11-08-2013 LETTING ITEM 035

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(53-5B-1)I-3	LIVINGSTON	15	1
	ILLINOIS	CONTRACT NO. 66D16		

INDEX OF SHEETS

STANDARDS

000001-06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
701101-03	OFF-ROAD OPERATIONS MULTILANE, 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE
701106-02	OFF-ROAD OPERATIONS, MULTILANE, MORE THAN 15' (4.5 m) AWAY
701901-03	TRAFFIC CONTROL DEVICES
704001-07	TEMPORARY CONCRETE BARRIER

701400-06
701402-09

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

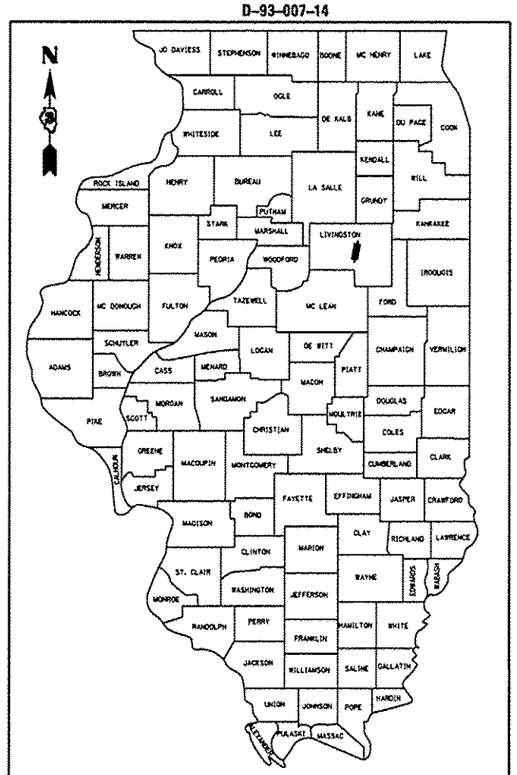
PROPOSED
HIGHWAY PLANS

F.A.I. ROUTE 55 (I-55)

SECTION (53-5B-1)I-3
BRIDGE REPAIR
STRUCTURE NO. 053-0129 (NB)
OVER THE VERMILION RIVER
WEST OF PONTIAC
LIVINGSTON COUNTY

C-93-001-14

D-93-007-14

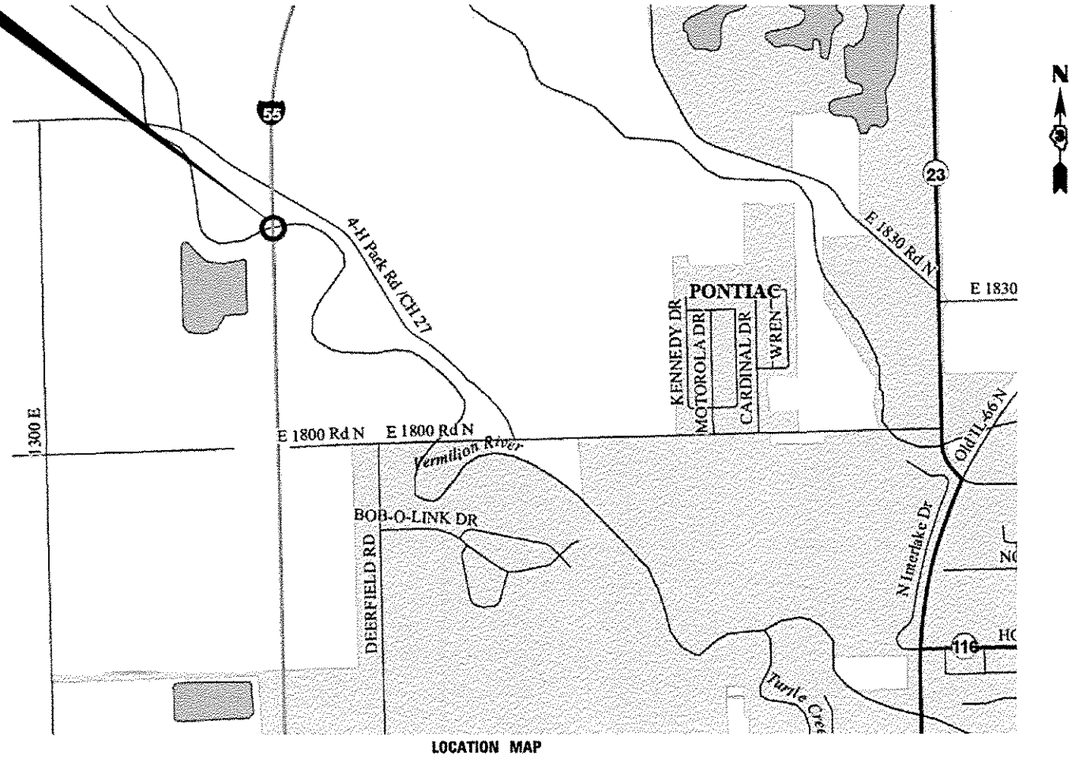


LOCATION OF SECTION INDICATED THUS: –

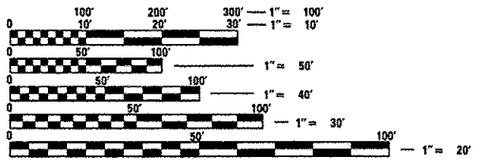
RURAL
INTERSTATE
FAI 55 (I-55)
2011

ADT	18700
P.V.	71.79%
S.U.	4.41%
M.U.	23.80%

PROJECT LOCATION
STRUCTURE NO. 053-0129 (NB)
STA. 188 + 20.13



LOCATION MAP
NOT TO SCALE
POINT LOCATION



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

PROJECT ENGINEER: JOE KANNEL
UNIT CHIES: RON WOODSHANK
TOWNSHIP: PONTIAC

CONTRACT NO. 66D16

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Sept. 3rd 20 13
Paul A. [signature]
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

October 4 20 13
John D. Baranzelli, P.E. by acting
ENGINEER OF DESIGN AND ENVIRONMENT

October 4 20 13
Omer Osman, P.E. by
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

GENERAL NOTES

FOR STABILIZATION, ALL TYPE III BARRICADES WILL REQUIRE A MINIMUM OF FOUR SAND BAGS PER BARRICADE.

SEEDING WILL NOT BE PERMITTED AT ANY TIME WHEN THE GROUND IS FROZEN, WET, OR IN AN UNTILLABLE CONDITION. LOCATIONS TO BE SEEDED WILL BE DETERMINED BY THE ENGINEER.

ABANDONED UNDERGROUND UTILITIES THAT CONFLICT WITH CONSTRUCTION SHALL BE DISPOSED OF OUTSIDE THE LIMITS OF THE RIGHT OF WAY ACCORDING TO ARTICLE 202.03 OF THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.

ANY REFERENCE TO A STANDARD IN THESE PLANS SHALL BE INTERPRETED TO MEAN THE EDITION AS INDICATED BY THE SUBNUMBER SHOWN IN THE LIST OF STANDARDS OR THE COPY INCLUDED IN THESE PLANS.

MEMBERS OF JULIE KNOWN TO BE WITHIN THE LIMITS OF THE IMPROVEMENT ARE:

NONE

NON-MEMBERS OF JULIE KNOWN TO BE WITHIN THE LIMITS OF THE IMPROVEMENT ARE:

NONE

THE CONTRACTOR SHALL CONTACT JULIE AT LEAST 48 HOURS PRIOR TO EXCAVATION TO DETERMINE WHICH UTILITIES ARE IN THE AREA.

DATE: 9-3-13

PREPARED BY: _____
DISTRICT STUDIES & PLANS ENGINEER

EXAMINED BY: _____
DISTRICT CONSTRUCTION ENGINEER

_____
DISTRICT MATERIALS ENGINEER

_____
DISTRICT OPERATIONS ENGINEER

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	PLOT SCALE = 100.0000 ' / in.	CHECKED - YOGESH PATEL	REVISED -
MODELNAME	PLOT DATE = 8/29/2013	DATE - 8/5/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

SCALE: | SHEET 1 OF 1 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(53-5B-D1-3	LIVINGSTON	15	2
		CONTRACT NO. 66D16		
	ILLINOIS FED. AID PROJECT			

CODE NO.	ITEM	UNIT	CONSTR. CODE MCHD FUNDS 100% STATE ROADWAY 0014 RURAL
25000210	SEEDING, CLASS 2A	ACRE	0.34
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	31
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	31
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	31
25100115	MULCH, METHOD 2	ACRE	0.34
28000400	PERIMETER EROSION BARRIER	FOOT	135
50102400	CONCRETE REMOVAL	CU YD	26.9
50300100	FLOOR DRAINS	EACH	4
50300225	CONCRETE STRUCTURES	CU YD	4.7
50300255	CONCRETE SUPERSTRUCTURE	CU YD	22.3
50300260	BRIDGE DECK GROOVING	SQ YD	62.5
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	23810
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	7040
50800530	MECHANICAL SPLICERS	EACH	240
52100520	ANCHOR BOLTS, 1"	EACH	4
59200101	BRIDGE WASHING NO. 1	EACH	1
67100100	MOBILIZATION	L SUM	1
70400100	TEMPORARY CONCRETE BARRIER	FOOT	600
70600350	IMPACT ATTENUATORS, RELOCATE (NON- REDIRECTIVE), TEST LEVEL 3	EACH	1
• 78009004	MODIFIED URETHANE PAVEMENT MARKING - LINE 4"	FOOT	50
• 78009006	MODIFIED URETHANE PAVEMENT MARKING - LINE 6"	FOOT	250
78300100	PAVEMENT MARKING REMOVAL	SQ FT	125
X0325969	PORTABLE, VEHICLE MOUNTED, CHANGEABLE MESSAGE BOARD	CAL DA	40
X0326867	RADAR SPEED TRAILER	CAL MO	1
X0326880	MESSAGE BOARD VEHICLE DRIVER	HOUR	320
X5870015	BRIDGE DECK CONCRETE SEALER	SQ FT	715
X7010208	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402 (SPECIAL)	EACH	1
Z0001903	STRUCTURAL STEEL REMOVAL	POUND	34810
Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	24
Z0050100	REMOVE AND RE-ERECT EXISTING HANDRAIL	FOOT	46
Z0073300	TEMPORARY SHORING AND CRIBBING	L SUM	1

