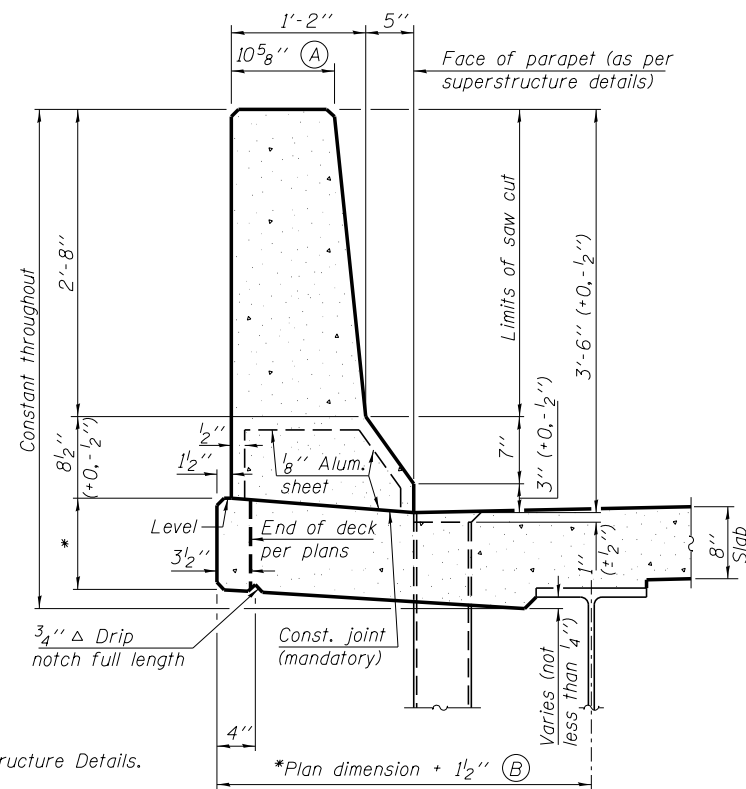


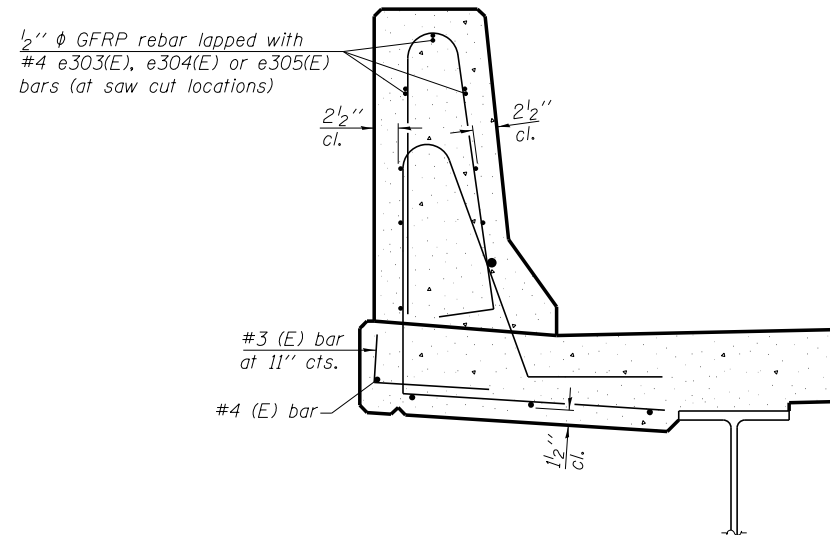
34" F SHAPE PARAPET SECTION
(Showing dimensions)

*See Superstructure Details.



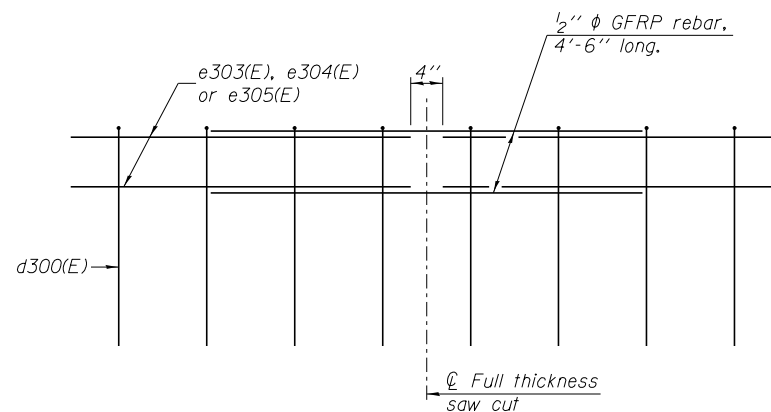
42" F SHAPE PARAPET SECTION
(Showing dimensions)

*See Superstructure Details.



SECTION

(34" parapet shown - 42" parapet similar)
(Showing reinforcement clearances for slip forming and additional reinforcement bars)

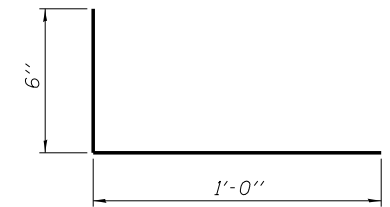


GFRP REBAR STIFFENING DETAIL

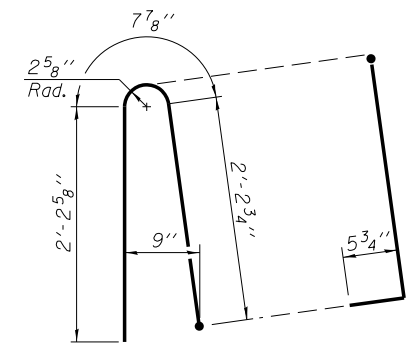
(Place as shown in parapet section at each parapet joint location.)

GENERAL NOTES

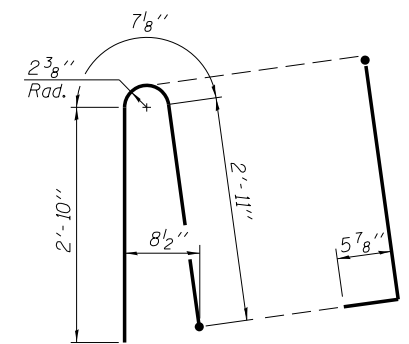
All dimensions shall remain the same as shown on superstructure details, except dimensions A and B which are to be revised as shown to provide additional clearance. Additional concrete needed to revise dimension A and B = 0.0165 cu. yds./ft. for 34" parapet or = 0.0223 cu. yds./ft. for 42" parapet. Place aluminum sheet in curb portion at and near piers. Full thickness saw cut at all joint locations in lieu of cork joint filler. Steel superstructure shown. Other superstructure types similar.



#3 (E) BAR



ALTERNATE BAR d300(E)
(For 34" parapet when conduit is present)

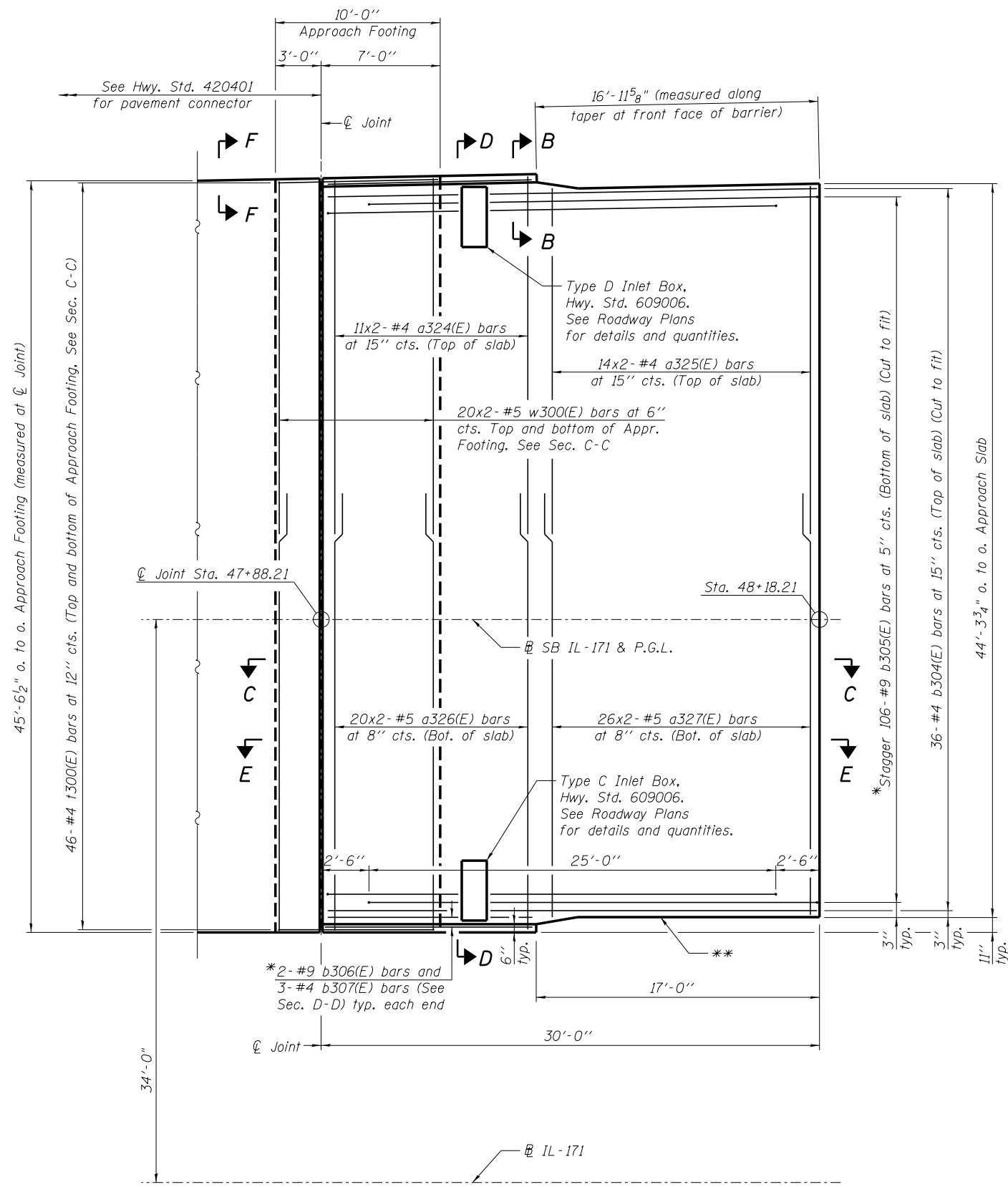


ALTERNATE BAR d300(E)
(For 42" parapet when conduit is present)

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0160483.60J16.017.Parapet.Slipform.dgn		CHECKED - MFH	REVISED -
	PLOT SCALE =	DRAWN - RMG	REVISED -
	PLOT DATE = 12/20/2013	CHECKED - MFH	REVISED -

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	501
CONTRACT NO. 60J16			ILLINOIS FED. AID PROJECT	

Y:\chicago\100005\100093\Eng_Docs_Phase1\1\SN_016_0483_0985_1st_Ave-over_Des_Plaines_River\Final\0160483-60J16-017-Parapet.Slipform.dgn 5:23:49 PM 8/11/2014



PLAN

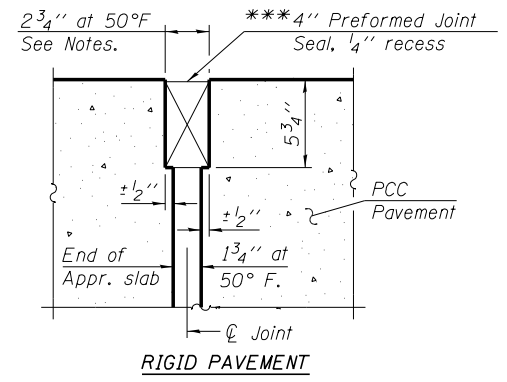
* Tilt #9 b305(E) and b306(E) bars as required to maintain clearance.

** Preformed Flexible Foam Expansion Joint Filler according to Article 1051.09 of the Std. Specifications; full depth of slab, full length of parapet. Typ. each parapet. Cost included with Concrete Superstructure.

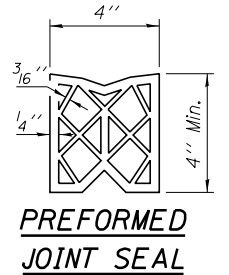
MINIMUM BAR LAP
(Approach)

#4 bar = 2'-7"
#5 bar = 3'-3"

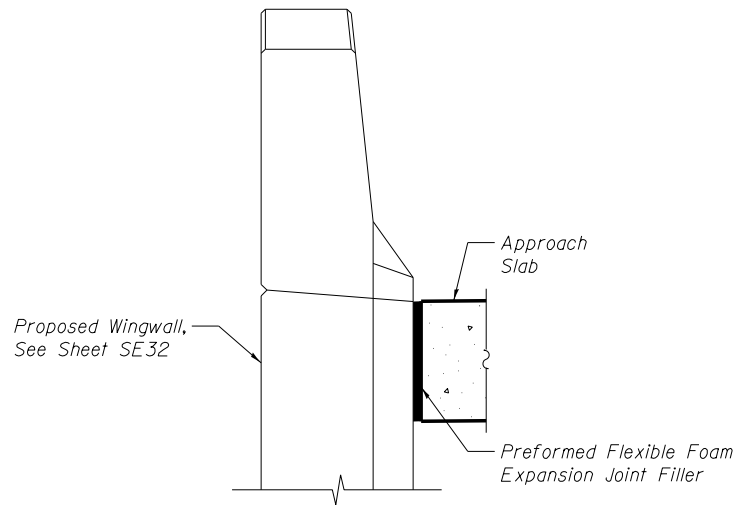
***Cost included with Concrete Superstructure.



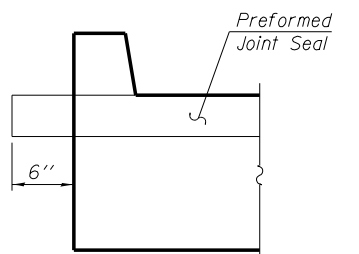
DETAIL A



PREFORMED JOINT SEAL



VIEW B-B



VIEW F-F

NOTES:

- See Sheet SE19 for Sections C-C & D-D and View E-E.
- a324(E) thru a327(E) bar spacings measured along Rdw.
- The joint opening shall be determined per Article 520.04 except that on jointless structures, the distance described as the bridge length between the nearest fixed bearings each way from the joint shall be taken as half the bridge length plus the approach slab length. The minimum dimension shall be 1¹/₂" for installation purposes.

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		CHECKED - MFH	REVISED -
PLOT DATE = 12/20/2013			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

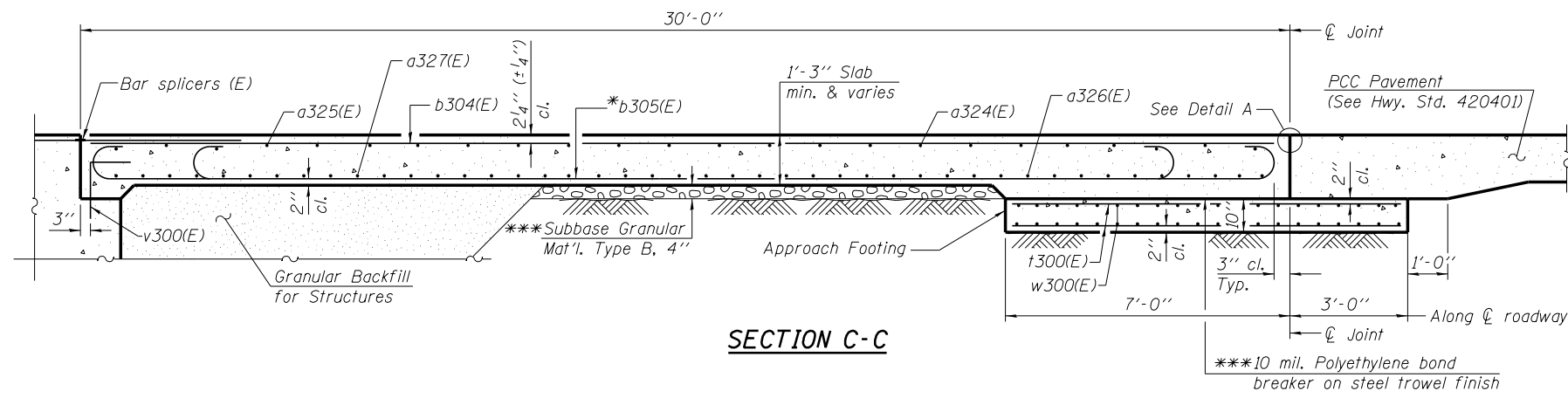
BRIDGE APPROACH SLAB PLAN
STRUCTURE NO. 016-0483

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	502
CONTRACT NO. 60J16				

SHEET NO. SE18 OF SE46 SHEETS

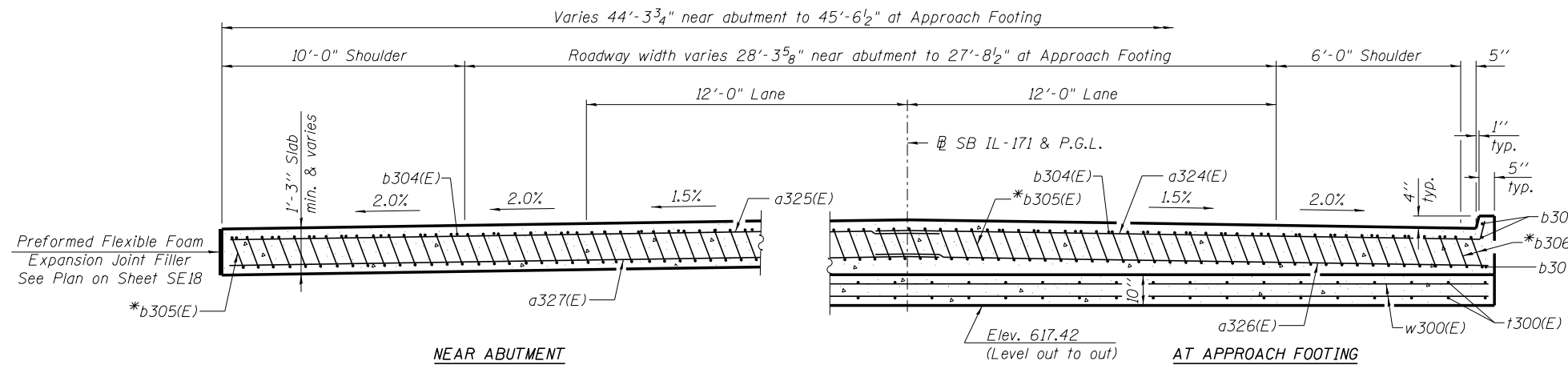
ILLINOIS FED. AID PROJECT

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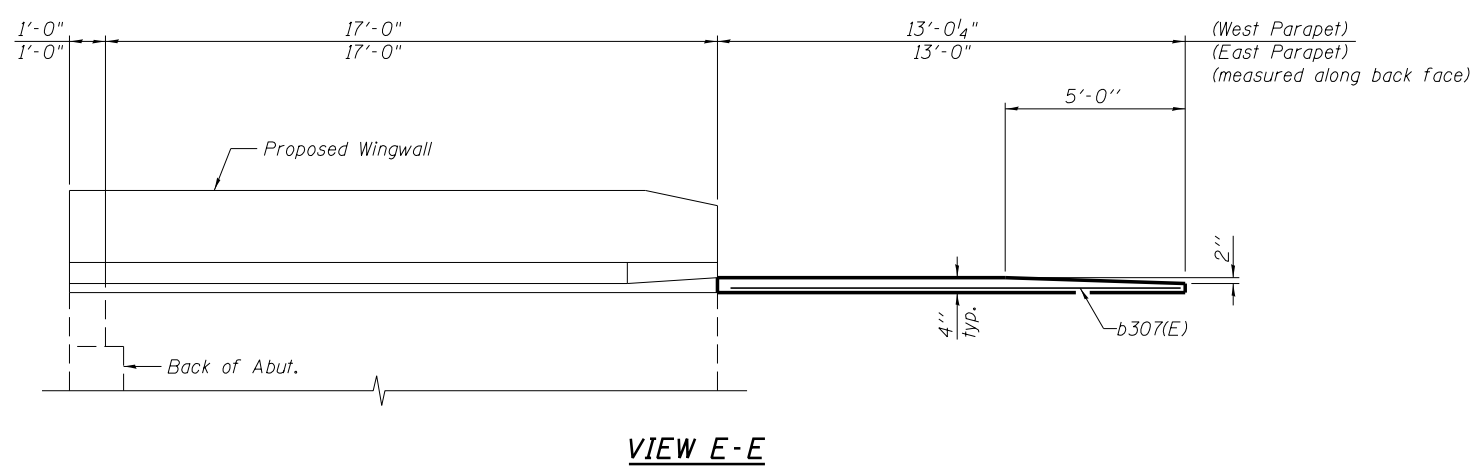
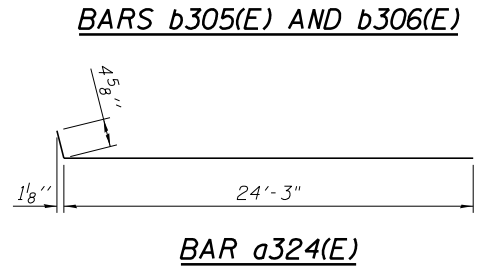
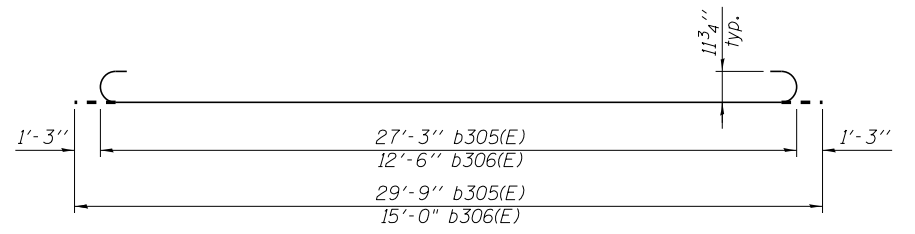


**ONE APPROACH
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a324(E)	22	#4	24'-8"	—
a325(E)	28	#4	23'-6"	—
a326(E)	40	#5	24'-6"	—
a327(E)	52	#5	23'-9"	—
b304(E)	36	#4	29'-8"	—
b305(E)	106	#9	29'-9"	—
b306(E)	4	#9	15'-0"	—
b307(E)	6	#4	12'-8"	—
t300(E)	92	#4	9'-8"	—
w300(E)	80	#5	24'-6"	—
Concrete Structures				Cu. Yd. 14.1
Concrete Superstructure				Cu. Yd. 65.9
Bridge Deck Grooving				Sq. Yd. 143
Protective Coat				Sq. Yd. 173
Reinforcement Bars, Epoxy Coated				Pound 17,450



* Tilt #9 b305(E) and b306(E) bars as required to maintain clearance.
 *** Cost included with Concrete Superstructure.



- NOTES:**
- See Sheet SE18 for Detail A and View B-B.
 - Approach slab concrete shall be paid for as Concrete Superstructure.
 - Approach footing concrete shall be paid for as Concrete Structures.
 - Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
 - For v300(E) bar details, see Sheet SE30.
 - The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
 - For bar splicer details, see Sheet SE41.
 - Cost of excavation for approach footing included with Concrete Structures.
 - For Granular Backfill for Structures and drainage treatment details, see Sheet SE31.
 - For additional parapet details, see Sheet SE32.

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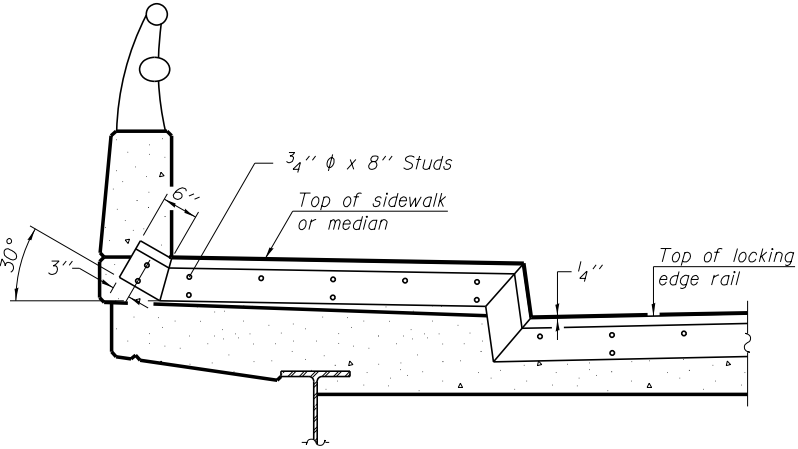
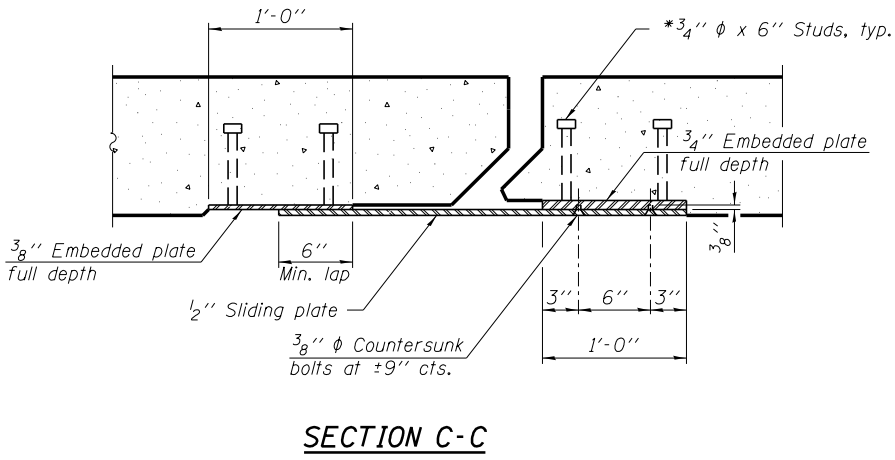
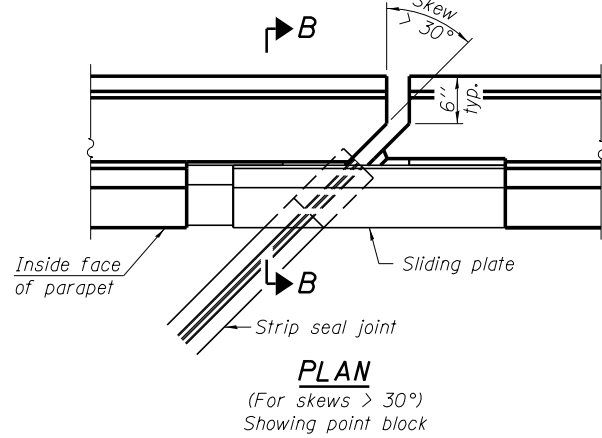
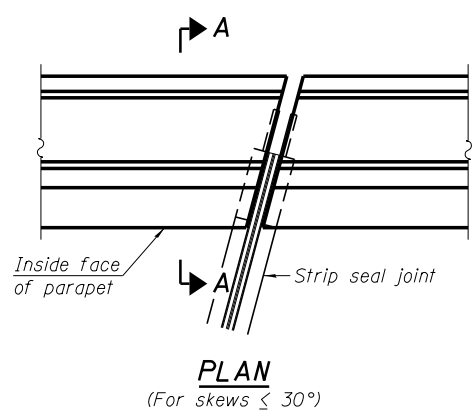
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 016-0483**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	503
CONTRACT NO. 60J16			ILLINOIS FED. AID PROJECT	

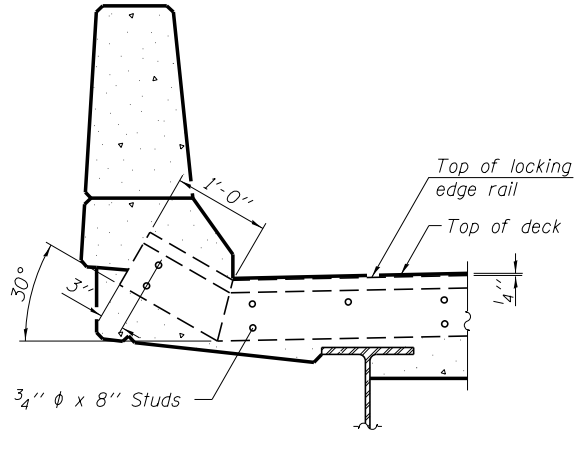
SHEET NO. SE19 OF SE46 SHEETS

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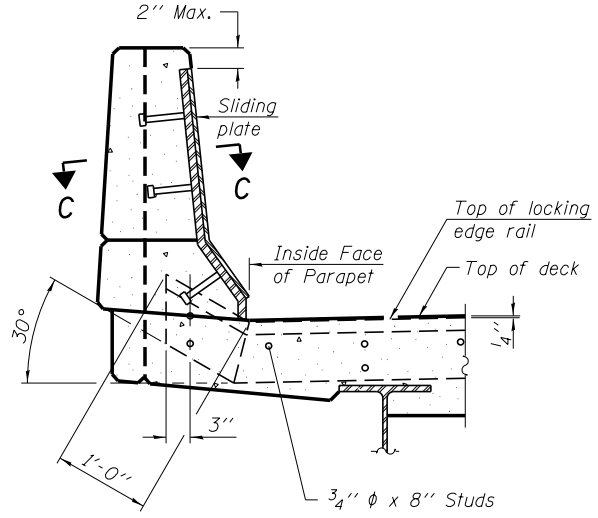


TYPICAL END TREATMENT AT SIDEWALK OR MEDIAN

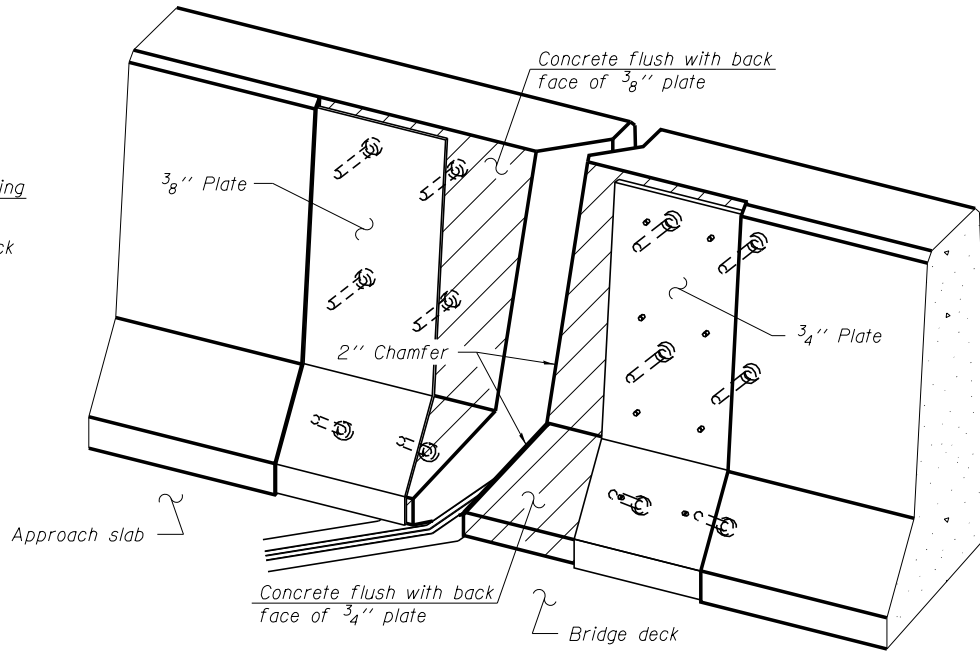
Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.



SECTION A-A

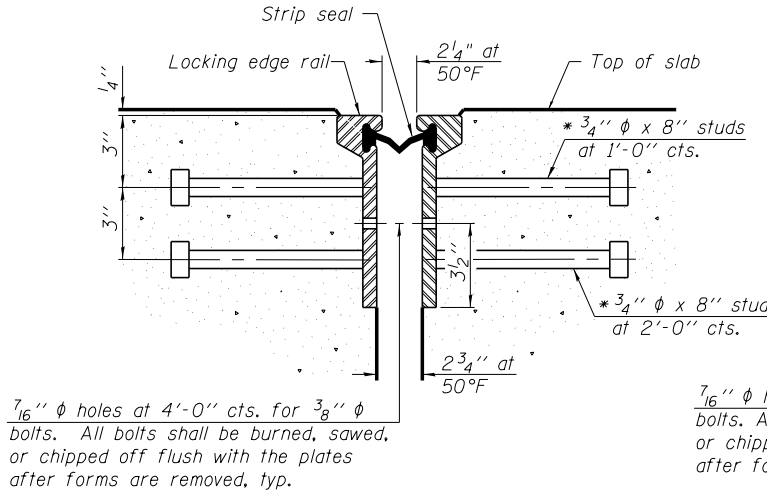


SECTION B-B



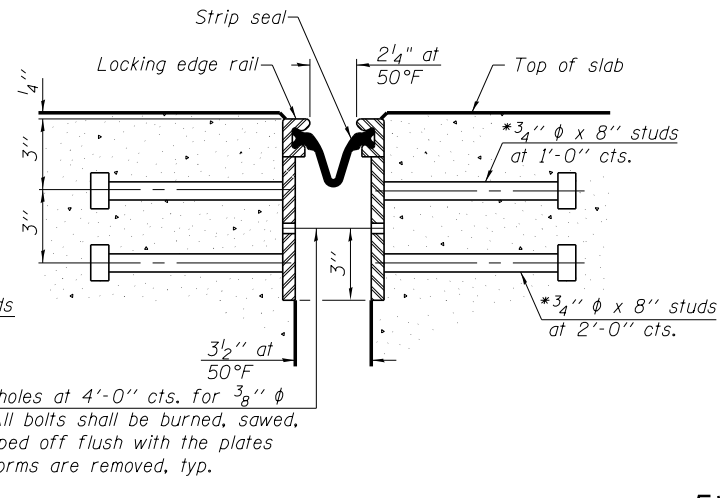
TRIMETRIC VIEW (Showing back plates only)

Notes:
 The strip seal shall be made continuous and shall have a minimum thickness of 1/4". 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 conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities.
 The manufacturer's recommended installation methods shall be followed.
 The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.
 All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.
 Maximum space between rail segments shall be 3/16", sealed with a suitable sealant. Joints in rails within 10 ft. of curbs shall be welded.
 Parapet plates and anchorage studs for skews > 30° included in the cost of Preformed Joint Strip Seal.

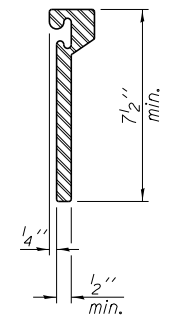


SECTION THRU ROLLED RAIL JOINT

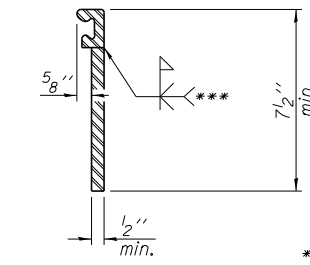
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



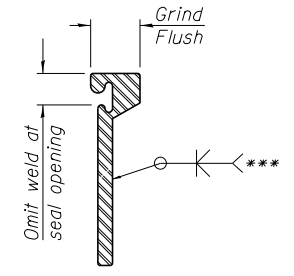
SECTION THRU WELDED RAIL JOINT



ROLLED EXTRUDED RAIL



WELDED RAIL



LOCKING EDGE RAIL SPLICE

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

LOCKING EDGE RAILS

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	46.5

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PLOT SCALE =			
PLOT DATE = 12/20/2013			

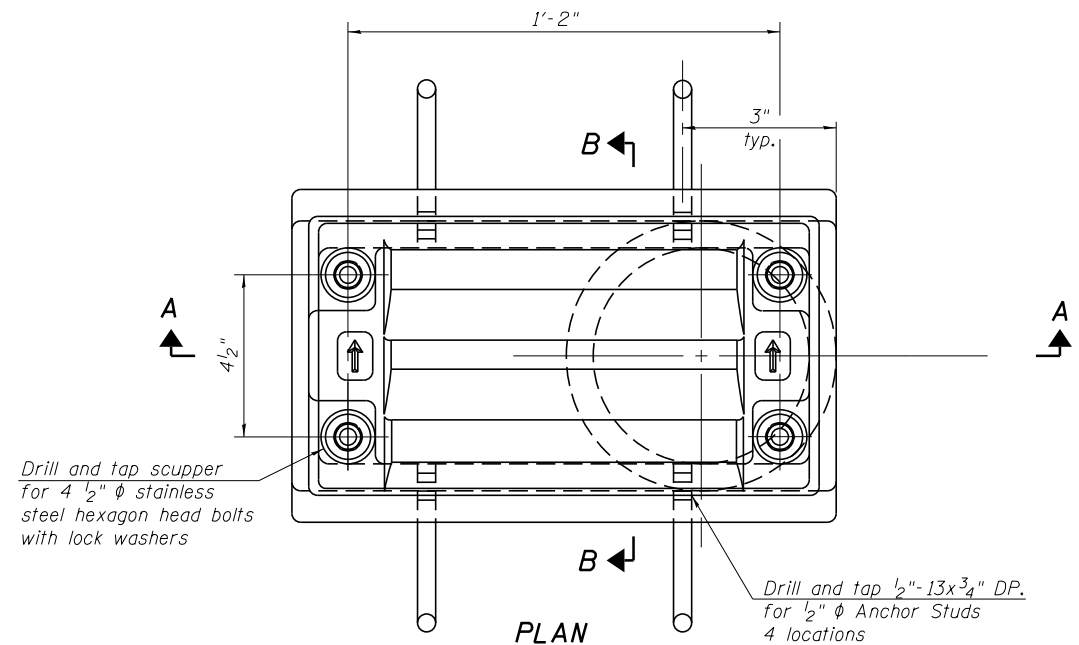
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 DEPARTMENT OF TRANSPORTATION**

**PREFORMED JOINT STRIP SEAL
 STRUCTURE NO. 016-0483**

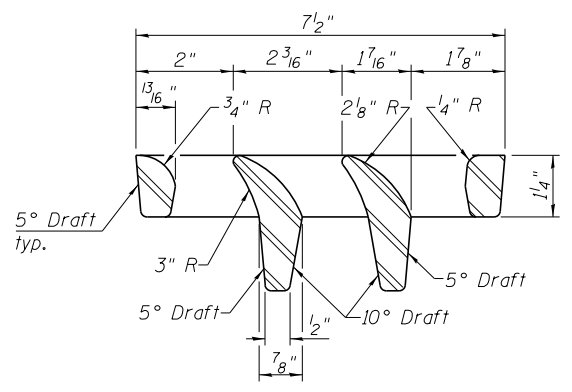
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	504
CONTRACT NO.			60J16	
ILLINOIS FED. AID PROJECT				

SHEET NO. SE20 OF SE46 SHEETS

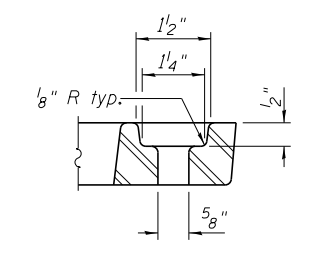
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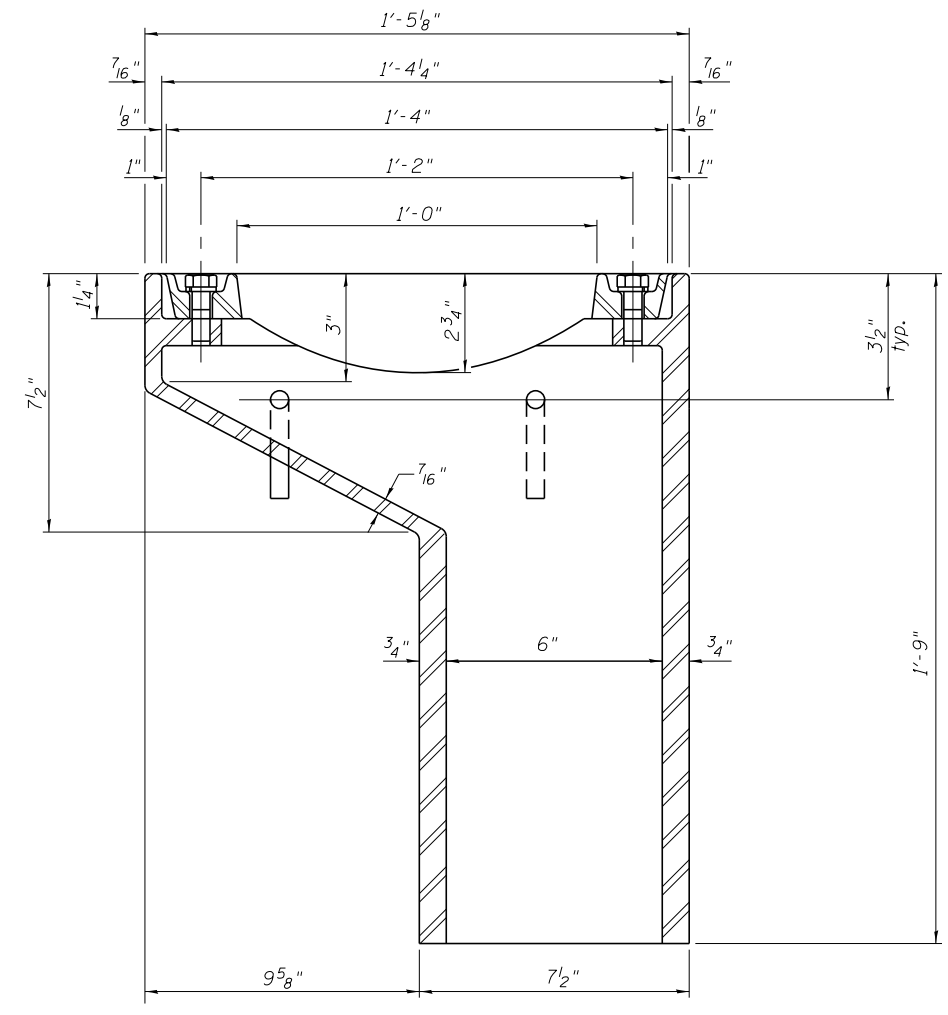
PLAN



VANE GRATE DETAIL

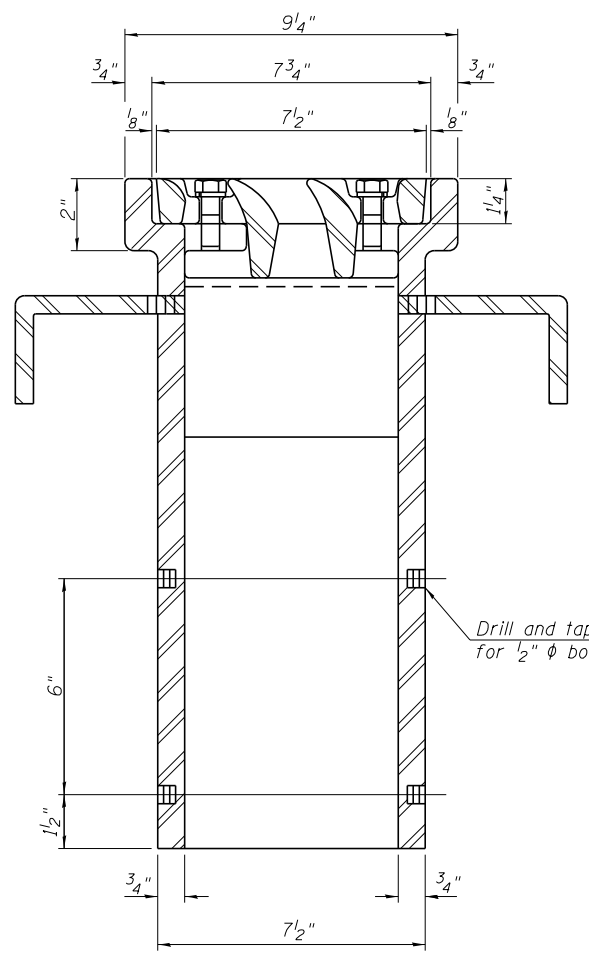


BOLT HOLE DETAIL



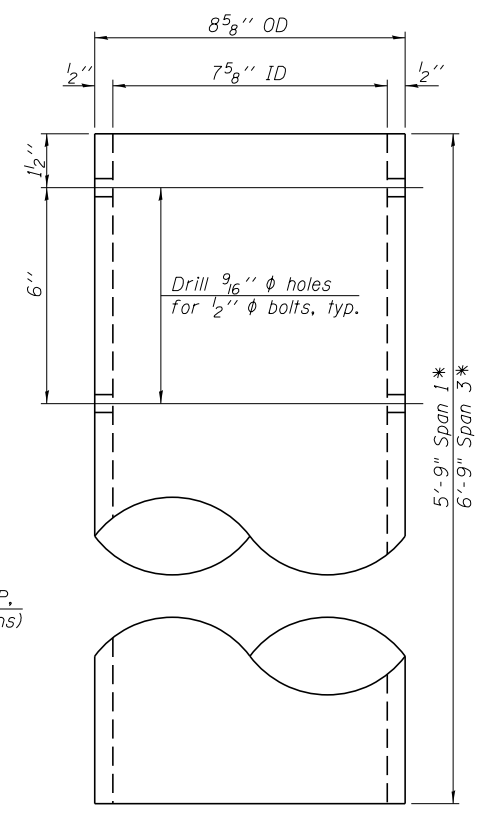
SECTION A-A

See Sheet SE14 for scupper location relative to parapet.

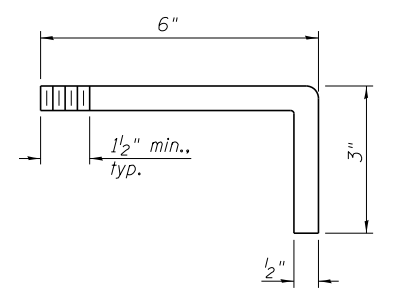


SECTION B-B

Drill and tap 1/2"-13x1/2" DP. for 1/2" φ bolts. (4 locations)



DOWNSPOUT



ANCHOR STUD DETAIL

*Length of downspout shall extend a minimum of 6" below the girder bottom flange.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-11	Each	4

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DS-11 7-1-10

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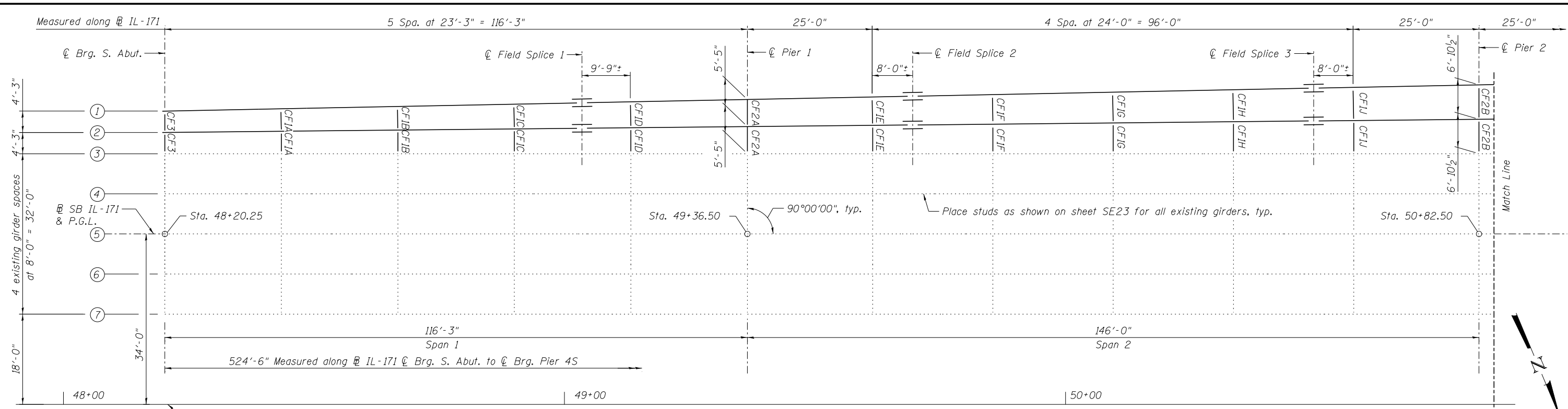
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**DRAINAGE SCUPPER, DS-11
STRUCTURE NO. 016-0483**

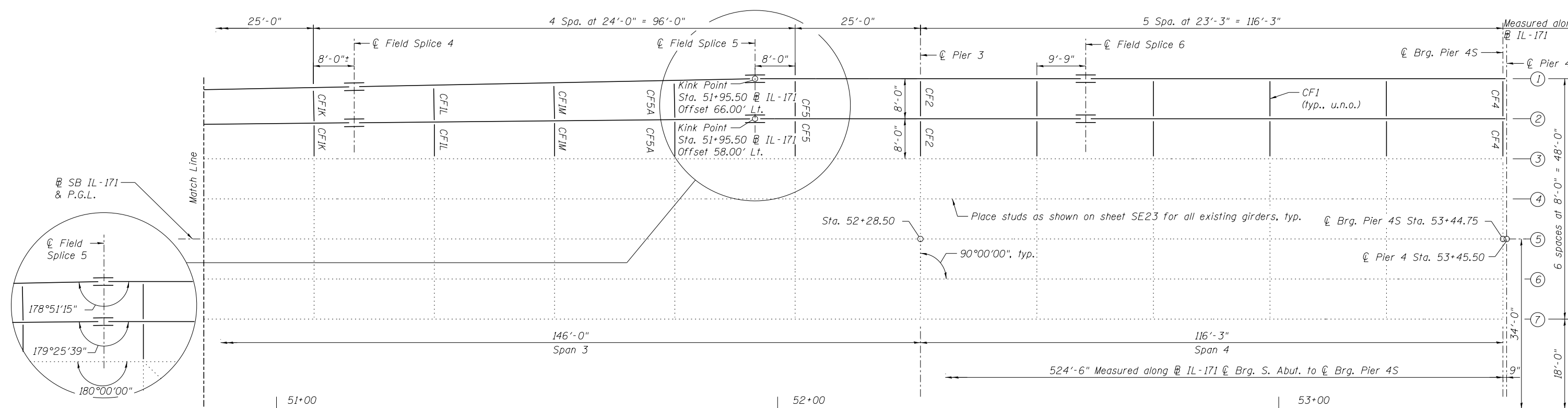
SHEET NO. SE21 OF SE46 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	505
CONTRACT NO.			60J16	
ILLINOIS FED. AID PROJECT				

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FRAMING PLAN - SPANS 1 & 2



FRAMING PLAN - SPANS 3 & 4

- NOTES:**
- Field verify all existing stiffener plate locations on girder 3 before fabricating proposed girders. Adjust location of cross frames so that connection to existing stiffener plate can be made.
 - Cross frames shall be placed perpendicular to girder 3 between girders 2 & 3. Cross frame shall be placed perpendicular to either girder between girders 1 & 2. Connection plates on either face of girder 2 shall be located at the same location along the girder. Adjust cross framing spacing along girder 1 as needed. At all support locations all cross frames shall be placed parallel to Brg.
 - See sheet SE25 for steel plate girder cross frame details.
 - See sheet SE24 for splice details.
 - See sheet SE26 for structural steel removal and repairs.
 - All cross frames shall be installed as steel is erected and secured with erection pins and bolts. Individual cross frames at supports may be temporarily disconnected to install bearing anchor rods.

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0160483.60J16.022.Framing.Plan.dgn		CHECKED - KMP	REVISED -
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STATE OF ILLINOIS
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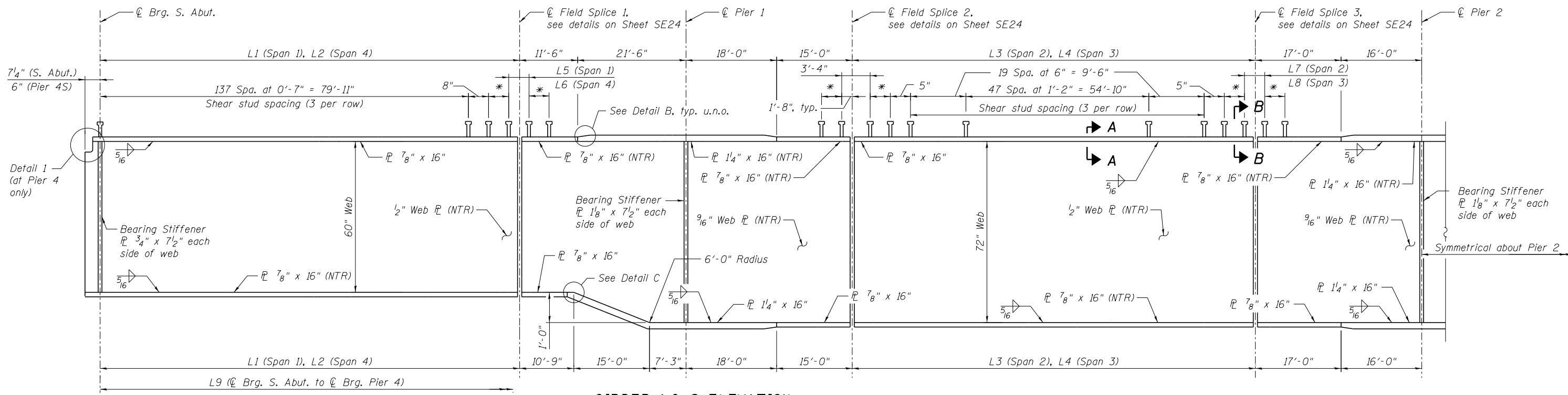
FRAMING PLAN
STRUCTURE NO. 016-0483

SHEET NO. SE22 OF SE46 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	506
CONTRACT NO. 60J16				

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GIRDER 1 & 2 ELEVATION

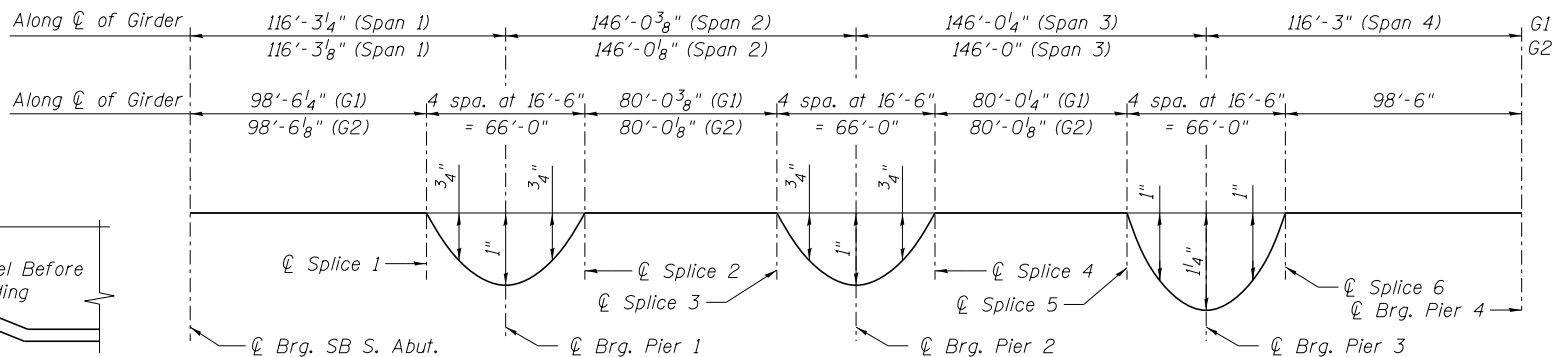
(Shear stud connector, shown for Girder G1-G7)

* 3 spa. at 0'-4" = 1'-0" (4 studs per row). See Section B-B

GIRDER DIMENSIONS

Girder No.	L1	L2	L3	L4	L5	L6	L7	L8	L9
G1	83'-3 1/4"	83'-3"	80'-0 3/8"	80'-0 1/4"	3'-4 1/4"	3'-4"	3'-4 3/8"	3'-4 1/4"	524'-6 7/8"
G2	83'-3 3/8"	83'-3"	80'-0 1/8"	80'-0"	3'-4 1/2"	3'-4"	3'-4 1/8"	3'-4 1/8"	524'-6 1/4"
Existing G3-G7	83'-3"	83'-3"	80'-0"	80'-0"	3'-4"	3'-4"	3'-4"	3'-4"	524'-6"

All dimensions along the ϕ of the girder

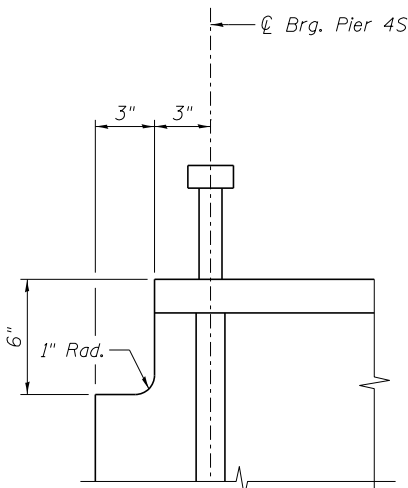


GIRDER 1 & 2 CAMBER DIAGRAM

**** TOP OF WEB ELEVATIONS**

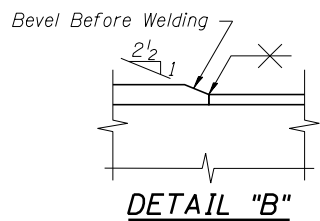
Location	Girder 1	Girder 2
CL Brg. S. Abut.	618.70	618.78
FS #1	618.71	618.79
CL Brg. Pier 1	618.66	618.75
FS #2	618.77	618.88
FS #3	618.95	619.07
CL Brg. Pier 2	618.98	619.11
FS #4	619.17	619.32
FS #5	619.53	619.69
CL Brg. Pier 3	619.63	619.79
FS #6	619.94	620.10
CL Brg. Pier 4S	620.51	620.67

**For Fabrication only.

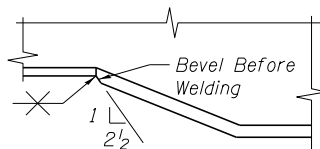


DETAIL 1

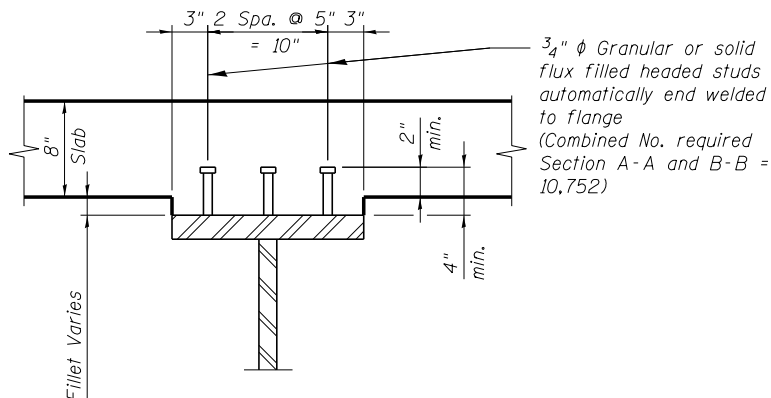
(Cope Girders as shown at Pier 4 only)



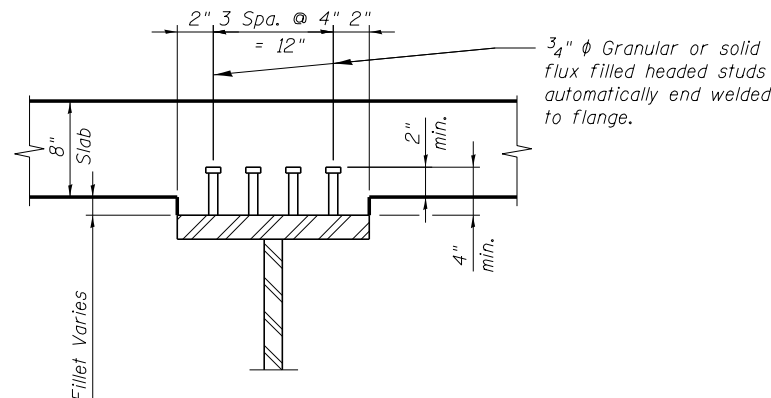
DETAIL "B"



DETAIL "C"



SECTION A-A



SECTION B-B

NOTES:

1. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
2. All flange plates and web plates shall be AASHTO M270 Grade 50 steel.

EXISTING INTERIOR GIRDER MOMENT TABLE					
		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 & 3	0.5 Sp. 2	Pier 2
I_s	(in ⁴)	44,271	95,488	53,509	95,488
$I_c(n)$	(in ⁴)	89,553	95,488	113,862	95,488
$I_c(3n)$	(in ⁴)	68,712	----	86,255	----
S_s	(in ³)	1417	2521	1449	2521
$S_c(n)$	(in ³)	1736	----	1875	----
$S_c(3n)$	(in ³)	1625	----	1729	----
Z	(in ³)	----	----	----	----
ρ	(k/')	1.114	1.382	1.109	1.382
$M\rho$	(k)	930.4	2417.5	855.2	2375.4
$s\rho$	(k/')	0.150	----	0.150	----
$M_s\rho$	(k)	136.6	----	134.7	----
M_L	(k)	1059.2	1179.0	1198.8	1294.1
$M_{I\omega}$	(k)	219.5	230.2	221.2	238.8
$^5_3 [M_L + M_I]$	(k)	2136	2353	2371	2560
M_a	(k)	4163.3	6202.1	4369.5	6415.8
M_u	(k)	6417.0	----	8221.6	----
$f_s \rho$ non-comp	(ksi)	7.9	11.5	7.1	11.3
$f_s \rho$ (comp)	(ksi)	1.0	----	0.9	----
$f_s \rho_3 [M_L + M_I]$	(ksi)	14.8	11.2	15.2	12.2
f_s (Overload)	(ksi)	23.7	22.7	23.2	23.5
f_s (Total)	(ksi)	----	29.5	----	30.5
VR	(k)	68.8	----	59.7	----

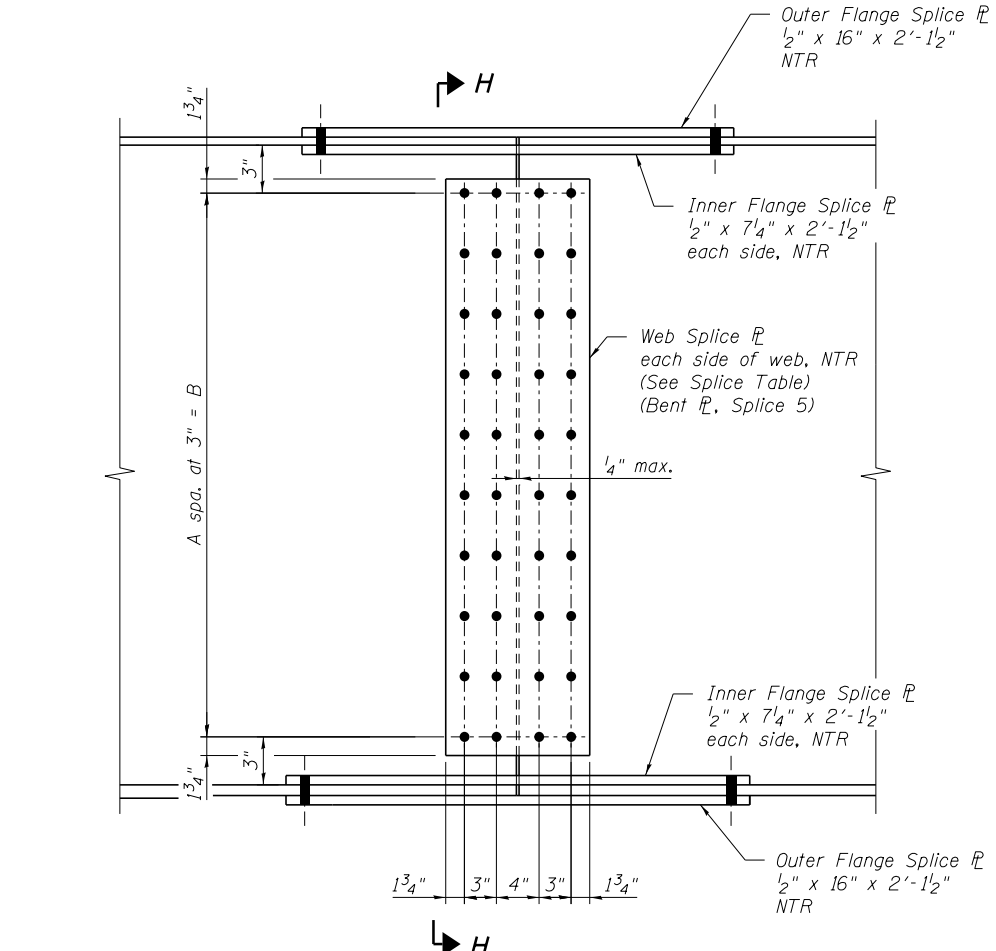
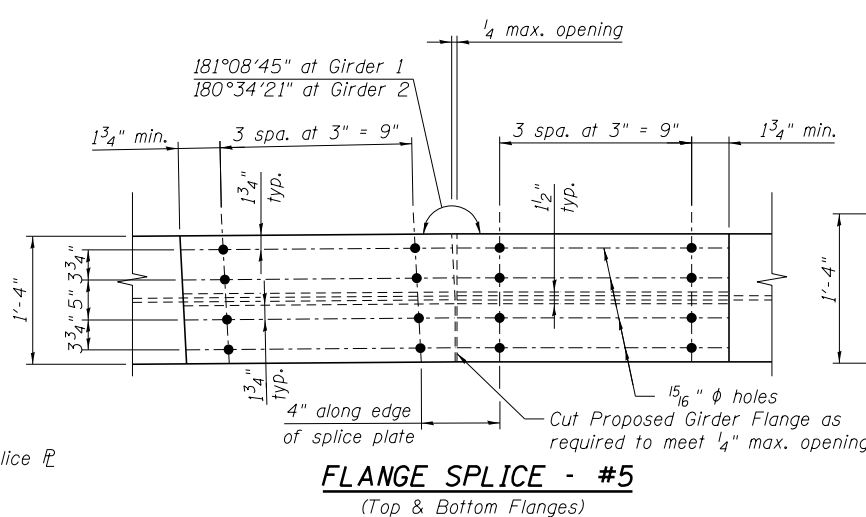
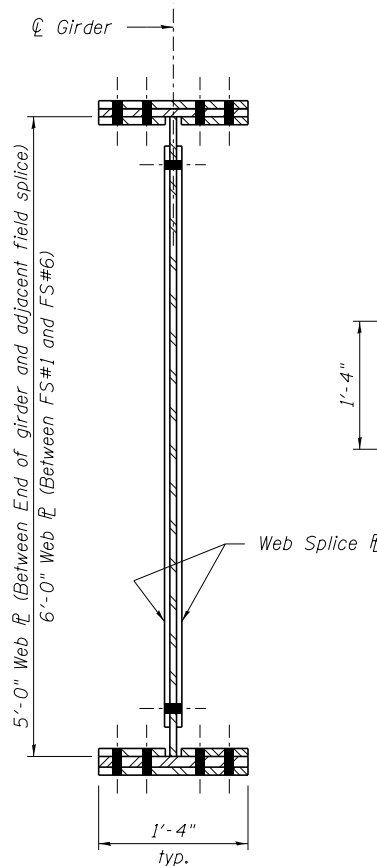
PROPOSED INTERIOR GIRDER 2 MOMENT TABLE								
		0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.5 Pier 3	Pier 3	.6 Span 4
I_s	(in ⁴)	34,942	71,157	52,729	71,157	52,729	71,157	34,942
$I_c(n)$	(in ⁴)	67,978	71,157	107,204	71,157	112,945	71,157	77,395
$I_c(3n)$	(in ⁴)	50,854	----	80,076	----	84,642	----	58,306
S_s	(in ³)	1132	1910	1430	1910	1430	1910	1132
$S_c(n)$	(in ³)	1444	----	1862	----	1891	----	1499
$S_c(3n)$	(in ³)	1314	----	1694	----	1727	----	1377
Z	(in ³)	----	----	----	----	----	----	----
ρ	(k/')	0.747	0.901	0.913	1.047	1.059	1.160	1.075
$M\rho$	(k)	607.3	1824.4	758.5	2085.8	880.9	2342.7	916.7
$s\rho$	(k/')	0.150	----	0.150	----	0.150	----	0.150
$M_s\rho$	(k)	137.1	----	140.4	----	144.000	----	139.930
M_L	(k)	601.0	786.5	917.0	1046.4	1120.4	1091.6	941.0
$M_{I\omega}$	(k)	124.6	153.5	169.2	193.1	206.7	213.1	195.1
$^5_3 [M_L + M_I]$	(k)	1212	1570	1814	2070	2216	2179	1897
M_a	(k)	2542.9	4412.7	3526.7	5402.5	4213.5	5877.8	3840.0
M_u	(k)	----	----	----	----	----	----	----
$f_s \rho$ non-comp	(ksi)	6.4	11.5	6.4	13.1	7.4	14.7	9.7
$f_s \rho$ (comp)	(ksi)	1.3	----	1.0	----	1.0	----	1.2
$f_s \rho_3 [M_L + M_I]$	(ksi)	10.1	9.9	11.7	13.0	14.1	13.7	15.2
f_s (Overload)	(ksi)	17.8	21.3	19.0	26.1	22.5	28.4	26.1
f_s (Total)	(ksi)	23.1	27.7	24.8	33.9	29.2	36.9	34.0
VR	(k)	41.5	----	47.5	----	57.3	----	67.8

INTERIOR EXISTING GIRDER REACTION TABLE				
		S. Abut. & Pier 4	Pier 1 & 3	Pier 2
$R\rho$	(k)	51.9	189.9	188.7
R_L	(k)	51.9	95.6	100.0
R_I	(k)	10.8	12.3	12.0
R_{Total}	(k)	114.5	297.8	300.6

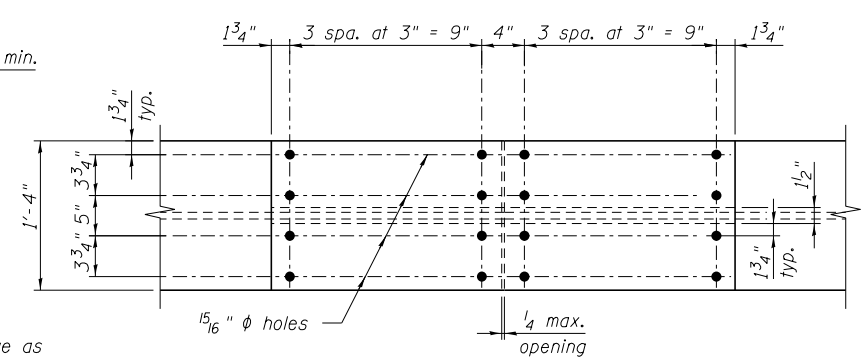
INTERIOR GIRDER 2 REACTION TABLE						
		S. Abut.	Pier 1	Pier 2	Pier 3	Pier 4
$R\rho$	(k)	36.5	146.7	169.0	185.6	45.2
R_L	(k)	30.5	66.2	85.2	93.5	51.5
R_I	(k)	6.3	8.5	10.2	12.1	10.7
R_{Total}	(k)	73.3	221.4	264.4	291.2	107.4

* Compact section
 ** Braced non-compact and partially braced section

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in⁴ and in³).
 $I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads (in⁴ and in³).
 $I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total and Overload) due to long-term composite (superimposed) dead loads (in⁴ and in³).
 Z : Plastic Section Modulus of the steel section in non-composite areas (in³).
 ρ : Un-factored non-composite dead load (kips/ft.).
 $M\rho$: Un-factored moment due to non-composite dead load (kip-ft.).
 $s\rho$: Un-factored long-term composite (superimposed) dead load (kips/ft.).
 $M_s\rho$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
 M_L : Un-factored live load moment (kip-ft.).
 M_I : Un-factored moment due to impact (kip-ft.).
 M_a : Factored design moment (kip-ft.).
 $1.3 [M\rho + M_s\rho + \frac{5}{3} (M_L + M_I)]$
 M_u : Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).
 f_s (Overload): Sum of stresses as computed from the moments below (ksi).
 $M\rho + M_s\rho + \frac{5}{3} (M_L + M_I)$
 f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
 $1.3 [M\rho + M_s\rho + \frac{5}{3} (M_L + M_I)]$
 VR: Maximum $\frac{1}{4}$ + impact shear range within the composite portion of the span for stud shear connector design (kips).



ELEVATION - FIELD SPLICE - GIRDER 1 & 2



FLANGE SPLICE 1, 2, 3, 4 & 6
 (Top & Bottom Flanges)
 (32 Bolts per Flange)

SPLICE TABLE

Splice Location	Web Splice ρ	A	B	No. Bolts
Splice 1 & 6	$\frac{3}{8}$ " x $13\frac{1}{2}$ " x $4'-9\frac{1}{2}$ "	18	4'-6"	76
Splice 2 & 5	$\frac{3}{8}$ " x $13\frac{1}{2}$ " x $5'-9\frac{1}{2}$ "	22	5'-6"	92
Splice 3 & 4	$\frac{3}{8}$ " x $13\frac{1}{2}$ " x $5'-9\frac{1}{2}$ "	22	5'-6"	92

NOTES:
 1. All Splice Plates shall be AASHTO M270 Grade 50 steel.
 2. All Splice Bolts shall be $\frac{7}{8}$ " ϕ ASTM A325 High Strength with $\frac{15}{16}$ " ϕ holes.
 3. Load carrying components designated "NTR" shall conform to the Impact Testing Requirements, Zone 2.



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 205 North Michigan Avenue, Suite 2400
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 312-565-0450 Job No. 10093

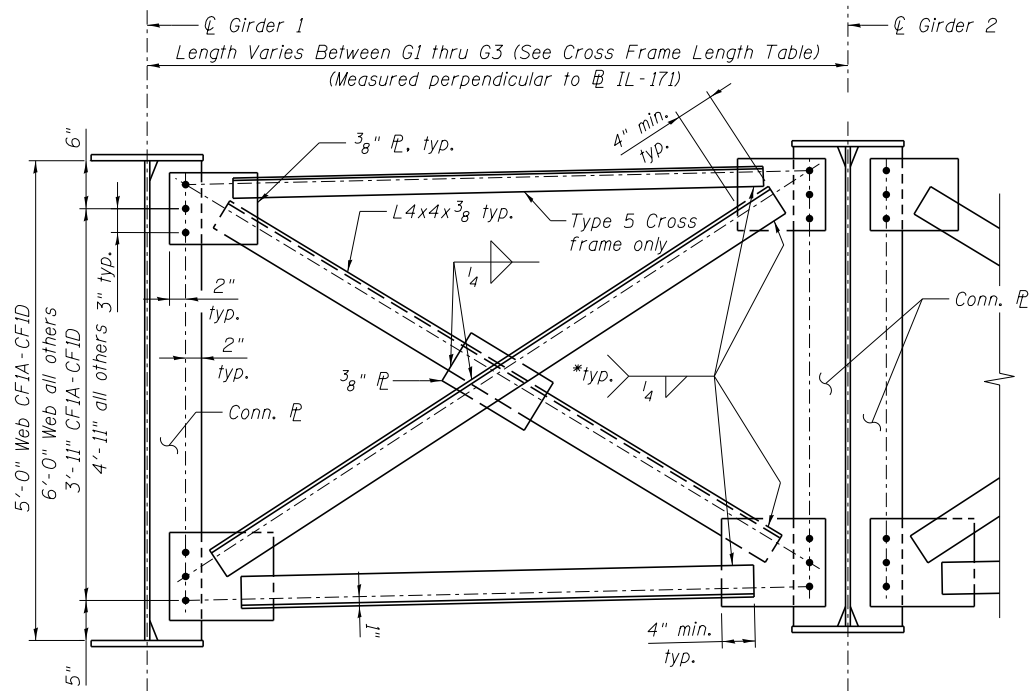
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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

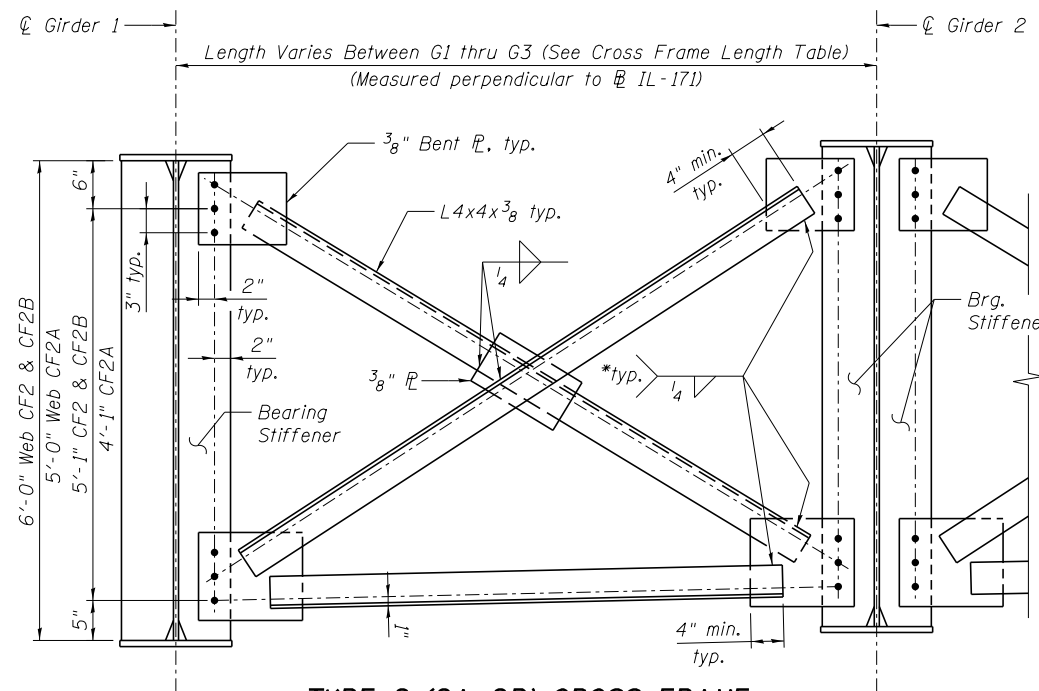
SPLICE DETAILS AND MOMENT & REACTION TABLE
 STRUCTURE NO. 016-0483
 SHEET NO. SE24 OF SE46 SHEETS

F.A.P. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	508
CONTRACT NO. 60J16			ILLINOIS FED. AID PROJECT	

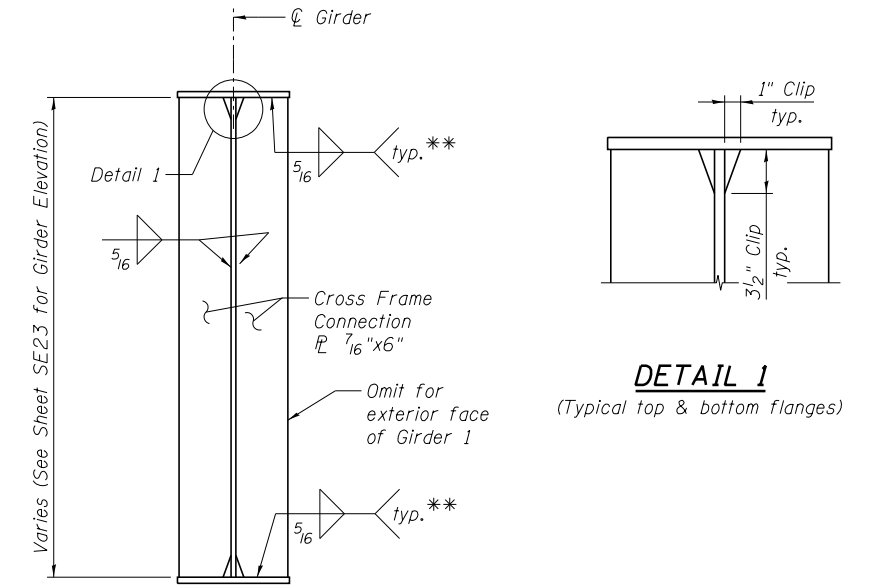
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TYPE 1 (IA-1M) & TYPE 5 (5A) CROSS FRAME
 (CF1) (CF5)
 (No. Req'd = 34) (No. Req'd = 4)



TYPE 2 (2A-2B) CROSS FRAME AT PIERS 1 THRU 3
 (CF2)
 (No. Req'd = 6)

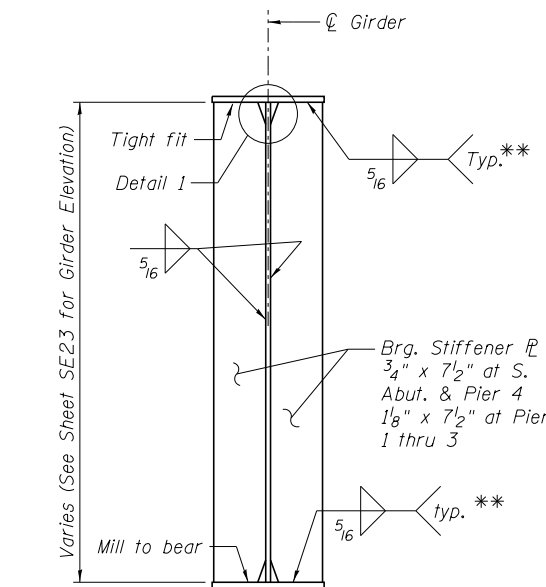


CONNECTION PLATE DETAIL
 (No. of Connection Plates Req'd = 108)

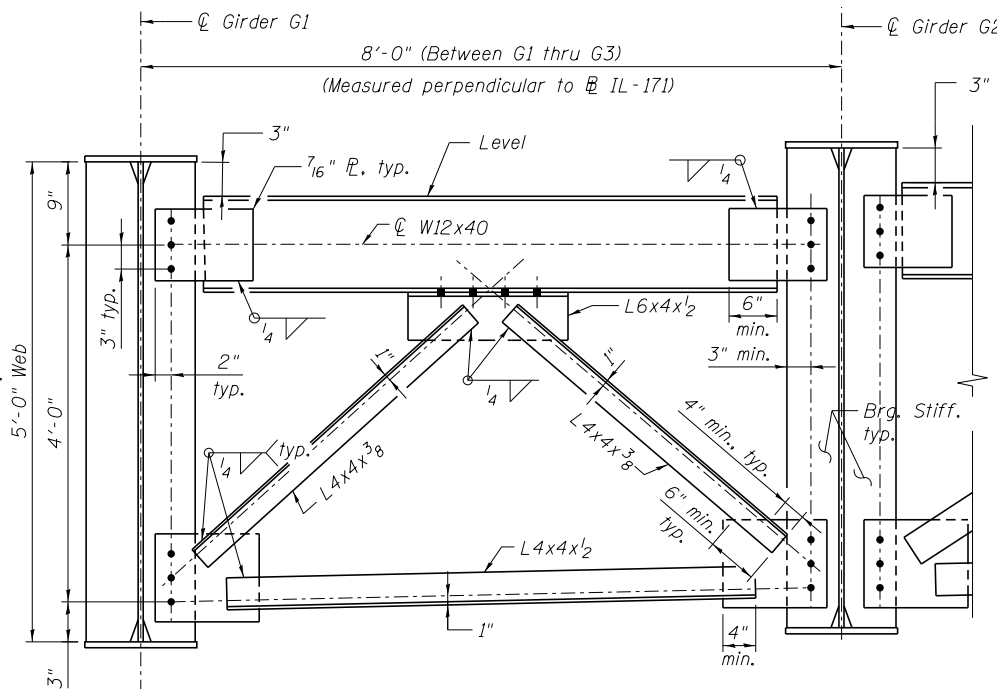
CROSS FRAME LENGTH

Cross Frame	Length
CF1	8'-0"
CF1A	4'-5 3/4"
CF1B	4'-8 1/2"
CF1C	4'-11 3/8"
CF1D	5'-2 1/8"
CF1E	5'-7 7/8"
CF1F	5'-10 3/4"
CF1G	6'-1 5/8"
CF1H	6'-4 5/8"
CF1J	6'-7 1/2"
CF1K	7'-1 1/2"
CF1L	7'-4 3/8"
CF1M	7'-7 1/4"
CF2	8'-0"
CF2A	5'-4 7/8"
CF2B	6'-10 1/2"
CF5	8'-0"
CF5A	7'-10 1/8"

(Measured perpendicular to IL-171)



TYPE 3 CROSS FRAME AT SOUTH ABUTMENT
 (CF3)
 (No. Req'd = 2)



TYPE 4 CROSS FRAME AT PIER 4
 (CF4)
 (No. Req'd = 2)

BEARING STIFFENER

(No. of 3/4" x 7 1/2" Plates Required = 8)
 (No. of 1/8" x 7 1/2" Plates Required = 12)

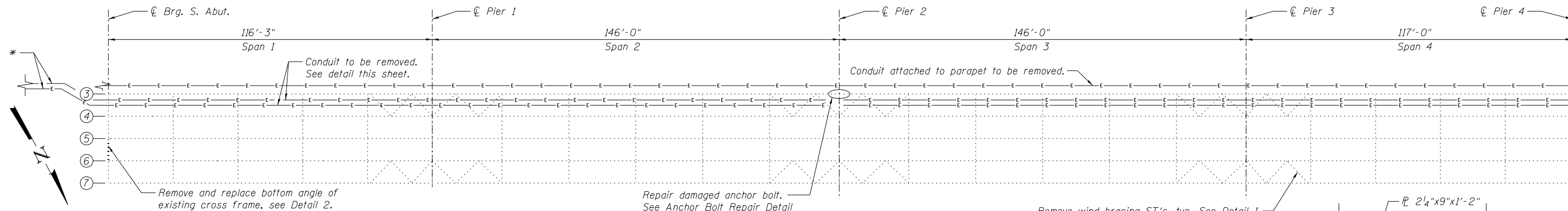
NOTES:

- All cross frames between girders shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames at supports may be temporarily disconnected to install bearing anchor rods.
- Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 3/4" ϕ , holes 5/16" ϕ . Two hardened washers required for each set of oversized holes.
- See sheet SE26 for Cross Frame Connection Detail to Existing Steel.
- All Cross Frame elements, Connection Plates and Bearing Stiffeners may be AASHTO M270 Grade 36.

* Fillet weld angles along 3 sides on one face of gusset plate.
 ** Terminate weld 1/4" from edges of stiffener P.

FILE NAME = 0160483.60J16.025.Steel.Details.1.dgn	USER NAME = jsurber	DESIGNED - DTS	REVISIONS -
		CHECKED - KMP	REVISIONS -
		DRAWN - DTS	REVISIONS -
		CHECKED - KMP	REVISIONS -
			REVISIONS -

F.A.P. RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	509
CONTRACT NO. 60J16			ILLINOIS FED. AID PROJECT	

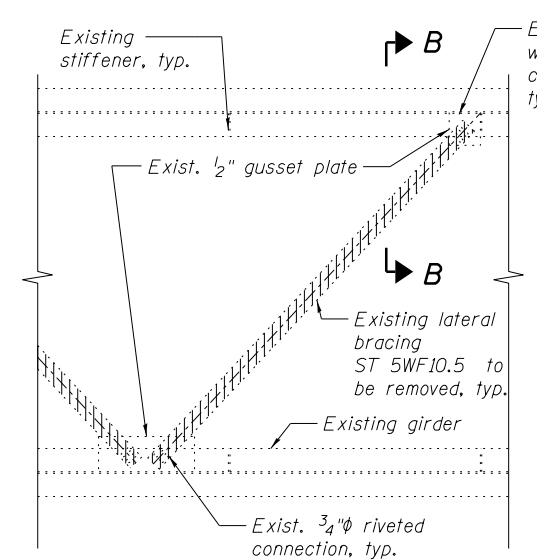


* Remove Conduit behind abutment and underneath existing approach slab. See Special Provision "Remove Conduit Attached to Structure".

Repair damaged anchor bolt. See Anchor Bolt Repair Detail and Note 3.

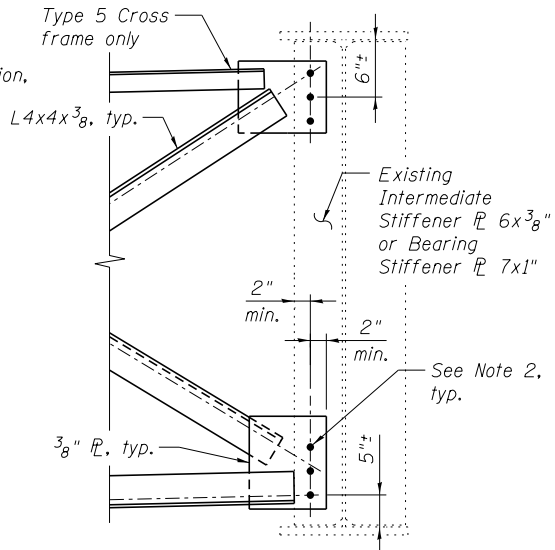
Remove wind bracing ST's, typ. See Detail 1. (Bottom flange only)

EXISTING FRAMING PLAN REMOVAL AND REPAIR



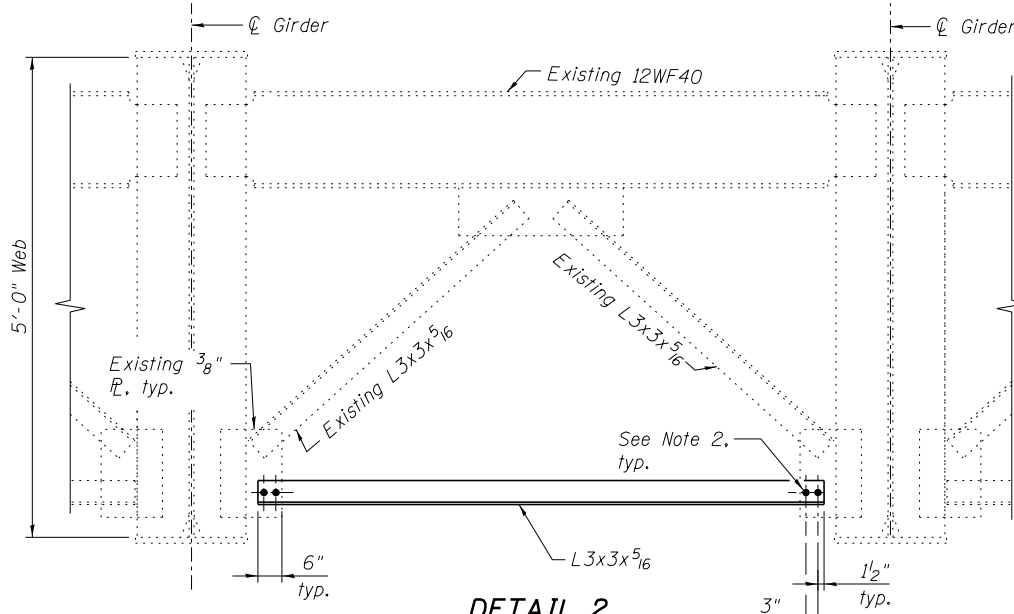
DETAIL 1

(6 Locations)
(Removal of lateral bracing paid for as "Structural Steel Removal")



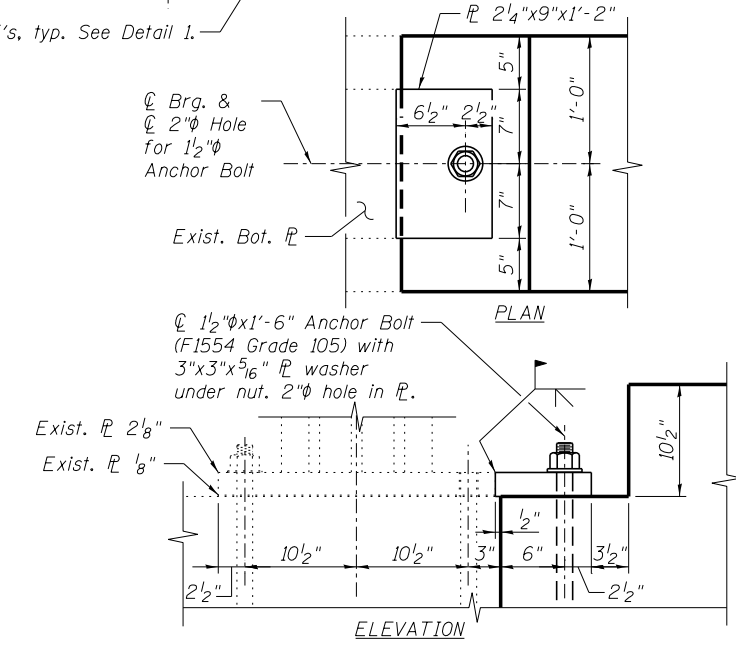
EXISTING GIRDER CONNECTION

(Cross Frame Type 1, 2 & 5)
(See sheet SE25 for additional cross frame connection details)



DETAIL 2

(1 Location)
(Replacement of angle paid for as "Furnishing and Erecting Structural Steel".)

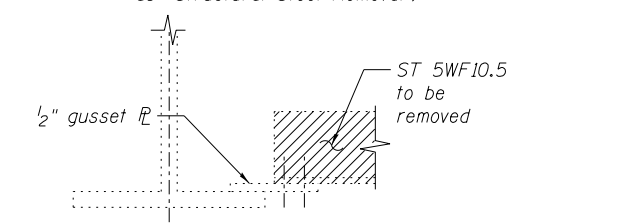


ANCHOR BOLT REPAIR DETAIL

(See Note 3)

NOTES:

- The Engineer will inspect all existing bearing anchor bolts to ascertain their condition. Any damaged anchor bolts shall be reported to the BBS for further direction. The Contractor shall provide all means and access for the Engineer to perform the anchor bolt inspections. All costs associated with providing the access shall be considered included in the unit price for "Furnishing and Erecting Structural Steel".
- New fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 3/4" dia., holes 1 1/8" dia. Holes in new steel shall be shop drilled. Holes in existing steel shall be field drilled using the holes in the new steel as a template. Provide two hardened washers for each set of holes. Cost of field drilling is included with "Furnishing and Erecting Structural Steel".
- Anchor bolt shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade and diameter specified. The corresponding specified grade of AASHTO M314 anchor bolt may be used in lieu of ASTM F1554. Drilled and set anchor bolt shall be installed in hole drilled after the pier has been widened (see Sheet SE36) according to Article 521.06 of the Standard Specifications. The structural steel plate shall meet the requirements of AASHTO M270 Grade 50. Cost of structural steel plate and all equipment and labor required to install is included with "Furnishing and Erecting Structural Steel". Cost of anchor bolt included with "Anchor Bolts, 1 1/2"".



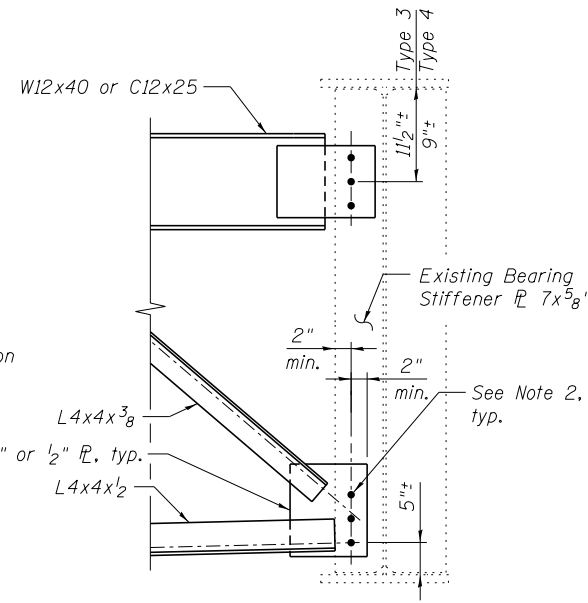
SECTION B-B

Existing conduit, wiring, U-Bolts, hardware, expansion couplings, sleeves, and junction boxes to be completely removed. Cost included with "Remove Conduit Attached to Structure". See Special Provision.

Existing support angle to remain.

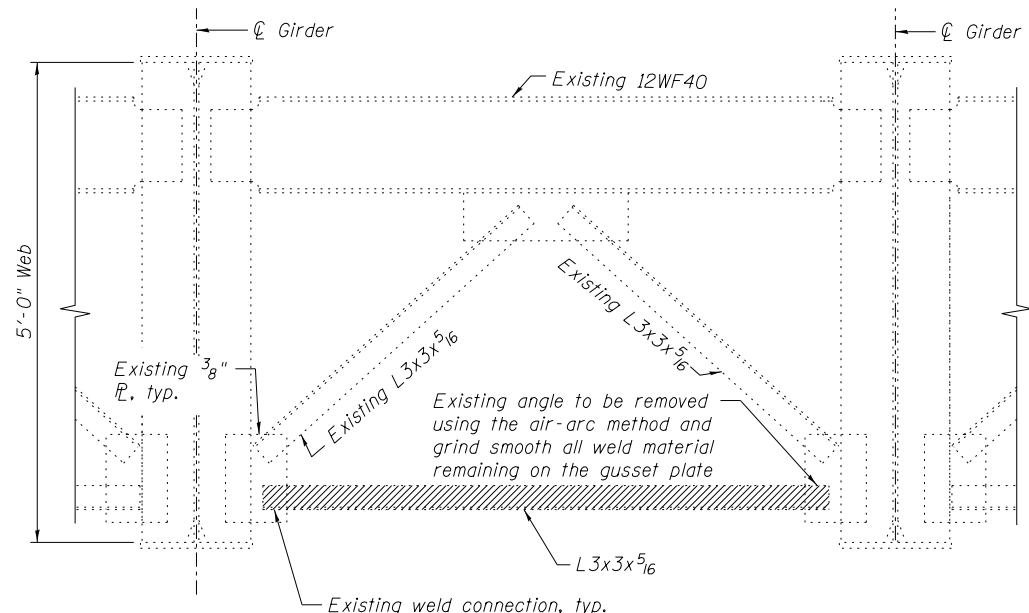
Existing Fascia Beam (Girder 3)

CONDUIT REMOVAL DETAIL



EXISTING GIRDER CONNECTION

(Cross Frame Type 3 & 4)
(See sheet SE25 for additional cross frame connection details)



EXISTING DETAIL 2

(Removal of angle paid for as "Structural Steel Removal".)

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Steel Removal	Pound	3,710
Remove Conduit Attached to Structure	Foot	1,626
Anchor Bolts, 1 1/2"	Each	1

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Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

FILE NAME =	USER NAME = jsurber	DESIGNED - DTS	REVISIONS -
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		PLOT SCALE =	REVISIONS -
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		PLOT DATE = 12/20/2013	REVISIONS -

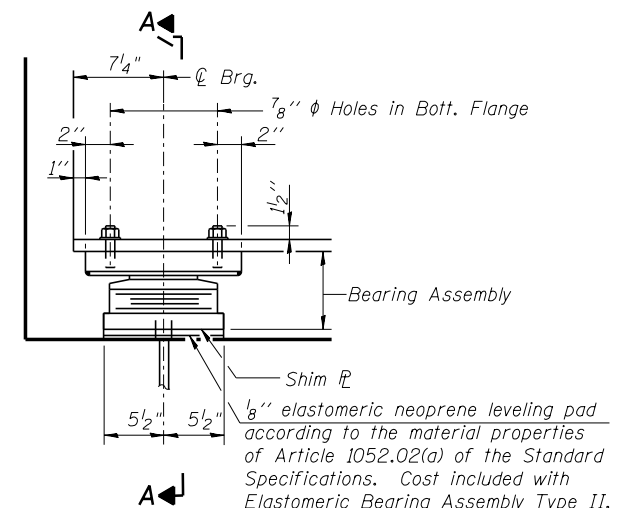
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL REPAIRS
STRUCTURE NO. 016-0483

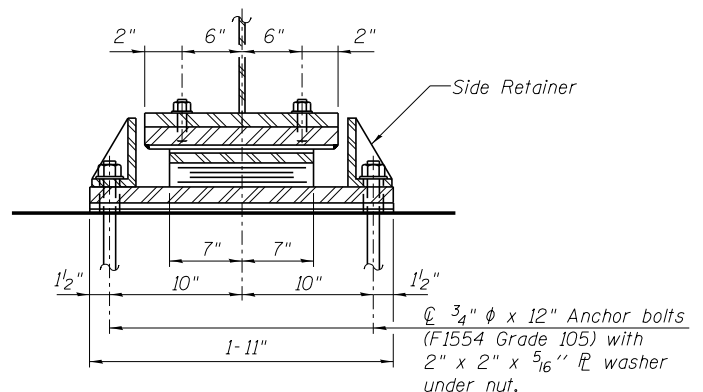
SHEET NO. SE26 OF SE46 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	510
CONTRACT NO.			60J16	
ILLINOIS FED. AID PROJECT				

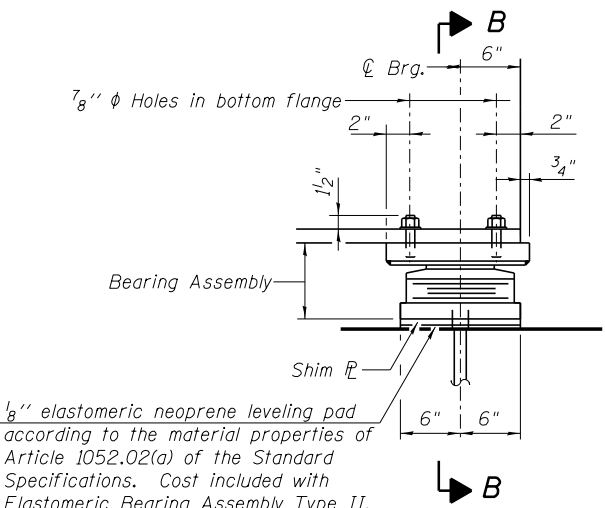
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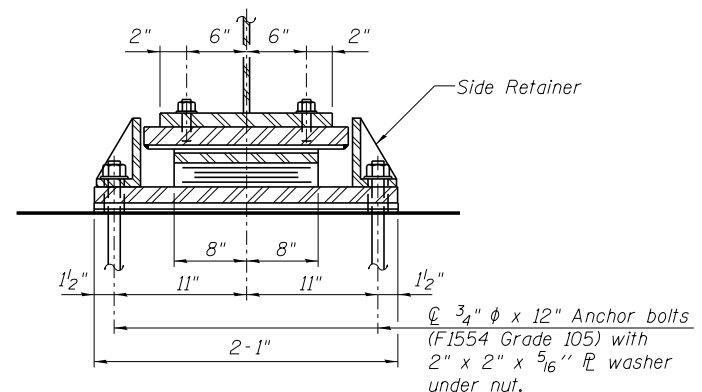
ELEVATION AT S. ABUT.
(Looking South)



SECTION A-A

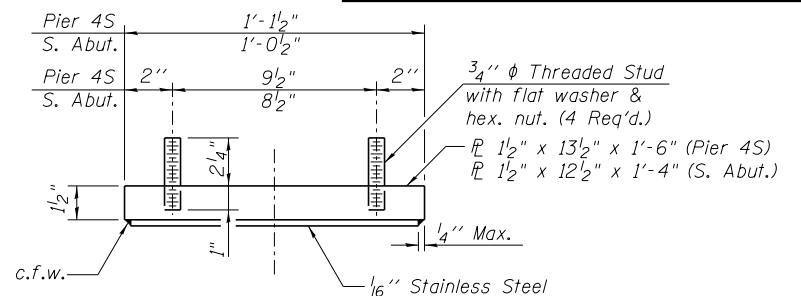


ELEVATION AT PIER 4S
(Looking South)

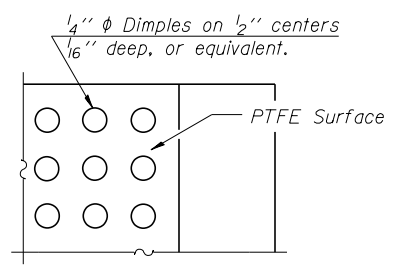


SECTION B-B

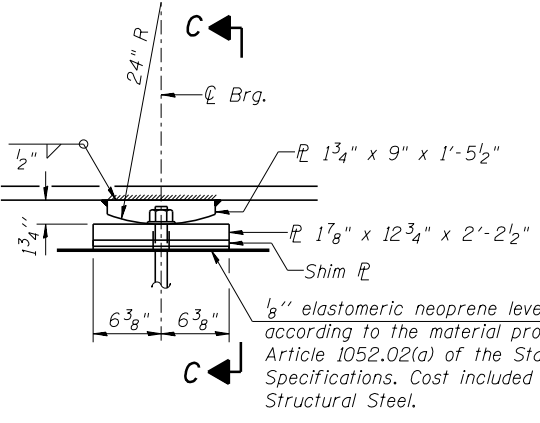
TYPE II ELASTOMERIC EXP. BRG. S. ABUT.



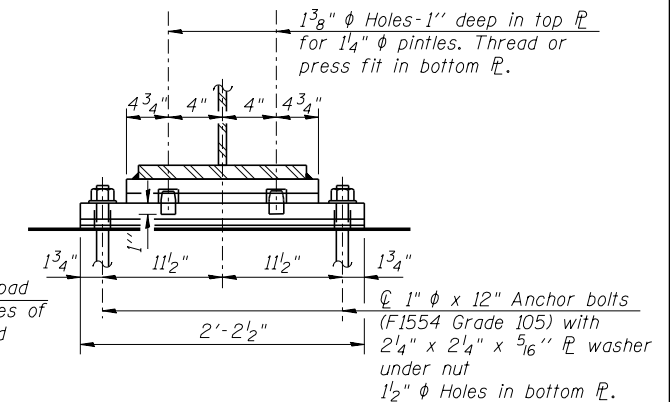
TOP BEARING ASSEMBLY



PLAN-PTFE SURFACE



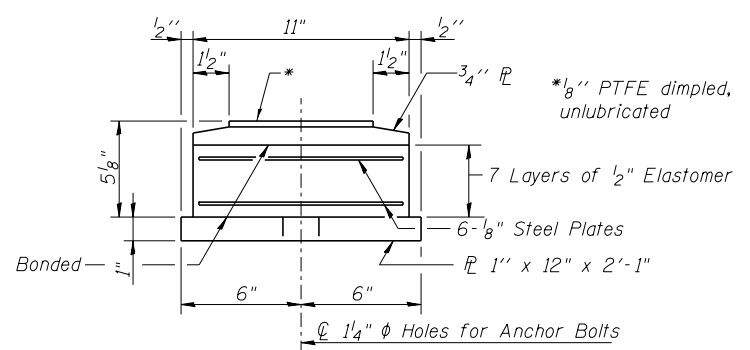
ELEVATION AT PIER 2



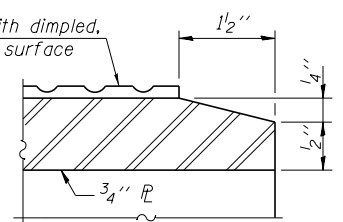
SECTION C-C

FIXED BEARING

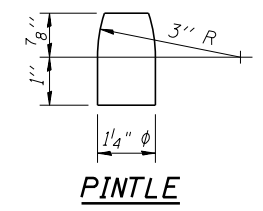
Notes:
Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.
Anchor bolts for Type II bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
Side retainers and other steel members required for the Type II elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.
The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.
Bonding of 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.
Steel plates and pintles required for fixed bearing shall be included with cost of furnishing and erecting structural steel.
The structural steel plates and pintles of the fixed bearing shall meet the requirements of AASHTO M270 Grade 50.
The structural steel plates of the elastomeric bearing assemblies shall meet the requirements of AASHTO M270 Grade 50.



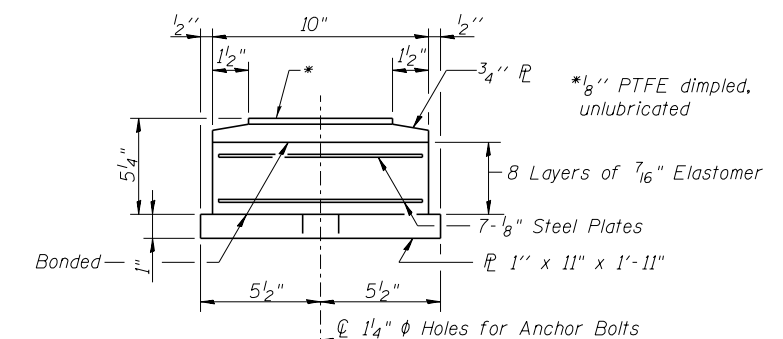
BOTTOM BEARING ASSEMBLY TYPE II PIER 4S



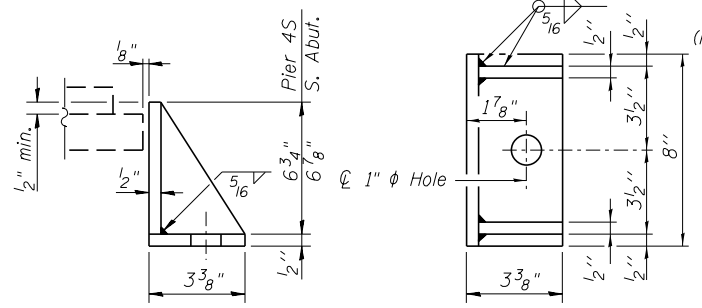
SECTION THRU PTFE



PINTLE

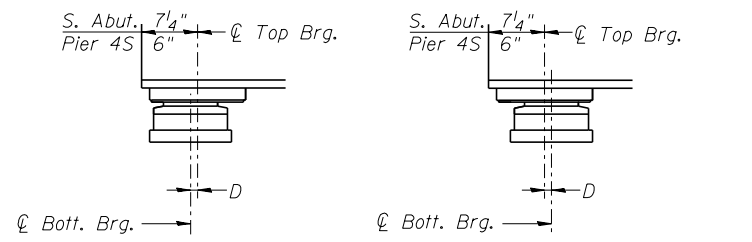


BOTTOM BEARING ASSEMBLY TYPE II S. ABUT.



