

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
580	18-00081-00-BR	CASS	24	1
FED. ROAD DIST. NO. 7		ILLINOIS	CONTRACT NO. 93780	

**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES, TYPICAL SECTIONS, PAVEMENT DESIGN INFORMATION, DETAILS
3	SUMMARY OF QUANTITIES, SCHEDULES OF QUANTITIES
4	TRAFFIC CONTROL PLAN
5	EROSION CONTROL PLAN
6	PLAN AND PROFILE
7-17	STRUCTURE PLANS
18-24	CROSS SECTIONS

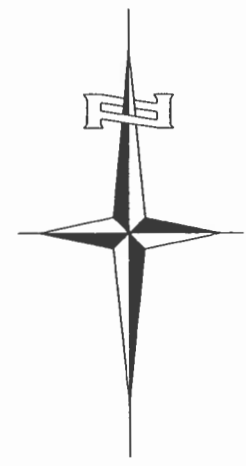
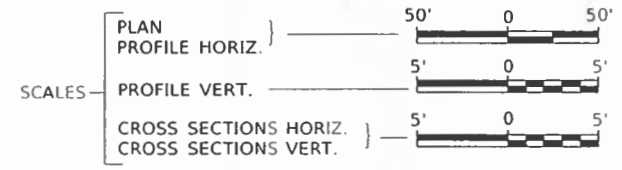
04-29-2022 LETTING ITEM 188

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**  
**PLANS FOR PROPOSED**  
**SURFACE TRANSPORTATION PROGRAM-BRIDGE**  
**CASS COUNTY**  
**SECTION 18-00081-00-BR**  
**F.A.S. 580 (C.H. 9) OVER MUD CREEK**  
**PROJECT NO. S18P(313)**  
**JOB NUMBER C-96-059-21**



**HIGHWAY STANDARDS**

- 000001-08 STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
- 280001-07 TEMPORARY EROSION CONTROL SYSTEMS
- 515001-04 NAME PLATE FOR BRIDGES
- 630301-09 SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
- 631011-10 TRAFFIC BARRIER TERMINAL, TYPE 2
- 631032-09 TRAFFIC BARRIER TERMINAL, TYPE 6A
- 701901-08 TRAFFIC CONTROL DEVICES
- 725001-01 OBJECT AND TERMINAL MARKERS
- BLR 21-9 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
- BLR 26-3 STEEL PLATE BEAM GUARDRAIL 29" (731mm) HEIGHT
- BLR 27-1 TRAFFIC BARRIER TERMINAL TYPE 5A



**UTILITY COMPANIES**

- FRONTIER COMMUNICATIONS  
JACKSONVILLE, ILLINOIS
- NORTH MORGAN WATER COOP  
JACKSONVILLE, ILLINOIS

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

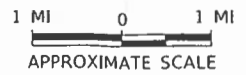
**CONTRACT NO. 93780**

PROPOSED STRUCTURE SN 009-3031  
THREE SPAN 17" PPC DECK BEAM  
SUPERSTRUCTURE ON CONCRETE ENCASED  
PILE BENT PIERS AND CONCRETE SPILL-THRU  
PILE BENT ABUTMENTS, 111'-0" BK TO BK,  
32'-0" O TO O DECK, NO SKEW.

SECTION 18-00081-00-BR  
BEGINS  
STATION 16+00.00



**LOCATION MAP**



NET LENGTH OF PROJECT = 625.00 FEET = 0.118 MILES  
DESIGN CLASSIFICATION: MAJOR COLLECTOR (NON-URBAN)  
DESIGN ADT = 770 (2041)  
DESIGN SPEED = 50 MPH

SECTION 18-00081-00-BR  
ENDS  
STATION 22+25.00

EXISTING STRUCTURE SN 009-3030  
THREE SPAN BRIDGE WITH A STEEL SUPERSTRUCTURE  
AND A REINFORCED CONCRETE DECK  
ON REINFORCED PILE BENT CONCRETE PIERS  
AND OPEN ABUTMENTS, 86'-0" BK TO BK,  
27'-11" O TO O DECK, NO SKEW. (TO BE REMOVED)

APPROVED *[Signature]* 2022  
CASS COUNTY ENGINEER

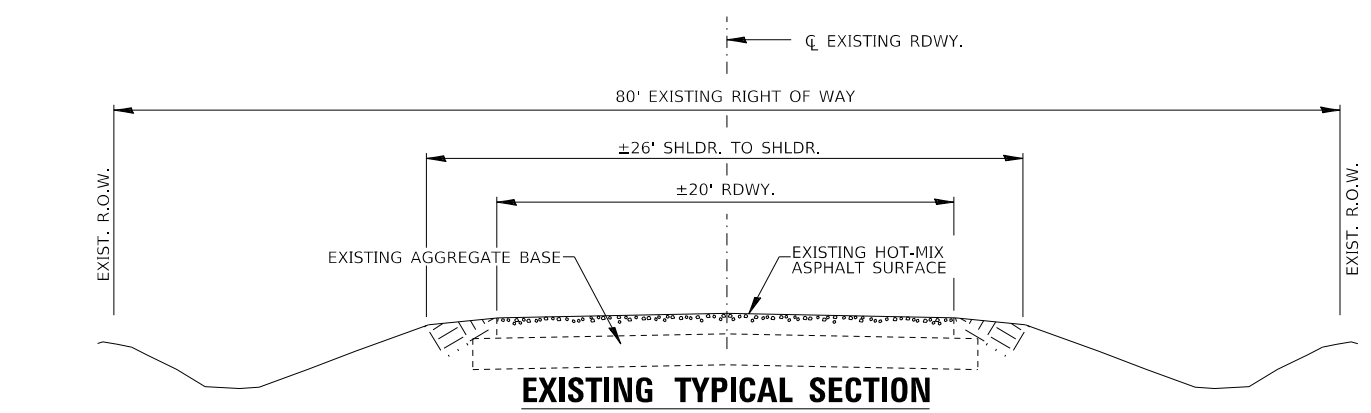
PASSED *[Signature]* 2022  
DISTRICT SIX ENGINEER OF  
LOCAL ROADS & STREETS

Released For  
Limited Review *[Signature]* 2022  
REGION FOUR ENGINEER  
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

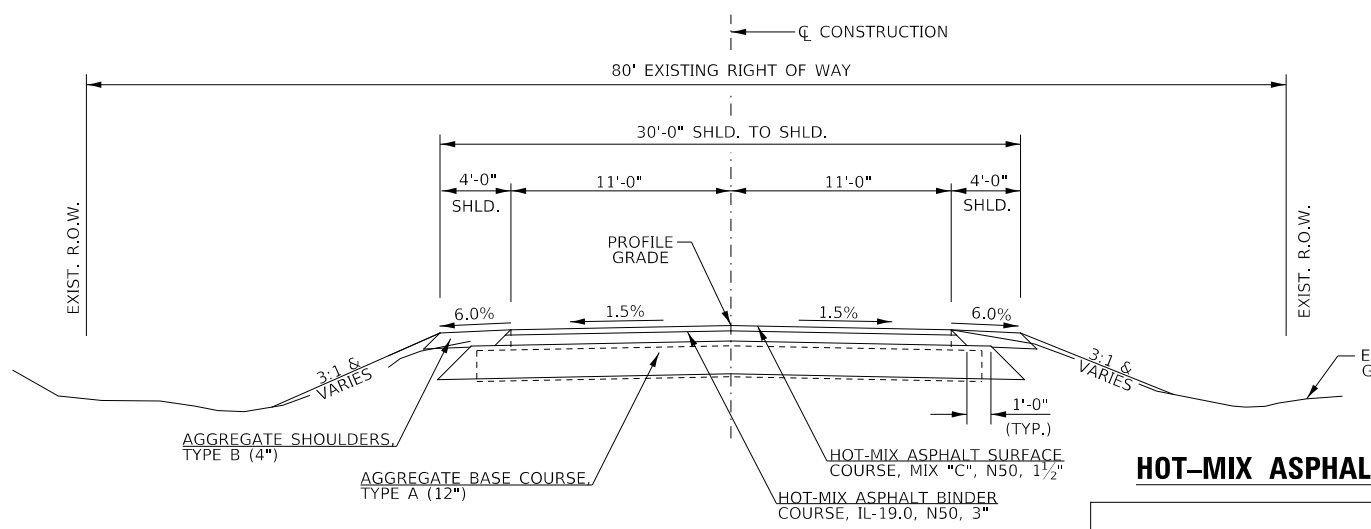
DATE: 3/13/23  
*[Professional Engineer Seal]*  
SIGNATURE  
ENGINEERS SEAL

**Hutchison Engineering, Inc.**  
JACKSONVILLE-SHOREWOOD  
PEORIA-QUAD CITIES-CARBONDALE  
2022 JOB#4796

FILE NAME: V:\1796 - Ctr 9 over Mud Creek (Cass)\CADD\CADD Sheets\1796-e001.dgn



**EXISTING TYPICAL SECTION**



**PROPOSED TYPICAL SECTION**

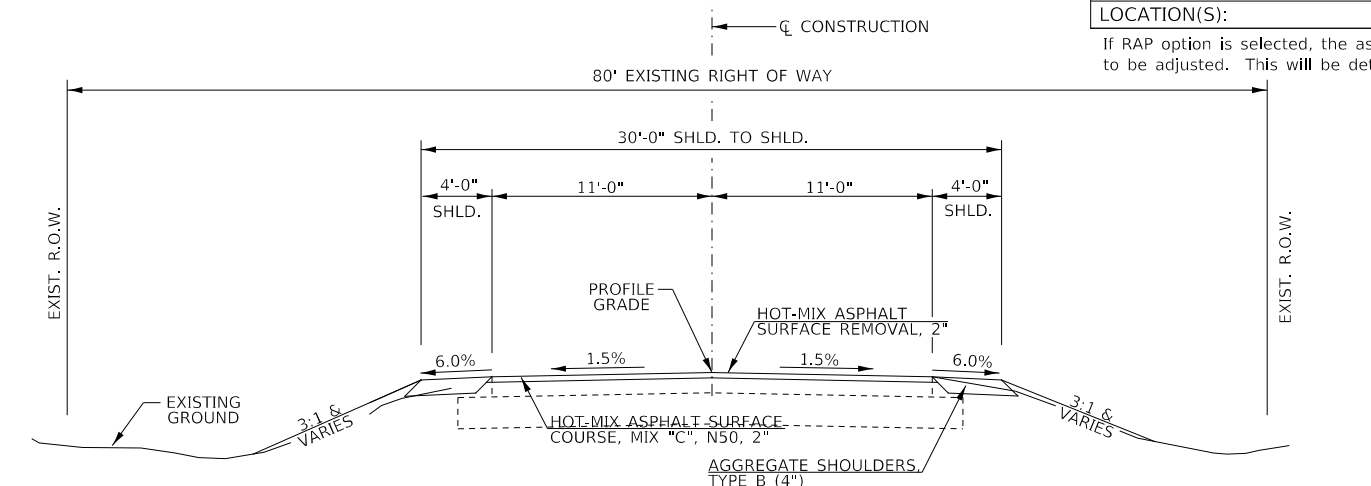
CONSTRUCT GUARDRAIL SHOULDER WIDENING IN ACCORDANCE WITH STD 630301

STA. 19+25.00 TO STA. 19+44.50  
 STA. 20+55.50 TO STA. 22+25.00  
 EXCEPT TRANSITIONS  
 STA. 21+75.00 TO 22+25.00  
 BRIDGE OMISSION  
 STA. 19+44.50 TO STA. 20+55.50

**HOT-MIX ASPHALT MIXTURE REQUIREMENTS**

	HMA BINDER	HMA SURFACE
PG GRADE:	PG 64-22	PG 64-22
DESIGN AIR VOIDS:	4% @ N50	4% @ N50
MIXTURE COMPOSITION:	IL-19.0	IL-9.5
FRICTION AGGREGATE:		MIXTURE C
DENSITY TEST METHOD:	NUCLEAR DENSITY GAUGE	NUCLEAR DENSITY GAUGE
MIXTURE WEIGHT:	112#/SQ YD/IN	112#/SQ YD/IN
QUALITY MANAGEMENT PROGRAM:	QC/QA	QC/QA
SUBLOT SIZE:	N/A	N/A
LOCATION(S):	STA. 19+25-22+25	ENTIRE PROJECT

If RAP option is selected, the asphalt cement grade may need to be adjusted. This will be determined by the Engineer.

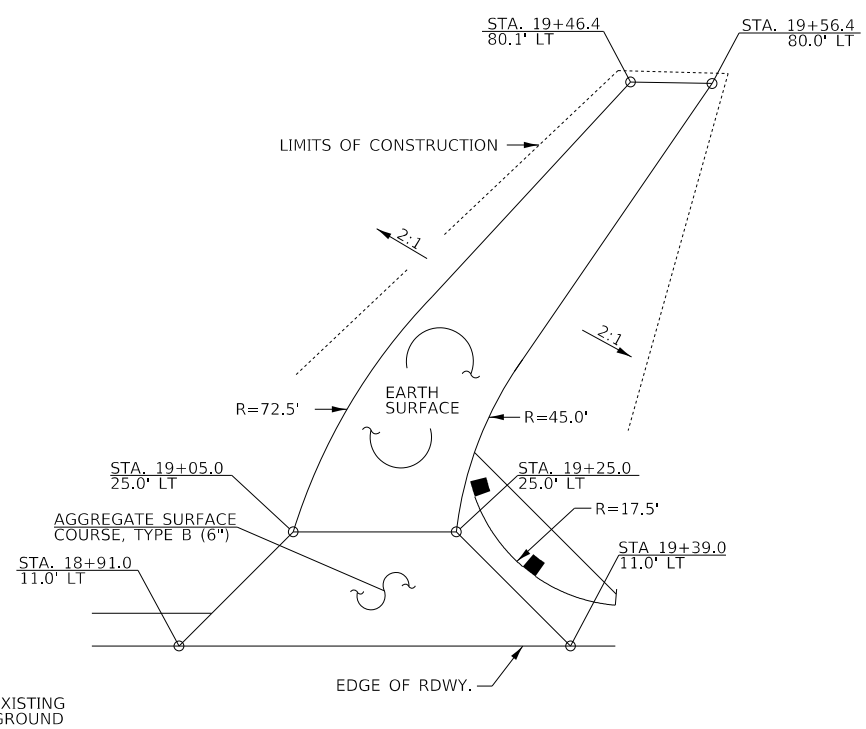


**PROPOSED TYPICAL SECTION**

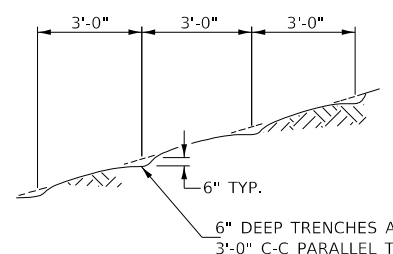
2" HMA OVERLAY  
 STA. 16+00.00 TO STA. 19+25.00

**COMMITMENTS**

THERE ARE NO COMMITMENTS FOR THIS PROJECT

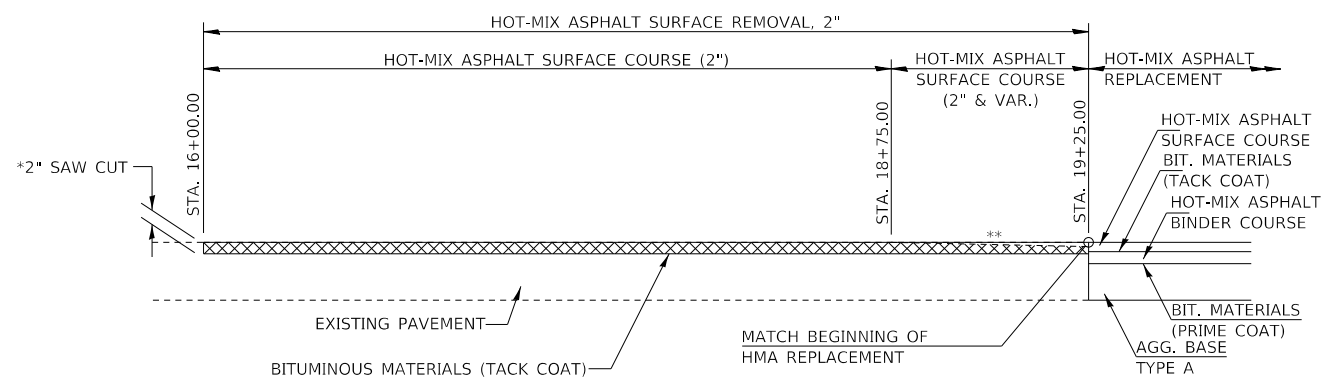


**FIELD ENTRANCE STA. 19+15.00**



NOTE: ALL SLOPES 3:1 OR STEEPER AND GREATER THAN 5' IN HEIGHT SHALL BE CONTOUR PLOWED AS SHOWN IN DETAIL, COST SHALL BE INCLUDED WITH SEEDING, CLASS 2 (SPECIAL).

**DETAIL OF CONTOUR PLOWING**



**HOT-MIX ASPHALT RESURFACING DETAILS**

\*COST INCLUDED IN HOT-MIX ASPHALT SURFACE REMOVAL

**GENERAL NOTES**

THE REMOVAL OF EXISTING HOT-MIX ASPHALT SURFACE AND GRAVEL OR CRUSHED STONE BASE COURSE WHICH MAY BE NECESSARY FOR THE CONSTRUCTION OF THE PROJECT SHALL BE REMOVED AS EARTH EXCAVATION AND NO COMPENSATION WILL BE ALLOWED FOR ADDITIONAL LABOR OR EQUIPMENT REQUIRED (EXCEPT FOR SCHEDULED 2" SURFACE REMOVAL).

ALL WASTE OR UNDESIRABLE MATERIAL AS IDENTIFIED BY THE ENGINEER SHALL BE DISPOSED OF OUTSIDE THE LIMITS OF THE RIGHT OF WAY AT THE CONTRACTOR'S EXPENSE.

ALL EXISTING PRIVATELY OWNED UTILITIES REQUIRING ADJUSTMENT WILL BE MADE BY THE UTILITY COMPANY INVOLVED. WHERE NO PROVISIONS HAVE BEEN MADE FOR ADJUSTMENTS ON THE PLANS, NO ADDITIONAL COMPENSATION WILL BE ALLOWED DUE TO DELAYS OR INCONVENIENCES CAUSED BY THE SAID UTILITY ADJUSTMENTS.

THE PROFILE GRADE ELEVATIONS SHOWN ON THE PLAN AND PROFILE SHEETS AND IN THE STATION CROSS SECTIONS ARE TO THE TOP OF THE FINISHED SURFACE.

ALL EXISTING DRAINAGE STRUCTURES NOT BEING REMOVED OR ADJUSTED BY THE CONTRACTOR THAT ARE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

ANY REFERENCE TO STANDARDS THROUGHOUT THE PLANS SHALL BE INTERPRETED TO BE THE LATEST STANDARDS OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION.

THE LOCATION OF UNDERGROUND UTILITIES SHOWN ON THE PLANS REPRESENTS THE BEST KNOWLEDGE OF THE COUNTY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS OF UNDERGROUND INSTALLATIONS BEFORE STARTING CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL INDEMNIFY THE COUNTY, ITS OFFICERS AND EMPLOYEES AGAINST ALL CLAIMS DUE TO DAMAGE TO CORPORATE OR PRIVATE PROPERTY RESULTING FROM HIS CONSTRUCTION OPERATIONS AS DESCRIBED IN ARTICLES 107.20 AND 107.26 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR MAY BE REQUIRED TO CONDUCT SOME OF HIS GRADING AND TRENCHING OPERATIONS AROUND TRANSMISSION POLES AND UNDER TRANSMISSION LINES. THE ADDED COST OF SO DOING SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION.

WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND PRESERVE PROPERTY MARKERS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR, OR AGENT, HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

ALL ELEVATIONS SHOWN REFER TO U.S.G.S. MEAN SEA LEVEL DATUM.