• SPECIALITY ITEM

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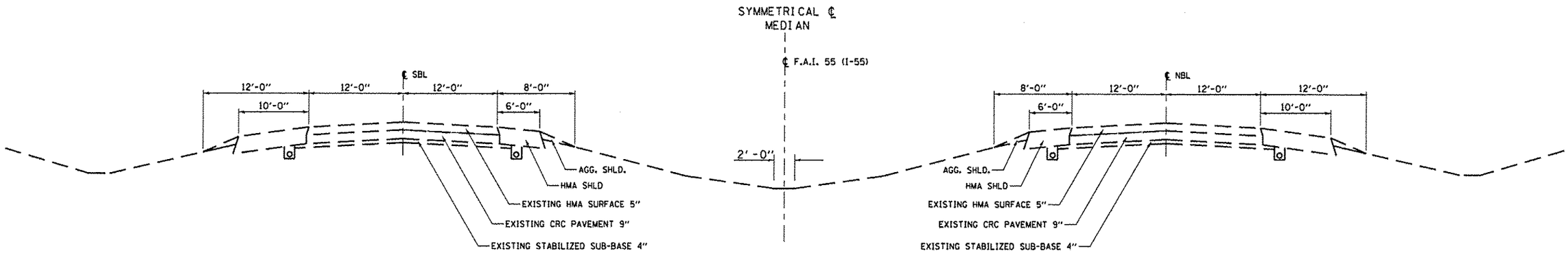
$MODELNAME$	PLOT DATE = 9/3/2013	DATE - 8/5/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: | SHEET 1 OF 1 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(53-5B-1)I-3	LIVINGSTON	15	3
		CONTRACT NO. 66D16		
		ILLINOIS FED. AID PROJECT		



TYPICAL SECTIONS

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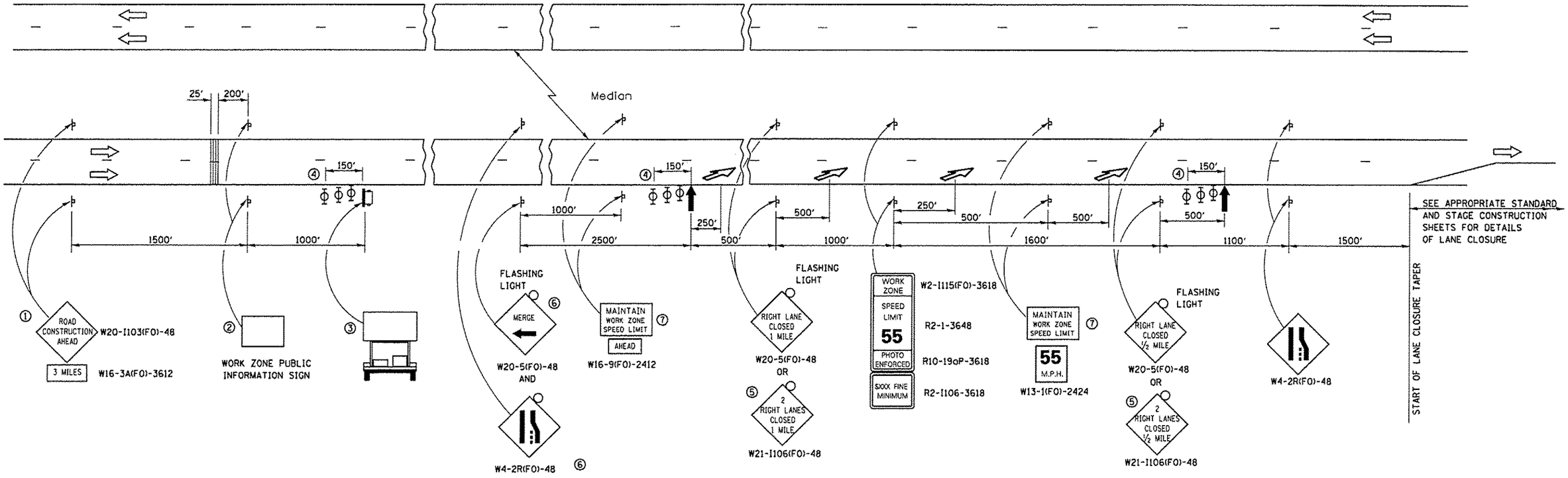
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS

SCALE: | SHEET 1 OF 1 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(53-5B-1)1-3	LIVINGSTON	15	4
		CONTRACT NO. 66D16		
		ILLINOIS FED. AID PROJECT		



① THE ROAD CONSTRUCTION AHEAD SIGN SHALL BE LOCATED 3 MILES IN ADVANCE OF THE PROJECT LIMITS.

② THE MESSAGE AND SIZE OF THE WORK ZONE PUBLIC INFORMATION SIGN SHALL BE AS SPECIFIED BY THE DEPARTMENT.

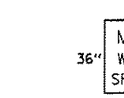
③ TO BE PLACED IN THE MEDIAN WHEN FEASIBLE. THE MESSAGE BOARD SHALL BE USED TO DISPLAY STATUS OF LANES WITHIN THE PROJECT. THE PRIMARY MESSAGES SHALL BE:
"RIGHT LANE CLOSED" / " x MILES AHEAD"
"LEFT LANE CLOSED" / " x MILES AHEAD"
"ALL LANES OPEN"

④ THREE, TYPE II BARRICADES, DRUMS, OR VERTICAL BARRICADES AT 50' CENTERS.

⑤ THIS SIGN SHALL BE USED WHEN 2 LANES ARE CLOSED.

⑥ WHEN THE LEFT LANE IS CLOSED, SWITCH THESE TWO SIGNS AND THE DIRECTION OF THE MERGE ARROW.

⑦ 48"x36" FLUORESCENT ORANGE SIGN WITH BLACK LETTERS.



ARROW BOARD

PORTABLE CHANGEABLE MESSAGE SIGN

SIGN

TYPE II BARRICADE, DRUM, OR VERTICAL BARRICADE WITH MONODIRECTIONAL FLASHING LIGHT

LANE DROP ARROW - SEE STANDARD 780001

TEMPORARY RUMBLE STRIPS

GENERAL NOTE:

THIS STANDARD IS USED WHERE AT ANY TIME A LANE IS CLOSED ON A FREEWAY/EXPRESSWAY.

WHEN THE LEFT LANE IS CLOSED, LEFT LANE CLOSED SIGNS SHALL BE SUBSTITUTED FOR THE RIGHT LANE CLOSED SIGNS.

THE FIRST TWO SIGNS AND THE MESSAGE BOARD ARE STATIONARY. THE OTHER SIGNS AND ARROWBOARDS SHALL BE MOVED AS NECESSARY TO MAINTAIN THE REQUIRED DISTANCE FROM THE START OF THE LANE CLOSURE TAPER(S).

SEE SPECIAL PROVISIONS.

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SHOWN.

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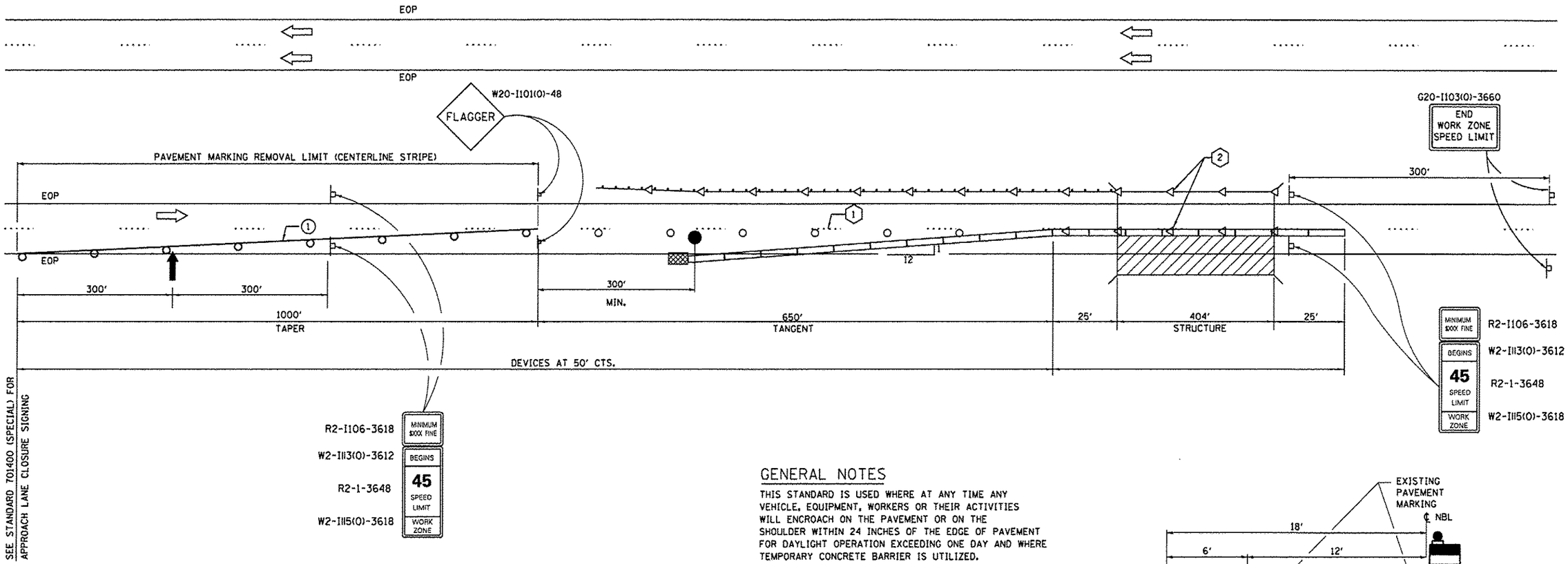
$MODELNAME$	PLOT DATE = 9/3/2013	DATE - 8/5/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL AND PROTECTION STANDARD 701400 (SPECIAL)

SCALE: | SHEET 1 OF 1 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(53-5B-)11-3	LIVINGSTON	15	5
		CONTRACT NO. 66D16		
	ILLINOIS FED. AID PROJECT			



SYMBOLS

- ARROW BOARD
- WORK AREA
- SIGN
- TRAFFIC CONTROL DRUM WITH STEADY BURN MONODIRECTIONAL LIGHT
- TEMPORARY CONCRETE BARRIER
- MONODIRECTIONAL BARRIER WALL/GUARDRAIL MARKER
- IMPACT ATTENUATOR

(1) TEMPORARY PAVEMENT MARKING TAPE OR EXISTING PAVEMENT MARKING SHALL BE PLACED THROUGHOUT THE TAPER AND ALONGSIDE THE WORK AREA. THE RIGHT EDGE LINE SHALL BE WHITE AND THE LEFT EDGE LINE SHALL BE YELLOW.