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



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
Elastomeric Bearing Assembly Type II	Each	4
Anchor Bolts, 3/4"	Each	8
Anchor Bolts, 1"	Each	4

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0160483.60J16.027.Bearing_Details.Ldgn		CHECKED - AJK	REVISIONS -
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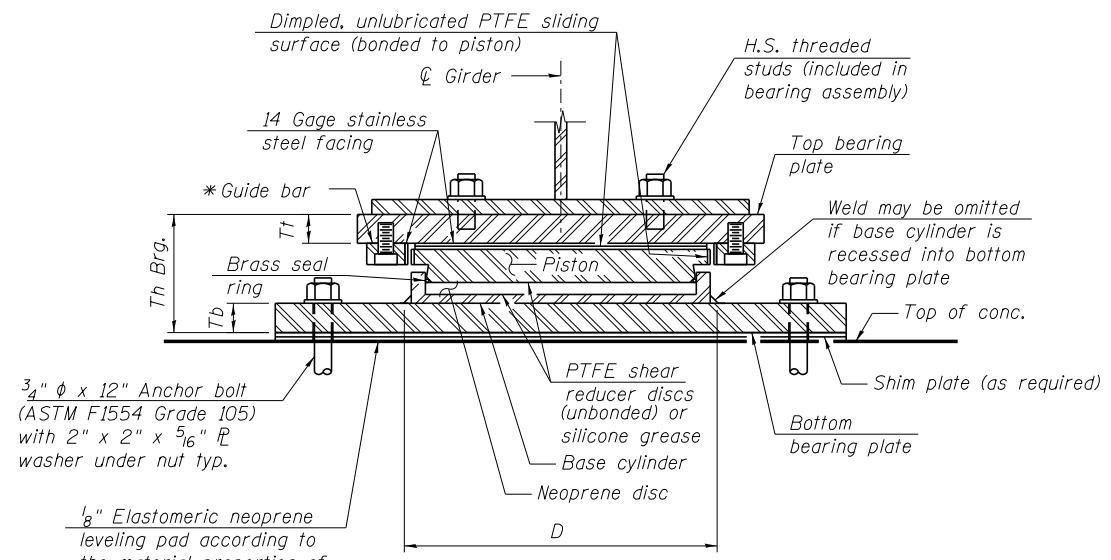
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ELASTOMERIC AND FIXED BEARING DETAILS
STRUCTURE NO. 016-0483

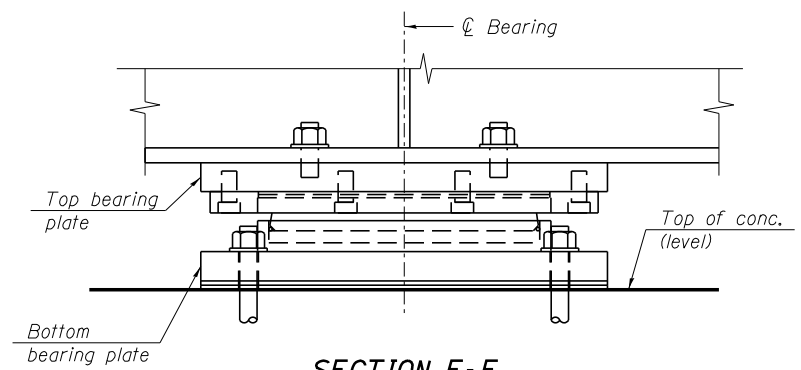
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CONTRACT NO.			60J16	
ILLINOIS FED. AID PROJECT				

SHEET NO. SE27 OF SE46 SHEETS

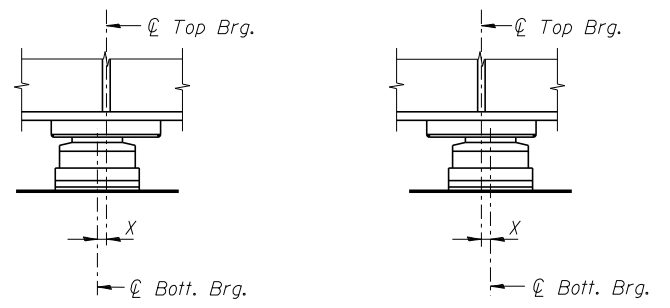
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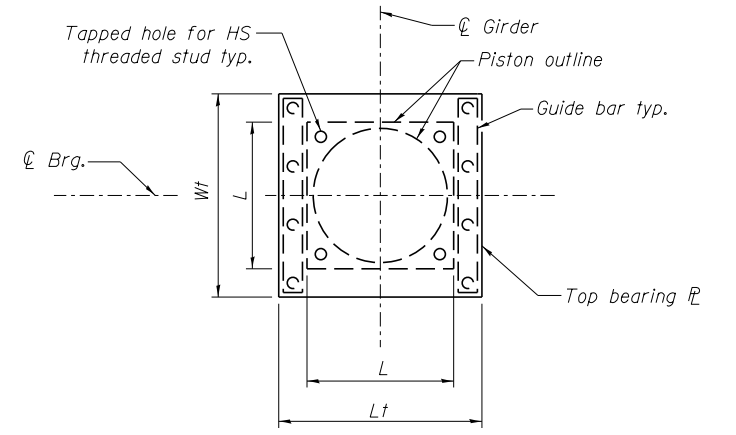
SECTION E-E



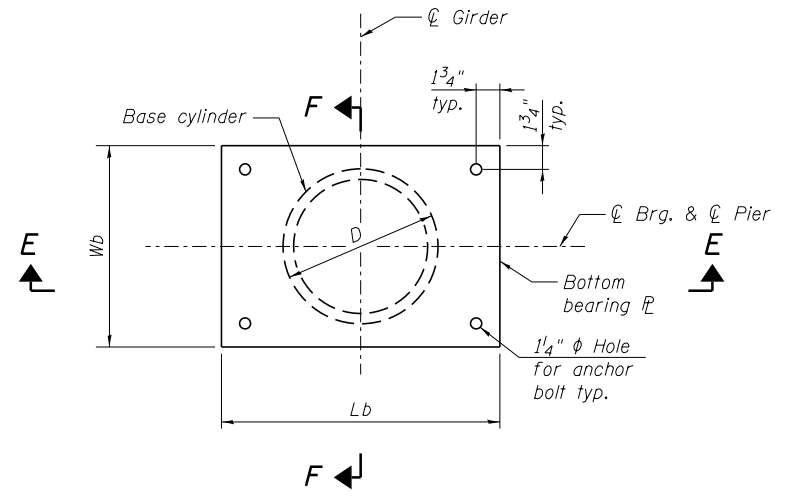
SECTION F-F



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



TOP BEARING PL AND PISTON PLAN



BOTTOM BEARING PL AND BASE CYLINDER PLAN

BILL OF MATERIAL

Item	Unit	Total
High Load Multi-Rotational Bearings, Guided Expansion, 250K	Ea.	2
High Load Multi-Rotational Bearings, Guided Expansion, 300K	Ea.	2
Anchor Bolts, 3/4"	Ea.	16

BEARING DIMENSIONS

Location	Pay Item Designation (kips)	Vert. Design Load** (kips)	Hs** (kips)	θs (radians)	Max. Theor. Thermal Mvmt from 50 °F	Top Plate				Bearing Assembly		Bottom Plate		Total Ht.		
						Wt	Lt	Tt (min.)	Bevel	Threaded Stud φ	L	D	Wb		Lb	Tb
Pier 1	250	238	48	0.02	1"	1'-7 1/4"	1'-7 3/8"	1 1/2"	N/A	3/4"	1'-1 5/8"	1'-1 5/8"	1'-6"	2'-3"	1 3/8"	7 1/2"
Pier 3	300	293	59	0.02	1"	1'-8 1/4"	1'-8 5/8"	1 3/4"	N/A	3/4"	1'-2 5/8"	1'-2 5/8"	1'-6"	2'-3"	1 3/8"	8 1/2"

* As an alternate to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece.
 ** Design Loads are the governing loads with no dynamic load allowance.

NOTES:

- All steel for bearings shall conform to the requirements of AASHTO M270 Grade 50, unless otherwise noted.
- 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. Anchor bolts may be either cast in place or installed in holes drilled after the supported member is in place. Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
- Total bearing height (Th) is estimated based on manufacturer data. Actual bearing height may differ from contract plans. The Contractor shall be responsible for verifying bearing heights and adjusting seat elevations, if required, prior to placing pier concrete.
- Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

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	PLOT DATE = 12/20/2013	CHECKED - AJK	REVISIED -

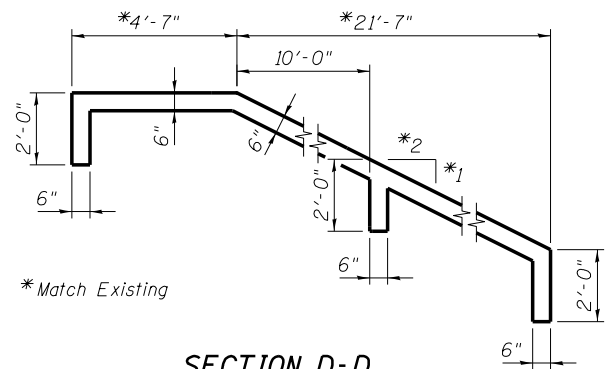
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**HLMR GUIDED EXPANSION BEARING DETAILS
 STRUCTURE NO. 016-0483**

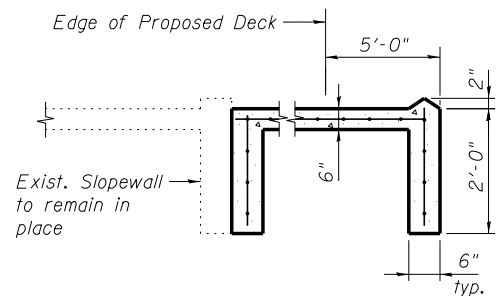
SHEET NO. SE28 OF SE46 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 60J16			ILLINOIS FED. AID PROJECT	

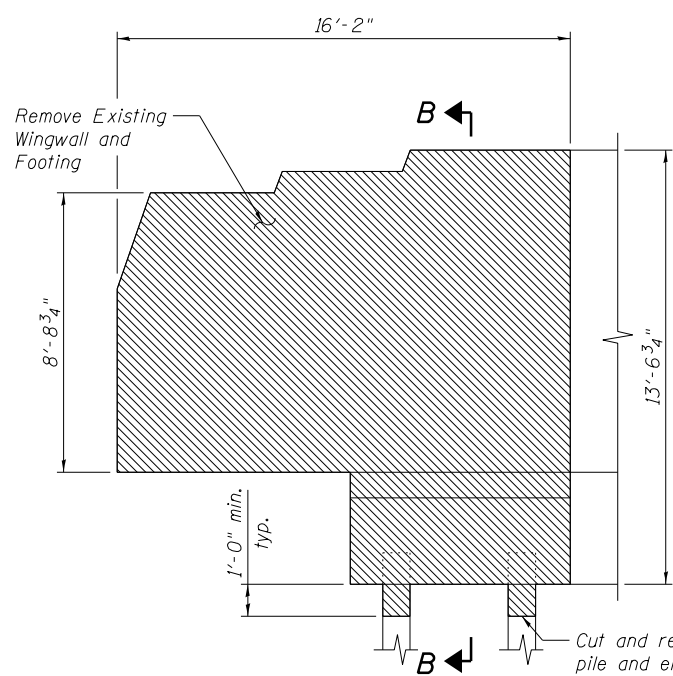
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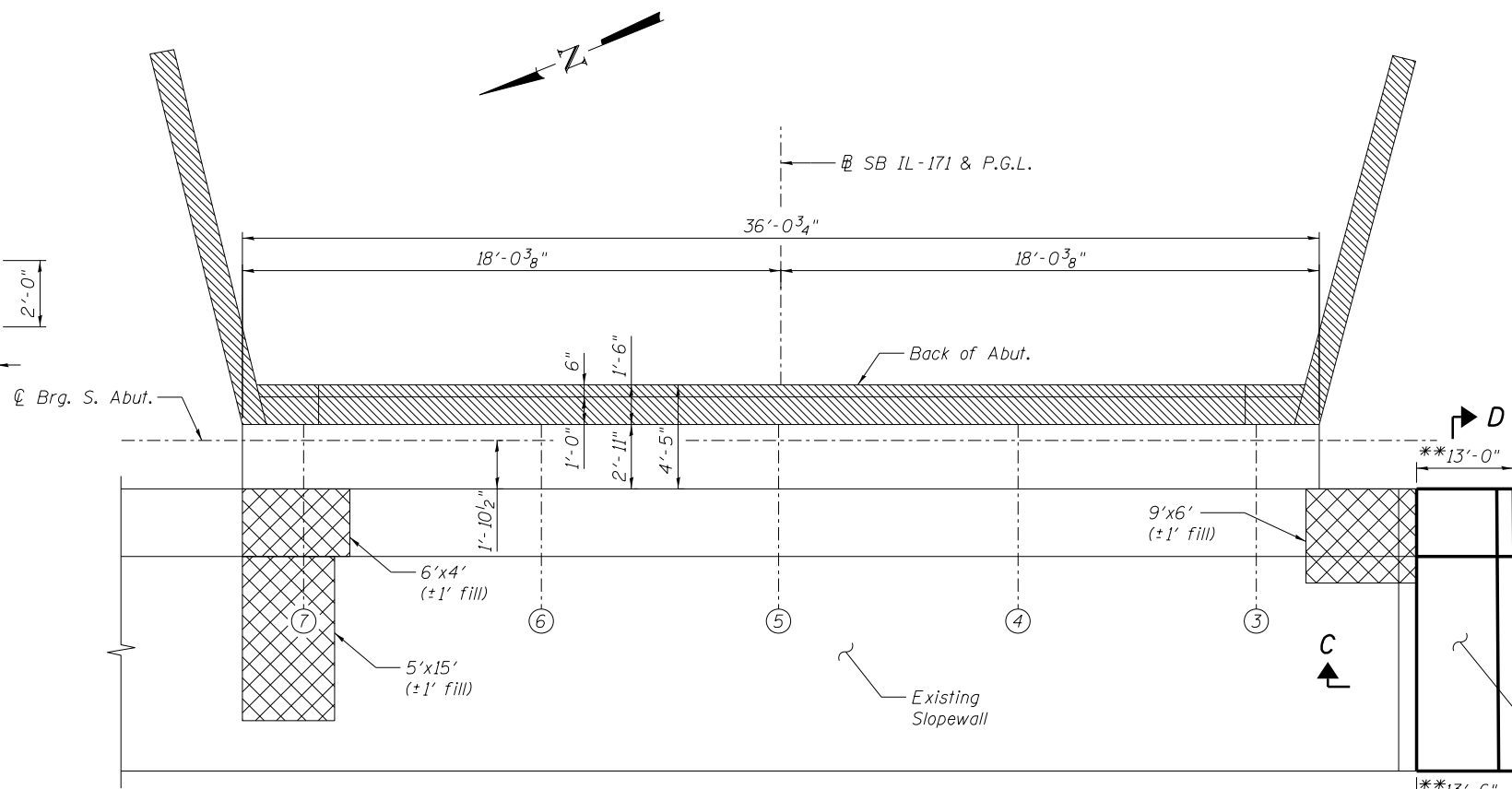
SECTION D-D



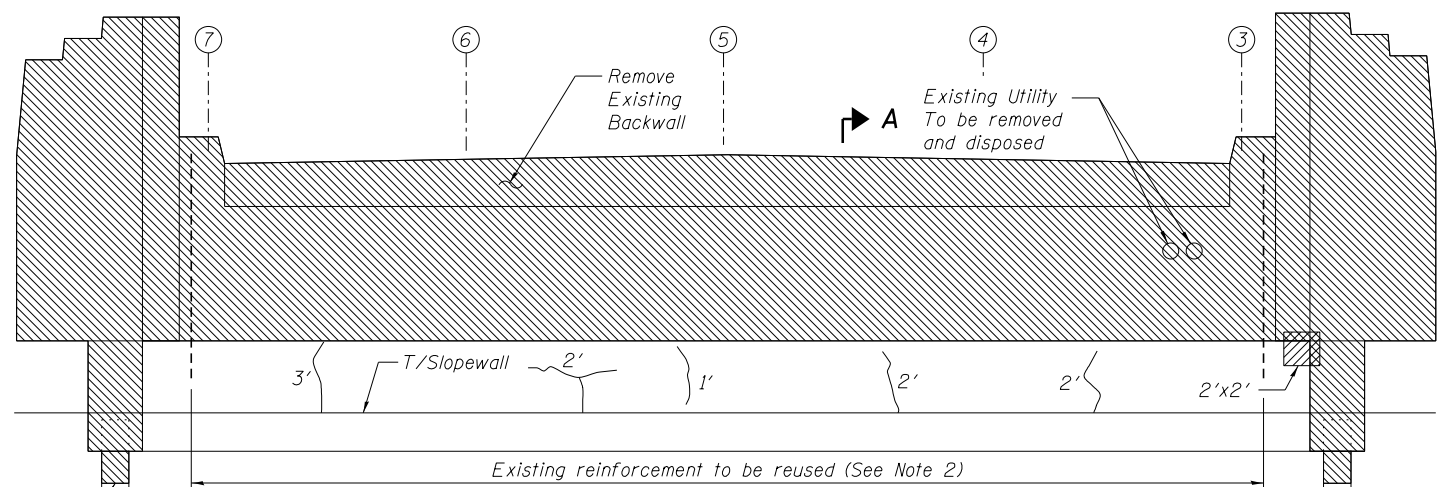
SECTION C-C



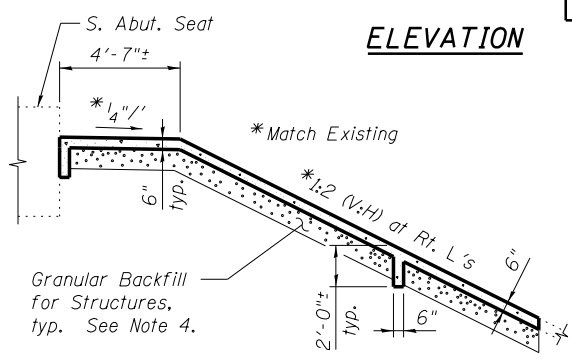
TYPICAL WINGWALL ELEVATION



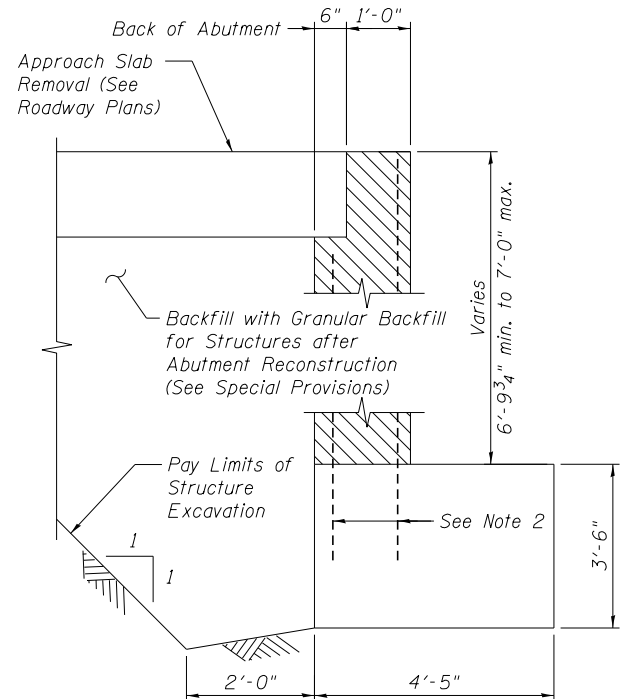
PLAN



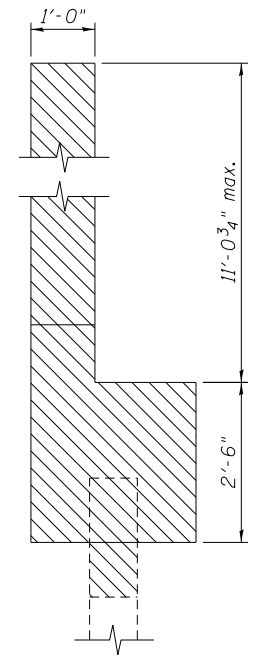
ELEVATION



SECTION THRU SLOPEWALL REPAIR LOCATIONS



SECTION A-A



SECTION B-B

**Dimensions based upon existing plans detailing existing slopewall 2'-0" past edge of deck

LEGEND

- Concrete Removal
- Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)
- Slope Wall Removal & Slope Wall 6 Inch
- Epoxy Crack Injection

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Concrete Removal	Cu. Yd.	30.0
Slope Wall Removal	Sq. Yd.	17
Slope Wall 6 Inch	Sq. Yd.	60
Epoxy Crack Injection	Foot	10
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	4
Granular Backfill for Structures	Cu. Yd.	6

(See Sheet SE30 for Structure Excavation and Granular Backfill for Structures behind abutment quantities)

NOTES:

1. Actual quantities of repairs shall be approved by the Engineer.
2. Existing reinforcement shall be cleaned and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost included with Concrete Removal.
3. Slopewall shall be reinforced with welded wire fabric, 6 in. X 6 in. W4.0 x W4.0, weighing 58 lbs per 100 sq ft.
4. Compact Granular Backfill prior to pouring slopewall to the satisfaction of the Engineer. Depth of backfill is estimated for bidding purposes.
5. Crack widths are 1/8" ± 1/16" unless otherwise noted.

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	PLOT DATE = 12/20/2013	DRAWN - FSM	REVISD -
		CHECKED - SLD	REVISD -

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DEPARTMENT OF TRANSPORTATION**

**ABUTMENT CONCRETE REMOVAL AND REPAIR DETAILS
STRUCTURE NO. 016-0483**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO.			60J16	
ILLINOIS FED. AID PROJECT				

SHEET NO. SE29 OF SE46 SHEETS

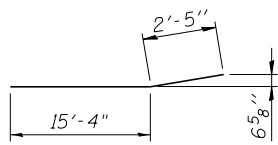
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**ABUTMENT
BILL OF MATERIAL**

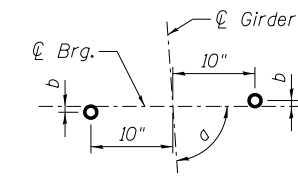
Bar	No.	Size	Length	Shape
d305(E)	8	#5	3'-6"	
d306(E)	8	#5	3'-0"	
h300(E)	32	#5	5'-6"	
h301(E)	24	#5	24'-0"	
h302(E)	8	#6	24'-3"	
h303(E)	30	#4	17'-6"	
h304(E)	22	#4	17'-9"	
n300(E)	32	#6	14'-4"	
n301(E)	12	#6	7'-2"	
p300(E)	8	#7	9'-6"	
p301(E)	9	#7	20'-5"	
p302(E)	3	#7	16'-0"	
s300(E)	12	#4	15'-11"	
s301(E)	38	#4	9'-5"	
s302(E)	5	#4	9'-5"	
u300(E)	5	#6	12'-1"	
v300(E)	45	#5	3'-9"	
v301(E)	45	#4	3'-5"	
v302(E)	9	#5	7'-3"	
v303(E)	9	#5	9'-0"	
v304(E)	36	#5	11'-11"	
v305(E)	36	#5	7'-4"	
v306(E)	19	#6	9'-0"	
v307(E)	3	#6	9'-0"	
v308(E)	16	#6	9'-2"	
v309(E)	19	#6	9'-8"	
v310(E)	3	#6	9'-8"	
v311(E)	16	#6	9'-10"	
Structure Excavation	Cu. Yd.		173	
Concrete Structures	Cu. Yd.		45.0	
Concrete Superstructure	Cu. Yd.		4.0	
Concrete Encasement	Cu. Yd.		1.8	
Reinforcement Bars, Epoxy Coated	Pound		5,910	
Furnishing Steel Piles HP12x53	Foot		132	
Driving Piles	Foot		132	
Test Pile Steel HP12x53	Each		1	
Pile Shoes	Each		5	
Concrete Sealer	Sq. Ft.		397	
Granular Backfill for Structures	Cu. Yd.		97	

PILE DATA

Type: HP12x53 with Pile Shoes
Nominal Required Bearing: 255 kips
Allowable Resistance Available: 85 kips
Est. Length: 33 ft.
No. Production Piles: 4
No. Test Piles: 1

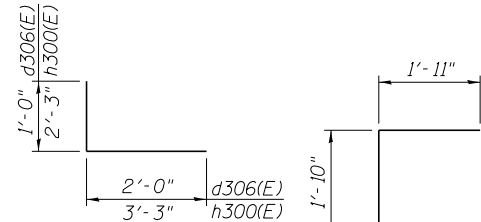


BAR h304(E)



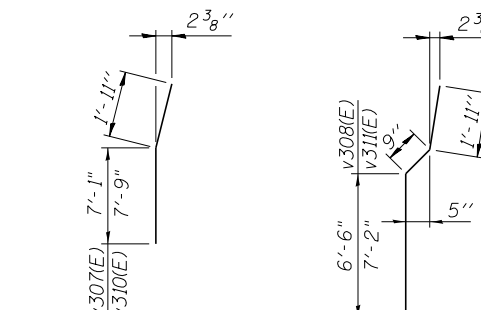
ANCHOR BOLT DETAIL

Dimension	Girder 1	Girder 2
a	88°51'15"	89°25'39"
b	1/4"	1/8"



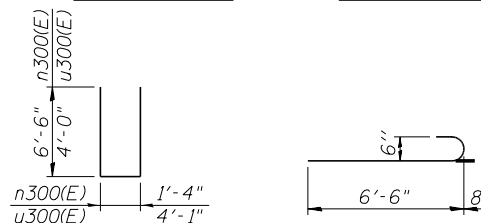
**BARS d306(E)
AND h300(E)**

BAR v300(E)



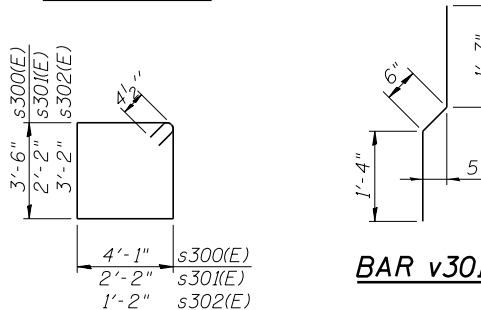
**BARS v307(E)
AND v310(E)**

**BARS v308(E)
AND v311(E)**



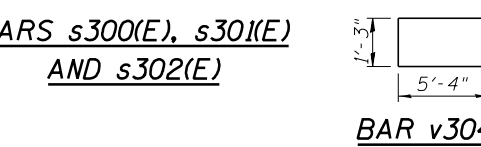
**BARS n300(E)
AND u300(E)**

BAR n301(E)

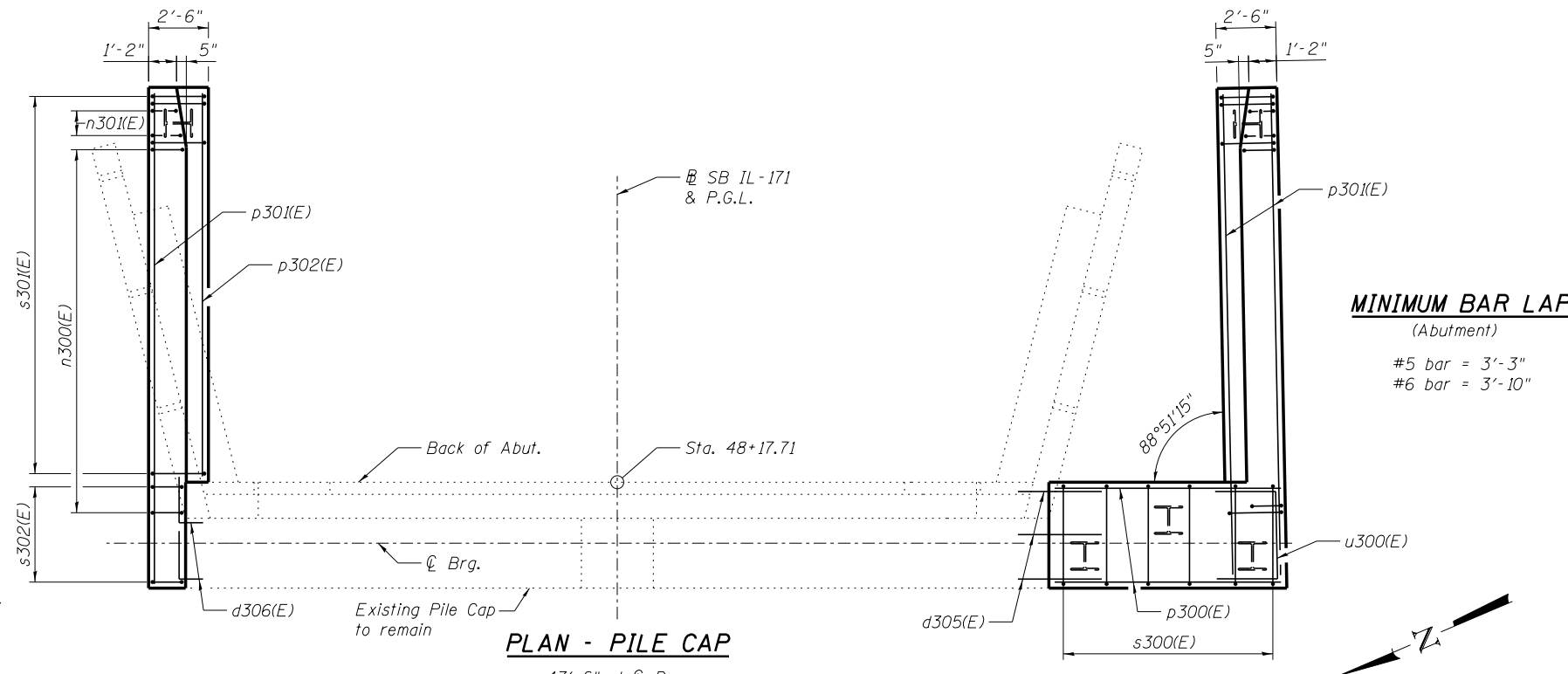


**BARS s300(E), s301(E)
AND s302(E)**

BAR v301(E)

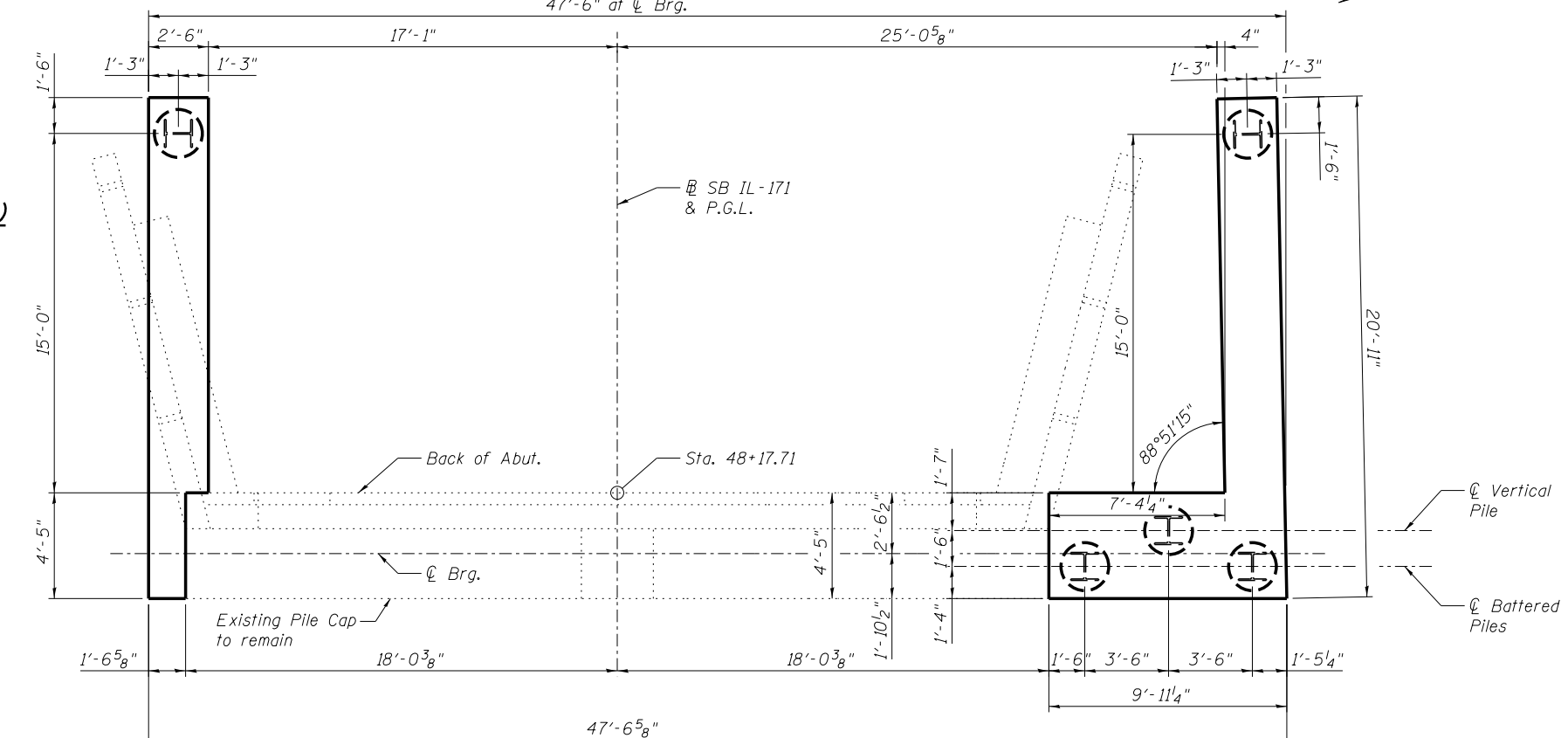


BAR v304(E)



PLAN - PILE CAP

47'-6" at \bar{C} Brg.



PLAN - PILE LAYOUT

**MINIMUM BAR LAP
(Abutment)**

#5 bar = 3'-3"
#6 bar = 3'-10"

NOTES:

- Backfill shall be placed behind the abutment after the superstructure has been poured and falsework removed. See Article 502.10 of the Standard Specifications.
- Space reinforcement to miss anchor bolts.
- Bars indicated thus 6x2-#5 etc. indicates 6 lines of bars with 2 lengths per line.



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0160483.60J16.030.Abut.Widening.1.dgn

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PLOT SCALE =
PLOT DATE = 12/20/2013

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REVISED -

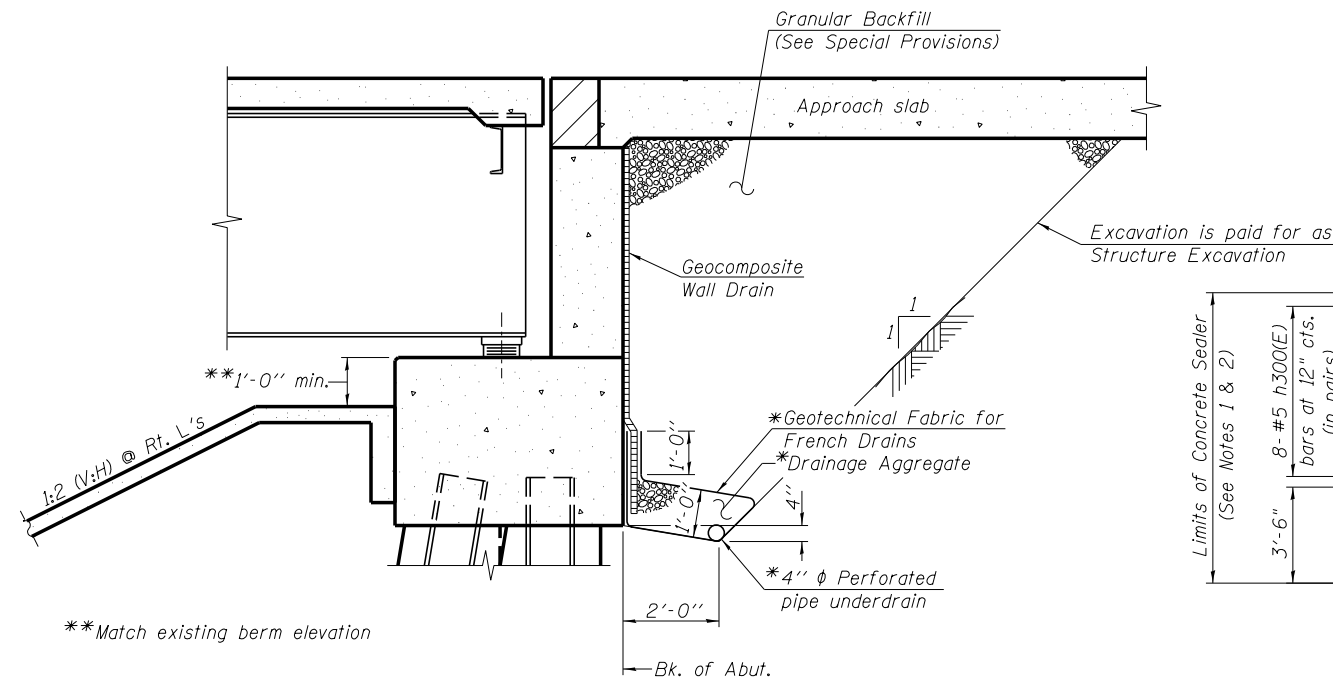
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**ABUTMENT WIDENING DETAILS (1 OF 3)
STRUCTURE NO. 016-0483**

SHEET NO. SE30 OF SE46 SHEETS

F.A.P. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	514
CONTRACT NO. 60J16			ILLINOIS FED. AID PROJECT	

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BACKFILL AND DRAINAGE DETAIL

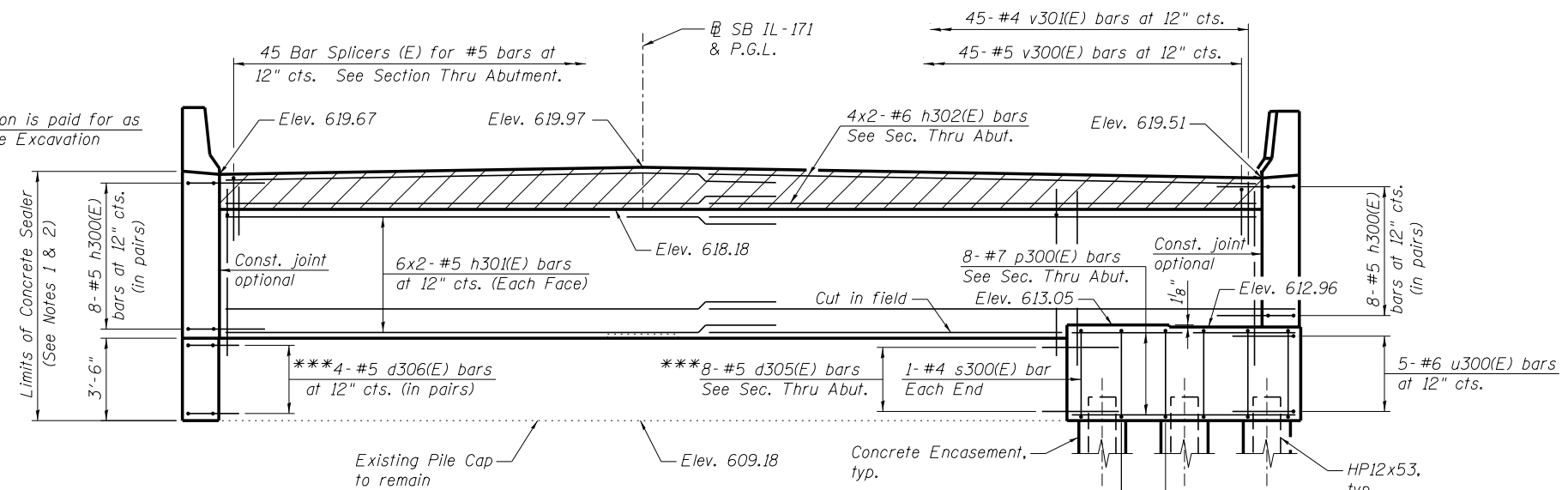
*Included in the cost of Pipe Underdrains for Structures 4".
(See Special Provisions)

Note:

All drainage system components shall extend parallel to the abutment back wall until they intersect the wingwalls or 2'-0" from the end of the wingwalls when the wings are parallel to the abutment. The pipe shall extend under the wingwall, if necessary, until intersecting the side slopes. The pipes shall drain into concrete headwalls (See Article 601.05 of the Standard Specifications and Highway Standard 60110).

NOTES:

- Concrete Sealer shall be applied to the area of the bearing seats, including steps, and the exposed front face of the abutment pile cap for the newly placed concrete only. Concrete Sealer shall also be applied to the area of the backwall and the vertical faces of both wingwalls underneath the parapet and in line with the backwall.
- Concrete Sealer does not need to be applied to existing concrete.

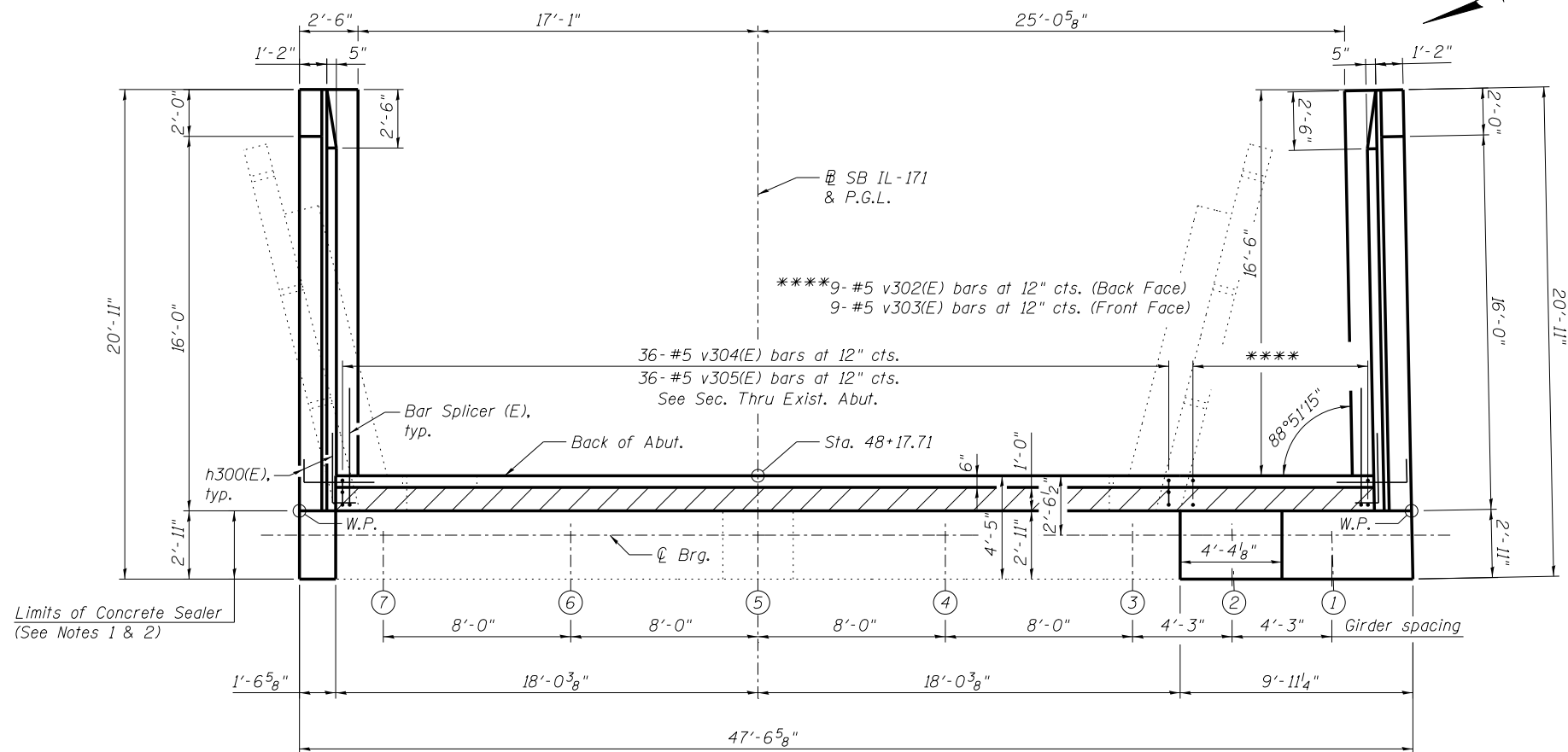


ELEVATION

MINIMUM BAR LAP

(Abutment)
#5 bar = 3'-3"
#6 bar = 3'-10"

***Drill and grout bars according to Article 584 of the Standard Specifications with a minimum embedment of 8". Cost included with Concrete Structures.



TOP VIEW



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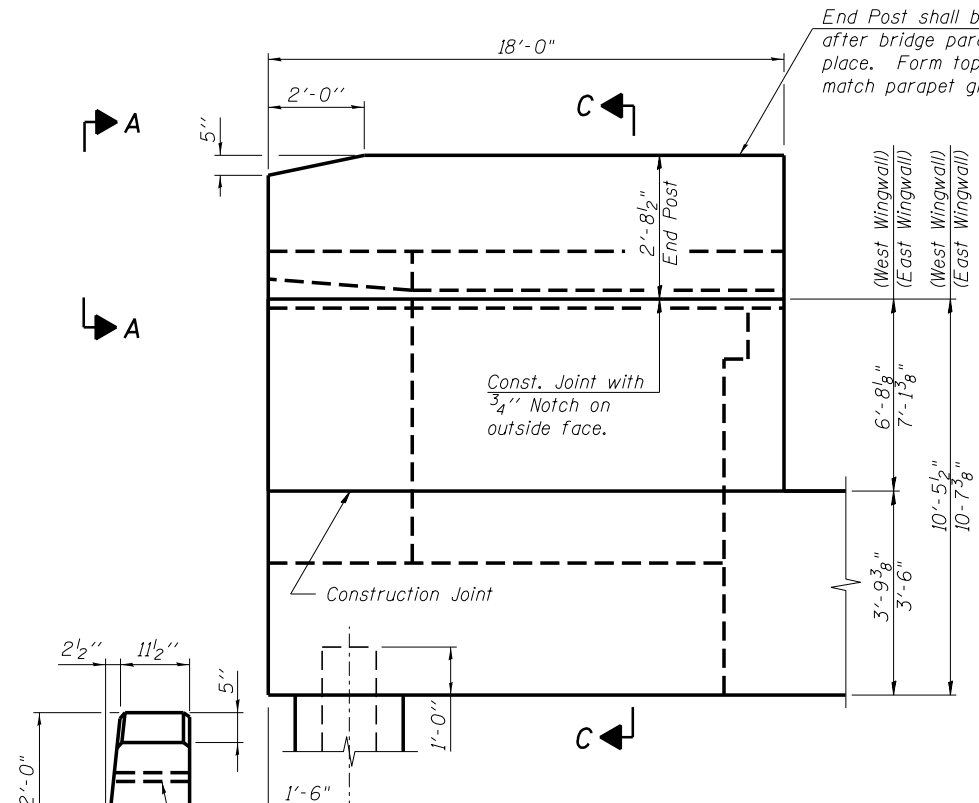
STATE OF ILLINOIS
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ABUTMENT WIDENING DETAILS (2 OF 3)
STRUCTURE NO. 016-0483

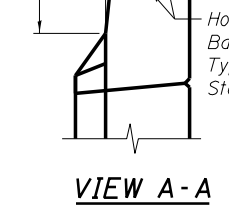
SHEET NO. SE31 OF SE46 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 60J16			ILLINOIS FED. AID PROJECT	

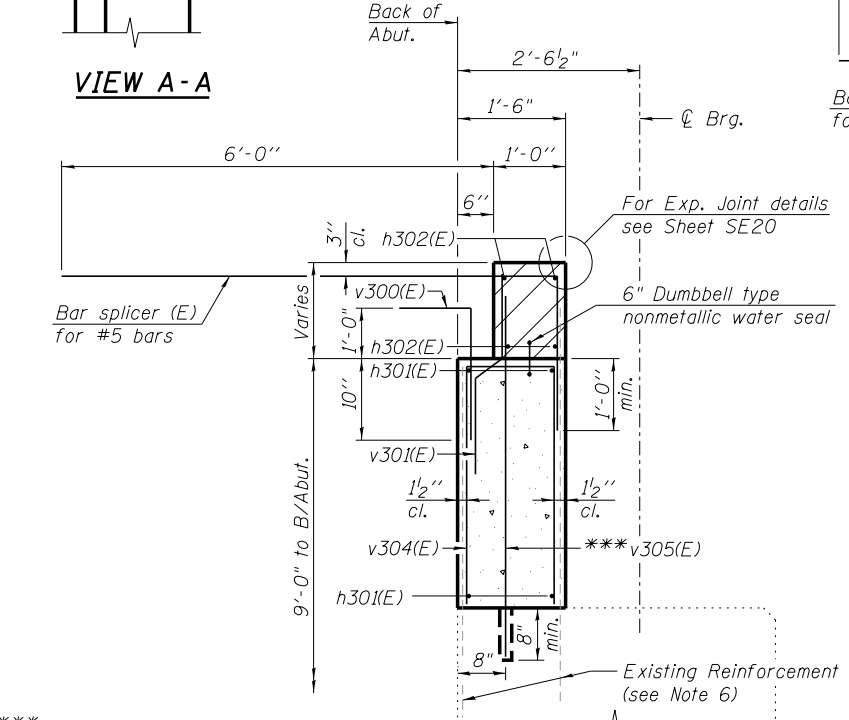
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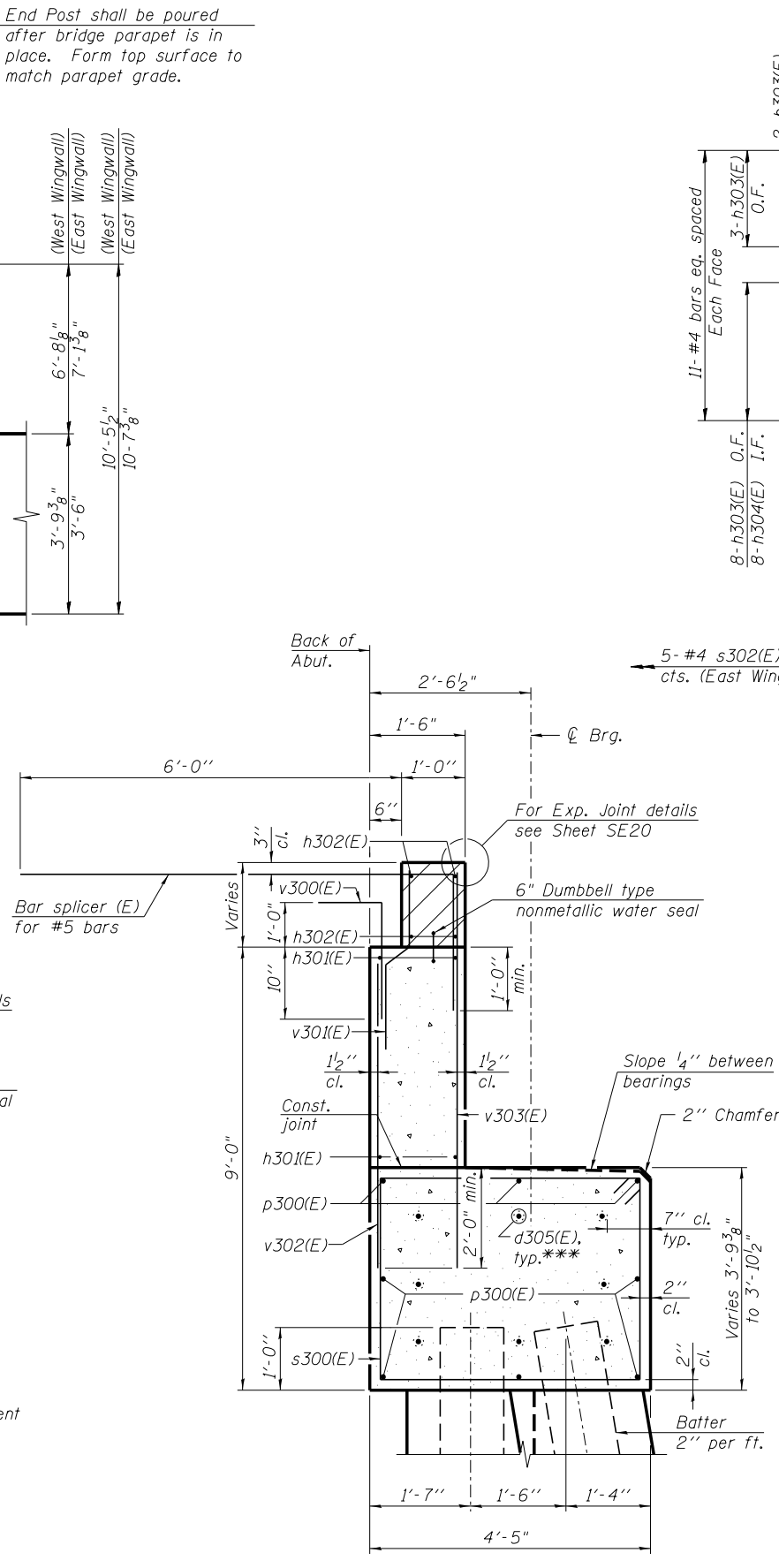
WINGWALL ELEVATION
Showing Dimensions



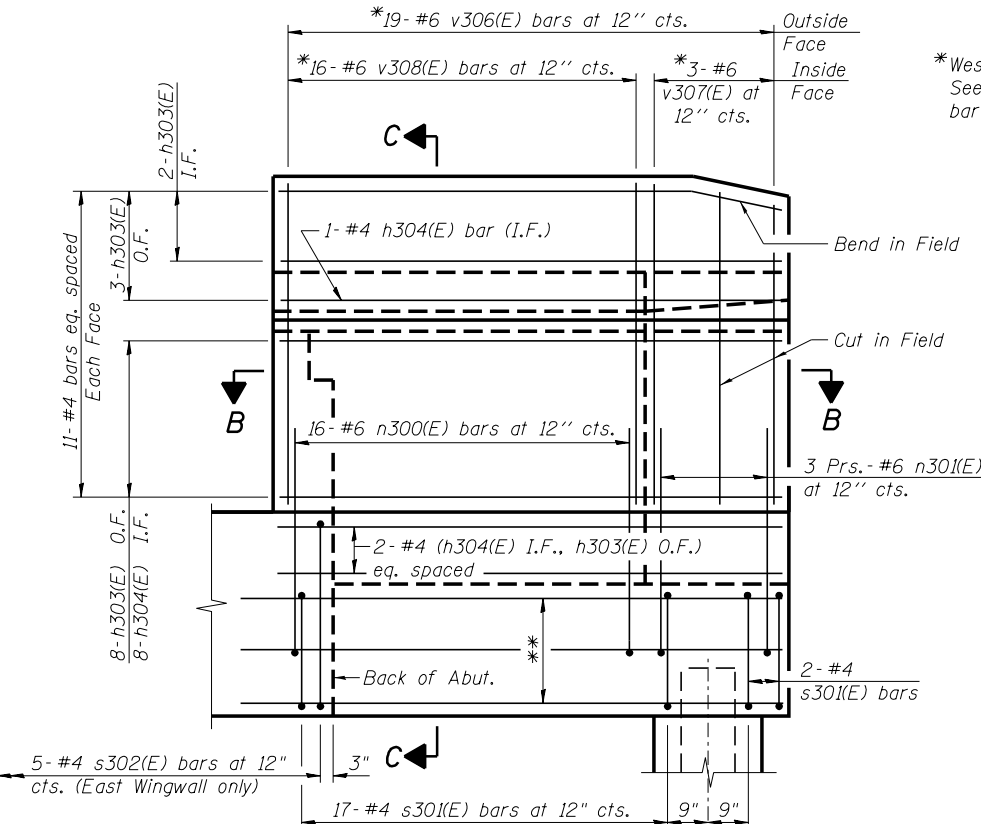
VIEW A-A



SEC. THRU EXISTING ABUT.

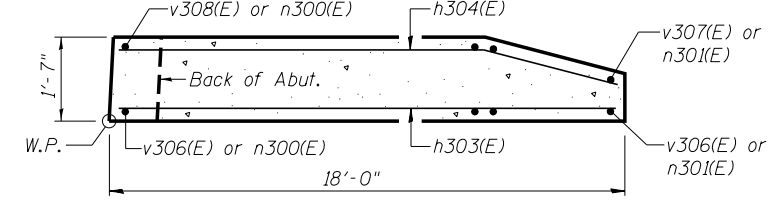


SEC. THRU ABUT. WIDENING

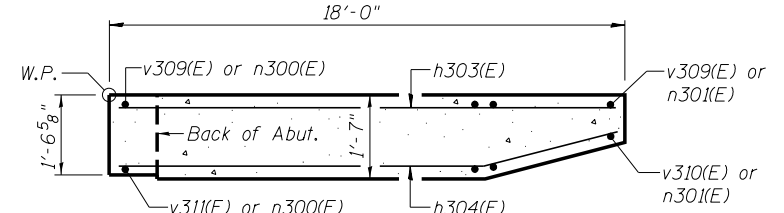


WINGWALL ELEVATION
Showing Reinforcement

*** 3-#7 p301(E) bars (E.F. West Wingwall)
3-#7 p301(E) bars (O.F. East Wingwall)
3-#7 p302(E) bars (I.F. East Wingwall)

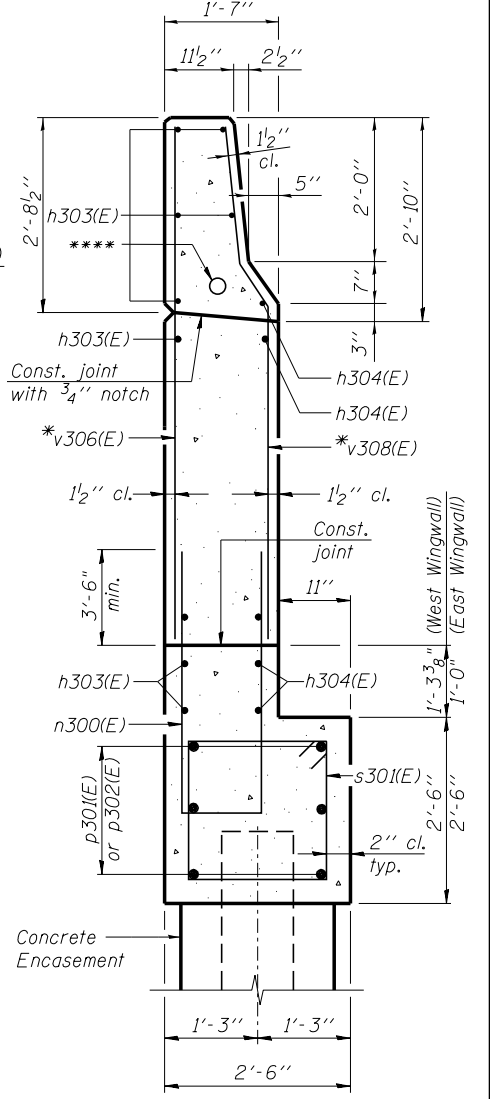


SECTION B-B
West Wingwall



SECTION B-B
East Wingwall

*West Wingwall vertical bar designations shown. See Sec. B-B for similar East Wingwall vertical bar designations.



SECTION C-C

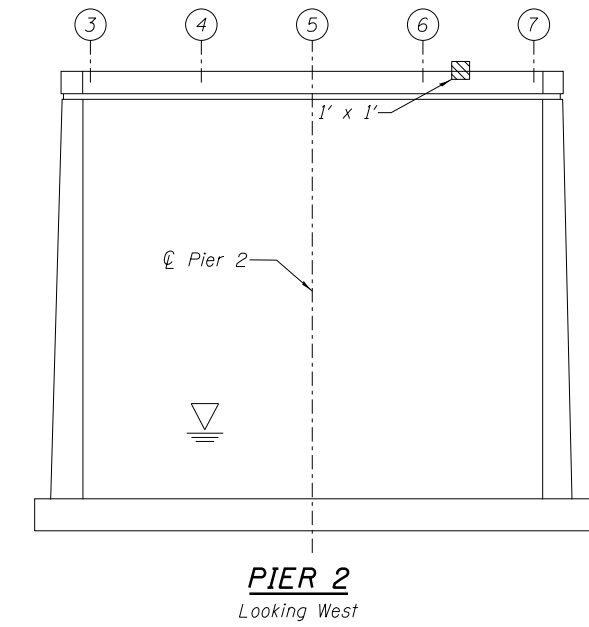
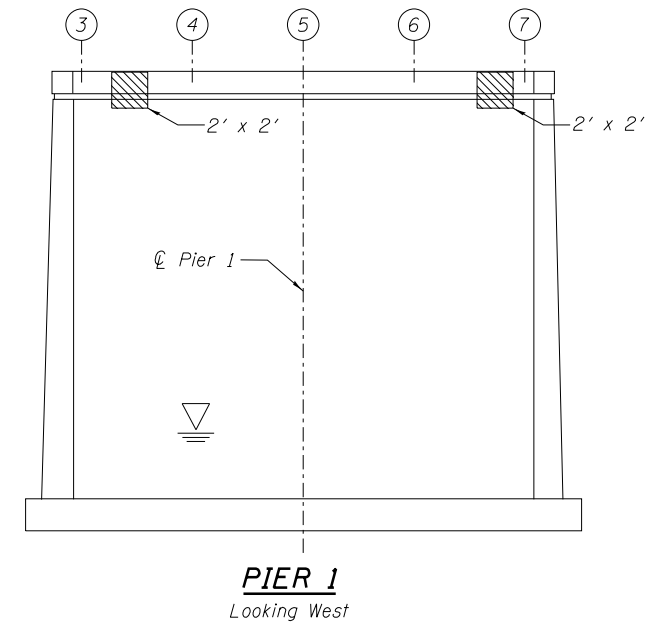
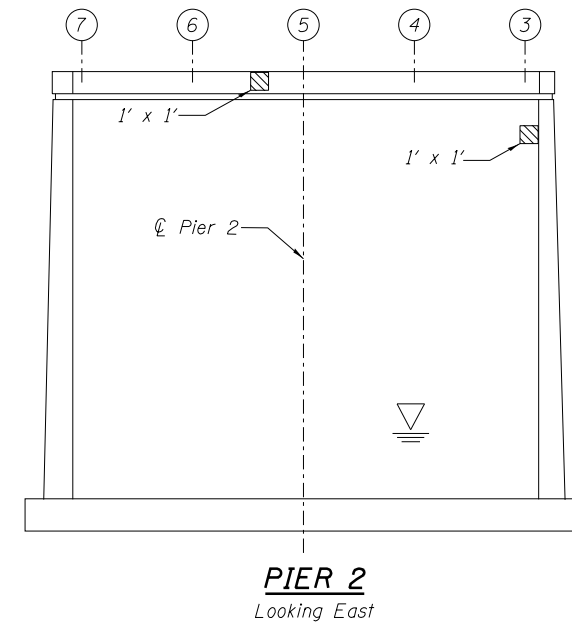
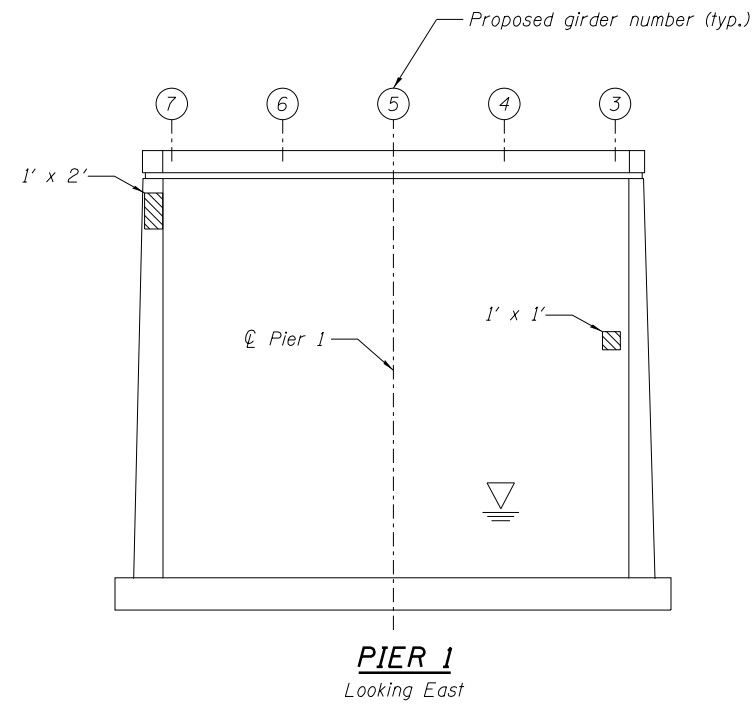
**** 1-2" ϕ PVC conduit, west parapet only. See Electrical Plans for details.

NOTES:

1. Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure on Sheet SE16.
2. Space reinforcement in cap to miss anchor bolts.
3. Pour steps monolithically with cap.
4. Quantity of concrete in end post included with Concrete Superstructure on Sheet SE30.
5. For Concrete Encasement details, see Sheet SE40.
6. Existing reinforcement shall be cleaned and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost included with Concrete Removal.

FILE NAME =	USER NAME = jsurber	DESIGNED - JLS	REVISED -
0160483.60J16.032.Abut.Widening.3.dgn		CHECKED - SLD	REVISED -
		DRAWN - RMG	REVISED -
		CHECKED - SLD	REVISED -

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	516
CONTRACT NO. 60J16			ILLINOIS FED. AID PROJECT	



BEAM REACTIONS (KIPS)

	Pier 1	Pier 2
Dead Load (steel only)	41	43

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	14

LEGEND

Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)

NOTES:

- Actual quantities shall be approved by the Engineer.
- If Temporary Shoring and Cribbing is required to perform a concrete repair, shoring and repair shall be done while the bridge deck is removed.

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0160483.60J16.033.Pier.Repair.1.dgn		CHECKED - AJK	REVISED -
	PLOT SCALE =	DRAWN - RMG	REVISED -
	PLOT DATE = 12/20/2013	CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

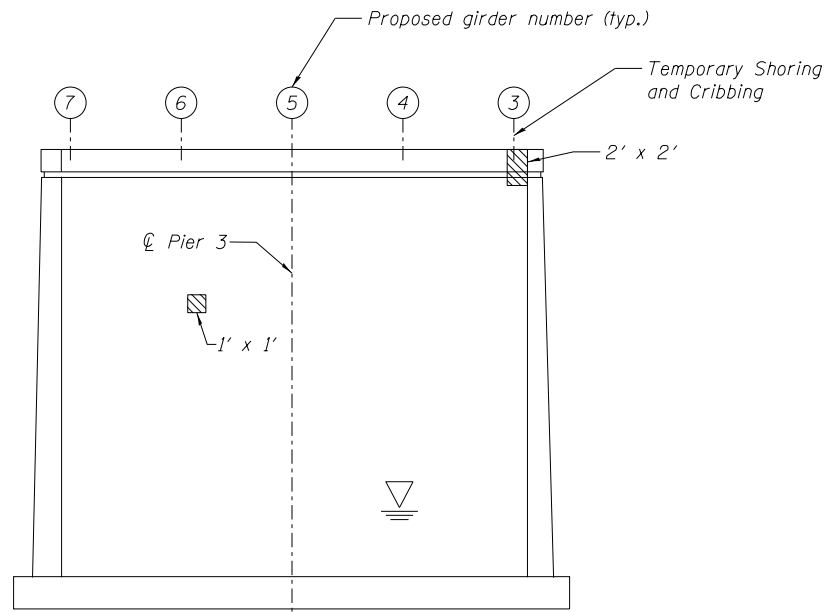
PIERS 1 AND 2 CONCRETE REPAIR DETAILS
STRUCTURE NO. 016-0483

SHEET NO. SE33 OF SE46 SHEETS

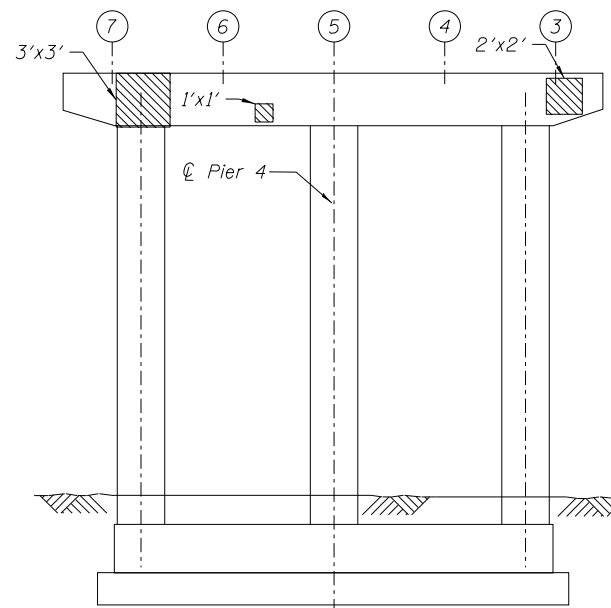
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	517
CONTRACT NO.			60J16	

ILLINOIS FED. AID PROJECT

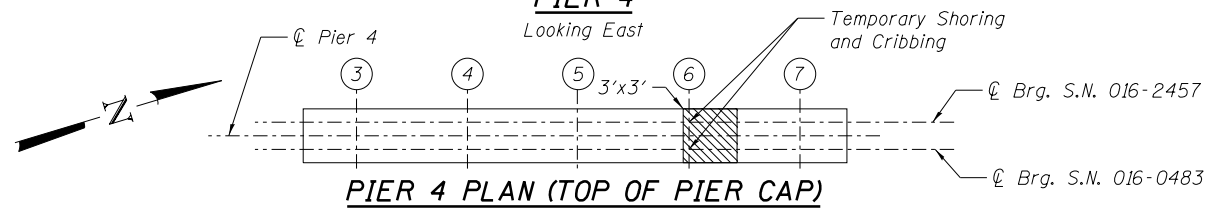
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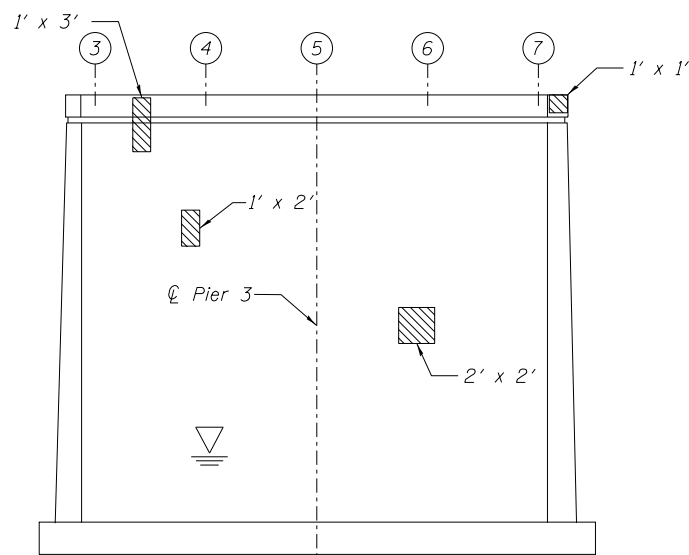
PIER 3
Looking East



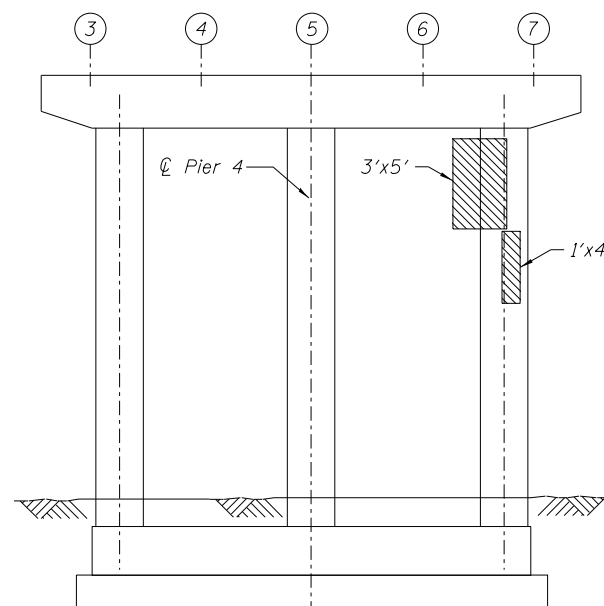
PIER 4
Looking East



PIER 4 PLAN (TOP OF PIER CAP)



PIER 3
Looking West



PIER 4
Looking West

BEAM REACTIONS (KIPS)

	Pier 3	Pier 4 016-0483	Pier 4 016-2457
Dead Load (steel only)	41	12	7

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	57
Temporary Shoring and Cribbing	Each	3

NOTES:

- Actual quantities shall be approved by the Engineer.
- If Temporary Shoring and Cribbing is required to perform a concrete repair, shoring and repair shall be done while the bridge deck is removed.

LEGEND

Structural Repair of Concrete
(Depth Equal to or Less Than 5 Inches)

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0160483.60J16.034.Pier.Repair.2.dgn		CHECKED - AJK	REVISED -
	PLOT SCALE =	DRAWN - RMG	REVISED -
	PLOT DATE = 12/20/2013	CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIERS 3 AND 4 CONCRETE REPAIR DETAILS
STRUCTURE NO. 016-0483

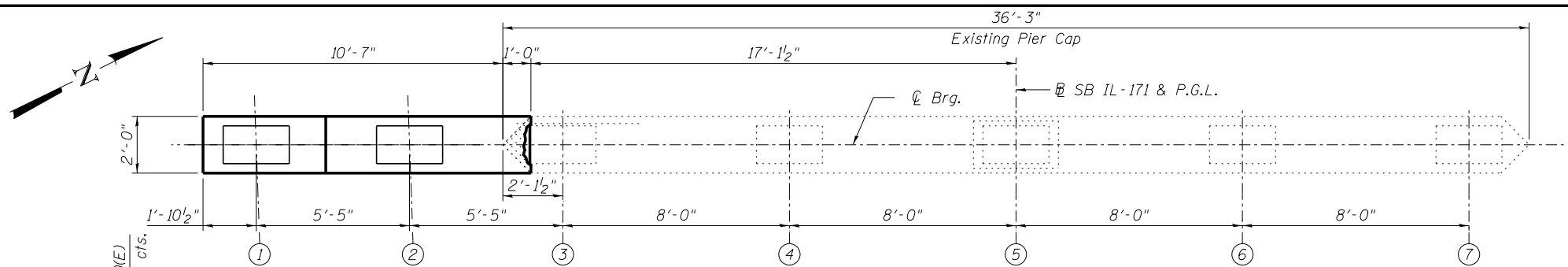
SHEET NO. SE34 OF SE46 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	518
CONTRACT NO. 60J16				

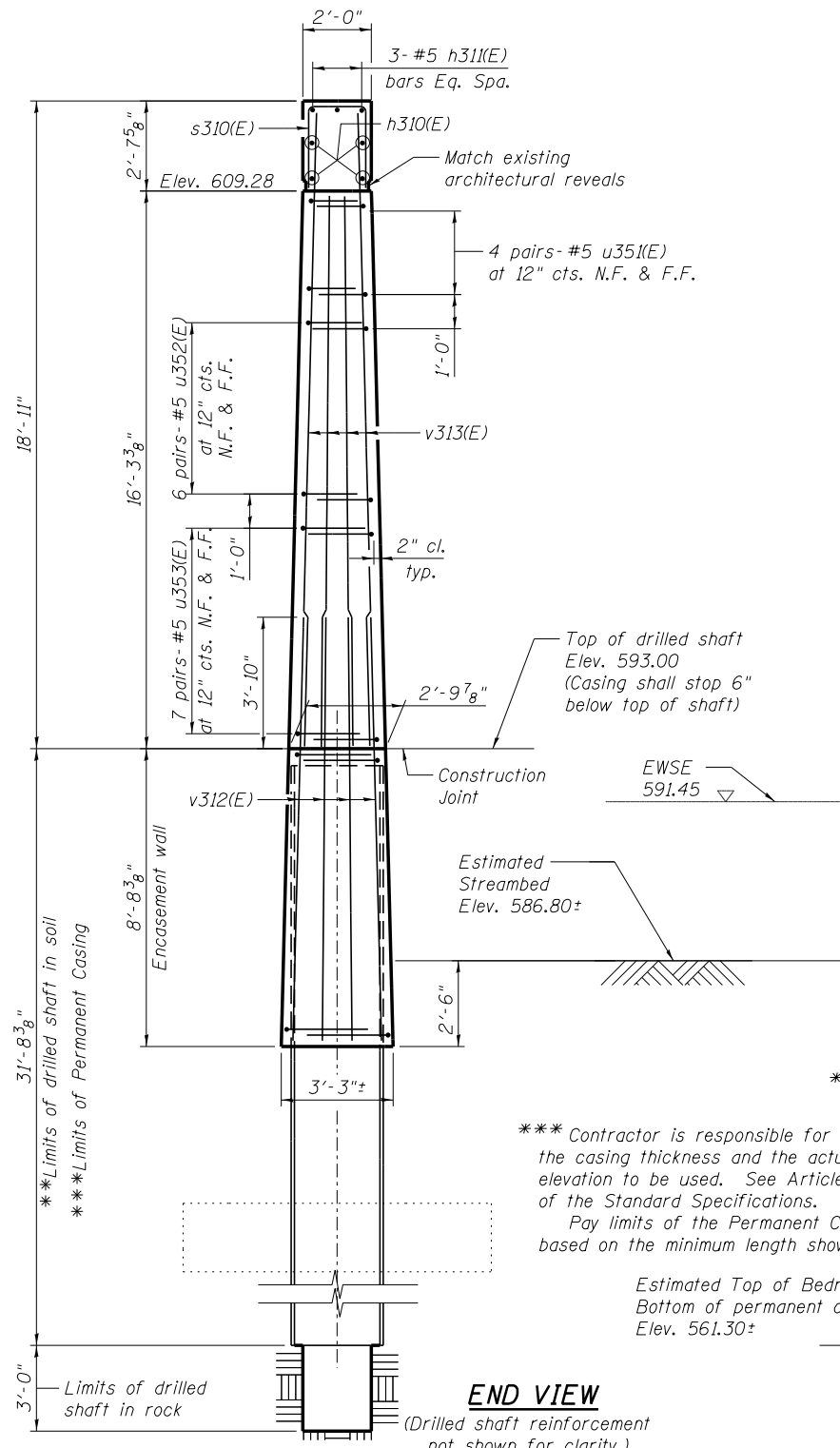
ILLINOIS FED. AID PROJECT

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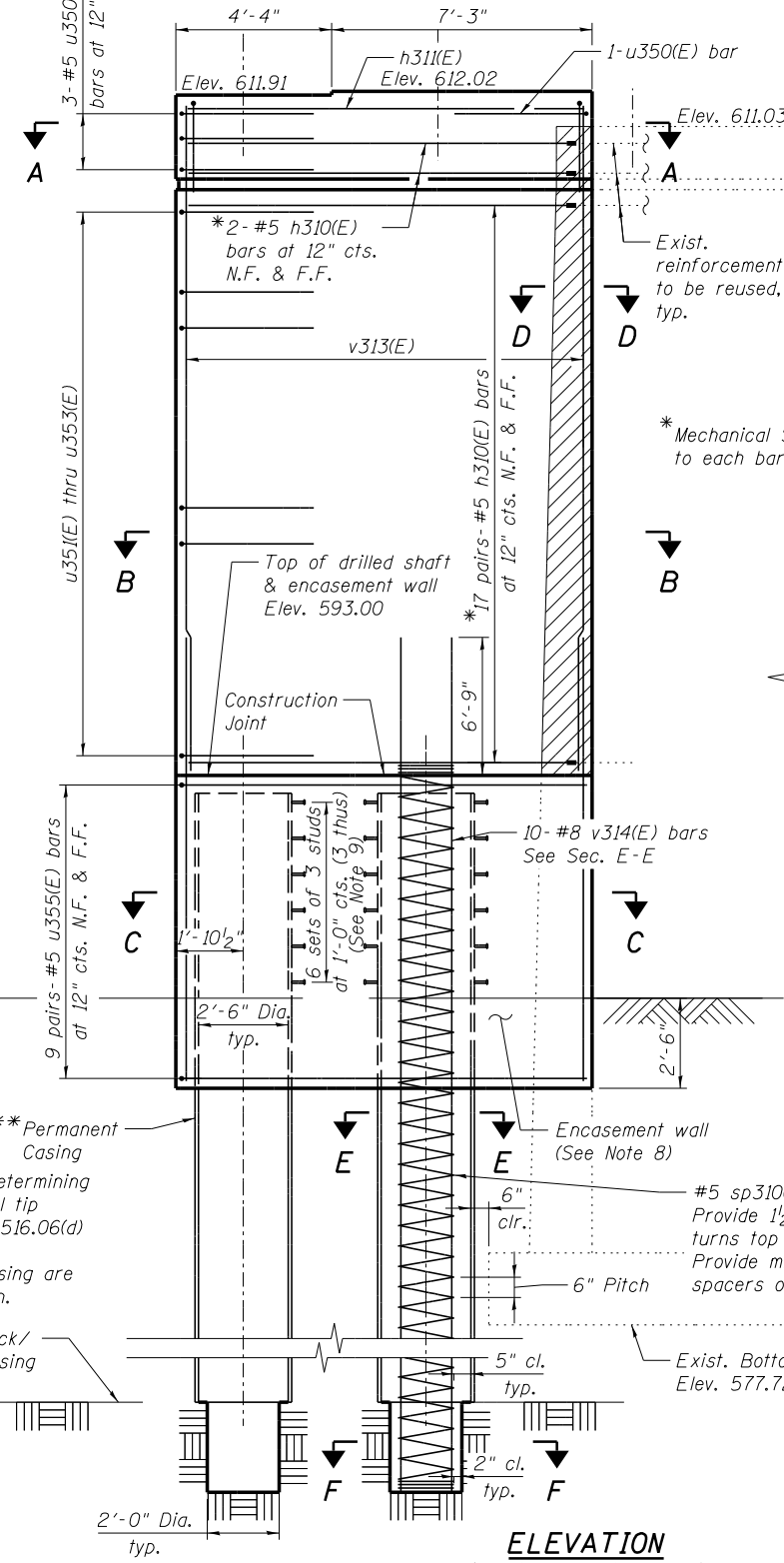
** If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.



TOP PLAN

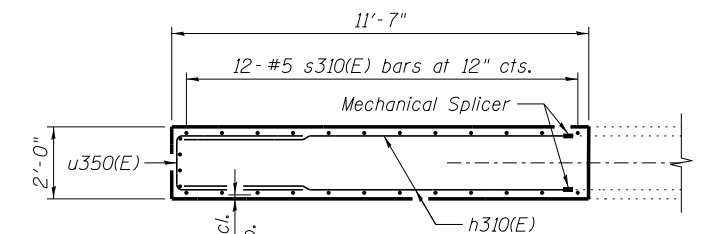


END VIEW

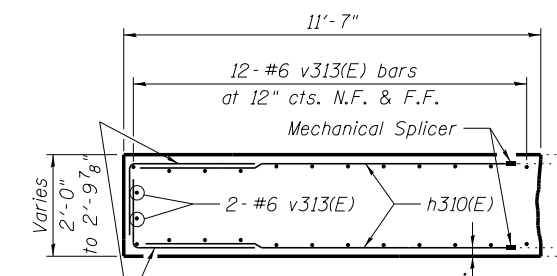


ELEVATION

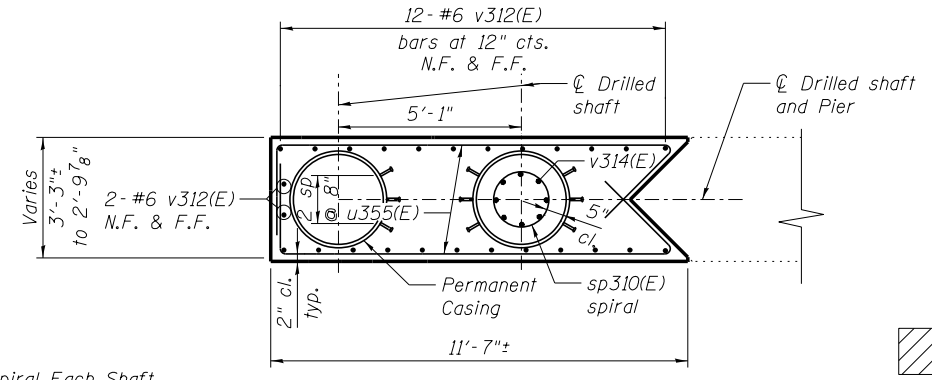
(Looking Upstation/North)



SECTION A-A



SECTION B-B



SECTION C-C

LEGEND



NOTES:

1. For Sections D-D, E-E and F-F, see Sheet SE39.
2. For bar list and bill of material, see Sheet SE39.
3. For anchor bolt layout, see Sheet SE39.
4. For drilled shaft layout and locations, see Sheet SE3.
5. Space reinforcement in cap to miss anchor bolts.
6. Pour steps monolithically with cap.
7. Existing reinforcement shall be cleaned and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced by removing additional concrete as necessary to install an approved mechanical splicer or anchorage system.
8. Encasement wall reinforcement may be placed underwater into forms. Encasement wall concrete shall be tremied according to Article 503.08 of the Standard Specifications.
9. Studs shall be 3/4" φ Granular or solid flux filled headed studs automatically end welded to permanent casing. Cost shall be included with Permanent Casing.

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0160483.60J16.035.Pier.Widening.1.dgn		CHECKED - AJK	REVISED -
		DRAWN - RMG	REVISED -
		CHECKED - AJK	REVISED -

STATE OF ILLINOIS
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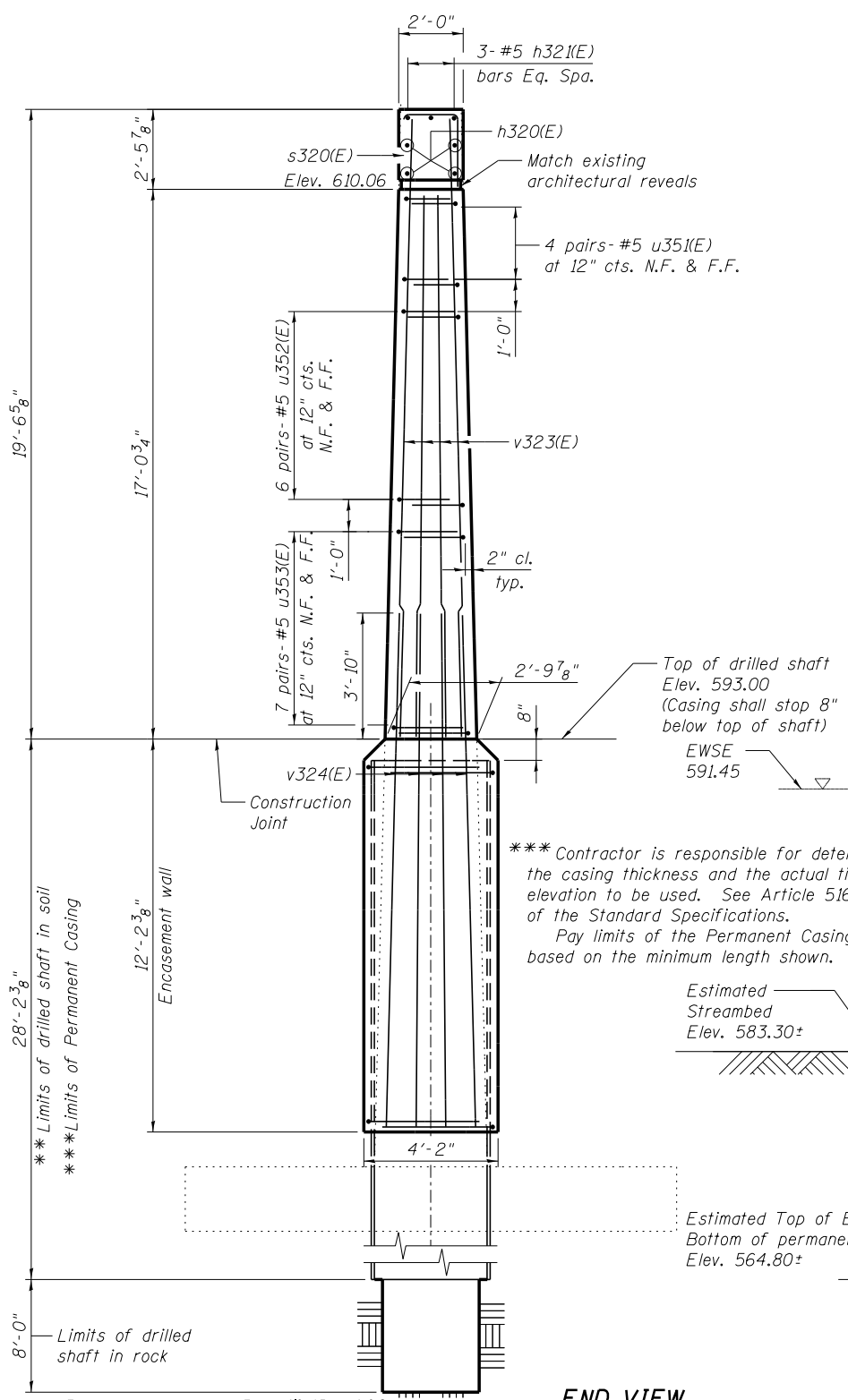
PIER 1 WIDENING DETAILS
STRUCTURE NO. 016-0483

SHEET NO. SE35 OF SE46 SHEETS

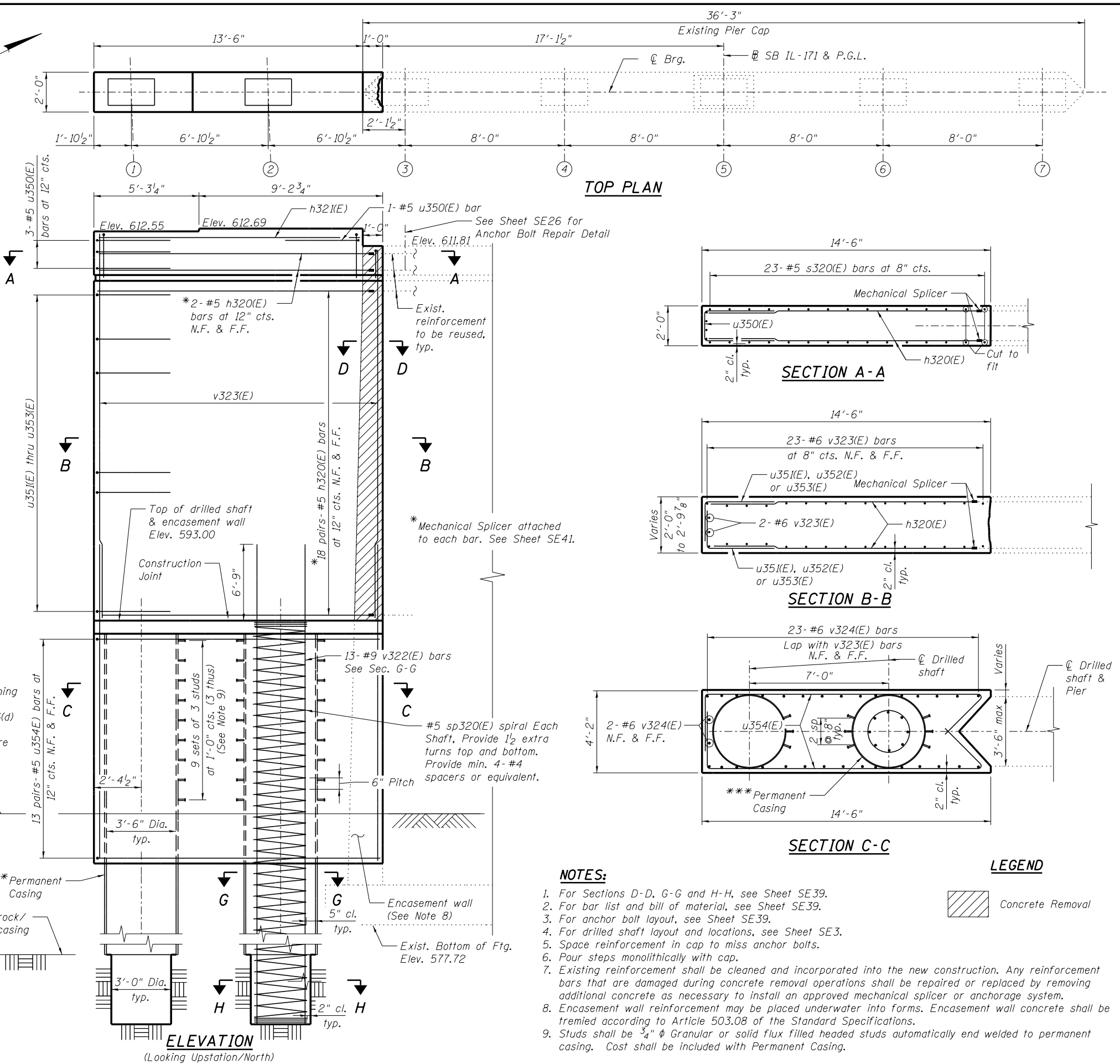
F.A.P. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	519
CONTRACT NO. 60J16			ILLINOIS FED. AID PROJECT	

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**If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.



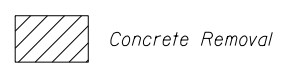
END VIEW
(Drilled shaft reinforcement not shown for clarity.)



NOTES:

1. For Sections D-D, G-G and H-H, see Sheet SE39.
2. For bar list and bill of material, see Sheet SE39.
3. For anchor bolt layout, see Sheet SE39.
4. For drilled shaft layout and locations, see Sheet SE3.
5. Space reinforcement in cap to miss anchor bolts.
6. Pour steps monolithically with cap.
7. Existing reinforcement shall be cleaned and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced by removing additional concrete as necessary to install an approved mechanical splicer or anchorage system.
8. Encasement wall reinforcement may be placed underwater into forms. Encasement wall concrete shall be tremied according to Article 503.08 of the Standard Specifications.
9. Studs shall be 3/4" ϕ Granular or solid flux filled headed studs automatically end welded to permanent casing. Cost shall be included with Permanent Casing.

LEGEND



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0160483.60J16.036.Pier.Widening.2.dgn		CHECKED - AJK	REVISED -
		DRAWN - RMG	REVISED -
		CHECKED - AJK	REVISED -

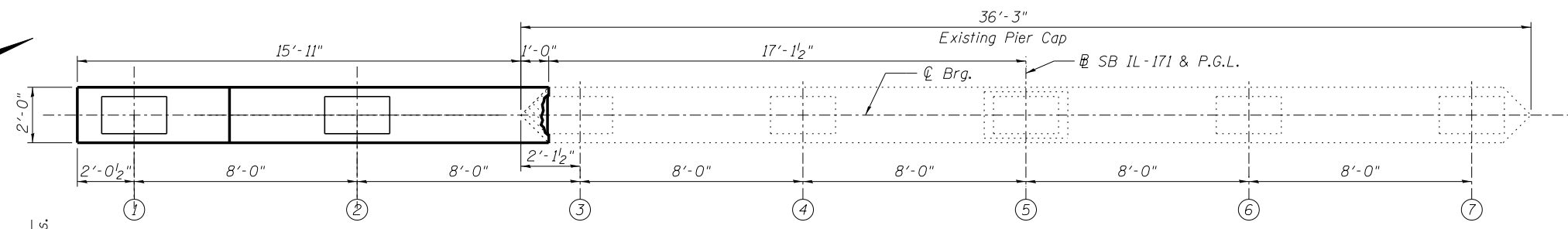
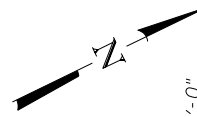
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 WIDENING DETAILS
STRUCTURE NO. 016-0483

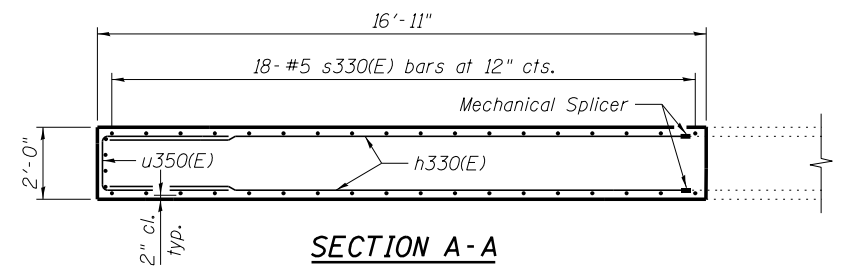
F.A.P. RT.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	520
CONTRACT NO.			60J16	
ILLINOIS FED. AID PROJECT				

SHEET NO. SE36 OF SE46 SHEETS

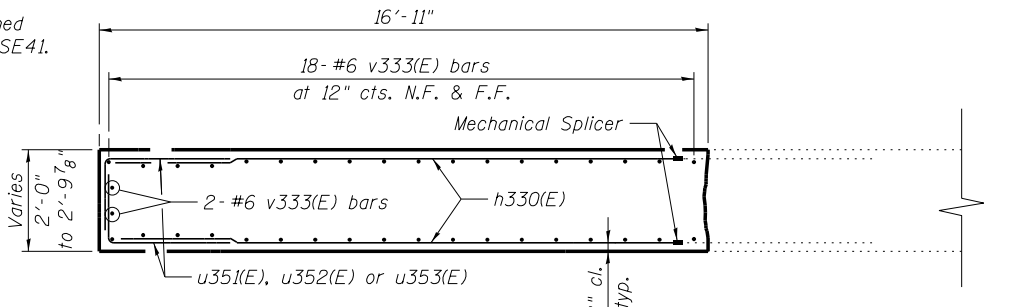
** If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.



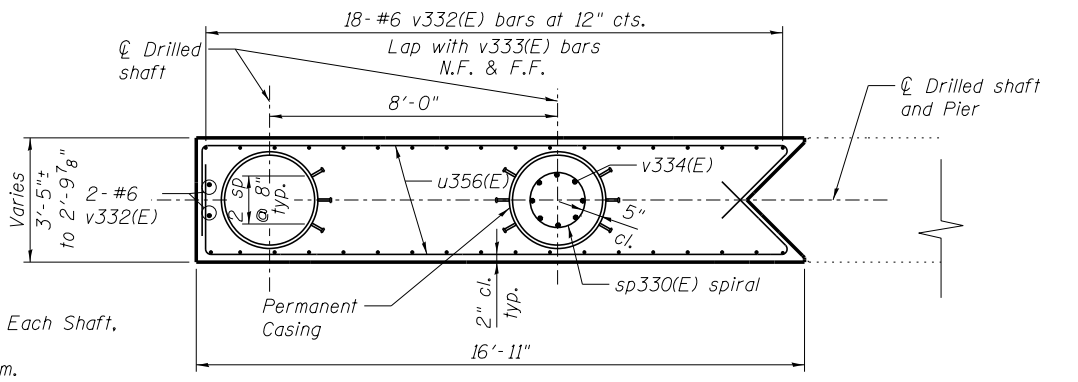
TOP PLAN



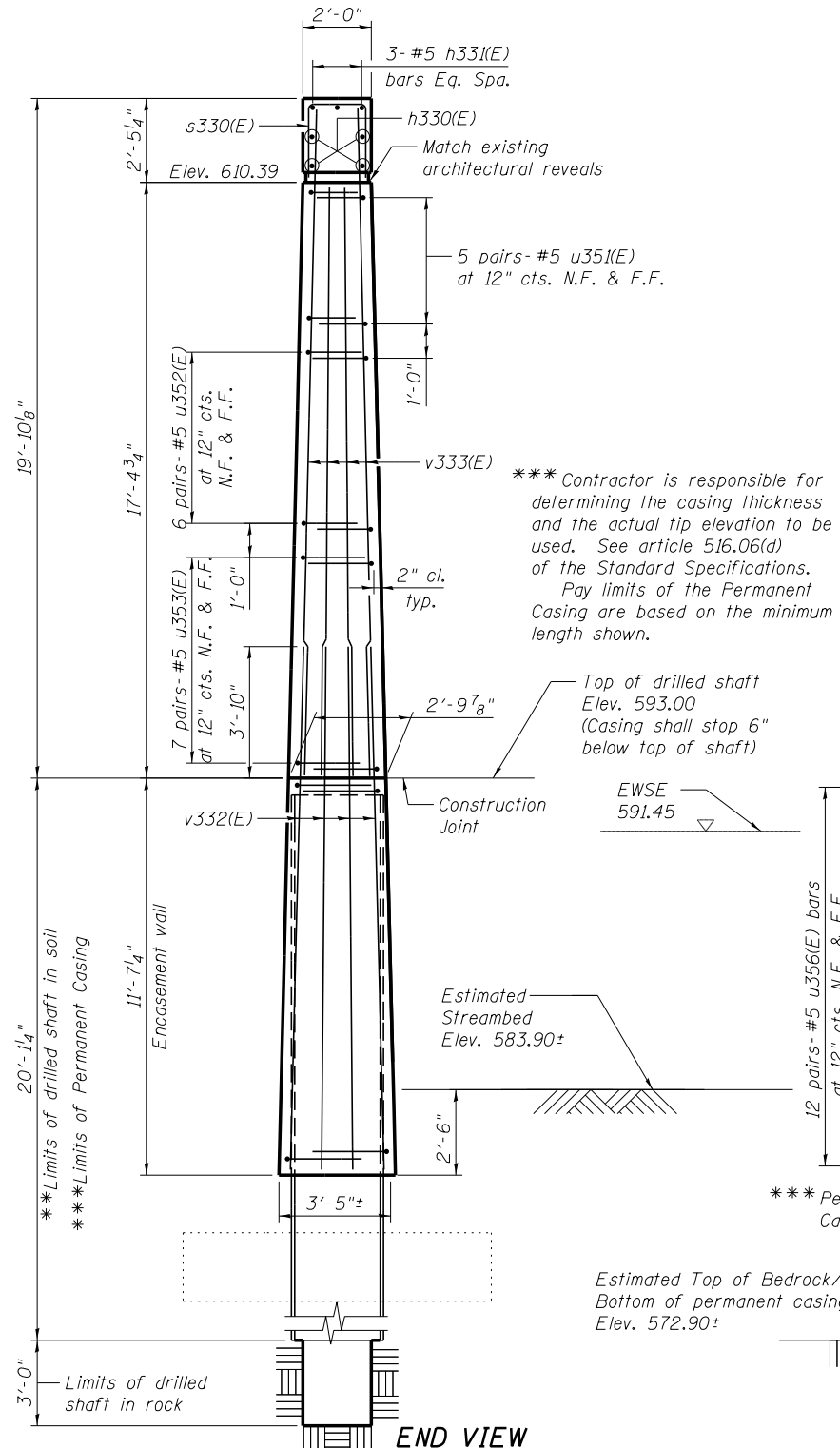
SECTION A-A



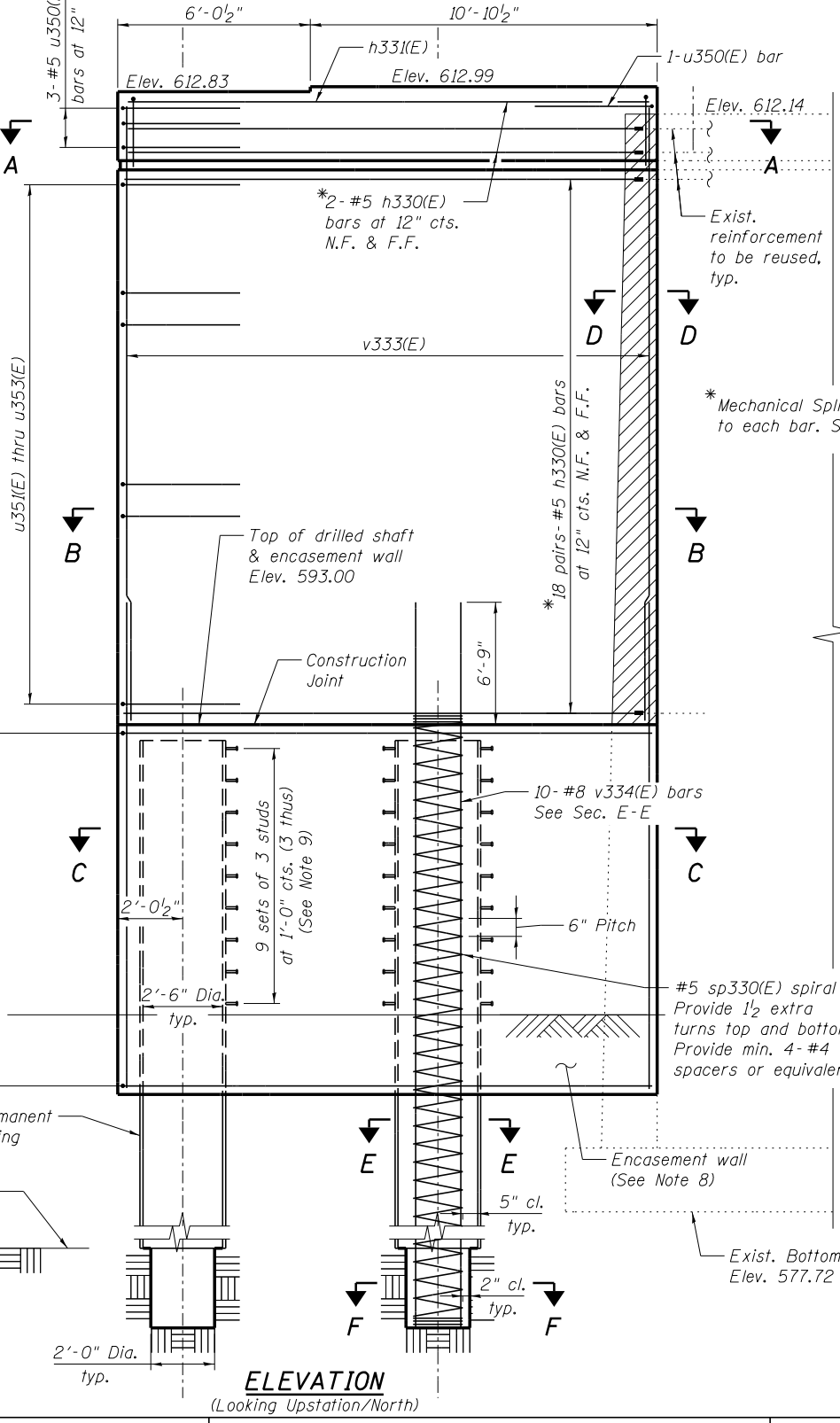
SECTION B-B



SECTION C-C



END VIEW



ELEVATION
(Looking Upstasion/North)

NOTES:

1. For Section D-D, E-E and F-F, see Sheet SE39.
2. For bar list and bill of material, see Sheet SE39.
3. For anchor bolt layout, see Sheet SE39.
4. For drilled shaft layout and locations, see Sheet SE3.
5. Space reinforcement in cap to miss anchor bolts.
6. Pour steps monolithically with cap.
7. Existing reinforcement shall be cleaned and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced by removing additional concrete as necessary to install an approved mechanical splicer or anchorage system.
8. Encasement wall reinforcement may be placed underwater into forms. Encasement wall concrete shall be tremied according to Article 503.08 of the Standard Specifications.
9. Studs shall be 3/4" ϕ Granular or solid flux filled headed studs automatically end welded to permanent casing. Cost shall be included with Permanent Casing.

LEGEND



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0160483.60J16.037.Pier.Widening.3.dgn	PLOT SCALE =	CHECKED - AJK	REVISED -
	PLOT DATE = 12/20/2013	DRAWN - RMG	REVISED -
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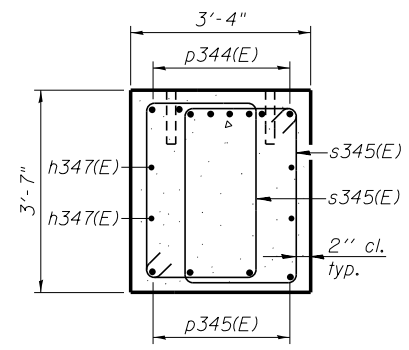
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 3 WIDENING DETAILS
STRUCTURE NO. 016-0483

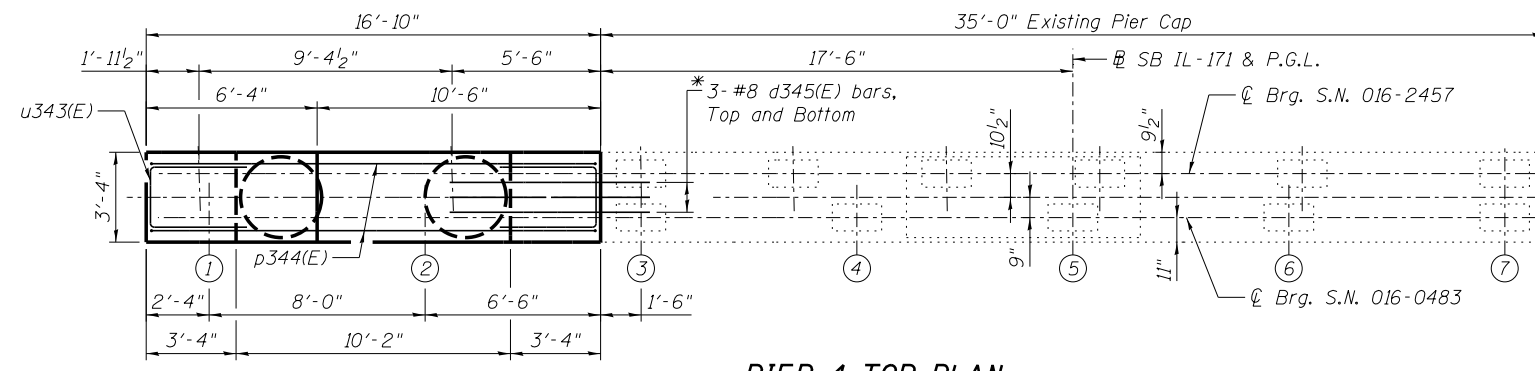
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	521
CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				

SHEET NO. SE37 OF SE46 SHEETS

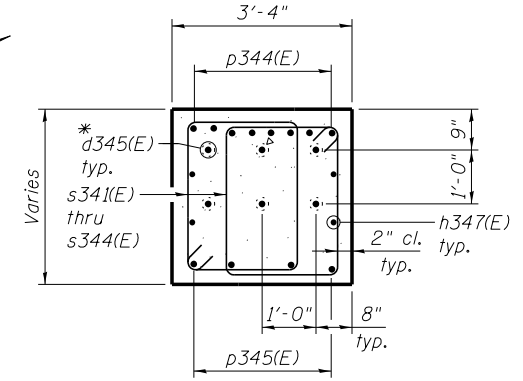
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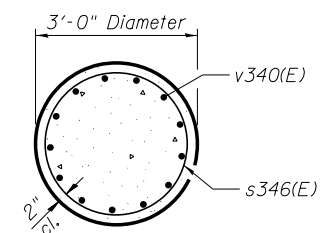
SECTION A-A
(Space Reinforcement to miss Anchor Bolts)



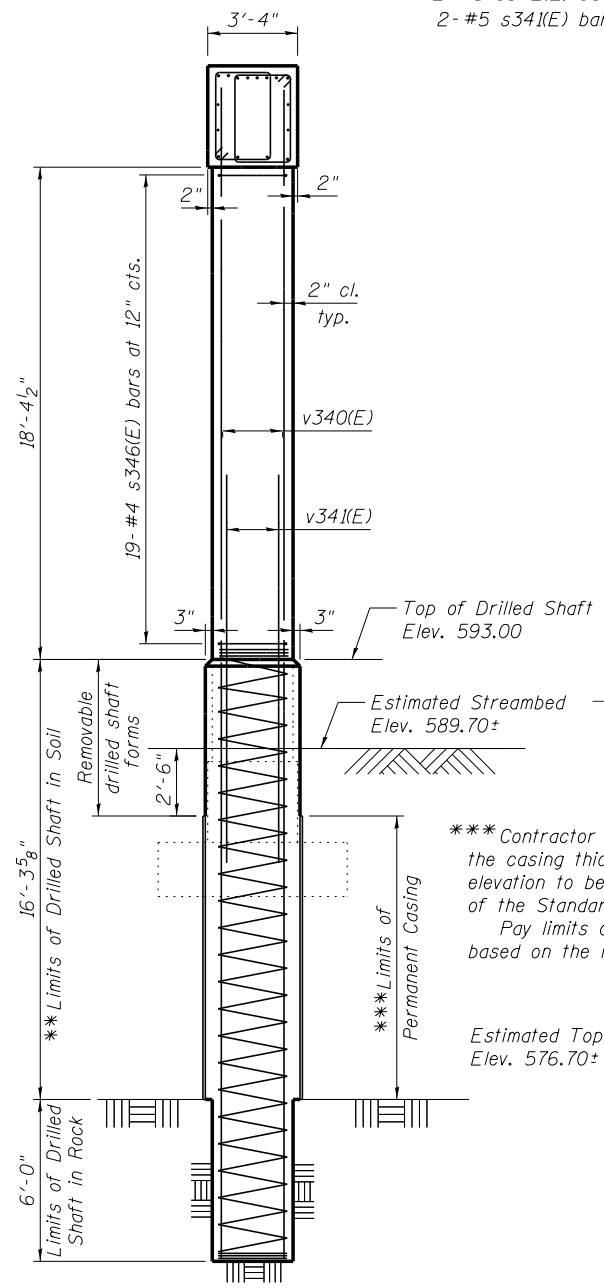
PIER 4 TOP PLAN



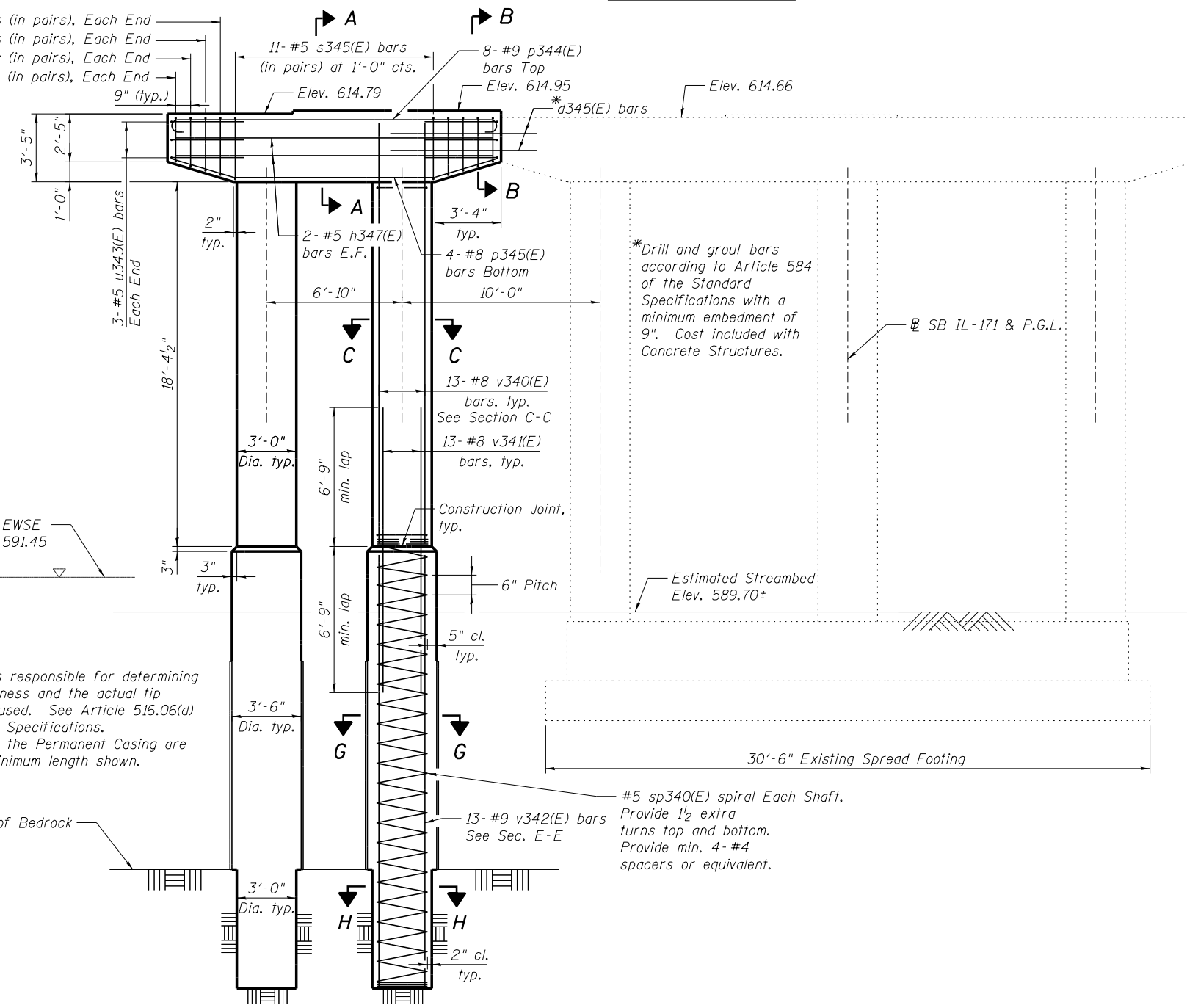
SECTION B-B



SECTION C-C



END VIEW



PIER 4 ELEVATION
(Looking Upstasion/North)

NOTES:

1. For bar list and bill of material, see Sheet SE39.
2. For anchor bolt layout, see Sheet SE39.
3. For drilled shaft layout and locations, see Sheet SE3.
4. All exposed surface areas of the pier widening shall be treated with Concrete Sealer.
5. Space reinforcement in cap to miss anchor bolts.
6. Pour steps monolithically with cap.
7. See Sheet SE39 for Sections G-G and H-H.