**STRUCTURAL DESIGN INFORMATION  
 COUNTY HIGHWAY 9**

ROAD CLASSIFICATION: CLASS III 80,000 LB./20 YEAR DESIGN STRUCTURAL DESIGN TRAFFIC:  
 PV = 563 SU = 45 MU = 32  
 PERCENT OF STRUCTURAL DESIGN TRAFFIC IN DESIGN LANE:  
 P = 88% S = 7% M = 5%  
 MINIMUM SUBGRADE SUPPORT RATING: FAIR  
 FLEXIBLE PAVEMENT DESIGN: MINIMUM TF = 0.173  
 ASPHALT PAVEMENT THICKNESS: 4 1/2"  
 AGGREGATE BASE COURSE, TYPE A: 12"

MODEL: S:\MODEL\MAME  
 FILE NAME: C:\1795 - C1 9 over Mud Creek (Cass)\CADD\CADD Sheets\1795-001.dgn

USER NAME = BNebe1	DESIGNED - JPS	REVISED -
DRAWN - JPS	REVISED -	
PLOT SCALE = 2,000' / in.	CHECKED - BAN	REVISED -
PLOT DATE = 1/2/2022	DATE - 9/15/2021	REVISED -

**CASS COUNTY  
 COUNTY HIGHWAY 9 (F.A.S. 580)  
 OVER MUD CREEK**

**GENERAL NOTES, TYPICAL SECTIONS,  
 PAVEMENT DESIGN INFORMATION, DETAILS**

SCALE: NONE SHEET 1 OF 1 SHEETS STA. 16+00.00 TO STA. 22+25.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
580	18-00081-00-BR	CASS	24	2
CONTRACT NO. 93780				
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT NO. 518P(313)		

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	UNIT	QUANTITY
20200100	EARTH EXCAVATION	CU YD	280
20300100	CHANNEL EXCAVATION	CU YD	820
20400800	FURNISHED EXCAVATION	CU YD	155
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	600
28000400	PERIMETER EROSION BARRIER	FOOT	1,200
28100209	STONE RIPRAP, CLASS A5	TON	750
28200200	FILTER FABRIC	SQ YD	720
35100100	AGGREGATE BASE COURSE, TYPE A	TON	340
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	17
40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	1,075
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	288
40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	81
40604050	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "C", N50	TON	192
44000157	HOT-MIX ASPHALT SURFACE REMOVAL, 2"	SQ YD	760
48101200	AGGREGATE SHOULDERS, TYPE B	TON	130
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	65
50200300	COFFERDAM EXCAVATION	CU YD	120
50201101	COFFERDAM (TYPE 1) (LOCATION-1)	EACH	1
50201102	COFFERDAM (TYPE 1) (LOCATION-2)	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	121.5
50300280	CONCRETE ENCASEMENT	CU YD	3.5
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ FT	3,485
50800105	REINFORCEMENT BARS	POUND	9,970
51201400	FURNISHING STEEL PILES HP10x42	FOOT	1,100
51202305	DRIVING PILES	FOOT	1,100
51203400	TEST PILE STEEL HP10x42	EACH	2
51500100	NAME PLATES	EACH	1
58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	395
58300100	PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	195
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	12.9
63100045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	1
63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	1
63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	3
63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	3
63200310	GUARDRAIL REMOVAL	FOOT	384
67100100	MOBILIZATION	L SUM	1
72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	2,035
X2300017	STEEL RAILING, TYPE SM (SPECIAL)	FOOT	222
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.6
X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1
# 20076600	TRAINEES	Hour	500
# 20076604	TRAINEES TRAINING PROGRAM GRADUATE	Hour	500

SEE SPECIAL PROVISION Δ SPECIALTY ITEMS #0042

GUARDRAIL REMOVAL			
STATION TO STATION	SIDE	FOOT	
18+10	19+55	RT	145
19+44	19+55	LT	30
20+41	21+08	RT	67
20+41	21+83	LT	142
TOTAL			384

TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT			
STATION TO STATION	SIDE	EACH	
18+57.00	19+07.00	RT	1
20+93.00	21+43.00	LT	1
20+93.00	21+43.00	RT	1
TOTAL			3

PERIMETER EROSION BARRIER			
STATION TO STATION	SIDE	FOOT	
16+00	19+45	RIGHT	365
16+00	19+60	LEFT	450
20+56	22+25	RIGHT	190
20+56	22+25	LEFT	195
TOTAL			1,200

TRAFFIC BARRIER TERMINAL, TYPE 6A			
STATION TO STATION	SIDE	EACH	
19+07.00	19+44.50	RT	1
20+55.50	20+93.00	LT	1
20+55.50	20+93.00	RT	1
TOTAL			3

TRAFFIC BARRIER TERMINAL, TYPE 2			
STATION TO STATION	SIDE	EACH	
19+27.17	19+33.15	LT	1
TOTAL			1

TRAFFIC BARRIER TERMINAL, TYPE 5A			
STATION TO STATION	SIDE	EACH	
19+33.15	19+44.50	LT	1
TOTAL			1

PAVEMENT SCHEDULE							
STATION TO STATION	WIDTH	LENGTH	AGGREGATE BASE CSE, TYPE A 140#/CF	BITUMINOUS MATERIALS (PRIME COAT) 0.25LBS/SQ FT	HOT-MIX ASPHALT BINDER CSE 112#/SQ YD/IN	BITUMINOUS MATERIALS (TACK COAT) 0.025LBS/SQ FT	HOT-MIX ASPHALT SURFACE CSE 112#/SQ YD/IN
			TON	POUND	TON	POUND	TON
16+00.00	16+50.00	22.39'	50.00'			28	
16+00.00	16+50.00	22.20'	50.00'				14
16+50.00	19+25.00	22.33'	275.00'			154	
16+50.00	19+25.00	22.17'	275.00'				76
19+25.00	19+44.50	25.75'	19.50'	35			
20+55.50	21+75.00	25.75'	119.50'	215			
21+75.00	22+25.00	25.71' AVG.	50.00'	90			
19+25.00	19+44.50	22.75'	19.50'		111		
20+55.50	21+75.00	22.75'	119.50'		680		
21+75.00	22+25.00	22.71' AVG.	50.00'		284		
19+25.00	19+44.50	22.50'	19.50'			9	
20+55.50	21+75.00	22.50'	119.50'			51	
21+75.00	22+25.00	22.46' AVG.	50.00'			21	
19+25.00	19+44.50	22.25'	19.50'				11
20+55.50	21+75.00	22.25'	119.50'				67
21+75.00	22+25.00	22.21' AVG.	50.00'				28
19+25.00	19+44.50	22.13'	19.50'				4
BRIDGE DECK			32.00'	111.00'			62
20+55.50	21+75.00	22.13'	119.50'				25
21+75.00	22+25.00	22.09' AVG.	50.00'				11
TOTAL				340	1,075	81	288
							192

EARTHWORK SUMMARY						
STATION TO STATION	EARTH EXCAVATION	CHANNEL EXCAVATION	STRUCTURE EXCAVATION	COFFERDAM EXCAVATION	FILL	WASTE (SHORTAGE)
RDWY 16+00.00 - 19+44.50	64				194	(146)
RDWY 20+55.50 - 22+25.00	215				171	(10)
CHANNEL		820				
STRUCTURE			65			
COFFERDAM				120		
TOTAL	279	820	65	120	365	(156)
USE	280	820	65	120	-	(155)

(@ 25% SHRINKAGE)

AGGREGATE SURFACE COURSE, TYPE B 140#/CF				
STATION	SIDE	WIDTH	LENGTH	TON
ENTR. - 19+15.00	LT	16' & VAR.	14.00'	17
TOTAL				17

HOT-MIX ASPHALT REMOVAL, 2"			
STATION TO STATION	WIDTH	LENGTH	SQ YD
16+00.00 - 19+25.00	21'	325.00'	760
TOTAL			760

PAINT PAVEMENT MARKING - LINE 4"			
STATION TO STATION	SIDE	DESCRIPTION	FOOT
16+00.00 - 22+25.00	LEFT	SOLID WHITE	625
16+00.00 - 22+25.00	CL	LT YELLOW SKIP-DASH	160
16+00.00 - 22+25.00	CL	RT YELLOW SOLID	625
16+00.00 - 22+25.00	RIGHT	SOLID WHITE	625
TOTAL			2,035

AGGREGATE SHOULDERS, TYPE B 140#/CF					
STATION TO STATION	SIDE	WIDTH	LENGTH	TON	
16+00.00	16+50.00	LT	3.65' AVG. 50.00'	4	
16+00.00	16+50.00	RT	3.50' AVG. 50.00'	4	
16+50.00	18+93.00	LT	4.00'	243.00'	23
16+50.00	18+17.00	RT	4.00'	167.00'	16
18+17.00	18+47.00	RT	6.50' AVG. 30.00'	5	
18+47.00	18+88.00	RT	9.00'	41.00'	9
18+88.00	19+28.00	RT	8.88' AVG. 40.00'	8	
19+28.00	19+44.50	RT	7.38' AVG. 16.50'	3	
19+37.00	19+44.50	LT	4.00'	7.50'	1
20+55.50	20+72.00	LT	7.38' AVG. 16.50'	3	
20+55.50	20+72.00	RT	7.38' AVG. 16.50'	3	
20+72.00	21+12.00	LT	8.88' AVG. 40.00'	8	
20+72.00	21+12.00	RT	8.88' AVG. 40.00'	8	
21+12.00	21+53.00	LT	9.00'	41.00'	9
21+12.00	21+53.00	RT	9.00'	41.00'	9
21+53.00	21+83.00	LT	6.50' AVG. 30.00'	5	
21+53.00	21+83.00	RT	6.50' AVG. 30.00'	5	
21+83.00	22+25.00	LT	2.45' AVG. 42.00'	3	
21+83.00	22+25.00	RT	3.33' AVG. 42.00'	4	
TOTAL				130	

MODEL AND/OR NAME FILE NAME: 2127299 - Ch 9 over Mud Creek (Cass)CADD\_Sheets\1796-001.dgn

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	DRAWN - JPS	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED - BAN/MMO	REVISED -
PLOT DATE = 1/2/2022	DATE - 09/14/2021	REVISED -

**CASS COUNTY  
COUNTY HIGHWAY 9 (F.A.S. 580)  
OVER MUD CREEK**

**SUMMARY OF QUANTITIES,  
SCHEDULES OF QUANTITIES**

SCALE: NONE SHEET 1 OF 1 SHEETS STA. 16+00.00 TO STA. 22+25.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
580	18-00081-00-BR	CASS	24	3
FED. ROAD DIST. NO. 7 ILLINOIS				CONTRACT NO. 93780
FED. AID PROJECT NO. 518P(13)				

R 13 W | R 12 W, 3rd PM

R 12 W | R 11 W, 3rd PM

T 16 N | T 17 N

SECTION 36

SECTION 31

SECTION 32

SECTION 33

SECTION 34

SECTION 35

SECTION 36

SECTION 31

CASS COUNTY

MORGAN COUNTY

BOULEVARD RD

WESSLER RD

ARENZVILLE RD

CH 9

T 16 N | T 17 N

SECTION 6

SECTION 5

SECTION 4

SECTION 3

SECTION 2

SECTION 1

SECTION 6

CH 11

SECTION 1

SECTION 7

SECTION 8

SECTION 9

SECTION 10

SECTION 11

SECTION 12

SECTION 7

ST. PAUL CHURCH ROAD

HILL RD

CONCORD-ARENZVILLE RD

SECTION 12

SECTION 18

SECTION 17

SECTION 16

SECTION 15

SECTION 14

SECTION 13

SECTION 18

SECTION 13

U.S. 67

CH 11

SECTION 19

SECTION 20

SECTION 21

SECTION 22

SECTION 23

SECTION 24

SECTION 19

SECTION 5

SECTION 8

SECTION 17

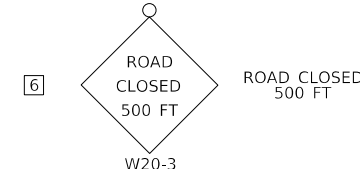
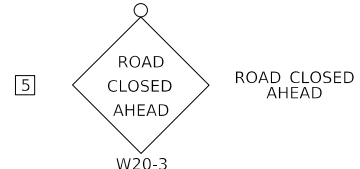
SECTION 17

R 13 W | R 12 W, 3rd PM

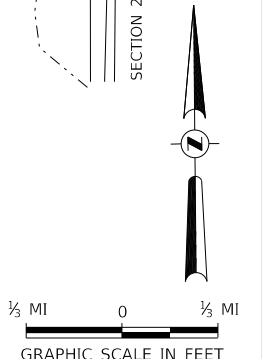
R 12 W | R 11 W, 3rd PM

- 1 ROAD CLOSED 3/4 MILE AHEAD LOCAL TRAFFIC ONLY R11-3
- 2 ROAD CLOSED 1 1/4 MILE AHEAD LOCAL TRAFFIC ONLY R11-3
- 3 ROAD CLOSED 1 1/4 MILE AHEAD LOCAL TRAFFIC ONLY R11-3
- 4 ROAD CLOSED 6 1/2 MILE AHEAD LOCAL TRAFFIC ONLY R11-3

- 5 ROAD CLOSED 1 MILE AHEAD LOCAL TRAFFIC ONLY
- 6 ROAD CLOSED 500 FT
- 7 TYPE III BARRICADES



SEE STANDARD BLR 21 AND SPECIAL PROVISIONS



MODEL: ST00161.MXD  
FILE NAME: C:\1795 - C1 9 over Mud Creek (Cass)\CADD\CADD Sheets\1795-001.dgn

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DRAWN - JPS	REVISED -	
PLOT SCALE = 2,6667' / in.	CHECKED - BAN/MMO	REVISED -
PLOT DATE = 1/2/2022	DATE - 10/08/2021	REVISED -

**CASS COUNTY  
COUNTY HIGHWAY 9 (F.A.S. 580)  
OVER MUD CREEK**

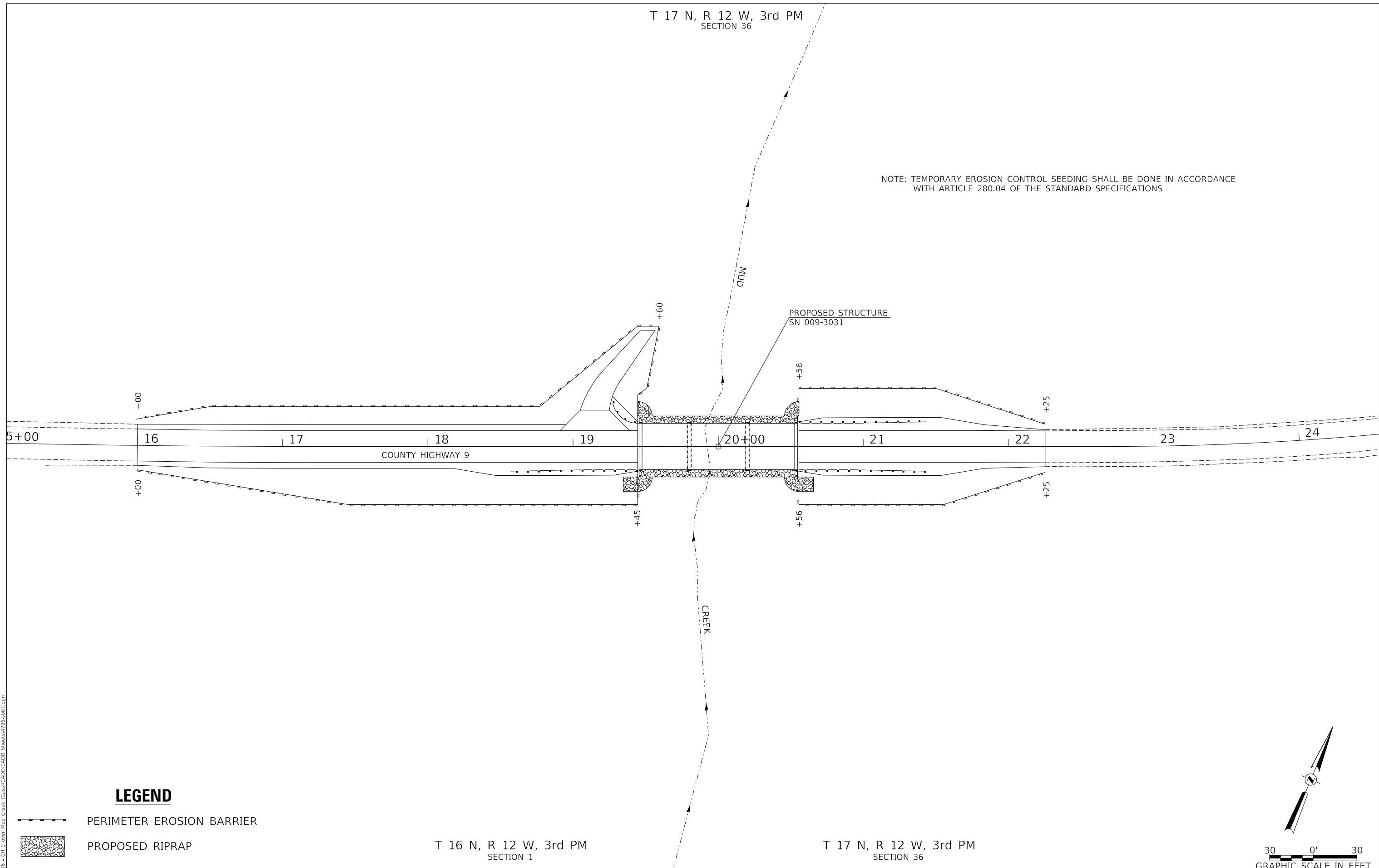
**TRAFFIC CONTROL PLAN**

SCALE: NONE SHEET 1 OF 1 SHEETS STA. 16+00.00 TO STA. 22+25.00


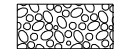
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
580	18-00081-00-BR	CASS	24	4
CONTRACT NO. 93780				
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT NO. 518P(313)	

T 17 N, R 12 W, 3rd PM  
SECTION 36

NOTE: TEMPORARY EROSION CONTROL SEEDING SHALL BE DONE IN ACCORDANCE WITH ARTICLE 280.04 OF THE STANDARD SPECIFICATIONS

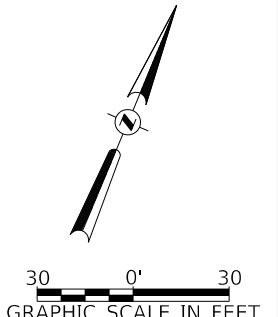


**LEGEND**

-  PERIMETER EROSION BARRIER
-  PROPOSED RIPRAP

T 16 N, R 12 W, 3rd PM  
SECTION 1

T 17 N, R 12 W, 3rd PM  
SECTION 36



MODEL: \\MODEL\NAME\... FILE NAME: \\1795 - C1 9 over Mud Creek (Cass)\CADD\CADD Sheets\1795-001.dgn

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	DRAWN - JPS	REVISED - _____
PLOT SCALE = 60.0000' / in.	CHECKED - BAN/MMO	REVISED - _____
PLOT DATE = 1/2/2022	DATE - 9/14/2021	REVISED - _____

**CASS COUNTY  
COUNTY HIGHWAY 9 (F.A.S. 580)  
OVER MUD CREEK**

**EROSION CONTROL PLAN**

SCALE: 1"=30' SHEET 1 OF 1 SHEETS STA. 16+00.00 TO STA. 22+25.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
580	18-00081-00-BR	CASS	24	5
CONTRACT NO. 93780				
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. 518P(313)		

DATE	
BY	
PLAN	SURVEYED
	PLOTTED
	ALIGNED
	CHECKED
	FILED
	NO.
	NO.

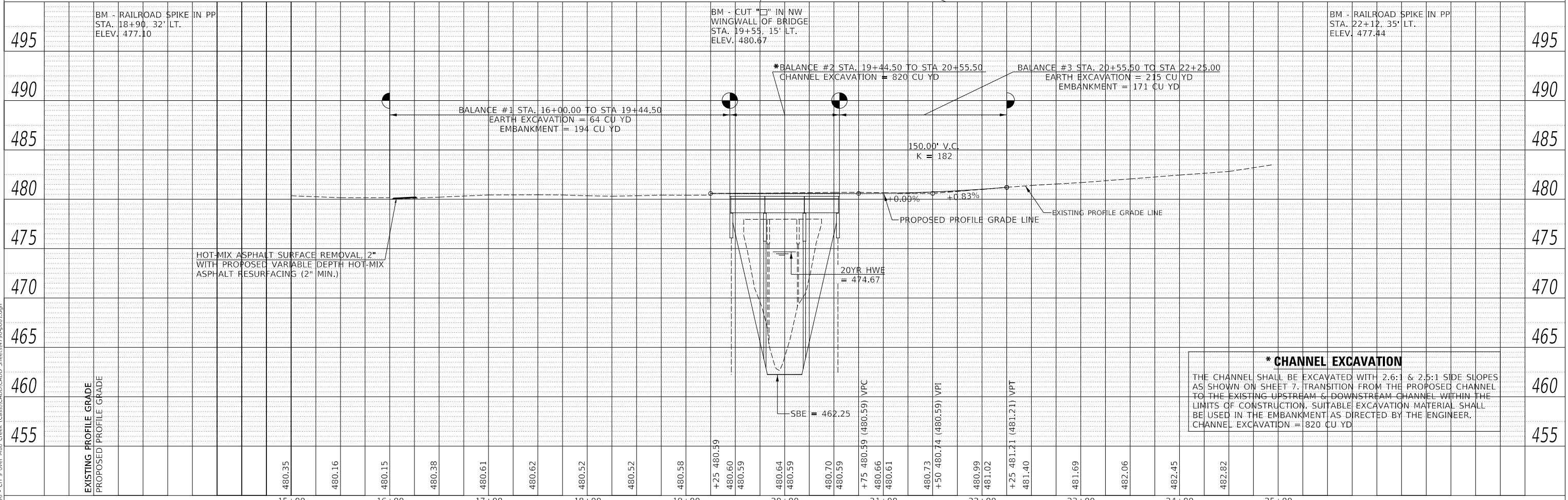
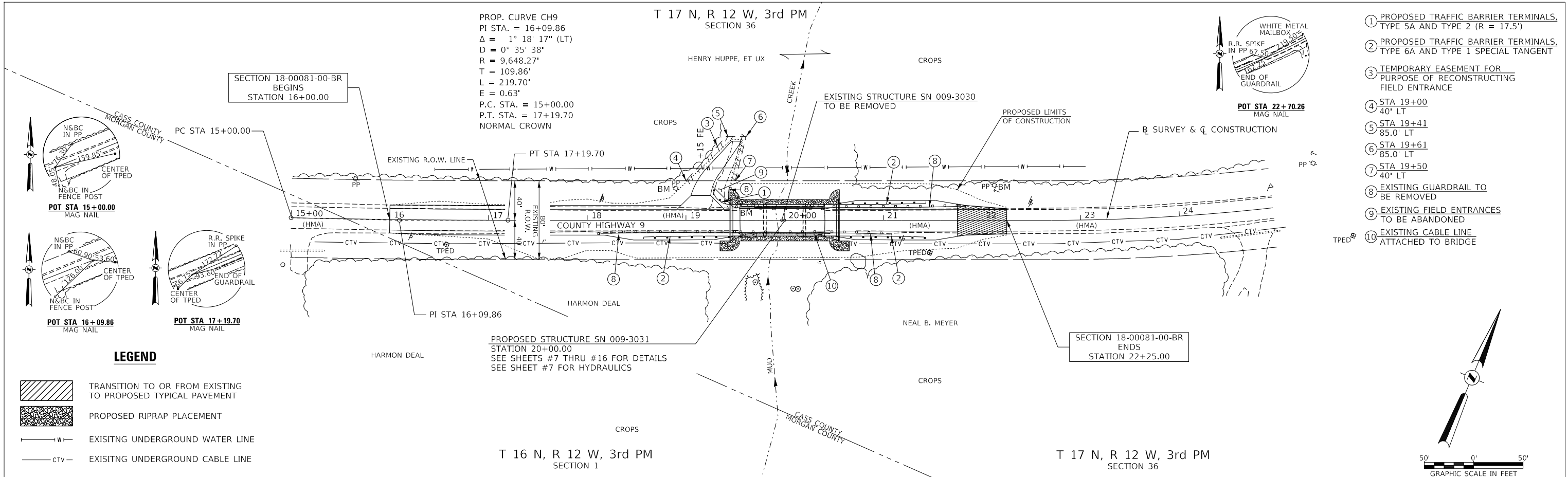
DATE	
BY	
PROFILE	SURVEYED
	PLOTTED
	GRADES
	CHECKED
	STRUCTURE
	NOTATIONS
	NO.
	NO.

MODEL: SPODEL\MAMES  
FILE NAME: V:\3796 - Ch 9 over Mud Creek (Cass)\CADD\CADD Sheets\3796-rp01.dgn

USER NAME =	BNebe1	DESIGNED -	JPS	REVISED -	
PLOT SCALE =	100.0000' / in.	DRAWN -	JPS	REVISED -	
PLOT DATE =	1/11/2022	CHECKED -	NMO/BAN	REVISED -	
		DATE -	9/15/2021	REVISED -	

**CASS COUNTY  
COUNTY HIGHWAY 9 (F.A.S. 580)  
OVER MUD CREEK**

SCALE: 1"=50'		SHEET 1 OF 1 SHEETS		STA. 16+00.00 TO STA. 22+25.00	
PLAN AND PROFILE		SECTION		COUNTY	
SECTION		18-00081-00-BR		CASS	
TOTAL SHEETS		24		6	
CONTRACT NO.		93780			
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT NO. 518P(313)	



**\* CHANNEL EXCAVATION**  
THE CHANNEL SHALL BE EXCAVATED WITH 2.6:1 & 2.5:1 SIDE SLOPES AS SHOWN ON SHEET 7. TRANSITION FROM THE PROPOSED CHANNEL TO THE EXISTING UPSTREAM & DOWNSTREAM CHANNEL WITHIN THE LIMITS OF CONSTRUCTION. SUITABLE EXCAVATION MATERIAL SHALL BE USED IN THE EMBANKMENT AS DIRECTED BY THE ENGINEER. CHANNEL EXCAVATION = 820 CU YD

B.M.: RR Spike in Power Pole  
Sta. 18+90, 32' LT.  
Elev. 477.10

RR Spike in Power Pole  
Sta. 22+12, 35' RT.  
Elev. 477.44

Existing Structure:  
Three span bridge with a steel superstructure on reinforced concrete pile bent piers and open abutments. The structure is 86'-0" back to back of abutments, 27'-11" out to out of deck, and is not skewed. Str. No. 009-3030

Salvage: None  
Road to be closed to traffic during construction.

