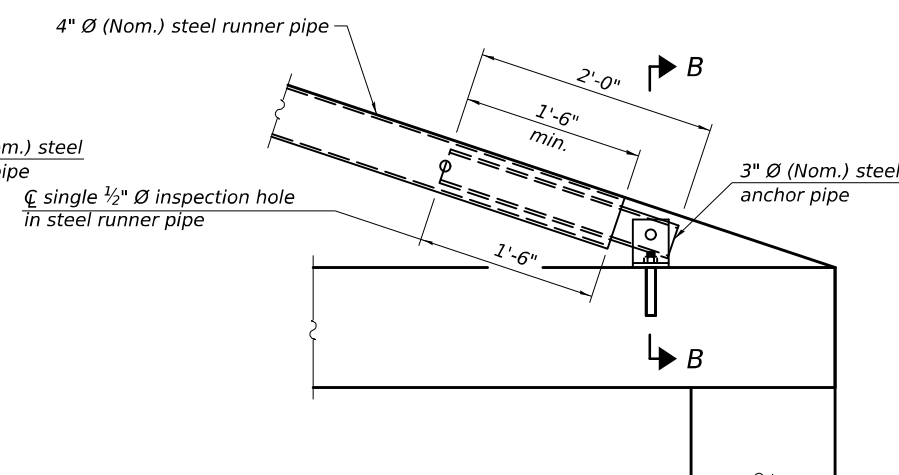
VIEW A-A



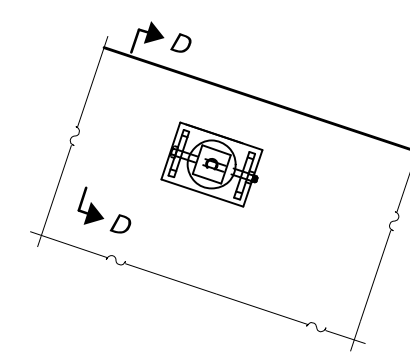
SECTION B-B



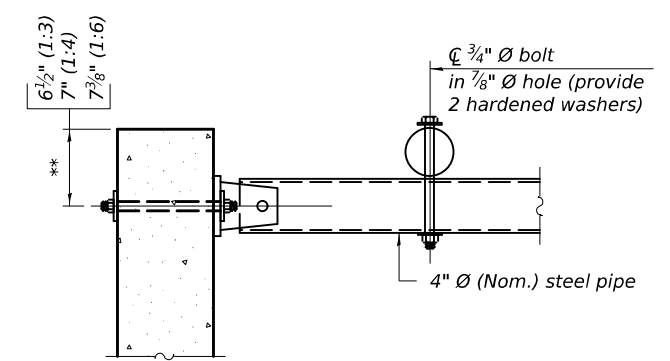
DETAIL A



DETAIL B



VIEW C-C
(See Detail A for dimensions and details not shown.)



SECTION D-D

** Measured perpendicular to top of culvert wall. In addition, formed hole shall be located a minimum of 6" measured horizontally from any vertical joints necessary for construction of the culvert end section.

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TPGBC-ZS

5-15-2023

(Sheet 1 of 2)

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PLOT SCALE = 0.16666633' / in.	DRAWN -	REVISED -
PLOT DATE = 1/31/2024	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TRANSVERSABLE PIPE GRATE FOR BOX CULVERTS
STRUCTURE NO. 010-8178**

SCALE: SHEET 4 OF 6 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	23
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

PIPE-GRATE SCHEDULE FOR BOX CULVERT END SECTIONS

Precast Box Culvert Dimensions			Slope of End Section								
			1:3			1:4			1:6		
S (ft)	R (ft)	Tt (in)	Main Pipe No. / Length	Int. Support No. / Length	Total Length of Pipe	Main Pipe No. / Length	Int. Support No. / Length	Total Length of Pipe	Main Pipe No. / Length	Int. Support No. / Length	Total Length of Pipe
4	2	7.5	1 @ 8'-10"	N/A	8'-10"	1 @ 11'-7"	N/A	11'-7"	1 @ 17'-2"	N/A	17'-2"
4	2	5	1 @ 8'-2"	N/A	8'-2"	1 @ 10'-8"	N/A	10'-8"	1 @ 15'-11"	N/A	15'-11"
4	3	7.5	1 @ 12'-0"	N/A	12'-0"	1 @ 15'-8"	N/A	15'-8"	1 @ 23'-3"	1 @ 3'-7"	26'-10"
4	3	5	1 @ 11'-4"	N/A	11'-4"	1 @ 14'-10"	N/A	14'-10"	1 @ 22'-0"	1 @ 3'-7"	25'-7"
4	4	7.5	1 @ 15'-2"	N/A	15'-2"	1 @ 19'-10"	1 @ 3'-7"	23'-5"	1 @ 29'-4"	2 @ 3'-7"	36'-3"
4	4	5	1 @ 14'-6"	N/A	14'-6"	1 @ 18'-11"	N/A	18'-11"	1 @ 28'-1"	2 @ 3'-7"	35'-3"
5	2	8	1 @ 8'-11"	N/A	8'-11"	1 @ 11'-9"	N/A	11'-9"	1 @ 17'-5"	N/A	17'-5"
5	2	6	1 @ 8'-5"	N/A	8'-5"	1 @ 11'-1"	N/A	11'-1"	1 @ 16'-5"	N/A	16'-5"
5	3	8	1 @ 12'-1"	N/A	12'-1"	1 @ 15'-10"	N/A	15'-10"	1 @ 23'-6"	1 @ 4'-7"	28'-1"
5	3	6	1 @ 11'-7"	N/A	11'-7"	1 @ 15'-2"	N/A	15'-2"	1 @ 22'-6"	1 @ 4'-7"	27'-1"
5	4	8	1 @ 15'-3"	N/A	15'-3"	1 @ 20'-0"	1 @ 4'-7"	24'-7"	1 @ 29'-7"	2 @ 4'-7"	38'-9"
5	4	6	1 @ 14'-9"	N/A	14'-9"	1 @ 19'-3"	N/A	19'-3"	1 @ 28'-7"	2 @ 4'-7"	37'-9"
5	5	8	1 @ 18'-5"	N/A	18'-5"	1 @ 24'-1"	2 @ 4'-7"	33'-3"	1 @ 35'-8"	3 @ 4'-7"	49'-5"
5	5	6	1 @ 17'-11"	N/A	17'-11"	1 @ 23'-5"	1 @ 4'-7"	28'-0"	1 @ 34'-8"	2 @ 4'-7"	43'-10"
6	2	8	2 @ 8'-11"	N/A	17'-10"	2 @ 11'-9"	N/A	23'-6"	2 @ 17'-5"	N/A	34'-10"
6	2	7	2 @ 8'-8"	N/A	17'-4"	2 @ 11'-5"	N/A	22'-10"	2 @ 16'-11"	N/A	33'-10"
6	3	8	2 @ 12'-1"	N/A	24'-2"	2 @ 15'-10"	N/A	31'-8"	2 @ 23'-6"	1 @ 5'-7"	52'-7"
6	3	7	2 @ 11'-10"	N/A	23'-8"	2 @ 15'-6"	N/A	31'-0"	2 @ 23'-0"	1 @ 5'-7"	51'-7"
6	4	8	2 @ 15'-3"	N/A	30'-6"	2 @ 20'-0"	1 @ 5'-7"	45'-7"	2 @ 29'-7"	2 @ 5'-7"	70'-4"
6	4	7	2 @ 15'-0"	N/A	30'-0"	2 @ 19'-8"	1 @ 5'-7"	44'-11"	2 @ 29'-1"	2 @ 5'-7"	69'-4"
6	5	8	2 @ 18'-5"	N/A	36'-10"	2 @ 24'-1"	2 @ 5'-7"	59'-4"	2 @ 35'-8"	3 @ 5'-7"	88'-1"
6	5	7	2 @ 18'-2"	N/A	36'-4"	2 @ 23'-9"	2 @ 5'-7"	58'-8"	2 @ 35'-2"	2 @ 5'-7"	81'-6"
6	6	8	2 @ 21'-7"	1 @ 5'-7"	48'-9"	2 @ 28'-3"	2 @ 5'-7"	67'-8"	2 @ 41'-9"	3 @ 5'-7"	100'-3"
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7	2	8	2 @ 8'-11"	N/A	17'-10"	2 @ 11'-9"	N/A	23'-6"	2 @ 17'-5"	N/A	34'-10"
7	3	8	2 @ 12'-1"	N/A	24'-2"	2 @ 15'-10"	N/A	31'-8"	2 @ 23'-6"	2 @ 6'-7"	60'-2"
7	4	8	2 @ 15'-3"	N/A	30'-6"	2 @ 20'-0"	2 @ 6'-7"	53'-2"	2 @ 29'-7"	3 @ 6'-7"	78'-11"
7	5	8	2 @ 18'-5"	N/A	36'-10"	2 @ 24'-1"	3 @ 6'-7"	67'-11"	2 @ 35'-8"	4 @ 6'-7"	97'-8"
7	6	8	2 @ 21'-7"	2 @ 6'-7"	56'-4"	2 @ 28'-3"	3 @ 6'-7"	76'-3"	2 @ 41'-9"	5 @ 6'-7"	116'-5"
7	7	8	2 @ 24'-9"	3 @ 6'-7"	69'-3"	2 @ 32'-4"	4 @ 6'-7"	91'-0"	2 @ 47'-10"	6 @ 6'-7"	135'-2"
8	2	8	3 @ 8'-11"	N/A	26'-9"	3 @ 11'-9"	N/A	35'-3"	3 @ 17'-5"	N/A	52'-3"
8	3	8	3 @ 12'-1"	N/A	36'-3"	3 @ 15'-10"	N/A	47'-6"	3 @ 23'-6"	2 @ 7'-7"	85'-8"
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9	4	9	3 @ 15'-6"	N/A	46'-6"	3 @ 20'-4"	2 @ 8'-7"	78'-2"	3 @ 30'-1"	3 @ 8'-7"	116'-0"
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9	9	9	3 @ 31'-4"	3 @ 8'-7"	119'-9"	3 @ 40'-11"	5 @ 8'-7"	165'-8"	3 @ 60'-6"	7 @ 8'-7"	241'-7"
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12	10	12	4 @ 35'-4"	4 @ 11'-7"	187'-8"	4 @ 46'-1"	5 @ 11'-7"	242'-3"	4 @ 68'-1"	8 @ 11'-7"	365'-0"
12	12	12	4 @ 41'-8"	5 @ 11'-7"	224'-7"	4 @ 54'-4"	6 @ 11'-7"	286'-10"	4 @ 80'-3"	10 @ 11'-7"	436'-10"

(Sheet 2 of 2)

TPGBC-ZS

5-15-2023

MODEL: TPGBC-ZS 2 (Sheet)
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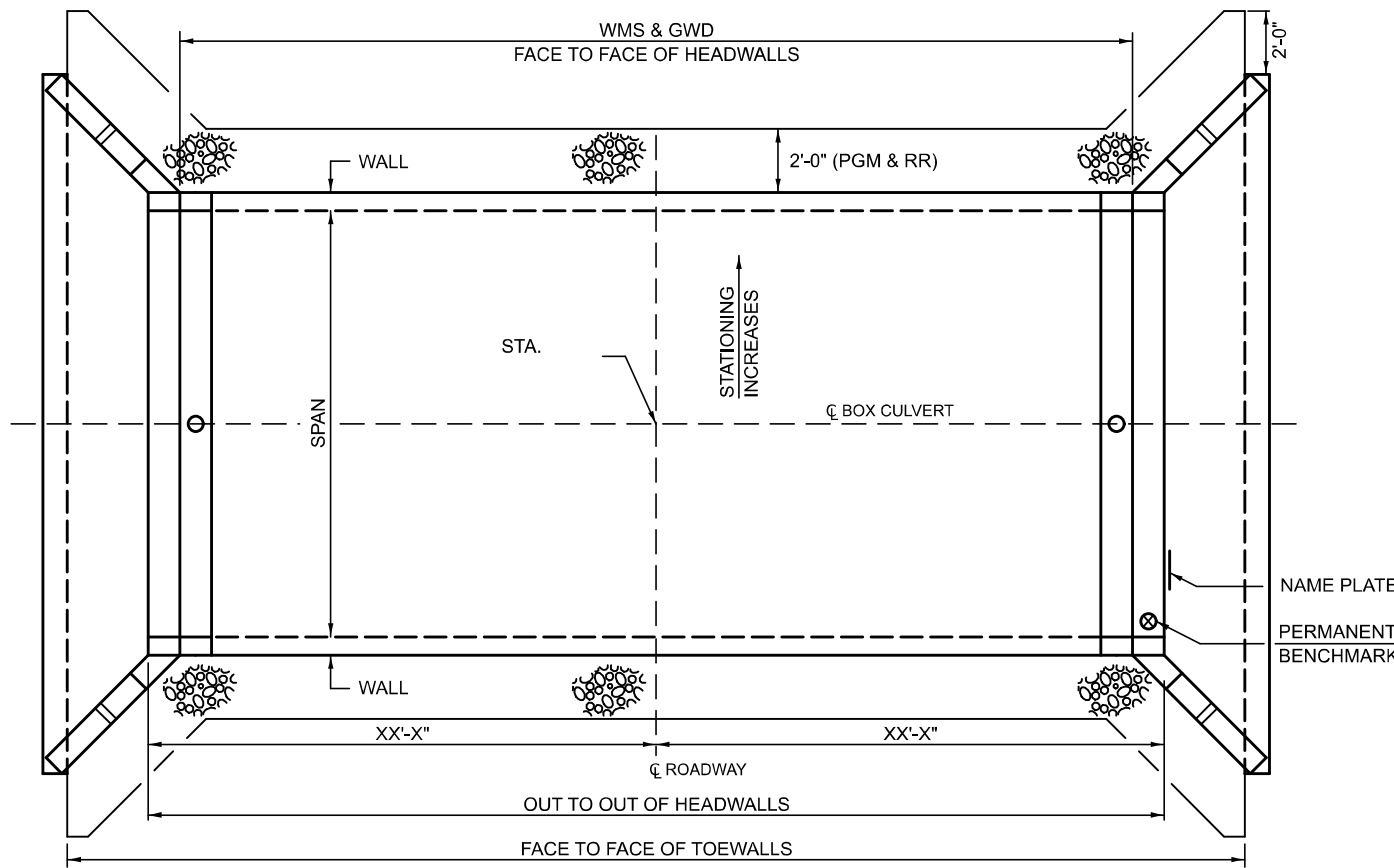
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PLOT SCALE = 0.16666633 / in.	DRAWN -	REVISED -
PLOT DATE = 1/31/2024	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TRANSVERSABLE PIPE GRATE FOR BOX CULVERTS
STRUCTURE NO. 010-8178**

SCALE: SHEET 5 OF 6 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	24
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				



PLAN

SINGLE PCBC SHOWN; MULTIPLE PCBC SIMILAR

****STONE RIPRAP, CLASS A1 (IF REQUIRED)**

STONE RIPRAP, CLASS A1 SHALL BE USED TO ADDRESS UNSTABLE SOIL CONDITIONS AS DETERMINED BY THE GEOTECHNICAL ENGINEER.

THE WORK SHALL BE PERFORMED PER APPLICABLE PORTIONS OF SECTION 281.

THIS WORK SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER TON FOR STONE RIPRAP, CLASS A1.

THE EXCAVATION AND DISPOSAL OF THE UNSUITABLE MATERIAL SHALL NOT BE MEASURED FOR PAYMENT, COST INCLUDED WITH STONE RIPRAP, CLASS A1.

MEMBRANE WATERPROOFING SYSTEM FOR BURIED STRUCTURES (MWS)

SEE SPECIAL PROVISIONS

GEOCOMPOSITE WALL DRAIN (GWD)

PER SECTION 591, EXCEPT CONCRETE NAILS NOT USED WHERE MWS & GWD OVERLAP

FILL HEIGHTS <= 3': MWS & GWD REQ.
FILL HEIGHTS > 3': MWS & GWD NOT REQ.
SEE ABD 19.2.

POROUS GRANULAR EMBANKMENT (PGE)

POROUS GRANULAR EMBANKMENT SHALL EXTEND 2 FT. BEYOND THE AGGREGATE SHOULDER.

THE WORK SHALL BE PERFORMED PER APPLICABLE PORTIONS OF SECTIONS 207 AND 540.

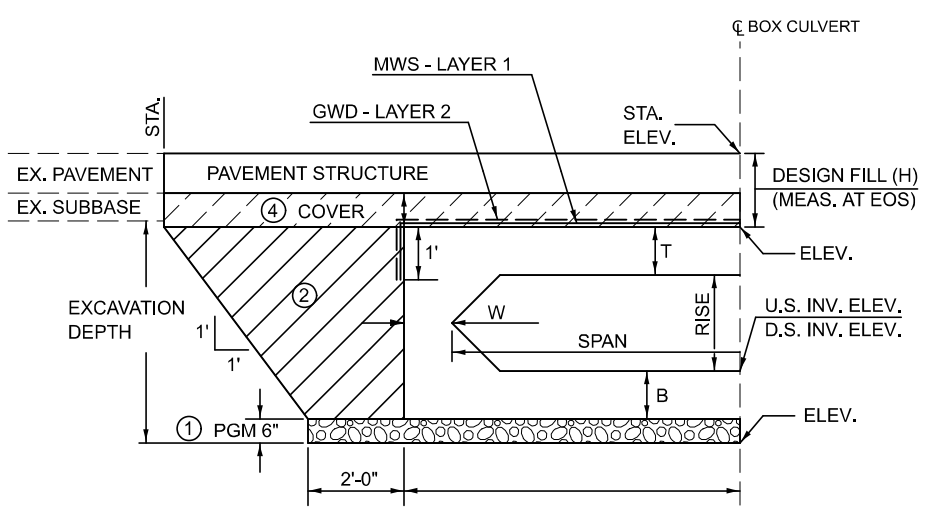
THE COARSE AGGRAGATE QUALITY SHALL BE CLASS D OR BETTER AND THE GRADATION SHALL BE CA-6 OR CA-10.

POROUS GRANULAR EMBANKMENT WILL BE MEASURED FOR PAYMENT IN CU. YDS. IN PLACE AS SHOWN. IF THE CONTACTOR CHOOSES TO EXCAVATE BEYOND THE LIMITS SHOWN. ADDITIONAL QUANTITIES OF POROUS GRANULAR EMBANKMENT WILL BE AT THEIR EXPENSE.

