

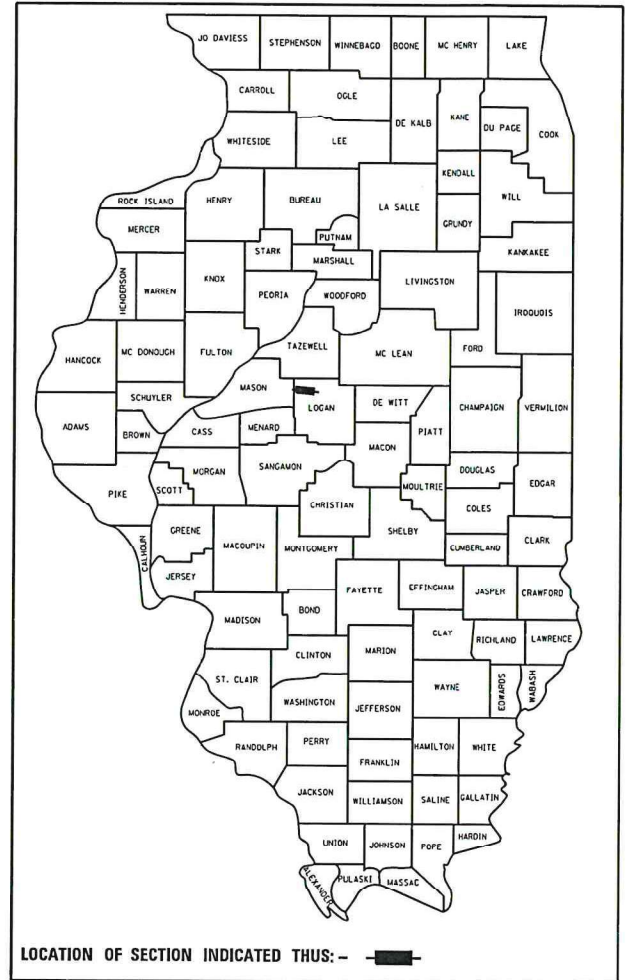
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

# PLANS FOR PROPOSED LOCAL BRIDGE FORMULA PROGRAM

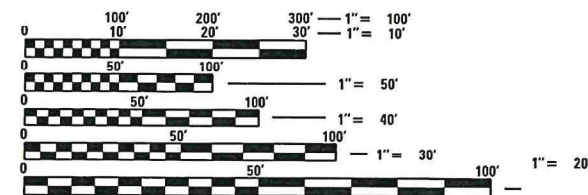
**CH 24 (2200TH ST) OVER PRAIRIE CREEK**  
**SECTION 22-00103-02-BR**  
**PROJECT HS17(651)**  
**LOGAN COUNTY**  
**C-96-003-26**

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	22-00103-02-BR	LOGAN	23	1
FEDERAL AID PROJECT		ILLINOIS	CONTRACT NO. 93846	

SEE SHEET 2 FOR  
 INDEX OF SHEETS AND  
 LIST OF ILLINOIS DOT HIGHWAY STANDARDS

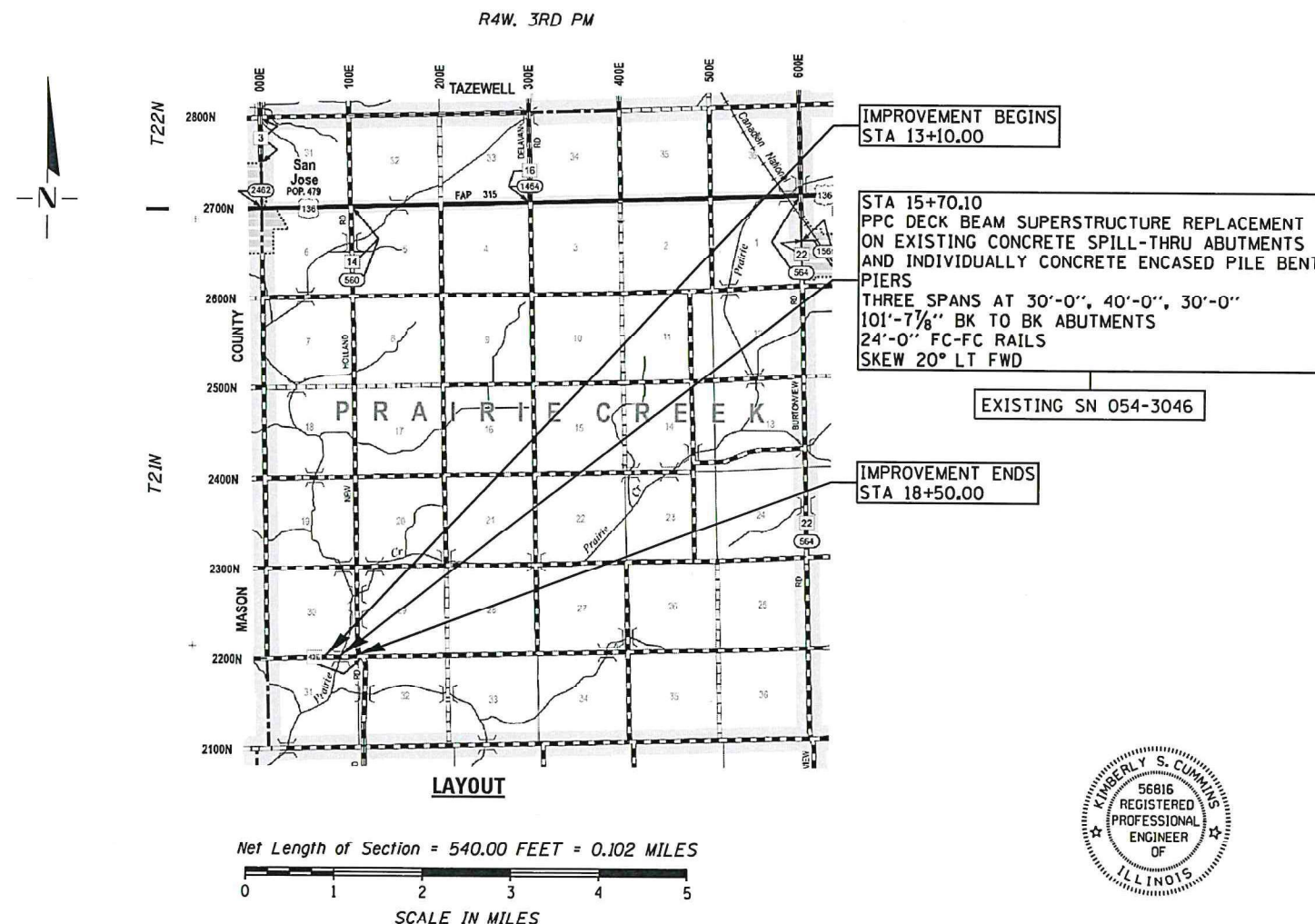


**UTILITY CONTACTS:**  
 NONE



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



FUNCTIONAL CLASSIFICATION : MINOR COLLECTOR  
 DESIGN SPEED 30 MPH  
 CURRENT ADT= 100 (2022)



*Kimberly S. Cummins* 7/29/25  
 ILLINOIS PROFESSIONAL NO. 56816  
 (Expires 11/30/25)

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	
APPROVED	<i>7/29</i> 25
LOGAN COUNTY ENGINEER	
PASSED	<i>August 12</i> 25
DISTRICT SIX ENGINEER OF LOCAL ROADS AND STREETS	
RELEASED FOR BID BASED ON LIMITED REVIEW	<i>August 12</i> 25
REGION FOUR ENGINEER	

**PRINTED BY THE AUTHORITY  
 OF THE STATE OF ILLINOIS**

INDEX OF SHEETS

SHEET NO.	TITLE
1	COVER SHEET
2	INDEX OF SHEETS, HIGHWAY STANDARDS, AND GENERAL NOTES
3-4	SUMMARY OF QUANTITIES
5	TYPICAL SECTIONS
6	SCHEDULE OF QUANTITIES
7	ALIGNMENT, BENCHMARKS, AND CROSS TIES
8-9	PLAN AND PROFILE
10	TRAFFIC CONTROL – ADVANCE WARNING SIGNS (ROAD CLOSURE)
11-21	BRIDGE PLANS
22-23	CROSS SECTIONS

GENERAL NOTES

1. WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE ANY SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR, OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
2. THE AREA TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY AS DIRECTED BY THE ENGINEER.  
  
SEEDING CLASS 2 (SPECIAL) = 0.50 ACRES
3. TEMPORARY EROSION CONTROL SEEDING IS INCLUDED IN THIS CONTRACT TO DISTURBED EARTH DURING THE PERIOD WHEN PERMANENT SEEDING IS NOT ALLOWED.
4. ALL ELEVATIONS SHOWN ON THE PLANS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
5. THE LOCATION OF THOSE BURIED AND ABOVE GROUND UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITY PROPERTY FROM CONSTRUCTION OPERATIONS AS OUTLINED IN ARTICLE 107.39 OF THE STANDARD SPECIFICATIONS. THE J.U.L.I.E NUMBER IS 1 (800) 892-0123. A MINIMUM 48 HOURS ADVANCE NOTICE IS REQUIRED. SEE SPECIAL PROVISIONS FOR STATUS OF UTILITIES WITH UTILITY COMPANIES LISTED.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRS TO ANY UTILITY LINES AND EXISTING IMPROVEMENTS TO REMAIN THAT ARE DAMAGED AS A RESULT OF THE WORK.
7. LAYOUT OF EROSION CONTROL ITEMS MAY BE VARIED IN THE FIELD TO SUIT GROUND CONDITIONS AS DIRECTED BY THE ENGINEER.

APPLICATION RATES USED IN QUANTITY CALCULATIONS

GRANULAR MATERIALS — — — — — 2.05 TONS / CU YD  
RIPRAP — — — — — 1.7 TONS / CU YD  
TEMPORARY EROSION CONTROL SEEDING — — — 100 LB / ACRE

COMMITMENTS

NONE

LIST OF ILLINOIS DOT HIGHWAY STANDARDS

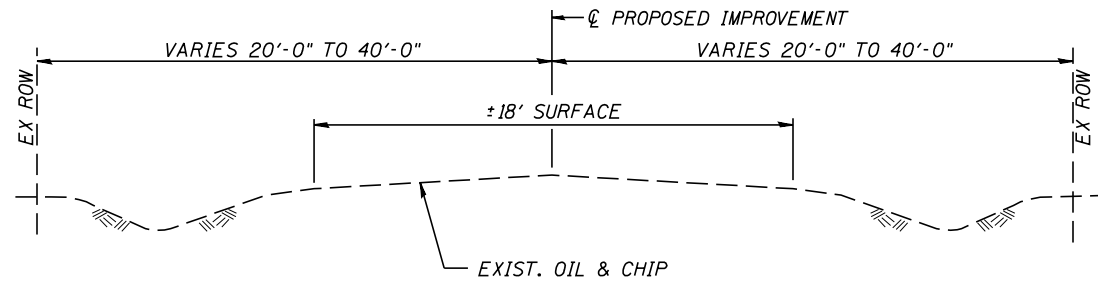
000001-08	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
515001-04	NAME PLATE FOR BRIDGES
701001-02	OFF-ROAD OPERATIONS, 2L, 2W, MORE THAN 15' (4.5 M) AWAY FROM PAVEMENT EDGE
701006-05	OFF-ROAD OPERATIONS, 2L, 2W, 15' (4.5 M) TO 24" (600 MM) FROM PAVEMENT EDGE
701901-10	TRAFFIC CONTROL DEVICES
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

SUMMARY OF QUANTITIES				CONSTRUCTION CODE
				80% FEDERAL 20% LOCAL
CODE NO.	ITEM	UNIT	TOTAL QUANTITY	BRIDGE
				0013
				054-3046
20200100	EARTH EXCAVATION	CU YD	65	65
20300100	CHANNEL EXCAVATION	CU YD	340	340
20400800	FURNISHED EXCAVATION	CU YD	170	170
20600110	GRANULAR EMBANKMENT, SPECIAL	TON	331	331
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	40	40
28000305	TEMPORARY DITCH CHECKS	FOOT	16	16
28000400	PERIMETER EROSION BARRIER	FOOT	150	150
28100207	STONE RIPRAP, CLASS A4	TON	270	270
28200200	FILTER FABRIC	SQ YD	290	290
35100100	AGGREGATE BASE COURSE, TYPE A	TON	403	403
50101500	REMOVAL OF EXISTING SUPERSTRUCTURES	EACH	1	1
50102400	CONCRETE REMOVAL	CU YD	3.6	3.6
50200100	STRUCTURE EXCAVATION	CU YD	6	6
50300225	CONCRETE STRUCTURES	CU YD	2.6	2.6

\* SPECIALTY ITEM

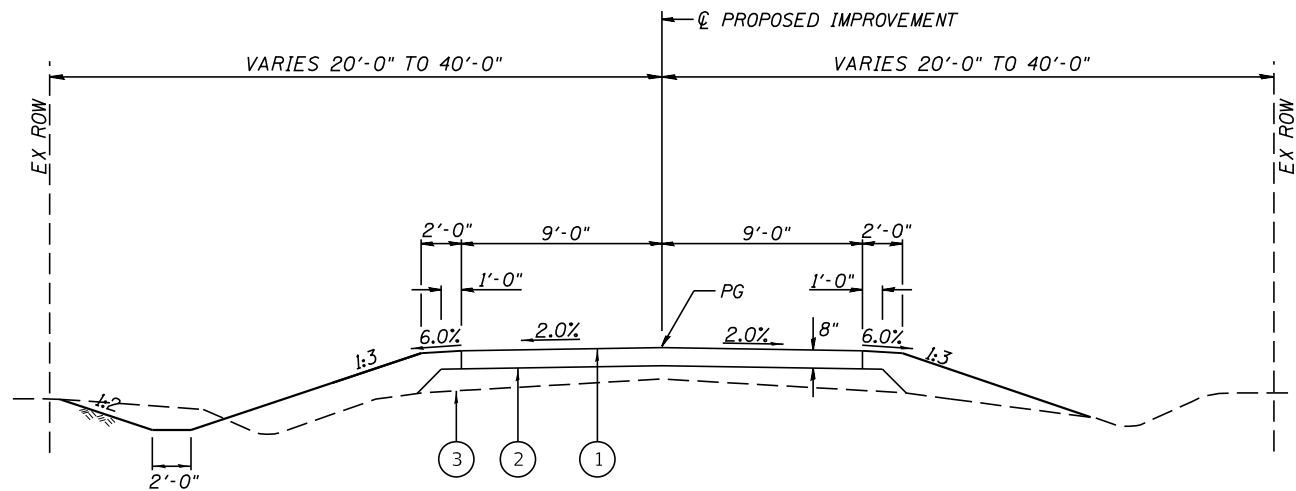






EXISTING TYPICAL SECTION  
STA 13+10.00 TO STA 15+19.27  
STA 16+20.93 TO STA 18+50.00

OMISSIONS  
BRIDGE  
STA 15+19.27 TO STA 16+20.93



CUT SECTION-CONSTRUCT AS  
SHOWN ON STATION CROSS SECTIONS

FILL SECTION-CONSTRUCT AS  
SHOWN ON STATION CROSS SECTIONS

PROPOSED TYPICAL SECTION  
STA 13+10.00 TO STA 15+19.27  
STA 16+20.93 TO STA 18+50.00

LEGEND

- ① PROPOSED BITUMINOUS SURFACE TREATMENT A2 (BY OTHERS)
- ② PROPOSED AGGREGATE BASE COURSE, TYPE A
- ③ PROPOSED GRANULAR EMBANKMENT, SPECIAL

NOTE:  
TRANSITION FROM EXISTING ROADWAY TO PROPOSED ROADWAY  
FROM STA 13+10.00 TO STA 13+35.00  
TRANSITION FROM PROPOSED ROADWAY TO EXISTING ROADWAY  
FROM STA 18+25.00 TO STA 18+50.00

EARTHWORK

LOCATION	20200100 EARTH EXCAVATION	EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT	20400800 FURNISHED EXCAVATION EARTHWORK BALANCE WASTE (+) OR
	CU YD	CU YD	CU YD	CU YD
STA 13+10.00 TO STA 15+00.00	25	20	90	-70
STA 16+20.93 TO STA 18+50.00	40	30	130	-100
CHANNEL EXCAVATION	340			
TOTAL	65	50	220	-170