(2) BARRIER WALL/GUARDRAIL MARKERS AT 25'. MARKERS ON RIGHT SHALL BE CRYSTAL AND MARKERS ON LEFT SHALL BE AMBER. COST INCLUDED WITH TEMPORARY CONCRETE BARRIER.

GENERAL NOTES

THIS STANDARD IS USED WHERE AT ANY TIME ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES WILL ENCROACH ON THE PAVEMENT OR ON THE SHOULDER WITHIN 24 INCHES OF THE EDGE OF PAVEMENT FOR DAYLIGHT OPERATION EXCEEDING ONE DAY AND WHERE TEMPORARY CONCRETE BARRIER IS UTILIZED.

THIS STANDARD MUST BE USED IN COMBINATION WITH STANDARD 701400 (SPECIAL).

WHEN WORK IS BEING PERFORMED IN THE LEFT LANE, THE SET UP WOULD BE A MIRROR IMAGE TO WHAT IS SHOWN.

FLAGGER, FLAGGER SIGNS AND SPEED LIMIT SIGNS SHALL BE REQUIRED WHENEVER TEMPORARY CONCRETE BARRIER IN NOT IN PLACE. WHEN TEMPORARY CONCRETE BARRIER IS IN PLACE, THE FLAGGER SIGNS SHALL BE REMOVED OR COVERED AND THE FLAGGER NOT REQUIRED.

TEMPORARY CONCRETE BARRIER SHALL BE ACCORDING TO STANDARD 704001.

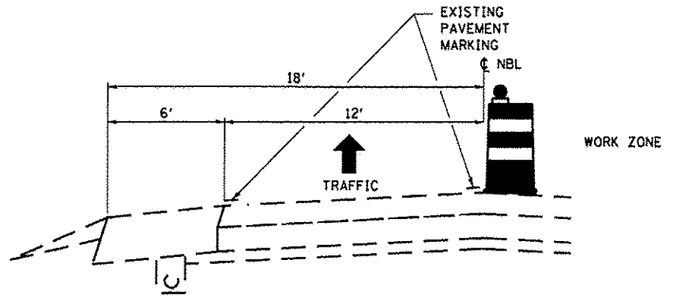
CALCULATE L AS FOLLOWS:

FORMULA
L=(W)(S)

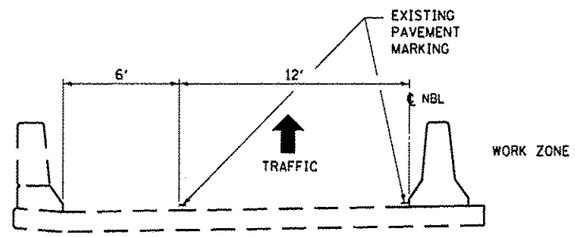
45 MPH OR MORE

W = WIDTH OF OFFSET IN FEET

S = NORMAL POSTED SPEED



TANGENT CROSS SECTION



STRUCTURE CROSS SECTION

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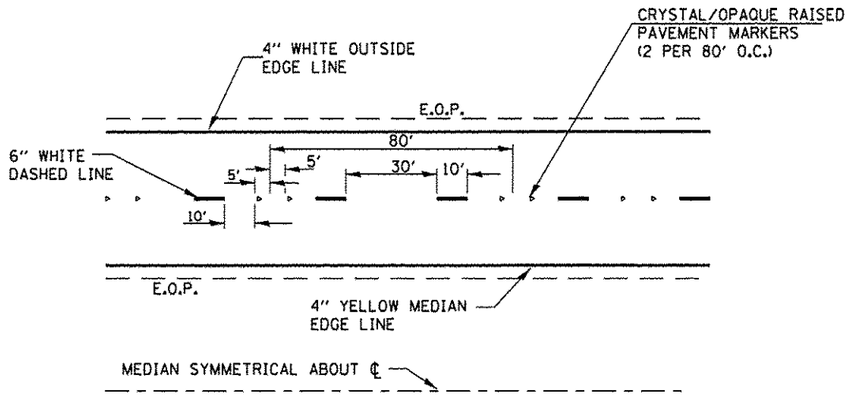
$MODELNAME$	PLOT DATE = 9/3/2013	DATE - 8/5/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

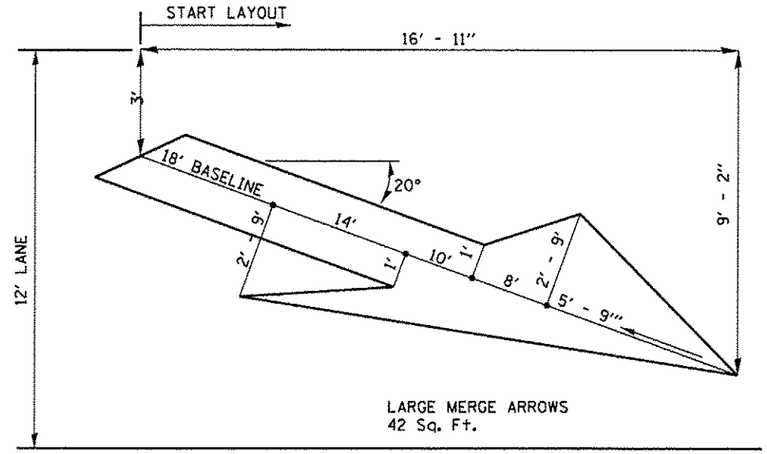
TRAFFIC CONTROL AND PROTECTION STANDARD 701402 (SPECIAL)

SCALE: | SHEET 1 OF 1 SHEETS

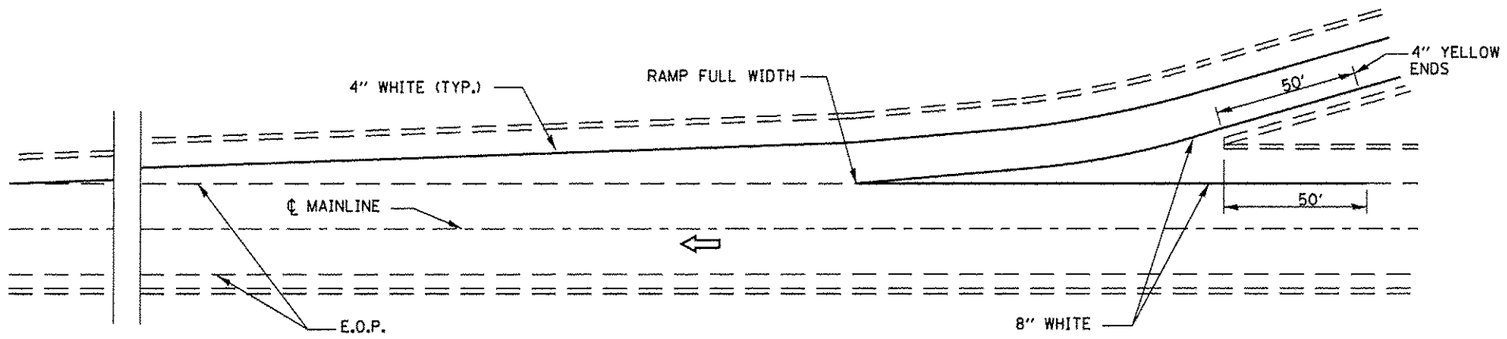
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(53-5B-)1-3	LIVINGSTON	15	6
		CONTRACT NO. 66D16		
		ILLINOIS FED. AID PROJECT		