MUD CREEK  
BUILT 202 BY  
CASS COUNTY  
SEC. 18-00081-00-BR  
C.H. 9 STATION 20+00.00  
F.A. PROJ. NO. \*\*\*\*\*  
STR. NO. 009-3031 LOADING HL-93

**NAME PLATE**

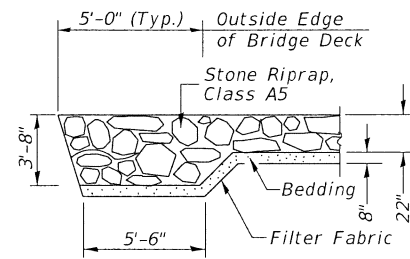
Locate Name Plate at S.W. Wingwall  
Corner of Bridge (See Std. 515001)

**GENERAL NOTES**

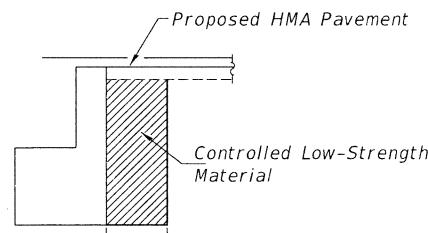
The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at the substructures specified or approved by the Engineer before ordering the remainder of the piles.  
For Soil Boring Logs, See Special Provisions.  
A Corrosion Inhibitor shall be used in the concrete for Precast Prestressed Concrete Deck Beams according to Article 1020.05(b)(10) and 1021.07 of the Standard Specifications.  
Reinforcement Bars designated (E) shall be epoxy coated.  
Layout of the slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.  
The top surface of the beams shall be finished according to the IDOT Manual for Fabrication of Precast Prestressed Concrete Products.  
The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on the project.

**TOTAL BILL OF MATERIAL**

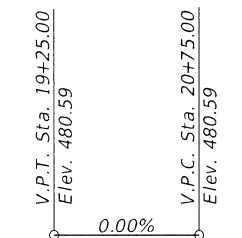
ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	CU YD		820	820
Stone Riprap, Class A5	TON		750	750
Filter Fabric	SQ YD		720	720
① Hot-Mix Asphalt Surface Course, IL-9.5, Mix "C", N50	TON	62		62
① Removal of Existing Structures	EACH			1
Structure Excavation	CU YD		65	65
Cofferdam Excavation	CU YD		120	120
Cofferdam (Type 1) (Location-1)	EACH		1	1
Cofferdam (Type 1) (Location-2)	EACH		1	1
Concrete Structures	CU YD		121.5	121.5
Concrete Encasement	CU YD		3.5	3.5
Precast Prestressed Concrete Deck Beams (17" Depth)	SQ FT	3,485		3,485
Reinforcement Bars	POUND		9,970	9,970
① Steel Railing, Type SM (Special)	FOOT	222		222
Furnishing Steel Piles HP10x42	FOOT		1,100	1,100
Driving Piles	FOOT		1,100	1,100
Test Pile Steel HP10x42	EACH		2	2
Name Plates	EACH		1	1
① Waterproofing Membrane System	SQ YD	395		395
Portland Cement Fairing Course	FOOT	195		195
① Controlled Low-Strength Material	CU YD		12.9	12.9
① See Special Provisions				



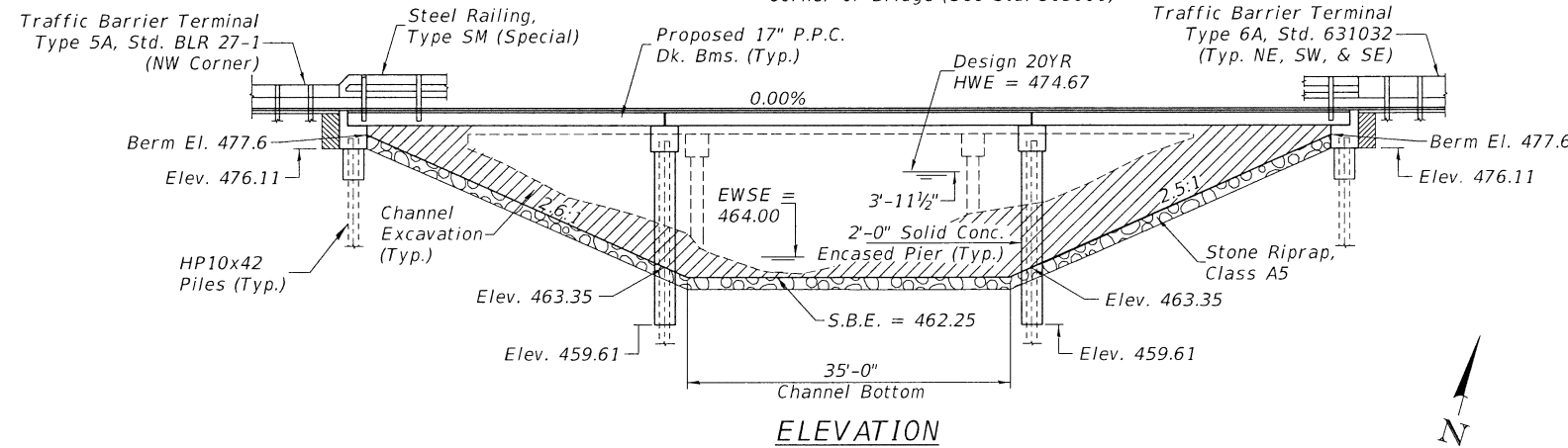
SECTION A-A



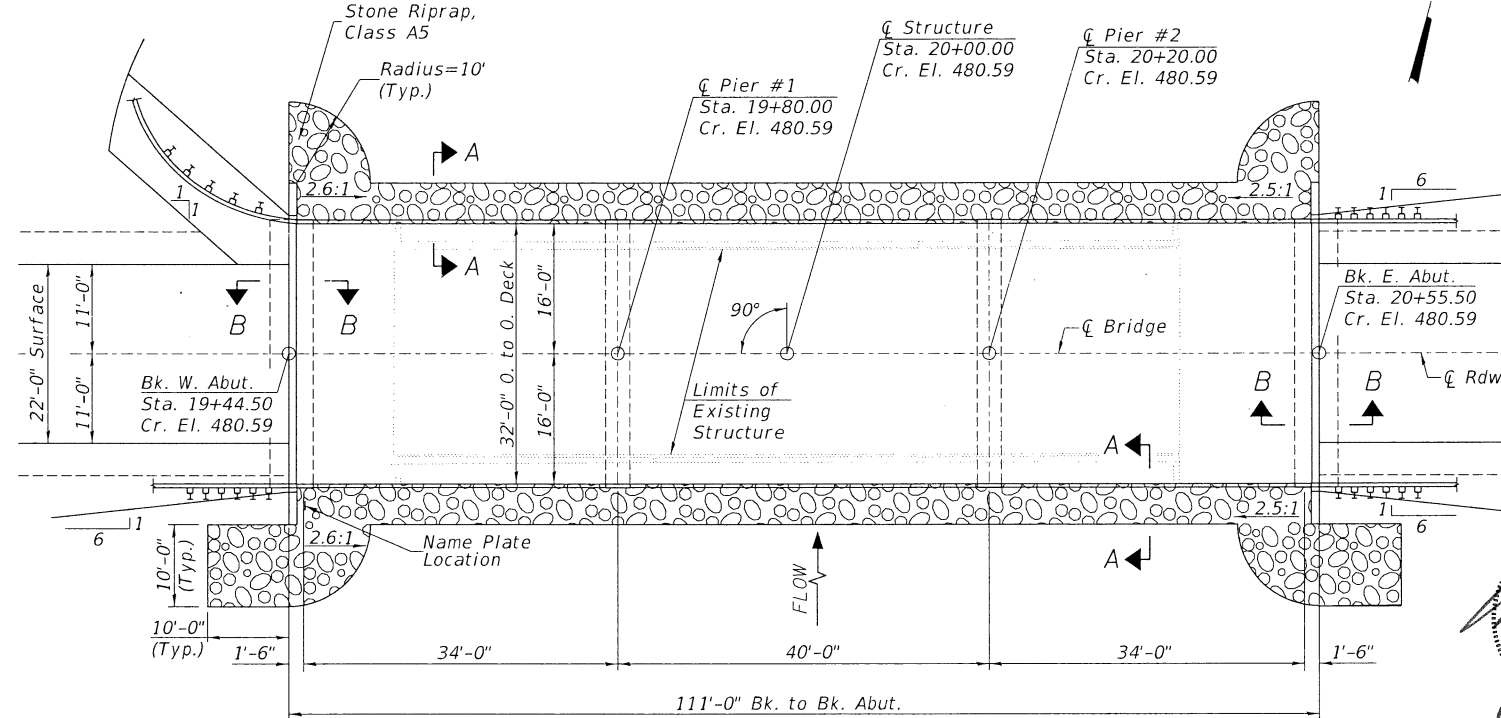
SECTION B-B



PROFILE GRADE (CH 9)



ELEVATION



PLAN

**DESIGN SCOUR ELEVATION TABLE**

Design Scour Elevations (ft.)					Item 113
	W. Abut.	Pier #1	Pier #2	E. Abut.	
Q100	476.1	458.3	458.3	476.1	8
Q200	476.1	457.0	457.0	476.1	
Design	476.1	458.3	458.3	476.1	
Check	476.1	457.0	457.0	476.1	

**WATERWAY INFORMATION**

Drainage Area = 8.79 Sq. Mi. Low Grade Elev. = 480.15 @ Sta. 16+00.00

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	20	2,377	438	723	474.67	0.25	0.24	474.92	474.91
Base	100	3,540	589	912	476.91	0.40	0.15	477.31	477.06

**DESIGN SPECIFICATIONS**

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

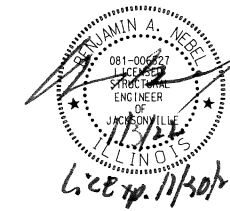
**DESIGN STRESSES**

(FIELD UNITS) (PRECAST PRESTRESSED UNITS)  
 f'c = 3,500 p.s.i. f'c = 6,000 p.s.i.  
 fy = 60,000 p.s.i. (Rein.) f'ci = 5,000 p.s.i.  
 f's = 270,000 p.s.i. (1/2" Strands)  
 f'si = 201,960 p.s.i. (1/2" Strands)

**LOADING HL-93**

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

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 Standard Specification for Highway Bridges. This design complies with all requirements of the current AASHTO Guide Specifications for Seismic Design of highway bridges.



*[Signature]*  
 Illinois Structural No. 6527  
 Expires 11/30/2022



LOCATION SKETCH

**GENERAL PLAN & ELEVATION**  
**COUNTY HIGHWAY 9 (FAS 580)**  
**OVER MUD CREEK**  
**CASS COUNTY**  
**SEC. 18-00081-00-BR**  
**STA. 20+00.00**  
**S.N. 009-3031**

USER NAME = BNebel	DESIGNED - JPS	REVISED -
PLOT SCALE = 100.0000' / in.	DRAWN - JPS	REVISED -
PLOT DATE = 1/2/2022	CHECKED - ZL/BAN	REVISED -
	DATE - 10/15/2021	REVISED -

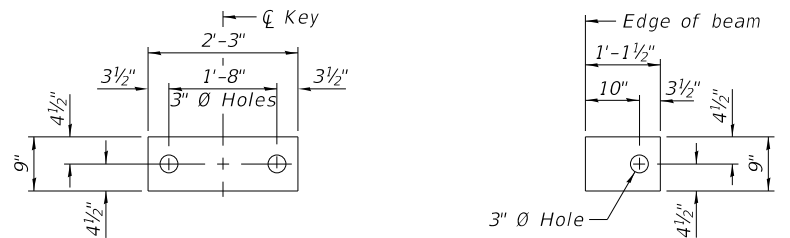
**CASS COUNTY**  
**COUNTY HIGHWAY 9 (F.A.S. 580)**  
**OVER MUD CREEK**

**GENERAL PLAN & ELEVATION**

SCALE: NONE SHEET 1 OF 11 SHEETS

F.A.S. RTE. 580	SECTION 18-00081-00-BR	COUNTY CASS	TOTAL SHEETS 24	SHEET NO. 7
SN 009-3031		CONTRACT NO. 93780		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT NO. 518P(313)		

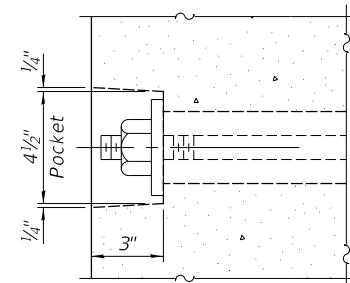
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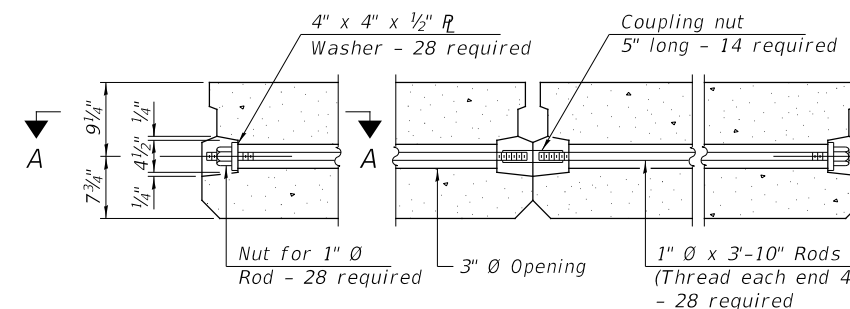
**1/2" FABRIC BEARING PAD**  
(Interior) 28 Required

**1/2" FABRIC BEARING PAD**  
(Exterior) 8 Required

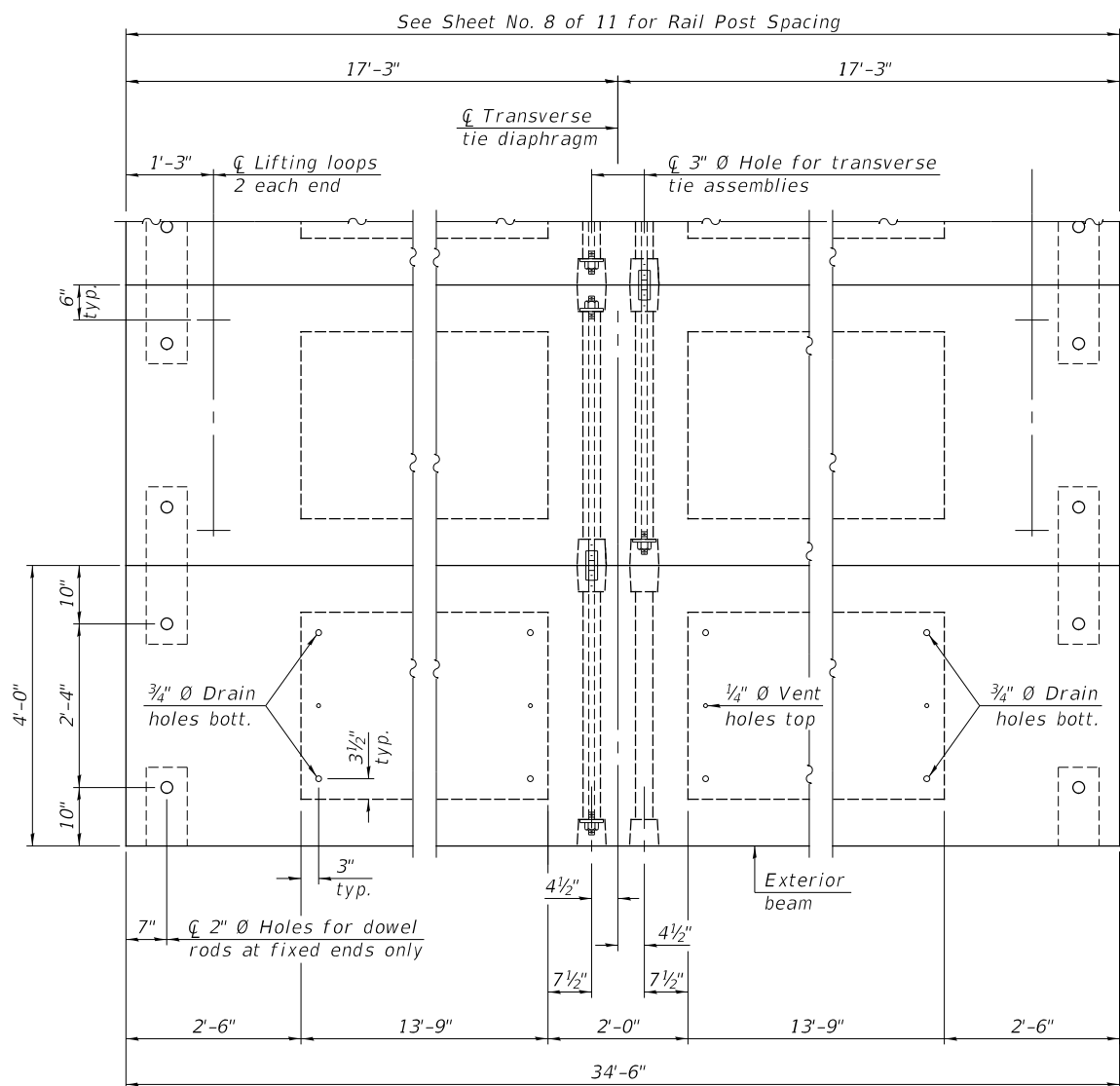
**FIXED**



**SECTION A-A**

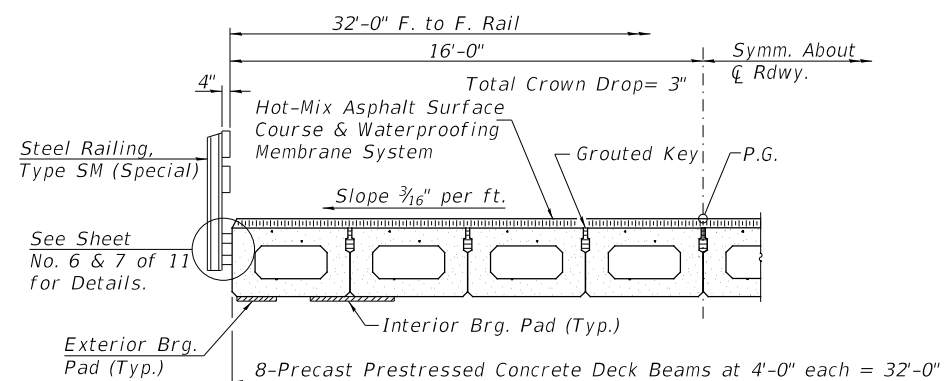


**TYPICAL TRANSVERSE TIE ASSEMBLY**



**PLAN VIEW**

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



**HALF CROSS SECTION**

**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" 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" diameter 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.