2-#5 s344(E) bars (in pairs), Each End
2-#5 s343(E) bars (in pairs), Each End
2-#5 s342(E) bars (in pairs), Each End
2-#5 s341(E) bars (in pairs), Each End
9" (typ.)

11-#5 s345(E) bars (in pairs) at 1'-0" cts.
Elev. 614.79
8-#9 p344(E) bars Top
Elev. 614.95
*d345(E) bars
Elev. 614.66

*Drill and grout bars according to Article 584 of the Standard Specifications with a minimum embedment of 9". Cost included with Concrete Structures.

*** Contractor is responsible for determining the casing thickness and the actual tip elevation to be used. See Article 516.06(d) of the Standard Specifications. Pay limits of the Permanent Casing are based on the minimum length shown.

#5 sp340(E) spiral Each Shaft, Provide 1/2 extra turns top and bottom. Provide min. 4-#4 spacers or equivalent.

**PIER 1
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h310(E)	38	#5	10'-11"	—
h311(E)	3	#5	11'-3"	—
s310(E)	12	#5	6'-8"	U
*sp310(E)	2	#5	35'-3"	W
u350(E)	4	#5	9'-0"	U
u351(E)	8	#5	5'-4"	J
u352(E)	12	#5	5'-6"	J
u353(E)	14	#5	5'-10"	J
u355(E)	18	#5	15'-6"	L
v312(E)	26	#6	12'-8"	—
v313(E)	26	#6	18'-6"	—
v314(E)	20	#8	41'-6"	—
Concrete Removal	Cu. Yd.	1.0		
Structure Excavation	Cu. Yd.	11		
Concrete Structures	Cu. Yd.	27.4		
Reinforcement Bars, Epoxy Coated	Pound	5,280		
Permanent Casing	Foot	64		
Drilled Shaft in Soil	Cu. Yd.	11.6		
Drilled Shaft in Rock	Cu. Yd.	0.7		

* Length is height of spiral.

**PIER 2
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h320(E)	40	#5	13'-10"	—
h321(E)	3	#5	13'-2"	—
s320(E)	23	#5	6'-4"	U
*sp320(E)	2	#5	36'-1"	W
u350(E)	4	#5	9'-0"	U
u351(E)	8	#5	5'-4"	J
u352(E)	12	#5	5'-6"	J
u353(E)	14	#5	5'-10"	J
u354(E)	26	#5	19'-5"	L
v322(E)	26	#9	43'-0"	—
v323(E)	48	#6	19'-2"	—
v324(E)	48	#6	16'-3"	—
Concrete Removal	Cu. Yd.	1.1		
Structure Excavation	Cu. Yd.	14		
Concrete Structures	Cu. Yd.	36.1		
Reinforcement Bars, Epoxy Coated	Pound	9,170		
Permanent Casing	Foot	58		
Drilled Shaft in Soil	Cu. Yd.	20.1		
Drilled Shaft in Rock	Cu. Yd.	4.2		

* Length is height of spiral.

**PIER 3
BILL OF MATERIAL**

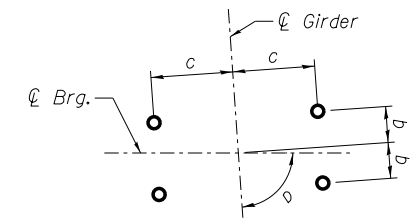
Bar	No.	Size	Length	Shape
h330(E)	40	#5	16'-3"	—
h331(E)	3	#5	16'-7"	—
s330(E)	18	#5	6'-2"	U
*sp330(E)	2	#5	23'-8"	W
u350(E)	4	#5	9'-0"	U
u351(E)	10	#5	5'-4"	J
u352(E)	12	#5	5'-6"	J
u353(E)	14	#5	5'-10"	J
u356(E)	24	#5	20'-10"	L
v332(E)	38	#6	15'-6"	—
v333(E)	38	#6	19'-5"	—
v334(E)	20	#8	30'-0"	—
Concrete Removal	Cu. Yd.	1.1		
Structure Excavation	Cu. Yd.	15		
Concrete Structures	Cu. Yd.	48.0		
Reinforcement Bars, Epoxy Coated	Pound	5,740		
Permanent Casing	Foot	42		
Drilled Shaft in Soil	Cu. Yd.	7.4		
Drilled Shaft in Rock	Cu. Yd.	0.7		

* Length is height of spiral.

**PIER 4
BILL OF MATERIAL**

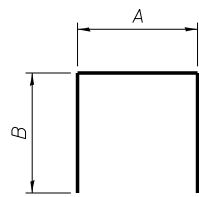
Bar	No.	Size	Length	Shape
d345(E)	6	#8	7'-0"	—
h347(E)	4	#5	16'-6"	—
p344(E)	8	#9	18'-10"	U
p345(E)	4	#8	16'-8"	U
s341(E)	4	#5	10'-5"	U
s342(E)	4	#5	10'-11"	U
s343(E)	4	#5	11'-5"	U
s344(E)	4	#5	11'-11"	U
s345(E)	22	#5	12'-3"	U
s346(E)	38	#4	11'-0"	O
*sp340(E)	2	#5	22'-10"	W
u343(E)	6	#5	10'-4"	U
v340(E)	26	#8	21'-3"	—
v341(E)	26	#8	14'-0"	—
v342(E)	26	#9	22'-1"	—
Concrete Structures	Cu. Yd.	16.6		
Reinforcement Bars, Epoxy Coated	Pound	6,900		
Permanent Casing	Foot	22		
Drilled Shaft in Soil	Cu. Yd.	11.7		
Drilled Shaft in Rock	Cu. Yd.	3.2		
Concrete Sealer	Sq. Ft.	616		

* Length is height of spiral.



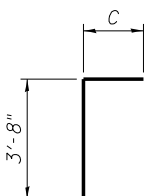
ANCHOR BOLT DETAIL

PIER	Dimension	Girder 1	Girder 2
Pier 1	a	88°51'15"	89°25'39"
	b	7 1/4"	7 1/4"
	c	11 3/4"	11 3/4"
Pier 2	a	88°51'15"	89°25'39"
	b	0"	0"
	c	11 1/2"	11 1/2"
Pier 3	a	90°00'00"	90°00'00"
	b	7 1/4"	7 1/4"
	c	11 3/4"	11 3/4"
Pier 4 (SN 016-0483)	a	90°00'00"	90°00'00"
	b	0"	0"
	c	11"	11"
Pier 4 (SN 016-2457)	a	88°29'15"	87°44'22"
	b	0"	0"
	c	10"	10"



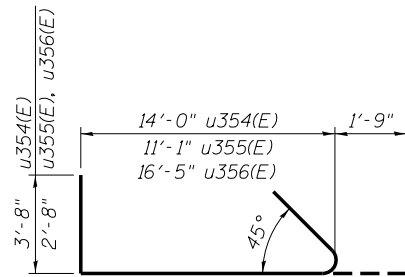
Bar	A	B
s310(E)	1'-8"	2'-6"
s320(E)	1'-8"	2'-4"
s330(E)	1'-8"	2'-3"
u350(E)	1'-8"	3'-8"
u343(E)	3'-0"	3'-8"

**s310(E), s320(E), s330(E),
u350(E), u343(E) BARS**

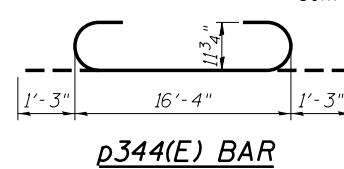


Bar	C
u351(E)	1'-8"
u352(E)	1'-10"
u353(E)	2'-2"

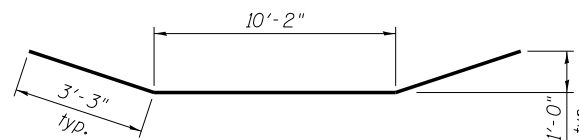
u351(E), u352(E), u353(E) BARS



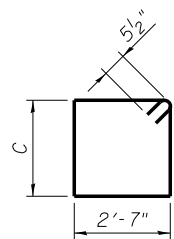
u354(E), u355(E), u356(E) BARS



p344(E) BAR

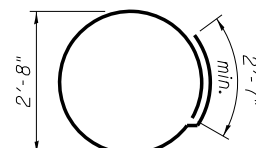


p345(E) BAR

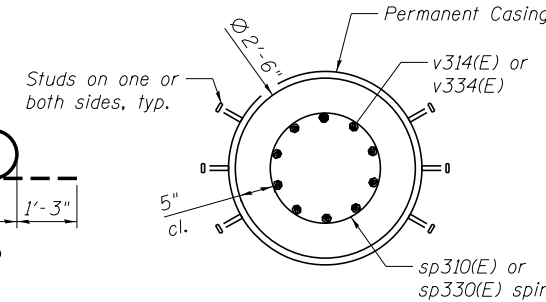


s341(E) - s345(E) BARS

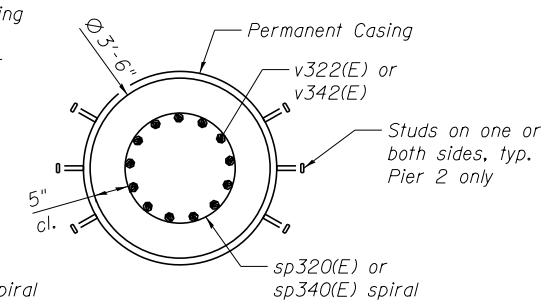
Bar	C
s341(E)	2'-2"
s342(E)	2'-5"
s343(E)	2'-8"
s344(E)	2'-11"
s345(E)	3'-1"



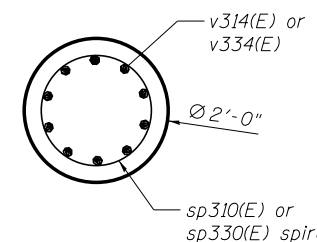
s346(E) BAR



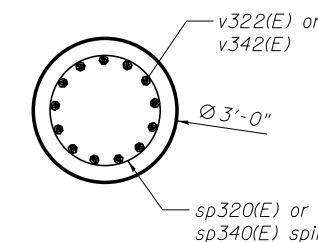
**SECTION E-E
(Shaft in soil)**



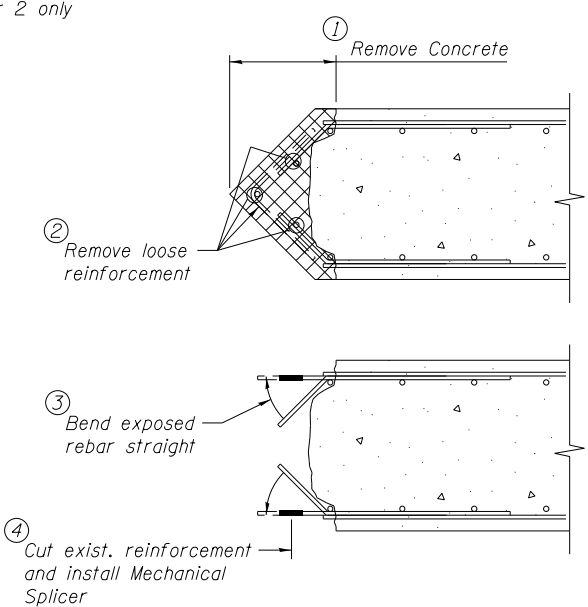
**SECTION G-G
(Shaft in soil)**



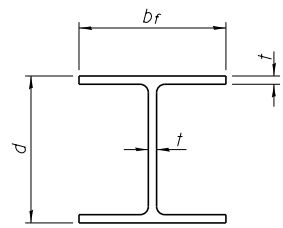
**SECTION F-F
(Shaft in rock)**



**SECTION H-H
(Shaft in rock)**

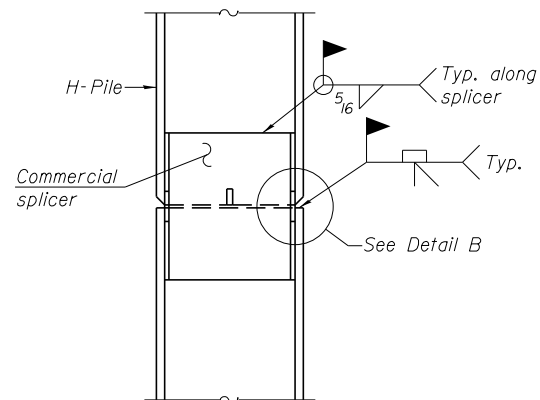


SECTION D-D

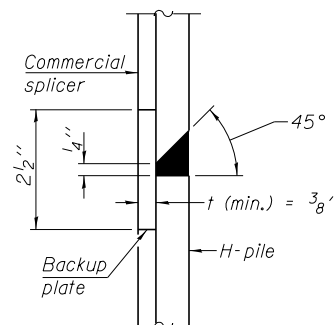


STEEL PILE TABLE

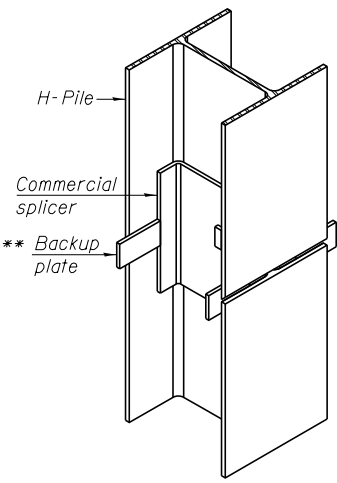
Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11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



ELEVATION

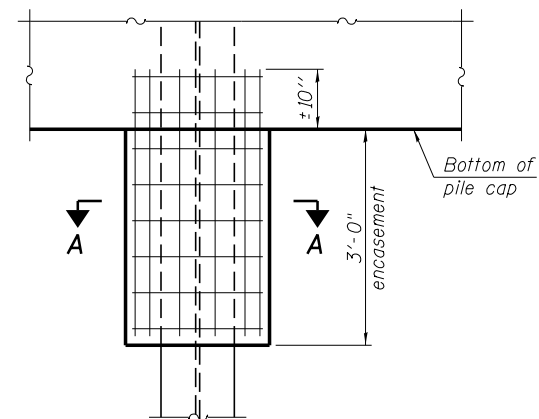


DETAIL "B"



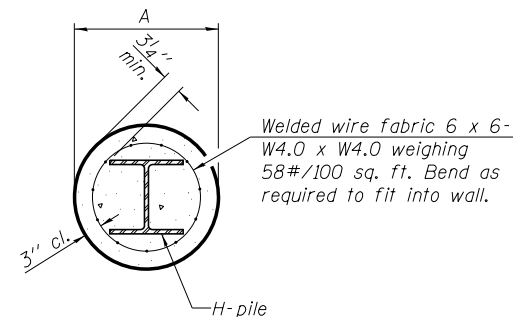
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



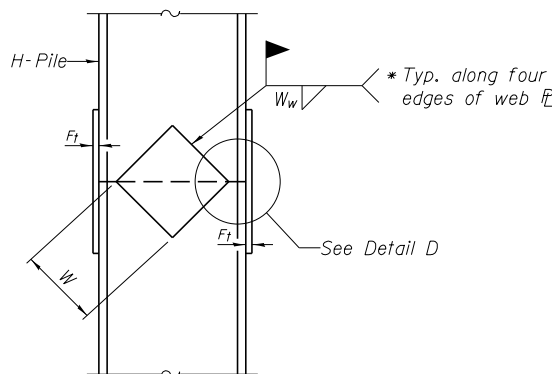
ELEVATION

PILE ENCASEMENT

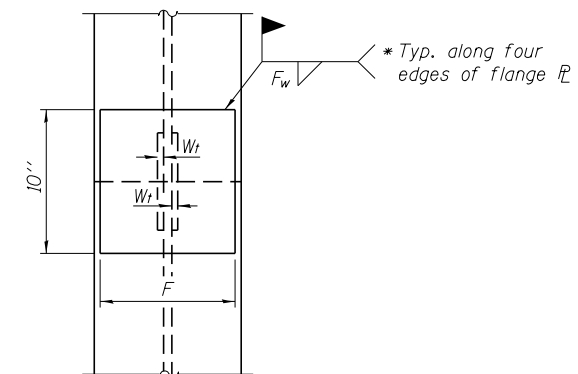


SECTION A-A

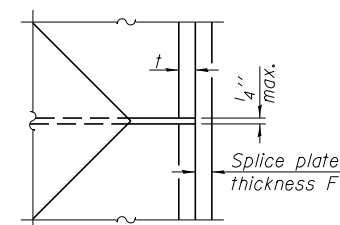
Note: Forms for encasement may be omitted when soil conditions permit.



ELEVATION



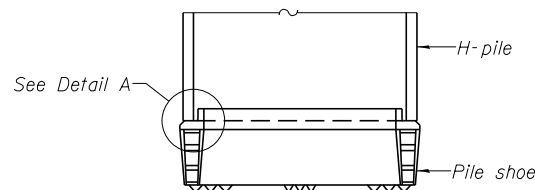
END VIEW



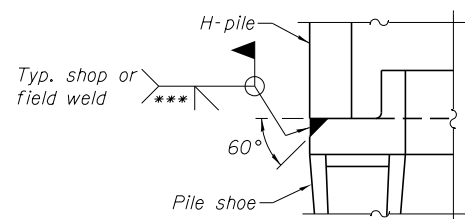
DETAIL D

WELDED PLATE FIELD SPLICE

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

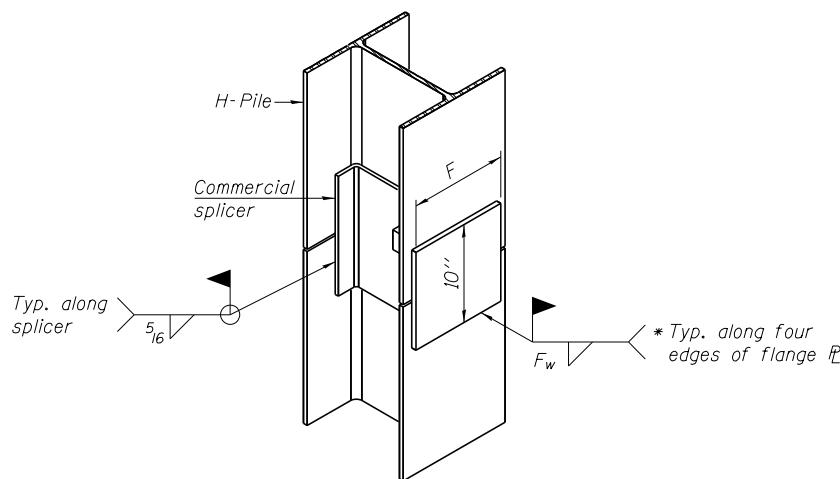


ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

- * Interrupt welds 1/4" from end of web and/or each flange.
- ** Remove portions of backup plates that extend outside the flanges.
- *** Weld size per pile shoe manufacturer (5/16" min.).

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

benesch
engineers · scientists · planners
Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

F - HP 1-27-12

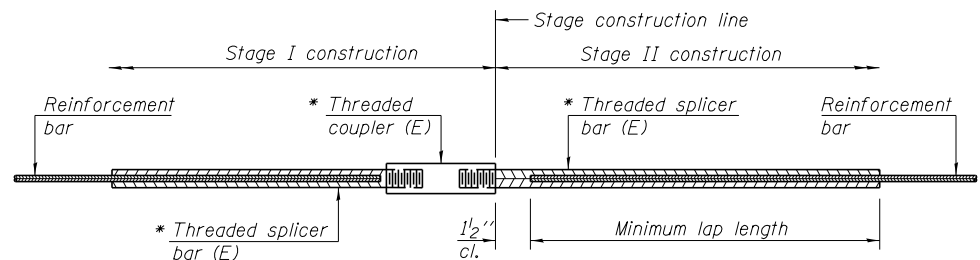
FILE NAME =	USER NAME = jsurber	DESIGNED - SCW	REVISED -
0160483.60J16.040.Pile.Details.dgn		CHECKED - MRB	REVISED -
		DRAWN - RMG	REVISED -
		CHECKED - MRB	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**HP PILE DETAILS
STRUCTURE NO. 016-0483**

SHEET NO. SE40 OF SE46 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	524
CONTRACT NO. 60J16			ILLINOIS FED. AID PROJECT	



STANDARD BAR SPLICER ASSEMBLY

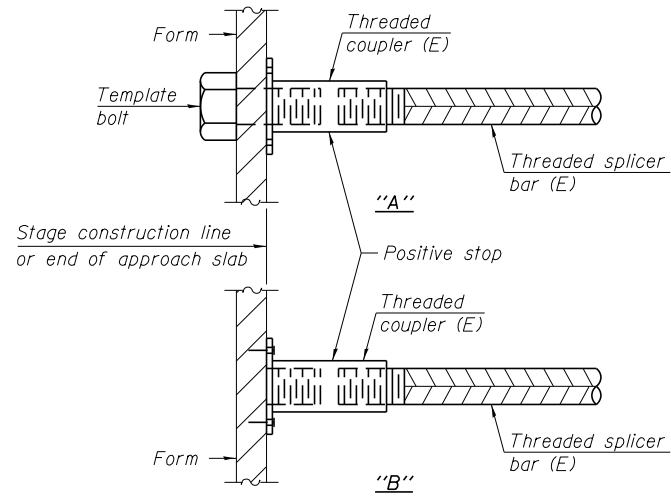
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"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

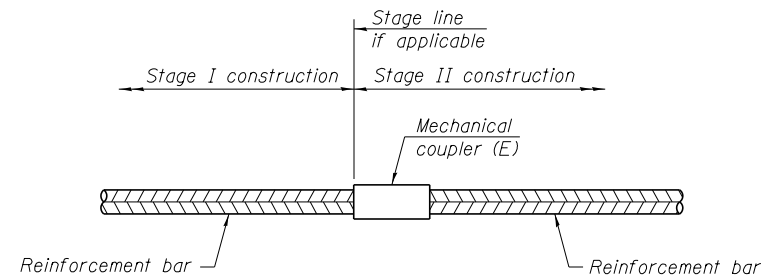
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

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



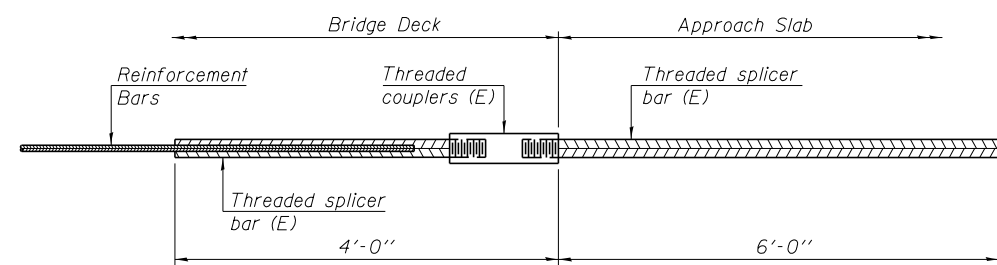
INSTALLATION AND SETTING METHODS

"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.



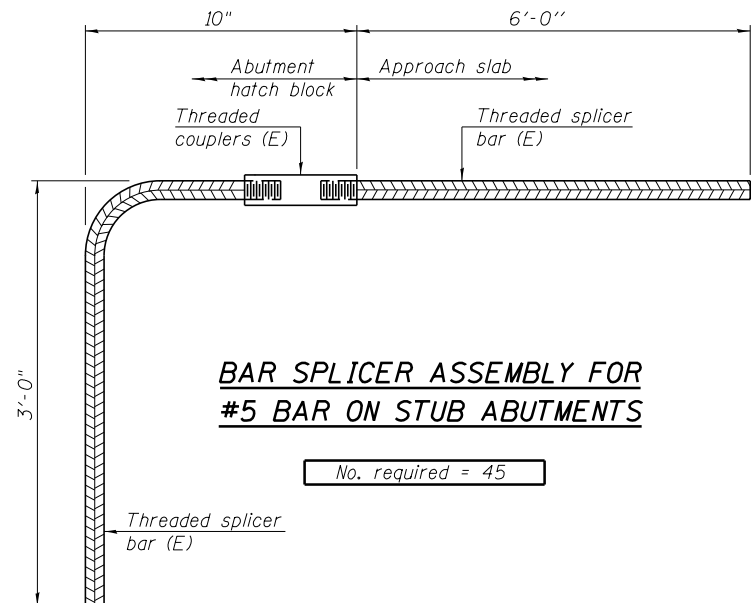
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
Pier 1	#5	38
Pier 2	#5	40
Pier 3	#5	40



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 = 45

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.

Y:\chicago\100005\10093\Eng_Docs_Phase_1\1\SN_016_0483_0985_1st_Ave_over_Des_Plaines_River_Final\0160483_60J16_041.Bar_Splicer.dgn 5:24:26 PM 8/11/2014



SOIL BORING LOG

GSJ Job No. 10025
Page 1 of 2
Date 5/2/12

ROUTE FAP 372 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY JZ
SECTION 2013-038B-R LOCATION SE 1/4, SEC. 11, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. 016-0483 DEPTH (ft) BLOW (ft) UCS (tsf) MOIST (%)
Station 50+80.50
BORING NO. SB-17 Groundwater Elev.:
Station 47+77 First Encounter Dry to 17.5' ft
Offset 48.00ft Left Upon Completion n/a ft
Ground Surface Elev. 619.70 ft (ft) (/6") (tsf) (%) After _____ Hrs. (ft) (/6") (tsf) (%)

12.0" ASPHALT										
Clayey SAND, GRAVEL & STONE-medium dense (Fill)	618.70	7								
		4			13					
		6								
CLAY LOAM-dark brown, gray & black-stiff to very stiff (Fill)	616.70									
		3								
		3	1.5		19					
		4	P							
		5								
		3								
		3			17					
		3								
		4	1.5		18					
		5	P							
		10								
		3								
		5	2.0		15					
		6	P							
		4								
		6			13					
		9								
		15								
		20	1.3		15					
		23	B							
		8								
		8	1.0		30					
		8	P							
		20								

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

Z:\PROJECTS\201010025\BENESCH_IL171-FIRST AVE. (DOT) PFB 154 ITEM 141\10025 BORING LOGS\10025 LOG.GPJ 11/13/13



SOIL BORING LOG

GSJ Job No. 10025
Page 2 of 2
Date 5/2/12

ROUTE FAP 372 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY JZ
SECTION 2013-038B-R LOCATION SE 1/4, SEC. 11, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. 016-0483 DEPTH (ft) BLOW (ft) UCS (tsf) MOIST (%)
Station 50+80.50
BORING NO. SB-17 Groundwater Elev.:
Station 47+77 First Encounter Dry to 17.5' ft
Offset 48.00ft Left Upon Completion n/a ft
Ground Surface Elev. 619.70 ft (ft) (/6") (tsf) (%) After _____ Hrs. (ft) (/6") (tsf) (%)

SILT-gray-very dense (continued)										
		6								
		14	1.5		28					
		16	P							
SILTY CLAY LOAM with Fractured Rock-gray-very dense	577.70									
		6								
		8	1.0		19					
		9	P							
		25								
		45								
		9			12					
		10								
		18								
SAND, GRAVEL & FRACTURED ROCK-gray-very dense	591.70									
		12								
		18			9					
		25								
		30								
		49								
		50/2"	2.5		14					
		50								
		28								
		50/5"			11					
		55								
		51								
		50/1"			19					
		40								
Drillers Observation: Apparent bedrock.	561.20	50/1"								
		60								

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

Z:\PROJECTS\201010025\BENESCH_IL171-FIRST AVE. (DOT) PFB 154 ITEM 141\10025 BORING LOGS\10025 LOG.GPJ 11/13/13

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amerist Court, Suite 204
Naperville, Illinois 60565
(630) 355-2838

ROCK CORE LOG

PAGE 1 of 1
DATE 5/1/2012
LOGGED BY RJ
GSJ JOB No. 10025

ROUTE IL Rte. 171, F.A.P. 372 DESCRIPTION 1st Ave. Bridge Rehabilitation & Replacement, 47th St. to 55th St.
SECTION 2013-038B-R LOCATION SEC 11, 12, 13 & 14 T 38 N, R 12 E, 3rd PM
COUNTY Cook CORING METHOD Rotary Wash

STRUCT. NO. <u>SN016-0483</u>	CORING BARREL TYPE & SIZE <u>NX Double Swivel-10 ft</u>	DEPTH (ft)	CORE (#)	RECOVERY (%)	ROD (in)	CORRECTION (min)	STRENGTH (tsf)
Station <u>50+80.50</u>	Core Diameter <u>2.0 in</u>	1	91.5	69.5	n/a	138.4	138.4
BORING NO. <u>SB-17</u>	Top of Rock Elev. <u>561.2</u>						
Station <u>47+77</u>	Begin Core Elev. <u>558.7</u>						
Offset <u>48.0' Left</u>							
Ground Surface Elev. <u>619.7</u>							

SILURIAN SYSTEM, NIAGARAN SERIES DOLOMITE
RUN 1 (-61.0' to -71.0')
Light gray mottled gray, fine grained with horizontal bedding. Some horizontal fractures throughout. Vertical fracture from -62.5' to -63.9'.



Color pictures of the cores Yes Cores will be stored for examination for
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)



Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

FILE NAME =	USER NAME = tjenicke	DESIGNED - FSM	REVISED -
		CHECKED - RMM	REVISED -
0160483.60J16.042.Soil Boring Logs 1.dgn	PLOT SCALE =	DRAWN - FSM	REVISED -
	PLOT DATE = 12/28/2013	CHECKED - RMM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS (1 OF 5)
STRUCTURE NO. 016-0483
SHEET NO. SE42 OF SE46 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	526
CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				

X:\100005\10093\Eng_Docs_Phase_1\1\SN_016_0483_0985_1st_Ave_cover_Des_Plaines_River_Final\0160483_60J16_042_Soil Boring Logs 1.dgn 2:43:19 PM 6/23/2014



SOIL BORING LOG

GSI Job No. 10025

Page 1 of 2

Date 5/4/12

ROUTE FAP 372 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY NW

SECTION 2013-038B-R LOCATION SE 1/4, SEC. 11, TWP. T38N, RNG. R12E, 3rd PM

COUNTY Cook DRILLING METHOD MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. 016-0483 Station 50+80.50 BORING NO. SB-19 Station 50+93 Offset 44.00ft Left Ground Surface Elev. 620.30 ft

Table with columns for Depth (ft), Blows (blows/ft), SPT (blows/ft), Moisture (%), UCS (tsf), and Soil Description. Includes entries for VOID, Water, and SILTY CLAY.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)



SOIL BORING LOG

GSI Job No. 10025

Page 2 of 2

Date 5/4/12

ROUTE FAP 372 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY NW

SECTION 2013-038B-R LOCATION SE 1/4, SEC. 11, TWP. T38N, RNG. R12E, 3rd PM

COUNTY Cook DRILLING METHOD MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. 016-0483 Station 50+80.50 BORING NO. SB-19 Station 50+93 Offset 44.00ft Left Ground Surface Elev. 620.30 ft

Table with columns for Depth (ft), Blows (blows/ft), SPT (blows/ft), Moisture (%), UCS (tsf), and Soil Description. Includes entries for SILTY CLAY, Boulders, SANDY CLAY LOAM, and bedrock.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

ROCK CORE LOG form containing project details, boring information, a data table with columns for Depth, Core Recovery, Rock Quality, etc., and a photograph of the rock core sample.

Color pictures of the cores Yes Cores will be stored for examination for The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)



Alfred Benesch & Company 205 North Michigan Avenue, Suite 2400 Chicago, Illinois 60601 312-565-0450 Job No. 10093

Table with columns for USER NAME, DESIGNED, CHECKED, REVISIONS, PLOT SCALE, and PLOT DATE.

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS (3 OF 5) STRUCTURE NO. 016-0483

Table with columns for F.A.P. RTE., SECTION, COUNTY, SHEETS, and CONTRACT NO.

SHEET NO. SE44 OF SE46 SHEETS

ILLINOIS FED. AID PROJECT

Vertical text on the right edge: X:\100005\10093\Eng_Docs_Phase-11\SN_016_0483_0985_1st_Ave_over_Des_Plaines_River_Final\016_044_Soil Boring Logs 3.dgn 6/23/2014 2:43:38 PM



SOIL BORING LOG

GSI Job No. 10025 Page 1 of 2 Date 5/3/12

ROUTE FAP 372 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY RR
SECTION 2013-038B-R LOCATION SE 1/4, SEC. 11, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD MUD ROTARY HAMMER TYPE CME Automatic

Table with columns for DEPTH (ft), BULGE (in), UCS (tsf), MOISTURE (%), SURFACE WATER ELEV., STREAM BED ELEV., GROUNDWATER ELEV., and various soil descriptions like VOID, CLAY LOAM, etc.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) BBS, from 137 (Rev. 8-99)



SOIL BORING LOG

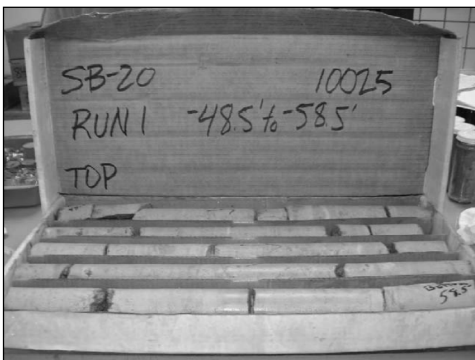
GSI Job No. 10025 Page 2 of 2 Date 5/3/12

ROUTE FAP 372 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY RR
SECTION 2013-038B-R LOCATION SE 1/4, SEC. 11, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD MUD ROTARY HAMMER TYPE CME Automatic

Table with columns for DEPTH (ft), BULGE (in), UCS (tsf), MOISTURE (%), SURFACE WATER ELEV., STREAM BED ELEV., GROUNDWATER ELEV., and soil descriptions like CLAY LOAM, SILTY CLAY LOAM, etc.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) BBS, from 137 (Rev. 8-99)

ROCK CORE LOG PAGE 1 of 1 DATE 5/3/2012 LOGGED BY JK GSI JOB No. 10025
IL Rte. 171, F.A.P. 372 DESCRIPTION 1st Ave. Bridge Rehabilitation & Replacement, 47th St. to 55th St.
SECTION 2013-038B-R LOCATION SEC 11, 12, 13 & 14 T 38 N, R 12 E, 3rd PM
COUNTY Cook CORING METHOD Rotary Wash
STRUCT. NO. SN016-0483 CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Station 50+80.50 Core Diameter 2.0 in
BORING NO. SB-20 Top of Rock Elev. 572.9
Station 52+35 Begin Core Elev. 572.4
Offset 46.0' Left
Ground Surface Elev. 620.9



Color pictures of the cores Yes Cores will be stored for examination for The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

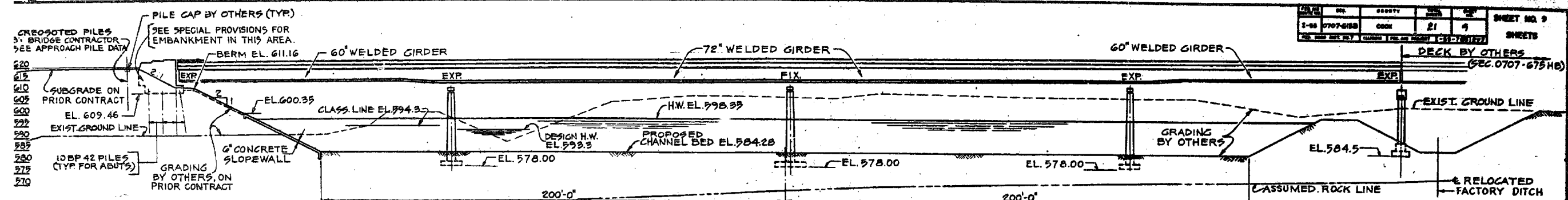


FILE NAME = USER NAME = tjenicke DESIGNED - FSM REVISED - CHECKED - RMM REVISED - PLOT SCALE = DRAWN - FSM REVISED - PLOT DATE = 12/28/2013 CHECKED - RMM REVISED -

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

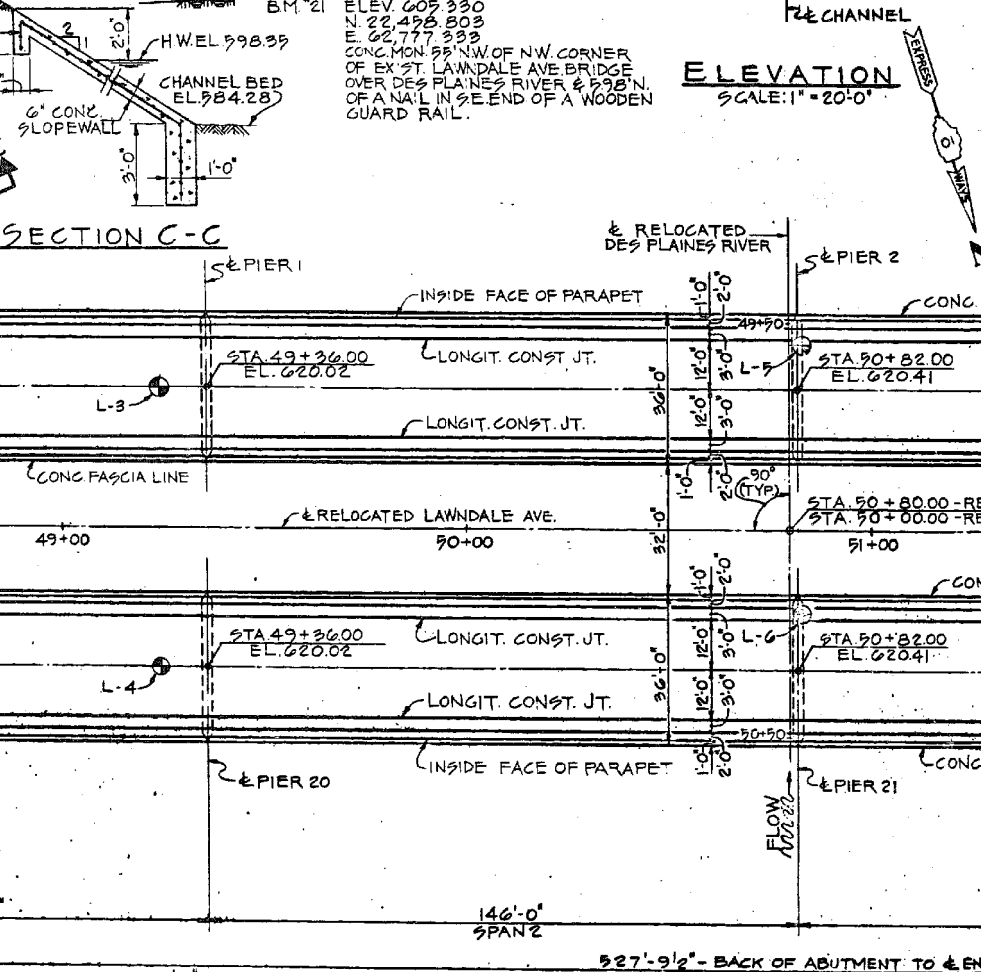
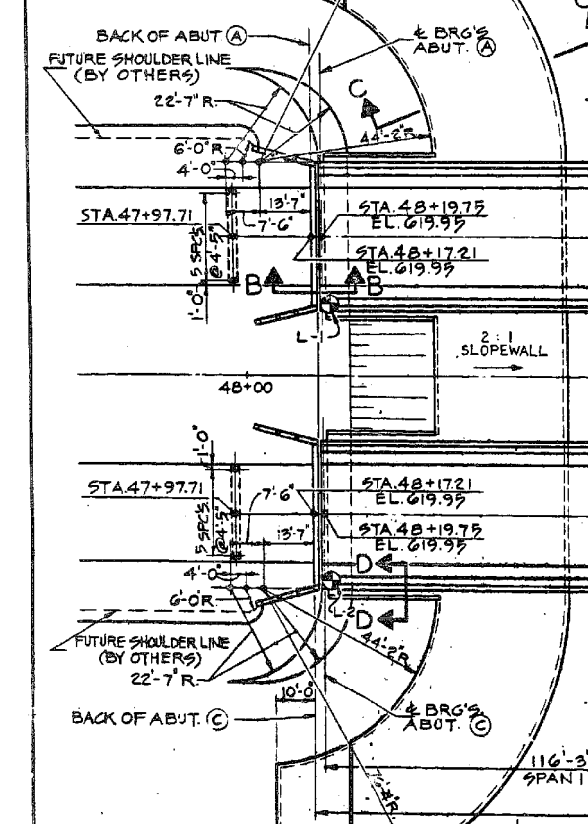
SOIL BORING LOGS (4 OF 5) STRUCTURE NO. 016-0483

Table with columns for F.A.P. RTE., SECTION, COUNTY, TOTAL SHEETS, SHEET NO., CONTRACT NO.

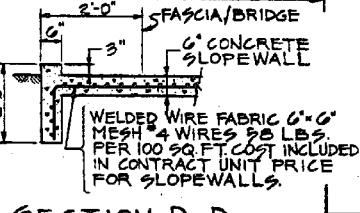


APPROACH PILE DATA

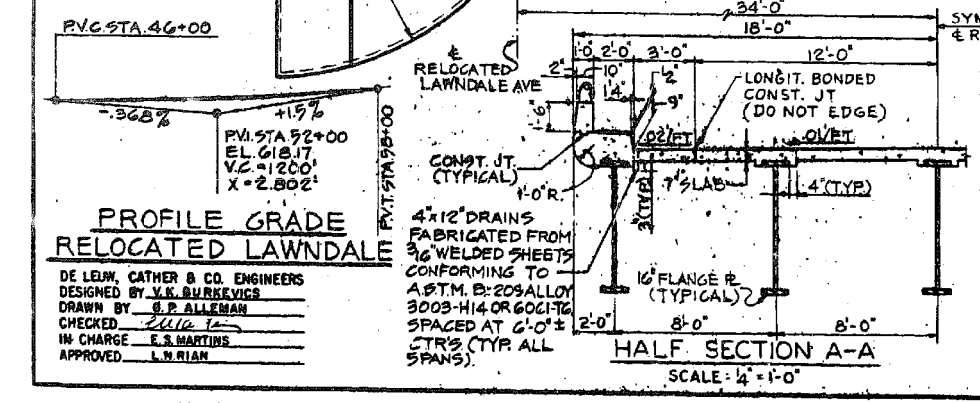
LOCATION	ABUT. A	ABUT. C
NO. REQUIRED	6	6
EST. LENGTH, FT.	25	25
CUT OFF ELEV.	617.46	617.46



WATERWAY INFORMATION
AS SPECIFIED BY DIVISION OF WATERWAYS LETTER OF MARCH 21, 1962.

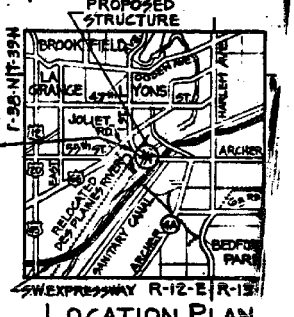
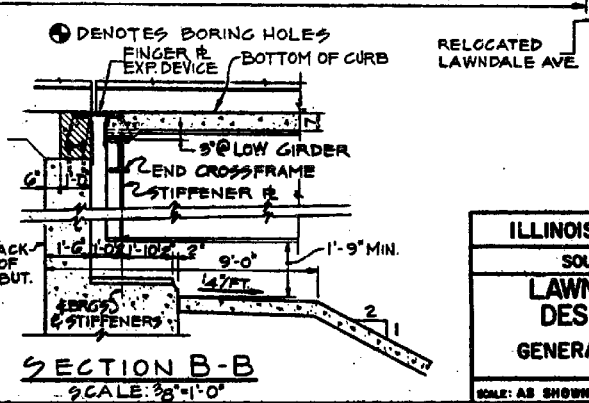


NOTES:
DESIGN LOADS: A.A.S.H.O. 1958-116
DESIGN STRESSES:
fc = 3400 PSI SUPERSTRUCTURE AND SUB-STRUCTURE WITHOUT EARTH PRESSURE
fc = 1000 PSI SUPERSTRUCTURE WITH EARTH PRESSURE
fs = 20,000 PSI REINFORCEMENT BARS
fs = 20,000 PSI STRUCTURAL STEEL A-36
v = 75 PSI SHEAR IN FOOTINGS
MAX. LL + 1 DEFLECTION = 1/1000



TOTAL BILL OF MATERIAL (Section 0707-618B)

ITEM	UNIT	TOTAL		ITEM	UNIT	TOTAL	
		SUPER. STRUCT.	SUB STRUCT.			SUPER. STRUCT.	SUB STRUCT.
CLASS A EXCAVATION FOR STRUCTURES	CU YD		3,401	TEST PILES STEEL	EACH	2	2
CLASS B EXCAVATION FOR STRUCTURES	CU YD		4,012	DRIVING STEEL PILES	LIN FT	600	600
SEAL COAT CONCRETE	CU YD	1,327.4	1,327.4	NAME PLATES	EACH	2	2
COFFERBAMS	EACH	1,327.4	1,327.4	BRIDGE SEAT SEALANTX	SQ YD	1,510	1,510
CLASS X CONCRETE	CU YD	1,106.8	2,271.6	SLOPE WALL 6 INCH	SQ YD	100	100
PROTECTIVE COAT	SO YD	4,714	4,714	CONDUIT IN TRENCH 2\"/>			



ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWNDALE AVE. OVER
DES PLAINES RIVER
GENERAL PLAN AND ELEVATION
SCALE: AS SHOWN

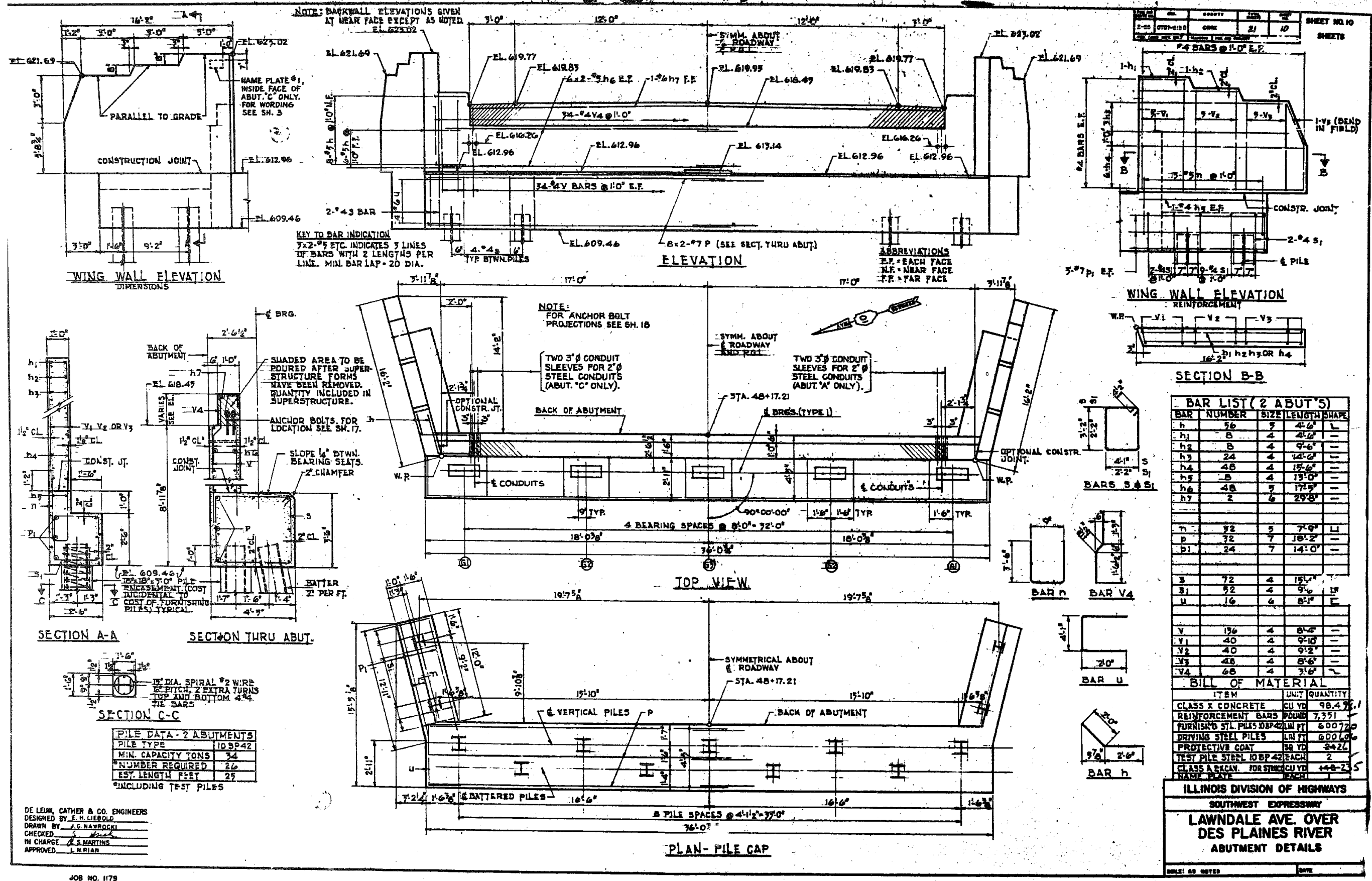
DE LEHN, CATHER & CO. ENGINEERS
DESIGNED BY V.K. BURKOVICZ
DRAWN BY G.P. ALLEN
CHECKED J.L. HANSEN
IN CHARGE E.S. MARTIN
APPROVED L.M. RIAN

HALF SECTION A-A
SCALE: 1/4" = 1'-0"

* INCLUDES 1634 CU.YDS. OF CLASS A EXCAVATION AND 1414 CU.YDS. OF CLASS B EXCAVATION FOR SLOPE WALLS. APPLIED AT PIERS 4, 23 & ABUT'S 'A' & 'C'

SECTION B-B
SCALE: 3/8" = 1'-0"

DATE



DATE	BY	CHKD	APPD	SHEET NO. 10
1-25-07	0707-0110	COOK	EL	10
SHEETS				

BAR LIST (2 ABUT'S)

BAR NUMBER	SIZE	LENGTH	SHAPE
h	56	9	4'-6"
h1	8	4	4'-6"
h2	8	4	9'-6"
h3	24	4	14'-0"
h4	48	4	15'-0"
h5	8	4	15'-0"
h6	48	5	17'-9"
h7	2	6	29'-8"
v	72	5	7'-9"
v1	72	7	16'-2"
v2	24	7	14'-0"
u	72	4	15'-4"
u1	72	4	9'-6"
u	16	6	8'-8"
v	136	4	8'-6"
v1	40	4	9'-10"
v2	40	4	9'-2"
v3	48	4	8'-6"
v4	68	4	3'-6"

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
CLASS X CONCRETE	CU YD	98.47
REINFORCEMENT BARS	POUNDS	7,351
FURNISH 5" L PILES	LN FT	6007.0
DRIVING STEEL PILES	LN FT	6006.0
PROTECTIVE COAT	SS YD	242.7
TEST PILE STEEL	LN FT	2
CLASS A PILE	CU YD	148.23
NAME PLATE	EACH	

ILLINOIS DIVISION OF HIGHWAYS
 SOUTHWEST EXPRESSWAY
 LAWNDALE AVE. OVER
 DES PLAINES RIVER
 ABUTMENT DETAILS

DE LEHN, CATHER & CO. ENGINEERS
 DESIGNED BY E. M. LIEBOLD
 DRAWN BY J. G. NAWROCKI
 CHECKED [Signature]
 IN CHARGE R. S. MARTINS
 APPROVED L. M. RIAN

PILE DATA - 2 ABUTMENTS

PILE TYPE	IDBP42
MIN. CAPACITY TONS	34
*NUMBER REQUIRED	26
EST. LENGTH FEET	25

*INCLUDING TEST PILES

benesch
 engineers · scientists · planners

Alfred Benesch & Company
 205 North Michigan Avenue, Suite 2400
 Chicago, Illinois 60601
 312-565-0450 Job No. 10093

FILE NAME =	USER NAME = tjenicke	DESIGNED - FSM	REVISED -
0160483.60J16.048.existplan2.dgn		CHECKED - RMM	REVISED -
		DRAWN - FSM	REVISED -
		CHECKED - RMM	REVISED -
		PLOT DATE = 12/28/2013	

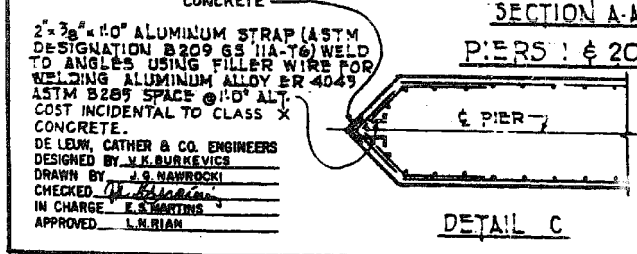
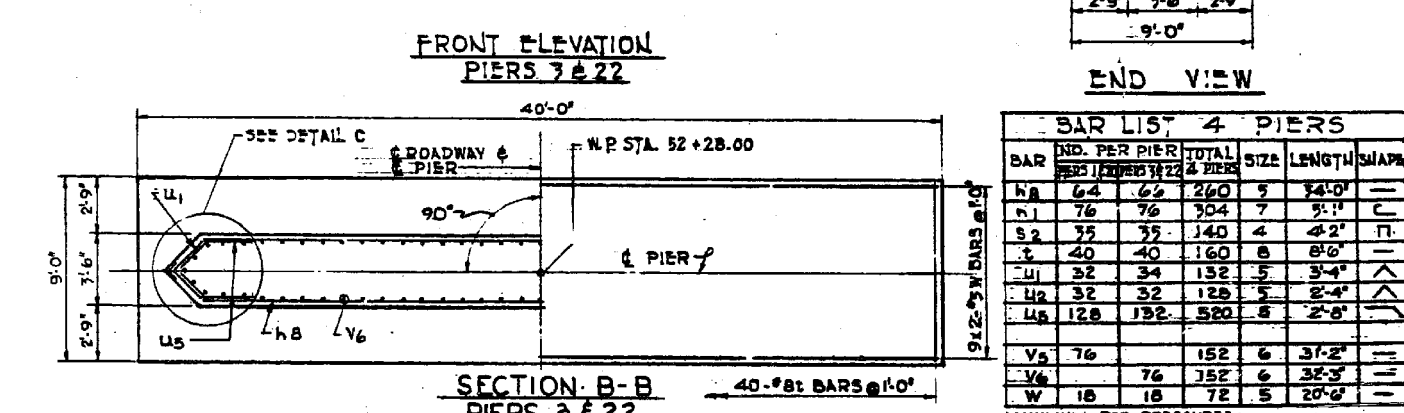
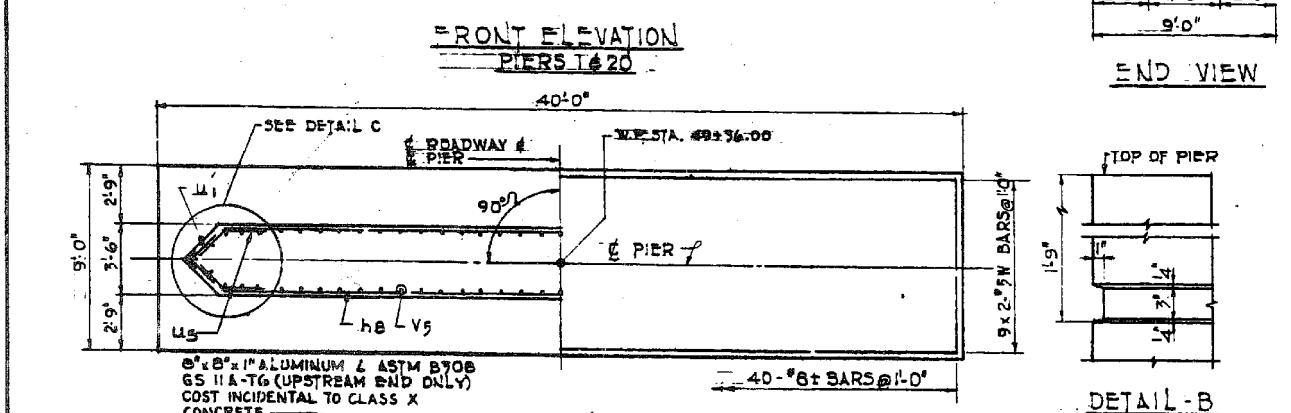
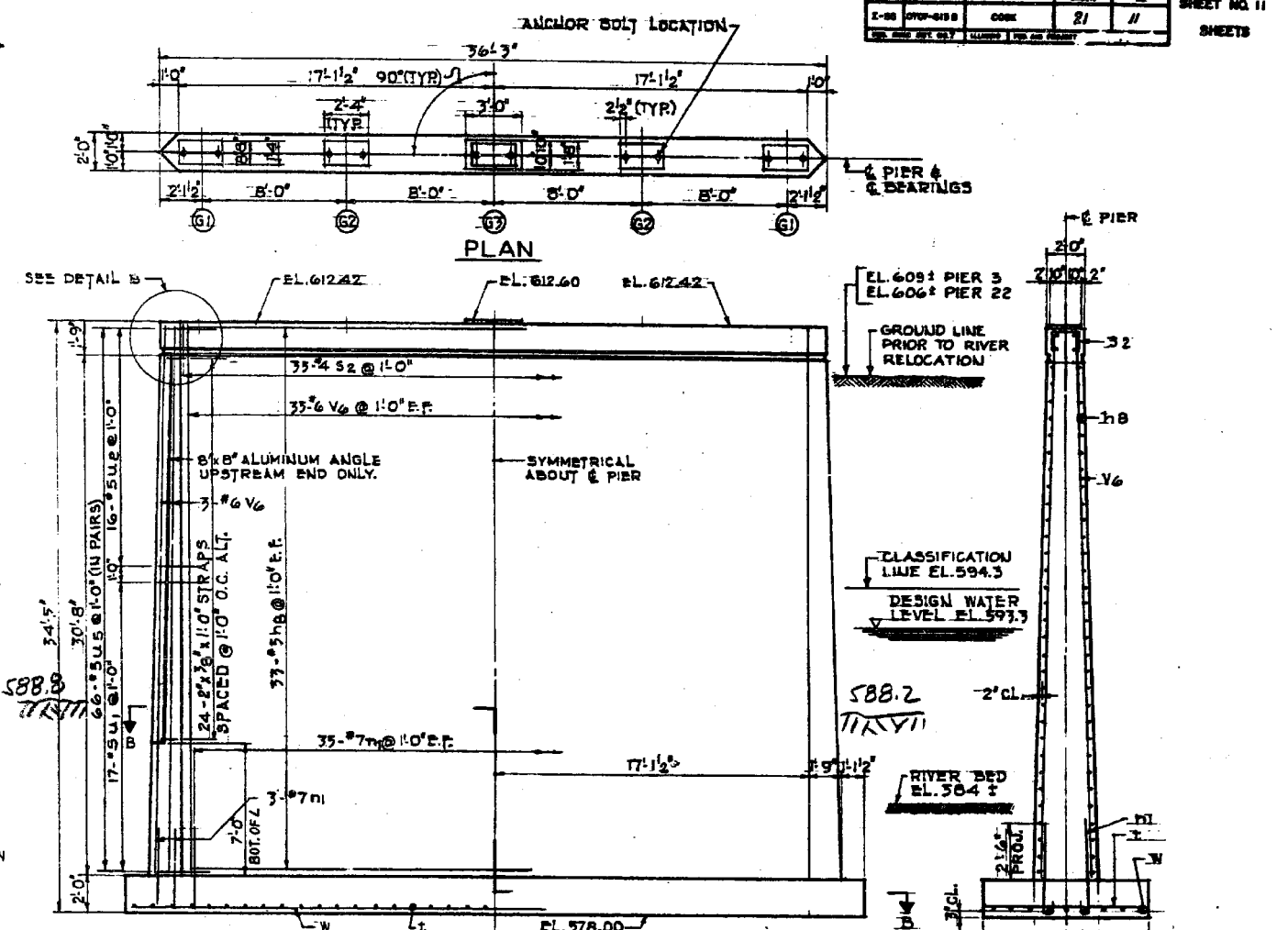
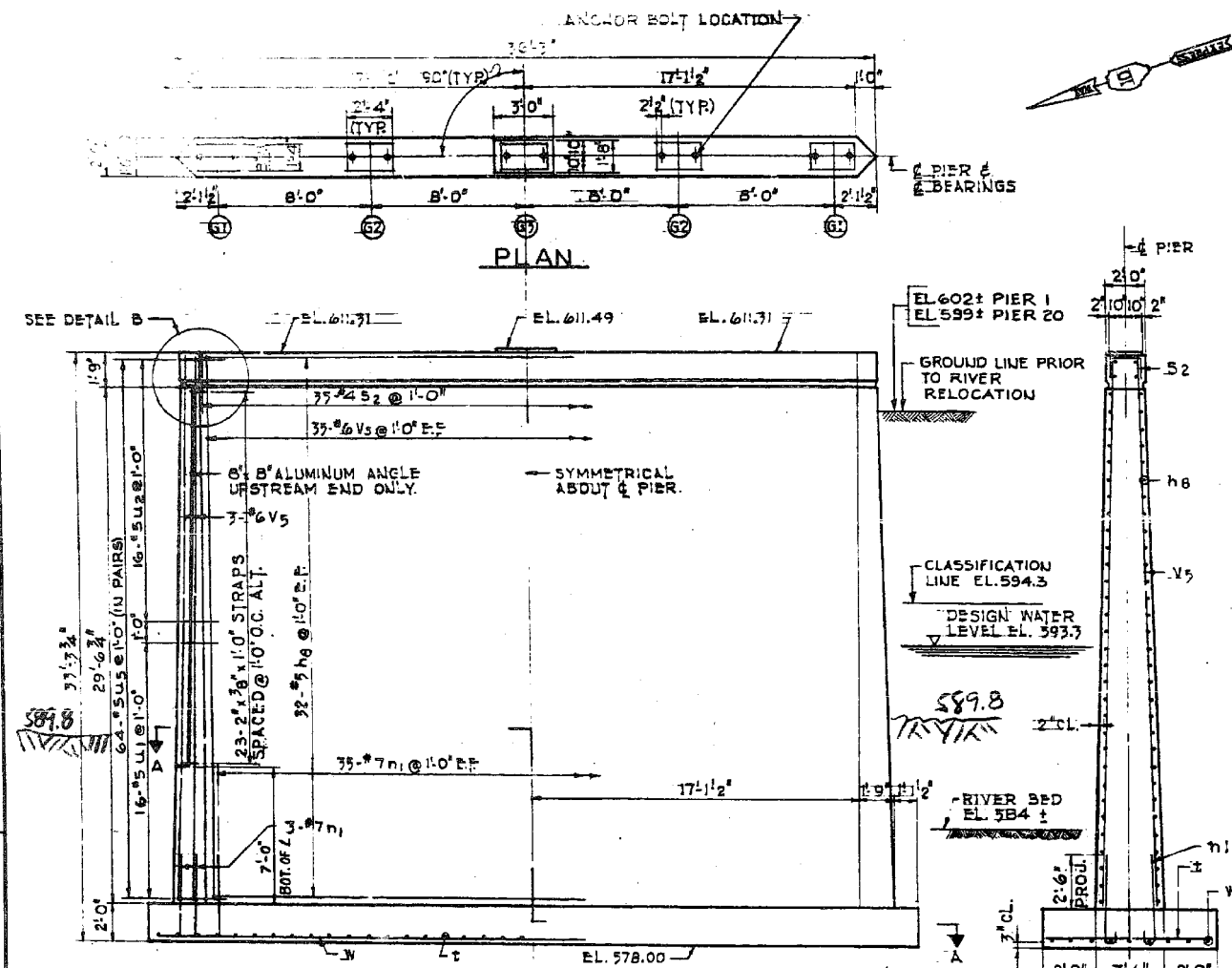
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING PLAN INFORMATION (2 OF 13)
 STRUCTURE NO. 016-0483
 SHEET NO. SEX2 OF SEX13 SHEETS

FOR INFORMATION ONLY

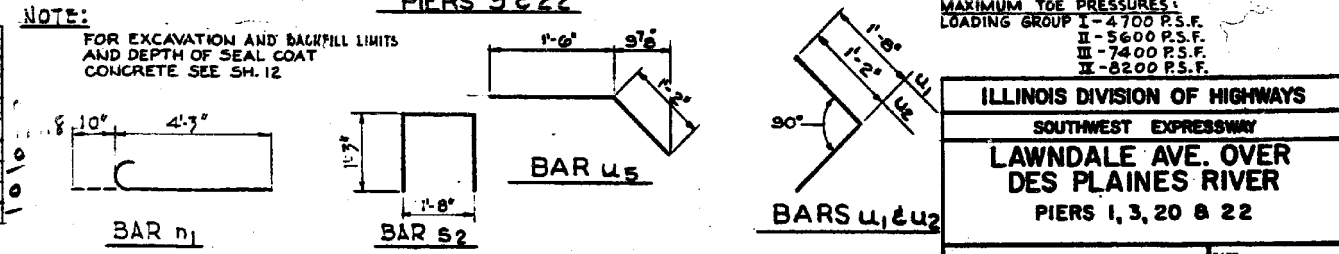
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	532
CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				

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BILL OF MATERIAL - 4 PIERS

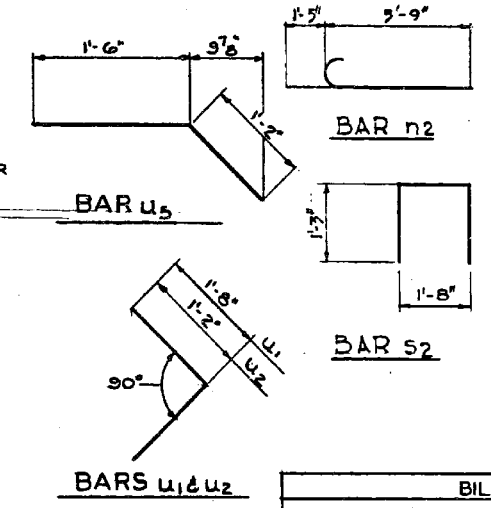
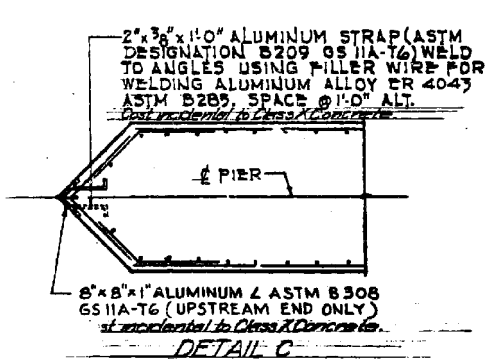
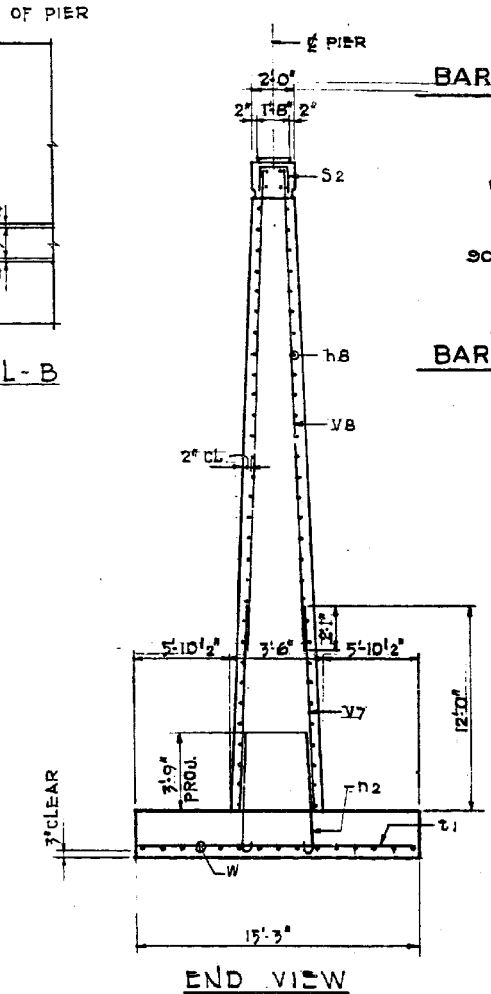
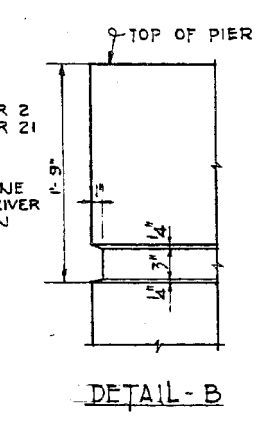
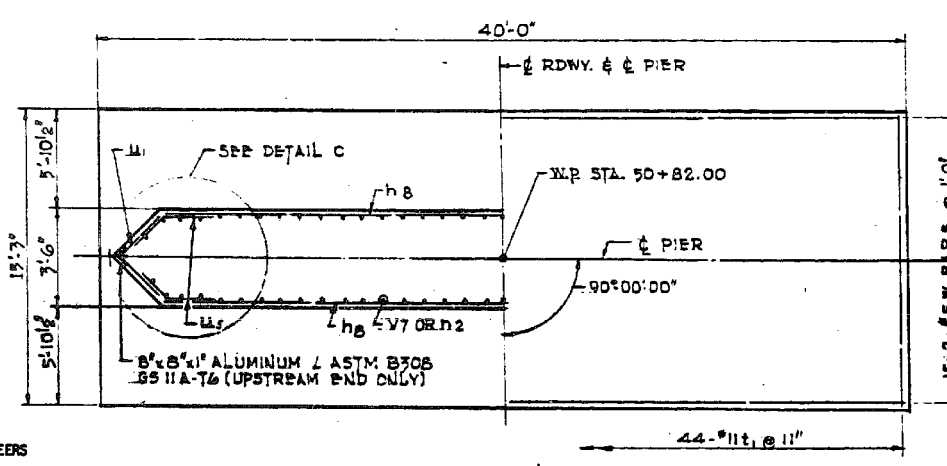
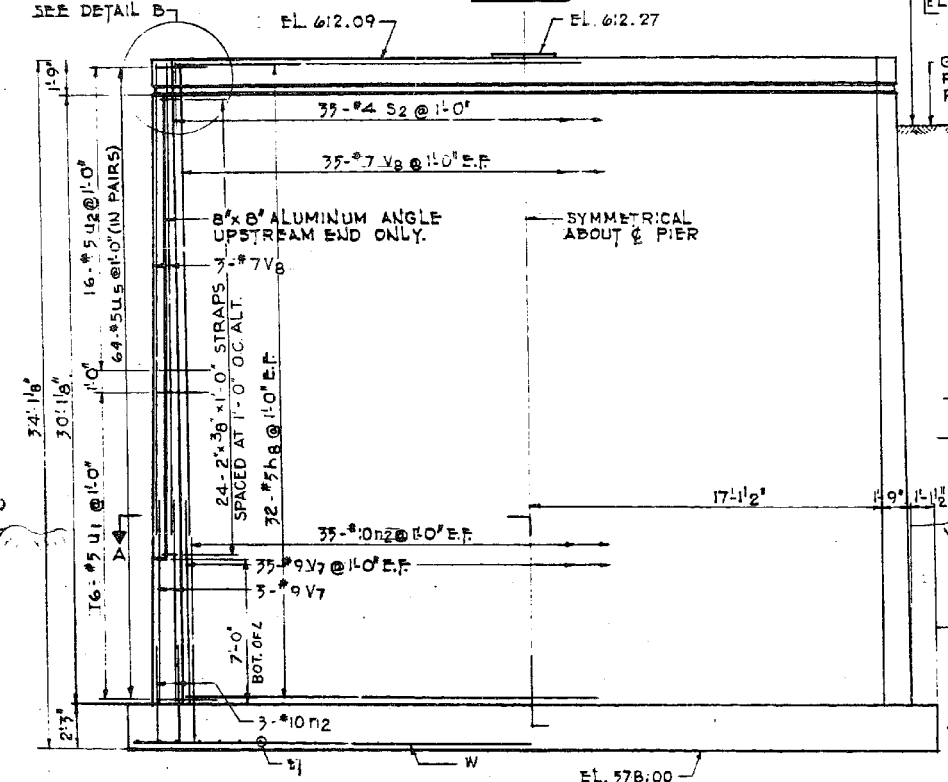
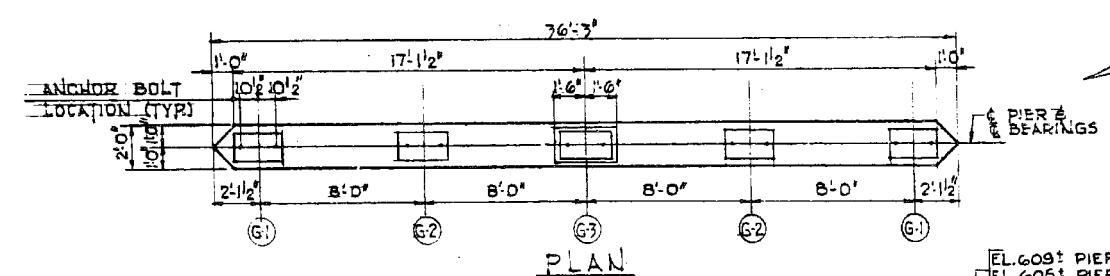
ITEM	UNIT	QUANTITY				TOTAL 4 PIERS
		PIER#1	PIER#3	PIER#20	PIER#22	
CLASS A EXCAVATION FOR STRUCTURES	CU. YD.	160	300	100	248	808
CLASS B EXCAVATION FOR STRUCTURES	CU. YD.	850	2376.4	2370	2375.7	13802
COFFERDAMS	EACH	+0	+0	+0	+0	+0
CLASS X CONCRETE	CU. YD.	138.6	142.6	138.6	142.6	562.4
SEAL COAT CONCRETE	CU. YD.	150.7	180.7	180.7	180.7	692.8
REINFORCEMENT BARS	POUND	8,552	8,765	8,552	8,765	34,634



BAR LIST 4 PIERS

BAR	NO. PER PIER	TOTAL 4 PIERS	SIZE	LENGTH	SWAP
n1	64	260	7	34'-0"	-
n2	76	304	7	9'-1"	C
s2	35	140	4	4'-2"	π
t	40	160	8	8'-0"	-
u1	32	128	5	3'-4"	△
u2	32	128	5	2'-4"	△
u3	128	512	8	2'-8"	△
v5	76	304	6	31'-2"	-
v6	76	304	6	32'-3"	-
w	18	72	5	20'-0"	-

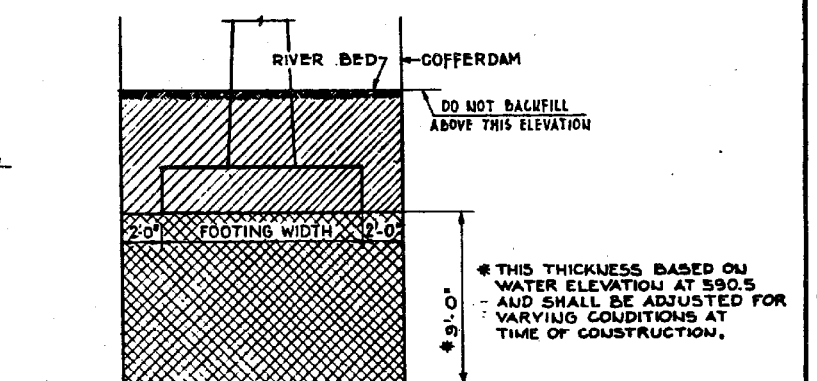
ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWDALE AVE. OVER
DES PLAINES RIVER
PIERS 1, 3, 20 & 22



BAR	QUANTITY	SIZE	LENGTH	SHAPE
h8	128	5	3'-0"	—
n2	152	10	7'-2"	C
S2	70	4	4'-2"	Π
t1	88	11	19'-3"	—
U1	64	5	3'-4"	△
U2	64	5	2'-4"	△
U5	256	5	2'-0"	—
V7	152	9	12'-0"	—
V8	152	7	22'-0"	—
W	60	3	20'-6"	—

ITEM	UNIT	QUANTITY		TOTAL
		PIER #2	PIER #21	
CLASS A EXCAVATION FOR STRUCTURES	CU YD	461	886	1347
CLASS B EXCAVATION FOR STRUCTURES	CU YD	2818	2818	5636
COFFERDAMS	EACH	25	75	100
CLASS X CONCRETE	CU YD	164.5	164.5	329
SEAL COAT CONCRETE	CU YD	883.5	883.5	1767
REINFORCEMENT BARS	POUND	14,846	14,846	29,692

15,982 15,982 31,964



MAXIMUM TOE PRESSURES
 LOADING GROUP I - 3000 P.S.F.
 II - 5400 P.S.F.
 III - 6600 P.S.F.

DE LEUR, CATHER & CO. ENGINEERS
 DESIGNED BY V.K. BURKEVICS
 DRAWN BY J.E. HAWROCK
 CHECKED T.J. HANCOCK
 IN CHARGE F.S. MARTINS
 APPROVED L.W. RIAN

JOB NO. 1179

ILLINOIS DIVISION OF HIGHWAYS
 SOUTHWEST EXPRESSWAY
 LAWNDALE AVE. OVER
 DES PLAINES RIVER
 PIERS 2 AND 21

benesch
 engineers · scientists · planners
 Alfred Benesch & Company
 205 North Michigan Avenue, Suite 2400
 Chicago, Illinois 60601
 312-565-0450 Job No. 10093

FILE NAME	USER NAME	DESIGNED	CHECKED	DRAWN	PLLOT SCALE	PLLOT DATE	REVISIONS
0160483.60J16.050.existplan4.dgn	tjanicke	FSM	RMM	FSM		12/28/2013	DESIGNED - FSM CHECKED - RMM DRAWN - FSM CHECKED - RMM

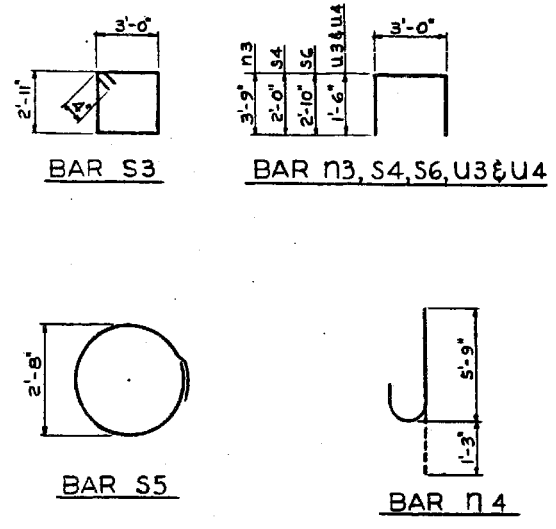
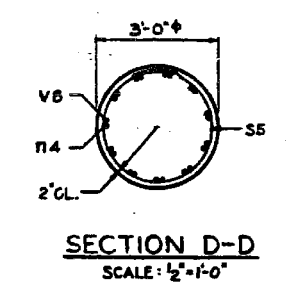
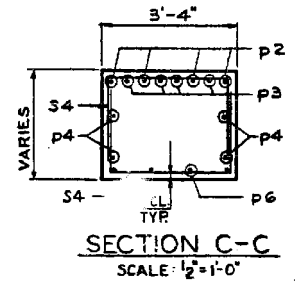
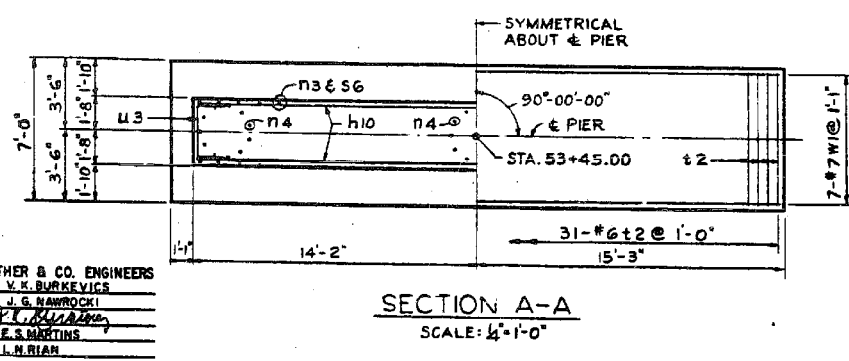
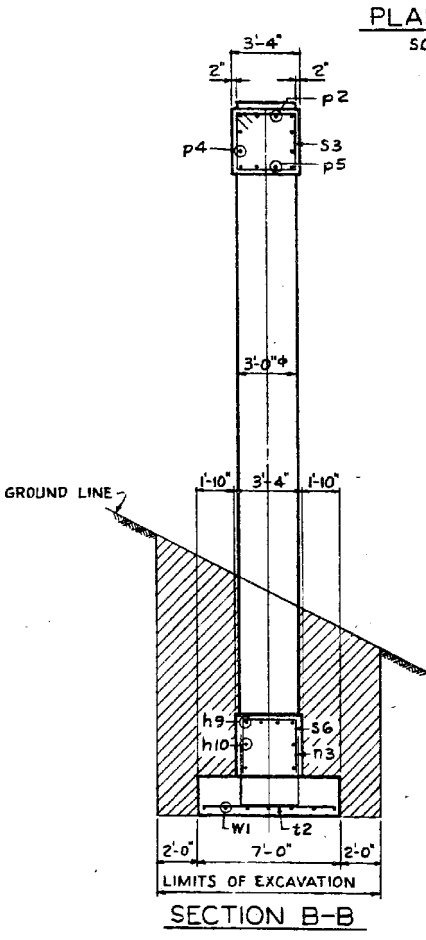
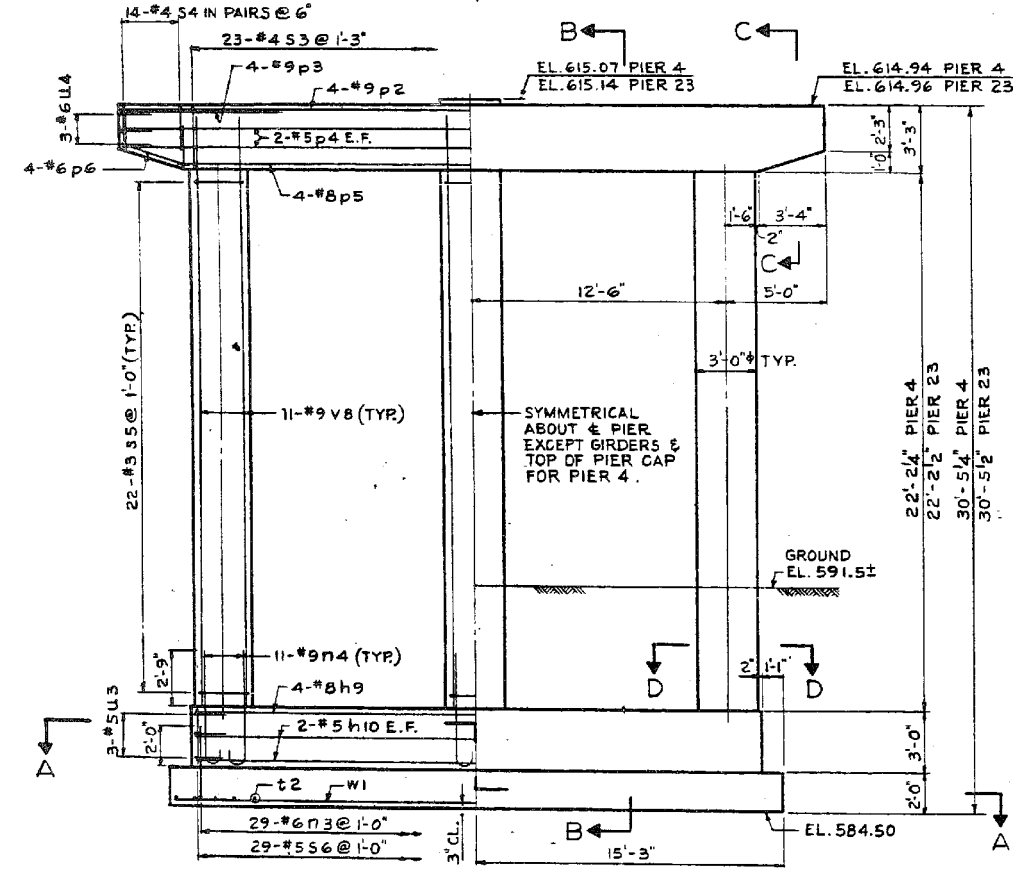
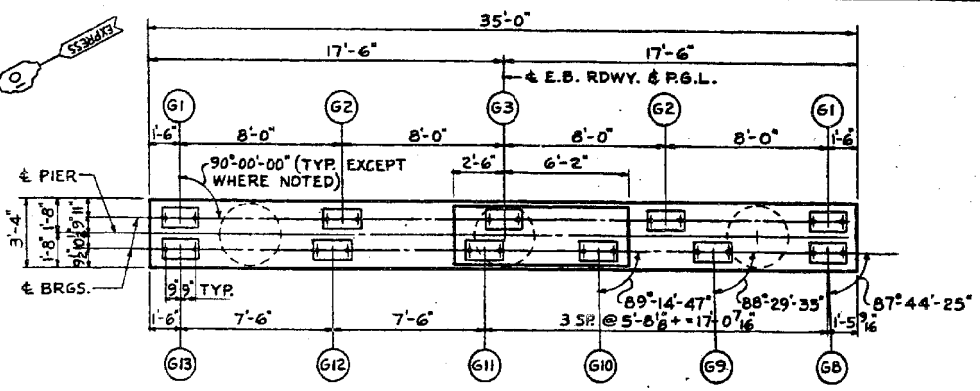
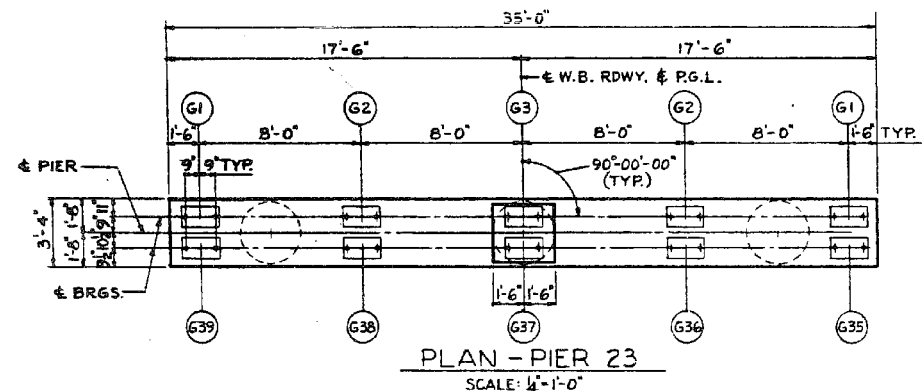
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING PLAN INFORMATION (4 OF 13)
 STRUCTURE NO. 016-0483
 SHEET NO. SEX4 OF SEX13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	534

CONTRACT NO. 60J16
 ILLINOIS FED. AID PROJECT

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BAR NO.	SIZE	LENGTH	SHAPE
h9	8	28'-0"	—
h10	8	28'-0"	—
n3	58	10'-6"	U
n4	66	7'-0"	U
p2	8	34'-9"	—
p3	16	8'-0"	—
p4	8	34'-9"	—
p5	8	28'-0"	—
p6	16	3'-3"	—
s3	46	12'-6"	□
s4	56	7'-0"	□
s5	132	9'-6"	O
s6	58	8'-8"	□
t2	62	6'-6"	—
u3	12	6'-0"	□
u4	12	6'-0"	□
v8	66	25'-3"	—
w1	14	30'-0"	—

ALL BAR DIMENSIONS ARE OUT TO OUT. PREFIX ALL BAR MARKS FOR SHIPMENT WITH A NUMBER INDICATING THE PIER WHERE THE BARS WILL BE USED. EXAMPLE: 23-h9 MEANS BARS h9 FOR PIER 23. FOR ANCHOR BOLT PROJECTION SEE SM. 18 POUR STEP MONOLITHICALLY WITH PIER CAP.

ITEM	UNIT	QUANTITY
CLASS B EXCAVATION FOR STRUCTS	CU YD	406.2
CLASS X CONCRETE	CU YD	115.0
REINFORCEMENT BARS	POUND	14,619

MAXIMUM TOE PRESSURES:
LOADING GROUP I - 5500 P.S.F.
II - 7300 P.S.F.
III - 9200 P.S.F.

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWDALE AVE. OVER DES PLAINES RIVER
PIERS 4 AND 23
SCALE: AS NOTED

DE LEW, CATHER & CO. ENGINEERS
DESIGNED BY V.K. BURKEVICS
DRAWN BY J.G. HAWROCKI
CHECKED P.L. BURKEVICS
IN CHARGE E.S. MARTINS
APPROVED L.H. RIAN

JOB NO. 1179

FILE NAME = 0160483.60J16.051.existplan5.dgn	USER NAME = tjenicke	DESIGNED - FSM	REVISED -
	PLOT SCALE =	CHECKED - RMM	REVISED -
	PLOT DATE = 12/28/2013	DRAWN - FSM	REVISED -
		CHECKED - RMM	REVISED -

FOR INFORMATION ONLY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	535
CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				

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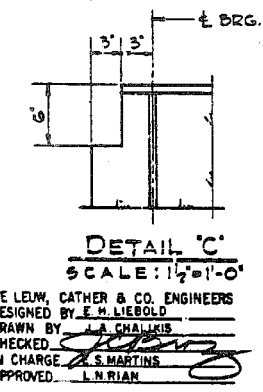
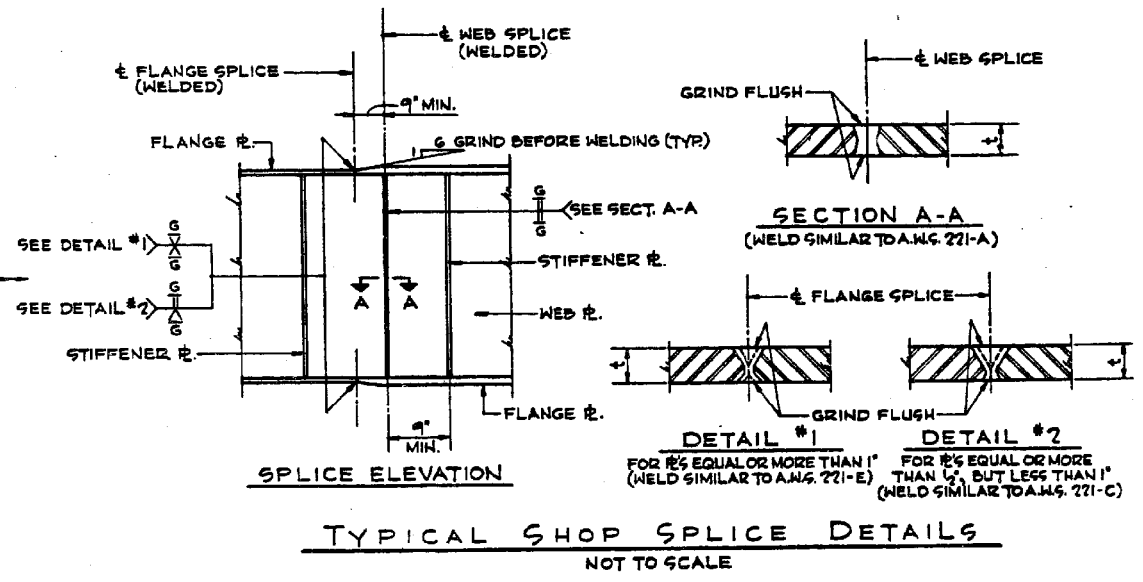
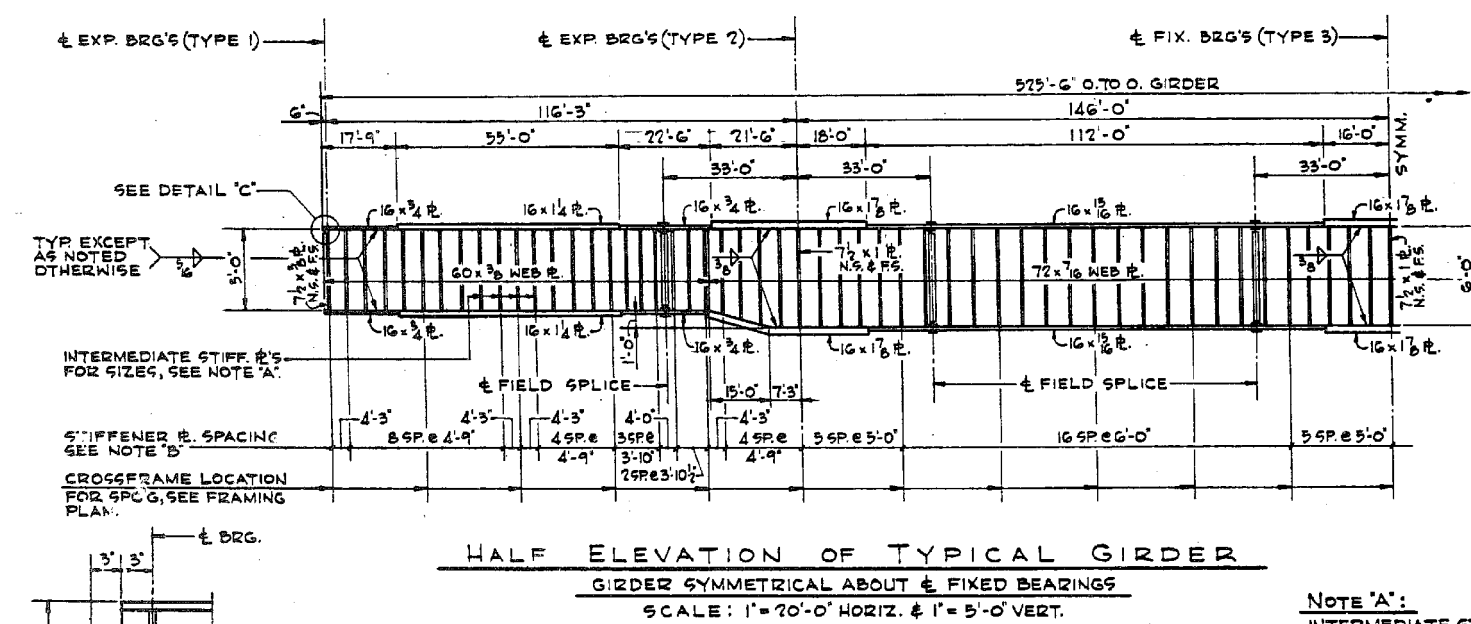
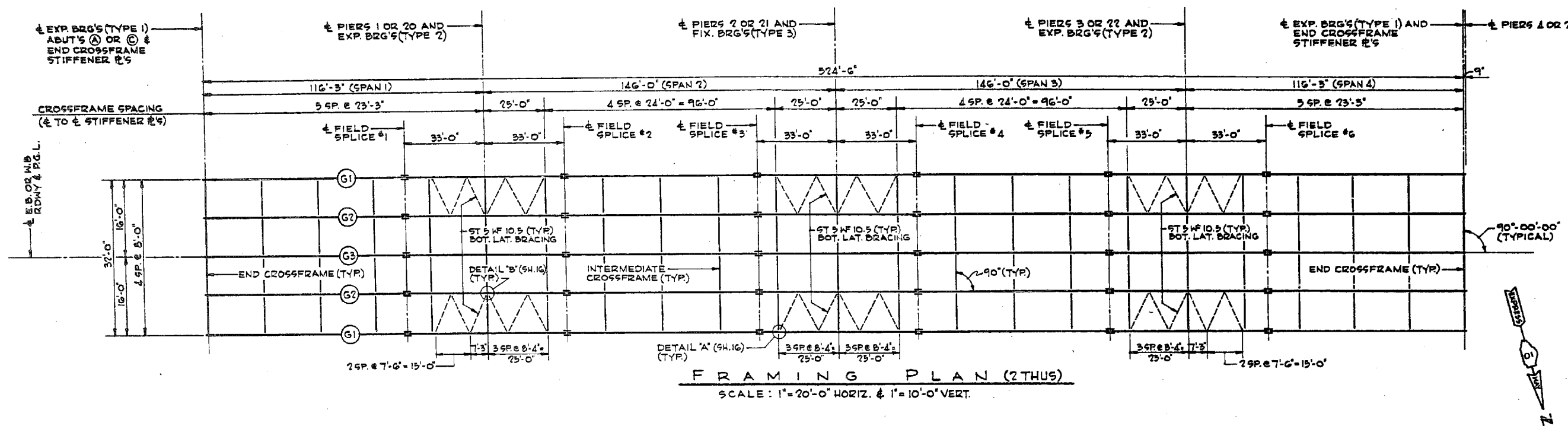


TABLE OF MOMENTS & REACTIONS - TYP. INTERIOR GIRDER

	MOMENTS (FT. KIPS)				REACTIONS (KIPS)			
	4SPAN1	PIERS 1 OR 20	5SPAN2	PIERS 2 OR 21	ABUT'S A OR C	PIERS 1 OR 20	PIERS 2 OR 21	PIERS 3 OR 22
DEAD LOAD	1073	-2507	993	-2397	993	-2507	1073	52.9
LIVE LOAD	1073	-1440	1055	-1905	1055	-1440	1073	46.9
IMPACT	212	-281	195	-278	195	-281	212	9.7
TOTAL	2358	-4228	2203	-4223	2203	-4223	2358	109.5

NOTE 'A':
INTERMEDIATE STIFF. ϵ 'S - $6 \times 3/8 \epsilon$ (N.S. & F.S.), EXCEPT AT CROSSFRAMES & AS NOTED OTHERWISE ON GIRDER ELEVATION. FOR STIFF. ϵ 'S AT CROSSFRAMES, SEE TYP. CROSSFRAME DETAILS; GH. 16. FOR DETAIL OF INTERMEDIATE STIFF. ϵ 'S OTHER THAN AT CROSSFRAMES, SEE DETAIL 'A'; GH. 16. FOR DETAIL OF STIFF. ϵ 'S AT BEARINGS, SEE GH. 16.

NOTE 'B':
ALL STIFFENER ϵ 'S TO BE WELDED AT RIGHT ANGLES TO WEB & FLANGES OF GIRDER.

NOTES:
FOR STRUCTURAL STEEL DESIGNATION, SEE 'GENERAL NOTES', GH. 3.
FOR TABLE 'TOP OF GIRDER WEB ϵ ELEVATIONS', SEE GH. 16.
FOR CROSSFRAME DETAILS, SEE GH. 16.
FOR FIELD SPLICE DETAILS, SEE GH. 16.
FOR BOT. LATERAL BRACING CONN. DETAILS 'A' & 'B', SEE GH. 16.
FOR DETAIL OF CONDUIT SUPPORT BRACKETS, SEE GH. 20.

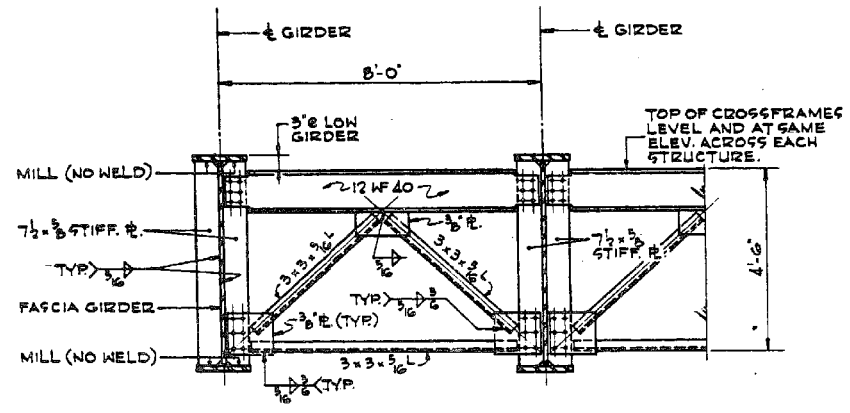
BILL OF MATERIAL *		
ITEM	UNIT	QUANTITY
FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	1,407,993

* INCLUDES ALL STRUCTURAL STEEL SHOWN ON THIS SHEET AND SHEET 16.

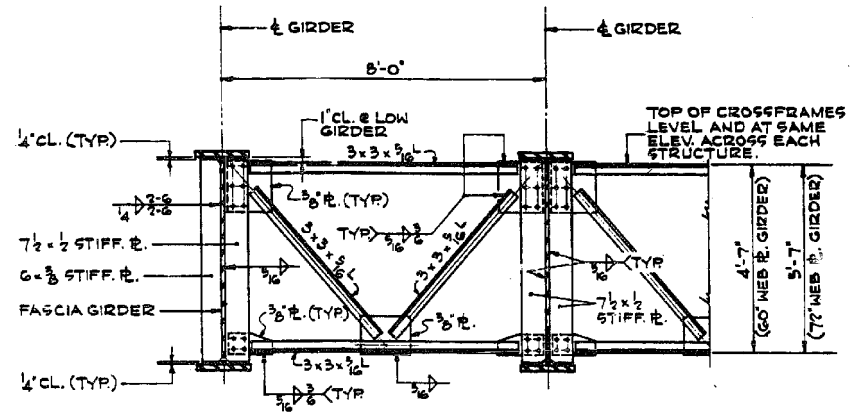
ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWDALE AVE. OVER DES PLAINES RIVER
FRAMING PLAN AND GIRDER DETAILS

SCALE: AS NOTED DATE

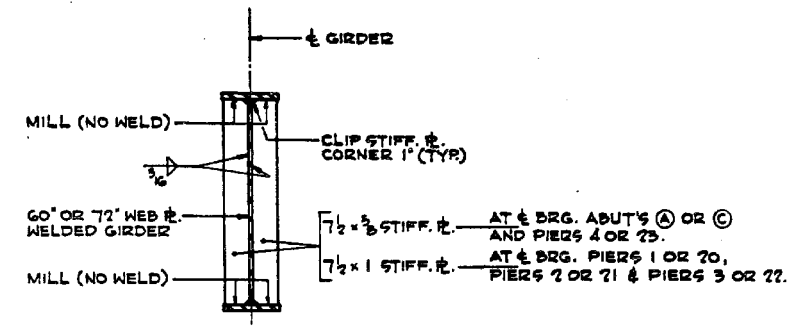
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END CROSSFRAME DETAIL



INTERMEDIATE CROSSFRAME DETAIL

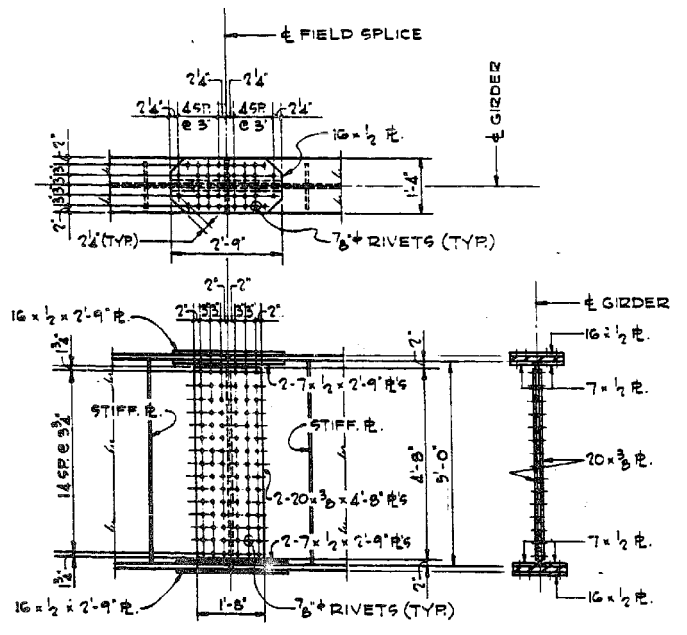


DETAIL OF BEARING STIFFENER PLATES AT ABUTMENTS AND PIERS

SCALE: 1/2" = 1'-0"

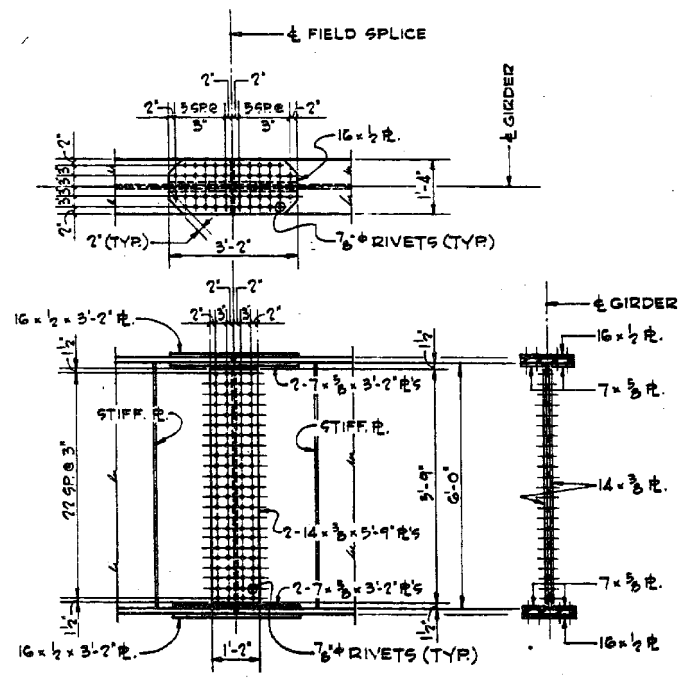
NOTE: USE 3/4" RIVETS FOR ALL FIELD CONNECTIONS
TYPICAL CROSSFRAME DETAILS
 SCALE: 1/2" = 1'-0"

NOTE: FOR DETAILS OF CONDUIT SUPPORT BRACKETS, SEE SH. 20.



DETAIL OF FIELD SPlice #1

60" WEB R. GIRDER
 SCALE: 1/2" = 1'-0"



DETAIL OF FIELD SPlice #2 THRU #5

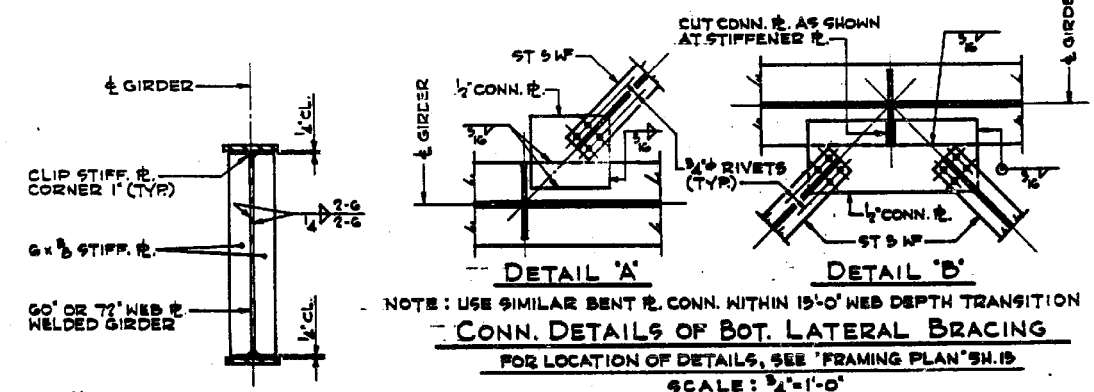
72" WEB R. GIRDER
 SCALE: 1/2" = 1'-0"

NOTE: FOR BILL OF MATERIAL, SEE SH. 15.

TOP OF GIRDER WEB R. ELEVATIONS

NOTE: TOP OF GIRDER WEB R. IS A STRAIGHT LINE BETWEEN POINTS A & B, B & D, D & E, E & G, G & H, H & K AND K & L.