SHRINKAGE = 25%

20600110 GRANULAR EMBANKMENT, SPECIAL

LOCATION	TON
STA 13+10.00 TO STA 15+19.27	137
STA 15+17.27 TO STA 15+19.27 @ backwall	3
STA 16+20.93 TO STA 16+22.93 @ backwall	3
STA 16+20.93 TO STA 18+50.00	188
TOTAL	331

28000250 TEMPORARY EROSION CONTROL SEEDING

LOCATION	POUND
LT STA 13+10.00 TO STA 15+90.00	14
LT STA 16+09.00 TO STA 18+50.00	9
RT STA 13+10.00 TO STA 15+47.00	7
RT STA 15+69.00 TO STA 18+50.00	10
TOTAL	40

28000305 TEMPORARY DITCH CHECKS

LOCATION	FOOT
LT STA 16+50.00	8
RT STA 16+50.00	8
TOTAL	16

28000400 PERIMETER EROSION BARRIER

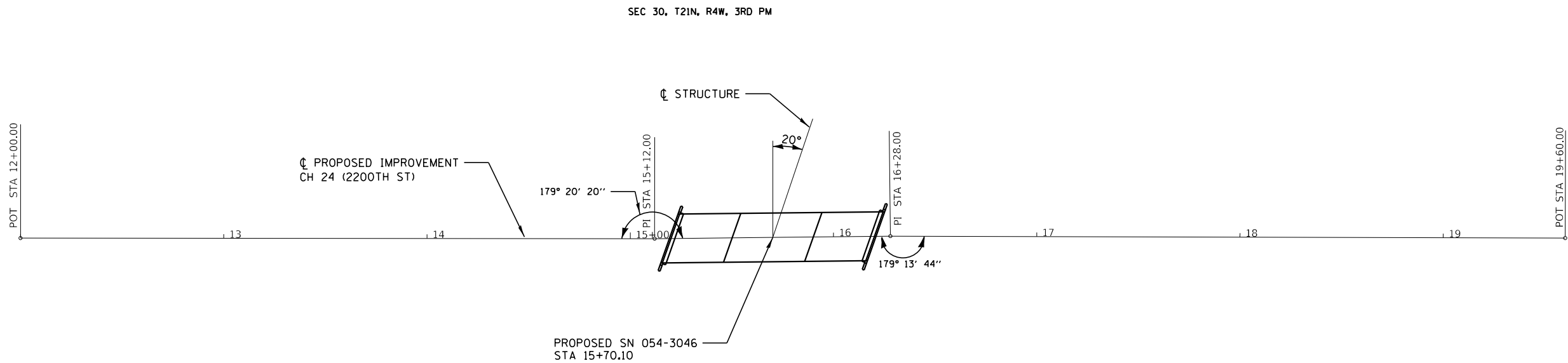
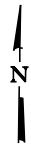
LOCATION	FOOT
RT STA 13+50.00 TO STA 15+00.00	150
TOTAL	150

35100100 AGGREGATE BASE COURSE, TYPE A

LOCATION		WIDTH	TON
STA 13+10.00	TO STA 13+35.00	18	22.78
STA 13+35.00	TO STA 15+19.27	18	169.57
STA 16+20.93	TO STA 18+25.00	18	187.61
STA 18+25.00	TO STA 18+50.00	18	22.78
TOTAL			402.74
USE			403

X2501000 SEEDING, CLASS 2 (SPECIAL)

LOCATION	ACRE
LT STA 13+10.00 TO STA 15+90.00	0.14
LT STA 16+09.00 TO STA 18+50.00	0.09
RT STA 13+10.00 TO STA 15+47.00	0.07
RT STA 15+69.00 TO STA 18+50.00	0.10
TOTAL	0.40
USE	0.50



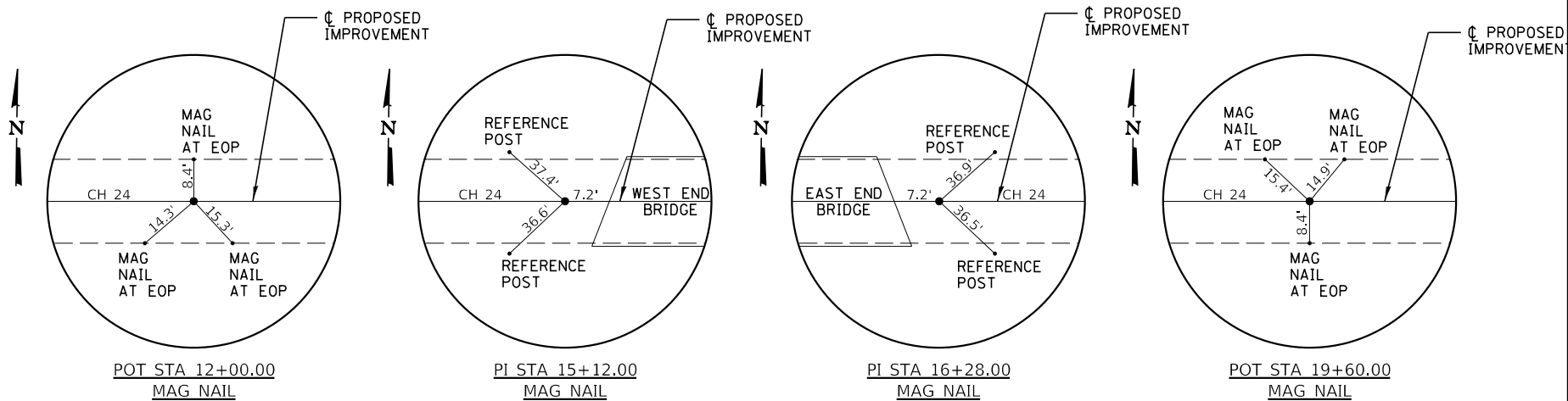
SEC 31, T21N, R4W, 3RD PM

BM\*1 - MAG NAIL IN END OF 24"Ø CMP  
STA. 9+92, 18.5' LT  
ELEV. 528.70

BM\*2 - CHISELED "□" IN NW WINGWALL OF BRIDGE  
STA. 15+24, 12.7' LT  
ELEV. 531.20

BM\*3 - CHISELED "□" IN SE WINGWALL OF BRIDGE  
STA. 16+16, 12.5' RT  
ELEV. 531.19

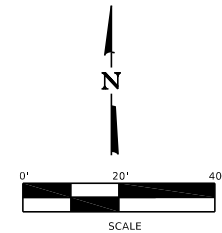
CL PROPOSED IMPROVEMENT			
CONTROL POINT	STATION	COORDINATES	
		NORTHING	EASTING
POT	12+00.00	1299311.67	2458348.88
PI	15+12.00	1299315.41	2458660.85
PI	16+28.00	1299318.14	2458776.82
POT	19+60.00	1299321.48	2459108.81



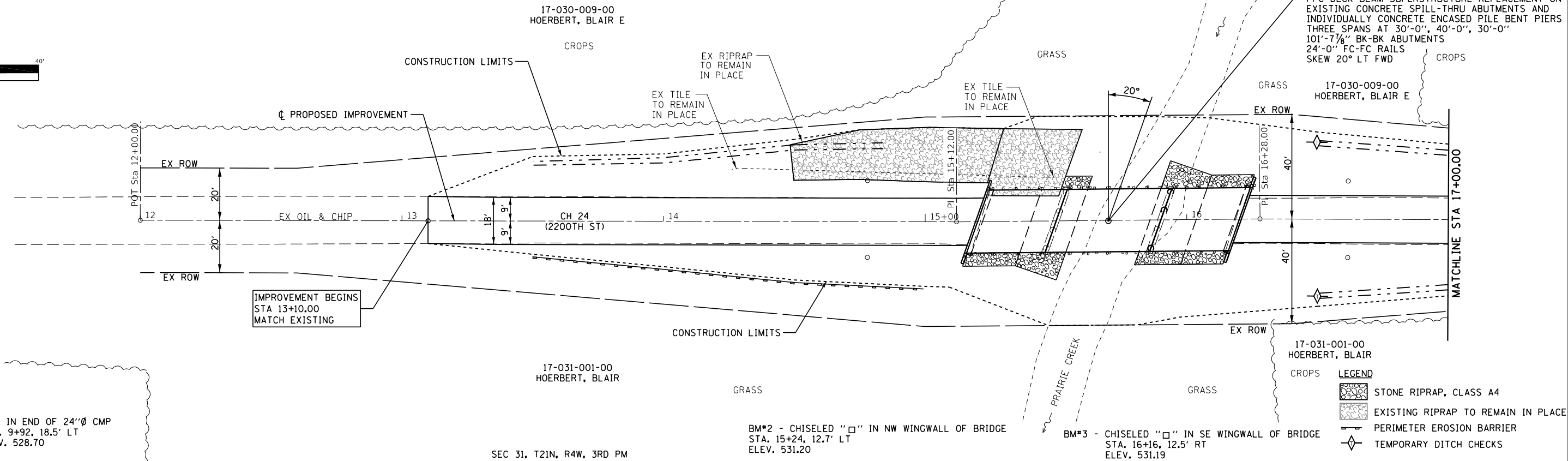
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NO.	PLOTTED		
	ALIGNMENT CHECKED		
	AS SHOWN		
	CADD FILE NAME		

PROFILE	SURVEYED	BY	DATE
NO.	PLOTTED		
	GRADES CHECKED		
	STRUCTURE NOTATIONS CHNG		

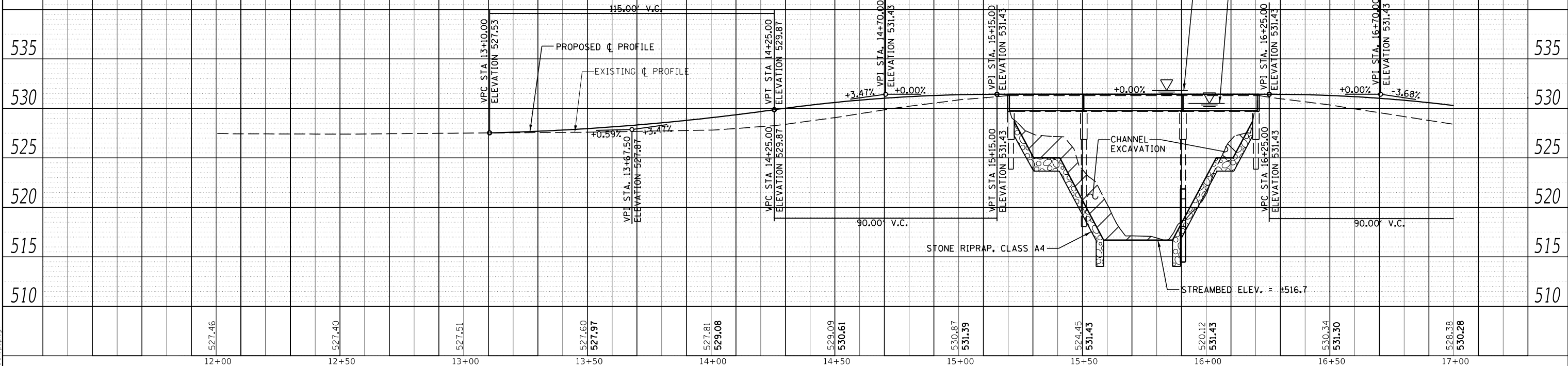
Default  
2781-sh1-p&p.dgn



SEC 30, T21N, R4W, 3RD PM



CHANNEL EXCAVATION  
THE CHANNEL SHALL BE EXCAVATED AS SHOWN WITHIN THE PROPOSED STRUCTURE THEN TAPER TO MATCH THE EXISTING CHANNEL AT THE RIGHT OF WAY LINES. SUITABLE EXCAVATED MATERIAL SHALL BE USED IN THE EMBANKMENT AS DIRECTED BY THE ENGINEER.  
CHANNEL EXCAVATION = 340 CU YD



**CEC** Cummins  
Engineering  
Corporation  
ENGINEERS & SURVEYORS

JOB = 2781  
FILE NAME = 2781-sh1-p&p.dgn  
PLOT SCALE = 40.0000' / 1" =  
PLOT DATE = 8/6/2025

DESIGNED - CGF  
DRAWN - CGF  
CHECKED - TSH  
DATE - 3/20/2025

REVISED -  
REVISED -  
REVISED -  
REVISED -

LOGAN COUNTY  
CH 24 IMPROVEMENTS

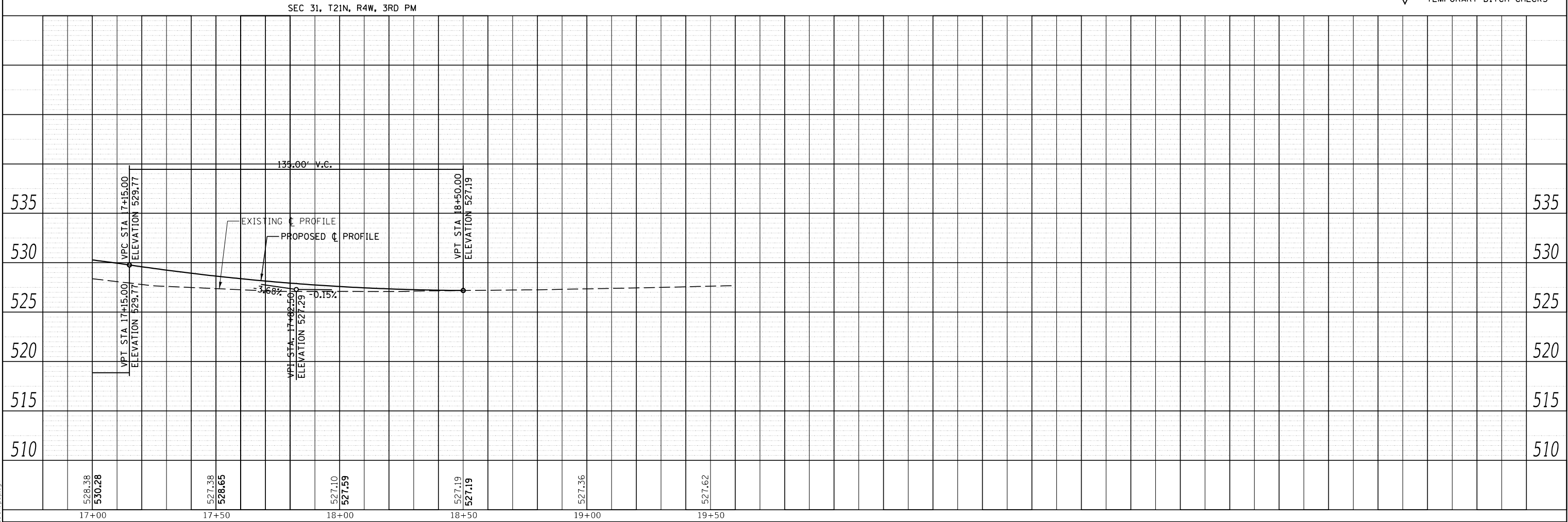
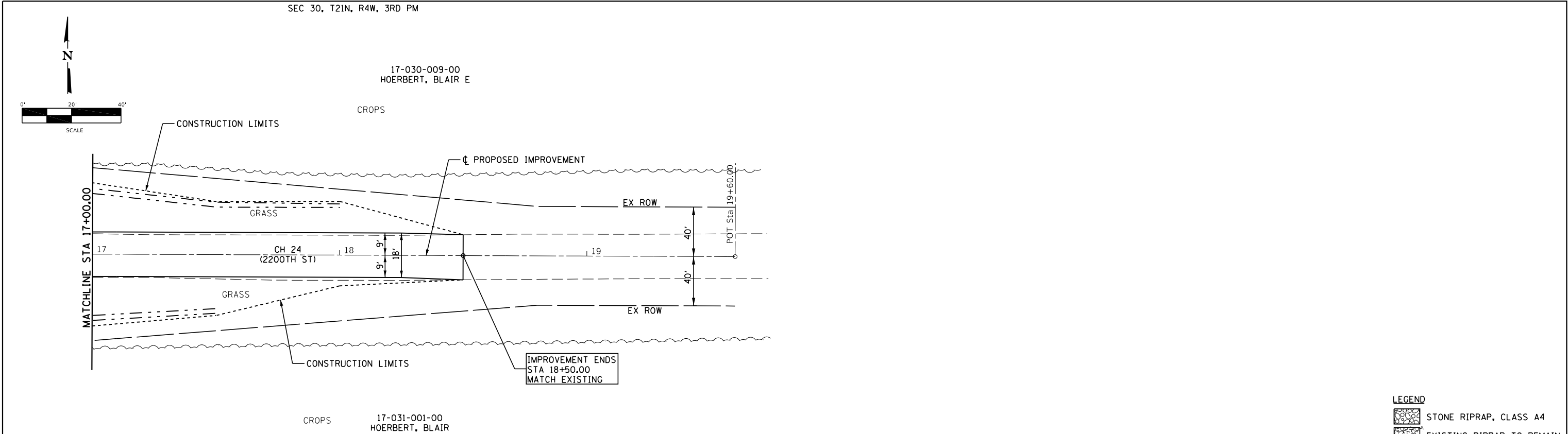
PLAN AND PROFILE

SCALE: SHEET NO. OF SHEETS STA. TO STA.