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	2,208

MODEL FILE NAME:

USER NAME = BNebel	DESIGNED - JPS	REVISED - _____
PLOT SCALE = 100,0000' / in.	DRAWN - JPS	REVISED - _____
PLOT DATE = 1/2/2022	CHECKED - ZL/BAN	REVISED - _____
	DATE - 10/15/2021	REVISED - _____

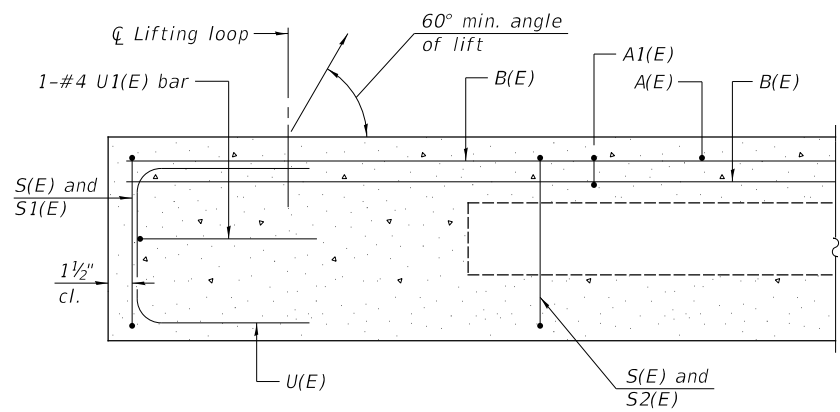
**CASS COUNTY  
COUNTY HIGHWAY 9 (F.A.S. 580)  
OVER MUD CREEK**

**SUPERSTRUCTURE - SPANS 1 & 3**

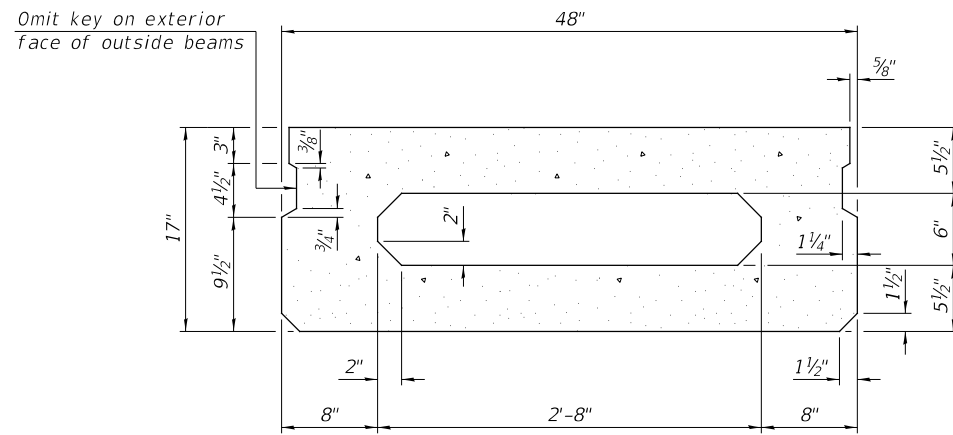
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F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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SN 009-3031		CONTRACT NO. 93780		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT NO. 518P(313)		

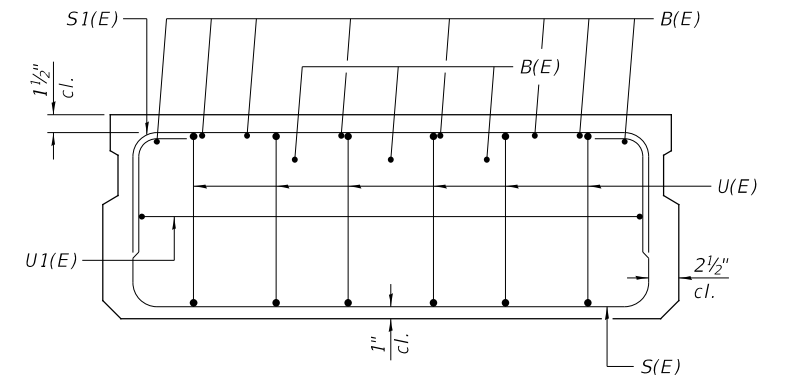




SECTION A-A



SECTION B-B  
(Showing dimensions)



VIEW C-C

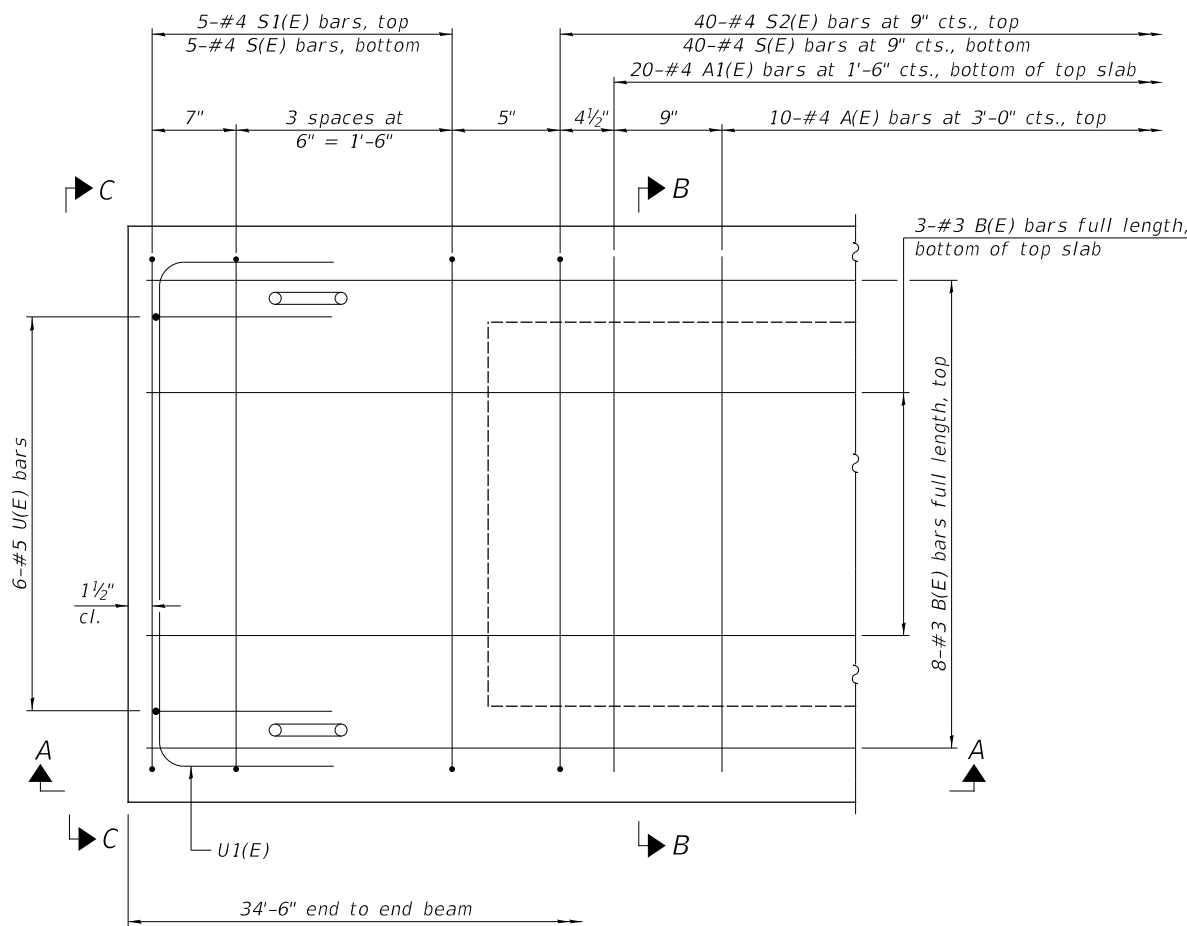
**BAR LIST**  
**ONE BEAM ONLY**  
(For information only)

Bar	No.	Size	Length	Shape
A(E)	10	#4	3'-7"	—
A1(E)	20	#4	3'-10"	—
B(E)	11	#3	*34'-3"	—
S(E)	50	#4	6'-9"	□
S1(E)	10	#4	5'-3"	□
S2(E)	40	#4	5'-6"	□
U(E)	12	#5	3'-8"	□
U1(E)	2	#4	6'-0"	□

Note:  
See sheet 2 of 11 for additional details and Bill of Material.

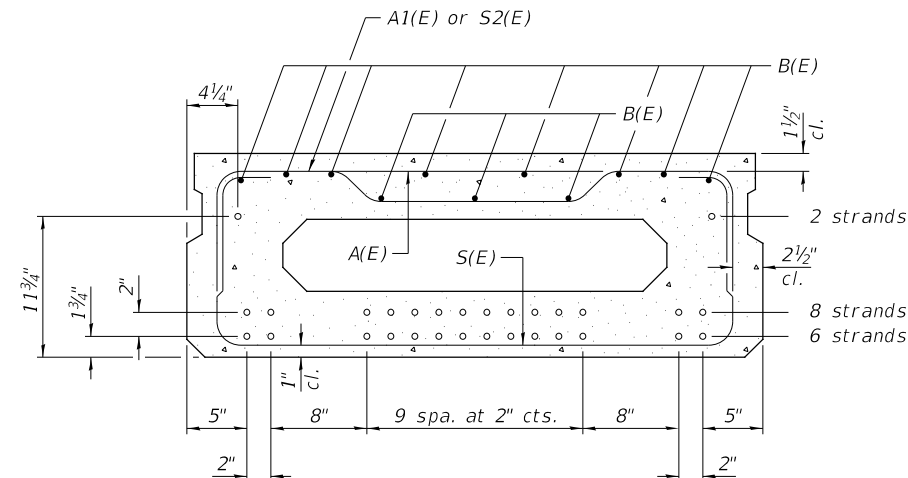
\*Total length, lap as necessary.

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



PLAN VIEW

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.

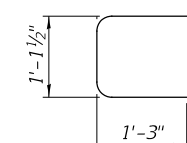


SECTION B-B

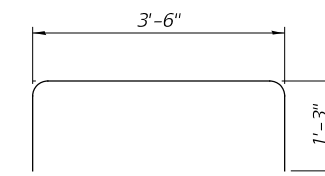
(Showing reinforcement and permissible strand locations)

16-1/2" Ø Strands Each Strand Stressed to 30,900 Lbs.  
6-Strands 1 3/4" up, 8-Strands 3 3/4" up,  
2-Strands 11 3/4" up

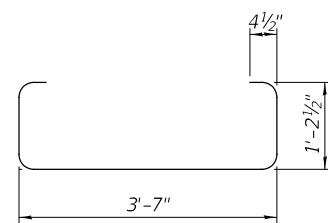
Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.



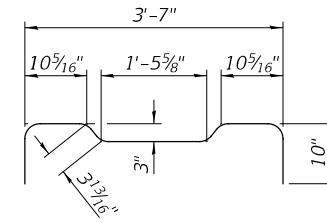
BAR U(E)



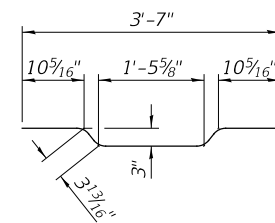
BAR U1(E)



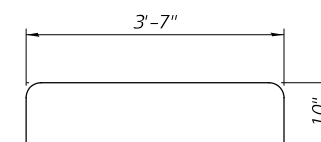
BAR S(E)



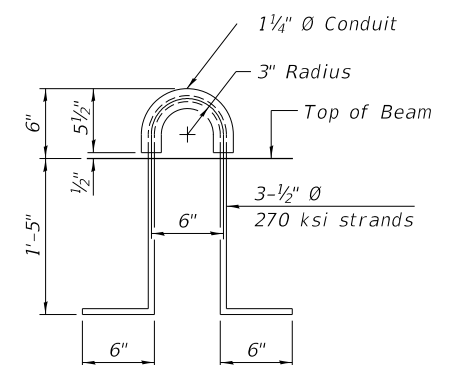
BAR S2(E)



BAR A1(E)



BAR S1(E)



LIFTING LOOP DETAIL

MODEL FILE NAME:

4796-b003.dgn

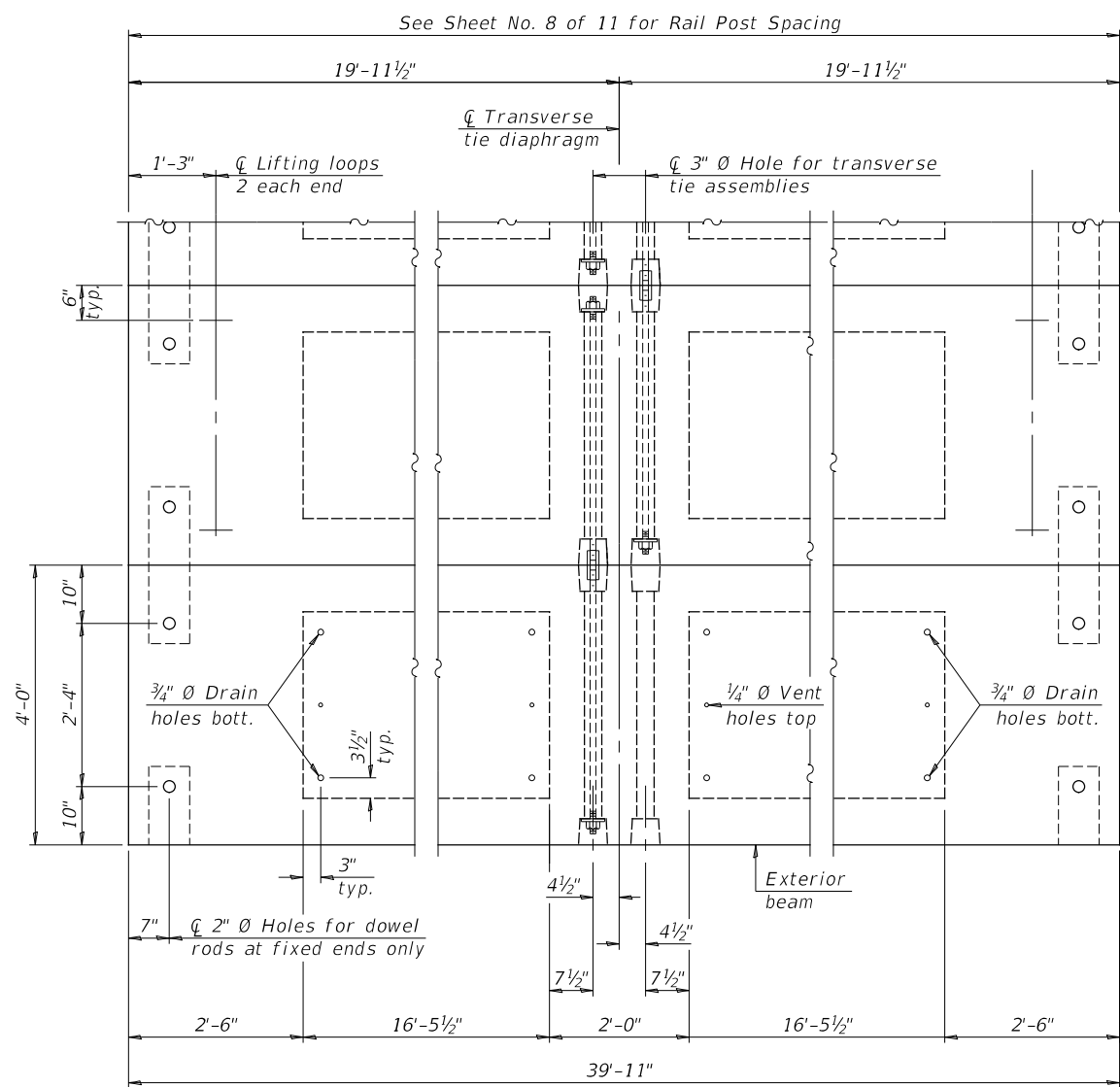
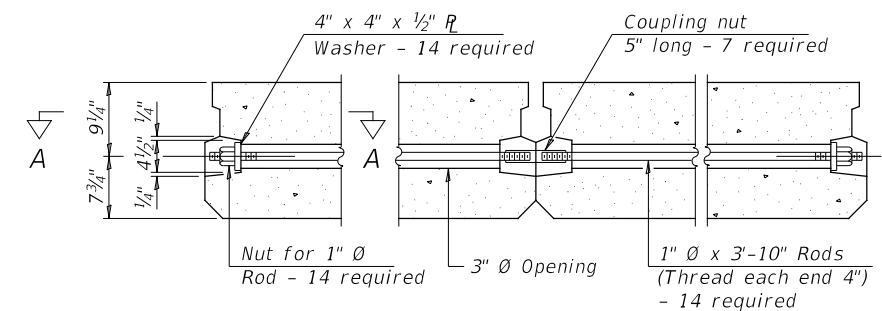
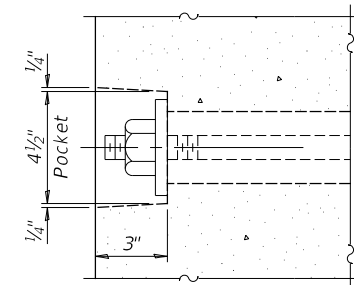
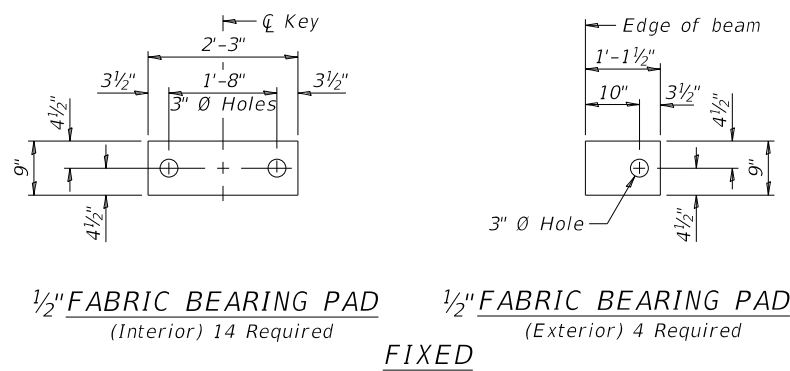
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PLOT DATE = 12/2/2022	DATE - 10/15/2021	REVISED -

**CASS COUNTY**  
**COUNTY HIGHWAY 9 (F.A.S. 580)**  
**OVER MUD CREEK**

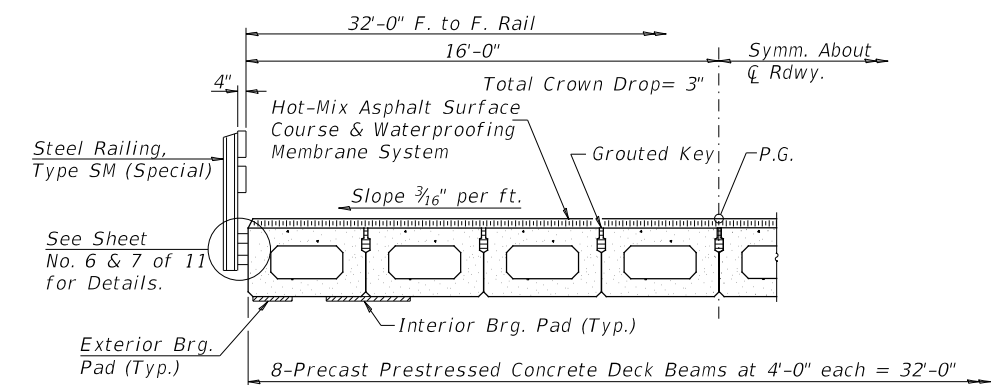
**SUPERSTRUCTURE DETAILS - SPANS 1 & 3**

SCALE: NONE SHEET 3 OF 11 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
580	18-00081-00-BR	CASS	24	9
	SN 009-3031		CONTRACT NO. 93780	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. 518P(313)		



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"  $\varnothing$  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"  $\varnothing$  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.

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	1,277

MODEL FILE NAME:

4796-b004.dgn

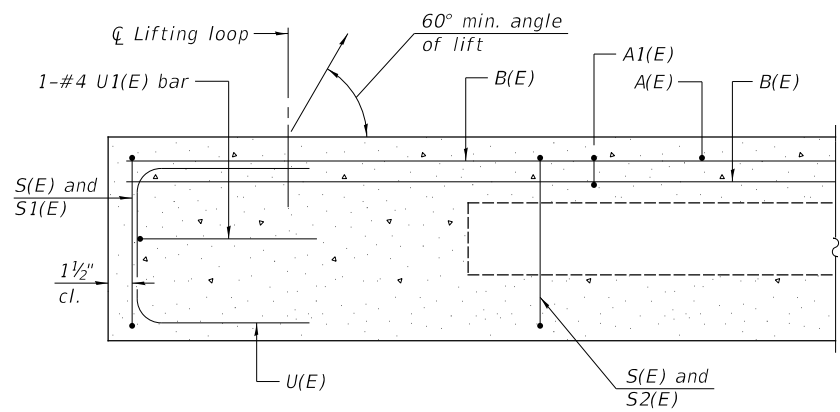
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DRAWN - JPS	REVISIONS - _____	
PLOT SCALE = 100.0000' / in.	CHECKED - ZL/BAN	REVISIONS - _____
PLOT DATE = 1/2/2022	DATE - 10/15/2021	REVISIONS - _____

**CASS COUNTY  
COUNTY HIGHWAY 9 (F.A.S. 580)  
OVER MUD CREEK**

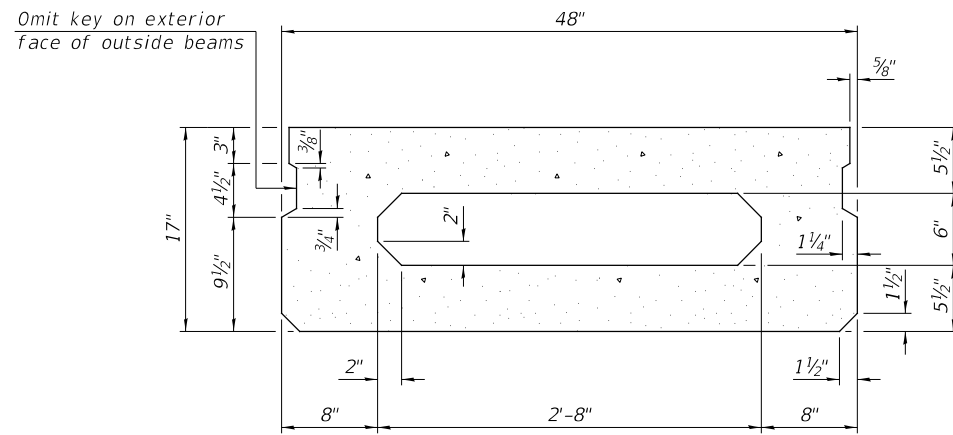
**SUPERSTRUCTURE - SPAN 2**

SCALE: NONE SHEET 4 OF 11 SHEETS

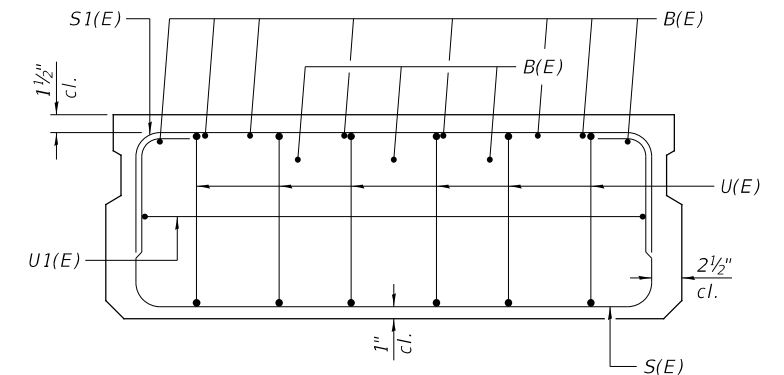
F.A.S. RTE. 580	SECTION 18-00081-00-BR	COUNTY CASS	TOTAL SHEETS 24	SHEET NO. 10
SN 009-3031		CONTRACT NO. 93780		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT NO. 518P(313)		