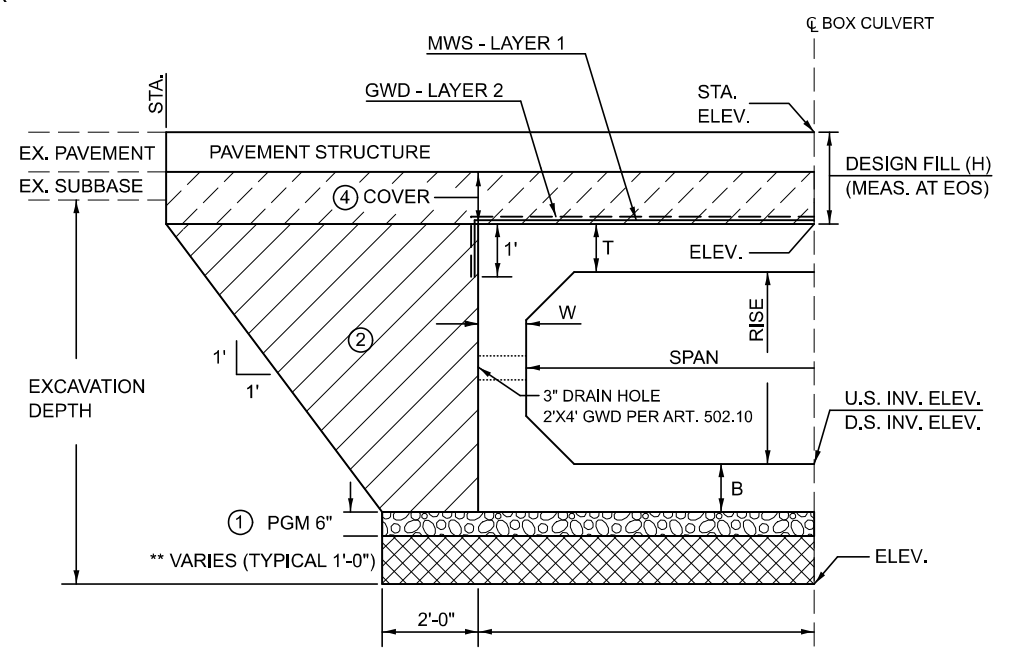
THE AREA TO BE EXCAVATED FOR THE PROPOSED BOX CULVERT AND END SECTIONS SHALL NOT BE MEASURED FOR PAYMENT. COST INCLUDED WITH PRECAST CONCRETE BOX CULVERTS.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
POROUS GRANULAR EMBANKMENT	CU YD	38
STONE RIPRAP, CLASS A1	TON	31



HALF SECTION SHOWN; (EXCAVATION DEPTH <= 5'-0")



HALF SECTION SHOWN; SEE EXCAVATION DEPTHS TABLE

EXCAVATION DEPTHS	* SLOPES
5'-0" < EXCAVATION DEPTH <= 8'-0"	3/4' : 1'
8'-0" < EXCAVATION DEPTH <= 12'-0"	1' : 1'
12'-0" < EXCAVATION DEPTH <= 20'-0"	1' : 1'

MUST BE SLOPED FROM EXCAVATION BOTTOM OR SPECIAL DESIGN BY S.E. SEE ARTICLE 522.07 FOR TEMPORARY SOIL RETENTION SYSTEM

*SLOPED EXCAVATION IN TYPE A SOIL SHOWN PER APPENDIX B OF OSHA CFR LABOR 29 PART 1926 SUBPART P - EXCAVATIONS.

OPTIONAL CONFIGURATIONS MAY BE CONSTRUCTED IN ACCORDANCE WITH OSHA REQUIREMENTS CONTAINED IN THE CODE OF FEDERAL REGULATIONS LABOR 29 PART 1926 SUBPART P - EXCAVATIONS.

SEE ARTICLE 107.28 FOR CONTACTOR SAFETY RESPONSIBILITY.

① POROUS GRANULAR MATERIAL (PGM) (CA-7) (Cost included with PCBC per Article 540.06)	② POROUS GRANULAR EMBANKMENT (PGE) SEE ABD 21.1.
STONE RIPRAP, CLASS A1	④ MIN. 6" COVER UNDER FLEXIBLE PAVEMENT. FILL HEIGHTS <= 3' PGE REQ. FILL HEIGHTS > 3' PGE NOT REQ. NO COVER REQUIRED UNDER RIGID PAVEMENT. WHEN RIGID PAVEMENT PLACED ON TOP OF PCBC THE MWS AND GWD ARE NOT REQ. SEE ABD 21.1.

REVISED PER ALL BRIDGE DESIGNERS MEMORANDUMS (ABD) 19.2 AND 21.1

Note: All dimensions are in INCHES (millimeters) unless otherwise shown.

DISTRICT 5 DETAIL NO. 20700220

USER NAME = Justin.Cearlock	DESIGNED - TJB	REVISED - TJB
	DRAWN - TJB	REVISED - TJB
PLOT SCALE = 0.16666833' / in.	CHECKED -	REVISED -
PLOT DATE = 1/30/2024	DATE - 10/17/2016	REVISED - 6/1/2022

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**POROUS GRANULAR EMBANKMENT
S.N. 010-8178; CULVERT NO. 1**

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	25
CONTRACT NO. 70753				

ILLINOIS FED. AID PROJECT

MODEL: 20700220
FILE NAME: c:\pwworking\illinois\project\0900796\0510753-Sht-Detail_20700220.dwg

Benchmark: Chiseled Square on Box Culvert Crossing Private Entrance. Mark is Approx. 2' Below Top of Headwall Located in Very SE Corner of Box Culvert. STA 487+57, 144.6" LT. Vertical Datum = NAVD 88 ELEV = 747.41

Existing Structure: S.N. 010-8073, Sta. 545+41, 10'x4' Reinforced Concrete Box Culvert

INDEX OF SHEETS

1. General Plan and Elevation
- 2.-3. Single Cell Precast Box Culvert Tapered End Section Details
- 4.-5. Traversable Pipe Grate for Box Culvert Details
6. Porous Granular Embankment Details

GENERAL NOTES

The design fill height for this box is 1.0 ft. The precast box culvert sections shall conform to the requirements of ASTM C 1577.
 Drain holes shall be provided on exterior culvert walls for each precast box segment with a clear rise greater than 3 ft. The drain hole shall be located within 1/3 of the clear rise of the box culvert, shall not intercept the haunch, and shall conform to the requirements of Article 503.11 of the Standard Specification.
 Nonwoven geotextile fabric shall conform to the requirements of Art. 1080.01 of the Standard Specifications. The minimum weight of the fabric shall be 6 ounces per square yard.
 Precast concrete box culverts and box culvert end sections shall be backfilled with Porous Granular Embankment in the required excavation areas on the sides of the box culvert from the top of the box culvert to the bottom of the box culvert. This area of PGE is included in the Porous Granular Embankment pay item. The 6-inch thick layer of porous granular material required under the precast concrete box culvert, according to Section 540.06 of the standard specifications, shall also apply to the end sections. Cost of this porous granular material will not be paid for separately but shall be included in the unit price of the work for which it is required.

DESIGN SPECIFICATIONS

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

LOADING HL-93

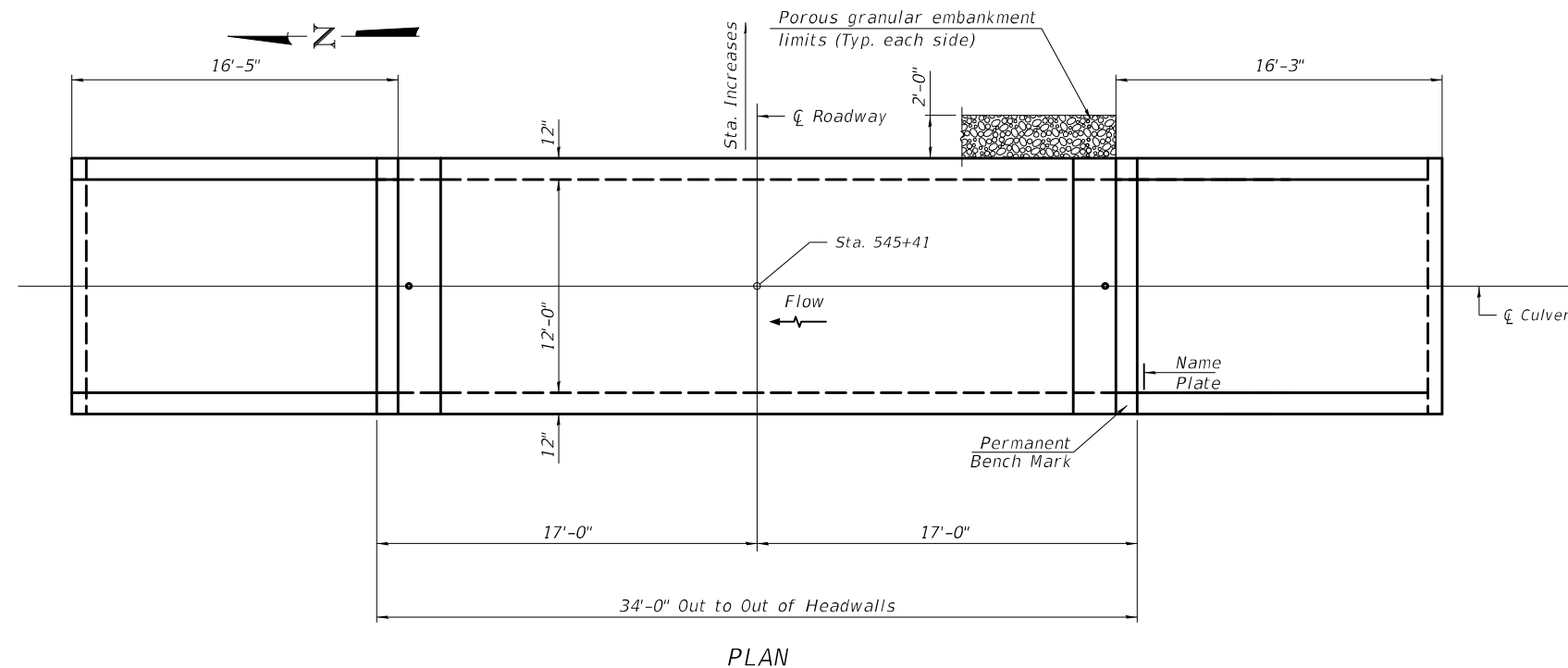
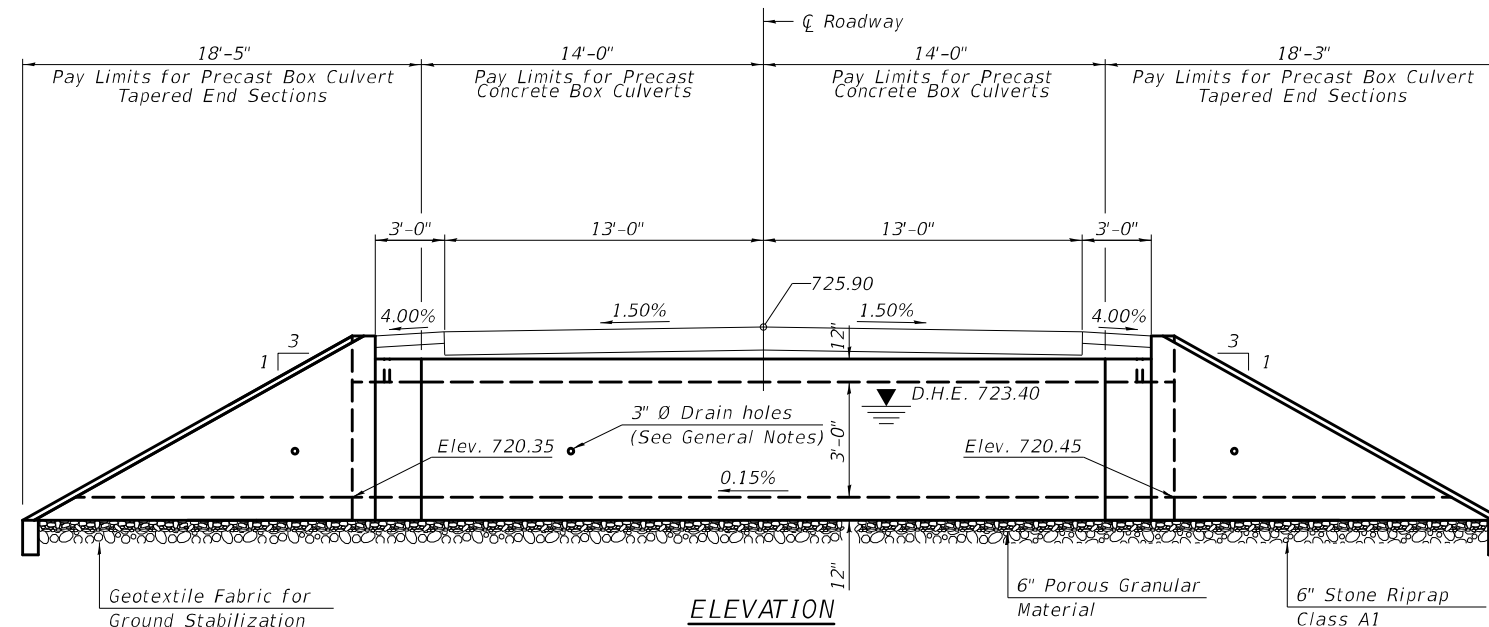
DESIGN STRESSES

PRECAST UNITS

$f_c = 5,000 \text{ psi}$
 $f_y = 65,000 \text{ psi (Welded Wire Reinforcement)}$

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Removal of Existing Structures, No. 1	Each	1
Name Plates	Each	1
Box Culvert End Sections, Culvert No. 1	Each	2
Precast Concrete Box Culverts, 12x3	Foot	28
Porous Granular Embankment	Cu. Yd.	38
Stone Riprap, Class A1	Tons	33
Permanent Bench Marks	Each	1
Geotextile Fabric for Ground Stabilization	Sq. Yd.	131
Traversable Pipe Grate for Concrete End Section	Foot	105.5
Temporary Soil Retention System	Sq. Ft.	33



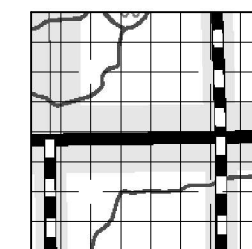
WATERWAY INFORMATION

Drainage Area = 0.29 sq. mi. Low Grade Elev. = 725.90 @ Sta. 545+41

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	97.3	27.2	29.64	722.8	0.3	0.3	723.1	723.1
Base	50	160	30	36	723.4	0.7	0.5	724.1	723.9
Overtopping	100	180	32	36	723.6	0.8	0.7	724.4	724.3
Max. Calc.	500	258	36	36	724.0	1.2	1.3	725.2	725.3

STATION 545+41
 BUILT 2024 BY
 STATE OF ILLINOIS
 F.A.P. RTE. 709 SECTION 113CR
 LOADING HL-93
 STRUCTURE NO.

NAME PLATE
 See Std. 515001



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
US RTE. 136 OVER UNNAMED DITCH
F.A.P. RTE. 709 SEC. 113CR
CHAMPAIGN COUNTY
STATION 545+41
S.N. 010-8179

MODEL: GPE (Sheet) FILE NAME: c:\p\work\wv\rd\p\scb\0108179\structures\0108179.dgn

SCB-GPE (MODIFIED) 5-15-2023

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PLOT SCALE = 0.16666833' / in.	DRAWN -	REVISED -
PLOT DATE = 1/30/2024	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
STRUCTURE NO. 010-8179

SCALE: SHEET 1 OF 6 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	26
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

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.

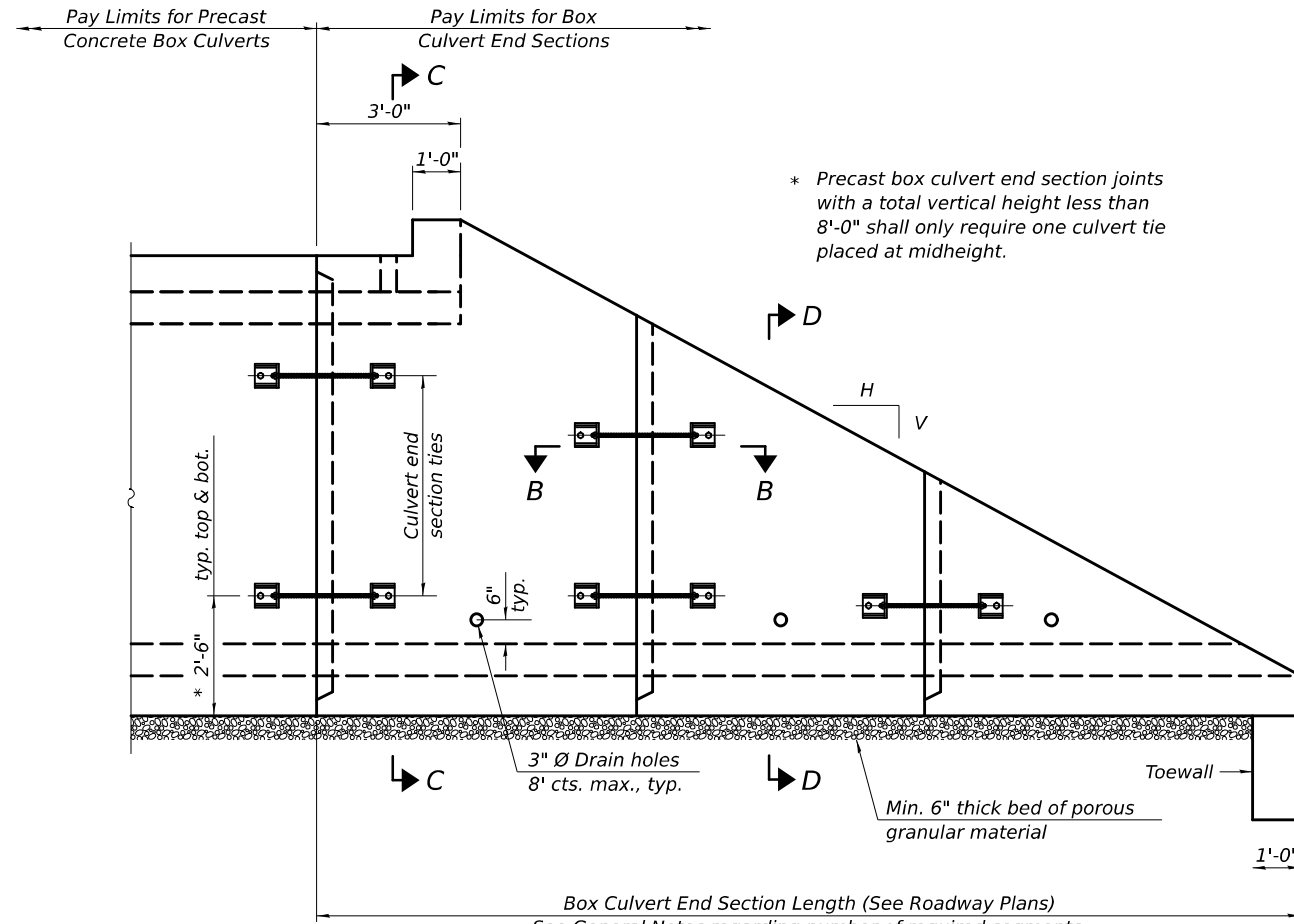
2 1/4" x 2 1/4" x 5/16" plate washers shall be provided under each nut required for the anchor rods. Anchor rods connecting precast sections shall be brought to a snug tight condition followed by an additional 1/2 turn on one of the nuts for anchor rods installed in the walls. Match marks shall be provided 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.

