04-26-2024 LETTING ITEM (50

FOR INDEX OF SHEETS SEE SHEET NO. 3

FOR SUMMARY OF QUANTITIES SEE SHEET NOS. ~~4-5~~

DESIGN DESIGNATION: N/A

COORDINATE SYSTEM: ILLINOIS COORDINATE SYSTEM, WEST ZONE

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	D9 BRIDGE REPAIR 2023-9	*	58	1
	ILLINOIS	CONTRACT NO. 78A08		

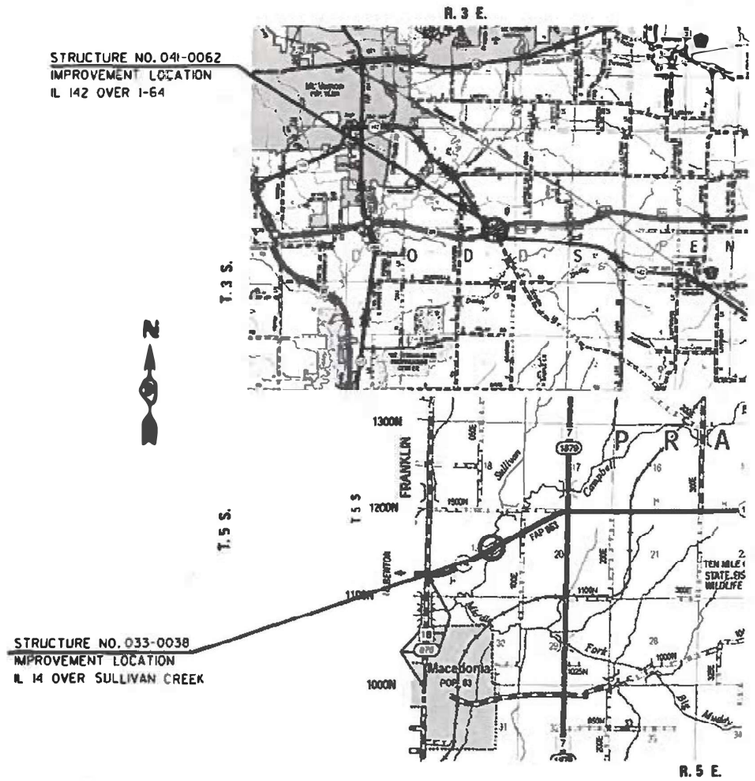
* JEFFERSON & HAMILTON

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PROPOSED HIGHWAY PLANS

FAI 64, FAP 853 (I-64, IL 14)
SECTION D9 BRIDGE OVERLAY 2023-9
PROJECT NHPP-HBFP-MSZV(505)
JEFFERSON/HAMILTON COUNTY
BRIDGE OVERLAY/REPAIRS
C-99-057-23

D-99-041-23

LOCATION OF SECTION INDICATED THUS: -



TOWNSHIPS

041-0062 - DODDS
033-0038 - KNIGHTS PRAIRIE

TRAFFIC DATA

IL 142
EXISTING ADT = 3600 (2021)
%SU = 90 (2.5%)
%MU = 4 (0.1%)
FUNCTIONAL CLASSIFICATION: MINOR ARTERIAL
POSTED SPEED: 55 MPH

TRAFFIC DATA

IL 14
EXISTING ADT = 1800 (2021)
%SU = 90 (5.0%)
%MU = 100 (5.6%)
FUNCTIONAL CLASSIFICATION: MINOR ARTERIAL
POSTED SPEED: 55 MPH

TRAFFIC DATA

I-64 AT SN 041-0062
EXISTING ADT = 12000 (2022)
%SU = 475 (4.0%)
%MU = 4750 (39.6%)
FUNCTIONAL CLASSIFICATION: INTERSTATE
POSTED SPEED: 70 MPH

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

PROJECT ENGINEER: EHREN KIRBY (618) 351-5227

NET LENGTH (IL 142) = 337.5 FT. = 0.064 MILE
NET LENGTH (IL 14) = 307.66 FT. = 0.058 MILE

Veenstra & Kimm, Inc.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

CHRISTOPHER P. KOHLRUS
062-046558
LICENSED PROFESSIONAL ENGINEER OF
STATE OF ILLINOIS

Christopher P. Kohlrus 1/25/24
EXPIRATION: 11/30/2025

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED Jan 30 20 24
Mark H. Brown MHB
REGION FIVE ENGINEER

March 22, 2024
ENGINEER OF DESIGN AND ENVIRONMENT

March 22, 2024
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

CONTRACT NO. 78A08

REV. - MS

PREPARED BY: _____
DISTRICT STUDIES AND PLANS ENGINEER

EXAMINED BY: Nancy Lee
DISTRICT LAND ACQUISITION ENGINEER

EXAMINED BY: Carin Nelson
DISTRICT PROGRAM DEVELOPMENT ENGINEER

EXAMINED BY: _____
DISTRICT OPERATIONS ENGINEER

EXAMINED BY: Daniel Wells
DISTRICT PROJECT IMPLEMENTATION ENGINEER

EXAMINED BY: Daniel Wells
DISTRICT CONSTRUCTION ENGINEER

EXAMINED BY: Aaron Vaupel
DISTRICT MATERIALS ENGINEER

* JEFFERSON & HAMILTON

MODEL $MODEL NAME$
FILE NAME $FILE$

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USER NAME = $USER$	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = $SCALE$	CHECKED -	REVISED -	
PLOT DATE = $DATE$	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SIGNATURE SHEET

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	D9 BRIDGE REPAIR 2023-9	*	58	2
		CONTRACT NO. 78A08		
	ILLINOIS FED. AID PROJECT			

GENERAL NOTES

1.) THE CENTERLINE PAVEMENT MARKING SHALL BE REMOVED FROM THE STOP BAR TO THE SAND ATENUATORS OR DRUMS. EDGE LINE PAVEMENT MARKING SHALL BE REMOVED IF A 10 FOOT LANE WIDTH CANNOT BE MAINTAINED. TEMPORARY EDGE LINES SHALL BE INSTALLED WHEN THE EDGE LINES ARE REMOVED.

2.) AT ALL LOCATIONS WHERE THE PROPOSED HOT MIX ASPHALT OR CONCRETE PAVEMENT JOINS AN EXISTING HOT MIX ASPHALT OR CONCRETE PAVEMENT, A FULL DEPTH SAWED JOINT SHALL BE CONSTRUCTED. THE COST OF THIS JOINT WILL BE INCLUDED IN THE COST OF THE TYPE OF PAVEMENT BEING CONSTRUCTED.

FACTORS USED FOR ESTIMATING PLAN QUANTITIES ARE AS FOLLOWS AND SHALL NOT BE USED FOR THE BASIS OF FINAL QUANTITIES:

ALL HOT-MIX ASPHALT	2.016 TONS/CU. YD.
ALL AGGREGATE	2.05 TONS/CU. YD.
RIPRAP	1.50 TONS/CU. YD.

COMMITMENTS

1.) NONE

INDEX OF SHEETS

MIXTURE REQUIREMENTS

LOCATIONS	HOT-MIX ASPHALT SURFACE COURSE	WATER PROOFING (SURFACE LIFT)	WATER PROOFING (BINDER LIFT)
MIXTURE USES:	HOT-MIX ASPHALT SURFACE COURSE, MIX D, N70	POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, 9.5-SMA N50	POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, 4.75 MM N50
AB/PG	PG64-22	SBS PG 76-22	SBS PG 76-22
DESIGN AIR VOIDS	4.0%, 70 GYRATION DESIGN	4.0%, 50 GYRATION DESIGN	4.0%, 50 GYRATION DESIGN
MIXTURE COMPOSITION (GRADATION MIXTURE)	IL-9.5MM	IL-9.5MM	IL-4.75MM
FRICTION AGGREGATE	MIX D	MIX D	NONE
MIXTURE WEIGHT	112 LBS./SQ. YD./INCH	112 LBS./SQ. YD./INCH	112 LBS./SQ. YD./INCH
QUALITY MANAGEMENT PROGRAM	QC/QA	QC/QA	QC/QA
SUBLOT SIZE	3000 TONS	3000 TONS	3000 TONS
MATERIAL TRANSFER DEVICE	NO	NO	NO

STANDARDS

001006 DECIMAL OF AN INCH AND OF A FOOT
000001-08 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02 AREAS OF REINFORCEMENT
420001-10 PAVEMENT JOINTS
483001-06 PCC SHOULDER
630001-13 STEEL PLATE BEAM GUARDRAIL
630301-09 SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
631031-18 TRAFFIC BARRIER TERMINAL, TYPE 6
701006-05 LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS ≥ 45 MPH
701201-05 OFF-ROAD OPERATIONS, 2 LANE, 2 WAY, 15' (4.5 M) TO 24" (600 MM) FROM PAVEMENT EDGE
701321-18 LANE CLOSURE, 2 LANE, 2 WAY, BRIDGE REPAIR WITH BARRIER
701326-04 LANE CLOSURE, 2L, 2W, PAVEMENT WIDENING, FOR SPEEDS ≥ 45 MPH
701426-09 LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPERATION, FOR SPEEDS ≥ 45 MPH
701901-09 TRAFFIC CONTROL DEVICES
704001-08 TEMPORARY CONCRETE BARRIER
725001-01 OBJECT AND TERMINAL MARKERS
780001-05 TYPICAL PAVEMENT MARKINGS
782006-01 GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS
862001-01 UNINTERRUPTABLE POWER SUPPLY (UPS)

REV. - MS

* JEFFERSON & HAMILTON

MODEL: $MODELNAME$
FILE NAME: $FILE1$

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	DRAWN - _____	REVISED - _____
PLOT SCALE = $SCALE$	CHECKED - _____	REVISED - _____
PLOT DATE = $DATE$	DATE - _____	REVISED - _____

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES, COMMITMENTS & PROJECT SPECIFIC NOTES

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	D9 BRIDGE REPAIR 2023-9	*	58	3
		CONTRACT NO. 78A08		
	ILLINOIS FED. AID PROJECT			

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	JEFFERSON F.A.P. 849 (IL 142) 90% FED/10% STATE RURAL BRIDGE 0047 SN 041-0062	HAMILTON F.A.P. 853 (IL 14) 80% FED/20% STATE RURAL BRIDGE 0047 SN 033-0038
20200600	EXCAVATING AND GRADING EXISTING SHOULDER	UNIT	9.0		9.0
28100705	STONE RIPRAP, CLASS A3	SQ YD	27	27	
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	1265	773	492
40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	542	222	320
40600990	TEMPORARY RAMP	SQ YD	30	16	14
40604062	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "D", N70	TON	64	22	42
40605022	POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, STONE MATRIX ASPHALT, 9.5, MIX "D", N50	TON	98		98
48101200	AGGREGATE SHOULDERS, TYPE B	TON	14	6	8
48300500	PORTLAND CEMENT CONCRETE SHOULDERS 10"	SQ YD	454		454
50102400	CONCRETE REMOVAL	CU YD	41.4	29.0	12.4
50157300	PROTECTIVE SHIELD	SQ YD	1100	1100	
50300255	CONCRETE SUPERSTRUCTURE	CU YD	43.3	29.9	13.4
50300260	BRIDGE DECK GROOVING	SQ YD	1202	1202	
50300300	PROTECTIVE COAT	SQ YD	1265	1265	
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	4870	3570	1300

REV. - MS

*JEFFERSON & HAMILTON

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	JEFFERSON F.A.P. 849 (IL 142) 90% FED/10% STATE RURAL BRIDGE 0047 SN 041-0062	HAMILTON F.A.P. 853 (IL 14) 80% FED/20% STATE RURAL BRIDGE 0047 SN 033-0038
	50800515	BAR SPLICERS	EACH	72	44	28
	52000110	PREFORMED JOINT STRIP SEAL	FOOT	179	97	82
	58100210	FULL LANE SEALANT WATERPROOFING SYSTEM	SQ YD	774		774
	59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	3	3	
*	63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	100	100	
*	63000003	STEEL PLATE BEAM GUARDRAIL, TYPE A, 9 FOOT POSTS	FOOT	125		125
*	63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4	4	
*	63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4	4	
	63200310	GUARDRAIL REMOVAL	FOOT	636	408	228
	67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	4	2	2
	67100100	MOBILIZATION	L SUM	1	0.5	0.5
	70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	2	1	1
	70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	0.5	0.5
	70100500	TRAFFIC CONTROL AND PROTECTION, STANDARD 701326	L SUM	1		1

* SPECIALTY ITEM

REV. - MS

*JEFFERSON & HAMILTON

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IL. Design Firm No. 184-001939

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CHECKED - ___ | REVISED - ___
PLOT SCALE = ___ | DRAWN - ___ | REVISED - ___
PLOT DATE = ___ | CHECKED - ___ | REVISED - ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE:_____ | SHEET NO. 2 OF 4 SHEETS | STA. _____ TO STA. _____

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	D9 BRIDGE REPAIR 2023-9	*	58	5
		CONTRACT NO. 78A08		
	ILLINOIS FED. AID PROJECT			

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	JEFFERSON F.A.P. 849 (IL 142) 90% FED/10% STATE RURAL BRIDGE 0047 SN 041-0062	HAMILTON F.A.P. 853 (IL 14) 80% FED/20% STATE RURAL BRIDGE 0047 SN 033-0038
	70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	10		10
	70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	2	1	1
	70106700	TEMPORARY RUMBLE STRIPS	EACH	12	6	6
	70107005	PAVEMENT MARKING BLACKOUT TAPE, 5"	FOOT	2158	1370	788
	70107025	CHANGEABLE MESSAGE SIGN	CAL DA	84	42	42
	70300150	SHORT TERM PAVEMENT MARKING REMOVAL	SQ FT	901	572	329
	70400100	TEMPORARY CONCRETE BARRIER	FOOT	1237.5	625	612.5
	70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	1237.5	625	612.5
	70600260	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	4	2	2
	70600332	IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	4	2	2
*	72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	8	4	4
*	78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	2142	1404	738
*	78200005	GUARDRAIL REFLECTORS, TYPE A	EACH	36	20	16
*	86200300	UNINTERRUPTABLE POWER SUPPLY, EXTENDED	EACH	2	1	1

* SPECIALTY ITEM

REV. - MS

*JEFFERSON & HAMILTON

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USER NAME = ___ | DESIGNED - ___ | REVISED - ___
CHECKED - ___ | REVISED - ___
PLOT SCALE = ___ | DRAWN - ___ | REVISED - ___
PLOT DATE = ___ | CHECKED - ___ | REVISED - ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE:_____ | SHEET NO. 3 OF 4 SHEETS | STA. _____ TO STA. _____

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	D9 BRIDGE REPAIR 2023-9	"	58	6
		CONTRACT NO. 78A08		
	ILLINOIS FED. AID PROJECT			

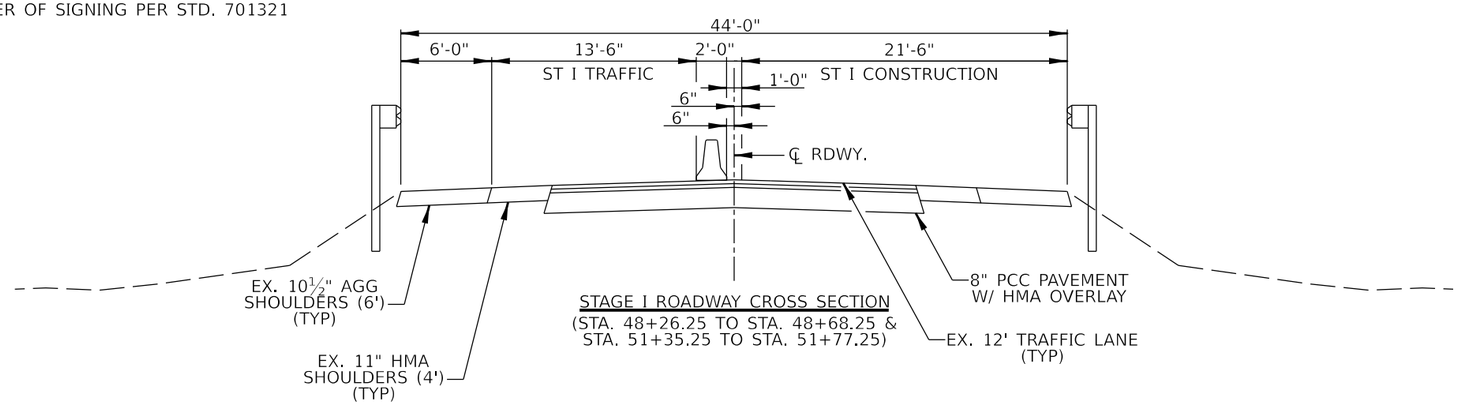
	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	JEFFERSON F.A.P. 849 (IL 142) 90% FED/10% STATE RURAL BRIDGE 0047 SN 041-0062	HAMILTON F.A.P. 853 (IL 14) 80% FED/20% STATE RURAL BRIDGE 0047 SN 033-0038
*	X6310195	TRAFFIC BARRIER TERMINAL TYPE 1, SPECIAL (TANGENT), MODIFIED	EACH	4		4
*	X6310214	TRAFFIC BARRIER TERMINAL, TYPE 6 (SPECIAL)	EACH	4		4
	Z0001905	STRUCTURAL STEEL REPAIR	POUND	420	420	
	Z0012130	BRIDGE DECK SCARIFICATION 3/4"	SQ YD	1222	1222	
	Z0012164	BRIDGE DECK MICROSILICA CONCRETE OVERLAY 2 1/2"	SQ YD	1222	1222	
	Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5")	SQ FT	586.5	302	284.5
	Z0016001	DECK SLAB REPAIR (FULL DEPTH, TYPE 1)	SQ YD	2	2	
	Z0016200	DECK SLAB REPAIR (PARTIAL)	SQ YD	15.4		15.4
	Z0021905	SILICONE JOINT SEALER, 1.25"	FOOT	74		74
	Z0041895	POLYMER CONCRETE	CU YD	17.5		17.5

* SPECIALTY ITEM

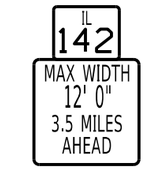
REV. - MS

*JEFFERSON & HAMILTON

* REMAINDER OF SIGNING PER STD. 701321



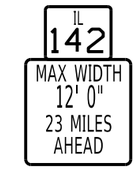
STAGE I ROADWAY CROSS SECTION
(STA. 48+26.25 TO STA. 48+68.25 & STA. 51+35.25 TO STA. 51+77.25)



WIDTH RESTRICTION SIGN

W12-I103 48" X 48" WITH 12' 0"
LETTERS BLACK ON ORANGE
MAX WIDTH & 3.5 MILES AHEAD
BLACK ON WHITE WITH M3-1 30X15
AND M1-I100 30X24

LOCATED WEST OF THE INTERSECTION OF IL 142 AND IL 37



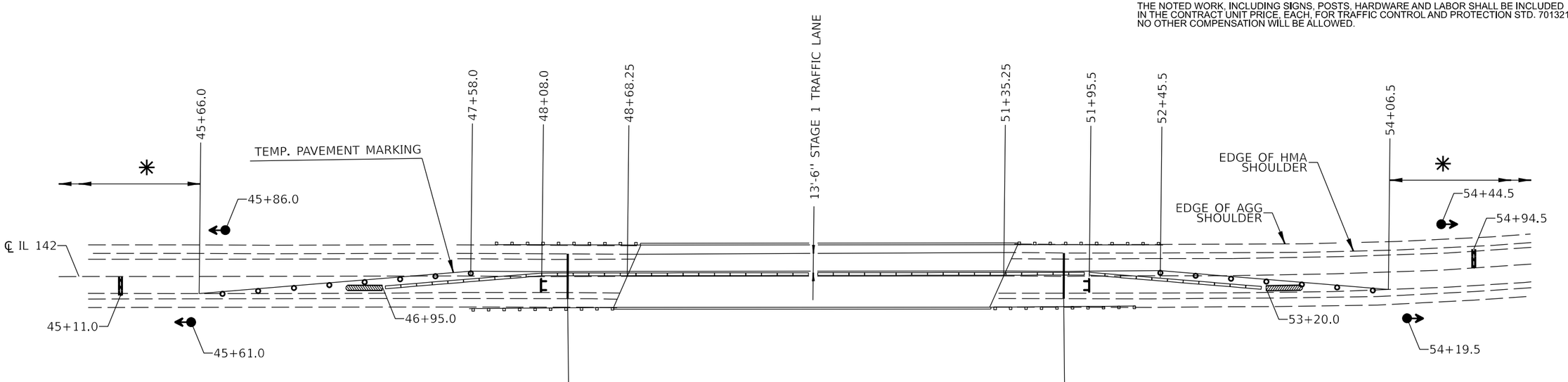
WIDTH RESTRICTION SIGN

W12-I103 48" X 48" WITH 12' 0"
LETTERS BLACK ON ORANGE
MAX WIDTH & 23 MILES AHEAD
BLACK ON WHITE WITH M3-1 30X15
AND M1-I100 30X24

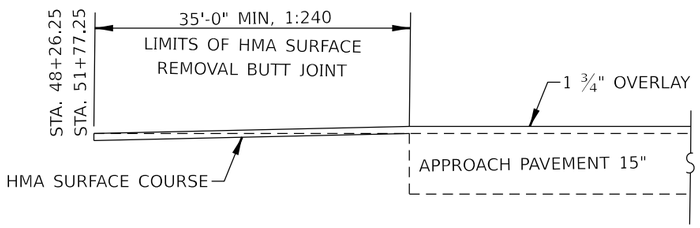
LOCATED EAST OF THE INTERSECTION OF IL 142 AND IL 242 IN MCLEANSBORO

NOTES:
THE CONTRACTOR SHALL FURNISH THE POSTS AND ERECT THE SIGNS AT THE LOCATIONS DIRECTED BY THE ENGINEER. ALL SIGNS SHALL BE POST MOUNTED.

THE NOTED WORK, INCLUDING SIGNS, POSTS, HARDWARE AND LABOR SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE, EACH, FOR TRAFFIC CONTROL AND PROTECTION STD. 701321, NO OTHER COMPENSATION WILL BE ALLOWED.



STAGE I PLAN



BUTT JOINT DETAIL
TYPICAL EACH END

LEGEND

- TYPE III BARRICADE
- DRUM WITH STEADY BURNING BI-DIRECTIONAL LIGHT
- IMPACT ATTENUATOR, TEST LEVEL 3
- TEMPORARY CONCRETE BARRIER

PLAN
0 20 40
SCALE: 1" = 20'

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IL. Design Firm No. 184-001939

USER NAME = ____	DESIGNED - ____	REVISED - ____
	CHECKED - ____	REVISED - ____
PLOT SCALE = ____	DRAWN - ____	REVISED - ____
PLOT DATE = ____	CHECKED - ____	REVISED - ____

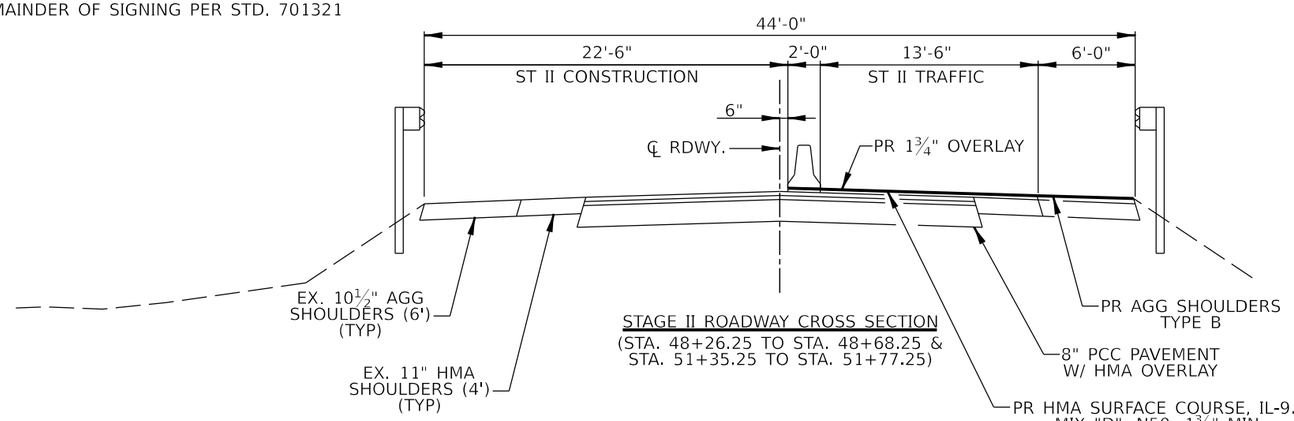
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE I CONSTRUCTION PLAN

SCALE: 1"=20' | SHEET NO. 1 OF 2 SHEETS | STA. _____ TO STA. _____

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	8
		CONTRACT NO. 78A08		
	ILLINOIS FED. AID PROJECT			

* REMAINDER OF SIGNING PER STD. 701321

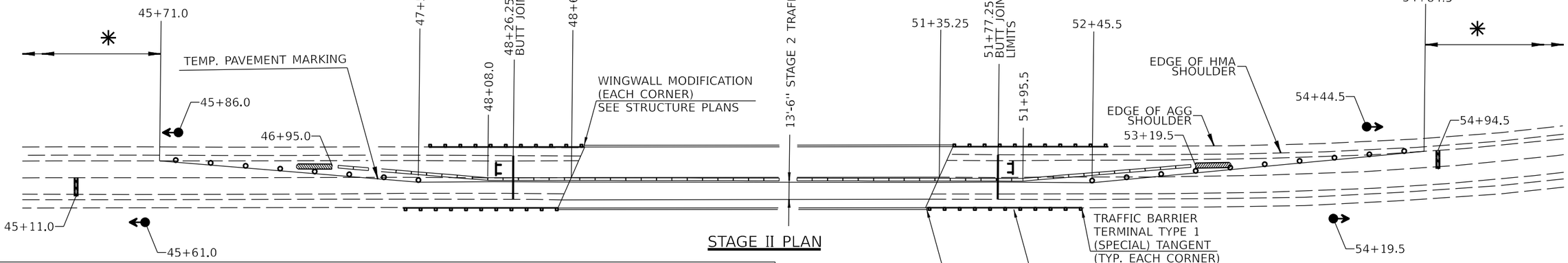


STAGE II ROADWAY CROSS SECTION
(STA. 48+26.25 TO STA. 48+68.25 & STA. 51+35.25 TO STA. 51+77.25)

LOCATION	PAINT PAVEMENT MARKING – LINE 4" EDGE (WHITE) FOOT	PAINT PAVEMENT MARKING – LINE 4" CENTERLINE (DBL YELLOW) FOOT	PAINT PAVEMENT MARKING – LINE 4" EDGE (WHITE) FOOT	PAVEMENT MARKING BLACKOUT TAPE, 5" FOOT	SHORT TERM PAVEMENT MARKING REMOVAL SQ. FT.
STA. 48+26.3 TO STA. 51+77.3	351	702	351		
STA. 47+58.0 TO STA. 52+45.5 LT (EDGE)				488	204
STA. 45+66.0 TO STA. 47+58.0 (℄)				384	160
STA. 52+45.5 TO STA. 54+94.5 (℄)				498	208
TOTAL		1404		1370	572

GUARDRAIL					
LOCATION	TBT TYPE 6 EACH	SPBGR TY A 6' POSTS FOOT	TBT TY 1 (SPECIAL) TANGENT EACH	TERMINAL MARKER DIRECT APPLIED EACH	GUARDRAIL REMOVAL FOOT
STA. 48+40.3 TO STA. 48+77.2 LT	1				
STA. 48+22.0 TO STA. 48+58.9 RT	1				
STA. 51+45.1 TO STA. 51+82.0 LT	1				
STA. 51+25.6 TO STA. 51+62.5 RT	1				
STA. 48+15.3 TO STA. 48+40.3 LT		25			
STA. 47+97.0 TO STA. 48+22.0 RT		25			
STA. 51+82.0 TO STA. 52+07.0 LT		25			
STA. 51+62.5 TO STA. 51+87.5 RT		25			
STA. 47+65.3 TO STA. 48+15.3 LT			1	1	
STA. 47+27.0 TO STA. 47+97.0 RT			1	1	
STA. 52+07.0 TO STA. 52+57.0 LT			1	1	
STA. 51+87.5 TO STA. 52+27.5 RT			1	1	
STA. 47+75.2 TO STA. 48+77.2 LT					102
STA. 47+56.9 TO STA. 48+58.9 RT					102
STA. 51+45.1 TO STA. 52+47.1 LT					102
STA. 51+25.6 TO STA. 52+27.6 RT					102
TOTAL	4	100	4	4	408

GUARDRAIL REFLECTORS	
LOCATION	GUARDRAIL REFLECTORS, TYPE A EACH
STA. 48+08.0 TO STA. 51+95.5 ℄	6
STA. 47+75.0 TO STA. 52+47.0 LT	7
STA. 47+57.0 TO STA. 52+28.0 RT	7
TOTAL	20



STAGE II PLAN

TEMPORARY CONCRETE BARRIER AND IMPACT ATTENUATORS				
LOCATION	IMPACT ATTENUATORS, TEMPORARY (FULLY-REDERECTIVE, NARROW), TEST LEVEL 3 EACH	TEMPORARY CONCRETE BARRIER FOOT	RELOCATE TEMP CONCRETE BARRIER FOOT	IMPACT ATTENUATORS, RELOCATE (FULLY-REDERECTIVE, NARROW), TEST LEVEL 3 EACH
STA. 46+62.4 TO STA. 46+95.0 LT.	1			
STA. 46+95.0 TO STA. 53+19.5 LT.		625		
STA. 51+95.5 TO STA. 53+19.5 LT.	1			
STA. 46+95.0 TO STA. 53+19.5 RT.			625	
STA. 46+62.4 TO STA. 46+95.0 RT.				1
STA. 51+95.5 TO STA. 53+19.5 RT.				1
TOTAL	2	625	625	2

AGGREGATE SHOULDERS	
LOCATION	AGGREGATE SHOULDERS, TYPE B TON
STA. 48+26.3 TO STA. 48+77.5 LT	2
STA. 48+26.3 TO STA. 48+61.3 RT	2
STA. 51+42.3 TO STA. 51+77.3 LT	1
STA. 51+26.1 TO STA. 51+77.3 RT	1
TOTAL	6

HOT-MIX ASPHALT			
LOCATION	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT SQ. YD.	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "D", N70 TON	BITUMINOUS MATERIALS TACK COAT POUND
STA. 48+26.3 TO STA. 48+68.3	111	11	
STA. 51+35.3 TO STA. 51+77.3	111	11	
STA. 48+26.3 TO STA. 51+77.3			773
TOTAL	222	22	773

LEGEND

- TYPE III BARRICADE
- DRUM WITH STEADY BURNING BI-DIRECTIONAL LIGHT
- IMPACT ATTENUATOR, TEST LEVEL 3
- TEMPORARY CONCRETE BARRIER

PLAN
0 20 40
SCALE: 1" = 20'

VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

USER NAME = ___	DESIGNED - ___	REVISED - ___
	CHECKED - ___	REVISED - ___
PLOT SCALE = ___	DRAWN - ___	REVISED - ___
PLOT DATE = ___	CHECKED - ___	REVISED - ___

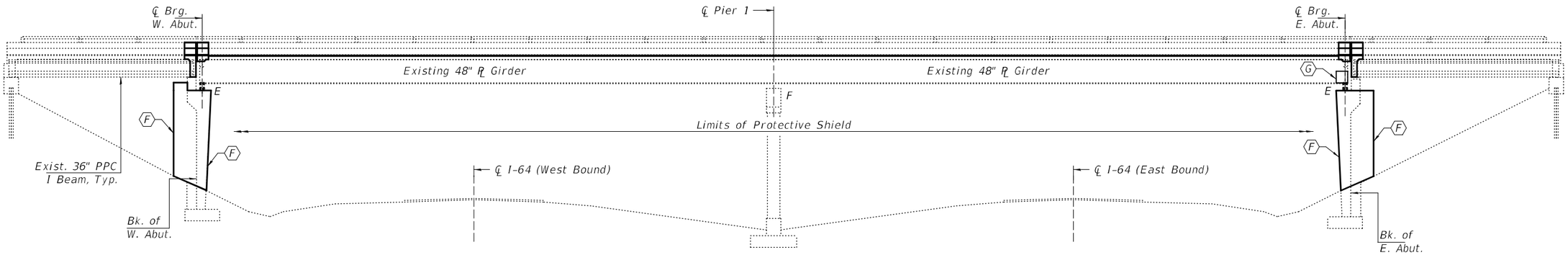
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE II CONSTRUCTION PLAN

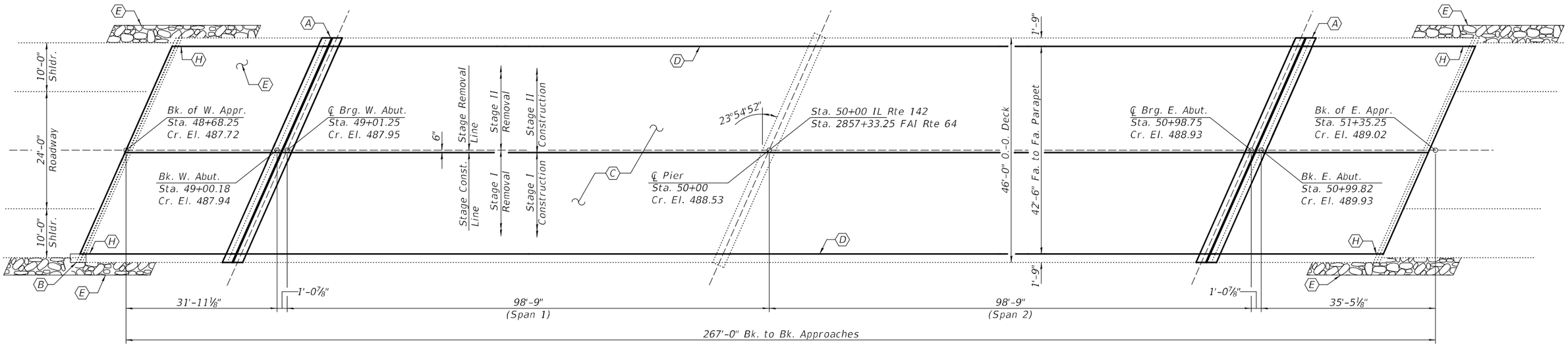
SCALE: 1"=20' | SHEET NO. 2 OF 2 SHEETS | STA. _____ TO STA. _____

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	9
		CONTRACT NO. 78A08		
	ILLINOIS FED. AID PROJECT			

Existing Structure: S.N. 041-0062. Station 2857+33.25. Two span continuous steel I-beam bridge with concrete deck on open reinforced concrete pile supported vaulted abutments and reinforced concrete pier with pile supported spread footing. 267'-0" back to back approach bents, 46'-0" out to out of deck and 42'-6" face to face of parapets. 23°54'52" left forward skew.



ELEVATION



INDEX OF SHEETS

- (A) - Joint replacement at both abutments, see sheet 5 of 25.
- (B) - Deck Slab Repair (Full Depth), see sheet 3 of 25.
- (C) - ¾" Bridge Deck Scarification and 2½" Microsilica Concrete Overlay, see sheet 4 of 25.
- (D) - Parapet Patching, see sheets 7 & 8 of 25.
- (E) - Add Riprap at slopewalls & E. Abut. Repairs inside the vault, see sheet 9 of 25.
- (F) - Abutment Patching, see sheet 10 of 25.
- (G) - Beam End Repairs, see sheet 11 of 25.
- (H) - Wingwall Modifications, see sheet 12 of 25.

STATE OF ILLINOIS
DREW H. COULTAS
81-4539
SPRINGFIELD
LICENSED STRUCTURAL ENGINEER

Drew H Coultas
Expires: 11/30/2024
Date: 1/24/2024

GENERAL PLAN & ELEVATION
IL ROUTE 142 OVER F.A.I ROUTE 64
F.A.P. ROUTE 849
SECTION D9 BRIDGE REPAIR 2023-9
JEFFERSON COUNTY
STATION. 2857+33.25
STRUCTURE NO. 041-0062

VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
SN 041-0062
SHEET NO. 1 OF 25 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	10
		CONTRACT NO. 78A08		
		ILLINOIS	FED. AID PROJECT	

MODEL: 78A08-010
FILE NAME: Z:\0 V and K Jobs\3951-011 PTB 203-048 SN 041-0062 & 033-0038 Structure Repairs\CADD\041-0062 Structure Plans.dgn
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GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

Plan dimensions and details relative to 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.

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose detrimental foreign material shall be removed from the surfaces in contact with concrete (SSPC--SP3 standards). Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be paid for according to Article 109.04 of the Standard Specifications.

Reinforcement bars designated (E) shall be epoxy coated.

Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction, cost included with Concrete Removal. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system at the Contractor's Expense.

Joint openings shall be adjusted according to Article 520.04 of the Standard Specifications when the deck is poured at an ambient temperature other than 50° F.

Traffic will be maintained using stage construction.

The new concrete shall have its final finish tined according to Article 420.09(e)(1) of the Standard Specifications. Cost included with Concrete Superstructure.

The Contractor shall use extreme care during concrete removal so as not to damage the PPC I-Beam on both approaches. Any damage done to the PPC I Beams during the concrete removal shall be repaired by the contractor at their expense.

All new structural steel shall be hot-dip galvanized. See Special Provisions for "Hot Dip Galvanizing For Structural Steel"

The Engineer in field shall be responsible to show the actual locations of the deck repairs on As-built Plans. The contractor will be paid for the actual quantity of Deck Slab Repair (Full Depth, Type I) at the unit price bid.

The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures". Cost included with Structural Steel Repair.

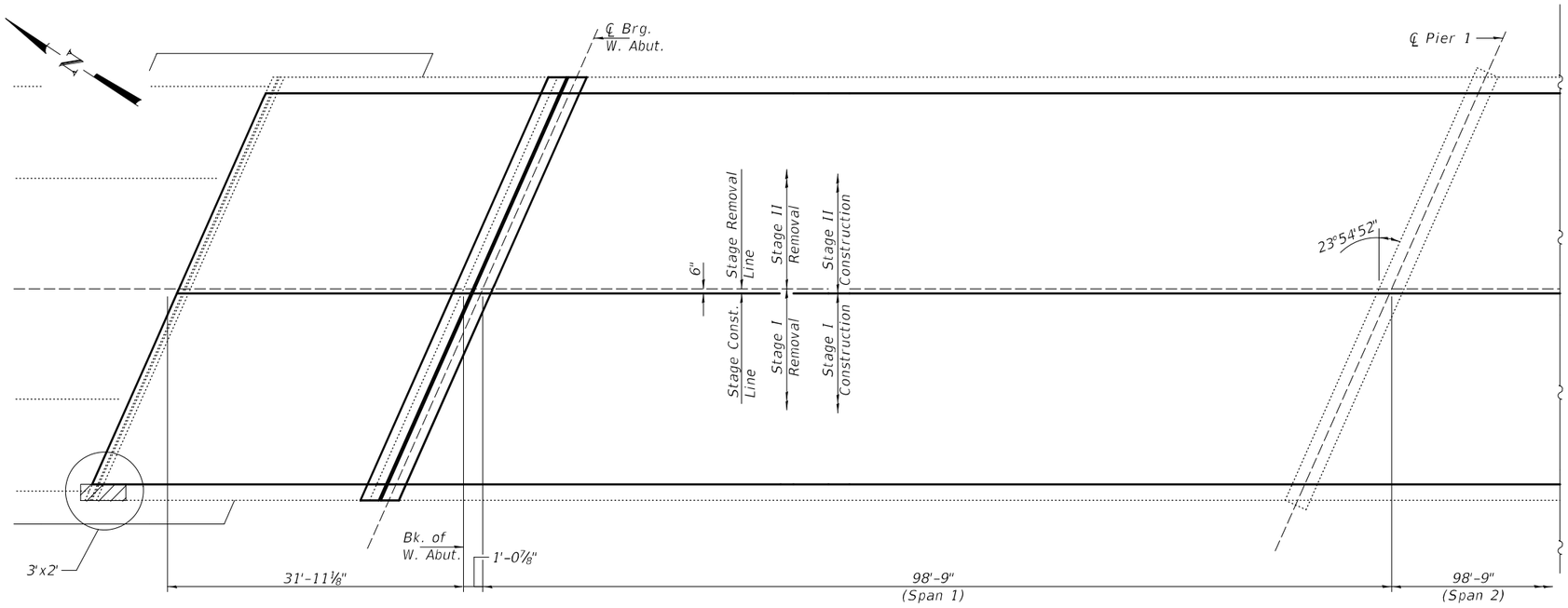
Cost of removal and re-installation of steel members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included with Concrete Superstructures.

Fasteners shall be ASTM F 3125 Grade A325 Type 1, mechanically galvanized bolts. Bolts ¾"Ø, open holes $1\frac{3}{16}$"Ø, unless otherwise noted.

TOTAL BILL OF MATERIAL

	ITEM	UNIT	QUANTITY
	Stone Riprap, Class A3	Sq. Yd.	27
	Concrete Removal	Cu. Yd.	29
	Concrete Superstructure	Cu. Yd.	29.9
	Bridge Deck Grooving	Sq. Yd.	1202
*	Protective Coat	Sq. Yd.	1265
	Reinforcement Bars, Epoxy Coated	Pound	3570
	Protective Shield	Sq. Yd.	1100
	Preformed Joint Strip Seal	Foot	97
	Controlled Low-Strength Material	Cu. Yd.	3
	Structural Steel Repair	Pound	420
	Bridge Deck Scarification ¾"	Sq. Yd.	1222
	Bridge Deck Microsilica Concrete Overlay $2\frac{1}{2}$"	Sq. Yd.	1222
	Structural Repair of Concrete (Depth ≤ 5")	Sq. Ft.	302
	Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	2
	Bar Splicers	Each	44

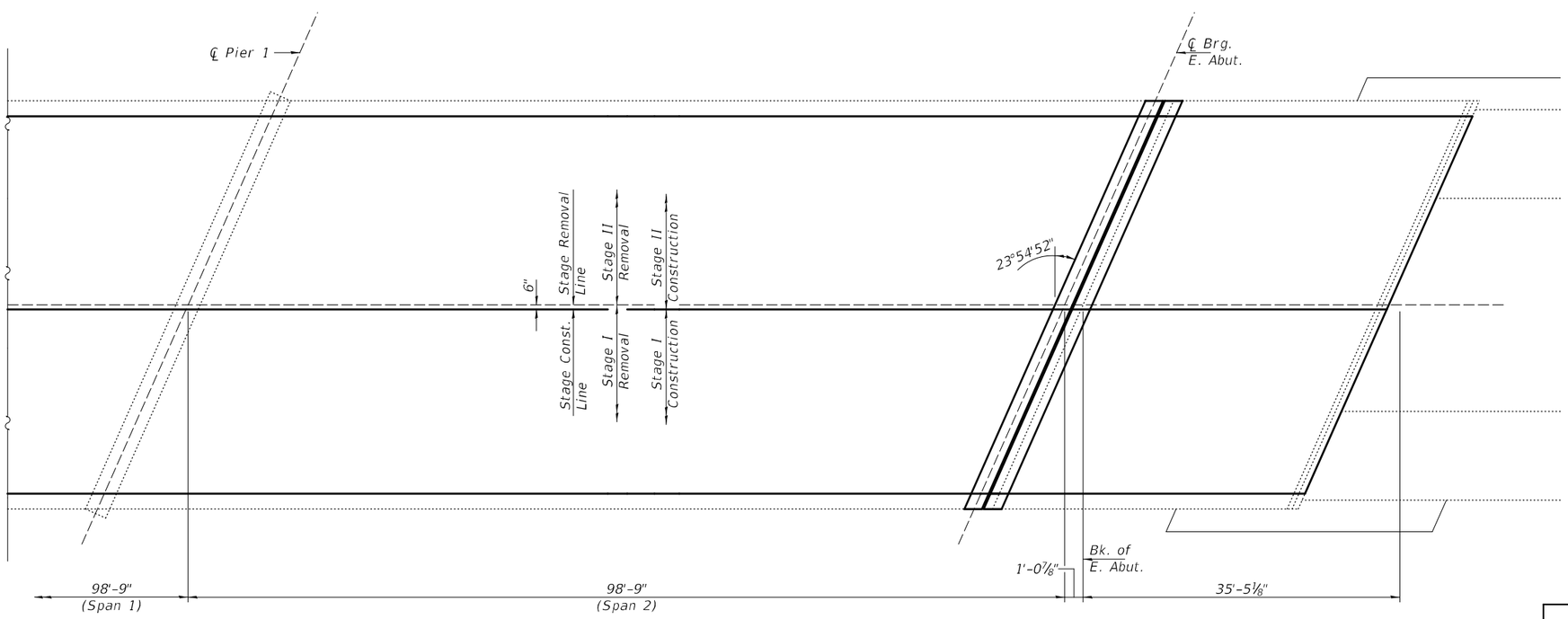
* Apply to new concrete only.



PLAN

Note:
As required, one lane of I-64 needs to be closed while performing Bridge Deck Scarification according to the Highway Standard, 701426.

