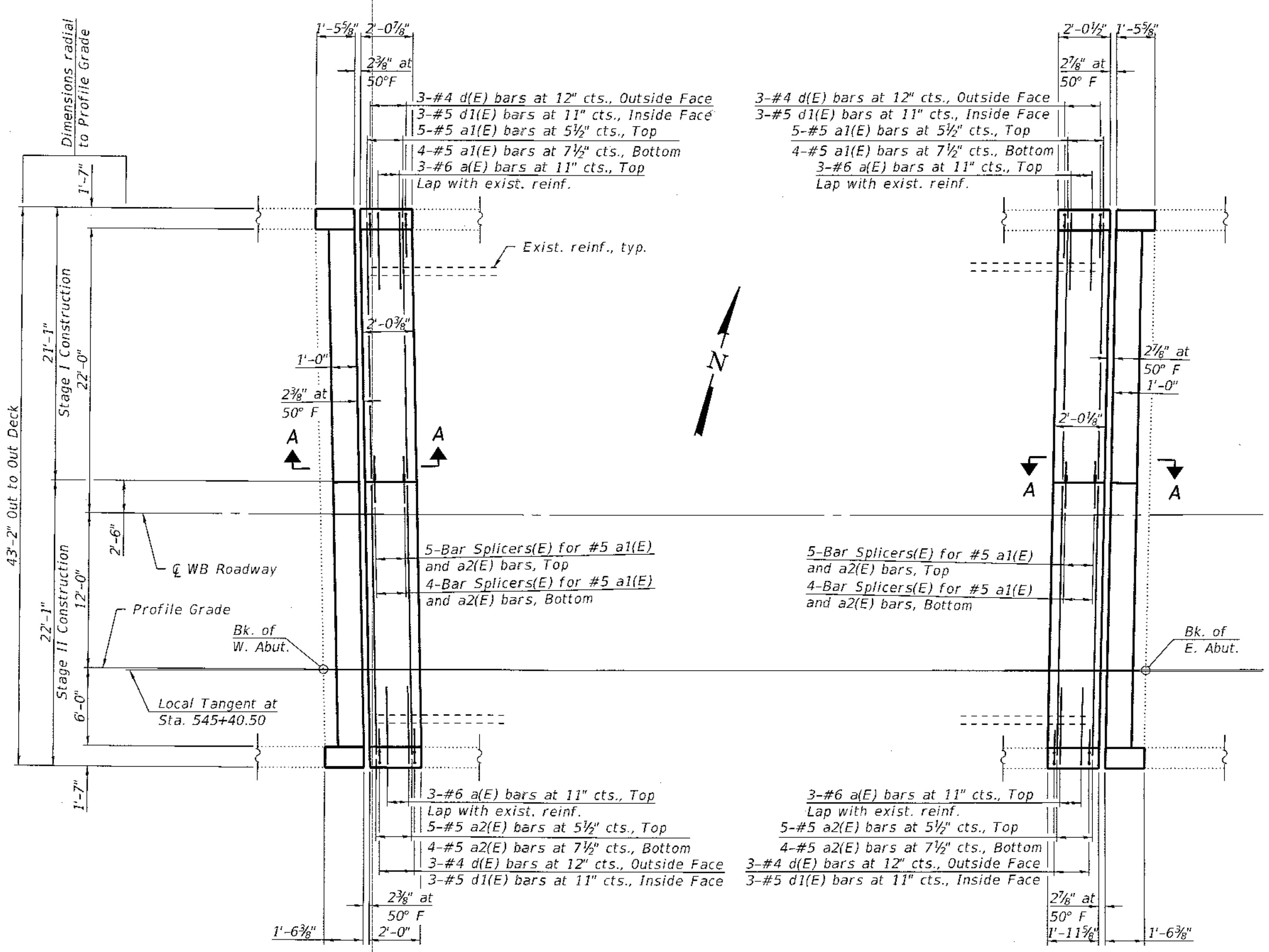
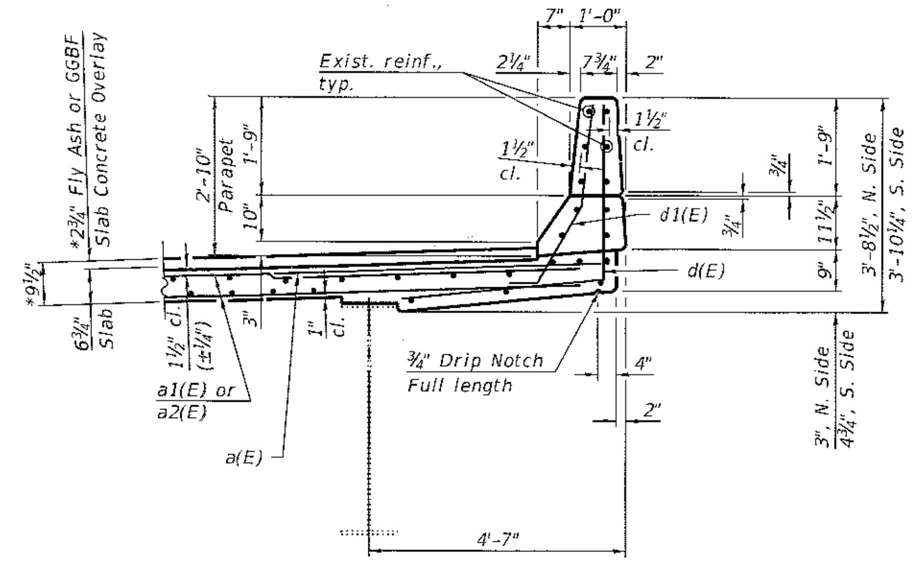
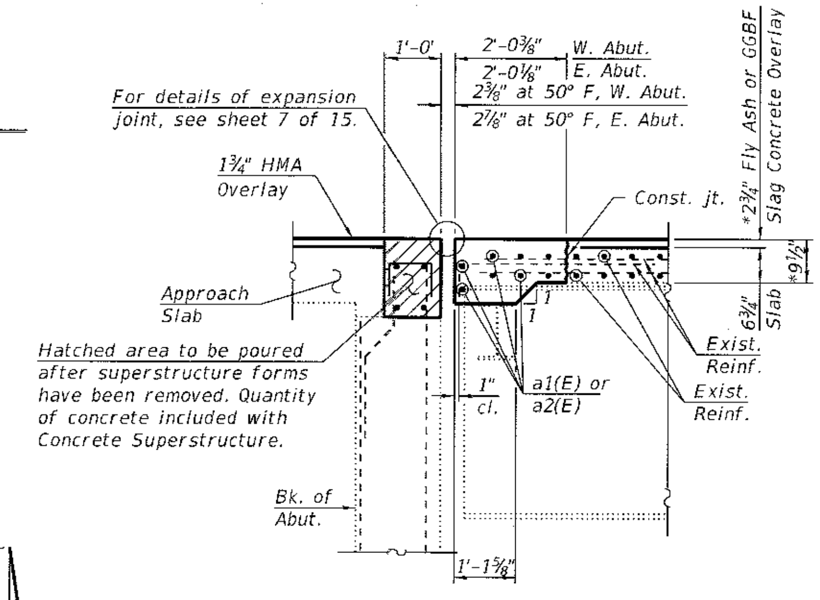


PARTIAL PLAN OF REINFORCEMENT DETAIL



SECTION THRU PARAPET

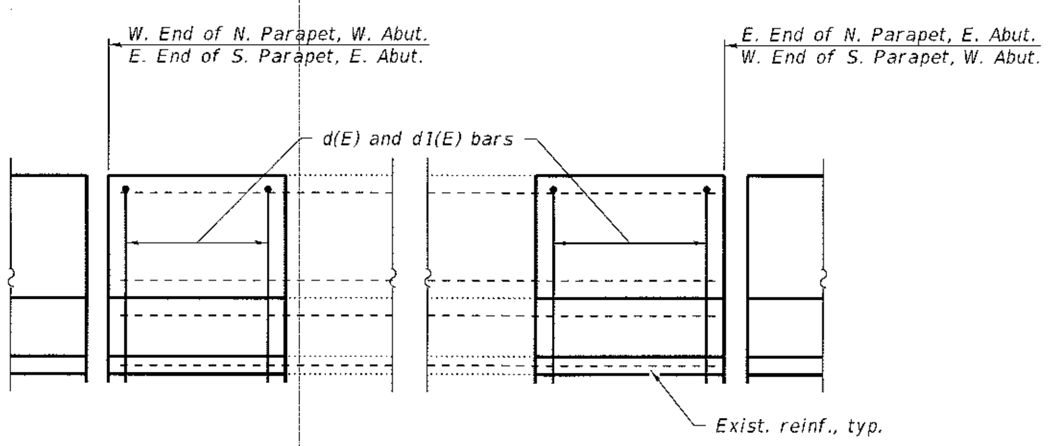
*Prior to grinding



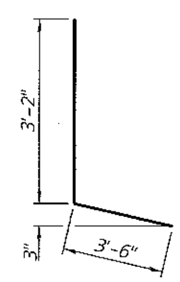
SECTION A-A
(Horiz. dim. at right L's)

SUPERSTRUCTURE BILL OF MATERIAL

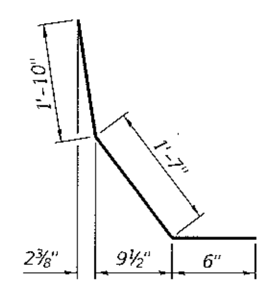
Bar	No.	Size	Length	Shape
a(E)	12	#6	6'-0"	
a1(E)	18	#5	20'-7"	
a2(E)	18	#5	21'-7"	
d(E)	12	#4	6'-8"	
d1(E)	12	#5	3'-11"	
Concrete Removal		Cu. Yd.	11.2	
Concrete Superstructure		Cu. Yd.	12.9	
Reinforcement Bars, Epoxy Coated		Pound	1,000	



INSIDE ELEVATION OF PARAPET



BAR d(E)



BAR d1(E)

Notes:
Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on sheet 7 of 15.
Cut ends of existing reinforcement bars extending into new construction to maintain 1½" minimum clearance.
For details of Bar Splicers, see sheet 10 of 15.
For Superstructure Concrete Removal Details, see sheet 5 of 15.

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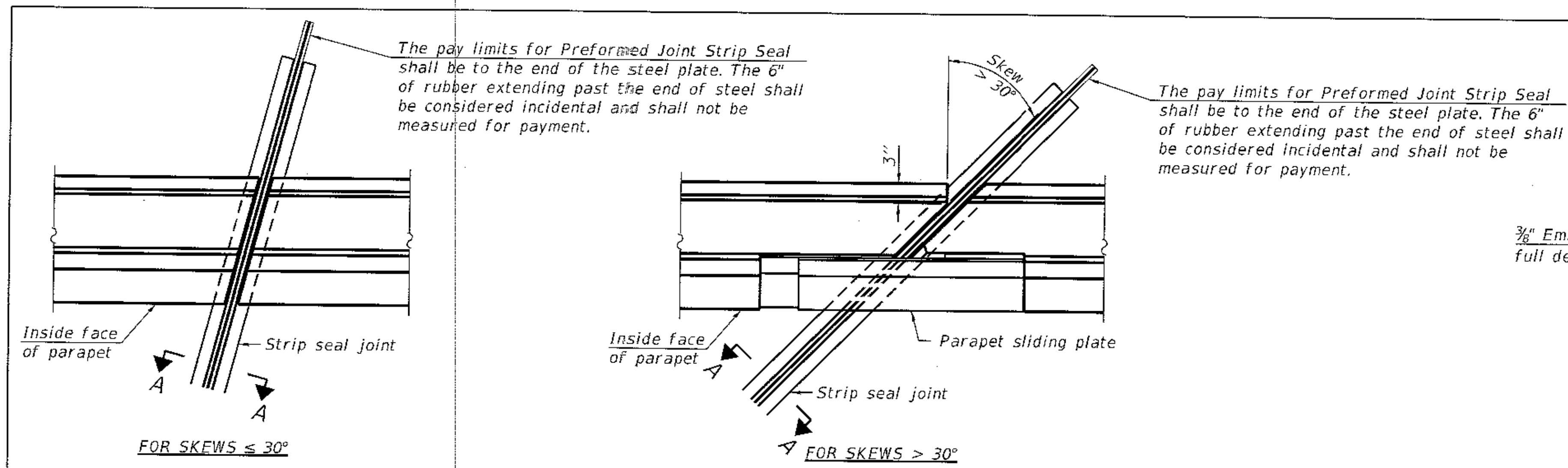
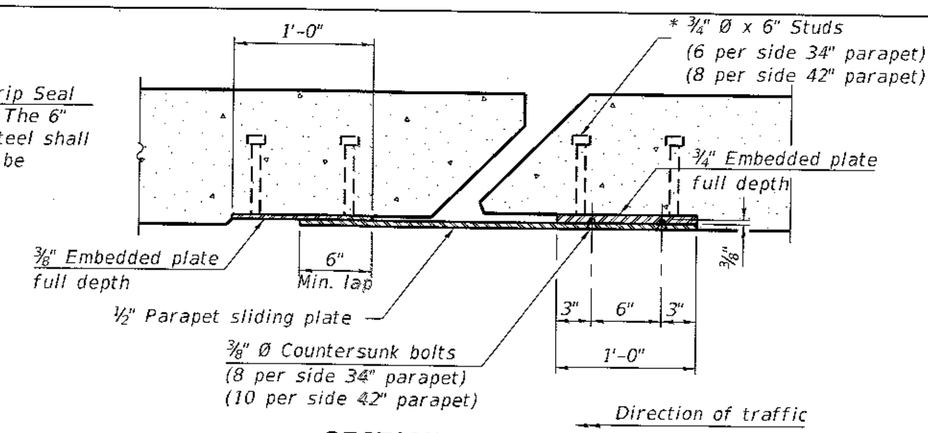
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE REPAIR DETAILS
STRUCTURE NO. 075-0119
SHEET NO. 6 OF 15 SHEETS

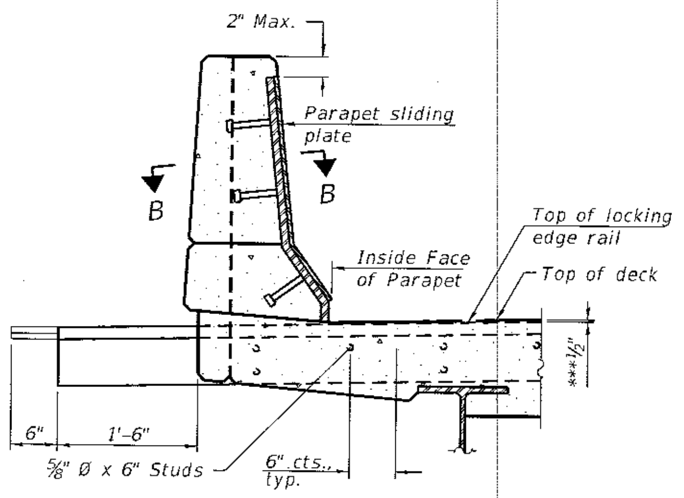
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	101
		CONTRACT NO. 72J42		
		ILLINOIS FED. AID PROJECT		



PLAN AT PARAPET

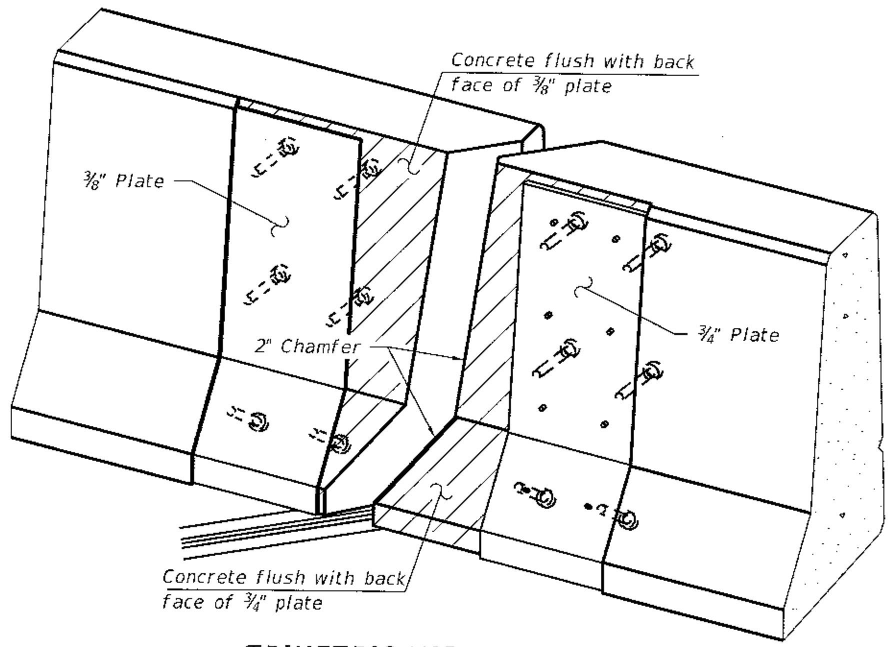


SECTION B-B



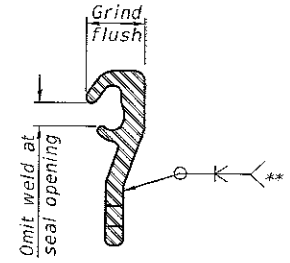
ELEVATION AT PARAPET

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



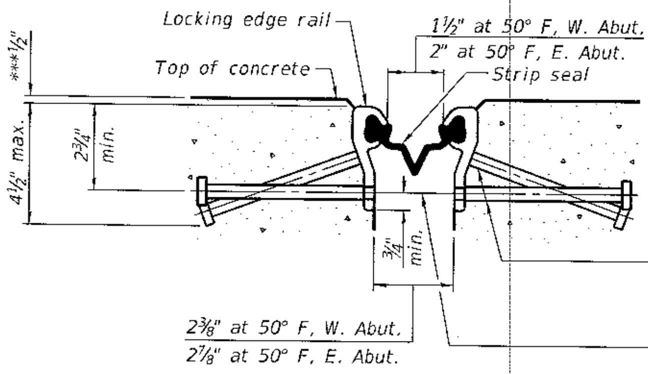
TRIMETRIC VIEW

(Showing embedded plates only)



LOCKING EDGE RAIL SPLICE

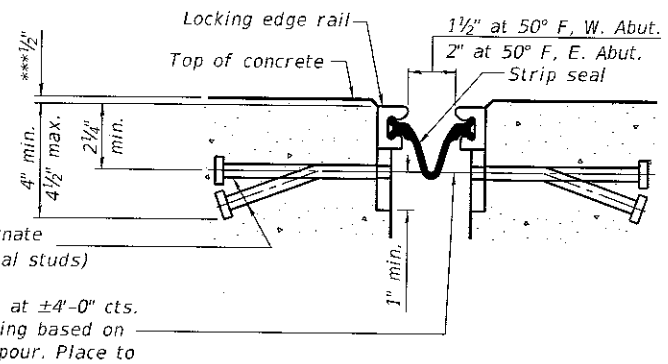
The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.



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.

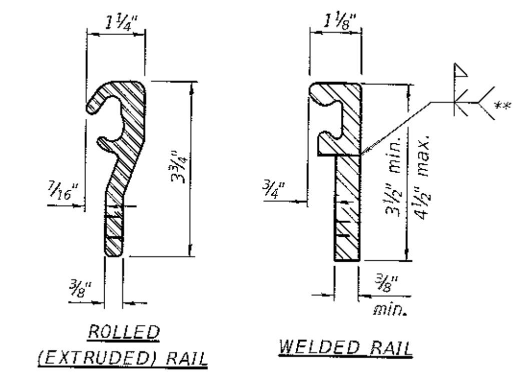


SHOWING WELDED RAIL JOINT

SECTION A-A

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

*** Prior to grinding.



LOCKING EDGE RAILS

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

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.

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

34" F-shape barrier shown, 42" F-shape 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.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	92.5

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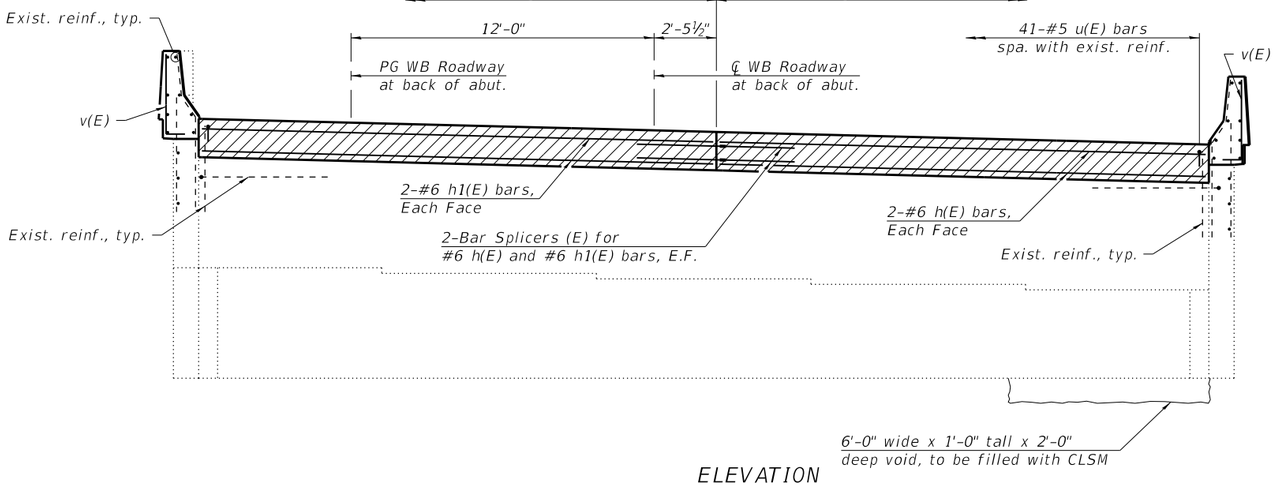
PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 075-0119

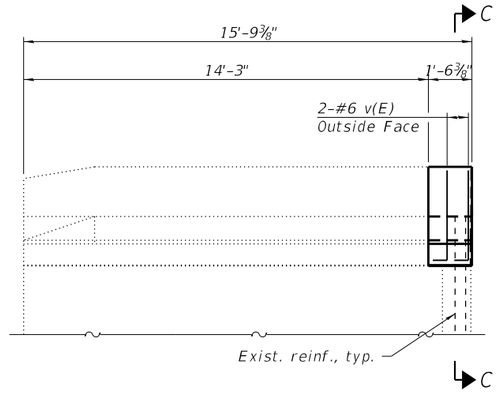
SHEET NO. 7 OF 15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	102
		CONTRACT NO. 72J42		
		ILLINOIS FED. AID PROJECT		



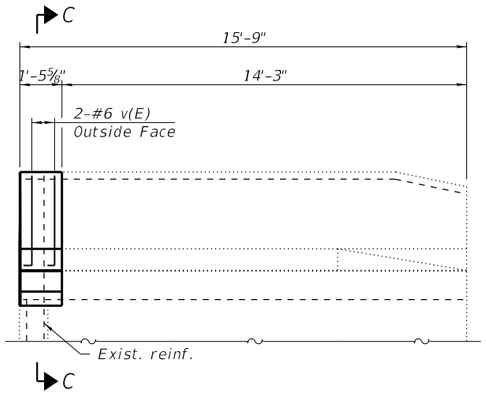
ELEVATION

(Looking West)



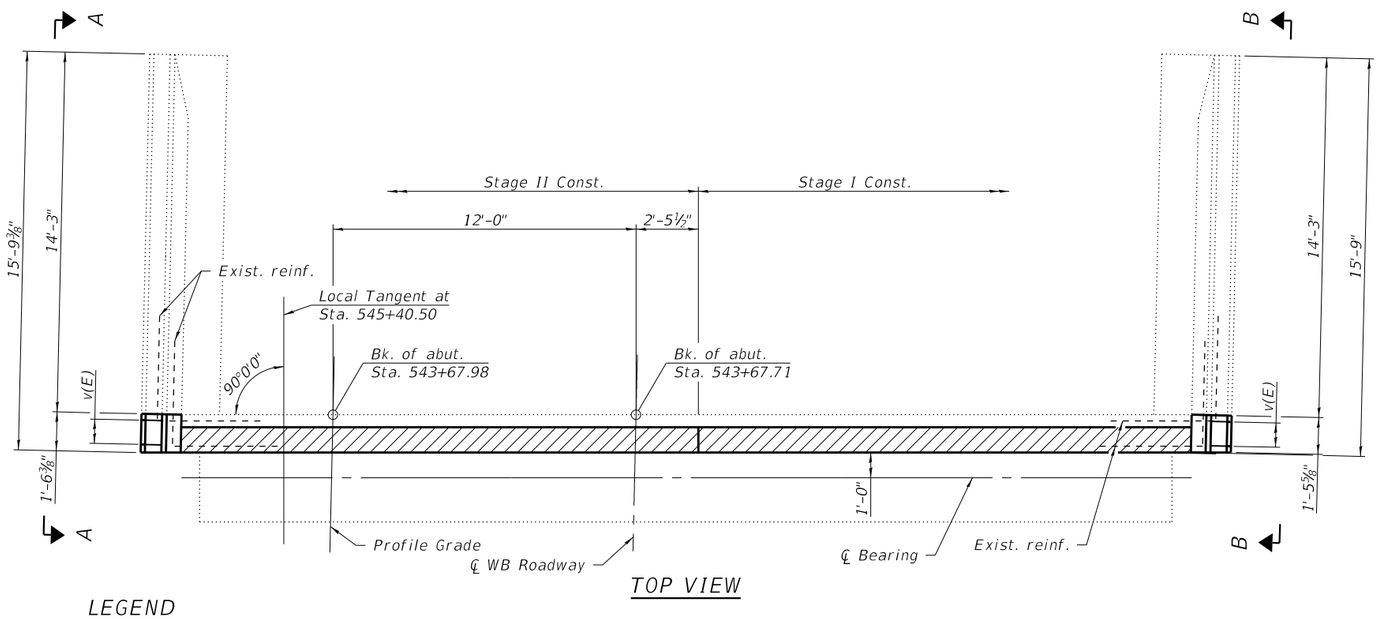
VIEW A-A

(West Abutment shown, East Abutment mirror image.)



VIEW B-B

(West Abutment shown, East Abutment mirror image.)



TOP VIEW

LEGEND

Structural Repair of Concrete
(Depth Equal to or Less than 5 inches)

Structural Repair of Concrete
(Depth Greater than 5 inches)

Notes:
For Section C-C, see sheet 9 of 15.
Cut existing reinforcement to maintain a 1½" minimum clearance.

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PLOT DATE = 8/17/2017

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DRAWN - TIM FRIEDERICH
CHECKED - ERIC M. LAGEMANN

REVISED -
REVISED -
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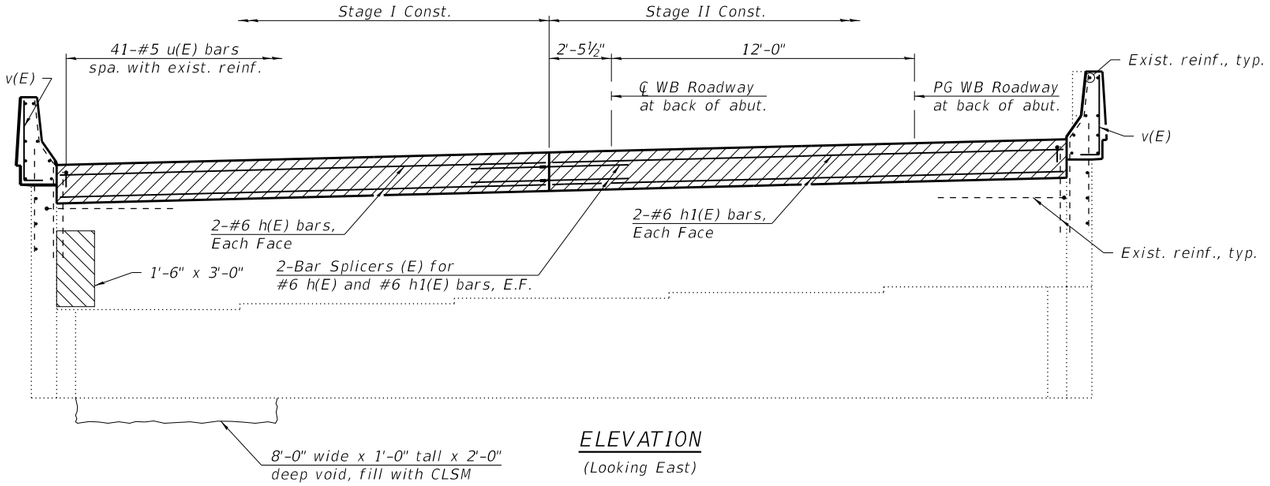
DEPARTMENT OF TRANSPORTATION

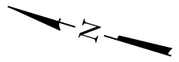
WEST ABUTMENT DETAILS
STRUCTURE NO. 075-0119
SHEET NO. 8 OF 15 SHEETS

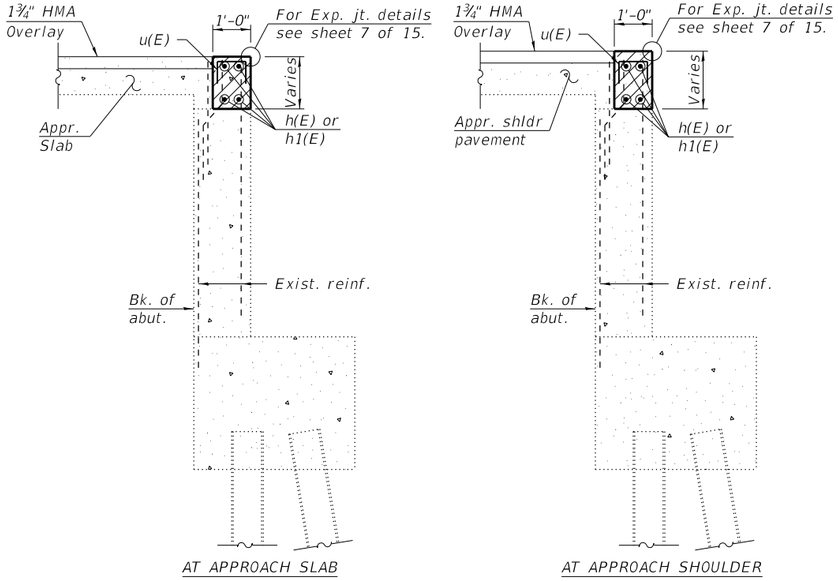
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	103
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			



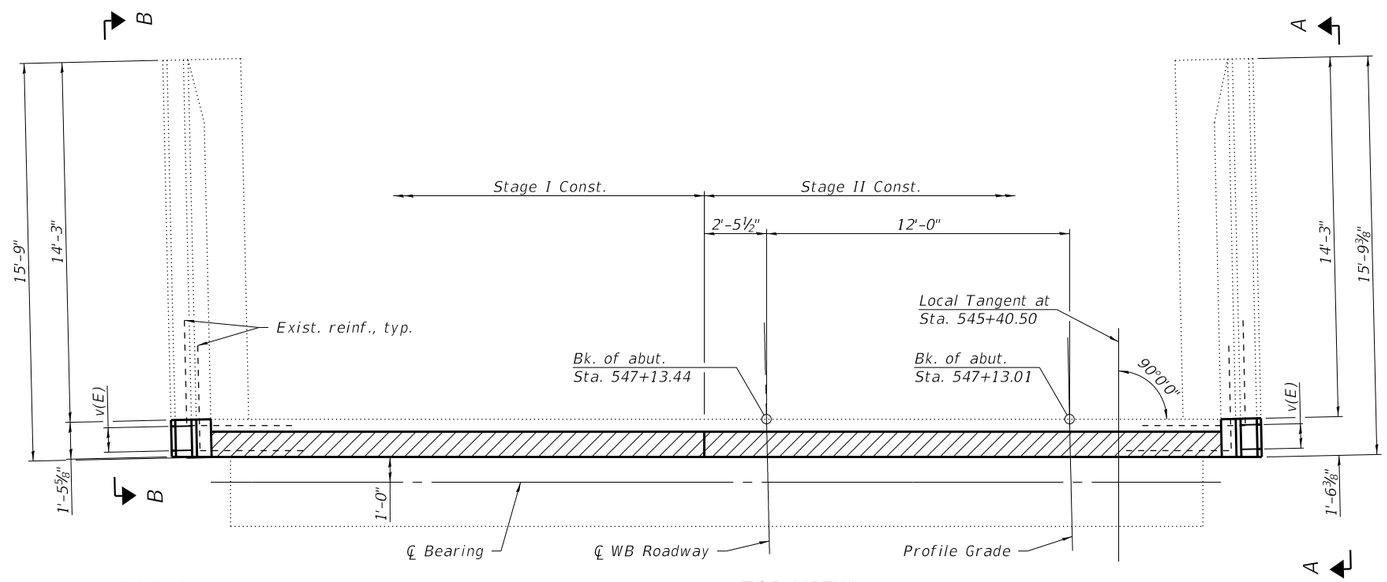
ELEVATION

(Looking East)





SECTION THRU ABUTMENT



TOP VIEW

SECTION C–C

BOTH ABUTMENTS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	8	#6	20'–1"	——
h1(E)	8	#6	21'–1"	——
u(E)	82	#5	2'–3"	⊐
v(E)	8	#6	3'–11"	⊐
Reinforcement Bars, Epoxy Coated			Pound	730
Structural Repair of Concrete (Depth Greater than 5 inches)			Sq. Ft.	5

LEGEND

Structural Repair of Concrete
(Depth Equal to or Less than 5 inches)

Structural Repair of Concrete
(Depth Greater than 5 inches)

BAR u(E)

BAR v(E)

Note:
For Views A–A and B–B,
see sheet 8 of 15.

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PLOT DATE = 8/17/2017	CHECKED - ERIC M. LAGEMANN	REVISED -

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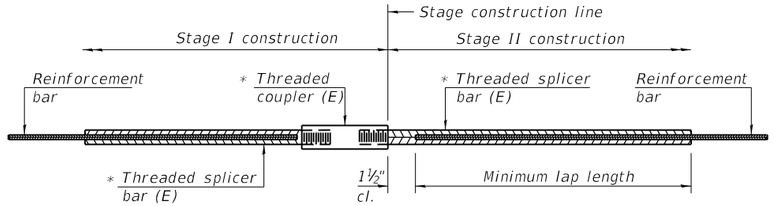
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT DETAILS
STRUCTURE NO. 075–0119
SHEET NO. 9 OF 15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	104
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			

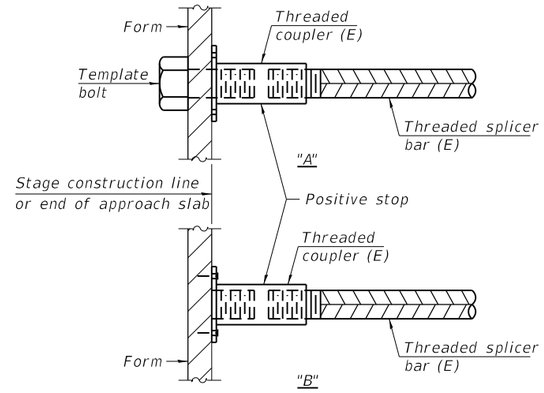


STANDARD BAR SPLICER ASSEMBLY

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

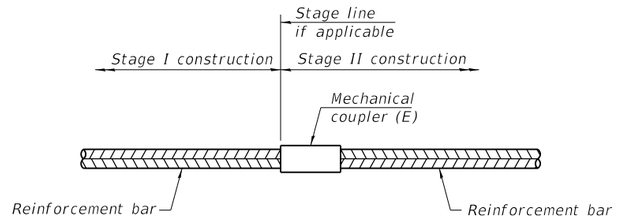
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
Deck	#5	18	2'-6"
West Abutment	#6	4	3'-0"
East Abutment	#6	4	3'-0"



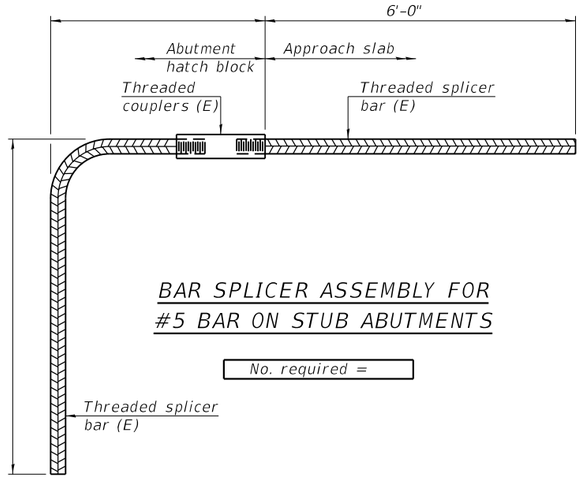
INSTALLATION AND SETTING METHODS

"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.

BSD-1

2-17-2017

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	CHECKED - ERIC M. LAGEMANN	REVISED -

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DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 075-0119
SHEET NO. 10 OF 15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	105
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			

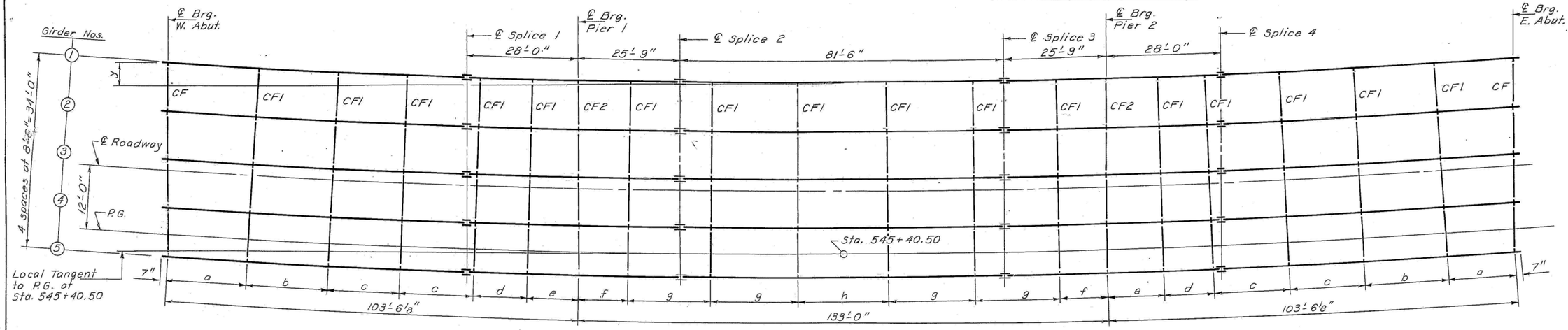
FOR INFORMATION ONLY

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

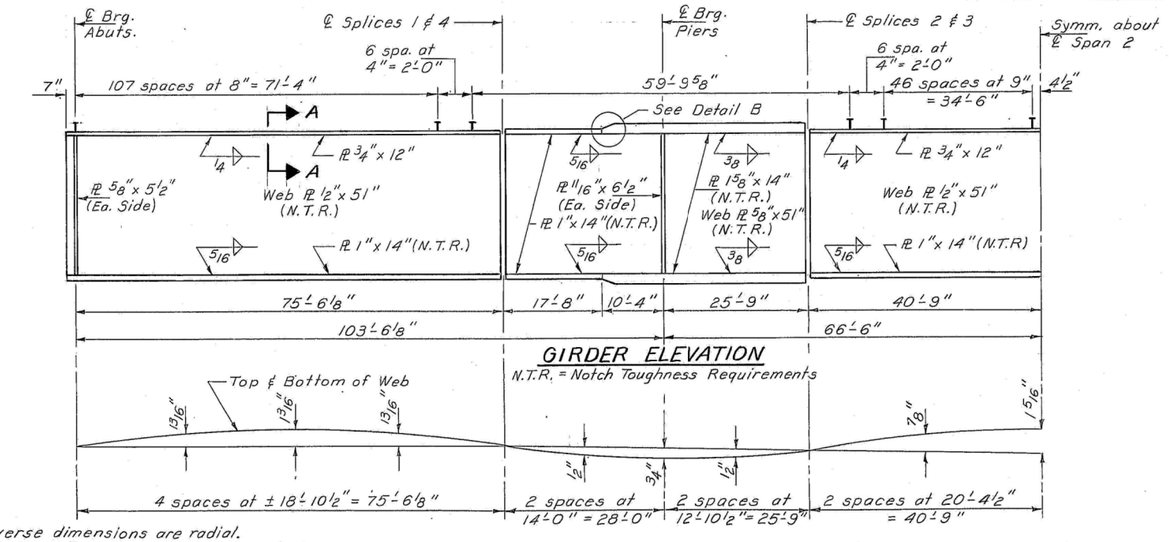
INTERIOR GIRDER REACTION TABLE		
	Abuts.	Piers
R℄ (K)	51.3	187.1
R4 (K)	51.3	91.5
Imp. (K)	10.9	18.6
R TOTAL (K)	113.5	297.2

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
F.A.I. # 408	75-6B-2	PIKE	511	260
FED ROAD DIST NO 7	ILLINOIS	FED AID PROJECT:		

SHEET NO. 8
18 SHEETS



FRAMING PLAN



GIRDER ELEVATION

N.T.R. = Notch Toughness Requirements

Notes: All transverse dimensions are radial.
All longitudinal dimensions are measured along ℄ of Girders.
See Sheet 9 of 18 for Sec. A-A & Detail B.
See Sheet 10 of 18 for Cross Frames.
Web PL's, Flange PL's and Brg. Stiffener PL's shall be AASHTO M223 Grade 50.

DESIGNED	Mary H. Bloxdorf
CHECKED	David Burdick
DRAWN	Paul Summer
CHECKED	DB MHB

Sept 14 1987
EXAMINED Orajit O. Kausar ENGINEER OF BRIDGE DESIGN
PASSED James T. Kaufmann ENGINEER OF BRIDGES AND STRUCTURES
APPROVED DIRECTOR OF HIGHWAYS

CAMBER DIAGRAM

* TOP OF WEB ELEVATIONS

	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5
℄ Brg. W. Abut.	580.36	580.58	580.79	581.01	581.23
℄ Splice 1	579.28	579.50	579.72	579.94	580.16
℄ Pier 1	578.82	579.04	579.26	579.48	579.70
℄ Splice 2	578.51	578.73	578.95	579.17	579.39
℄ Splice 3	577.30	577.52	577.74	577.96	578.18
℄ Brg. Pier 2	576.84	577.06	577.28	577.51	577.73
℄ Splice 4	576.47	576.70	576.92	577.14	577.36
℄ Brg. E. Abut.	575.30	575.52	575.75	575.97	576.20

* For fabrication only Elevations at Splices have been adjusted for camber.

