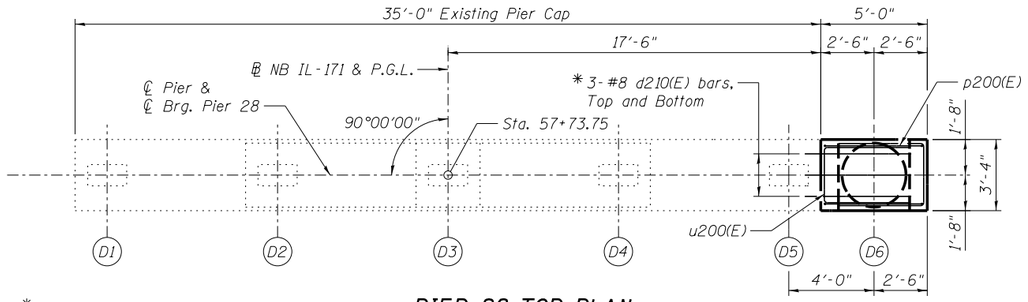
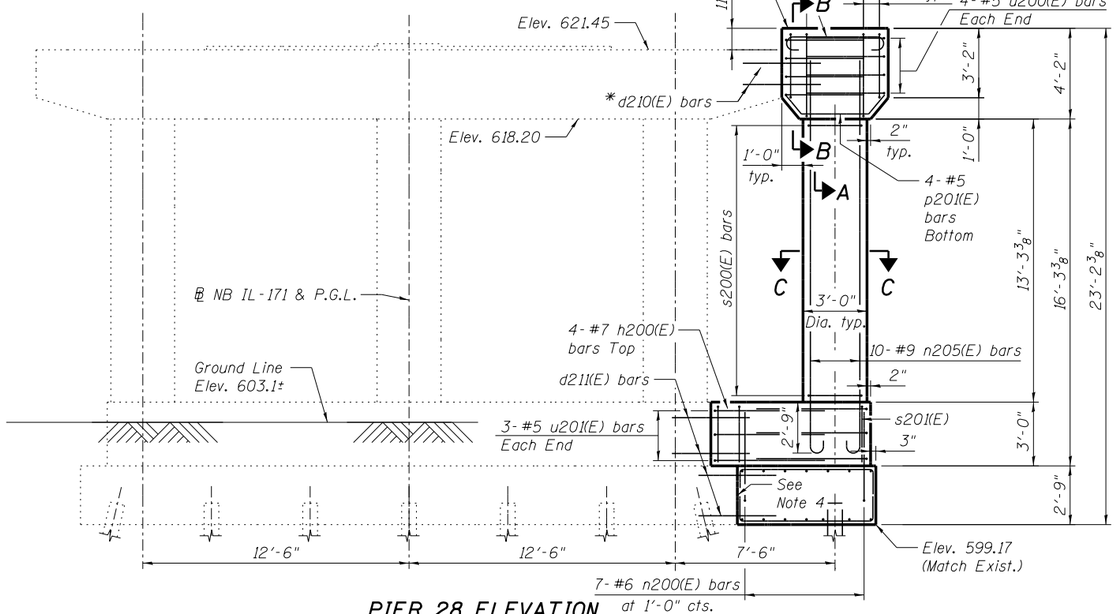
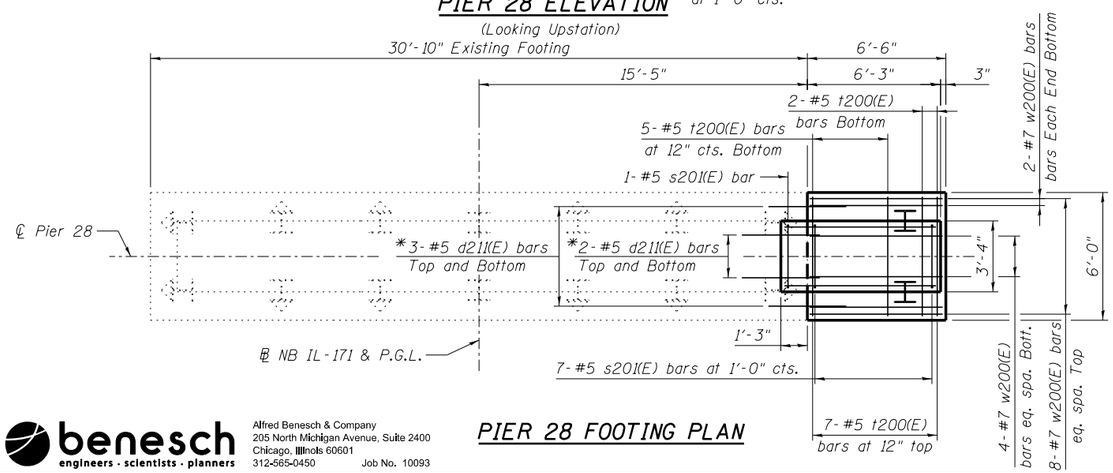


PIER 28 TOP PLAN

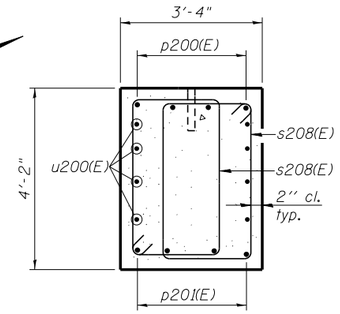
*Drill and grout bars according to Article 584 of the Standard Specifications with a minimum embedment of 9" for #8 bars and 6" for #5 bars. Cost included with Concrete Structures.



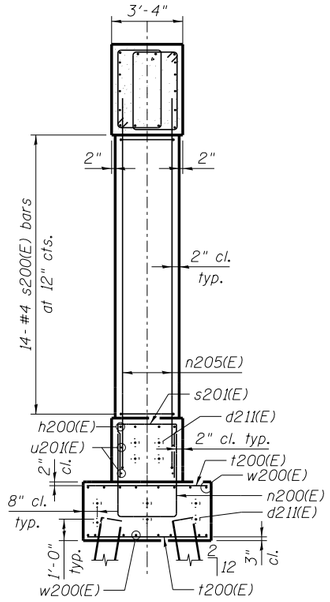
PIER 28 ELEVATION



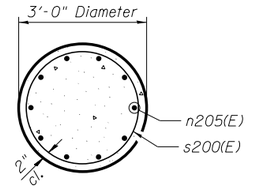
PIER 28 FOOTING PLAN



SECTION A-A



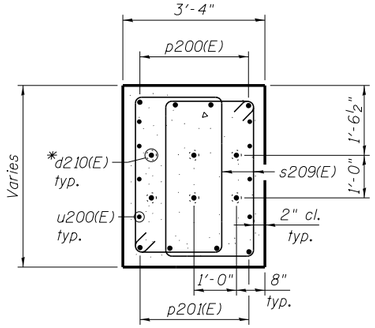
END VIEW



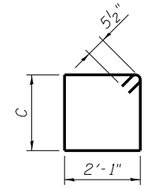
SECTION C-C

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d210(E)	6	#8	5'-0"	——
d211(E)	10	#5	4'-0"	——
h200(E)	4	#7	7'-2"	——
n200(E)	7	#6	12'-0"	⊔
n205(E)	10	#9	20'-3"	⊔
p200(E)	4	#9	7'-2"	⊂⊃
p201(E)	4	#5	5'-8"	⌒
s200(E)	14	#4	11'-0"	○
s201(E)	8	#5	8'-8"	⊔
s208(E)	8	#5	12'-9"	◪
s209(E)	4	#5	11'-1"	◪
t200(E)	14	#5	5'-8"	——
u200(E)	8	#5	10'-11"	⊔
u201(E)	6	#5	13'-5"	⊔
w200(E)	16	#7	8'-6"	⊔
Structure Excavation			Cu. Yd.	15
Concrete Structures			Cu. Yd.	12.7
Reinforcement Bars, Epoxy Coated			Pound	1,980
Furnishing Steel Piles HP14x73			Foot	120
Driving Piles			Foot	120
Pile Shoes			Each	2

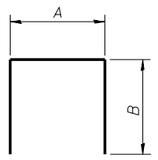


SECTION B-B



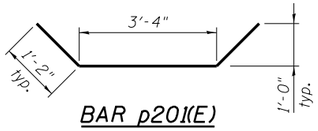
Bar	C
s208(E)	3'-10"
s209(E)	3'-0"

s208(E) AND s209(E) BARS

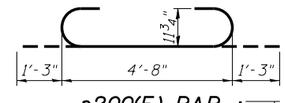


Bar	A	B
n200(E)	3'-0"	4'-6"
s201(E)	3'-0"	2'-10"
u200(E)	2'-11"	4'-0"
u201(E)	2'-11"	5'-3"
w200(E)	6'-2"	1'-2"

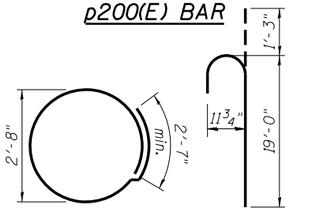
BARS n200(E), s201(E), u200(E), u201(E), & w200(E)



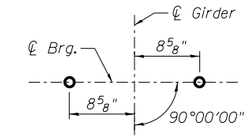
BAR p201(E)



p200(E) BAR



BAR s200(E) BAR n205(E)



ANCHOR BOLT DETAIL

PILE DATA

Type: HP14x73 with Pile Shoes
Nominal Required Bearing: 578 kips
Allowable Resistance Available: 193 kips
Est. Length: 60 ft.
No. Production Piles: 2

NOTES:

1. Space reinforcement to miss anchor bolts.
2. Pour steps monolithically with cap.
3. For pile spacing and footing layout, see Foundation Layout on Sheet SC6.

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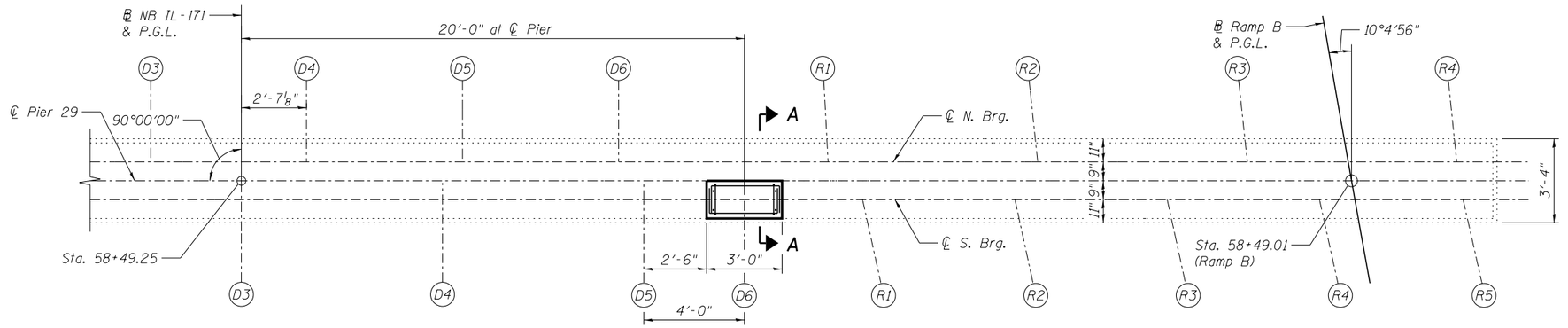
Chicago, Illinois 60601
312-565-0450 Job No. 10093

FILE NAME = 0162456_60W75_089_Pier_28_Widening_Details.dgn	USER NAME = jsurber	DESIGNED - MWG	REVISED -
		CHECKED - AJK	REVISED -
	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/15/2015	CHECKED - AJK	REVISED -

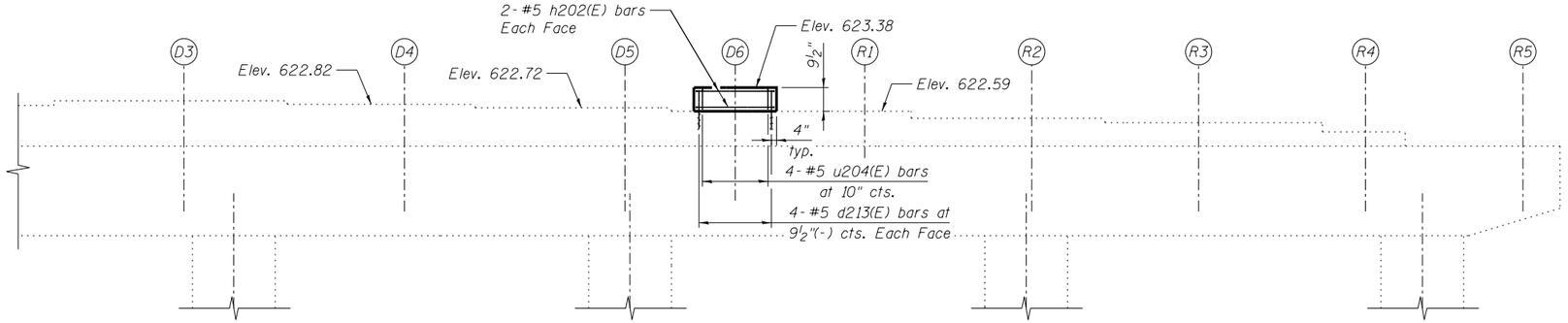
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 28 WIDENING DETAILS
STRUCTURE NO. 016-2456
SHEET NO. SC89 OF SC96 SHEETS

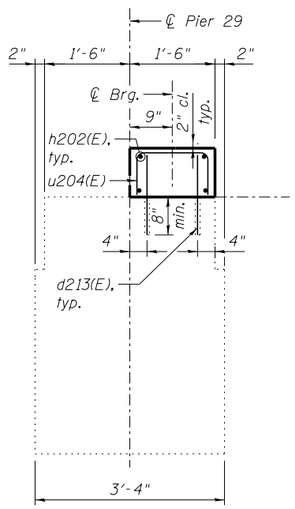
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	401
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		



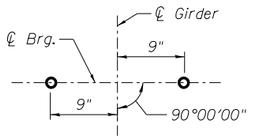
PIER 29 PARTIAL TOP PLAN



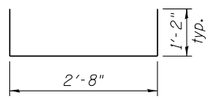
PIER 29 PARTIAL ELEVATION



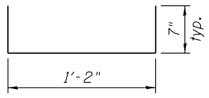
SECTION A-A



PIER 29 ANCHOR BOLT DETAIL



BAR h202(E)



BAR u204(E)

PIER 29 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d213(E)	8	#5	1'-4"	———
h202(E)	4	#5	5'-0"	⌴
u204(E)	4	#5	2'-4"	⌴
Concrete Structures			Cu. Yd.	0.2
Reinforcement Bars, Epoxy Coated			Pound	50
Concrete Sealer			Sq. Ft.	13

NOTE:

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

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312-565-0450 Job No. 10093

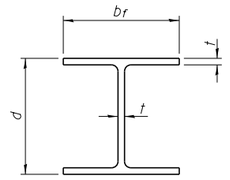
FILE NAME = 0162456_60W75_090_Pier_29_Mod_Details.dgn	USER NAME = jsurber	DESIGNED - MWG	REVISED -
		CHECKED - AJK	REVISED -
	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/15/2015	CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 29 MODIFICATION DETAILS
STRUCTURE NO. 016-2456
SHEET NO. SC90 OF SC96 SHEETS

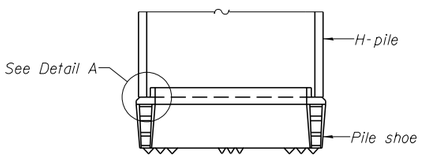
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	402
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

6/15/2015 10:06:26 AM Y:\chicago\10000S\10093\Eng_Docs_Phase_II\SN_016_2456_2457_1st_Ave_over_Des_Plaines_River_Valley\Final\2456 Final\0162456_60W75_090_Pier_29_Mod_Details.dgn

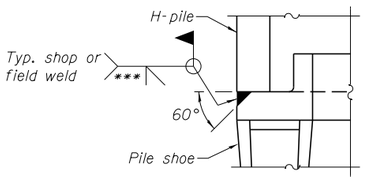


STEEL PILE TABLE

Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	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"	11/16"	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"

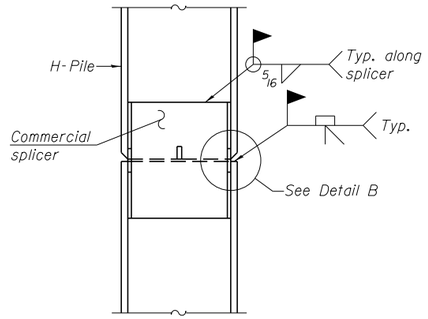


ELEVATION

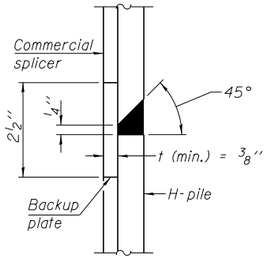


DETAIL A

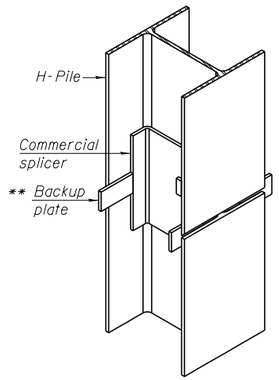
H-PILE SHOE ATTACHMENT



ELEVATION

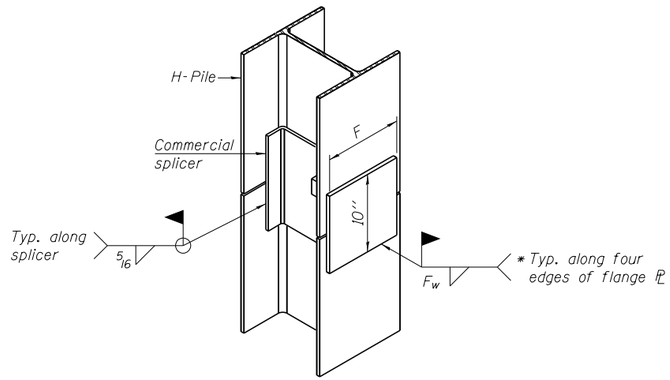


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



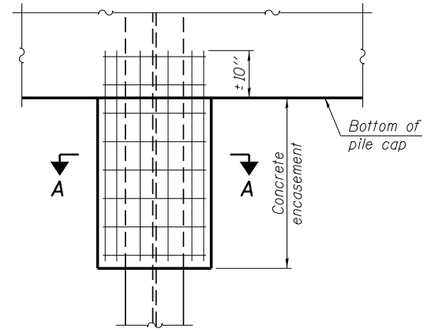
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

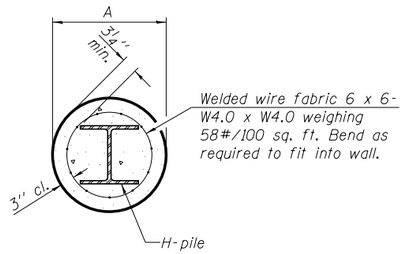
* Interrupt welds 1/4" from end of web and/or each flange.

** Remove portions of backup plates that extend outside the flanges.

*** Weld size per pile shoe manufacturer (5/16" min.).



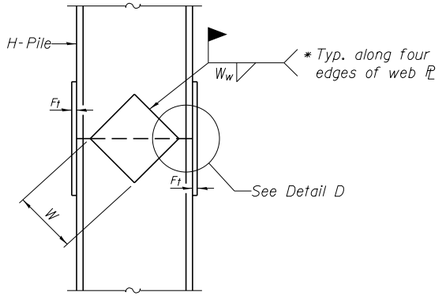
ELEVATION



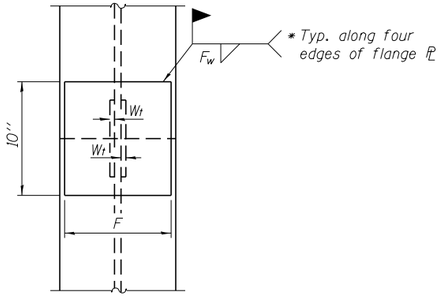
Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

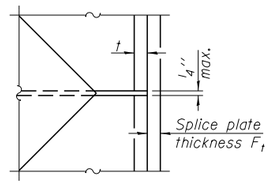
PILE ENCASEMENT



ELEVATION



END VIEW



DETAIL D

Designation	F	F_t	F_w	W	W_t	W_w
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"	11/16"	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"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	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"

WELDED PLATE FIELD SPLICE

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

F-HP 1-27-12

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FILE NAME = 0162456_60W75_091_steelhpile.dgn	USER NAME = jsurber	DESIGNED - MWG	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	HP PILE DETAILS STRUCTURE NO. 016-2456	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - AJK	REVISED -			372	2013-037B-R	COOK	787	403
	PLOT SCALE =	DRAWN - PRT	REVISED -					CONTRACT NO. 60W75		
	PLOT DATE = 6/15/2015	CHECKED - AJK	REVISED -		SHEET NO. SC91 OF SC96 SHEETS			ILLINOIS	FED. AID PROJECT	

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

SOIL BORING LOG

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

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

SECTION 2013-037B-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. 016-2456
Station 58+29.83

BORING NO. SB-42
Station 54+48
Offset 46.00ft Right
Ground Surface Elev. 622.50 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter n/a ft
Upon Completion n/a ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	DESCRIPTION
				9.0" CONCRETE BRIDGE DECK
				621.75
				VOID
				CINDERS & SAND-brown-loose (Fill)
	3			
	3		42	
	3			
				599.50
				Chalk-white-loose (Fill)
	4			
-5	4		72	
	3			
				597.00
				CINDERS, SAND & ASPHALT-medium dense (Fill)
	5			
	8		34	
	9			
				594.50
				Chalk-white-loose (Fill)
	2			
	4		74	
-10	2			
-30				
	18			
	20	4.9	12	
	24	B		
				590.50
				CLAY LOAM-brown-hard
				589.00
				Drillers Observation: Fractured rock.
-15				
-35				
				586.00
				Drillers Observation: Apparent bedrock.
				584.00
				Borehole continued with rock coring.
602.50 -20				-40

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\2015\15005 BENESCH, IL-171 FIRST AVE - IDOT PTB 154, ITEM 1441005\BORING LOGS\15005_LOG.GPJ 1/7/13

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Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2838

ROCK CORE LOG

PAGE 1 of 1
DATE 5/2/2012
LOGGED BY JK
GSI JOB No. 10025

FAP 372 (IL 171) DESCRIPTION 1st Ave. Bridge Rehabilitation & Replacement. 47th St. to 55th St.

SECTION 2013-037B-R LOCATION SEC 11, 12, 13 & 14 T 38 N, R 12 E, 3rd PM

COUNTY Cook CORING METHOD Rotary Wash

STRUCT. NO. 016+2456 CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Station 58+29.83 Core Diameter 2.0 in
Top of Rock Elev. 586.0

BORING NO. SB-42
Station 54+48
Offset 46.0' Right
Ground Surface Elev. 622.5
Begin Core Elev. 584.0

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	
	1	96.0	82.5	n/a	842 @ -38.5'	SILURIAN SYSTEM, NIAGARAN SERIES DOLOMITE RUN 1 (-38.5' to -48.5') Light gray to gray with horizontal bedding. Porous with some horizontal & vertical fractures throughout.
-43.5						
-48.5						

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)

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Chicago, Illinois 60601
312-565-0450 Job No. 10093

FILE NAME = 0162456_60W75_092_Soil Boring Logs 1.dgn	USER NAME = jsurber	DESIGNED - MWG	REVISED -
		CHECKED - AJK	REVISED -
	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/15/2015	CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS – PIER 24
STRUCTURE NO. 016-2456
SHEET NO. SC92 OF SC96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	404
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

6/15/2015 10:06:28 AM Y:\chicago\10000s\10093\Eng_Docs_Phase_II\SN_016_2456_2457_1st_Ave_over_Des_Plaines_River_Valley\Final\0162456_60W75_092_Soil Boring Logs 1.dgn

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

SOIL BORING LOG

GSI 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 NW

SECTION 2013-037B-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. 016-2456
Station 58+29.83

BORING NO. SB-43
Station 55+44
Offset 46.00ft Right
Ground Surface Elev. 623.50 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter n/a ft
Upon Completion n/a ft
After ___ Hrs. ___ ft

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
9.0" CONCRETE BRIDGE DECK	622.75				
VOID		-5			
		-10			
		-15			
		-20			
VOID (continued)	602.50				
Clayey SAND, GRAVEL & STONE-dark brown-medium dense (Fill)			7		
			16		12
	600.50		9		
			4		
Silty SAND & CINDERS-brown & black-very loose to loose (Fill)			4		
			2		35
			3		
		-25	6		
			9		
			4		44
			4		
			1		
			1		54
		-30	1		
			2		
			1		28
	586.50	-35	6		
CINDERS, WOOD & GRAVEL-dark brown & black-very loose to medium dense (Fill)			1		
			1		44
		-40	1		

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\2010\10025 BENESCH, IL-171 FIRST AVE. (IDOT PTB 154, ITEM 14)\10025 BORING LOGS\10025_LOG.GPJ 11/7/13

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SOIL BORING LOG

GSI 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 NW

SECTION 2013-037B-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. 016-2456
Station 58+29.83

BORING NO. SB-43
Station 55+44
Offset 46.00ft Right
Ground Surface Elev. 623.50 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter n/a ft
Upon Completion n/a ft
After ___ Hrs. ___ ft

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CINDERS, WOOD & GRAVEL-dark brown & black-very loose to medium dense (Fill) *(continued)*			4		
			2		128
		-45	1		
			2		
			2		35
		-50	2		
			0		
			0		33
		-55	0		
			15		
			12		54
		-60	5		
CINDERS, WOOD & GRAVEL-dark brown & black-very loose to medium dense (Fill) *(continued)*			1		
			2		30
	558.50	-65	2		
Drillers Observation: Apparent bedrock.	558.00				
Borehole continued with rock coring.		-70			
		-75			
		-80			

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\2010\10025 BENESCH, IL-171 FIRST AVE. (IDOT PTB 154, ITEM 14)\10025 BORING LOGS\10025_LOG.GPJ 11/7/13

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Naperville, Illinois 60565
(630) 355-2838

ROCK CORE LOG

PAGE 1 of 1
DATE 5/2/2012
LOGGED BY DR
GSI JOB No. 10025

FAP 372 (IL 171) DESCRIPTION 1st Ave. Bridge Rehabilitation & Replacement, 47th St. to 55th St.

SECTION 2013-037B-R LOCATION SEC 11, 12, 13 & 14 T 38 N, R 12 E, 3rd PM

COUNTY Cook CORING METHOD Rotary Wash

STRUCT. NO. 016-2456 CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Station 58+29.83 Core Diameter 2.0 in
BORING NO. **SB-43** Top of Rock Elev. 558.5
Station 55+44 Begin Core Elev. 558.0
Offset 46.0' Right
Ground Surface Elev. 623.5

Description	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
SILURIAN SYSTEM, NIAGARAN SERIES DOLOMITE RUN 1 (-65.5' to -75.5') Light gray mottled gray with horizontal bedding. Slightly porous with some horizontal fractures throughout.		1	96.0	65.5	n/a	1166 @ -69.9'
	-70.5					
	-75.5					

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)

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

FILE NAME =	USER NAME = jsurber	DESIGNED - MWG	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORING LOGS – PIER 25 STRUCTURE NO. 016–2456	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0162456_60W75_093_Soil Boring Logs 2.dgn		CHECKED - AJK	REVISED -			372	2013-037B-R	COOK	787	405
	PLOT SCALE =	DRAWN - PRT	REVISED -			CONTRACT NO. 60W75				
	PLOT DATE = 6/15/2015	CHECKED - AJK	REVISED -		SHEET NO. SC93 OF SC96 SHEETS	ILLINOIS FED. AID PROJECT				

Y:\chicago\10000S\10093\Eng_Docs_Phase_II\SN_016_2456_2457_1st_Ave_over_Des_Plaines_River_Valley\Final\2456 Final\0162456_60W75_093_Soil Boring Logs 2.dgn 10:06:32 AM 6/15/2015

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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 1
Date 1/16/13

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

SECTION 2013-037B-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. 016-2456
Station 58+29.83

BORING NO. SB-44
Station 56+31
Offset 52.10ft Right
Ground Surface Elev. 603.00 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter 593.0 ft ▼
Upon Completion n/a ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CINDERS, SAND, SILT, GRAVEL & STONE with Wood & Muck-dark brown to black-very loose to dense (Fill)			
	7		22
	5 6		27
	4		
-5	2 2		24
	4		
	7 4		15
	1		
▼-10	1 1		13
	1		
	1 2		43
	1		
-15	1 1		38
	1		
	2 2		40
	1		
-20	1 2		52
CINDERS, SAND, SILT, GRAVEL & STONE with Wood & Muck-dark brown to black-very loose to dense (Fill) *(continued)*			
	7		
	6 5		49
	4		
-25	3 5		48
	10		
	17 20		41
	5		
-30	6 7		29
570.00 FRACTURED ROCK & STONE-loose			
	5		
-35	2 7		7
567.00 Drillers Observation: Apparent Bedrock			
565.50 Borehole continued with rock coring.			
-40			

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)

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ROCK CORE LOG

PAGE 1 of 1
DATE 1/16/2013
LOGGED BY JK
GSI JOB No. 10025

FAP 372 (IL 171) DESCRIPTION 1st Ave. Bridge Rehabilitation & Replacement. 47th St. to 55th St.

SECTION 2013-037B-R LOCATION SEC 11, 12, 13 & 14 T 38 N, R 12 E, 3rd PM

COUNTY Cook CORING METHOD Rotary Wash

STRUCT. NO. 016+2456 CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Station 58+29.83 Core Diameter 2.0 in
BORING NO. SB-44 Top of Rock Elev. 567.0
Station 56+31 Begin Core Elev. 565.5
Offset 52.1' Right
Ground Surface Elev. 603.0

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
SILURIAN SYSTEM, NIAGARAN SERIES DOLOMITE RUN 1 (−37.5' to −47.5') Light gray mottled gray with horizontal to wavy bedding. Slightly porous with some vugs. Numerous horizontal fractures throughout with some intersecting vertical fractures. Highly fractured from −38.7' to −44.2'.	1	100.0	36.5	n/a	771 ● −38.5'
−42.5					
−47.5					

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)

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312-565-0450 Job No. 10093

FILE NAME = 0162456_60W75_094_Soil Boring Logs 3.dgn	USER NAME = jsurber	DESIGNED - MWG	REVISED -
		CHECKED - AJK	REVISED -
	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/15/2015	CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS – PIER 26
STRUCTURE NO. 016–2456
SHEET NO. SC94 OF SC96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	406
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

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Z:\PROJECTS\2011\10025 BENESCH, IL-171 FIRST AVE (IDOT PTB 154, ITEM 4)\10025_LOG.GPJ 1/17/13

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SOIL BORING LOG

GSI Job No. 10025

Page 1 of 1

Date 1/16/13

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

SECTION 2013-037B-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. 016-2456
Station 58+29.83

BORING NO. SB-45
Station 57+06
Offset 52.10ft Right
Ground Surface Elev. 603.00 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter 593.0 ft ▼
Upon Completion n/a ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	DESCRIPTION
			12	CINDERS, SAND, SILT, GRAVEL & STONE with Wood & Muck-dark brown to black-very loose to dense (Fill)
	10			
	11		31	
	7			
	1			
	1		33	
-5	1			
	1			
	1		33	
	1			
	1			
	2		20	
-10	1			
	2			
	2		34	
	1			
	1			
	1		33	
-15	2			
	9			
	12		65	
	15			
	6			
	2		44	
-20	2			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	DESCRIPTION
				CINDERS, SAND, SILT, GRAVEL & STONE with Wood & Muck-dark brown to black-very loose to dense (Fill) *(continued)*
	3			
	2		52	
	3			
	2			
	3		41	
-25	5			
	2			
	3		53	
	4			
	9			
	11		22	
-30	50			
				572.50
				Drillers Observation: Apparent Bedrock
				569.00
				Borehole continued with rock coring.
-35				
-40				

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)

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ROCK CORE LOG

PAGE 1 of 1
DATE 1/16/2013
LOGGED BY JK
GSI JOB No. 10025

FAP 372 (IL 171) DESCRIPTION 1st Ave. Bridge Rehabilitation & Replacement. 47th St. to 55th St.

SECTION 2013-037B-R LOCATION SEC 11, 12, 13 & 14 T 38 N, R 12 E, 3rd PM

COUNTY Cook CORING METHOD Rotary Wash

STRUCT. NO. 016+2456 CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Station 58+29.83 Core Diameter 2.0 in
Top of Rock Elev. 572.5

BORING NO. SB-45
Station 57+06
Offset 52.1' Right
Ground Surface Elev. 603.0
Begin Core Elev. 569.0

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	DESCRIPTION
	1	100.0	71.0	n/a	946 @ -34.5'	SILURIAN SYSTEM, NIAGARAN SERIES DOLOMITE
						RUN 1 (−34.0' to −44.0')
						Light gray mottled gray & slightly porous with horizontal to wavy bedding. Horizontal fractures @ −34.4', −35.0', −35.2', −36.0', −36.3', −36.6', −38.0', −38.2', −38.6', −39.0', −39.5', −39.6', −40.0', −40.2', −41.0', −41.8', −42.2', −42.8', −43.4' & −43.7'.
-39.0						
-44.0						

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)

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FILE NAME =	USER NAME = jsurber	DESIGNED - MWG	REVISED -
		CHECKED - AJK	REVISED -
0162456_60W75_095_Soil Boring Logs 4.dgn	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/15/2015	CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS – PIER 27
STRUCTURE NO. 016-2456
SHEET NO. SC95 OF SC96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	407
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

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GSI Job No. 10025

SOIL BORING LOG

Page 1 of 2

Date 1/16/13

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

SECTION 2013-037B-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. 016-2456
Station 58+29.83

BORING NO. SB-46
Station 57+82
Offset 52.10ft Right
Ground Surface Elev. 603.10 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter 593.1 ft ▼
Upon Completion n/a ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Soil Description
				CINDERS, SAND, SILT, GRAVEL & STONE with Wood & Muck-dark brown to black-very loose to dense (Fill)
	6		6	
	6 7		23	
	1			
-5	2 2		18	
	1			
	2 2		23	
	2			
-10 ▼	3 1		27	
	1			
	1 0		47	
	1			
-15	1 1		92	
	1			
	2 2		38	
	2			
-20	2 1		70	
				CINDERS, SAND, SILT, GRAVEL & STONE with Wood & Muck-dark brown to black-very loose to dense (Fill) *(continued)*
	2			
	2 2		107	
	2			
-25	2 1		24	
	1			
	1 1		44	
	9			
-30	5 5		26	
	2			
-35	2 2		52	
	4			
-40	6 6		36	

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\2013\13005 BENESCH IL-171 FIRST AVE (IDOT PTB 154, ITEM 14)\13005_LOG.GPJ 1/17/13

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GSI Job No. 10025

SOIL BORING LOG

Page 2 of 2

Date 1/16/13

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

SECTION 2013-037B-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. 016-2456
Station 58+29.83

BORING NO. SB-46
Station 57+82
Offset 52.10ft Right
Ground Surface Elev. 603.10 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter 593.1 ft ▼
Upon Completion n/a ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Soil Description
				CINDERS, SAND, SILT, GRAVEL & STONE with Wood & Muck-dark brown to black-very loose to dense (Fill) *(continued)*
	2			
-45	2 8		74	
	2			
	1 1		69	
-50				
-55				
	547.10			Drillers Observation: Apparent Bedrock
	546.60			Borehole continued with rock coring.
-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\2013\13005 BENESCH IL-171 FIRST AVE (IDOT PTB 154, ITEM 14)\13005_LOG.GPJ 1/17/13

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ROCK CORE LOG

PAGE 1 of 1
DATE 1/16/2013
LOGGED BY DR
GSI JOB No. 10025

FAP 372 (IL 171) DESCRIPTION 1st Ave. Bridge Rehabilitation & Replacement, 47th St. to 55th St.
SECTION 2013-037B-R LOCATION SEC 11, 12, 13 & 14 T 38 N, R 12 E, 3rd PM
COUNTY Cook CORING METHOD Rotary Wash
STRUCT. NO. 016-2456 CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Station 58+29.83 Core Diameter 2.0 in
BORING NO. SB-46 Top of Rock Elev. 547.1
Station 57+82 Begin Core Elev. 546.6
Offset 52.1' Right
Ground Surface Elev. 603.1

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	
	1	100.0	74.5	n/a	362 @ -58.5'	SILURIAN SYSTEM, NIAGARAN SERIES DOLOMITE RUN 1 (−29.5' to −34.5') Light gray mottled gray, fine grained with horizontal bedding and a few small vugs. Vertical fracture with intersecting horizontal fractures from −56.5' to −57.6'. Horizontal fractures @ −59.0', −60.0', −60.1', −60.4', −60.7', −60.9', −61.7', −62.7', −63.2', −63.8', −64.1', −64.6', −65.2' & −66.0'.
-61.5						
-66.5						

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)

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

FILE NAME = 0162456_60W75_096_Soil Boring Logs 5.dgn	USER NAME = jsurber	DESIGNED - MWG	REVISED -
		CHECKED - AJK	REVISED -
	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/15/2015	CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS – PIER 28
STRUCTURE NO. 016-2456
SHEET NO. SC96 OF SC96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	408
		CONTRACT NO. 60W75		
		ILLINOIS	FED. AID PROJECT	

6/15/2015 10:06:45 AM Y:\chicago\10000S\10093\Eng_Docs_Phase_II\SN_016_2456_2457_1st_Ave_over_Des_Plaines_River_Valley\Final\0162456_60W75_096_Soil Boring Logs 5.dgn

FED.RD. DIST.NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
I-55	0707-475 HS	COOK	95	20
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	I-55-7(162)237	

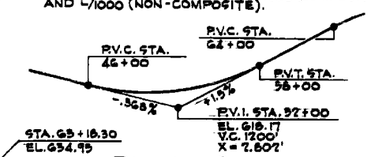
SHEET NO. 20
SHEETS

DESIGN LOADING:

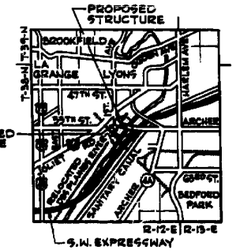
A.A.S.H.O. H20-S16 & 15% FUTURE WEARING SURFACE.

DESIGN STRESSES:

fc = 1400 P.S.I. SUPERSTRUCTURE AND SUBSTRUCTURE WITHOUT EARTH PRESSURE.
fc = 1000 P.S.I. SUBSTRUCTURE WITH EARTH PRESSURE.
fs = 20,000 P.S.I. REINFORCEMENT BARS.
fs = 20,000 P.S.I. STRUCTURAL STEEL. A-36
V = 75 P.S.I. SHEAR IN PIER FOOTINGS.
MAX. L.L. + I DEFLECTION ≤ L/1200 (COMPOSITE) AND L/1000 (NON-COMPOSITE).



PROFILE GRADE
RELOCATED LAWNDALE AVENUE



LOCATION PLAN

TOTAL BILL OF MATERIALS

ITEM	UNIT	SUPERSTRUCTURE	SUBSTRUCTURE	TOTAL
EARTH EXCAVATION	CU YD	-	16,230	16,230
CLASS A EXCAVATION FOR STRUCTURES	CU YD	-	2,138	2,138
ROCK EXCAVATION FOR STRUCTURES	CU YD	-	68	68
CLASS A CONCRETE	CU YD	3,950.1	2,068.0	6,018.1
PROTECTIVE COAT	SQ YD	14,221	-	14,221
FURNISHING & ERECTING STRUCTURAL STEEL	POUND	3579,957	-	3579,957
REINFORCEMENT BARS	POUND	816,326	298,095	1114,421
FURNISHING STEEL PILES 12BP53	LIN FT	-	11,586	11,586
FURNISHING STEEL PILES 10BP57	LIN FT	-	3,861	3,861
TEST PILE STEEL 12BP53	EACH	-	17	17
TEST PILE STEEL 10BP57	EACH	-	12	12
DRIVING STEEL PILES	LIN FT	-	15,597	15,597
NAME PLATES	EACH	2	-	2
CHAIN LINK FENCE (6')	LIN FT	-	2,380	2,380
CONDUIT IN CONCRETE, 1½" DIA., GALVANIZED STEEL	LIN FT	100	-	100
CONDUIT 1½" DIA., GALVANIZED STEEL	LIN FT	50	-	50
ALUMINUM HANDRAIL	LIN FT	5,538	-	5,538
BRIDGE SEAT SEALANT	LIMP GAL			
CONDUIT ATTACHED TO STRUCTURE, 2" DIA., GALVANIZED STEEL	LIN FT	5600	-	5,600
C.I. JUNCTION BOX 12"x12"x12"	EACH	2	-	2
C.I. JUNCTION BOX 15"x12"x12"	EACH	1	-	1
C.I. JUNCTION BOX 18"x18"x10"	EACH	1	-	1

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWNDALE AVE. VIADUCT
GENERAL PLAN AND ELEVATIONS

SCALE: AS NOTED — DATE 11-25-03

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY J. G. BROZ
DRAWN BY J. A. CHALIKIS
CHECKED
IN CHARGE E. S. MARTINS
APPROVED L. N. RIAN

JOB NO. 1179

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

FOR INFORMATION ONLY

FILE NAME =	USER NAME = jsurber	DESIGNED - MPL	REVISED -
		CHECKED - JLS	REVISED -
0162456.60W75.X01.existplan1.dgn	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

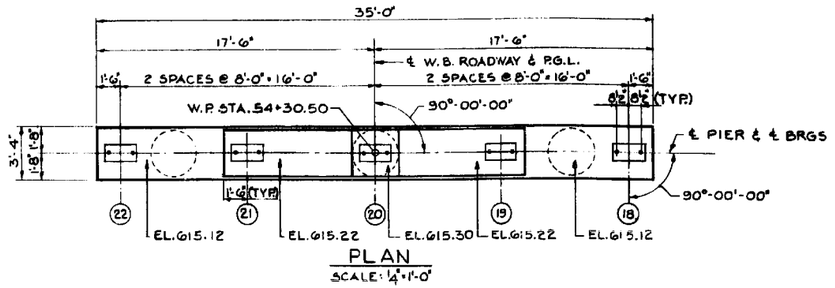
EXISTING PLANS – PLAN AND ELEVATION
STRUCTURE NO. 016-2456
SHEET NO. SCX1 OF SCX33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	409
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

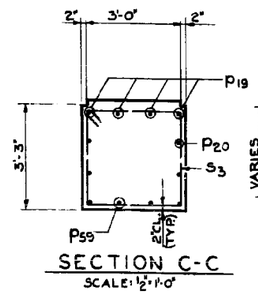
6/9/2015 9:43:26 PM Y:\chicago\10000S\10093\Eng_Docs_Phase_II\SN_016-2456.2456.2457.1st.Ave.over.Des.Plaines.River-Valley\Final\2456 Final\0162456.60W75.X01.existplan1.dgn

FED. ROAD DIST. NO.	DIST.	COUNTY	SECTION NO.	SHEET NO.
I-55	0707-676NB	COOK	95	32
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		SHEETS

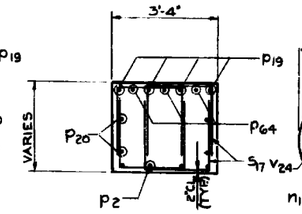
SHEET NO.32



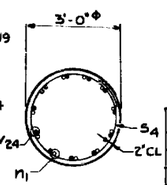
PLAN
SCALE: 1/4" = 1'-0"



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

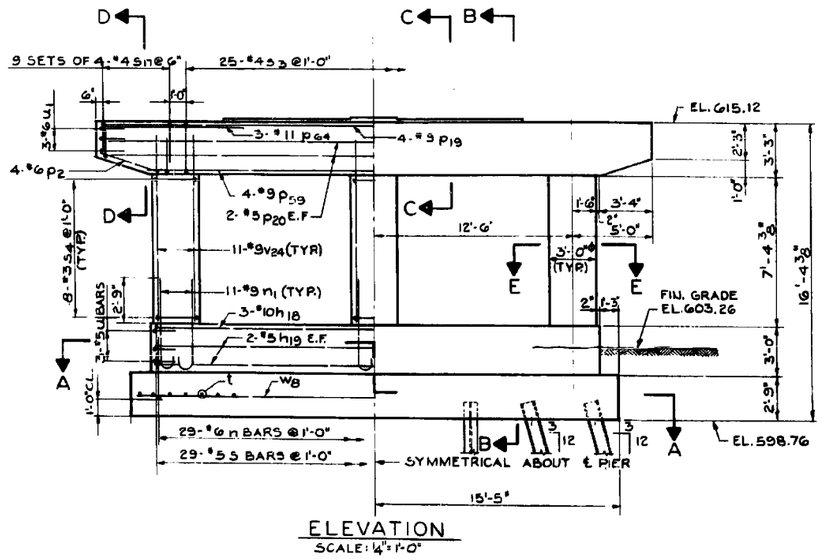


SECTION D-D
SCALE: 1 1/2" = 1'-0"

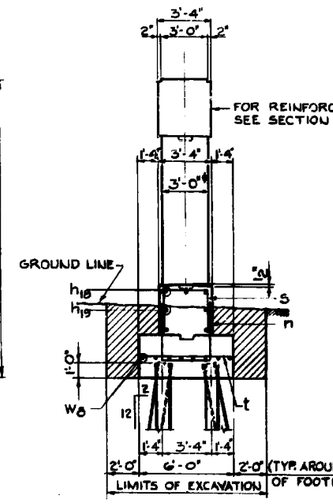


SECTION E-E
SCALE: 1 1/2" = 1'-0"

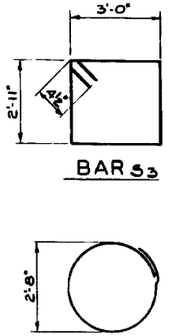
BAR LIST				
BAR	NO	SIZE	LENGTH	SHAPE
h_{18}	3	10	28'-0"	
h_{19}	4	5	28'-0"	
n	29	6	9'-6"	
n_1	33	9	7'-0"	
P_2	8	6	3'-6"	
P_{19}	4	9	34'-6"	
P_{20}	4	5	34'-6"	
P_{59}	4	9	28'-0"	
P_{64}	6	11	9'-0"	
S	20	5	8'-8"	
S_3	25	4	12'-7"	
S_4	24	3	9'-6"	
S_{17}	72	4	5'-11"	
t	31	5	5'-6"	
U	6	5	5'-11"	
U_1	6	6	5'-11"	
V_{24}	33	9	10'-3"	
W_8	8	8	30'-6"	



ELEVATION
SCALE: 1/4" = 1'-0"

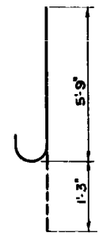


SECTION B-B
SCALE: 1/4" = 1'-0"



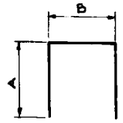
BAR S3

BAR S4



BAR n_1

BAR	A	B
n	3'-3"	3'-0"
S	2'-10"	3'-0"
S_{17}	1'-11"	2'-1"
U	1'-6"	2'-11"
U_1	1'-6"	2'-11"

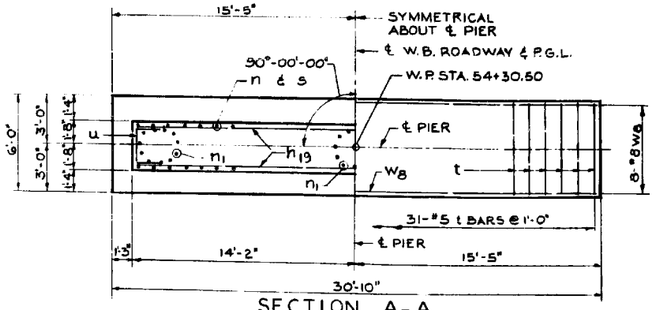


BARS n, S, S_{17}, U, & U_1

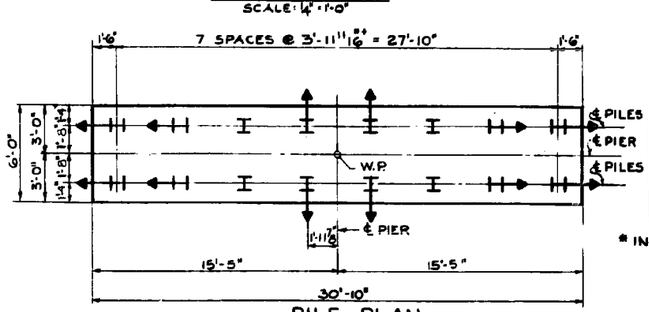
NOTES:

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: $24h_{18}$ MEANS BARS h_{18} FOR PIER 24. FOR ANCHOR BOLT PROJECTION SEE SH. 76. POUR STEPS MONOLITHICALLY WITH PIER CAP.

SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.



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



PILE PLAN
SCALE: 1/4" = 1'-0"

DENOTES BATTERED PILES

PILE DATA	
PILE TYPE	12BP53
MIN. CAPACITY TONS	32
NO. REQUIRED	16*
EST. LENGTH FEET	16
CUT OFF ELEV.	599.76

* INCLUDES 1 TEST PILE

BILL OF MATERIAL		
ITEM	UNIT	QUANTITY
CLASS A EXCAVATION FOR STRUCTURE	CU YD	58
CLASS X CONCRETE	CU YD	49.0
REINFORCEMENT BARS	POUND	5,913
FURNISHING STEEL PILES 12 BP 53	LIN FT	240
TEST PILE STEEL 12 BP 53	EACH	1
DRIVING STEEL PILES	LIN FT	240

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY J.C. BROZ
DRAWN BY O. MARTINSONS
CHECKED
IN CHARGE E.S. MARTINS
APPROVED L.N. RIAN

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY

LAWNDALE AVE. VIADUCT

PIER 24

SCALE: AS NOTED | DATE 11-25-1969

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Chicago, Illinois 60601
312-565-0450 Job No. 10093

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FILE NAME = 0162456_60W75_X02_existplan2.dgn	USER NAME = jsurber	DESIGNED - MPL	REVISED -
		CHECKED - JLS	REVISED -
	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

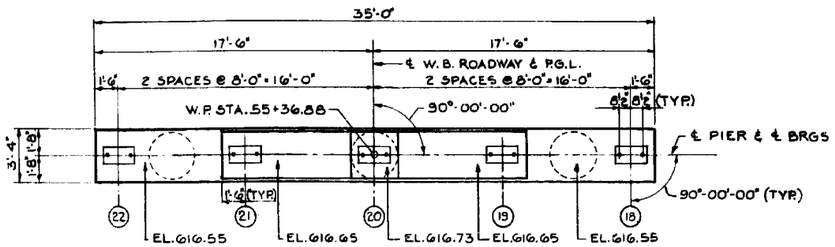
EXISTING PLANS – PIER 24
STRUCTURE NO. 016-2456
SHEET NO. SCX2 OF SCX33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	410
		CONTRACT NO. 60W75		
		ILLINOIS	FED. AID PROJECT	

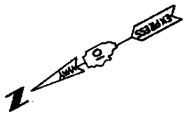
6/9/2015 9:43:27 PM Y:\chicago\100005\100093\Eng_Docs_Phase_II\SN_016_2456_2457_1st_Ave_over_Des_Plaines_River_Valley_Final\2456_Final\0162456_60W75_X02_existplan2.dgn

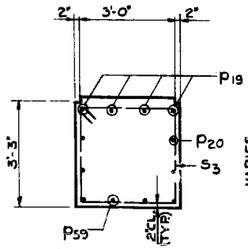
FED. ROAD DIST. NO.	STATE	COUNTY	TOTAL SHEETS	SHEET NO.
I-55	07107-67BHB	COOK	95	33
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO.33
SHEETS

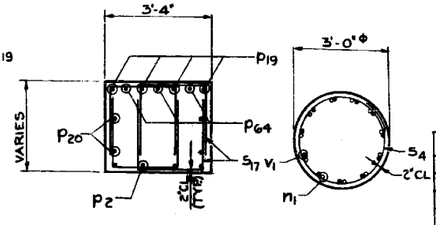


PLAN
SCALE: 1/4" = 1'-0"





SECTION C-C
SCALE: 1½" = 1'-0"

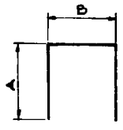


SECTION D-D
SCALE: 1½" = 1'-0"

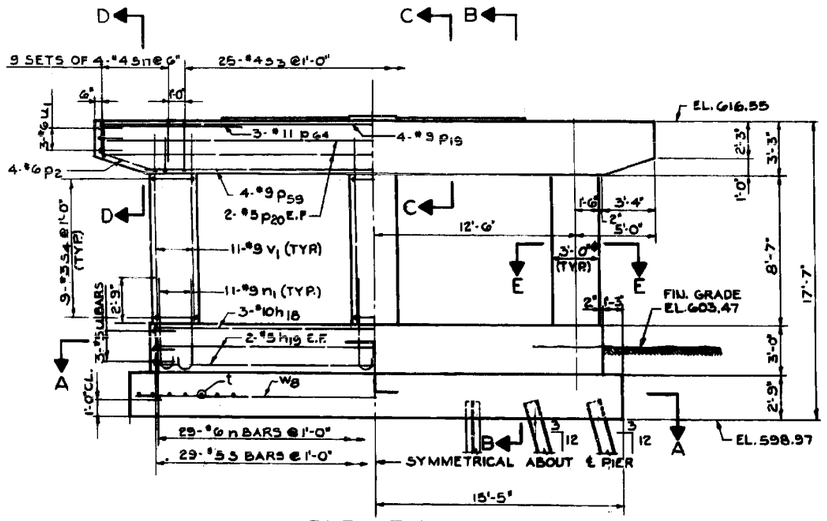
SECTION E-E
SCALE: 1½" = 1'-0"

BAR LIST				
BAR	NO	SIZE	LENGTH	SHAPE
h18	3	10	28'-0"	
h19	4	5	28'-0"	
n	29	6	9'-6"	⊓
n1	33	9	7'-0"	J
P2	8	6	3'-6"	
P19	4	9	34'-6"	
P20	4	5	34'-6"	
P59	4	9	28'-0"	
P64	6	11	9'-0"	
S	29	5	8'-8"	□
S3	25	4	12'-7"	□
S4	27	3	9'-6"	□
S17	72	4	5'-11"	□
t	31	5	5'-6"	
U	6	5	5'-11"	⊓
U1	6	6	5'-11"	⊓
V1	33	9	11'-3"	
W8	8	8	30'-6"	

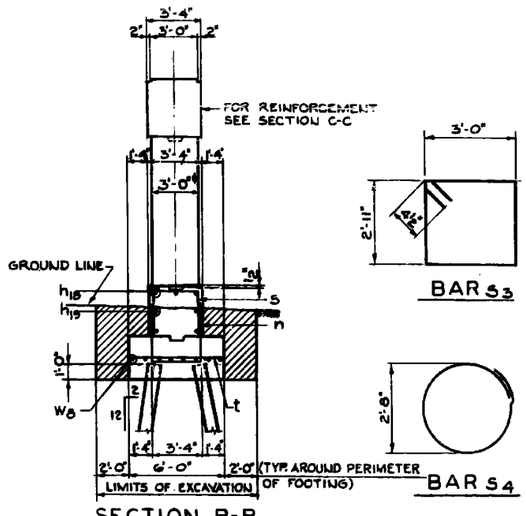
BAR	A	B
n	3'-3"	3'-0"
S	2'-10"	3'-0"
S17	1'-11"	2'-1"
U	1'-6"	2'-11"
U1	1'-6"	2'-11"



BARS n, S, S17, U, & U1



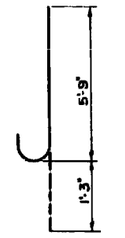
ELEVATION
SCALE: 1/4" = 1'-0"



SECTION B-B
SCALE: 1/4" = 1'-0"

BAR S3

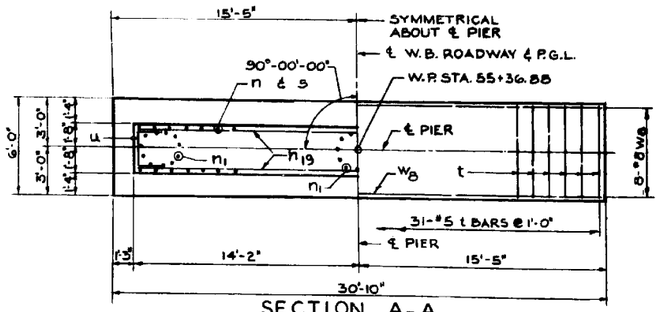
BAR S4



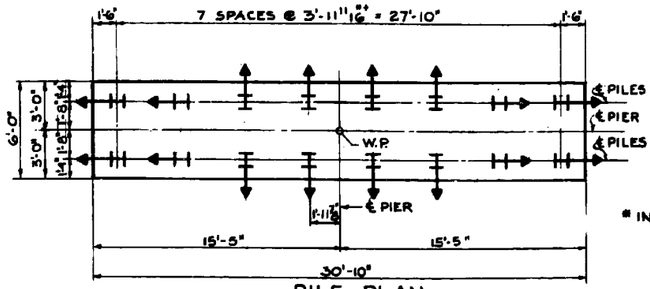
BAR n1

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: 25h18 MEANS BARS h18 FOR PIER 25. FOR ANCHOR BOLT PROJECTION SEE SH.76. POUR STEPS MONOLITHICALLY WITH PIER CAP.
SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.



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



PILE PLAN
SCALE: 1/4" = 1'-0"

DENOTES BATTERED PILES

PILE DATA	
PILE TYPE	10BP57
MIN. CAPACITY TONS	39
NO. REQUIRED	16*
EST. LENGTH FEET	42
CUT OFF ELEV.	599.97

* INCLUDES 2 TEST PILES

BILL OF MATERIAL		
ITEM	UNIT	QUANTITY
CLASS A EXCAVATION FOR STRUCTURE	CU YD	58
CLASS X CONCRETE	CU YD	42.9
REINFORCEMENT BARS	POUND	6036
FURNISHING STEEL PILES 10 BP 57	LIN FT	588
TEST PILE STEEL 10 BP 57	EACH	2
DRIVING STEEL PILES	LIN FT	588

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY J.C.BROZ
DRAWN BY D.MARTINSONS
CHECKED R.F.Duggan
IN CHARGE R.S.MARTINS
APPROVED L.N.RIAN

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY

LAWNDALE AVE. VIADUCT
PIER 25

SCALE: AS NOTED
DATE 11-28-1962

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

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FILE NAME = 0162456.60W75.X03.existplan3.dgn	USER NAME = jsurber	DESIGNED - MPL	REVISED -
		CHECKED - JLS	REVISED -
	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

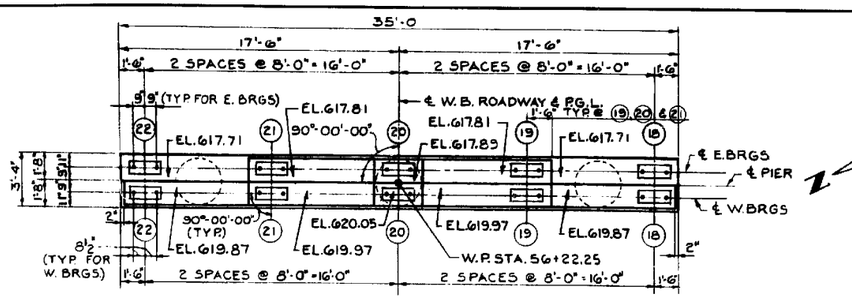
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS – PIER 25
STRUCTURE NO. 016–2456
SHEET NO. SCX3 OF SCX33 SHEETS

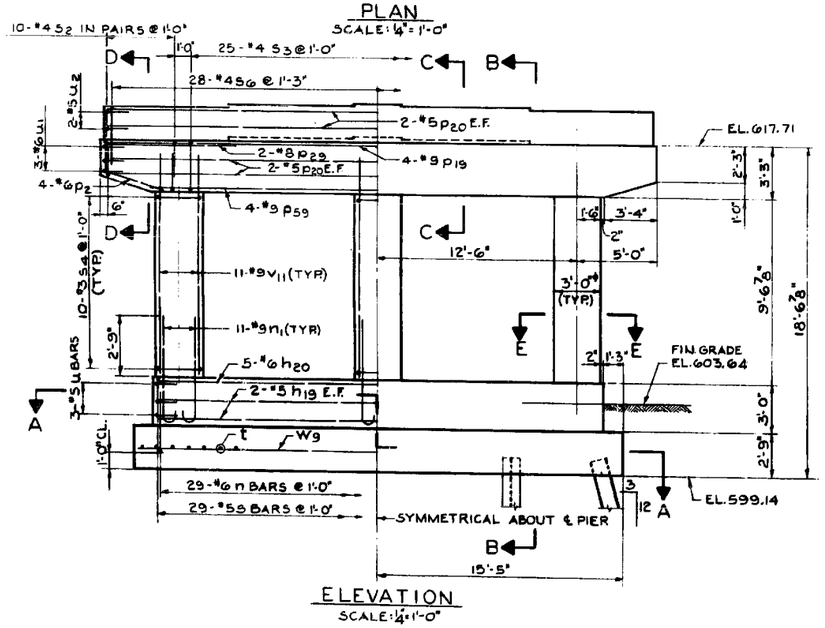
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	411
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

FED.ROAD DIST. NO.	STATE	COUNTY	TOTAL SHEETS	SHEET NO.
I-55	0707-675MB	COOK	95	34
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

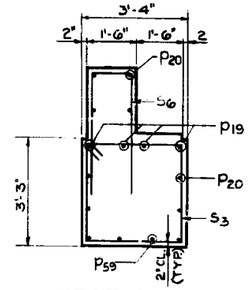
SHEET NO. 34
SHEETS



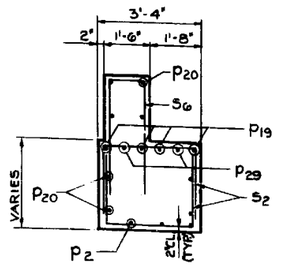
PLAN
SCALE: ¼" = 1'-0"



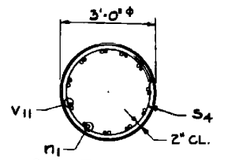
ELEVATION
SCALE: ¼" = 1'-0"



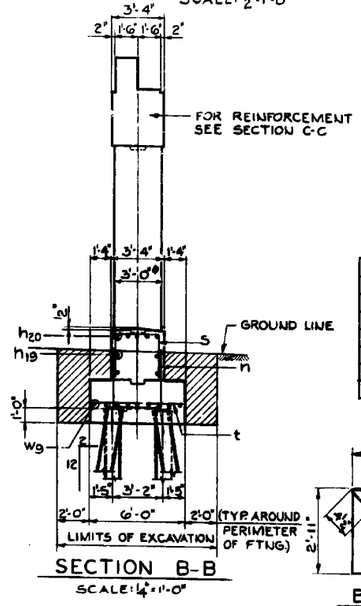
SECTION C-C
SCALE: 1½" = 1'-0"



SECTION D-D
SCALE: 1½" = 1'-0"

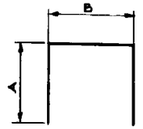


SECTION E-E
SCALE: 1½" = 1'-0"

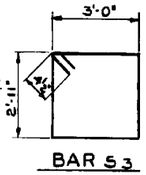


SECTION B-B
SCALE: ¼" = 1'-0"

BAR	A	B
n	3'-3"	3'-0"
S	2'-10"	3'-0"
S2	1'-11"	3'-0"
S6	3'-5"	1'-2"
U	1'-6"	2'-11"
U1	1'-6"	2'-11"
U2	1'-3"	1'-1"

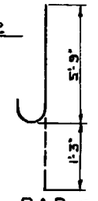


BARS n, S, S2, S6, U, U1 & U2



BAR S3

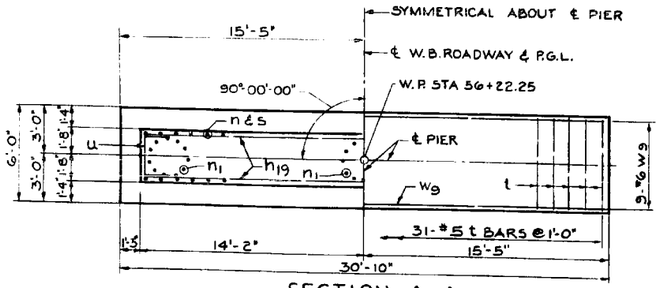
BAR S4



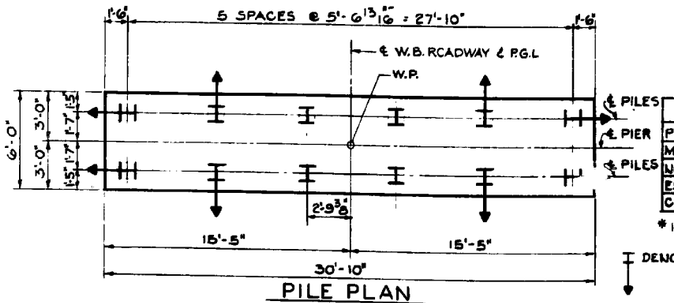
BAR n1

BAR LIST				
BAR	NO	SIZE	LENGTH	SHAPE
h19	4	5	28'-0"	
h20	5	6	28'-0"	
n	29	6	5'-6"	
n1	33	9	7'-0"	
P2	8	6	3'-6"	
P19	4	9	34'-6"	
P20	4	5	34'-6"	
P29	4	8	8'-3"	
P59	4	9	28'-0"	
S	29	5	5'-9"	
S2	20	4	6'-10"	
S3	25	4	12'-7"	
S4	30	3	9'-6"	
S6	28	4	8'-0	
t	31	5	5'-6"	
U	6	5	5'-11"	
U1	6	6	5'-11"	
U2	4	5	3'-7"	
V11	33	9	12'-3"	
W9	9	6	30'-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: 2Gh19 MEANS BARS h19 FOR PIER 2G. FOR ANCHOR BOLT PROJECTION SEE SH. 76 & 77, POUR STEPS MONOLITHICALLY WITH PIER CAP.
SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.



SECTION A-A
SCALE: ¼" = 1'-0"



PILE PLAN
SCALE: ¼" = 1'-0"

PILE DATA	
PILE TYPE	12 BP 53
MIN. CAPACITY TONS	32
NO. REQUIRED	12*
EST. LENGTH FEET	33
CUT OFF ELEV.	600.14

* INCLUDES 1 TEST PILE

DENOTES BATTERED PILES

BILL OF MATERIAL		
ITEM	UNIT	QUANTITY
CLASS A EXCAVATION FOR STRUCTURE	CU YD	58
CLASS X CONCRETE	CU YD	54.9
REINFORCEMENT BARS	POUND	5,541
FURNISHING STEEL PILES 12 BP 53	LIN FT	363
TEST PILE STEEL 12 BP 53	EACH	1
DRIVING STEEL PILES	LIN. FT.	363

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY

LAWNDALE AVE. VIADUCT
PIER 26

SCALE: AS NOTED
DATE 11-25-1965

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY J.C. BROZ
DRAWN BY O. MARTINSONS
CHECKED R.E. Ruegsegger
IN CHARGE E.S. MARTINS
APPROVED L.N. RIAN

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

FOR INFORMATION ONLY

FILE NAME =	USER NAME = jsurber	DESIGNED - MPL	REVISED -
		CHECKED - JLS	REVISED -
0162456_60W75_X04_existplan4.dgn	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

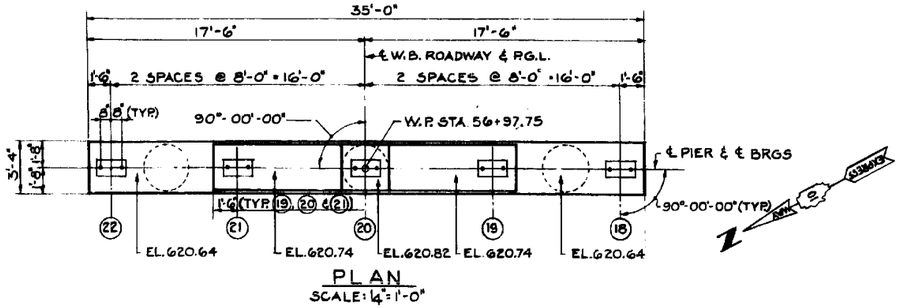
EXISTING PLANS – PIER 26
STRUCTURE NO. 016-2456
SHEET NO. SCX4 OF SCX33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	412
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

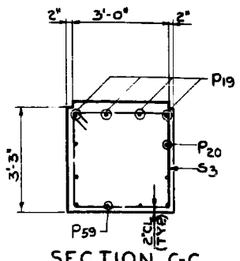
6/9/2015

FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
X-55	0707-675HB	COOK	95	35

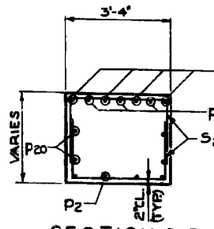
SHEET NO. 35 SHEETS



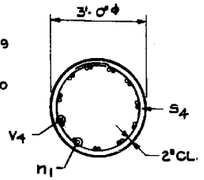
PLAN
SCALE: 1/4" = 1'-0"



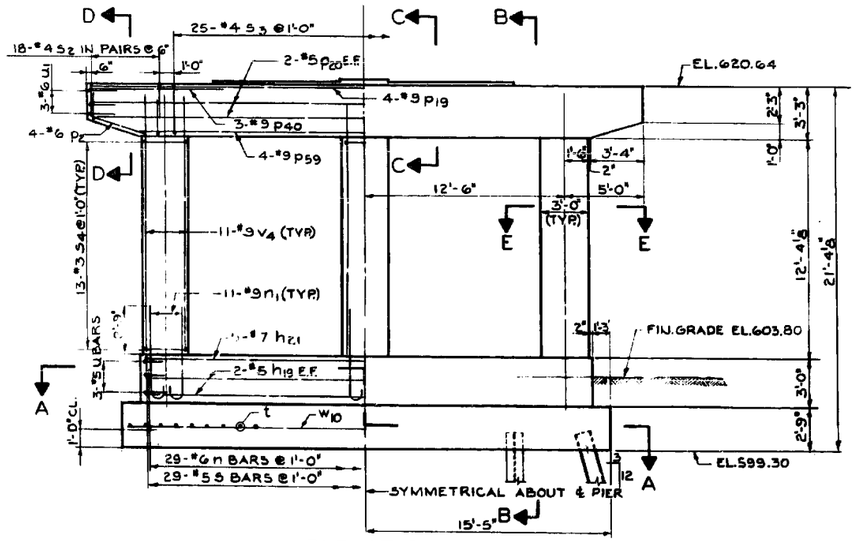
SECTION C-C
SCALE: 1/2" = 1'-0"



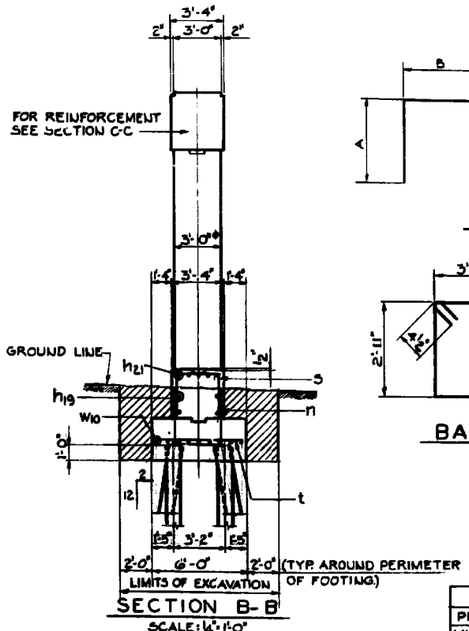
SECTION D-D
SCALE: 1/2" = 1'-0"



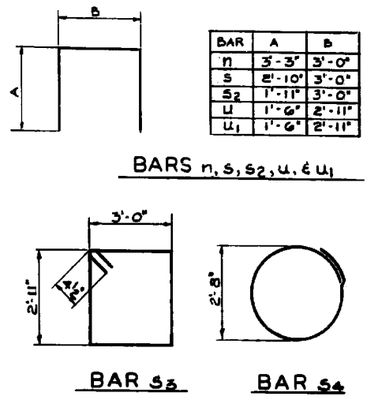
SECTION E-E
SCALE: 1/2" = 1'-0"



ELEVATION
SCALE: 1/4" = 1'-0"



SECTION B-B
SCALE: 1/4" = 1'-0"

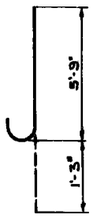


BAR	A	B
n	3'-3"	3'-0"
S	2'-10"	3'-0"
S2	1'-11"	3'-0"
U	1'-6"	2'-11"
U1	1'-6"	2'-11"

BARS n, S, S2, U, & U1

BAR S3

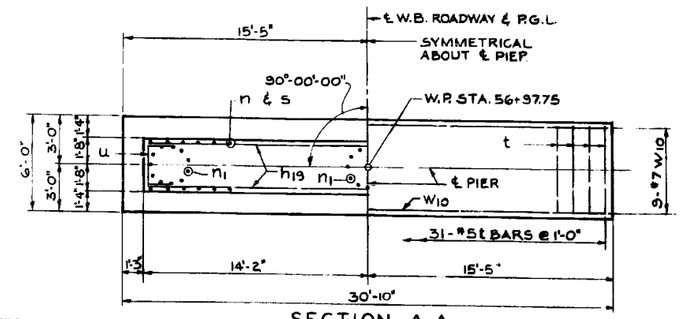
BAR S4



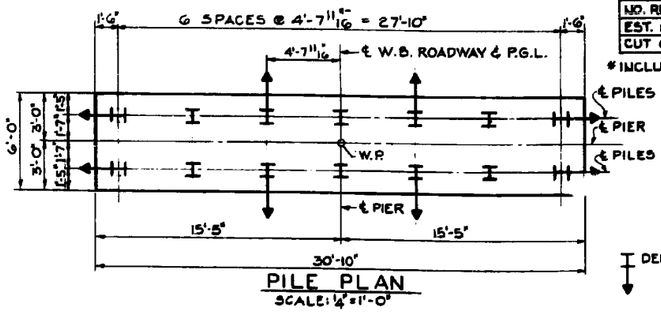
BAR n1

BAR LIST				
BAR	NO	SIZE	LENGTH	SHAPE
h19	4	5	28'-0"	
h21	5	7	28'-0"	
n	29	6	9'-6"	
n1	33	9	7'-0"	
P2	8	6	3'-6"	
P19	4	9	34'-6"	
P20	4	5	34'-6"	
P40	6	9	8'-6"	
P59	4	9	28'-0"	
S	29	5	8'-8"	
S2	36	4	6'-10"	
S3	25	4	12'-7"	
S4	39	3	5'-6"	
t	31	5	5'-6"	
U	6	5	5'-11"	
U1	6	6	5'-11"	
V4	33	9	15'-0"	
W10	9	7	30'-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: 27 h19 MEANS BARS h19 FOR PIER 27. FOR ANCHOR BOLT PROJECTION SEE SH. 77. POUR STEPS MONOLITHICALLY WITH PIER CAP.
SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.



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



PILE PLAN
SCALE: 1/4" = 1'-0"

PILE DATA	
PILE TYPE	12 BP 53
MIN. CAPACITY TONS	32
NO. REQUIRED	14 *
EST. LENGTH FEET	33
CUT OFF ELEV.	600.30

*INCLUDES 1 TEST PILE.

DENOTES BATTERED PILES

BILL OF MATERIAL		
ITEM	UNIT	QUANTITY
CLASS A EXCAVATION FOR STRUCTURE	CU YD	58
CLASS X CONCRETE	CU YD	52.9
REINFORCEMENT BARS	POUND	6100
FURNISHING STEEL PILES 12 BP 53	LIN FT	429
TEST PILE STEEL 12 BP 53	EACH	1
DRIVING STEEL PILES	LIN FT	429

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY J.C. BROZ
DRAWN BY O. MARTINSONS
CHECKED
IN CHARGE E.S. MARTINS
APPROVED L.N. RIAN

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY

LAWNDALE AVE. VIADUCT
PIER 27

SCALE: AS NOTED
DATE 11-25-1963

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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

FOR INFORMATION ONLY

FILE NAME = 0162456_60W75_X05_existplan5.dgn	USER NAME = jsurber	DESIGNED - MPL	REVISED -
		CHECKED - JLS	REVISED -
	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

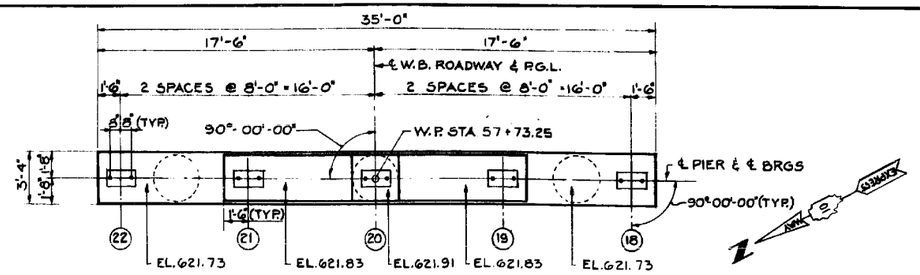
EXISTING PLANS – PIER 27
STRUCTURE NO. 016-2456
SHEET NO. SCX5 OF SCX33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	413
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

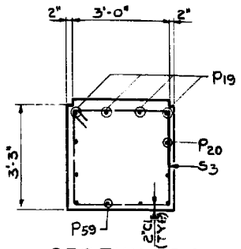
6/9/2015 9:43:48 PM Y:\chicago\10000S\10093\Eng_Docs_Phase_II\SN_016_2456_2457_1st_Ave_over_Des_Plaines_River_Valley_Final\2456 Final\0162456_60W75_X05_existplan5.dgn

FED. ROAD DIST. NO.	STATE	COUNTY	TOTAL SHEETS	SHEET NO.
I-88	0707-075HB	COOK	95	36
	ILLINOIS	FED. AID PROJECT		

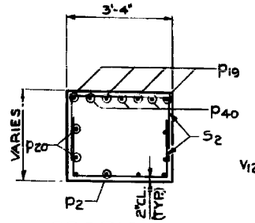
SHEET NO.36 SHEETS



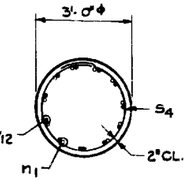
PLAN
SCALE: 1/4"=1'-0"



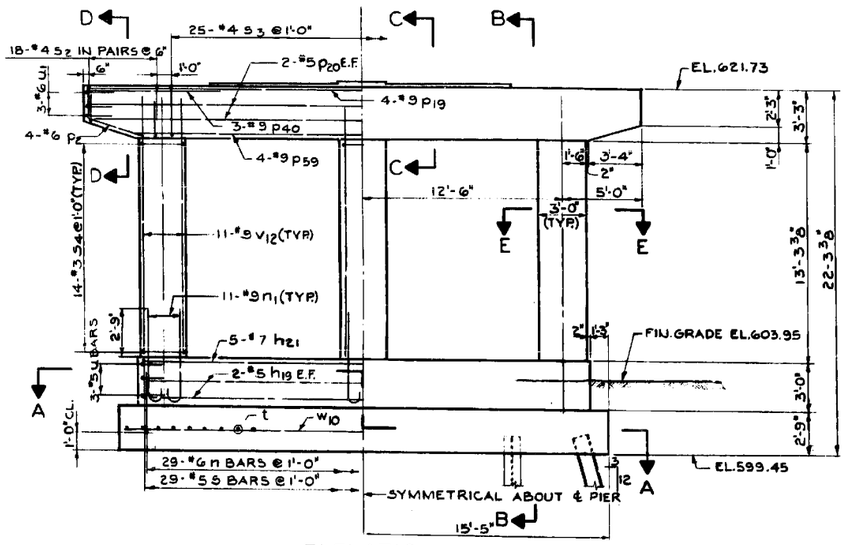
SECTION C-C
SCALE: 1 1/2"=1'-0"



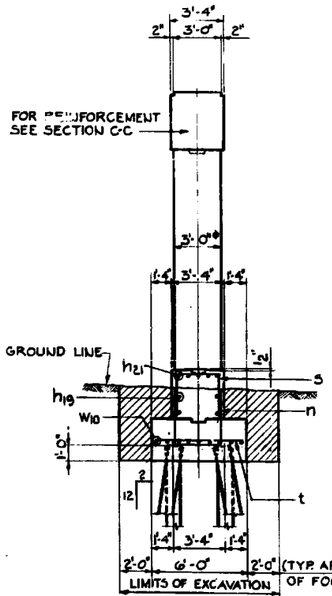
SECTION D-D
SCALE: 1 1/2"=1'-0"



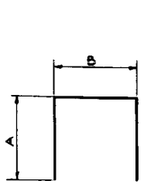
SECTION E-E
SCALE: 1 1/2"=1'-0"



ELEVATION
SCALE: 1/4"=1'-0"

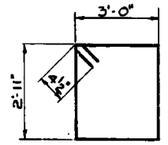


SECTION B-B
SCALE: 1/4"=1'-0"

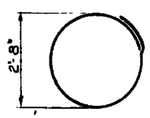


BAR	A	B
n	3'-3"	3'-0"
S	2'-10"	3'-0"
S2	1'-11"	3'-0"
U	1'-6"	2'-11"
U1	1'-6"	2'-11"

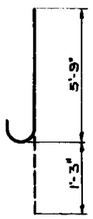
BARS n, S, S2, U, & U1



BAR S3



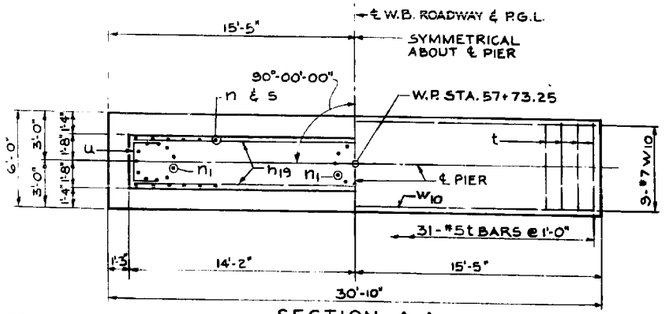
BAR S4



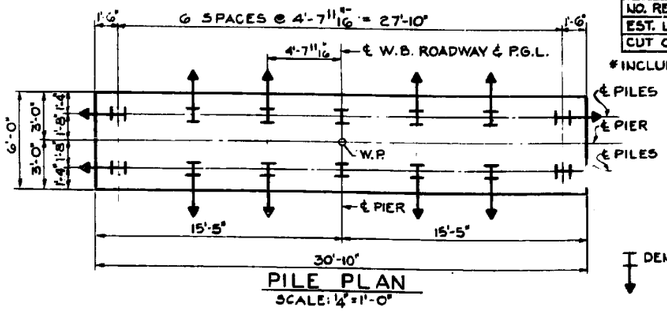
BAR n1

BAR LIST				
BAR	NO	SIZE	LENGTH	SHAPE
n19	4	5	28'-0"	
n21	5	7	28'-0"	
n	29	6	5'-6"	
n1	33	9	7'-0"	
P2	8	6	3'-8"	
P19	4	9	34'-6"	
P20	4	5	34'-6"	
P40	6	9	8'-6"	
P59	4	9	28'-0"	
S	29	5	8'-8"	
S2	36	4	6'-10"	
S3	25	4	12'-7"	
S4	42	3	5'-6"	
t	31	5	5'-6"	
U	6	5	5'-11"	
U1	6	6	5'-11"	
V12	33	9	16'-0"	
W10	9	7	30'-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: 28 h19 MEANS BARS h19 FOR PIER 28. FOR ANCHOR BOLT PROJECTION SEE SH. 77. POUR STEPS MONOLITHICALLY WITH PIER CAP.
SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.



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



PILE PLAN
SCALE: 1/4"=1'-0"

PILE DATA	
PILE TYPE	10 BP 57
MIN. CAPACITY TONS	39
NO. REQUIRED	14 *
EST. LENGTH FEET	48
CUT OFF ELEV.	600.45

* INCLUDES 2 TEST PILES

DENOTES BATTERED PILES

BILL OF MATERIAL		
ITEM	UNIT	QUANTITY
CLASS A EXCAVATION FOR STRUCTURE	CU YD	58
CLASS X CONCRETE	CU YD	53.6
REINFORCEMENT BARS	POUND	6,223
FURNISHING STEEL PILES 10 BP 57	LIN FT	576
TEST PILE STEEL 10 BP 57	EACH	2
DRIVING STEEL PILES	LIN FT	576

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY J.C. BROZ
DRAWN BY O. MARTINSONS
CHECKED M. F. Burgham
IN CHARGE E.S. MARTINS
APPROVED L.N. RIAN

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY

LAWNDALE AVE. VIADUCT

PIER 28

SCALE: AS NOYED | DATE 11-25-1964

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

FOR INFORMATION ONLY

FILE NAME = 0162456_60W75_X06_existplan6.dgn	USER NAME = jsurber	DESIGNED - MPL	REVISED -
		CHECKED - JLS	REVISED -
	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

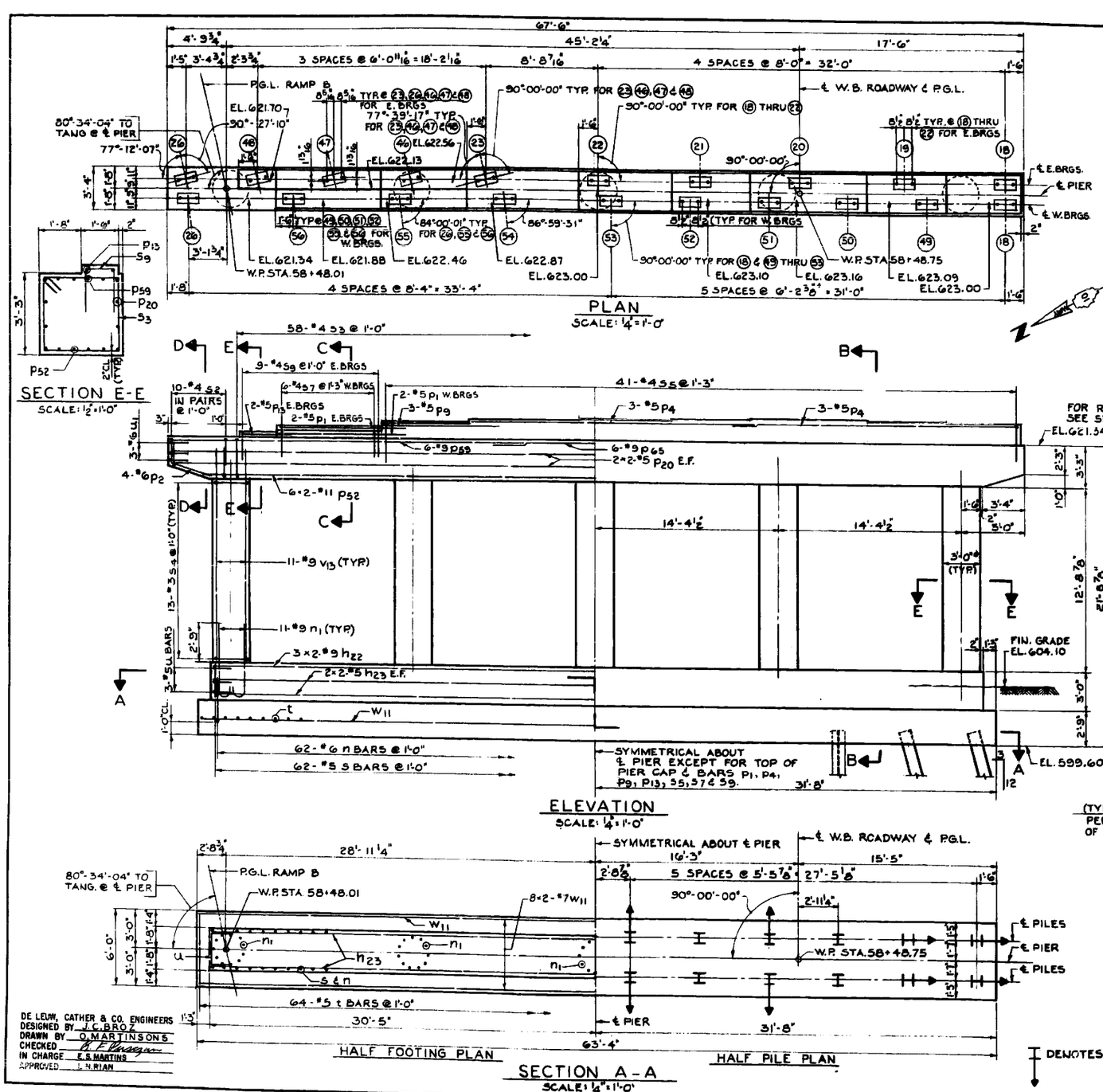
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS – PIER 28
STRUCTURE NO. 016-2456
SHEET NO. SCX6 OF SCX33 SHEETS

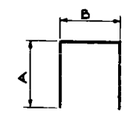
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	414
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT	COUNTY	TOTAL SHEETS	SHEET NO.
I-55	07071-07BWB		COOK	95	37

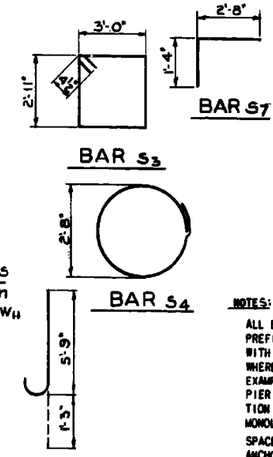
SHEET NO. 37
SHEETS



BAR	A	B
n	3'-3"	3'-0"
s	2'-10	3'-0"
s2	1'-11"	3'-0"
s5	2'-8"	2'-8"
s9	1'-6"	1'-2"
u	1'-6"	2'-11"
u1	1'-6"	2'-11"



BARS n, s, s2, s5, s9, u & u1



BAR LIST

BAR	NO	SIZE	LENGTH	SHAPE
h22	6	9	31'-0"	
h23	8	5	30'-9"	
n	62	6	8'-6"	
n1	55	9	7'-0"	
p1	4	5	5'-3"	
p2	8	9	3'-6"	
p4	6	5	22'-3"	
p9	3	5	7'-3"	
p13	2	5	4'-3"	
p20	8	5	34'-6"	
p52	12	11	32'-0"	
p59	12	9	28'-0"	
p65	4	9	16'-9"	
s	62	5	8'-8"	
s2	20	4	6'-10"	
s3	58	4	12'-7"	
s4	65	3	3'-6"	
s5	41	4	8'-0"	
s7	6	4	4'-0"	
s9	3	4	4'-2"	
t	64	5	5'-6"	
u	6	5	5'-11"	
u1	6	6	5'-11"	
v13	55	9	15'-6"	
w11	16	7	32'-3"	

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: 29h22 MEANS BARS h22 FOR PIER 29. FOR ANCHOR BOLT PROJECTION SEE SH. 77. POUR STEPS MONOLITHICALLY WITH PIER CAP.

SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.

PILE DATA	
PILE TYPE	12 BP 53
MIN. CAPACITY TONS	31
NO. REQUIRED	24 *
EST. LENGTH FEET	58
CUT OFF ELEV.	600.60

*INCLUDES 1 TEST PILE

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
CLASS A EXCAVATION FOR STRUCTURE	CU YD	112
CLASS X CONCRETE	CU YD	114.3
REINFORCEMENT BARS	POUND	13,199
FURNISHING STEEL PILES 12 BP 53	LIN FT	1,334
TEST PILE STEEL 12 BB 63	EACH	1
DRIVING STEEL PILES	LIN FT	1,334

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY J.C. BROZ
DRAWN BY O. MARTINSONS
CHECKED R.F. Flanagan
IN CHARGE E.S. MARTINS
APPROVED L.N. RIAN

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY

LAWNDALE AVE. VIADUCT
PIER 29

SCALE: AS NOTED | DATE 11-25-1963

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

FOR INFORMATION ONLY

FILE NAME =	USER NAME = jsurber	DESIGNED - MPL	REVISED -
		CHECKED - JLS	REVISED -
0162456.60W75.X07_existplan7.dgn	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

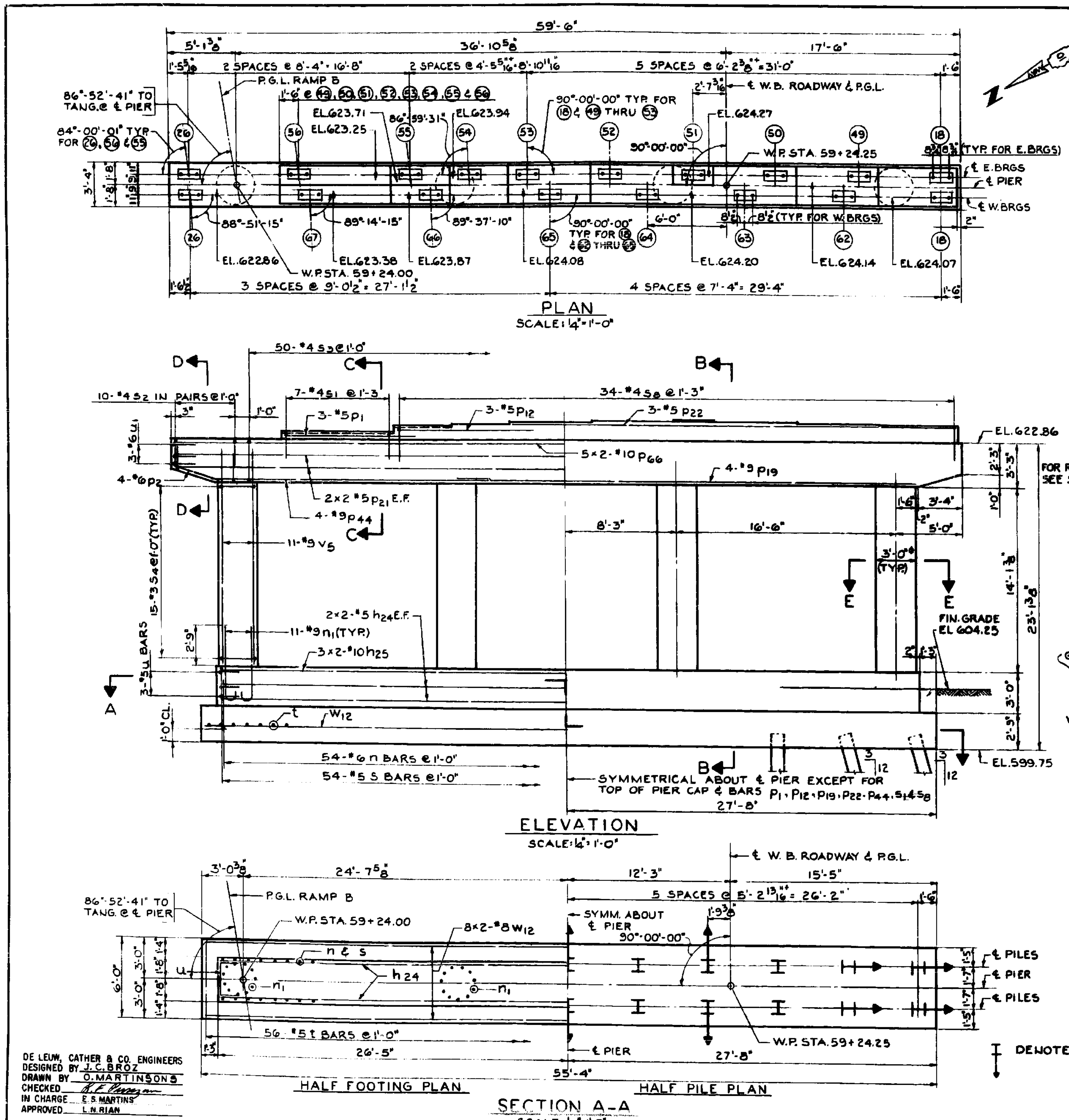
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

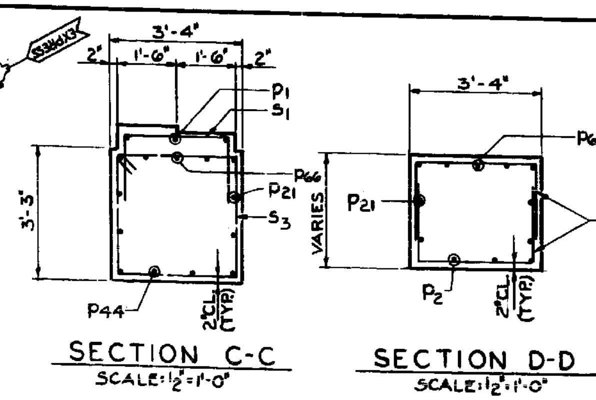
EXISTING PLANS – PIER 29
STRUCTURE NO. 016-2456
SHEET NO. SCX7 OF SCX33 SHEETS

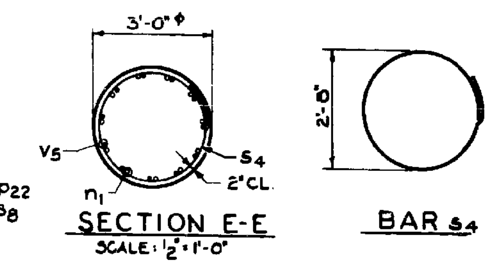
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	415
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

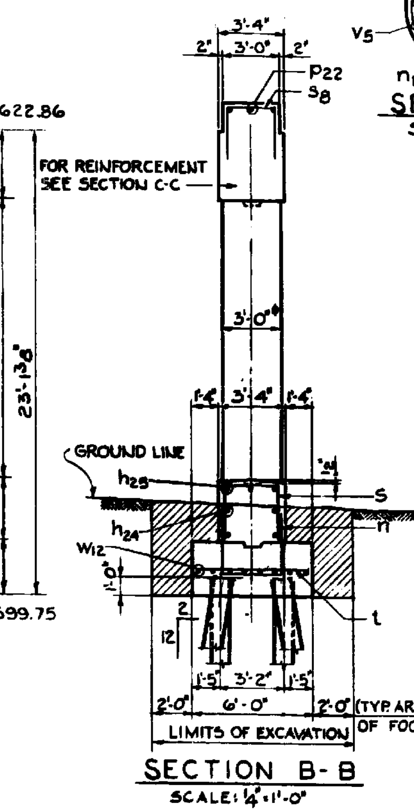
F.A.P. RTE.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
I-55	0707-675HD	COOK	95	38

SHEET NO. 38 / SHEETS

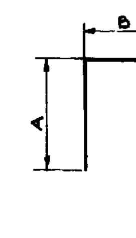




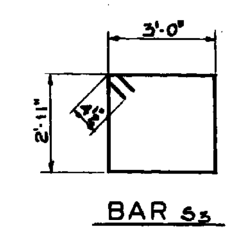




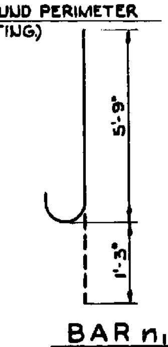
BAR	A	B
n	3'-3"	3'-0"
s	2'-10	3'-0"
s1	1'-6"	2'-8"
s2	1'-11"	3'-0"
s8	2'-2"	2'-8"
u	1'-6"	2'-11"
u1	1'-6"	2'-11"



BARS n, s, s1, s2, s8, u & u1



BAR s5



BAR n1

BAR LIST

BAR	NO	SIZE	LENGTH	SHAPE
h24	8	5	27'-0"	—
h25	6	10	27'-6"	—
n	54	6	9'-6"	⊓
n1	44	9	7'-0"	J
p1	3	5	9'-3"	—
p2	8	6	3'-6"	—
p12	3	5	10'-0"	—
p19	4	9	34'-6"	—
p21	8	5	30'-3"	—
p22	3	5	33'-6"	—
p44	4	9	20'-6"	—
p66	10	10	31'-0"	—
s	54	5	8'-8"	⊓
s1	7	4	5'-8"	⊓
s2	20	4	6'-10"	⊓
s3	50	4	12'-7"	▢
s4	60	3	9'-6"	○
s8	34	4	7'-0"	⊓
t	56	5	5'-6"	—
u	6	5	5'-11"	⊓
u1	6	6	5'-11"	⊓
v5	44	9	16'-9"	—
w12	16	8	28'-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: 30h24 MEANS BARS h24 FOR PIER 30. FOR ANCHOR BOLT PROJECTION SEE SH. 77. POUR STEPS MONOLITHICALLY WITH PIER CAP.

SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.

PILE DATA

PILE TYPE	12 BP53
MIN. CAPACITY TONS	31
NO. REQUIRED	22*
EST. LENGTH FEET	58
CUT OFF ELEV	600.75

*INCLUDES 1 TEST PILE

Ɪ DENOTES BATTER PILES

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
CLASS A EXCAVATION FOR STRUCTURE	CU YD	99
CLASS X CONCRETE	CU YD	97.8
REINFORCEMENT BARS	POUND	10,829
FURNISHING STEEL PILES 12 BP53	LIN FT	1,218
TEST PILE STEEL 12 BP53	EACH	1
DRIVING STEEL PILES	LIN FT	1,218

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY J. C. BROZ
DRAWN BY O. MARTINSONS
CHECKED R. F. [illegible]
IN CHARGE E. S. MARTINS
APPROVED L. N. RIAN

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY

LAWNDALE AVE. VIADUCT

PIER 30

SCALE: AS NOTED   DATE 11-25-1963

FOR INFORMATION ONLY

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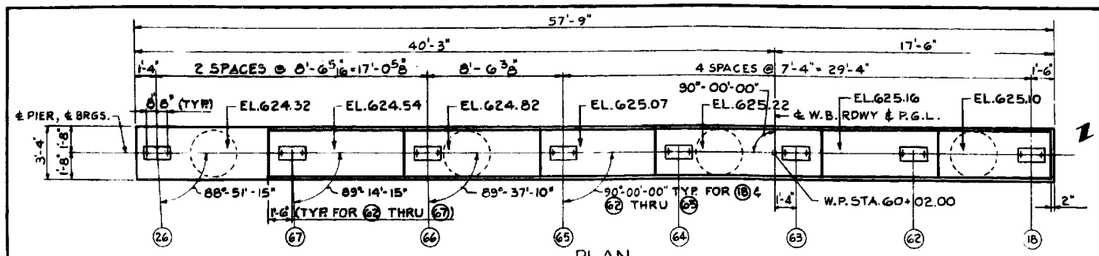
Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450   Job No. 10093

FILE NAME = 0162456_60W75_X08_existplan8.dgn	USER NAME = jsurber	DESIGNED - MPL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLANS – PIER 30 STRUCTURE NO. 016-2456
		CHECKED - JLS	REVISED -		
	PLOT SCALE =	DRAWN - PRT	REVISED -		
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -		SHEET NO. SCX8 OF SCX33 SHEETS

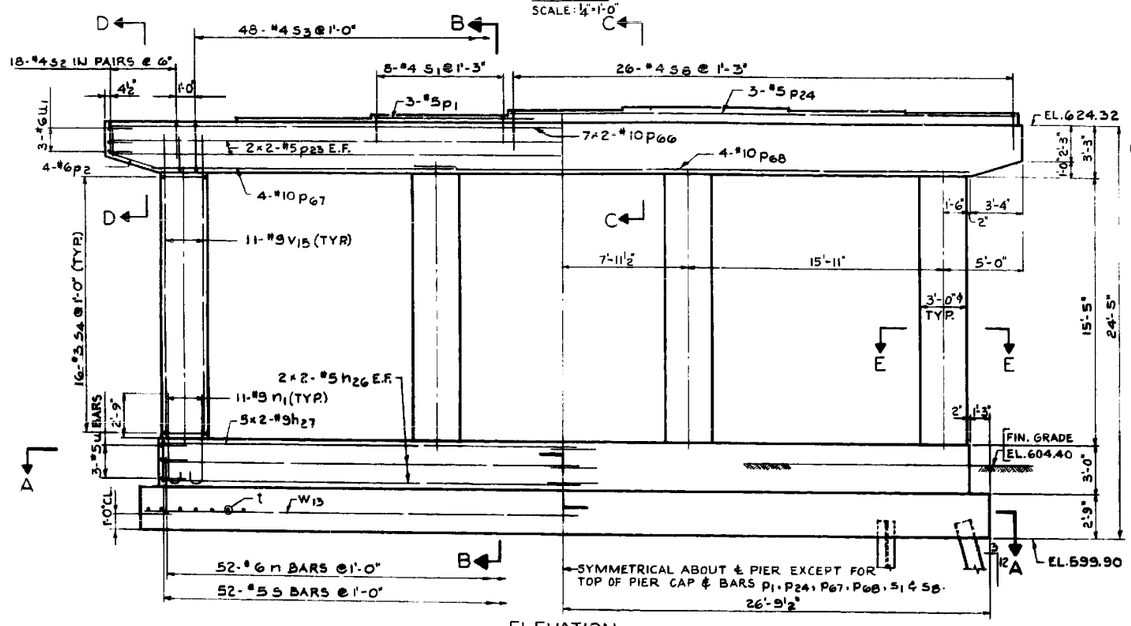
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	416
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

Y:\chicago\10000S\10093\Eng_Docs_Phase_II\SN_016_2456_2457_1st_Ave_over_Des_Planes_River_Valley\Final\2456 Final\0162456_60W75_X08_existplan8.dgn   9:44:08 PM   6/9/2015

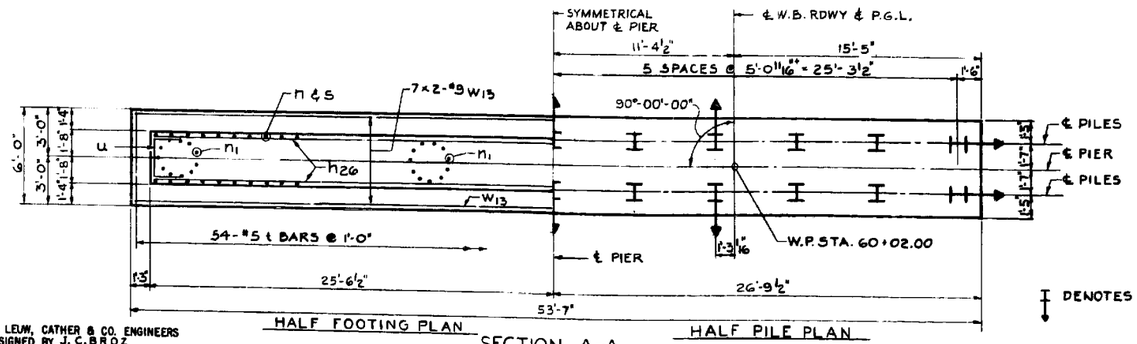
CONTRACT NO.	SEC.	ROUTE	SHEET NO.	SHEET NO.
I-88	2013-037B-R	COOK	95	39
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		SHEETS



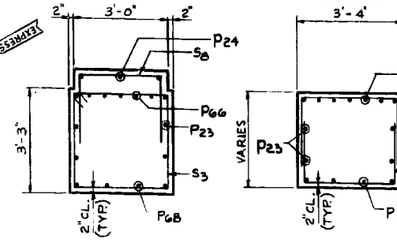
PLAN
SCALE: 1/4"=1'-0"



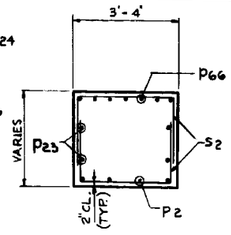
ELEVATION
SCALE: 1/4"=1'-0"



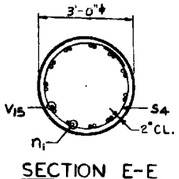
HALF FOOTING PLAN — SECTION A-A — HALF PILE PLAN
SCALE: 1/4"=1'-0"



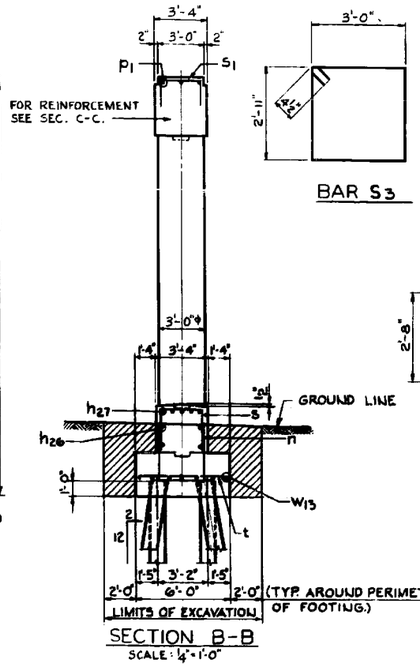
SECTION C-C
SCALE: 1/2"=1'-0"



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



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

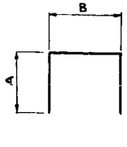


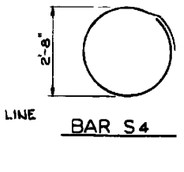
SECTION B-B
SCALE: 1/4"=1'-0"

BAR S3

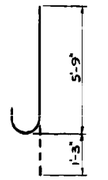
BAR	A	B
n	3'-3"	3'-0"
S	2'-10"	3'-0"
S1	1'-6"	2'-8"
S2	1'-11"	3'-0"
S8	2'-2"	2'-8"
U	1'-6"	2'-11"
U1	1'-6"	2'-11"

BARS n, S, S1, S2, S8, U & U1





BAR S4



BAR n1

BAR LIST				
BAR	NO.	SIZE	LENGTH	SHAPE
h26	8	5	26'-0"	
h27	10	9	26'-6"	
n	52	6	9'-6"	⊓
n1	44	9	7'-0"	J
P1	3	5	9'-3"	
P2	8	6	3'-6"	
P23	8	5	29'-3"	
P24	3	5	31'-9"	
P66	14	10	31'-0"	
P67	4	10	18' 9"	
P68	4	10	34'-9"	
S	52	8	8'-8"	⊓
S1	8	4	5'-8"	⊓
S2	36	4	6'-10"	⊓
S3	48	4	12'-7"	⊓
S4	64	3	5'-6"	○
S8	28	4	7'-0"	⊓
t	54	5	5'-6"	
U	6	5	5'-11"	⊓
U1	6	6	5'-11"	⊓
V15	44	9	18'-3"	
W13	14	9	27'-9"	

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: 31 h26 MEANS BARS h26 FOR PIER 31. FOR ANCHOR BOLT PROJECTION SEE SH. 77. POUR STEPS MONOLITHICALLY WITH PIER CAP.
SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.

PILE DATA	
PILE TYPE	12 BP 53
MIN. CAPACITY TONS	33
NO. REQUIRED	22*
EST. LENGTH FEET	53
CUT OFF ELEV.	600.90

*INCLUDES 1 TEST PILE

DENOTES BATTERED PILES

BILL OF MATERIAL		
ITEM	UNIT	QUANTITY
CLASS A EXCAVATION FOR STRUCTURES	CU YD	96
CLASS X CONCRETE	CU YD	94.2
REINFORCEMENT BARS	POUND	11,979
FURNISHING STEEL PILES 12 BP 53	LIN FT	1,113
TEST PILE STEEL 12 BP 53	EACH	1
DRIVING STEEL PILES	LIN FT	1,113

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY J.C.BROZ
DRAWN BY O.MARTINSONS
CHECKED R.T.Burgan
IN CHARGE E.S.MARTINS
APPROVED L.N.RIAN

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWNDALE AVE. VIADUCT
PIER 31
SCALE: AS NOTED — DATE 11-25-1963

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

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FILE NAME = 0162456.60W75.X09_existplan9.dgn	USER NAME = jsurber	DESIGNED - MPL	REVISED -
		CHECKED - JLS	REVISED -
	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

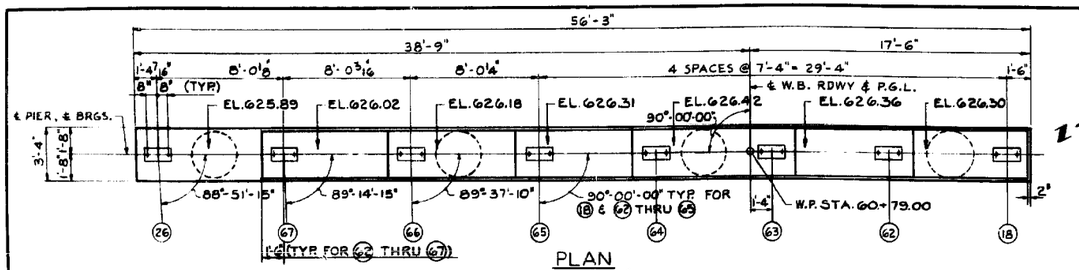
EXISTING PLANS – PIER 31
STRUCTURE NO. 016-2456
SHEET NO. SCX9 OF SCX33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	417
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

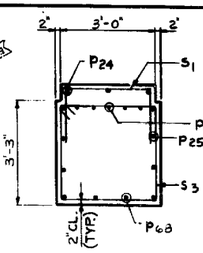
6/9/2015 9:44:14 PM Y:\chicago\10000S\10093\Eng_Docs_Phase_II\SN_016_2456_2457_1st_Ave_over_Des_Plaines_River_Valley_Final\2456_Final\0162456.60W75.X09_existplan9.dgn

FED. ROAD DIST. NO.	STATE	DISTRICT	COUNTY	TOTAL SHEETS	SHEET NO.
I-88	070P-0198		COOK	95	40
FED. ROAD DIST. NO.	PLANNING	FED. AID PROJECT			

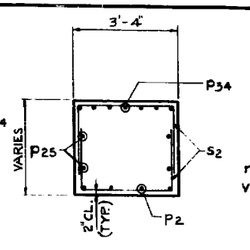
SHEET NO. 40
SHEETS



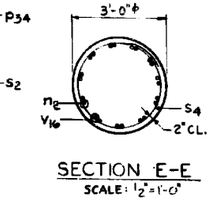
PLAN
SCALE: 1/4"=1'-0"



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

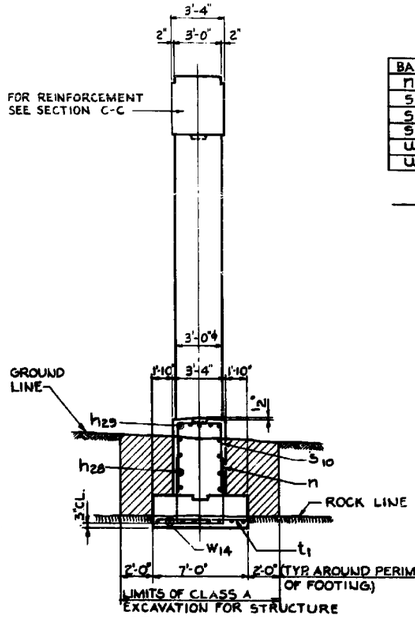


SECTION D-D
SCALE: 1/2"=1'-0"



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

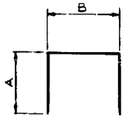
BAR LIST				
BAR	NO.	SIZE	LENGTH	SHAPE
h_{28}	18	5	25'-3"	
h_{29}	10	8	25'-9"	
n	50	6	3'-6"	⊓
n_2	44	10	7'-6"	J
p_1	3	5	9'-3"	
p_2	8	6	3'-6"	
p_{24}	3	5	31'-9"	
p_{25}	8	5	28'-5"	
p_{34}	14	9	29'-0"	
p_{67}	4	10	18'-9"	
p_{68}	4	10	34'-3"	
s_1	31	4	5'-8"	⊓
s_2	28	4	6'-10"	⊓
s_3	47	4	12'-7"	⊓
s_4	68	3	19'-6"	○
s_{10}	50	5	12'-8"	⊓
t_1	70	5	9'-6"	
u	6	5	5'-11"	⊓
u_1	6	6	5'-11"	⊓
V_{16}	44	10	20'-6"	
W_{14}	16	7	26'-9"	



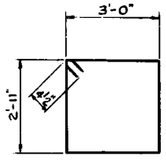
ELEVATION
SCALE: 1/4"=1'-0"

SECTION B-B
NOT TO SCALE

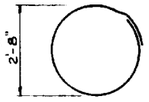
BAR	A	B
n	3'-3"	3'-0"
S_1	1'-6"	2'-8"
S_2	1'-11"	3'-0"
S_{10}	4'-7 1/2"	3'-0"
u	1'-6"	2'-11"
u_1	1'-6"	2'-11"



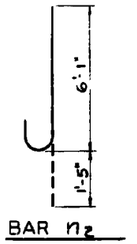
BARS n, S_1, S_2, S_{10}, u & U_1



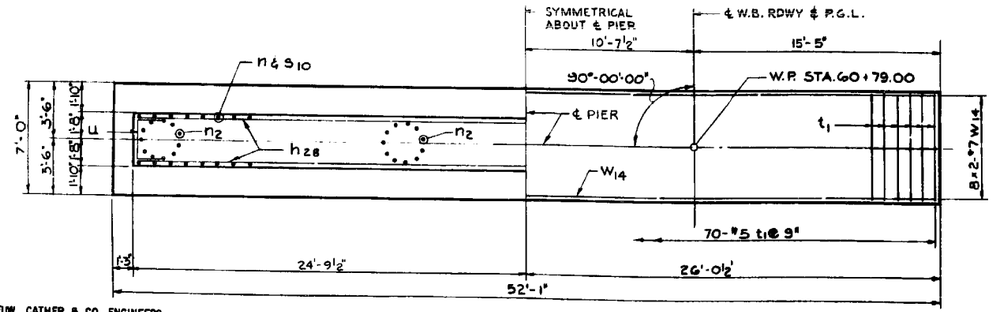
BAR S3



BAR S4



BAR n_2



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

ACTUAL MAXIMUM TOE PRESSURES:
LOADING GROUP I —— 3800 P.S.F.
LOADING GROUP II —— 6110 P.S.F.
LOADING GROUP III —— 8630 P.S.F.

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: 32-h_{28} MEANS BARS h_{28} FOR PIER 32. FOR ANCHOR BOLT PROJECTION SEE SH. 77. POUR STEPS MONOLITHICALLY WITH PIER CAP.
SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.

BILL OF MATERIAL		
ITEM	UNIT	QUANTITY
CLASS A EXCAVATION FOR STRUCTURE	CU YD	113
ROCK EXCAVATION FOR STRUCTURE	CU YD	8
CLASS X CONCRETE	CU YD	98.3
REINFORCEMENT BARS	POUND	12,795

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWNDALE AVE. VIADUCT
PIER 32
SCALE: AS NOTED
DATE 1-25-1963

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY J.C.BROZ
DRAWN BY O.MARTINSONS
CHECKED R.F.Flanagan
IN CHARGE E.S.MARTINS
APPROVED L.N.RIAN

FOR INFORMATION ONLY

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

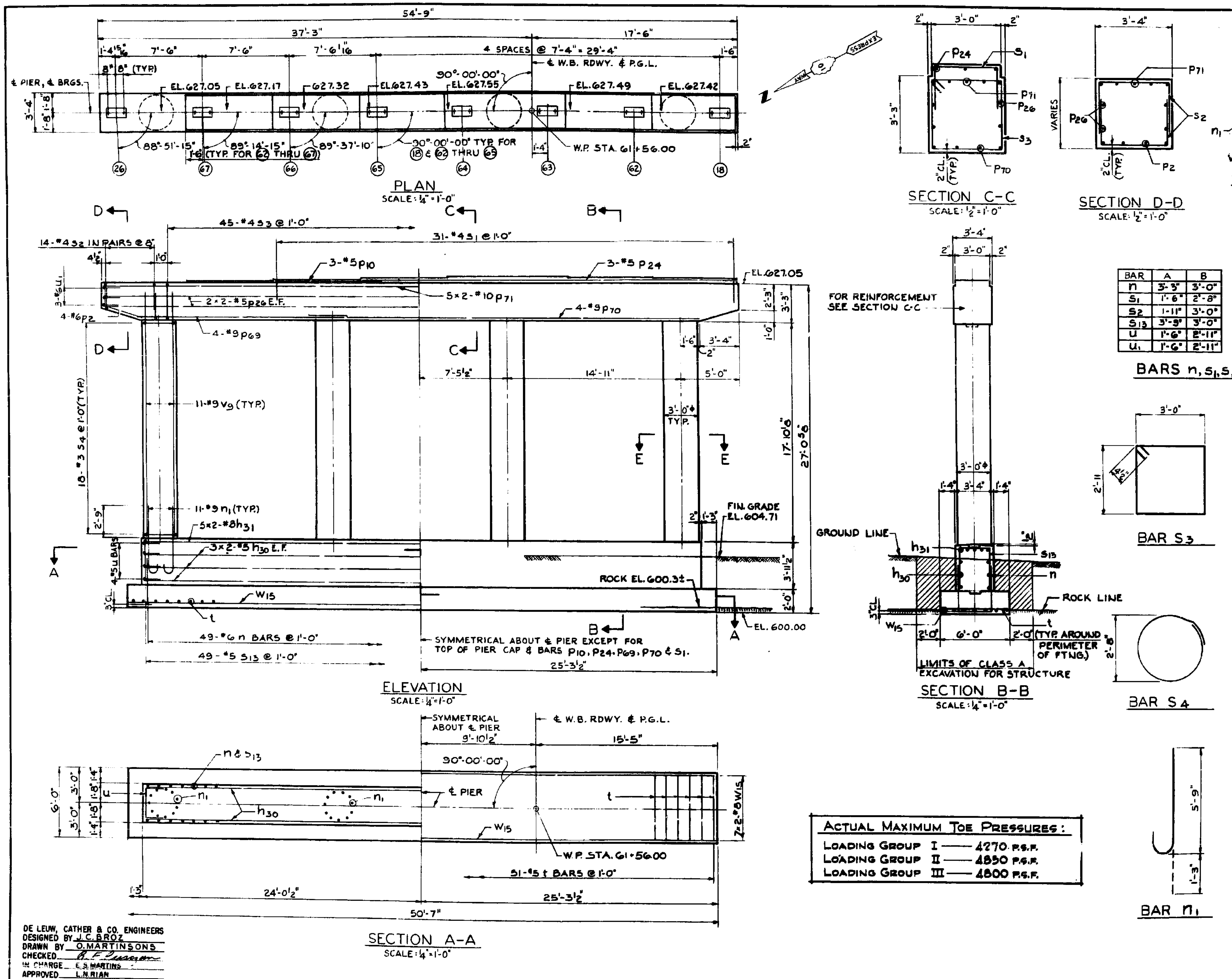
FILE NAME = 0162456_60W75_X10_existplan10.dgn	USER NAME = jsurber	DESIGNED - MPL	REVISED -
		CHECKED - JLS	REVISED -
	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS – PIER 32
STRUCTURE NO. 016-2456
SHEET NO. SCX10 OF SCX33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	418
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

6/9/2015 9:44:21 PM Y:\chicago\10000s\10093\Eng_Docs_Phase_II\SN_016_2456_2457_1st_Ave_over_Des_Plaines_River_Valley\Final\0162456_60W75_X10_existplan10.dgn



BAR	A	B
n	3'-3"	3'-0"
S1	1'-6"	2'-8"
S2	1'-11"	3'-0"
S13	3'-3"	3'-0"
U	1'-6"	2'-11"
U1	1'-6"	2'-11"

F.A.I. RTE.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
I-55	0707-075HB	COOK	95	41

SHEET NO. 41 ... SHEETS

BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
h_{30}	12	5	24'-6"	—
h_{31}	10	8	25'-0"	—
n	49	6	9'-6"	⊓
n_1	44	9	7'-0"	J
P_2	8	6	3'-6"	—
P_{10}	3	5	8'-9"	—
P_{24}	3	5	31'-9"	—
P_{26}	8	5	28'-3"	—
P_{69}	4	9	17'-9"	—
P_{70}	4	9	32'-6"	—
P_{71}	10	10	28'-6"	—
S_1	31	4	5'-8"	⊓
S_2	28	4	6'-10"	⊓
S_3	45	4	12'-7"	□
S_4	72	3	9'-6"	○
S_{13}	49	5	10'-6"	⊓
t	51	5	5'-6"	—
U	8	5	5'-11"	⊓
U_1	6	6	5'-11"	⊓
V_9	44	9	20'-9"	—
W_{15}	14	8	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: $33h_{31}$ MEANS BARS h_{31} FOR PIER 33. FOR ANCHOR BOLT PROJECTION SEE SH. 77. POUR STEPS MONOLITHICALLY WITH PIER CAP.

SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
CLASS A EXCAVATION FOR STRUCTURE	CU YD	89
ROCK EXCAVATION FOR STRUCTURE	CU YD	3
CLASS X CONCRETE	CU YD	88.0
REINFORCEMENT BARS	POUND	10,666

ILLINOIS DIVISION OF HIGHWAYS

SOUTHWEST EXPRESSWAY

LAWNDALE AVE. VIADUCT

PIER 33

SCALE: AS NOTED   DATE 11-25-1963

Y:\chicago\10000S\10093\Eng_Docs_Phase_II\SN_016_2456_2457_1st_Ave_over_Des_Plaines_River_Valley\Final\2456 Final\0162456_60W75_X11_existplan11.dgn   9:44:28 PM   6/9/2015

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312-565-0450   Job No. 10093

FILE NAME = 0162456_60W75_X11_existplan11.dgn	USER NAME = jsurber	DESIGNED - MPL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLANS – PIER 33 STRUCTURE NO. 016-2456
	PLOT SCALE =	CHECKED - JLS	REVISED -		SHEET NO. SCX11 OF SCX33 SHEETS
	PLOT DATE = 6/9/2015	DRAWN - PRT	REVISED -		
		CHECKED - JLS	REVISED -		

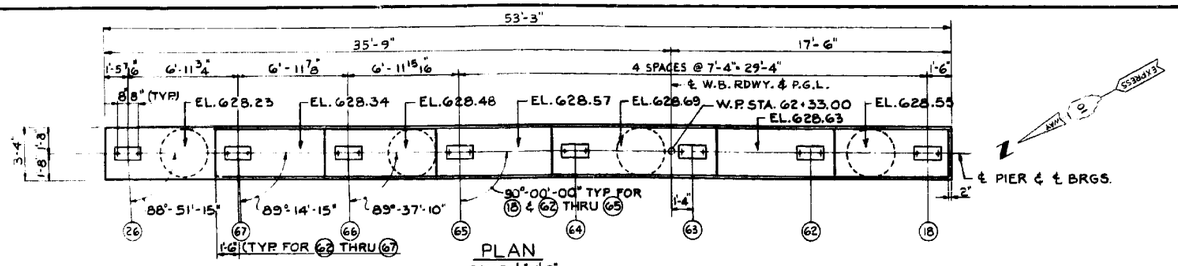
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	419

CONTRACT NO. 60W75

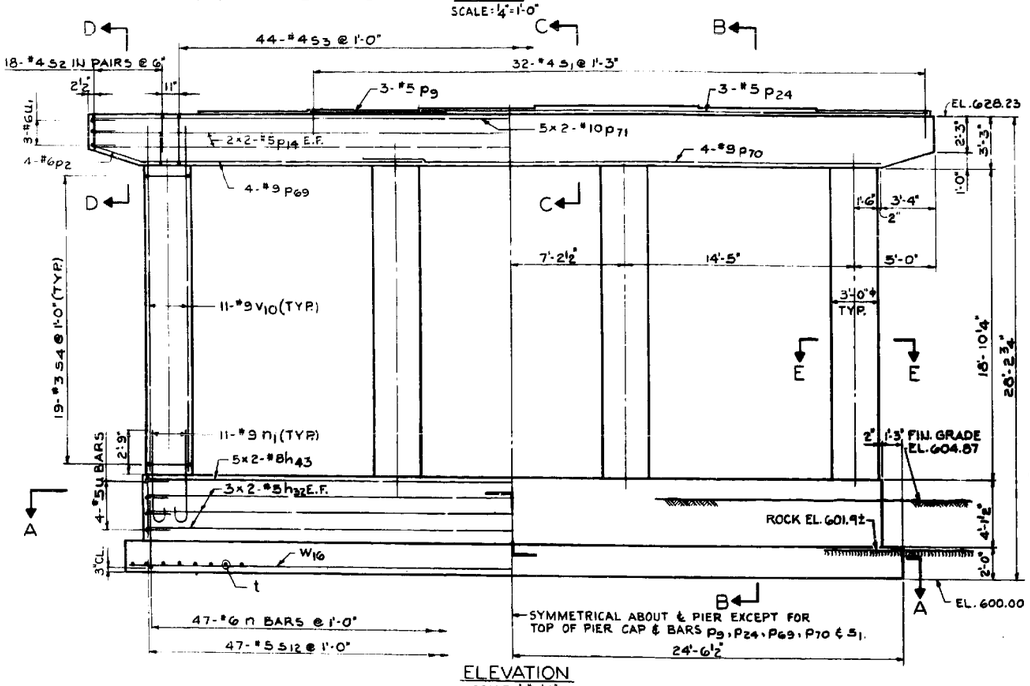
ILLINOIS FED. AID PROJECT

FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	COUNTY	TOTAL SHEETS	SHEET NO.
X-55	0707-07SHB		COOK	95	42

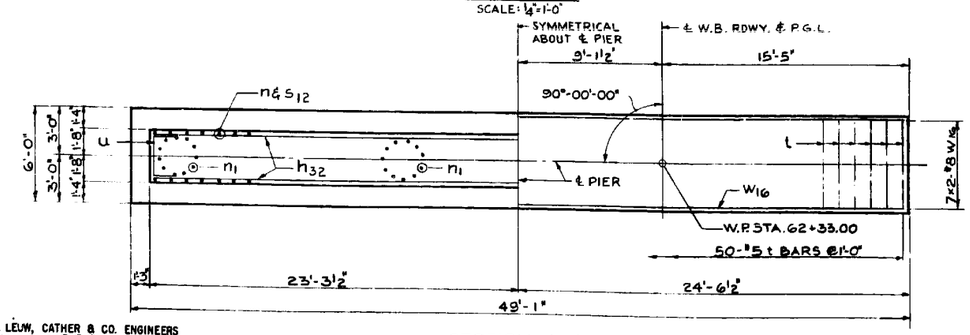
SHEET NO. 42
SHEETS



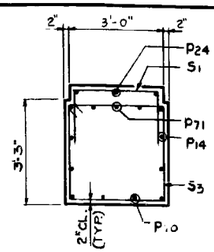
PLAN
SCALE: 1/4"=1'-0"



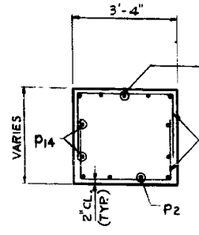
ELEVATION
SCALE: 1/4"=1'-0"



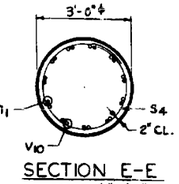
SECTION A-A
SCALE: 1/4"=1'-0"



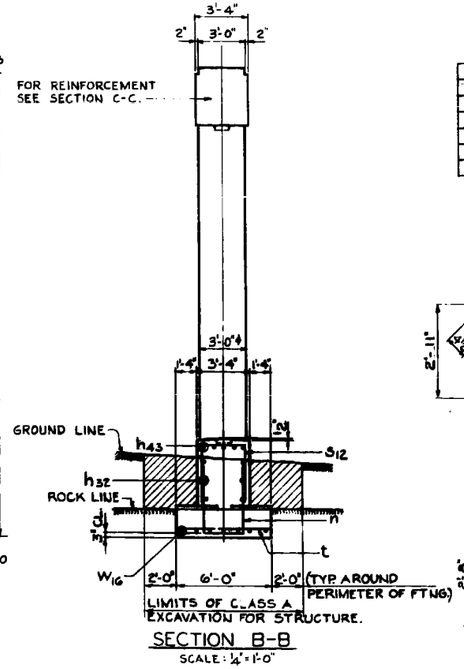
SECTION C-C
SCALE: 1/2"=1'-0"



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

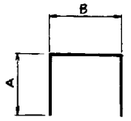


SECTION E-E
SCALE: 1/2"=1'-0"

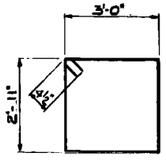


SECTION B-B
SCALE: 1/4"=1'-0"

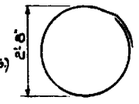
BAR	A	B
n	3'-3"	3'-0"
S1	1'-6"	2'-8"
S2	1'-11"	3'-0"
S12	3'-1"	3'-0"
u	1'-6"	2'-11"
u1	1'-6"	2'-11"



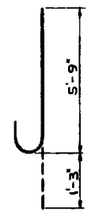
BARS n, S1, S2, S12, u & u1



BAR S3



BAR S4



BAR n1

BAR	NO.	SIZE	LENGTH	SHAPE
h32	12	5	23'-5"	—
h43	10	8	24'-3"	—
n	47	6	9'-6"	⊓
n1	44	9	7'-0"	J
P2	8	6	3'-6"	—
P9	3	5	7'-3"	—
P14	8	5	27'-3"	—
P24	3	5	31'-8"	—
P69	4	9	17'-9"	—
P70	4	9	32'-6"	—
P71	10	10	28'-0"	—
S1	32	4	5'-8"	⊓
S2	36	4	6'-10"	⊓
S3	44	4	12'-7"	⊓
S4	76	3	9'-6"	○
S12	47	5	10'-10"	⊓
t	50	5	5'-6"	—
u	8	5	5'-11"	⊓
u1	6	6	5'-11"	⊓
V10	44	9	21'-9"	—
W16	14	8	25'-3"	—

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: 34 h32 MEANS BARS h32 FOR PIER 34. FOR ANCHOR BOLT PROJECTION SEE SH. 77. POUR STEPS MONOLITHICALLY WITH PIER CAP.
SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.

BILL OF MATERIAL		
ITEM	UNIT	QUANTITY
CLASS A EXCAVATION FOR STRUCTURE	CU YD	59
ROCK EXCAVATION FOR STRUCTURE	CU YD	21
CLASS X CONCRETE	CU YD	57.9
REINFORCEMENT BARS	POUND	11,009

ACTUAL MAXIMUM TOE PRESSURES:
LOADING GROUP I —— 4780 P.S.F.
LOADING GROUP II —— 5470 P.S.F.
LOADING GROUP III —— 5390 P.S.F.

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY J.C.BROZ
DRAWN BY O.MARTINSONS
CHECKED R.F.Swanson
IN CHARGE E.S.MARTINS
APPROVED L.N.RIAN

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWNDALE AVE. VIADUCT
PIER 34
SCALE: AS NOTED
DATE 11-28-1962

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0162456_60W75_X12_existplan12.dgn	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS – PIER 34
STRUCTURE NO. 016-2456
SHEET NO. SCX12 OF SCX33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	420
		CONTRACT NO. 60W75		
		ILLINOIS	FED. AID PROJECT	

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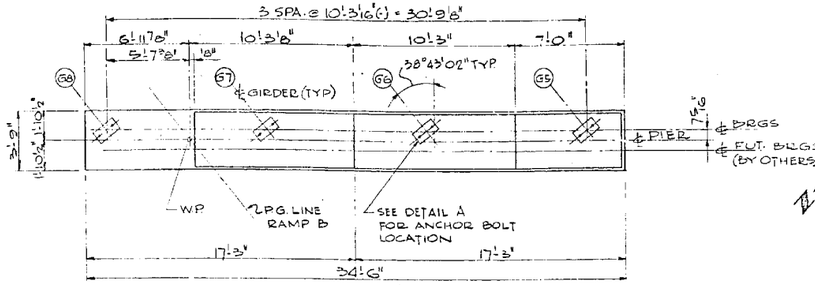
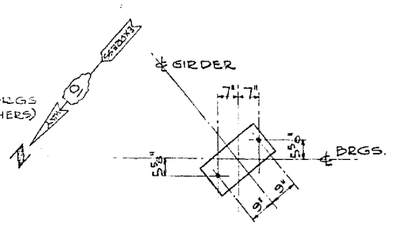
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		
E-55	0707-013 B	COOK	30	19
FED. AID PROJ. NO.	BEC	COUNTY	TOTAL SHEETS	SHEET NO.

SHEET NO. 13 SHEETS

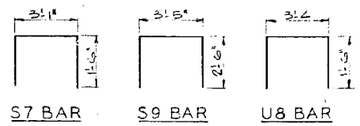


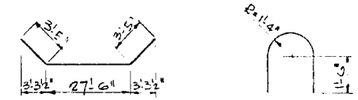
TOP PLAN
NO SCALE

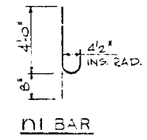


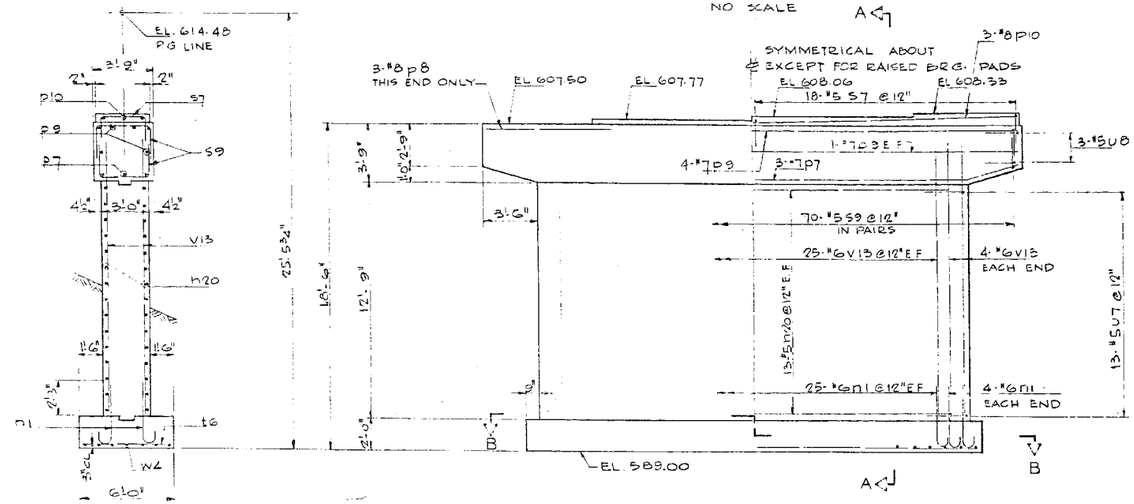
DETAIL A

ALL ANCHOR BOLTS TO PROJECT 7 3/4" ABOVE FINISHED CONCRETE. SPACE REINFORCEMENT IN CAP TO CLEAR ANCHOR BOLTS.



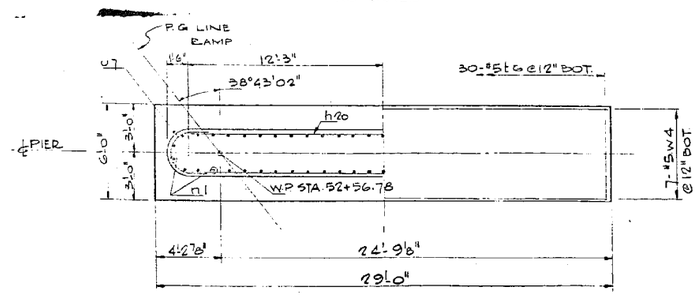






SECTION A-A
NO SCALE

ELEVATION
NO SCALE



SECTION B-B
NO SCALE

BAR LIST				
BAR	Nº	SIZE	LENGTH	SHAPE
h20	26	5	2'-6"	—
n1	58	6	4'-8"	⌐
p7	3	7	5'-3"	⌐
p8	5	8	3'-0"	—
p9	6	7	3'-4"	—
p10	3	8	12'-9"	—
s7	18	5	6'-11"	⊓
s9	70	5	8'-3"	⊓
t6	30	5	5'-2"	—
u7	26	5	7'-2"	⌐
u8	6	5	6'-4"	⊓
v13	58	6	13'-0"	—
w4	7	5	28'-8"	—

NOTES
1. MIN. BAR LAP = 70 DIA.
2. ALL BAR DIMENSIONS ARE OUT TO OUT
3. PREFIX ALL BAR MARKS FOR SHAPES WITH A NUMBER INDICATING THE PIER WHERE THE BARS WILL BE USED— EXAMPLE:— 55P6 MEANS BAR P6 FOR PIER 55
4. ALL EDGES TO HAVE STD 3/4" CHAMFER EXCEPT AS NOTED.
5. MAX. FOOTING PRESSURE 7.8 K/ft²

BILL OF MATERIAL		
ITEM	UNIT	QUAN.
CLASS X CONCRETE	CU.YD.	70.6
REINFORCEMENT BARS	POUND	4550
CLASS A EXCAV.	CU.YD.	116

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY

RAMP B OVER DES PLAINES RIVER
PIER 55

SCALE: AS NOTED
DATE 4-13-15

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Chicago, Illinois 60601
312-565-0450 Job No. 10093

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FILE NAME = 0162456.60W75.X13.existplan13.dgn	USER NAME = jsurber	DESIGNED - MPL	REVISED -
		CHECKED - JLS	REVISED -
	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS – PIER 55
STRUCTURE NO. 016-2456
SHEET NO. SCX13 OF SCX33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	421
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		

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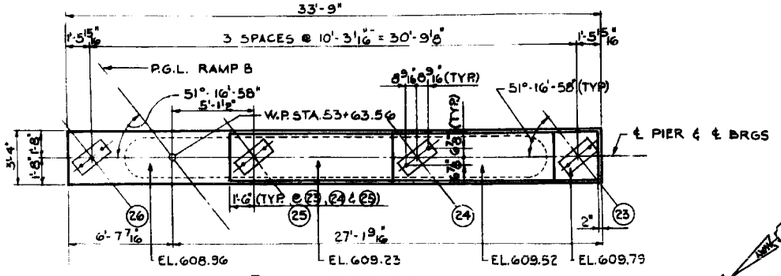
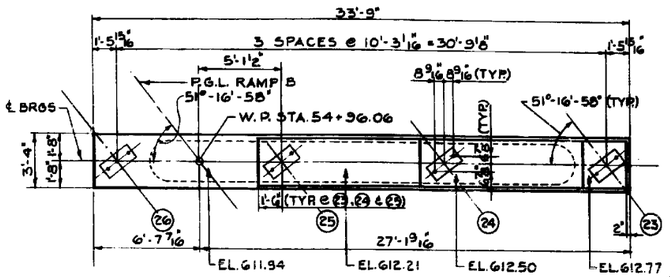
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	95	45

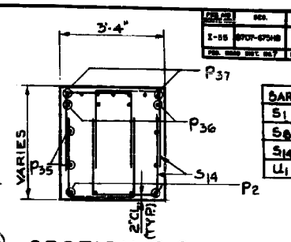
SHEET NO. 45 SHEETS



PLAN PIER 56
SCALE: 1/4"=1'-0"

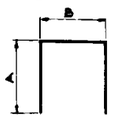


PLAN PIER 57
SCALE: 1/4"=1'-0"

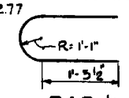


SECTION C-C
SCALE: 1/2"=1'-0"

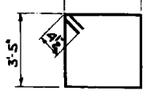
BAR	A	B
S1	1'-6"	2'-8"
S5	2'-2"	2'-8"
S14	2'-5"	2'-1"
U1	1'-6"	2'-11"



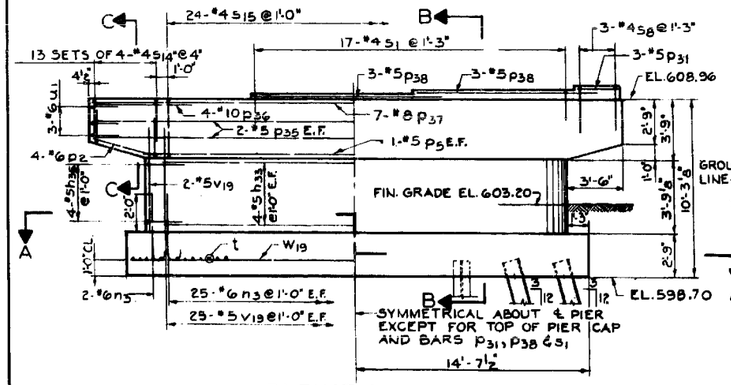
BARS S1, S5, S14 & U1



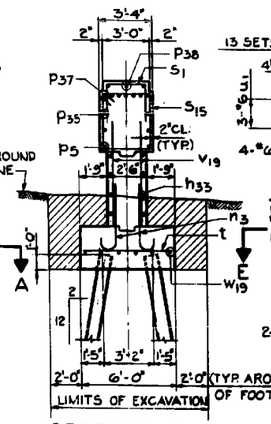
BAR h36



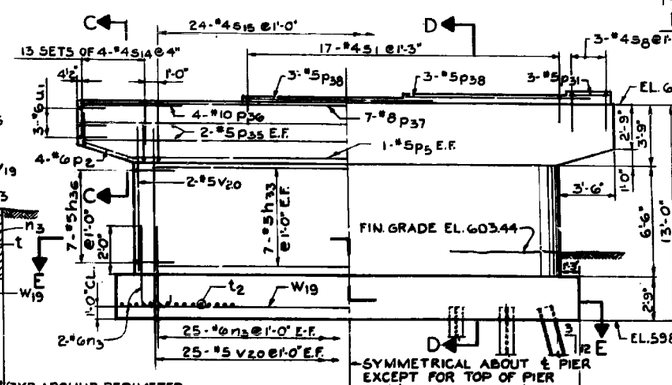
BAR S15



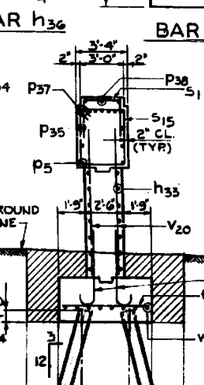
ELEVATION PIER 56
SCALE: 1/4"=1'-0"



SECTION B-B
SCALE: 1/4"=1'-0"

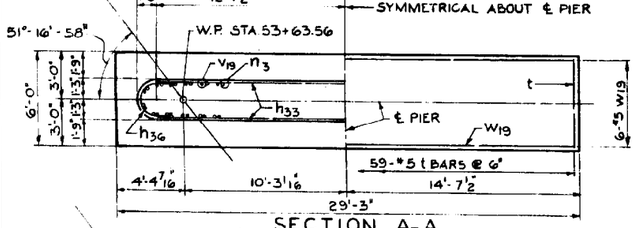


ELEVATION PIER 57
SCALE: 1/4"=1'-0"

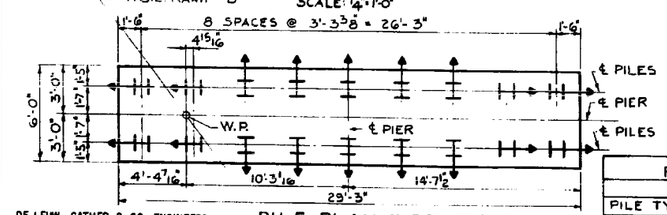


SECTION D-D
SCALE: 1/4"=1'-0"

(TYP. AROUND PERIMETER OF FOOTING)



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

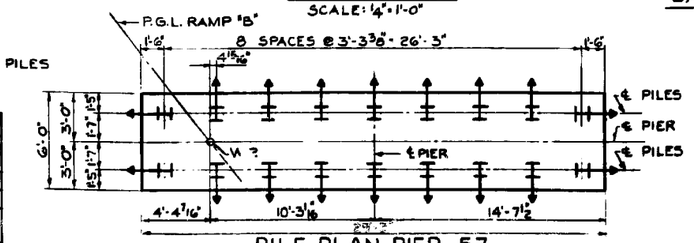


PILE PLAN PIER 56
SCALE: 1/4"=1'-0"

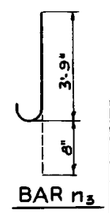
DENOTES BATTERED PILES

PILE DATA - 2 PIERS		
	PIER 56	PIER 57
PILE TYPE	12 BP 53	10 BP 57
MIN. CAPACITY TONS	31	37
NO. REQUIRED	18 *	18 **
EST. LENGTH FEET	13	42
CUT OFF ELEV.	599.70	599.94

* INCLUDES 1 TEST PILE. ** INCLUDES 2 TEST PILES



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



BAR n3

PILE PLAN PIER 57
SCALE: 1/4"=1'-0"

BAR LIST - 2 PIERS					
BAR	NUMBER PIER 56	NUMBER PIER 57	SIZE	LENGTH	SHAPE
h33	8	14	5	24'-3"	
h36	8	14	5	6'-0"	U
n3	54	54	6	4'-5"	J
P2	8	8	6	3'-6"	
P5	2	2	5	26'-6"	
P31	3	3	5	2'-6"	
P35	4	4	5	33'-3"	
P36	8	8	10	7'-3"	
P37	7	7	8	33'-3"	
P38	6	6	5	11'-3"	
S1	17	17	4	5'-8"	
S8	3	3	4	7'-0"	
S14	104	104	4	6'-11"	
S15	24	24	4	13'-7"	
t	59		5	5'-6"	
t2		59	6	5'-6"	
U1	6	6	6	5'-11"	
V19	54		5	5'-8"	
V20		54	5	8'-6"	
W19	6	8	8	28'-9"	

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: 56h36 MEANS BARS h36 FOR PIER 56. FOR ANCHOR BOLT PROJECTION SEE SH. 76. POUR STEPS MONOLITHICALLY WITH PIER CAP.
SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.

BILL OF MATERIAL - 2 PIERS			
ITEM	UNIT	QUANTITY PIER 56	QUANTITY PIER 57
CLASS A EXCAVATION FOR STRUCTURE	CU YD	55	55
CLASS X CONCRETE	CU YD	43.4	50.0
REINFORCEMENT BARS	POUND	3,468	4,021
FURNISHING STEEL PILES 12 BP 53	LIN. FT	221	
FURNISHING STEEL PILES 10 BP 57	LIN FT.		672
TEST PILE STEEL 12 BP 53	EACH	1	
TEST PILE STEEL 10 BP 57	EACH		2
DRIVING STEEL PILES	LIN FT	221	672

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY J.C. BROZ
DRAWN BY Q. MARTINSONS
CHECKED
IN CHARGE E.S. MARTINS
APPROVED L.N. RIAN

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY

LAWNDALE AVE. VIADUCT

PIERS 56 AND 57

SCALE: AS NOTED
DATE 11-25-1968

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

FOR INFORMATION ONLY

FILE NAME = 0162456_60W75_X14_existplan14.dgn	USER NAME = jsurber	DESIGNED - MPL	REVISED -
		CHECKED - JLS	REVISED -
	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

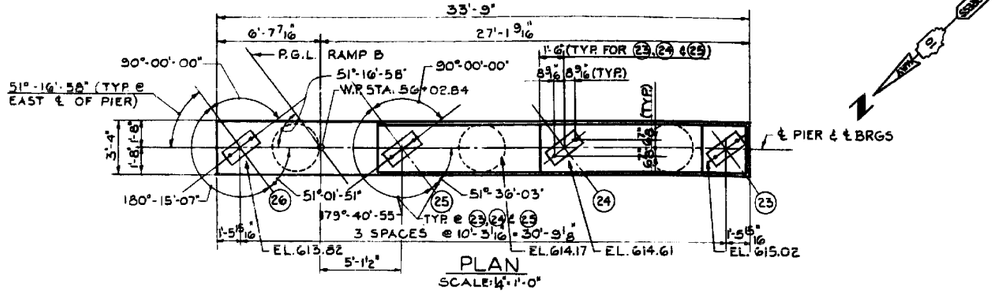
EXISTING PLANS – PIERS 56 & 57
STRUCTURE NO. 016-2456
SHEET NO. SCX14 OF SCX33 SHEETS

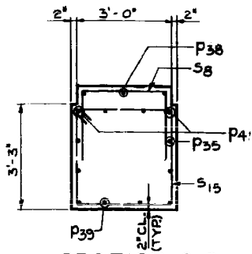
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	422
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

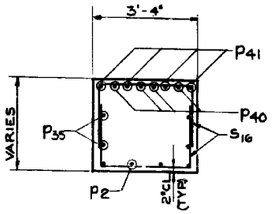
6/9/2015 9:44:48 PM Y:\chicago\10000S\10093\Eng_Docs_Phase_II\SN_016_2456_2457_1st_Ave_over_Des_Plaines_River_Valley_Final\2456 Final\0162456_60W75_X14_existplan14.dgn

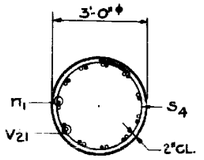
FED. ROAD DIST. NO.	STATE	COUNTY	TOTAL SHEETS	SHEET NO.
I-55	0707-075HB	COOK	95	46
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SHEET NO. 46
SHEETS

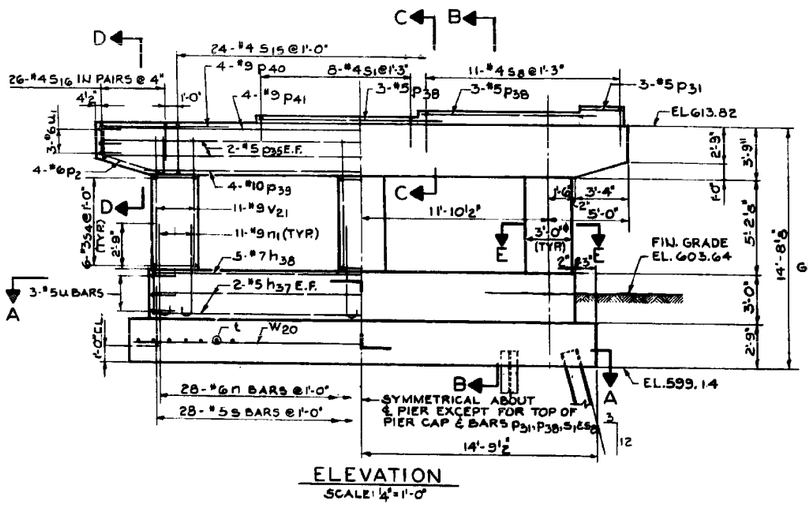


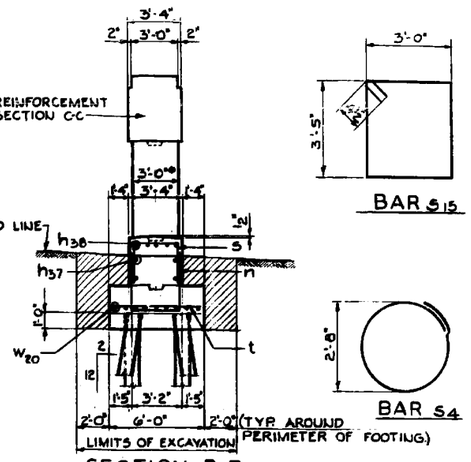




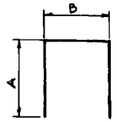


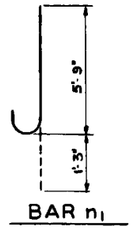
BAR LIST				
BAR	NO	SIZE	LENGTH	SHAPE
h37	4	5	26'-9"	
h38	5	7	26'-9"	
n	28	6	5'-6"	
n1	33	9	7'-0"	
P2	8	6	3'-6"	
P31	3	5	2'-6"	
P35	4	5	33'-3"	
P38	6	5	11'-3"	
P39	4	10	26'-9"	
P40	8	9	8'-6"	
P41	4	9	33'-3"	
S	28	5	8'-8"	
S1	8	4	5'-8"	
S4	18	3	9'-6"	
S8	11	4	7'-0"	
S15	24	4	13'-7"	
S16	52	4	7'-10"	
t	30	5	5'-6"	
U	6	5	5'-11"	
U1	6	6	5'-11"	
V21	33	9	8'-0"	
W20	9	7	29'-0"	



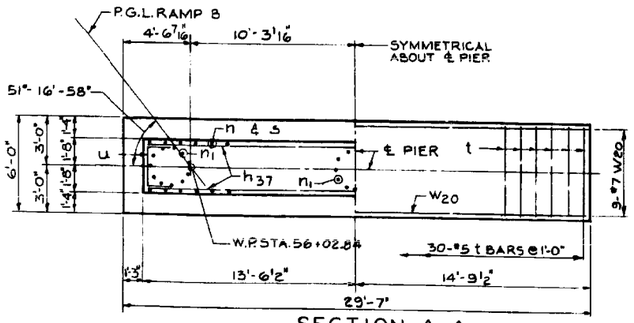


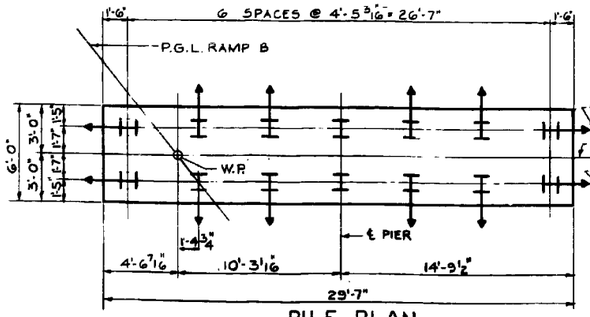
BARS n, S, S1, S8, S16, U & U1		
BAR	A	B
n	3'-3"	3'-0"
S	2'-10"	3'-0"
S1	1'-6"	2'-8"
S8	2'-2"	2'-8"
S16	2'-5"	3'-0"
U	1'-6"	2'-11"
U1	1'-6"	2'-11"





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: 58 h_{37} MEANS BARS h_{37} FOR PIER 58
FOR ANCHOR BOLT PROJECTION SEE SH. 76
FOUR STEPS MONOLITHICALLY WITH PIER CAP.
SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.





PILE DATA	
PILE TYPE	12 BP53
MIN. CAPACITY TONS	33
NO. REQUIRED	14*
EST. LENGTH FEET	43
CUT OFF ELEV.	600.14

*INCLUDES 1 TEST PILE

DENOTES BATTERED PILES

BILL OF MATERIAL		
ITEM	UNIT	QUANTITY
CLASS A EXCAVATION FOR STRUCTURES	CU YD	56
CLASS X CONCRETE	CU YD	49.0
REINFORCEMENT BARS	POUND	5,555
FURNISHING STEEL PILES 12BP53	LIN FT	559
TEST PILE STEEL 12 BP53	EACH	1
DRIVING STEEL PILES	LIN FT	559

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY J.C.BROZ
DRAWN BY O.MARTINSONS
CHECKED B.F. Runyan
IN CHARGE E.S. MARTINS
APPROVED L.N. RIAN

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWNDALE AVE. VIADUCT
PIER 58

SCALE: AS NOTED | DATE 11-25-1963

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

FOR INFORMATION ONLY

FILE NAME = 0162456_60W75_X15_existplan15.dgn	USER NAME = jsurber	DESIGNED - MPL	REVISED -
		CHECKED - JLS	REVISED -
	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

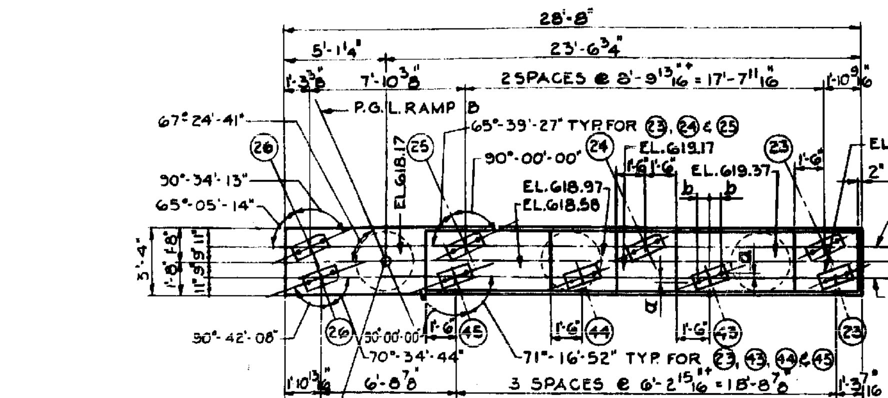
EXISTING PLANS – PIER 58
STRUCTURE NO. 016-2456
SHEET NO. SCX15 OF SCX33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	423
		CONTRACT NO. 60W75		
		ILLINOIS	FED. AID PROJECT	

6/9/2015 9:44:55 PM Y:\chicago\10000s\10093\Eng_Docs_Phase_II\SN_016_2456_2457_1st_Ave_over_Des_Plaines_River_Valley_Final\2456 Final\0162456_60W75_X15_existplan15.dgn

I-55	0707-679HB	COOK	95	47

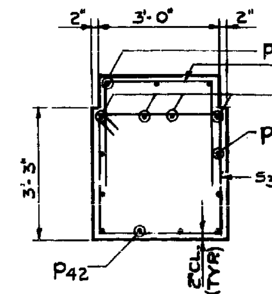
SHEET NO. 47 / SHEETS



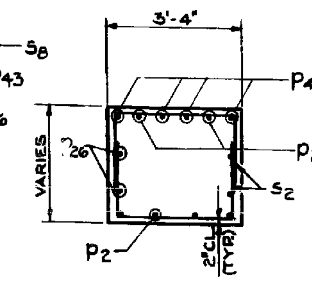
PLAN
SCALE: 1/4" = 1'-0"

NOTES:
FOR DIMENSIONS a & b SEE TABLE I

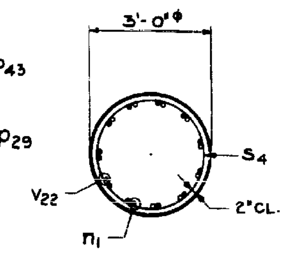
TABLE I			
BRGS	STRINGER LINE	a	b
EAST	(26), (25), (24) & (23)	3 5/8	8"
WEST	(26), (45), (44), (43) & (23)	2 13/16	8 5/16



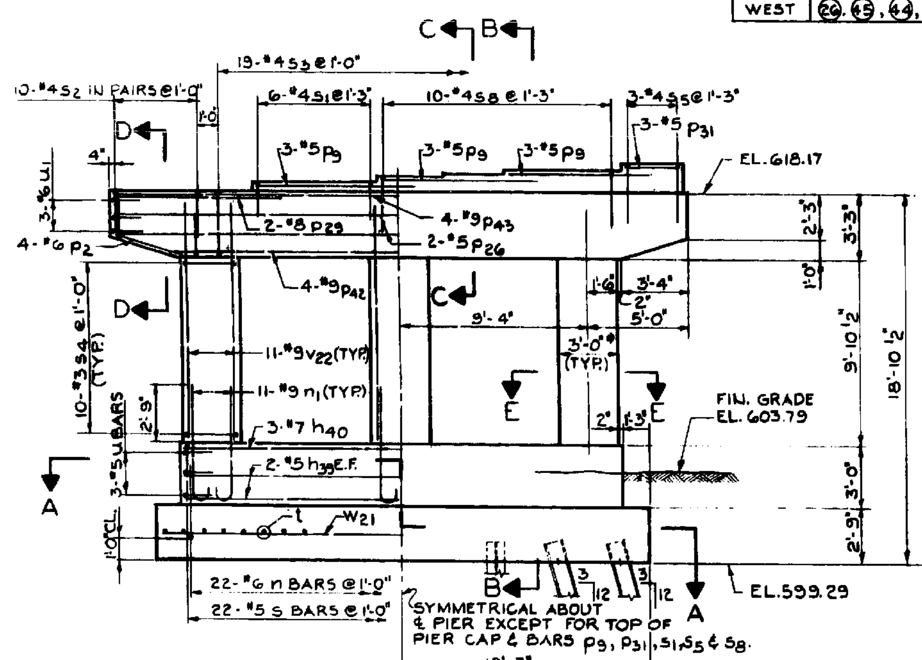
SECTION C-C
SCALE: 1/2" = 1'-0"



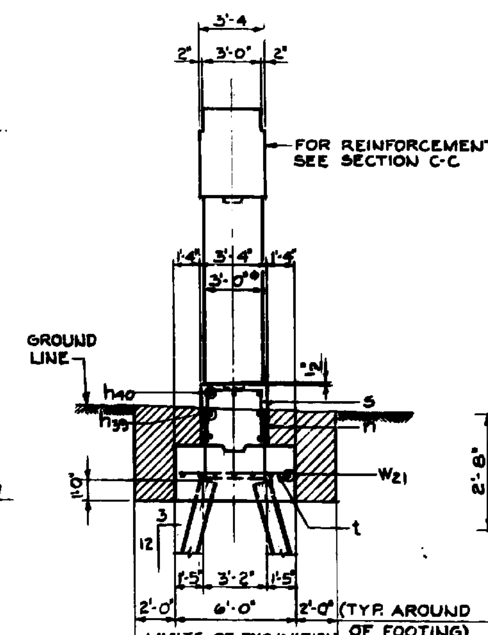
SECTION D-D
SCALE: 1/2" = 1'-0"



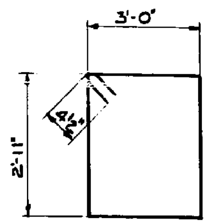
SECTION E-E
SCALE: 1/2" = 1'-0"



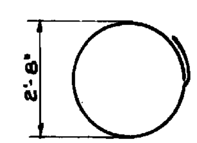
ELEVATION
SCALE: 1/4" = 1'-0"



SECTION B-B
SCALE: 1/4" = 1'-0"

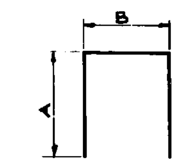


BAR S_3

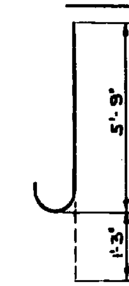


BAR S_4

BAR	A	B
n	3'-3"	3'-0"
s	2'-10"	3'-0"
s_1	1'-6"	2'-8"
s_2	1'-11"	3'-0"
s_5	2'-8"	2'-8"
s_8	2'-2"	2'-8"
u	1'-6"	2'-11"
u_1	1'-6"	2'-11"



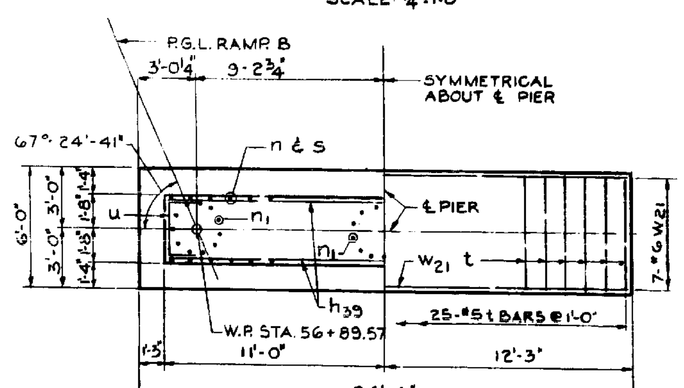
BARS n, s, s_1, s_2, s_5, s_8, u & u_1



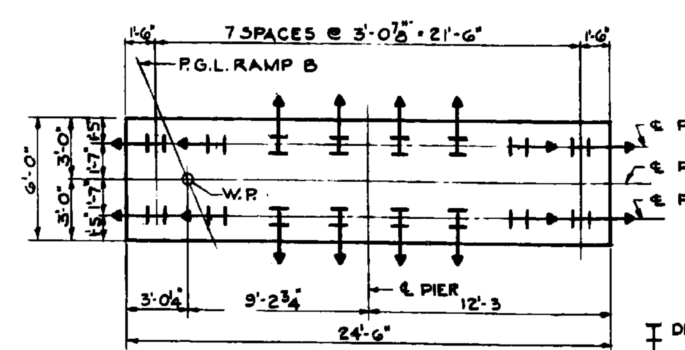
BAR n_1

BAR LIST				
BAR	NO	SIZE	LENGTH	SHAPE
h_{39}	4	5	21'-9"	——
h_{40}	3	7	21'-9"	——
n	22	6	9'-6"	⊓
n_1	33	9	7'-0"	J
p_2	8	6	3'-6"	——
p_9	9	5	7'-3"	——
p_{26}	4	5	28'-3"	——
p_{29}	4	8	8'-3"	——
p_{31}	3	5	2'-6"	——
p_{42}	4	9	21'-9"	——
p_{43}	4	9	28'-3"	——
s	22	5	8'-8"	⊓
s_1	6	4	5'-8"	⊓
s_2	20	4	6'-10"	⊓
s_3	18	4	12'-7"	◪
s_4	30	3	9'-6"	O
s_5	10	4	8'-0"	⊓
s_8	3	4	7'-0"	⊓
t	25	5	5'-6"	——
u	6	5	5'-11"	⊓
u_1	6	6	5'-11"	⊓
v_{22}	33	9	12'-9"	——
w_{21}	7	6	24'-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: 59 h_{39} MEANS BARS h_{39} FOR PIER 59.
FOR ANCHOR BOLT PROJECTION SEE SH.77
POUR STEPS MONOLITHICALLY WITH PIER CAP.
SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.



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



PILE PLAN
SCALE: 1/4" = 1'-0"

PILE DATA	
PILE TYPE	10 BP 57
MIN. CAPACITY TONS	36
NO. REQUIRED	16*
EST. LENGTH FEET	43
CUT OFF ELEV.	600.29

*INCLUDES 1 TEST PILE

DENOTES BATTERED PILES

BILL OF MATERIAL		
ITEM	UNIT	QUANTITY
CLASS A EXCAVATION FOR STRUCTURES	CU YD	48
CLASS X CONCRETE	CU YD	44.1
REINFORCEMENT BARS	POUND	4,891
FURNISHING STEEL PILES 10 BP 57	LIN FT	645
TEST PILE STEEL 10 BP 57	EACH	1
DRIVING STEEL PILES	LIN FT	645

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY J.C. BROZ
DRAWN BY O. MARTINSONS
CHECKED
IN CHARGE E.S. MARTINS
APPROVED L.N. RIAN

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY

LAWNDALE AVE. VIADUCT
PIER 59

SCALE: AS NOTED — DATE 11-25-1963

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

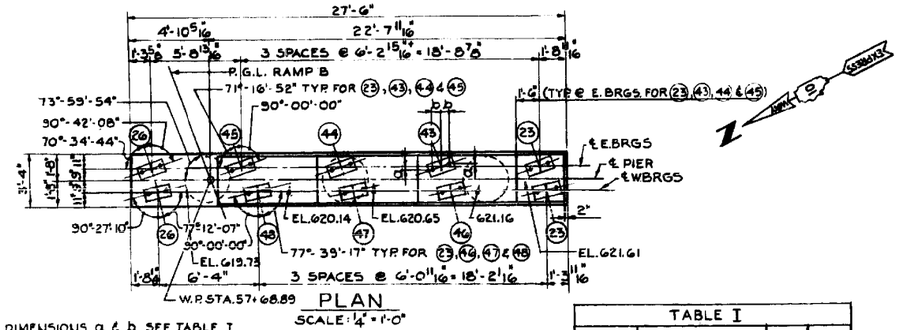
FILE NAME =	USER NAME = jsurber	DESIGNED - MPL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLANS – PIER 59 STRUCTURE NO. 016-2456
		CHECKED - JLS	REVISED -		
0162456_60W75_X16_existplan16.dgn	PLOT SCALE =	DRAWN - PRT	REVISED -		
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -		SHEET NO. SCX16 OF SCX33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	424
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

Y:\chicago\10000S\10093\Eng_Docs_Phase_II\SN_016_2456_2457_1st_Ave_over_Des_Plaines_River_Valley\Final\2456 Final\0162456_60W75_X16_existplan16.dgn 9:45:01 PM 6/9/2015

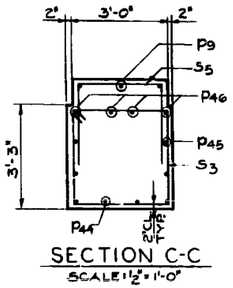
I-55	0707-079MG	COOK	95	48

SHEET NO. 48 SHEETS

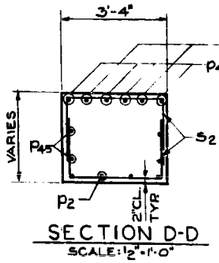


NOTE
FOR DIMENSIONS a & b SEE TABLE I

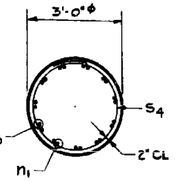
TABLE I			
BRGS	STRINGER LINE	a	b
EAST	26, 45, 44, 43, 23	2 3/4"	8 1/16"
WEST	26, 48, 47, 46, 23	1 7/8"	8 9/16"



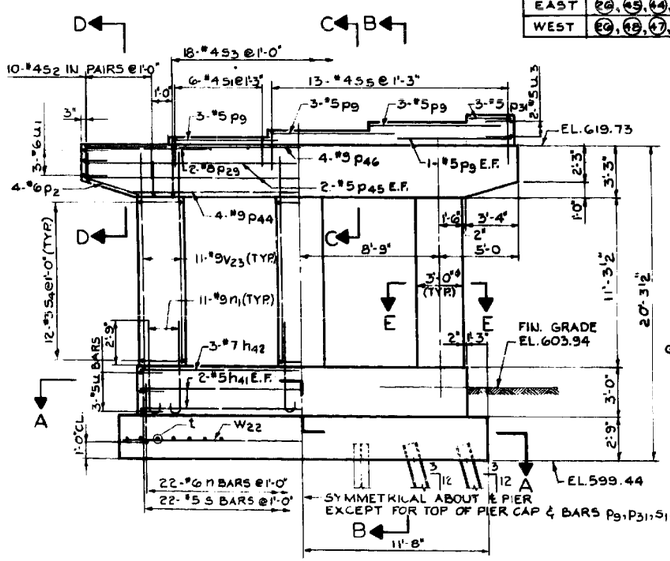
SECTION C-C
SCALE: 1 1/2" = 1'-0"



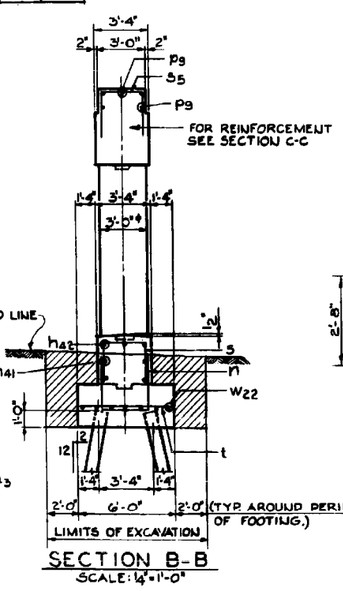
SECTION D-D
SCALE: 1 1/2" = 1'-0"



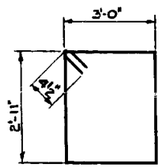
SECTION E-E
SCALE: 1 1/2" = 1'-0"



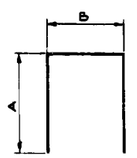
ELEVATION
SCALE: 1/4" = 1'-0"



SECTION B-B
SCALE: 1/4" = 1'-0"

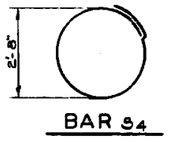


BAR S3

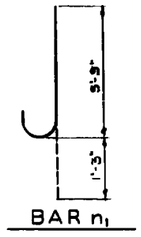


BAR	A	B
n	3'-3"	3'-0"
S	2'-10"	3'-0"
S1	1'-6"	2'-8"
S2	1'-11"	3'-0"
S5	2'-8"	2'-8"
U	1'-6"	2'-11"
U1	1'-6"	2'-11"
U3	1'-4"	2'-7"

BARS n, S, S1, S2, S5, U, U1 & U3



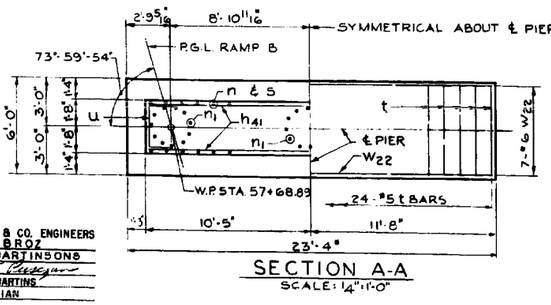
BAR S4



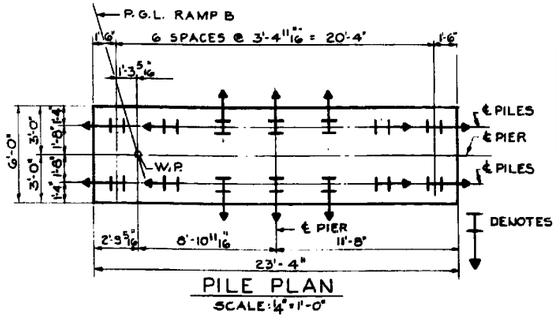
BAR n1

BAR LIST				
BAR	NO	SIZE	LENGTH	SHAPE
h41	4	5	20'-6"	—
h42	3	7	20'-6"	—
n	22	6	9'-6"	⊓
n1	33	9	7'-0"	J
P2	8	6	3'-6"	—
P9	11	5	7'-3"	—
P29	4	8	8'-5"	—
P31	3	5	2'-6"	—
P44	4	9	20'-6"	—
P45	4	5	27'-0"	—
P46	4	9	27'-0"	—
S	22	5	6'-8"	⊓
S1	6	4	5'-8"	⊓
S2	20	4	6'-10"	⊓
S3	18	4	12'-7"	⊓
S4	36	3	9'-6"	⊓
S5	13	4	6'-0"	⊓
t	24	5	5'-6"	—
U	6	5	5'-11"	⊓
U1	6	6	5'-11"	⊓
U3	2	5	5'-3"	⊓
V23	33	9	14'-0"	—
W22	7	6	23'-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: 60h41 MEANS BARS h41 FOR PIER 60.
FOR ANCHOR BOLT PROJECTION SEE SH. 77
POUR STEPS MONOLITHICALLY WITH PIER CAP.
SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.