Deck Slab Repair (Full Depth)



PLAN

Note:
The quantity of Deck Slab Repair (Full Depth, Type I) in plans is estimated. Engineer in field shall be responsible to figure out the actual locations and show it on As-built Plans.

BILL OF MATERIAL

Item	Unit	Total
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	2

MODEL: 78A08-012
FILE NAME: Z:\0 V and K Jobs\9951-011 PTB 203-048 SN 041-0062 & 033-0038 Structure Repairs\CADD\044-0062 Structure Plans.dgn
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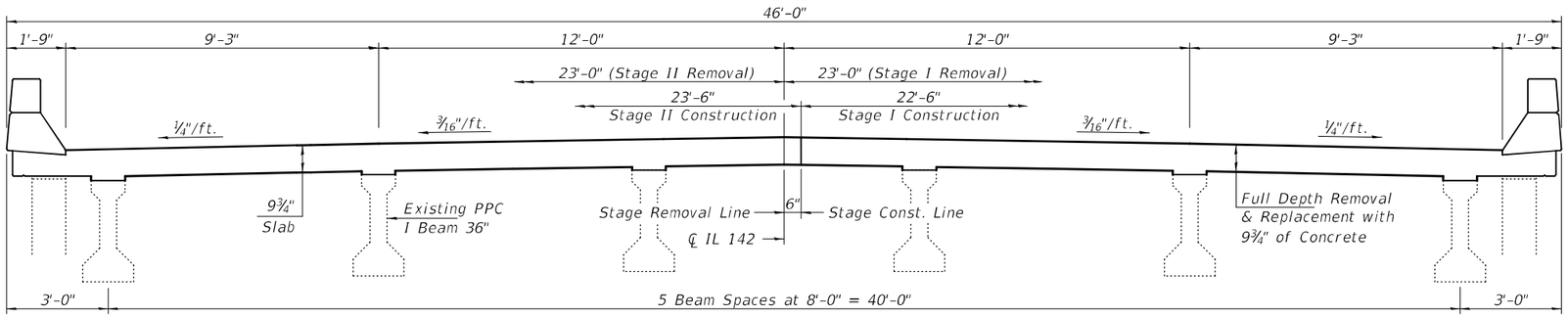
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

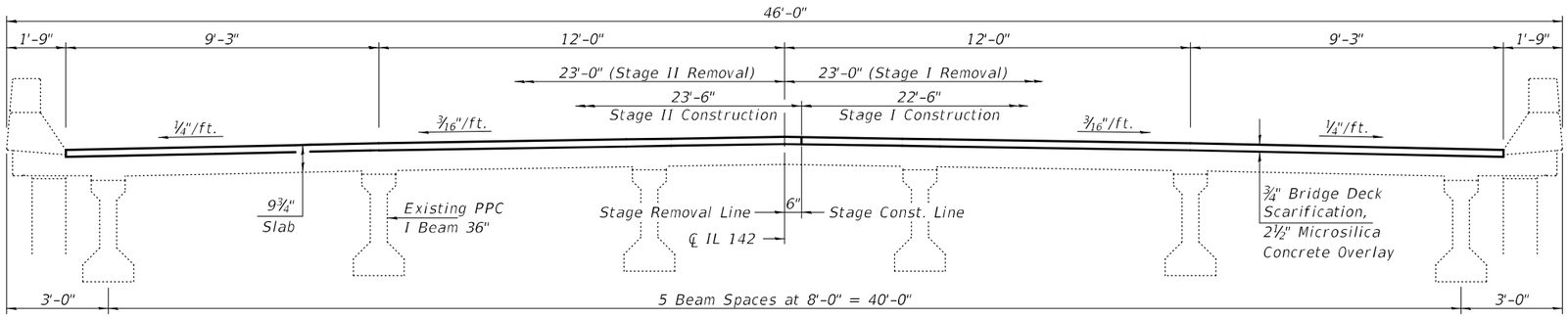
DECK REPAIR DETAILS
SN 041-0062
SHEET NO. 3 OF 25 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	12
		CONTRACT NO. 78A08		
	ILLINOIS	FED. AID PROJECT		



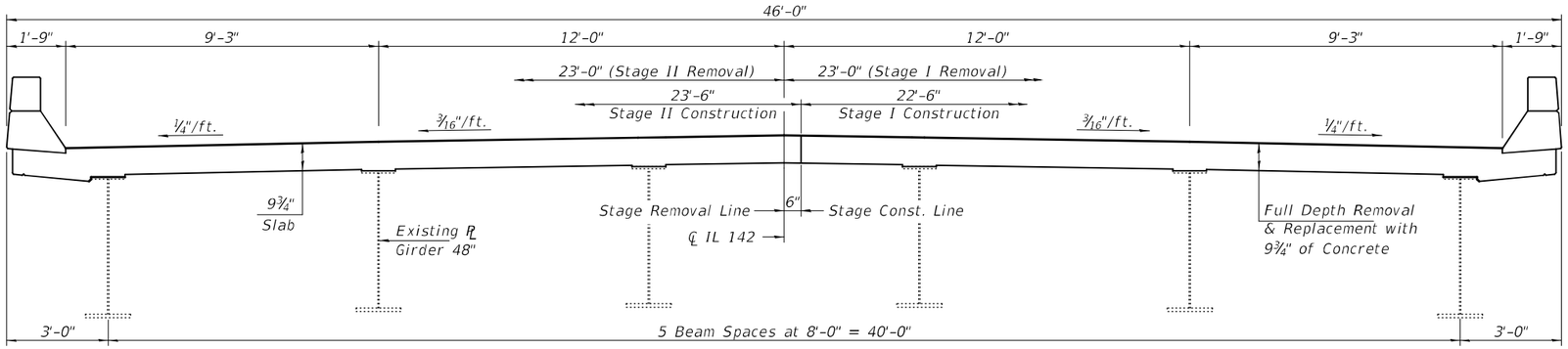
CROSS SECTION AT ABUTMENT JOINT-APPROACH SIDE

(Looking East)



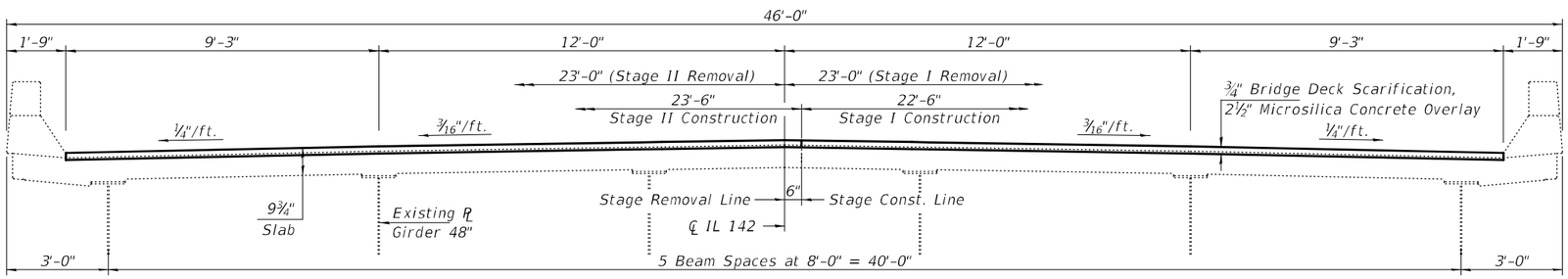
CROSS SECTION AT APPROACH'S

(Looking East)



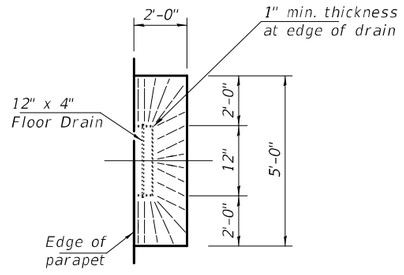
CROSS SECTION AT ABUTMENT JOINT-DECK SIDE

(Looking East)



CROSS SECTION AT MID SPAN OF DECK

(Looking East)



DRAIN DETAIL

* slope to drain

Note:
See Sheet 5 of 25 for limits of full depth joint removal and joint replacement.
See Roadway plans for details regarding Temporary Concrete Barrier.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS & STAGING DETAILS
SN 041-0062

SHEET NO. 4 OF 25 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	13
		CONTRACT NO. 78A08		
	ILLINOIS	FED. AID PROJECT		

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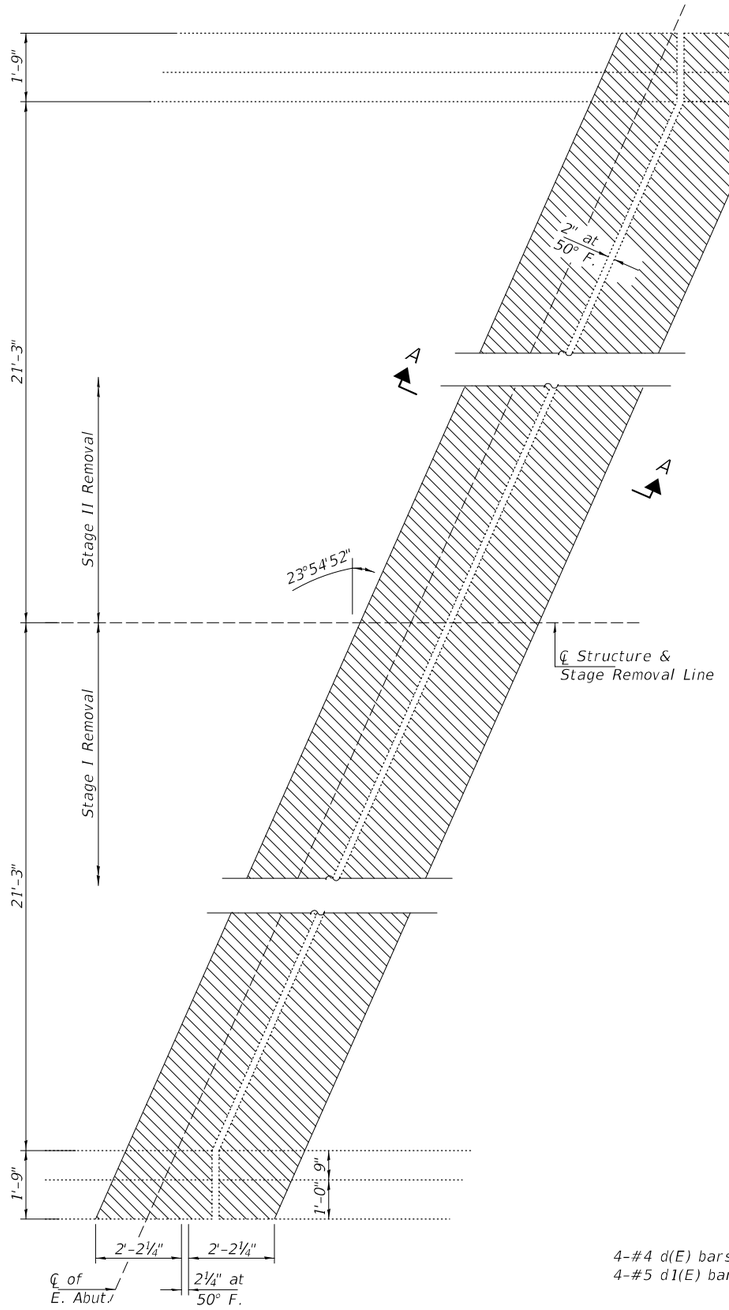
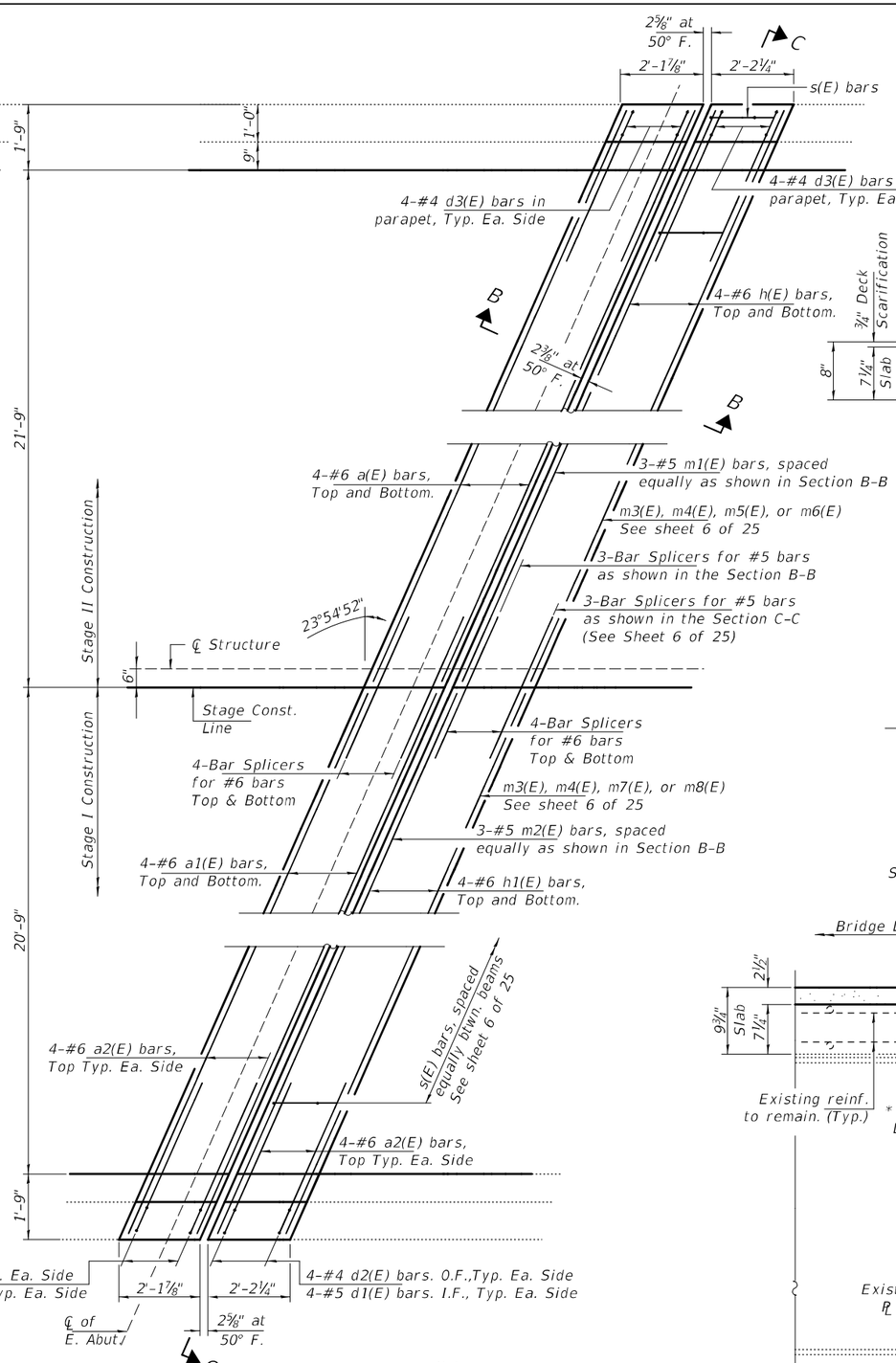


REMOVAL PLAN

East Abut. shown, West Abut. is similar by mirroring along ℄ Str.



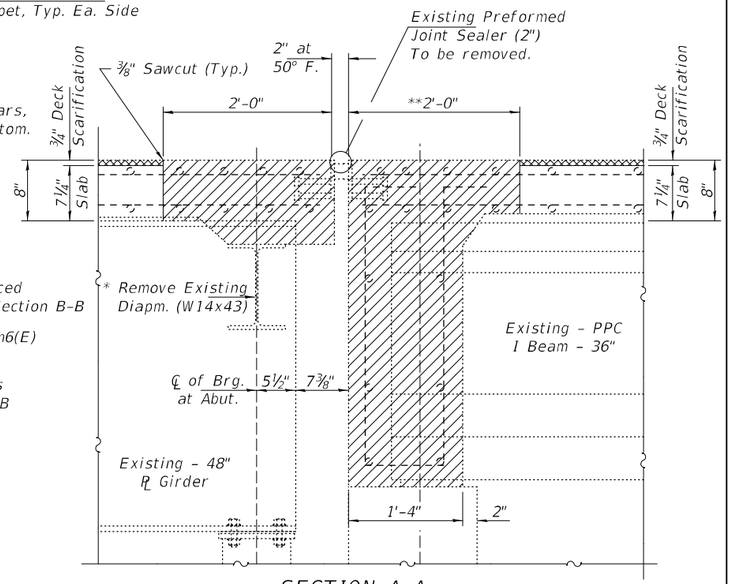
REPLACEMENT PLAN

East Abut. shown, West Abut. is similar by mirroring along ℄ Str.

Note:
See Sheet 6 of 25 for Section C-C, Reinforcement and Parapet Details.

** The Contractor shall use extreme care during concrete removal so as not to damage the PPC I-Beam on both approaches. Any damage done to the PPC I Beams during the concrete removal shall be repaired by the contractor at their expense.

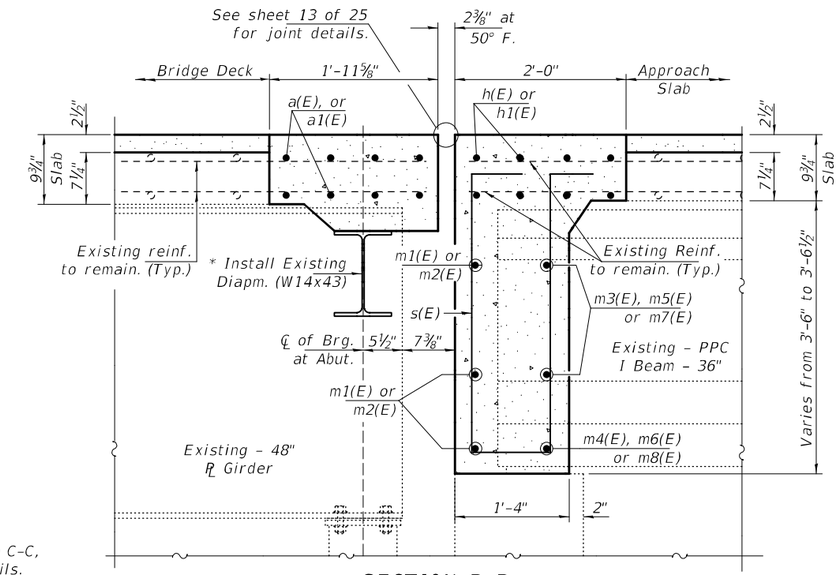
Concrete Removal Concrete Replacement



SECTION A-A

(Dimensions at Rt. Angles)

* Clean and paint the Existing Steel Diaphragm (W14x43) and install it back after repairing the Approach Diaphram



SECTION B-B

(Dimensions at Rt. Angles)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

JOINT REMOVAL & REPLACEMENT DETAILS - BOTH ABUTMENTS
SN 041-0062

SHEET NO. 5 OF 25 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	14
		CONTRACT NO. 78A08		
	ILLINOIS	FED. AID PROJECT		

MODEL: 78A08-014
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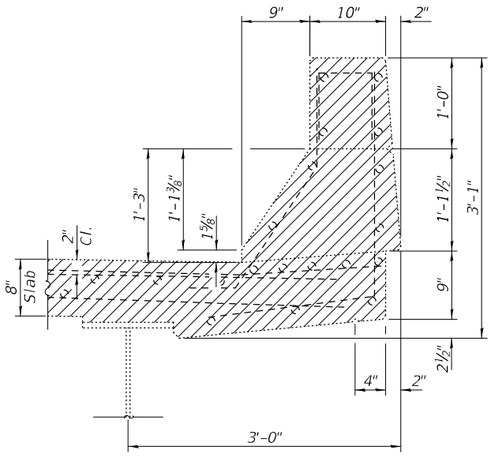
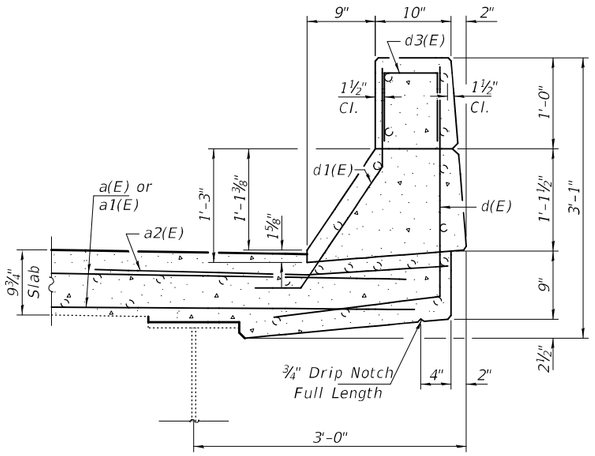
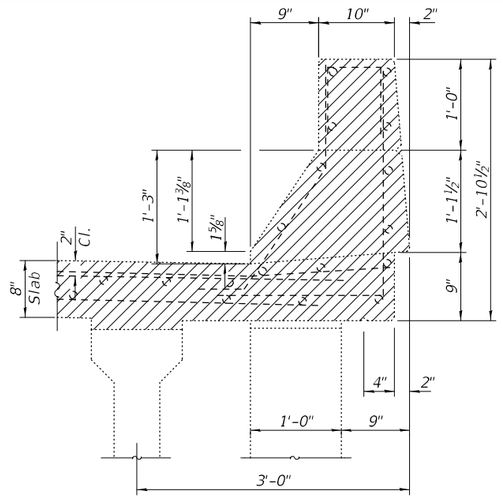


REMOVAL DETAILS

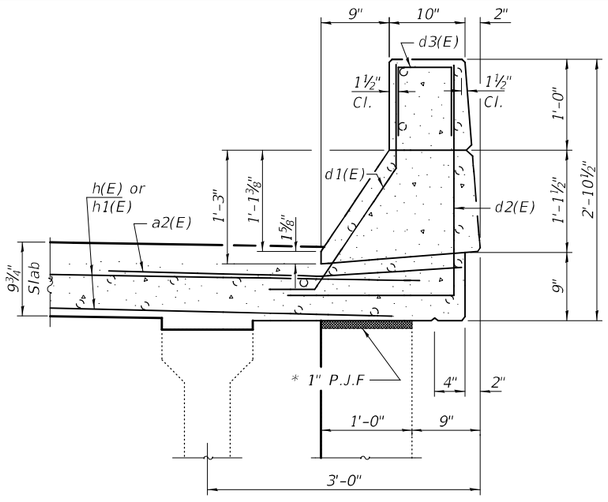


REPLACEMENT DETAILS

SECTION THRU PARAPET AT ABUTMENT - DECK SIDE

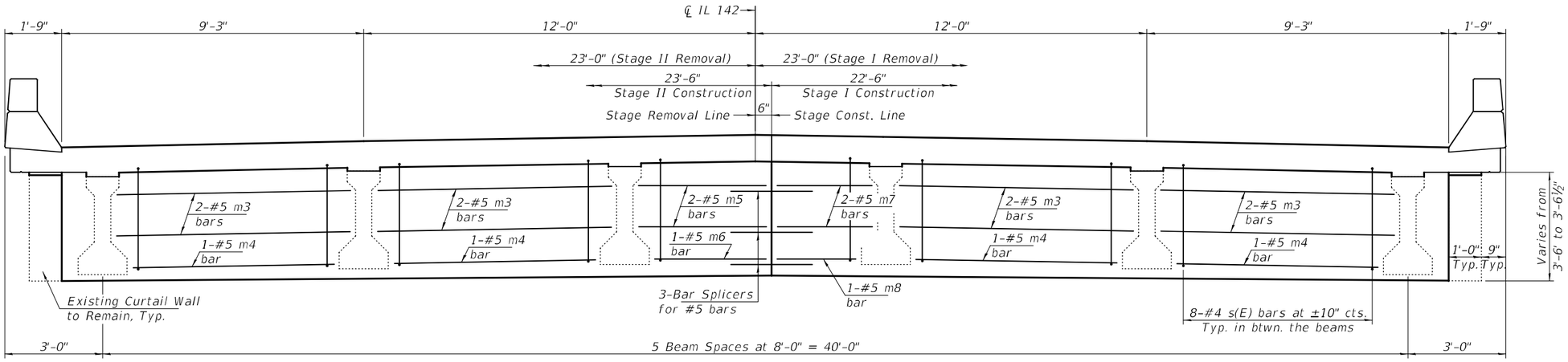


REMOVAL DETAILS

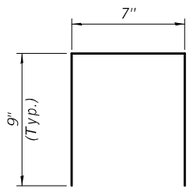


REPLACEMENT DETAILS

SECTION THRU PARAPET AT ABUTMENT - APPROACH SIDE



SECTION THRU THE APPROACH DIAPHRAGM (SECTION C-C)



BAR d3(E)

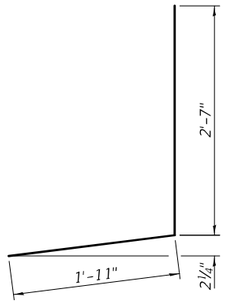
BAR a2(E)

* 1" x 13" Preformed Joint Filler (4 Required) shall be included in the cost of Concrete Superstructure.

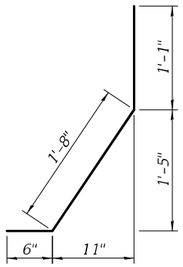
Note:
See sheet 13 of 25 for Preformed Joint Strip Seal to be cast into the new concrete.

Concrete Removal

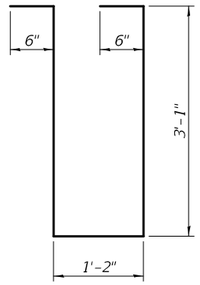
Concrete Replacement



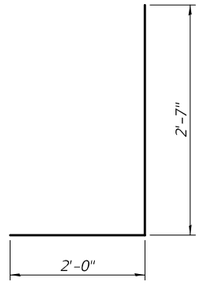
BAR d(E)



BAR d1(E)



BAR s(E)



BAR d2(E)

BILL OF MATERIAL (TWO ABUTMENTS)

Bar	No.	Size	Length	Shape
a(E)	16	#6	25'-2"	
a1(E)	16	#6	24'-1"	
a2(E)	16	#6	4'-0"	
d(E)	16	#4	4'-6"	
d1(E)	32	#5	3'-3"	
d2(E)	16	#4	4'-7"	
d3(E)	32	#4	2'-1"	
h(E)	16	#6	25'-2"	
h1(E)	16	#6	24'-1"	
m1(E)	6	#5	23'-5"	
m2(E)	6	#5	22'-4"	
m3(E)	16	#5	7'-10"	
m4(E)	8	#5	6'-9"	
m5(E)	4	#5	4'-3"	
m6(E)	2	#5	3'-8"	
m7(E)	4	#5	3'-2"	
m8(E)	2	#5	2'-7"	
s(E)	40	#4	8'-4"	
Concrete Removal			Cu. Yd.	28.9
Concrete Superstructure			Cu. Yd.	29.1
Reinforcement Bars, Epoxy Coated			Pound	3460
Bar Splicers			Each	44

MODEL: 78A08-015
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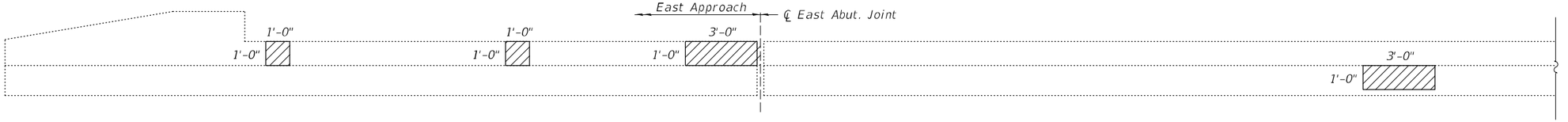
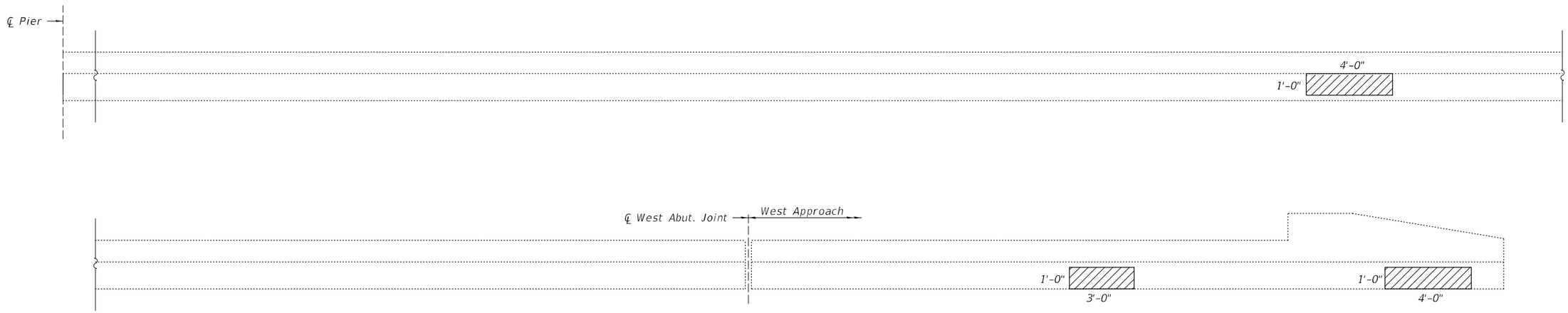
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

JOINT & DIAPHRAGM DETAILS
SN 041-0062
SHEET NO. 6 OF 25 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	15
		CONTRACT NO. 78A08		
	ILLINOIS FED. AID PROJECT			





INSIDE ELEVATION OF PARAPET

(Looking East)

Structural Repair of Concrete (Depth ≤ 5")

Item	Unit	Total
Structural Repair of Concrete (Depth ≤ 5")	Sq. Ft.	29

VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST PARAPET REPAIR DETAILS
SN 041-0062

SHEET NO. 7 OF 25 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	16
		CONTRACT NO. 78A08		
	ILLINOIS	FED. AID PROJECT		

MODEL: 78A08-016
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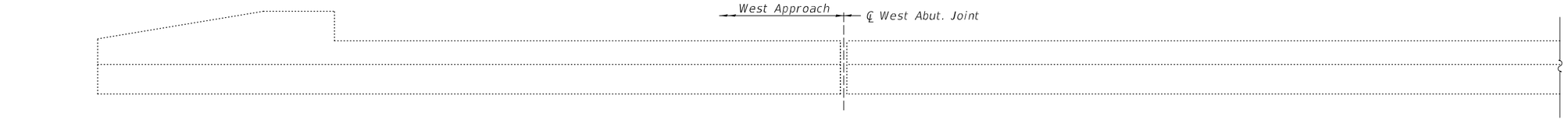

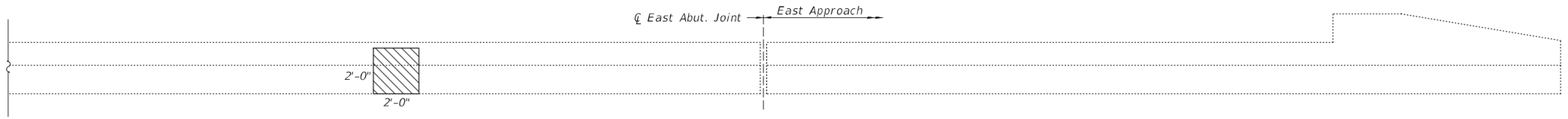

INSIDE ELEVATION OF PARAPET

(Looking West)

Structural Repair of Concrete (Depth ≤ 5")

BILL OF MATERIAL

Item	Unit	Total
Structural Repair of Concrete (Depth ≤ 5")	Sq. Ft.	11

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IL. Design Firm No. 184-001939

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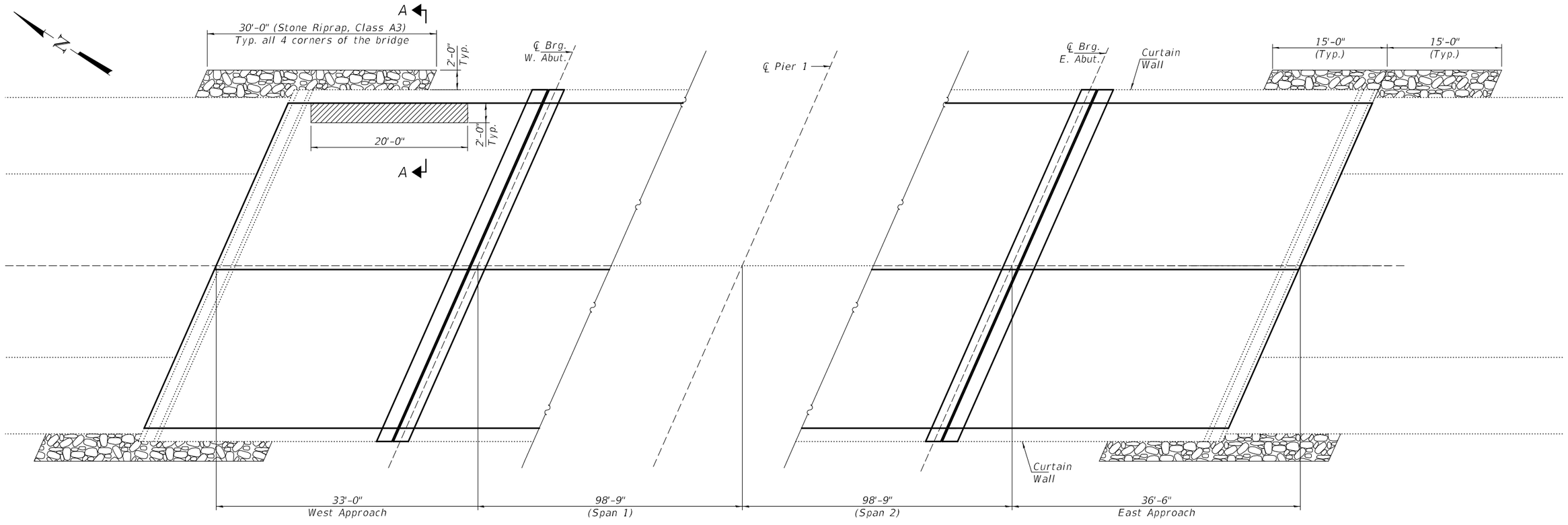
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST PARAPET REPAIR DETAILS
SN 041-0062
SHEET NO. 8 OF 25 SHEETS

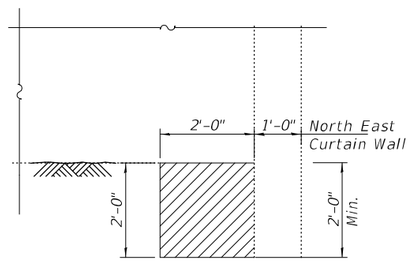
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	17
		CONTRACT NO. 78A08		
	ILLINOIS	FED. AID PROJECT		



PARTIAL PLAN VIEW

Controlled Low Strength Material (Inside the Vaulted Abutment with 2'-0" wide, 2'-0" Deep & 20'-0" Long)

Class A3 Riprap along the slopewall (2'-0" wide, 2'-0" Deep & 30'-0" Long)



SECTION A-A

NOTES

Voids beneath the existing concrete slope wall and the gaps along the Curtain Wall in side the vault shall be filled with Controlled Low Strength Material (CLSM) in accordance with Article 593 of the Standard Specs. and as directed by the Engineer. If required, removal of Slope Wall can be done with Sawed Openings to fill the CLSM and is included in the cost of Controlled Low Strength Material.

The location and quantities of Controlled Low Strength Material are based on a field survey done at the time of plan preparation. The exact locations and actual quantities will be determined in the field by the Engineer. The Contractor will be paid for the actual quantity at the contract unit price bid for the item.

BILL OF MATERIAL

Item	Unit	Total
Controlled Low-Strength Material	Cu. Yd.	3
Stone Riprap, Class A3	Sq. Yd.	27

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT SLOPEWALL & EMBANKMENT DETAILS
SN 041-0062
SHEET NO. 9 OF 25 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	18
		CONTRACT NO. 78A08		
	ILLINOIS FED. AID PROJECT			

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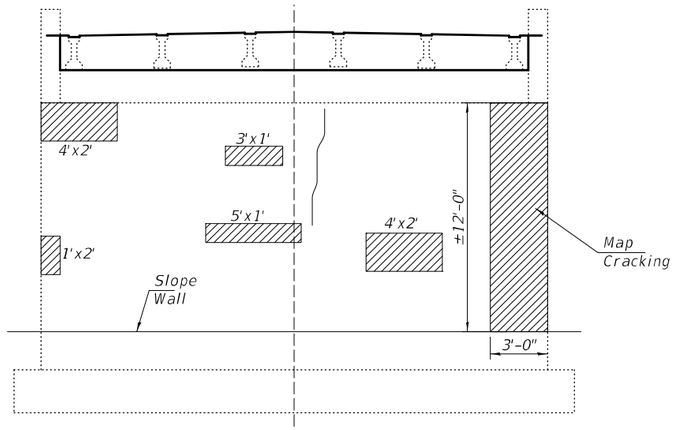
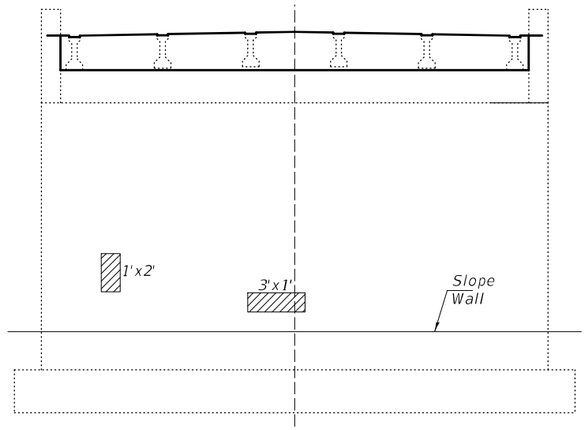
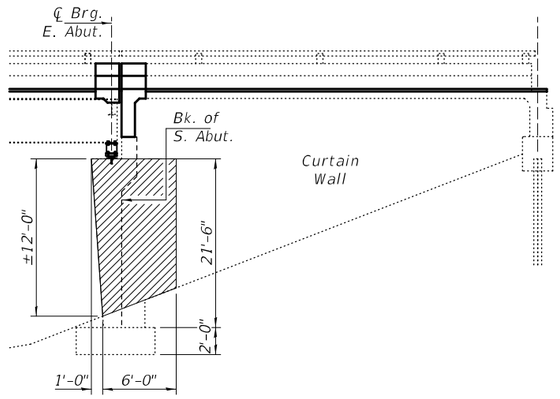


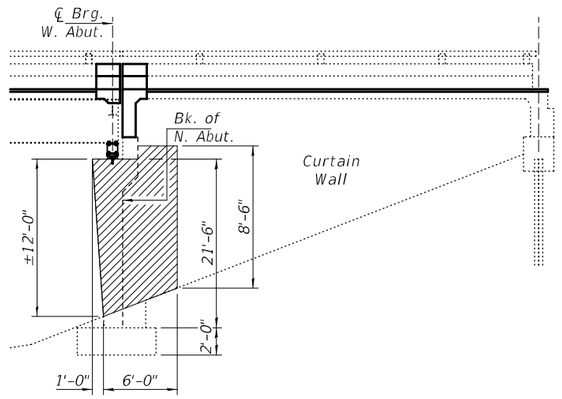
ELEVATION VIEW OF THE EAST ABUTMENT
(Looking Southwest)



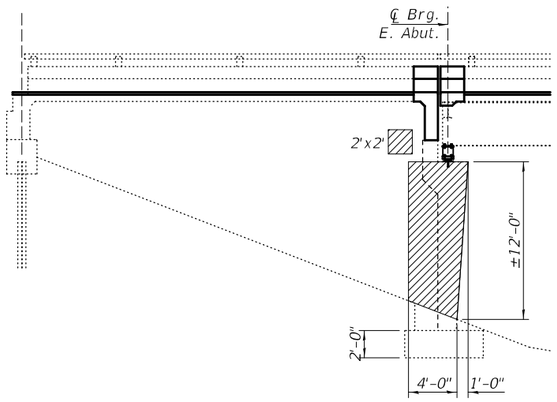
ELEVATION VIEW OF THE WEST ABUTMENT
(Looking Northeast)



SOUTHWEST CURTAIN WALL
(Looking East)



NORTHEAST CURTAIN WALL
(Looking East)



SOUTHEAST CURTAIN WALL
(Looking West)

Structural Repair of Concrete (Depth ≤ 5")

Note:
The quantity of Structural Repair of Concrete (Depth ≤ 5") shown in the plans is based on a field survey done at the time of plan preparation. The exact locations and actual quantities will be determined in the field by the Engineer. The Contractor will be paid for the actual quantity at the contract unit price bid for the item.

BILL OF MATERIAL

Item	Unit	Total
Structural Repair of Concrete (Depth ≤ 5")	Sq. Ft.	262

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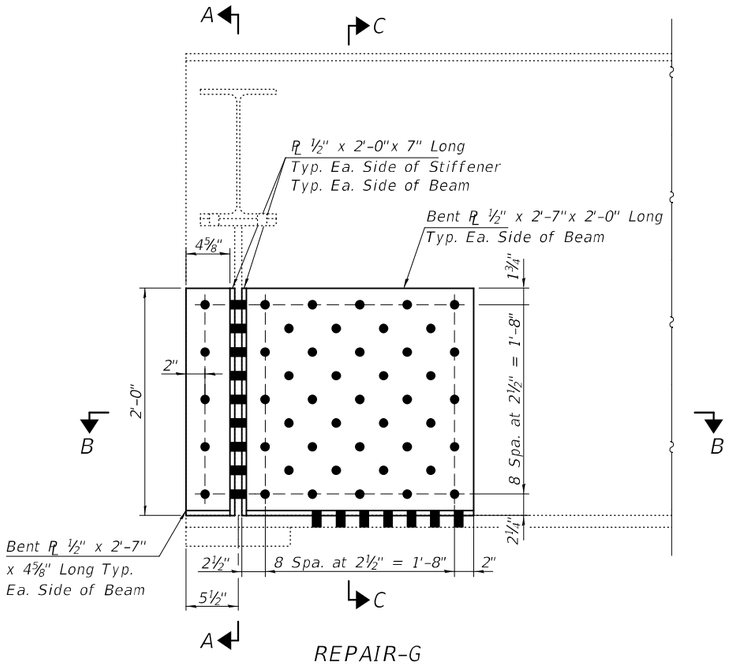
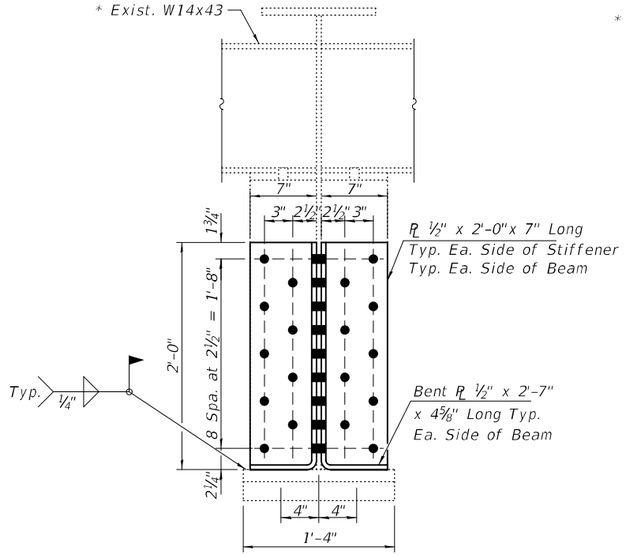
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT PATCHING DETAILS
SN 041-0062
SHEET NO. 10 OF 25 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	19
		CONTRACT NO. 78A08		
	ILLINOIS	FED. AID PROJECT		

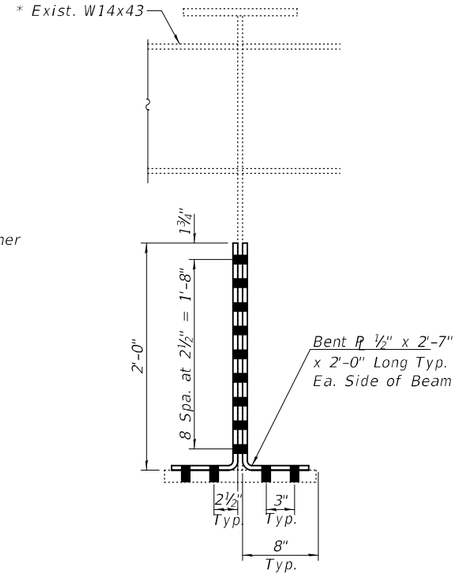


REPAIR-G
(1 Location)



SECTION A-A

* Existing Diaphragm may be removed and re-installed to facilitate while doing the replacement of Concrete Approach Slab Diaphragm.
Cost included with Concrete Superstructures.