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp.1 & 0.6 Sp. 3	Piers	0.5 Sp. 2
Is	(in4)	20,663	38,420	20,663
Ic	(in4)	52,516		52,516
Ss	(in3)	868	1,416	868
Sc	(in3)	1,203		1,203
Sbi	(in3)	32.7	53	32.7
D℄	(K/I)	0.996	1.491	0.996
M℄	('K)	645	2,145	654
S℄	(K/I)	0.377		0.377
Ms℄	('K)	289		340
M4	('K)	1,055	1,020	1,170
M Imp	('K)	223	203	219
5/3 (M4 + I)	('K)	2,130	2,038	2,315
Ma	('K)	3,983	5,438	4,302
Mbi	('K)	6.7	2.0	6.7
fs ℄ non-comp	(k.s.i.)	8.9	18.2	9.0
fs ℄ (comp)	(k.s.i.)	2.9		3.4
fs 5/3 (4 + I)	(k.s.i.)	21.2	17.3	23.1
fw	(k.s.i.)	2.5	0.4	2.5
(fs+fw) (Overload)	(k.s.i.)	34.9	35.8	37.4
Fs (Total)	(k.s.i.)	38.3	46.2	46.2
fs (Total) + fw	(k.s.i.)	40.8	46.6	48.7
VR	(K)	66.9		58.9
Fb	(k.s.i.)	48.6	47.2	48.6

All structural steel fabricators performing work on the main load carrying components of steel structures shall be certified under Category III (AISC) Quality Certification Program.

Fb - Maximum allowable stress Fbu or Fby computed according to AASHTO [Guide Specifications for Horizontally Curved Highway Bridges Section 2.12(B) & 2.16].
Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).
Ic and Sc are the moment of inertia and section modulus of the composite section used in computing fs (Total & Overload).
VR is the maximum 4 + Impact shear range in spon.
Ma (Applied Moment) = 1.3 [M℄ + Ms℄ + 5/3 (M4 + I)]
(fs+fw) (overload) is the sum of the stress due to M℄ + Ms℄ + 5/3 (M4 + I)
fs (Total) is the sum of the stress due to 1.3 [M℄ + Ms℄ + 5/3 (M4 + I)]
Sbi is the section modulus for one flange plate for lateral flange bending.
Mbi is the lateral bending moment for flange plate (factored).
fw is the calculated normal stress at the edge of flange due to lateral flange bending (factored).
M4 and R4 have been increased due to the effect of centrifugal force and superelevation.

	a	b	c	d	e	f	g	h	Radius
Girder 1	21'-6 1/16"	20'-6 7/8"	17'-11 11/16"	13'-11 1/4"	11'-7 13/16"	12'-0 1/16"	21'-9 9/16"	21'-9 5/8"	7608.44
Girder 2	21'-4 1/16"	20'-7 1/8"	17'-11 5/16"	13'-11 7/16"	11'-8 7/8"	11'-11 5/16"	21'-9 7/8"	21'-9 7/8"	7616.94
Girder 3	21'-2 1/16"	20'-7 7/16"	17'-11 1/2"	13'-11 5/8"	11'-10"	11'-10 1/2"	21'-10 3/16"	21'-10 1/4"	7625.44
Girder 4	21'-0 1/16"	20'-7 11/16"	17'-11 3/4"	13'-11 13/16"	11'-11 1/16"	11'-9 3/4"	21'-10 1/2"	21'-10 1/2"	7633.94
Girder 5	20'-10 1/8"	20'-8"	18'-0"	14'-0"	12'-0"	11'-9 1/8"	21'-10 3/4"	21'-10 3/4"	7642.44

DIMENSION y

	Abuts.	Splice 1 & 4	Piers	Splice 2 & 3
Girder 1	1'-10 13/16"	7 1/16"	3 1/2"	1 5/16"
Girder 2	1'-10 3/4"	7 1/16"	3 1/2"	1 5/16"
Girder 3	1'-10 3/4"	7 1/16"	3 1/2"	1 5/16"
Girder 4	1'-10 11/16"	7"	3 1/2"	1 5/16"
Girder 5	1'-10 11/16"	7"	3 1/2"	1 5/16"

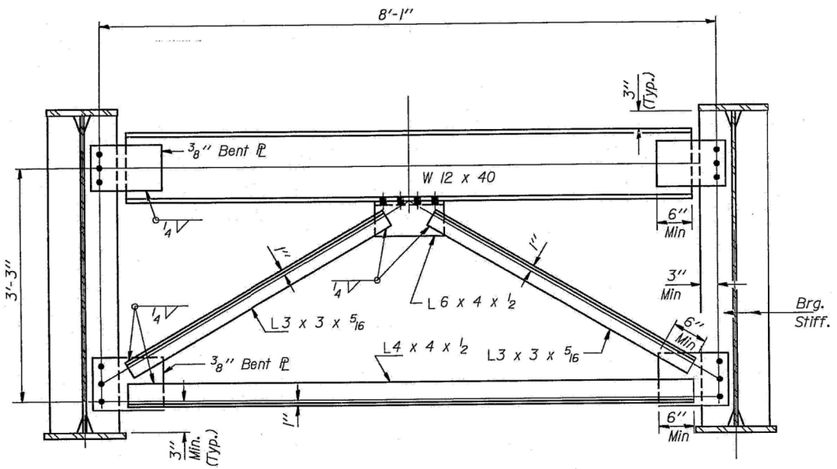
STRUCTURAL STEEL
F.A. RT. 408 SEC. 75-6B-2
PIKE COUNTY
STA. 545+40.50

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S. R. I. F.A. 408	75-6B-2	PIKE	511	262
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

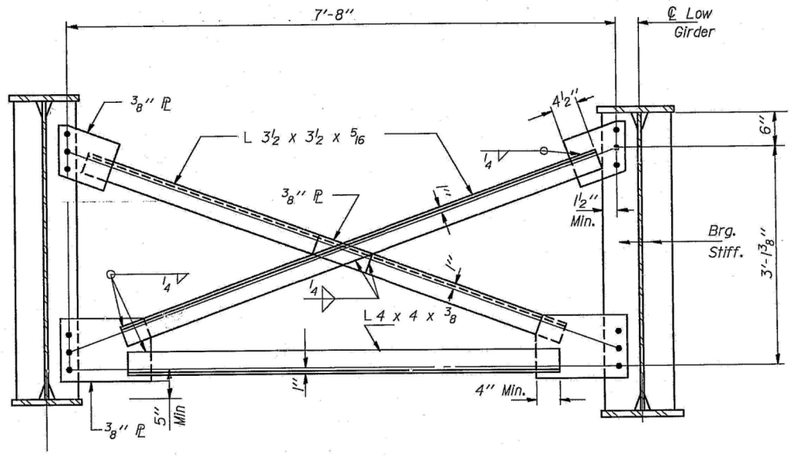
SHEET NO. 10
18 SHEETS

FOR INFORMATION ONLY

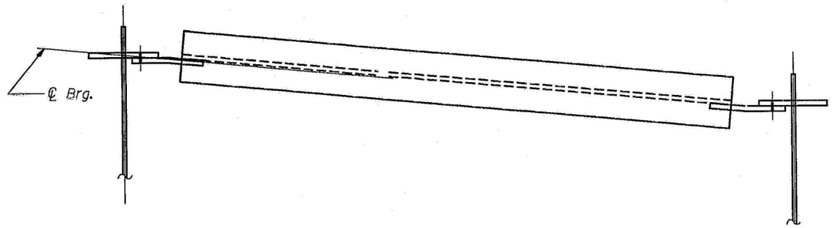
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



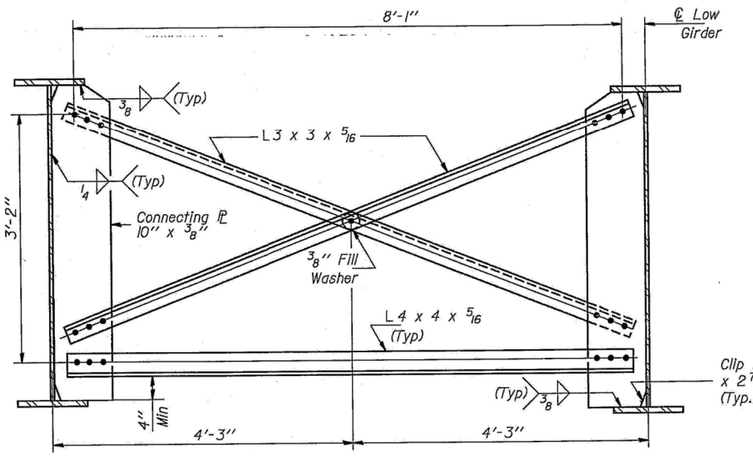
CROSS FRAME - CF
8 Required



CROSS FRAME - CF2
8 Required



PLAN VIEW - CF



Notes:
Use 7/8"ϕ H.S. Bolts with 1 1/16"ϕ holes.
Two hardened washers shall be required over all holes.
All connecting plates are placed radial.

CROSS FRAME - CF1
64 Required

DESIGNED	Mary H. Bloxdorf
CHECKED	David Burdick
DRAWN	P. S. F. M.
CHECKED	DB MHB

Sept 14 19 87

EXAMINED Raj D. Kaspar
ENGINEER OF BRIDGE DESIGN

PASSED James T. Kayburn
ENGINEER OF BRIDGES AND STRUCTURES

APPROVED
DIRECTOR OF HIGHWAYS

STRUCTURAL STEEL DETAILS
F.A. RT. 408 SEC. 75-6B-2
PIKE COUNTY
STA. 545+40.50

HORNER SHIFRIN
WWW. HORNERSHIFRIN .COM

USER NAME = tsfriederich	DESIGNED - TIM FRIEDERICH	REVISED -
PLOT SCALE = NTS	CHECKED - ERIC M. LAGEMANN	REVISED -
PLOT DATE = 8/17/2017	DRAWN - TIM FRIEDERICH	REVISED -
	CHECKED - ERIC M. LAGEMANN	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING FRAMING PLAN AND BEARING SHEETS
STRUCTURE NO. 075-0119
SHEET NO. 12 OF 15 SHEETS

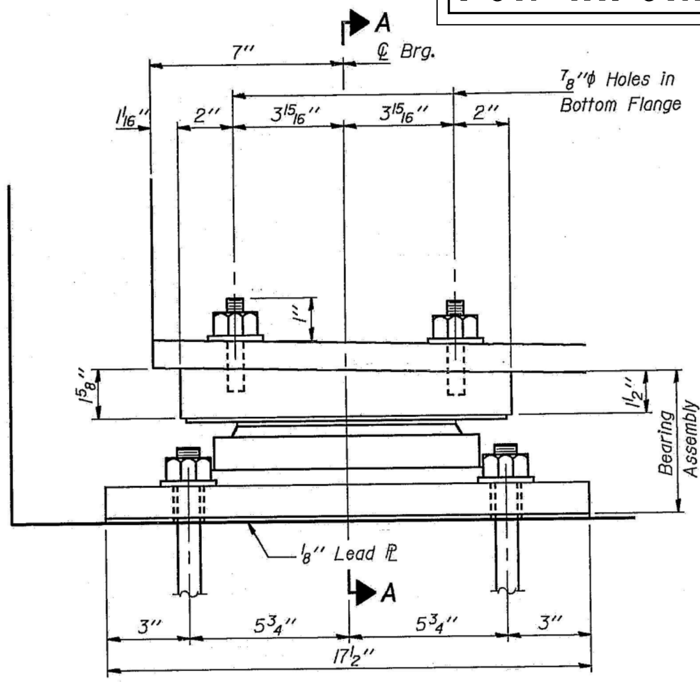
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	107
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			

FOR INFORMATION ONLY

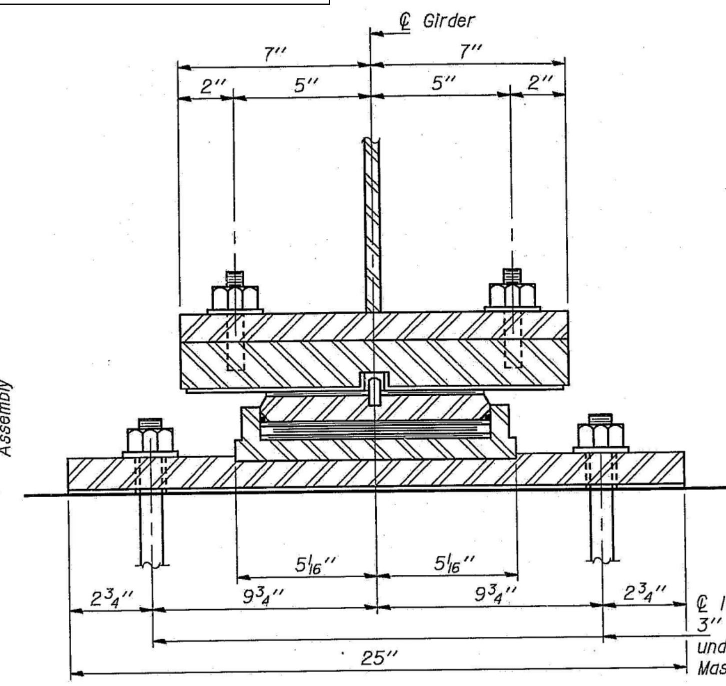
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 408	75-6B-2	PIKE	511	263
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

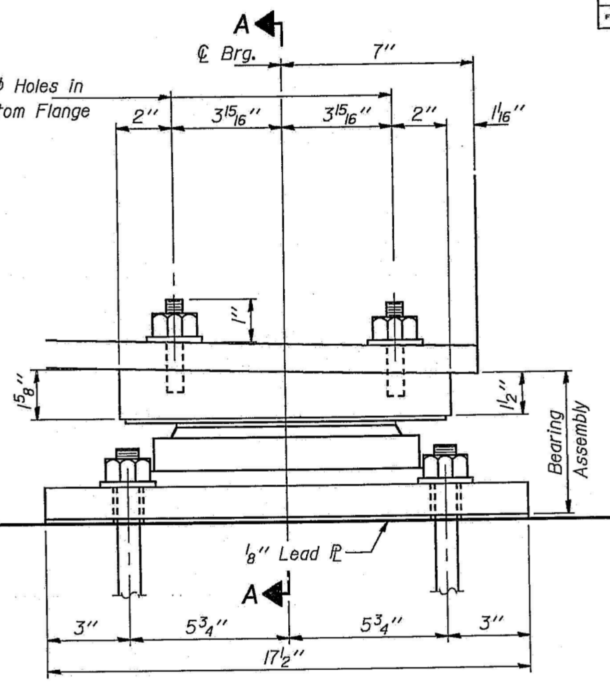
SHEET NO. 11
18 SHEETS



ELEVATION AT WEST ABUTMENT
(Looking North)

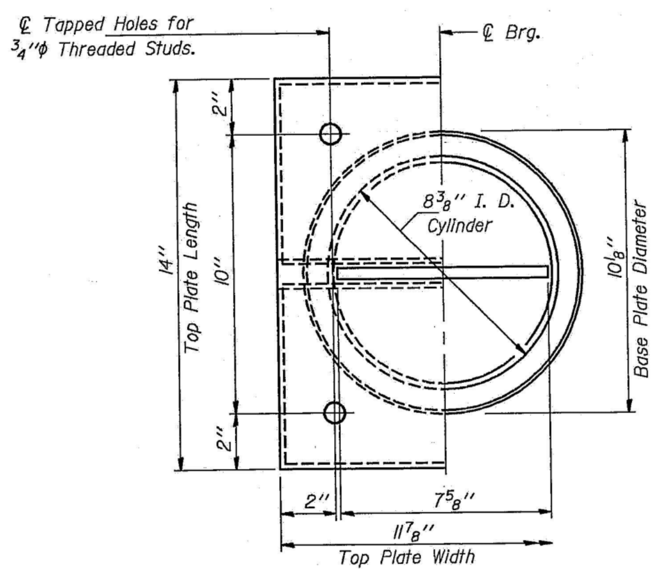


SECTION A-A
EXPANSION FLOATING BEARING



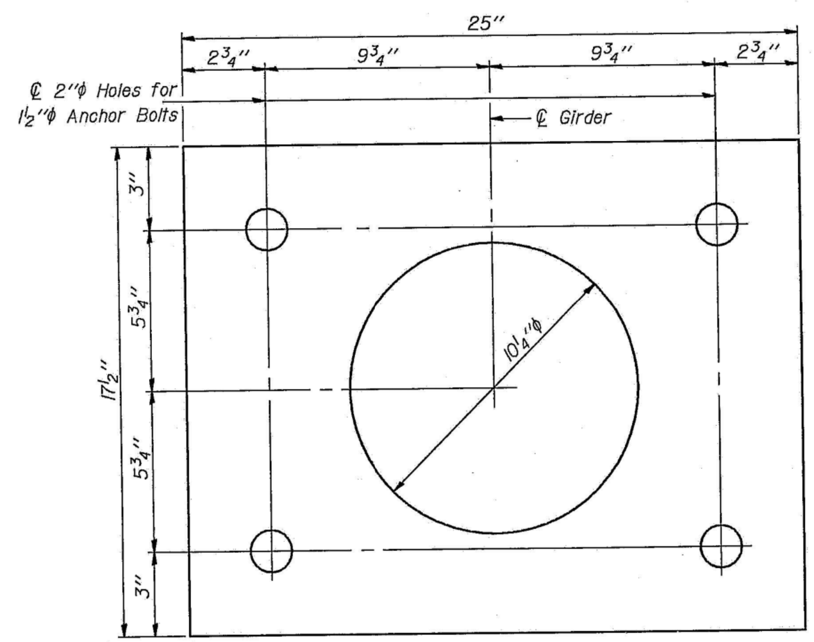
ELEVATION AT EAST ABUTMENT
(Looking North)

BEARING DATA		
R ℄ (k)		51.3
R ℄ (k)		51.3
R I (k)		10.9
RTOTAL(k)		113.5
Expansion Lengths	W.	236'-6"
	E.	103'-6"
Lateral Load (k)		2.1

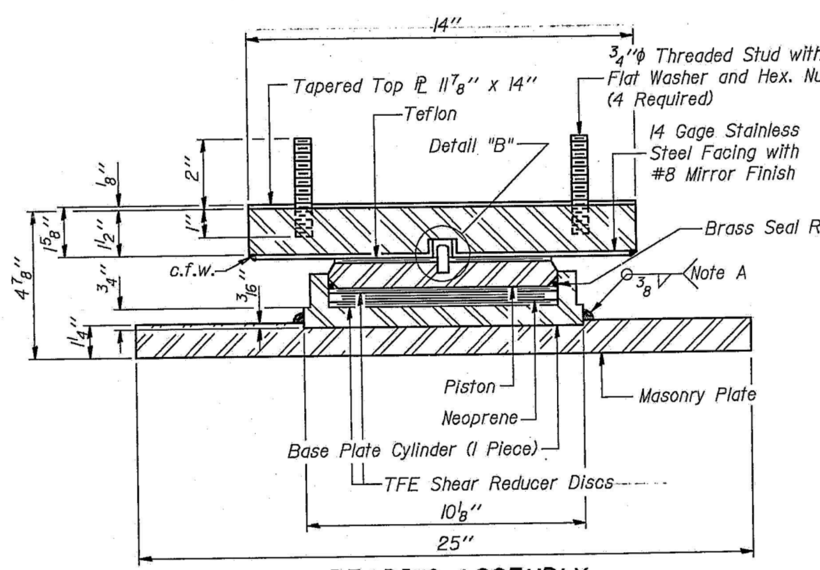


CUT-AWAY PLAN
(Half of Top Plate shown)

Notes: The plates of the Bearing Assembly shall be AASHTO M223, Grade 50.
For anchor bolt installation details see sheet 14 of 18.

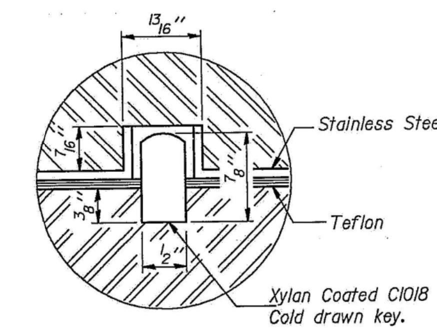


MASONRY PLATE DETAIL



BEARING ASSEMBLY
(For both abutments)

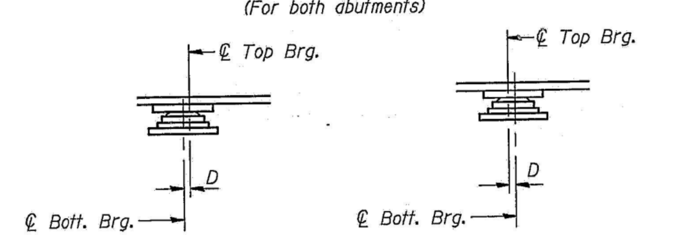
NOTE A:
Weld in field after bearing is self aligned during first movement.



DETAIL "B"

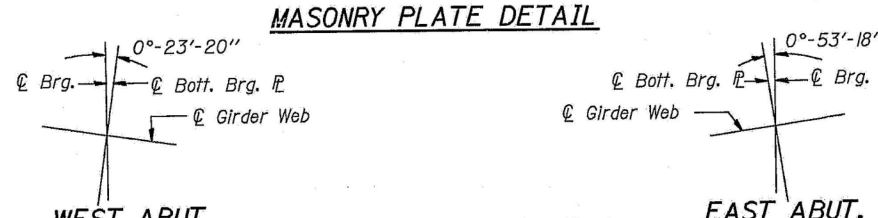
BILL OF MATERIAL

Item	Unit	Total
Floating Bearing, Guided Expansion 150K	Each	10



SETTING ANCHOR BOLTS AT EXP. BRG.

D=1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.



BEARING ORIENTATION

BEARING DETAILS
EAST & WEST ABUTMENTS
F.A. RT. 408 SEC. 75-6B-2
PIKE COUNTY
STA. 545+40.50

DESIGNED	Mary H. Bloxdorf
CHECKED	David Burdick
DRAWN	Paul Summer
CHECKED	DB MHB

Sept 14 1987
EXAMINED Raj. J. Kaspar — ENGINEER OF BRIDGE DESIGN
PASSED James T. Rayburn — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

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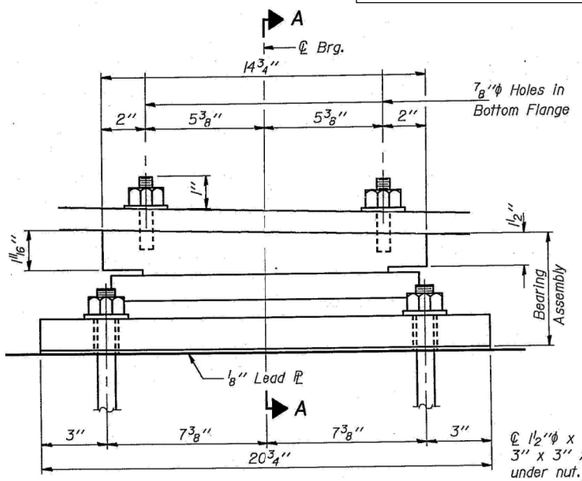
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. RTE. 408	75-6B-2	PIKE	511	264
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

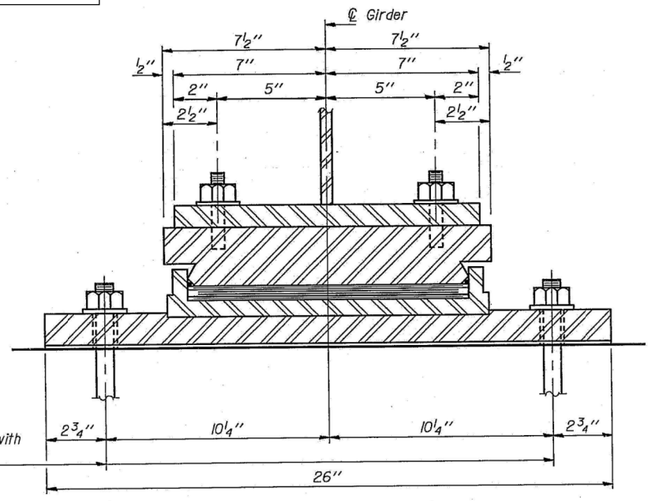
SHEET NO. 12
18 SHEETS

FOR INFORMATION ONLY

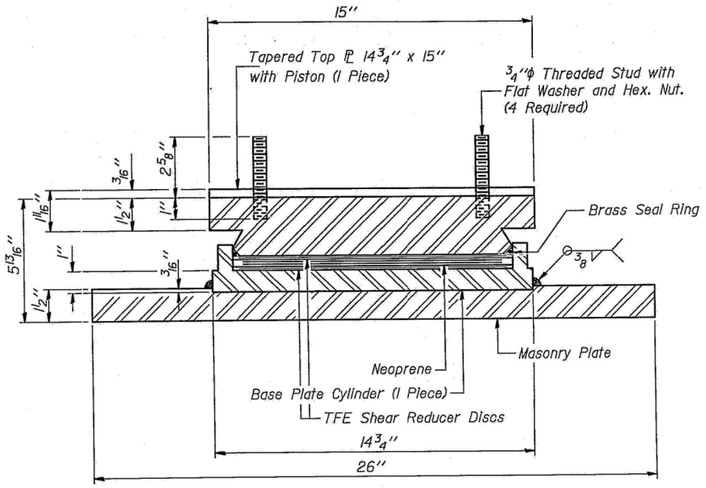
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION AT PIER I
(Looking North)

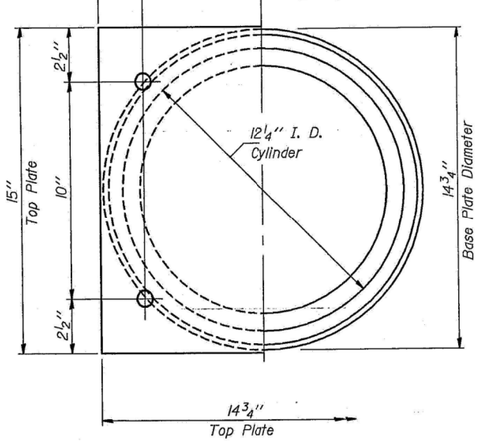


SECTION A-A

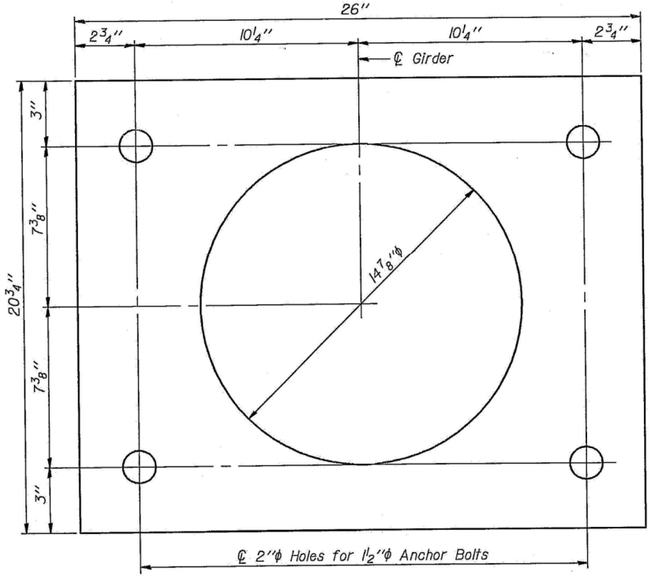


BEARING ASSEMBLY

FIXED FLOATING BEARING



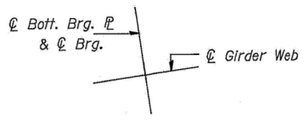
CUT-AWAY PLAN
(Half of Top Plate shown)



MASONRY PLATE DETAIL

BEARING DATA	
R ℄ (k)	187.1
R ℄ (k)	91.5
R 1 (k)	18.6
R TOTAL (k)	297.2
Lateral Load (k)	12.0

Notes: The plates of the Bearing Assembly shall be AASHTO M223, Grade 50.
For anchor bolt installation details see sheet 14 of 18.
Anchor bolts may be built into masonry.



BEARING ORIENTATION

BILL OF MATERIAL

Item	Unit	Total
Floating Bearing, Fixed 350K	Each	5

DESIGNED Mary H. Bloxdorf
CHECKED David Burdick
DRAWN Paul Summer
CHECKED DB MHB

Sept 14 1987
EXAMINED Raj. D. Kapur ENGINEER OF BRIDGE DESIGN
PASSED James T. Rayburn ENGINEER OF BRIDGES AND STRUCTURES
APPROVED DIRECTOR OF HIGHWAYS

BEARING DETAILS
PIER I
F.A. RT. 408 SEC. 75-6B-2
PIKE COUNTY
STA. 545+40.50

HORNER SHIFRIN
WWW.HORNERSHIFRIN.COM

USER NAME = tsfriederich	DESIGNED - TIM FRIEDERICH	REVISED -	
PLOT SCALE = NTS	CHECKED - ERIC M. LAGEMANN	REVISED -	
PLOT DATE = 8/17/2017	DRAWN - TIM FRIEDERICH	REVISED -	
	CHECKED - ERIC M. LAGEMANN	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING FRAMING PLAN AND BEARING SHEETS
STRUCTURE NO. 075-0119
SHEET NO. 14 OF 15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	109
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			

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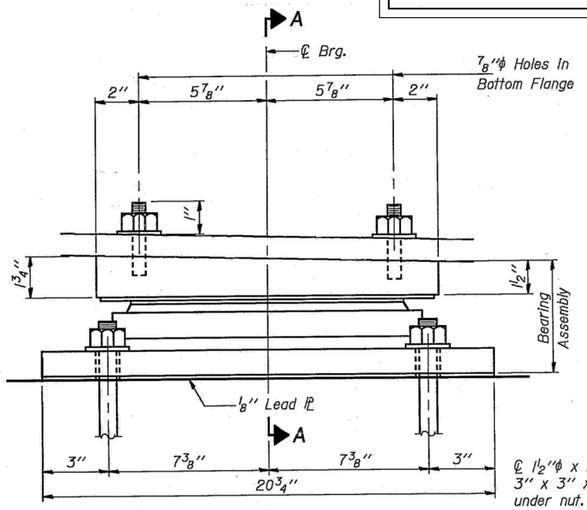
FOR INFORMATION ONLY

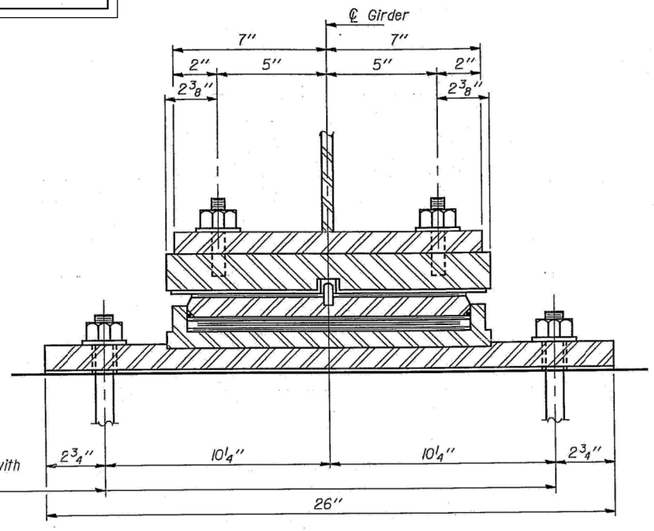
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. F.A. 408	75-6B-2	PIKE	511	265
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 13
18 SHEETS

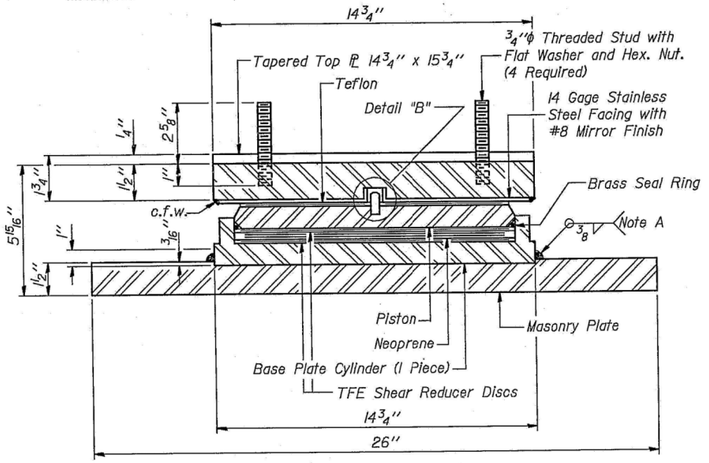


ELEVATION AT PIER 2
(Looking North)



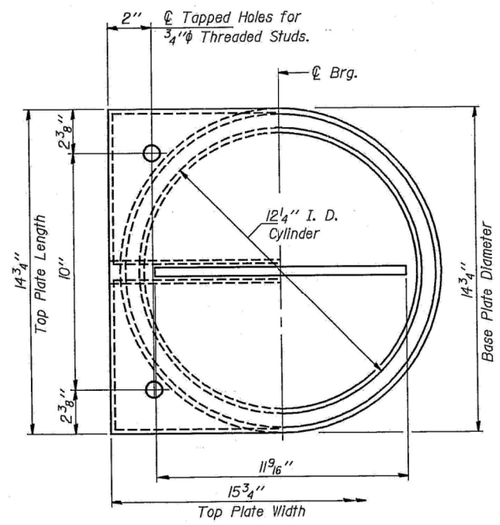
SECTION A-A

NOTE A:
Weld in field after bearing is self aligned during first movement.



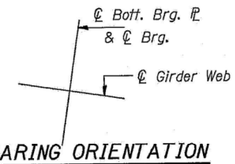
BEARING ASSEMBLY

EXPANSION FLOATING BEARING
(5 Required)

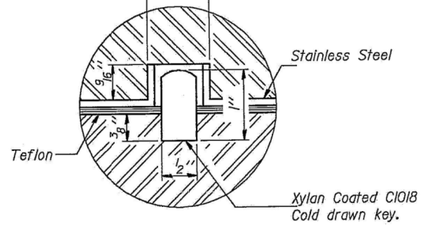


CUT-AWAY PLAN
(Half of Top Plate shown)

MASONRY PLATE DETAIL



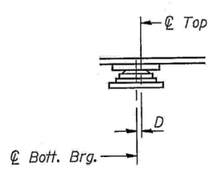
BEARING ORIENTATION



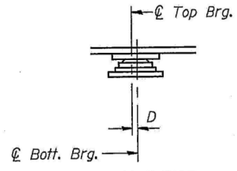
DETAIL "B"

Notes: The plates of the Bearing Assembly shall be AASHTO M223, Grade 50.
For anchor bolt installation details see sheet 14 of 18.

BEARING DATA	
R ℄ (k)	187.1
R t (k)	91.5
R I (k)	18.6
RTOTAL(k)	297.2
Expansion Length	133'-0"
Lateral Load (k)	9.4



BELOW 50°F.
(Move bott. brg. away from fixed brg.)



ABOVE 50°F.
(Move bott. brg. toward fixed brg.)

BILL OF MATERIAL

Item	Unit	Total
Floating Bearing, Guided Expansion 350K	Each	5

SETTING ANCHOR BOLTS AT EXP. BRG.

D=1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

BEARING DETAILS
PIER 2
F.A. RT. 408 SEC. 75-6B-2
PIKE COUNTY
STA. 545+40.50

DESIGNED Mary H. Bloxdorf
CHECKED David Burdick
DRAWN Paul Summer
CHECKED DB MHB

Sept 14 1987
EXAMINED Engineer of Bridge Design
PASSED James T. Rayburn Engineer of Bridges and Structures
APPROVED Director of Highways

HORNER SHIFRIN
WWW. HORNERSHIFRIN .COM

USER NAME = tsfriederich	DESIGNED - TIM FRIEDERICH	REVISED -
PLOT SCALE = NTS	CHECKED - ERIC M. LAGEMANN	REVISED -
PLOT DATE = 8/17/2017	DRAWN - TIM FRIEDERICH	REVISED -
	CHECKED - ERIC M. LAGEMANN	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING FRAMING PLAN AND BEARING SHEETS
STRUCTURE NO. 075-0119
SHEET NO. 15 OF 15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	110
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			

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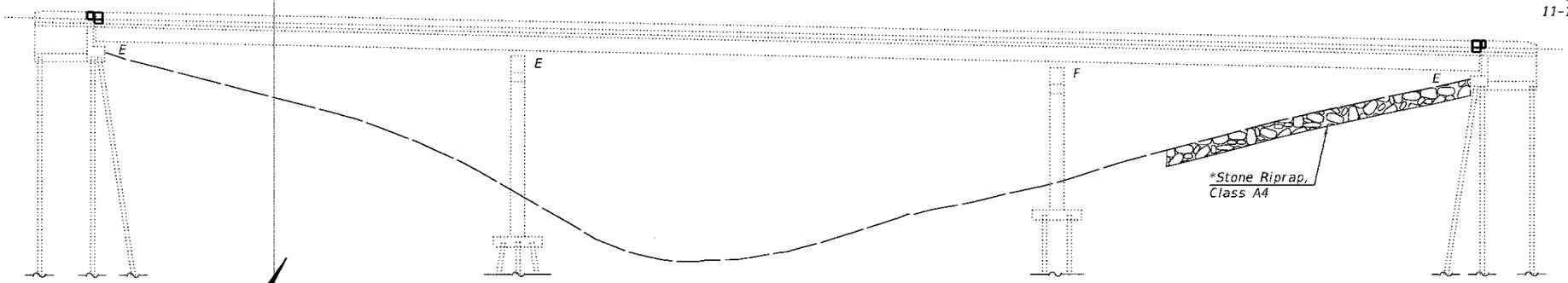
INDEX OF SHEETS

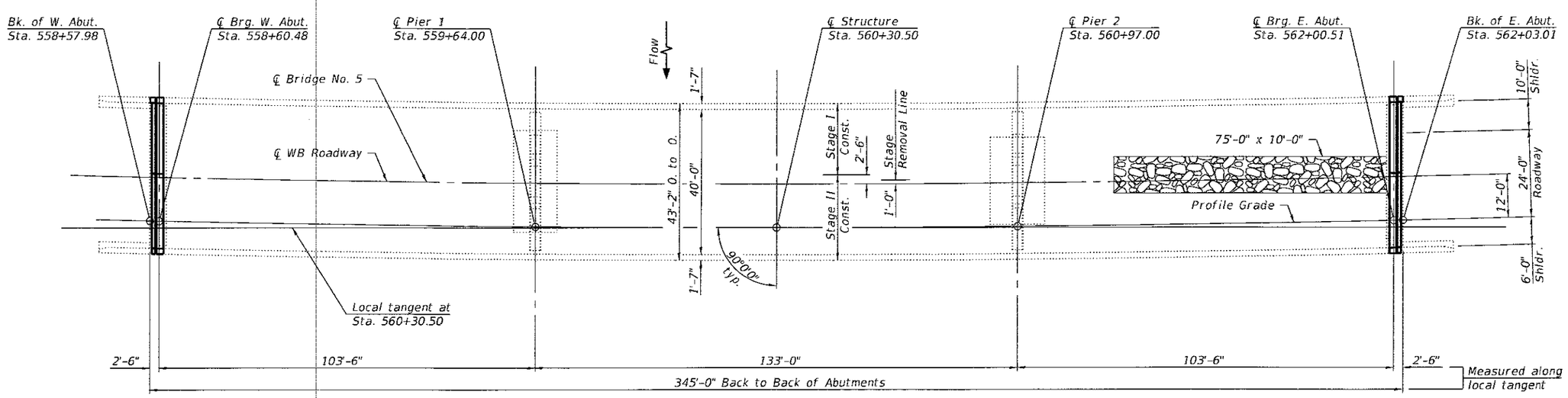
SCOPE OF WORK

1. Replace expansion joints.
2. Deck and approach patching.
3. Hydroscarification and placement of microsilica concrete overlay.
4. Perform diamond grinding and apply protective coat.
5. Blasting and painting of beam ends, end diaphragms, and abutment bearings.
6. Substructure repair.
7. Place riprap under Span 3.



*Without filter fabric and sand bedding

ELEVATION



PLAN

STATE OF ILLINOIS
ERIC M. LAGEMANN
LICENSE NO. 081-006124
LICENSED STRUCTURAL ENGINEER

Eric Lagemann 8/18/17
Expires 11/30/2018 Date

GENERAL PLAN
I-72 OVER NAPOLEON HOLLOW DRAW
F.A.I. ROUTE 72
SECTION (75-6) BDR, BP, BRR, RS-2
PIKE COUNTY
STATION 560+30.50
STRUCTURE NO. 075-0120

HORNER SHIFRIN
WWW. HORNERSHIFRIN .COM

USER NAME = tsfriederich	DESIGNED - TIM FRIEDERICH	REVISED -
PLOT SCALE = NTS	CHECKED - ERIC M. LAGEMANN	REVISED -
PLOT DATE = 8/17/2017	DRAWN - TIM FRIEDERICH	REVISED -
	CHECKED - ERIC M. LAGEMANN	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	111
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			

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GENERAL NOTES

Reinforcement bars designated (E) shall be epoxy coated.

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. 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 included in the pay item covering removal of the existing concrete.

As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that can not be removed by grindng ¼ in. deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

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.

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

Cleaning and Painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". All beams, bearings and other structural steel within the length (measured along beam) shown in the GIRDER PAINTING LIMITS TABLE, of either side of deck joints, shall be cleaned per Near White Blast Cleaning – SSPC-SP10. The exterior surfaces and bottom of the bottom flange of the fascia beams shall be cleaned per Commercial Grade Power Tool Cleaning – SSPC – SP15. The designated areas cleaned per Near White Blast Cleaning and per Commercial Grade Power Tool Cleaning shall be painted according to the requirements of Paint System 1 – OZ/E/U. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No. 5B 7/1. The color of the final finish coat for all exterior steel surfaces shall be Reddish Brown, Munsell No. 2.5YR 3/4.