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	22-00103-02-BR	LOGAN	23	8
CONTRACT NO. 93846				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

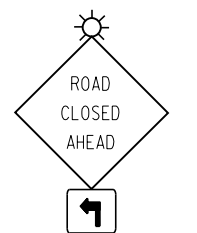
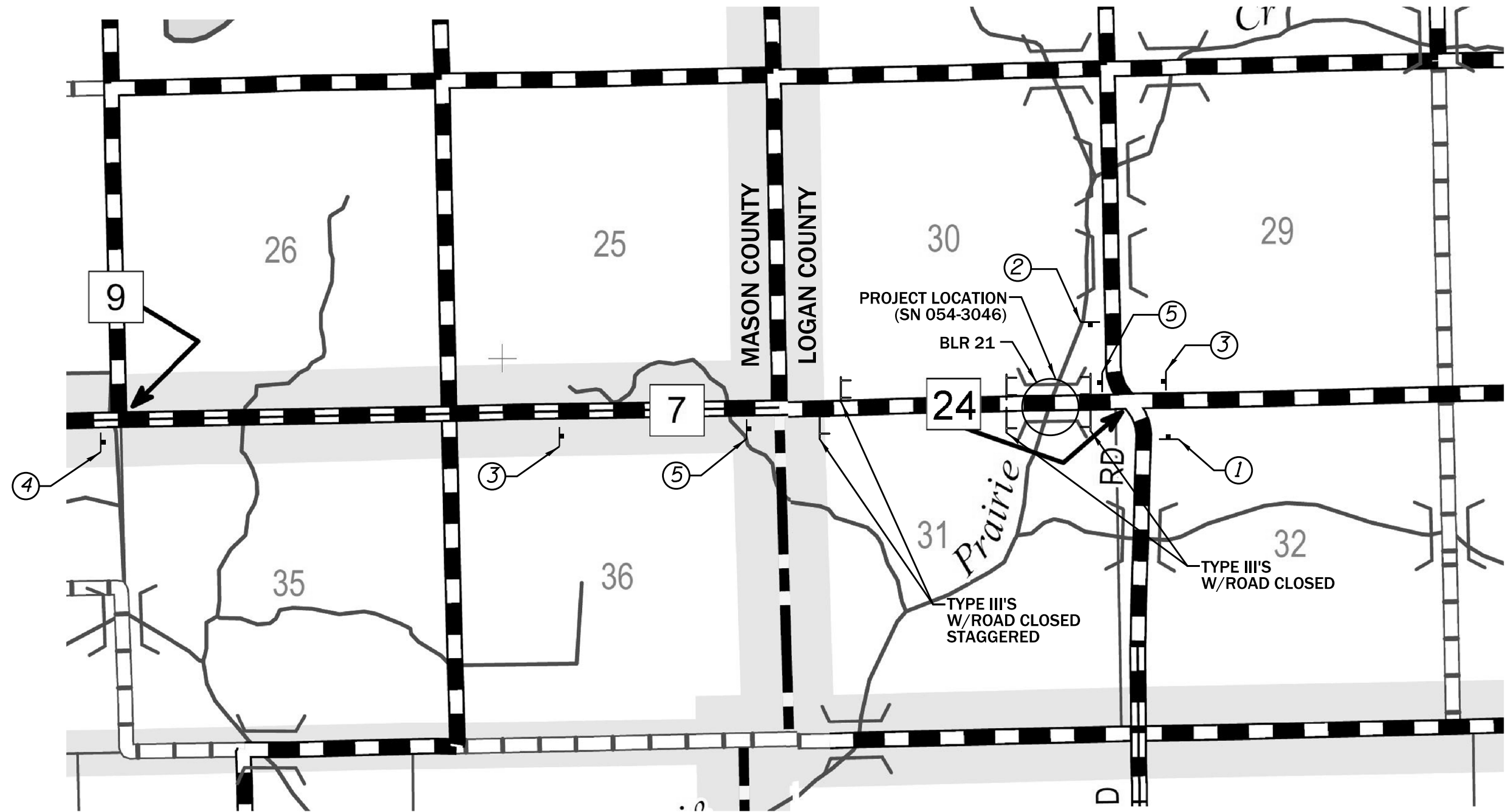
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			PLOTTED		
			ALIGNMENT CHECKED		
			AS SHOWN		
			CADD FILE NAME		

PROFILE	NO.	NOTE BOOK	SURVEYED	BY	DATE
			GRADES CHECKED		
			AS SHOWN		
			STRUCTURE NOTATIONS CHNG		

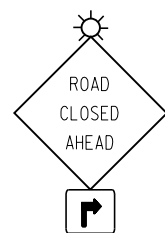


<div><div>CEC</div><div>Cummins Engineering Corporation</div><div>ENGINEERS &amp; SURVEYORS</div></div>	JOB = 2781	DESIGNED - CGF	REVISED -	LOGAN COUNTY CH 24 IMPROVEMENTS	PLAN AND PROFILE					C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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	PLOT SCALE = 40.0000' / in.	CHECKED - TSH	REVISED -							CONTRACT NO. 93846				
	PLOT DATE = 8/1/2025	DATE - 3/20/2025	REVISED -							FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				
					SCALE:	SHEET NO.	OF	SHEETS	STA.	TO	STA.			

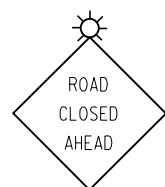




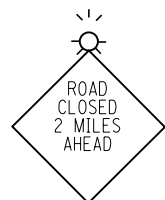
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M5-1(L)  
POST MOUNTED  
W/ LIGHT  
SIGN PANEL ①



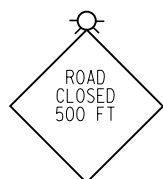
W20-3(O)-48  
M5-1(R)  
POST MOUNTED  
W/ LIGHT  
SIGN PANEL ②



W20-3(O)-48  
POST MOUNTED  
W/ LIGHT  
SIGN PANEL ③



W20-3(O)-48  
POST MOUNTED  
W/ LIGHT  
SIGN PANEL ④



W20-3(O)-48  
POST MOUNTED  
W/ LIGHT  
SIGN PANEL ⑤

Benchmark: #2 Chisled square on NW wingwall, 12.4' LT. Sta. 15+23.73, Elev. 531.20.

Existing S.N. 054-3046 three span PPC Deck Beam bridge on spill-thru abutments and individually encased pile bent piers. The structure is 101'-8" back to back abutments and 24' out to out deck. The structure is skewed 20° Lt. fwd.

## INDEX OF SHEETS

1. General Plan & Elevation
2. Riprap Plan
3. Superstructure Details
- 4-7. 17"x48" PPC Deck Beam
8. Steel Railing, Type S1
9. Abutment Concrete Removal
10. Abutment Details
11. Pier 2 Encasement Details

PRAIRIE CREEK  
RE-BUILT 20\_\_ BY  
LOGAN COUNTY  
SEC. 22-00103-02-BR  
STATION 15+70.10  
STR. NO. 054-3046 LOADING HL-93

## NAME PLATE

See Std. 515001

Existing Name Plate shall be cleaned and relocated next to new Name Plate. Cost included with Name Plates.

## GENERAL NOTES

Reinforcement bars designated (E) shall be epoxy coated.

Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

Plan dimensions and details relative to the existing structure have been taken from existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

## TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A4	Ton		270	270
Filter Fabric	Sq. Yd.		290	290
Removal Of Existing Superstructures	Each		1	1
Concrete Removal	Cu. Yd.		3.6	3.6
Structure Excavation	Cu. Yd.		6	6
Concrete Structures	Cu. Yd.		2.6	2.6
Concrete Encasement	Cu. Yd.		2.5	2.5
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	2394		2394
Reinforcement Bars, Epoxy Coated	Pound		340	340
Steel Railing, Type S1	Foot	200		200
Name Plates	Each		1	1

## GENERAL PLAN AND ELEVATION

CH 24 (2200TH ST) OVER

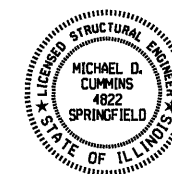
PRAIRIE CREEK

SECTION 22-00103-02-BR

LOGAN COUNTY

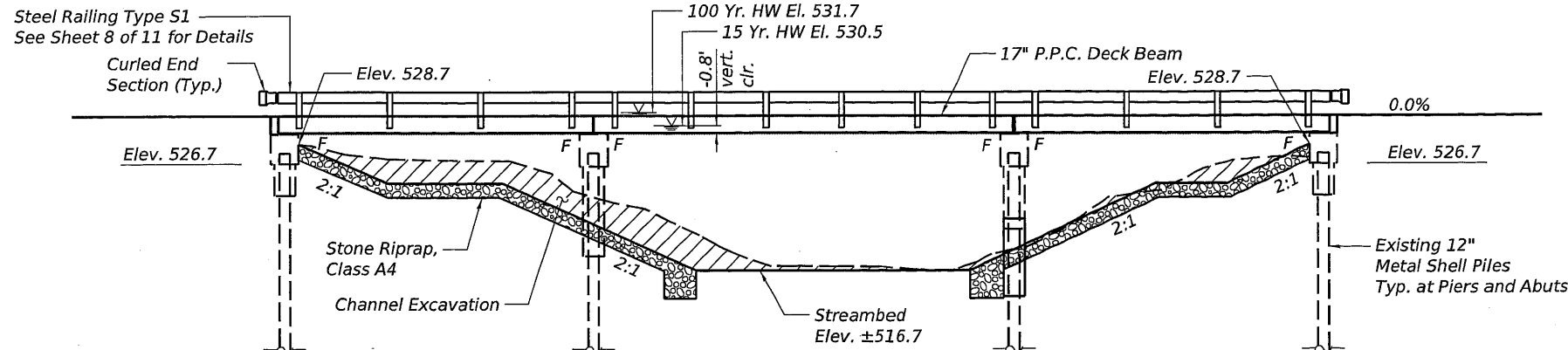
STA 15+70.10

STRUCTURE NO. 054-3046

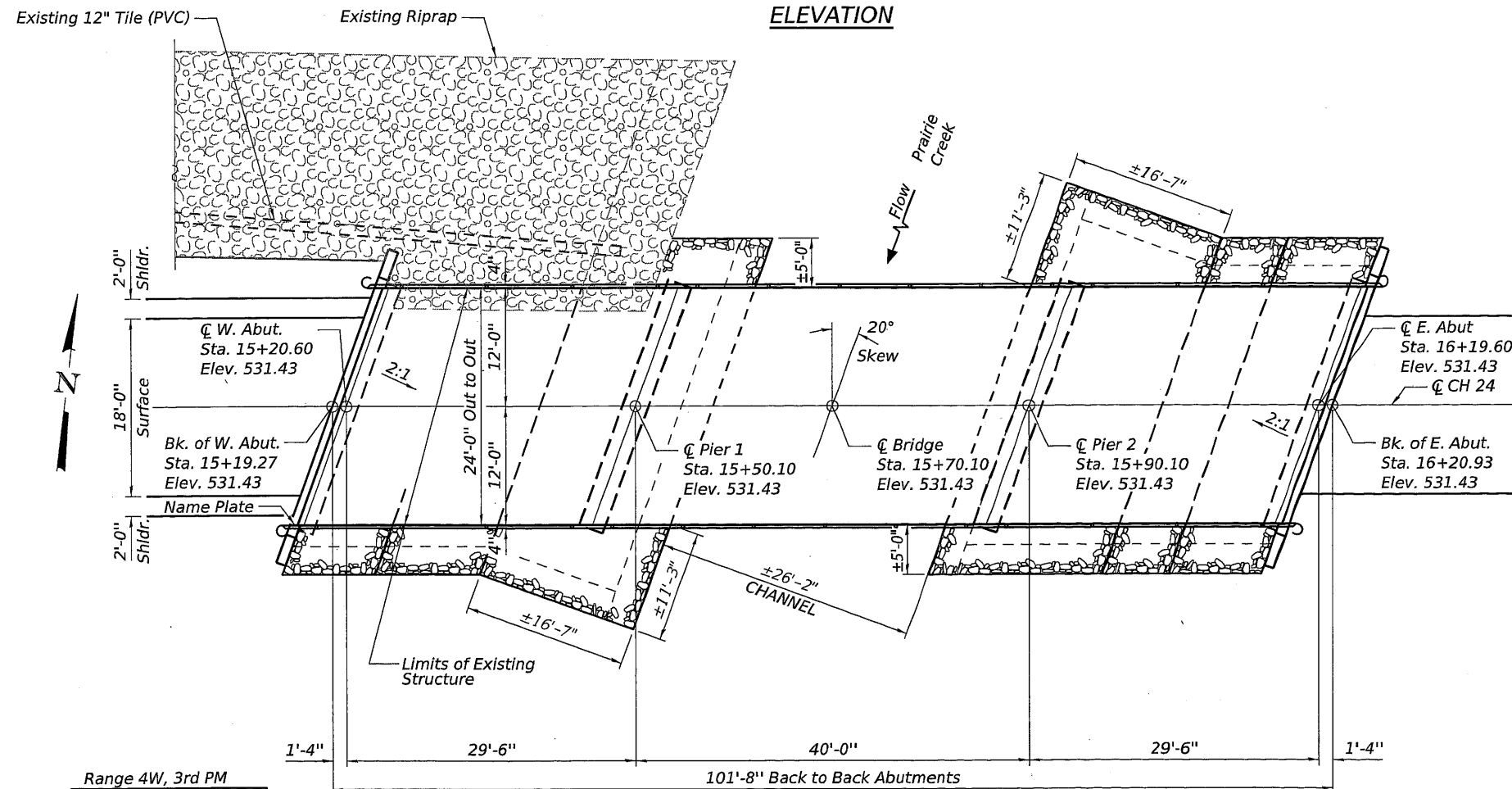


"I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current 'AASHTO Bridge Design Specifications'."

Michael D. Cummins 8-6-25  
ILLINOIS STRUCTURAL NO. 4822 (Expires 11/30/26)



## ELEVATION



## PLAN

## DESIGN SPECIFICATIONS

2025 AASHTO LRFD Bridge Design Specifications, 10th Edition

## LOADING HL-93

(NEW CONSTRUCTION)

Allow 50#/sq. ft. for future wearing surface.