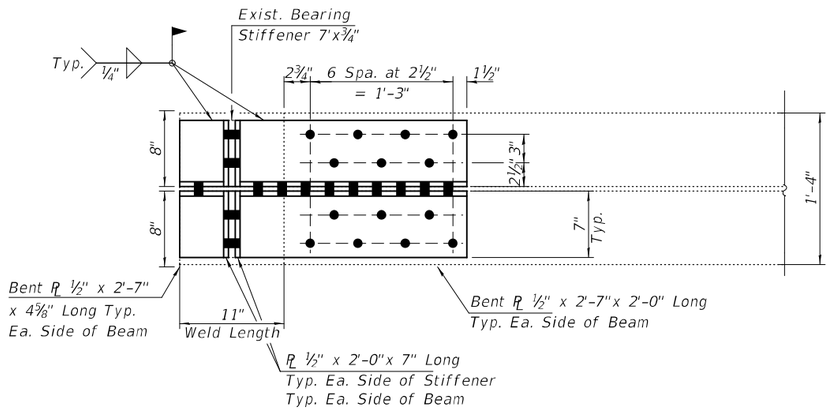


SECTION C-C

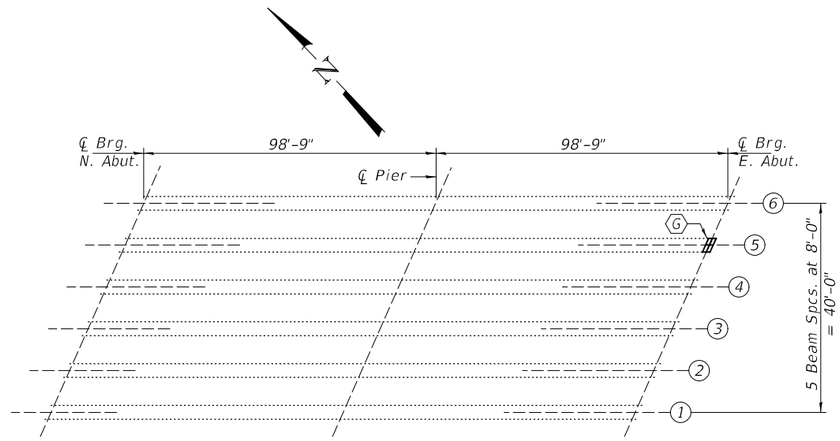
BOLT HOLE LEGEND

○ - Field drill using existing steel as template.

● - Shop drill holes in new steel.



SECTION B-B



FRAMING PLAN

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Steel Repair	Pound	420

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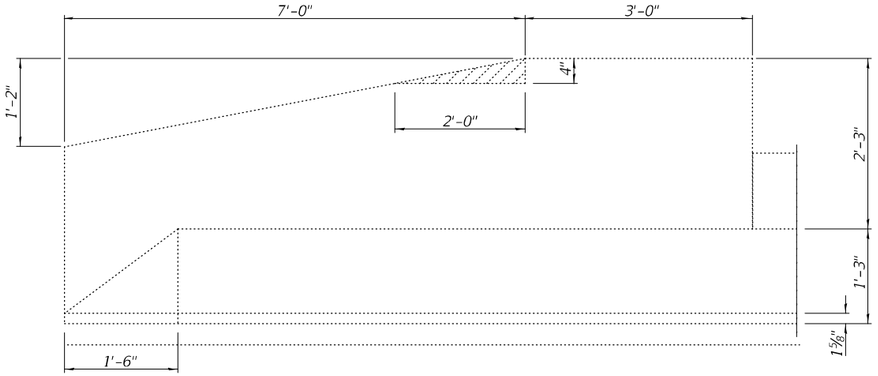
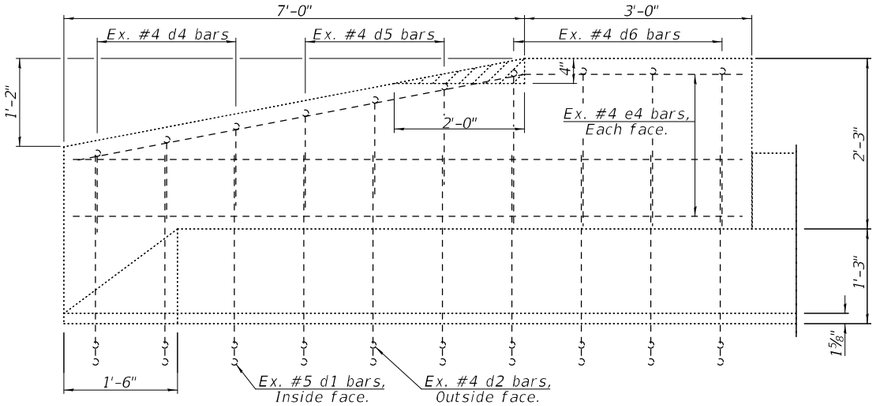
BEAM END REPAIR DETAILS
SN 041-0062
SHEET NO. 11 OF 25 SHEETS

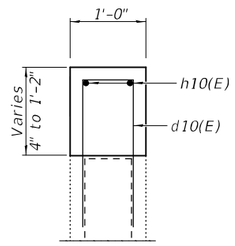
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	20
		CONTRACT NO. 78A08		
	ILLINOIS FED. AID PROJECT			



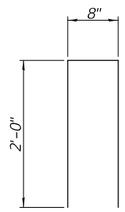
CONCRETE REMOVAL DETAILS



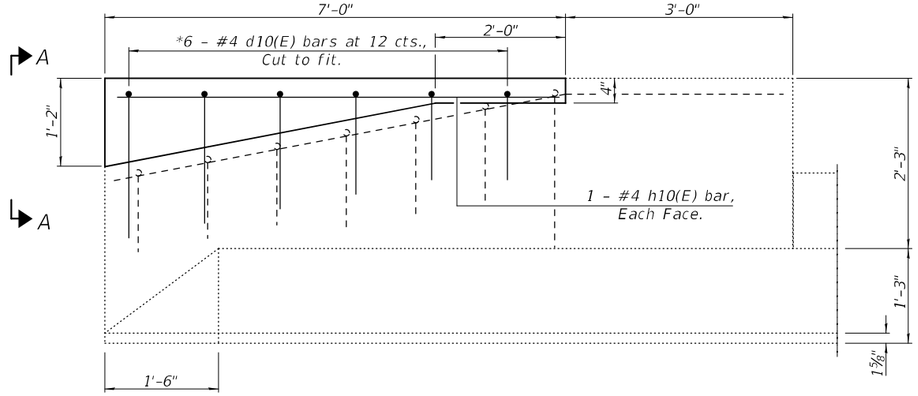
EXISTING REINFORCEMENT



SECTION A-A



BAR d10(E)



PROPOSED ELEVATION

* Epoxy grout d10(E) bars in 12" min. holes according to Article 584 of the Standard Specifications.

BILL OF MATERIAL
(4 Locations)

Bar	No.	Size	Length	Shape
d10(E)	24	#4	4'-8"	⊓
h10(E)	8	#4	6'-8"	———
Concrete Removal			Cu. Yd.	0.1
Concrete Superstructure			Cu. Yd.	0.8
Reinforcement Bars, Epoxy Coated			Pound	110

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WINGWALL MODIFICATIONS DETAILS - REPAIR 'H'
SN 041-0062
SHEET NO. 12 OF 25 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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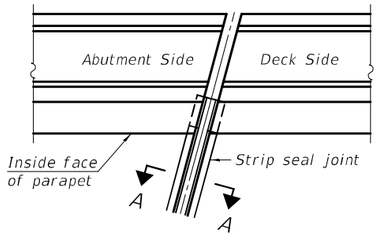
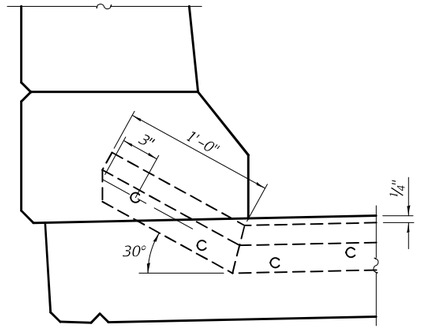
		CONTRACT NO. 78A08		
	ILLINOIS FED. AID PROJECT			



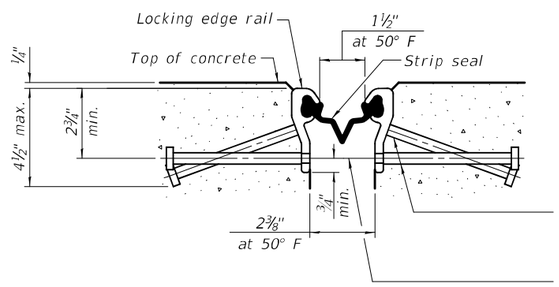
FOR SKEWS ≤ 30°

PLAN AT PARAPET



PARAPET ELEVATION AT ABUTMENTS

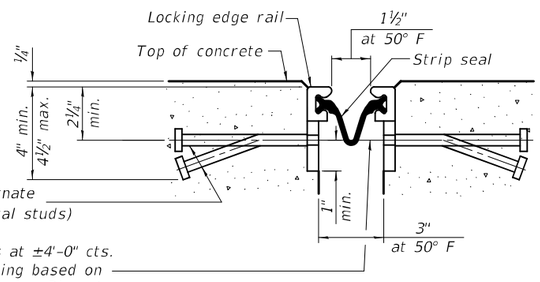
(Skews ≤ 30°)



SHOWING ROLLED RAIL JOINT

* ⅝" Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

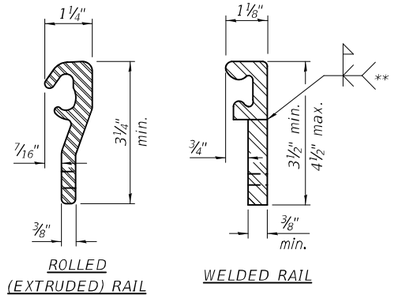
⅜" ϕ threaded rods in 7/16" ϕ holes at ±4'-0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.



SHOWING WELDED RAIL JOINT

SECTION A-A

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

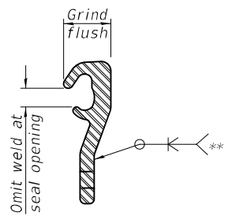


ROLLED (EXTRUDED) RAIL

WELDED RAIL

LOCKING EDGE RAILS

** Back gouge not required if complete joint penetration is verified by mock-up.



LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of ¼". The configuration of the strip seal shall match the configuration of the locking edge rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

The locking edge rails depicted are configured for typical applications and are conceptual only. The actual configuration of the locking edge rails and matching strip seal may vary from manufacturer to manufacturer provided they fit the application and meet the minimum anchorage shown. Flanged edge rails, however, will not be allowed. Locking edge rails may exceed the 4½" maximum depth provided the anchorage system is revised according to the manufacturer's recommendation.

The manufacturer's recommended installation methods shall be followed.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

The Maximum space between locking edge rail segments shall be 3/16" and sealed with a suitable sealant; however, any rail joint within 10' measured perpendicular to the face of the curb or parapet shall be welded as shown in the locking edge rail splice detail.

The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to use a different locking edge rail, dimensional adjustments may be required. One exception to this would be the strip seal joint at the end of the precast bridge approach slab. For these cases the pavement connector length shall be adjusted, not the length of the bridge approach slab.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	97

MODEL: 78A08-022
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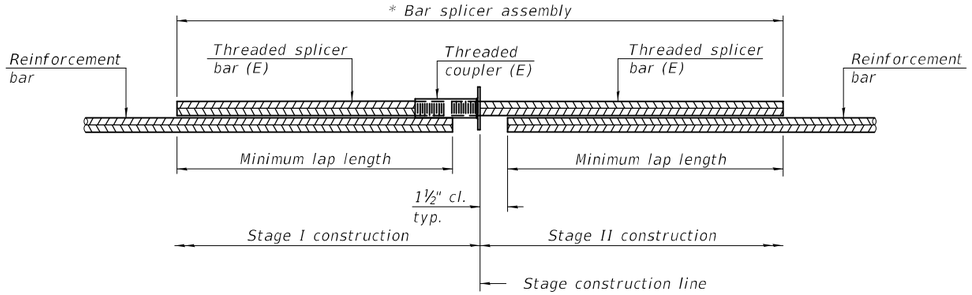
PREFORMED JOINT STRIP SEAL DETAILS
SN 041-0062
SHEET NO. 13 OF 25 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	22
		CONTRACT NO. 78A08		
	ILLINOIS	FED. AID PROJECT		



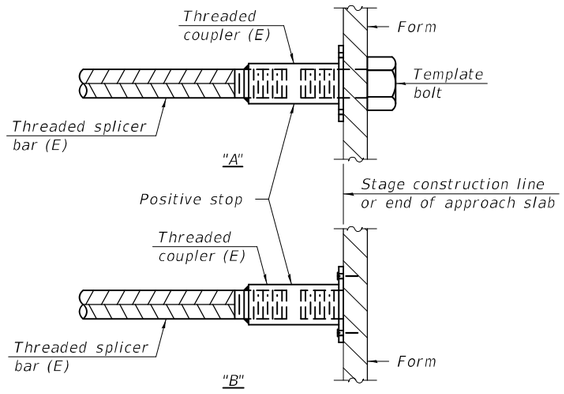
STANDARD BAR SPLICER ASSEMBLY PLAN

Only bar splicer assemblies as presented on the approved QPL list may be used.

Threaded splicer bar length = min. lap length + 1½" + thread length

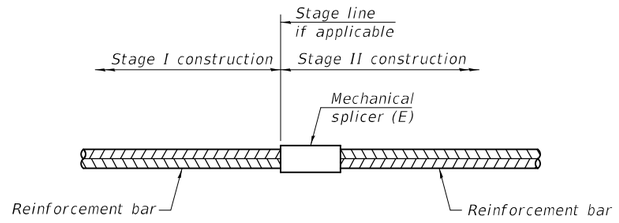
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
W. Abut. (Deck Side)	#6	8	4'-0"
W. Abut. (App. Side)	#6	8	4'-0"
W. Abut. (App. Side)	#5	6	2'-11"
E. Abut. (Deck Side)	#6	8	4'-0"
E. Abut. (App. Side)	#6	8	4'-0"
E. Abut. (App. Side)	#5	6	2'-11"



INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required

Notes:
Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
All reinforcement shall be lapped and tied to the splicer bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1 2-1-2023

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BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
SN 041-0062
SHEET NO. 14 OF 25 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	23
		CONTRACT NO. 78A08		
	ILLINOIS FED. AID PROJECT			

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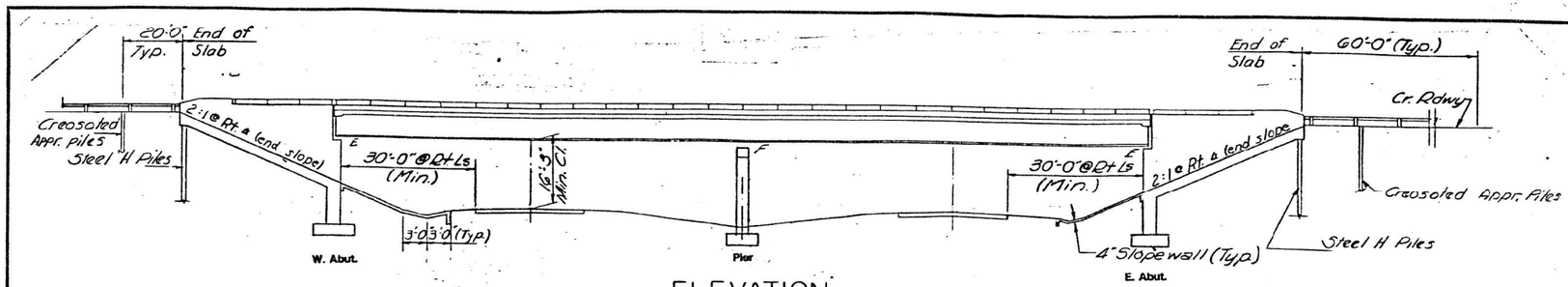
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-64	VAR.	JEFFERSON	8	4
STA. FED. ROAD DIST. NO. 7	ILLINOIS	NO STA. FED. AID PROJECT		

D-1 EXP. ST. REP. 1989-1

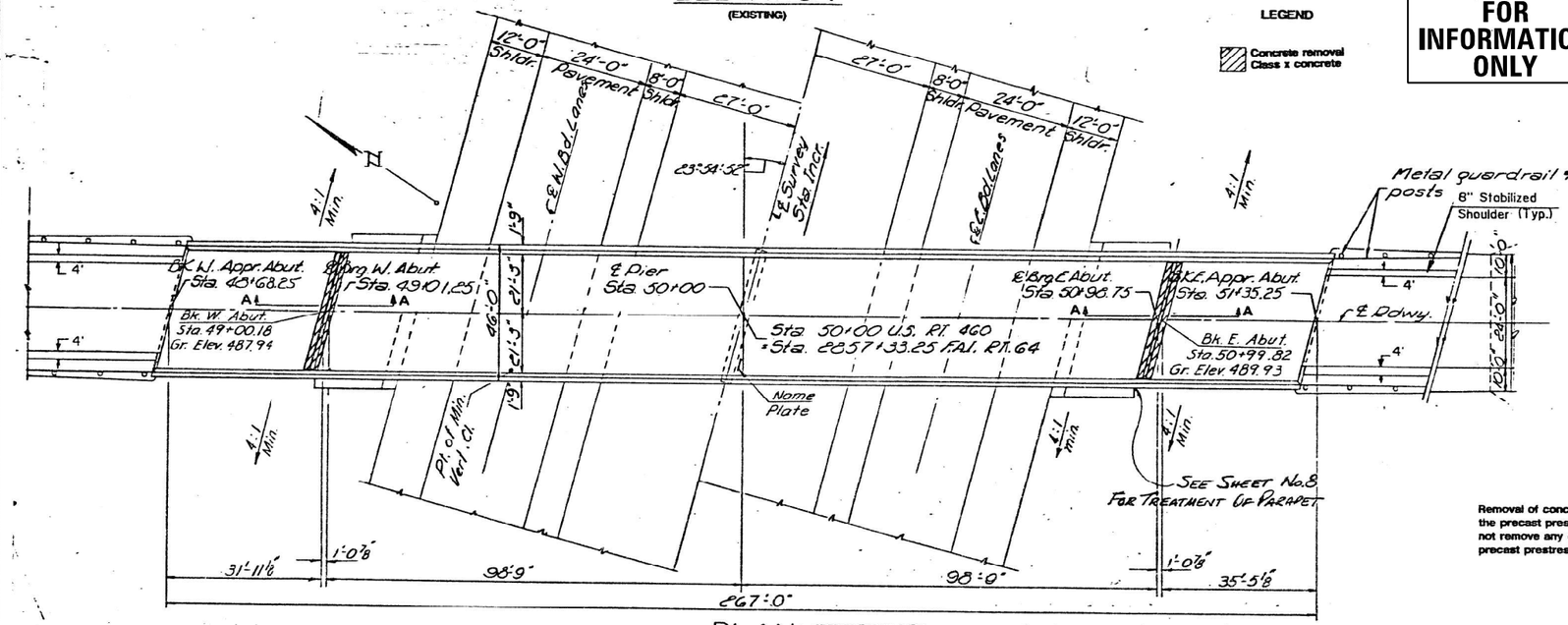


ELEVATION (EXISTING)

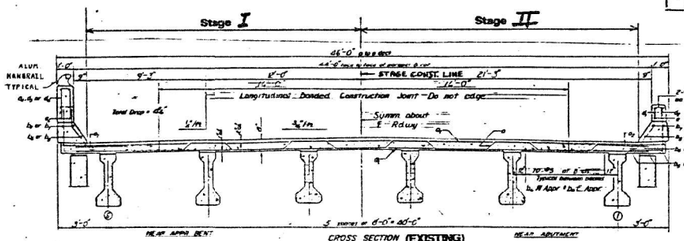
LEGEND

Concrete removal
Class X concrete

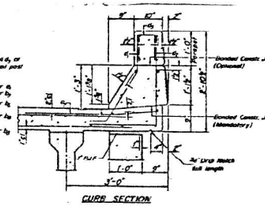
FOR INFORMATION ONLY



PLAN (EXISTING)



CROSS SECTION (EXISTING)
(Looking East)



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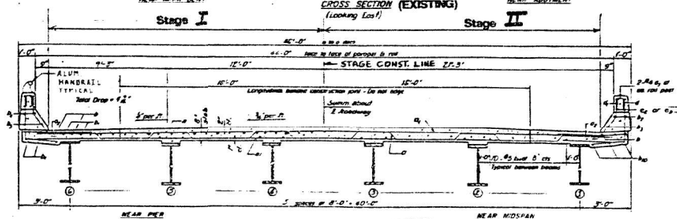
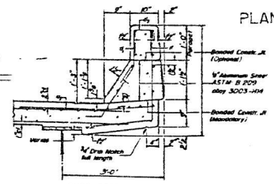


CROSS SECTION (EXISTING)
(Looking East)



(EXISTING)

BILL OF MATERIALS

Bar List	No	Size	Length	Shape
a(E)	48	#6	23'-0"	

Quantities

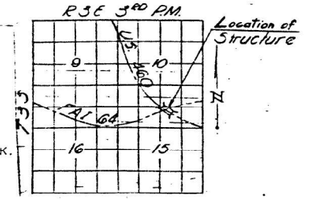
Concrete Removal	84 C.Y.
Class X Concrete	83 C.Y.
Neoprene Expansion Jt.	2793 L.F.
Traffic Control & Protection	2309 L.F.A.
Reinforcement Bar (Epoxy Coated)	16604 Lb.

* Stage I & II 23'-0"

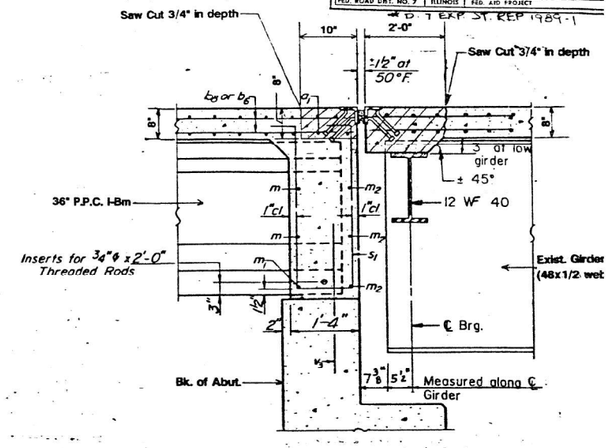
PLAN :

PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD 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 THE WORK, HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.

EXISTING BARS SHALL BE CLEANED AND USED FOR NEW CONSTRUCTION. NEW BARS SHALL BE EPOXY COATED WITH BAR SPLICERS FOR STAGED CONSTRUCTION (INCIDENTAL TO RE-BARS)

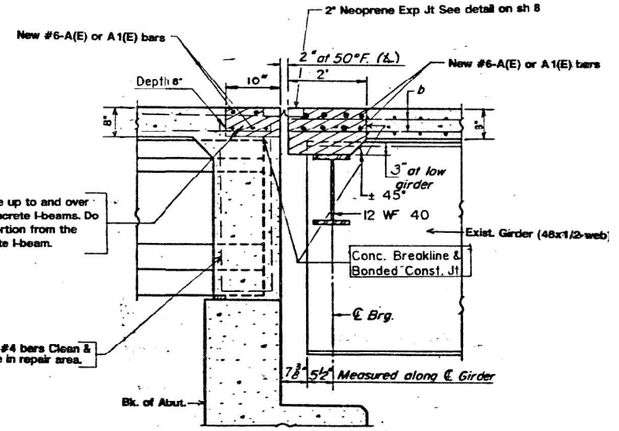


LOCATION SKETCH



SECTION A-A

~ EXISTING SECTION @ ABUTS ~



Removal of concrete shall be up to and over the precast prestressed concrete I-beams. Do not remove any concrete portion from the precast prestressed concrete I-beam.

SECTION A-A

~ PROPOSED SECTION @ ABUTS ~

NOTE: Exist. longitudinal reinf. bars to remain in place in the removal areas. See note below.

NOTE: For details of 2 1/2" Neoprene Exp Jt & 4" Performed Joint Seal See Sh No. 8.

GENERAL PLAN & ELEVATION
U.S. RT. 460 (SBI RT 142) OVER F.A.I. RT. 64
F.A.I. RT. 64 SEC. 41-8HB-3
JEFFERSON COUNTY
STATION 2837+33.25

Str. No. 041-0062

VEENSTRA & KIMM INC. Springfield, IL. Phone: (217)544-8033 IL. Design Firm No. 184-001939	USER NAME =	DESIGNED - VVR	REVISED -
		CHECKED - MAH	REVISED -
	PLOT SCALE =	DRAWN - VVR	REVISED -
	PLOT DATE = JANUARY 24th, 2024	CHECKED - MAH	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLAN SHEET - FOR INFORMATION ONLY
SN 041-0062
SHEET NO. 15 OF 25 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	24
			CONTRACT NO. 78A08	
		ILLINOIS	FED. AID PROJECT	

MODEL: 78A08-024
FILE NAME: Z:\0 V and K Jobs\5951-011 PTB 203-048 SN 041-0062 & 033-0038 Structure Repairs\CADD\044-0062 Structure Plans.dgn
1/24/2024 9:36:04 AM

GENERAL NOTES FOR NEOPRENE EXPANSION JOINT

Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane.

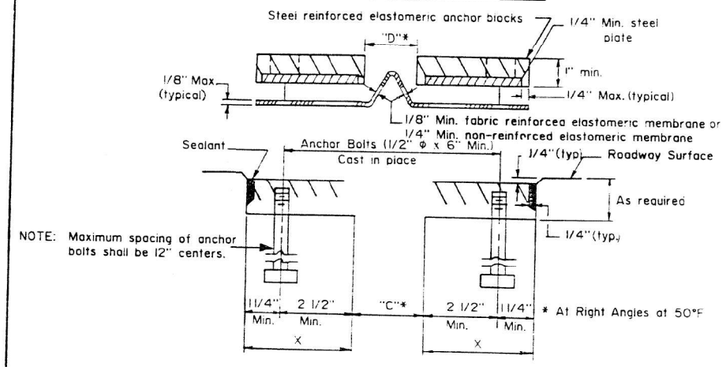
The elastomeric membrane shall be premolded with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.

The convolution length shall be such that the extended length will not be greater than the manufactured length when the joint is fully expanded in its design range and will not protrude above the anchor blocks when the joint is fully compressed.

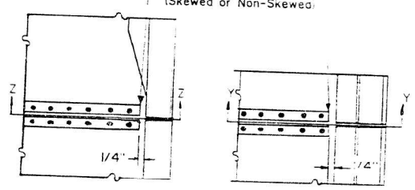
Joint openings shall be adjusted in accordance with Article 503.07(c) of the Standard Specifications .

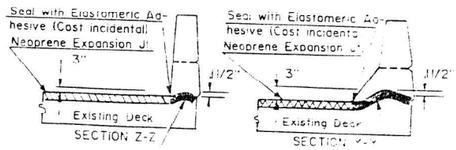
Preformed Joint Seal End Treatment will not be measured for payment, but shall be considered incidental to neoprene expansion joint.

JOINT SIZE	"C" at 50° F	"D" at 50°F
2"	2"	1 1/2" min.
2 1/2"	2 1/2"	1 3/4" min.
4"	3"	2 1/2" min.



CUT END OF UNIT TO FIT
(Skewed or Non-Skewed)





END TREATMENT

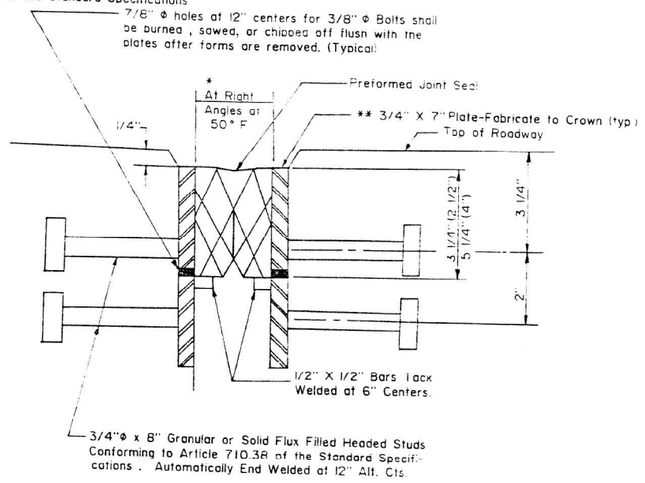
NOTE: ① See Detail of Preformed Joint Seal Cut-out for Additional Installation Information.
② ANY EXISTING PREFORMED JOINT SEAL SHALL BE REPLACED FOR END TREATMENT

NEOPRENE EXPANSION JOINT DETAIL

GENERAL NOTES FOR PREFORMED JOINT SEAL

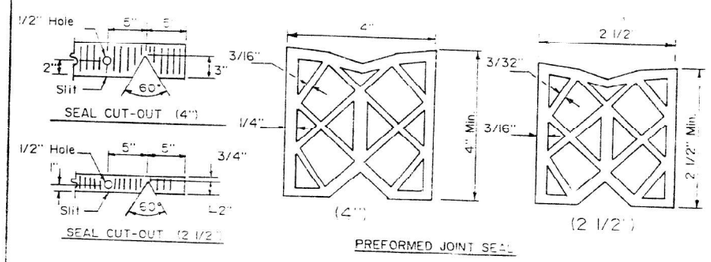
After Fabrication all Surfaces of the Steel Plates shall be Painted in Accordance with the Applicable Portions of Article 509.04. of the Standard Specifications

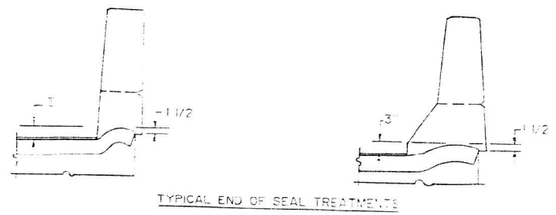
Joint Openings shall be adjusted in Accordance with Article 503.07 (c) of the Standard Specifications



* 1 3/4" at 50°F (2 1/2")
2 3/4" at 50°F (4")

** Furnish in segments of 25 ft. maximum length. Maximum space between installed segments shall be 3/16". Seal space with Silicone Sealant suitable for Structural Stee..



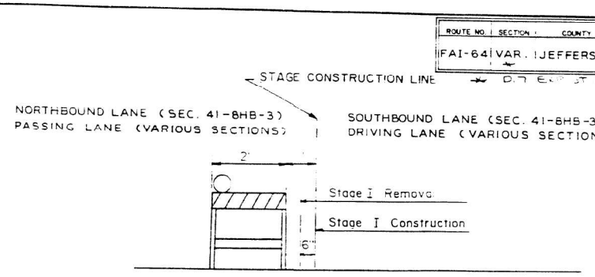


TYPICAL END OF SEAL TREATMENTS

Note: Allow ± 1/4" Gap between end of expansion angle and face of parapet

PREFORMED JOINT SEAL DETAIL

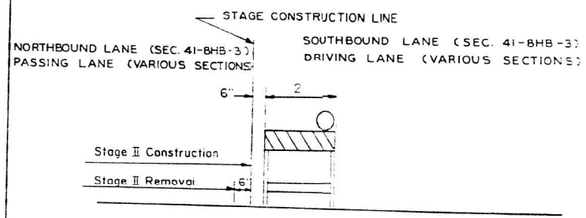
ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.
FAI-64	VAR.	JEFFERSON	6	6



STAGE I TRAFFIC CONTROL CONSTRUCTION

1. PLACE TRAFFIC CONTROL STANDARD 2316 (STAGE II CONSTRUCTION)
2. CONSTRUCT BASE COURSE WIDENING (STAGE II CONSTRUCTION)
3. RELOCATE TRAFFIC CONTROL STANDARD 2316 TO STAGE I CONSTRUCTION
4. CONSTRUCT BASE COURSE WIDENING (STAGE I CONSTRUCTION)
5. CONSTRUCT STAGE I CONSTRUCTION JOINTS

NOTE:
SEE GENERAL PLAN AND ELEVATION SHEETS FOR BASE COURSE WIDENING REQUIREMENTS.



STAGE II TRAFFIC CONTROL CONSTRUCTION

1. Relocate Standard 2309 or 2316
2. Remove and Replace the Expansion Joints
3. Remove the Traffic Standard 2309 or 2316

STAGE CONSTRUCTION DETAIL

FOR INFORMATION ONLY

MODEL: 78A06-025
FILE NAME: Z:\0 V and K Jobs\9951-011 PTB 203-048 SN 041-0062 & 033-0038 Structure Repairs\CADD\044-0062 Structure Plans.dgn
1/24/2024 9:36:10 AM

VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

USER NAME =	DESIGNED - VVR	REVISED -	
	CHECKED - MAH	REVISED -	
PLOT SCALE =	DRAWN - VVR	REVISED -	
PLOT DATE = JANUARY 24th, 2024	CHECKED - MAH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLAN SHEET - FOR INFORMATION ONLY
SN 041-0062
SHEET NO. 16 OF 25 SHEETS

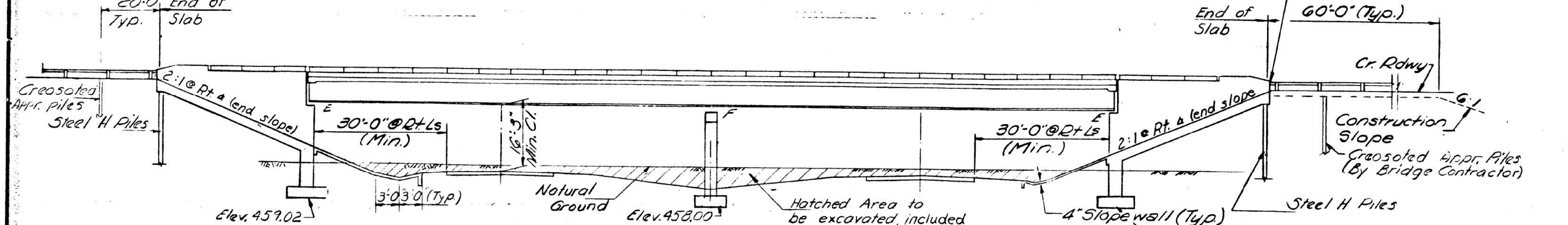
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	25
		CONTRACT NO. 78A08		
		ILLINOIS FED. AID PROJECT		

B.M. #10 R.R. Spike in pole 202 ft. Rt. of Sta 2856+03 Elev. 471.90

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. F.A.I. 64	41-8A-1 41-8HB-3	JEFFERSON	82	26
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

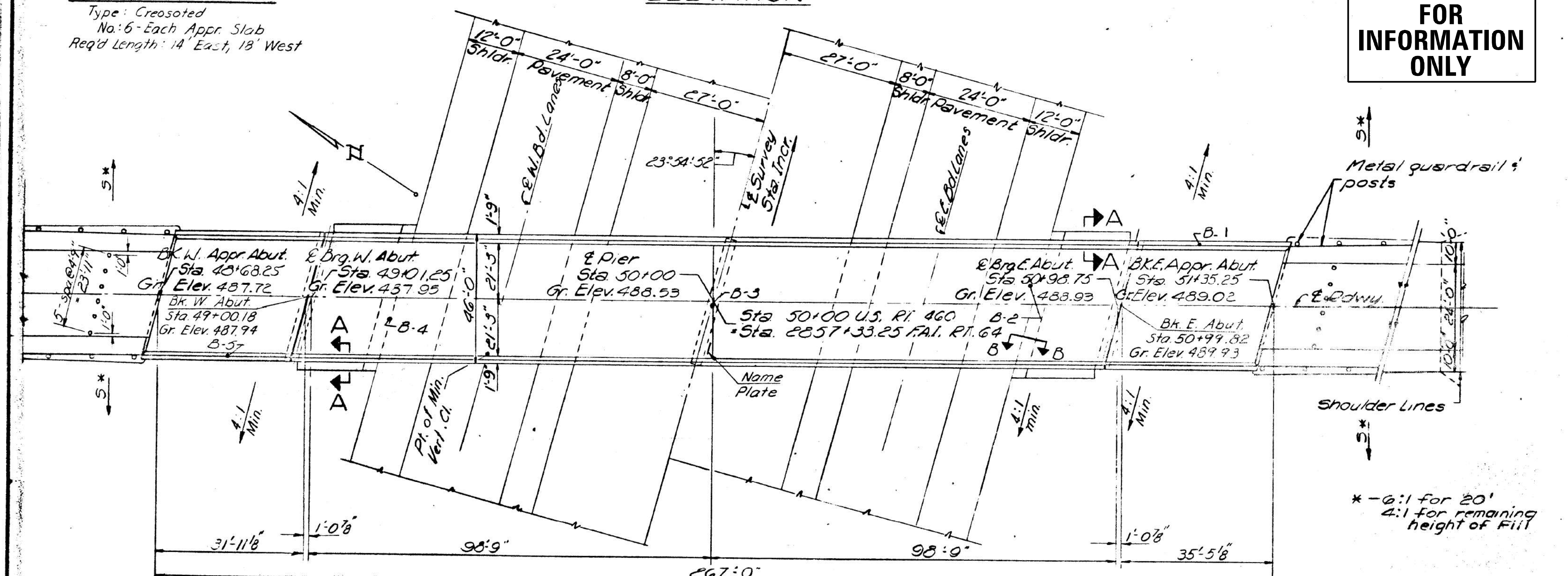
SHEET NO. 1
14 SHEETS



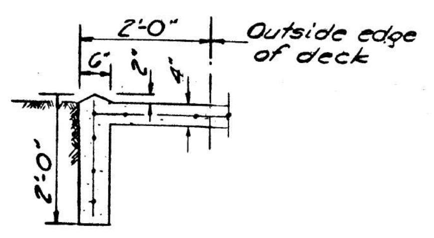
ELEVATION

APPROACH PILE DATA
Type: Creosoted
No.: 6-Each Appr. Slab
Req'd Length: 14' East, 18' West

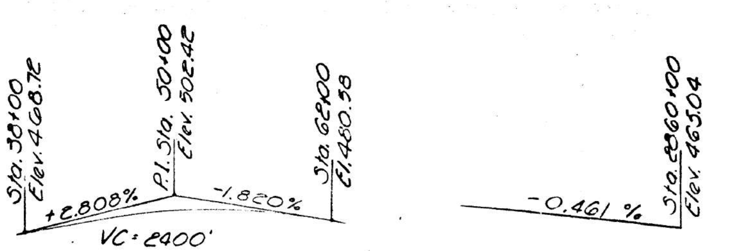
FOR INFORMATION ONLY



PLAN



SEC. A-A



PROFILE U.S. RT. 460

PROFILE F.A.I. RT. 64

STATION 2857+33.25
BUILT 19 BY
STATE OF ILLINOIS
F.A.I. RT. 64 SEC. 41-8HB-3
PROJ. I-64-3(25)
LOADING HS20

NAME PLATE
(See Std. 2113-1)

GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.

Field connections shall be bolted using high strength bolts. Bolts ¾"φ, open holes 13/16"φ, unless otherwise noted.

Except as otherwise provided, all structural steel shall receive one shop coat of red lead paint and two field coats of paint. See Special Provisions for field paint.

Field welding of construction accessories will not be permitted to the bottom flange of beams or girders nor to the top flange for a distance equal to one-fourth the span length each way from the pier supports. Field welding in other areas will be permitted only when approved by the Engineer.

Anchor bolts shall be set before riveting diaphragms over supports.

Slope wall shall be reinforced with welded wire fabric 6"x 6" mesh, weighing 58# per 100 sq. ft.

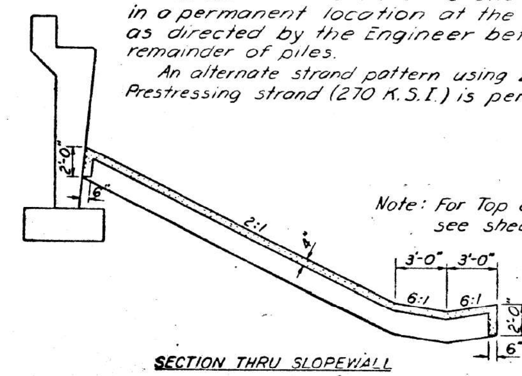
Class A Excavation for structures includes excavation for slope wall.

The concrete rail section above the mandatory construction joint at the top of the slab shall be constructed of Class X Concrete, except the aggregates shall conform to the requirements of Handrail Concrete.

The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.

The Contractor shall drive One Steel Test Pile (8BP36) in a permanent location at the West Appr. Abut. as directed by the Engineer before ordering the remainder of piles.

An alternate strand pattern using Extra High Strength Prestressing strand (270 K.S.I.) is permitted



Note: For Top of Slab Elevations see sheet # 13

SECTION THRU SLOPEWALL

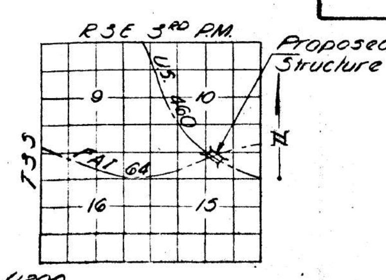
TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Class A Excavation for Structure	Cu Yds.			562
Protective Coat	Sq. Yds.	1460		1460
Class X Concrete	Cu. Yds.	393.2	347.6	740.8
F. & E. P.P.C. I Bm (36")	Lin. Ft.	386		386
Structural Steel	Lbs.	274,580		274,580
Stud Shear Connectors	Each	2052		2052
Aluminum Railing	Lin. Ft.	492		492
Reinforcement Bars	Lbs.	91,690	31,950	123,640
Steel Piles (8 BP36)	Lin. Ft.		422	422
Test Piles Steel (8BP36)	Each			1
Name Plates	Each		1	1
Slope Wall (4")	Sq Yds.			236
Creosoted Piles (up to 20')	Lin. Ft.			192
Preformed Joint Sealer	Lin. Ft.	101		101

DESIGN STRESSES

PRECAST PRESTRESSED UNITS
f'c = 5,000 psi
f'ci = 4,000 psi
f's = 248,000 psi (Strands 7/16"φ)
fsi = 173,600 psi (Strands 7/16"φ)
Allow Future W.S. 25#/sq. ft.

FIELD UNITS
f'c = 1,200 psi (Deck Slab)
f'c = 1,400 psi (Curb, Parapet, Sub.)
fs = 20,000 psi (Reinf. & Struct.)
Vc = 75 psi (Ftgs)
n = 10 Allowable ℄ Deflection L/1200
LOADING HS 20-44



LOCATION SKETCH

PROJ. I-64-3(25)76
GENERAL PLAN & ELEVATION
U.S. RT. 460 (SBI RT 142) OVER F.A.I. RT. 64
F.A.I. RT. 64 SEC. 41-8HB-3
JEFFERSON COUNTY
STATION 2857+33.25

DESIGNED	Emile A Samara
CHECKED	[signature]
DRAWN	R.P.S.
CHECKED	H.S.