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.

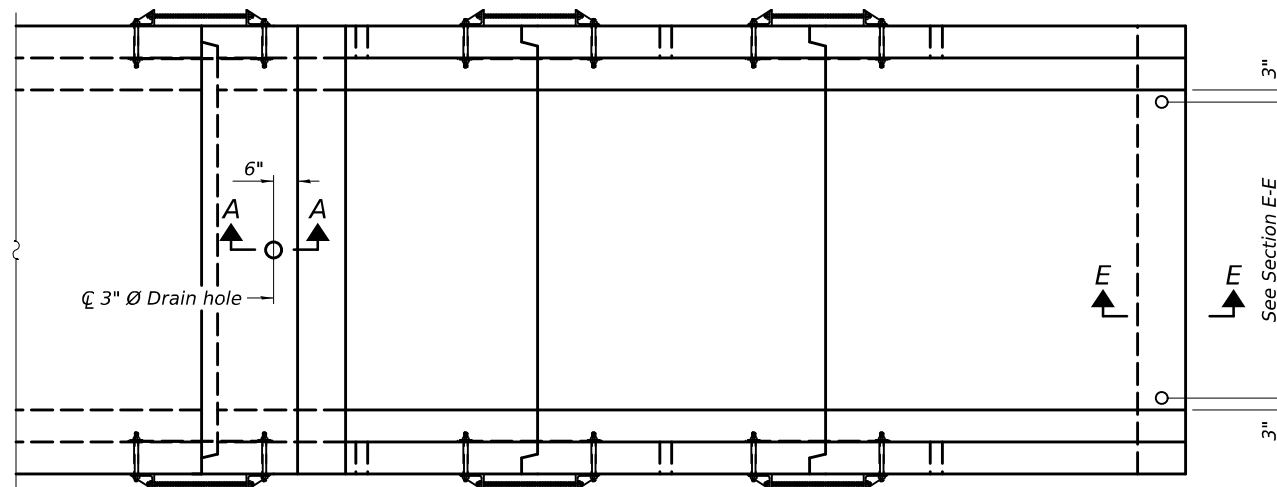
Drain holes shall conform to the requirements of Article 503.11 of the Standard Specifications unless noted otherwise.

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

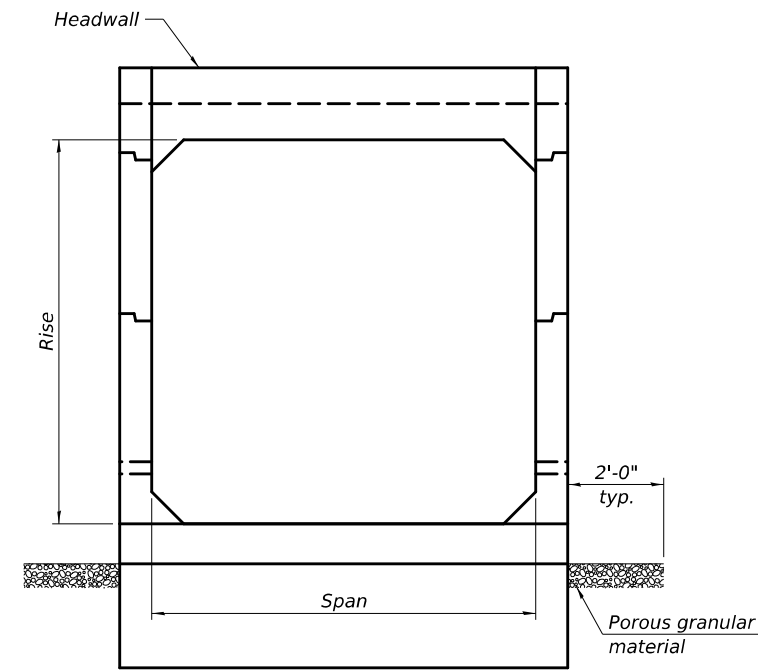
For end sections with traversable pipe grate systems, see grate detail sheet for required modifications.



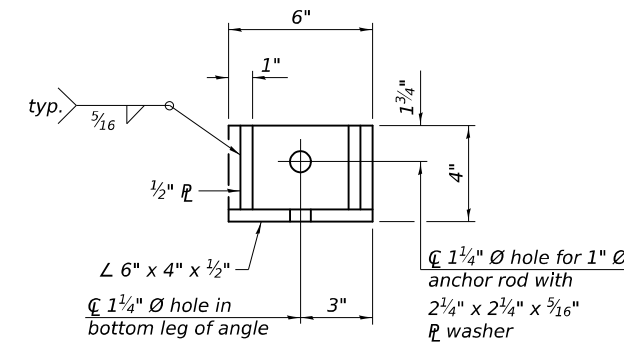
ELEVATION



PLAN



END VIEW



RESTRAINT ANGLE DETAIL

12" x 12" x 6" block of CA5, CA7, or CA11 coarse aggregate placed over drain opening. Block of aggregate shall be completely wrapped in nonwoven geotextile fabric.

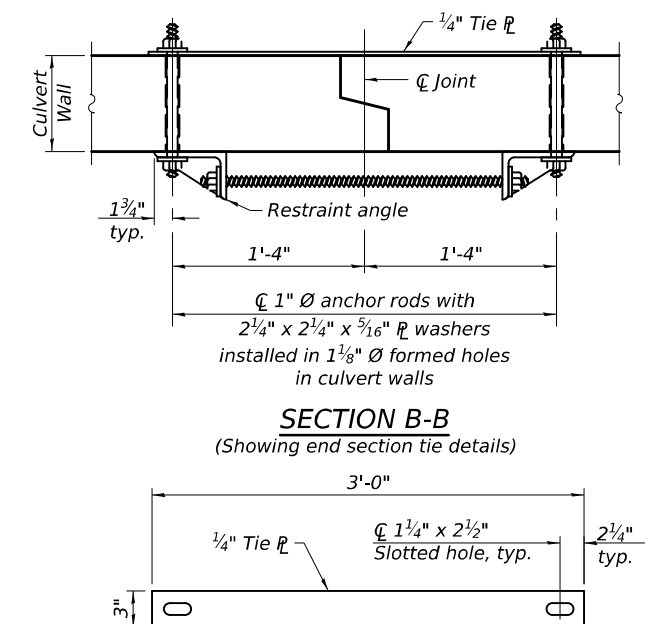
Provide a double layer of 12" x 12" nonwoven geotextile fabric centered over the drain hole. Fabric shall be sealed to the concrete with mastic.

SECTION A-A

3" Ø PVC drain cast with the concrete (Adjust location to clear reinforcement).
1/2" Square foam blockout around PVC drain (to be removed with formwork)

(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.)

(Sheet 1 of 2)



SECTION B-B
(Showing end section tie details)

TIE PLATE DETAIL

MODEL: End section 1 (Sheet)
FILE NAME: c:\pwworking\tdp\structures\0108179.dgn

SCB-TES

5-15-2023

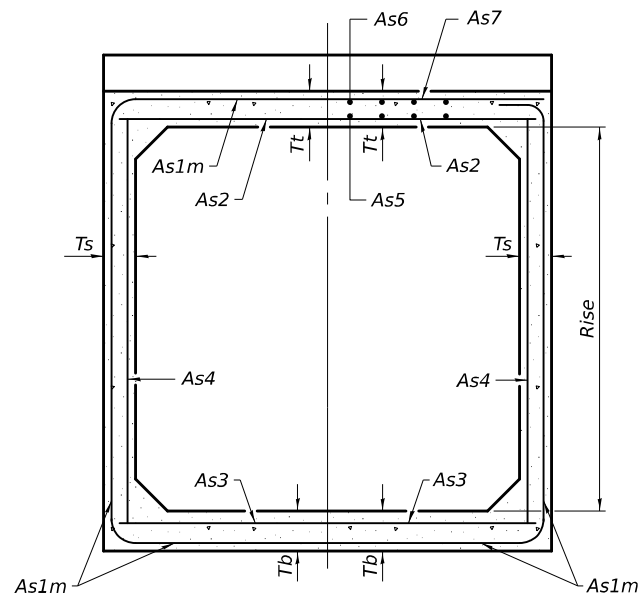
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DRAWN -	REVISIONS -	
PLOT SCALE = 0.16666633 / in.	CHECKED -	REVISED -
PLOT DATE = 1/31/2024	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SINGLE CELL PRECAST BOX CULVERT TAPERED END SECTIONS
STRUCTURE NO. 010-8179**

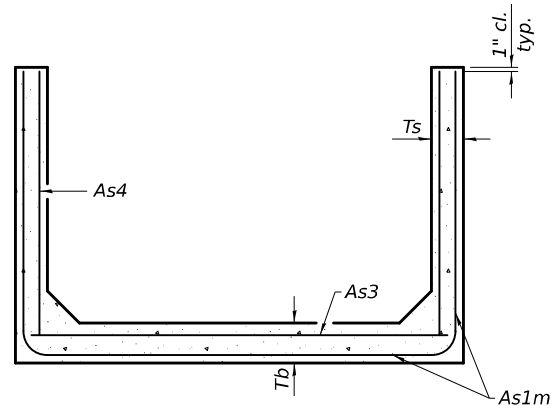
SCALE: SHEET 2 OF 6 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	27
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

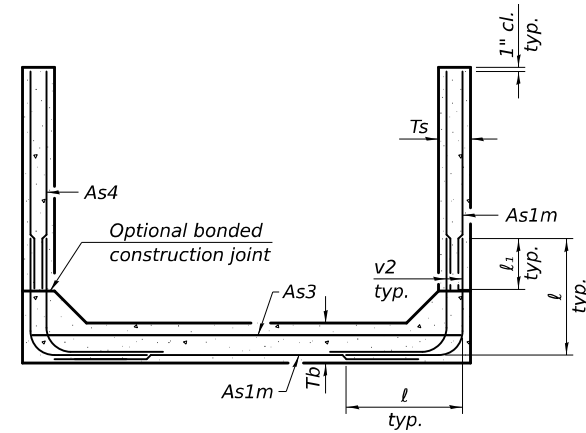


(Design Earth Cover \geq 2 ft) (Design Earth Cover < 2 ft)

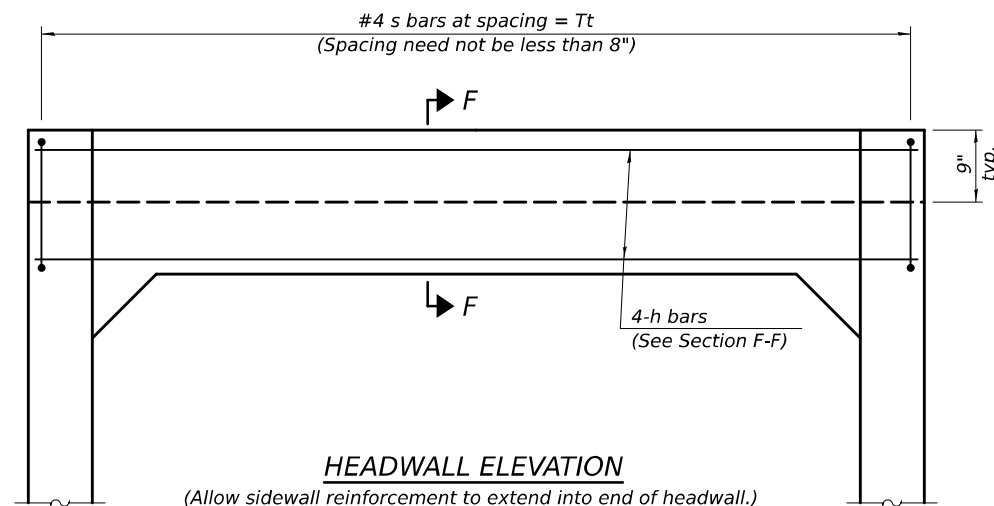
SECTION C-C



SECTION D-D



ALTERNATE SECTION D-D



HEADWALL ELEVATION

		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	0.29	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).

l₁ DIMENSION

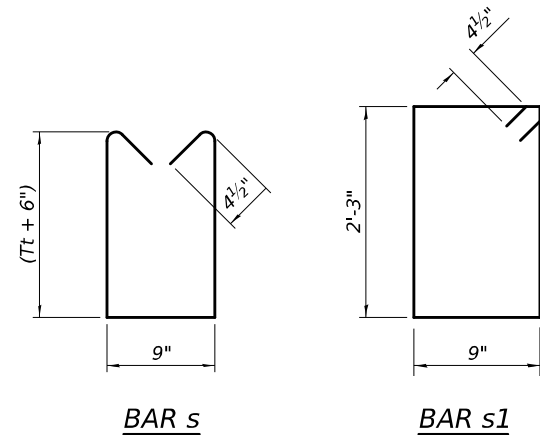
- #3 bar = 2'-0"
- #4 bar = 2'-8"
- #5 bar = 3'-4"
- #6 bar = 3'-11"

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.



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.

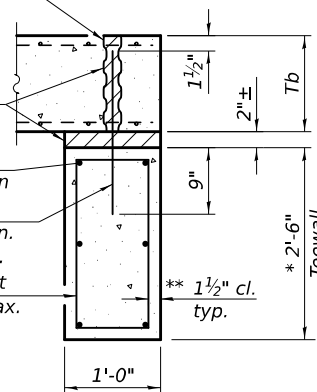
* The Contractor may furnish a precast or cast-in-place toewall. The Contractor shall be responsible for the strength and stability of the precast toewall during handling. Additional lifting points may be required depending upon the length of the toewall or the Contractor may need to modify the design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

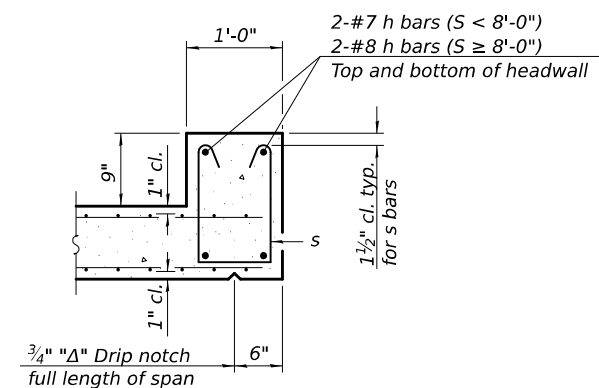
3" \emptyset corrugated PE pipe per Article 1040.04 of the Standard Specifications.

Fill with non-shrink grout

6-#5 h1 bars placed as shown
#4 v1 bars drilled and grouted into toewall in 9" min. deep holes at 1'-6" cts., max.
#4 s1 bars at 1'-0" cts., max.