## DESIGN STRESSES

### FIELD & EXISTING UNITS

$f_c = 3,500$  psi (Substructure)  
 $f_y = 60,000$  psi (Reinforcement)

### PRECAST PRESTRESSED UNITS

$f_c = 6,000$  psi  
 $f_{ci} = 5,000$  psi  
 $f_{pu} = 270,000$  psi ( $\frac{1}{2}$ " low relax strands)  
 $f_{pbi} = 201,960$  psi ( $\frac{1}{2}$ " low relax strands)

LOGAN COUNTY  
CH 24 IMPROVEMENTS

GENERAL PLAN AND ELEVATION  
STRUCTURE NO. 054-3046

SHEET 1 OF 11 SHEETS

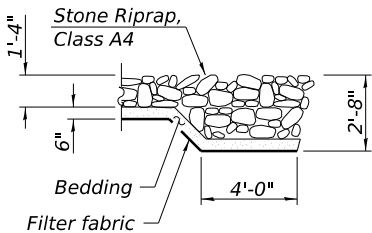
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	22-00103-02-BR	LOGAN	23	1
CONTRACT NO. 93846				
ILLINOIS FED. AID PROJECT				

**CEC** Cummins  
Engineering  
Corporation  
ENGINEERS & SURVEYORS

JOB = 2781  
FILE NAME = 054-3046-0000-01-GPE.dgn  
PLOT DATE = 8/6/2025

DESIGNED - EFB  
CHECKED - AAN  
DRAWN - EFB  
CHECKED - MDC

REVISED -  
REVISED -  
REVISED -  
REVISED -



SECTION C-C

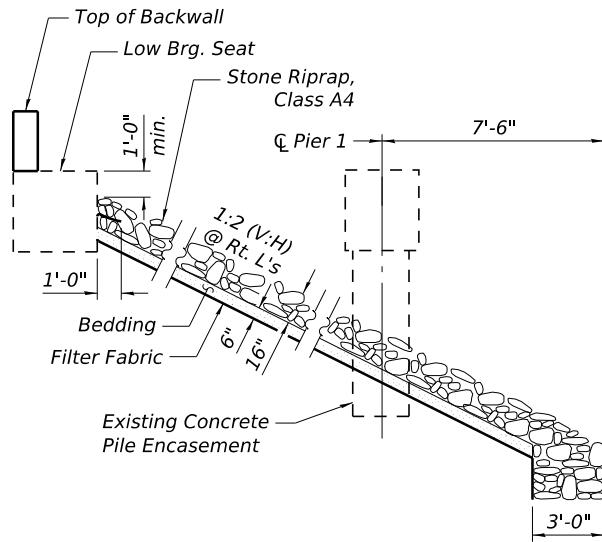
RIPRAP PLAN

DESIGN SCOUR ELEVATION TABLE

Design Scour	W. Abut.	Pier 1	Pier 2	E. Abut.	Item 113
Elevation (ft.)	527.2	513.6	512.2	527.2	5

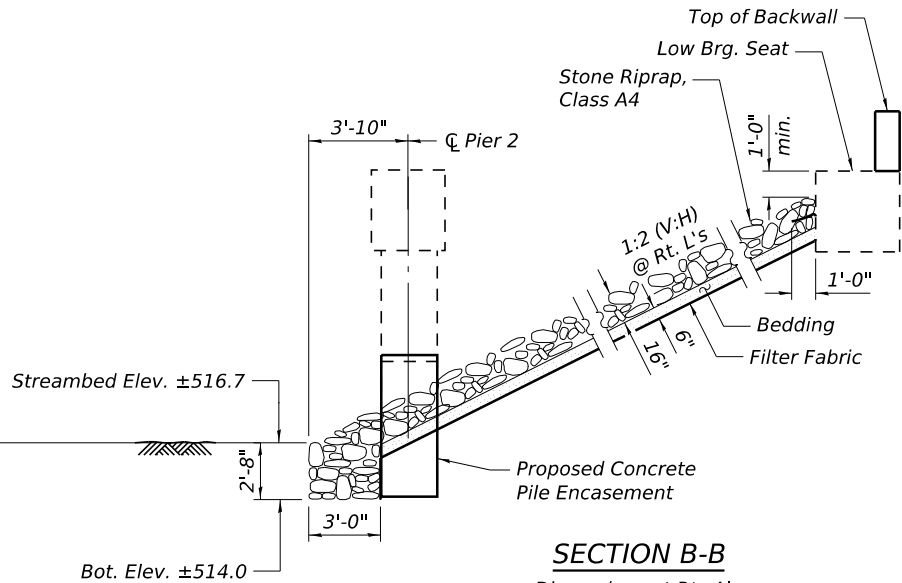
WATERWAY INFORMATION

Drainage Area	74.0 Sq. Mi.
Required Opening (15 Yr.)	3,112 Sq. Ft.
Proposed Opening (15 Yr.)	722 Sq. Ft.
Approach Opening (15 Yr.)	2,390 Sq. Ft.
Required Opening (100 Yr.)	5,011 Sq. Ft.
Proposed Opening (100 Yr.)	722 Sq. Ft.
Approach Opening (100 Yr.)	4,289 Sq. Ft.
Ex. Ovt. Discharge (2 Yr.)	2,000 C.F.S.
Created Head (2 Yr.)	0.2 Ft.
Design Discharge (15 Yr.)	5,595 C.F.S.
Created Head (15 Yr.)	0.1 Ft.
Base Discharge (100 Yr.)	9,070 C.F.S.



SECTION A-A

Dimensions at Rt. L's

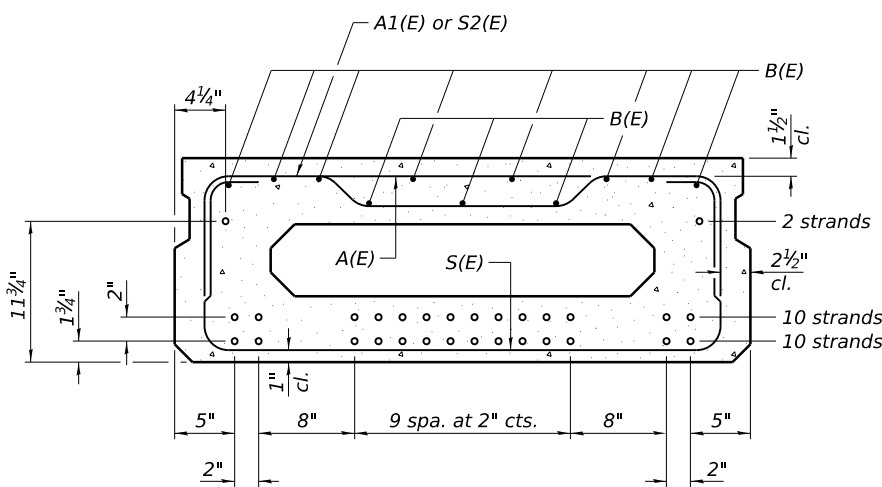
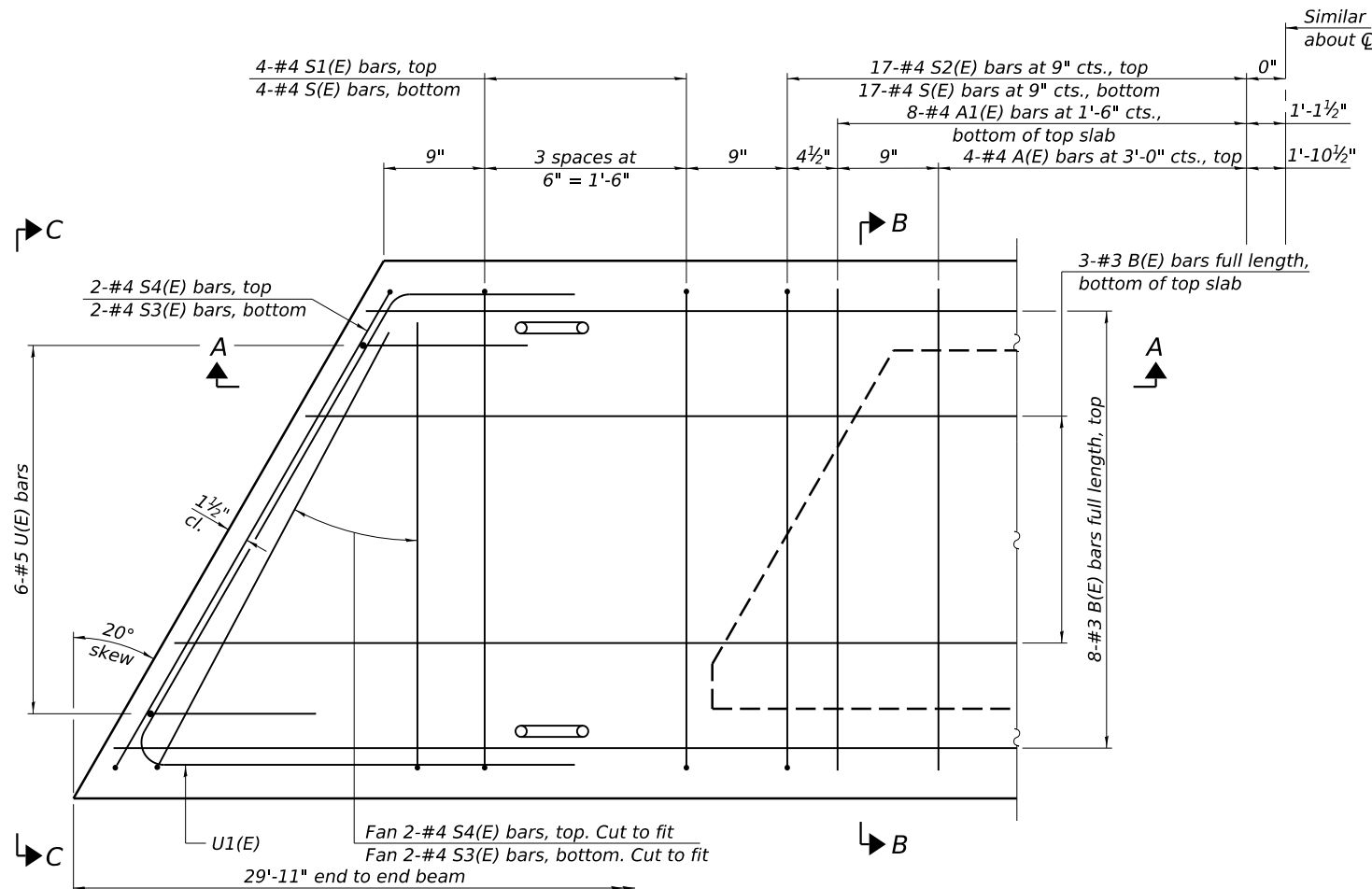
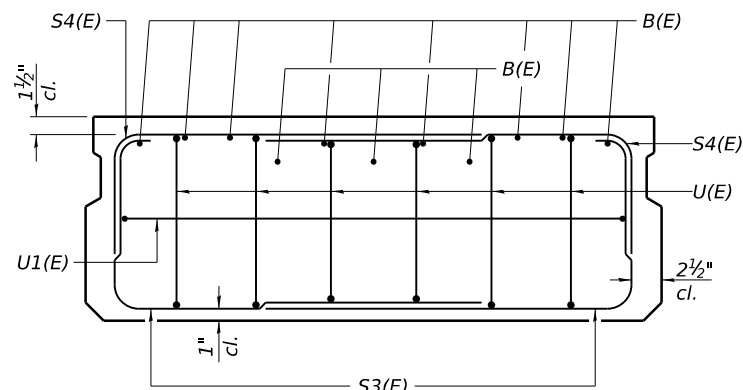
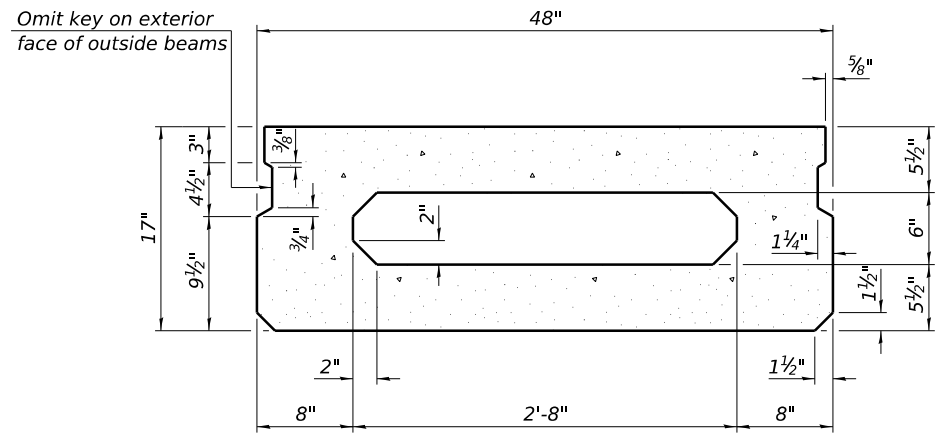
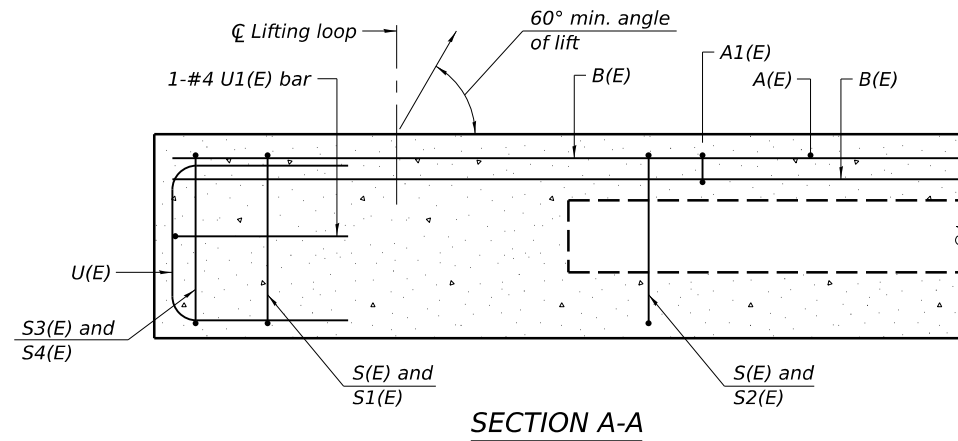


SECTION B-B

Dimensions at Rt. L's

MODEL: Default  
FILE NAME: 054-3046-0000-02-RiprapDetails.dgn





BAR LIST				
ONE BEAM ONLY				
(For information only)				
Bar	No.	Size	Length	Shape
A(E)	9	#4	3'-7"	—
A1(E)	17	#4	3'-10"	—
B(E)	11	#3	29'-8"	—
S(E)	41	#4	6'-9"	┌
S1(E)	8	#4	5'-3"	┌
S2(E)	33	#4	5'-6"	┌
S3(E)	8	#4	5'-0"	┌
S4(E)	8	#4	4'-3"	┌
U(E)	12	#5	3'-8"	└
U1(E)	2	#4	7'-6"	└

MINIMUM BAR LAP  
#3 bar = 1'-6"

Note:  
Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

Note:  
See sheet 5 of 11 for additional details and Bill of Material.

MODEL: Default  
FILE NAME: 054-3046-0000-04-07-Super.dgn

PD-1748-L

5-15-2023

**CEC**  
Cummins  
Engineering  
Corporation  
ENGINEERS & SURVEYORS

JOB - 2781  
FILE NAME = 054-3046-0000-04-07-Super.dgn  
PLOT DATE = 7/23/2025

DESIGNED - EFB	REVISED -
CHECKED - AAN	REVISED -
DRAWN - EFB	REVISED -
CHECKED - MDC	REVISED -

LOGAN COUNTY  
CH 24 IMPROVEMENTS

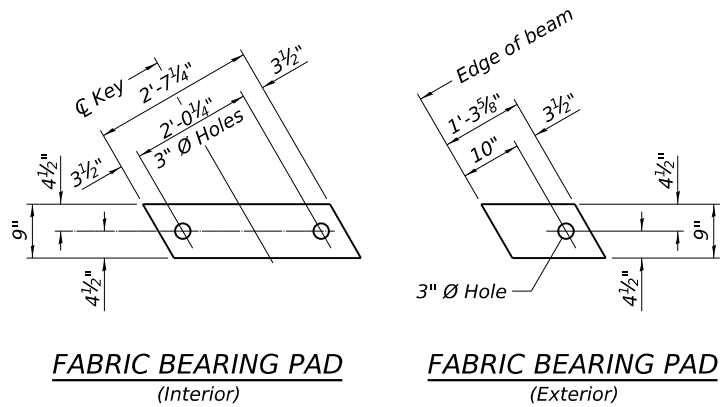
17" x 48" PPC DECK BEAM  
STRUCTURE NO. 054-3046

SHEET 4 OF 11 SHEETS

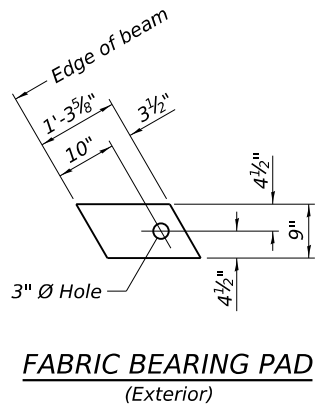
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	22-00103-02-BR	LOGAN	23	14
CONTRACT NO. 93846				

ILLINOIS FED. AID PROJECT





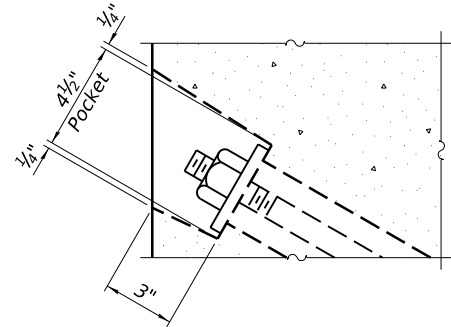
FABRIC BEARING PAD  
(Interior)



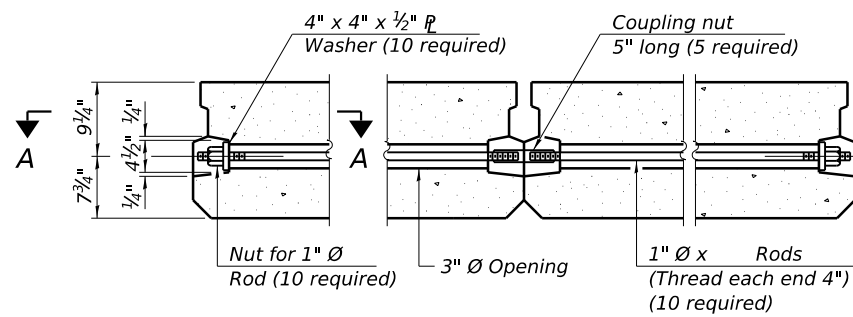
FABRIC BEARING PAD  
(Exterior)

FIXED

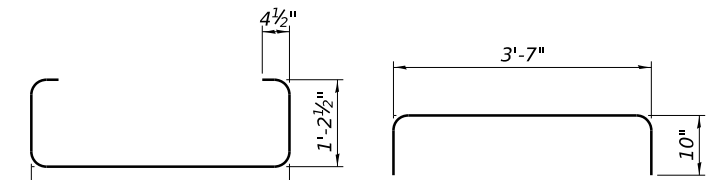
Notes:  
All bearing pads shall be 1" thick.  
Omit holes when using expansion bearings.  
Expansion bearing pads shall be bonded to the substructure.