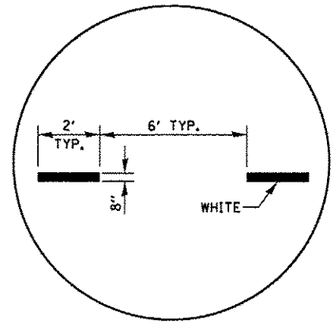
TYPICAL PAVEMENT MARKINGS



LANE DROP ARROW

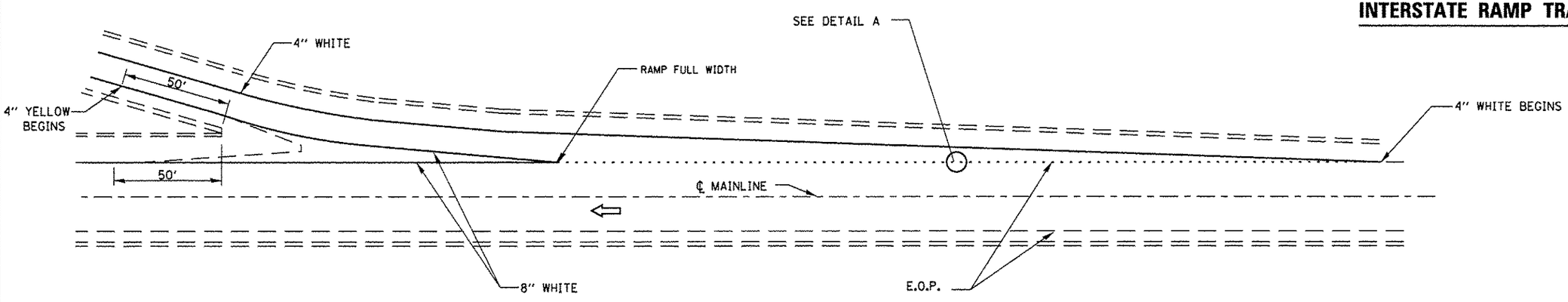


TYPICAL PAVEMENT MARKING FOR ENTRANCE RAMP TERMINALS



DETAIL A

INTERSTATE RAMP TRANSTION LINE



TYPICAL PAVEMENT MARKINGS FOR EXIT RAMP TERMINALS

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		DRAWN - RON WOODSHANK	REVISED -			55	(53-5B-1)I-3	LIVINGSTON	15	7
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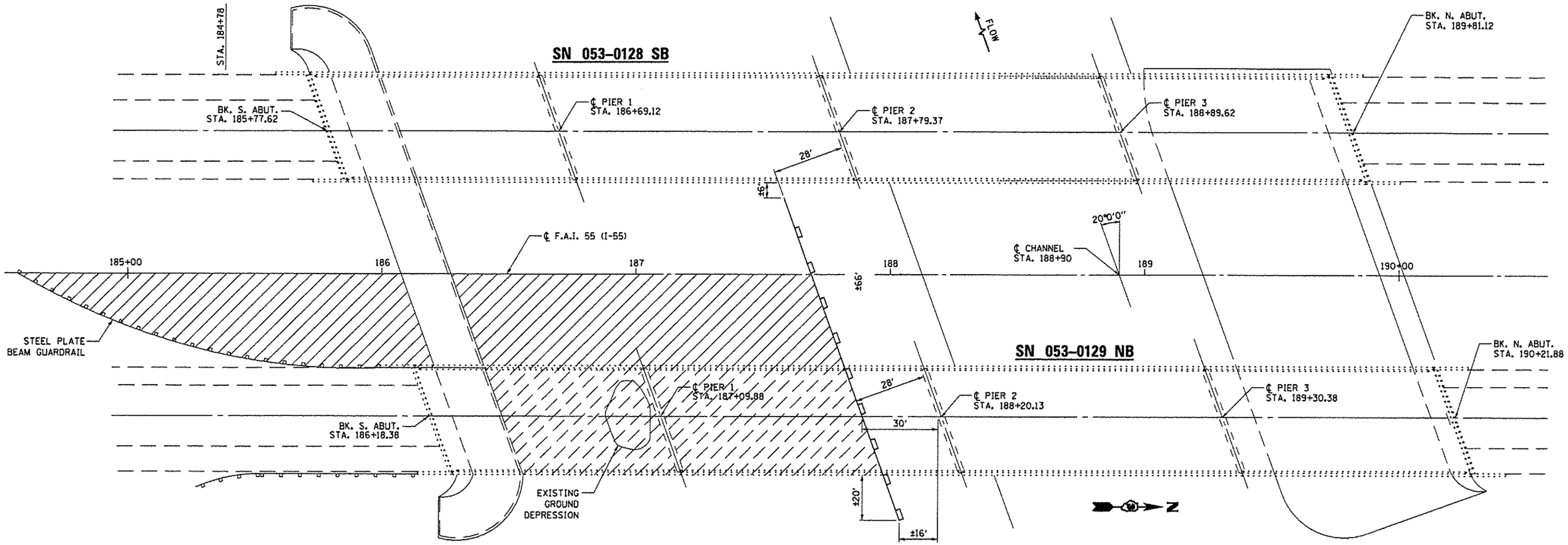
⊕MODELNAME⊕	PLOT DATE = 9/3/2013	DATE - 8/5/2013	REVISED -		SCALE:	SHEET 1 OF 1 SHEETS		ILLINOIS FED. AID PROJECT		



PLAN

LEGEND

PERIMETER EROSION BARRIER

SITE CLEANUP

SITE CLEANUP (UNDER STRUCTURE)

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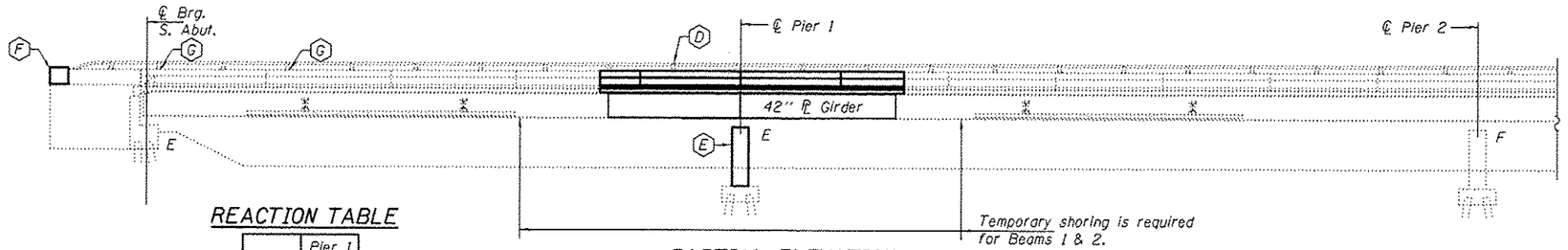
$MODELNAME$	PLOT DATE = 9/3/2013	DATE - 8/29/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SITE CLEAN UP
FOR STRUCTURE NO. 053-0129

SCALE: | SHEET 1 OF 1 SHEETS

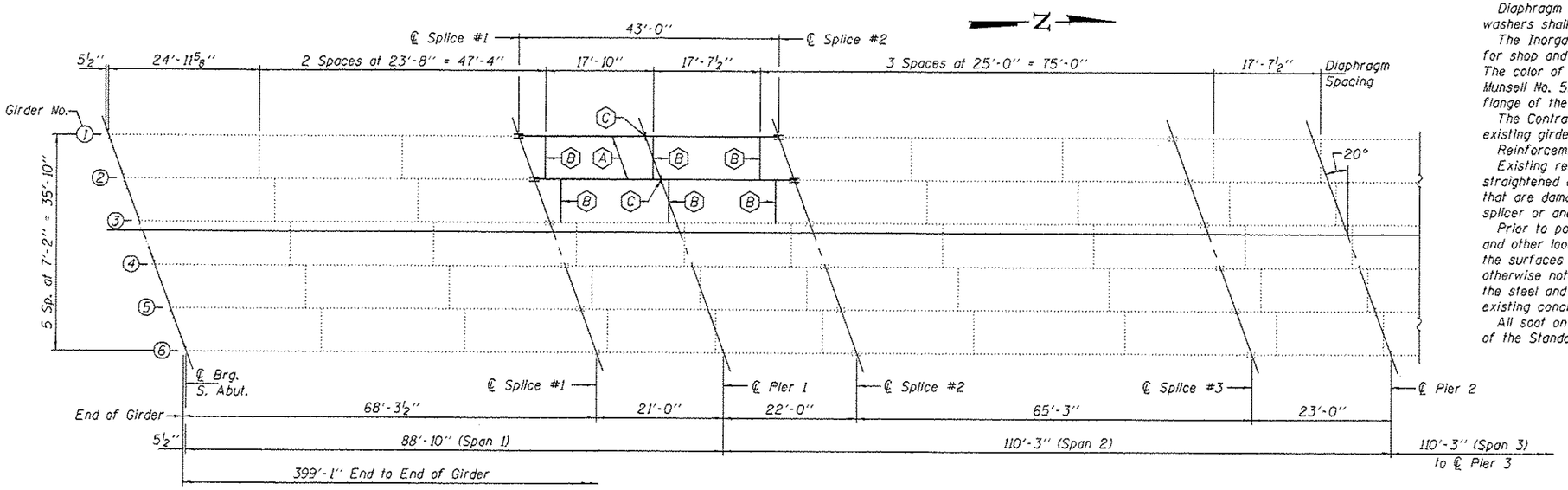
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(53-5B-1)I-3	LIVINGSTON	15	8
		CONTRACT NO. 66D16		
	ILLINOIS FED. AID PROJECT			



PARTIAL ELEVATION

REACTION TABLE

	Pier 1
D	157.9k
L	65.6k
Imp.	14.6k
Total	238.1k



PARTIAL FRAMING PLAN (N.B. LANES)

- (A) - Remove and Replace Girder Segment
- (B) - Replace Diaphragm and top and bottom clip L's
- (C) - Remove & Replace Bearing
- (D) - Re-erect Handrail
- (E) - Pier Reconstruction
- (F) - Wingwall Reconstruction
- (G) - Structural Repair of Concrete (Depth ≤ 5"). Actual location & quantities to be determined by the engineer in the field

GENERAL NOTES

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

Fasteners shall be high strength bolts. Bolts $^{7}/_{8}$"ϕ, open holes $^{15}/_{16}$"ϕ, unless otherwise noted.

The Contractor shall provide support and/or shoring systems for the slab and beam in the area of existing beam removal. See Special Provisions "Temporary Shoring and Cribbing" and "Temporary Slab Support System."

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.

Cost of removal and re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included with Furnishing and Erecting Structural Steel.

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

Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Standard Specifications and the GBSP "Cleaning and Painting Contact Surface Areas of Existing Steel Structures". The color of the final finish coat shall be Reddish Brown, Munsell No. 2.5YR 3/4. Cost included with Furnishing and Erecting Structural Steel.

Diaphragm connection holes shall be $^{15}/_{16}$"ϕ for $^{3}/_{4}$"ϕ bolts. Two hardened washers shall be required at diaphragm connections.

The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. 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 the exterior and bottom flange of the fascia beams shall be Reddish Brown, Munsell No. 2.5YR 3/4.

The Contractor is responsible for the method of supporting the portion of existing girder to be removed prior to removal operations.

Reinforcement bars designated (E) shall be epoxy coated.

Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. 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.

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.

All soot on the underside of the bridge shall be removed according to Article 592 of the Standard Specifications to the satisfaction of the Engineer.

