

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

VARIOUS ROUTES
VARIOUS LOCATIONS
SECTION: 2015-067BR
BRIDGE REPAIR; SIGN MAINTENANCE
COOK COUNTY

C-91-049-16

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	2015-067BR	COOK	27	1
ILLINOIS			CONTRACT NO. 62B49	

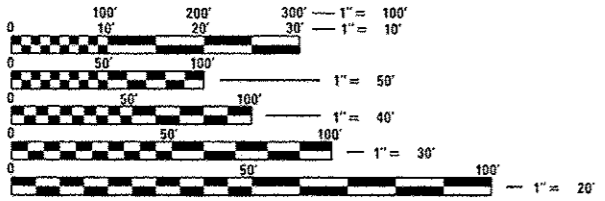
* 27 + 6 = 33 TOTAL SHEETS



FOR INDEX OF SHEETS, SEE SHEET NO. 2

IMPROVEMENT IS LOCATED IN THE
VILLAGES OF MAYWOOD AND WILMETTE

SEE LOCATION MAPS
SHEET 4



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 J. ALAIN MIDY (847) 221-3056
PROJECT MANAGER ISSAM RAYYAN (847) 705-4178

CONTRACT NO. 62B49

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED October 28, 2015
John F. Baranelli
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

Dec 4, 2015
John D. Baranelli P.E.
ENGINEER OF DESIGN AND ENVIRONMENT

Dec 4, 2015
Omor Osman P.E.
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER




PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

REVISÉ 12-29-15

INDEX OF SHEETS

STATE STANDARDS

GENERAL NOTES

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3. SUMMARY OF QUANTITIES	643001-02	SAND MODULE IMPACT ATTENUATORS
4. LOCATION MAPS	701400-08	APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY
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14-16. TRAFFIC CONTROL STAGING PLANS (SN 016-0545)	701427-03	LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPERATIONS, FOR SPEEDS \leq 40 MPH
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** 21-22. BRIDGE PLANS (SN 016-0699) 	701411-09	LANE CLOSURE, MULTILANE, AT ENTRANCE OR EXIT RAMP, FOR SPEEDS \geq 45 MPH
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26. ARTERIAL ROAD INFORMATION SIGN (TC-22) 	701901-04	TRAFFIC CONTROL DEVICES
26A. ENTRANCE AND EXIT RAMP CLOSURE DETAILS (TC-08) 	704001-07	TEMPORARY CONCRETE BARRIER

* INCLUDES SHEET 5A.

** INCLUDES SHEETS 21A-21D AND 22A. 

BEFORE STARTING ANY EXCAVATION, THE CONTRACTOR SHALL CALL "J.U.L.I.E." AT (800) 892-0123 OR 811 FOR FIELD LOCATIONS OF BURIED ELECTRIC, TELEPHONE, AND GAS FACILITIES. (48 HOUR NOTIFICATION REQUIRED).

THE CONTRACTOR WILL NOT BE ALLOWED TO SET UP A YARD OR FIELD OFFICE ON STATE PROPERTY WITHOUT THE WRITTEN PERMISSION OF THE DEPARTMENT.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO CONSTRUCTION AND ORDERING OF MATERIALS.

THE CONTRACTOR SHALL CONTACT THE DISTRICT ONE TRAFFIC CONTROL SUPERVISOR AT (847) 705-4470 FOR ARTERIALS AND (847) 705-4155 FOR EXPRESSWAYS A MINIMUM OF 72 HOURS IN ADVANCE OF BEGINNING WORK.

DO NOT SCALE PLANS FOR CONSTRUCTION DIMENSIONS.

THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES, AND THE VILLAGES OF MAYWOOD AND WILMETTE.

THESE PLANS HAVE BEEN PREPARED FROM NOTES RECEIVED FROM THE BUREAU OF MAINTENANCE BRIDGE INSPECTORS.

THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ACCESS TO ABUTTING PROPERTY AT ALL TIMES DURING THE CONSTRUCTION OF THIS PROJECT.

THE "ARTERIAL ROAD INFORMATION SIGN (TC-22)" IS APPLICABLE ONLY TO ARTERIAL ROAD AND SHALL NOT BE APPLIED TO EXPRESSWAYS/TOLLWAYS.

FOR LOC 2) (SN 016-0692) A BARRICADE OR DRUM WITH FLASHING LIGHTS SHALL BE PLACED ON THE SIDEWALK ON EITHER SIDE OF TEMPORARY SLAB SUPPORT SYSTEM. COST INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION STANDARD 701801.

 REVISED 12-29-15

FILE NAME : pm\11004EBIDINTEG\illinois.gov\11001\00	USER NAME : pgrzenowakrb	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	INDEX OF SHEETS, STATE STANDARDS AND GENERAL NOTES	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
documents\DOT of Illinois\District 1\Projects\018-01-01\018-01-01\Design\0184916-ahs-plan.dgn	CHECKED -	REVISED -	VAR.			2015-0678R	COOK	26	2	
PLT SCALE = 100.0000' / 1"	CHECKED -	REVISED -	CONTRACT NO. 62849							
PLT DATE = 11/5/2015	DATE -	REVISED -	ILLINOIS FED. AID PROJECT							
Default				SCALE:	SHEET OF SHEETS	STA.	TO STA.			

URBAN

2

3

URBAN

SUMMARY OF QUANTITIES			CONSTRUCTION TYPE CODE					
CODE NO	ITEM	UNIT	TOTAL QUANTITIES	016-0545 0014	MCHD 782303 016-0692 0014	016-0699 0014	016-0545 0021	MCHD 782303 016-0692 0021
50102400	CONCRETE REMOVAL	CU YD	6.0	2.1	3.9			
50300255	CONCRETE SUPERSTRUCTURE	CU YD	6.0	2.1	3.9			
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	38900	23370	15530			
52100520	ANCHOR BOLT, 1"	EACH	2	2				
67100100	MOBILIZATION	LSUM	1	0.33	0.33	0.34		
70102630	TRAFFIC CONTROL AND PROTECTION, STANDARD 701601	L SUM	1		1			
70102640	TRAFFIC CONTROL AND PROTECTION, STANDARD 701801	L SUM	1		1			
70200100	NIGHTTIME WORK ZONE LIGHTING	LSUM	1	0.33	0.33	0.34		
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SO FT	287	287				
70400100	TEMPORARY CONCRETE BARRIER	FOOT	250	250				
* 72000200	SIGN PANEL - TYPE 2	SO FT	23.75			23.75		
* 72000300	SIGN PANEL - TYPE 3	SO FT	322.75			123	199.75	
* 73304000	OVERHEAD SIGN STRUCTURE - BRIDGE MOUNTED	FOOT	44.5			21	23.5	
* 73602000	REMOVE OVERHEAD SIGN STRUCTURE - BRIDGE MOUNTED	EACH	2			1	1	
* 78000200	THERMOPLASTIC PAVEMENT MARKING - LINE 4"	FOOT	202	202				
* 78200530	BARRIER WALL MARKERS, TYPE C	EACH	9	9				
1/3 78300100	PAVEMENT MARKING REMOVAL	SO FT	68	68				

SUMMARY OF QUANTITIES			CONSTRUCTION TYPE CODE					
CODE NO	ITEM	UNIT	TOTAL QUANTITIES	016-0545 0014	MCHD 782303 016-0692 0014	016-0699 0014	016-0545 0021	MCHD 782303 016-0692 0021
* 84200600	REMOVAL OF LIGHTING UNIT, NO SALVAGE	EACH	3	3				
X7010218	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	EACH	1	1				
X7011015	TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS)	LSUM	1	0.33	0.33	0.34		
X7030030	WET REFLECTIVE TEMPORARY TAPE TYPE III, 4 INCH	FOOT	861	861				
X7380150	REMOVE AND RE-ERECT OVERHEAD SIGN STRUCTURE - BRIDGE MOUNTED, SPECIAL	EACH	1				1	
Z0001903	STRUCTURAL STEEL REMOVAL	POUND	38180	22880	15020	280		
Z0001905	STRUCTURAL STEEL REPAIR	POUND	540			540		
Z0003600	BEAM STRAIGHTENING	LSUM	1	0.4	0.4	0.2		
Z0073300	TEMPORARY SHORING AND CRIBBING	L SUM	1	0.5	0.5			
Z0073351	TEMPORARY SLAB SUPPORT SYSTEM	L SUM	1	0.5	0.5			

* Specialty Items

FILE NAME :	USER NAME : ar2010rsh10	DESIGNED -	REVISED -
Office/District/Projects/CD/DB/CA/DO/Design/00495-DRAWING		REVISION -	REVISION -
PLOT SCALE : 1/8" = 1'-0"		CHECKED -	REVISION -
PLOT DATE : 11/5/2015		DATE -	REVISION -

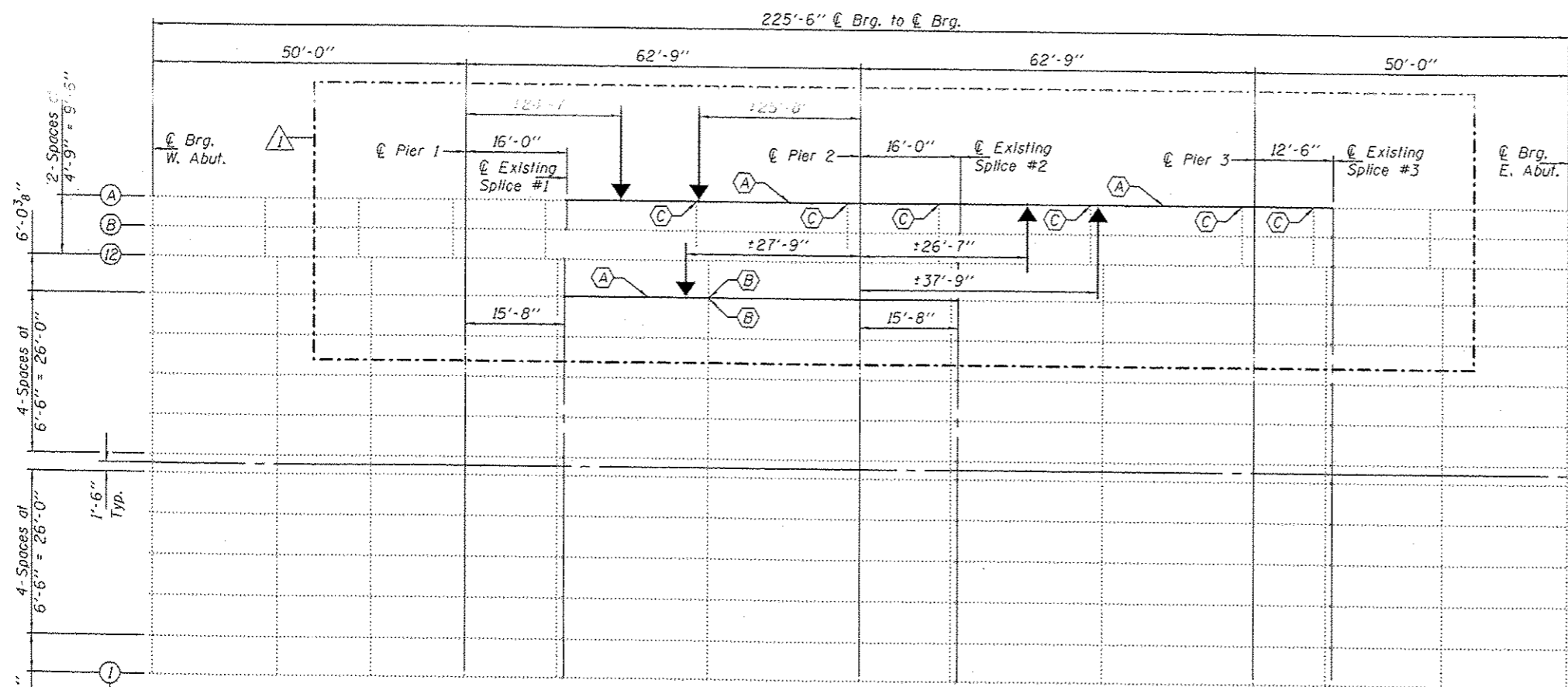
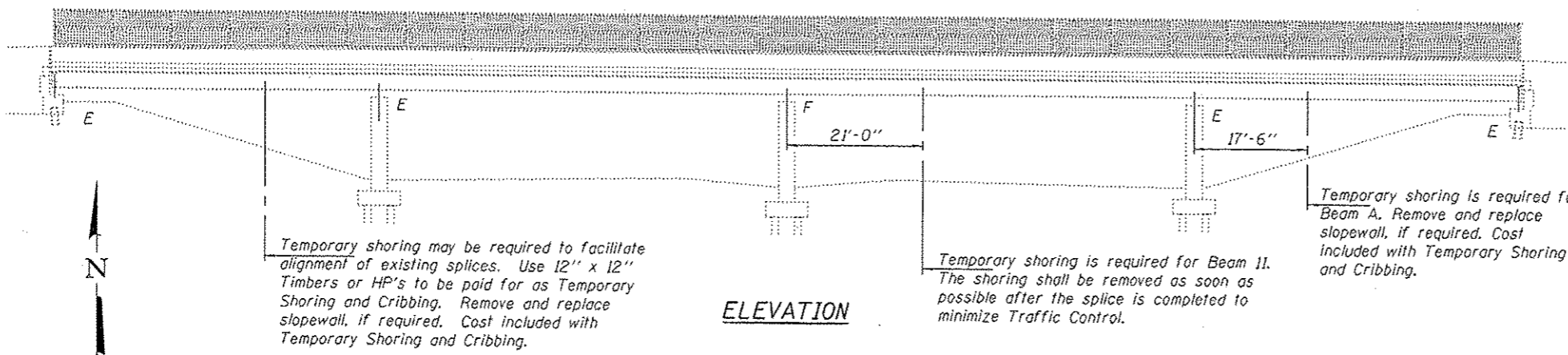
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES		F.A. RATE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
SCALE:	SHEET NO. OF SHEETS STA. TO STA.	VAR.	2015-0678R	COOK	26	3
		FED. ROAD DIST. NO. 1 ILLINOIS		FED. AID PROJECT		

REVISOR 12-29-15

GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.
 Fasteners shall be high strength bolts. Flange splice holes shall be $\frac{15}{16}$ " ϕ for $\frac{7}{8}$ " ϕ bolts. Web splice holes shall be $\frac{13}{16}$ " ϕ for $\frac{3}{4}$ " ϕ bolts, unless otherwise noted.
 Diaphragm connection holes shall be $\frac{15}{16}$ " ϕ for $\frac{3}{4}$ " ϕ bolts. Two hardened washers shall be required at diaphragm connections.
 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."
 After the new beam is in its final position and/or beam straightening operations have been completed, the Engineer in the field shall check to see that the top flange is tight against the slab. If not, the Contractor shall inject epoxy between the existing concrete deck and the top flange of the beam. See Special Provision "Epoxy Injection".
 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.