SECTION A-A

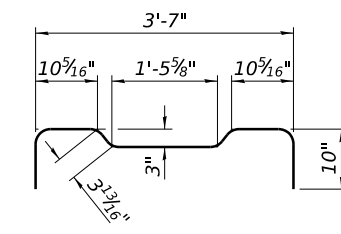


TYPICAL TRANSVERSE TIE ASSEMBLY

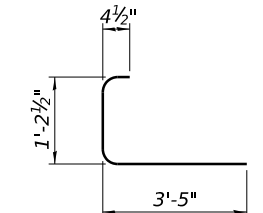


BAR S(E)

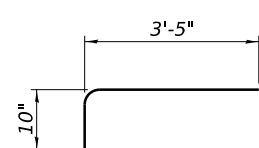
BAR S1(E)



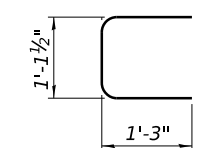
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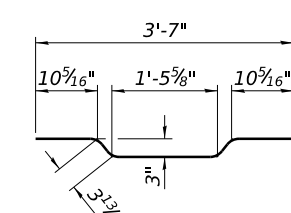
BAR S3(E)



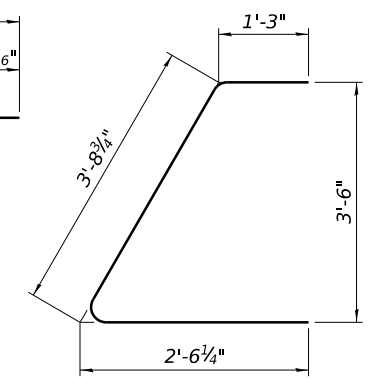
BAR S4(E)



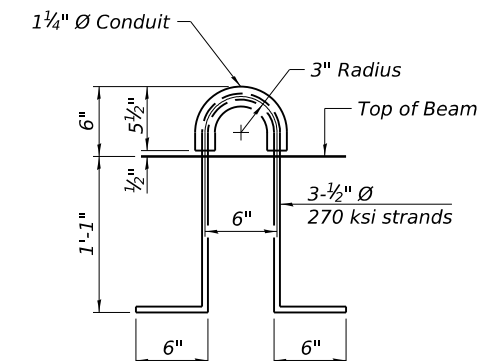
BAR U(E)



BAR A1(E)



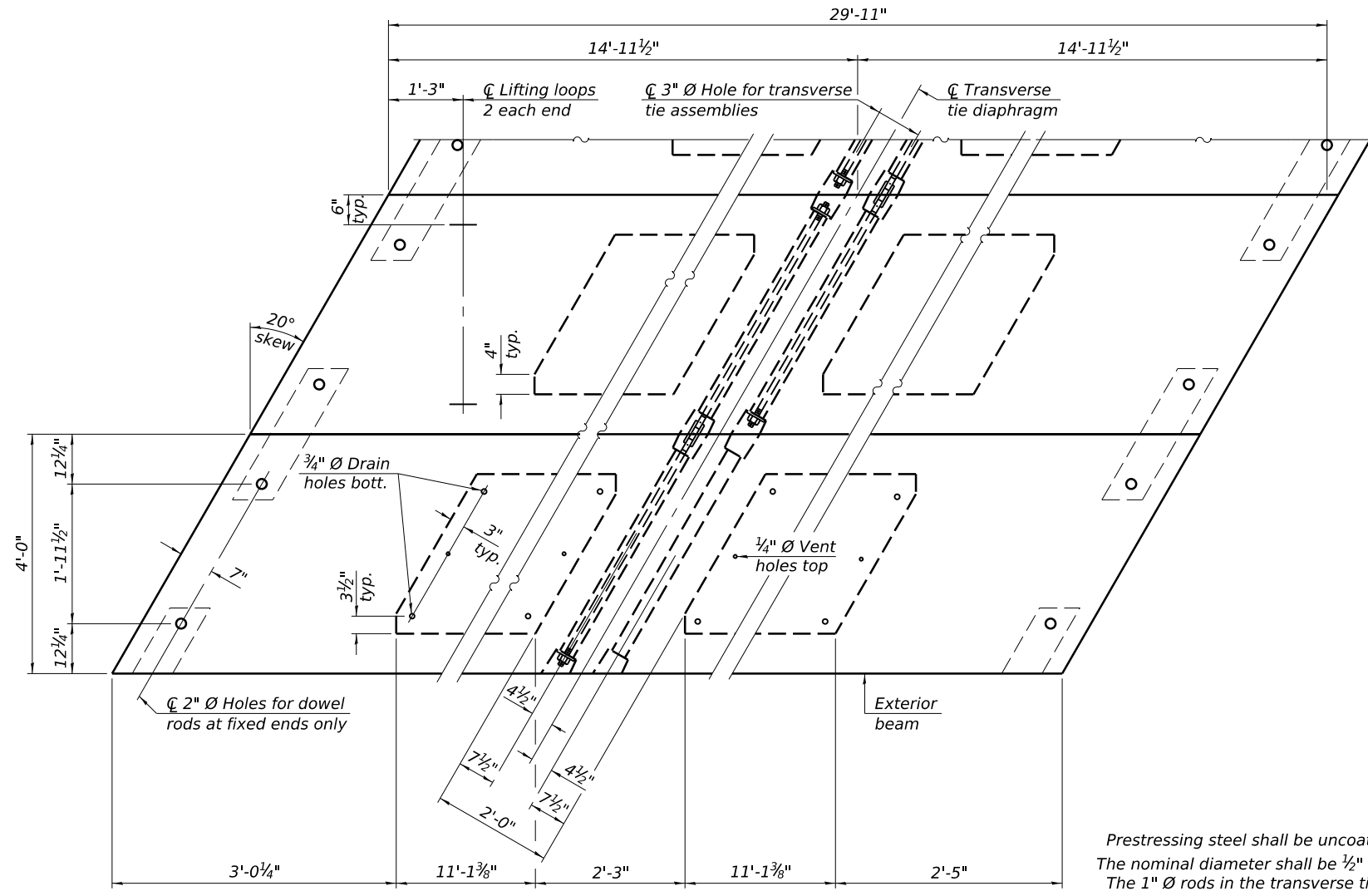
BAR U1(E)



LIFTING LOOP DETAIL

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	1436
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PLAN VIEW

Note:  
Connect beams in pairs with the  
transverse tie configuration shown.

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" Ø rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place. Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. A minimum 2 1/2" Ø lifting pin shall be used to engage the lifting loops during handling. Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams. Compressive strength of prestressed concrete, f'c, shall be 6000 psi. Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

LOGAN COUNTY  
CH 24 IMPROVEMENTS

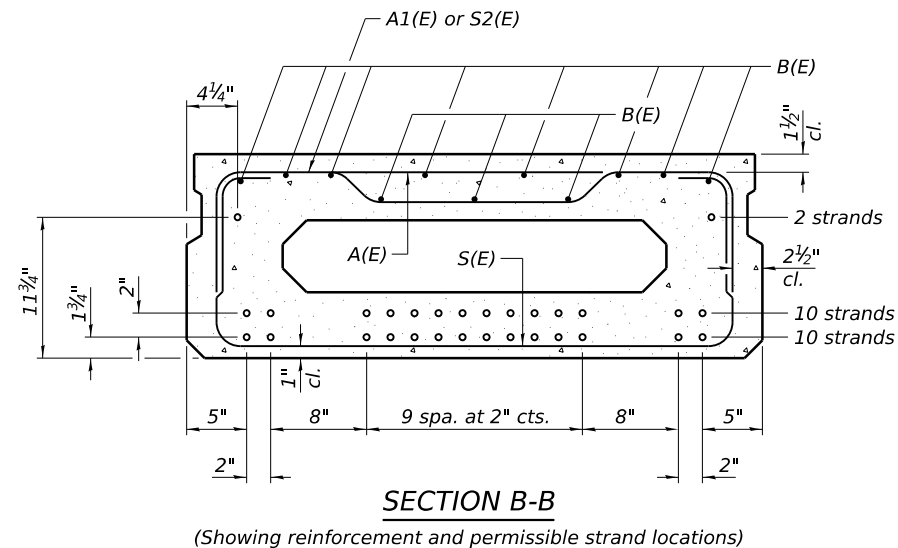
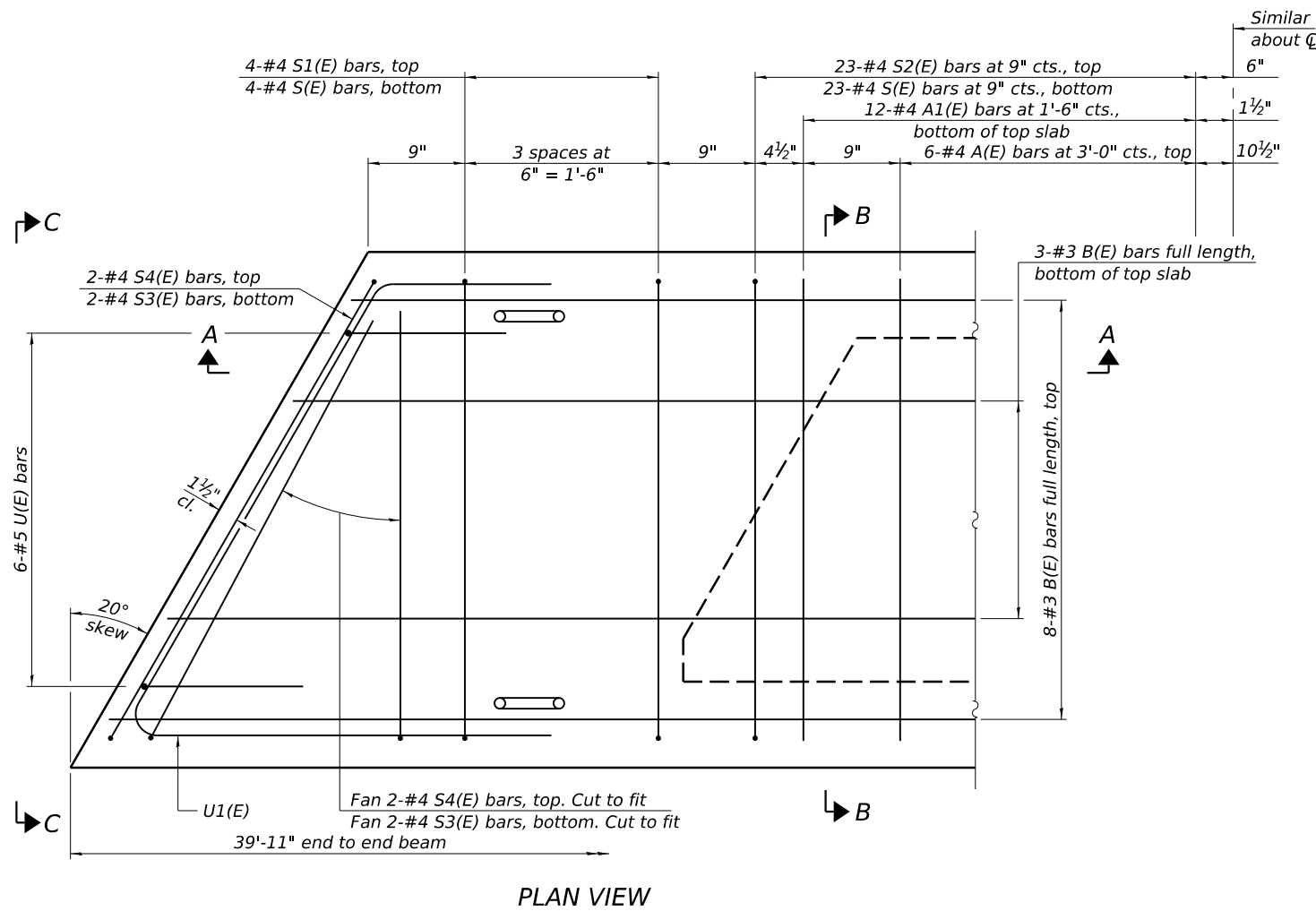
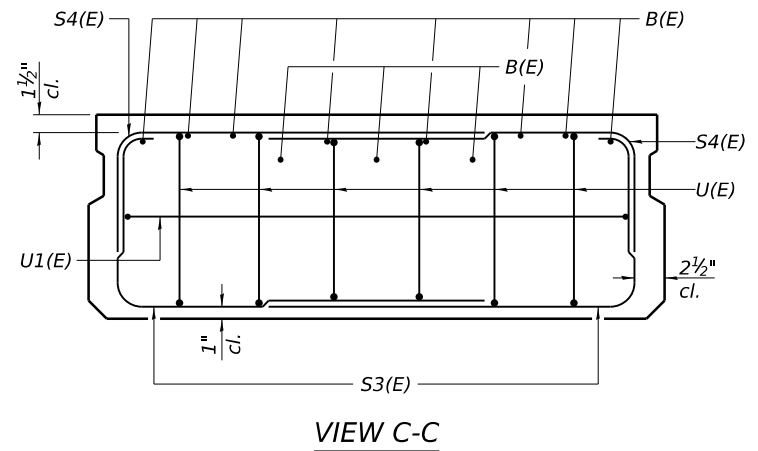
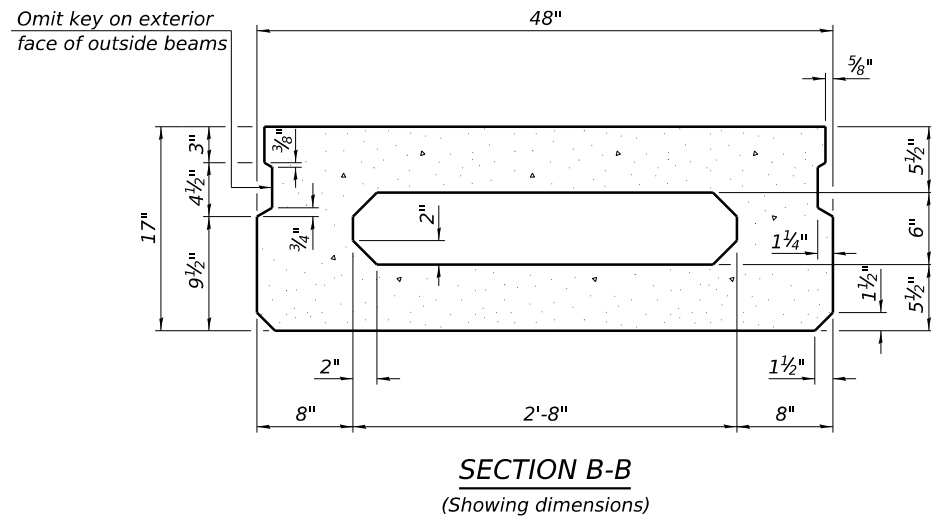
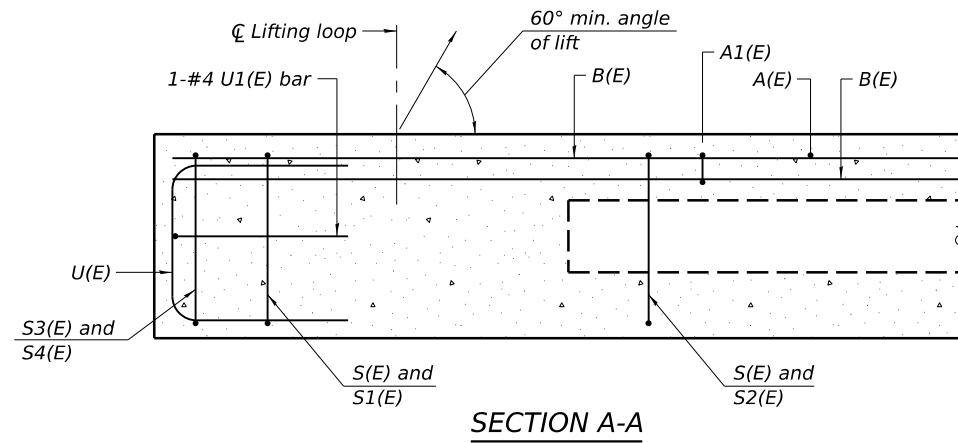
17" x 48" PPC DECK BEAM  
STRUCTURE NO. 054-3046