EXAMINED [signature] April 29 1969
PASSED [signature]
APPROVED Richard H Golterman

VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

USER NAME =	DESIGNED - VVR	REVISED -
	CHECKED - MAH	REVISED -
PLOT SCALE =	DRAWN - VVR	REVISED -
PLOT DATE = JANUARY 24th, 2024	CHECKED - MAH	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLAN SHEET - FOR INFORMATION ONLY
SN 041-0062
SHEET NO. 17 OF 25 SHEETS

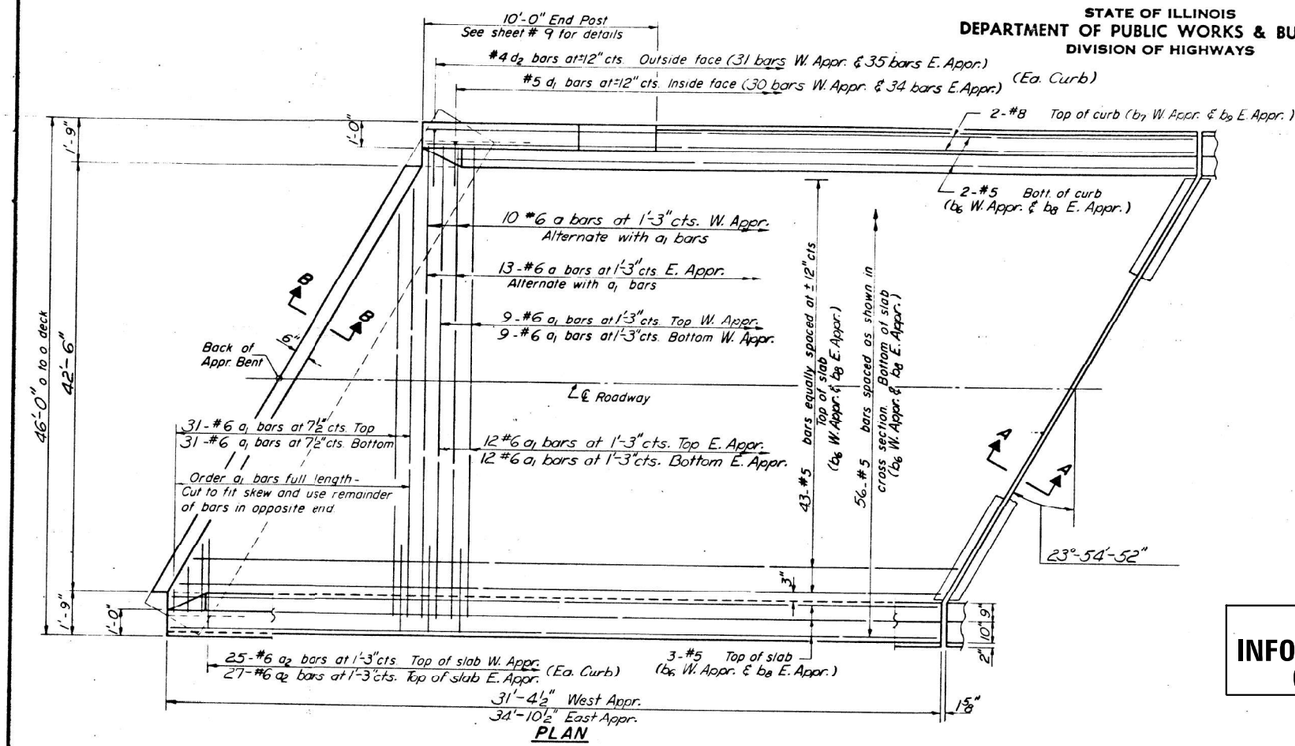
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	26
		CONTRACT NO. 78A08		
		ILLINOIS FED. AID PROJECT		

MODEL: 78A08-026
FILE NAME: Z:\0 V and K Jobs\951-011 PTB 203-048 SN 041-0062 & 033-0038 Structure Repairs\CADD\041-0062 Structure Plans.dgn
1/24/2024 9:36:15 AM

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

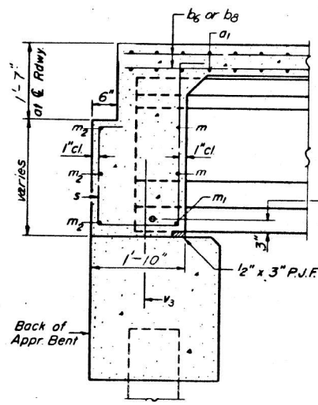
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
U.S.I. 64	41-8A-1 41-8HB3	JEFFERSON	82	28
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 3
14 SHEETS



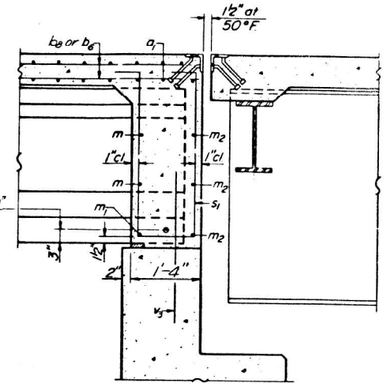
PLAN

NOTE: For details of expansion angles see Detail "A" sheet #



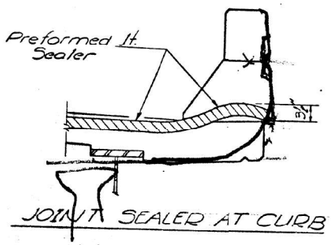
SECTION B-B

Inserts for ¾"ϕ x 2'-0" Threaded Rods



SECTION A-A

FOR INFORMATION ONLY

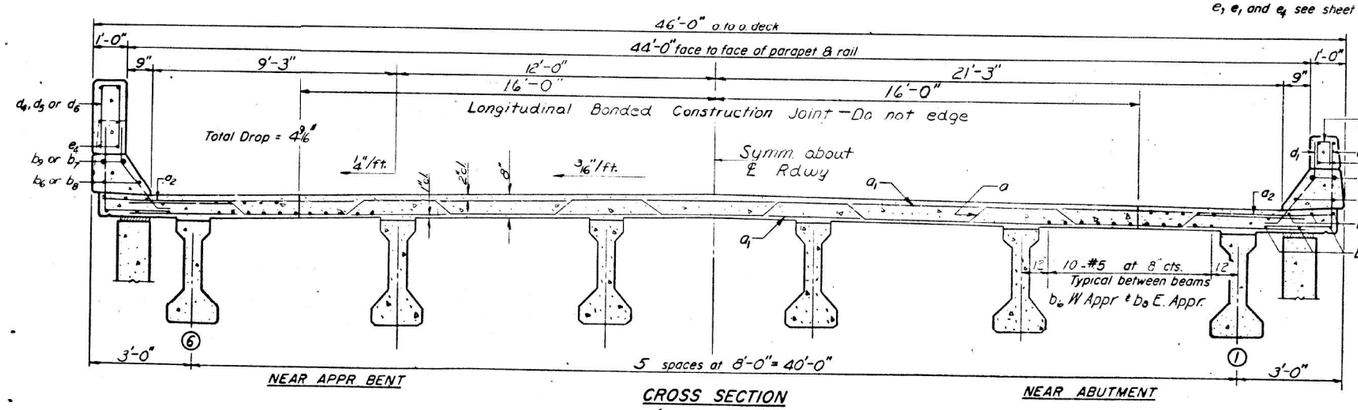


JOINT SEALER AT CURB

TWO APPR. SPANS
BILL OF MATERIAL

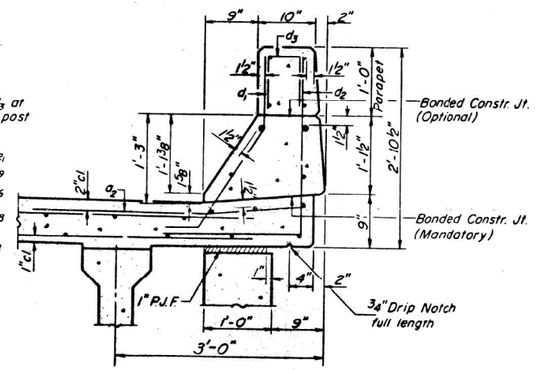
Bar	No.	Size	Length	Shape
a	23	#6	45'-3"	
a1	166	#6	44'-1"	
a2	104	#6	4'-0"	
b6	109	#5	31'-0"	
b7	4	#8	31'-0"	
b8	109	#5	34'-5"	
b9	4	#8	34'-5"	
d1	128	#5	3'-3"	
d2	132	#4	4'-7"	
m	40	#4	7'-10"	
m1	20	#5	6'-9"	
m2	24	#5	23'-9"	
m3	10	#4	7'-3"	
m4	10	#4	6'-3"	
s	60	#4	7'-6"	
s1	60	#4	8'-4"	
s2	30	#4	7'-0"	
Reinforcement Bars			Lbs.	23970
Class X Concrete			Cu Yds.	115.2

NOTE: For placement of bars d_3 thru d_6, e_3 e_1 and e_4 see sheet # 9



NEAR APPR BENT — NEAR ABUTMENT

CROSS SECTION
(Looking East)



CURB SECTION

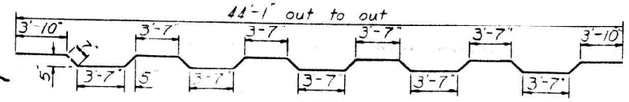
Parapet Reinforcement and Class X Concrete are billed on sheet # 9

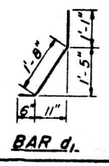
For placement and details of bars m thru m_4 and s thru s_2 see sheet # 5

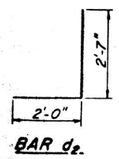
DESIGNED	Emil A. Samaha	
CHECKED	Harbel Singh	
DRAWN	J. Sutherland	
CHECKED	H.S.	

EXAMINED April 28 1969 — Carl Thunmann, Engineer of Bridge and Traffic Structures
PASSED H.E. Baumann, Engineer of Design
APPROVED Richard H. Gotterer, Chief Highway Engineer

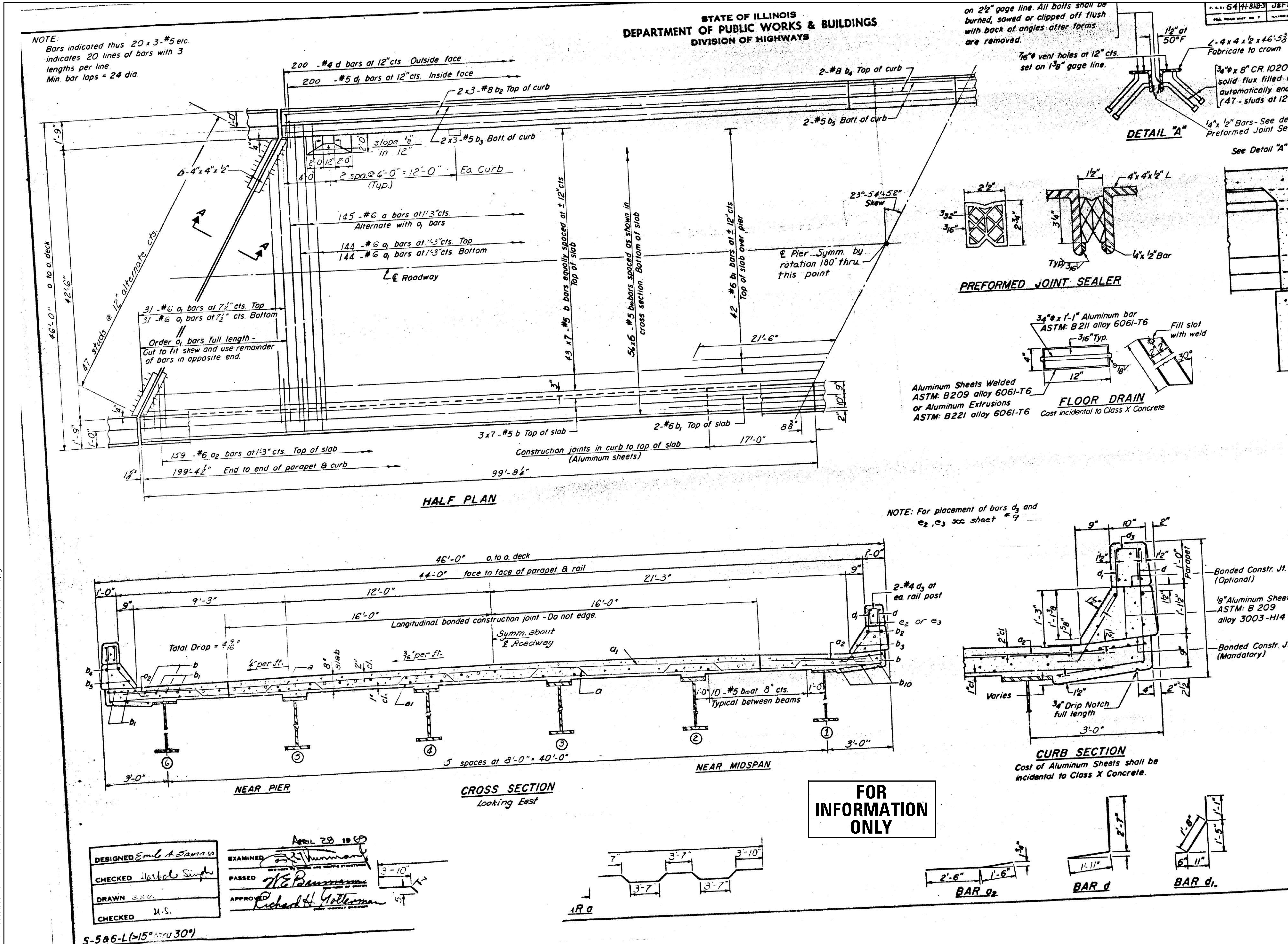
SA-5 & 6-L (>15° thru 30°)

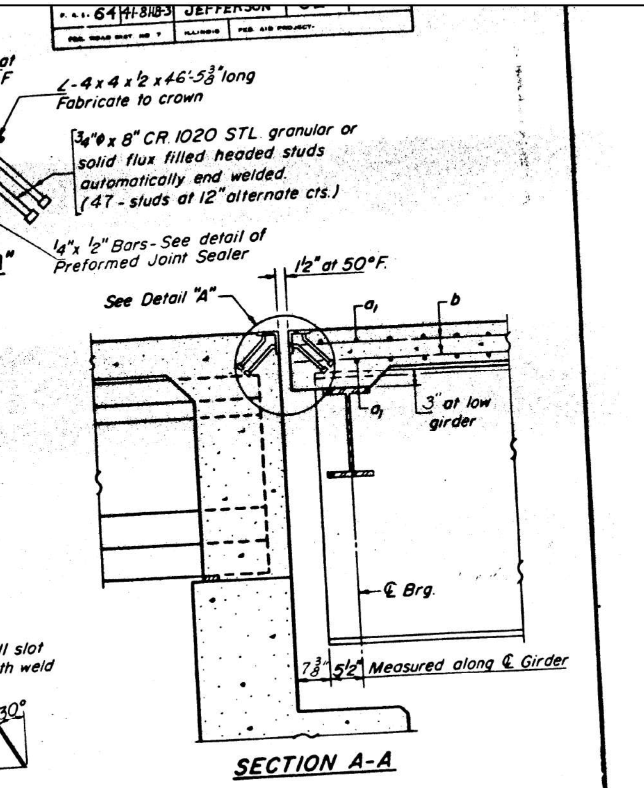






SUPER STRUCTURE
APPROACH SPANS
F.A.I. RT. 64 SEC. 41-8HB-3
JEFFERSON COUNTY
STATION 2857+33.25





BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	145	#6	45'-9"	
a1	350	#6	44'-1"	
a2	318	#6	4'-0"	
b	343	#5	29'-6"	
b1	46	#6	43'-0"	
b2	24	#8	29'-0"	
b3	24	#5	28'-9"	
b4	8	#8	[illegible]-9"	
b5	8	#5	15'-7"	
b10	336	#5	34'-3"	
d	400	#4	4'-6"	
d1	400	#5	3'-3"	
Reinforcement Bars			Lbs.	66000
Class X Concrete			Cu. Yds.	259.4
* Structural Steel			Lbs.	274,580

* Weight of bearing assemblies with lead plates and anchor bolts are included as Structural Steel. Est. Wt. = 7,100

Parapet Reinforcement and Class X Concrete are billed on sheet # 9

SUPERSTRUCTURE
GIRDER SPAN
F.A.I. RT. 64 - SEC. 41-SH33
JEFFERSON CO.
STA. 2857+33.25

MODEL: 78A08-028
FILE NAME: Z:\0 V and K Jobs\5951-011 PTB 203-048 SN 041-0062 & 033-0038 Structure Repairs\CADD\041-0062 Structure Plans.dgn

VEENSTRA & KIMM INC. Springfield, IL. Phone: (217)544-8033 IL. Design Firm No. 184-001939	USER NAME =	DESIGNED - VVR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLAN SHEET - FOR INFORMATION ONLY SN 041-0062
		CHECKED - MAH	REVISED -		
	PLOT SCALE =	DRAWN - VVR	REVISED -		
	PLOT DATE = JANUARY 24th, 2024	CHECKED - MAH	REVISED -		SHEET NO. 19 OF 25 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	28
		CONTRACT NO. 78A08		
		ILLINOIS FED. AID PROJECT		

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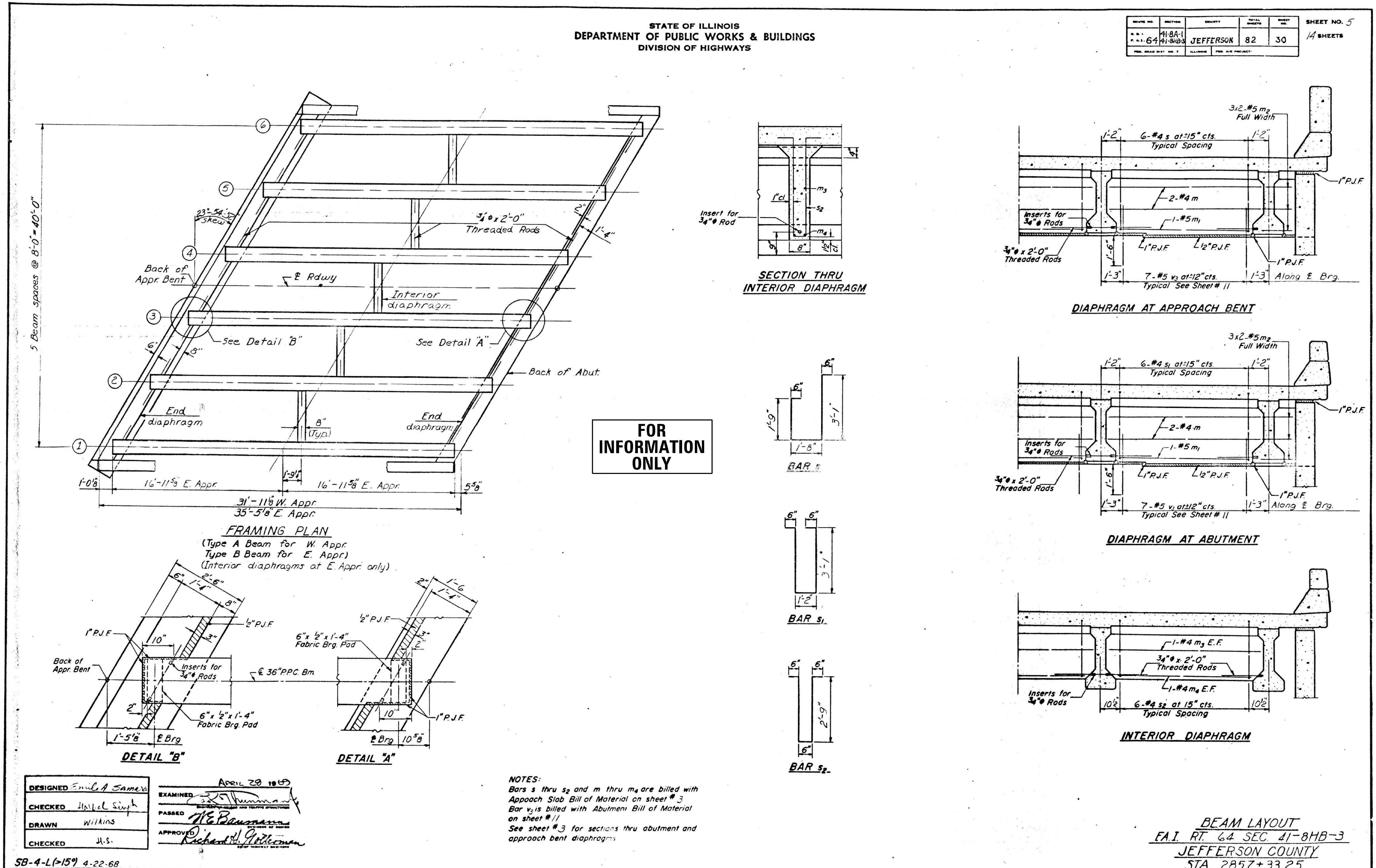

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS
F.A.I. 64 41-8A-1 41-8HB3 JEFFERSON 82 30
SHEET NO. 5
14 SHEETS
5 Beam spaces @ 8'-0" = 40'-0"
23°-54'-52" Skew
Back of Appr. Bent
℄ Rdwy
3/4"ø x 2'-0" Threaded Rods
Interior diaphragm
See Detail "B"
See Detail "A"
Back of Abut.
End diaphragm
8" (Typ.)
16'-11 5/8" E. Appr.
31'-11 1/8" W. Appr
35'-5 1/8" E. Appr.
FRAMING PLAN
(Type A Beam for W. Appr.
Type B Beam for E. Appr.)
(Interior diaphragms at E. Appr. only)
1" P.J.F.
1/2" P.J.F.
Inserts for 3/4"ø Rods
℄ 36" P.P.C. Bm.
6" x 1/2" x 1'-4" Fabric Brg. Pad
℄ Brg
DETAIL "B"
DETAIL "A"
SECTION THRU INTERIOR DIAPHRAGM
Insert for 3/4"ø Rod
BAR m
BAR s1
BAR s2
FOR INFORMATION ONLY
3x2-#5 m2 Full Width
6-#4 s at 15" cts. Typical Spacing
2-#4 m
1-#5 m1
7-#5 v3 at 12" cts. Typical See Sheet # 11
Along ℄ Brg.
DIAPHRAGM AT APPROACH BENT
6-#4 s1 at 15" cts. Typical Spacing
DIAPHRAGM AT ABUTMENT
1-#4 m3 E.F.
3/4"ø x 2'-0" Threaded Rods
1-#4 m4 E.F.
6-#4 s2 at 15" cts. Typical Spacing
INTERIOR DIAPHRAGM
DESIGNED Emil A Samara
CHECKED
DRAWN Wilkins
CHECKED
EXAMINED
PASSED
APPROVED
April 28 1969
NOTES:
Bars s thru s2 and m thru m4 are billed with Appoach Slab Bill of Material on sheet # 3
Bar v3 is billed with Abutment Bill of Material on sheet # 11
See sheet # 3 for sections thru abutment and approach bent diaphragms
SB-4-L(>15°) 4-22-68
BEAM LAYOUT
F.A.I. RT. 64 SEC. 41-8HB-3
JEFFERSON COUNTY
STA. 2857+33.25

MODEL: 78A08-029
FILE NAME: Z:\0 V and K Jobs\5951-011 PTB 203-048 SN 041-0062 & 033-0038 Structure Repairs\CADD\044-0062 Structure Plans.dgn

VEENSTRA & KIMM INC. Springfield, IL. Phone: (217)544-8033 IL. Design Firm No. 184-001939	USER NAME =	DESIGNED - VVR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLAN SHEET - FOR INFORMATION ONLY SN 041-0062
		CHECKED - MAH	REVISED -		
	PLOT SCALE =	DRAWN - VVR	REVISED -		
	PLOT DATE = JANUARY 24th, 2024	CHECKED - MAH	REVISED -		SHEET NO. 20 OF 25 SHEETS

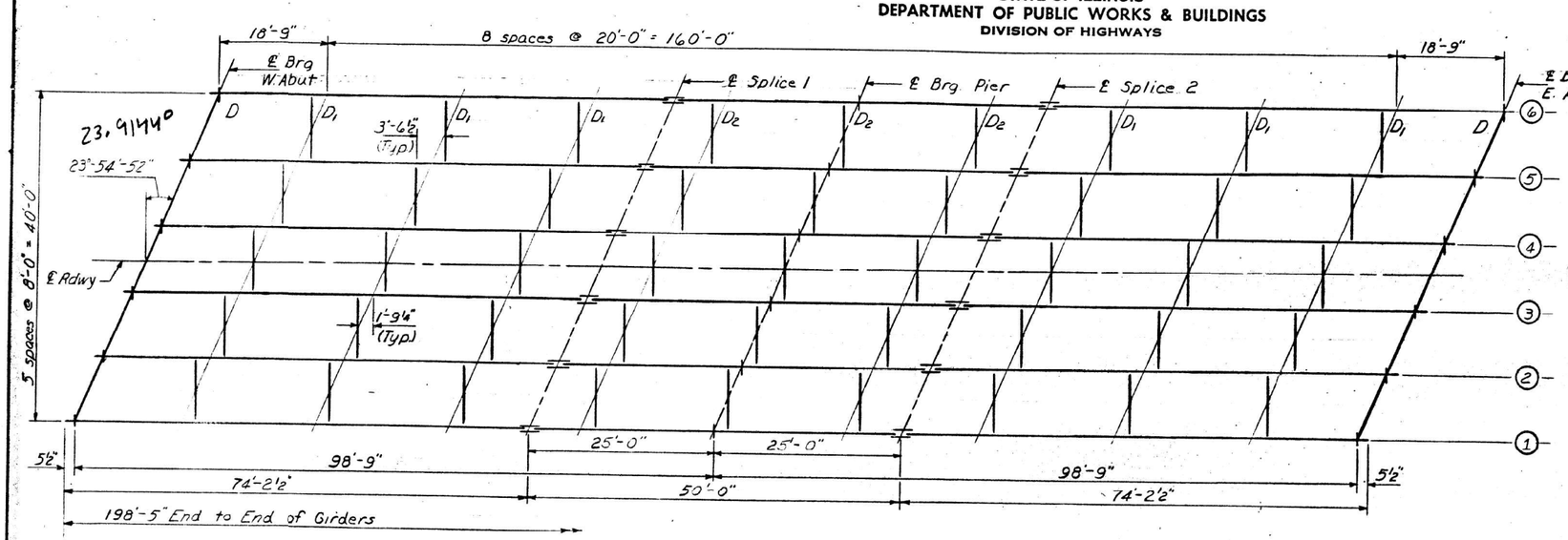
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	29
	CONTRACT NO. 78A08			
	ILLINOIS FED. AID PROJECT			

1/24/2024 9:36:31 AM

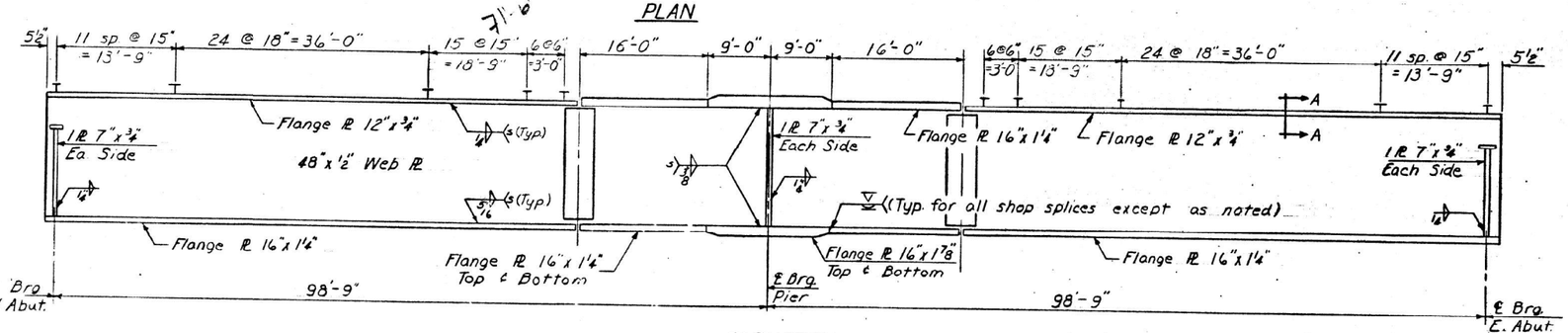
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 64	41-8H-1 41-8HB-3	JEFFERSON	82	32
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 7
14 SHEETS

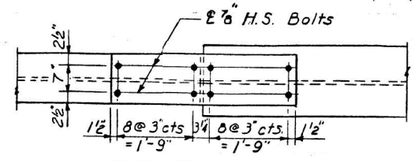
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS



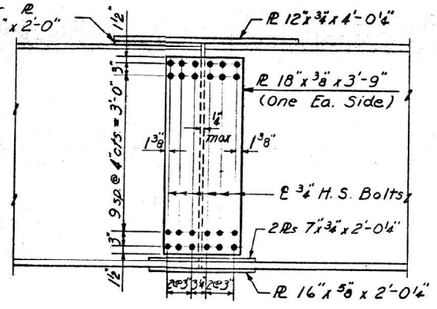
PLAN



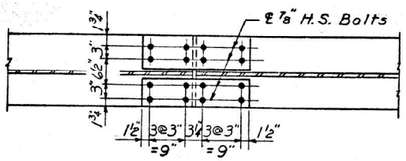
ELEVATION



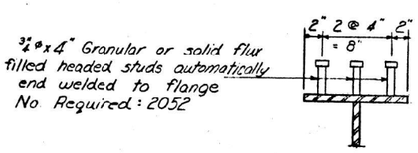
PLAN TOP FLANGE



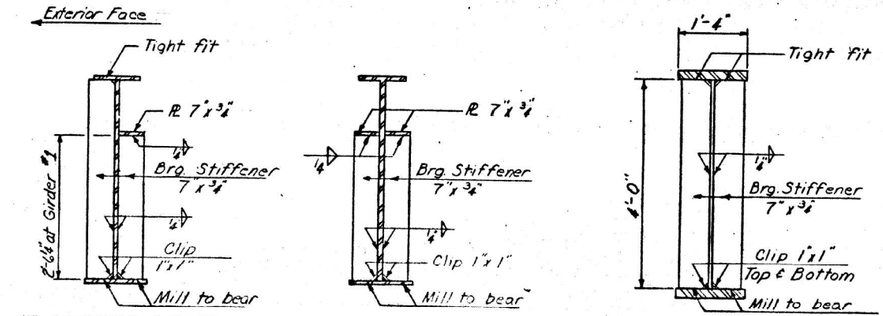
DETAIL OF FIELD SPLICES



PLAN BOTTOM FLANGE



SECTION A-A



DESIGNED	Emile A Tamara
CHECKED	Norbert Singh
DRAWN	C.E. Wilkins
CHECKED	H.S.

APRIL 28 19 69
EXAMINED
ENGINEER OF BRIDGES AND TRAFFIC STRUCTURES
PASSED
ENGINEER OF DESIGN
APPROVED
CHIEF HIGHWAY ENGINEER

FOR INFORMATION ONLY

STRUCTURAL STEEL AND DETAILS
FAI RT. 64 SEC. 41-8HB-3
JEFFERSON COUNTY
STA 2857+33.25

MODEL: 78A08-030
FILE NAME: Z:\0 V and K Jobs\3951-011 PTB 203-048 SN 041-0062 & 033-0038 Structure Repairs\CADD\041-0062 Structure Plans.dgn
1/24/2024 9:36:37 AM

VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

USER NAME =	DESIGNED - VVR	REVISED -	
	CHECKED - MAH	REVISED -	
PLOT SCALE =	DRAWN - VVR	REVISED -	
PLOT DATE = JANUARY 24th, 2024	CHECKED - MAH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

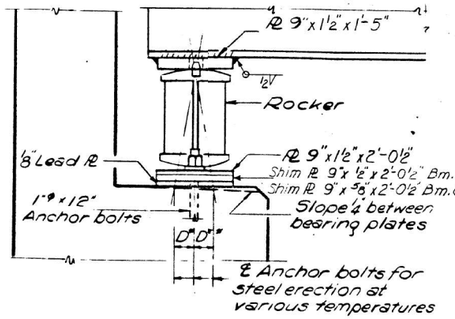
EXISTING PLAN SHEET - FOR INFORMATION ONLY
SN 041-0062
SHEET NO. 21 OF 25 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	30
		CONTRACT NO. 78A08		
	ILLINOIS	FED. AID PROJECT		

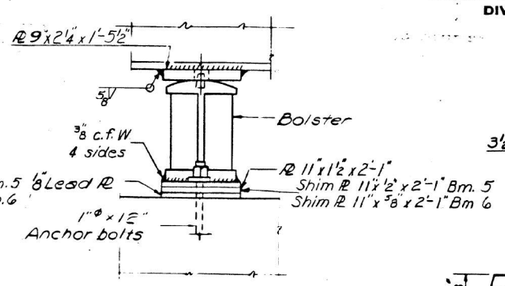
DISTR. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
D.B.I.	41-8A-1	JEFFERSON	82	33
F.A.I. 64	41-8HB-3			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 8
14 SHEETS

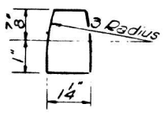
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS



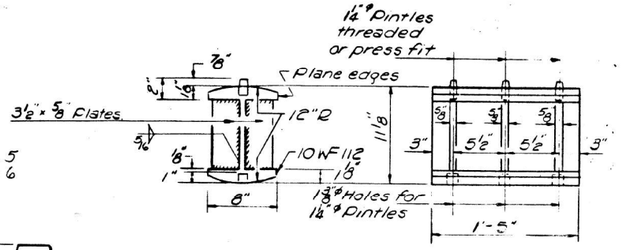
ELEVATION



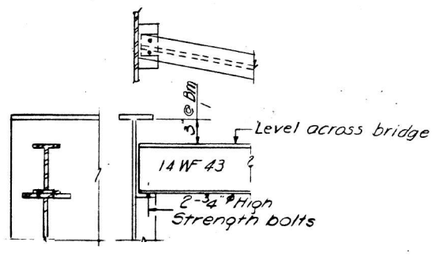
ELEVATION



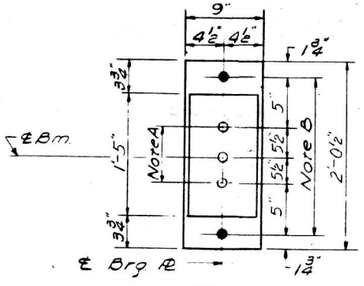
PINTLE



ROCKER

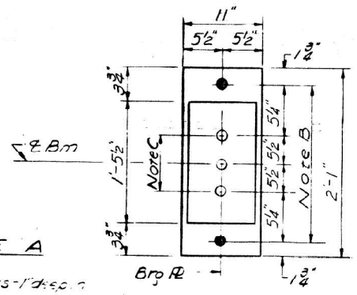


DIAPHRAGM D
10 Required



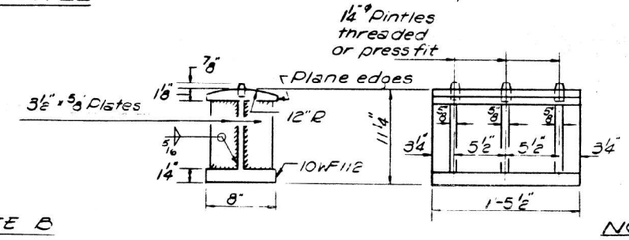
PLAN
AT ABUTMENTS

NOTE A
1⅛"ø Holes 1" deep in top ℄ for pintles. Thread or press fit pintles in bottom ℄



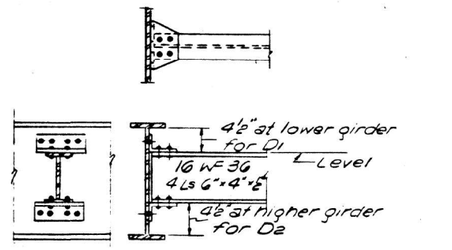
PLAN
AT PIER

NOTE B
1⅛"ø Holes for 1"ø anchor bolts 2½"x2½"x5/16 ℄ washers under nut



BOLSTER

NOTE C
1⅛"ø Holes 1" deep in top ℄ only for 1¼"ø pintles



DIAPHRAGMS D_1 & D_2
D_1 - 30 Required
D_2 - 15 Required

NOTES ON SETTING OF ANCHOR BOLTS AT EXPANSION BEARINGS

a) D* (Side of brg away from fixed brg)
C* = ⅛" per each 100' of expansion for every 15° fall below the normal temperature of 50°F

C** (Side of brg toward fixed brg)
D** = ⅛" per each 100' of expansion for every 15° rise above the normal temperature of 50°F

b) After beams have been erected and dimensions D* or D** determined, holes shall be drilled and anchor bolts shall be grouted in place. All fixed anchor bolts may be built into the masonry.

TABLE OF MOMENTS SHEARS & REACTIONS - INTERIOR BEAMS

MOMENTS (Ft-Kip)				REACTIONS (Kips)	
	0.4 Span 1		PIER	Abut.	PIER
	Steel Section				
D.L.	619	D.L.	1472	36	132
	Composite Sec.				
S.D.L.	233	S.D.L.	354	12	39
L.L.	906	L.L.	733	46.5	75
Imp.	207	Imp.	170	10.7	17.
Total	1346	Total	2729	105.2	263.

SHEAR (Kips)				
	Abut	¼	½	¾
S.D.L.	12.2	4.3	-3.6	-11.5
L.L.	46.0	31.5	-26.0	-39.0
Imp.	10.8	7.2	-5.9	-9.1
Total	69.0	43.0	-35.5	-59.6

PROPERTIES	
STEEL SECTION @ 0.4 l	
Is	19,742 in⁴
Sts	680 in³
Sbs	955 in³
COMPOSITE SECTION	
Ic	51418 in⁴
Stc	4,930 in³
Sbc	1300 in³

TOP OF WEB ELEVATIONS

	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5	Beam 6
℄ Brg W Abut.	486.81	486.98	487.12	487.12	487.02	486.86
℄ Splice 1	487.16	487.34	487.47	487.47	487.37	487.21
℄ Pier	487.30	487.47	487.61	487.61	487.51	487.35
℄ Splice 2	487.44	487.61	487.75	487.75	487.65	487.49
℄ Brg E. Abut	487.82	487.99	488.13	488.13	488.03	487.87

(For fabrication only)

FOR INFORMATION ONLY

DESIGNED	Emil A Fumara	
CHECKED	Harbel Singh	
DRAWN	C.E. Wilkins	
CHECKED	H.S.	

EXAMINED April 28 1982
PASSED M E Baumann
APPROVED Richard H. Gutterman

BEARING DETAILS
FAI RT. 64 SEC. 41-8HB-3
JEFFERSON COUNTY
STA. 2857+33.25

VEENSTRA & KIMM INC. Springfield, IL. Phone: (217)544-8033 IL. Design Firm No. 184-001939	USER NAME =	DESIGNED - VVR	REVISED -
		CHECKED - MAH	REVISED -
	PLOT SCALE =	DRAWN - VVR	REVISED -
	PLOT DATE = JANUARY 24th, 2024	CHECKED - MAH	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLAN SHEET - FOR INFORMATION ONLY
SN 041-0062
SHEET NO. 22 OF 25 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	31
		CONTRACT NO. 78A08		
	ILLINOIS	FED. AID PROJECT		

MODEL: 78A08-031
FILE NAME: Z:\0 V and K Jobs\5951-011 PTB 203-048 SN 041-0062 & 033-0038 Structure Repairs\CADD\044-0062 Structure Plans.dgn
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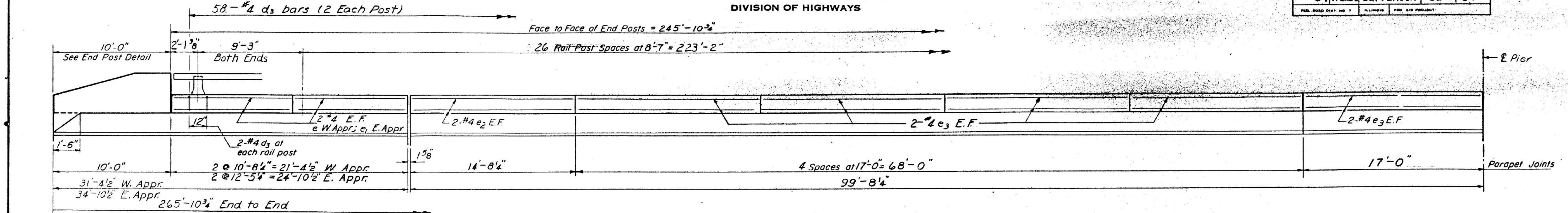
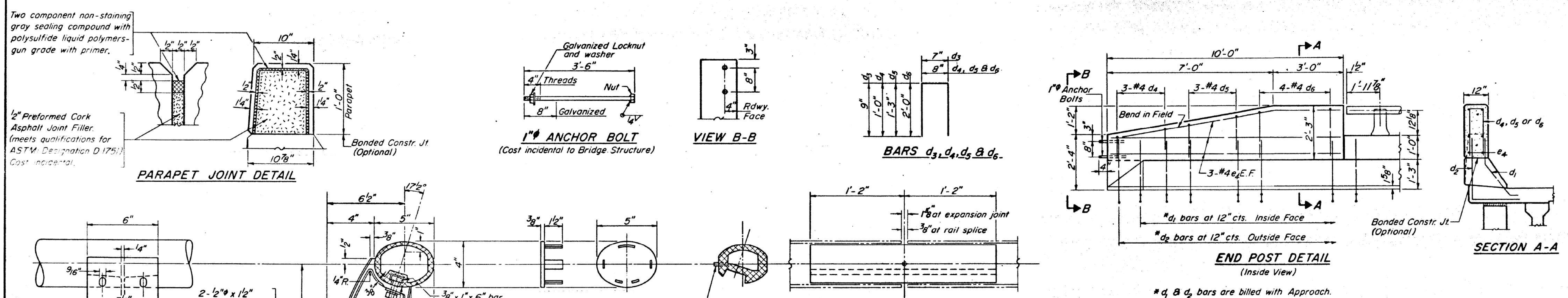
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

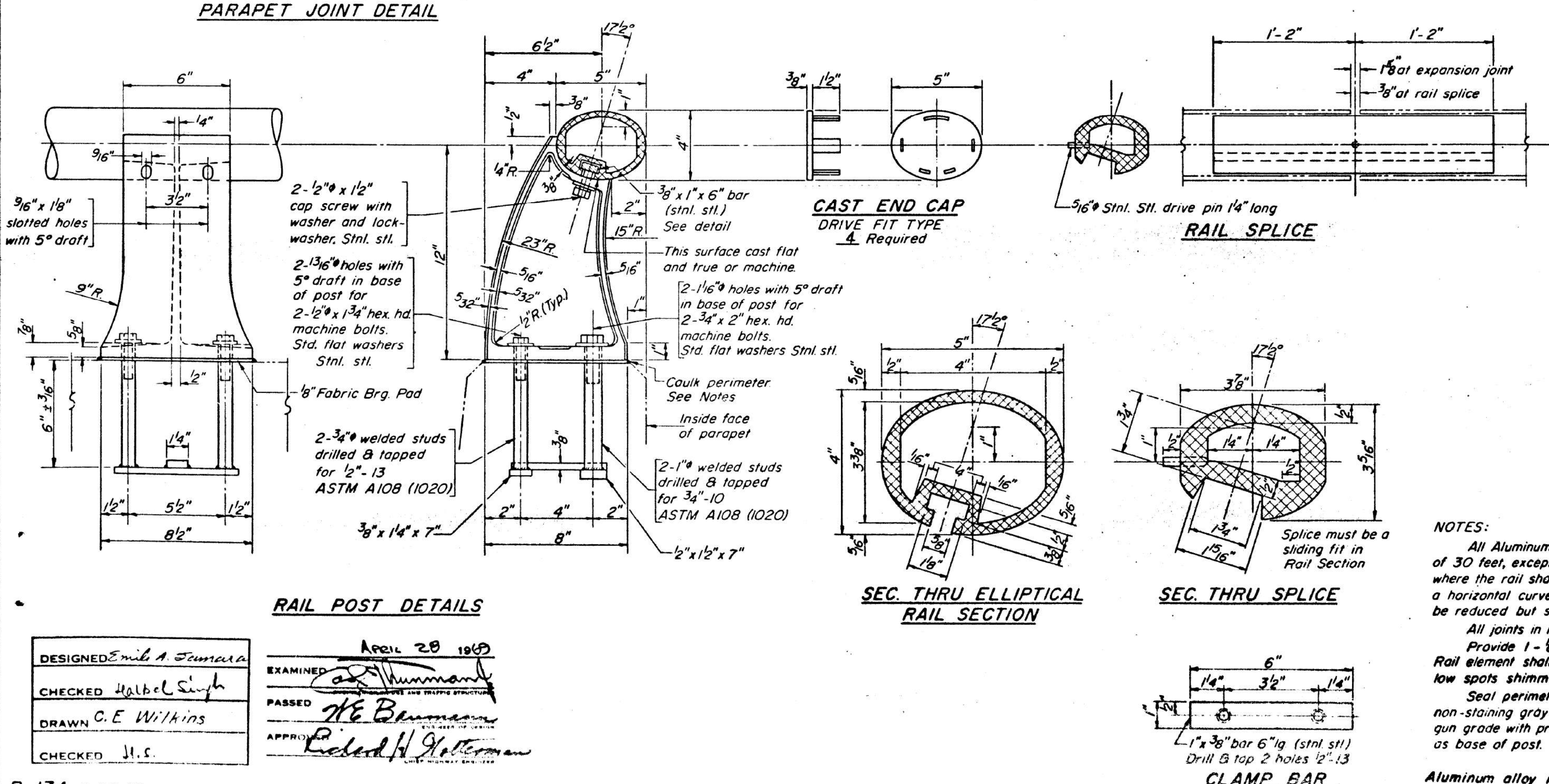
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 64	41-8A-1 41-8HB-3	JEFFERSON	82	34

SHEET NO. 9
14 SHEETS



HALF ELEVATION
(North Rail shown; South Rail similar)





FOR INFORMATION ONLY

NOTES:

All Aluminum Alloy Extruded Rail shall be supplied in modular lengths of 30 feet, except at the end of bridge or over open joints in bridge deck where the rail shall be attached to a minimum of 2 posts. If the rail is on a horizontal curve of 2300 foot radius or less, the modular lengths may be reduced but shall be attached to a minimum of 2 posts.

All joints in rail shall be spliced per detail.

Provide 1 - ⅛" and 2 - 1/16" Aluminum Shims for 25% of the Posts. Rail element shall be parallel to Grade - high spots shall be ground and low spots shimmed.

Seal perimeter of base of post to parapet with two component non-staining gray sealing compound with polysulfide liquid polymers, gun grade with primer. Fabric Bearing Pad shall have same dimensions as base of post.

Aluminum alloy rail shall conform to ASTM B221 alloy 6061-T6 or 6351-T5 with min. yield 35 ksi, min. tensile 38 ksi, and elongation of 10% in 2 inches.

PARAPETS & RAILS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d_3	116	#4	2'-1"	⊓
d_4	12	#4	2'-8"	⊓
d_5	12	#4	3'-2"	⊓
d_6	16	#4	4'-8"	⊓
e	16	#4	10'-5"	——
e_1	16	#4	12'-2"	——
e_2	16	#4	14'-5"	——
e_3	80	#4	16'-9"	——
e_4	24	#4	9'-9"	——
Reinforcement Bars			Lbs.	17,00
Class X Concrete			Cu. Yds.	18.6
Aluminum Railing			Lin. Ft.	492

ALUMINUM RAILING
F.A.I. RT. 64 SEC. 41-8HB-3
JEFFERSON COUNTY
STA. 2857+33.25

DESIGNED Emil A. Samara	EXAMINED [signature]		APRIL 28 1969
CHECKED Halbel Singh	PASSED W.E. Baumann		
DRAWN C.E. Wilkins	APPROVED Richard H. Golterman		
CHECKED J.L.S.			

