

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1780	28CR-1	ST. CLAIR	18	1
		ILLINOIS	CONTRACT NO. 76M49	

FOR INDEX OF SHEETS, SEE SHEET NO. 2

FAS ROUTE 1780 (OLD US 50) ADT

2025 = 3,000 (ESTIMATED)
SU = 13.4% MU = 2.5%

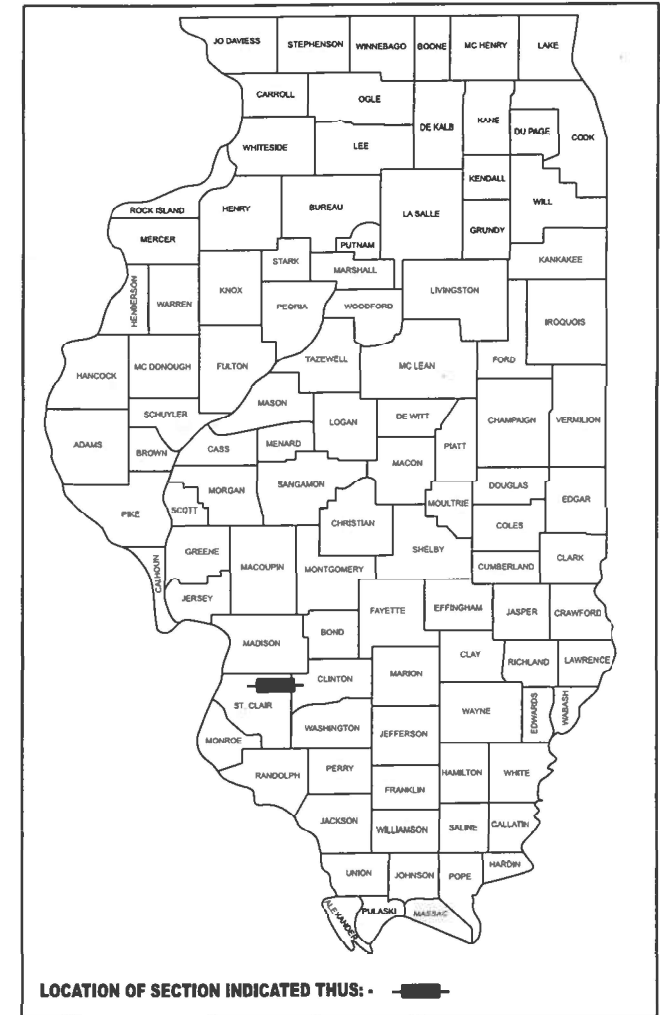
FUNCTIONAL CLASSIFICATION:
MAJOR COLLECTOR

PROPOSED
HIGHWAY PLANS

FAS ROUTE 1780 (OLD US 50)
SECTION 28CR-1
PROJECT STP-WYBF(464)
CULVERT REPLACEMENT
ST. CLAIR COUNTY

C-98-082-19

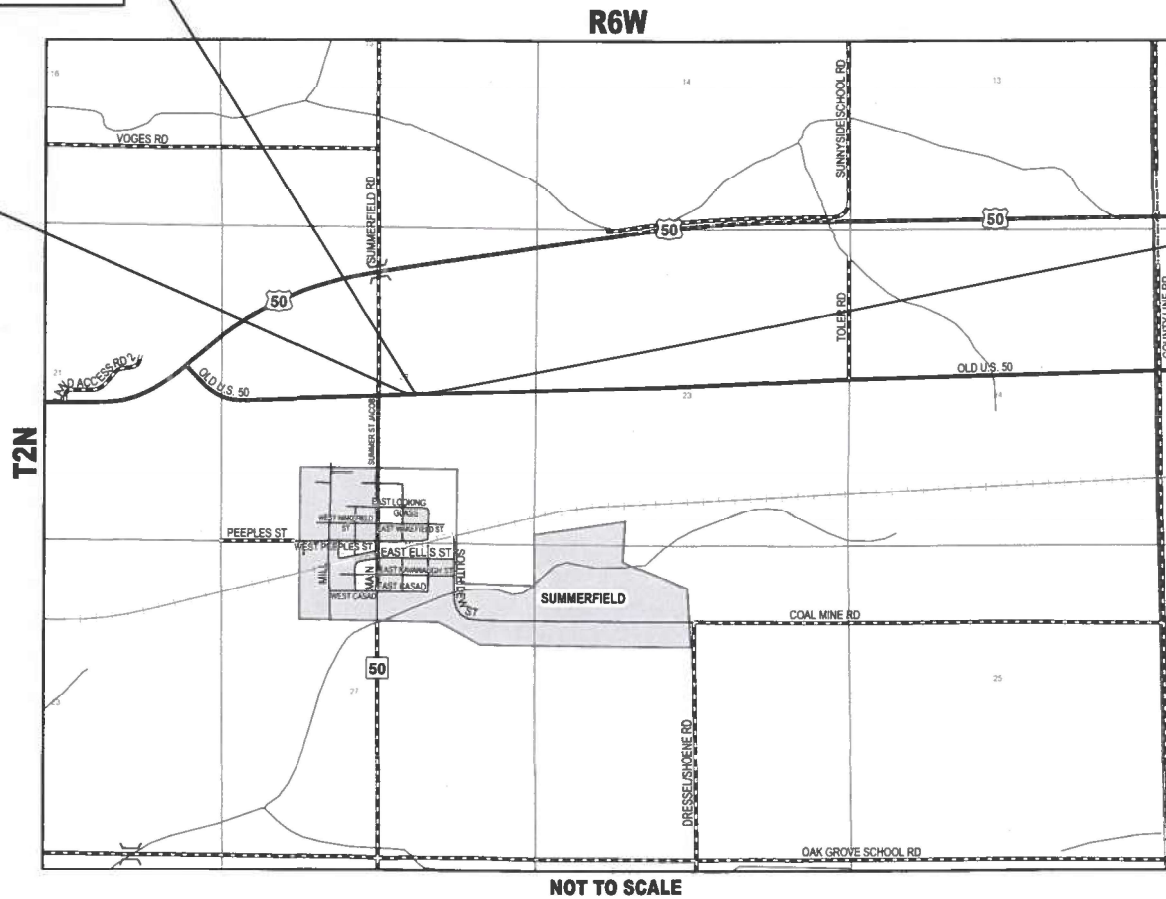
D-98-063-19



EXISTING STRUCTURE S.N. 082-2516	STA. 735+69 OLD US 50 AT W TRIB E BRANCH OF SILVER CREEK LAT: 38.60400' N LONG: 89.75034' W
PROPOSED STRUCTURE S.N. 082-2579	

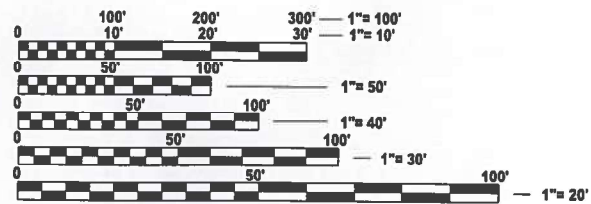
BEGIN PROJECT
OLD US 50
STA. 735+49
LAT: 38.60399' N
LONG: 89.75041' W

END PROJECT
OLD US 50
STA. 735+89
LAT: 38.60400' N
LONG: 89.75027' W



NOT TO SCALE

GROSS LENGTH = 40 FT. = 0.008 MILE
NET LENGTH = 40 FT. = 0.008 MILE



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

PROJECT ENGINEER: BILLIE OWEN
PROJECT MANAGER: BRANDON HUMPHREYS

CONTRACT NO. 76M49

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED *Aug 13, 2024*
Keith Brown
REGIONAL ENGINEER

October 4, 2024
Scott A. Elk
ENGINEER OF DESIGN AND ENVIRONMENT

October 4, 2024
James J. [Signature]
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

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OF THE STATE OF ILLINOIS

INDEX OF SHEETS

1. COVER SHEET
2. INDEX OF SHEETS, HIGHWAY STANDARDS, GENERAL NOTES, & COMMITMENTS
3. SUMMARY OF QUANTITIES
- 4-5. TYPICAL SECTIONS
6. SCHEDULES OF QUANTITIES
7. LOCATION MAP
- 8-9. ALIGNMENTS, TIES, AND BENCHMARKS - OLD US 50
10. OLD US 50 CULVERT REPLACEMENT - EXISTING AND REMOVAL PLAN
11. OLD US 50 CULVERT REPLACEMENT - ROADWAY PLAN AND PROFILE
12. PAVEMENT PATCHING (SPECIAL) DETAIL SHEET
13. EROSION CONTROL PLAN - OLD US 50
14. DETOUR ROUTE MAP - OLD US 50
15. GENERAL PLAN AND ELEVATION - STRUCTURE NO. 082-2579
- 16-17. MULTI-CELL PRECAST CONCRETE BOX CULVERT APRON END SECTION DETAILS - STRUCTURE NO. 082-2579
18. BORING LOGS SHEET

HIGHWAY STANDARDS

000001-08	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
420001-10	PAVEMENT JOINTS
442101-09	CLASS B PATCHES
515001-04	NAME PLATE FOR BRIDGES
630001-13	STEEL PLATE BEAM GUARDRAIL
630106-02	LONG-SPAN GUARDRAIL OVER CULVERT
630301-09	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
701001-02	OFF-RD OPERATIONS, 2L, 2W, MORE THAN 15' AWAY
701006-05	OFF-RD OPERATIONS, 2L, 2W, 15' TO 24' FROM PAVEMENT EDGE
701011-04	OFF-RD MOVING OPERATIONS, 2L, 2W, DAY ONLY
701201-05	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS ≥ 45 MPH
701311-03	LANE CLOSURE, 2L, 2W, MOVING OPERATIONS - DAY ONLY
701901-09	TRAFFIC CONTROL DEVICES
725001-01	OBJECT AND TERMINAL MARKERS
782006-01	GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
420701-03	PAVEMENT WELDED WIRE REINFORCEMENT
780001-05	TYPICAL PAVEMENT MARKINGS

GENERAL NOTES

1. THE UTILITIES KNOWN TO HAVE FACILITIES WITHIN THE PROJECT AREA ARE AS FOLLOWS:
 - AMEREN ILLINOIS
 - AT&T ILLINOIS
 - CHARTER COMMUNICATIONS, INC.
 - CLEARWAVE COMMUNICATIONS
 - FRONTIER COMMUNICATIONS
 - SLM WATER COMMISSION
 - VILLAGE OF SUMMERFIELD
 - TRI-TOWNSHIP WATER DISTRICT
2. THE TWO CHANGEABLE MESSAGE SIGNS REQUIRED FOR THIS PROJECT SHALL BE IN PLACE AND IN OPERATION TWO WEEKS PRIOR TO ANY LANE CLOSURE AT LOCATIONS DETERMINED BY THE ENGINEER. THE ENGINEER WILL PROVIDE THE MESSAGE TO THE CONTRACTOR FOR THE TWO WEEKS PRIOR TO CONSTRUCTION AND DURING CONSTRUCTION.
3. THE CONTRACTOR SHALL PROVIDE POSITIVE AND ADEQUATE DRAINAGE AT ALL TIMES.
4. ALL ELEVATIONS REFER TO THE USGS MEAN SEA LEVEL DATUM, NAVD 88.
5. THE DEPARTMENT STRONGLY ENCOURAGES THE PRIME CONTRACTOR AND THEIR APPROVED SUB-CONTRACTORS TO HIRE MINORITY, WOMEN AND DISADVANTAGED INDIVIDUALS FROM ITS FEDERALLY FUNDED HIGHWAY CONSTRUCTION CAREERS TRAINING PROGRAM (HCCTP) TO HELP MEET WORKFORCE AND TRAINEE GOALS. THIS PROGRAM IS TRAINING MINORITIES, WOMEN AND DISADVANTAGED INDIVIDUALS IN HIGHWAY CONSTRUCTION-RELATED SKILLS, E.G., MATH FOR THE TRADES, JOB READINESS, TECHNICAL SKILLS COURSEWORK (CARPENTRY, CONCRETE FLATWORK, BLUEPRINT READING, SITE PLANS, SITE WORK, TOOLS USE, ETC.) AND OSHA 10 HOUR CERTIFICATION, TO PREPARE THEM FOR A CAREER IN THE HIGHWAY CONSTRUCTION TRADES. GRADUATES ARE WELL-TRAINED AND READY TO BECOME PRODUCTIVE ENTRY-LEVEL CONSTRUCTION WORKERS. CONTACT THE DISTRICT 8 EEO OFFICE AT 618-346-3360 AND/OR THE HCCTP COORDINATOR AT 618-874-6528 TO LEARN MORE ABOUT THE PROGRAM AND FOR ASSISTANCE IN MEETING WORKFORCE AND TRAINEE GOALS.