SHEET 5 OF 11 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	22-00103-02-BR	LOGAN	23	15
CONTRACT NO. 93846				

ILLINOIS FED. AID PROJECT

JOB - 2781	DESIGNED - EFB	REVISED -
FILE NAME = 054-3046-0000-04-07-Super.dgn	CHECKED - AAN	REVISED -
PLOT DATE = 7/23/2025	DRAWN - EFB	REVISED -
	CHECKED - MDC	REVISED -



**MINIMUM BAR LAP**  
#3 bar = 1'-6"

BAR LIST				
ONE BEAM ONLY				
(For information only)				
Bar	No.	Size	Length	Shape
A(E)	13	#4	3'-7"	—
A1(E)	25	#4	3'-10"	—
B(E)	11	#3	39'-8"	—
S(E)	55	#4	6'-9"	┌┐
S1(E)	8	#4	5'-3"	┌┐
S2(E)	47	#4	5'-6"	┌┐
S3(E)	8	#4	5'-0"	┌┐
S4(E)	8	#4	4'-3"	┌┐
U(E)	12	#5	3'-8"	└┘
U1(E)	2	#4	7'-6"	└┘

Note:  
See sheet 7 of 11 for additional details and Bill of Material.

Note:  
Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

MODEL: Default  
FILE NAME: 054-3046-0000-04-07-Super.dgn

PD-1748-L

5-15-2023

**CEC** Cummins  
Engineering  
Corporation  
ENGINEERS & SURVEYORS

JOB - 2781  
FILE NAME = 054-3046-0000-04-07-Super.dgn  
PLOT DATE = 7/23/2025

DESIGNED - EFB  
CHECKED - AAN  
DRAWN - EFB  
CHECKED - MDC  
REVISED -  
REVISED -  
REVISED -  
REVISED -

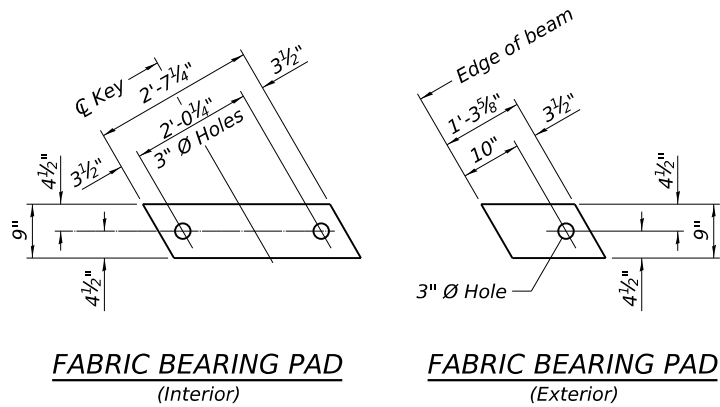
**LOGAN COUNTY  
CH 24 IMPROVEMENTS**

**17" x 48" PPC DECK BEAM  
STRUCTURE NO. 054-3046**

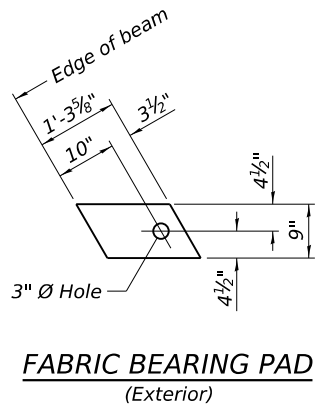
SHEET 6 OF 11 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	22-00103-02-BR	LOGAN	23	16
CONTRACT NO. 93846				

ILLINOIS FED. AID PROJECT



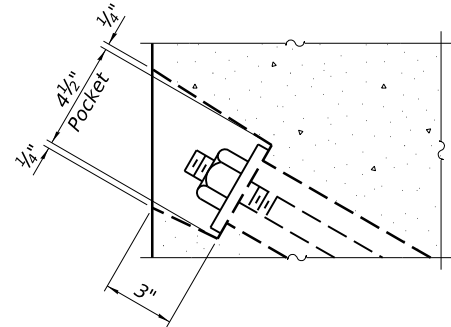
FABRIC BEARING PAD  
(Interior)



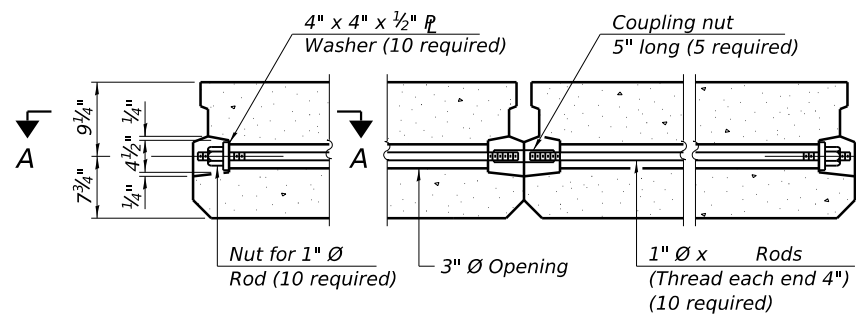
FABRIC BEARING PAD  
(Exterior)

FIXED

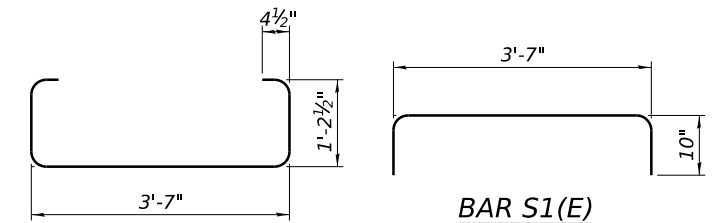
Notes:  
All bearing pads shall be 1" thick.  
Omit holes when using expansion bearings.  
Expansion bearing pads shall be bonded to the substructure.



SECTION A-A

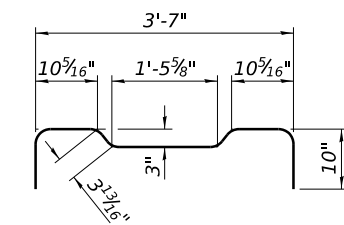


TYPICAL TRANSVERSE TIE ASSEMBLY

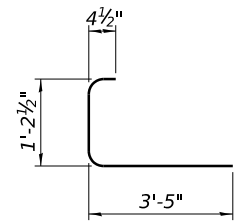


BAR S(E)

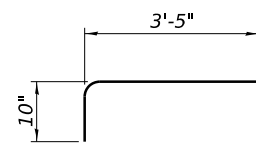
BAR S1(E)



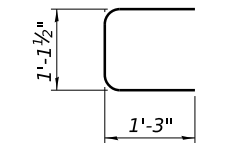
BAR S2(E)



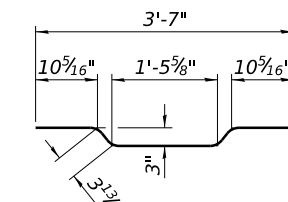
BAR S3(E)



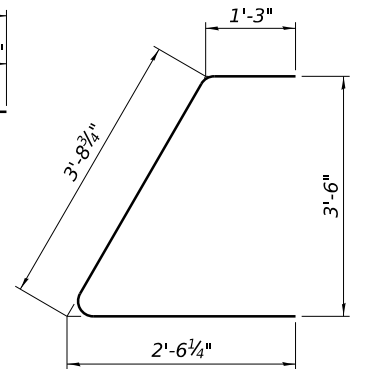
BAR S4(E)



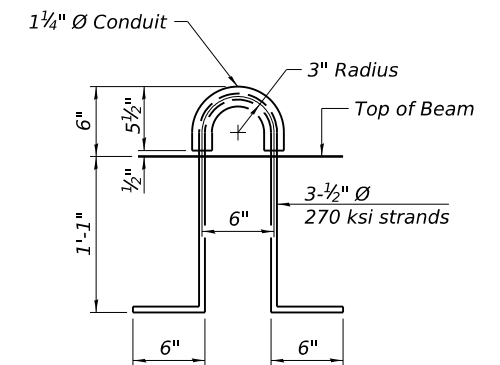
BAR U(E)



BAR A1(E)



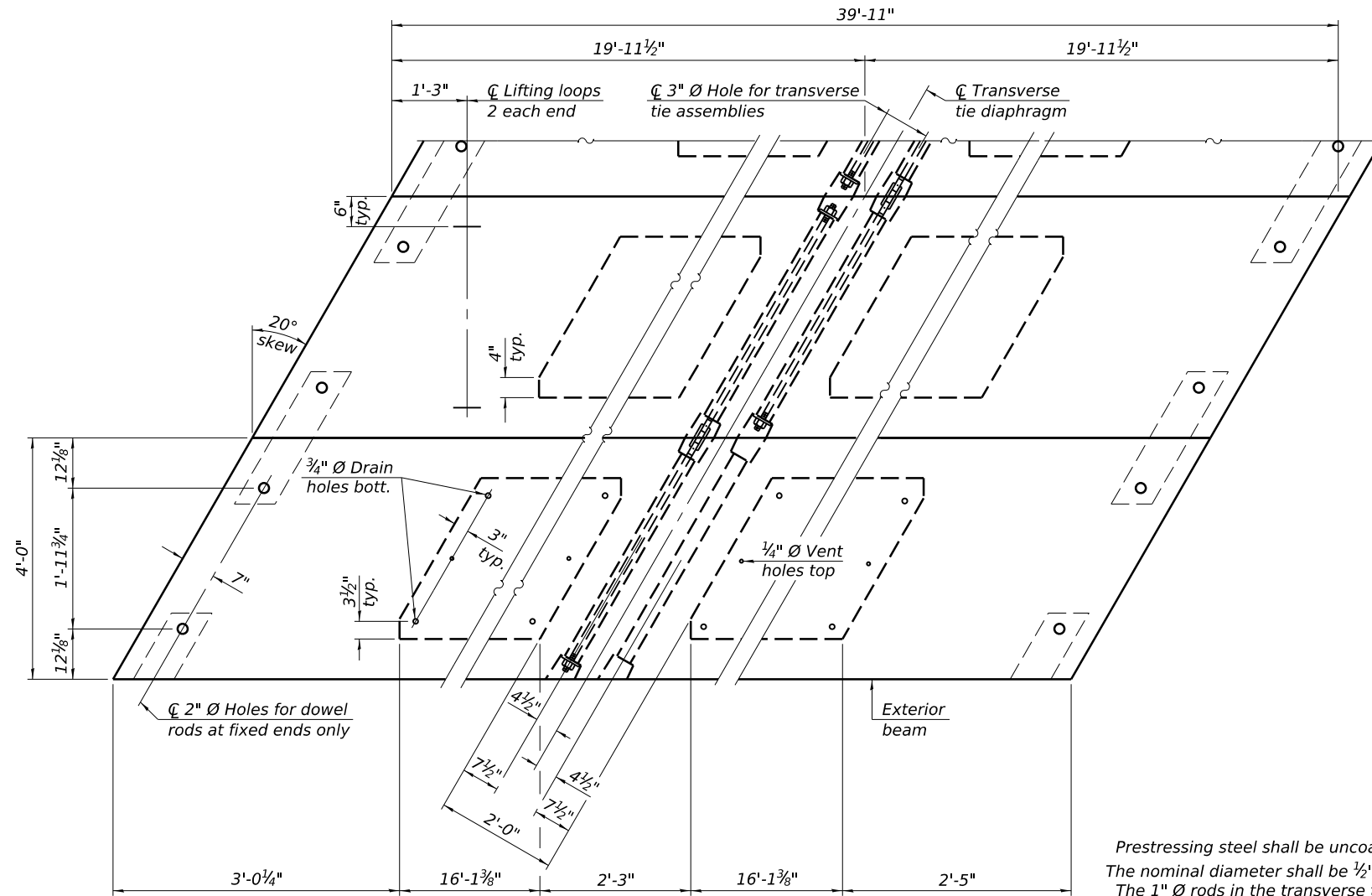
BAR U1(E)



LIFTING LOOP DETAIL

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	958
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PLAN VIEW

Note:  
Connect beams in pairs with the  
transverse tie configuration shown.

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" Ø rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place. Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. A minimum 2 1/2" Ø lifting pin shall be used to engage the lifting loops during handling. Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams. Compressive strength of prestressed concrete, f'c, shall be 6000 psi. Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

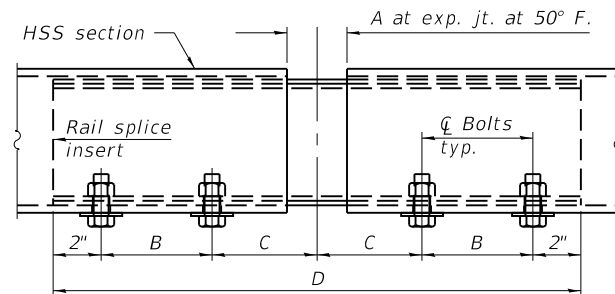
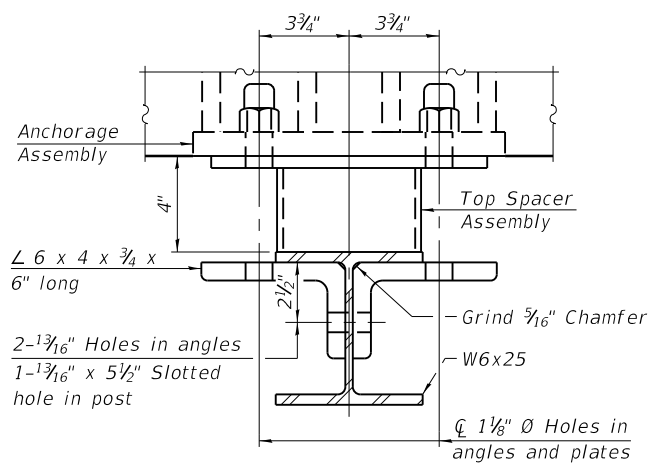
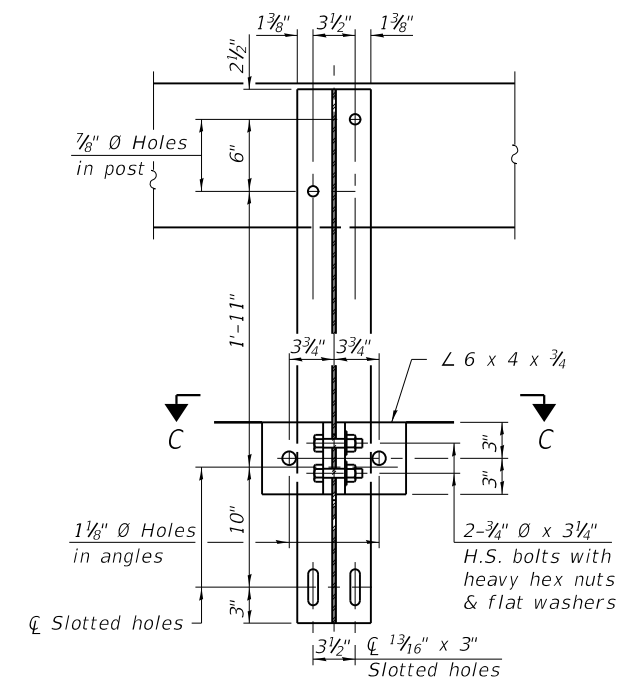
LOGAN COUNTY  
CH 24 IMPROVEMENTS