Joint plates and attached bars shall be shop painted with the inorganic zinc rich primer. No field paint required.

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.

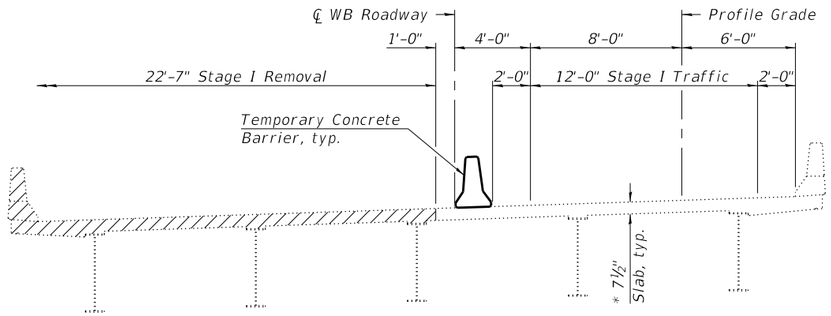
TOTAL BILL OF MATERIAL

	ITEM	UNIT	SUPER	SUB	TOTAL
	Stone Riprap, Class A4	Sq. Yd.		83	83
	Concrete Removal	Cu. Yd.	11.2		11.2
	Concrete Superstructure	Cu. Yd.	12.9		12.9
*	Protective Coat	Sq. Yd.	1,810		1,810
	Reinforcement Bars, Epoxy Coated	Pound	1,000	730	1,730
	Bar Splicers	Each	26		26
	Preformed Joint Strip Seal	Foot	92.5		92.5
	Bridge Deck Grooving (Longitudinal)	Sq. Yd.	911		911
	Containment and Disposal of Non-Lead Paint Cleaning Residues No. 5	L Sum			1
	Approach Slab Repair (Partial Depth)	Sq. Yd.			0.9
	Cleaning and Painting Steel Bridge No. 5	L Sum			1
	Bridge Deck Scarification ¾"	Sq. Yd.	1,500		1,500
	Bridge Deck Microsilica Concrete Overlay 2¾"	Sq. Yd.	1,500		1,500
	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)	Sq. Ft.		14	14
	Structural Repair of Concrete (Depth Greater than 5 inches)	Sq. Ft.	19	19	38
	Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	9.2		9.2
	Diamond Grinding (Bridge Section)	Sq. Yd.	1,529		1,529

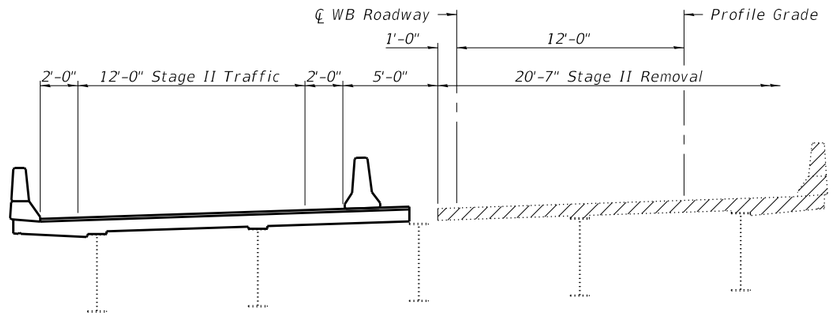
* Quantity includes overlay and face of parapets.

GIRDER PAINTING LIMITS TABLE

Girder No.	Span 1	Span 2	Span 3
1	100'-0"	---	10'-0"
2	100'-0"	---	10'-0"
3	100'-0"	---	10'-0"
4	100'-0"	---	10'-0"
5	100'-0"	---	10'-0"

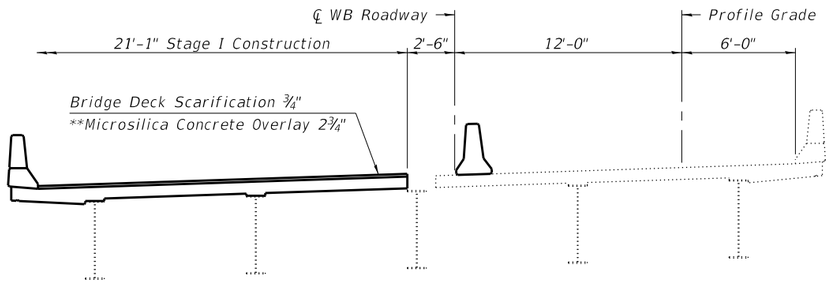


STAGE I REMOVAL

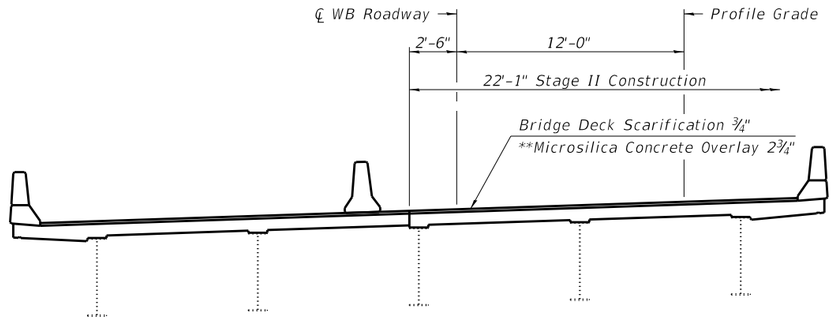


STAGE II REMOVAL

* Prior to scarification
** Prior to grinding



STAGE I CONSTRUCTION



STAGE II CONSTRUCTION

Notes:
All sections are looking east.
For quantity of Temporary Concrete Barrier, see Roadway Plans.
Hatched areas indicate Concrete Removal.

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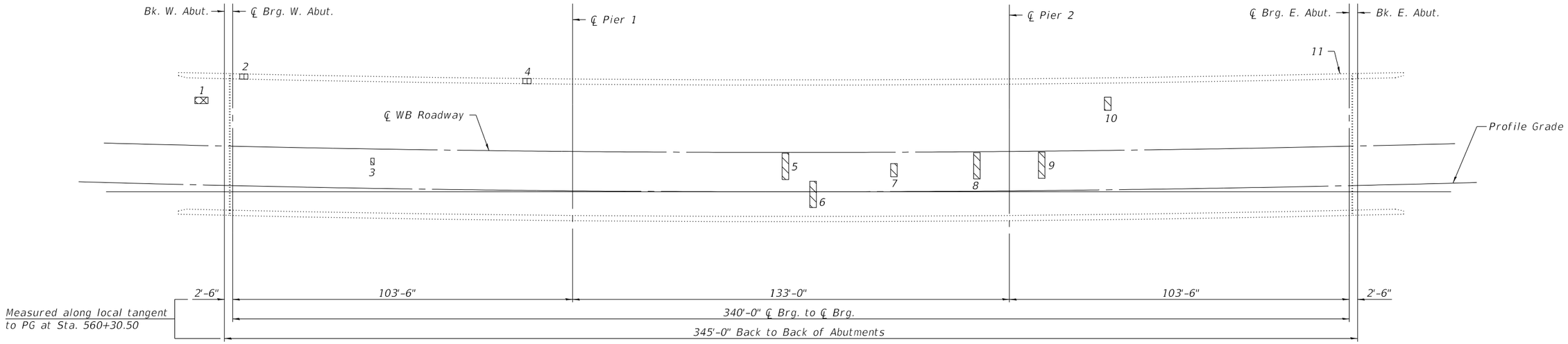
PLOT DATE = 8/17/2017	DRAWN - TIM FRIEDERICH	REVISED -
	CHECKED - ERIC M. LAGEMANN	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 075-0120
SHEET NO. 3 OF 15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	113
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			



DECK REPAIR PLAN

N

ANTICIPATED DECK SLAB REPAIR (FULL DEPTH, TYPE II)

Patch No.	Length (ft.)	Width (ft.)	Area (sq. yd.)
3	1	2	0.2
5	2	8	1.8
6	2	8	1.8
7	2	4	0.9
8	2	8	1.8
9	2	8	1.8
10	2	4	0.9
		Total =	9.2

STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES)

Patch No.	Area (sq. ft.)
2	2
4	2
11	15
Total =	19

LEGEND

- Deck Slab Repair (Full Depth, Type II)
- Approach Slab Repair (Partial Depth)
- Structural Repair of Concrete (Depth Greater than 5 inches)

ANTICIPATED APPROACH SLAB REPAIR (PARTIAL DEPTH)

Patch No.	Length (ft.)	Width (ft.)	Area (sq. yd.)
1	4	2	0.9
		Total =	0.9

BILL OF MATERIAL

Item	Unit	Total
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	9.2
Approach Slab Repair (Partial Depth)	Sq. Yd.	0.9
Structural Repair of Concrete (Depth Greater than 5 inches)	Sq. Ft.	19

Quantities and repair area shown are estimated. Actual areas to be determined by the Resident Engineer and recorded on the As-Built Plans.

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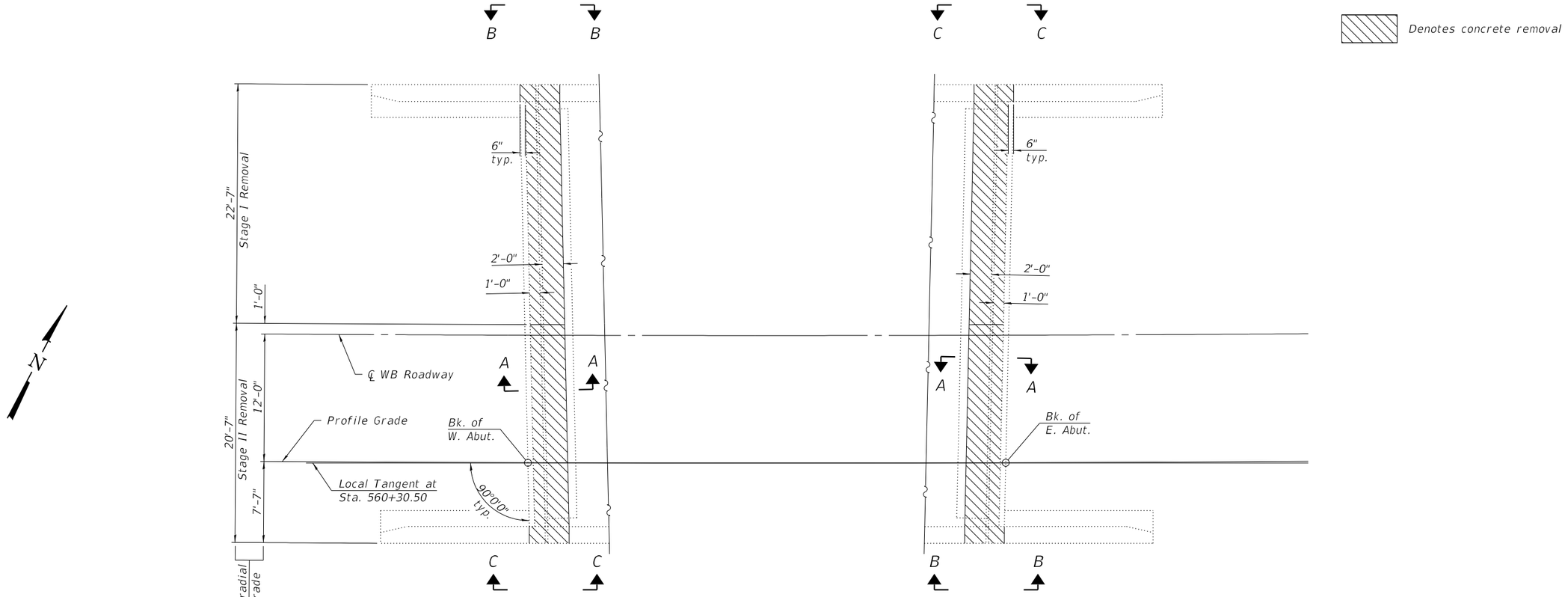
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK PATCHING REMOVAL
STRUCTURE NO. 075-0120
SHEET NO. 4 OF 15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	114
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			



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PLOT DATE = 8/17/2017	DRAWN - TIM FRIEDERICH	REVISED -
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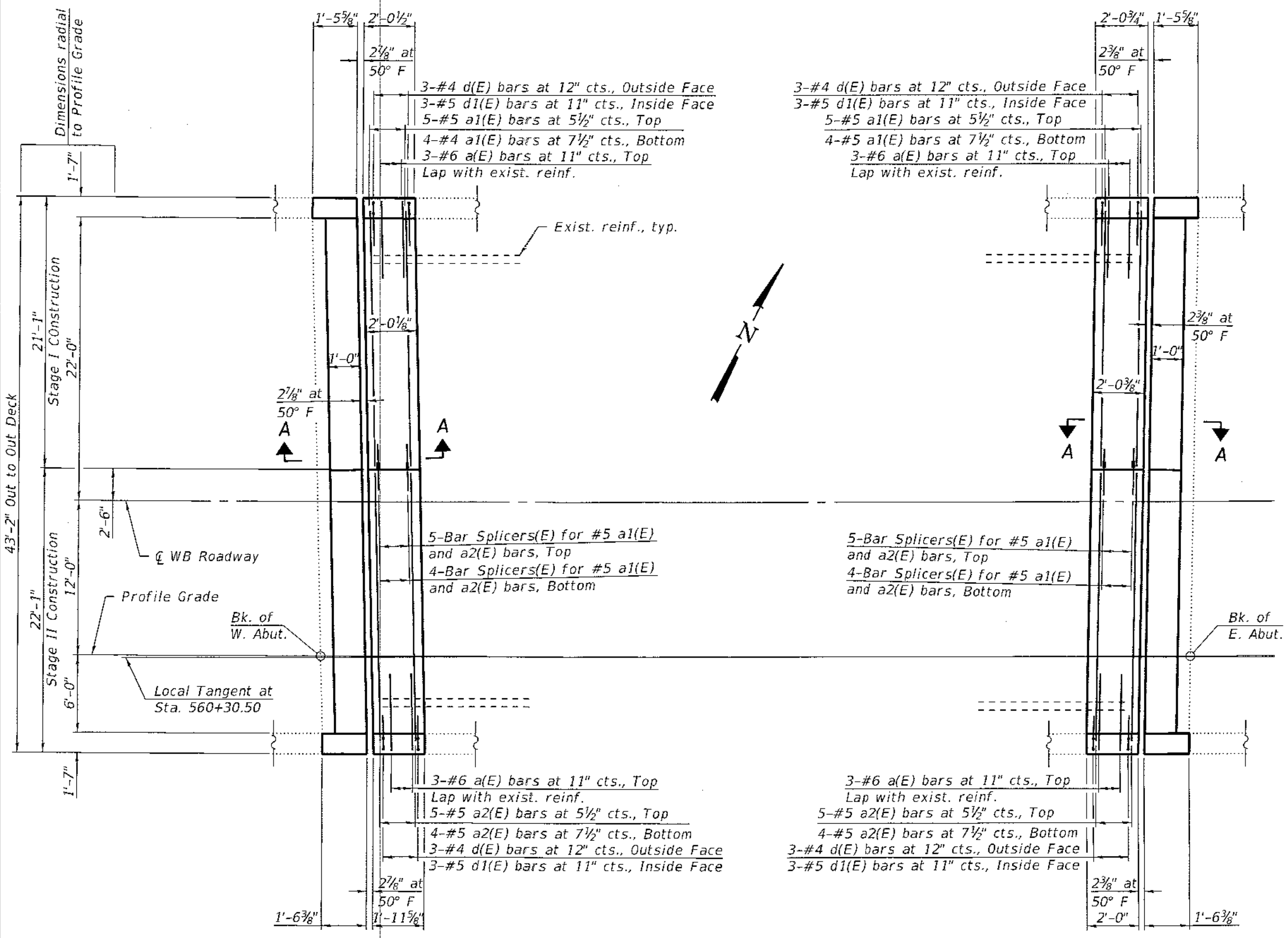
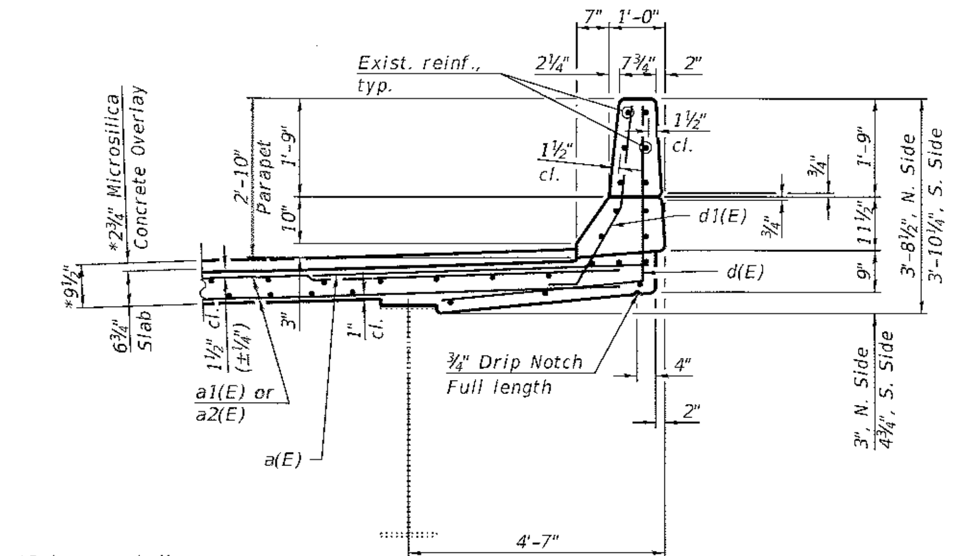
REMOVAL DETAILS
STRUCTURE NO. 075-0120
SHEET NO. 5 OF 15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	115
		CONTRACT NO. 72J42		
	ILLINOIS	FED. AID PROJECT		

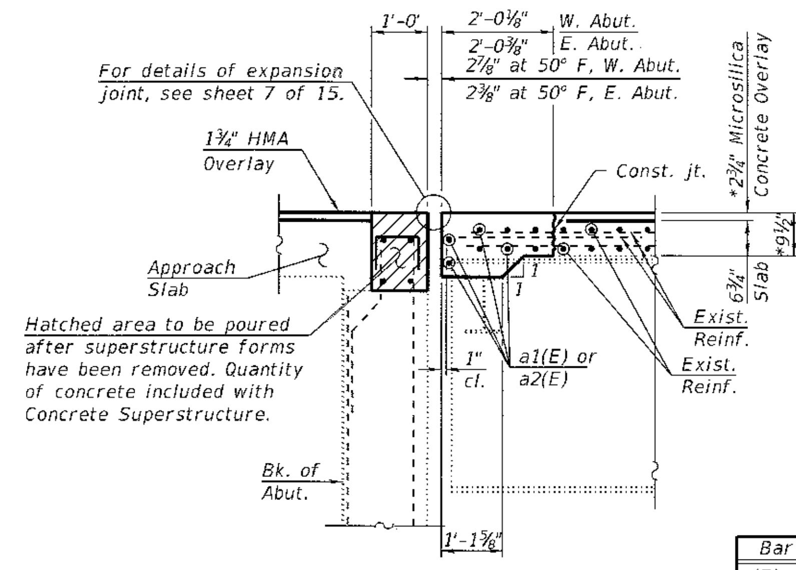


PARTIAL PLAN OF REINFORCEMENT DETAIL



*Prior to grinding

SECTION THRU PARAPET

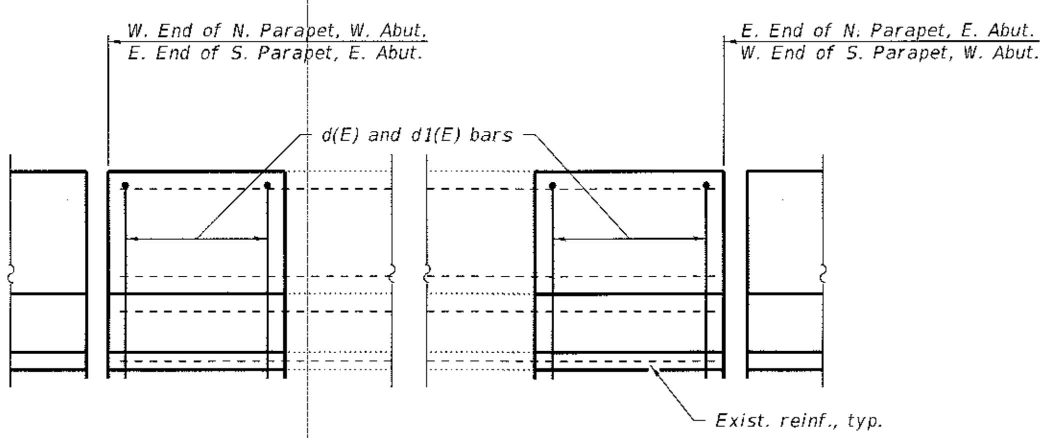


SECTION A-A

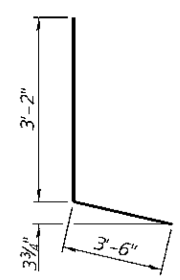
(Horiz. dim. at right L's)

SUPERSTRUCTURE BILL OF MATERIAL

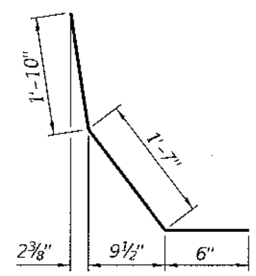
Bar	No.	Size	Length	Shape
a(E)	12	#6	6'-0"	———
a1(E)	18	#5	20'-7"	———
a2(E)	18	#5	21'-7"	———
d(E)	12	#4	6'-8"	└
d1(E)	12	#5	3'-11"	└
Concrete Removal		Cu. Yd.	11.2	
Concrete Superstructure		Cu. Yd.	12.9	
Reinforcement Bars, Epoxy Coated		Pound	1,000	



INSIDE ELEVATION OF PARAPET



BAR d(E)



BAR d1(E)

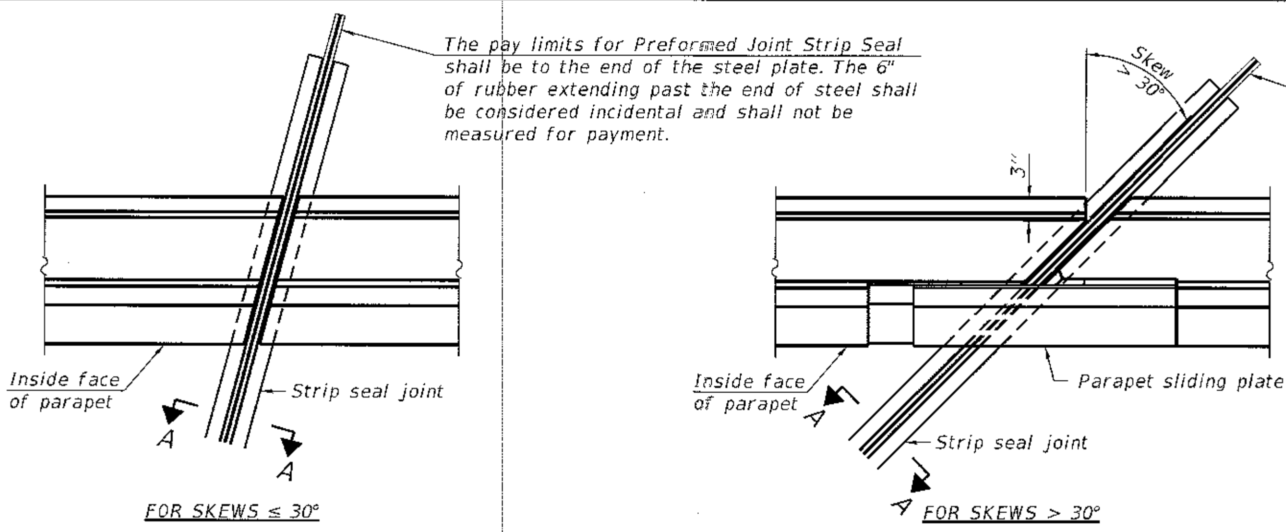
Notes:

Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on sheet 7 of 15.

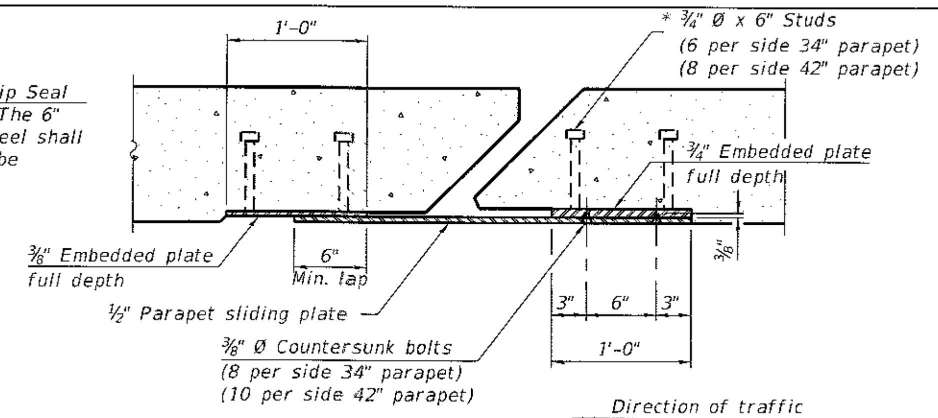
Cut ends of existing reinforcement bars extending into new construction to maintain 1½" minimum clearance.

For details of Bar Splicers, see sheet 10 of 15.

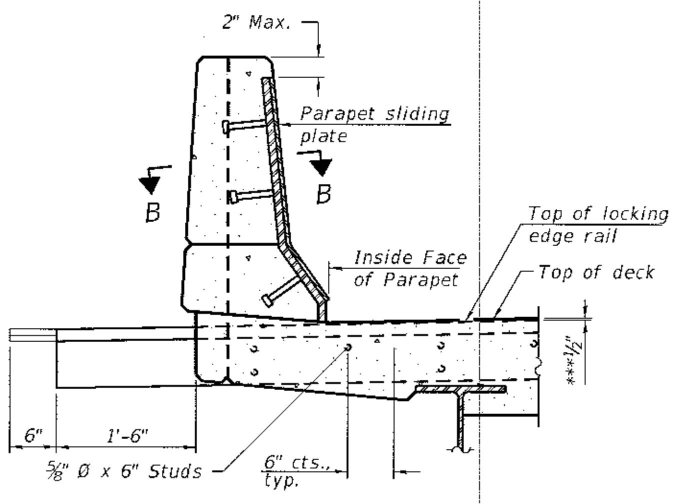
For Superstructure Concrete Removal Details, see sheet 5 of 15.



PLAN AT PARAPET

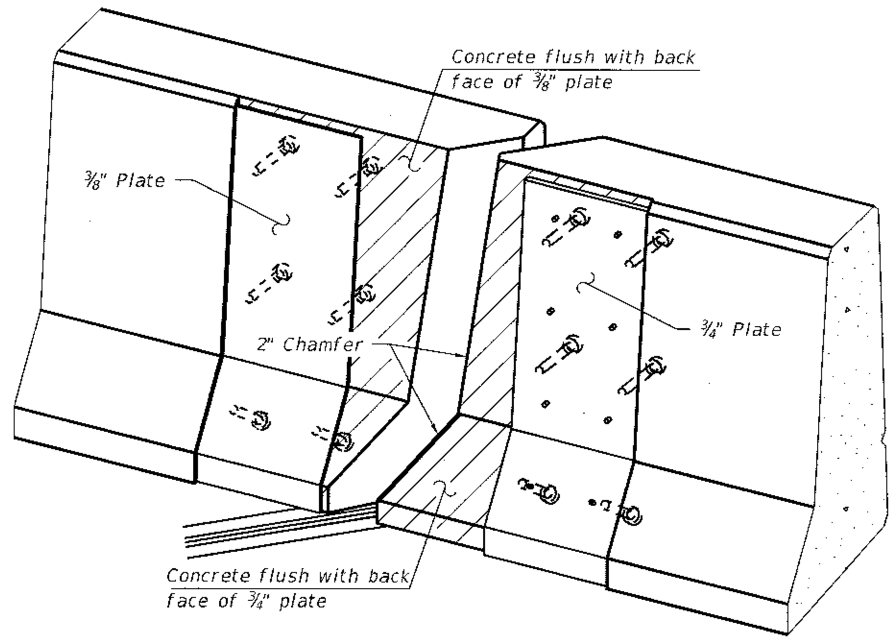


SECTION B-B



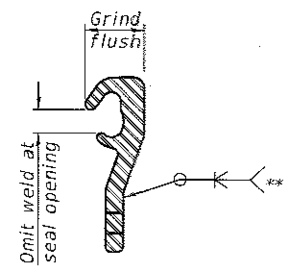
ELEVATION AT PARAPET

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



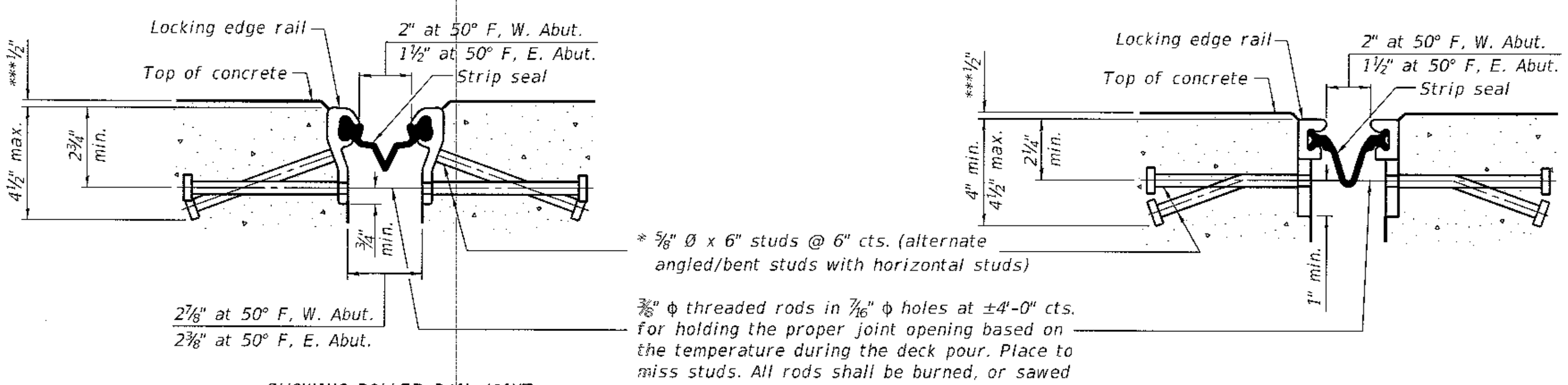
TRIMETRIC VIEW

(Showing embedded plates only)



LOCKING EDGE RAIL SPLICE

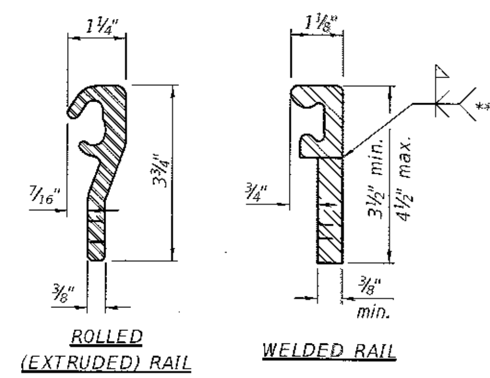
The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.



SECTION A-A

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

*** Prior to grinding.



LOCKING EDGE RAILS

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

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.

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

34" F-shape barrier shown, 42" F-shape 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.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	92.5

pw:\\pw01.horner-shifrin.com:Transportation\Eng\Documents\1019708-P16157\tem037W08\01_Cadd\BridgeStruct\0750120-42920-007.dgn

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DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 075-0120

SHEET NO. 7 OF 15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	117
		CONTRACT NO. 72J42		

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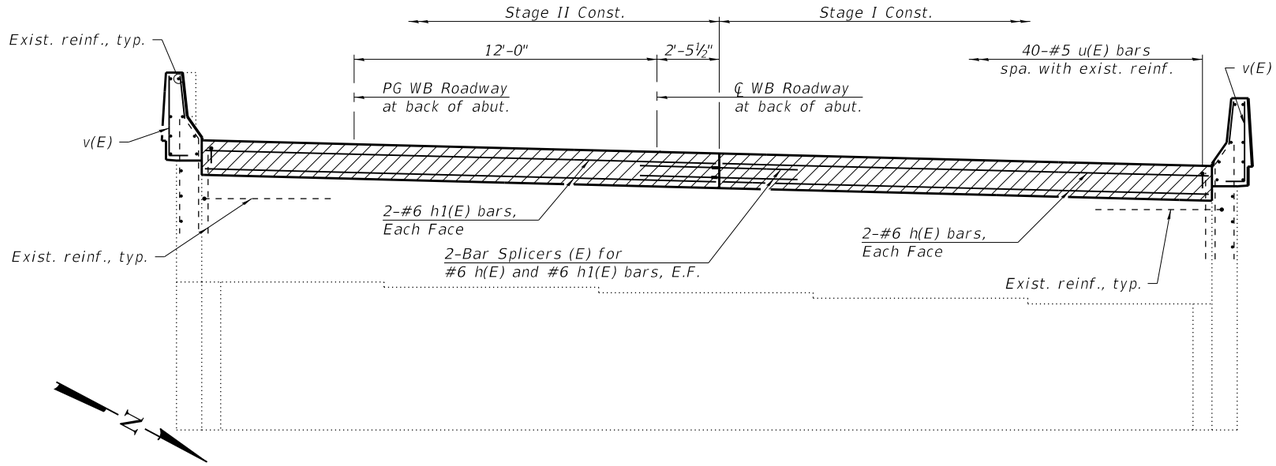
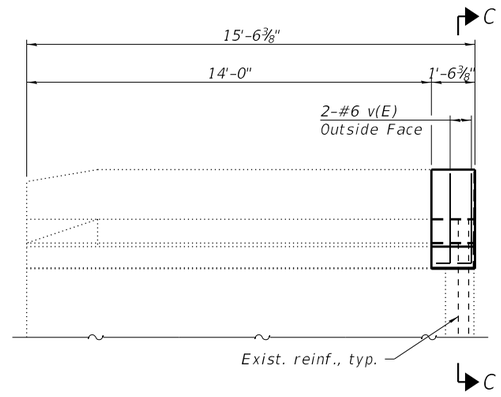


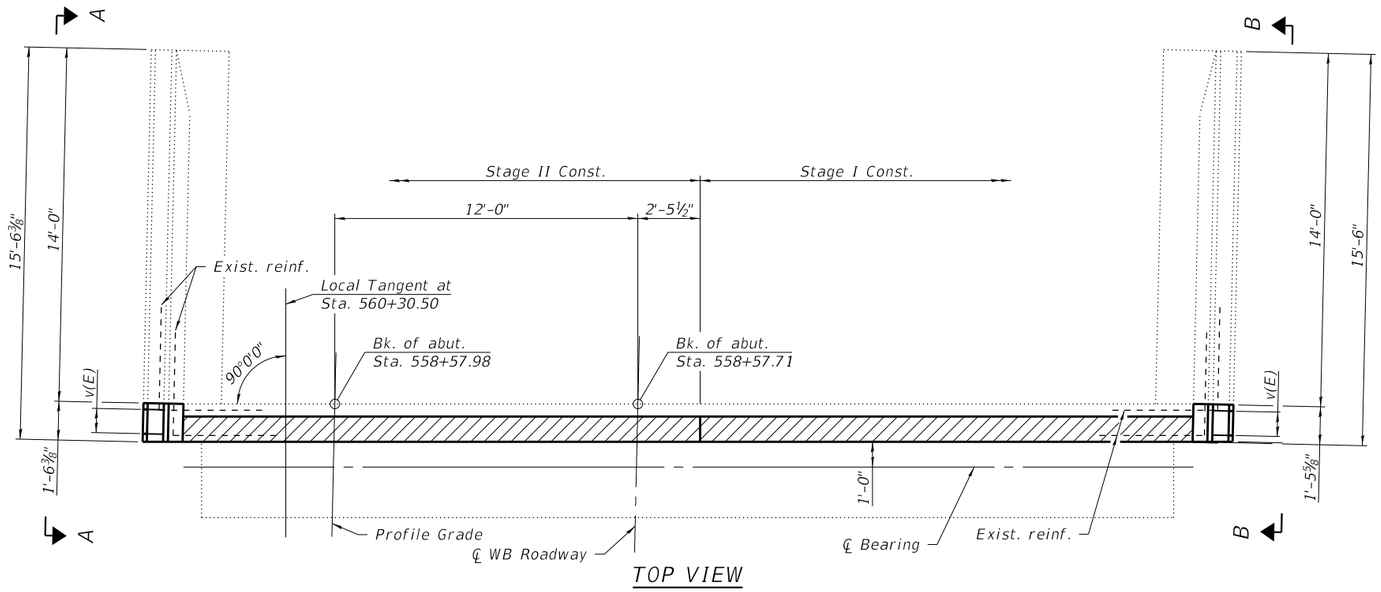
ELEVATION

(Looking West)

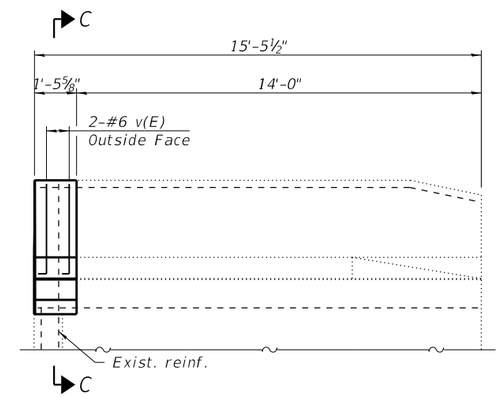


VIEW A-A

(West Abutment shown, East Abutment mirror image.)



TOP VIEW



VIEW B-B

(West Abutment shown, East Abutment mirror image.)

LEGEND

Structural Repair of Concrete
(Depth Equal to or Less than 5 inches)

Structural Repair of Concrete
(Depth Greater than 5 inches)

Notes:
For Section C-C, see sheet 9 of 15.
Cut existing reinforcement to maintain a 1½" minimum clearance.

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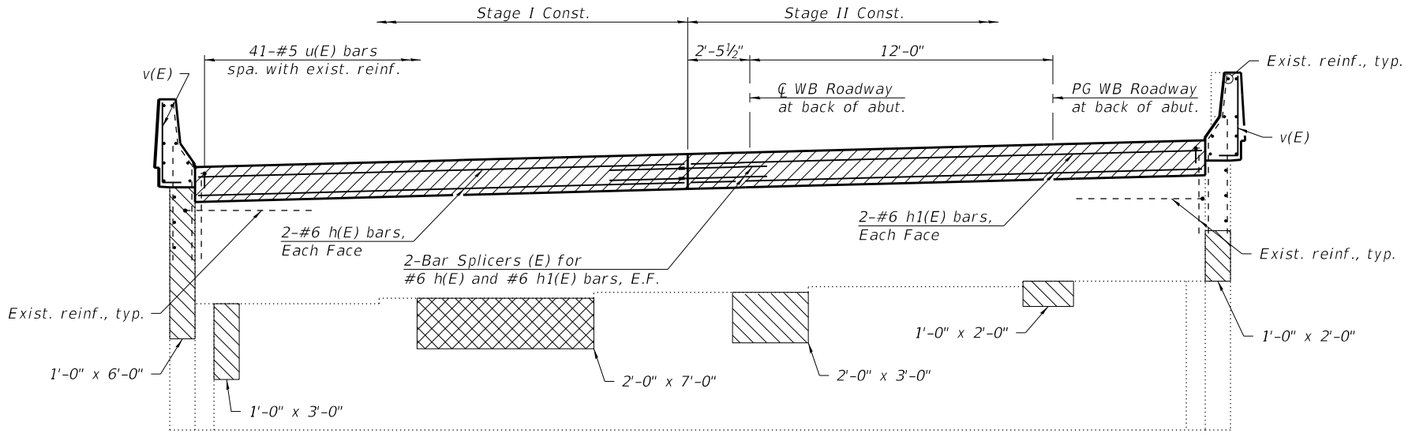
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

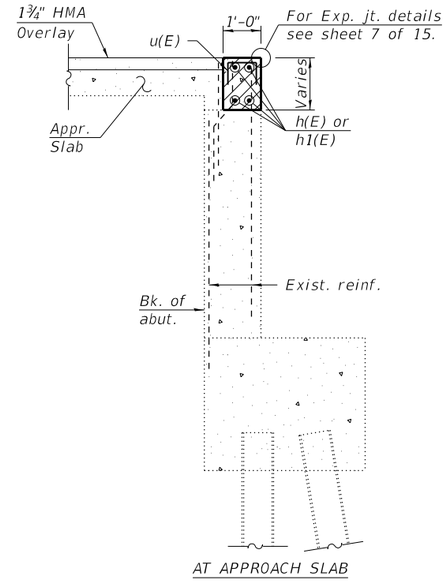
WEST ABUTMENT DETAILS
STRUCTURE NO. 075-0120
SHEET NO. 8 OF 15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	118
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			

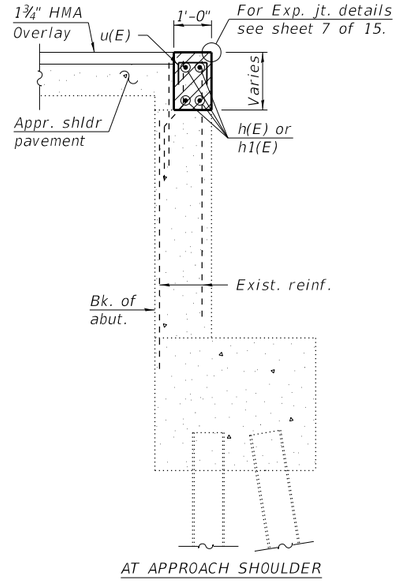


ELEVATION

(Looking East)

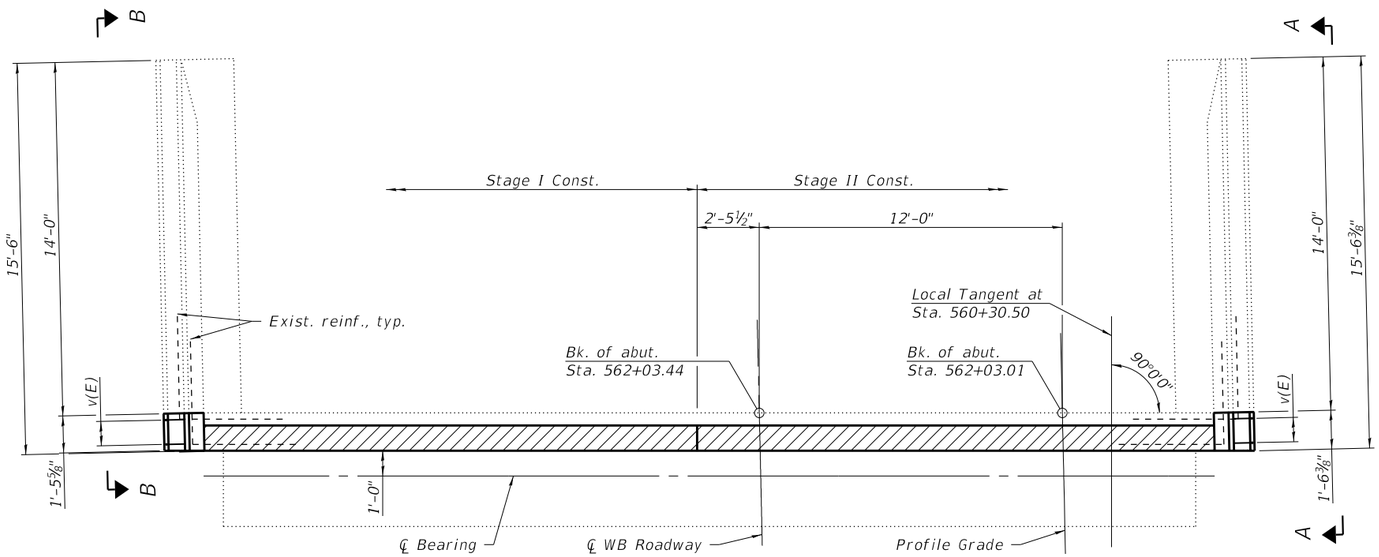


AT APPROACH SLAB

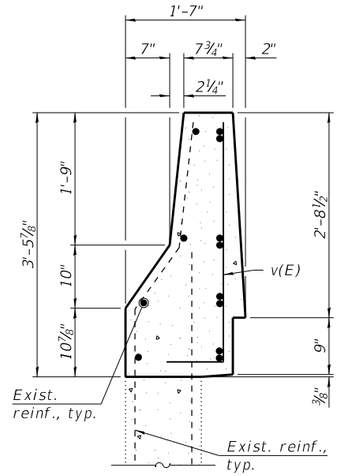


AT APPROACH SHOULDER

SECTION THRU ABUTMENT



TOP VIEW



SECTION C–C

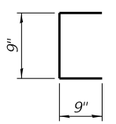
BOTH ABUTMENTS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	8	#6	20'–1"	
h1(E)	8	#6	21'–1"	
u(E)	82	#5	2'–3"	
v(E)	8	#6	3'–11"	
Reinforcement Bars, Epoxy Coated		Pound	730	
Structural Repair of Concrete (Depth Equal to or Less than 5 inches)		Sq. Ft.	14	
Structural Repair of Concrete (Depth Greater than 5 inches)		Sq. Ft.	19	

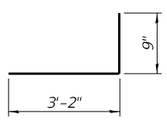
LEGEND

Structural Repair of Concrete
(Depth Equal to or Less than 5 inches)

Structural Repair of Concrete
(Depth Greater than 5 inches)



BAR u(E)



BAR v(E)

Note:
For Views A–A and B–B,
see sheet 8 of 15.