TOTAL BILL OF MATERIAL

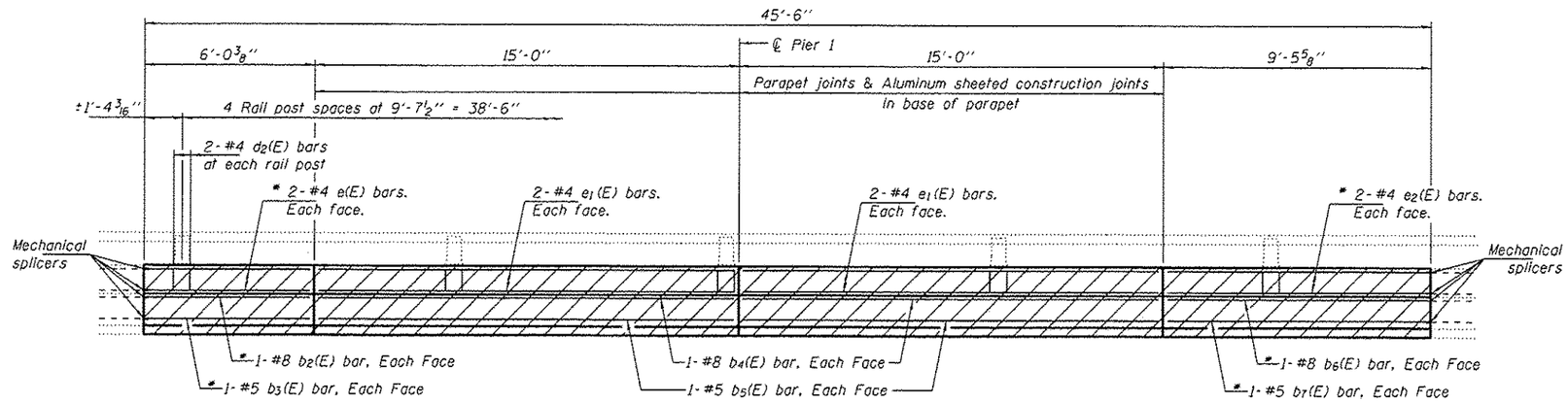
ITEM	UNIT	QUANTITY
Furnishing and Erecting Structural Steel	Pound	23810
Structural Steel Removal	Pound	34810
Temporary Shoring and Cribbing	L.S.	1
Concrete Removal	Cu. Yd.	26.9
Concrete Structures	Cu. Yd.	4.7
Concrete Superstructure	Cu. Yd.	22.3
Reinforcement Bars, Epoxy Coated	Pound	7040
Bridge Deck Grooving	Sq. Yd.	62.5
Bridge Deck Concrete Sealer	Sq. Ft.	715
Floor Drains	Each	4
Mechanical Splicers	Each	240
Remove and Re-Erect Existing Handrail	Foot	46
Structural Repair of Concrete (Depth ≤ 5")	Sq. Ft.	24
Bridge Washing No. 1	Each	1
Anchor Bolt 1"ϕ	Each	4

LICENSED STRUCTURAL ENGINEER
DAVID CARL PUZEY
081-005470
SPRINGFIELD ILLINOIS
STATE OF ILLINOIS

EXPIRES 11-30-2014

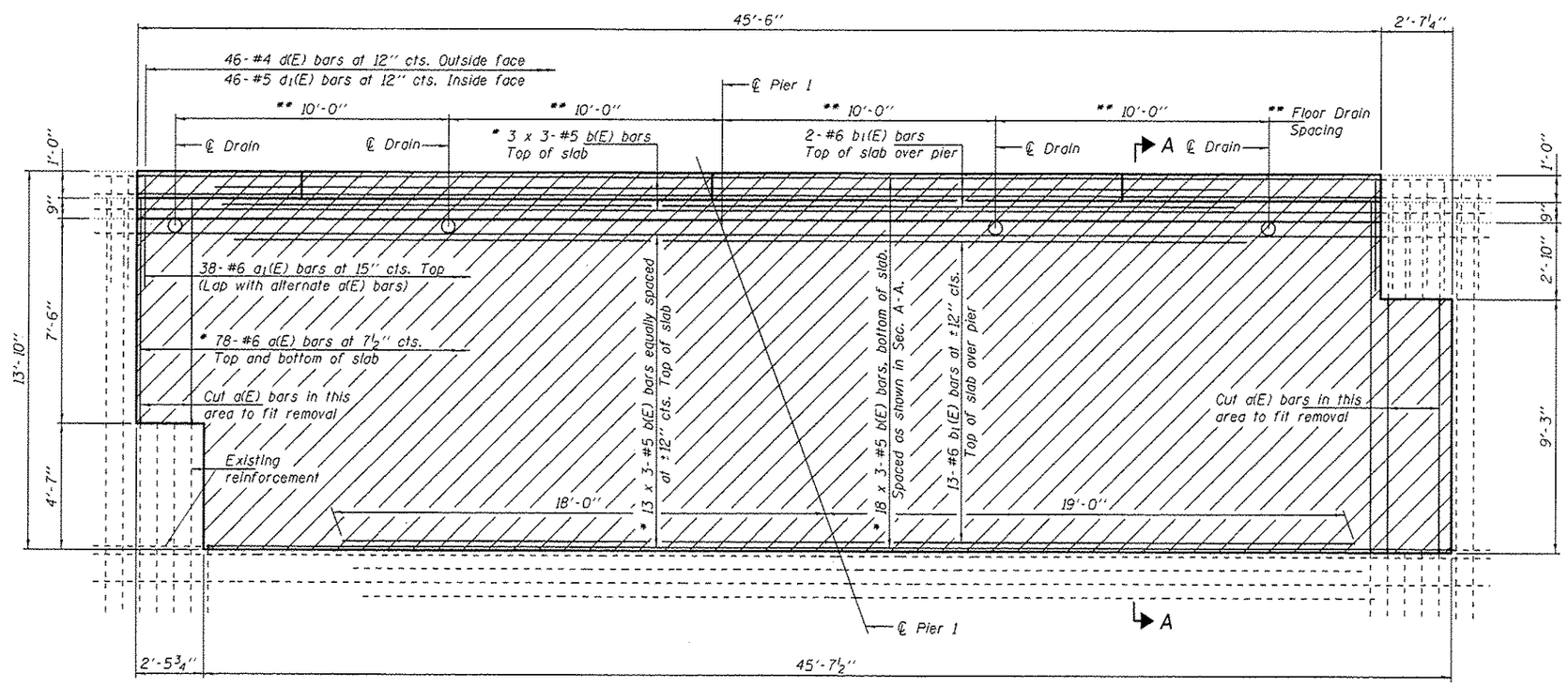
DESIGNED	EXAMINED	DATE AUGUST 30, 2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
CHECKED	ACTING ENGINEER OF STRUCTURAL SERVICES		
DRAWN baliva / steffen	PASSED	REVISED	GENERAL PLAN & ELEVATION F.A.I. ROUTE 55 OVER THE VERMILION RIVER SN 053-0129 (NB)
CHECKED	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED	SHEET NO. 1 OF 7 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	153-5B-111-3	LIVINGSTON	15	9
		CONTRACT NO. 66D16		
		ILLINOIS FED. AID PROJECT		



PARTIAL INSIDE ELEVATION
PARAPET REMOVAL & REPLACEMENT

MINIMUM BAR LAP
#5 bar = 2'-7"



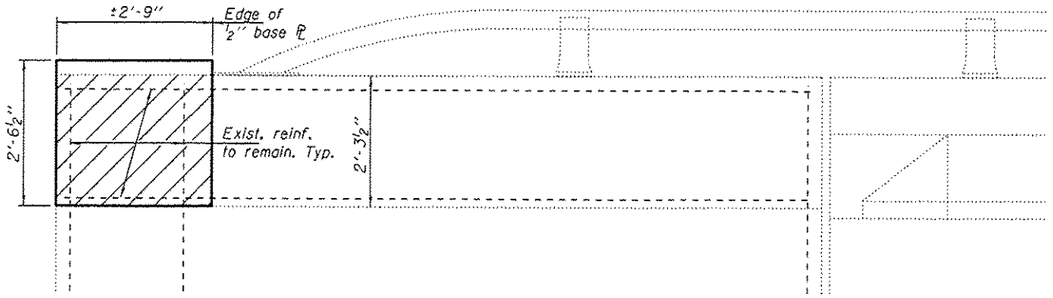
* Attach to existing reinforcement with mechanical splicers. Existing reinforcement to extend 6" min. into the removal area to allow attachment of the mechanical splicers.

** 10'-0" spacing measured from ℄ Pier on both sides. Space drains to miss diaphragms.

PARTIAL PLAN
CONCRETE REMOVAL & REPLACEMENT

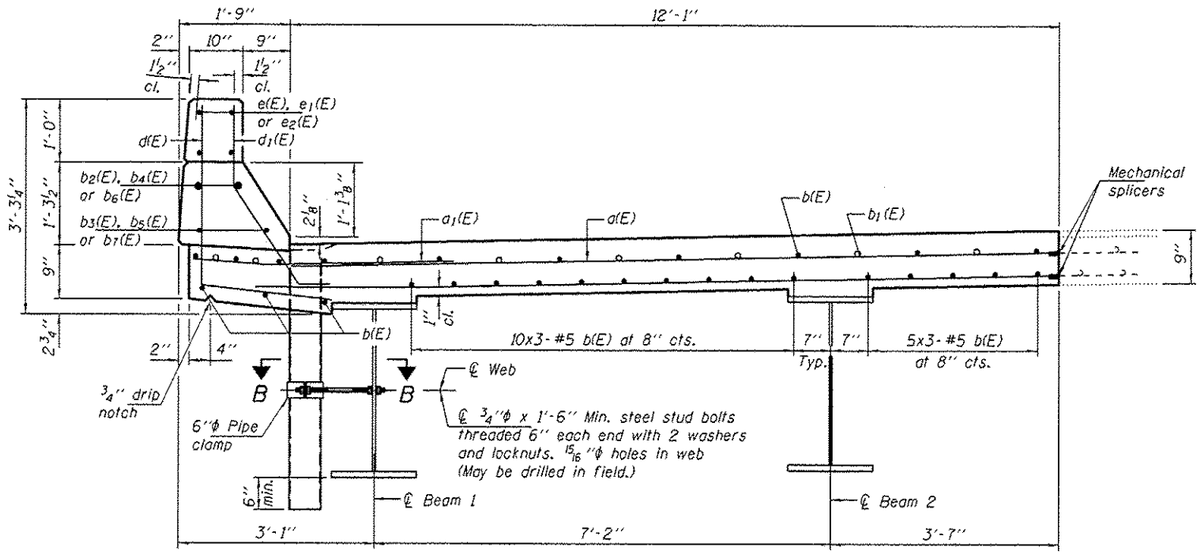
Notes:
See sheet 3 of 7 for Section A-A, superstructure details and Bill of Material.
Bars indicated thus 13 x 3-#5 etc. indicates 13 lines of bars with 3 lengths per line.
Hatched areas indicate Concrete Removal and Concrete Superstructure.
Perimeters of concrete removal areas shall be saw cut 3/4" prior to the removal of concrete.