COMMITMENTS

NONE

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REV - MS

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	DRAWN -	REVISED -			1780	28CR-1	ST. CLAIR	18	2	
	CHECKED -	REVISED -			CONTRACT NO. 76M49					
PLOT DATE = 8/2/2024	DATE -	REVISED -			SCALE:	SHEET 1	OF 1	SHEETS	STA.	TO STA.
					ILLINOIS FED. AID PROJECT					

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE	
				80% FEDERAL 20% STATE BOX CULVERT 0004 RURAL	
20200100	EARTH EXCAVATION	CU YD	69	69	
20700220	POROUS GRANULAR EMBANKMENT	CU YD	174	174	
25100630	EROSION CONTROL BLANKET	SQ YD	36	36	
28000305	TEMPORARY DITCH CHECKS	FOOT	14	14	
28100107	STONE RIPRAP, CLASS A4	SQ YD	133	133	
28200200	FILTER FABRIC	SQ YD	81	81	
31102000	SUBBASE GRANULAR MATERIAL, TYPE C	CU YD	17	17	
44200050	WELDED WIRE REINFORCEMENT	SQ YD	110	110	
44213200	SAW CUTS	FOOT	154	154	
44213204	TIE BARS 3/4"	EACH	45	45	
48101200	AGGREGATE SHOULDERS, TYPE B	TON	20	20	
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1	1	
51500100	NAME PLATES	EACH	1	1	
54001001	BOX CULVERT END SECTIONS, CULVERT NO. 1	EACH	2	2	
54010606	PRECAST CONCRETE BOX CULVERTS 6' X 6'	FOOT	64	64	

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE	
				80% FEDERAL 20% STATE BOX CULVERT 0004 RURAL	
* 63000003	STEEL PLATE BEAM GUARDRAIL, TYPE A, 9 FOOT POSTS	FOOT	338	338	
* 63000360	LONG-SPAN GUARDRAIL OVER CULVERT, 18 FT 9 IN SPAN	FOOT	88	88	
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4	4	
63200310	GUARDRAIL REMOVAL	FOOT	476	476	
67100100	MOBILIZATION	L SUM	1	1	
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	1	
70107025	CHANGEABLE MESSAGE SIGN	CAL DA	38	38	
* 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4	4	
* 78001120	PAINT PAVEMENT MARKING - LINE 5"	FOOT	90	90	
* 78200005	GUARDRAIL REFLECTORS, TYPE A	EACH	7	7	
X4420201	PAVEMENT PATCHING (SPECIAL)	SQ YD	110	110	
X5810103	MEMBRANE WATERPROOFING SYSTEM FOR BURIED STRUCTURES	SQ YD	63	63	
X7011800	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1	1	
Z0016702	DETOUR SIGNING	L SUM	1	1	

* SPECIALTY ITEM

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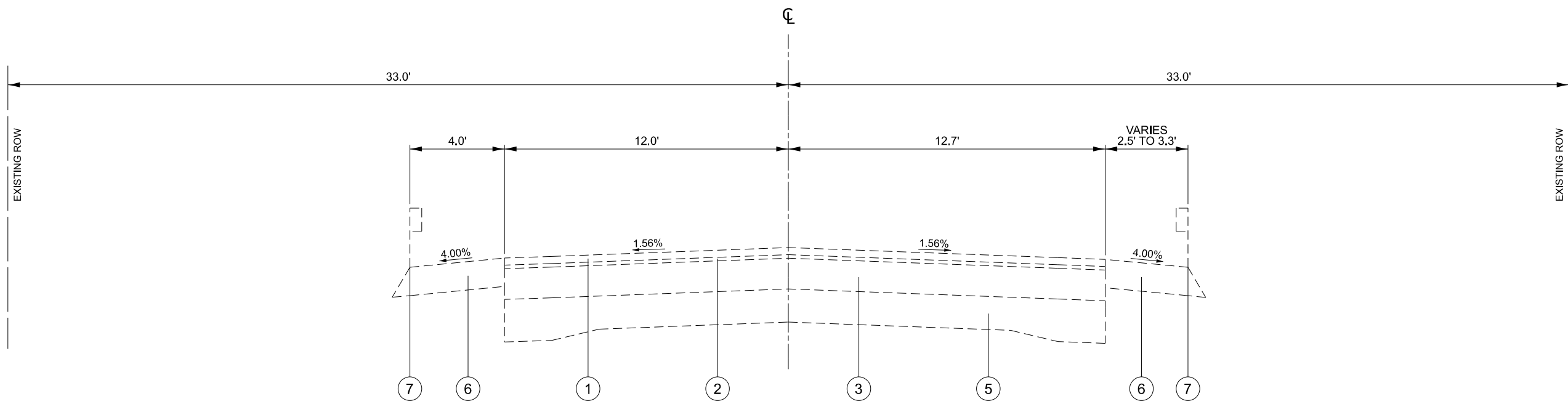
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

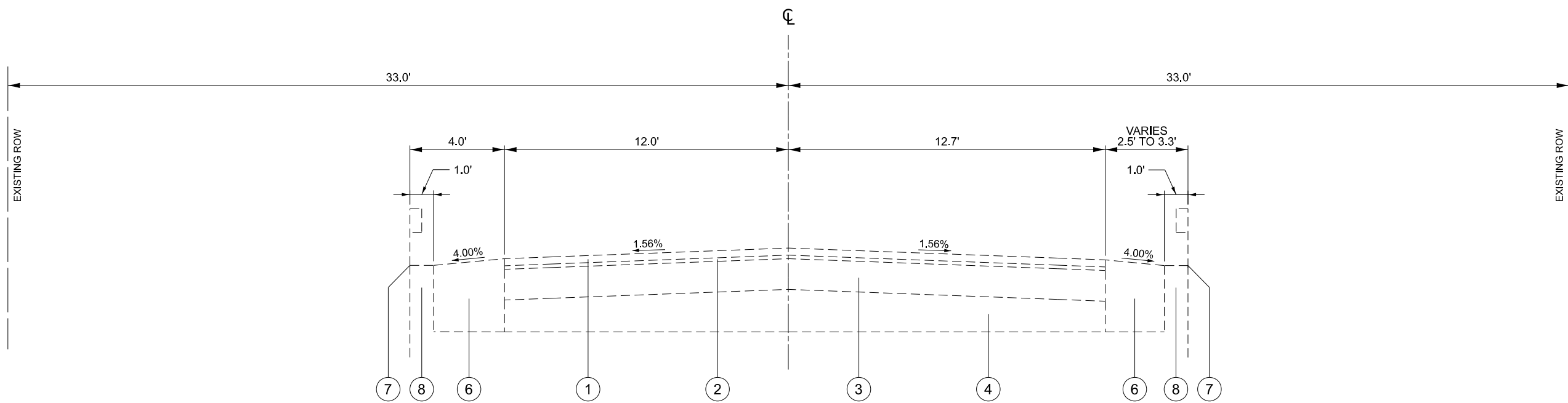
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1780	28CR-1	ST. CLAIR	18	3
CONTRACT NO. 76M49				
ILLINOIS FED. AID PROJECT				



**EXISTING TYPICAL SECTION
FAS 1780 (OLD US 50)**

STA 735+48.56 TO STA 735+62.81
STA 735+74.31 TO STA 735+88.56



**EXISTING TYPICAL SECTION
FAS 1780 (OLD US 50)**

STA 735+62.81 TO STA 735+74.31

LEGEND

- ① EXISTING BITUMINOUS SURFACE COURSE, 1 1/2"
- ④ EXISTING P.C.C. PAVEMENT, 9"
- ⑦ EXISTING STEEL PLATE BEAM GUARDRAIL, TYPE A, 6' POSTS
- ⑪ PROPOSED AGGREGATE SHOULDER, TY B
- ② EXISTING BITUMINOUS BINDER COURSE, 3/4"
- ⑤ EXISTING P.C.C. PAVEMENT, 9"-7"-9"
- ⑧ EXISTING CULVERT HEADWALL
- ⑫ PROPOSED STEEL PLATE BEAM GUARDRAIL, TYPE A, 9' POSTS
- ③ EXISTING BITUMINOUS RESURFACING, 6 1/2"
- ⑥ EXISTING AGGREGATE SHOULDER
- ⑩ PROPOSED SUBBASE GRANULAR MATERIAL, TY C, 6"
- ⑬ PROPOSED LONG-SPAN GUARDRAIL OVER CULVERT

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

EXISTING TYPICAL SECTIONS

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

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1780	28CR-1	ST. CLAIR	18	4
CONTRACT NO. 76M49				
ILLINOIS FED. AID PROJECT				

EROSION CONTROL SCHEDULE													
LOCATION					SEEDING, CLASS 2A	NITROGEN FERTILIZER NUTRIENT	PHOSPHORUS FERTILIZER NUTRIENT	POTASSIUM FERTILIZER NUTRIENT	MULCH, METHOD 2	EROSION CONTROL BLANKET	TEMPORARY DITCH CHECKS	STONE RIPRAP, CLASS A4	FILTER FABRIC
STATION	OFFSET	TO	STATION	OFFSET	ACRE	POUND	POUND	POUND	ACRE	SQ YD	FOOT	SQ YD	SQ YD
OLD US 50													
735+47	23.8' LT	TO	735+90	31.1' LT							14	70.1	40.2
735+49	15.6' LT	TO	735+89	23.8' LT	0.003	0.3	0.3	0.3	0.003	16.6		5.1	
735+49	14.7' RT	TO	735+89	23.5' RT	0.004	0.4	0.4	0.4	0.004	19.2		5.1	
735+53	23.5' RT	TO	735+84	30.9' RT								52.6	40.2
SUBTOTALS					0.007	0.7	0.7	0.7	0.007	35.8	14	132.9	80.4
TOTALS					0.01	1	1	1	0.01	36	14	133	81

GUARDRAIL SCHEDULE										
STATION	TO	STATION	LENGTH OF NEED	STEEL PLATE BEAM GUARDRAIL, TYPE A, 9 FOOT POSTS	LONG-SPAN GUARDRAIL OVER CULVERT, 18 FT 9 IN SPAN	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	GUARDRAIL REMOVAL	TERMINAL MARKER- DIRECT APPLIED	GUARDRAIL REFLECTORS, TYPE A	NOTES
			FOOT	FOOT	FOOT	EACH	FOOT	EACH	EACH	
OLD US 50										
734+47	TO	736+88	243.7	174.9	43.8	2	244	2	4	WESTBOUND OLD US 50
734+54	TO	736+83	231.2	162.4	43.8	2	232	2	3	EASTBOUND OLD US 50
SUBTOTALS				337.3	87.6	4	476	4	7	
TOTALS				338	88	4	476	4	7	