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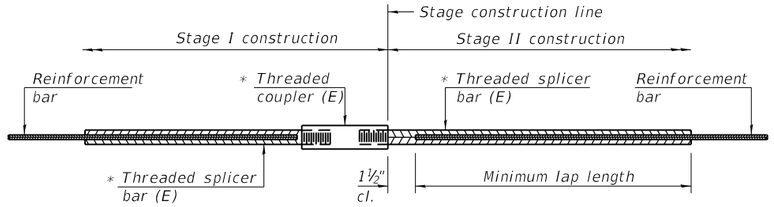
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT DETAILS
STRUCTURE NO. 075–0120
SHEET NO. 9 OF 15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	119
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			

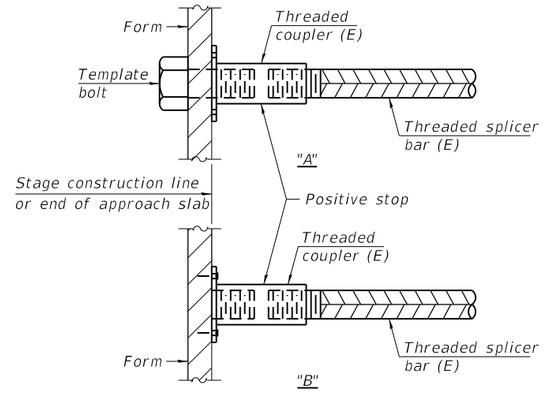


STANDARD BAR SPLICER ASSEMBLY

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

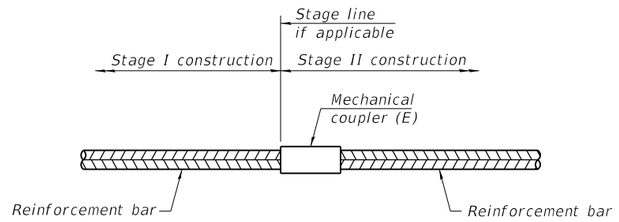
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
Deck	#5	18	2'-6"
West Abutment	#6	4	3'-0"
East Abutment	#6	4	3'-0"



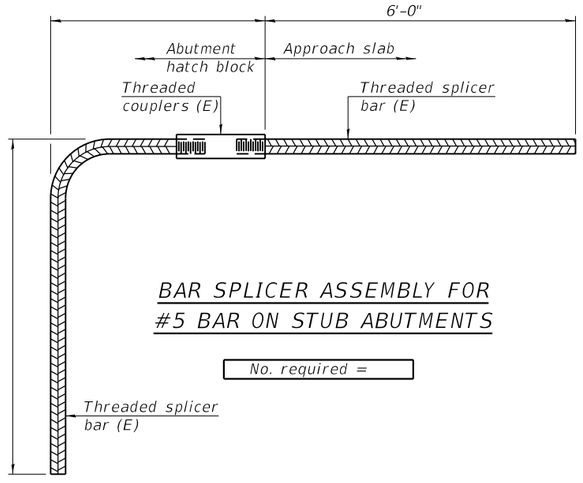
INSTALLATION AND SETTING METHODS

"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.

BSD-1

2-17-2017

HORNER SHIFRIN
WWW. HORNERSHIFRIN .COM

USER NAME = tsfriederich	DESIGNED - TIM FRIEDERICH	REVISED -
PLOT SCALE = NTS	CHECKED - ERIC M. LAGEMANN	REVISED -
PLOT DATE = 8/17/2017	DRAWN - TIM FRIEDERICH	REVISED -
	CHECKED - ERIC M. LAGEMANN	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 075-0120
SHEET NO. 10 OF 15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	120
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			

FOR INFORMATION ONLY

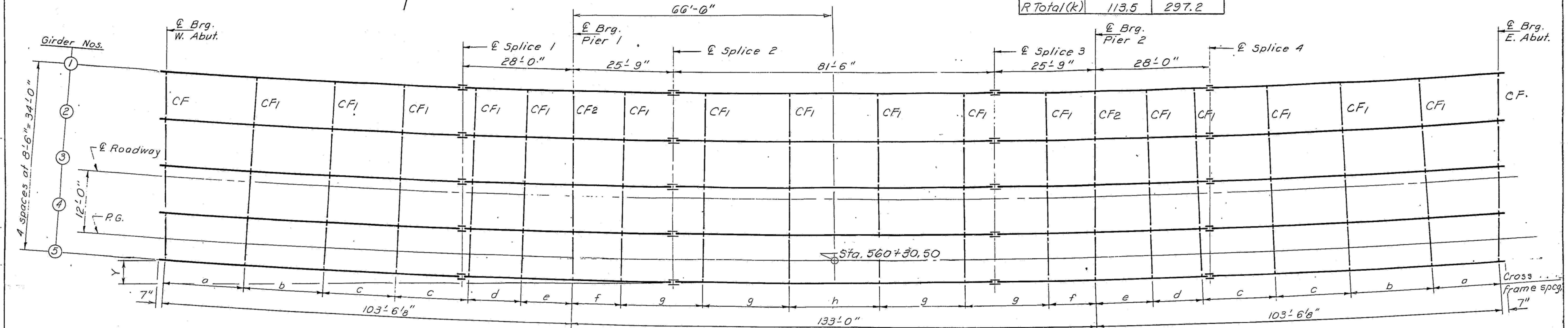
All structural steel fabricators performing work on the main load carrying components of steel structures shall be certified under Category III (AISC) of the Quality Certification Program.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

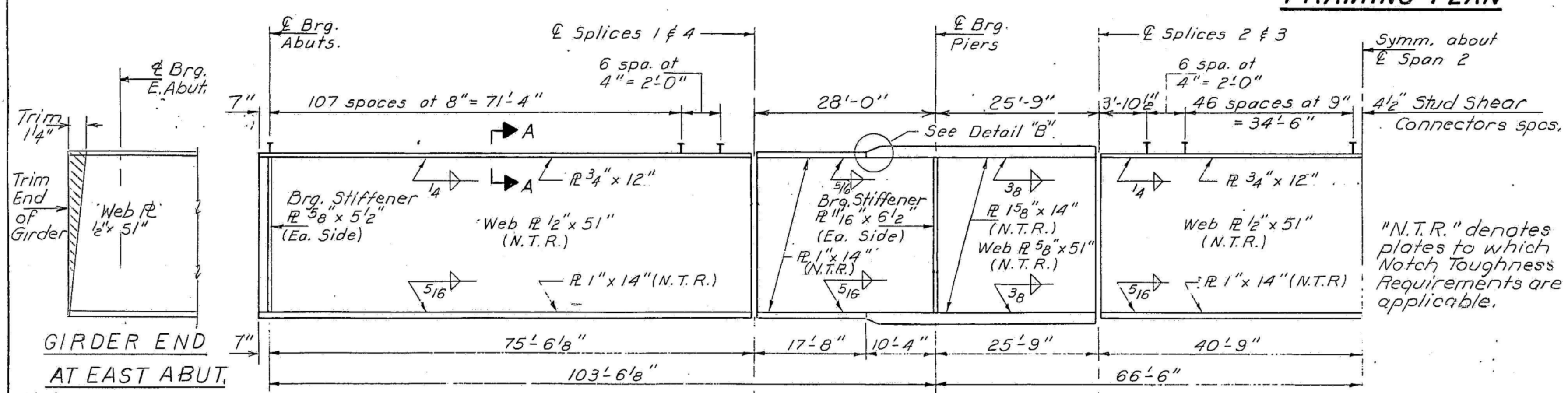
INTERIOR GIRDER REACTION TABLE	Abuts.	Piers
R Ⓓ (K)	51.3	187.1
R Ⓛ (k)	51.3	91.5
Imp. (k)	10.9	18.6
R Total (k)	113.5	297.2

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
408	75-6B-3	Pike	511	278

SHEET NO 8
18 SHEETS



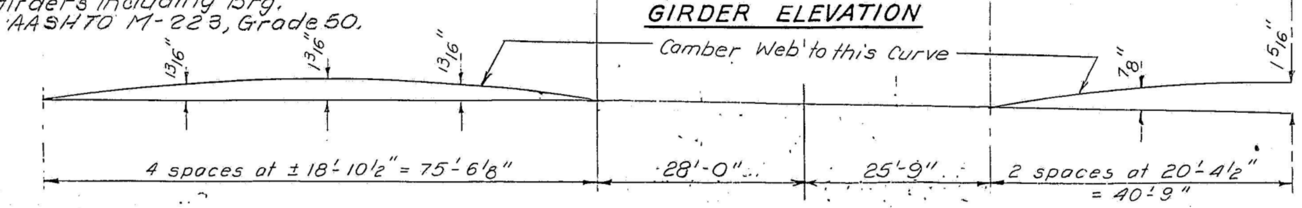
FRAMING PLAN



"N.T.R." denotes plates to which Notch Toughness Requirements are applicable.

GIRDER ELEVATION

Notes:
All Plates for Girders including Brg. Stiffeners shall be AASHTO M-223, Grade 50.



CAMBER DIAGRAM

* For Fabrication only.
Notes: All transverse dimensions are radial unless otherwise shown.
All longitudinal dimensions are measured along ℄ of Girders.
See sheet 9 of 18 for Sec. A-A & Detail "B"
See sheet 10 of 18 for Cross Frames.

	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5
℄ Brg. W. Abut.	552.77	552.99	553.21	553.42	553.64
℄ Splice 1	551.02	551.23	551.45	551.67	551.89
℄ Brg. Pier 1	550.37	550.59	550.81	551.03	551.25
℄ Splice 2	549.78	550.00	550.22	550.44	550.66
℄ Splice 3	547.96	548.18	548.40	548.62	548.84
℄ Brg. Pier 2	547.40	547.62	547.84	548.06	548.29
℄ Splice 4	546.79	547.01	547.23	547.46	547.68
℄ Brg. E. Abut.	545.18	545.39	545.62	545.84	546.07

* TOP OF WEB ELEVATIONS

DESIGNED David Budick
CHECKED Suresh Desai
mercado
DRAWN P. Summer
CHECKED DB

Sept 15 1987
EXAMINED — ENGINEER OF BRIDGE DESIGN
PASSED — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

INTERIOR GIRDER MOMENT TABLE

	0.4 Sp.1 & 0.6 Sp.3	Piers	0.5 Sp. 2
Is (in⁴)	20,663	38,420	20,663
Ic (in.⁴)	52,516		52,516
Ss (in.³)	868	1,416	868
Sc (in.³)	1,203		1,203
Sbl (in³)	32.7	53	32.7
Ⓓ (K/l)	0.996	1.491	0.996
MⒹ ('K)	645	2,145	654
SⒹ (K/l)	0.377		0.377
MsⒹ ('K)	289		340
MⓁ ('K)	1,055	1,020	1,170
MImp. ('K)	223	203	219
5/3(MⓁ+I) ('K)	2,130	2,038	2,315
Ma ('K)	3,983	5,438	4,302
Mbl ('K)	6.7	2.0	6.7
fsⒹ non comp. (k.s.i.)	8.9	18.2	9.0
fsⒹ (comp) (k.s.i.)	2.9		3.4
fs 5/3(Ⓛ+I) (k.s.i.)	21.2	17.3	23.1
fw (k.s.i.)	2.5	0.4	2.5
(fs+fw)(overload) (k.s.i.)	34.9	35.8	37.4
fs(Total) (k.s.i.)	42.9	46.2	46.2
fs(Total)+fw (k.s.i.)	45.4		48.7
VR (k)	66.9		58.9
Fb (k.s.i.)	48.6	47.2	48.6

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).
Ic and Sc are the moment of inertia and section modulus of the composite section used in computing fs (Total & Overload).
VR is the maximum Live Load + Impact shear range in span.
Ma (Applied Moment) = 1.3[MⒹ + MsⒹ + 5/3(MⓁ + I)].
fs + fw (Overload) is the sum of the stresses due to MⒹ + MsⒹ + 5/3(MⓁ + I) + (Mbl/1.3).
fs (Total) (Non-compact section) is the sum of the stresses due to 1.3[MⒹ + MsⒹ + 5/3(MⓁ + I)].
MⒹ - Moment due to dead loads on non-composite section.
MsⒹ - Moment due to dead loads on non-composite or composite section.
MⓁ - Moment due to live loads on non-composite or composite section.
I - Live load impact.
Sbl is the section modulus for one flange plate for lateral flange bending.
Mbl is the lateral bending moment for flange plate (factored).
fw is the calculated normal stress at the edge of flange due to lateral flange bending (factored).
MⓁ and RⓁ have been increased due to the effect of centrifugal force and superelevation.
Fb - Maximum allowable stress, Fbu or Fby, computed according to AASHTO Guide to Specifications for Horizontally Curved Hwy. Bridges, Sections 2.12(B) & 2.16

TABLE OF DIMENSIONS

	a	b	c	d	e	f	g	h	Radius
Girder 1	21'-6 1/16"	20'-6 7/8"	17'-11 1/16"	13'-11 1/4"	11'-7 13/16"	12'-0 1/16"	21'-9 9/16"	21'-9 5/8"	7608.44
Girder 2	21'-4 1/16"	20'-7 1/8"	17'-11 5/16"	13'-11 7/16"	11'-8 7/8"	11'-11 5/16"	21'-9 7/8"	21'-9 7/8"	7616.94
Girder 3	21'-2 1/16"	20'-7 7/16"	17'-11 1/2"	13'-11 5/8"	11'-10"	11'-10 1/2"	21'-10 3/16"	21'-10 1/4"	7625.44
Girder 4	21'-0 1/16"	20'-7 11/16"	17'-11 3/4"	13'-11 13/16"	11'-11 1/16"	11'-9 3/4"	21'-10 1/2"	21'-10 1/2"	7633.94
Girder 5	20'-10 1/8"	20'-8"	18'-0"	14'-0"	12'-0"	11'-9 1/8"	21'-10 3/4"	21'-10 3/4"	7642.44

TABLE OF Y DIMENSIONS

	Abuts.	Piers	Splices 1 & 4	Splices 2 & 3
Girder 1	1'-10 13/16"	3 1/2"	7 1/16"	1 5/16"
Girder 2	1'-10 3/4"	3 1/2"	7 1/16"	1 5/16"
Girder 3	1'-10 3/4"	3 1/2"	7 1/16"	1 5/16"
Girder 4	1'-10 11/16"	3 1/2"	7"	1 5/16"
Girder 5	1'-10 11/16"	3 1/2"	7"	1 5/16"

STRUCTURAL STEEL
F.A. RT. 408 SEC 75-6B-3
PIKE COUNTY
STA. 560+30.50

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HORNER SHIFRIN
WWW.HORNERSHIFRIN.COM

USER NAME = tsfriederich	DESIGNED - TIM FRIEDERICH	REVISED -
PLOT SCALE = NTS	CHECKED - ERIC M. LAGEMANN	REVISED -
	DRAWN - TIM FRIEDERICH	REVISED -
PLOT DATE = 8/17/2017	CHECKED - ERIC M. LAGEMANN	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING FRAMING PLAN AND BEARING SHEETS
STRUCTURE NO. 075-0120
SHEET NO. 11 OF 15 SHEETS

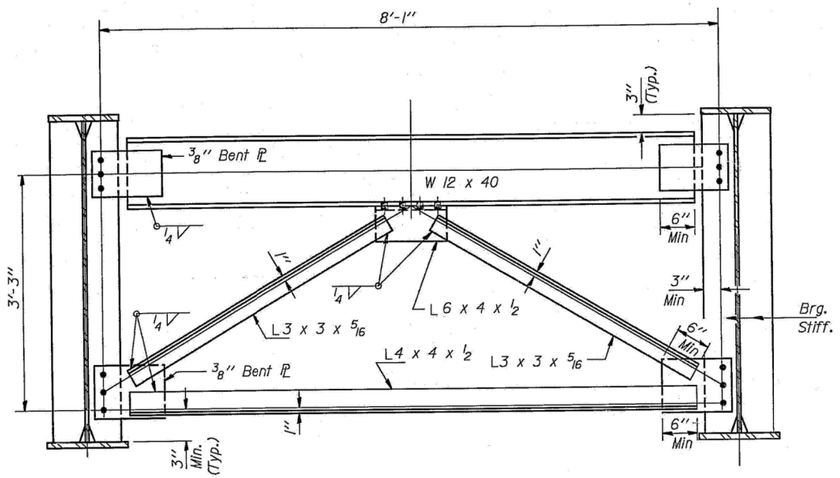
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	121
		CONTRACT NO. 72J42		
		ILLINOIS FED. AID PROJECT		

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
U.S.I. F.A. 408	75-6B-3	Pike	511	280
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

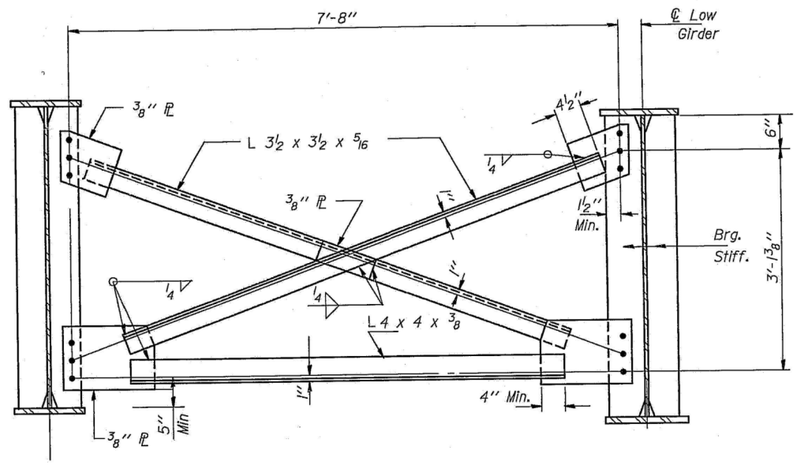
SHEET NO. 10
18 SHEETS

FOR INFORMATION ONLY

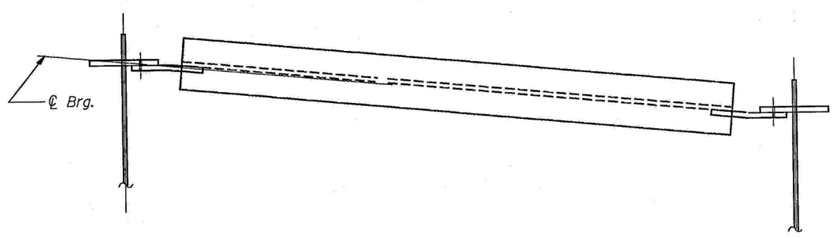
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



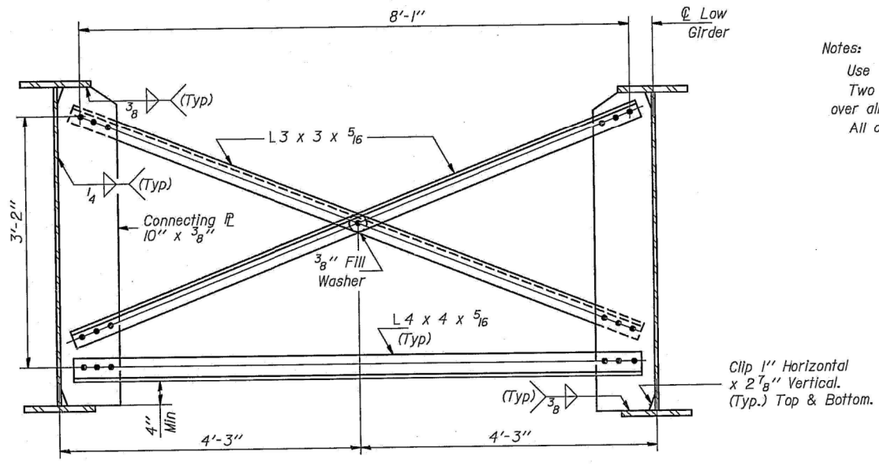
CROSS FRAME - CF
8 Required



CROSS FRAME - CF2
8 Required



PLAN VIEW - CF



CROSS FRAME - CF1
64 Required

Notes:
Use 7/8"ϕ H.S. Bolts with 1 1/16"ϕ holes.
Two hardened washers shall be required over all holes.
All connecting plates are placed radial.

DESIGNED	Mary H. Bloxdorf
CHECKED	David Burdick
DRAWN	P. S. F. M.
CHECKED	DB

Sept 15 1987
EXAMINED Iraj O. Kaspar ENGINEER OF BRIDGE DESIGN
PASSED James T. Rayburn ENGINEER OF BRIDGES AND STRUCTURES
APPROVED DIRECTOR OF HIGHWAYS

STRUCTURAL STEEL DETAILS
F.A. RT. 408 SEC. 75-6B-3
PIKE COUNTY
STA. 560+30.50

HORNER SHIFRIN
WWW. HORNERSHIFRIN.COM

USER NAME = tsfriederich	DESIGNED - TIM FRIEDERICH	REVISED -
PLOT SCALE = NTS	CHECKED - ERIC M. LAGEMANN	REVISED -
PLOT DATE = 8/17/2017	DRAWN - TIM FRIEDERICH	REVISED -
	CHECKED - ERIC M. LAGEMANN	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING FRAMING PLAN AND BEARING SHEETS
STRUCTURE NO. 075-0120
SHEET NO. 12 OF 15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	122
		CONTRACT NO. 72J42		
	ILLINOIS	FED. AID PROJECT		

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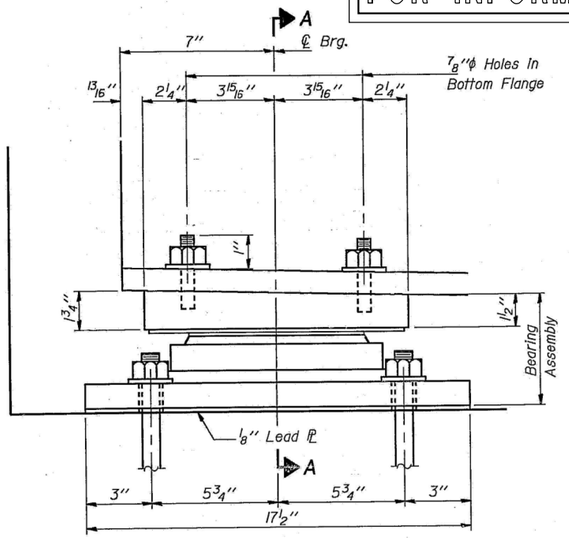
FOR INFORMATION ONLY

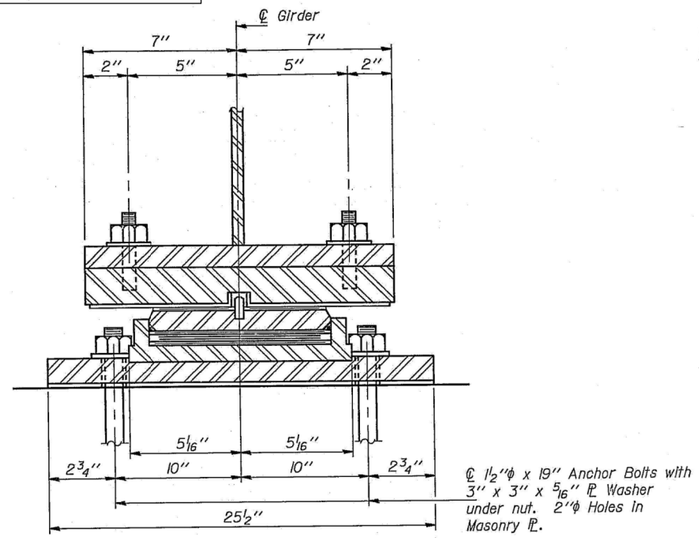
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. RT. 408	75-6B-3	Pike	511	281
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 11
18 SHEETS

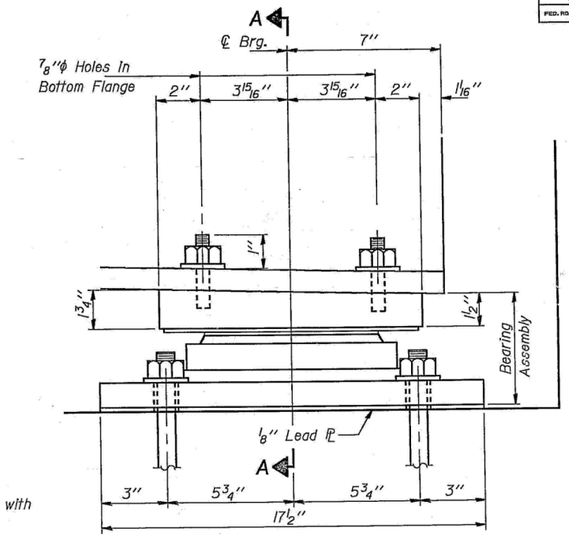


ELEVATION AT WEST ABUTMENT
(Looking North)



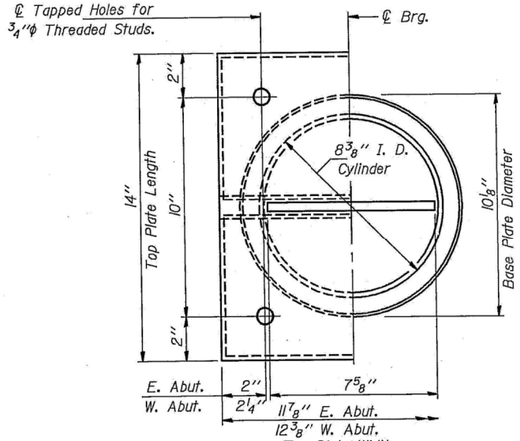
SECTION A-A

℄ 1 1⁄2″ϕ x 19″ Anchor Bolts with 3″ x 3″ x 5⁄16″ ℄ Washer under nut. 2″ϕ Holes in Masonry ℄.

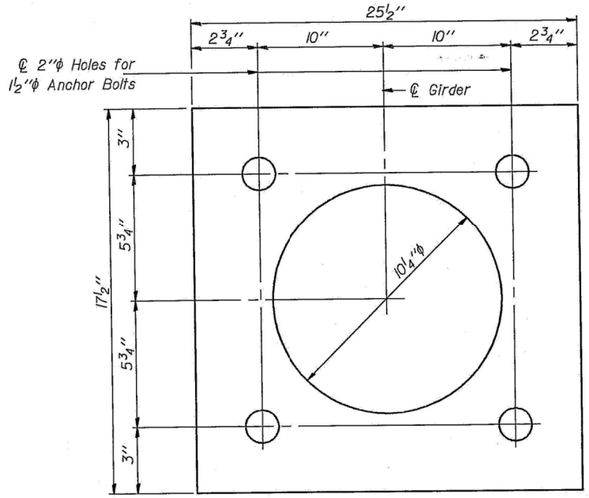


ELEVATION AT EAST ABUTMENT
(Looking North)

BEARING DATA		
R ℄ (k)		51.3
R ℄ (k)		51.3
R I (k)		10.9
RTOTAL(k)		113.5
Expansion Lengths	W.	236′-6″
	E.	103′-6″
Lateral Load (k)		2.1

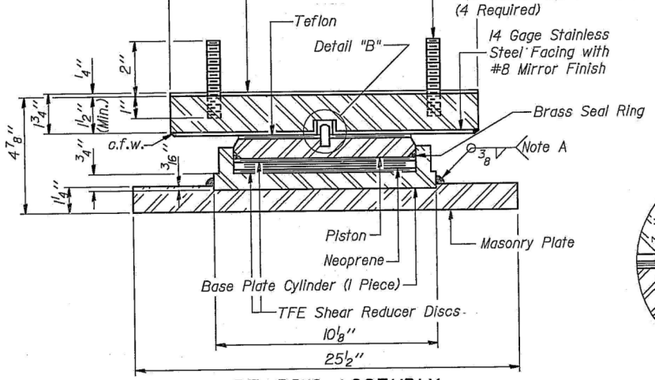


CUT-AWAY PLAN
(Half of Top Plate shown)



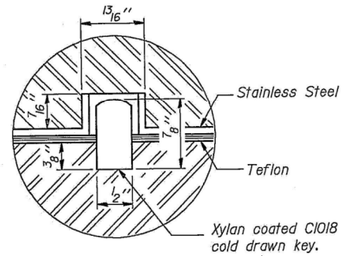
MASONRY PLATE DETAIL

Tapered Top ℄ 11 7⁄8″ x 14″ E. Abut.
Tapered Top ℄ 12 3⁄8″ x 14″ W. Abut.



BEARING ASSEMBLY
(For both abutments)

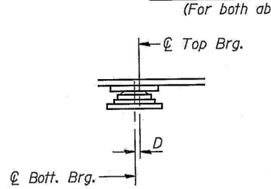
NOTE A:
Weld in field after bearing is self aligned during first movement.



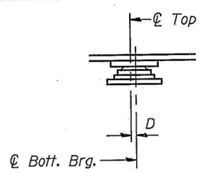
DETAIL "B"

BILL OF MATERIAL

Item	Unit	Total
Floating Bearings, Guided Expansion, 125 K	Each	10



BELOW 50°F.
(Move bott. brg. away from fixed brg.)



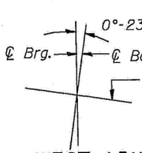
ABOVE 50°F.
(Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.
D=1⁄8″ per each 100′ of expansion for every 15° temp. change from the normal temp. of 50°F.

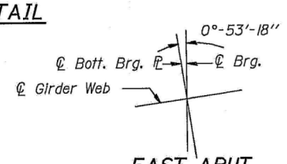
BEARING DETAILS
EAST & WEST ABUTMENTS
F.A. RT. 408 SEC. 75-6B-3
PIKE COUNTY
STA. 560+30.50

Notes: The plates of the Bearing Assembly shall be AASHTO M223, Grade 50.
For anchor bolt installation details see sheet #14 of 18.

DESIGNED	Mary H. Bloxdorf	Sept 15 1987
CHECKED	David Burdick	EXAMINED Graj O Kaspar ENGINEER OF BRIDGE DESIGN
DRAWN	R. Doty meroado	PASSED James J Rayburn ENGINEER OF BRIDGES AND STRUCTURES
CHECKED	DB	APPROVED DIRECTOR OF HIGHWAYS



WEST ABUT.



EAST ABUT.

BEARING ORIENTATION

HORNER SHIFRIN		DESIGNED - TIM FRIEDERICH	REVISED -
WWW. HORNERSHIFRIN .COM	USER NAME = tsfriederich	CHECKED - ERIC M. LAGEMANN	REVISED -
	PLOT SCALE = NTS	DRAWN - TIM FRIEDERICH	REVISED -
	PLOT DATE = 8/17/2017	CHECKED - ERIC M. LAGEMANN	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING FRAMING PLAN AND BEARING SHEETS
STRUCTURE NO. 075-0120
SHEET NO. 13 OF 15 SHEETS

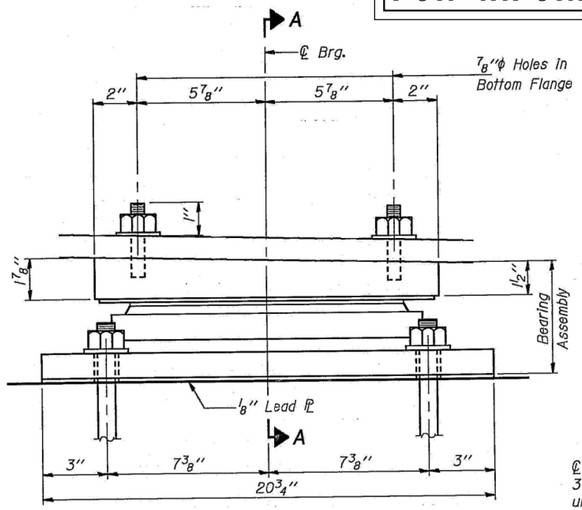
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	123
		CONTRACT NO. 72J42		
	ILLINOIS	FED. AID PROJECT		

FOR INFORMATION ONLY

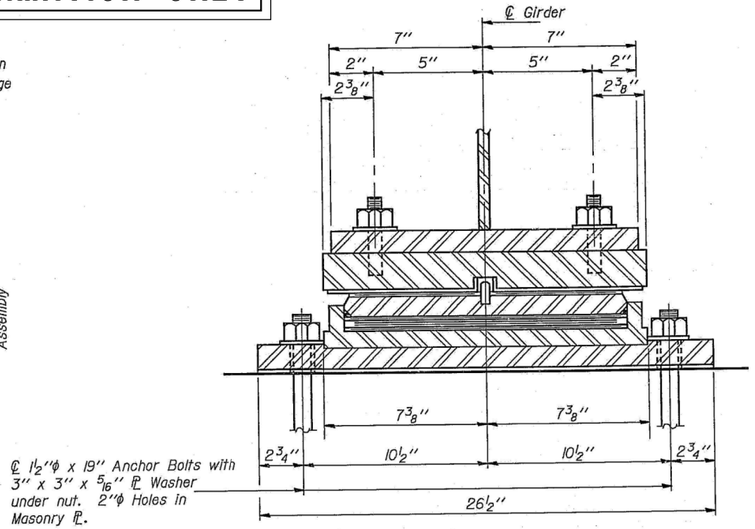
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. RTE. 408	75-68-3	Pike	511	282
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 12
18 SHEETS

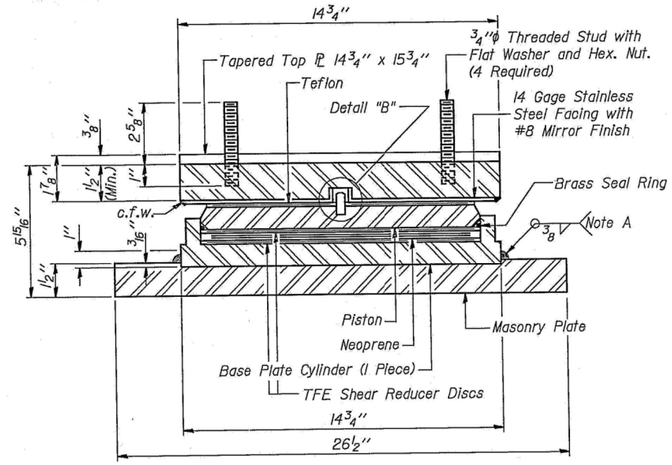


ELEVATION AT PIER #1
(Looking North)

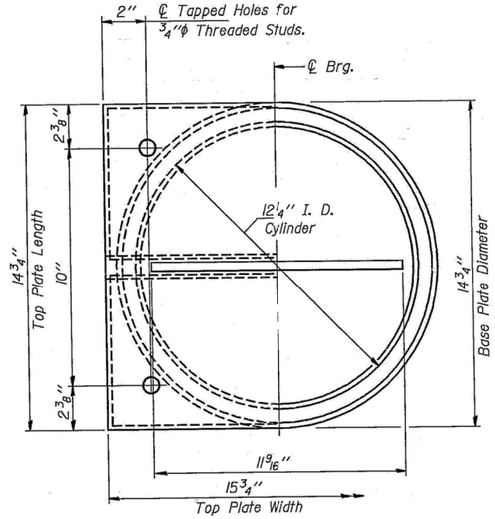


SECTION A-A

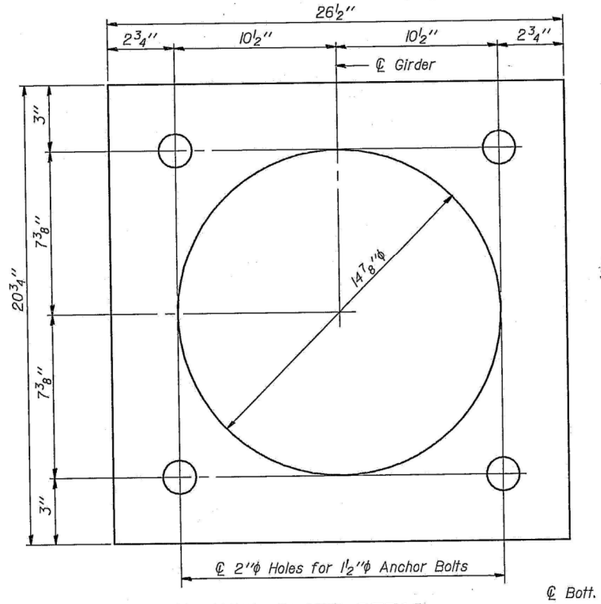
NOTE A:
Weld in field after bearing is self aligned during first movement.



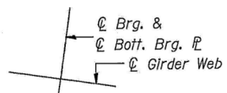
BEARING ASSEMBLY



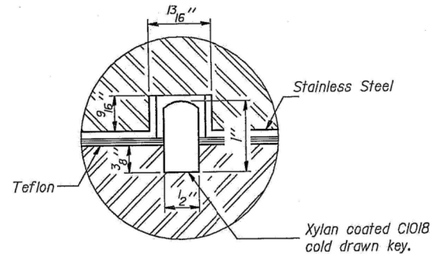
CUT-AWAY PLAN
(Half of Top Plate shown)



MASONRY PLATE DETAIL



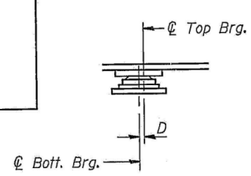
BEARING ORIENTATION



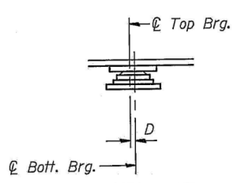
DETAIL "B"

Notes: The plates of the Bearing Assembly shall be AASHTO M223, Grade 50.
For anchor bolt installation details see sheet #14 of 18.

BEARING DATA	
R ℄ (k)	187.1
R ℄ (k)	91.5
R I (k)	18.6
RTOTAL(k)	297.2
Expansion Length	133'-0"
Lateral Load (k)	9.4



BELOW 50°F.
(Move bott. brg. away from fixed brg.)