R-17A 4-22-68

VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

USER NAME =	DESIGNED - VVR	REVISED -
	CHECKED - MAH	REVISED -
PLOT SCALE =	DRAWN - VVR	REVISED -
PLOT DATE = JANUARY 24th, 2024	CHECKED - MAH	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLAN SHEET - FOR INFORMATION ONLY
SN 041-0062
SHEET NO. 23 OF 25 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	32
		CONTRACT NO. 78A08		
		ILLINOIS FED. AID PROJECT		

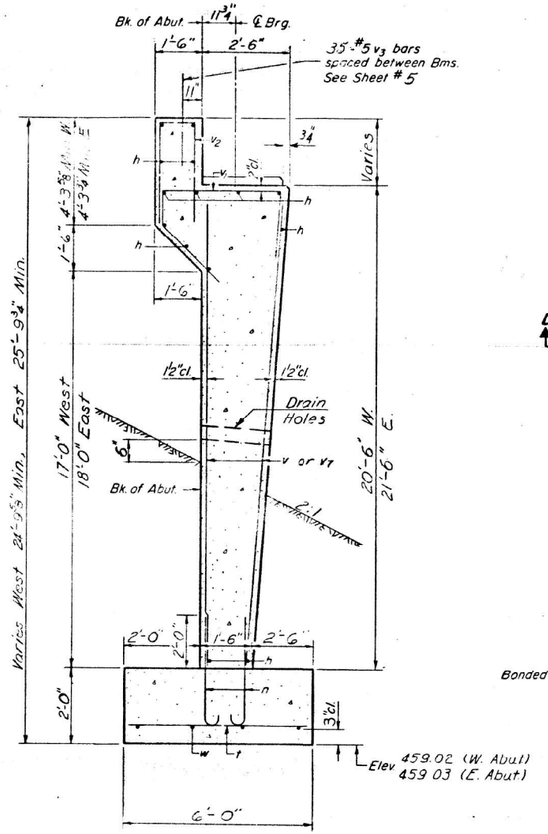
MODEL: 78A08-032
FILE NAME: Z:\0 V and K Jobs\9951-011 PTB 203-048 SN 041-0062 & 033-0038 Structure Repairs\CADD\044-0062 Structure Plans.dgn

1/24/2024 9:36:48 AM

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 64	41-8A-1 41-8HB3	JEFFERSON	82	36
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

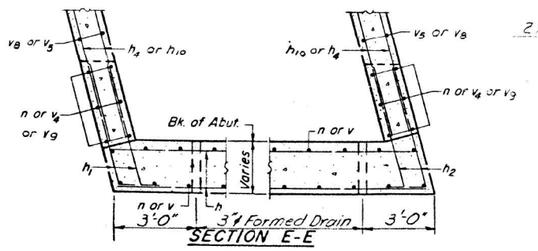
SHEET NO. 11
14 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

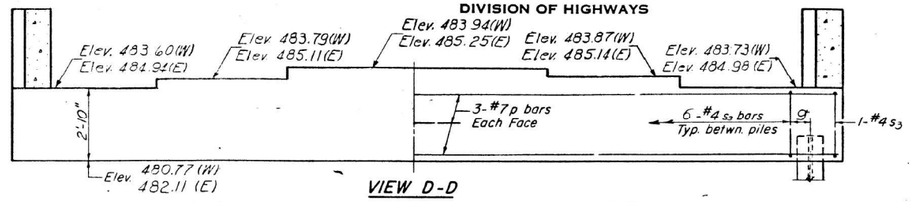


SECTION A-A

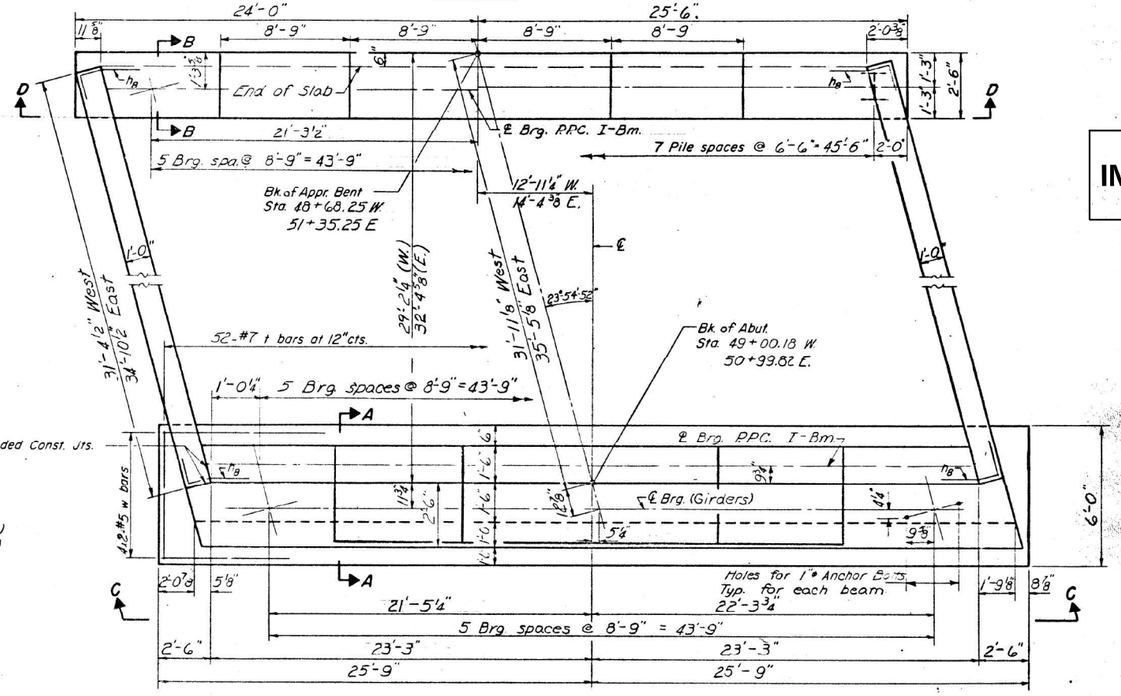
Max. Soil pressure = 70 K.s.f.



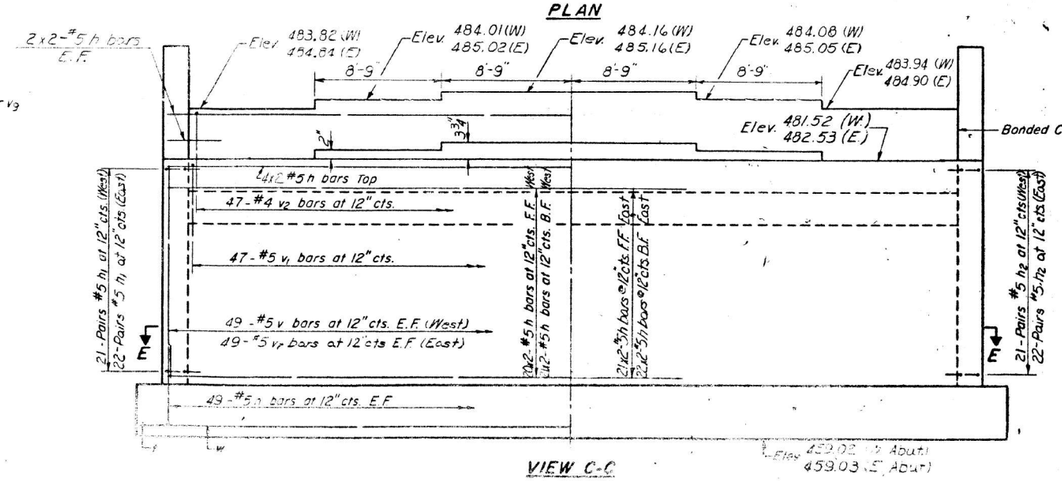
SECTION E-E



VIEW D-D

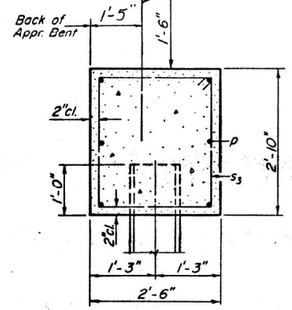


PLAN

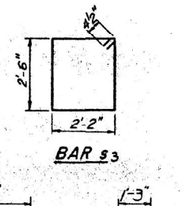


VIEW C-C

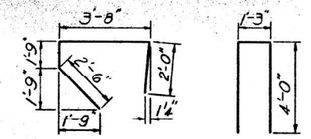
FOR INFORMATION ONLY



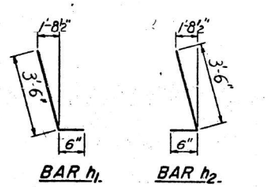
SECTION B-B



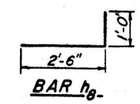
BAR s3



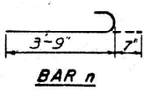
BAR v1 BAR v2



BAR h1 BAR h2



BAR h8



BAR n

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	200	#5	24'-9"	—
h1	86	#5	4'-0"	L
h2	86	#5	4'-0"	L
h3	8	#6	17'-0"	—
h4	20	#4	25'-0"	—
h5	48	#4	16'-3"	—
h6	48	#4	18'-0"	—
h7	40	#4	3'-3"	—
h8	24	#4	3'-6"	L
h9	8	#6	19'-0"	—
h10	22	#4	28'-6"	—
n	220	#5	4'-4"	⊃
p	12	#7	49'-3"	—
s3	88	#4	10'-1"	□
t	104	#6	5'-9"	—
v	98	#5	20'-3"	—
v1	94	#5	9'-11"	⊓
v2	94	#4	9'-3"	⊓
v3	140	#5	3'-0"	—
v4	12	#4	25'-3"	—
v5	42	#4	21'-0"	—
v6	64	#4	5'-6"	—
v7	98	#5	21'-3"	—
v8	48	#4	22'-6"	—
v9	12	#4	26'-3"	—
w	16	#5	26'-5"	—

Reinforcement Bars	Lbs.	20,640
Class X Concrete	Cu. Yds.	2825
Steel Piles (8BP36)	Lin. Ft.	422
Test Piles Steel (8BP36)	Each	1

DESIGNED	Emil A. Fumia
CHECKED	Harbel Singh
DRAWN	C.E. Wilkins
CHECKED	H.S.

EXAMINED April 28 1969
PASSED W.E. Baumann
APPROVED Richard H. Gottbrecht

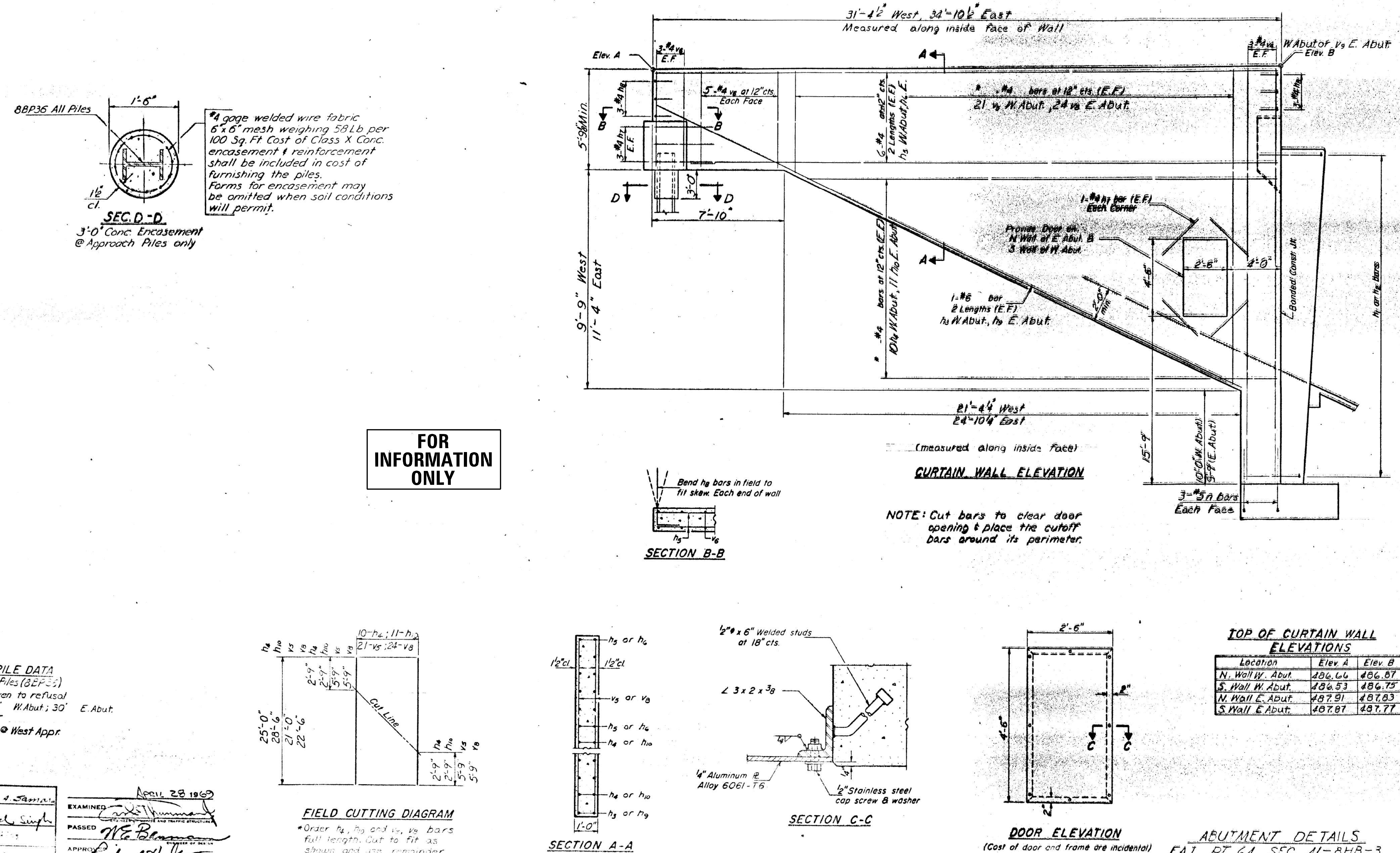
VA-L 6-21-68

DETAIL OF ABUTMENTS
F.A.I. RT. 64 SEC. 41-8HB-3
JEFFERSON COUNTY
STA. 2857+33.25

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 64	41-8A-1 41-8HB3	JEFFERSON	82	37

SHEET NO. 12
14 SHEETS



TOP OF CURTAIN WALL ELEVATIONS

Location	Elev. A	Elev. B
N. Wall W. Abut.	486.66	486.87
S. Wall W. Abut.	486.53	486.75
N. Wall E. Abut.	487.91	487.83
S. Wall E. Abut.	487.87	487.77

FOR INFORMATION ONLY

DESIGNED Emil A. Sams
CHECKED Harbel Singh
DRAWN C.E.
CHECKED H.S.

April 28 1969
EXAMINED
PASSED
APPROVED Richard H. Golterman, Chief Highway Engineer

VA-W 6-21-68

ABUTMENT DETAILS
F.A.I. RT. 64 SEC. 41-8HB-3
JEFFERSON COUNTY
STA. 2857+33.25

MODEL: 78A08-034
FILE NAME: Z:\0 V and K Jobs\9951-011 PTB 203-048 SN 041-0062 & 033-0038 Structure Repairs\CADD\044-0062 Structure Plans.dgn

VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

USER NAME =	DESIGNED - VVR	REVISED -
	CHECKED - MAH	REVISED -
PLOT SCALE =	DRAWN - VVR	REVISED -
PLOT DATE = JANUARY 24th, 2024	CHECKED - MAH	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

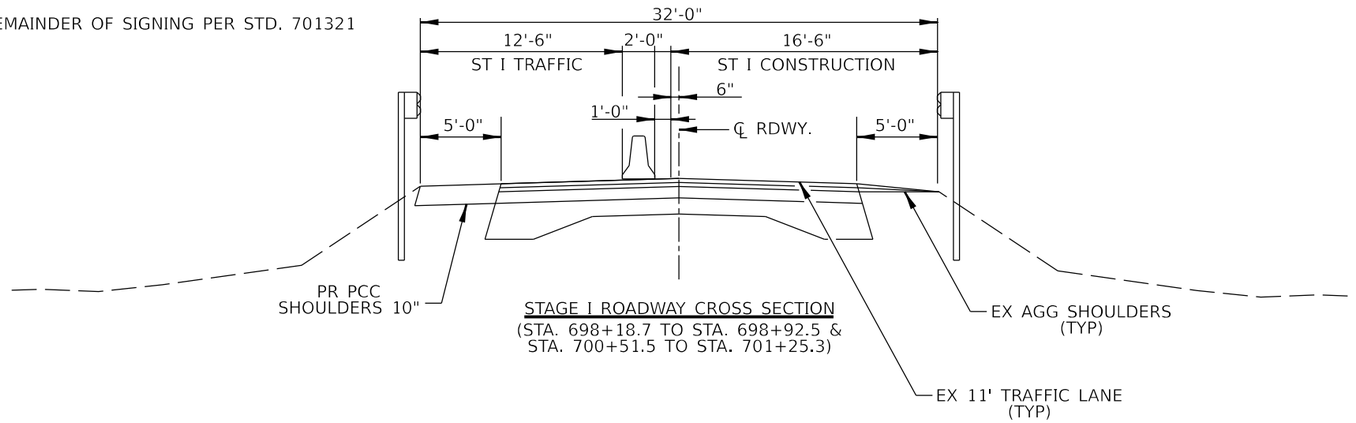
EXISTING PLAN SHEET - FOR INFORMATION ONLY
SN 041-0062
SHEET NO. 25 OF 25 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2023-9	JEFFERSON	58	34

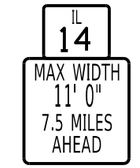
CONTRACT NO. 78A08
ILLINOIS FED. AID PROJECT

1/24/2024 9:36:59 AM

* REMAINDER OF SIGNING PER STD. 701321



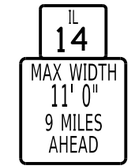
STAGE I ROADWAY CROSS SECTION
(STA. 698+18.7 TO STA. 698+92.5 & STA. 700+51.5 TO STA. 701+25.3)



WIDTH RESTRICTION SIGN

W12-I103 48" X 48" WITH 11' 0"
LETTERS BLACK ON ORANGE
MAX WIDTH & 2.5 MILES AHEAD
BLACK ON WHITE WITH M3-1 30X15
AND M1-I100 30X24

LOCATED WEST OF THE INTERSECTION OF IL 14 AND IL 37 IN BENTON



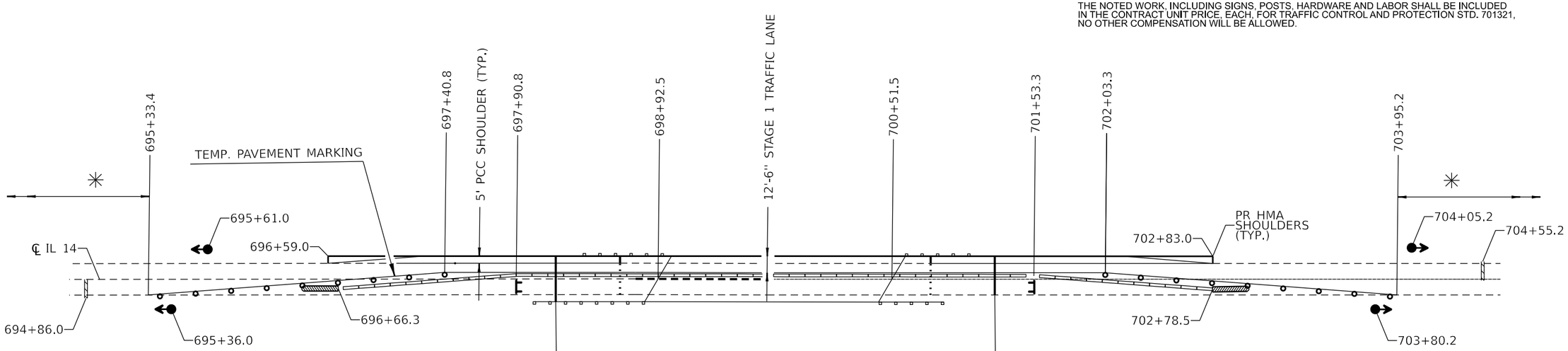
WIDTH RESTRICTION SIGN

W12-I103 48" X 48" WITH 11' 0"
LETTERS BLACK ON ORANGE
MAX WIDTH & 2 MILES AHEAD
BLACK ON WHITE WITH M3-1 30X15
AND M1-I100 30X24

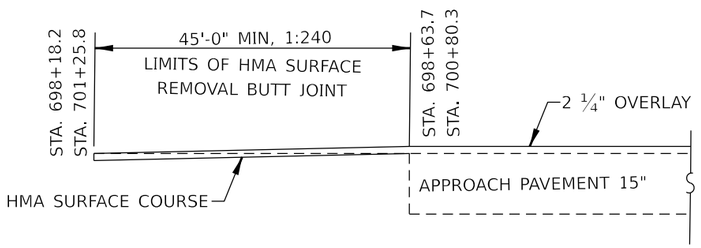
LOCATED EAST OF THE INTERSECTION OF IL 14 AND IL 142 IN MCLEANSBORO

NOTES:
THE CONTRACTOR SHALL FURNISH THE POSTS AND ERECT THE SIGNS AT THE LOCATIONS DIRECTED BY THE ENGINEER. ALL SIGNS SHALL BE POST MOUNTED.

THE NOTED WORK, INCLUDING SIGNS, POSTS, HARDWARE AND LABOR SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE, EACH, FOR TRAFFIC CONTROL AND PROTECTION STD. 701321, NO OTHER COMPENSATION WILL BE ALLOWED.



STAGE I PLAN



BUTT JOINT DETAIL
TYPICAL EACH END

LEGEND

- TYPE III BARRICADE
- DRUM WITH STEADY BURNING BI-DIRECTIONAL LIGHT
- IMPACT ATTENUATOR, TEST LEVEL 3
- TEMPORARY CONCRETE BARRIER

PLAN
0 20 40
SCALE: 1" = 20'

VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

USER NAME = ____	DESIGNED - ____	REVISED - ____
	CHECKED - ____	REVISED - ____
PLOT SCALE = ____	DRAWN - ____	REVISED - ____
PLOT DATE = ____	CHECKED - ____	REVISED - ____

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

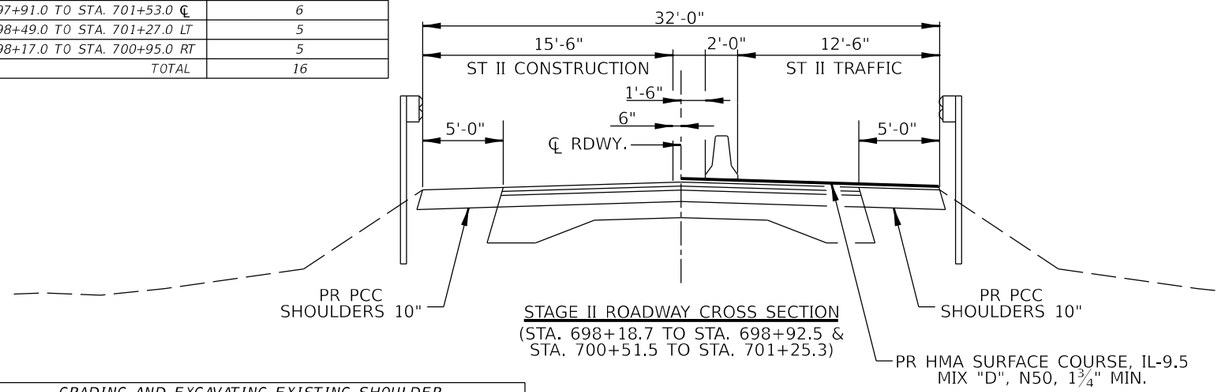
STAGE I CONSTRUCTION PLAN

SCALE: 1"=20' | SHEET NO. 1 OF 2 SHEETS | STA. _____ TO STA. _____

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE REPAIR 2023-9	HAMILTON	58	35
		CONTRACT NO. 78A08		
	ILLINOIS	FED. AID PROJECT		

GUARDRAIL REFLECTORS	
LOCATION	GUARDRAIL REFLECTORS, TYPE A
	EACH
STA. 697+91.0 TO STA. 701+53.0 ℄	6
STA. 698+49.0 TO STA. 701+27.0 LT	5
STA. 698+17.0 TO STA. 700+95.0 RT	5
TOTAL	16

* REMAINDER OF SIGNING PER STD. 701321

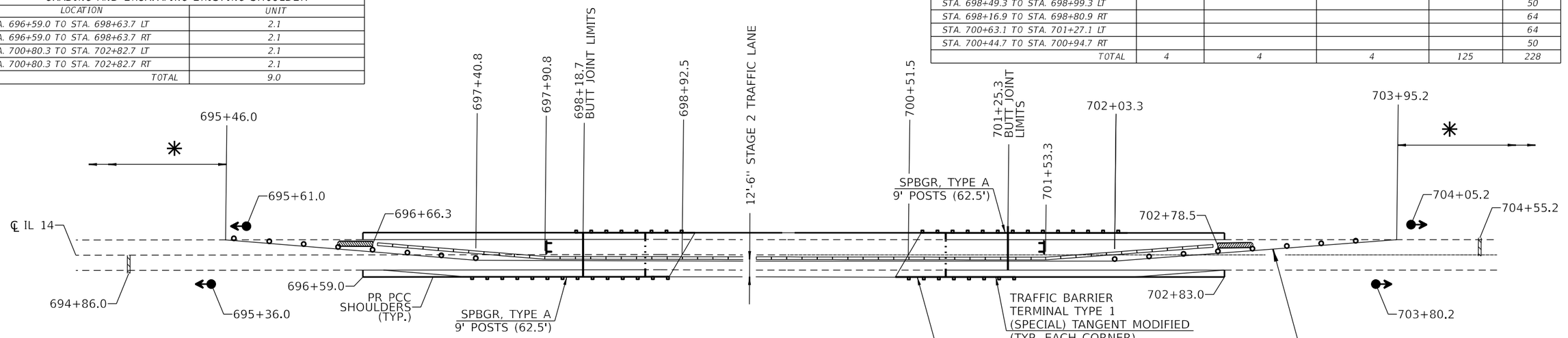


STAGE II ROADWAY CROSS SECTION
(STA. 698+18.7 TO STA. 698+92.5 & STA. 700+51.5 TO STA. 701+25.3)

PAINT PAVEMENT MARKING - LINE 4"				
LOCATION	EDGE (WHITE)	CENTERLINE SKIP-DASH (Y)	EDGE (WHITE)	PAVEMENT MARKING BLACKOUT TAPE, 5"	SHORT TERM PAVEMENT MARKING REMOVAL
	FOOT	FOOT	FOOT	FOOT	SQ. FT.
STA. 698+18.7 TO 701+25.3	307	124	307		
STA. 696+58.9 TO STA. 702+82.8 LT (EDGE)				624	260
STA. 695+33.0 TO STA. 697+40.8 (℄)				84	35
STA. 702+03.3 TO STA. 703+95.2 (℄)				80	34
TOTAL		738		788	329

GUARDRAIL					
LOCATION	TBT TYPE 6 (SPECIAL)	TBT TY 1 (SPECIAL) TANGENT, MODIFIED	TERMINAL MARKER DIRECT APPLIED	SPBGR TY A 9' POSTS	GUARDRAIL REMOVAL
	EACH	EACH	EACH	FOOT	FOOT
STA. 698+62.4 TO STA. 698+99.3 LT	1				
STA. 700+63.1 TO STA. 701+00.0 LT	1				
STA. 698+44.0 TO STA. 698+80.9 RT	1				
STA. 700+44.7 TO STA. 700+81.6 RT	1				
STA. 701+00.0 TO STA. 701+62.5 LT				62.5	
STA. 697+81.5 TO STA. 698+44.0 RT				62.5	
STA. 698+12.4 TO STA. 698+62.4 LT		1	1		
STA. 701+62.5 TO STA. 702+12.5 LT		1	1		
STA. 697+31.5 TO STA. 697+81.5 RT		1	1		
STA. 700+81.6 TO STA. 701+31.6 RT		1	1		
STA. 698+49.3 TO STA. 698+99.3 LT					50
STA. 698+16.9 TO STA. 698+80.9 RT					64
STA. 700+63.1 TO STA. 701+27.1 LT					64
STA. 700+44.7 TO STA. 700+94.7 RT					50
TOTAL	4	4	4	125	228

GRADING AND EXCAVATING EXISTING SHOULDER	
LOCATION	UNIT
STA. 696+59.0 TO STA. 698+63.7 LT	2.1
STA. 696+59.0 TO STA. 698+63.7 RT	2.1
STA. 700+80.3 TO STA. 702+82.7 LT	2.1
STA. 700+80.3 TO STA. 702+82.7 RT	2.1
TOTAL	9.0



STAGE II PLAN

TEMPORARY CONCRETE BARRIER AND IMPACT ATTENUATORS				
LOCATION	IMPACT ATTENUATORS, TEMPORARY (FULLY-REDERECTIVE, NARROW), TEST LEVEL 3	TEMPORARY CONCRETE BARRIER	RELOCATE TEMP CONCRETE BARRIER	IMPACT ATTENUATORS, RELOCATE (FULLY-REDERECTIVE, NARROW), TEST LEVEL 3
	EACH	FOOT	FOOT	EACH
STA. 696+33.7 TO STA. 696+66.3 RT.	1			
STA. 696+66.3 TO STA. 702+78.5 LT.		612.5		
STA. 702+78.5 TO STA. 703+11.1 RT.	1			
STA. 696+66.3 TO STA. 702+78.5 RT.			612.5	
STA. 696+33.7 TO STA. 696+66.3 LT.				1
STA. 702+78.5 TO STA. 703+11.1 LT.				1
TOTAL	2	612.5	612.5	2

AGGREGATE SHOULDERS	
LOCATION	AGGREGATE SHOULDERS, TYPE B
	TON
STA. 698+18.7 TO STA. 698+63.7 LT	2
STA. 698+18.7 TO STA. 698+63.7 RT	2
STA. 700+80.3 TO STA. 701+25.3 LT	2
STA. 700+80.3 TO STA. 701+25.3 RT	2
TOTAL	8

PCC SHOULDERS	
LOCATION	PCC SHOULDERS 10"
	SQ. YD.
STA. 696+59.0 TO STA. 698+63.7 LT	114
STA. 696+59.0 TO STA. 698+63.7 RT	114
STA. 700+80.3 TO STA. 702+82.7 LT	113
STA. 700+80.3 TO STA. 702+82.7 RT	113
TOTAL	454

HOT-MIX ASPHALT				
LOCATION	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "D", N70	BITUMINOUS MATERIALS TACK COAT	POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, STONE MATRIX ASPHALT, 9.5, MIX "D", N50
	SQ. YD.	TON	POUND	TON
STA. 698+18.7 TO STA. 698+63.7	160	21		
STA. 700+80.3 TO STA. 701+25.3	160	21		
STA. 698+18.7 TO STA. 701+25.3			492	
STA. 698+63.7 TO STA. 700+80.3				98
TOTAL	320	42	492	98

LEGEND

- TYPE III BARRICADE
- DRUM WITH STEADY BURNING BI-DIRECTIONAL LIGHT
- IMPACT ATTENUATOR, TEST LEVEL 3
- TEMPORARY CONCRETE BARRIER

PLAN
0 20 40
SCALE: 1" = 20'

VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

USER NAME = ___	DESIGNED - ___	REVISED - ___
	CHECKED - ___	REVISED - ___
PLOT SCALE = ___	DRAWN - ___	REVISED - ___
PLOT DATE = ___	CHECKED - ___	REVISED - ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

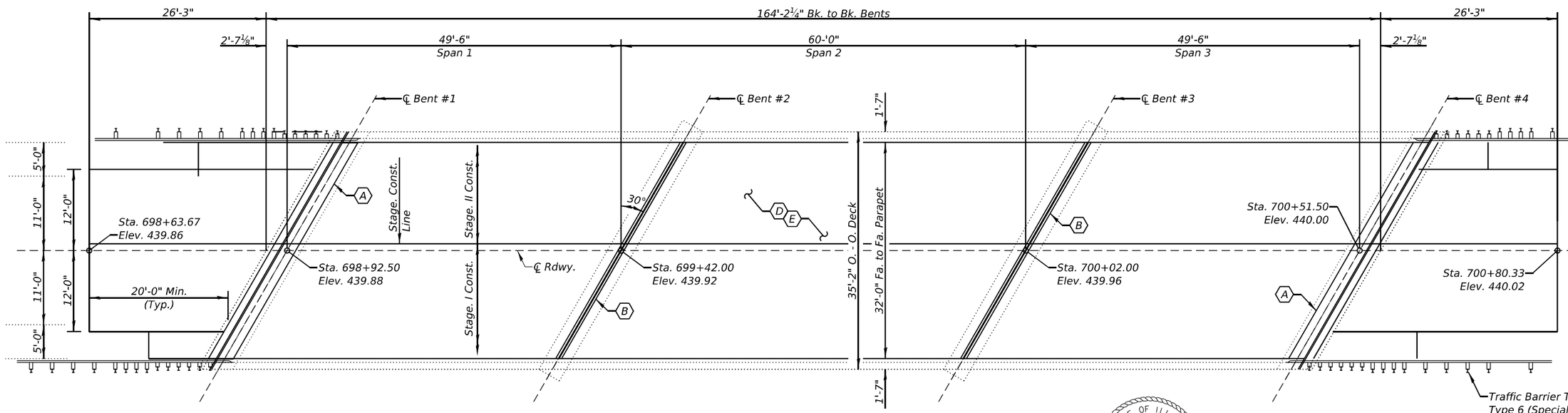
STAGE II CONSTRUCTION PLAN

SCALE: 1"=20' | SHEET NO. 2 OF 2 SHEETS | STA. _____ TO STA. _____

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE REPAIR 2023-9	HAMILTON	58	36
		CONTRACT NO. 78A08		
	ILLINOIS	FED. AID PROJECT		

ELEVATION

INDEX OF SHEETS



PLAN

(A) - Joint replacements at bents 1 and 4

(B) - Joint replacements at bents 2 and 3

(C) - Substructure Repairs

(D) - Deck Repair

(E) - 1½" HMA Surface Course w/ ¾" Binder Course

STATE OF ILLINOIS
DEWEY H. COULTAS
81-4539
SPRINGFIELD
LICENSED STRUCTURAL ENGINEER

Dewey H Coultas

Expires: 11/30/2024
Date: 1/22/2024

GENERAL PLAN & ELEVATION
IL-14 OVER SULLIVAN BRANCH
F.A.P. ROUTE 853
SECTION D9 BRIDGE OVERLAY 2023-9
HAMILTON COUNTY
STATION 699+72.00
STRUCTURE NO. 033-0038

VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

USER NAME =	DESIGNED - DJC	REVISED -
	CHECKED - DHC	REVISED -
PLOT SCALE =	DRAWN - DJC	REVISED -
PLOT DATE = MARCH 7th, 2024	CHECKED - DHC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 033-0038
SHEET 1 OF 22 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE OVERLAY 2023-9	HAMILTON	58	37
		CONTRACT NO. 78A08		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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GENERAL NOTES

Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. The Contactor 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.

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete (SSPC--SP3 standards). Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be paid for according to Article 109.04 of the Standard Specifications.

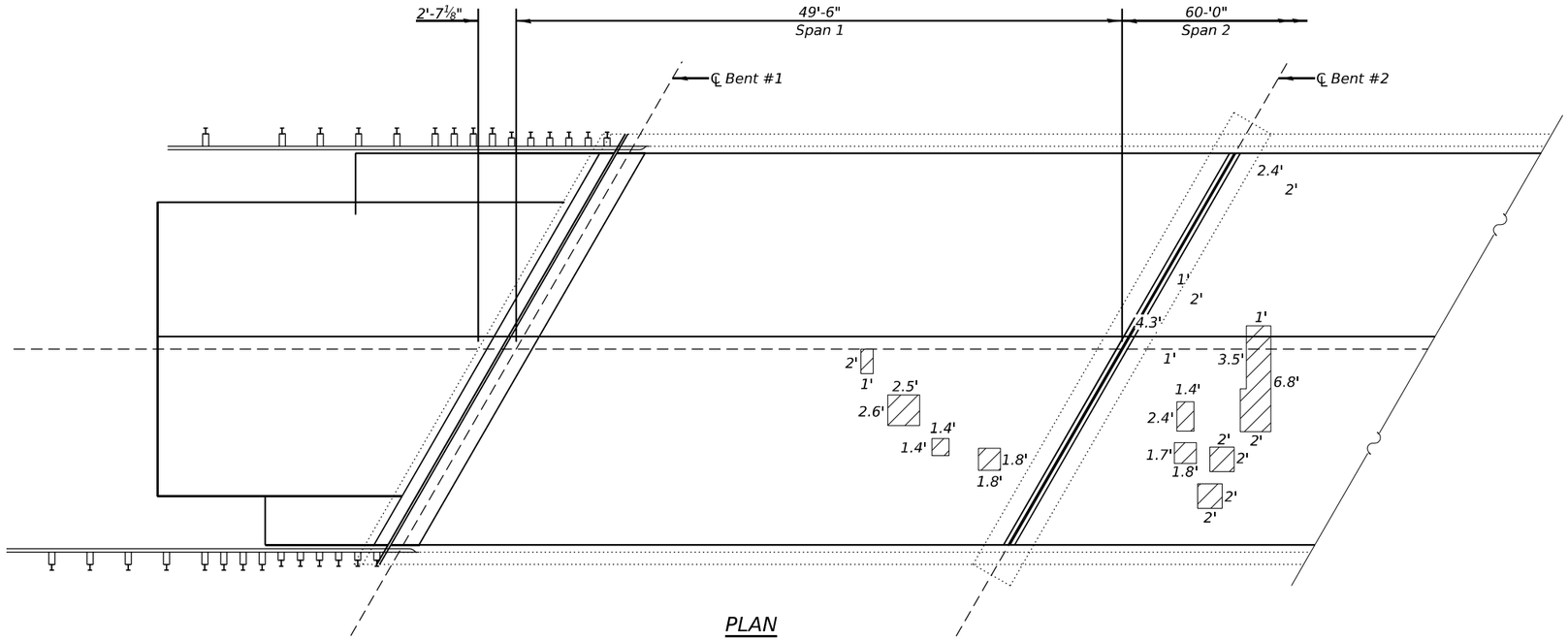
Reinforcement bars designated (E) shall be epoxy coated.

Existing reinforcement shall be cleaned, straightened and incorporated into the new construction. Cost included with Concrete Removal. Any reinforcement bars that are damaged during concrete removal operations shall be replaced with an approved bar splicer or anchorage system at the contractor's expense.

Joint openings shall be adjusted according to article 520.04 of the Standard Specifications when the deck is poured at an ambient temperature other than 50° F.