- (A) - Remove & Replace Beam Segment
- (B) - Remove & Replace Bottom Clip Angles
- (C) - Remove & Replace Top & Bottom Clip Angles

BEAM "A" AT PIERS 1 & 3

REACTION TABLE AT TEMPORARY SHORING		
R ϕ	(K)	53
R $\frac{1}{2}$	(K)	33
Imp.	(K)	9
R (Total)	(K)	95

BEAM "A" AT PIER 2

REACTION TABLE AT TEMPORARY SHORING		
R ϕ	(K)	54
R $\frac{1}{2}$	(K)	34
Imp.	(K)	9
R (Total)	(K)	97

BEAM 11 AT PIERS 1 & 3

REACTION TABLE AT TEMPORARY SHORING		
R ϕ	(K)	59
R $\frac{1}{2}$	(K)	42
Imp.	(K)	12
R (Total)	(K)	113

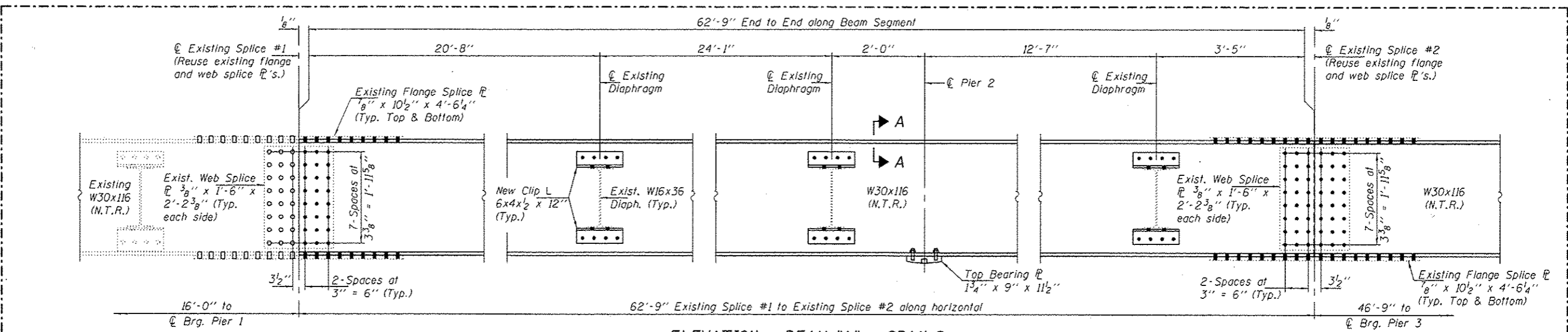
BEAM 11 AT PIER 2

REACTION TABLE AT TEMPORARY SHORING		
R ϕ	(K)	59
R $\frac{1}{2}$	(K)	43
Imp.	(K)	12
R (Total)	(K)	114

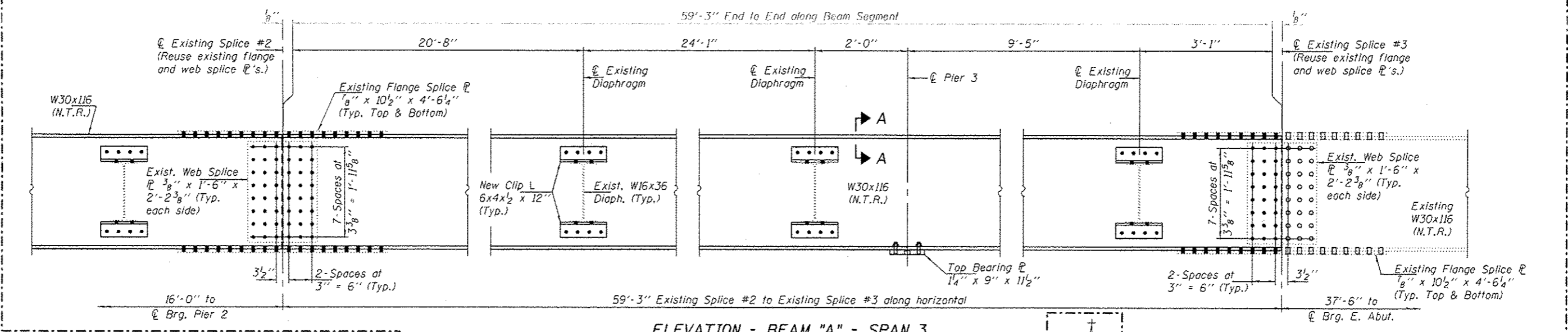
TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	2.1
Concrete Superstructure	Cu. Yd.	2.1
Structural Steel Removal	Pound	22,880
Furnishing & Erecting Structural Steel	Pound	23,370
Beam Straightening	L.S.	0.4
Anchor Bolts, 1" ϕ	Each	2
Temporary Shoring and Cribbing	L.S.	0.5
Temporary Slab Support System	L.S.	0.5
Remove Overhead Sign Structure - Bridge Mounted	Each	1
Overhead Sign Structure - Bridge Mounted	Foot	21.0

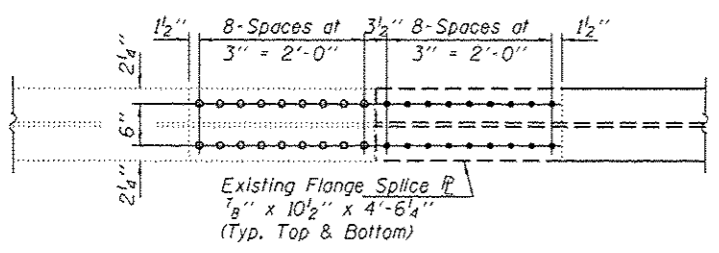
DAVID CARL PUZEY
 081-005470
 SPRINGFIELD ILLINOIS
 STATE OF ILLINOIS
 EXPIRES 11-30-2016



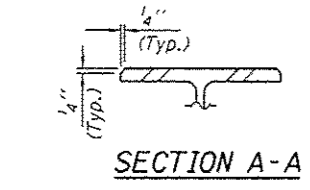
ELEVATION - BEAM "A" - SPAN 2
(Looking North)



ELEVATION - BEAM "A" - SPAN 3
(Looking North)

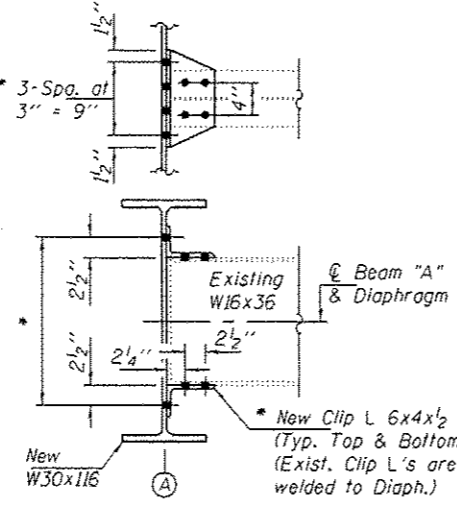


TYPICAL FLANGE SPLICE

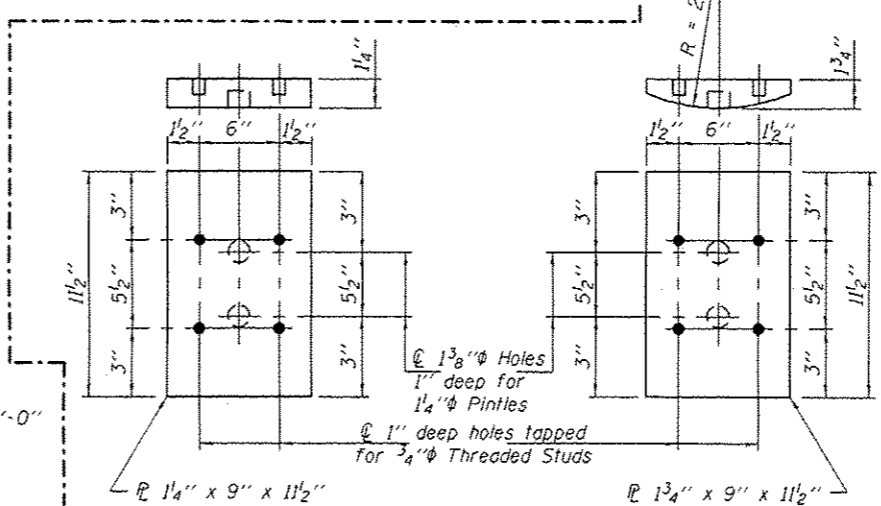


SECTION A-A

* Field drill holes in new beam and existing diaphragms using holes in new clip L's as template. Existing clip L's shall be removed using the air-arc method. Cost included with Structural Steel Removal.

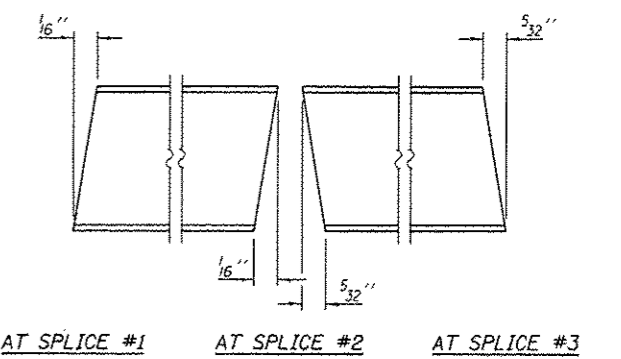


TYPICAL DIAPHRAGM CONNECTION AT BEAM "A"



TOP BEARING PLATE AT PIER 3

TOP BEARING PLATE AT PIER 2



BEAM "A" END DETAILS

DESIGNED SMR	DATE NOVEMBER 25, 2015	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	F.A.I. RTE. VAR	SECTION 2015-067BR	COUNTY COOK	TOTAL SHEETS 26	SHEET NO. 8
CHECKED CCC	REVISED 12/10/15	BEAM REPLACEMENT & BEARING DETAILS FOR BEAM A SN 016-0545	CONTRACT NO. 62B49		ILLINOIS FED. AID PROJECT		
DRAWN Steffen	REVISOR	SHEET NO. 5 OF 9 SHEETS					
CHECKED SMR CCC	ACTING ENGINEER OF BRIDGES AND STRUCTURES						

GENERAL NOTES

SPECIFICATIONS:

DESIGN: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. ("AASHTO Specifications") ②

CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Special Provisions. ("Standard Specifications")

LOADING: 90 M.P.H. WIND VELOCITY

WALKWAY LOADING: Dead load plus 500 lbs. concentrated live load.

MINIMUM CLEARANCE: 3" greater than bridge members at all locations. (All Obstructions)

WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 Structural Welding Code (Steel) and the Standard Specifications.

MATERIALS: All Structural Steel Pipe shall be ASTM A53 Grade B with a minimum yield of 35,000 p.s.i., or A500 Grade B or C with a minimum yield of 46,000 p.s.i. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53.

All Structural Steel Plates and Shapes shall conform to AASHTO M270 Gr. 36, Gr. 50 (M183, M223 Gr. 50).

HIGH STRENGTH BOLTS: All bolts, washers, nuts and locknuts shall satisfy the requirements of ASTM designation A307 unless noted as "H.S." which shall require AASHTO M164 (A325), ASTM A449, or approved alternate. All fasteners shall be hot dip galvanized per AASHTO M232 unless otherwise specified.

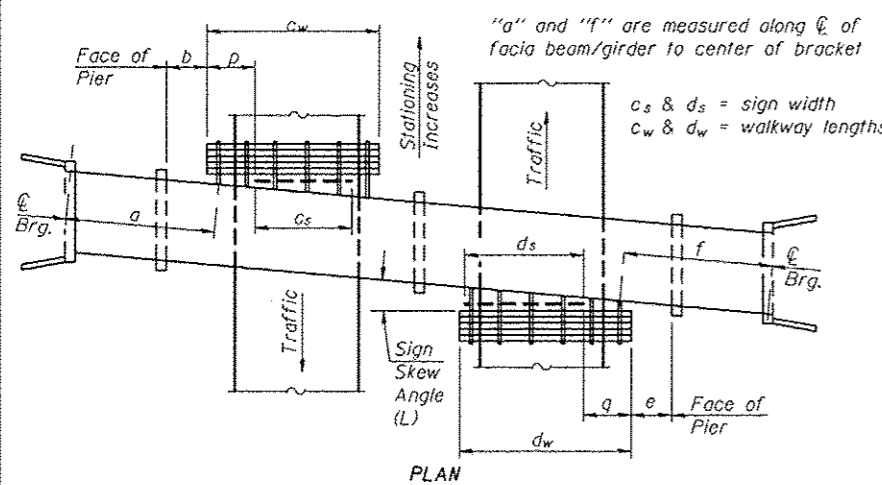
GALVANIZING: All Steel Grating, Plates, Shapes and Pipe shall be Hot Dip Galvanized after fabrication in accordance with AASHTO M111. Painting is not permitted.

ANCHOR RODS: All-threaded rod shall conform to ASTM F1554 Grade 105, 3/4" ϕ x 12" long, each with one plate washer and locknut and be hot dip galvanized per AASHTO M232. They shall be either cast into the concrete or epoxy grouted in accordance with Section 584 of the Standard Specifications. Minimum embedment in concrete shall be 9".

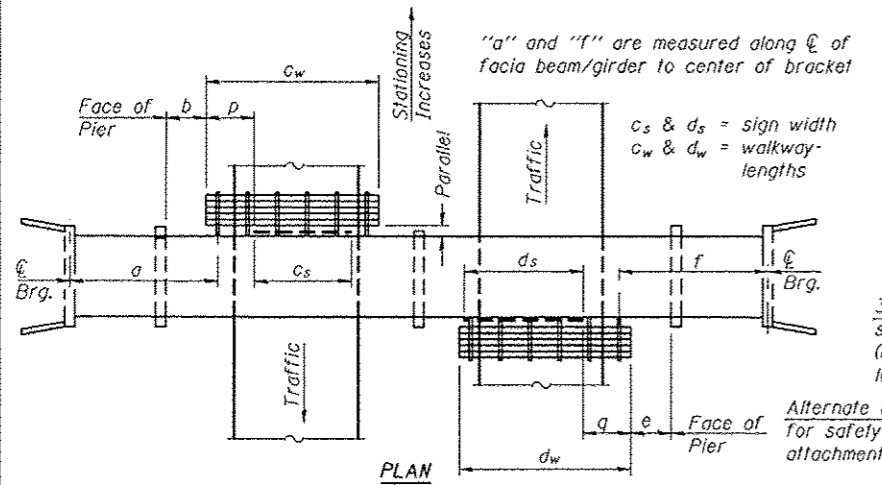
- ① Bracket spacing $g \leq 6'-0"$, max. Spacing shall be uniform if possible but may vary $\pm 6"$ to miss existing obstruction (rail post, light poles, web stiffeners, splice plates, etc.). Adjust bracket lengths accordingly on skewed structures.
- ② Any design modifications shall be based on the current version of applicable specifications and submitted for the Engineer's approval.
- ③ Unit price includes grating, handrail, brackets, supports, anchor bolts, fasteners, fabrication, delivery, erection, field drilling and other necessary items. Limits of payment are based on grating length (c_w , d_w) unless otherwise specified. For Safety Chain Details and Details D, F and G, see Base Sheet BM-4.
- ④ If walkway bracket at safety chain location is behind sign, add angle to bracket. See detail on Base Sheet BM-4.
- ⑤ The Contractor shall verify sign placement with the Engineer prior to obtaining field measurements and installing the sign.

TOTAL BILL OF MATERIAL

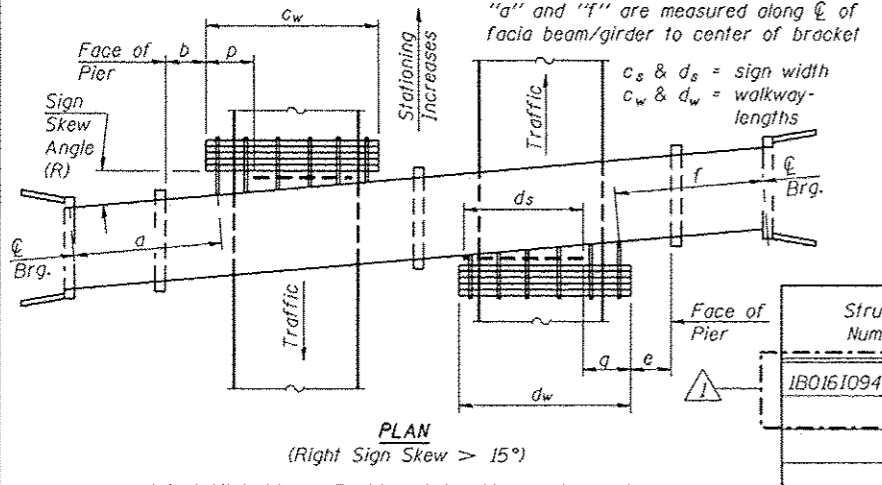
③ OVERHEAD SIGN STRUCTURE - BRIDGE MOUNTED	Foot	21.0
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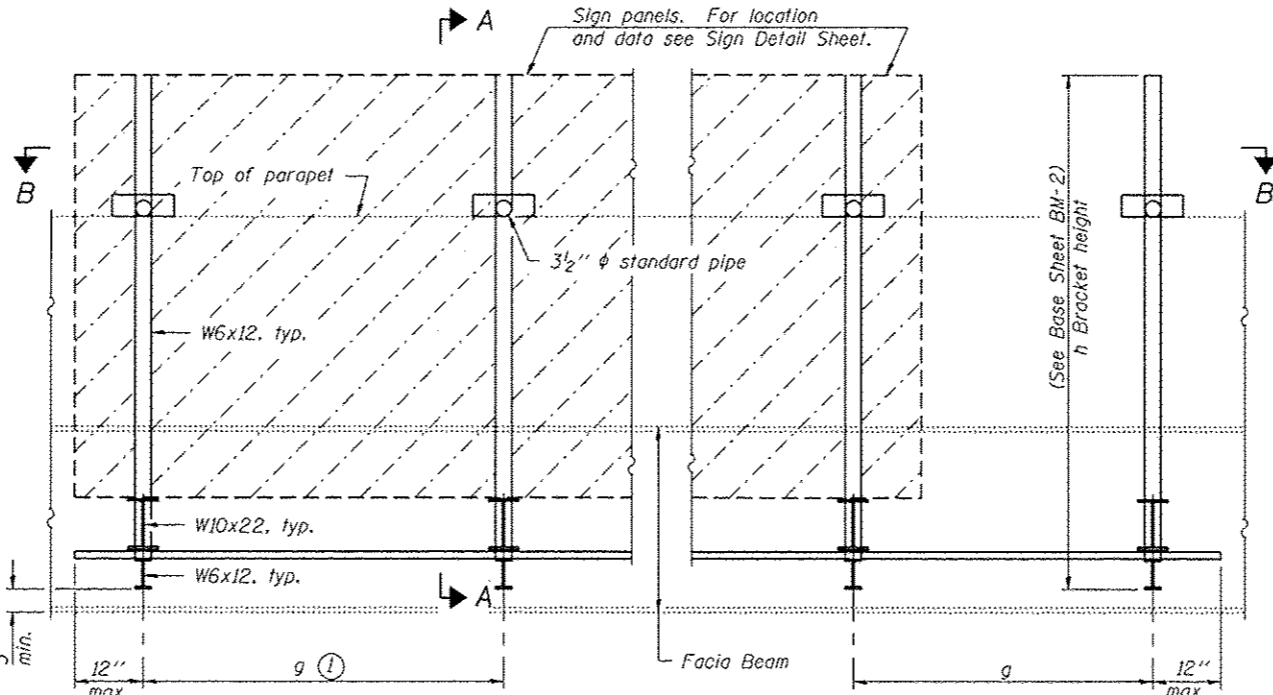
PLAN
(Left Sign Skew > 15°)
WALKWAY AND HANDRAIL SKETCH
(Road plan beneath structure varies.)