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



PILE PLAN
SCALE: 1/4" = 1'-0"

PILE DATA	
PILE TYPE	10 BP 57
MIN. CAPACITY TONS	39
NO. REQUIRED	144
EST. LENGTH FEET	48
CUT OFF ELEV.	600.44

* INCLUDES 1 TEST PILE

BILL OF MATERIAL		
ITEM	UNIT	QUANTITY
CLASS A EXCAVATION FOR STRUCTURE	CU YD	46
CLASS X CONCRETE	CU YD	44.0
REINFORCEMENT BARS	POUND	5,004
FURNISHING STEEL PILES 10 BP 57	LIN FT	624
TEST PILE STEEL 10 BP 57	EACH	1
DRIVING STEEL PILES	LIN FT	624

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY J.C. BROZ
DRAWN BY O. MARTINSONS
CHECKED
IN CHARGE E.S. MARTINS
APPROVED L.N. RIAN

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWNDALE AVE. VIADUCT
PIER 60
SCALE: AS NOTED
DATE 11-25-1968

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Chicago, Illinois 60601
312-565-0450 Job No. 10093

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	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS – PIER 60
STRUCTURE NO. 016-2456
SHEET NO. SCX17 OF SCX33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	425
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

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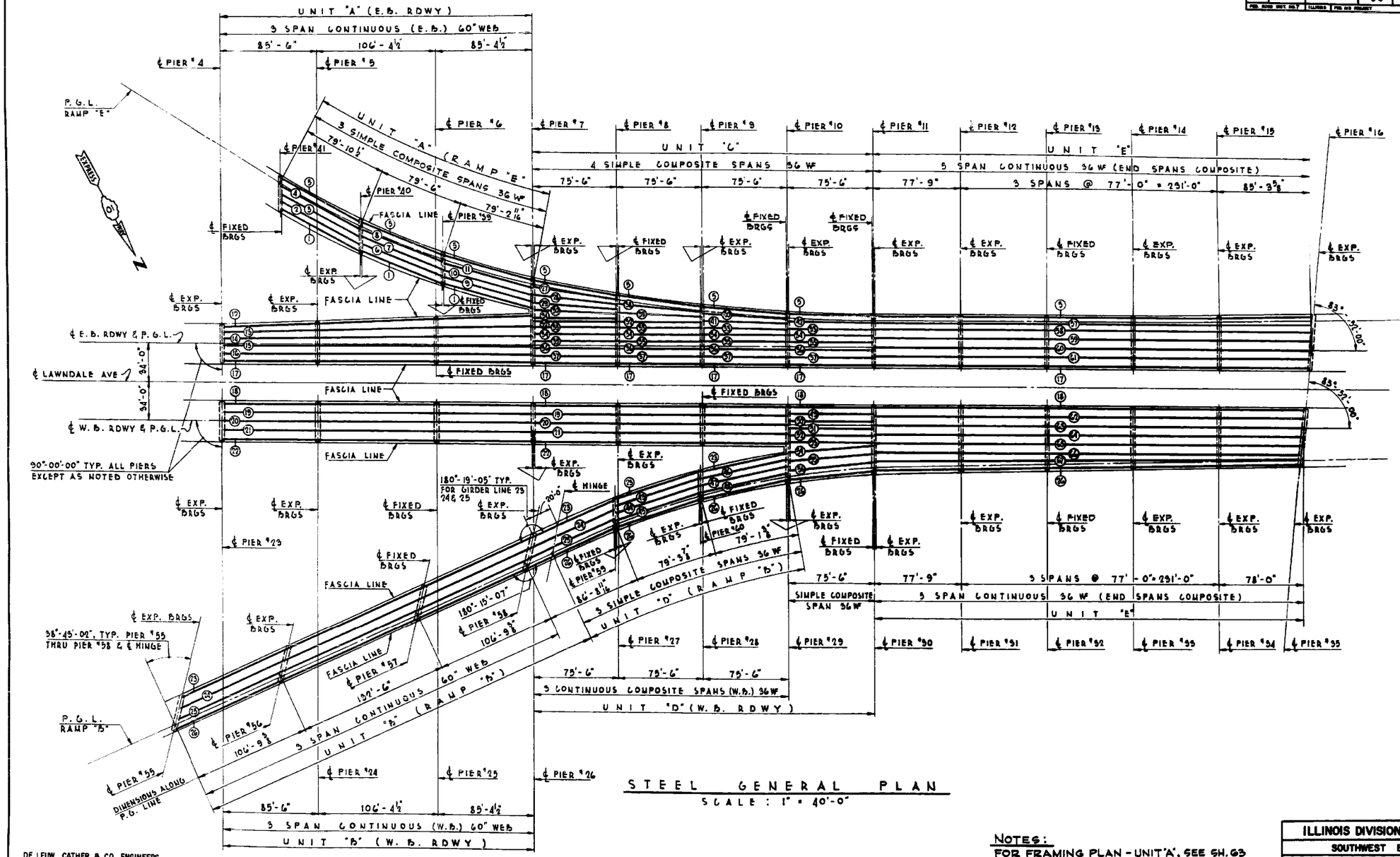
FED. AID PROJECT NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
I-55	0707-079 HB	COOK	95	62
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 62
SHEETS



STEEL GENERAL PLAN

SCALE : 1" = 40'-0"

NOTES:
FOR FRAMING PLAN - UNIT 'A', SEE SH. 63
FOR FRAMING PLAN - UNIT 'B', SEE SH. 64
FOR FRAMING PLAN - UNIT 'C', SEE SH. 65
FOR FRAMING PLAN - UNIT 'D', SEE SH. 69
FOR FRAMING PLAN - UNIT 'E', SEE SH. 71
FOR BEARING TYPES, SEE FRAMING PLANS.

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY J.C. BROZ
DRAWN BY F. BOBINAS
CHECKED E.M.L.
IN CHARGE E.S. MARTINS
APPROVED L.N. RIAN

JOB NO. 1179

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWNDALE AVE. VIADUCT
GENERAL FRAMING PLAN
SCALE: AS NOTED | DATE 11-25-63

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	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS – GENERAL FRAMING PLAN
STRUCTURE NO. 016–2456
SHEET NO. SCX18 OF SCX33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	426
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

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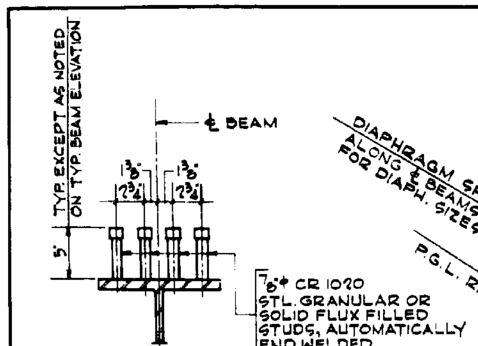
FED. AID ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
I-55	0707-675HB	COOK	95	63

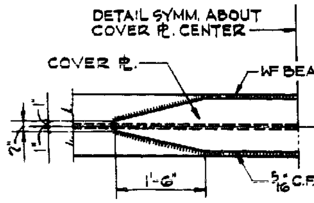
SHEET NO. 63
95 SHEETS

NOTE "A":
DIAPHRAGMS D THRU D8 - 12 WF 40
DIAPHRAGMS D9 THRU D18 - 16 WF 36
FOR DIAPHRAGM LENGTHS & NO. REQUIRED, SEE "TABLE II".



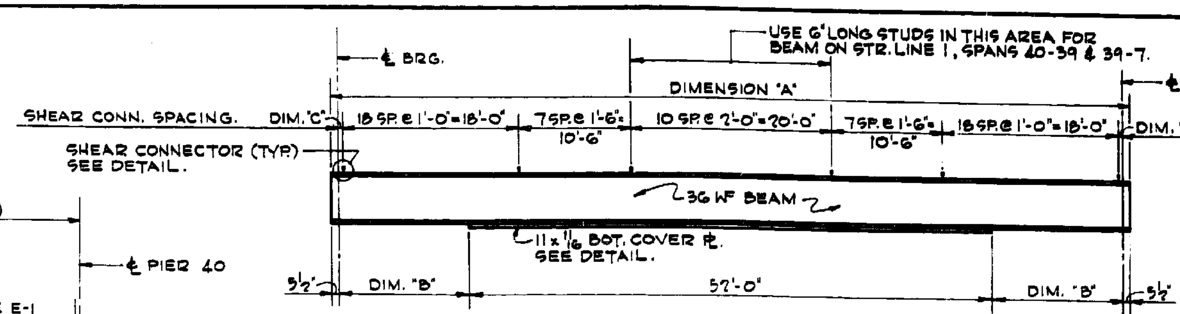
SHEAR CONNECTOR DETAIL

SCALE: 1½" = 1'-0"



HALF-PLAN DETAIL OF COVER ℞'S

NOT TO SCALE



TYPICAL BEAM ELEVATION

FOR DIMENSIONS NOT SHOWN, SEE "TABLE I"
NOT TO SCALE

TABLE I

STRINGER LINE	SPAN	DIMENSIONS *** "A"	"B"	"C"
1 THRU 4 AND 6 THRU 11	41-40 40-39 39-7	78'-4 1/16"	12'-8 1/2"+	2 1/2"+
5	41-40	79'-2 11/16"	13'-1 7/8"-	7"-
	40-39	78'-9 15/16"	12'-11 1/2"-	5 1/2"-
	39-7	78'-6 15/16"	12'-10"-	4"-

*** DIM'S GIVEN ALONG ℄ BEAMS.

TOP/WF ELEVATIONS - UNIT "A"

STRINGER LINE \ LOCATION	PIER 41 ℄ W. BRG.	PIER 40 ℄ E. BRG.	PIER 40 ℄ W. BRG.	PIER 39 ℄ E. BRG.	PIER 39 ℄ W. BRG.	PIER 7 ℄ E. BRG.
5	617.687	618.896	618.924	620.362	620.393	621.971
4, 8 & 11	617.994	619.219	619.316	620.780	620.871	622.353
3, 7 & 10	618.286	619.655	619.733	621.305	621.376	622.827
2, 6 & 9	618.590	620.100	620.158	621.830	621.881	623.296
1	618.846	620.509	620.547	622.246	622.274	623.551

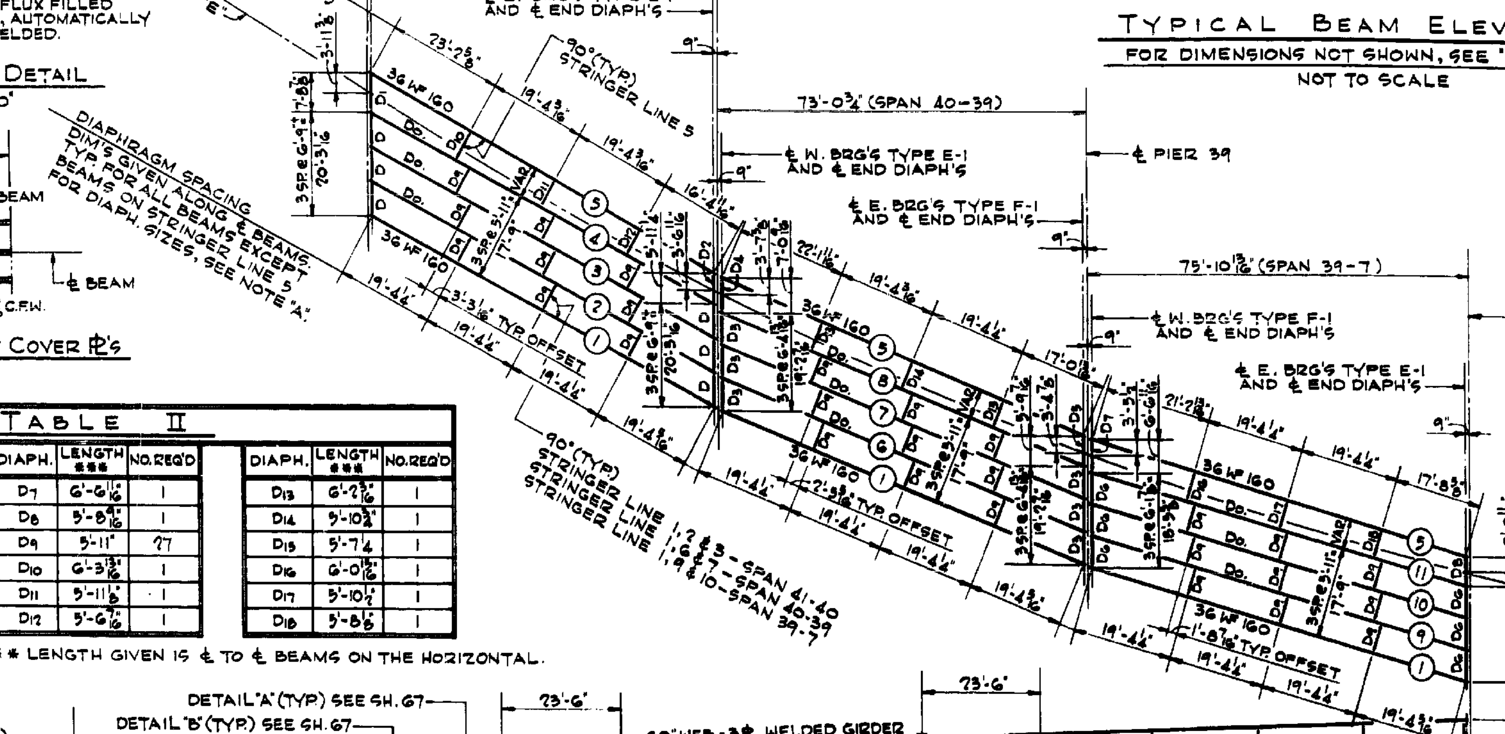
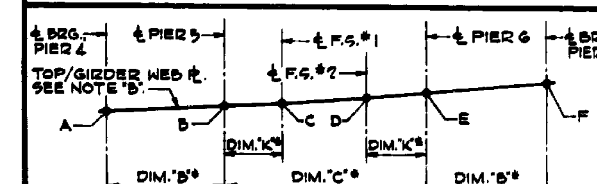


TABLE II

DIAPH.	LENGTH ***	NO. REQ'D
D	6'-9"+	6
D1	7'-8 7/8"	1
D2	5'-11 1/4"	1
D3	6'-4 13/16"	6
D4	7'-0 9/16"	1
D5	5'-9 7/16"	1
D6	6'-1 7/8"	6
D7	6'-6 11/16"	1
D8	5'-8 9/16"	1
D9	5'-11"	27
D10	6'-3 13/16"	1
D11	5'-11 1/8"	1
D12	5'-6 7/16"	1
D13	6'-2 3/16"	1
D14	5'-10 3/4"	1
D15	5'-7 1/4	1
D16	6'-0 15/16"	1
D17	5'-10 1/2"	1
D18	5'-8 1/8"	1

*** LENGTH GIVEN IS ℄ TO ℄ BEAMS ON THE HORIZONTAL.

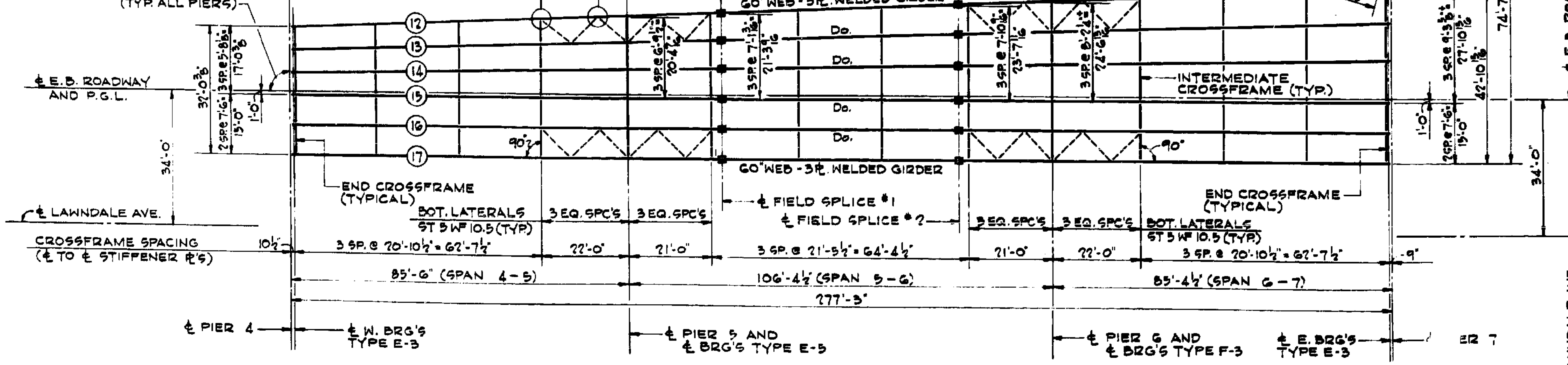
TOP/GIRDER WEB ℞ ELEVATIONS - UNIT "A"



* FOR DIM'S SEE "TABLE II", SH. 65.

STRINGER LINE	A	B	C	D	E	F
12	621.137	621.690	621.843	622.423	622.692	623.662
13	621.167	621.828	622.018	622.598	622.867	623.836
14	621.271	621.952	622.142	622.721	622.991	623.960
15	621.307	621.989	622.178	622.758	623.027	623.997
16	621.222	621.904	622.093	622.673	622.942	623.911
17	621.127	621.809	621.998	622.578	622.847	623.816

NOTE "B": TOP OF GIRDER WEB ℞ IS A STRAIGHT LINE BETWEEN POINTS A & C, C & D AND D & F.



FRAMING PLAN - UNIT "A"

SCALE: 1/16" = 1'-0"

NOTES:
ALL HORIZONTAL DIMENSIONS ON FRAMING PLAN ARE GIVEN ALONG LINES PARALLEL TO ℄ LAWNDALE AVE.
ALL PIERS ARE 90°-00'-00" TO ℄ LAWNDALE AVE.
FOR GENERAL FRAMING PLAN, SEE SH. 62.
FOR STRUCTURAL STEEL NOTES, SEE SH. 3.
FOR GIRDER & CROSSFRAME DETAILS, SEE SH. 65.
FOR DIAPHRAGM DETAILS, SEE SH. 73 & SH. 74.
FOR TABLES OF MOMENTS, REACTIONS & PROPERTIES, SEE SH. 65.
FOR DETAILS OF CONDUIT SUPPORT BRACKETS, SEE SH. 81.

* INCLUDES 3,604 LBS. FOR SHEAR CONNECTORS.

BILL OF MATERIAL **

ITEM	UNIT	QUANTITY
FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	558,675*

** INCLUDES ALL STRUCTURAL STEEL IN UNIT "A" EXCEPT BEARINGS AND EXPANSION GUARDS.

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY V. K. BURKEVICS
DRAWN BY J. A. CHALIKIS
CHECKED A. Mulinas
IN CHARGE E. S. MARTINS
APPROVED L. M. RIAN

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWNDALE AVE. VIADUCT
FRAMING PLAN
UNIT "A"
SCALE: AS NOTED | DATE 11-25-1963

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312-565-0450 Job No. 10093

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0162456_60W75_X19_existplan19.dgn	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

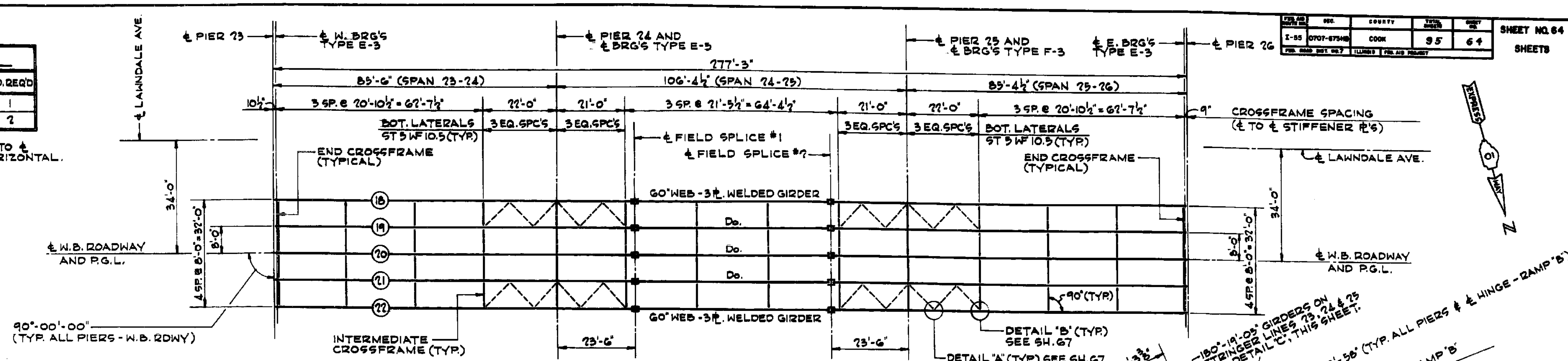
EXISTING PLANS - SHEAR CONNECTORS AND COVER PLATES
STRUCTURE NO. 016-2456
SHEET NO. SCX19 OF SCX33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	427

CONTRACT NO. 60W75
ILLINOIS FED. AID PROJECT

TABLE I			
DIAPH.	SIZE	LENGTH **	NO. REQ'D
D	12 WF 40	10'-0 5/8"	1
D1	12 WF 40	10'-3 1/16"	2

** LENGTH GIVEN IS ℄ TO ℄ GIRDERS ON THE HORIZONTAL.



FRAMING PLAN - UNIT 'B'

FRAMING FOR W.B. ROADWAY

SCALE: 1/16" = 1'-0"

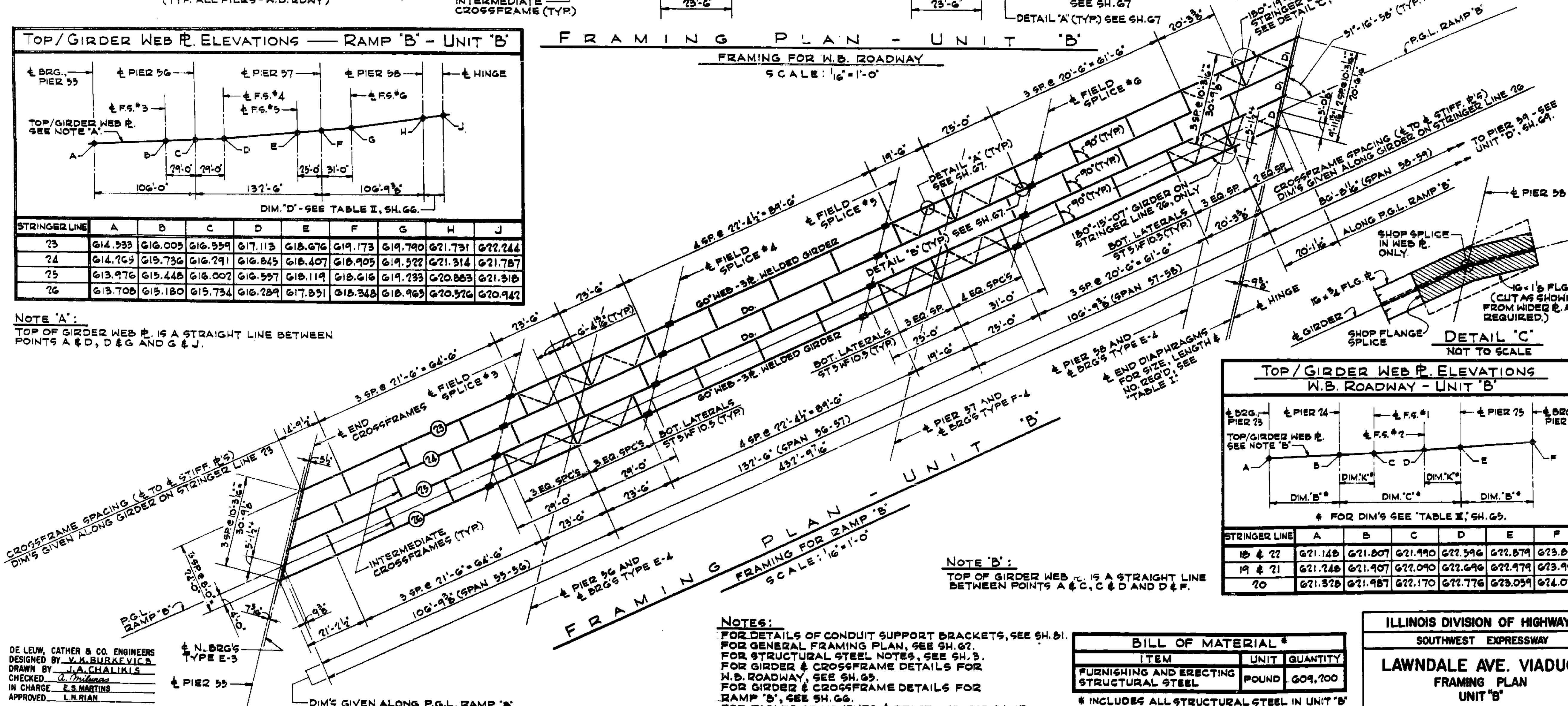
TOP/GIRDER WEB ℞. ELEVATIONS — RAMP 'B' - UNIT 'B'

DIM. "D" - SEE TABLE II, SH. 66.

STRINGER LINE	A	B	C	D	E	F	G	H	J
23	614.533	616.005	616.559	617.113	618.676	619.173	619.790	621.731	622.244
24	614.265	615.736	616.291	616.845	618.407	618.905	619.522	621.314	621.787
25	613.976	615.448	616.002	616.557	618.119	618.616	619.233	620.883	621.318
26	613.708	615.180	615.734	616.289	617.851	618.348	618.965	620.526	620.942

NOTE 'A':

TOP OF GIRDER WEB ℞. IS A STRAIGHT LINE BETWEEN POINTS A & D, D & G AND G & J.



FRAMING PLAN - UNIT 'B'

FRAMING FOR RAMP 'B'

SCALE: 1/16" = 1'-0"

TOP/GIRDER WEB ℞. ELEVATIONS W.B. ROADWAY - UNIT 'B'

* FOR DIM'S SEE 'TABLE II,' SH. 65.

STRINGER LINE	A	B	C	D	E	F
18 & 22	621.148	621.807	621.990	622.596	622.879	623.899
19 & 21	621.248	621.907	622.090	622.696	622.979	623.999
20	621.328	621.987	622.170	622.776	623.059	624.079

NOTE 'B':

TOP OF GIRDER WEB ℞. IS A STRAIGHT LINE BETWEEN POINTS A & C, C & D AND D & F.

NOTES:

FOR DETAILS OF CONDUIT SUPPORT BRACKETS, SEE SH. 81.
FOR GENERAL FRAMING PLAN, SEE SH. 62.
FOR STRUCTURAL STEEL NOTES, SEE SH. 3.
FOR GIRDER & CROSSFRAME DETAILS FOR W.B. ROADWAY, SEE SH. 65.
FOR GIRDER & CROSSFRAME DETAILS FOR RAMP 'B', SEE SH. 66.
FOR TABLES OF MOMENTS & REACTIONS, SEE SH. 67.

BILL OF MATERIAL *		
ITEM	UNIT	QUANTITY
FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	609,200

* INCLUDES ALL STRUCTURAL STEEL IN UNIT 'B' EXCEPT BEARINGS AND EXPANSION GUARDS.

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY V.K. BURKEVICS
DRAWN BY J.A. CHALIKIS
CHECKED
IN CHARGE E.S. MARTINS
APPROVED L.N. RIAN

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWNDALE AVE. VIADUCT
FRAMING PLAN
UNIT 'B'
SCALE: AS NOTED   DATE: 11-25-1963

SHEET NO. 64 — I-55, 0707-673HB, COOK, 95 SHEETS

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Chicago, Illinois 60601
312-565-0450   Job No. 10093

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

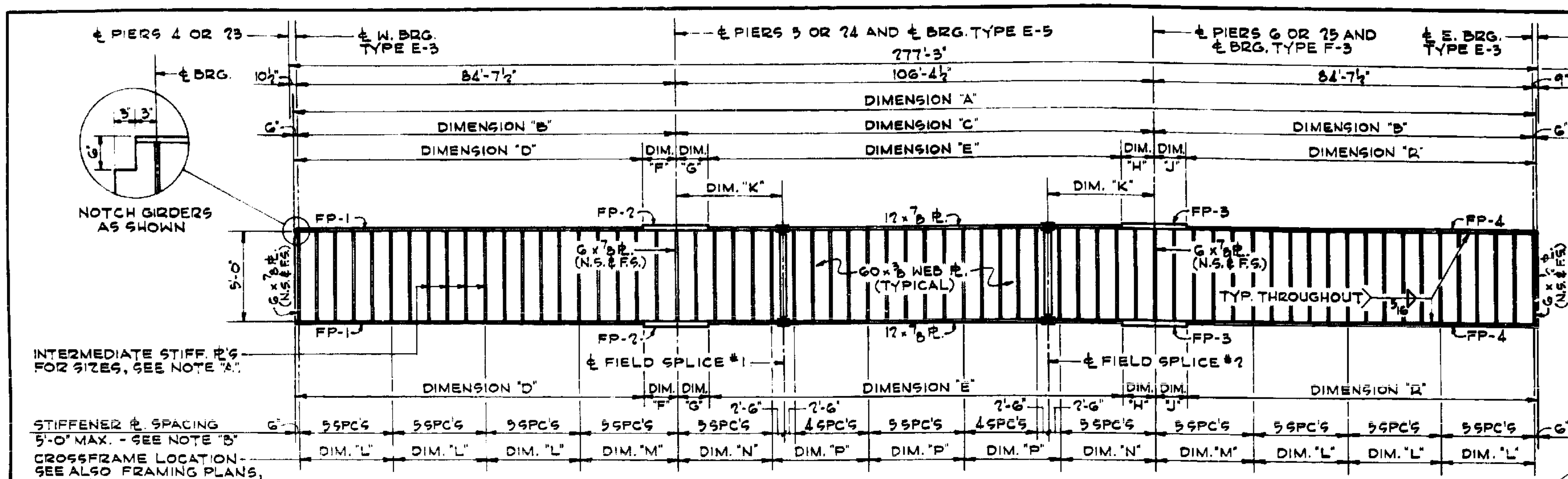
EXISTING PLANS - FRAMING PLAN UNIT B
STRUCTURE NO. 016-2456
SHEET NO. SCX20 OF SCX33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	428

CONTRACT NO. 60W75
ILLINOIS FED. AID PROJECT

F.A.I. RTE.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
I-55	0707-0739HB	COOK	95	65

SHEET NO. 65 SHEETS



ELEVATION OF GIRDERS - STRINGER LINES (12) THRU (22)

FOR ℞. SIZES & DIMENSIONS NOT SHOWN, SEE "TABLE III"

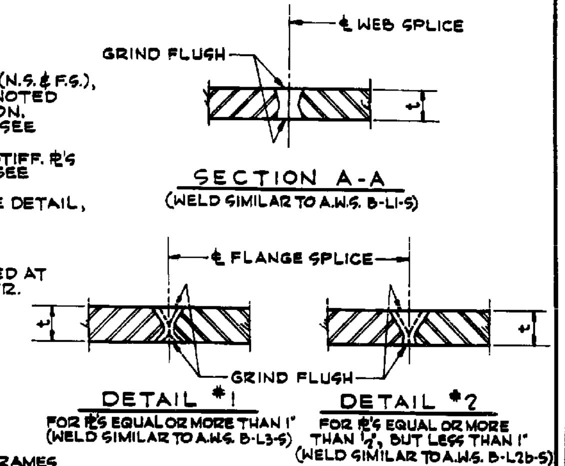
SCALE: 1/16" = 1'-0" HORIZ. & 1/4" = 1'-0" VERT.

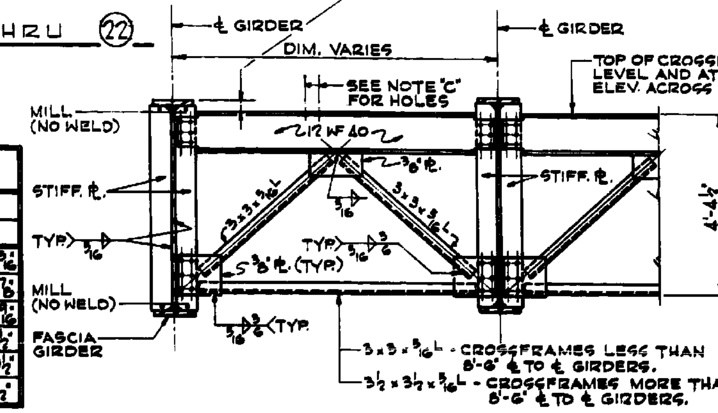
NOTE "A":

INTERMEDIATE STIFF'S - 4 × 3/8 ℞. (N.S. & F.S.), EXCEPT AT CROSSFRAMES & AS NOTED OTHERWISE ON GIRDER ELEVATION. FOR STIFF. ℞'S AT CROSSFRAMES, SEE CROSSFRAME DETAILS, THIS SH. FOR DETAIL OF INTERMEDIATE STIFF. ℞'S OTHER THAN AT CROSSFRAMES, SEE DETAIL "X", THIS SH. FOR STIFF. ℞'S AT BEARINGS SEE DETAIL, THIS SH.

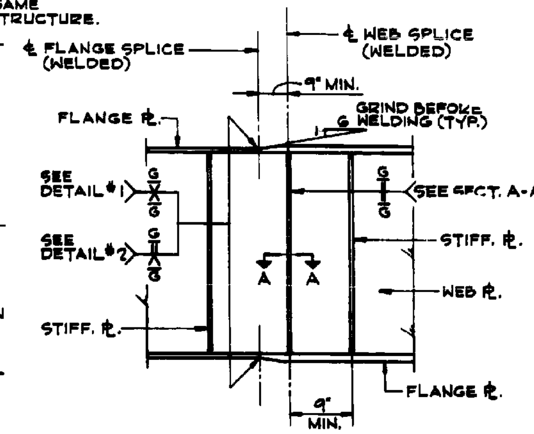
NOTE "B":

ALL STIFFENER ℞'S TO BE WELDED AT RIGHT ANGLES TO WEB OF GIRDER.





END CROSSFRAME DETAIL SCALE: 1/2" = 1'-0"



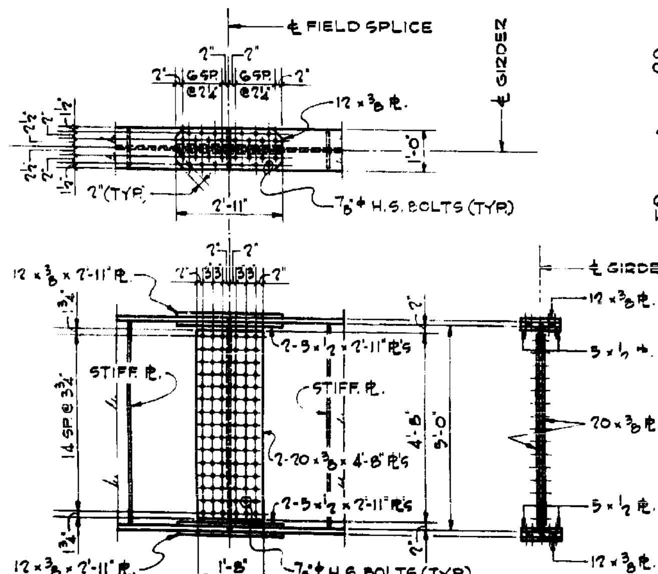
SPLICE ELEVATION

TYPICAL GIRDER SHOP SPLICE DETAILS

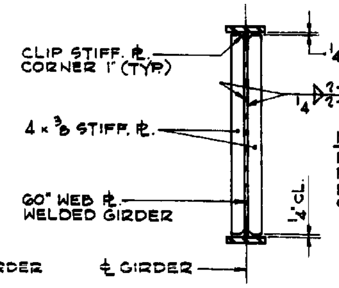
NOT TO SCALE

TABLE III

STRINGER LINE	FLANGE ℞. SIZES FP-1	FP-2	FP-3	FP-4	DIMENSIONS (GIVEN ALONG ℄ GIRDER) "A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"	"K"	"L"	"M"	"N"	"P"	"R"
12	12 × 3/4	12 × 1 1/8	12 × 1 3/8	12 × 1	276'-10 1/8"	84'-8 5/16"	106'-5 1/2"	77'-8 5/16"	92'-11 1/2"	7'-6"	5'-0"	8'-6"	6'-6"	23'-6 1/4"	20'-10 11/16"+	22'-0 3/16"	21'-0 3/16"	21'-5 11/16"+	78'-8 3/16"
13	↓	↓	↓	↓	276'-8 11/16"	84'-7 7/8"	106'-4 13/16"	77'-7 7/8"	92'-10 15/16"	↓	↓	↓	↓	23'-6 5/8"	20'-10 9/16"	22'-0 1/16"	21'-0 1/16"	21'-5 9/16"+	78'-7 7/8"
14	↓	↓	↓	↓	276'-7 3/4"	84'-7 9/16"	106'-4 5/8"	77'-7 9/16"	92'-10 5/8"	↓	↓	↓	↓	23'-6"	20'-10 1/2"+	22'-0"	21'-0"	21'-5 1/2"+	78'-7 9/16"
15	12 × 3/4	12 × 1 1/8	12 × 1 3/8	12 × 1	276'-7 1/2"	84'-7 1/2"	106'-4 1/2"	77'-7 1/2"	92'-10 1/2"	7'-6"	5'-0"	8'-6"	6'-6"	23'-6"	20'-10 1/2"	22'-0"	21'-0"	21'-5 1/2"	78'-7 1/2"
16 & 17	12 × 7/8	12 × 1 1/4	12 × 1 1/4	12 × 7/8	276'-7 1/2"	84'-7 1/2"	106'-4 1/2"	77'-10 1/2"	91'-10 1/2"	7'-3"	7'-3"	7'-3"	7'-3"	23'-6"	20'-10 1/2"	22'-0"	21'-0"	21'-5 1/2"	77'-10 1/2"
18 THRU 22	12 × 7/8	12 × 1 3/8	12 × 1 3/8	12 × 7/8	276'-7 1/2"	84'-7 1/2"	106'-4 1/2"	77'-1 1/2"	90'-4 1/2"	8'-0"	8'-0"	8'-0"	8'-0	23'-6"	20'-10 1/2"	22'-0"	21'-0"	21'-5 1/2"	77'-1 1/2"



TYPICAL FIELD SPLICE DETAIL SCALE: 1/2" = 1'-0"



DETAIL "X" — TYP. INTERMEDIATE STIFFENERS OTHER THAN AT CROSSFRAMES.

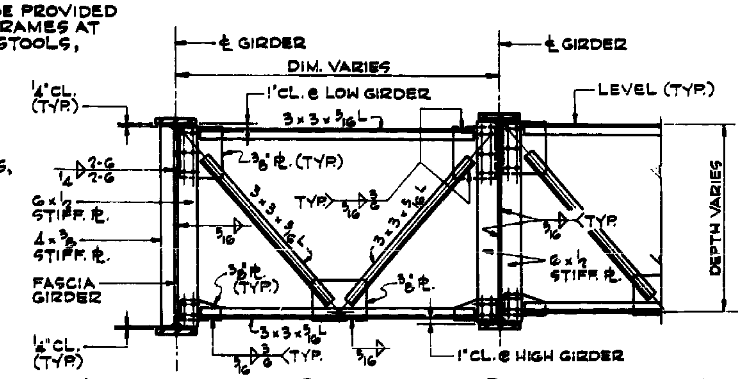
SCALE: 1/2" = 1'-0"

NOTE "C":

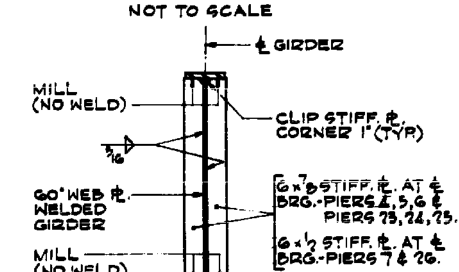
FOR LOCATION OF HOLES TO BE PROVIDED IN TOP CHORD OF END CROSSFRAMES AT PIERS 4 & 23 FOR FINGER ℞. STOOLS, SEE SH. 82.

NOTE:

FOR WELD DETAILS OF STIFF. ℞'S AT CROSSFRAMES, SEE CROSSFRAME DETAILS. FOR WELD DETAILS OF STIFF. ℞'S AT BEARINGS, SEE DETAIL THIS SHEET.



INTERMEDIATE CROSSFRAME DETAIL SCALE: 1/2" = 1'-0"



DETAIL OF BEARING STIFFENER ℞'S AT PIERS

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

TABLE OF MOMENTS AND REACTIONS

UNIT "A" - INTERIOR COMPOSITE BEAMS

	MAX.* MOMENTS	MAX.* REACTIONS
D.L.	544	27
S.D.L.	120	7
L.L.	602	34
IMP.	149	8
TOTAL	1415	76

PROPERTIES	
STEEL SECTION	
I_s	11931
S_{TS}	581
S_{BS}	739
COMPOSITE SECTION	
I_c	26321
I_{TC}	2749
I_{BC}	971

* MOMENTS ARE IN FT. - KIPS
REACTIONS ARE IN KIPS.
FOR MEANING OF SYMBOLS USED IN TABLE SEE LEGEND, SH. 70.

TABLE OF MOMENTS AND REACTIONS - UNIT "A" - 3 SPAN CONTINUOUS INTERIOR GIRDERS

		MOMENTS* .4 SPAN 4-5	PIER 5	.5 SPAN 5-6	PIER 6	.6 SPAN 6-7	REACTIONS* PIER 4	PIER 5	PIER 6	PIER 7
STR. LINE 13, 14 & 15	DEAD LOAD	404	-881	467	-1044	563	27	100	116	36
	LIVE LOAD	565	-632	690	-754	800	35	62	73	49
	IMPACT	135	-146	152	-172	193	8	14	16	12
	TOTAL	1104	-1659	1309	-1970	1556	70	176	205	97
STR. LINE 16	DEAD LOAD	484	-991	485	-991	484	32	110	110	32
	LIVE LOAD	681	-707	680	-707	681	42	67	67	42
	IMPACT	164	-164	149	-163	164	10	16	16	10
	TOTAL	1329	-1862	1287	-1861	1329	84	193	193	84

NOTE:

FOR BILL OF MATERIAL AND "TOP/GIRDER WEB ℞. ELEVATIONS," SEE SH. 63 & SH. 64.

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY V. K. BURKEVICS
DRAWN BY J. A. CHALIKIS
CHECKED J. Milunas
IN CHARGE E. S. MARTINS
APPROVED L. N. RIAN

ILLINOIS DIVISION OF HIGHWAYS

SOUTHWEST EXPRESSWAY

LAWNDALE AVE. VIADUCT

GIRDER & CROSS FRAME DETAILS
UNITS "A" & "B" - MAINLINE

SCALE: AS NOTED DATE 11-25-63

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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FILE NAME = 0162456_60W75_X21_existplan21.dgn	USER NAME = jsurber	DESIGNED - MPL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLANS - GIRDER DETAILS UNIT B STRUCTURE NO. 016-2456
		CHECKED - JLS	REVISED -		
	PLOT SCALE =	DRAWN - PRT	REVISED -		
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -		SHEET NO. SCX21 OF SCX33 SHEETS

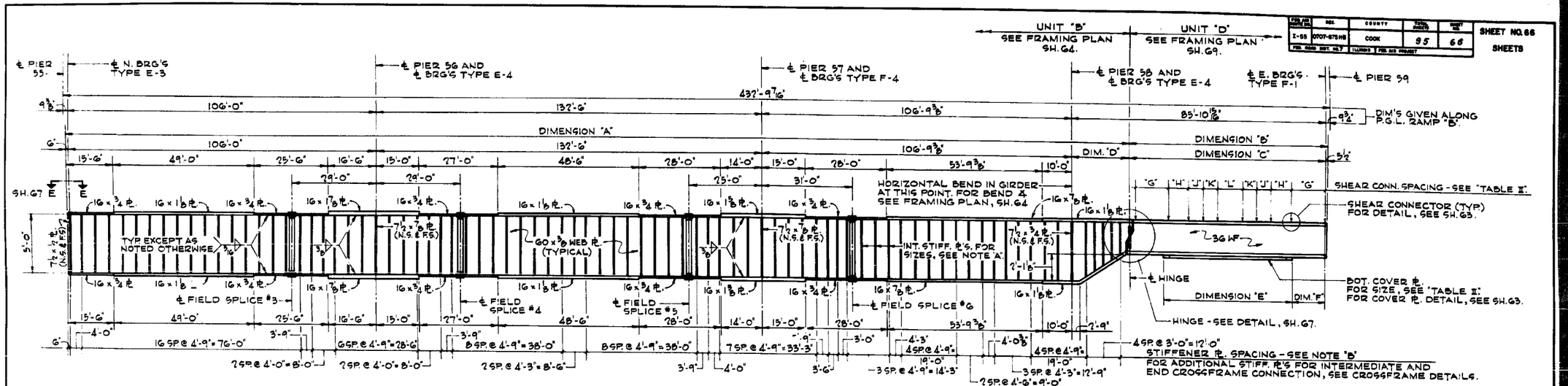
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	429

CONTRACT NO. 60W75

ILLINOIS FED. AID PROJECT

FED. AID PROJECT NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
X-055	0707-675 HB	COOK	95	66
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 66
SHEETS



ELEVATION OF GIRDERS & BEAMS — STRINGER LINES (23) THRU (26)

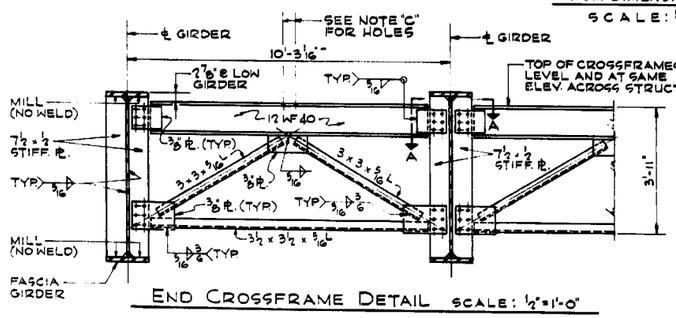
FOR DIMENSIONS NOT SHOWN, SEE "TABLE II"

SCALE: 1/16" = 1'-0" HORIZ. & 1/4" = 1'-0" VERT.

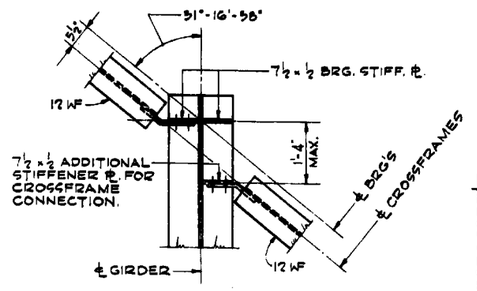
TABLE II

STRINGER LINE	DIMENSIONS *						SHEAR CONNECTOR SPACING					COVER ℄ SIZE
	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"	"K"	"L"	
23	365'-9 3/8"	59'-0 6/16"	59'-0 6/16"	20'-0"	32'-6"	13'-3 1/4"	16 SP @ 9"	4 SP @ 1'-0"	4 SP @ 1'-3"	3 SP @ 1'-6"	4 SP @ 1'-8"	11 x 7/16
24	365'-9 3/8"	62'-2 7/8"	61'-9 3/8"	20'-0"	37'-9"	12'-0 3/16"	18 SP @ 9"	4 SP @ 1'-0"	5 SP @ 1'-3"	2 SP @ 1'-6"	4 SP @ 1'-9"	11 x 7/16
25	365'-9 3/8"	64'-11 6/16"	64'-6 6/16"	20'-0"	42'-0"	11'-3 1/16"	18 SP @ 9"	4 SP @ 1'-0"	4 SP @ 1'-3"	2 SP @ 1'-6"	7 SP @ 1'-9"	11 x 1/2
26	365'-11 6/16"	67'-11 6/16"	67'-5 6/16"	20'-1 6/16"	45'-0"	11'-2 7/16"	18 SP @ 9"	7 SP @ 1'-0"	4 SP @ 1'-3"	2 SP @ 1'-6"	5 SP @ 1'-10"	11 x 5/8

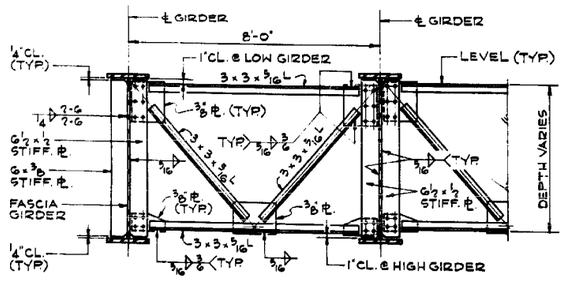
* DIMENSIONS GIVEN ALONG ℄ BEAM & GIRDER.



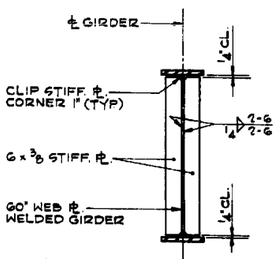
END CROSSFRAME DETAIL SCALE: 1/2" = 1'-0"



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

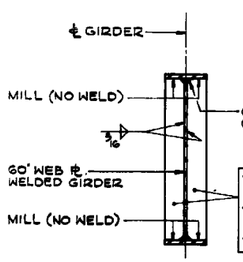


INTERMEDIATE CROSSFRAME DETAIL SCALE: 1/2" = 1'-0"



NOTE:
FOR WELD DETAILS OF STIFF. ℄'S AT CROSSFRAMES, SEE CROSSFRAME DETAILS.
FOR WELD DETAILS OF STIFF. ℄'S AT BEARINGS, SEE DETAIL THIS SHEET.

DETAIL "X" — TYP. INTERMEDIATE STIFFENERS OTHER THAN AT CROSSFRAMES
SCALE: 1/2" = 1'-0"

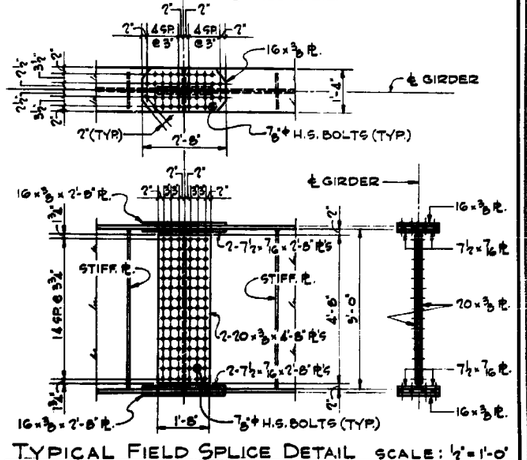


DETAIL OF BEARING STIFFENER ℄'S AT PIERS
SCALE: 1/2" = 1'-0"

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

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

NOTES:
FOR BILL OF MATERIAL, SEE SH. G4.
FOR GIRDER SHOP SPLICE DETAILS, SEE SH. G3.
FOR "TOP/GIRDER WEB ℄. ELEVATIONS," SEE SH. G4.



TYPICAL FIELD SPLICE DETAIL SCALE: 1/2" = 1'-0"

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY V. K. BURKEVICH
DRAWN BY J. A. CHALIKIS
CHECKED O. McEwen
IN CHARGE E. S. MARTINS
APPROVED L. N. RIAN

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWNDALE AVE. VIADUCT
GIRDER & CROSS FRAME DETAILS UNIT "B"-RAMP
SCALE: AS NOTED
DATE 11-25-1963

benesch engineers · scientists · planners
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312-565-0450 Job No. 10093

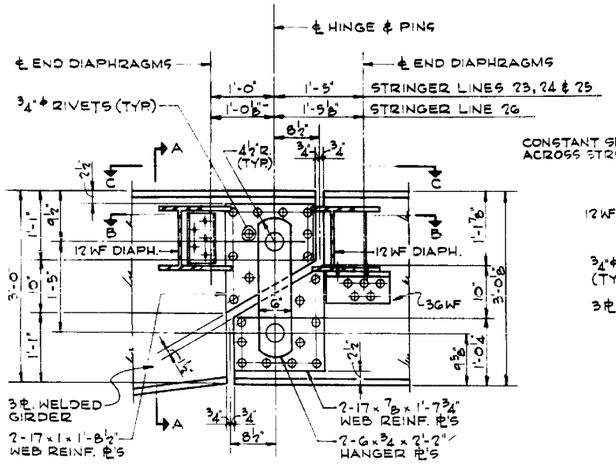
FOR INFORMATION ONLY

FILE NAME = 0162456_60W75_X22_existplan22.dgn	USER NAME = jsurber	DESIGNED - MPL	REVISED -
		CHECKED - JLS	REVISED -
	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

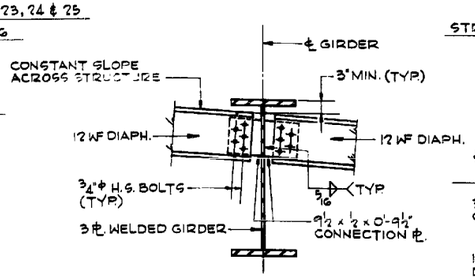
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS — GIRDER DETAILS UNIT B RAMP B
STRUCTURE NO. 016-2456
SHEET NO. SCX22 OF SCX33 SHEETS

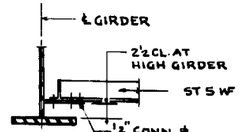
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	430
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



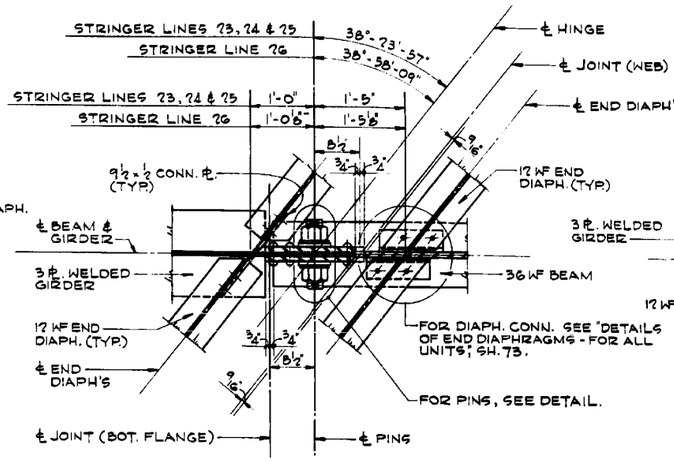
HINGE DETAIL - ELEVATION
SCALE: 1"=1'-0"



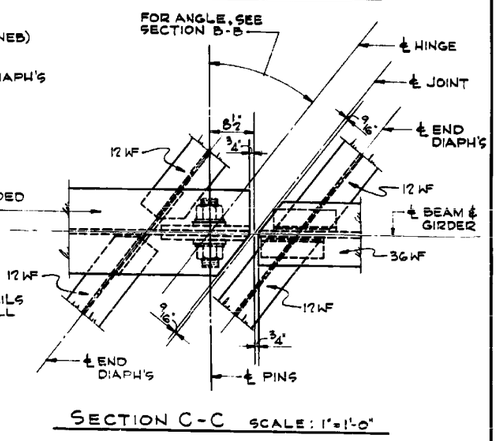
SECTION A-A
SCALE: 3/4"=1'-0"



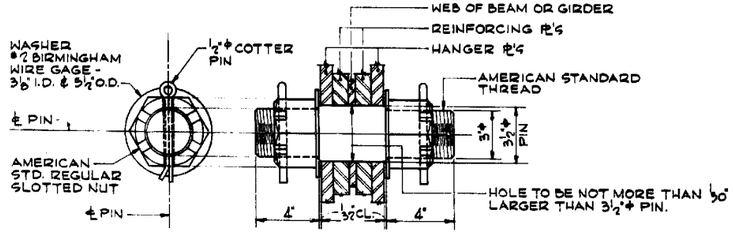
SECTION D-D
SCALE: 3/4"=1'-0"



SECTION B-B SCALE: 1"=1'-0"
SHOWING DETAILS OF END DIAPHRAGMS D, D1, D2 & D3 AT HINGE



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

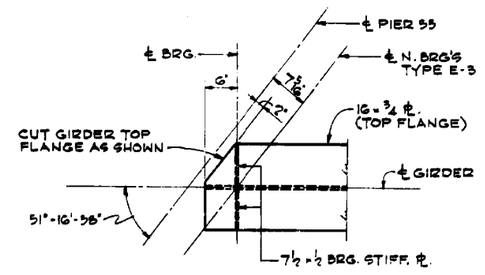


PIN DETAIL SCALE: 3"=1'-0"

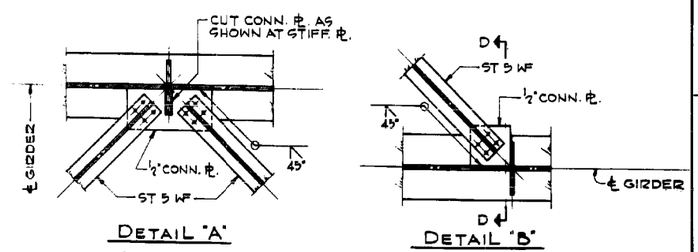
TABLE OF MOMENTS AND REACTIONS
UNIT "B" - WEST BOUND ROADWAY - INTERIOR GIRDERS

	MOMENTS					REACTIONS			
	.4 SPAN 23-24	PIER 24	.5 SPAN 24-25	PIER 25	.6 SPAN 25-26	PIER 23	PIER 24	PIER 25	PIER 26
DEAD LOAD	510	-1045	483	-1045	510	33	116	116	33
LIVE LOAD	727	-754	725	-754	727	45	72	72	45
IMPACT	174	-173	159	-173	174	11	16	16	11
TOTAL	1411	-1972	1367	-1972	1411	89	204	204	89

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



SECTION E-E
REFER TO "ELEVATION OF GIRDERS & BEAMS," SH. 66
SCALE: 1"=1'-0"



DETAIL "A"
DETAIL "B"

NOTE: USE SIMILAR BENT ℄. CONNECTION WITHIN WEB DEPTH TRANSITION & GIRDER CANTILEVER.

CONN. DETAILS OF BOT. LATERAL BRACING
FOR LOCATION OF DETAILS, SEE FRAMING PLANS SH. 63 & SH. 64.
SCALE: 3/4"=1'-0"

REVISIONS

HANGER PLATES & PINS
MISC. STEEL DETAIL
UNITS A&B

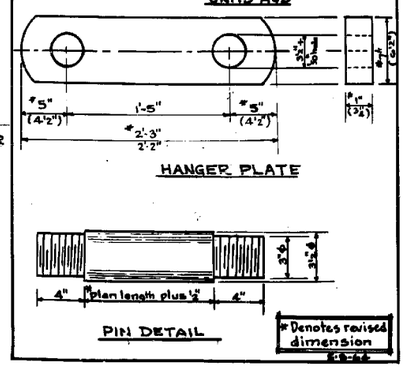


TABLE OF MOMENTS AND REACTIONS
UNIT "B" - RAMP "B" - INTERIOR GIRDERS

	MOMENTS						REACTIONS				
	.4 SPAN 55-56	PIER 56	.5 SPAN 56-57	PIER 57	.6 SPAN 57-58	PIER 58	PIER 55	PIER 56	PIER 57	PIER 58	HINGE
DEAD LOAD	838	-1782	870	-1526	426	-905	44	135	142	111	35
LIVE LOAD	955	-1154	986	-1119	947	-845	47	86	86	70	45
IMPACT	210	-236	187	-229	208	-268	10	18	18	21	13
TOTAL	2003	-3172	2043	-2874	1713*	-2068	101	239	246	202	93

MOMENTS ARE IN FT.-KIPS.
REACTIONS ARE IN KIPS.
* DESIGN MOMENT INCREASED ACCORDING TO A.A.S.H.O. REQUIREMENT FOR ALTERNATE STRESS.

NOTE:
FOR BILL OF MATERIAL, SEE SH. 63 & SH. 64.

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY

LAWNDALE AVE. VIADUCT
MISCELLANEOUS STEEL DETAILS UNITS A & B

SCALE: AS NOTED | DATE 11-25-1963

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY V.K. BURKEVICS
DRAWN BY J.A. CHALIKIS
CHECKED
IN CHARGE E.S. MARTINS
APPROVED L.N. RIAN

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		CHECKED - JLS	REVISED -
	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS – MISC. STEEL DETAILS UNIT B
STRUCTURE NO. 016-2456
SHEET NO. SCX23 OF SCX33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	431
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

6/9/2015 9:45:42 PM Y:\chicago\10000S\10093\Eng_Docs_Phase_II\SN_016_2456_2457_1st_Ave_over_Des_Plaines_River_Valley_Final\2456 Final\0162456.60W75_X23_existplan23.dgn

FED. ROAD DIST. NO.	STATE	COUNTY	TOTAL SHEETS	SHEET NO.
I-55	0707-079HB	COOK	95	69
	ILLINOIS	FED. AID PROJECT		

SHEET NO. 69
SHEETS

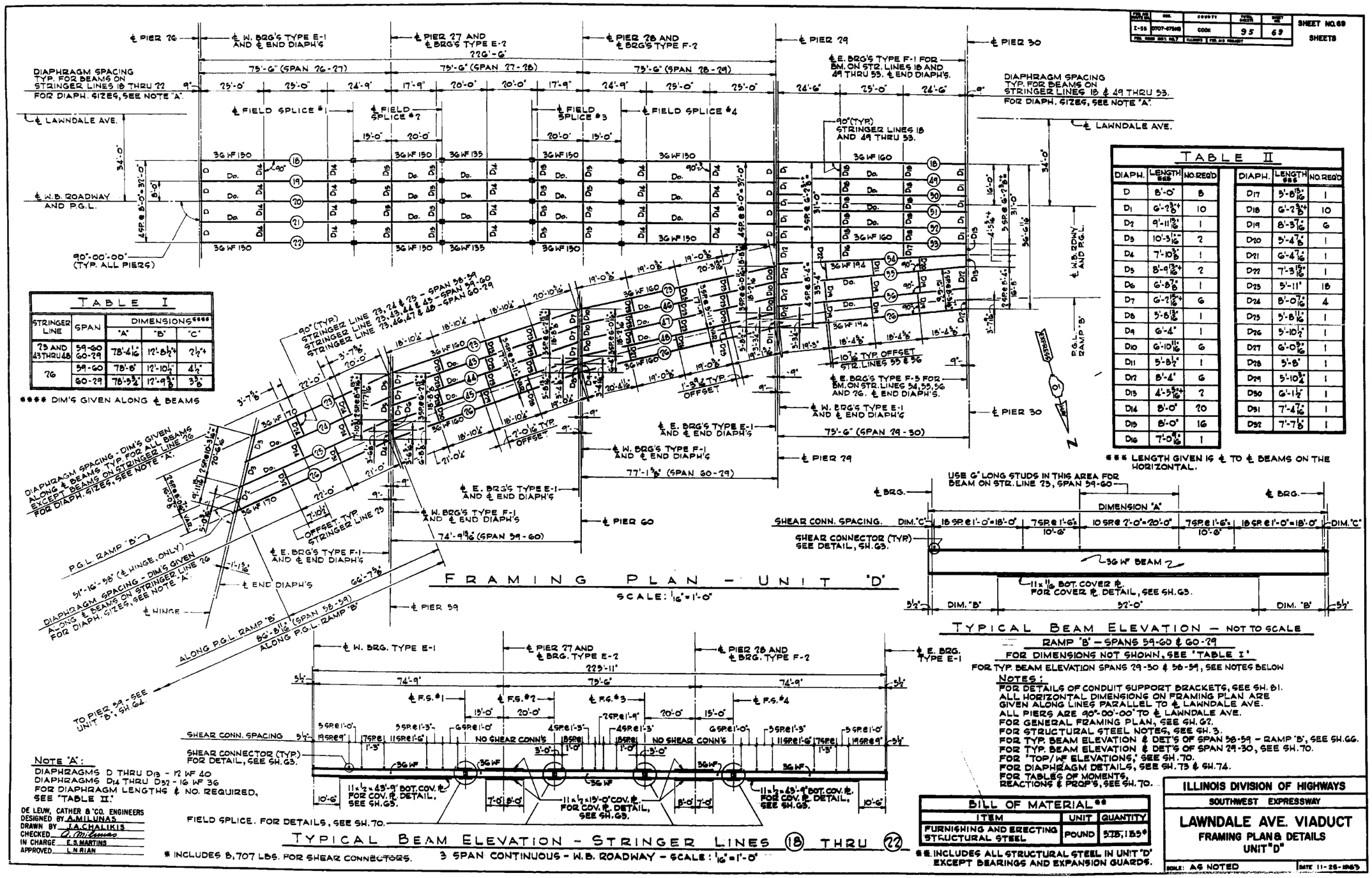

TABLE I

STRINGER LINE	SPAN	DIMENSIONS**** "A"	"B"	"C"
73 AND 43 THRU 48	59-60	78'-4 1/16"	12'-8 1/2"	7 1/2"
	60-29	78'-6"	12'-10 1/2"	4 1/2"
76	59-60	78'-5 3/4"	12'-9 3/4"	3 3/8"
	60-29	78'-5 3/4"	12'-9 3/4"	3 3/8"

**** DIM'S GIVEN ALONG ℄ BEAMS

TABLE II

DIAPH.	LENGTH ***	NO. REQ'D
D	8'-0"	8
D1	6'-2 3/4"	10
D2	9'-11 13/16"	1
D3	10'-3 1/16"	2
D4	7'-10 3/8"	1
D5	8'-9 13/16"	2
D6	6'-8 7/8"	1
D7	6'-2 13/16"	6
D8	5'-8 13/16"	1
D9	6'-4"	1
D10	6'-10 11/16"	6
D11	5'-8 1/2"	1
D12	8'-4"	6
D13	4'-5 13/16"	2
D14	8'-0"	70
D15	8'-0"	16
D16	7'-0 9/16"	1

DIAPH.	LENGTH ***	NO. REQ'D
D17	5'-8 13/16"	1
D18	6'-2 3/4"	10
D19	8'-3 7/16"	6
D20	5'-4 7/8"	1
D21	6'-4 7/16"	1
D22	7'-3 15/16"	1
D23	5'-11"	18
D24	8'-0 7/16"	4
D25	5'-8 11/16"	1
D26	5'-10 1/2"	1
D27	6'-0 9/16"	1
D28	5'-8"	1
D29	5'-10 3/4"	1
D30	6'-1 1/2"	1
D31	7'-4 7/16"	1
D32	7'-7 1/8"	1

*** LENGTH GIVEN IS ℄ TO ℄ BEAMS ON THE HORIZONTAL.

NOTE "A":
DIAPHRAGMS D THRU D13 - 12 WF 40
DIAPHRAGMS D14 THRU D32 - 16 WF 36
FOR DIAPHRAGM LENGTHS & NO. REQUIRED, SEE "TABLE II."

NOTES:
FOR DETAILS OF CONDUIT SUPPORT BRACKETS, SEE SH. 81.
ALL HORIZONTAL DIMENSIONS ON FRAMING PLAN ARE GIVEN ALONG LINES PARALLEL TO ℄ LAWNDALE AVE.
ALL PIERS ARE 90°-00'-00" TO ℄ LAWNDALE AVE.
FOR GENERAL FRAMING PLAN, SEE SH. G2.
FOR STRUCTURAL STEEL NOTES, SEE SH. 3.
FOR TYP. BEAM ELEVATION & DET'S OF SPAN 58-59 - RAMP "B", SEE SH. G6.
FOR TYP. BEAM ELEVATION & DET'S OF SPAN 29-30, SEE SH. 70.
FOR "TOP / WF ELEVATIONS," SEE SH. 70.
FOR DIAPHRAGM DETAILS, SEE SH. 73 & SH. 74.
FOR TABLES OF MOMENTS, REACTIONS & PROP'S, SEE SH. 70.

BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	515,185*

* INCLUDES 8,707 LBS. FOR SHEAR CONNECTORS.
** INCLUDES ALL STRUCTURAL STEEL IN UNIT "D" EXCEPT BEARINGS AND EXPANSION GUARDS.

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY A. MILUNAS
DRAWN BY I.A. CHALIKIS
CHECKED A. Milunas
IN CHARGE E.S. MARTINS
APPROVED L.N. RIAN

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY

LAWNDALE AVE. VIADUCT
FRAMING PLAN & DETAILS
UNIT "D"

SCALE: AS NOTED
DATE 11-25-1963

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

FOR INFORMATION ONLY

FILE NAME = 0162456_60W75_X24_existplan24.dgn	USER NAME = jsurber	DESIGNED - MPL	REVISED -
		CHECKED - JLS	REVISED -
	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS - FRAMING PLAN UNIT D
STRUCTURE NO. 016-2456
SHEET NO. SCX24 OF SCX33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	432
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

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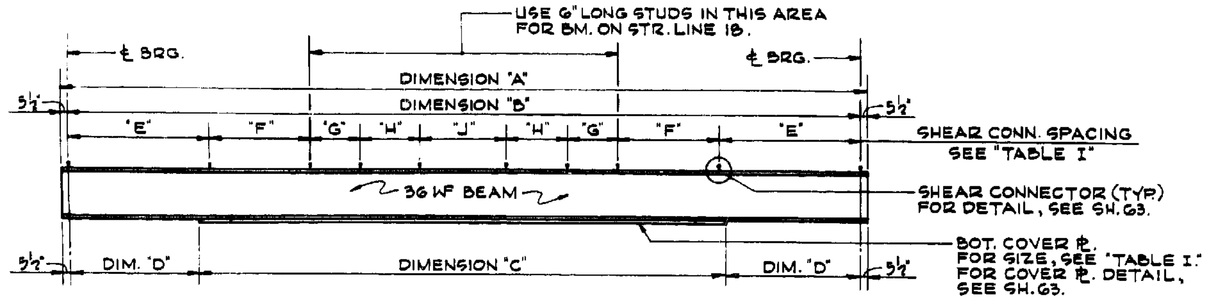


TYPICAL BEAM ELEVATION

UNIT "D" - SPAN 29-30

FOR DIMENSIONS NOT SHOWN, SEE "TABLE I"

NOT TO SCALE

TABLE I

STRINGER LINE	DIMENSIONS ** "A"	"B"	"C"	"D"	SHEAR CONNECTOR SPACING "E"	"F"	"G"	"H"	"J"	COVER ℄. SIZE
18, 49 THRU 53	74'-11"	74'-0"	49'-0"	12'-6"	17 SP. @ 11"	6 SP. @ 1'-3"	3 SP. @ 1'-6"	2 SP. @ 1'-8½"	6 SP. @ 2'-0"	11 x ⅝
54	75'-0¼"	74'-1¼"	52'-6"	10'-9⅝"	18 SP. @ 9"	10 SP. @ 1'-0"	4 SP. @ 1'-3"	4 SP. @ 1'-6"	3 SP. @ 1'-8¾"	11 x 1⅛
55, 56 & 26	75'-3⅞"	74'-4⅞"	52'-6"	10'-11 7/16"	18 SP. @ 9"	10 SP. @ 1'-0"	4 SP. @ 1'-3"	4 SP. @ 1'-6"	3 SP. @ 1'-10"	11 x 1⅛

** DIMENSIONS GIVEN ALONG ℄ BEAM.

TOP/WF ELEVATIONS - UNIT "D"

LOCATION \ STRINGER LINE	18 & 22	19 & 21	20
PIER 26 - ℄ W. BRG.	623.996	624.096	624.176
℄ FIELD SPLICE #1	624.721	624.821	624.901
℄ PIER 27	624.913	625.013	625.093
℄ FIELD SPLICE #2	625.168	625.268	625.348
℄ FIELD SPLICE #3	625.660	625.760	625.840
℄ PIER 28	625.969	626.069	626.149
℄ FIELD SPLICE #4	626.201	626.301	626.381
PIER 29 - ℄ E. BRG.	627.127	627.227	627.307

STRINGER LINE \ LOCATION	℄ HINGE - EL. @ T/GIRDER FLG. ℄	PIER 59 ℄ E. BRG.
23	622.338	623.844
24	621.881	623.326
25	621.412	622.771
26	621.035	622.332

STRINGER LINE \ LOCATION	PIER 59 ℄ W. BRG.	PIER 60 ℄ E. BRG.	PIER 60 ℄ W. BRG.	PIER 29 ℄ E. BRG.
23	623.884	625.748	625.783	627.075
43 & 46	623.517	625.297	625.347	626.698
44 & 47	623.117	624.783	624.847	626.269
45 & 48	622.724	624.273	624.351	625.837
26	622.363	623.865	623.895	625.482

STRINGER LINE \ LOCATION	PIER 29 ℄ W. BRG.	PIER 30 ℄ E. BRG.
18	627.149	628.259
49	627.231	628.341
50	627.293	628.403
51	627.303	628.413
52	627.241	628.351
53	627.139	628.249
54	627.049	628.134
55	626.640	627.902
56	626.058	627.447
26	625.514	627.055

PROPERTIES - UNIT "D"

3 SPAN CONTINUOUS INTERIOR BEAMS

SPAN	26-27 & 28-29	27-28
STRING. LINE	19 THRU 21	19 THRU 21
STEEL SECTION		
I_S	10627	7796
S_{TS}	533	437
S_{BS}	648	437
COMPOSITE SECTION		
I_C	24333	17837
S_{TC}	16594	14333
S_{BC}	864	602

TABLE OF MOMENTS AND REACTIONS - SIMPLE SPANS

UNIT "D" - INTERIOR COMPOSITE BEAMS

STRINGER LINE	SPAN		MAX.* MOMENTS	MAX.* REACTIONS	PROPERTIES	
24	℄ HINGE - 59	STEEL SECTION D.L.	440	28.0	STEEL SECTION I_S	11940
			COMPOSITE SECTION		S_{TS}	606
		S.D.L.	103	6.7	S_{BS}	706
		L.L.	612	44.6	COMPOSITE SECTION I_C	26030
		IMP.	164	11.9	S_{TC}	17243
		TOTAL	879	63.2	S_{BC}	930
25	℄ HINGE - 59	STEEL SECTION D.L.	481	29.3	STEEL SECTION I_S	12135
			COMPOSITE SECTION		S_{TS}	610
		S.D.L.	113	7.0	S_{BS}	724
		L.L.	648	45.0	COMPOSITE SECTION I_C	26567
		IMP.	171	11.9	S_{TC}	17391
		TOTAL	932	63.9	S_{BC}	953
43 THRU 48	56-60 & 60-29	STEEL SECTION D.L.	544	27.4	STEEL SECTION I_S	11930
			COMPOSITE SECTION		S_{TS}	581
		S.D.L.	120	6.2	S_{BS}	739
		L.L.	602	34.1	COMPOSITE SECTION I_C	26321
		IMP.	149	8.4	S_{TC}	16375
		TOTAL	871	48.7	S_{BC}	971
49 THRU 52	29-30	STEEL SECTION D.L.	519	27.3	STEEL SECTION I_S	11751
			COMPOSITE SECTION		S_{TS}	578
		S.D.L.	127	6.9	S_{BS}	721
		L.L.	596	35.5	COMPOSITE SECTION I_C	26167
		IMP.	150	8.9	S_{TC}	16753
		TOTAL	873	51.3	S_{BC}	951
55 & 56	29-30	STEEL SECTION D.L.	690	36.0	STEEL SECTION I_S	15699
			COMPOSITE SECTION		S_{TS}	727
		S.D.L.	161	8.8	S_{BS}	980
		L.L.	803	47.5	COMPOSITE SECTION I_C	34044
		IMP.	201	11.9	S_{TC}	19404
		TOTAL	1165	68.2	S_{BC}	1282

TABLE OF MOMENTS AND REACTIONS

UNIT "D" - 3 SPAN CONTINUOUS INTERIOR BEAMS

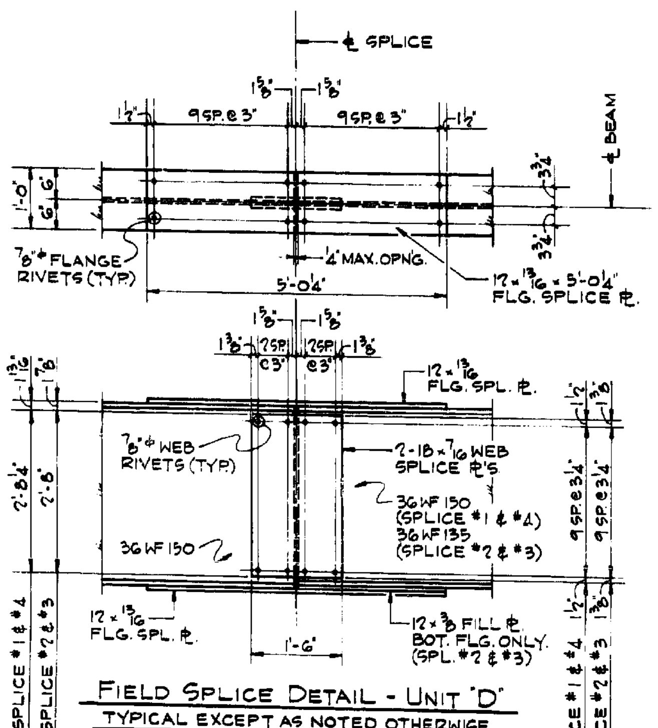
	MOMENTS* .4 SPAN 26-27	PIER 27	.5 SPAN 27-28	PIER 28	.6 SPAN 28-29	REACTIONS* PIER 26	PIER 27	PIER 28	PIER 29
D.L.	387	-517	114	-517	387	26.2	73.4	73.4	26.2
S.D.L.	95	-96	46	-96	95	6.2	16.2	16.2	6.2
L.L.	656	-403	532	-403	656	44.7	59.4	59.4	44.7
IMP.	164	-101	133	-101	164	11.3	14.9	14.9	11.3
TOTAL COMPOSITE	915	–	711	–	915	–	–	–	–
TOTAL STEEL	387	-1117	114	-1117	387	88.4	163.9	163.9	88.4

* MOMENTS ARE IN FT.-KIPS. REACTIONS ARE IN KIPS.

TABLE OF MOMENTS AND REACTIONS

UNIT "C" - INTERIOR COMPOSITE BEAMS

STRINGER LINE	SPAN		MAX.* MOMENTS	MAX.* REACTIONS	PROPERTIES	
27 THRU 29	7-8	STEEL SECTION D.L.	452	23.6	STEEL SECTION I_S	9713
			COMPOSITE SECTION		S_{TS}	475
		S.D.L.	56	4.6	S_{BS}	617
		L.L.	522	30.7	COMPOSITE SECTION I_C	22887
		IMP.	131	7.7	S_{TC}	14452
		TOTAL	739	43.0	S_{BC}	837
30	7-8	STEEL SECTION D.L.	458	24.1	STEEL SECTION I_S	10440
			COMPOSITE SECTION		S_{TS}	530
40 & 41	9-10	S.D.L.	102	5.6	S_{BS}	630
		L.L.	530	31.5	COMPOSITE SECTION I_C	23310
		IMP.	133	7.9	S_{TC}	14963
		TOTAL	765	45.0	S_{BC}	842
33 THRU 37	7-8	STEEL SECTION D.L.	530	28.0	STEEL SECTION I_S	11751
32 THRU 37	8-9		COMPOSITE SECTION		S_{TS}	578
33 THRU 37	9-10	S.D.L.	112	6.0	S_{BS}	721
34 THRU 37	10-11	L.L.	604	36.0	COMPOSITE SECTION I_C	26961
		IMP.	152	9.0	S_{TC}	17156
		TOTAL	868	51.0	S_{BC}	966
38 & 39	8-9	STEEL SECTION D.L.	496	26.0	STEEL SECTION I_S	11380
			COMPOSITE SECTION		S_{TS}	573
		S.D.L.	99	5.4	S_{BS}	683
		L.L.	575	34.0	COMPOSITE SECTION I_C	25490
		IMP.	144	8.6	S_{TC}	16287
		TOTAL	818	48.0	S_{BC}	915
33 & 42	10-11	STEEL SECTION D.L.	534	28.2	STEEL SECTION I_S	11933
			COMPOSITE SECTION		S_{TS}	582
		S.D.L.	117	6.3	S_{BS}	737
		L.L.	632	37.6	COMPOSITE SECTION I_C	27762
		IMP.	159	9.4	S_{TC}	17682
		TOTAL	908	53.3	S_{BC}	992



FIELD SPLICE DETAIL - UNIT "D"

TYPICAL EXCEPT AS NOTED OTHERWISE

FIELD SPLICE #1, #2 & #4 - AS SHOWN

FIELD SPLICE #3 - SIMILAR, BUT OPP. HAND

SCALE: ¾" = 1'-0"

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY Y.N. HUO
DRAWN BY J.A. CHALIKIS
CHECKED [signature]
IN CHARGE E.S. MARTINS
APPROVED L.N. RIAN

LEGEND:

FOR SYMBOLS USED IN TABLES OF MOMENTS, REACTIONS AND PROPERTIES.

- D.L. — DEAD LOAD.
- S.D.L. — SUPERIMPOSED DEAD LOAD ACTING ON COMPOSITE SECTION.
- L.L. — LIVE LOAD.
- IMP. — IMPACT.
- I_S — MOMENT OF INERTIA STEEL SECTION.
- S_{TS} — SECTION MODULUS - TOP STEEL SECTION.
- S_{BS} — SECTION MODULUS - BOT. STEEL SECTION.
- I_C — MOMENT OF INERTIA COMPOSITE SECTION.
- S_{TC} — SECTION MODULUS - TOP COMPOSITE SECTION.
- S_{BC} — SECTION MODULUS - BOT. COMPOSITE SECTION.

NOTE: FOR BILL OF MATERIAL, SEE SH. 69.

I-55 | 0707-67CHB | COOK | 95 | 70 | SHEET NO. 70 SHEETS

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWNDALE AVE. VIADUCT
STEEL DETAILS - UNIT "D" & TABLE OF MOMENTS & SHEARS - UNIT "C"
SCALE: AS NOTED | DATE 11-25-1963

FOR INFORMATION ONLY

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

FILE NAME = 0162456_60W75_X25_existplan25.dgn	USER NAME = jsurber	DESIGNED - MPL	REVISED -
	PLOT SCALE =	CHECKED - JLS	REVISED -
	PLOT DATE = 6/9/2015	DRAWN - PRT	REVISED -
		CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

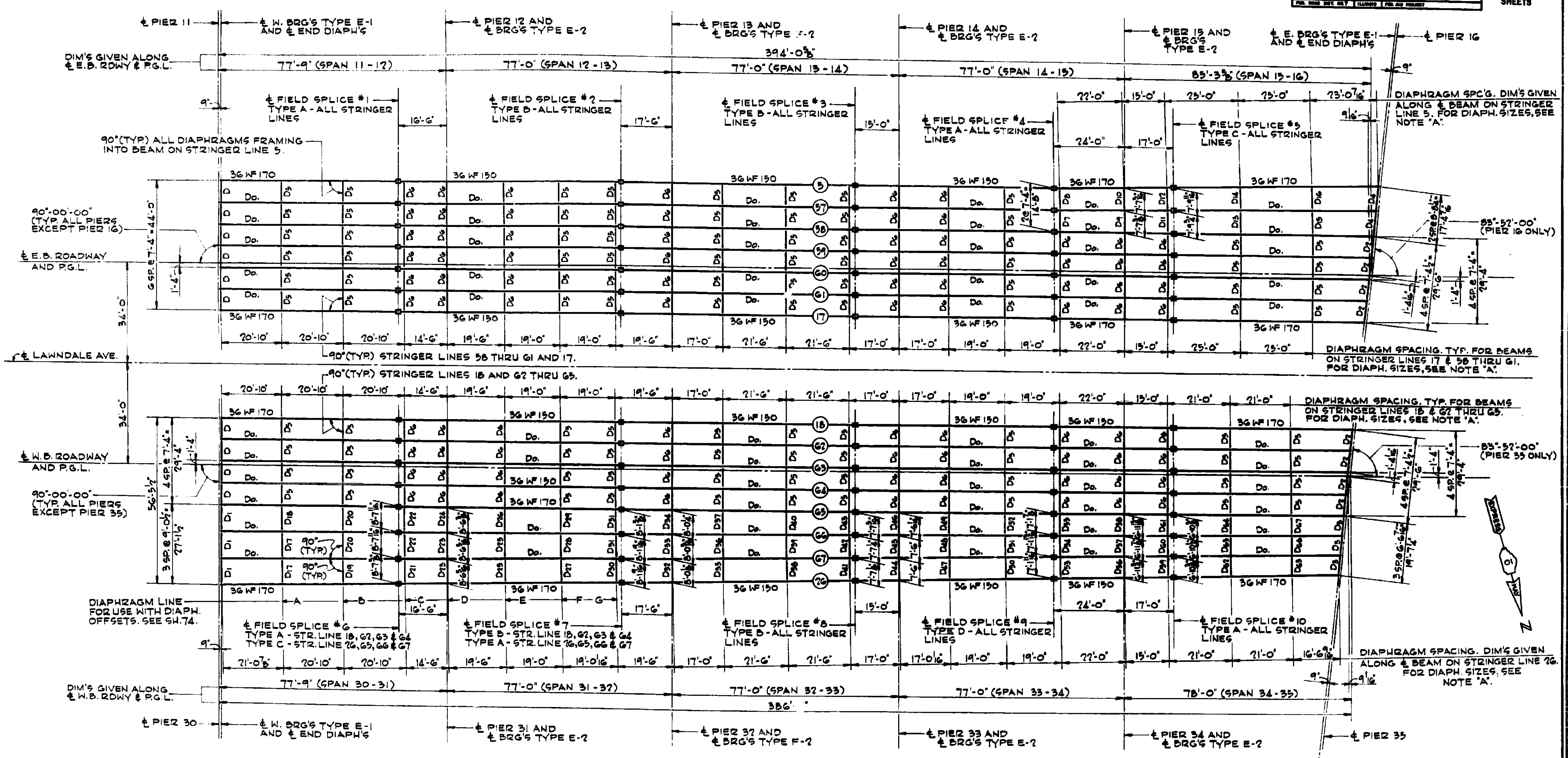
EXISTING PLANS - BEAM DETAILS UNIT D
STRUCTURE NO. 016-2456
SHEET NO. SCX25 OF SCX33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	433

CONTRACT NO. 60W75
ILLINOIS FED. AID PROJECT

I-55	C707-675-10	COOK	95	71

SHEET NO. 71
SHEETS



FRAMING PLAN - UNIT 'E'

SCALE: 1/16" = 1'-0"

NOTE "A":
DIAPHRAGMS D THRU D4 - 12 WF 40
DIAPHRAGMS D5 THRU D67 - 16 WF 36
FOR DIAPHRAGM LENGTHS & NO. REQUIRED, SEE "TABLE II," SH. 72.

NOTES:
FOR GENERAL FRAMING PLAN, SEE SH. 62.
FOR STRUCTURAL STEEL NOTES, SEE SH. 3.
FOR TYPICAL BEAM ELEVATION & DETAILS, SEE SH. 72.
FOR "TOP/WF ELEVATIONS," SEE SH. 72.
FOR DIAPHRAGM DETAILS, SEE SH. 73 & SH. 74.
FOR TABLES OF MOMENTS, REACTIONS & PROPERTIES, SEE SH. 73.
FOR DETAILS OF CONDUIT SUPPORT BRACKETS, SEE SH. 81.