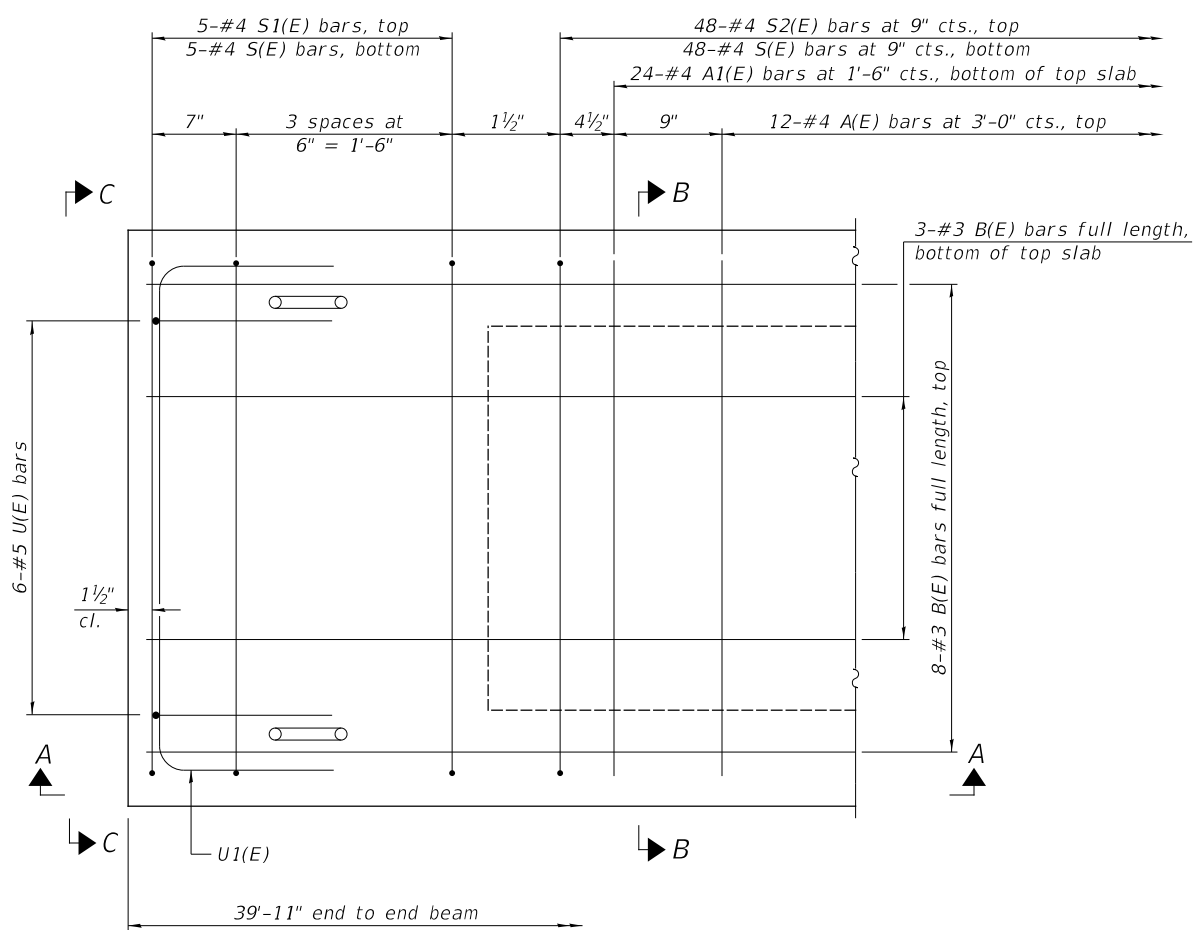
SECTION A-A



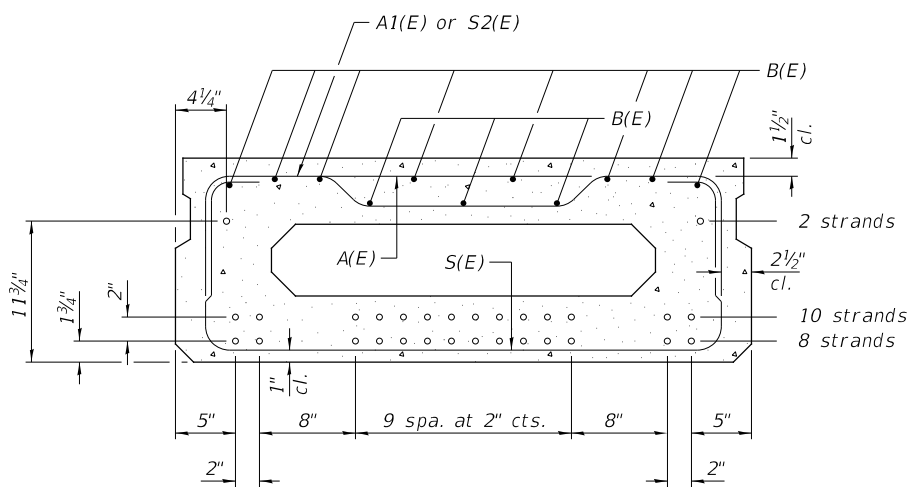
SECTION B-B  
(Showing dimensions)



VIEW C-C



PLAN VIEW



SECTION B-B  
(Showing reinforcement and permissible strand locations)

20-1/2"Ø Strands Each Strand Stressed to 30,900 Lbs.  
8-Strands 1 3/4" up, 10-Strands 3 3/4" up,  
2-Strands 11 3/4" up

Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

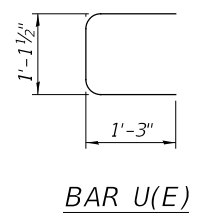
**BAR LIST**  
**ONE BEAM ONLY**  
(For information only)

Bar	No.	Size	Length	Shape
A(E)	12	#4	3'-7"	—
A1(E)	24	#4	3'-10"	—
B(E)	11	#3	*39'-8"	—
S(E)	58	#4	6'-9"	⌊
S1(E)	10	#4	5'-3"	⌊
S2(E)	48	#4	5'-6"	⌊
U(E)	12	#5	3'-8"	⌊
U1(E)	2	#4	6'-0"	⌊

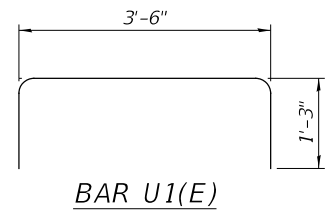
Note:  
See sheet 4 of 11 for additional details and Bill of Material.

\*Total length, lap as necessary.

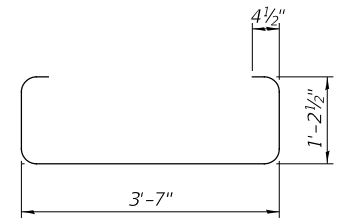
**MINIMUM BAR LAP**  
#3 bar = 1'-6"



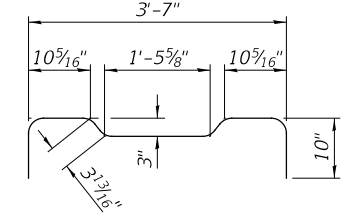
BAR U(E)



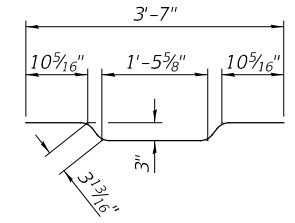
BAR U1(E)



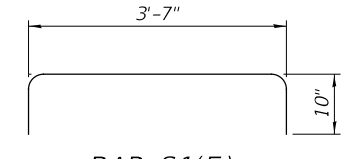
BAR S(E)



BAR S2(E)

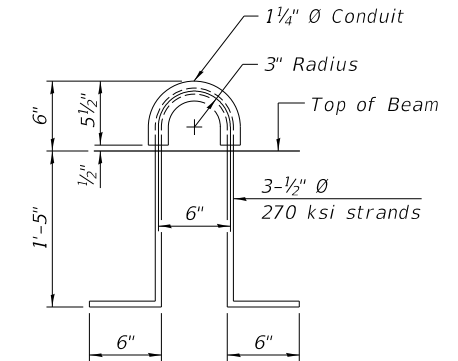


BAR A1(E)



BAR S1(E)

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.



LIFTING LOOP DETAIL

MODEL: 4796-b005.dgn

USER NAME = BNeibel	DESIGNED - JPS	REVISED -
DRAWN - JPS	REVISED -	
PLOT SCALE = 100.0000' / in.	CHECKED - ZL/BAN	REVISED -
PLOT DATE = 1/2/2022	DATE - 10/15/2021	REVISED -

**CASS COUNTY**  
**COUNTY HIGHWAY 9 (F.A.S. 580)**  
**OVER MUD CREEK**

**SUPERSTRUCTURE DETAILS - SPAN 2**

SCALE: NONE SHEET 5 OF 11 SHEETS

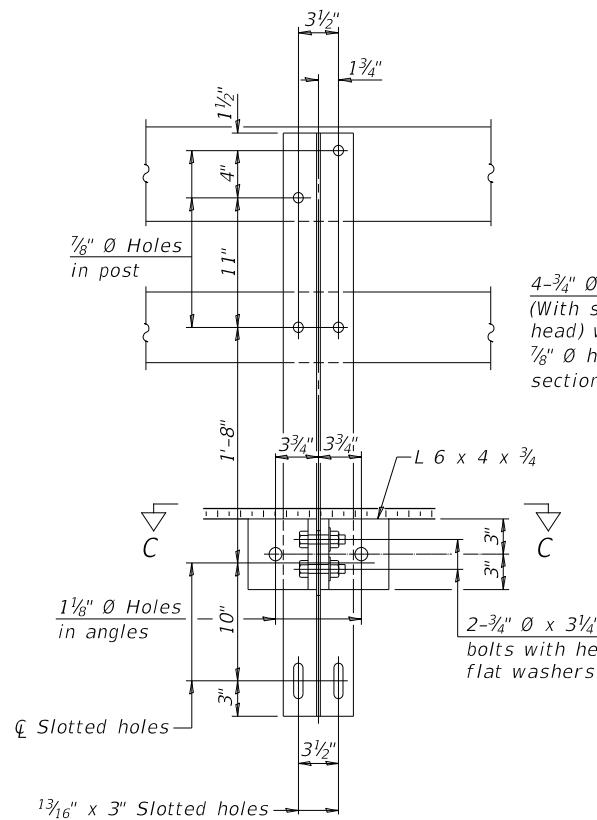
F.A.S. RTE. 580	SECTION 18-00081-00-BR	COUNTY CASS	TOTAL SHEETS 24	SHEET NO. 11
SN 009-3031		CONTRACT NO. 93780		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT NO. 518P(313)		

SEE SHEET NO. 8 OF 11 FOR RAIL POST SPACING.

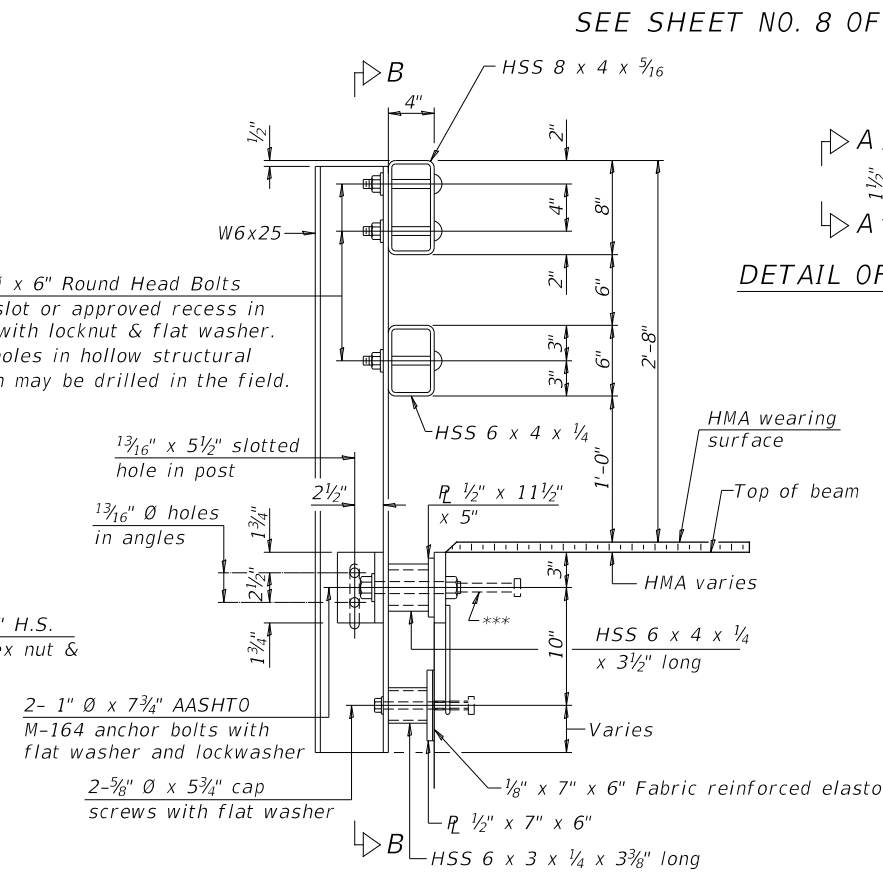
**NOTES**

All field drilled holes shall be coated with an approved zinc rich paint before erection.  
 For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type SM.  
 All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

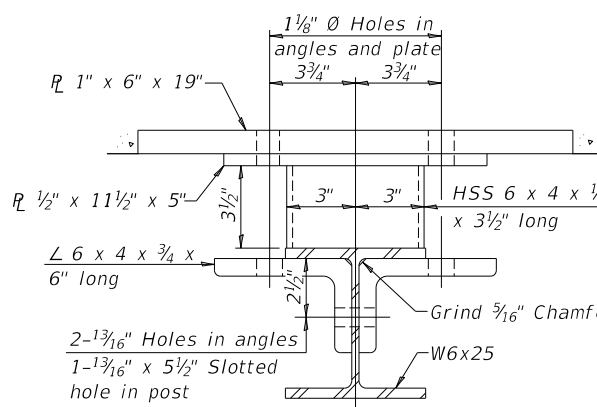
\*\*\*The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



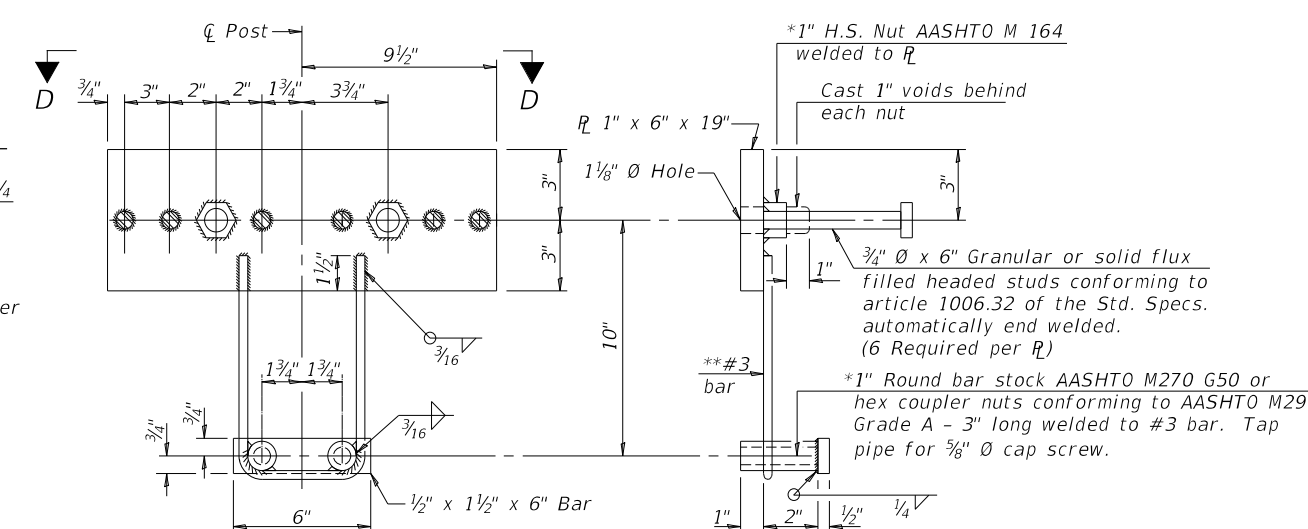
**SECTION B-B**



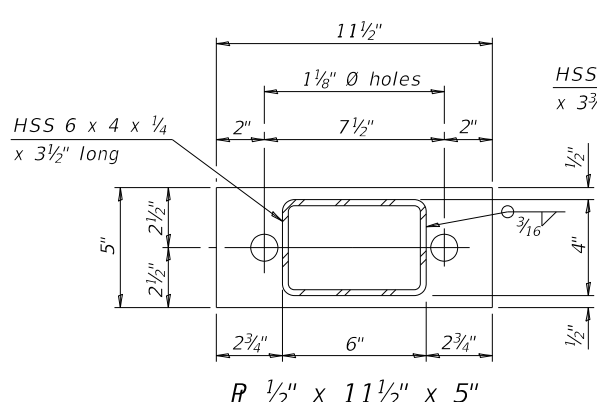
**SECTION AT RAIL POST**



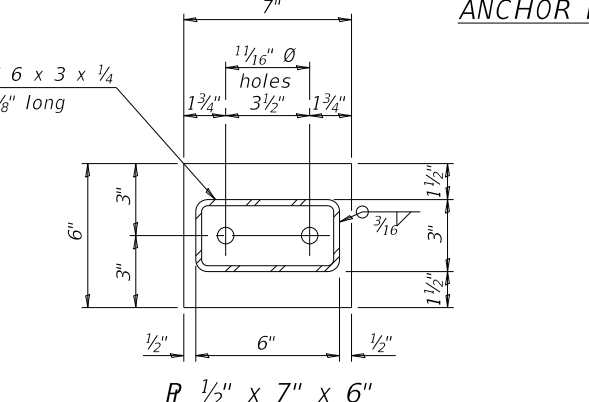
**SECTION C-C**



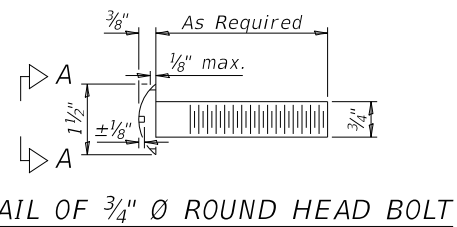
**ANCHOR DEVICE**



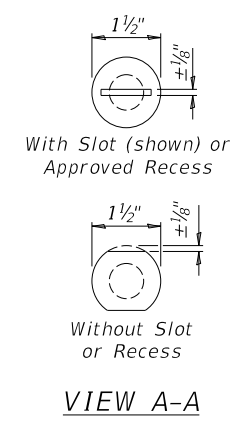
**SECTION AT RAIL SPLICE**



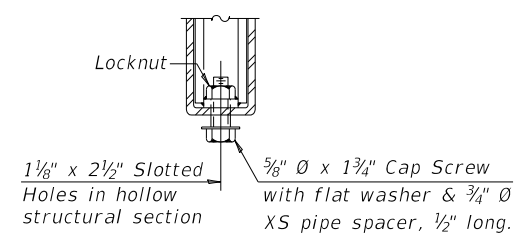
**PLAN-BOTT. SPLICE R TYPICAL**



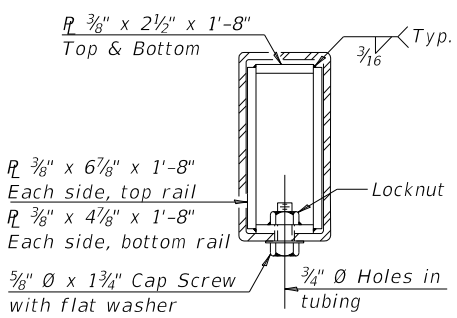
**DETAIL OF 3/4" Ø ROUND HEAD BOLT**



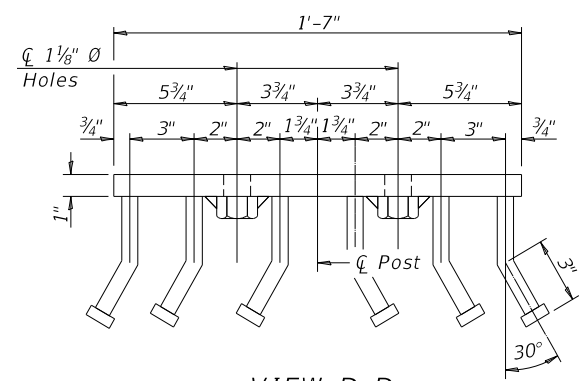
**VIEW A-A**



**RAIL SPLICE CONNECTION AT EXPANSION JT.**



**SECTION AT RAIL SPLICE**



**VIEW D-D**

\*Threaded areas shall be plugged or blocked off during casting of beam. Galvanized after fabrication.  
 \*\*Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Steel Railing, Type SM (Special)	FOOT	222

(Sheet 1 of 2)

**CASS COUNTY  
 COUNTY HIGHWAY 9 (F.A.S. 580)  
 OVER MUD CREEK**

**STEEL RAILING, TYPE SM (SPECIAL)**

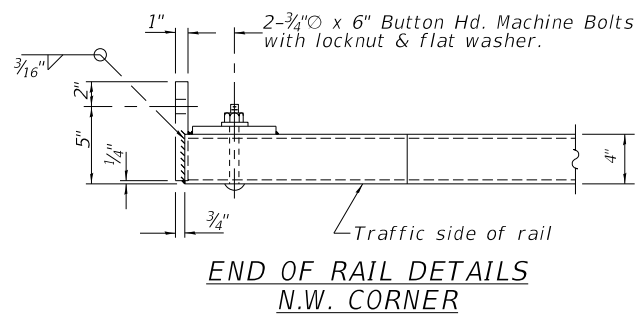
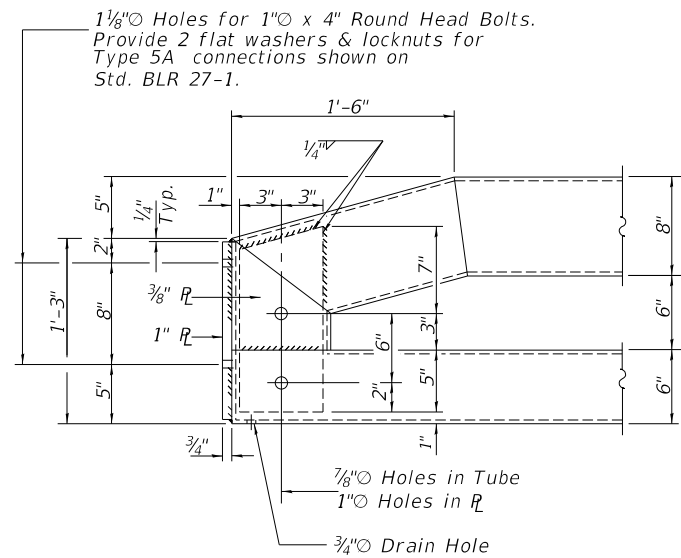
SCALE: NONE SHEET 6 OF 11 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
580	18-00081-00-BR	CASS	24	12
SN 009-3031		CONTRACT NO. 93780		
FED. ROAD DIST. NO. 7		ILLINOIS		
		FED. AID PROJECT NO. 518P(313)		

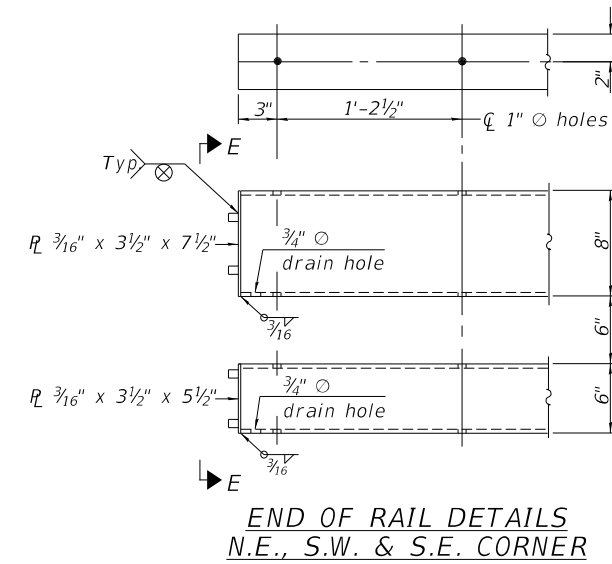
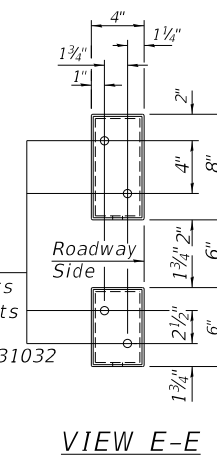
MODEL FILE NAME:

4796-b006.dgn

USER NAME = BNeibel	DESIGNED - JPS	REVISED -
PLOT SCALE = 100.0000' / in.	DRAWN - JPS	REVISED -
PLOT DATE = 1/2/2022	CHECKED - ZL/BAN	REVISED -
	DATE - 10/15/2021	REVISED -