SECTION E-E



SECTION F-F

MODEL: End section 2 (Sheet) FILE NAME: c:\p\work\wtd\p\scb\0108179.dgn

SCB-TES

5-15-2023

USER NAME = Bridgette,Plerson	DESIGNED -	REVISED -
PLOT SCALE = 0.16666633 / in.	DRAWN -	REVISED -
PLOT DATE = 1/31/2024	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SINGLE CELL PRECAST BOX CULVERT TAPERED END SECTIONS
STRUCTURE NO. 010-8179**

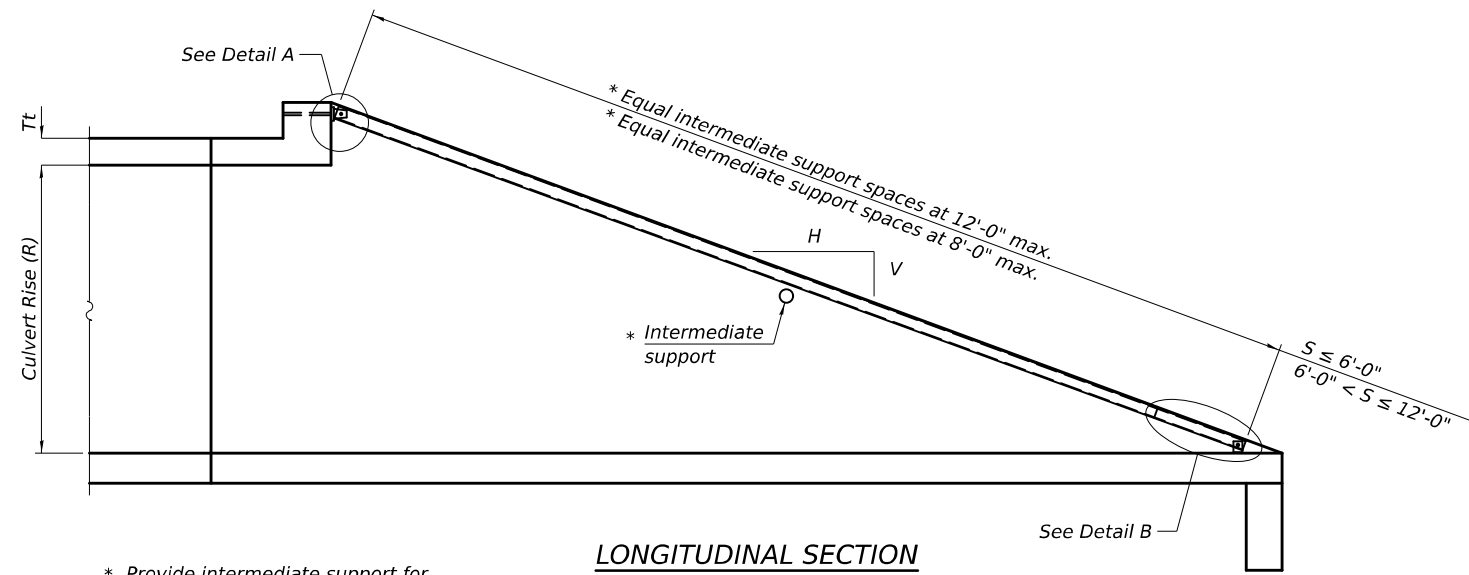
SCALE: SHEET 3 OF 6 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	28
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

(Sheet 2 of 2)

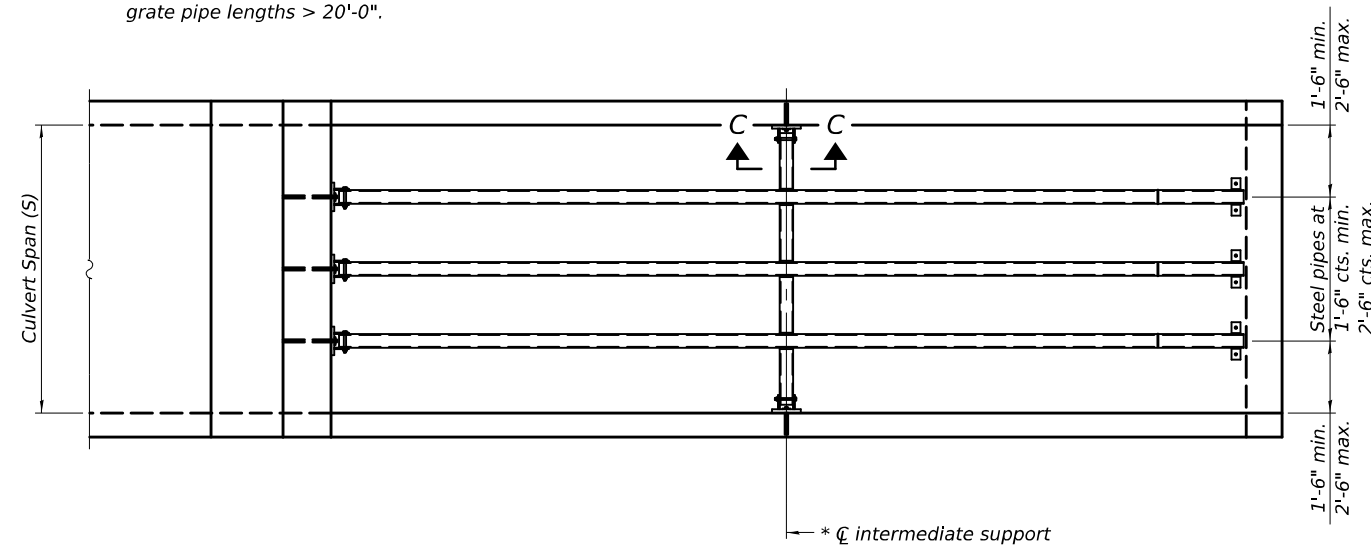
GENERAL NOTES

The minimum edge distance from the center of a hole to the free edge of a structural shape or plate shall be 1½" unless noted otherwise.
 This standard shall only be used on concrete end sections not skewed more than ±15 degrees with roadway.
 The Contractor may install the thru bolts using drilling and grouting in lieu of providing a formed hole using steel pipe. Installation shall be in accordance with Article 509.06 using a method that results in the annulus surrounding the bolt being completely filled with adhesive. The method of drilling shall not result in spalled concrete at the exit face. Epoxy grouted thru bolts shall be snug tightened followed by an additional ½ turn on the interior nut at final installation. Cost included with Traversable Pipe Grate.

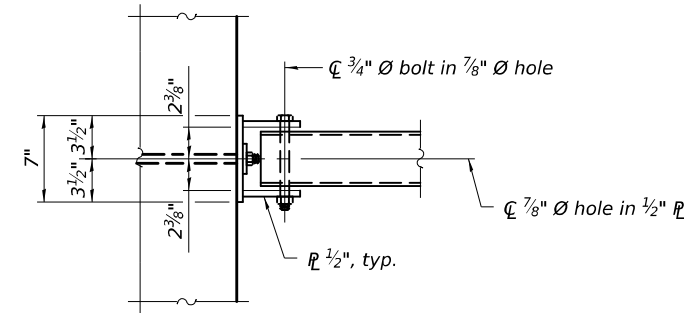


LONGITUDINAL SECTION

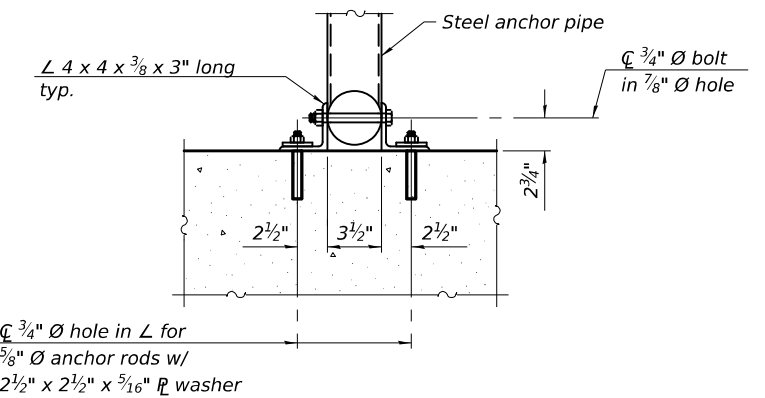
* Provide intermediate support for grate pipe lengths > 20'-0".



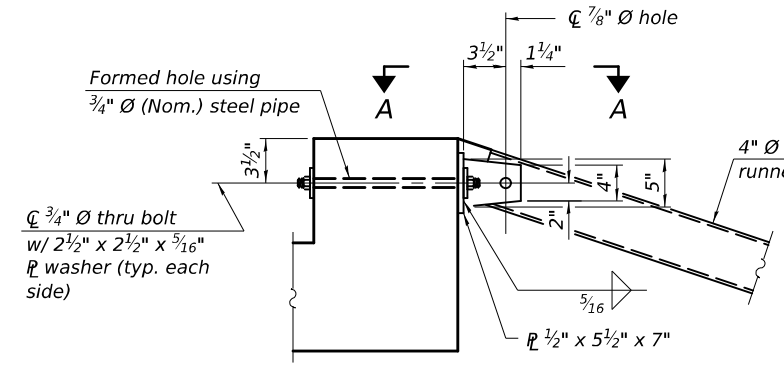
PLAN VIEW



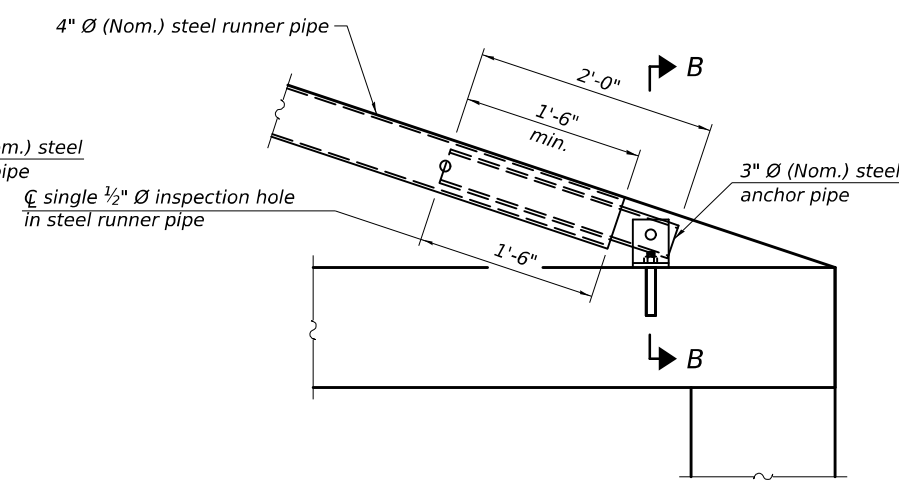
VIEW A-A



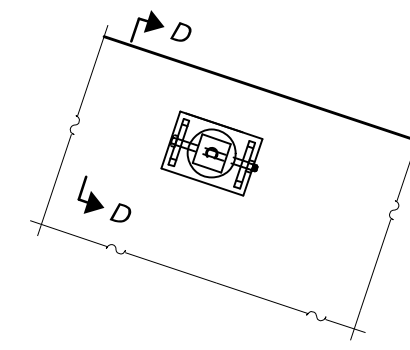
SECTION B-B



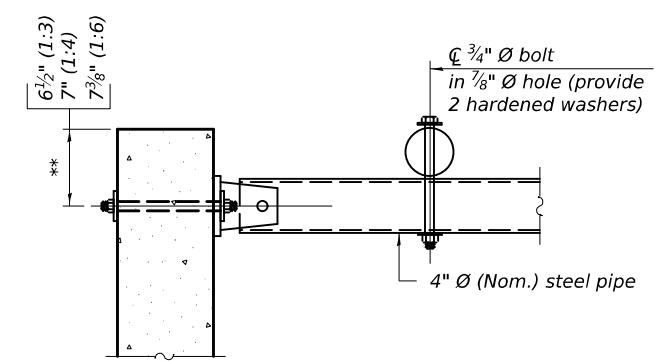
DETAIL A



DETAIL B



VIEW C-C
(See Detail A for dimensions and details not shown.)



SECTION D-D

** Measured perpendicular to top of culvert wall. In addition, formed hole shall be located a minimum of 6" measured horizontally from any vertical joints necessary for construction of the culvert end section.

MODEL: TPGB-CZS 1 (Sheet) FILE NAME: c:\p\work\tpgbc\tpgbc\structures\0108179.dgn

TPGBC-ZS

5-15-2023

(Sheet 1 of 2)

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PLOT SCALE = 0.16666633' / in.	DRAWN -	REVISED -
PLOT DATE = 1/31/2024	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TRANSVERSABLE PIPE GRATE FOR BOX CULVERTS
STRUCTURE NO. 010-8179**

SCALE: SHEET 4 OF 6 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	29
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

PIPE-GRATE SCHEDULE FOR BOX CULVERT END SECTIONS

Precast Box Culvert Dimensions			Slope of End Section								
			1:3			1:4			1:6		
S (ft)	R (ft)	Tt (in)	Main Pipe No. / Length	Int. Support No. / Length	Total Length of Pipe	Main Pipe No. / Length	Int. Support No. / Length	Total Length of Pipe	Main Pipe No. / Length	Int. Support No. / Length	Total Length of Pipe
4	2	7.5	1 @ 8'-10"	N/A	8'-10"	1 @ 11'-7"	N/A	11'-7"	1 @ 17'-2"	N/A	17'-2"
4	2	5	1 @ 8'-2"	N/A	8'-2"	1 @ 10'-8"	N/A	10'-8"	1 @ 15'-11"	N/A	15'-11"
4	3	7.5	1 @ 12'-0"	N/A	12'-0"	1 @ 15'-8"	N/A	15'-8"	1 @ 23'-3"	1 @ 3'-7"	26'-10"
4	3	5	1 @ 11'-4"	N/A	11'-4"	1 @ 14'-10"	N/A	14'-10"	1 @ 22'-0"	1 @ 3'-7"	25'-7"
4	4	7.5	1 @ 15'-2"	N/A	15'-2"	1 @ 19'-10"	1 @ 3'-7"	23'-5"	1 @ 29'-4"	2 @ 3'-7"	36'-3"
4	4	5	1 @ 14'-6"	N/A	14'-6"	1 @ 18'-11"	N/A	18'-11"	1 @ 28'-1"	2 @ 3'-7"	35'-3"
5	2	8	1 @ 8'-11"	N/A	8'-11"	1 @ 11'-9"	N/A	11'-9"	1 @ 17'-5"	N/A	17'-5"
5	2	6	1 @ 8'-5"	N/A	8'-5"	1 @ 11'-1"	N/A	11'-1"	1 @ 16'-5"	N/A	16'-5"
5	3	8	1 @ 12'-1"	N/A	12'-1"	1 @ 15'-10"	N/A	15'-10"	1 @ 23'-6"	1 @ 4'-7"	28'-1"
5	3	6	1 @ 11'-7"	N/A	11'-7"	1 @ 15'-2"	N/A	15'-2"	1 @ 22'-6"	1 @ 4'-7"	27'-1"
5	4	8	1 @ 15'-3"	N/A	15'-3"	1 @ 20'-0"	1 @ 4'-7"	24'-7"	1 @ 29'-7"	2 @ 4'-7"	38'-9"
5	4	6	1 @ 14'-9"	N/A	14'-9"	1 @ 19'-3"	N/A	19'-3"	1 @ 28'-7"	2 @ 4'-7"	37'-9"
5	5	8	1 @ 18'-5"	N/A	18'-5"	1 @ 24'-1"	2 @ 4'-7"	33'-3"	1 @ 35'-8"	3 @ 4'-7"	49'-5"
5	5	6	1 @ 17'-11"	N/A	17'-11"	1 @ 23'-5"	1 @ 4'-7"	28'-0"	1 @ 34'-8"	2 @ 4'-7"	43'-10"
6	2	8	2 @ 8'-11"	N/A	17'-10"	2 @ 11'-9"	N/A	23'-6"	2 @ 17'-5"	N/A	34'-10"
6	2	7	2 @ 8'-8"	N/A	17'-4"	2 @ 11'-5"	N/A	22'-10"	2 @ 16'-11"	N/A	33'-10"
6	3	8	2 @ 12'-1"	N/A	24'-2"	2 @ 15'-10"	N/A	31'-8"	2 @ 23'-6"	1 @ 5'-7"	52'-7"
6	3	7	2 @ 11'-10"	N/A	23'-8"	2 @ 15'-6"	N/A	31'-0"	2 @ 23'-0"	1 @ 5'-7"	51'-7"
6	4	8	2 @ 15'-3"	N/A	30'-6"	2 @ 20'-0"	1 @ 5'-7"	45'-7"	2 @ 29'-7"	2 @ 5'-7"	70'-4"
6	4	7	2 @ 15'-0"	N/A	30'-0"	2 @ 19'-8"	1 @ 5'-7"	44'-11"	2 @ 29'-1"	2 @ 5'-7"	69'-4"
6	5	8	2 @ 18'-5"	N/A	36'-10"	2 @ 24'-1"	2 @ 5'-7"	59'-4"	2 @ 35'-8"	3 @ 5'-7"	88'-1"
6	5	7	2 @ 18'-2"	N/A	36'-4"	2 @ 23'-9"	2 @ 5'-7"	58'-8"	2 @ 35'-2"	2 @ 5'-7"	81'-6"
6	6	8	2 @ 21'-7"	1 @ 5'-7"	48'-9"	2 @ 28'-3"	2 @ 5'-7"	67'-8"	2 @ 41'-9"	3 @ 5'-7"	100'-3"
6	6	7	2 @ 21'-4"	1 @ 5'-7"	48'-3"	2 @ 27'-11"	2 @ 5'-7"	67'-0"	2 @ 41'-3"	3 @ 5'-7"	99'-3"
7	2	8	2 @ 8'-11"	N/A	17'-10"	2 @ 11'-9"	N/A	23'-6"	2 @ 17'-5"	N/A	34'-10"
7	3	8	2 @ 12'-1"	N/A	24'-2"	2 @ 15'-10"	N/A	31'-8"	2 @ 23'-6"	2 @ 6'-7"	60'-2"
7	4	8	2 @ 15'-3"	N/A	30'-6"	2 @ 20'-0"	2 @ 6'-7"	53'-2"	2 @ 29'-7"	3 @ 6'-7"	78'-11"
7	5	8	2 @ 18'-5"	N/A	36'-10"	2 @ 24'-1"	3 @ 6'-7"	67'-11"	2 @ 35'-8"	4 @ 6'-7"	97'-8"
7	6	8	2 @ 21'-7"	2 @ 6'-7"	56'-4"	2 @ 28'-3"	3 @ 6'-7"	76'-3"	2 @ 41'-9"	5 @ 6'-7"	116'-5"
7	7	8	2 @ 24'-9"	3 @ 6'-7"	69'-3"	2 @ 32'-4"	4 @ 6'-7"	91'-0"	2 @ 47'-10"	6 @ 6'-7"	135'-2"
8	2	8	3 @ 8'-11"	N/A	26'-9"	3 @ 11'-9"	N/A	35'-3"	3 @ 17'-5"	N/A	52'-3"
8	3	8	3 @ 12'-1"	N/A	36'-3"	3 @ 15'-10"	N/A	47'-6"	3 @ 23'-6"	2 @ 7'-7"	85'-8"
8	4	8	3 @ 15'-3"	N/A	45'-9"	3 @ 20'-0"	2 @ 7'-7"	75'-2"	3 @ 29'-7"	3 @ 7'-7"	111'-6"
8	5	8	3 @ 18'-5"	N/A	55'-3"	3 @ 24'-1"	3 @ 7'-7"	95'-0"	3 @ 35'-8"	4 @ 7'-7"	137'-4"
8	6	8	3 @ 21'-7"	2 @ 7'-7"	79'-11"	3 @ 28'-3"	3 @ 7'-7"	107'-6"	3 @ 41'-9"	5 @ 7'-7"	163'-2"
8	7	8	3 @ 24'-9"	3 @ 7'-7"	97'-0"	3 @ 32'-4"	4 @ 7'-7"	127'-4"	3 @ 47'-10"	6 @ 7'-7"	189'-0"
8	8	8	3 @ 27'-11"	3 @ 7'-7"	106'-6"	3 @ 36'-6"	4 @ 7'-7"	139'-10"	3 @ 53'-11"	6 @ 7'-7"	207'-3"
9	2	9	3 @ 9'-3"	N/A	27'-9"	3 @ 12'-1"	N/A	36'-3"	3 @ 17'-11"	N/A	53'-9"
9	3	9	3 @ 12'-4"	N/A	37'-0"	3 @ 16'-2"	N/A	48'-6"	3 @ 24'-0"	3 @ 8'-7"	97'-9"
9	4	9	3 @ 15'-6"	N/A	46'-6"	3 @ 20'-4"	2 @ 8'-7"	78'-2"	3 @ 30'-1"	3 @ 8'-7"	116'-0"
9	5	9	3 @ 18'-8"	N/A	56'-0"	3 @ 24'-5"	3 @ 8'-7"	99'-0"	3 @ 36'-2"	4 @ 8'-7"	142'-10"
9	6	9	3 @ 21'-10"	2 @ 8'-7"	82'-8"	3 @ 28'-7"	3 @ 8'-7"	111'-6"	3 @ 42'-3"	5 @ 8'-7"	169'-8"
9	7	9	3 @ 25'-0"	3 @ 8'-7"	100'-9"	3 @ 32'-8"	4 @ 8'-7"	132'-4"	3 @ 48'-4"	6 @ 8'-7"	196'-6"
9	8	9	3 @ 28'-2"	3 @ 8'-7"	110'-3"	3 @ 36'-10"	4 @ 8'-7"	144'-10"	3 @ 54'-5"	6 @ 8'-7"	214'-9"
9	9	9	3 @ 31'-4"	3 @ 8'-7"	119'-9"	3 @ 40'-11"	5 @ 8'-7"	165'-8"	3 @ 60'-6"	7 @ 8'-7"	241'-7"
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10	5	10	3 @ 19'-0"	N/A	57'-0"	3 @ 24'-9"	3 @ 9'-7"	103'-0"	3 @ 36'-8"	4 @ 9'-7"	148'-4"
10	6	10	3 @ 22'-1"	2 @ 9'-7"	85'-5"	3 @ 28'-11"	3 @ 9'-7"	115'-6"	3 @ 42'-9"	5 @ 9'-7"	176'-2"
10	7	10	3 @ 25'-3"	3 @ 9'-7"	104'-6"	3 @ 33'-0"	4 @ 9'-7"	137'-4"	3 @ 48'-10"	6 @ 9'-7"	204'-0"
10	8	10	3 @ 28'-5"	3 @ 9'-7"	114'-0"	3 @ 37'-2"	4 @ 9'-7"	149'-10"	3 @ 54'-11"	6 @ 9'-7"	222'-3"
10	9	10	3 @ 31'-7"	4 @ 9'-7"	133'-1"	3 @ 41'-3"	5 @ 9'-7"	171'-8"	3 @ 61'-0"	7 @ 9'-7"	250'-1"
10	10	10	3 @ 34'-9"	4 @ 9'-7"	142'-7"	3 @ 45'-5"	5 @ 9'-7"	184'-2"	3 @ 67'-1"	8 @ 9'-7"	277'-11"
11	2	11	4 @ 9'-9"	N/A	39'-0"	3 @ 12'-9"	N/A	51'-0"	4 @ 18'-11"	N/A	75'-8"
11	3	11	4 @ 12'-11"	N/A	51'-8"	3 @ 16'-11"	N/A	67'-8"	4 @ 25'-0"	3 @ 10'-7"	131'-9"
11	4	11	4 @ 16'-1"	N/A	64'-4"	4 @ 21'-0"	2 @ 10'-7"	105'-2"	4 @ 31'-1"	3 @ 10'-7"	156'-1"
11	6	11	4 @ 22'-5"	2 @ 10'-7"	110'-10"	4 @ 29'-3"	3 @ 10'-7"	148'-9"	4 @ 43'-3"	5 @ 10'-7"	225'-11"
11	8	11	4 @ 28'-9"	3 @ 10'-7"	146'-9"	4 @ 37'-6"	4 @ 10'-7"	192'-4"	4 @ 55'-5"	6 @ 10'-7"	285'-2"
11	10	11	4 @ 35'-0"	4 @ 10'-7"	182'-4"	4 @ 45'-9"	5 @ 10'-7"	235'-11"	4 @ 67'-7"	8 @ 10'-7"	355'-0"
11	11	11	4 @ 38'-2"	4 @ 10'-7"	195'-0"	4 @ 49'-10"	6 @ 10'-7"	262'-10"	4 @ 73'-8"	9 @ 10'-7"	389'-11"
12	2	12	4 @ 10'-0"	N/A	40'-0"	4 @ 13'-1"	N/A	52'-4"	4 @ 19'-5"	N/A	77'-8"
12	3	12	4 @ 13'-2"	N/A	52'-8"	4 @ 17'-3"	N/A	69'-0"	4 @ 25'-6"	3 @ 11'-7"	136'-9"
12	4	12	4 @ 16'-4"	N/A	65'-4"	4 @ 21'-4"	2 @ 11'-7"	108'-6"	4 @ 31'-7"	4 @ 11'-7"	172'-8"
12	6	12	4 @ 22'-8"	2 @ 11'-7"	113'-10"	4 @ 29'-7"	3 @ 11'-7"	153'-1"	4 @ 43'-9"	5 @ 11'-7"	232'-11"
12	8	12	4 @ 29'-0"	3 @ 11'-7"	150'-9"	4 @ 37'-10"	4 @ 11'-7"	197'-8"	4 @ 55'-11"	7 @ 11'-7"	304'-9"
12	10	12	4 @ 35'-4"	4 @ 11'-7"	187'-8"	4 @ 46'-1"	5 @ 11'-7"	242'-3"	4 @ 68'-1"	8 @ 11'-7"	365'-0"
12	12	12	4 @ 41'-8"	5 @ 11'-7"	224'-7"	4 @ 54'-4"	6 @ 11'-7"	286'-10"	4 @ 80'-3"	10 @ 11'-7"	436'-10"