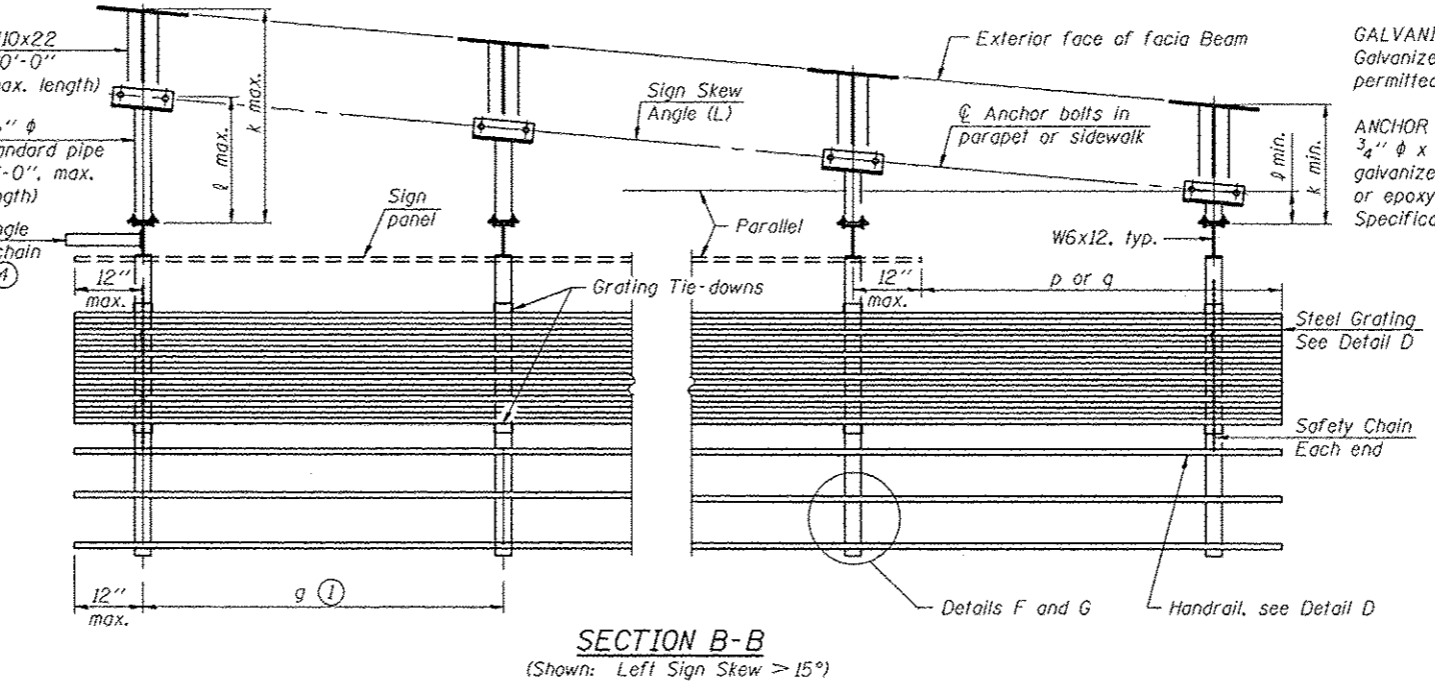
PLAN
(For Sign Skew $\leq 15^\circ$, all brackets constant)
WALKWAY AND HANDRAIL SKETCH
(Road plan beneath structure varies.)



PLAN
(Right Sign Skew > 15°)
WALKWAY AND HANDRAIL SKETCH
(Road plan beneath structure varies.)



TYPICAL FRONT ELEVATION
(With lights, safety chain and handrail omitted for clarity.)



SECTION B-B
(Shown: Left Sign Skew > 15°)

Structure Number	Sign Skew Angle (L) or (R)	Bridge Station	Bridge Structure Number	Contract Route Designation	a	b	c _s	c _w	d _s	d _w	e	f	g	No. of Brackets (Total)	p	q	Total Grating/Handr. Lengths (c _w + d _w)
1B0161094R034.6			016-0545	SBI-94	⑤	⑤	246"	0	0	0	0	0	55"	5	0	0	0

Dimensions a, b, e, f & g may vary as approved by the Engineer, see ①.
When $c_w < c_s$ and/or $d_w < d_s$, use alternate brackets without walkway supports where applicable, see ③.

BM-1 6-1-12

DESIGNED SMR	CHECKED CCC	DRAWN Steffen	CHECKED SMR CCC
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PASSED
ACTING ENGINEER OF BRIDGES AND STRUCTURES
Carl Perry

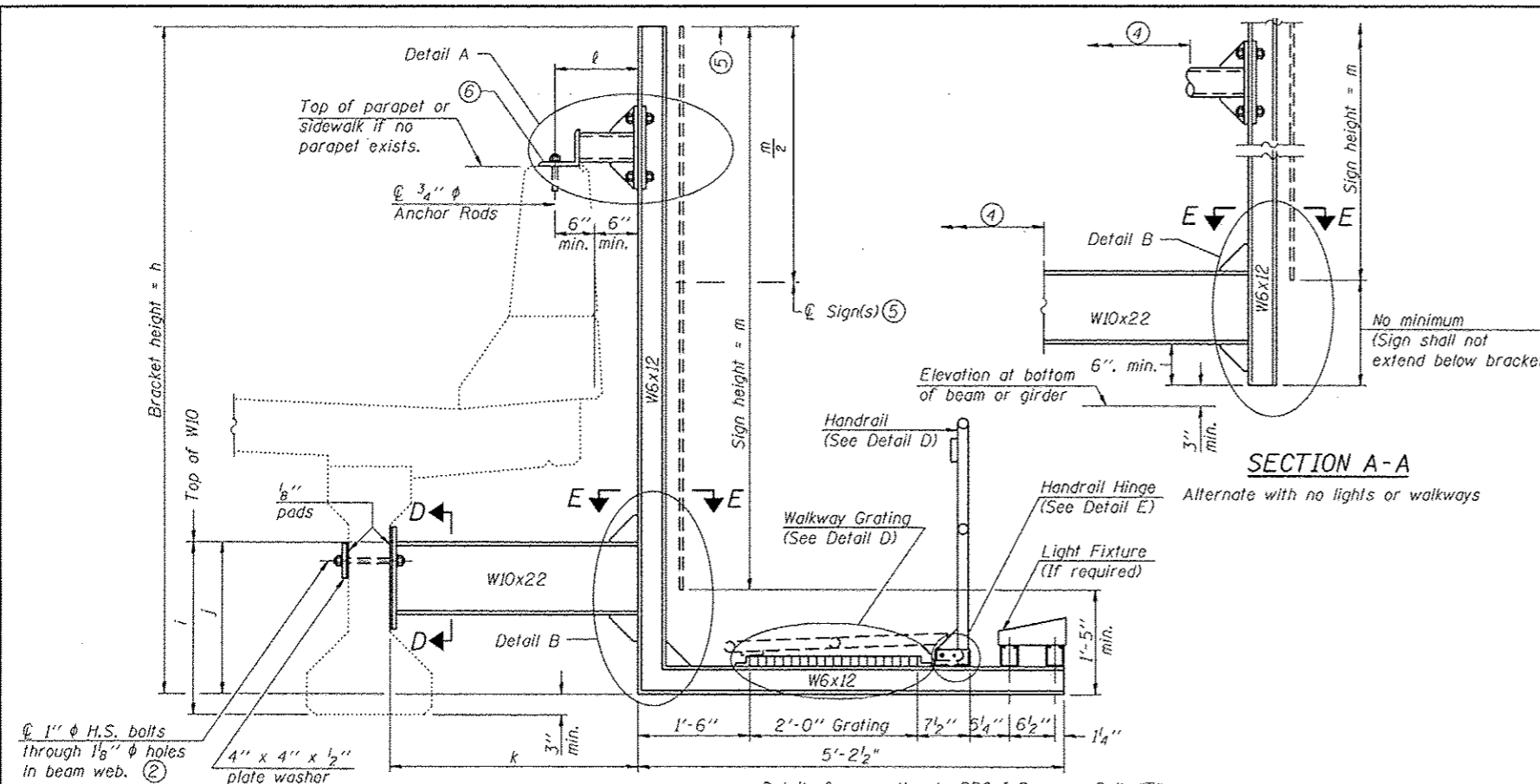
DATE NOVEMBER 25, 2015	REVISED 12/23/15 RP
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

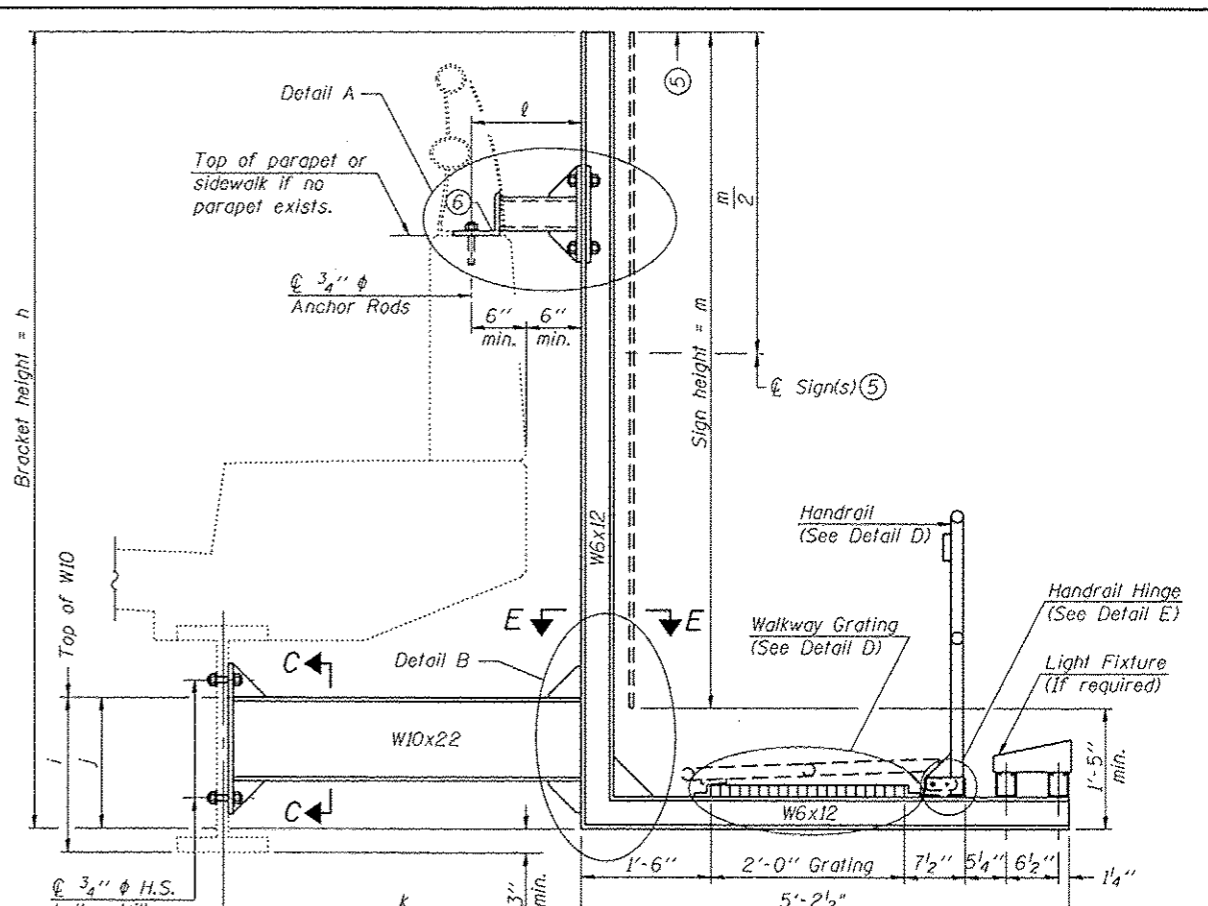
BRIDGE MOUNT SIGN STRUCTURES - GENERAL PLAN AND ELEVATION
SN 016-0545

SHEET NO. 6 OF 9 SHEETS

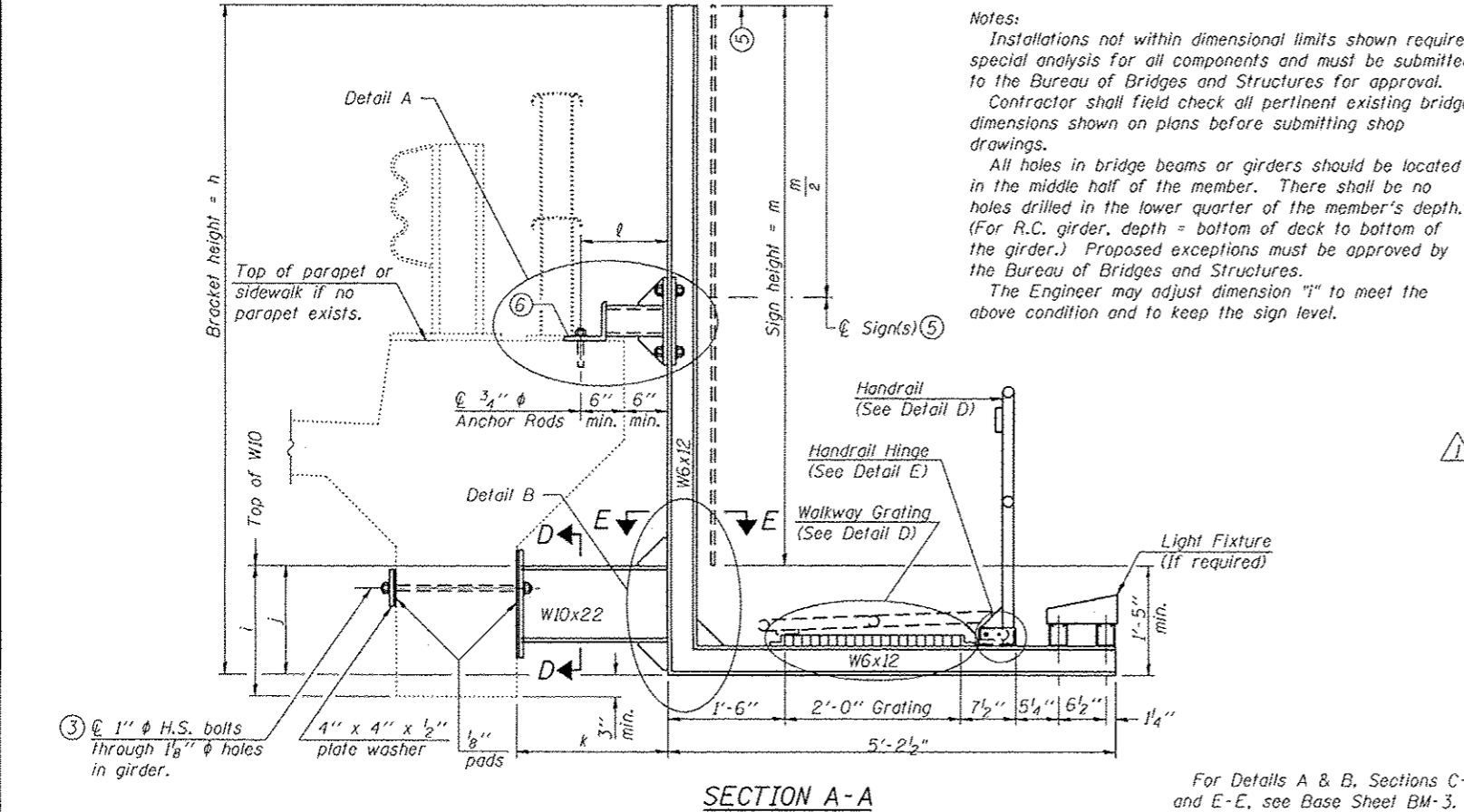
F.A.I. RTE. VAR	SECTION 2015-067BR	COUNTY COOK	TOTAL SHEETS 26	SHEET NO. 9
CONTRACT NO. 62849			ILLINOIS FED. AID PROJECT	



SECTION A-A Details for mounting to PPC I Beam or Bulb "T" & Details for mounting to parapet w/o rail



SECTION A-A Details for mounting to steel beam or girder & Details for mounting with existing parapet mounted rail



SECTION A-A Details for mounting to integral reinforced concrete girder & Details for mounting on safety curb with surface-mount bridge rail

Notes:
 Installations not within dimensional limits shown require special analysis for all components and must be submitted to the Bureau of Bridges and Structures for approval. Contractor shall field check all pertinent existing bridge dimensions shown on plans before submitting shop drawings.
 All holes in bridge beams or girders should be located in the middle half of the member. There shall be no holes drilled in the lower quarter of the member's depth. (For R.C. girder, depth = bottom of deck to bottom of the girder.) Proposed exceptions must be approved by the Bureau of Bridges and Structures.
 The Engineer may adjust dimension "i" to meet the above condition and to keep the sign level.