PATCHING SCHEDULE									
STATION	TO	STATION	LENGTH	WIDTH	SAW CUTS	TIE BARS, 3/4"	WELDED WIRE REINFORCEMENT	PAVEMENT PATCHING (SPECIAL)	
			FOOT	FOOT	FOOT	EACH	SQ YD	SQ YD	
OLD US 50									
735+49	TO	735+89	40	24.7	154	45	110	110	
TOTALS					154	45	110	110	

PAVEMENT MARKINGS SCHEDULE					
STATION	TO	STATION	LENGTH	PAINT PAVEMENT MARKINGS	
				LINE 5-INCH	
				SOLID	SKIP-DASH
				WHITE	YELLOW
			FOOT	FOOT	FOOT
OLD US 50					
735+49	TO	735+89	40	80	10
TOTALS				90	

PAVING SCHEDULE					
LOCATION			LENGTH	SUBBASE GRANULAR MATERIAL, TY C	AGGREGATE SHOULDERS, TYPE B
STATION	TO	STATION	FOOT	CU YD	TON
OLD US 50					
735+49	TO	735+54	5		2.6
735+54	TO	735+61	7	3.2	4.0
735+61	TO	735+69	8	5.1	3.1
735+69	TO	735+76	7	5.1	3.1
735+76	TO	735+84	8	3.2	4.0
735+84	TO	735+89	5		2.6
SUBTOTALS				16.5	19.4
TOTALS				17	20

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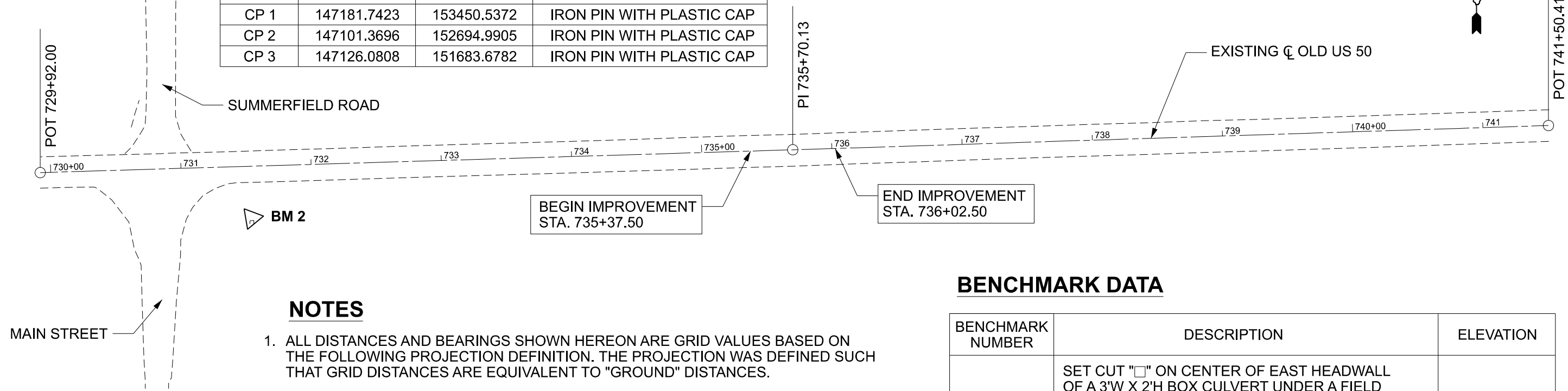
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SCHEDULE OF QUANTITIES

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

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1780	28CR-1	ST. CLAIR	18	6
CONTRACT NO. 76M49				
ILLINOIS FED. AID PROJECT				

REFERENCE POINTS			
POINT NUMBER	NORTHING	EASTING	DESCRIPTION
CP 1	147181.7423	153450.5372	IRON PIN WITH PLASTIC CAP
CP 2	147101.3696	152694.9905	IRON PIN WITH PLASTIC CAP
CP 3	147126.0808	151683.6782	IRON PIN WITH PLASTIC CAP



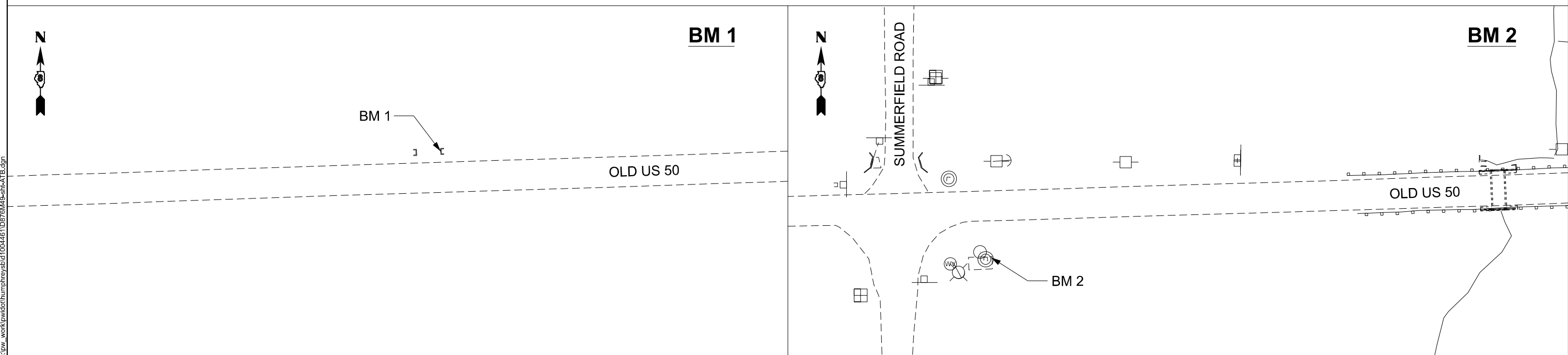
NOTES

1. ALL DISTANCES AND BEARINGS SHOWN HEREON ARE GRID VALUES BASED ON THE FOLLOWING PROJECTION DEFINITION. THE PROJECTION WAS DEFINED SUCH THAT GRID DISTANCES ARE EQUIVALENT TO "GROUND" DISTANCES.
2. PROJECT COORDINATES ARE BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, WEST ZONE, NAD 83 (1997). TWO MILLION HAS BEEN TRUNCATED FROM THE EASTING TO DISTINGUISH PROJECT COORDINATES AS GROUND COORDINATES.
3. ALL ELEVATIONS REFER TO USGS MEAN SEA LEVEL DATUM, NAVD 88.

BENCHMARK DATA

BENCHMARK NUMBER	DESCRIPTION	ELEVATION
BM 1	SET CUT "□" ON CENTER OF EAST HEADWALL OF A 3'W X 2'H BOX CULVERT UNDER A FIELD ENTRANCE ON THE NORTH SIDE OF OLD US 50, ±0.2 MILES EAST OF THE INTERSECTION OF OLD US 50 & SUMMERFIELD ROAD.	478.364'
BM 2	SET CUT "□" ON THE NORTHEAST CENTER OF A CONCRETE SLAB OF A LIFT STATION IN THE SOUTHEAST QUADRANT OF OLD US 50 & SUMMERFIELD ROAD.	476.808'

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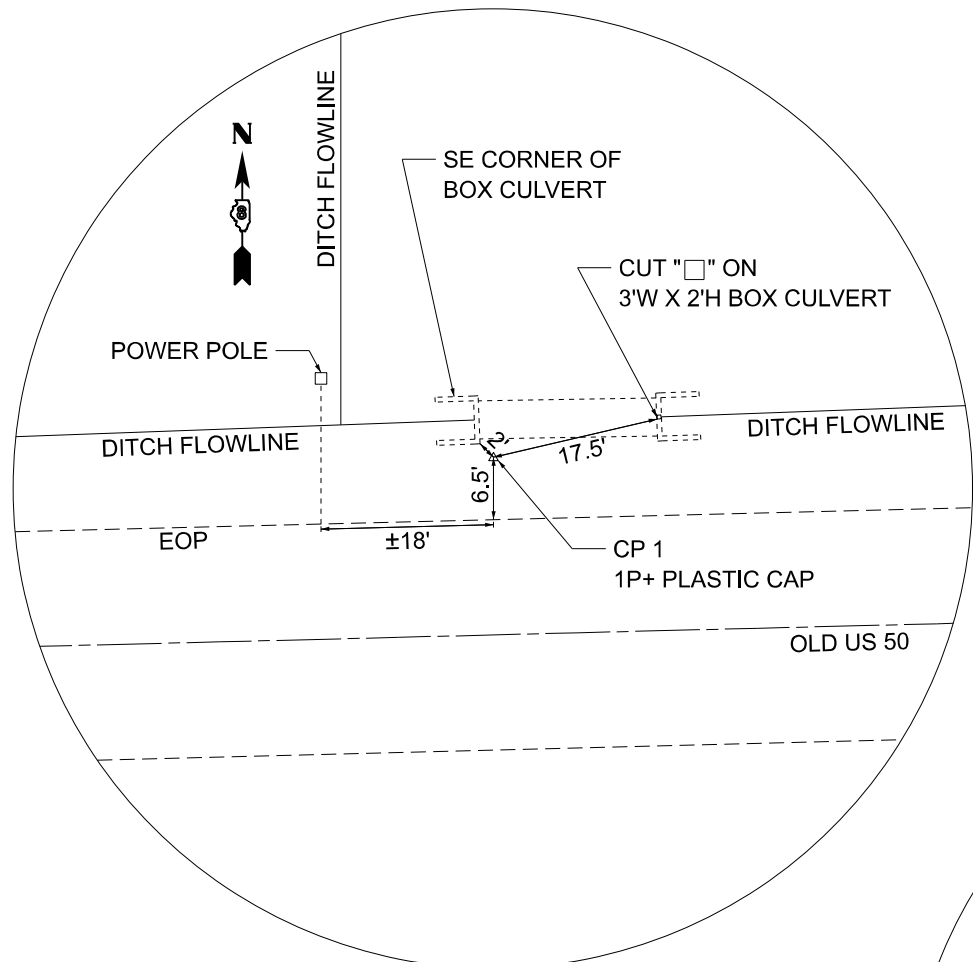
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

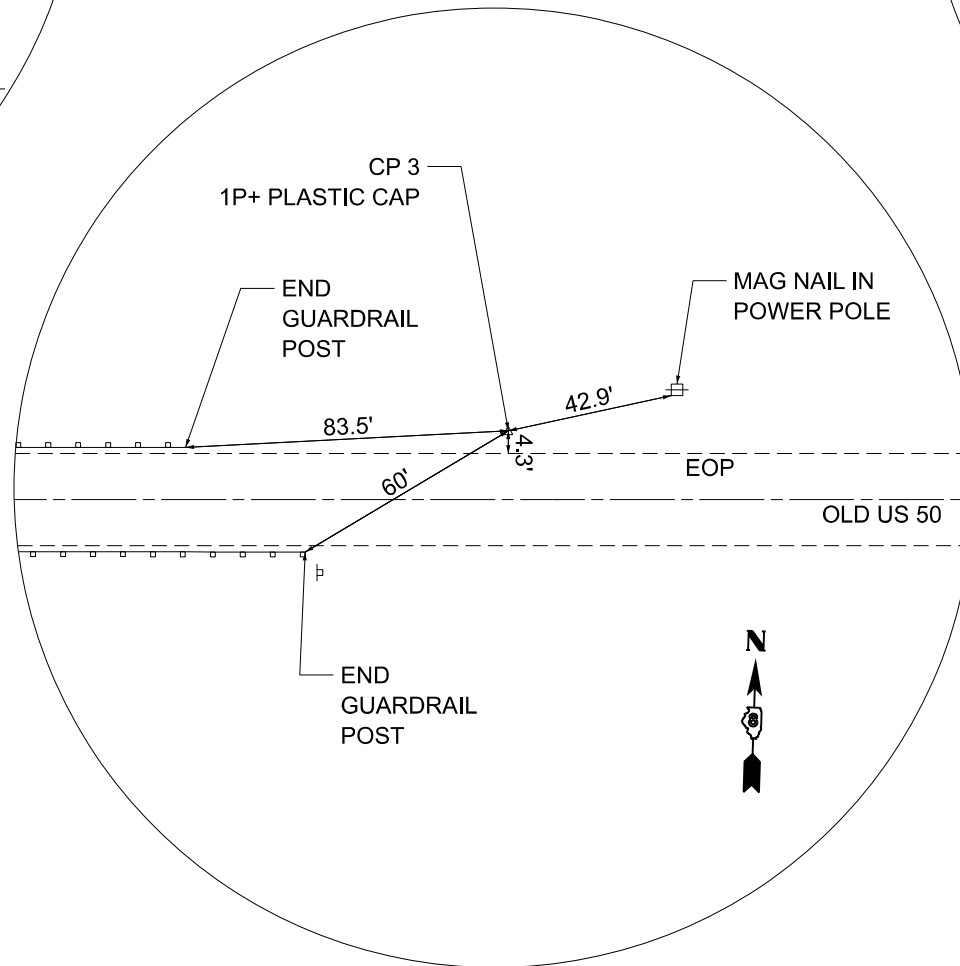
**ALIGNMENT, TIES, AND BENCHMARKS
OLD US 50**