4-5/8" reduced base welded studs. Provide 4-5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032



(Sheet 2 of 2)

USER NAME = BNeibel	DESIGNED - JPS	REVISED - _____
DRAWN - JPS	REVISIONS - _____	
PLOT SCALE = 100.0000' / in.	CHECKED - ZL/BAN	REVISIONS - _____
PLOT DATE = 1/2/2022	DATE - 10/15/2021	REVISIONS - _____

**CASS COUNTY  
COUNTY HIGHWAY 9 (F.A.S. 580)  
OVER MUD CREEK**

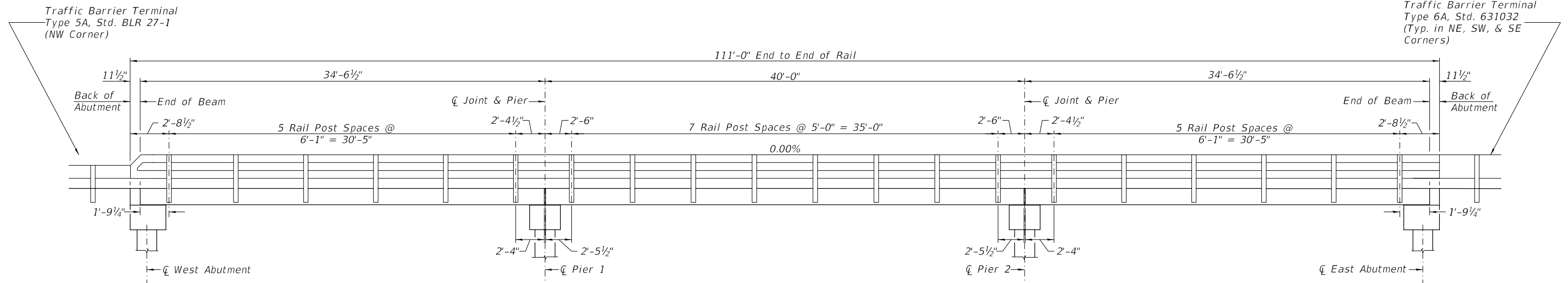
**STEEL RAILING, TYPE SM (SPECIAL)**

SCALE: NONE SHEET 7 OF 11 SHEETS

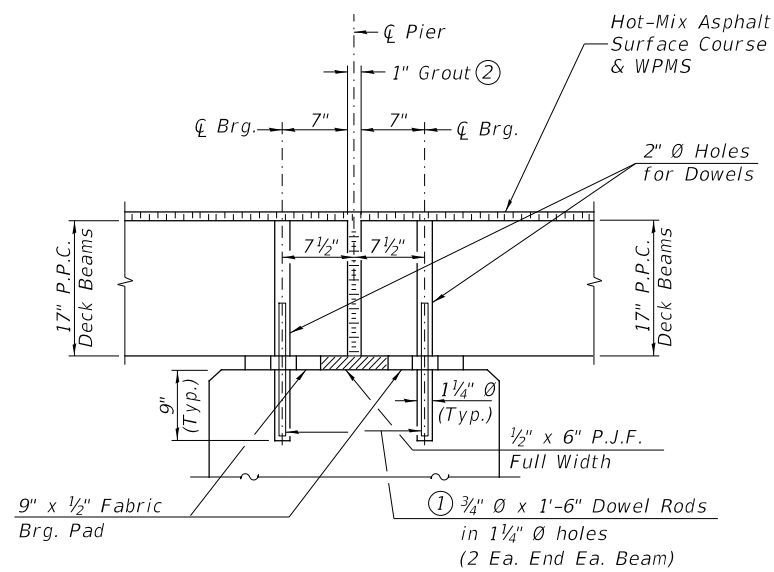
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
580	18-00081-00-BR	CASS	24	13
SN 009-3031		CONTRACT NO. 93780		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT NO. 518P(313)		

MODEL FILE NAME:

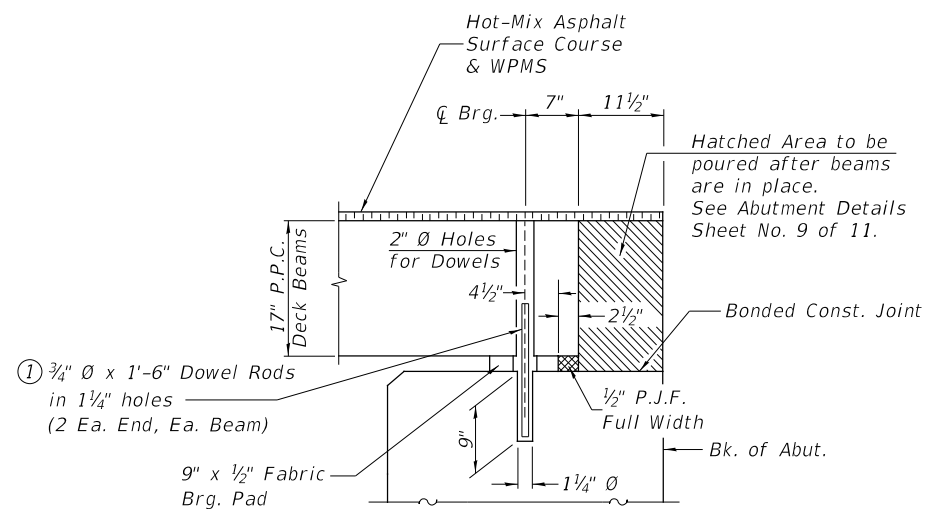
4796-b007.dgn



**RAIL POST SPACING**

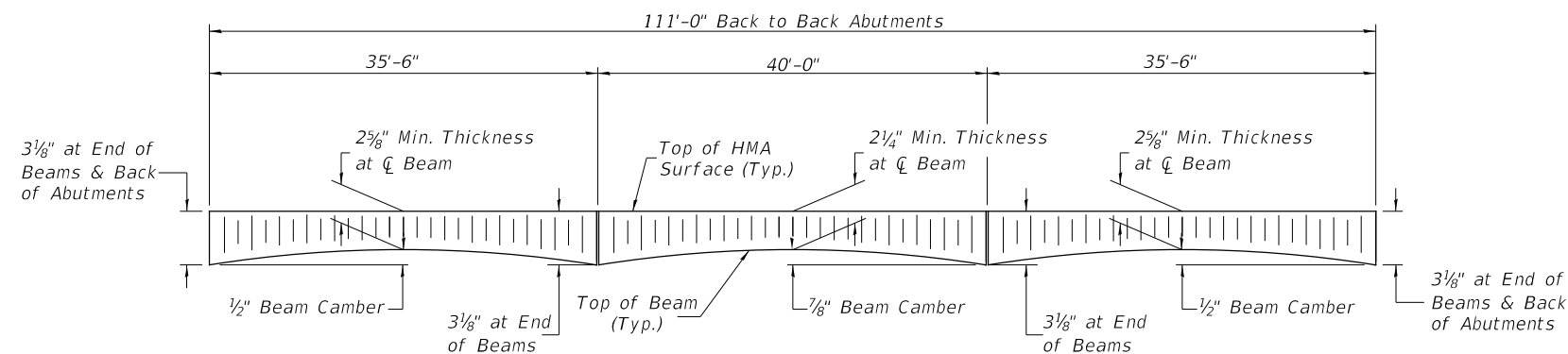


**SECTION THRU PIERS**



**SECTION THRU ABUTMENTS**

- ① Dowel Rods to be grouted after beams are in place and allowed to cure (Min. 24 hr.) prior to grouting the shear keys.
- ② 1" Joint shall be packed with a very dry mix of 2:1 sand and P.C. mortar. 1" Dimension may vary plus or minus to accommodate tolerance in beam lengths.



**HMA SURFACE PROFILE**  
Includes Waterproofing Membrane System ( $\pm 3/4$ )

MODEL FILE NAME:

4796-b008.dgn

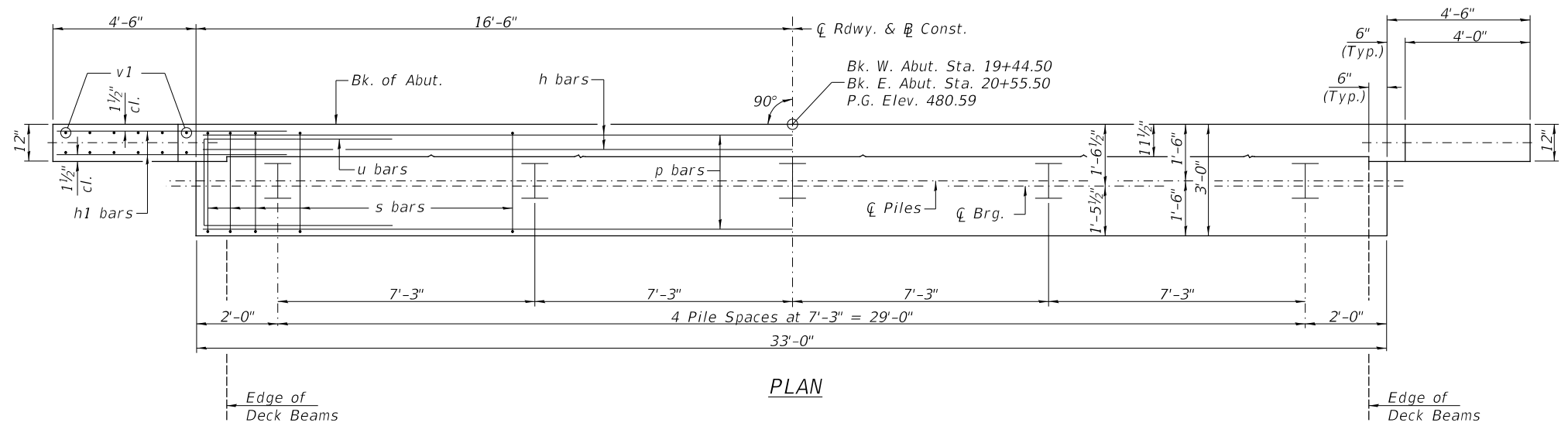
USER NAME = BNeibel	DESIGNED - JPS	REVISED - _____
DRAWN - JPS	REVISOR - _____	
PLOT SCALE = 100,000' / in.	CHECKED - ZL/BAN	REVISOR - _____
PLOT DATE = 1/2/2022	DATE - 10/15/2021	REVISOR - _____

**CASS COUNTY  
COUNTY HIGHWAY 9 (F.A.S. 580)  
OVER MUD CREEK**

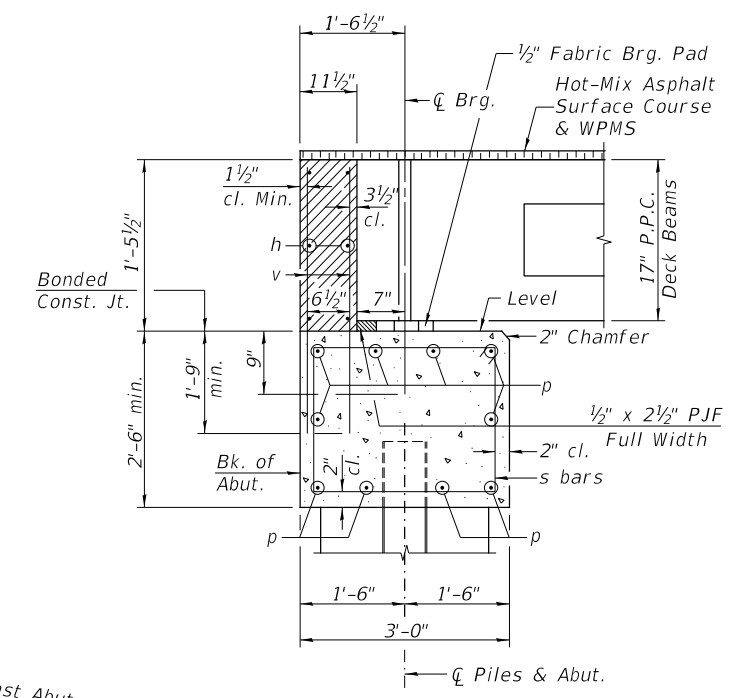
**RAIL POST SPACING  
AND SUPERSTRUCTURE DETAILS**

SCALE: NONE SHEET 8 OF 11 SHEETS

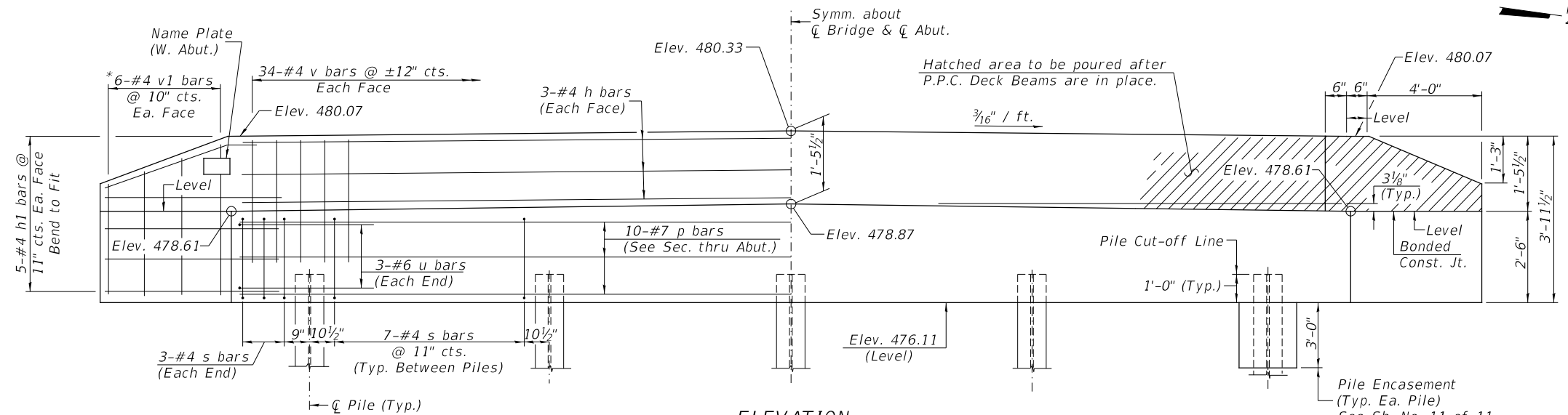
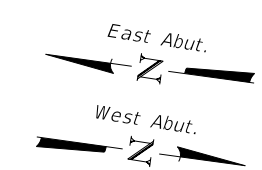
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
580	18-00081-00-BR	CASS	24	14
SN 009-3031		CONTRACT NO. 93780		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. 518P(313)		



PLAN



SECTION THRU ABUT.



ELEVATION  
(Front View of Abutment)

TWO ABUTMENTS  
BILL OF MATERIAL

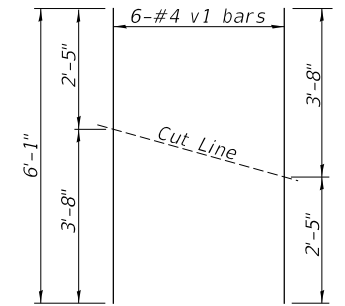
BAR	NO.	SIZE	LENGTH	SHAPE
h	12	#4	32'-9"	—
h1	40	#4	6'-6"	—
p	20	#7	32'-9"	—
s	68	#4	10'-5"	□
u	12	#6	11'-7"	□
v	136	#4	3'-3"	—
v1	24	#4	6'-1"	—
Structure Excavation		CU YD	65	
Concrete Structures		CU YD	25.0	
Concrete Encasement		CU YD	3.5	
Reinforcement Bars		POUND	2,850	
Furnishing Steel Piles HP10x42		FOOT	450	
Driving Piles		FOOT	450	
Test Pile Steel HP10x42		EACH	1	
Name Plates		EACH	1	

NOTES

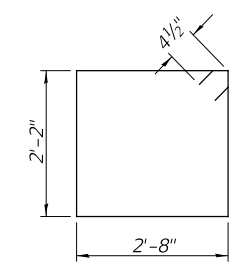
- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- All edges shall have standard 3/4" chamfer.

PILE DATA

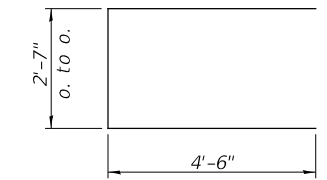
Type & Size: Steel HP10x42  
 Nominal Required Bearing: 335 kips  
 Factored Resistance Available: 184 kips  
 Est. Length: 50' W. Abut.  
 50' E. Abut.  
 No. Req'd.: 10 (Includes 1 Test Pile at East Abut.)



BAR CUTTING DIAGRAM  
Order v1 bars full length. Cut as shown and use remainder of bars in opposite face.



BAR s



BAR u

FILE NAME:

USER NAME = BNeibel	DESIGNED - JPS	REVISED -
DRAWN - JPS	REVISED -	
PLOT SCALE = 100.0000' / in.	CHECKED - ZL/BAN	REVISED -
PLOT DATE = 12/2022	DATE - 10/15/2021	REVISED -

CASS COUNTY  
COUNTY HIGHWAY 9 (F.A.S. 580)  
OVER MUD CREEK

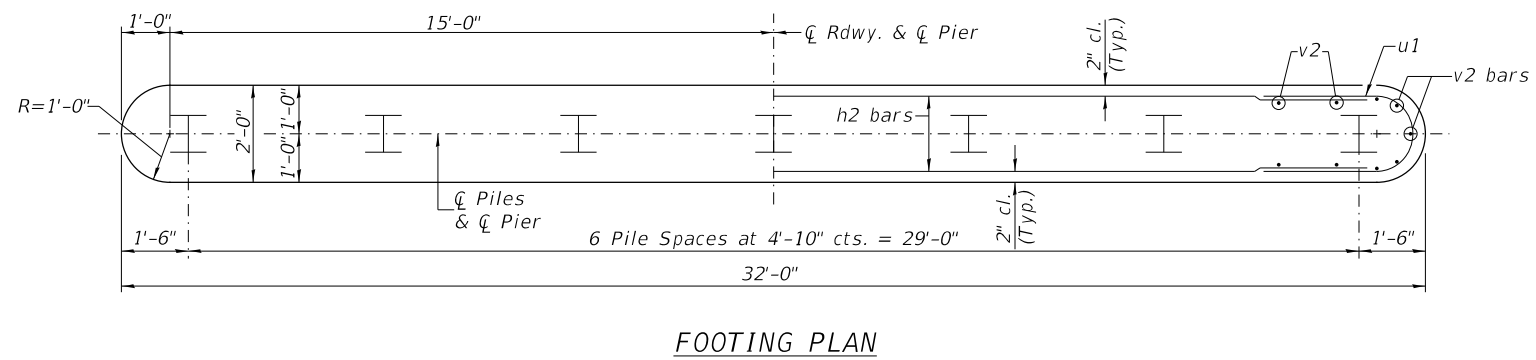
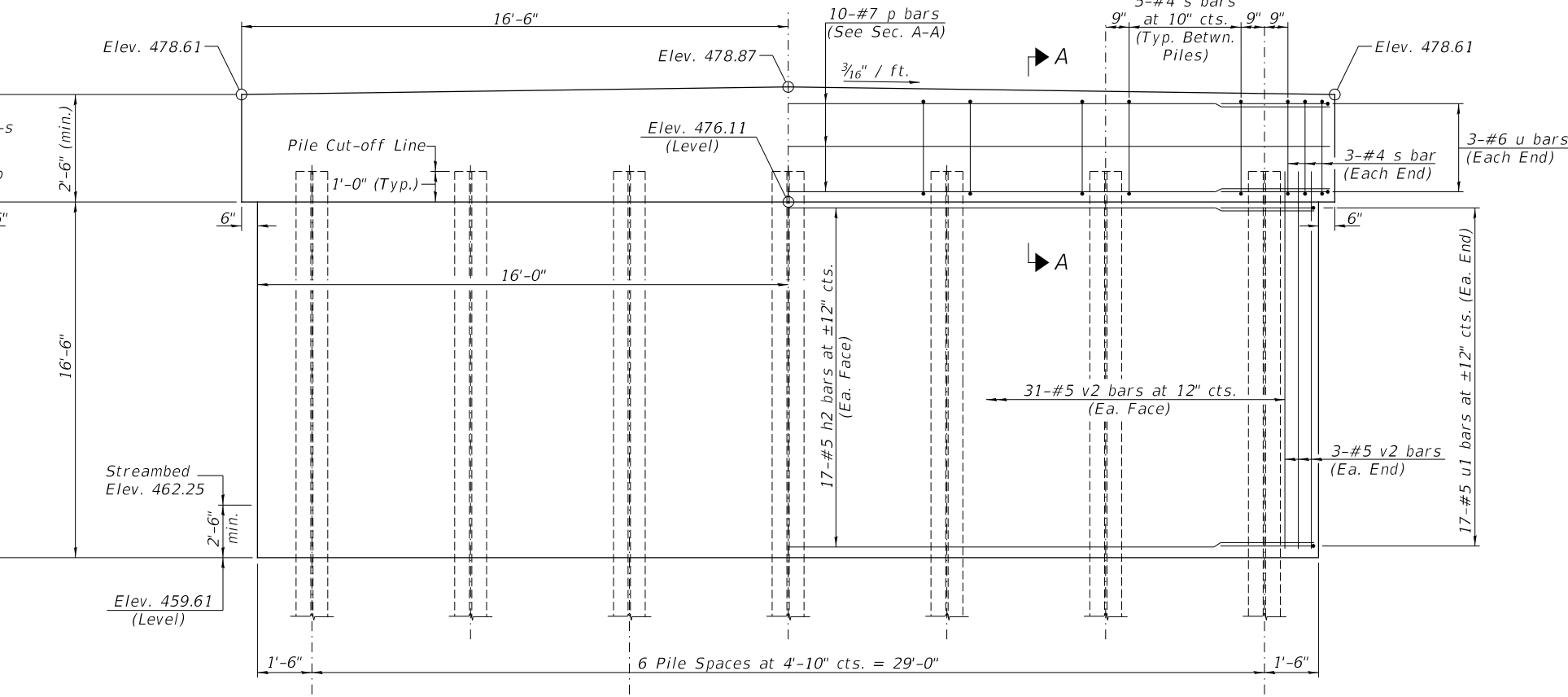
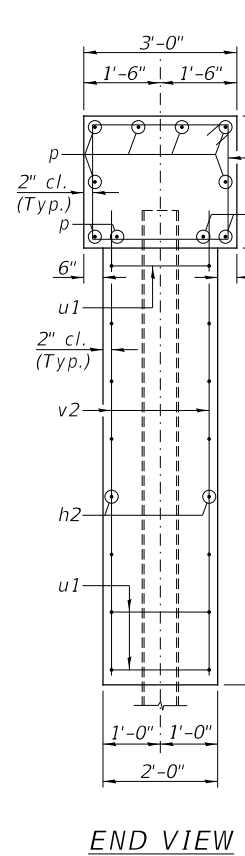
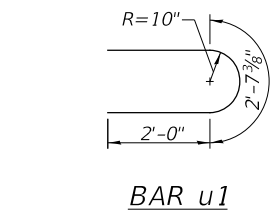
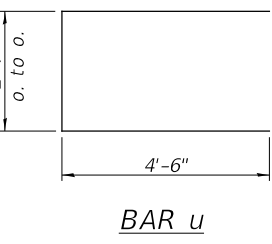
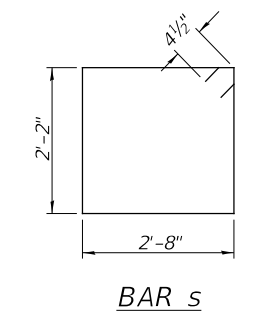
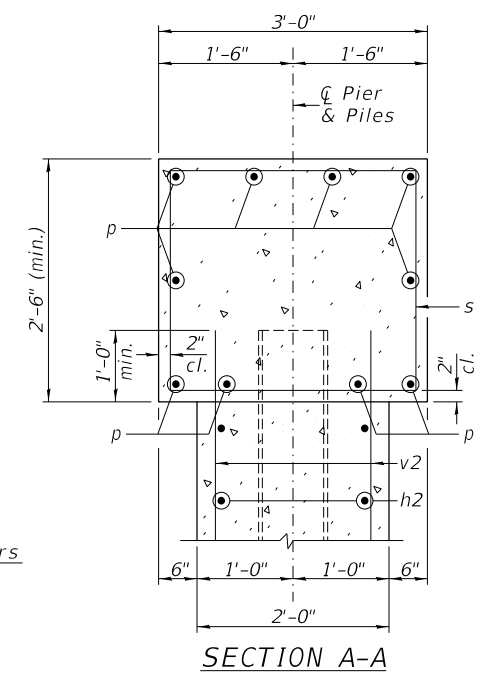
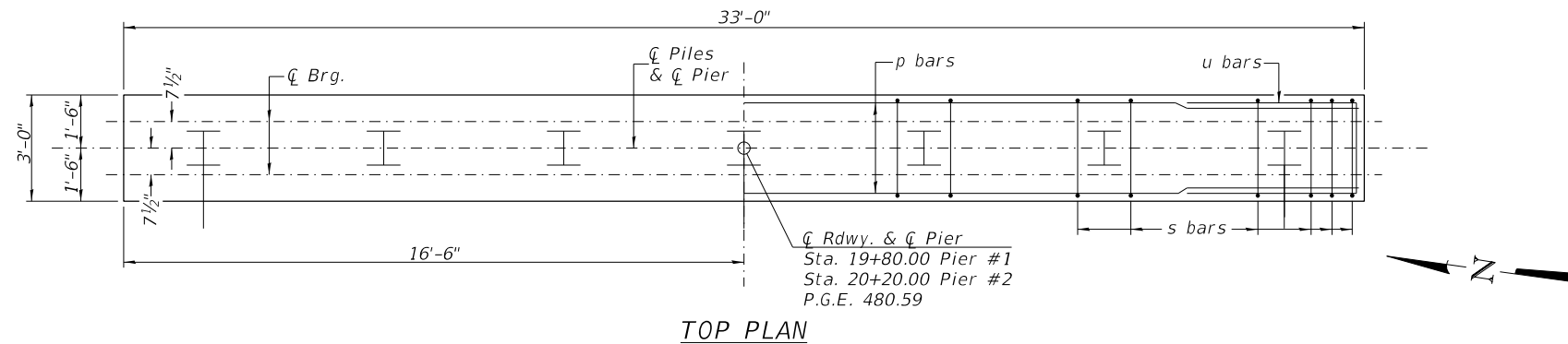
SCALE: NONE SHEET 9 OF 11 SHEETS