17" x 48" PPC DECK BEAM  
STRUCTURE NO. 054-3046

SHEET 7 OF 11 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	22-00103-02-BR	LOGAN	23	17
CONTRACT NO. 93846				
ILLINOIS FED. AID PROJECT				

JOB - 2781	DESIGNED - EFB	REVISED -
FILE NAME = 054-3046-0000-04-07-Super.dgn	CHECKED - AAN	REVISED -
PLOT DATE = 7/23/2025	DRAWN - EFB	REVISED -
	CHECKED - MDC	REVISED -



## RAILING CRITERIA

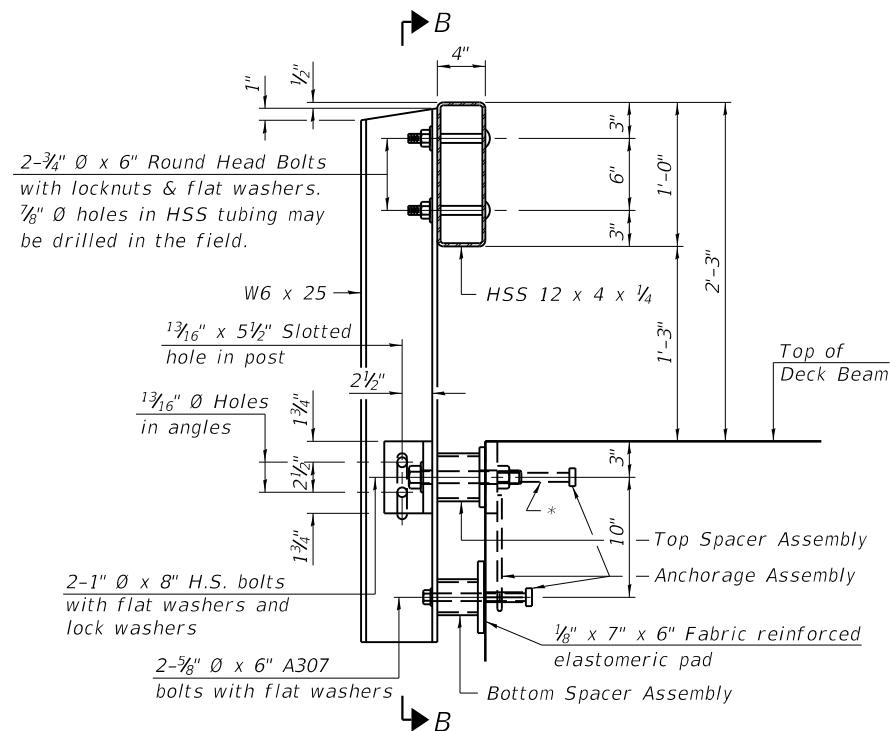
NCHRP 350 Test Level	2
Railing Weight (plf)	50
Max Post Spacing	10'-9"
HMA thickness range (in)	1 1/4 - 3 1/8

R-23A

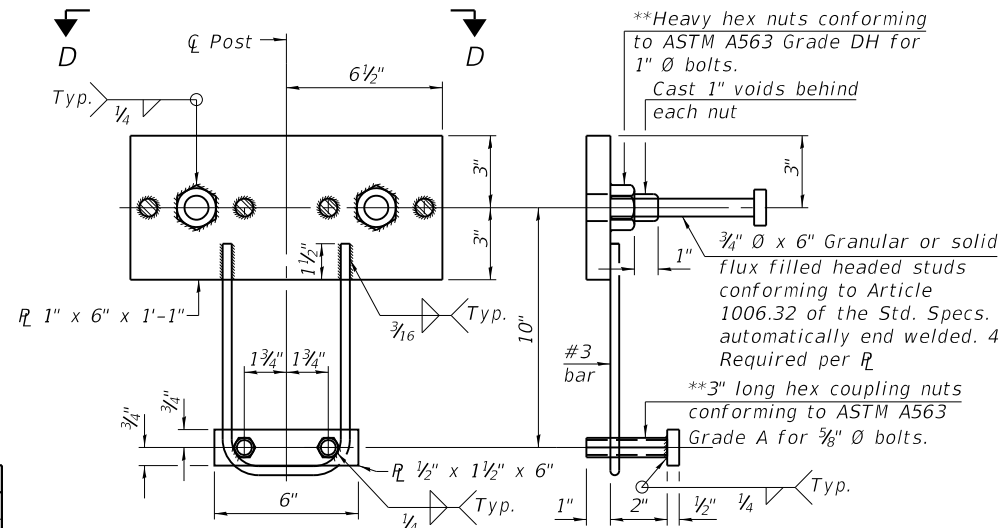
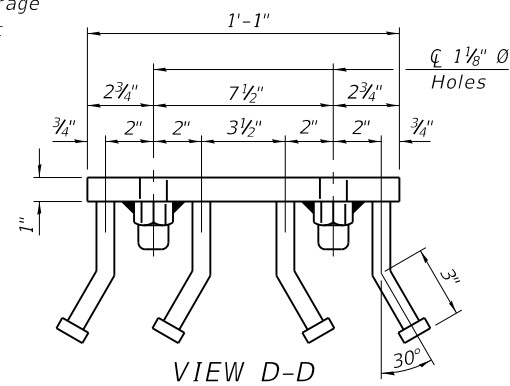
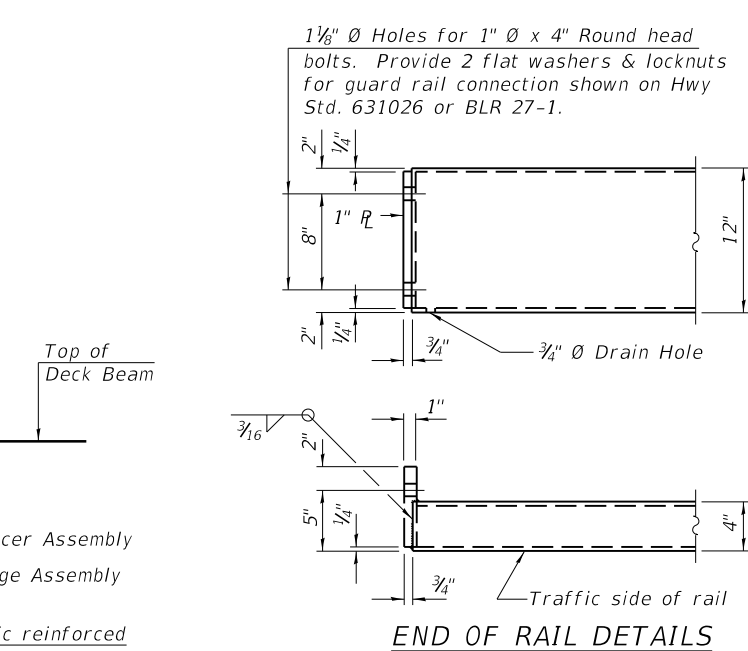
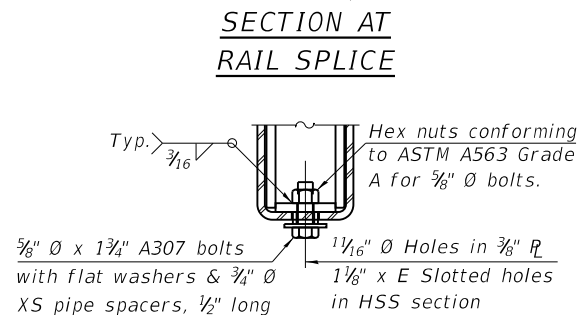
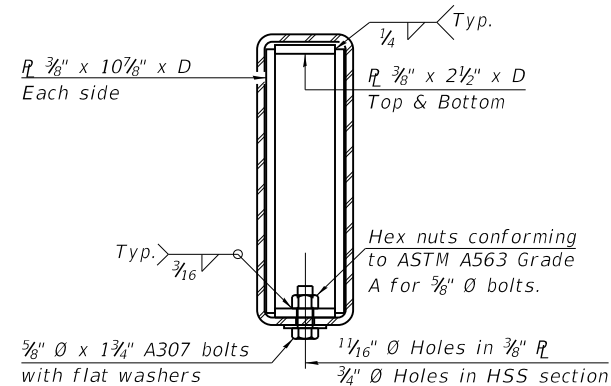
10-12-2021

Location	T	A	B	C	D	E
All locs. not over exp. jts.	0	1/4"	4"	4"	1'-8"	-
Over Strip Seal Jt.	≤4"	2 1/2"	4 3/8"	4 3/8"	1'-10"	3 1/2"
Over Finger or Modular Jt.	≤9 1/2"	5 1/2"	7 3/8"	7 1/4"	2'-9 1/4"	5 1/2"
Over Finger or Modular Jt.	≤15"	8 1/4"	10 1/8"	10"	3'-8 1/4"	8 1/2"

$T =$  ; total movement along centerline of roadway at expansion joint.



\* The outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchorage assembly. The anchorage studs may be bent down  $\frac{1}{2}$ " to accommodate the top reinforcement bar placement.



**\*\* Threaded areas shall be plugged or blocked off during casting of concrete.**

Notes:

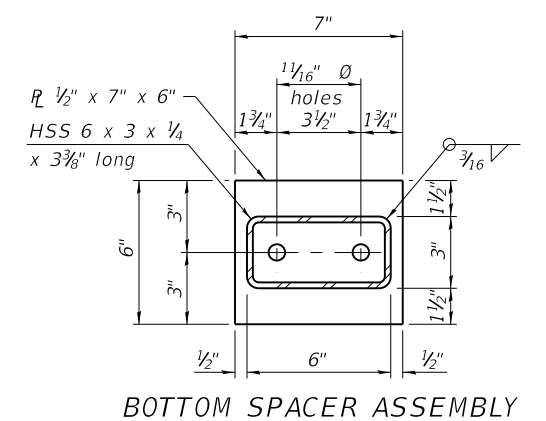
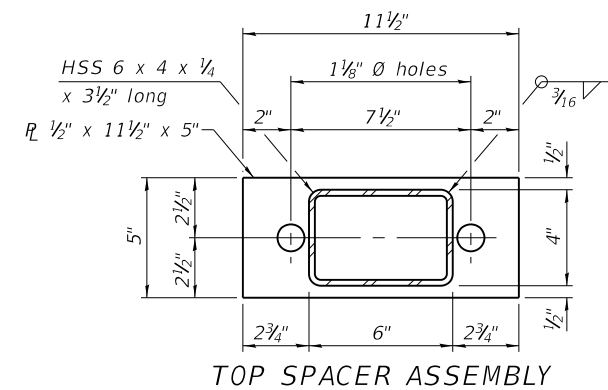
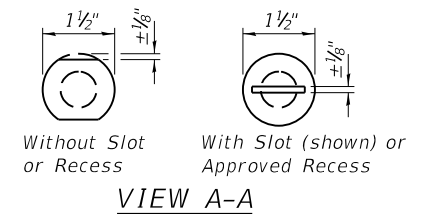
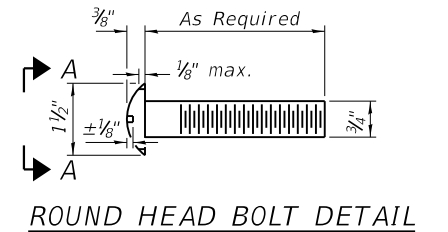
A sufficient number of shims of various thicknesses, sized to fit behind the top spacer assembly, 5" x 1 1/2", and bottom spacer assembly, 6" x 7", shall be provided to adjust posts for proper alignment. If the summation of shims is greater than 1/4" (top) or 1/2" (bottom), longer bolts are required. Cost included with Steel Railing, Type S-1.

*All steel rail elements including shims shall be galvanized according to Article 509.05 of the Standard Specifications.*

*All HSS tubing serving as railing shall be CVN tested according to Article 1006.34(b) of the Standard Specifications.*

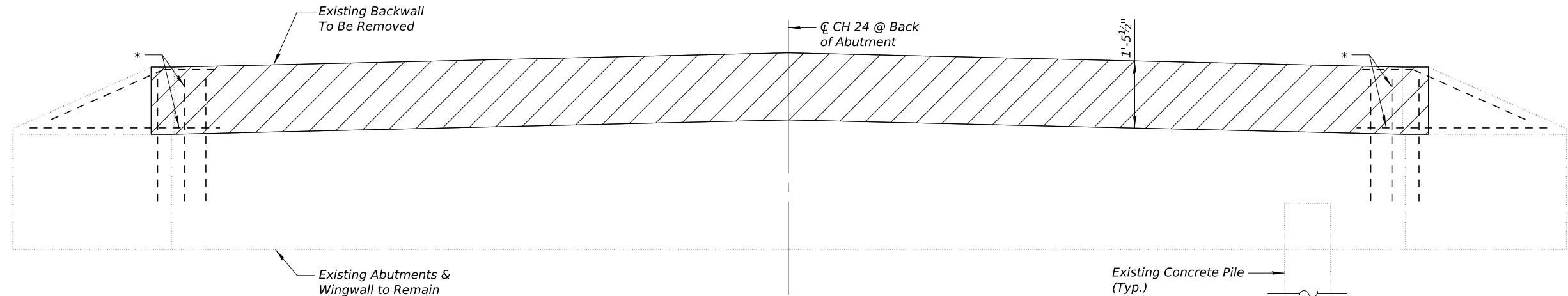
Rail splice inserts may be built out of 2 - $\frac{3}{8}$ " bent plates in lieu of the 4 plate rail splice inserts shown, provided the outside dimensions are matched.

All round head bolts shall be ASTM A307 with locknuts according to ASTM A563 grade A.



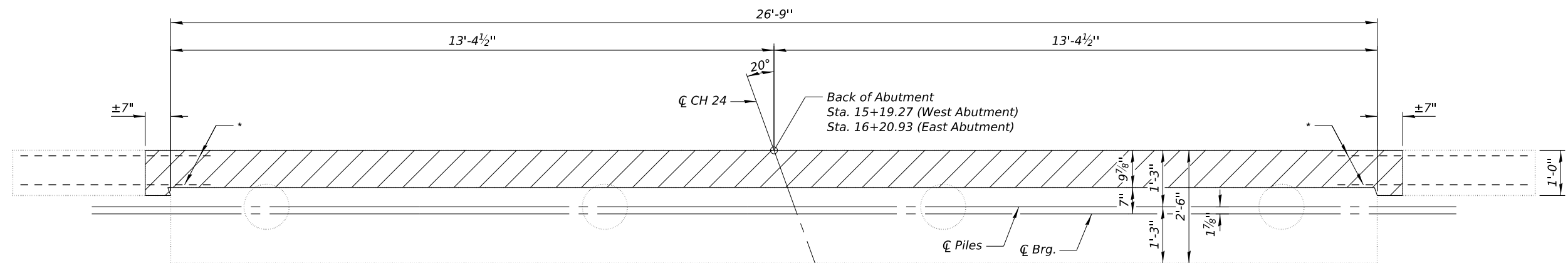
### BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	200

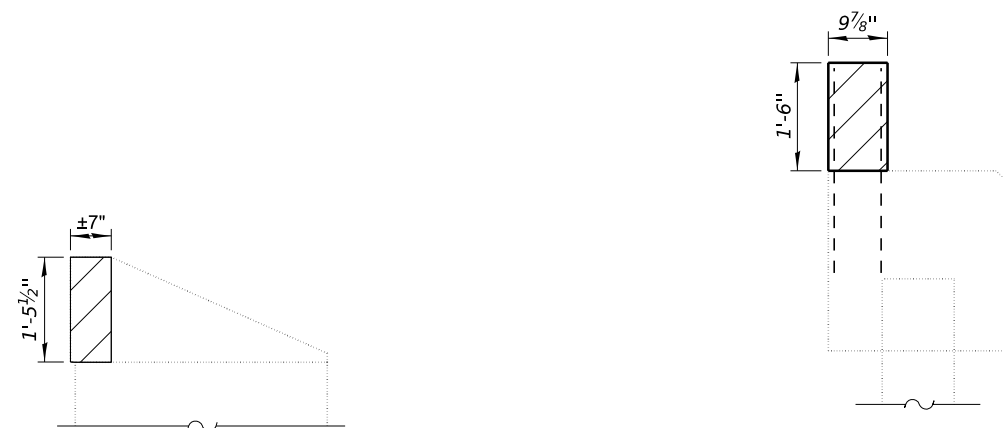


**ELEVATION**  
(Looking West @ West Abut.)  
(Looking East @ East Abut.)

\* Existing reinforcement extending into removal area shall be cleaned, straightened, and incorporated into the new construction. Cost included with Concrete Removal.