* INCLUDES 6,546 LBS. FOR SHEAR CONNECTORS

BILL OF MATERIAL **		
ITEM	UNIT	QUANTITY
FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	1,142,092*

** INCLUDES ALL STRUCTURAL STEEL IN UNIT "E" EXCEPT BEARINGS AND EXPANSION GUARDS.

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY T. BRUNOVSKIS
DRAWN BY J.A. CHALIKIS
CHECKED A. Milunas
IN CHARGE E.S. MARTINS
APPROVED L.N. RIAN

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWNDALE AVE. VIADUCT
FRAMING PLAN
UNIT "E"
SCALE: AS NOTED
DATE 11-25-1969

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

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FILE NAME =	USER NAME = jsurber	DESIGNED - MPL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLANS - FRAMING PLAN UNIT E STRUCTURE NO. 016-2456	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0162456_60W75_X26_existplan26.dgn	PLOT SCALE =	CHECKED - JLS	REVISED -			372	2013-037B-R	COOK	787	434
	PLOT DATE = 6/9/2015	DRAWN - PRT	REVISED -		SHEET NO. SCX26 OF SCX33 SHEETS	CONTRACT NO. 60W75				
		CHECKED - JLS	REVISED -			ILLINOIS FED. AID PROJECT				

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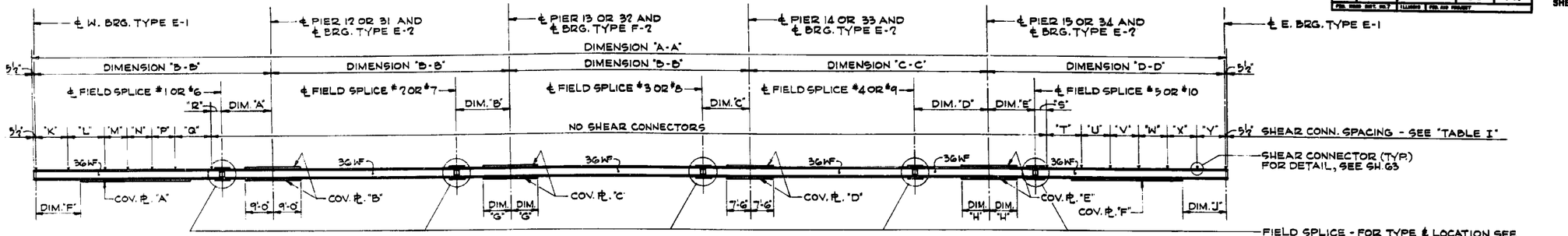
FED. ROAD DIST. NO.	STATE	COUNTY	TOTAL SHEETS	SHEET NO.
E-88	0707-675NB	COOK	95	72
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SHEET NO. 72
SHEETS



TYPICAL BEAM ELEVATION

FOR DIMENSIONS NOT SHOWN & COVER PLATE SIZES, SEE "TABLE I"

SCALE: 1/16" = 1'-0"

TABLE I

STRINGER LINE	DIMENSIONS (GIVEN ALONG ℄ BEAM) "A-A"	"B-B"	"C-C"	"D-D"	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"	SHEAR CONNECTOR SPACING "K"	"L"	"M"	"N"	"P"	"Q"	"R"	"S"	"T"	"U"	"V"	"W"	"X"	"Y"	COVER PLATE SIZE - FOR COVER PLATE DETAIL, SEE SH. G3. COV. PL. "A"	COV. PL. "B"	COV. PL. "C"	COV. PL. "D"	COV. PL. "E"	COV. PL. "F"
5	396'-9 5/16"	77'-0"	77'-0 1/16"	87'-10 5/16"	16'-6"	17'-6"	15'-0"	24'-0 1/16"	17'-0 1/16"	14'-6"	7'-6"	11'-0"	11'-6"	14@PR9"	12@PR1'-0"	5@PR1'-6"	4@PR2'-0"	5@PR1'-6"	12@PR1'-0"	3'-0"	4'-4 1/4"	12@PR9"	13@PR1'-0"	11@PR1'-6"	4@PR1'-3"	8@PR1'-0"	20@PR9"	11"x 7/16"x 36'-0"	11"x 5/8"x 18'-0"	11"x 7/16"x 15'-0"	11"x 1/2"x 22'-0"	11"x 1 1/16"x 92'-0"	11"x 1 1/16"x 92'-0"
57	395'-9 5/16"		77'-0"	86'-10 5/16"				24'-0"	17'-0"			11'-0"	11'-0"								3'-4 5/16"	12@PR9"	13@PR1'-0"	11@PR1'-6"	4@PR1'-3"	8@PR1'-0"	20@PR9"				11"x 1 1/16"x 22'-0"	11"x 1 1/16"x 92'-0"	11"x 1 1/16"x 92'-0"
58	394'-10 1/4"			85'-11 3/4"								11'-0"	10'-6"								3'-11 5/16"	12@PR9"	13@PR1'-0"	10@PR1'-6"	4@PR1'-3"	8@PR1'-0"	20@PR9"				11"x 1 1/16"x 22'-0"	11"x 1 1/16"x 92'-0"	11"x 1 1/16"x 92'-0"
59	394'-1 5/16"			85'-1 7/16"								10'-0"	12'-6"								3'-2 5/16"	16@PR9"	6@PR1'-0"	6@PR1'-6"	3@PR2'-0"	6@PR1'-0"	16@PR9"	12@PR9"			11"x 3/4"x 20'-0"	11"x 1 1/16"x 44'-0"	11"x 1 1/16"x 44'-0"
60	393'-3 3/16"			84'-4 13/16"									12'-0"								4'-4 1/2"				7@PR2'-0"							11"x 1 1/16"x 44'-0"	11"x 1 1/16"x 44'-0"
61	392'-6 1/4"			83'-7 7/8"									12'-9"								3'-7 5/8"				7@PR2'-0"							11"x 1 1/16"x 47'-0"	11"x 1 1/16"x 47'-0"
17	391'-8 5/16"			82'-9 15/16"									12'-6"								4'-9 15/16"	16@PR1'-0"	6@PR1'-6"	6@PR1'-6"	1@PR2'-0"	6@PR1'-0"	16@PR9"	12@PR9"				11"x 1 1/16"x 47'-0"	11"x 1 1/16"x 47'-0"
18	387'-10 9/16"			78'-11 9/16"									13'-6"								4'-5 9/16"	12@PR1'-0"	5@PR1'-6"	5@PR1'-6"	4@PR2'-0"	5@PR1'-6"	12@PR1'-0"	14@PR9"				11"x 1 1/16"x 40'-0"	11"x 1 1/16"x 40'-0"
G2	387'-1 5/8"			78'-2 5/8"								10'-0"	13'-6"								3'-8 5/8"				4@PR2'-0"							11"x 3/4"x 20'-0"	11"x 1 1/16"x 38'-0"
G3	386'-3 11/16"			77'-4 11/16"								9'-0"	14'-6"								2'-10 11/16"				4@PR2'-0"							11"x 3/4"x 18'-0"	11"x 1 1/16"x 36'-0"
G4	385'-6 5/16"			76'-7 3/16"						14'-6"	7'-6"		14'-6"	14@PR9"	12@PR1'-0"	5@PR1'-6"	4@PR2'-0"	5@PR1'-6"	12@PR1'-0"	3'-0"	4'-1 5/16"				3@PR2'-0"				11"x 7/16"x 36'-0"	11"x 3/4"x 18'-0"	11"x 3/16"x 15'-0"		11"x 3/4"x 18'-0"	11"x 1 1/16"x 36'-0"
G5	384'-8 3/4"	77'-0"	77'-0"	75'-9 3/4"						11'-6"	9'-0"		14'-0"	16@PR9"	9@PR1'-0"	4@PR1'-3"	10@PR1'-6"	11@PR1'-0"	6@PR9"	4'-0"	3'-3 3/4"				3@PR2'-0"				11"x 7/16"x 42'-0"	11"x 3/4"x 18'-0"	11"x 1/2"x 18'-0"		11"x 3/4"x 18'-0"	11"x 1 1/16"x 36'-0"
G6	384'-0 1/4"	77'-0"	77'-0"	75'-1 3/8"				24'-0"	17'-0"				—							4'-0"	2'-7 3/8"				3@PR2'-0"							11"x 1/2"x 18'-0"	NONE
G7	383'-4 3/8"	77'-0 1/16"	77'-0 1/16"	74'-5 1/16"	16'-6"	17'-6"	15'-0"	24'-0"	17'-0 1/16"				—							4'-0 1/16"	3'-11 1/16"				2@PR2'-0"							11"x 1/2"x 18'-0"	NONE
76	382'-8 1/16"	77'-0 9/16"	77'-0 9/16"	73'-8 1/16"	16'-6 1/16"	17'-6 1/16"	15'-0 1/16"	24'-0 1/16"	17'-0 1/16"	11'-6"	9'-0"	9'-0"	—	16@PR9"	9@PR1'-0"	4@PR1'-3"	10@PR1'-6"	11@PR1'-0"	6@PR9"	4'-0 1/8"	3'-2 3/4"	17@PR9"	5@PR1'-6"	7@PR2'-0"	5@PR1'-6"	12@PR1'-0"	14@PR9"	11"x 9/16"x 42'-0"	11"x 3/4"x 18'-0"	11"x 1/2"x 18'-0"	11"x 7/16"x 15'-0"	11"x 1/2"x 18'-0"	NONE

TABLE II

DIAPH.	LENGTH **	NO. REQ'D
D	7'-4"	10
D1	9'-0 1/2"	3
D2	7'-4 1/2"	8
D3	6'-6 7/16"	3
D4	8'-8 1/2"	2
D5	7'-4"	96
D6	7'-4"	84
D7	7'-4 5/16"	1
D8	7'-4 1/4"	1
D9	7'-7 3/8"	1
D10	7'-7 5/16"	1
D11	7'-9 1/2"	1
D12	7'-9 3/8"	1
D13	8'-1"	1
D14	8'-0 7/8"	1

DIAPH.	LENGTH **	NO. REQ'D
D15	8'-4 9/16"	1
D16	8'-4 1/16"	1
D17	8'-10 1/16"	2
D18	8'-10 5/16"	1
D19	8'-9 1/16"	1
D20	8'-9 3/16"	2
D21	8'-7 7/16"	1
D22	8'-7 1/2"	2
D23	8'-6 9/16"	2
D24	8'-6 5/8"	1
D25	8'-4 3/8"	2
D26	8'-4 15/16"	1
D27	8'-3 5/16"	1
D28	8'-3 1/4"	1
D29	8'-3 7/16"	1

DIAPH.	LENGTH **	NO. REQ'D
D30	8'-1 11/16"	1
D31	8'-1 3/4"	2
D32	8'-0 1/8"	1
D33	8'-0 3/16"	1
D34	8'-0 1/4"	1
D35	7'-10 3/4"	1
D36	7'-10 15/16"	1
D37	7'-10 7/8"	1
D38	7'-9"	1
D39	7'-9 1/16"	1
D40	7'-9 3/16"	1
D41	7'-7 7/16"	1
D42	7'-7 3/8"	1
D43	7'-7 1/16"	1
D44	7'-5 15/16"	1
D45	7'-6"	1
D46	7'-6 1/16"	1
D47	7'-4 9/16"	1
D48	7'-4 5/8"	1

DIAPH.	LENGTH **	NO. REQ'D
D49	7'-4 3/4"	1
D50	7'-3 1/16"	1
D51	7'-3 1/8"	1
D52	7'-3 7/16"	1
D53	7'-1 1/2"	1
D54	7'-1 5/8"	1
D55	7'-1 11/16"	1
D56	6'-11 3/4"	1
D57	6'-11 7/8"	1
D58	6'-11 15/16"	1
D59	6'-10 9/16"	1
D60	6'-10 5/8"	1
D61	6'-10 3/4"	1
D62	6'-8 5/8"	1
D63	6'-9"	1
D64	6'-9 1/16"	1
D65	6'-7 5/16"	1
D66	6'-7 1/8"	1
D67	6'-7 7/16"	1

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY T. BRUNOVSKIS
DRAWN BY J. A. CHALIKIS
CHECKED A. Milunas
IN CHARGE E. S. MARTINS
APPROVED L. N. RIAN

** LENGTH GIVEN IS ℄ TO ℄ BEAMS ON THE HORIZONTAL.

TOP / WF ELEVATIONS — UNIT "E"

EAST BOUND ROADWAY

STRINGER LINE / LOCATION	5	57	58	59	60	61	17
PIER 11 - ℄ W. BRG.	627.974	628.091	628.237	628.334	628.381	628.308	628.219
℄ FIELD SPLICE #1	628.887	628.998	629.145	629.242	629.288	629.215	629.127
℄ PIER 12	629.179	629.246	629.392	629.489	629.536	629.463	629.374
℄ FIELD SPLICE #2	630.022	630.138	630.285	630.382	630.428	630.355	630.267
℄ PIER 13	630.284	630.401	630.547	630.644	630.691	630.618	630.529
℄ FIELD SPLICE #3	631.214	631.331	631.477	631.574	631.621	631.548	631.459
℄ PIER 14	631.459	631.556	631.702	631.799	631.846	631.773	631.684
℄ FIELD SPLICE #4	632.234	632.351	632.497	632.594	632.641	632.568	632.479
℄ PIER 15	632.594	632.711	632.857	632.954	633.001	632.928	632.839
℄ FIELD SPLICE #5	632.849	632.966	633.112	633.209	633.256	633.183	633.094
PIER 16 - ℄ E. BRG.	633.912	634.014	634.147	634.232	634.267	634.182	634.087

WEST BOUND ROADWAY

STRINGER LINE / LOCATION	18	G2	G3	G4	G5	G6	G7	76
PIER 30 - ℄ W. BRG.	628.219	628.308	628.391	628.345	628.232	628.070	627.926	627.085
℄ FIELD SPLICE #6	629.127	629.215	629.299	629.252	629.140	628.855	628.547	628.294
℄ PIER 31	629.374	629.463	629.546	629.500	629.387	629.136	628.860	628.633
℄ FIELD SPLICE #7	630.267	630.355	630.439	630.392	630.280	630.148	629.985	629.853
℄ PIER 32	630.529	630.618	630.701	630.655	630.542	630.413	630.253	630.122
℄ FIELD SPLICE #8	631.459	631.548	631.631	631.585	631.472	631.351	631.199	631.077
℄ PIER 33	631.684	631.773	631.856	631.810	631.697	631.578	631.428	631.308
℄ FIELD SPLICE #9	632.479	632.568	632.651	632.605	632.492	632.380	632.237	632.124
℄ PIER 34	632.839	632.928	633.011	632.965	632.852	632.743	632.604	632.494
℄ FIELD SPLICE #10	633.094	633.183	633.266	633.220	633.107	633.001	632.863	632.756
PIER 35 - ℄ E. BRG.	634.024	634.100	634.177	634.114	633.984	633.922	633.781	633.671

NOTE: FOR BILL OF MATERIAL, SEE SH. 71.

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWNDALE AVE. VIADUCT
STEEL DETAILS - UNIT "E"
SCALE: AS NOTED
DATE 11-25-63

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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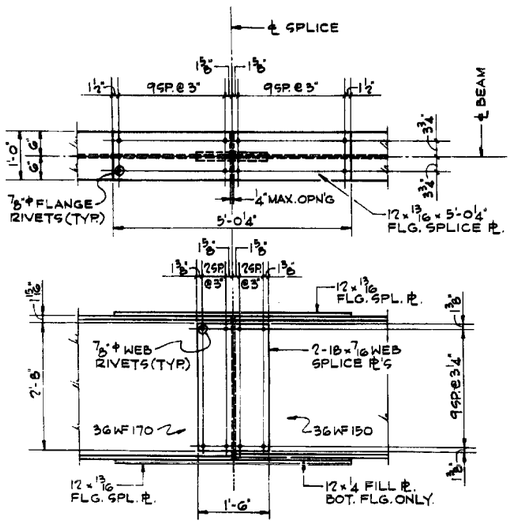
0162456_60W75_X27_existplan27.dgn		CHECKED - JLS	REVISED -
	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

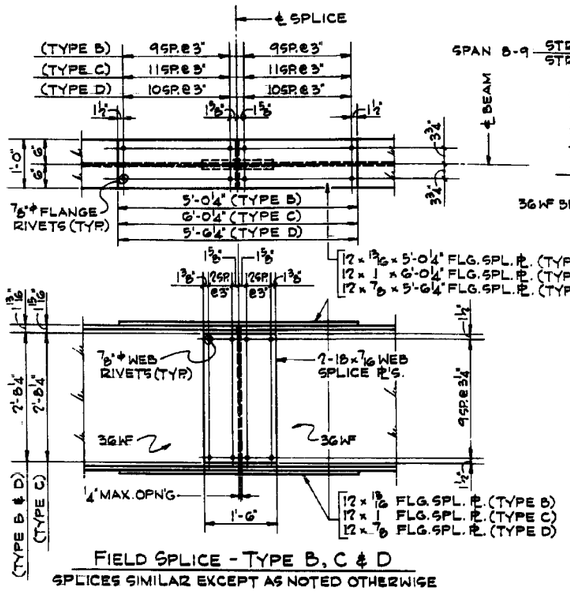
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS — BEAM DETAILS UNIT E
STRUCTURE NO. 016-2456
SHEET NO. SCX27 OF SCX33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	435
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



FIELD SPLICE - TYPE A



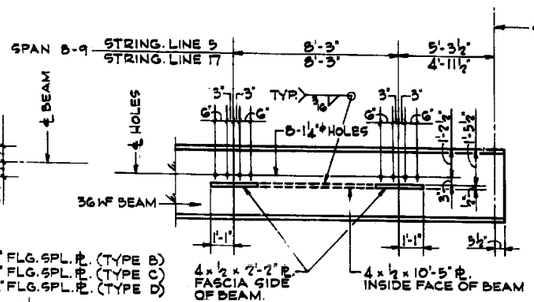
FIELD SPLICE - TYPE B, C & D

SPLICES SIMILAR EXCEPT AS NOTED OTHERWISE

FIELD SPLICE DETAILS - UNIT 'E'

FOR SPLICE TYPE LOCATION SEE 'FRAMING PLAN - UNIT 'E', SH. 71

SCALE: ¾"=1'-0"



DETAIL "A"

REFER TO "TYP. BEAM ELEVATION", SH. 68

NOT TO SCALE

PROJECT NO.	CODE	COUNTY	TOTAL SHEETS	SHEET NO.
X-55	0707-675HB	COOK	95	73
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SHEET NO. 73
SHEETS

PROPERTIES - UNIT 'E' - 5 SPAN CONTINUOUS INTERIOR BEAMS

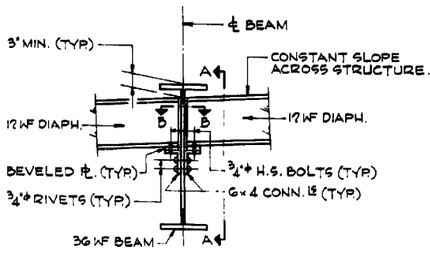
SPAN	11-12 & 30-31	30-31	15-16	15-16	15-16	15-16
STRINGER LINE	57 THRU 64	65,66,67	57,58	59,60,61	62 THRU 65	66,67
STEEL SECTION						
I_S	11940	12326	13237	12700	11940	10470
S_{TS}	607	613	628	619	607	579
S_{BS}	706	747	829	777	706	579
COMPOSITE SECTION						
I_C	26030	27099	29696	28151	26030	22140
S_{TC}	17243	17535	18199	17811	17243	16067
S_{BC}	930	975	1091	1022	930	767

TABLE OF MOMENTS AND REACTIONS - UNIT 'E' - 5 SPAN CONTINUOUS INTERIOR BEAMS

		MOMENTS*									REACTIONS*					
		.4 SPAN 11-12 30-31	PIER 12 PIER 31	.5 SPAN 12-13 31-32	PIER 13 PIER 32	.5 SPAN 13-14 32-33	PIER 14 PIER 33	.5 SPAN 14-15 33-34	PIER 15 PIER 34	.6 SPAN 15-16 34-35	PIER 11 PIER 30	PIER 12 PIER 31	PIER 13 PIER 32	PIER 14 PIER 33	PIER 15 PIER 34	PIER 16 PIER 35
STRINGER LINE 57, 58	D.L.	391	-537	151	-422	228	-380	105	-700	550	76.0	74.6	69.1	61.8	85.5	33.4
	S.D.L.	83	-94	36	-87	42	-81	30	-110	112	5.3	14.4	13.1	12.6	13.6	6.2
	L.L.	658	-440	442	-452	451	-449	439	-520	806	41.4	56.5	55.3	55.1	62.0	49.5
	IMP.	157	-109	108	-112	112	-111	109	-125	184	10.2	14.0	13.6	13.6	15.3	11.6
	TOTAL COMPOSITE	878	—	—	—	—	—	—	—	1107	—	—	—	—	—	—
	TOTAL STEEL	391	-1180	737	-1073	833	-1021	683	-1455	550	82.9	159.5	147.1	143.1	178.4	101.2
STRINGER LINE 59, 60, 61	D.L.	391	-537	151	-422	228	-380	105	-670	516	76.0	74.6	69.1	61.8	82.1	29.8
	S.D.L.	83	-94	36	-87	42	-81	30	-110	110	5.3	14.4	13.1	12.6	13.6	6.2
	L.L.	658	-440	442	-452	451	-449	439	-501	745	41.4	56.5	55.3	55.1	59.6	42.9
	IMP.	157	-109	108	-112	112	-111	109	-121	175	10.2	14.0	13.6	13.6	14.3	10.0
	TOTAL COMPOSITE	878	—	—	—	—	—	—	—	1030	—	—	—	—	—	—
	TOTAL STEEL	391	-1180	737	-1073	833	-1021	683	-1402	516	82.9	159.5	147.1	143.1	171.6	88.5
STRINGER LINE 62	D.L.	385	-563	147	-414	222	-414	147	-588	410	73.7	75.3	64.1	64.1	77.4	26.5
	S.D.L.	83	-97	35	-85	41	-85	35	-99	86	5.3	14.5	12.9	12.9	14.7	5.5
	L.L.	634	-455	436	-447	451	-447	436	-462	661	41.4	56.9	55.1	55.1	57.4	41.6
	IMP.	156	-112	107	-111	111	-111	107	-114	163	10.2	14.0	13.6	13.6	14.0	10.2
	TOTAL COMPOSITE	873	—	—	—	—	—	—	—	910	—	—	—	—	—	—
	TOTAL STEEL	385	-1227	727	-1057	825	-1057	727	-1263	410	82.6	160.7	145.7	145.7	163.9	83.8
STRINGER LINE 63, 64	D.L.	385	-563	147	-414	222	-414	147	-563	385	73.7	75.3	64.1	64.1	75.3	25.7
	S.D.L.	83	-97	35	-85	41	-85	35	-97	83	5.3	14.5	12.9	12.9	14.5	5.3
	L.L.	634	-455	436	-447	451	-447	436	-455	634	41.4	56.9	55.1	55.1	56.9	41.4
	IMP.	156	-112	107	-111	111	-111	107	-112	156	10.2	14.0	13.6	13.6	14.0	10.2
	TOTAL COMPOSITE	873	—	—	—	—	—	—	—	873	—	—	—	—	—	—
	TOTAL STEEL	385	-1227	727	-1057	825	-1057	727	-1227	385	82.6	160.7	145.7	145.7	160.7	82.6
STRINGER LINE 65	D.L.	440	-633	161	-426	227	-432	157	-563	385	79.3	84.3	67.2	65.3	75.3	25.7
	S.D.L.	82	-97	36	-83	41	-87	36	-97	83	5.3	14.5	12.9	13.0	14.5	5.3
	L.L.	760	-524	508	-480	475	-464	456	-455	634	51.1	66.2	60.1	56.6	56.9	41.4
	IMP.	188	-129	126	-119	117	-114	108	-112	156	12.6	16.7	14.9	14.1	14.0	10.2
	TOTAL COMPOSITE	1030	—	—	—	—	—	—	—	873	—	—	—	—	—	—
	TOTAL STEEL	440	-1383	851	-1108	860	-1097	737	-1227	385	98.3	181.7	155.1	149.0	160.7	82.6
STRINGER LINE 66, 67	D.L.	440	-633	161	-426	227	-432	157	-502	328	79.3	84.3	67.2	65.3	70.1	23.4
	S.D.L.	82	-97	36	-83	41	-87	36	-93	76	5.3	14.5	12.9	13.0	14.2	5.1
	L.L.	760	-524	508	-480	475	-464	456	-423	565	51.1	66.2	60.1	56.6	53.8	36.3
	IMP.	188	-129	126	-119	117	-114	108	-105	140	12.6	16.7	14.9	14.1	13.3	9.1
	TOTAL COMPOSITE	1030	—	—	—	—	—	—	—	781	—	—	—	—	—	—
	TOTAL STEEL	440	-1383	851	-1108	860	-1097	737	-1173	328	98.3	181.7	155.1	149.0	151.4	75.9

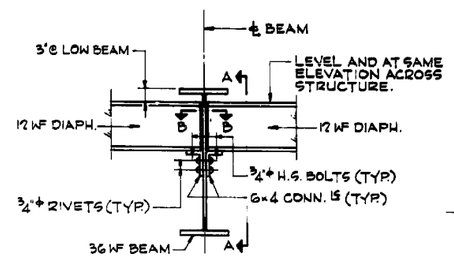
* MOMENTS ARE IN FT.-KIPS.
REACTIONS ARE IN KIPS.
FOR MEANING OF SYMBOLS USED IN TABLES OF MOMENTS, REACTIONS & PROPERTIES SEE LEGEND, SH. 70.

NOTE:
FOR BILL OF MATERIAL SEE SH. 63, 68, 69 & 71.



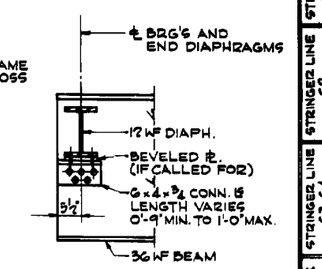
END DIAPHRAGM DETAIL

UNIT "A" - DIAPHRAGMS D THRU D8
UNIT "C" - DIAPHRAGMS D_1 THRU D6
UNIT "D" - DIAPHRAGMS D_2 THRU D13
UNIT "E" - DIAPHRAGMS D_1



END DIAPHRAGM DETAIL

UNIT "C" - DIAPHRAGMS D AND D_7
UNIT "D" - DIAPHRAGMS D AND D_1
UNIT "E" - DIAPHRAGMS D, D_2, D_3 & D_4



SECTION A-A

SCALE: ¾"=1'-0"

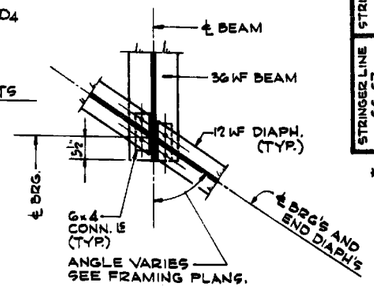
DETAILS OF END DIAPHRAGMS - FOR ALL UNITS

SEAT ANGLES MAY BE SHOP CONNECTED WITH ¾"ø H.S. BOLTS OR ¼" C.F.W. IN LIEU OF ¾"ø RIVETS

FOR DIAPHRAGM LOCATIONS, SEE FRAMING PLANS

FOR INTERMEDIATE DIAPHRAGM DETAILS, SEE SH. 74

SCALE: ¾"=1'-0"



SECTION B-B SCALE: ¾"=1'-0"

NOTE:
FOR LOCATION OF HOLES TO BE PROVIDED IN END DIAPHRAGMS @ PIERS 16 & 35 FOR FINGER PL. STOOLS, SEE SH. 84 & SH. 85.

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY T. BRUNOVSKIS
DRAWN BY J. A. CHALIKIS
CHECKED D. Mikunas
IN CHARGE E. S. MARTINS
APPROVED L. N. RIAN

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY

LAWNDALE AVE. VIADUCT
MISCELLANEOUS STEEL DETAILS AND TABLES

SCALE: AS NOTED | DATE 11-25-63

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

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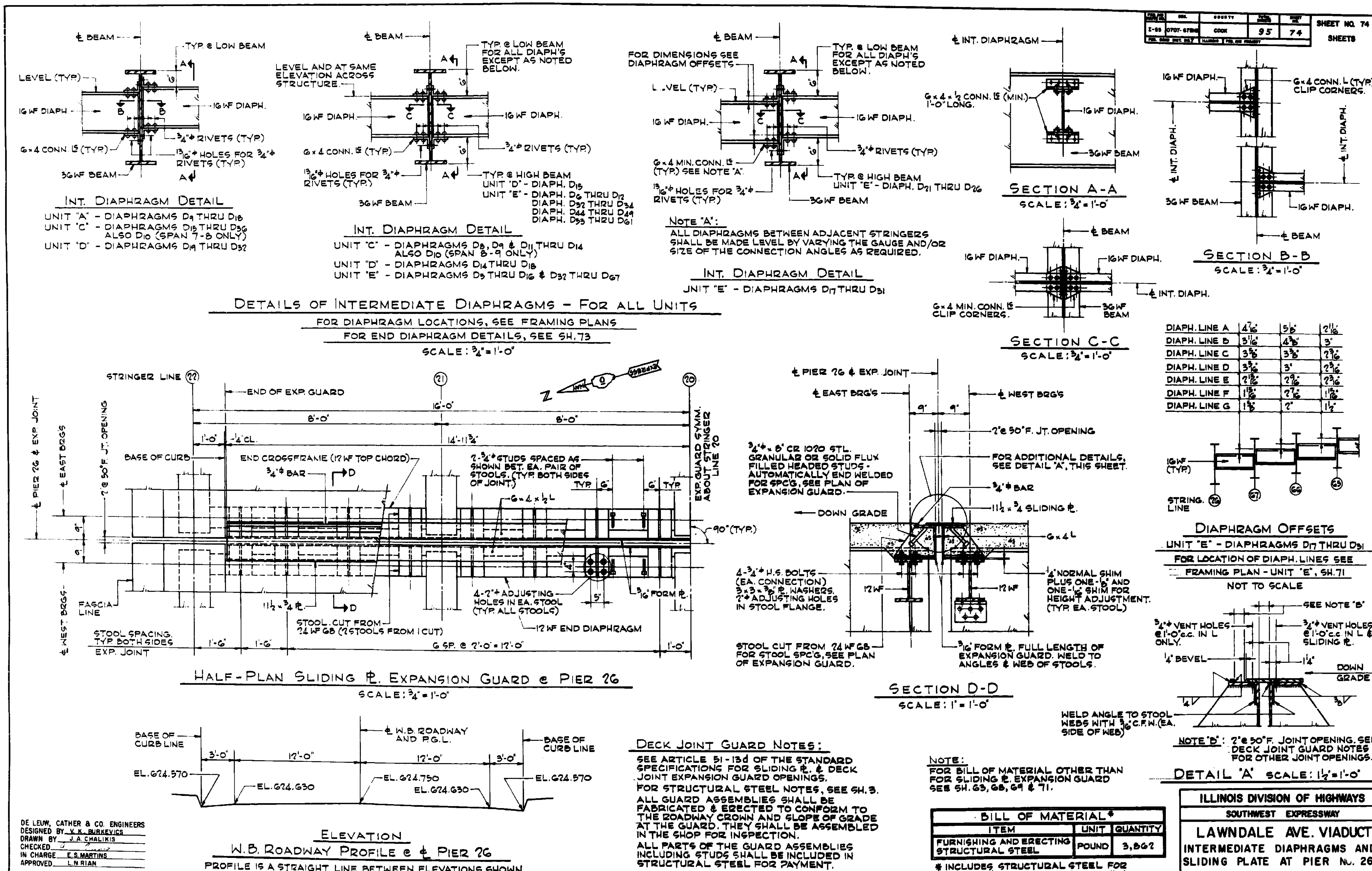
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS - MISC. STEEL DETAILS
STRUCTURE NO. 016-2456
SHEET NO. SCX28 OF SCX33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	436
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		



DIAPH. LINE A	4 7/16"	5 1/8"	2 11/16"
DIAPH. LINE B	3 11/16"	4 3/8"	3"
DIAPH. LINE C	3 5/8"	3 3/8"	2 3/16"
DIAPH. LINE D	3 5/16"	3"	2 3/16"
DIAPH. LINE E	2 13/16"	2 9/16"	2 3/16"
DIAPH. LINE F	1 15/16"	2 7/16"	1 15/16"
DIAPH. LINE G	1 5/8"	2"	1 1/2"

DECK JOINT GUARD NOTES:

SEE ARTICLE 51-13d OF THE STANDARD SPECIFICATIONS FOR SLIDING ℙ & DECK JOINT EXPANSION GUARD OPENINGS.

FOR STRUCTURAL STEEL NOTES, SEE SH. 3.

ALL GUARD ASSEMBLIES SHALL BE FABRICATED & ERECTED TO CONFORM TO THE ROADWAY CROWN AND SLOPE OF GRADE AT THE GUARD. THEY SHALL BE ASSEMBLED IN THE SHOP FOR INSPECTION.

ALL PARTS OF THE GUARD ASSEMBLIES INCLUDING STUDS SHALL BE INCLUDED IN STRUCTURAL STEEL FOR PAYMENT.

NOTE: FOR BILL OF MATERIAL OTHER THAN FOR SLIDING ℙ EXPANSION GUARD SEE SH. 63, 68, 69 & 71.

BILL OF MATERIAL*

ITEM	UNIT	QUANTITY
FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	3,862

* INCLUDES STRUCTURAL STEEL FOR SLIDING ℙ EXPANSION GUARD ONLY.

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY V. K. BURKEVICS
DRAWN BY J. A. CHALIKIS
CHECKED
IN CHARGE E. S. MARTINS
APPROVED L. N. RIAN

F.A. RTE.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
I-55	0707-67	COOK	95	74

SHEET NO. 74 SHEETS

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWNDALE AVE. VIADUCT
INTERMEDIATE DIAPHRAGMS AND SLIDING PLATE AT PIER No. 26
SCALE: AS NOTED DATE 11-29-63

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

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	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS – MISC. STEEL DETAILS
STRUCTURE NO. 016-2456
SHEET NO. SCX29 OF SCX33 SHEETS

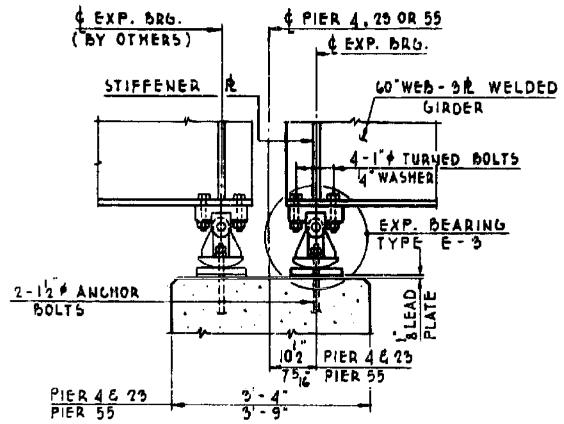
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	437

CONTRACT NO. 60W75
ILLINOIS FED. AID PROJECT

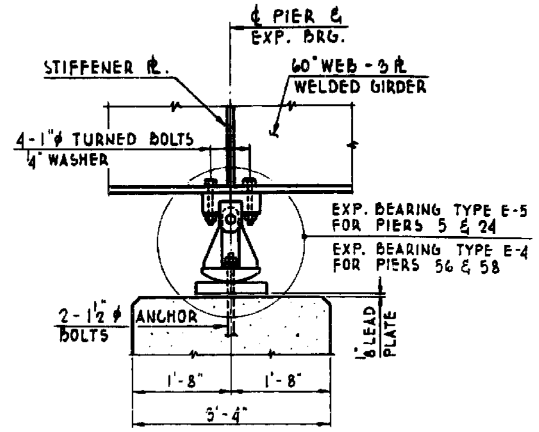
Y:\chicago\10000S\10093\Eng_Docs_Phase_II\SN_016_2456_2457_1st_Ave_over_Des_Planes_River_Valley\Final\2456 Final\0162456_60W75_X29_existplan29.dgn 9:45:55 PM 6/9/2015

F.A.I. RTE.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
E-66	(1707-67BHB)	COOK	95	76

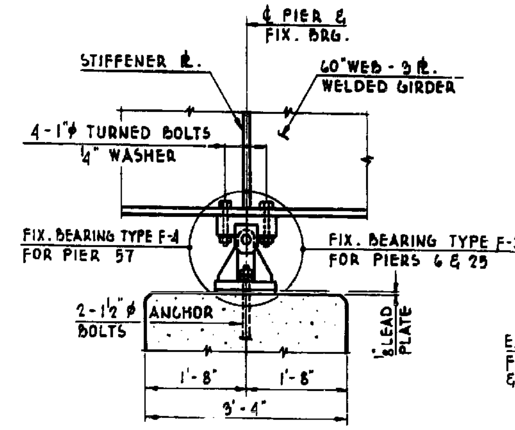
SHEET NO. 76
SHEETS



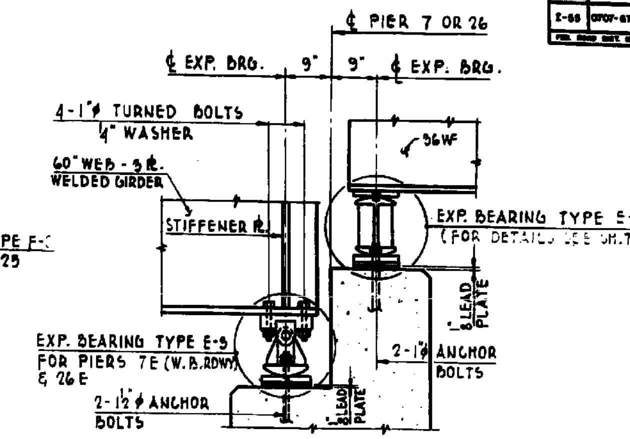
BRG. TYPE E-3 AT PIERS 4W, 23W & 55N
SCALE: 3/4" = 1'-0"



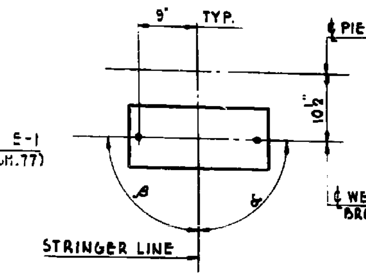
BRG. TYPE E-4 & E-5 AT PIERS 5, 24, 56 & 58



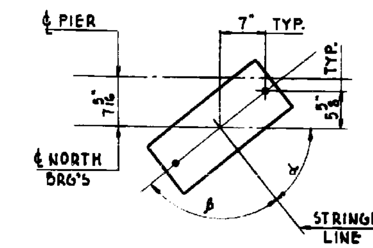
BRG. TYPE F-3 & F-4 AT PIERS 6, 25 & 57



BRG. TYPE E-3 AT PIERS 7E (W.B. RDWY) & 26E



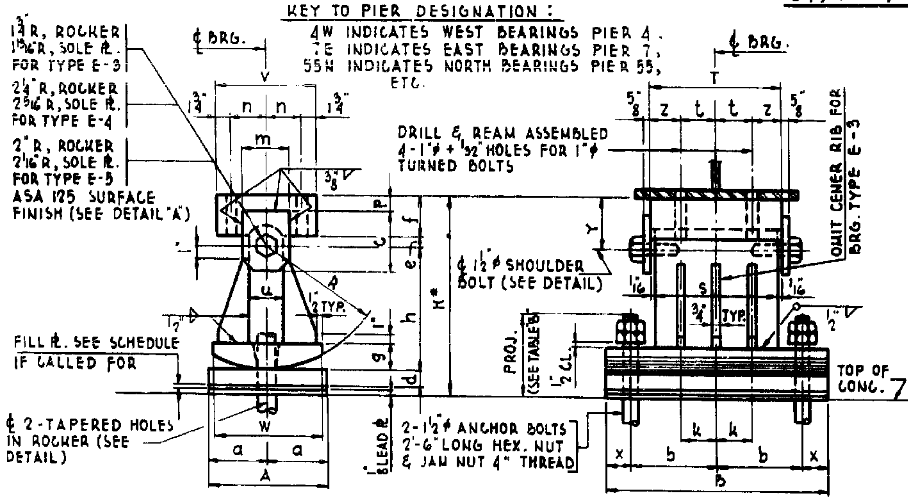
PIERS 4 & 23



PIER 55

PIER	STRINGER LINE	ANGLE α	ANGLE β
4	12	87°-44'-25"	92°-15'-35"
	13	88°-29'-35"	91°-30'-25"
	14	89°-14'-47"	90°-45'-13"
	15 TO 17	90°-00'-00"	90°-00'-00"
23	18 TO 22	90°-00'-00"	90°-00'-00"
55	23 TO 26	51°-16'-58"	90°-00'-00"

KEY TO PIER DESIGNATION:
4W INDICATES WEST BEARINGS PIER 4.
7E INDICATES EAST BEARINGS PIER 7.
55N INDICATES NORTH BEARINGS PIER 55, ETC.



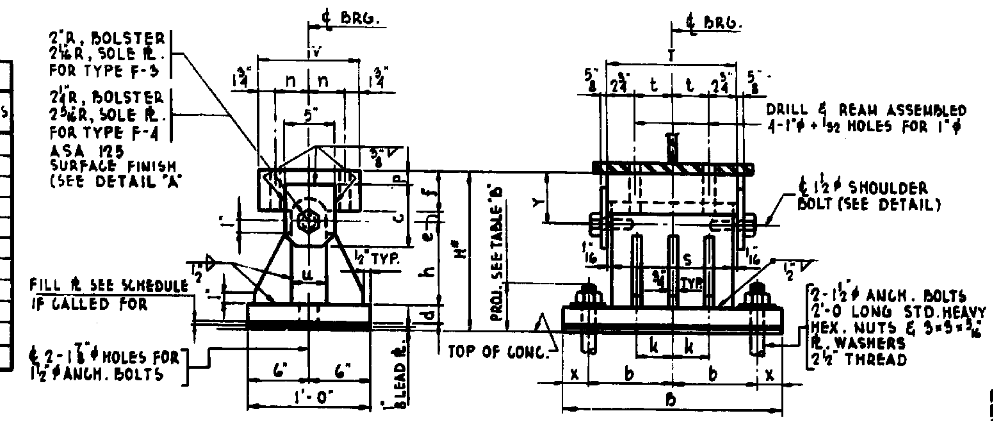
BRG. TYPE	NO. REQ'D	A	a	B	b	c	d	e	f	g	H*	h	k	m	n	p	R	s	T	t	u	v	w	x	Y	z	TOTAL WEIGHT** POUNDS
E-3	26	1'-0"	6"	1'-10"	9"	4 3/4"	1 1/2"	3/4"	3"	2 1/4"	1'-1 3/8"	8"	3"	4"	3 1/4"	1"	8"	11 7/8"	1'-0"	4 1/4"	3"	10"	9"	2"	3 3/4"	1 3/4"	526
E-4	8	1'-1"	6 1/2"	2'-3"	11"	4 3/4"	2 3/16"	1 1/16"	4"	2 1/2"	1'-7 3/8"	1'-0"	4"	5"	3 3/4"	2"	1'-0"	1'-1 3/8"	1'-2"	5"	4"	11"	1'-0"	2 1/2"	5 1/16"	2"	947
E-5	11	1'-0"	6"	1'-10"	8 1/2"	4 3/4"	2 1/8"	7/8"	3 3/4"	2 3/4"	1'-6 3/8"	1'-0"	3 1/4"	5"	3 1/4"	1"	1'-0"	11 7/8"	1'-0"	3 1/4"	3 1/2"	10"	10"	2 1/2"	4 3/8"	2 3/4"	714

* DOES NOT INCLUDE FILL PLATES

ROCKER DETAIL OF EXP. BRG. TYPE E-3, E-4 & E-5

** TOTAL WEIGHT OF ONE ASSEMBLY INCLUDES TOP ℞., ROCKER OR BOLSTER, ANCHOR BOLTS, ℞. WASHERS, BOTTOM ℞. AND LEAD ℞. IT DOES NOT INCLUDE THE WEIGHT OF ANY FILL ℞.

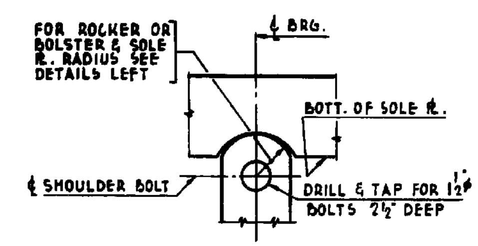
FILL PLATE SCHEDULE			
BEARING TYPE	PIER	STRINGER LINE	THICKNESS
E-3	4W	12	1/4"
		13	3/8"
		14	5/16"
		15	3/4"
		16	1 1/8"
	7E	14	1/4"
	23W	19, 21	1 5/16"
	55N	23, 24	5/16"
		25, 26	5/8"
E-5	5	15	3/8"
F-3	6	14	5/16"



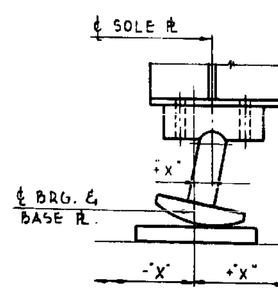
BRG. TYPE	NO. REQ'D	B	b	c	d	e	f	H*	h	k	n	p	s	T	t	u	v	x	Y	TOTAL WEIGHT** POUNDS
F-3	11	1'-10"	8 1/2"	6"	1 3/4"	1"	3 3/4"	1'-2 3/8"	8"	3 1/4"	3 1/4"	1"	11 7/8"	1'-0"	3 1/4"	3 1/2"	10"	2 1/2"	4 3/4"	485
F-4	4	2'-2"	11"	4 3/4"	2 1/8"	1"	4"	1'-3 3/8"	8"	4"	3 3/4"	1 3/4"	1'-1 3/8"	1'-2"	4 1/4"	4"	11"	2"	5"	790

* DOES NOT INCLUDE FILL PLATES

BOLSTER DETAIL OF FIXED BRG. TYPE F-3 & F-4



DETAIL - "A"
SCALE: 3" = 1'-0"



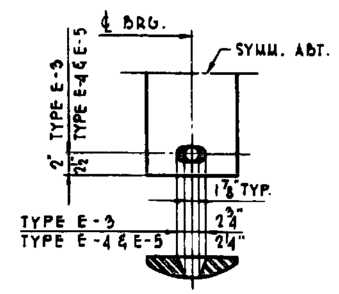
DIMENSION 'X'
(SEE TABLE RIGHT)

TEMPERATURE F°	110°	90°	70°	50°	30°	10°
WEST BRG'S @ PIER 4	-7/8"	-5/8"	-5/16"	0	+5/16"	+5/8"
BRG'S @ PIER 5	-1/2"	-5/16"	-3/16"	0	+3/16"	+5/16"
EAST BRG'S @ PIER 7	+5/8"	+1/4"	+1/8"	0	-1/8"	-1/4"
WEST BRG'S @ PIER 23	-7/8"	-5/8"	-5/16"	0	+5/16"	+5/8"
BRG'S @ PIER 24	-1/2"	-5/16"	-3/16"	0	+3/16"	+5/16"
EAST BRG'S @ PIER 26	+3/8"	+1/4"	+1/8"	0	-1/8"	-1/4"
NORTH BRG'S @ PIER 55	-1 1/8"	-3/4"	-3/8"	0	+3/8"	+3/4"
BRG'S @ PIER 56	-5/8"	-7/16"	-3/16"	0	+3/16"	+7/16"
BRG'S @ PIER 58	+1/2"	+5/16	+3/16"	0	-3/16	-5/16"

MINUS SIGN INDICATES ℄ SOLE PLATE EAST OF ℄ BEARING } TYP. ALL PIERS, EXCEPT
PLUS SIGN INDICATES ℄ SOLE PLATE WEST OF ℄ BEARING } PIER 55 SEE NOTE-1

NOTE-1: MINUS SIGN INDICATES ℄ SOLE PLATE SOUTH OF ℄ BEARING
PLUS SIGN INDICATES ℄ SOLE PLATE NORTH OF ℄ BEARING

ROCKER SETTING DIAGRAM

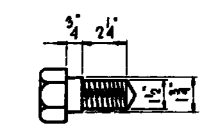


DETAIL OF HOLE IN ROCKERS

ANCHOR BOLT PROJECTIONS - TABLE "B"					
BRG. TYPE	E-3	E-4	E-5	F-3	F-4
PROJ. FOR FILL ℞'S 0" TO 1/2"	7 1/2"	8 1/2"	8 1/2"	4"	4 1/2"
PROJ. FOR FILL ℞'S 9/16" TO 1"	8"	-	-	-	-
PROJ. FOR FILL ℞'S > 1"	8 1/2"	-	-	-	-

BILL OF MATERIAL		
ITEM	UNIT	QUANTITY
FURNISHING & ERECTING ST[illegible]CTURAL STEEL	POUND	86,904

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



SHOULDER BOLT DETAIL
SCALE: 3" = 1'-0"

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY T. BRUNOVSKIS
DRAWN BY F. BOBINAS
CHECKED T. Brunovskis
IN CHARGE E.S. MARTINS
APPROVED L.N. RIAN

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWNDALE AVE. VIADUCT
BEARING DETAILS
WELDED GIRDERS
SCALE: AS NOTED
DATE 11-25-1963

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

FOR INFORMATION ONLY

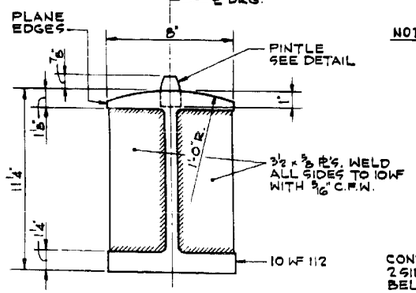
FILE NAME =	USER NAME = jsurber	DESIGNED - MPL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLANS - BEARING DETAILS WELDED GIRDERS STRUCTURE NO. 016-2456
0162456_60W75_X30_existplan30.dgn	PLOT SCALE =	CHECKED - JLS	REVISED -		SHEET NO. SCX30 OF SCX33 SHEETS
	PLOT DATE = 6/9/2015	DRAWN - PRT	REVISED -		
		CHECKED - JLS	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	438

CONTRACT NO. 60W75
ILLINOIS FED. AID PROJECT

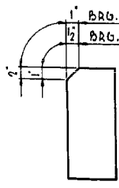
Y:\chicago\10000S\10093\Eng_Docs_Phase_II\SN_016_2456_2457_1st_Ave_over_Des_Planes_River_Valley\Final\2456 Final\0162456_60W75_X30_existplan30.dgn 9:45:57 PM 6/9/2015

FILL PLATE SCHEDULE							
BEARING TYPE	PIER	STRINGER LINE	THICKNESS	BEARING TYPE	PIER	STRINGER LINE	THICKNESS
E-1	7W	5	15/16"	F-1	8E	5, 33	1/8"
		32	11/16"			28	9/16"
		17	5/16"			30	5/8"
	9E	33	1/8"			32	7/16"
	9W	5,34,33,17	1/2"		8W	33, 34, 36	5/16"
		41	5/16"			33	5/8"
		34	7/16"			37, 17	1/4"
		37	5/8"		10E	41	7/16"
	10W	5	5/8"			34, 36	9/16"
		33	1/8"			35, 37	5/8"
	11W	5	1"			37	1/2"
		33	5/16"		11E	33	1/2"
	16E	33	1/4"			34, 36	3/8"
	29E	19	1/8"			35, 37	7/16"
		20	5/16"			17	1/2"
		23	15/16"		30E	18	1/2"
	29W	18	5/16"			49, 50	11/16"
		51	1/8"			33	1/4"
	30W	62	1/4"		33W	5, 1	5/16"
		63	1/2"			11	1 1/8"
		26	13/16"			10	15/16"
	40W	5	5/16"			9	5/8"
		8	1 3/16"		41W	5	3/8"
		7	15/16"			1	5/8"
		6	3/4"		33E	25	3/8"
		1	1/2"		33W	23	11/16"
E-2	12,15	33	1/8"			26	5/16"
	14	33	5/16"		60W	23	5/16"
	31	62	5/16"			46	1/2"
		63	9/16"			47	5/8"
	33	62	1/4"			48	3/4"
		63	1/2"			26	1/4"
	34	62	1/8"	F-2	18	33	1/8"
		63	1/2"		32	62	5/16"
						63	5/8"



BOLSTER DETAIL

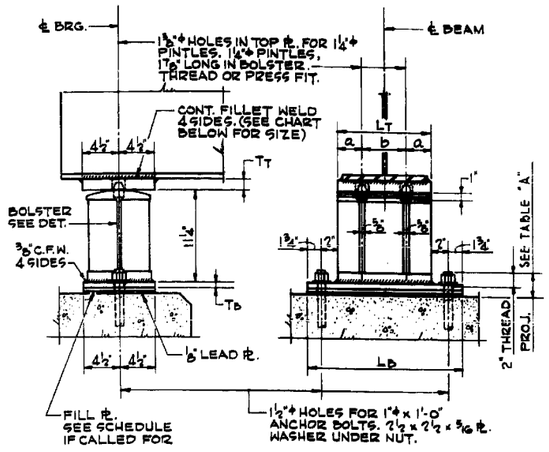
SCALE: 3"=1'-0"



BEARING PLATE DETAIL

NOTE: CUT CORNER IS LOCATED NEAREST TO OUTSIDE FACE OF PIER CAP.

KEY TO PIER DESIGNATION:
8E INDICATES EAST BEARINGS PIER 8,
8W INDICATES WEST BEARINGS PIER 8,
ETC.



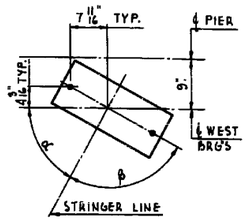
TYPE	NO. REQ'D	LT	LB	TT	TB	a	b	C.F.W.	TOTAL WEIGHT*
F-1	75	13½"	21"	1⅜"	1"	3½"	6½"	⅝"	279
F-5	4	13½"	21"	1⅜"	1⅛"	3½"	6½"	⅝"	286

FIXED BEARINGS AT PIERS

TYPE F-1 @ 8E, 8W, 10E, 11E, 29E, 29W, 41W, 59E, 59W, 60W & 30E*
TYPE F-5 @ 30E SEE NOTE 1.

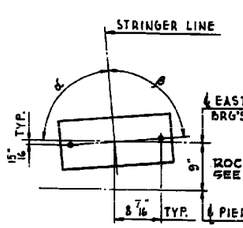
NOTE 1: FOR PIER 30E LOCATE BRG TYPE F-1 @ STRINGER LINES 18 & 49 THRU 53; LOCATE BRG TYPE F-5 @ STRINGER LINES 54 THRU 56 & 26

ANCHOR BOLT PROJECTIONS - TABLE "A"					
BRG. TYPE	E-1	E-2	F-1	F-2	F-5
PROJ. FOR FILL PL'S 0" TO 7/16"	3⅛"	3 3/4"	2¾"	3¼"	2¾"
PROJ. FOR FILL PL'S ½" TO 15/16"	3⅝"	4¼"	3¼"	3¾"	—
PROJ. FOR FILL PL'S > 15/16"	4⅛"	—	3¾"	—	—

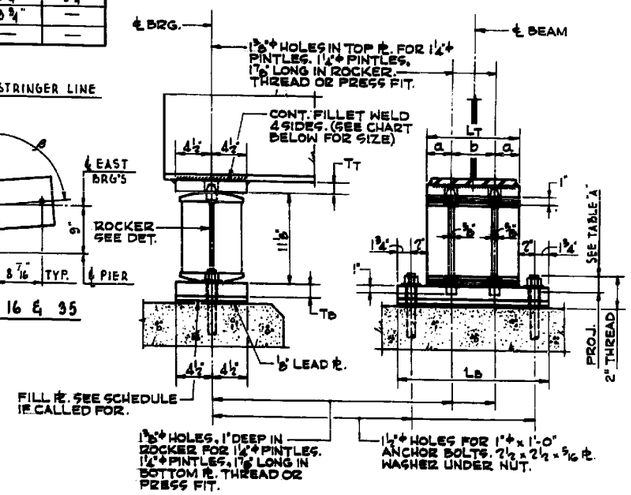


PIER 41

PIER	STRINGER LINE	ANGLE "α"	ANGLE "β"
16	5	82°-51'-54"	91°-20'-06"
	57	88°-11'-37"	90°-40'-25"
	58 TO 61, 17	89°-37'-00"	90°-00'-00"
35	18, 62 TO 65	89°-52'-00"	90°-00'-00"
	66	89°-29'-10"	90°-22'-50"
	67	89°-06'-15"	90°-45'-45"
	26	88°-45'-15"	91°-08'-45"
41	5	60°-02'-06"	91°-09'-16"
	1 TO 4	61°-11'-22"	90°-00'-00"



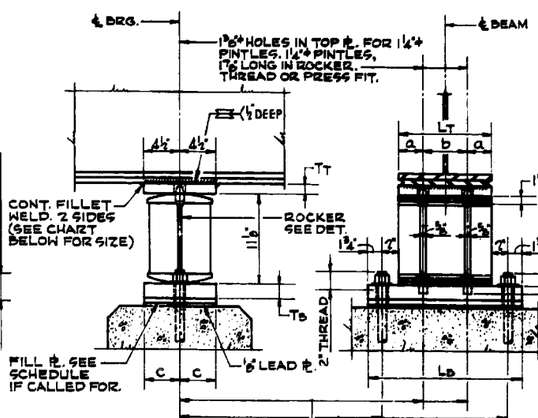
PIERS 16 & 35



TYPE	NO. REQ'D	LT	LB	TT	TB	a	b	C.F.W.	TOTAL WEIGHT*
E-1	115	13"	20½"	1"	1⅝"	3½"	6½"	½"	276

EXPANSION BEARINGS AT PIERS

7E, 7W, 9E, 9W, 10W, 11W, 16E, 26W, 29E, 29W, 30W, 35E, 40E, 40W & 60E.

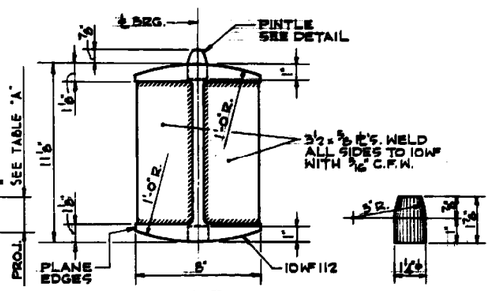


TYPE	NO. REQ'D	LT	LB	TT	TB	a	b	C.F.W.	TOTAL WEIGHT*
E-2	50	12"	19½"	1⅝"	2"	3"	6"	⅝"	321

EXPANSION BEARINGS AT PIERS 12, 14, 15, 27, 31, 33 & 34

BEAM WITH COVER PLATES

SCALE: 1½"=1'-0"



ROCKER DETAIL

SCALE: 3"=1'-0"

PINTLE DETAIL

NOT TO SCALE

TYPE	NO. REQ'D	LT	LB	TT	TB	a	b	C	C.F.W.	TOTAL WEIGHT*
F-2	20	12"	19½"	1⅝"	1½"	3"	6"	5"	½"	293

FIXED BEARINGS AT PIERS 13, 28 & 32

BEAM WITH COVER PLATES

SCALE: 1½"=1'-0"

* TOTAL WEIGHT OF ONE ASSEMBLY INCLUDES TOP PL., ROCKER OR BOLSTER, BOTTOM PL., ANCHOR BOLTS, PL. WASHERS AND LEAD PL. DOES NOT INCLUDE THE WEIGHT OF ANY FILL PL.

** WEIGHT OF ALL MATERIAL SHOWN ON THIS SHEET, INCL. FILL PLATES.

BILL OF MATERIAL**		
ITEM	UNIT	QUANTITY
FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	77,731

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY J.C. BROZ
DRAWN BY J.A. CHALIKIS
CHECKED T. Armanetzis
IN CHARGE E.S. MARTINS
APPROVED L.N. RIAN

JOB NO. 1179

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWNDALE AVE. VIADUCT
BEARING DETAILS - WF BEAMS
SCALE: AS NOTED
DATE 11-28-1995

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-88	0707-078HB	COOK	95	77

SHEET NO. 77
SHEETS

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

FOR INFORMATION ONLY

FILE NAME = 0162456_60W75_X31_existplan31.dgn	USER NAME = jsurber	DESIGNED - MPL	REVISED -
		CHECKED - JLS	REVISED -
	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS – BEARING DETAILS WF BEAMS
STRUCTURE NO. 016-2456
SHEET NO. SCX31 OF SCX33 SHEETS

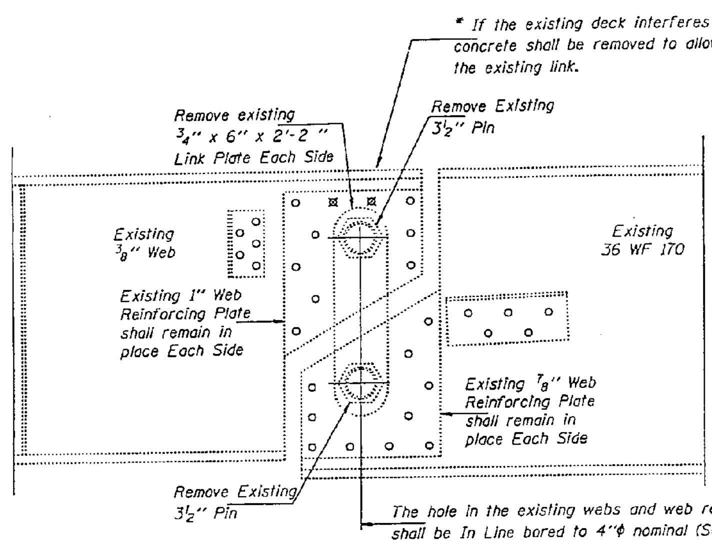
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	439
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

6/9/2015 9:46:03 PM Y:\chicago\10000S\10093\Eng_Docs_Phase_II\SN_016_2456_2457_1st_Ave_over_Des_Plaines_River_Valley\Final\2456 Final\0162456_60W75_X31_existplan31.dgn

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

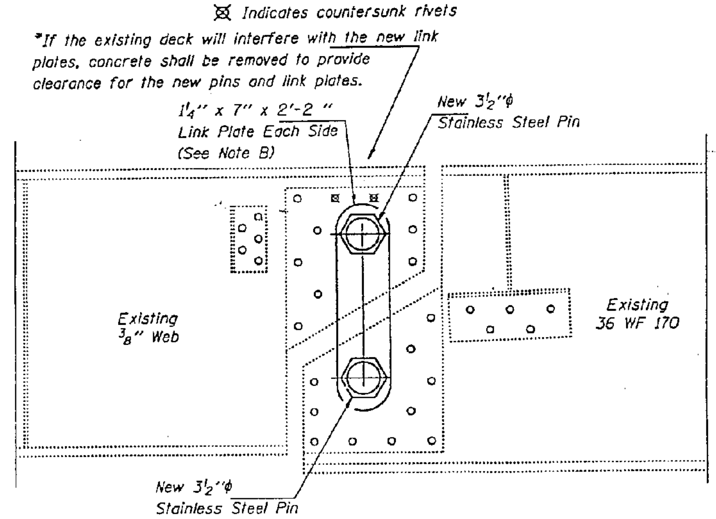
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 55		COOK	67	11

SHEET NO. 1
7 SHEETS

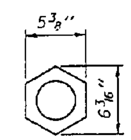


ELEVATION AT EXISTING PIN ASSEMBLY

⊠ Indicates countersunk rivets

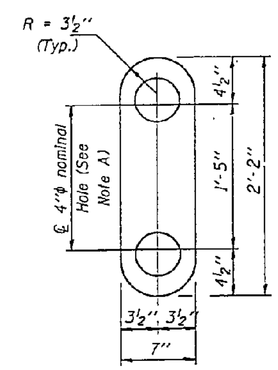


ELEVATION AT NEW PIN ASSEMBLY

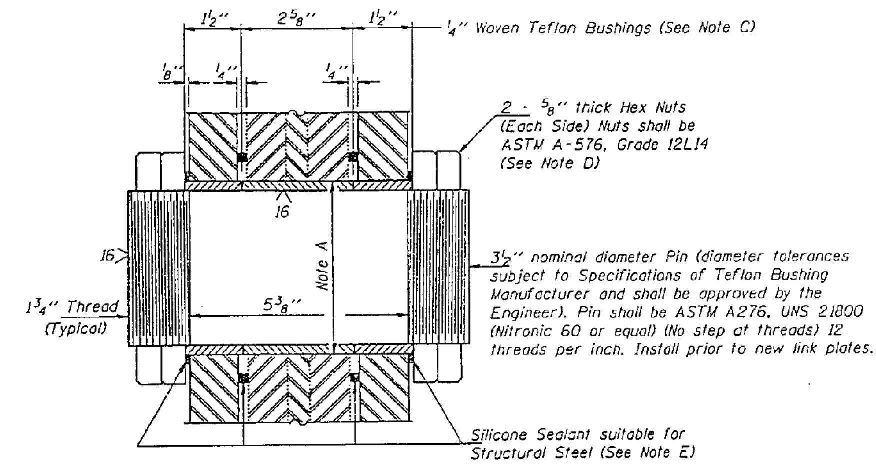


NUT DETAIL
(32 Required)

*Cost is incidental to "Pin and Link Plate Replacement".



LINK PLATE DETAIL
(8 Required)



SECTION THRU PIN
(8 Required)

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, $\frac{1}{4}$" 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 $\frac{1}{4}$ turn and tighten outer nuts.

Note E:
Apply $\frac{3}{8}$" bead to face of the web reinforcing plates approximately $\frac{1}{2}$" 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.

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. The support and/or shoring systems shall be approved by the Engineer. Such approval will not relieve the Contractor of responsibility for the safety of the structure. See Special Provisions for "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 Metal Structures".

Existing Structural steel shall be cleaned and painted as required by the Special Provision "Cleaning and Painting Adjacent Areas of Existing Steel Structures". Cost incidental to "Pin and Link Plate Replacement."

All existing steel surfaces behind link plates shall be cleaned and primed before installation of new link plates. Cost incidental to "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 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 and silicone sealant are the items included in "Pin and Link Plate Replacement".

BILL OF MATERIAL

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

MAXIMUM REACTIONS AT PIN

RD	(K)	46.9
RL	(K)	45.4
Imp.	(K)	11.8
R (Total)	(K)	102.3

DESIGNED	Nicholas J. Donald
CHECKED	[illegible]
DRAWN	SHANE SUMMER
CHECKED	NSS CMZ

December 13, 1995
EXAMINED [signature]
ENGINEER OF STRUCTURAL SERVICES
PASSED
ENGINEER OF BRIDGES AND STRUCTURES

PIN REPLACEMENT
F.A.I. ROUTE 55 SEC. 0707-675 HB
COOK COUNTY
STA. 250+41
STR. No. 016-2456

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

FOR INFORMATION ONLY

FILE NAME =	USER NAME = jsurber	DESIGNED - MPL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLANS (1997) - PIN & LINK REPLACEMENT STRUCTURE NO. 016-2456
		CHECKED - JLS	REVISED -		
0162456_60W75_X32_existplan32.dgn	PLOT SCALE =	DRAWN - PRT	REVISED -		
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -		SHEET NO. SCX32 OF SCX33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	440

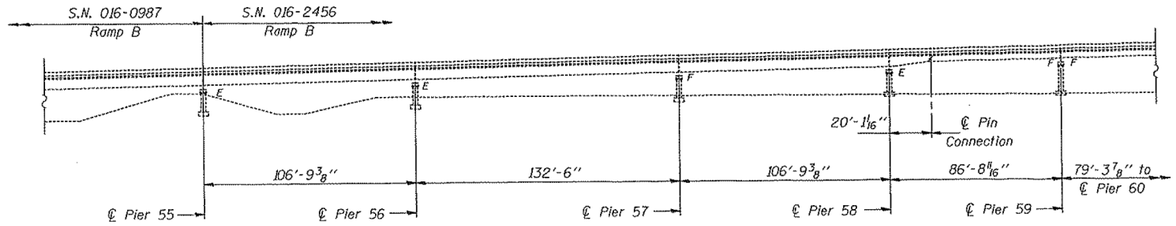
CONTRACT NO. 60W75
ILLINOIS FED. AID PROJECT

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

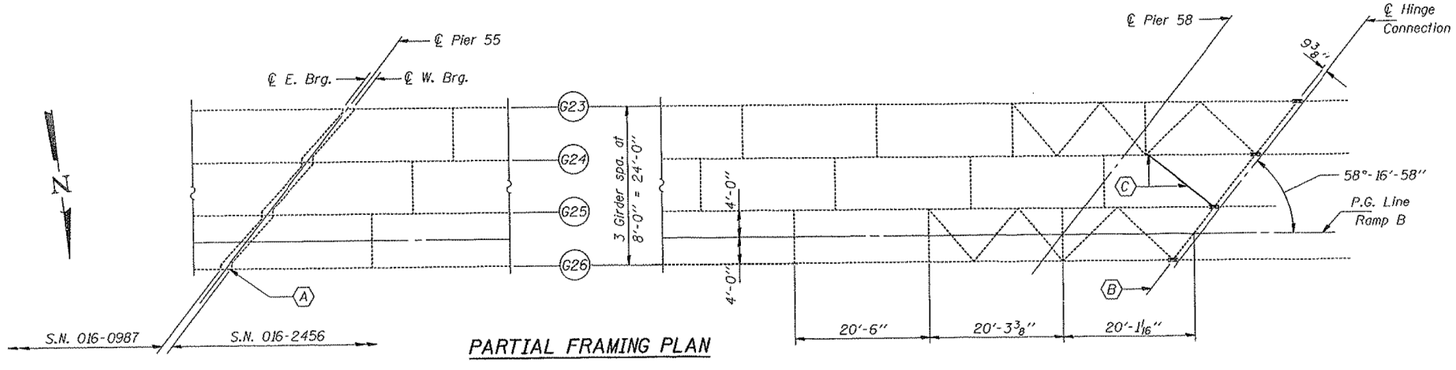
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 55	*	COOK	6	3
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 1
3 SHEETS

* (0707[615B, 675HB]) I-2-DL

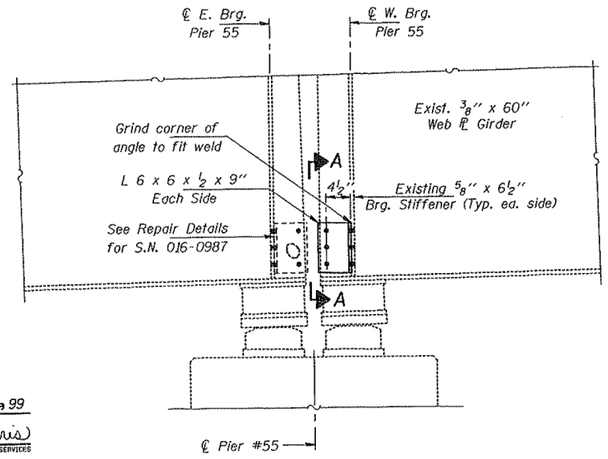


PARTIAL ELEVATION

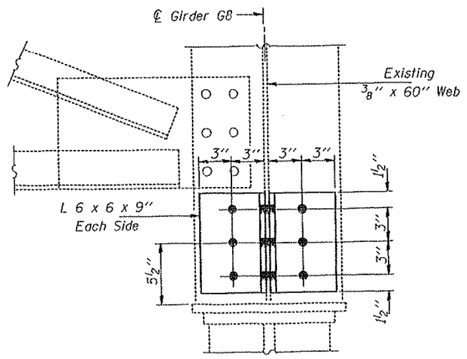


PARTIAL FRAMING PLAN

(A) Repair G26 Girder End
(B) Repair Girder Ends
(C) Install new WT Bracing with L & gusset ℄



REPAIR A



VIEW A-A

GENERAL NOTES

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

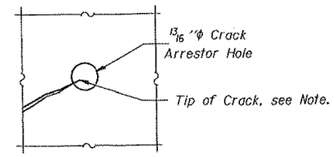
Fasteners shall be high strength bolts. Bolts 3/4"ϕ. open holes 13/16"ϕ. unless otherwise noted.

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 facia girder shall be Interstate Green, Munsell No. 7.5G 4/8. The color of th 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 should take appropriate precautions to deal with the presence of lead on this proje

Existing structural steel shall only be cleaned and painted as required by the Special Provision "Cleaning and Painting Adjacent Areas of Existing Stee Structures".



CRACK ARRESTOR HOLE DETAIL

Note: Locate crack tip using liquid dye penetrant or magnetic particle testing. Drill 13/16"ϕ Crack Arrestor hole at the crack tip. After crack arrestor 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	1050

BRIDGE REPAIRS
F.A.I. 55 (RAMP B) OVER DES PLAINES RIV
SEC. 0707-6158
COOK COUNTY
S.N. 016-2456

DESIGNED Curt M. Ensey
CHECKED Brian T. Holloway
DRAWN D.Herbert
A.T.H.

MAY 27, 1999
EXAMINED John A. Morris
ENGINEER OF STRUCTURAL SERVICES
PASSED
ENGINEER OF BRIDGES AND STRUCTURES

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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

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FILE NAME = 0162456.60W75.X33.existplan33.dgn	USER NAME = jsurber	DESIGNED - MPL	REVISED -
		CHECKED - JLS	REVISED -
	PLOT SCALE =	DRAWN - PRT	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (1999) – UNIT B RAMP B STEEL REPAIR
STRUCTURE NO. 016-2456
SHEET NO. SCX33 OF SCX33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	441
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

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Bench Mark: Chiseled square at SE corner of NB IL-171 bridge over Des Plaines River. El. 622.69

Existing Structure: S.N. 016-0985 (NB) was built in 1964 as F.A.I. Rte. 55, Section 0707-613B at Sta. 50+80. Structure consists of a four span reinforced concrete deck on five lines of continuous welded haunched plate girders. The reinforced concrete deck is 7½" thick, including a 2" microsilica concrete overlay. The substructure consists of an open stub abutment founded on steel piles at the downstation end, solid wall concrete piers founded on spread footings through the river, and a multi-column pier founded on a spread footing at the upstation end. Pier 23 is shared with S.N. 016-2456. The structure is 527'-9½" from back of abutment to centerline of Pier 23, with an out-to-out deck width of 36'-0" and no skew. Traffic is to be maintained utilizing crossovers.

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. 578.00 = NAVD88 Elev. 577.72.

WATERWAY INFORMATION

Drainage Area = 641.59 sq. mi.					Low Grade Elev. 619.97 at Sta. 48+42				
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	2	4,554	3,423	3,423	594.80				
	10	5,930	2,988	2,988	595.75	0.57	0.57	596.32	596.32
Design	50	7,370	3,567	3,567	597.15	0.60	0.61	597.75	597.76
Base	100	7,900	3,773	3,773	597.64	0.61	0.61	598.25	598.25
Overtopping	>500								
Max. Calc.	500	9,316	4,297	4,297	598.88	0.63	0.63	599.51	599.51

10 Year Velocity through Existing and Proposed Bridge = 1.95 fps

LOADING HS20-44

No future wearing surface allowed.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges

DESIGN STRESSES

FIELD UNITS (New Construction)

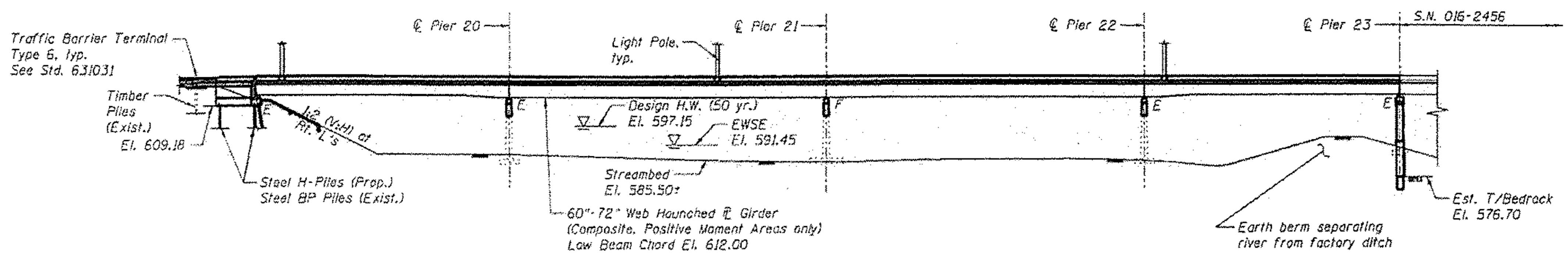
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

FIELD UNITS (Exist. Construction)

f'c = 3,500 psi
fy = 40,000 psi (Reinforcement)
fy = 36,000 psi (Structural Steel)

SEISMIC DATA

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



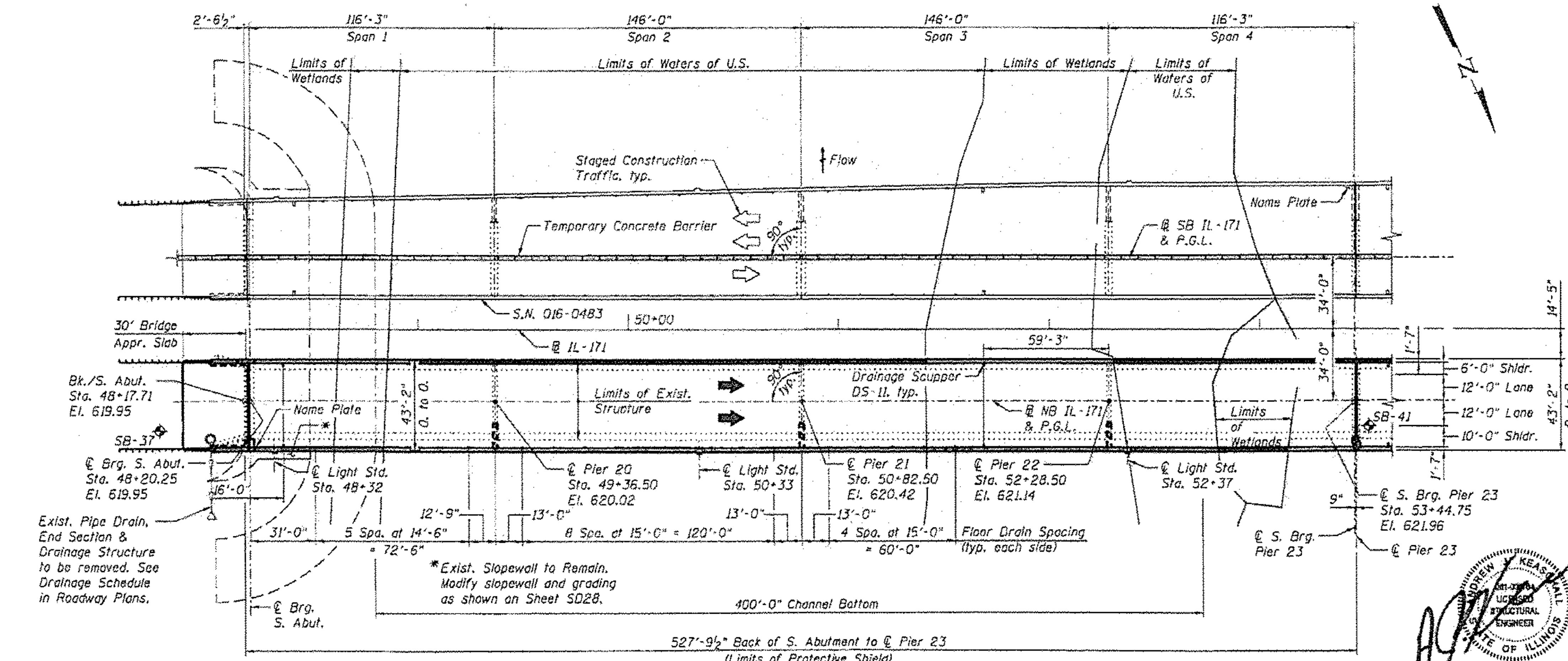
REFLECTED ELEVATION

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

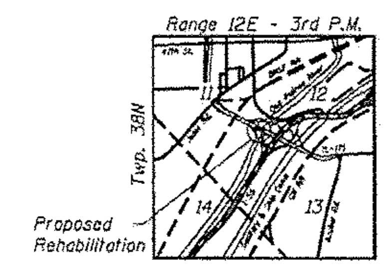
DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)				
S. Abut.	Pier 1	Pier 2	Pier 3	Pier 4
609.18	580.00	579.66	585.00	584.22

Design scour elevations estimated from existing data.



PLAN



LOCATION SKETCH

EXPIRATION DATE 11-30-2016
DATE: 06-12-2015

GENERAL PLAN AND ELEVATION
IL-171 OVER DES PLAINES RIVER
"PUBLIC WATER"
FAP 372 - SECTION 2013-037B-R
COOK COUNTY
STATION 50+80.50
STRUCTURE NO. 016-0985

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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 = jaurbar	DESIGNED - JLS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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	PLOT DATE = 6/12/2015	DRAWN - RMG	REVISED -					CONTRACT NO. 60W75		
		CHECKED - AJK	REVISED -		SHEET NO. S01 OF S040 SHEETS		ILLINOIS FED. AID PROJECT			

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GENERAL NOTES

1. For new structural steel elements, fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts $\frac{7}{8}$"Φ, holes $\frac{15}{16}$"Φ, unless otherwise noted.

2. Calculated weight of Structural Steel =
   M 270 Grade 36: 5,800 lbs
   M 270 Grade 50: 115,960 lbs

3. No field welding is permitted except as specified in the contract documents.

4. Reinforcement bars designated (E) shall be epoxy coated.

5. 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 $\frac{1}{4}$ inch 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. If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as 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.

7. 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.

8. Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $\frac{1}{8}$ inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.

9. Concrete Sealer shall be applied to the designated areas of the South Abutment and Pier 23.

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

11. 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 the respective steel or bearing pay items. The intermediate and top coats shall be applied under a separate painting contract.

12. 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".

13. The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutment.

14. 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.

15. The top flange of the existing structural steel is anticipated to have been painted with lead paint. Lead paint removal shall be completed in areas of the top flange that are to receive proposed stud shear connectors. See Special Provision for "Containment and Disposal of Lead Paint Cleaning Residues".

INDEX OF SHEETS

For existing bridge plans see Sheets SDX1-SDX13 immediately following Sheet SD40.

TOTAL BILL OF MATERIAL

	ITEM	UNIT	SUPER	SUB	TOTAL
	Concrete Removal	Cu Yd		35.1	35.1
	Slope Wall Removal	Sq Yd		20	20
	Removal of Existing Concrete Deck No. 3	Each	1		1
	Protective Shield	Sq Yd	2,104		2,104
	Structure Excavation	Cu Yd		141	141
	Floor Drains	Each	40		40
	Concrete Structures	Cu Yd		75.2	75.2
	Concrete Superstructure	Cu Yd	799.3		799.3
	Bridge Deck Grooving	Sq Yd	2,354		2,354
	Concrete Encasement	Cu Yd		1.4	1.4
	Protective Coat	Sq Yd	2,935		2,935
	Furnishing and Erecting Structural Steel	L Sum	0.30		0.30
	Stud Shear Connectors	Each	8,856		8,856
	Reinforcement Bars, Epoxy Coated	Pound	188,860	13,050	201,910
	Bar Splicers	Each		41	41
	Mechanical Splicers	Each		36	36
	Slope Wall 6 Inch	Sq Yd		48	48
	Furnishing Steel Piles HP12x53	Foot		99	99
	Driving Piles	Foot		99	99
	Test Pile Steel HP12x53	Each		1	1
	Pile Shoes	Each		4	4
	Name Plates	Each	1		1
	Permanent Casing	Foot		11	11
	Drilled Shaft in Soil	Cu Yd		5.9	5.9
	Drilled Shaft in Rock	Cu Yd		1.6	1.6
	Preformed Joint Strip Seal	Foot	42.0		42.0
	Elastomeric Bearing Assembly, Type I	Each	4		4
	Elastomeric Bearing Assembly, Type II	Each	2		2
	Anchor Bolts, $\frac{3}{4}$"	Each	16		16
	Concrete Sealer	Sq Ft		645	645
*	Epoxy Crack Injection	Foot		15	15
	Geocomposite Wall Drain	Sq Yd		41	41
	Jack and Remove Existing Bearings	Each	3		3
	Structural Steel Removal	Pound	3,670		3,670
	Containment and Disposal of Lead Paint Cleaning Residues No. 3	L Sum	1		1
	Cleaning Bridge Seats	Sq Ft		440	440
*	Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft		323	323
*	Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq Ft		65	65
	Drainage Scuppers, DS-11	Each	4		4
	Pipe Underdrains for Structures 4"	Foot		58	58
**	Selective Clearing	Unit		1	1
	Temporary Shoring and Cribbing	Each		2	2
	Remove Conduit Attached to Structure	Foot	1,672		1,672
	Granular Backfill for Structures	Cu Yd		97	97

* Quantity includes a contingency (above the amounts shown in the individual 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, vegetation, etc. on the existing slopewall.

SCOPE OF WORK

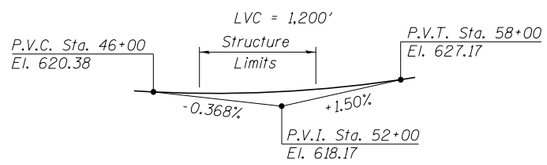
1. Remove existing concrete deck and microsilica concrete overlay and replace with new 8" reinforced concrete deck.
2. Make new deck composite in positive moment areas only by adding shear studs to all existing and proposed girders.
3. Remove and replace existing expansion joints and drainage scuppers.
4. Remove and replace existing backwall.
5. Widen abutment, piers and slopewall.
6. Remove and replace approach slab and wingwalls.
7. Repair spalls, delaminations and open cracks in substructure using formed concrete repair and epoxy crack injection. Replace failed slopewall panels.
8. Add one additional steel girder line.
9. Remove wind bracing from the structure.
10. Perform miscellaneous repairs including debris/vegetation removal.
11. Remove and dispose of existing electrical conduits and junction boxes attached to the girders and/or deck.

STATION 50+80.50
RE-BUILT 20__ BY
STATE OF ILLINOIS
F.A.P. RT. 372
SEC. 2013-037B-R
LOADING HS20
STR. NO. 016-0985

NAME PLATE

See Std. 515001

Existing Name Plate shall be cleaned and relocated next to the new Name Plate. Cost included with Name Plates.



PROFILE GRADE NB IL-171

(Along ℄ of Roadway)

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Chicago, Illinois 60601
312-565-0450 Job No. 10093

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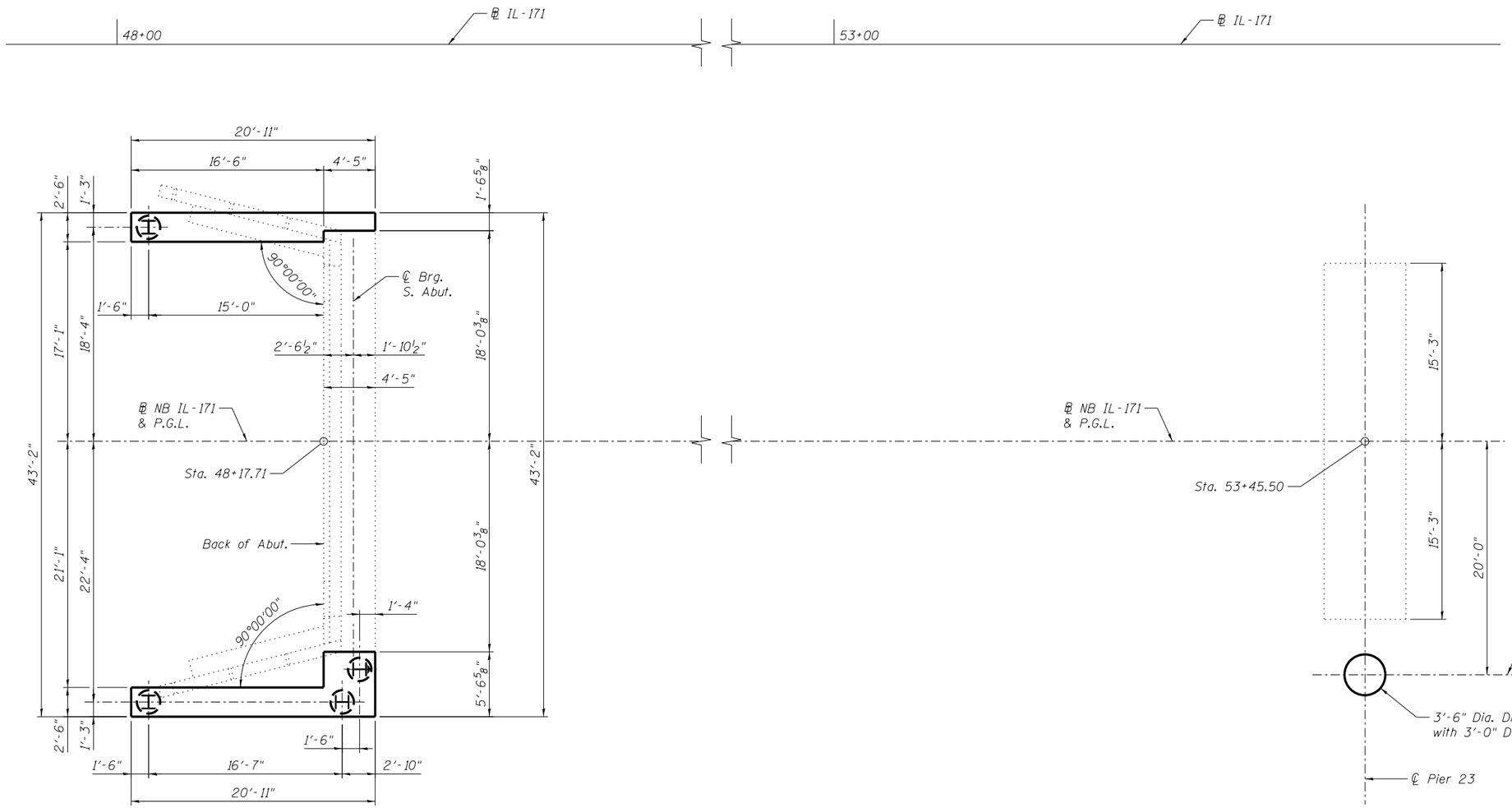
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES, INDEX OF SHEETS AND TOTAL BILL OF MATERIAL
STRUCTURE NO. 016-0985
SHEET NO. SD2 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	443
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		



SOUTH ABUTMENT

PIER 23

PLAN - FOUNDATION LAYOUT

LEGEND

- Indicates vertical pile
- Indicates battered pile 12:2 (V:H)
- Indicates Concrete Encasement

NOTES:

1. For abutment details, see sheets SD29 thru SD31.
2. For Pier 23 details, see sheets SD35 and SD36.
3. For HP Pile Details and Concrete Encasement Details, see sheet SD37.