- ① Holes in new steel members may be drilled in the fabrication shop or in the field. Field drill existing members.
- ② For new PPC I beams, holes shall be formed during casting. For existing PPC I beams, prestressing strand locations shall be determined and spaced to miss strands by 6", min. Minimize spalling during field drilling of existing beams.
- ③ For new construction, form holes. For existing RC beams, locate primary reinforcement and space holes to miss by 6", min. Minimize spalling and concrete fracturing/damage during field drilling of existing concrete. Spalls over 1/4" deep or beyond the coverage of the 4x4 plate washer shall be repaired with epoxy mortar before installing washer.
- ④ For attachment details of 3/2" pipe and W10x22, see other sections as applicable.
- ⑤ Sign shall not extend more than 6" above top of bracket, and this dimension may vary to keep sign level if bridge is on grade or vertical curve. Multiple signs of various heights shall share a common horizontal centerline and use equal bracket heights. If no sign is attached to a W6x12 vertical (bracket only supporting walkway), dimension h shall be the same as an adjacent bracket with a sign attached, unless Engineer specifically directs shorter brackets due to locational restraints on future uses. (See Detail A for minimum bracket height.)
- ⑥ For bridge mounted sign structures installed on new bridges with railing, during design, bracket spacing must be coordinated with railing post spacing and the Contractor must install upper brackets prior to railing installation. For bridge mounted sign structures installed on existing bridges with railing, during design, brackets spacing must be coordinated with railing post spacing and the Contractor must temporarily remove sections of railing to facilitate upper bracket installation. If it is determined during design that existing railings can't be removed, alternate upper connection details must be developed for the contract plans and approved by the Bureau of Bridges and Structures.
- ⑦ Contractor is responsible to obtain field measurements prior to ordering materials.

Structure Number	Station	h	i	j	k max. (10'-0" max.)	l max. (8'-0" max.)	m (15'-0" max.)
1B0161094R034.6		119" & 89"	Match exist.	Match exist.	(7)	(7)	102" & 72"

For Details A & B, Sections C-C, D-D and E-E, see Base Sheet BM-3.
 For Details D & E, see Base Sheet BM-4.

BM-2 6-1-12

DESIGNED SMR	CHECKED CCC
DRAWN Steffen	CHECKED SMR CCC

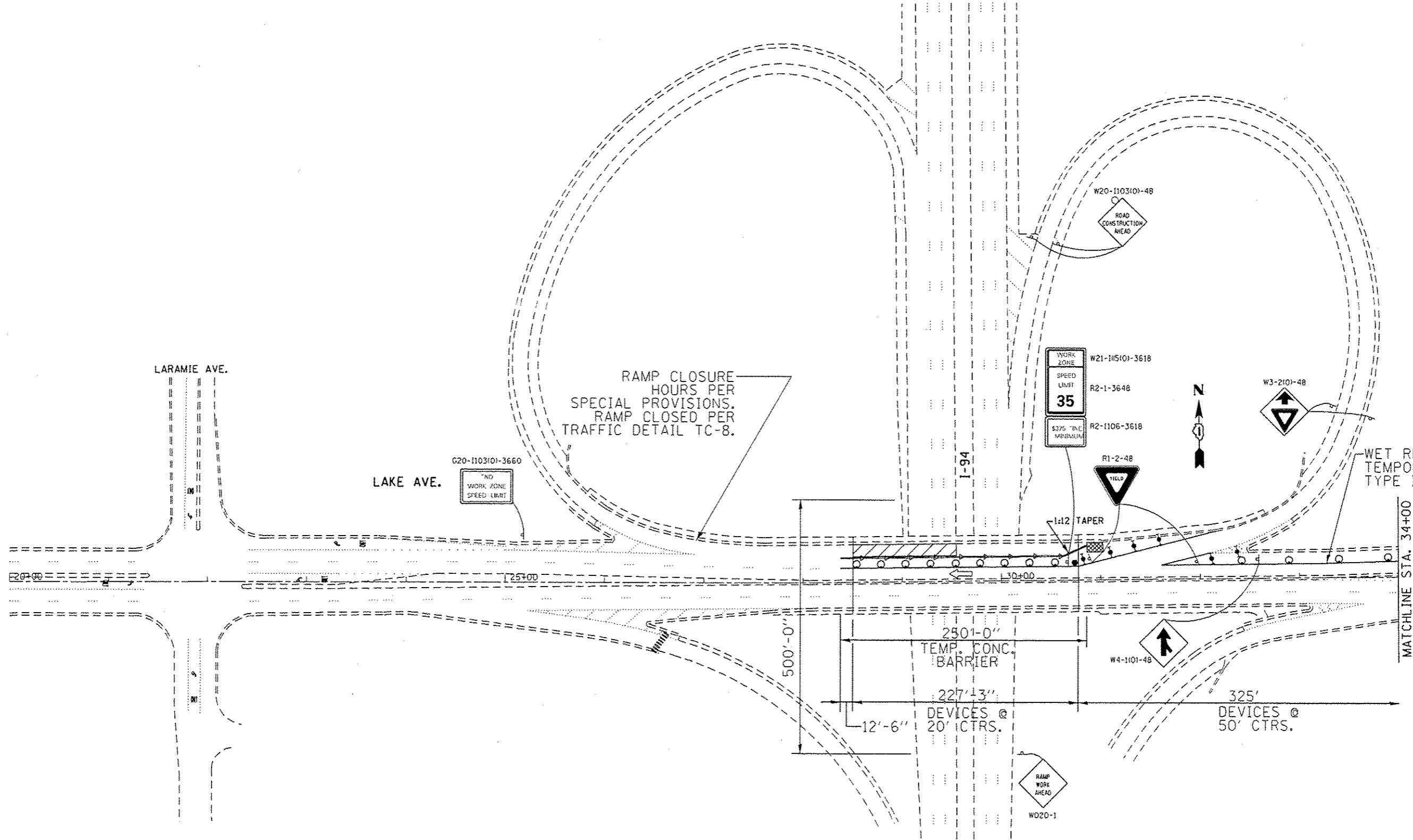
PASSED
 ACTING ENGINEER OF BRIDGES AND STRUCTURES

DATE NOVEMBER 25, 2015
REVISED 12/23/15 RP
REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BRIDGE MOUNT SIGN STRUCTURES - WALKWAY & CONNECTION DETAILS
 SN 016-0545
 SHEET NO. 7 OF 9 SHEETS

F.A.I. RTE. VAR	SECTION 2015-067BR	COUNTY COOK	TOTAL SHEETS 26	SHEET NO. 10
CONTRACT NO. 62B49			ILLINOIS FED. AID PROJECT	



RAMP CLOSURE
HOURS PER
SPECIAL PROVISIONS.
RAMP CLOSED PER
TRAFFIC DETAIL TC-8.

2501'-0"
TEMP. CONC.
BARRIER

227'-13"
DEVICES @
20' CTRS.

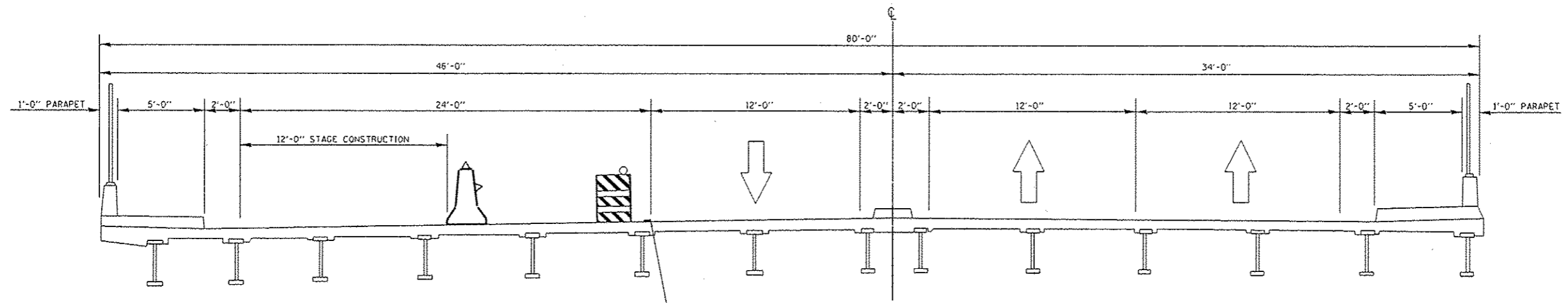
12'-6"

325'
DEVICES @
50' CTRS.

WET REFLECTIVE
TEMPORARY TAPE
TYPE II, WHITE 4"

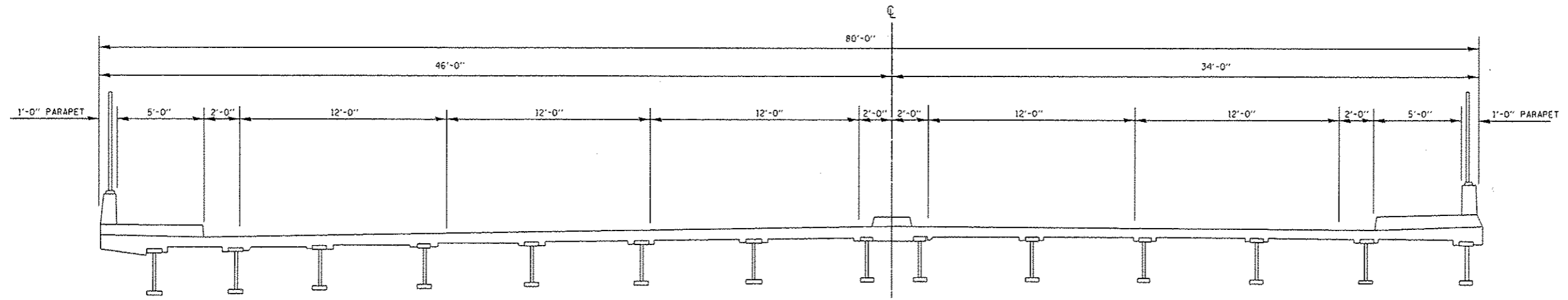
1 Revised Sheet 12-23-15 RP

FILE NAME =	USER NAME = pyzanoski	DESIGNED -	REVISED - 12-23-15 RP	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	LAKE AVE. (LARAMIE AVE. - U.S. ROUTE 41)		F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
PROJECT =	PROJECT DATA =	CHECKED -	REVISED -		SCALE: 1"=50'	SHEET OF SHEETS	STA. TO STA.	VAR.	2015-067BR	COOK	26	14
PLOT SCALE = 100.0000 / in.	CHECKED -	REVISED -	REVISED -		CONTRACT NO. 62B49							
PLOT DATE = 12/23/2015	DATE -	REVISED -	REVISED -		ILLINOIS FED. AID PROJECT							



WET REFLECTIVE
TEMPORARY TAPE
TYPE II, WHITE 4"

STAGE CROSS SECTION
(LOOKING EAST)



CROSS SECTION
(LOOKING EAST)

1 Revised Sheet 12-23-15 RP

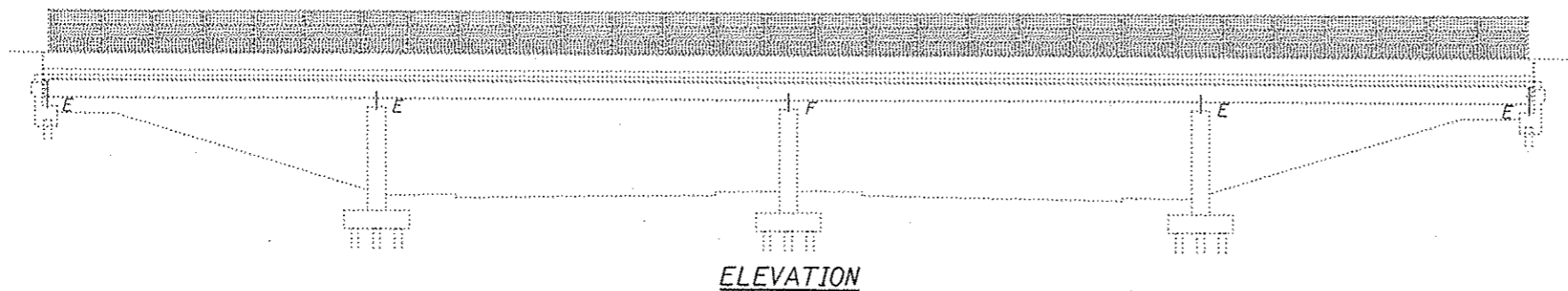
FILE NAME *	USER NAME = pyzanoski	DESIGNED -	REVISED - 12-23-15 RP
pw\11.004EBID\INTEG\illinois.gov\PI007\Documents\1007 Offices\District 1\Projects\0184\BRM\0184\Design\0184916-shr-plan.dgn		CHECKED -	REVISED -
Default	PLOT SCALE = 100.0000 1/16 in.	DATE -	REVISED -
	PLOT DATE = 12/23/2015		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