ABUTMENTS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
580	18-00081-00-BR	CASS	24	15
SN 009-3031		CONTRACT NO. 93780		
FED. ROAD DIST. NO. 7		ILLINOIS		
		FED. AID PROJECT NO. 518P(313)		

**NOTES**

All edges shall have standard 3/4" chamfer.  
 If a portion of the pier wall is underwater, concrete shall be tremied under water into forms according to Article 503.08 of the Standard Specifications. Concrete shall be tremied to an Elevation 1'-0" above the water level at the time of construction.  
 See Sheet No. 11 of 11 for Pile Details.  
 The Pier Stem shall be constructed in a single continuous concrete pour.



**TWO PIERS  
BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE
h2	68	#5	30'-0"	—
p	20	#7	32'-9"	—
s	72	#4	10'-5"	□
u	12	#6	11'-7"	U
u1	68	#5	6'-8"	C
v2	136	#5	11'-5"	—
Cofferdam Excavation		CU YD	120	
Cofferdam (Type 1) (Location-1)		EACH	1	
Cofferdam (Type 1) (Location-2)		EACH	1	
Concrete Structures		CU YD	96.5	
Reinforcement Bars		POUND	7,120	
Furnishing Steel Piles HP10x42		FOOT	650	
Driving Piles		FOOT	650	
Test Pile Steel HP10x42		EACH	1	

**PILE DATA**  
 Type & Size: Steel HP10x42  
 Nominal Required Bearing: 335 kips  
 Factored Resistance Available: 184 kips  
 Est. Length: 50' Pier #1  
 50' Pier #2  
 No. Req'd.: 14 (Includes 1 Test Pile at Pier 1)

FILE NAME:

USER NAME = BNebel	DESIGNED - JPS	REVISED - _____
PLOT SCALE = 100.0000' / in.	DRAWN - JPS	REVISED - _____
PLOT DATE = 1/2/2022	CHECKED - ZL/BAN	REVISED - _____
	DATE - 10/15/2021	REVISED - _____

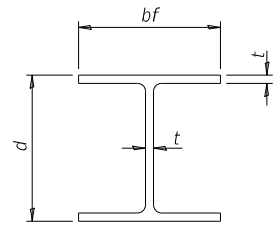
**CASS COUNTY  
COUNTY HIGHWAY 9 (F.A.S. 580)  
OVER MUD CREEK**

SCALE: NONE SHEET 10 OF 11 SHEETS

**PIERS**

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
580	18-00081-00-BR	CASS	24	16
	SN 009-3031		CONTRACT NO. 93780	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. 518P(313)		

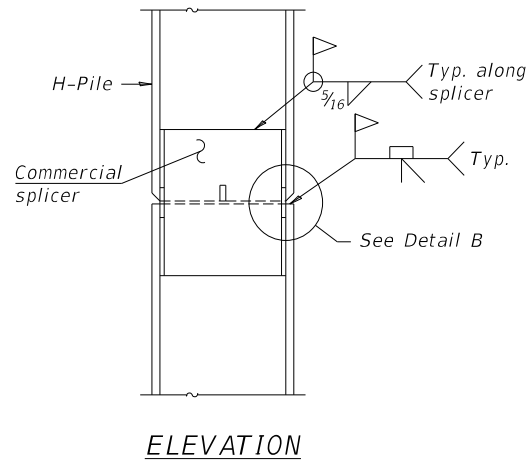




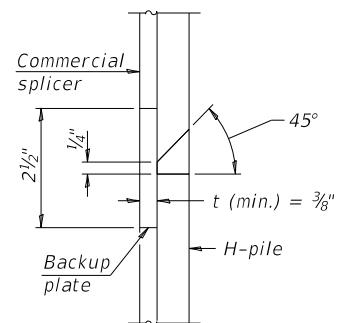
**STEEL PILE TABLE**

Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1 1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 3/8"	14 3/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/2"	1 1/16"	24"
x74	12 1/8"	12 1/2"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"

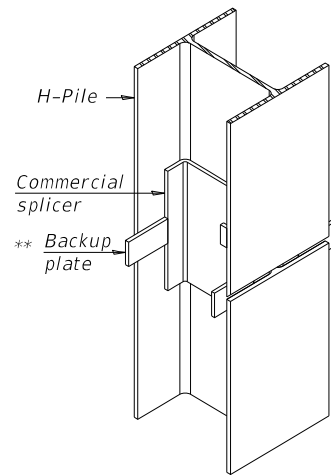
Note:  
The steel H-piles shall be according to AASHTO M270 Grade 50.



**ELEVATION**

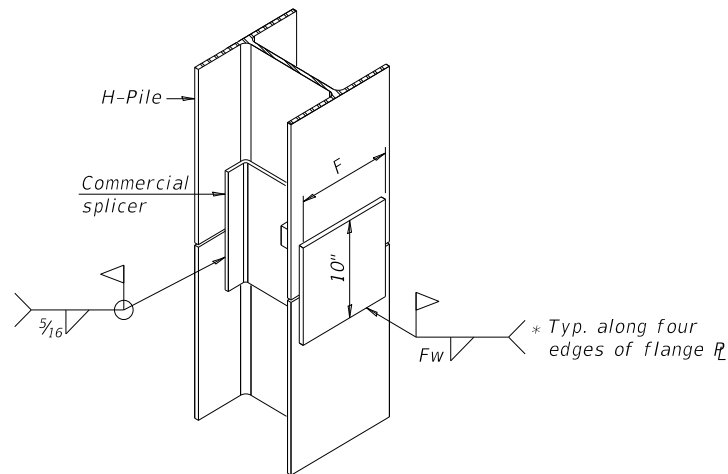


**DETAIL "B"**



**ISOMETRIC VIEW**

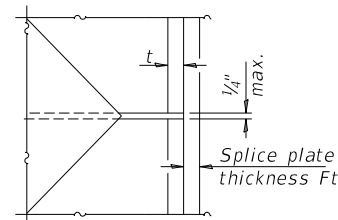
**WELDED COMMERCIAL SPLICE**



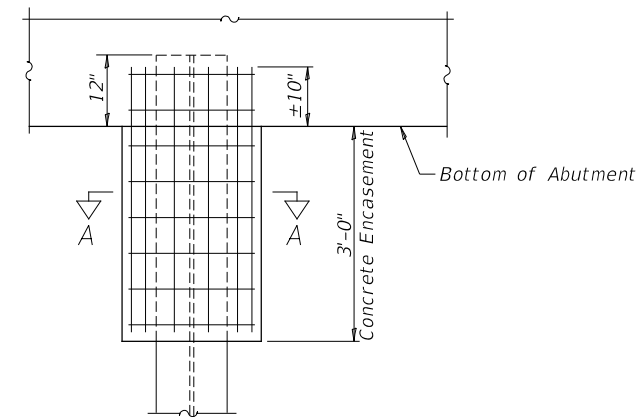
**ISOMETRIC VIEW**

**WELDED COMMERCIAL SPLICE ALTERNATE**

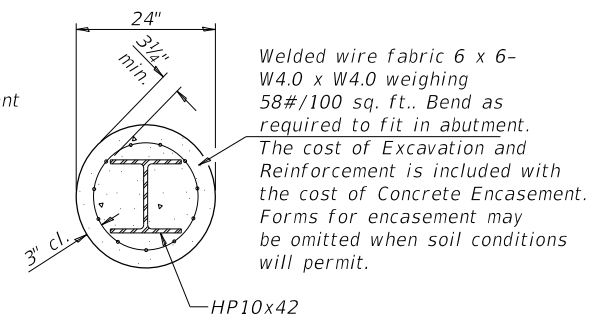
\* Interrupt welds 1/4" from end of web and/or each flange.  
\*\* Remove portions of backup plates that extend outside the flanges.



**DETAIL C**



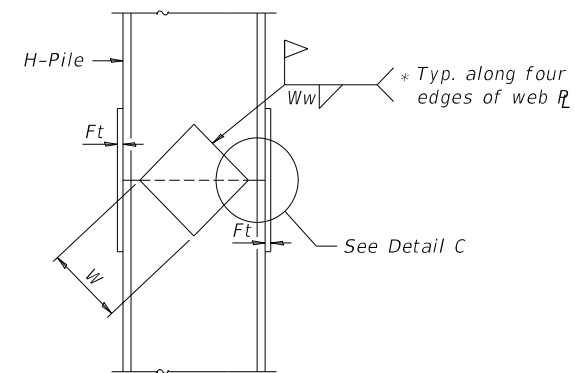
**ABUTMENT ELEVATION**



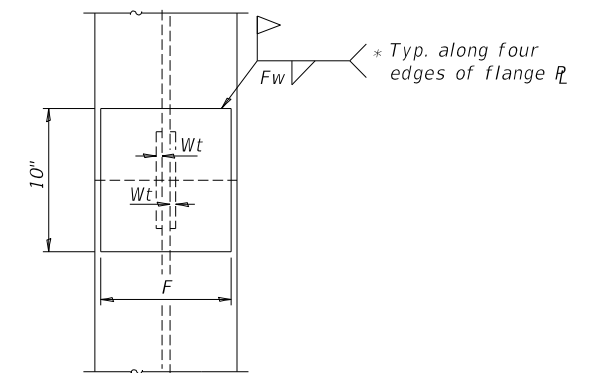
**SECTION A-A**

Welded wire fabric 6 x 6- W4.0 x W4.0 weighing 58#/100 sq. ft.. Bend as required to fit in abutment. The cost of Excavation and Reinforcement is included with the cost of Concrete Encasement. Forms for encasement may be omitted when soil conditions will permit.

**PILE ENCASEMENT**



**ELEVATION**



**END VIEW**

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1 1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	1 1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1 1/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

**WELDED PLATE FIELD SPLICE**

FILE NAME:

USER NAME = BNebe1	DESIGNED - JPS	REVISED - _____
DRAWN - JPS	REVISED - _____	
PLOT SCALE = 100.0000' / in.	CHECKED - ZL/BAN	REVISED - _____
PLOT DATE = 1/2/2022	DATE - 10/15/2021	REVISED - _____

**CASS COUNTY  
COUNTY HIGHWAY 9 (F.A.S. 580)  
OVER MUD CREEK**

**HP PILE DETAILS**

SCALE: NONE SHEET 11 OF 11 SHEETS

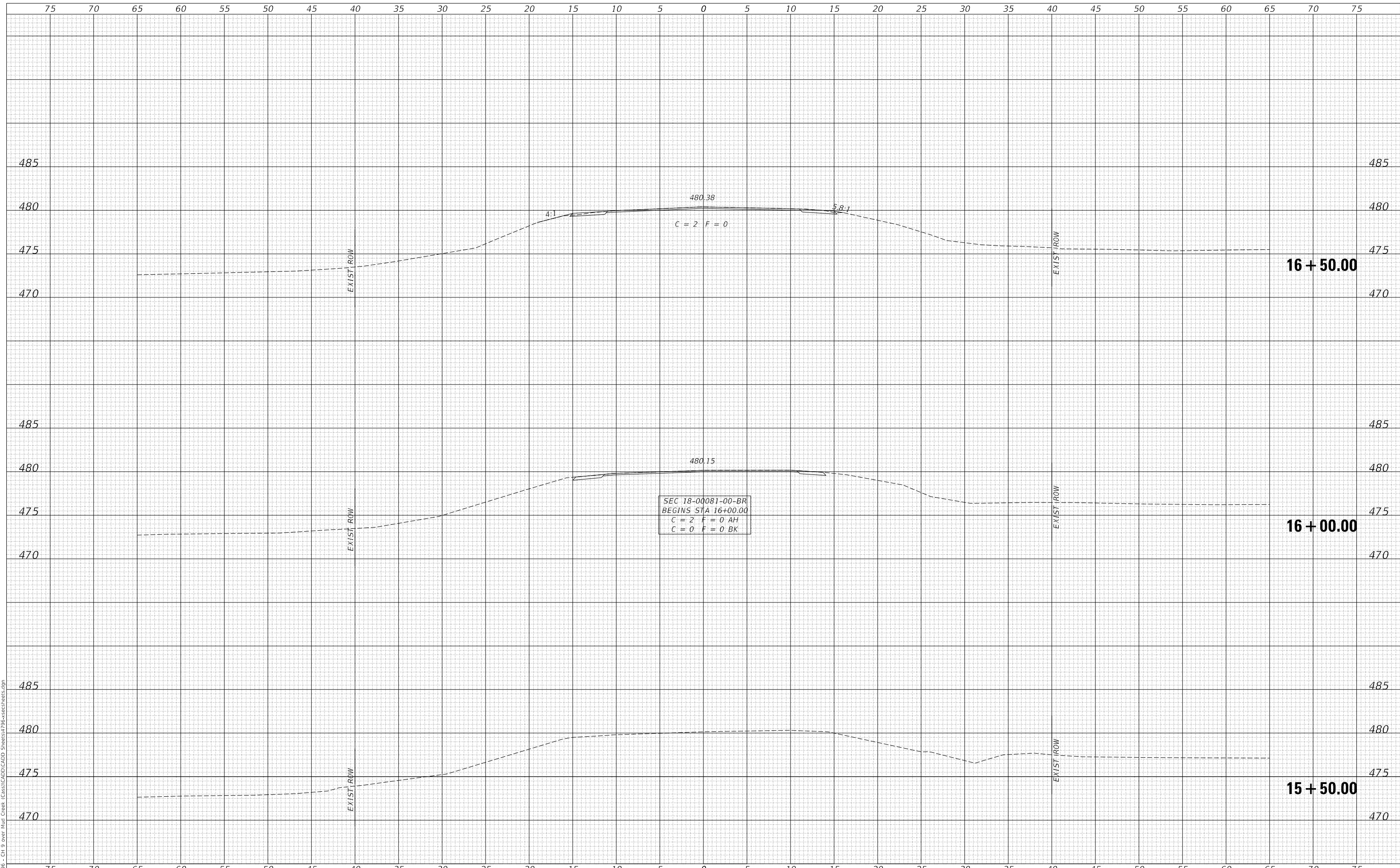
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
580	18-00081-00-BR	CASS	24	17
SN 009-3031		CONTRACT NO. 93780		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT NO. 518P(313)		

4796-b011.dgn

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

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

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PLOT SCALE =	10.0000' / in.	CHECKED -	MMO/BAN	REVISED -	_____
PLOT DATE =	1/2/2022	DATE -	9/15/2021	REVISED -	_____

**CASS COUNTY  
 COUNTY HIGHWAY 9 (F.A.S. 580)  
 OVER MUD CREEK**

**CROSS SECTIONS**

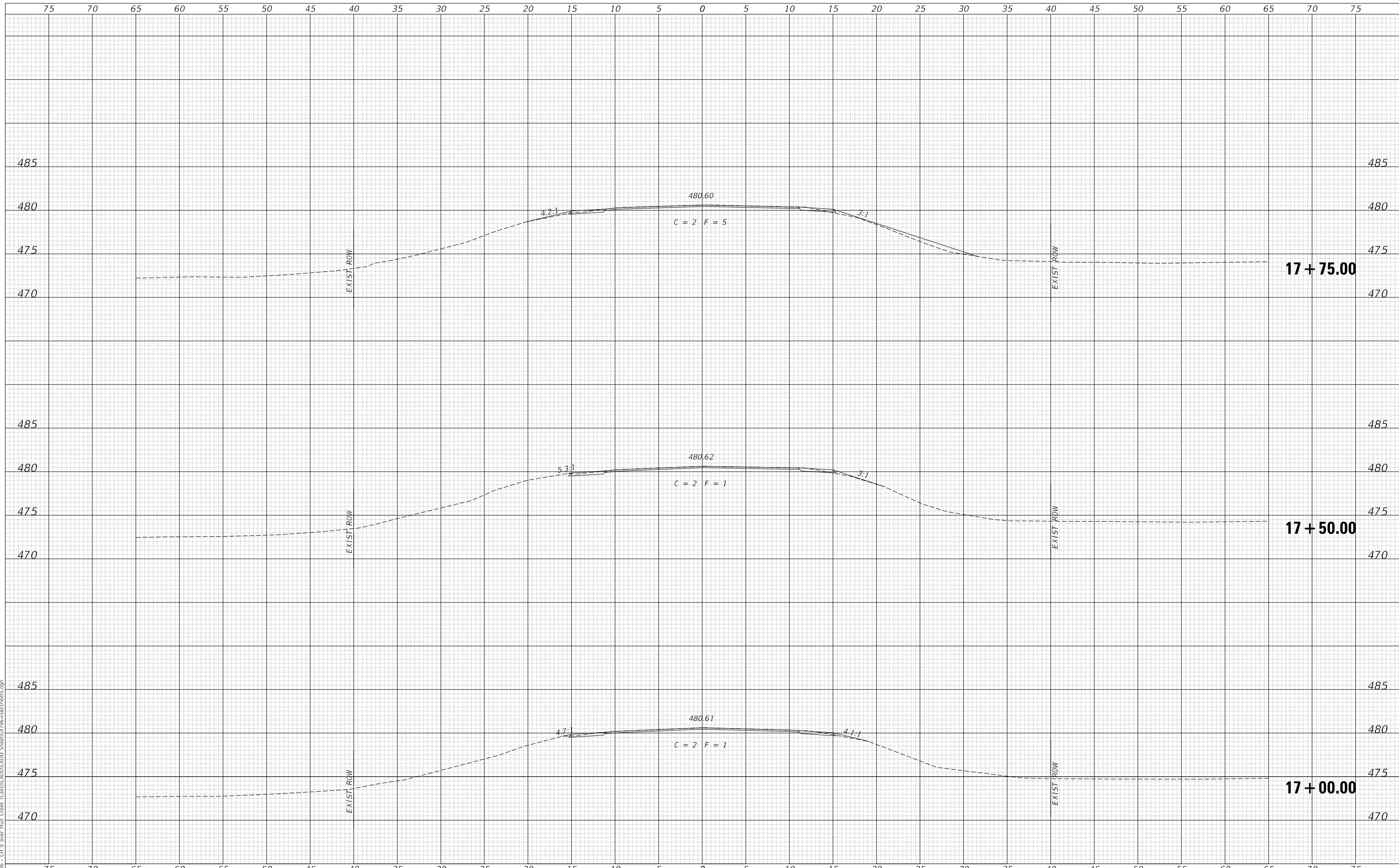
SCALE: 1" = 5'      SHEET 1 OF 7 SHEETS      STA. 15+50.00 TO STA. 16+50.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
580	18-00081-00-BR	CASS	24	18
CONTRACT NO. 93780				
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. 518P(313)		

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

DATE	
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SURVEYED	
PLOTTED	
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AREAS CHECKED	
ORIGINAL SURVEY	
NOTE BOOK	
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MODEL: \$MODELNAME\$  
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PLOT SCALE =	10.0000' / in.	CHECKED -	NMO/BAN	REVISED -	_____
PLOT DATE =	1/2/2022	DATE -	9/15/2021	REVISED -	_____

**CASS COUNTY  
COUNTY HIGHWAY (F.A.S. 580)  
OVER MUD CREEK**

**CROSS SECTIONS**  
SCALE: 1" = 5'    SHEET 2    OF 7    SHEETS    STA. 17+00.00    TO STA. 17+75.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
580	18-00081-00-BR	CASS	24	19
FED. ROAD DIST. NO. 7				ILLINOIS
FED. AID PROJECT NO. 518P(313)				