GIRDER	A	B	C	D	E	F	G	H	J	K	L
G1 & G2	619.140	619.059	619.118	619.178	619.387	619.515	619.642	620.042	620.252	620.422	621.145
G3	619.320	619.239	619.298	619.358	619.367	619.645	619.822	620.222	620.412	620.602	621.325



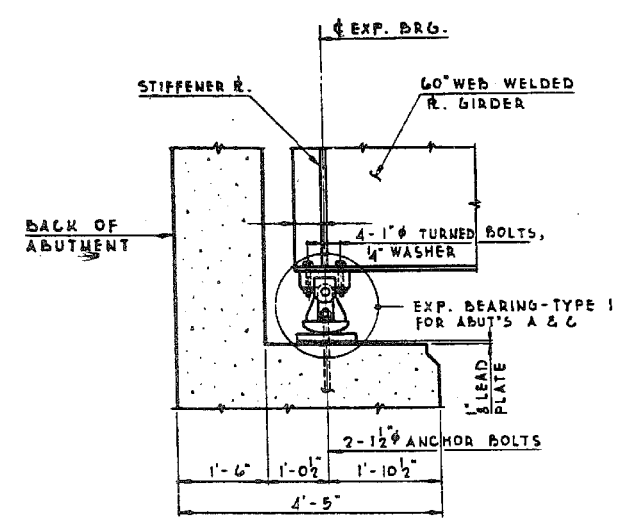
NOTE: USE SIMILAR BENT R. CONN. WITHIN 15'-0" WEB DEPTH TRANSITION
CONN. DETAILS OF BOT. LATERAL BRACING
 FOR LOCATION OF DETAILS, SEE 'FRAMING PLAN' SH. 15
 SCALE: 3/4" = 1'-0"

NOTE: FOR WELD DETAILS OF STIFF. PLATES AT CROSS-FRAMES, SEE 'TYP. CROSSFRAME DETAILS'; FOR WELD DETAILS OF STIFF. PLATES AT BEARINGS, SEE DETAIL THRU SHEET.
DETAIL 'X' - TYP. INTERMEDIATE STIFFENERS OTHER THAN AT CROSSFRAMES.
 SCALE: 1/2" = 1'-0"

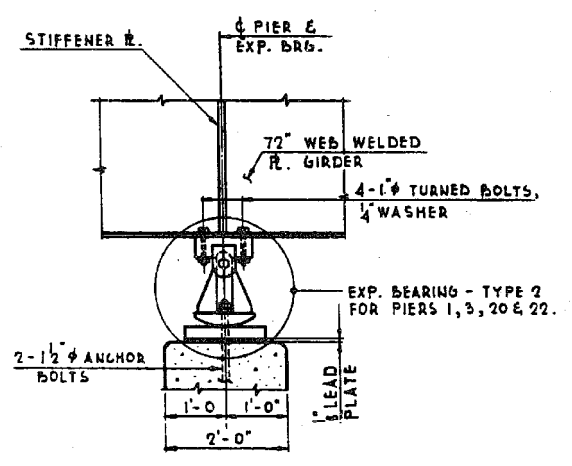
DE LEJW, CATHAR & CO. ENGINEERS
 DESIGNED BY J.C. BROZ
 DRAWN BY J.A. CHALIKIS
 CHECKED BY [Signature]
 IN CHARGE E.S. MARTINS
 APPROVED L. NIAN

JOB NO. 1179

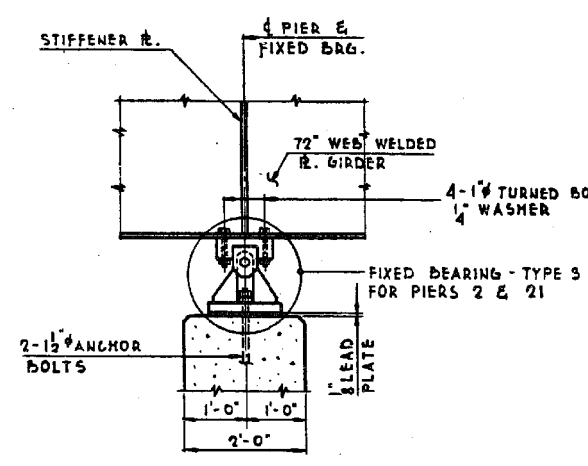
ILLINOIS DIVISION OF HIGHWAYS
 SOUTHWEST EXPRESSWAY
 LAWDALE AVE. OVER
 DES PLAINES RIVER
 MISCELLANEOUS STEEL DETAILS
 SCALE: AS NOTED



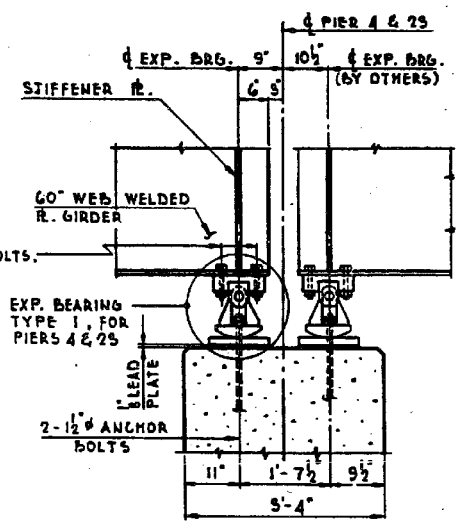
BRG. TYPE 1 AT ABUT'S A & C
SCALE: 3/4" = 1'-0"



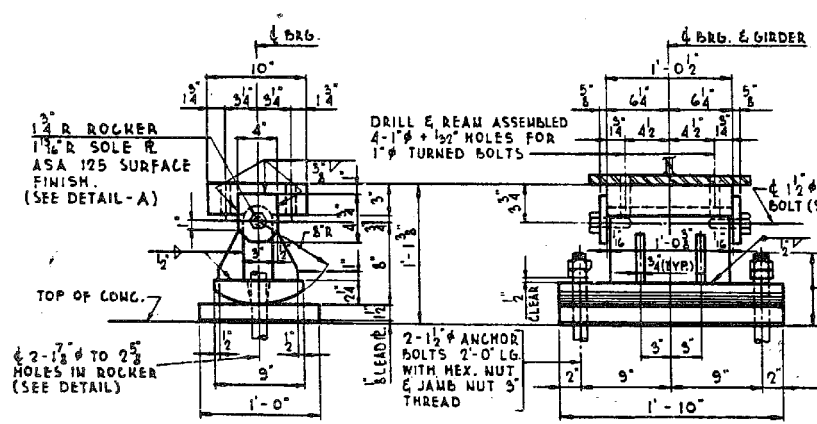
BRG. TYPE 2 AT PIERS 1, 3, 20 & 22
SCALE: 3/4" = 1'-0"



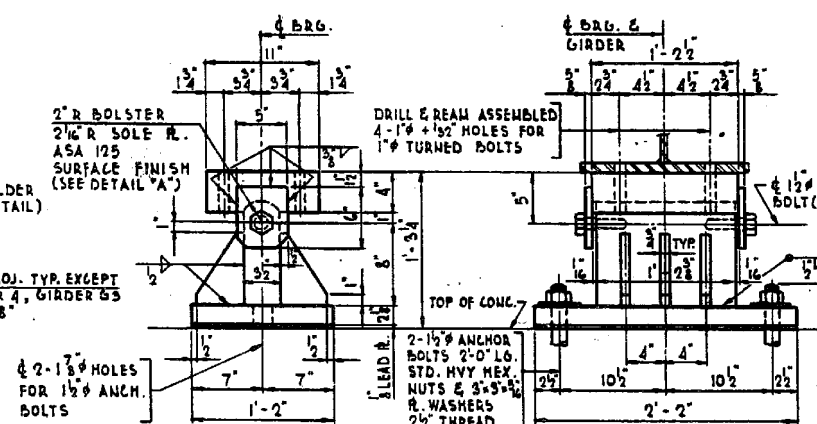
BRG. TYPE 3 AT PIERS 2 & 21
SCALE: 3/4" = 1'-0"



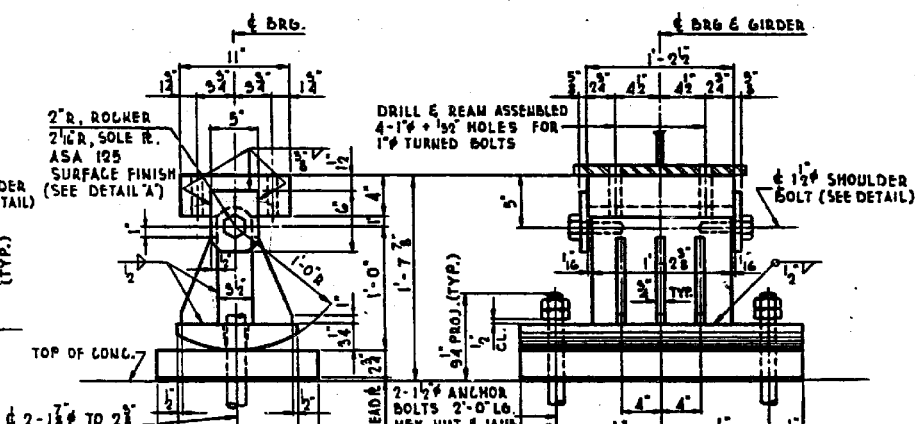
BRG. TYPE 1 AT PIERS 4 & 23
SCALE: 3/4" = 1'-0"



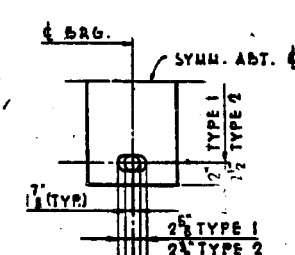
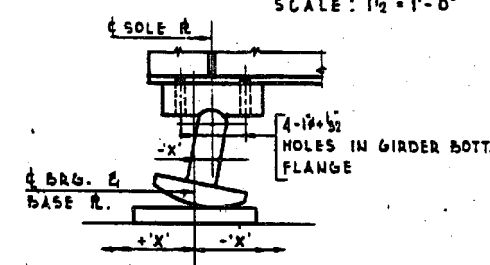
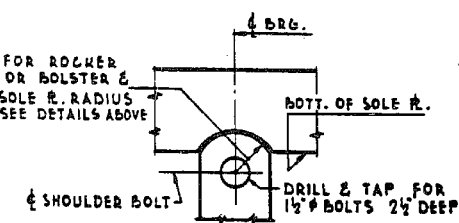
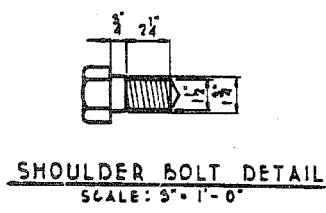
ROCKER DETAIL OF EXP. BRG. TYPE 1
SCALE: 1 1/2" = 1'-0"



BOLSTER DETAIL OF FIXED BRG. TYPE 3
SCALE: 1 1/2" = 1'-0"



ROCKER DETAIL OF EXP. BRG. TYPE 2
SCALE: 1 1/2" = 1'-0"



BILL OF MATERIAL **		
ITEM	UNIT	QUANTITY
FURNISHING & ERECTING STRUCTURAL STEEL	POUND	42,904

** WEIGHT OF ALL MATERIAL SHOWN ON THIS SHEET, INCL. FILL P.'S.

FILL PLATE SCHEDULE		
LOCATION	THICKNESS	
GIRDERS G1 & G2 @ PIER 4	5/16" (4 REQ'D)	
GIRDER G3 @ PIER 4	1 1/2"	
GIRDERS G1, G2 & G3 @ PIER 23	1/2" (5 REQ'D)	
TOTAL WEIGHT OF FILL PLATES = 214 LBS		

TEMPERATURE F	110°	90°	70°	50°	30°	10°
BRG'S @ ABUT'S (A) & (C)	+1/4"	+3/8"	+1/2"	0	-1/4"	-3/8"
BRG'S @ PIERS 1 & 20	+1/4"	+3/8"	+1/2"	0	-1/4"	-3/8"
BRG'S @ PIERS 3 & 22	-1/4"	-3/8"	-1/2"	0	+1/4"	+3/8"
E. BRG'S @ PIERS 4 & 23	-1/4"	-3/8"	-1/2"	0	+1/4"	+3/8"

ROCKER SETTING DIAGRAM
MINUS SIGN INDICATES ϕ SOLE PLATE WEST OF ϕ BEARING.
PLUS SIGN INDICATES ϕ SOLE PLATE EAST OF ϕ BEARING.

BRG. TYPE	WT. PER BRG.	NO. REQ'D	TOTAL WT.
1	555	20	11,100
2	1,194	20	23,880
3	711	10	7,110

BEARING SCHEDULE
* DOES NOT INCLUDE FILL P.'S.

ILLINOIS DIVISION OF HIGHWAYS			
SOUTHWEST EXPRESSWAY			
LAWDALE AVE. OVER DES. PLAINES RIVER			
BEARING DETAILS			

DE LEW, CATHY & CO. ENGINEERS
DESIGNED BY E.M. LIEBOLD
DRAWN BY E. BOBINAS
CHECKED BY J. S. MARTINS
IN CHARGE
APPROVED L.H. RIAH

JOB NO. 1179

Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093



FILE NAME = 0160483.60J16.054.existplan8.dgn

USER NAME = tjenicke
DESIGNED - FSM
CHECKED - RMM
DRAWN - FSM
PLOT DATE = 12/20/2013

REVISOR -
REVISION -
REVISION -
REVISION -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

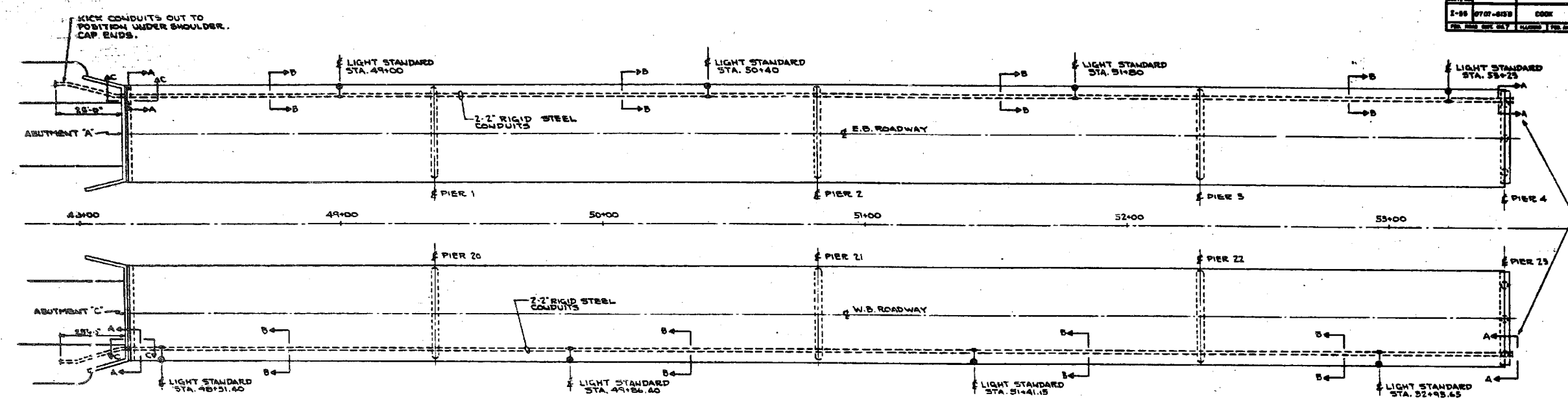
EXISTING PLAN INFORMATION (8 OF 13)
STRUCTURE NO. 016-0483

SHEET NO. SEX8 OF SEX13 SHEETS

FOR INFORMATION ONLY

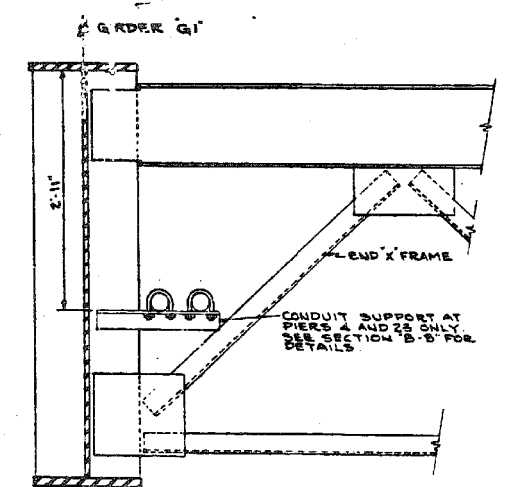
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	538
CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				

X:\100005\10093\Eng_Docs_Phase_1\11\SN_016_0483_0985_1st_Ave_cover_Des_Plaines_River_Final\0160483_60J16_054.existplan8.dgn 2:44:31 PM 6/23/2014

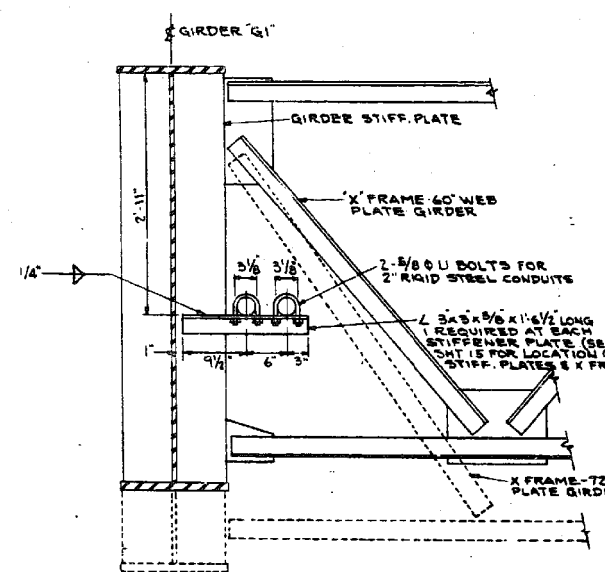


PLAN
SCALE: 1"=20'

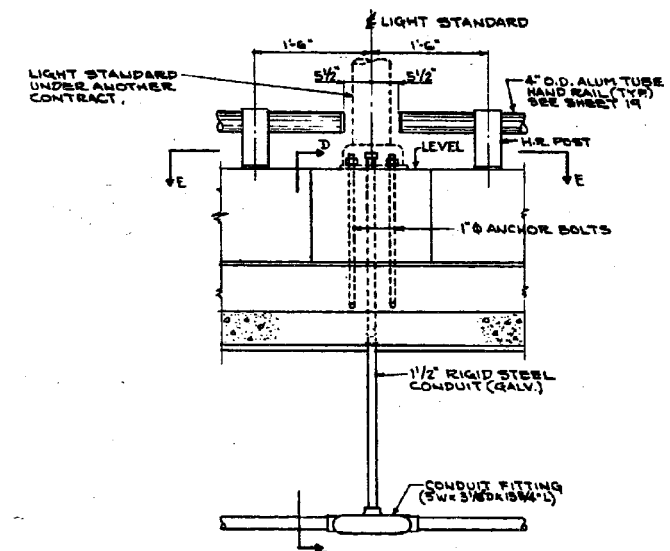
TERMINATE CONDUITS ON CENTERLINE OF PIERS 4 & 23. ENDS TO BE THREADED & CAPPED FOR FUTURE EXTENSION INCLUDING EXPANSION COUPLINGS UNDER ANOTHER CONTRACT.



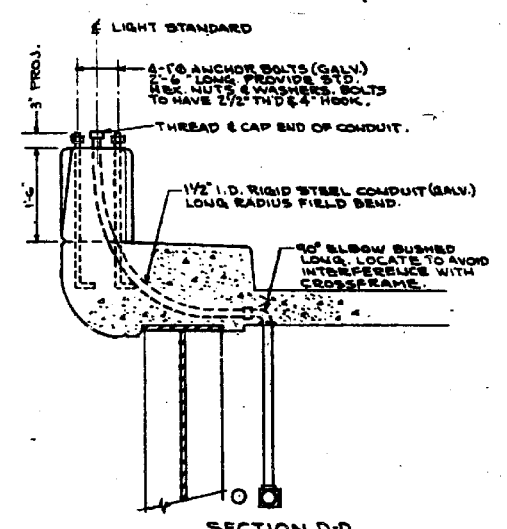
SECTION A-A
SCALE: 1"=1'-0"



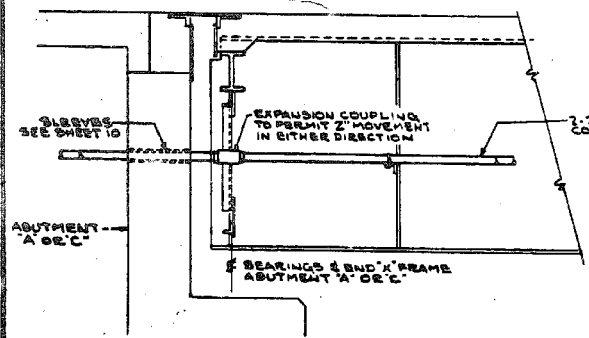
SECTION B-B
SCALE: 1"=1'-0"



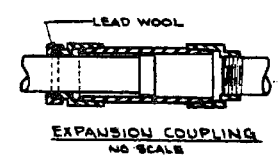
ELEVATION AT LIGHT STANDARDS
SCALE: 3/4"=1'-0"



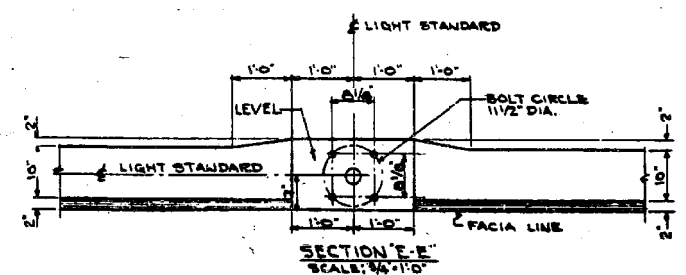
SECTION D-D
SCALE: 3/4"=1'-0"



SECTION C-C
SCALE: 1/2"=1'-0"



EXPANSION COUPLING
NO SCALE



SECTION E-E
SCALE: 3/4"=1'-0"

BILL OF MATERIAL		UNIT	QUANTITY
CONDUIT IN TRENCH, 2" DIA. GALVANIZED STEEL	ITEM		
CONDUIT IN TRENCH, 2" DIA. GALVANIZED STEEL		LIN. FT.	100
CONDUIT ATTACHED TO STRUCTURE, 2" DIA. GALV. STEEL		LIN. FT.	2112
CONDUIT IN CONCRETE, 1 1/2" DIA. GALVANIZED STEEL		LIN. FT.	40
CONDUIT, 1 1/2" DIA. GALVANIZED STEEL		LIN. FT.	24
TRENCH AND BACKFILL		LIN. FT.	50
FURNISHING & ERECTING STRUCTURAL STEEL		POUND	7969

DE LEW, GATHER & CO. ENGINEERS
DESIGNED BY E.M.
DRAWN BY B.M.
CHECKED BY B.M.
IN CHARGE F.S. MARTIN
APPROVED L.B. RIAN

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWDALE AVE OVER
DES PLAINES RIVER
ELECTRICAL DETAILS
SCALE: AS NOTED DATE

FILE NAME =	USER NAME = tjenicke	DESIGNED - FSM	REVISED -
0160483.60J16.055.existplan9.dgn		CHECKED - RMM	REVISED -
	PLOT SCALE =	DRAWN - FSM	REVISED -
	PLOT DATE = 12/28/2013	CHECKED - RMM	REVISED -

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-0388-R	COOK	821	539
			CONTRACT NO. 60J16	
ILLINOIS FED. AID PROJECT				

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
IL 171	**	COOK	265	212
			ILLINOIS	FED. AID PROJECT

** SECTION 0707-613B (BR)

EXIST DUAL STRUCTURES (016-0483 & 016-0985)
 BASE LINE STA. 50+80.00 BUILT 1964, 7" CONC. SLAB
 4 SPAN WELDED PLATE GIRDER BRIDGES, 36'-0" O.-O. DECK,
 SUPPORTED BY COLUMN & SOLID CONC. PIERS ON SPREAD
 FOOTINGS, SPILL THRU ABUT W/ STL PILES

TRAFFIC SHALL BE MAINTAINED UTILIZING STAGE CONSTRUCTION.

REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS
 OF AASHTO M-31 M-42 OR M-53 GRADE 60

PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING
 STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS
 AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS.
 IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY
 SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE
 NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION
 OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT
 BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE
 IN THE SCOPE OF THE WORK. HOWEVER, THE CONTRACTOR
 WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT
 THE UNIT PRICE BID FOR THE WORK.

ANY REINFORCEMENT BARS THAT ARE DAMAGED DURING
 CONCRETE REMOVAL SHALL BE REPLACED WITH AN APPROVED
 BAR SPLICER OR ANCHORAGE SYSTEM. COST INCIDENTAL TO
 "CONCRETE REMOVAL".

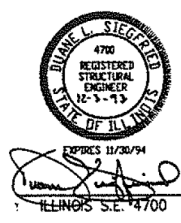
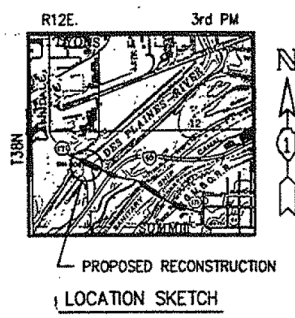
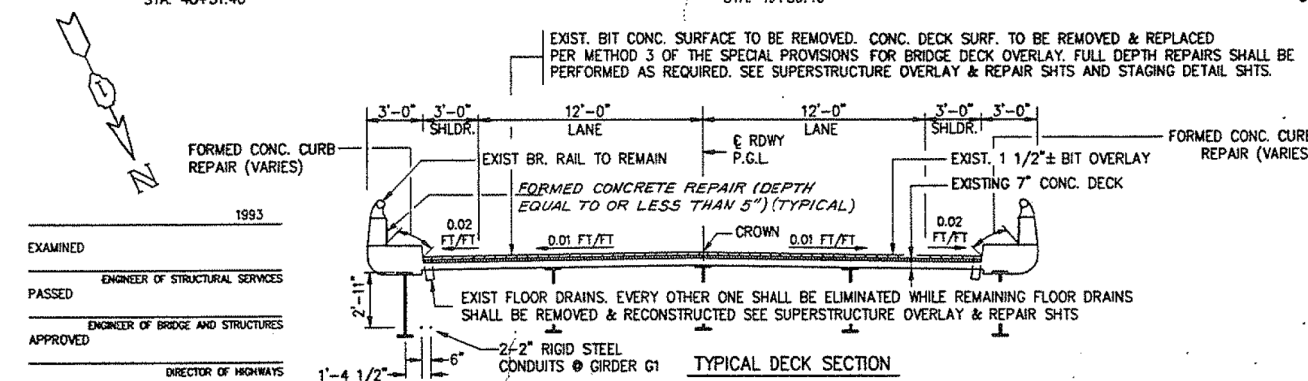
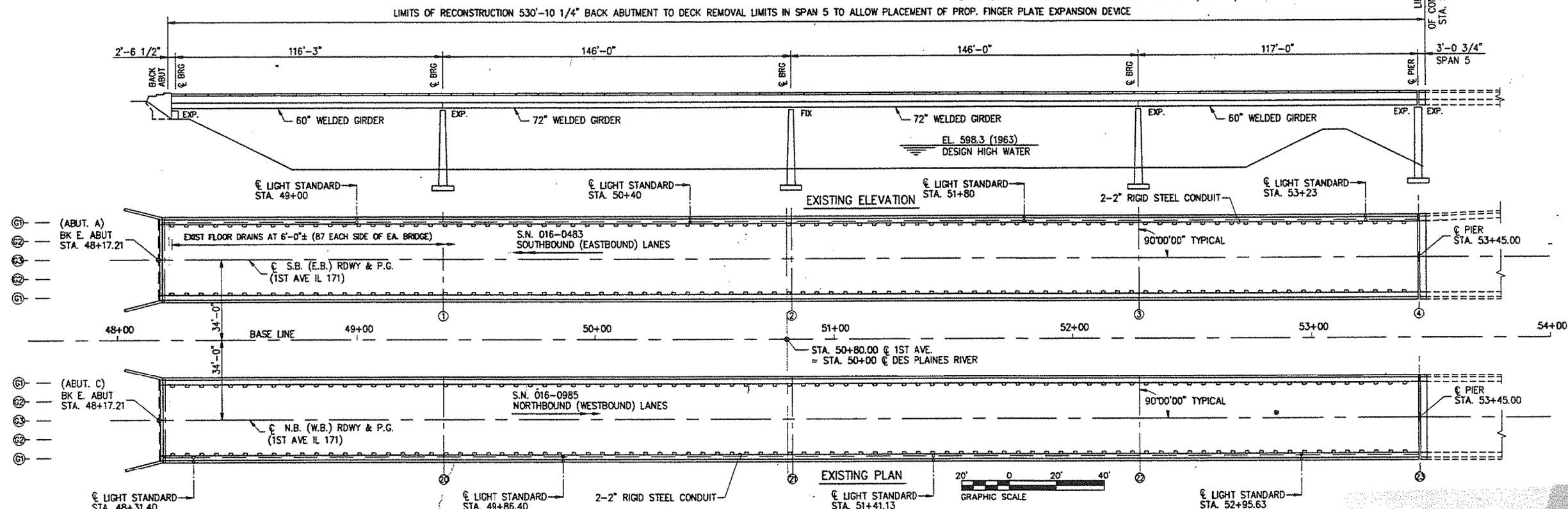
ALL NEW STRUCTURAL STEEL SHALL CONFORM TO AASHTO
 CLASSIFICATION M-270 GR. 36
 THE INORGANIC ZINC-SILICATE
 / ACRYLIC / ACRYLIC PAINT SYSTEM SHALL BE USED
 FOR SHOP AND FIELD PAINTING OF STRUCTURAL STEEL EXCEPT
 WHERE OTHERWISE NOTED. THE COLOR OF THE ACRYLIC FINISH
 COAT SHALL BE MUNSELL NO. 10YR 7/1. (LIGHT GREY).

THE STRUCTURAL STEEL BEARING PLATES OF THE ELASTOMERIC
 BEARING ASSEMBLY SHALL CONFORM TO THE REQUIREMENTS OF
 AASHTO M 270 GRADE 50.

PRIOR TO POURING THE NEW CONCRETE FOR THE DECK,
 ALL LOOSE RUST, LOOSE MILL SCALE, AND ALL OTHER
 LOOSE DETRIMENTAL FOREIGN MATERIAL SHALL BE
 REMOVED FROM THE EMBEDDED PORTIONS OF FLANGES OF
 STRINGERS. THE REMOVAL SHALL BE ACCOMPLISHED
 IN ACCORDANCE WITH THE REQUIREMENTS OF THE SSPC
 SURFACE PREPARATION SPECIFICATIONS SP-3 FOR POWER
 TOOL CLEANING OR SP-2 FOR HAND TOOL CLEANING.
 COST SHALL BE INCIDENTAL TO CONCRETE REMOVAL.

BRIDGE SEAT SEALER SHALL BE APPLIED TO THE SEAT
 AREA OF THE EAST ABUTMENTS, PIER 4 & PIER 23.

BRIDGE DECK MICROSILICA CONCRETE OVERLAY (SPECIAL)
 AND CONCRETE BRIDGE DECK SURFACE REMOVAL (METHOD
 3) SHALL BE PERFORMED IN ACCORDANCE WITH "SPECIAL
 PROVISION FOR BRIDGE DECK OVERLAY (EFFECTIVE OCTOBER
 1, 1983; REVISED OCTOBER 2, 1991)", EXCEPT AS MODIFIED
 BY "SPECIAL PROVISION FOR BRIDGE DECK OVERLAY (SPECIAL)".



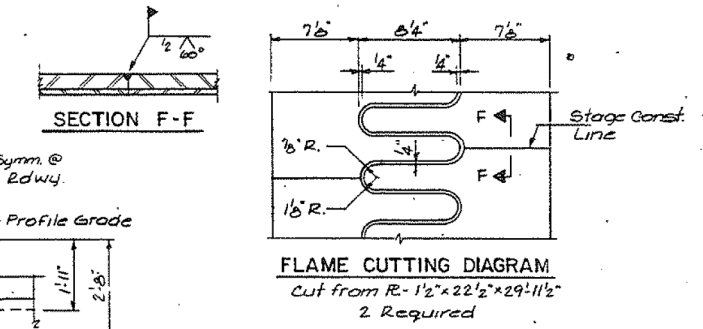
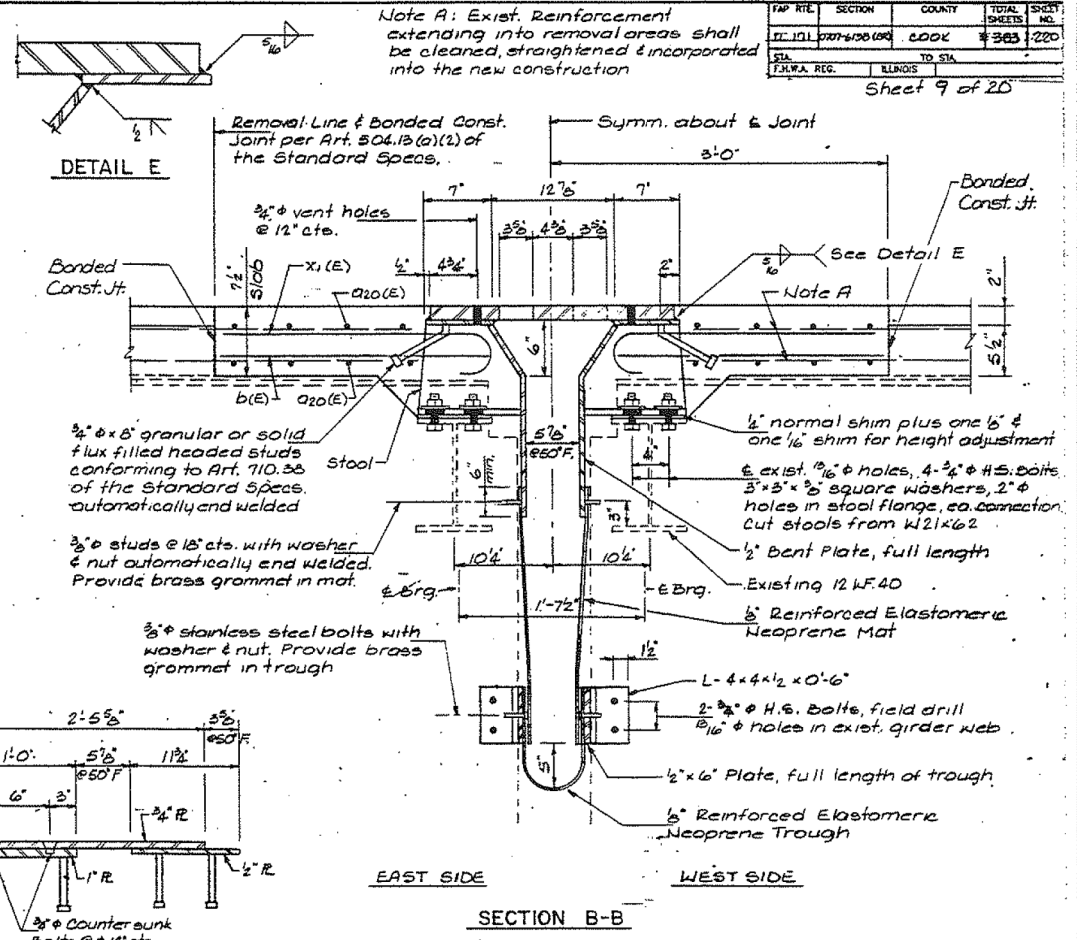
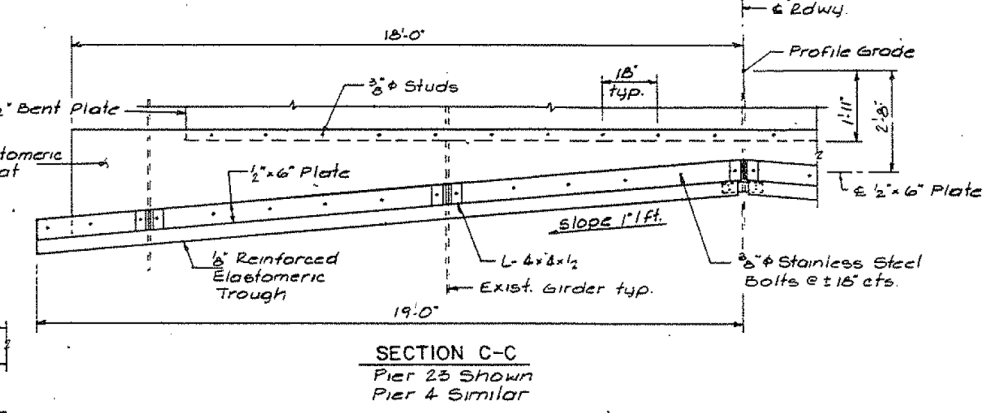
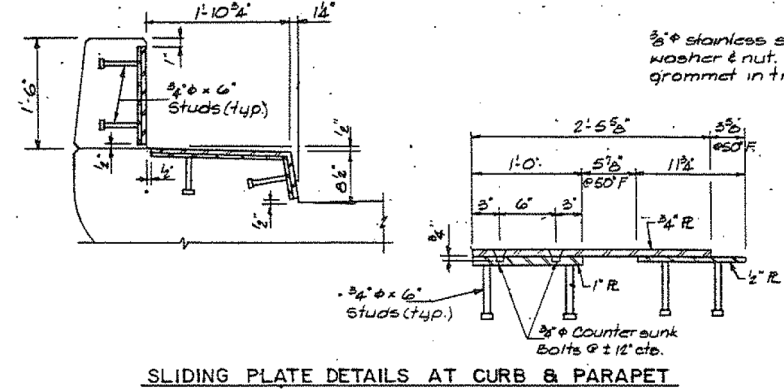
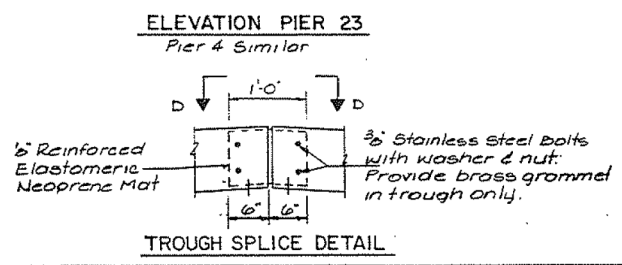
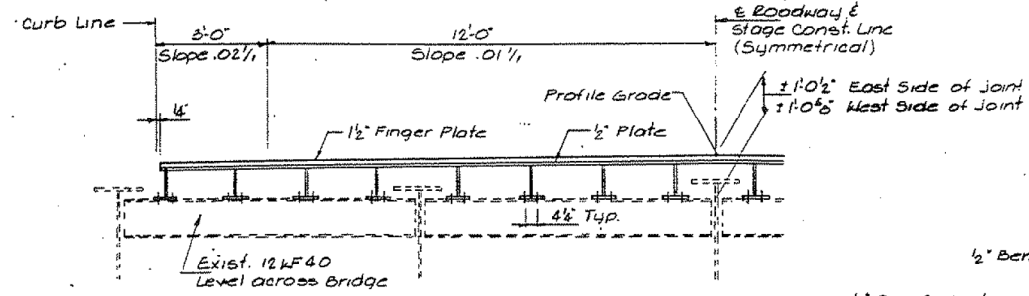
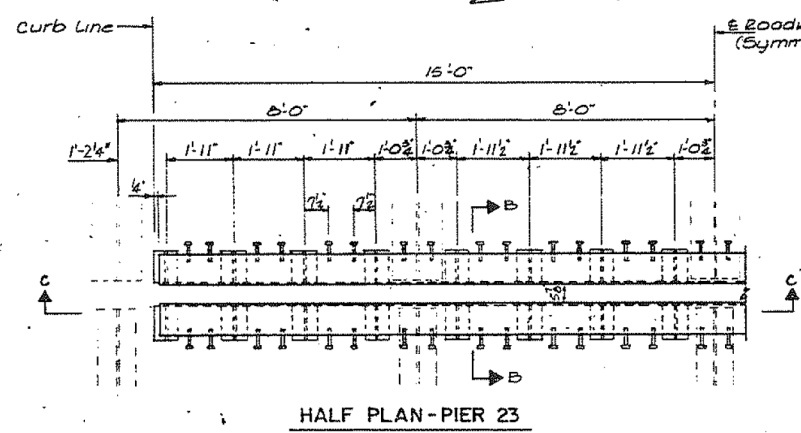
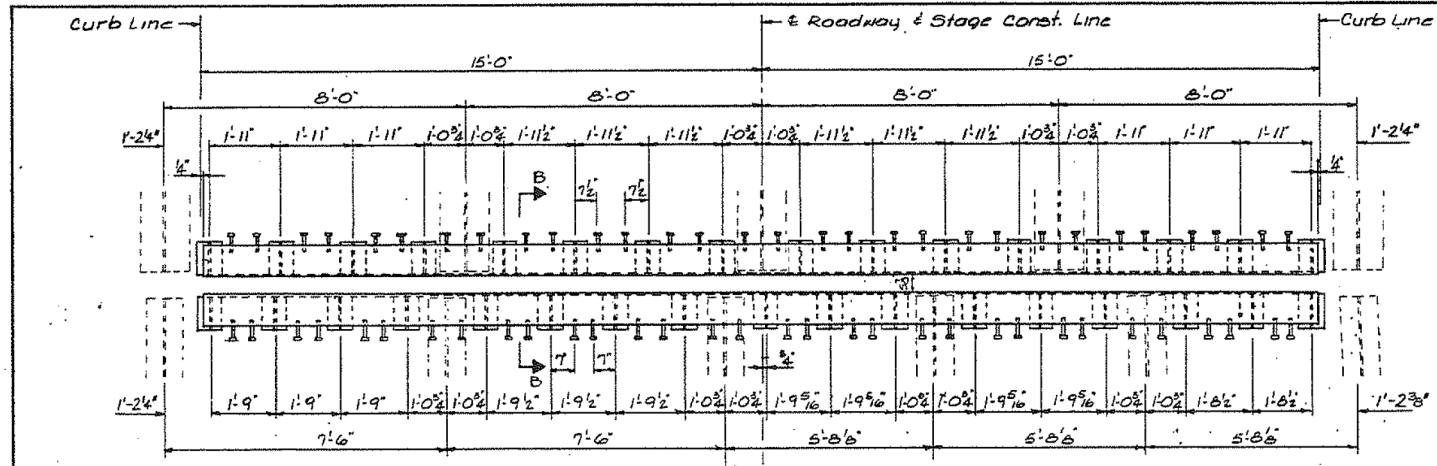
ILLINOIS DEPARTMENT OF TRANSPORTATION
GENERAL PLAN & ELEVATION
 BRIDGE REPAIRS
 1ST AVE (IL 171) S.N. 016-0483 & 016-0985
 OVER DES PLAINES RIVER
 F.A.U. RT. 1505 SECTION 0707-613B (BR)
 COOK CO. IL
 STA. 50+80.00

FILE NAME =	USER NAME = tjenicke	DESIGNED - FSM	REVISED -
		CHECKED - RMM	REVISED -
		DRAWN - FSM	REVISED -
		CHECKED - RMM	REVISED -

FOR INFORMATION ONLY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	540
				CONTRACT NO. 60J16
ILLINOIS FED. AID PROJECT				

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ILLINOIS DEPARTMENT OF TRANSPORTATION
FINGER PLATE EXPANSION JOINTS
 BRIDGE REPAIRS
 1ST AVE (IL 171) S.N. 016-0483 & 016-0985
 OVER DES PLAINES RIVER
 F.A.U. RT. 1505 SECTION 0707-613B (BR)
 COOK CO. IL
 STA. 50+80.00

F.A.P. R.T.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0707-613B (BR)	0707-613B (BR)	COOK	821	541

Sheet 9 of 20

benesch
 engineers · scientists · planners
 Alfred Benesch & Company
 205 North Michigan Avenue, Suite 2400
 Chicago, Illinois 60601
 312-565-0450 Job No. 10093

FILE NAME	USER NAME	DESIGNED	CHECKED	DRAWN	PLOT DATE	REVISIONS
0160483.60J16.057.existplan11.dgn	tjenicke	FSM	RMM	FSM	12/28/2013	DESIGNED - FSM CHECKED - RMM DRAWN - FSM CHECKED - RMM

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING PLAN INFORMATION (11 OF 13)
 STRUCTURE NO. 016-0483

FOR INFORMATION ONLY

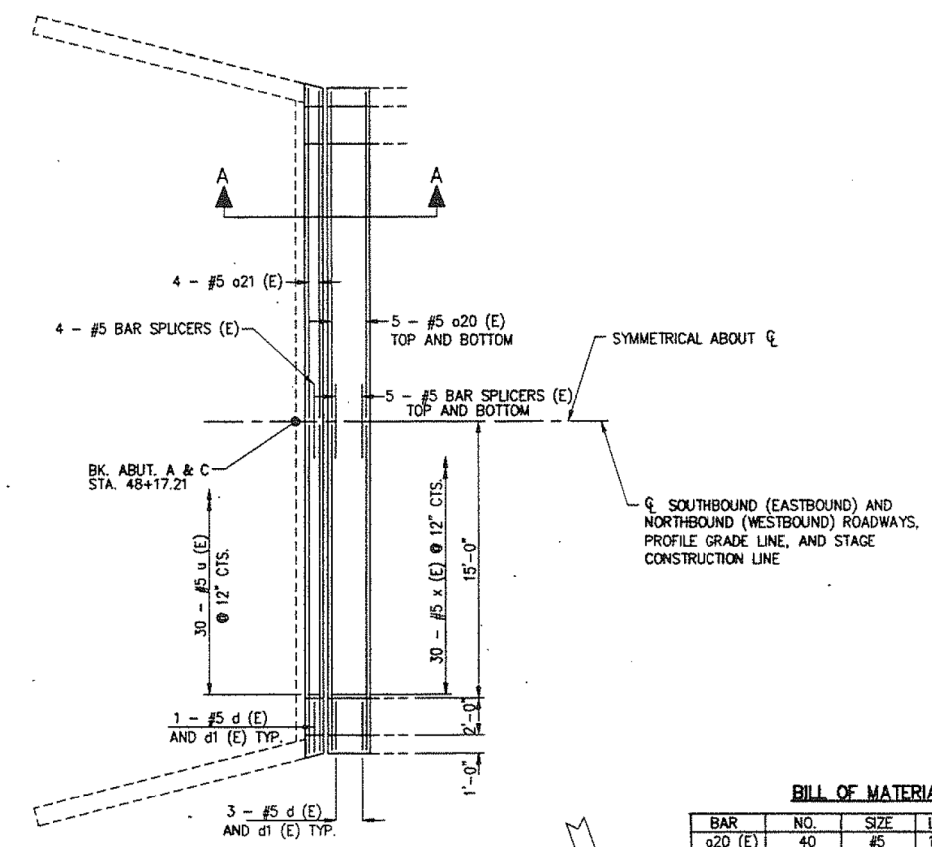
F.A.P. R.T.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	541

CONTRACT NO. 60J16
 SHEET NO. SEX11 OF SEX13 SHEETS
 ILLINOIS FED. AID PROJECT

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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
IL 171	**	COOK	98	221
		ILLINOIS	FED. AID PROJECT	

** SECTION 0707-613B (BR)

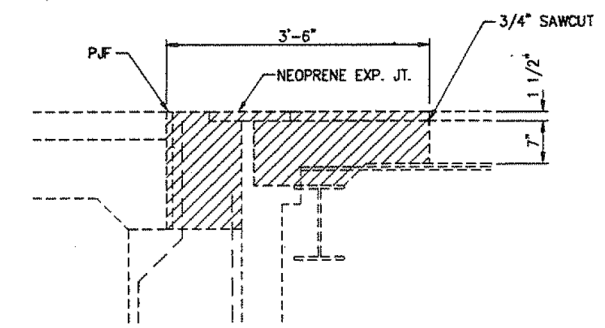


ABUTMENTS A & C - PLAN VIEW

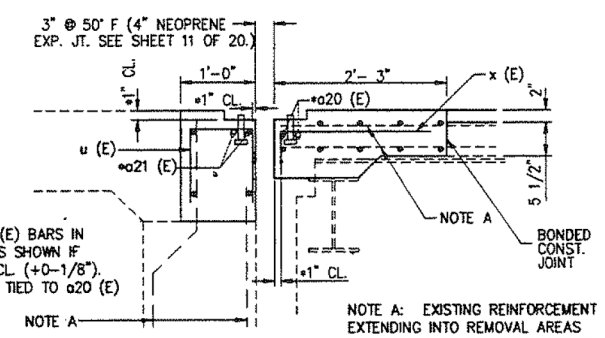
BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
a20 (E)	40	#5	17'-6"	—
a21 (E)	16	#5	17'-9"	—
d (E)	16	#5	6'-0"	⌈
d1 (E)	16	#5	6'-8"	⌋
u (E)	60	#5	2'-9"	⌈
x (E)	60	#5	2'-7"	⌋
REINFORCEMENT BARS EPOXY COATED.		LBS.	1570	
CONCRETE REMOVAL		C.U. YDS.	10.2	
CLASS X CONCRETE, SUPERSTRUCTURE		C.U. YDS.	10.6	
BAR SPLICERS		EACH	28	
NEOPRENE EXPANSION JOINT 4"		LIN. FT.	73	

REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.



SECTION A-A EXISTING
HATCHED AREAS TO BE REMOVED



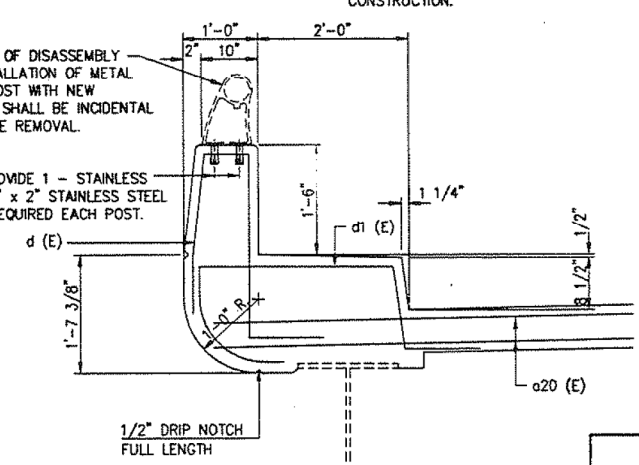
SECTION A-A PROPOSED

PLACE a20 (E) AND a21 (E) BARS IN BACK OF ANCHOR BOLTS AS SHOWN IF REQUIRED TO MAINTAIN 1" CL (+0-1/8"). ANCHOR BOLTS SHOULD BE TIED TO a20 (E) AND a21 (E) BARS.

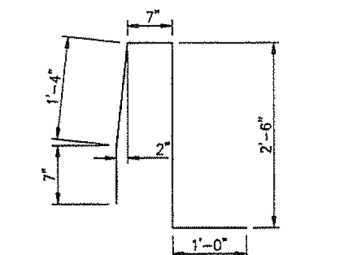
NOTE A: EXISTING REINFORCEMENT EXTENDING INTO REMOVAL AREAS SHALL BE CLEANED, STRAIGHTENED, AND INCORPORATED INTO THE NEW CONSTRUCTION.

NOTE: COST OF DISASSEMBLY AND REINSTALLATION OF METAL RAIL AND POST WITH NEW ANCHORAGE SHALL BE INCIDENTAL TO CONCRETE REMOVAL.

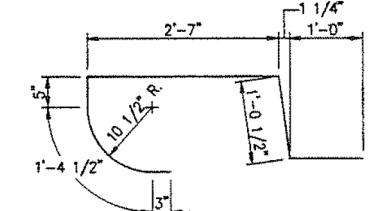
5/8" THREADED INSERTS PROVIDE 1 - STAINLESS STEEL WASHER AND 1 - 5/8" x 2" STAINLESS STEEL BOLT WITH EACH INSERT. 4 REQUIRED EACH POST.



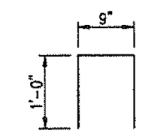
PROPOSED
TYPICAL SECTION AT CURB



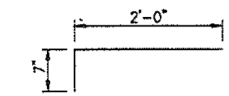
BAR d (E)



BAR d1 (E)



BAR u (E)



BAR x (E)

ILLINOIS DEPARTMENT OF TRANSPORTATION
NEOPRENE EXPANSION JOINTS
 BRIDGE REPAIRS
 1ST AVE (IL 171) S.N. 016-0483 & 016-0985
 OVER DES PLAINES RIVER
 F.A.U. RT. 1505 SECTION 0707-613B (BR)
 COOK CO: IL
 STA. 50+80.00

12/03/03 11:45:35 AM 483REPAIRS 0483 & 0985 SUBSTRUCTURE REPAIR --- JOINTS

1993
 EXAMINED
 ENGINEER OF STRUCTURAL SERVICES
 PASSED
 ENGINEER OF BRIDGE AND STRUCTURES
 APPROVED
 DIRECTOR OF HIGHWAYS

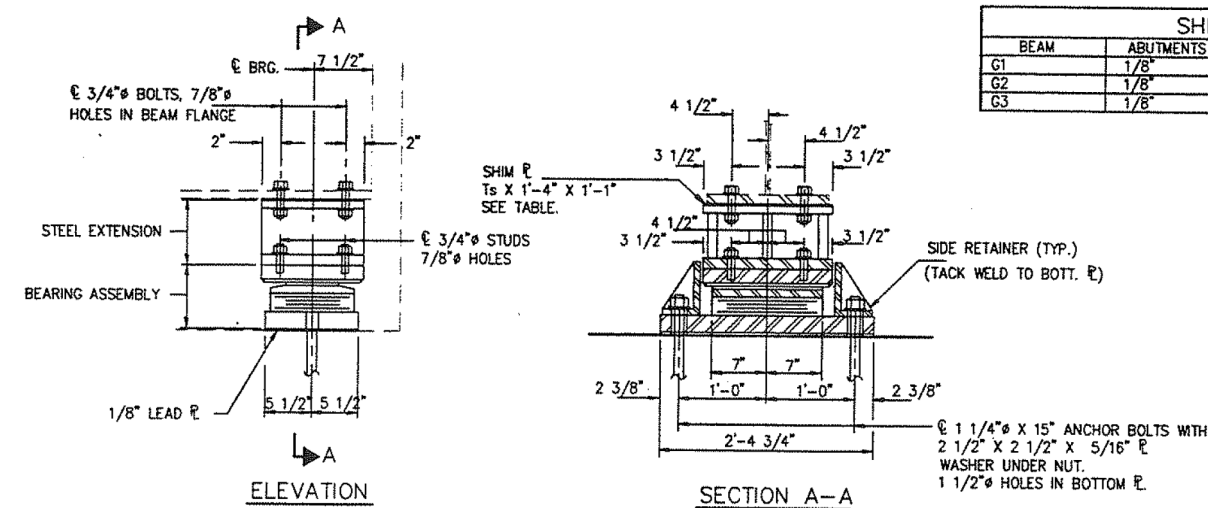
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IL 171	**	COOK	985	225
			ILLINOIS	FED. AID PROJECT

** SECTION 0707-613B (BR)

SHIM P Ts			
BEAM	ABUTMENTS	PIER 4 EAST	PIER 23 EAST
G1	1/8"	1/8" + 5/16"	1/8" + 1/8"
G2	1/8"	1/8" + 5/16"	1/8" + 1/8"
G3	1/8"	1/8" + 13/16"	1/8" + 1/8"

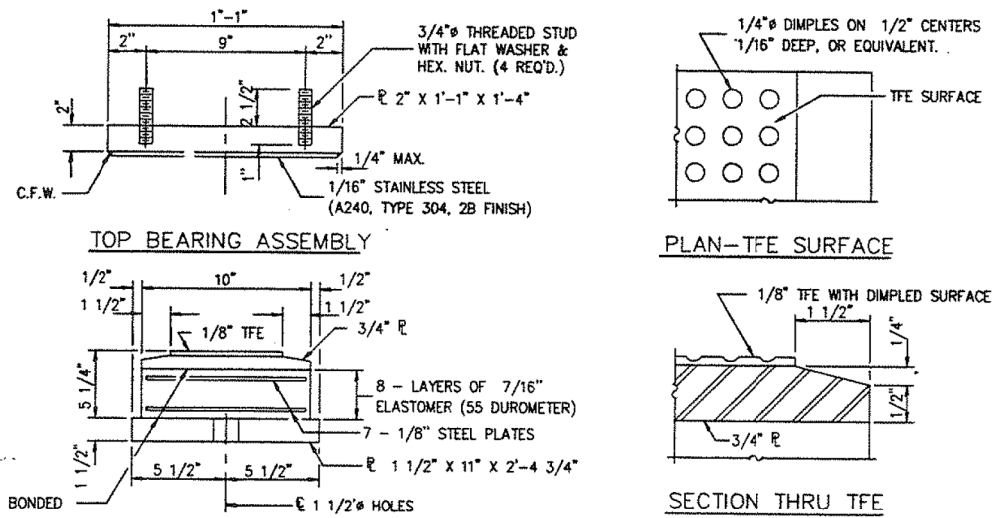
GIRDER REACTIONS

RL	(K)	60.3
RE	(K)	51.6
IMP.	(K)	10.7
R (TOTAL)	(K)	122.6



NOTES: DIAPHRAGM REMOVAL AND REPLACEMENT MAY BE REQUIRED TO FACILITATE DRILLING HOLES IN THE BOTTOM FLANGE FOR BEARING ATTACHMENT. COST IS INCIDENTAL TO "FURNISHING AND ERECTING STRUCTURAL STEEL".
 NEW STEEL EXTENSIONS, SIDE RETAINERS, LEAD PLATES, CONNECTION BOLTS AND ANCHOR BOLTS ARE INCLUDED IN "FURNISHING AND ERECTING STRUCTURAL STEEL".
 SEE SHEET 18 OF 20 FOR ANCHOR BOLT INSTALLATION.
 BEFORE INSTALLING THE NEW BEARING, THE TOP PLATE OF THE EXISTING BEARING ASSEMBLY SHALL BE REMOVED FROM THE BOTTOM FLANGE USING THE AIR-ARC METHOD. GRIND SMOOTH ALL WELD MATERIAL REMAINING ON THE BOTTOM FLANGE. BURN EXISTING ANCHOR BOLTS FLUSH WITH EXISTING CONCRETE SURFACE. GRIND EXISTING ANCHOR BOLT SMOOTH AND SEAL WITH EPOXY. COST IS INCIDENTAL TO FURNISHING AND ERECTING STRUCTURAL STEEL.
 TRAFFIC SHALL BE REMOVED FROM THE PORTION OF THE STRUCTURE TO BE JACKED PRIOR TO COMMENCING JACKING OPERATIONS. TRAFFIC SHALL BE KEPT OFF THAT PORTION OF THE STRUCTURE DURING THE ENTIRE BEARING REPLACEMENT OPERATION. DIFFERENTIAL JACKING HEIGHT NOT TO EXCEED 1/8" TRANSVERSELY BETWEEN ADJACENT BEAMS OR 1/4" LONGITUDINALLY BETWEEN ADJACENT SUPPORTS.
 PRIOR TO ORDERING ANY MATERIAL, THE CONTRACTOR SHALL VERIFY IN THE FIELD ALL BEARING HEIGHT AND SHIM DIMENSIONS.
 SEE SUPERSTRUCTURE OVERLAY & REPAIR PLANS FOR BEAM LOCATIONS.

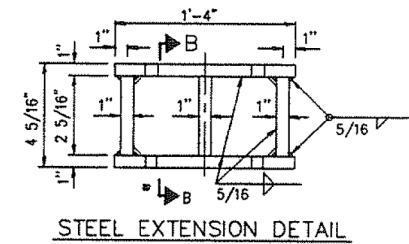
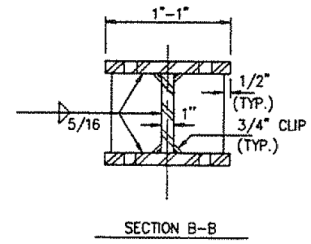
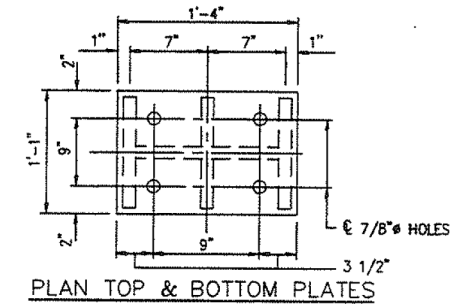
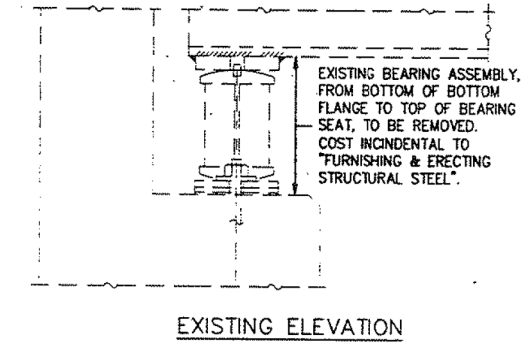
TYPE II TFE ELASTOMERIC EXP. BRG.



NOTE: THE 1/8" TFE SHEET SHALL BE BONDED DIRECTLY TO THE TOP STEEL PLATE WITH A TWO-COMPONENT, MEDIUM VISCOSITY EPOXY RESIN, CONFORMING TO THE REQUIREMENTS OF THE FEDERAL SPECIFICATION MMM-A-134, TYPE 1. THE BOND AGENT SHALL BE APPLIED ON THE FULL AREA OF THE CONTACT SURFACES.
 BONDING OF 1/8" TFE SHEET DURING VULCANIZING PROCESS WILL BE PERMITTED PROVIDED THE PROCESS AND METHOD OF ADJUSTING ASSEMBLY HEIGHT IS APPROVED BY THE ENGINEER.

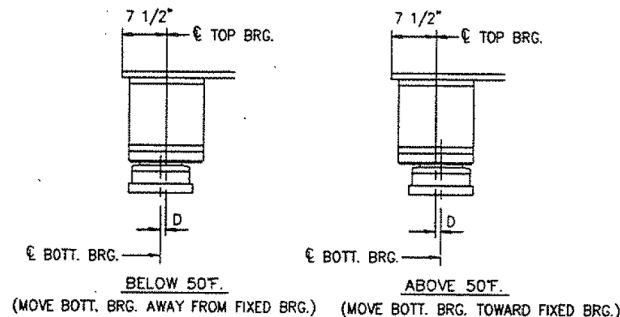
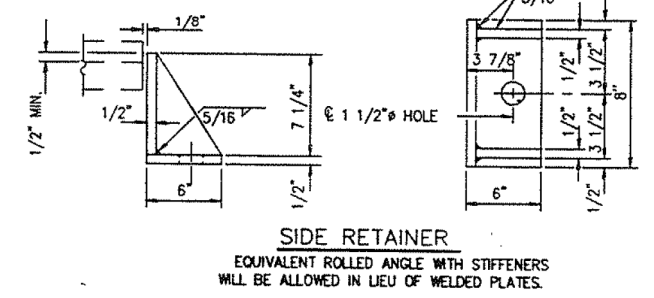
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EXAMINED	_____ ENGINEER OF BRIDGE DESIGN
PASSED	_____ ENGINEER OF BRIDGES AND STRUCTURES
APPROVED	_____ DIRECTOR OF HIGHWAYS



BILL OF MATERIAL

ITEM	UNIT	TOTAL
ELASTOMERIC BEARING ASSEMBLY TYPE II	EACH	20
JACK & REMOVE EXISTING BEARINGS	EACH	20
FURNISH & ERECT STRUCTURAL STEEL	LBS	4940



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.

ILLINOIS DEPARTMENT OF TRANSPORTATION
EAST ABUTMENTS & PIERS 4 & 23
 TYPE II BEARINGS
 BRIDGE REPAIRS
 1ST AVE (IL 171) S.N. 016-0483 & 016-0985
 OVER DES PLAINES RIVER
 F.A.U. RT. 1505 SECTION 0707-613B (BR)
 COOK CO. IL
 STA. 50+80.00

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	PLOT DATE = 12/20/2013	DRAWN - FSM	REVISED -
		CHECKED - RMM	REVISED -

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Bench Mark: Chisled square at SW corner of SB IL-171 Bridge over Des Plaines River. Elev. 622.14

Existing Structure: S.N. 016-1026 was originally built in 1964 under Section 0707-614B. The structure consists of seven spans with a 7 1/2" concrete deck that was replaced in 1994. Continuous spans 41 thru 44 consist of four girder lines with 36 WF beams from Pier 41 to the pin and link connections, variable height steel plate girders from the pin and link connections to Pier 42, and three spans of 60" web steel plate girders. Simply supported spans 45 thru 47 consist of five, six, and seven flared girder lines, respectively, all 60" web steel plate girders. The substructures consist of two multi-column piers, five solid wall piers, and a pile bent abutment. Pier 41 and the abutment are supported on steel piles, and all other piers are supported on spread footings. The structure is 687'-8 3/4" from centerline of Pier 41 to back of abutment, with an out to out deck width which varies from 29'-2" to 58'-3 1/2", with a 32°-16'-30" skew angle. The bridge shall be closed during construction. A detour shall be utilized to maintain traffic.

No salvage.

All Elevations in the proposed plans are based on NAVD88 Datum. Elevations in the existing plans are based on the NGVD29 Datum. NGVD29 Elev. 618.58 = NAVD88 Elev. 618.30.

APPROVED
For Structural Adequacy Only

De Carl Perry
Engineer of Bridges & Structures

STATION 206+25.24
RE-BUILT 2013 BY
STATE OF ILLINOIS
F.A.P. RT. 372
SECTION 2013-038B-R
LOADING HS-20
STRUCTURE NO. 016-1026

LOADING HS20-44 (New Constr.)
No future wearing surface allowed.
DESIGN SPECIFICATIONS (New Constr.)
2002 AASHTO Standard Specifications
for Highway Bridges

DESIGN STRESSES

FIELD UNITS (New Construction)

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 35,000 psi (AASHTO M270 Grade 35 -
Cross Frames & Diaphragms)
fy = 50,000 psi (AASHTO M270 Grade 50 -
Splice Plates)

FIELD UNITS (Exist. Construction)

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement - Superstructure)
fy = 40,000 psi (Reinforcement - Substructure).
fy = 35,000 psi (Structural Steel)

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.04g
Site Coefficient (S) = 1.0

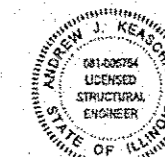
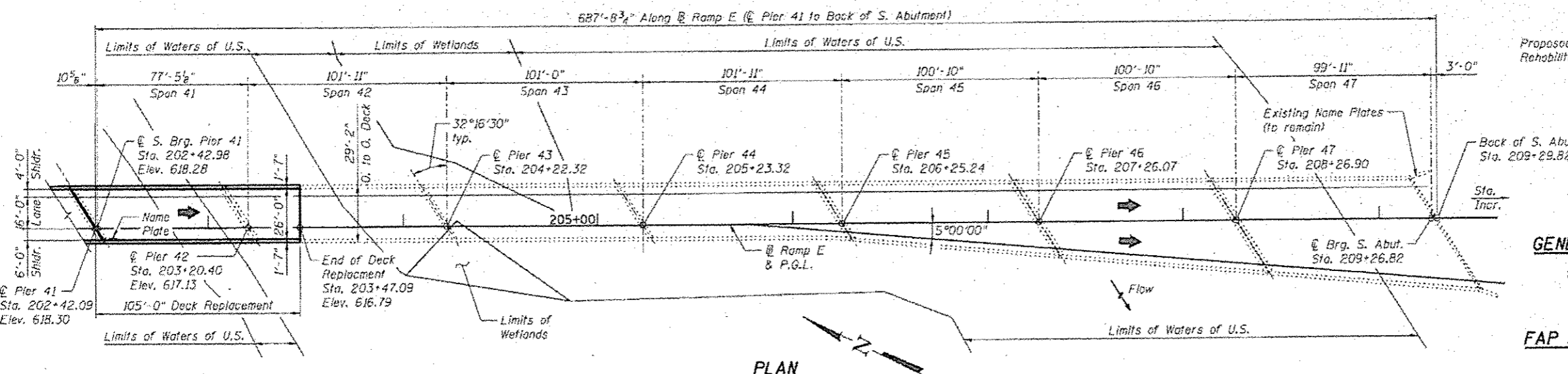
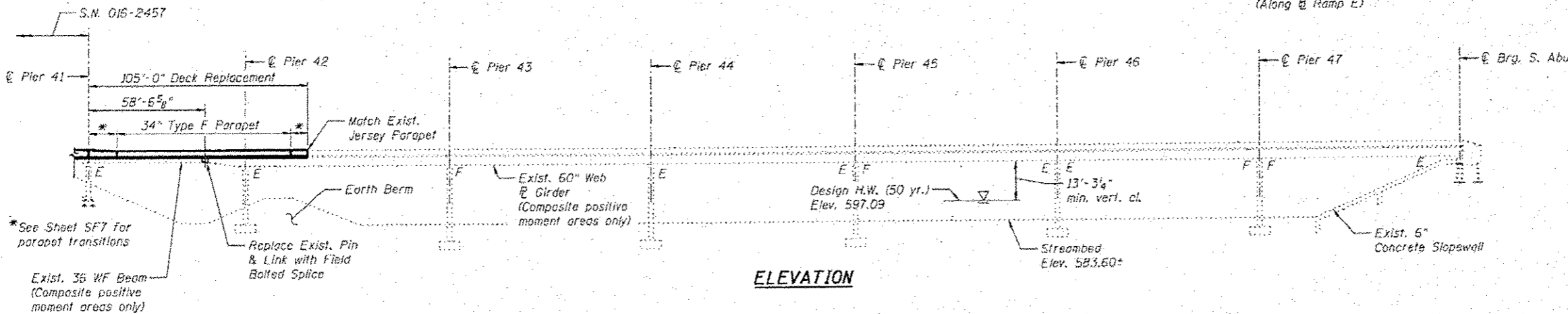
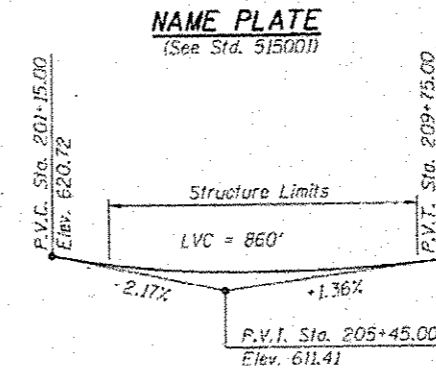
WATERWAY INFORMATION

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	5,930	2,719	2,719	595.68	0.01	0.01	595.69	595.69
Base	100	7,370	3,217	3,217	597.09	0.01	0.01	597.10	597.10
Overtopping	>500	7,900	3,338	3,338	597.58	0.00	0.00	597.58	597.58
Max. Calc.	500	9,315	3,833	3,833	598.82	0.00	0.00	598.82	598.82

Drainage Area = 641.59 sq. mi. Low Grade Elev. 615.05 at Sta. 206+50
10 Year Velocity through Existing and Proposed Bridge = 2.21 fps

DESIGN SCOUR ELEVATION TABLE

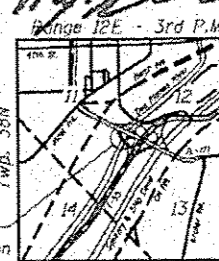
Design Scour Elevation (ft.)				
Pier 43	Pier 44	Pier 45	Pier 46	Pier 47
582.50	583.40	581.10	579.00	579.40



EXPIRATION DATE 11-30-2014

DATE 05-23-2014

Bridge IPE - 3rd P.M.



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
SB IL-171 RAMP E OVER
DES PLAINES RIVER
"PUBLIC WATER"
FAP 372 - SECTION 2013-038B-R
COOK COUNTY
STATION 206+25.24
STRUCTURE NO. 016-1026

benesch
engineers . scientists . planners
Alfred Benesch & Company
209 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312.565.0450 Job No. 10093

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 511 OF 517 SHEETS

F.A.P. RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	544
				CONTRACT NO. 60J16
ILLINOIS FED. AID PROJECT				

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GENERAL NOTES

- Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 7/8" dia., holes 15/16" dia., unless otherwise noted.
- Calculated weight of structural steel =
M270 Grade 36: 5,000 pounds
M270 Grade 50: 2,570 pounds
- No field welding is permitted except as specified in the contract documents.
- 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 cannot be removed by grinding 1/4 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.

6. 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 Inorganic Zinc Rich Primer/Acrylic/Acrylic Paint System shall be used for shop and field painting of new structural steel and the steel portions of the new elastomeric bearings. Only Inorganic Zinc Rich Primer shall be applied to the new structural steel and the steel portions of the new elastomeric bearings in the shop under this contract and is included in "Furnishing and Erecting Structural Steel" and "Elastomeric Bearing Assembly, Type II", respectively. The intermediate and top coats shall be applied under a separate painting contract.
- The existing structural steel coating contains lead. The Contractor shall take all precautions to deal with the presence of lead on this project.
- Existing structural steel shall only be cleaned and painted as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".
- The Contractor shall obtain a construction permit from the Illinois Department of Natural Resources (IDNR), Office of Water Resources for any temporary construction activity placed in the water except cofferdams. This shall include the placement of material for run-arounds, causeways, etc. Any permit application by the Contractor shall refer to the IDNR 3704 Floodway Construction permit number allowing permanent construction as shown in the contract plans.
- Slipforming of the parapets is not allowed.

INDEX OF SHEETS

- SF1 General Plan and Elevation
- SF2 General Notes, Index of Sheets and Total Bill of Material
- SF3 Top of Slab Elevations Plan
- SF4 Top of Slab Elevations
- SF5 Deck Reinforcement Plan
- SF6 Deck Cross Section and Details
- SF7 Parapet Details and Bill of Material
- SF8 Structural Steel Repair Framing Plan
- SF9 Structural Steel Repair Details
- SF10 Partial Framing Plan and Moment & Reaction Tables
- SF11 Pin & Link and Miscellaneous Removal Details
- SF12 Field Bolted Splice & Diaphragm Details
- SF13 Bearing Details
- SF14 Piers 41 and 42 Concrete Repair Details
- SF15 Piers 43 and 44 Concrete Repair Details
- SF16 Piers 45 and 46 Concrete Repair Details
- SF17 Pier 47 Concrete Repair Details

For existing bridge plans, see Sheets SFX1 thru SFX30, immediately following Sheet SF17.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Concrete Deck No. 4	Each	1		1
* Protective Shield	Sq Yd	355		355
Concrete Superstructure	Cu Yd	105.9		105.9
Bridge Deck Grooving	Sq Yd	292		292
Protective Coat	Sq Yd	409		409
Furnishing and Erecting Structural Steel	Pound	7,570		7,570
Reinforcement Bars, Epoxy Coated	Pound	30,980		30,980
Name Plates	Each	1		1
Elastomeric Bearing Assembly, Type II	Each	4		4
Anchor Bolts, 3/4"	Each	8		8
** Epoxy Crack Injection	Foot		81	81
Jack and Remove Existing Bearings	Each	4		4
Structural Steel Removal	Pound	10,150		10,150
Cleaning Bridge Seats	Sq Ft		1,044	1,044
** Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft		470	470
** Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq Ft		24	24
*** Selective Clearing	Unit		1	1
Temporary Shoring and Cribbing	Each		3	3
Temporary Support System	Each	4		4
Remove Conduit Attached to Structure	Foot	1,410		1,410

- * Protective Shield shall be installed in Span 41 and a portion of Span 42 within the limits of Deck Replacement shown on Sheet SF1.
- ** Quantity includes a contingency (above the amounts shown in the bills of material) to account for uncertainties associated with the condition of the existing substructure and the age of the original inspection (2008-9). Actual repair areas will be determined by the Engineer in the field.
- *** The quantity for this item is estimated. The intent for this work is to remove accumulations of rubbish, debris, vegetation, etc. on the existing slope walls and other areas.

SCOPE OF WORK

- Remove existing concrete deck and expansion joint in Span 41 and a portion of Span 42 and replace with new 7 1/2" reinforced concrete deck.
- Remove existing pin and link connections and make steel continuous with field bolted splice.
- Replace and/or repair several existing cross frame members.
- Replace existing fixed bearings at Pier 41 with new elastomeric expansion bearings.
- Repair broken anchor bolts along existing bearings on Pier 47.
- Remove existing wind bracing (bottom lateral angles and, where shown, the corresponding gusset plates).
- Remove and dispose of existing abandoned electrical conduits and junction boxes attached to the inside face of the south fascia beam and girder.
- Repair spalls, delaminations and open cracks in substructures using formed concrete repair and epoxy crack injection.



Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

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		CHECKED - AJK	REVISED -
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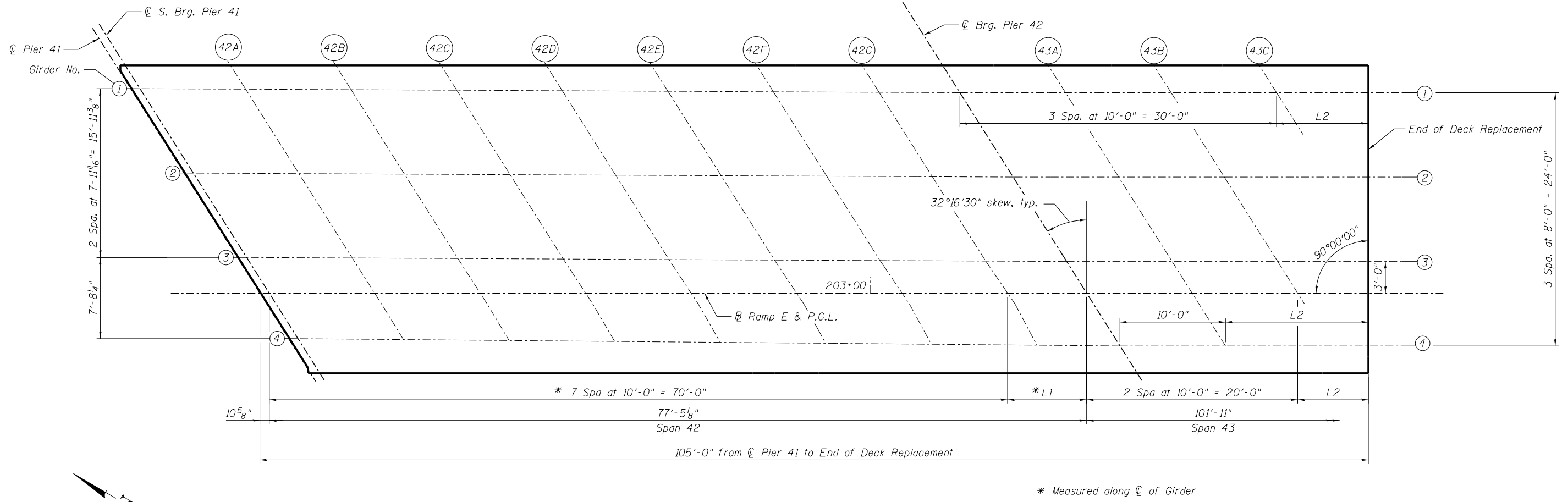
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL NOTES, INDEX OF SHEETS AND TOTAL BILL OF MATERIAL
STRUCTURE NO. 016-1026**

SHEET NO. SF2 OF SF17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	545
			CONTRACT NO. 60J16	
ILLINOIS FED. AID PROJECT				

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PLAN

SCREED SPACING

LOCATION	L1	L2
Girder 1	7'-8"	8'-8 1/4"
Girder 2	7'-8"	13'-7 5/8"
Girder 3	7'-8"	8'-7"
Ramp E & P.G.L.	7'-5 1/8"	6'-8 1/4"
Girder 4	7'-10 3/8"	13'-6 3/8"

benesch
engineers · scientists · planners

Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

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		DRAWN - KMS	REVISED -
		CHECKED - TJJ	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS PLAN
STRUCTURE NO. 016-1026**

SHEET NO. SF3 OF SF17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	546
CONTRACT NO. 60J16			ILLINOIS FED. AID PROJECT	

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GIRDER 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
⊙ Pier 41	202+29.95	-19.40	619.35	619.35
⊙ S. Brg Pier 41	202+30.82	-19.39	619.33	619.33
42A	202+40.82	-19.33	619.10	619.14
42B	202+50.82	-19.28	618.88	618.94
42C	202+60.82	-19.23	618.66	618.73
42D	202+70.82	-19.18	618.45	618.51
42E	202+80.82	-19.14	618.24	618.28
42F	202+90.82	-19.09	618.03	618.05
42G	203+00.82	-19.04	617.84	617.84
⊙ Brg. Pier 42	203+08.40	-19.00	617.71	617.71
43A	203+18.40	-19.00	617.56	617.56
43B	203+28.40	-19.00	617.41	617.42
43C	203+38.40	-19.00	617.28	617.31
End of Deck Replacement	203+47.09	-19.00	617.17	617.21

GIRDER 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
⊙ Pier 41	202+34.90	-11.39	618.89	618.89
⊙ S. Brg Pier 41	202+35.79	-11.38	618.87	618.87
42A	202+45.79	-11.33	618.67	618.70
42B	202+55.79	-11.28	618.48	618.53
42C	202+65.79	-11.23	618.29	618.35
42D	202+75.79	-11.18	618.10	618.16
42E	202+85.79	-11.14	617.92	617.96
42F	202+95.79	-11.09	617.74	617.76
42G	203+05.79	-11.04	617.58	617.58
⊙ Brg. Pier 42	203+13.45	-11.00	617.46	617.46
43A	203+23.45	-11.00	617.32	617.32
43B	203+33.45	-11.00	617.18	617.20
End of Deck Replacement	203+47.09	-11.00	617.01	617.05

GIRDER 3

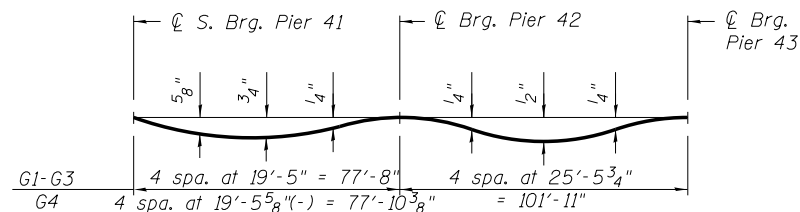
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
⊙ Pier 41	202+39.95	-3.39	618.47	618.47
⊙ S. Brg Pier 41	202+40.84	-3.38	618.45	618.45
42A	202+50.84	-3.33	618.28	618.31
42B	202+60.84	-3.28	618.11	618.16
42C	202+70.84	-3.23	617.94	618.01
42D	202+80.84	-3.18	617.78	617.84
42E	202+90.84	-3.14	617.62	617.66
42F	203+00.84	-3.09	617.47	617.49
42G	203+10.84	-3.04	617.33	617.33
⊙ Brg. Pier 42	203+18.51	-3.00	617.22	617.22
43A	203+28.51	-3.00	617.09	617.09
43B	203+38.51	-3.00	616.96	616.97
End of Deck Replacement	203+47.09	-3.00	616.85	616.88

⊙ Ramp E & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
⊙ Pier 41	202+42.09	0.00	618.30	618.30
⊙ S. Brg Pier 41	202+42.98	0.00	618.28	618.28
42A	202+52.98	0.00	618.12	618.15
42B	202+62.98	0.00	617.96	618.02
42C	202+72.98	0.00	617.81	617.87
42D	202+82.98	0.00	617.66	617.72
42E	202+92.98	0.00	617.51	617.55
42F	203+02.98	0.00	617.37	617.39
42G	203+12.98	0.00	617.23	617.24
⊙ Brg. Pier 42	203+20.40	0.00	617.13	617.13
43A	203+30.40	0.00	617.00	617.01
43B	203+40.40	0.00	616.88	616.89
End of Deck Replacement	203+47.09	0.00	616.79	616.82

GIRDER 4

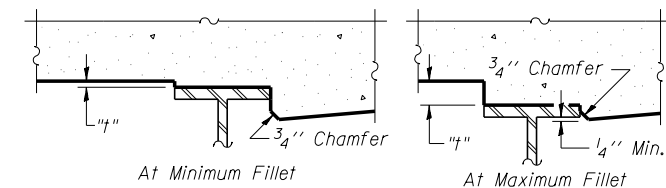
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
⊙ Pier 41	202+44.81	4.30	618.08	618.08
⊙ S. Brg Pier 41	202+45.70	4.31	618.07	618.07
42A	202+55.70	4.40	617.92	617.95
42B	202+65.70	4.49	617.77	617.83
42C	202+75.70	4.58	617.63	617.69
42D	202+85.70	4.66	617.49	617.55
42E	202+95.70	4.75	617.36	617.40
42F	203+05.69	4.84	617.22	617.24
42G	203+15.69	4.93	617.09	617.10
⊙ Brg. Pier 42	203+23.56	5.00	616.99	616.99
43A	203+33.56	5.00	616.86	616.87
End of Deck Replacement	203+47.09	5.00	616.69	616.71



DEAD LOAD DEFLECTION DIAGRAM (SPAN 41 & 42 ONLY)

(Includes weight of concrete only.)

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown.



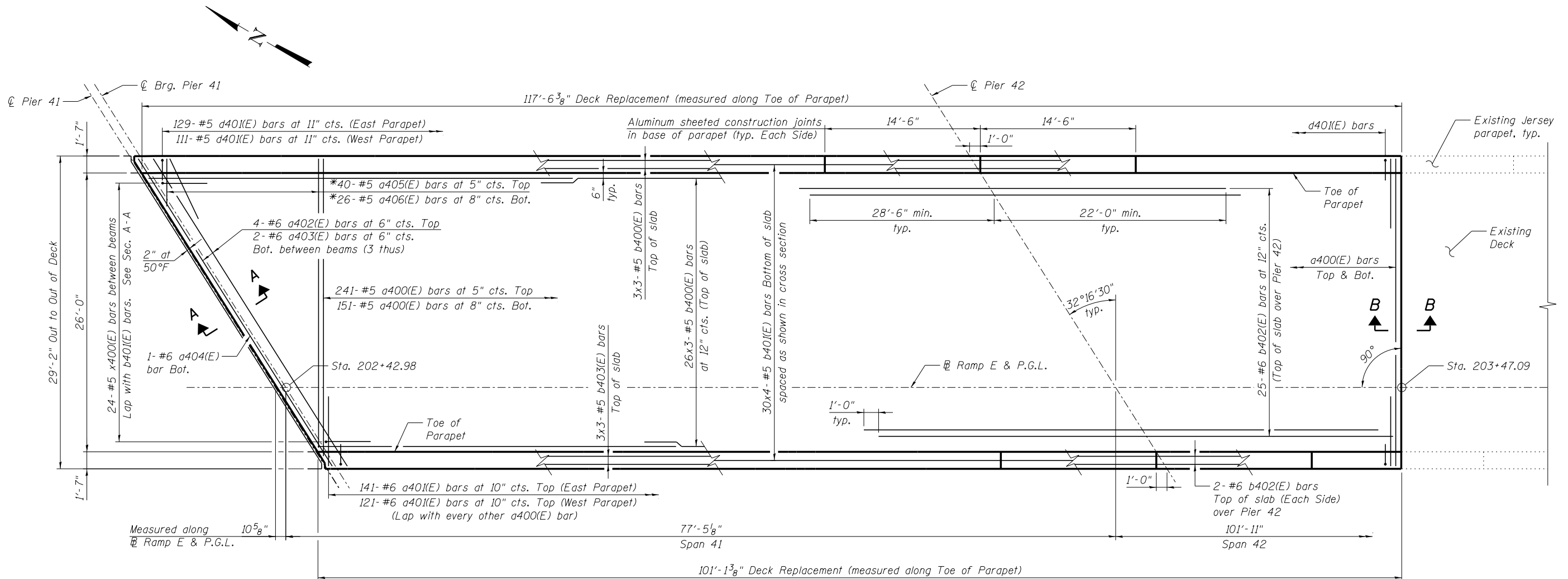
To determine "t": After removal of the existing deck to the limits specified is complete, elevations of the top flanges of the beams shall be taken at intervals shown on Sheet SF3. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown herein, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

FILE NAME =	USER NAME = tjjenicke	DESIGNED - DTS	REVISED -
		CHECKED - TJJ	REVISED -
		DRAWN - DTS	REVISED -
		CHECKED - TJJ	REVISED -

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	547
CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				

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*See Field Cutting Diagram on Sheet SF7.

PLAN

MINIMUM BAR LAP
(Slab)
#5 bar = 3'-3"
#6 bar = 3'-10"

NOTES:

1. See Sheet SF6 for Section A-A, Section B-B and Deck Cross Section.
2. See Sheet SF7 for Superstructure Details, parapet reinforcement and Bill of Material.
3. Bars indicated thus 26x3-#5 etc. indicates 26 lines of bars with 3 lengths per line.
4. 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 the Preformed Joint Strip Seal sheet of SN 016-2457.
5. The deck shall be poured after the Pin & Link retrofits have been completed and shall progress from Pier 41 towards Pier 42.

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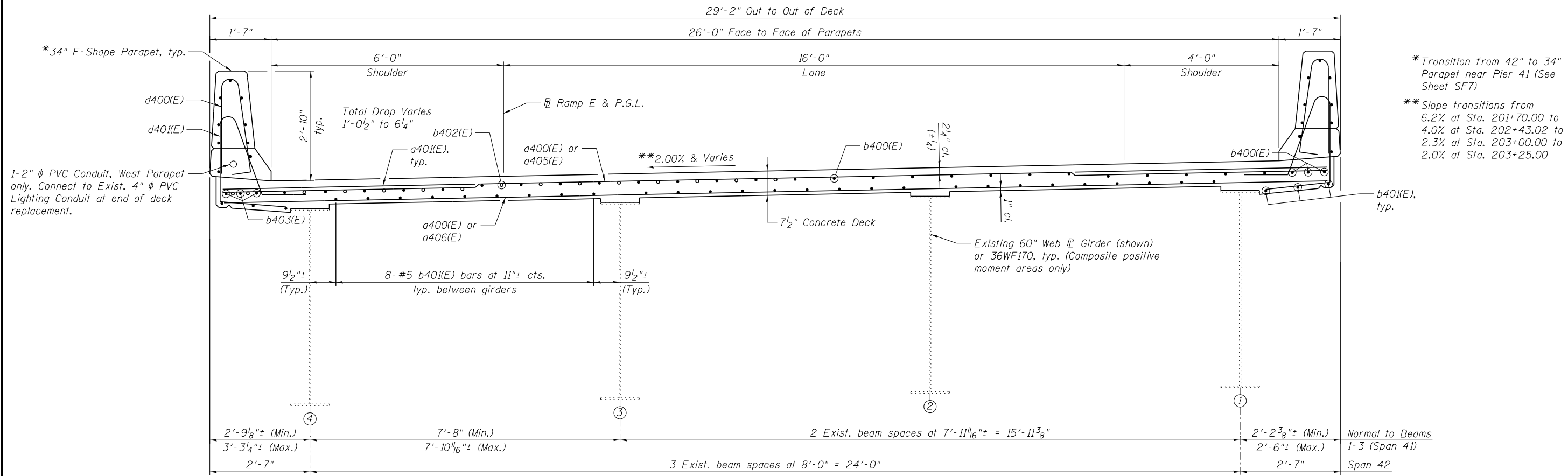
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	PLOT DATE = 12/20/2013	CHECKED - AJK	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**DECK REINFORCEMENT PLAN
STRUCTURE NO. 016-1026**
SHEET NO. SF5 OF SF17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	548
CONTRACT NO. 60J16			ILLINOIS FED. AID PROJECT	

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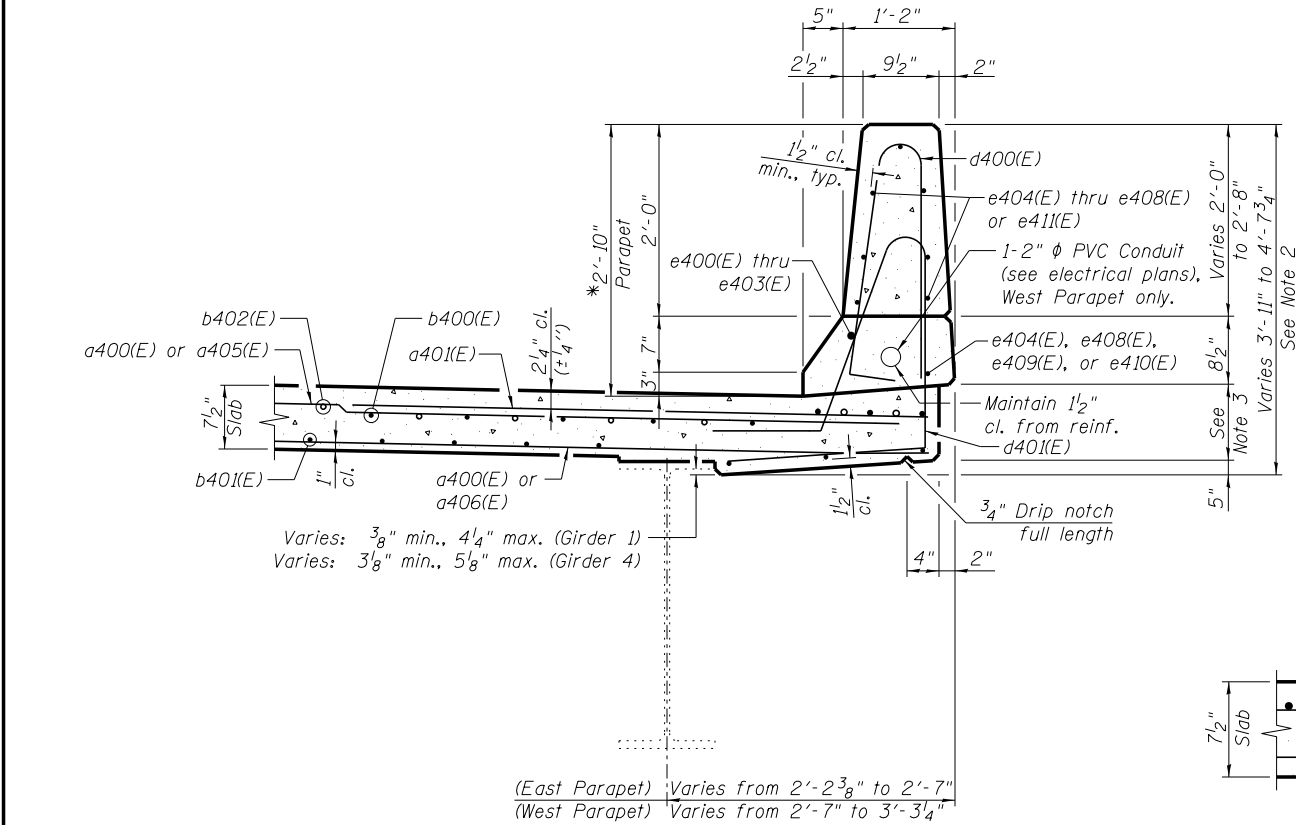


*Transition from 42" to 34" Parapet near Pier 41 (See Sheet SF7)

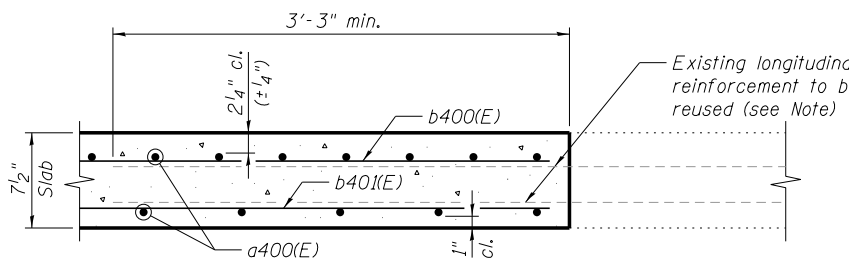
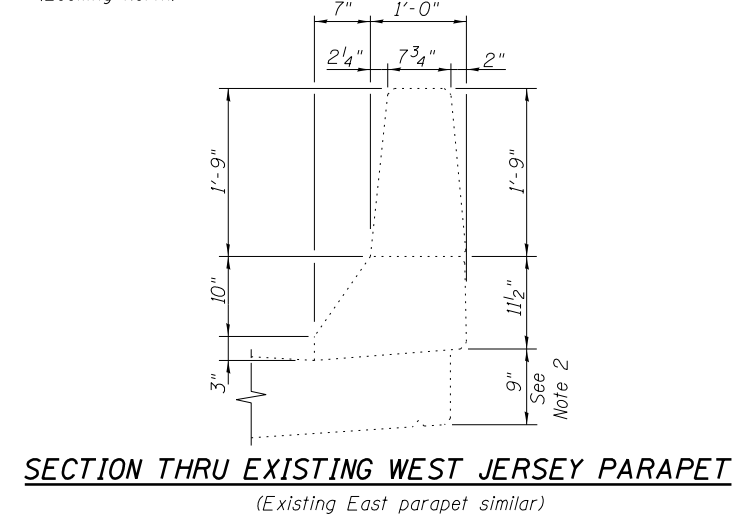
**Slope transitions from 6.2% at Sta. 201+70.00 to 4.0% at Sta. 202+43.02 to 2.3% at Sta. 203+00.00 to 2.0% at Sta. 203+25.00

1-2" φ PVC Conduit, West Parapet only. Connect to Exist. 4" φ PVC Lighting Conduit at end of deck replacement.

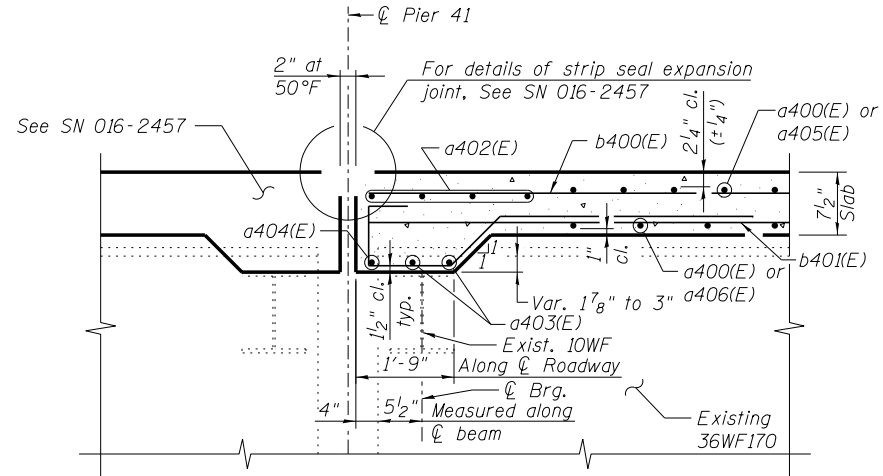
DECK CROSS SECTION
(Looking North)



SECTION THRU WEST PARAPET
(East parapet similar)



SECTION B-B



SECTION A-A

NOTES:

- Existing longitudinal reinforcement shall be cleaned and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost included with Removal of Existing Concrete Deck No. 4.
- Dimension is 10 1/4" at the east side and 9 1/2" at the west side of the proposed deck. Dimension must taper down to 9" at both sides to meet the existing deck.

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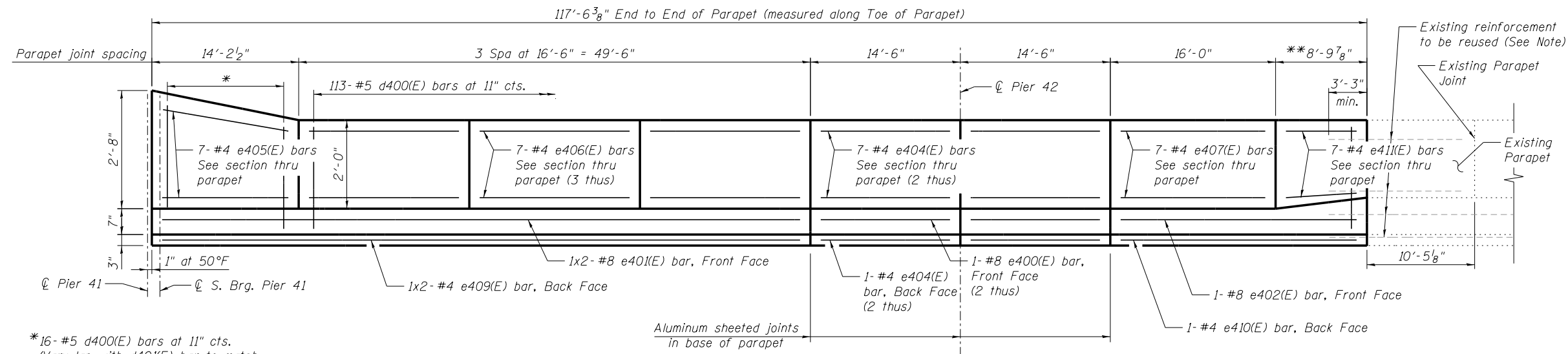
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK CROSS SECTION AND DETAILS
STRUCTURE NO. 016-1026

SHEET NO. SF6 OF SF17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	549
CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				

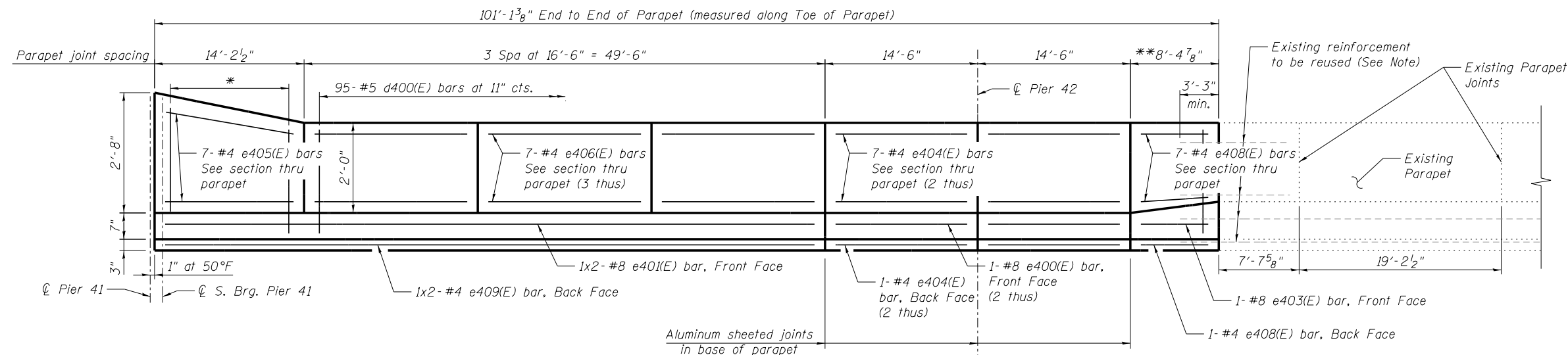
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INSIDE ELEVATION OF EAST PARAPET

*16- #5 d400(E) bars at 11" cts. (Vary lap with d401(E) bar to match parapet taper)

**Transition F-Shape parapet to match existing Jersey parapet. See Section Thru Existing Jersey Parapet on Sheet SF6.



REFLECTED INSIDE ELEVATION OF WEST PARAPET

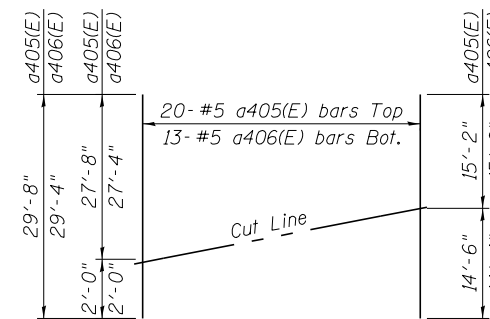
SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a400(E)	392	#5	28'-6"	
a401(E)	262	#6	6'-6"	
a402(E)	4	#6	33'-8"	
a403(E)	6	#6	8'-10"	
a404(E)	1	#6	27'-6"	
a405(E)	20	#5	29'-8"	
a406(E)	13	#5	29'-4"	
b400(E)	87	#5	41'-4"	
b401(E)	120	#5	32'-0"	
b402(E)	29	#6	51'-6"	
b403(E)	9	#5	36'-0"	
d400(E)	240	#5	5'-7"	
d401(E)	240	#5	7'-3"	
e400(E)	4	#8	14'-2"	
e401(E)	4	#8	34'-4"	
e402(E)	1	#8	24'-6"	
e403(E)	1	#8	8'-0"	
e404(E)	32	#4	14'-2"	
e405(E)	14	#4	13'-10"	
e406(E)	42	#4	16'-2"	
e407(E)	7	#4	15'-8"	
e408(E)	8	#4	8'-0"	
e409(E)	4	#4	32'-9"	
e410(E)	1	#4	24'-6"	
e411(E)	7	#4	8'-5"	
x400(E)	24	#5	5'-2"	
Concrete Superstructure	Cu. Yd.		105.9	
Bridge Deck Grooving	Sq. Yd.		292	
Protective Coat	Sq. Yd.		409	
Reinforcement Bars, Epoxy Coated	Pound		30,980	

Bars indicated thus 26x3- #5 etc. indicates 26 lines of bars with 3 lengths per line.

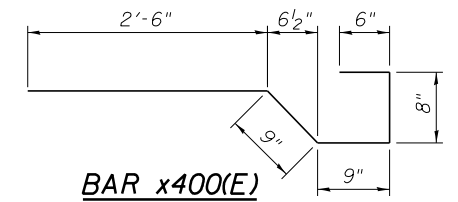
MINIMUM BAR LAP

(Parapet)
 #4 bar = 2'-0"
 #8 bar = 5'-2"

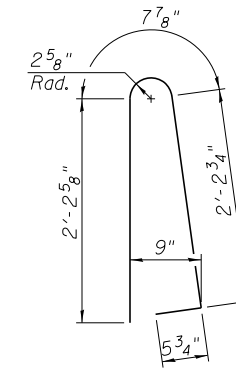


FIELD CUTTING DIAGRAM

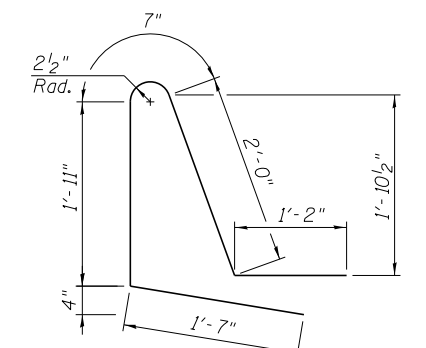
Order a405(E) and a406(E) bars full length. Cut as shown.



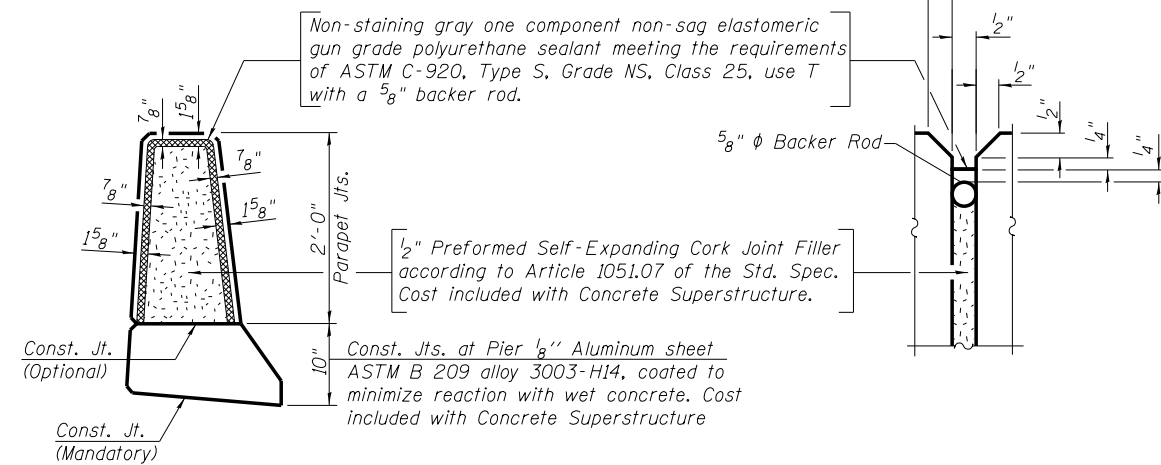
BAR x400(E)



BAR d400(E)



BAR d401(E)



PARAPET JOINT DETAILS

NOTE:

Existing longitudinal reinforcement shall be cleaned and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost included with Removal of Existing Concrete Deck No. 4.

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0161026.60J16.007.Parapet Elevation.BOM	PLOT SCALE =	CHECKED - AJK	REVISED -
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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

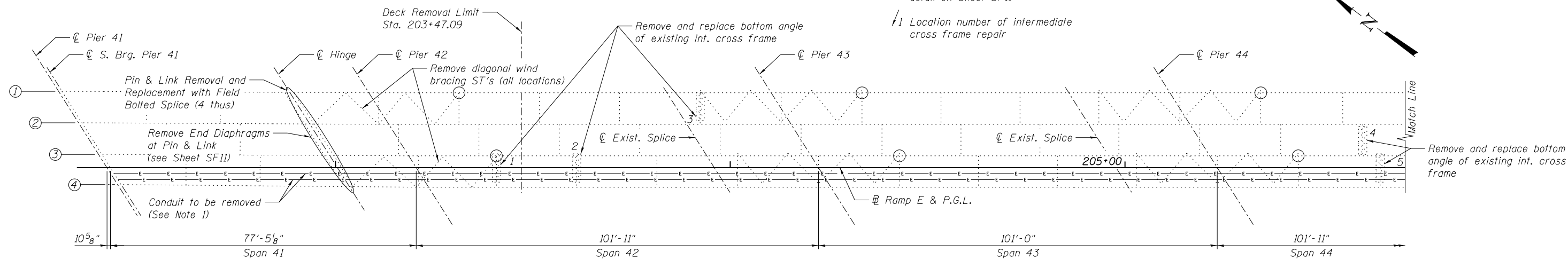
**PARAPET DETAILS AND BILL OF MATERIAL
 STRUCTURE NO. 016-1026**

SHEET NO. SF7 OF SF17 SHEETS

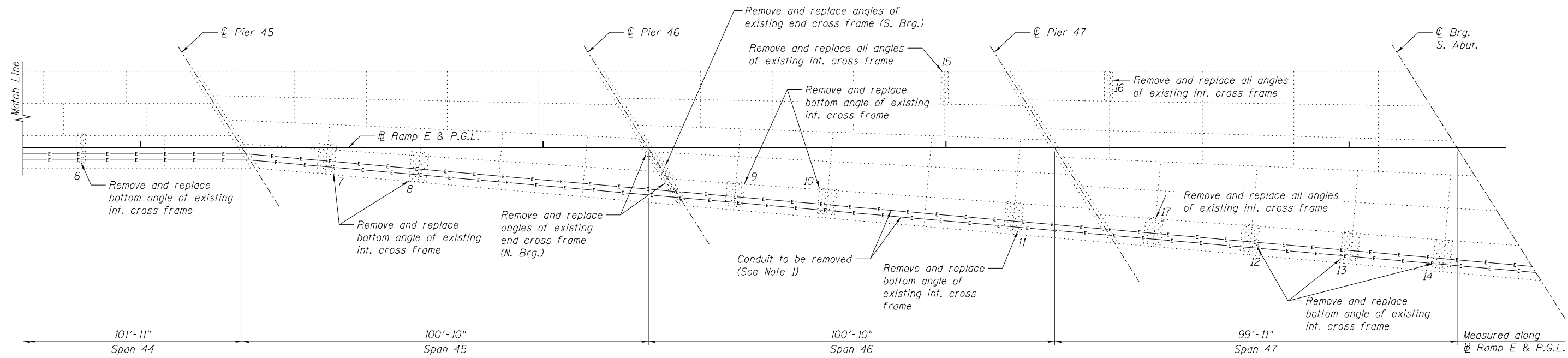
F.A.P. RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	550
CONTRACT NO. 60J16			ILLINOIS FED. AID PROJECT	

LEGEND

- Remove existing gusset plates per "Structural Steel Removal" Special Provision. See Wind Bracing Removal detail on Sheet SF11
- /1 Location number of intermediate cross frame repair



**EXISTING FRAMING PLAN
REMOVAL AND REPAIR**



**EXISTING FRAMING PLAN
REMOVAL AND REPAIR**

NOTES:

1. See Conduit Removal Details on Sheet SF11.
2. For details of removing wind bracing ST's at Piers 42 through 44 see Wind Bracing Removal detail on Sheet SF11.
3. For details of removing and replacing the bottom angle of existing intermediate cross frames see Detail 2 on Sheet SF9. For details of removing and replacing angles of existing end cross frames see Detail 3 on Sheet SF9. For details of removing and replacing all angles of existing intermediate cross frames see Detail 4 on Sheet SF9. Removal of steel paid for as "Structural Steel Removal". Replacement of steel paid for as "Furnishing and Erecting Structural Steel".
4. The Engineer will inspect all existing bearing anchor bolts to ascertain their condition. Any damaged anchor bolts shall be reported to the BBS for further direction. The Contractor shall provide all means and access for the Engineer to perform the anchor bolt inspections. All costs associated with providing the access shall be considered included in the unit price for "Furnishing and Erecting Structural Steel".
5. See Existing Plans for existing framing plan dimensions.