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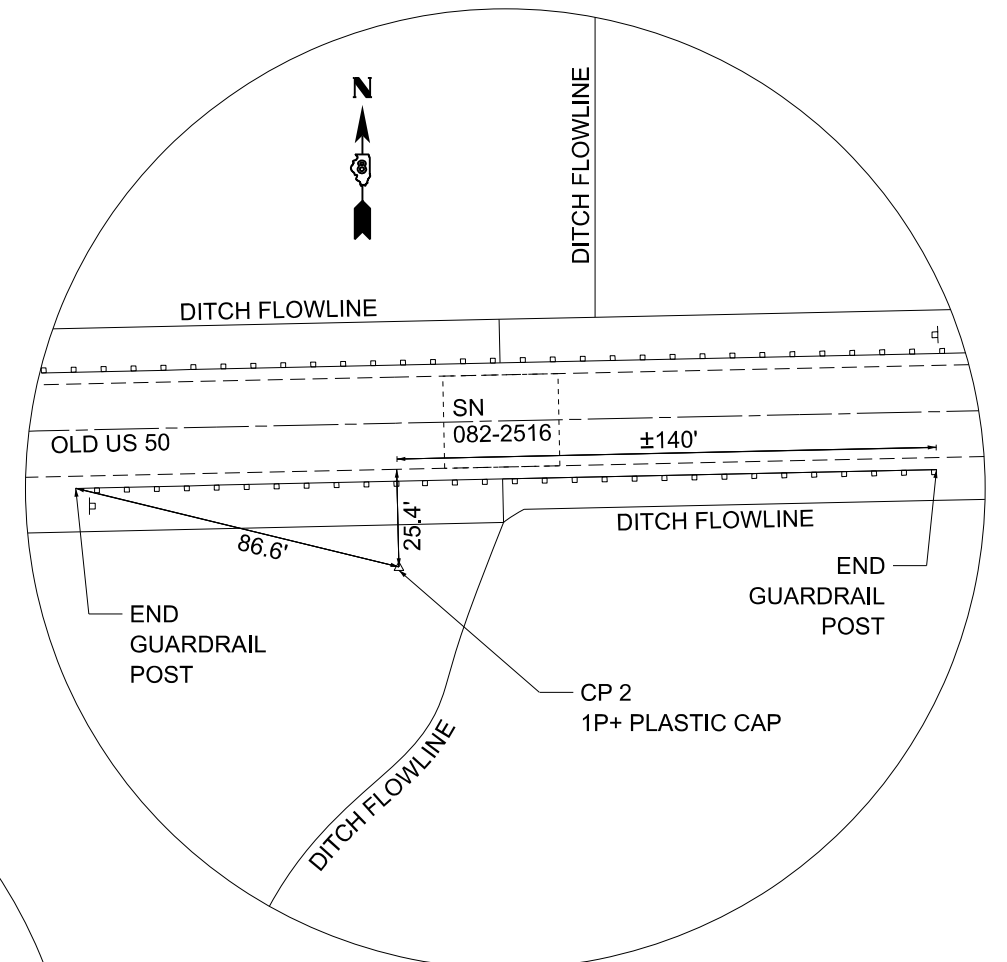
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1780	28CR-1	ST. CLAIR	18	8
CONTRACT NO. 76M49				
ILLINOIS FED. AID PROJECT				



CP 1
 ±0.2 MILES EAST OF THE INTERSECTION
 OF OLD US 50 & SUMMERFIELD ROAD.



CP 3
 ±0.1 MILES WEST OF THE INTERSECTION
 OF OLD US 50 & SUMMERFIELD ROAD.



CP 2
 ±0.1 MILES EAST OF THE INTERSECTION
 OF OLD US 50 & SUMMERFIELD ROAD.

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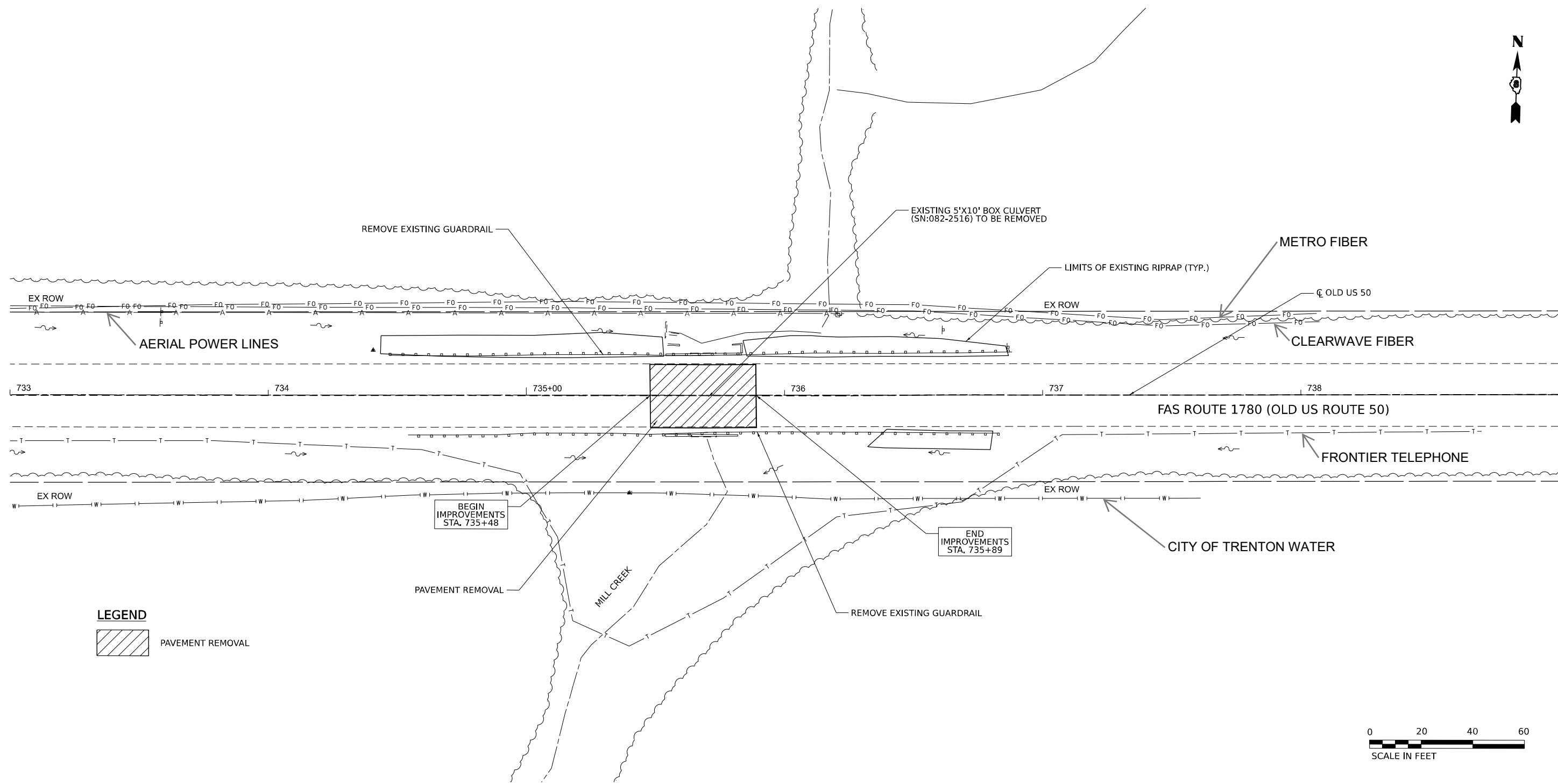
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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**ALIGNMENT, TIES, AND BENCHMARKS
 OLD US 50**

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

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1780	28CR-1	ST. CLAIR	18	9
CONTRACT NO. 76M49				
ILLINOIS FED. AID PROJECT				



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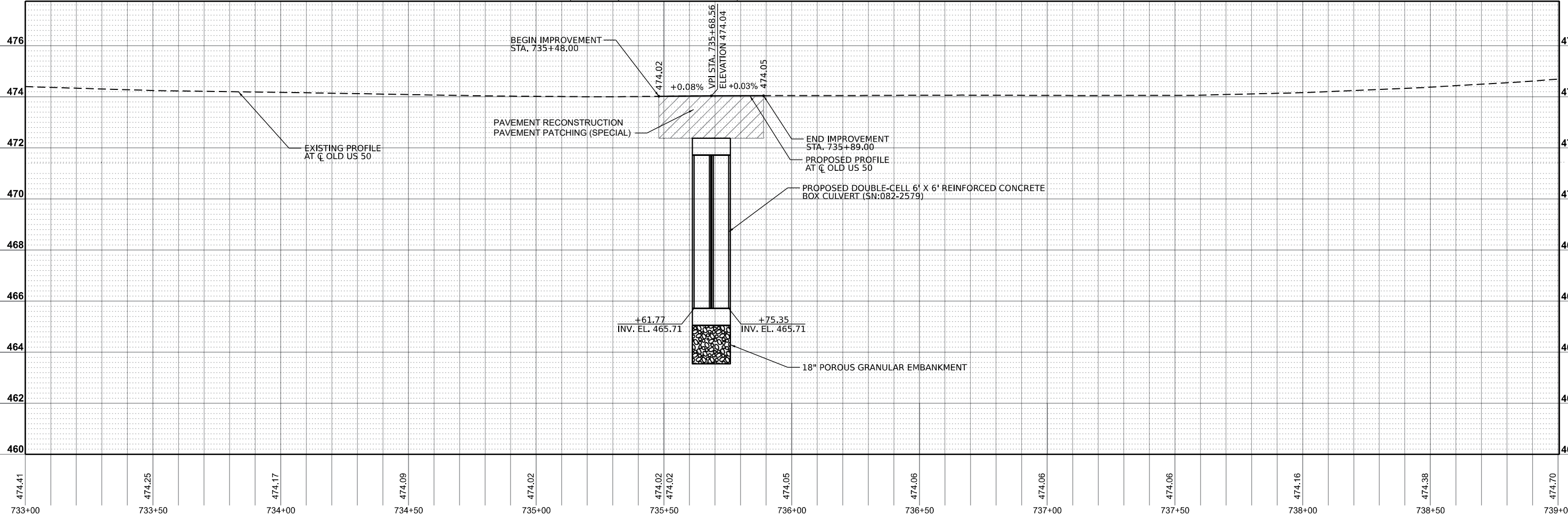
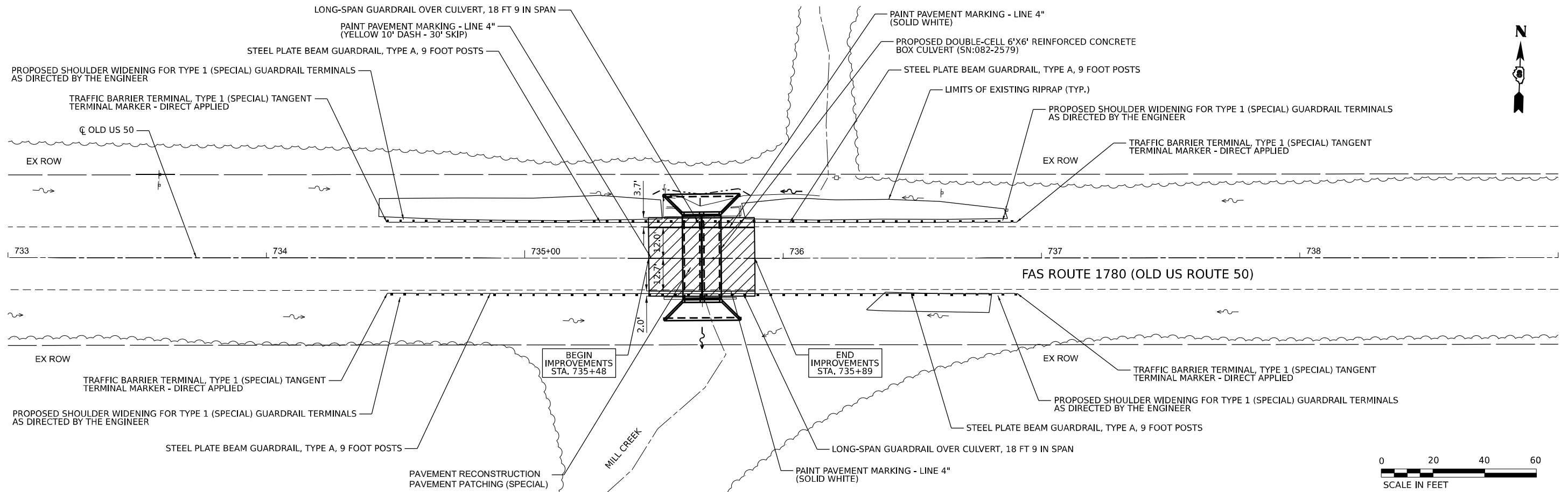
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**OLD US 50 CULVERT REPLACEMENT
EXISTING AND REMOVAL PLAN**