**17 + 75.00**

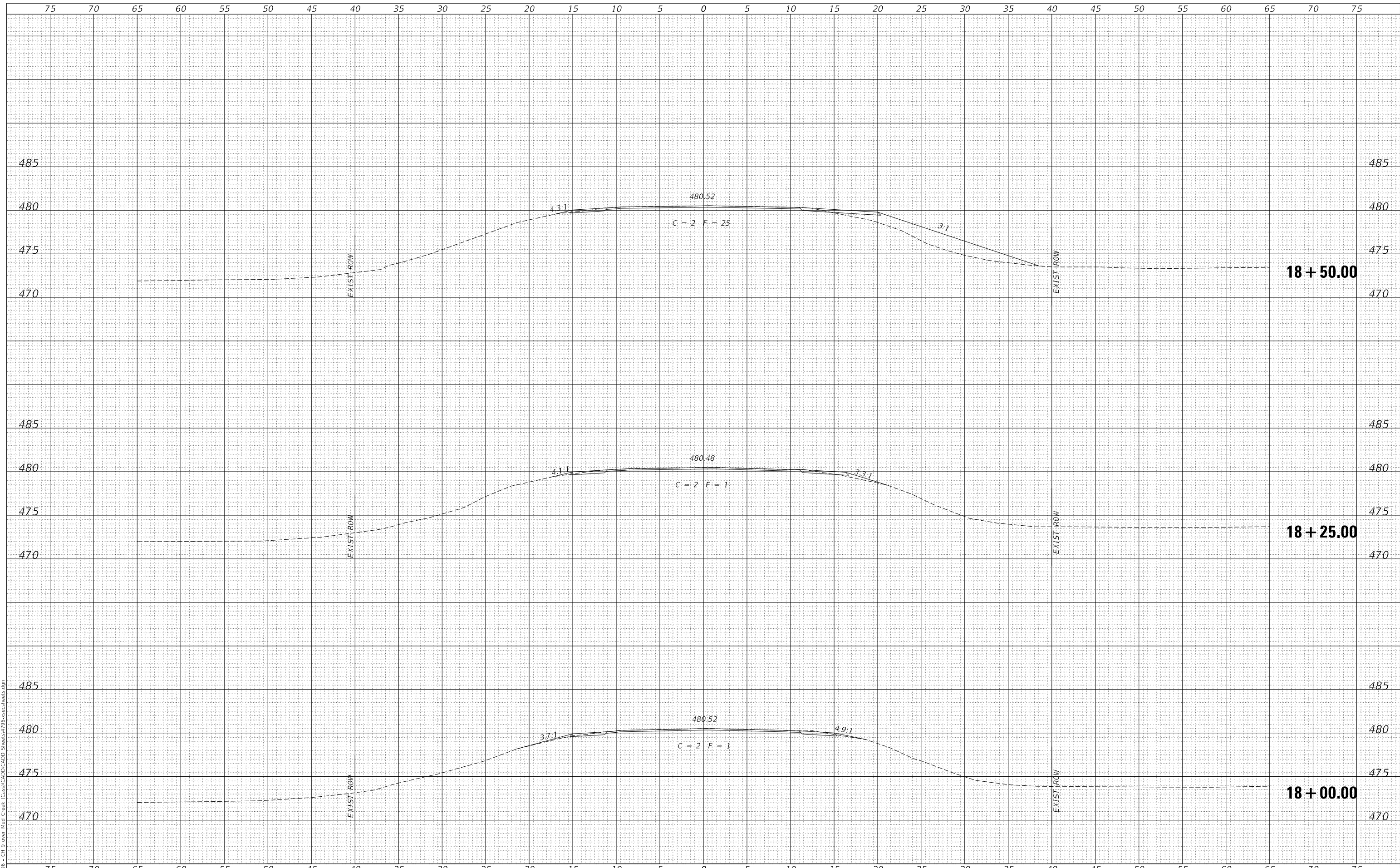
**17 + 50.00**

**17 + 00.00**

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

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

MODEL: \$MODELNAME\$  
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USER NAME =	BNebe1	DESIGNED -	JPS	REVISED -	_____
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PLOT SCALE =	10.0000 ' / in.	CHECKED -	MMO/BAN	REVISED -	_____
PLOT DATE =	1/2/2022	DATE -	9/15/2021	REVISED -	_____

**CASS COUNTY  
 COUNTY HIGHWAY (F.A.S. 580)  
 OVER MUD CREEK**

**CROSS SECTIONS**

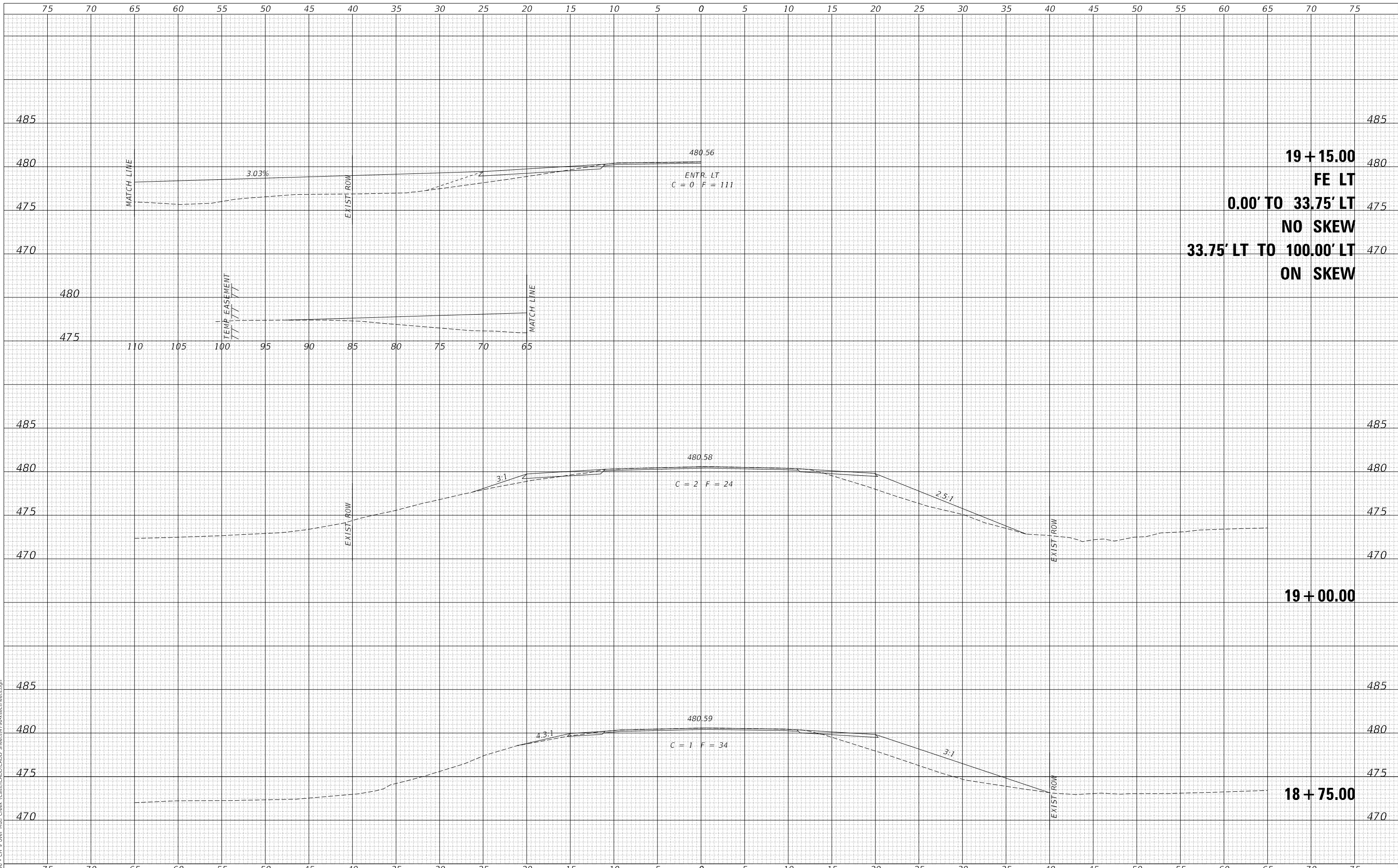
SCALE: 1" = 5'    SHEET 3    OF 7    SHEETS    STA. 18+00.00    TO STA. 18+50.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
580	18-00081-00-BR	CASS	24	20
CONTRACT NO. 93780				
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT NO. 518P(313)	

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

MODEL: \$MODELNAME\$  
 FILE NAME: V:\1938 - Ch 9 Over Mud Creek (Cass)\CADD\CADD Sheets\1938xsec\1938xsec.dgn



**19 + 15.00**  
**FE LT**  
**0.00' TO 33.75' LT**  
**NO SKEW**  
**33.75' LT TO 100.00' LT**  
**ON SKEW**

**19 + 00.00**

**18 + 75.00**

USER NAME =	BNebe1	DESIGNED -	JPS	REVISED -	_____
		DRAWN -	JPS	REVISED -	_____
PLOT SCALE =	10.0000' / in.	CHECKED -	MMO/BAN	REVISED -	_____
PLOT DATE =	1/2/2022	DATE -	9/15/2021	REVISED -	_____

**CASS COUNTY  
 COUNTY HIGHWAY 9 (FAS 580)  
 OVER MUD CREEK**

**CROSS SECTIONS**

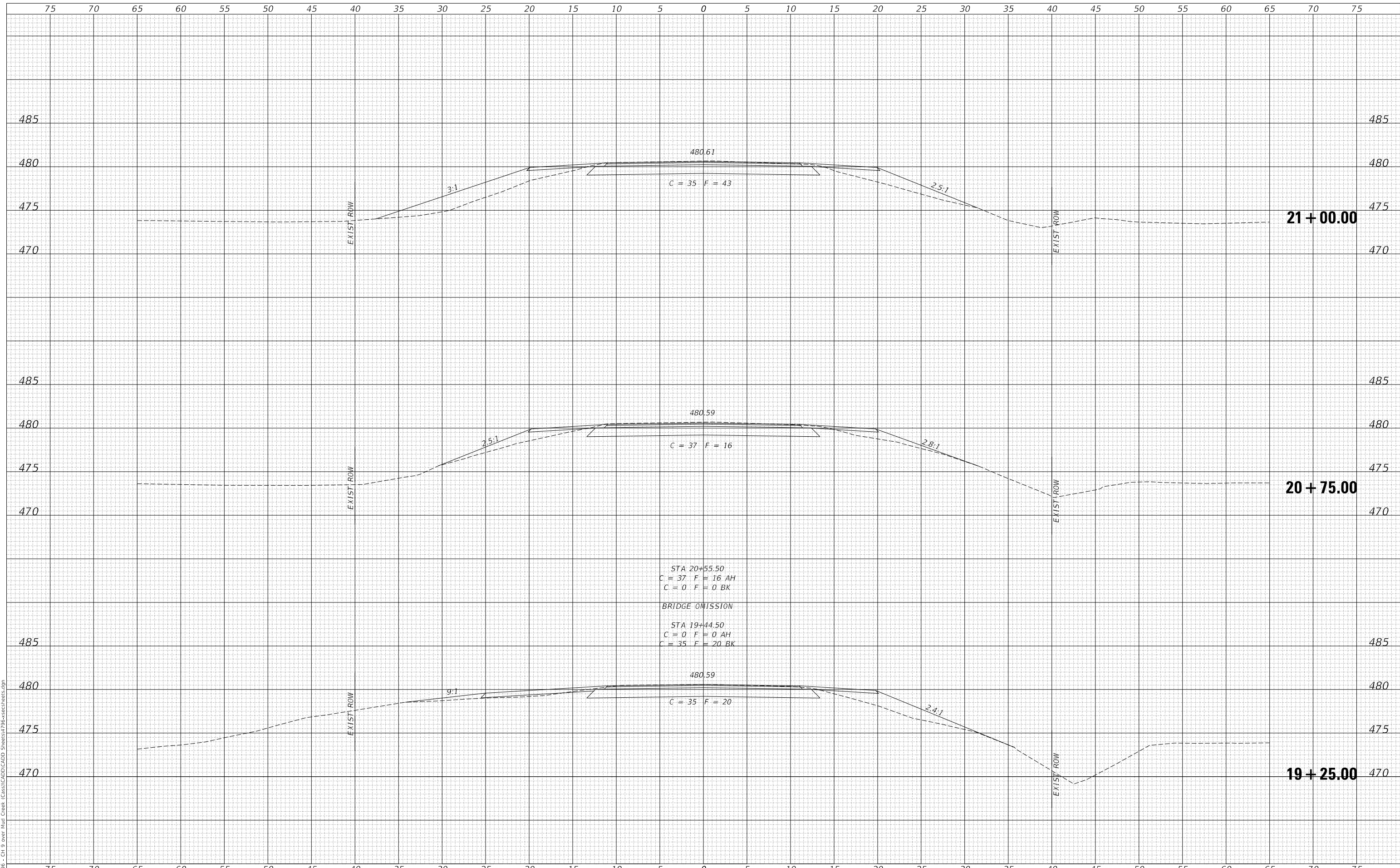
SCALE: 1" = 5'    SHEET 4    OF 7    SHEETS    STA. 18+75.00    TO STA. 19+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
580	18-00081-00-BR	CASS	24	21
CONTRACT NO. 93780				
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT NO. S18P(313)

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

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ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
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USER NAME =	BNeibel	DESIGNED -	JPS	REVISED -	_____
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PLOT SCALE =	10.0000' / in.	CHECKED -	MMO/BAN	REVISED -	_____
PLOT DATE =	1/2/2022	DATE -	9/15/2021	REVISED -	_____

**CASS COUNTY  
COUNTY HIGHWAY 9 (FAS 580)  
OVER MUD CREEK**

**CROSS SECTIONS**

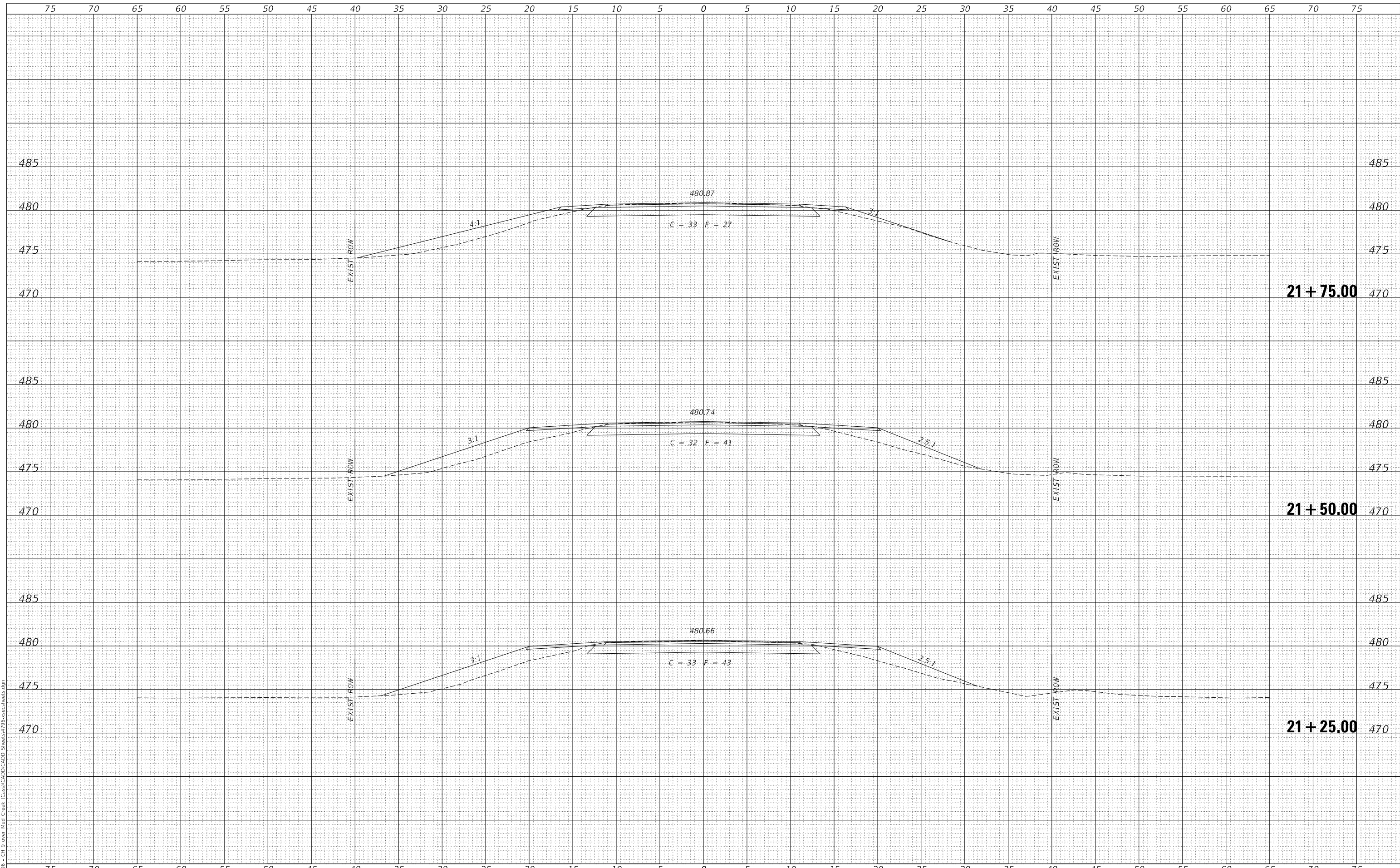
SCALE: 1" = 5'      SHEET 5      OF 7      SHEETS      STA. 19+25.00      TO STA. 21+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
580	18-00081-00-BR	CASS	24	22
CONTRACT NO. 93780				
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT NO. S18P(313)

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

DATE	
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TEMPLATE	
AREAS CHECKED	
ORIGINAL SURVEY	
NOTE BOOK	
NO.	

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USER NAME =	BNebe1	DESIGNED -	JPS	REVISED -	_____
		DRAWN -	JPS	REVISED -	_____
PLOT SCALE =	10.0000' / in.	CHECKED -	NMO/BAN	REVISED -	_____
PLOT DATE =	1/2/2022	DATE -	9/15/2021	REVISED -	_____

**CASS COUNTY  
COUNTY HIGHWAY 9 (FAS 580)  
OVER MUD CREEK**

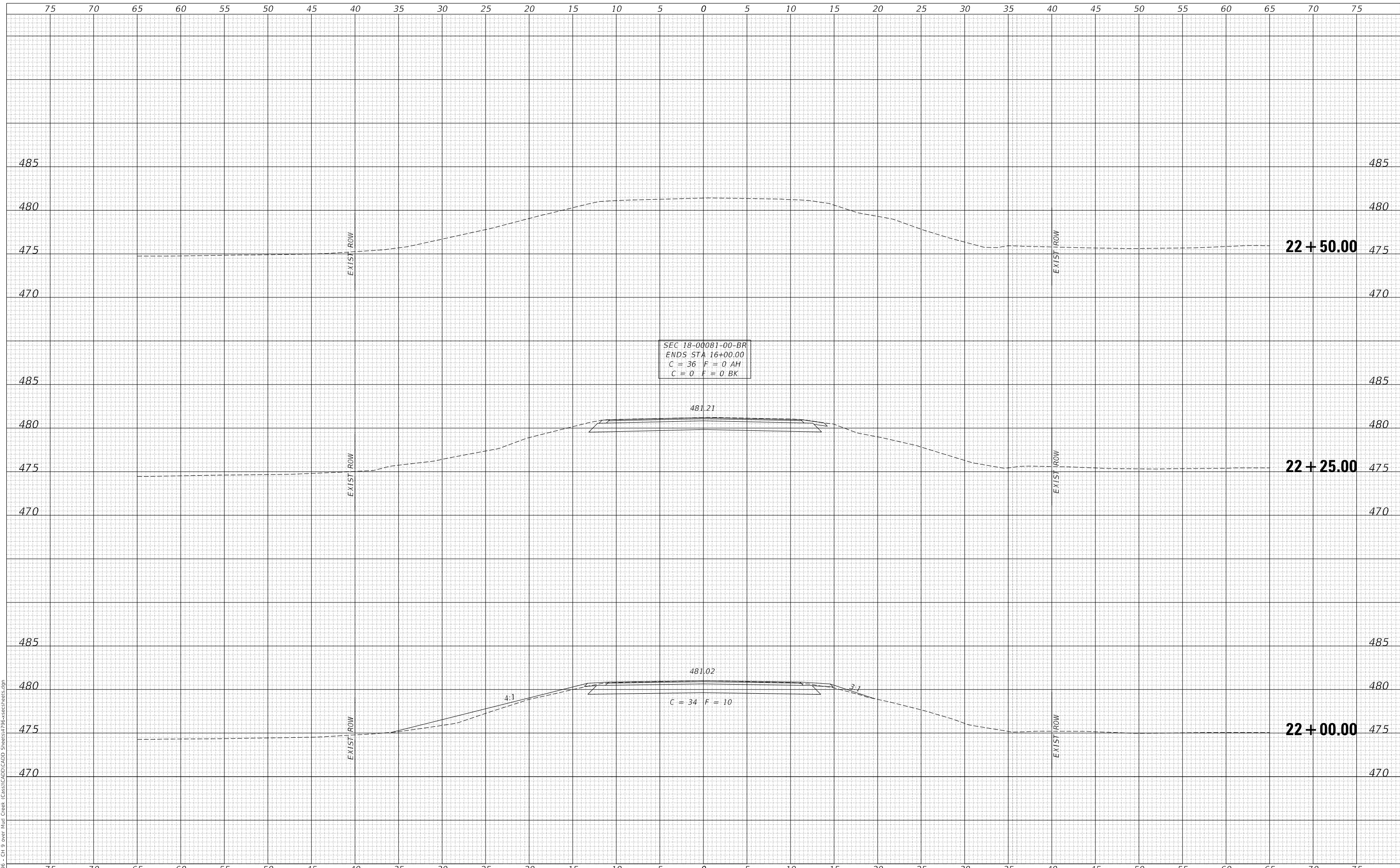
**CROSS SECTIONS**  
SCALE: 1" = 5'    SHEET 6 OF 7 SHEETS    STA. 21+25.00 TO STA. 21+75.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
580	18-00081-00-BR	CASS	24	23
CONTRACT NO. 93780				
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. S18P(313)		

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

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

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PLOT SCALE = 10.0000' / in.	CHECKED - MMO/BAN	REVISED - _____
PLOT DATE = 1/2/2022	DATE - 9/15/2021	REVISED - _____

**CASS COUNTY  
COUNTY HIGHWAY 9 (FAS 580)  
OVER MUD CREEK**

**CROSS SECTIONS**

SCALE: 1" = 5'      SHEET 7      OF 7      SHEETS      STA. 22+00.00      TO STA. 22+50.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
580	18-00081-00-BR	CASS	24	24
CONTRACT NO. 93780				
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. S18P(313)		