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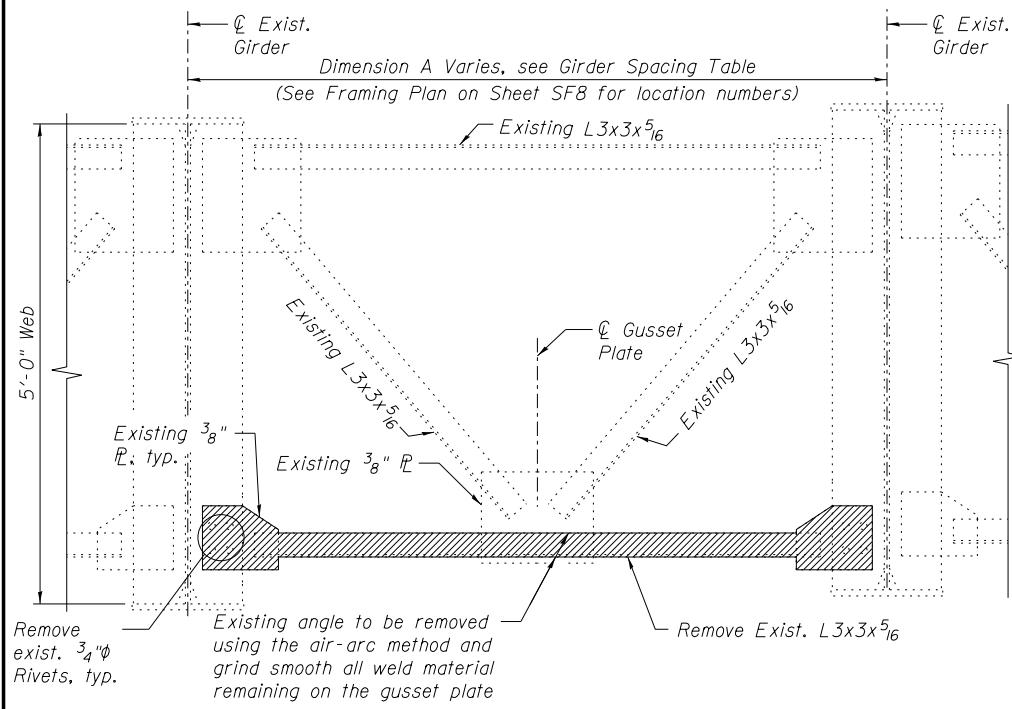
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**STRUCTURAL STEEL REPAIR FRAMING PLAN
STRUCTURE NO. 016-1026**

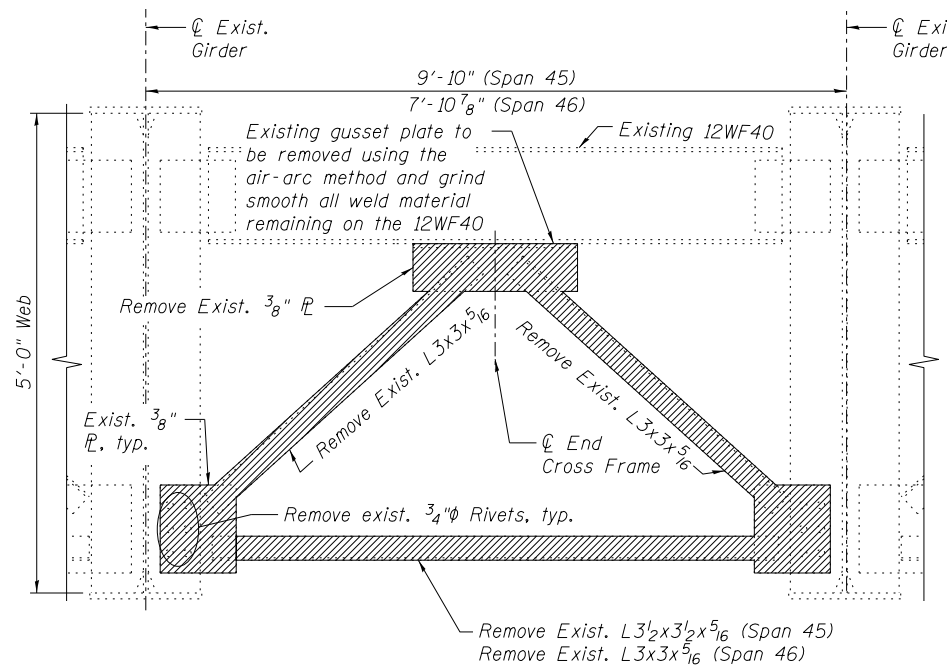
SHEET NO. SF8 OF SF17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				

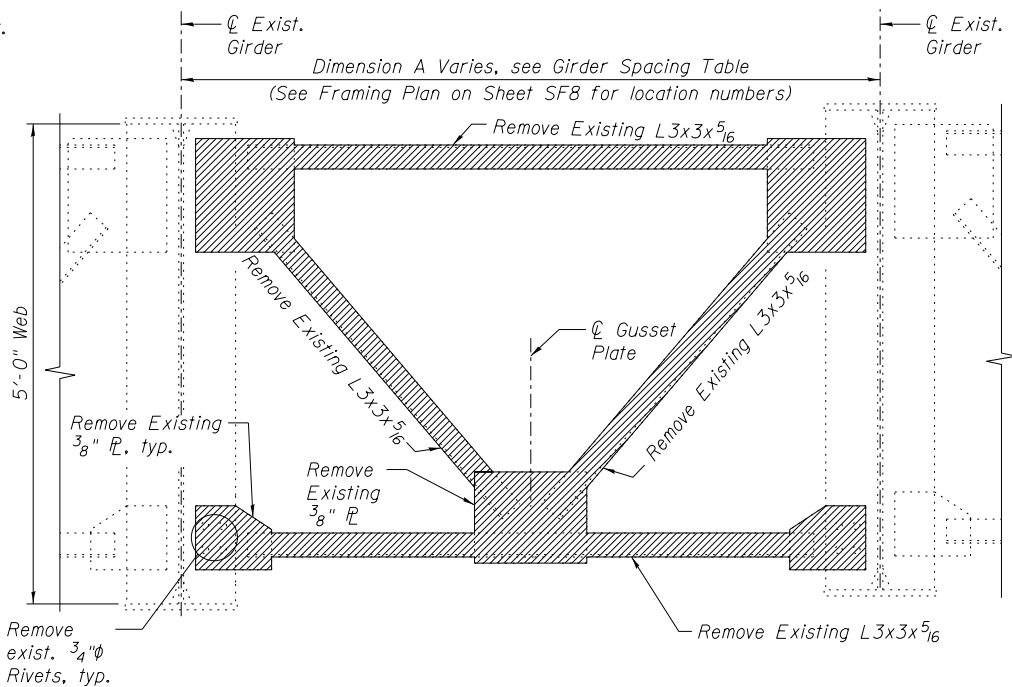
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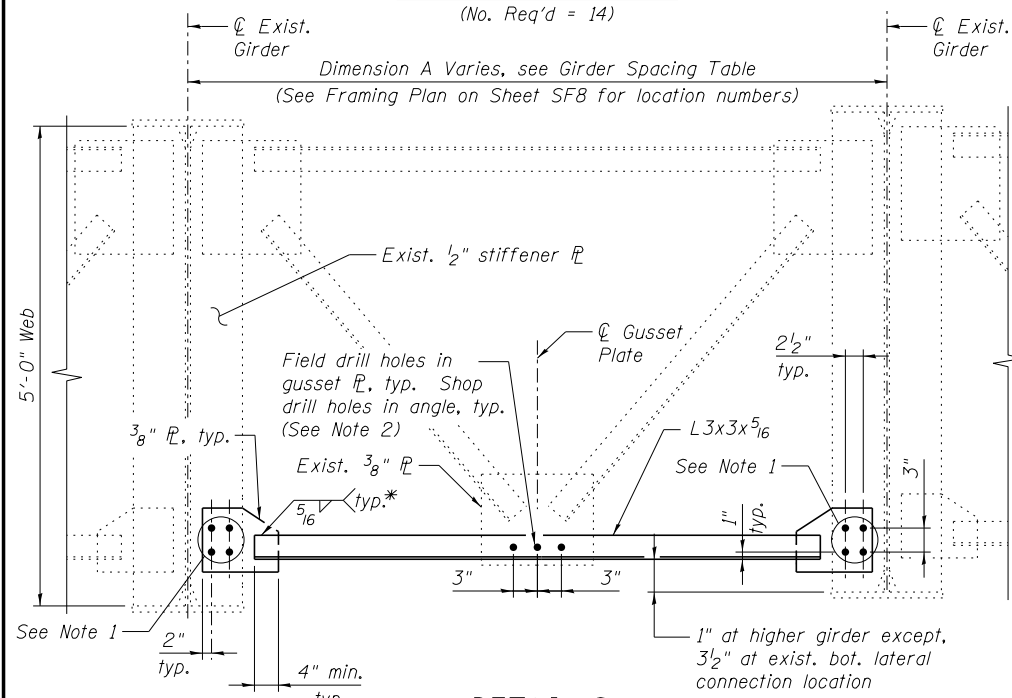
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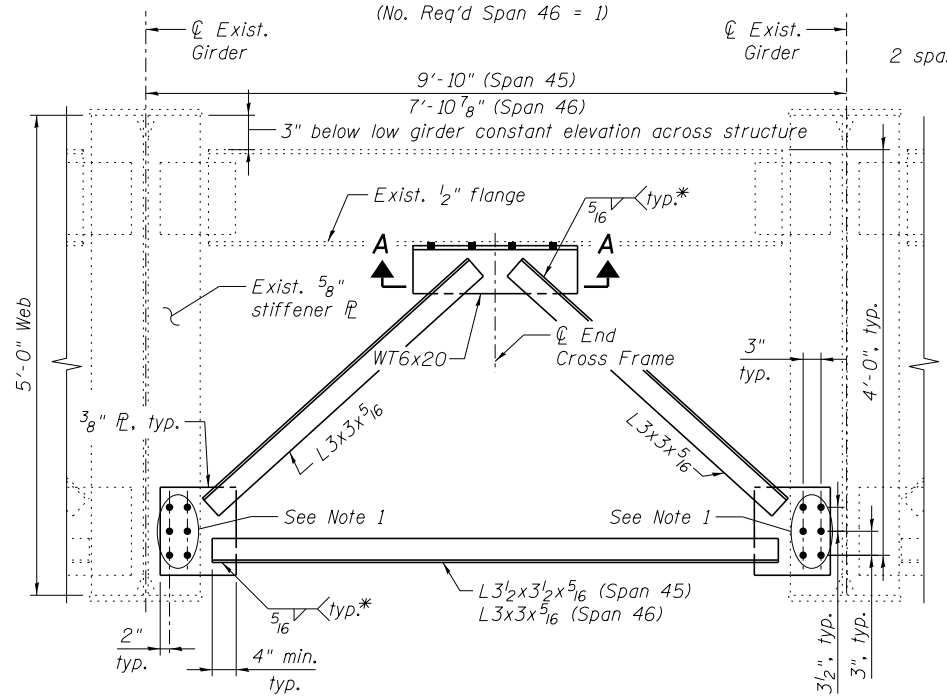
EXISTING DETAIL 3
(No. Req'd Span 45 = 2)
(No. Req'd Span 46 = 1)



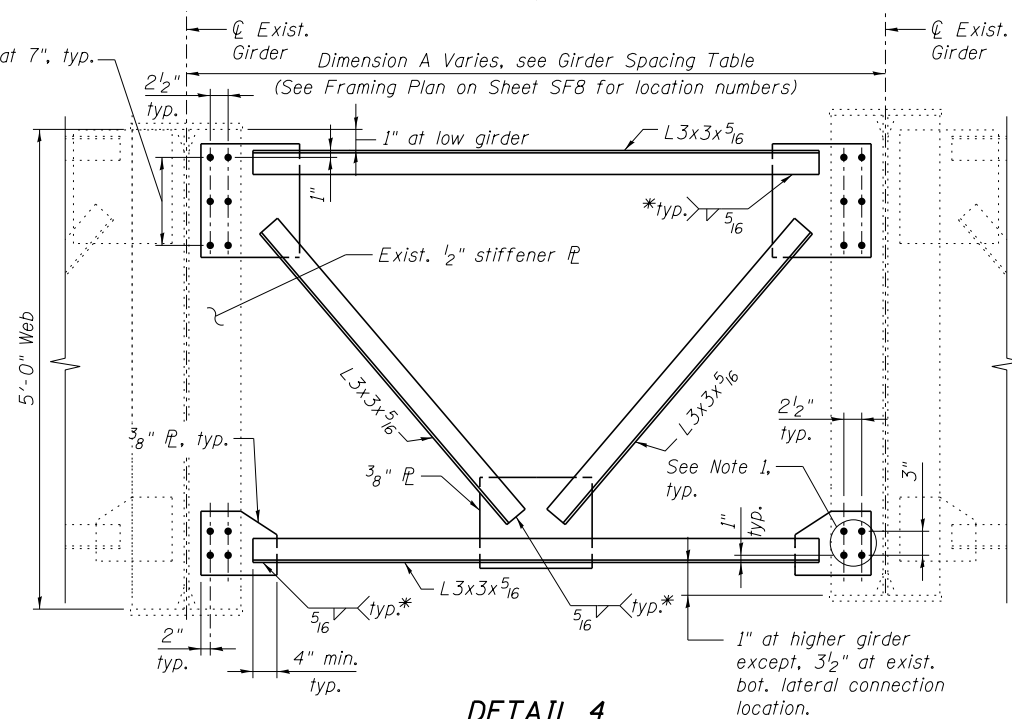
EXISTING DETAIL 4
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DETAIL 2
(No. Req'd = 14)



DETAIL 3
(No. Req'd Span 45 = 2)
(No. Req'd Span 46 = 1)



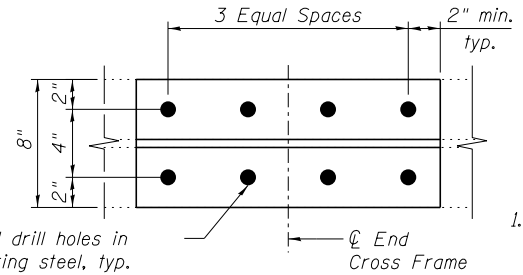
DETAIL 4
(No. Req'd = 3)

* Fillet weld angles along 3 sides on one face of gusset plate or WT section.

GIRDER SPACING TABLE

Location	A	Location	A
1	8'-0"±	9	6'-6 5/8"±
2	8'-0"±	10	6'-11 1/4"±
3	8'-0"±	11	7'-8 1/2"±
4	8'-0"±	12	7'-2 3/4"±
5	8'-0"±	13	7'-6 7/8"±
6	8'-0"±	14	7'-10 5/8"±
7	6'-1 1/4"±	15	8'-1 3/4"±
8	6'-7"±	16	7'-5 1/4"±
		17	6'-10 3/4"±

(For information only. The Contractor shall field verify existing dimensions and details prior to ordering of materials.)



SECTION A-A

NOTES:

- For new structural steel elements connected to existing structural steel elements, fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Holes shall be subpunched or subdrilled 1/16" dia. and reamed in the field to 13/16" dia. for 3/4" dia. bolts using existing holes in connection plates as a template, unless otherwise noted.
- Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 3/4" dia., holes 13/16" dia. in existing and new steel.
- Cost of field drilling included with "Furnishing and Erecting Structural Steel".

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Furnishing and Erecting Structural Steel	Pound	2,030
Structural Steel Removal	Pound	1,830

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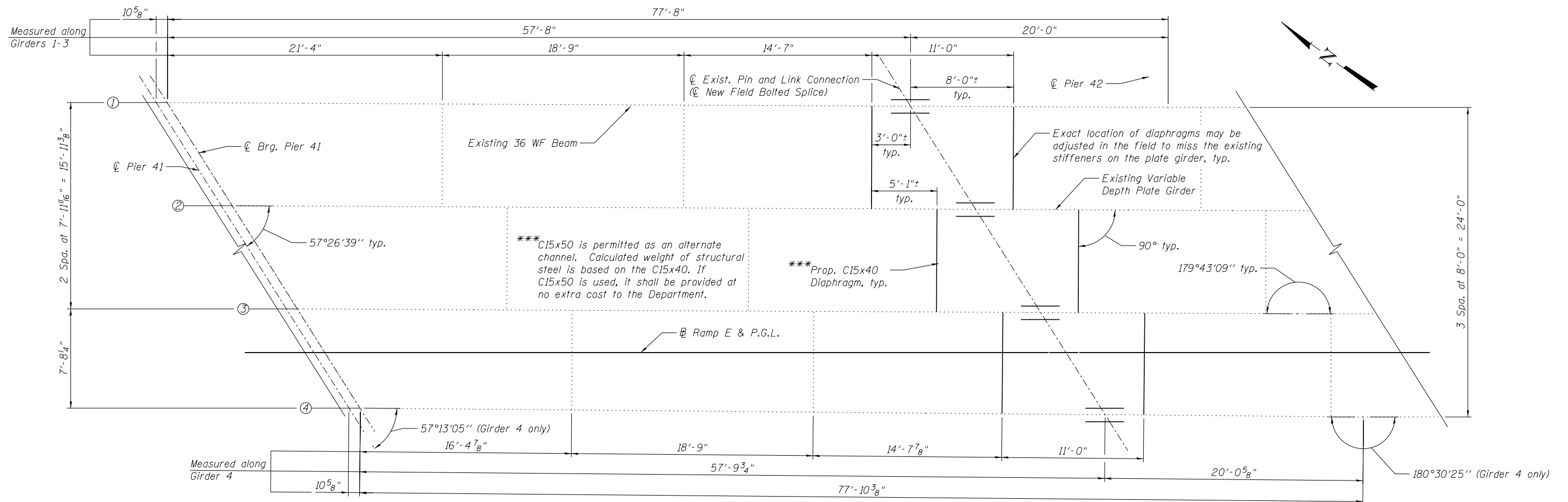
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL REPAIR DETAILS
STRUCTURE NO. 016-1026

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	552
CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				

SHEET NO. SF9 OF SF17 SHEETS

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PARTIAL FRAMING PLAN (SPAN 41)

NOTES:

- For details of structural steel repair and removal see Sheet SF8, SF9 & SF11.
- For details of existing pin and link connection removal, see Sheet SF11.
- For details of bolted splice and diaphragms, see Sheet SF12.

INTERIOR GIRDER MOMENT TABLE (Spans 41-44 only)								
		0.4 Span 41	Pier 42	0.5 Span 42	Pier 43	0.5 Span 43	Pier 44	0.6 Span 44
I_s	(in ⁴)	10,361	39,581	32,799	39,581	22,830	46,472	39,581
$I_c(n)$	(in ⁴)	24,953	39,581	69,594	39,581	54,007	46,472	79,803
$I_c(3n)$	(in ⁴)	18,410	---	53,109	---	41,127	---	61,043
S_s	(in ³)	572	1267	1058	1267	746	1475	1267
$S_c(n)$	(in ³)	798	---	1344	---	1018	---	1563
$S_c(3n)$	(in ³)	724	---	1249	---	938	---	1458
Z	(in ³)	---	---	---	---	---	---	---
ϕ	(k/')	0.990	1.248	0.995	1.244	0.959	1.268	1.019
$M\phi$	(k)	336.7	1131.0	420.7	974.9	277.7	1336.3	788.8
$s\phi$	(k/')	0.225	---	0.225	---	0.225	---	0.225
$M_s\phi$	(k)	85.9	---	109.9	---	85.6	---	184.2
$M\phi$	(k)	595.4	601.4	860.5	649.2	730.0	705.1	950.9
M_I	(k)	147.1	140.1	189.6	143.4	161.5	156.0	210.3
M_a	(k)	2161.1	3080.0	2969.4	2988.1	2407.7	3606.6	3786.0
M_u	(k)	2856.8	---	5481.2	---	4612.3	---	5007.4
$f_s \phi$ non-comp	(ksi)	7.1	10.7	4.8	9.2	4.5	10.9	7.5
$f_s \phi$ (comp)	(ksi)	1.4	---	1.1	---	1.1	---	1.5
$f_s \phi [M\phi + M_I]$	(ksi)	18.6	11.7	15.7	12.5	17.5	11.7	14.9
f_s (Overload)	(ksi)	27.1	22.4	21.5	21.8	23.1	22.6	23.9
f_s (Total)	(ksi)	---	29.2	---	28.3	---	29.3	---
VR	(k)	65.1	---	59.8	---	60.1	---	56.7

INTERIOR GIRDER REACTION TABLE						
		Pier 41	Pier 42	Pier 43	Pier 44	Pier 45
$R\phi$	(k)	32.9	126.0	117.9	140.0	48.9
$R\phi$	(k)	48.6	68.9	71.9	74.1	51.3
R_I	(k)	12.0	11.3	11.0	11.3	11.3
R_{Total}	(k)	93.5	206.2	200.7	225.5	111.5

* Compact section
 ** Braced non-compact and partially braced section

I_s , S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in⁴ and in³).
 $I_c(n)$, $S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads (in⁴ and in³).
 $I_c(3n)$, $S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total and Overload) due to long-term composite (superimposed) dead loads (in⁴ and in³).
 Z : Plastic Section Modulus of the steel section in non-composite areas (in³).
 ϕ : Un-factored non-composite dead load (kips/ft.).
 $M\phi$: Un-factored moment due to non-composite dead load (kip-ft.).
 $s\phi$: Un-factored long-term composite (superimposed) dead load (kips/ft.).
 $M_s\phi$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
 $M\phi$: Un-factored live load moment (kip-ft.).
 M_I : Un-factored moment due to impact (kip-ft.).
 M_a : Factored design moment (kip-ft.).
 $1.3 [M\phi + M_s\phi + \frac{2}{3} (M\phi + M_I)]$
 M_u : Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).
 f_s (Overload): Sum of stresses as computed from the moments below (ksi).
 $M\phi + M_s\phi + \frac{2}{3} (M\phi + M_I)$
 f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
 $1.3 [M\phi + M_s\phi + \frac{2}{3} (M\phi + M_I)]$
 VR: Maximum ϕ + impact shear range within the composite portion of the span for stud shear connector design (kips).

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FILE NAME =	USER NAME = tjjenicke	DESIGNED - TJJ	REVISED -
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	PLOT DATE = 12/20/2013	DRAWN - TJJ	REVISED -
		CHECKED - AJK/AAJ	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**PARTIAL FRAMING PLAN AND MOMENT & REACTION TABLES
 STRUCTURE NO. 016-1026**

F.A.P. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	553
CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				

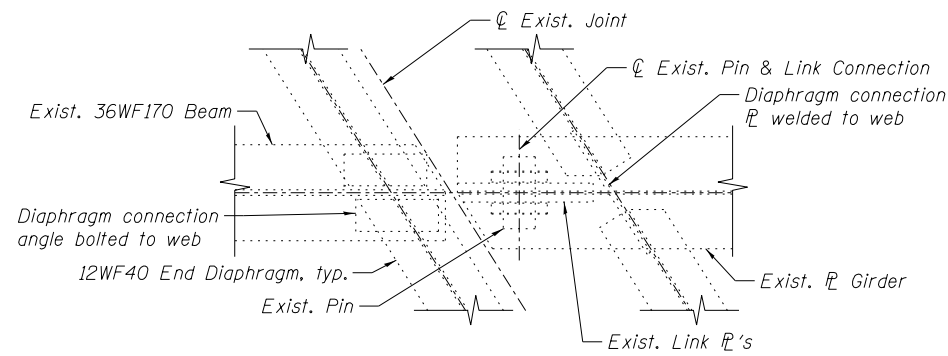
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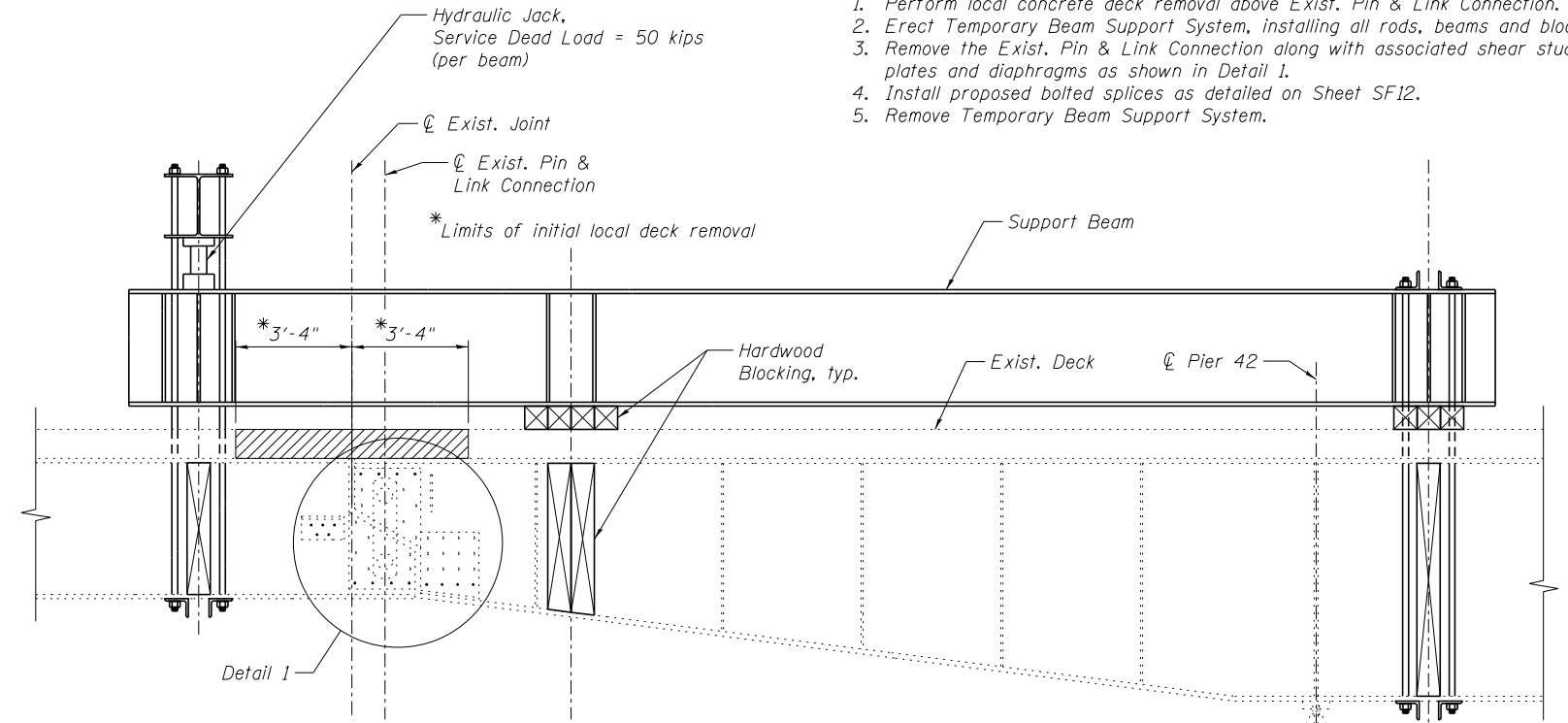
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SUGGESTED PROCEDURE FOR PIN AND LINK RETROFIT

1. Perform local concrete deck removal above Exist. Pin & Link Connection.
2. Erect Temporary Beam Support System, installing all rods, beams and blocking.
3. Remove the Exist. Pin & Link Connection along with associated shear studs, plates and diaphragms as shown in Detail 1.
4. Install proposed bolted splices as detailed on Sheet SF12.
5. Remove Temporary Beam Support System.

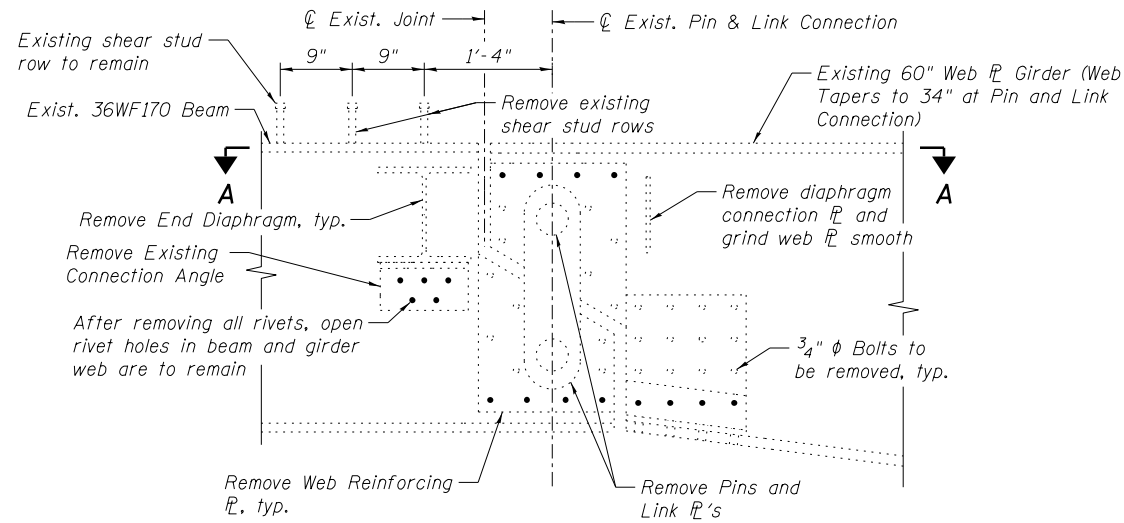


SECTION A-A

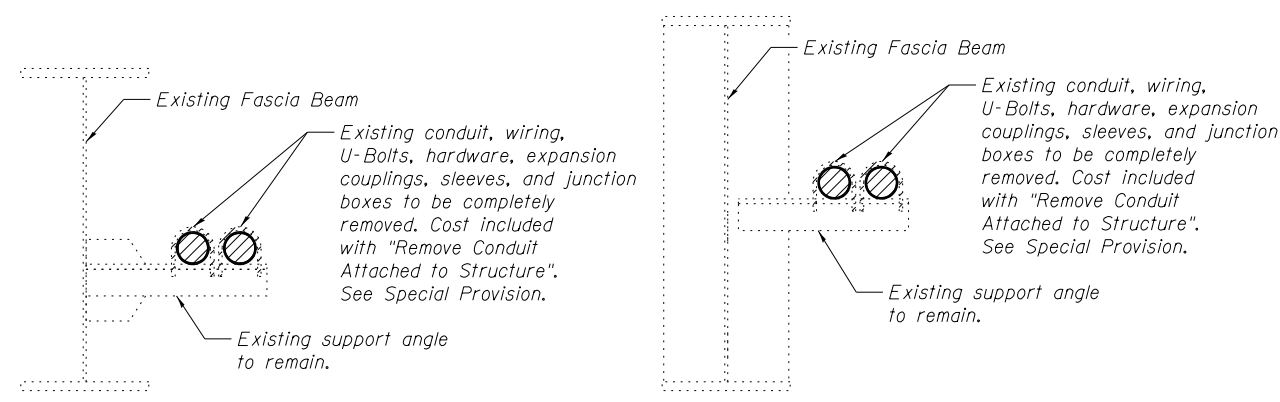


SUGGESTED TEMPORARY BEAM SUPPORT SYSTEM

Note: Specific details of the Temporary Support System shall be submitted by the Contractor for review and approval by the Engineer.



DETAIL 1

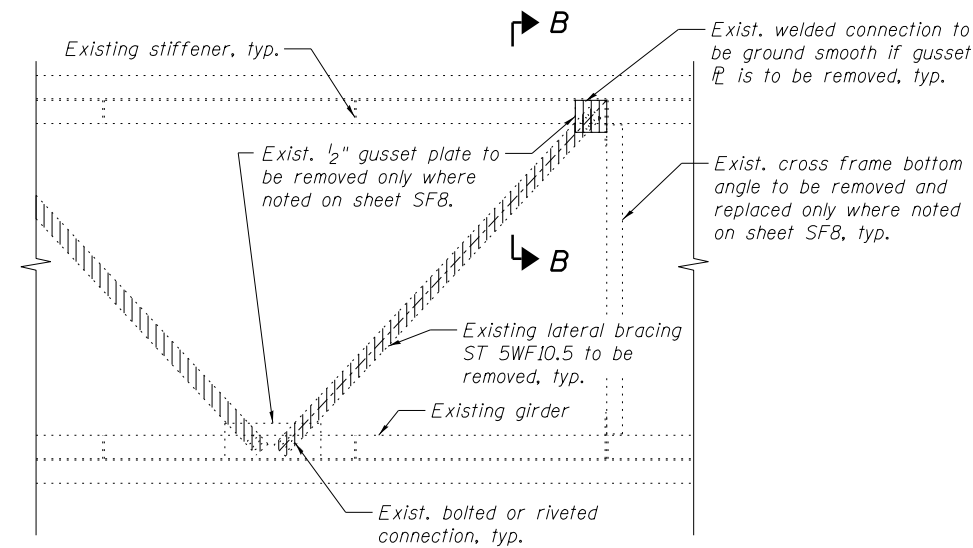


CONDUIT REMOVAL DETAIL

(36 WF 170 Detail)

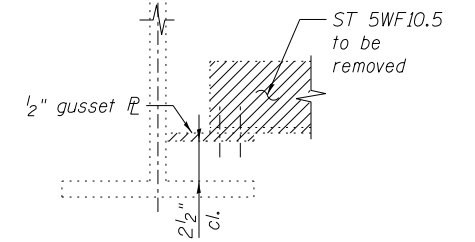
CONDUIT REMOVAL DETAIL

(Plate Girder Detail)



WIND BRACING REMOVAL

(Removal of lateral bracing and gusset plates paid for as "Structural Steel Removal")
 (34 ST 5WF10.5 diagonals to be removed)
 (6 gusset plates to be removed)



SECTION B-B

NOTES:

1. The work required to remove all existing components of the pin & link connection and diaphragms at the existing joint shall be paid for as Structural Steel Removal.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Steel Removal	Pound	8,320
Temporary Support System	Each	4
Remove Conduit Attached to Structure	Foot	1,410

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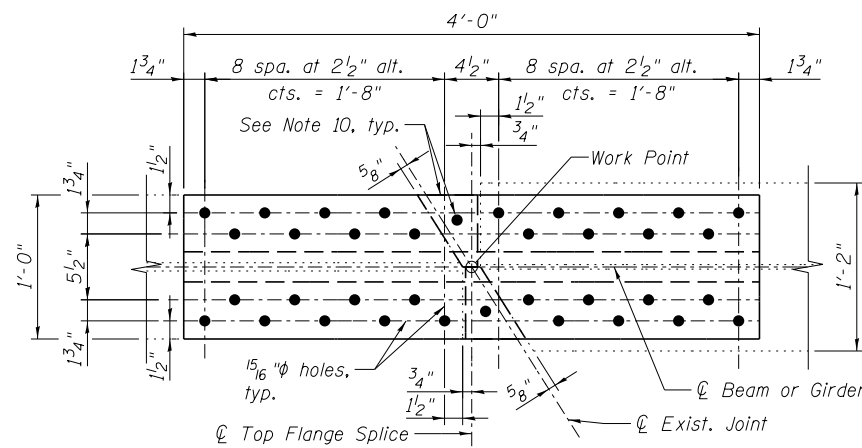
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	PLOT DATE = 12/28/2013		

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**PIN & LINK AND MISCELLANEOUS REMOVAL DETAILS
 STRUCTURE NO. 016-1026**

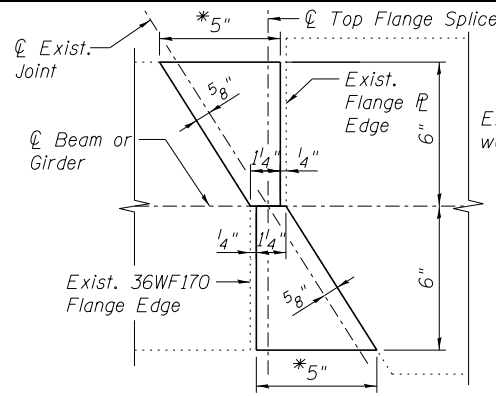
SHEET NO. SF11 OF SF17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 60J16			ILLINOIS FED. AID PROJECT	



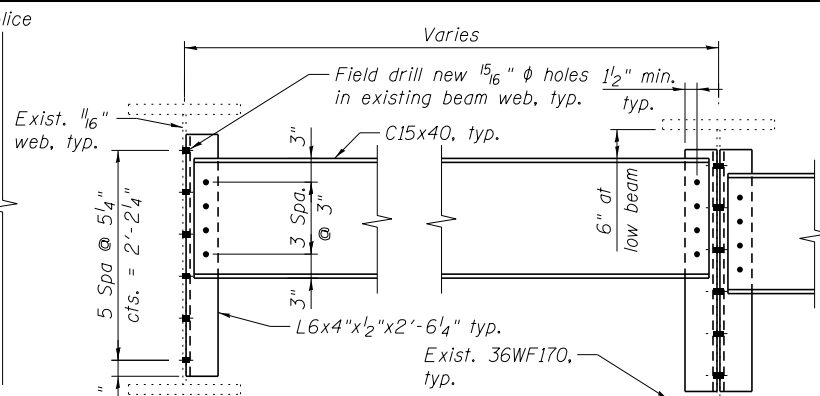
TOP FLANGE SPLICE

(Web splice PL's not shown for clarity)

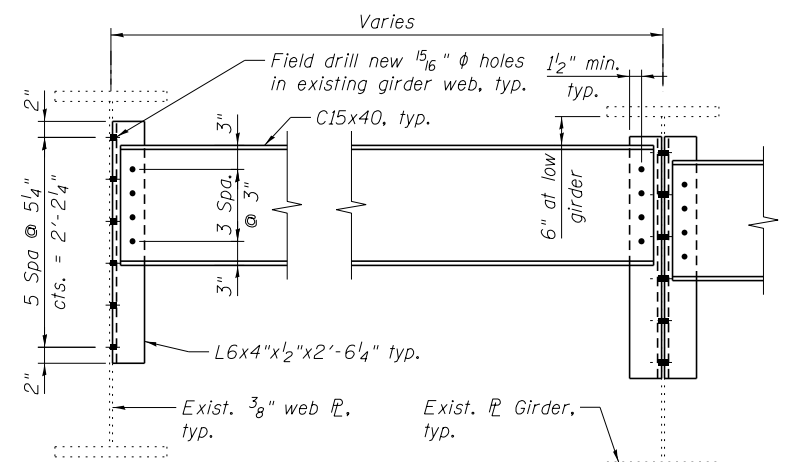


ADDITIONAL TOP FLANGE FILL PLATES

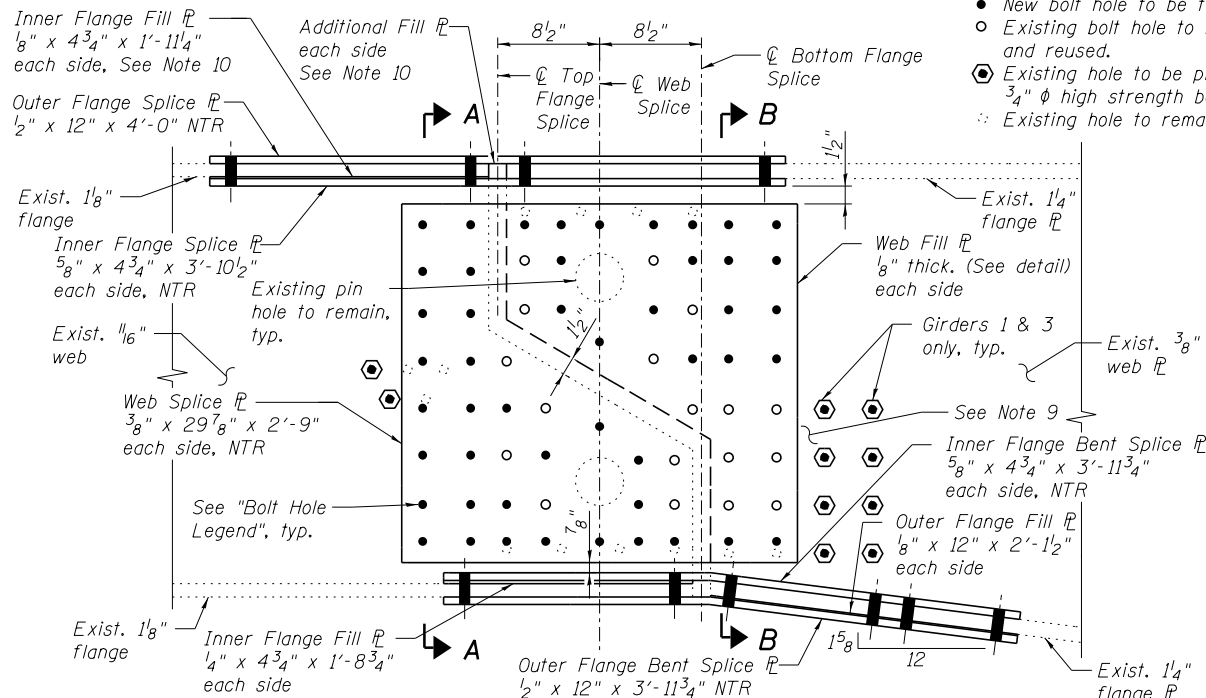
*Verify all dimensions in field.



DIAPHRAGM DETAIL
(3 Locations)



DIAPHRAGM DETAIL
(3 Locations)

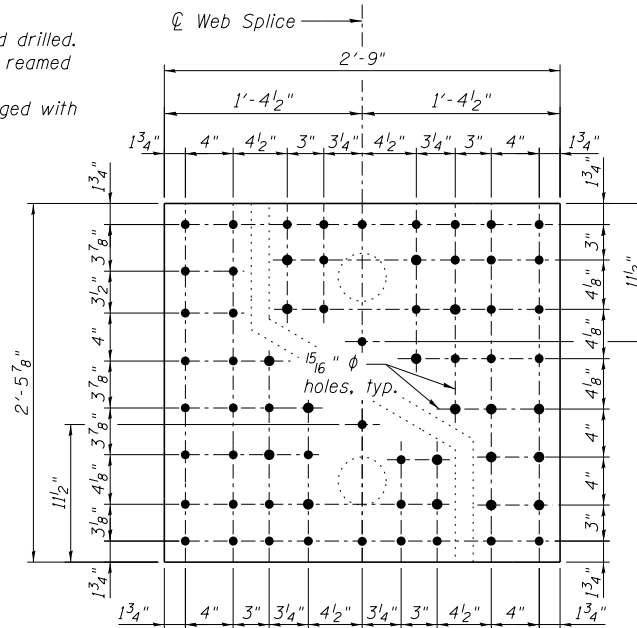


ELEVATION - FIELD SPLICE

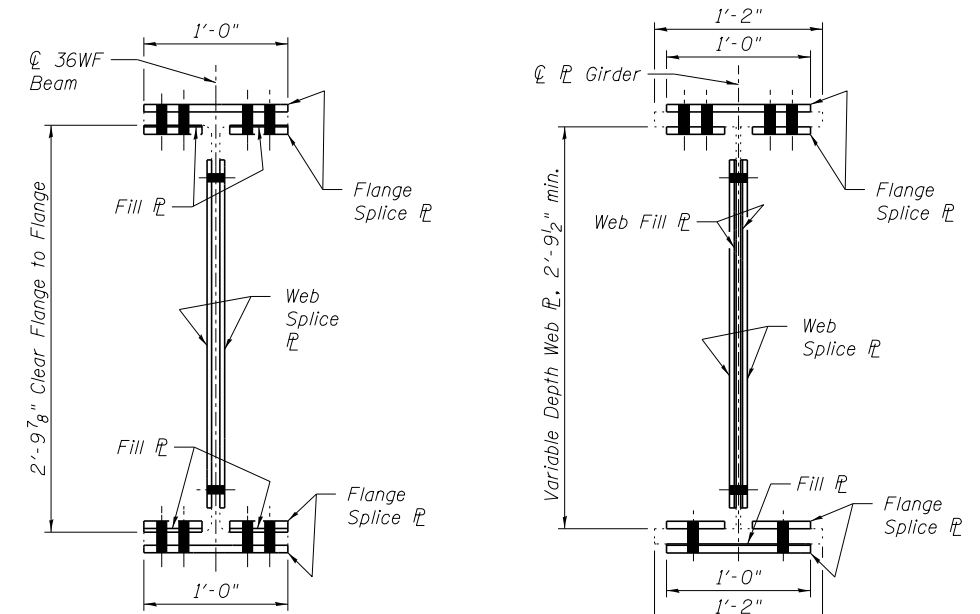
(4 Locations)

BOLT HOLE LEGEND

- New bolt hole to be field drilled.
- Existing bolt hole to be reamed and reused.
- ⊙ Existing hole to be plugged with 3/4" phi high strength bolt.
- ⊘ Existing hole to remain.



WEB SPLICE PLATE DETAIL



SECTION A-A

SECTION B-B

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Furnishing and Erecting Structural Steel	Pound	5,030

NOTES:

1. All Splice Plates shall be AASHTO M270 Grade 50 steel.
2. All Splice Bolts shall be 7/8" phi High Strength ASTM A325 Type 1, mechanically galvanized with 15/16" phi holes.
3. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
4. Cost of field drilling included in Furnishing and Erecting Structural Steel.
5. All diaphragm bolts shall be ASTM A325 Type 1, mechanically galvanized 3/4" phi bolts with 15/16" phi holes. Two hardened washers required for each set of oversized holes.
6. The Contractor is responsible for verifying all dimensions of the existing bolt hole configuration before fabrication of the Splice Plates.
7. For details of existing pin and link connection removal, see Sheet SF11.
8. For partial framing plan and moment and reaction tables, see Sheet SF10.
9. For Girders 1 and 3, after removal of existing web repair PL's, the area around the existing cracks and arrester holes shall be inspected using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any additional cracking shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of inspecting and testing the existing webs shall be included with the cost of Furnishing and Erecting Structural Steel.
10. Additional 1/4" fill PL's shall be provided at both sides of each top flange splice to occupy space between the outer & inner flange splice PL's and the chamfered ends of the existing girder & 36WF. Dimensions of these fill PL's shall be determined in the field and fabricated such that a 1/4" maximum horizontal clear distance be maintained between the fill PL and the existing flange edges. Each of these fill PL's shall be fastened to the top flange splice PL's with a single bolt as shown. Holes for these bolts may be field drilled.



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FILE NAME =	USER NAME = tjjenicke	DESIGNED - TJJ	REVISED -
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	PLOT DATE = 12/20/2013	CHECKED - AJK	REVISED -

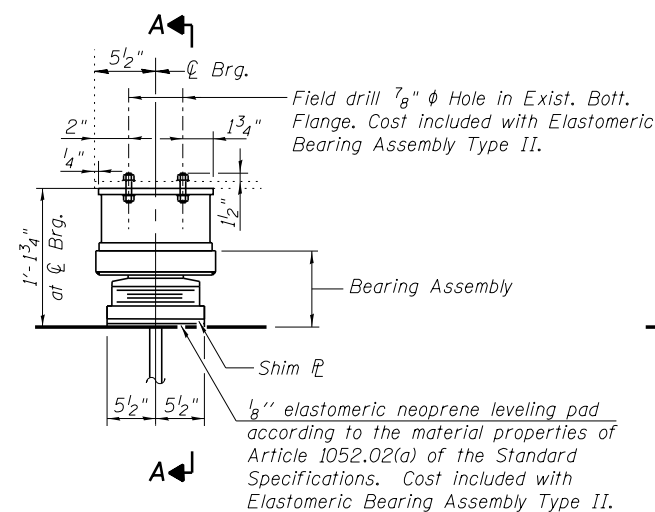
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FIELD BOLTED SPLICE & DIAPHRAGM DETAILS
STRUCTURE NO. 016-1026

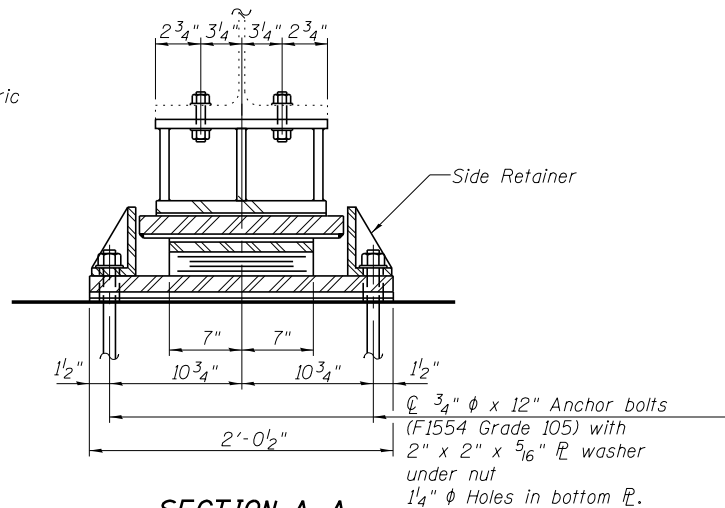
SHEET NO. SF12 OF SF17 SHEETS

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

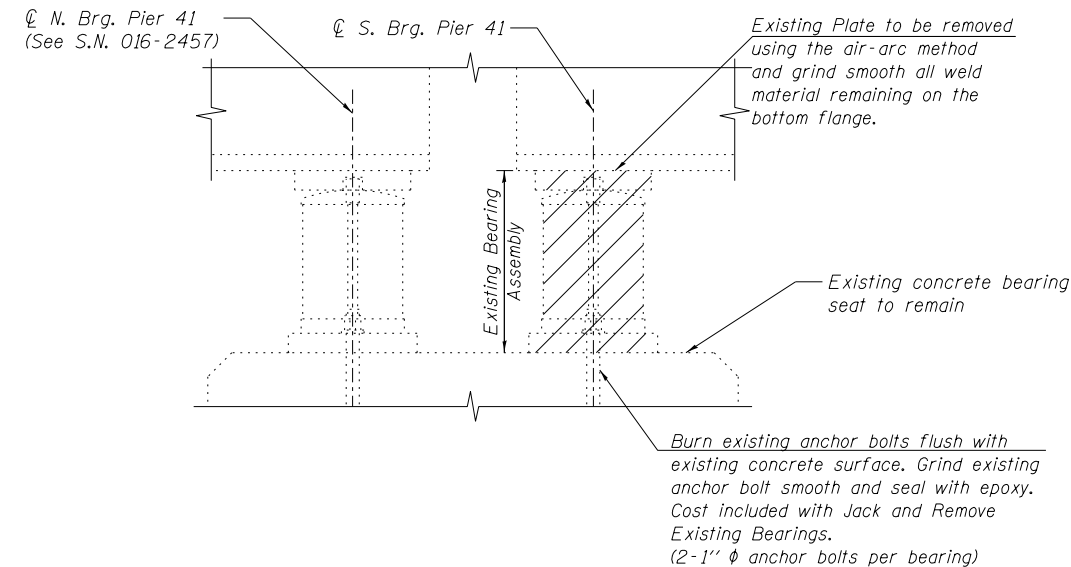
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ELEVATION AT PIER 41



SECTION A-A

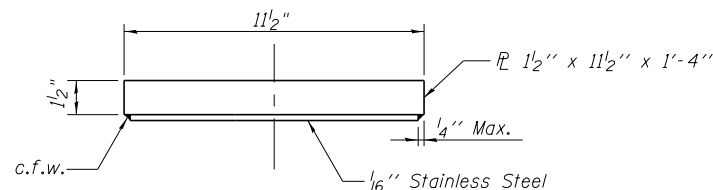


EXISTING BEARINGS REMOVAL DETAIL AT PIER 41

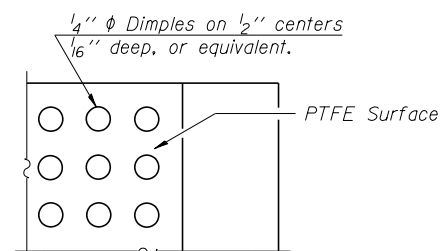
TYPE II ELASTOMERIC EXP. BRG.

(4 Required)

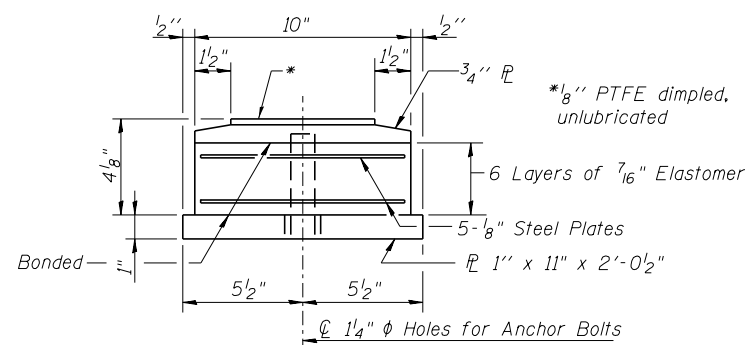
1. See special provision for "Jack and Remove Existing Bearings."
2. Jacking shall not commence until the deck has been removed entirely. The (steel only) dead load reaction is 6 kips for each south bearing at Pier 41. Minimum jack capacity = 4.5 tons.



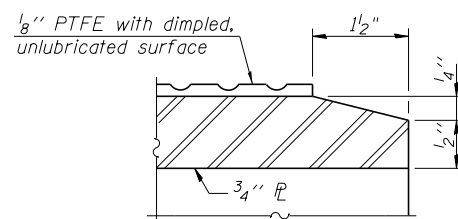
TOP BEARING PLATE



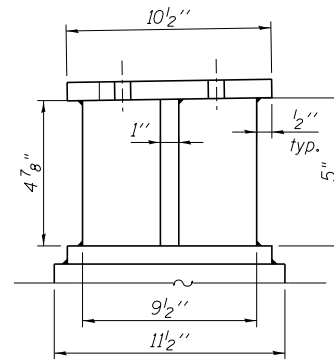
PLAN-PTFE SURFACE



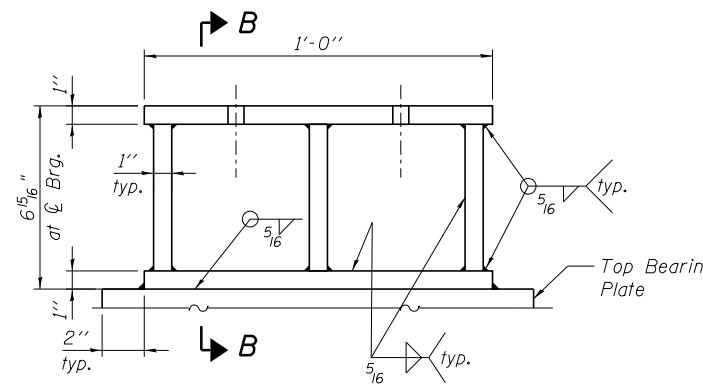
BOTTOM BEARING ASSEMBLY



SECTION THRU PTFE



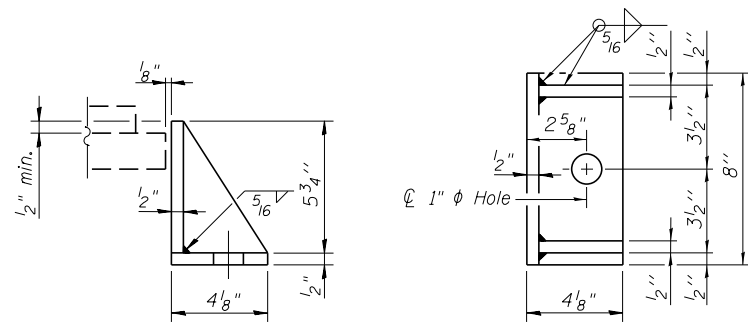
SECTION B-B



ELEVATION STEEL EXTENSION

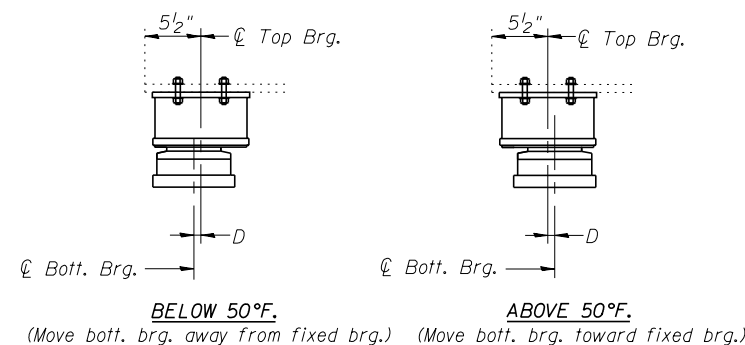
(Paid for as Furnishing and Erecting Structural Steel.)

Notes:
Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
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.
Anchor bolts for Type II bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.
The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.
Bonding of 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.
The structural steel plates of the bearing assemblies shall meet the requirements of AASHTO M270 Grade 50.
Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.



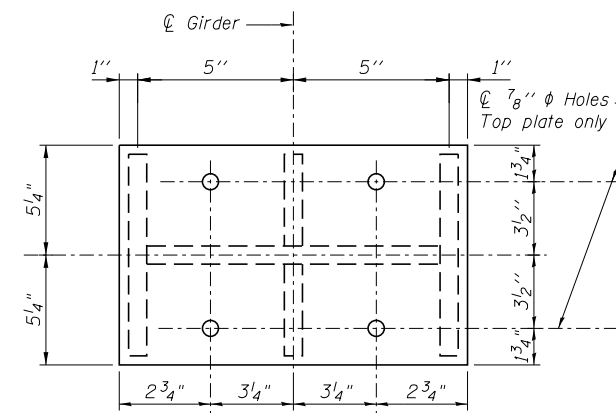
SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



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.



PLAN STEEL EXTENSION

Prior to ordering any material, Contractor shall verify in the field all bearing height and shim thickness dimensions.

BILL OF MATERIAL

Item	Unit	Total
Jack and Remove Existing Bearings	Each	4
Elastomeric Bearing Assembly Type II	Each	4
Anchor Bolts, 3/4"	Each	8
Furnishing and Erecting Structural Steel	Pound	510



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0161026.60J16.013.Bearing_Dt1s.dgn

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DESIGNED - TJJ
CHECKED - AAY/TPS
PLOT SCALE =
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REVISIONS -
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REVISIONS -

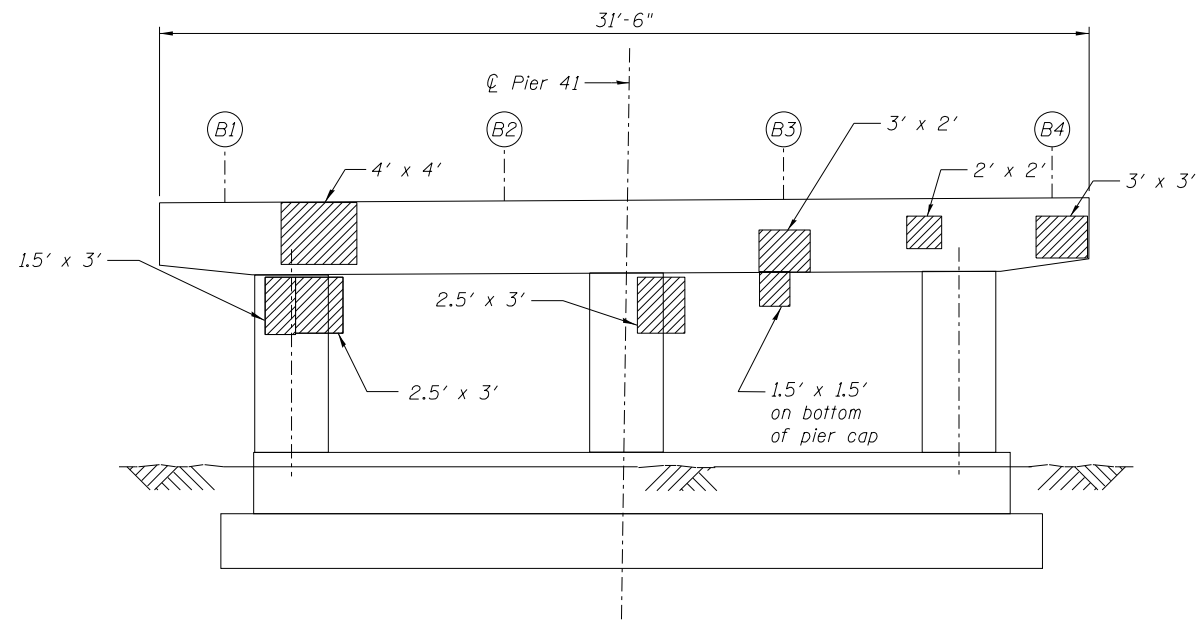
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS
STRUCTURE NO. 016-1026

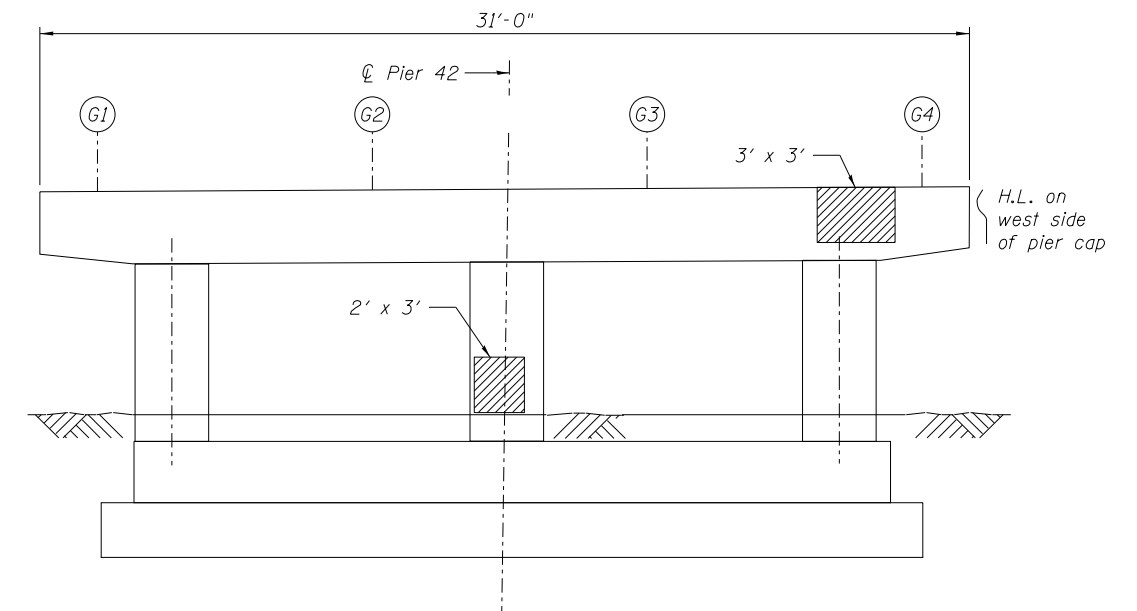
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F.A.P. R.T.E. SECTION COUNTY TOTAL SHEETS SHEET NO.
372 2013-038B-R COOK 821 556
CONTRACT NO. 60J16
ILLINOIS FED. AID PROJECT

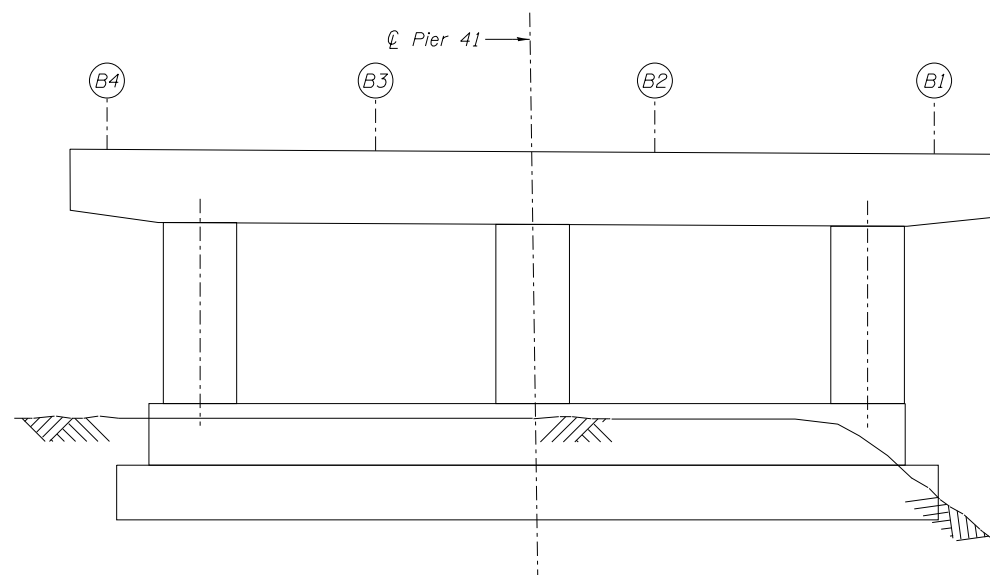
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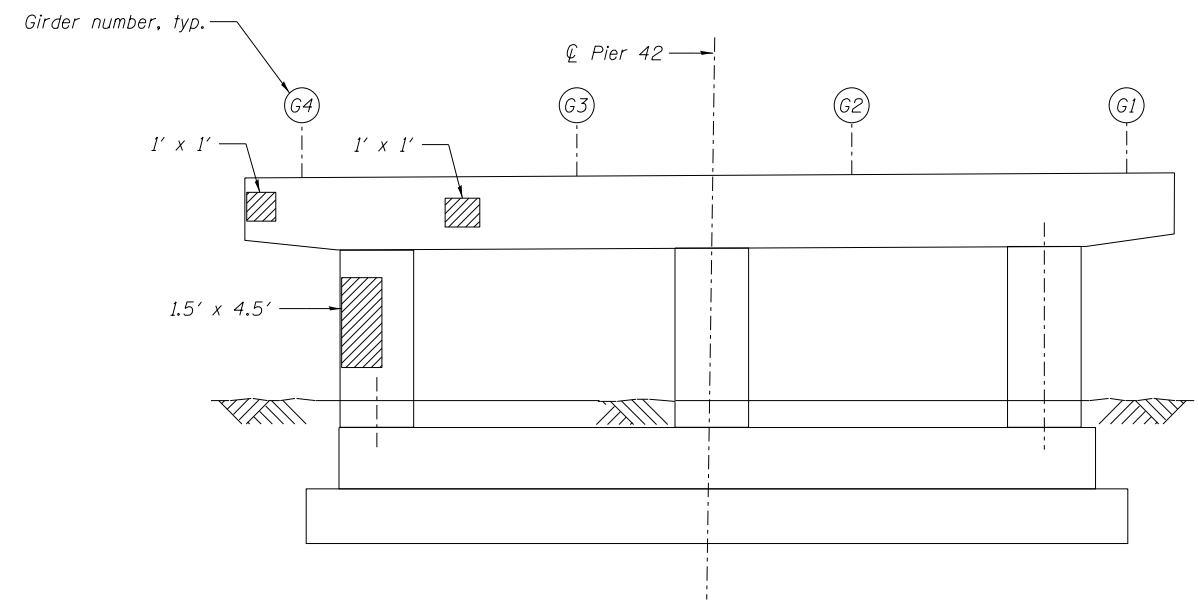
PIER 41
Looking East



PIER 42
Looking East



PIER 41
Looking West



PIER 42
Looking West

LEGEND

Structural Repair of Concrete
(Depth Equal to or Less Than 5 Inches)

Hairline Crack (not to be repaired)

NOTE:

Actual quantities of repairs shall be approved by the Engineer.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	81

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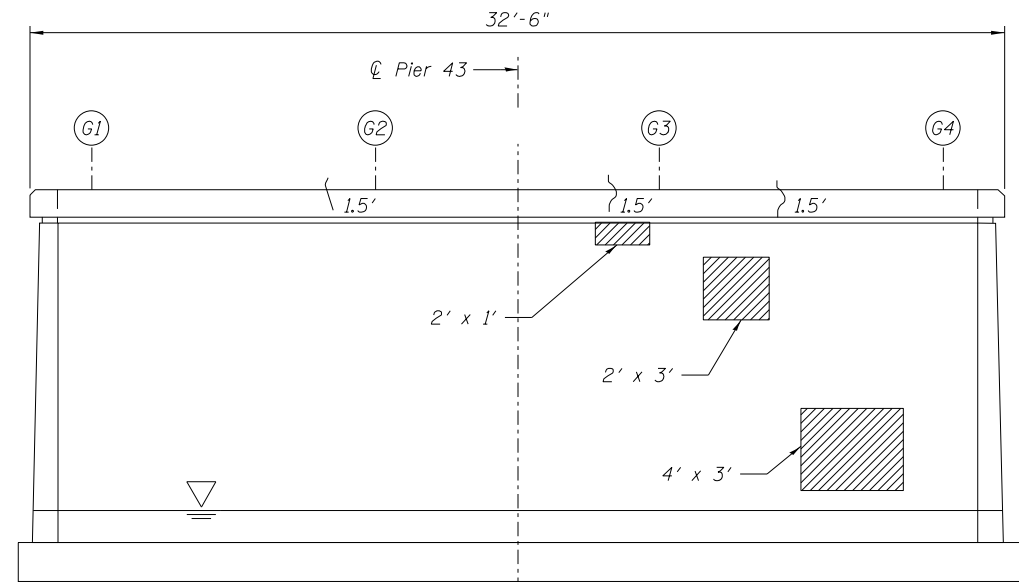
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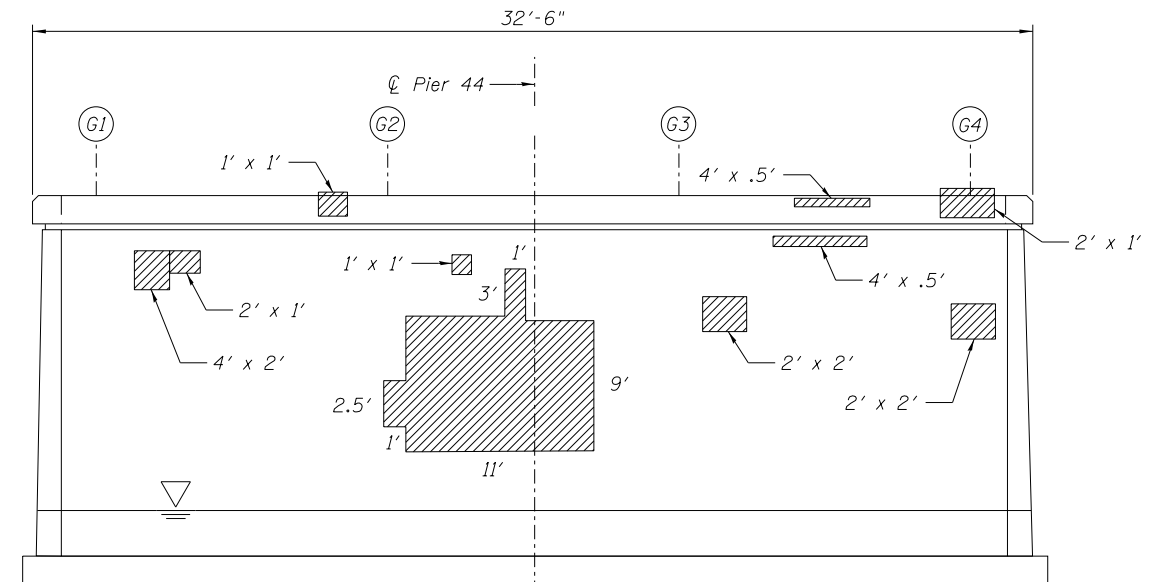
PIERS 41 AND 42 CONCRETE REPAIR DETAILS
STRUCTURE NO. 016-1026

SHEET NO. SF14 OF SF17 SHEETS

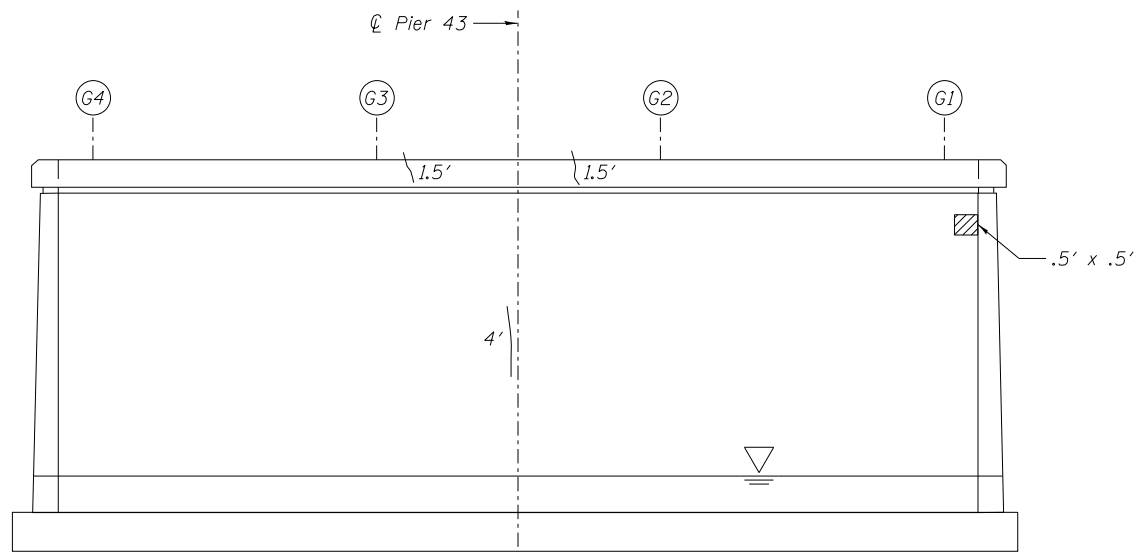
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CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				



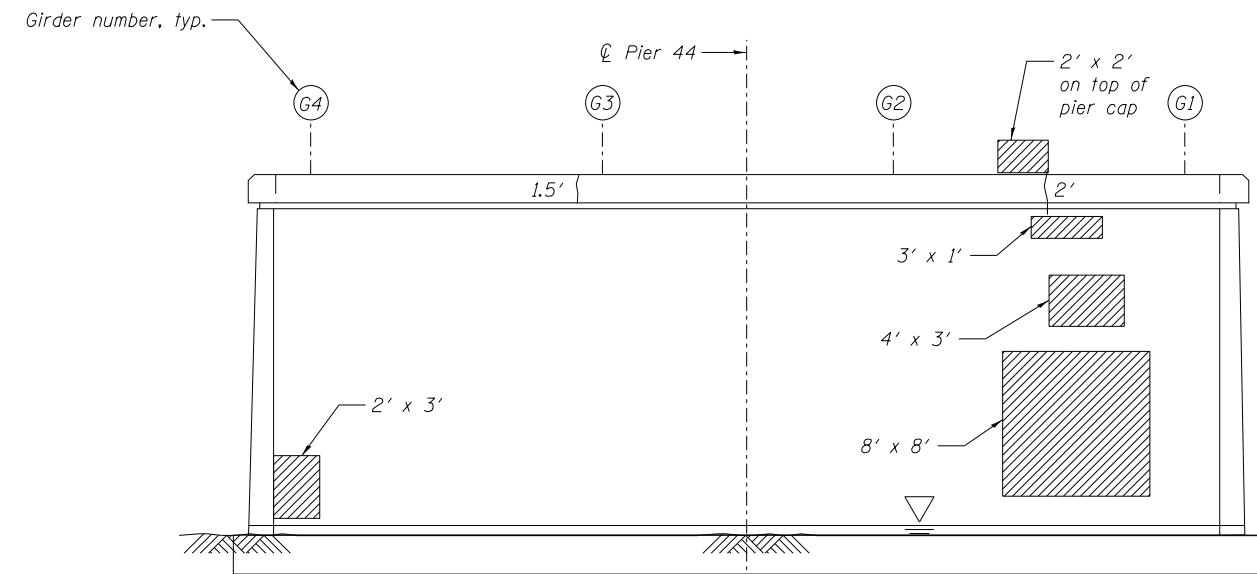
PIER 43
Looking East



PIER 44
Looking East



PIER 43
Looking West



PIER 44
Looking West

LEGEND

Structural Repair of Concrete
(Depth Equal to or Less Than 5 Inches)

Epoxy Crack Injection

NOTE:

Actual quantities of repairs shall be approved by the Engineer.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	240
Epoxy Crack Injection	Foot	15

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312-565-0450 Job No. 10093

FILE NAME =	USER NAME = tjenicke	DESIGNED - JLS	REVISED -
		CHECKED - AJK	REVISED -
		DRAWN - FSM	REVISED -
		CHECKED - AJK	REVISED -
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	PLOT DATE = 12/20/2013		

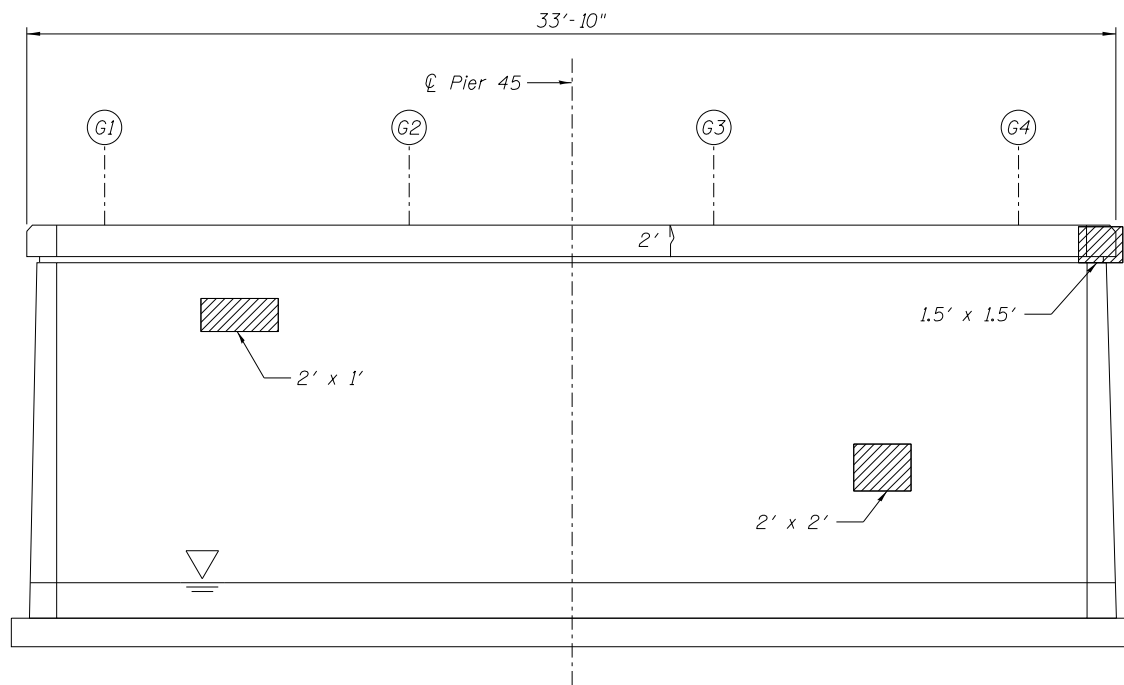
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIERS 43 AND 44 CONCRETE REPAIR DETAILS
STRUCTURE NO. 016-1026

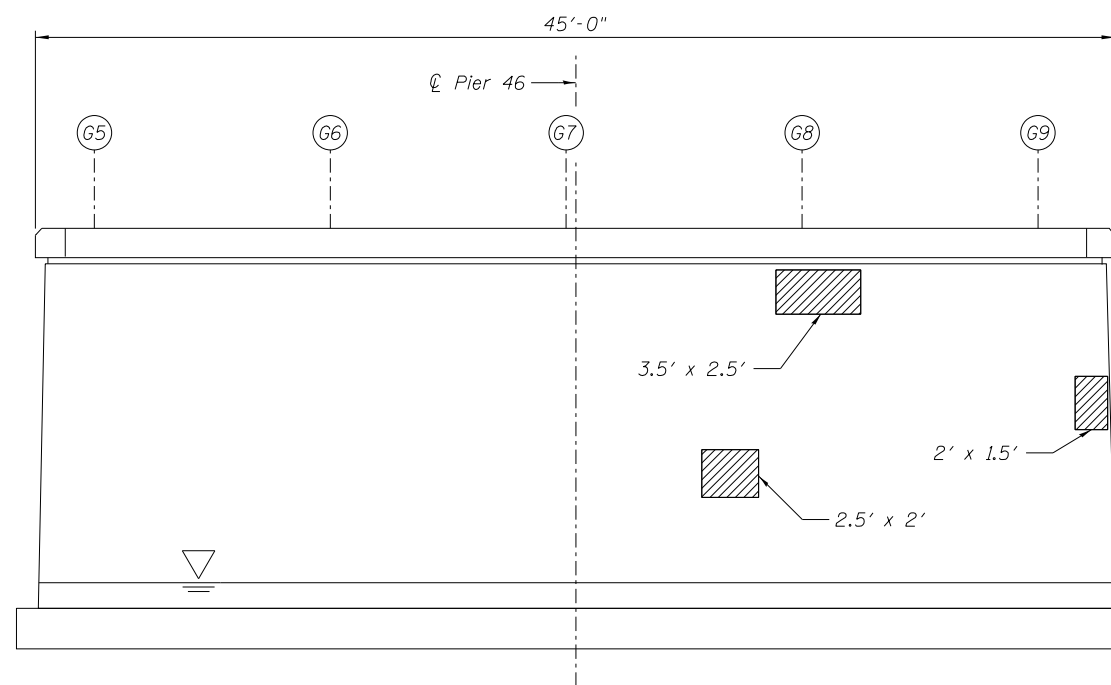
SHEET NO. SF15 OF SF17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	558
			CONTRACT NO. 60J16	
ILLINOIS FED. AID PROJECT				

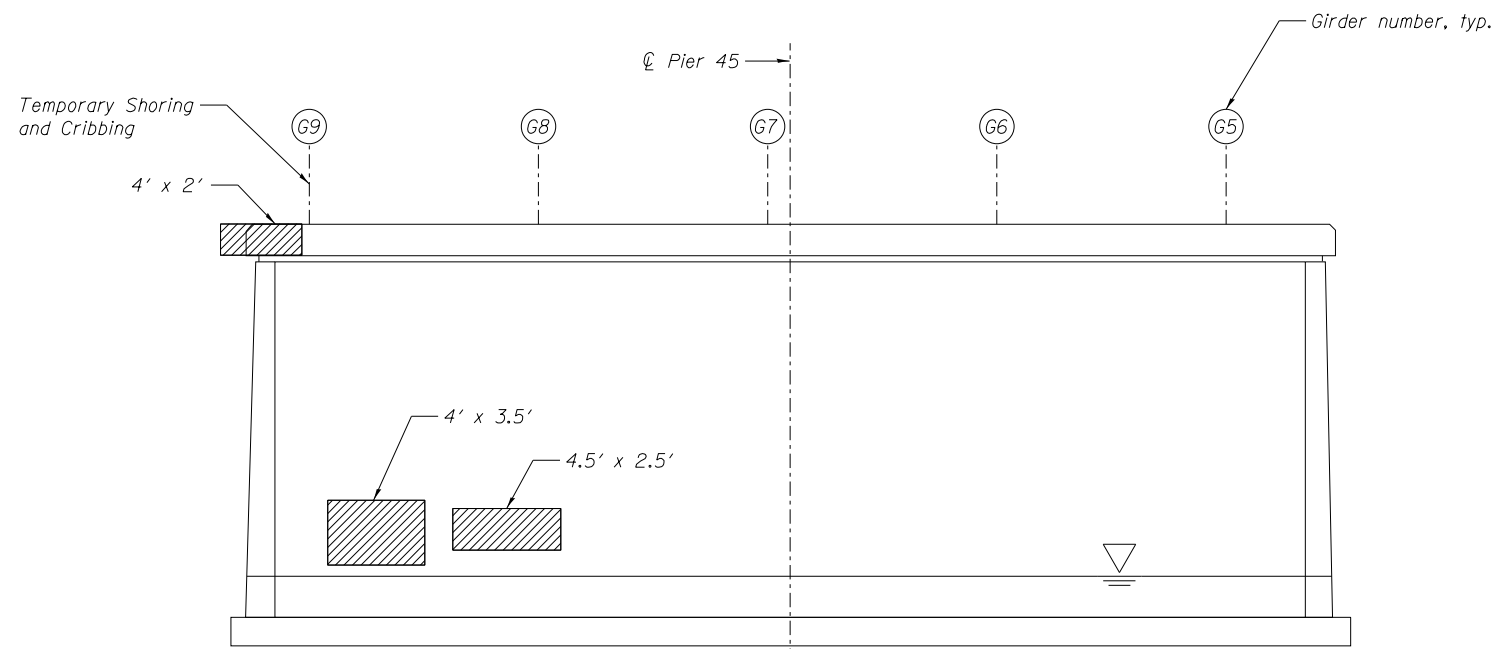
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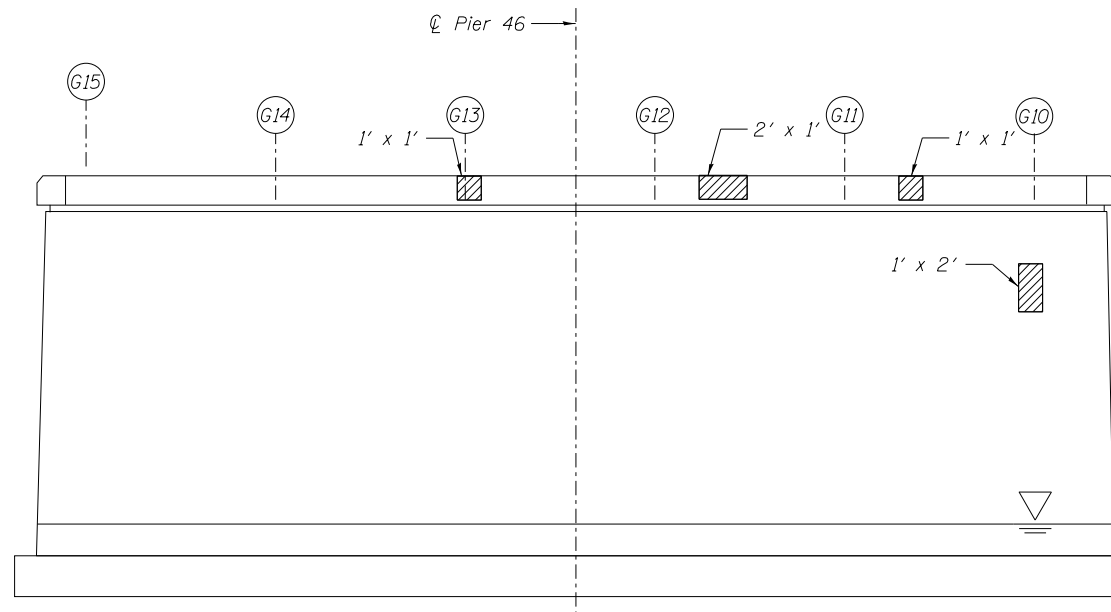
PIER 45
Looking East



PIER 46
Looking East



PIER 45
Looking West



PIER 46
Looking West

UNFACTORED BEAM REACTIONS (KIPS)

LOCATION	DEAD LOAD (steel and concrete)
G9	54.4

NOTES:

- Actual quantities of repairs shall be approved by the Engineer.
- If Temporary Shoring and Cribbing is required to perform a concrete repair, shoring and repair shall be done with no live load on the bridge.

LEGEND

Structural Repair of Concrete
(Depth Equal to or Less Than 5 Inches)

Epoxy Crack Injection

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	65
Epoxy Crack Injection	Foot	2
Temporary Shoring and Cribbing	Each	1

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		DRAWN - FSM	REVISED -
		CHECKED - AJK	REVISED -
0161026.60J16.016.pierrepair45.46.dgn	PLOT SCALE =		
	PLOT DATE = 12/20/2013		

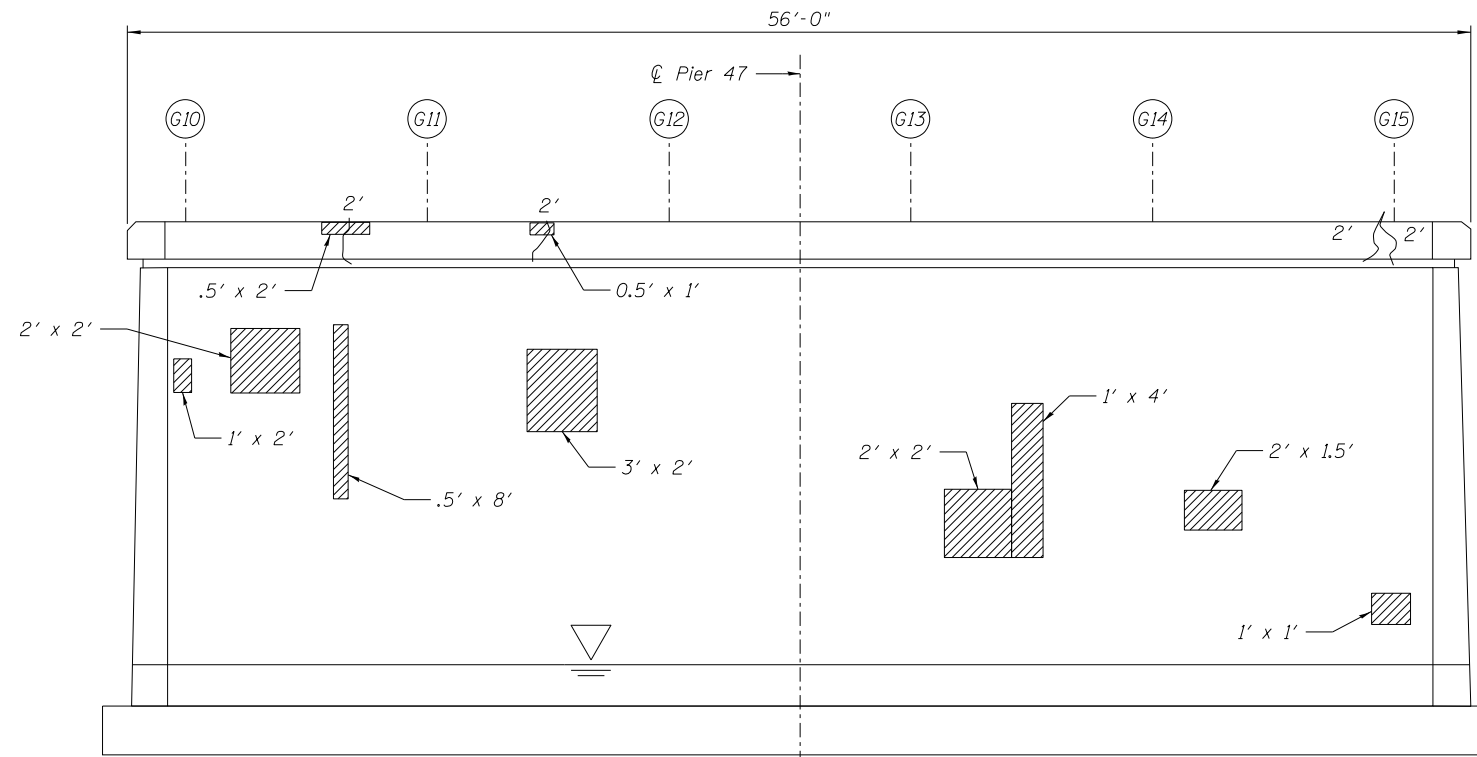
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIERS 45 AND 46 CONCRETE REPAIR DETAILS
STRUCTURE NO. 016-1026

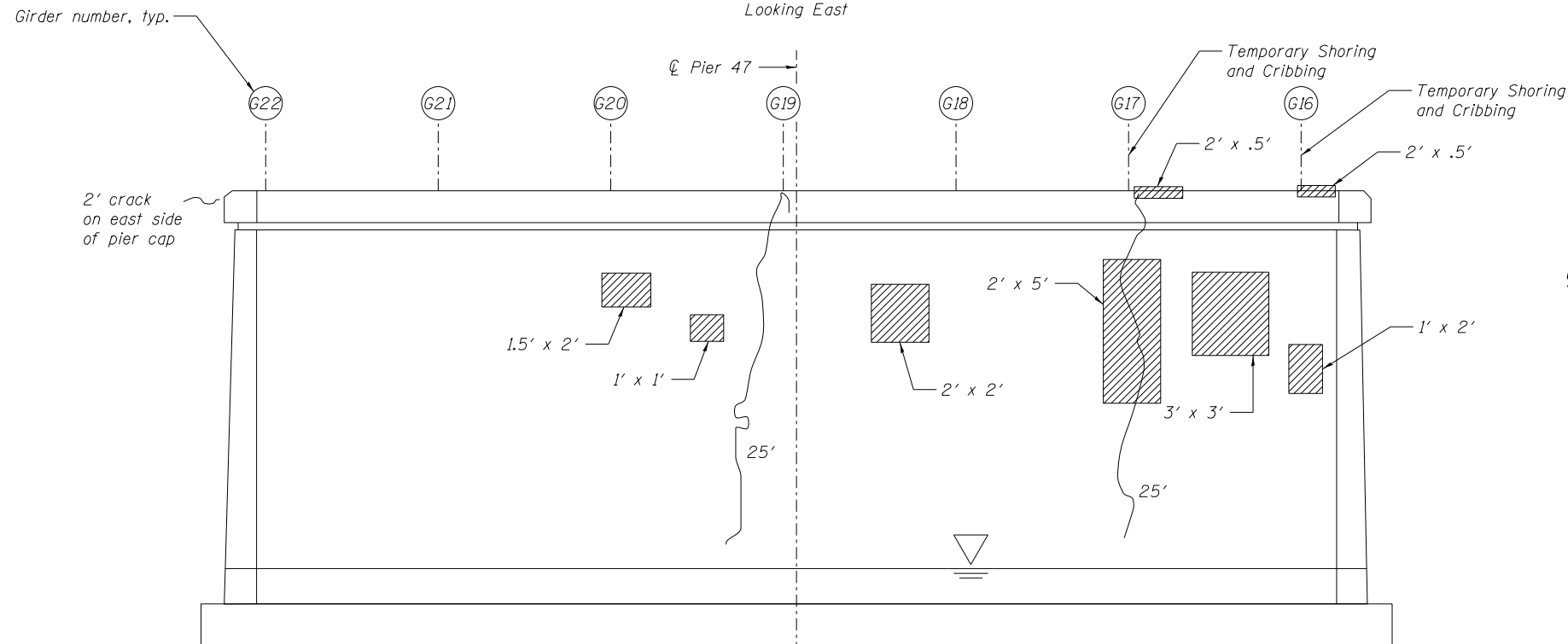
SHEET NO. SF16 OF SF17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	559
CONTRACT NO. 60J16			ILLINOIS FED. AID PROJECT	

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PIER 47
Looking East



PIER 47
Looking West

UNFACTORED BEAM REACTIONS (KIPS)

LOCATION	DEAD LOAD (steel and concrete)
G16 & G17	53.5

LEGEND

Structural Repair of Concrete
(Depth Equal to or Less Than 5 Inches)

5' Epoxy Crack Injection

NOTES:

- Actual quantities of repairs shall be approved by the Engineer.
- If Temporary Shoring and Cribbing is required to perform a concrete repair, shoring and repair shall be done with no live load on the bridge.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	61
Epoxy Crack Injection	Foot	60
Temporary Shoring and Cribbing	Each	2

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		CHECKED - AJK	REVISED -
0161026.60J16_017_pierrepair47.dgn		DRAWN - FSM	REVISED -
		CHECKED - AJK	REVISED -
	PLOT SCALE =		
	PLOT DATE = 12/20/2013		

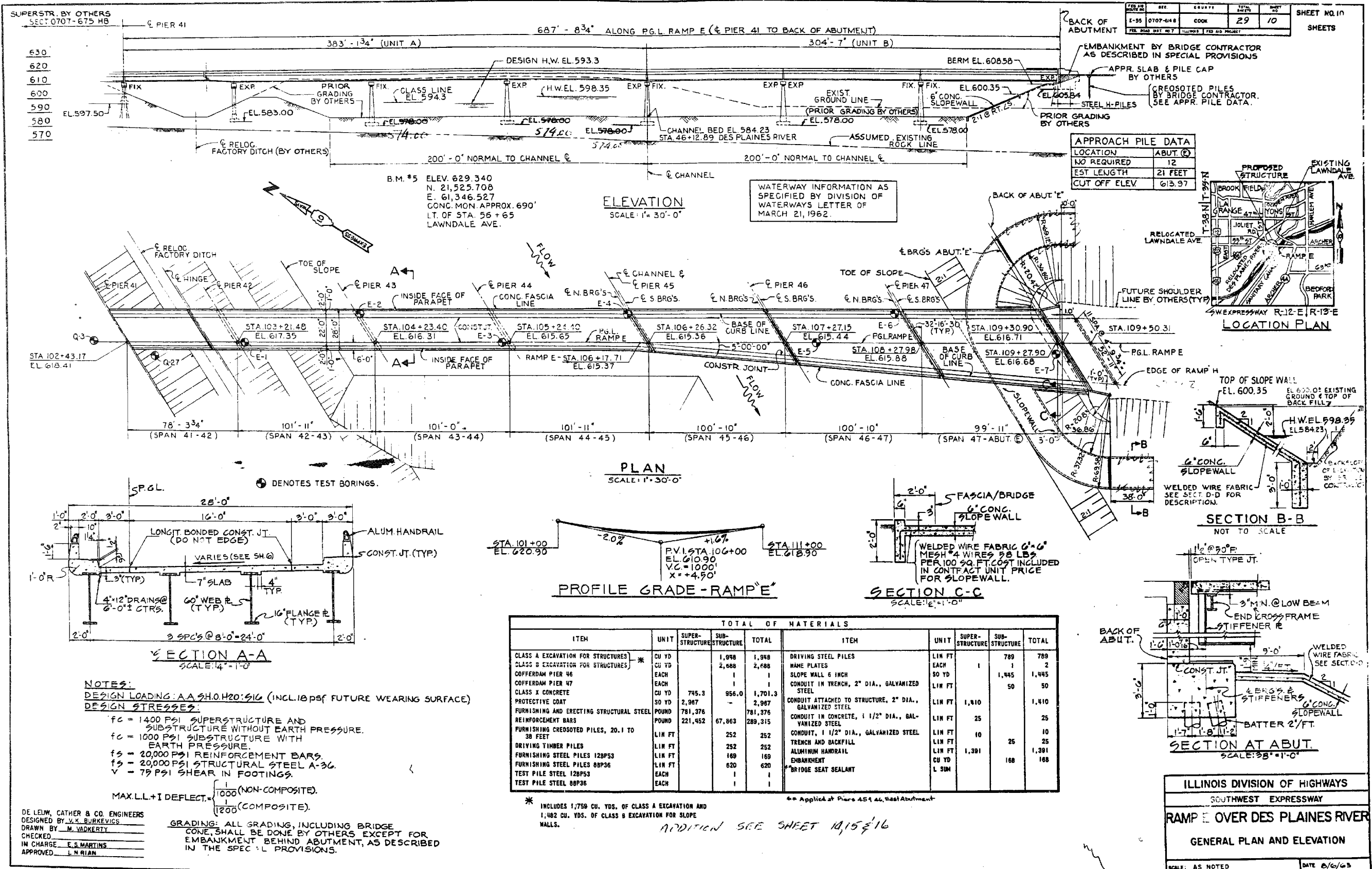
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 47 CONCRETE REPAIR DETAILS
STRUCTURE NO. 016-1026

SHEET NO. SF17 OF SF17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	560
			CONTRACT NO. 60J16	
ILLINOIS FED. AID PROJECT				

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NOTES:
 DESIGN LOADING: A.A. SH.O.H20:51G (INCL. 18 PSF FUTURE WEARING SURFACE)
 DESIGN STRESSES:
 $f_c = 1400$ PSI SUPERSTRUCTURE AND SUBSTRUCTURE WITHOUT EARTH PRESSURE.
 $f_c = 1000$ PSI SUBSTRUCTURE WITH EARTH PRESSURE.
 $f_s = 20,000$ PSI REINFORCEMENT BARS.
 $f_s = 20,000$ PSI STRUCTURAL STEEL A-36.
 $v = 79$ PSI SHEAR IN FOOTINGS.
 MAX. LL+I DEFLECT. = $\frac{1000}{1200}$ (NON-COMPOSITE).
 $\frac{1000}{1200}$ (COMPOSITE).
 GRADING: ALL GRADING, INCLUDING BRIDGE CONE, SHALL BE DONE BY OTHERS EXCEPT FOR EMBANKMENT BEHIND ABUTMENT, AS DESCRIBED IN THE SPECIAL PROVISIONS.

TOTAL OF MATERIALS				TOTAL OF MATERIALS					
ITEM	UNIT	SUPER-STRUCTURE	SUB-STRUCTURE	TOTAL	ITEM	UNIT	SUPER-STRUCTURE	SUB-STRUCTURE	TOTAL
CLASS A EXCAVATION FOR STRUCTURES	CU YD		1,998	1,998	DRIVING STEEL PILES	LIN FT		789	789
CLASS B EXCAVATION FOR STRUCTURES	CU YD		2,488	2,488	NAME PLATES	EACH	1	1	2
COFFERDAM PIER 46	EACH		1	1	SLOPE WALL 6 INCH	SO YD		1,445	1,445
COFFERDAM PIER 47	EACH		1	1	CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL	LIN FT		50	50
CLASS X CONCRETE	CU YD	795.3	956.0	1,751.3	CONDUIT ATTACHED TO STRUCTURE, 2" DIA., GALVANIZED STEEL	LIN FT	1,410		1,410
PROTECTIVE COAT	SO YD	2,987		2,987	CONDUIT IN CONCRETE, 1 1/2" DIA., GALVANIZED STEEL	LIN FT	25		25
FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	781,376		781,376	CONDUIT, 1 1/2" DIA., GALVANIZED STEEL	LIN FT	10		10
REINFORCEMENT BARS	POUND	221,452	67,863	289,315	TRENCH AND BACKFILL	LIN FT		25	25
FURNISHING CREOSOTED PILES, 20.1 TO 30 FEET	LIN FT		252	252	ALUMINUM HANDRAIL	LIN FT	1,391		1,391
DRIVING TIMBER PILES	LIN FT		252	252	EMBANKMENT	CU YD		168	168
FURNISHING STEEL PILES 128P53	LIN FT		169	169	BRIDGE SEAT SEALANT	L SUM			
FURNISHING STEEL PILES 88P36	LIN FT		620	620					
TEST PILE STEEL 128P53	EACH		1	1					
TEST PILE STEEL 88P36	EACH		1	1					

* INCLUDES 1,759 CU. YDS. OF CLASS A EXCAVATION AND 1,482 CU. YDS. OF CLASS B EXCAVATION FOR SLOPE WALLS.
 ** Applied at Piers 45 & 46, East Abutment.
 ADDITION SEE SHEET 10,15 & 16

ILLINOIS DIVISION OF HIGHWAYS
 SOUTHWEST EXPRESSWAY
 RAMP E OVER DES PLAINES RIVER
 GENERAL PLAN AND ELEVATION
 SCALE: AS NOTED DATE: 8/6/63

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0161026.60J16.X01.existplan1.dgn		CHECKED - RMM	REVISED -
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		CHECKED - RMM	REVISED -

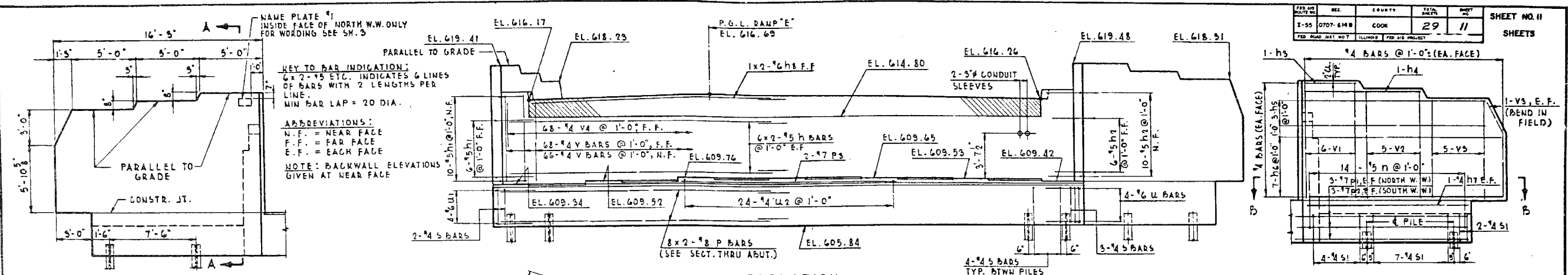
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING PLANS - PLAN AND ELEVATION
 STRUCTURE NO. 016-1026
 SHEET NO. SFX1 OF SFX30 SHEETS

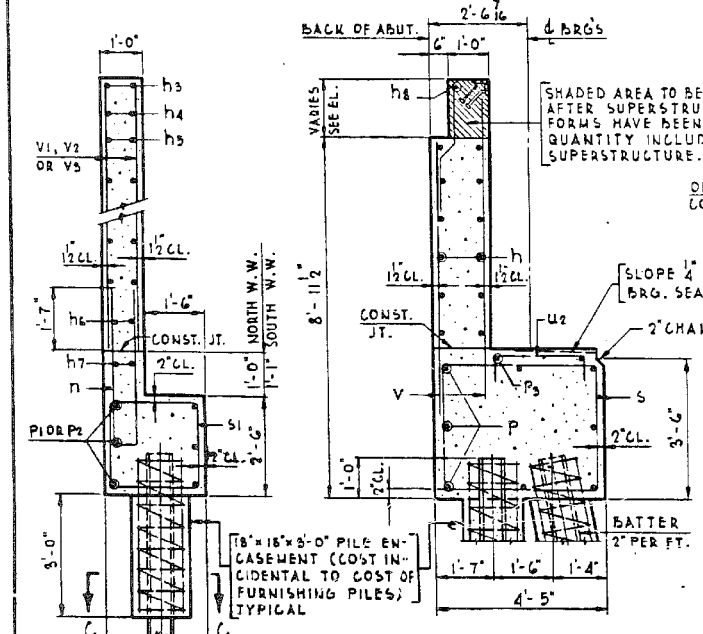
FOR INFORMATION ONLY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	561
CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				

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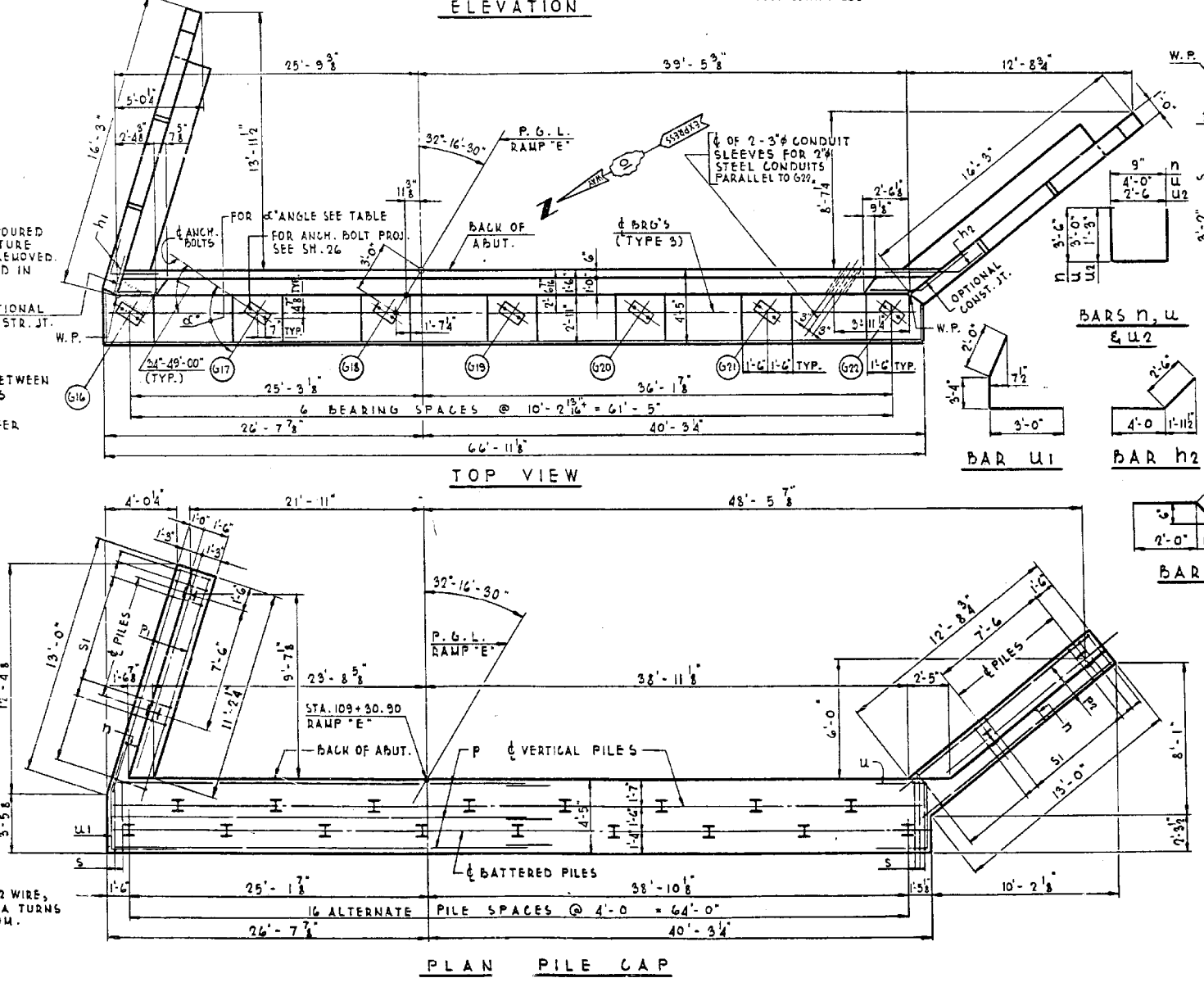
GIRDER	ANGLE α°	GIRDER	ANGLE α°
G16	92°-52'-30"	G20	89°-08'-28"
G17	91°-55'-57"	G21	88°-19'-59"
G18	90°-48'-27"	G22	87°-32'-30"
G19	89°-57'-57"		



PILE DATA	
PILE TYPE	8 BP 36
MIN. CAPACITY TONS	28
NO. REQUIRED	21*
EST. LENGTH FEET	31

* INCLUDING TEST PILE.