(Sheet 2 of 2)

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TPGBC-ZS

5-15-2023

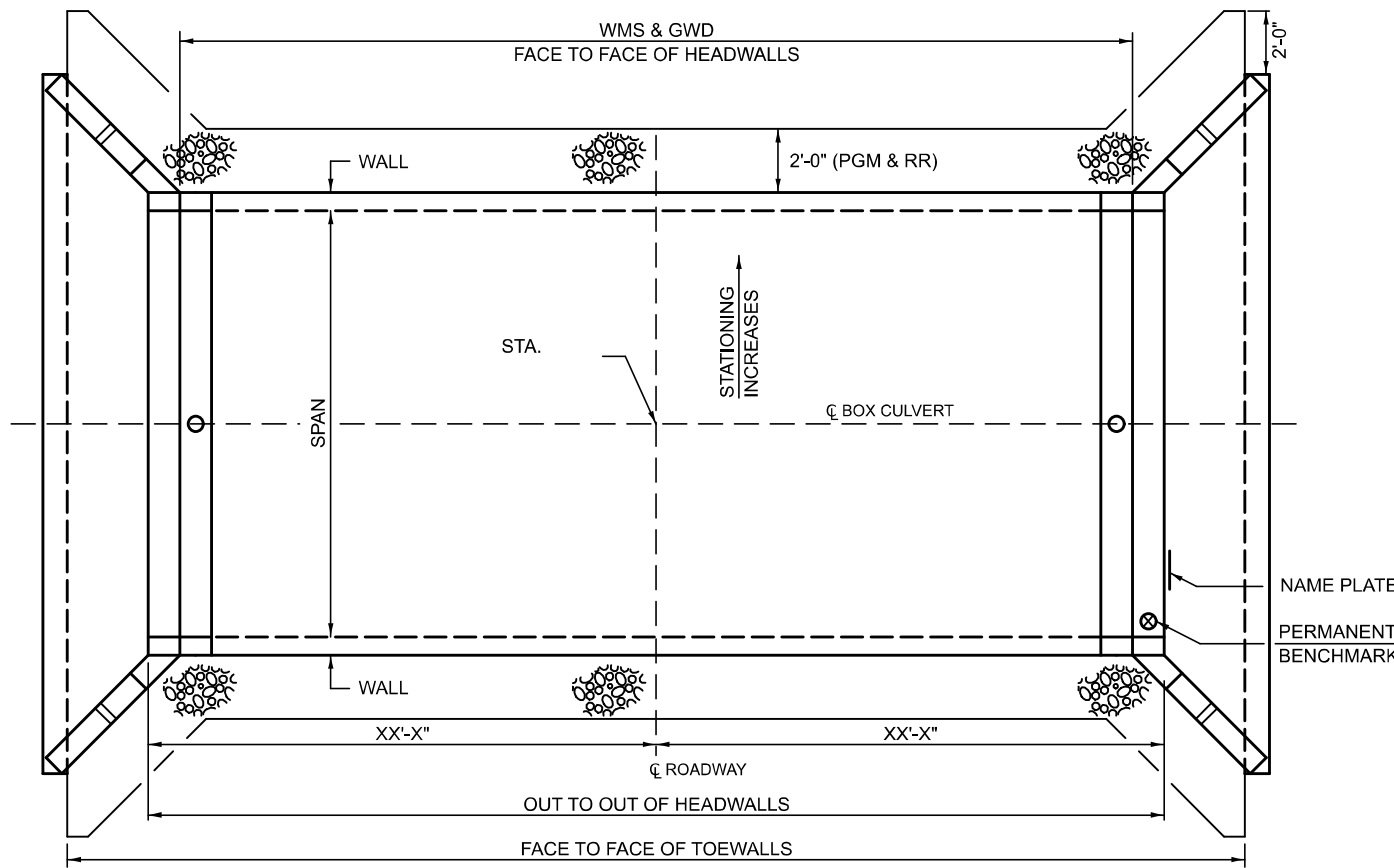
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TRANSVERSABLE PIPE GRATE FOR BOX CULVERTS
STRUCTURE NO. 010-8179**

SCALE: SHEET 5 OF 6 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	30
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				



PLAN

SINGLE PCBC SHOWN; MULTIPLE PCBC SIMILAR

****STONE RIPRAP, CLASS A1 (IF REQUIRED)**

STONE RIPRAP, CLASS A1 SHALL BE USED TO ADDRESS UNSTABLE SOIL CONDITIONS AS DETERMINED BY THE GEOTECHNICAL ENGINEER.

THE WORK SHALL BE PERFORMED PER APPLICABLE PORTIONS OF SECTION 281.

THIS WORK SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER TON FOR STONE RIPRAP, CLASS A1.

THE EXCAVATION AND DISPOSAL OF THE UNSUITABLE MATERIAL SHALL NOT BE MEASURED FOR PAYMENT, COST INCLUDED WITH STONE RIPRAP, CLASS A1.

MEMBRANE WATERPROOFING SYSTEM FOR BURIED STRUCTURES (MWS)

SEE SPECIAL PROVISIONS

GEOCOMPOSITE WALL DRAIN (GWD)

PER SECTION 591, EXCEPT CONCRETE NAILS NOT USED WHERE MWS & GWD OVERLAP

FILL HEIGHTS <= 3': MWS & GWD REQ.
 FILL HEIGHTS > 3': MWS & GWD NOT REQ.
 SEE ABD 19.2.

POROUS GRANULAR EMBANKMENT (PGE)

POROUS GRANULAR EMBANKMENT SHALL EXTEND 2 FT. BEYOND THE AGGREGATE SHOULDER.

THE WORK SHALL BE PERFORMED PER APPLICABLE PORTIONS OF SECTIONS 207 AND 540.

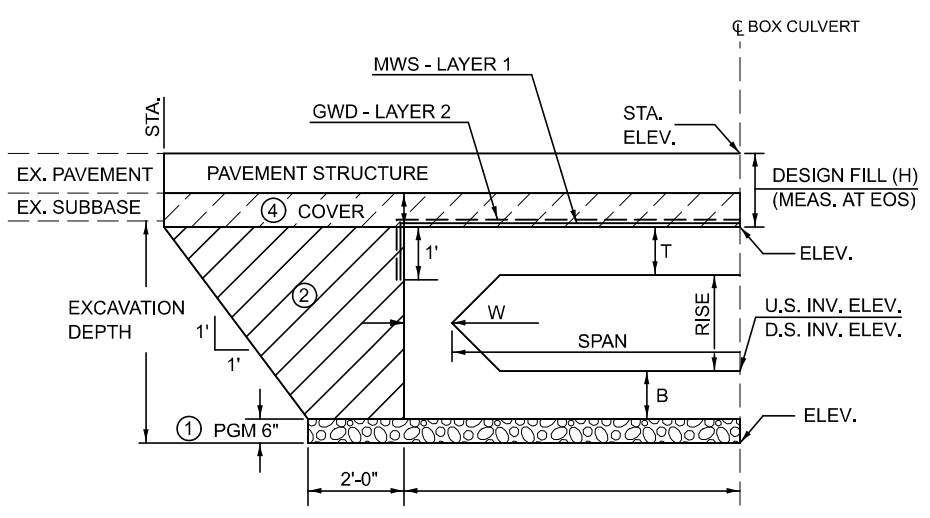
THE COARSE AGGRAGATE QUALITY SHALL BE CLASS D OR BETTER AND THE GRADATION SHALL BE CA-6 OR CA-10.

POROUS GRANULAR EMBANKMENT WILL BE MEASURED FOR PAYMENT IN CU. YDS. IN PLACE AS SHOWN. IF THE CONTACTOR CHOOSES TO EXCAVATE BEYOND THE LIMITS SHOWN. ADDITIONAL QUANTITIES OF POROUS GRANULAR EMBANKMENT WILL BE AT THEIR EXPENSE.

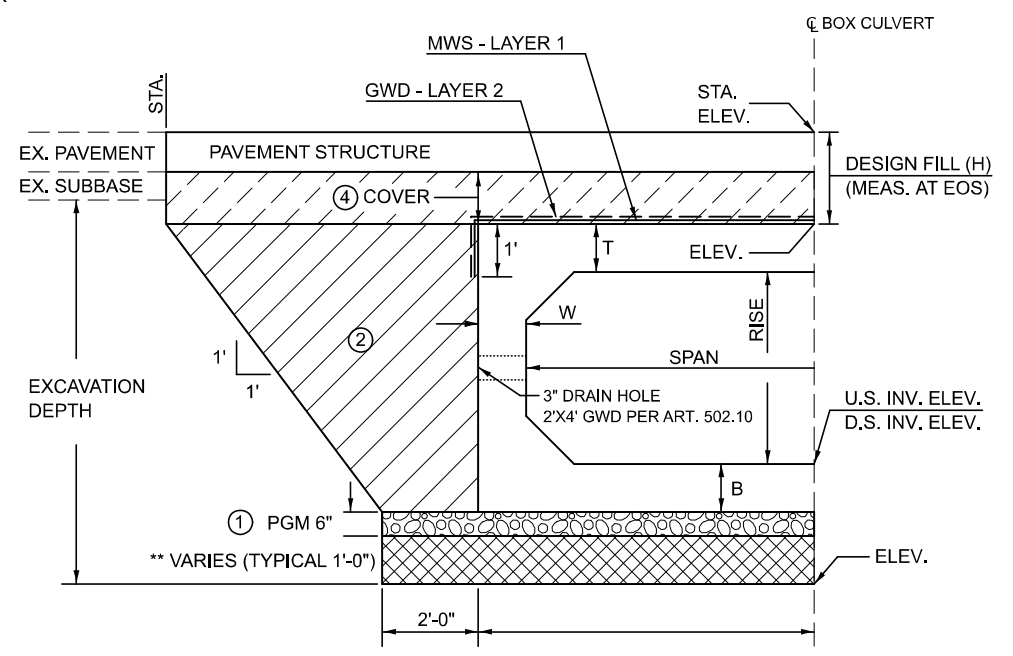
THE AREA TO BE EXCAVATED FOR THE PROPOSED BOX CULVERT AND END SECTIONS SHALL NOT BE MEASURED FOR PAYMENT. COST INCLUDED WITH PRECAST CONCRETE BOX CULVERTS.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
POROUS GRANULAR EMBANKMENT	CU YD	38
STONE RIPRAP, CLASS A1	TON	33



HALF SECTION SHOWN; (EXCAVATION DEPTH <= 5'-0")



HALF SECTION SHOWN; SEE EXCAVATION DEPTHS TABLE

EXCAVATION DEPTHS	* SLOPES
5'-0" < EXCAVATION DEPTH <= 8'-0"	3/4' : 1'
8'-0" < EXCAVATION DEPTH <= 12'-0"	1' : 1'
12'-0" < EXCAVATION DEPTH <= 20'-0"	1' : 1'

*SLOPED EXCAVATION IN TYPE A SOIL SHOWN PER APPENDIX B OF OSHA CFR LABOR 29 PART 1926 SUBPART P - EXCAVATIONS.

OPTIONAL CONFIGURATIONS MAY BE CONSTRUCTED IN ACCORDANCE WITH OSHA REQUIREMENTS CONTAINED IN THE CODE OF FEDERAL REGULATIONS LABOR 29 PART 1926 SUBPART P - EXCAVATIONS.

SEE ARTICLE 107.28 FOR CONTACTOR SAFETY RESPONSIBILITY.

1 POROUS GRANULAR MATERIAL (PGM) (CA-7) (Cost included with PCBC per Article 540.06)	2 POROUS GRANULAR EMBANKMENT (PGE) SEE ABD 21.1.
3 STONE RIPRAP, CLASS A1	4 MIN. 6" COVER UNDER FLEXIBLE PAVEMENT. FILL HEIGHTS <= 3' PGE REQ. FILL HEIGHTS > 3' PGE NOT REQ. NO COVER REQUIRED UNDER RIGID PAVEMENT. WHEN RIGID PAVEMENT PLACED ON TOP OF PCBC THE MWS AND GWD ARE NOT REQ. SEE ABD 21.1.

REVISED PER ALL BRIDGE DESIGNERS MEMORANDUMS (ABD) 19.2 AND 21.1

Note: All dimensions are in INCHES (millimeters) unless otherwise shown.