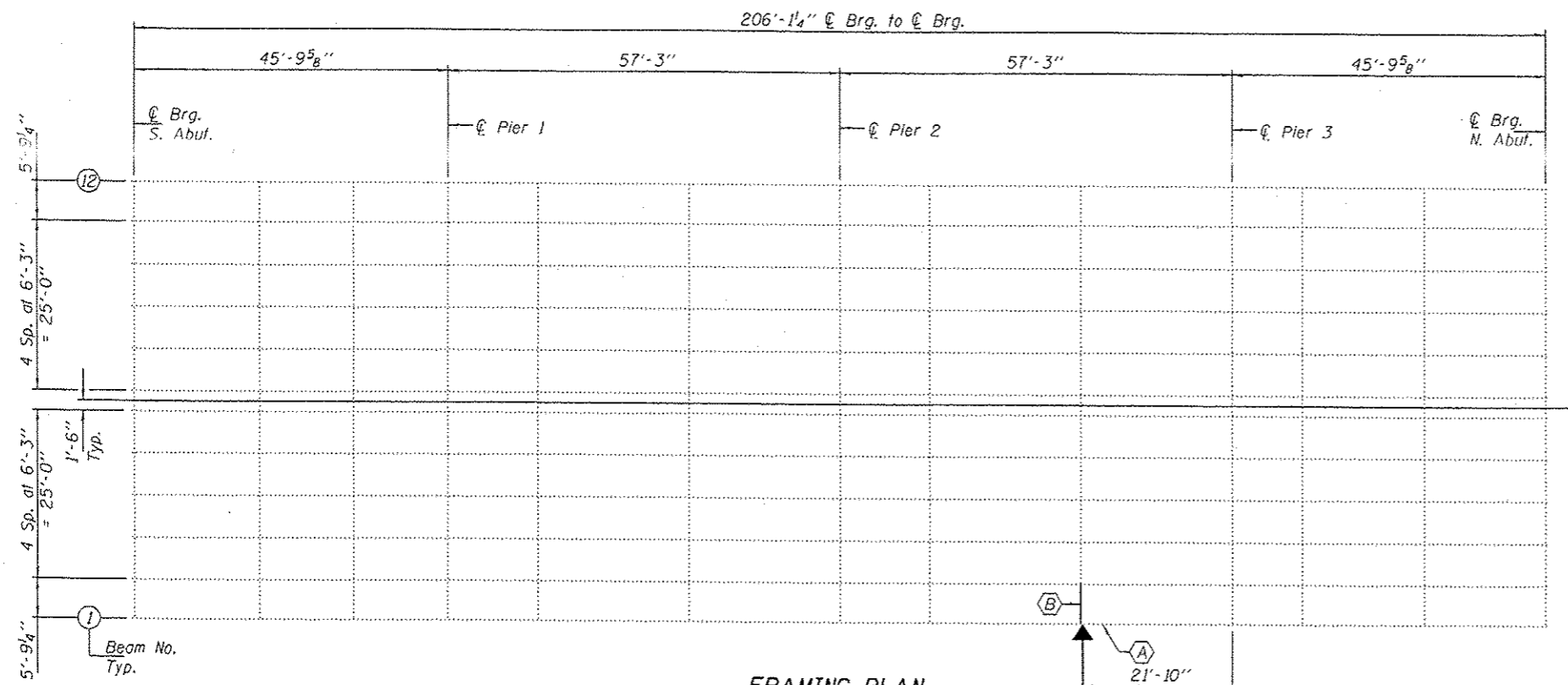
SCALE:	SHEET	OF	SHEETS	STA.	TO STA.																				
<table border="1"> <tr> <td>F.A. RTE.</td> <td>SECTION</td> <td>COUNTY</td> <td>TOTAL SHEETS</td> <td>SHEET NO.</td> </tr> <tr> <td>VAR.</td> <td>2015-06TBR</td> <td>COOK</td> <td>26</td> <td>16</td> </tr> <tr> <td colspan="5">CONTRACT NO. 62B49</td> </tr> <tr> <td colspan="5">ILLINOIS FED. AID PROJECT</td> </tr> </table>						F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	VAR.	2015-06TBR	COOK	26	16	CONTRACT NO. 62B49					ILLINOIS FED. AID PROJECT				
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.																					
VAR.	2015-06TBR	COOK	26	16																					
CONTRACT NO. 62B49																									
ILLINOIS FED. AID PROJECT																									

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.
 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.
 The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
 Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".
 All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type I. Cost included with Structural Steel Repair.

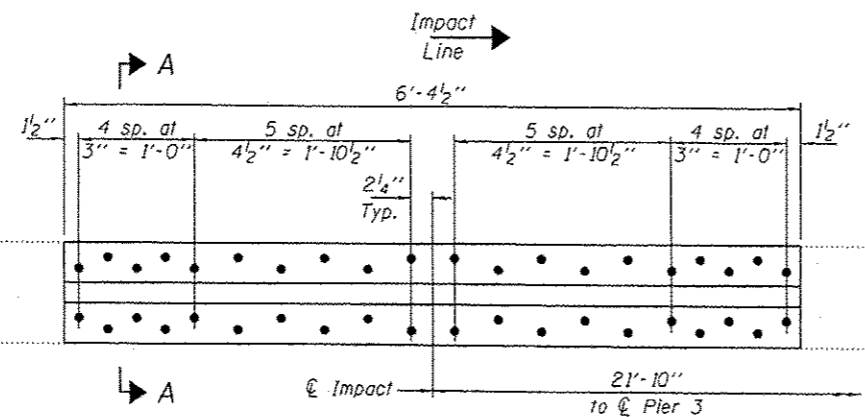


ELEVATION



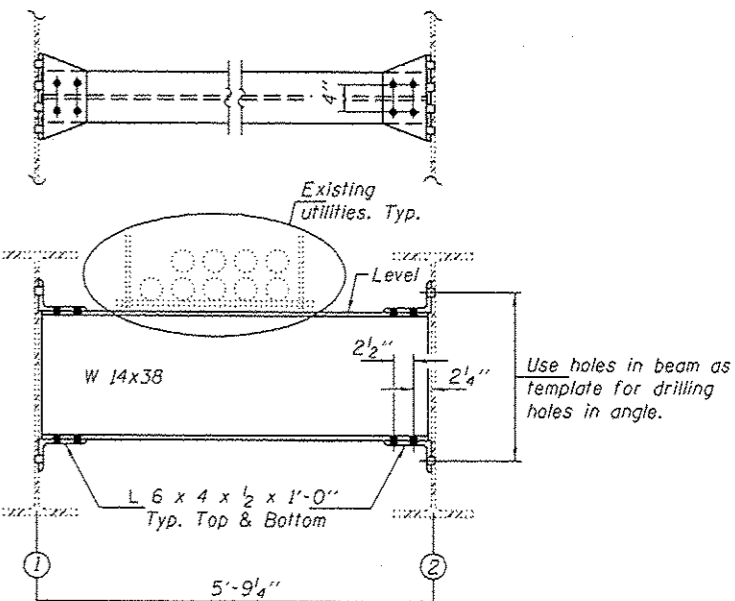
FRAMING PLAN

- (A) - Existing Beam to be Straightened & Strengthened.
- (B) - Replace diaphragm and clip angles.



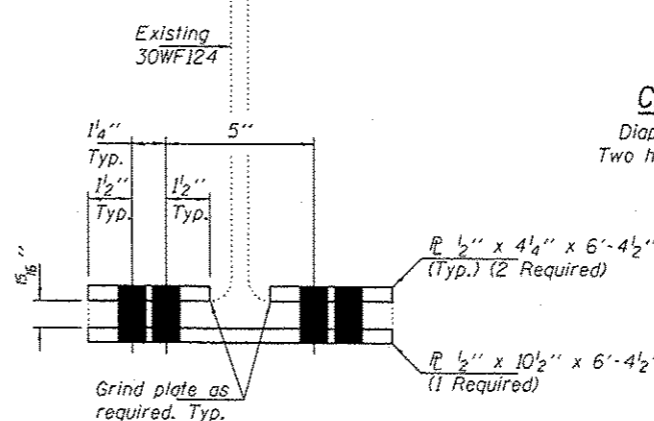
STRENGTHENING DETAIL

See Section A-A for dimensions not shown.



DIAPHRAGM AND CLIP ANGLE REPLACEMENT DETAIL

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



SECTION A-A

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Steel Repair	Pound	540
Beam Straightening	L.S.	0.2
Structural Steel Removal	Pound	280
Remove Overhead Sign Structure - Bridge Mounted	Each	1
Overhead Sign Structure - Bridge Mounted	Foot	23.5



EXPIRES 11-30-2016

DESIGNED: *Stephan Hoffmann*
 CHECKED: *David Puzey*
 DRAWN: *bativa*
 CHECKED: *all SMR*

PASSED: *David Carl Puzey*
 ACTING ENGINEER OF BRIDGES AND STRUCTURES

DATE: NOVEMBER 23, 2015
 REVISED: 12/23/15 VHV
 REVISED:

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

PLAN AND ELEVATION
 1ST. AVE. OVER FAI 290
 SN 016-0699
 SHEET NO. 1 OF 2 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	2015-0618R	COOK	26	21
CONTRACT NO. 62B49			ILLINOIS FED. AID PROJECT	

GENERAL NOTES

SPECIFICATIONS:

DESIGN: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. ("AASHTO Specifications") (2)

CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Special Provisions. ("Standard Specifications")

LOADING: 90 M.P.H. WIND VELOCITY

WALKWAY LOADING: Dead load plus 500 lbs. concentrated live load.

MINIMUM CLEARANCE: 3" greater than bridge members at all locations. (All Obstructions)

WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 Structural Welding Code (Steel) and the Standard Specifications.

MATERIALS: All Structural Steel Pipe shall be ASTM A53 Grade B with a minimum yield of 35,000 p.s.i., or A500 Grade B or C with a minimum yield of 46,000 p.s.i. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53.
All Structural Steel Plates and Shapes shall conform to AASHTO M270 Gr. 36, Gr. 50 (M183, M223 Gr. 50).

HIGH STRENGTH BOLTS: All bolts, washers, nuts and locknuts shall satisfy the requirements of ASTM designation A307 unless noted as "H.S." which shall require AASHTO M164 (A325), ASTM A449, or approved alternate. All fasteners shall be hot dip galvanized per AASHTO M232 unless otherwise specified.

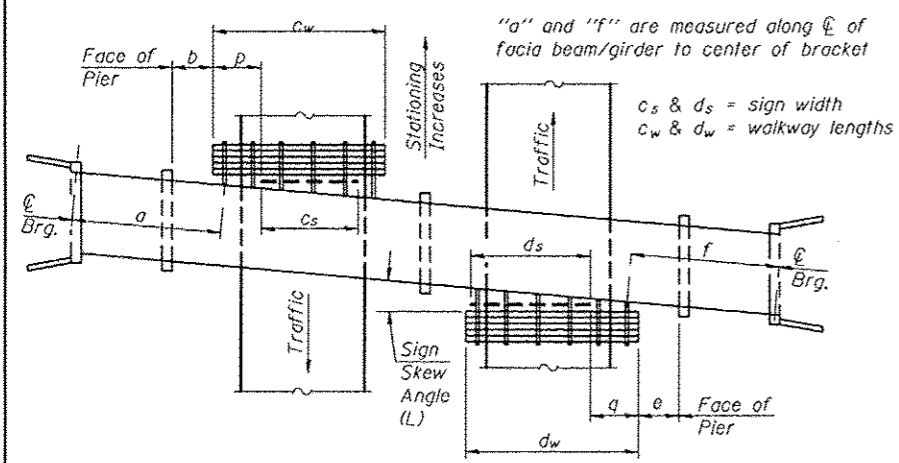
GALVANIZING: All Steel Grating, Plates, Shapes and Pipe shall be Hot Dip Galvanized after fabrication in accordance with AASHTO M111. Painting is not permitted.

ANCHOR RODS: All-threaded rod shall conform to ASTM F1554 Grade 105, 3/4" ϕ x 12" long, each with one plate washer and locknut and be hot dip galvanized per AASHTO M232. They shall be either cast into the concrete or epoxy grouted in accordance with Section 584 of the Standard Specifications. Minimum embedment in concrete shall be 9".

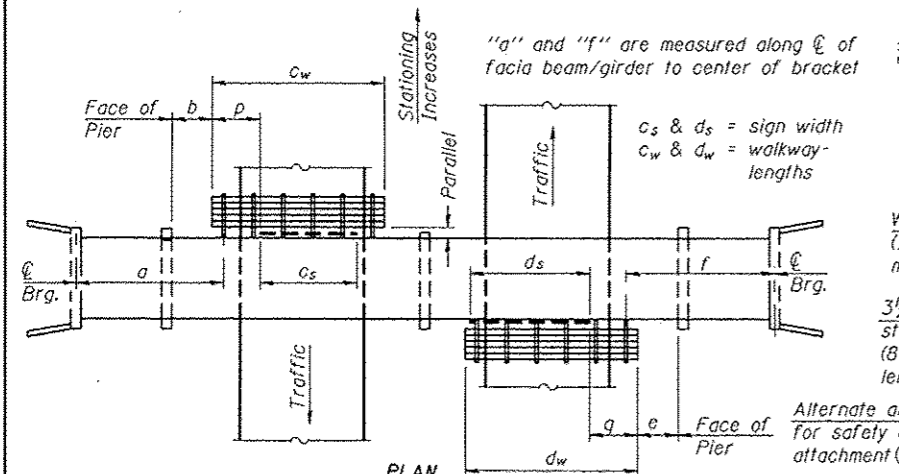
- ① Bracket spacing $g \leq 6'-0"$, max. Spacing shall be uniform if possible but may vary $\pm 6"$ to miss existing obstruction (rail post, light poles, web stiffeners, splice plates, etc.). Adjust bracket lengths accordingly on skewed structures.
- ② Any design modifications shall be based on the current version of applicable specifications and submitted for the Engineer's approval.
- ③ Unit price includes grating, handrail, brackets, supports, anchor bolts, fasteners, fabrication, delivery, erection, field drilling and other necessary items. Limits of payment are based on grating length (c_w , d_w) unless otherwise specified. For Safety Chain Details and Details D, F and G, see Base Sheet BM-4.
- ④ If walkway bracket at safety chain location is behind sign, add angle to bracket. See detail on Base Sheet BM-4.
- ⑤ The Contractor shall verify sign placement with the Engineer prior to obtaining field measurements and installing the sign.

TOTAL BILL OF MATERIAL

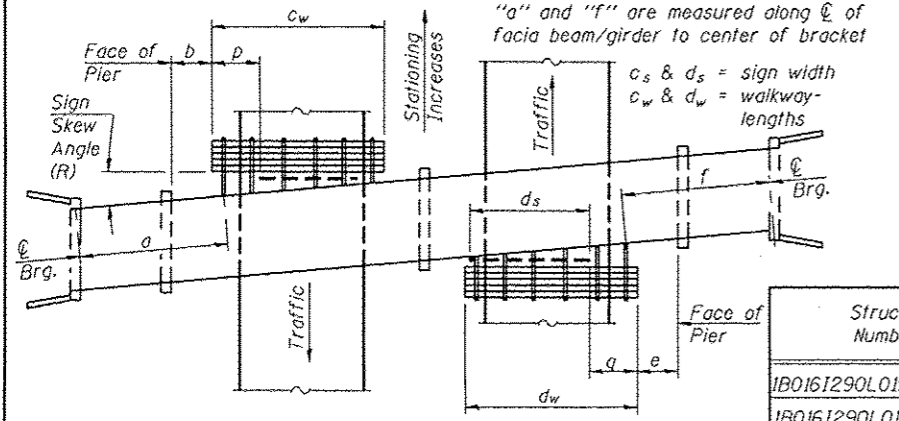
③ OVERHEAD SIGN STRUCTURE - BRIDGE MOUNTED	Foot	23.5
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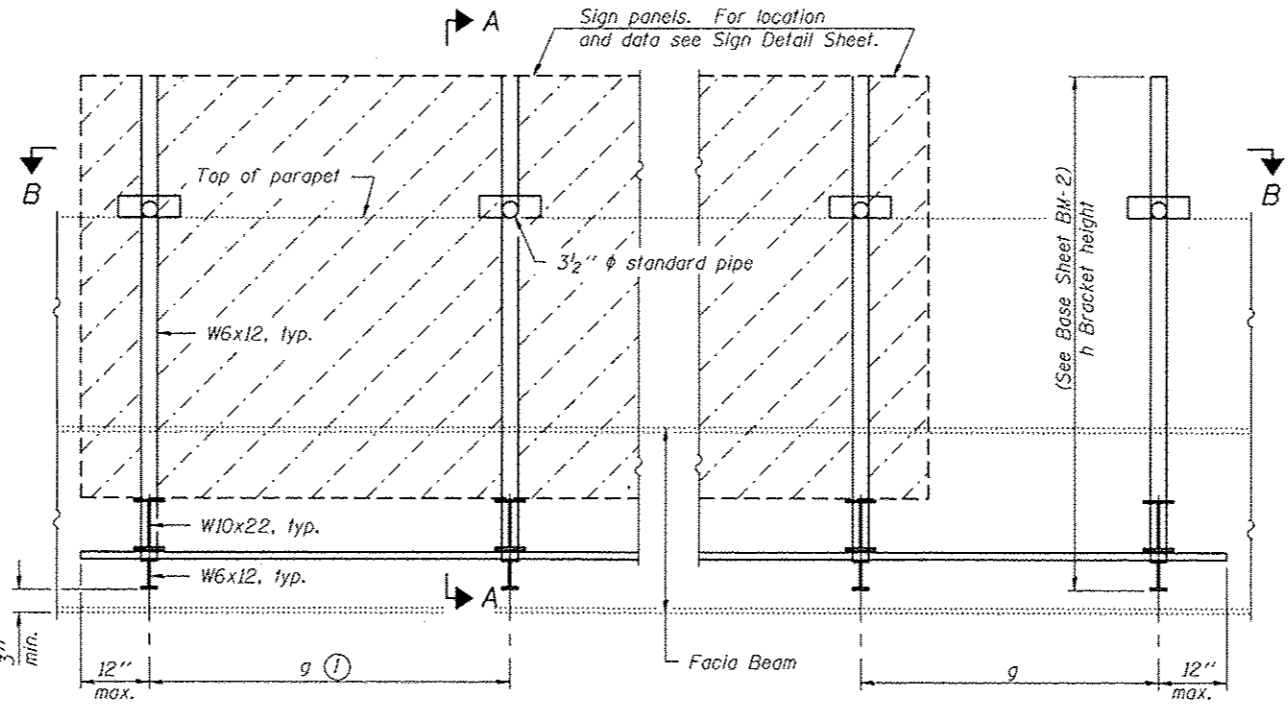
PLAN
(Left Sign Skew > 15°)
WALKWAY AND HANDRAIL SKETCH
(Road plan beneath structure varies.)