DE LEM, CATHY & CO. ENGINEERS
 DESIGNED BY A MILUNAS
 DRAWN BY F BOBINAS
 CHECKED IN CHARGE E S MARTINS
 APPROVED L N RIAN



BAR LIST			
BAR NO.	SIZE	LENGTH	SHAPE
n	24	5	35'-6"
h1	16	5	5'-0"
h2	16	5	6'-6"
h3	4	4	4'-6"
h4	4	4	9'-6"
h5	12	4	14'-6"
h6	28	4	15'-9"
h7	4	4	12'-9"
h8	2	6	30'-9"
n	28	5	7'-5"
p	16	8	34'-5"
p1	6	7	12'-9"
p2	6	7	14'-5"
p3	2	7	25'-5"
s	6	4	15'-5"
s1	26	4	9'-5"
u	4	6	10'-0"
u1	4	6	8'-4"
u2	24	4	5'-0"
v	134	4	7'-6"
v1	24	4	9'-10"
v2	20	4	9'-2"
v3	24	4	8'-6"
v4	68	4	4'-5"

BILL OF MATERIAL		
ITEM	UNIT	QUANTITY
CLASS X CONCRETE	CU YD	78.8
REINFORCEMENT BARS	POUND	6,077
FURNISHING STEEL PILES 8BP36	LIN FT	620
TEST PILE STEEL 8BP36	EACH	1
DRIVING STEEL PILES	LIN FT	440
PROTECTIVE COAT	50 YD	12
CLASS A EXCAVATION FOR STRUCTURES	CU YD	116
NAME PLATE	EACH	1

ILLINOIS DIVISION OF HIGHWAYS
 SOUTHWEST EXPRESSWAY
RAMP E OVER DES PLAINES RIVER
 ABUTMENT "E" DETAILS

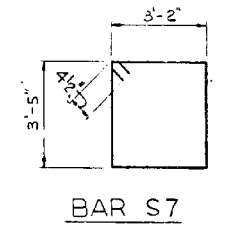
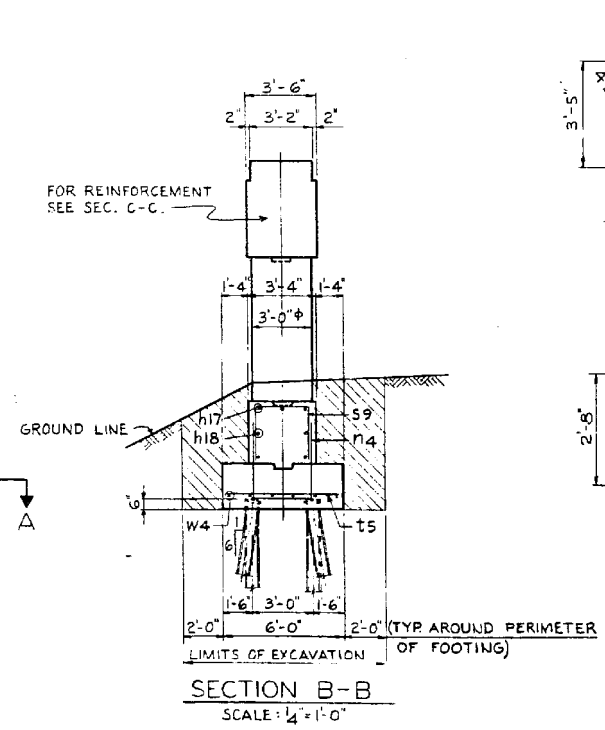
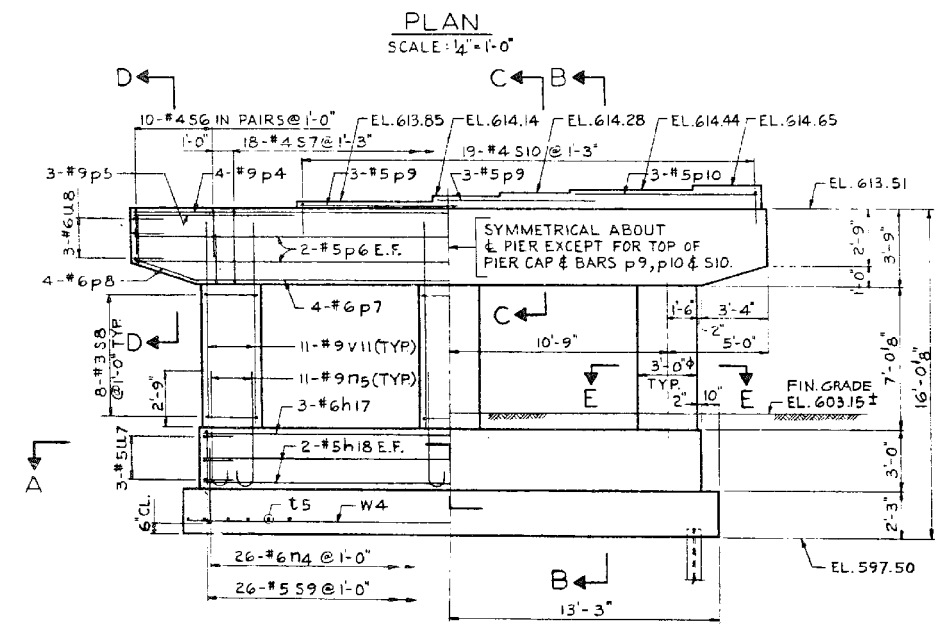
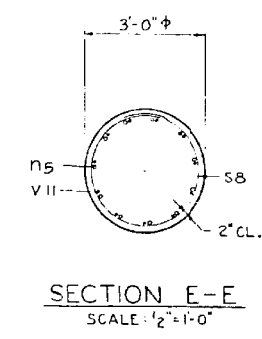
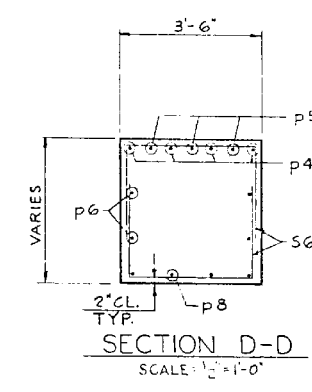
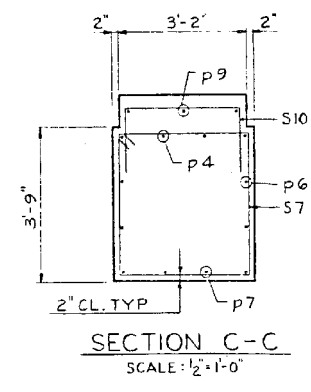
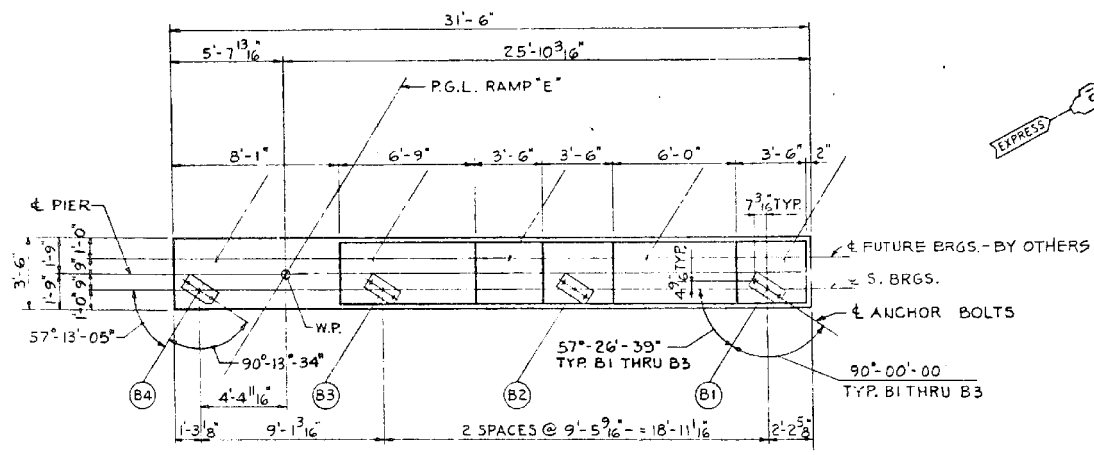
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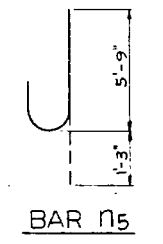
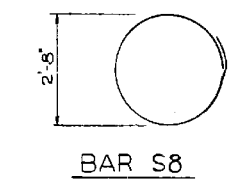
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	562
CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				

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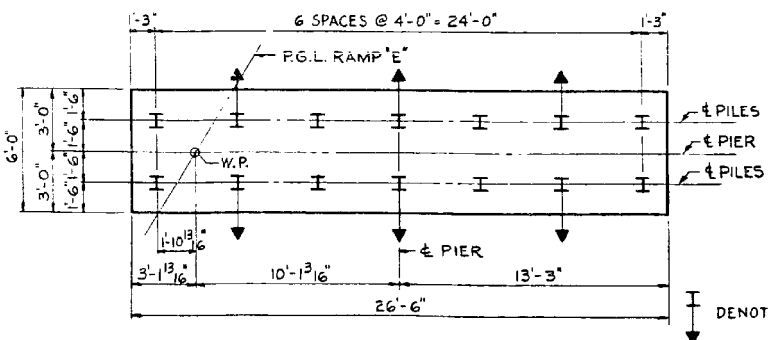
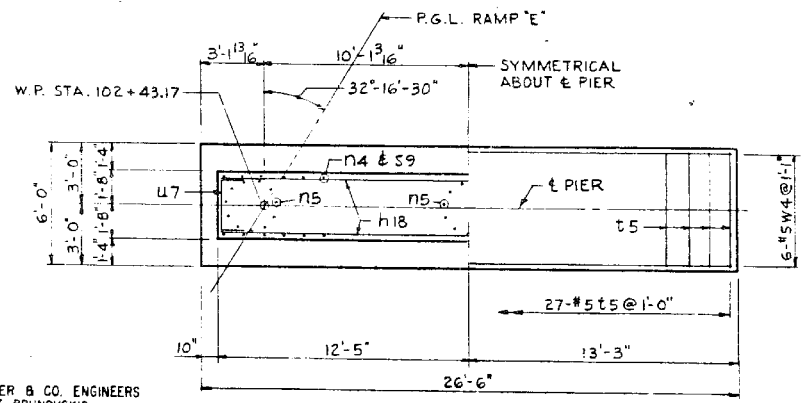
BAR	A	B
n4	3'-3"	3'-0"
s6	2'-3"	3'-2"
s9	2'-10"	3'-0"
s10	1'-6"	2'-10"
u7	1'-6"	2'-11"
u8	1'-6"	3'-1"

BAR n4, s6, s9, s10, u7 & u8



BAR LIST				
BAR NO.	SIZE	LENGTH	SHAPE	
h17	3/4"	24'-6"	—	
h18	4"	24'-6"	—	
n4	26"	9'-6"	□	
n5	33"	7'-0"	J	
p4	4"	31'-0"	—	
p5	6"	8'-0"	—	
p6	4"	31'-0"	—	
p7	4"	24'-6"	—	
p8	8"	3'-6"	—	
p9	6"	8'-0"	—	
p10	3"	9'-3"	—	
s6	20"	7'-8"	□	
s7	18"	13'-11"	□	
s8	24"	9'-6"	○	
s9	26"	8'-8"	□	
s10	19"	5'-10"	□	
t5	27"	5'-6"	—	
u7	6"	5'-11"	□	
u8	6"	6'-1"	□	
v11	33"	10'-0"	—	
w4	6"	26'-0"	—	

NOTES: ALL BAR DIMENSIONS ARE OUT TO OUT. PREFIX ALL BAR MARKS FOR SHIPMENT WITH A NUMBER INDICATING THE PIER WHERE THE BARS WILL BE USED. EXAMPLE: 41 h17 MEANS BARS h17 FOR PIER 41. FOR ANCHOR BOLT PROJECTION SEE SH. 26. POUR STEPS MONOLITHICALLY WITH PIER CAP. SPACE REINFORCEMENT IN GAPS TO MISS ANCHOR BOLTS.



PILE DATA	
PILE TYPE	12BP53**
MIN. CAPACITY TONS	30
NO. REQUIRED	14*
EST. LENGTH FEET	13
CUT OFF ELEV.	598.00

* INCLUDES 1 TEST PILE.
** SEE SPECIAL PROVISIONS FOR COPPER CONTENT.

BILL OF MATERIAL		
ITEM	UNIT	QUANTITY
CLASS A EXCAVATION FOR STRUCTURE	CU YD	62
CLASS X CONCRETE	CU YD	44.8
REINFORCEMENT BARS	POUND	4547
FURNISHING STEEL PILES 12BP53	LIN FT	109
TEST PILE STEEL 12BP53	EACH	1
DRIVING STEEL PILES	LIN FT	169

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
RAMP E OVER DES PLAINES RIVER
PIER 41
SCALE: AS NOTED DATE: 8-21-63

DE LEUW, CATHY & CO. ENGINEERS
DESIGNED BY T. BRUNOVSKIS
DRAWN BY R. MILLER
CHECKED BY S. MARTINS
IN CHARGE
APPROVED L.N. RIAN

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Alfred Benesch & Company
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Chicago, Illinois 60601
312-565-0450 Job No. 10093

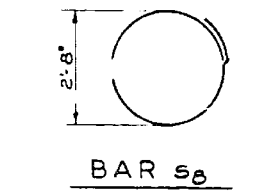
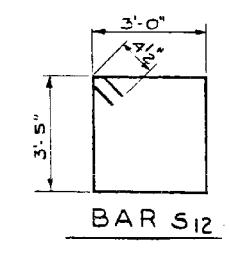
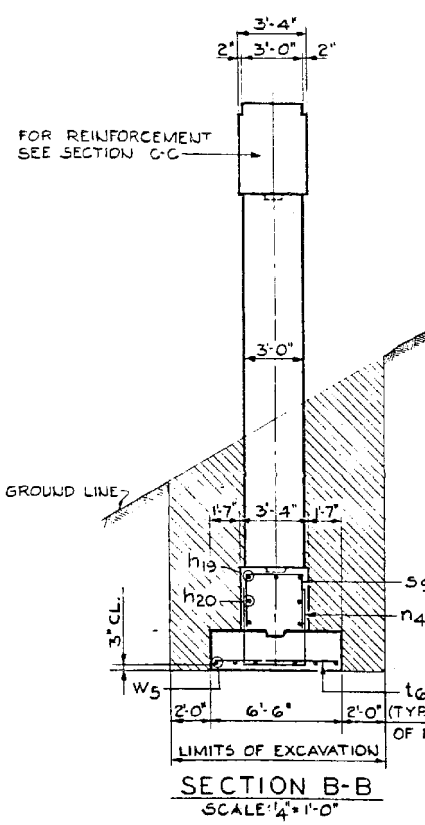
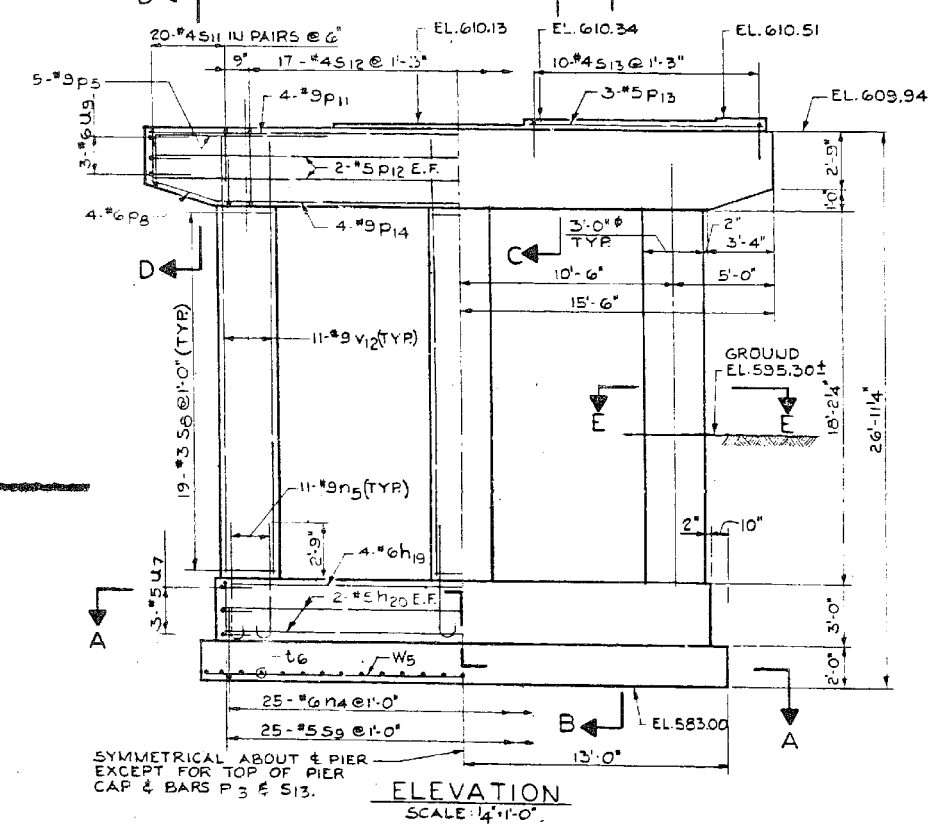
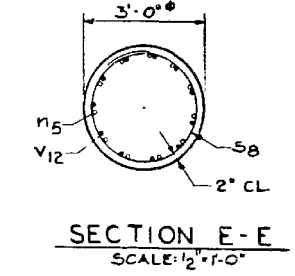
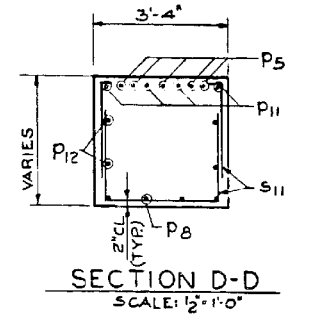
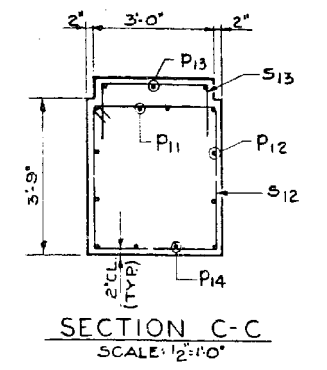
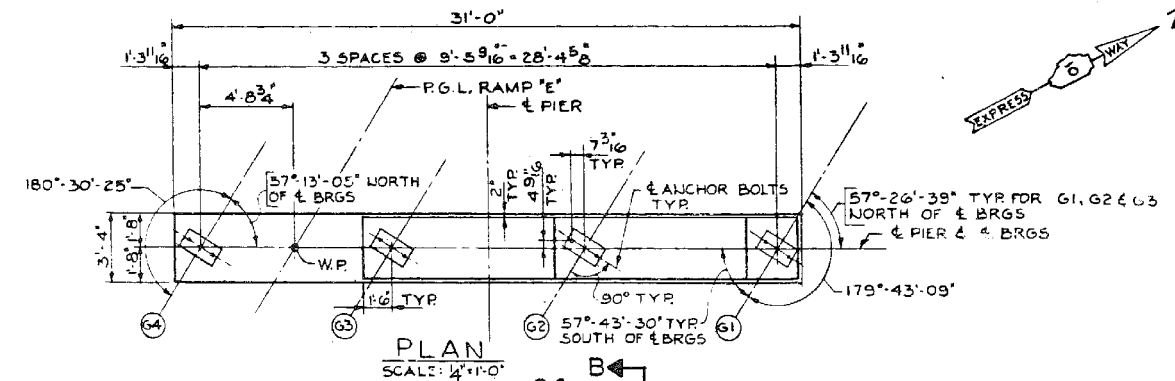
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	PLOT DATE = 12/20/2013	CHECKED - RMM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

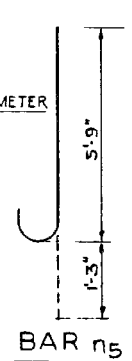
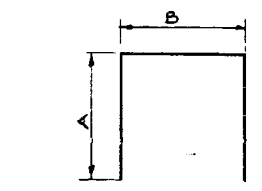
EXISTING PLANS - PIER 41
STRUCTURE NO. 016-1026
SHEET NO. SFX3 OF SFX30 SHEETS

FOR INFORMATION ONLY				
F.A.P. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	563
				CONTRACT NO. 60J16
ILLINOIS FED. AID PROJECT				

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BAR	A	B
n4	3'-3"	3'-0"
s9	2'-10"	3'-0"
s11	2'-3"	3'-0"
s13	1'-6"	2'-8"
u7	1'-6"	2'-11"
u9	1'-6"	2'-11"



BAR LIST				
BAR	NO	SIZE	LENGTH	SHAPE
h19	4	6	24'-0"	—
h20	4	5	24'-0"	—
n4	25	6	9'-6"	□
n5	33	9	7'-0"	J
p5	10	9	8'-0"	—
p8	8	6	3'-6"	—
p11	4	9	30'-6"	—
p12	4	5	30'-6"	—
p13	3	5	11'-6"	—
p14	4	9	24'-0"	—
s8	57	3	9'-6"	○
s9	25	5	8'-8"	□
s11	40	4	7'-6"	□
s12	17	4	13'-7"	□
s13	10	4	5'-8"	□
t6	27	6	6'-0"	—
u7	6	5	5'-11"	□
u9	6	6	5'-11"	□
v12	33	9	21'-3"	—
w5	7	6	25'-6"	—

NOTES:
 ALL BAR DIMENSIONS ARE OUT TO OUT.
 PREFIX ALL BAR MARKS FOR SHIPMENT WITH A NUMBER INDICATING THE PIER WHERE THE BARS WILL BE USED. EXAMPLE 42 h19 MEANS BARS h19 FOR PIER 42.
 FOR ANCHOR BOLT PROJECTION SEE SH. 26
 SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS
 POUR STEPS MONOLITHICALLY WITH PIER CAP.

BILL OF MATERIAL		
ITEM	UNIT	QUANTITY
CLASS A EXCAVATION FOR STRUCTURES	CU YD	142
CLASS X CONCRETE	CU YD	505
REINFORCEMENT BARS	POUND	6413
CLASS B EXCAVATION FOR STRUCTURES	CU YD	132

ILLINOIS DIVISION OF HIGHWAYS

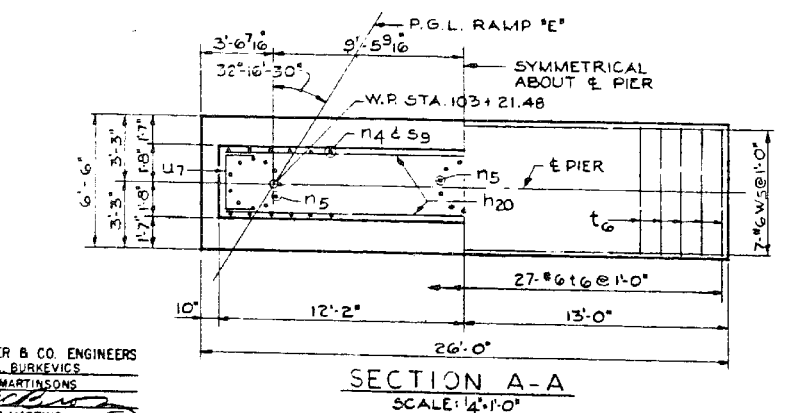
SOUTHWEST EXPRESSWAY

RAMP E OVER DES PLAINES RIVER

PIER 42

SCALE: AS NOTED DATE: 8-21-63

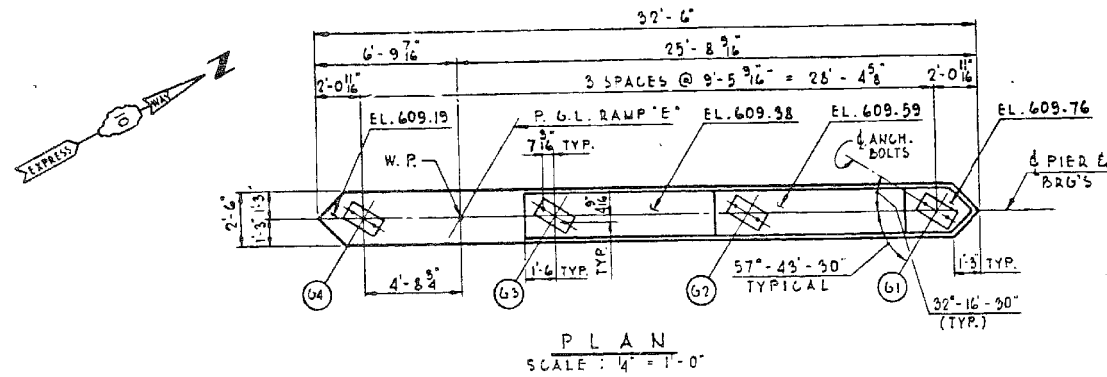
DE LEUR, CATHY & CO. ENGINEERS
 DESIGNED BY V.A. BURKEVICS
 DRAWN BY O. MARTINSONS
 CHECKED BY S. MARTINS
 IN CHARGE
 APPROVED L.N. RIAN



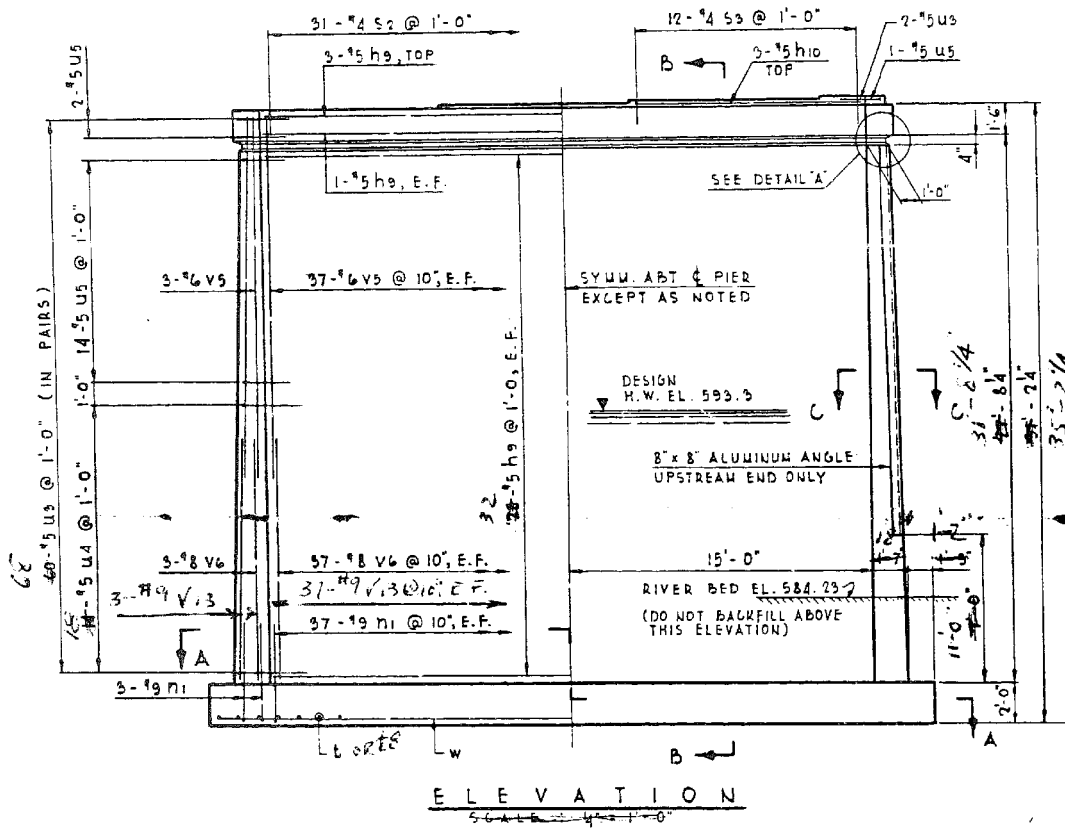
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			REVISIONS -

FOR INFORMATION ONLY				
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	564
CONTRACT NO. 60J16				ILLINOIS FED. AID PROJECT

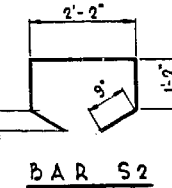
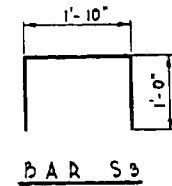
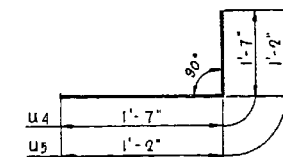
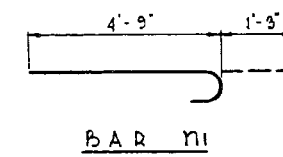
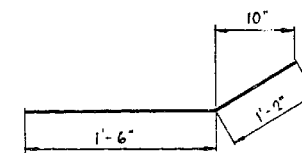
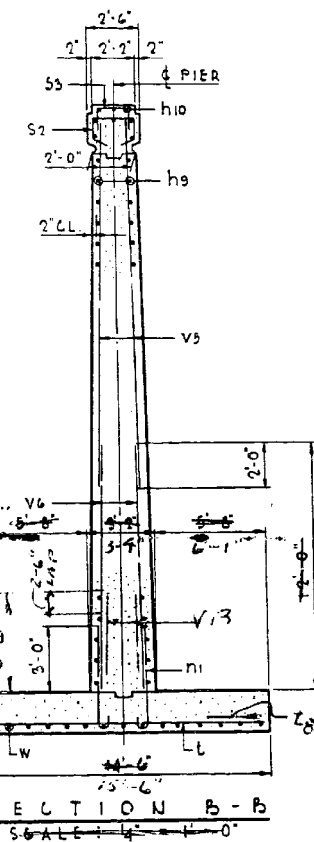
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DETAIL 'A'
SCALE: 1 1/2" = 1'-0"



NOTE: SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS



INCIDENTAL BAR LIST

BAR NO.	SIZE	LENGTH	SHAPE
h9	5	29'-4"	—
h7	2	10	15'-0"
h5	40	10	4'-0"
h3	6	5	2'-8"
h4	8	5	3'-2"
v13	50	4	6'-6"
w	1	5	35'-3"

BAR LIST

BAR NO.	SIZE	LENGTH	SHAPE
h9	5	29'-9"	—
h10	5	11'-6"	—
n1	80	9	6'-0"
s2	31	4	6'-0"
s9	12	4	9'-10"
t	40	10	14'-0"
u3	122	5	2'-8"
u4	28	5	3'-2"
u5	39	5	2'-4"
v5	80	6	19'-0"
v6	80	8	12'-0"
w	15	5	35'-3"

ALL BAR DIMENSIONS ARE OUT TO OUT. PREFIX ALL BAR MARKS FOR SHIPMENT WITH A NUMBER INDICATING THE PIER WHERE THE BARS WILL BE USED. EXAMPLE: 49h9 MEANS BARS h9 FOR PIER 49 FOR ANCHOR BOLT PROJECTION SEE SH. 26 POUR STEPS MONOLITHICALLY WITH PIER CAP MIN. BAR LAP = 20 DIA.

BILL OF MATERIALS

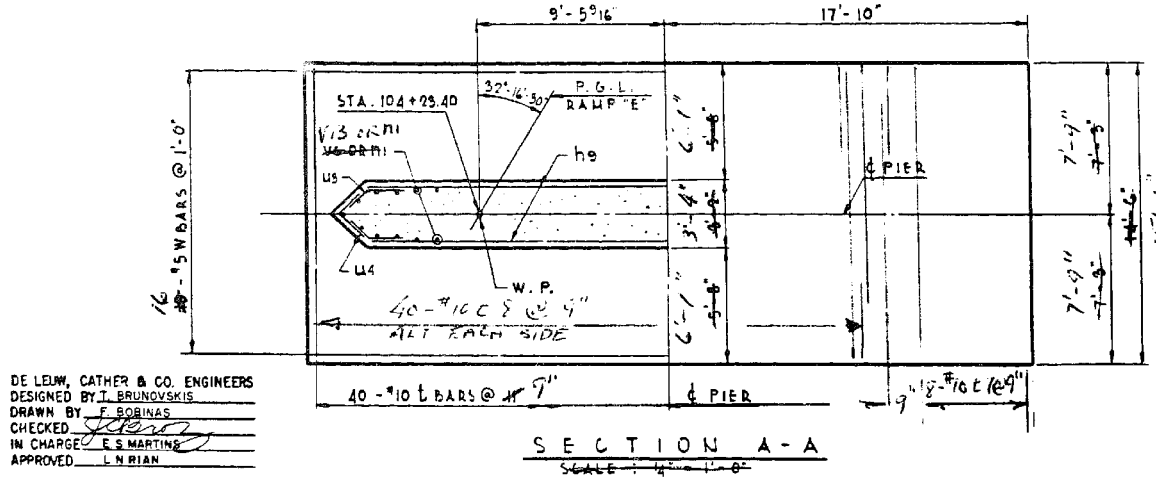
ITEM	UNIT	QUANTITY
CLASS B EXCAVATION FOR STRUCTURES	CU. YD.	469
CLASS X CONCRETE	CU. YD.	125-7
REINFORCEMENT BARS	POUND	12,855

SUPPLEMENTAL BILL OF MATERIALS

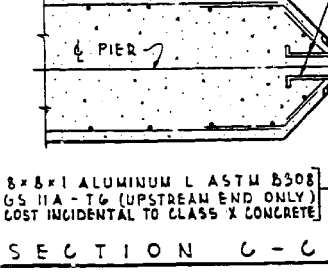
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CLASS B EXCAVATION FOR STRUCT.	CU. YD.	24.0
CLASS X CONCRETE	CU. YD.	17.9
REINFORCEMENT BARS	POUND	3329

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
RAMP E OVER DES PLAINES RIVER
PIER 43

SCALE: AS NOTED DATE: 12-27-63



2" x 3/8" x 1'-0" ALUMINUM STRAP (ASTM DESIGNATION B209 G5 11A-T6). WELD TO ANGLES USING FILLER WIRE FOR WELDING, ALUMINUM ALLOY ER 4043 ASTM B285. SPACE @ 1'-0" ALT. COST INCIDENTAL TO CLASS X CONCRETE.



8" x 8" ALUMINUM L ASTM B308 G5 11A-T6 (UPSTREAM END ONLY) COST INCIDENTAL TO CLASS X CONCRETE.

DE LEW, CATHER & CO. ENGINEERS
DESIGNED BY T. BRUNOVSKIS
DRAWN BY F. BOBINAS
CHECKED [Signature]
IN CHARGE E. S. MARTINE
APPROVED L. N. RIAN

REVISED DE LEW CATHER & CO. 12-9-63 (DROPPED FOOTING ELEVATION)

benesch
engineers · scientists · planners

Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

FILE NAME	USER NAME	DESIGNED	REVISIONS
0161026_60J16_X05_existplan5.dgn	tjanicke	FSM	FSM
		RMM	RMM
		FSM	FSM
		RMM	RMM

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

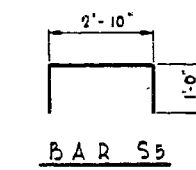
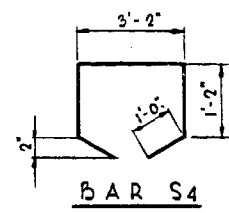
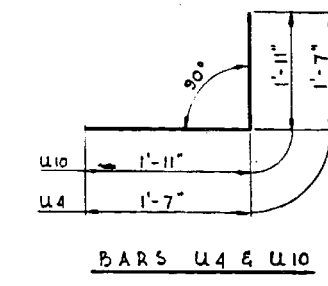
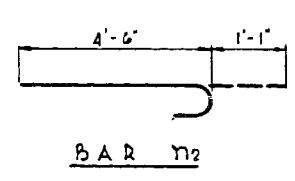
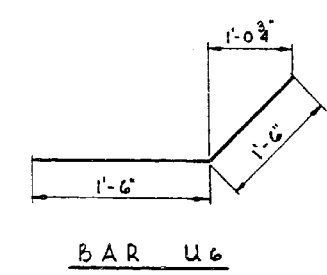
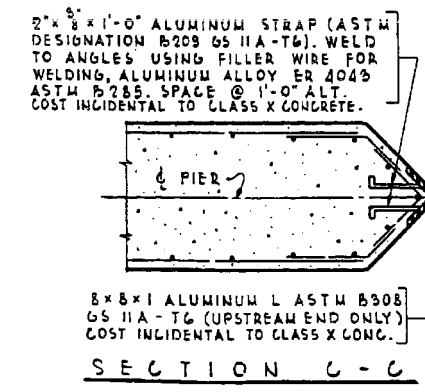
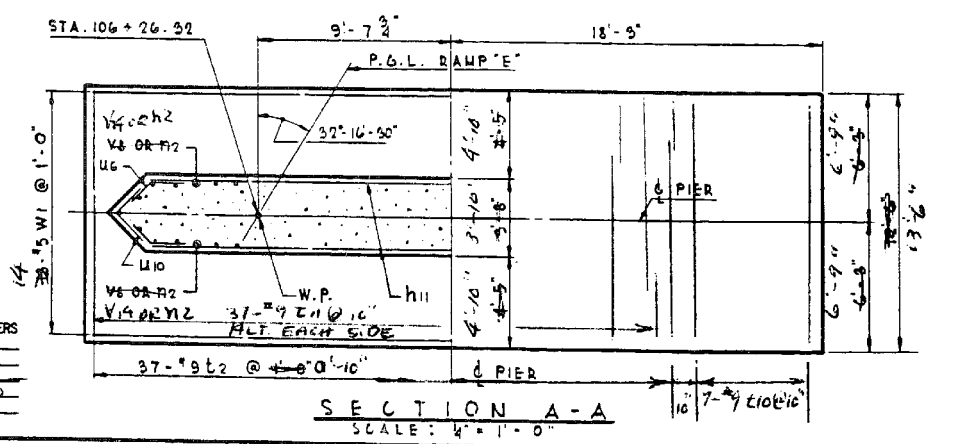
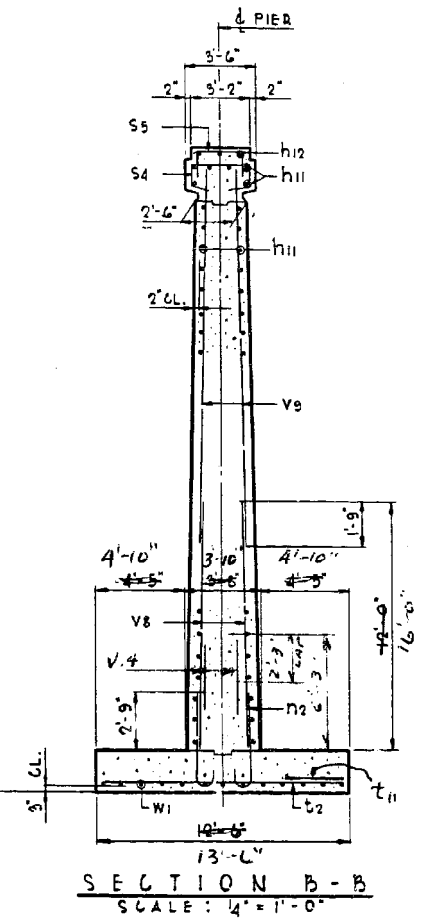
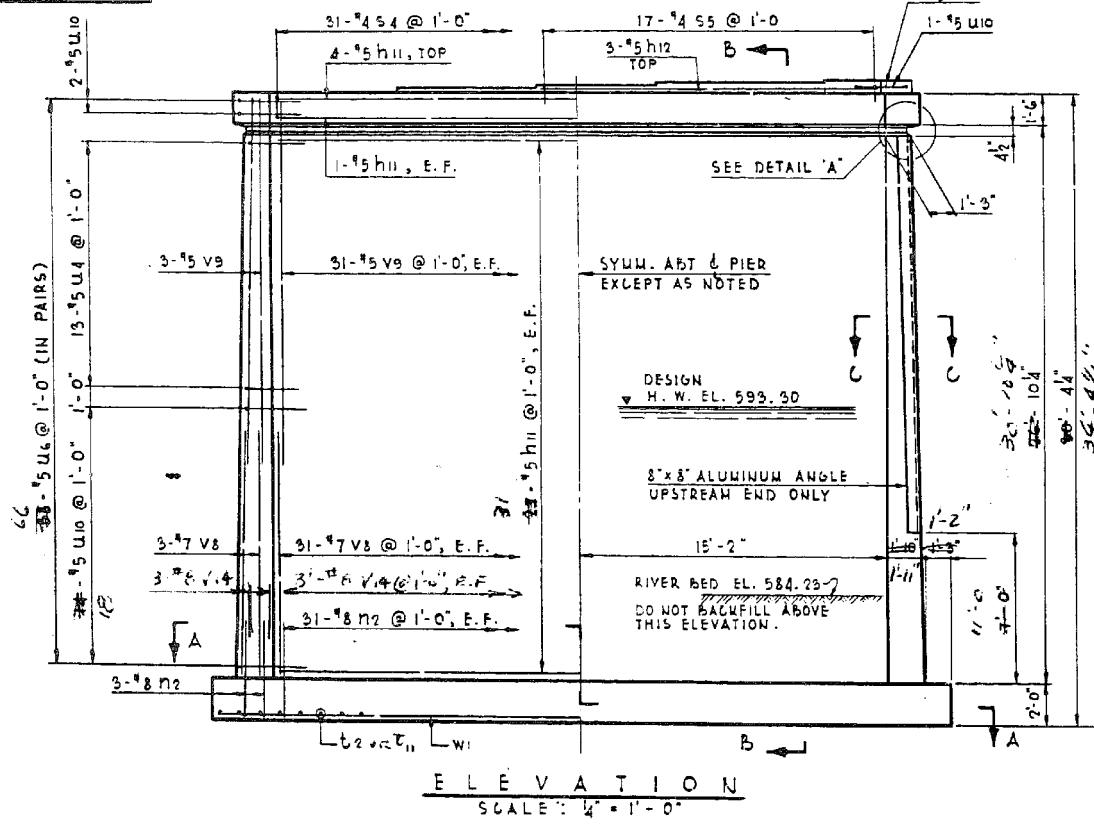
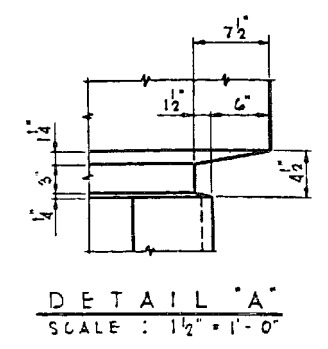
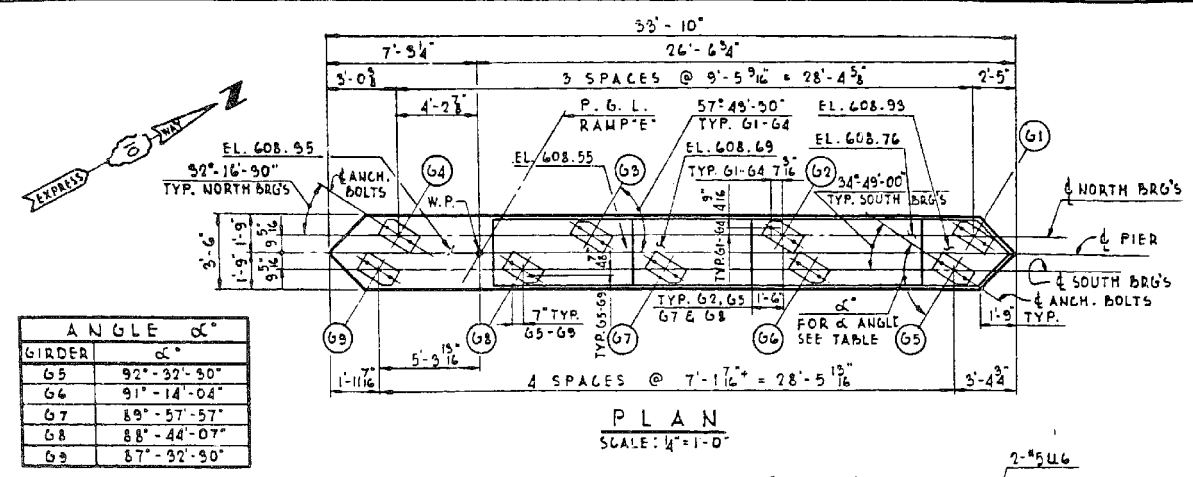
EXISTING PLANS - PIER 43
STRUCTURE NO. 016-1026

SHEET NO. SFX5 OF SFX30 SHEETS

FOR INFORMATION ONLY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	565

CONTRACT NO. 60J16
ILLINOIS FED. AID PROJECT



REINFORCEMENT BAR LIST

BAR NO.	SIZE	LENGTH	SHAPE
M11	8	5	20'0"
S10	7	9	13'0"
E11	37	9	3'9"
U6	16	5	3'0"
U10	8	5	3'10"
V14	68	8	6'3"
W1	1	5	36'0"

BAR LIST

BAR NO.	SIZE	LENGTH	SHAPE
M11	60	5	30'0"
M12	3	5	17'0"
M2	68	8	5'7"
S4	91	4	7'6"
S5	17	4	4'10"
E2	57	9	12'0"
U4	26	5	3'2"
U6	118	5	3'0"
U10	33	5	3'10"
V8	68	7	12'0"
V9	68	5	18'0"
W1	13	5	36'0"

ALL BAR DIMENSIONS ARE OUT TO OUT. PREFIX ALL BAR MARKS FOR SHIPMENT WITH A NUMBER INDICATING THE PIER WHERE THE BARS WILL BE USED. EXAMPLE: 45 M11 MEANS BARS M11 FOR PIER 45. FOR ANCHOR BOLT PROJECTION SEE SH-26. FOUR STEPS MONOLITHICALLY WITH PIER GAP. MIN. BAR LAP = 20 DIA. SPACE REINFORCEMENT IN GAP TO MISS ANCHOR BOLTS.

BILL OF MATERIAL *

ITEM	UNIT	QUANTITY
CLASS B EXCAVATION	CU YD	154
CLASS X CONCRETE	CU YD	158.9
REINFORCEMENT BARS	POUND	8684

* FOR ORIGINAL CONTRACT ONLY

SUPPLEMENTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
CLASS B EXCAV. FOR STRUT, CO. 10	CU YD	115
CLASS X CONCRETE	CU YD	20.6
REINFORCEMENT BARS	POUND	1238.6

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
RAMP E OVER DES PLAINES RIVER
PIER 45

SCALE: AS NOTED DATE: 7-22-63

DE LEJW, CATHER & CO. ENGINEERS
DESIGNED BY T. BRUNOVSKIS
DRAWN BY F. BOBINAS
CHECKED BY [Signature]
IN CHARGE E. S. MARTINS
APPROVED L. W. RIAN

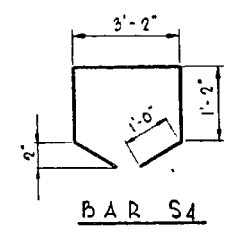
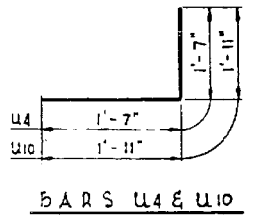
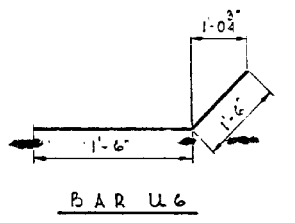
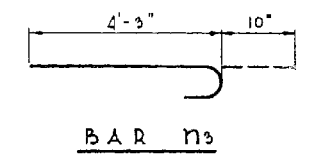
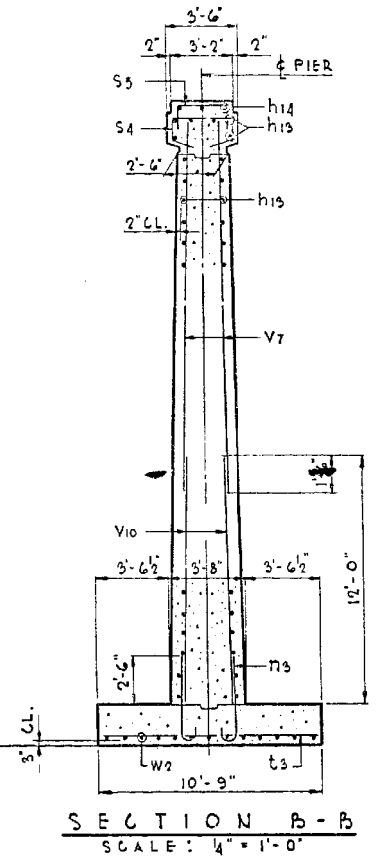
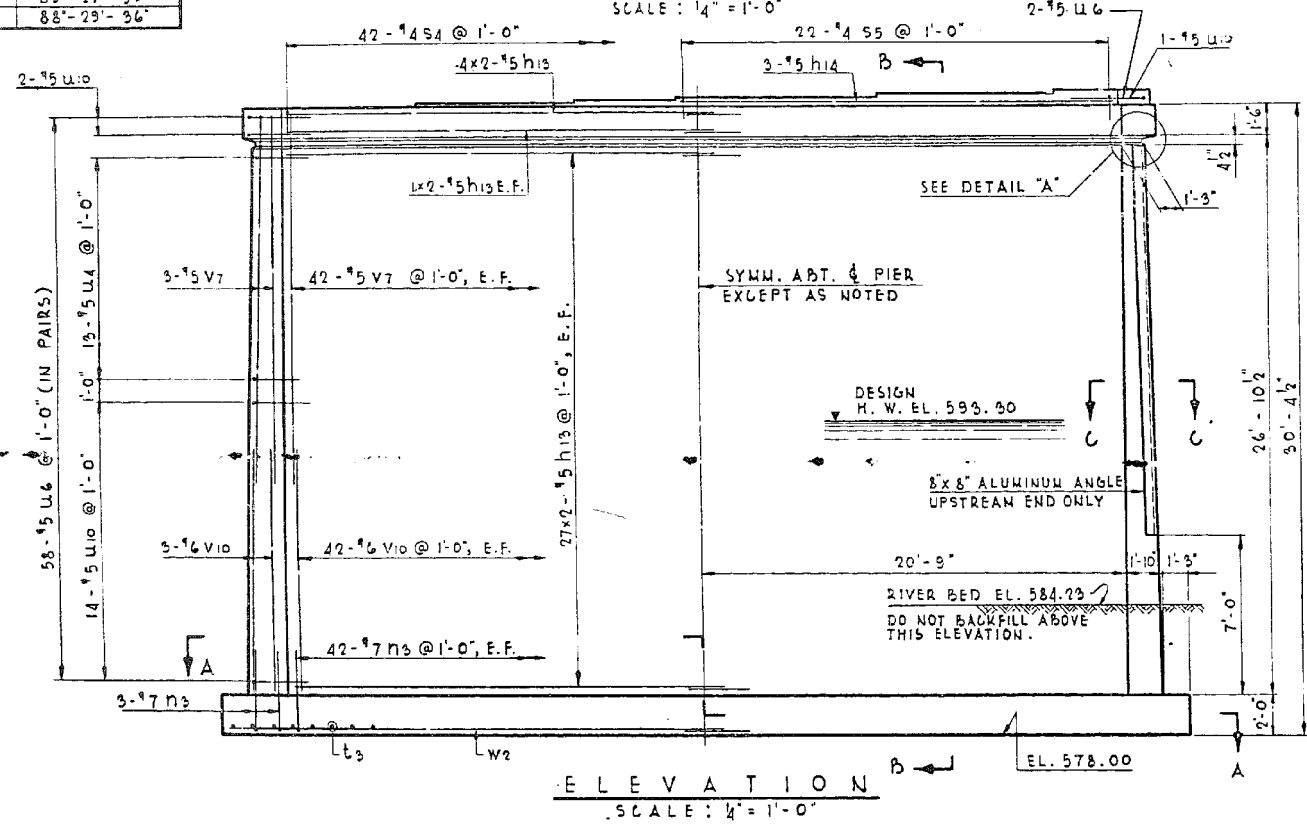
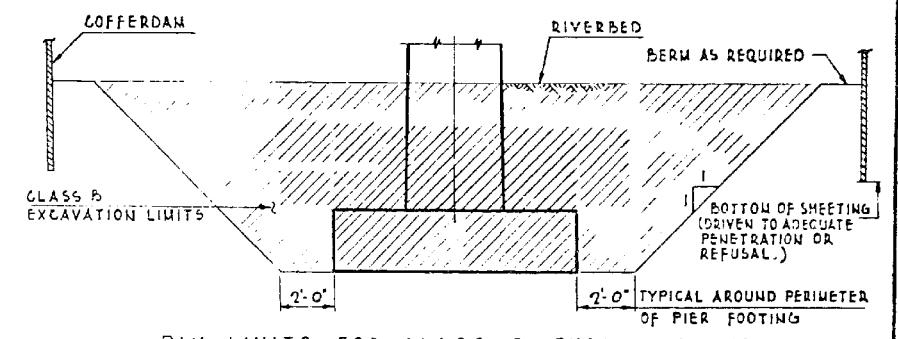
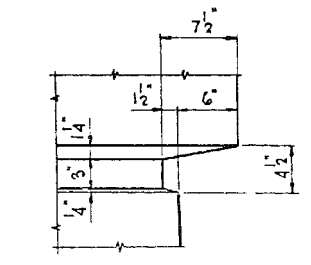
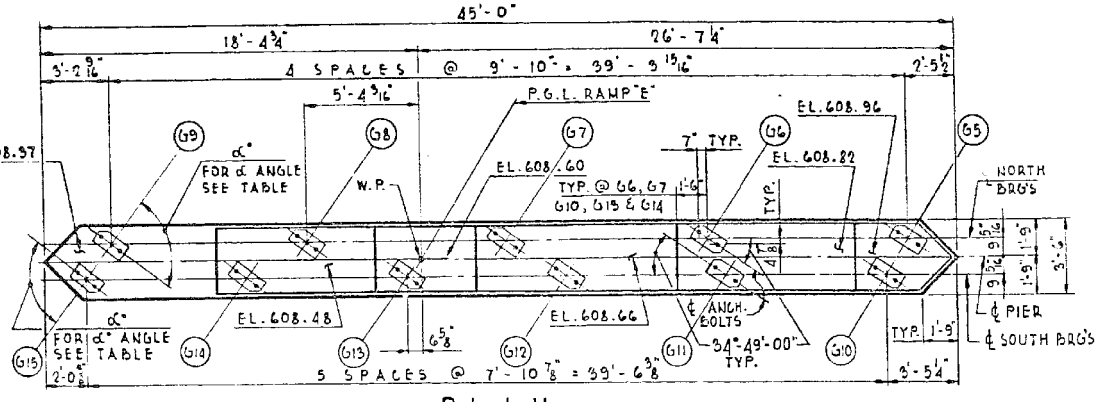
2" x 8" x 1'-0" ALUMINUM STRAP (ASTM DESIGNATION B209 G5 11A-T6). WELD TO ANGLES USING FILLER WIRE FOR WELDING, ALUMINUM ALLOY ER 4043 ASTM B285. SPACE @ 1'-0" ALT. COST INCIDENTAL TO CLASS X CONG.

8" x 8" ALUMINUM L ASTM B308 G5 11A-T6 (UPSTREAM END ONLY). COST INCIDENTAL TO CLASS X CONG.

SECTION C-C

REVISED 12-9-63 DELEJW, CATHER & CO (DROPPED FOOTING ELEV 4'-0")

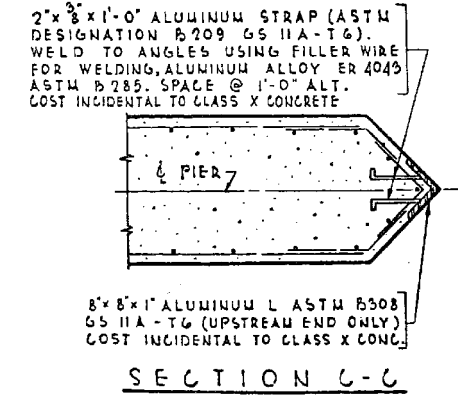
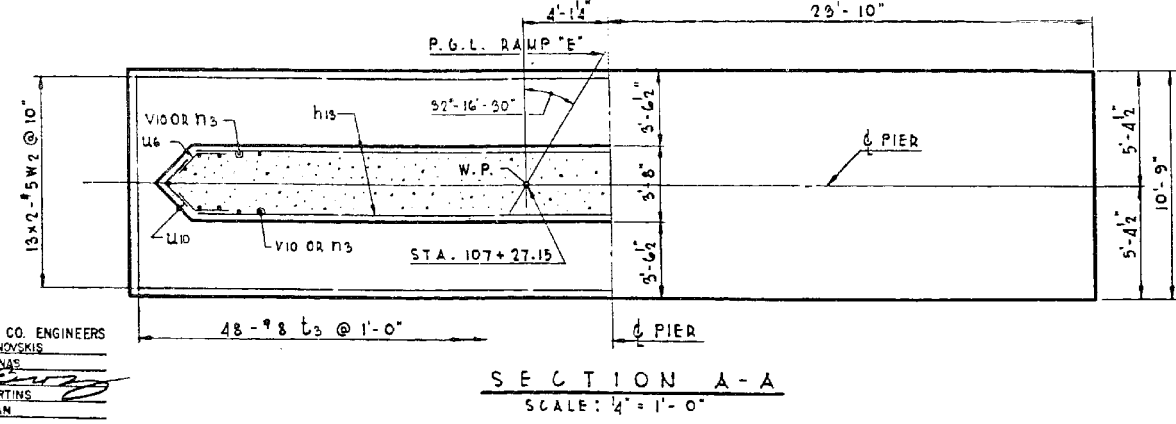
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G6	91°-14'-04"	
G7	89°-57'-57"	
G8	88°-44'-07"	
G9&G15	87°-37'-30"	
G11	91°-29'-34"	
G12	90°-28'-07"	
G13	89°-27'-59"	
G14	88°-23'-36"	



BAR NO.	SIZE	LENGTH	SHAPE
h13	120	5	21'-3"
h14	3	5	21'-6"
n3	90	7	5'-1"
s4	42	4	7'-6"
s5	22	4	4'-10"
t3	48	8	10'-3"
u4	26	5	9'-2"
u6	118	5	9'-0"
u10	32	5	9'-10"
v7	90	5	17'-9"
v10	90	6	12'-0"
w2	26	5	24'-3"

ALL BAR DIMENSIONS ARE OUT TO OUT. PREFIX ALL BAR MARKS FOR SHIPMENT WITH A NUMBER INDICATING THE PIER WHERE THE BARS WILL BE USED. EXAMPLE: 46 h13 MEANS BARS h13 FOR PIER 46 FOR ANCHOR BOLT PROJECTION SEE SH. 26 POUR STEPS MONOLITHICALLY WITH PIER CAP KEY TO BAR INDICATION: 15 x 2'-15 ETC. MEANS 15 LINES OF BARS WITH 2 LENGTHS PER LINE. MIN. BAR LAP = 20 DIA. SPACE REINFORCEMENT IN CAP TO MISS ANCH. BOLTS.

ITEM	UNIT	QUANTITY
CLASS B EXCAVATION	CU YD	280
CLASS X CONCRETE	CU YD	179.1
REINFORCEMENT BARS	POUND	9780
COFFERDAM	EACH	4



ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
RAMP E OVER DES PLAINES RIVER
PIER 46
SCALE: AS NOTED DATE: 8-23-63

benesch
engineers · scientists · planners
Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

FILE NAME =	USER NAME = tjenicke	DESIGNED - FSM	REVISED -
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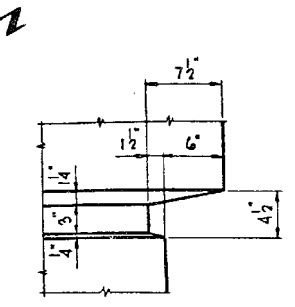
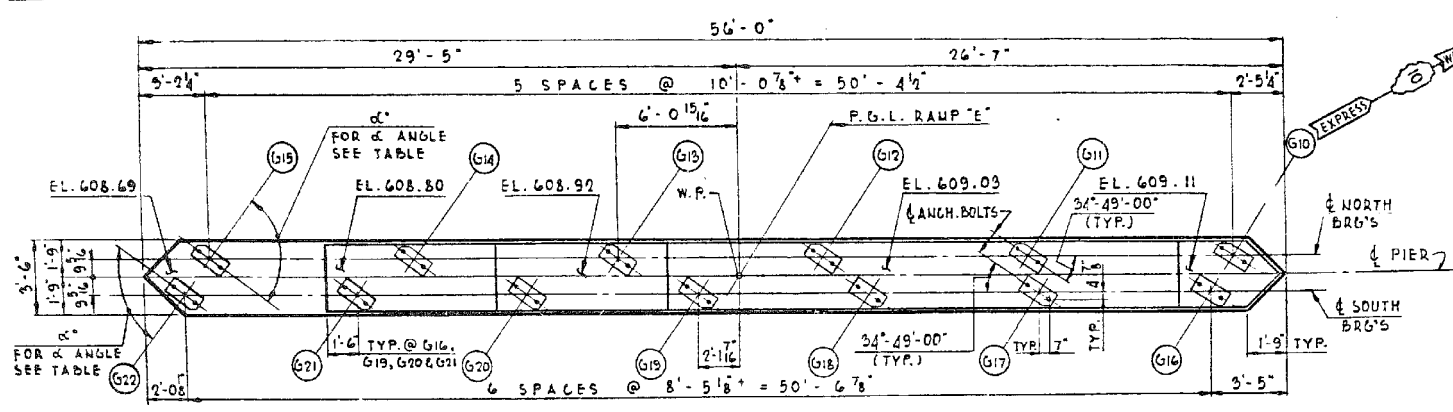
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS - PIER 46
STRUCTURE NO. 016-1026
SHEET NO. SF8 OF SF30 SHEETS

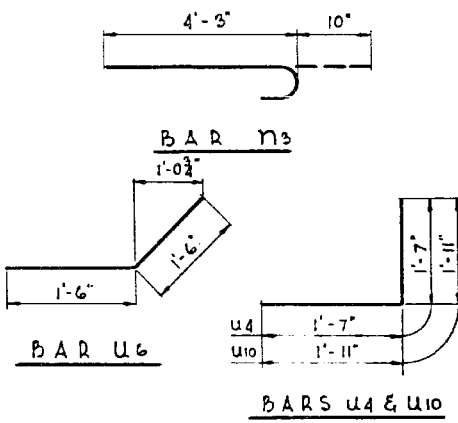
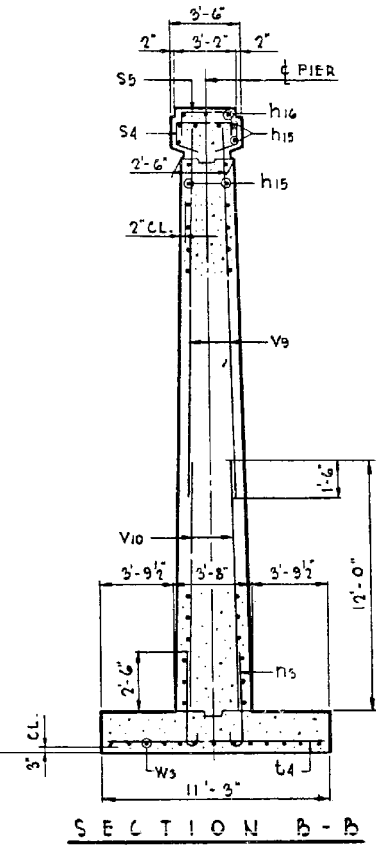
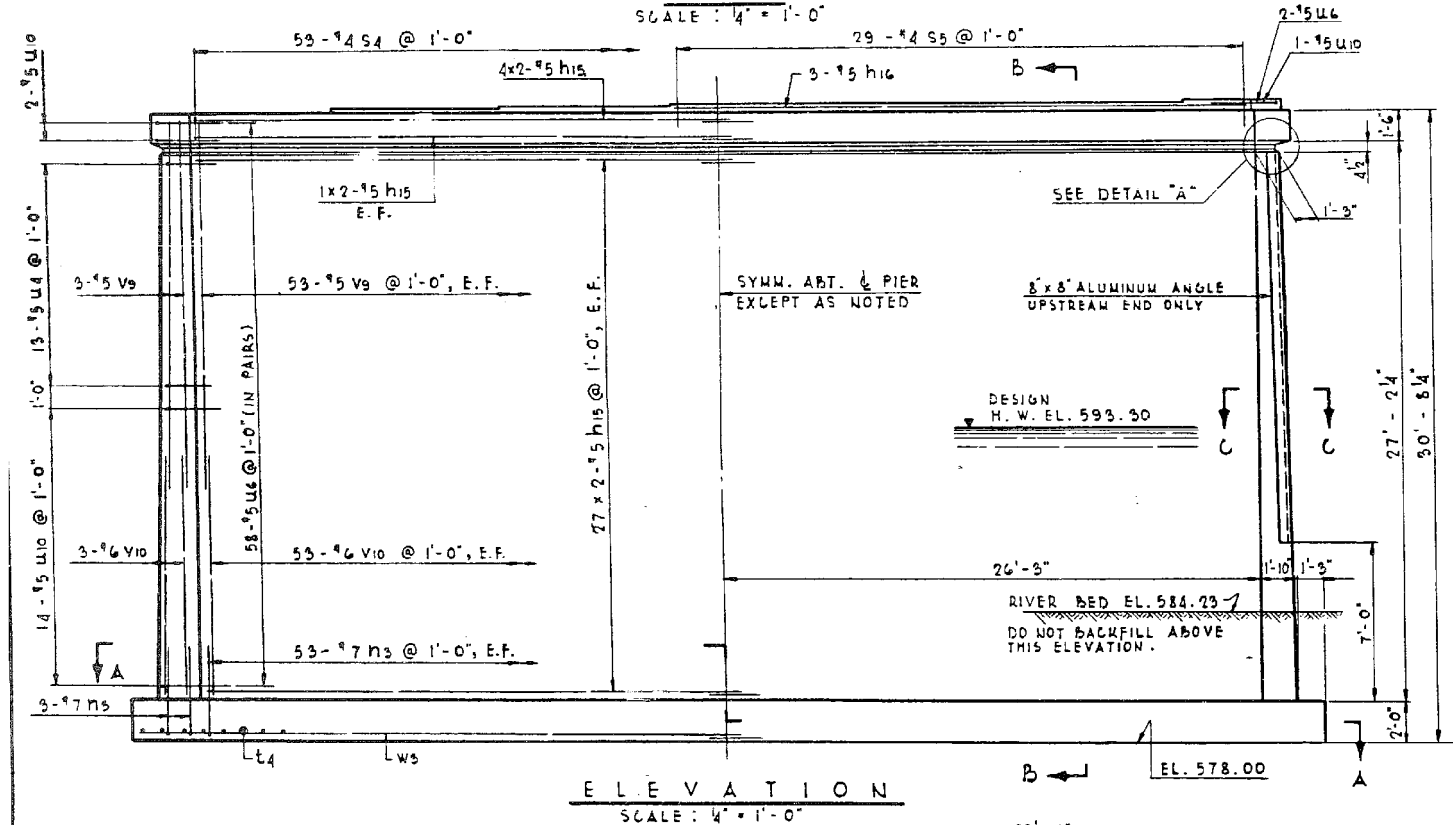
FOR INFORMATION ONLY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	568
				CONTRACT NO. 60J16
ILLINOIS FED. AID PROJECT				

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GIRDER	α°
G10 & G16	92°-32'-30"
G11	91°-29'-34"
G12	90°-28'-07"
G13	89°-27'-59"
G14	88°-29'-36"
G15 & G22	87°-32'-30"
G17	91°-39'-57"
G18	90°-48'-07"
G19	89°-57'-E"
G20	89°-08'-28"
G21	88°-19'-59"

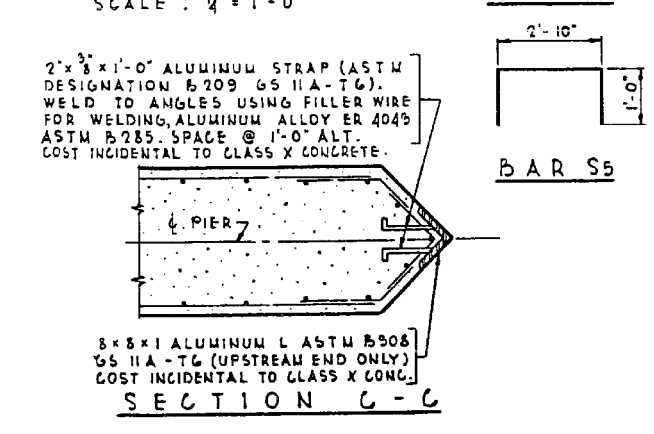
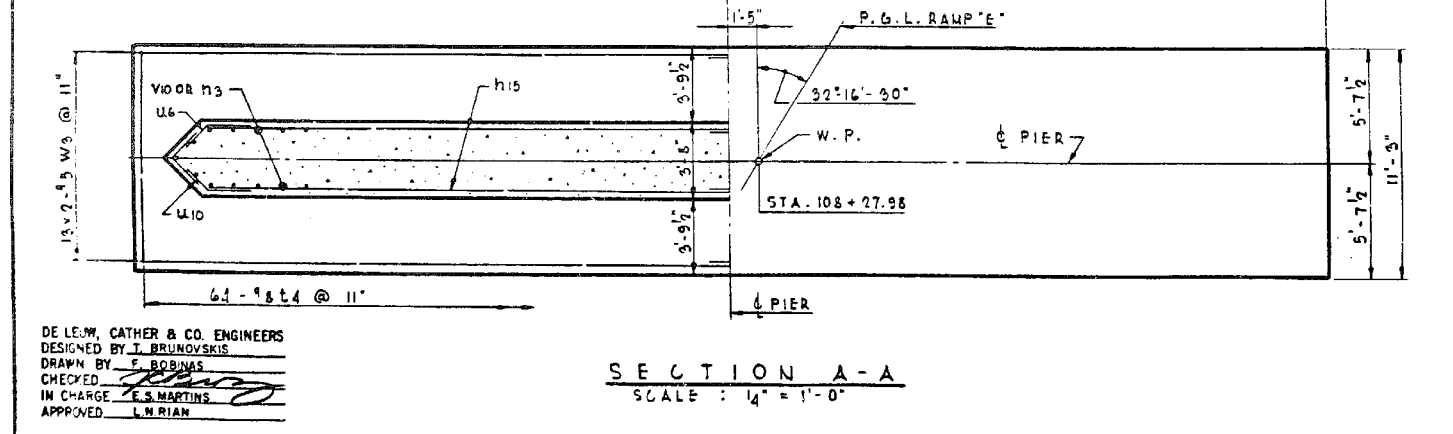


BAR NO.	SIZE	LENGTH	SHAPE
h15	120	5	27'-0"
h16	34	5	28'-9"
n3	112	7	5'-1"
s4	53	4	7'-6"
s5	29	4	4'-10"
t4	64	8	10'-9"
u4	26	5	3'-2"
u6	118	5	3'-0"
u10	53	5	3'-10"
v9	112	5	15'-0"
v10	112	6	12'-0"
w3	26	5	29'-9"

ALL BAR DIMENSIONS ARE OUT TO OUT. PREFIX ALL BAR MARKS FOR SHIPMENT WITH A NUMBER INDICATING THE PIER WHERE THE BARS WILL BE USED. EXAMPLE: 47 h15 MEANS BARS h15 FOR PIER 47 FOR ANCHOR BOLT PROJECTION SEE SH. 26 POUR STEPS MONOLITHICALLY WITH PIER CAP KEY TO BAR INDICATION: 13 x 2-15 ETC. MEANS 13 LINES OF BARS WITH 2 LENGTHS PER LINE. MIN. BAR LAP = 20 DIA. SPACE REINFORCEMENT IN CAP TO MISS ANCH. BOLTS.

ITEM	UNIT	QUANTITY
CLASS B EXCAVATION	CU YD	341
CLASS X CONCRETE	CU YD	228.5
REINFORCEMENT BARS	POUND	12,538
COFFERDAM	EACH	1

NOTE: FOR CLASS B EXCAVATION LIMITS SEE SH. 17.



ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
RAMP E OVER DES PLAINES RIVER
PIER 47
SCALE: AS NOTED DATE: 8-23-63

DE LEW, CATHER & CO. ENGINEERS
DESIGNED BY J. BRUNOVSKIS
DRAWN BY F. BOBINAS
CHECKED BY [Signature]
IN CHARGE E.S. MARTINS
APPROVED L.W. RIAN

benesch
engineers · scientists · planners
Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

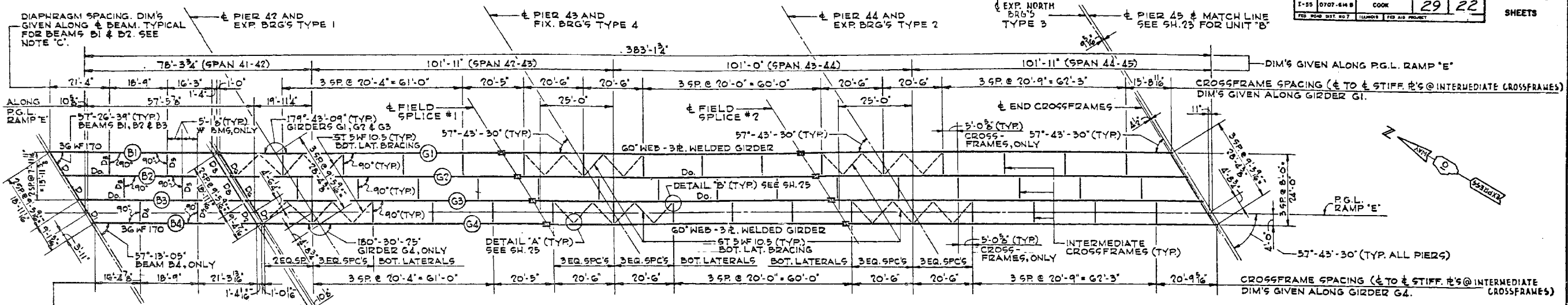
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		CHECKED - RMM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS - PIER 47
STRUCTURE NO. 016-1026
SHEET NO. SFX9 OF SFX30 SHEETS

FOR INFORMATION ONLY				
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	569
			CONTRACT NO. 60J16	
ILLINOIS FED. AID PROJECT				

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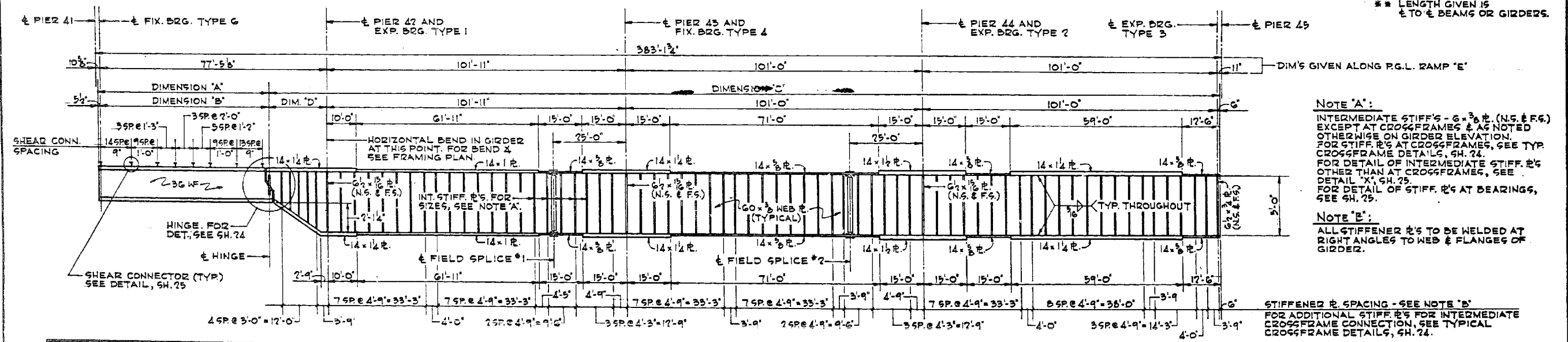


FRAMING PLAN - UNIT 'A'
SCALE: 1/16" = 1'-0"

DIAPH	LENGTH	NO. REQ'D	DIAPH	LENGTH	NO. REQ'D	DIAPH	LENGTH	NO. REQ'D
D	9'-5 1/16"	2	D3	7'-11 1/16"	4	D6	9'-5 1/16"	2
D1	9'-13 1/16"	1	D4	7'-8 1/16"	1	D7	9'-4 1/2"	1
D2	9'-4 3/8"	1	D5	7'-9 1/16"	1	D8	9'-5 1/16"	2

** LENGTH GIVEN IS E TO E BEAMS OR GIRDERS.

NOTE 'C':
 DIAPHRAGMS D₁, D₂ = 10 WF 33
 DIAPHRAGMS D₃, D₄, D₅, D₆ = 12 WF 40
 DIAPHRAGMS D₇, D₈ = 16 WF 36
 FOR DIAPHRAGM LENGTHS, SEE TABLE II.



TYPICAL BEAM & GIRDER ELEVATION
 FOR DIMENSIONS NOT GIVEN, SEE TABLE I
 SCALE: 1/16" = 1'-0" HORIZ. & 1/4" = 1'-0" VERT.

NOTE 'A':
 INTERMEDIATE STIFFERS - 6 x 3/8" (N.S. & F.S.) EXCEPT AT CROSSFRAMES & AS NOTED OTHERWISE ON GIRDER ELEVATION. FOR STIFFERS AT CROSSFRAMES, SEE TYP. CROSSFRAME DETAILS, SH. 24. FOR DETAIL OF INTERMEDIATE STIFF. R'S OTHER THAN AT CROSSFRAMES, SEE DETAIL 'X', SH. 25. FOR DETAIL OF STIFF. R'S AT BEARINGS, SEE SH. 25.

NOTE 'B':
 ALL STIFFENER R'S TO BE WELDED AT RIGHT ANGLES TO WEB & FLANGES OF GIRDER.

NOTE 'D':
 STIFFENER R. SPACING - SEE NOTE 'B'. FOR ADDITIONAL STIFF R'S FOR INTERMEDIATE CROSSFRAME CONNECTION, SEE TYPICAL CROSSFRAME DETAILS, SH. 24.

BEAM OR GIRDER	DIMENSIONS **			
	'A'	'B'	'C'	'D'
B1, B2, B3	58'-1 1/2"	57'-8"	—	—
B4	58'-3 1/2"	57'-9 3/4"	—	—
G1, G2, G3	—	—	324'-5"	70'-0"
G4	—	—	324'-5 1/2"	70'-0 1/2"

** GIVEN ALONG E BEAM OR GIRDER

	MOMENTS		REACTIONS			
	E CENTER OF SIMPLE SPAN	PIER 41 & HINGE	PIER 42	PIER 43	PIER 44	PIER 45
DEAD LOAD	375	25.8	933	606	-1037	385
LIVE LOAD	596	43.9	-875	897	-829	651
IMPACT	192	12.0	-263	198	-183	144
SUPERIMPOSED DEAD LOAD	87	6.0				
TOTAL	1170	87.7	-2071	1701	-2049	1180

MOMENTS ARE IN FT. - KIPS.
 REACTIONS & SHEARS ARE IN KIPS.

ITEM	UNIT	QUANTITY
FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	749,200

ILLINOIS DIVISION OF HIGHWAYS
 SOUTHWEST EXPRESSWAY
RAMP E OVER DES PLAINES RIVER
 FRAMING PLAN & GIRDER DETAILS
 UNIT A

SCALE: AS NOTED DATE: 8-28-63

NOTES:
 FOR STRUCTURAL STEEL DESIGNATION, SEE SH. 3.
 FOR DIAPHRAGM & CROSSFRAME DETAILS, SEE SH. 24.
 FOR TOP OF WF BEAM OR GIRDER WEB R. ELEVATIONS, SEE SH. 25.
 FOR SHOP & FIELD SPLICE DETAILS, SEE SH. 24 & 25.
 FOR BOTTOM LATERAL BRACING CONNECTION DETAILS 'A' & 'B', SEE SH. 25.
 FOR DETAIL OF CONDUIT SUPPORT BRACKETS, SEE SH. 28.

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Alfred Benesch & Company
 205 North Michigan Avenue, Suite 2400
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 312-565-0450 Job No. 10093

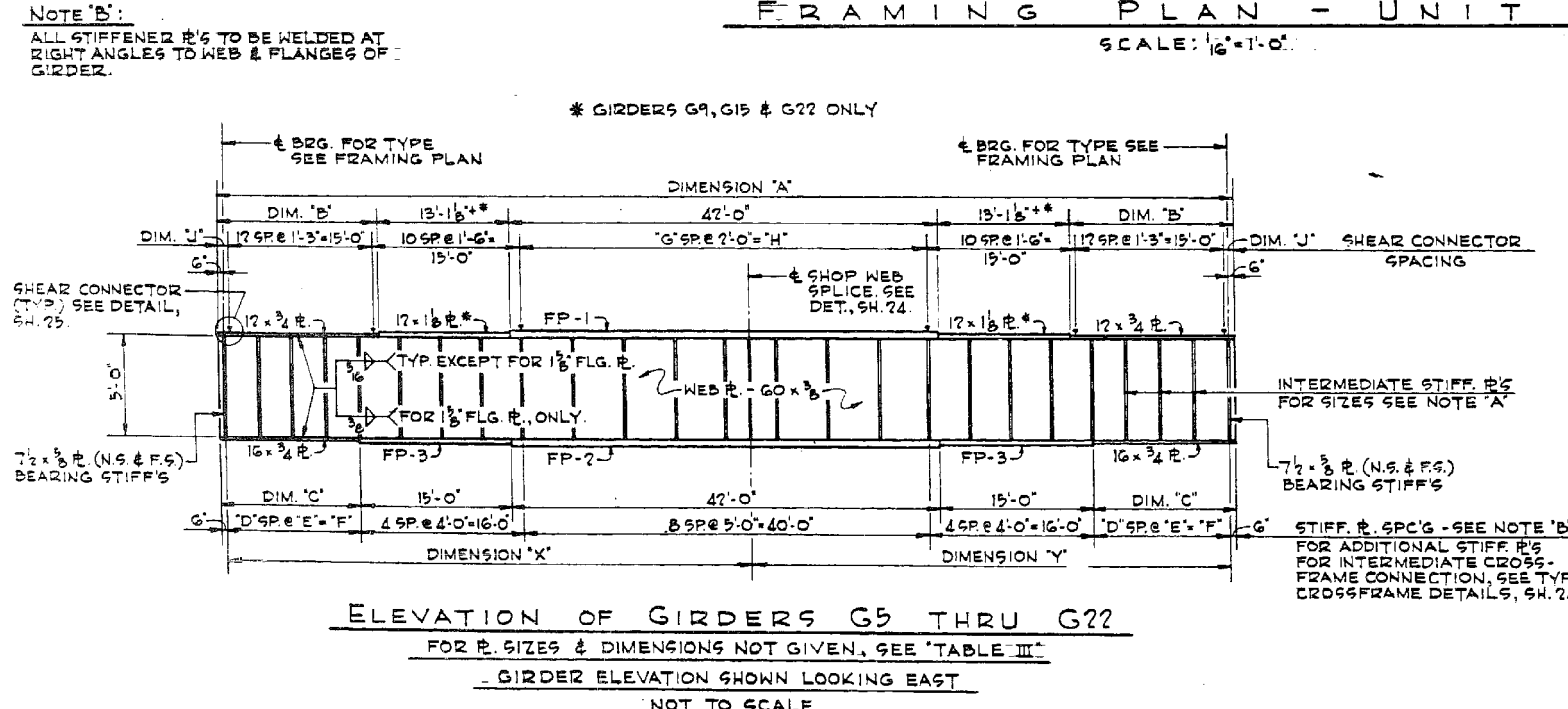
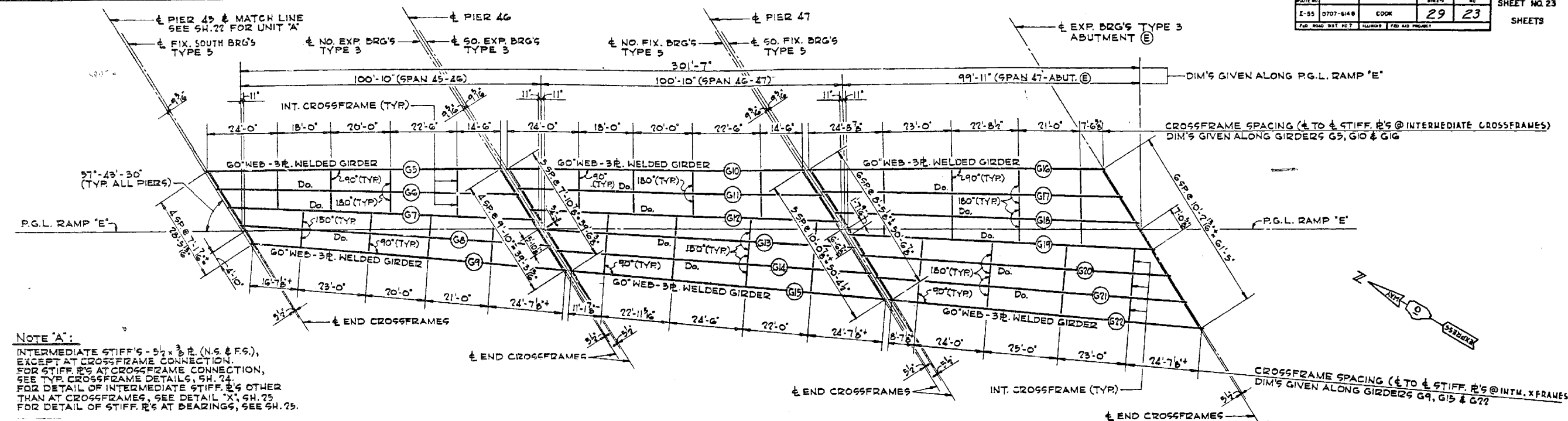
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		CHECKED - RMM	REVISIONS -
		DRAWN - FSM	REVISIONS -
		CHECKED - RMM	REVISIONS -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING PLANS - UNIT A FRAMING PLAN
 STRUCTURE NO. 016-1026
 SHEET NO. SFX10 OF SFX30 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	570
CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				

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GIRDER	FLANGE R. SIZES			DIMENSIONS (GIVEN ALONG GIRDER)											
	FP-1	FP-2	FP-3	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'	'J'	'X'	'Y'	
G5	12 x 1	16 x 1 1/2	16 x 1 3/4	100'-0"	29'-0"	14'-0"	4	3'-4 1/2	13'-6"	19	38'-0"	1'-0"	52'-0"	47'-0"	
G6	12 x 1 1/2	16 x 1 3/4	16 x 1 3/4	101'-5 1/2"	29'-8 3/4"	14'-8 3/4"	4	3'-6 1/4"	14'-2 1/4"	20	40'-0"	8'-11 3/4"	52'-9 3/4"	47'-8 3/4"	
G7	12 x 1 1/2	16 x 1 3/4	16 x 1 3/4	103'-0"	30'-6"	15'-6"	4	3'-9"	15'-0"	21	42'-0"	6"	53'-6"	48'-5 1/2"	
G8	12 x 1 1/2	16 x 1 3/4	16 x 1 3/4	104'-6 3/8"	31'-3 7/8"	16'-3 7/8"	5	3'-1 1/8"	15'-9 7/8"	21	42'-0"	1'-3 1/8"	54'-4 1/8"	49'-2 1/8"	
G9	12 x 1 1/2	16 x 1 3/4	16 x 1 3/4	106'-2 1/2"	19'-0"	17'-1 1/2"	5	3'-3 1/2"	16'-7 1/2"	22	44'-0"	1'-1 1/2"	55'-3"	49'-11 1/2"	
G10	12 x 1			100'-0"	29'-0"	14'-0"	4	3'-4 1/2	13'-6"	19	38'-0"	1'-0"	52'-0"	47'-0"	
G11				101'-2 1/2"	29'-7 1/2"	14'-7 1/2"	4	3'-6 1/4"	14'-1 1/2"	20	40'-0"	7'-6"	52'-7 1/2"	47'-6 1/2"	
G12				102'-4 1/2"	30'-2 1/2"	15'-2 1/2"	4	3'-8 1/2"	14'-8 1/2"	20	40'-0"	1'-2 1/2"	53'-3"	48'-1 1/2"	
G13				103'-7 1/2"	30'-9 3/4"	15'-9 3/4"	4	3'-9 1/2"	15'-3 3/4"	21	42'-0"	9 3/4"	53'-10 3/4"	48'-8 3/4"	
G14	12 x 1			104'-10 1/8"	31'-5 7/8"	16'-5 7/8"	5	3'-2 1/4"	15'-11 7/8"	21	42'-0"	1'-5 7/8"	54'-6 7/8"	49'-3 7/8"	
G15	12 x 1 1/2			106'-2 1/2"	19'-0"	17'-1 1/2"	5	3'-3 1/2"	16'-7 1/2"	22	44'-0"	1'-1 1/2"	55'-3"	49'-11 1/2"	
G16	12 x 1			100'-0"	29'-0"	14'-0"	4	3'-4 1/2	13'-6"	19	38'-0"	1'-0"	52'-0"	47'-0"	
G17				100'-11 1/2"	29'-5 1/2"	14'-5 1/2"	4	3'-6"	13'-11 1/2"	19	38'-0"	1'-5 1/2"	52'-6"	47'-5 1/2"	
G18				101'-11 1/8"	29'-11 3/8"	14'-11 3/8"	4	3'-7 1/8"	14'-5 3/8"	20	40'-0"	11 3/8"	53'-0 1/8"	47'-11 1/8"	
G19				103'-0"	30'-6"	15'-6"	4	3'-9"	15'-0"	21	42'-0"	6"	53'-6"	48'-5 1/2"	
G20				104'-0"	31'-0"	16'-0"	5	3'-1 1/2"	15'-6"	21	42'-0"	1'-0 1/2"	54'-1 1/2"	48'-11"	
G21	12 x 1			105'-1 1/2"	31'-6 3/8"	16'-6 3/8"	5	3'-2 1/2"	16'-0 3/8"	22	44'-0"	6 3/8"	54'-8 3/8"	49'-5 1/8"	
G22	12 x 1 1/2	16 x 1 3/4	16 x 1 3/4	106'-2 1/2"	19'-0"	17'-1 1/2"	5	3'-3 1/2"	16'-7 1/2"	22	44'-0"	1'-1 1/2"	55'-3"	49'-11 1/2"	

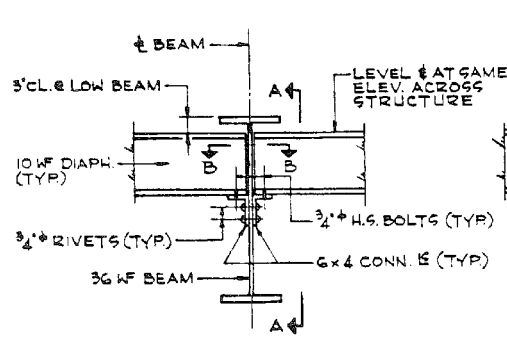
MAX. MOMENT (K-IPS)	FASCIA GIRDERS				INTERIOR GIRDERS					
	G5, G10 & G16	G9, G15 & G22	G6, G7 & G8	G11 THRU G14	G17 THRU G21	G5, G10 & G16	G9, G15 & G22	G6, G7 & G8	G11 THRU G14	G17 THRU G21
DEAD LOAD	1507	2003	1229	1300	1334	61.0	76.3	47.6	50.2	51.4
LIVE LOAD	471	606	1047	1123	1162		24.6	43.2	46.2	47.7
IMPACT	109	132	229	245	254		9.3	9.4	10.1	10.4
SUPERIMPOSED DEAD LOAD	241	272	258	248	246	9.8	10.4	10.0	9.6	9.5
TOTAL	2327	3013	2763	2916	2996	95.8	116.6	110.2	116.1	119.0

NOTES:
FOR STRUCTURAL STEEL DESIGNATION, SEE SH. 3.
FOR BILL OF MATERIAL, SEE SH. 22.
FOR CROSSFRAME DETAILS, SEE SH. 24.
FOR TOP OF GIRDER WEB R. ELEVATIONS, SEE SH. 25.
FOR DETAIL OF CONDUIT SUPPORT BRACKETS SEE SH. 28.

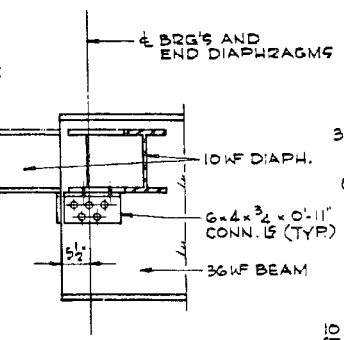
ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
RAMP E OVER DES PLAINES RIVER
FRAMING PLAN & GIRDER DETAILS
UNIT B
SCALE: AS NOTED DATE: 8-28-03

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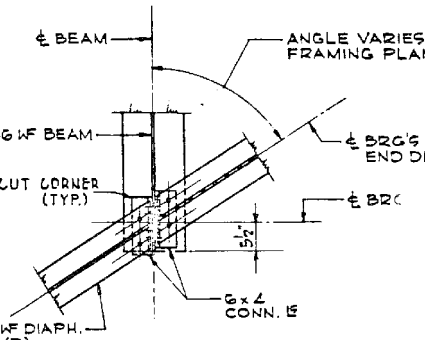
STIFF. R. LOCATION	'A'	'B'	'C'
UNIT 'A'	6 1/2 x 3/4	6 1/2 x 1/2	6 x 3/8
UNIT 'B'	7 1/2 x 3/8	7 1/2 x 1/2	5 1/2 x 3/8



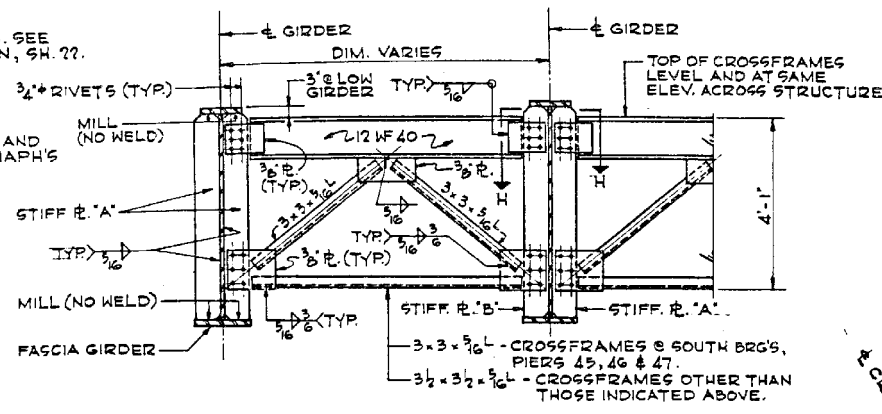
END DIAPHRAGM DETAIL AT PIER 41
DIAPHRAGMS D & D1
FOR NO. REQ'D, SEE TABLE II SH.??
SCALE: 3/4\"/>



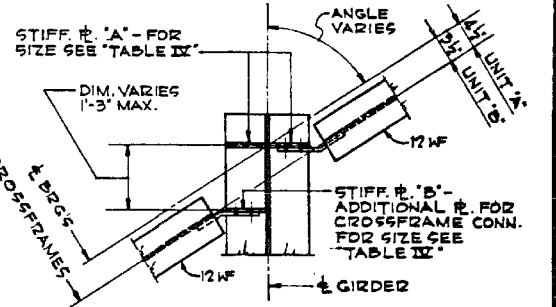
SECTION A-A
SCALE: 3/4\"/>



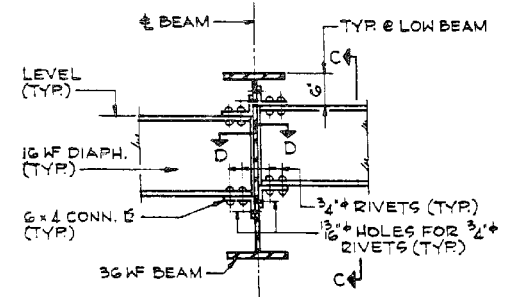
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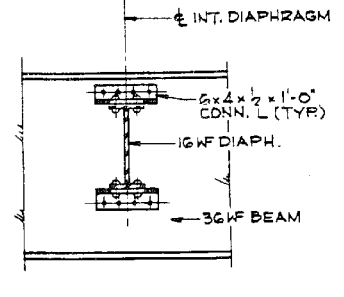
END CROSSFRAME DETAIL
FOR SIZE OF STIFF. R'S 'A' & 'B', SEE TABLE IV.
SCALE: 1/2\"/>



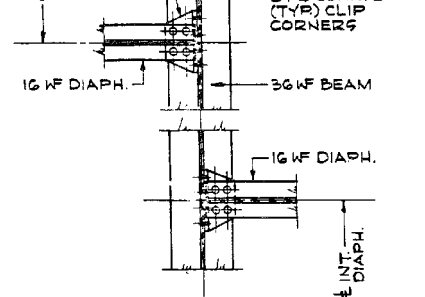
SECTION H-H
SCALE: 3/4\"/>



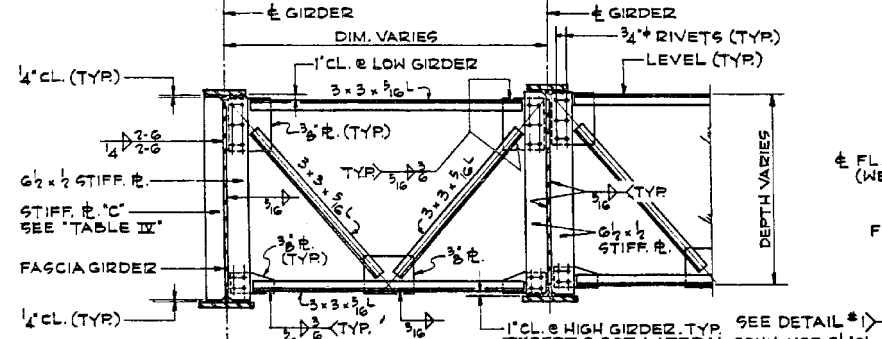
INTERMEDIATE DIAPHRAGM DETAIL
DIAPHRAGMS D3, D4 & D5
FOR NO. REQ'D, SEE TABLE II SH.??
SCALE: 3/4\"/>



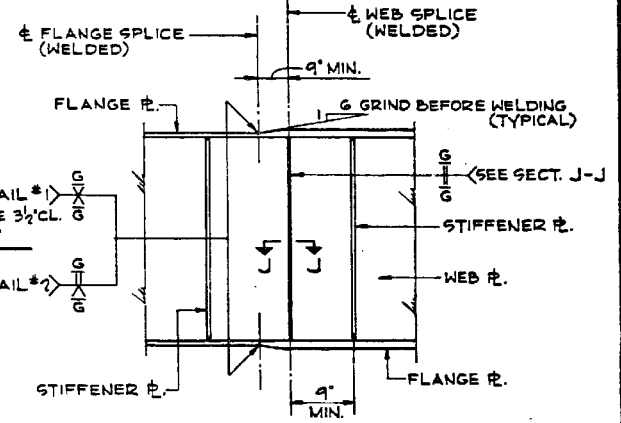
SECTION C-C
SCALE: 3/4\"/>



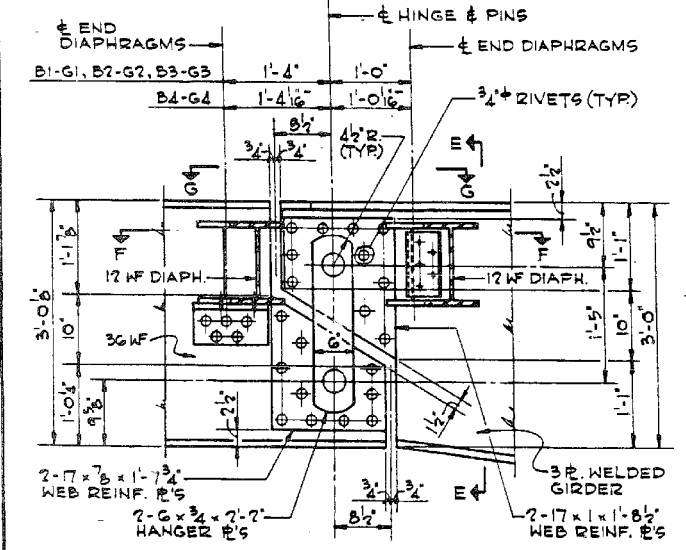
SECTION D-D
SCALE: 3/4\"/>



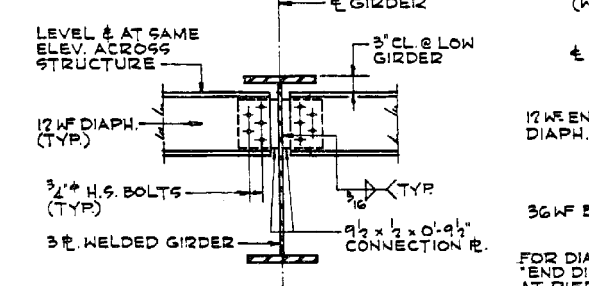
INTERMEDIATE CROSSFRAME DETAIL
SCALE: 1/2\"/>



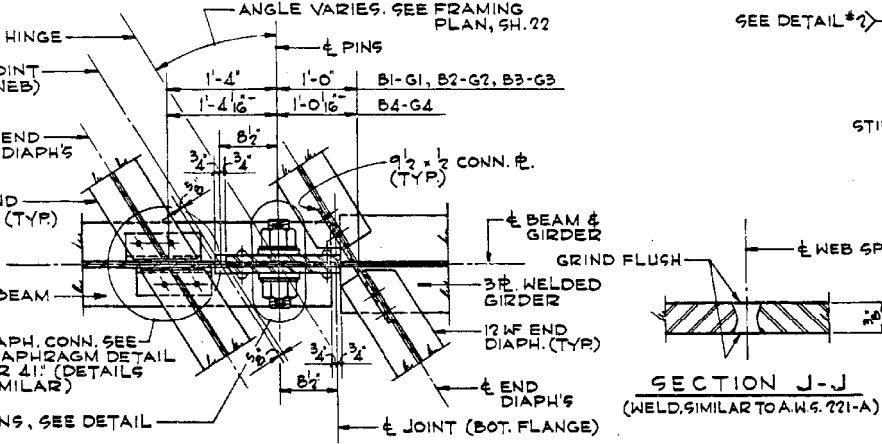
SPlice ELEVATION



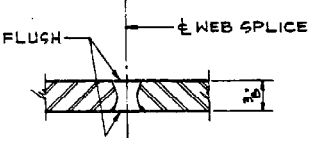
HINGE DETAIL - ELEVATION
SCALE: 1\"/>



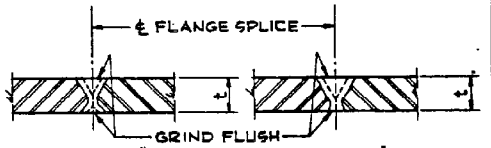
SECTION E-E
SCALE: 3/4\"/>



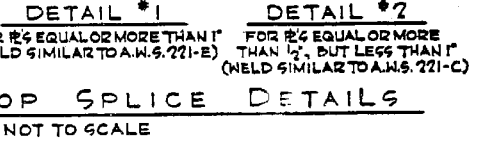
SECTION F-F
SHOWING DETAILS OF END DIAPHRAGMS D2, D6, D7 & D8 AT HINGE
SCALE: 1\"/>



SECTION J-J
(WELD SIMILAR TO A.W.S.??1-A)

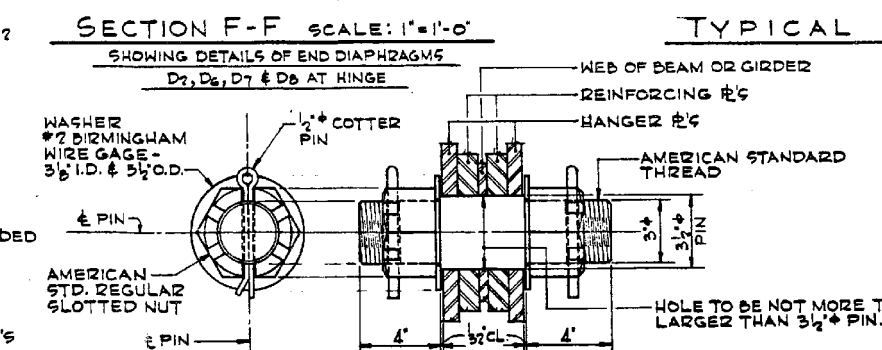


DETAIL #1
FOR R'S EQUAL OR MORE THAN 1\"/>



DETAIL #2
FOR R'S EQUAL OR MORE THAN 1/2\", BUT LESS THAN 1\"/>

NOTE:
FOR BILL OF MATERIAL, SEE SH.??