**PLAN**



**WINGWALL REMOVAL DETAIL**

**SECTION THRU ABUTMENT**

**TWO ABUTMENTS  
BILL OF MATERIAL**

Item	Unit	Quantity
Concrete Removal	Cu. Yd.	2.5

Note:  
Hatched area indicates limits of Concrete Removal.

MODEL: Default  
FILE NAME: H:\2781 Logan Co. CH 24 Bridge Rehab\CADD\Sheets\Bridge\054-3046-0000-09-10-Abuts.dgn

**CEC** Cummins  
Engineering  
Corporation  
ENGINEERS & SURVEYORS

JOB - 2781  
FILE NAME - 054-3046-0000-09-10-Abuts.dgn  
PLOT DATE - 8/6/2025

DESIGNED -	EFB	REVISED -
CHECKED -	AAN	REVISED -
DRAWN -	EFB	REVISED -
CHECKED -	MDC	REVISED -

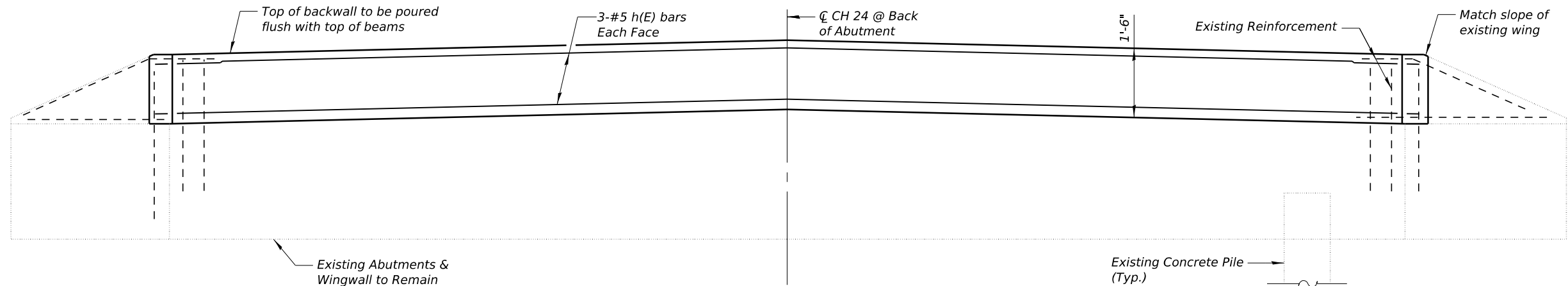
**LOGAN COUNTY  
CH 24 IMPROVEMENTS**

**ABUTMENT CONCRETE REMOVAL  
STRUCTURE NO. 054-3046**

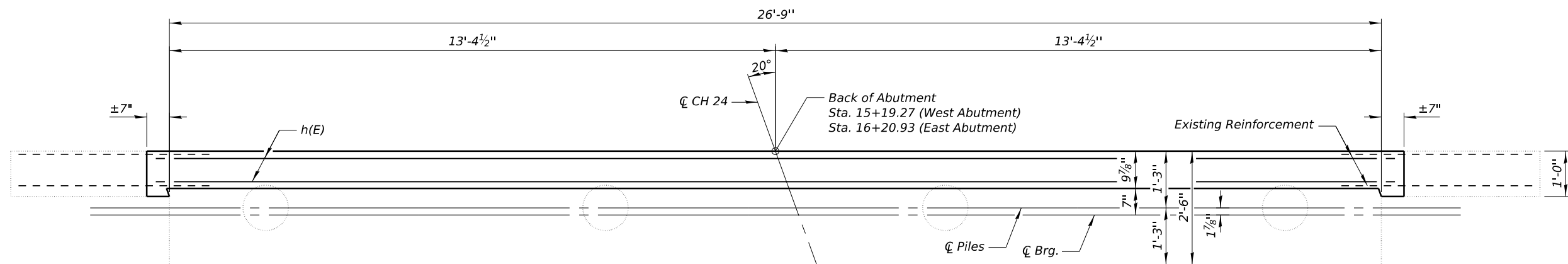
SHEET 9 OF 11 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	22-00103-02-BR	LOGAN	23	19
CONTRACT NO. 93846				
ILLINOIS FED. AID PROJECT				

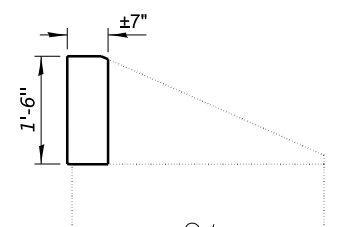




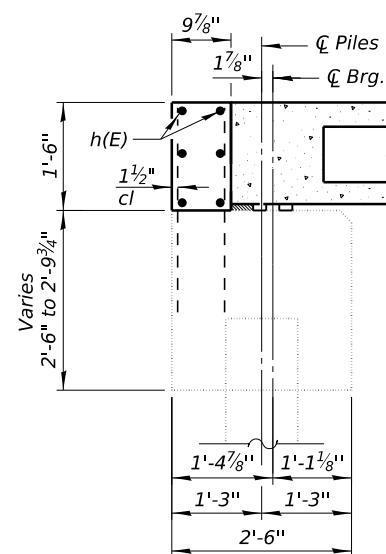
**ELEVATION**  
(Looking West @ West Abut.)  
(Looking East @ East Abut.)



**PLAN**



**WINGWALL DETAIL**

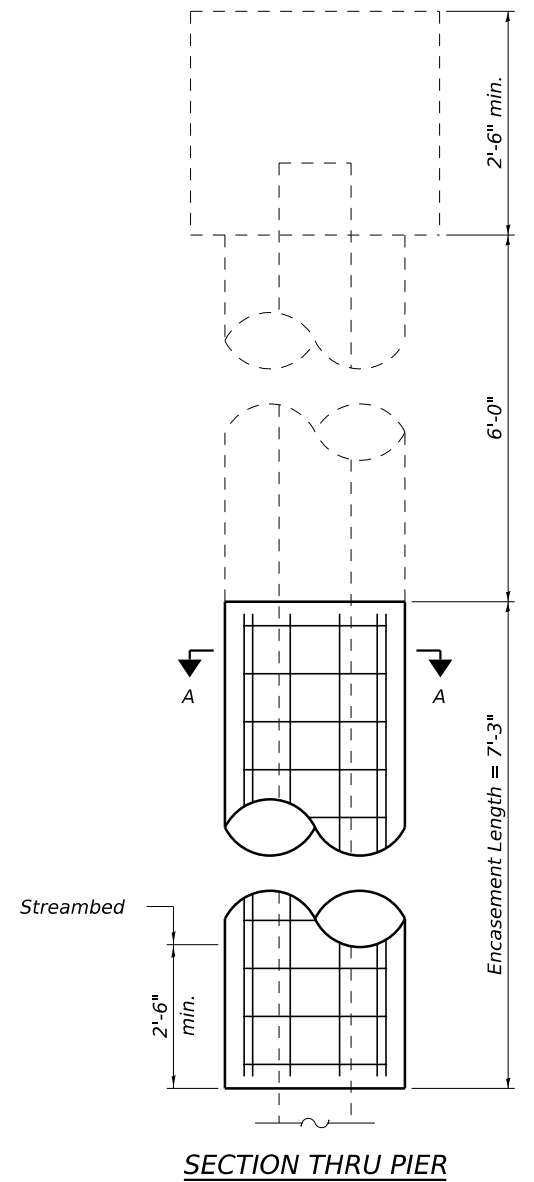
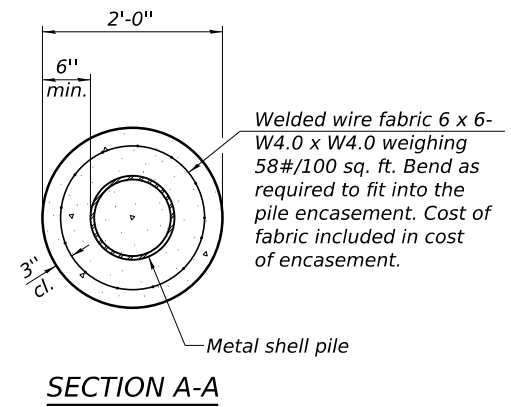
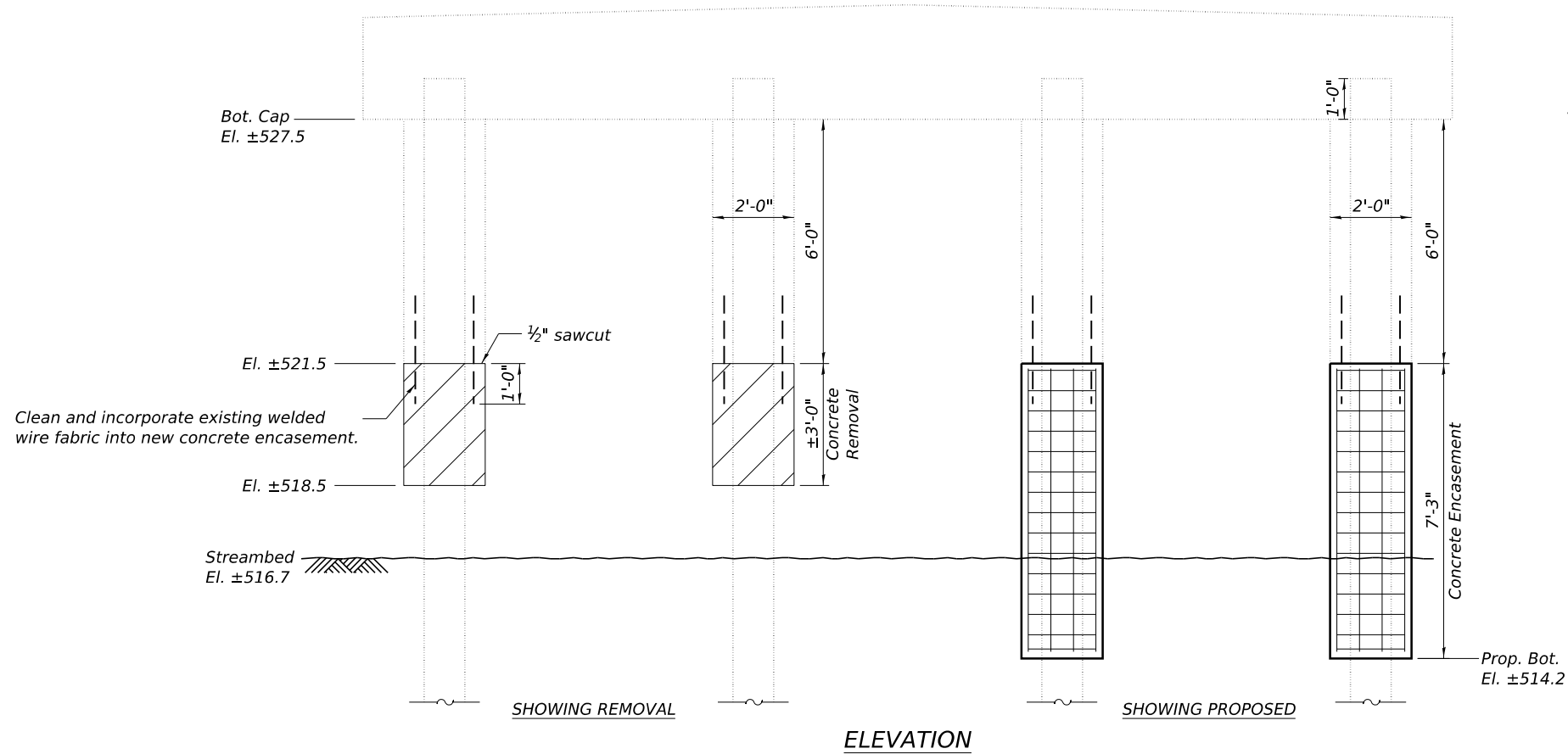
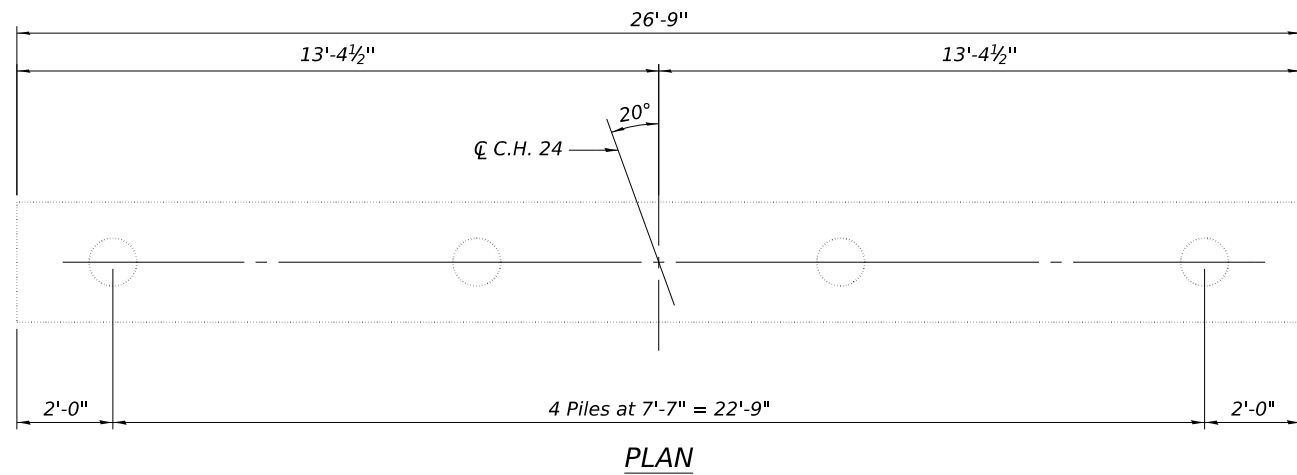


**SECTION THRU ABUTMENT**

**TWO ABUTMENTS  
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h(E)	12	#5	26'-5"	
Reinforcement Bars, Epoxy Coated			Pound	340
Concrete Structures			Cu. Yd.	2.6

Note:  
Dowel holes in new beams have been adjusted to miss existing dowel rods. Contractor shall verify location of existing dowel rods prior to fabrication of new beams.  
After beams have been placed and dowel rods grouted, the backwall and portions of the wingwall shall be poured.



BILL OF MATERIAL

Item	Unit	Quantity
Concrete Removal	Cu. Yd.	1.1
Concrete Encasement	Cu. Yd.	2.5

MODEL: Default  
FILE NAME: 054-3046-0000-11-Piers.dgn

**CEC** Cummins  
Engineering  
Corporation  
ENGINEERS & SURVEYORS

JOB = 2781  
FILE NAME = 054-3046-0000-11-Piers.dgn  
PLOT DATE = 7/23/2025

DESIGNED - EFB  
CHECKED - AAN  
DRAWN - EFB  
CHECKED - MDC

REVISED -  
REVISED -  
REVISED -  
REVISED -

LOGAN COUNTY  
CH 24 IMPROVEMENTS

PIER 2 DETAILS  
STRUCTURE NO. 054-3046

SHEET 11 OF 11 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	22-00103-02-BR	LOGAN	23	21
CONTRACT NO. 93846				
ILLINOIS FED. AID PROJECT				

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

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

MODEL Default  
FILE NAME: 2781-shr-xsec.dgn

CEC

ENGINEERS & SURVEYORS

Cummins  
Engineering  
Corporation

JOB = 2781
FILE NAME = 2781-shr-xsec.dgn
PLOT SCALE = 10.0000' / in.
PLOT DATE = 8/6/2025

DESIGNED - CGF
DRAWN - CGF
CHECKED - TSH
DATE - 3/20/2025

REVISED -
REVISED -
REVISED -
REVISED -

LOGAN COUNTY  
CH 24 IMPROVEMENTS

CROSS SECTIONS

SCALE:	SHEET	OF	SHEETS	STA. 13+10.00	TO STA. 15+00.00
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C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	22-00103-02-BR	LOGAN	23	22
		CONTRACT NO. 93846		
ILLINOIS FED. AID PROJECT				