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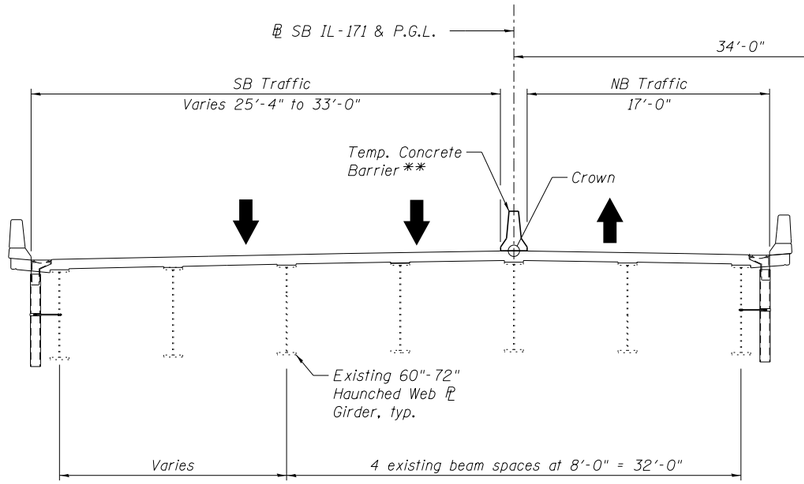
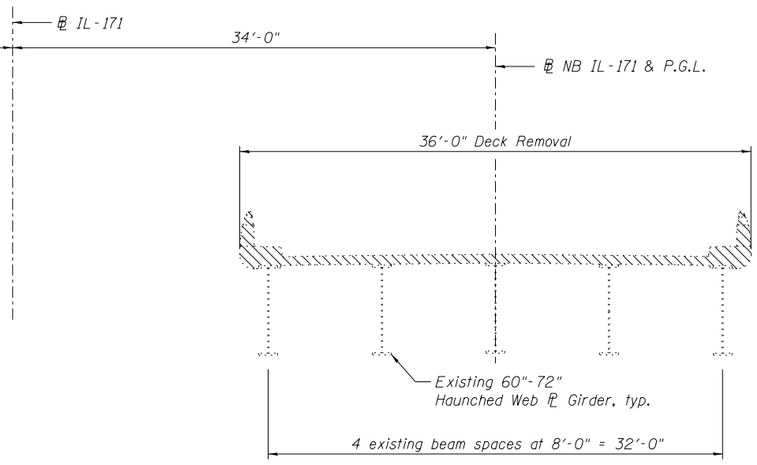
	PLOT DATE = 6/12/2015	CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

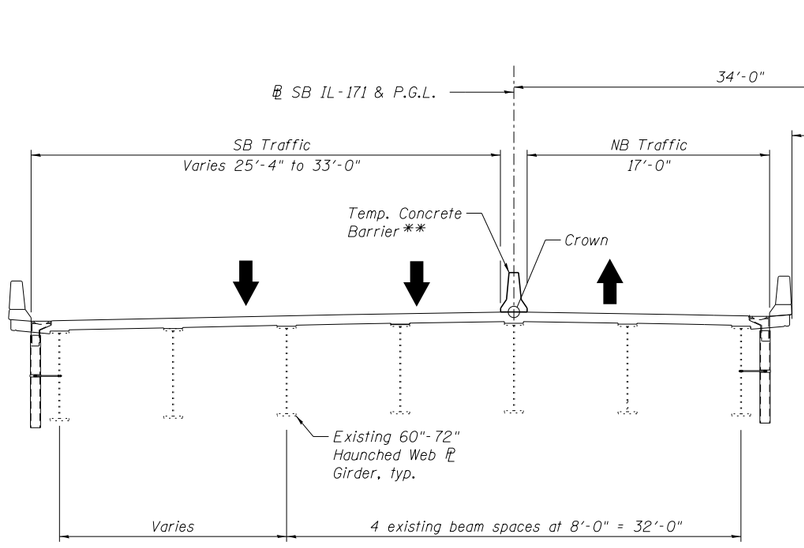
FOUNDATION LAYOUT
STRUCTURE NO. 016-0985
SHEET NO. SD3 OF SD40 SHEETS

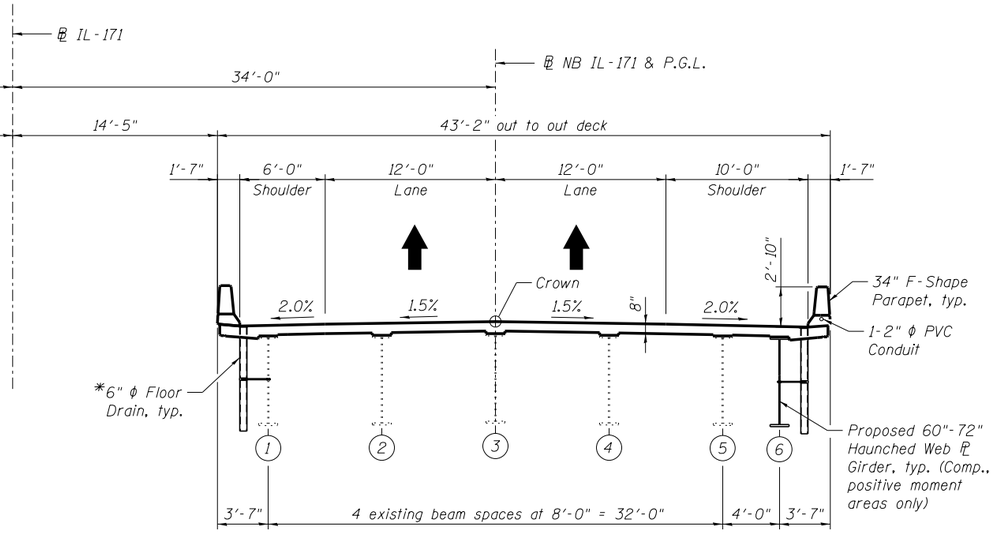
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	444
		CONTRACT NO. 60W75		
ILLINOIS	FED. AID PROJECT			





CONTRACT 60W75 REMOVAL
(Looking Upstation/North)





CONTRACT 60W75 CONSTRUCTION
(Looking Upstation/North)

** See Sheet SD5 and maintenance of traffic sheets for more information.

* Floor drains shown, northbound drainage scuppers not shown for clarity. See Sheet SD1 for location of drainage scuppers and floor drains.

LEGEND

Indicates Removal of Existing Concrete Deck No. 3.

NOTE:

Temporary Concrete Barrier shall not be doweled into existing or proposed bridge decks.

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312-565-0450 Job No. 10093

FILE NAME = 0160985_60W75_004_Stage_Const.dgn	USER NAME = jsurber	DESIGNED - JLS	REVISED -
		CHECKED - AJK	REVISED -
	PLOT SCALE =	DRAWN - RMG	REVISED -
	PLOT DATE = 6/12/2015	CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 016-0985
SHEET NO. SD4 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	445
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

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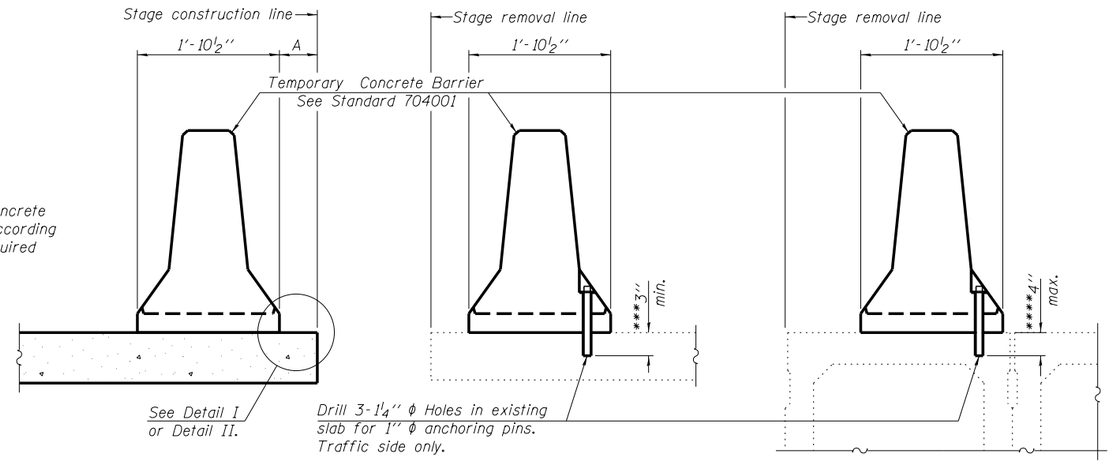
When "A" is 3'-1'' or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-1''.



NEW SLAB

EXISTING SLAB

EXISTING DECK BEAM

SECTIONS THRU SLAB OR DECK BEAM

NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1'' x 7' 'x ''W'' steel PL to the top layer of couplers with 2-⅝'' ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.

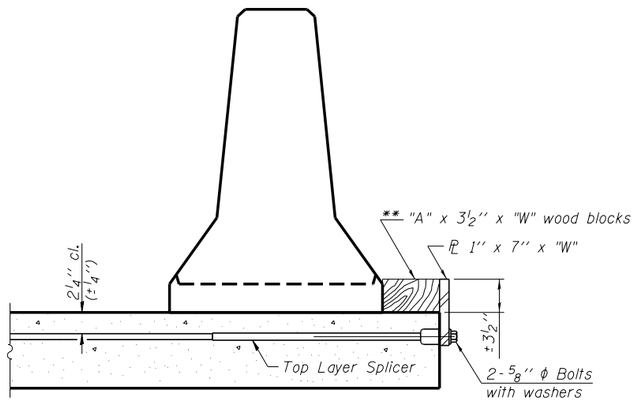
Detail II - With Extended Reinforcement Bars:
Connect one (1) 1'' x 7'' x ''W'' steel PL to the concrete slab or concrete wearing surface with 2-⅝'' ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each barrier panel.

Cost of retainer assembly is included with Temporary Concrete Barrier.

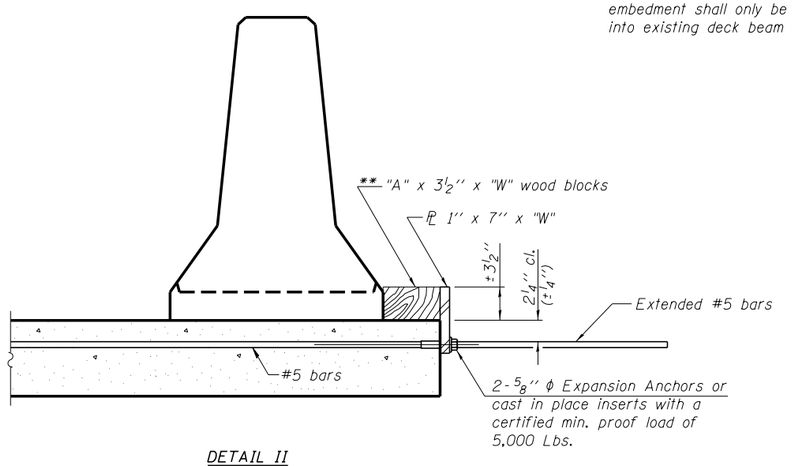
The 1'' x 7'' x ''W'' plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

*** Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

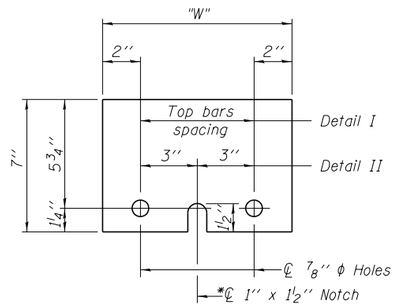
**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



STEEL RETAINER PL 1'' x 7'' x ''W''

* Required only with Detail II

RETAINER ASSEMBLY

** Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

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R-27

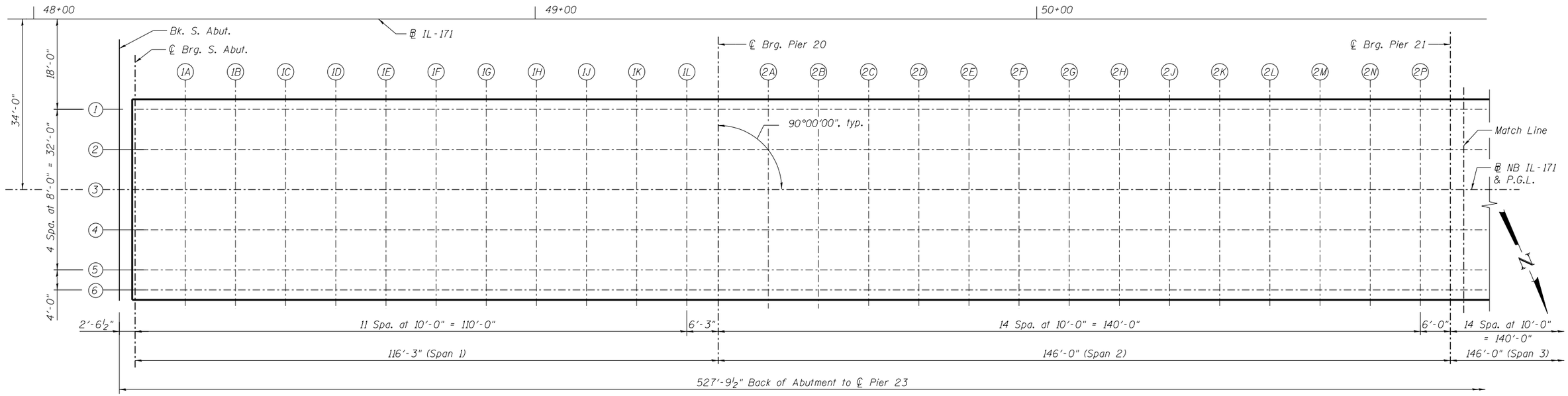
1-12-15

FILE NAME = 0160985_60W75_005_Temp_Conc_Barrier.dgn	USER NAME = jsurber	DESIGNED - JLS	REVISED -
		CHECKED - AJK	REVISED -
	PLOT SCALE =	DRAWN - RMG	REVISED -
	PLOT DATE = 6/12/2015	CHECKED - AJK	REVISED -

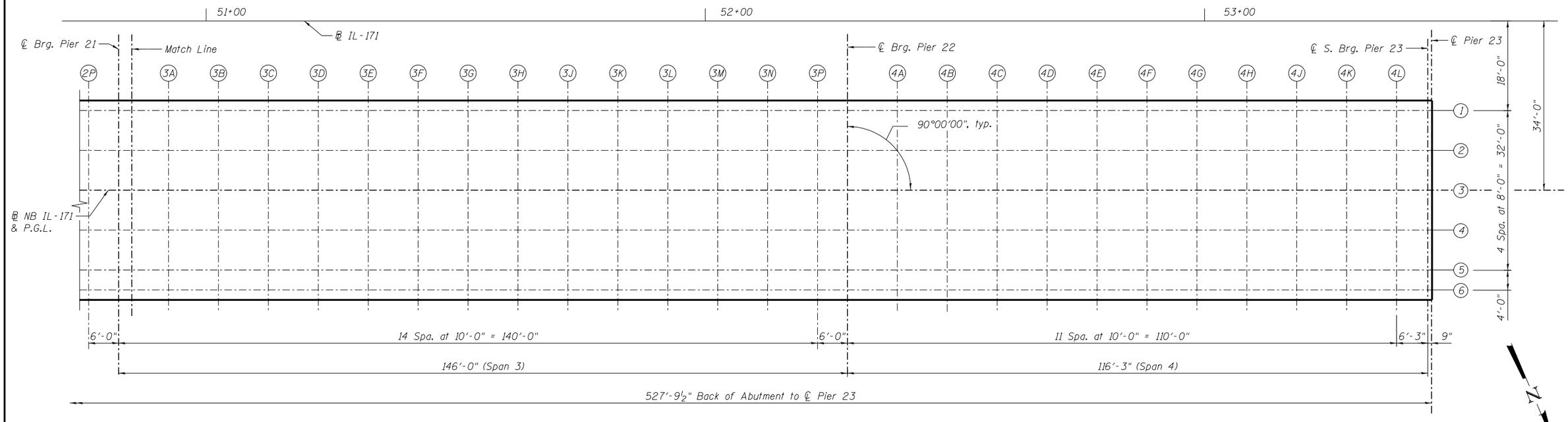
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
STRUCTURE NO. 016-0985
SHEET NO. SD5 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	446
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



DECK ELEVATION PLAN - SPANS 1 AND 2



DECK ELEVATION PLAN - SPANS 3 AND 4

NOTE:
Contractor shall supply top of steel elevation survey data at all screed points to the Engineer for approval before beginning deck formwork operations.

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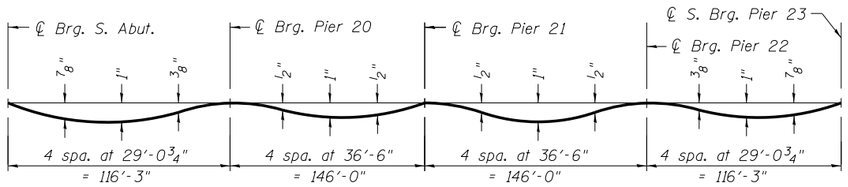
FILE NAME = 0160985_60W75_006_TOS_Plan.dgn	USER NAME = jsurber	DESIGNED - DTS	REVISED -
		CHECKED - JLS	REVISED -
	PLOT SCALE =	DRAWN - RMG	REVISED -
	PLOT DATE = 8/18/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS PLAN
STRUCTURE NO. 016-0985
SHEET NO. SD6 OF SD40 SHEETS

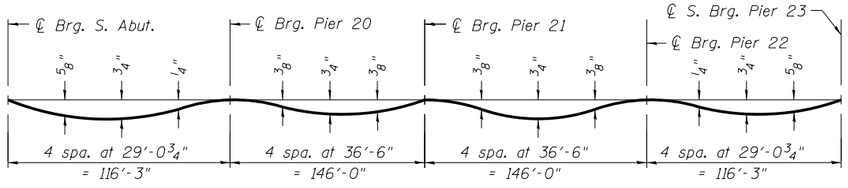
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	447
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



DEAD LOAD DEFLECTION DIAGRAM (GIRDER 1 THRU GIRDER 4)

(Includes weight of concrete only)

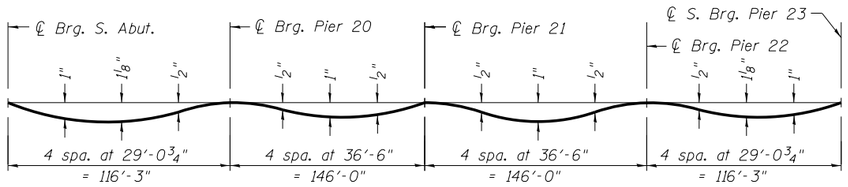
Note: The above deflections are not for use in the field if the Engineer is working from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" as shown on Sheets SD7 and SD8.



DEAD LOAD DEFLECTION DIAGRAM (GIRDER 5)

(Includes weight of concrete only)

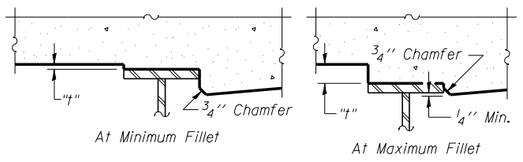
Note: The above deflections are not for use in the field if the Engineer is working from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" as shown on Sheet SD8.



DEAD LOAD DEFLECTION DIAGRAM (GIRDER 6)

(Includes weight of concrete only)

Note: The above deflections are not for use in the field if the Engineer is working from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" as shown on Sheet SD9.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown on Sheets SD7 thru SD9. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on Sheets SD7 thru SD9, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

GIRDER 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	48+17.71	-16.00	619.69	619.69
℄ Brg. S. Abut.	48+20.25	-16.00	619.69	619.69
1A	48+30.25	-16.00	619.68	619.72
1B	48+40.25	-16.00	619.68	619.74
1C	48+50.25	-16.00	619.69	619.76
1D	48+60.25	-16.00	619.69	619.78
1E	48+70.25	-16.00	619.69	619.78
1F	48+80.25	-16.00	619.70	619.78
1G	48+90.25	-16.00	619.71	619.78
1H	49+00.25	-16.00	619.72	619.77
1J	49+10.25	-16.00	619.73	619.76
1K	49+20.25	-16.00	619.74	619.75
1L	49+30.25	-16.00	619.75	619.76
℄ Brg. Pier 20	49+36.50	-16.00	619.76	619.76
2A	49+46.50	-16.00	619.78	619.78
2B	49+56.50	-16.00	619.80	619.81
2C	49+66.50	-16.00	619.82	619.84
2D	49+76.50	-16.00	619.84	619.88
2E	49+86.50	-16.00	619.86	619.92
2F	49+96.50	-16.00	619.88	619.96
2G	50+06.50	-16.00	619.91	619.99
2H	50+16.50	-16.00	619.94	620.01
2J	50+26.50	-16.00	619.97	620.04
2K	50+36.50	-16.00	620.00	620.05
2L	50+46.50	-16.00	620.03	620.07
2M	50+56.50	-16.00	620.06	620.09
2N	50+66.50	-16.00	620.10	620.11
2P	50+76.50	-16.00	620.13	620.13
℄ Brg. Pier 21	50+82.50	-16.00	620.16	620.16
3A	50+92.50	-16.00	620.19	620.20
3B	51+02.50	-16.00	620.23	620.25
3C	51+12.50	-16.00	620.28	620.31
3D	51+22.50	-16.00	620.32	620.37
3E	51+32.50	-16.00	620.37	620.43
3F	51+42.50	-16.00	620.41	620.49
3G	51+52.50	-16.00	620.46	620.54
3H	51+62.50	-16.00	620.51	620.59
3J	51+72.50	-16.00	620.56	620.63
3K	51+82.50	-16.00	620.62	620.67
3L	51+92.50	-16.00	620.67	620.71
3M	52+02.50	-16.00	620.73	620.75
3N	52+12.50	-16.00	620.78	620.79
3P	52+22.50	-16.00	620.84	620.84
℄ Brg. Pier 22	52+28.50	-16.00	620.88	620.88
4A	52+38.50	-16.00	620.94	620.95
4B	52+48.50	-16.00	621.01	621.03
4C	52+58.50	-16.00	621.07	621.11
4D	52+68.50	-16.00	621.14	621.20
4E	52+78.50	-16.00	621.20	621.28
4F	52+88.50	-16.00	621.27	621.36
4G	52+98.50	-16.00	621.35	621.44
4H	53+08.50	-16.00	621.42	621.50
4J	53+18.50	-16.00	621.49	621.56
4K	53+28.50	-16.00	621.57	621.62
4L	53+38.50	-16.00	621.65	621.67
℄ S. Brg. Pier 23	53+44.75	-16.00	621.69	621.69
℄ Pier 23	53+45.50	-16.00	621.70	621.70

GIRDER 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	48+17.71	-8.00	619.83	619.83
℄ Brg. S. Abut.	48+20.25	-8.00	619.83	619.83
1A	48+30.25	-8.00	619.82	619.86
1B	48+40.25	-8.00	619.82	619.88
1C	48+50.25	-8.00	619.83	619.90
1D	48+60.25	-8.00	619.83	619.92
1E	48+70.25	-8.00	619.83	619.92
1F	48+80.25	-8.00	619.84	619.92
1G	48+90.25	-8.00	619.85	619.92
1H	49+00.25	-8.00	619.86	619.91
1J	49+10.25	-8.00	619.87	619.90
1K	49+20.25	-8.00	619.88	619.89
1L	49+30.25	-8.00	619.89	619.90
℄ Brg. Pier 20	49+36.50	-8.00	619.90	619.90
2A	49+46.50	-8.00	619.92	619.92
2B	49+56.50	-8.00	619.94	619.95
2C	49+66.50	-8.00	619.96	619.98
2D	49+76.50	-8.00	619.98	620.02
2E	49+86.50	-8.00	620.00	620.06
2F	49+96.50	-8.00	620.02	620.10
2G	50+06.50	-8.00	620.05	620.13
2H	50+16.50	-8.00	620.08	620.15
2J	50+26.50	-8.00	620.11	620.18
2K	50+36.50	-8.00	620.14	620.19
2L	50+46.50	-8.00	620.17	620.21
2M	50+56.50	-8.00	620.20	620.23
2N	50+66.50	-8.00	620.24	620.25
2P	50+76.50	-8.00	620.27	620.27
℄ Brg. Pier 21	50+82.50	-8.00	620.30	620.30
3A	50+92.50	-8.00	620.33	620.34
3B	51+02.50	-8.00	620.37	620.39
3C	51+12.50	-8.00	620.42	620.45
3D	51+22.50	-8.00	620.46	620.51
3E	51+32.50	-8.00	620.51	620.57
3F	51+42.50	-8.00	620.55	620.63
3G	51+52.50	-8.00	620.60	620.68
3H	51+62.50	-8.00	620.65	620.73
3J	51+72.50	-8.00	620.70	620.77
3K	51+82.50	-8.00	620.76	620.81
3L	51+92.50	-8.00	620.81	620.85
3M	52+02.50	-8.00	620.87	620.89
3N	52+12.50	-8.00	620.92	620.93
3P	52+22.50	-8.00	620.98	620.98
℄ Brg. Pier 22	52+28.50	-8.00	621.02	621.02
4A	52+38.50	-8.00	621.08	621.09
4B	52+48.50	-8.00	621.15	621.17
4C	52+58.50	-8.00	621.21	621.25
4D	52+68.50	-8.00	621.28	621.34
4E	52+78.50	-8.00	621.34	621.42
4F	52+88.50	-8.00	621.41	621.50
4G	52+98.50	-8.00	621.49	621.58
4H	53+08.50	-8.00	621.56	621.64
4J	53+18.50	-8.00	621.63	621.70
4K	53+28.50	-8.00	621.71	621.76
4L	53+38.50	-8.00	621.79	621.81
℄ S. Brg. Pier 23	53+44.75	-8.00	621.83	621.83
℄ Pier 23	53+45.50	-8.00	621.84	621.84

NOTE:

Offset measured from ℄ NB IL-171 & P.G.L.

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FILE NAME = 0160985_60W75_007_TOS_Elev_1.dgn	USER NAME = jsurber	DESIGNED - DTS	REVISED -
		CHECKED - JLS	REVISED -
	PLOT SCALE =	DRAWN - RMG	REVISED -
	PLOT DATE = 6/12/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS (1 OF 3)
STRUCTURE NO. 016-0985
SHEET NO. SD7 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	448
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

GIRDER 3, ℄ NB IL-171 & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	48+17.71	0.00	619.95	619.95
℄ Brg. S. Abut.	48+20.25	0.00	619.95	619.95
1A	48+30.25	0.00	619.94	619.98
1B	48+40.25	0.00	619.94	620.00
1C	48+50.25	0.00	619.95	620.02
1D	48+60.25	0.00	619.95	620.04
1E	48+70.25	0.00	619.95	620.04
1F	48+80.25	0.00	619.96	620.04
1G	48+90.25	0.00	619.97	620.04
1H	49+00.25	0.00	619.98	620.03
1J	49+10.25	0.00	619.99	620.02
1K	49+20.25	0.00	620.00	620.01
1L	49+30.25	0.00	620.01	620.02
℄ Brg. Pier 20	49+36.50	0.00	620.02	620.02
2A	49+46.50	0.00	620.04	620.04
2B	49+56.50	0.00	620.06	620.07
2C	49+66.50	0.00	620.08	620.10
2D	49+76.50	0.00	620.10	620.14
2E	49+86.50	0.00	620.12	620.18
2F	49+96.50	0.00	620.14	620.22
2G	50+06.50	0.00	620.17	620.25
2H	50+16.50	0.00	620.20	620.27
2J	50+26.50	0.00	620.23	620.30
2K	50+36.50	0.00	620.26	620.31
2L	50+46.50	0.00	620.29	620.33
2M	50+56.50	0.00	620.32	620.35
2N	50+66.50	0.00	620.36	620.37
2P	50+76.50	0.00	620.39	620.39
℄ Brg. Pier 21	50+82.50	0.00	620.42	620.42
3A	50+92.50	0.00	620.45	620.46
3B	51+02.50	0.00	620.49	620.51
3C	51+12.50	0.00	620.54	620.57
3D	51+22.50	0.00	620.58	620.63
3E	51+32.50	0.00	620.63	620.69
3F	51+42.50	0.00	620.67	620.75
3G	51+52.50	0.00	620.72	620.80
3H	51+62.50	0.00	620.77	620.85
3J	51+72.50	0.00	620.82	620.89
3K	51+82.50	0.00	620.88	620.93
3L	51+92.50	0.00	620.93	620.97
3M	52+02.50	0.00	620.99	621.01
3N	52+12.50	0.00	621.04	621.05
3P	52+22.50	0.00	621.10	621.10
℄ Brg. Pier 22	52+28.50	0.00	621.14	621.14
4A	52+38.50	0.00	621.20	621.21
4B	52+48.50	0.00	621.27	621.29
4C	52+58.50	0.00	621.33	621.37
4D	52+68.50	0.00	621.40	621.46
4E	52+78.50	0.00	621.46	621.54
4F	52+88.50	0.00	621.53	621.62
4G	52+98.50	0.00	621.61	621.70
4H	53+08.50	0.00	621.68	621.76
4J	53+18.50	0.00	621.75	621.82
4K	53+28.50	0.00	621.83	621.88
4L	53+38.50	0.00	621.91	621.93
℄ S. Brg. Pier 23	53+44.75	0.00	621.95	621.95
℄ Pier 23	53+45.50	0.00	621.96	621.96

GIRDER 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	48+17.71	8.00	619.83	619.83
℄ Brg. S. Abut.	48+20.25	8.00	619.83	619.83
1A	48+30.25	8.00	619.82	619.86
1B	48+40.25	8.00	619.82	619.88
1C	48+50.25	8.00	619.83	619.90
1D	48+60.25	8.00	619.83	619.92
1E	48+70.25	8.00	619.83	619.92
1F	48+80.25	8.00	619.84	619.92
1G	48+90.25	8.00	619.85	619.92
1H	49+00.25	8.00	619.86	619.91
1J	49+10.25	8.00	619.87	619.90
1K	49+20.25	8.00	619.88	619.89
1L	49+30.25	8.00	619.89	619.90
℄ Brg. Pier 20	49+36.50	8.00	619.90	619.90
2A	49+46.50	8.00	619.92	619.92
2B	49+56.50	8.00	619.94	619.95
2C	49+66.50	8.00	619.96	619.98
2D	49+76.50	8.00	619.98	620.02
2E	49+86.50	8.00	620.00	620.06
2F	49+96.50	8.00	620.02	620.10
2G	50+06.50	8.00	620.05	620.13
2H	50+16.50	8.00	620.08	620.15
2J	50+26.50	8.00	620.11	620.18
2K	50+36.50	8.00	620.14	620.19
2L	50+46.50	8.00	620.17	620.21
2M	50+56.50	8.00	620.20	620.23
2N	50+66.50	8.00	620.24	620.25
2P	50+76.50	8.00	620.27	620.27
℄ Brg. Pier 21	50+82.50	8.00	620.30	620.30
3A	50+92.50	8.00	620.33	620.34
3B	51+02.50	8.00	620.37	620.39
3C	51+12.50	8.00	620.42	620.45
3D	51+22.50	8.00	620.46	620.51
3E	51+32.50	8.00	620.51	620.57
3F	51+42.50	8.00	620.55	620.63
3G	51+52.50	8.00	620.60	620.68
3H	51+62.50	8.00	620.65	620.73
3J	51+72.50	8.00	620.70	620.77
3K	51+82.50	8.00	620.76	620.81
3L	51+92.50	8.00	620.81	620.85
3M	52+02.50	8.00	620.87	620.89
3N	52+12.50	8.00	620.92	620.93
3P	52+22.50	8.00	620.98	620.98
℄ Brg. Pier 22	52+28.50	8.00	621.02	621.02
4A	52+38.50	8.00	621.08	621.09
4B	52+48.50	8.00	621.15	621.17
4C	52+58.50	8.00	621.21	621.25
4D	52+68.50	8.00	621.28	621.34
4E	52+78.50	8.00	621.34	621.42
4F	52+88.50	8.00	621.41	621.50
4G	52+98.50	8.00	621.49	621.58
4H	53+08.50	8.00	621.56	621.64
4J	53+18.50	8.00	621.63	621.70
4K	53+28.50	8.00	621.71	621.76
4L	53+38.50	8.00	621.79	621.81
℄ S. Brg. Pier 23	53+44.75	8.00	621.83	621.83
℄ Pier 23	53+45.50	8.00	621.84	621.84

GIRDER 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	48+17.71	16.00	619.69	619.69
℄ Brg. S. Abut.	48+20.25	16.00	619.69	619.69
1A	48+30.25	16.00	619.68	619.70
1B	48+40.25	16.00	619.68	619.72
1C	48+50.25	16.00	619.69	619.73
1D	48+60.25	16.00	619.69	619.74
1E	48+70.25	16.00	619.69	619.75
1F	48+80.25	16.00	619.70	619.75
1G	48+90.25	16.00	619.71	619.75
1H	49+00.25	16.00	619.72	619.75
1J	49+10.25	16.00	619.73	619.75
1K	49+20.25	16.00	619.74	619.75
1L	49+30.25	16.00	619.75	619.76
℄ Brg. Pier 20	49+36.50	16.00	619.76	619.76
2A	49+46.50	16.00	619.78	619.78
2B	49+56.50	16.00	619.80	619.80
2C	49+66.50	16.00	619.82	619.83
2D	49+76.50	16.00	619.84	619.86
2E	49+86.50	16.00	619.86	619.90
2F	49+96.50	16.00	619.88	619.93
2G	50+06.50	16.00	619.91	619.96
2H	50+16.50	16.00	619.94	619.98
2J	50+26.50	16.00	619.97	620.01
2K	50+36.50	16.00	620.00	620.03
2L	50+46.50	16.00	620.03	620.05
2M	50+56.50	16.00	620.06	620.08
2N	50+66.50	16.00	620.10	620.10
2P	50+76.50	16.00	620.13	620.13
℄ Brg. Pier 21	50+82.50	16.00	620.16	620.16
3A	50+92.50	16.00	620.19	620.20
3B	51+02.50	16.00	620.23	620.24
3C	51+12.50	16.00	620.28	620.30
3D	51+22.50	16.00	620.32	620.35
3E	51+32.50	16.00	620.37	620.40
3F	51+42.50	16.00	620.41	620.46
3G	51+52.50	16.00	620.46	620.51
3H	51+62.50	16.00	620.51	620.56
3J	51+72.50	16.00	620.56	620.60
3K	51+82.50	16.00	620.62	620.65
3L	51+92.50	16.00	620.67	620.69
3M	52+02.50	16.00	620.73	620.74
3N	52+12.50	16.00	620.78	620.79
3P	52+22.50	16.00	620.84	620.84
℄ Brg. Pier 22	52+28.50	16.00	620.88	620.88
4A	52+38.50	16.00	620.94	620.95
4B	52+48.50	16.00	621.01	621.02
4C	52+58.50	16.00	621.07	621.09
4D	52+68.50	16.00	621.14	621.17
4E	52+78.50	16.00	621.20	621.25
4F	52+88.50	16.00	621.27	621.33
4G	52+98.50	16.00	621.35	621.40
4H	53+08.50	16.00	621.42	621.47
4J	53+18.50	16.00	621.49	621.54
4K	53+28.50	16.00	621.57	621.60
4L	53+38.50	16.00	621.65	621.66
℄ S. Brg. Pier 23	53+44.75	16.00	621.69	621.69
℄ Pier 23	53+45.50	16.00	621.70	621.70

NOTE:
Offset measured from ℄ NB IL-171 & P.G.L.

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	PLOT DATE = 6/12/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS (2 OF 3)
STRUCTURE NO. 016-0985
SHEET NO. SD8 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	449
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

GIRDER 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	48+17.71	20.00	619.61	619.61
℄ Brg. S. Abut.	48+20.25	20.00	619.61	619.61
1A	48+30.25	20.00	619.60	619.64
1B	48+40.25	20.00	619.60	619.67
1C	48+50.25	20.00	619.61	619.69
1D	48+60.25	20.00	619.61	619.71
1E	48+70.25	20.00	619.61	619.71
1F	48+80.25	20.00	619.62	619.71
1G	48+90.25	20.00	619.63	619.70
1H	49+00.25	20.00	619.64	619.69
1J	49+10.25	20.00	619.65	619.68
1K	49+20.25	20.00	619.66	619.67
1L	49+30.25	20.00	619.67	619.68
℄ Brg. Pier 20	49+36.50	20.00	619.68	619.68
2A	49+46.50	20.00	619.70	619.70
2B	49+56.50	20.00	619.72	619.73
2C	49+66.50	20.00	619.74	619.77
2D	49+76.50	20.00	619.76	619.81
2E	49+86.50	20.00	619.78	619.84
2F	49+96.50	20.00	619.80	619.88
2G	50+06.50	20.00	619.83	619.91
2H	50+16.50	20.00	619.86	619.94
2J	50+26.50	20.00	619.89	619.96
2K	50+36.50	20.00	619.92	619.98
2L	50+46.50	20.00	619.95	619.99
2M	50+56.50	20.00	619.98	620.01
2N	50+66.50	20.00	620.02	620.03
2P	50+76.50	20.00	620.05	620.05
℄ Brg. Pier 21	50+82.50	20.00	620.08	620.08
3A	50+92.50	20.00	620.11	620.12
3B	51+02.50	20.00	620.15	620.17
3C	51+12.50	20.00	620.20	620.23
3D	51+22.50	20.00	620.24	620.29
3E	51+32.50	20.00	620.29	620.35
3F	51+42.50	20.00	620.33	620.41
3G	51+52.50	20.00	620.38	620.46
3H	51+62.50	20.00	620.43	620.51
3J	51+72.50	20.00	620.48	620.55
3K	51+82.50	20.00	620.54	620.59
3L	51+92.50	20.00	620.59	620.63
3M	52+02.50	20.00	620.65	620.67
3N	52+12.50	20.00	620.70	620.71
3P	52+22.50	20.00	620.76	620.77
℄ Brg. Pier 22	52+28.50	20.00	620.80	620.80
4A	52+38.50	20.00	620.86	620.87
4B	52+48.50	20.00	620.93	620.95
4C	52+58.50	20.00	620.99	621.03
4D	52+68.50	20.00	621.06	621.12
4E	52+78.50	20.00	621.12	621.21
4F	52+88.50	20.00	621.19	621.29
4G	52+98.50	20.00	621.27	621.37
4H	53+08.50	20.00	621.34	621.43
4J	53+18.50	20.00	621.41	621.49
4K	53+28.50	20.00	621.49	621.54
4L	53+38.50	20.00	621.57	621.59
℄ S. Brg. Pier 23	53+44.75	20.00	621.61	621.61
℄ Pier 23	53+45.50	20.00	621.62	621.62

NOTE:
Offset measured from ℄ NB IL-171 & P.G.L.

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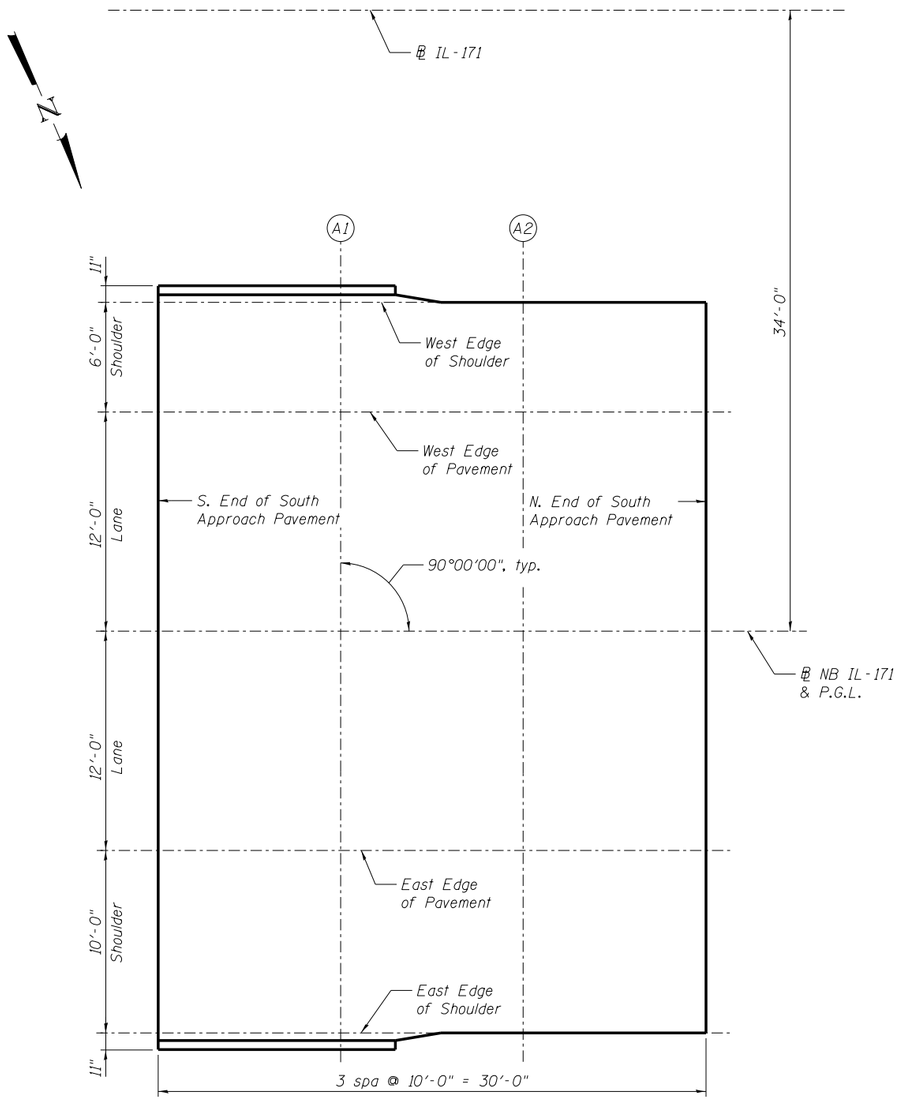
	PLOT DATE = 6/12/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS (3 OF 3)
STRUCTURE NO. 016-0985
SHEET NO. SD9 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	450
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



PLAN

WEST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
S. End of South Approach Pavement	47+88.21	-18.00	619.66
A1	47+98.21	-18.00	619.65
A2	48+08.21	-18.00	619.65
N. End of South Approach Pavement	48+18.21	-18.00	619.65

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
S. End of South Approach Pavement	47+88.21	-12.00	619.78
A1	47+98.21	-12.00	619.77
A2	48+08.21	-12.00	619.77
N. End of South Approach Pavement	48+18.21	-12.00	619.77

℄ NB IL-171 & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations
S. End of South Approach Pavement	47+88.21	0.00	619.96
A1	47+98.21	0.00	619.95
A2	48+08.21	0.00	619.95
N. End of South Approach Pavement	48+18.21	0.00	619.95

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
S. End of South Approach Pavement	47+88.21	12.00	619.78
A1	47+98.21	12.00	619.77
A2	48+08.21	12.00	619.77
N. End of South Approach Pavement	48+18.21	12.00	619.77

EAST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
S. End of South Approach Pavement	47+88.21	22.00	619.58
A1	47+98.21	22.00	619.57
A2	48+08.21	22.00	619.57
N. End of South Approach Pavement	48+18.21	22.00	619.57

NOTE:
Offset measured from ℄ NB IL-171.

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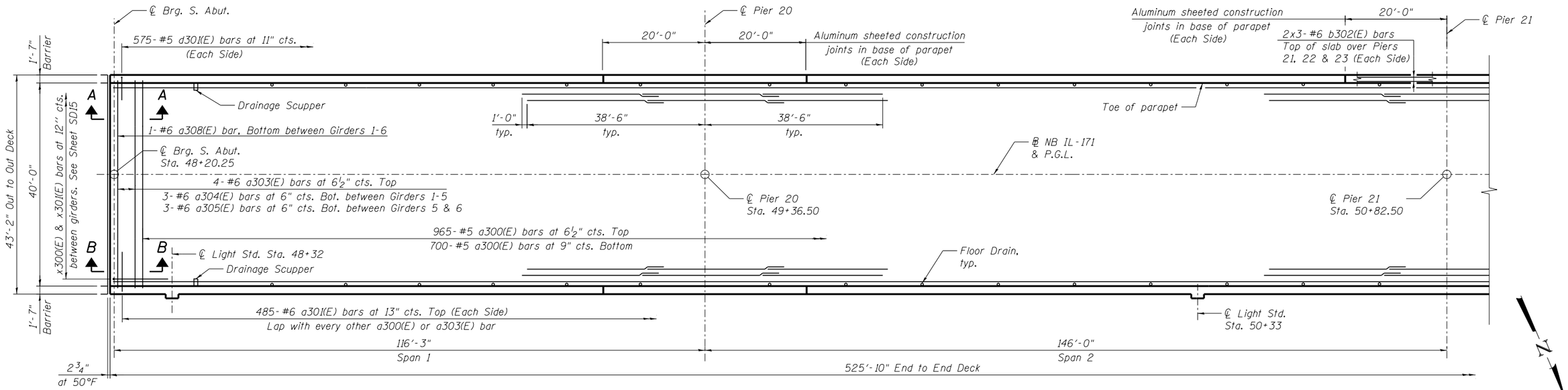
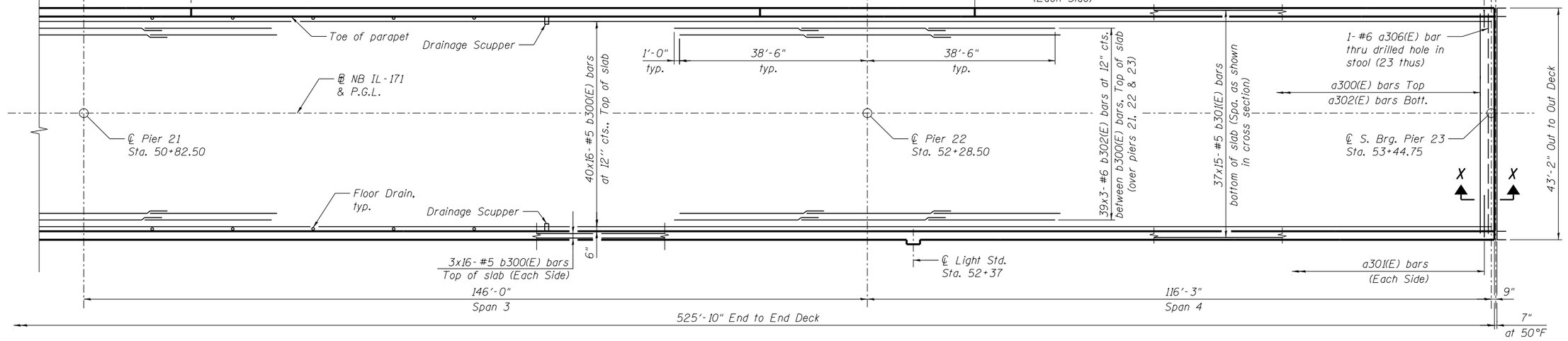
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SOUTH APPROACH SLAB ELEVATIONS
STRUCTURE NO. 016-0985
SHEET NO. SD10 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	451
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		



PLAN - SPANS 1 AND 2

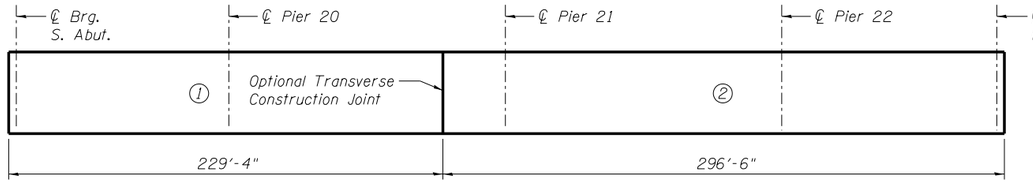


PLAN - SPANS 3 AND 4

MINIMUM BAR LAP

(Slab)

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



OPTIONAL DECK POUR SEQUENCE

NOTES:

1. When the deck pour is stopped for the day at the optional transverse construction joint in the deck pouring sequence as shown, the next pour shall not be made until both of the following are met:
   A) At least 72 hours shall have elapsed from the end of the previous pour.
   B) The concrete strength shall have attained a minimum flexural strength of 650 psi or a minimum compressive strength of 3500 psi.
2. See Sheet SD15 for Superstructure Details and Bill of Material.
3. See Sheet SD12 for Deck Cross Section.
4. See Sheet SD1 for locations of Drainage Scuppers and Floor Drains.
5. See Sheet SD15 for Sections A-A & B-B.
6. See Sheet SD13 for Section X-X.
7. Dimensions are based on a Rolled Rail Strip Seal Joint at the S. Abutment. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet SD19.

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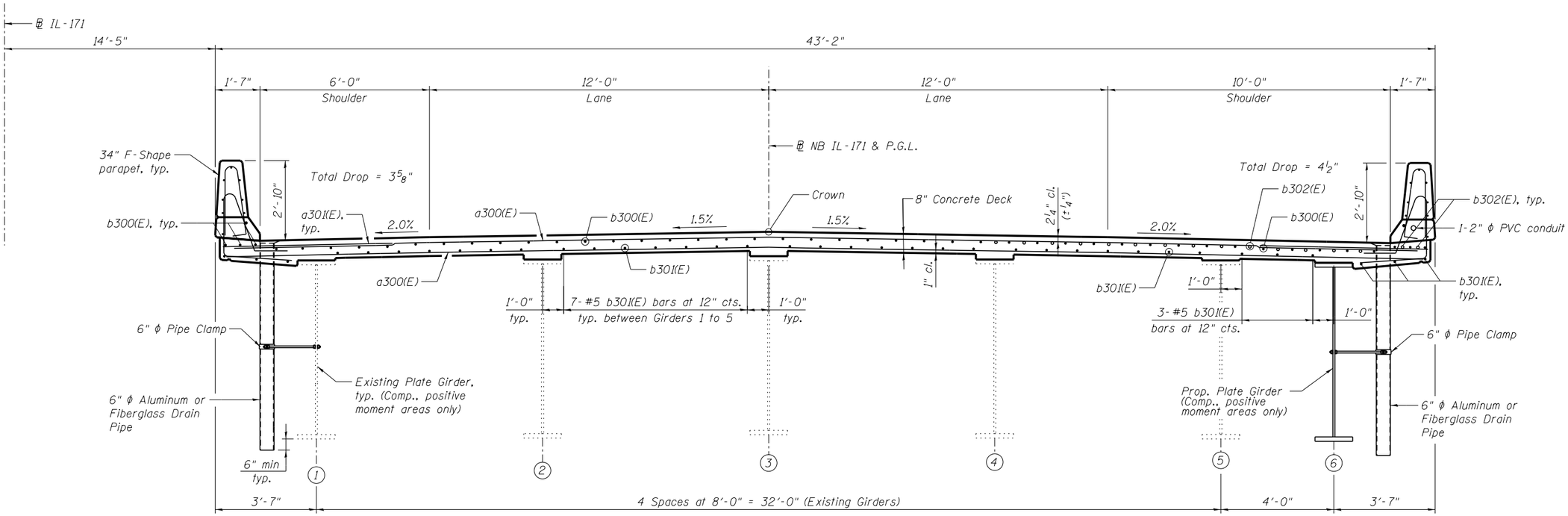
	PLOT DATE = 6/12/2015	CHECKED - DTS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK REINFORCEMENT PLAN
STRUCTURE NO. 016-0985
SHEET NO. SD11 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	452
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

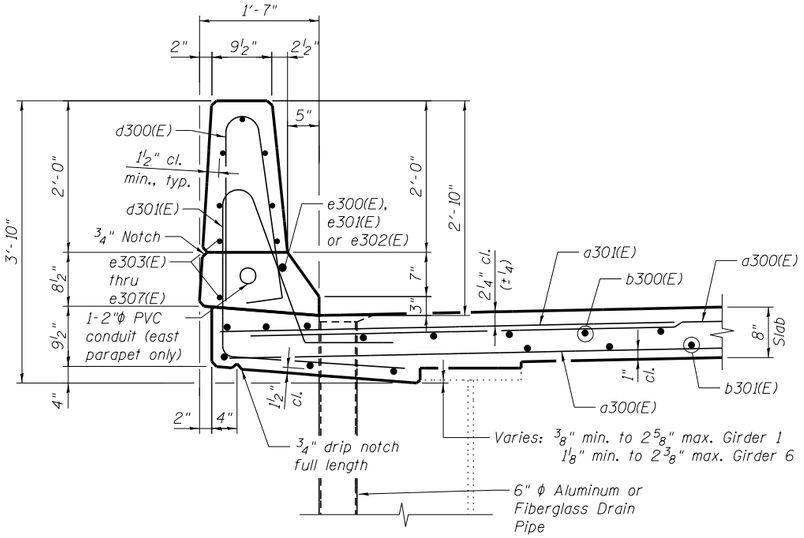


NEAR MIDSPAN

NEAR PIER

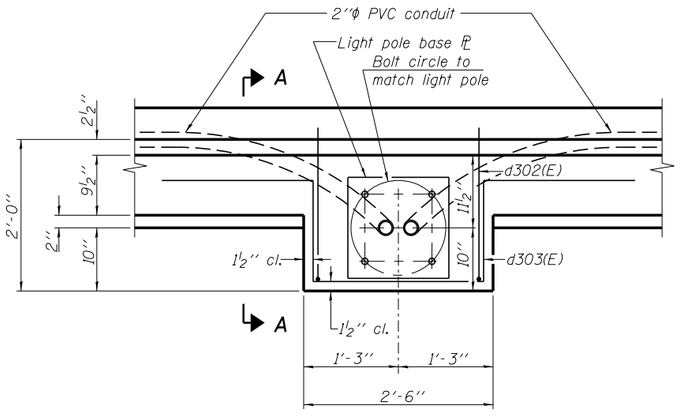
CROSS SECTION

(Looking Upstation/North)
(showing Floor Drains)



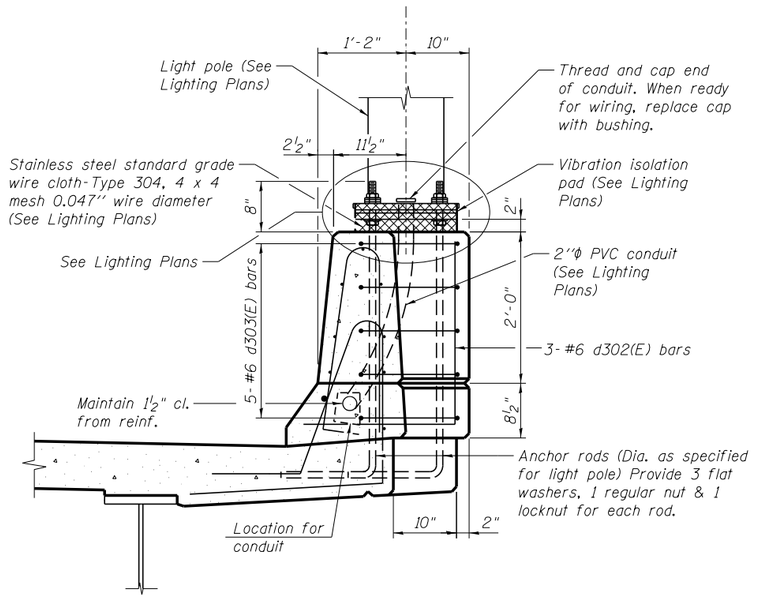
SECTION THRU PARAPET

(showing Floor Drain)



PLAN

Note:
Cost of anchor rods is included with Concrete Superstructure.



SECTION A-A

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	PLOT DATE = 6/12/2015	CHECKED - DTS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK CROSS SECTION AND DETAILS
STRUCTURE NO. 016-0985
SHEET NO. SD12 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	453
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

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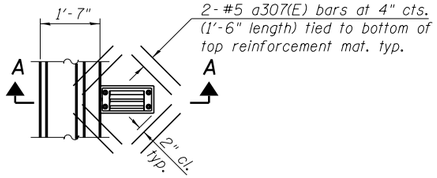
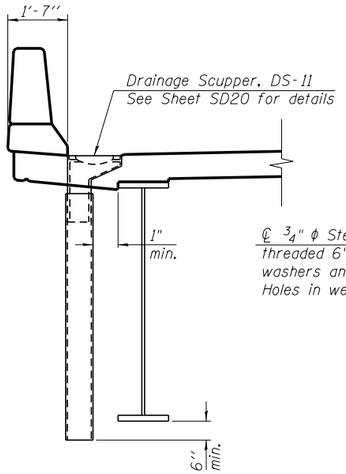
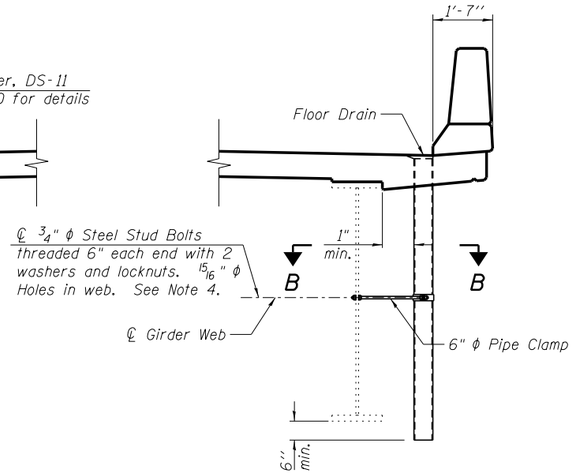


PLAN

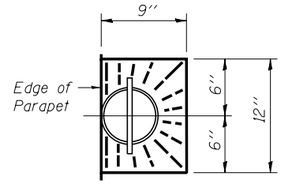
Note:
Cut longitudinal reinforcement to clear drainage scuppers.



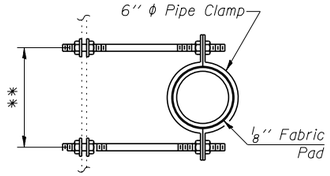
SECTION A-A
(showing proposed girder)



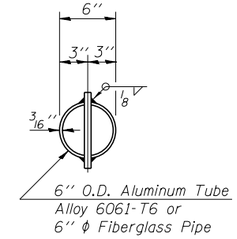
SECTION AT PARAPET
WITH FLOOR DRAIN
(showing existing girder)



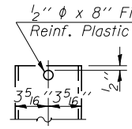
TOP PLAN



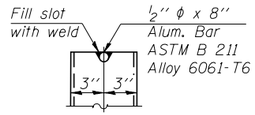
SECTION B-B
** Dimension as required by Pipe Clamp



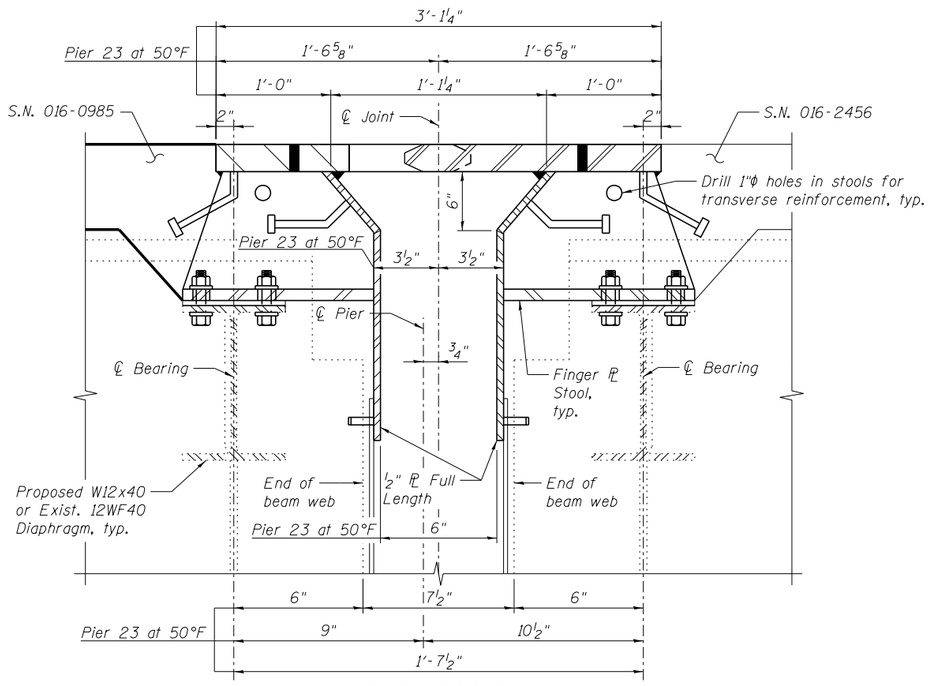
TOP PLAN
(Showing Aluminum Tube)



FIBERGLASS
PIPE



ALUMINUM
TUBE



SECTION X-X
(See SN 016-2456 plans for additional finger plate joint details. Cost of finger plate joint included with SN 016-2456.)

NOTES:

1. Cleaning and painting of the exterior surfaces of the floor drains and drainage scuppers shall be performed under a separate painting contract.
2. Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.
3. Galvanize clamping device according to AASHTO M232. Cost of clamping device and galvanizing included with Floor Drains.
4. Holes shall be drilled in field for existing girder and may be either field drilled or shop drilled for proposed girder. Cost of field drilling included with "Furnishing and Erecting Structural Steel".
5. See Sheet SD11 for location of Section X-X.

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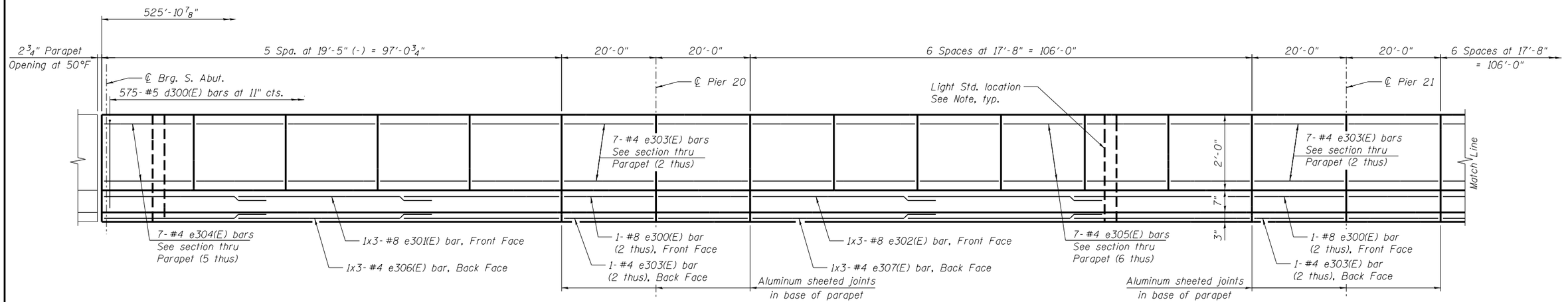
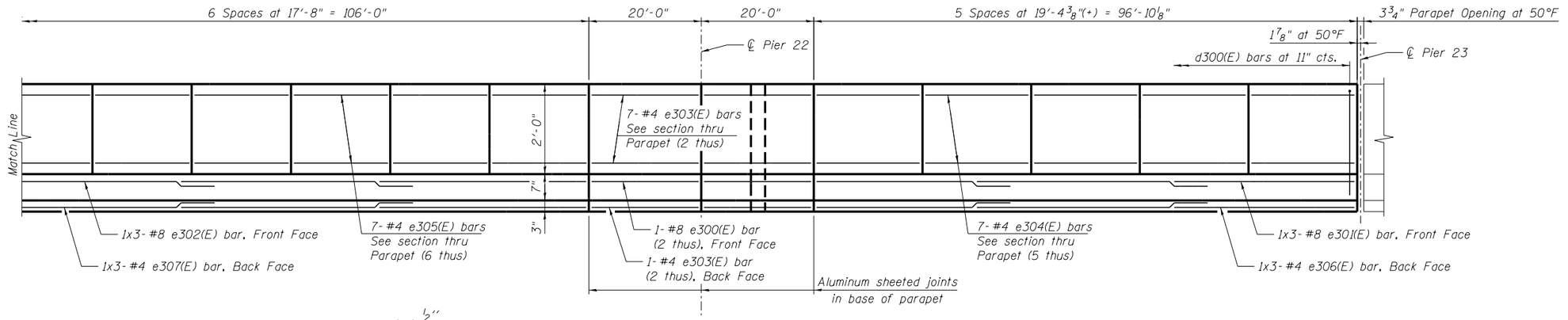
	PLOT DATE = 6/12/2015	CHECKED - DTS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

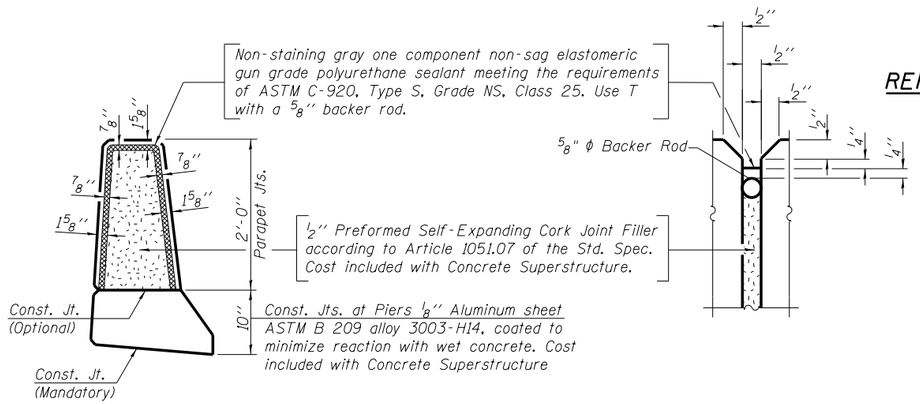
DECK DRAINAGE AND FINGER PLATE DETAILS
STRUCTURE NO. 016-0985
SHEET NO. SD13 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	454
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		





INSIDE ELEVATION OF WEST PARAPET
REFLECTED INSIDE ELEVATION OF EAST PARAPET



PARAPET JOINT DETAILS
(For conventional concrete placement)

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

NOTE:
See Sheet SD1 for Light Pole locations (E. Parapet only).

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STATE OF ILLINOIS
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PARAPET DETAILS
STRUCTURE NO. 016-0985
SHEET NO. SD14 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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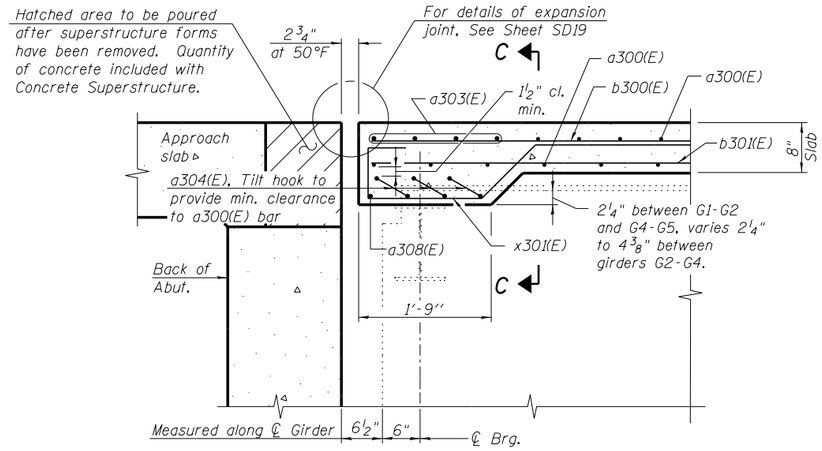
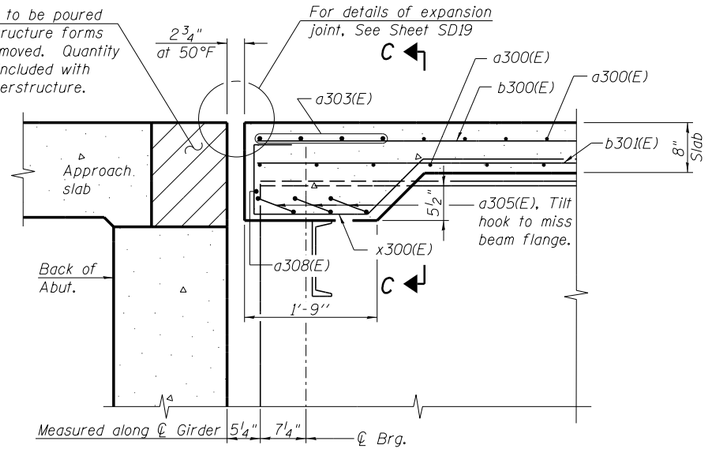
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



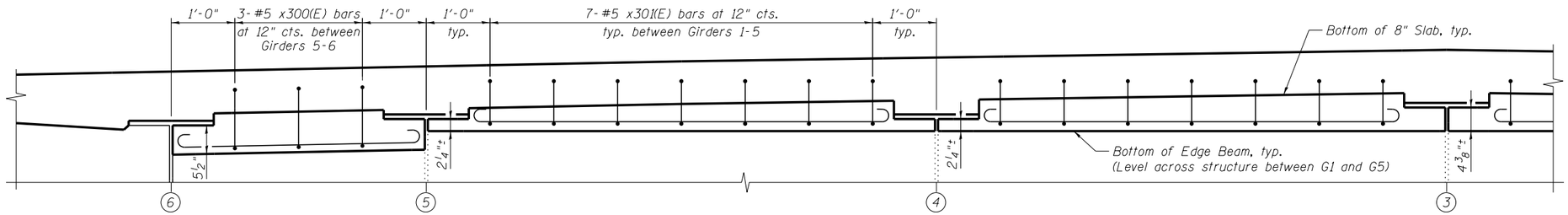
SECTION A-A

(Section applies to bays between G1 thru G5)



SECTION B-B

(Section applies to bay between G5 & G6)



SECTION C-C

(Reinforcement in 8" slab not shown for clarity)

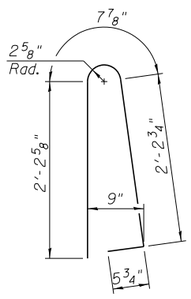
SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a300(E)	1665	#5	42'-6"	
a301(E)	970	#6	6'-6"	
a303(E)	4	#6	42'-6"	
a304(E)	12	#6	7'-9"	
a305(E)	3	#6	5'-1"	
a306(E)	23	#6	3'-8"	
a307(E)	32	#5	1'-6"	
a308(E)	1	#6	35'-0"	
b300(E)	736	#5	36'-0"	
b301(E)	555	#5	38'-2"	
b302(E)	387	#6	28'-8"	
d300(E)	1150	#5	5'-7"	
d301(E)	1150	#5	8'-0"	
d302(E)	9	#6	4'-5"	
d303(E)	15	#6	8'-11"	
e300(E)	12	#8	19'-8"	
e301(E)	12	#8	35'-9"	
e302(E)	12	#8	38'-9"	
e303(E)	96	#4	19'-8"	
e304(E)	140	#4	19'-1"	
e305(E)	168	#4	17'-4"	
e306(E)	12	#4	33'-8"	
e307(E)	12	#4	36'-8"	
x300(E)	3	#5	6'-5"	
x301(E)	28	#5	6'-2"	
Concrete Superstructure			Cu. Yd.	736.2
Bridge Deck Grooving			Sq. Yd.	2,221
Protective Coat			Sq. Yd.	2,778
Reinforcement Bars, Epoxy Coated			Pound	175,640

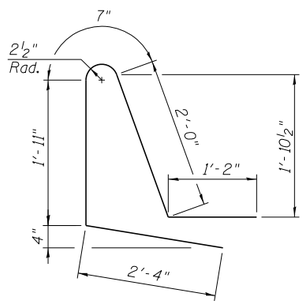
Bars indicated thus 40x16-#5 etc. indicates 40 lines of bars with 16 lengths per line.

NOTES:

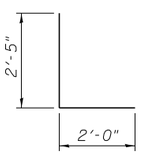
1. See Sheet SD11 for locations of Sections A-A & B-B.
2. Concrete edge beam shall be placed from fascia beam to fascia beam.



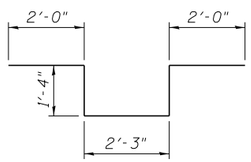
BAR d300(E)



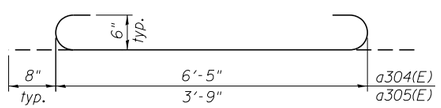
BAR d301(E)



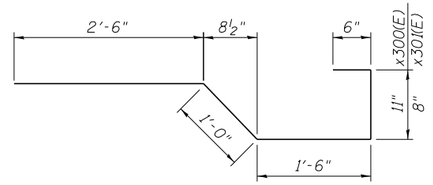
BAR d302(E)



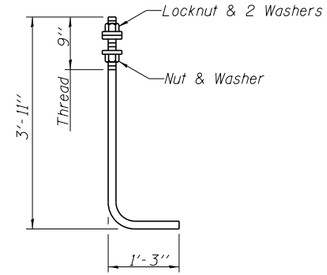
BAR d303(E)



BARS a304(E) AND a305(E)



BARS x300(E) AND x301(E)



ANCHOR ROD

Diameter as specified for light poles.
(ASTM F 1554 Grade 105)
Full length hot dipped galvanized.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS AND BILL OF MATERIAL
STRUCTURE NO. 016-0985
SHEET NO. SD15 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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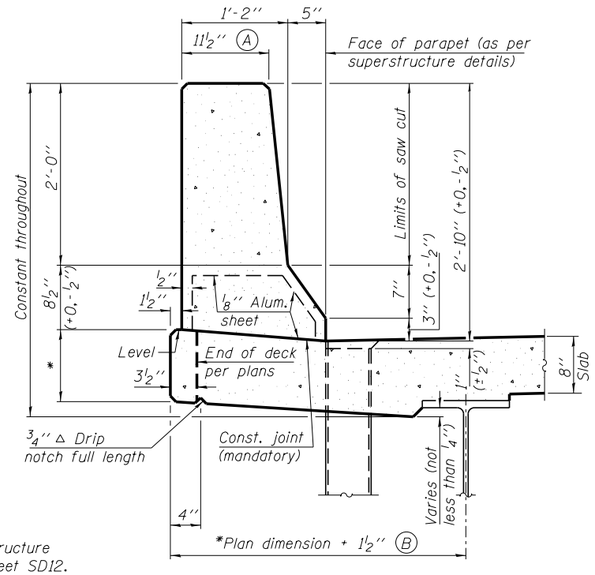
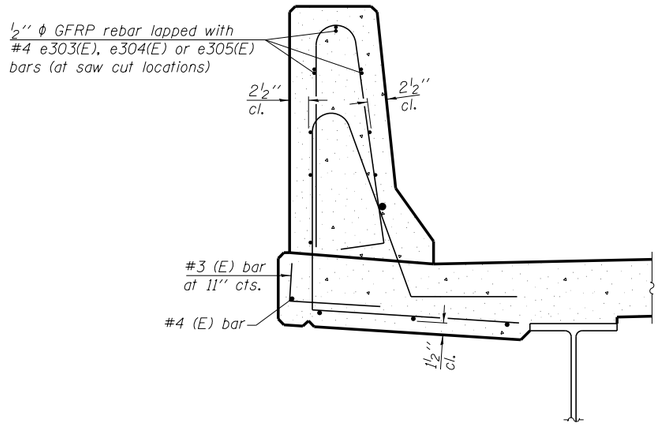
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



*See Superstructure Details on Sheet SD12.

34" F SHAPE PARAPET SECTION

(Showing dimensions)



SECTION

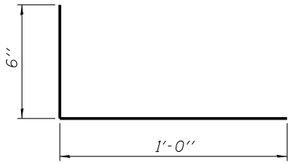
(34" parapet shown - 42" parapet similar)
(Showing reinforcement clearances for slip forming and additional reinforcement bars)

GENERAL NOTES

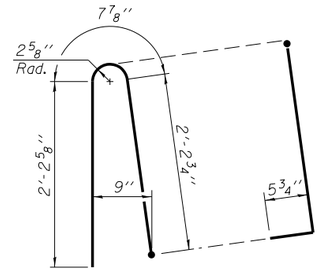
All dimensions shall remain the same as shown on Sheet SD12, except dimensions A and B which are to be revised as shown to provide additional clearance. Additional concrete needed to revise dimension A and B = 0.0165 cu. yds./ft. for 34" parapet or = 0.0223 cu. yds./ft. for 42" parapet.

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.

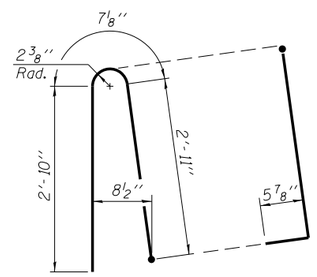


#3 (E) BAR



ALTERNATE BAR d300(E)

(For 34" parapet when conduit is present)



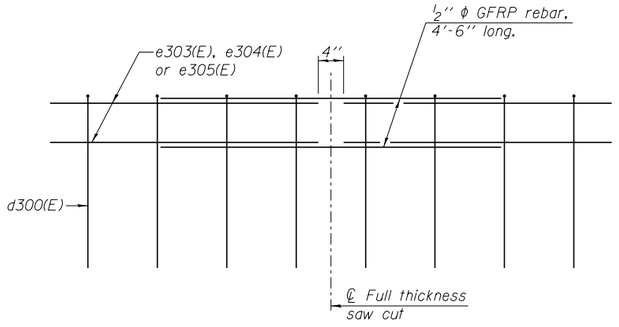
ALTERNATE BAR d300(E)

(For 42" parapet when conduit is present)

*See Superstructure Details on Sheet SD12.

42" F SHAPE PARAPET SECTION

(Showing dimensions)



GFRP REBAR STIFFENING DETAIL

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

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SFP 34-42

8-16-12

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DEPARTMENT OF TRANSPORTATION

CONCRETE PARAPET SLIPFORMING OPTION
STRUCTURE NO. 016-0985
SHEET NO. SD16 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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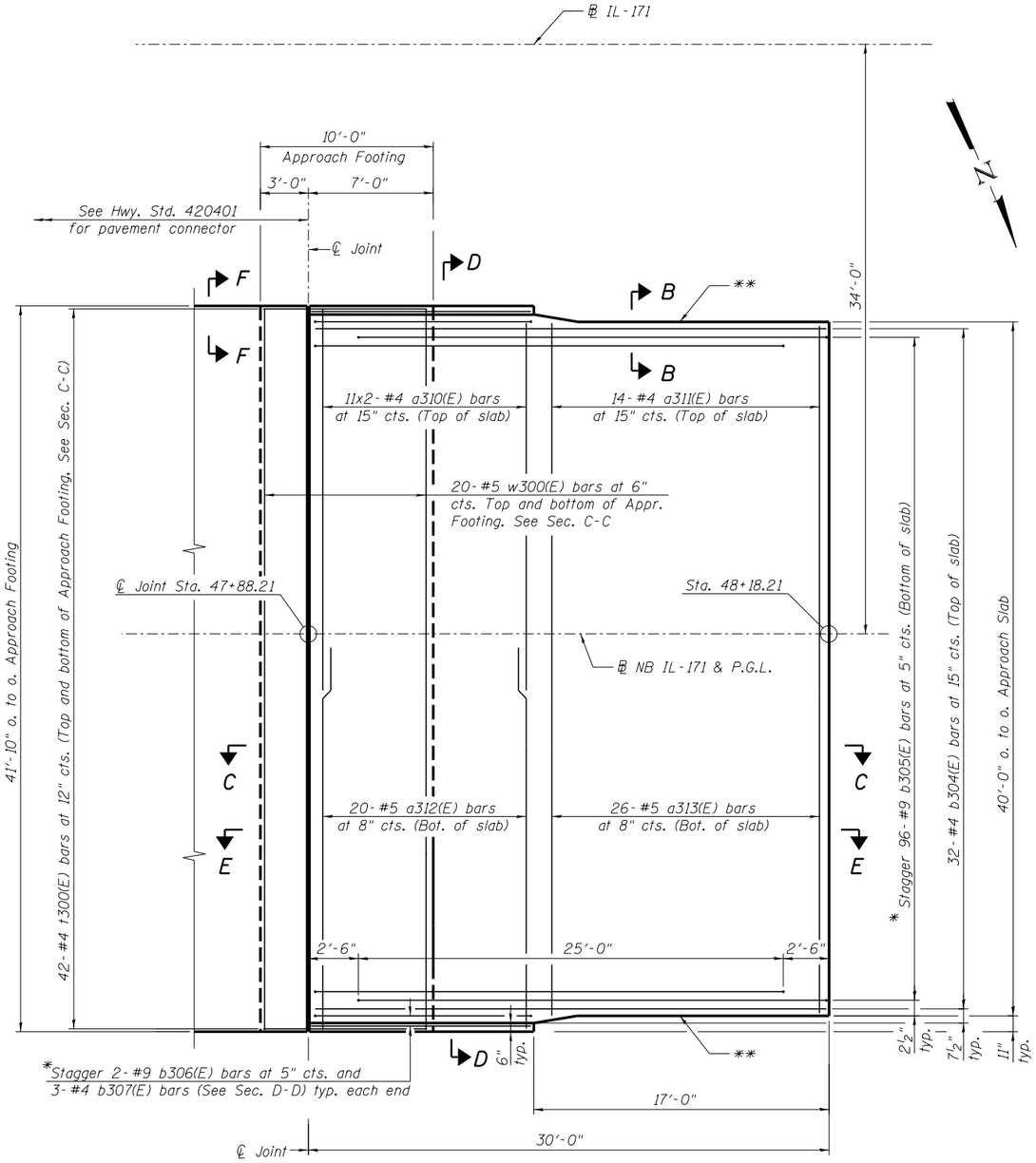
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

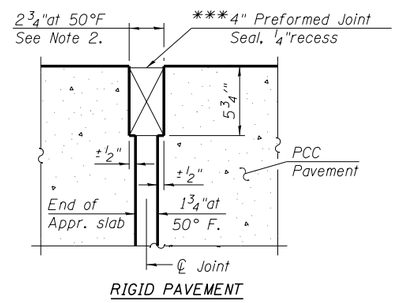


PLAN

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

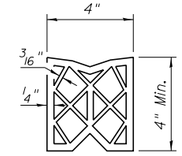
** Preformed Flexible Foam Expansion Joint Filler according to Article 1051.09 of the Std. Specifications; full depth of slab, full length of parapet. Cost included with Concrete Superstructure.

***Cost included with Concrete Superstructure.

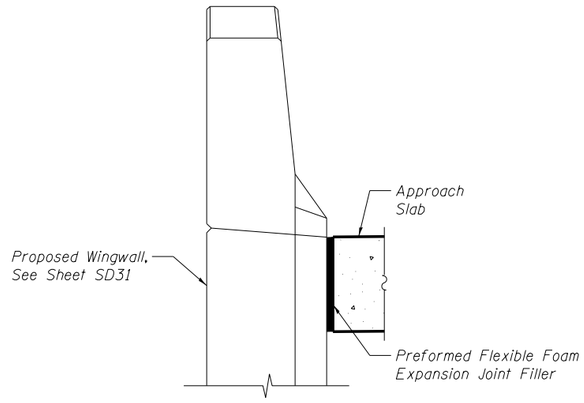


RIGID PAVEMENT

DETAIL A

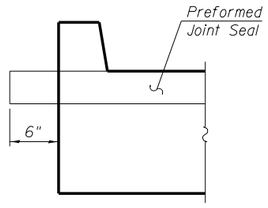


PREFORMED JOINT SEAL



SECTION B-B

(rebar not shown for clarity)



VIEW F-F

MINIMUM BAR LAP

(Approach)

#4 bar = 2'-7"

NOTES:

1. See Sheet SD18 for Sections C-C & D-D and View E-E.
2. 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 1½"for installation purposes.

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DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB PLAN
STRUCTURE NO. 016-0985
SHEET NO. SD17 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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		CONTRACT NO. 60W75		
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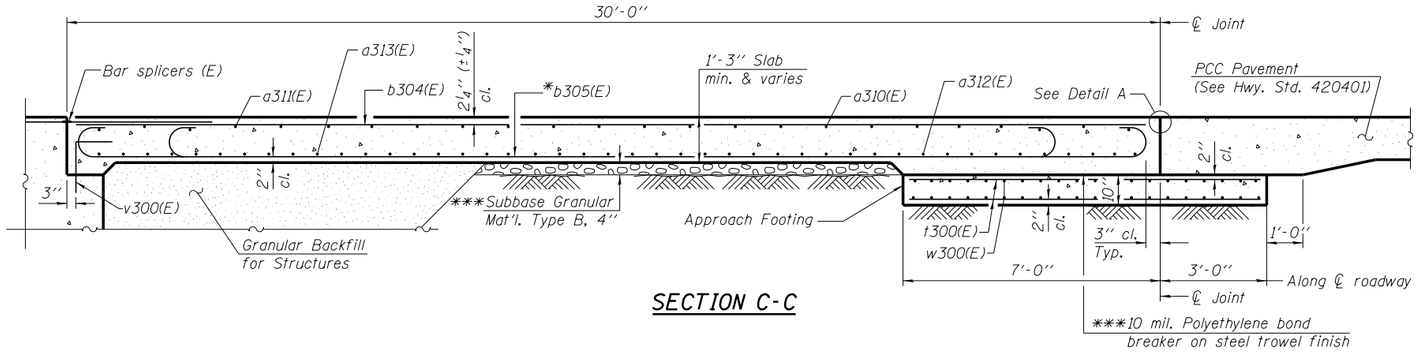
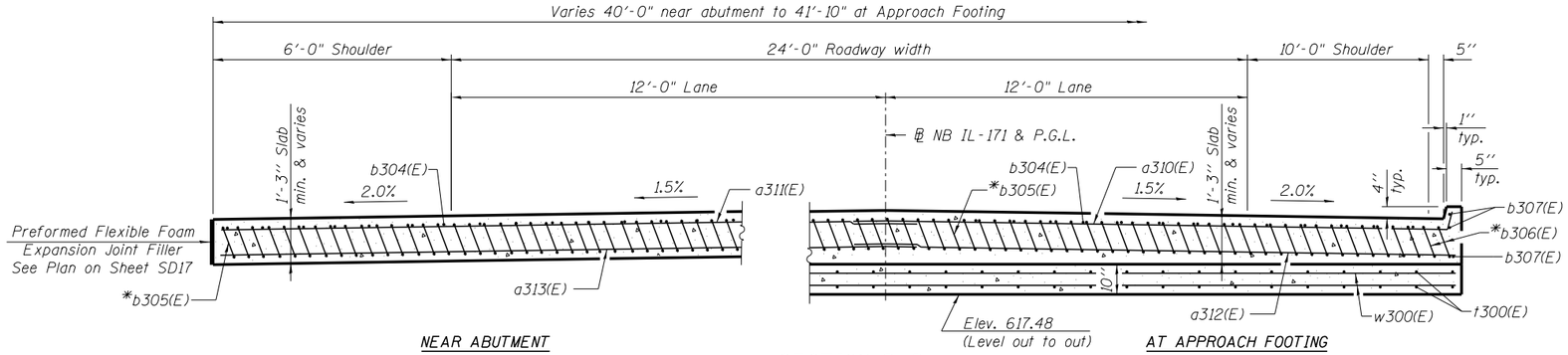


SECTION C-C

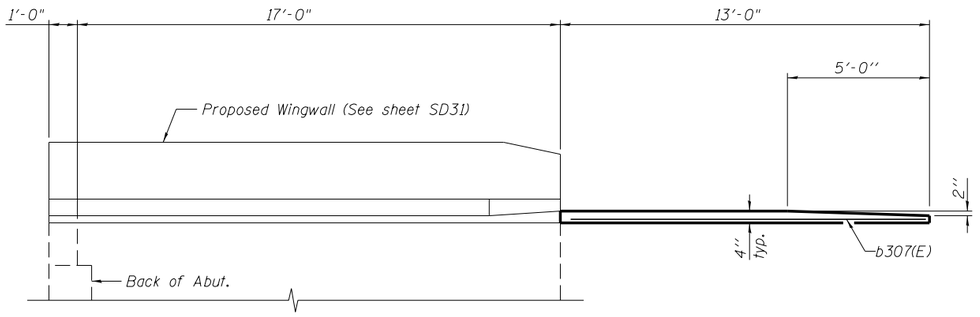


NEAR ABUTMENT

AT APPROACH FOOTING

SECTION D-D

(See Plan for dimensions not shown)



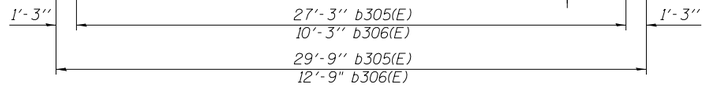
VIEW E-E

ONE APPROACH BILL OF MATERIAL

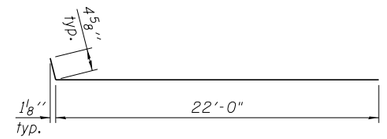
Bar	No.	Size	Length	Shape
a310(E)	22	#4	22'-5"	
a311(E)	14	#4	39'-8"	
a312(E)	20	#5	41'-6"	
a313(E)	26	#5	39'-8"	
b304(E)	32	#4	29'-8"	
b305(E)	96	#9	29'-9"	
b306(E)	4	#9	12'-9"	
b307(E)	6	#4	12'-8"	
t300(E)	84	#4	9'-8"	
w300(E)	40	#5	41'-6"	
Concrete Structures			Cu. Yd.	13.0
Concrete Superstructure			Cu. Yd.	59.1
Bridge Deck Grooving			Sq. Yd.	133
Protective Coat			Sq. Yd.	157
Reinforcement Bars, Epoxy Coated			Pound	15,500

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

*** Cost included with Concrete Superstructure.



BARS b305(E) AND b306(E)



BAR a310(E)

NOTES:

1. See Sheet SD17 for Detail A and View B-B.
2. Approach slab concrete shall be paid for as Concrete Superstructure.
3. Approach footing concrete shall be paid for as Concrete Structures.
4. Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
5. For v300(E) bar details, see Sheet SD29.
6. The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
7. For bar splicer details, see Sheet SD38.
8. Cost of excavation for approach footing included with Concrete Structures.
9. For Granular Backfill for Structures and drainage treatment details, see Sheet SD30.