PIN DETAIL
SCALE: 3\"/>

DE LEW, CATHER & CO. ENGINEERS
DESIGNED BY J.H. HOD
DRAWN BY J. CHALKIS
CHECKED BY J. MARTINS
IN CHARGE E.S. MARTINS
APPROVED L.N. RIAN

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
RAMPE OVER DES PLAINES RIVER
STEEL DETAILS
SCALE: AS NOTED DATE: 8-28-63

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205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

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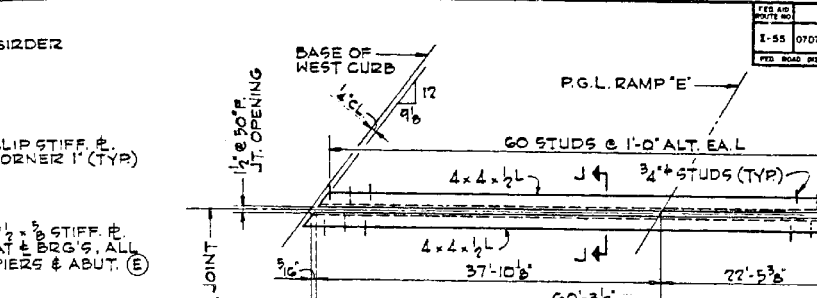
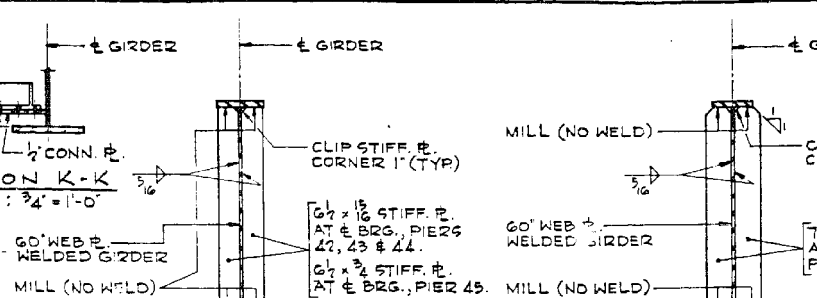
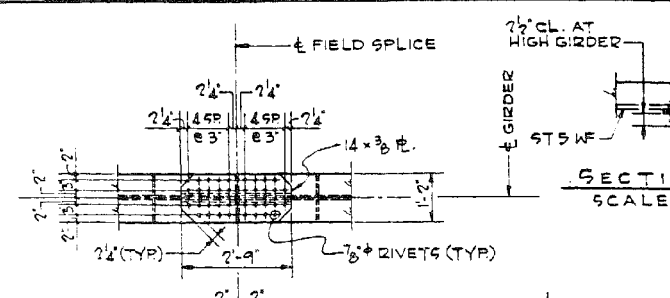
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS - STEEL DETAILS (1 OF 2)
STRUCTURE NO. 016-1026
SHEET NO. SFX12 OF SFX30 SHEETS

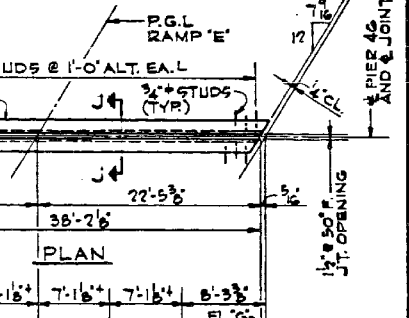
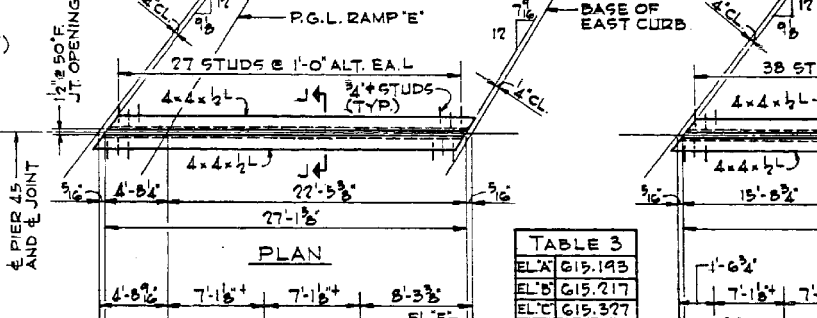
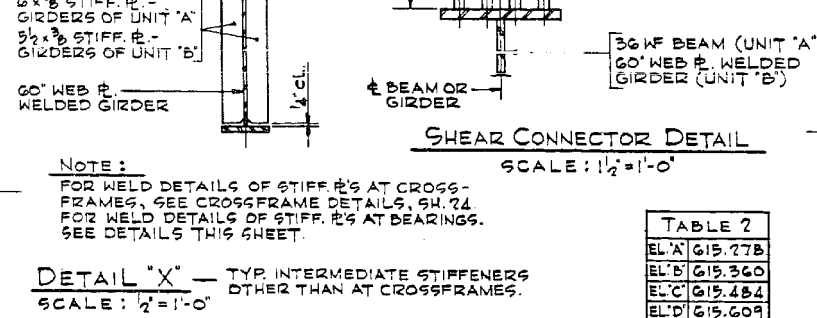
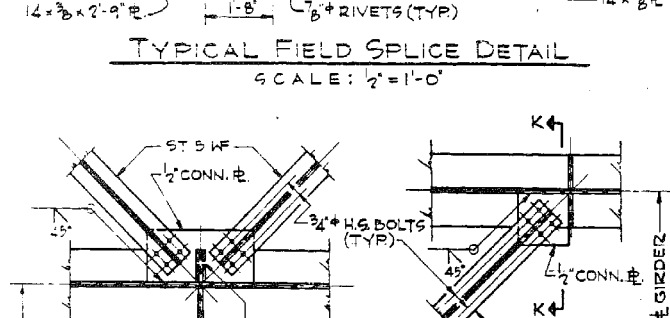
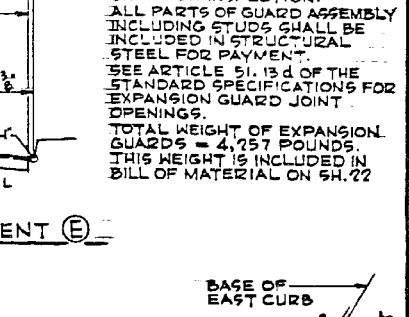
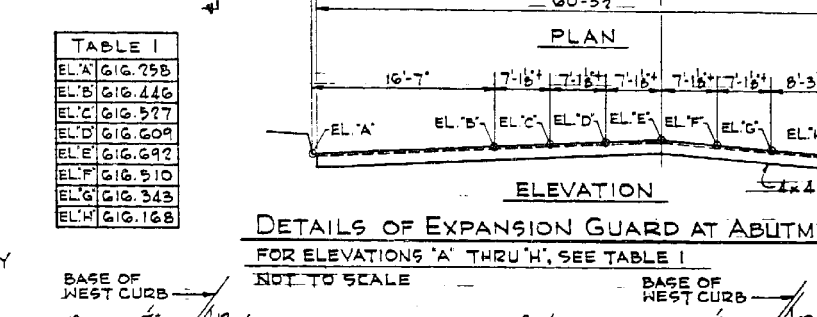
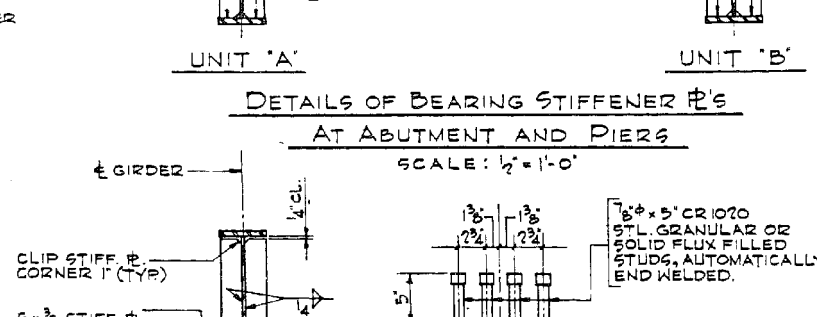
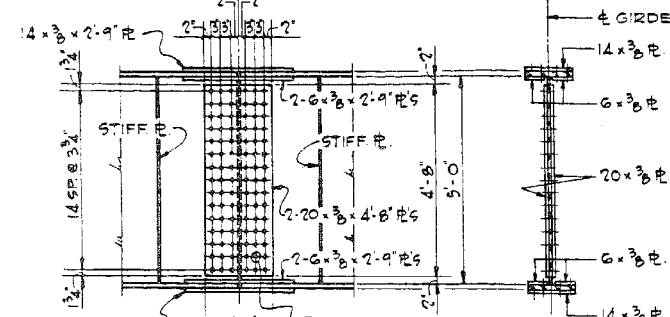
FOR INFORMATION ONLY

F.A.P. RTE. 372	SECTION 2013-038B-R	COUNTY COOK	TOTAL SHEETS 821	SHEET NO. 572
CONTRACT NO. 60J16			ILLINOIS FED. AID PROJECT	

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EXPANSION GUARD NOTES:
 FOR STRUCTURAL STEEL DESIGNATION, SEE SH. 3
 EXPANSION GUARD ASSEMBLIES SHALL BE FABRICATED AND ERECTED TO CONFORM TO THE ROADWAY CROWN AND SLOPE OF GRADE "A". THE GUARD, THEY SHALL BE ASSEMBLED IN THE SHOP FOR INSPECTION.
 ALL PARTS OF GUARD ASSEMBLY INCLUDING STUDS SHALL BE INCLUDED IN STRUCTURAL STEEL FOR PAYMENT.
 SEE ARTICLE 51.13 d OF THE STANDARD SPECIFICATIONS FOR EXPANSION GUARD JOINT OPENINGS.
 TOTAL WEIGHT OF EXPANSION GUARDS = 4,757 POUNDS. THIS HEIGHT IS INCLUDED IN BILL OF MATERIAL ON SH. 22



NOTE: USE SIMILAR BENT # CONNECTION WITHIN WEB DEPTH TRANSITION @ GIRDER CANTILEVER
CONN. DETAILS OF BOT. LATERAL BRACING
 FOR LOCATION OF DETAILS, SEE "FRAMING PLAN" SH. 22
 SCALE: 3/4"=1'-0"

TOP/WF ELEVATIONS - UNIT 'A'

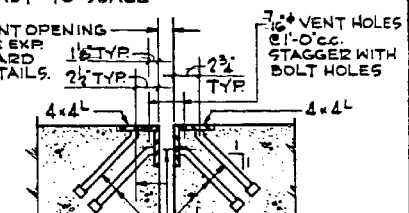
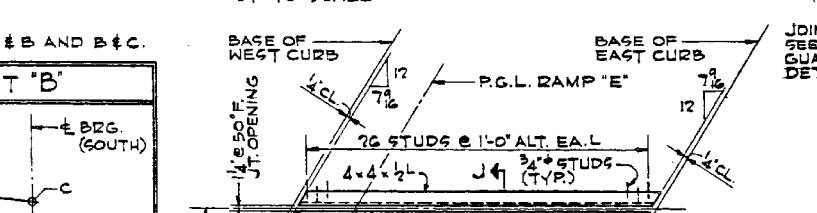
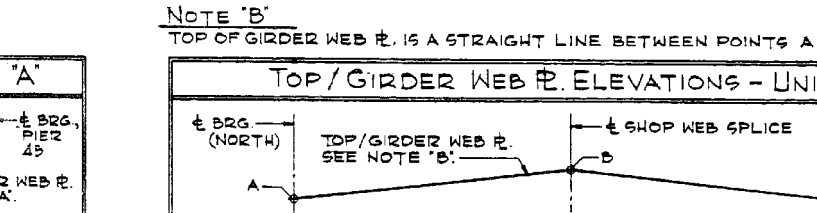
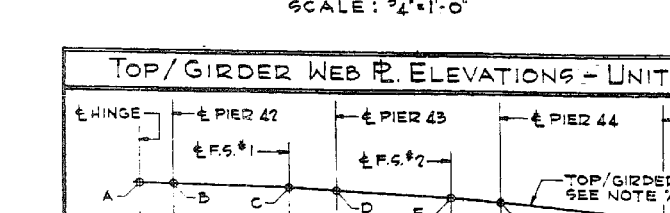
LOCATION	BEAM	B1	B2	B3	B4
FIX. BRG'S @ PIER 41		618.809	618.435	618.074	617.663
HINGE (EL. @ GIRDER)		617.485	617.315	617.106	616.910

TABLE 1

EL 'A'	616.758
EL 'B'	616.446
EL 'C'	616.577
EL 'D'	616.609
EL 'E'	616.692
EL 'F'	616.910
EL 'G'	616.343
EL 'H'	616.168

TABLE 2

EL 'A'	615.278
EL 'B'	615.360
EL 'C'	615.484
EL 'D'	615.609
EL 'E'	615.755



TOP/GIRDER WEB # ELEVATIONS - UNIT 'A'

GIRDER	A	B	C	D	E	F	G
G1	617.381	617.156	616.790	616.083	615.455	615.383	615.093
G2	617.211	616.986	616.121	615.914	615.285	615.214	614.924
G3	617.007	616.777	615.912	615.705	615.076	615.005	614.715
G4	616.806	616.581	615.716	615.509	614.880	614.808	614.519

TOP/GIRDER WEB # ELEVATIONS - UNIT 'B'

GIRDER	A	B	C
G5	615.109	615.220	615.139
G6	614.993	615.063	614.994
G7	614.867	614.932	614.840
G8	614.743	614.800	614.667
G9	614.629	614.684	614.546
G10	615.143	615.379	615.288
G11	615.028	615.228	615.243
G12	614.905	615.192	615.221
G13	614.782	615.033	615.128

TABLE 3

EL 'A'	615.193
EL 'B'	615.217
EL 'C'	615.327
EL 'D'	615.437
EL 'E'	615.547
EL 'F'	615.658
EL 'G'	615.768

TABLE 4

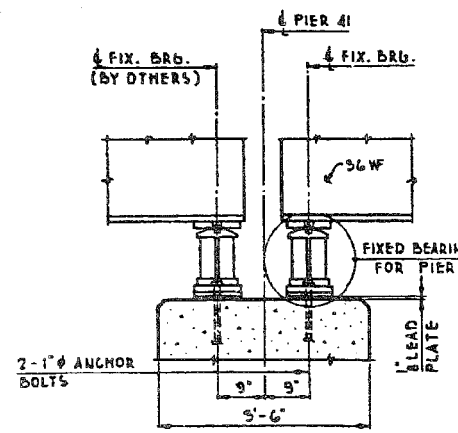
EL 'A'	617.519
EL 'B'	617.609
EL 'C'	617.687
EL 'D'	617.867
EL 'E'	618.058
EL 'F'	618.260

NOTE 'A':
 TOP OF GIRDER WEB # IS A STRAIGHT LINE BETWEEN POINTS A & C, C & E AND E & G.

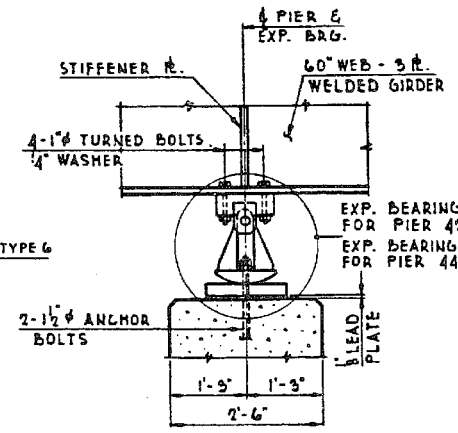
NOTE 'B':
 TOP OF GIRDER WEB # IS A STRAIGHT LINE BETWEEN POINTS A & B AND B & C.

NOTE: FOR BILL OF MATERIAL, SEE SH. 22

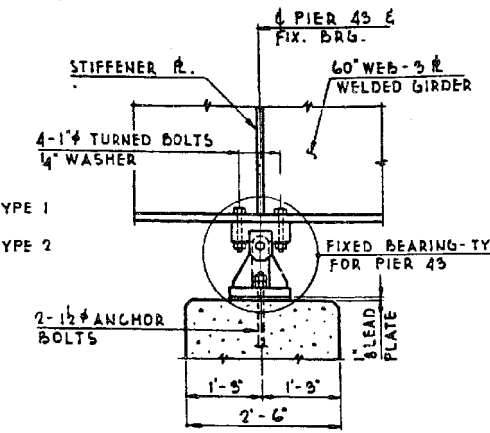
ILLINOIS DIVISION OF HIGHWAYS
 SOUTHWEST EXPRESSWAY
 RAMP E OVER DES PLAINES RIVER
 STEEL DETAILS, EXPANSION GUARDS & ELEVATIONS
 SCALE: AS NOTED DATE 8/2/23



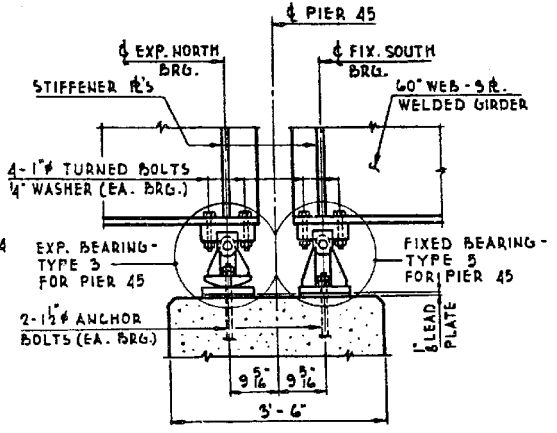
BRG. TYPE 6 AT PIER 41
 SCALE: 3/4" = 1'-0"



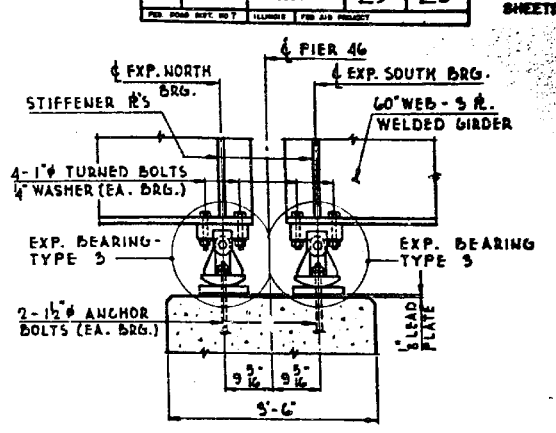
BRG. TYPE 1 & 2
 AT PIERS 42 & 44
 SCALE: 3/4" = 1'-0"



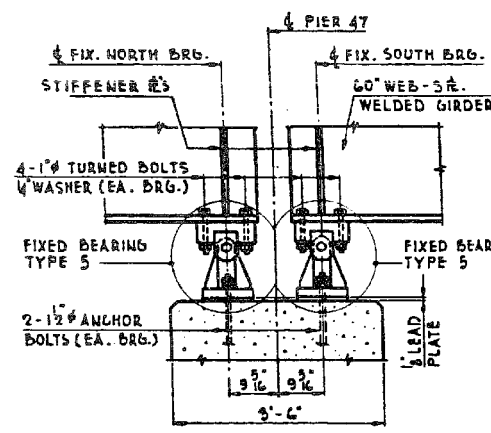
BRG. TYPE 4 AT PIER 43
 SCALE: 3/4" = 1'-0"



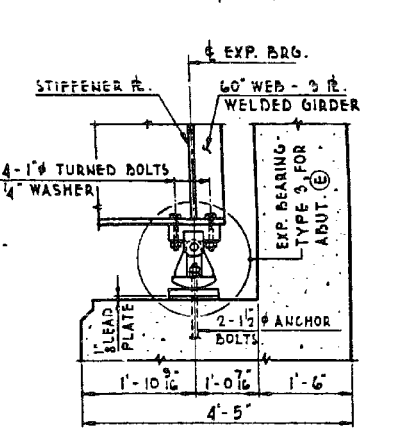
BRG. TYPE 3 & 5 AT PIER 45
 SCALE: 3/4" = 1'-0"



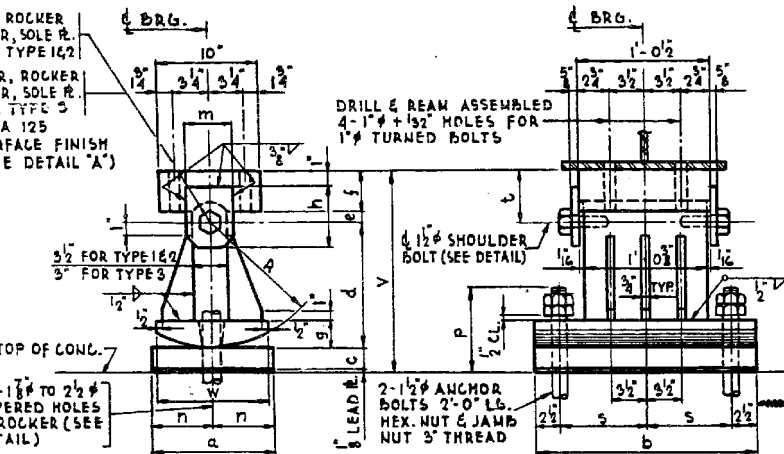
BRG. TYPE 3 AT PIER 46
 SCALE: 3/4" = 1'-0"



BRG. TYPE 5 AT PIER 47
 SCALE: 3/4" = 1'-0"

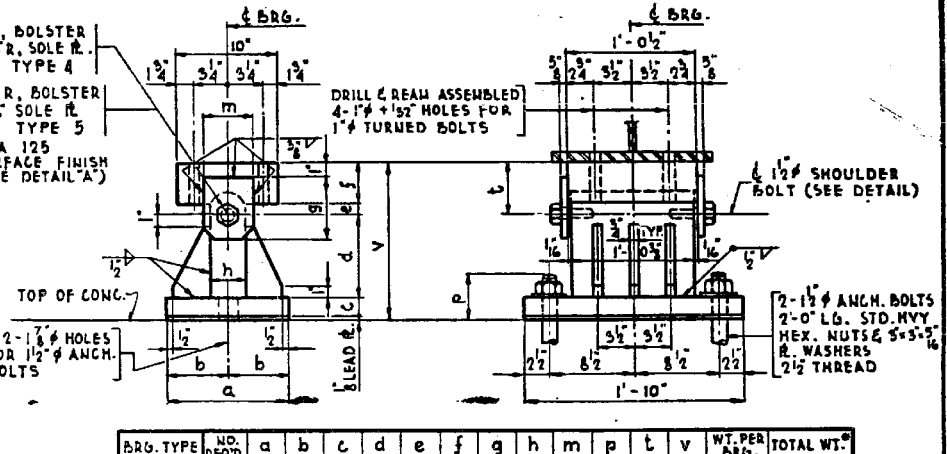


BRG. TYPE 3 AT ABUT. (E)
 SCALE: 3/4" = 1'-0"



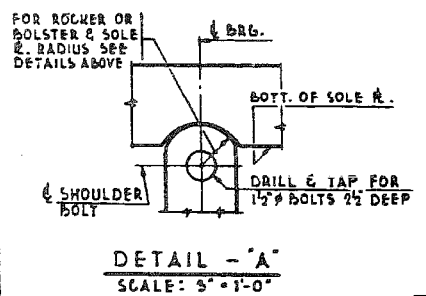
BRG. TYPE	NO. REQ'D	a	b	c	d	e	f	g	h	m	n	p	r	s	t	v	w	WT. PER BRG.	TOTAL WT.
1	4	1'-0"	1'-0"	1'-0"	1'-0"	3/4"	3/4"	2 1/2"	4 1/2"	5"	6"	8 1/2"	1'-0"	8 1/2"	4 1/2"	1'-0"	10"	749	2,996
2	4	1'-0"	2'-2"	2'-2"	1'-0"	1"	3 3/4"	3 3/4"	6"	5"	6"	9"	1'-0"	10 1/2"	4 1/2"	1'-7"	11"	908	3,632
3	22	10"	1'-10"	1 1/2"	8"	3 1/2"	3"	2 1/2"	4 1/2"	4"	5"	7 1/2"	8"	8 1/2"	3 3/4"	1'-1 1/2"	9"	549	11,946

* DOES NOT INCLUDE FILL R'S EXCEPT @ PIER 46-612, USE P=8 1/2"

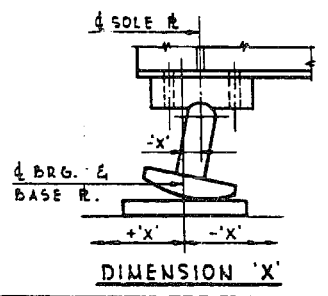


BRG. TYPE	NO. REQ'D	a	b	c	d	e	f	g	h	m	p	t	v	WT. PER BRG.	TOTAL WT.
4	4	1'-0"	6"	1 1/2"	8"	1"	3 3/4"	6"	3 3/4"	5"	4"	4 1/2"	1'-2 1/2"	594	2,196
5	18	10"	5"	1 1/2"	8"	3 1/2"	3"	4 1/2"	3"	4"	4"	3 3/4"	1'-1 1/2"	495	7,850

* DOES NOT INCLUDE FILL R'S EXCEPT @ PIER 45-66 & 669 USE P=4"



DETAIL - A
 SCALE: 5" = 1'-0"

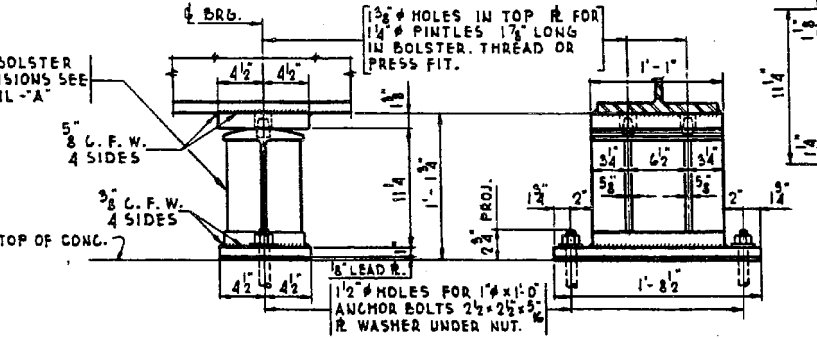


DIMENSION 'X'

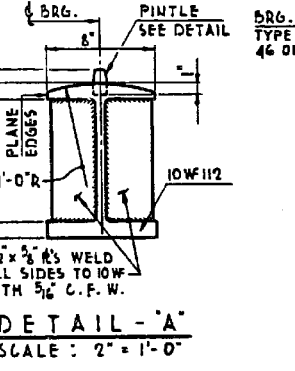
TEMPERATURE F	110°	90°	70°	50°	30°	10°
BRG'S @ PIER 42	+2"	+3 1/2"	+5 1/2"	0	-3 1/2"	-5 1/2"
BRG'S @ PIER 44	-1 1/2"	-3 1/2"	-5 1/2"	0	+3 1/2"	+5 1/2"
NO. BRG'S @ PIER 45	-1 1/2"	-3 1/2"	-5 1/2"	0	+3 1/2"	+5 1/2"
NO. BRG'S @ PIER 46	-1 1/2"	-3 1/2"	-5 1/2"	0	+3 1/2"	+5 1/2"
SO. BRG'S @ PIER 46	+1 1/2"	+3 1/2"	+5 1/2"	0	-3 1/2"	-5 1/2"
BRG'S @ ABUT. (E)	-1 1/2"	-3 1/2"	-5 1/2"	0	+3 1/2"	+5 1/2"

MINUS SIGN INDICATES SOLE PLATE SOUTH OF BEARING.
 PLUS SIGN INDICATES SOLE PLATE NORTH OF BEARING.

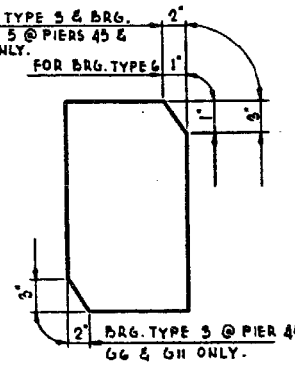
ROCKER SETTING DIAGRAM



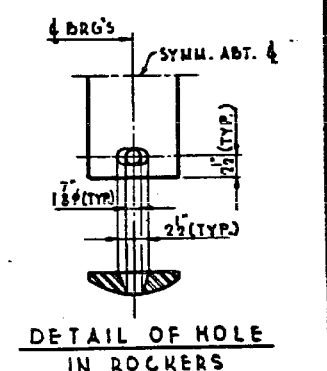
BOLSTER DETAIL OF FIXED BRG. TYPE 6 (4REQ'D)
 SCALE: 1 1/2" = 1'-0"



DETAIL - A
 SCALE: 2" = 1'-0"



BEARING PLATE DETAIL
 NOTE: FOR ORIENTATION OF BEARING PLATES SEE PIER DWGS SHEETS 12-18



DETAIL OF HOLE IN ROCKERS
 SCALE: AS NOTED

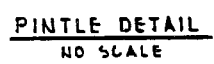
DE LEHM, CATHAR & CO. ENGINEERS
 DESIGNED BY V.K. BURKEVICS
 DRAWN BY F. BOBINAS
 CHECKED BY M. BOBINAS
 IN CHARGE F.S. MARTINS
 APPROVED L.M. RIAN

LOCATION	PIER 41	PIER 45	PIER 46	PIER 47
GIRDER	G5	G6	G8, G9, G10, G11, G12	G13, G14, G15, G16, G17, G18, G19, G20, G21, G22
FILL R.	3'6"	1'10"	3'6"	1'4"

TOTAL WEIGHT OF FILL PLATES = 505 LBS

BILL OF MATERIAL **		UNIT	QUANTITY
FURNISHING & ERECTING	STRUCTURAL STEEL	POUND	50,181

** WEIGHT OF ALL MATERIAL SHOWN ON THIS SHEET, INCL. FILL R'S



PINTLE DETAIL
 NO SCALE

ILLINOIS DIVISION OF HIGHWAYS
 SOUTHWEST EXPRESSWAY
**RAMP E
 OVER DES PLAINES RIVER**
 BEARING DETAILS
 SCALE: AS NOTED
 DATE: 8-28-63

benesch
 engineers - scientists - planners
 Alfred Benesch & Company
 205 North Michigan Avenue, Suite 2400
 Chicago, Illinois 60601
 312-565-0450 Job No. 10093

FILE NAME	USER NAME	DESIGNED	CHECKED	PLLOT SCALE	PLLOT DATE
0161026_60J16_X14_existplan14.dgn	tjanicke	FSM	RMM		12/28/2013

DESIGNED	CHECKED	DRAWN	CHECKED	REVISED	REVISED	REVISED
FSM	RMM	FSM	RMM			

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

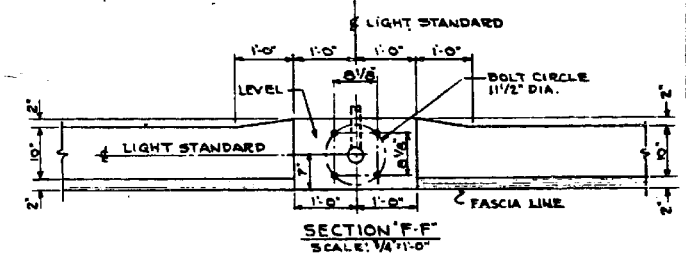
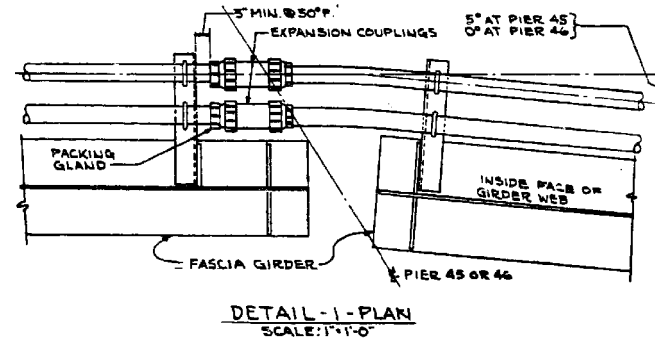
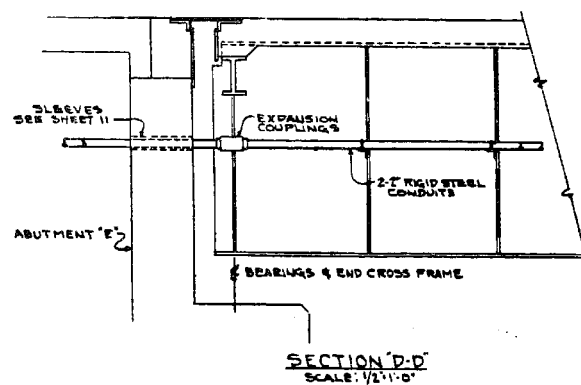
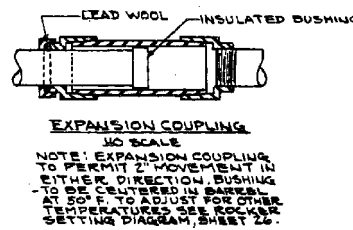
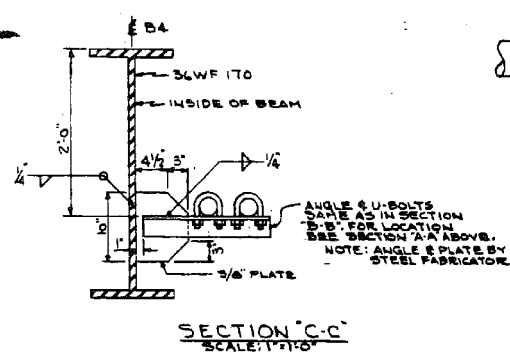
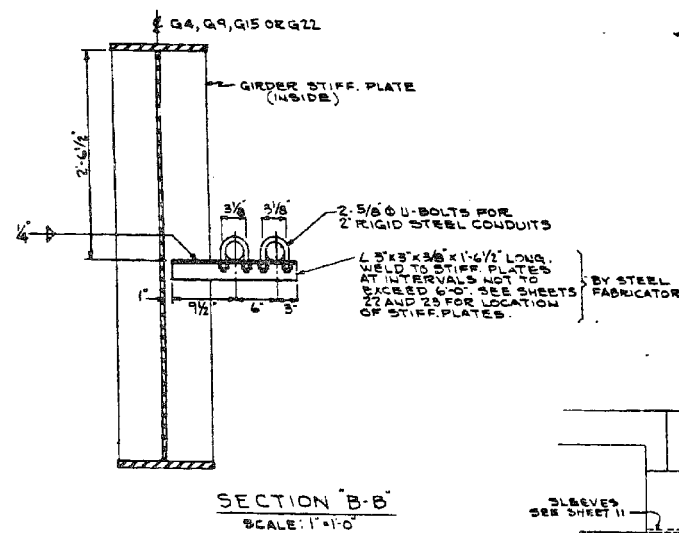
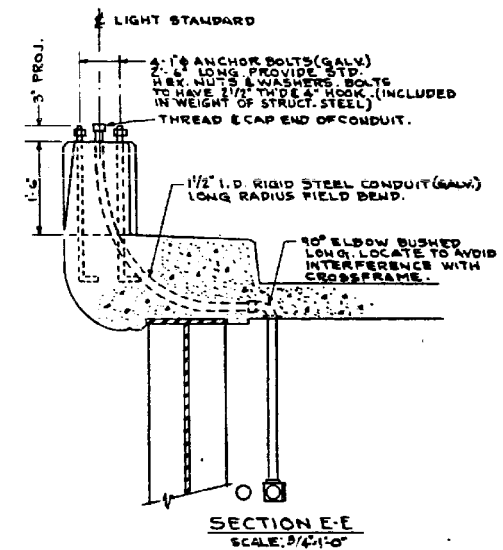
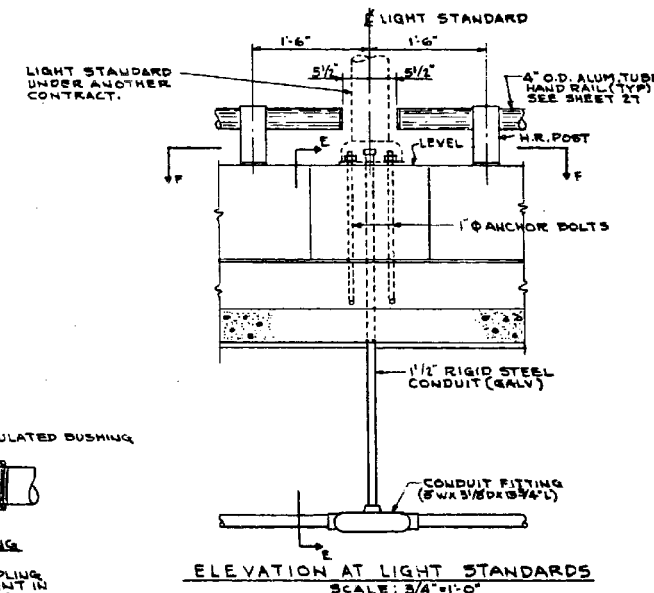
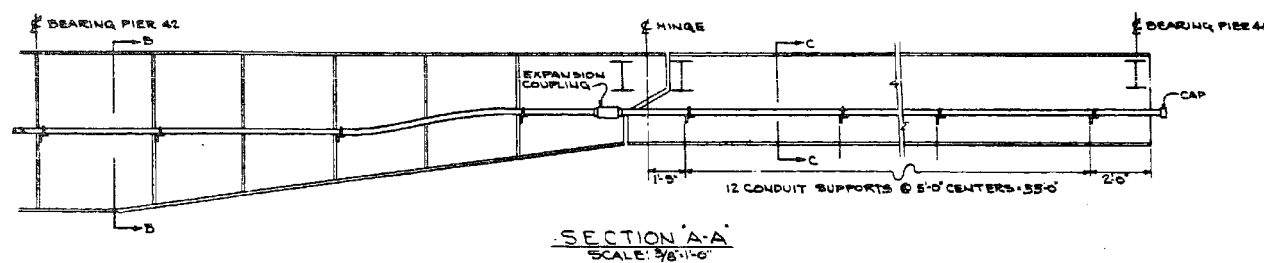
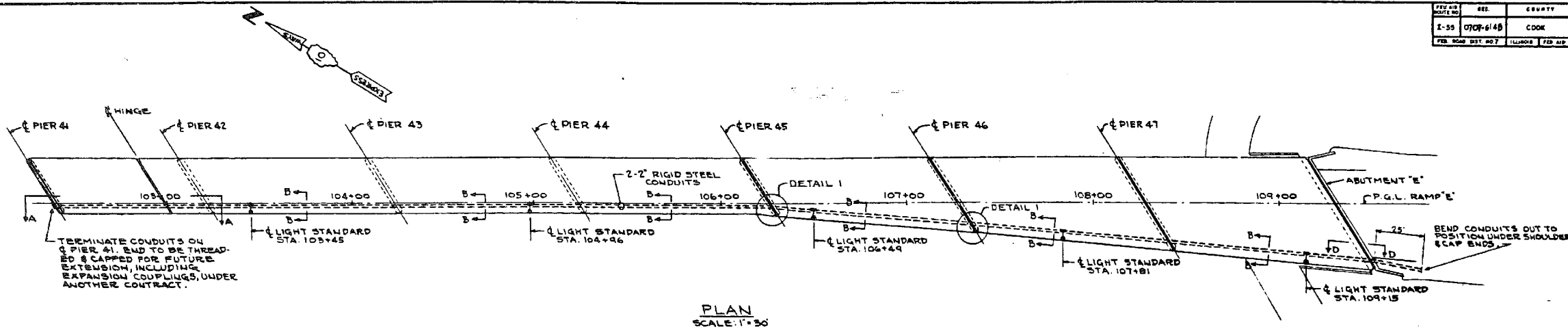
EXISTING PLANS - BEARING DETAILS
 STRUCTURE NO. 016-1026
 SHEET NO. SFX14 OF SFX30 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	574

CONTRACT NO. 60J16
 ILLINOIS FED. AID PROJECT

X:\100005\10093\Eng_Docs_Phase_1\11\SN_016_1026_SB_1st_Ave_Ramp_cover_Des_Plaines_River_VFinal_VFinal_1026\0161026_60J16_X14_existplan14.dgn 2:46:05 PM 6/23/2014

REV. NO.	REV.	DATE	TOTAL SHEETS	SHEET NO.
1-55	07/09/61	48	29	28
SHEET NO. 28				
SHEETS				



BILL OF MATERIAL		
ITEM	UNIT	QUANTITY
CONDUIT IN TRENCH, 2" DIA. GALVANIZED STEEL	LIN. FT.	50
CONDUIT ATTACHED TO STRUCTURE, 2" DIA. GALV. STEEL	LIN. FT.	1410
CONDUIT IN CONCRETE, 1 1/2" DIA. GALVANIZED STEEL	LIN. FT.	25
CONDUIT, 1 1/2" DIA. GALVANIZED STEEL	LIN. FT.	10
TRENCH AND BACKFILL	LIN. FT.	25
FURNISHING & ERECTING STRUCTURAL STEEL	POUND	1995

ILLINOIS DIVISION OF HIGHWAYS
 SOUTHWEST EXPRESSWAY
 RAMP E OVER DES PLAINES RIVER
 ELECTRICAL DETAILS

SCALE: AS NOTED DATE

DE LEUK, CATHAR & CO. ENGINEERS
 DESIGNED BY E.M.
 DRAWN BY E.M.
 CHECKED E.M.
 IN CHARGE E.S. MARTINS
 APPROVED L.R. RIAN

Alfred Benesch & Company
 205 North Michigan Avenue, Suite 2400
 Chicago, Illinois 60601
 312-565-0450 Job No. 10093

FILE NAME = 0161026_60J16_X15_existplan15.dgn

USER NAME = tjenicke
 DESIGNED - FSM
 CHECKED - RMM
 DRAWN - FSM
 CHECKED - RMM
 PLOT SCALE =
 PLOT DATE = 12/20/2013

DESIGNED - FSM
 CHECKED - RMM
 DRAWN - FSM
 CHECKED - RMM

REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING PLANS - ELECTRICAL DETAILS
 STRUCTURE NO. 016-1026

SHEET NO. SFX15 OF SFX30 SHEETS

FOR INFORMATION ONLY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	575
CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				

X:\100005\10093\Eng_Docs_Phase_II\SN_016-1026-SB-1st-Ave-Ramp-over_Des_Plaines_River\Final\1026\0161026_60J16_X15_existplan15.dgn 2:46:07 PM 6/23/2014

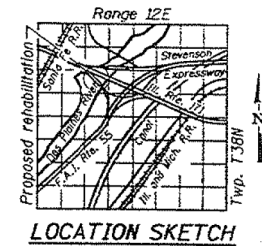
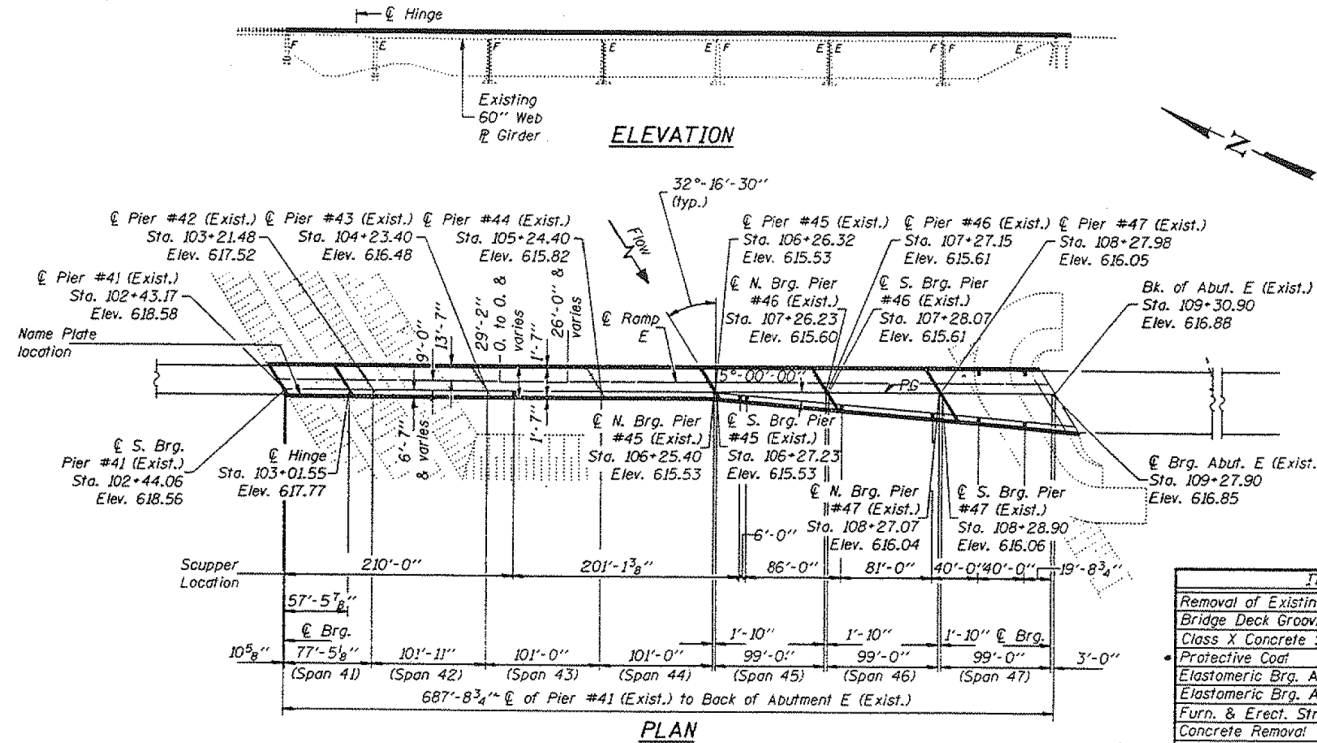
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.
F.A.I. RT. 55	2013-038B-R	COOK	343	348
PROJECT NO. 016-1026				24 SHEETS

Bench Mark: Chiseled "□" cut on curb of parapet Ramp E at Sta. 100+00 (T.B.M. #1) 625.11

Existing Structure: Il. Rte. 171 S. Bd. to F.A.I. Rte. 55 E. Bd. Ramp E, Sec. 0707-614B, Sta. 106+26.32, Str. No. 016-1026. Built in 1964 as a seven span multi beam/girder, four continuous spans with a hinge and four simple spans. The substructure consists of two straight, multi column spread footing piers, five solid wall spread footing piers and a pile bent abutment. Traffic will be detoured utilizing alternate routes during rehabilitation.

No Salvage.



GENERAL NOTES

Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60.
Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
Field welding of construction accessories will not be permitted to the bottom flange of girders nor to the top flange for a distance equal to one-fourth the span length each way from the pier supports. Field welding in other areas will be permitted only when approved by the Engineer.

The Inorganic Zinc-Silicate/Acrylic/Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the acrylic finish coat shall be Interstate Green, Munsell No. 7.5G 4/B.
Cleaning and painting of the existing structural steel shall be specified in the Special Provision for "Cleaning and Painting Existing Steel Structures". All existing structural steel within 5 feet of either side of expansion joints shall be cleaned and painted by Method 1. All remaining existing structural steel shall be cleaned by Method 2. The Lead and Chromate Free Alkyd Paint System shall be used for painting of existing structural steel. The prime and intermediate coats shall be applied as specified in the special provision, followed by a spot final finish coat over all newly primed steel surfaces. The color of the final finish coat shall be Interstate Green, Munsell No. 7.5G 4/B.

The estimated area to be cleaned by Method 1 is 6,570 sq. ft.
The Contractor will be required to mark, on top of the concrete deck, the locations of the top flange of all the steel girders, prior to any removal of the bridge concrete deck. Saw cutting directly over the top of the girder flanges is not permitted.

Contractor should exercise extreme care to not damage existing shear studs.
Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 1/8" adjusting shims, of the dimension of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims. (For Type I Elastomeric Bearings, shims of the dimensions of the top plate shall be provided as detailed).

Asbestos material is on waterproofing membrane.

SCOPE OF WORK

- Rehabilitation consists of removal and replacement of existing concrete deck.
- Replacement of all expansion joints.
- Removal and replacement of expansion bearings.
- Repair of cracks and spalls on substructure.
- Removal and replacement of section of abutment.

For Light Post locations see sheets 6 & 8 of 24.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Concrete Deck	Each	1		1
Bridge Deck Grooving	Sq. Yd.	2340		2340
Class X Concrete Superstructure	Cu. Yd.	771.8		771.8
Protective Coat	Sq. Yd.	569		569
Elastomeric Brg. Assembly, Type I	Each	18		18
Elastomeric Brg. Assembly, Type II	Each	4		4
Furn. & Erect. Structural Steel	Pound	9050		9050
Concrete Removal	Cu. Yd.	7.8		7.8
Cleaning and Painting Steel Bridge	L.S.	0.32		0.32
Reinforcement Bars, Epoxy Coated	Pound	200,760		200,760
Name Plates	Each	1		1
Jack & Remove Existing Bearings	Each	22		22
Epoxy Crack Sealing	Lin. Ft.		15	15
Drainage Scuppers	Each	9		9
Stud Shear Connectors	Each	2480		2480
Bar Splicers	Each	20		20
Neoprene Expansion Joint 2"	Lin. Ft.	31		31
Neoprene Expansion Joint 2 1/2"	Lin. Ft.	31		31
Neoprene Expansion Joint 4"	Lin. Ft.	76		76
Preformed Joint Seal 1 1/2"	Lin. Ft.	58		58
Preformed Joint Seal 4"	Lin. Ft.	69		69
Formed Concrete Repair Depth ≤ 5"	Sq. Ft.		189	189
Power Tool Cleaning Residue Containment and Disposal	L.S.	0.32		0.32
Blasting Residue Containment and Disposal	L.S.	0.32		0.32
Bituminous Conc. Surface Removal (Asb.)	Sq. Yd.	1704		1704

* Quantity is for top and inside surfaces of Parapets.

LOADING HS20-44 (New Construction)

DESIGN SPECIFICATIONS

1992 AASHTO & 1993 Interim

DESIGN STRESSES

Proposed $f_c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)
Existing $f_c = 20,000$ psi (struct.)
 $f_y = 36,000$ psi (M270 Gr.36)

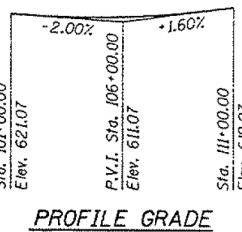
SEISMIC DATA

Seismic Performance Category (SPC) = A
Acceleration Coefficient (A) = 0.038g
Site Coefficient (S) = 1.2

STATION 106+26.32
REBUILT 199 BY
STATE OF ILLINOIS
F.A.I. RT. 55 SEC. 0707-614B
F.A. PROJ.
LOADING HS20
STR. NO. 016-1026

NAME PLATE

See Sta. 2113
Clean and relocate existing name plate adjacent to new name plate. Cost incidental to new Name Plate.



PROFILE GRADE

S.E. = 0.02'/1'
S.E. Transition
Sta. 101+00.00, 0.08'/1'E to
Sta. 103+00.00, 0.023'/1'E to
Sta. 103+25.00, 0.02'/1'E
East of Profile Grade Line
Sta. 107+50.00, 0.02'/1'E to
Sta. 108+50.00, 0.00'/1' to
Sta. 111+00.00, 0.08'/1'W
West of Profile Grade Line
Sta. 103+50.00
S.E. = 0.02'/1'E

DESIGNED **Victor H. Veltz**
CHECKED **Nicholas J. Smith**
DRAWN **r.b. carbonell**
CHECKED **VHV UJS**

EXAMINED **Greg D. Koop**
PASSED **Ralph L. Anderson**



Rev.

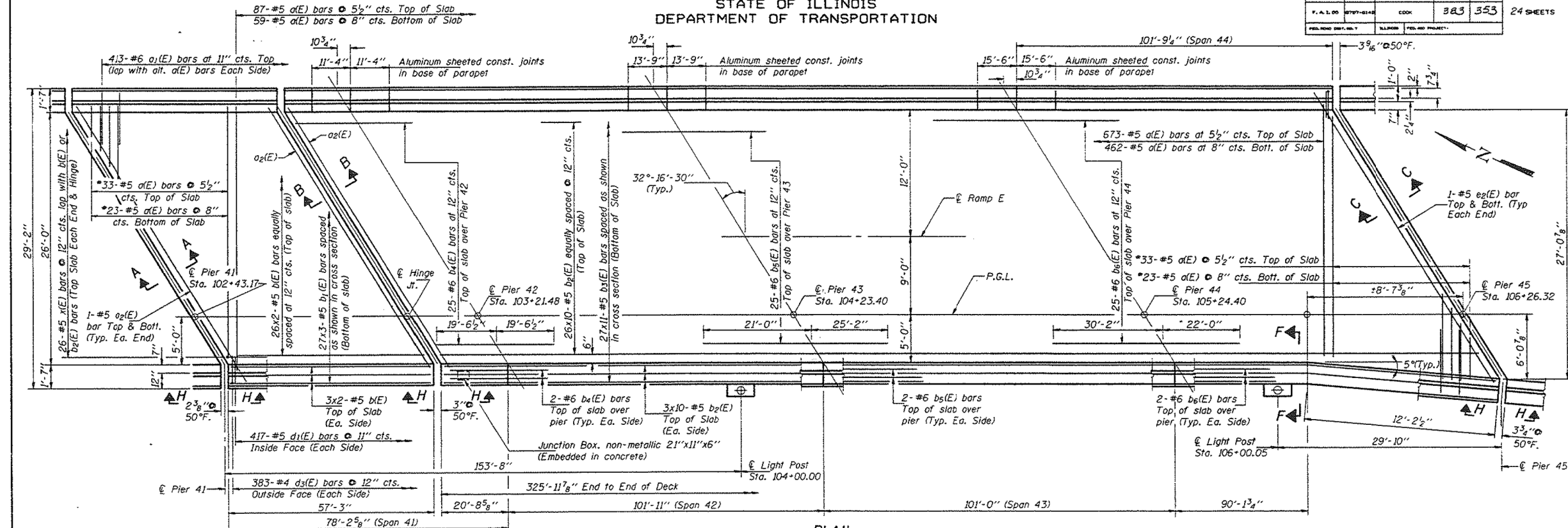
GENERAL PLAN
ILLINOIS ROUTE 171 S. BD. TO
F.A.I. ROUTE 55 E. BD.
RAMP E
OVER DES PLAINES RIVER
F.A.I. ROUTE 55 - SEC. 0707-614B
COOK COUNTY
STATION 106+26.32
STRUCTURE NO. 016-1026

FILE NAME =	USER NAME = tjenicke	DESIGNED - FSM	REVISOR -
		CHECKED - RMM	REVISIONS -
		DRAWN - FSM	
		CHECKED - RMM	

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	576
CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DATE	SECTION	COUNT	NO.	SHEET NO.
1. A. I. 00	0707-614B	COOK	383	353
F.A.I. RT. 55				24 SHEETS



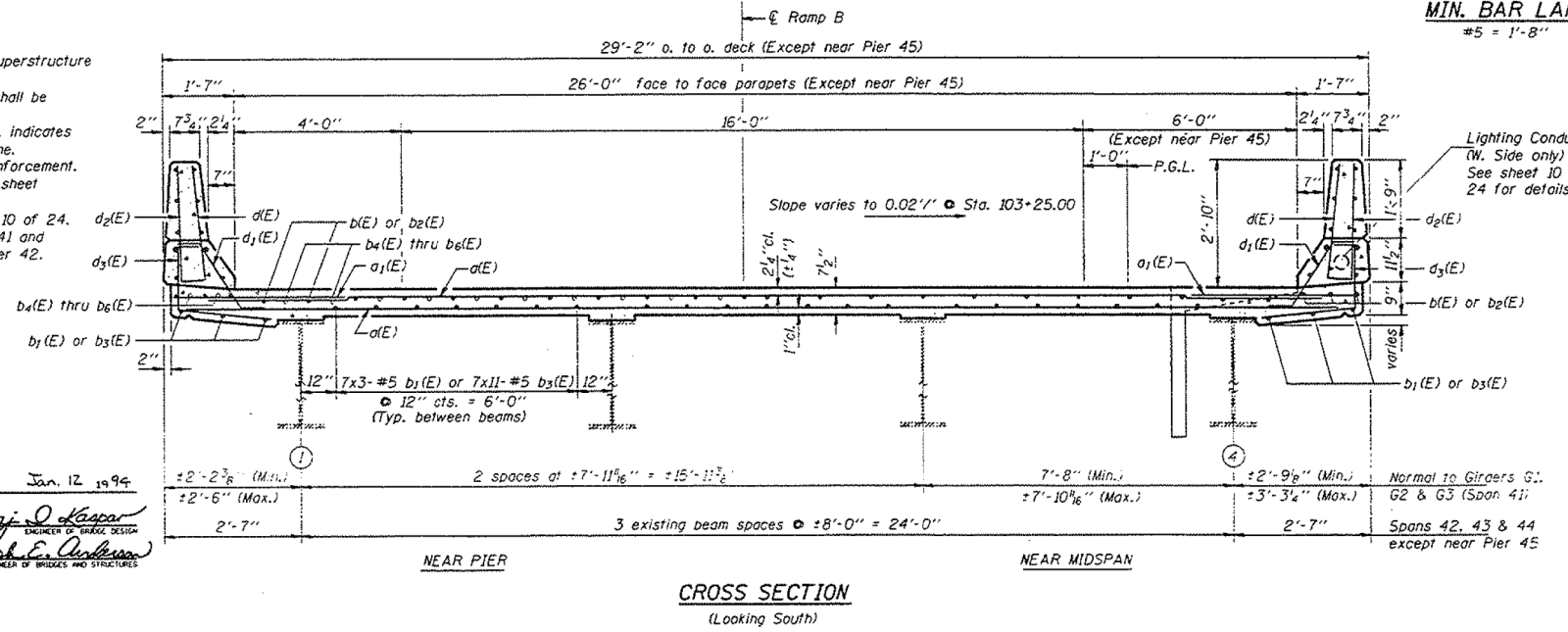
PLAN

*Order d(E) bars full length, cut to fit skew and use remainder of bars in opposite end.

Notes: See sheets 10, 11 & 12 of 24 for superstructure details and Bill of Material.
Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 26 x 11-#5 etc. indicates 26 lines of bars with 11 lengths per line.
See sheet 10 of 24 for parapet reinforcement.
For Sections A-A, B-B & C-C see sheet 11 of 24.
For Sections F-F & H-H see sheet 10 of 24.
Pour section of deck between Pier 41 and hinge before pouring concrete over Pier 42.

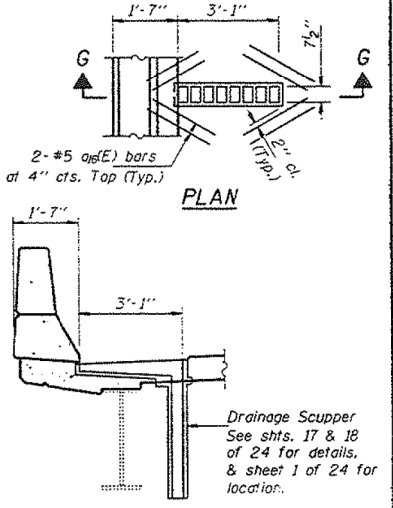
DESIGNED	Victor H. Velazquez
CHECKED	Nicholas J. Carbonell
DRAWN	r.b. carbonell
CHECKED	VHW ALTS

Jan. 12 1994
EXAMINED: *[Signature]*
DIRECTOR OF BRIDGE DESIGN
PASSED: *[Signature]*
DIRECTOR OF BRIDGES AND STRUCTURES



CROSS SECTION
(Looking South)

MIN. BAR LAPS
#5 = 1'-8"



SECTION G-G
SUPERSTRUCTURE (SPANS 41-44)
F.A.I. RT. 55 SEC. 0707-614B
COOK COUNTY
STA. 106+26.32



Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

FILE NAME =	USER NAME =	DESIGNED -	REVISOR -
0161026.60J16.X17.existplan17.dgn	tjenicke	FSM	
		CHECKED -	REVISOR -
		RMM	
		DRAWN -	REVISOR -
		FSM	
		CHECKED -	REVISOR -
		RMM	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (1994) - DECK PLAN
STRUCTURE NO. 016-1026

SHEET NO. SFX17 OF SFX30 SHEETS

FOR INFORMATION ONLY

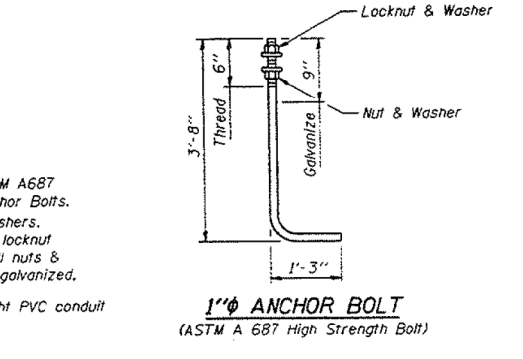
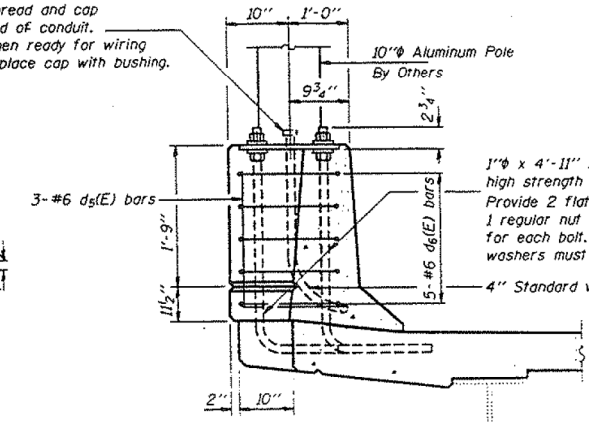
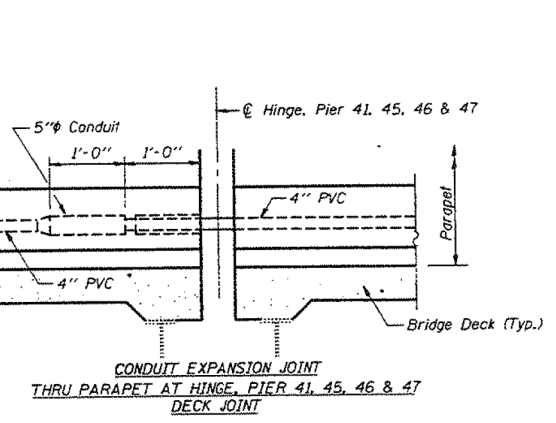
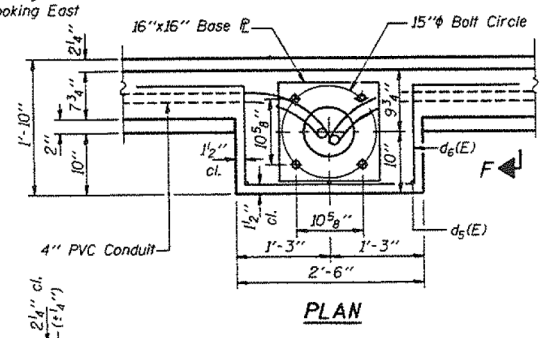
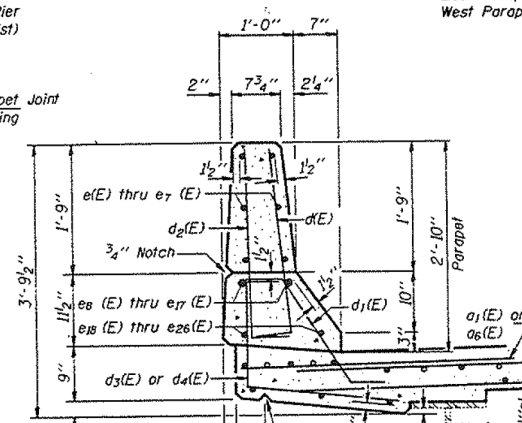
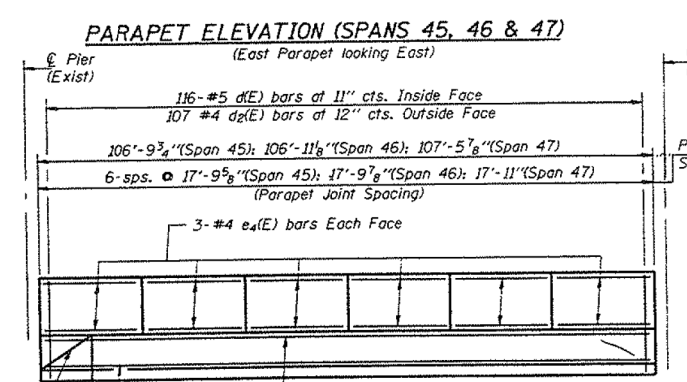
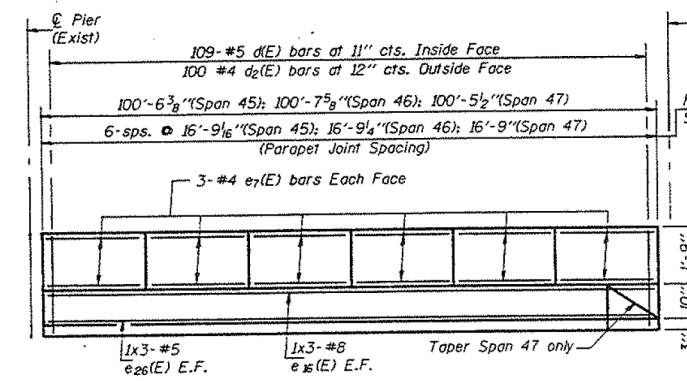
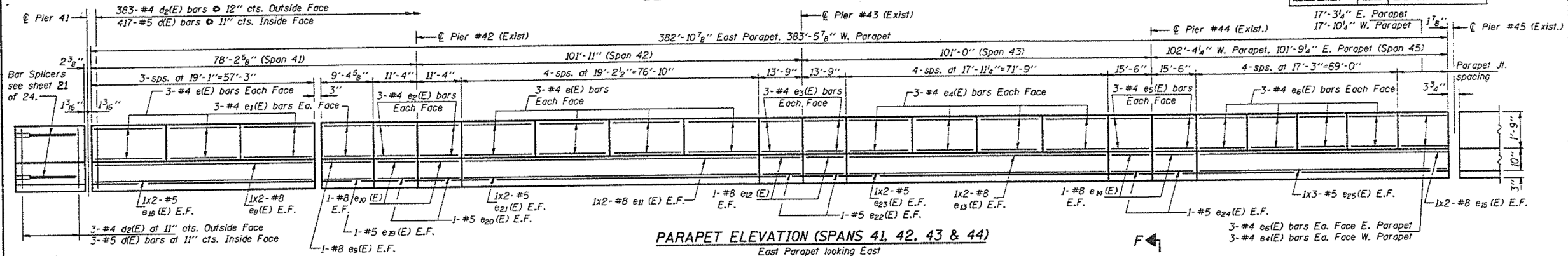
F.A.P. RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	577
				CONTRACT NO. 60J16

ILLINOIS FED. AID PROJECT

X:\100005\10093\Eng_Docs_Phase_11\SN_016_1026_SB_1st_Ave_Ramp_cover_Des_Plaines_River\Final\1026\0161026.60J16.X17.existplan17.dgn 2:46:20 PM 6/23/2014

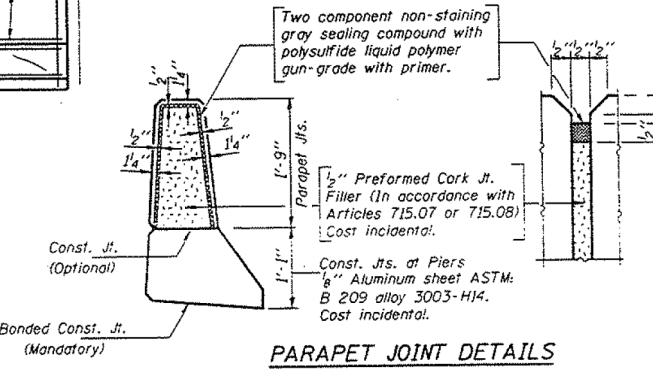
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
F.A.I. RT. 55	0707-614B	COOK	383	357
				24 SHEETS



DESIGNED VECTER B. VELEZ	EXAMINED Prof. J. Kasper
CHECKED Nicholas J. Saville	PASSED Ralph E. Anderson
DRAWN r.b. carbonell	
CHECKED VHV NJS	

S-2-D 2-26-93



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Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

FILE NAME =	USER NAME = tjenicke	DESIGNED - FSM	REVISIONS
0161026_60J16_X18_existplan18.dgn		CHECKED - RMM	REVISIONS
		DRAWN - FSM	REVISIONS
		CHECKED - RMM	REVISIONS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (1994) - PARAPET ELEVATION
STRUCTURE NO. 016-1026

SHEET NO. SFX18 OF SFX30 SHEETS

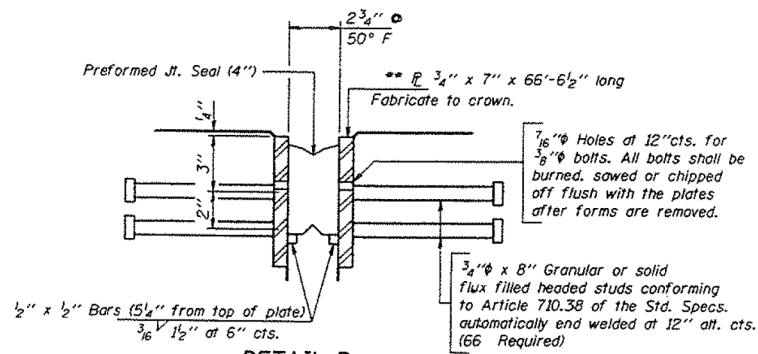
FOR INFORMATION ONLY

F.A.P. RT. 55	SECTION 2013-038B-R	COUNTY COOK	TOTAL SHEETS 821	SHEET NO. 578
				CONTRACT NO. 60J16
ILLINOIS FED. AID PROJECT				

X:\100005\10093\Eng_Docs_Phase_1\11\SN_016_1026_SB_1st_Ave_Ramp_cover_Des_Plaines_River_Final_V16.dwg 6/23/2014 2:46:30 PM

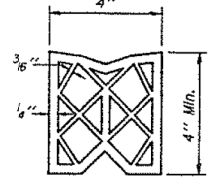
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNT	DATE	NO.	SHEET NO. 11
F.A.I. RT. 55	0707-614B	COOK	383	358	24 SHEETS
PROJECT NO.	ALIAS	PROJECT NAME			

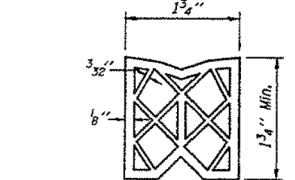


DETAIL B

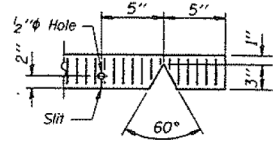
** Furnish in segments of 20 ft. maximum length. Maximum space between installed segments shall be 3/16". Seal space with Silicone Sealant suitable for Structural Steel.



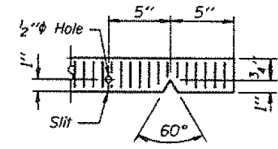
PREFORMED JOINT SEAL (4")



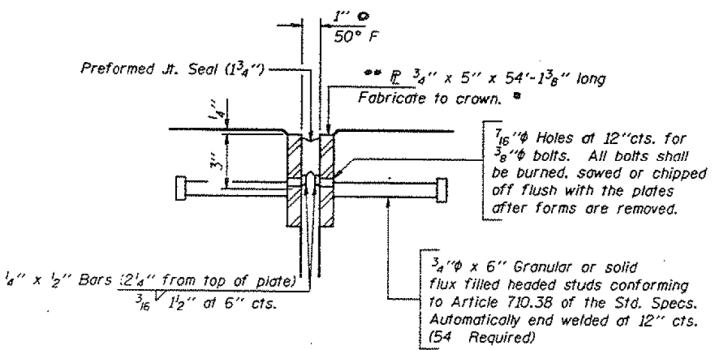
PREFORMED JOINT SEAL (1 3/4")



SEAL CUT-OUT

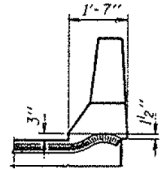


SEAL CUT-OUT

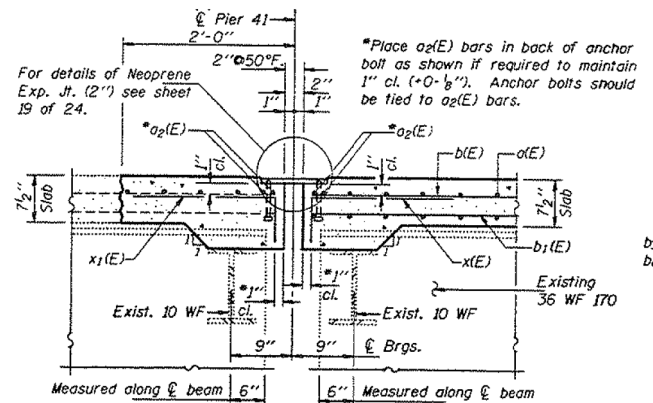


DETAIL A

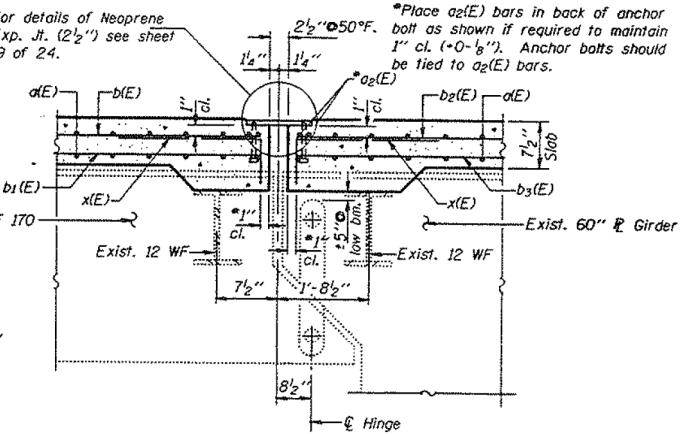
** Furnish in segments of 20 ft. maximum length. Maximum space between installed segments shall be 3/16". Seal space with Silicone Sealant suitable for Structural Steel.



TYPICAL END OF SEAL TREATMENTS AT PIER 47

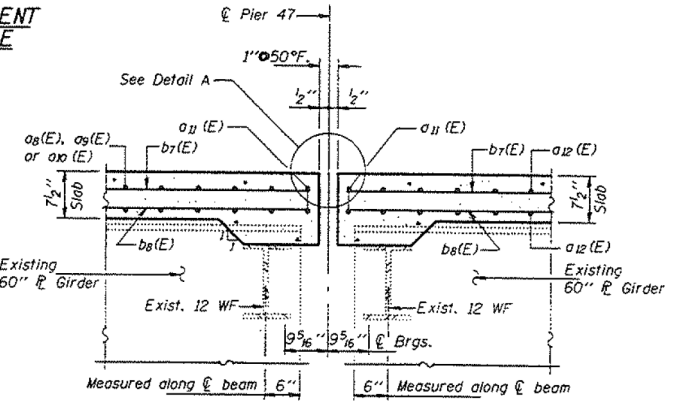


SECTION A-A
(Dim. are at Rt. L's)

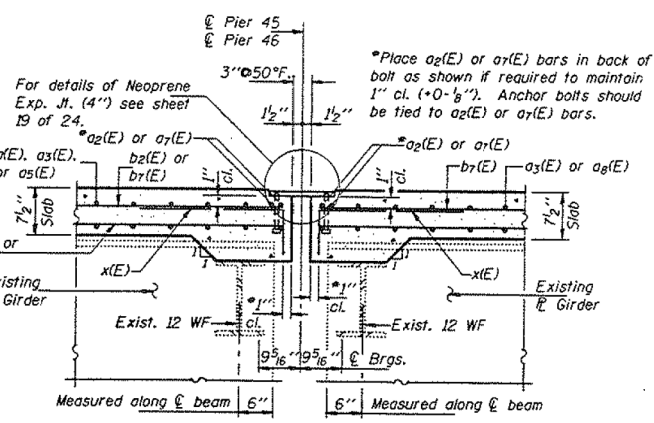


SECTION B-B
(Dim. are at Rt. L's)

END TREATMENT AT ABUT. E

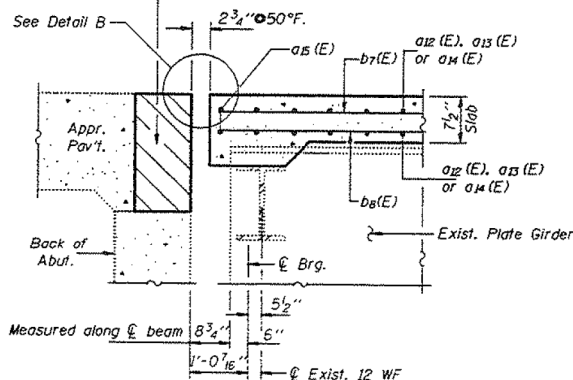


SECTION D-D
(Dim. are at Rt. L's)



SECTION C-C
(Dim. are at Rt. L's)

Hatched area to be poured after superstructure forms have been removed. Quantity of concrete to be included with Class X Concrete Superstructure.



SECTION E-E
(Dim. are at Rt. L's)

DESIGNED <i>Vicente H. Uelz</i>	EXAMINED <i>Jan. 12 1994</i>
CHECKED <i>Nicholas J. Hall</i>	PASSED <i>Ralph E. Anderson</i>
DRAWN <i>r.b. carbonell</i>	
CHECKED <i>VHV AIT'S</i>	

S-2-D 2-26-93

SUPERSTRUCTURE DETAILS
F.A.I. RT. 55 SEC. 0707-614B
COOK COUNTY
STA. 106+26.32

FILE NAME =	USER NAME = tjenicke	DESIGNED - FSM	REVISD -
		CHECKED - RMM	REVISD -
		DRAWN - FSM	REVISD -
		CHECKED - RMM	REVISD -

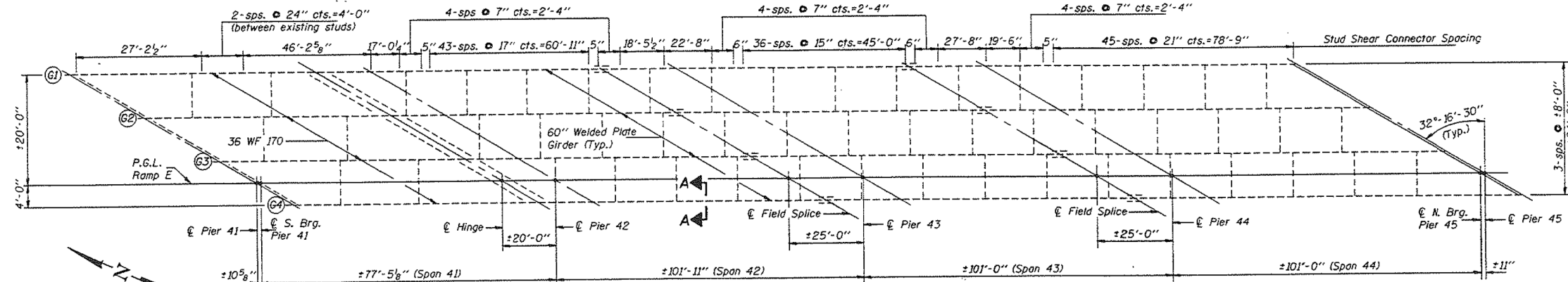
0161026.60J16.X19.existplan19.dgn

PLOT SCALE =

PLOT DATE = 12/20/2013

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

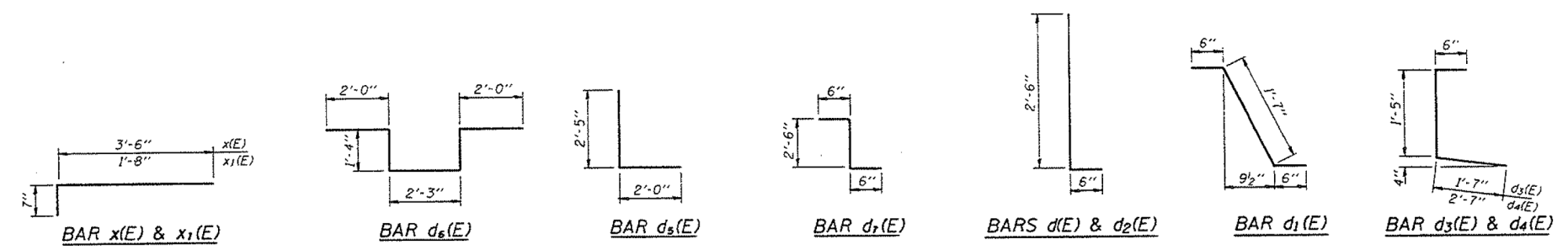
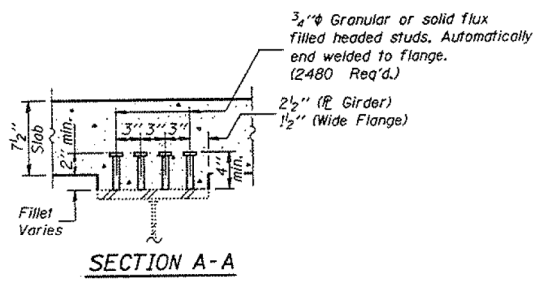
PROJECT NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
F.A.I. RT. 55	0707-614B	COOK	323	359
SHEET NO. 12			24 SHEETS	



EXISTING FRAMING PLAN (UNIT A)

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d1(E)	1393	#5	27'-2"	—
a1(E)	1150	#6	4'-0"	—
a2(E)	10	#5	32'-5"	—
a3(E)	370	#5	19'-1"	—
a4(E)	175	#5	30'-0"	—
a5(E)	38	#5	18'-8"	—
a6(E)	346	#6	6'-0"	—
a7(E)	8	#5	22'-10"	—
a8(E)	363	#5	21'-7"	—
a9(E)	167	#5	44'-6"	—
a10(E)	53	#5	25'-0"	—
a11(E)	8	#5	28'-5"	—
a12(E)	365	#5	29'-7"	—
a13(E)	165	#5	45'-10"	—
a14(E)	58	#5	26'-0"	—
a15(E)	4	#5	34'-0"	—
a16(E)	72	#5	2'-0"	—
a17(E)	64	#5	29'-0"	—
b1(E)	81	#5	19'-10"	—
b2(E)	320	#5	34'-1"	—
b3(E)	297	#5	31'-2"	—
b4(E)	29	#6	39'-1"	—
b5(E)	29	#6	46'-2"	—
b6(E)	29	#6	52'-2"	—
b7(E)	620	#5	28'-0"	—
b8(E)	690	#5	22'-9"	—
d1(E)	1509	#5	3'-0"	—
d1(E)	1503	#5	2'-7"	—
d2(E)	1387	#4	3'-0"	—
d3(E)	1066	#4	3'-6"	—
d4(E)	321	#5	4'-6"	—
d5(E)	9	#6	4'-5"	—
d6(E)	15	#6	8'-11"	—
d7(E)	6	#5	3'-6"	—
e1(E)	84	#4	18'-10"	—
e1(E)	12	#4	9'-1"	—
e2(E)	24	#4	11'-1"	—
e3(E)	24	#4	13'-6"	—
e4(E)	168	#4	17'-7"	—
e5(E)	24	#4	15'-3"	—
e6(E)	48	#4	17'-0"	—
e7(E)	108	#4	16'-6"	—
e8(E)	8	#8	30'-4"	—
e9(E)	4	#8	9'-1"	—
e10(E)	8	#8	11'-1"	—
e11(E)	8	#8	40'-1"	—
e12(E)	8	#8	13'-6"	—
e13(E)	8	#8	37'-7"	—
e14(E)	8	#8	15'-3"	—
e15(E)	8	#8	45'-0"	—
e16(E)	18	#8	35'-9"	—
e17(E)	18	#8	37'-10"	—
e18(E)	8	#5	29'-6"	—
e19(E)	4	#5	9'-1"	—
e20(E)	8	#5	11'-1"	—
e21(E)	8	#5	39'-3"	—
e22(E)	8	#5	13'-6"	—
e23(E)	26	#5	36'-9"	—
e24(E)	8	#5	15'-3"	—
e25(E)	12	#5	30'-0"	—
e26(E)	18	#5	34'-7"	—
n1(E)	8	#5	34'-6"	—
*h1(E)	4	#5	5'-10"	—
*h2(E)	4	#5	3'-10"	—
*u(E)	67	#5	1'-11"	—
x(E)	222	#5	4'-1"	—
x1(E)	26	#5	2'-3"	—
Reinforcement Bars, Epoxy Coated				Lbs. 200,760
Class X Concrete Superstructure				Cu. Yds. 771.8



DESIGNED *Victor H. Velek*
 CHECKED *Nicholas J. Sault*
 DRAWN *r.b. carbonell*
 CHECKED *Y.W. NJS*

EXAMINED *Gregory J. Kaspar*
 PASSED *Ralph E. Anderson*

Jan. 12 1994

Reinforcement bars designated (E) shall be epoxy coated.

* For bar bending diagram see sheet 16 of 24.
SUPERSTRUCTURE DETAILS
 F.A.I. RT. 55 SEC. 0707-614B
 COOK COUNTY
 STA. 106+26.32

FILE NAME = 0161026_60J16_X20_existplan20.dgn	USER NAME = tjenicke	DESIGNED - FSM	REVISIONS
		CHECKED - RMM	REVISIONS
		DRAWN - FSM	REVISIONS
		CHECKED - RMM	REVISIONS
			REVISIONS

FOR INFORMATION ONLY

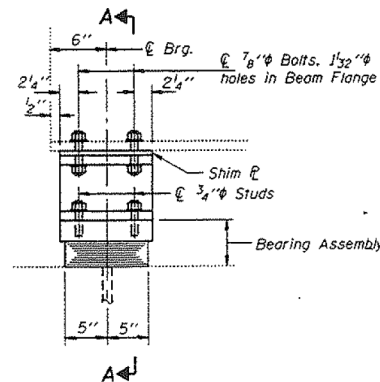
F.A.P. RT. 372	SECTION 2013-038B-R	COUNTY COOK	TOTAL SHEETS 821	SHEET NO. 580
CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				

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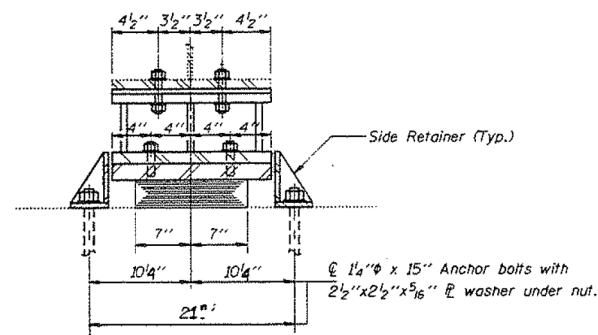
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO.
F.A.I. 55	SEC. 0707-614B	COOK	383	360
FED. ROAD DIST. NO. 7	SUBDIVISION	FED. AID PROJECT		

SHEET NO. 13
24 SHEETS



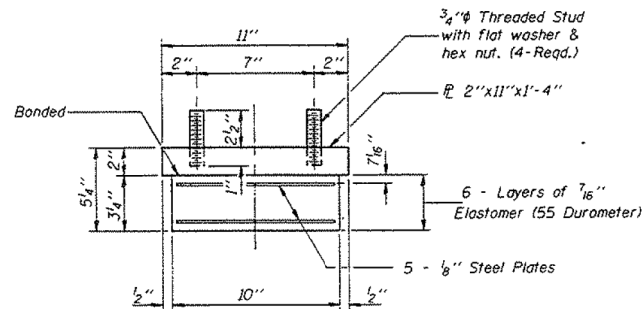
ELEVATION AT ABUT. E & PIER 46



SECTION A-A

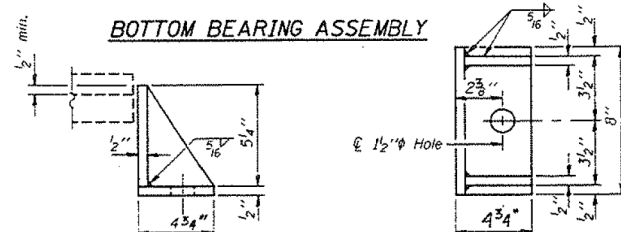
New Steel Extensions, Connection Bolts and Anchor Bolts are included in "Furnishing and Erecting Structural Steel". See sheet #20 for Anchor Bolt installation.

TYPE I ELASTOMERIC EXP. BRG.



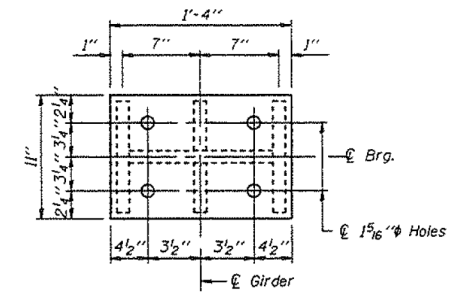
BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly.

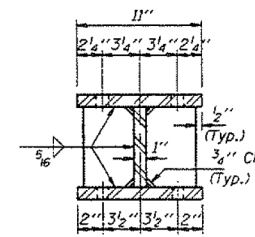


SIDE RETAINER

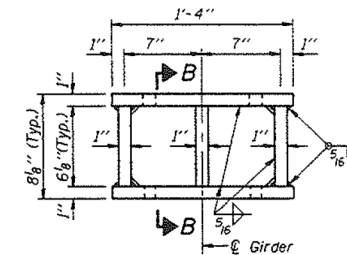
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.



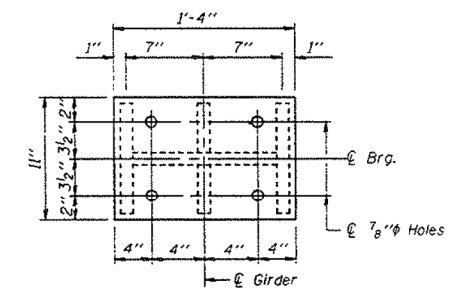
PLAN TOP PLATE



SECTION B-B



STEEL EXTENSION DETAIL



PLAN BOTTOM PLATE

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	18

BEARING DETAILS
F.A.I. RT. 55 SEC. 0707-614B
COOK COUNTY
STA. 106+26.32

DESIGNED	Victor H. Veltz
CHECKED	Nicholas J. Hall
DRAWN	r.b. carbonell
CHECKED	WVV NTS

EXAMINED	Jan. 12 1994 D. J. Kaspar
PASSED	Ralph E. Urkison

I-2-E1 2-26-93



Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

FILE NAME =	USER NAME = tjenicke	DESIGNED - FSM	REVISED -
0161026_60J16_X21.existplan21.dgn	PLOT SCALE =	CHECKED - RMM	REVISED -
	PLOT DATE = 12/20/2013	DRAWN - FSM	REVISED -
		CHECKED - RMM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (1994) - S. ABUT. AND PIER 46 BEARING DETAILS
STRUCTURE NO. 016-1026

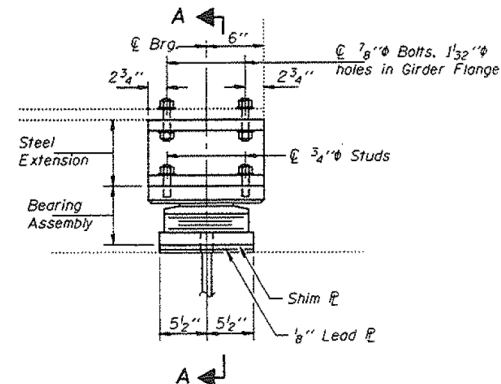
SHEET NO. SFX21 OF SFX30 SHEETS

FOR INFORMATION ONLY

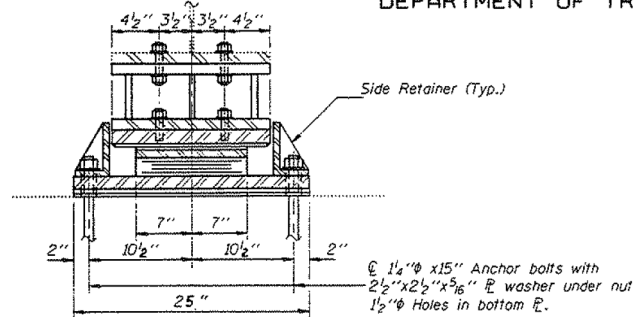
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	581
CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	STA.	SHEET NO.
F.A.I. 55	0707-614B	COOK	383	561
FED. AID PROJECT NO. 1				24 SHEETS



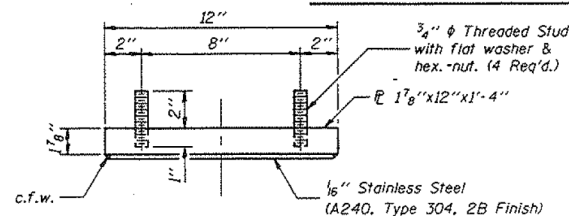
ELEVATION AT PIER 45



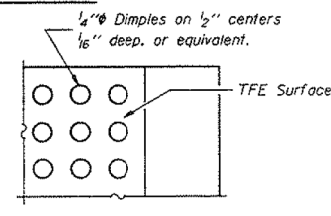
SECTION A-A

Side Retainer (Typ.)
1/2" φ x 15" Anchor bolts with 2 1/2" x 2 1/2" x 3/16" E washer under nut. 1 1/2" φ Holes in bottom E.

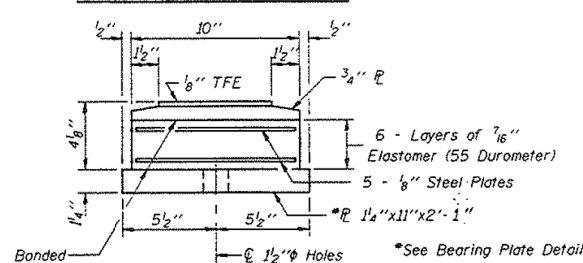
TYPE II TFE ELASTOMERIC EXP. BRG.



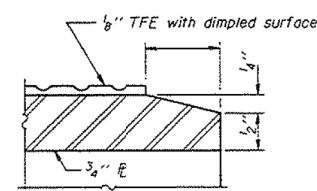
TOP BEARING ASSEMBLY



PLAN-TFE SURFACE



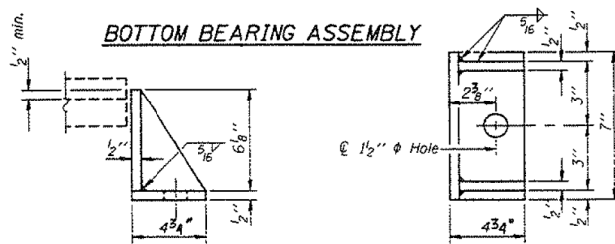
BOTTOM BEARING ASSEMBLY



SECTION THRU TFE

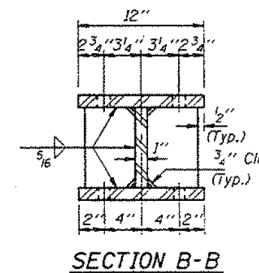
Note: The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

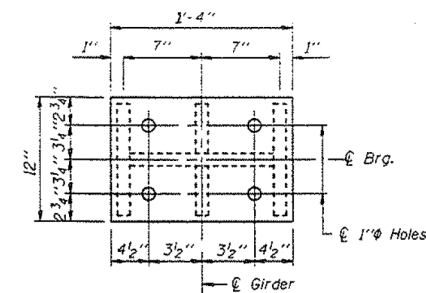


SIDE RETAINER

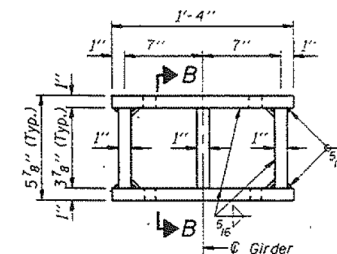
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.



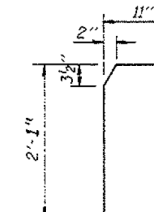
SECTION B-B



PLAN TOP PLATE

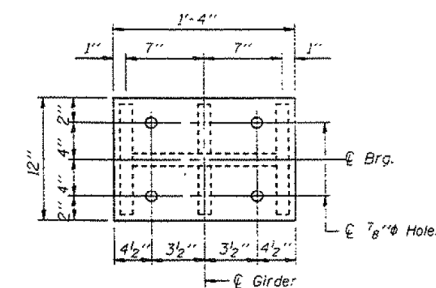


STEEL EXTENSION DETAIL



BEARING PLATE DETAIL

(For orientation see Existing Plans)



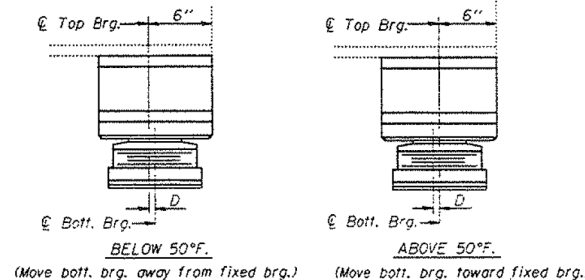
PLAN BOTTOM PLATE

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I!	Each	4

DESIGNED Victor H. Veit
CHECKED Nicholas J. Dow
DRAWN r.b. carbonelli
CHECKED VHV NJS
I-2-E2 2-26-93

EXAMINED Gregory J. Kasper
PASSED Roland E. Anderson
Jan. 12 1994



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.

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

BEARING DETAILS
F.A.I. RT. 55 SEC. 0707-614B
COOK COUNTY
STA. 106+26.32

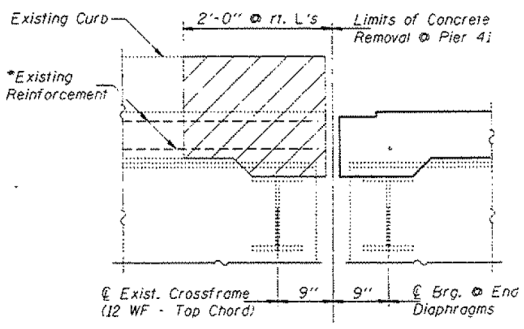
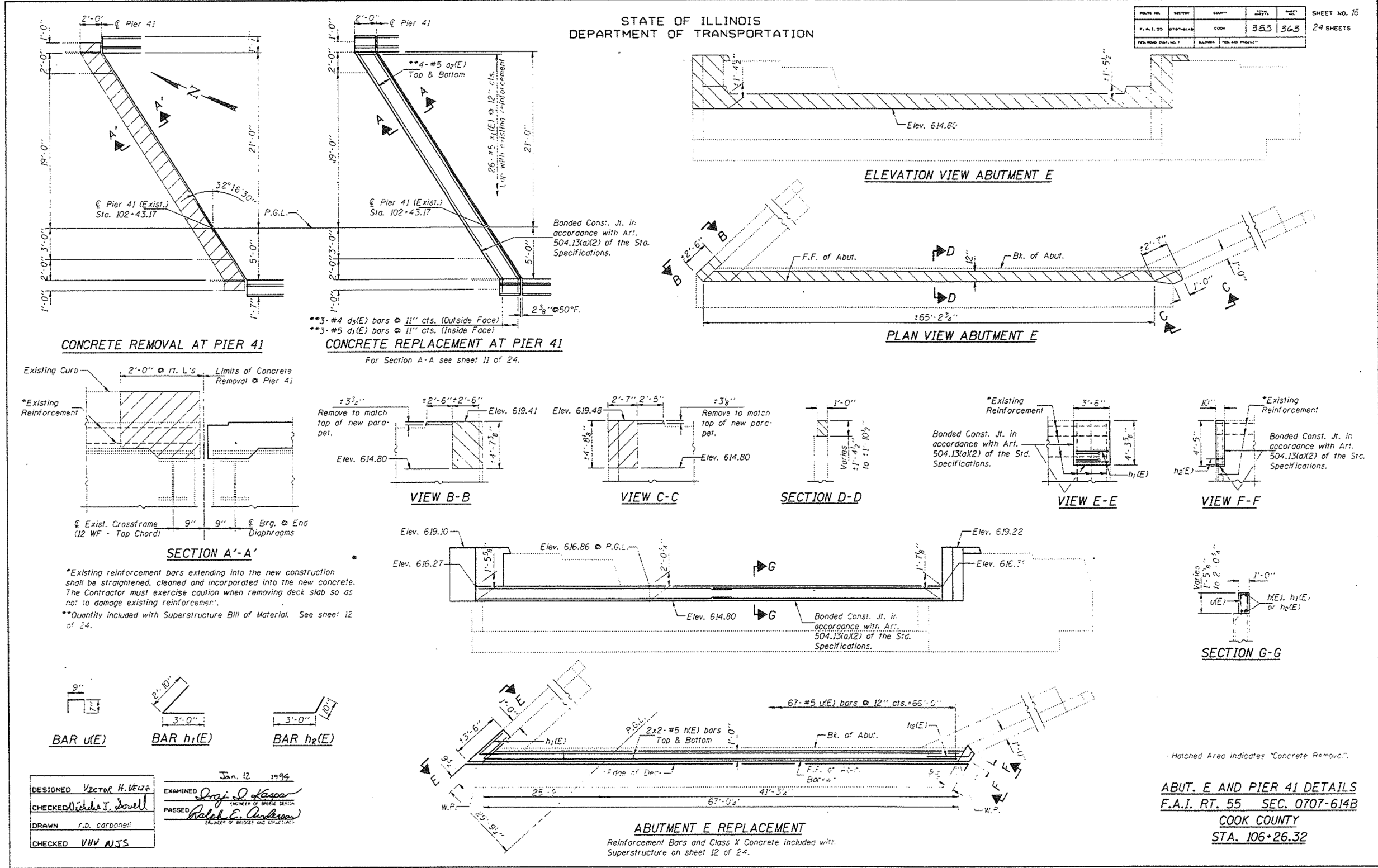
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		CHECKED - RMM	REVISIONS
		DRAWN - FSM	REVISIONS
		CHECKED - RMM	REVISIONS
			REVISIONS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	582
				CONTRACT NO. 60J16
ILLINOIS FED. AID PROJECT				

X:\1000005\10093\Eng_Docs_Phase_II\SN_016_1026_SB_1st_Ave_Ramp_cover_Des_Plaines_River\Final\1026\0161026_60J16_X22_existplan22.dgn 6/23/2014 2:47:07 PM

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. RT. 55	0707-614B	COOK	363	363
24 SHEETS				



*Existing reinforcement bars extending into the new construction shall be straightened, cleaned and incorporated into the new concrete. The Contractor must exercise caution when removing deck slab so as not to damage existing reinforcement.

**Quantity included with Superstructure Bill of Material. See sheet 12 of 24.



DESIGNED	Victor H. Ueva	EXAMINED	Jan 12 1994 Prof. J. Kasper
CHECKED	Nicholas J. Howell	PASSED	Ralph E. Anderson
DRAWN	r.d. carbone		
CHECKED	VHV NJS		

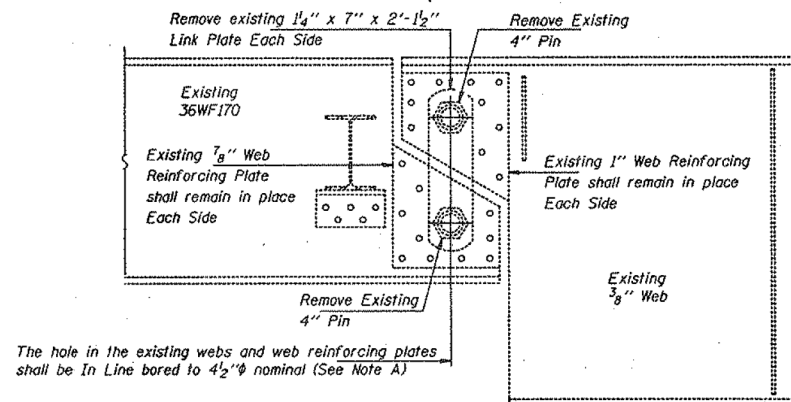
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	PLOT DATE = 12/20/2013	CHECKED - RMM	REVISED -

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	583
CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET	SHEET NO. 1
F.A.I. 55		COOK	51	42	6 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

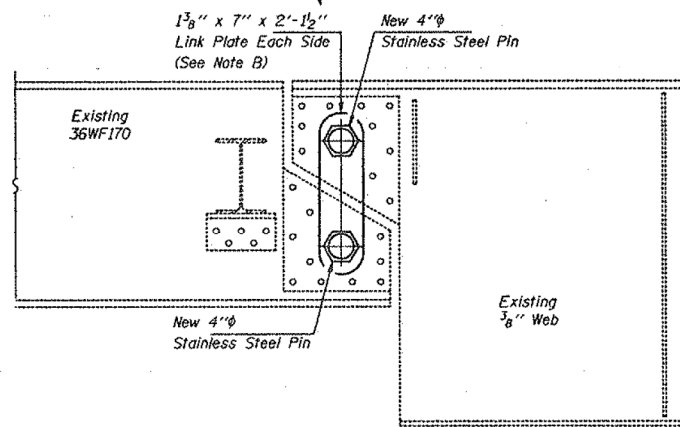
If the existing deck interferes with the existing link, concrete shall be removed to allow for removal of the existing link. Cost shall be included in the cost of "Pin and Link Plate Replacement".



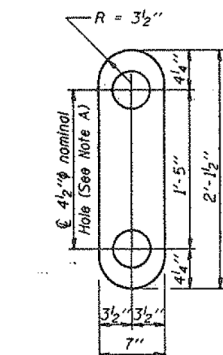
ELEVATION AT EXISTING PIN ASSEMBLY

Any Pins that can be easily removed without damage to the pin shall be salvaged and the Bridge Engineer shall be contacted for disposition. Cost of salvage is included in "Pin and Link Plate Replacement".

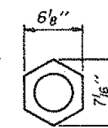
If the existing deck interferes with the new link plates, concrete shall be removed to provide clearance for the new pins and link plates. Cost shall be included in the cost of "Pin and Link Plate Replacement".



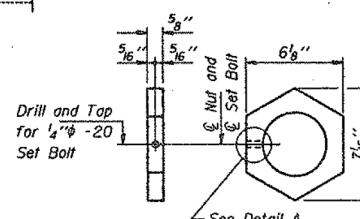
ELEVATION AT NEW PIN ASSEMBLY



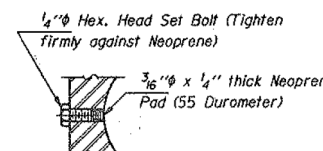
LINK PLATE DETAIL
(8 Required)



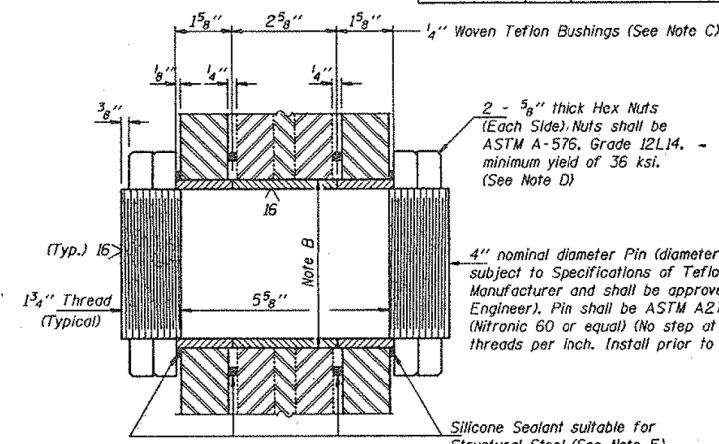
INTERIOR NUT DETAIL
(16 Required)



EXTERIOR NUT DETAIL
(16 Required)



DETAIL A
Set Bolts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.



SECTION THRU PIN
(8 Required)

GENERAL NOTES

- All new structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.
- The Contractor shall provide support and/or shoring systems for the beam in the area of existing pin and link plate replacement. See Special Provision "Temporary Support System."
- 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 acrylic finish coat shall be Interstate Green, Munsell No. 7.5G 4/8. See Special Provisions "Cleaning and Painting New Metal Structures". Cost shall be included in the cost of "Pin and Link Plate Replacement."
- Existing Structural steel shall be cleaned and painted as required by the Special Provision "Cleaning and Painting Adjacent Areas of Existing Steel Structures". Cost shall be included in the cost of "Pin and Link Plate Replacement."
- All existing steel surfaces behind link plates shall be cleaned and primed before installation of new link plates. Cost shall be included in the cost of "Pin and Link Plate Replacement."
- Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field, except the pin diameters, and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
- The Pins and Link Plates shall conform to the minimum Charpy V-Notch Toughness of 25 ft.-lbs. at 40° F.
- The pins, link plates, bushings, nuts, Set Bolts, Neoprene Pad and silicone sealant are the items included in "Pin and Link Plate Replacement".
- The existing structural steel coating contains lead. The Contractor should take appropriate precautions to deal with the presence of lead on this project.

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Temporary Support System	Each	4
Pin and Link Plate Replacement	Each	4

PIN AND LINK PLATE REPLACEMENT
F.A.I. ROUTE 55 SEC. 0707-614B
COOK COUNTY
STA. 106+26.32
STR. No. 016-1026

DESIGNED <i>Paul Summer</i>	AUGUST 5, 19 98
CHECKED <i>Victor H. Velazquez</i>	EXAMINED <i>John E. Hanna</i>
DRAWN <i>Paul Summer</i>	PASSED
CHECKED <i>VHV</i>	ENGINEER OF BRIDGES AND STRUCTURES

MAXIMUM REACTIONS

RP	(K)	40.3
Rt	(K)	43.9
Imp.	(K)	13.2
R (Total)	(K)	97.4

Note A:
Bore diameter for bushing in link plate, existing webs and web reinforcement plates shall correspond to bushing manufacturer's allowable tolerances for proper functioning. Hole diameter may be adjusted to allow use of stock bushings.

Note B:
Inside face of new link plates shall receive first field coat in shop. The primer shall pass the M.E.K. Rub Test before the first field coat is applied.

Note C:
Actual bushing thickness per manufacturer's specifications, 1/4" is approximate. Bushings shall be a self lubricating filament wound epoxy matrix backed Duralon Bearing, metal backed Fiber Glide Bearing or equivalent. No primer or grease shall be allowed on bushings. Bushings shall be suitable for dynamic loads of 20,000 psi.

Note D:
Tighten inside nuts to bring all bushings into firm contact, then back off 1/4 turn and tighten outer nuts and set bolts.

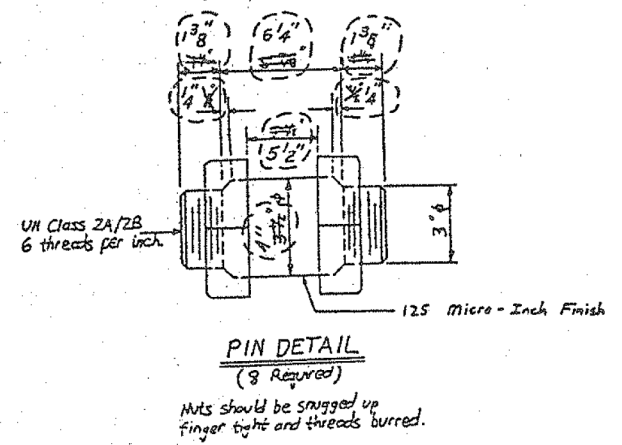
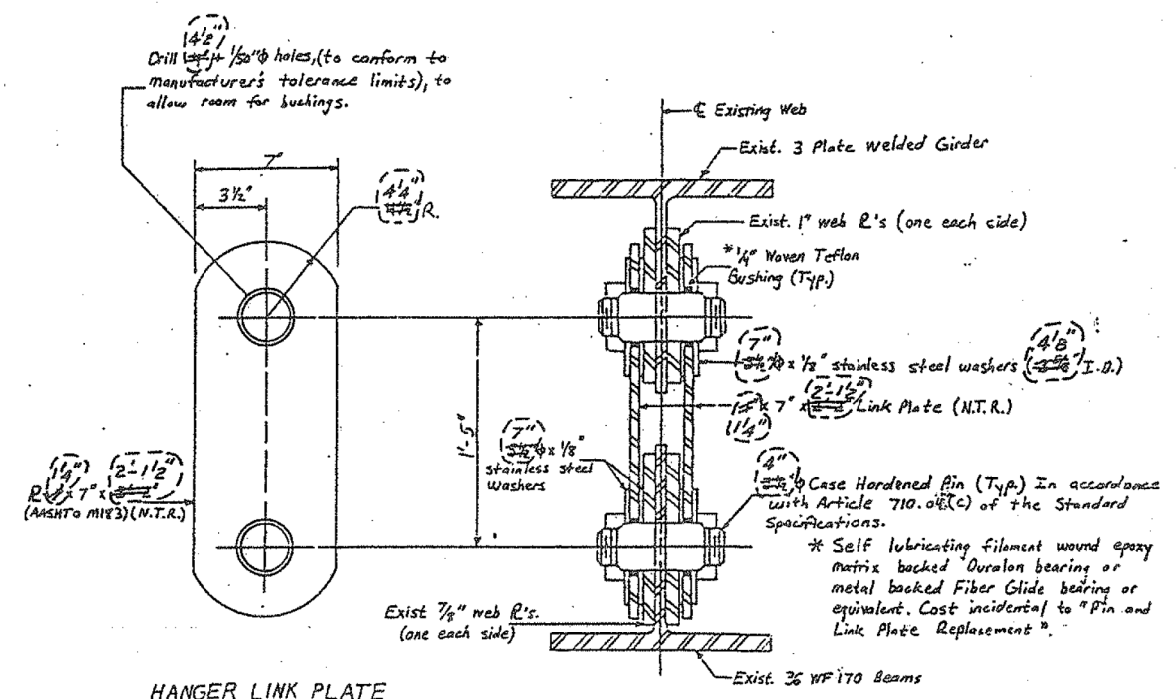
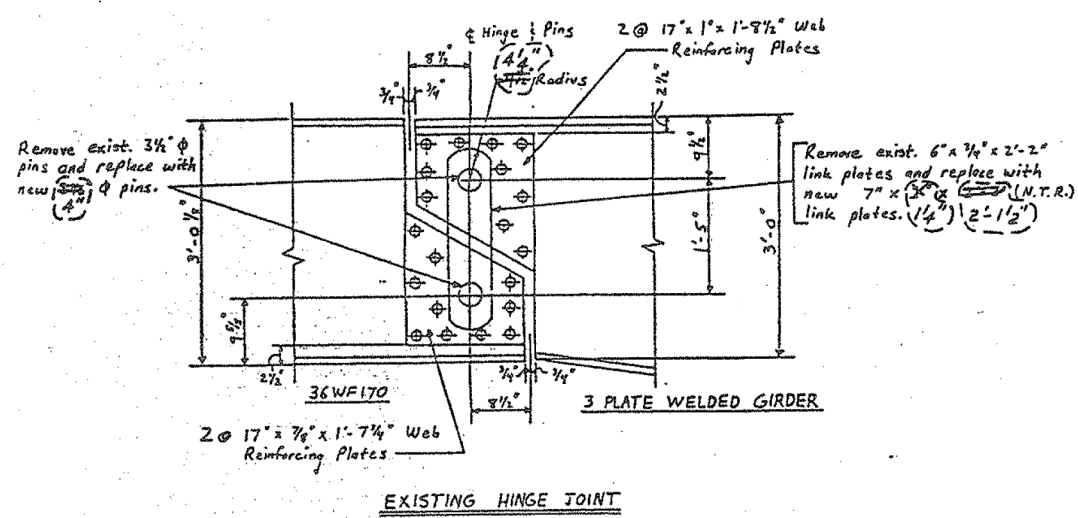
Note E:
Apply 3/8" bead to face of the web reinforcing plates approximately 1/2" from bushing immediately before installing new link plates. Place sealant around nuts after installation. Sealant shall be suitable for prolonged exterior exposure without losing flexibility or adhesion to painted steel surfaces. Proposed products shall be subject to Department's acceptance based on documented testing or other evidence.

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0161026.60J16.X24.existplan24.dgn		CHECKED - RMM	REVISED -
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	PLOT DATE = 12/20/2013	CHECKED - RMM	REVISED -

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	584
			CONTRACT NO. 60J16	
ILLINOIS FED. AID PROJECT				

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	Cook	51	44
DATE		DRAWN BY	
12/28/2013		RMM	

Sht. No. 3 of 6



NOTES:

Provide support for beams at each pin and link plate replacement location; to be paid for as "Jack and Remove Existing Pin & Link". See Special Provisions.

The link plates shall conform to the supplemental requirements for Notch Toughness, Zone 2 (N.T.R.)

The Contractor shall protect the pins from corrosion until installation. The pins shall be clean and free of all foreign material before installation.

Provide 1/8" x 3/16" o.d. x 3/16" I.D. washers for placement under pin nuts if required to prevent clamping the material when nuts are tightened against pin body.

The holes in the existing webs and shim plates shall be In-Line bored to 4" φ + 1/50" for new 4" φ Pins.

FOR INFORMATION ONLY

(AS REVISED 6-10-33 C.H.M.)