DISTRICT 5 DETAIL NO. 20700220

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	DRAWN - TJB	REVISED - TJB
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PLOT DATE = 1/30/2024	DATE - 10/17/2016	REVISED - 6/1/2022

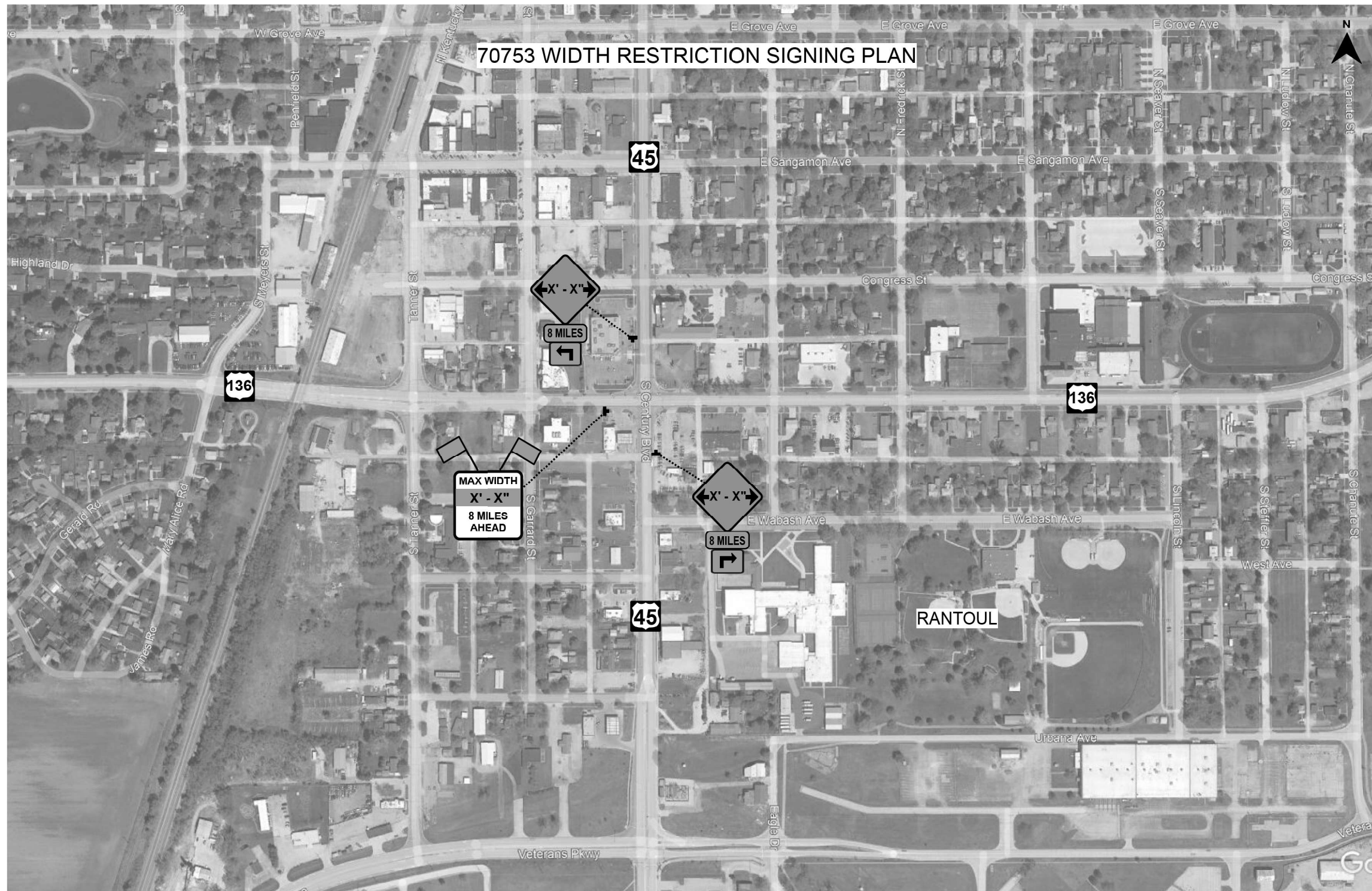
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**POROUS GRANULAR EMBANKMENT
S.N. 010-8179; CULVERT NO. 2**

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	31
CONTRACT NO. 70753				

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70753 WIDTH RESTRICTION SIGNING PLAN

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PLOT DATE = 1/31/2024	DATE -	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

FAP 709 WIDTH RESTRICTION SIGNING PLAN
 RANTOUL

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	32
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

SCALE: SHEET 1 OF 4 SHEETS STA. TO STA.



70753 WIDTH RESTRICTION SIGNING PLAN



GIFFORD

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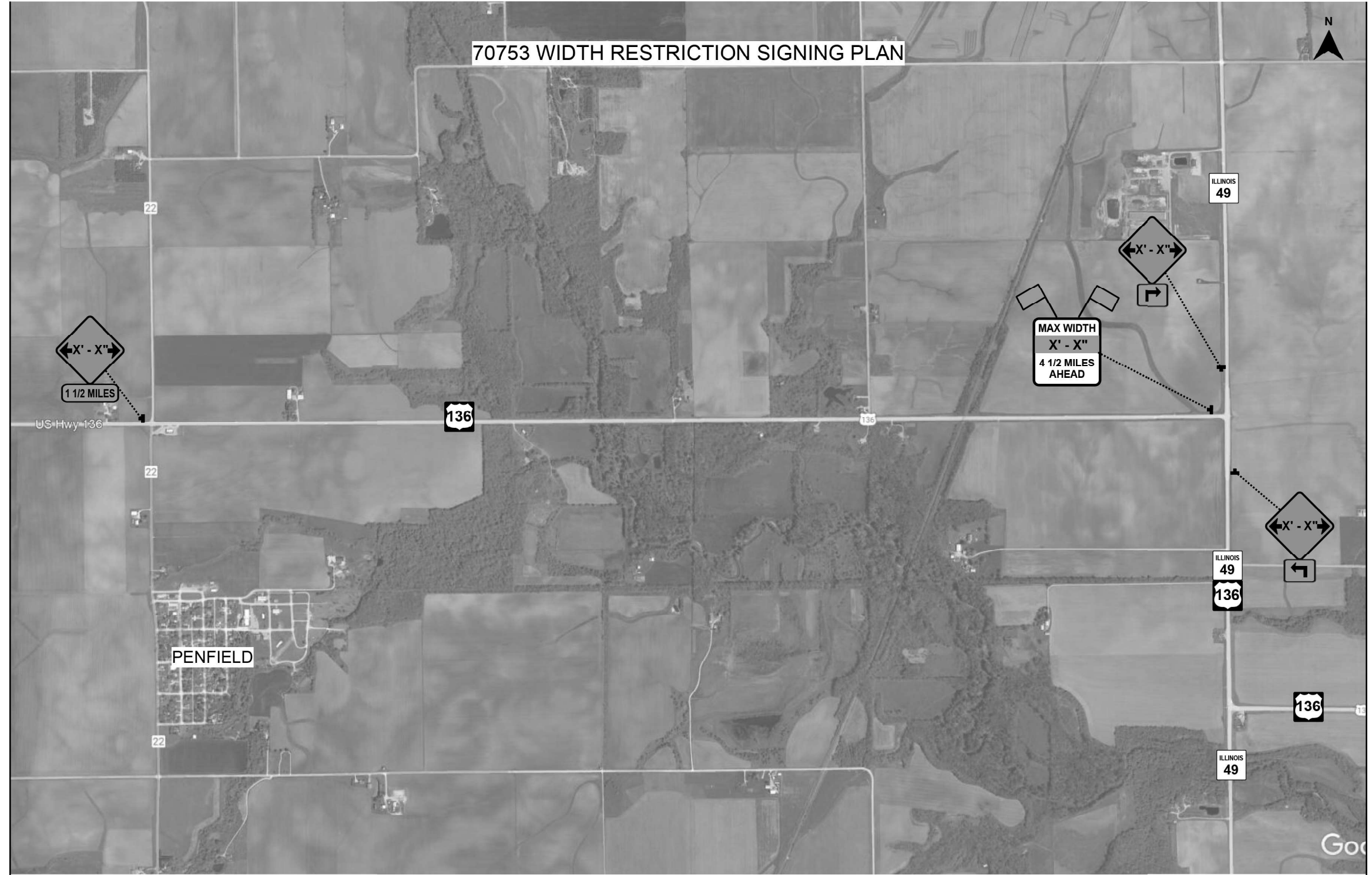
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PLOT DATE = 1/31/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP 709 WIDTH RESTRICTION SIGNING PLAN
GIFFORD

SCALE: SHEET 2 OF 4 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	33
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



70753 WIDTH RESTRICTION SIGNING PLAN

PENFIELD

US Hwy 136

MAX WIDTH
X' - X''
4 1/2 MILES
AHEAD

1 1/2 MILES

136

ILLINOIS
49

ILLINOIS
49
136

136

ILLINOIS
49

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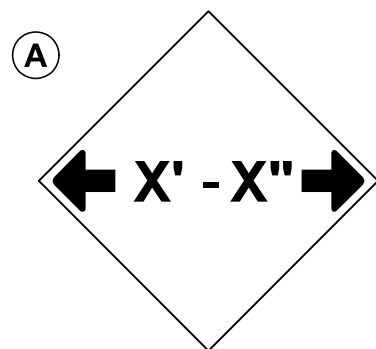
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PLOT DATE = 1/30/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP 709 WIDTH RESTRICTION SIGNING PLAN
PENFIELD

SCALE: SHEET 3 OF 4 SHEETS STA. TO STA.

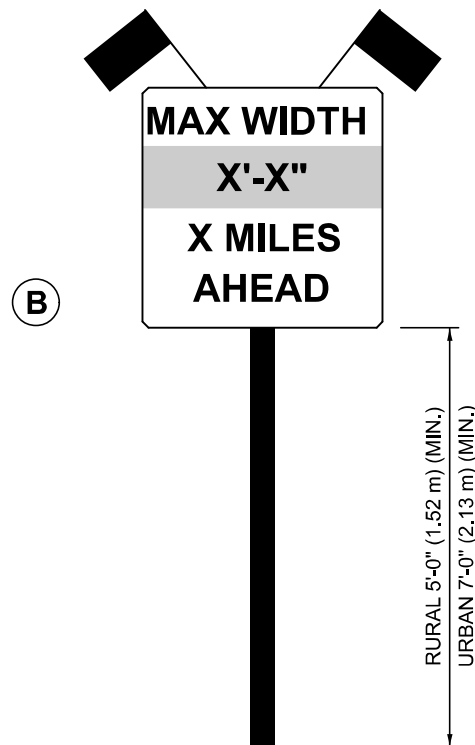
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	34
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



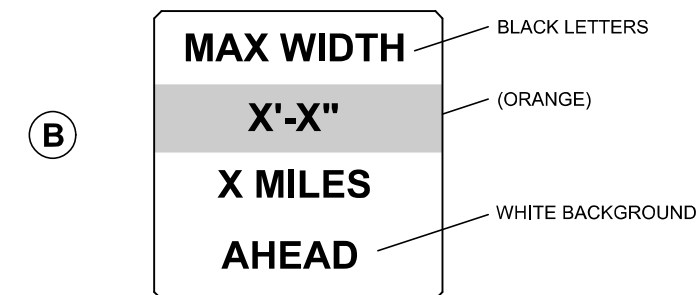
W12-2(O)-48"x48"(1200x1200)

SIGN (A) 2 SIGNS - W12-2(O)-48"x48"(1200x1200) ARE TO BE PLACED AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

SIGN (B) 2 SIGNS - (SIGN PANEL, TYPE II) AS SHOWN ARE TO BE PLACED AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.



SIGN PANEL, TYPE II



**W12-I103(O)-48"x48"(1200x1200)
"D" LETTERS/NUMBERS**

GENERAL NOTES

1. ALL TRAFFIC CONTROL DEVICES SHALL BE FURNISHED, ERECTED AND MAINTAINED BY THE CONTRACTOR.
2. ALL (B) SIGNS SHALL HAVE FLAGS INSTALLED UNLESS OTHERWISE DIRECTED.
3. LOCATIONS OF TRAFFIC CONTROL DEVICES MAY BE ADJUSTED BY THE ENGINEER.
4. ALL TRAFFIC CONTROL SHOWN ON THIS SHEET SHALL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR WIDTH RESTRICTION SIGNING.
5. ALL SIGNS SHALL BE POST MOUNTED UNLESS OTHERWISE DIRECTED.
6. ALL SIGNS SHOWN ORANGE (O) SHALL BE FLUORESCENT ORANGE.
7. ALL SIGNS SHOWN SHALL CONSIST OF THE CURRENT RETROREFLECTIVE SHEETING REQUIREMENTS AS OUTLINED IN SECTION 1106.01 OF THE STANDARD SPECIFICATIONS BOOK.

Note: All dimensions are in INCHES (millimeters) unless otherwise shown.

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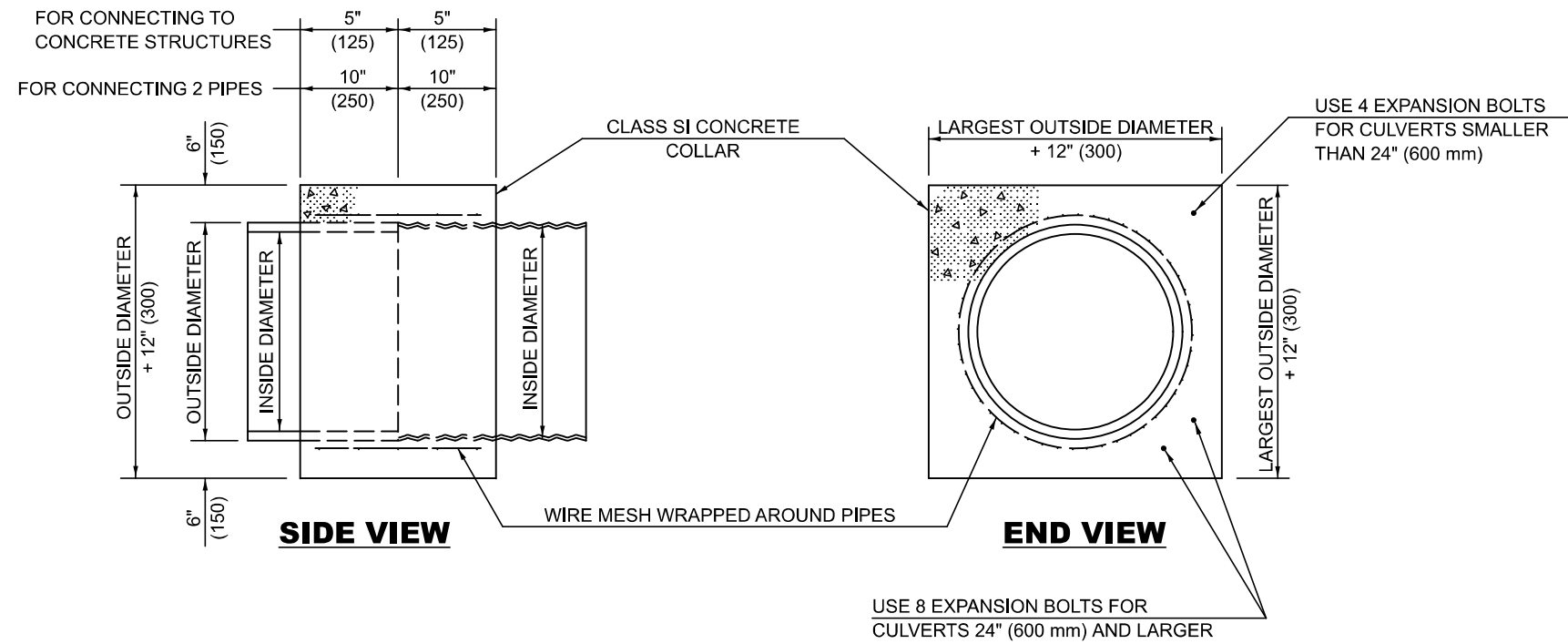
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

WIDTH RESTRICTION SIGNING

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

DISTRICT 5 DETAIL NO. X7200201

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	34A
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				



GENERAL NOTES

1. CLASS SI CONCRETE SHALL BE USED THROUGHOUT.
2. WHEN CONCRETE COLLARS ARE USED TO CONNECT PIPES OF DIFFERENT OUTSIDE DIAMETERS, THE CONCRETE COLLAR SHALL BE FORMED USING THE LARGEST OUTSIDE DIAMETER (SEE END VIEW).
3. THE WIRE MESH SHALL WEIGH NOT LESS THAN 54#/100 SQ. FT. (2.63 kg/m²).
4. WHEN CONCRETE COLLARS ARE CONSTRUCTED ADJACENT TO AN EXISTING CONCRETE STRUCTURE (HEADWALLS, ETC.) EXPANSION BOLTS, SHALL BE USED AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE, EACH, FOR EXPANSION BOLTS OF THE SIZE SPECIFIED IN THE PLANS.
5. CONCRETE COLLARS WILL BE PAID FOR AT THE CONTRACT UNIT PRICE, PER CUBIC YARD (CUBIC METER), FOR CONCRETE COLLARS INCLUDING ALL MATERIAL AND LABOR SPECIFIED TO COMPLETE THE WORK IN PLACE.

QUANTITIES FOR CONCRETE PIPES	
INSIDE DIAMETER OF PIPE	ESTIMATED CLASS SI CONCRETE REQUIRED
INCH (mm)	20" (500 mm) WIDTH CU.YD. (m ³)
4" (100)	0.14 (0.11)
6" (150)	0.16 (0.12)
8" (200)	0.19 (0.14)
10" (250)	0.22 (0.17)
12" (300)	0.25 (0.19)
15" (375)	0.30 (0.23)
18" (450)	0.35 (0.27)
24" (600)	0.45 (0.35)
30" (750)	0.57 (0.43)
36" (900)	0.69 (0.53)
42" (1050)	0.83 (0.63)
48" (1200)	0.97 (0.74)
54" (1350)	1.12 (0.86)
60" (1500)	1.28 (0.98)

QUANTITIES FOR METAL PIPES	
INSIDE DIAMETER OF PIPE	ESTIMATED CLASS SI CONCRETE REQUIRED
INCH (mm)	20" (500 mm) WIDTH CU.YD. (m ³)
4" (100)	0.12 (0.09)
6" (150)	0.14 (0.11)
8" (200)	0.16 (0.12)
10" (250)	0.19 (0.14)
12" (300)	0.21 (0.16)
15" (375)	0.25 (0.19)
18" (450)	0.29 (0.22)
24" (600)	0.38 (0.29)
30" (750)	0.47 (0.36)
36" (900)	0.59 (0.45)
42" (1050)	0.69 (0.53)
48" (1200)	0.81 (0.62)
54" (1350)	0.93 (0.71)
60" (1500)	1.05 (0.81)

Note: All dimensions are in INCHES (millimeters) unless otherwise shown.