DESIGNED TLC	EXAMINED	Timothy A. Bollini	DATE AUGUST 30, 2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	REPAIR DETAILS SN 053-0129	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED SMR	PASSED	ACTING ENGINEER OF STRUCTURAL SERVICES A. Carl Langer	REVISED			55	153-5B-1R1-3	LIVINGSTON	15	10
DRAWN baliva		ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED		SHEET NO. 2 OF 7 SHEETS			CONTRACT NO. 66D16		
CHECKED TLC SMR								ILLINOIS FED. AID PROJECT		

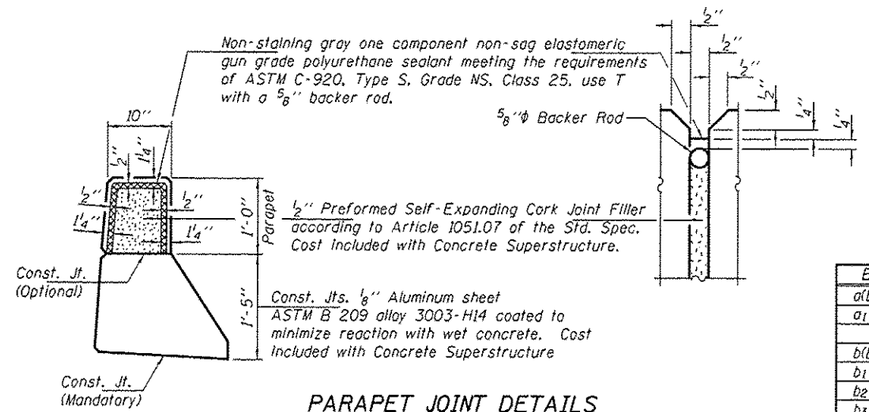


REPAIR F

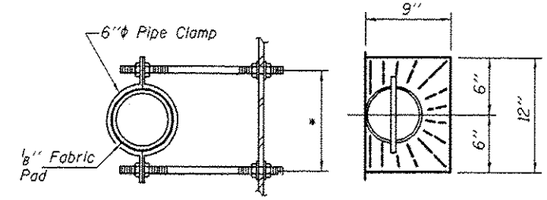
Notes:
Hatched area indicates Concrete Removal.
Perimeters of concrete removal areas shall be saw cut ¾" prior to the removal of concrete.



SECTION A-A



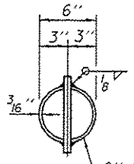
PARAPET JOINT DETAILS



SECTION B-B

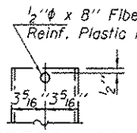
* Dimension as required by Pipe Clamp

TOP PLAN

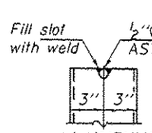


TOP PLAN

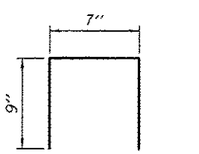
(Showing Aluminum Tube)



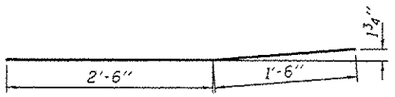
FIBERGLASS PIPE



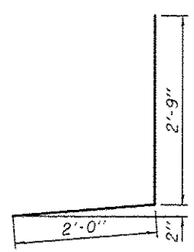
ALUMINUM TUBE



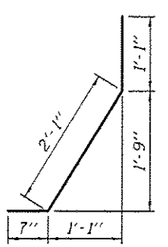
BAR d2(E)



BAR a1(E)



BAR d(E)



BAR d1(E)

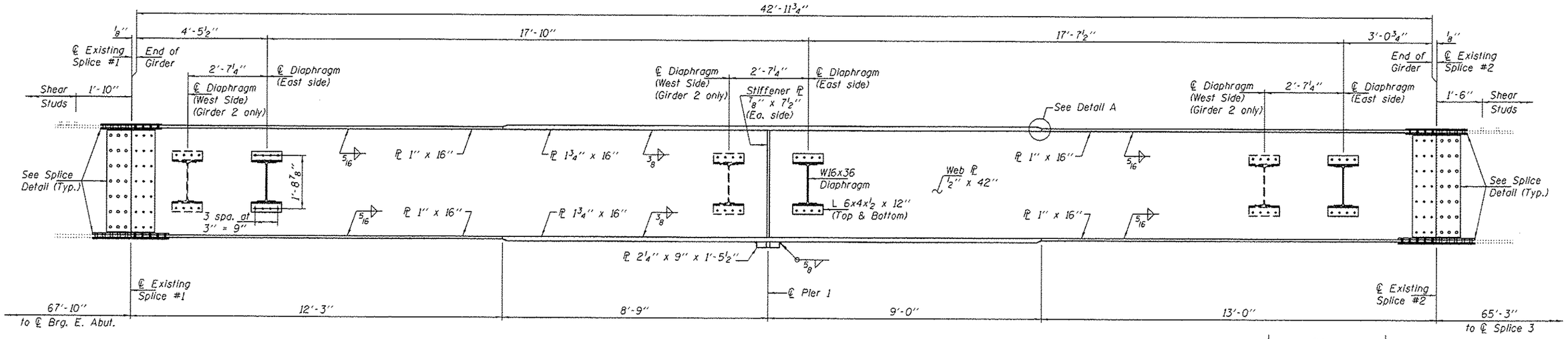
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	156	#6	12'-9"	
a1(E)	38	#6	4'-0"	
b(E)	102	#5	17'-9"	
b1(E)	15	#6	37'-0"	
b2(E)	2	#8	5'-8"	
b3(E)	2	#5	5'-8"	
b4(E)	4	#8	14'-8"	
b5(E)	4	#5	14'-8"	
b6(E)	2	#8	9'-1"	
b7(E)	2	#5	9'-1"	
d(E)	46	#4	4'-9"	
d1(E)	46	#5	3'-9"	
d2(E)	10	#4	2'-1"	
e(E)	4	#4	5'-8"	
e1(E)	8	#4	14'-8"	
e2(E)	4	#4	9'-1"	
Mechanical Splicers		Each	240	
Concrete Removal		Cu. Yd.	22.2	
Concrete Superstructure		Cu. Yd.	22.3	
Reinforcement Bars, Epoxy Coated		Lbs.	6730	

Bars indicated thus 13 x 3-#5 etc. indicates 13 lines of bars with 3 lengths per line.

Notes:
Drains shall be located clear of all diaphragms.
The exterior surfaces of the floor drains shall be painted with the finish coat as specified in the special provisions for Cleaning and Painting New Metal Structures. The exterior surfaces of the drains shall be cleaned according to the Society of Protective Coating's Spec. SSPC-SP1 prior to painting.
Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.
Galvanize clamping device according to AASHTO M232. Cost of clamping device and inserts is included with Floor Drains.

DESIGNED TLC	EXAMINED	Timothy A. Sheehy	DATE AUGUST 30, 2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	REPAIR DETAILS SN 053-0129	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED SMR	PASSED	ACTING ENGINEER OF STRUCTURAL SERVICES	REVISED			55	153-5B-1R1-3	LIVINGSTON	15	11
DRAWN baliva		J. Carl Tunzy	REVISED		SHEET NO. 3 OF 7 SHEETS			CONTRACT NO. 66D16		
CHECKED TLC SMR		ACTING ENGINEER OF BRIDGES AND STRUCTURES						ILLINOIS FED. AID PROJECT		

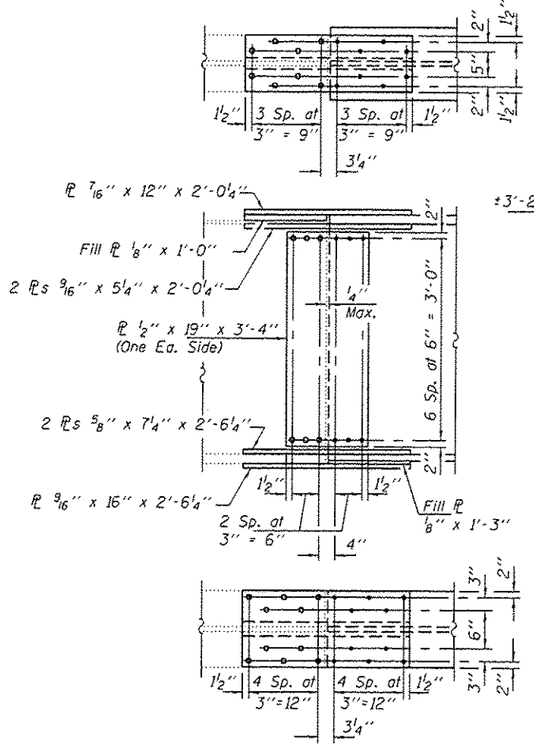


GIRDER ELEVATION

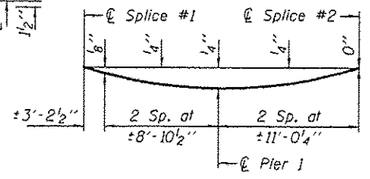
(Girder 2 shown. Girder 1 similar except as noted.)

Note:
Natural camber of new beam shall be placed upward for fabrication.

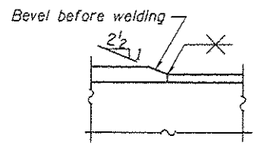
○ - Use holes in existing girder as a template for drilling holes in new steel.