SN 033-0038 TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	12.4		12.4
Concrete Superstructure	Cu. Yd.	13.4		13.4
Reinforcement Bars, Epoxy Coated	Pound	1300		1300
Preformed Joint Strip Seal	Foot	82		82
Full Lane Sealant Waterproofing System	Sq. Yd.	774		774
Deck Slab Repair (Partial)	Sq. Yd.	15.4		15.4
Structural Repair of Concrete (Depth ≤ 5")	Sq. Ft.		284.5	284.5
Polymer Concrete	Cu. Ft.	17.5		17.5
Silicone Joint Sealer, 1.25"	Foot	74		74
Bar Splicers	Each	28		28
Polymerized Hot-Mix Asphalt Surface Course, Stone Matrix Asphalt, 9.5 Mix "D" N50	Ton	98		98



PLAN

PLAN

Notes:

The quantity of Deck Slab Repair (Partial) is estimated. The Engineer in the field shall be resposible for the actual locations and documentation on the As-Built Plans.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Deck Slab Repair (Partial)	Sq. Yd.	15.4

MODEL: Default
FILE NAME: \\vksprfs1\sprshare\0500\0595-IL_DOT_District_9\0595-0001-0011_SN041-0062_and_SN033-0038_Bridg_Repair\CADD\CAD Sheets\Structural\SN 038-0038\59951-011-ORD-003_Deck Repair.dgn
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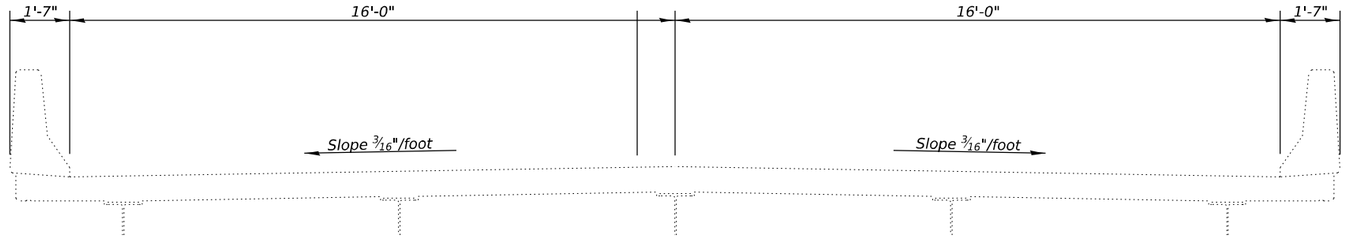
VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

USER NAME =	DESIGNED - DJC	REVISED -	
	CHECKED - DHC	REVISED -	
PLOT SCALE =	DRAWN - DJC	REVISED -	
PLOT DATE = MARCH 7th, 2024	CHECKED - DHC	REVISED -	

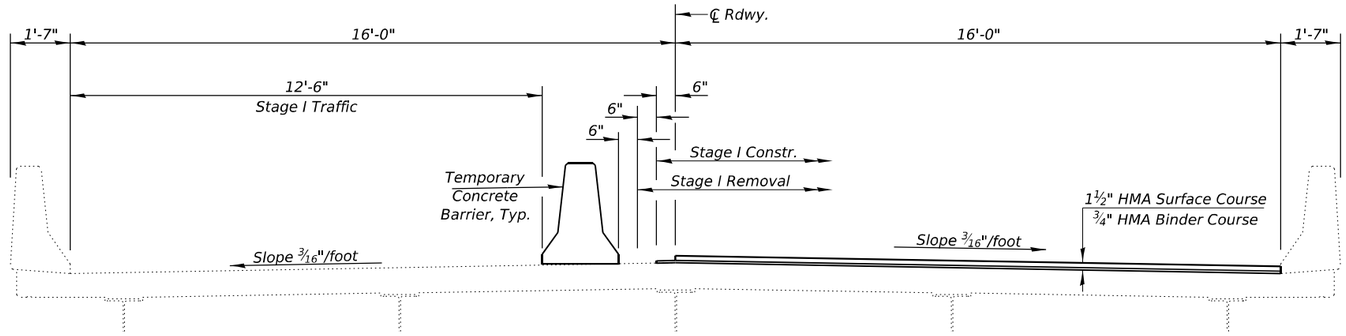
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK REPAIR DETAILS
STRUCTURE NO. 033-0038
SHEET 3 OF 22 SHEETS

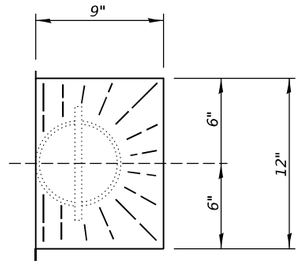
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE OVERLAY 2023-9	HAMILTON	58	39
		CONTRACT NO. 78A08		
	ILLINOIS FED. AID PROJECT			



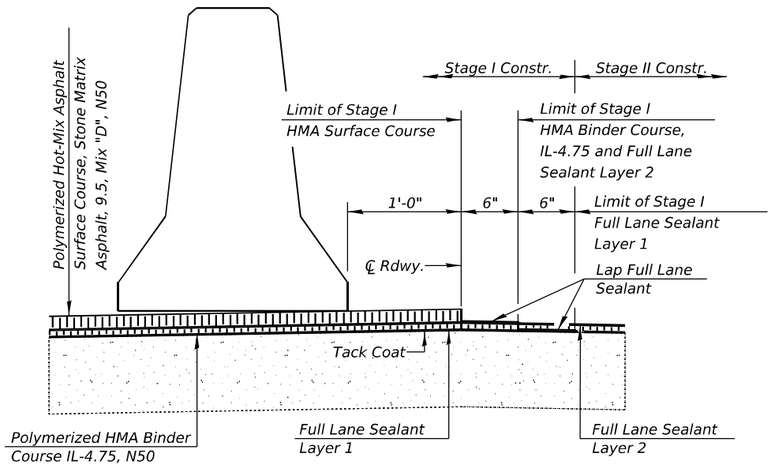
EXISTING DECK SECTION
Looking East



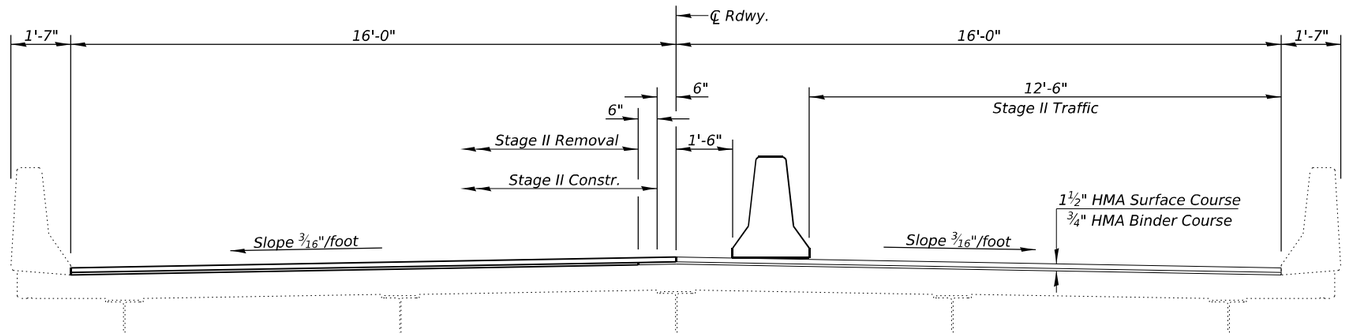
PROPOSED DECK SECTION
Stage I



EXISTING DECK DRAIN PLAN
(Slope to Drain)



WATERPROOFING STAGING



PROPOSED DECK SECTION
Stage II

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Full Lane Sealant Waterproofing System	Sq. Yd.	774
Polymerized Hot-Mix Asphalt Surface Course, Stone Matrix Asphalt, 9.5 Mix "D" N50	Ton	98

Note:
For Polymerized Hot-Mix Asphalt Surface Course, Stone Matrix Asphalt, 9.5 Mix "D" N50 see Roadway plans

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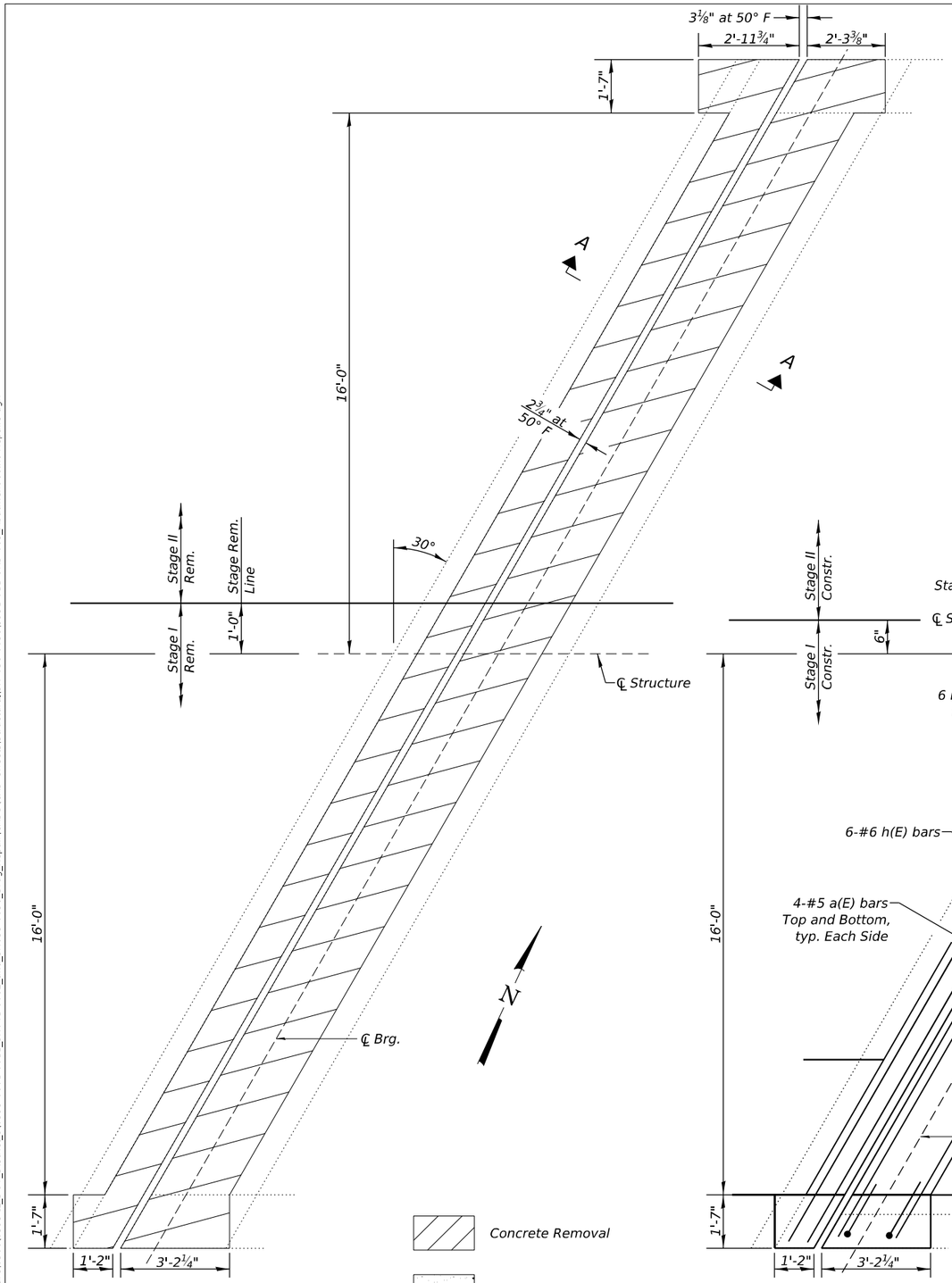
DEPARTMENT OF TRANSPORTATION

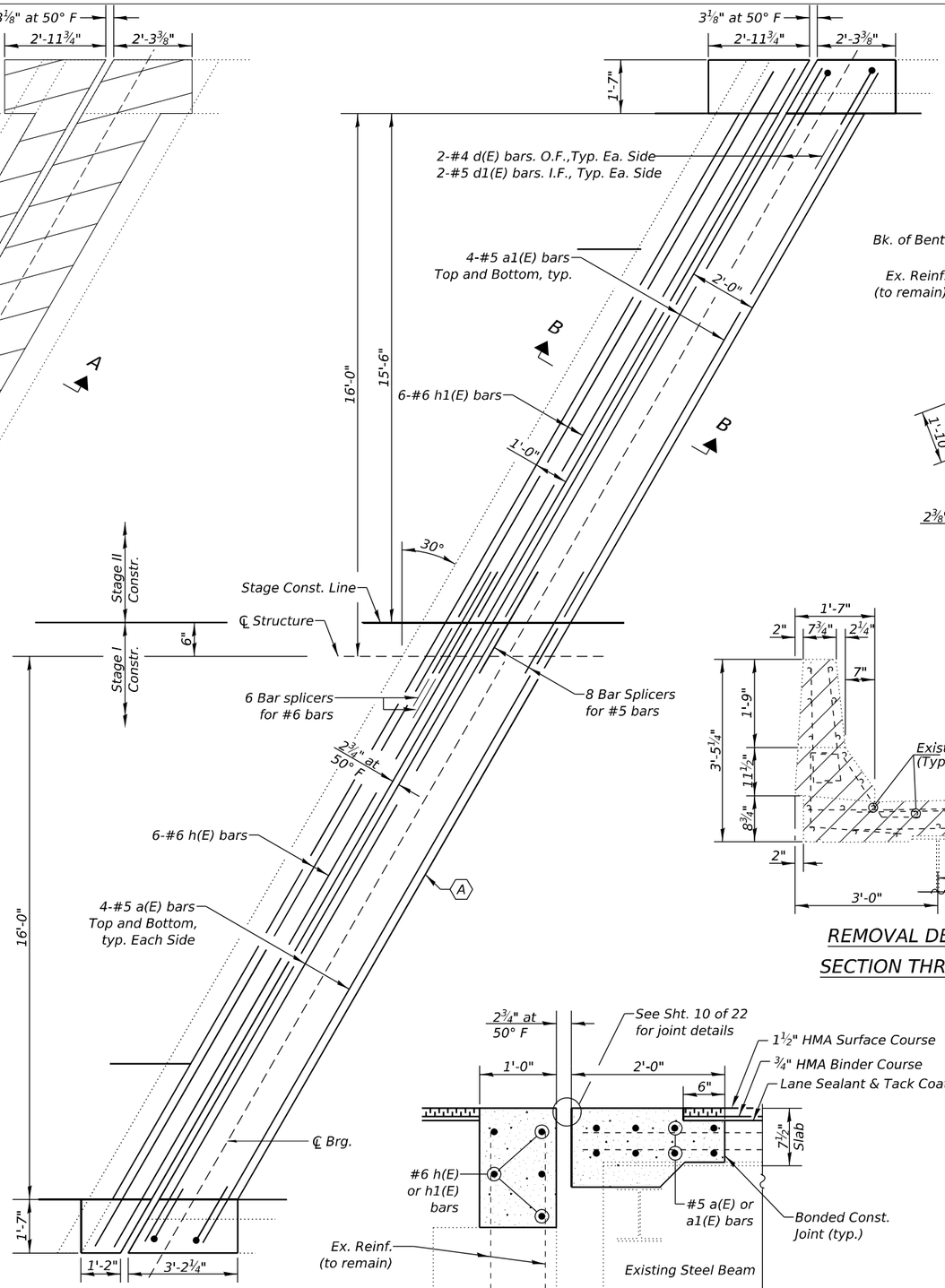
CROSS SECTION DETAILS
STRUCTURE NO. 033 - 0038
SHEET 4 OF 22 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE OVERLAY 2023-9	HAMILTON	58	40
		CONTRACT NO. 78A08		
		ILLINOIS	FED. AID PROJECT	



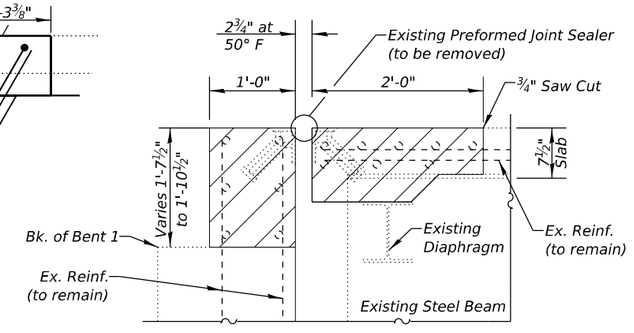
REMOVAL PLAN

Bent 1 Shown
Bent 4 is similar by 180° rotation



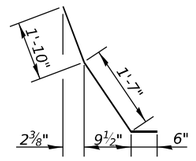
REPLACEMENT PLAN

Bent 1 Shown
Bent 4 is similar by 180° rotation

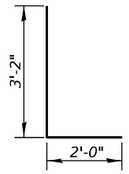


SECTION A-A

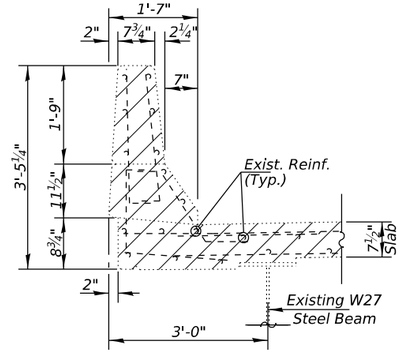
(Dimensions at Rt. Angles)



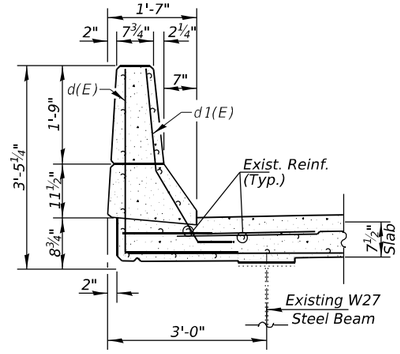
BAR d1(E)



BAR d(E)

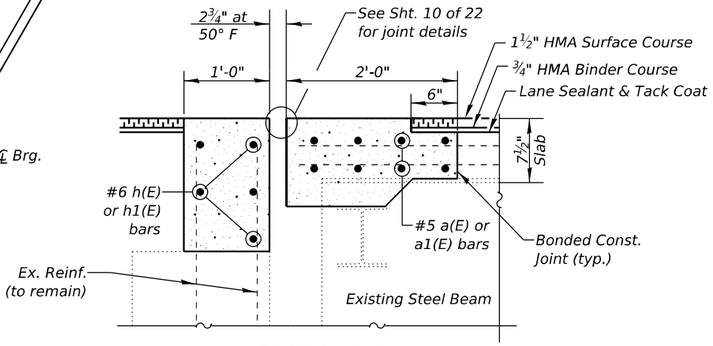


REMOVAL DETAILS



REPLACEMENT DETAILS

SECTION THRU BRIDGE PARAPET AT BOTH ABUTMENTS



SECTION B-B

(Dimensions at Rt. Angles)

BILL OF MATERIAL - 2 EXPANSION JOINTS

Bar	No.	Size	Length	Shape
a(E)	16	#5	18'-10"	———
a1(E)	16	#5	17'-7"	———
d(E)	4	#4	5'-2"	L
d1(E)	4	#5	3'-11"	⌐
h(E)	12	#6	18'-10"	———
h1(E)	12	#6	17'-7"	———
Concrete Removal			Cu. Yd.	12.1
Concrete Superstructure			Cu. Yd,.	13.4
Reinforcement Bars, Epoxy Coated			Pound	1300

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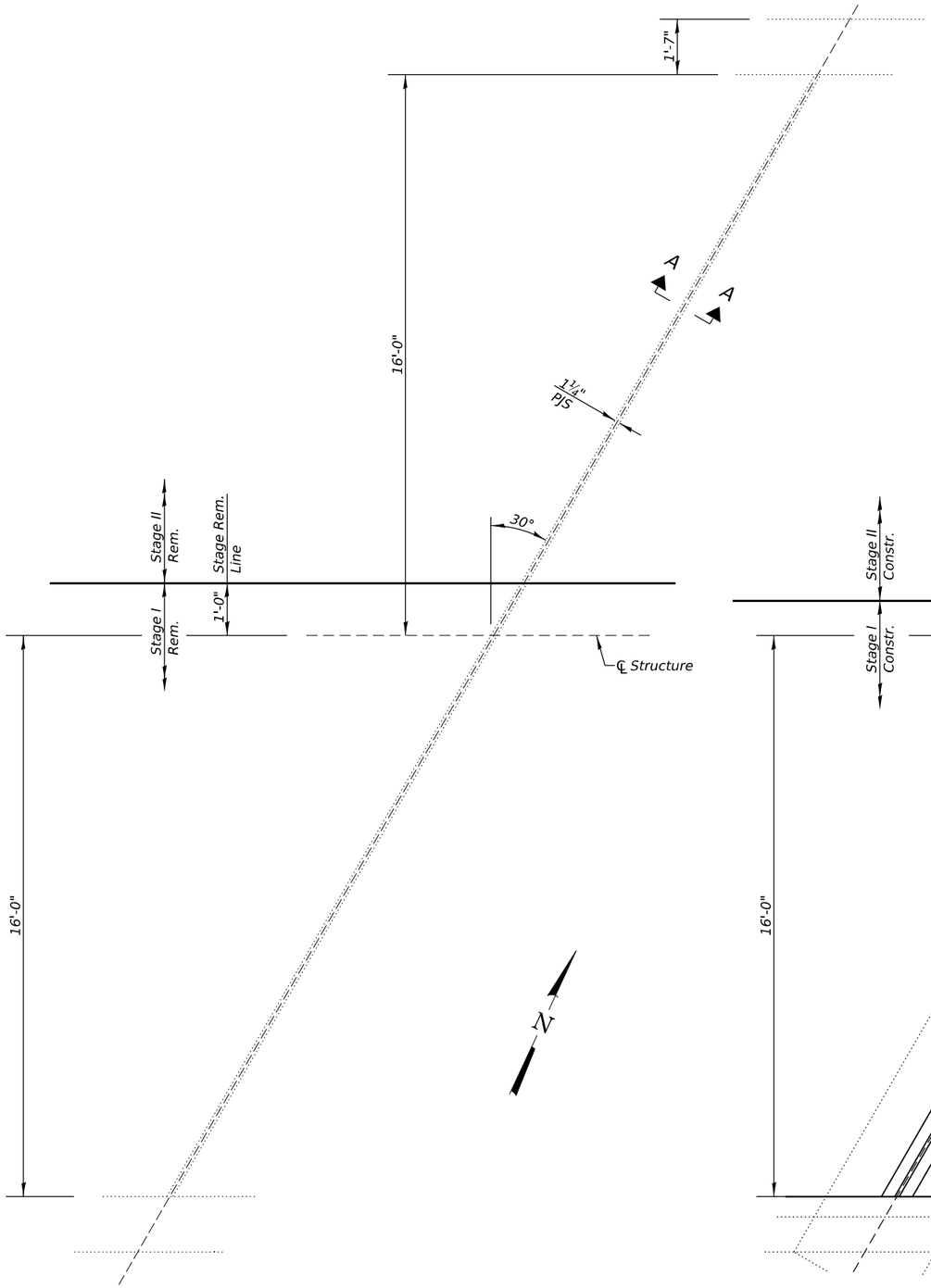
EXPANSION JOINT REPAIRS
STRUCTURE NO. 033-0038

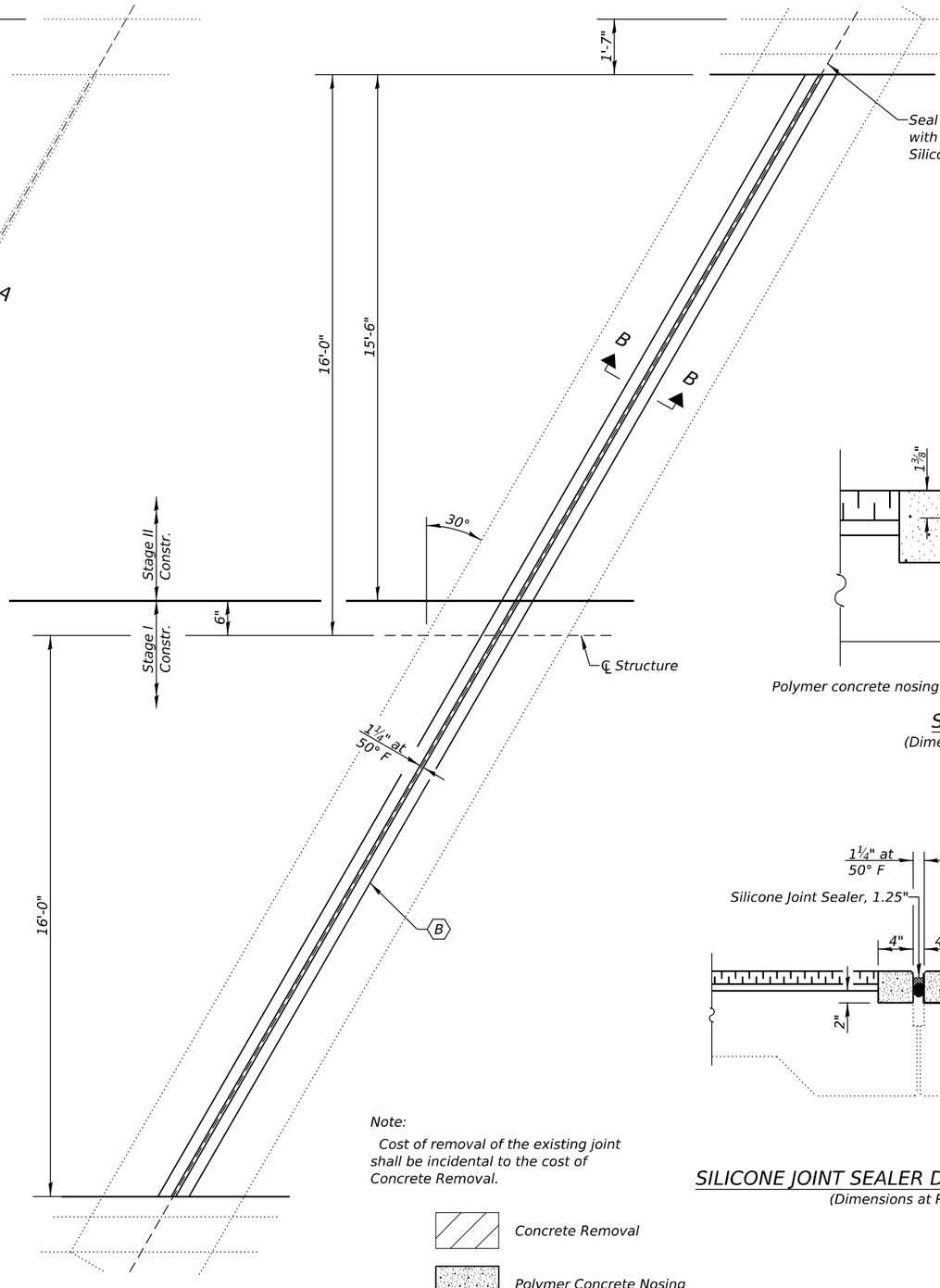
SHEET 5 OF 22 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE OVERLAY 2023-9	HAMILTON	58	41
		CONTRACT NO. 78A08		
	ILLINOIS FED. AID PROJECT			



REMOVAL PLAN

Bent 2 Shown
Bent 3 is similar



REPLACEMENT PLAN

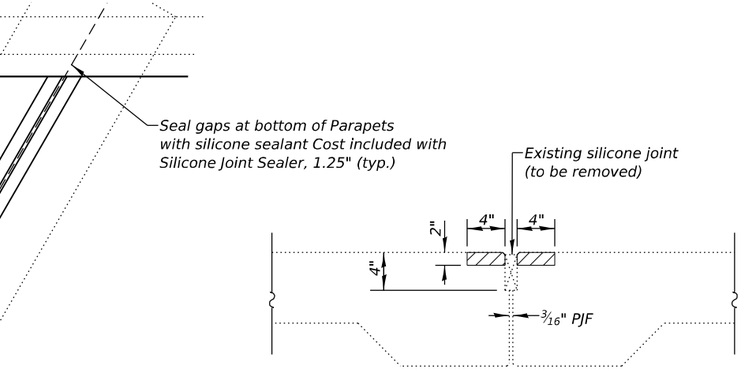
Bent 2 Shown
Bent 3 is similar

Note:

Cost of removal of the existing joint shall be incidental to the cost of Concrete Removal.

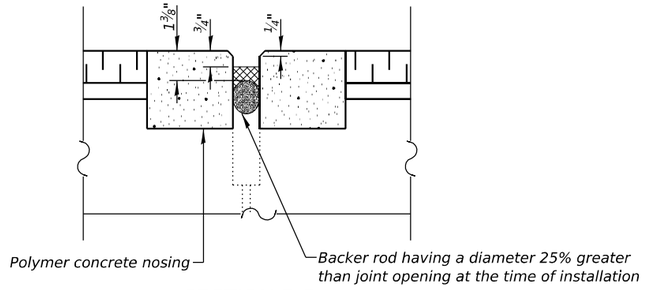
Concrete Removal

Polymer Concrete Nosing



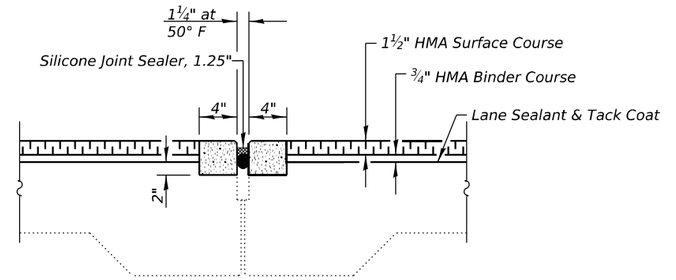
SECTION A-A

(Dimensions at Rt. Angles)



SECTION B-B

(Dimensions at Rt. Angles)



SILICONE JOINT SEALER DETAIL (SECTION B-B)

(Dimensions at Rt. Angles)

BILL OF MATERIAL - 2 FIXED JOINTS

ITEM	UNIT	TOTAL
Concrete Removal	Cu. Yd.	0.3
Polymer Concrete	Cu. Ft.	17.5
Silicone Joint Sealer, 1.25"	Foot	74

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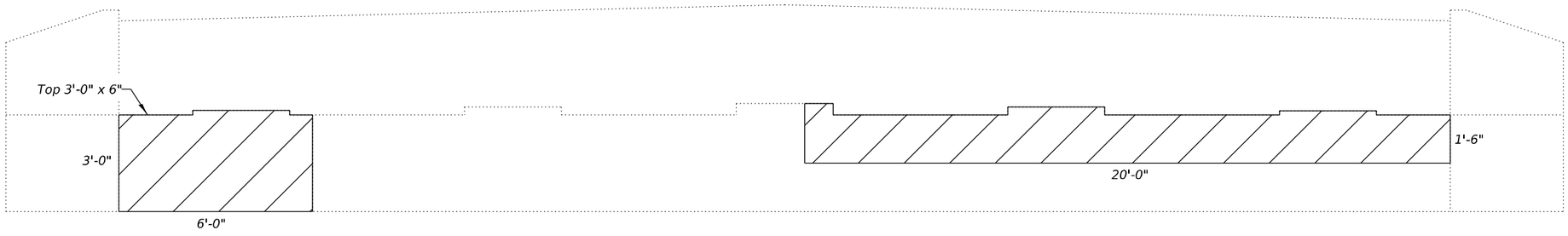
PIER JOINT REPAIRS
STRUCTURE NO. 033-0038

SHEET 6 OF 22 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE OVERLAY 2023-9	HAMILTON	58	42
		CONTRACT NO. 78A08		
	ILLINOIS	FED. AID PROJECT		



BENT 1
Looking West

BENT 4
Looking East

Structural Repair of Concrete (Depth ≤ 5")

BILL OF MATERIAL - 2 BENTS

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth ≤ 5")	Sq. Ft.	60.5

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BENTS 1 AND 4 REPAIRS
STRUCTURE NO. 033-0038
SHEET 7 OF 22 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE OVERLAY 2023-9	HAMILTON	58	43
		CONTRACT NO. 78A08		
	ILLINOIS	FED. AID PROJECT		

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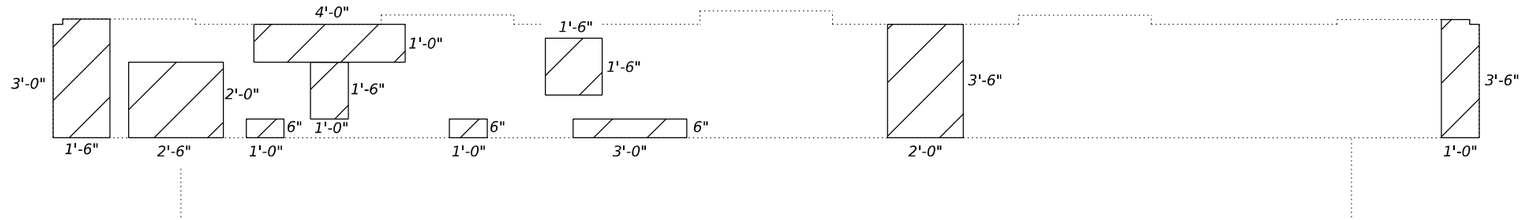
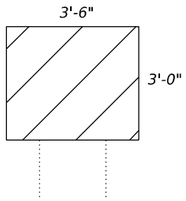
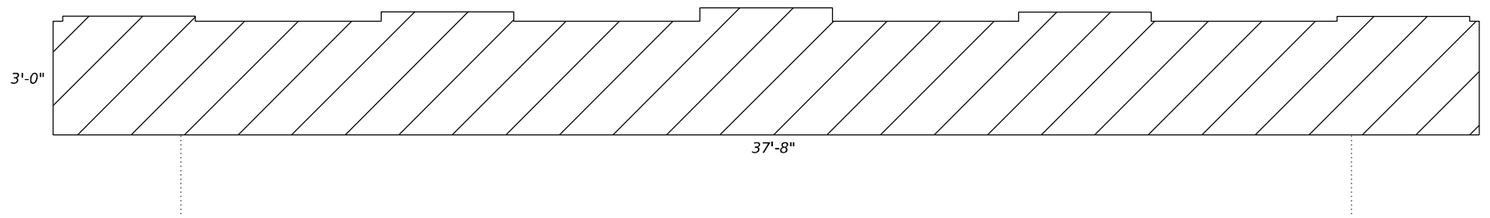




NORTH & SOUTH FACES

BENT 2
East Face Looking West



BENT 2
West Face Looking East

Structural Repair of Concrete (Depth ≤ 5")

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth ≤ 5")	Sq. Ft.	165

MODEL: Default
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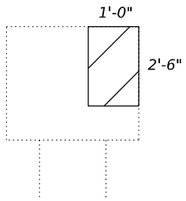
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

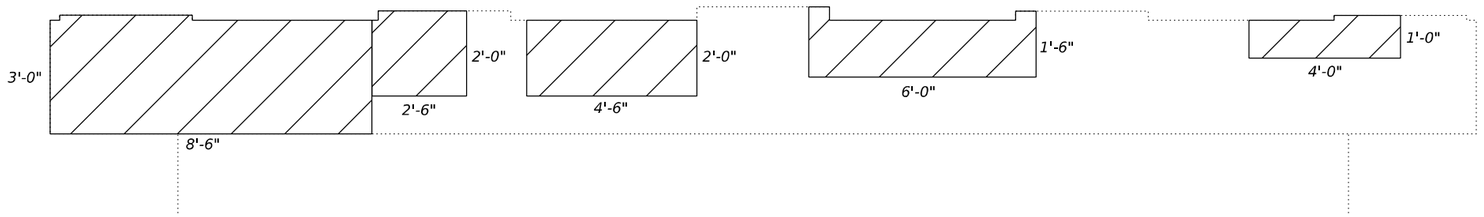
BENT 2 REPAIRS
STRUCTURE NO. 033-0038
SHEET 8 OF 22 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE OVERLAY 2023-9	HAMILTON	58	44
		CONTRACT NO. 78A08		
	ILLINOIS	FED. AID PROJECT		



NORTH FACE

BENT 3
East Face Looking West



BENT 3
West Face Looking East

Structural Repair of Concrete (Depth ≤ 5")

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth ≤ 5")	Sq. Ft.	59

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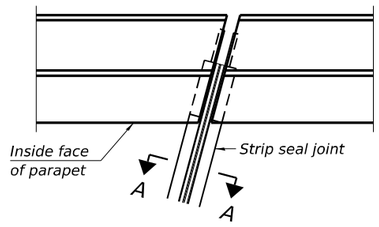
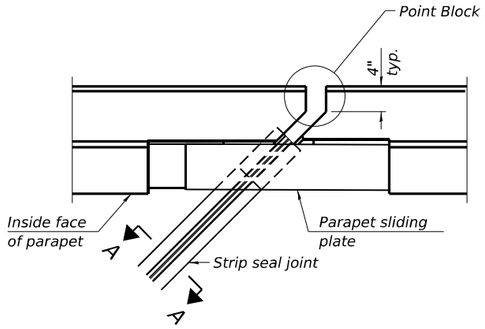
DEPARTMENT OF TRANSPORTATION

BENT 3 REPAIRS
STRUCTURE NO. 033-0038
SHEET 9 OF 22 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE OVERLAY 2023-9	HAMILTON	58	45
		CONTRACT NO. 78A08		
	ILLINOIS	FED. AID PROJECT		

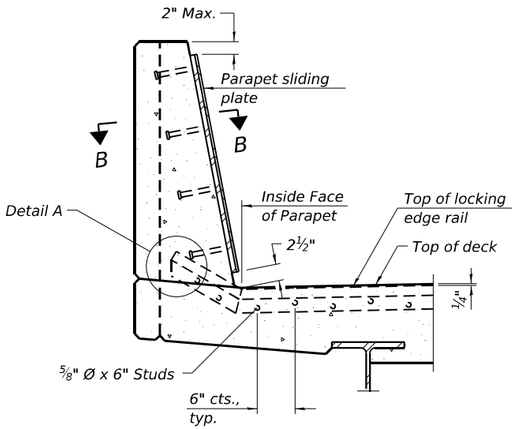


FOR SKEWS ≤ 30°



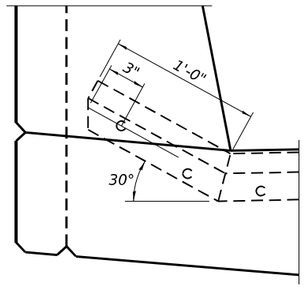
FOR SKEWS > 30°

PLAN AT PARAPET

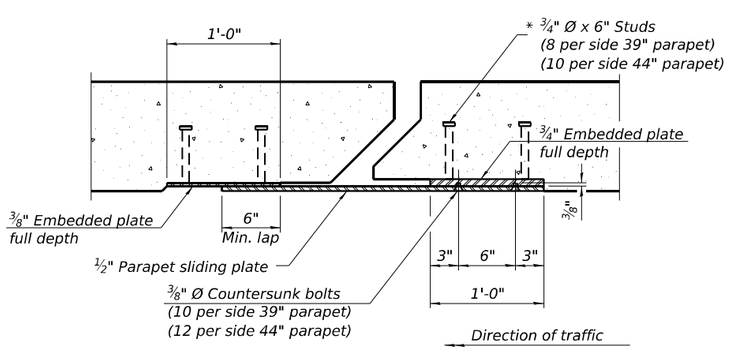


SECTION AT PARAPET

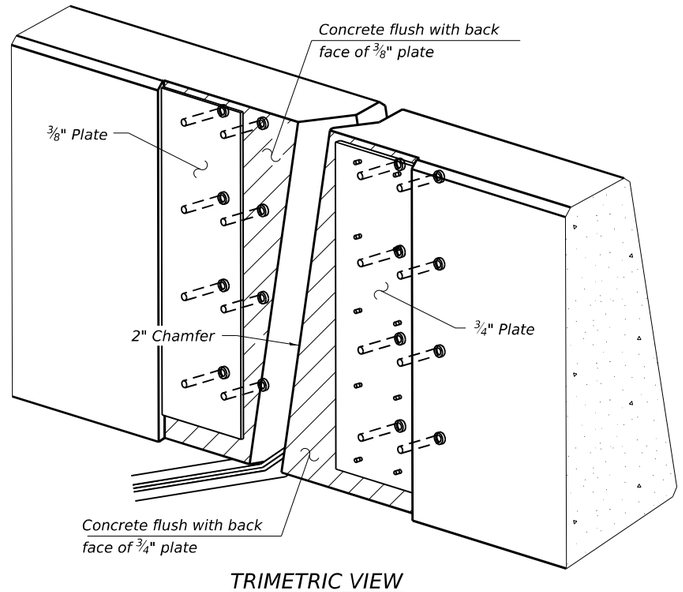
(Skews > 30° shown. Skews ≤ 30° similar except as shown in plan view.)



DETAIL A



SECTION B-B



TRIMETRIC VIEW

(Showing embedded plates only)

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of ¼". The configuration of the strip seal shall match the configuration of the locking edge rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

The locking edge rails depicted are configured for typical applications and are conceptual only. The actual configuration of the locking edge rails and matching strip seal may vary from manufacturer to manufacturer provided they fit the application and meet the minimum anchorage shown. Flanged edge rails, however, will not be allowed. Locking edge rails may exceed the 4½" maximum depth provided the anchorage system is revised according to the manufacturer's recommendation.

The manufacturer's recommended installation methods shall be followed.

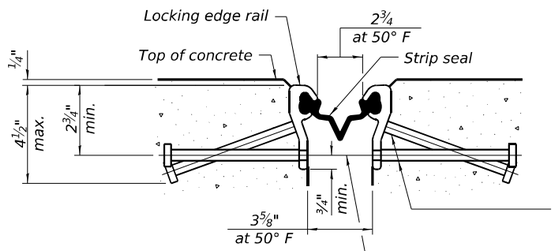
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

The Maximum space between locking edge rail segments shall be c" and sealed with a suitable sealant; however, any rail joint within 10' measured perpendicular to the face of the curb or parapet shall be welded as shown in the locking edge rail splice detail.

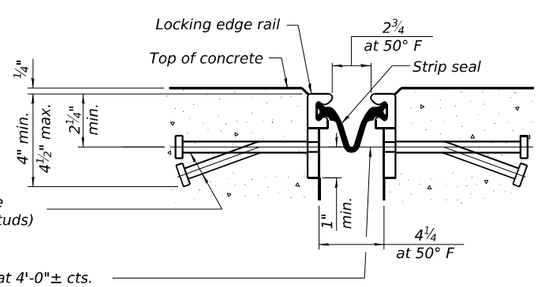
Cost of parapet sliding plates, embedded plates, and anchorage studs included with Preformed Joint Strip Seal.

39" constant slope barrier shown, 44" constant slope barrier similar as noted.

The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to use a different locking edge rail, dimensional adjustments may be required. One exception to this would be the strip seal joint at the end of the precast bridge approach slab. For these cases the pavement connector length shall be adjusted, not the length of the bridge approach slab.



SHOWING ROLLED RAIL JOINT



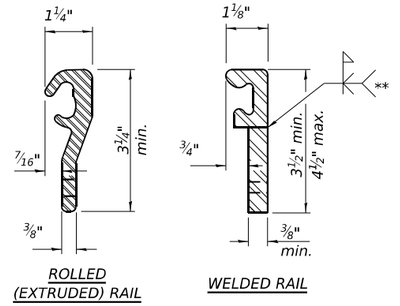
SHOWING WELDED RAIL JOINT

* ⅝" Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

⅜" Ø threaded rods in 7/16" Ø holes at 4'-0"± cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.

SECTION A-A

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

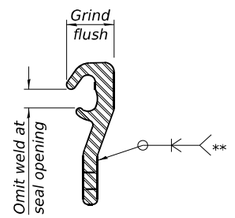


ROLLED (EXTRUDED) RAIL

WELDED RAIL

LOCKING EDGE RAILS

** Back gouge not required if complete joint penetration is verified by mock-up.



LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	82

EJ-SS

5-15-2023

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DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 033-0038

SHEET 10 OF 22 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE OVERLAY 2023-9	HAMILTON	58	46
		CONTRACT NO. 78A08		
	ILLINOIS	FED. AID PROJECT		

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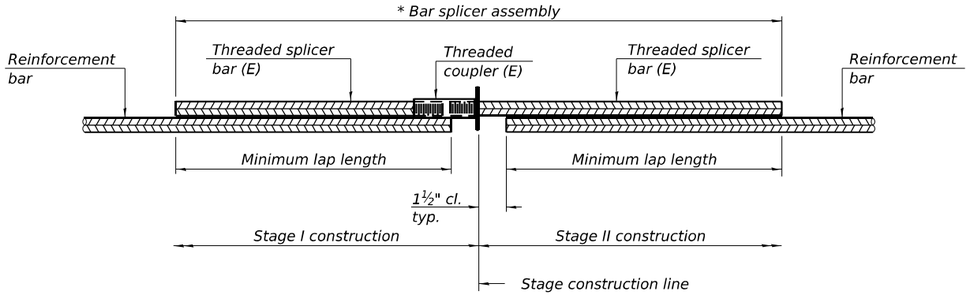


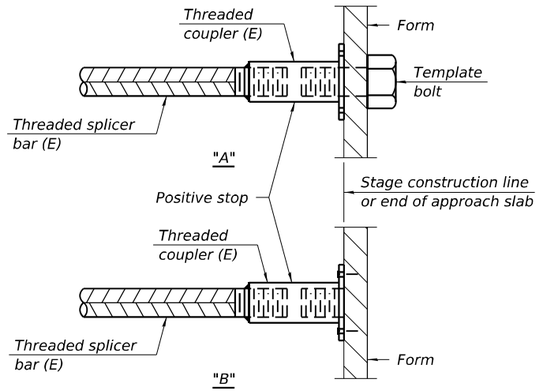
STANDARD BAR SPLICER ASSEMBLY PLAN

Only bar splicer assemblies as presented on the approved QPL list may be used.

Threaded splicer bar length = min. lap length + 1½" + thread length

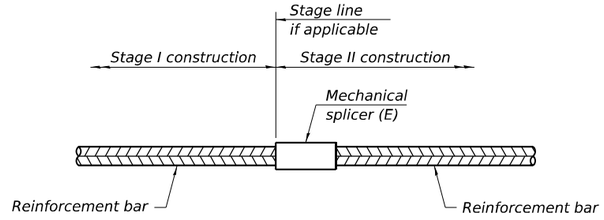
** Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.*

Location	Bar size	No. assemblies required	Minimum lap length
W. Abut.	#5	8	3'-6"
W. Abut.	#6	6	4'-0"
E. Abut.	#5	8	3'-6"
E. Abut.	#6	6	4'-0"



INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required

Notes:
Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
All reinforcement shall be lapped and tied to the splicer bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
See approved list of bar splicer assemblies and mechanical splicers for alternatives.

VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

USER NAME =	DESIGNED - DJC	REVISED -	
	CHECKED - DHC	REVISED -	
PLOT SCALE =	DRAWN - DJC	REVISED -	
PLOT DATE = MARCH 7th, 2024	CHECKED - DHC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 033-0038

SHEET 11 OF 22 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE OVERLAY 2023-9	HAMILTON	58	47
		CONTRACT NO. 78A08		
	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

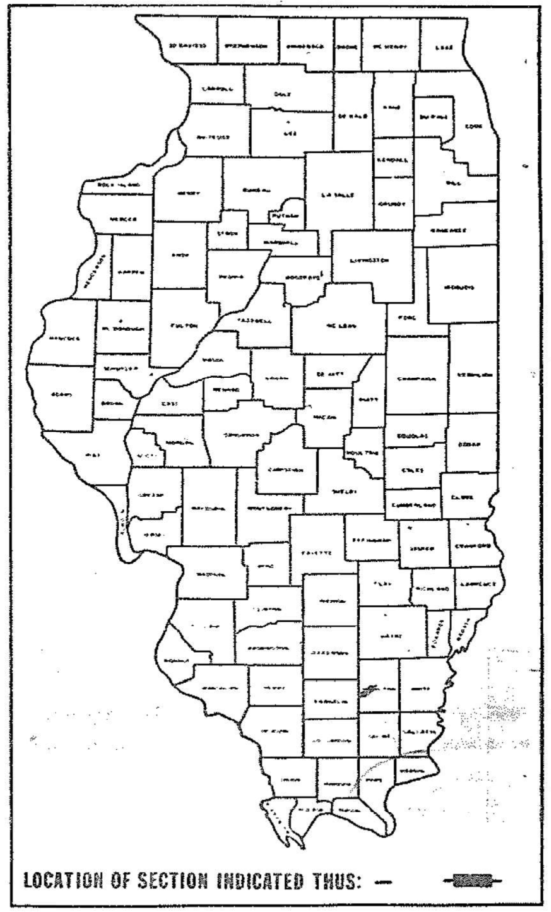
PLANS FOR PROPOSED FEDERAL AID HIGHWAY

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	7-BR	HAMILTON	17	1
F.H.P.A. REG.		ILLINOIS	PROJECT BRF-853(5)	

P-97-012-82

~ INDEX OF SHEETS ~

SCALES: PLAN 0 50 100 FEET; PROFILE HOR. / PROFILE VERT. 0 10 20 FEET; CROSS-SECTIONS 0 5 10 FEET; VERT. / HOR. 0 10 20 FEET



F. A. ROUTE 853 (ILL. RTE. 14)

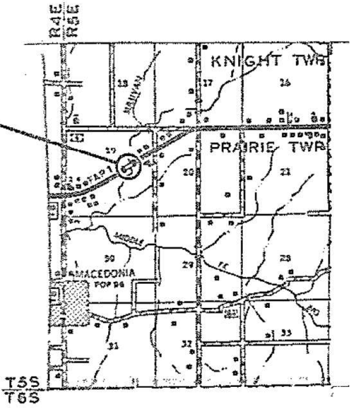
SECTION 7-BR

PROJECT BRF-853(5)

HAMILTON COUNTY

C-97-009-84

LOCATION OF PROJECT
SECTION 7-BR
SULLIVAN BRANCH
BEGINS STA. 697+80
ENDS STA. 703+00



~ LAYOUT MAP ~

0 1 2 Mi.
APPROXIMATE SCALE

NET LENGTH OF PROJECT = 520 FT. = 0.098 MI.