DISTRICT 5 DETAIL NO. 54248510

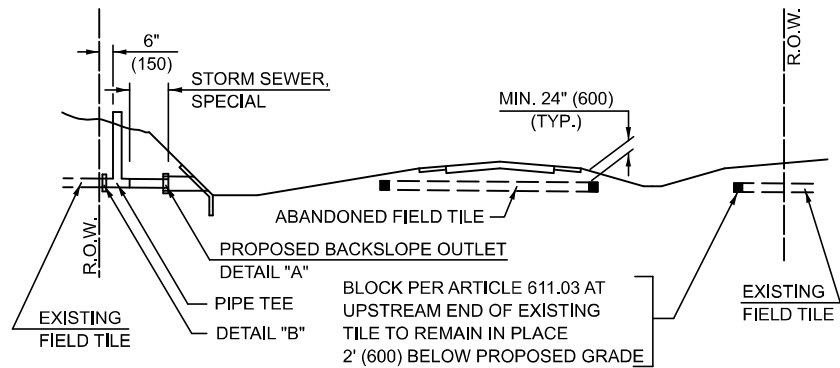
USER NAME = Justin.Cearlock	DESIGNED -	REVISED - 12/06
	DRAWN -	REVISED -
PLOT SCALE = 0.16666833' / in.	CHECKED -	REVISED -
PLOT DATE = 1/30/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONCRETE COLLAR

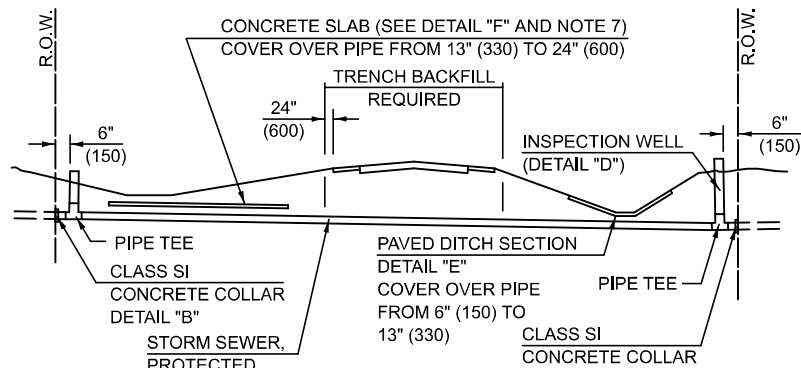
SCALE: SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	35
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				



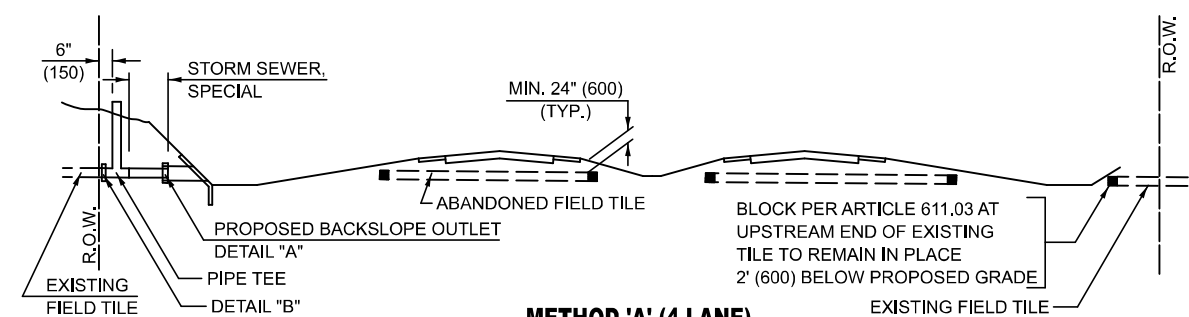
METHOD 'A' (2 LANE)

STORM SEWER FLOW LINE ABOVE PROPOSED DITCH FLOW LINE



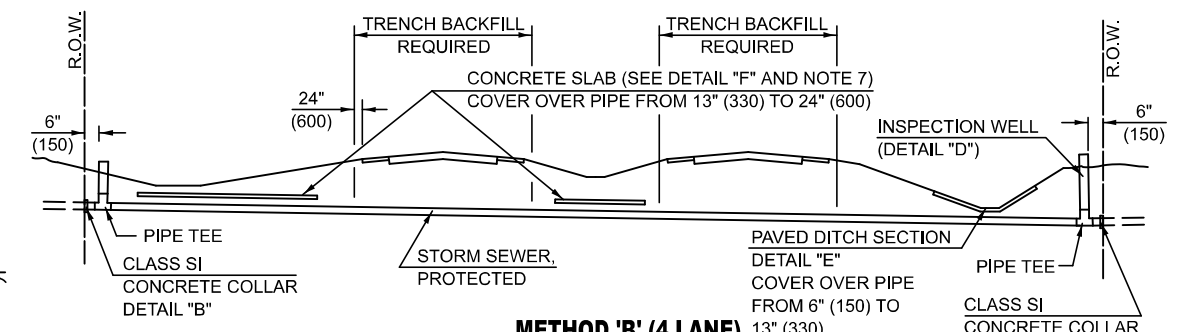
METHOD 'B' (2 LANE)

STORM SEWER LESS THAN 2' (600 mm) BELOW DITCH FLOW LINE AND STORM SEWERS CROSSING UNDER PAVEMENT AND PAVED DITCH



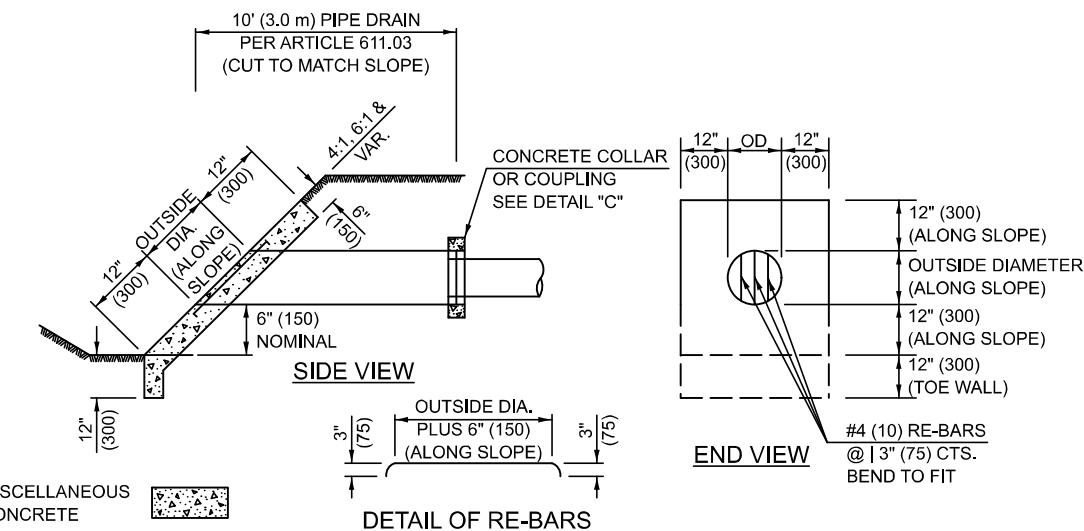
METHOD 'A' (4 LANE)

STORM SEWER FLOW LINE ABOVE PROPOSED DITCH FLOW LINE



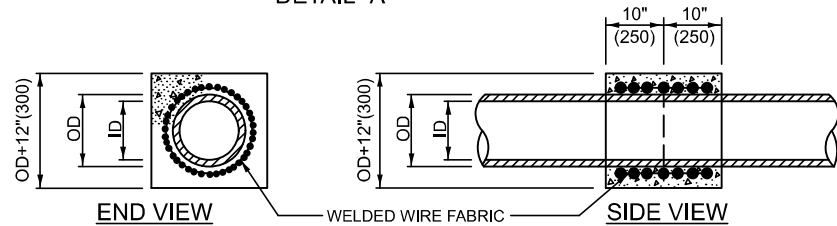
METHOD 'B' (4 LANE)

STORM SEWER LESS THAN 2' (600 mm) BELOW DITCH FLOW LINE AND STORM SEWERS CROSSING UNDER PAVEMENTS AND PAVED DITCHES



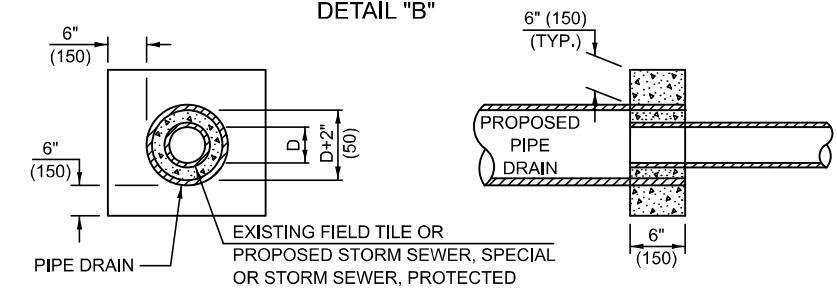
HEADWALL FOR BACKSLOPE OUTLET

DETAIL "A"



CONCRETE COLLAR

DETAIL "B"

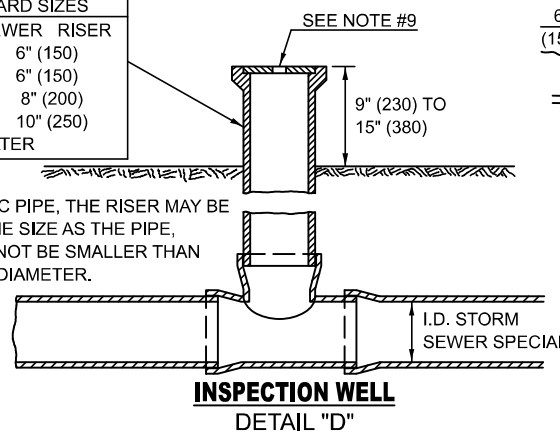


CLASS SI COLLAR

DETAIL "C"

CONCRETE PIPE STANDARD SIZES	
STORM SEWER	RISER
6" (150)	6" (150)
8" (200)	6" (150)
10" (250)	8" (200)
12" (300)	10" (250)
OR GREATER	

FOR PLASTIC PIPE, THE RISER MAY BE OF THE SAME SIZE AS THE PIPE, BUT SHALL NOT BE SMALLER THAN 4" (100 mm) DIAMETER.

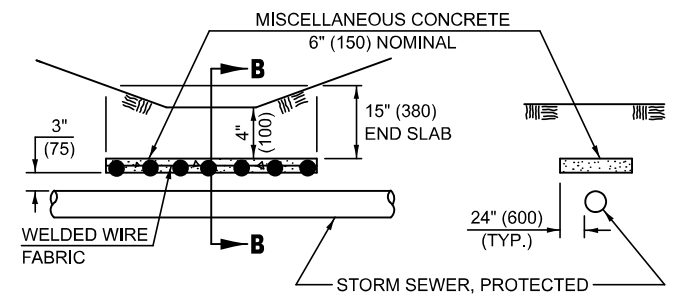


INSPECTION WELL

DETAIL "D"

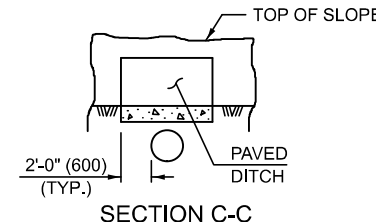
GENERAL NOTES

- EXISTING FIELD TILE ENCOUNTERED BY EXPLORATION TRENCH SHALL BE INSPECTED BY THE ENGINEER FOR UNOBSTRUCTED FLOW WITHIN THE LIMITS OF THE RIGHT-OF-WAY.
- ONLY FIELD TILE THAT DOES NOT HAVE SATISFACTORY FLOW AND OR HAS VISIBLE SIGNS OF DETERIORATION (SINK HOLES, ETC.) SHALL BE REPLACED WITHIN THE LIMITS OF THE RIGHT-OF-WAY IN ACCORDANCE WITH METHOD "B".
- INSPECTION WELLS SHALL BE CONSTRUCTED APPROXIMATELY 6" (150 mm) INSIDE OF BOTH RIGHT-OF-WAY LINES AT ALL FIELD TILE LOCATIONS.
- EXISTING FIELD TILE ABANDONED UNDER EXISTING PAVEMENTS OR PAVED SHOULDERS SHALL BE FILLED WITH FLOWABLE GROUT AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR ACCORDING TO ARTICLE 109.04.
- NON-CIRCULAR FIELD TILE SHALL BE REPLACED WITH STORM SEWER, SPECIAL OF AT LEAST THE SAME CROSS SECTIONAL AREA. ALL EXISTING FIELD TILE SHALL BE REPLACED WITH STORM SEWER OF THE TYPE REQUIRED FOR THE MINIMUM DEPTH OF COVER.
- THE 6" (150 mm) CONCRETE SLAB OR DITCH LINING SHALL BE POURED THE LENGTH OF THE TRENCH AT ALL DITCH FLOW LINE LOCATIONS WITHIN THE RIGHT-OF-WAY WITH LESS THAN 2' (600 mm) OF EARTH COVER. MISCELLANEOUS CONCRETE SHALL BE USED ACCORDING TO SECTION 611.
- ALL MISCELLANEOUS SLABS, APRONS AND DITCH LININGS SHALL BE REINFORCED WITH WELDED WIRE FABRIC AS SHOWN FOR PAVED DITCH IN STANDARD 606401.
- HEADWALL FOR BACKSLOPE OUTLET MAY BE USED FOR PIPE DRAIN DIAMETERS UP TO 10" (250 mm). SPECIAL DESIGNS WILL BE REQUIRED FOR LARGER SIZES.
- THE INSPECTION WELL LID FOR P.C.C. PIPE SHALL BE CONSTRUCTED OF 3/8" (10 mm) CAST IRON AND PROVIDED WITH A 1" (25 mm) DIAMETER HOLE IN CENTER. THE LID FOR THE OTHER PIPE MATERIALS SHALL BE A GRATE ASSEMBLY PREFABRICATED FOR AND COMPATIBLE WITH THE PIPE SYSTEM.



SLAB ELEVATION

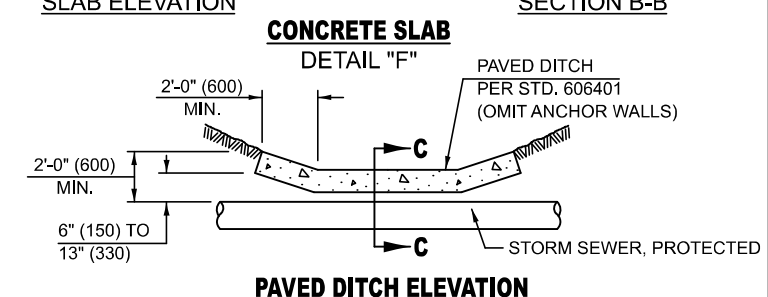
SECTION B-B



SECTION C-C

PAVED DITCH

DETAIL "E"



CONCRETE SLAB

DETAIL "F"

PAVED DITCH ELEVATION

Note: All dimensions are in INCHES (millimeters) unless otherwise shown.

DISTRICT 5 DETAIL NO. 61101011A

USER NAME = Justin.Cearlock	DESIGNED -	REVISED - 11/06
PLOT SCALE = 1/8" = 1'-0"	DRAWN -	REVISED -
PLOT DATE = 1/30/2024	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FIELD TILE SYSTEMS (TREATMENT OF EXISTING)

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

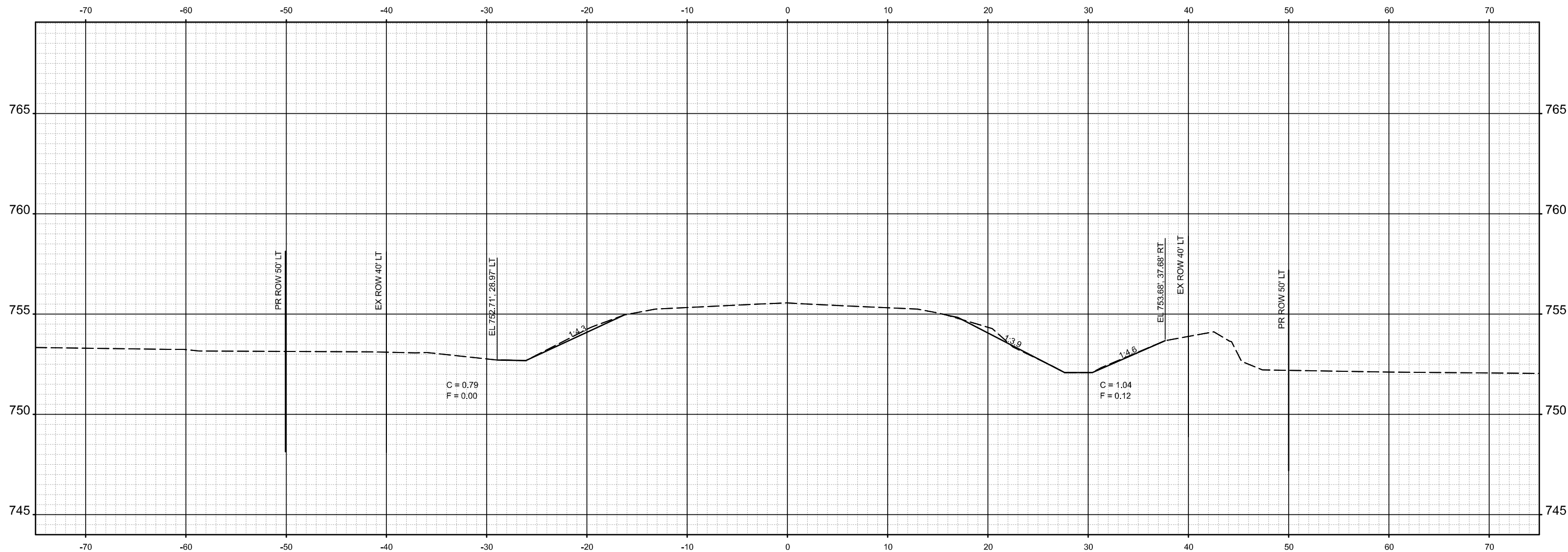
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	36
CONTRACT NO. 70753				