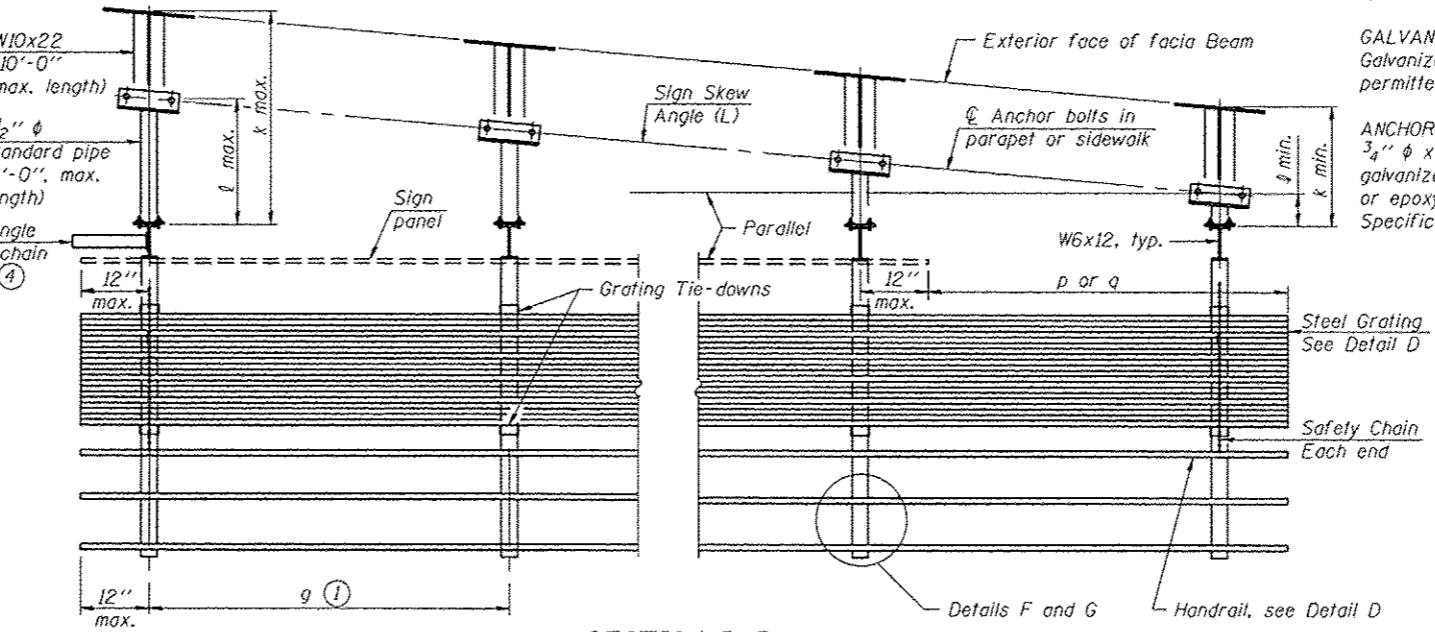
PLAN
(For Sign Skew $\leq 15^\circ$, all brackets constant)
WALKWAY AND HANDRAIL SKETCH
(Road plan beneath structure varies.)



PLAN
(Right Sign Skew > 15°)
WALKWAY AND HANDRAIL SKETCH
(Road plan beneath structure varies.)



TYPICAL FRONT ELEVATION
(With lights, safety chain and handrail omitted for clarity.)



SECTION B-B
(Shown: Left Sign Skew > 15°)

Structure Number	Sign Skew Angle (L) or (R)	Bridge Station	Bridge Structure Number	Contract Route Designation	a	b	c _s	c _w	d _s	d _w	e	f	g	No. of Brackets (Total)	p	q	Total Grating/Hndrl. Lengths (c _w + d _w)
1B0161290L019.9-000			016-0699	SBI-94	⑤	⑤	144"	0	0	0	0	0	66"	3	0	0	0
1B0161290L019.9-001			016-0699	SBI-94	⑤	⑤	138"	0	0	0	0	0	60"	3	0	0	0

Dimensions a, b, e, f & g may vary as approved by the Engineer, see ①.
When $c_w < c_s$ and/or $d_w < d_s$, use alternate brackets without walkway supports where applicable, see ③.

BM-1 6-1-12

DESIGNED SMR
CHECKED CCC
DRAWN baliva
CHECKED SMR CCC

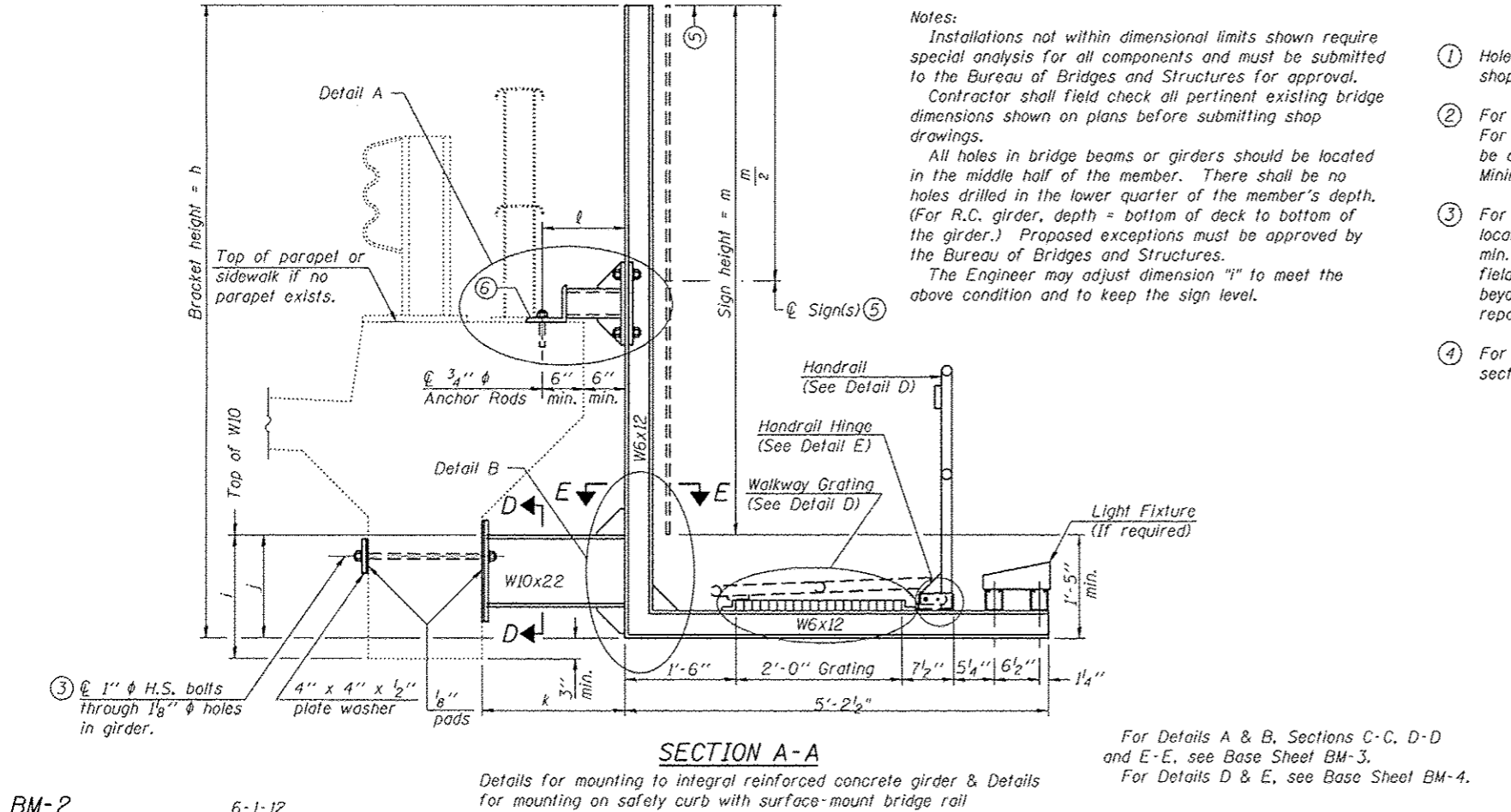
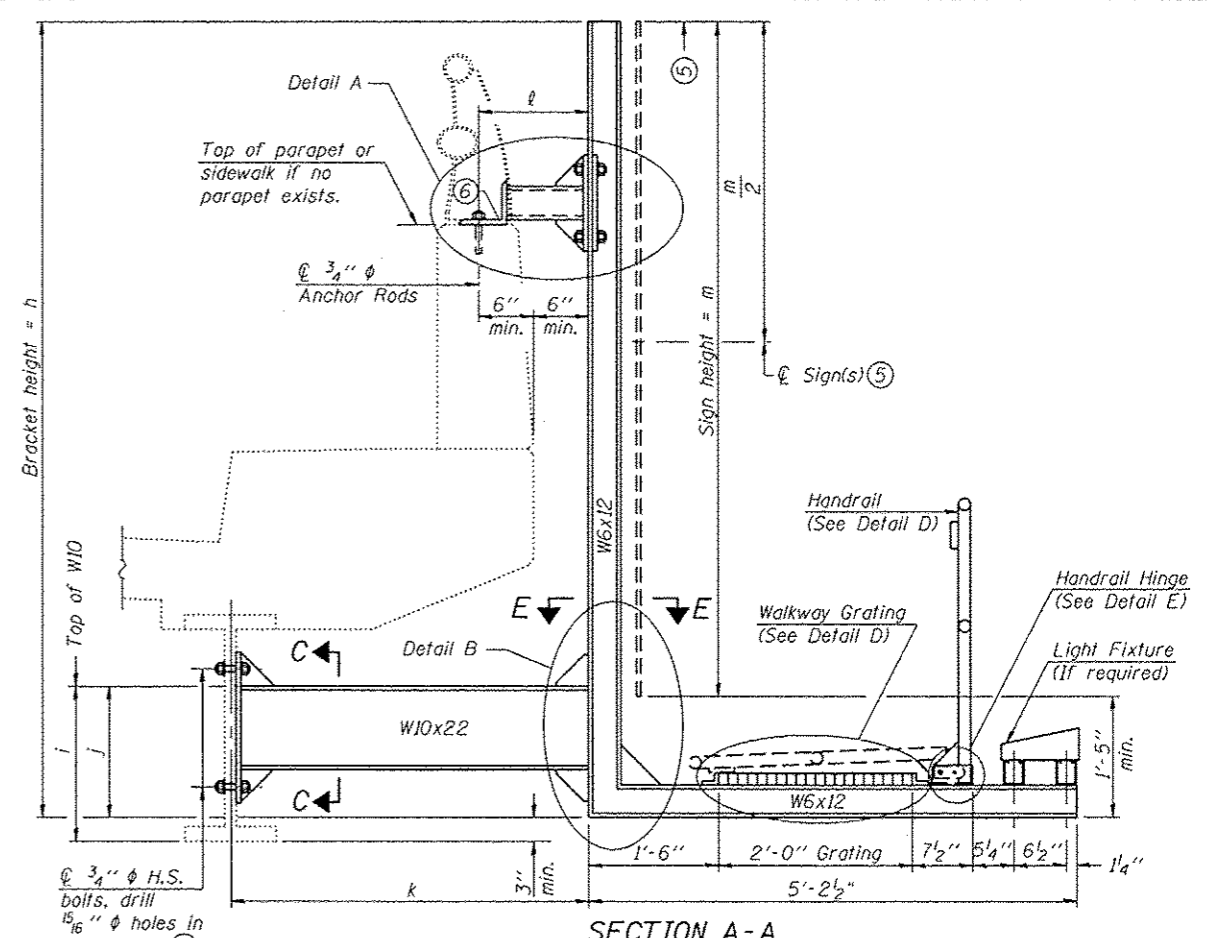
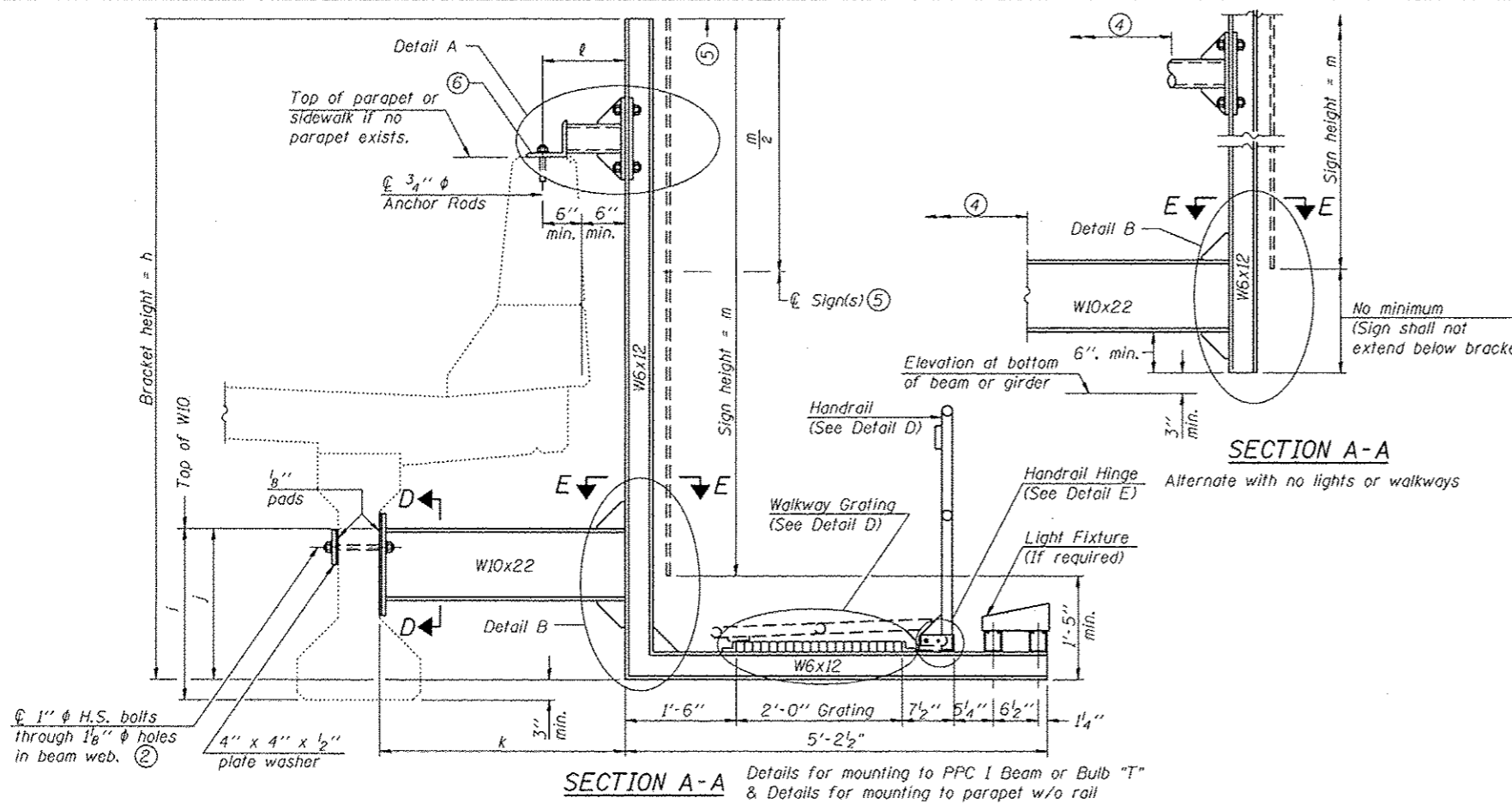
PASSED
ACTING ENGINEER OF BRIDGES AND STRUCTURES

DATE NOVEMBER 23, 2015
SHEET ADDED 12/23/15 RP
REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE MOUNT SIGN STRUCTURES - GENERAL PLAN AND ELEVATION
SN 016-0699
SHEET NO. 1A OF 2 SHEETS

F.A.I. R.T.E. SECTION COUNTY TOTAL SHEETS SHEET NO.
VAR. 2015-0678R COOK 26 21A
CONTRACT NO. 62B49
ILLINOIS FED. AID PROJECT



Notes:
 Installations not within dimensional limits shown require special analysis for all components and must be submitted to the Bureau of Bridges and Structures for approval.
 Contractor shall field check all pertinent existing bridge dimensions shown on plans before submitting shop drawings.
 All holes in bridge beams or girders should be located in the middle half of the member. There shall be no holes drilled in the lower quarter of the member's depth. (For R.C. girder, depth = bottom of deck to bottom of the girder.) Proposed exceptions must be approved by the Bureau of Bridges and Structures.
 The Engineer may adjust dimension "i" to meet the above condition and to keep the sign level.