SCALE: 1"=20' SHEET 1 OF 1 SHEETS STA. 733+00 TO STA. 739+00

F.A.S. RTE. 1780	SECTION 28CR-1	COUNTY ST. CLAIR	TOTAL SHEETS 18	SHEET NO. 10
CONTRACT NO. 76M49				
ILLINOIS FED. AID PROJECT				

Long Section Number



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	DATE - 7/30/2024	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**OLD US 50 CULVERT REPLACEMENT
ROADWAY PLAN AND PROFILE**

SCALE: 1"=20' SHEET 1 OF 1 SHEETS STA. 733+00 TO STA. 739+00






F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1780	28CR-1	ST. CLAIR	18	11
CONTRACT NO. 76M49				
ILLINOIS FED. AID PROJECT				

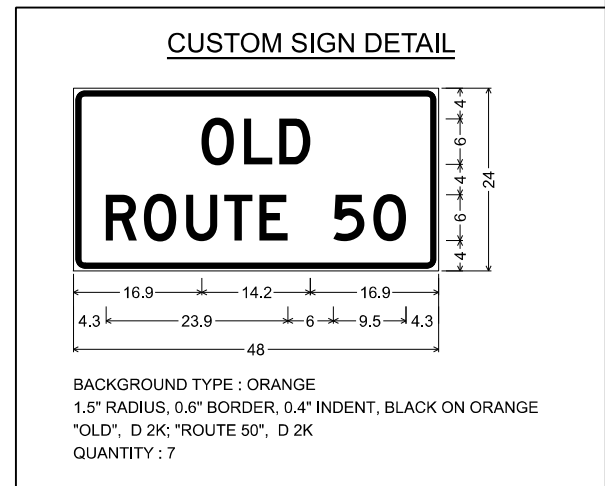
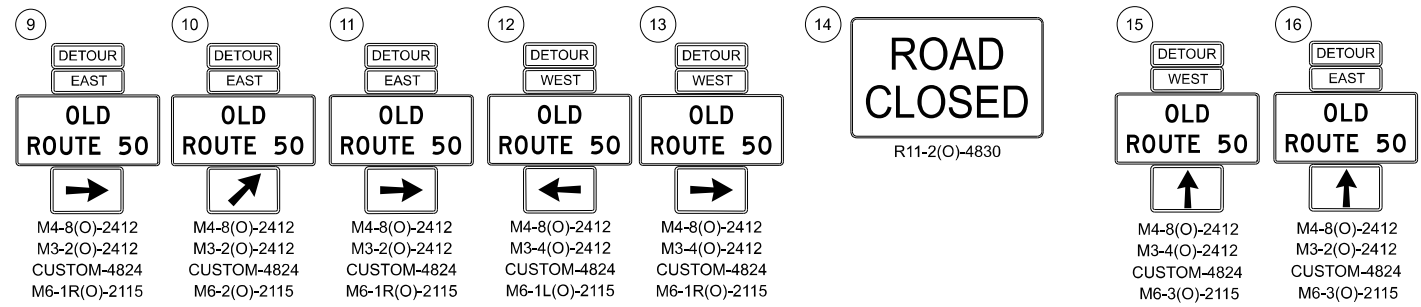
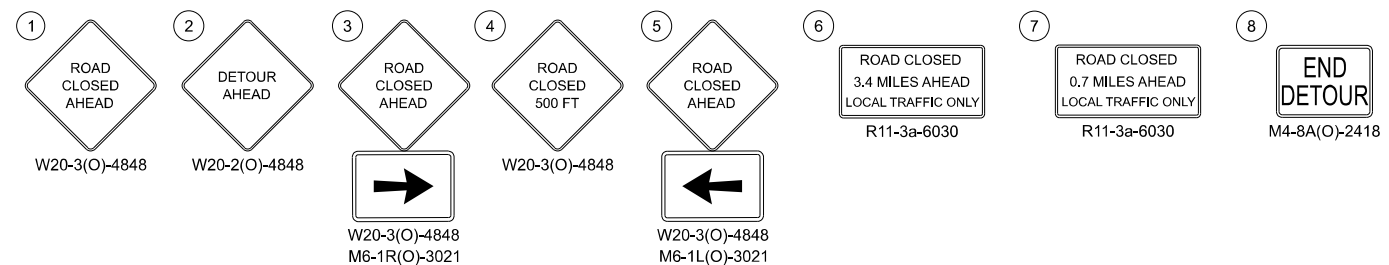
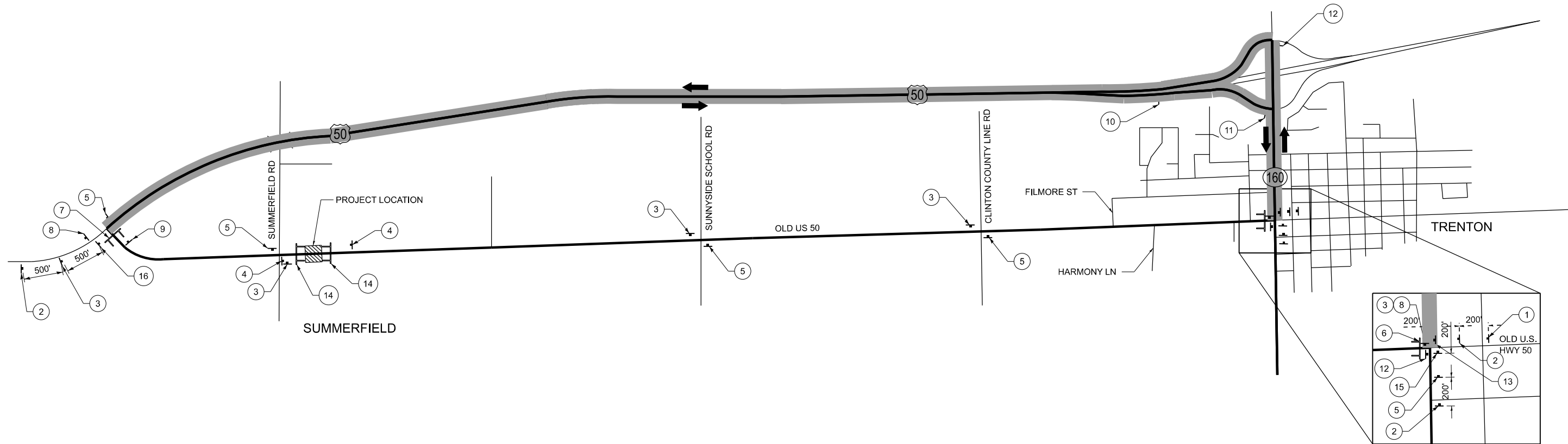
NOTES

A DETOUR ROUTE WILL BE USED TO MAINTAIN TRAFFIC DURING CONSTRUCTION. THE ROADWAY AT THE PROJECT LOCATION WILL BE CLOSED TO THROUGH TRAFFIC. LOCAL ACCESS IS TO BE MAINTAINED TO ALL ENTRANCES OUTSIDE OF THE IMPROVEMENT LIMITS.

SIGNS WILL BE PLACED 100' PRIOR TO INTERSECTION OR TO FIT FIELD CONDITIONS, UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER.

LEGEND

-  WORK AREA
-  DETOUR ROUTE
-  TRAFFIC FLOW
-  TYPE III BARRICADE
-  DETOUR SIGN



MODEL: Detour Route Map (Sheet)
 FILE NAME: c:\pw\work\wv\hch\humpreys\bd1004461\10876M49-sh-stdaig.dgn

USER NAME = Brandon.Humphreys	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETOUR ROUTE MAP OLD US 50				F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DRAWN -	REVISED -		1780	28CR-1	ST. CLAIR	18	14				
	CHECKED -	REVISED -		CONTRACT NO. 76M49				ILLINOIS FED. AID PROJECT				
PLOT DATE = 8/6/2024	DATE -	REVISED -		SCALE: NTS	SHEET 1	OF 1 SHEETS	STA.	TO STA.				

Benchmark: On the NE corner of a concrete slab of a lift station in the SE quadrant of Old US 50 & Summerfield Rd. 35.8' S of the centerline of Old US 50 and 45.4' E of the centerline of Summerfield Rd. Elevation = 476.808 (NAVD 1988).

Existing Structure: Structure Number 082-2516 was built in 1923 and consists of a single cell cast-in-place regularly reinforced concrete box culvert. The culvert opening is 10'x6' with cast-in-place wingwalls and is 32'-0" long from out-to-out headwalls. Structure and wingwalls to be removed and replaced with a 35'-0" long precast concrete box culvert with an 8'-5 1/2" end section on either end, totaling 48'-11".