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NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS CHECKED		

MODEL: STR072-460+00.00 [Sheet]
 FILE NAME: c:\p\work\paw\pawson\0900795\0570753-SH-XS-S178.dgn



STA 460+00.00

USER NAME = Bridgette.Pierson	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 0.16666833' / in.	CHECKED -	REVISED -
PLOT DATE = 1/31/2024	DATE -	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

S.N. 010-8178
 CROSS SECTION

SCALE: 1"=5' SHEET 1 OF 3 SHEETS STA. 460+00.00 TO STA. 460+00.00

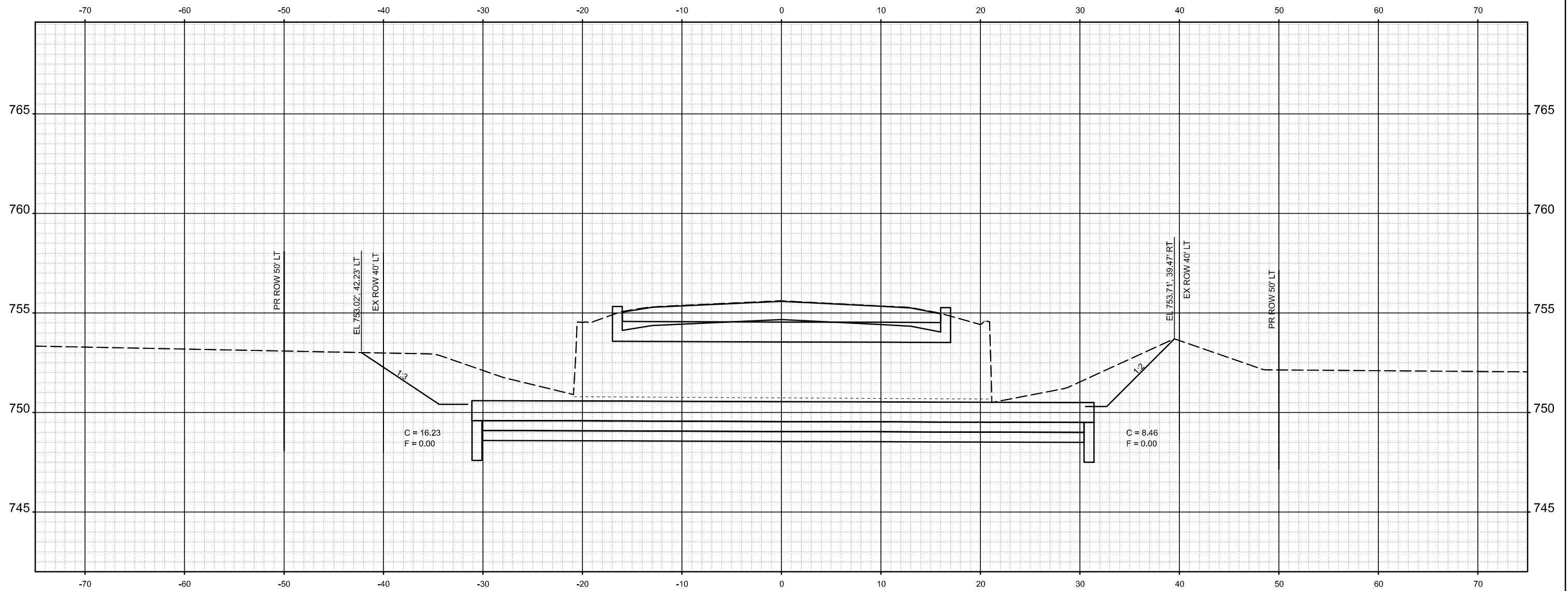
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	37
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
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ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
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STA 460+43.00

USER NAME = Justin.Cearlock	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 0.16666833' / in.	CHECKED -	REVISED -
PLOT DATE = 1/30/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

S.N. 010-8178
CROSS SECTION

SCALE: 1"=5' SHEET 2 OF 3 SHEETS STA. 460+43.00 TO STA. 460+43.00

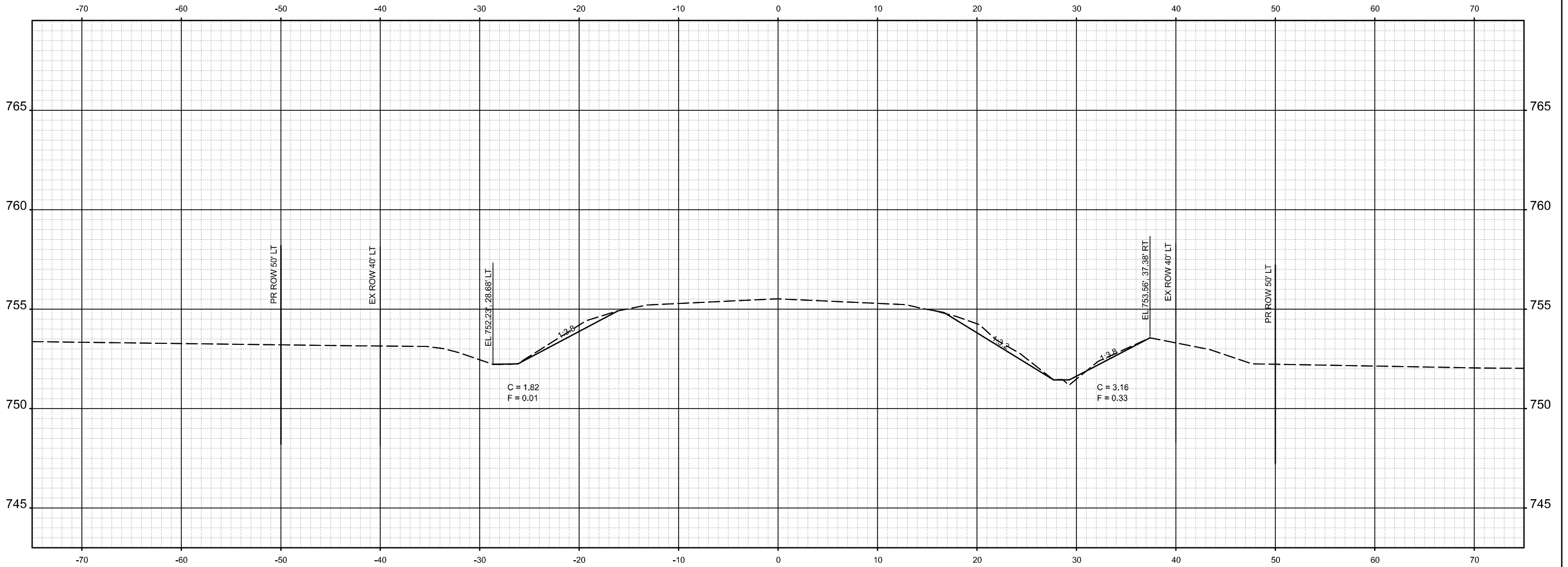
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709	113CR	CHAMPAIGN	42	38
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

BY		DATE	
SURVEYED		PLOTTED	
TEMPLATE		AREAS CHECKED	
NO.			

BY		DATE	
SURVEYED		PLOTTED	
TEMPLATE		AREAS CHECKED	
NO.			

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STA 460+85.00

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	DRAWN -	REVISED -
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PLOT DATE = 1/31/2024	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SCALE: 1"=5' SHEET 3 OF 3 SHEETS STA. 460+85.00 TO STA. 460+85.00

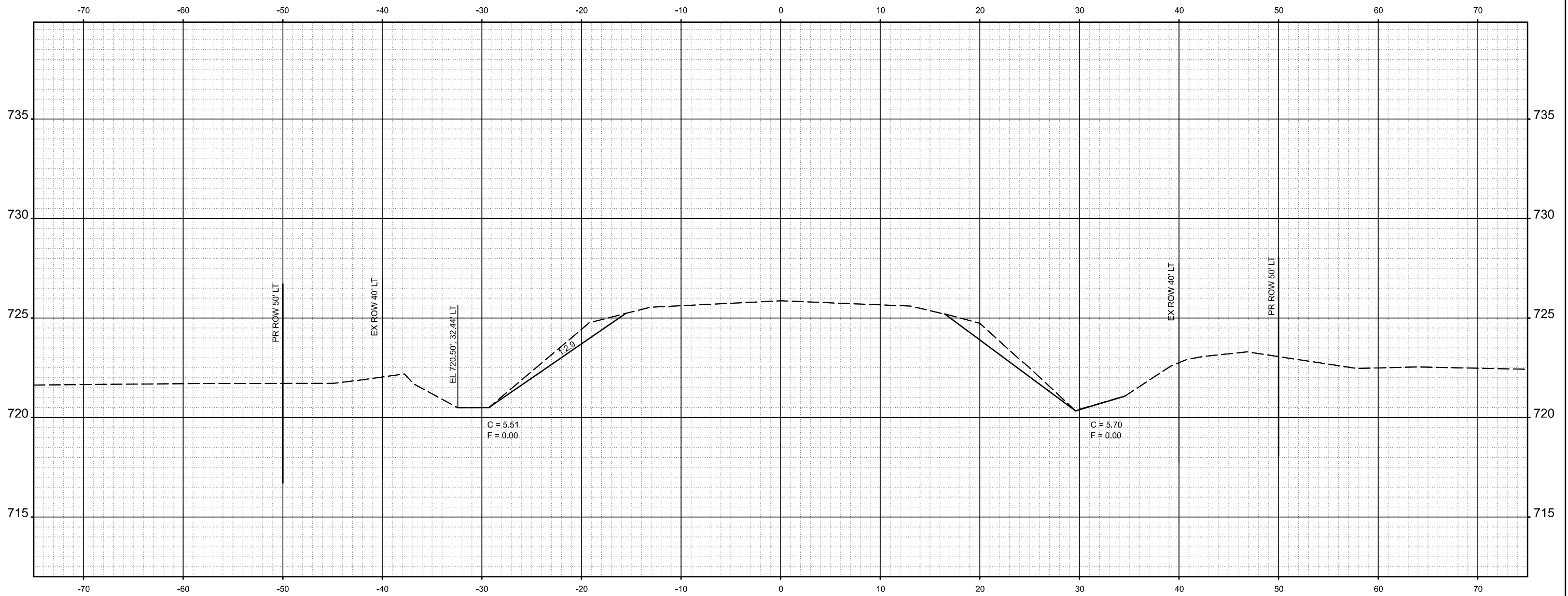
**S.N. 010-8178
CROSS SECTION**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	39
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS CHECKED		
	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS CHECKED		
	AREAS CHECKED		

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STA 545+00.00

USER NAME = Bridgette.Pierson	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 0.16666833' / in.	CHECKED -	REVISED -
PLOT DATE = 1/31/2024	DATE -	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**S.N. 010-8179
 CROSS SECTION**

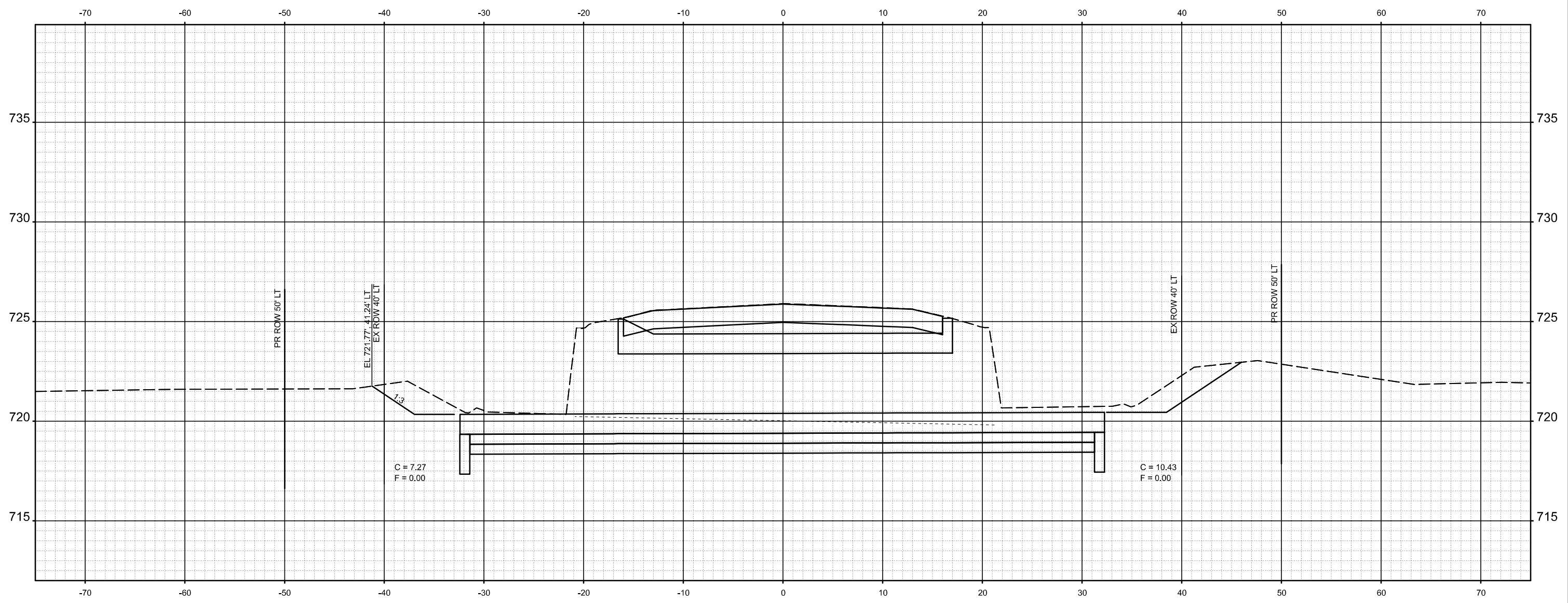
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F.A.P. RTE. 709	SECTION 113CR	COUNTY CHAMPAIGN	TOTAL SHEETS 42	SHEET NO. 40
				CONTRACT NO. 70753
ILLINOIS FED. AID PROJECT				

FINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE
NOTE BOOK NO.			

ORIGINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE
NOTE BOOK NO.			

MODEL: STR073 - 545+41.00 [Sheet]
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STA 545+41.00

USER NAME = Bridgette.Pierson	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 0.16666833' / in.	CHECKED -	REVISED -
PLOT DATE = 1/31/2024	DATE -	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**S.N. 010-8179
 CROSS SECTION**

SCALE: 1"=5' SHEET 2 OF 3 SHEETS STA. 545+41.00 TO STA. 545+41.00

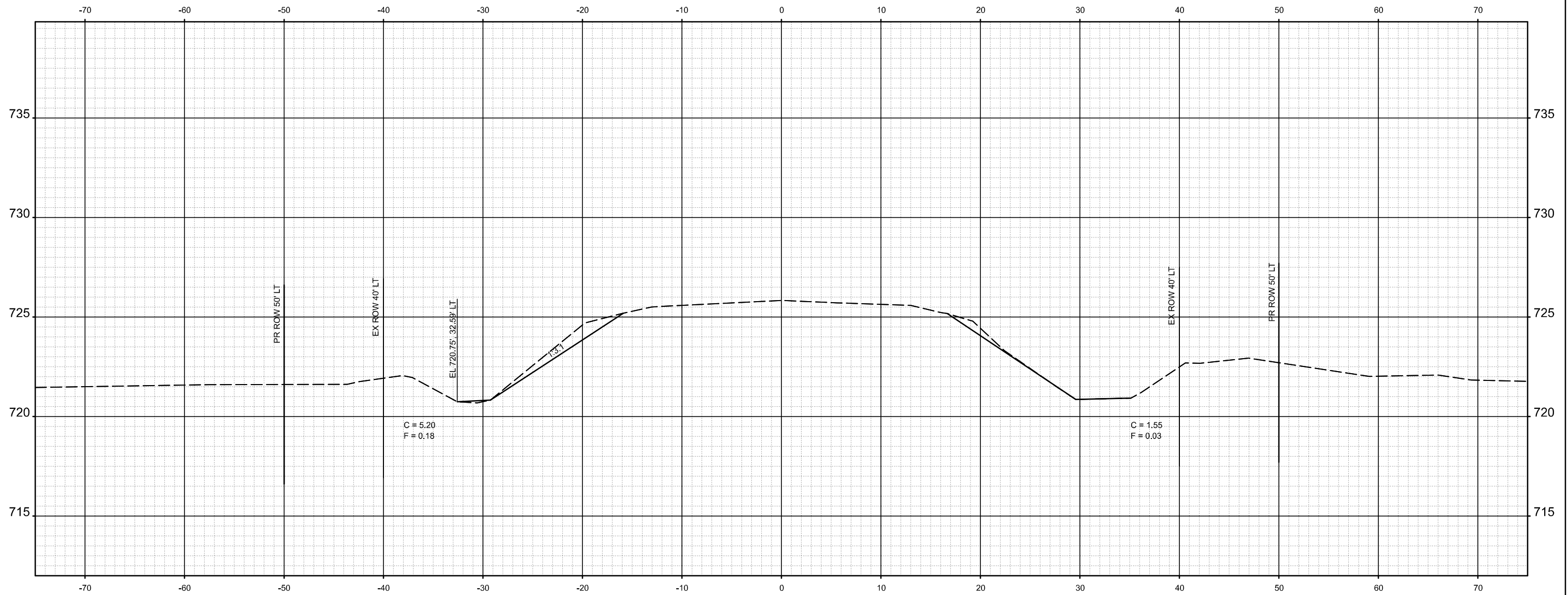
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	41
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
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	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS CHECKED		
	AREAS CHECKED		

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FILE NAME: C:\p\work\road\sonia\090079\0570753-SH-XS-S179.dgn



STA 545+80.00

USER NAME = Justin.Cearlock	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 0.16666833' / in.	CHECKED -	REVISED -
PLOT DATE = 1/30/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

S.N. 010-8179
CROSS SECTION

SCALE: 1"=5' SHEET 3 OF 3 SHEETS STA. 545+80.00 TO STA. 545+80.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
709	113CR	CHAMPAIGN	42	42
CONTRACT NO. 70753				
ILLINOIS FED. AID PROJECT				