FOR INFORMATION ONLY

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Sep 14 1984 — M.G. [signature], DISTRICT ENGINEER
EXAMINED 10-15 1984 — [signature], ENGINEER OF PLANS AND CONTRACTS
PASSED 10-17 1984 — [signature], ENGINEER OF DESIGN
APPROVED 10-11 1984 — [signature], DIRECTOR DIVISION OF HIGHWAYS

C.N. 11694 033-0038
CONTRACT NO. 38546

7-96

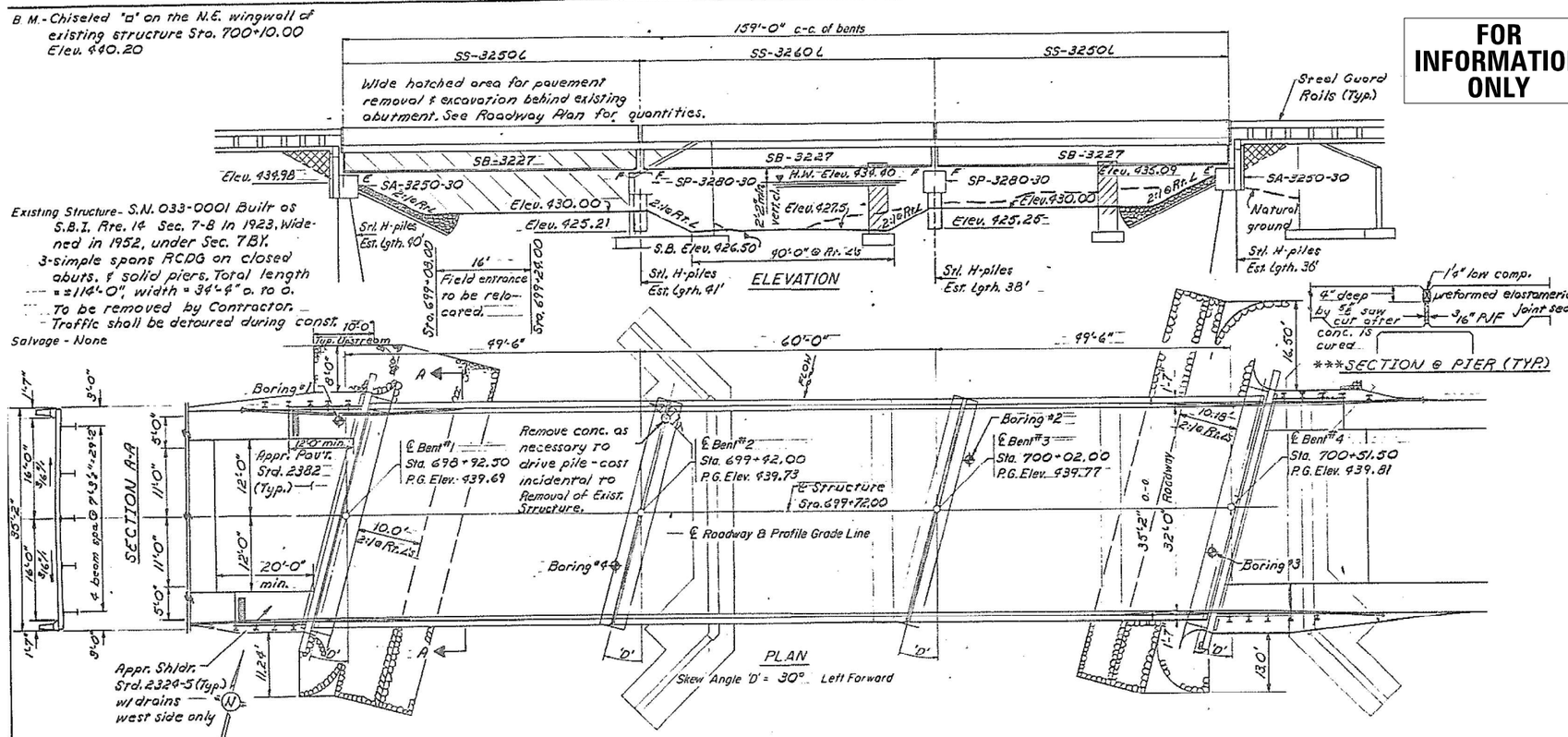
ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
FA 853	7BR	HAMILTON	17	5
FED ROAD DIST NO 7	ILLINOIS	PROJECT		

SHEET NO. 1
10 SHEETS

FOR INFORMATION ONLY

B.M. - Chiseled "a" on the N.E. wingwall of existing structure Sta. 700+10.00 Elev. 440.20

Existing Structure - S.N. 033-0001 Built as S.B.I. Rte. 14 Sec. 7-8 in 1923, Widened in 1952, under Sec. 7BY. 3-simple spans RCDG on closed abuts. & solid piers. Total length = ±114'-0", width = 34'-4" o. to o.
To be removed by Contractor.
Traffic shall be detoured during const.
Salvage - None



GENERAL NOTES

See Special Provisions for boring logs and top of Slab Elevations.
Class 'X' Concrete shall be used throughout.
Fasteners shall be high strength bolts (AASHTO M164, Type 3). Bolts 3/4"ø, open holes 13/16"ø. unless otherwise noted.
All structural steel shall be AASHTO M222 except expansion joint angles and attached bars which shall be AASHTO M183 and shall be shop painted with zinc-silicate primer.
AASHTO M222 structural steel shall not be painted except, that for a distance of three times the depth of the beams (but not exceeding 10 ft.) each way from deck joints, the AASHTO M222 structural steel shall be cleaned, and given one coat of the zinc-silicate primer and a dark maroon vinyl finish coat. Both coats to be applied in the shop with spot painting only in the field.
Field welding of construction accessories will be permitted on the top flange of beams only.
The structural steel bearing plates of the Elastomeric Bearing Assembly shall conform to the requirements of AASHTO M222.
The main beams shall conform to the supplemental requirements for Notch Toughness Zone 2.
Anchor bolts shall be set before bolting diaphragms over supports.
Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-53 Grade 60.
Layout of riprap may be varied in the field to suit ground conditions as directed by the Engineer.
The contractor shall drive one HP10x42 test pile in a permanent location at Bent #2 as directed by the Engineer before ordering the remainder of the piles.

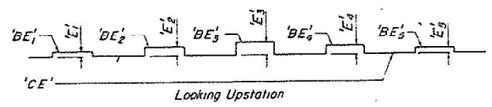
TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub. Piers	Sub. Abuts	Total
Removal of Existing Structures	Each				1
Structure Excavation	Cu Yd.		68.1	53.0	121.1
Floor Drains	Each	18			18
Protective Coat	Sq.Yd.	703.1			703
Class X Concrete	Cu. Yd.	172.3	32.8	62.8	267.9
Preformed Joint Seal 4"	Lin Ft	80			80
F.B.E. Struct Steel	L. Sum	1			1
Stud Shear Connectors	Each	2250			2250
Elast. Bearing Assy. T1	Each			10	10
Reinforcement Bars	Lbs.		5,500	5,260	10,760
* Rein. Bars (Epoxy Ctd.)	Lbs.	40,950			40,950
Steel Piles HP10x42	Lin Ft		670	332	1202
Channel Excavation	Cu. Yd.				970
Test Pile (Steel HP10x42)	Each		1		1
Class 'X' Concrete Encasement	Cu Yd		31.6		31.6
Name Plates	Each				1
Stone Riprap	Sq. Yd.				325

*All Rebars in the deck STD's SS-3250L & SS-3260L are Epoxy coated.

BEARING CAP ELEVATION DATA

Bent	"CE"	Bm #1 'BE'1	'1	Bm. #2 'BE'2	'2	Bm. #3 'BE'3	'3	Bm. #4 'BE'4	'4	Bm. #5 'BE'5	'5
#1	435.98	436.12	1 5/8"	436.23	3"	436.36	4 1/4"	436.22	2 7/8"	436.10	1 1/2"
#2	436.21	436.35	1 5/8"	436.46	3"	436.57	4 1/4"	436.45	2 7/8"	436.34	1 1/2"
#3	436.25	436.39	1 5/8"	436.50	3"	436.61	4 1/4"	436.49	2 7/8"	436.38	1 1/2"
#4	436.09	436.23	1 5/8"	436.34	3"	436.45	4 1/4"	436.33	2 7/8"	436.21	1 1/2"



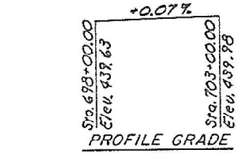
WATERWAY INFORMATION

Drainage Area = 11.67 sq. mi. Low Grade Elev. = 437.81 At Sta.: 693+00

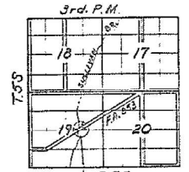
Flood	Freq. Yr.	Q C.F.S	Opening Sq. Ft. Exist	Opening Sq. Ft. Prop.	Natural H.W.E.	Head-Ft. Exist	Head-Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	50	3115	371	627	434.4	3.24	0.88	437.64	435.28
Base	100	3580	403	665	434.7	3.63	1.06	438.33	435.76
Overtopping									
Max. Calc.	500	4660		715	435.1		1.56		436.66

PILE DATA

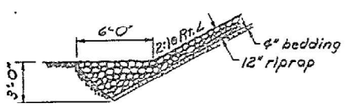
Bent	#1	#2	#3	#4
Type	HP10x42	HP10x42	HP10x42	HP10x42
Capacity - Ton	45	35	35	45
Estimated Length - Feet	40	41	38	36
Number Required	7	8	9	7
Test Piles		1		



PROFILE GRADE



LOCATION SKETCH



RIPRAP ANCHOR DETAIL

SGP-3L(7-1-81) AFS K.H.O. M.C. DJR. 2-27-84 9-18-84

Illinois Department of Transportation

September 20, 1984

APPROVED Engineer of Bridges and Structures

STATION 699+72
BUILT 19__ BY
STATE OF ILLINOIS
F.A. RT. 853 SEC. 7BR
F.A. PROJ. BRF-853(5)

LOADING HS20
STR. NO. 033-0038

LETTERING FOR NAME PLATE

Locate Name Plate at Corner of Bridge (See Standard 2113)

DESIGN SPECIFICATIONS

1977 AASHTO & 1978, 1979 & 1980 Interims
HS 20-44 Loading. Load Factor Design.

CALCULATED WEIGHT of STRUCTURAL STEEL

Standard SB 3227	85,292.0 lbs.
Standard SD 3201	2,692.0 lbs.
Standard SD 3202	3,120.0 lbs.
Total	91,104.0 lbs.

INDEX OF SHEETS

** See sheet #10 for anchor bolt details.

STANDARD BRIDGE
STEEL BEAMS - 32' ROADWAY

GENERAL PLAN & ELEVATION

ILLINOIS ROUTE 14
OVER SULLIVAN BRANCH

RT. F.A. 853 SEC. 7BR
HAMILTON COUNTY
STATION 699+72.00

I-5

VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

USER NAME =	DESIGNED - DJC	REVISED -	
	CHECKED - KS	REVISED -	
PLOT SCALE =	DRAWN - DJC	REVISED -	
PLOT DATE = JANUARY 26th, 2024	CHECKED - KS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 033-0038
SHEET 13 OF 22 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE OVERLAY 2023-9	HAMILTON	58	49
		CONTRACT NO. 78A08		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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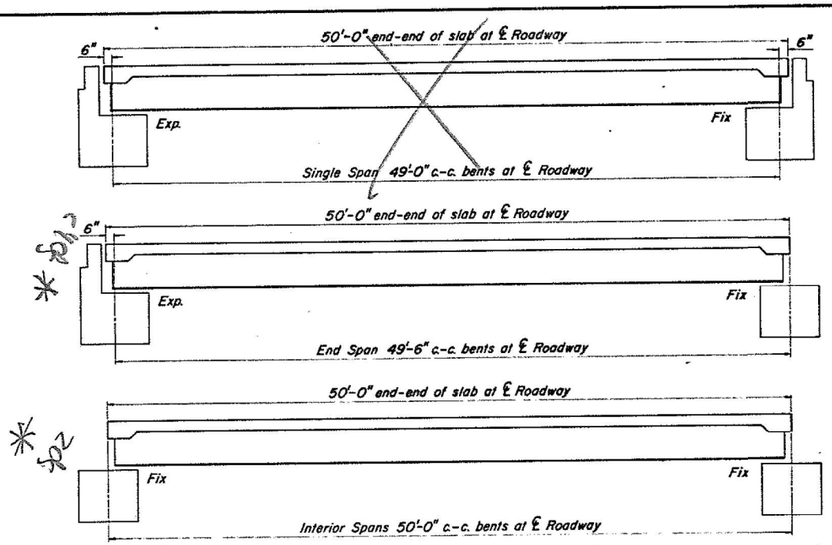
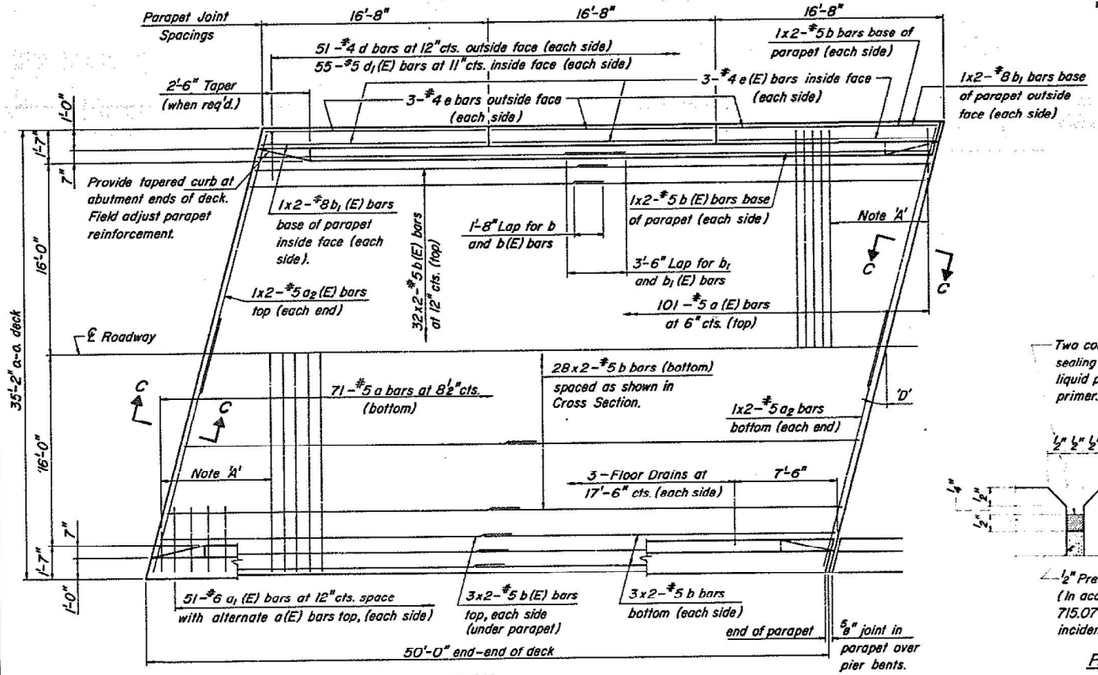
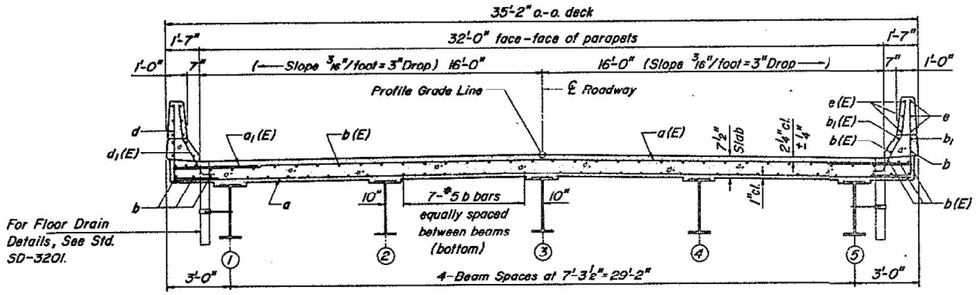


TYPICAL ELEVATIONS



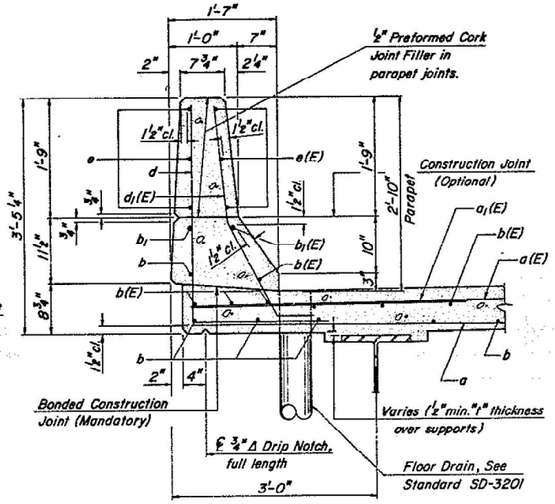
PLAN

('D'=Designated Skew Angle)

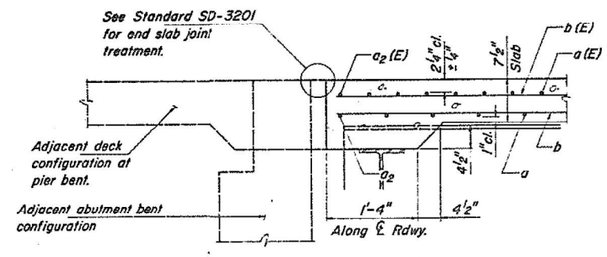


CROSS SECTION

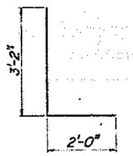
(Looking Upstation)



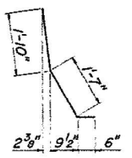
PARAPET SECTION



SECTION C-C



Bar d



Bar d_1(E)

BAR LIST FOR ONE SPAN

Bar	No.	Size	Length	Shape
a	71	#5	34'-7"	
a(E)	101	#5	34'-7"	
a_1(E)	102	#6	4'-0"	
a_2	4	#5	20'-8"	
a_2(E)	4	#5	20'-8"	
b	72	#5	25'-8"	
b(E)	80	#5	25'-8"	
b_1	4	#8	26'-7"	
b_1(E)	4	#8	26'-7"	
d	102	#4	5'-2"	L
d_1(E)	110	#5	3'-11"	L
e	18	#4	16'-4"	
e(E)	18	#4	16'-4"	

Reinforcement bars designated (E) shall be epoxy coated. See Special Provisions.

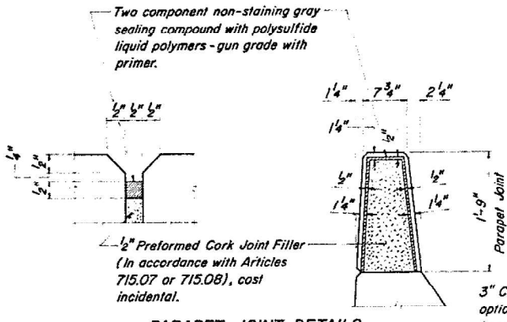
QUANTITIES FOR ONE SPAN

Class 'X' Concrete	53.7	Cu. Yds.
Reinforcement Bars	5410	Lbs.
Rein. Bars (Epoxy Coated)	7410	Lbs.
Floor Drains	6	Each
Protective Coat	219.8	Sq. Yds.

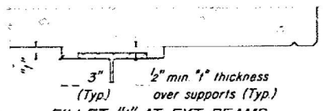
DESIGN STRESSES

f'c = 3,500 psi
fy = 60,000 psi

FOR INFORMATION ONLY

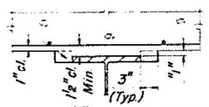


PARAPET JOINT DETAILS



3" Cheeks are optional where beams have shear connectors.

FILLET "t" AT EXT. BEAMS



FILLET "t" AT INT. BEAMS

See Steel Framing Standards for Dead Load Deflection Diagram.

METHOD FOR DETERMINING FILLET HEIGHT "t"

After all structural steel has been erected, elevations of the top flanges of each beam shall be taken at intervals not to exceed 10 feet. From these elevations, subtract the increment of deflection for these points determined from the "Dead Load Deflection Diagram". The elevation so attained subtracted from the theoretical top of slab elevations over each beam minus the slab thickness equals the fillet height "t" above the top of the beam.

Bars indicated thus; 28x2-#5 etc. indicates 28 lines of bars with 2 lengths per line.

Note 'A':
Field cut a and a(E) bars to fit skew and use remainder of bars in opposite end. See Special Provisions for treatment of field cut epoxy coated bars.

Illinois Department of Transportation

APPROVED JULY 1, 1981
Engineer of Bridges and Structures

APPROVED JULY 1, 1981
Engineer of Design

ISSUED 7-1-81

STEEL BEAM BRIDGES SUPERSTRUCTURE

32' RDWY.	50' SPAN	LEFT

STANDARD SS-3250-L

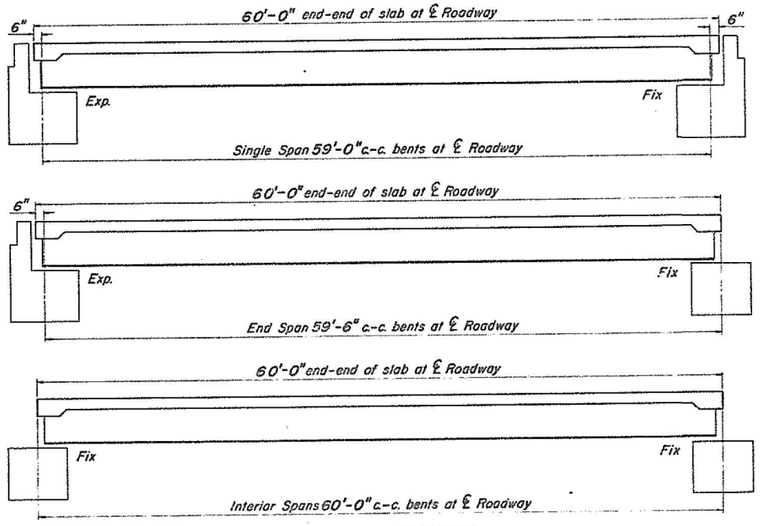
VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

USER NAME =		DESIGNED - DJC	REVISED -
		CHECKED - KS	REVISED -
PLOT SCALE =		DRAWN - DJC	REVISED -
PLOT DATE = JANUARY 26th, 2024		CHECKED - KS	REVISED -

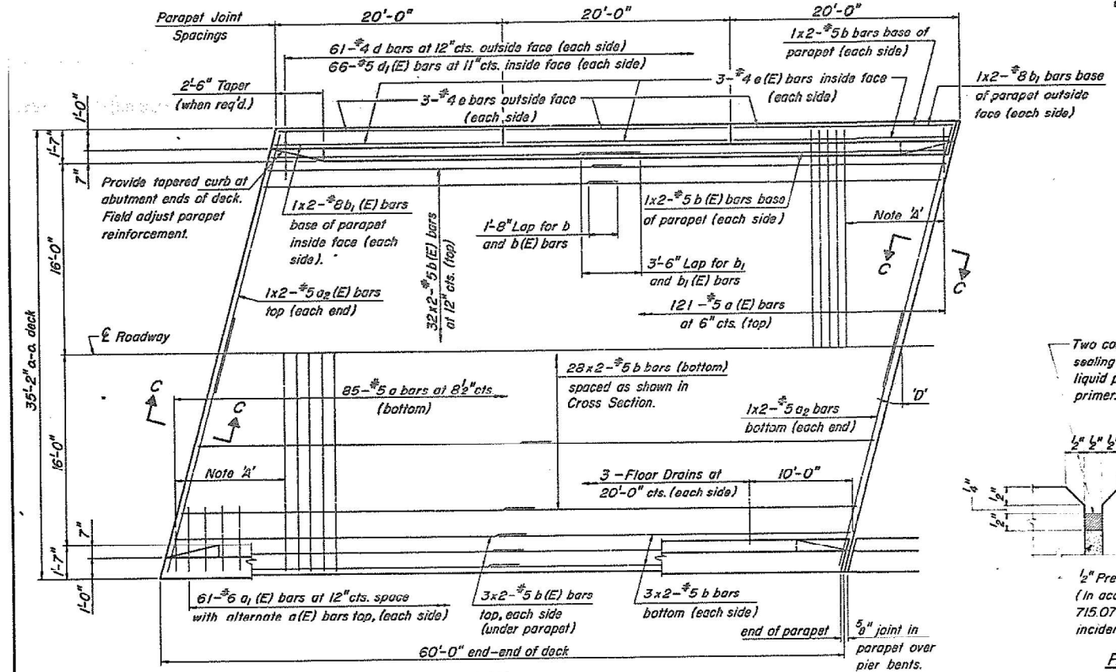
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 033-0038
SHEET 14 OF 22 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE OVERLAY 2023-9	HAMILTON	58	50
		CONTRACT NO. 78A08		
	ILLINOIS FED. AID PROJECT			



TYPICAL ELEVATIONS

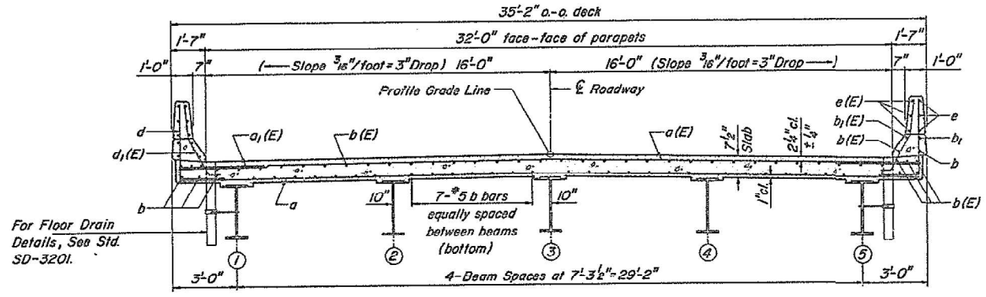


PLAN

('D'=Designated Skew Angle)

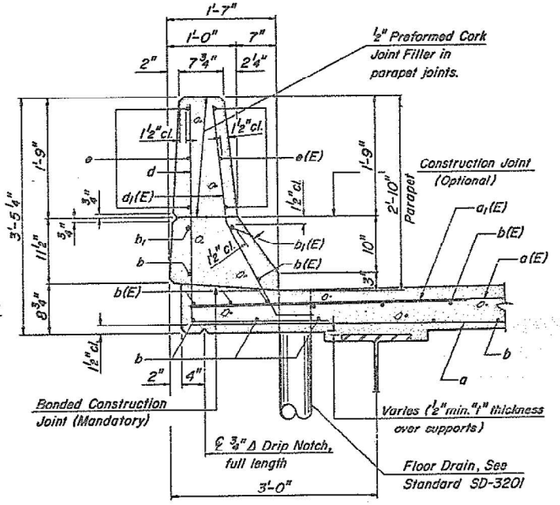
Bars indicated thus; 28x2-#5 etc. indicates 28 lines of bars with 2 lengths per line.

Note 'A':
Field cut a and a(E) bars to fit skew and use remainder of bars in opposite end. See Special Provisions for treatment of field cut epoxy coated bars.

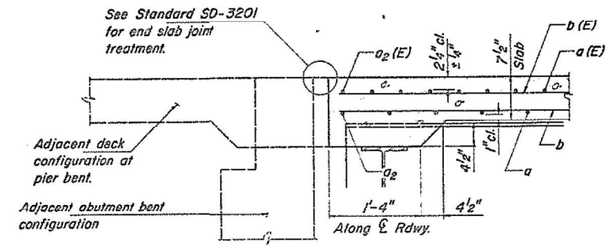


CROSS SECTION

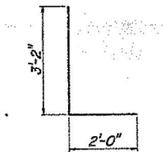
(Looking Upstation)



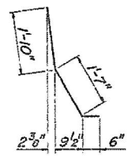
PARAPET SECTION



SECTION C-C



Bar d



Bar $d_1(E)$

BAR LIST FOR ONE SPAN

Bar	No.	Size	Length	Shape
a	85	#5	34'-7"	——
a(E)	121	#5	34'-7"	——
a_1(E)	122	#6	4'-0"	——
a_2	4	#5	20'-8"	——
a_2(E)	4	#5	20'-8"	——
b	72	#5	30'-8"	——
b(E)	80	#5	30'-8"	——
b_1	4	#8	31'-7"	——
b_1(E)	4	#8	31'-7"	——
d	122	#4	5'-2"	L
d_1(E)	132	#5	3'-11"	L
e	18	#4	19'-8"	——
e(E)	18	#4	19'-8"	——

Reinforcement bars designated (E) shall be epoxy coated. See Special Provisions.

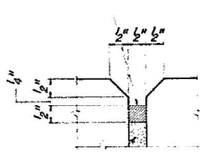
QUANTITIES FOR ONE SPAN

Class 'X' Concrete	64.9 Cu. Yds.
Reinforcement Bars	6450 Lbs.
Rein. Bars (Epoxy Coated)	8860 Lbs.
Floor Drains	6 Each
Protective Coat	263.5 Sq. Yds.

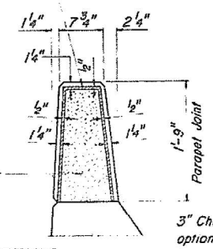
DESIGN STRESSES

f'c = 3,500 psi
fy = 60,000 psi

Two component non-staining gray sealing compound with polysulfide liquid polymers - gun grade with primer.



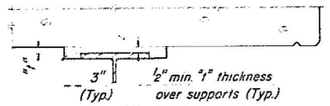
½" Preformed Cork Joint Filler (In accordance with Articles 715.07 or 715.08), cost incidental.



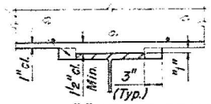
PARAPET JOINT DETAILS

FOR INFORMATION ONLY

3" Cheeks are optional where beams have shear connectors.



FILLET "t" AT EXT. BEAMS



FILLET "t" AT INT. BEAMS

See Steel Framing Standards for Dead Load Deflection Diagram.

METHOD FOR DETERMINING FILLET HEIGHT "t"

After all structural steel has been erected, elevations of the top flanges of each beam shall be taken at intervals not to exceed 10 feet. From these elevations, subtract the increment of deflection for these points determined from the "Dead Load Deflection Diagram". The elevation so attained subtracted from the theoretical top of slab elevations over each beam minus the slab thickness equals the fillet height "t" above the top of the beam.

Illinois Department of Transportation

APPROVED JULY 1, 1981
Engineer of Bridges and Structures

APPROVED JULY 1, 1981
Engineer of Design

ISSUED 7-1-81

STEEL BEAM BRIDGES SUPERSTRUCTURE

32' RDWY.	60' SPAN	LEFT

STANDARD SS-3260-L

VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

USER NAME =	DESIGNED - DJC	REVISED -	
	CHECKED - KS	REVISED -	
PLOT SCALE =	DRAWN - DJC	REVISED -	
PLOT DATE = JANUARY 26th, 2024	CHECKED - KS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

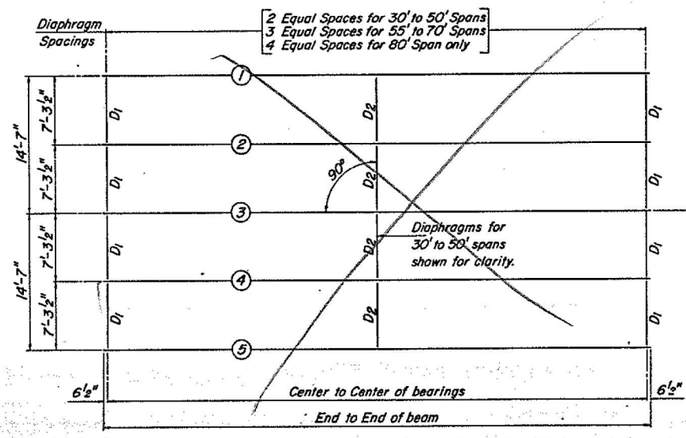
EXISTING PLANS
STRUCTURE NO. 033-0038
SHEET 15 OF 22 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE OVERLAY 2023-9	HAMILTON	58	51
		CONTRACT NO. 78A08		
	ILLINOIS FED. AID PROJECT			

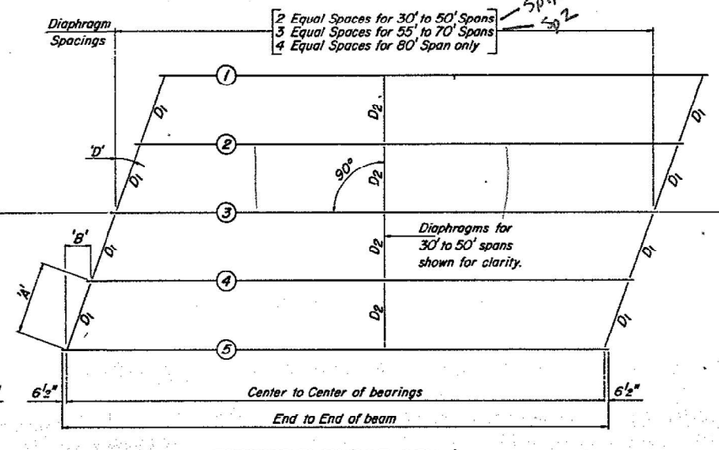
MODEL: Default
FILE NAME: I:\vkspr-fs1\sprshare\0500\0595-IL_DOT_District_9\0595-0001-0011_SN041-0062_and_SN033-0038_Brdg_Repair\CADD\CAD Sheets\Structural\SN 038-0038\5951-011-ORD-012-022_Existing Plans.dgn
1/25/2024 5:12:57 PM

Span	Beam Size	Values for 'SD' Exp.	Values for 'SD' Fixed	Ctr.-Ctr. Bearings	End-End Beam	No. of Diaphragms D_1	No. of Diaphragms D_2	Stud Shear Connector Spacings a	b	c	d	e	Studs Per Line	Total Studs	℄ Deflections ¼ Pt.	½ Pt.	¾ Pt.	Calculated Weight by 'D' 0°	5°	10°	15°	20°	25°	30°	Bearing Type Exp.	Fixed
30'	W27x84	3.357'	3.112'	29'-0"	29'-1"	6	4			NON-COMPOSITE					.008'	.013'	.008'	15163	15171	15192	15229	15284	15357	15453	EX-I	FX-III
35'	W27x84	3.357'	3.112'	33'-0"	34'-1"	6	4			NON-COMPOSITE					.017'	.023'	.017'	17263	17271	17292	17329	17384	17457	17553	EX-I	FX-III
40'	W27x84	3.357'	3.112'	38'-0"	39'-1"	6	4	12 - Spaces at 7"	12 - Spaces at 8"	12 - Spaces at 8"	12 - Spaces at 8"	12 - Spaces at 7"	2	610	.027'	.037'	.027'	19363	19371	19392	19429	19484	19557	19653	EX-II	FX-III
45'	W27x84	3.357'	3.112'	43'-0"	44'-1"	6	4	9 - Spaces at 6"	8 - Spaces at 8"	28 - Spaces at 10"	8 - Spaces at 8"	9 - Spaces at 6"	2	630	.043'	.060'	.043'	21463	21471	21492	21529	21584	21657	21753	EX-II	FX-III
50'	W27x84	3.357'	3.112'	48'-0"	49'-1"	8	4	12 - Spaces at 6"	15 - Spaces at 8"	16 - Spaces at 12"	15 - Spaces at 8"	12 - Spaces at 6"	2	710	.067'	.094'	.067'	23563	23571	23592	23629	23684	23757	23853	EX-III	FX-III
55'	W27x102	3.389'	3.144'	53'-0"	54'-1"	8	8	12 - Spaces at 6"	12 - Spaces at 8"	30 - Spaces at 10"	12 - Spaces at 8"	12 - Spaces at 6"	2	790	.079'	.110'	.079'	31204	31211	31233	31270	31324	31397	31493	EX-III	FX-III
60'	W27x114	3.405'	3.160'	58'-0"	59'-1"	8	8	18 - Spaces at 7"	18 - Spaces at 9"	30 - Spaces at 10"	8 - Spaces at 9"	18 - Spaces at 7"	2	830	.101'	.140'	.101'	37297	37305	37326	37363	37417	37491	37586	EX-III	FX-III
70'	W27x146	3.413'	3.166'	68'-0"	69'-1"	8	8	21 - Spaces at 7"	17 - Spaces at 9"	18 - Spaces at 12"	17 - Spaces at 9"	21 - Spaces at 7"	2	950	.139'	.195'	.139'	54051	54058	54080	54117	54171	54244	54340	EX-V	FX-V
80'	W27x178	3.449'	3.204'	78'-0"	79'-1"	8	12	21 - Spaces at 7"	19 - Spaces at 9"	25 - Spaces at 12"	19 - Spaces at 9"	21 - Spaces at 7"	2	1060	.196'	.274'	.196'	74674	74681	74703	74740	74793	74867	74962	EX-VI	FX-V

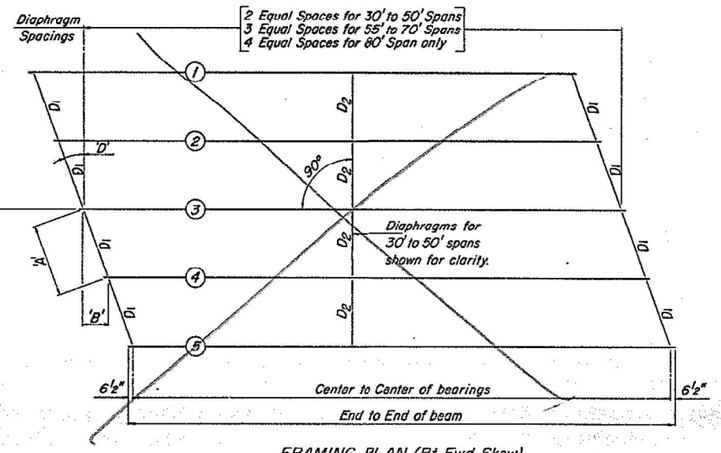
Sp1,3 *
Sp2 *



FRAMING PLAN (0° SKEW)



FRAMING PLAN (Lt. Fwd. Skew)
('D'=Designated Skew Angle)



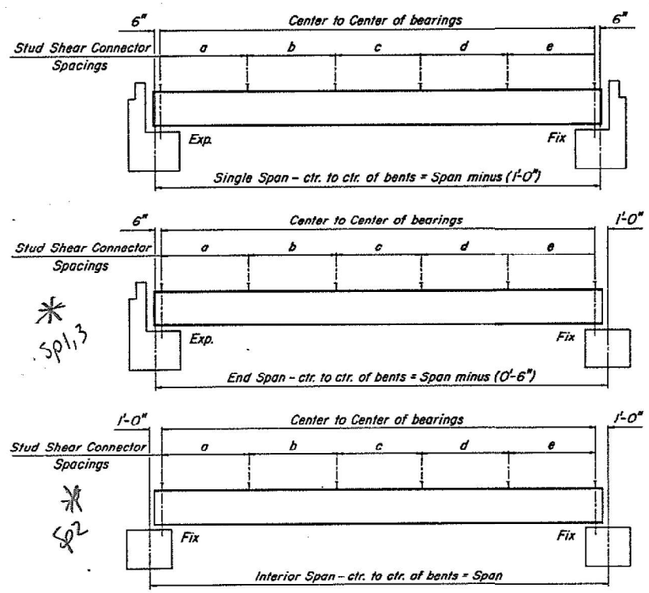
FRAMING PLAN (Rt. Fwd. Skew)
('D'=Designated Skew Angle)

DIMENSION 'A' & 'B'

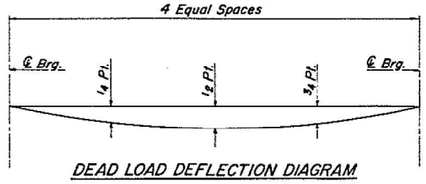
'D'	'A'	'B'
5°	7'-3 13/16"	7 5/8"
10°	7'-4 7/8"	1'-3 7/16"
15°	7'-6 9/16"	1'-11 7/16"
20°	7'-9 1/8"	2'-7 7/8"
25°	8'-0 9/16"	3'-4 13/16"
30°	8'-5 1/16"	4'-2 1/2"

DESIGN STRESSES

fy = 50,000 psi
n = 9 (Composite)

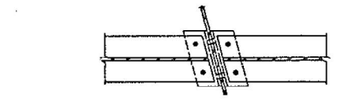


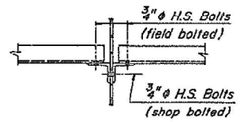
TYPICAL ELEVATIONS

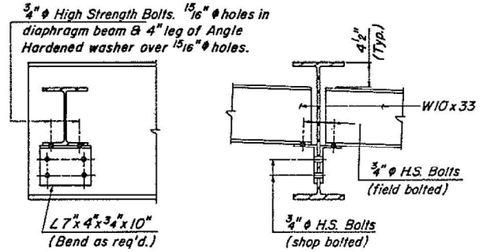


DEAD LOAD DEFLECTION DIAGRAM

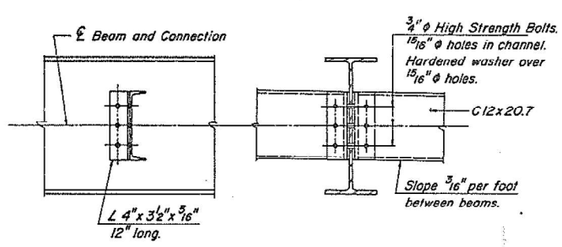
FOR INFORMATION ONLY



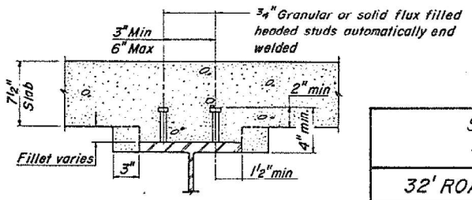




END DIAPHRAGM D_1



INTERIOR DIAPHRAGM D_2



STUD SHEAR CONNECTOR DETAIL

Illinois Department of Transportation
APPROVED JULY 1, 1981
Engineer of Bridges and Structures
APPROVED JULY 1, 1981
Engineer of Design
ISSUED 7-1-81

STEEL BEAM BRIDGES
STEEL BEAM DETAILS
32' ROADWAY | W27 BEAMS
STANDARD SB-3227

VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

USER NAME =		DESIGNED - DJC	REVISED -
		CHECKED - KS	REVISED -
PLOT SCALE =		DRAWN - DJC	REVISED -
PLOT DATE = JANUARY 26th, 2024		CHECKED - KS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 033-0038
SHEET 16 OF 22 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE OVERLAY 2023-9	HAMILTON	58	52
		CONTRACT NO. 78A08		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: \\vkspr-fs1\sprshare\0500\0595-IL_DOT_District_9\0595-0001-0011_SN041-0062_and_SN033-0038_Brdg_Repair\CADD\CAD Sheets\StructuralSN 038-0038\595I-011-ORD-012-022_Existing Plans.dgn
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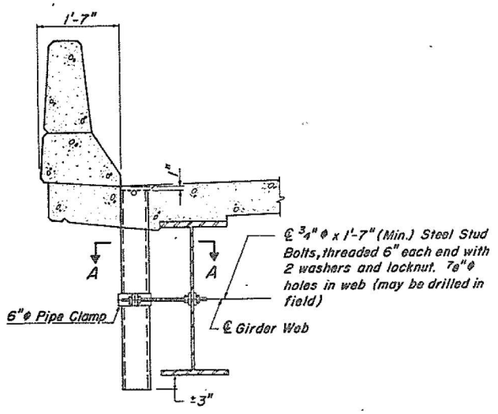
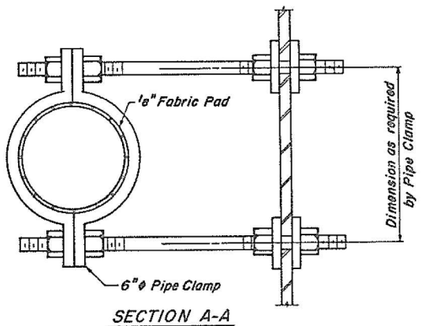
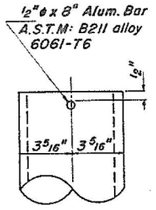


SECTION AT PARAPET

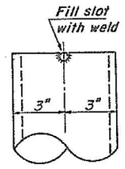


SECTION A-A

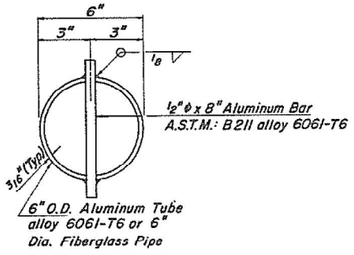


FIBERGLASS PIPE

Note: The surface of the Fiberglass pipe shall be free of bond inhibiting agents.

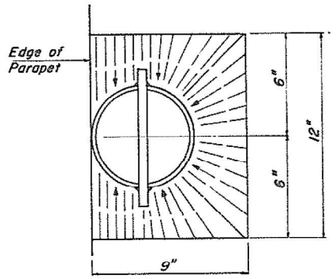


ALUMINUM TUBE



TOP VIEW

Showing Aluminum Tube



DECK DRAIN PLAN

(Slope to Drain)

NOTE

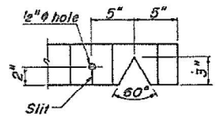
Fiberglass pipe shall conform to ASTM D2996, Designation Code RTRP-11AE-5112. Pipes with Class C or F liner are acceptable.

The exterior surfaces of all Floor Drains, including Clamp Brackets, shall be painted with the Basic Lead Silico Chromate painting specified for Structural Steel. The exterior surfaces of the Aluminum pipe shall be cleaned and given a washcoat pretreatment in accordance with Steel Structural Painting Council's Spec. SSPC-SP1 & SSPC-PT3 prior to painting.