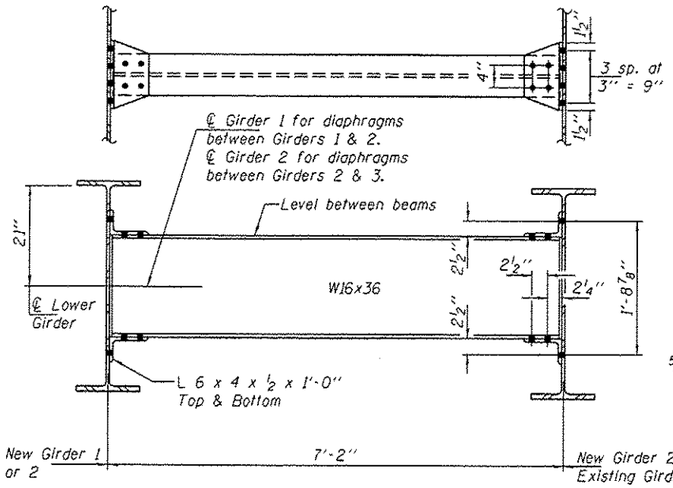
SPLICE DETAIL



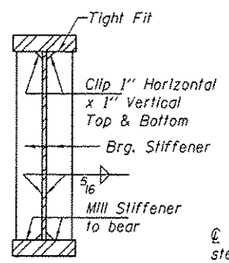
CAMBER DIAGRAM



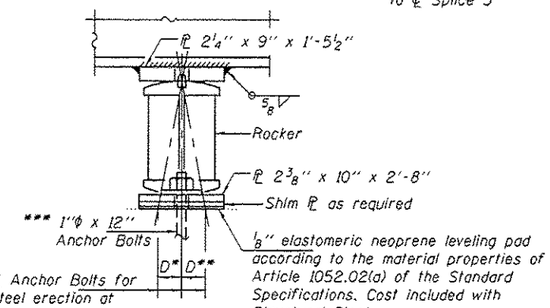
DETAIL A



DIAPHRAGM REPLACEMENT DETAIL



SECTION AT PIER

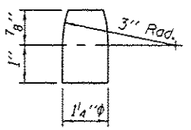


PROPOSED BEARING AT PIER 1

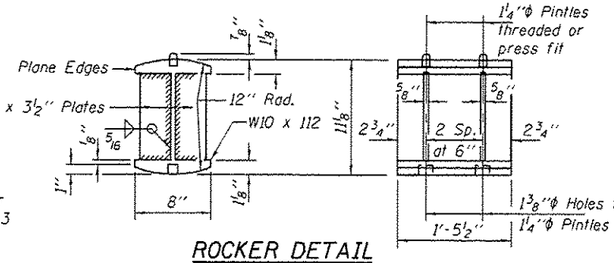
Cost of bearing is included with Structural Steel.

* D = 1/8"/100 ft. of exp. for every 15° below the normal temperature of 50°F.
** D = 1/8"/100 ft. of exp. for every 15° below the normal temperature of 50°F.

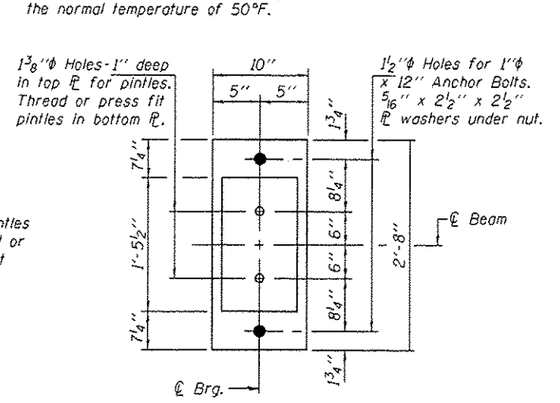
Notes:
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.



PINTLE



ROCKER DETAIL



BEARING PLAN

*** Burn existing anchor bolts at girder 2 flush with existing concrete surface. Grind existing anchor bolt smooth and seal with epoxy.

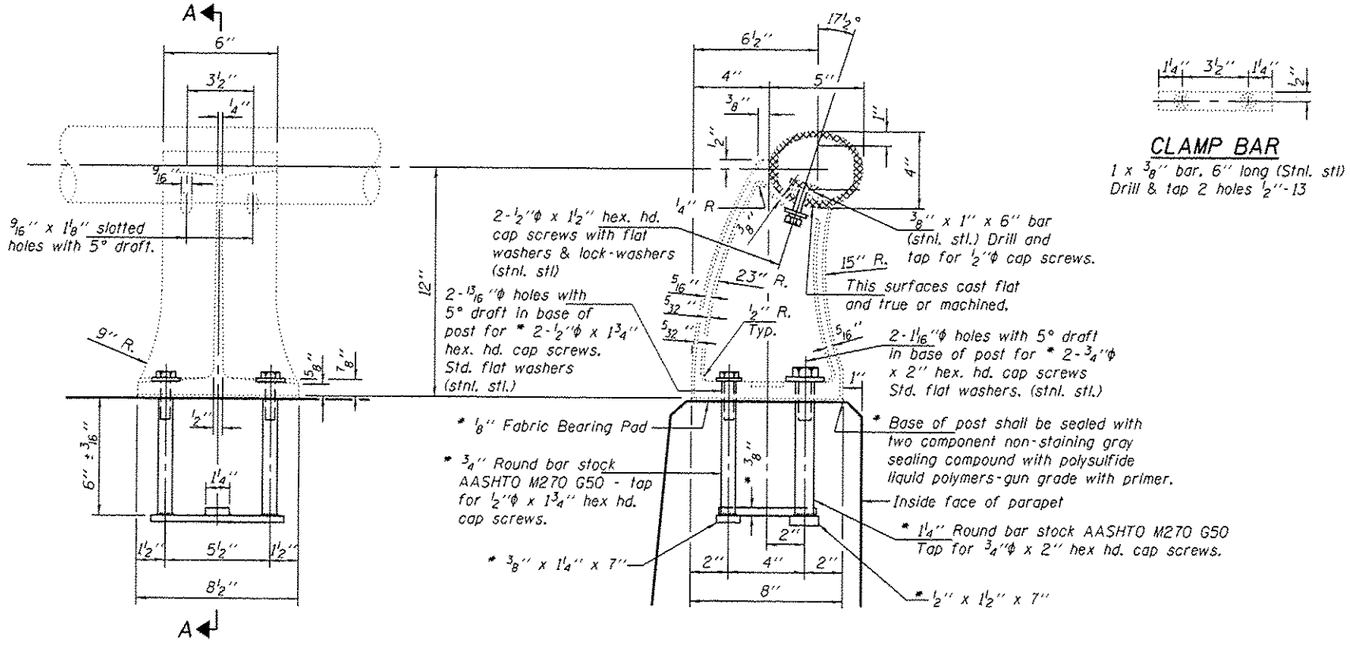
DESIGNED	TLC		
CHECKED	SMR		
DRAWN	steffen		
CHECKED	TLC SMR		

EXAMINED — Timothy A. Bullit, ACTING ENGINEER OF STRUCTURAL SERVICES
PASSED — J. Carl Tumey, ACTING ENGINEER OF BRIDGES AND STRUCTURES
DATE — AUGUST 30, 2013
REVISED
REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER, DIAPHRAGM & BEARING REPLACEMENT DETAILS
SN 053-0129
SHEET NO. 4 OF 7 SHEETS

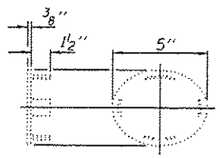
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	153-5B-1R-3	LIVINGSTON	15	12
		CONTRACT NO. 66D16		
	ILLINOIS FED. AID PROJECT			



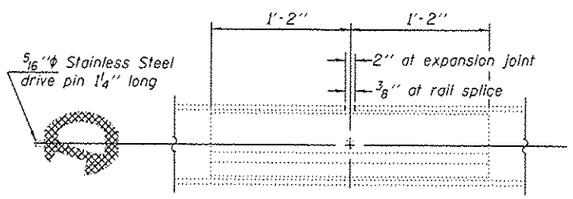
RAIL POST DETAILS

* New Rail Post anchorage devices at each location where posts are connected to new construction. Cost included with Remove and Re-erect Existing Handrail.

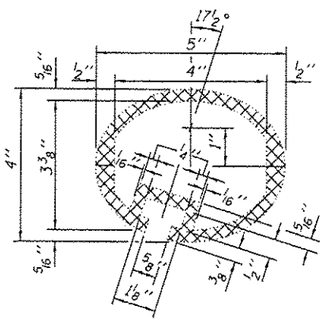
In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting stainless steel anchor rods of the same diameter and grade as the specified cap screws according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.



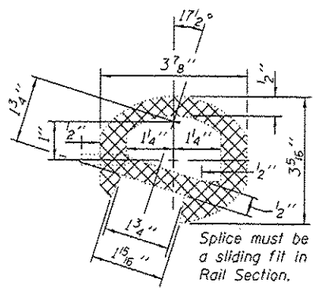
CAST END CAP
DRIVE FIT TYPE



RAIL SPLICE



SEC. THRU ELLIPTICAL RAIL SECTION



SEC. THRU SPLICE

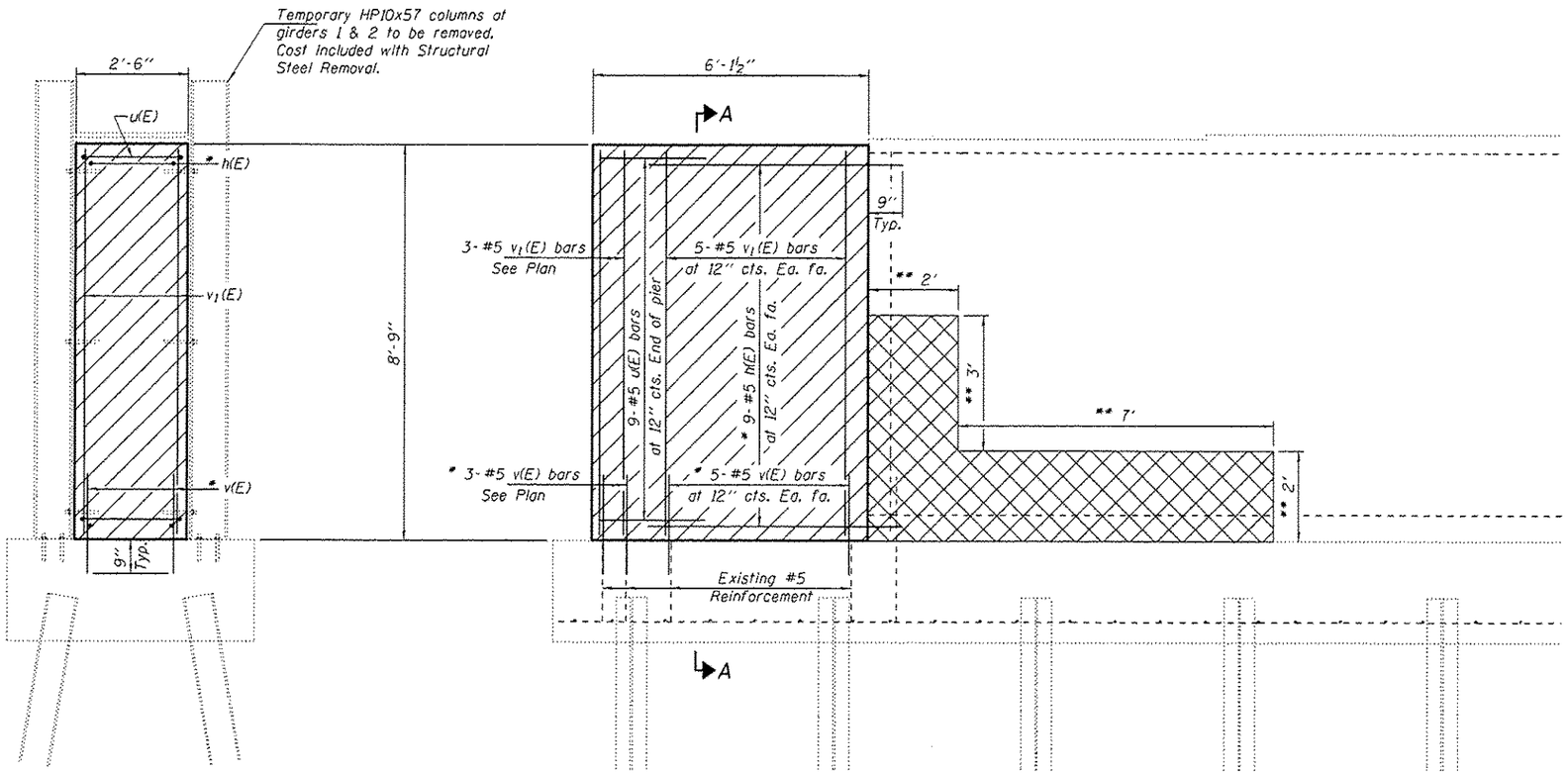
Notes:
All Posts shall be normal to parapet.
All joints in rail shall be spliced per detail.
All exposed rail ends shall be capped per detail.
Provide 1-⅛" and 2-1/16" Aluminum Shims for 25% of the Posts. Rail elements shall be parallel to Grade-high spots will be ground and low spots shimmed.