ILLINOIS DEPARTMENT OF TRANSPORTATION

PIN AND LINK DETAILS

SN: 016-1026-1026

SCALE: VERT. NONE

DRAWN BY: CW

CHECKED BY:

REVISIONS	
NAME	DATE

FILE NAME =	USER NAME = tjenicke	DESIGNED - FSM	REVISED -
0161026.60J16.X25.exisplan25.dgn	PLOT SCALE =	CHECKED - RMM	REVISED -
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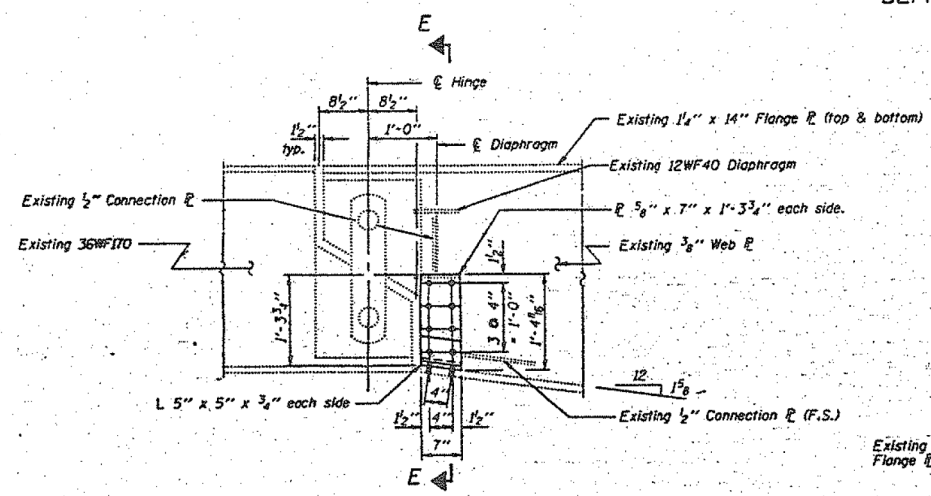
FOR INFORMATION ONLY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	585
CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				

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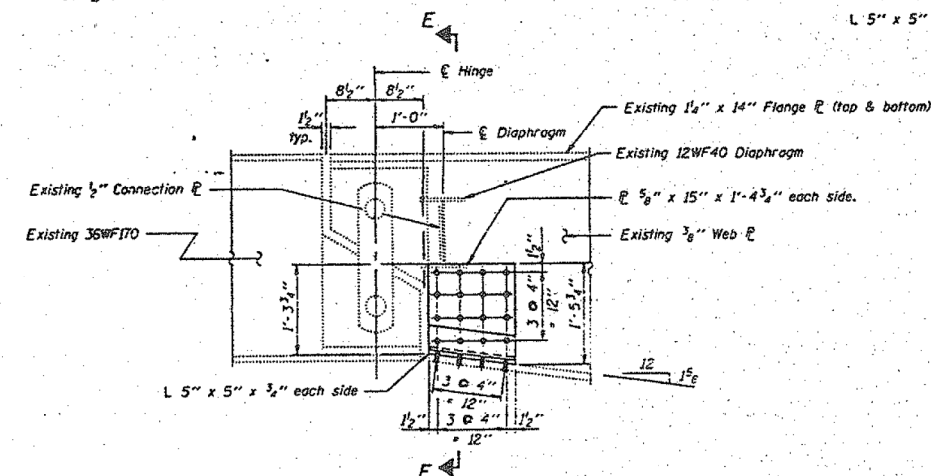
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	DATE	SCALE	SHEET NO.
FAI 55	COOK	51	45	6
SHEETS				6

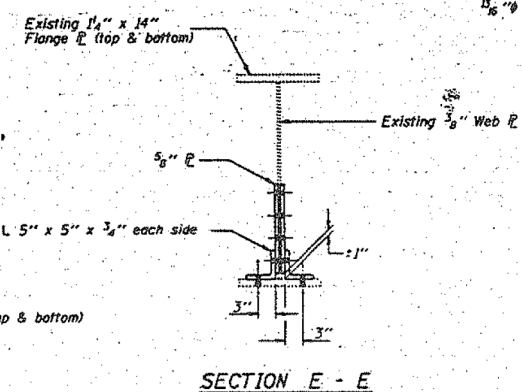


VIEW C - C
(Girders G2 & G4 only)

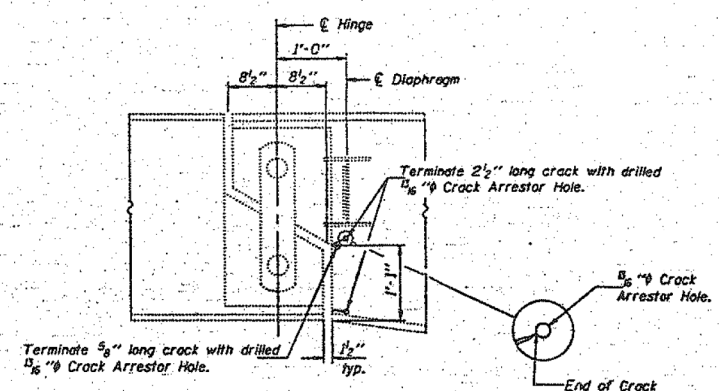
Note:
Field drill holes in existing plate girder web and flange using repair plates and angles as a template. All holes shall be 5/8\"/>



VIEW D - D
(Girders G1 & G3 only)

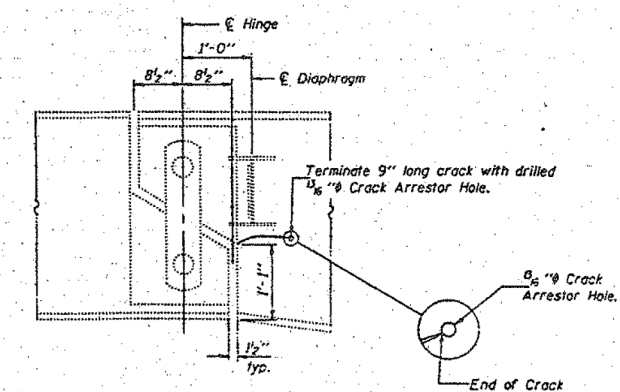


SECTION E - E



CRACK ARRESTOR HOLE DETAIL
(Girder G3 only)

Notes: Locate crack tips using liquid dye penetrant or magnetic particle testing. After crack arrester holes have been drilled at crack tips, dye penetrant or magnetic particle testing shall be used to verify that the drilled holes have captured the crack tips. Cost incidental to "Structural Steel Repair".



CRACK ARRESTOR HOLE DETAIL
(Girder G1 only)

DESIGNED	CHW	EXAMINED	April 23 1993 Todd E. Adams ENGINEER OF STRUCTURAL REPAIRS
CHECKED	BRT	PASSED	
DRAWN	KC	APPROVED	ENGINEER OF BRIDGES AND STRUCTURE
CHECKED	CHW		DIRECTOR OF HIGHWAYS

**FOR
INFORMATION
ONLY**

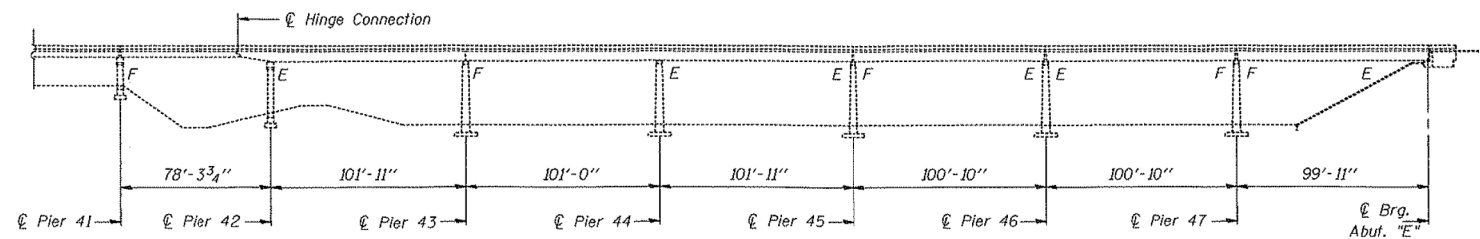
BRIDGE REPAIRS
FAI RT. 55 SEC. 0707-614B
RAMP E OVER DESPLAINES RIVER
COOK COUNTY
STR. NO. 016-1026

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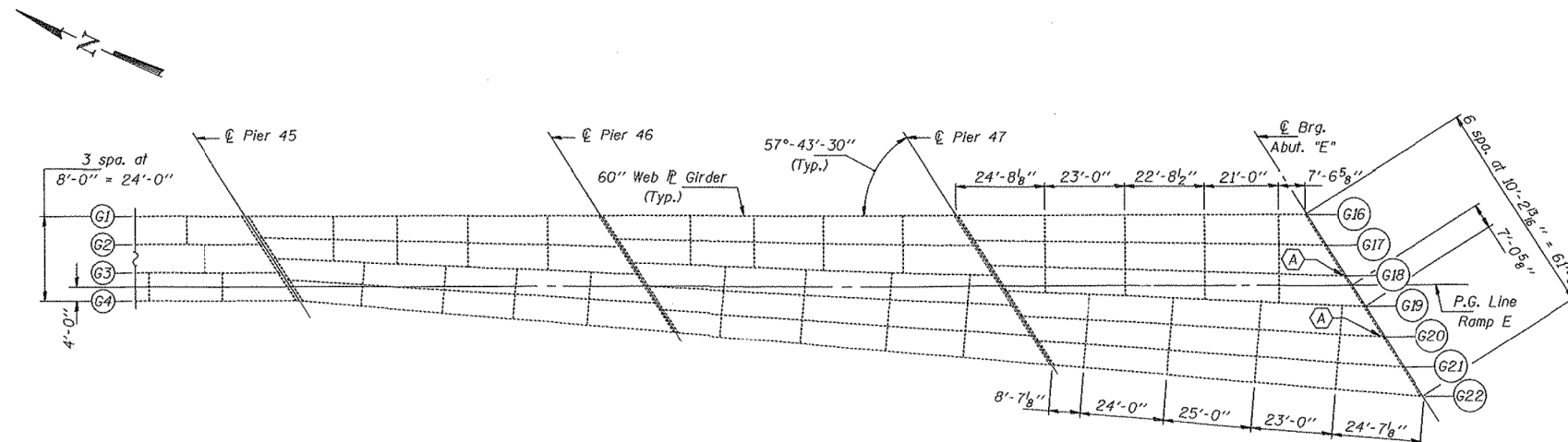
FOR INFORMATION ONLY				
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	586
			CONTRACT NO. 60J16	
ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.	SHEET NO. 2 SHEETS
F.A.I. 55	*	COOK	5	3	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT	* 0707-614B-I-1-DL		



PARTIAL ELEVATION

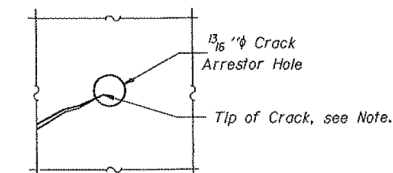


PARTIAL FRAMING PLAN

(A) Repair Girder ends with new Stiffener Brackets.

GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36 unless otherwise noted.
Fasteners shall be high strength bolts. Bolts 3/4" φ, open holes 13/16" φ, unless otherwise noted.
Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
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 acrylic finish coat for the exterior face and bottom flange of the fascia girder shall be Interstate Green, Munsell No. 7.5G 4/8. The color of acrylic finish coat for steel interior locations shall be Gray, Munsell No. 5B 7/1. See Special Provision for "Cleaning and Painting New Metal Structures".
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 shall only be cleaned and painted as required by the Special Provision "Cleaning and Painting Adjacent Areas of Existing Steel Structures".



CRACK ARRESTOR HOLE DETAIL

Note: Locate crack tip using liquid dye penetrant or magnetic particle testing. Drill 13/16" φ Crack Arrester hole at the crack tip. After crack arrester hole has been drilled, dye penetrant or magnetic particle testing shall be used to verify that the drilled hole has captured the crack tip. Cost shall be included in the cost of "Furnishing and Erecting Structural Steel".

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing and Erecting Structural Steel	Pound	150

BRIDGE REPAIRS

F.A.I. 55 (RAMP E) OVER DES PLAINES RIV
SEC. 0707-614B
COOK COUNTY
STA. 106+26.32
S.N. 016-1026

DESIGNED	<i>Chris E. Ensey</i>	MAY 27, 1999
CHECKED	<i>Glenn Bell</i>	EXAMINED
DRAWN	<i>Dierbert</i>	PASSED
CHECKED	<i>CME VHV</i>	ENGINEER OF BRIDGES AND STRUCTURES

benesch
engineers · scientists · planners
Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (1999) - PARTIAL REPAIR FRAMING PLAN
STRUCTURE NO. 016-1026

SHEET NO. SFX27 OF SFX30 SHEETS

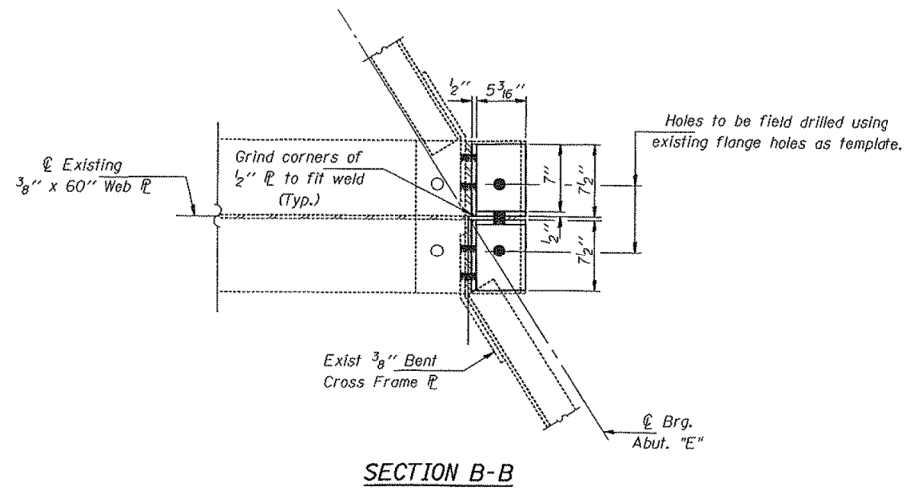
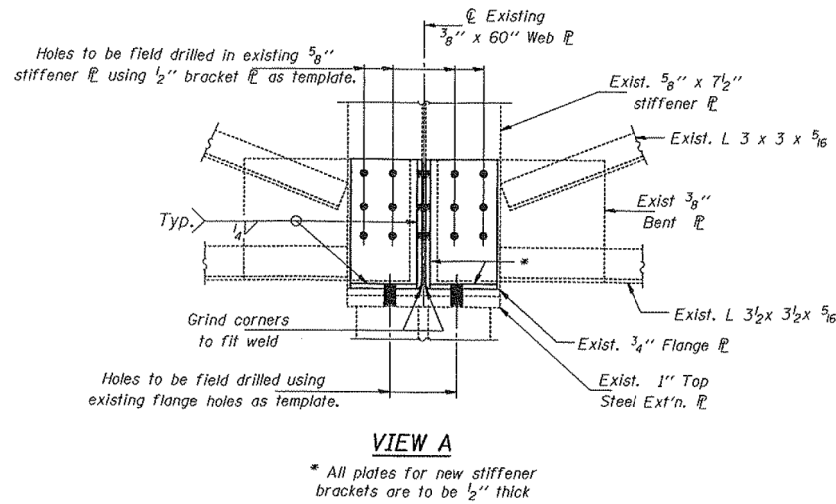
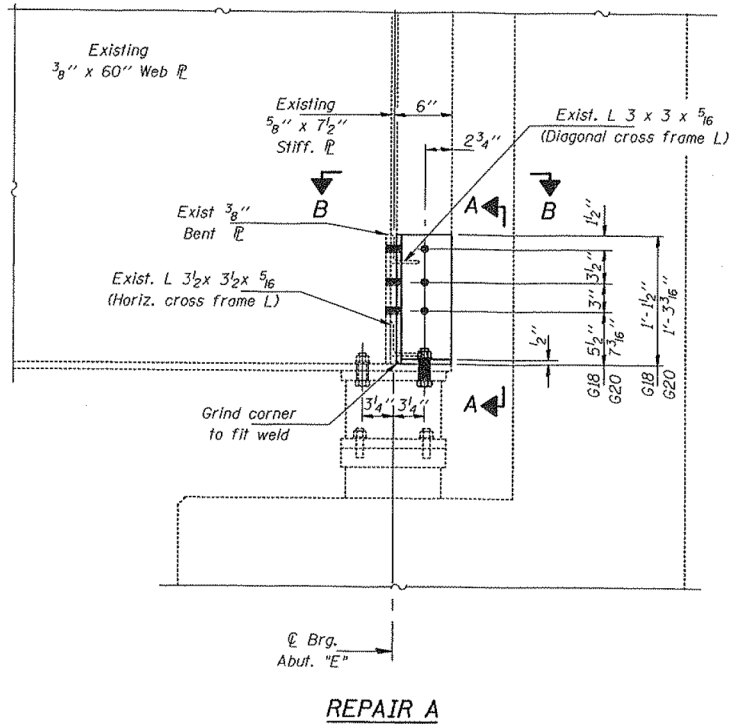
FOR INFORMATION ONLY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	587
CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.	SHEET
F.A.I. 55	*	COOK	5	4	2 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-	* 0707-614B-I-1-DL		



DESIGNED	C.M.E.	MAY 27, 1999
CHECKED	G.T.B.	EXAMINED <i>John A. Morias</i>
DRAWN	D-herbert	PASSED
CHECKED	C.M.E. V.H.V.	ENGINEER OF BRIDGES AND STRUCTURES

BRIDGE REPAIRS
F.A.I. 55 (RAMP E) OVER DES PLAINES RIV
SEC. 0707-614B
COOK COUNTY
STA. 106+26.32
S.N. 016-1026

benesch
engineers · scientists · planners
Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

FILE NAME =	USER NAME = tjenicke	DESIGNED - FSM	REVISED -
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	PLOT DATE = 12/20/2013	DRAWN - FSM	REVISED -
		CHECKED - RMM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (1999) - BEAM END REPAIR
STRUCTURE NO. 016-1026

SHEET NO. SFX28 OF SFX30 SHEETS

FOR INFORMATION ONLY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	588
			CONTRACT NO. 60J16	
ILLINOIS FED. AID PROJECT				

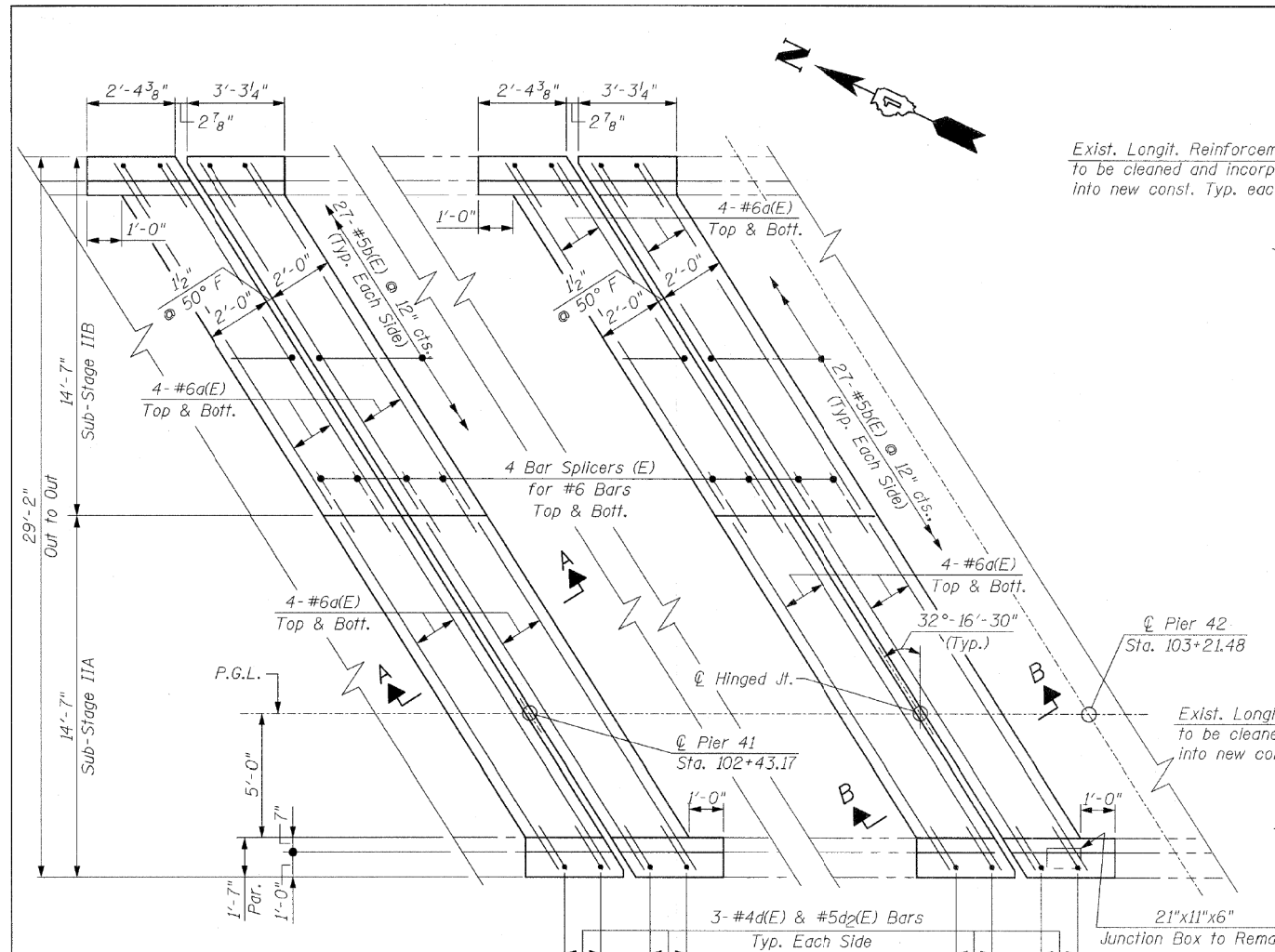
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	0707-608 HB-1-4	COOK	40	27
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

CONTRACT NO. 60C94

BILL OF MATERIAL

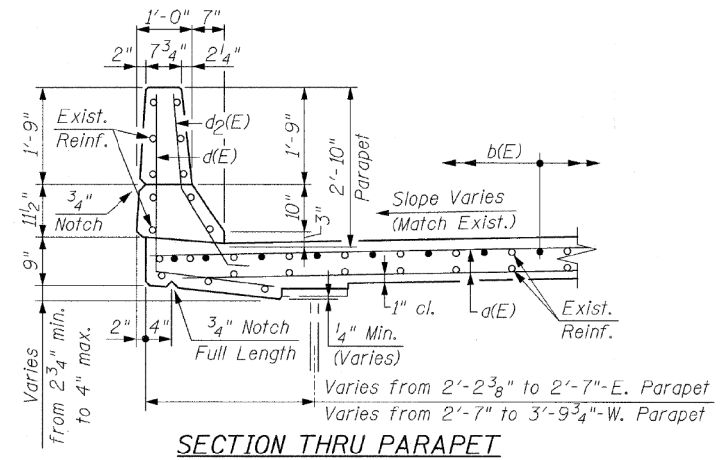
Bar	No.	Size	Length	Shape
a(E)	64	#6	17'-0"	—
b(E)	108	#5	2'-6"	└
d(E)	24	#4	4'-4"	L
d2(E)	24	#5	3'-11"	L
Reinforcement Bars, Epoxy Coated		Pound	2,080	
Concrete Removal		Cu. Yd.	11.0	
Concrete Superstructure		Cu. Yd.	11.0	
Bar Splicers		Each	32	



At Pier 41
Remove Neoprene Exp. Joint (2") & Replace with Preformed Strip Seal Joint at Pier 41. Reconstruct 1/2 width at a time. Reconstruct 2 ft. of Deck on both sides of the joint.

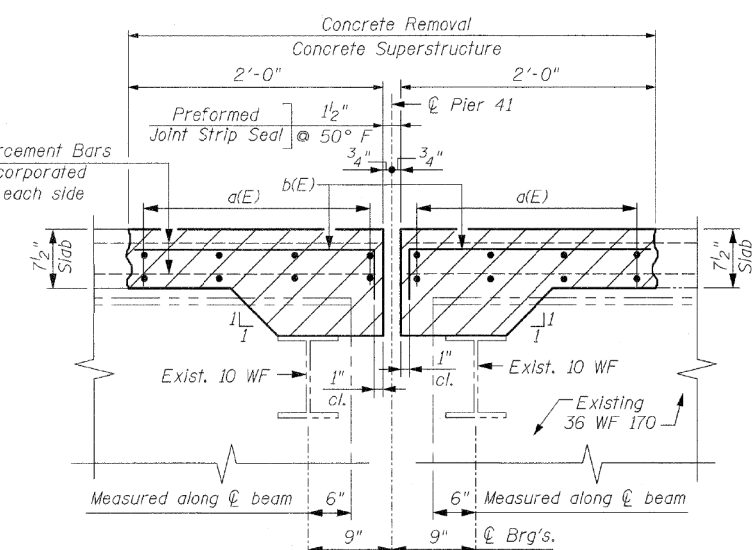
PLAN
(Joint Reconstruction at Pier 41 & Hinged Joint)

At Hinge Joint
Remove Neoprene Exp. Joint (2 1/2") & Replace with Preformed Strip Seal Joint at Hinged Joint in Span 41



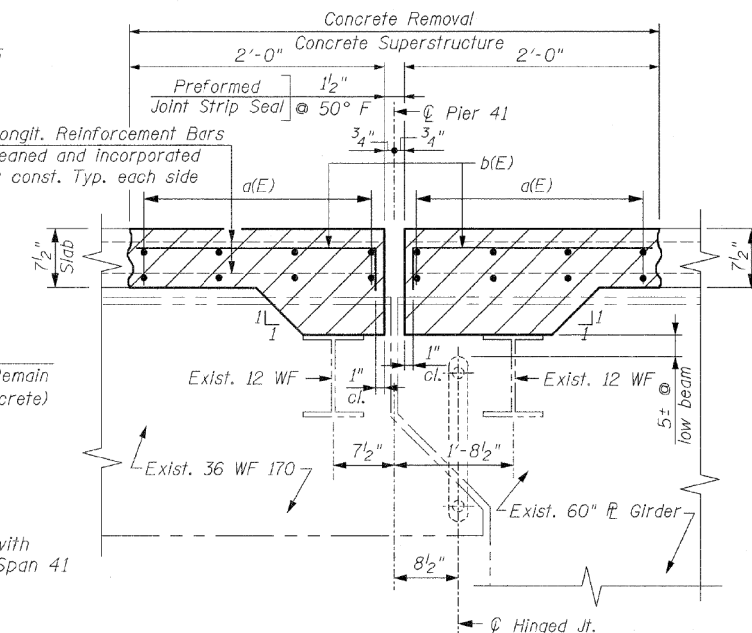
SECTION THRU PARAPET

The Contractor must use extreme caution during concrete removal and must not nick, cut or damage in any way, any of the steel beams. The 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 is included with Concrete Removal.
Reinforcement Bars shall conform to the requirements of ASTM A-706, Gr. 60, See Special Provisions.
Reinforcement Bars designated (E) shall be Epoxy Coated.
Cost for removal of existing Neoprene Exp. Joints is included in the cost of Concrete Removal.



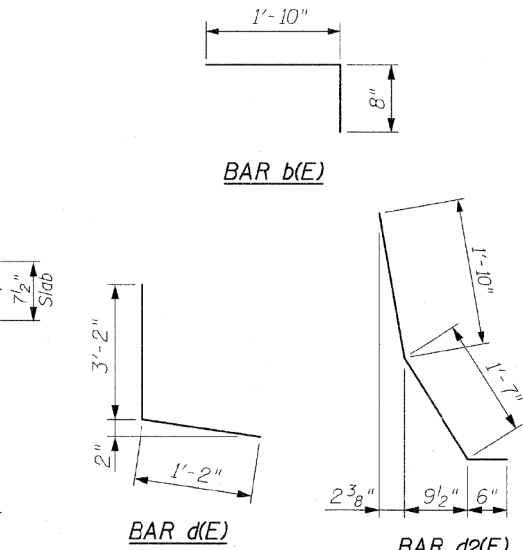
SECTION A-A

(Dimensions are at Rt. L's)



SECTION B-B

(Dimensions are at Rt. L's)



LEGEND:

Concrete Removal

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION	
JOINT REPLACEMENT IL. RTE. 171 OVER DES PLAINES RIVER	
F.A.P. RTE. 373	SECTION: 0707-608 HB-1-4
COOK COUNTY STATION 106+26.32	
STRUCTURE NO. 016-1026	
SCALE: NONE	DRAWN BY: D.L./F.J.M.
DATE: DECEMBER 8, 2008	CHECKED BY: B.N.S./J.C.N.
CHRISTIAN-ROGE & ASSOC., INC. CHICAGO ILLINOIS	

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engineers · scientists · planners

Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

FILE NAME =	USER NAME = tjenicke	DESIGNED - FSM	REVISED -
0161026_60J16_X29_existplan29.dgn	PLOT SCALE =	CHECKED - RMM	REVISED -
	PLOT DATE = 12/20/2013	DRAWN - FSM	REVISED -
		CHECKED - RMM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (2008) – PIER 41 AND HINGE JOINT REPLACEMENT
STRUCTURE NO. 016-1026

FOR INFORMATION ONLY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	589
				CONTRACT NO. 60J16
				ILLINOIS FED. AID PROJECT

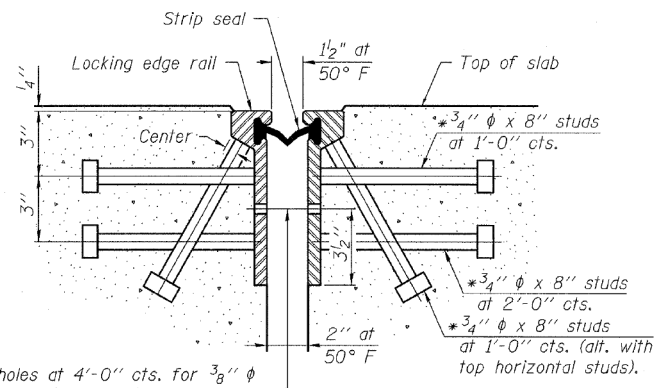
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

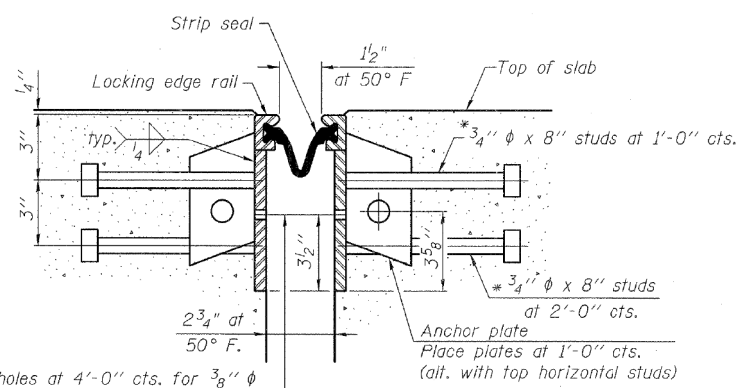
CONTRACT NO. 60C94

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



7/16" φ holes at 4'-0" cts. for 3/8" φ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU ROLLED RAIL JOINT

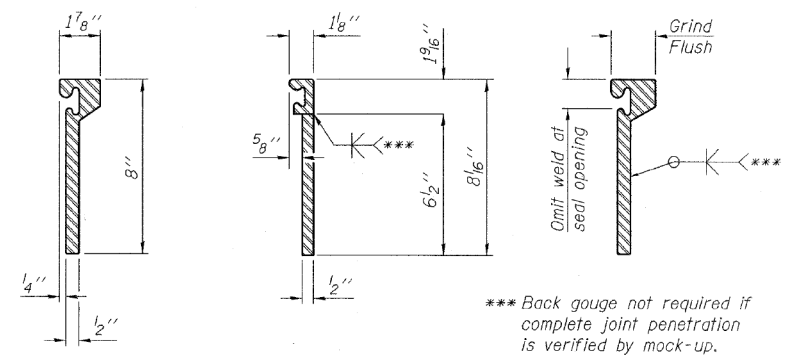


7/16" φ holes at 4'-0" cts. for 3/8" φ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU WELDED RAIL JOINT

NOTES:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". 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 height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities and stage construction joints. The manufacturer's recommended installation methods shall be followed. The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State. All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

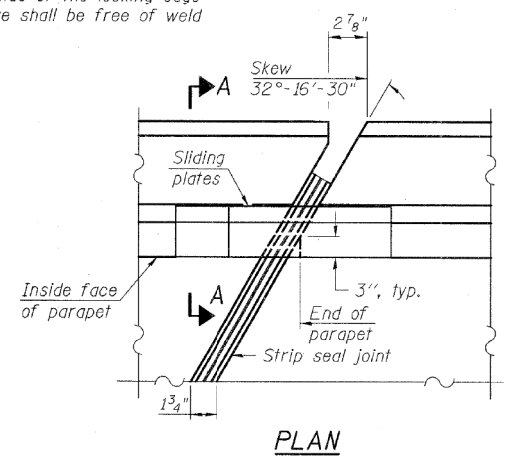


*** Back gouge not required if complete joint penetration is verified by mock-up.

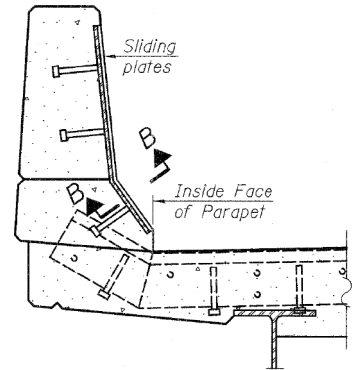
ROLLED (EXTRUDED) RAIL WELDED RAIL

LOCKING EDGE RAIL SPLICE
The inside of the locking edge rail groove shall be free of weld residue.

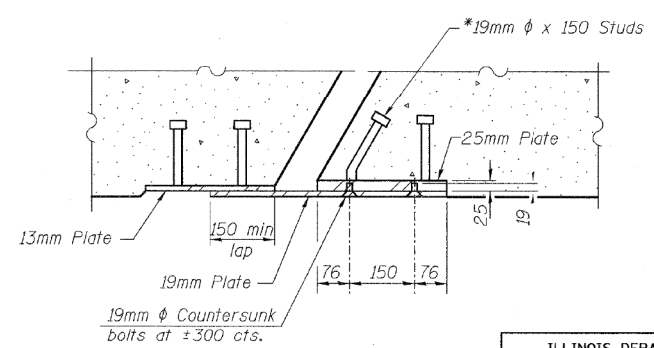
LOCKING EDGE RAILS



PLAN



SECTION A-A POINT BLOCK DETAILS (for skews > 30°)



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	75

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
PREFORMED STRIP SEAL JOINT
 IL. RTE. 171
 OVER
 DES PLAINES RIVER
 F.A.P. RTE. 373 SECTION: 0707-608 HB-I-4
 COOK COUNTY STATION 106+26.32
 STRUCTURE NO. 016-1026
 SCALE: NONE DRAWN BY: D.L./F.M.
 DATE: DECEMBER 8, 2008 CHECKED BY: B.N.S./J.C.N.
CHRISTIAN-ROGE & ASSOC., INC.
 CHICAGO ILLINOIS

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 engineers - scientists - planners
 Alfred Benesch & Company
 205 North Michigan Avenue, Suite 2400
 Chicago, Illinois 60601
 312-565-0450 Job No. 10093

FILE NAME =	USER NAME = tjenicke	DESIGNED - FSM	REVISED -
0161026_60J16_X30_existplan30.dgn	PLOT SCALE =	CHECKED - RMM	REVISED -
	PLOT DATE = 12/20/2013	DRAWN - FSM	REVISED -
		CHECKED - RMM	REVISED -

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (2008) - JOINT REPLACEMENT DETAILS
STRUCTURE NO. 016-1026

FOR INFORMATION ONLY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	590
CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				

SHEET NO. SFX30 OF SFX30 SHEETS

X:\100005\10093\Eng_Docs_Phase_1\161026_SB_1st_Ave_Ramp_cover_Des_Plaines_River\Final\Final_1026_0161026_60J16_X30_existplan30.dgn 6/23/2014 2:48:46 PM

Bench Mark:
Chiseled square on SE corner of concrete wingwall at SW corner of SB IL-171 Bridge over Sanitary & Ship Canal, EL. 628.20.

Existing Structures: S.N. 016-0486 built in 1954 under F.A. Route 133, Sections 0707-626B & 0707-610HD, consist of a 7 1/2" concrete deck with a 2" microsilica overlay. The structure consists of a twelve span mainline bridge with a two span ramp bridge. The structures are supported by 11 multi-column piers, founded on spread footings or BP piles, and 3 abutments, 2 mainline and 1 Ramp F, founded on BP piles. The mainline structure is 833'-5" back to back of abutments, with an out to out deck width which varies from 36'-6 1/4" to 62'-11 1/2". The Ramp F structure has an out to out deck width of 28'-0". The structures have varying skew angles. Traffic is to be maintained utilizing crossovers.

No salvage.

All elevations in the proposed plans are base on NAVD88 Datum. Elevations in the existing plans are base on NAVD29 Datum, NAVD29 Elev. 584.50 = NAVD88 Elev. 584.22.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications For Highway Bridges

DESIGN STRESSES

FIELD UNITS (New Construction)

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

FIELD UNITS (Exlst. Construction)

f'c = 3,500 psi
fy = 40,000 psi (Reinforcement)
fy = 35,000 psi (Structural Steel)

LOADING HS20-44

No future wearing surface allowed.

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.04g
Site Coefficient (S) = 1.0

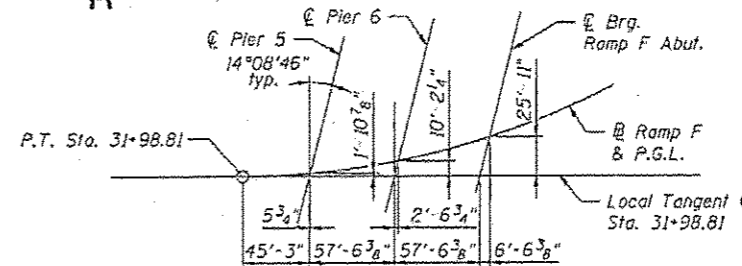
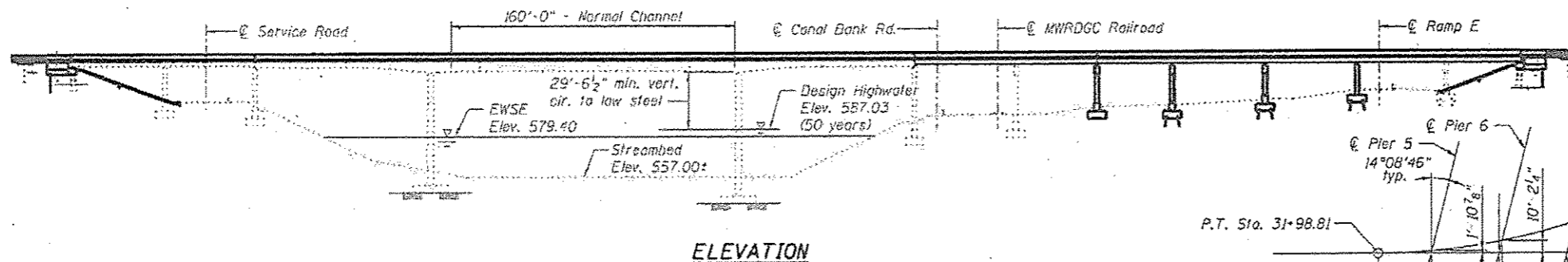
CURVE DATA

RAMP F

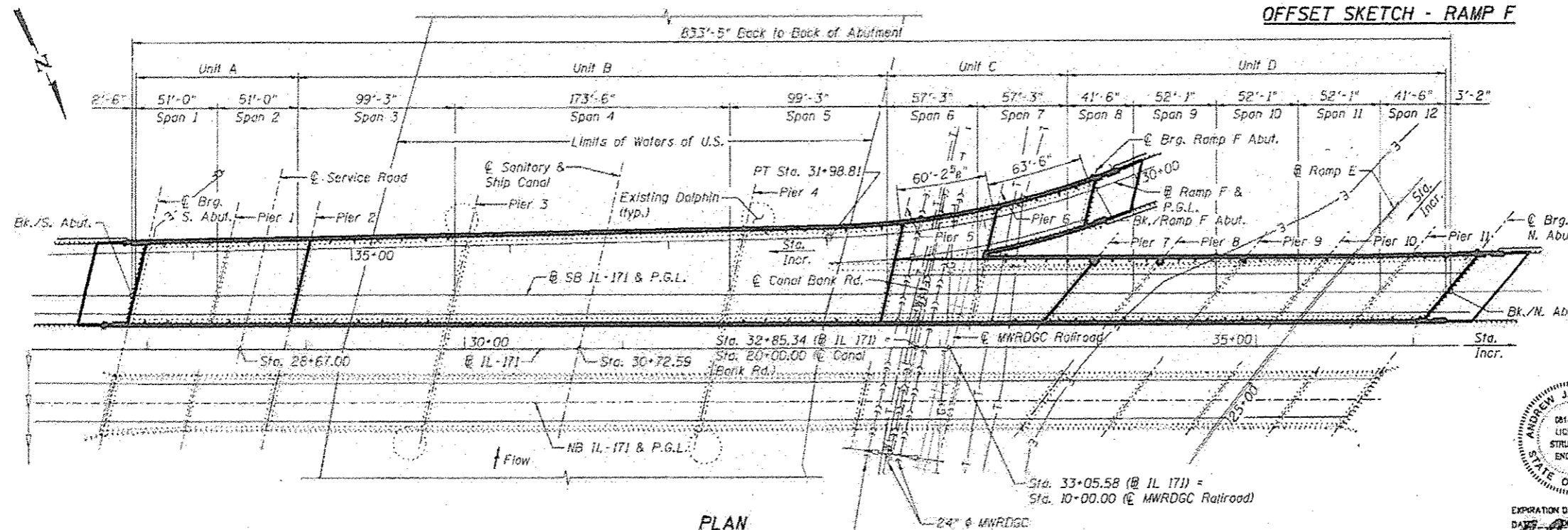
P.I. = Sta. 30+28.04
Δ = 35°54'40" (RT)
D = 10°25'03"
R = 550.00'
T = 183.55'
L = 354.32'
E = 29.82'
e = 6.0%
P.C. = Sta. 28+44.49
P.T. = Sta. 31+98.81

APPROVED
For Structural Adequacy Only

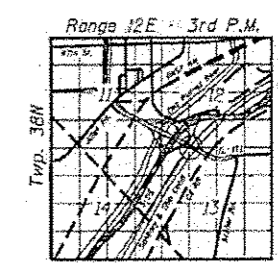
De Carl Kuyper
Engineer of Bridges & Structures



OFFSET SKETCH - RAMP F



PLAN



LOCATION SKETCH

EXISTING UTILITY LEGEND

- W — Underground Water Main
- G — Underground Gas Line
- T — Underground Telephone Line
- E — Underground Electrical Line
- Utility Pole

DESIGN SCOUR ELEVATION TABLE

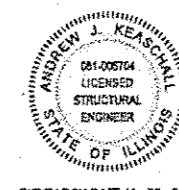
Design Scour Elevation (ft.)	Design Scour Elevation (ft.)			
	Pier 13	Pier 14	Pier 15	Pier 16
0.100	590.0	553.0	553.0	565.7
0.500	589.0	553.0	553.0	585.4

Design scour elevations estimated from existing data.

WATERWAY INFORMATION

Flood	Freq. Yr.	C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	50	11,300	7,965	7,965	587.03	0.00	0.00	587.03	587.03
Base	100	12,800	8,279	8,279	588.03	0.00	0.00	588.03	588.03
Overtopping	>900								
Max. Calc.	500	16,100	9,439	9,439	591.44	0.00	0.00	591.43	591.43

10 Year Velocity Through Existing and Proposed Bridge = 1.21 fps



EXPIRATION DATE 11-30-2014

Andrew J. Keaschall

GENERAL PLAN AND ELEVATION
SB IL-171 OVER SANITARY & SHIP CANAL
(PUBLIC WATER), SERVICE RD.,
CANAL BANK RD., MWRDGC RR & RAMP E
FAP 373 - SECTION 2013-038B-R
COOK COUNTY
STATION 30+72.59
STRUCTURE NO. 016-0486

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205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

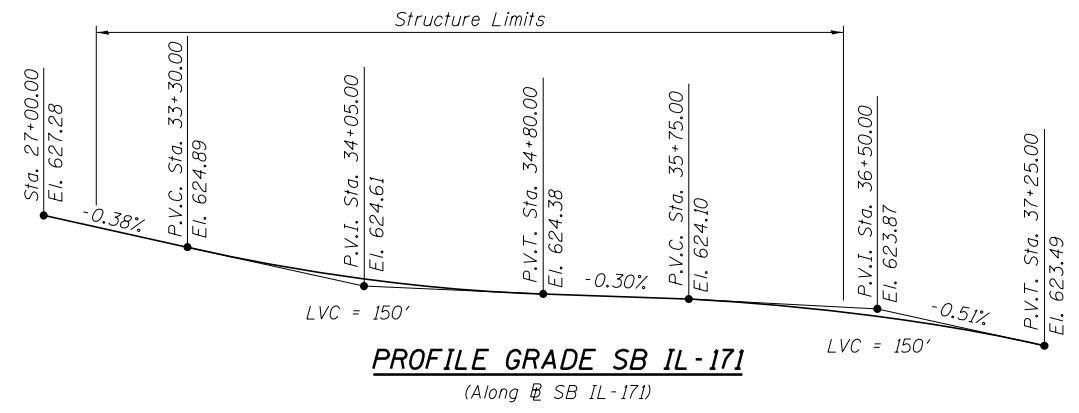
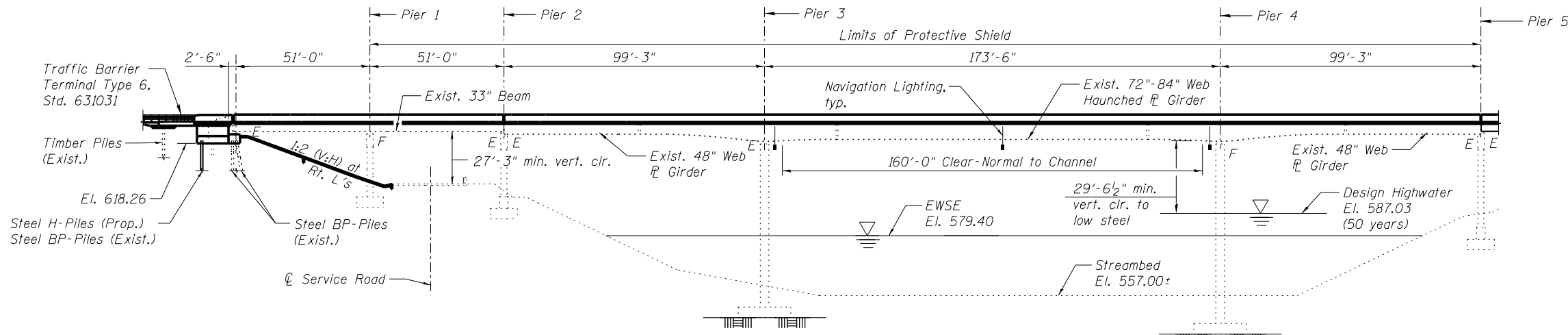
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

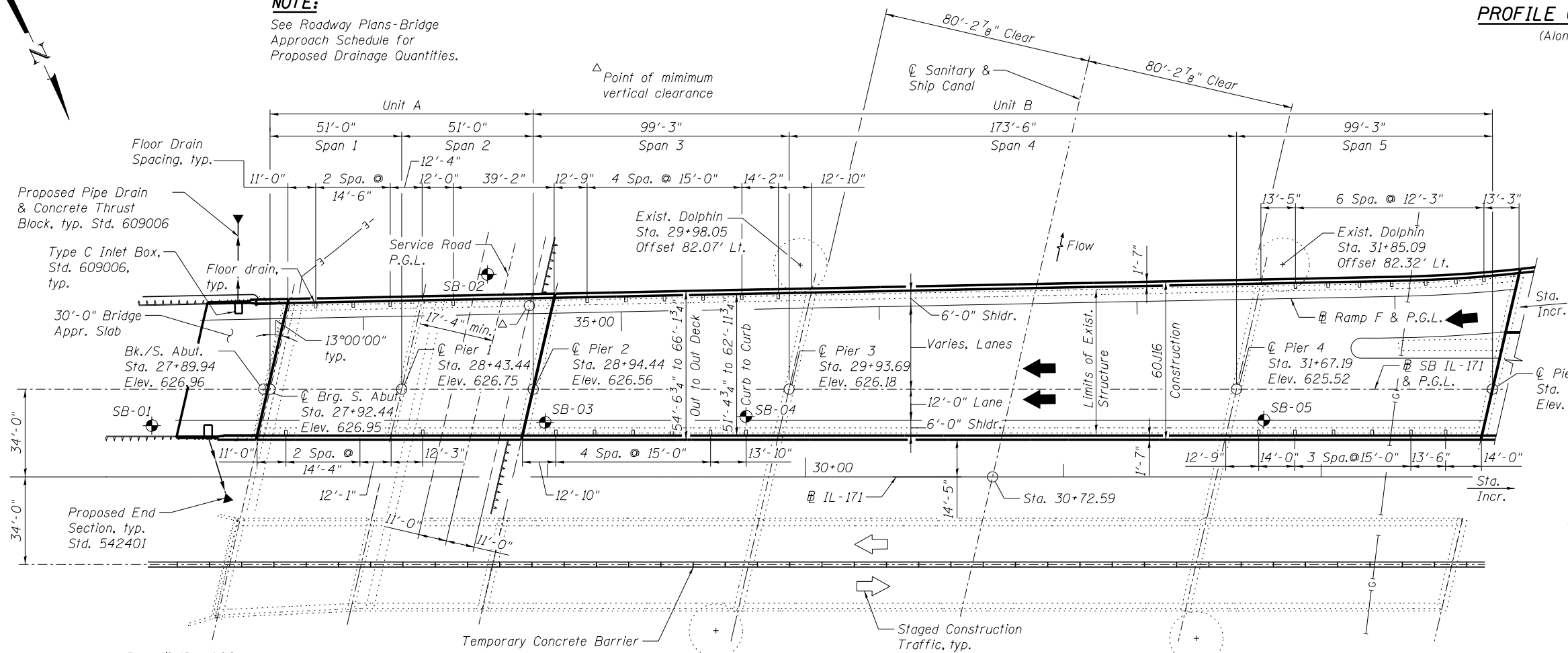
SHEET NO. 561 OF 56300 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	2013-038B-R	COOK	821	561
CONTRACT NO. 60J16			ILLINOIS FED. AID PROJECT	

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NOTE:
 See Roadway Plans-Bridge Approach Schedule for Proposed Drainage Quantities.



EXISTING UTILITY LEGEND

—G—G— Undergroud Gas Line
 —E—E— Undergroud Electrical Line

GENERAL PLAN AND ELEVATION SPANS 1 THROUGH 5
SB IL-171 OVER SANITARY & SHIP CANAL (PUBLIC WATER), SERVICE RD., CANAL BANK RD., MWRDGC RR & RAMP E FAP 373 - SECTION 2013-038B-R
COOK COUNTY
STATION 30+72.59
STRUCTURE NO. 016-0486

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 312-565-0450 Job No. 10093

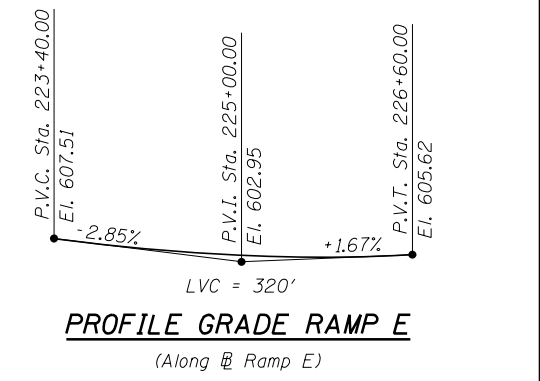
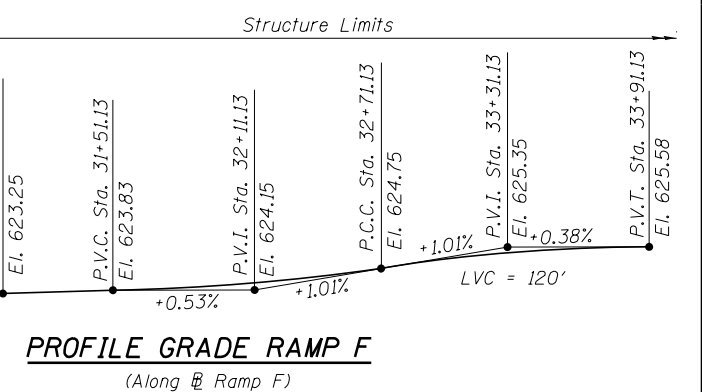
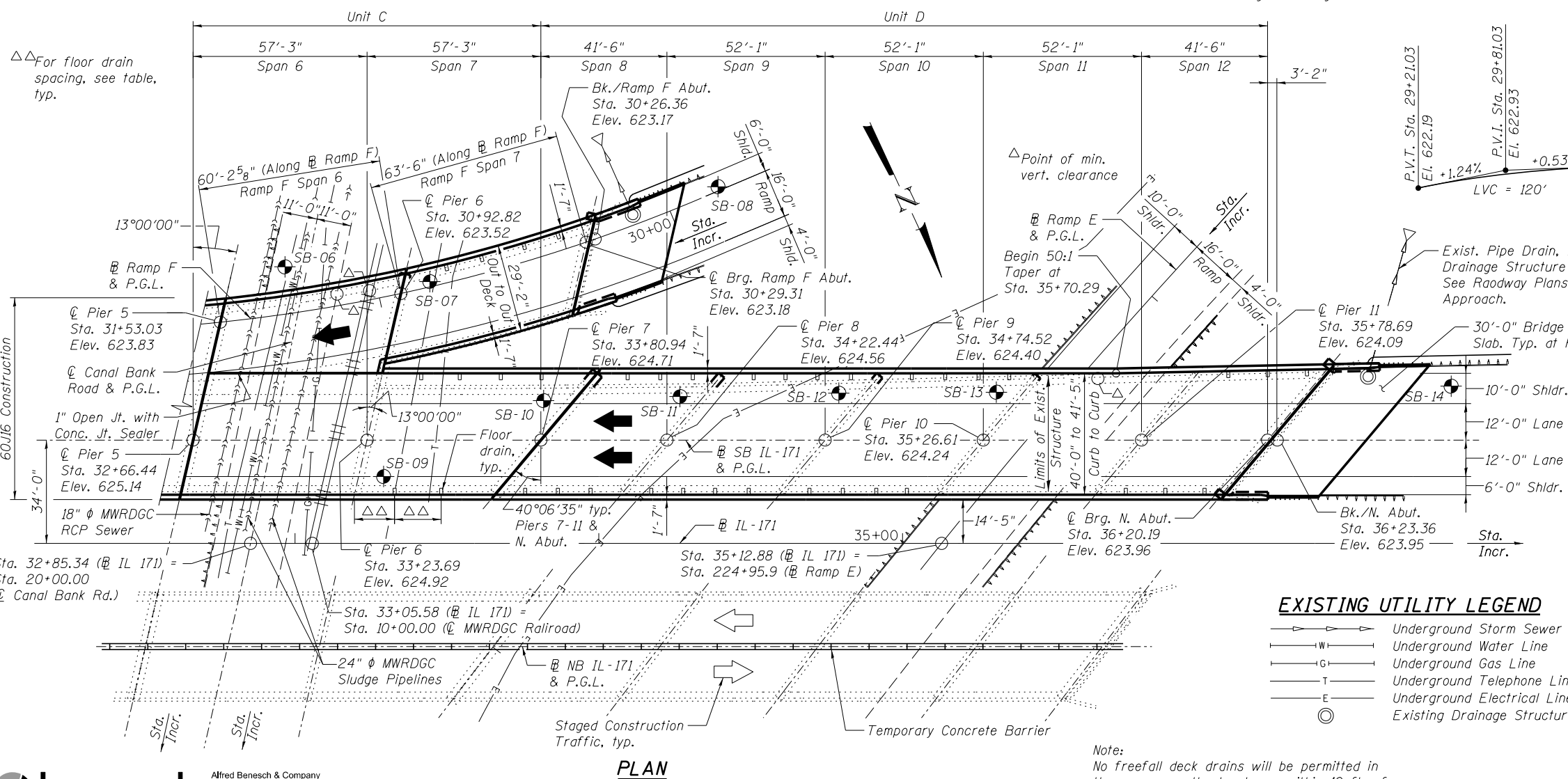
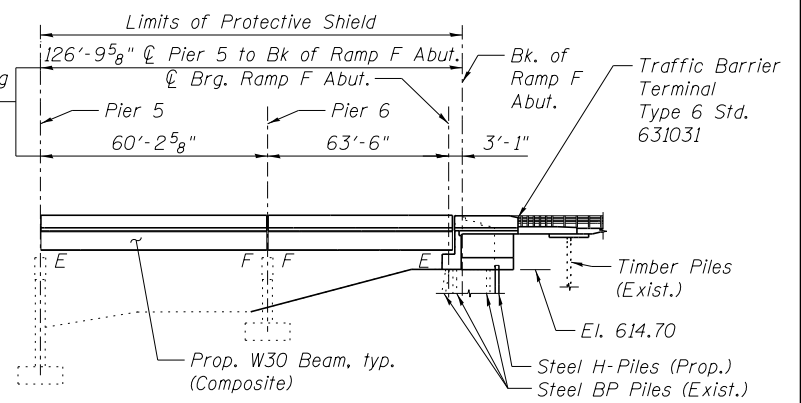
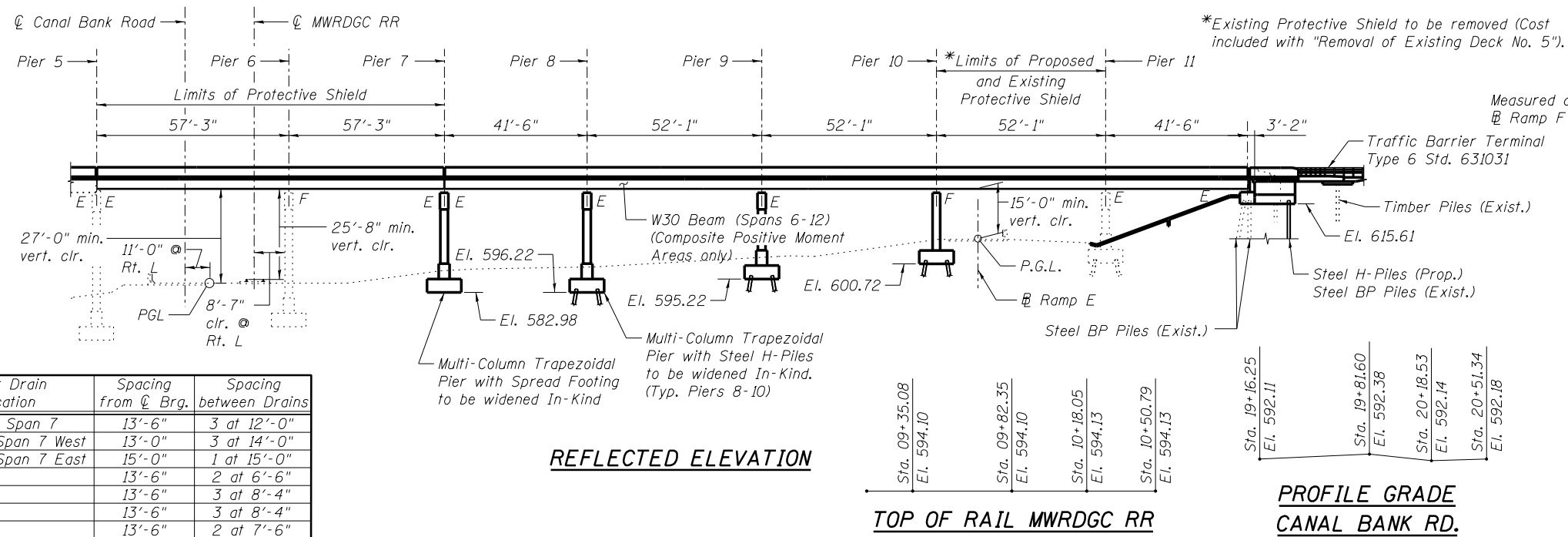
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		CHECKED - DTS	REVISD -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. S62 OF S6100 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	2013-038B-R	COOK	821	592
CONTRACT NO. 60J16			ILLINOIS FED. AID PROJECT	

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GENERAL PLAN AND ELEVATION
SPANS 6 THROUGH 12
SB IL-171 OVER SANITARY & SHIP CANAL
(PUBLIC WATER), SERVICE RD.,
CANAL BANK RD., MWRDGC RR & RAMP E
FAP 373 - SECTION 2013-038B-R
COOK COUNTY
STATION 30+72.59
STRUCTURE NO. 016-0486

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 312-565-0450 Job No. 10093

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		DRAWN - RMG	REVISED -
		CHECKED - DTS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. SG3 OF SG100 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	2013-038B-R	COOK	821	593
CONTRACT NO. 60J16			ILLINOIS FED. AID PROJECT	

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GENERAL NOTES

- Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 7/8" dia., holes 15/16" dia., unless otherwise noted.
 - Calculated weight of structural steel = M270 Grade 36: 16,780 lbs. M270 Grade 50: 104,590 lbs.
 - No field welding is permitted except as specified in the contract documents.
 - The Contractor shall test the existing welds by non-destructive methods within 2 ft. of the end of the existing cover plates for cracks after removal of the existing concrete deck. Dye penetrant(PT), magnetic particle (MT), or other approved testing method shall be performed by qualified personnel approved by the Engineer. If cracks are found, report them to the Bureau of Bridges and Structures for disposition. The cost of testing is included in Removal of Existing Concrete Deck. The cost of crack repair, if necessary, will be paid for according to Article 109.04 of the Standard Specifications.
 - 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 cannot be removed by grinding 1/4 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.
- If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.
8. 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.
- Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8" (0.01). Adjustment shall be made either by grinding the surface or shimming the bearings.
 - Concrete Sealer shall be applied to the designated areas of all abutments including Ramp F, and Piers 5 thru 7.
 - The existing structural steel coating contains lead. The Contractor shall take all precautions to deal with the presence of lead on this project.
 - The Inorganic Zinc Rich Primer/Acrylic/Acrylic Paint System shall be used for shop and field painting of new structural steel and the steel portions of new elastomeric bearings. Only Inorganic Zinc Rich Primer shall be applied to the new structural steel and the steel portions of the new elastomeric bearings in the shop under this contract and is included in "Furnishing and Erecting Structural Steel" and the elastomeric bearing pay items, respectively. The intermediate and top coats shall be applied under a separate painting contract.
 - Existing structural steel shall only be cleaned and painted as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".
 - The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.

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- SG1 Overall General Plan and Elevation
- SG2 General Plan and Elevation Spans 1 through 5
- SG3 General Plan and Elevation Spans 6 through 12
- SG4 General Notes, Bill of Material and Index of Sheets
- SG5 Foundation Layout (1 of 2)
- SG6 Foundation Layout (2 of 2)
- SG7 Stage Construction Details Spans 1 and 2
- SG8 Stage Construction Details Spans 3 thru 5
- SG9 Stage Construction Details Span 6
- SG10 Stage Construction Details Span 7
- SG11 Stage Construction Details Spans 8 thru 12
- SG12 Temporary Concrete Barrier for Stage Construction
- SG13 Top of Slab Elevations Plan Spans 1 thru 5
- SG14 Top of Slab Elevations Spans 1 and 2 (1 of 2)
- SG15 Top of Slab Elevations Spans 1 and 2 (2 of 2)
- SG16 Top of Slab Elevations Spans 3 through 5 (1 of 4)
- SG17 Top of Slab Elevations Spans 3 through 5 (2 of 4)
- SG18 Top of Slab Elevations Spans 3 through 5 (3 of 4)
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- SG20 Top of Slab Elevations Plan Spans 6 thru 12
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- SG22 Top of Slab Elevations Spans 6 and 7 (2 of 4)
- SG23 Top of Slab Elevations Spans 6 and 7 (3 of 4)
- SG24 Top of Slab Elevations Spans 6 and 7 (4 of 4)
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- SG26 Top of Slab Elevations Spans 8 through 12 (2 of 3)
- SG27 Top of Slab Elevations Spans 8 through 12 (3 of 3)
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- SG29 Top of North Approach Slab Elevations
- SG30 Top of Ramp F Approach Slab Elevations
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- SG32 Deck Plan and Cross Section Spans 3 thru 5
- SG33 Deck Plan and Cross Section Span 6 Ramp F
- SG34 Deck Plan and Cross Section Span 7 Ramp F
- SG35 Deck Plan and Cross Section Spans 6 and 7
- SG36 Deck Plan and Cross Section Spans 8 thru 12
- SG37 Parapet Details Spans 1 and 2
- SG38 Parapet Details Spans 3 thru 5
- SG39 Parapet Details Spans 6 and 7
- SG40 Parapet Details Spans 8 thru 12
- SG41 Superstructure Details
- SG42 Reinforcing Bar Details and Bill of Material Spans 1 thru 5
- SG43 Reinforcing Bar Details and Bill of Material Spans 6 thru 12
- SG44 Concrete Parapet Slipforming Option
- SG45 Preformed Joint Strip Seal
- SG46 South Bridge Approach Slab Plan
- SG47 South Bridge Approach Slab Details
- SG48 North Bridge Approach Slab Plan
- SG49 North Bridge Approach Slab Details
- SG50 Ramp F Bridge Approach Slab Plan
- SG51 Ramp F Bridge Approach Slab Details
- SG52 Steel Removal and Repair Plan Unit A & B
- SG53 Steel Removal and Repair Plan Unit C & D
- SG54 Structural Steel Repair Details (1 of 2)
- SG55 Structural Steel Repair Details (2 of 2)
- SG56 Framing Plan Spans 6 and 7
- SG57 Girder Elevations and Details - Spans 6 and 7
- SG58 Framing Plan and Girder Elevation Spans 8 thru 12
- SG59 Steel Diaphragm Details Spans 6-12
- SG60 Girder Splice Details
- SG61 Moment and Reaction Tables (1 of 2)
- SG62 Moment and Reaction Tables (2 of 2)
- SG63 Bearing Details (1 of 2)
- SG64 Bearing Details (2 of 2)
- SG65 South Abutment Concrete Removal and Repair Details
- SG66 Ramp F Abutment Concrete Removal and Repair Details
- SG67 North Abutment Concrete Removal and Repair Details
- SG68 Pier 1 and 2 Repair Details
- SG69 Pier 3 and 4 Repair Details
- SG70 Pier 5 and 6 Repair Details
- SG71 Pier 7 and 8 Repair Details
- SG72 Pier 9 and 10 Repair Details
- SG73 Pier 11 Repair Details
- SG74 South Abutment Widening Details (1 of 3)
- SG75 South Abutment Widening Details (2 of 3)
- SG76 South Abutment Widening Details (3 of 3)
- SG77 Ramp F Abutment Widening Details (1 of 3)
- SG78 Ramp F Abutment Widening Details (2 of 3)

STATION 30+72.59
RE-BUILT 20__ BY
STATE OF ILLINOIS
FAP 373-SEC. 2013-038B-R
LOADING HS-20
STRUCTURE NO. 016-0486

SB NAME PLATE
(See Std. 515001)

Existing Name Plate shall be cleaned and relocated next to the new Name Plate. Cost included with Name Plates.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu Yd		59.4	59.4
Slope Wall Removal	Sq Yd		31.0	31.0
Removal of Existing Concrete Deck No. 5	Each	1		1
Protective Shield	Sq Yd	3,752		3,752
Structure Excavation	Cu Yd		429	429
Floor Drains	Each	71		71
Concrete Structures	Cu Yd		161.0	161.0
Concrete Superstructure	Cu Yd	1,692.6		1,692.6
Bridge Deck Grooving	Sq Yd	5,075.0		5,075
Concrete Encasement	Cu Yd		2.1	2.1
Protective Coat	Sq Yd	6,213		6,213
Furnishing and Erecting Structural Steel	L Sum	0.13		0.13
Stud Shear Connectors	Each	12,577		12,577
Reinforcement Bars, Epoxy Coated	Pound	431,120	29,570	460,690
Bar Splicers	Each		139	139
Slope Wall 4 Inch	Sq Yd		150	150
Furnishing Steel Piles HPI2x53	Foot		660	660
Driving Piles	Foot		660	660
Test Pile Steel HPI2x53	Each		3	3
Pile Shoes	Each		18	18
Name Plates	Each	1		1
Preformed Joint Strip Seal	Foot	353.5		353.5
Elastomeric Bearing Assembly, Type I	Each	11		11
Elastomeric Bearing Assembly, Type II	Each	4		4
Anchor Bolts, 3/4"	Each	43		43
Anchor Bolts, 1"	Each	4		4
Anchor Bolts, 1 1/2"	Each	2		2
Concrete Sealer	Sq Ft		1,271	1,271
* Epoxy Crack Injection	Foot		102	102
Geocomposite Wall Drain	Sq Yd		112	112
Structural Steel Removal	Pound	125,740		125,740
Structural Steel Repair	Pound	7,270		7,270
Cleaning Bridge Seats	Sq Ft		2,300	2,300
* Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft		301	301
* Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq Ft		16	16
Silicone Joint Sealer, 1"	Foot	58		58
Pipe Underdrains For Structures 4"	Foot		180	180
Selective Clearing	Unit		3	3
Remove Conduit Attached to Structure	Foot	1,950		1,950
Fender System	L Sum		1	1
Granular Backfill For Structures	Cu Yd		280	280

* Quantity includes a contingency (above the amounts shown in the bills of material) to account for uncertainties associated with the condition of the existing substructure and the age of the original inspection (2008-2009). Actual repair areas will be determined by the Engineer in the field.

INDEX OF SHEETS (CONT'D)

- SG79 Ramp F Abutment Widening Details (3 of 3)
- SG80 North Abutment Widening Details (1 of 3)
- SG81 North Abutment Widening Details (2 of 3)
- SG82 North Abutment Widening Details (3 of 3)
- SG83 Abutment Bar Bends and Bill of Material
- SG84 Pier 7 Widening Details
- SG85 Pier 8 Widening Details
- SG86 Pier 9 Widening Details
- SG87 Piers 7, 8 & 9 Sections
- SG88 Piers 7, 8 & 9 Bar Bends and Bill of Material
- SG89 Pier 5 & 6 Cap Details
- SG90 Pier 10 & 11 Cap Details
- SG91 Piers 5, 6, 10 & 11 Bar Bends and Bill of Material
- SG92 Bar Splicer Assembly and Mechanical Splicer Details
- SG93 HP Pile Details
- SG94 Soil Boring Logs South Abutment
- SG95 Soil Boring Logs Ramp F Abutment
- SG96 Soil Boring Logs Pier 7
- SG97 Soil Boring Logs Pier 8
- SG98 Soil Boring Logs Pier 9
- SG99 Soil Boring Logs Pier 10
- SG100 Soil Boring Logs North Abutment

For existing bridge plans, see Sheets SGX1 thru SGX48 immediately following Sheet SG100.

SCOPE OF WORK

- Remove existing concrete deck and microsilica concrete overlay and replace with new 8" reinforced concrete deck.
- Retrofit steel superstructure fatigue prone details.
- Remove wind bracing in spans 3 through 5 (bottom lateral angles).
- Perform miscellaneous repairs including repairing unseated or missing anchor bolts and side retainers, and removing debris.
- Replace or repair damaged or corroded cross frames, diaphragms and connection plates.
- Install new girders, diaphragms and cross frames for widening.
- Remove and replace selected existing girders and cross frames.
- Make new deck composite in positive moment areas only by adding shear studs to all girders and beams where not already installed.
- Remove and dispose of abandoned electrical conduits and junction boxes attached to the beams and/or deck.
- Strengthen beam ends and replace diaphragms at expansion joints.
- Repair spalls, delaminations and open cracks in substructure using structural repair of concrete and epoxy crack injection.
- Widen Piers 7, 8 & 9 and all abutments.
- Construct additions to caps at Piers 5, 6, 10 & 11.
- Remove and replace existing abutment backwalls.
- Widen and repair existing slopewalls.
- Remove and replace existing expansion joints.
- Remove and replace approach slabs and drainage at abutments.
- Fix conduit and exposed wires at Ramp F abutment.
- Repair timber fenders at Piers 3 and 4.
- Remove and replace navigational lighting.



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**GENERAL NOTES, BILL OF MATERIAL AND INDEX OF SHEETS
STRUCTURE NO. 016-0486**

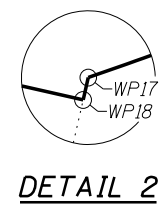
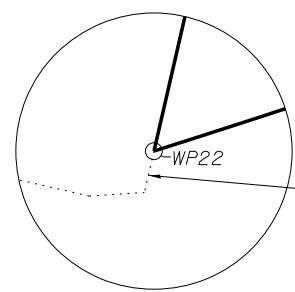
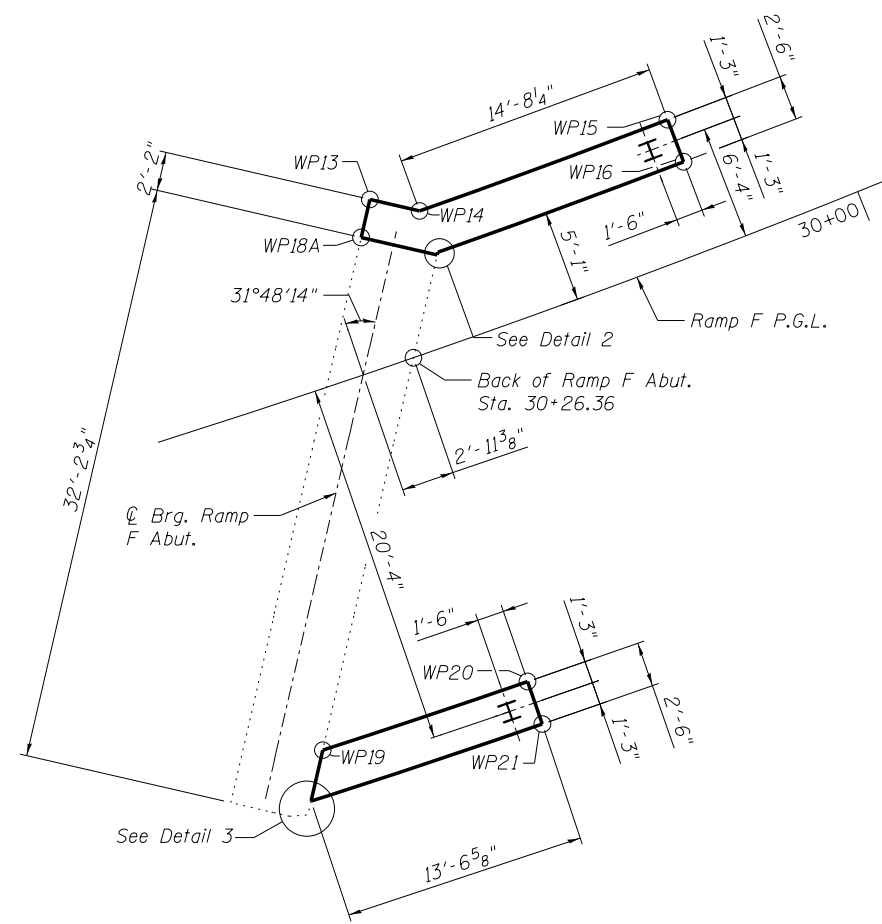
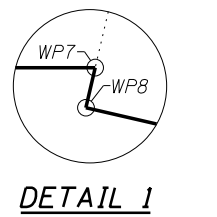
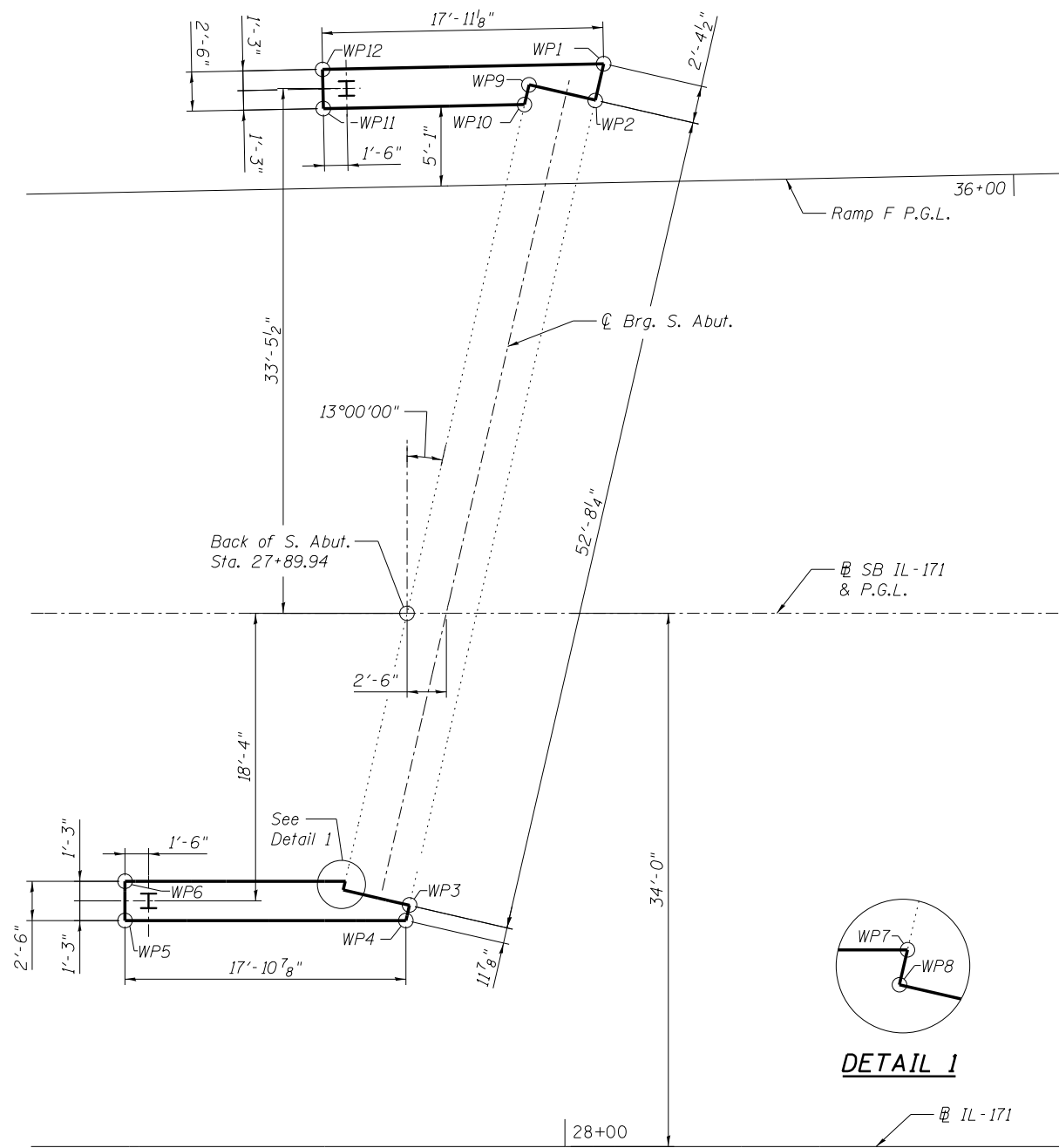
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ILLINOIS FED. AID PROJECT				

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Cut existing reinforcement to be flush with face of existing abutment cap.

PLAN - FOUNDATION LAYOUT

NOTES:
1. For abutment details, see Sheets SG74 to SG83.

WORK POINTS

W.P.	Station	Offset
1	28+02.48	69.04 Lt.
2	28+01.94	66.72 Lt.
3	27+90.09	15.39 Lt.
4	27+89.87	14.42 Lt.
5	27+71.96	14.42 Lt.
6	27+71.96	16.92 Lt.
7	27+86.00	16.92 Lt.
8	27+85.87	16.36 Lt.
9	27+97.72	67.70 Lt.
10	27+97.43	66.44 Lt.
11	27+84.60	66.18 Lt.
12	27+84.55	68.68 Lt.
13	30+25.76	9.10 Rt.
14	30+23.32	7.58 Rt.
15	30+08.44	7.58 Rt.
16	30+08.44	5.08 Rt.
17	30+23.13	5.08 Rt.
18	30+23.22	4.95 Rt.
18A	30+26.93	7.26 Rt.
19	30+37.86	19.08 Lt.
20	30+26.26	19.08 Lt.
21	30+26.26	21.58 Lt.
22	30+39.30	21.58 Lt.

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**FOUNDATION LAYOUT (1 OF 2)
STRUCTURE NO. 016-0486**

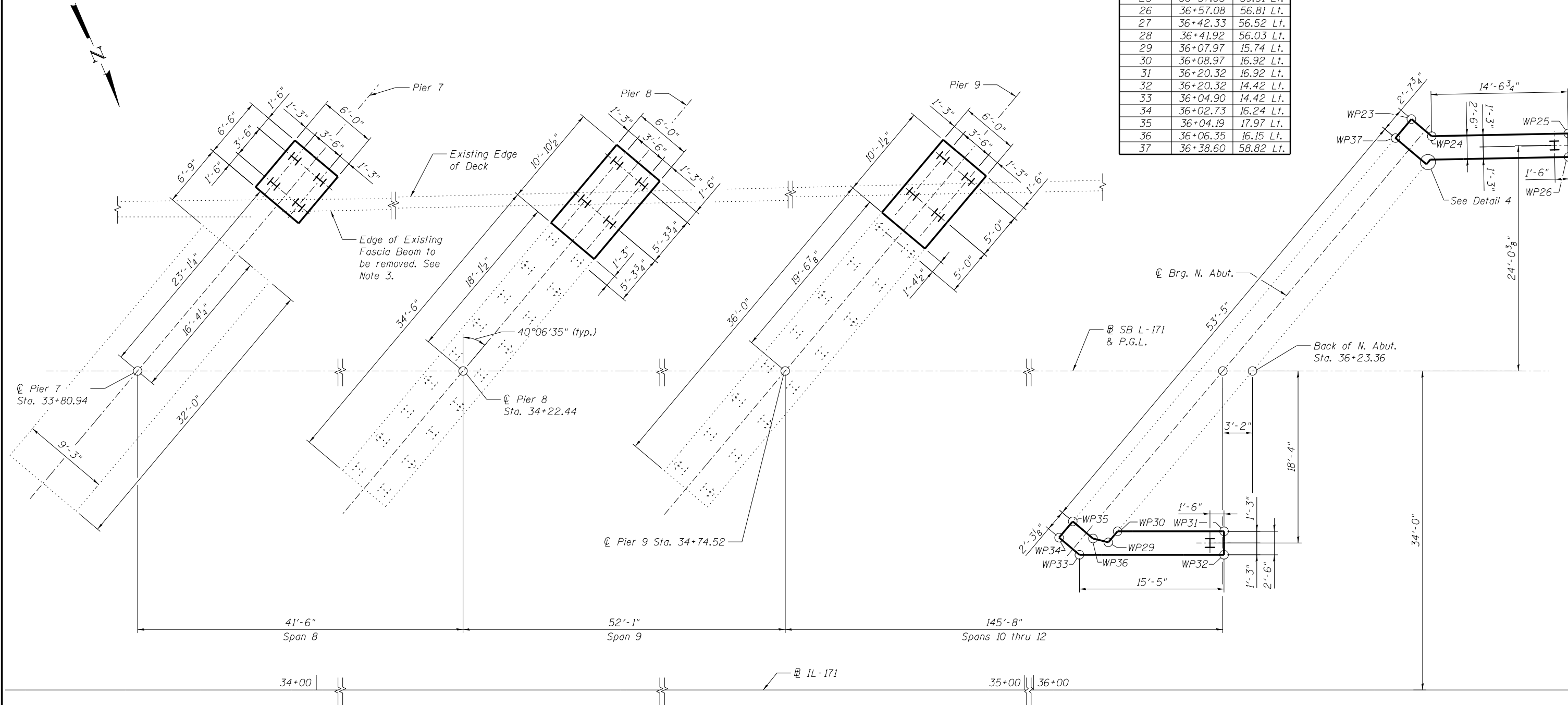
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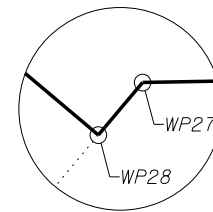
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WORK POINTS

W.P.	Station	Offset
23	36+40.31	60.85 Lt.
24	36+42.47	59.02 Lt.
25	36+57.03	59.31 Lt.
26	36+57.08	56.81 Lt.
27	36+42.33	56.52 Lt.
28	36+41.92	56.03 Lt.
29	36+07.97	15.74 Lt.
30	36+08.97	16.92 Lt.
31	36+20.32	16.92 Lt.
32	36+20.32	14.42 Lt.
33	36+04.90	14.42 Lt.
34	36+02.73	16.24 Lt.
35	36+04.19	17.97 Lt.
36	36+06.35	16.15 Lt.
37	36+38.60	58.82 Lt.



PLAN - FOUNDATION LAYOUT



DETAIL 4

NOTES:

1. For pier details, see Sheets SG84 to SG88.
2. For abutment details, see Sheets SG74 to SG83.
3. Existing beams shall be removed prior to installation of piles. See Sheet SG53.

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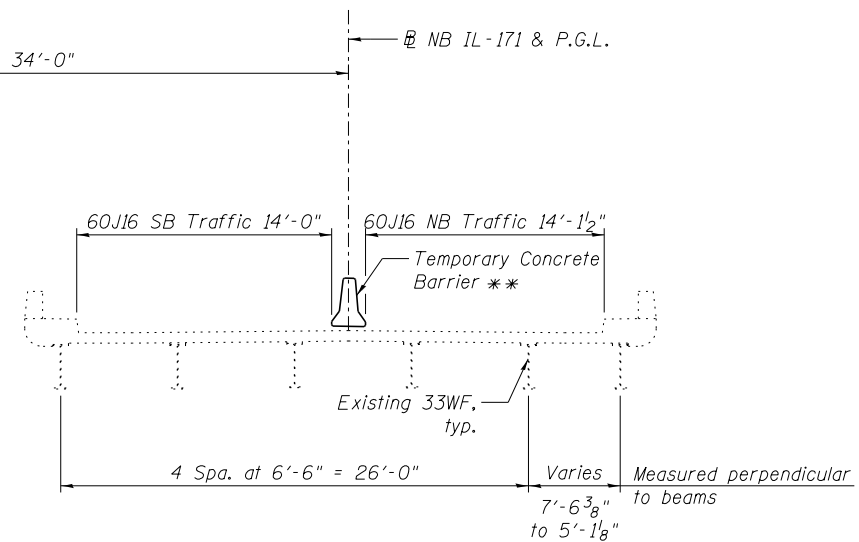
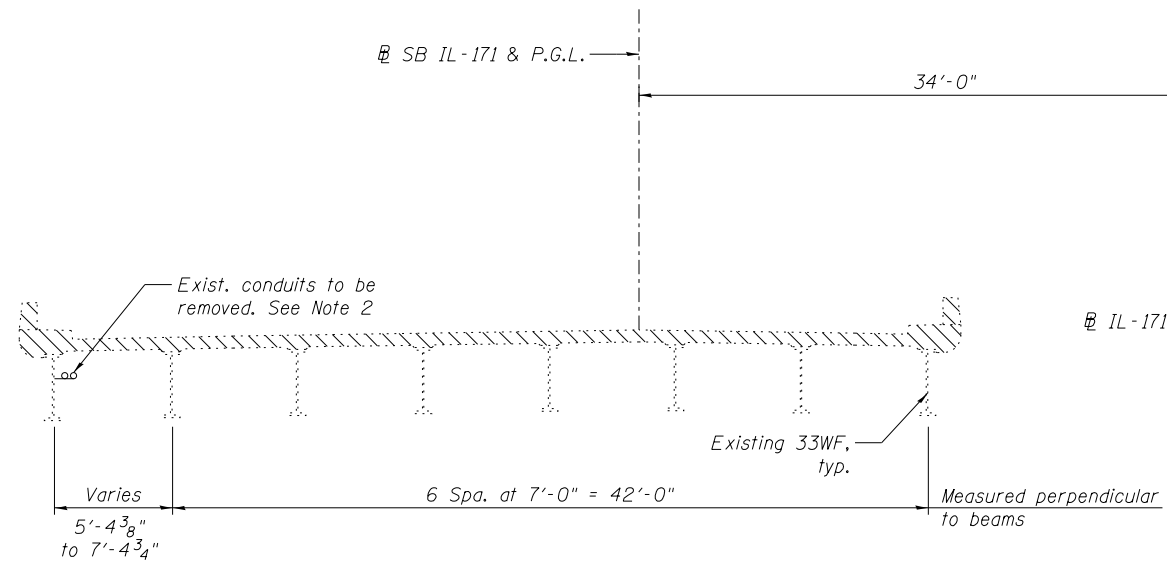
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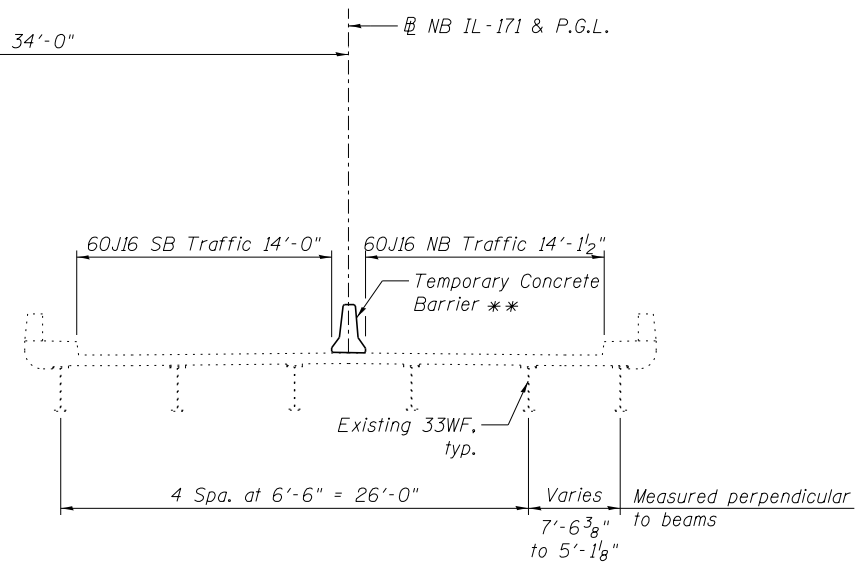
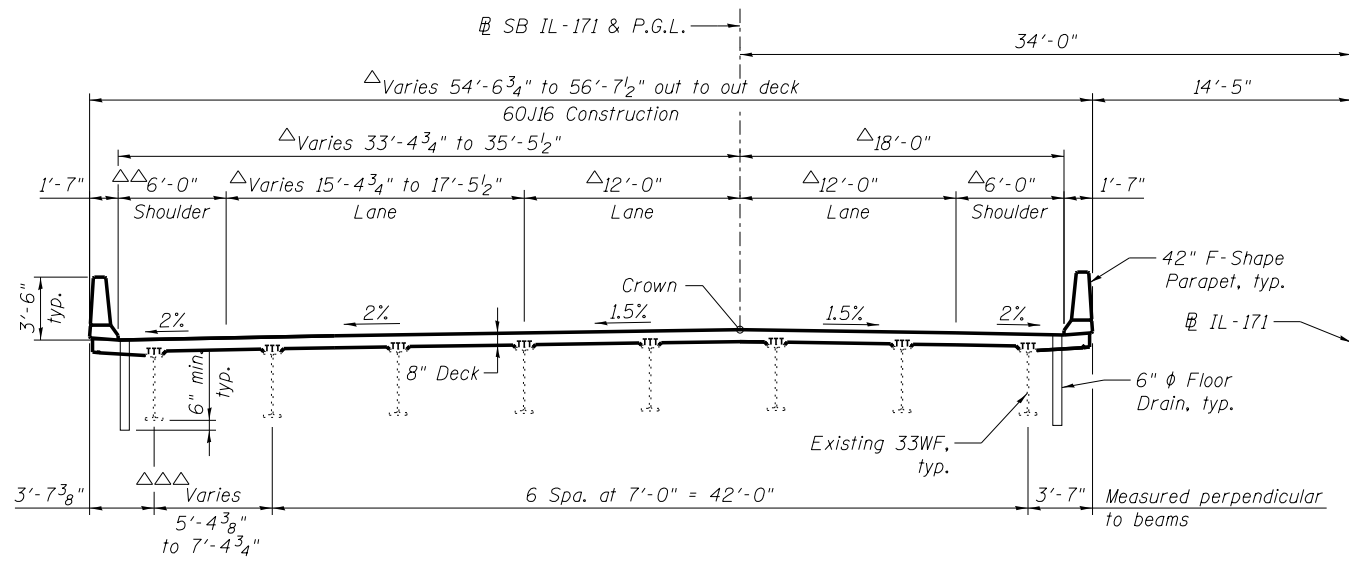
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STRUCTURE NO. 016-0486**
SHEET NO. SG6 OF SG100 SHEETS

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CONTRACT 60J16 REMOVAL
(Spans 1 & 2 Looking Upstation)



△ Measured perpendicular to IL-171
 △△ Measured perpendicular to Ramp F
 △△△ Measured perpendicular to Beam A2

CONTRACT 60J16 CONSTRUCTION
(Spans 1 & 2 Looking Upstation)

LEGEND

Indicates Removal of Existing Concrete Deck No. 5.

NOTES:

- All dimensions are measured perpendicular to IL-171 unless noted otherwise.
- The existing conduit contains live electrical cables that power the existing navigation lighting attached to the fascia girder. Note that the navigation lighting must remain in service without interruption. See Lighting Plans for additional details and requirements. Coordinate the removal of the existing conduit with the installation of the new navigation lighting and corresponding new conduit and wiring. See Sheet SG54 for Conduit Removal Details.
- Do not anchor Temp. Concrete Barrier to exist. deck.

** See Sheet SG12 and maintenance of traffic sheets for more information.

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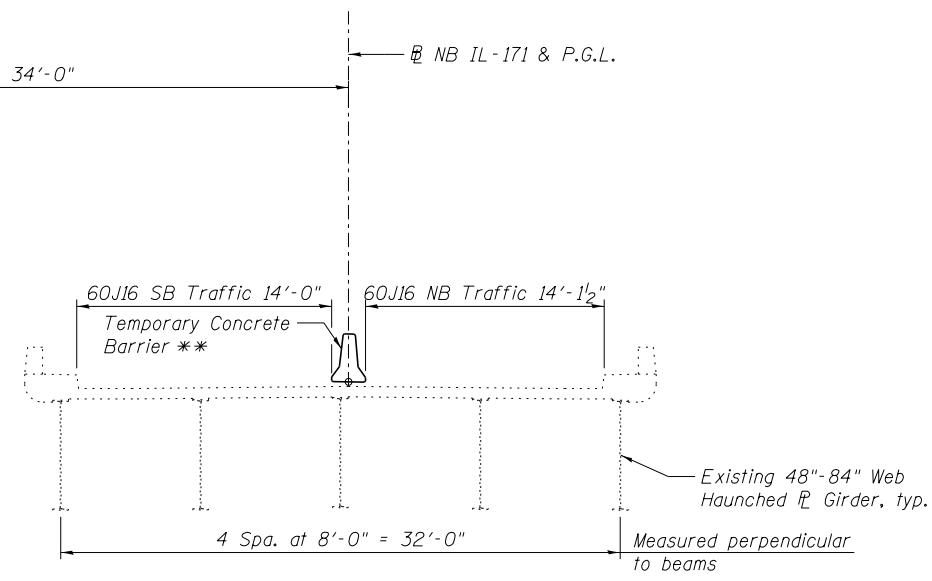
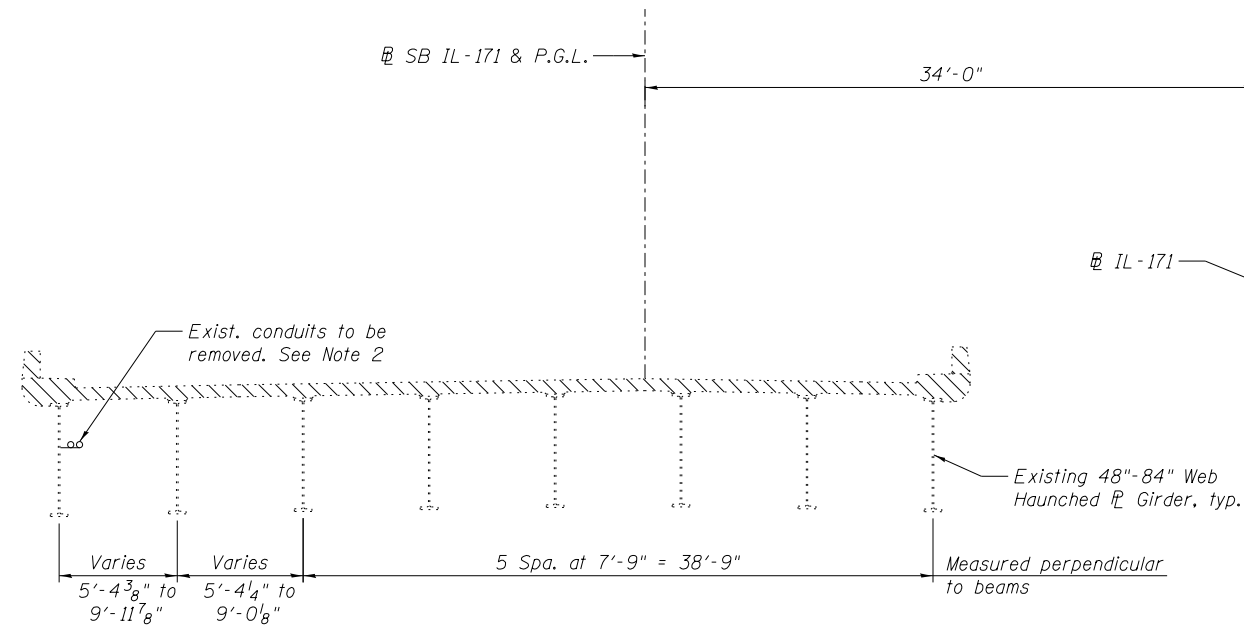
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STAGE CONSTRUCTION DETAILS SPANS 1 AND 2
STRUCTURE NO. 016-0486

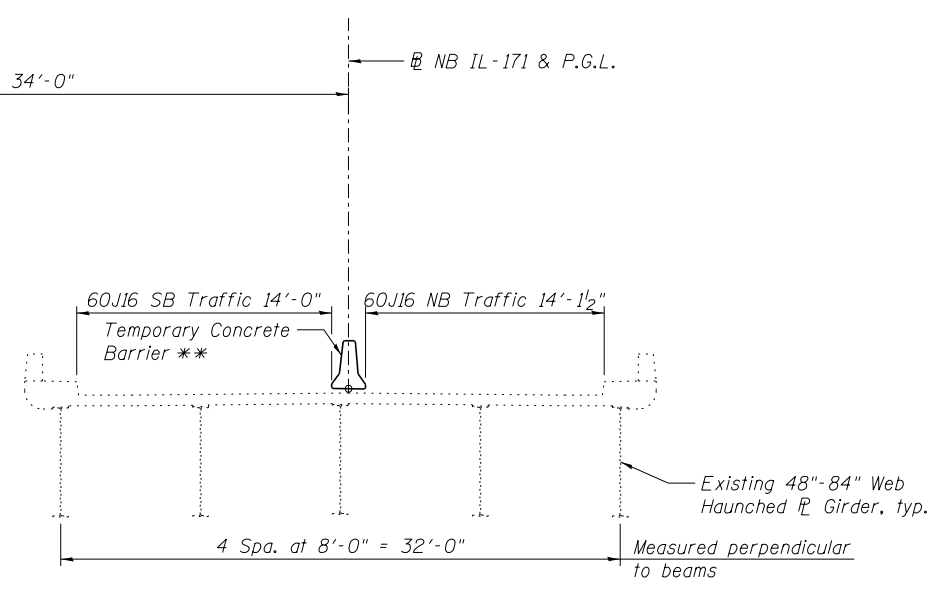
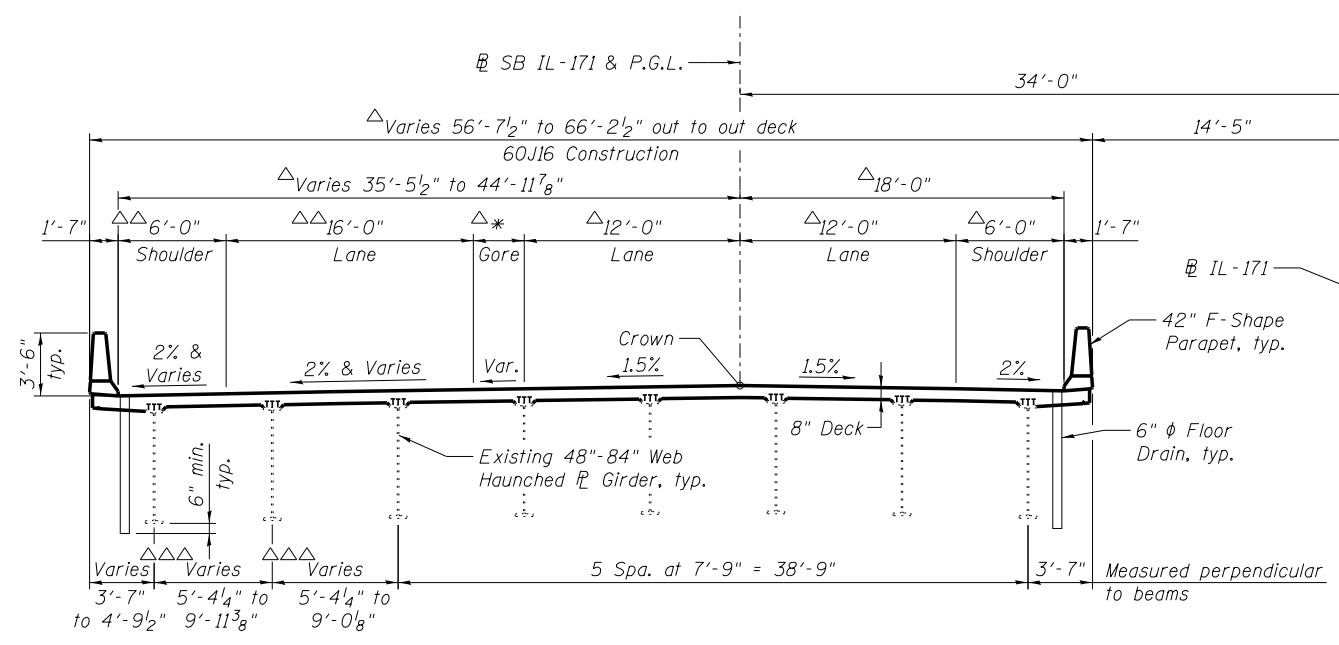
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CONTRACT 60J16 REMOVAL
(Spans 3 thru 5 Looking Upstation)



△ Measured perpendicular to IL-171
 △△ Measured perpendicular to Ramp F
 △△△ Measured perpendicular to east girder
 * Varies 1'-5 1/2" to 10'-10 1/2"

CONTRACT 60J16 CONSTRUCTION
(Spans 3 thru 5 Looking Upstation)

LEGEND

Indicates Removal of Existing Concrete Deck No. 5.

NOTES:

1. All dimensions are measured perpendicular to IL-171 unless noted otherwise.
2. The existing conduit contains live electrical cables that power the existing navigation lighting attached to the fascia girder. Note that the navigation lighting must remain in service without interruption. See Lighting Plans for additional details and requirements. Coordinate the removal of the existing conduit with the installation of the new navigation lighting and corresponding new conduit and wiring. See Sheet SG54 for Conduit Removal Details.
3. Do not anchor Temp. Concrete Barrier to exist. deck.

** See Sheet SG12 and maintenance of traffic sheets for more information.

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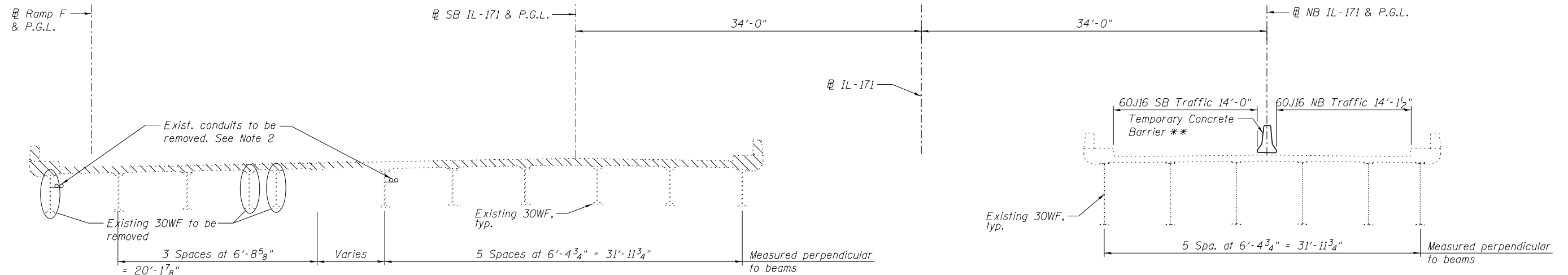
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STAGE CONSTRUCTION DETAILS SPANS 3 THRU 5
STRUCTURE NO. 016-0486

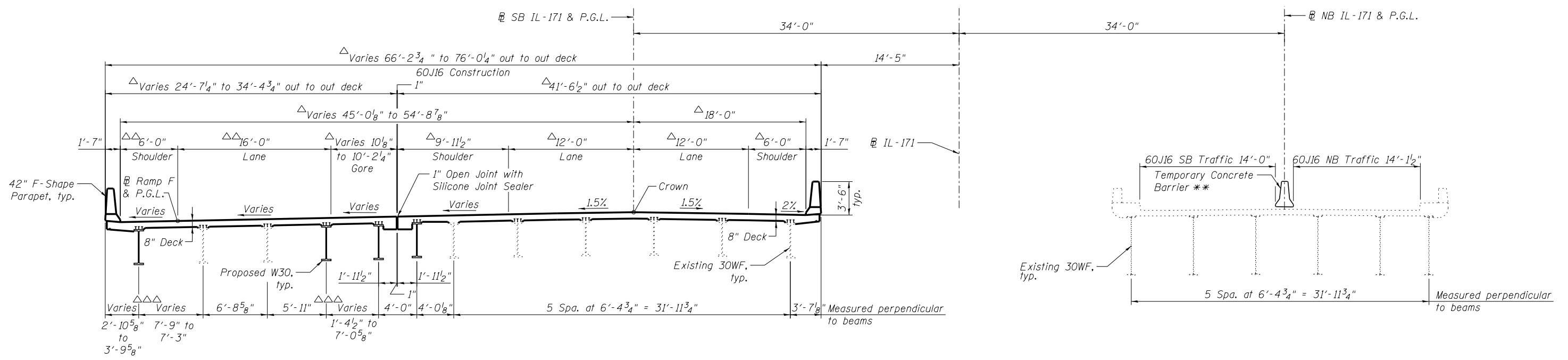
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CONTRACT 60J16 REMOVAL
(Span 6 Looking Upstation)



CONTRACT 60J16 CONSTRUCTION
(Span 6 Looking Upstation)

△ Measured perpendicular to IL-171 and Open Joint
 △△ Measured perpendicular to Ramp F
 △△△ Measured perpendicular to east beam

LEGEND

Indicates Removal of Existing Concrete Deck No. 5.

NOTES:

- All dimensions are measured perpendicular to IL-171 unless noted otherwise.
- The existing conduit contains live electrical cables that power the existing navigation lighting attached to the fascia girder. Note that the navigation lighting must remain in service without interruption. See Lighting Plans for additional details and requirements. Coordinate the removal of the existing conduit with the installation of the new navigation lighting and corresponding new conduit and wiring. See Sheet SG54 for Conduit Removal Details.
- Do not anchor Temp. Concrete Barrier to exist. deck.

** See Sheet SG12 and maintenance of traffic sheets for more information.

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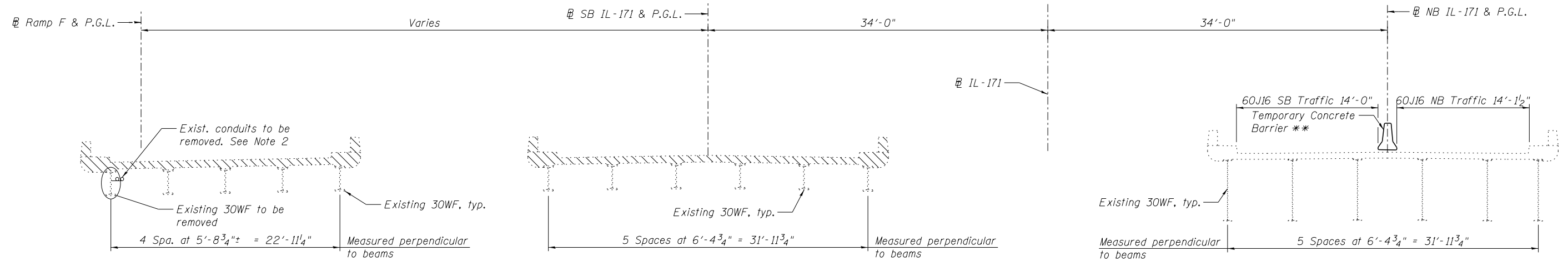
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STAGE CONSTRUCTION DETAILS SPAN 6
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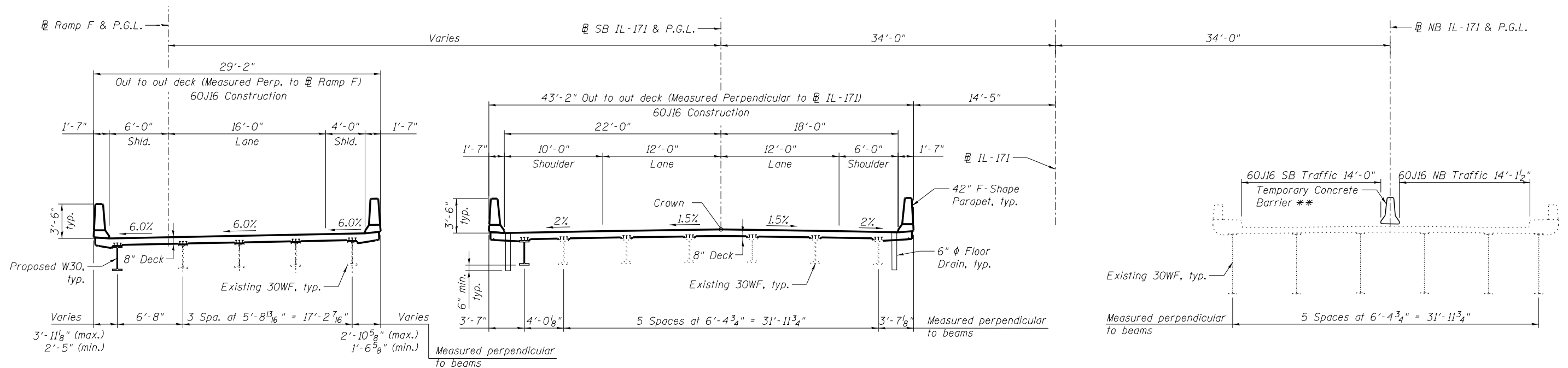
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CONTRACT 60J16 REMOVAL
(Span 7 Looking Upstation)



CONTRACT 60J16 CONSTRUCTION
(Span 7 Looking Upstation)

LEGEND

 Indicates Removal of Existing Concrete Deck No. 5.

NOTES:

1. All dimensions are measured perpendicular to IL-171 unless noted otherwise.
2. The existing conduit contains live electrical cables that power the existing navigation lighting attached to the fascia girder. Note that the navigation lighting must remain in service without interruption. See Lighting Plans for additional details and requirements. Coordinate the removal of the existing conduit with the installation of the new navigation lighting and corresponding new conduit and wiring. See Sheet SG54 for Conduit Removal Details.
3. Do not anchor Temp. Concrete Barrier to exist. deck.

** See Sheet SG12 and maintenance of traffic sheets for more information.

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STAGE CONSTRUCTION DETAILS SPAN 7
STRUCTURE NO. 016-0486

SHEET NO. SG10 OF SG100 SHEETS

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