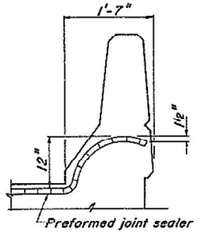
Illinois Department of Transportation

APPROVED JULY 1, 1981
Engineer of Bridges and Structures
APPROVED JULY 1, 1981
Engineer of Design

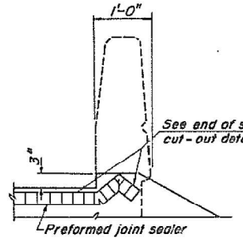
ISSUED 7-1-81



SEAL CUT - OUT

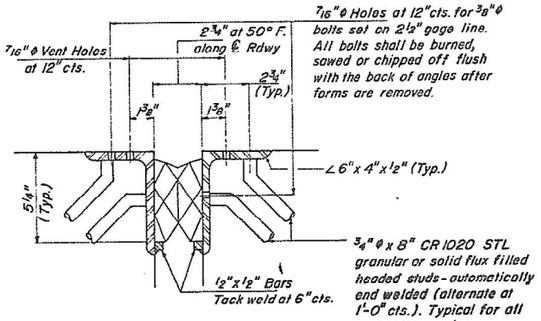


AT PIERS

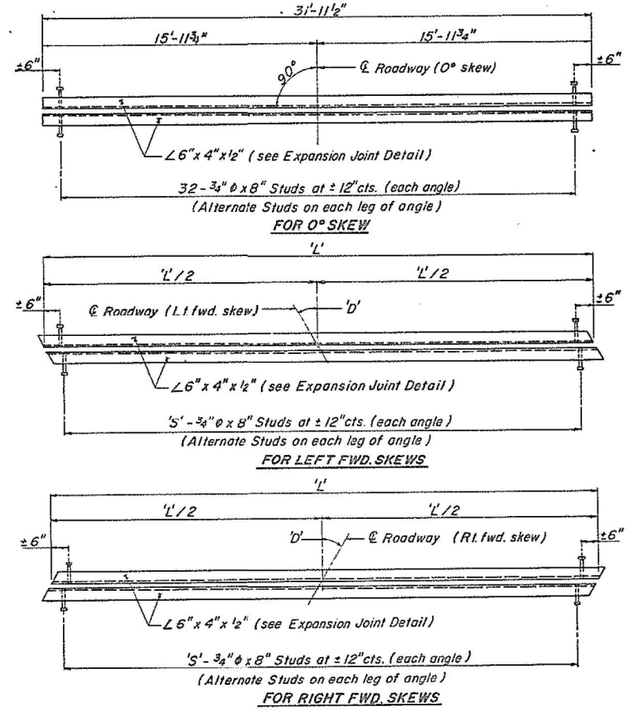


AT ABUTMENTS

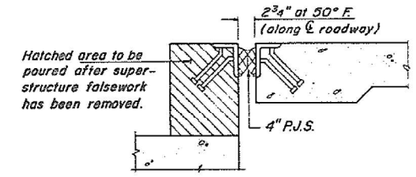
TYPICAL END TREATMENTS



TYPICAL EXPANSION JOINT DETAIL

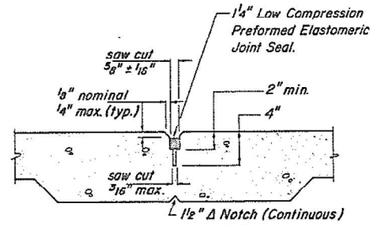


TYPICAL PLANS - EXPANSION ANGLES



SECTION AT ABUTMENTS

(Fixed or Expansion Bearing)



SECTION AT PIERS

(Bearing Fixed Both Sides of Joint)

CALCULATED WEIGHT

'D'	Lbs.
0°	2331
5°	2340
10°	2369
15°	2412
20°	2480
25°	2570
30°	2692

(Two abutments - 4 angles) (including studs)

STUD NUMBER 'S'

'D'	'S'
5°	32
10°	33
15°	33
20°	34
25°	35
30°	37

(One angle only)

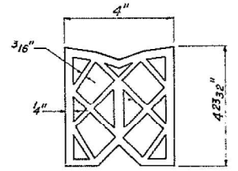
DIMENSION 'L'

'D'	'L'
5°	32'-1"
10°	32'-5 3/8"
15°	33'-1"
20°	34'-0 1/8"
25°	35'-3 1/8"
30°	36'-10 7/8"

QUANTITIES FOR ONE EXP JOINT (BY SKEW)

0°	Preformed Joint Seal 4"	35 Lin. Ft.
5°	Preformed Joint Seal 4"	35 Lin. Ft.
10°	Preformed Joint Seal 4"	36 Lin. Ft.
15°	Preformed Joint Seal 4"	36 Lin. Ft.
20°	Preformed Joint Seal 4"	37 Lin. Ft.
25°	Preformed Joint Seal 4"	39 Lin. Ft.
30°	Preformed Joint Seal 4"	40 Lin. Ft.

FOR INFORMATION ONLY



PREFORMED JOINT SEALER 4"

(AT ABUTMENTS)

NOTES

The ∠ 6" x 4" x ½" shall be fabricated to fit crown of roadway.

The Preformed Joint Sealer shall be paid for by the Unit Price per Lin. Ft.

Cost of 1¼" Low Compression Preformed Elastomeric Joint Seal is incidental to cost of Class 'X' Concrete.

STEEL BEAM BRIDGES

DRAIN & JOINT DETAILS

STANDARD SD-3201

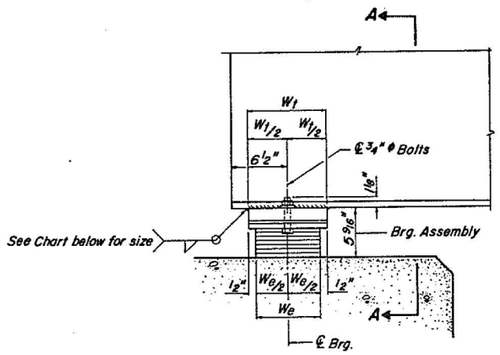
VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

USER NAME =	DESIGNED - DJC	REVISED -	
	CHECKED - KS	REVISED -	
PLOT SCALE =	DRAWN - DJC	REVISED -	
PLOT DATE = JANUARY 26th, 2024	CHECKED - KS	REVISED -	

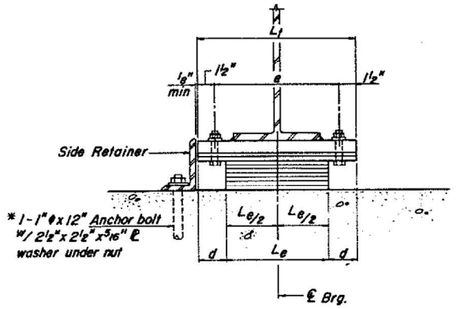
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 033-0038
SHEET 17 OF 22 SHEETS

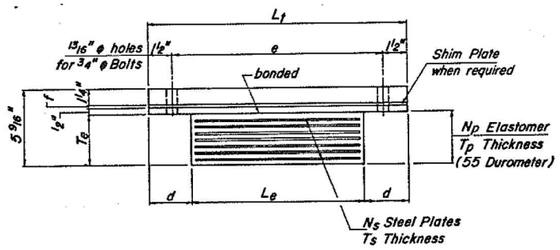
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE OVERLAY 2023-9	HAMILTON	58	53
		CONTRACT NO. 78A08		
	ILLINOIS	FED. AID PROJECT		



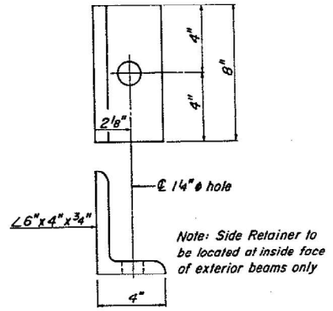
ELEVATION



SECTION A-A



BEARING ASSEMBLY

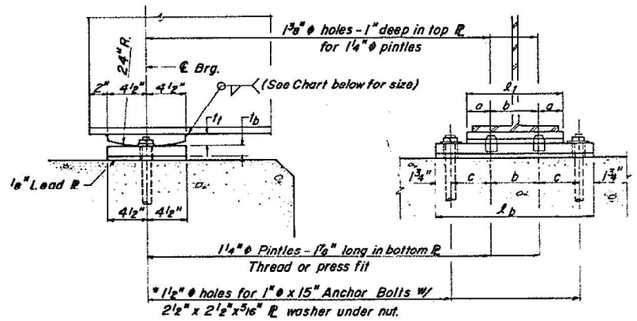


SIDE RETAINER

Brg. Type	Le	We	L1	W1	ø v	Tp	Np	Ts	Ns	Te	d	e	f	Stl. Wt.	Tapered Top ℄
EX-I	10"	7"	18"	8"	5/16"	3/8"	8	14ga.	7	3½"	4"	15"	5/16"	66 lbs.	Grades > 4.0%
EX-II	12"	7"	18"	8"	5/16"	3/8"	8	14ga.	7	3½"	3"	15"	5/16"	66 lbs.	Grades > 4.0%
EX-III	12"	9"	18"	10"	5/16"	3/8"	8	3/32"	7	3⅝"	3"	15"	3/16"	76 lbs.	Grades > 2.5%
EX-IV	12"	9"	19"	10"	5/16"	3/8"	8	3/32"	7	3⅝"	3½"	16"	3/16"	80 lbs.	Grades > 2.5%
EX-V	12"	9"	21"	10"	3/8"	3/8"	8	3/32"	7	3⅝"	4½"	18"	3/16	89 lbs.	Grades > 2.5%
EX-VI	14"	10"	21"	11"	3/8"	7/16"	7	1/8"	6	3 13/16"	3½"	18"	—	85 lbs.	Grades > 2.0%

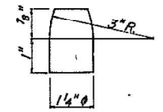
* Note: After beams have been erected, holes for Side Retainers shall be drilled and Anchor Bolts grouted in place.

TYPE EX EXPANSION BEARINGS



ELEVATION

SECTION



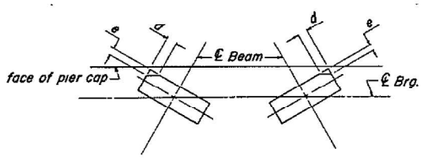
PINTLE

Brg. Type	lt	lb	ø v	It	Ib	a	b	c	Tot. Weight **
FX-I	8"	15½"	5/16"	¼"	1¼"	2"	4"	4"	94 Lbs.
FX-II	10"	17½"	5/16"	¼"	1¼"	2½"	5"	4½"	108 Lbs.
FX-III	11½"	19"	5/16"	¼"	1¼"	3"	5½"	5"	118 Lbs.
FX-IV	13"	20½"	3/8"	¼"	1¼"	3¼"	6½"	5¼"	129 Lbs.
FX-V	16"	23½"	3/8"	¼"	1¼"	4"	8"	6"	149 Lbs.

**Total weight of one assembly includes Top Plate, Bottom Plate, Anchor Bolts, Plate Washers, and Lead Plate.

NOTE: Anchor Bolts at fixed Brgs. may be built into the masonry or drilled and grouted into place after beams are set.

TYPE FX FIXED BEARINGS



BEARING CLIP DIM. (Bottom Plate)

Bearing	d	e
FX-IV	1⅞"	½"
FX-V	2⅜"	1⅜"

Clip plates for 'D's ≥ 20°

FOR INFORMATION ONLY

NOTES

The calculated Stl. Wt., for the 1¼" plate and Shim ℄ (when req'd.), is to be included with the calculated weight of Structural Steel.

Provide Side Retainers, Plate washers, and Anchor Bolts at Expansion Abutments only. Cost is incidental.

For grades greater than shown in table; the top plate of the brg. shall be tapered to match grade. Maintain 1¼" thickness at ℄ of brg.

Illinois Department of Transportation

APPROVED JULY 1, 1981
Engineer of Bridges and Structures
APPROVED JULY 1, 1981
Engineer of Design

ISSUED 7-1-81

STEEL BEAM BRIDGES

EXPANSION AND FIXED BEARINGS

STANDARD SD-3202

VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

USER NAME =	DESIGNED - DJC	REVISED -	
	CHECKED - KS	REVISED -	
PLOT SCALE =	DRAWN - DJC	REVISED -	
PLOT DATE = JANUARY 26th, 2024	CHECKED - KS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 033-0038
SHEET 18 OF 22 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE OVERLAY 2023-9	HAMILTON	58	54
		CONTRACT NO. 78A08		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
FILE NAME: \\vkspr-fs1\sprshare\0500\0595-IL_DOT_District_9\0595-0001-0011_SN041-0062_and_SN033-0038_Brdg_Repair\CADD\CAD Sheets\Structural\SN 038-0038\5951-011-ORD-012-022_Existing Plans.dgn
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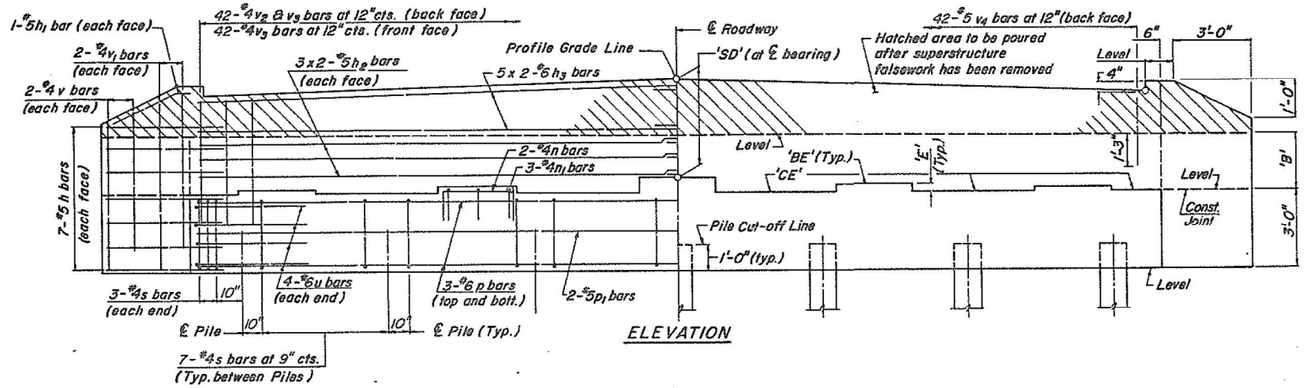

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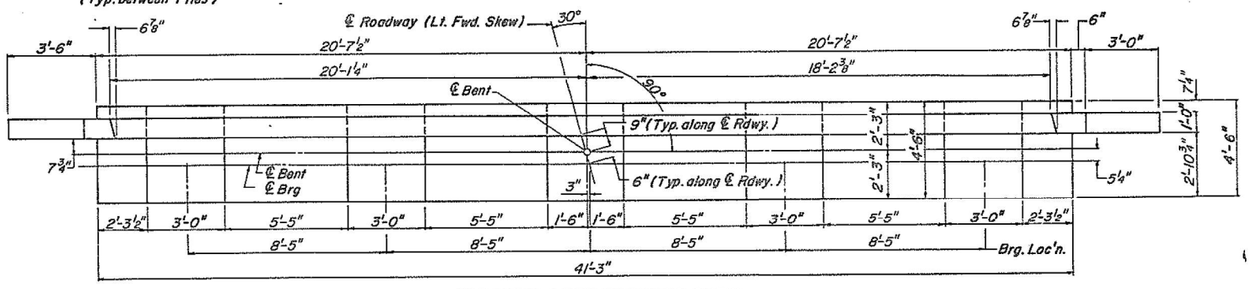
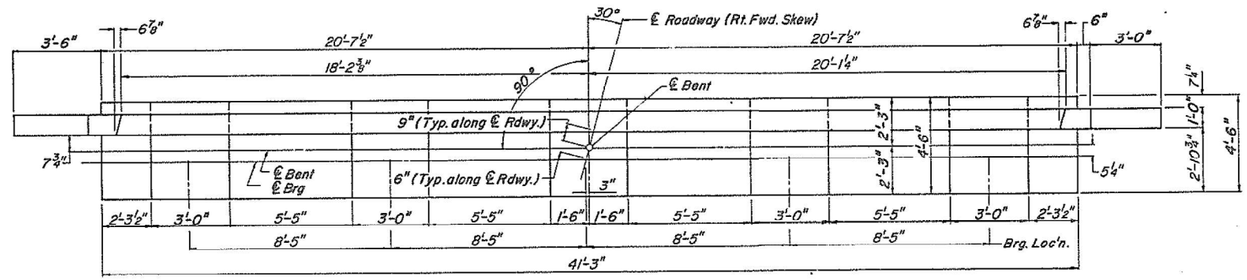
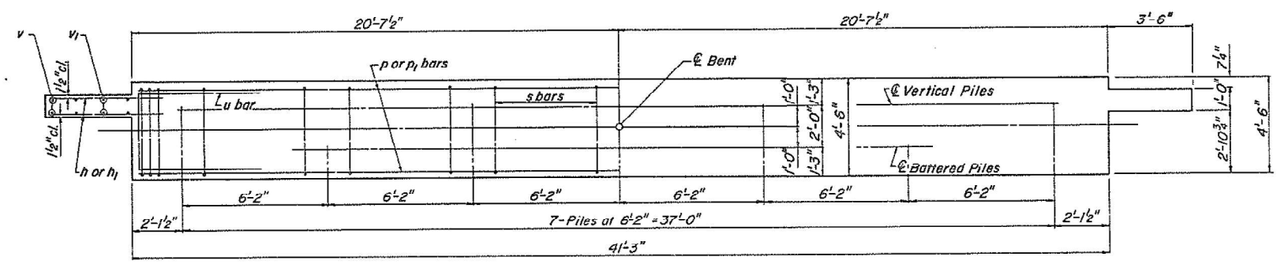


TOP VIEW - LEFT FORWARD SKEW



TOP VIEW - RIGHT FORWARD SKEW

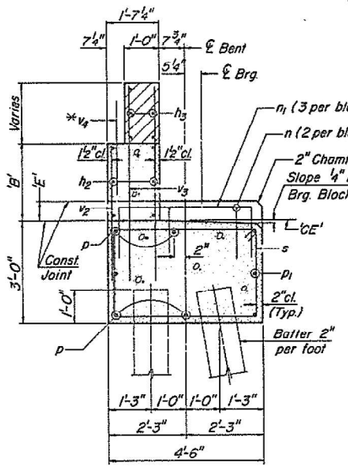


PLAN - PILE CAP

Illinois Department of Transportation

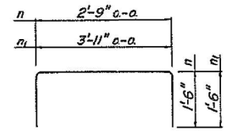
APPROVED JULY 1, 1981
Engineer of Bridges and Structures
APPROVED JULY 1, 1981
Engineer of Design

SSRSD 18-1-2

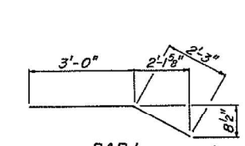


SECTION THRU ABUT.
(At Right Angles)

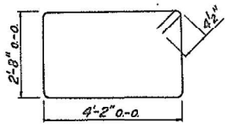
FOR INFORMATION ONLY



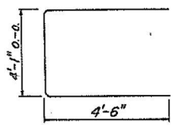
BAR n or n1



BAR h1



BAR s



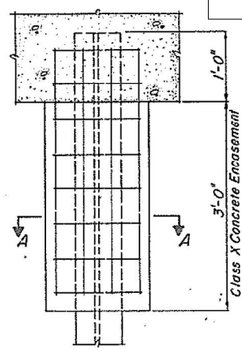
BAR u

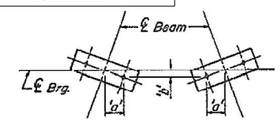
DIMENSION 'B'

Beam Size	'B'
W24	1'-8"
W27	1'-10"
W30	2'-1"
W33	2'-4"

MAXIMUM PILE LOADS

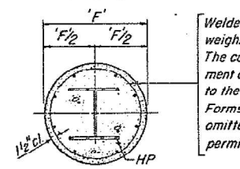
Span	Tons
30'	41
35'	41
40'	42
45'	43
50'	45





ANCHOR BOLT LOCATIONS

Bearing Type	'a'	'b'
FX-I	5 3/16"	3"
FX-II	6 1/16"	3½"
FX-III	6 11/16"	3⅞"
FX-IV	7⅞"	4¼"
FX-V	8 11/16"	5"



SECTION A-A

Welded wire fabric 6x6-W4.0xW4.0 weighing 58 /100 sq ft. The cost of Class X Concrete Encasement and W. W. Fabric is incidental to the cost of furnishing piles. Forms for encasement may be omitted when soil conditions will permit.

DETAIL OF 'H' PILE ENCASEMENT

PILE	'F'
HP 8	1'-6"
HP10	1'-9"
HP12	2'-0"

NOTES

1. Reinforcement bars shall conform to A.A.S.H.T.O. M-31 or M-53 Grade 60.
2. Space reintorcement in cap to miss anchor bolts.
3. The designation "4x2-#5...etc." indicates 4 lines of bars with 2 lengths per line.
4. Pour Brg. Seat Blocks monolithically with cap.
5. For Elevations 'BE' and 'CE', and dimension 'E' See General Plan and Elevation sheet. For dimension 'SD' see Steel Beam Details Standards.

DESIGN STRESSES

f'c = 3,500 p.s.i.
fy = 60,000 p.s.i.

BAR LIST FOR ONE ABUTMENT

Bar	No.	Size	Length	Shape
h	28	#5	5'-3"	
h1	4	#5	5'-3"	
h2	12	#5	21'-4"	
h3	10	#6	21'-9"	
n	10	#4	5'-9"	
n1	15	#4	6'-11"	
p	6	#6	40'-11"	
p1	2	#5	40'-11"	
s	48	#4	14'-5"	
u	8	#6	13'-1"	
v	8	#4	6'-11"	
v1	8	#4	7'-7"	
v2	42	#4	4'-0"	
v3	84	#4	6'-4"	
* v4	42	#5	3'-2"	

* v4 bars shall be omitted when Non-Rigid approach is used.

QUANTITIES FOR ONE ABUTMENT

Beam Size	Item	Quantity
W24	Class 'X' Concrete	30.8 Cu. Yds.
W27	Class 'X' Concrete	31.4 Cu. Yds.
W30	Class 'X' Concrete	32.1 Cu. Yds.
W33	Class 'X' Concrete	32.7 Cu. Yds.
ALL	Reinforcement Bars	2630 Lbs.

STEEL BEAM BRIDGES
ABUTMENT CAP

32' RDWY.	SPANS 30'-50'	'D'=30°

STANDARD SA-3250-30

VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

USER NAME =	DESIGNED - DJC	REVISED -	
	CHECKED - KS	REVISED -	
PLOT SCALE =	DRAWN - DJC	REVISED -	
PLOT DATE = JANUARY 26th, 2024	CHECKED - KS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 033-0038
SHEET 19 OF 22 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE OVERLAY 2023-9	HAMILTON	58	55
		CONTRACT NO. 78A08		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
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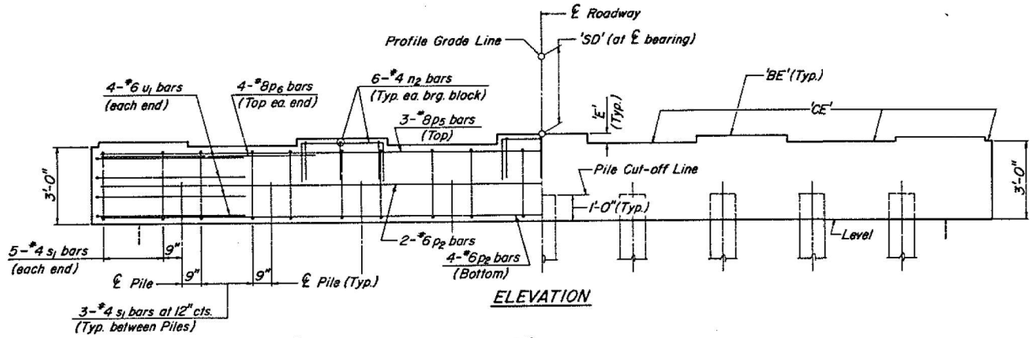
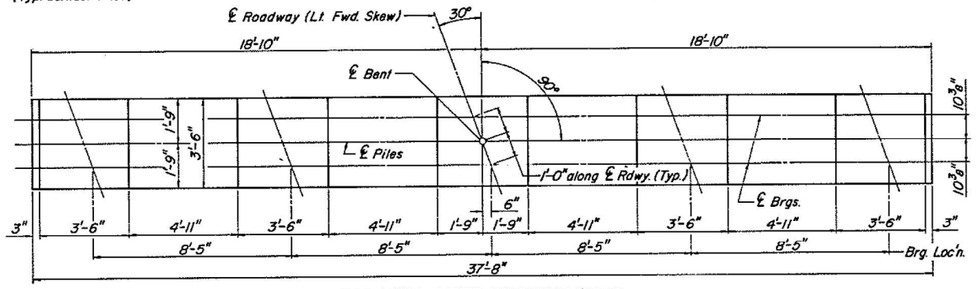
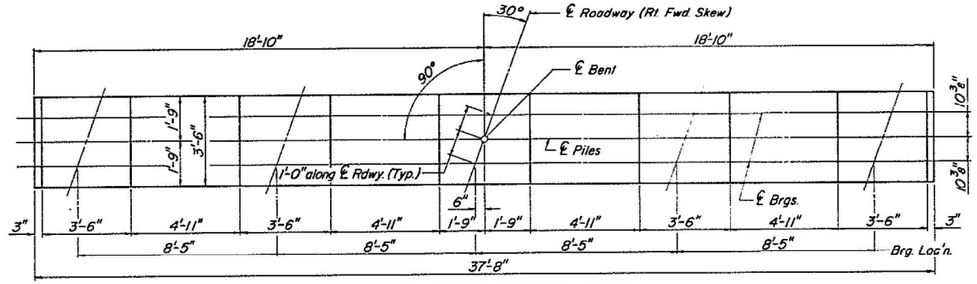


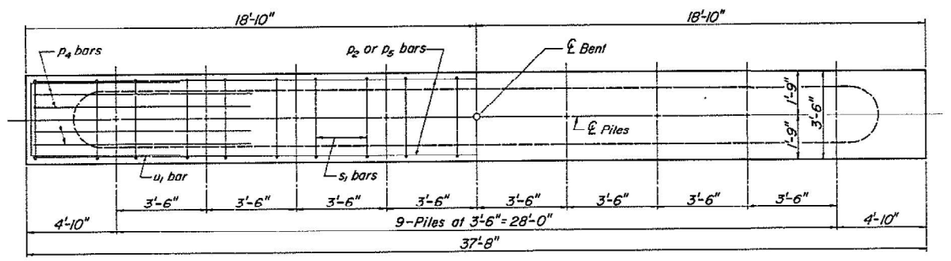
ELEVATION



TOP VIEW - LEFT FORWARD SKEW



TOP VIEW - RIGHT FORWARD SKEW



CAP PLAN

Illinois Department of Transportation

APPROVED JULY 1, 1981

Engineer of Bridges and Structures

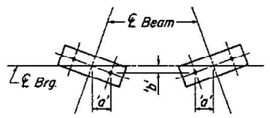
APPROVED JULY 1, 1981

Engineer of Design

ISSUED 7-1-81

Note:
When the PIER FOOTING AND STEM standards are used, the piles in the cap shall be omitted and the spacing of the s_1 bars shall remain as shown.

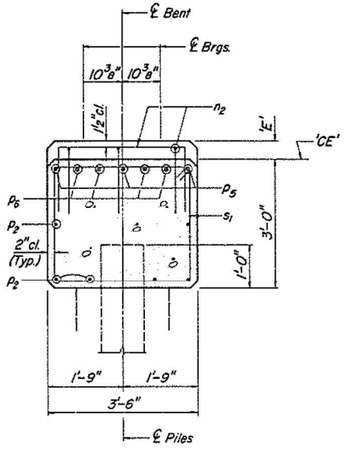
FOR INFORMATION ONLY



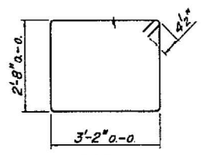
(Rt. Fwd. Skew) (Lt. Fwd. Skew)

ANCHOR BOLT LOCATIONS

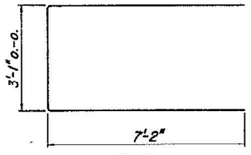
Bearing Type	'a'	'b'
FX-I	5 3/16"	3"
FX-II	6 1/16"	3 1/2"
FX-III	6 15/16"	3 7/8"
FX-IV	7 3/8"	4 1/4"
FX-V	8 11/16"	5"



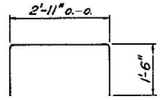
SECTION THRU PIER
(At Right Angles)



BAR s_1



BAR u_1



BAR n_2

MAXIMUM PILE LOADS (Tons) *

'E.H.' / Span	5'-9'	10'-14'	15'-19'
55'	33	35	37
60'	35	37	39
70'	39	41	43
80'	43	45	45

'E.H.' – Encasement Height, see Pile Encasem't. Wall Standard'.
Span – Longest of Either Span Supported by the Pier.

* Maximum Pile Loads apply only for Pile Encasement Wall. For pile loads with Pier footing and Stem, see Pier Footing and Stem Standards.

DESIGN STRESSES

f'c = 3,500 p.s.i.
fy = 60,000 p.s.i.

NOTES

1. Reinforcement Bars shall conform to A.A.S.H.T.O. M-31 or M-53, Grade 60.
2. Space reinforcement in cap to miss anchor bolts.
3. All edges shall have standard ¾" chamfers.
4. Pour Bearing Blocks monolithically with cap.
5. For Elevations 'BE' and 'CE' and dimension 'E' see General Plan and Elevation sheet. For dimension 'SD' see Steel Beam Details Standards.

BAR LIST FOR ONE PIER

Bar	No.	Size	Length	Shape
n_2	30	#4	5'-11"	
p_2	6	#6	37'-4"	
p_5	3	#8	37'-4"	
p_6	8	#8	9'-11"	
s_1	34	#4	12'-5"	
u_1	8	#6	17'-5"	

QUANTITIES FOR ONE PIER

Class 'X' Concrete	16.4	Cu. Yds.
Reinforcement Bars	1460	Lbs.

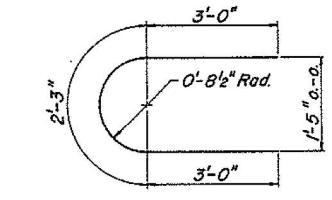
STEEL BEAM BRIDGES
PIER CAP

32' RDWY. | SPANS 55'-80' | 'D'=30°

STANDARD SP-3280-30

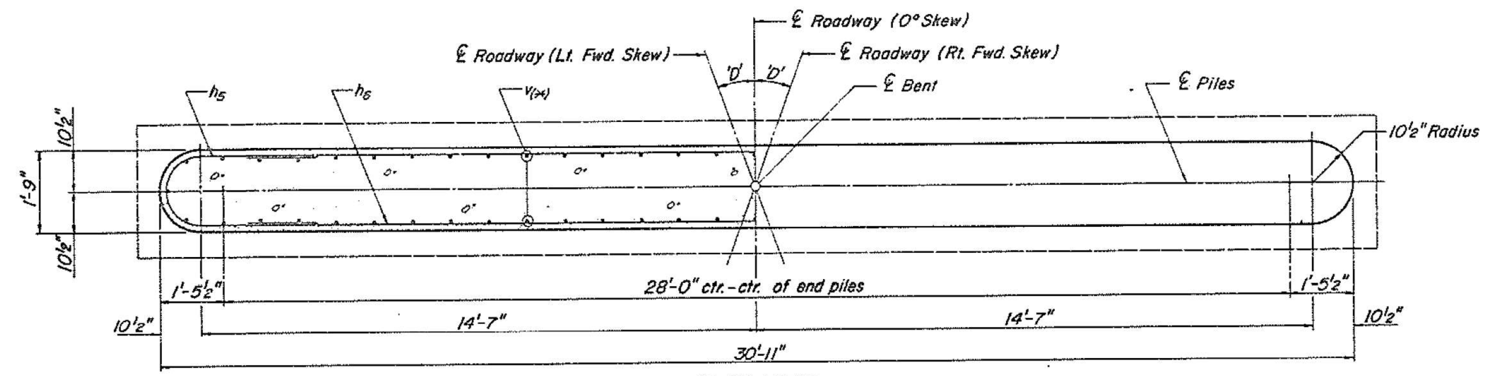
QUANTITIES FOR ONE ENCASEMENT

Height	Encasement Height	h_5 BARS Number	h_5 BARS Size	h_5 BARS Length	h_6 BARS Number	h_6 BARS Size	h_6 BARS Length	$v_{(*)}$ BARS $v_{(*)}$	$v_{(*)}$ BARS No.	$v_{(*)}$ BARS Size	$v_{(*)}$ BARS Length	Reinforcement Bars Pounds	Class 'X' Concrete – Cubic Yards: 7-Pile Encasement 'H' Piles	7-Pile Encasement Mtl. Shell	9-Pile Encasement 'H' Piles	9-Pile Encasement Mtl. Shell
6'	5'	12	#5	8'-3"	12	#5	26'-9"	v_5	64	#5	6'-6"	870	9.9	8.9	9.9	8.6
7'	6'	14	#5	8'-3"	14	#5	26'-9"	v_6	64	#5	7'-6"	1,010	11.9	10.7	11.9	10.3
8'	7'	16	#5	8'-3"	16	#5	26'-9"	v_7	64	#5	8'-6"	1,150	13.9	12.4	13.9	12.0
9'	8'	18	#5	8'-3"	18	#5	26'-9"	v_8	64	#5	9'-6"	1,290	15.8	14.2	15.8	13.7
10'	9'	20	#5	8'-3"	20	#5	26'-9"	v_9	64	#5	10'-6"	1,430	17.8	16.0	17.8	15.5
11'	10'	22	#5	8'-3"	22	#5	26'-9"	v_{10}	64	#5	11'-6"	1,570	19.8	17.8	19.8	17.2
12'	11'	24	#5	8'-3"	24	#5	26'-9"	v_{11}	64	#5	12'-6"	1,710	21.8	19.5	21.8	18.9
13'	12'	26	#5	8'-3"	26	#5	26'-9"	v_{12}	64	#5	13'-6"	1,850	23.8	21.3	23.8	20.6
14'	13'	28	#5	8'-3"	28	#5	26'-9"	v_{13}	64	#5	14'-6"	1,990	25.7	23.1	25.7	22.3
15'	14'	30	#5	8'-3"	30	#5	26'-9"	v_{14}	64	#5	15'-6"	2,130	27.7	24.9	27.7	24.0
16'	15'	32	#5	8'-3"	32	#5	26'-9"	v_{15}	64	#5	16'-6"	2,270	29.7	26.6	29.7	25.8
17'	16'	34	#5	8'-3"	34	#5	26'-9"	v_{16}	64	#5	17'-6"	2,410	31.7	28.4	31.7	27.5
18'	17'	36	#5	8'-3"	36	#5	26'-9"	v_{17}	64	#5	18'-6"	2,550	33.7	30.2	33.7	29.2
19'	18'	38	#5	8'-3"	38	#5	26'-9"	v_{18}	64	#5	19'-6"	2,690	35.6	32.0	35.6	30.9
20'	19'	40	#5	8'-3"	40	#5	26'-9"	v_{19}	64	#5	20'-6"	2,830	37.6	33.7	37.6	32.6

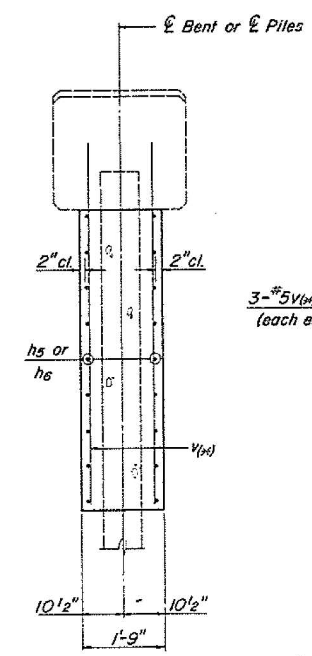


BAR h_5.

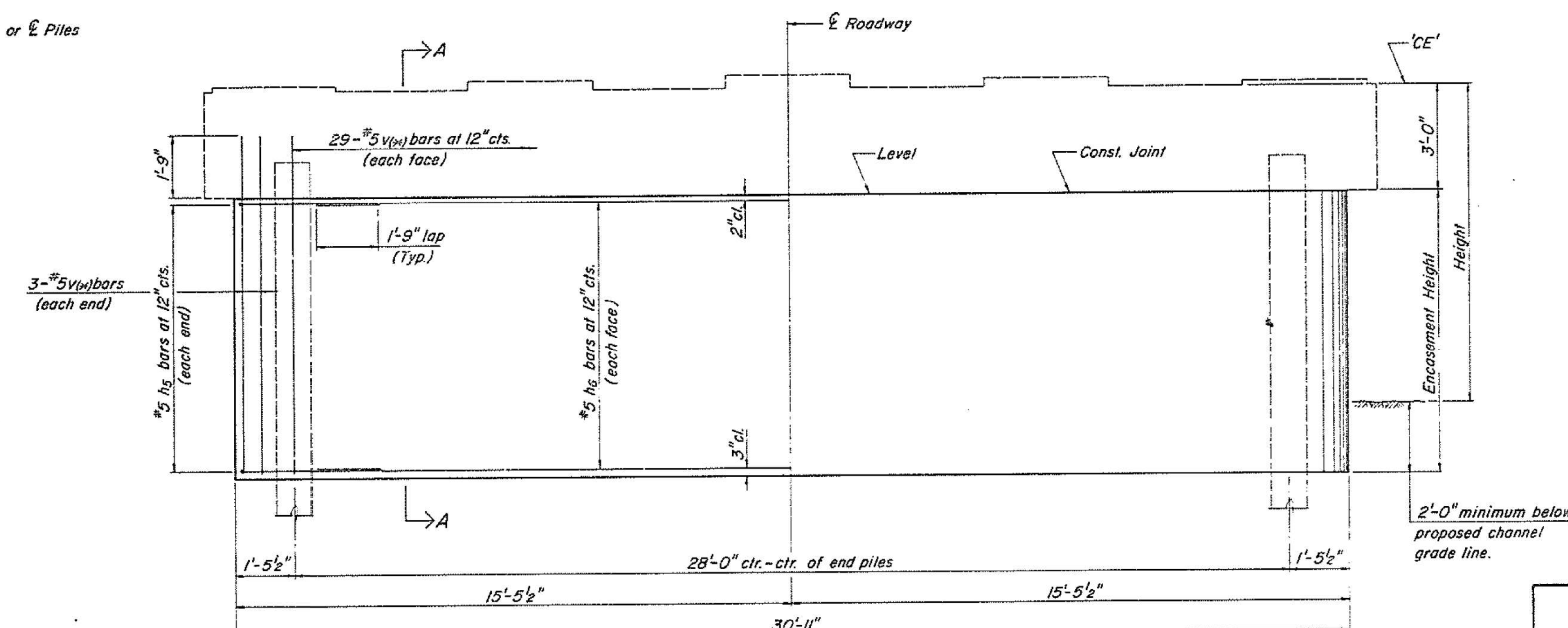
FOR INFORMATION ONLY



PLAN VIEW
('θ'=Designated Skew Angle)



SECTION A-A



ELEVATION

NOTE

Reinforcement bars shall conform to A.A.S.H.T.O. M-31 or M-53, Grade 60.

DESIGN STRESSES

f'c = 3,500 p.s.i.
fy = 60,000 p.s.i

Illinois Department of Transportation

APPROVED JULY 1, 1981
Engineer of Bridges and Structures

APPROVED JULY 1, 1981
Engineer of Design

ISSUED 7-1-81

STEEL BEAM BRIDGES
PILE ENCASEMENT WALL

32' RDWY.	ALL SKEWS	ALL SPANS

STANDARD SE-3200

MODEL: Default
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VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

USER NAME =	DESIGNED - DJC	REVISED -
	CHECKED - KS	REVISED -
PLOT SCALE =	DRAWN - DJC	REVISED -
PLOT DATE = JANUARY 26th, 2024	CHECKED - KS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 033-0038

SHEET 21 OF 22 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE OVERLAY 2023-9	HAMILTON	58	57
		CONTRACT NO. 78A08		
		ILLINOIS FED. AID PROJECT		

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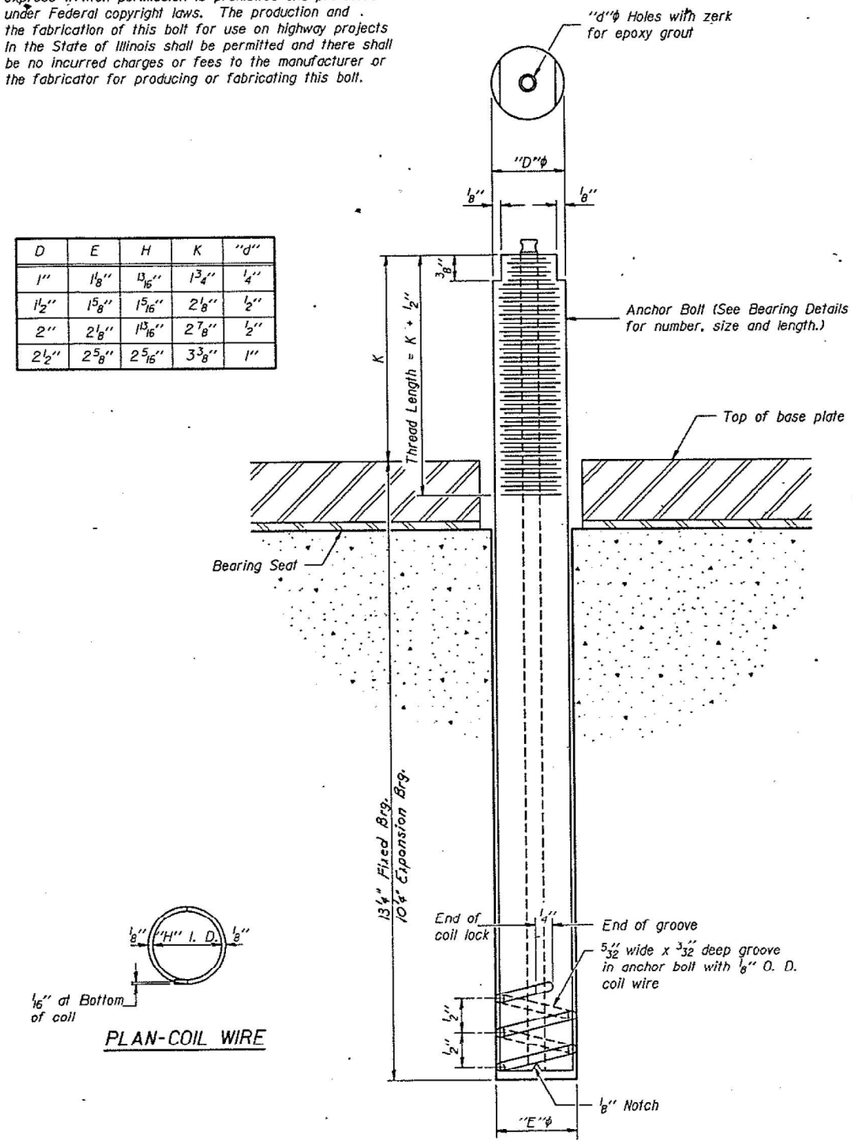
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 853	7BR	HAMILTON	17	14
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 10
10 SHEETS



D	E	H	K	"d"
1"	1 1/8"	13/16"	1 3/4"	1/4"
1 1/2"	1 5/8"	1 5/16"	2 1/8"	1/2"
2"	2 1/8"	1 13/16"	2 7/8"	1/2"
2 1/2"	2 5/8"	2 5/16"	3 3/8"	1"

PLAN-COIL WIRE

ILLINOIS COIL-LOCK ANCHOR BOLT

MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A519, Grade 1026 and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire.

The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.

The epoxy grout shall be a two-component, epoxy resin bonding system comforming to ASTM C881, Type I, Grade I and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes in accordance with the manufacturer's recommendations and procedures.

The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:

1. A threaded rod stud with nut and washer conforming to ASTM A307.
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or in accordance with the manufacturer's recommendation after beams or girders have been erected and adjusted.

Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.

The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for "Furnishing and Erecting Structural Steel".

FOR INFORMATION ONLY

DESIGNED	A.E.S.
CHECKED	D.J.R.
DRAWN	M.G.
CHECKED	D.J.R.

ABB-1 12-1-83

September 20 1984
EXAMINED
PASSED
APPROVED
ENGINEER OF BRIDGES AND STRUCTURES
DIRECTOR OF HIGHWAYS

STANDARD BRIDGE
STEEL BEAMS-32'ROADWAY

ANCHOR BOLT DETAILS FOR BEARINGS

ILLINOIS ROUTE 14
OVER SULLIVAN BRANCH

RT. F.A. 853 SEC. 7BR
HAMILTON COUNTY
STATION 699+72.00

VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

USER NAME =	DESIGNED - DJC	REVISED -	
	CHECKED - KS	REVISED -	
PLOT SCALE =	DRAWN - DJC	REVISED -	
PLOT DATE = JANUARY 26th, 2024	CHECKED - KS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 033-0038
SHEET 22 OF 22 SHEETS

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