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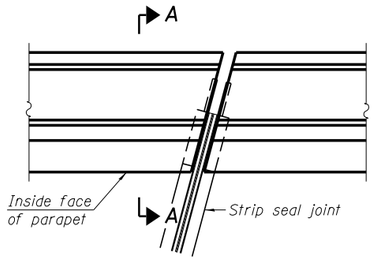
FILE NAME = 0160985_60W75_018_Approach_Details_2.dgn	USER NAME = jsurber	DESIGNED - MLM	REVISED -
		CHECKED - DTS	REVISED -
	PLOT SCALE =	DRAWN - RMG	REVISED -
	PLOT DATE = 6/12/2015	CHECKED - DTS	REVISED -

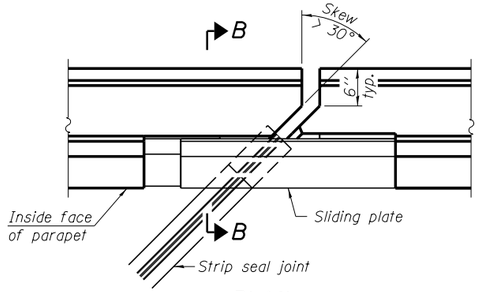
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 016-0985
SHEET NO. SD18 OF SD40 SHEETS

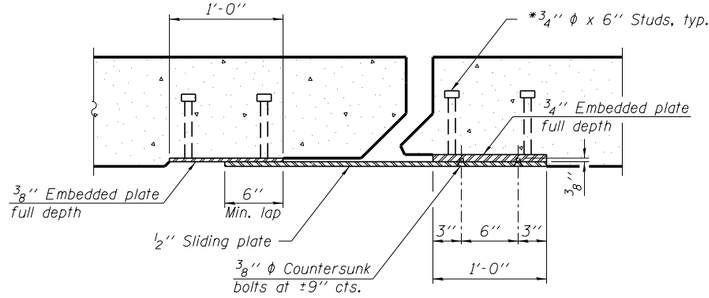
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	459
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



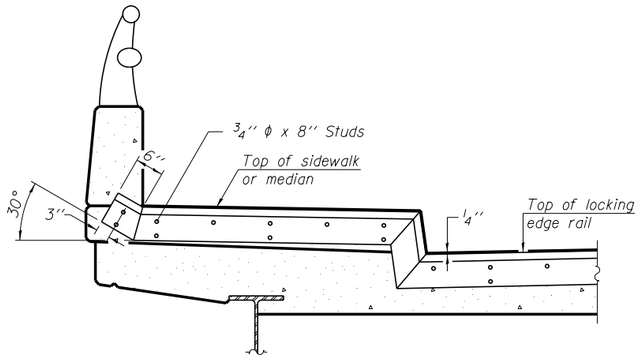
PLAN
(For skews ≤ 30°)



PLAN
(For skews > 30°)
Showing point block

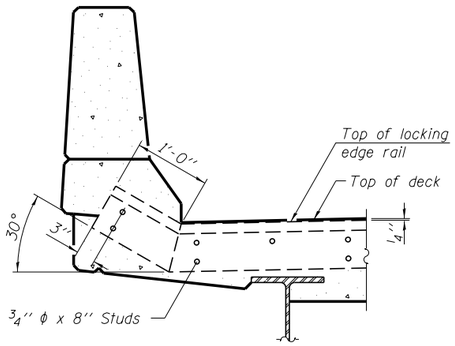


SECTION C-C

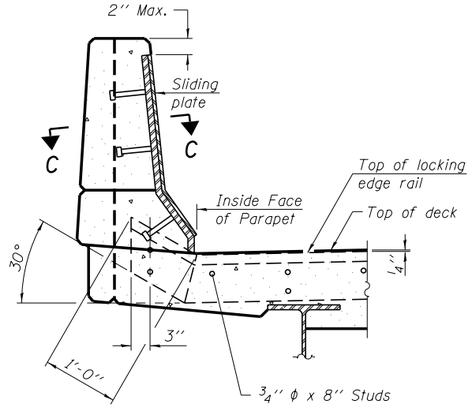


TYPICAL END TREATMENT AT SIDEWALK OR MEDIAN

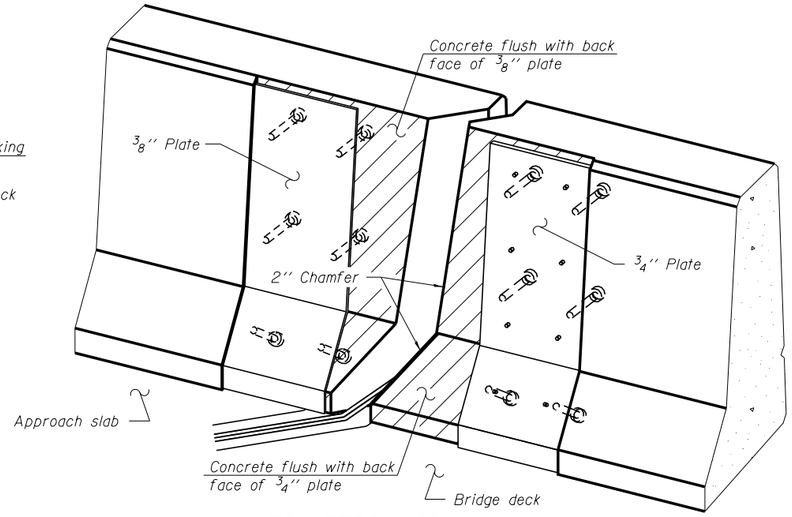
Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.



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.

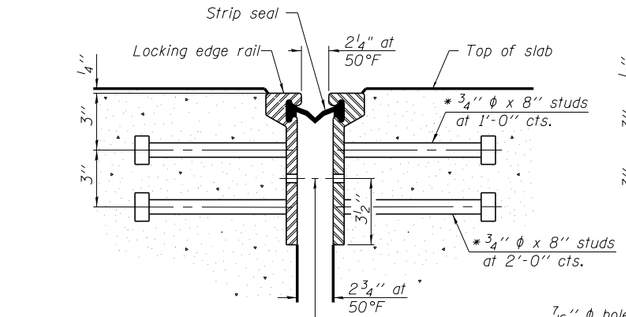
The manufacturer's recommended installation methods shall be followed.

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.

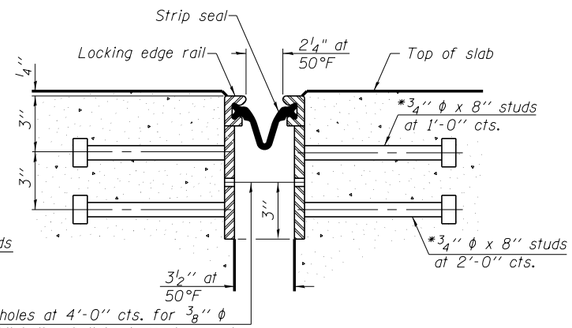
Maximum space between rail segments shall be 3/16", sealed with a suitable sealant. Joints in rails within 10 ft. of curbs shall be welded.

Parapet plates and anchorage studs for skews > 30° included in the cost of Preformed Joint Strip Seal.



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.

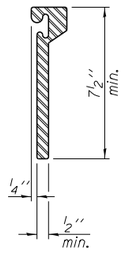
SECTION THRU ROLLED RAIL JOINT



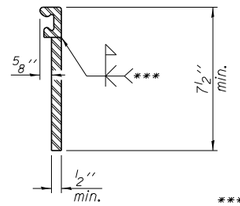
7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU WELDED RAIL JOINT

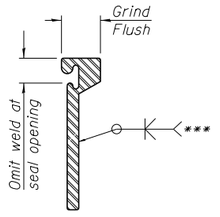
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



ROLLED EXTRUDED RAIL



WELDED RAIL



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

LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.

Rolled rail shown, welded rail similar.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	42.0

LOCKING EDGE RAILS

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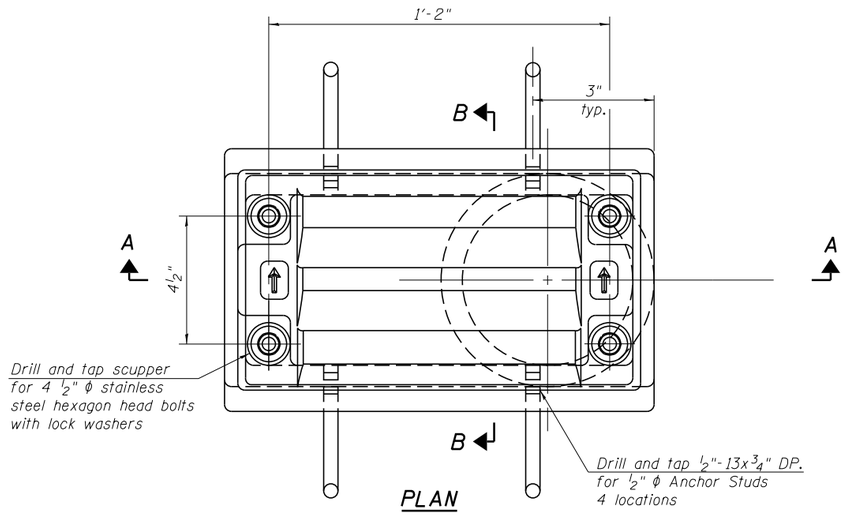
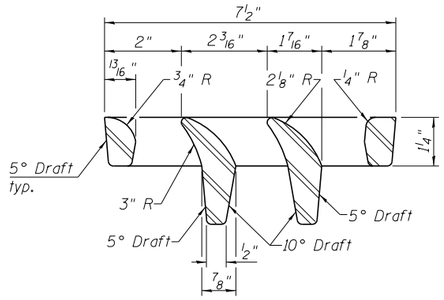
EJ-SSJ 1-27-12

FILE NAME =	USER NAME = jsurber	DESIGNED - MLM/JLS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PREFORMED JOINT STRIP SEAL STRUCTURE NO. 016-0985
		CHECKED - DTS	REVISED -		
0160985_60W75_019_Exp_Joint_Details.dgn	PLOT SCALE =	DRAWN - RMG	REVISED -		
	PLOT DATE = 6/12/2015	CHECKED - DTS	REVISED -		SHEET NO. SD19 OF SD40 SHEETS

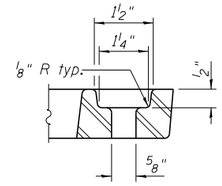
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	460
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



PLAN



VANE GRATE DETAIL



BOLT HOLE DETAIL

Notes:

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.

Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.

Downspouts located on the exterior side of a fascia beam shall be painted under a separate painting contract.

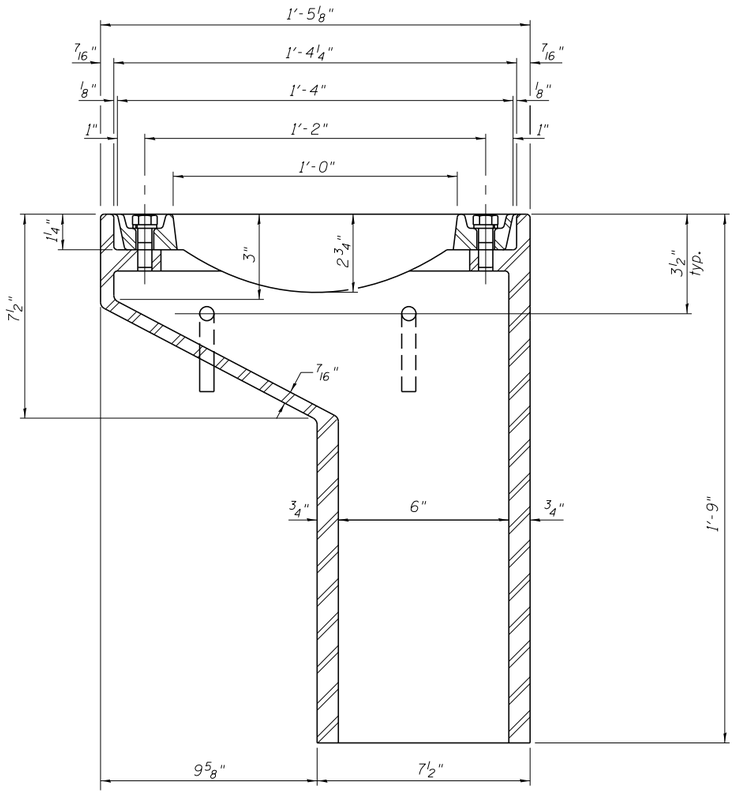
As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.

The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.

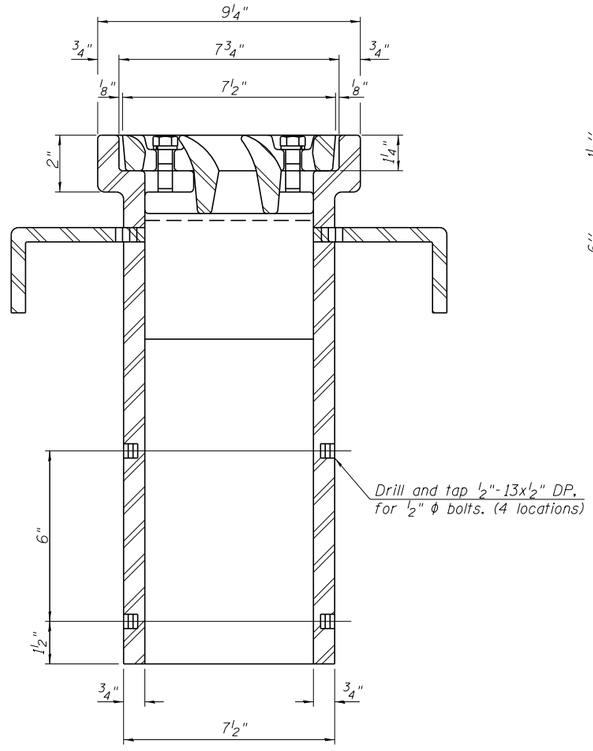
Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-11.

Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.

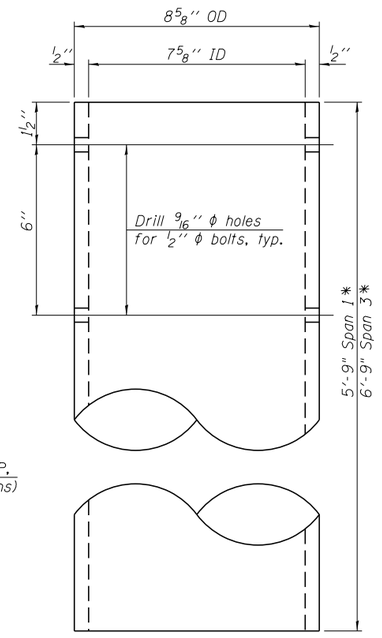


SECTION A-A

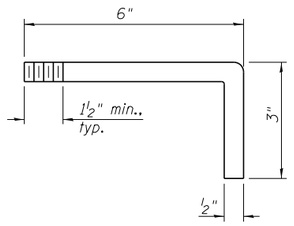
See Sheet SD13 for scupper location relative to parapet.



SECTION B-B



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 Scuppers, DS-11	Each	4

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DS-11 7-1-10

FILE NAME = 0160985_60W75_020_Scupper.dgn	USER NAME = jsurber	DESIGNED - MLM/JLS	REVISED -
		CHECKED - DTS	REVISED -
	PLOT SCALE =	DRAWN - RMG	REVISED -
	PLOT DATE = 6/12/2015	CHECKED - DTS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCUPPER DETAILS
STRUCTURE NO. 016-0985
SHEET NO. SD20 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	461
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

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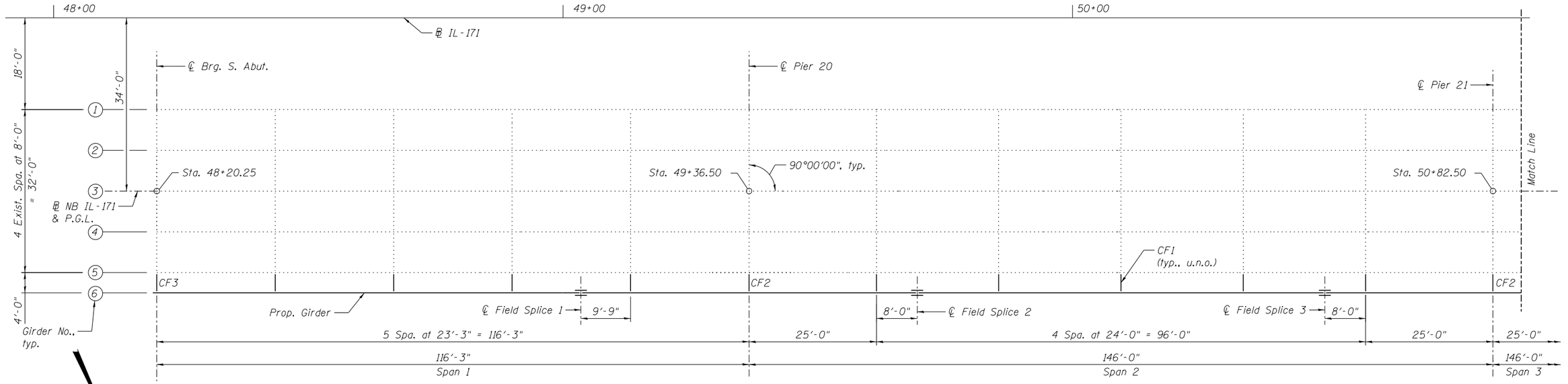
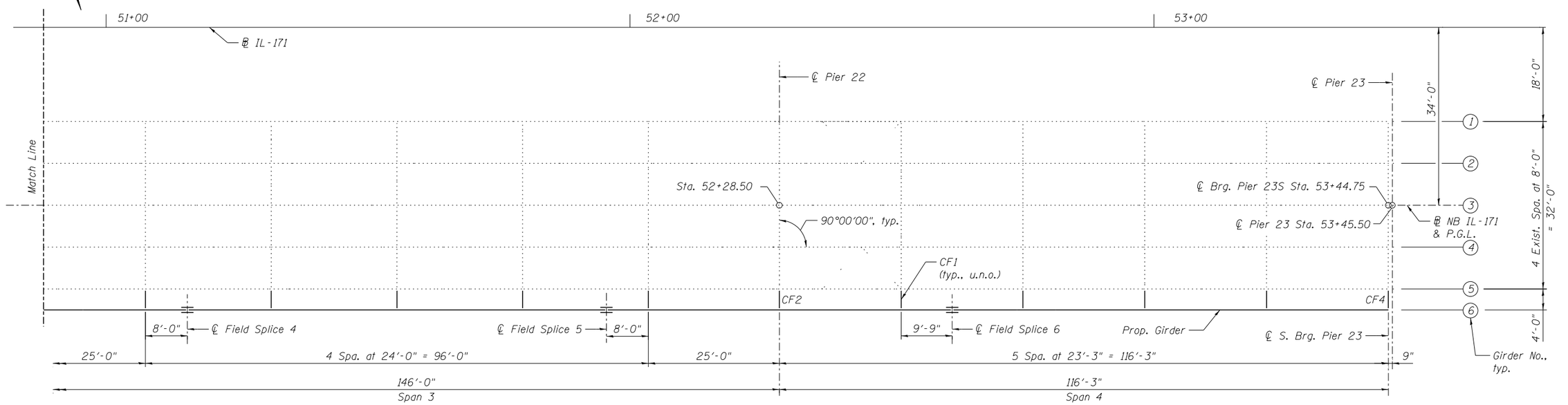


FRAMING PLAN - SPANS 1 & 2



FRAMING PLAN - SPANS 3 & 4

NOTES:

1. Field verify all existing stiffener plate locations on girder 5 before fabricating proposed girders. Adjust location of cross frames so that connection to existing stiffener plate can be made.
2. See sheet SD24 for steel plate girder cross frame details.
3. See sheet SD23 for splice details.
4. See sheet SD25 for structural steel removals.
5. 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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	PLOT SCALE =	DRAWN - RMG	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN
STRUCTURE NO. 016-0985
SHEET NO. SD21 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	462
		CONTRACT NO. 60W75		
ILLINOIS	FED. AID PROJECT			

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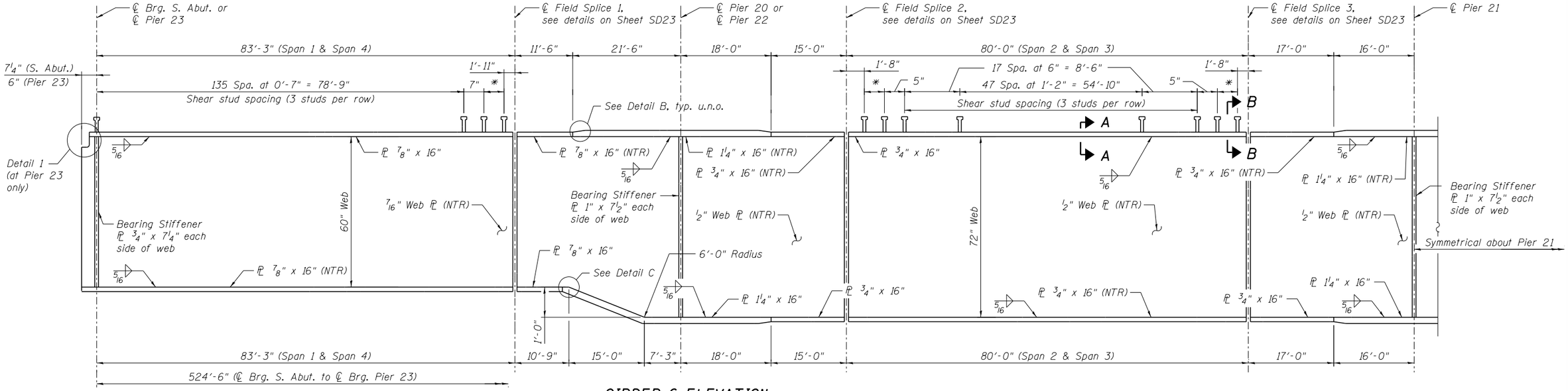
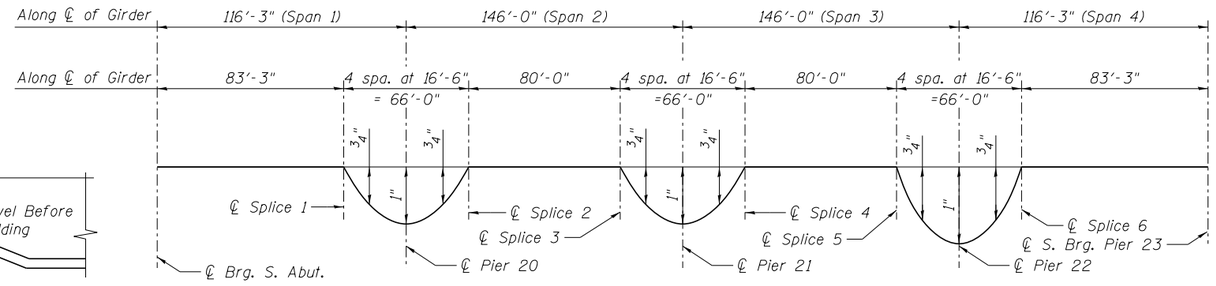


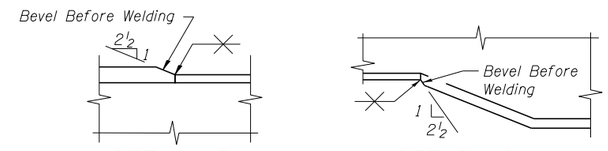
GIRDER 6 ELEVATION

(Shear stud connector spacing shown for Girders G1-G6)

* 6 spa. at 4" = 2′-0" (4 studs per row). See Section B-B

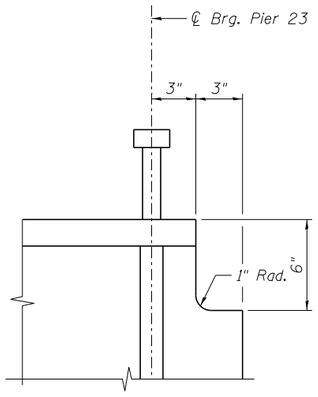


GIRDER 6 CAMBER DIAGRAM



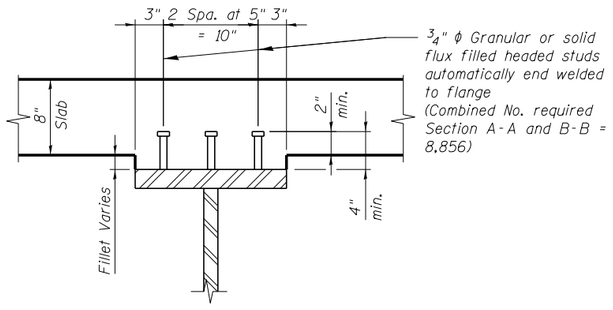
DETAIL "B"

DETAIL "C"

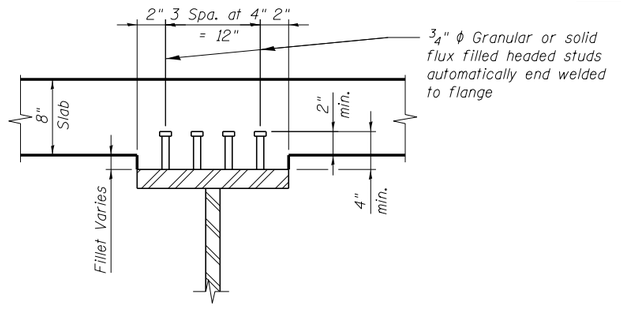


DETAIL 1

(Cope Girder 6 as shown at Pier 23 only)



SECTION A-A



SECTION B-B

** TOP OF WEB ELEVATIONS

Location	Girder 6
℄ Brg. S. Abut.	618.76
FS#1	618.81
℄ Brg. Pier 20	618.78
FS #2	618.91
FS #3	619.13
℄ Brg. Pier 21	619.17
FS #4	619.38
FS #5	619.78
℄ Brg. Pier 22	619.90
FS #6	620.18
℄ S. Brg. Pier 23	620.77

** For fabrication use only.

NOTES:

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

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FILE NAME = 0160985_60W75_022_Girder_Details.dgn	USER NAME = jsurber	DESIGNED - DTS	REVISED -
		CHECKED - JLS	REVISED -
	PLOT SCALE =	DRAWN - RMG	REVISED -
	PLOT DATE = 6/12/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL PLATE GIRDER ELEVATION & CAMBER DIAGRAM
STRUCTURE NO. 016-0985
SHEET NO. SD22 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	463
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

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EXISTING INTERIOR GIRDER MOMENT TABLE					
		0.4 Sp. 1 or 0.6 Sp. 4	Pier 20 & 22	0.5 Sp. 2 or 0.5 Sp. 3	Pier 21
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)	----	----	----	----
w_D	(k/')	1.114	1.382	1.109	1.382
M_D	('k)	930.4	2417.5	855.2	2375.4
s_D	(k/')	0.150	----	0.150	----
M_{sD}	('k)	136.6	----	134.7	----
M_L	('k)	1059.2	1179.0	1198.8	1294.1
M_{IM}	('k)	219.5	230.2	221.2	238.8
$\frac{5}{3}[M_L + I]$	('k)	2136	2353	2371	2560
M_a	('k)	4163.3	6202.1	4369.5	6415.8
* M_u	('k)	4873.2	----	5216.0	----
f_s w_D non-comp	(ksi)	7.9	11.5	7.1	11.3
f_s w_D (comp)	(ksi)	1.0	----	0.9	----
f_s $\frac{5}{3}[M_L + M_I]$	(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	----

EXISTING INTERIOR GIRDER REACTION TABLE				
		S. Abut. & Pier 23	Pier 20 & 22	Pier 21
R_D	(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

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

PROPOSED EXTERIOR GIRDER 6 MOMENT TABLE					
		0.4 Sp. 1 or 0.6 Sp. 4	Pier 20 & 22	0.5 Sp. 2 or 0.5 Sp. 3	Pier 21
I_s	(in^4)	33,817	69,213	47,308	69,213
$I_{c(n)}$	(in^4)	68,155	69,213	96,494	69,213
$I_{c(3n)}$	(in^4)	51,207	----	71,621	----
S_s	(in^3)	1095	1858	1287	1858
$S_{c(n)}$	(in^3)	1395	----	1701	----
$S_{c(3n)}$	(in^3)	1280	----	1535	----
Z	(in^3)	----	----	----	----
w_D	(k/')	0.903	1.134	0.925	1.134
M_D	('k)	765.2	2028.2	744.5	1963.6
s_D	(k/')	0.150	----	0.150	----
M_{sD}	('k)	137.6	----	137.7	----
M_L	('k)	535.2	576.6	601.0	620.4
M_{IM}	('k)	110.9	112.5	110.9	114.5
$\frac{5}{3}[M_L + I]$	('k)	1079	1151	1189	1227
M_a	('k)	2576.3	4132.8	2692.3	4148.2
* M_u	('k)	5226.3	----	6311.5	----
f_s w_D non-comp	(ksi)	8.4	13.1	6.9	12.7
f_s w_D (comp)	(ksi)	1.3	----	1.1	----
f_s $\frac{5}{3}[M_L + M_I]$	(ksi)	9.3	7.4	8.4	7.9
f_s (Overload)	(ksi)	19.0	20.5	16.4	20.6
** f_s (Total)	(ksi)	----	26.7	----	26.8
VR	(k)	37.0	----	29.8	----

PROPOSED EXTERIOR GIRDER 6 REACTION TABLE				
		S. Abut. & Pier 23	Pier 20 & 22	Pier 21
R_D	(k)	44.3	160.2	158.7
R_L	(k)	27.9	49.3	51.2
R_I	(k)	5.8	6.4	6.1
R_{Total}	(k)	78.0	215.8	216.0

* 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 ($in.^4$ and $in.^3$).

$I_{c(n)}$, $S_{c(n)}$: 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 ($in.^4$ and $in.^3$).

$I_{c(3n)}$, $S_{c(3n)}$: 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 ($in.^4$ and $in.^3$).

Z: Plastic Section Modulus of the steel section in non-composite areas ($in.^3$).

w_D: Un-factored non-composite dead load (kips/ft.).

M_D: Un-factored moment due to non-composite dead load (kip-ft.).

s_D: Un-factored long-term composite (superimposed) dead load (kips/ft.)

M_{sD}: 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.).

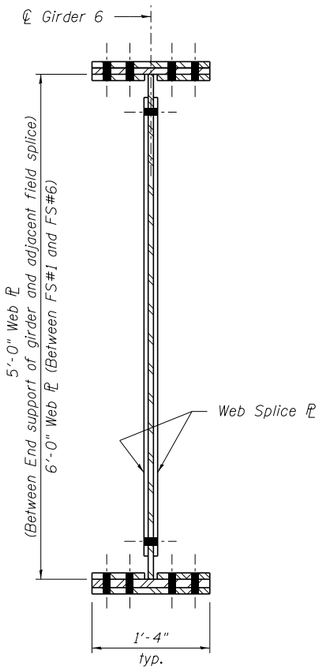
M_a: Factored design moment (kip-ft.).
$1.3\ [\ M_D + M_{sD} + \frac{5}{3}\ (M_L + M_I)]$

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.).

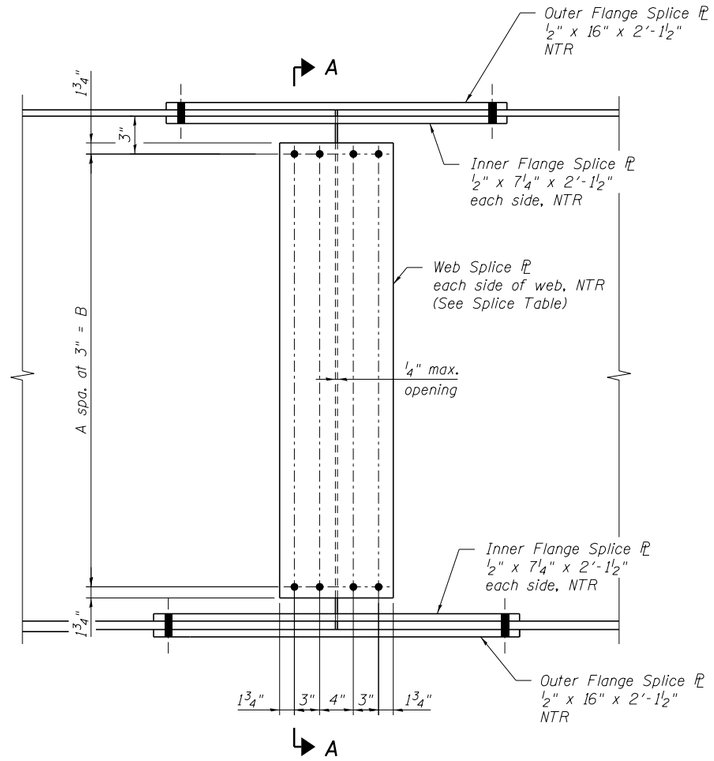
f_s (Overload): Sum of stresses as computed from the moments below (ksi).
$M_D + M_{sD} + \frac{5}{3}\ (M_L + M_I)$

f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
$1.3\ [M_D + M_{sD} + \frac{5}{3}\ (M_L + M_I)]$

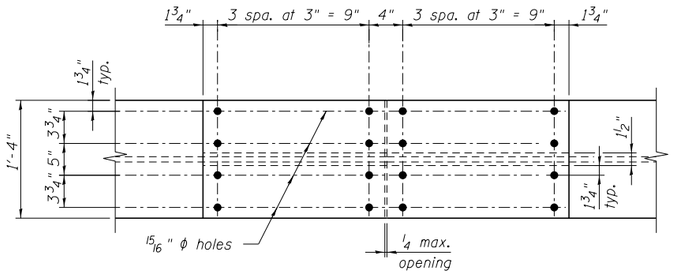
VR: Maximum M_L + impact shear range within the composite portion of the span for stud shear connector design (kips).



SECTION A-A



ELEVATION - FIELD SPLICE - GIRDER 6



FLANGE SPLICE - GIRDER 6

(Top & Bottom Flanges)
(32 Bolts per Flange Splice)

SPLICE TABLE

Splice Location	Web Splice ℄	A	B	No. Bolts
Splice 1 & 6	3/8"x13 1/2"x4'-9 1/2"	18	4'-6"	76
Splice 2 & 5	3/8"x13 1/2"x5'-9 1/2"	22	5'-6"	92
Splice 3 & 4	3/8"x13 1/2"x5'-9 1/2"	22	5'-6"	92

NOTES:

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

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FILE NAME = 0160985.60W75.023.Camber.Mom.Table.dgn	USER NAME = jsurber	DESIGNED - DTS	REVISED -
		CHECKED - JLS	REVISED -
	PLOT SCALE =	DRAWN - RMG	REVISED -
	PLOT DATE = 6/12/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SPLICE DETAILS AND MOMENT & REACTION TABLE
STRUCTURE NO. 016-0985
SHEET NO. SD23 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	464
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

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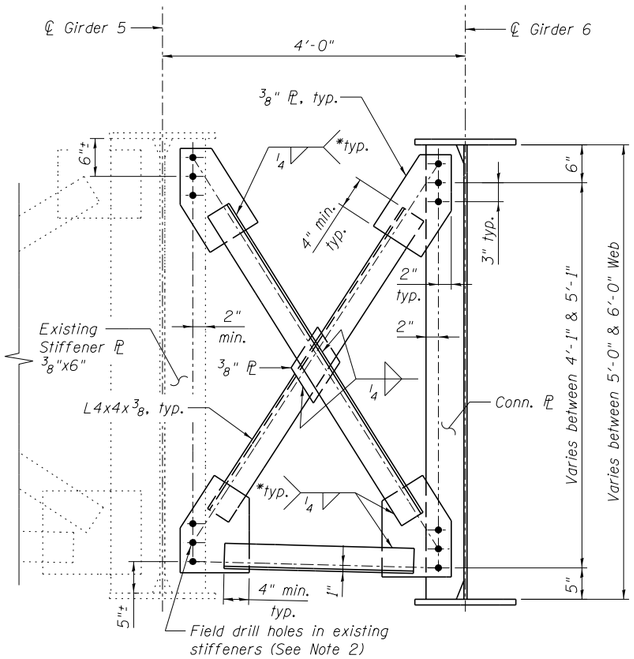
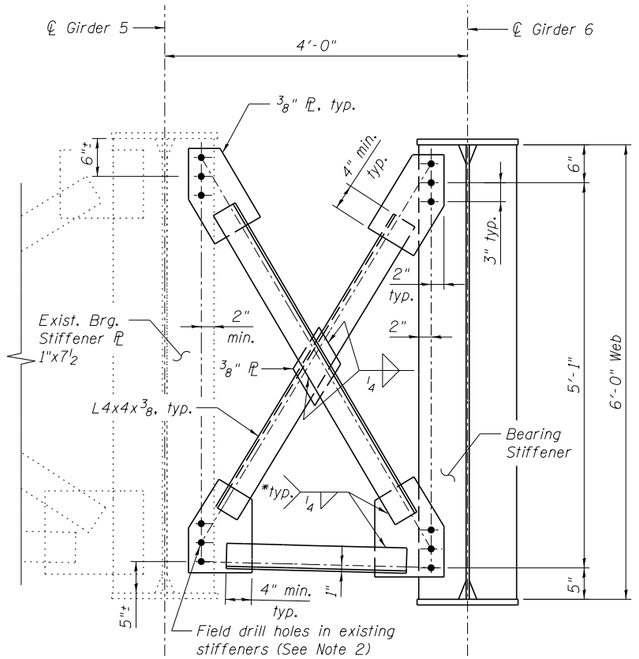


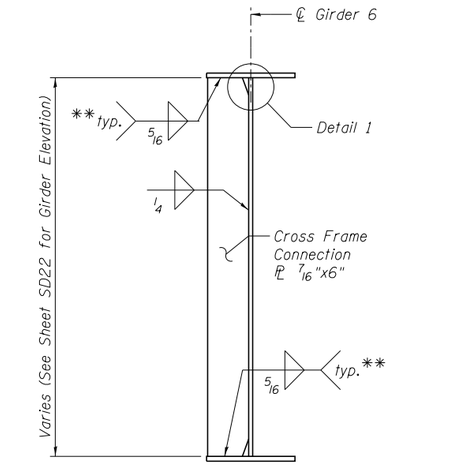
TYPE 1 CROSS FRAME

(CF1)
(No. Req'd = 18)



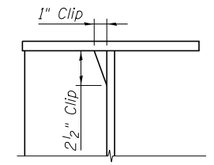
TYPE 2 CROSS FRAME AT PIERS 20 THRU 22

(CF2)
(No. Req'd = 3)



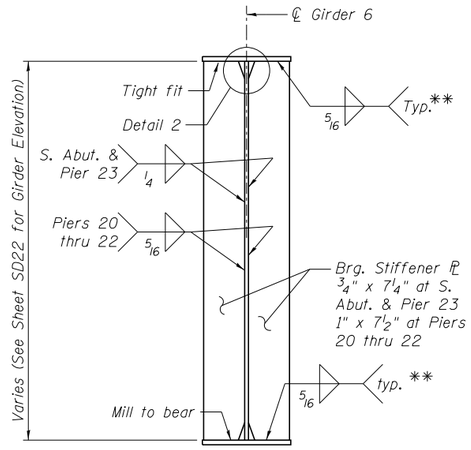
CONNECTION PLATE DETAIL

(No. of Connection Plates Req'd = 18)
(Omit cross frame connection PL from exterior face of girder 6)



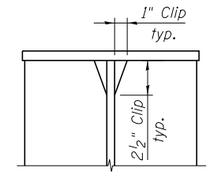
DETAIL 1

(Typical top & bottom flanges)



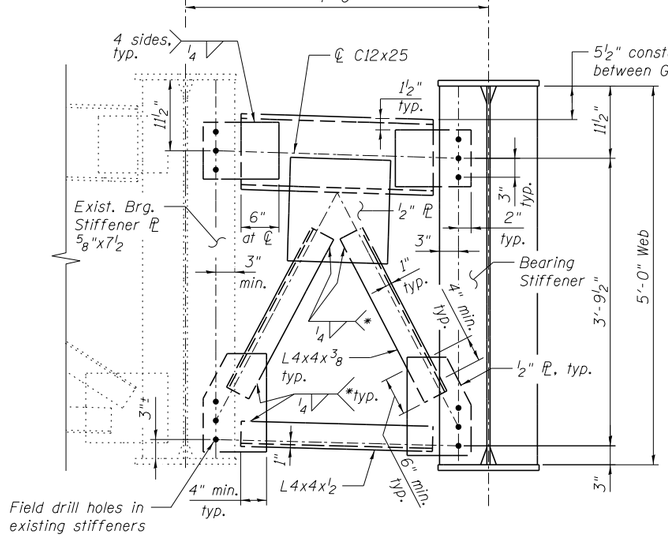
BEARING STIFFENER

(No. of 3/4" x 7 1/4" Plates Required = 4)
(No. of 1" x 7 1/2" Plates Required = 6)



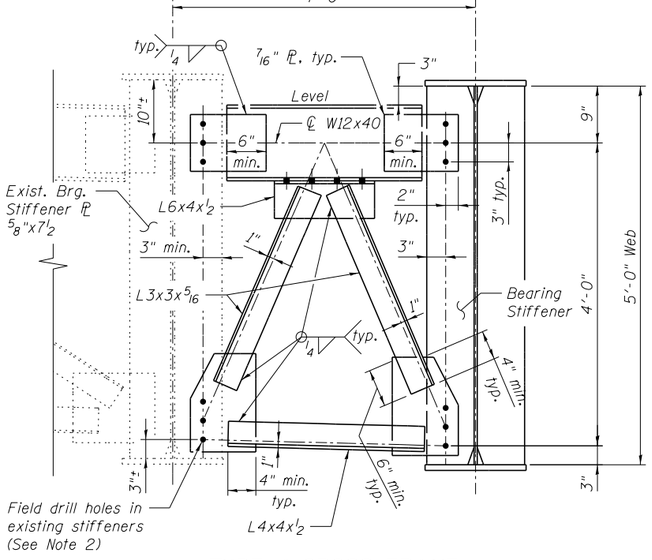
DETAIL 2

(Typical top & bottom flanges)



TYPE 3 CROSS FRAME AT SOUTH ABUTMENT

(CF3)
(No. Req'd = 1)



TYPE 4 CROSS FRAME AT PIER 23

(CF4)
(No. Req'd = 1)

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

NOTES:

1. 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.
2. Fasteners shall be 3/4" ϕ ASTM A325 Type 1, mechanically galvanized bolts in 15/16" ϕ holes. Holes in new steel shall be shop drilled. Holes in existing steel shall be field drilled using holes in new steel as a template. Provide two hardened washers required for each set of oversized holes. Cost of field drilling is included with "Furnishing and Erecting Structural Steel".
3. All Cross Frame elements and Connection Plates may be AASHTO M270 Grade 36. All Bearing Stiffeners shall be AASHTO M270 Grade 50.

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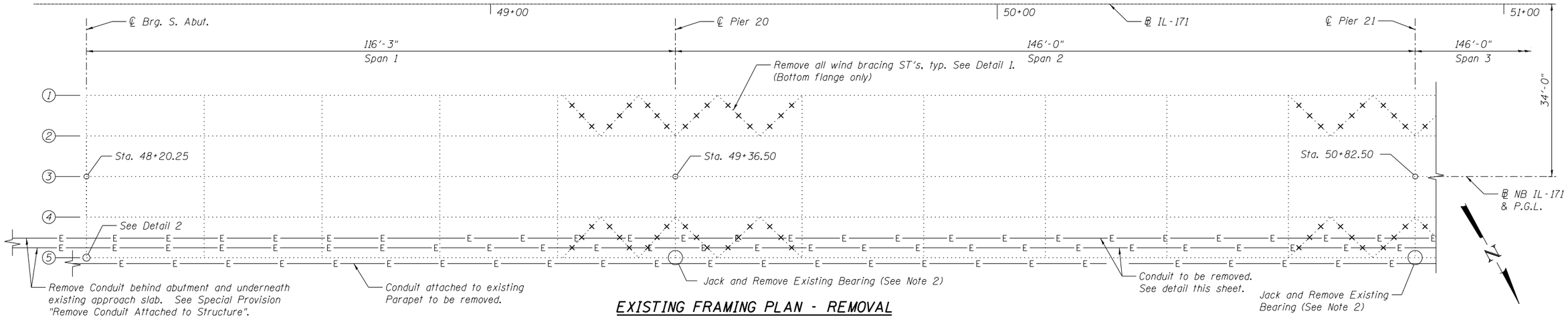
		CHECKED - DTS	REVISED -
	PLOT SCALE =	DRAWN - RMG	REVISED -
	PLOT DATE = 6/12/2015	CHECKED - DTS	REVISED -

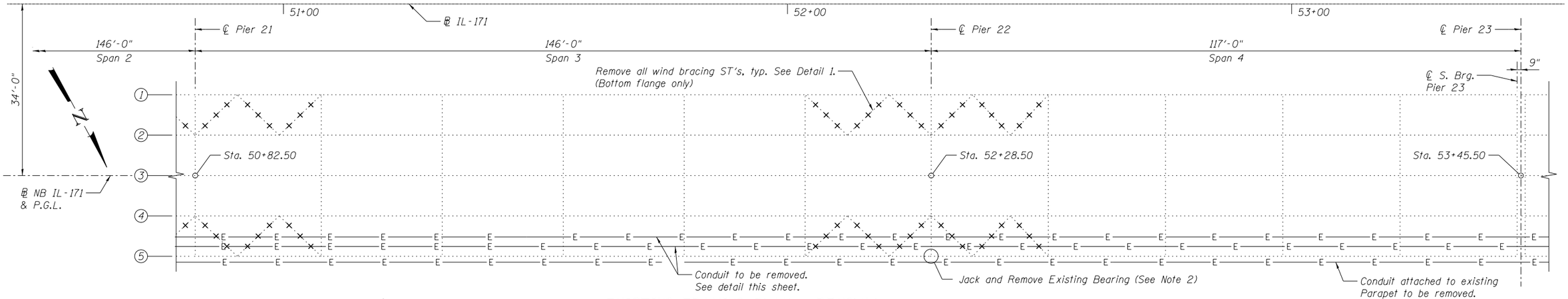
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL PLATE GIRDER CROSS FRAMES
STRUCTURE NO. 016-0985
SHEET NO. SD24 OF SD40 SHEETS

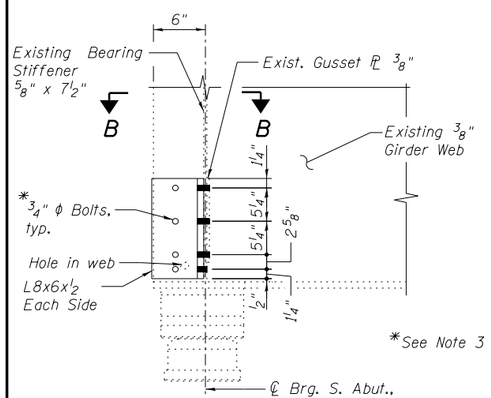
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	465
		CONTRACT NO. 60W75		
ILLINOIS FED. AID PROJECT				



EXISTING FRAMING PLAN - REMOVAL

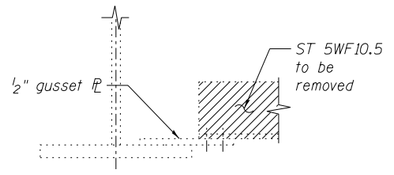


EXISTING FRAMING PLAN - REMOVAL

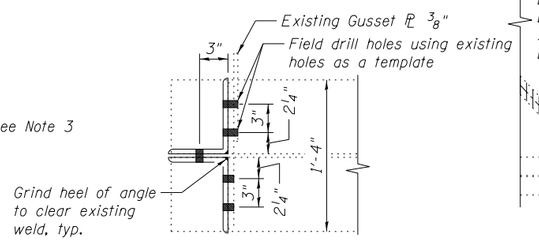


DETAIL 2

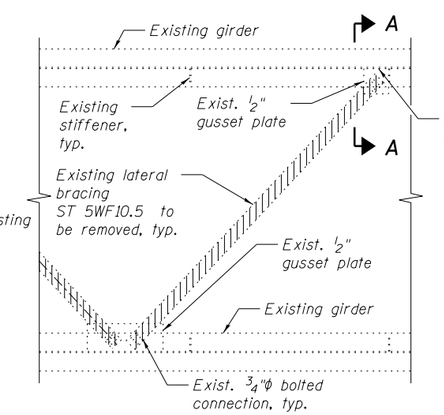
(One location)
(Steel paid for as "Furnishing and Erecting Structural Steel")



SECTION A-A

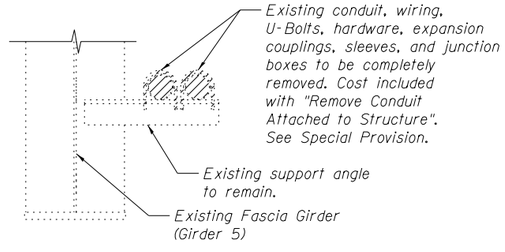


SECTION B-B



DETAIL 1

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



CONDUIT REMOVAL DETAIL

LEGEND

Remove Exist. Steel ···×···×···

NOTES:

1. 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".
2. Bearing removal is required to facilitate construction of the pier widenings. See Sheet SD27 for Existing Bearing Removal Detail. See Sheets SD32 thru SD34 and SD36 for pier removal and widening details.
3. The Contractor shall verify existing dimensions and locations of the gusset plates and existing hole sizes and make any necessary adjustments to the bolt spacing and angle sizes prior to construction or ordering of materials. Cost included with "Furnishing and Erecting Structural Steel".

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Steel Removal	Pound	3,670
Remove Conduit Attached to Structure	Foot	1,672

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		CHECKED - JLS	REVISED -
	PLOT SCALE =	DRAWN - RMG	REVISED -
	PLOT DATE = 6/12/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL REMOVAL AND REPAIRS
STRUCTURE NO. 016-0985
SHEET NO. SD25 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	466
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

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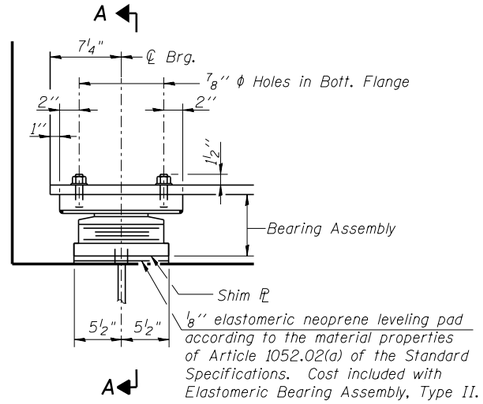
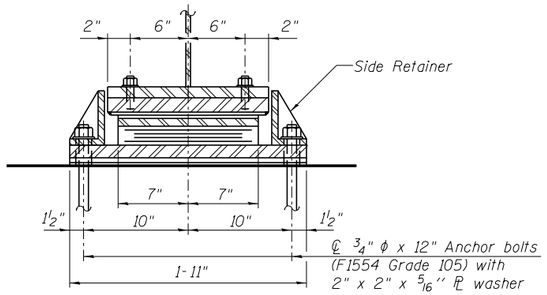
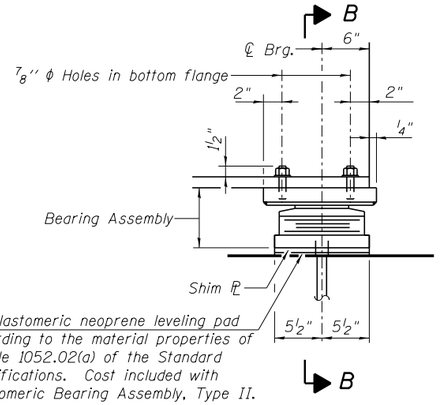


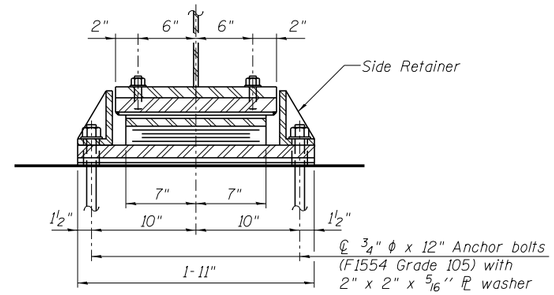
ELEVATION AT S. ABUT.
(Looking West)



SECTION A-A

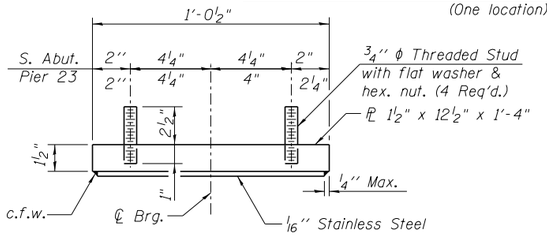


ELEVATION AT PIER 23
(Looking West)

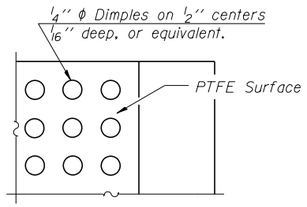


SECTION B-B

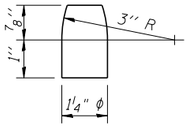
TYPE II ELASTOMERIC EXP. BRG. AT S. ABUT.
(One location)



TOP BEARING ASSEMBLY

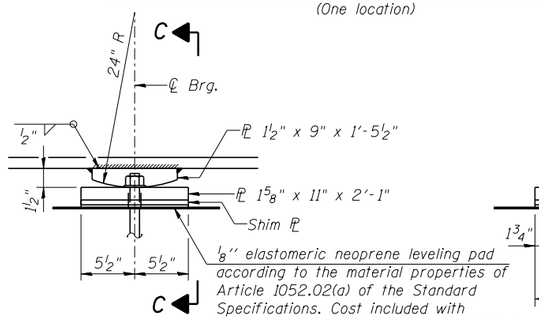


PLAN-PTFE SURFACE

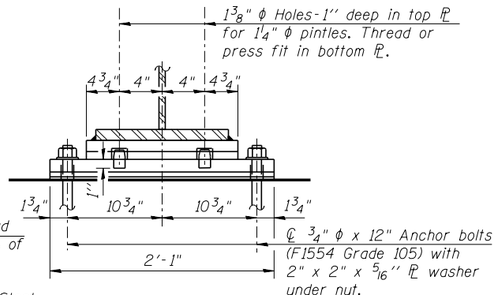


PINTLE

TYPE II ELASTOMERIC EXP. BRG. AT PIER 23
(One location)

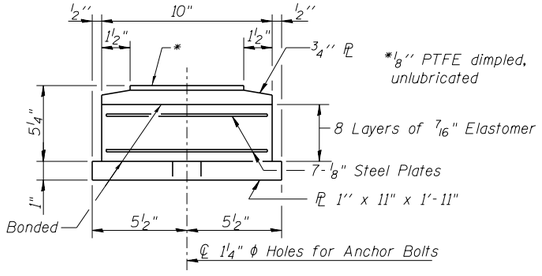


ELEVATION AT PIER 21

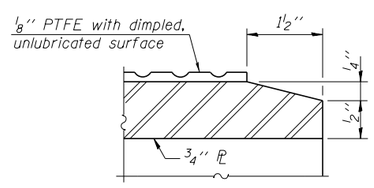


SECTION C-C

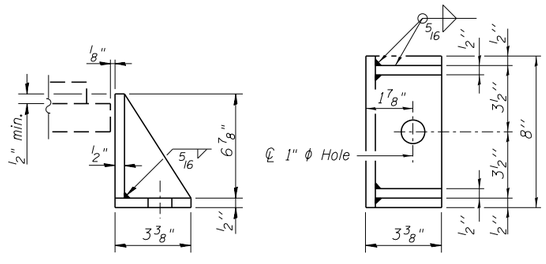
PROPOSED GIRDER 6 FIXED BEARING AT PIER 21
(One location)



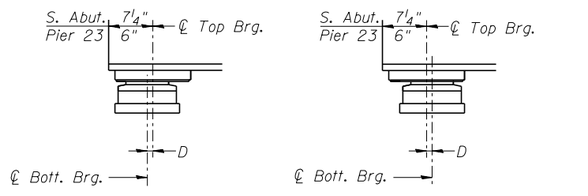
BOTTOM BEARING ASSEMBLY



SECTION THRU PTFE



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



SETTING ANCHOR BOLTS AT EXP. BRG.

D='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	2
Anchor Bolts, 3/4"	Each	6

Notes:

Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and if needed 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.

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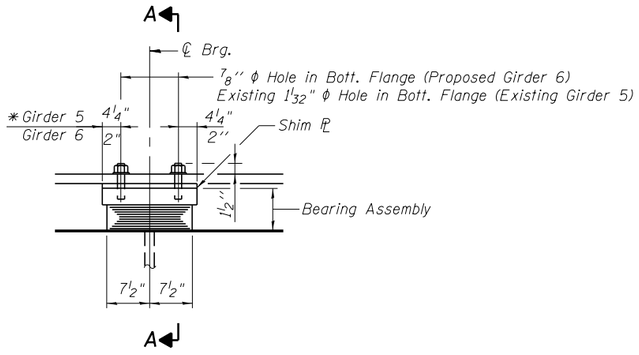
		CHECKED - JLS	REVISED -
	PLOT SCALE =	DRAWN - DTS	REVISED -
	PLOT DATE = 6/12/2015	CHECKED - JLS	REVISED -

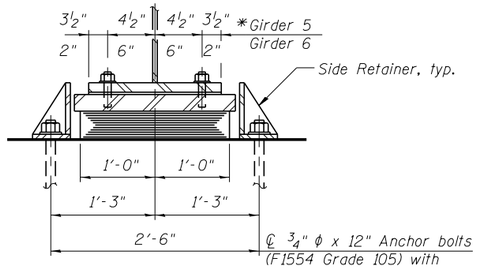
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPE II ELASTOMERIC AND GIRDER 6 FIXED BEARING DETAILS
STRUCTURE NO. 016-0985
SHEET NO. SD26 OF SD40 SHEETS

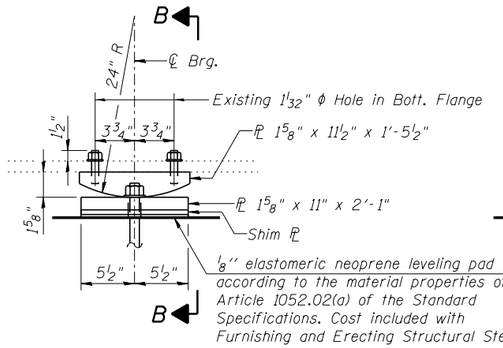
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	467
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



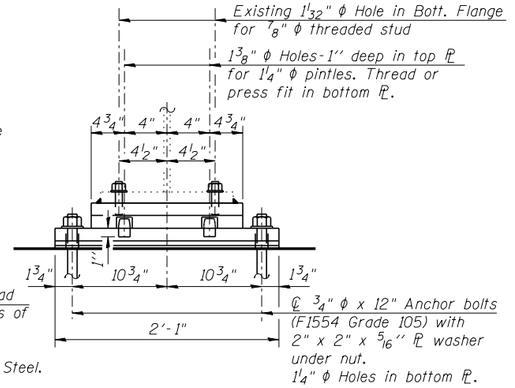
ELEVATION AT PIERS 20 & 22



SECTION A-A



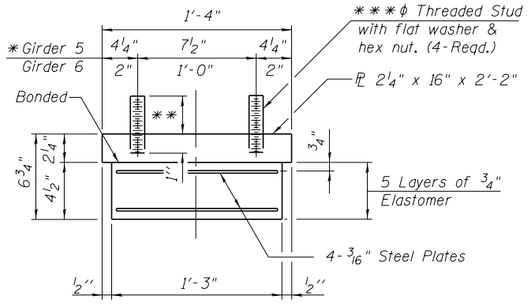
ELEVATION AT PIER 21



SECTION B-B

TYPE I ELASTOMERIC EXP. BRG. PIER 20 & 22

(Four locations)



* Prior to ordering any material the Contractor shall field verify existing drilled holes in bottom flange of existing Girder 5.

** 3 5/8" at existing Girder 5
3" at proposed Girder 6

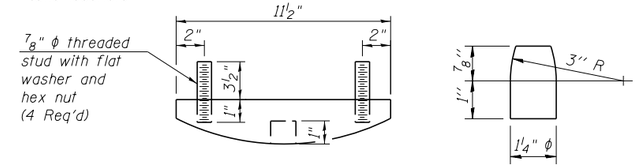
*** 7/8" at existing Girder 5
3/4" at proposed Girder 6

BEARING ASSEMBLY

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

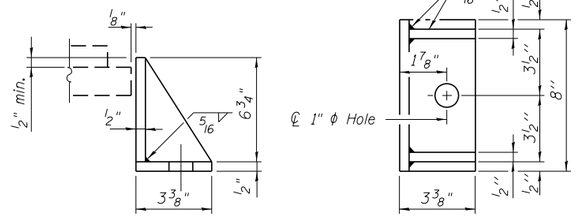
EXISTING GIRDER 5 FIXED BEARING AT PIER 21

(One location)



PL 1 5/8" x 11 1/2" x 1'-5 1/2" DETAIL

PINTLE

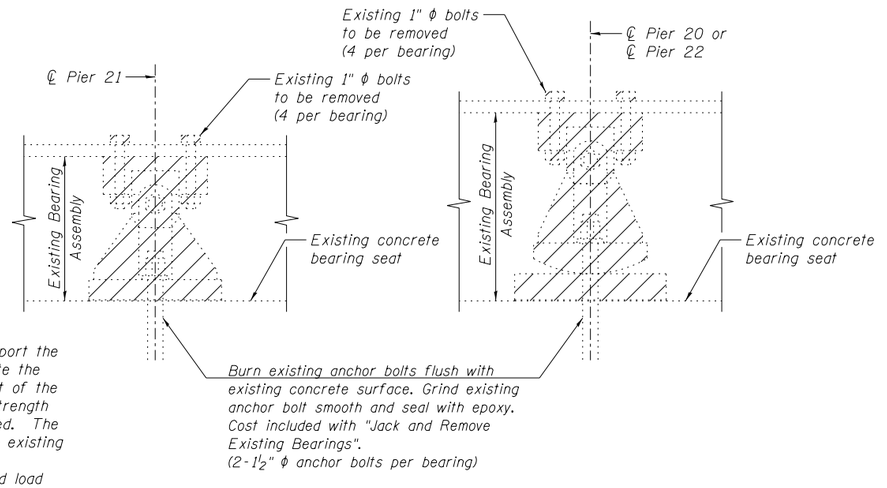


SIDE RETAINER

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

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	4
Anchor Bolts, 3/4"	Each	10
Jack and Remove Existing Bearings	Each	3



EXISTING BEARING REMOVAL DETAIL

(Existing Girder 5 at Piers 20-22)

PROCEDURE FOR JACKING AND REMOVING EXISTING BEARINGS
(Existing Girder 5 at Piers 20-22)

1. See Special Provision for "Jack and Remove Existing Bearings".
2. The pay item "Jack and Remove Existing Bearings" shall include the work required to support the girder while the bridge deck is removed in order to remove the bearings and also facilitate the concrete removal below. The jacking and supporting details shall also allow for placement of the new concrete and reinforcement. The new pier cap concrete shall have its full design strength before the existing girder load is returned to the new bearing and the new deck is poured. The Contractor shall submit, for approval by the Engineer, plans for jacking and removing the existing bearings prior to commencing any work at the bearings.
3. Jacking shall not commence until the deck has been removed entirely. The (steel only) dead load reaction is 45 kips for each bearing at Pier 20, 21 or 22. Minimum jack capacity = 50.0 tons per bearing.

Notes:

Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and if needed 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 side retainers may be cast in place or installed in holes drilled before or after members are in place.

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 I elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.

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.

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FILE NAME =	USER NAME = jsurber	DESIGNED - DTS	REVISED -
		CHECKED - JLS	REVISED -
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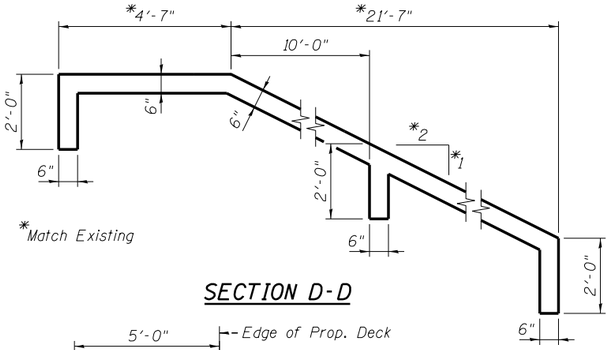
	PLOT DATE = 6/12/2015	CHECKED - JLS	REVISED -

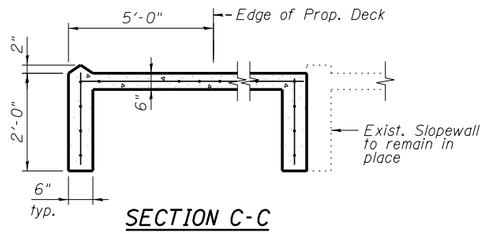
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPE I ELASTOMERIC & GIRDER 5 FIXED BEARING DETAILS
STRUCTURE NO. 016-0985
SHEET NO. SD27 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	468
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



SECTION D-D

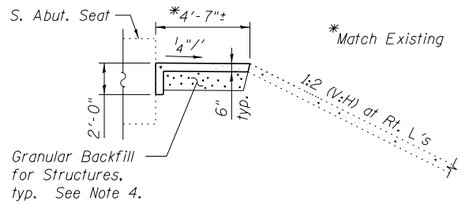


SECTION C-C

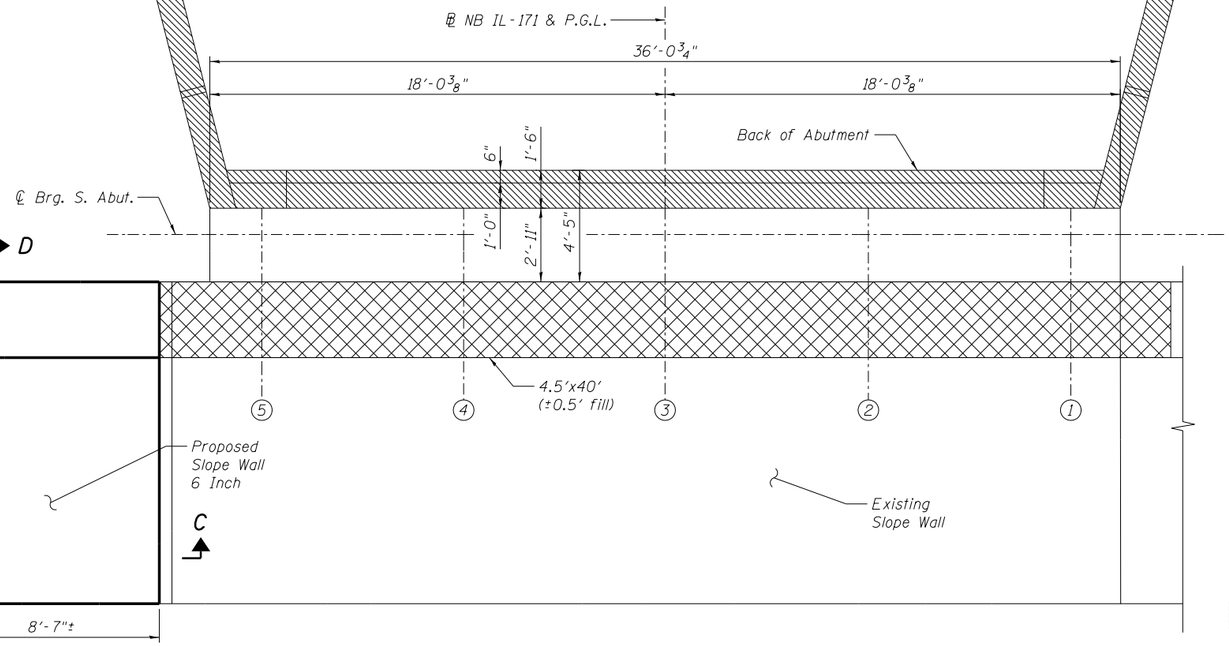
BILL OF MATERIAL

ITEM	UNIT	TOTAL
Concrete Removal	Cu. Yd.	30.0
Slope Wall Removal	Sq. Yd.	20
Slope Wall 6 Inch	Sq. Yd.	48
Epoxy Crack Injection	Foot	14
Granular Backfill for Structures	Cu. Yd.	4

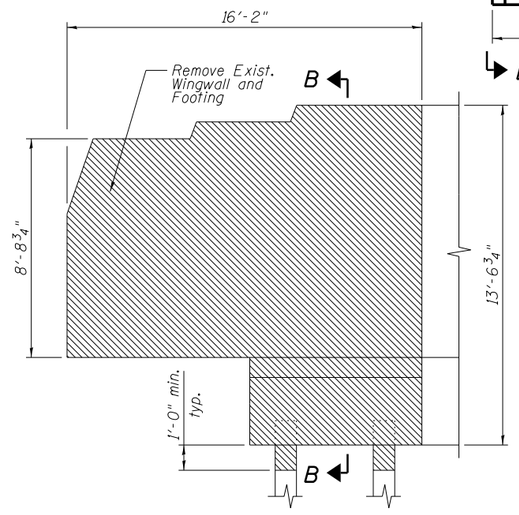
(See Sheet SD29 for Structure Excavation and Granular Backfill for Structures behind abutment quantities)



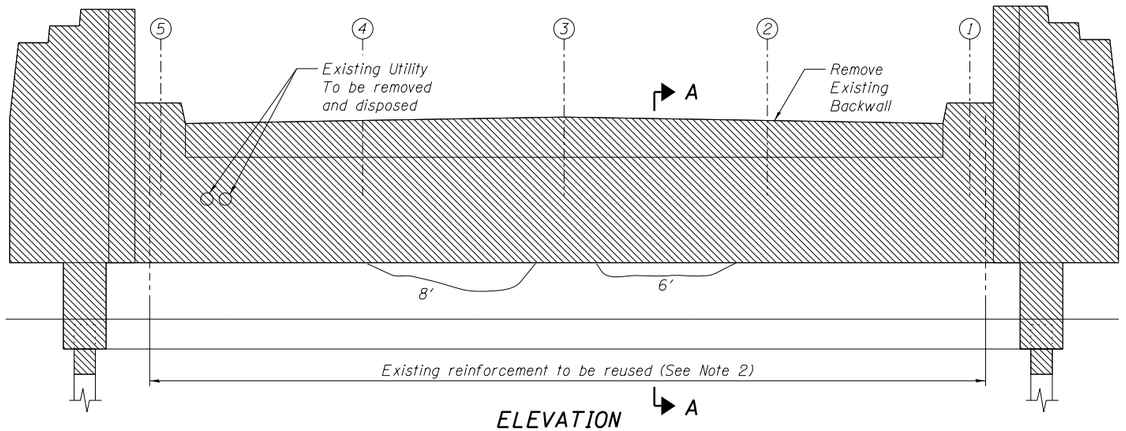
SECTION THRU SLOPEWALL REPAIR LOCATIONS



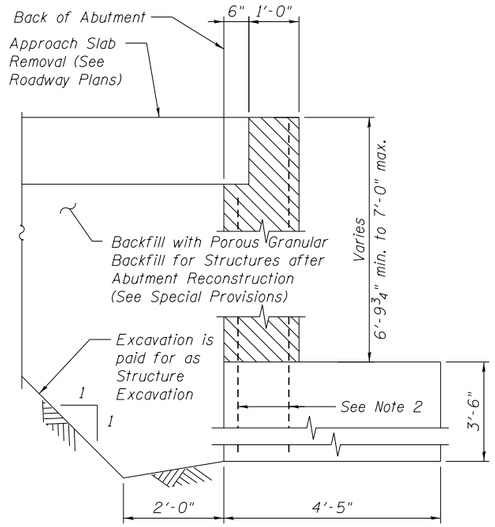
PLAN



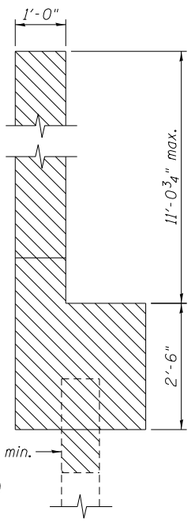
TYPICAL WINGWALL ELEVATION



ELEVATION



SECTION A-A



LEGEND

- Concrete Removal
- Slope Wall Removal & Slope Wall 6 Inch
- 4' Epoxy Crack Injection

Existing pile to be cut off 1'-0" min. below bottom of footing (Cost included with "Concrete Removal")

SECTION B-B

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. Embankment required for the slopewall widening shall be paid for as "Furnished Excavation". Granular Backfill required for the existing slopewall repair shall be placed and compacted to the satisfaction of the Engineer prior to pouring the new slopewall. Cost included with "Slope Wall 6 Inch".
5. Crack widths are 1/8" ±1/16" unless otherwise noted.

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		CHECKED - AJK	REVISED -
	PLOT SCALE =	DRAWN - RMG	REVISED -
	PLOT DATE = 6/12/2015	CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT CONCRETE REMOVAL AND REPAIR DETAILS
STRUCTURE NO. 016-0985
SHEET NO. SD28 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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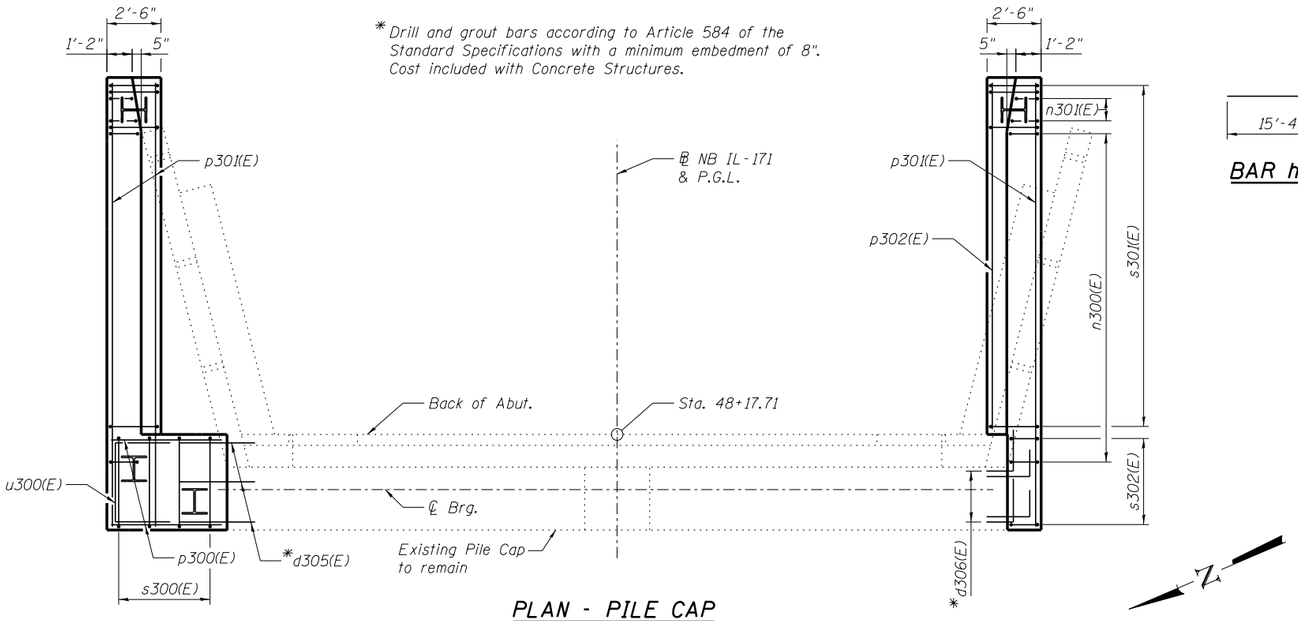
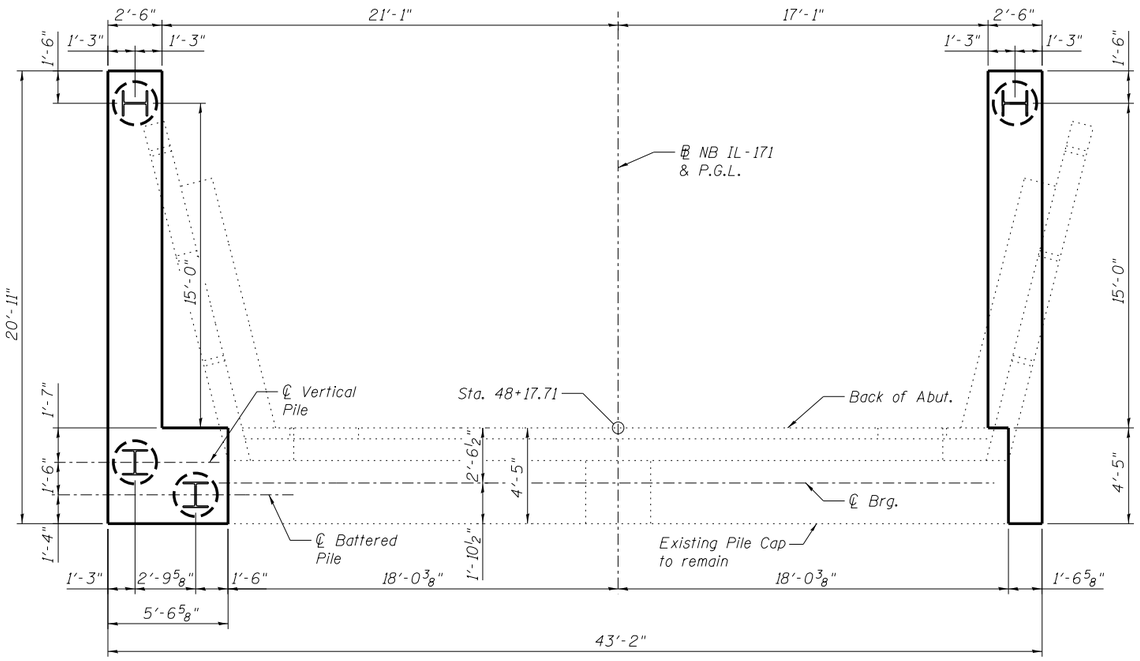
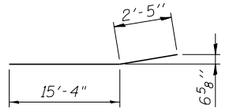
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		



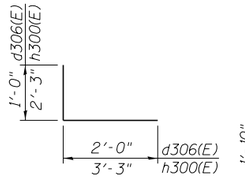
PLAN - PILE CAP



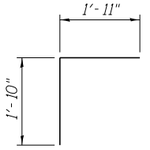
PLAN - PILE LAYOUT



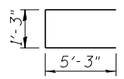
BAR h304(E)



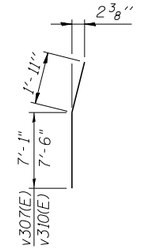
BARS d306(E) AND h300(E)



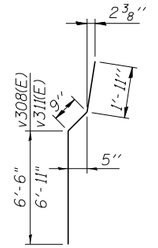
BAR v300(E)



BAR v304(E)



BARS v307(E) AND v310(E)



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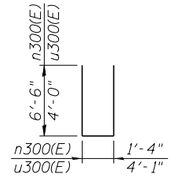
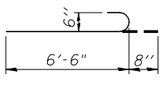
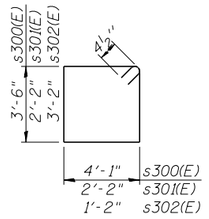


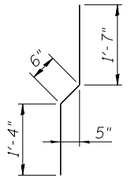
BARS n300(E) AND u300(E)



BAR n301(E)



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



BAR v301(E)

PILE DATA

Type: HP12x53 with Pile Shoes
Nominal Required Bearing: 255 kips
Allowable Resistance Available: 85 kips
Est. Length: 33 ft.
No. Production Piles: 3
No. Test Piles: 1

MINIMUM BAR LAP

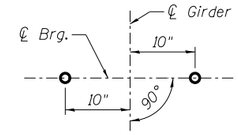
(Abutment)

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

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	21'-9"	
h302(E)	8	#6	22'-0"	
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	5'-2"	
p301(E)	9	#7	20'-5"	
p302(E)	3	#7	16'-0"	
s300(E)	6	#4	15'-11"	
s301(E)	38	#4	9'-5"	
s302(E)	5	#4	9'-5"	
u300(E)	5	#6	12'-1"	
v300(E)	41	#5	3'-9"	
v301(E)	41	#4	3'-5"	
v302(E)	5	#5	8'-0"	
v303(E)	5	#5	9'-9"	
v304(E)	36	#5	11'-9"	
v305(E)	36	#5	7'-2"	
v306(E)	19	#6	9'-0"	
v307(E)	3	#6	9'-0"	
v308(E)	16	#6	9'-2"	
v309(E)	19	#6	9'-5"	
v310(E)	3	#6	9'-5"	
v311(E)	16	#6	9'-7"	

Structure Excavation	Cu. Yd.	141
Concrete Structures	Cu. Yd.	41.2
Concrete Superstructure	Cu. Yd.	4.0
Concrete Encasement	Cu. Yd.	1.4
Reinforcement Bars, Epoxy Coated	Pound	5,580
Furnishing Steel Piles HP12x53	Foot	99
Driving Piles	Foot	99
Test Pile Steel HP12x53	Each	1
Pile Shoes	Each	4
Concrete Sealer	Sq. Ft.	336
Granular Backfill for Structures	Cu. Yd.	93



ANCHOR BOLT DETAIL

NOTES:

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

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		CHECKED - JLS	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT WIDENING DETAILS (1 OF 3)
STRUCTURE NO. 016-0985
SHEET NO. SD29 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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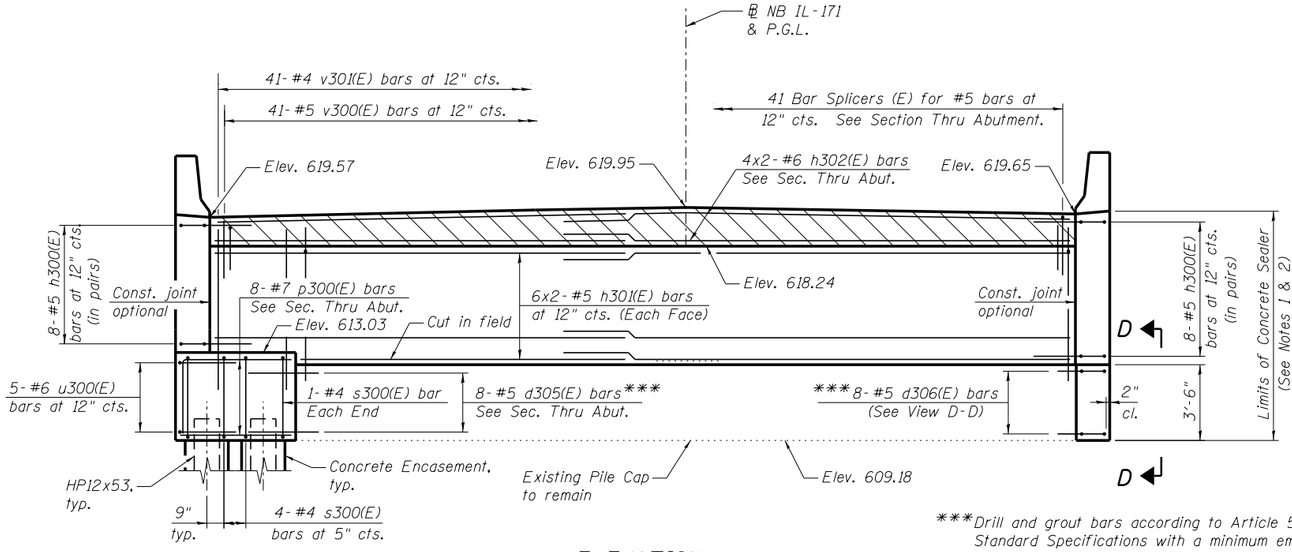
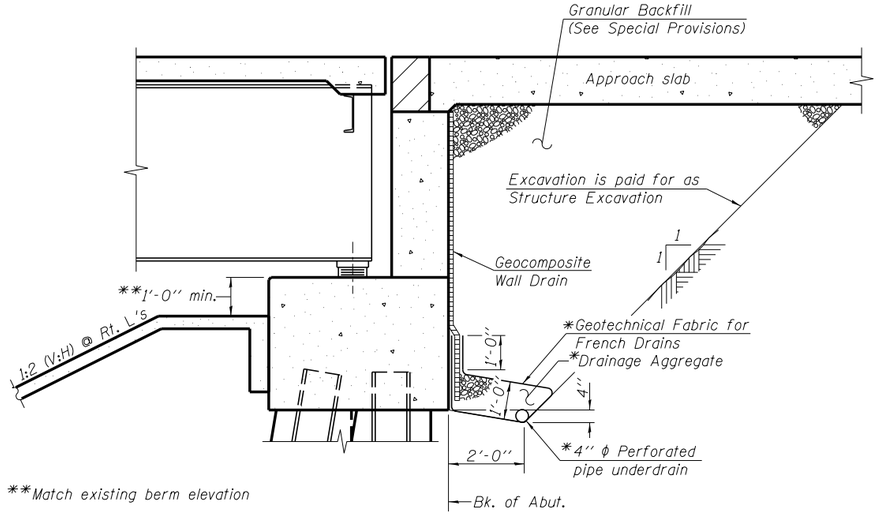
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		



ELEVATION

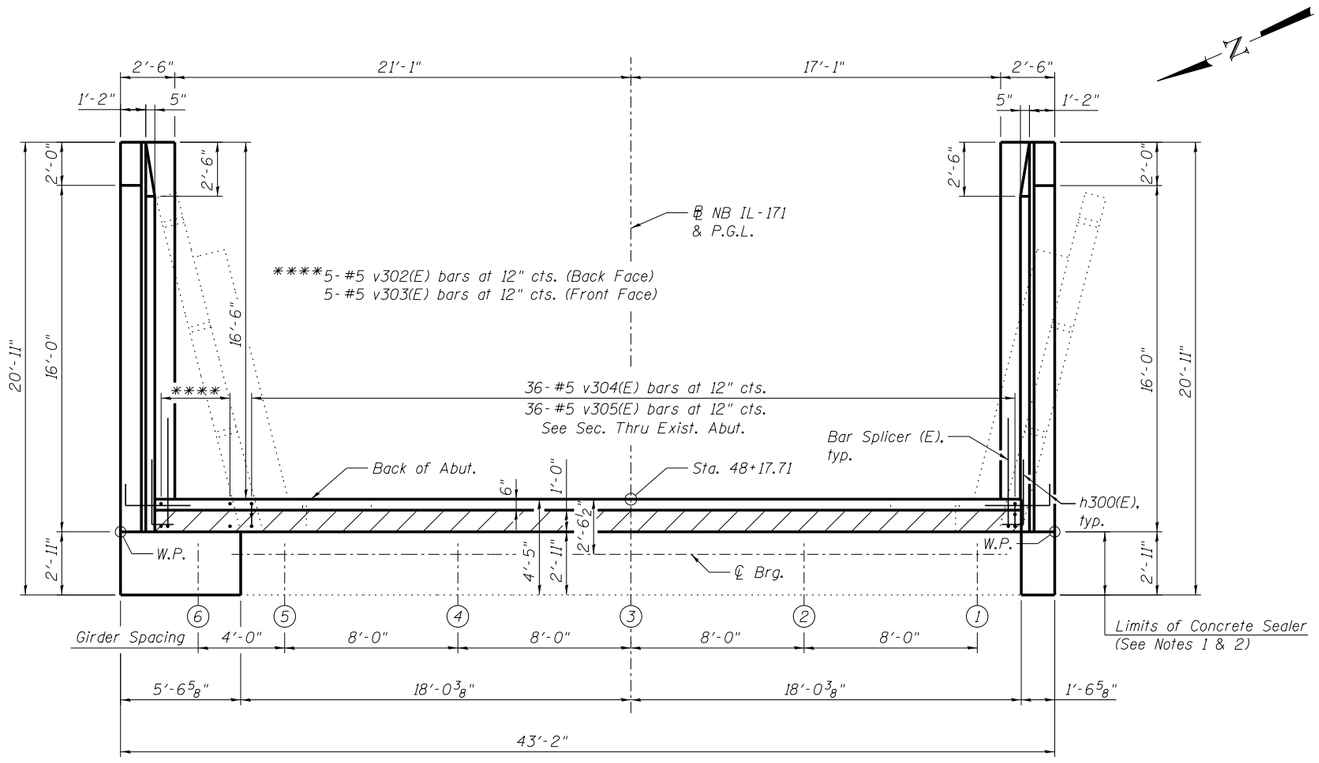
***Drill and grout bars according to Article 584 of the Standard Specifications with a minimum embedment of 8". Cost included with Concrete Structures.