ABOVE 50°F.
(Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.
D=1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

BILL OF MATERIAL

Item	Unit	Total
Floating Bearings, Guided Expansion, 300K	Each	5

BEARING DETAILS
PIER #1
F.A. RT. 408 SEC. 75-6B-3
PIKE COUNTY
STA. 560+30.50

DESIGNED	Mary H. Bloxdorf	
CHECKED	David Buzicki	
DRAWN	R. Doty mercado	
CHECKED	DB	

Sept 15 1987

EXAMINED Engineer of Bridge Design

PASSED James T. Kyburn
Engineer of Bridges and Structures

APPROVED
Director of Highways

HORNER SHIFRIN
WWW.HORNERSHIFRIN.COM

USER NAME = tsfriederich	DESIGNED - TIM FRIEDERICH	REVISED -
PLOT SCALE = NTS	CHECKED - ERIC M. LAGEMANN	REVISED -
PLOT DATE = 8/17/2017	DRAWN - TIM FRIEDERICH	REVISED -
	CHECKED - ERIC M. LAGEMANN	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING FRAMING PLAN AND BEARING SHEETS
STRUCTURE NO. 075-0120
SHEET NO. 14 OF 15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	124
		CONTRACT NO. 72J42		
	ILLINOIS	FED. AID PROJECT		

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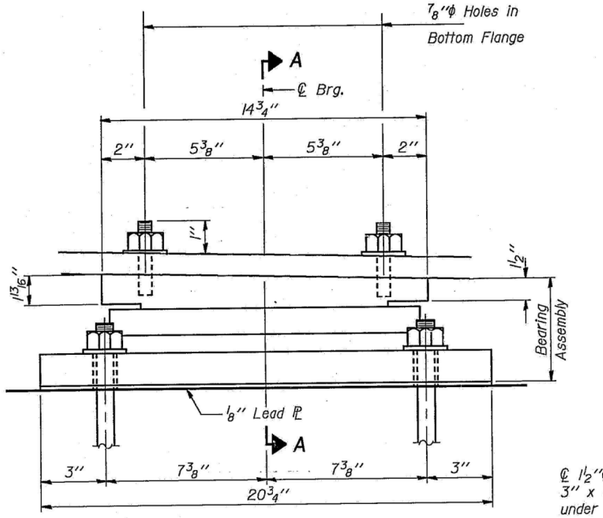
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

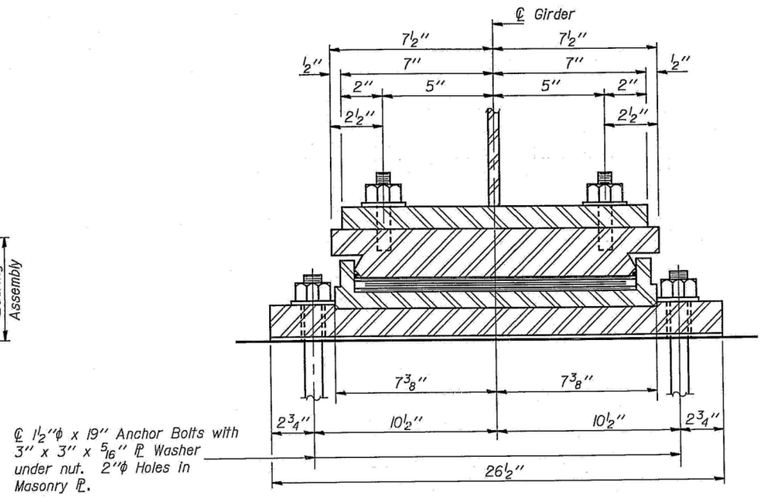
FOR INFORMATION ONLY

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. RTE. 408	75-6B-3	Pike	511	283
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 13
18 SHEETS

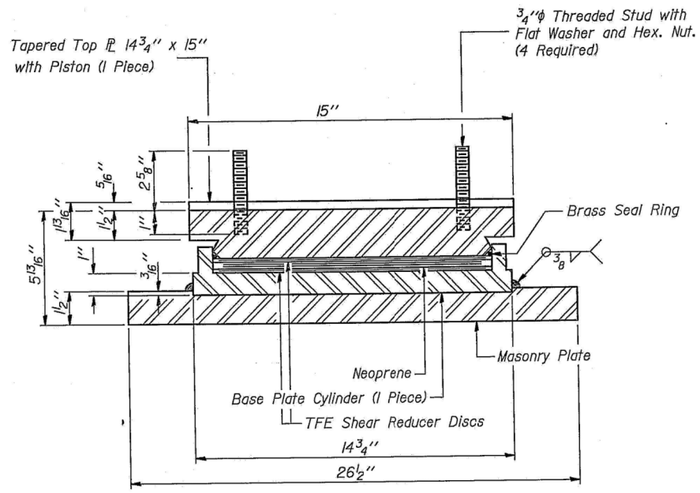


ELEVATION AT PIER #2
(Looking North)

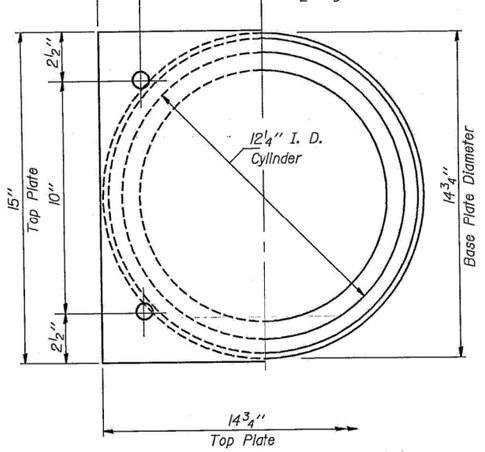


℄ 1 1/2"ϕ x 19" Anchor Bolts with 3" x 3" x 5/16" ℙ Washer under nut. 2"ϕ Holes in Masonry ℙ.

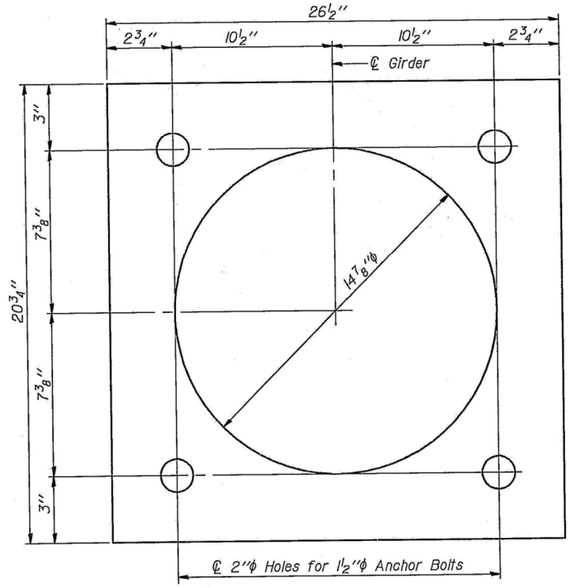
SECTION A-A



BEARING ASSEMBLY



CUT-AWAY PLAN
(Half of Top Plate shown)



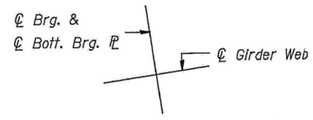
MASONRY PLATE DETAIL

BEARING DATA	
R ℙ (k)	187.1
R ℄ (k)	91.5
R I (k)	18.6
R TOTAL(k)	297.2
Lateral Load (k)	12.0

Notes: The plates of the Bearing Assembly shall be AASHTO M223, Grade 50.
For anchor bolt installation details see sheet #14 of 18.
Anchor bolts may be built into masonry.

BILL OF MATERIAL

Item	Unit	Total
Floating Bearings, Fixed, 300K	Each	5



BEARING ORIENTATION

DESIGNED	Mary H. Blaxdorf
CHECKED	David Burdick
DRAWN	mercado R. Doty
CHECKED	DB

Sept 15 1987
EXAMINED Iraj O. Kaspar ENGINEER OF BRIDGE DESIGN
PASSED James T. Rayburn ENGINEER OF BRIDGES AND STRUCTURES
APPROVED DIRECTOR OF HIGHWAYS

BEARING DETAILS
PIER #2
F.A. RT. 408 SEC. 75-6B-3
PIKE COUNTY
STA. 560+30.50

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USER NAME = tsfriederich	DESIGNED - TIM FRIEDERICH	REVISED -
PLOT SCALE = NTS	CHECKED - ERIC M. LAGEMANN	REVISED -
PLOT DATE = 8/17/2017	DRAWN - TIM FRIEDERICH	REVISED -
	CHECKED - ERIC M. LAGEMANN	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING FRAMING PLAN AND BEARING SHEETS
STRUCTURE NO. 075-0120
SHEET NO. 15 OF 15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	125
		CONTRACT NO. 72J42		
	ILLINOIS	FED. AID PROJECT		

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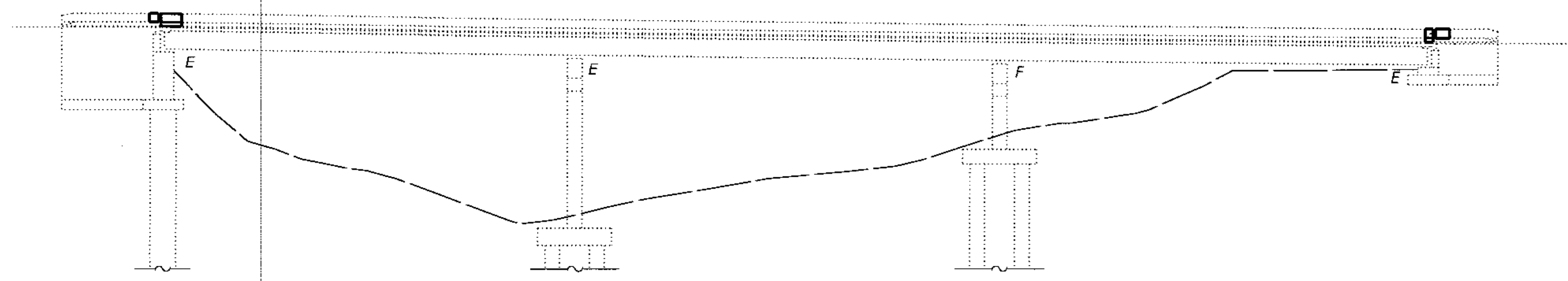
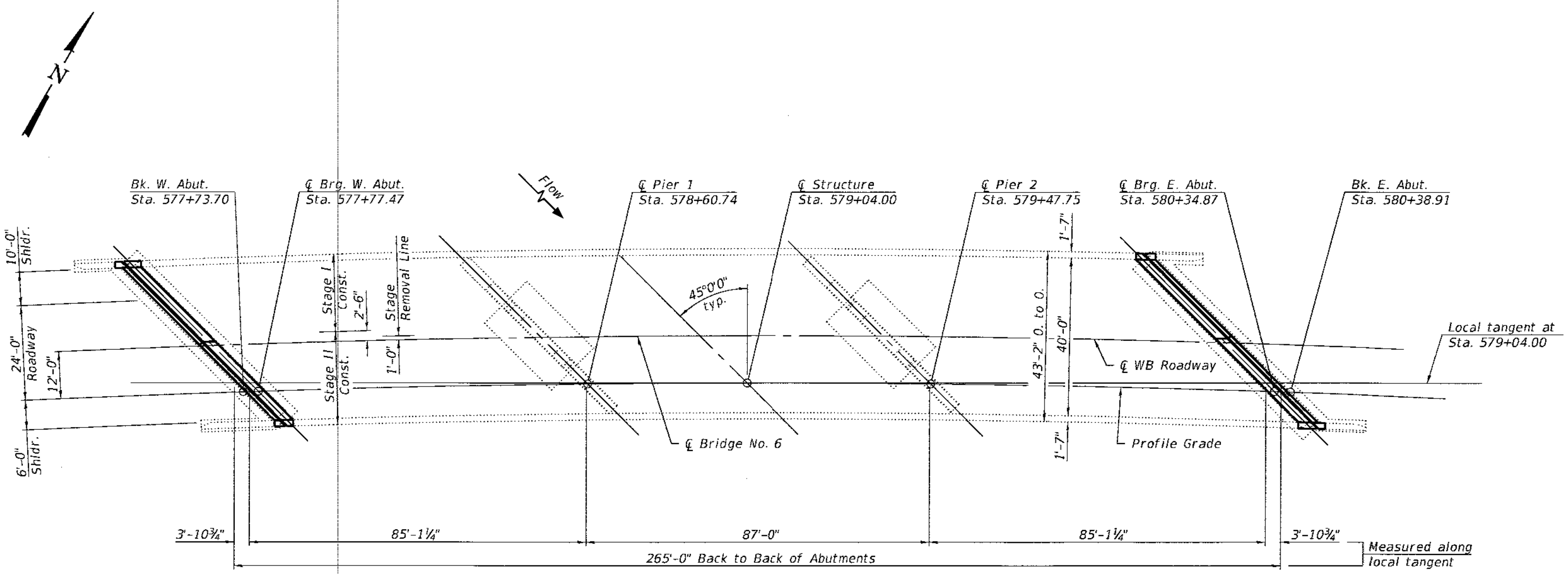
INDEX OF SHEETS



ELEVATION

SCOPE OF WORK

1. Replace expansion joints.
2. Deck and approach patching.
3. Hydroscarification and placement of microsilica concrete overlay.
4. Perform diamond grinding and apply protective coat.
5. Blasting and painting of beam ends, end diaphragms, and abutment bearings.
6. Substructure repair.



PLAN

STATE OF ILLINOIS ★ ERIC M. LAGEMANN ★ LICENSE NO. 081-006124 ★ LICENSED STRUCTURAL ENGINEER

Eric Lagemann 8/18/17
Expires 11/30/2018 Date

GENERAL PLAN
I-72 OVER NAPOLEON HOLLOW DRAW
F.A.I. ROUTE 72
SECTION (75-6) BDR, BP, BRR, RS-2
PIKE COUNTY
STATION 579+04.00
STRUCTURE NO. 075-0121

HORNER SHIFRIN WWW.HORNERSHIFRIN.COM	USER NAME = tsfriederich	DESIGNED - TIM FRIEDERICH	REVISED -
	PLOT SCALE = NTS	CHECKED - ERIC M. LAGEMANN	REVISED -
	PLOT DATE = 8/17/2017	DRAWN - TIM FRIEDERICH	REVISED -
		CHECKED - ERIC M. LAGEMANN	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	126
		CONTRACT NO. 72J42		
		ILLINOIS FED. AID PROJECT		

GENERAL NOTES

Reinforcement bars designated (E) shall be epoxy coated.

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. 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 included in the pay item covering removal of the existing concrete.

As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that can not be removed by grindng ¼ in. deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

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.

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

Cleaning and Painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". All beams, bearings and other structural steel within the length (measured along beam) shown in the GIRDER PAINTING LIMITS TABLE, of either side of deck joints, shall be cleaned per Near White Blast Cleaning – SSPC-SP10. The exterior surfaces and bottom of the bottom flange of the fascia beams shall be cleaned per Commercial Grade Power Tool Cleaning – SSPC – SP15. The designated areas cleaned per Near White Blast Cleaning and per Commercial Grade Power Tool Cleaning shall be painted according to the requirements of Paint System 1 – OZ/E/U. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No. 5B 7/1. The color of the final finish coat for all exterior steel surfaces shall be Reddish Brown, Munsell No. 2.5YR 3/4.

Joint plates and attached bars shall be shop painted with the inorganic zinc primer. No field paint required.

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.

Synthetic fibers shall be added to the Bridge Deck Concrete Overlay. See Special Provisions.

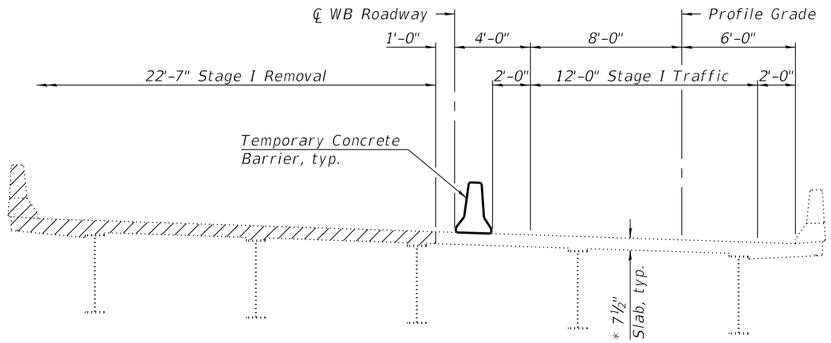
TOTAL BILL OF MATERIAL

	ITEM	UNIT	SUPER	SUB	TOTAL
	Concrete Removal	Cu. Yd.	17.2	0.3	17.5
	Concrete Superstructure	Cu. Yd.	19.5	0.3	19.8
*	Protective Coat	Sq. Yd.	1,380		1,380
	Reinforcement Bars, Epoxy Coated	Pound	480	1,020	1,500
	Bar Splicers	Each	12		12
	Preformed Joint Strip Seal	Foot	128.0		128.0
	Bridge Deck Grooving (Longitudinal)	Sq. Yd.	692		692
	Containment and Disposal of Non-Lead Paint Cleaning Residues No. 6	L Sum			1
	Approach Slab Repair (Partial Depth)	Sq. Yd.			7.0
	Cleaning and Painting Steel Bridge No. 6	L Sum			1
	Bridge Deck Scarification ¾"	Sq. Yd.	1,125		1,125
	Bridge Deck Microsilica Concrete Overlay 2¾"	Sq. Yd.	1,125		1,125
	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)	Sq. Ft.		8	8
	Structural Repair of Concrete (Depth Greater than 5 inches)	Sq. Ft.	5		5
	Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	5.4		5.4
	Diamond Grinding (Bridge Section)	Sq. Yd.	1,168		1,168

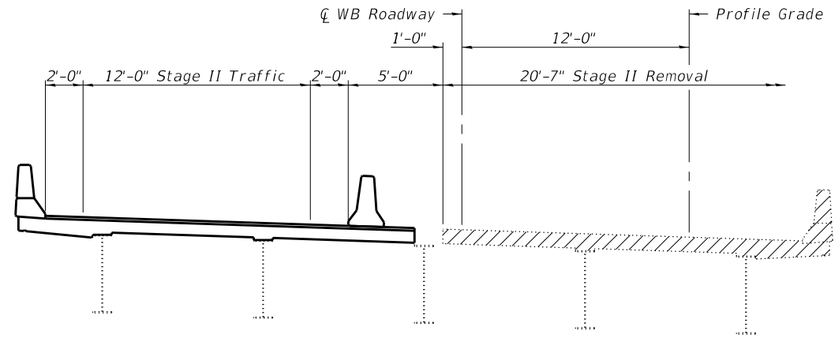
* Quantity includes overlay and face of parapets.

GIRDER PAINTING LIMITS TABLE

Girder No.	Span 1	Span 2	Span 3
1	10'-0"	---	10'-0"
2	10'-0"	---	10'-0"
3	10'-0"	---	10'-0"
4	10'-0"	---	10'-0"
5	10'-0"	---	10'-0"

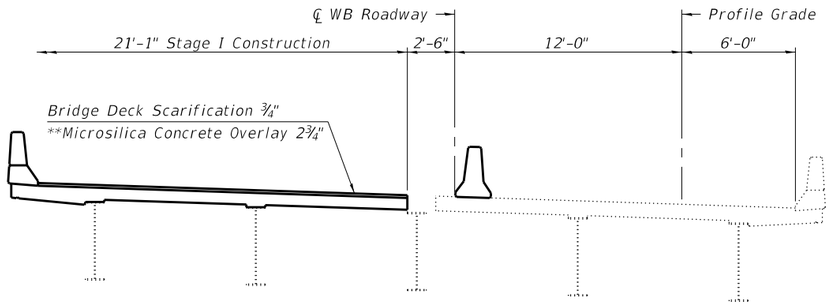


STAGE I REMOVAL

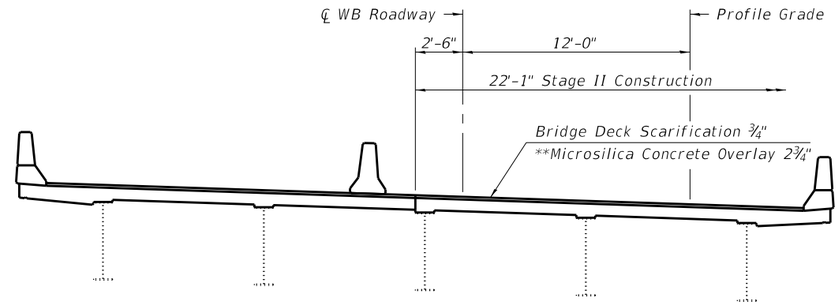


STAGE II REMOVAL

* Prior to scarification
** Prior to grinding



STAGE I CONSTRUCTION



STAGE II CONSTRUCTION

Notes:
All sections are looking east.
For quantity of Temporary Concrete Barrier, see Roadway Plans.
Hatched areas indicate Concrete Removal.

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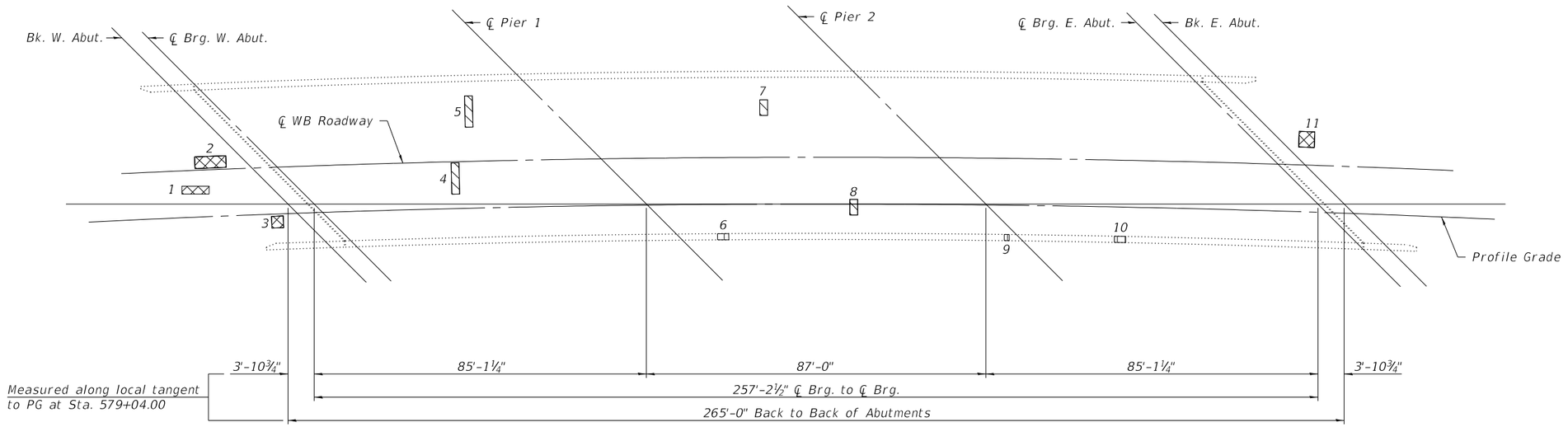
USER NAME = tsfriederich	DESIGNED - TIM FRIEDERICH	REVISED -
PLOT SCALE = NTS	CHECKED - ERIC M. LAGEMANN	REVISED -
PLOT DATE = 8/17/2017	DRAWN - TIM FRIEDERICH	REVISED -
	CHECKED - ERIC M. LAGEMANN	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 075-0121
SHEET NO. 3 OF 17 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	128
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			



DECK REPAIR PLAN

N

LEGEND

- Deck Slab Repair (Full Depth, Type II)
- Approach Slab Repair (Partial Depth)
- Structural Repair of Concrete (Depth Greater than 5 inches)

ANTICIPATED DECK SLAB REPAIR (FULL DEPTH, TYPE II)

Patch No.	Length (ft.)	Width (ft.)	Area (sq. yd.)
4	2	8	1.8
5	2	8	1.8
7	2	4	0.9
8	2	4	0.9
		Total =	5.4

ANTICIPATED APPROACH SLAB REPAIR (PARTIAL DEPTH)

Patch No.	Length (ft.)	Width (ft.)	Area (sq. yd.)
1	7	2	1.5
2	8	3	2.7
3	3	3	1.0
11	4	4	1.8
		Total =	7.0

Quantities and repair area shown are estimated. Actual areas to be determined by the Resident Engineer and recorded on the As-Built Plans.

STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES)

Patch No.	Area (sq. ft.)
6	2
9	1
10	2
Total =	5

BILL OF MATERIAL

Item	Unit	Total
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	5.4
Structural Repair of Concrete (Depth Greater than 5 inches)	Sq. Ft.	5
Approach Slab Repair (Partial Depth)	Sq. Yd.	7.0

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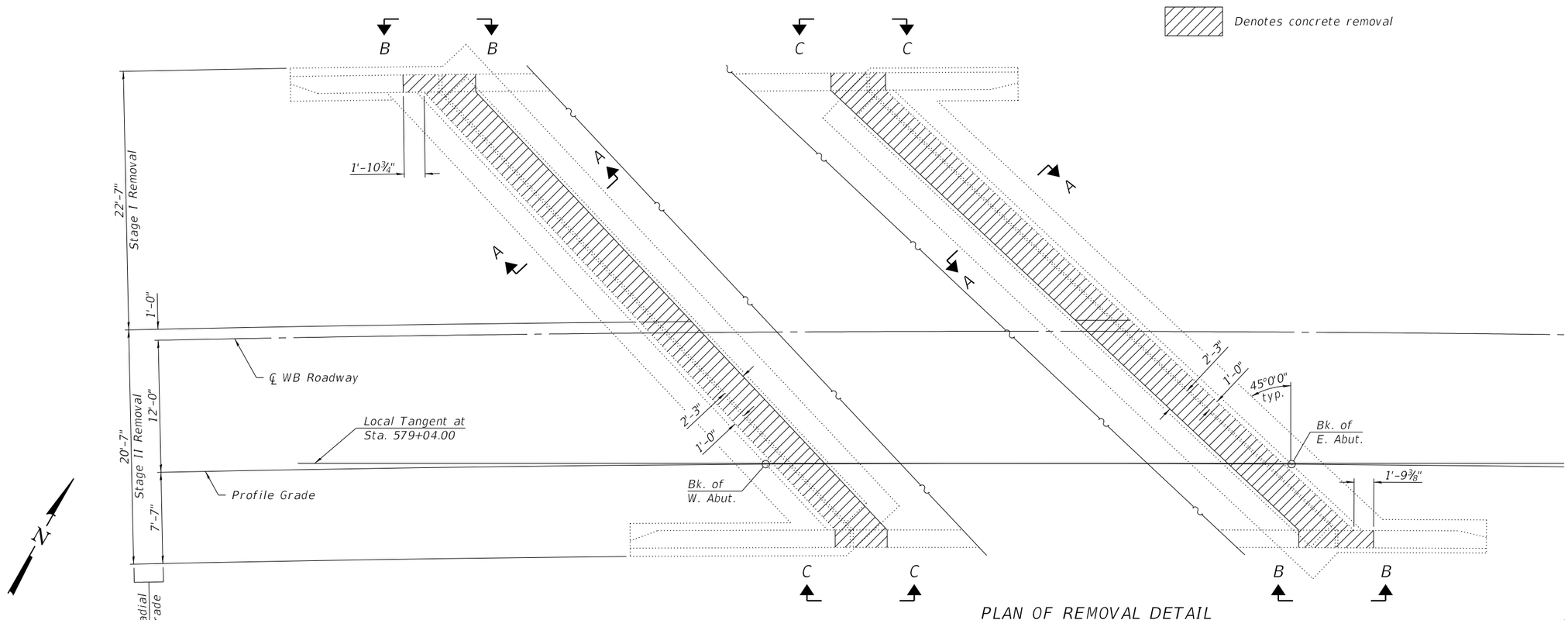
USER NAME = tsfriederich	DESIGNED - TIM FRIEDERICH	REVISED -
PLOT SCALE = NTS	CHECKED - ERIC M. LAGEMANN	REVISED -
PLOT DATE = 8/17/2017	DRAWN - TIM FRIEDERICH	REVISED -
	CHECKED - ERIC M. LAGEMANN	REVISED -

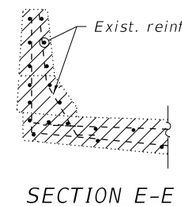
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK PATCHING REMOVAL
STRUCTURE NO. 075-0121
SHEET NO. 4 OF 17 SHEETS

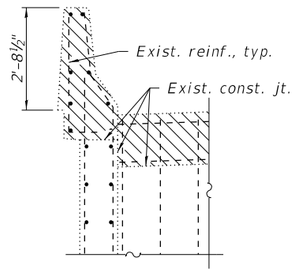
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	129
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			



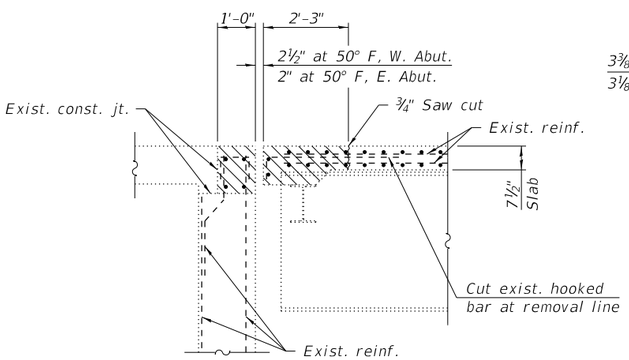
PLAN OF REMOVAL DETAIL



SECTION E-E

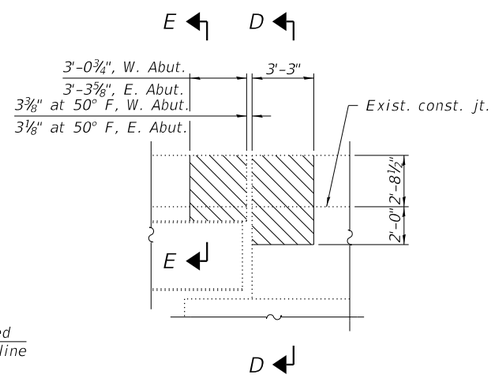


SECTION F-F

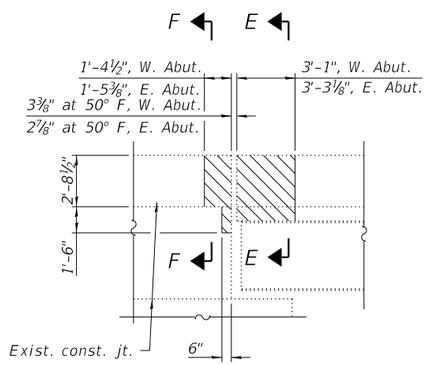


SECTION A-A

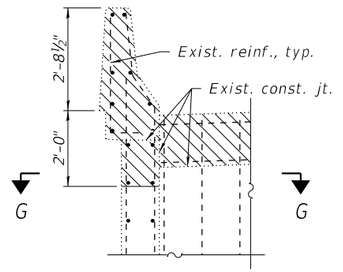
(Horiz. dim. at right L's)



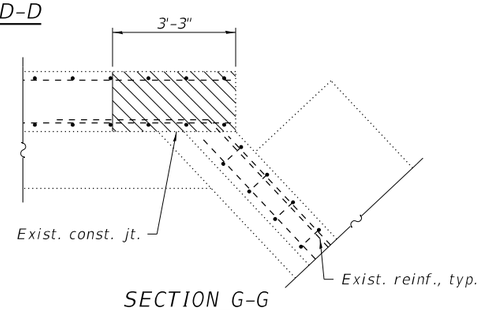
VIEW B-B



VIEW C-C



SECTION D-D



SECTION G-G

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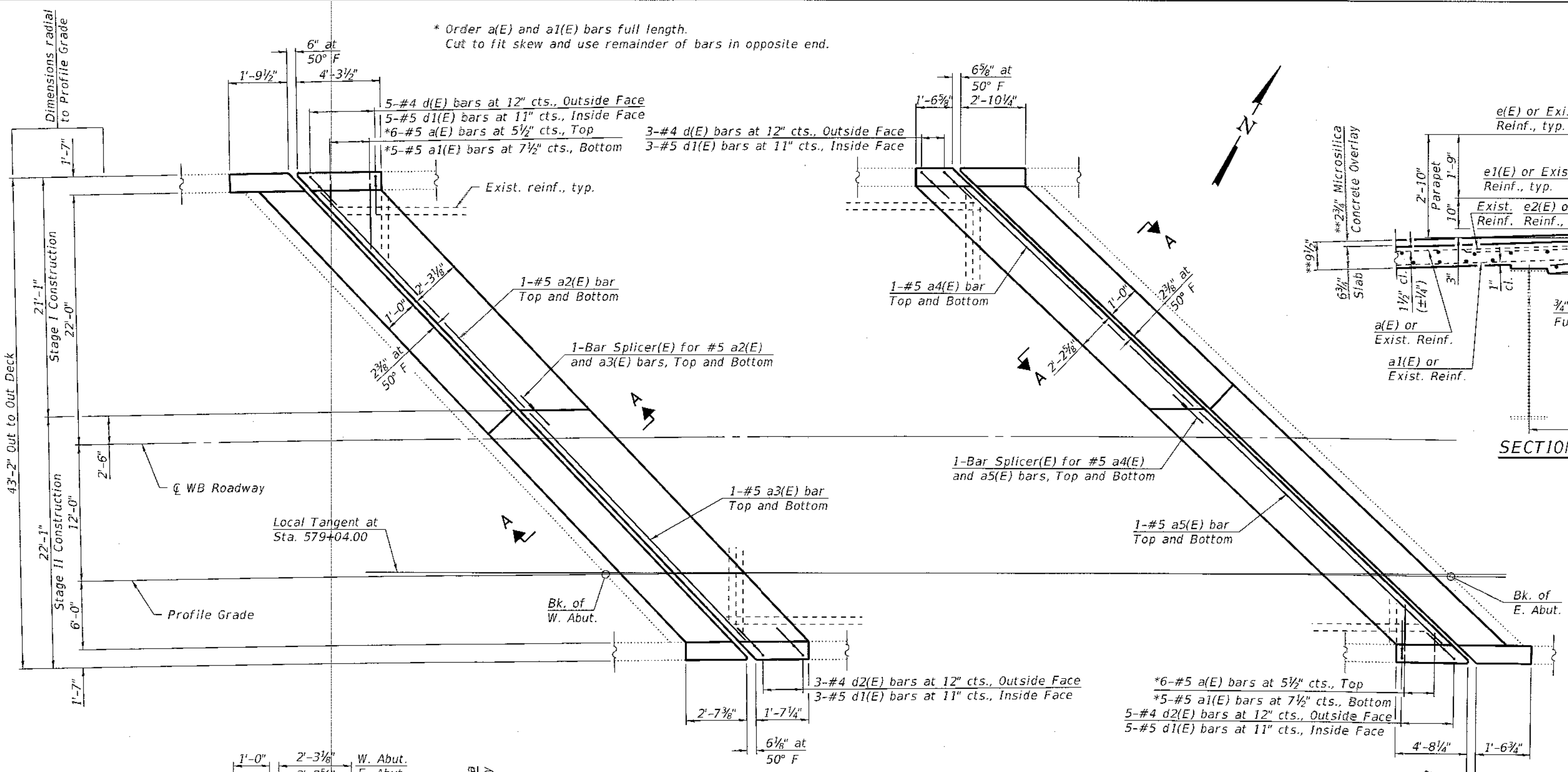
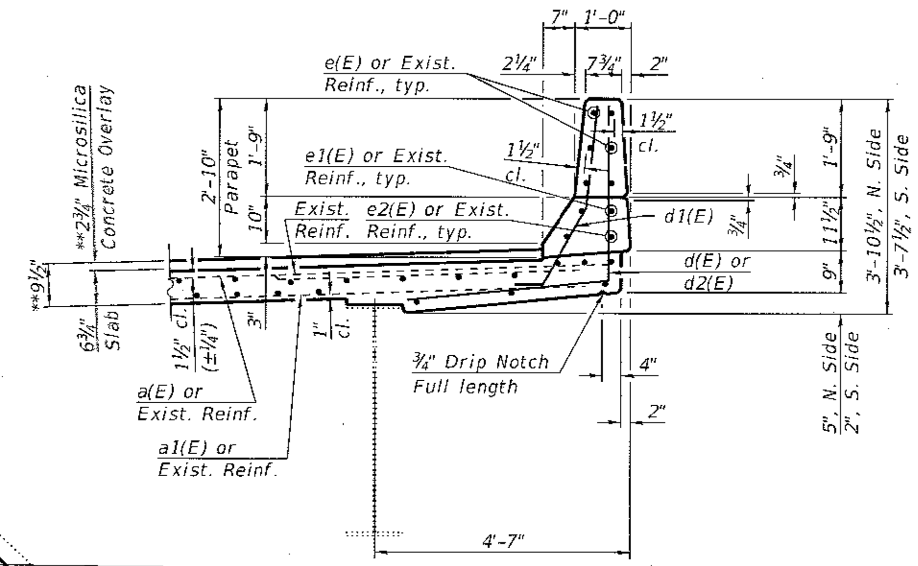
	USER NAME = tsfriederich	CHECKED - ERIC M. LAGEMANN	REVISED -
	PLOT SCALE = NTS	DRAWN - TIM FRIEDERICH	REVISED -
	PLOT DATE = 8/17/2017	CHECKED - ERIC M. LAGEMANN	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REMOVAL DETAILS
STRUCTURE NO. 075-0121
SHEET NO. 5 OF 17 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	130
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			

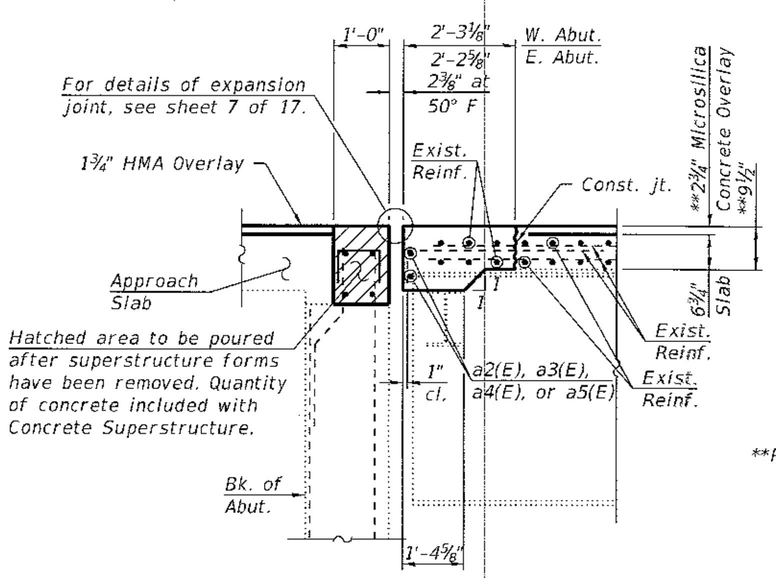




SECTION THRU PARAPET

SUPERSTRUCTURE BILL OF MATERIAL

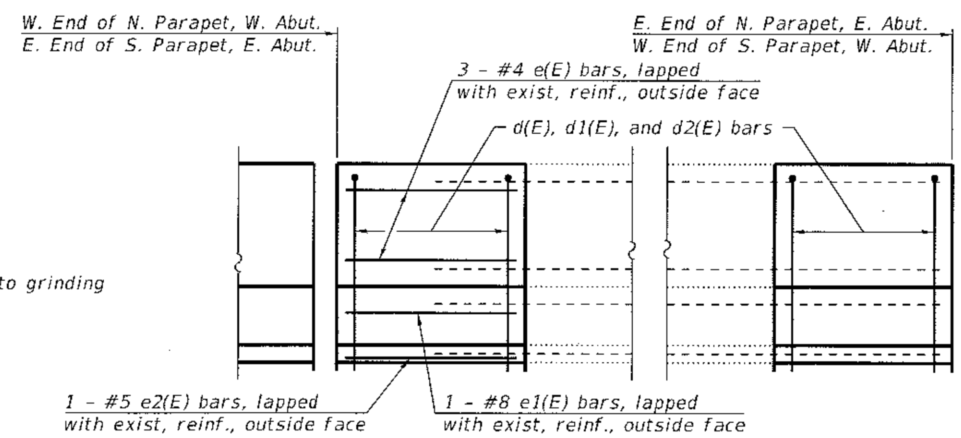
Bar	No.	Size	Length	Shape
a(E)	6	#5	5'-5"	——
a1(E)	5	#5	5'-9"	——
a2(E)	2	#5	26'-1"	——
a3(E)	2	#5	27'-7"	——
a4(E)	2	#5	27'-10"	——
a5(E)	2	#5	29'-6"	——
d(E)	8	#4	6'-10"	
d1(E)	16	#5	3'-11"	
d2(E)	8	#4	6'-10"	
e(E)	6	#4	4'-0"	——
e1(E)	2	#8	4'-0"	——
e2(E)	2	#5	4'-0"	——
Concrete Removal		Cu. Yd.	17.2	
Concrete Superstructure		Cu. Yd.	19.8	
Reinforcement Bars, Epoxy Coated		Pound	480	



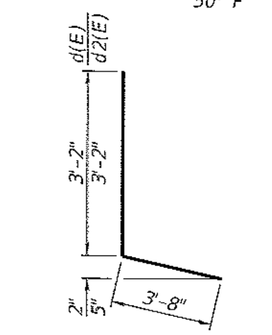
SECTION A-A

(Horiz. dim. at right L's)

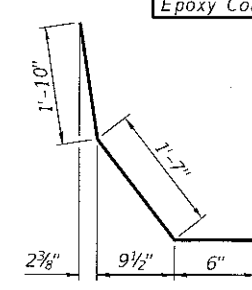
**Prior to grinding



INSIDE ELEVATION OF PARAPET



BARS d(E) & d2(E)



BAR d1(E)

Notes:

Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on sheet 7 of 17.

Cut ends of existing reinforcement bars extending into new construction to maintain 1½" minimum clearance.

For details of Bar Splicers, see sheet 11 of 17.

For Superstructure Concrete Removal Details, see sheet 5 of 17.