- ① Holes in new steel members may be drilled in the fabrication shop or in the field. Field drill existing members.
- ② For new PPC I beams, holes shall be formed during casting. For existing PPC I beams, prestressing strand locations shall be determined and spaced to miss strands by 6", min. Minimize spalling during field drilling of existing beams.
- ③ For new construction, form holes. For existing RC beams, locate primary reinforcement and space holes to miss by 6", min. Minimize spalling and concrete fracturing/damage during field drilling of existing concrete. Spalls over 1/4" deep or beyond the coverage of the 4x4 plate washer shall be repaired with epoxy mortar before installing washer.
- ④ For attachment details of 3/2" pipe and W10x22, see other sections as applicable.
- ⑤ Sign shall not extend more than 6" above top of bracket, and this dimension may vary to keep sign level if bridge is on grade or vertical curve. Multiple signs of various heights shall share a common horizontal centerline and use equal bracket heights. If no sign is attached to a W6x12 vertical (bracket only supporting walkway), dimension h shall be the same as an adjacent bracket with a sign attached, unless Engineer specifically directs shorter brackets due to locational restraints on future uses. (See Detail A for minimum bracket height.)
- ⑥ For bridge mounted sign structures installed on new bridges with railing, during design, bracket spacing must be coordinated with railing post spacing and the Contractor must install upper brackets prior to railing installation. For bridge mounted sign structures installed on existing bridges with railing, during design, brackets spacing must be coordinated with railing post spacing and the Contractor must temporarily remove sections of railing to facilitate upper bracket installation. If it is determined during design that existing railings can't be removed, alternate upper connection details must be developed for the contract plans and approved by the Bureau of Bridges and Structures.

Structure Number	Station	h	i	j	k max. (10'-0" max.)	l max. (8'-0" max.)	m (15'-0" max.)
1B0161290L019.9-000		119"	Match exist.	Match exist.	1'-8 3/4"	1'-6"	102"
1B0161290L019.9-001		119"	Match exist.	Match exist.	1'-8 3/4"	1'-6"	102"

BM-2 6-1-12

DESIGNED SMR
 CHECKED CCC
 DRAWN baliva
 CHECKED SMR CCC

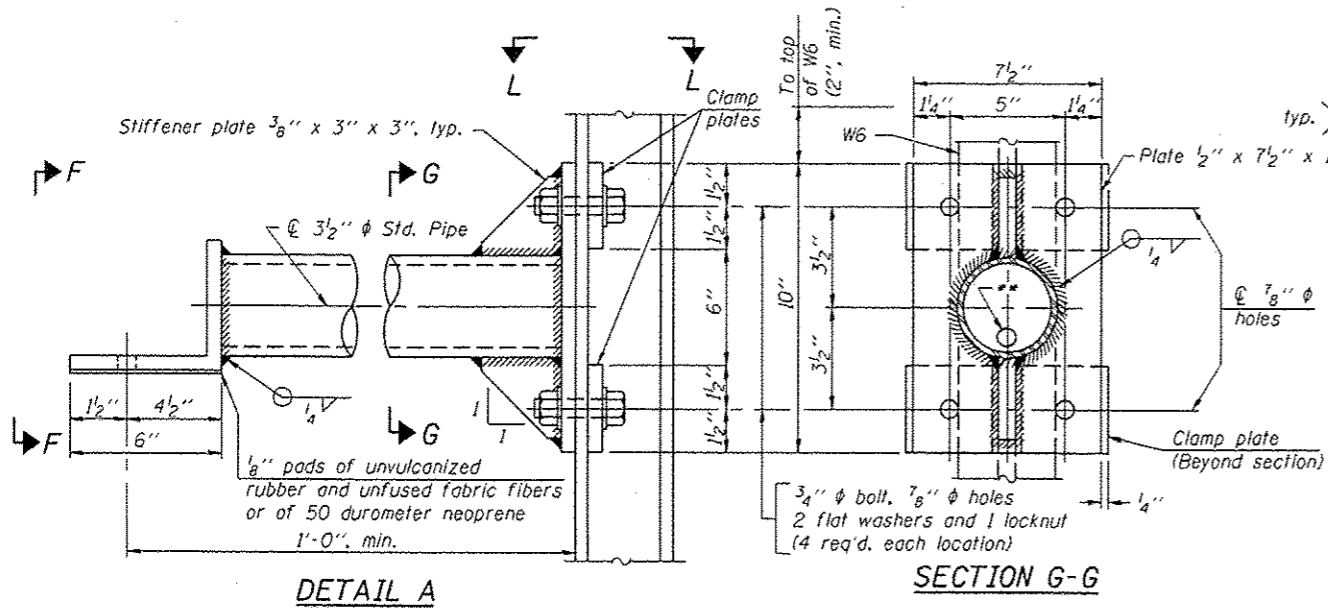
PASSED
 ACTING ENGINEER OF BRIDGES AND STRUCTURES

DATE NOVEMBER 23, 2015
 SHEET ADDED 12/23/15 RP
 REVISED

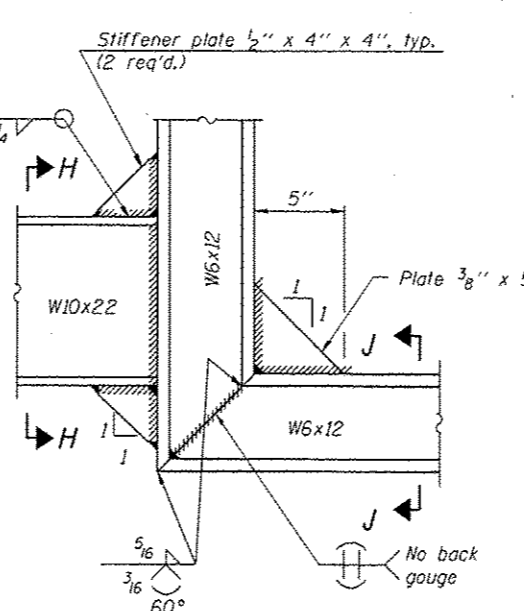
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BRIDGE MOUNT SIGN STRUCTURES - WALKWAY & CONNECTION DETAILS
 SN 016-0699
 SHEET NO. 1B OF 2 SHEETS

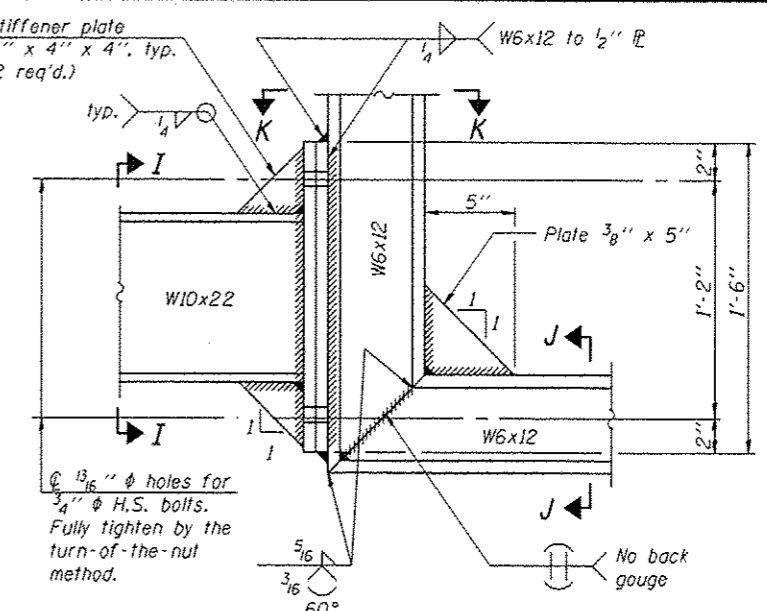
F.A.I. R.T.E. SECTION COUNTY TOTAL SHEETS SHEET NO.
 VAR. 2015-067BR COOK 26 218
 CONTRACT NO. 62B49
 ILLINOIS FED. AID PROJECT



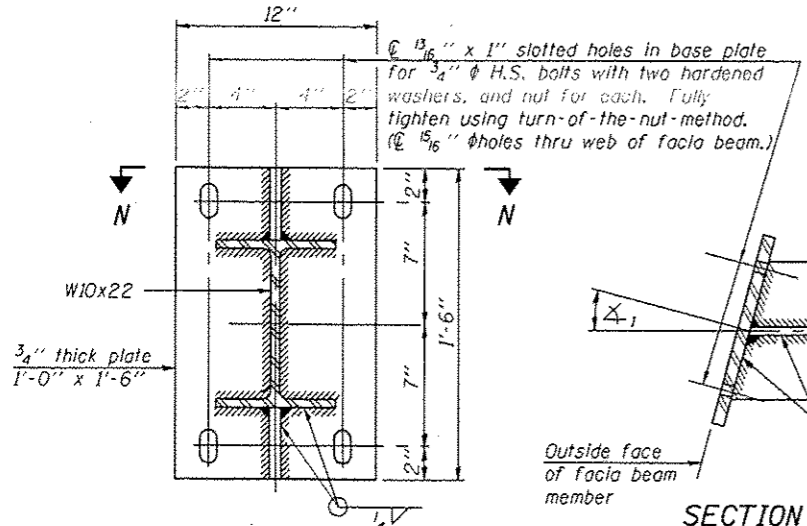
DETAIL A



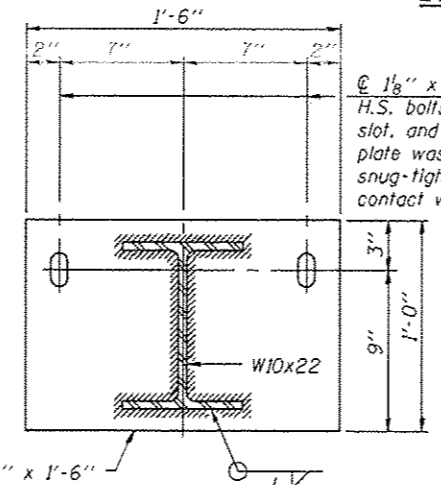
DETAIL B - WELDED W10x22 TO W6x12 CONNECTION



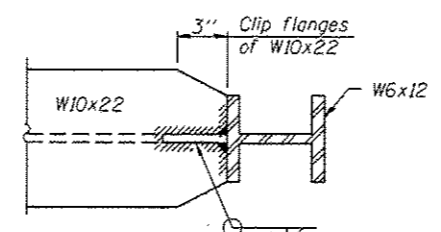
DETAIL B - ALTERNATE BOLTED W10x22 TO W6x12 CONNECTION



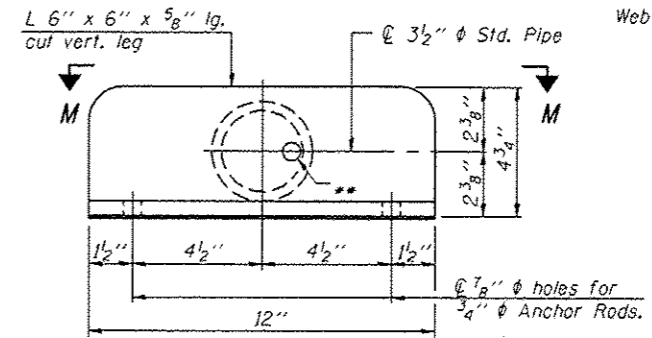
SECTION N-N Skewed connection detail for W10x22 to fascia beam.



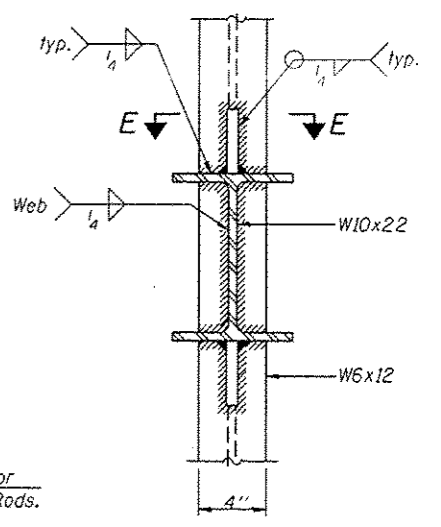
SECTION D-D Concrete beam or girder connection plate details.



SECTION E-E

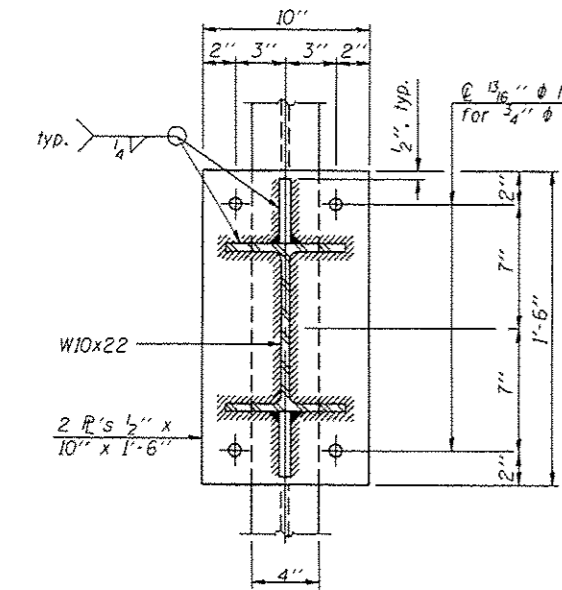


VIEW F-F

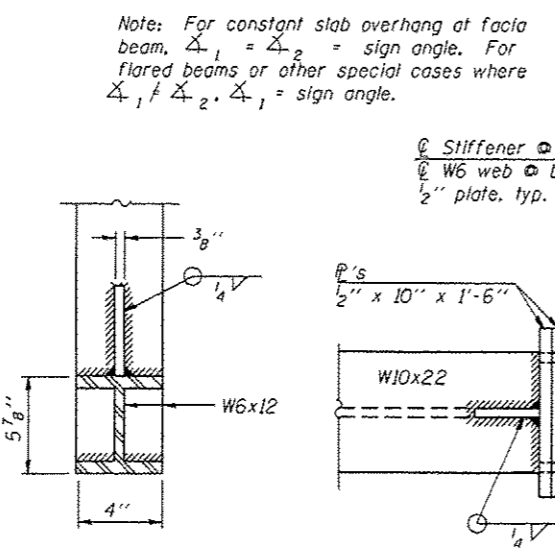


SECTION H-H

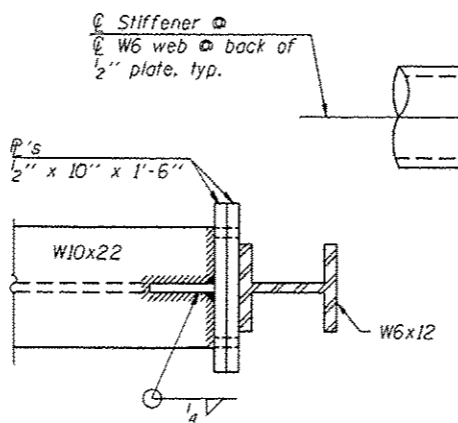
SECTION C-C Steel beam or girder connection plate details