INDEX OF SHEETS

- General Plan and Elevation
- 3. Multi-cell Precast Concrete Box Culvert Apron End Section Details

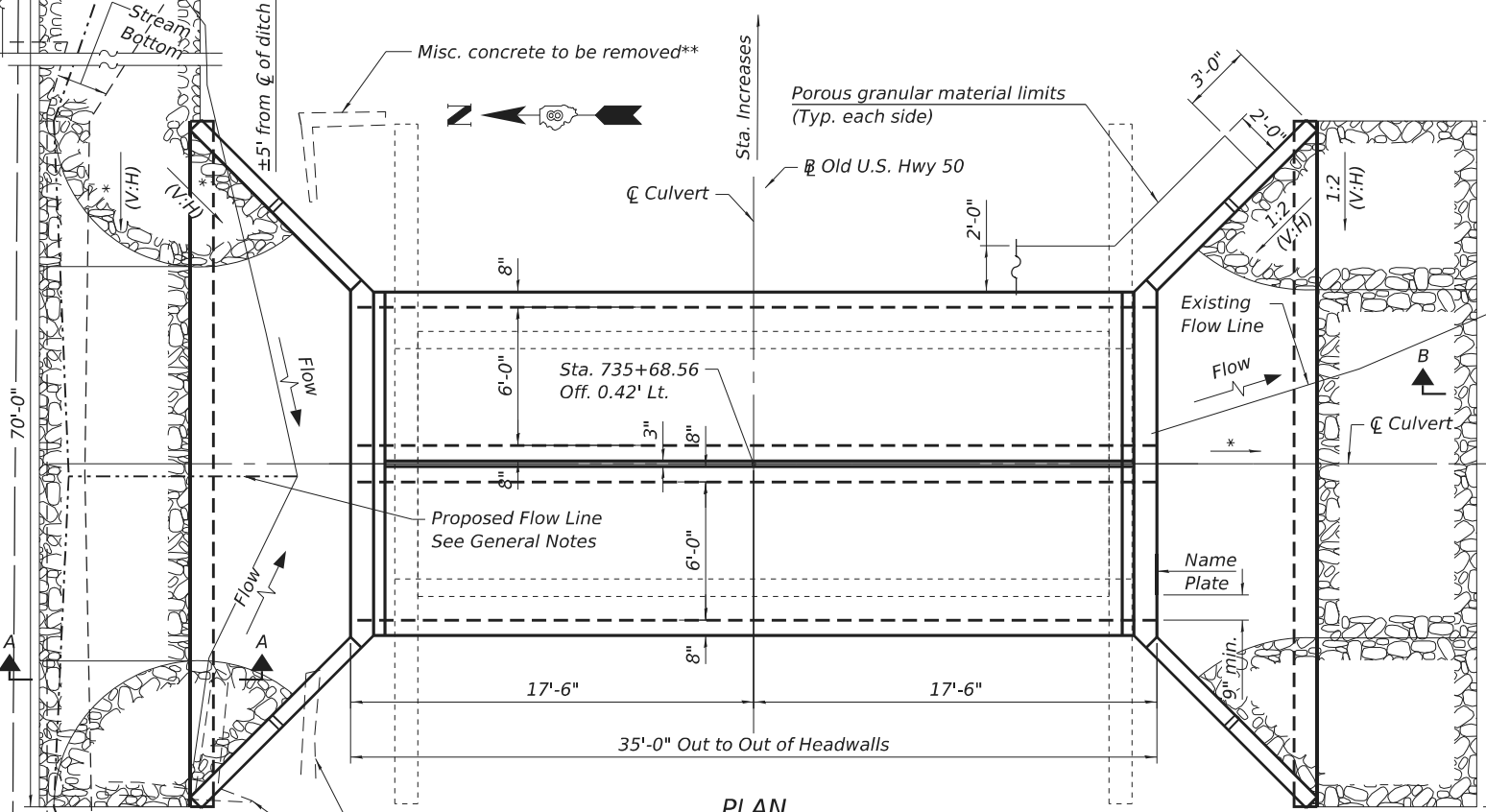
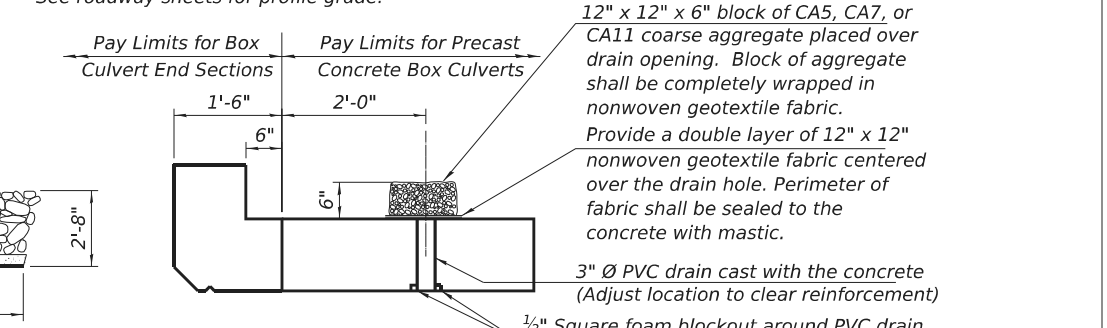
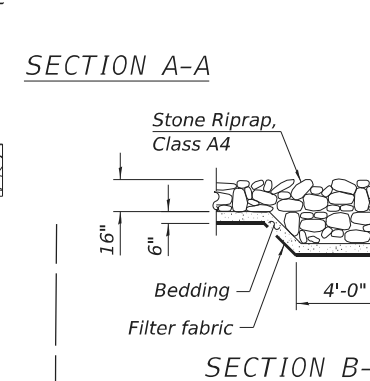
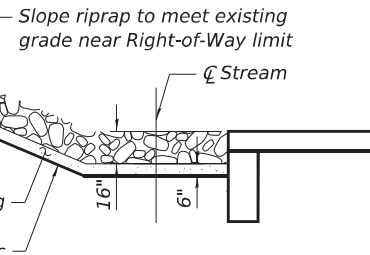
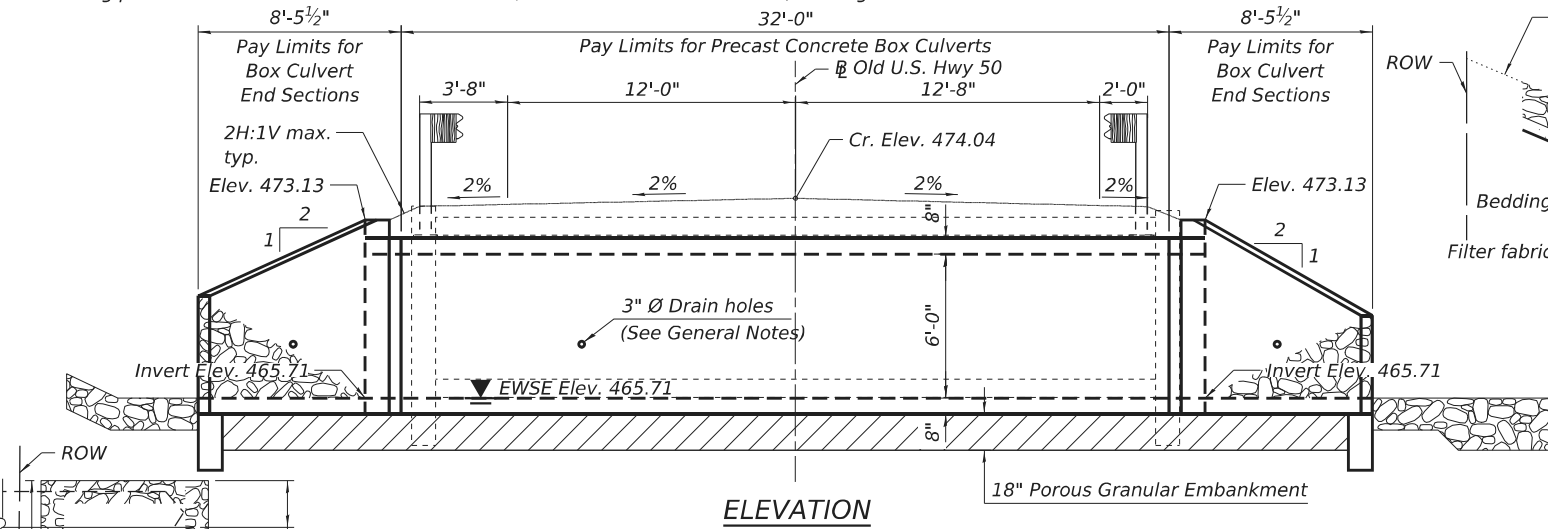
GENERAL NOTES

The design fill height for this box is 1.7 ft. The precast box culvert sections shall conform to the requirements of ASTM C 1577.

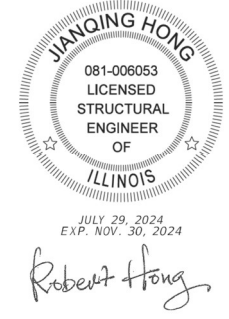
Drain holes shall be provided on exterior culvert walls for each precast box segment with a clear rise greater than 3 ft. The drain hole shall be located within 1/3 of the clear rise of the box culvert, shall not intercept the haunch, and shall conform to the requirements of Article 503.11 of the Standard 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 18-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. See roadway sheets for profile grade.



(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.)



DESIGN SPECIFICATIONS

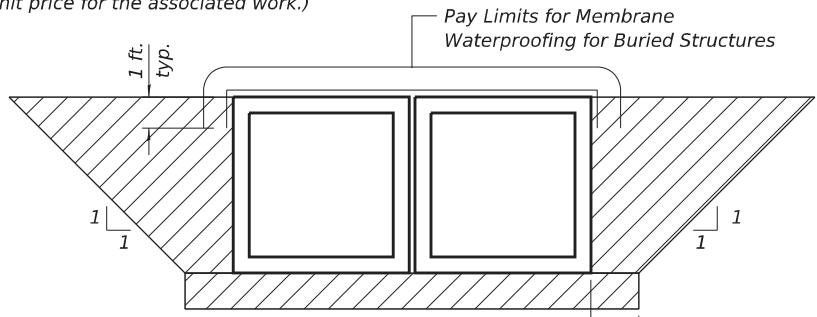
2020 AASHTO LRFD Bridge Design Specifications
Customary U.S. Units, 9th Edition

LOADING HL-93

DESIGN STRESSES

PRECAST UNITS
f_c = 5,000 psi
f_y = 65,000 psi (Welded Wire Reinforcement)

FIELD UNITS
f_c = 3,500 psi
f_y = 65,000 psi (Welded Wire Reinforcement)



TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Earth Excavation	Cu. Yd.	68.5
Porous Granular Embankment	Cu. Yd.	173.3
Stone Riprap, Class A4	Sq. Yd.	132.9
Filter Fabric	Sq. Yd.	80.4
Removal Of Existing Structures	L Sum	1
Name Plates	Each	1
Box Culvert End Sections, Culvert No. 1	Each	2
Precast Concrete Box Culverts 6' X 6'	Foot	64
Membrane Waterproofing System For Buried Structures	Sq. Yd.	62.1

WATERWAY INFORMATION

Drainage Area = 0.31 sq. mi. Low Grade Elev. = @ Sta.

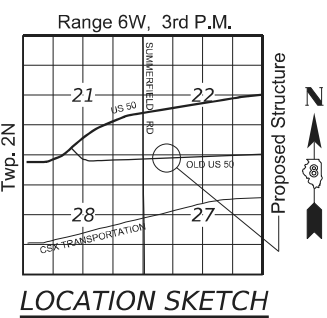
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
10	216	50	72				472.02	471.78	
Design	50	359	50	72			474.06	473.41	
Base	100	425	50	72			474.21	474.06	
Overtopping	87	417	N/A	72			N/A	474.01	
Max. Calc.	500	589	50	72			474.38	474.32	

NOTES

- The existing stream north of the structure shall be migrated further north to accommodate the proposed box culvert end section. Gradual adjustments shall be made to ensure water does not flow into/behind the edge of the wingwalls or promote bank erosion upstream or downstream. Actual limits and angles of stream adjustment to be field verified and approved by The Engineer prior to the commencement of any work.
- Stone Riprap, Class A4 Gradation RR-4 shall be placed anywhere construction impacts the existing stream.