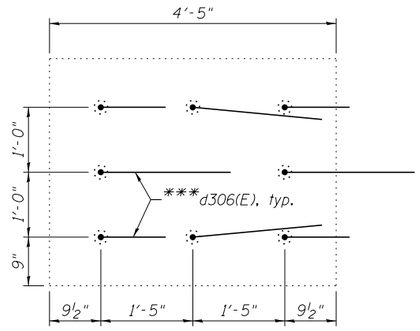
BACKFILL AND DRAINAGE DETAIL

*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 601101).



TOP VIEW



VIEW D-D

MINIMUM BAR LAP

(Abutment)

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

NOTES:

1. 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.
2. Concrete Sealer does not need to be applied to existing concrete.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT WIDENING DETAILS (2 OF 3)
STRUCTURE NO. 016-0985
SHEET NO. SD30 OF SD40 SHEETS

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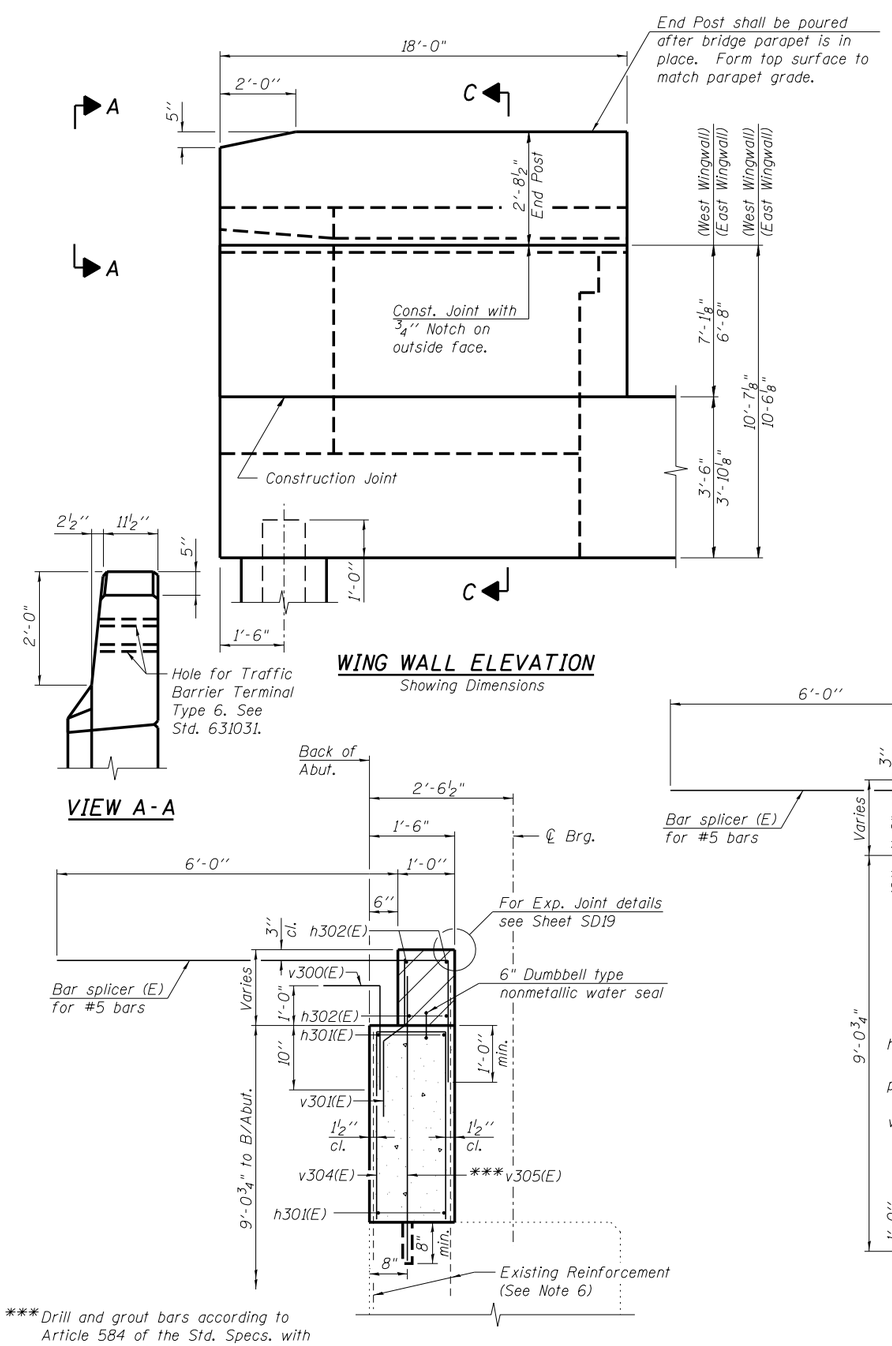
		ILLINOIS FED. AID PROJECT		

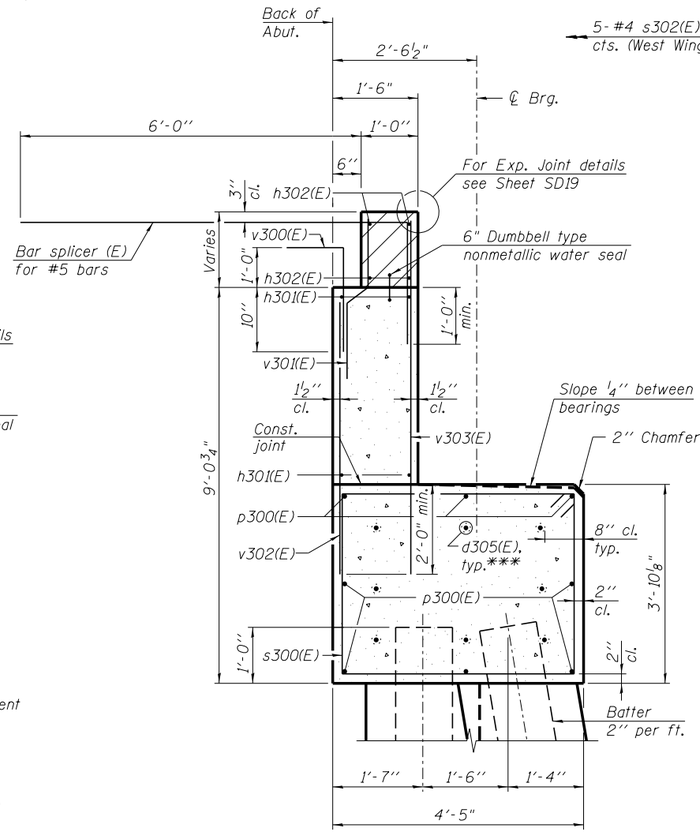


WING WALL ELEVATION
Showing Dimensions

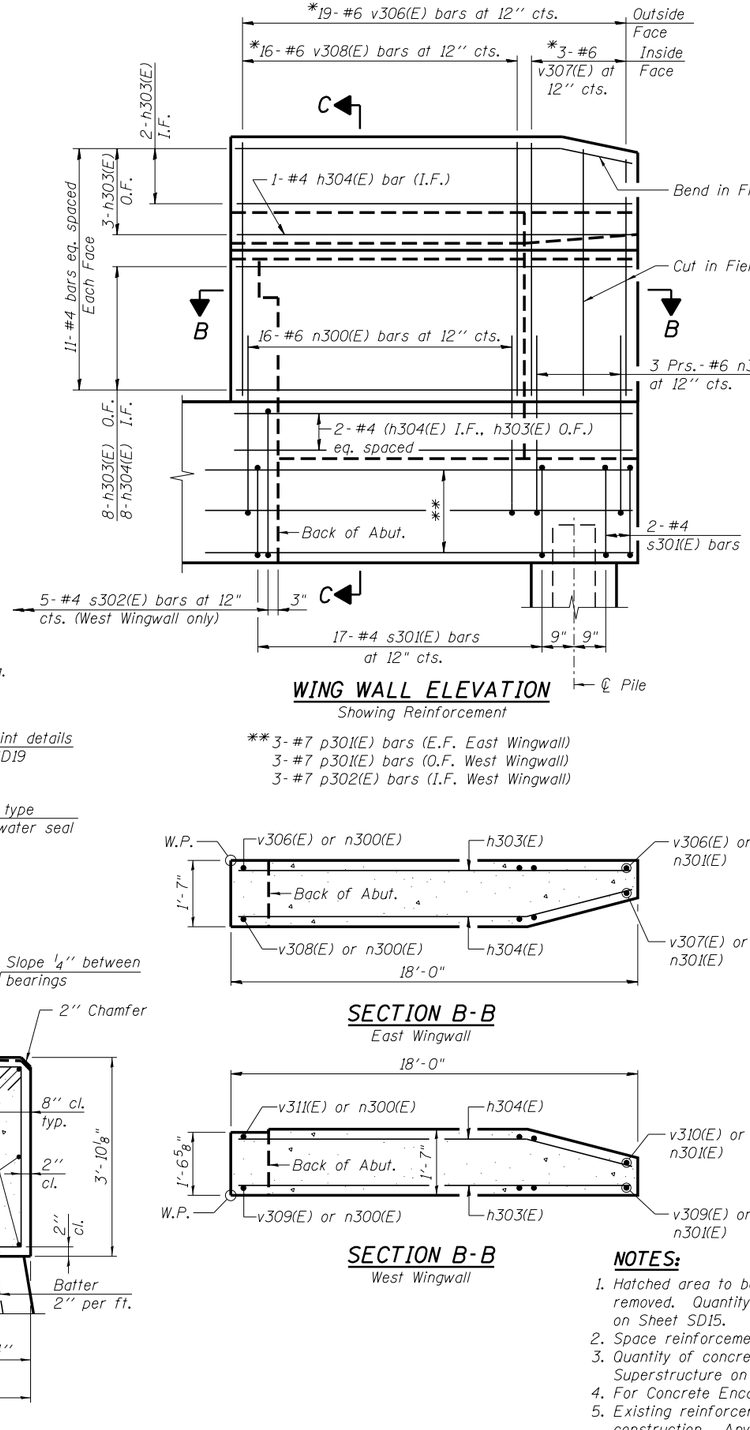
VIEW A-A

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

SEC. THRU EXISTING ABUT.



SEC. THRU ABUT. WIDENING



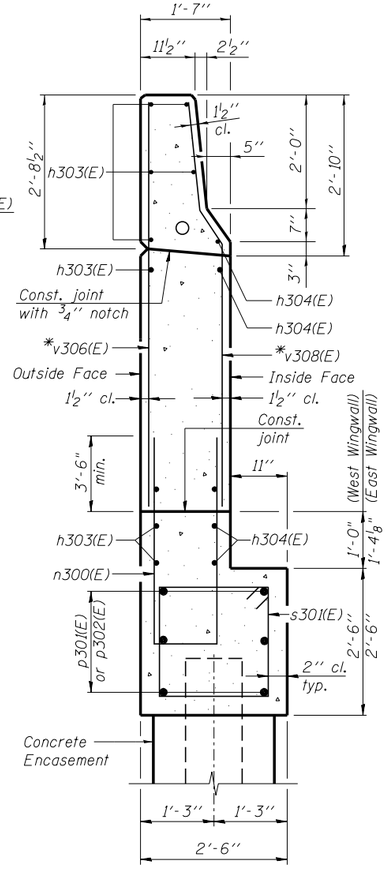
WING WALL ELEVATION
Showing Reinforcement

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

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

SECTION B-B
East Wingwall

SECTION B-B
West Wingwall



SECTION C-C
(1-2"ϕ PVC conduit, east parapet only. See Lighting 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 SD15.
2. Space reinforcement in cap to miss anchor bolts.
3. Quantity of concrete in end post included with Concrete Superstructure on Sheet SD29.
4. For Concrete Encasement details, see Sheet SD37.
5. 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.

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Chicago, Illinois 60601
312-565-0450 Job No. 10093

FILE NAME = 0160985.60W75.031.Abut.Widening.3.dgn	USER NAME = jsurber	DESIGNED - MWG	REVISED -
		CHECKED - JLS	REVISED -
	PLOT SCALE =	DRAWN - RMG	REVISED -
	PLOT DATE = 6/12/2015	CHECKED - JLS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT WIDENING DETAILS (3 OF 3)
STRUCTURE NO. 016-0985
SHEET NO. SD31 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	472
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

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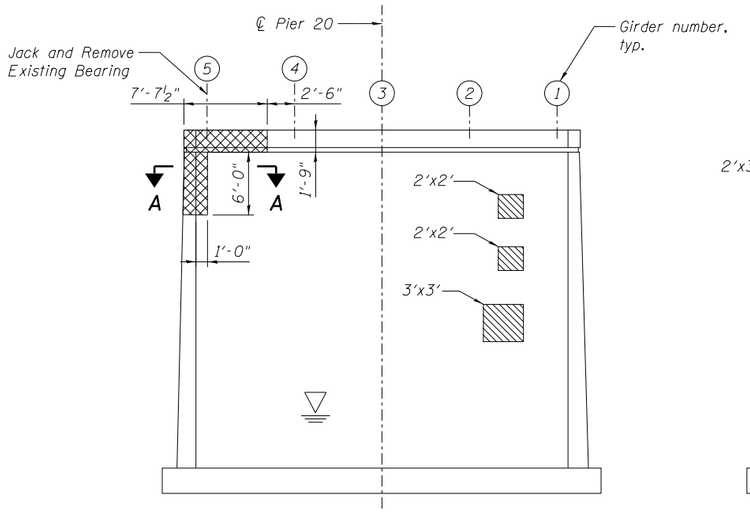
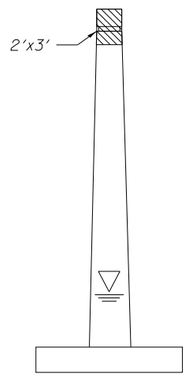
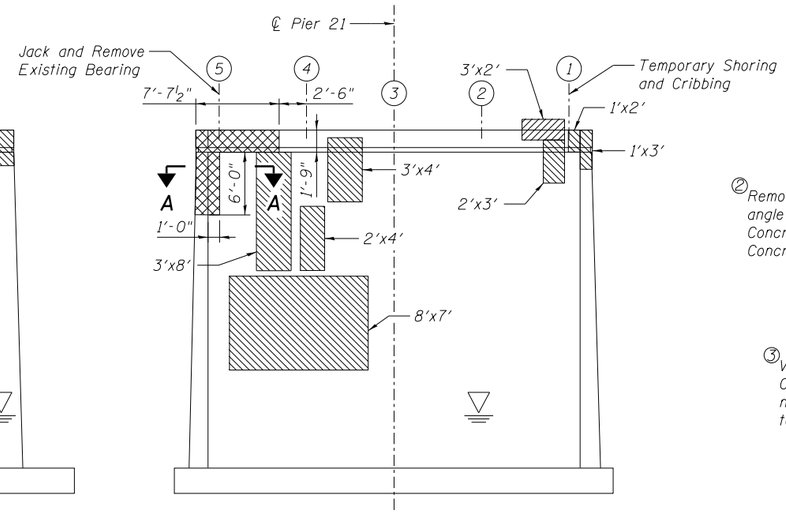


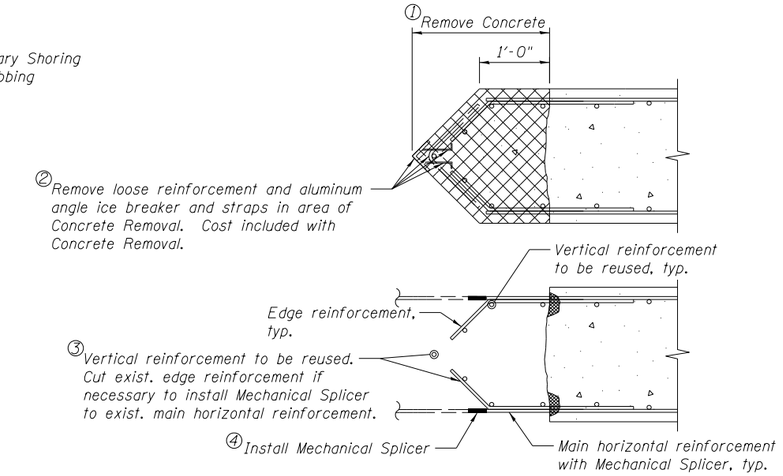
PIER 20
Looking East



PIER 20
Looking North



PIER 21
Looking East



SECTION A-A
(See Note 4)

PIER 20
Looking West

PIER 21
Looking West

UNFACTORED BEAM REACTION (KIPS)

	Pier 20	Pier 21
Dead Load (steel only per beam)	45	45

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Concrete Removal	Cu. Yd.	3.4
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	224
Temporary Shoring and Cribbing	Each	1

LEGEND

Concrete Removal

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

NOTES:

1. Actual quantities shall be approved by the Engineer.
2. If Temporary Shoring and Cribbing is required to perform a concrete repair, shoring and repair shall be done while the bridge deck is removed.
3. The pay item "Jack and Remove Existing Bearings" shall include the work required to support the girder while the bridge deck is removed in order to remove the bearing and also facilitate the concrete removal below. The jacking and supporting details shall also allow for placement of the new concrete and reinforcement. The new concrete shall have its full design strength before the existing girder load is returned to the new bearing. Plans and procedures for the proposed jacking and supporting details shall be designed and sealed by an Illinois Licensed Structural Engineer. See Sheet SD27 for bearing details. See Special Provisions for "Jack and Remove Existing Bearings".
4. 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.

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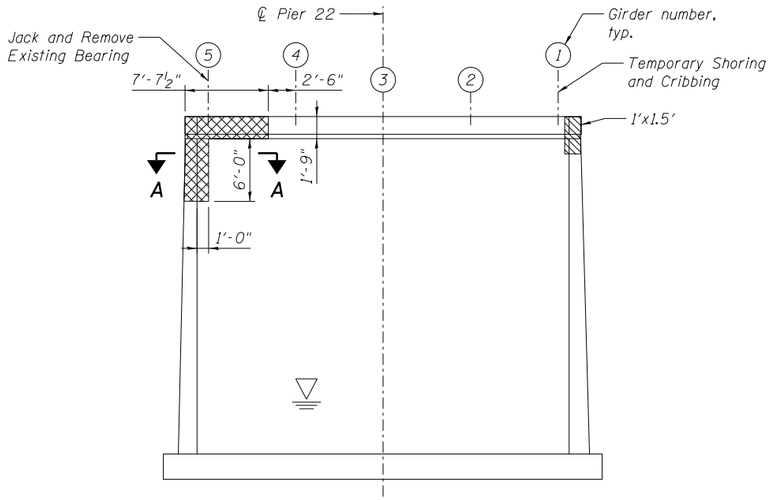
FILE NAME = 0160985_60W75_032_Pier_Repair_1.dgn	USER NAME = jsurber	DESIGNED - JLS	REVISED -
		CHECKED - AJK	REVISED -
	PLOT SCALE =	DRAWN - RMG	REVISED -
	PLOT DATE = 6/12/2015	CHECKED - AJK	REVISED -

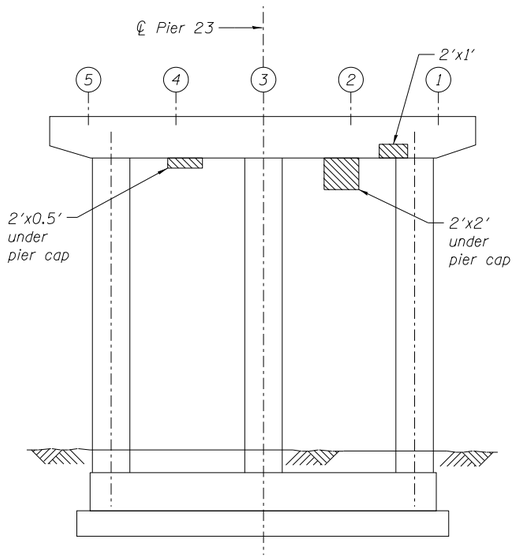
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIERS 20 AND 21 CONCRETE REMOVAL AND REPAIR DETAILS
STRUCTURE NO. 016-0985
SHEET NO. SD32 OF SD40 SHEETS

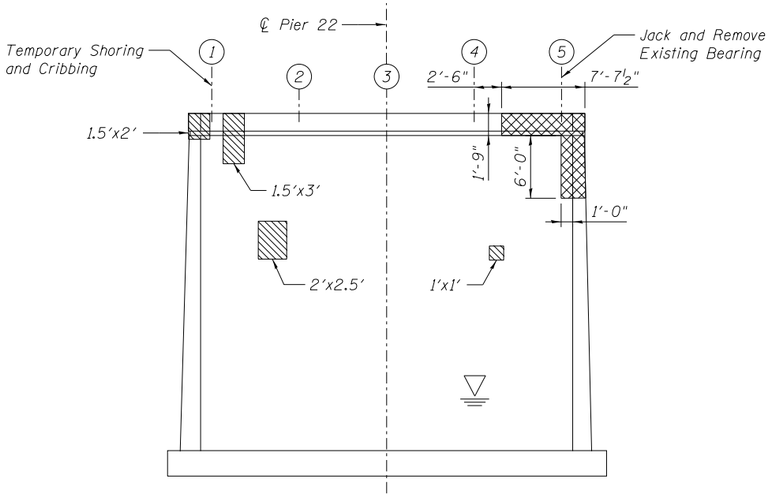
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	473
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



PIER 22
Looking East



PIER 23
Looking East



PIER 22
Looking West

PIER 23
Looking West

LEGEND

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

UNFACTORED BEAM REACTION (KIPS)

	Pier 22
Dead Load (steel only per beam)	45

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Concrete Removal	Cu. Yd.	1.7
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	45
Temporary Shoring and Cribbing	Each	1

NOTES:

1. Actual quantities shall be approved by the Engineer.
2. If Temporary Shoring and Cribbing is required to perform a concrete repair, shoring and repair shall be done while the bridge deck is removed.
3. The pay item "Jack and Remove Existing Bearings" shall include the work required to support the girder while the bridge deck is removed in order to remove the bearing and also facilitate the concrete removal below. The jacking and supporting details shall also allow for placement of the new concrete and reinforcement. The new concrete shall have its full design strength before the existing girder load is returned to the new bearing. Plans and procedures for the proposed jacking and supporting details shall be designed and sealed by an Illinois Licensed Structural Engineer. See Sheet SD27 for bearing details. See Special Provisions for "Jack and Remove Existing Bearings".
4. See Sheet SD32 for Section A-A. 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.

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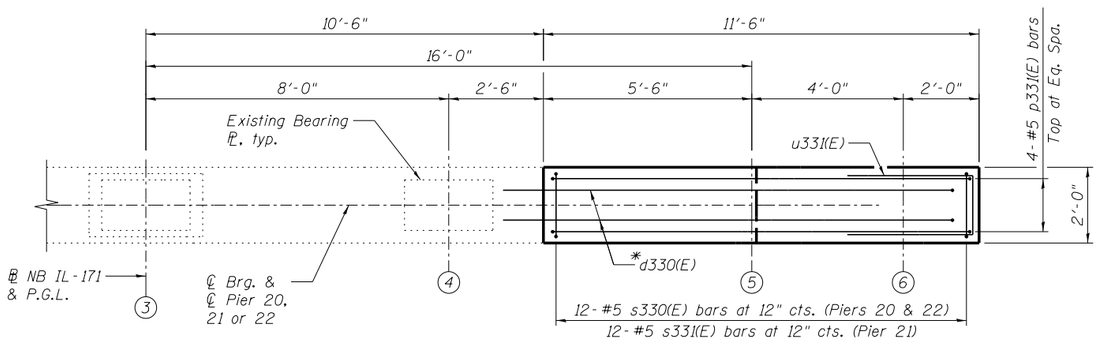
FILE NAME = 0160985_60W75_033_Pier_Repair_2.dgn	USER NAME = jsurber	DESIGNED - JLS	REVISED -
		CHECKED - AJK	REVISED -
	PLOT SCALE =	DRAWN - RMG	REVISED -
	PLOT DATE = 6/12/2015	CHECKED - AJK	REVISED -

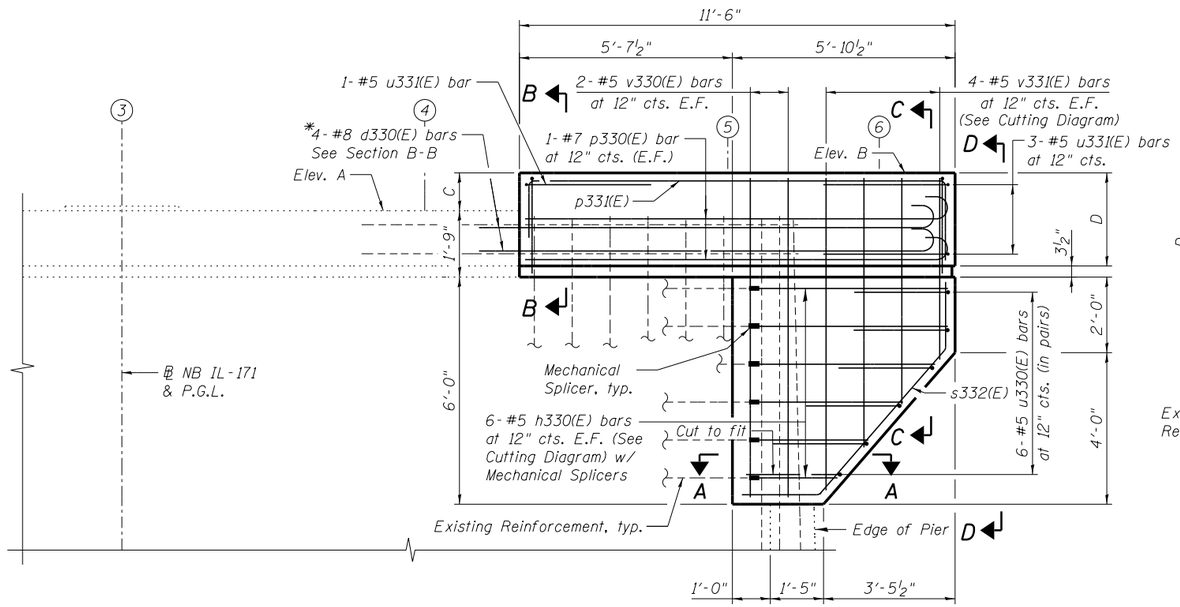
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIERS 22 AND 23 CONCRETE REMOVAL AND REPAIR DETAILS
STRUCTURE NO. 016-0985
SHEET NO. SD33 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	474
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

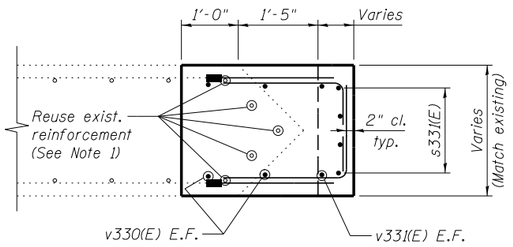


PLAN



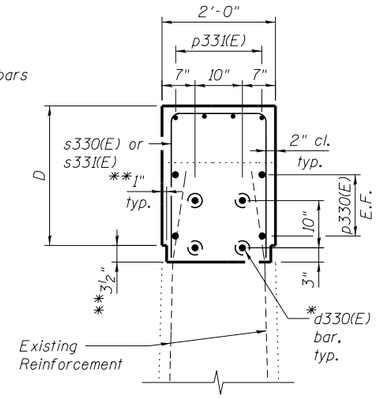
*Drill and grout bars according to Article 584 of the Std. Specifications with a minimum embedment of 9". Cost included with Concrete Structures.

ELEVATION

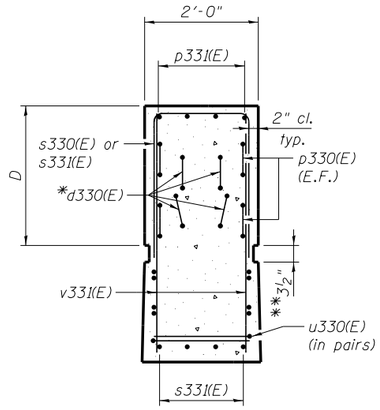


SECTION A-A

**Reveal dimensions and details shall match existing.

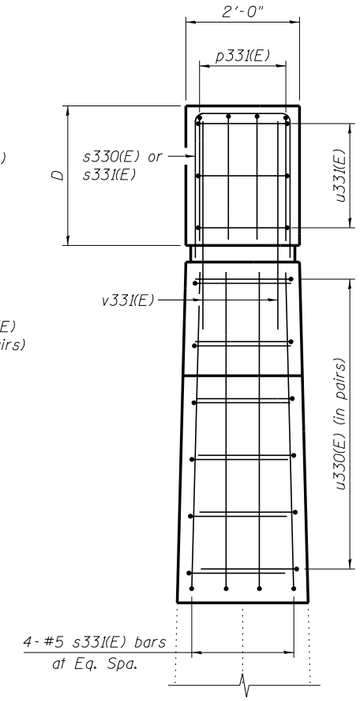


SECTION B-B



SECTION C-C

Pier	Elev. A	Elev. B	C	D
Pier 20	611.03	612.11	1'-1"	2'-6½"
Pier 21	611.81	612.80	11⅞"	2'-5⅜"
Pier 22	612.14	613.23	1'-1⅛"	2'-6⅝"



VIEW D-D

NOTES:

1. Existing reinforcement shall be cleaned and incorporated in 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.
2. See Sheet SD36 for Bar Bends and Bill of Material.
3. See Sheet SD36 for anchor bolt layout.
4. Space reinforcement in cap to miss anchor bolts.
5. See Sheet SD36 for Cutting Diagram.

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		CHECKED - AJK	REVISED -
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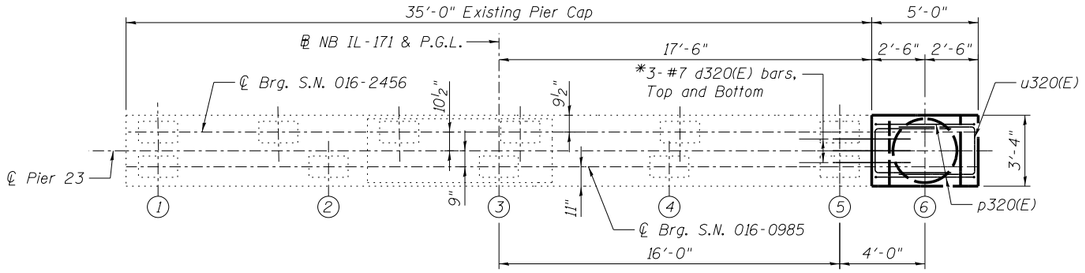
	PLOT DATE = 6/12/2015	CHECKED - AJK	REVISED -

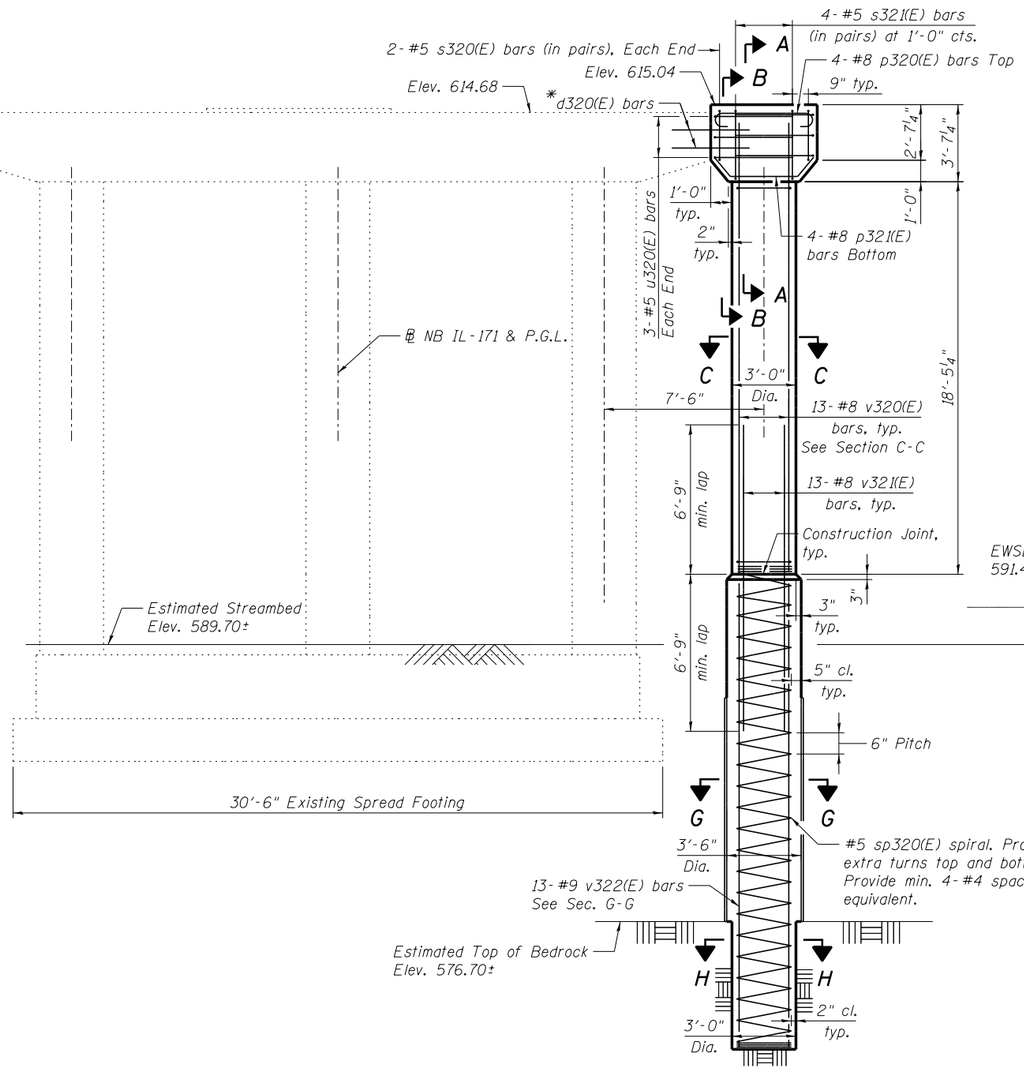
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIERS 20 THRU 22 WIDENING DETAILS
STRUCTURE NO. 016-0985
SHEET NO. SD34 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	475
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

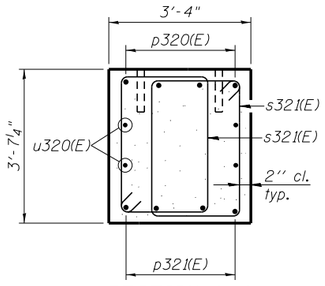


PIER 23 TOP PLAN



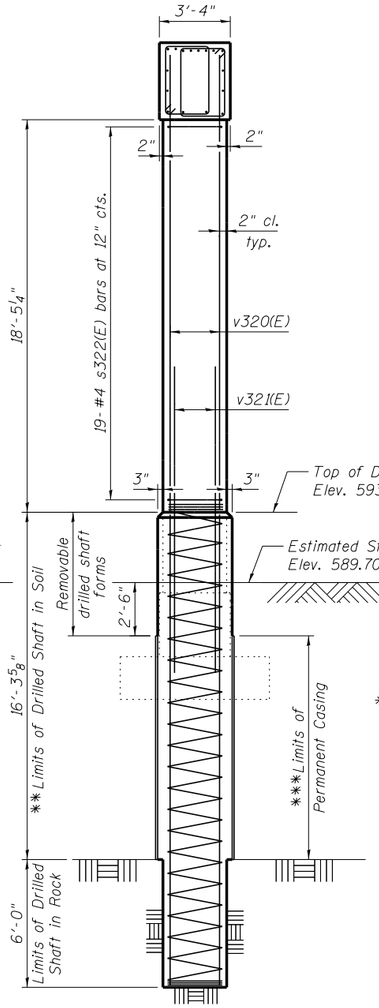
PIER 23 ELEVATION

(Looking Upstation/North)



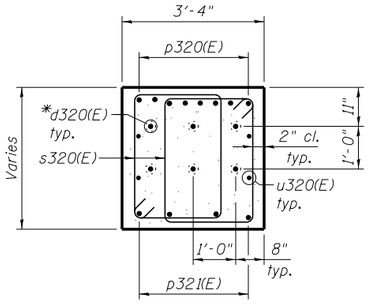
SECTION A-A

(Space Reinforcement to miss Anchor Bolts)

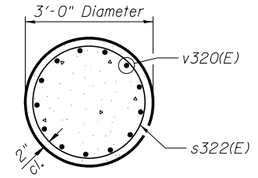


END VIEW

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



SECTION B-B



SECTION C-C

** 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.

*** 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.

NOTES:

1. See Sheet SD36 for Bar Bends and Bill of Material.
2. See Sheet SD36 for anchor bolt layout.
3. See Sheet SD3 for drilled shaft layout and locations.
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. See Sheet SD36 for Sections G-G and H-H.

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	PLOT DATE = 6/12/2015	CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 23 WIDENING DETAILS
STRUCTURE NO. 016-0985
SHEET NO. SD35 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	476
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

PIER 20
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d330(E)	4	#8	12'-9"	
h330(E)	6	#5	8'-0"	
p330(E)	4	#7	12'-1"	
p331(E)	4	#5	16'-2"	
s330(E)	12	#5	7'-0"	
s332(E)	4	#5	9'-0"	
u330(E)	12	#5	4'-11"	
u331(E)	4	#5	8'-7"	
v330(E)	4	#5	8'-7"	
v331(E)	4	#5	13'-0"	
Concrete Structures			Cu. Yd.	4.7
Reinforcement Bars, Epoxy Coated			Pound	670

PIER 21
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d330(E)	4	#8	12'-9"	
h330(E)	6	#5	8'-0"	
p330(E)	4	#7	12'-1"	
p331(E)	4	#5	16'-2"	
s331(E)	12	#5	6'-10"	
s332(E)	4	#5	9'-0"	
u330(E)	12	#5	4'-11"	
u331(E)	4	#5	8'-7"	
v330(E)	4	#5	8'-7"	
v331(E)	4	#5	13'-0"	
Concrete Structures			Cu. Yd.	4.6
Reinforcement Bars, Epoxy Coated			Pound	670

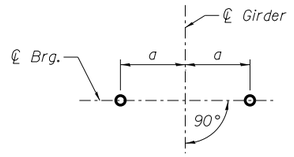
PIER 22
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d330(E)	4	#8	12'-9"	
h330(E)	6	#5	8'-0"	
p330(E)	4	#7	12'-1"	
p331(E)	4	#5	16'-2"	
s330(E)	12	#5	7'-0"	
s332(E)	4	#5	9'-0"	
u330(E)	12	#5	4'-11"	
u331(E)	4	#5	8'-7"	
v330(E)	4	#5	8'-7"	
v331(E)	4	#5	13'-0"	
Concrete Structures			Cu. Yd.	4.7
Reinforcement Bars, Epoxy Coated			Pound	670

PIER 23
BILL OF MATERIAL

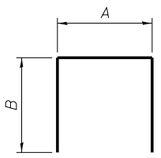
Bar	No.	Size	Length	Shape
d320(E)	6	#7	5'-6"	
p320(E)	4	#8	6'-6"	
p321(E)	4	#8	5'-6"	
s320(E)	4	#5	10'-9"	
s321(E)	8	#5	12'-7"	
s322(E)	19	#4	11'-0"	
* sp320(E)	1	#5	22'-10"	
u320(E)	6	#5	11'-3"	
v320(E)	13	#8	21'-6"	
v321(E)	13	#8	14'-0"	
v322(E)	13	#9	22'-1"	
Concrete Structures			Cu. Yd.	7.0
Reinforcement Bars, Epoxy Coated			Pound	3,180
Permanent Casing			Foot	11
Drilled Shaft in Soil			Cu. Yd.	5.9
Drilled Shaft in Rock			Cu. Yd.	1.6
Concrete Sealer			Sq. Ft.	309

* Length is height of spiral.



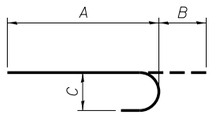
ANCHOR BOLT DETAIL

PIER	a (Girder 5)	a (Girder 6)
Pier 20	1'-3"	1'-3"
Pier 21	10 3/4"	10 3/4"
Pier 22	1'-3"	1'-3"
Pier 23 (SN 016-0985)	---	10"
Pier 23 (SN 016-2456)	---	9"



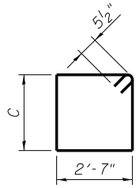
Bar	A	B
p331(E)	11'-4"	2'-5"
s330(E)	1'-8"	2'-8"
s331(E)	1'-8"	2'-7"
u331(E)	1'-7"	3'-6"
u320(E)	2'-11"	4'-2"

p331(E), s330(E), s331(E), u331(E) & u320(E) BARS



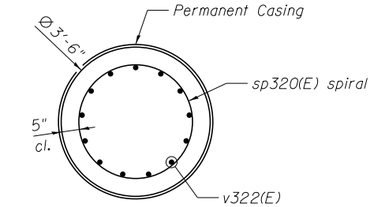
Bar	A	B	C
d330(E)	11'-10"	11"	8"
p330(E)	11'-3"	10"	7"

d330(E) & p330(E) BARS

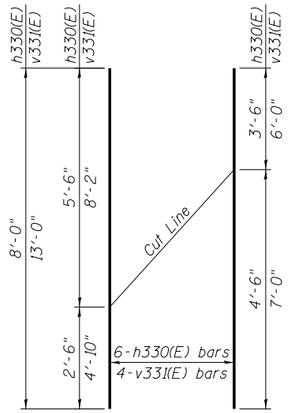


Bar	C
s320(E)	2'-4"
s321(E)	3'-3"

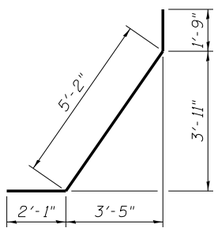
s320(E) & s321(E) BARS



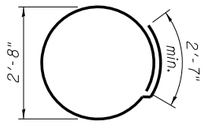
SECTION G-G
(Shaft in soil)



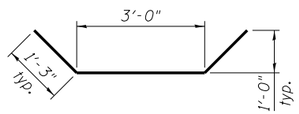
FIELD CUTTING DIAGRAM
h330(E) & v331(E) BARS



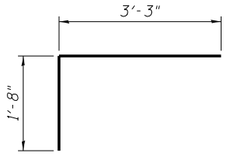
s332(E) BAR



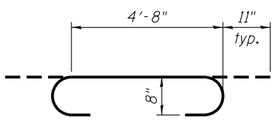
s322(E) BAR



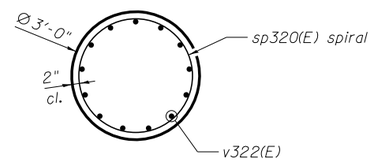
p321(E) BAR



u330(E) BAR



p320(E) BAR



SECTION H-H
(Shaft in rock)

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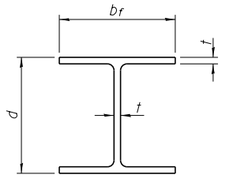
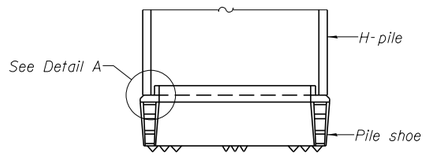
Chicago, Illinois 60601
312-565-0450 Job No. 10093

FILE NAME = 0160985_60W75_036_Pier_Widening_3.dgn	USER NAME = jsurber	DESIGNED - JLS/MWG	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PIERS 20–23 BAR DETAILS STRUCTURE NO. 016–0985	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - AJK	REVISED -			372	2013-037B-R	COOK	787	477
	PLOT SCALE =	DRAWN - RMG	REVISED -						CONTRACT NO. 60W75	
	PLOT DATE = 6/12/2015	CHECKED - AJK	REVISED -		SHEET NO. SD36 OF SD40 SHEETS			ILLINOIS	FED. AID PROJECT	

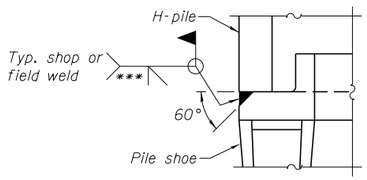


STEEL PILE TABLE

Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	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"	11/16"	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"

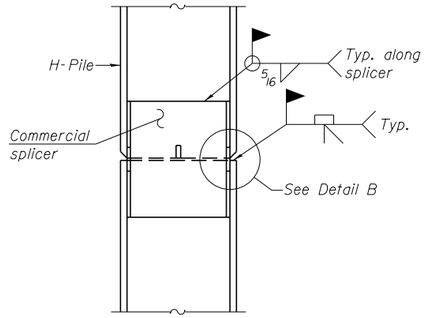


ELEVATION

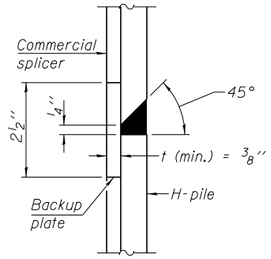


DETAIL A

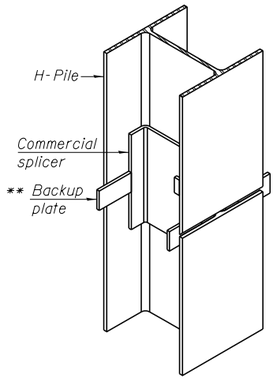
H-PILE SHOE ATTACHMENT



ELEVATION

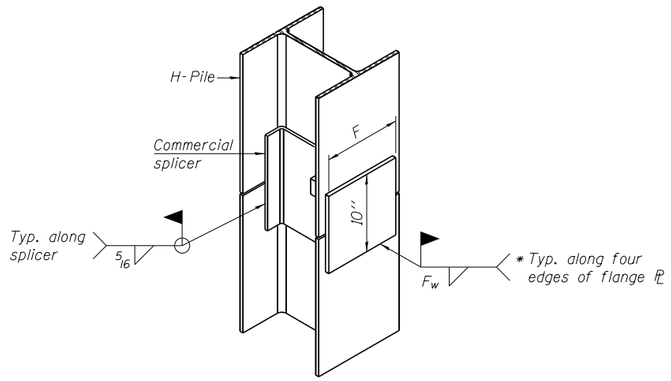


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



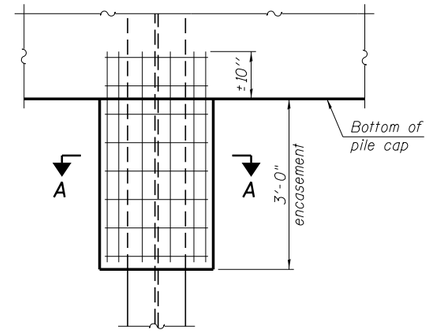
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

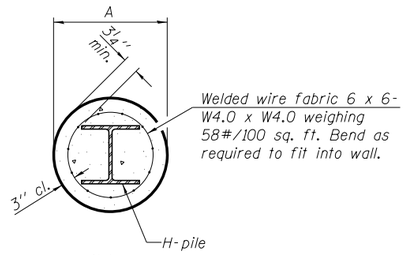
* Interrupt welds 1/4" from end of web and/or each flange.

** Remove portions of backup plates that extend outside the flanges.

*** Weld size per pile shoe manufacturer (5/16" min.).



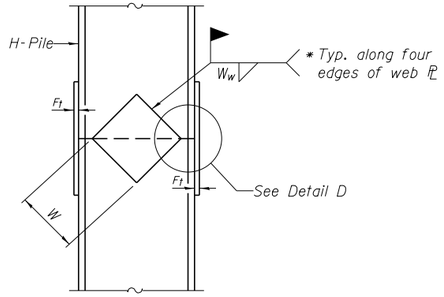
ELEVATION



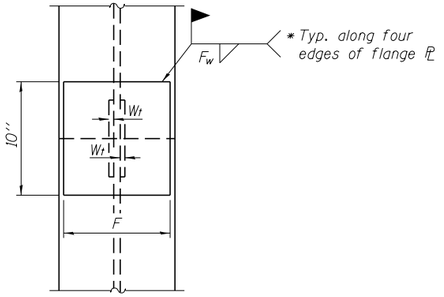
Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

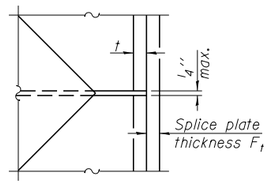
PILE ENCASEMENT



ELEVATION



END VIEW



DETAIL D

Designation	F	F_f	F_w	W	W_f	W_w
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"	11/16"	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"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	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"

WELDED PLATE FIELD SPLICE

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

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Chicago, Illinois 60601
312-565-0450 Job No. 10093

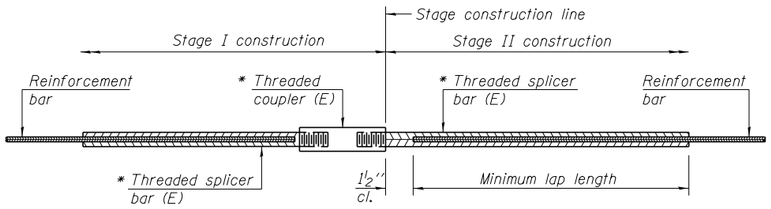
F-HP 1-27-12

FILE NAME = 0160985_60W75_037_Pile_Details.dgn	USER NAME = jsurber	DESIGNED - JLS	REVISED -
		CHECKED - AJK	REVISED -
	PLOT SCALE =	DRAWN - RMG	REVISED -
	PLOT DATE = 6/12/2015	CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NO. 016-0985
SHEET NO. SD37 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	478
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		



STANDARD BAR SPLICER ASSEMBLY

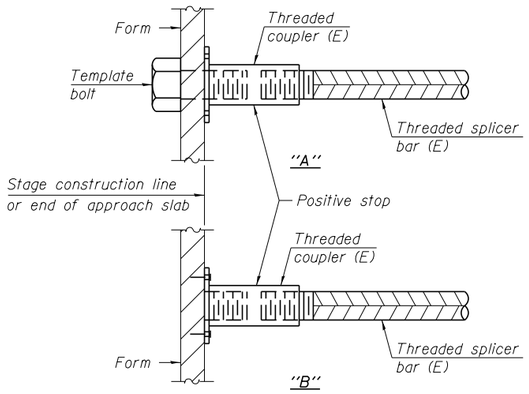
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"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

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

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

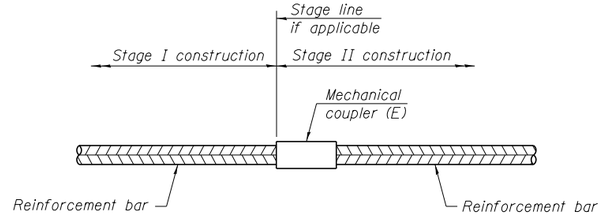
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

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



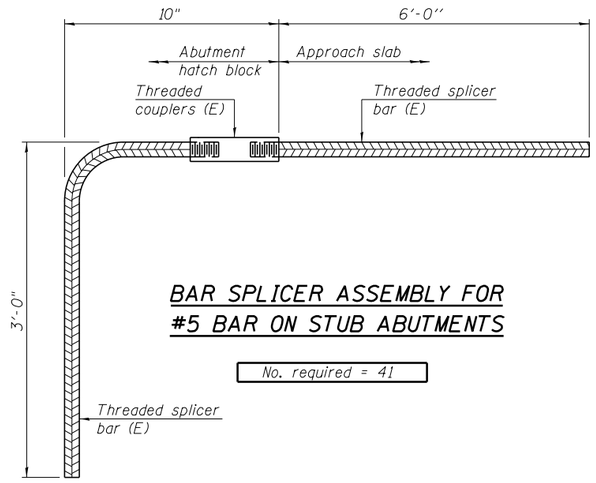
INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
Pier 20	#5	12
Pier 21	#5	12
Pier 22	#5	12



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required = 41

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.

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Chicago, Illinois 60601
312-565-0450 Job No. 10093

BSD-1 8-31-12

FILE NAME = 0160985_60W75_038_Bar_Splicer.dgn	USER NAME = jsurber	DESIGNED - JLS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS STRUCTURE NO. 016-0985
		CHECKED - AJK	REVISED -		
	PLOT SCALE =	DRAWN - RMG	REVISED -		SHEET NO. SD38 OF SD40 SHEETS
	PLOT DATE = 6/12/2015	CHECKED - AJK	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	479
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

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Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2838

GSI Job No. 10025

SOIL BORING LOG

Page 1 of 2

Date 4/30/12

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

SECTION 2013-037B-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. 016-0985
Station 50+80.50

BORING NO. SB-37
Station 47+77
Offset 48.00ft Right
Ground Surface Elev. 619.60 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter Dry to 10.0' ft
Upon Completion n/a ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
3.0" ASPHALT, 9.0" CONCRETE			
618.60			
CLAY LOAM-dark brown, gray & black-stiff to hard (Fill)	4		
	5 9	5.5 B	18
	3		
	3 3	2.0 P	19
-5			
	7		
	20 13	4.5 P	13
	8		
	11 11	1.4 B	27
-10			
	9		
	6 7	1.5 P	18
	2		
	5 9		16
-15			
	10		
	11 13	4.5 P	14
	7		
	12 14	4.5 P	15
-20			
CLAY LOAM-dark brown, gray & black-stiff to hard (Fill) *(continued)*	5		
	8 15	1.2 B	17
	4		
	7 19	1.5 P	34
-25			
594.10			
CRUSHED STONE-dense (Fill)	7		
	15 18		13
	18		
	31 12		7
-30			
587.60			
CLAY LOAM with Stone-brown & gray-medium dense (Fill)	9		
	7 7		12
-35			
582.60			
CLAY-gray-hard	14		
	44 49	5.6 B	16
-40			

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\2010\10025 BENESCH, IL-171 FIRST AVE. (IDOT PTB 154, ITEM 14)\10025_BORING LOGS\10025_LOG.GPJ 11/13/13

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Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2838

GSI Job No. 10025

SOIL BORING LOG

Page 2 of 2

Date 4/30/12

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

SECTION 2013-037B-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. 016-0985
Station 50+80.50

BORING NO. SB-37
Station 47+77
Offset 48.00ft Right
Ground Surface Elev. 619.60 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter Dry to 10.0' ft
Upon Completion n/a ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY-gray-hard *(continued)*			
577.60			
CLAY LOAM-gray-very dense	46		
	90/6"	4.5 P	10
574.60 -45			
Borehole continued with rock coring.			
-50			
-55			
-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\2010\10025 BENESCH, IL-171 FIRST AVE. (IDOT PTB 154, ITEM 14)\10025_BORING LOGS\10025_LOG.GPJ 11/13/13

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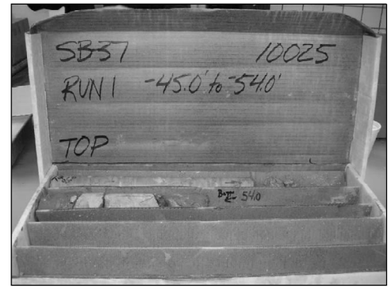
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2838

ROCK CORE LOG

PAGE 1 of 1
DATE 4/30/2012
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 2013-037B-R LOCATION SEC 11, 12, 13 & 14 T 38 N, R 12 E, 3rd PM
COUNTY Cook CORING METHOD Rotary Wash
STRUCT. NO. SN016-0985 CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Station 50+80.50 Core Diameter 2.0 in
BORING NO. SB-37 Top of Rock Elev. 559.6
Station 47+77 Begin Core Elev. 574.6
Offset 48.0' Right
Ground Surface Elev. 619.6

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
RUN 1 (−45.0' to −54.0') Cobbles & boulders with gravel & clay seams.	1	30.0	n/a	n/a	n/a
−50					
−15					



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

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

FILE NAME = 0160985_60W75_039_Soil Boring Logs 1.dgn	USER NAME = jsurber	DESIGNED - JLS	REVISED -
		CHECKED - AJK	REVISED -
	PLOT SCALE =	DRAWN - JLS	REVISED -
	PLOT DATE = 6/12/2015	CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS (1 OF 2)
STRUCTURE NO. 016-0985
SHEET NO. SD39 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	480
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

Y:\chicago\10000S\10093\Eng_Docs_Phase_II\SN_016_0483_0985_1st_Ave_over_Des_Plaines_River\Final_0985_016_0985_60W75_039_Soil Boring Logs 1.dgn
6/12/2015 3:14:51 PM

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

GSI Job No. 10025

SOIL BORING LOG

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 NW

SECTION 2013-037B-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. 016-0985
Station 50+80.50

BORING NO. SB-41
Station 53+52
Offset 46.00ft Right
Ground Surface Elev. 621.70 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter n/a ft
Upon Completion n/a ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
620.87				10.0" CONCRETE BRIDGE DECK
				VOID
-5				
-10				
-15				
-20				
-25				VOID *(continued)*
-30				
590.70				Water
589.70				Organic SILTY SAND-black-loose
	7			
	4		39	
	1			
587.70				CLAY LOAM-gray-hard
-35	13			
	20	4.5	10	
	24	P		
585.70				FRACTURED ROCK-very dense
	50/4"			
			9	
-40				

Z:\PROJECTS\2010\10025 BENESCH, IL-171 FIRST AVE. (IDOT PTB 154, ITEM 14)\10025_BORING LOGS\10025_LOG.GPJ 11/13/13

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)

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Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2838

GSI Job No. 10025

SOIL BORING LOG

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 NW

SECTION 2013-037B-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. 016-0985
Station 50+80.50

BORING NO. SB-41
Station 53+52
Offset 46.00ft Right
Ground Surface Elev. 621.70 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter n/a ft
Upon Completion n/a ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				FRACTURED ROCK-very dense *(continued)*
	50/2"			
576.70				
-45				
576.20				Drillers Observation: Apparent bedrock.
				Borehole continued with rock coring.
-50				
-55				
-60				

Z:\PROJECTS\2010\10025 BENESCH, IL-171 FIRST AVE. (IDOT PTB 154, ITEM 14)\10025_BORING LOGS\10025_LOG.GPJ 11/13/13

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)

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

ROCK CORE LOG

PAGE 1 of 1
DATE 5/2/2012
LOGGED BY DR
GSI JOB No. 10025

IL Rte. 171, F.A.P. 372 DESCRIPTION 1st Ave. Bridge Rehabilitation & Replacement, 47th St. to 55th St.
SECTION 2013-037B-R LOCATION SEC 11, 12, 13 & 14 T 38 N, R 12 E, 3rd PM
COUNTY Cook CORING METHOD Rotary Wash
STRUCT. NO. SN016-0985 CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Station 50+80.50 Core Diameter 2.0 in
BORING NO. SB-41 Top of Rock Elev. 576.7
Station 53+52 Begin Core Elev. 576.2
Offset 46.0' Right
Ground Surface Elev. 621.7

DEPTH (ft)	CORE	RECOVERY (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	Description
	1	100.0	80.0	n/a		650 @ -45.5'	SILURIAN SYSTEM, NIAGARAN SERIES DOLOMITE RUN 1 (-45.5' to -55.5') Light gray mottled gray with horizontal to wavy bedding. Slightly porous with some vugs. Some horizontal fractures throughout.
-50.5							
-55.5							

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

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Chicago, Illinois 60601
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0160985_60W75_040_Soil Boring Logs 2.dgn	PLOT SCALE =	DRAWN - JLS	REVISED -
	PLOT DATE = 6/12/2015	CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS (2 OF 2)
STRUCTURE NO. 016-0985
SHEET NO. SD40 OF SD40 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	481
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

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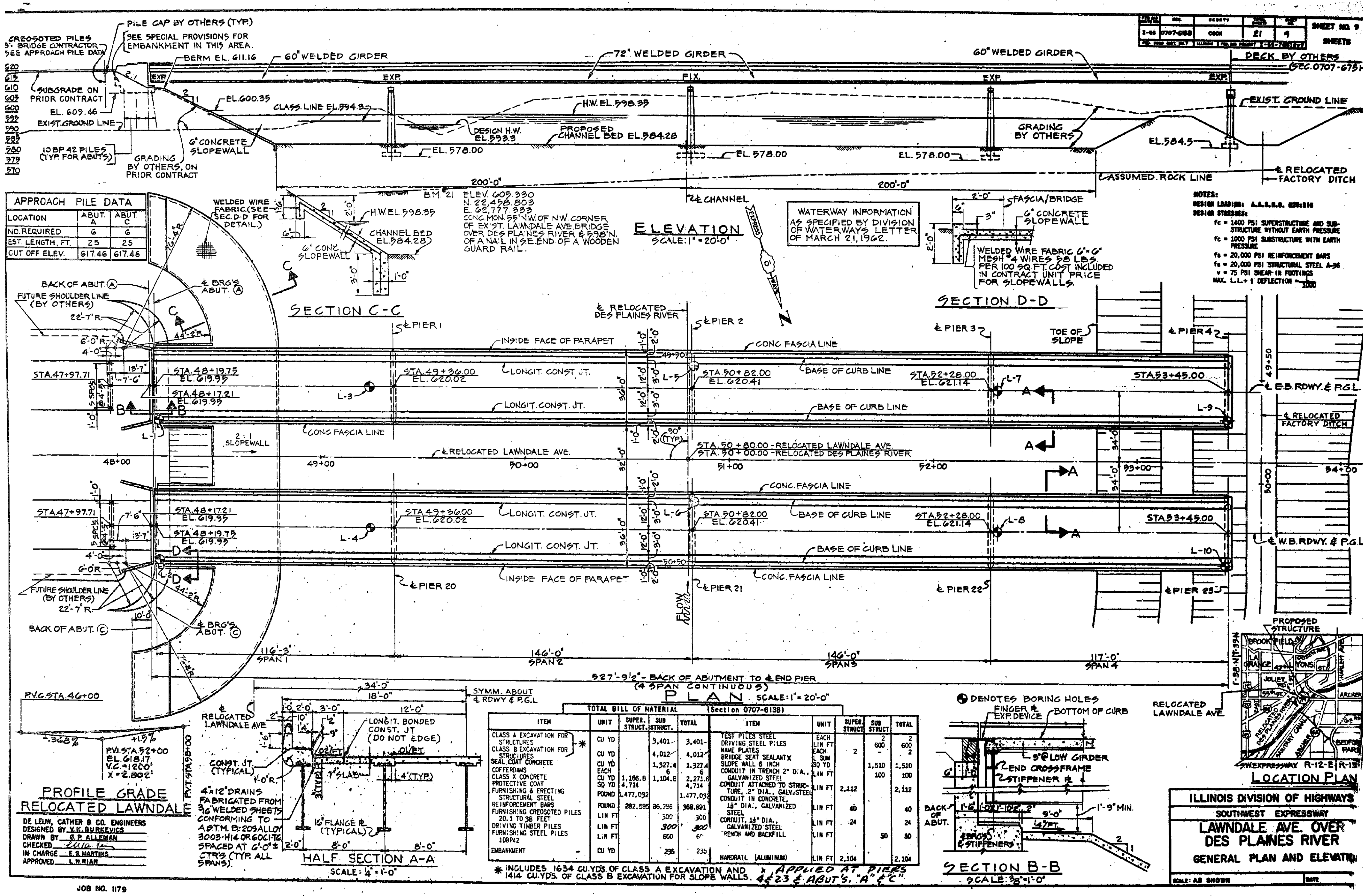

APPROACH PILE DATA

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

TOTAL BILL OF MATERIAL (Section 0707-613B)

ITEM	UNIT	SUPER. STRUCT.	SUB STRUCT.	TOTAL
CLASS A EXCAVATION FOR STRUCTURES *	CU YD		3,401	3,401
CLASS B EXCAVATION FOR STRUCTURES *	CU YD		4,012	4,012
SEAL COAT CONCRETE	CU YD		1,327.4	1,327.4
COFFERDAMS	EACH		6	6
CLASS X CONCRETE	CU YD	1,166.8	1,104.8	2,271.6
PROTECTIVE COAT	SQ YD	4,714		4,714
FURNISHING & ERECTING STRUCTURAL STEEL	POUND	1,477,032		1,477,032
REINFORCEMENT BARS	POUND	282,595	86,296	368,891
FURNISHING CREOSOTED PILES 20.1 TO 38 FEET	LIN FT		300	300
DRIVING TIMBER PILES	LIN FT		300	300
FURNISHING STEEL PILES 10BP42	LIN FT		600	600
EMBANKMENT	CU YD		235	235
TEST PILES STEEL	EACH		2	2
DRIVING STEEL PILES	LIN FT		600	600
NAME PLATES	EACH	2	-	2
BRIDGE SEAT SEALANT x	L SUM			
SLOPE WALL 6 INCH	SQ YD		1,510	1,510
CONDUIT IN TRENCH 2" DIA., GALVANIZED STEEL	LIN FT		100	100
CONDUIT ATTACHED TO STRUCTURE, 2" DIA., GALV. STEEL	LIN FT	2,112		2,112
CONDUIT IN CONCRETE, 1½" DIA., GALVANIZED STEEL	LIN FT	40		40
CONDUIT, 1½" DIA., GALVANIZED STEEL	LIN FT	24		24
TRENCH AND BACKFILL	LIN FT		50	50
HANDRAIL (ALUMINUM)	LIN FT	2,104		2,104

* INCLUDES 1634 CU.YDS. OF CLASS A EXCAVATION AND 1414 CU.YDS. OF CLASS B EXCAVATION FOR SLOPE WALLS.

x APPLIED AT PIERS 4 & 23 & ABUT'S. "A" & "C"

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0160985_60W75_041_existplan1.dgn	PLOT SCALE =	CHECKED - AJK	REVISED -			372	2013-037B-R	COOK	787	482
	PLOT DATE = 6/9/2015	DRAWN - JLS	REVISED -		SHEET NO. SDX1 OF SDX13 SHEETS	CONTRACT NO. 60W75				
		CHECKED - AJK	REVISED -			ILLINOIS FED. AID PROJECT				

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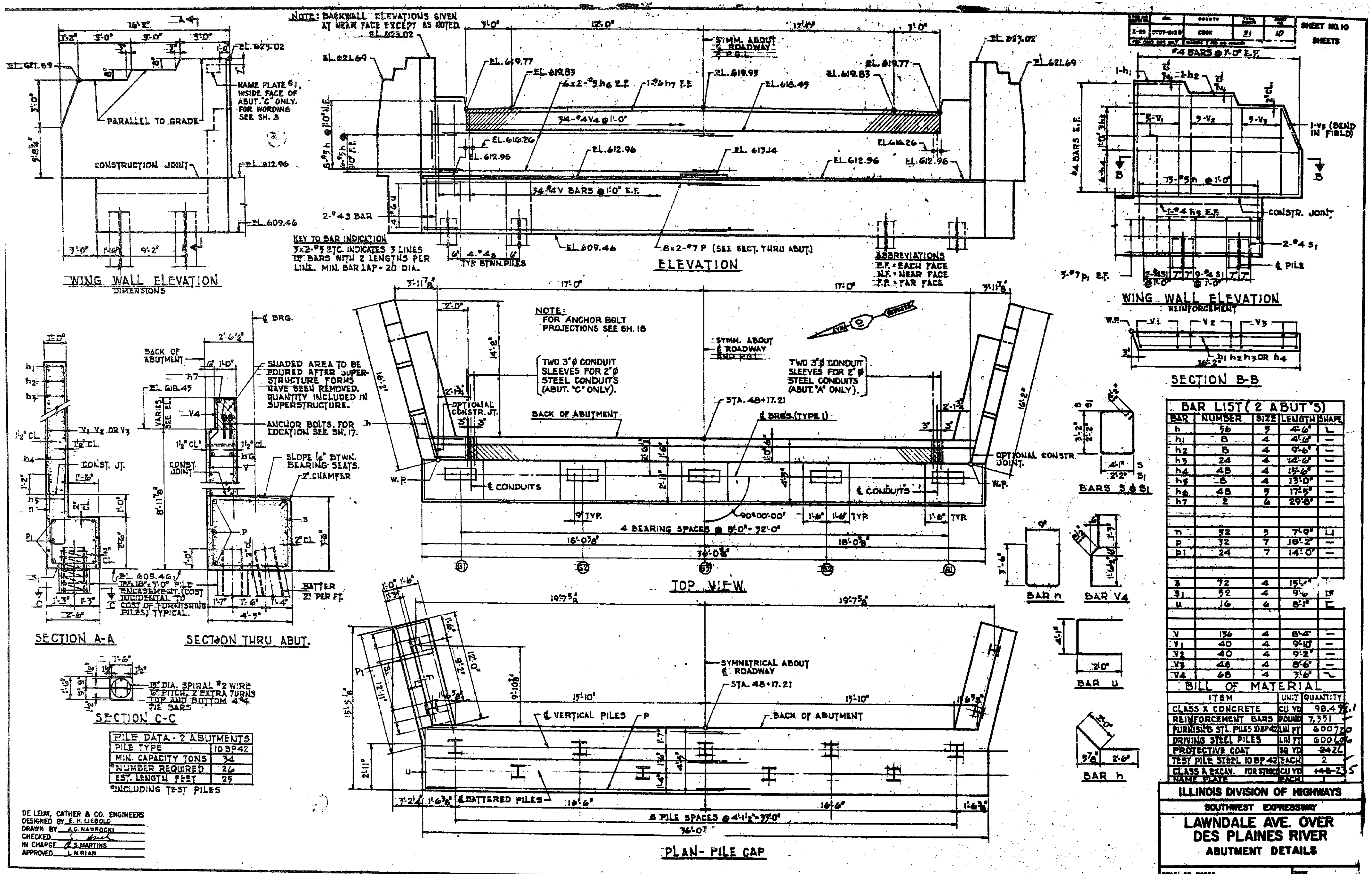

PILE DATA - 2 ABUTMENTS	
PILE TYPE	10 BP42
MIN. CAPACITY TONS	34
*NUMBER REQUIRED	26
EST. LENGTH FEET	25

*INCLUDING TEST PILES

BAR LIST (2 ABUT'S)				
BAR	NUMBER	SIZE	LENGTH	SHAPE
h	56	5	4'-6"	L
h1	8	4	4'-6"	—
h2	8	4	9'-6"	—
h3	24	4	14'-6"	—
h4	48	4	15'-6"	—
h5	8	4	13'-0"	—
h6	48	5	17'-5"	—
h7	2	6	29'-8"	—
n	32	5	7'-9"	⊔
p	32	7	18'-2"	—
p1	24	7	14'-0"	—
s	72	4	15'-4"	
s1	32	4	9'-6"	
u	16	6	8'-1"	⊏
v	136	4	8'-4"	—
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	98.4 97.1
REINFORCEMENT BARS	POUND	7,351
FURNISH'G STL. PILES 10BP42	LIN FT	600 720
DRIVING STEEL PILES	LIN FT	600 606
PROTECTIVE COAT	SQ YD	~~24~~ 26
TEST PILE STEEL 10 BP 42	EACH	2
CLASS A EXCAV. FOR STRUCT.	CU YD	~~148~~ 235
NAME PLATE	EACH	1

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWNDALE AVE. OVER DES PLAINES RIVER
ABUTMENT DETAILS
SCALE: AS NOTED
DATE

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY E. H. LIEBOLD
DRAWN BY J. G. NAWROCKI
CHECKED [signature]
IN CHARGE E. S. MARTINS
APPROVED L. N. RIAN

JOB NO. 1179

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	PLOT DATE = 6/9/2015	CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLAN INFORMATION (2 OF 13)
STRUCTURE NO. 016–0985
SHEET NO. SDX2 OF SDX13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	483

CONTRACT NO. 60W75
ILLINOIS FED. AID PROJECT

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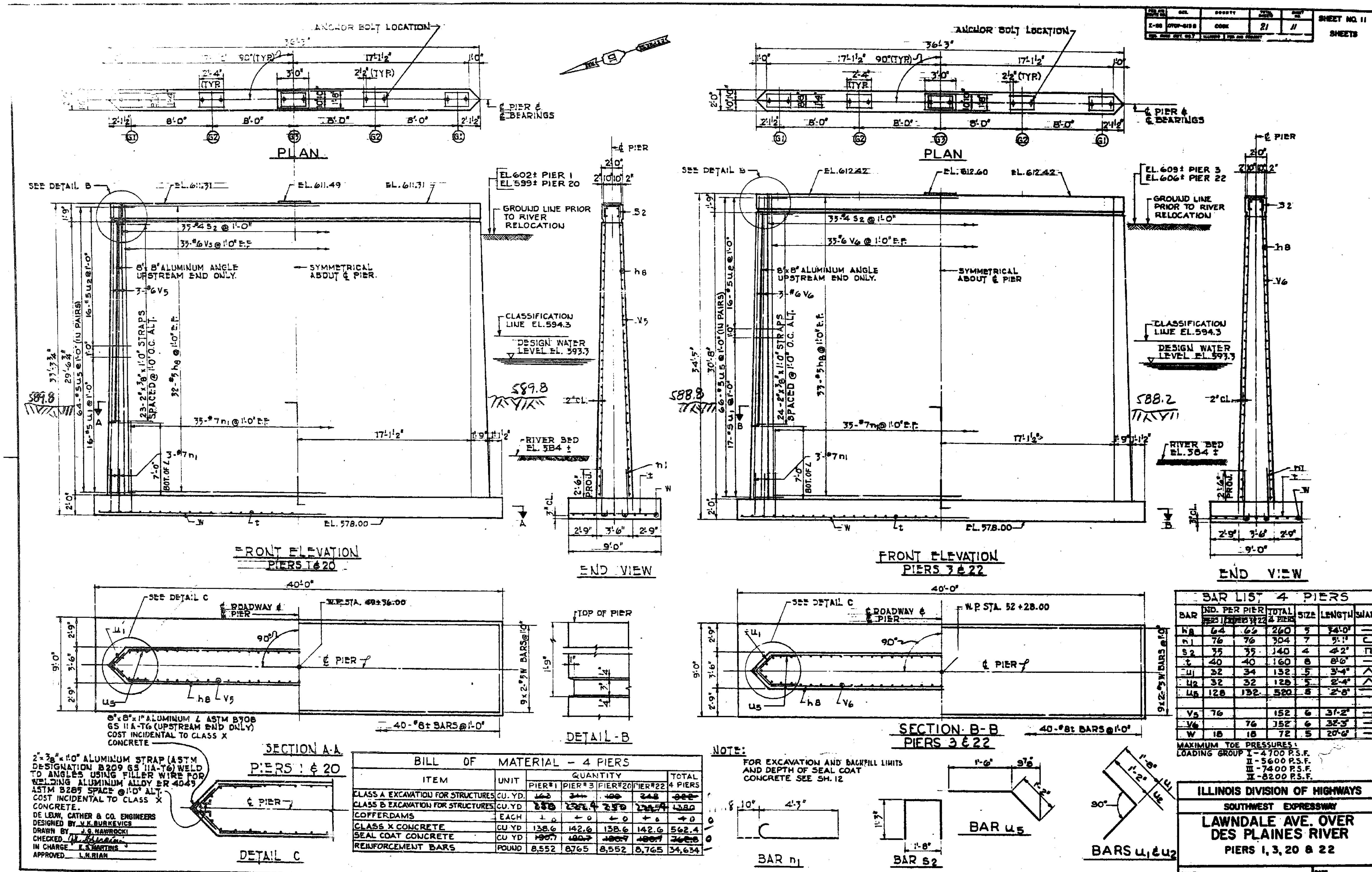

BAR	NO. PER PIER PIERS 1 & 20	NO. PER PIER PIERS 3 & 22	TOTAL 4 PIERS	SIZE	LENGTH	SHAPE
h8	64	66	260	5	34'-0"	—
n1	76	76	304	7	5'-1"	⊏
S2	35	35	140	4	4'-2"	⊓
t	40	40	160	8	8'-6"	—
u1	32	34	132	5	3'-4"	^
u2	32	32	128	5	2'-4"	^
u5	128	132	520	5	2'-8"	
V5	76		152	6	31'-2"	
V6		76	152	6	32'-3"	
W	18	18	72	5	20'-6"	—

MAXIMUM TOE PRESSURES:
LOADING GROUP I - 4700 P.S.F.
II - 5600 P.S.F.
III - 7400 P.S.F.
IX - 8200 P.S.F.

BILL OF MATERIAL - 4 PIERS

ITEM	UNIT	QUANTITY PIER #1	PIER #3	PIER #20	PIER #22	TOTAL 4 PIERS
CLASS A EXCAVATION FOR STRUCTURES	CU. YD.	~~163~~	~~311~~	~~100~~	~~248~~	~~822~~
CLASS B EXCAVATION FOR STRUCTURES	CU. YD	~~258~~	~~[illegible]~~	~~250~~	~~[illegible]~~	~~1380~~
COFFERDAMS	EACH	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~4~~ 0
CLASS X CONCRETE	CU YD	138.6	142.6	138.6	142.6	562.4
SEAL COAT CONCRETE	CU YD	~~190.7~~	~~190.7~~	~~190.7~~	~~190.7~~	~~762.8~~
REINFORCEMENT BARS	POUND	8,552	8,765	8,552	8,765	34,634

NOTE:
FOR EXCAVATION AND BACKFILL LIMITS AND DEPTH OF SEAL COAT CONCRETE SEE SH. 12

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

JOB NO. 1179

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

SHEET NO. 11 SHEETS
COUNTY COOK 21 11

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0160985_60W75_043_existplan3.dgn	PLOT SCALE =	CHECKED - AJK	REVISED -		
	PLOT DATE = 6/9/2015	DRAWN - JLS	REVISED -		SHEET NO. SDX3 OF SDX13 SHEETS
		CHECKED - AJK	REVISED -		

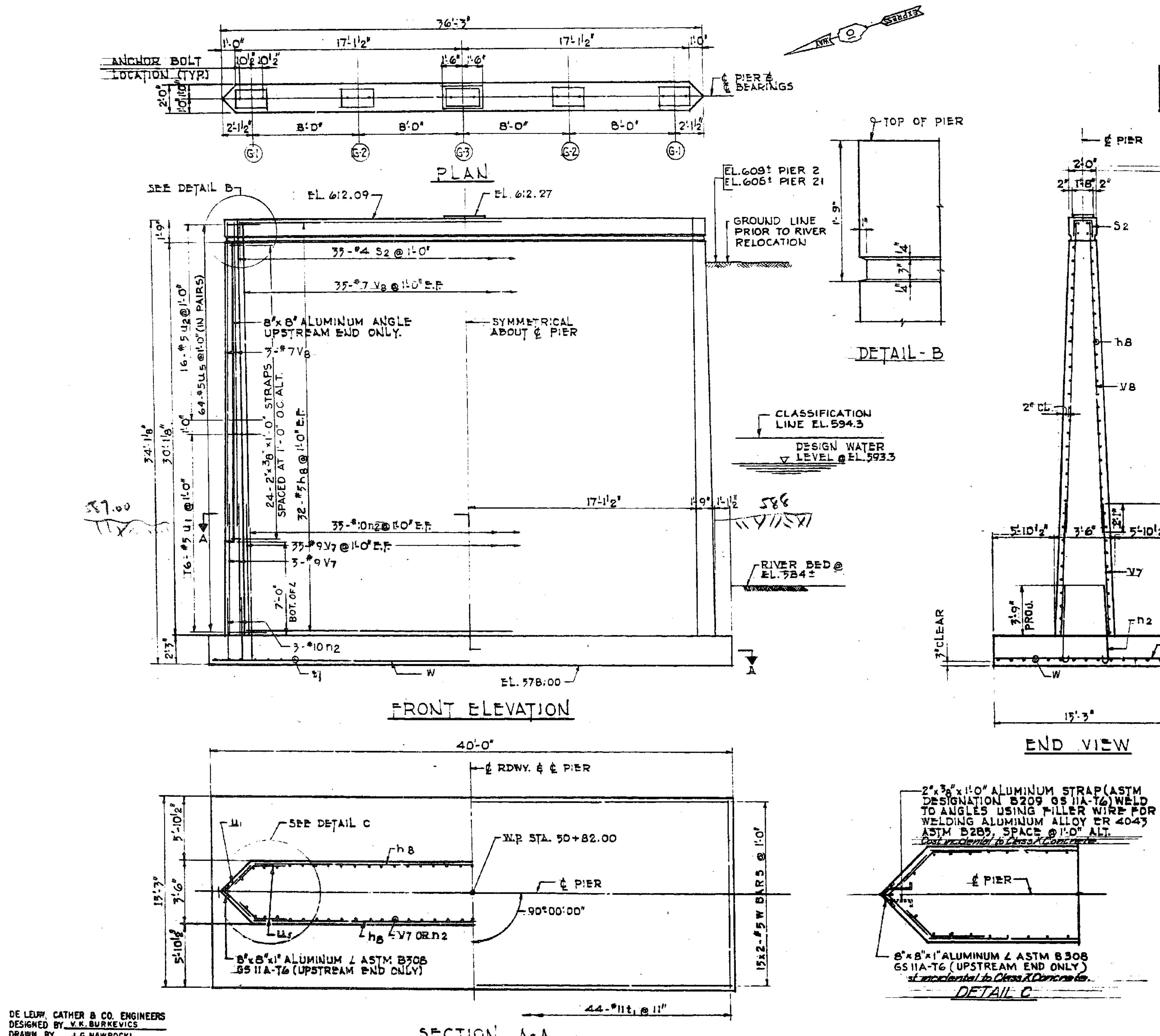
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	484

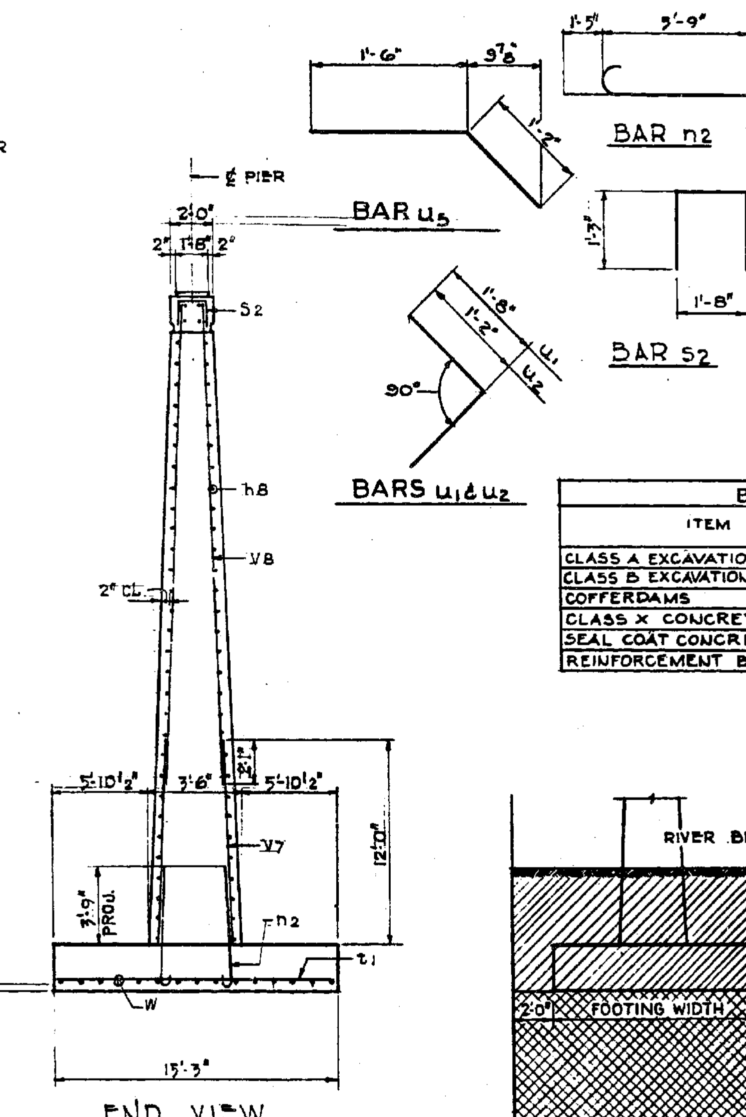
CONTRACT NO. 60W75
ILLINOIS FED. AID PROJECT

FED. AID ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
I-55	0707-613 B	COOK	21	12

FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT

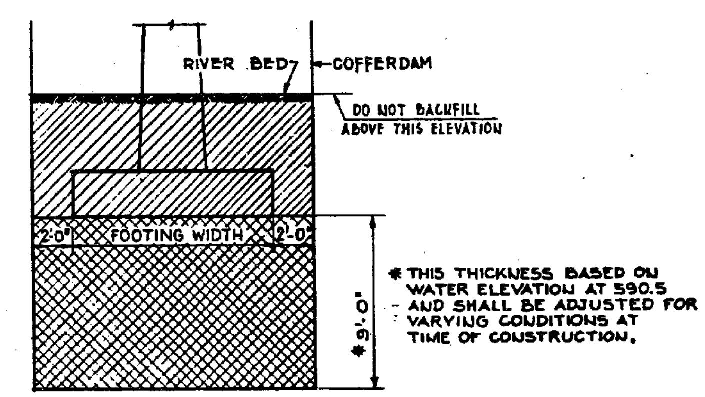
SHEET NO. 12 / 21 SHEETS





BAR LIST-2 PIERS				
BAR	QUANTITY	SIZE	LENGTH	SHAPE
h8	~~64~~ 128	5	34'-0"	—
n2	152	10	7'-2"	⊂
S2	70	4	4'-2"	⊓
t1	88	11	15'-3"	—
u1	64	5	3'-4"	^
u2	64	5	2'-4"	^
u5	256	5	2'-8"	¬
V7	152	9	12'-0"	—
V8	152	7	22'-0"	—
W	60	5	20'-6"	—

BILL OF MATERIAL-2 PIERS				
ITEM	UNIT	QUANTITY PIER #2	PIER #21	TOTAL 2 PIERS
CLASS A EXCAVATION FOR STRUCTURES	CU YD	~~461~~	~~836~~	~~797~~ 0
CLASS B EXCAVATION FOR STRUCTURES	CU YD	2[illegible]	2[illegible]	~~4022~~ 596
COFFERDAMS	EACH	~~1~~ 0	~~1~~ 0	~~2~~ 0
CLASS X CONCRETE	CU YD	164.5	164.5	329
SEAL COAT CONCRETE	CU YD	~~282.3~~	~~282.3~~	~~564.6~~ 0
REINFORCEMENT BARS	POUND	~~14,846~~ 15,982	14,846 15,982	~~29,692~~ 31,964



* THIS THICKNESS BASED ON WATER ELEVATION AT 590.5 AND SHALL BE ADJUSTED FOR VARYING CONDITIONS AT TIME OF CONSTRUCTION.