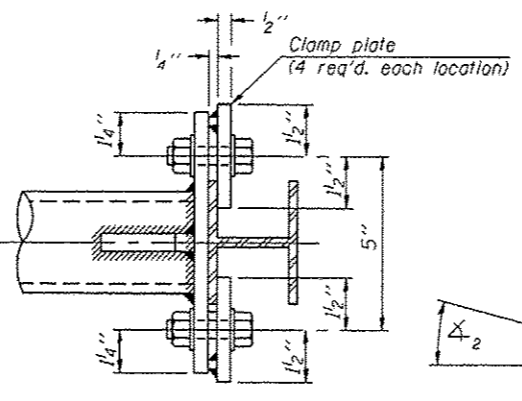
SECTION I-I



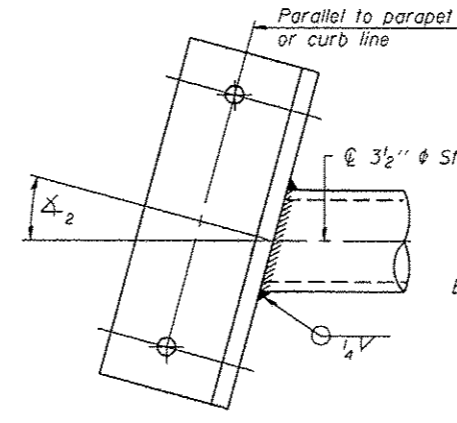
SECTION J-J



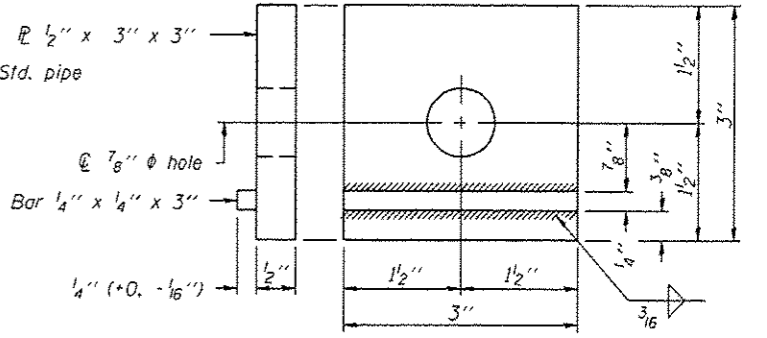
SECTION K-K



SECTION L-L



SECTION M-M Skewed connection detail for 3 1/2" diameter pipe to parapet.



CLAMP PLATE DETAILS

BM-3 6-1-12

DESIGNED	SMR
CHECKED	CCC
DRAWN	baliva
CHECKED	SMR CCC

PASSED
Carl Perry
 ACTING ENGINEER OF BRIDGES AND STRUCTURES

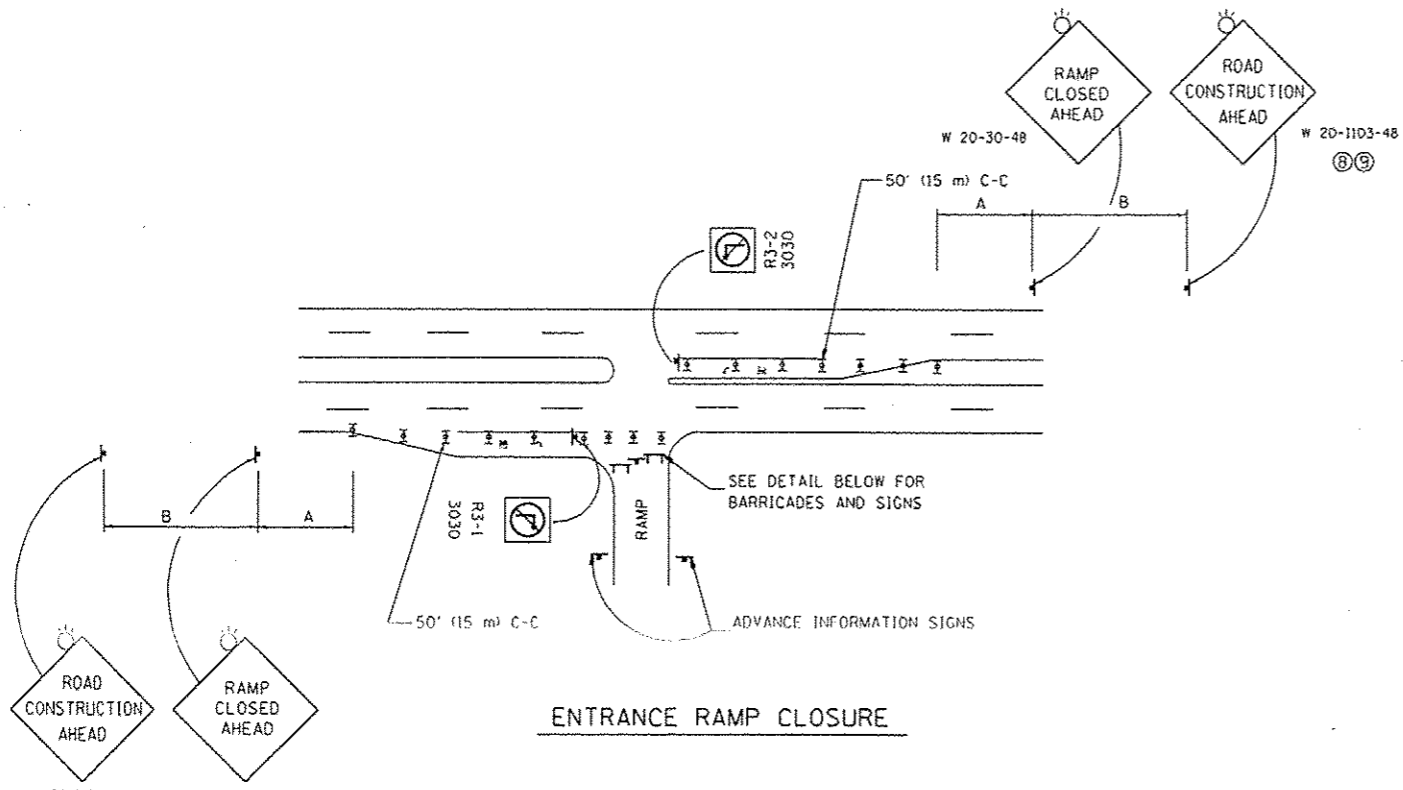
DATE	NOVEMBER 23, 2015
SHEET ADDED	12/23/15 RP
REVISED	

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BRIDGE MOUNT SIGN STRUCTURES - CONNECTION DETAILS
 SN 016-0699

SHEET NO. 1C OF 2 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	2015-067BR	COOK	26	21C
CONTRACT NO. 62B49			ILLINOIS FED. AID PROJECT	



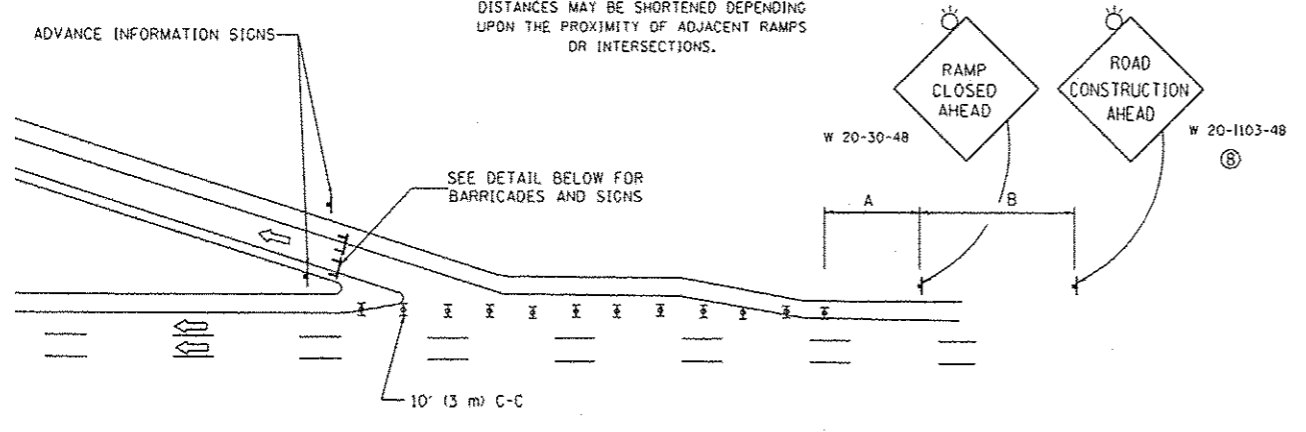
ENTRANCE RAMP CLOSURE

SIGN SPACING TABLE

FACILITY	DISTANCE BETWEEN SIGNS	
	A	B
EXPRESSWAY >24 HOURS	1000' (300 m)	1500' (450 m)
EXPRESSWAY ≤24 HOURS	500' (150 m)	500' (150 m)
ARTERIAL 55 MPH	500' (150 m)	500' (150 m)
ARTERIAL 50-45 MPH	350' (100 m)	350' (100 m)
ARTERIAL <45 MPH	200' (60 m)	200' (60 m)

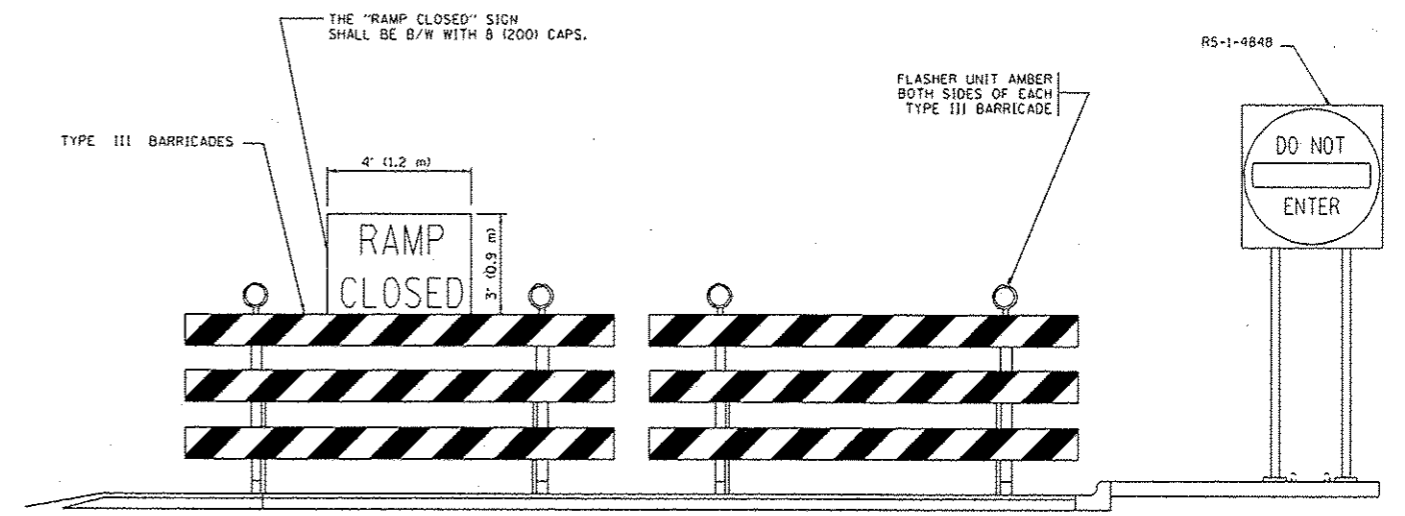
DISTANCES MAY BE SHORTENED DEPENDING UPON THE PROXIMITY OF ADJACENT RAMPS OR INTERSECTIONS.

W 20-1103-48
W 20-30-48

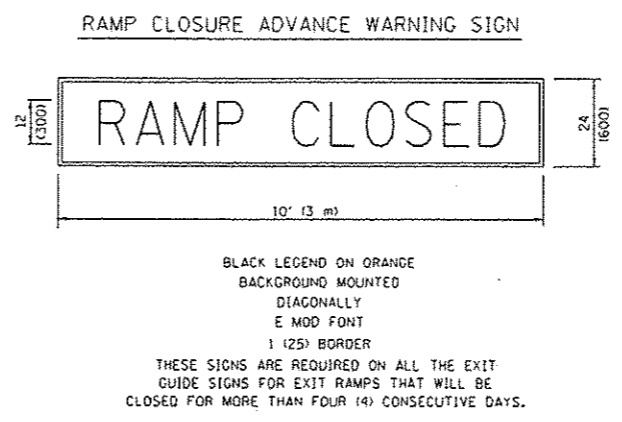


EXIT RAMP CLOSURE

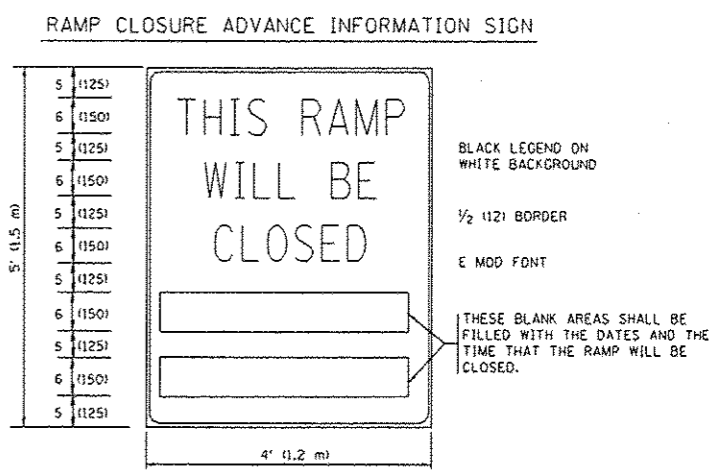
- SYMBOLS**
- ▬ TYPE II BARRICADE OR DRUM WITH STEADY BURN MONO-DIRECTIONAL LIGHT
 - ▬ TYPE III BARRICADE WITH 2 FLASHING LIGHTS



DETAIL FOR REQUIRED BARRICADES & SIGNS



THESE SIGNS ARE REQUIRED ON BOTH SIDES OF THE RAMP, MINIMUM OF 1 WEEK IN ADVANCE OF THE CLOSURE.
THESE SIGNS SHALL BE FABRICATED AND PAID FOR ACCORDING TO THE TEMPORARY INFORMATION SIGNING SPECIAL PROVISION



GENERAL NOTES:

- ① CONES MAY BE SUBSTITUTED FOR DRUMS OR TYPE II BARRICADES DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (700) HIGH.
- ② STEADY BURN LIGHTS WILL NOT BE REQUIRED FOR DAY OPERATIONS.
- ③ A FLAGGER SHALL BE POSITIONED AT EACH CLOSED RAMP THAT IS OPEN TO CONSTRUCTION VEHICLES, PRECEDED BY A W20-7 FLAGGER WARNING SIGN.
- ④ ALL ROUTE MARKERS AND TRAILBLAZER ASSEMBLIES WHICH DIRECT MOTORISTS TO A CLOSED ENTRANCE RAMP SHALL BE COVERED WHEN THE RAMP IS CLOSED FOR MORE THAN FOUR (4) DAYS.
- ⑤ THE SIGNING AND BARRICADE WHICH IS REQUIRED BY THIS DETAIL SHALL BE INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS).
- ⑥ AUTHORIZATION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL RAMP CLOSURES.
- ⑦ THE RAMP CLOSURE ADVANCE INFORMATION SIGNS SHALL BE ERECTED IF THE CLOSURE TIME EXCEEDS TWENTY-FOUR (24) HOURS. ADDITIONAL ADVANCE WARNING SIGNS ON EXIT GUIDE SIGNING WILL BE REQUIRED FOR EXIT RAMP CLOSURES THAT EXCEED FOUR (4) DAYS IN LENGTH.
- ⑧ ROAD CONSTRUCTION AHEAD SIGNS MAY BE OMITTED WHEN THIS DETAIL IS USED IN CONJUNCTION WITH OTHER TRAFFIC CONTROL THAT ALREADY INCLUDES A ROAD CONSTRUCTION AHEAD SIGN.
- ⑨ ARTERIAL ROAD CONSTRUCTION AHEAD SIGNS SHALL BE INSTALLED ON THE LEFT SIDE OF TRAFFIC IF THE MEDIAN IS MORE THAN 10 FT WIDE.

Added Sheet 12-23-15 RP

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.