NAME PLATE
See Std. 515001

STATION 735+68.56
BUILT 202 BY
STATE OF ILLINOIS
F.A.S RTE. 1780 SEC. 28CR-1
LOADING HL-93
STR. NO. 082-2579



GENERAL PLAN AND ELEVATION
OLD U.S. RTE. 50 OVER W. TRIB E. BRANCH SILVER CREEK
F.A.S. RTE. 1780 SEC. 28CR-1
ST. CLAIR COUNTY
STATION 735+68.56
S.N. - 082-2579



USER NAME =	DESIGNED EHK	REVISIONS
CHECKED JWM	REVISIONS	
PLOT SCALE =	DRAWN BPH	REVISIONS
PLOT DATE =	CHECKED JWM	REVISIONS

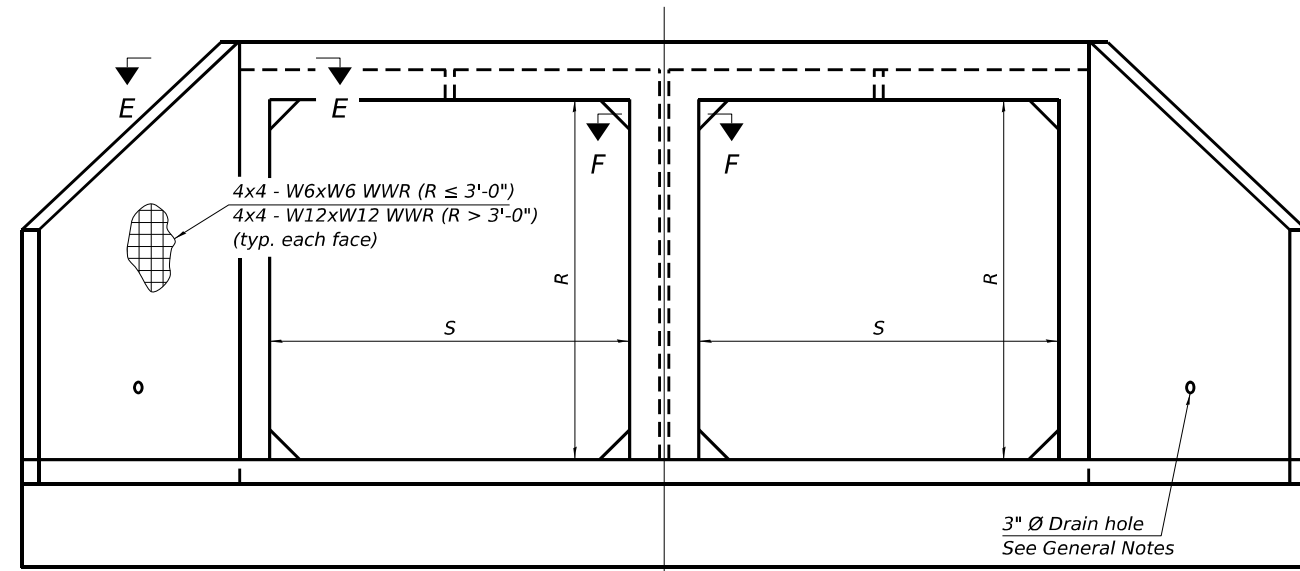
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 082-2579
SHEET 1 OF 3 SHEETS

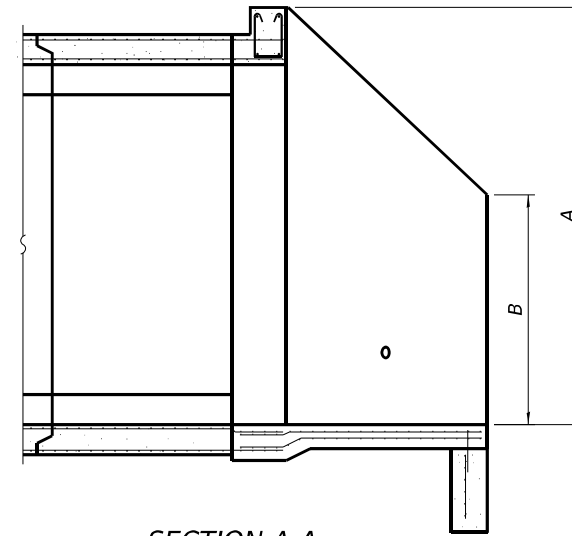
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1780	28CR-1	ST. CLAIR	18	15
CONTRACT NO. 76M49				
ILLINOIS FED. AID PROJECT				

GENERAL NOTES

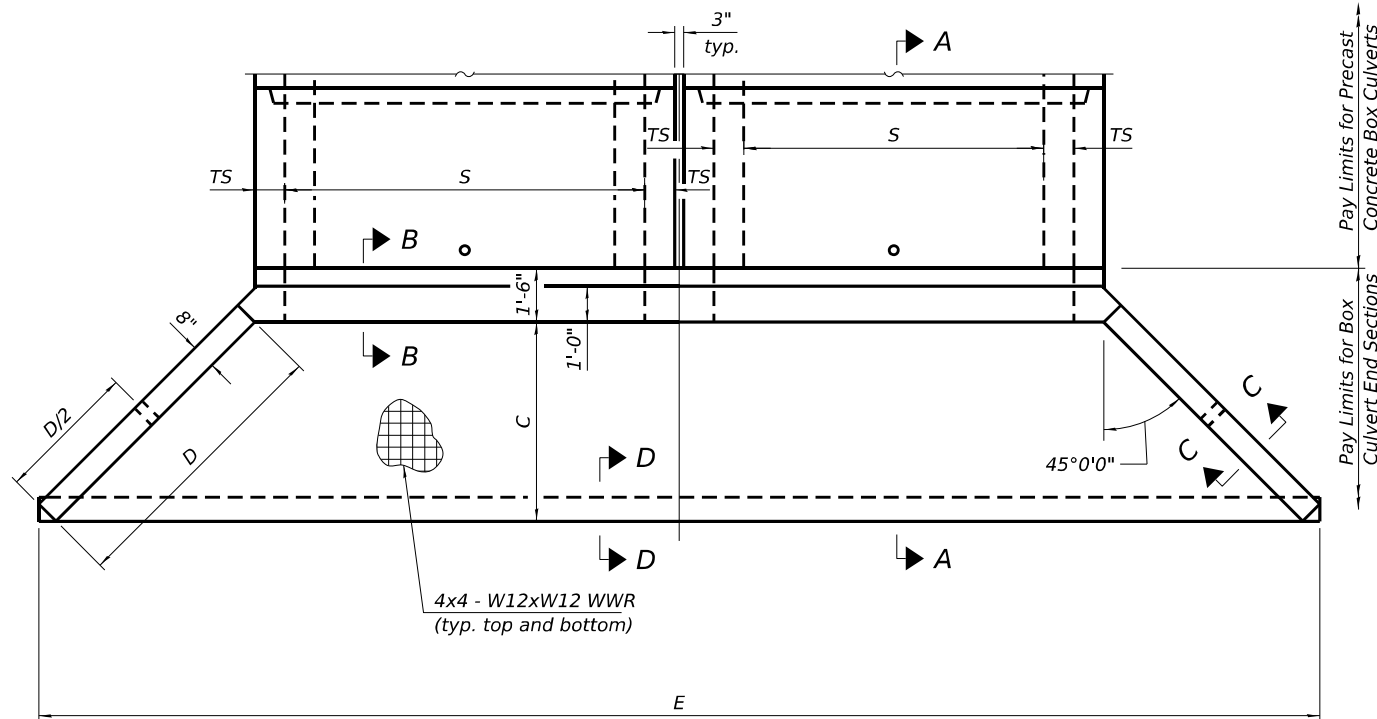
1. Box Culvert End Sections shall be constructed according to the requirements of Section 540 of the Standard Specifications except as modified herein. End sections will be paid for at the contract unit price per each for Box Culvert End Sections.
2. Box section dimensions, materials, and reinforcement details for Box Culvert End Sections shall be according to the requirements for ASTM C 1577 as required for the design of the portion of the culvert within the limits of Precast Concrete Box Culverts except as modified herein.
3. The details contained herein are for constructing the end sections using cast-in-place (CIP) construction. The Contractor may propose to furnish the end sections using precast construction methods and the end sections may consist of multiple precast concrete segments. The Contractor shall be responsible for determining all details associated with the precast option including any strengthening or stiffening provisions necessary for handling the precast segments. Conceptual details followed by shop drawings and design calculations sealed by an Illinois Licensed Structural Engineer shall be submitted to the Engineer for review and approval. Elements of the precast option shall at a minimum result in the same wingwall geometry and not have a thickness less than that detailed herein. The option to construct the end sections using precast construction methods shall be at no additional charge.
4. Shop drawings that detail slab thickness and reinforcement layout for the Box Culvert End Sections shall be provided to the Engineer for review and approval. Reinforcement bars not detailed herein shall be detailed with a clear distance at the end of the reinforcement not less than 1/2" nor more than 2".
5. The contractor may use reinforcement bars in lieu of welded wire reinforcement (WWR). Reinforcement bars shall be limited to the sizes of #3 through #5 bars, a maximum spacing of the lesser of 8" or the member thickness, and shall result in an area of reinforcement equal to or greater than that provided by the WWR. Minimum lap lengths detailed herein are applicable to WWR and reinforcement bars.
6. Reinforcement (circumferential and longitudinal) in the precast concrete box culvert segments immediately adjacent to the box culvert end sections that is being lapped with the end section reinforcement shall not be less than that required by ASTM C 1577 for the design fill height or the reinforcement detailed for the end section, whichever is greater.
7. One drain hole shall be provided in each wingwall for end sections of box culverts having an opening with a clear rise greater than 3 ft. The drain hole shall be located within 1/3 of the clear rise of the box culvert and shall conform to the requirements of Article 503.11 of the Standard Specifications.



END VIEW



SECTION A-A



PLAN

APRON END SECTION DIMENSIONS

Span (S)	Rise (R)	Tt, Tb, & Ts	A	B	C	D	Double Cell		Triple Cell	
							E	Concrete Cu. Yd.	E	Concrete Cu. Yd.
6'-0"	6'-0"	8"	7'-5"	4'-3"	6'-11 1/2"	9'-10"	29'-9 1/4"	12.4		

MODEL: Sheet
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8/5/2024 4:54:48 PM