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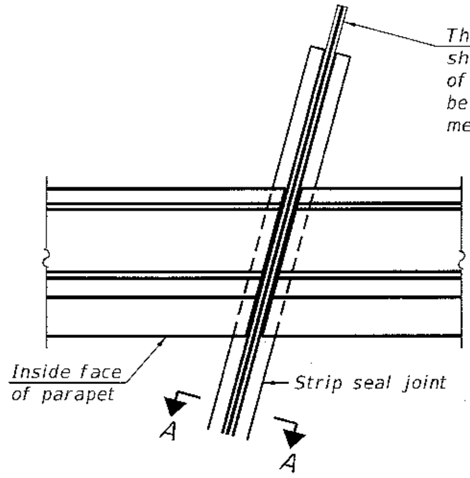
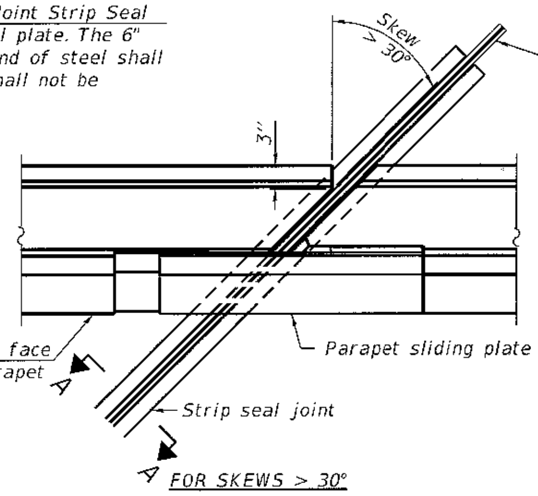
SUPERSTRUCTURE REPAIR DETAILS
STRUCTURE NO. 075-0121

SHEET NO. 6 OF 17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	131
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			

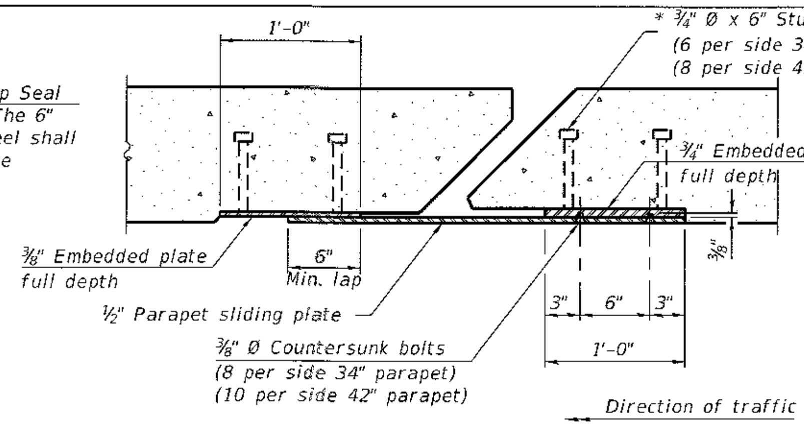


FOR SKEWS ≤ 30°

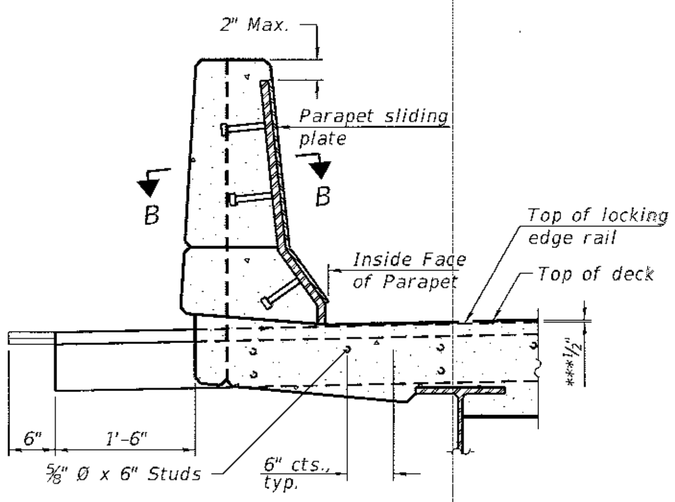


FOR SKEWS > 30°

PLAN AT PARAPET

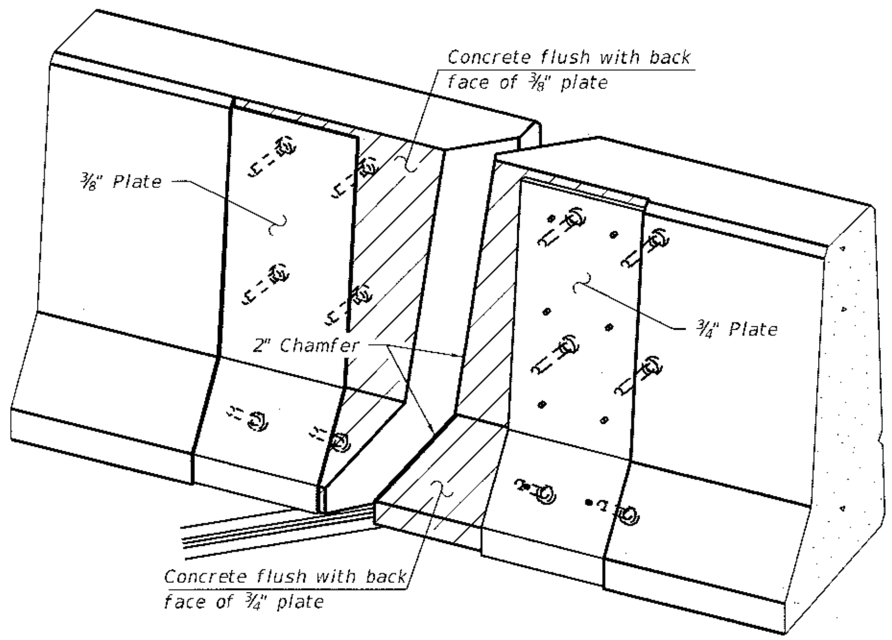


SECTION B-B



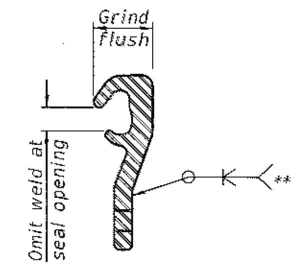
ELEVATION AT PARAPET

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



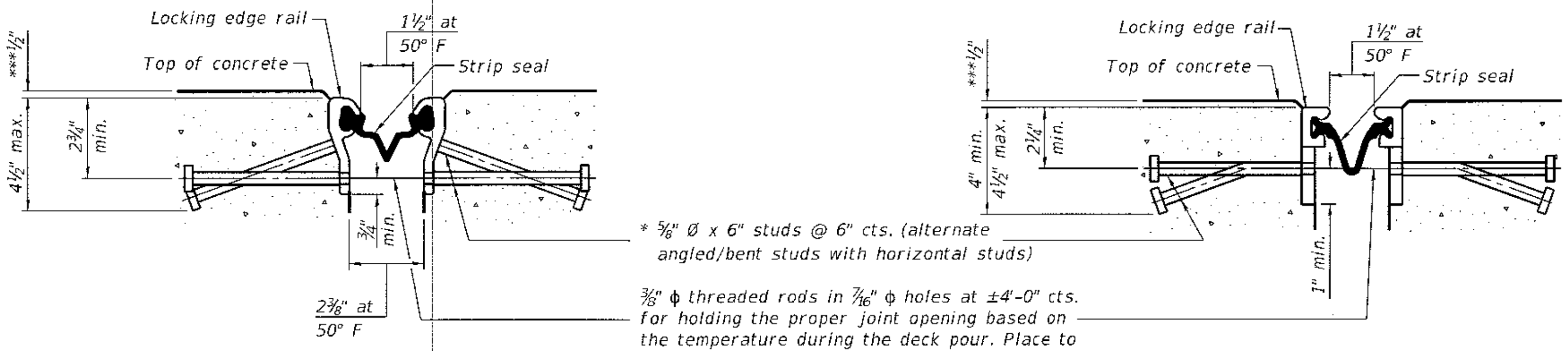
TRIMETRIC VIEW

(Showing embedded plates only)



LOCKING EDGE RAIL SPLICE

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



SHOWING ROLLED RAIL JOINT

SHOWING WELDED RAIL JOINT

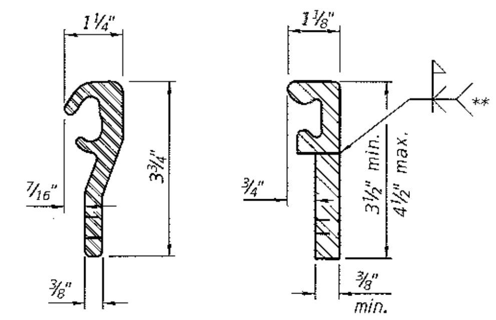
* ⅝" Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

⅜" ϕ threaded rods in $\frac{7}{16}$" 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.

SECTION A-A

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

*** Prior to grinding.



ROLLED (EXTRUDED) RAIL

WELDED RAIL

LOCKING EDGE RAILS

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

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 $\frac{3}{16}$" 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.

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

34" F-shape barrier shown, 42" F-shape 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.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	128.0

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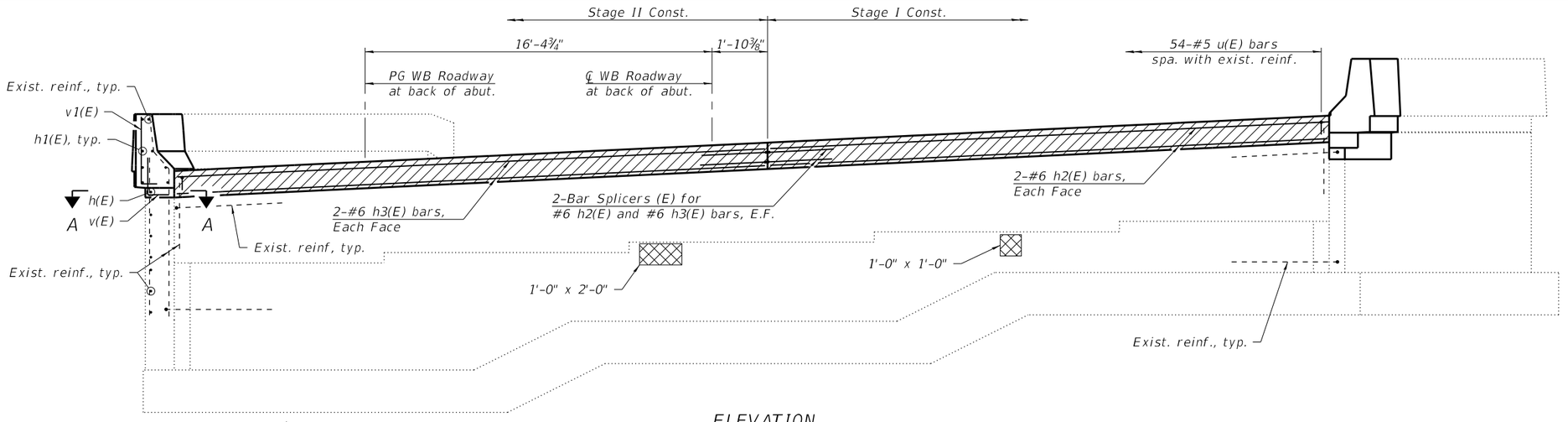
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 075-0121

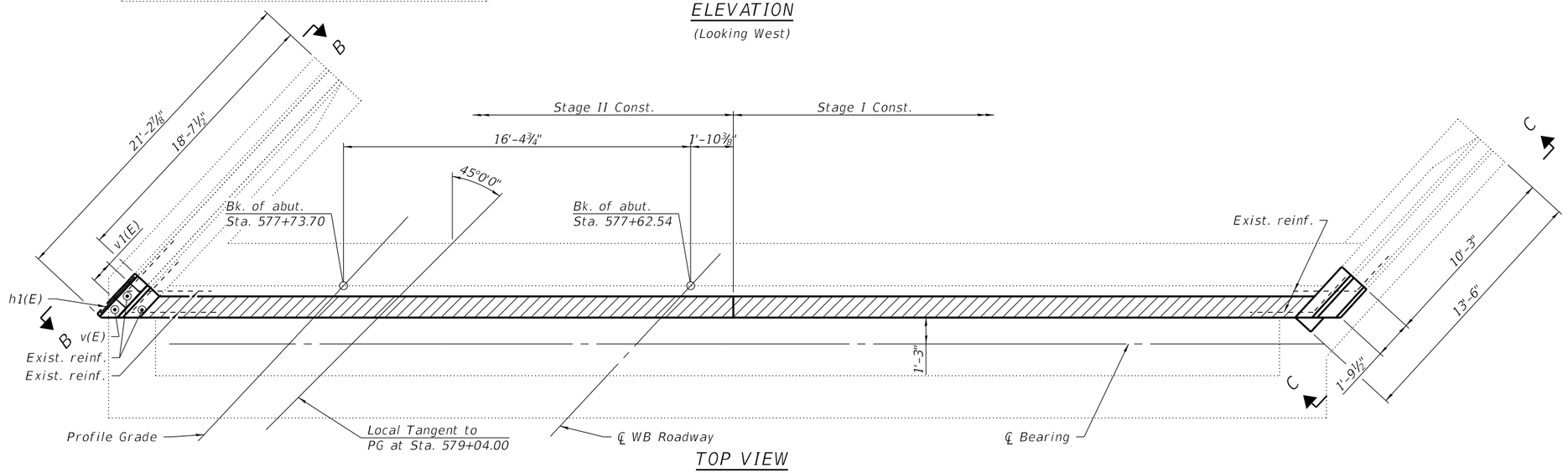
SHEET NO. 7 OF 17 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	132
		CONTRACT NO. 72J42		
		ILLINOIS FED. AID PROJECT		

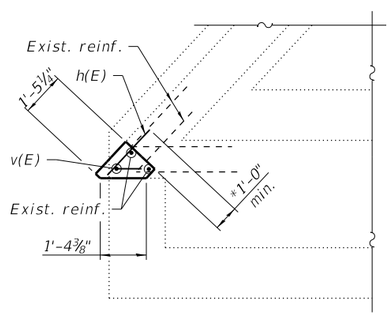


ELEVATION

(Looking West)



TOP VIEW



SECTION A-A

LEGEND

- Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
- Structural Repair of Concrete (Depth Greater than 5 inches)

*Drill and epoxy grout reinforcement according to Section 584 of the Standard Specifications.

Note:
For Views B-B and C-C, see sheet 10 of 17.

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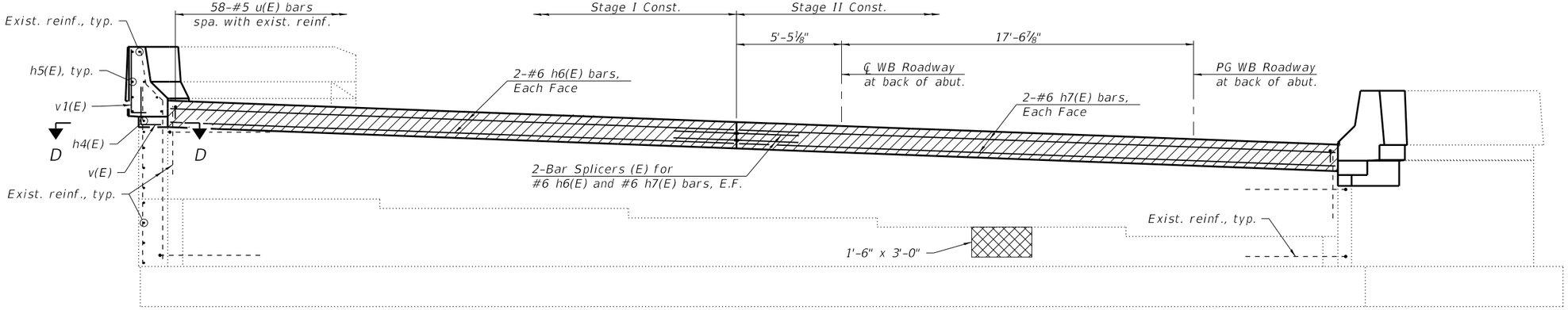
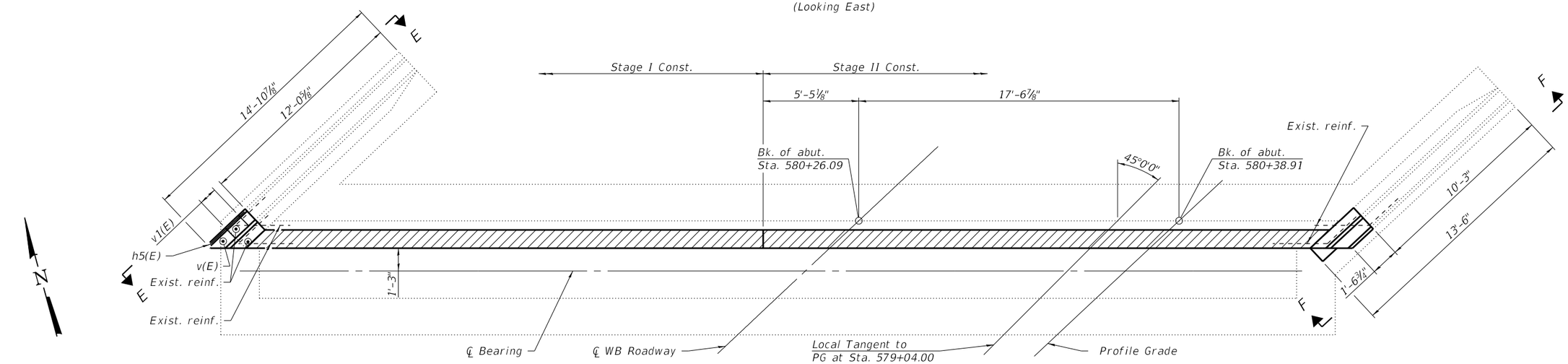
WEST ABUTMENT DETAILS
STRUCTURE NO. 075-0121
SHEET NO. 8 OF 17 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	133
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			



ELEVATION

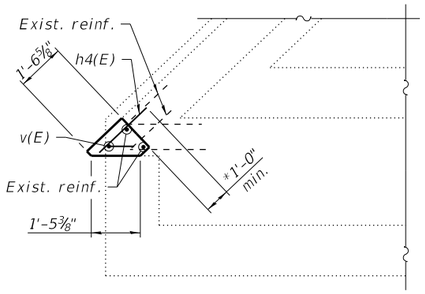
(Looking East)



TOP VIEW

LEGEND

- Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
- Structural Repair of Concrete (Depth Greater than 5 inches)



SECTION D-D

*Drill and epoxy grout reinforcement according to Section 584 of the Standard Specifications.

Note:
For Views E-E and F-F, see sheet 10 of 17.

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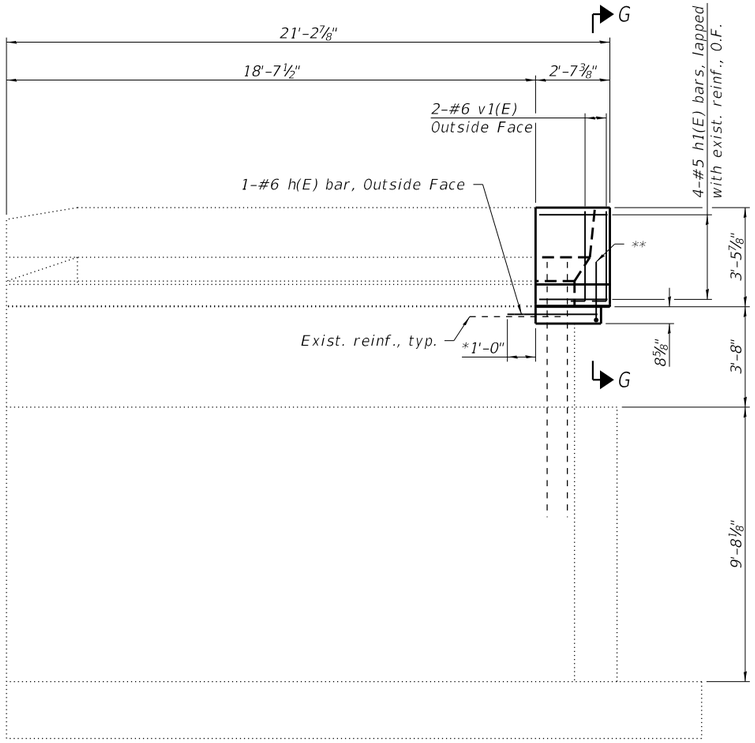
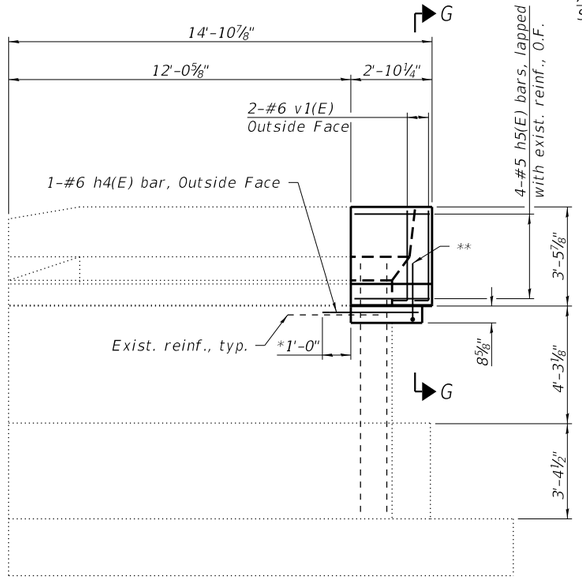
EAST ABUTMENT DETAILS
STRUCTURE NO. 075-0121
SHEET NO. 9 OF 17 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	134
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			

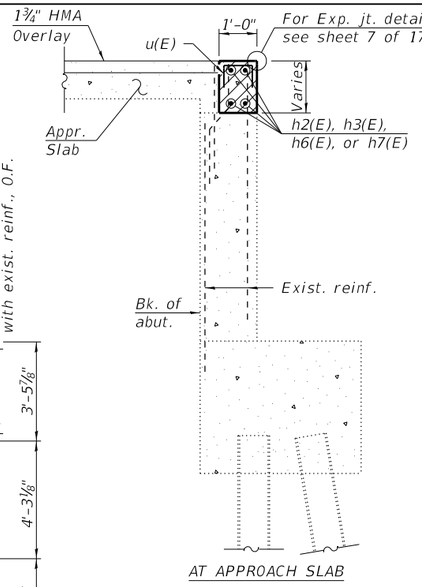


VIEW B-B

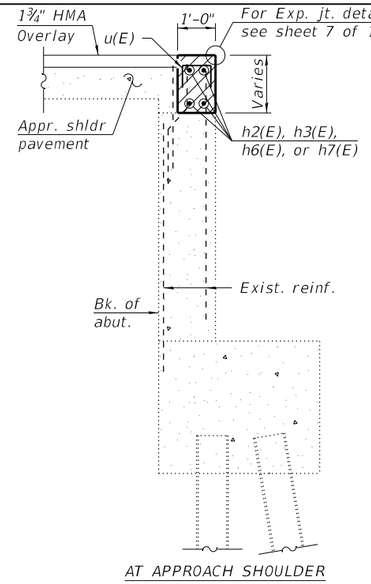


VIEW E-E

* Drill and grout reinforcement
** 1-#6 v(E) bar, Outside Face

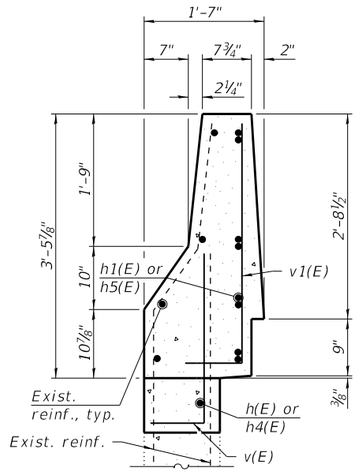


AT APPROACH SLAB

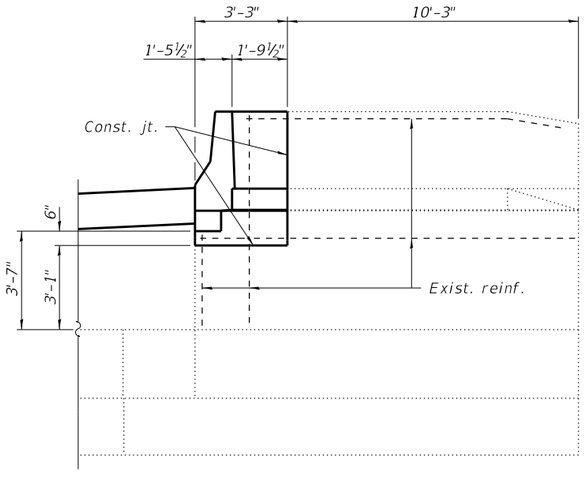


AT APPROACH SHOULDER

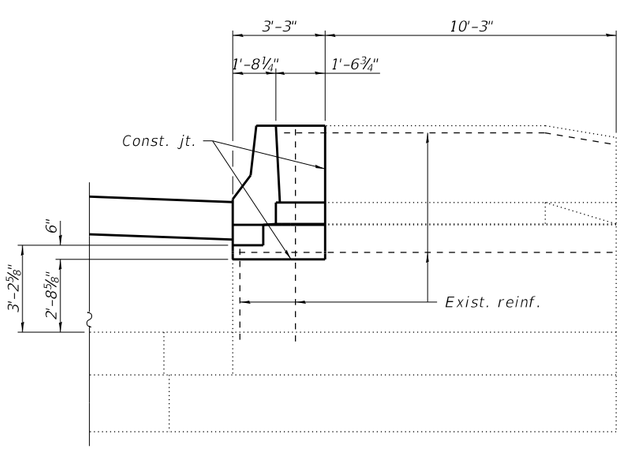
SECTION THRU ABUTMENT



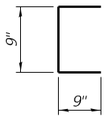
SECTION G-G



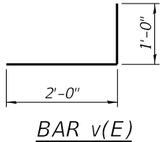
VIEW C-C



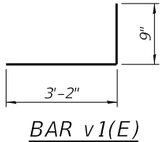
VIEW F-F



BAR u(E)



BAR v(E)



BAR v1(E)

BOTH ABUTMENTS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	1	#6	2'-0"	
h1(E)	4	#5	2'-2"	
h2(E)	4	#6	27'-10"	
h3(E)	4	#6	28'-1"	
h4(E)	1	#6	2'-2"	
h5(E)	4	#5	2'-4"	
h6(E)	4	#6	28'-4"	
h7(E)	4	#6	31'-5"	
u(E)	112	#5	2'-3"	
v(E)	2	#6	3'-0"	
v1(E)	4	#6	3'-11"	
Concrete Removal			Cu. Yd.	0.3
Reinforcement Bars, Epoxy Coated			Pound	1,020
Structural Repair of Concrete (Depth Equal to or Less than 5 inches)			Sq. Ft.	8

Notes:
All new concrete is included with Concrete Superstructure.
For Locations of Views B-B and C-C, see sheet 8 of 17.
For Location of Views E-E and F-F, see sheet 9 of 17.
Cut existing reinforcement to maintain a 1½" minimum clearance.

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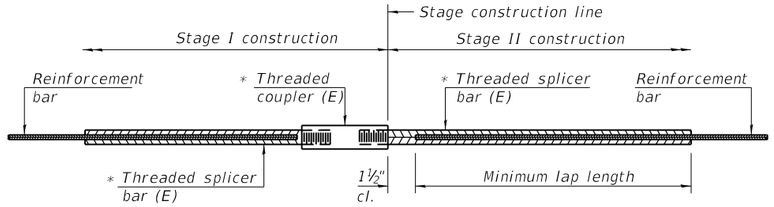
ABUTMENT DETAILS
STRUCTURE NO. 075-0121
SHEET NO. 10 OF 17 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	135
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			

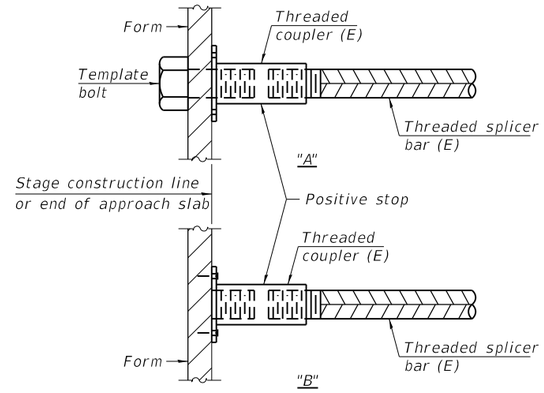


STANDARD BAR SPLICER ASSEMBLY

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

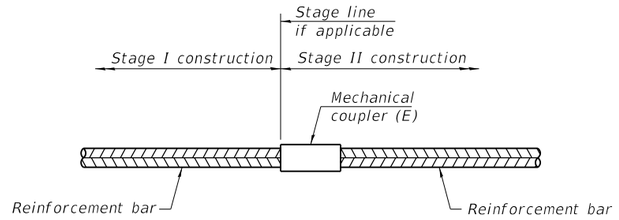
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
Deck	#5	4	2'-6"
West Abutment	#6	4	3'-0"
East Abutment	#6	4	3'-0"



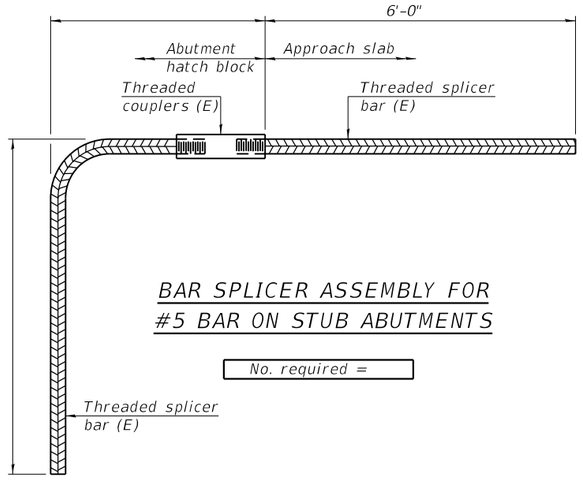
INSTALLATION AND SETTING METHODS

"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.

BSD-1

2-17-2017

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BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 075-0121
SHEET NO. 11 OF 17 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	136
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			

FOR INFORMATION ONLY

STATE OF ILLINOIS
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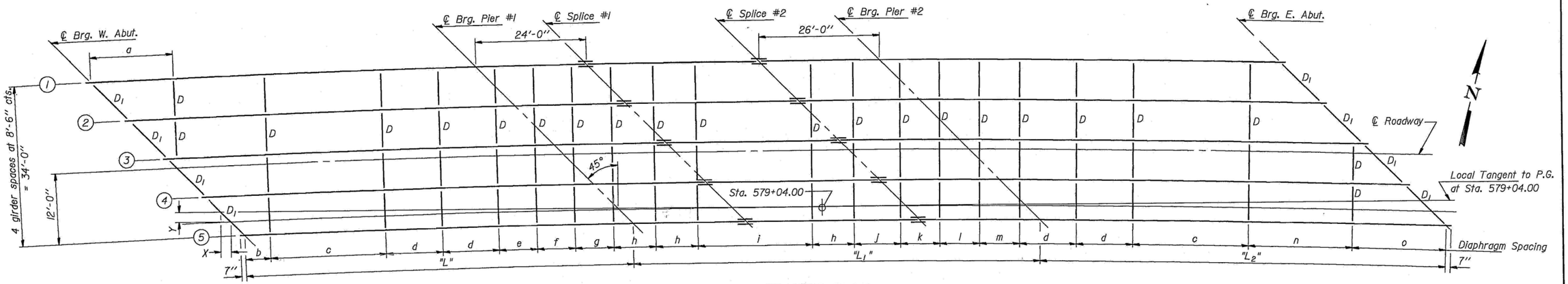
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 408	75-6B-4	Pike	511	297
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

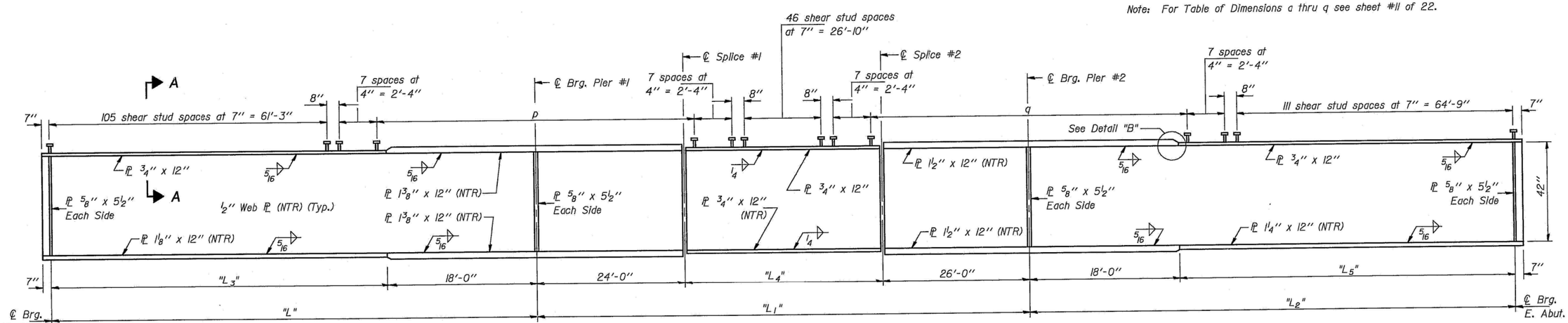
SHEET NO. 9
22 SHEETS



FRAMING PLAN

Note: All horizontal dimensions are given along curve.

Note: For Table of Dimensions a thru q see sheet #11 of 22.



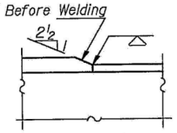
GIRDER ELEVATION

"NTR" denotes plates to which Notch Toughness Requirements are applicable.

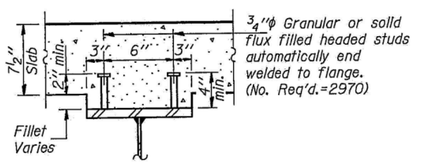
TABLE OF LAYOUT DIMENSIONS

Location	℄ Brg. W. Abut.		Pier #1		Splice #1		Splice #2		Pier #2		℄ Brg. E. Abut.	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
Girder #1	3'-2 1/8"	3'-2 1/8"	0'-8 1/2"	0'-8 1/2"	0'-3 7/8"	0'-3 7/8"	0'-0 1/4"	0'-0 1/4"	0'-0 1/4"	0'-0 1/4"	1'-3 1/4"	1'-3 1/4"
Girder #2	2'-10 5/16"	2'-10 5/16"	0'-6 11/16"	0'-6 11/16"	0'-2 11/16"	0'-2 11/16"	0'-0 1/16"	0'-0 1/16"	0'-0 11/16"	0'-0 11/16"	1'-6 11/16"	1'-6 11/16"
Girder #3	2'-6 11/16"	2'-6 11/16"	0'-5 1/8"	0'-5 1/8"	0'-1 11/16"	0'-1 11/16"	0'-0"	0'-0"	0'-1 3/8"	0'-1 3/8"	1'-9 3/16"	1'-9 3/16"
Girder #4	2'-3 1/4"	2'-3 1/4"	0'-3 3/4"	0'-3 3/4"	0'-0 15/16"	0'-0 15/16"	0'-0 1/4"	0'-0 1/4"	0'-2 5/16"	0'-2 5/16"	2'-0 9/16"	2'-0 9/16"
Girder #5	2'-0"	2'-0"	0'-2 9/16"	0'-2 9/16"	0'-0 7/16"	0'-0 7/16"	0'-0 1/16"	0'-0 1/16"	0'-3 7/16"	0'-3 7/16"	2'-4 3/16"	2'-4 3/16"

Bevel Before Welding



DETAIL "B"



3/4"ϕ Granular or solid flux filled headed studs automatically end welded to flange. (No. Req'd.=2970)

SECTION A-A

TABLE OF "L" DIMENSIONS

Location	"L"	"L1"	"L2"	"L3"	"L4"	"L5"	Radius
Girder #1	82'-8 1/16"	86'-3 13/16"	86'-4 3/8"	64'-8 1/16"	36'-3 13/16"	68'-4 3/8"	3850.72
Girder #2	82'-10"	86'-6 1/16"	86'-6 13/16"	64'-10"	36'-6 1/16"	68'-6 13/16"	3842.22
Girder #3	83'-0"	86'-8 5/16"	86'-9 5/16"	65'-0"	36'-8 5/16"	68'-9 5/16"	3833.72
Girder #4	83'-2"	86'-10 5/8"	86'-11 13/16"	65'-2"	36'-10 5/8"	68'-11 13/16"	3825.22
Girder #5	83'-4 1/16"	87'-0 15/16"	87'-2 5/16"	65'-4 1/16"	37'-0 15/16"	69'-2 5/16"	3816.72

DESIGNED Todd E. Andrews
CHECKED Ralph E. Anderson
DRAWN R. Doty
CHECKED R. E. A.

Sept 15 1987
EXAMINED Oraj O. Kaspar, ENGINEER OF BRIDGE DESIGN
PASSED James T. Rayburn, ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

Note: All flanges, webs, bearing stiffeners and splice plate materials shall be AASHTO M-223, Grade 50.
All structural steel fabricators performing work on the main load carrying components of steel structures shall be certified under Category III (AISC) Quality Certification Program.

STRUCTURAL STEEL
F.A. RT. 408 SEC. 75-6B-4
PIKE COUNTY
STA. 579+04.00

G-1 4-1-79

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 408	75-6B-4	Pike	511	298
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 10
22 SHEETS

FOR INFORMATION ONLY

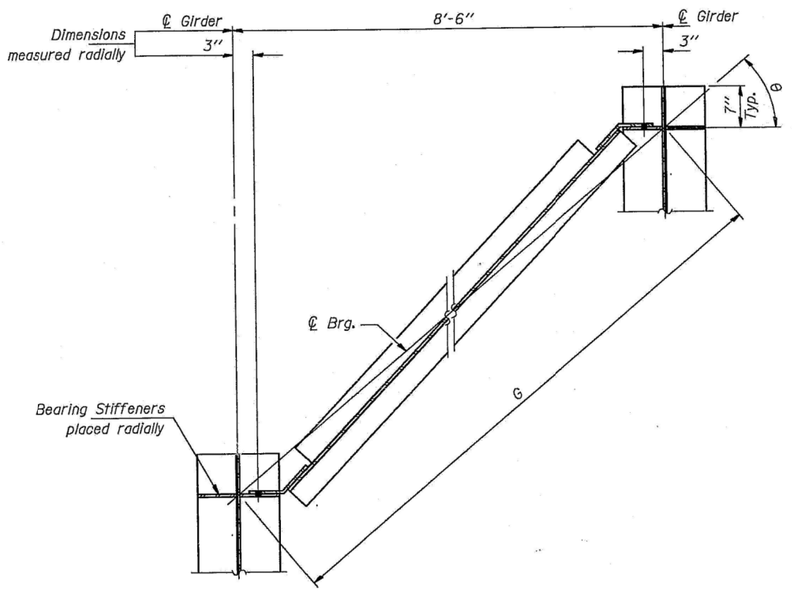
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VALUE OF θ

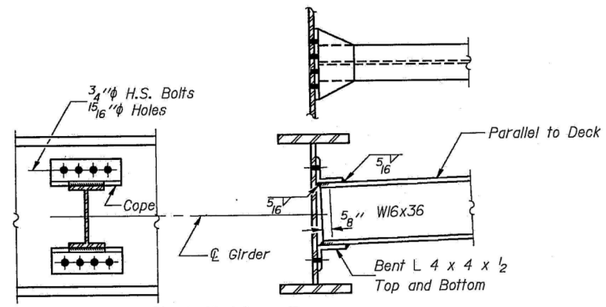
Loc. \ Gir.	#1	#2	#3	#4	#5
℄ Brg. W. Abut.	42°-40'-20"	42°-47'-20"	42°-54'-20"	43°-01'-30"	43°-08'-40"
℄ Brg. E. Abut.	46°-28'-20"	46°-36'-20"	46°-44'-20"	46°-52'-30"	47°-00'-40"

DIMENSION G

Loc. \ Gir.		Betwn. Girders #1 & #2	Betwn. Girders #2 & #3	Betwn. Girders #3 & #4	Betwn. Girders #4 & #5
℄ Brg. W. Abut.	G	11'-6 7/8"	11'-7 1/8"	11'-7 3/8"	11'-7 5/8"
℄ Brg. E. Abut.	G	12'-4 5/16"	12'-4 5/8"	12'-5"	12'-5 3/8"

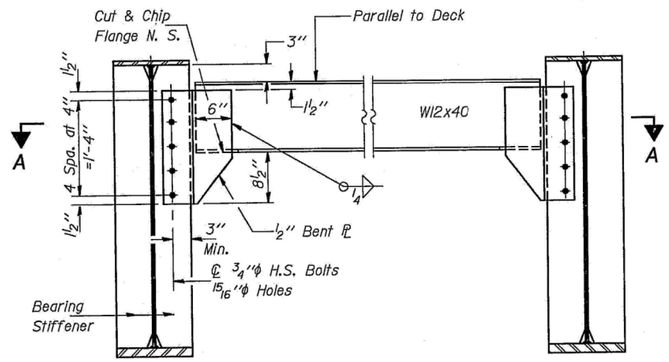


SECTION A-A

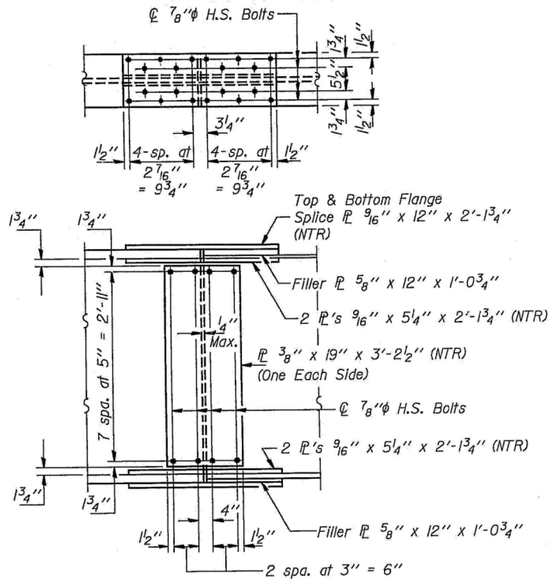


DIAPHRAGM D
(76 Required)

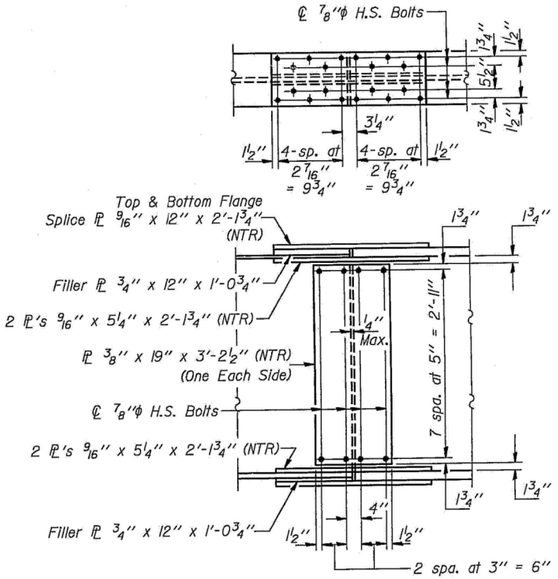
Note: Two hardened washers shall be required over all 15/16"ϕ holes.