EXCAVATION & SEAL COAT LIMITS

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

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY V.K. BURKEVICS
DRAWN BY J.G. NAWROCKI
CHECKED [signature]
IN CHARGE F.S. MARTINS
APPROVED L.N. RIAN

JOB NO. 1179

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWNDALE AVE. OVER DES PLAINES ~~RIVER~~
PIERS 2 AND 21
SCALE: | DATE

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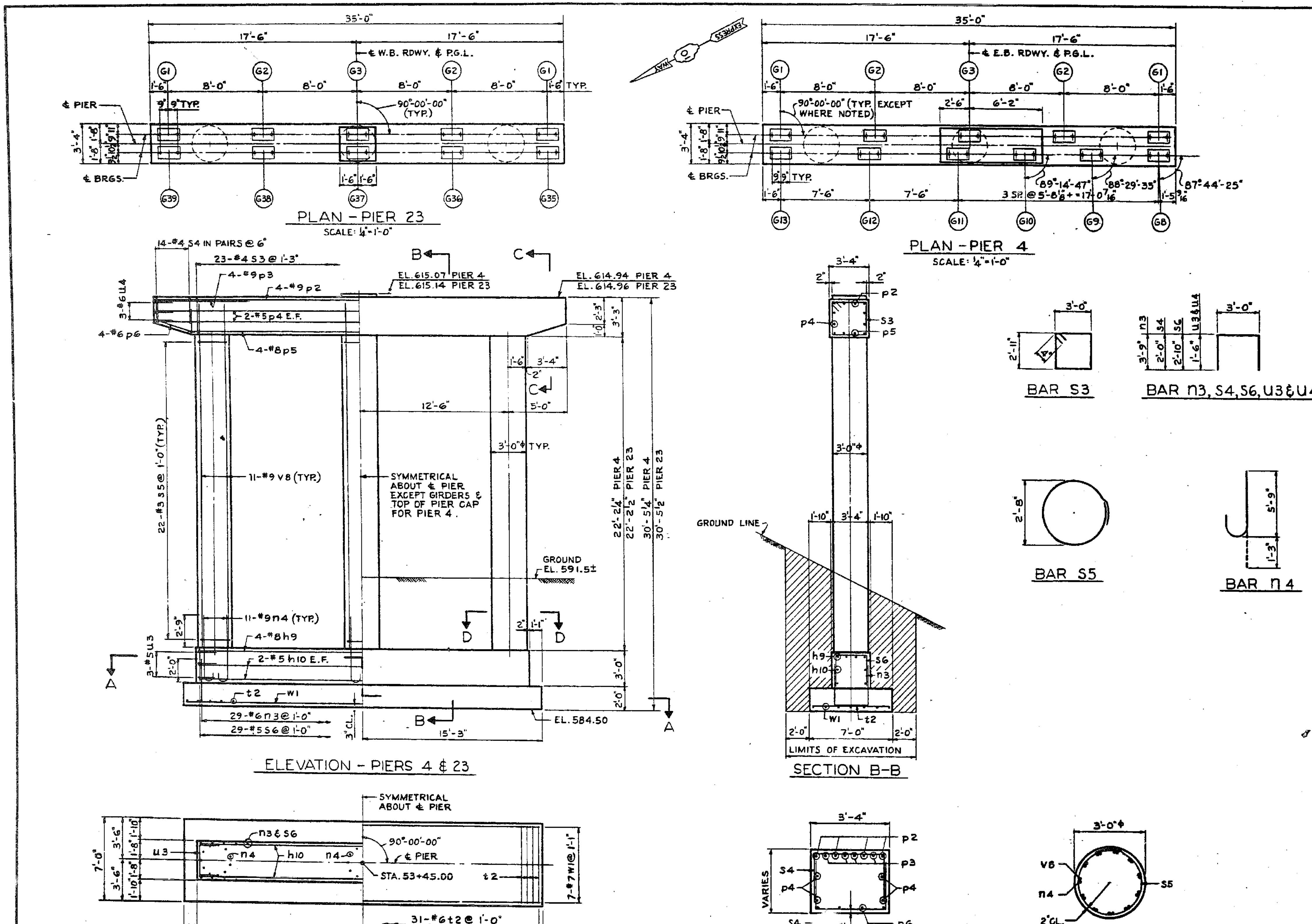
0160985_60W75_044_existplan4.dgn		CHECKED - AJK	REVISED -		
	PLOT SCALE =	DRAWN - JLS	REVISED -		
	PLOT DATE = 6/9/2015	CHECKED - AJK	REVISED -		SHEET NO. SDX4 OF SDX13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	485

CONTRACT NO. 60W75
ILLINOIS FED. AID PROJECT

FED. AID ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
I-55	0707-0830	COOK	21	13

SHEET NO. 13 SHEETS



BAR LIST (2 PIERS)				
BAR	NO.	SIZE	LENGTH	SHAPE
h9	8	#8	28'-0"	—
h10	8	#5	28'-0"	—
n3	58	#6	10'-6"	⊔
n4	66	#9	7'-0"	J
p2	8	#9	34'-9"	—
p3	16	#9	8'-0"	—
p4	8	#5	34'-9"	—
p5	8	#8	28'-0"	—
p6	16	#6	3'-3"	—
S3	46	#4	12'-6"	◻
S4	56	#4	7'-0"	⊓
S5	132	#3	9'-6"	O
S6	58	#5	8'-8"	⊓
t2	62	#6	6'-6"	—
U3	12	#5	6'-0"	⊓
U4	12	#6	6'-0"	⊓
V8	66	#9	25'-3"	—
W1	14	#7	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 SH. 18
POUR STEP MONOLITHICALLY WITH PIER CAP.

BILL OF MATERIAL (2 PIERS)		
ITEM	UNIT	QUANTITY
CLASS B EXCAVATION FOR STRUCT'S	CU YD	~~496~~ 2[illegible]
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.

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY V. K. BURKEVICS
DRAWN BY J. G. NAWROCKI
CHECKED [signature]
IN CHARGE E. S. MARTINS
APPROVED L. H. RIAN

JOB NO. 1179

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

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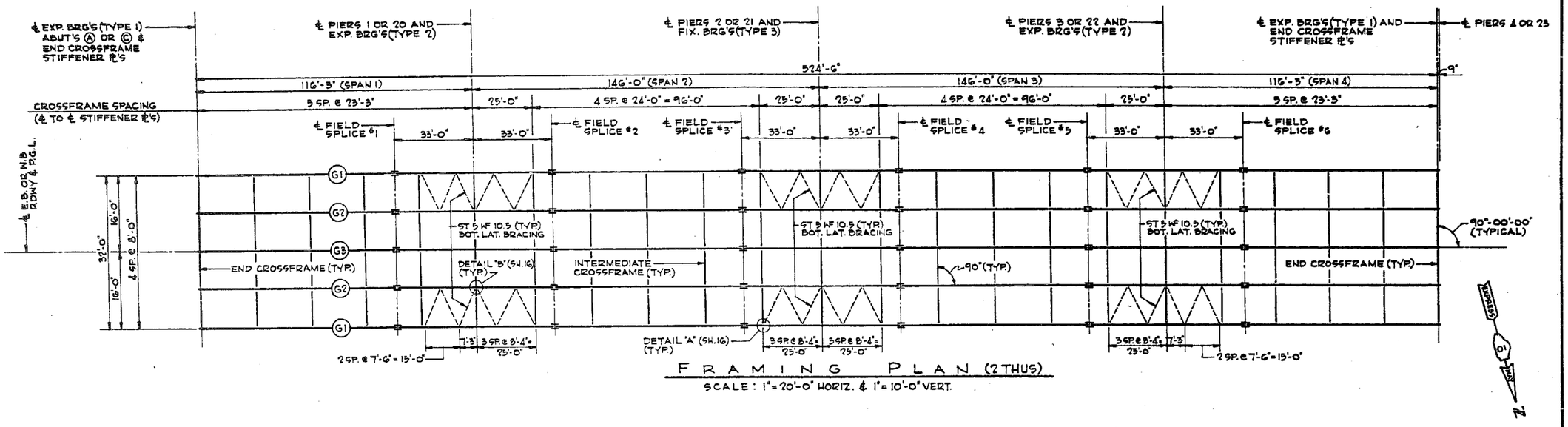
		CHECKED - AJK	REVISED -							
	PLOT SCALE =	DRAWN - JLS	REVISED -			CONTRACT NO. 60W75				
	PLOT DATE = 6/9/2015	CHECKED - AJK	REVISED -		SHEET NO. SDX5 OF SDX13 SHEETS	ILLINOIS FED. AID PROJECT				

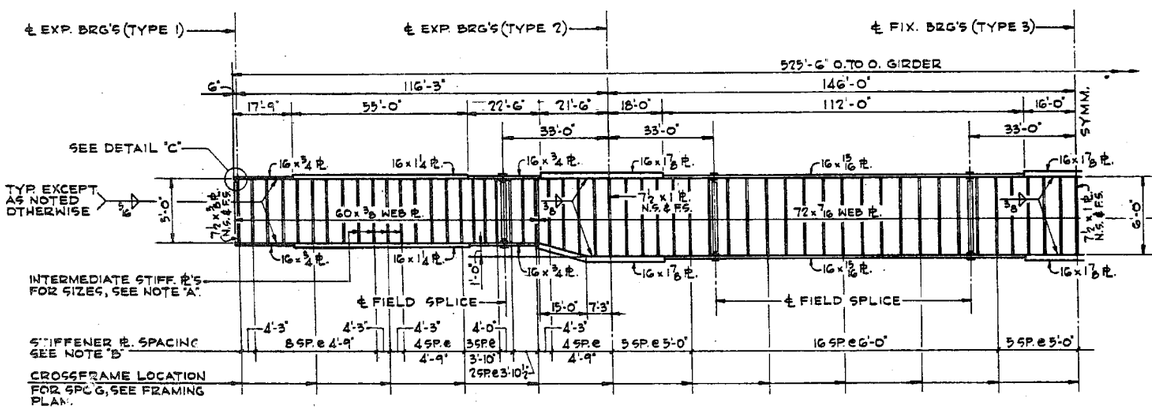
FED. AID PROJECT NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
I-55	0707-6158	COOK	21	15
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 15
SHEETS



FRAMING PLAN (2 THUS)

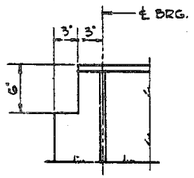
SCALE: 1" = 20'-0" HORIZ. & 1" = 10'-0" VERT.



HALF ELEVATION OF TYPICAL GIRDER

GIRDER SYMMETRICAL ABOUT ℄ FIXED BEARINGS

SCALE: 1" = 20'-0" HORIZ. & 1" = 5'-0" VERT.



DETAIL "C"

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

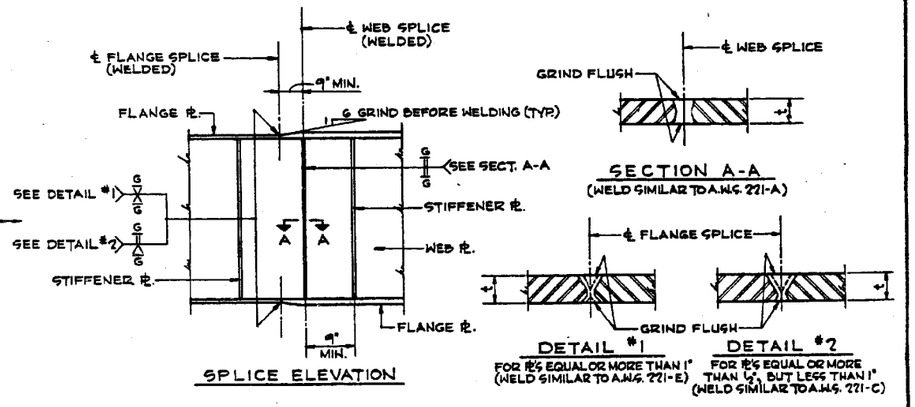
TABLE OF MOMENTS & REACTIONS – TYP. INTERIOR GIRDER												
	MOMENTS (FT. KIPS)							REACTIONS (KIPS)				
	.4 SPAN 1	PIERS 1 OR 20	.5 SPAN 2	PIERS 2 OR 21	.5 SPAN 3	PIERS 3 OR 22	.4 SPAN 4	ABUT'S A OR C	PIERS 1 OR 20	PIERS 2 OR 21	PIERS 3 OR 22	PIERS 4 OR 23
DEAD LOAD	1075	-2502	953	-2357	953	-2502	1075	52.9	190.0	185.3	190.0	52.9
LIVE LOAD	1023	-1440	1055	-1505	1055	-1440	1023	46.9	94.7	97.2	94.7	46.9
IMPACT	212	-781	195	-778	195	-781	212	9.7	12.1	11.7	12.1	9.7
TOTAL	2310	-4723	2203	-4640	2203	-4723	2310	109.5	296.8	294.2	296.8	109.5

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY E. M. LIEBOLD
DRAWN BY L. A. CHALIKIS
CHECKED
IN CHARGE R. S. MARTINS
APPROVED L. N. RIAN

JOB NO. 1179

NOTE "A":
INTERMEDIATE STIFF'S - G x 3/8 PL. (N.S. & F.S.), EXCEPT AT CROSSFRAMES & AS NOTED OTHERWISE ON GIRDER ELEVATION. FOR STIFF. #'S AT CROSSFRAMES, SEE "TYP. CROSSFRAME DETAILS," SH. 16. FOR DETAIL OF INTERMEDIATE STIFF. #'S OTHER THAN AT CROSSFRAMES, SEE DETAIL "A" SH. 16. FOR DETAIL OF STIFF. #'S AT BEARINGS, SEE SH. 16.

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



TYPICAL SHOP SPLICE DETAILS

NOT TO SCALE

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

LAWNDALE AVE. OVER DES PLAINES RIVER

FRAMING PLAN AND GIRDER DETAILS

SCALE: AS NOTED | DATE

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

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0160985_60W75_046_existplan6.dgn	PLOT SCALE =	DRAWN - JLS	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - AJK	REVISED -

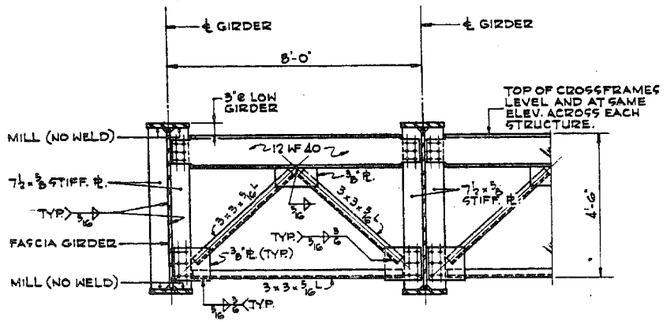
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLAN INFORMATION (6 OF 13)
STRUCTURE NO. 016-0985
SHEET NO. SDX6 OF SDX13 SHEETS

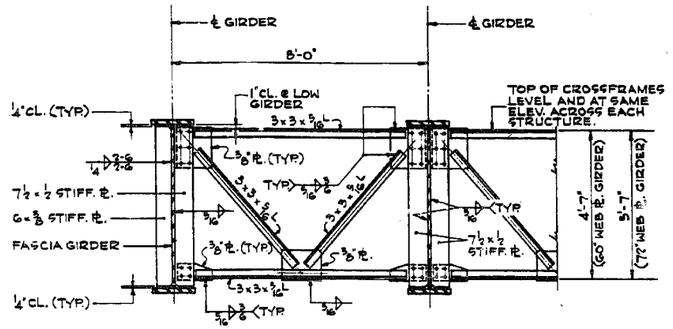
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	487
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

FED. AID PROJECT NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
I-88	0707-018B	COOK	21	16
FED. AID INT. SYST. NO.	ILLINOIS	FED. AID PROJECT		

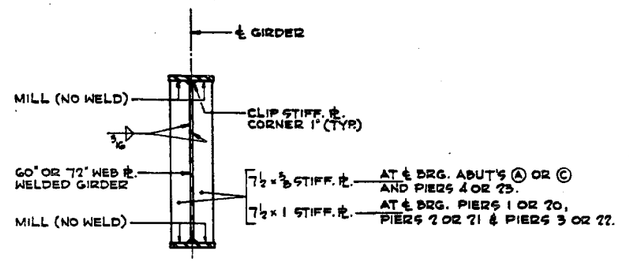
SHEET NO. 16
SHEETS



END CROSSFRAME DETAIL



INTERMEDIATE CROSSFRAME DETAIL



DETAIL OF BEARING STIFFENER PL'S AT ABUTMENTS AND PIERS

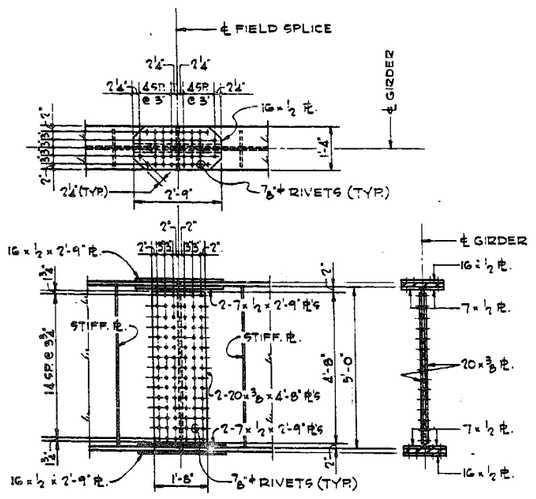
SCALE: ½"=1'-0"

NOTE: USE ¾"ø RIVETS FOR ALL FIELD CONNECTIONS

TYPICAL CROSSFRAME DETAILS

SCALE: ½"=1'-0"

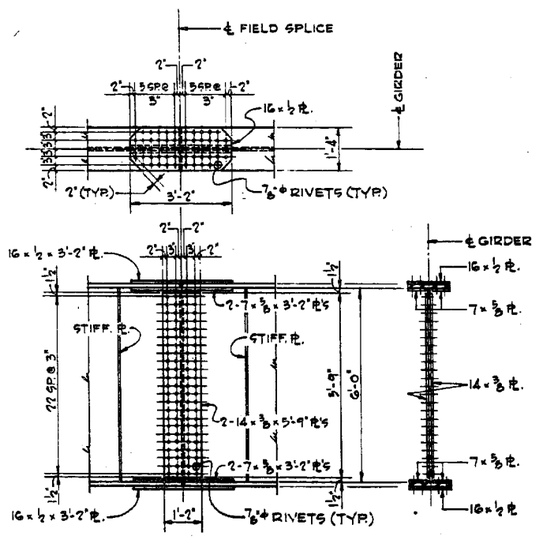
NOTE: FOR DETAILS OF CONDUIT SUPPORT BRACKETS, SEE SH. 20.



DETAIL OF FIELD SPLICE #1 & #6

60" WEB ℄ GIRDER

SCALE: ½"=1'-0"



DETAIL OF FIELD SPLICE #2 THRU #5

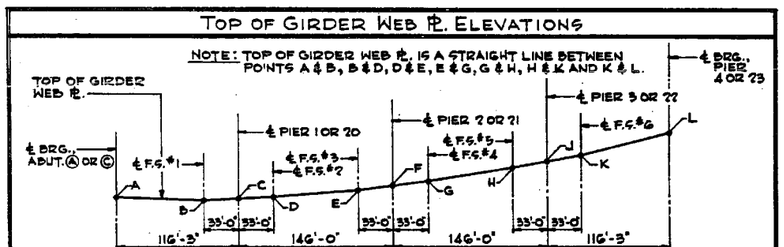
72" WEB ℄ GIRDER

SCALE: ½"=1'-0"

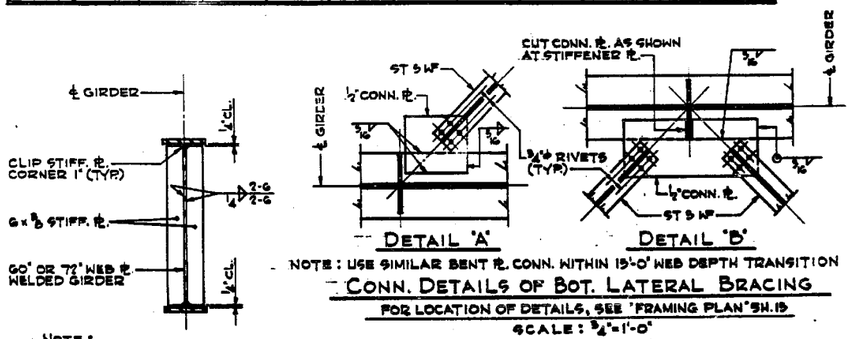
NOTE:
FOR BILL OF MATERIAL, SEE SH. 15.

TOP OF GIRDER WEB ℄ ELEVATIONS

NOTE: TOP OF GIRDER WEB ℄ 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	620.232	620.422	621.145
G3	619.320	619.239	619.298	619.358	619.367	619.695	619.822	620.222	620.412	620.602	621.325



DETAIL 'X' — TYP. INTERMEDIATE STIFFENERS OTHER THAN AT CROSSFRAMES.

SCALE: ½"=1'-0"

DETAIL 'A'

DETAIL 'B'

NOTE: USE SIMILAR BENT PL. CONN. WITHIN 15'-0" WEB DEPTH TRANSITION

CONN. DETAILS OF BOT. LATERAL BRACING

FOR LOCATION OF DETAILS, SEE 'FRAMING PLAN' SH. 15

SCALE: ¾"=1'-0"

NOTE:
FOR WELD DETAILS OF STIFF. PL'S AT CROSS-FRAMES, SEE "TYP. CROSSFRAME DETAILS."
FOR WELD DETAILS OF STIFF. PL'S AT BEARINGS, SEE DETAIL THIS SHEET.

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY J. C. BROZ
DRAWN BY A. A. CHALIKIS
CHECKED
IN CHARGE E. S. MARTINS
APPROVED L. ... RIAN

JOB NO. 1179

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

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312-565-0450 Job No. 10093

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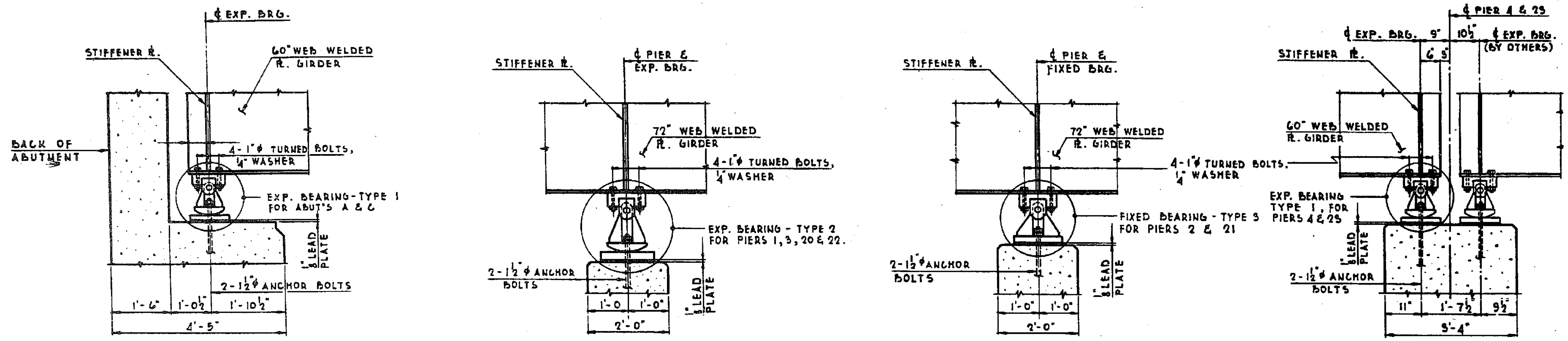
	PLOT SCALE =	DRAWN - JLS	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLAN INFORMATION (7 OF 13)
STRUCTURE NO. 016-0985
SHEET NO. SDX7 OF SDX13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	488
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

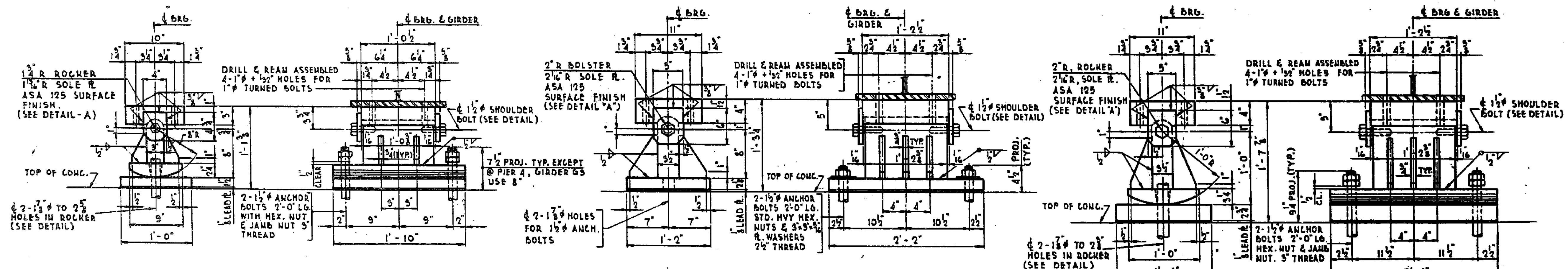


BRG. TYPE 1 AT ABUT'S A & C
SCALE: ¾" = 1'-0"

BRG. TYPE 2 AT PIERS 1, 3, 20 & 22
SCALE: ¾" = 1'-0"

BRG. TYPE 3 AT PIERS 2 & 21

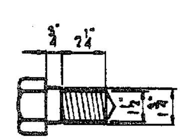
BRG. TYPE 1 AT PIERS 4 & 23
SCALE: ¾" = 1'-0"



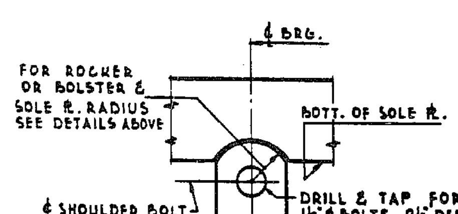
ROCKER DETAIL OF EXP. BRG. TYPE 1
SCALE: 1½" = 1'-0"

BOLSTER DETAIL OF FIXED BRG. TYPE 3
SCALE: 1½" = 1'-0"

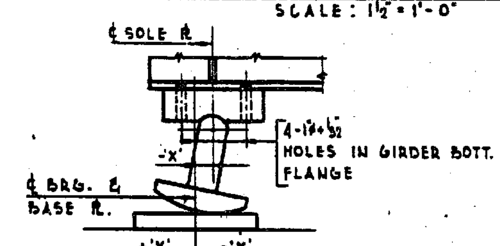
ROCKER DETAIL OF EXP. BRG. TYPE 2
SCALE: 1½" = 1'-0"



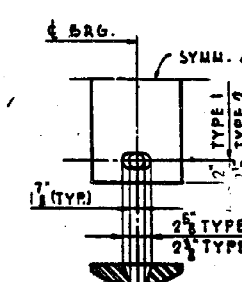
SHOULDER BOLT DETAIL
SCALE: 3" = 1'-0"



DETAIL - "A"
SCALE: 3" = 1'-0"



DIMENSION 'X'



DETAIL OF HOLE IN ROCKERS

FILL PLATE SCHEDULE	
LOCATION	THICKNESS
GIRDERS G1 & G2 @ PIER 4	5/16" (4 REQ'D)
GIRDER G3 @ PIER 4	15/16"
GIRDERS G1, G2 & G3 @ PIER 23	⅛" (5 REQ'D)

TOTAL WEIGHT OF FILL PLATES = 214 LBS

TEMPERATURE F	110°	90°	70°	50°	30°	10°
BRG'S @ ABUT'S Ⓐ & Ⓒ	+1¼	+13/16	+7/16	0	[illegible]	-15/16
BRG'S @ PIERS 1 & 20	+1 1/16	+7/16	+¼	[illegible]	-¼	-7/16
BRG'S @ PIERS 3 & 22	-1 1/16	-7/16	-¼	0	+¼	+7/16
E. BRG'S @ PIERS 4 & 23	-1¼	-13/16	-7/16	0	+7/16	+13/16

ROCKER SETTING DIAGRAM

MINUS SIGN INDICATES ℄ SOLE PLATE WEST OF ℄ BEARING.
PLUS SIGN INDICATES ℄ SOLE PLATE EAST OF ℄ 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 ℞'S

BILL OF MATERIAL **		
ITEM	UNIT	QUANTITY
FURNISHING & ERECTING STRUCTURAL STEEL	POUND	42,304

** WEIGHT OF ALL MATERIAL SHOWN ON THIS SHEET, INCL. FILL ℞.

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWNDALE AVE. OVER DES PLAINES RIVER
BEARING DETAILS
SCALE: AS NOTED | DATE

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY E.H. LIEBOLD
DRAWN BY E. BOBINAS
CHECKED
IN CHARGE S. MARTINS
APPROVED L.N. RIAN

JOB NO. 1179

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312-565-0450 Job No. 10093

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0160985_60W75_048_existplan8.dgn	PLOT SCALE =	CHECKED - AJK	REVISED -		SHEET NO. SDX8 OF SDX13 SHEETS	CONTRACT NO. 60W75				
	PLOT DATE = 6/9/2015	DRAWN - JLS	REVISED -			ILLINOIS FED. AID PROJECT				
		CHECKED - AJK	REVISED -							

FED. ROAD DIST. NO.	RTE.	COUNTY	TOTAL SHEETS	SHEET NO.
I-88	0707-6058	COOK	21	20
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SHEET NO. 20
SHEETS

KICK CONDUITS OUT TO POSITION UNDER SHOULDER. CAP ENDS.

ABUTMENT "A"

℄ LIGHT STANDARD STA. 49+00

℄ LIGHT STANDARD STA. 50+40

℄ LIGHT STANDARD STA. 51+80

℄ LIGHT STANDARD STA. 53+25

2-2" RIGID STEEL CONDUITS

℄ E.B. ROADWAY

℄ PIER 1

℄ PIER 2

℄ PIER 3

℄ PIER 4

48+00 49+00 50+00 51+00 52+00 53+00

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

ABUTMENT "C"

℄ PIER 20

℄ PIER 21

℄ PIER 22

℄ PIER 23

2-2" RIGID STEEL CONDUITS

℄ W.B. ROADWAY

℄ LIGHT STANDARD STA. 48+51.40

℄ LIGHT STANDARD STA. 49+84.40

℄ LIGHT STANDARD STA. 51+41.15

℄ LIGHT STANDARD STA. 52+98.65

TEMPORARY

PLAN
SCALE: 1"=20'

℄ GIRDER "G1"

2'-11"

"X" FRAME-60" WEB PLATE GIRDER

END "X" FRAME

CONDUIT SUPPORT AT PIERS 4 AND 23 ONLY SEE SECTION B-B FOR DETAILS

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

℄ GIRDER "G1"

GIRDER STIFF. PLATE

"X" FRAME-60" WEB PLATE GIRDER

2-5/8 ø U BOLTS FOR 2" RIGID STEEL CONDUITS

1/4"

5/16 5/16

1" 9 1/4" 6" 3"

L 3x3x5/16 x 11'-6 1/2" LONG (1 REQUIRED AT EACH STIFFENER PLATE) (SEE SHT. 15 FOR LOCATION OF STIFF. PLATES & X FRAMES) } BY STEEL FABRICATOR

X FRAME-72" WEB PLATE GIRDER

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

SLEEVES SEE SHEET 10

EXPANSION COUPLING TO PERMIT 2" MOVEMENT IN EITHER DIRECTION

2-2" RIGID STEEL CONDUITS

ABUTMENT "A" OR "C"

℄ BEARINGS & END "X" FRAME ABUTMENT "A" OR "C"

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

LEAD WOOL

EXPANSION COUPLING
NO SCALE

℄ LIGHT STANDARD

LIGHT STANDARD UNDER ANOTHER CONTRACT.

1'-6" 1'-6"

5 1/2" 5 1/2"

4" O.D. ALUM. TUBE HAND RAIL (TYP.) SEE SHEET 19

H.R. POST

LEVEL

1"ø ANCHOR BOLTS

1 1/2" RIGID STEEL CONDUIT (GALV.)

CONDUIT FITTING (5"W x 3"D x 13 3/4"L)

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

℄ LIGHT STANDARD

1'-0" 1'-0" 1'-0" 1'-0"

LEVEL

BOLT CIRCLE 11 1/2" DIA.

2"

10"

LIGHT STANDARD

1'-0" 1'-0"

℄ FACIA LINE

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

℄ LIGHT STANDARD

3" PROJ.

2-1"ø ANCHOR BOLTS (GALV.) 2'-6" LONG, PROVIDE STD. DBL. NUTS & WASHERS. BOLTS TO HAVE 2 1/2" THD & 4" HOOK.

THREAD & CAP END OF CONDUIT.

1'-6"

1 1/2" I.D. RIGID STEEL CONDUIT (GALV.) LONG RADIUS FIELD BEND.

90° ELBOW BUSHED LONG, LOCATE TO AVOID INTERFERENCE WITH CROSSFRAME.

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
CONDUIT IN TRENCH, 2" DIA. GALVANIZED STEEL	LIN. FT.	100
CONDUIT ATTACHED TO STRUCTURE, 2" DIA. GALV. STEEL	LIN. FT.	2112
CONDUIT IN CONCRETE, 1½" DIA. GALVANIZED STEEL	LIN. FT.	40
CONDUIT, 1½" DIA., GALVANIZED STEEL	LIN. FT.	24
TRENCH AND BACKFILL	LIN. FT.	50
FURNISHING & ERECTING STRUCTURAL STEEL	POUND	7565

DE LEUW, CATHER & CO. ENGINEERS
DESIGNED BY R.H.
DRAWN BY R.M.
CHECKED R.K.
IN CHARGE P.S. MARTINS
APPROVED L.A. GIAN

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY

LAWNDALE AVE OVER DES PLAINES RIVER

ELECTRICAL DETAILS

SCALE: AS NOTED | DATE

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0160985_60W75_049_existplan9.dgn	PLOT SCALE =	DRAWN - JLS	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLAN INFORMATION (9 OF 13)
STRUCTURE NO. 016-0985
SHEET NO. SDX9 OF SDX13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	490
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		

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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
IL 171	**	COOK	385	212
	-	ILLINOIS	FED. AID PROJECT	

** SECTION 0707-613B (BR)

EXIST DUAL STRUCTURES (016-0483 & D16-0985)
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 / 1 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).

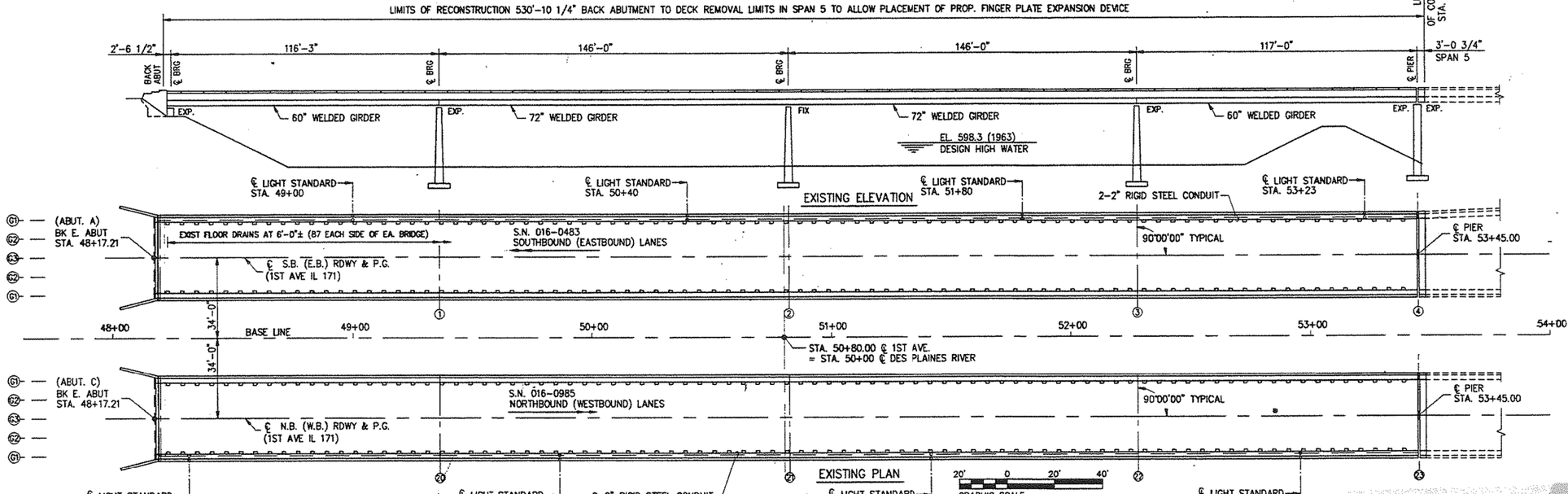
THE STRUCTURAL STEEL BEARING PLATES OF THE ELASTOMERIC BEARING ASSEMBLY SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 270 GRADE 50.

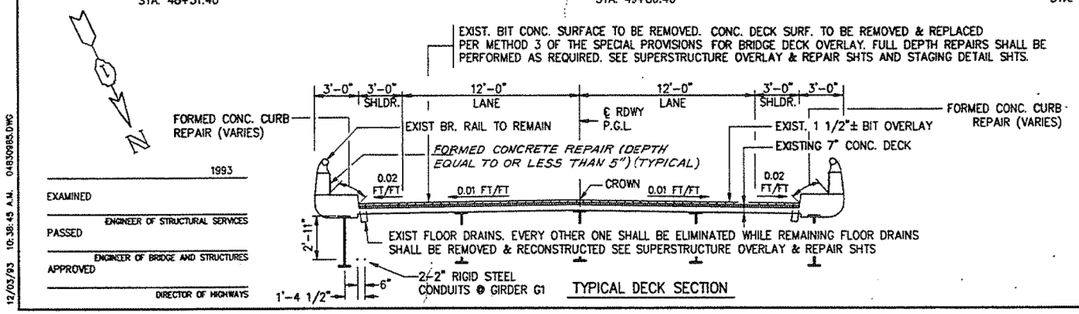
PRIOR TO POURING THE NEW CONCRETE FOR THE DECK, ALL LOOSE RUST, LOOSE MILL SCALE, AND ALL OTHER LOOSE DETRIMENTAL FOREIGN MATERIAL SHALL BE REMOVED FROM THE EMBEDDED PORTIONS OF FLANGES OF STRINGERS. THE REMOVAL SHALL BE ACCOMPLISHED IN ACCCORDANCE WITH THE REQUIREMENTS OF THE SSPC SURFACE PREPARATION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

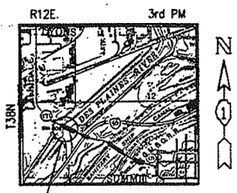
BRIDGE SEAT SEALER SHALL BE APPLIED TO THE SEAT AREA OF THE EAST ABUTMENTS, PIER 4 & PIER 23.

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)".

52785







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

12/03/93 10:38:45 A.M. 0185098S.DWG

DUANE L. SIEGFRIED 4700 REGISTERED STRUCTURAL ENGINEER 12-3-93 STATE OF ILLINOIS
EXPIRES 11/30/94
ILLINOIS S.E. 4700

ILLINOIS DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION

BRIDGE REPAIRS
1ST AVE (IL 171) S.N. 016-0483 & 016-D985
OVER DES PLAINES RIVER

F.A.U. RT. 1505 — SECTION 0707-613B (BR)
COOK CO. IL
STA. 50+80.00

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

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FILE NAME = 0160985_60W75_050_existplan10.dgn	USER NAME = jsurber	DESIGNED - JLS	REVISED -
		CHECKED - AJK	REVISED -
	PLOT SCALE =	DRAWN - JLS	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLAN INFORMATION (10 OF 13)
STRUCTURE NO. 016-0985
SHEET NO. SDX10 OF SDX13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	491
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		

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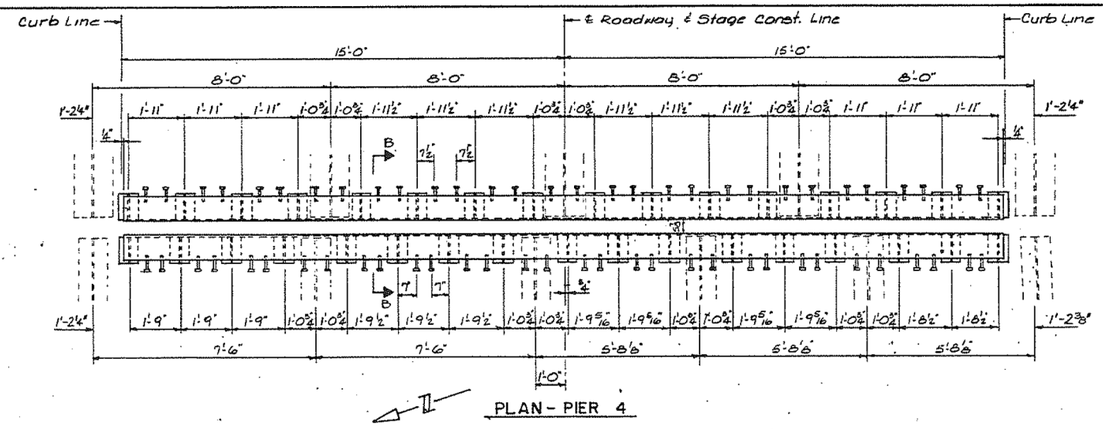
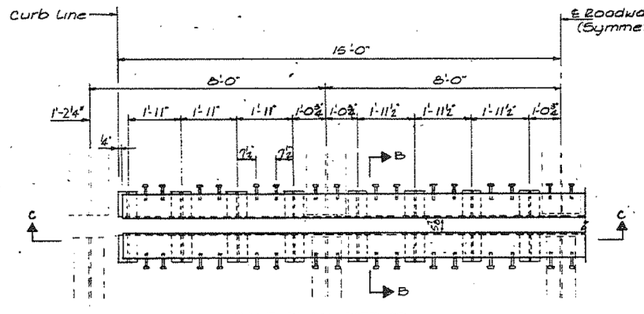
FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
IL 171	2007-037B (BR)	COOK	383	220
STA.		TO STA.		
F.H.W.A. REG.	ILLINOIS			

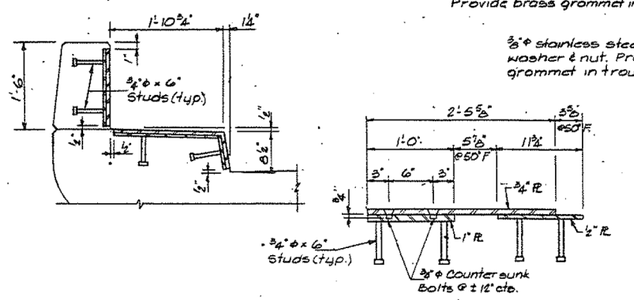
Sheet 9 of 20



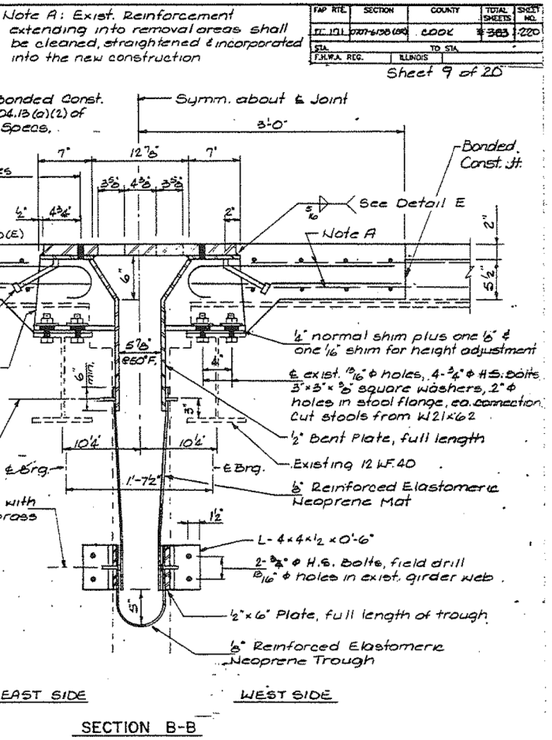
PLAN - PIER 4



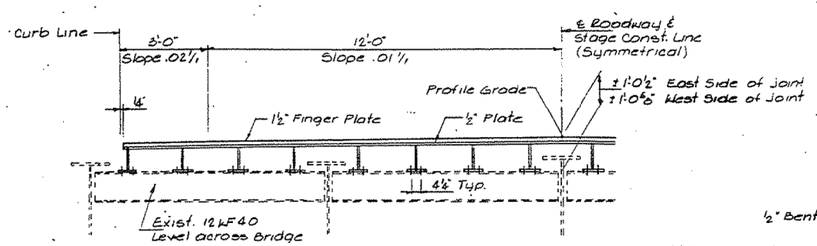
HALF PLAN - PIER 23



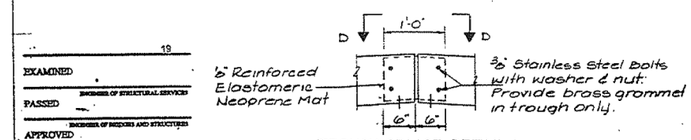
SLIDING PLATE DETAILS AT CURB & PARAPET



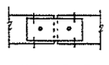
SECTION B-B



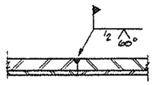
ELEVATION PIER 23
Pier 4 Similar



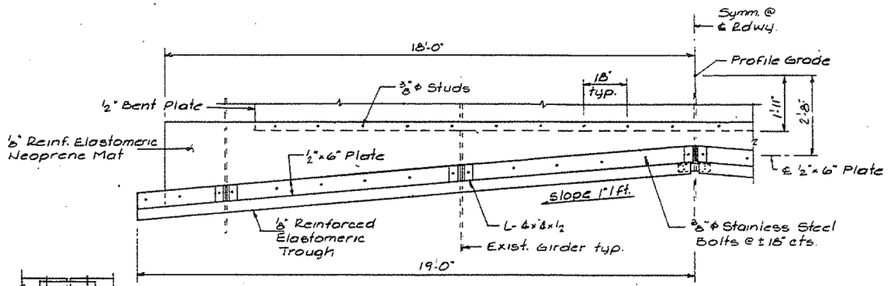
TROUGH SPLICE DETAIL



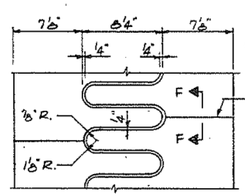
VIEW D-D



SECTION F-F



SECTION C-C
Pier 23 Shown
Pier 4 Similar



FLAME CUTTING DIAGRAM
Cut from R - 1'2"x22'2"x29'11½"
2 Required

19
EXAMINED
ENGINEER OF STRUCTURAL SERVICES
PASSED
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

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

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312-565-0450 Job No. 10093

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0160985_60W75_051_existplan11.dgn	PLOT SCALE =	DRAWN - JLS	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLAN INFORMATION (11 OF 13)
STRUCTURE NO. 016-0985
SHEET NO. SDX11 OF SDX13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	492
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		

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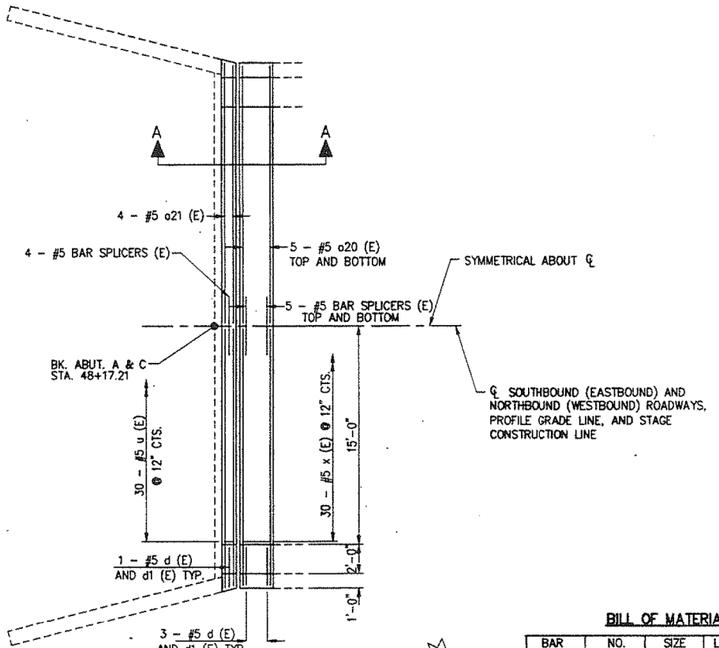
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
IL 171	* *	COOK	585	281
		ILLINOIS	FED. AID PROJECT	

* * SECTION 0707-613B (BR)



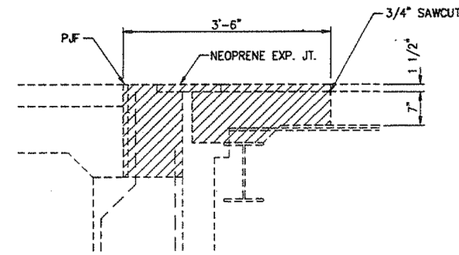
ABUTMENTS A & C - PLAN VIEW

BILL OF MATERIAL

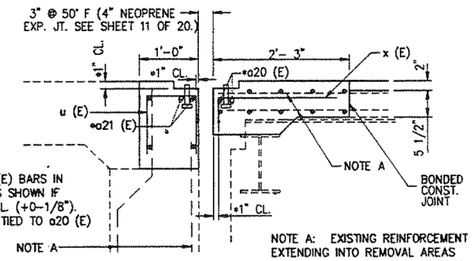
BAR	NO.	SIZE	LENGTH	SHAPE
a20 (E)	40	#5	17'-6"	
a21 (E)	16	#5	17'-9"	
d (E)	16	#5	6'-0"	
d1 (E)	16	#5	6'-8"	
u (E)	60	#5	2'-9"	
x (E)	60	#5	2'-7"	

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.



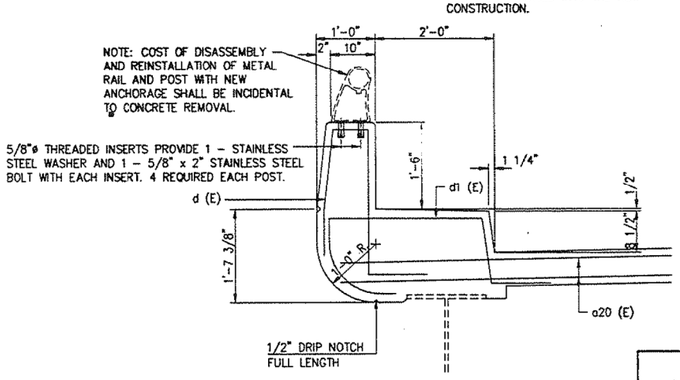
SECTION A-A EXISTING
HATCHED AREAS TO BE REMOVED



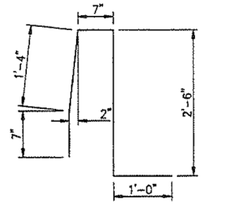
• PLACE a20 (E) AND a21 (E) BARS IN BACK OF ANCHOR BOLTS AS SHOWN IF REQUIRED TO MAINTAIN 1" CL. (+0-1/8"). ANCHOR BOLTS SHOULD BE TIED TO a20 (E) AND a21 (E) BARS.

SECTION A-A PROPOSED

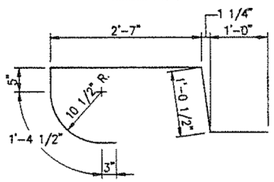
NOTE A: EXISTING REINFORCEMENT EXTENDING INTO REMOVAL AREAS SHALL BE CLEANED, STRAIGHTENED, AND INCORPORATED INTO THE NEW CONSTRUCTION.



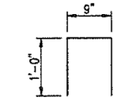
PROPOSED
TYPICAL SECTION AT CURB



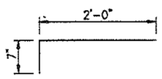
BAR d (E)



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

1993

EXAMINED
ENGINEER OF STRUCTURAL SERVICES

PASSED
ENGINEER OF BRIDGE AND STRUCTURES

APPROVED
DIRECTOR OF HIGHWAYS

12/03/93 11:42:36 A.M. 483985.DGN
0483 & 0985 SUBSTRUCTURE REPAIR -- JOINTS

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Chicago, Illinois 60601
312-565-0450 Job No. 10093

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	PLOT SCALE =	DRAWN - JLS	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLAN INFORMATION (12 OF 13)
STRUCTURE NO. 016-0985
SHEET NO. SDX12 OF SDX13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	493
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		

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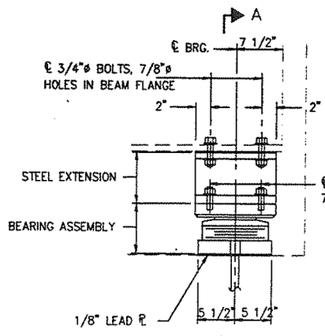
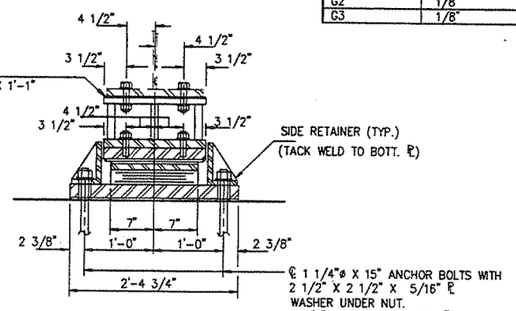
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
IL 171	**	COOK	585	223
		ILLINOIS	FED. AID PROJECT	

** SECTION 0707-613B (BR)



ELEVATION



SECTION A–A

TYPE II TFE ELASTOMERIC EXP. BRG.

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		
RD	(K)	60.3
RL	(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".

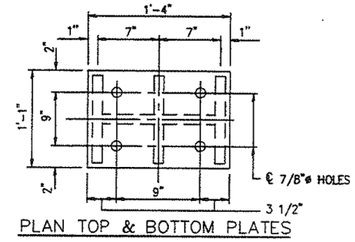
SEE SHEET 18 OF 20 FOR ANCHOR BOLT INSTALLATION.

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.

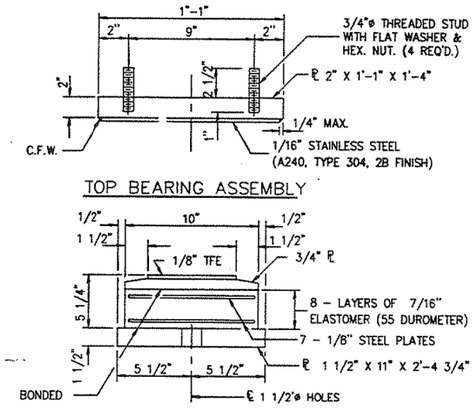
TRAFFIC SHALL BE REMOVED FROM THE PORTION OF THE STRUCTURE TO BE JACKED PRIOR TO COMMENCING JACKING OPERATIONS. TRAFFIC SHALL BE KEPT OFF THAT PORTION OF THE STRUCTURE DURING THE ENTIRE BEARING REPLACEMENT OPERATION. DIFFERENTIAL JACKING HEIGHT NOT TO EXCEED 1/8" TRANSVERSELY BETWEEN ADJACENT BEAMS OR 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.



PLAN TOP & BOTTOM PLATES

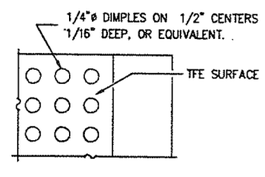


TOP BEARING ASSEMBLY

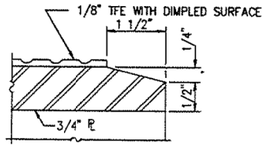
BOTTOM BEARING ASSEMBLY

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.

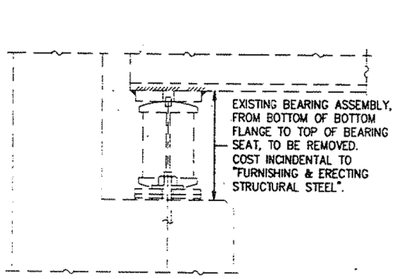
BONDING OF 1/8 " TFE SHEET DURING VULCANIZING PROCESS WILL BE PERMITTED PROVIDED THE PROCESS AND METHOD OF ADJUSTING ASSEMBLY HEIGHT IS APPROVED BY THE ENGINEER.



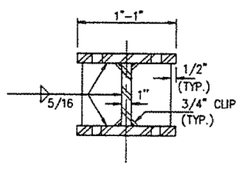
PLAN–TFE SURFACE



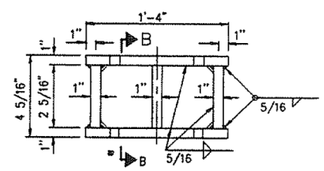
SECTION THRU TFE



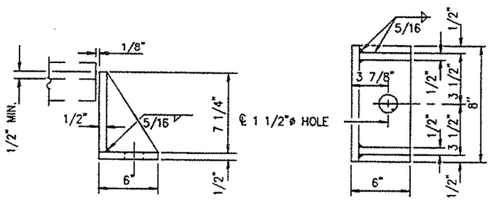
EXISTING ELEVATION



SECTION B–B

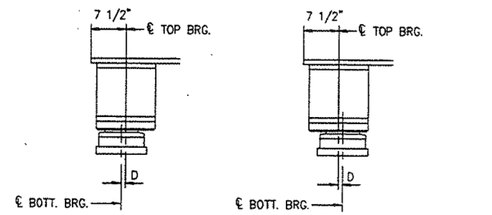


STEEL EXTENSION DETAIL



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	20
JACK & REMOVE EXISTING BEARINGS	EACH	20
FURNISH & ERECT STRUCTURAL STEEL	LBS	4940

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

19

EXAMINED

PASSED — ENGINEER OF BRIDGE DESIGN

APPROVED — ENGINEER OF BRIDGES AND STRUCTURES

DIRECTOR OF HIGHWAYS

12/03/93 11:47:27 A.M. 483TYP2.DWG

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Chicago, Illinois 60601
312-565-0450 Job No. 10093

FOR INFORMATION ONLY

FILE NAME = 0160985_60W75_053_existplan13.dgn	USER NAME = jsurber	DESIGNED - JLS	REVISED -
		CHECKED - AJK	REVISED -
	PLOT SCALE =	DRAWN - JLS	REVISED -
	PLOT DATE = 6/9/2015	CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLAN INFORMATION (13 OF 13)
STRUCTURE NO. 016-0985
SHEET NO. SDX13 OF SDX13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	494
		CONTRACT NO. 60W75		
		ILLINOIS	FED. AID PROJECT	

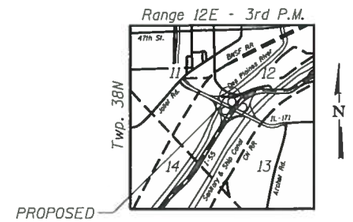
6/9/2015 9:33:57 PM Y:\chicago\10000S\10093\Eng_Docs_Phase_II\SN_016_0483_0985_1st_Ave_over_Des_Plaines_River\Final_0985_0160985_60W75_053_existplan13.dgn

Bench Mark: Chiseled square cut on south side parapet wall at Pier 55 (T.B.M. #7) 617.59

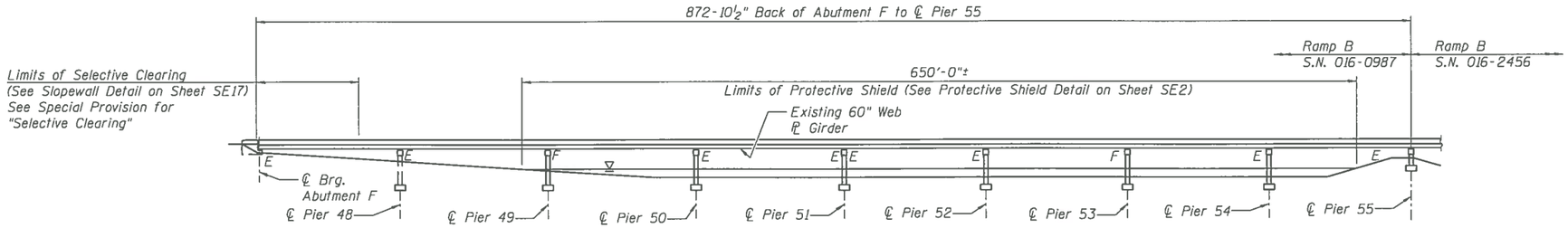
Existing Structure:
The structure is eight spans comprised of two four-span composite continuous welded plate girders and 7½ inch reinforced concrete slab. The original structure was built in 1963. In 1994, the deck was replaced and jersey parapet, bridge lighting, and transverse expansion joints were added; substructure was repaired, new elastomeric bearings, drain extensions added, wingwalls at the southeast abutment, and existing plate girders were made composite. In 2008, lateral bracing was replaced at the north fascia girder in the fourth bay west of the east abutment.

Bridge shall be closed during construction. A detour shall be utilized to maintain traffic.

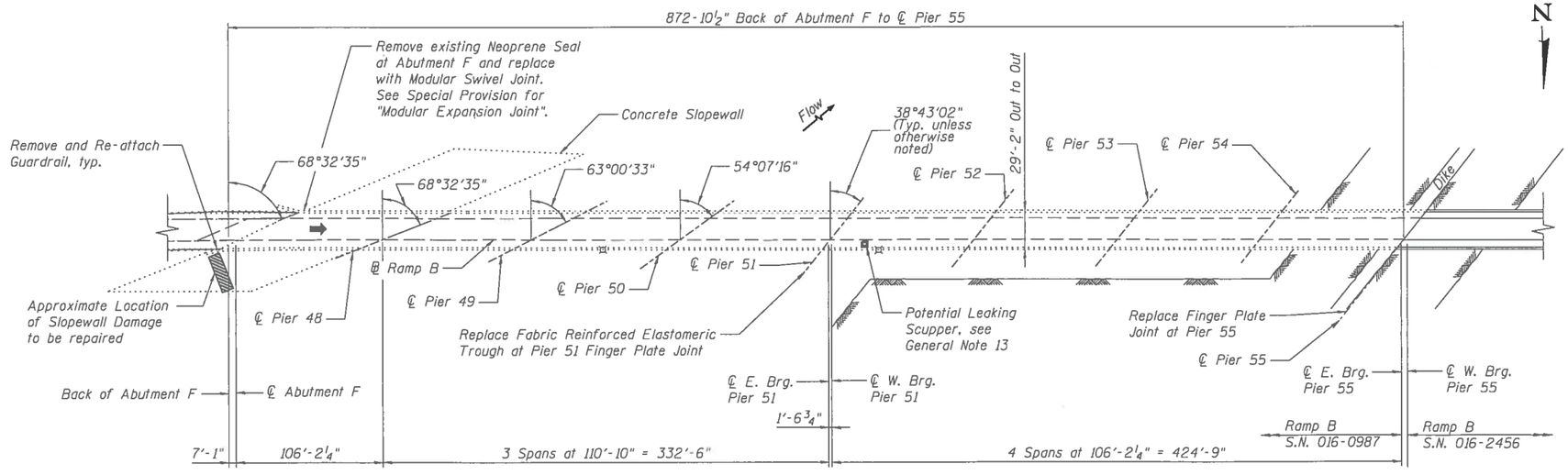
No salvage.



LOCATION SKETCH



ELEVATION



PLAN

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications
for highway Bridges, 17th Edition

DESIGN STRESSES

f'c = 3,500 psi
fy = 60,000 psi (reinforcement)
fy = 36,000 psi (existing structural steel)
fy = 36,000 psi (proposed structural steel repair)

SCOPE OF WORK

1. Substructure repair consisting of structural concrete repair and epoxy crack sealing.
2. Concrete repair of concrete parapets.
3. Structural steel repairs.
4. Remove lateral wind bracing.
5. Remove abandoned conduit under bridge.
6. Repair the anchor bolt missing a nut at the western bearing of Girder No. 4 at Pier 51.
7. Fix loose bearing bolt at Girder No. 4 bearing at Pier 48.
8. Repair slopewall at Abutment F.
9. Replace expansion joint at Abutment F with modular expansion joint and replace finger plate expansion joint at Pier 55. Replace fabric reinforced elastomeric trough at Pier 51.
10. Vegetation removal.
11. Clean out deck drains and repair as necessary. Clean and seal bridge deck, approach slab and parapets.

KURT J. NAUS
081-005578
LICENSED
STRUCTURAL
ENGINEER
STATE OF ILLINOIS

EXPIRATION DATE 11-30-2016
DATE: 06-12-2015

GENERAL PLAN AND ELEVATION
I-55 SB RAMP TO IL-171 NB
OVER DES PLAINES RIVER
"PUBLIC WATER"
FAP 372 - SECTION 2013-037B-R
COOK COUNTY
STATION 49+11.52
STRUCTURE NO. 016-0987

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Chicago, Illinois 60601
312-585-0450 Job No. 10093

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	PLOT DATE = 6/17/2015	CHECKED - JAW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. SE1 OF SE21 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	495
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

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GENERAL NOTES

1. Reinforcement bars designated (E) shall be epoxy coated.

2. 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.

3. Protective Coat shall be applied to the entire top surface of the deck and approach slab and the tops and inside vertical faces of all parapets. All surfaces to be sealed shall be cleaned thoroughly prior to sealer application.

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

5. All structural steel shall be AASHTO M270 Grade 36 unless otherwise noted (except expansion joints which shall be AASHTO M270 Grade 50 NTR).

6. No field welding is permitted except as specified in the contract documents.

7. 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 the concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will be included in the pay item covering removal of existing concrete.

8. Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts (in painted areas and ASTM A325 Type 3 in unpainted areas). Bolts $\frac{3}{4}$" ϕ, holes $\frac{13}{16}$", unless otherwise noted.

9. The Contractor shall exercise care during removal of existing joints to ensure that the slab, beams and diaphragms' integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams and diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.

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

11. The Inorganic Zinc Rich Primer/Acrylic/Acrylic Paint System shall be used for shop and field painting of new structural steel. Only Inorganic Zinc Rich Primer shall be applied to the new structural steel in the shop under this contract and is included in the respective steel pay items. The intermediate and top coats shall be applied under a separate painting contract.

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

13. There are 7 deck drains on this bridge. Deck drains (downspouts and scuppers) shall be cleaned with the bridge deck prior to application of the Protective Coat. The potentially leaking scupper shown on the General Plan shall be tested to determine the potential source of the leaking. This may be done by observing the scupper from underneath the bridge either during a period of heavy rainfall, or while pumping sufficient volumes of water down through the scupper. If the Engineer decides that scupper is not leaking, then no further action is necessary. Cost included with Protective Coat. If a leak is identified, then it shall be repaired to the satisfaction of the Engineer. If the repair involves either tightening the existing threaded studs or using epoxy to seal a crack, then no additional payment will be made. Otherwise, the repairs will be paid for according to Article 109.04 of the Standard Specifications.

14. Cost of vegetation removal to be included with Selective Clearing. See Special Provision for "Selective Clearing".

INDEX OF SHEETS

For existing bridge plans, see Sheets SEX1 thru SEX11, immediately following Sheet SE21.

TOTAL BILL OF MATERIAL

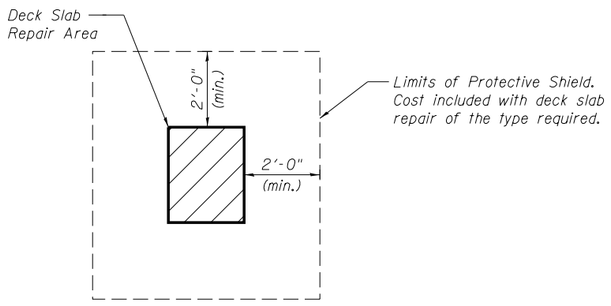
	ITEM	UNIT	SUPER	SUB	TOTAL
	Concrete Removal	Cu Yd	15.1		15.1
	Slope Wall Removal	Sq Yd		30	30
	Concrete Superstructure	Cu Yd	15.1		15.1
	Protective Coat	Sq Yd	3,225		3,225
	Furnishing and Erecting Structural Steel	Pound	6,780		6,780
	Reinforcement Bars, Epoxy Coated	Pound	1,100		1,100
	Slope Wall 4 Inch	Sq Yd		30	30
*	Finger Plate Expansion Joint, 4"	Foot	33.5		33.5
*	Fabric Reinforced Elastomeric Trough	Foot	70.0		70.0
**	Epoxy Crack Injection	Foot		86	86
	Remove Conduit Attached to Structure	Foot	1,746		1,746
	Re-attach Guardrail to Structure	Each	2		2
	Granular Backfill for Structures	Cu Yd		20	20
	Structural Steel Removal	Pound	16,290		16,290
	Structural Steel Repair	Pound	2,000		2,000
**	Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	20	219	239
**	Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq Ft	6	44	50
***	Deck Slab Repair (Full Depth, Type I)	Sq Yd	5.0		5.0
***	Deck Slab Repair (Full Depth, Type II)	Sq Yd	5.0		5.0
***	Deck Slab Repair (Partial)	Sq Yd	10.0		10.0
*	Modular Expansion Joint-Swivel 6"	Foot	66.5		66.5
****	Selective Clearing	Unit		1	1

* Includes cost of Removal and Disposal of Existing Joints (Abut. F & Pier 55) and trough (Pier 51).

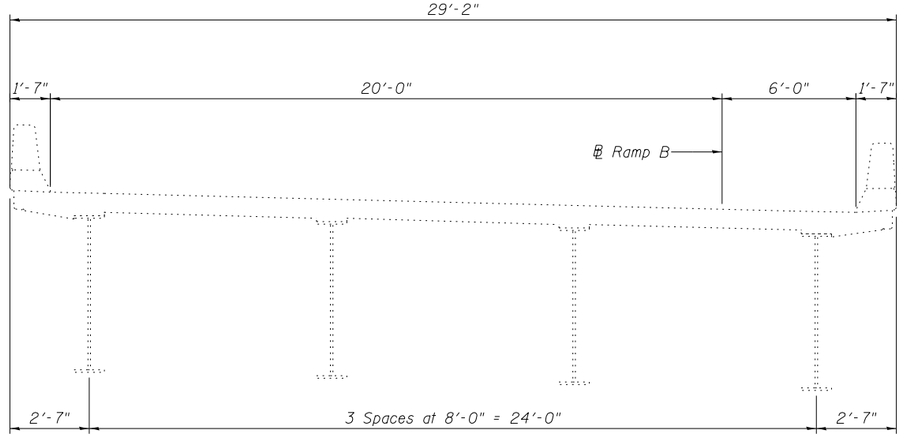
** Quantity includes a contingency (above the amounts shown in the bills of material) to account for uncertainties associated with the condition of the existing substructure and the age of the original inspection (2008-9). Actual repair areas will be determined by the Engineer in the field.

*** The quantity shown is an estimate. Actual repair areas and locations shall be determined by the Engineer and shown on As-Built plans.

**** The quantity for this work is estimated. The intent for this work is to remove accumulations of rubbish, vegetation, etc., on the existing slopewall.



PROTECTIVE SHIELD DETAIL



EXISTING DECK CROSS SECTION

(Looking West)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES, BILL OF MATERIAL AND INDEX OF SHEETS
STRUCTURE NO. 016-0987
SHEET NO. SE2 OF SE21 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	496
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

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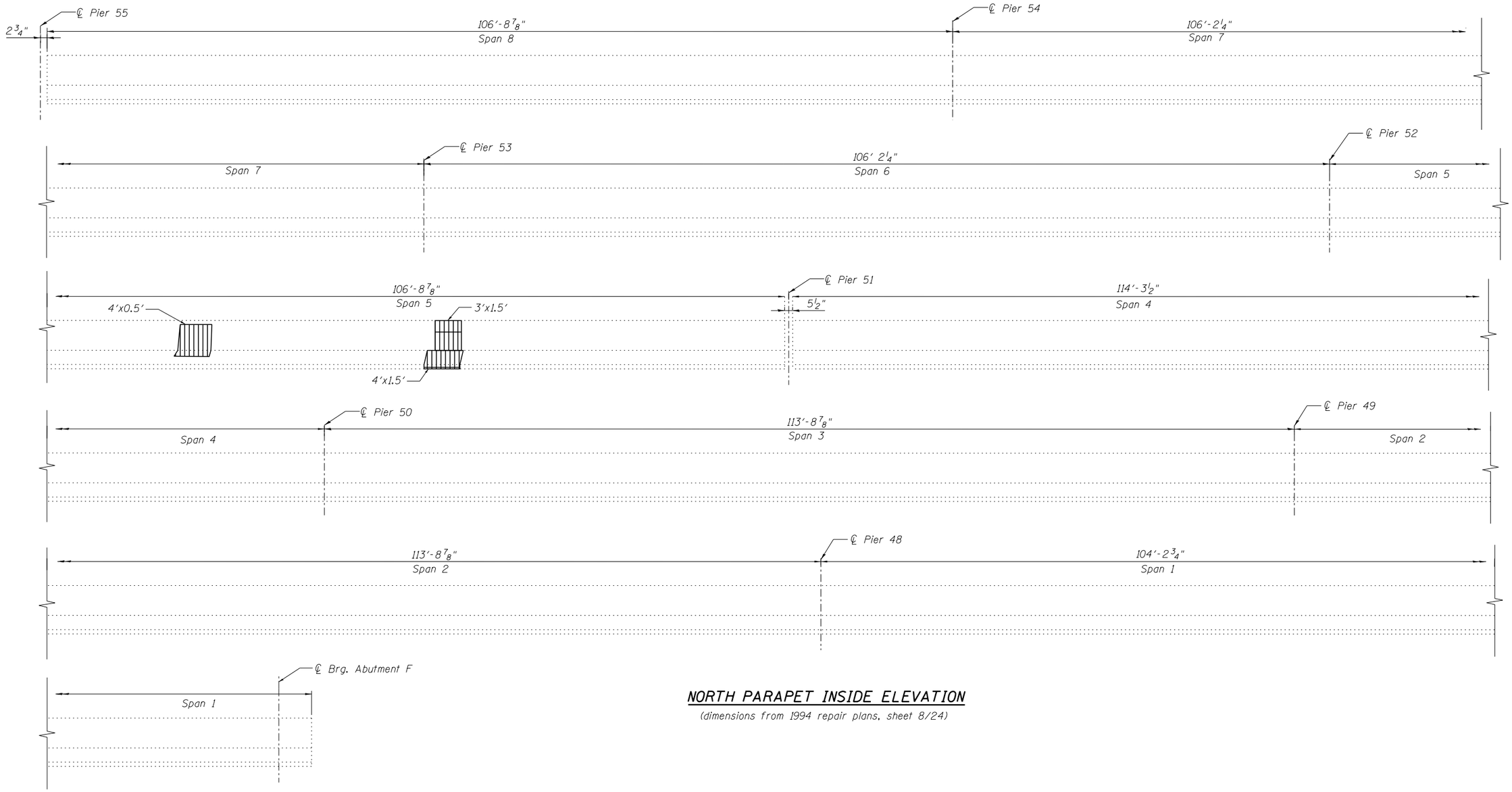

NORTH PARAPET INSIDE ELEVATION

(dimensions from 1994 repair plans, sheet 8/24)

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	13

LEGEND

Spalled Concrete

NOTE:

See Expansion Joint Sheets for Parapet work at Expansion Joints.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH PARAPET REPAIRS
STRUCTURE NO. 016-0987
SHEET NO. SE3 OF SE21 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	497
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

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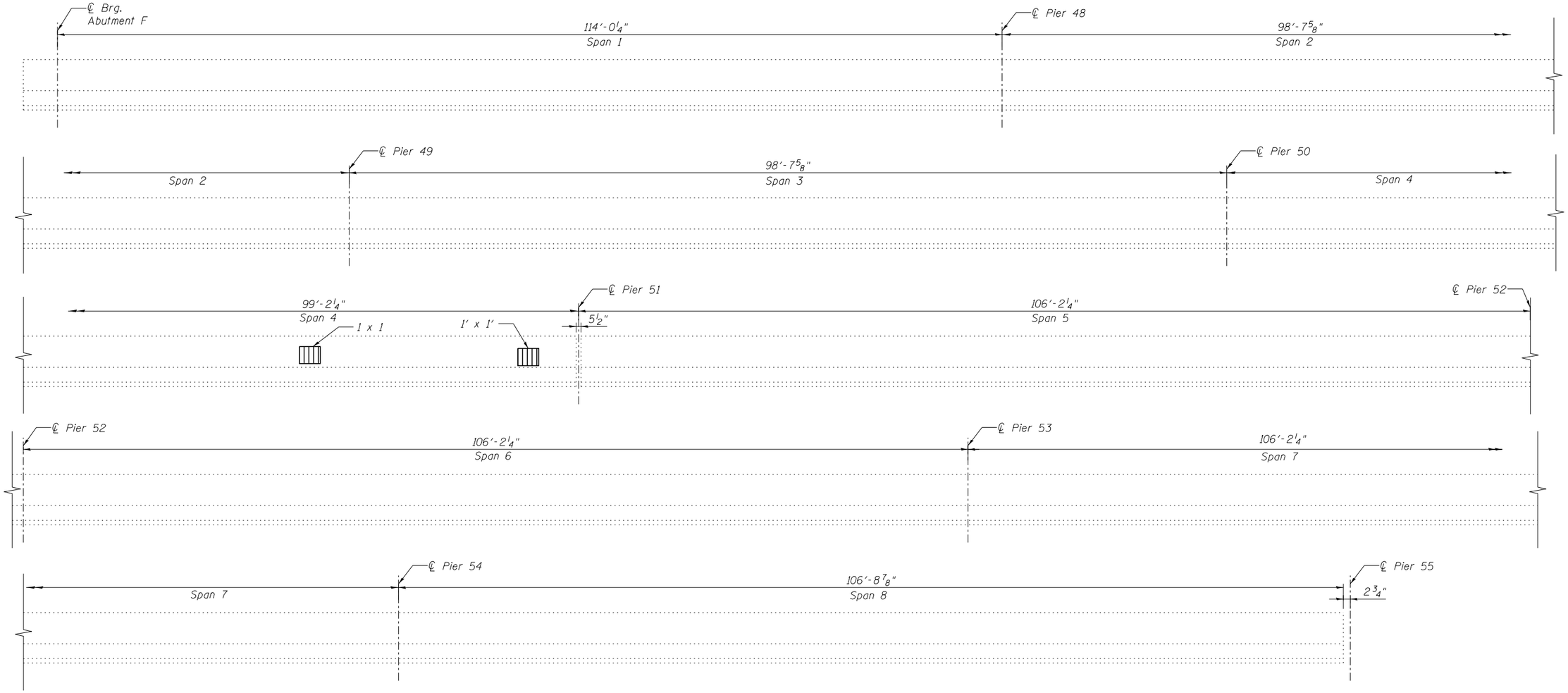

SOUTH PARAPET - INSIDE ELEVATION

(dimensions from 1994 repair plans, sheet 8/24)

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	2

LEGEND

Spalled Concrete

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SOUTH PARAPET REPAIRS
STRUCTURE NO. 016-0987
SHEET NO. SE4 OF SE21 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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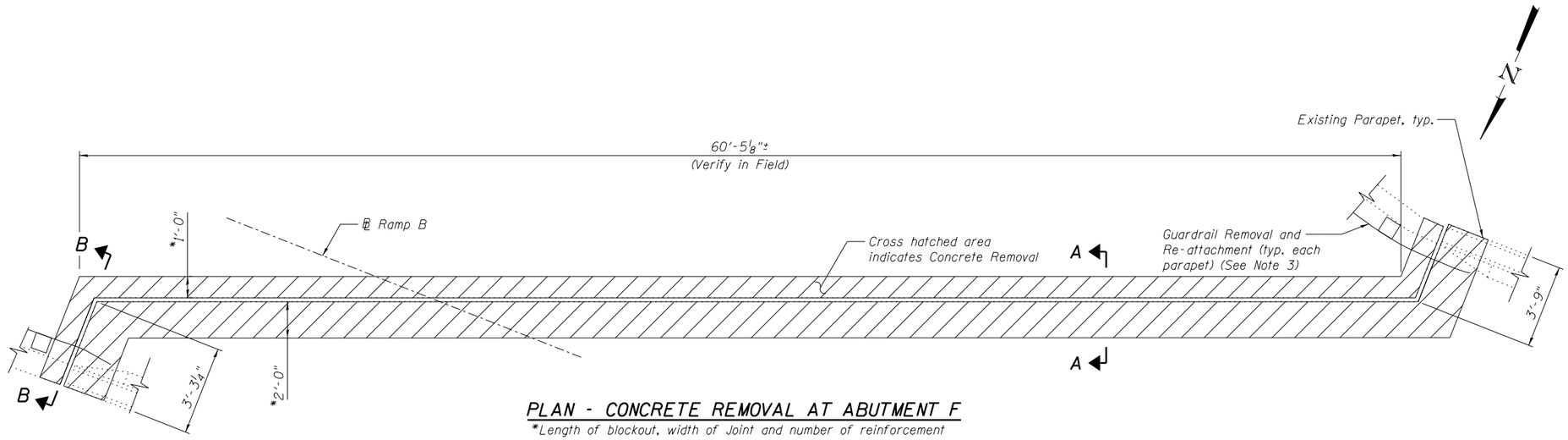


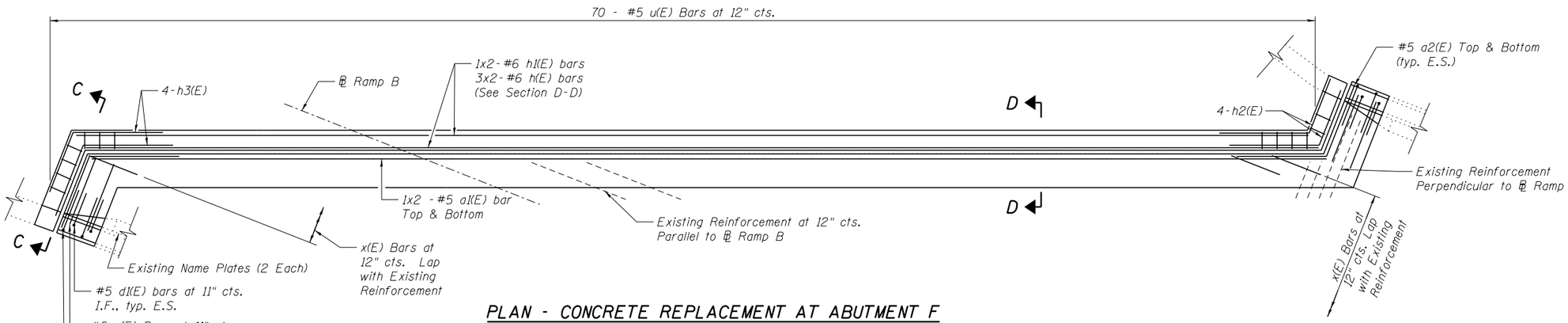
PLAN - CONCRETE REMOVAL AT ABUTMENT F

*Length of blockout, width of Joint and number of reinforcement bars needed may vary as required by Joint Manufacturer.

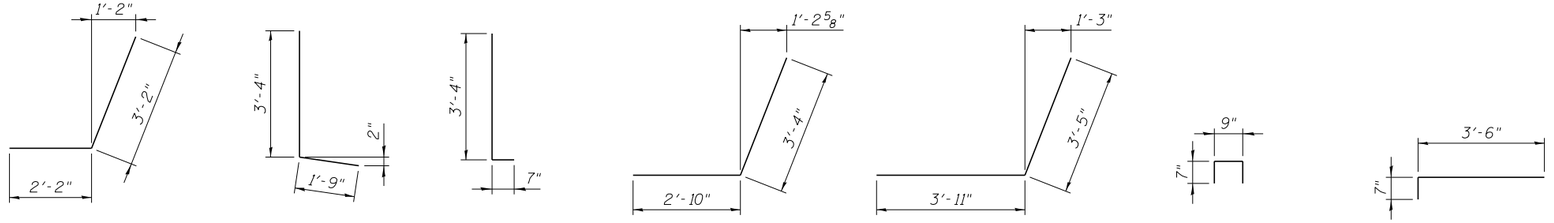
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	6	#6	4'-0"	
a1(E)	2	#5	32'-0"	
a2(E)	4	#5	5'-4"	
d(E)	4	#4	5'-1"	
d1(E)	4	#5	3'-11"	
h(E)	6	#6	31'-4"	
h1(E)	2	#6	31'-7"	
h2(E)	4	#6	6'-2"	
h3(E)	4	#6	7'-4"	
u(E)	70	#5	1'-11"	
x(E)	24	#5	4'-1"	
Concrete Removal			Cu. Yd.	10.3
Concrete Superstructure			Cu. Yd.	10.3
Mod. Exp. Jt.-Swivel 6"			Foot	66.5
Reinforcement Bars, Epoxy Coated			Pound	860
Re-attach Guardrail to Structure			Each	2

Bars indicated thus 1x2-#5 etc. indicates 1 line of bars with 2 lengths per line.



PLAN - CONCRETE REPLACEMENT AT ABUTMENT F



BAR a2(E) | BAR d(E) | BAR d1(E) | BAR h2(E) | BAR h3(E) | BAR u(E) | BAR x(E)

NOTES:

1. I.F. denotes Inside Face.
   O.F. denotes Outside Face.
   E.S. denotes Each Side
   E.E. denotes Each End
2. Work this sheet with sheets SE6 and SE7.
3. Existing guardrail, lower rub rail and posts shall be removed and reinstalled as required to facilitate expansion joint repair. See Special Provision for "Re-attach Guardrail to Structure".
4. If either existing name plate falls within the limits of Concrete Removal, it shall be removed and reinstalled in its original location according to IDOT Std. 515001. Cost included with "Concrete Removal".

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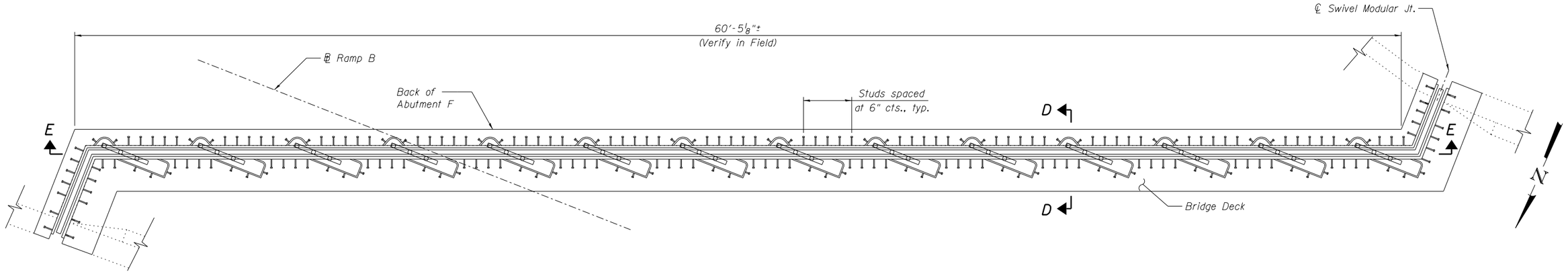
DEPARTMENT OF TRANSPORTATION

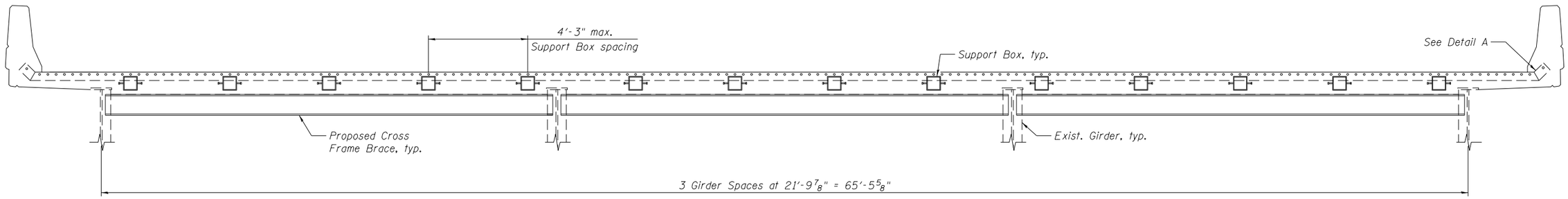
EXPANSION JOINT REPAIRS – ABUTMENT F
STRUCTURE NO. 016–0987
SHEET NO. SE5 OF SE21 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	499
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		



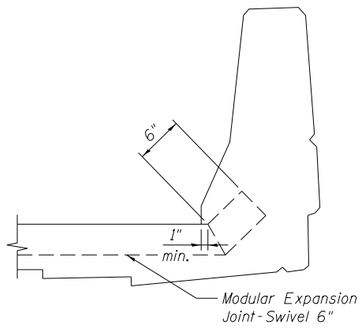
PLAN - PROPOSED BOX LOCATIONS

(Box spacing to be determined by Joint Manufacturer. Space to miss Girders)



SECTION E-E

(Horizontal dimensions measured along skew)



DETAIL A

NOTES:

1. Modular Expansion Joint shall be designed according to the latest AASHTO Specifications for HS20-44 truck loading with impact and for a minimum movement of ±1.5" (total of 3").
2. The Modular Expansion Joint shall be either the Maurer Swivel system by the D.S. Brown Company, the WABO X-CEL system by the Watson Bowman Acme Corporation or the LG Swivel system by D.S. Tech Star Inc.
3. Joint shall be fabricated and installed according to the manufacturer's recommendations and as approved by the Engineer.
4. Joint shall be fabricated to conform to the Roadway Profile and Cross-Slopes.
5. Cost of all hardware and installation of Steel Bearing Shim Plates and additional reinforcement required to anchor the joint to the slab shall be included with "Modular Expansion Joint-Swivel 6".
6. Expansion Joints shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.
7. Contributing expansion length = 217′.
8. Work this sheet with heets SE5 and SE7.

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EXPANSION JOINT LAYOUT – ABUTMENT F
STRUCTURE NO. 016-0987
SHEET NO. SE6 OF SE21 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	500
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			