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	CHECKED JWM	REVISED -
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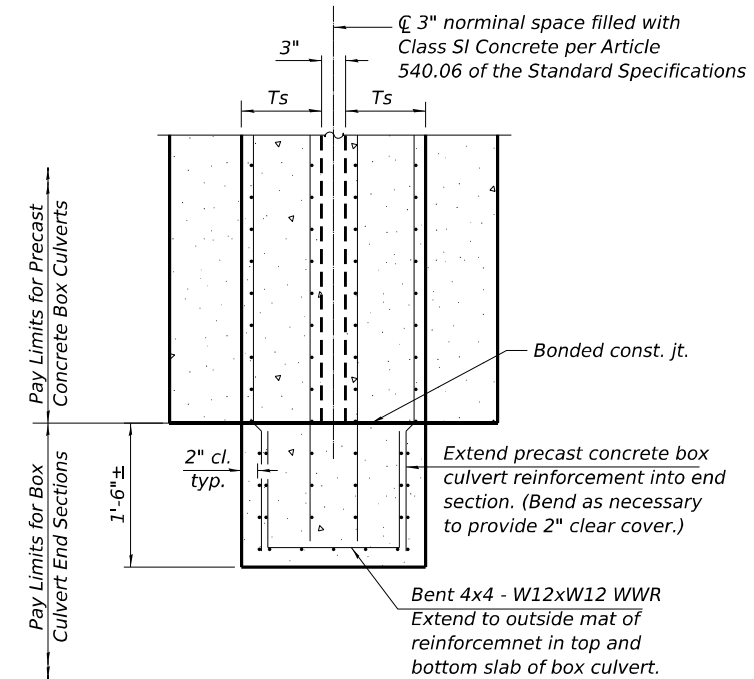
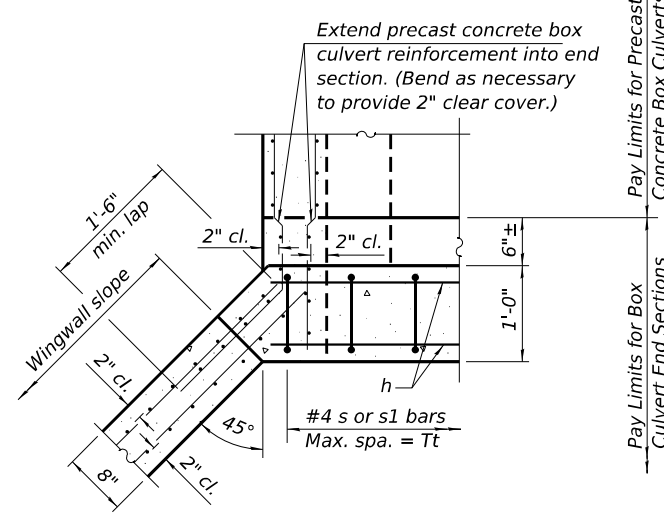
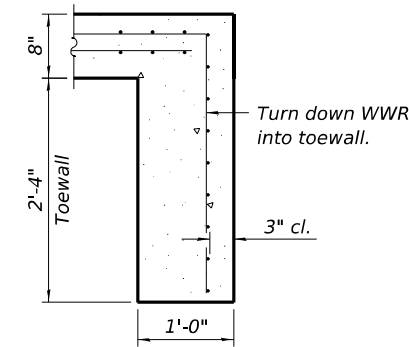
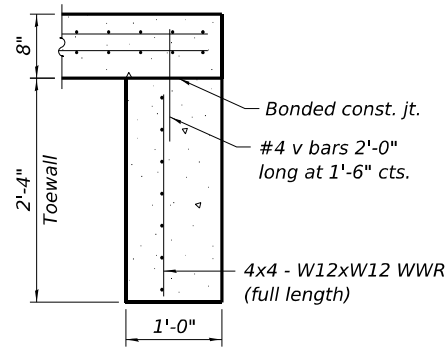
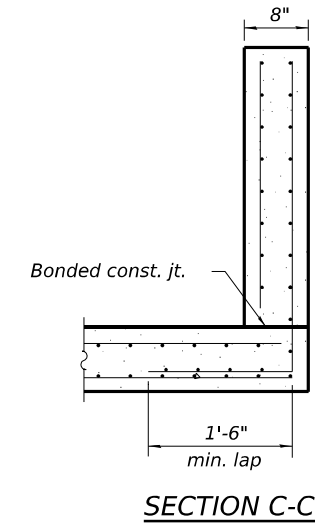
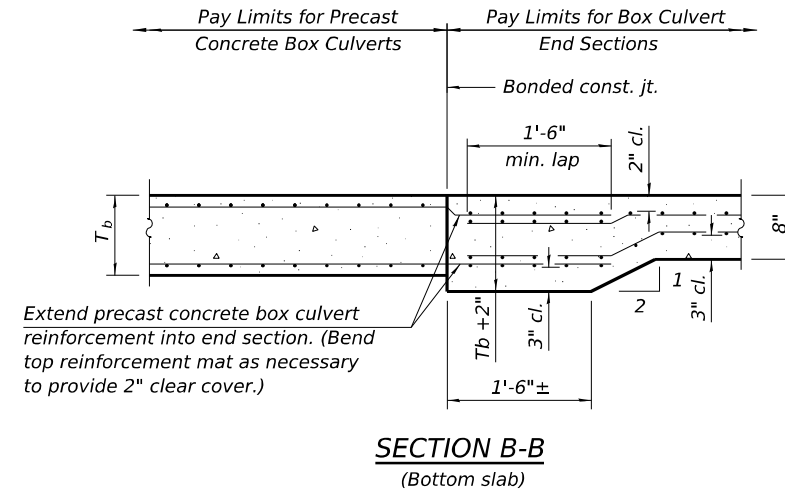
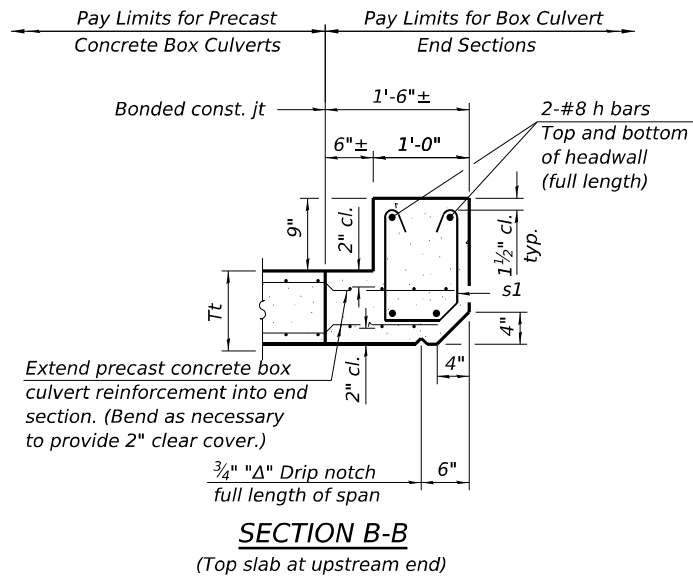
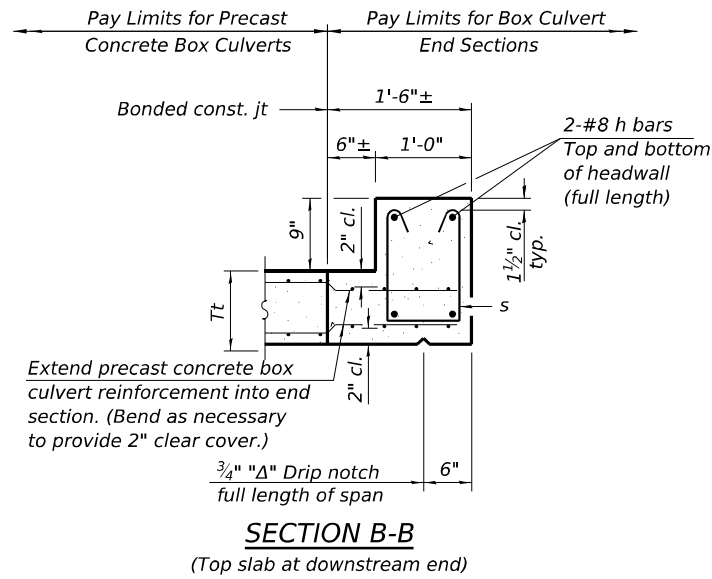
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MULTI-CELL PRECAST CONCRETE BOX CULVERT APRON END
SECTION DETAILS - 1

SHEET 2 OF 3 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1780	28CR-1	ST. CLAIR	18	16
CONTRACT NO. 76M49				

ILLINOIS FED. AID PROJECT

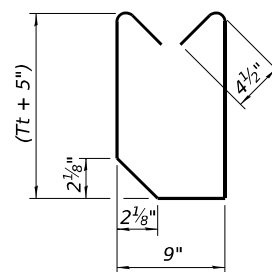
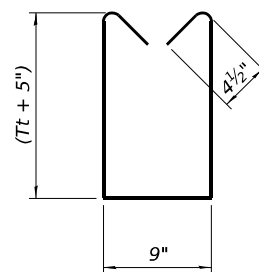


TOEWALL CONSTRUCTION SEQUENCE

1. Perform excavation and construct toewall.
2. Backfill accordingly and prepare bedding for box culvert end sections.
3. Construct remainder of box culvert end section.

Note:

If soil conditions permit, the toewall may be poured monolithically with the bottom slab of the end section using Alt. Section D-D subject to approval from the Engineer.



MODEL: Sheet
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USER NAME =	DESIGNED EHK	REVISED -
PLOT SCALE =	CHECKED JWM	REVISED -
PLOT DATE =	DRAWN BPH	REVISED -
	CHECKED JWM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MULTI-CELL PRECAST CONCRETE BOX CULVERT APRON END
SECTION DETAILS - 2

SHEET 3 OF 3 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1780	28CR-1	ST. CLAIR	18	17
CONTRACT NO. 76M49				

ILLINOIS FED. AID PROJECT



Illinois Department of Transportation
Division of Highways
Illinois Department of Transportation

SOIL BORING LOG

Page 1 of 1

Date 8/15/23

ROUTEAS 1780 (Old US 50) DESCRIPTION Old US 50 at W Tributary E Branch of Silver Creek E of Summerfield Rd LOGGED BY KEG - MTH

SECTION 128CR-1 LOCATION SEC. TWP. RNG. PM

COUNTY St. Clair DRILLING METHOD Hollow Stem Auger HAMMER TYPE 140# Automatic

STRUCT. NO. 082-2516
Station 735+70
BORING NO. B-1
Station 735+43
Offset 7.70ft N
Ground Surface Elev. 474.57 ft

Description	Elev. (ft)	D (ft)	B (/6")	U (tsf)	M (%)	Soil Properties			
						Surface Water Elev. (ft)	Stream Bed Elev. (ft)	Groundwater Elev. (ft)	First Encounter Upon Completion After n/a Hrs. (ft)
Asphalt ~ 4"	473.6								
Concrete - slow drilling		6							
Brown Silty Clay		6	1.25P	25					
		3	P						
As Above	471.1	2							
		2	1.05B	23					
		5	B						
ST 6.0 - 8.0	468.6	-	avg. 0.92	avg. 25.3					
Browish-gray Clay	466.1	1							
		2	0.75P	24					
		3	P						
Becomes Brown & Gray	461.6	1							
		2	1.7B	22					
		4	B						
Brown sandy Clay, w/ gravel	458.6	WH							
		2	0.26B	17					
		2	B						
		3							
		3	1.0B	14					
		6	B						
	454.6	-20							

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)



Illinois Department of Transportation
Division of Highways
Illinois Department of Transportation

SOIL BORING LOG

Page 1 of 1

Date 8/15/23

ROUTEAS 1780 (Old US 50) DESCRIPTION Old US 50 at W Tributary E Branch of Silver Creek E of Summerfield Rd LOGGED BY KEG - MTH

SECTION 128CR-1 LOCATION SEC. TWP. RNG. PM

COUNTY St. Clair DRILLING METHOD Hollow Stem Auger HAMMER TYPE 140# Automatic

STRUCT. NO. 082-2516
Station 735+70
BORING NO. B-1
Station 735+43
Offset 7.70ft N
Ground Surface Elev. 474.57 ft

Description	Elev. (ft)	D (ft)	B (/6")	U (tsf)	M (%)	Soil Properties			
						Surface Water Elev. (ft)	Stream Bed Elev. (ft)	Groundwater Elev. (ft)	First Encounter Upon Completion After n/a Hrs. (ft)
Asphalt ~ 4"	473.6								
Concrete - slow drilling		6							
Brown Silty Clay		6	1.25P	25					
		3	P						
As Above	471.1	2							
		2	1.05B	23					
		5	B						
ST 6.0 - 8.0	468.6	-	avg. 0.92	avg. 25.3					
Browish-gray Clay	466.1	1							
		2	0.75P	24					
		3	P						
Becomes Brown & Gray	461.6	1							
		2	1.7B	22					
		4	B						
Brown sandy Clay, w/ gravel	458.6	WH							
		2	0.26B	17					
		2	B						
		3							
		3	1.0B	14					
		6	B						
	454.6	-20							

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

MODEL: Boring Log Sheet (Sheet)
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	DRAWN -	REVISED -
	CHECKED -	REVISED -
PLOT DATE = 7/17/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS SHEET

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

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1780	28CR-1	ST. CLAIR	18	18
CONTRACT NO. 76M49				
ILLINOIS FED. AID PROJECT				