DIAPHRAGM D1
(8 Required)



SPLICE #1



SPLICE #2

"NTR" denotes plates to which Notch Toughness Requirements are applicable.

DESIGNED	Todd E. Ahrens
CHECKED	Ralph E. Anderson
DRAWN	R. Doty
CHECKED	R.E.A.

Sept 15 1987

EXAMINED Greg D. Kaspar — ENGINEER OF BRIDGE DESIGN
PASSED James T. Kaufmann — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

STRUCTURAL STEEL DETAILS
F.A. RT. 408 SEC. 75-6B-4
PIKE COUNTY
STA. 579+04.00

p:\pw01\hornershifrin.com\Transportation Eng\Documents\10197.08-PTB157.Item037M08.01_Caddd\BridgeStruct\075012I-42928-813.dgn

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOR INFORMATION ONLY

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S. B. I. F. A. 408	75&B-4	Pike	511	299
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 11
22 SHEETS

INTERIOR GIRDER MOMENT TABLE						
		0.4 Span #1	Pier #1	0.5 Span #2	Pier #2	0.6 Span #3
Is	(in4)	13254	18614	11312	20124	13829
Ic	(in4)	36038		29367		38180
Ss	(in3)	667	832	520	894	716
Sc	(in3)	949		752		1015
Sbi	(in3)	27	33	18	36	30
l_D	(K/ft.)	0.985	1.404	0.966	1.416	0.991
MD	('K)	518	999	139	1104	568
sD	(K/ft.)	0.376		0.376		0.376
MsD	('K)	219		113		241
ML	('K)	842	556	692	589	886
M (Imp)	('K)	193	126	156	132	199
$\frac{5}{3}$(ML+I)	('K)	1725	1137	1413	1202	1808
Ma	('K)	3201	2777	2165	2998	3402
Mbi	('K)	12.0	1.3	7.9	2.7	12.7
fsD non-comp	(k.s.i.)	9.3	14.4	3.2	14.8	9.5
fsD (comp)	(k.s.i.)	2.8		1.8		2.8
$fs\frac{5}{3}$(L+I)	(k.s.i.)	21.8	16.4	22.5	16.1	21.4
fw	(k.s.i.)	5.3	0.5	5.3	0.9	5.1
fs + fw (Overload)	(k.s.i.)	38.0	31.2	31.6	31.6	37.6
fs (Total)	(k.s.i.)	44.1	40.0	35.8	40.2	43.8
fs (Total) + fw	(k.s.i.)	49.4		41.1		48.9
VR	(K)	70.7		59.1		70.7
Fb	(k.s.i.)	46.8	47.9	47.6	46.1	46.6

INTERIOR GIRDER REACTION TABLE					
		W. Abut.	Pier#1	Pier #2	E. Abut.
RD	(K)	45.0	127.8	133.8	47.2
RL	(K)	52.3	74.4	75.8	52.6
Imp.	(K)	12.6	17.7	17.9	12.4
R (Total)	(K)	109.9	219.9	227.5	112.2

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).

Ic and Sc are the moment of inertia and section modulus of the composite section used in computing fs (Total & Overload).

VR is the maximum Live Load + Impact shear range in span.

Ma (Applied Moment)=1.3[MD + MsD + $\frac{5}{3}$(ML + I)].

fs + fw (Overload) is the sum of the stresses due to MD + MsD + $\frac{5}{3}$(ML + I) + (Mbi/1.3).

fs (Total) is the sum of the stresses due to 1.3[MD + MsD + $\frac{5}{3}$(ML + I)].

MD - Moment due to dead loads on non-composite section.

MsD - Moment due to dead loads on composite section.

ML - Moment due to live loads on non-composite or composite section.

I - Live load impact.

Sbi is the section modulus for one flange plate for lateral flange bending.

Mbi is the lateral bending moment for flange plate (factored).

fw is the calculated normal stress at the edge of flange due to lateral flange bending (factored).

ML and RL have been increased due to the effect of centrifugal force and superelevation.

Fb-Maximum allowable stress, F_{bu} or F_{by}, computed according to AASHTO [Guide Specifications for Horizontally Curved Highway Bridges Section 2.12(B) or 2.16].

TABLE OF a THRU q DIMENSIONS

	Girder #1	Girder #2	Girder #3	Girder #4	Girder #5
a	17'-9 3/8"	9'-10 11/16"	2'-0"	———	———
b	19'-5 7/8"	19'-5 5/16"	19'-4 13/16"	13'-5 1/4"	5'-5 5/8"
c	25'-0"	24'-11 5/16"	24'-10 11/16"	24'-10"	24'-9 3/8"
d	12'-3"	12'-2 11/16"	12'-2 3/8"	12'-2"	12'-1 11/16"
e	8'-2 13/16"	8'-2 9/16"	8'-2 3/8"	8'-2 1/8"	8'-1 15/16"
f	8'-3 7/16"	8'-3 1/4"	8'-3"	8'-2 13/16"	8'-2 9/16"
g	8'-4 1/8"	8'-3 7/8"	8'-3 11/16"	8'-3 7/16"	8'-3 3/16"
h	9'-0"	8'-11 3/4"	8'-11 1/2"	8'-11 5/16"	8'-11 1/16"
i	24'-7 3/4"	24'-7 1/16"	24'-6 7/16"	24'-5 3/4"	24'-5 1/8"
j	10'-0"	9'-11 3/4"	9'-11 1/2"	9'-11 3/16"	9'-10 15/16"
k	8'-7 3/8"	8'-7 1/8"	8'-6 7/8"	8'-6 11/16"	8'-6 7/16"
l	8'-8 1/16"	8'-7 13/16"	8'-7 9/16"	8'-7 3/8"	8'-7 1/8"
m	8'-8 3/4"	8'-8 1/2"	8'-8 5/16"	8'-8 1/16"	8'-7 13/16"
n	6'-6 13/16"	15'-6 1/8"	22'-5 3/4"	22'-5 3/16"	22'-4 9/16"
o	———	———	2'-0"	11'-0 1/2"	20'-1 1/4"
p	44'-2 1/16"	44'-5"	44'-8"	44'-11"	45'-2 1/16"
q	46'-4 3/16"	46'-7 7/8"	46'-11 5/8"	47'-3 7/16"	47'-7 1/4"

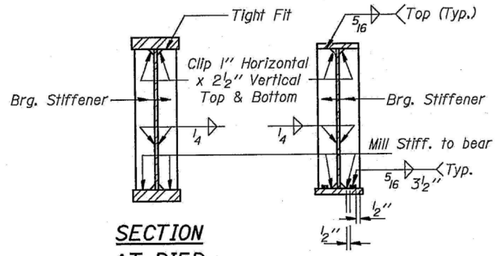
TABLE OF A THRU F DIMENSIONS

Location	A	B	C	D	E	F
Girder #1	13'-4"	106'-8 1/16"	9'-0 15/16"	36'-3 13/16"	14'-0 9/16"	112'-4 3/8"
Girder #2	13'-4 1/4"	106'-10"	9'-1 1/2"	36'-6 1/16"	14'-0 7/8"	112'-6 13/16"
Girder #3	13'-4 1/2"	107'-0"	9'-2 1/16"	36'-8 5/16"	14'-1 3/16"	112'-9 5/16"
Girder #4	13'-4 3/4"	107'-2"	9'-2 11/16"	36'-10 5/8"	14'-1 1/2"	112'-11 13/16"
Girder #5	13'-5"	107'-4 1/16"	9'-3 1/4"	37'-0 15/16"	14'-1 13/16"	113'-2 5/16"

TOP OF WEB ELEVATIONS

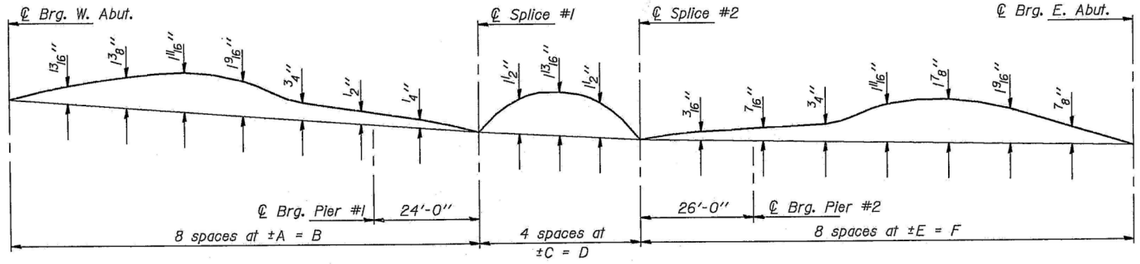
Location	Girder #1	Girder #2	Girder #3	Girder #4	Girder #5
℄ Brg. W. Abut.	514.16	513.67	513.18	512.69	512.19
℄ Brg. Pier #1	512.92	512.43	511.94	511.46	510.98
℄ Splice #1	512.50	512.01	511.53	511.05	510.57
℄ Splice #2	512.01	511.53	511.06	510.58	510.10
℄ Brg. Pier #2	511.79	511.31	510.84	510.36	509.88
℄ Brg. E. Abut.	510.87	510.40	509.94	509.47	509.00

Top of web elevations at splices have been adjusted for camber. For fabrication only.



SECTION AT PIER

SECTION AT ABUTMENT



CAMBER DIAGRAM

DESIGNED	Todd E Ahrens
CHECKED	Ralph E. Anderson
DRAWN	R. Doty
CHECKED	R.E.A.

Sept 15 1987

EXAMINED Engineer of Bridge Design

PASSED Engineer of Bridges and Structures

APPROVED Director of Highways

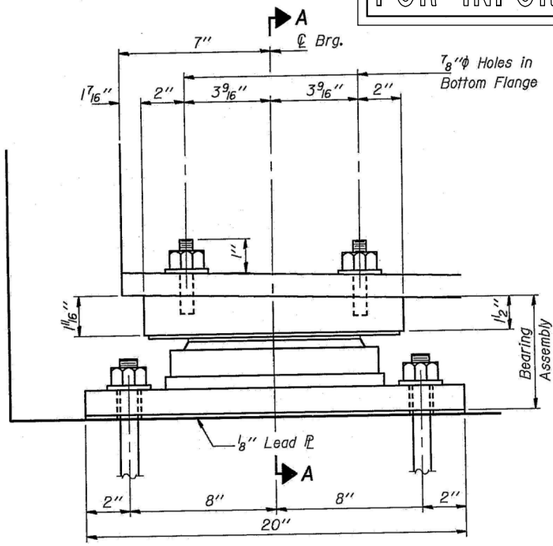
STRUCTURAL STEEL DETAILS
F.A. RT. 408 SEC. 75-6B-4
PIKE COUNTY
STA. 579+04.00

FOR INFORMATION ONLY

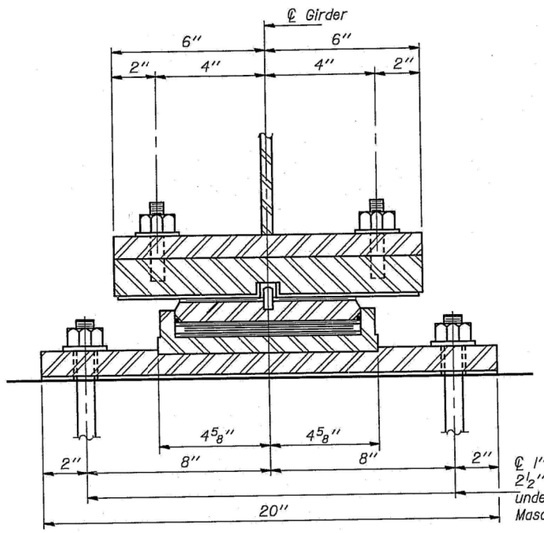
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S. B. I. F. A. 408	75-6B-4	Pike	511	300
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 12
22 SHEETS

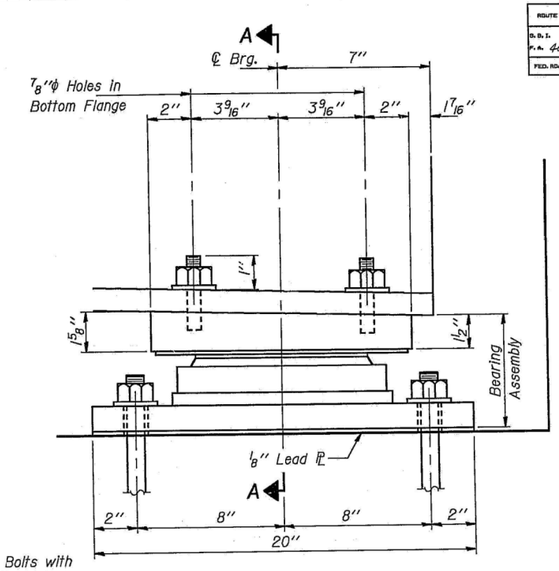


ELEVATION AT WEST ABUTMENT



SECTION A-A

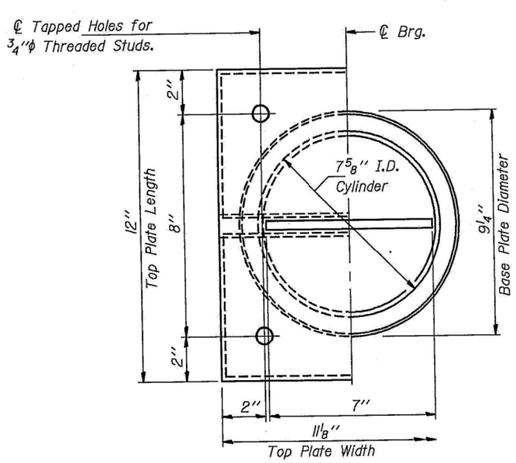
EXPANSION FLOATING BEARING
(10 Required)



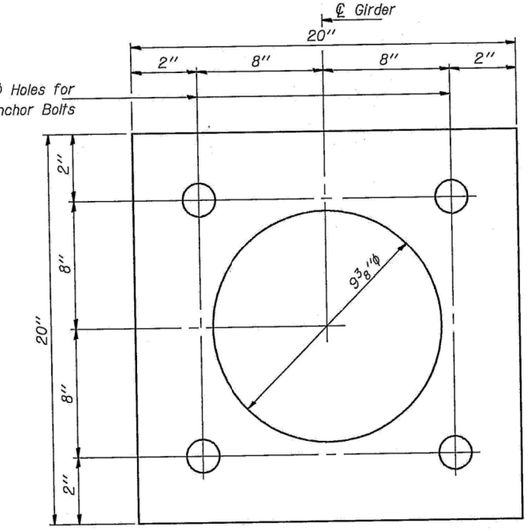
ELEVATION AT EAST ABUTMENT

West Abutment Bearing Data	
RL	45.0 k
RR	52.3 k
RI	12.6 k
R TOTAL	109.9 k
Lateral Load	4.4 k
Expansion Length	170'-5"

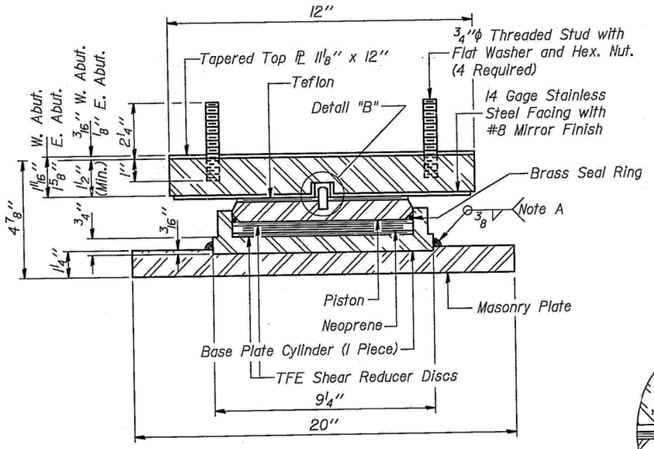
East Abutment Bearing Data	
RL	47.2 k
RR	52.6 k
RI	12.4 k
R TOTAL	112.2 k
Lateral Load	4.5 k
Expansion Length	87'-2"



CUT-AWAY PLAN
(Half of Top Plate shown)

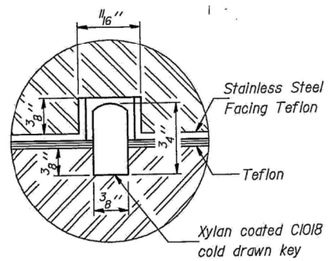


MASONRY PLATE DETAIL

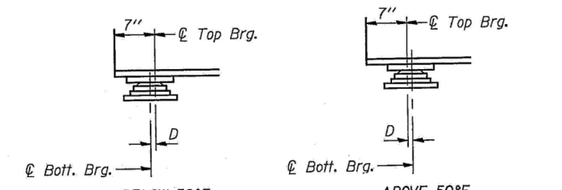


BEARING ASSEMBLY
(For both abutments)

NOTE A:
Weld in field after bearing is self aligned during first movement.



DETAIL "B"



SETTING ANCHOR BOLTS AT EXP. BRG.

D=1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

Notes: The plates of the Bearing Assembly shall be AASHTO M223, Grade 50.
For anchor bolt installation details see sheet #22 of 22.

DESIGNED	Todd E. Abrams
CHECKED	Ralph E. Anderson
DRAWN	R. Doty
CHECKED	R.E.A.

Sept 15 1987

EXAMINED Engineer of Bridge Design

PASSED James J. Kaspar Engineer of Bridges and Structures

APPROVED Director of Highways

BEARING DETAILS
EAST & WEST ABUTMENTS
F.A. RT. 408 SEC. 75-6B-4
PIKE COUNTY
STA. 579+04.00

HORNER SHIFRIN WWW.HORNERSHIFRIN.COM			
	USER NAME = tsfriederich	DESIGNED - TIM FRIEDERICH	REVISED -
	PLOT SCALE = NTS	DRAWN - TIM FRIEDERICH	REVISED -
	PLOT DATE = 8/17/2017	CHECKED - ERIC M. LAGEMANN	REVISED -
		CHECKED - ERIC M. LAGEMANN	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING FRAMING PLAN AND BEARING SHEETS
STRUCTURE NO. 075-0121
SHEET NO. 15 OF 17 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	140
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			

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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
U.S. I F.A. 408	75-6B-4	PIKE	511	301
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 13
22 SHEETS

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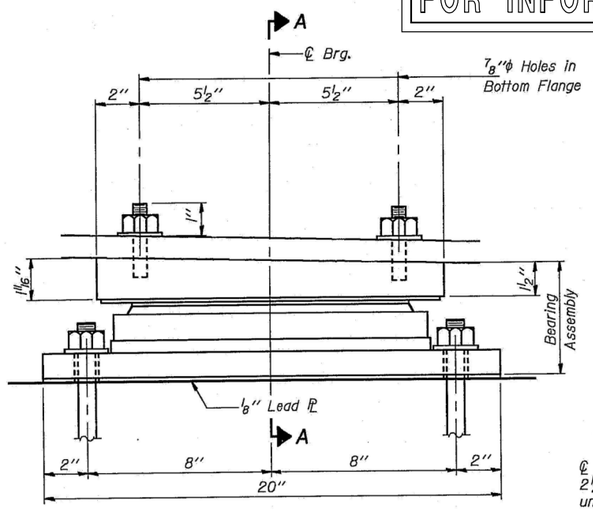
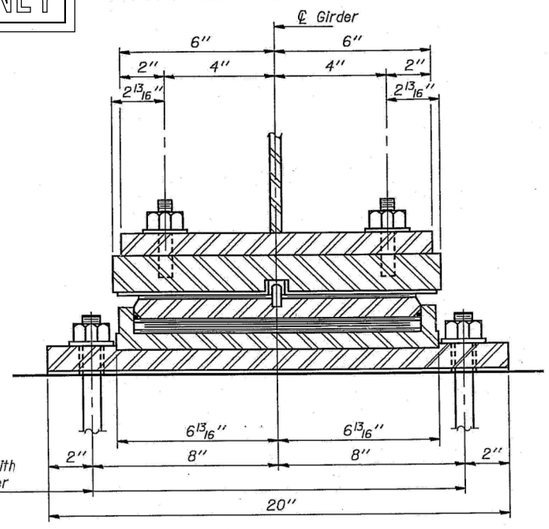
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION AT PIER #1

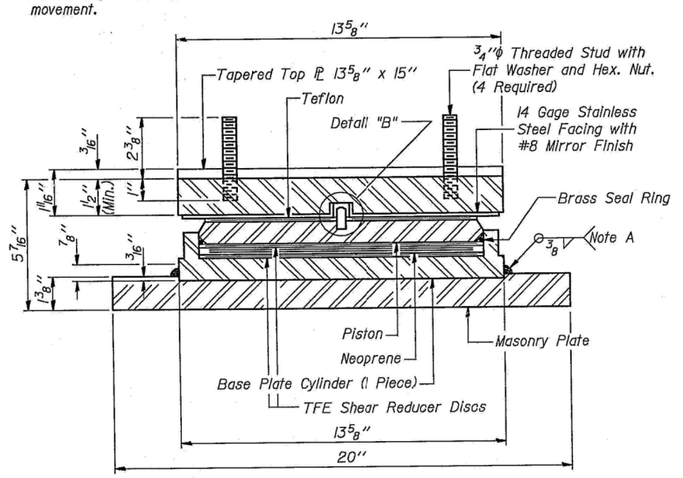


℄ 1"ϕ x 12" Anchor Bolts with 2½" x 2½" x 5/16" ℗ washer under nut. 1½"ϕ Holes in Masonry ℗.

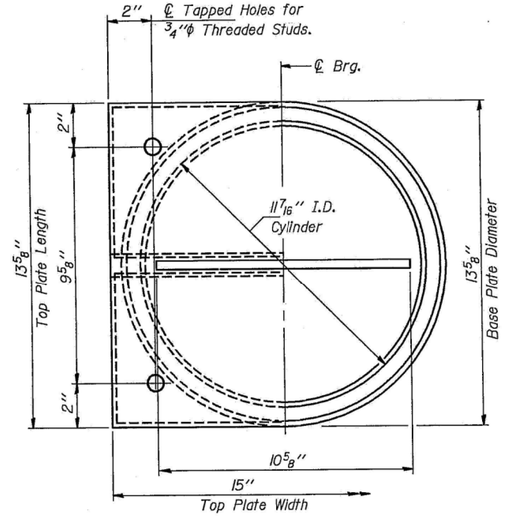
SECTION A-A

EXPANSION FLOATING BEARING
(5 Required)

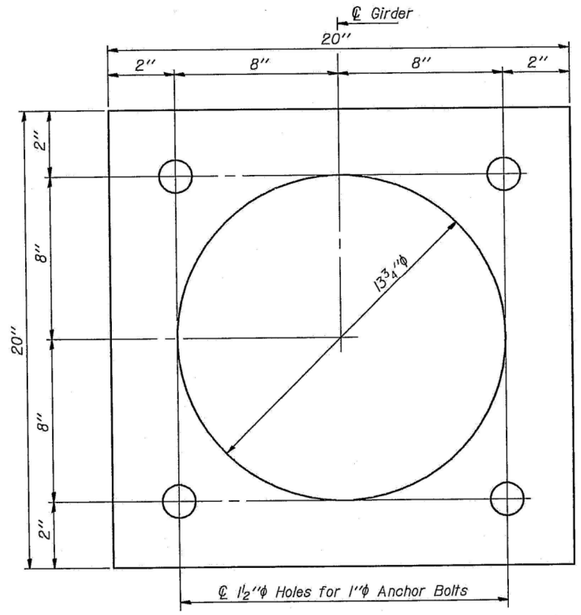
NOTE A:
Weld in field after bearing is self aligned during first movement.



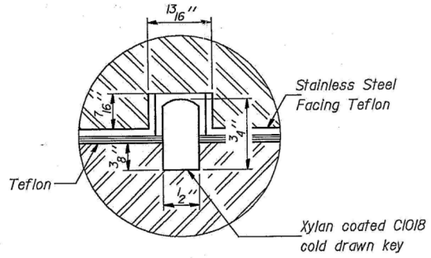
BEARING ASSEMBLY



CUT-AWAY PLAN
(Half of Top Plate shown)

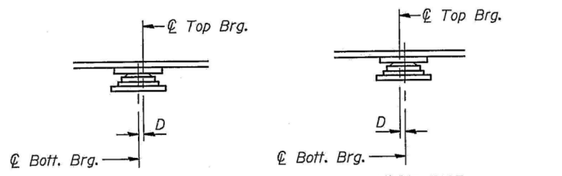


MASONRY PLATE DETAIL



DETAIL "B"

Pier #1 Bearing Data	
R℄	127.8k
R℄	74.4k
R_I	17.7k
R_{TOTAL}	219.9k
Lateral Load	7.8k
Expansion Length	87'-1"



SETTING ANCHOR BOLTS AT EXP. BRG.

D=1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

DESIGNED	Todd E. Adams
CHECKED	Ralph W. Anderson
DRAWN	R. Doty
CHECKED	R.E.A.

Sept 15 1987
EXAMINED Greg D. Kaspar
ENGINEER OF BRIDGE DESIGN
PASSED James T. Kaufmann
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

Notes: The plates of the Bearing Assembly shall be AASHTO M223, Grade 50.
For anchor bolt installation details see sheet #22 of 22.

BEARING DETAILS
PIER #1
F.A. RT. 408 SEC. 75-6B-4
PIKE COUNTY
STA. 579+04.00

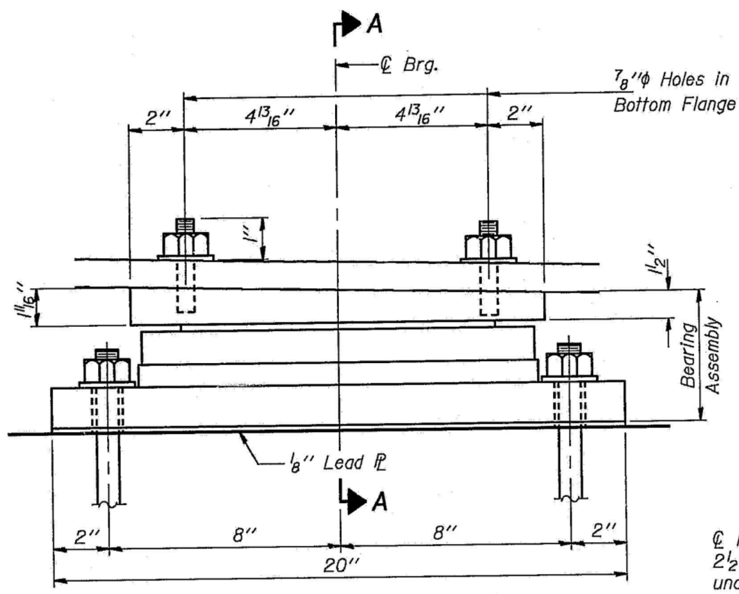
FOR INFORMATION ONLY

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

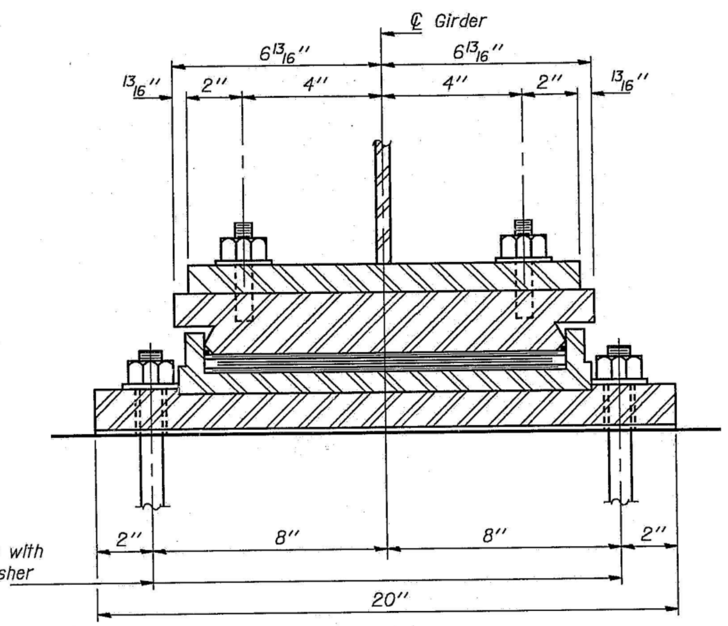
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. F.A. 408	75-6B-4	Pike	511	302
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 14
22 SHEETS

NOTE A:
Weld in field after bearing is self aligned during first movement.



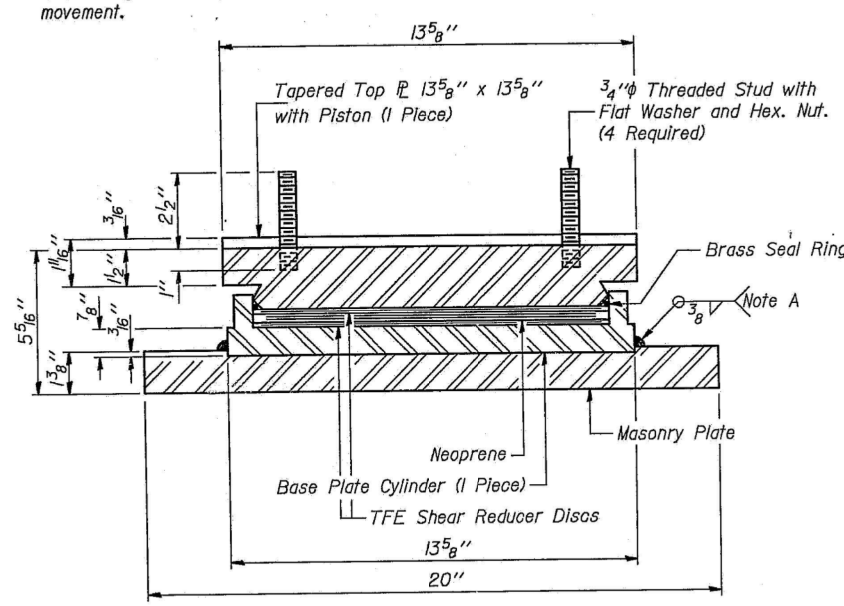
ELEVATION AT PIER #2



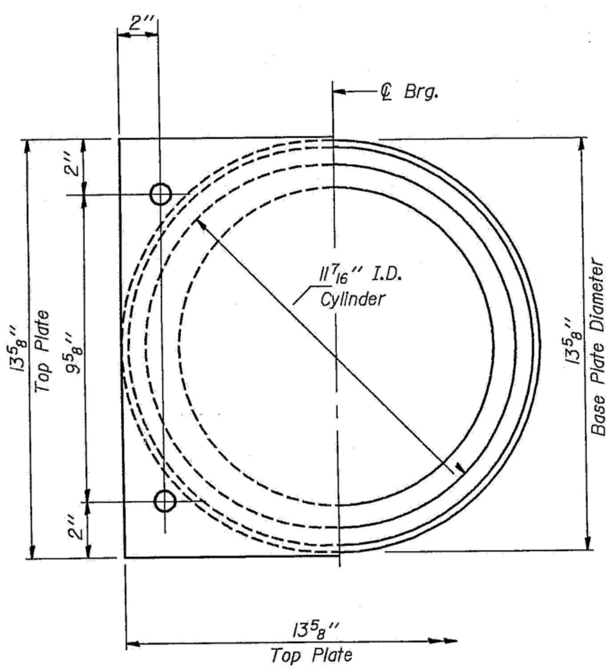
SECTION A-A

℄ 1"ϕ x 12" Anchor Bolts with 2 1/2" x 2 1/2" x 5/16" ℗ washer under nut. 1 1/2"ϕ Holes in Masonry ℗.

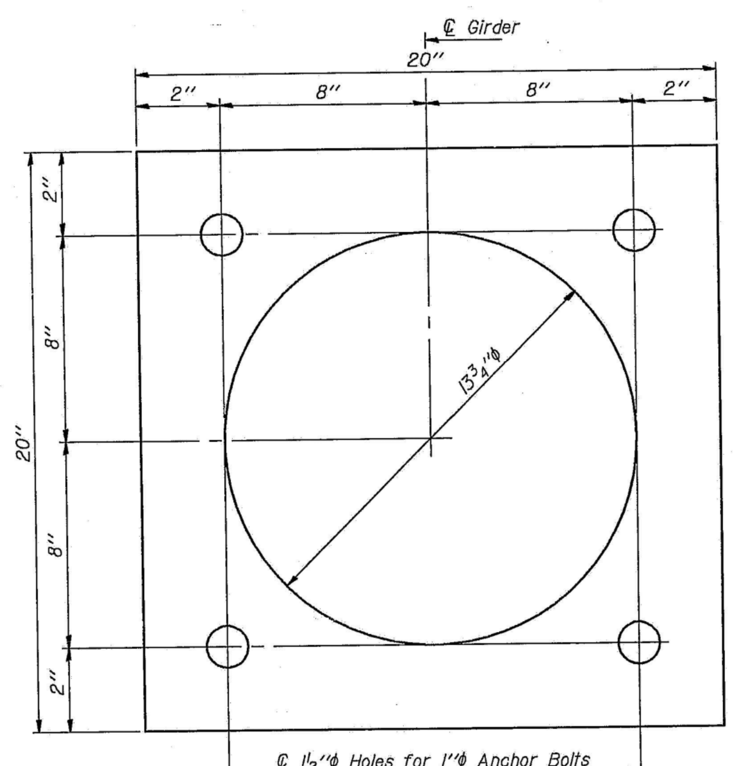
FIXED FLOATING BEARING
(5 Required)



BEARING ASSEMBLY



CUT-AWAY PLAN
(Half of Top Plate shown)



MASONRY PLATE DETAIL

Pier #2 Bearing Data	
R$_{D}$	133.8^{k}
R$_{L}$	75.8^{k}
R$_{I}$	17.9^{k}
R TOTAL	227.5^{k}
Lateral Load	8.1^{k}

Notes: The plates of the Bearing Assembly shall be AASHTO M223, Grade 50.
For anchor bolt installation details see sheet #22 of 22.

BEARING DETAILS
PIER #2
F.A. RT. 408 SEC. 75-6B-4
PIKE COUNTY
STA. 579+04.00

DESIGNED	Todd E. Ahrens
CHECKED	Ralph E. Anderson
DRAWN	R. Doty
CHECKED	R.E.A.

Sept 15 1987
EXAMINED — ENGINEER OF BRIDGE DESIGN
PASSED James T. Rayburn — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

pw:\\pw101.hornershifrin.com:Transportation\Eng\Documents\1019708-PTB157Item037WO8\01.Cadd\BridgeStruct\0750121-42928-017.dgn

HORNER SHIFRIN
WWW.HORNERSHIFRIN.COM

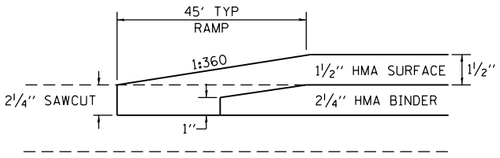
USER NAME = tsfriederich	DESIGNED - TIM FRIEDERICH	REVISED -
	CHECKED - ERIC M. LAGEMANN	REVISED -
PLOT SCALE = NTS	DRAWN - TIM FRIEDERICH	REVISED -
PLOT DATE = 8/17/2017	CHECKED - ERIC M. LAGEMANN	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING FRAMING PLAN AND BEARING SHEETS
STRUCTURE NO. 075-0121
SHEET NO. 17 OF 17 SHEETS

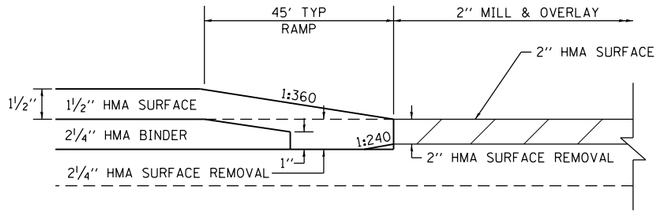
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	142

CONTRACT NO. 72J42
ILLINOIS FED. AID PROJECT



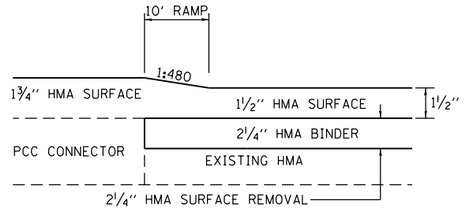
RAMP DETAIL

STA 538+68.29 TO STA 539+13.29
STA 586+56.26 TO STA 587+01.26
STA 41+64.11 TO STA 42+09.11



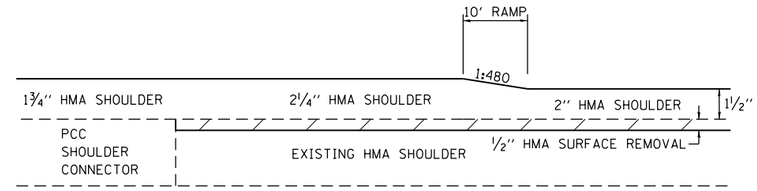
RAMP DETAIL

STA 83+64.36 TO STA 83+94.36 (MAINLINE)
STA 83+94.36 TO STA 85+67.18 (MILL & OVERLAY)



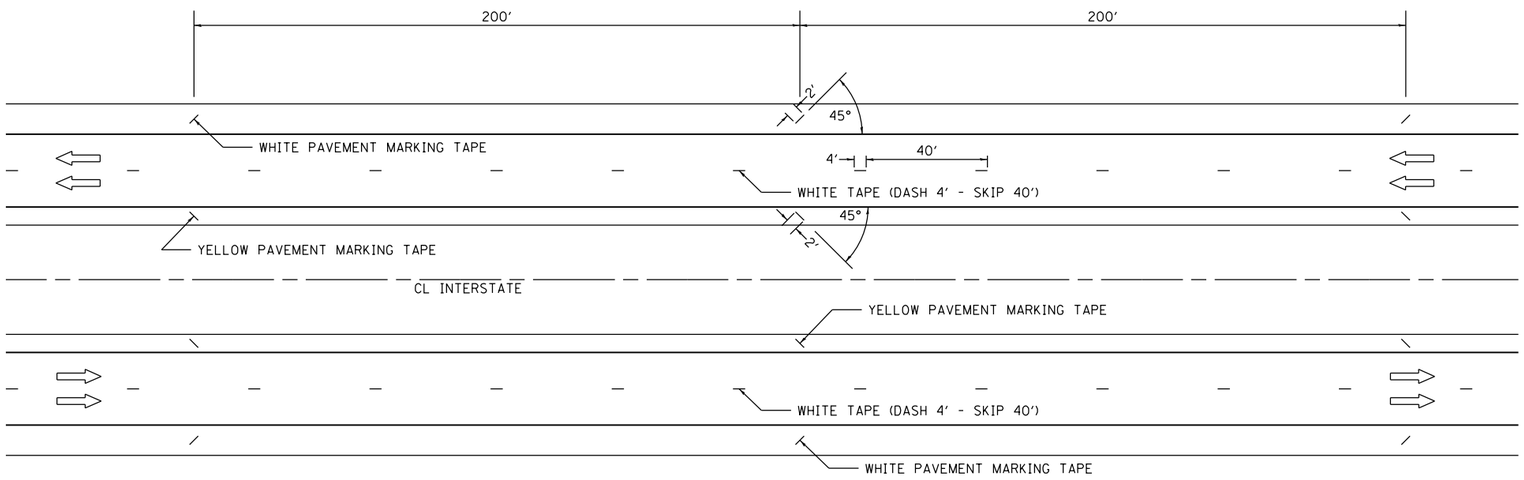
HMA TO PCC CONNECTOR RAMP DETAIL – MAINLINE

STA 542+58.18 TO STA 542+68.18
STA 548+12.51 TO STA 548+22.51
STA 557+48.48 TO STA 557+58.48
STA 563+02.51 TO STA 563+12.51
STA 576+52.41 TO STA 576+62.41
STA 580+58.20 TO STA 580+68.20
STA 46+15.42 TO STA 46+25.42
STA 51+14.32 TO STA 51+24.32
STA 57+39.87 TO STA 57+49.87
STA 63+82.90 TO STA 63+92.90
STA 67+33.65 TO STA 67+43.65
STA 75+03.49 TO STA 75+13.49



HMA TO PCC CONNECTOR RAMP DETAIL – SHOULDER

STA 542+58.18 TO STA 542+68.18
STA 548+12.51 TO STA 548+22.51
STA 557+48.48 TO STA 557+58.48
STA 563+02.51 TO STA 563+12.51
STA 576+52.41 TO STA 576+62.41
STA 580+58.20 TO STA 580+68.20
STA 46+15.42 TO STA 46+25.42
STA 51+14.32 TO STA 51+24.32
STA 57+39.87 TO STA 57+49.87
STA 63+82.90 TO STA 63+92.90
STA 67+33.65 TO STA 67+43.65
STA 75+03.49 TO STA 75+13.49



TYPICAL SHORT TERM PAVEMENT MARKING FOR INTERSTATE ROUTES

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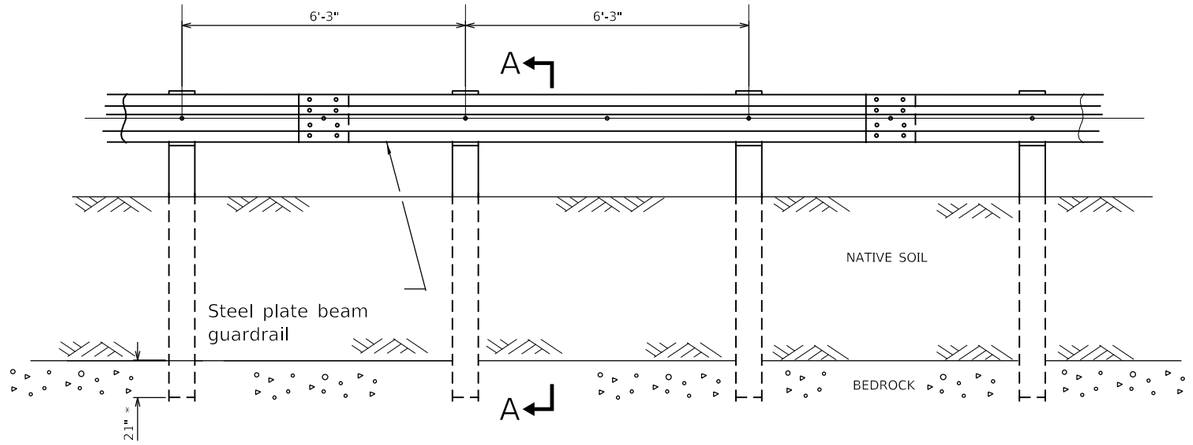
	PLOT DATE = 8/18/2017 2:47:59 PM	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-72 RESURFACING
RAMP DETAIL /SHORT-TERM PAVEMEMENT MARKINGS

SCALE: | SHEET 1 OF 8 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	143
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			

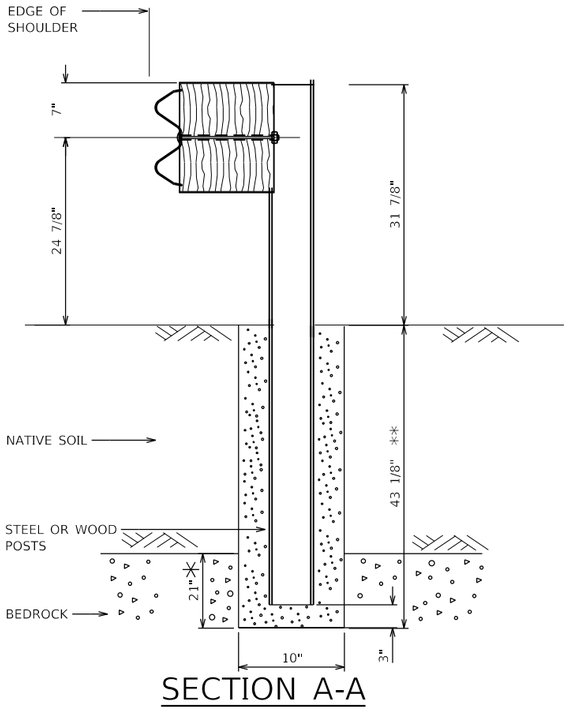


ELEVATION

TYPE A GUARDRAIL

6'-3" Typical post spacing

LOCATIONS	ROCK EXCAVATION FOR STRUCTURES (CU YD)	POROUS GRANULAR ENBANKMENT (CU YD)
EAST BOUND		
STA. 81+00 TO STA. 84+00	1.68	3.36
WEST BOUND		
STA. 580+38 TO STA. 584+00	2.03	4.1
STA. 564+00 TO STA. 571+50	4.2	8.4
TOTAL=	7.91	15.8
ROUNDED =	**8.0**	**16.0**



SECTION A-A

IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 10 INCHES IN DIAMETER EXTENDING 21 INCHES DEEP INTO THE ROCK. BACKFILL WITH "POROUS GRANULAR BACKFILL" (CA-06).