BILL OF MATERIAL

Item	Unit	Quantity
Remove and Re-erect Existing Handrail	Foot	46

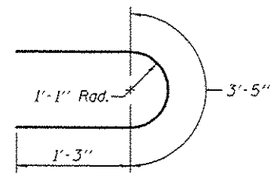
DESIGNED TLC	EXAMINED	Timothy A. Bollt — ACTING ENGINEER OF STRUCTURAL SERVICES	DATE AUGUST 30, 2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
CHECKED SMR	PASSED	M Carl Purvis — ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED	REPAIR DETAILS SN 053-0129
DRAWN baliva			REVISED	SHEET NO. 5 OF 7 SHEETS
CHECKED TLC SMR				

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	153-5B-1(-3	LIVINGSTON	15	13
		CONTRACT NO. 66D16		
	ILLINOIS FED. AID PROJECT			

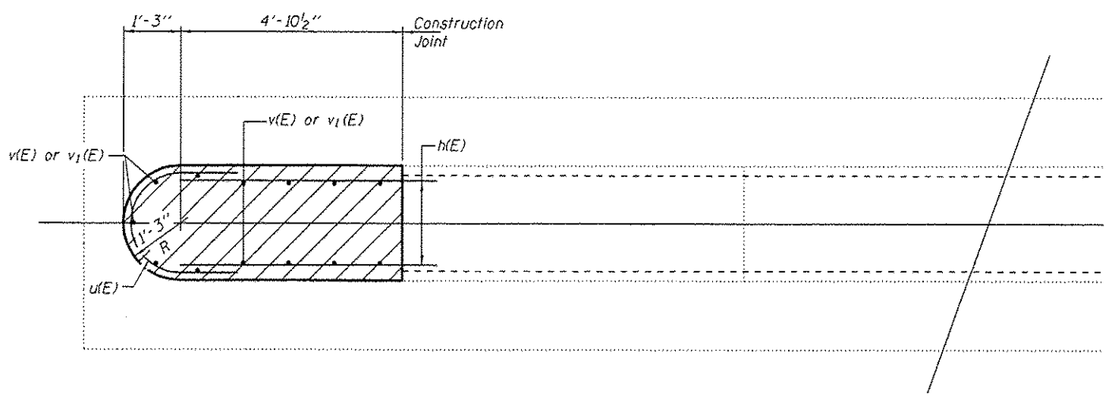


SECTION A-A

ELEVATION
(Looking North)



BAR u(E)



PLAN

Hatched areas indicate Concrete Removal and Concrete Structures.
Cross hatched areas Indicate Structural Repair of Concrete (Depth ≤ 5")

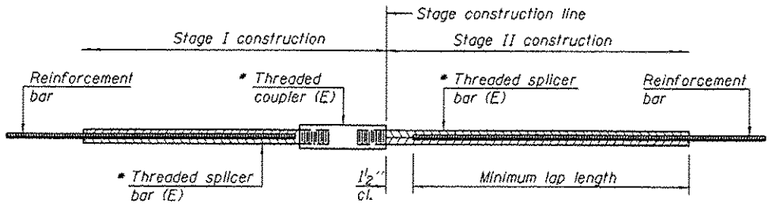
* Epoxy grout h(E) & v(E) bars in 9" min. holes according to Article 584 of the Standard Specifications.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	18	#5	5'-8"	——
u(E)	9	#5	5'-11"	⊃
v(E)	13	#5	2'-3"	——
v1(E)	13	#5	8'-6"	——
Concrete Removal			Cu. Yd.	4.7
Concrete Structures			Cu. Yd.	4.7
Reinforcement Bars, Epoxy Coated			Pound	310
** Structural Repair of Concrete (Depth ≤ 5")			Sq. Ft.	24

** Dimensions are approximate. Actual areas to be repaired & quantity to be established in the field by the engineer.

DESIGNED TLC	EXAMINED	Timothy A. Anglin ACTING ENGINEER OF STRUCTURAL SERVICES	DATE AUGUST 30, 2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PIER 1 REPAIR DETAILS SN 053-0129	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED SMR	PASSED	A. Carl Bunge ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED		SHEET NO. 6 OF 7 SHEETS	55	153-58-1H1-3	LIVINGSTON	15	14
DRAWN baliva			REVISED						CONTRACT NO. 66D16	
CHECKED TLC SMR								ILLINOIS FED. AID PROJECT		



STANDARD BAR SPLICER ASSEMBLY

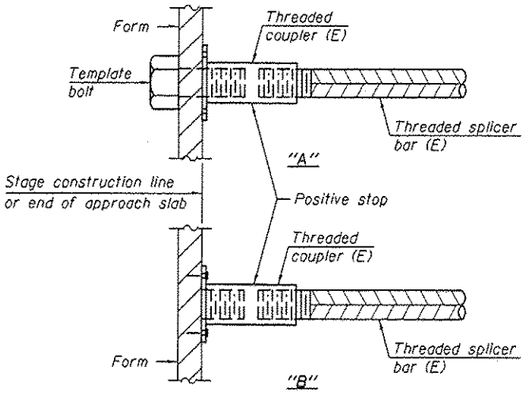
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"	6'-5"	6'-10"	7'-9"	8'-7"	9'-8"

Table 1: Black bar, 0.8 Class C
Table 2: Black bar, Top bar lap, 0.8 Class C
Table 3: Epoxy bar, 0.8 Class C
Table 4: Epoxy bar, Top bar lap, 0.8 Class C
Table 5: Epoxy bar, Class C
Table 6: Epoxy bar, Top bar top, Class C

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

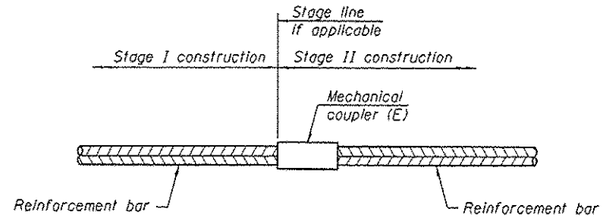
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length



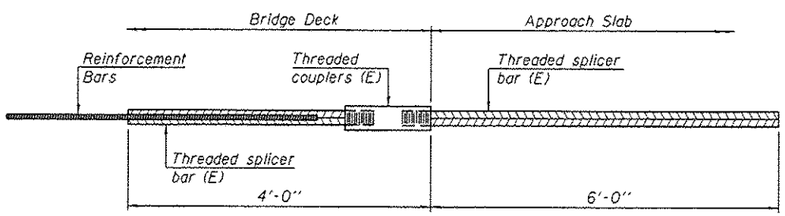
INSTALLATION AND SETTING METHODS

"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.



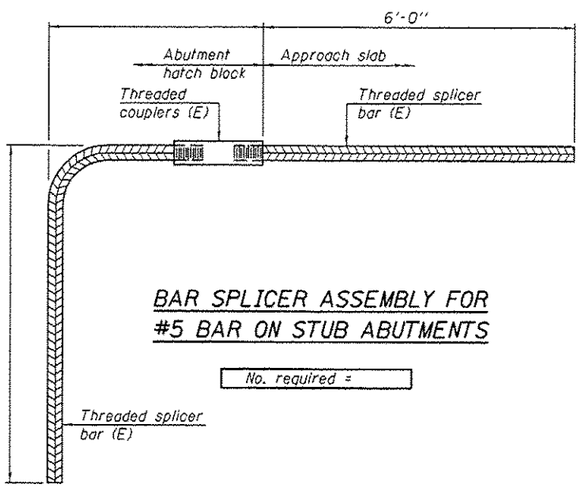
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
Parapet	#4	8
Parapet	#5	4
Parapet	#8	4
Deck	#5	68
Deck	#6	156



BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. 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 1-27-12

DESIGNED TLC	EXAMINED	Timothy A. Bollenbacher ACTING ENGINEER OF STRUCTURAL SERVICES	DATE AUGUST 30, 2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS SN 053-0129
CHECKED SMR	PASSED	D. Carl Peterson ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED		SHEET NO. 7 OF 7 SHEETS
DRAWN baliva			REVISED		
CHECKED TLC SMR					

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	153-5B-1H-3	LIVINGSTON	15	15
		CONTRACT NO. 66D16		
		ILLINOIS FED. AID PROJECT		