* ROCK EXCAVATION FOR STRUCTURES (TYP)

** POROUS GRANULAR BACKFILL, CA-06 (TYP)

NOT TO SCALE

LAST SAVED = 8/17/2017
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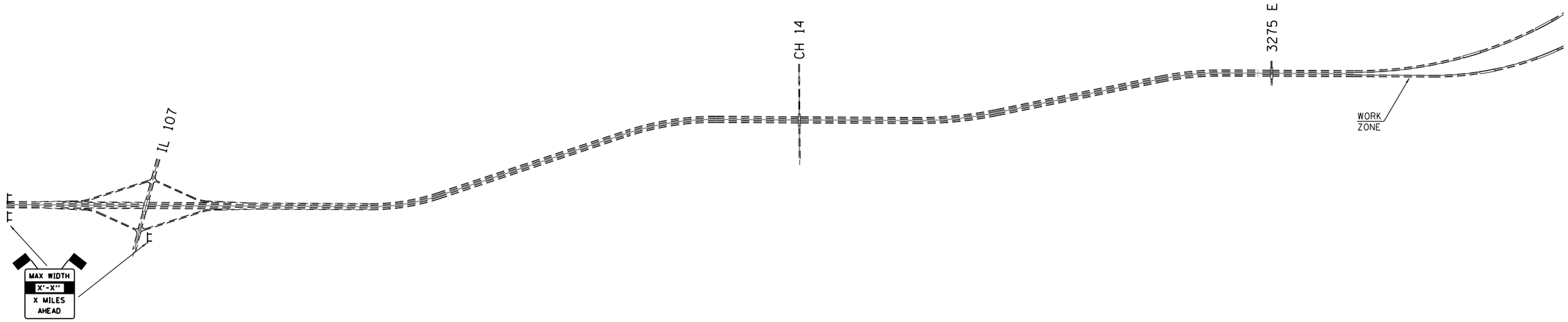
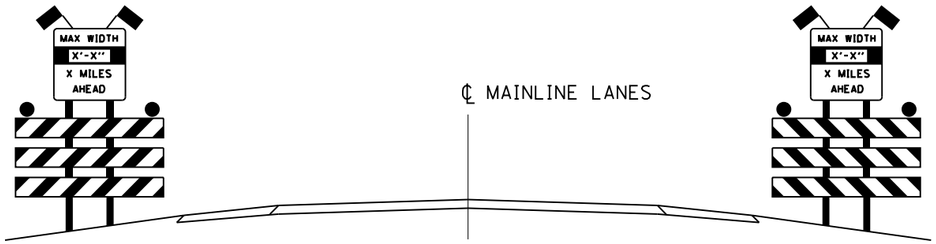
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-72 RESURFACING
ROCK EXCAVATION FOR GUARDRAIL POST

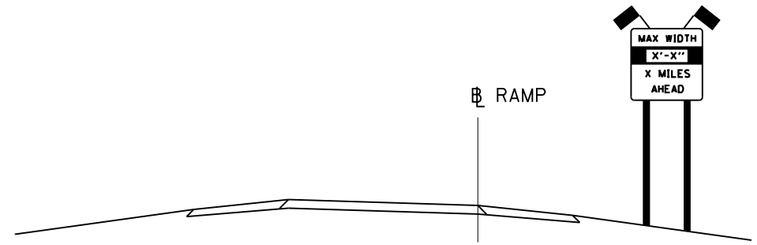
SCALE: | SHEET 2 OF 8 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	144
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			

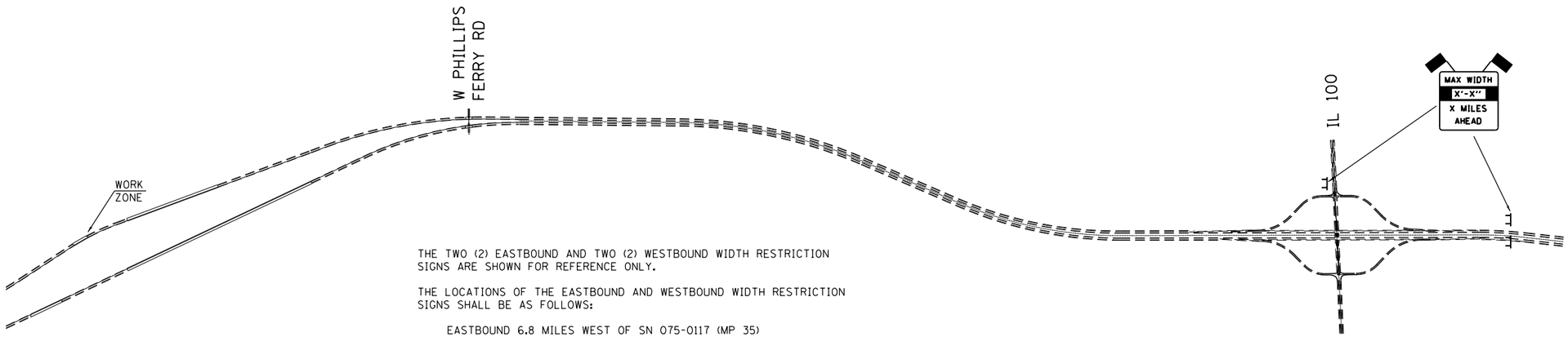




TYPICAL APPLICATION – MAINLINE



TYPICAL APPLICATION – RAMP



THE TWO (2) EASTBOUND AND TWO (2) WESTBOUND WIDTH RESTRICTION SIGNS ARE SHOWN FOR REFERENCE ONLY.

THE LOCATIONS OF THE EASTBOUND AND WESTBOUND WIDTH RESTRICTION SIGNS SHALL BE AS FOLLOWS:

EASTBOUND 6.8 MILES WEST OF SN 075-0117 (MP 35)
IL 107 RAMP TO EASTBOUND I-72
WESTBOUND 4.8 MILES EAST OF SN 075-0121 (MP 75)
IL 100 RAMP TO WESTBOUND I-72

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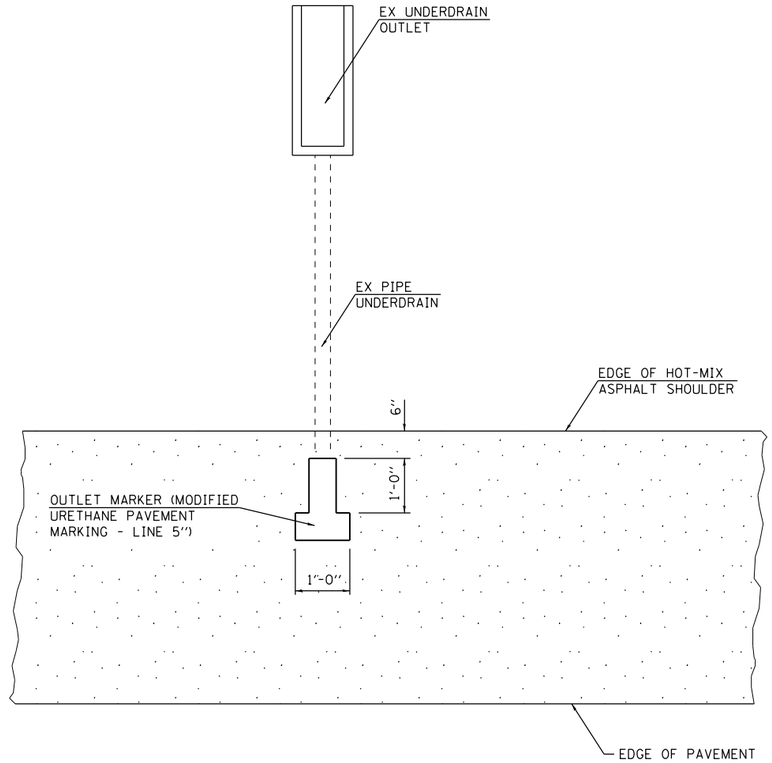
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-72 RESURFACING
WIDTH RESTRICTION SIGNING

SCALE: | SHEET 3 OF 8 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	145
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			



DRAINAGE OUTLET MARKER

SEE PAVEMENT MARKING SCHEDULE FOR PLACEMENT

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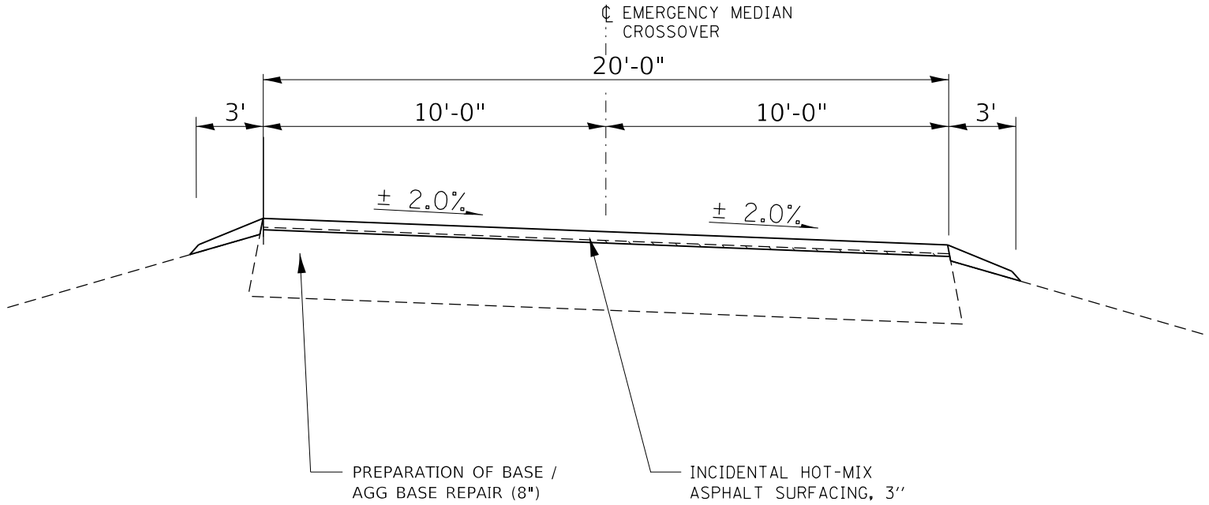
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

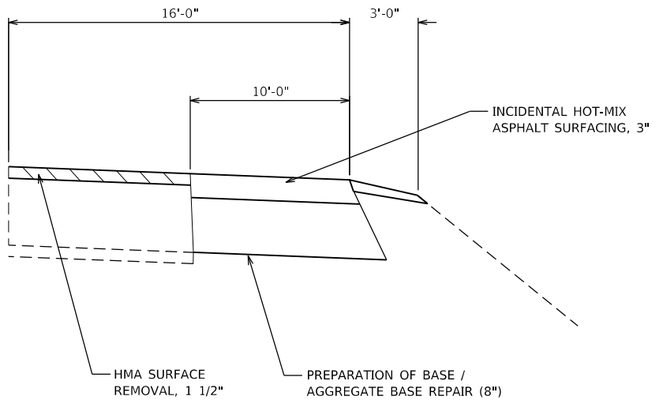
I-72 RESURFACING
DRAINAGE OUTLET MARKER

SCALE: | SHEET 4 OF 8 SHEETS | STA. | TO STA.

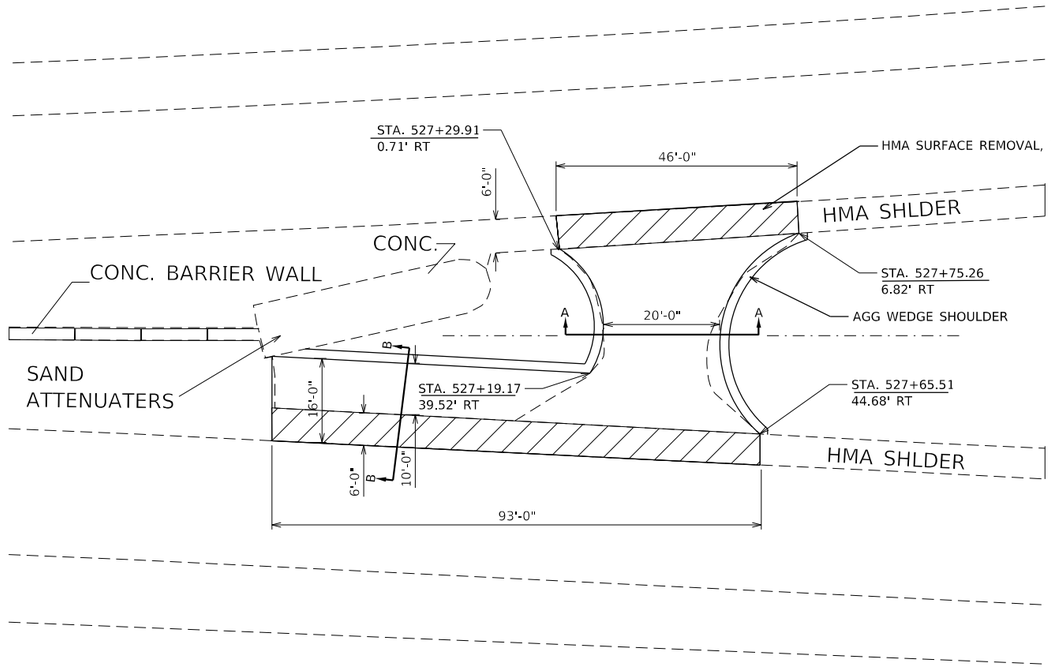
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	146
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			



SECTION A - A



SECTION B - B



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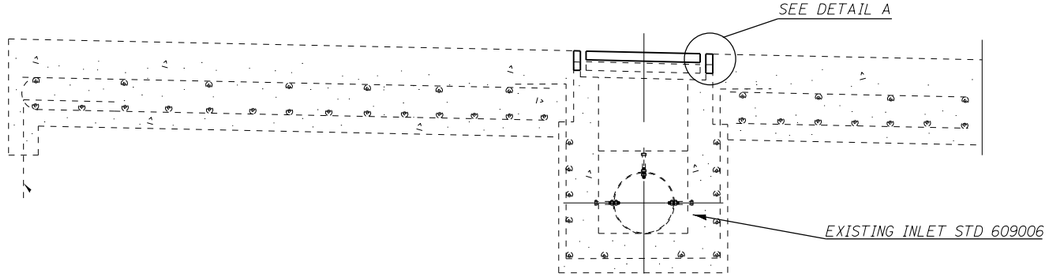
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

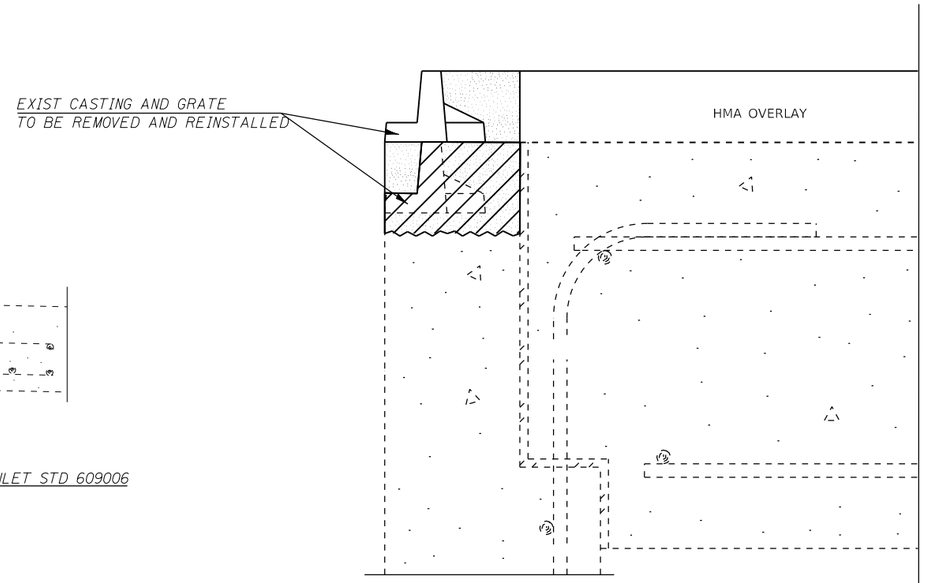
I-72 RESURFACING
MEDIAN CROSSOVER DETAIL

SCALE: | SHEET 5 OF 8 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	147
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			



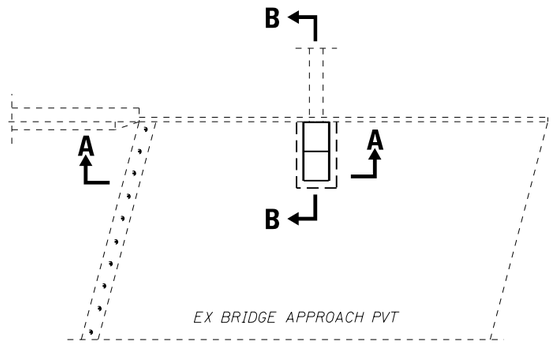
SECTION A–A



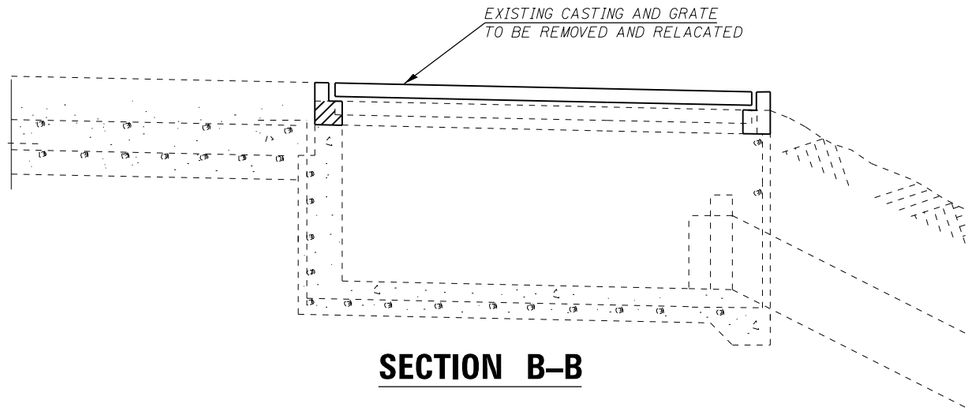
- CONCRETE TO BE REMOVED
- POLYMER CONCRETE POUR

* SEE STD 2322-3 & 2324-6 FOR INLET SIZES & PLAN SHEETS

DETAIL A



TYPICAL DETAIL PLAN



SECTION B–B

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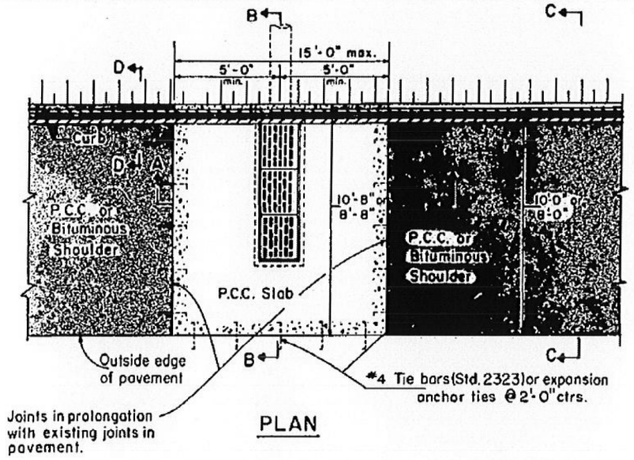
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-72 RESURFACING
ADJUST FRAMES FOR INLETS

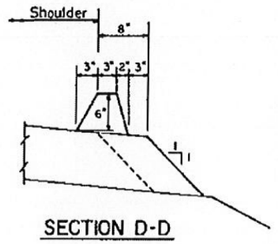
SCALE: | SHEET 6 OF 8 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75-6) BDR, BP, BRR, RS-2	PIKE	150	148
		CONTRACT NO. 72J42		
	ILLINOIS FED. AID PROJECT			

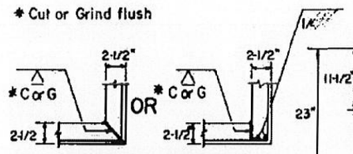
FOR INFORMATION ONLY



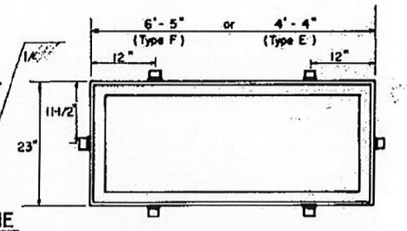
PLAN



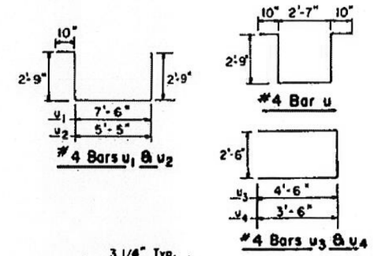
SECTION D-D

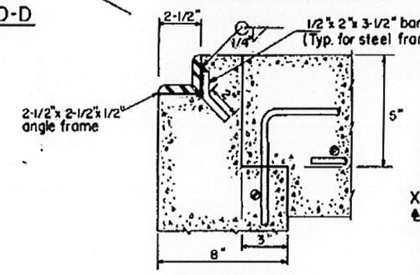


TYPICAL CORNER OF STEEL GRATING FRAME

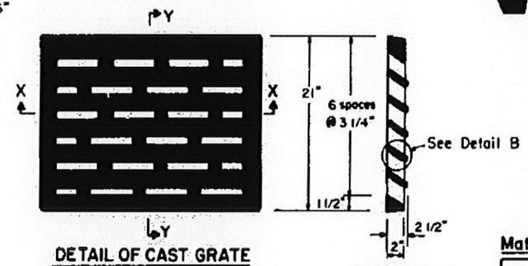


DETAIL OF STEEL FRAME
Cast frame to have same basic dimensions.



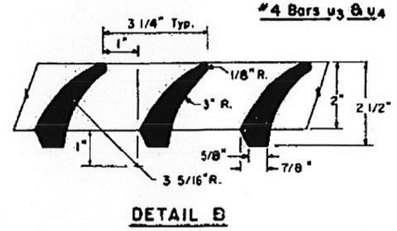


DETAIL A

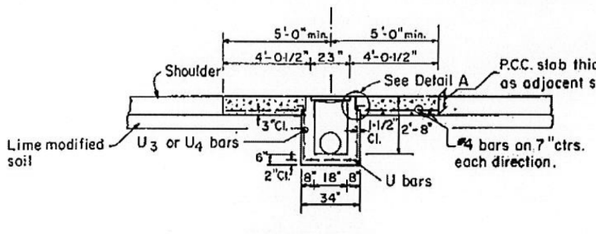


DETAIL OF CAST GRATE
Type E requires 2 grates
Type F requires 3 grates

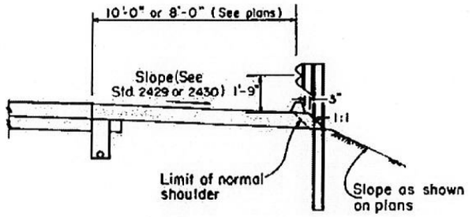
SECTION Y-Y



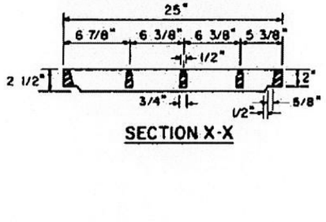
DETAIL B



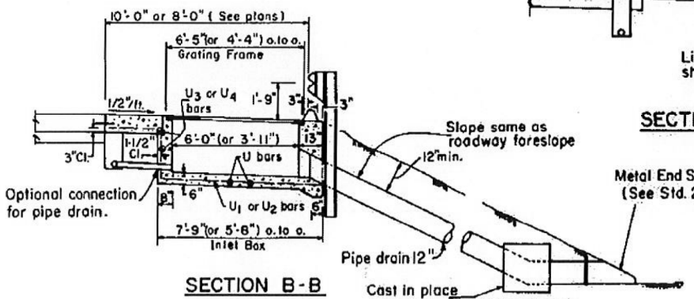
SECTION A-A



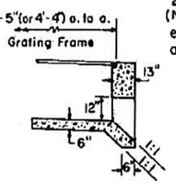
SECTION C-C



SECTION X-X



SECTION B-B



BOX OUTLET WHEN PRECAST

GENERAL NOTES

Use Type E inlet Box for 8' shoulder widths; use Type F inlet Box for 10' shoulder widths.
The P.C. Concrete used in the slab shall meet the requirements of Section 408 of the Standard Specifications.
When the slab is constructed adjacent to bituminous pavement and shoulders, the bituminous shoulder shall be placed first and then sawed full depth and removed in the area of the PCC slab. The area of the bituminous shoulder removed will not be deducted from the area of bituminous shoulder originally measured for payment.
When the slab is constructed adjacent to PCC pavement and shoulders, it may be constructed separately or monolithic with the shoulders.
The lengths of #4 bars used in the PCC slab shall be as required to accommodate the length, width, and spacing shown.
For placement of drainage elements on existing construction with existing rigid pavement, subsillute expansion anchor ties for tie bars. For nonrigid pavements or monolithic construction of PCC slab and shoulder, omit tie bars.
The material for Pipe Drains - 12" shall be either corrugated steel, aluminum alloy pipe or polyethylene (PE) pipe with U.V. protection.
The Contractor shall have the option to use bituminous or PCC material to construct the curb.
Corrugated steel and aluminum alloy pipe shall have 2' coupling bands for 2:1 slope or steeper. All pipe connections shall be watertight.

INLETS

Class X concrete or Precast concrete shall be used throughout. Precast concrete shall be in accordance with Sections 505.01 thru 505.05 of the Standard Specifications except that the concrete strength shall be not less than 4000 p.s.i. at 28 days. All exposed edges, except the upper perimeter, shall be beveled 3/4".
A 3" deep sand bedding conforming to Article 703.01 (FA 1 or FA 2) shall be provided under the full length and width of precast units, and all voids around the pipe drain entrance, both inside and outside, shall be sealed with mortar.
Steel frames shall conform to Article 710.04 of the Standard Specifications and shall be galvanized to AASHTO Specification M111 after fabrication.
Cast grating and frames shall conform to Article 710.17 of the Standard Specifications.

BASIS OF PAYMENT

Pipe drains shall be installed, measured and paid for in accordance with Section 607 of the Standard Specifications.
Metal End Sections shall be installed, measured and paid for in accordance with Section 511 of the Standard Specifications. The Class X concrete thrust blocks will be paid for at the contract unit price each for CONCRETE THRUST BLOCKS and shall include all excavation and backfilling necessary.
The contract unit price "Each" for TYPE E INLET BOX, STANDARD 2322 or TYPE F INLET BOX, STANDARD 2322, in place, shall include the frame and grating, Class X or Precast Concrete, reinforcement bars, excavation, bedding when required, and compacted backfilling.
PCC slab will be measured in place and paid for in square yards as PORTLAND CEMENT CONCRETE SHOULDERS of the thickness specified, which price shall include the cost of sawing and removal of the bituminous shoulder (when necessary), subgrade preparation, expansion anchor ties and reinforcement. In computing the area for payment, a deduction will be made for the area displaced by the inlet.

Material Required for One Type F Inlet Box

Bar	No.	Size	Length
u	8	#4	9' 9"
u_1	3	#4	13'-10"
u_3	6	#4	11'-6"
Concrete - Class X or Precast		Cu. Yds.	1.6
Reinf. Bars		Lbs.	125
Grating		Sq. Ft.	11.0

Material Required for One Type E Inlet Box

Bar	No.	Size	Length
u	6	#4	9'-9"
u_2	3	#4	11'-9"
u_4	6	#4	9'-6"
Concrete - Class X or Precast		Cu. Yds.	1.2
Reinf. Bars		Lbs.	100
Grating		Sq. Ft.	7.3

DESIGN NOTES

Curb should be used adjacent to high-speed facilities when fill slopes are 2:1 or where past experience or soils investigations indicate the presence of highly erodible soils.

When curb is used adjacent to high-speed facilities, guardrail must also be used.

Inlet spacing should be calculated using normal drainage procedures.

Design Notes will not appear in the contract plans.

Illinois Department of Transportation

PASSED Nov. 14 1988
Engineer of Policy and Procedures

APPROVED Nov. 14 1988
Engineer of Design

ISSUED 12-1-89

SHOULDER INLET WITH CURB
STANDARD 2322 - 3
(Full Size) DWW Sr.

A-7.20c

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		DATE -	REVISED -		

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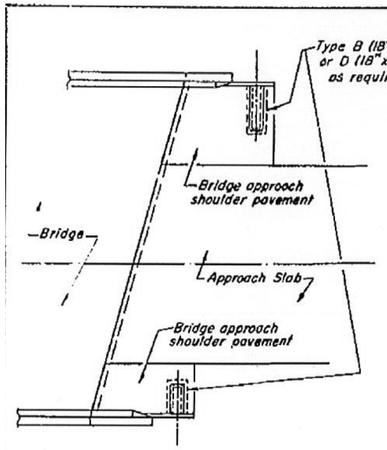
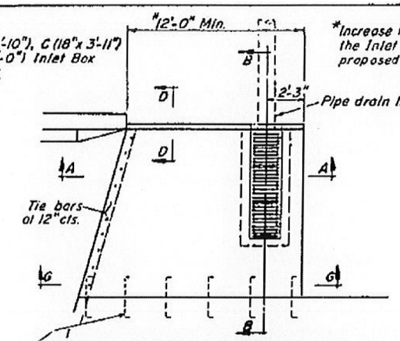


GENERAL PLAN

SEC. C-C

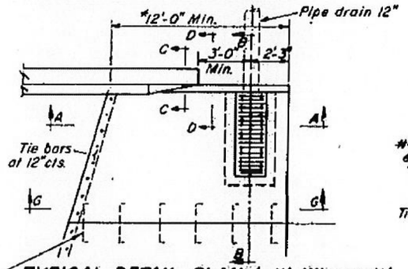
SEC. D-D



TYPICAL DETAIL PLAN (w/o Wingwall)

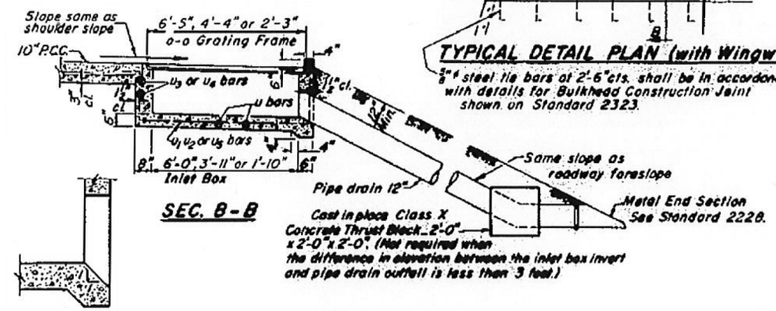
⅝" ϕ steel tie bars at 2'-6" cts. shall be in accordance with details for Bulkhead Construction Joint shown on Standard 2323.

*Increase this dimension as needed to position the Inlet Box and Pipe Drain between the proposed approach guardrail posts.



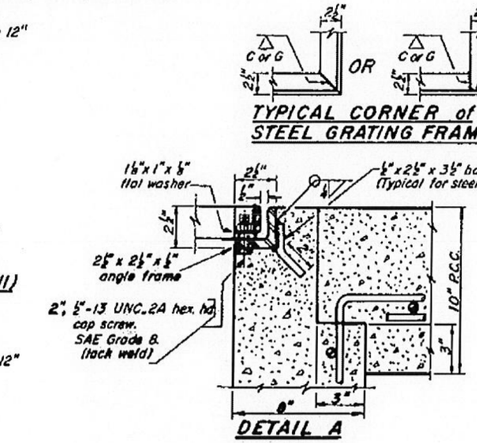
TYPICAL DETAIL PLAN (with Wingwall)

⅝" ϕ steel tie bars at 2'-6" cts. shall be in accordance with details for Bulkhead Construction Joint shown on Standard 2323.

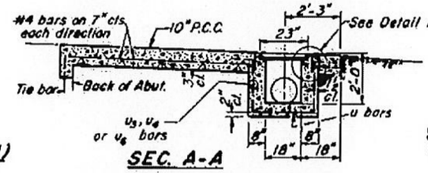


SEC. B-B

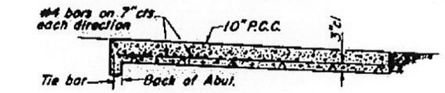
BOX OUTLET WHEN PRECAST



DETAIL A



SEC. A-A



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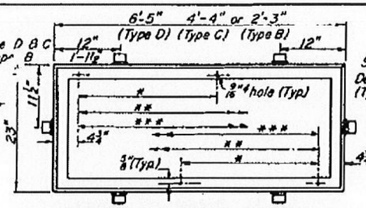
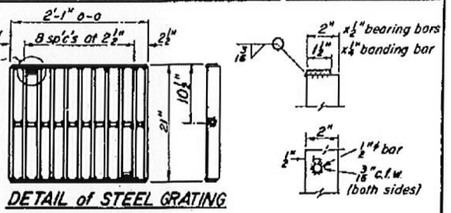


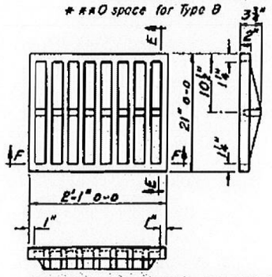
DETAIL of STEEL FRAME

Cast frame to have same basic dimensions.
* 1 space at 2'-1" for Type C
** 2 spaces at 2'-1" for Type D
*** space for Type B



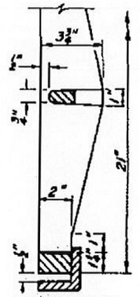
DETAIL of STEEL GRATING

Type B requires 1 grate
Type C requires 2 grates
Type D requires 3 grates



DETAIL of CAST GRATING

Type B requires 1 grate
Type C requires 2 grates
Type D requires 3 grates



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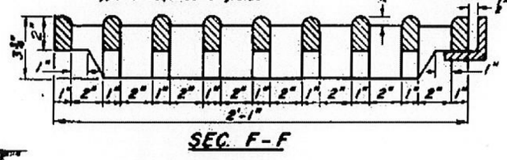

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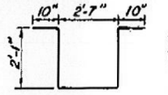
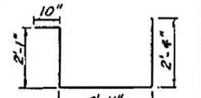
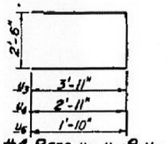


#4 Bar u



#4 Bars u_1, u_2 & u_5



#4 Bars u_3, u_4 & u_6

Material Required for One Type B Inlet Box

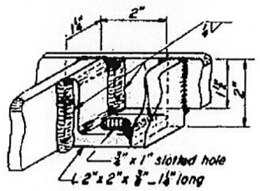
Bar	No.	Size	Length
u	4	#4	8'-5"
u_3	3	#4	8'-0"
u_6	4	#4	6'-2"
Concrete - Class X or Precast		Cu. Yds.	0.4
Reinf. Bars		Lbs.	60
Grating		Sq. Ft.	3.7

Material Required for One Type C Inlet Box

Bar	No.	Size	Length
u	6	#4	8'-5"
u_3	3	#4	10'-1"
u_6	4	#4	8'-4"
Concrete - Class X or Precast		Cu. Yds.	0.9
Reinf. Bars		Lbs.	80
Grating		Sq. Ft.	7.3

Material Required for One Type D Inlet Box

Bar	No.	Size	Length
u	8	#4	8'-5"
u_1	3	#4	12'-2"
u_5	4	#4	10'-4"
Concrete - Class X or Precast		Cu. Yds.	1.2
Reinf. Bars		Lbs.	100
Grating		Sq. Ft.	11.0



DETAIL B

GENERAL NOTES

When Inlet Box or Boxes are not required, surface of the shoulder pavement shall be finished to provide a smooth transition from back of the abutment to normal approach roadway shoulder.

See plans for location of bridge approach shoulder pavement.

Use Type C Inlet Box for 5' and 6' shoulder widths, use Type D Inlet Box for 7' and wider shoulder widths, use Type B Inlet Box for shoulders less than 5' wide.

For placement of approach shoulder pavement on existing construction substitute expansion anchor ties for tie bars. For non-rigid approaches, shoulder pavement will be as shown except omit tie bars in approach pavement.

The material for 12" ϕ Pipe Drains shall be either corrugated steel, aluminum alloy or polyethlene (P.E.) pipe with UV protection.

Corrugated steel and aluminum alloy pipe shall have 2' coupling bands. All pipe connections shall be water tight.

The P.C. Concrete used in the shoulder slab shall meet the requirements of Section 408 of the Standard Specifications.

The lengths of #4 bars used in the approach shoulder pavement shall be as required to accommodate the length, width and skew of the slab.

Class X concrete or precast concrete shall be used for the inlet.

Precast concrete shall be in accordance with Sections 503.01 thru 503.05 of the Standard Specifications except that the concrete strength shall be 4000 p.s.i. after 28 days.

All exposed edges of the inlet, except the upper perimeter, shall be beveled ¾".

Shop drawings will not be required for precast Inlet Boxes.

A 3" deep CA-12 bedding conforming to Article 704.01,D Quality or better shall be provided under full length and width of precast units, and all voids around the pipe drain entrance, both inside and outside, shall be sealed with mortar.

The grating shall seat firmly in the frame and steel grates shall be secured to the frame with a locking device as shown. Cast grates will not require the locking device.

Steel grating and frames shall conform to Article 710.04 of the Standard Specifications and shall be galvanized to AASHTO Specification M 111 after fabrication.

Cast grating and frames shall conform to Article 710.17 of the Standard Specifications. Cast grating and frames shall not be galvanized.

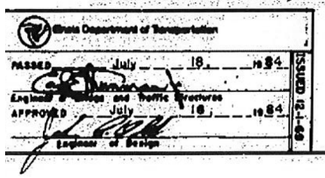
Pipe drains shall be installed, measured and paid for in accordance with Section 607 of the Standard Specifications, except sand bedding will not be required.

Metal End Sections shall be installed, measured and paid for in accordance with Section 511 of the Standard Specifications.

Bridge approach shoulder pavement will be measured in place and paid for in square yards as P.C. CONCRETE BRIDGE APPROACH SHOULDER PAVEMENT which shall include the cost of subgrade preparation, expansion anchor ties, reinforcement and joint fillers. In computing the area for payment, a deduction will be made for the area displaced by the inlet. (1.2 Sq. Yds. Type C; 1.7 Sq. Yds. Type D, 0.6 Sq. Yds. Type B)

The contract unit price "Each" for TYPE (B, C or D) INLET BOX STANDARD 2324, in place, shall include the frame and grating, class X or precast concrete, reinforcement bars, excavation, bedding when required, and compacted backfill.

The contract unit price "Each" for CONCRETE THRUST BLOCKS, in place, shall include excavation and compacted backfilling.



BRIDGE APPROACH SHOULDER PAVEMENT

STANDARD 2324-6

(Full Size)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-72 RESURFACING
SHOULDER INLET STANDARD 2324-6

SCALE: | SHEET 8 OF 8 SHEETS | STA. | TO STA.

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